



## Operating Instructions, Repair Manuals and Maintenance Instructions







**Ball Bearing Turntables** and Slewing rings



Fifth Wheel Couplings 2" and Mounting Plates



**Heavy Duty Fifth Wheel** Couplings 31/2" 2", and **Mounting Plates** 

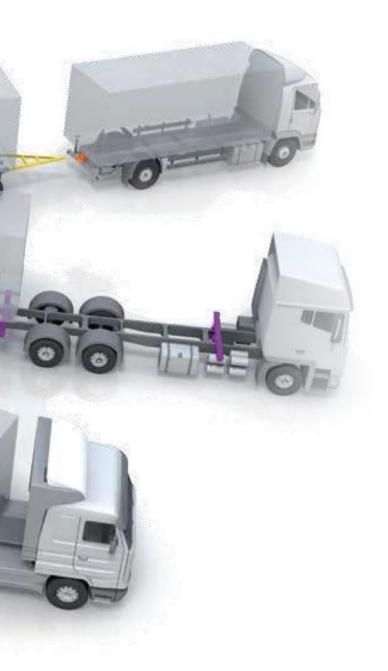


Slider for Fifth Wheel Coupling



2" and 31/2" King Pins

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Selected Operating Instructions, Repair Manuals and Maintenance Instructions, which are referred to or appear in this catalogue, are applicable to the genuine product as manufactured/supplied by **JOST** Australia.

Where applicable, each product complies with the requirements of the Australian Design Rules (ADR's) 62/01, and the corresponding Component Registration Number (CRN) is detailed on the **JOST** Australia CRN List at the front of this catalogue.

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The registration covers the Quality Management System for the assembly and fitting of equipment for the truck and trailer industry including fifth wheels, landing gear systems, turntables, towing gear, hubodometers, mounting plates and associated replacement parts and accessories; the distribution of hydraulic hoists, pumps, valves, spare parts and accessories to the truck, industrial trailer.

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Telescopic Landing Gear



Automatic Towing Hitches & Tow Eyes



Hubodometer and Hub Caps

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### **Component Registration Numbers (CRN)**

**Note:** All D-Values have been transcribed directly from the original Component Test Reports. (Current from 14th April 2003)

### **JOST Fifthwheels**

| Product Stock No               | CRN & D-Val | ue Specification  |  |
|--------------------------------|-------------|-------------------|--|
| JSK32AV                        | 26278       | D-Value: 160 kN   |  |
| JSK36DV1                       | 26277       | D-Value: 170 kN   |  |
| JSK36CV                        | 41444       | D-Value: 190 kN   | 150mm, 170mm, 185mm, 220mm, 250mm & 300mm pedestals            |
| JSK37CZ                        | 41876       | D-Value: 190 kN   | 150mm, 170mm, 185mm, 220mm, 250mm & 300mm pedestal             |
| JSK37E                         | 36821       | D-Value: 190 kN   | (Same plate construction as JSK37CZ, but with pivot pedestals) |
| JSK37EW                        | 36821       | D-Value: 190 kN   | (Greaseless version of JSK37E)                                 |
| JSKSLE37E                      | 42707       | D-Value: 190 kN   |  |
| JSK37CZW                       | 41876       | D-Value: 190 kN   | 150mm, 170mm, 185mm, 220mm, 250mm & 300mm pedestals            |
|                                |             |                   | (Greaseless version of JSK37CZ)                                |
| JSK37CWS                       | 41876       | D-Value: 190kN    | 150mm, 170mm, 185mm, 220mm, 250mm & 300mm pedestals            |
|                                |             |                   | (Greaseless Sensor version of JSK37CZ)                         |
| JSK37CZS                       | 41876       | D-Value: 190kN    | 150mm, 170mm, 185mm, 220mm, 250mm & 300mm pedestals            |
|                                |             |                   | (Greaseable Sensor version of JSK37CZ)                         |
| JSK37CX                        | 45374       | D-Value: 240kN    | 150mm, 170mm, 185mm, 220mm, 250mm & 300mm pedestals            |
| JSK37027                       | 38553       | D-Value: 200kN    |  |
| JSK37070                       | 38553       | D-Value: 200kN    |  |
| JSK38C1                        | 24329       | D-Value: 260 kN   |  |
| JSK38C2                        | 42531       | D-Value: 216 kN   |  |
| JSK38DV                        | 36688       | D-Value: 260 kN   |  |
| JSK38G1                        | 24327       | D-Value: 260 kN   |  |
| JSK38G2                        | 42706       | D-Value: 216 kN   |  |
| JSK39CS                        | 45375       | D-Value: 275kN    |  |
| JSK39CSW                       | 45375       | D-Value: 275kN    |  |
| JSK52                          | 46422       | D-Value: 400kN    |  |
| JSK50                          | 24502       | D-Value: 300 kN   |  |
| JSK36AV2                       | 24497       | D-Value: 162.4 kN |  |
| JSK42ZJ                        | 36130       | D-Value: 200 kN   |  |
| JSK42WJ                        | 36130       | D-Value: 200 kN   |  |
| LP36CV                         | 24835       | D-Value: 190 kN   |  |
| LP37CZ / LP37CW                | 24836       | D-Value: 190 kN   |  |
| LP37E / LP37EW                 | 24833       | D-Value: 190 kN   |  |
| LP37E027                       | 40925       | D-Value: 190kN    |  |
| LP37CX                         | 46788       | D-Value: 240kN    |  |
| LP37G240                       | 24831       | D-Value: 162.4 kN |  |
| LP38C1                         | 47221       | D-Value: 240 kN   |  |
| LP38C12                        | 24834       | D-Value: 216 kN   |  |
| DH200 - Dual Height Fifthwheel | 26983       | D-Value: 120 kN   | (max height: 290mm, min height: 165mm)                         |
| DR36CV                         | 24832       | D-Value: 190 kN   |  |
| DR37CZ / DR37CW                | 24842       | D-Value: 190 kN   |  |
| DR37E / DR37EW                 | 24840       | D-Value: 190 kN   |  |
| DR38C1                         | 24843       | D-Value: 260 kN   |  |
| DR38C12                        | 41443       | D-Value: 216 kN   |  |
| LP39CS                         | 47151       | D-Value: 240kN    |  |
| LP39CSW                        | 47151       | D-Value: 240kN    |  |
| DR38DV90                       | 36819       | D-Value: 260 kN   |  |

| DR39CS        | 45373           | D-Value: 275kN    |   |
|---------------|-----------------|-------------------|---|
| DR37CX        | 45372           | D-Value: 240kN    |   |
| EVM SLIDER    | 26167           | D-Value: 190 kN   | For use with JSK36CV150 with EVM Slider |
| EVM SLIDER    | 26169           | D-Value: 190 kN   | For use with JSK37CZ150 with EVM Slider |
| EVP SLIDER    | 26168           | D-Value: 190 kN   | For use with JSK36CV150 with EVP Slider |
| EVP SLIDER    | 26170           | D-Value: 190 kN   | For use with JSK37CZ150 with EVP Slider |
| EVPLP SLIDER  | 24836 and 26170 | D-Value: 190kN    |   |
| JSKSLE SLIDER | 42707           | D-Value: 190kN    |   |
| S036CV        | 24844           | D-Value: 162.4 kN |   |
| S037CZ        | 24845           | D-Value: 162.4 kN |   |
| S037E         | 24838           | D-Value: 162.4 kN |   |

### **JOST Kingpins**

| Product Stock No                       |                 | CRN & D-Value S | pecification      |
|--|-----------------|-----------------|-------------------|
| KZ1008, KZ1010, KZ1012, KZ101216       |                 | 24156           | D-Value: 190 kN   |
| KZ091201 (Part of the KZ0908 Assembly) | FEA Approved ** | 24857           | D-Value: 108 kN   |
| KZ1516                                 | FEA Approved ** | 24344           | D-Value: 162.4 kN |
| KZ1016                                 |                 | 24292           | D-Value: 400 kN   |
| KZ1408, KZ1410, KZ1412                 | FEA Approved ** | 24811           | D-Value: 162.4 kN |
| KZ1416                                 | FEA Approved ** | 24812           | D-Value: 200 kN   |
| KZ1706, KZ1707, KZ1710, KZ1712         | FEA Approved ** | 24856           | D-Value: 152 kN   |
| KZ101216                               |                 | 24156           | D-Value: 190kN    |
| KP2108                                 |                 | 43948           | D-Value:190kN     |
| KP2210                                 |                 | 43949           | D-Value: 190kN    |
| KP2312                                 |                 | 43950           | D-Value: 190kN    |
| KP3508                                 |                 | 43487           | D-Value: 260 kN   |
| KP3510                                 |                 | 43488           | D-Value: 260 kN   |
| KP3512                                 |                 | 43489           | D-Value: 260 kN   |
| KP3516                                 |                 | 42523           | D-Value: 260 kN   |

### **Buyers Pintle Hooks**

| Product Stock No      | CRN & D-Value S | pecification    |                  |
|-----------------------|-----------------|-----------------|------------------|
| BDB1394               | 37264           | D-Value: 165 kN |                  |
| BPCPH15WMK            | 37267           | D-Value: 75 kN  |                  |
| BPCPH20WMK            | 37268           | D-Value: 100 kN |                  |
| BPCP45AC4 & BPCP45AC6 | 37266           | D-Value: 165 kN |                  |
| BPCBH850MM            | 37265           | D-Value: 30 kN  |                  |
| BPC PH 8 WMK          | 37270           | D-Value: 50 kN  |                  |
| BPCPH5WMK             | 37269           | D-Value: 35 kN  |                  |
| BPCPH30               | 44894           | D-Value: 125kN  |                  |
| BPCPH50               | 45107           | D-Value: 135kN  |                  |
| BPCRM650M             | 45999           | D-Value: 42kN   | WITHOUT THE BALL |
| BPCRM650M             | 45999           | D-Value: 17kN   | USED WITH BALL   |

<sup>\*\*</sup> Finite Element Analysis (FEA) has been approved for Kingpins by the Austrailian Standards Committee (Refer: Supplement 1-2002 to AS 2175-1995) as an alternative to physical testing.

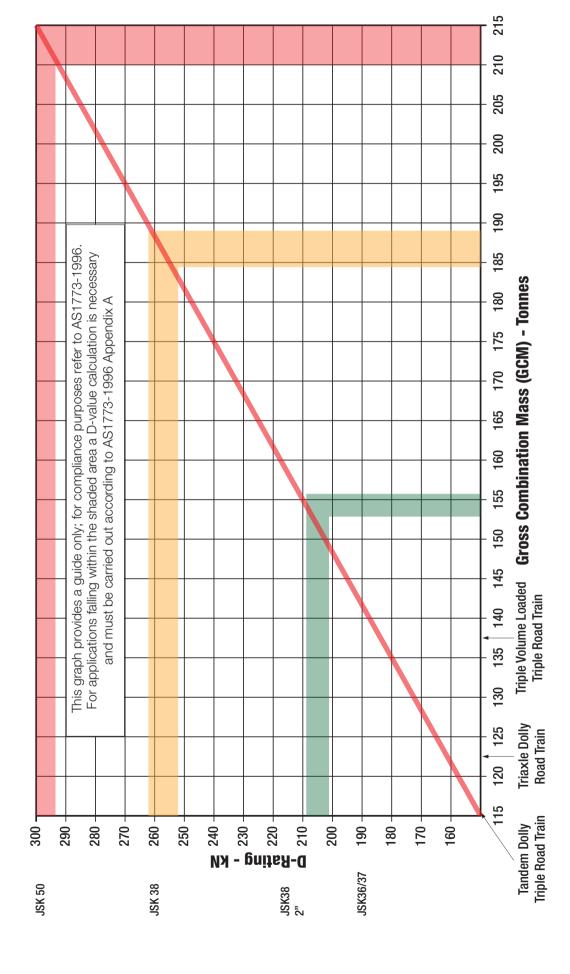
### **Rockinger Coupling**

| Product Stock No        | CRN & D-Value S | pecification       |                             |
|-------------------------|-----------------|--------------------|-----------------------------|
| R0500 Rockinger Coupler | 28986           | D-Value: 260 kN    |                             |
|                         |                 | (At ZERO download) |                             |
| R0500B66000B            | 43546           | D-Value: 200kN     | WITH 2500 KG DOWN LOAD      |
| R0500B66500B            | 43545           | D-Value: 285 kN    | WITH 1000KG DOWN LOAD       |
| R0E57005                | 49663           | D-Value: 314kN     | WITH ZERO DOWNLOAD          |
| ROCKINGER 400           | 43196           | D-Value: 130kN     | WITH 1000 KG DOWNLOAD       |
| ROCKINGER 243U130       | 43247           | D-Value: 30kN      | WITH 350 KG (MAX ) DOWNLOAD |
| R0850B30                | 49383           | D-Value: 50kN      |                             |
| R0860B40                | 49384           | D-Value: 78.2kN    |                             |
| R0860B50                | 49385           | D-Value: 98.1kN    |                             |

### **JOST & Rockinger Towing Eyes**

| Product Stock No |                                     | CRN & D-Va | CRN & D-Value Specification |  |
|------------------|-------------------------------------|------------|-----------------------------|--|
| R0E57374         | (Replaces <b>JOST</b> Z046)         | 41539      | D-Value: 120 kN             |  |
| R0CK57394        | (50mm Weld-In) (Replaces JOST Z059) | 24529      | D-Value: 314 kN             |  |
| R0E57272         | (50mm Weld-In) (Replaces JOST Z058) | 41941      | D-Value: 191 kN             |  |
| R0CK57254        | (50mm) (Replaces JOST Z060)         | 29201      | D-Value: 191 kN             |  |
| J0ST0063126      |                                     | 41615      | D-Value: 125kN              |  |
| JOST106B2H       |                                     | 41613      | D-Value: 200kN              |  |
| JOST106B2R       |                                     | 41614      | D-Value: 140kN              |  |
| J0ST57374        |                                     | 42704      | D-Value: 120kN              |  |
| J0ST57272        |                                     | 42293      | D-Value: 200kN              |  |
| J0ST57394        |                                     | 42305      | D-Value: 280kN              |  |
| J0ST57254        |                                     | 42292      | D-Value: 260kN              |  |
| J0ST57254E       |                                     | 42292      | D-Value: 260kN              |  |

# Jost D-Rating Guide for Triple Road Trains (Both Tandem and Triaxle Dollies)



| Theoretical towing capacity (in tonnes) | of the coupling system based on<br>tractor mass (tonnes) and coupling D<br>Value (kN) |            |         | Calculation as lollows. | D Value (kN) = $\alpha$ (TxB)/(T+B) or | Gravity (0.81 ms-2) X (Tractor Mass (+) | X Trailer Mass (†)/(Tractor Mass (†) | Trailer Mass (t)) |      | Example of 10t Tractor with a 74kN |         | Tated coupling equates to being able | Wataie Will 50.7 toine mass | (III Orange) |      |           |      |      |         |           |      |           |           |      |           |           |      |       |      |       |           |       |         |
|---|---|------------|---------|-------------------------|--|---|--------------------------------------|-------------------|------|------------------------------------|---------|--------------------------------------|-----------------------------|--------------|------|-----------|------|------|---------|-----------|------|-----------|-----------|------|-----------|-----------|------|-------|------|-------|-----------|-------|---------|
| _                                       | 1   |            | ĺ       |                         |  | ı                                       |                                      |                   | 1    |                                    |         | 1                                    |                             |              | .l   |           |      | l_   |         |           | l    |           |           | .l   |           |           | J.,  | _     |      | l     | _         |       |         |
| 14.5 15.0                               |   | 2 4.2      |         | 9 4.9                   |  |   |                                      | 7.3               |      |                                    | 9.2     | ľ                                    |                             | 12.6 12.2    | ľ    | 14.0 13.6 |      | ľ    |         | 18.6 17.9 | ``   |           | 22.3      |      |           | .1 28.2   |      |       |      |       | 45.7 41.4 |       | 585 516 |
| 14.0   14                               |   |            | 4.6 4.6 | 5.0 4.9                 |  |   |                                      | 7.5 7.4           |      |                                    | 9.6 9.4 |                                      | 11.5 11                     | -            |      |           |      | ľ    | 18.4 17 |           |      | 23.5 22.2 | 25.0 23.5 |      | 30.4 28.3 | 32.5 30.1 |      |       |      |       | 51.5 45.7 |       | 68.4 58 |
| 13.5                                    |   |            | 4.7     | 5.0                     |  |   | 7.2                                  | 7.7               |      |                                    | 9.9     |                                      |                             | 13.4         |      | 15.1      |      | ľ    | 19.3 1  |           |      |           | 26.7 2    |      |           | 35.6 3    |      |       |      |       | 59.7 5    |       | 83.5 6  |
| 13.0                                    |   | 4.4        | 4.7     | 5.1                     | 5.9                                    | 6.4                                     | 7.3                                  | 7.8               |      |                                    | 10.2    |                                      |                             | 13.9         |      | 15.8      |      |      | 20.5    |           |      |           | 28.9      |      |           | 39.6      |      |       |      |       | 71.9      |       | 109.5   |
| 12.5                                    |   | 4.0        | 4.8     | 5.2                     | 6.1                                    | 6.5                                     | 7.5                                  | 8.0               | 9.2  | 9.8                                | 10.5    | 12.0                                 | 12.8                        | 13.0         | 15.6 | 16.6      | 19.0 | 20.4 | 21.8    | 23.5      | 27.2 | 29.4      | 31.8      | 37.6 | 41.0      | 45.1      | 55.2 | 61.8  | 8.69 | 79.7  | 92.3      | 100.3 |         |
| 12.0                                    |   | 4.1        | 4.9     | 5.3                     | 6.2                                    | 6.7                                     | 7.7                                  | 8.3               | 9.5  | 10.2                               | 10.9    | 12.5                                 | 13.4                        | 15.3         | 16.4 | 17.6      | 20.3 | 21.9 | 23.6    | 25.5      | 29.9 | 32.5      | 30.0      | 42.9 | 47.6      | 53.0      | 67.7 | 6.77  | 91.0 | 108.5 |           |       |         |
| 11.5                                    | _   | 4.2        | 5.0     | 5.4                     | 6.3                                    | 6.8                                     | 7.9                                  | 8.5               | 9.8  | 10.6                               | 11.3    | 13.1                                 | 14.0                        | 16.7         | 17.4 | 18.8      | 21.9 | 23.7 | 25.8    | 30.6      | 33.5 | 36.9      | 40.8      | 50.8 | 57.5      | 65.7      | 89.7 | 108.5 |      |       |           |       |         |
| 11.0                                    |   | 4.2        | 5.1     | 5.5                     | 6.5                                    | 7.0                                     | 7.0<br>8.2                           | 8.8               | 10.2 | 11.0                               | 17.9    | 13.8                                 | 14.9                        | 17.3         | 18.7 | 20.3      | 24.0 | 26.2 | 28.7    | 34.8      | 38.6 | 43.2      | 48.6      | 63.6 | 74.3      | 108.8     |      |       |      |       |           |       |         |
| 10.5                                    |   | 4.3        | 5.2     | 5.6                     | 6.7                                    | 7.2                                     | 8.5                                  | 9.2               | 10.7 | 11.6                               | 12.5    | 14.6                                 | 15.9                        | 18.7         | 20.4 | 22.3      | 26.8 | 29.6 | 32.8    | 36.5      | 46.4 | 53.1      | 61.6      | 87.8 | 109.6     |           |      |       |      |       |           |       |         |
| 10.0                                    |   | 4.4        | 5.3     | 5.8                     | 6.9                                    | 7.5                                     | 8.8                                  | 9.6               | 11.3 | 12.2                               | 13.3    | 15.7                                 | 17.2                        | 20.6         | 22.6 | 24.9      | 30.7 | 34.4 | 38.8    | 50.9      | 59.6 | 71.1      | 87.1      |      |           |           |      |       |      |       |           |       |         |
| 26                                      | 14  | 5.0        | 5.5     | 6.5                     | 7.1                                    | 7.8                                     | 9.3                                  | 10.1              | 12.0 | 13.1                               | 15.7    | 17.2                                 | 18.9                        | 23.1         | 25.6 | 28.7      | 36.6 | 42.0 | 48.8    | 57.6      | 86.8 | 113.6     |           |      |           |           |      |       |      |       |           |       |         |
| 0.6                                     | 24  | 4.6<br>5.1 | 5.6     | 6.8                     | 7.5                                    | 8.2                                     | 9.8                                  | 10.7              | 12.9 | 14.2                               | 15.6    | 19.1                                 | 21.2                        | 26.6         | 30.2 | 34.4      | 46.6 | 55.7 | 68.2    | 86.9      |      |           |           |      |           |           |      |       |      |       |           |       |         |
| 75                                      | 4.3   | 5.3        | 5.9     | 6.5                     | 7.8                                    | 8.6                                     | 9.5<br>10.5                          | 11.5              | 14.1 | 15.6                               | 17.4    | 21.8                                 | 24.6                        | 32.3         | 37.6 | 44.5      | 67.0 | 87.5 |         |           |      |           |           |      |           |           |      |       |      |       |           |       |         |
| 8.0                                     | 4 4   | 5.0        | 6.1     | 6.8                     | 8.3                                    | 9.5                                     | 11.3                                 | 12.6              | 15.7 | 17.6                               | 19.9    | 26.0                                 | 30.1                        | 42.3         | 51.9 | 0.99      | 3    |      |         |           |      |           |           |      |           |           |      |       |      |       |           |       |         |
| 7.5                                     | 1.4   | 5.2        | 6.4     | 7.2                     | 8.9                                    | 10.0                                    | 12.5                                 | 14.1              | 18.1 | 20.7                               | 23.9    | 33.1                                 | 40.2                        | 90.1         | 91.5 |           |      |      |         |           |      |           |           |      |           |           |      |       |      |       |           |       |         |
| 2.0                                     | 1   | 5.4        |         |                         |  |   |                                      |                   |      |                                    |         |                                      | 65.1                        | 80.8         |      |           |      |      |         |           |      |           |           |      |           |           |      |       |      |       |           |       |         |
| 6.5                                     | -   | 5.8        |         |                         |  |   |                                      |                   |      |                                    |         | 103.6                                |                             |              |      |           |      |      |         |           |      |           |           |      |           |           |      |       |      |       |           |       |         |
| 0.9                                     |   |            |         |                         |  |   |                                      |                   |      | 66.7                               | c:/LL   |                                      |                             |              |      |           |      |      |         |           |      |           |           |      |           |           |      |       |      |       |           |       |         |
| 2.5                                     | 4   |            |         |                         |  |   |                                      |                   |      |                                    |         |                                      |                             |              |      |           |      |      |         |           |      |           |           |      |           |           |      |       |      |       |           |       |         |
| 5.0                                     |   |            |         |                         |  |   | 75.4                                 |                   |      |                                    |         |                                      |                             |              |      |           |      |      |         |           |      |           |           |      |           |           |      |       |      |       |           |       |         |
| 4.5                                     | <b>↓</b>  |            |         |                         | 43.4                                   | 88.1                                    |                                      |                   |      |                                    |         |                                      |                             |              |      |           |      |      |         |           |      |           |           |      |           |           |      |       |      |       |           |       |         |
| 4.0                                     |   |            |         | _                       | 0                                      | 0.0                                     | 0 0                                  | 0 0               | 0.   | 0 0                                | 0 0     | 0                                    | 0.0                         | 9 9          | 0    | 0.0       | 0    | 0.   | 0.      | 0.0       | 0.   | 0.0       | 0 0       | 0    | 0         | 0 0       | 0.0  | 5.0   | 4.0  | 9.0   | 0.0       | 2:0   | 1.0     |
| L                                       | 22.0  | 32 32      | 34      | 38                      | 8                                      | 42                                      | 46                                   | 48                | 25   | 54                                 | 2 2     | 8                                    | 62                          | 8 8          | 89   | 70        | 74   | 92   | 78      | 8 8       | 8    | 98        | 8 8       | 92   | 94        | 96 86     | 3 E  | 102   | 10   | 100   | 1 10      | 11,   | 114     |

**Tractor Mass (Tonnes)** 

# **Tractor Mass (Tonnes)**

| 31.0 | 36.8  | 42.0  | 46.8  | 51.2  | 55.2   | 58.9   | 62.3  | 65.4  | 68.3  | 71.0  | 73.6  | 75.9  | 78.2   | 80.3  | 82.2   | 84.1   | 82.8   | 87.5   | 89.1  | 90.6  | 92.0   | 93.3   | 94.6  | 95.8  | 97.0  | 98.1  | 99.2  | 100.2  | 101.2  | 102.1  | 103.0  | 103.9   | 104.7   | 105.5  | 106.3   | 107.0   |
|------|---|---|---|---|--|--|---|---|---|---|---|---|--|---|--|--|--|--|---|---|--|--|---|---|---|---|---|--|--|--|--|---|---|--|---|---|
| 30.8 | 36.5  | 41.6  | 46.3  | 9.09  | 54.5   | 58.1   | 61.4  | 64.4  | 67.2  | 669   | 72.3  | 74.6  | 76.8   | 78.8  | 80.7   | 82.5   | 84.1   | 85.7   | 87.2  | 88.7  | 90.0   | 91.3   | 92.5  | 93.7  | 94.8  | 95.9  | 6.96  | 97.9   | 98.8   | 99.7   | 100.6  | 101.4   | 102.2   | 103.0  | 103.7   | 104.4   |
| 30.5 | 36.1  | 41.2  | 45.8  | 49.9  | 53.7   | 57.2   | 60.4  | 63.4  | 66.1  | 68.7  | 71.0  | 73.2  | 75.3   | 77.3  | 79.1   | 80.8   | 82.4   | 83.9   | 85.4  | 86.7  | 88.0   | 89.3   | 90.4  | 91.6  | 95.6  | 93.6  | 94.6  | 95.5   | 96.4   | 97.3   | 98.1   | 6'86  | 966   | 100.4  | 101.1   | 101.7   |
| 30.3 | 35.8  | 40.7  | 45.2  | 49.3  | 53.0   | 56.4   | 59.5  | 62.3  | 65.0  | 67.4  | 69.7  | 71.8  | 73.8   | 75.7  | 77.4   | 79.1   | 9.08   | 82.1   | 83.5  | 84.8  | 86.0   | 87.2   | 88.3  | 89.4  | 90.4  | 91.3  | 92.3  | 93.1   | 94.0   | 94.8   | 92.6   | 96.3  | 97.0  | 97.7   | 98.4  | 99.0  |
| 30.0 | 35.4  | 40.3  | 44.6  | 48.6  | 52.2   | 55.4   | 58.5  | 61.2  | 63.8  | 66.1  | 68.3  | 70.4  | 72.3   | 74.0  | 75.7   | 77.3   | 78.8   | 80.2   | 81.5  | 82.7  | 83.9   | 85.0   | 86.1  | 87.1  | 88.1  | 89.0  | 89.9  | 2.06   | 91.5   | 92.3   | 93.0   | 93.7  | 94.4  | 95.0   | 92.6  | 96.2  |
| 29.7 | 35.0  | 39.8  | 44.0  | 47.9  | 51.3   | 54.5   | 57.4  | 60.1  | 62.5  | 64.8  | 6.99  | 68.8  | 70.7   | 72.4  | 74.0   | 75.5   | 6.97   | 78.2   | 79.4  | 9.08  | 81.8   | 82.8   | 83.8  | 84.8  | 85.7  | 9.98  | 87.4  | 88.2   | 88.9   | 89.7   | 90.4   | 91.0  | 91.7  | 92.3   | 92.9  | 93.4  |
| 29.4 | 34.6  | 39.2  | 43.4  | 47.1  | 50.5   | 53.5   | 56.3  | 58.9  | 61.2  | 63.4  | 65.4  | 67.3  | 69.0   | 9.07  | 72.2   | 73.6   | 74.9   | 76.2   | 77.4  | 78.5  | 79.5   | 80.5   | 81.5  | 82.4  | 83.3  | 84.1  | 84.9  | 85.6   | 86.3   | 87.0   | 87.7   | 88.3  | 88.9  | 89.5   | 90.0  | 90.6  |
| 29.1 | 34.2  | 38.7  | 42.7  | 46.3  | 49.5   | 52.5   | 55.2  | 97.9  | 59.9  | 61.9  | 63.9  | 9.59  | 67.3   | 68.8  | 70.3   | 71.6   | 72.9   | 74.1   | 75.2  | 76.3  | 77.3   | 78.2   | 79.1  | 80.0  | 80.8  | 81.6  | 82.3  | 83.0   | 83.7   | 84.3   | 84.9   | 85.5  | 86.1  | 9.98   | 87.1  | 97.8  |
| 28.8 | 33.7  | 38.1  | 42.0  | 45.4  | 48.6   | 51.4   | 54.0  | 56.3  | 58.5  | 60.4  | 62.3  | 63.9  | 65.5   | 0.79  | 68.3   | 9.69   | 8.07   | 71.9   | 73.0  | 74.0  | 74.9   | 75.8   | 76.7  | 77.5  | 78.2  | 79.0  | 9.62  | 80.3   | 80.9   | 81.5   | 82.1   | 82.7  | 83.2  | 83.7   | 84.2  | 84.6  |
| 28.4 | 33.2  | 37.5  | 41.2  | 44.5  | 47.5   | 50.2   | 52.7  | 54.9  | 57.0  | 58.9  | 9.09  | 62.2  | 63.7   | 65.1  | 66.3   | 67.5   | 68.7   | 69.7   | 70.7  | 71.7  | 72.5   | 73.4   | 74.2  | 74.9  | 75.6  | 76.3  | 6.92  | 9.77   | 78.1   | 78.7   | 79.2   | 79.7  | 80.2  | 80.7   | 81.2  | 81.6  |
| 28.0 | 32.7  | 36.8  | 40.4  | 43.6  | 46.5   | 49.1   | 51.4  | 53.5  | 55.4  | 57.2  | 58.9  | 60.4  | 61.8   | 63.1  | 64.3   | 65.4   | 66.5   | 67.4   | 68.4  | 69.2  | 70.1   | 6.07   | 71.6  | 72.3  | 72.9  | 73.6  | 74.2  | 74.7   | 75.3   | 75.8   | 76.3   | 8.92  | 77.2  | 7.77   | 78.1  | 78.5  |
| 27.6 | 32.1  | 36.1  | 39.5  | 42.6  | 45.3   | 47.8   | 20.0  | 52.0  | 53.8  | 55.5  | 57.1  | 58.5  | 59.8   | 61.0  | 62.1   | 63.2   | 64.2   | 65.1   | 0.99  | 8.99  | 67.5   | 68.3   | 68.9  | 9.69  | 70.2  | 70.8  | 71.3  | 71.9   | 72.4   | 72.8   | 73.3   | 73.7  | 74.2  | 74.6   | 74.9  | 75.3  |
| 27.2 | 31.5  | 35.3  | 38.6  | 41.5  | 1.4  | 46.5   | 48.6  | 50.5  | 52.2  | 53.7  | 55.2  | 56.5  | 57.7   | 58.9  | 59.9   | 6.09   | 61.8   | 62.7   | 63.5  | 64.2  | 64.9   | 9.59   | 66.2  | 8.99  | 67.4  | 6.79  | 68.4  | 68.9   | 69.4   | 8.69   | 70.2   | 9.02  | 71.0  | 71.4   | 71.7  | 72.1  |
| 26.7 | 30.9  | 34.5  | 37.7  | 40.4  | 42.9   | 45.1   | 47.0  | 48.8  | 50.4  | 51.9  | 53.2  | 54.5  | 55.6   | 9.99  | 97.6   | 58.5   | 59.4   | 60.1   | 6.09  | 61.6  | 62.2   | 62.8   | 63.4  | 64.0  | 64.5  | 65.0  | 65.4  | 62.9   | 66.3   | 2.99   | 67.1   | 67.5  | 8.79  | 68.1   | 68.5  | 8.89  |
| 26.2 | 30.2  | 33.6  | 36.6  | 39.2  | 41.5   | 43.6   | 45.4  | 47.1  | 48.6  | 49.9  | 51.2  | 52.3  | 53.4   | 54.3  | 55.2   | 56.1   | 56.8   | 97.6   | 58.2  | 58.9  | 59.5   | 0.09   | 60.5  | 61.0  | 61.5  | 62.0  | 62.4  | 62.8   | 63.2   | 63.5   | 63.9   | 64.2  | 64.5  | 64.8   | 65.1  | 65.4  |
| 25.6 | 29.4  | 32.7  | 35.5  | 38.0  | 40.1   | 42.0   | 43.7  | 45.3  | 46.7  | 47.9  | 49.1  | 50.1  | 51.1   | 51.9  | 52.8   | 53.5   | 54.2   | 54.9   | 55.5  | 56.1  | 9.99   | 57.1   | 97.6  | 58.0  | 58.5  | 58.9  | 59.2  | 9.69   | 0.09   | 60.3   | 9.09   | 6.09  | 61.2  | 61.4   | 61.7  | 62.0  |
| 25.0 | 28.6  | 31.7  | 34.3  | 36.6  | 38.6   | 40.4   | 45.0  | 43.4  | 44.6  | 45.8  | 46.8  | 47.8  | 48.6   | 49.4  | 50.2   | 50.9   | 51.5   | 52.1   | 52.6  | 53.2  | 53.6   | 54.1   | 54.5  | 54.9  | 55.3  | 22.7  | 56.0  | 56.3   | 26.7   | 56.9   | 57.2   | 57.5  | 57.7  | 58.0   | 58.2  | 58.4  |
| 24.3 | 27.7  | 30.6  | 33.1  | 35.2  | 37.0   | 38.6   | 40.1  | 41.4  | 42.5  | 43.5  | 44.5  | 45.3  | 46.1   | 46.8  | 47.5   | 48.1   | 48.7   | 49.2   | 49.7  | 50.2  | 9.09   | 51.0   | 51.4  | 51.8  | 52.1  | 52.4  | 52.7  | 53.0   | 53.3   | 53.5   | 53.8   | 54.0  | 54.2  | 54.5   | 54.7  | 54.9  |
| 23.5 | 26.8  | 29.4  | 31.7  | 33.6  | 35.3   | 36.8   | 38.1  | 39.2  | 40.3  | 41.2  | 42.0  | 42.8  | 43.5   | 44.1  | 44.7   | 45.3   | 45.8   | 46.2   | 46.7  | 47.1  | 47.5   | 47.8   | 48.2  | 48.5  | 48.8  | 49.1  | 49.3  | 49.6   | 49.8   | 50.0   | 50.2   | 50.5  | 50.6  | 20.8   | 51.0  | 51.2  |
| 22.7 | 25.7  | 28.2  | 30.2  | 32.0  | 33.5   | 34.8   | 36.0  | 37.0  | 37.9  | 38.7  | 39.5  | 40.2  | 40.8   | 41.3  | 41.8   | 42.3   | 42.8   | 43.2   | 43.5  | 43.9  | 44.2   | 44.5   | 44.8  | 45.1  | 45.4  | 45.6  | 45.8  | 46.0   | 46.2   | 46.4   | 46.6   | 46.8  | 47.0  | 47.1   | 47.3  | 47.4  |
| 21.8 | 24.5  | 26.8  | 28.6  | 30.2  | 31.5   | 32.7   | 33.7  | 34.6  | 35.4  | 36.1  | 36.8  | 37.4  | 37.9   | 38.4  | 38.8   | 39.2   | 39.6   | 40.0   | 40.3  | 40.6  | 40.9   | 41.1   | 41.4  | 41.6  | 41.8  | 45.0  | 42.2  | 42.4   | 45.6   | 42.8   | 42.9   | 43.1  | 43.2  | 43.3   | 43.5  | 43.6  |
| 20.8 | 23.2  | 25.2  | 56.9  | 28.3  | 29.4   | 30.4   | 31.3  | 32.1  | 32.8  | 33.4  | 34.0  | 34.5  | 34.9   | 35.3  | 35.7   | 36.0   | 36.4   | 36.6   | 36.9  | 37.2  | 37.4   | 37.6   | 37.8  | 38.0  | 38.2  | 38.4  | 38.5  | 38.7   | 38.8   | 39.0   | 39.1   | 39.2  | 39.4  | 39.5   | 39.6  | 39.7  |
| 19.6 | 21.8  | 23.5  | 25.0  | 26.2  | 27.2   | 28.0   | 28.8  | 29.4  | 30.0  | 30.5  | 31.0  | 31.4  | 31.8   | 32.1  | 32.4   | 32.7   | 33.0   | 33.2   | 33.4  | 33.6  | 33.8   | 34.0   | 34.2  | 34.3  | 34.5  | 34.6  | 34.8  | 34.9   | 35.0   | 35.1   | 35.2   | 35.3  | 35.4  | 35.5   | 35.6  | 35.7  |
|      |   |   |   | <u> </u>  | _  |  | _   | ⊢   | _   | _   | -   | ⊢   |  |   | _  | _  | _  | _  | _   |   | _  | _  |   |   |   |   | _   | _  | _  | _  | _  | _   | _   |  | _   | _   |
|      | 19.6 20.8 21.8 22.7 23.5 24.3 25.0 25.6 26.2 26.7 27.2 27.6 28.0 28.4 28.8 29.1 29.4 29.7 30.0 30.3 30.5 30.8 | 19.6 20.8 21.8 22.7 23.5 24.3 25.0 25.6 26.2 26.7 27.2 27.6 28.0 28.4 28.8 29.1 29.4 29.7 30.0 30.3 30.5 30.8 21.8 23.2 24.5 25.7 26.8 27.7 28.6 29.4 30.2 30.9 31.5 32.1 32.7 33.2 33.7 34.2 34.6 35.0 35.4 35.8 36.1 36.5 | 19.6 20.8 21.8 22.7 23.5 24.3 25.0 25.6 26.2 26.7 27.2 27.6 28.0 28.4 28.8 29.1 29.4 29.7 30.0 30.3 30.5 30.8 21.8 23.2 24.5 25.7 26.8 27.7 28.6 29.4 30.2 30.9 31.5 32.1 32.7 33.2 33.7 33.2 33.7 34.2 34.6 35.0 35.4 35.8 36.1 36.5 23.5 25.2 26.8 28.2 29.4 30.6 31.7 32.7 33.6 34.5 35.3 36.1 36.8 37.5 38.1 38.7 39.2 39.8 40.3 40.7 41.2 41.6 | 19.6 20.8 21.8 22.7 23.5 24.3 25.0 25.6 26.2 26.7 27.2 27.6 28.0 28.4 28.8 29.1 29.4 29.7 30.0 30.3 30.5 30.8 21.8 23.2 24.5 25.7 26.8 27.7 28.6 29.4 30.2 30.9 31.5 32.1 32.7 33.2 33.7 33.2 33.7 34.2 34.6 35.0 35.4 35.8 36.1 36.8 23.5 25.2 26.8 28.2 29.4 30.6 31.7 32.7 33.6 34.5 35.3 36.1 36.8 37.5 38.1 38.7 39.2 39.8 40.3 40.7 41.2 41.6 27.7 28.6 30.2 31.7 33.1 34.3 35.5 36.6 37.7 38.6 39.5 40.4 41.2 42.0 42.7 43.4 44.0 44.6 45.2 45.8 46.3 46.3 | 19.6 20.8 21.8 22.7 23.5 24.3 25.0 25.6 26.2 26.7 27.2 27.6 28.0 28.4 28.8 29.1 29.4 29.7 30.0 30.3 30.5 30.8 20.8 20.8 20.8 20.8 20.8 20.8 20.8 2 | 19.6 20.8 21.8 22.7 25.5 24.3 25.0 25.6 26.2 26.7 27.2 27.6 28.0 28.4 28.8 29.1 29.4 29.7 30.0 30.3 30.5 30.8 20.8 21.8 23.2 24.5 25.7 26.8 27.7 28.6 29.4 30.2 31.5 31.5 32.1 32.7 33.2 33.7 34.2 34.6 35.0 35.4 35.8 36.1 36.5 25.2 26.8 28.2 29.4 30.6 31.7 32.7 33.6 34.5 35.3 36.1 36.8 37.7 38.6 37.7 38.7 38.7 38.7 38.7 38.7 38.7 38.7 | 19.6         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.2         27.6         28.0         28.4         28.8         29.1         29.4         29.7         30.0         30.3         30.5         30.8           21.8         23.2         24.5         25.7         26.8         27.7         28.6         29.4         30.2         31.5         33.7         34.2         34.6         35.0         35.8         36.1         36.7         36.8         37.7         38.8         37.7         38.8         37.7         38.8         37.7         38.8         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         44.6         47.2         42.0         42.7         43.4         44.0         46.6         47.8         46.3         46 | 19.6         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.2         27.6         28.0         28.4         28.8         29.1         29.4         29.7         30.0         30.3         30.5         30.8           21.8         23.2         24.5         25.7         26.8         27.7         28.6         29.4         30.2         31.5         33.7         34.2         34.6         35.0         35.4         35.9         36.7         36.8         39.7         34.6         37.7         36.8         37.7         38.8         37.7         38.8         49.7         44.9         44.6         45.2         44.9         46.8         47.7         48.8         49 | 19.6         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.2         27.6         28.0         28.4         28.8         29.1         29.4         29.7         30.0         30.3         30.5         30.8           21.8         23.2         24.5         25.7         26.8         27.7         28.6         29.4         30.2         31.7         32.7         34.6         35.7         34.6         35.0         35.4         35.9         36.7         38.7         34.7         34.6         35.0         35.4         36.7         36.7         37.7         38.7         34.7         34.6         35.0         35.4         36.7         36.7         36.8         37.7         34.7         34.7         34.6         35.0         36.7         36.7         36.7         36.7         36.7         36.7         36.7         36.7         36.7         36.7         36.7         36.7         36.7         36.7         36.7         36.8         36.7         36.7         36.8         36.7         36.8         36.7         36.8         36.7         36.8         36.7         36.8         36.7         36.8         36.7         36.8         36 | 19.6         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.2         27.6         28.0         28.4         28.8         29.1         29.4         30.3         30.3         30.5         30.8           21.8         23.2         24.5         25.7         26.8         27.7         28.6         29.4         30.2         30.3         30.3         33.7         34.2         34.6         35.0         35.4         36.5         38.1         38.7         34.2         34.6         35.0         35.4         36.3         36.3         36.3         36.3         36.3         36.3         36.3         36.3         36.3         36.3         36.4         38.7         34.7         34.6         35.0         36.4         36.7         36.8         37.5         38.1         38.7         34.6         40.3         40.4         41.2         42.0         42.7         44.8         46.3         40.4         41.2         42.0         42.7         44.4         44.5         46.4         44.5         46.7         44.6         46.7         44.6         46.7         44.1         47.8         46.7         44.6         46.7         44.1         47 | 19.6         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.2         27.6         28.0         28.4         28.8         29.1         29.4         29.7         30.0         30.3         30.5         30.8           21.8         23.2         24.5         25.7         26.8         27.7         28.6         29.4         30.2         30.4         31.2         34.7         34.6         37.7         38.1         38.7         34.2         34.6         35.0         35.7         34.8         35.8         36.8         37.7         34.4         34.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         40.4         44.0         44.6         44 | 19.6         20.8         21.8         22.7         23.5         24.5         25.6         26.7         27.6         28.0         28.4         28.8         29.1         29.4         29.7         30.0         30.3         30.5         30.8           21.8         23.2         24.5         25.6         26.4         30.2         30.7         34.6         35.7         34.6         35.7         34.6         35.7         34.6         35.7         34.6         35.7         34.6         37.7         36.8         36.7         36.7         38.7         34.7         34.6         35.7         34.7         34.6         35.7         34.7         34.7         36.8         36.7         36.8         37.7         36.8         37.7         36.8         37.7         36.8         37.7         36.8         37.7         36.8         37.7         36.8         37.7         44.1         47.9         44.1         47.9         44.1         47.9         44.1         47.9         44.1         47.9         48.6         47.9         48.6         47.9         47.9         47.9         48.6         47.9         48.6         47.9         48.9         50.2         53.7         53.8         53.2         53 | 19.6         20.8         21.8         22.7         23.5         24.3         25.0         25.4         26.7         27.6         28.0         28.4         28.8         29.1         29.4         29.7         30.0         30.3         30.5         30.8         30.2         21.8         22.7         28.6         27.7         28.6         28.7         38.6         28.7         38.6         38.7         38.7         34.2         34.6         35.0         30.3         30.3         30.2         30.7         30.8         30.2         31.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         44.5         44.0         44.6         44.0         44.6         44.0         44.6         44.0         44.6         44.0         44.6         44.7         44.6         44.0 <th< th=""><th>19.6         20.8         21.8         22.7         23.5         24.3         25.0         25.2         26.7         27.2         27.6         28.0         28.4         28.8         29.1         29.4         29.7         30.0         30.3         30.5         30.8           21.8         23.2         24.5         25.7         26.8         27.7         28.6         27.7         28.6         27.7         28.6         27.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         49.7         44.9         44.6         44</th><th>19.6         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.2         27.6         28.0         28.4         28.1         29.1         29.4         30.0         30.3         30.5         30.6         30.3         30.2         30.4         28.6         29.7         28.6         29.4         30.2         30.4         30.2         30.4         30.6         30.3         30.2         30.7         30.4         30.6         30.7         30.6         20.4         30.2         30.7         30.4         30.4         30.4         30.6         30.7         30.6         30.7         30.8         30.7         30.4         30.7         30.8         30.7         30.4         30.7         30.8         30.7         30.4         40.7         <th< th=""><th>19.6         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.2         27.6         28.0         28.4         28.8         29.1         29.4         30.0         30.3         30.5         30.8         20.1         20.4         20.7         20.8         20.4         20.7         20.8         20.4         30.2         30.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         <th< th=""><th>19.6         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.2         27.6         28.0         28.4         28.1         29.4         29.7         30.0         30.3         30.5         30.6         30.2         30.2         30.4         28.4         28.7         38.6         30.7         28.6         27.7         28.6         27.7         28.6         27.7         38.6         37.7         38.7         38.7         34.6         35.0         30.3         30.3         30.2         30.7         34.6         35.0         30.7         34.7         34.6         35.0         30.2         30.7         34.7         34.6         35.0         30.7         34.7         44.7         45.7         44.7         44.7         44.8         44.7         44.8         44.7         44.8         44.7         44.8         45.7         44.7         44.8         45.7         44.7         44.7         <th< th=""><th>19.6         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.2         27.6         28.0         28.4         28.1         29.4         29.7         30.0         30.3         30.5         30.6         27.2         27.6         28.0         28.1         28.4         28.7         34.6         35.0         35.2         33.7         34.2         34.6         35.0         30.3         30.3         30.2         30.7         34.6         35.0         30.2         33.7         34.2         34.6         35.0         30.2         30.7         34.7         34.6         35.7         34.7         34.6         34.7         34.6         34.7         34.7         34.6         34.7         34.7         34.6         34.7         34.7         34.7         34.6         34.7         34.7         34.6         34.7         34.7         34.6         34.7         <th< th=""><th>19.6         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.2         27.6         28.0         28.0         28.1         28.0         28.1         28.0         28.1         28.0         28.1         28.0         <th< th=""><th>19.6         20.6         21.6         22.7         23.5         24.3         25.0         25.6         26.2         26.7         27.2         27.6         28.6         28.7         27.2         27.6         28.6         28.7         28.7         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         37.7         28.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         47.6         48.6         48.7         48.7         48.4         48.7         <th< th=""><th>196         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.6         28.0         28.4         28.8         29.1         29.4         29.7         30.9         30.3         30.5         30.5         30.5         30.5         30.5         30.2         20.7         20.8         20.7         20.8         20.7         20.8         20.7         20.8         20.7         30.2         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         40.7         40.8         50.0         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7</th><th>196         20.8         21.8         22.4         24.5         25.6         25.6         26.7         27.2         27.6         28.6         28.7         27.2         27.6         28.6         28.7         28.6         28.7         28.6         28.7         28.6         29.4         30.2         30.2         30.3         31.5         32.7         32.7         38.6         29.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         44.1         45.2         46.7         46.7         46.7         46.8         49.7         48.6         49.7         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6</th><th>196         208         218         224         256         265         262         267         276         276         284         284         284         284         284         364         368         364         368         364         368         364         367         368         368         368         368         368         368         368         368         368         368         368         368         368         368         368         368         368         369         368         368</th></th<><th>196         208         218         22.7         23.5         24.3         25.0         25.6         25.6         26.7         27.7         27.6         28.4         28.4         28.4         28.4         28.4         38.5         38</th><th>196         208         218         21.         23.5         24.3         25.0         25.6         26.7         27.2         27.6         20.7         27.6         20.7         23.6         23.6         23.7         27.6         20.7         20.6         20.</th><th>196         218         21.7         21.7         21.8         21.7         21.8         21.7         21.8         21.7         21.8         21.7         21.8         21.8         21.7         21.8         2</th><th>196         218         218         218         217         236         246         266         266         266         266         266         266         266         266         266         267         277         286         287         286         287         286         287         286         287         286         287         286         287         286         287         286         287         286         287         286         287         287         287         387         387         387         387         387         387         387         387         387         387         387         387         387         387         387         387         388         401         415         426         445         465         465         465         465         467         487         488         401         420         487         488         402         387         386         401         420         487         486         402         401         411         412         445         486         401         411         420         445         489         401         420         487         489         489         489         489</th></th></th<><th>196         20.8         21.8         22.7         22.7         22.7         22.7         22.8         28.9         28.9         28.9         28.9         28.9         28.9         28.9         39.9         39.9         39.9         39.7         32.7         32.9         38.9         39.9         39.9         39.9         39.7         32.7         32.9         38.9         39.9         41.1         42.9         41.2         42.0         42.7         42.9         41.1         42.9         41.2         42.0         42.7         42.9         41.1         42.9         41.2         42.0         42.7         42.9         41.2         42.0         42.7         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0</th><th>11         2         3</th><th>11.6         21.8         <th< th=""><th>196         20.2         21.8         22.2         24.5         24.5         24.6         25.2         24.5         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         35.2         36.6         36.7         36.8         37.7         38.6         36.7         36.8         37.7         38.6</th><th>196         20.2         2.5         2.6         3.6<th>198         208         218         22.7         23.5         24.3         26.6         26.7         26.7         27.5         28.6         27.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         48.1         41.1         42.9         41.1         42.6         48.7         48.6         48.6         48.6         48.6         48.6         48.6         48.1         48.6         48.1         48.6         48.1         48.6         48.1         48.6         48</th><th>198         20.8         21.8         22.2         22.4         22.6         22.6         22.6         22.7         23.5         24.3         25.0         26.6         27.7         28.6         28.4         20.2         23.6         23.7         23.6         23.7         23.6         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7</th><th>218 202 245 257 268 217 268 217 268 24 362 36 37 37 27 36 38 37 34 2 38 2 39 3 40 3 30 3 30 3 30 3 30 3 3 3 3 3 3 3</th><th>  146   225</th></th></th<></th></th></th<></th></th<></th></th<></th></th<></th></th<> | 19.6         20.8         21.8         22.7         23.5         24.3         25.0         25.2         26.7         27.2         27.6         28.0         28.4         28.8         29.1         29.4         29.7         30.0         30.3         30.5         30.8           21.8         23.2         24.5         25.7         26.8         27.7         28.6         27.7         28.6         27.7         28.6         27.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         49.7         44.9         44.6         44 | 19.6         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.2         27.6         28.0         28.4         28.1         29.1         29.4         30.0         30.3         30.5         30.6         30.3         30.2         30.4         28.6         29.7         28.6         29.4         30.2         30.4         30.2         30.4         30.6         30.3         30.2         30.7         30.4         30.6         30.7         30.6         20.4         30.2         30.7         30.4         30.4         30.4         30.6         30.7         30.6         30.7         30.8         30.7         30.4         30.7         30.8         30.7         30.4         30.7         30.8         30.7         30.4         40.7 <th< th=""><th>19.6         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.2         27.6         28.0         28.4         28.8         29.1         29.4         30.0         30.3         30.5         30.8         20.1         20.4         20.7         20.8         20.4         20.7         20.8         20.4         30.2         30.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         <th< th=""><th>19.6         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.2         27.6         28.0         28.4         28.1         29.4         29.7         30.0         30.3         30.5         30.6         30.2         30.2         30.4         28.4         28.7         38.6         30.7         28.6         27.7         28.6         27.7         28.6         27.7         38.6         37.7         38.7         38.7         34.6         35.0         30.3         30.3         30.2         30.7         34.6         35.0         30.7         34.7         34.6         35.0         30.2         30.7         34.7         34.6         35.0         30.7         34.7         44.7         45.7         44.7         44.7         44.8         44.7         44.8         44.7         44.8         44.7         44.8         45.7         44.7         44.8         45.7         44.7         44.7         <th< th=""><th>19.6         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.2         27.6         28.0         28.4         28.1         29.4         29.7         30.0         30.3         30.5         30.6         27.2         27.6         28.0         28.1         28.4         28.7         34.6         35.0         35.2         33.7         34.2         34.6         35.0         30.3         30.3         30.2         30.7         34.6         35.0         30.2         33.7         34.2         34.6         35.0         30.2         30.7         34.7         34.6         35.7         34.7         34.6         34.7         34.6         34.7         34.7         34.6         34.7         34.7         34.6         34.7         34.7         34.7         34.6         34.7         34.7         34.6         34.7         34.7         34.6         34.7         <th< th=""><th>19.6         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.2         27.6         28.0         28.0         28.1         28.0         28.1         28.0         28.1         28.0         28.1         28.0         <th< th=""><th>19.6         20.6         21.6         22.7         23.5         24.3         25.0         25.6         26.2         26.7         27.2         27.6         28.6         28.7         27.2         27.6         28.6         28.7         28.7         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         37.7         28.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         47.6         48.6         48.7         48.7         48.4         48.7         <th< th=""><th>196         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.6         28.0         28.4         28.8         29.1         29.4         29.7         30.9         30.3         30.5         30.5         30.5         30.5         30.5         30.2         20.7         20.8         20.7         20.8         20.7         20.8         20.7         20.8         20.7         30.2         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         40.7         40.8         50.0         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7</th><th>196         20.8         21.8         22.4         24.5         25.6         25.6         26.7         27.2         27.6         28.6         28.7         27.2         27.6         28.6         28.7         28.6         28.7         28.6         28.7         28.6         29.4         30.2         30.2         30.3         31.5         32.7         32.7         38.6         29.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         44.1         45.2         46.7         46.7         46.7         46.8         49.7         48.6         49.7         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6</th><th>196         208         218         224         256         265         262         267         276         276         284         284         284         284         284         364         368         364         368         364         368         364         367         368         368         368         368         368         368         368         368         368         368         368         368         368         368         368         368         368         369         368         368</th></th<><th>196         208         218         22.7         23.5         24.3         25.0         25.6         25.6         26.7         27.7         27.6         28.4         28.4         28.4         28.4         28.4         38.5         38</th><th>196         208         218         21.         23.5         24.3         25.0         25.6         26.7         27.2         27.6         20.7         27.6         20.7         23.6         23.6         23.7         27.6         20.7         20.6         20.</th><th>196         218         21.7         21.7         21.8         21.7         21.8         21.7         21.8         21.7         21.8         21.7         21.8         21.8         21.7         21.8         2</th><th>196         218         218         218         217         236         246         266         266         266         266         266         266         266         266         266         267         277         286         287         286         287         286         287         286         287         286         287         286         287         286         287         286         287         286         287         286         287         287         287         387         387         387         387         387         387         387         387         387         387         387         387         387         387         387         387         388         401         415         426         445         465         465         465         465         467         487         488         401         420         487         488         402         387         386         401         420         487         486         402         401         411         412         445         486         401         411         420         445         489         401         420         487         489         489         489         489</th></th></th<><th>196         20.8         21.8         22.7         22.7         22.7         22.7         22.8         28.9         28.9         28.9         28.9         28.9         28.9         28.9         39.9         39.9         39.9         39.7         32.7         32.9         38.9         39.9         39.9         39.9         39.7         32.7         32.9         38.9         39.9         41.1         42.9         41.2         42.0         42.7         42.9         41.1         42.9         41.2         42.0         42.7         42.9         41.1         42.9         41.2         42.0         42.7         42.9         41.2         42.0         42.7         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0</th><th>11         2         3</th><th>11.6         21.8         <th< th=""><th>196         20.2         21.8         22.2         24.5         24.5         24.6         25.2         24.5         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         35.2         36.6         36.7         36.8         37.7         38.6         36.7         36.8         37.7         38.6</th><th>196         20.2         2.5         2.6         3.6<th>198         208         218         22.7         23.5         24.3         26.6         26.7         26.7         27.5         28.6         27.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         48.1         41.1         42.9         41.1         42.6         48.7         48.6         48.6         48.6         48.6         48.6         48.6         48.1         48.6         48.1         48.6         48.1         48.6         48.1         48.6         48</th><th>198         20.8         21.8         22.2         22.4         22.6         22.6         22.6         22.7         23.5         24.3         25.0         26.6         27.7         28.6         28.4         20.2         23.6         23.7         23.6         23.7         23.6         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7</th><th>218 202 245 257 268 217 268 217 268 24 362 36 37 37 27 36 38 37 34 2 38 2 39 3 40 3 30 3 30 3 30 3 30 3 3 3 3 3 3 3</th><th>  146   225</th></th></th<></th></th></th<></th></th<></th></th<></th></th<> | 19.6         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.2         27.6         28.0         28.4         28.8         29.1         29.4         30.0         30.3         30.5         30.8         20.1         20.4         20.7         20.8         20.4         20.7         20.8         20.4         30.2         30.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4         40.4 <th< th=""><th>19.6         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.2         27.6         28.0         28.4         28.1         29.4         29.7         30.0         30.3         30.5         30.6         30.2         30.2         30.4         28.4         28.7         38.6         30.7         28.6         27.7         28.6         27.7         28.6         27.7         38.6         37.7         38.7         38.7         34.6         35.0         30.3         30.3         30.2         30.7         34.6         35.0         30.7         34.7         34.6         35.0         30.2         30.7         34.7         34.6         35.0         30.7         34.7         44.7         45.7         44.7         44.7         44.8         44.7         44.8         44.7         44.8         44.7         44.8         45.7         44.7         44.8         45.7         44.7         44.7         <th< th=""><th>19.6         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.2         27.6         28.0         28.4         28.1         29.4         29.7         30.0         30.3         30.5         30.6         27.2         27.6         28.0         28.1         28.4         28.7         34.6         35.0         35.2         33.7         34.2         34.6         35.0         30.3         30.3         30.2         30.7         34.6         35.0         30.2         33.7         34.2         34.6         35.0         30.2         30.7         34.7         34.6         35.7         34.7         34.6         34.7         34.6         34.7         34.7         34.6         34.7         34.7         34.6         34.7         34.7         34.7         34.6         34.7         34.7         34.6         34.7         34.7         34.6         34.7         <th< th=""><th>19.6         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.2         27.6         28.0         28.0         28.1         28.0         28.1         28.0         28.1         28.0         28.1         28.0         <th< th=""><th>19.6         20.6         21.6         22.7         23.5         24.3         25.0         25.6         26.2         26.7         27.2         27.6         28.6         28.7         27.2         27.6         28.6         28.7         28.7         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         37.7         28.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         47.6         48.6         48.7         48.7         48.4         48.7         <th< th=""><th>196         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.6         28.0         28.4         28.8         29.1         29.4         29.7         30.9         30.3         30.5         30.5         30.5         30.5         30.5         30.2         20.7         20.8         20.7         20.8         20.7         20.8         20.7         20.8         20.7         30.2         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         40.7         40.8         50.0         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7</th><th>196         20.8         21.8         22.4         24.5         25.6         25.6         26.7         27.2         27.6         28.6         28.7         27.2         27.6         28.6         28.7         28.6         28.7         28.6         28.7         28.6         29.4         30.2         30.2         30.3         31.5         32.7         32.7         38.6         29.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         44.1         45.2         46.7         46.7         46.7         46.8         49.7         48.6         49.7         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6</th><th>196         208         218         224         256         265         262         267         276         276         284         284         284         284         284         364         368         364         368         364         368         364         367         368         368         368         368         368         368         368         368         368         368         368         368         368         368         368         368         368         369         368         368</th></th<><th>196         208         218         22.7         23.5         24.3         25.0         25.6         25.6         26.7         27.7         27.6         28.4         28.4         28.4         28.4         28.4         38.5         38</th><th>196         208         218         21.         23.5         24.3         25.0         25.6         26.7         27.2         27.6         20.7         27.6         20.7         23.6         23.6         23.7         27.6         20.7         20.6         20.</th><th>196         218         21.7         21.7         21.8         21.7         21.8         21.7         21.8         21.7         21.8         21.7         21.8         21.8         21.7         21.8         2</th><th>196         218         218         218         217         236         246         266         266         266         266         266         266         266         266         266         267         277         286         287         286         287         286         287         286         287         286         287         286         287         286         287         286         287         286         287         286         287         287         287         387         387         387         387         387         387         387         387         387         387         387         387         387         387         387         387         388         401         415         426         445         465         465         465         465         467         487         488         401         420         487         488         402         387         386         401         420         487         486         402         401         411         412         445         486         401         411         420         445         489         401         420         487         489         489         489         489</th></th></th<><th>196         20.8         21.8         22.7         22.7         22.7         22.7         22.8         28.9         28.9         28.9         28.9         28.9         28.9         28.9         39.9         39.9         39.9         39.7         32.7         32.9         38.9         39.9         39.9         39.9         39.7         32.7         32.9         38.9         39.9         41.1         42.9         41.2         42.0         42.7         42.9         41.1         42.9         41.2         42.0         42.7         42.9         41.1         42.9         41.2         42.0         42.7         42.9         41.2         42.0         42.7         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0</th><th>11         2         3</th><th>11.6         21.8         <th< th=""><th>196         20.2         21.8         22.2         24.5         24.5         24.6         25.2         24.5         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         35.2         36.6         36.7         36.8         37.7         38.6         36.7         36.8         37.7         38.6</th><th>196         20.2         2.5         2.6         3.6<th>198         208         218         22.7         23.5         24.3         26.6         26.7         26.7         27.5         28.6         27.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         48.1         41.1         42.9         41.1         42.6         48.7         48.6         48.6         48.6         48.6         48.6         48.6         48.1         48.6         48.1         48.6         48.1         48.6         48.1         48.6         48</th><th>198         20.8         21.8         22.2         22.4         22.6         22.6         22.6         22.7         23.5         24.3         25.0         26.6         27.7         28.6         28.4         20.2         23.6         23.7         23.6         23.7         23.6         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7</th><th>218 202 245 257 268 217 268 217 268 24 362 36 37 37 27 36 38 37 34 2 38 2 39 3 40 3 30 3 30 3 30 3 30 3 3 3 3 3 3 3</th><th>  146   225</th></th></th<></th></th></th<></th></th<></th></th<> | 19.6         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.2         27.6         28.0         28.4         28.1         29.4         29.7         30.0         30.3         30.5         30.6         30.2         30.2         30.4         28.4         28.7         38.6         30.7         28.6         27.7         28.6         27.7         28.6         27.7         38.6         37.7         38.7         38.7         34.6         35.0         30.3         30.3         30.2         30.7         34.6         35.0         30.7         34.7         34.6         35.0         30.2         30.7         34.7         34.6         35.0         30.7         34.7         44.7         45.7         44.7         44.7         44.8         44.7         44.8         44.7         44.8         44.7         44.8         45.7         44.7         44.8         45.7         44.7         44.7 <th< th=""><th>19.6         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.2         27.6         28.0         28.4         28.1         29.4         29.7         30.0         30.3         30.5         30.6         27.2         27.6         28.0         28.1         28.4         28.7         34.6         35.0         35.2         33.7         34.2         34.6         35.0         30.3         30.3         30.2         30.7         34.6         35.0         30.2         33.7         34.2         34.6         35.0         30.2         30.7         34.7         34.6         35.7         34.7         34.6         34.7         34.6         34.7         34.7         34.6         34.7         34.7         34.6         34.7         34.7         34.7         34.6         34.7         34.7         34.6         34.7         34.7         34.6         34.7         <th< th=""><th>19.6         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.2         27.6         28.0         28.0         28.1         28.0         28.1         28.0         28.1         28.0         28.1         28.0         <th< th=""><th>19.6         20.6         21.6         22.7         23.5         24.3         25.0         25.6         26.2         26.7         27.2         27.6         28.6         28.7         27.2         27.6         28.6         28.7         28.7         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         37.7         28.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         47.6         48.6         48.7         48.7         48.4         48.7         <th< th=""><th>196         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.6         28.0         28.4         28.8         29.1         29.4         29.7         30.9         30.3         30.5         30.5         30.5         30.5         30.5         30.2         20.7         20.8         20.7         20.8         20.7         20.8         20.7         20.8         20.7         30.2         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         40.7         40.8         50.0         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7</th><th>196         20.8         21.8         22.4         24.5         25.6         25.6         26.7         27.2         27.6         28.6         28.7         27.2         27.6         28.6         28.7         28.6         28.7         28.6         28.7         28.6         29.4         30.2         30.2         30.3         31.5         32.7         32.7         38.6         29.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         44.1         45.2         46.7         46.7         46.7         46.8         49.7         48.6         49.7         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6</th><th>196         208         218         224         256         265         262         267         276         276         284         284         284         284         284         364         368         364         368         364         368         364         367         368         368         368         368         368         368         368         368         368         368         368         368         368         368         368         368         368         369         368         368</th></th<><th>196         208         218         22.7         23.5         24.3         25.0         25.6         25.6         26.7         27.7         27.6         28.4         28.4         28.4         28.4         28.4         38.5         38</th><th>196         208         218         21.         23.5         24.3         25.0         25.6         26.7         27.2         27.6         20.7         27.6         20.7         23.6         23.6         23.7         27.6         20.7         20.6         20.</th><th>196         218         21.7         21.7         21.8         21.7         21.8         21.7         21.8         21.7         21.8         21.7         21.8         21.8         21.7         21.8         2</th><th>196         218         218         218         217         236         246         266         266         266         266         266         266         266         266         266         267         277         286         287         286         287         286         287         286         287         286         287         286         287         286         287         286         287         286         287         286         287         287         287         387         387         387         387         387         387         387         387         387         387         387         387         387         387         387         387         388         401         415         426         445         465         465         465         465         467         487         488         401         420         487         488         402         387         386         401         420         487         486         402         401         411         412         445         486         401         411         420         445         489         401         420         487         489         489         489         489</th></th></th<><th>196         20.8         21.8         22.7         22.7         22.7         22.7         22.8         28.9         28.9         28.9         28.9         28.9         28.9         28.9         39.9         39.9         39.9         39.7         32.7         32.9         38.9         39.9         39.9         39.9         39.7         32.7         32.9         38.9         39.9         41.1         42.9         41.2         42.0         42.7         42.9         41.1         42.9         41.2         42.0         42.7         42.9         41.1         42.9         41.2         42.0         42.7         42.9         41.2         42.0         42.7         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0</th><th>11         2         3</th><th>11.6         21.8         <th< th=""><th>196         20.2         21.8         22.2         24.5         24.5         24.6         25.2         24.5         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         35.2         36.6         36.7         36.8         37.7         38.6         36.7         36.8         37.7         38.6</th><th>196         20.2         2.5         2.6         3.6<th>198         208         218         22.7         23.5         24.3         26.6         26.7         26.7         27.5         28.6         27.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         48.1         41.1         42.9         41.1         42.6         48.7         48.6         48.6         48.6         48.6         48.6         48.6         48.1         48.6         48.1         48.6         48.1         48.6         48.1         48.6         48</th><th>198         20.8         21.8         22.2         22.4         22.6         22.6         22.6         22.7         23.5         24.3         25.0         26.6         27.7         28.6         28.4         20.2         23.6         23.7         23.6         23.7         23.6         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7</th><th>218 202 245 257 268 217 268 217 268 24 362 36 37 37 27 36 38 37 34 2 38 2 39 3 40 3 30 3 30 3 30 3 30 3 3 3 3 3 3 3</th><th>  146   225</th></th></th<></th></th></th<></th></th<> | 19.6         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.2         27.6         28.0         28.4         28.1         29.4         29.7         30.0         30.3         30.5         30.6         27.2         27.6         28.0         28.1         28.4         28.7         34.6         35.0         35.2         33.7         34.2         34.6         35.0         30.3         30.3         30.2         30.7         34.6         35.0         30.2         33.7         34.2         34.6         35.0         30.2         30.7         34.7         34.6         35.7         34.7         34.6         34.7         34.6         34.7         34.7         34.6         34.7         34.7         34.6         34.7         34.7         34.7         34.6         34.7         34.7         34.6         34.7         34.7         34.6         34.7 <th< th=""><th>19.6         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.2         27.6         28.0         28.0         28.1         28.0         28.1         28.0         28.1         28.0         28.1         28.0         <th< th=""><th>19.6         20.6         21.6         22.7         23.5         24.3         25.0         25.6         26.2         26.7         27.2         27.6         28.6         28.7         27.2         27.6         28.6         28.7         28.7         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         37.7         28.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         47.6         48.6         48.7         48.7         48.4         48.7         <th< th=""><th>196         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.6         28.0         28.4         28.8         29.1         29.4         29.7         30.9         30.3         30.5         30.5         30.5         30.5         30.5         30.2         20.7         20.8         20.7         20.8         20.7         20.8         20.7         20.8         20.7         30.2         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         40.7         40.8         50.0         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7</th><th>196         20.8         21.8         22.4         24.5         25.6         25.6         26.7         27.2         27.6         28.6         28.7         27.2         27.6         28.6         28.7         28.6         28.7         28.6         28.7         28.6         29.4         30.2         30.2         30.3         31.5         32.7         32.7         38.6         29.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         44.1         45.2         46.7         46.7         46.7         46.8         49.7         48.6         49.7         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6</th><th>196         208         218         224         256         265         262         267         276         276         284         284         284         284         284         364         368         364         368         364         368         364         367         368         368         368         368         368         368         368         368         368         368         368         368         368         368         368         368         368         369         368         368</th></th<><th>196         208         218         22.7         23.5         24.3         25.0         25.6         25.6         26.7         27.7         27.6         28.4         28.4         28.4         28.4         28.4         38.5         38</th><th>196         208         218         21.         23.5         24.3         25.0         25.6         26.7         27.2         27.6         20.7         27.6         20.7         23.6         23.6         23.7         27.6         20.7         20.6         20.</th><th>196         218         21.7         21.7         21.8         21.7         21.8         21.7         21.8         21.7         21.8         21.7         21.8         21.8         21.7         21.8         2</th><th>196         218         218         218         217         236         246         266         266         266         266         266         266         266         266         266         267         277         286         287         286         287         286         287         286         287         286         287         286         287         286         287         286         287         286         287         286         287         287         287         387         387         387         387         387         387         387         387         387         387         387         387         387         387         387         387         388         401         415         426         445         465         465         465         465         467         487         488         401         420         487         488         402         387         386         401         420         487         486         402         401         411         412         445         486         401         411         420         445         489         401         420         487         489         489         489         489</th></th></th<><th>196         20.8         21.8         22.7         22.7         22.7         22.7         22.8         28.9         28.9         28.9         28.9         28.9         28.9         28.9         39.9         39.9         39.9         39.7         32.7         32.9         38.9         39.9         39.9         39.9         39.7         32.7         32.9         38.9         39.9         41.1         42.9         41.2         42.0         42.7         42.9         41.1         42.9         41.2         42.0         42.7         42.9         41.1         42.9         41.2         42.0         42.7         42.9         41.2         42.0         42.7         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0</th><th>11         2         3</th><th>11.6         21.8         <th< th=""><th>196         20.2         21.8         22.2         24.5         24.5         24.6         25.2         24.5         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         35.2         36.6         36.7         36.8         37.7         38.6         36.7         36.8         37.7         38.6</th><th>196         20.2         2.5         2.6         3.6<th>198         208         218         22.7         23.5         24.3         26.6         26.7         26.7         27.5         28.6         27.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         48.1         41.1         42.9         41.1         42.6         48.7         48.6         48.6         48.6         48.6         48.6         48.6         48.1         48.6         48.1         48.6         48.1         48.6         48.1         48.6         48</th><th>198         20.8         21.8         22.2         22.4         22.6         22.6         22.6         22.7         23.5         24.3         25.0         26.6         27.7         28.6         28.4         20.2         23.6         23.7         23.6         23.7         23.6         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7</th><th>218 202 245 257 268 217 268 217 268 24 362 36 37 37 27 36 38 37 34 2 38 2 39 3 40 3 30 3 30 3 30 3 30 3 3 3 3 3 3 3</th><th>  146   225</th></th></th<></th></th></th<> | 19.6         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.2         27.6         28.0         28.0         28.1         28.0         28.1         28.0         28.1         28.0         28.1         28.0 <th< th=""><th>19.6         20.6         21.6         22.7         23.5         24.3         25.0         25.6         26.2         26.7         27.2         27.6         28.6         28.7         27.2         27.6         28.6         28.7         28.7         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         37.7         28.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         47.6         48.6         48.7         48.7         48.4         48.7         <th< th=""><th>196         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.6         28.0         28.4         28.8         29.1         29.4         29.7         30.9         30.3         30.5         30.5         30.5         30.5         30.5         30.2         20.7         20.8         20.7         20.8         20.7         20.8         20.7         20.8         20.7         30.2         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         40.7         40.8         50.0         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7</th><th>196         20.8         21.8         22.4         24.5         25.6         25.6         26.7         27.2         27.6         28.6         28.7         27.2         27.6         28.6         28.7         28.6         28.7         28.6         28.7         28.6         29.4         30.2         30.2         30.3         31.5         32.7         32.7         38.6         29.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         44.1         45.2         46.7         46.7         46.7         46.8         49.7         48.6         49.7         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6</th><th>196         208         218         224         256         265         262         267         276         276         284         284         284         284         284         364         368         364         368         364         368         364         367         368         368         368         368         368         368         368         368         368         368         368         368         368         368         368         368         368         369         368         368</th></th<><th>196         208         218         22.7         23.5         24.3         25.0         25.6         25.6         26.7         27.7         27.6         28.4         28.4         28.4         28.4         28.4         38.5         38</th><th>196         208         218         21.         23.5         24.3         25.0         25.6         26.7         27.2         27.6         20.7         27.6         20.7         23.6         23.6         23.7         27.6         20.7         20.6         20.</th><th>196         218         21.7         21.7         21.8         21.7         21.8         21.7         21.8         21.7         21.8         21.7         21.8         21.8         21.7         21.8         2</th><th>196         218         218         218         217         236         246         266         266         266         266         266         266         266         266         266         267         277         286         287         286         287         286         287         286         287         286         287         286         287         286         287         286         287         286         287         286         287         287         287         387         387         387         387         387         387         387         387         387         387         387         387         387         387         387         387         388         401         415         426         445         465         465         465         465         467         487         488         401         420         487         488         402         387         386         401         420         487         486         402         401         411         412         445         486         401         411         420         445         489         401         420         487         489         489         489         489</th></th></th<> <th>196         20.8         21.8         22.7         22.7         22.7         22.7         22.8         28.9         28.9         28.9         28.9         28.9         28.9         28.9         39.9         39.9         39.9         39.7         32.7         32.9         38.9         39.9         39.9         39.9         39.7         32.7         32.9         38.9         39.9         41.1         42.9         41.2         42.0         42.7         42.9         41.1         42.9         41.2         42.0         42.7         42.9         41.1         42.9         41.2         42.0         42.7         42.9         41.2         42.0         42.7         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0</th> <th>11         2         3</th> <th>11.6         21.8         <th< th=""><th>196         20.2         21.8         22.2         24.5         24.5         24.6         25.2         24.5         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         35.2         36.6         36.7         36.8         37.7         38.6         36.7         36.8         37.7         38.6</th><th>196         20.2         2.5         2.6         3.6<th>198         208         218         22.7         23.5         24.3         26.6         26.7         26.7         27.5         28.6         27.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         48.1         41.1         42.9         41.1         42.6         48.7         48.6         48.6         48.6         48.6         48.6         48.6         48.1         48.6         48.1         48.6         48.1         48.6         48.1         48.6         48</th><th>198         20.8         21.8         22.2         22.4         22.6         22.6         22.6         22.7         23.5         24.3         25.0         26.6         27.7         28.6         28.4         20.2         23.6         23.7         23.6         23.7         23.6         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7</th><th>218 202 245 257 268 217 268 217 268 24 362 36 37 37 27 36 38 37 34 2 38 2 39 3 40 3 30 3 30 3 30 3 30 3 3 3 3 3 3 3</th><th>  146   225</th></th></th<></th> | 19.6         20.6         21.6         22.7         23.5         24.3         25.0         25.6         26.2         26.7         27.2         27.6         28.6         28.7         27.2         27.6         28.6         28.7         28.7         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         37.7         28.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         37.7         38.6         47.6         48.6         48.7         48.7         48.4         48.7 <th< th=""><th>196         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.6         28.0         28.4         28.8         29.1         29.4         29.7         30.9         30.3         30.5         30.5         30.5         30.5         30.5         30.2         20.7         20.8         20.7         20.8         20.7         20.8         20.7         20.8         20.7         30.2         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         40.7         40.8         50.0         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7</th><th>196         20.8         21.8         22.4         24.5         25.6         25.6         26.7         27.2         27.6         28.6         28.7         27.2         27.6         28.6         28.7         28.6         28.7         28.6         28.7         28.6         29.4         30.2         30.2         30.3         31.5         32.7         32.7         38.6         29.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         44.1         45.2         46.7         46.7         46.7         46.8         49.7         48.6         49.7         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6</th><th>196         208         218         224         256         265         262         267         276         276         284         284         284         284         284         364         368         364         368         364         368         364         367         368         368         368         368         368         368         368         368         368         368         368         368         368         368         368         368         368         369         368         368</th></th<> <th>196         208         218         22.7         23.5         24.3         25.0         25.6         25.6         26.7         27.7         27.6         28.4         28.4         28.4         28.4         28.4         38.5         38</th> <th>196         208         218         21.         23.5         24.3         25.0         25.6         26.7         27.2         27.6         20.7         27.6         20.7         23.6         23.6         23.7         27.6         20.7         20.6         20.</th> <th>196         218         21.7         21.7         21.8         21.7         21.8         21.7         21.8         21.7         21.8         21.7         21.8         21.8         21.7         21.8         2</th> <th>196         218         218         218         217         236         246         266         266         266         266         266         266         266         266         266         267         277         286         287         286         287         286         287         286         287         286         287         286         287         286         287         286         287         286         287         286         287         287         287         387         387         387         387         387         387         387         387         387         387         387         387         387         387         387         387         388         401         415         426         445         465         465         465         465         467         487         488         401         420         487         488         402         387         386         401         420         487         486         402         401         411         412         445         486         401         411         420         445         489         401         420         487         489         489         489         489</th> | 196         20.8         21.8         22.7         23.5         24.3         25.0         25.6         26.7         27.6         28.0         28.4         28.8         29.1         29.4         29.7         30.9         30.3         30.5         30.5         30.5         30.5         30.5         30.2         20.7         20.8         20.7         20.8         20.7         20.8         20.7         20.8         20.7         30.2         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         30.7         30.4         40.7         40.8         50.0         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7         50.7 | 196         20.8         21.8         22.4         24.5         25.6         25.6         26.7         27.2         27.6         28.6         28.7         27.2         27.6         28.6         28.7         28.6         28.7         28.6         28.7         28.6         29.4         30.2         30.2         30.3         31.5         32.7         32.7         38.6         29.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         39.7         38.6         44.1         45.2         46.7         46.7         46.7         46.8         49.7         48.6         49.7         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6         49.7         48.6 | 196         208         218         224         256         265         262         267         276         276         284         284         284         284         284         364         368         364         368         364         368         364         367         368         368         368         368         368         368         368         368         368         368         368         368         368         368         368         368         368         369         368         368 | 196         208         218         22.7         23.5         24.3         25.0         25.6         25.6         26.7         27.7         27.6         28.4         28.4         28.4         28.4         28.4         38.5         38 | 196         208         218         21.         23.5         24.3         25.0         25.6         26.7         27.2         27.6         20.7         27.6         20.7         23.6         23.6         23.7         27.6         20.7         20.6         20. | 196         218         21.7         21.7         21.8         21.7         21.8         21.7         21.8         21.7         21.8         21.7         21.8         21.8         21.7         21.8         2 | 196         218         218         218         217         236         246         266         266         266         266         266         266         266         266         266         267         277         286         287         286         287         286         287         286         287         286         287         286         287         286         287         286         287         286         287         286         287         287         287         387         387         387         387         387         387         387         387         387         387         387         387         387         387         387         387         388         401         415         426         445         465         465         465         465         467         487         488         401         420         487         488         402         387         386         401         420         487         486         402         401         411         412         445         486         401         411         420         445         489         401         420         487         489         489         489         489 | 196         20.8         21.8         22.7         22.7         22.7         22.7         22.8         28.9         28.9         28.9         28.9         28.9         28.9         28.9         39.9         39.9         39.9         39.7         32.7         32.9         38.9         39.9         39.9         39.9         39.7         32.7         32.9         38.9         39.9         41.1         42.9         41.2         42.0         42.7         42.9         41.1         42.9         41.2         42.0         42.7         42.9         41.1         42.9         41.2         42.0         42.7         42.9         41.2         42.0         42.7         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0         41.2         42.0 | 11         2         3 | 11.6         21.8 <th< th=""><th>196         20.2         21.8         22.2         24.5         24.5         24.6         25.2         24.5         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         35.2         36.6         36.7         36.8         37.7         38.6         36.7         36.8         37.7         38.6</th><th>196         20.2         2.5         2.6         3.6<th>198         208         218         22.7         23.5         24.3         26.6         26.7         26.7         27.5         28.6         27.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         48.1         41.1         42.9         41.1         42.6         48.7         48.6         48.6         48.6         48.6         48.6         48.6         48.1         48.6         48.1         48.6         48.1         48.6         48.1         48.6         48</th><th>198         20.8         21.8         22.2         22.4         22.6         22.6         22.6         22.7         23.5         24.3         25.0         26.6         27.7         28.6         28.4         20.2         23.6         23.7         23.6         23.7         23.6         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7</th><th>218 202 245 257 268 217 268 217 268 24 362 36 37 37 27 36 38 37 34 2 38 2 39 3 40 3 30 3 30 3 30 3 30 3 3 3 3 3 3 3</th><th>  146   225</th></th></th<> | 196         20.2         21.8         22.2         24.5         24.5         24.6         25.2         24.5         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         25.2         24.6         35.2         36.6         36.7         36.8         37.7         38.6         36.7         36.8         37.7         38.6 | 196         20.2         2.5         2.6         3.6 <th>198         208         218         22.7         23.5         24.3         26.6         26.7         26.7         27.5         28.6         27.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         48.1         41.1         42.9         41.1         42.6         48.7         48.6         48.6         48.6         48.6         48.6         48.6         48.1         48.6         48.1         48.6         48.1         48.6         48.1         48.6         48</th> <th>198         20.8         21.8         22.2         22.4         22.6         22.6         22.6         22.7         23.5         24.3         25.0         26.6         27.7         28.6         28.4         20.2         23.6         23.7         23.6         23.7         23.6         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7</th> <th>218 202 245 257 268 217 268 217 268 24 362 36 37 37 27 36 38 37 34 2 38 2 39 3 40 3 30 3 30 3 30 3 30 3 3 3 3 3 3 3</th> <th>  146   225</th> | 198         208         218         22.7         23.5         24.3         26.6         26.7         26.7         27.5         28.6         27.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.7         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         28.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         38.6         48.1         41.1         42.9         41.1         42.6         48.7         48.6         48.6         48.6         48.6         48.6         48.6         48.1         48.6         48.1         48.6         48.1         48.6         48.1         48.6         48 | 198         20.8         21.8         22.2         22.4         22.6         22.6         22.6         22.7         23.5         24.3         25.0         26.6         27.7         28.6         28.4         20.2         23.6         23.7         23.6         23.7         23.6         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7         23.6         23.7 | 218 202 245 257 268 217 268 217 268 24 362 36 37 37 27 36 38 37 34 2 38 2 39 3 40 3 30 3 30 3 30 3 30 3 3 3 3 3 3 3 | 146   225 |

Trailer Mass (Tonnes)

Theoretical D Value (kN) calculations based on tractor and trailer mass (in tonnes) Calculation as follows: D Value (kN) = g . (TxR)/(T+R) or Gravity (9.81ms-2) X (Tractor Mass (t) X Trailer Mass (t))/(Tractor Mass (t) + Trailer Mass (t)

Example of 10t Tractor towing 30t Trailer in green above

D Value = 9.81 X (10x30)/(10+30)
D Value = 9.81 X 300/40
D Value = 73.575 kN
With Compliments from
D Value = 73.6 kN

# **Ball Bearing Turntables and Slewing rings**



### Ball bearing turntables - Series L and N

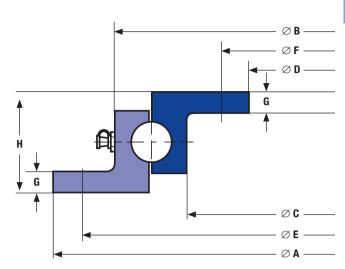
**L-series** = for farm carts and trailers with a speed up to 30 km/h (18m.p.h.).

**N-series** = for heavy farm carts and light truck trailers with a speed above 30 km/h (18 m.p.h.).

Slewing rings are supplied undrilled and primed in black for corrosion protection. The measurements are subject to our standard tolerances. For the turntables of the N series the load limits are only valid for operation on paved roads and under conditions prevailing in Europe.

The axial load can be exceeded by 30 to 50% on the turntables of the N series if the speed is below 30 km/h (18 m.p.h.).

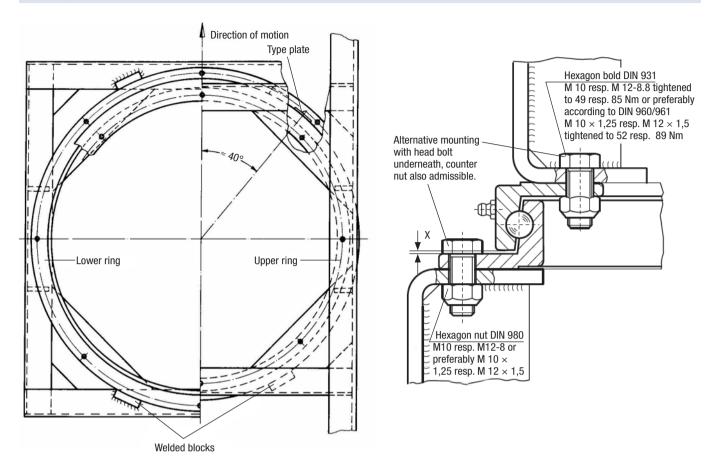
See reverse for fitting and maintenance instructions. The right to alter specifications is reserved.



|          |           | _         |           |           | _         | _         |           |           | Weight        |                  |
|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|---------------|------------------|
| Туре     | ∅ A<br>mm | Ø B<br>mm | Ø C<br>mm | Ø D<br>mm | ∅ E<br>mm | ∅ F<br>mm | ∅ G<br>mm | ∅ H<br>mm | approx.<br>kg | Axial Load<br>kN |
| KLK400L  | 400       | 342       | 292       | 230       | 375       | 260       | 8         | 45        | 11            | 7,5              |
| KLK500L  | 500       | 442       | 392       | 330       | 475       | 360       | 8         | 45        | 15            | 9                |
| KLK650L  | 650       | 592       | 542       | 480       | 625       | 510       | 8         | 45        | 20            | 15               |
| KLK750L  | 750       | 692       | 642       | 580       | 725       | 610       | 8         | 45        | 23            | 18               |
| KLK850L  | 850       | 792       | 742       | 680       | 825       | 710       | 8         | 45        | 27            | 25               |
| KLK950L  | 950       | 892       | 842       | 780       | 925       | 810       | 8         | 45        | 30            | 30               |
| KLK1050L | 1050      | 992       | 942       | 880       | 1025      | 910       | 8         | 45        | 34            | 35               |
| KLK500N  | 500       | 437       | 384       | 315       | 475       | 340       | 8         | 52        | 17            | 18               |
| KLK650N  | 650       | 587       | 534       | 465       | 625       | 490       | 8         | 52        | 23            | 25               |
| KLK750N  | 750       | 687       | 634       | 565       | 725       | 590       | 8         | 52        | 28            | 30               |
| KLK850N  | 850       | 787       | 734       | 665       | 825       | 690       | 8         | 52        | 32            | 35               |
| KLK950N  | 950       | 887       | 834       | 765       | 925       | 790       | 8         | 52        | 36            | 40               |
| KLK1050N | 1050      | 987       | 934       | 865       | 1025      | 890       | 8         | 52        | 40            | 45               |



### Fitting and Maintenance Instructions for L and N series



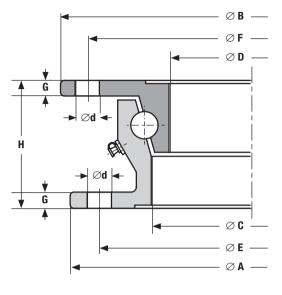
- 1. The ball bearing turntable must be mounted on a completely flat (max. unevenness 1mm) and horizontally and vertically rigid base with at least 50% of the circumference adequately supported. Particular attention should be paid to the support of the web section area containing the ball bearing races. Any unevenness under the flanges can be corrected with metal strips or by filling in with plastic metal.
- 2. Each flange must be attached with a minimum of 8 high tensile bolts grade 8.8, preferably M 10 × 1,25 (3/8 24) or M 12 × 1,5 (7/16–20) for sizes below 650 mm (25 5/8") dia. 4 to 6 bolts are adequate. In case of operation under adverse conditions, we recommend the use of bolts with enlarged contact surface (such as Tensi Lock or Verbus Ripp), or to increase the number of bolts. The thickness of paint between turntable and frame should not exceed 50mm to guarantee the fit to be friction-tight.
- To ease the shear load on the mounting bolts at least four blocks should be welded on immediately adjoining each flange. The ball bearing turntable must not be mounted by means of welding.

- 4. JOST turntables are lubricated with a lubricant suitable for the type of operation and the adherent operating conditions before they leave the factory, however, the turntable must be adequately re-lubricated with high quality ball bearing grease (lithium saponified, NLGI class 2) before the trailer is put into operation for the first time. The relubrication should build up a collar of grease in the gap between the 2 rings of the turntable thus preventing ingress of grit and water into the ball races.
- 5. The ball bearing turntable must be lubricated according to use but at least once a month with a lubricant suitable for the type of operation and the adherent operating condition (lithium saponified, NLGI class 2). While lubricating the A-frame should be turned so that the grease is evenly distributed and a collar of grease is being built up in the gap between the 2 rings. The tightness of the mounting bolts should also be checked.
- **6.** Ball bearing turntables are subject to wear. The limit of wear is reached when there is 2,5 mm axial play. This is the case at the very latest when the air gap X = 1 mm at any point on the circumference of the turntable.

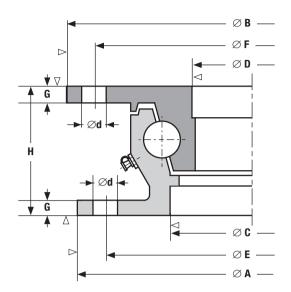
### Ball bearing turntables - Series HE and SO

For drawbar trailers and special trailers





HE Standard



SO Standard

 $\nabla$  = shaped profile

|             | $\varnothing$ A | $\emptyset$ B | $\varnothing$ C | $\varnothing$ D | ØE   | $\emptyset$ F | G  | Н  | $\varnothing$ d | Weight     | <b>Axial load</b> |
|-------------|-----------------|---------------|-----------------|-----------------|------|---------------|----|----|-----------------|------------|-------------------|
| Туре        | mm              | mm            | mm              | mm              | mm   | mm            | mm | mm | mm              | approx. kg | kN                |
| *HE5        | 880             | 895           | 783             | 762             | 852  | 866           | 9  | 80 | 16              | 43         | 50                |
| HE181000    | 1000            | 1008          | 886             | 859             | 960  | 974           | 10 | 90 | -               | 63         | 80                |
| S0100024    | 987             | 1000          | 871             | 844             | 952  | 966           | 10 | 90 | -               | 72         | 120               |
| *S0110024   | 1095            | 1108          | 979             | 952             | 1060 | 1074          | 10 | 90 | 18              | 82         | 160               |
| KLKHE120022 | 1200            | 1211          | 1086            | 1059            | 1160 | 1174          | 10 | 90 | 18              | 76         | 130               |

**Note:** SO100024 used in SO assembly Ball bearing turntables are supplied undrilled. \*drilled and primed in black for corrosion protection.

The measurements are subject to our standard tolerances.

The above axial loads are applicable if the slewing ring is mounted to the front axle of the trailer with three/four axles at speeds of up to 105 km/h (65 mph).

They can be exceeded by 10% for full trailers with two axles.

In case of speeds below 30 km/h (18 mph) the axial loads can be exceeded by 20%.

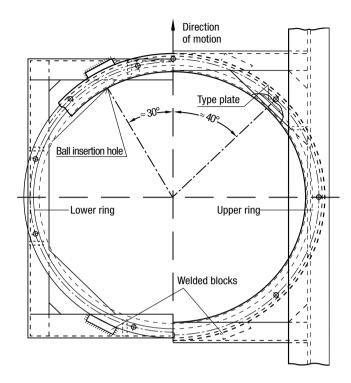
If required axial loads exceed the data permitted for turntables of series HE/SO, please ask for slewing rings of series KDL900, which allow axial loads up to 250 kN.

In case of use above the steered axle and above the fifth wheel on semi-trailers with rear axle steering please enquire as to the load data giving details of the vehicle.

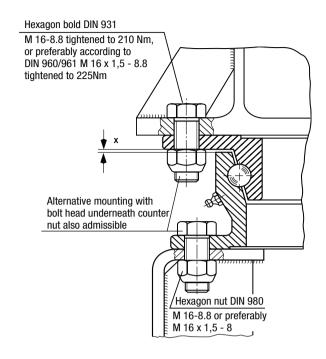
The load limits are only valid for operation on paved roads and under conditions prevailing in Europe.

See reverse for fitting and maintenance instruction

### Fitting and Maintenance Instructions for HE & SO

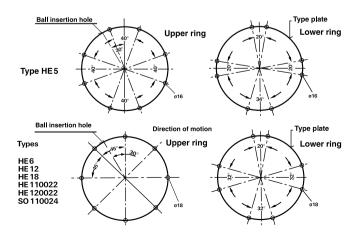


- 1. The ball bearing turntable must be mounted on a completely flat (max. unevenness 1mm) and horizontally and vertically rigid base with at least 50% of the circumference adequately supported. Particular attention must be paid to the support of the web section area containing the ball bearing races. Any unevenness under the flanges can be corrected with metal strips or by filling in with plastic material.
- 2. Each flange must be attached with at least 8 high tensile bolts, M 16 x 1,5 of grade 8.8. Do not drill in the area of the type plate ball insertion hole which should be at less than 30° to the direction of travel. In case of operation under adverse conditions, we recommend the use of bolts with enlarged contact surface (such as Tensi Lock or Verbus Ripp), or to increase the number of bolts from 8 to 12 per flange. This applies in particular to type HE130022 The thickness of paint between turntable and frame should not exceed 50 mm to guarantee the fit to be friction-tight.
- To ease the shear load on the mounting bolts at least four blocks should be welded on immediately adjoining each flange. The ball bearing turntable must not be mounted by means of welding.
- 4. JOST ball bearing turntables are suitably lubricated before they leave the factory, Before the trailer is put into operation for the first time, however, they should be re-lubricated with a high quality lithium saponified turntable grease of NLGI class 2 through all the grease nipples. The re-lubrication should build up a collar of grease in the gap between the 2 rings of the turntable thus preventing ingress of grit and water into the ball race. If a central lubrication system is to be used the quantity of lubrication nipples should be increased (please specify when ordering) and the above mentioned grease specification observed, however NLGI consistency class min 1.



- 5. The ball bearing turntable must be lubricated according to use but at least once a month with a high quality lithium saponified turntable grease of NLGI class 2. lubricant suitable for the type of operation and the prevailing operating conditions. While lubricating the A-frame should be turned so that the grease is evenly distributed and a collar of grease is being built up in the gap between the 2 rings. The tightness of the mounting bolts should also be checked.
- 6. Ball bearing turntables are subject to wear. The limit of wear is reached when there is 3,5 mm axial play. This is the case at the very latest when the air gap X = 0 mm at any point on the circumference of the turntables.

### **Drilling pattern for ball bearing turntables**

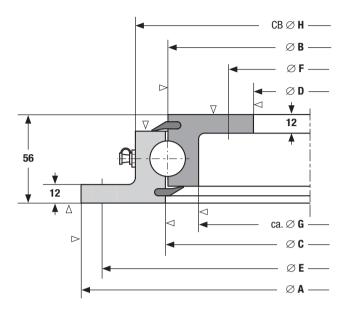


### Slewing ring - Series KDL9006W

### Siewing inig Genee Release



### **Low Profile Ballrace Models**



 $\nabla$  = shaped profile

### Model

**KDL9006W Supplied Pre-Drilled** 

Typical applications: Fridge Vans Stock Crate

D-Value Rating\*: 240kN

- Slewing rings are supplied primed for corrosion protection.
- Material C45.
- Ball race hardened.
- 8 conical lubrication nipples AM 8 x 1 according to DIN 71412.

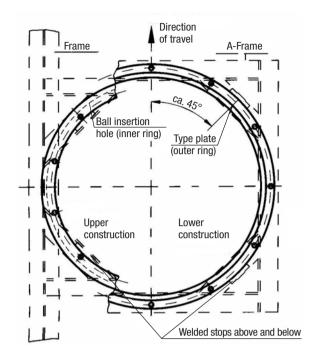
The below axial loads are applicable if the slewing ring is mounted to the front axle of a trailer at speeds of up to 105 km/h (65 m.p.h.). If it is to be used in self steering systems or above a fifth wheel please contact us for the maximum permissible loads by submitting construction data.

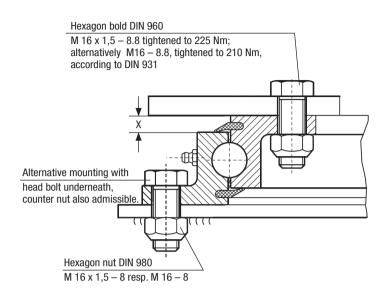
|           | $\varnothing$ A | $\emptyset$ B | $\varnothing$ C | $\varnothing$ D | ØE   | ∅F   | $\varnothing$ G | $\varnothing$ H | Weight     | <b>Axial load</b> |
|-----------|-----------------|---------------|-----------------|-----------------|------|------|-----------------|-----------------|------------|-------------------|
| Туре      | mm              | mm            | mm              | mm              | mm   | mm   | approx. mm      | approx. mm      | approx. kg | kN                |
| KDL9001   | 520             | 409           | 412             | 302             | 490  | 332  | 371             | 451             | 25         | 40                |
| KDL9002   | 650             | 539           | 542             | 432             | 620  | 462  | 501             | 581             | 32         | 80                |
| KDL9003   | 750             | 639           | 642             | 532             | 720  | 562  | 601             | 681             | 38         | 120               |
| KDL9004   | 850             | 739           | 742             | 632             | 820  | 662  | 701             | 781             | 44         | 150               |
| KDL9005   | 950             | 839           | 842             | 732             | 920  | 762  | 801             | 881             | 50         | 180               |
| *KDL9006W | 1050            | 939           | 942             | 832             | 1020 | 862  | 901             | 981             | 56         | 210               |
| KDL9007   | 1200            | 1089          | 1092            | 982             | 1170 | 1012 | 1051            | 1131            | 65         | 250               |

The measurements are subject to our standard tolerances.

<sup>\*</sup>As tested in a JOST assembly

### Fitting and Maintenance Instructions for Slewing Rings KDL900/6W





- 1. The slewing ring must be mounted on a completely flat (max. unevenness 1mm) and rigid base with at least 50% of the circumference adequately supported. Particular attention must be paid to the support of the web section area containing the slewing ring races. Any unevenness under the flanges can be corrected with metal strips or by filling in with plastic metal.
- 2. Each flange must be attached with at least 12 high tensile bolts M 16 × 1,5 of at least grade 8.8. Do not drill in the area of the ball insertion hole, which should be at less than 45° to the direction of travel. The thickness of paint between slewing ring and mounting should not exceed 50 microns to guarantee the fit to be friction-tight.
- 3. To ease the shear load on the mounting bolts in the case of horizontal force at least 4 blocks should be welded on immediately adjoining each flange. The slewing ring must not be mounted by means of welding.
- 4. JOST slewing rings are initially lubricated before they leave the factory. Before they are put into operation for the first time however they must be adequately re-lubricated with ball bearing grease (lithium saponified, NLGI class 2). Whilst

lubricating the slewing ring should be turned so that the grease is evenly distributed. If a central lubrication system is to be used we recommend increasing the number of grease nipples (please state on order) and using a high quality lithium saponified ball bearing grease of at least NLGI class 1.

5. The slewing ring must be lubricated according to use but at least once every 3 months or 25,000 km, using a high quality ball bearing grease (lithium saponified, NLGI CLASS 2). Whilst lubricating the A-frame should be turned so that the grease is evenly distributed.

The tightness of the mounting bolts should also be checked at regular service intervals.

6. Slewing rings are subject to wear. The limit of wear is reached when the axial play is 3.5 mm. This is at the latest the case when the distance X < 8 mm at any point on the circumference.</p>

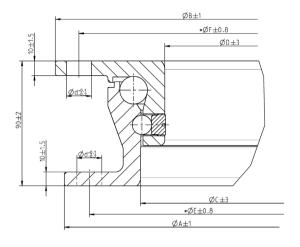
### **Wear Limits**

Radial play - max. 3.0mm Axial play - max. 2.5mm

### Slewing ring - Series KLK

### **Double Row Ballrace Models**





### Model

**Double Row Ballrace KLK Series** 

Typical applications: Dairy Tankers, Tri Axle Tippers D-Value Rating: 275kN

- Ballraces are supplied E-coated.
- 8 lubrication points enable the best possible distribution of grease.
- Lbryrinth seal.
- Supplied drilled/undrilled.

The specified axle loads for KLKDR series relate to use where the slewing ring is mounted on the front axle of a trailer with three axles and fifth wheel steering, travelling at speeds of up to 100kph (65mph). On dual-axle trailers, the specified axle load can be exceeded by 10% of 20% at speeds below 30kph (18mph).

|               | Imposed<br>load | Α    | В    | C    | D    | E         | F         | d    | Weight |
|---------------|-----------------|------|------|------|------|-----------|-----------|------|--------|
| Туре          | (T)             | (mm) | (mm) | (mm) | (mm) | (mm)      | (mm)      | (mm) | kgs    |
| KLKDR41AS010K | 26              | 987  | 1000 | 868  | 842  | 952       | 966       | 18   | 73     |
| KLKDR4100010K | 26              | 987  | 1000 | 868  | 842  | undrilled | undrilled | N/A  | 73     |
| KLKDR210010K  | 26              | 1095 | 1108 | 976  | 950  | 1060      | 1075      | N/A  | 80     |
| KLKDR110020   | 26              | 1095 | 1108 | 976  | 950  | 1060      | 1074      | 18   | 80     |
| KLKDR4200010K | 26              | 1095 | 1108 | 976  | 950  | 1060      | 1074      | N/A  | 80     |
| KLKDR4400010K | 30              | 1195 | 1208 | 1076 | 1050 | 1160      | 1074      | N/A  | 92     |

Note: The pre-drilled hole pattern on the KLKDR41AS010K is suited only for a DR assembly replacement. Other ballraces are undrilled as standard. For any special drilling requirements please contact JOST Australia. Note: The above ratings are in accordance to ADR requirements. The measurements are subject to our standard tolerances.

### **Design and Features**

The ball bearing turntables enable the rotation of the pivot support towards the trailer frame. Thanks to the functional design, the axial loads are ideally supported and the thrust and tractive forces which occur when driving are transmitted in an optimal fashion.

### The advantages at a glance:

### Premium force transmissions for the highest demands

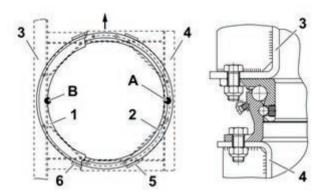
- The extra large support balls transmit the axial loads ove a wide area directly onto the vertical bar of the ring parts
- Horizontal forces in pull or push direction, as well as the moment load resulting from braking and centrifugal forces, are supported by the interplay of the two ball rows
- · Lifting forces are transmitted by the smaller radial ball
- Optional fastening using splined bolts, making additional welding of thrust plates unnecessary

### Durable construction with very little wear

- The use of high-strength steel ensures the greatest possible surface quality
- Cold-twisting of tracks by shrinking the ball gearing turnable reduces wear to a minimum and increases lifespans significantly
- A robust labyrinth seal protects the tracks from dirt, even in extreme conditions
- The practiculary large grease reservior resulting from the free space between the tracks guarantees smooth running thanks to opium lubrication.
- 8 lubrication points enable the best possible distribution of grease within the tracks with just minimal rotation (+/- 20°) during lubrication.
- Optionally available with pre-assembled lubrication block to ensure ideal access to the lubrication points or as preparation for connection to a central lubrication system.

Note: D-values may vary when used in conjunction with additional JOST products that have been tested and carry a CRN number. Contact your local JOST branch for further details.

### Fitting and Maintenance Instructions for Slewing Ring KLKDR



- Upper ring
- 2. Lower ring
- 3. Chassis
- 4. A-frame
- 5. Thrust plates bottom
- 6. Thrust plates top
- A. Position of the type plate
- B. Position of the ball earing filling hole

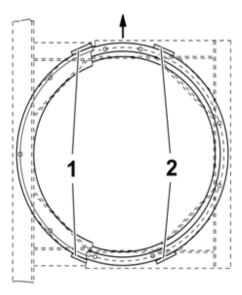
### 2. Assembly

| Series | Screws of quality class 8.8                     | Torque <sup>1)</sup> |
|--------|---|----------------------|
| DR     | Min. 8 hexagon screws per ring section          |                      |
|        | DIN EN ISO 8765/8676 (DIN 960/961)<br>M16 x 1.5 | 225 Nm               |
|        | Alternatively DIN EN 24014 (DIN 931)<br>M16     | 210 Nm               |

<sup>1)</sup> Setting value, tighten the screw connection with torque wrench DIN EN ISO 6789, class A or B.

| Series | Nuts of quality class 8   |  |
|--------|---------------------------|--|
| DR     | DIN EN ISO 7042 (DIN 980) |  |

### Thrust plates

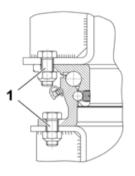


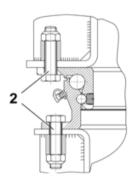
### 1. Standard mounting.

The ball bearing turntable must be fitted on a flat (max. offset 1mm) support construction that provides torsional, longitudinal and lateral rigidity. To ensure there is an adequate transfer of force, at least 50% of the flange surfaces must be supported with weight-bearing structures. The bearing zone must be distributed evenly in and lateral to the direction of travel and be designed so that the ball bearing turntable is supported in the area of its vertical profile bars, i.e the ball race-ways. Larger planarity deviations can be compensated with shim panels. With undrilled turntables, the following must be noted with drilling the fastening holes.

- That no drill chips or cutting fluid gets into the raceway.
- That no holes are drilled in the vicinity (+/- 15mm) of the ball insertion hole or in the vicinity of the welds.
- That the type plate is placed at 90 degrees to the right of the vehicle and the ball insertion hole is placed at 90 degrees to the left of the vehicle to remove the smaller cross-sections from the area under maximum stress.
- The lubricating nipples are easily accessible.
- Free motion of the swivel movement is ensured.

### Special fastening





### Notes on fastening

Screws of strength class 8.8 must be used for fastening. The screw connections must be secured using state of the art methods to prevent them coming loose.

Do not secure the ball-bearing turntable by welding. In general, the layer thickness of the paint build-up must be no more than 170  $\mu m$  per component in the screws grip area so that a perfect friction lock is guaranteed without settling.

The values shown are guide values for a coefficient of friction  $\mu$ tot. = 0.14. Further information is available in VDI 2230. Tighten screws with a suitable tool diagonally. In case of fastening with a low number of screws or small screw size, at least the same overall stability must be achieved.

In more arduous operating conditions, we recommend installing screws with a spacer sleeve or increasing the number of screws in order to maintain the correct pre-tensioning force. With different screw connections, as shown in position (1) and (2), free movement of the turntable must be absolutely guaranteed, especially in the area of the lubricating nipples and the type plate.

### Special fastening with JOST splined bolts (fastening without thrust plates)

When used on single axle bogie steering systems at axle loads of up to 10t, the standard hole patterns can be used as per the JOST product data sheet in combination with splined bolts for attachment to the vehicle without the use of thrust plates. If the axle load of the bogie is greater than 10t, we recommend using at least 12 securing points per ring, distributed as evenly as possible, with splined bolts. In order to ensure that the fitting of the turntable or slewing ring is under as little strain as possible, a positional accuracy for the hole pattern of 0.6mm and a drilling diameter of 18 +/-0.1, should be observed. More detailed information can be found in our installation instructions for JOST splined bolts.

### **Thrust plates**

To relieve the thrust force on screws subject to horizontal forces, the fitted ball bearing turntable must be attached to the flanges with four pre-welded thrust plates and there must be no play between the components. Use the welding methods set out by the trailer's manufacturer for this purpose. In cases of special fastenings with JOST splined bolts there are no trust plates required, if the requirements specified in 'special fastening' are met.

### Coating

The JOST DR series has a permanent cathode dip coating. The CDC offers the ideal surface sealing method and therefore excellent protection against corrosion. Thanks to the evenly thin coating, it may be painted over at any time.

### **Standard Mounting**

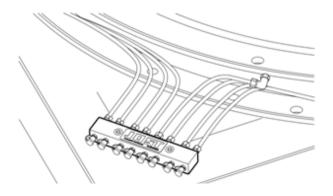
Fastening set KLE0000500 (16 screws M16 x 1.5 x 55 - 8.8, 16 nuts M16 x 1.5 - 10 and 8 thrust plates.

### Special fastening with JOST splined bolts

Min. 8 JOST splined bolts M16 x 55-10.9 per ring section and matching JOST nuts M16-10.9, tightening torque 300Nm. Fastening set KLE0000300 (16 splined bolts and nuts) Fastening set KLE0000400 (24 splined bolts and nuts)

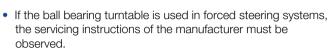
### Standard ball bearing turntables

Standard ball bearing turntables are supplied with light basic lubrication. Before commissioning, the turntable must be given a thorough re-lubrication over all lubricating nipples with a high quality rolling bearing grease (lithium soap, NGLI consistency class 2), with a closed bead of grease sealing the bearing clearances against the penetration of dirt and spray water. We recommend the use of JOST high performance lubricant (SKE005670000). Where a central lubricating system is used, a high quality rolling bearing (lithium soap, NLGI consistency class min. 1) should be used. At least 6 lubricating nipples should be connected.



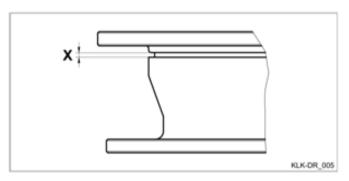
### **Maintenance**

The ball bearing turntable must be lubricated at least every 8,000 to 10,000km, or once a month, with a high quality rolling bearing grease (lithium soap, NLGI consistency class2). This is done by swivelling the bogie backwards and forwards until as closed a bead of grease as possible comes out from the entire length of the bearing clearances or sealing lips. We recommend the use of JOST high performance lubricant (SKE005670000).



- The screw connections must be checked as part of the vehicle inspections, but no later than 50,000km, to ensure they are tightened to the prescribed tightening torque.
- Check for wear.
- Ball bearing turntables and their fastening elements, must be checked for excessive corrosion, damage or cracks.

### To check for wear



| Series | Maximum axial play | Minimum air gap X |
|--------|--------------------|-------------------|
| DR     | 3.5 mm             | 0.0 mm            |

### Safety information for maintenance

- Only use the specified lubricating grease for servicing work.
- The servicing work should only be completed by trained personnel.

### Safety information for installation

- Do not change the installation area defined by the trailer's manufacturer.
- The assembly work may only be completed by authorised specialists.
- Instructions from the trailer's manufacturer must be observed e.g. the type of fastening and support construction.
- The installation guidelines provided by the trailer's manufacturer must be complied with.

### **Advice**

Technical modifications reserved. The latest information can be found at www.jostaustralia.com.au or www.jost-world.com



# **Ball Race (Slew Ring) Service and Maintenance Bulletin**

Note: JOST ball races are initially lubricated before they leave the factory. Before they are put into operation for the first time however they must be adequately re-lubricated with ball bearing grease.

### Recommended grease types

JOST ball races - Lithium Saponfied, NLGI class 2. (Use class 1 grease if a central lubrication system is to being used)

BPW Double Row - BPW special long life grease ECO-Li 91 Lithium Complex Grease.

The grease must not be mixed with other calcium base or sodium base lubricants.

Ball races should be lubricated at least every 25,000klm or every 3 months, or sooner depending on the application. Under extreme or arduous operating conditions greasing may be required weekly. The ball race should be rotated during greasing to ensure that the grease is distributed evenly.

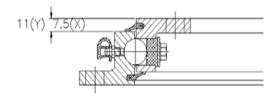
The tightness of the mounting bolts should also be checked at regular service intervals.

Ball races are subject to wear. It is recommended that the ball race be replaced when the wear limits are reached.

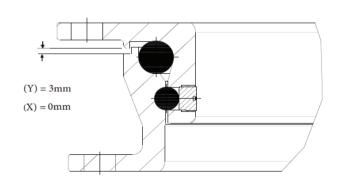
| Jost KDL           | 900/6 Radial Play max 3.0mm – Axial Play max 3.5mm (< 01.2010)                          |
|--------------------|---|
| Jost KDL           | 900/6W Radial Play max 3.0mm – Axial Play max 3.5mm (> 01.2010)                         |
|                    | Refer to Figure 1: (Y New Ball Race 11mm) (X Measurement =7.5mm has reached wear limit) |
| BPWDK9014          | Radial Play max 2.0mm – Axial Play max 3.0mm (< 06.2012)                                |
| Jost KLK DR Series | Radial Play max 2.0mm – Axial Play max 3.0mm (> 06.2012)                                |
|                    | Refer to Figure 2: (Y New Ball Race 3mm) (X Measurement = 0mm has reached wear limit)   |

Note: X and Y measurement pictured below refer to axial movement

### **KDL900 Series**



### KLK DR & DK9014 Series



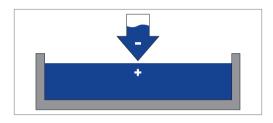
### JOST ball bearing turntables Innovative technology, proven quality



Ball bearing turntables and slewing rings are parts for fitting onto trailers and agricultural vehicles to connect the A-frame to the trailer chassis so it can swivel. They are the products which started the success story of JOST in 1952. Today, they are used on all the world's roads. And not only that: They are also used in agriculture, at airports and railway stations, in mining and in a wide range of special applications, such as in TRIDEC forced steering. The ball bearing turntables are subject to constant further development, so that they impress with their innovative benefits and proven quality time and again.

### **E-coating**

- Premium corrosion protection
- Additional top coat on request



### **Verified safety**

- Tested in accordance with ECE R55
- Environmental management in accordance with ISO 14001
- Quality management in accordance with ISO/TS 16949

### Weight advantage

• Up to 10 kg lighter than comparable products

### Splined bolt

 Assembly kit with special screws, making use of additional welded thrust plates unnecessary Item number KLE0000300 (16 pieces)
 Item number KLE0000400 (24 pieces)



### Mounting kit KLE0000500

| Item | Description              | per kit |
|------|--------------------------|---------|
| 01   | Hexagon screw M16x1,5x55 | 16      |
| 02   | Hexagon nut M16x1,5      | 16      |
| 03   | Stop block               | 8       |

### **Central lubrication manifold**

- Makes lubrication easier
- Makes connection to central lubrication system easier Item number KLE0000200



### **High performance lubricant**

 JOST high performance lubricant for initial greasing or follow-up lubrication in a practical refill set
 Item number SKE005670000

### Low maintenance

 Low maintenance version for HE and KDL available

### Product overview: Ball bearing turntables

### Ball bearing turntables KLKHE and SO



E-coated Standard or low maintenance (HE series) Drilled or undrilled Lubrication manifold (optional) Splined bolts (optional)

### **Slewing ring KDL900**



E-coated
Low maintenance
Drilled or undrilled
Hardened bearings
Lubrication manifold (optional)
Splined bolts (optional)

### Ball bearing turntables KLKL and N



- E-coated
- Undrilled
- L series: Agricultural trailers and transportation devices up to 30 km/h
- N series: Heavy agricultural trailers and light truck trailers over 30 km/h

### **Ball bearing turntables KLKND**



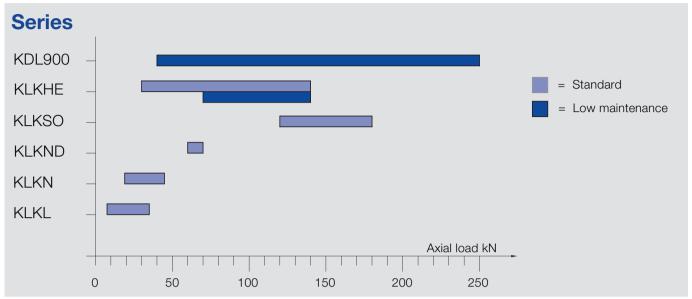
- E-coated
- Drilled or undrilled
- Lubrication manifold (optional)

### **Customer-specific drilling patterns**

• Even in small batch sizes

### **Axial load**

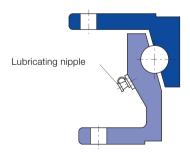




The application of ball bearing turntables and slewing rings depends on the permissible axial load. JOST ball bearing turntables and slewing rings cover an axial load range of between 7.5 and 250 kN.

All load data for the KDL, HE, SO, ND, L and N series apply for operation in pivot support steering systems on paved roads and under the transport conditions common in Central Europe.

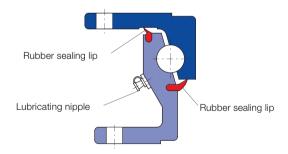
### **Maintenance**



### **Standard**

JOST standard ball bearing turntables are supplied with a thin base coating of lubricant. Before it is used for the first time the ball bearing turntable must be lubricated thoroughly. See JOST installation and operating instructions.

Connection to the central vehicle lubrication system is possible (grease is essential, rather than oil).



### Low maintenance

The low-maintenance versions of ball bearing turntables and slewing rings mean they do not have to be maintained for up to three years or 300,000 km. After this period they must be serviced in the same way as standard turntables. The low-maintenance models are distinguished by a green type plate and by the letter "W" at the end of the item number. Maintenance conditions differ when fitted to steered semi-trailers or in the case of heavy conditions of use. The maximum storage period for maintenance-free ball bearing turntables and slewing rings is three years.



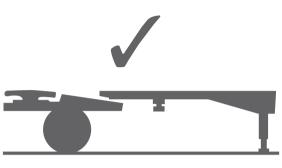


Refer to Jost website www.jostaustralia.com.au for further details and instructional videos.

# Operating and Maintenance Instructions for JOST grease type fifthwheels

# STOP DRIVERS ensure that you get a when coupling!





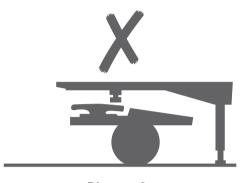


Diagram 1

Diagram 2

Failure to ensure that trailer rubbing plate is set **below** the fifthwheel plate when coupling up could result in loss of your trailer or damage to your truck or trailer.

Regardless of whether you have air or spring suspension, ALWAYS follow the coupling CODE to ensure the king pin is securely engaged with the fifthwheel. This following coupling CODE is issued by **JOST** Australia Pty Ltd.

### **The Coupling Code**

The fifthwheel must be angled down to the rear of the truck and the mechanism in the pre-set position.

Ensure that the trailer rubbing plate is below the height of the fifthwheel plate (refer Diagrams 1 and 2).

Reverse the truck slowly under the trailer, aligning the king pin with the centre of the fifthwheel.

Continue reversing until the mechanism locks and secures the king pin.

Pull forward against the trailer brakes to ensure engagement of the king pin in the fifthwheel.

Visually check to see that there is no gap between the fifthwheel plate and trailer rubbing plate and that the king pin is secured correctly within the fifthwheel mechanism.

Finally, ensure that the automatic secondary locking device is engaged (as per Diagram 3). If it is not engaged, the whole coupling up procedure must be repeated.

Note: Pending the fifthwheel model, coupling code may vary.

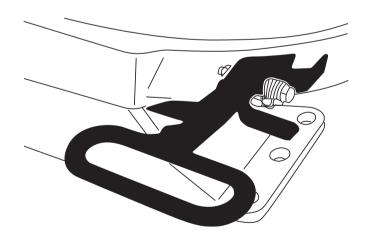
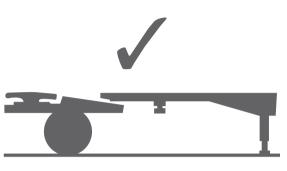


Diagram 3

Failure to read, understand and follow the important information contained above may result in a hazardous condition or cause a hazardous condition to develop.

# **Operating and Maintenance Instructions for JOST greaseless fifthwheels**

# STOP DRIVERS ensure that you get a when coupling!



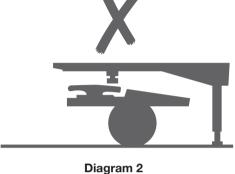


Diagram 1

Failure to ensure that the trailer rubbing plate is set level with the fifthwheel plate when coupling up, could result in loss of your trailer or damage to your truck or trailer.

Regardless of whether you have air or spring suspension, ALWAYS follow the coupling CODE to ensure the king pin is securely engaged with the fifthwheel. This following coupling CODE is issued by **JOST** Australia Pty Ltd.

### **The Coupling Code**

The fifthwheel must be angled down to the rear of the truck and the mechanism in the pre-set position.

Ensure that the trailer rubbing plate is level with the height of the fifthwheel plate (refer Diagrams 1 and 2).

Reverse the truck slowly under the trailer, aligning the king pin with the centre of the fifthwheel.

Continue reversing until the mechanism locks and secures the king pin.

Pull forward against the trailer brakes to ensure engagement of the king pin in the fifthwheel.

Visually check to see that there is no gap between the fifthwheel plate and the trailer rubbing plate and that the king pin is secured correctly within the fifthwheel mechanism.

Finally, ensure that the automatic secondary locking device is engaged (as per Diagram 3). If it is not engaged, the whole coupling up procedure must be repeated.

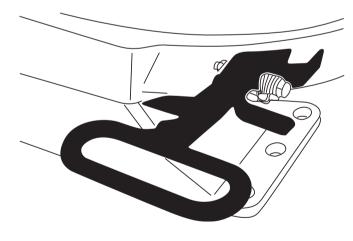
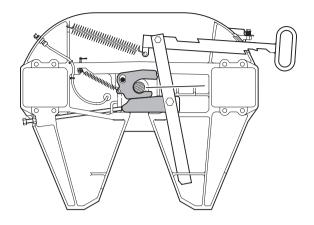


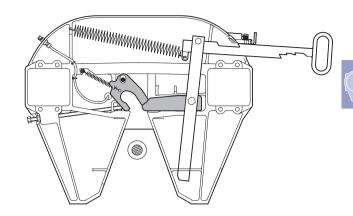
Diagram 3

Failure to read, understand and follow the important information contained above may result in a hazardous condition or cause a hazardous condition to develop.

### **Locking device**



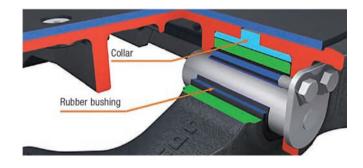


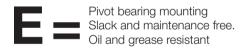


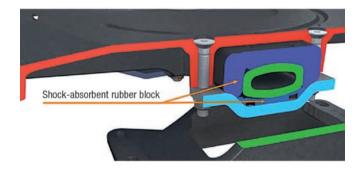
Set for coupling

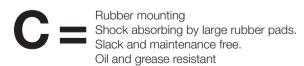
- Automatic setting to couple up
- Fully adjustable wear
- Easy maintenance

### Type of mounting









# Low Maintenance Fifth Wheel Couplings JSK37

Selection criteria, maintenance, mounting instructions and user information for the top plate liner

### **Coupling Code**

The fifth wheel must be angled down to the rear of the truck and the mechanism in the present condition. Ensure that the trailer rubbing plate is level with the height of the fifth wheel plate. Reverse the truck slowly under the trailer aligning the king pin with the centre of the fifth wheel.

Continue reversing until the mechanism locks and secures the king pin. Pull forward against the trailer brakes to ensure engagement of the king pin in the coupling.

Visually check to see that there is no gap between the fifth wheel plate and the trailer rubbing plate and that the king pin is secured correctly within the fifth wheel mechanism.

Ensure lock catch is secured in the locked position.

### **Selection Criteria**

The main characteristics of the **JOST** low maintenance fifth wheel coupling JSK37 are there excellent sliding properties (equivalent to a well lubricated fifth wheel) and their long life.

The fifth wheel was designed in particular for articulated vehicles with high mileage which are rarely uncoupled and run for long periods between services, e.g. tankers and tilts.

This high quality, low maintenance fifth wheel will offer you a long life span if you

- Couple up carefully: the fifth wheel should be at the same height as the skid plate (air suspension vehicles are advantageous)
- Make sure that the skid plate resp. guide rails to the skid plate are the correct size.
  - They should have no sharp edges, steps or welding seams in the coupling up area.

- Ensure a flat, smooth surface of the skid plate and contact area.
- Grease the skid plate lightly to protect it from corrosion.
   The liner is not adversely affected by grease.

if these points are not observed the liner may be damaged.

Articulated vehicles with more complex load requirements (e.g. on building sites) and/or semi-trailers with rigid chassis (e.g. tankers) are liable to increase wear on the liner.

The liner is bolted onto the fifth wheel and can be easily replaced.

### **Maintenance of the Locking Mechanism**

Lubrication of the liner is not necessary.

The fifthwheel has only one lubrication point for the lock jaw.



Uncouple at the latest every 50,000 Km or six months, depending on usage. Clean the fifth wheel with liner and the skid plate. Check the liner for damage and wear. Lubricate the lock jaw and king pin with high pressure grease (EP) with MoS<sub>2</sub> or graphite additive (e.g. L21M,Esso universal grease M or Shell Retinax AM).

The grease nipple on the edge of the fifth wheel plate is for lubricating the lock jaw and king pin between service.

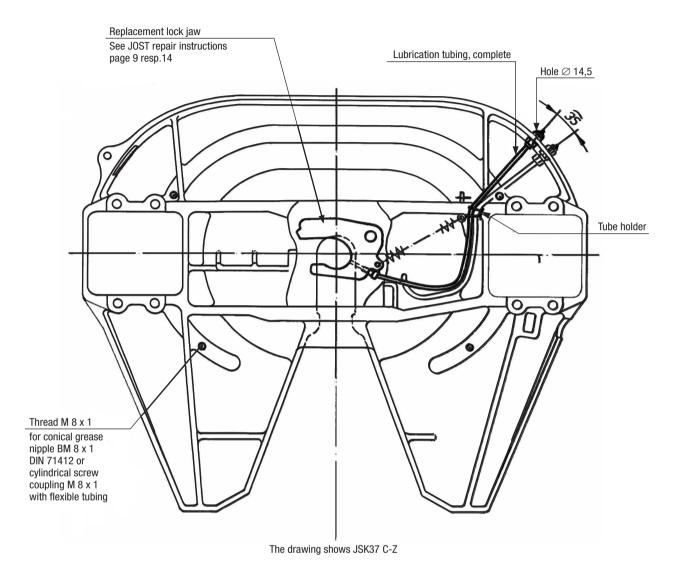


The life expectancy of the lock jaw and king pin depend on effective lubrication before being put into service and after every cleaning operation.

For further information please refer to the **JOST** repair instruction booklet.

### **Central Lubrication for 2" Fifth Wheels**

### **Models JSK37 Series**



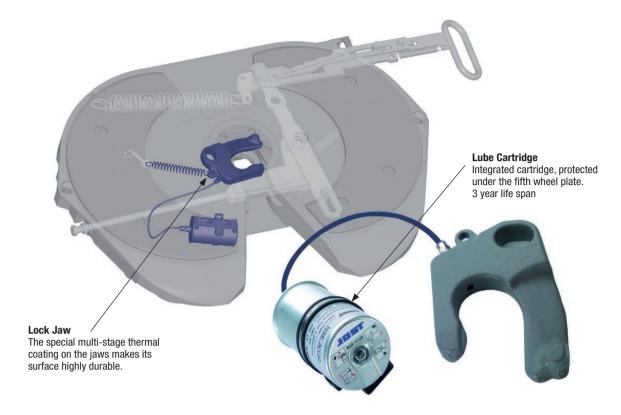
The fifth wheels JSK37CZ and JSK37E Series are supplied with additional lubrication for the lock jaw and the king pin.

In order to connect the fifth wheels to the central lubrication system of the prime mover it is necessary to replace the 4 grease nipples under the fifth wheel plate and the 2 at the side with suitable screw couplings and connect them to flexible tubing, which is in turn joined up to a distributor unit compatible with the respective central lubrication system.

As a lubricant we recommend grease or liquid grease. Fifth wheels with central lubrication should be thoroughly cleaned and inspected for wear, damage and correct functioning at least once a year, or at the latest after 50,000 km, and repaired if necessary. Before coupling up again the fifth wheel and the king pin should be manually lubricated with high pressure grease (EP) with MoS<sub>2</sub> or graphite additive.



### LubeTronic



### Lubrication of the wheel coupling

### Guaranteed safe and automatic for 3 years

JOST, the market leader in the area of couplings for trucks and trailers, remains on it's innovative course. The new development LubeTronic saves time and money and simplifies the day-to-day life of drivers and freight forwarding companies.

### **Always lubricates safely**

- The special coating on the lock jaw makes the surface extremely durable. This allows the lock jaw to be operated with a minimal amount of lubricant.
- Excellant emargency running properties allow the coating to handle short-term operating even without lubricant.
- Outstanding lubricant qualities thanks to novel lubricants from high-performance grease and continuous lubrication.
- Temperature range: -20°C to +70°C
- Electronic dose dispensing reduces both costs and environmental impact
- Completely sealed and immersion tested (IP 68)

### Simple maintenance

- LubeTronic is easy to mount
- Self-regulating system with electronic monitoring signal on the cartridge
- Guaranteed 3 year life span
- Maintenance time savings
- Potential upgrading of all low-maintenance couplings
- Very light and compact
- With shockproof metal bracket
- Not recommended for usage in the construction industry
- Repair kit (complete) with cartridge: Order No. SKE004070000

### LubeTronic

### **Less Maintenance - Greater Safety**

**JOST**, the market leader in the area of couplings for trucks and trailers, remains on it's innovative course. The new development LubeTronic saves time and money and simplifies the day-to-day life of drivers and freight forwarding companies.

The lock of the fifth wheel holds the king pin firmly in place; it used to be one of the last maintenance-intensive elements in the system. LubeTronic allows this system to run practically maintenance-free for three whole years. The grease is discharged in a electronically controlled manner; the lock and king pin are always optimally lubricated. **JOST** guarantees automatic and safe operation of the LubeTronic for three years. The lubrication cartridges discharges it's lubricant in a constant, uniform manner over a wide temperature range from -20 to +70 degrees Celsius and the entire system has been underwater-tested according to IP 68.

### **Simple Assembly - Significant Action**

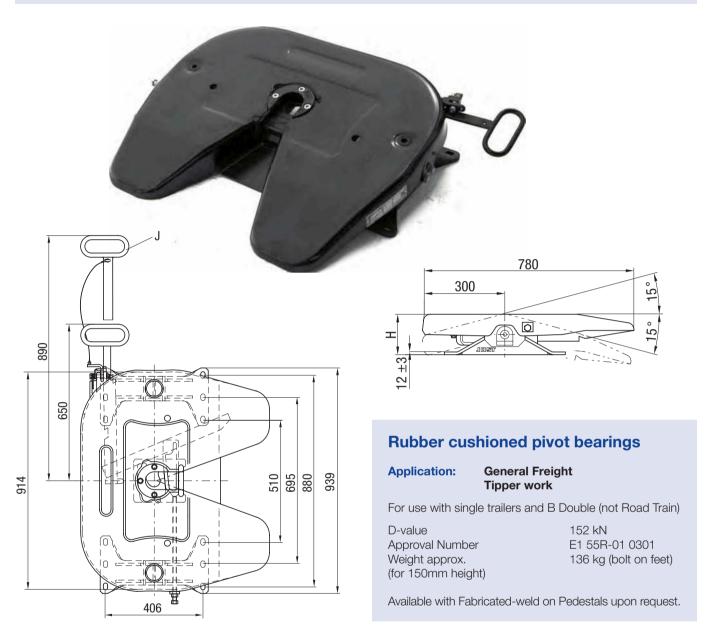
The LubeTronic retrofit kit includes a specially coated lock, which, together with the electronically regulated lubrication cartridge, is a system patented by **JOST**. The coating makes the surface of the lock particularly resistive and durable, so that even minimal quantities of the lubricating grease are sufficient. This is efficient and eco-friendly at the same time. The coating is so efficient that it even allows running without lubricant for short periods, although this is not recommended!

The lock holds the king pin and with it, the entire support system, coupled firmly with the traction engine. So far, regular lubrication by hand or by means of an expensive central lubrication was required, because the lock and king pin wear quickly without lubrication and have to be replaced. The traditional lubrication aids - which are mostly lubricating cartridges operated with overpressure - discharge grease smoothly and uniformly only within a narrow temperature range. All the maintenance procedures for the fifth wheel, which are not only uncomfortable and time-consuming, but above all, relevant for safety, are rendered redundant by LubeTronic.



### **JSK36 DV1 Pivot Bearing Mount**

### **Pressed Steel**

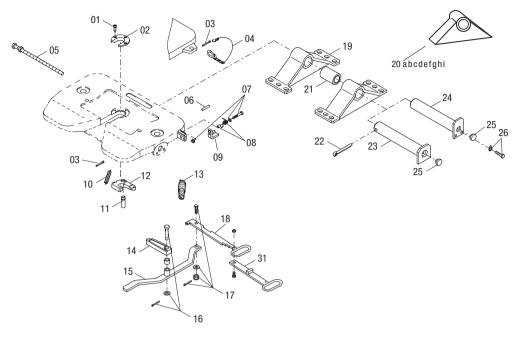


Mounting must be carried out in accordance with our instructions.

| Туре        | Overall<br>Height<br>mm | Imposed Load<br>On Tractor<br>kg | D-Value<br>kN | Weight<br>Approx.<br>kg | Pedestal<br>Style |
|-------------|-------------------------|----------------------------------|---------------|-------------------------|-------------------|
| JSK36DV1130 | 130                     | 20000                            | 152           | 112                     | Weld on           |
| JSK36DV1150 | 150                     | 20000                            | 152           | 115                     | Weld on / Bolt on |
| JSK36DV1170 | 170                     | 20000                            | 152           | 118                     | Weld on / Bolt on |
| JSK36DV1185 | 185                     | 20000                            | 152           | 118                     | Weld on / Bolt on |
| JSK36DV1195 | 195                     | 20000                            | 152           | 120                     | Weld on           |
| JSK36DV1205 | 205                     | 20000                            | 152           | 122                     | Weld on           |
| JSK36DV1215 | 215                     | 20000                            | 152           | 125                     | Weld on           |
| JSK36DV1235 | 235                     | 20000                            | 152           | 125                     | Weld on           |
| JSK36DV1255 | 255                     | 20000                            | 152           | 127                     | Weld on           |

The right to alter specifications is reserved.

### Spare parts for type JSK36DV1

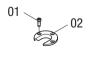




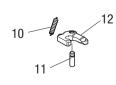
| Item | Designation           | Order No.   | Quantity<br>per JSK |
|------|-----------------------|-------------|---------------------|
| 01   | Socket head bolt      | SK212107    | 3                   |
| 02   | Wearing ring          | SK210519    | 1                   |
| 03   | Split pin             | SK1974      | 1                   |
| 04   | Spring hook           | SK1436      | 1                   |
| 05   | Adjusting screw       | SK270044    | 1                   |
|      |                       | SK290551    | 1                   |
| 06   | Clamping pin          | 000.003.027 | 1                   |
| 07   | Hexagon bolt, compl.  | SK352103    | 1                   |
| 80   | Spring noose, compl.  | SK292130    | 1                   |
| 09   | Latch, compl.         | SK312152    | 1                   |
| 10   | Tension spring        | SK847       | 1                   |
| 11   | Pivot                 | SK210667    | 1                   |
| 12   | Lock Jaw              | SK1489      | 1                   |
| 13   | Double tension spring | SK310520    | 1                   |
| 14   | Locking bar           | SK290506    | 1                   |
| 15   | Lever                 | SK210725    | 1                   |
| 16   | Bar bolt, compl.      | SK292102    | 1                   |
| 17   | Head bolt             | SK1513      | 1                   |
| 18   | Handle                | SK2905111   | 1                   |

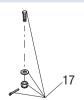
| Item | Designation              | Order No. | Quantity per JSK |
|------|--------------------------|-----------|------------------|
| 19a  | Bolt on Pedestals 150    | SK290442  | 1                |
| 19b  | Bolt on Pedestals 170    | SK290441E | 1                |
| 19c  | Bolt on Pedestals 185    | SK929440  | 1                |
| 20a  | Fabricated Pedestals 130 | SK2920130 | 1                |
| 20b  | Fabricated Pedestals 150 | SK2920150 | 1                |
| 20c  | Fabricated Pedestals 170 | SK2920170 | 1                |
| 20d  | Fabricated Pedestals 185 | SK2920185 | 1                |
| 20e  | Fabricated Pedestals 195 | SK2920195 | 1                |
| 20f  | Fabricated Pedestals 205 | SK2920205 | 1                |
| 20g  | Fabricated Pedestals 215 | SK2920215 | 1                |
| 20h  | Fabricated Pedestals 235 | SK2920235 | 1                |
| 20i  | Fabricated Pedestals 255 | SK2920255 | 1                |
| 21   | Rubber bushing, compl.   | SK290520E | 2                |
| 22   | Split pin                | SK292104  | 2                |
| 23   | Pivet pin with 22 + 25   | SK292124  | 2                |
| 24   | Pivet pin                | SK290553  | 2                |
| 24a  | Pivet pin with 25        | SK290499  | 2                |
| 25   | Plug                     | JS 110112 | 2                |
| 26   | Hexagon bolts, compl.    | SK2921038 | 2                |

### **Repair and Retrofit Kits**









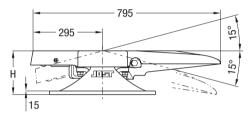
| Item                       | Designation         | Order No. |
|----------------------------|---------------------|-----------|
| 01, 02, 10, 11, 12         | Repair kit for lock | SK322150  |
| 01, 02                     | Repair kit for lock | SK212151  |
| 10, 11, 12                 | Repair kit for lock | SK322152  |
| 01, 02, 04, 10, 11, 12, 17 | Repair kit for lock | SK312150  |
|                            |                     |           |

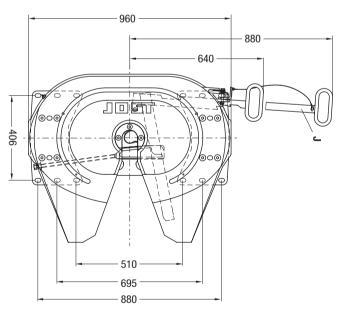
| Item                   | Designation         | Order No. |
|------------------------|---------------------|-----------|
| 01, 02, 10, 11, 12, 17 | Repair kit for lock | SK312151  |
| 07, 08, 09             | Repair kit for lock | SK312152  |

### **JSK37CZ Rubber Mount**

### With Wear Ring & External Jaw Lubrication







**Applications: Tanker** 

General freight Fridge van B-double Road train

The fifth wheel comes standard with bolt on/weld on feet

The fifth wheel coupling can be linked to the central lubrication system of the prime mover.

Lock jaw and wear ring can be replaced without difficulty in a few minutes with the fifth wheel still in position.

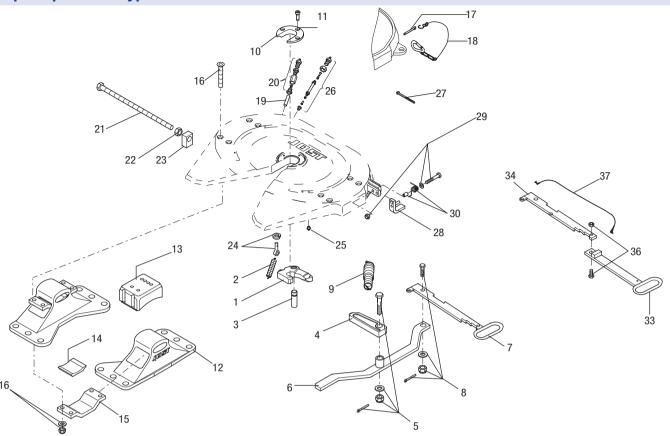
Shock absorbing large rubber pads. Oil and grease resistant.

Mounting must be carried out in accordance with our instructions.

| Туре         | Overall Height<br>mm | Imposed Load<br>kg | D-Value<br>kN | Weight Approx.<br>kg | Approval Number |
|--------------|----------------------|--------------------|---------------|----------------------|-----------------|
| JSK37CZ/150  | 150                  | 20000              | 190           | 144.5                | CTA-041876      |
| JSK37CZ/170  | 170                  | 20000              | 190           | 146.5                |                 |
| JSK37CZ/185  | 185                  | 20000              | 190           | 148.5                |                 |
| JSK37CZ/220  | 220                  | 20000              | 190           | 155.5                |                 |
| JSK37CZ/250  | 250                  | 20000              | 190           | 160.5                |                 |
| *JSK37CZ/300 | 300                  | 20000              | 190           | 176.5                |                 |

<sup>\*</sup> Note 300mm non weldable pedestals

# Spare parts for type JSK37CZ



| Fig. | Description                       | Part No.  |
|------|-----------------------------------|-----------|
| 01   | Lock jaw                          | SK1489Z   |
| 02   | Lock jaw spring                   | SK847     |
| 03   | Pivot for lock jaw, compl.        | SK210667  |
| 04   | Locking bar                       | SK320506  |
| 05   | Locking bar bolt, compl.          | SK322101  |
| 06   | Lever                             | SK310518  |
| 07   | Operating handle                  | SK310515  |
| 80   | Socket head bolt                  | SK1513    |
| 09   | Double tension spring             | SK310520  |
| 10   | Wearing ring                      | SK210519  |
| 11   | Head bolt                         | SK212107  |
| 12b  | Pedestal (150 mm) Bolt on\Weld on | SK210402X |
| 12c  | Pedestal (170 mm) Bolt on\Weld on | SK210421X |
| 12a  | Pedestal (185 mm) Bolt on\Weld on | SK210401X |
| 12d  | Pedestal (220 mm) Bolt on\Weld on | SK210418X |
| 12e  | Pedestal (250 mm) Bolt on\Weld on | SK210414X |
| 12f  | Pedestal (300 mm) Non Weldable    | SK210420  |
| 13   | Upper rubber cushion              | SK1259    |
| 14   | Lower rubber cushion              | SK210525  |
| 15   | Mounting bracket                  | SK1372    |

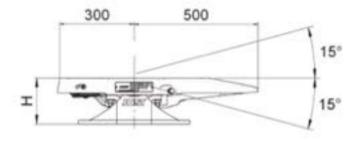
| Fig. | Description                       | Part No.  |
|------|-----------------------------------|-----------|
| 16   | Socket head bolt, compl. with nut | SK212115  |
| 17   | Split pin                         | SK1974    |
| 18   | Spring hook Pre 1996              | SK1436    |
| 19   | Lubrication fitting steel         | SK1989    |
| 20   | Grease nipple compl               | SK1976    |
| 21   | Adjusting screw                   | SK310505  |
| 22   | Hexagon nut                       | SK212178  |
| 23   | Guide piece                       | SK320507  |
| 24   | Eye bolt comp.                    | SK212204  |
| 25   | Grease nipple                     | SK312111  |
| 26   | Lubrication tubing nylon          | SK310802  |
| 27   | Tubing clamp                      | SK312113  |
| 28   | Spring latch 1996 onwards         | SK312152  |
| 29   | Bolt for spring latch             | SK352103  |
| 30   | Spring for latch                  | SK312159  |
| 33   | Handle Extension                  | SK3105113 |
| 34   | Internal Operating Handle         | SK3105115 |
| 35   | Head Bolt                         | SK1513    |
| 36   | Extended Handle Bolt              | SK242150  |
| 37   | Cable Extension                   | SK352102  |

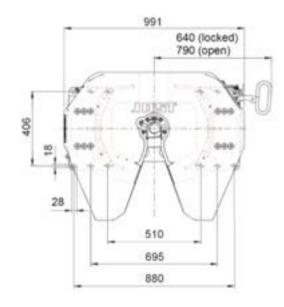
| Repair Kits                 |                               |              |  |  |
|-----------------------------|-------------------------------|--------------|--|--|
| Fig.                        | Repair Kits                   | Part No.     |  |  |
| 01, 02, 03, 10, 11          | Repair kit for locking device | SK322150Z    |  |  |
| 01, 02, 03                  | Repair kit for locking device | SK322152Z    |  |  |
| 01, 02, 03, 08, 10, 11, 18, | Repair kit for locking device | SK312150     |  |  |
| 13, 14, 16                  | Repair kit for rubber bearing | SK212169Z    |  |  |
| 28, 29, 30                  | Repair kit for spring latch   | SK312152 Kit |  |  |

# **JSK37 CX Rubber Mount**

#### With Wear Ring & External Jaw Lubrication







**Applications: Stock crate** 

Fridge van Tanker B-double Road train

Sturdier fifth wheel coupling plate, with central relief to avoid load concentration on the coupling system. A heavy-duty fifth wheel coupling for operation in arduous conditions.

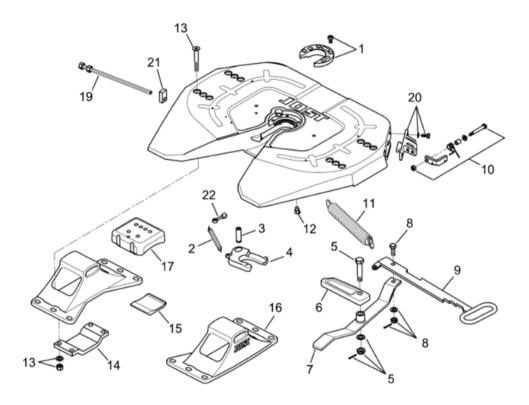
Pedestals fixed by 6 bolts. Hole areas have been reinforced.

Lock jaw and wear ring can be replaced without difficulty in a few minutes with the fifth wheel still in position. Mounting must be carried out in accordance with our mounting instruction.

| Туре         | Overall Height<br>mm | Imposed Load<br>kg | D-Value<br>kN | Weight Approx.<br>kg | Approval Number |
|--------------|----------------------|--------------------|---------------|----------------------|-----------------|
| JSK37CX/150  | 150                  | 24000              | 240           | 162                  | CTA-045374      |
| JSK37CX/170  | 170                  | 24000              | 240           | 168                  |                 |
| JSK37CX/185  | 185                  | 24000              | 240           | 170                  |                 |
| JSK37CX/220  | 220                  | 24000              | 240           | 179                  |                 |
| JSK37CX/250  | 250                  | 24000              | 240           | 182                  |                 |
| *JSK37CX/300 | 300                  | 24000              | 240           | 190                  |                 |

<sup>\*</sup> Note 300mm non weldable pedestals

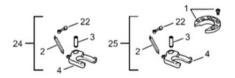
## **Spare parts for type JSK37CX**

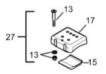




| Fig. | Description               | Code        |
|------|---------------------------|-------------|
| 01   | Wearing ring and bolts    | QR00269J00  |
| 02   | Lock jaw spring           | SK847       |
| 03   | Pivot                     | SK210667    |
| 04   | Locking jaw               | SK1489Z     |
| 05   | Bolt (complete)           | SK322101    |
| 06   | Locking bolt              | SK320506    |
| 07   | Lever with bushing        | SK310518    |
| 80   | Head bolt                 | SK1513      |
| 09   | Lever handle              | SK310515    |
| 10   | Latch kit                 | SK312152KIT |
| 11   | Double tension spring     | SK310520    |
| 12   | Fitting                   | SK312111    |
| 13   | Complete countersunk bolt | SK212115    |

| Fig. | Description                   | Code       |
|------|-------------------------------|------------|
| 14   | Mounting bracket              | QR00215J01 |
| 15   | Lower rubber cushion          | SK21025    |
| 16a  | Pedestal (150mm)              | SK210402X  |
| 16b  | Pedestal (170mm)              | SK210421X  |
| 16c  | Pedestal (185mm)              | SK210401X  |
| 16d  | Pedestal (220mm)              | SK210418X  |
| 16e  | Pedestal (250mm)              | SK210414X  |
| 16f  | Pedestal (300mm)              | SK210420   |
| 17   | Upper Rubber Cushion          | SK1259     |
| 19   | Adjustment screw              | AD01148B80 |
| 20   | Guide latch complete security | QR00270J00 |
| 21   | Guide with thread             | SK320507   |
| 22   | Pin with eyelet               | SK212204   |

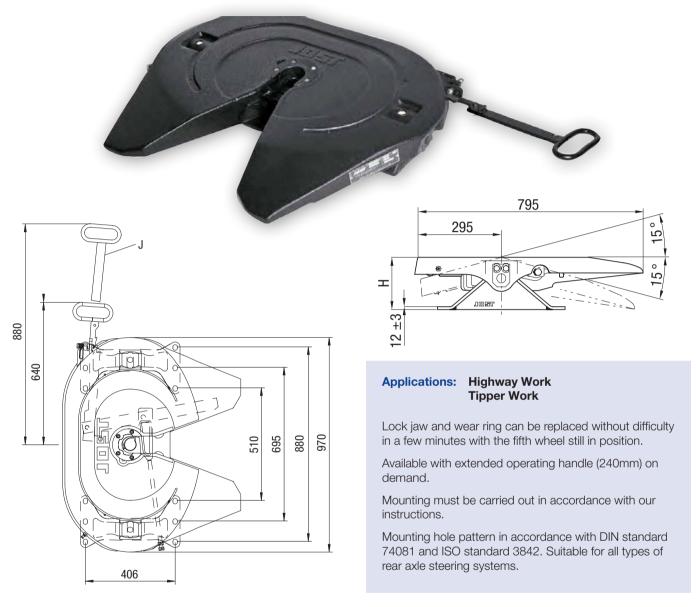




| Fig. | Repair Kits   | Part No.   |  |
|------|---|------------|--|
| 24   | Locking latch kit - items 2, 3, 4, 22                       | SK322152Z  |  |
| 25   | Kit locking claw - items 1, 2, 3, 4, 22                     | SK322150CX |  |
| 27   | Base plate fastening kit - items 13, 15, 17 (with 4 screws) | SK212169CX |  |

# **JSK37E Pivot bearing**

## With Wear Ring & External Jaw Lubrication

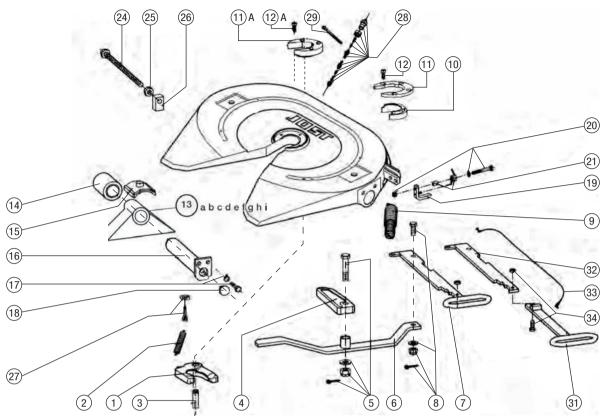


The right to alter specifications is reserved.

| Туре        | Overall height mm | Imposed Load<br>kg | D-value<br>kN | Weight approx<br>kg. | Pedestal<br>style | Approval<br>Number |
|-------------|-------------------|--------------------|---------------|----------------------|-------------------|--------------------|
| JSK37E130MM | 130               | 20000              | 190           | 122                  | Weld on           | CTA-036821         |
| JSK37E150MM | 150               | 20000              | 190           | 124                  | Weld on*          |                    |
| JSK37E170MM | 170               | 20000              | 190           | 129                  | Weld on*          |                    |
| JSK37E185MM | 185               | 20000              | 190           | 129                  | Weld on*          |                    |
| JSK37E195MM | 195               | 20000              | 190           | 130                  | Weld on           |                    |
| JSK37E205MM | 205               | 20000              | 190           | 132                  | Weld on           |                    |
| JSK37E215MM | 215               | 20000              | 190           | 132                  | Weld on           |                    |
| JSK37E235MM | 235               | 20000              | 190           | 134                  | Weld on           |                    |
| JSK37E255MM | 255               | 20000              | 190           | 137                  | Weld on           |                    |

<sup>\*</sup>Bolt on pedestals are available on request

## **Spare parts for JSK37E**





| Fig. | Description              | Part No.  |
|------|--------------------------|-----------|
| 01   | Jaw                      | SK1489Z   |
| 02   | Jaw Spring               | SK847     |
| 03   | Jaw Pivot                | SK210667  |
| 04   | Locking Bar              | SK320506  |
| 05   | Lock Bar Bolt            | SK322101  |
| 06   | Release Lever            | SK310518  |
| 07   | Operating Handle         | SK310515  |
| 80   | Head Bolt                | SK1513    |
| 09   | Double Tension Spring    | SK310520  |
| 10   | Wearing Ring Insert      | SK310592  |
| 11   | Wearing Ring Fixture     | SK310593  |
| 11a  | Wearing Ring Fixture     | SK210519  |
| 12   | Socket Head Bolt         | SK312155  |
| 12a  | Socket Head Bolt         | SK212107  |
| 13a  | Fabricated Pedestals 130 | SK2920130 |
| 13b  | Fabricated Pedestals 150 | SK2920150 |
| 13c  | Fabricated Pedestals 170 | SK2920170 |
| 13d  | Fabricated Pedestals 185 | SK2920185 |
| 13e  | Fabricated Pedestals 195 | SK2920195 |
| 13f  | Fabricated Pedestals 205 | SK2920205 |
| 13g  | Fabricated Pedestals 215 | SK2920215 |
| 13h  | Fabricated Pedestals 235 | SK2920235 |

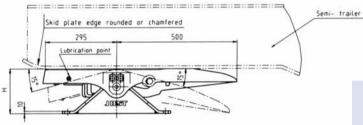
| Fig. | Description                     | Part No.  |
|------|---------------------------------|-----------|
| 13i  | Fabricated Pedestals 255        | SK2920255 |
| 13j  | Bolt on Pedestals 150mm         | SK290442  |
| 13k  | Bolt on Pedestals 170mm         | SK290441E |
| 131  | Bolt on Pedestals 185mm         | SK290440  |
| 14   | Rubber bushing for bolt on feet | SK290595  |
| 14a  | Poly Bush                       | SK290520  |
| 15   | Collar                          | SK310595  |
| 16   | Swivel Pin                      | SK310405  |
| 17   | Swivel Pin Bolt                 | SK312128  |
| 18   | Swivel Pin Plug                 | JS 110112 |
| 19   | Spring Latch 1996 onwards       | SK312152  |
| 20   | Bolt for Spring Latch           | SK352103  |
| 21   | Spring for Latch                | SK312159  |
| 24   | Adjusting Screw                 | SK310597  |
| 25   | Hex Nut                         | SK212178  |
| 26   | Guide Piece                     | SK320507  |
| 27   | Eye Bolt Complete               | SK212204  |
| 28   | Grease Line Complete            | SK310802  |
| 31   | Handle Extension                | SK3105113 |
| 32   | Internal Operating Handle       | SK3105115 |
| 33   | Cable Extension                 | SK352102  |
| 34   | Extended Handle Bolt            | SK242150  |

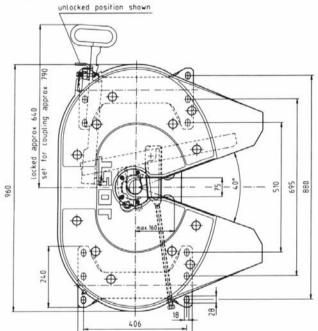
| Fig.                  | Repair Kits                   | Part No.  |
|-----------------------|-------------------------------|-----------|
| 01, 02, 03            | Repair kit for locking device | SK322152Z |
| 14, 15, 16,<br>17, 18 | Repair kit                    | SK3121061 |

| Fig.                          | Repair Kits                   | Part No.     |
|-------------------------------|-------------------------------|--------------|
| 01, 02, 03, 08,<br>10, 12, 28 | Repair kit for locking device | SK3121060Z   |
| 10, 11, 12                    | Repair kit for wearing ring   | SK310594     |
| 22, 23, 24                    | Repair kit for spring latch   | SK312152 Kit |

# **JSK37EW Pivot Bearing - Low Maintenance**







Applications: Highway work Tipper Work

Low maintenance fifth wheel coupling:

- maintenance free top plate
- maintenance free rubber cushioned pivot bearings
- maintenance free wear ring
- only one remaining grease point the lock jaw (little grease required)

Lock jaw and wear ring can be replaced without difficulty in a few minutes with the fifth wheel still in position.

Available with extended operating handle (240mm) on demand.

Mounting must be carried out in accordance with our instructions.

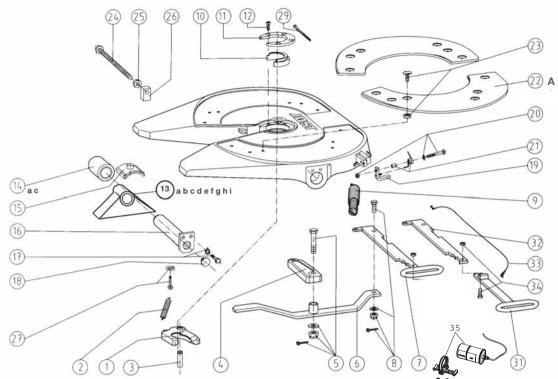
Mounting hole pattern in accordance with DIN standard 74081 and ISO standard 3842. Suitable for all types of rear axle

The right to alter specifications is reserved.

| Туре         | Overall height mm | Imposed Load<br>kg | D-value<br>Kn | Weight approx<br>kg. | Pedestal<br>Style | Approval<br>Number |
|--------------|-------------------|--------------------|---------------|----------------------|-------------------|--------------------|
| JSK37EW130MM | 130               | 20000              | 190           | 120                  | Weld on           | CTA-036821         |
| JSK37EW150MM | 150               | 20000              | 190           | 123                  | *Weld on          |                    |
| JSK37EW170MM | 170               | 20000              | 190           | 128                  | *Weld on          |                    |
| JSK37EW185MM | 185               | 20000              | 190           | 128                  | *Weld on          |                    |
| JSK37EW195MM | 195               | 20000              | 190           | 130                  | Weld on           |                    |
| JSK37EW205MM | 205               | 20000              | 190           | 131                  | Weld on           |                    |
| JSK37EW215MM | 215               | 20000              | 190           | 132                  | Weld on           |                    |
| JSK37EW235MM | 235               | 20000              | 190           | 133                  | Weld on           |                    |
| JSK37EW255MM | 255               | 20000              | 190           | 136                  | Weld on           |                    |

<sup>\*</sup>Bolt on pedestals are available on request.

## **Spare parts for JSK37EW**





| Fig. | Description                 | Part No.   |
|------|-----------------------------|------------|
| 01   | Lock jaw                    | SK1489Z    |
| 02   | Lock jaw spring             | SK847      |
| 03   | Pivot for lock jaw, compl.  | SK210667   |
| 04   | Locking bar                 | SK320506   |
| 05   | Locking bar bolt, compl.    | SK322101   |
| 06   | Lever                       | SK310518   |
| 07   | Operating handle (standard) | SK310515   |
| 08   | Head bolt                   | SK1513     |
| 09   | Double tension spring       | SK310520   |
| 10   | Wearing ring insert         | SK310592   |
| 11   | Wearing ring fixture        | SK310593   |
| 12   | Socket head bolt            | SK312155   |
| 13a  | Fabricated Pedestals 130    | SK2920130  |
| 13b  | Fabricated Pedestals 150    | SK2920150  |
| 13c  | Fabricated Pedestals 170    | SK2920170  |
| 13d  | Fabricated Pedestals 185    | SK2920185  |
| 13e  | Fabricated Pedestals 195    | SK2920195  |
| 13f  | Fabricated Pedestals 205    | SK2920205  |
| 13g  | Fabricated Pedestals 215    | SK2920215  |
| 13h  | Fabricated Pedestals 235    | SK2920235  |
| 13i  | Fabricated Pedestals 255    | SK2920255  |
| 13j  | Bolt on Pedestals 150mm     | SK2904/42  |
| 13k  | Bolt on Pedestals 170mm     | SK2904/41E |
| 131  | Bolt on Pedestals 185mm     | SK2904/40  |

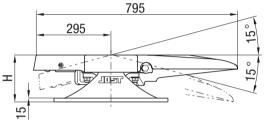
| Fig. | Description                     | Part No.      |
|------|---------------------------------|---------------|
| 14a  | Rubber bushing for bolt on feet | SK290520E     |
| 15   | Collar                          | SK310595      |
| 16   | Swivel pin                      | SK310405      |
| 17   | Socket head bolt, compl.        | SK312128      |
| 18   | Plug                            | JS110112      |
| 19   | Latch                           | SK312152      |
| 20   | Bolt for spring latch           | SK352103      |
| 21   | Spring noose with spacer        | SK312159      |
| 22   | Top plate liner, right hand     | SK3105/130L   |
| 22   | Top plate liner, left hand      | SK3105/130R   |
| 23   | Hexalobular bolt (new style)    | SKT 001006000 |
| 24   | Adjusting screw                 | SK310597      |
| 25   | Hexagon nut                     | SK212178      |
| 26   | Guide piece                     | SK320507      |
| 27   | Eye bolt, compl.                | SK212204      |
| 28   | Lubrication tubing, compl.      | SK310802      |
| 29   | Tubing clamp                    | SK312113      |
| 31   | Extended handle, grip           | SK3105113     |
| 32   | Extended handle, lower part     | SK3105115     |
| 33   | Latch cord, compl.              | SK352102      |
| 34   | Socket head bolt, compl.        | SK242150      |
| 35   | Lubetronic grease cartridge     | SKE003110310  |

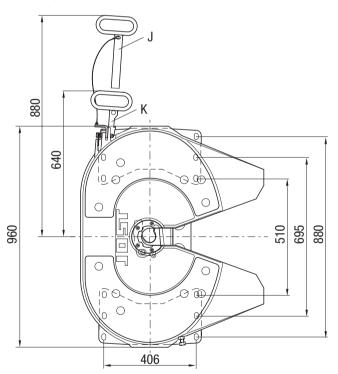
| Fig.                   | Repair Kits                   | Part No.     |
|------------------------|-------------------------------|--------------|
| 1, 2, 3                | Repair kit for locking device | SK322152Z    |
| 1, 2, 3, 8, 10, 12, 28 | Repair kit for locking device | SK3121060Z   |
| 10, 11, 12             | Repair kit for wearing ring   | SK310494     |
| 14, 15, 16, 17, 18     | Repair kit for bearing        | SK3121061    |
| 19, 20, 21             | Repair kit for spring latch   | SK312152 Kit |

| Fig.  | Repair Kits                                      | Part No.  |
|-------|--|-----------|
| 22a   | Steel Inserts 6 bolt LH                          | SK4001L   |
| 22a   | Steel Inserts 6 bolt RH                          | SK4001R   |
| 22    | Steel Inserts (6 bolt) kit                       | SK4000    |
| 22,23 | Repair kit for top plate liner 10mm (6 bolt) kit | SK3106007 |
| 33,34 | Handle extension, compl.                         | SK3121063 |

# JSK37CZW Rubber Mounting - Low Maintenance







**Applications: Tanker** 

General freight Stock crate Fridge van B-double Road train

Low maintenance fifth wheel coupling:

- maintenance free top plate
- maintenance free rubber cushioned pivot bearings
- maintenance free wearing ring
- only one remaining grease point the lock jaw (little grease required)

Lock jaw and wearing ring can be replaced without difficulty in a few minutes with the fifth wheel still in position.

Available with extended operating handle (240mm) on demand.

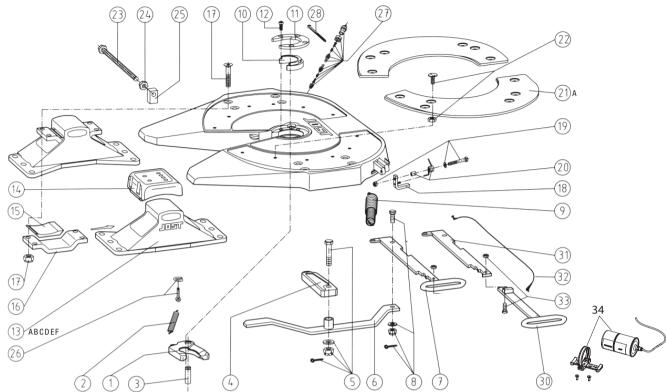
Mounting must be carried out in accordance with our instructions.

Mounting hole pattern in accordance with DIN standard 74081 and ISO standard 3842.

|             | Overall height | Imposed Load | D-value | Weight approx |                        |
|-------------|----------------|--------------|---------|---------------|------------------------|
| Type        | mm             | kg           | Kn      | kg.           | <b>Approval Number</b> |
| JSK37C150W  | 150            | 20000        | 190     | 136           | CTA-041876             |
| JSK37C170W  | 170            | 20000        | 190     | 139           |                        |
| JSK37C185W  | 185            | 20000        | 190     | 141           |                        |
| JSK37C220W  | 220            | 20000        | 190     | 143           |                        |
| JSK37C250W  | 250            | 20000        | 190     | 145           |                        |
| *JSK37C300W | 300            | 20000        | 190     | 161           |                        |

<sup>\*</sup> Note 300mm non weldable pedestals

## Spare parts for JSK37CZW



| Fig. | Description                       | Part No.  |
|------|-----------------------------------|-----------|
| 01   | Lock jaw                          | SK1489Z   |
| 02   | Lock jaw spring                   | SK847     |
| 03   | Pivot for lock jaw, compl.        | SK210667  |
| 04   | Locking bar                       | SK320506  |
| 05   | Locking bar bolt, compl.          | SK322101  |
| 06   | Lever                             | SK310518  |
| 07   | Operating handle (standard)       | SK310515  |
| 08   | Head bolt                         | SK1513    |
| 09   | Double tension spring             | SK310520  |
| 10   | Wear ring insert                  | SK310592  |
| 11   | Wear ring                         | SK310593  |
| 12   | Socket head bolt                  | SK312155  |
| 13a  | Pedestal (150mm) bolt on\weldable | SK210402X |
| 13b  | Pedestal (170mm) bolt on\weldable | SK210421X |
| 13c  | Pedestal (185mm) bolt on\weldable | SK210401X |
| 13d  | Pedestal (220mm) bolt on\weldable | SK210418X |
| 13e  | Pedestal (250mm) bolt on\weldable | SK210414X |
| 13f  | Pedestal (300mm) bolt on          | SK210420  |
| 14   | Upper rubber cushion              | SK1259    |
| 15   | Lower rubber cushion              | SK210525  |

| Fig. | Description                             | Part No.      |
|------|---|---------------|
| 16   | Mounting bracket                        | SK1372        |
| 17   | Countersunk bolt, compl.                | SK212115      |
| 18   | Latch                                   | SK312152      |
| 19   | Bolt for spring latch                   | SK352103      |
| 20   | Spring noose with spacer                | SK312159      |
| 21   | Top plate liner, right hand (new style) | SK3105/130L   |
| 21   | Top plate liner, left hand (new style)  | SK3105/130R   |
| 22   | Hexalobular bolt (new style bolt only)  | SKT 001006000 |
| 23   | Adjusting screw                         | SK310597      |
| 24   | Hexagon nut                             | SK212178      |
| 25   | Guide piece                             | SK320507      |
| 26   | Eye bolt, compl.                        | SK212204      |
| 27   | Lubrication tubing, compl.              | SK310802      |
| 28   | Tubing clamp                            | SK312113      |
| 30   | Extended handle, grip                   | SK3105113     |
| 31   | Extended handle, lower part             | SK3105115     |
| 32   | Latch cord, compl.                      | SK352102      |
| 33   | Socket head bolt, compl.                | SK242150      |
| 34   | Lubetronic grease cartridge             | SKE003110310  |

#### **Repair Kits**

| Hepun      | TATES                                   |              |
|------------|---|--------------|
| Fig.       | Repair Kits                             | Part No.     |
| 01, 02, 03 | Repair kit for locking device           | SK322152Z    |
| 10, 11, 12 | Repair kit for wearing ring             | SK310594     |
| 14, 15, 17 | Repair kit for bearing                  | SK212169Z    |
| 18, 19, 20 | Repair kit for spring latch             | SK312152     |
| 19, 20, 21 | Repair kit for spring latch             | Kit SK312159 |
| 21, 22     | Repair kit for top plate liner (6 bolt) | SK3106007    |

| Fig.       | Repair Kits                    | Part No.     |
|------------|--------------------------------|--------------|
| 21, 22a    | Steel Inserts Kit 8mm (6 bolt) | SK4000       |
| 22         | Steel Inserts 6 bolt LH        | SK4001L      |
| 22         | Steel Inserts 6 bolt RH        | SK4001R      |
| 30, 32, 33 | Handle extension, compl.       | SK3121063    |
| 18, 19, 20 | Repair kit for spring latch    | SK312152 Kit |

The right to alter specifications is reserved

# JSK42

### **Technical Specification**

The fifth wheel coupling complies with the following directives/ standards: 94/20/ EC - Class G50, DIN 74081, ISO 3842. Suitable for mounting 2" king pins (50) as per 94/20/EC, DIN 74085, ISO 337 and steering wedges as per 94/20/EC, DIN 74085, AS/NZS 4968-1:2003.

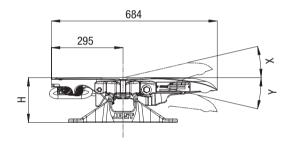


#### **Technical Data**

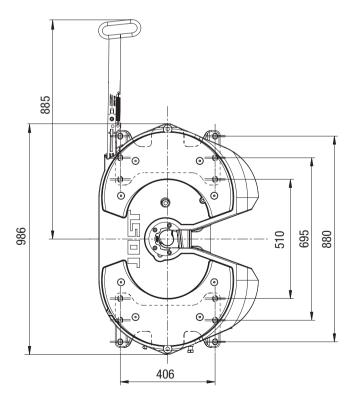
| D value (kN) | Imposed load U (t) | <b>Approval Number</b> |
|--------------|--------------------|------------------------|
| 200          | 20                 | CTA-036130             |

#### **Selection Table**

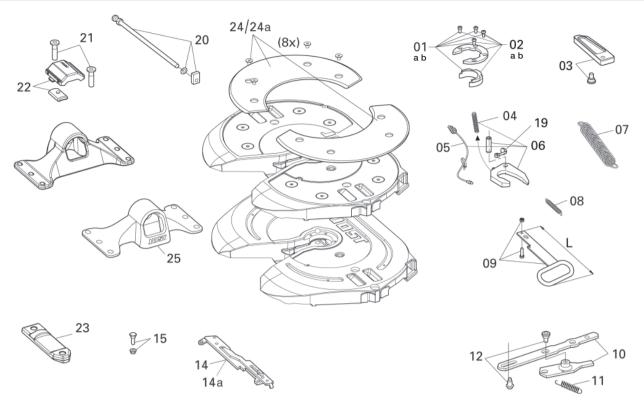
| Order No.  | H<br>(mm) | Standard or<br>Greaseless |
|------------|-----------|---------------------------|
| JSK42WJ150 | 150       | G                         |
| JSK42WJ185 | 185       | G                         |
| JSK42WJ225 | 225       | G                         |
| JSK42WJ250 | 250       | G                         |
| JSK42ZJ150 | 150       | S                         |
| JSK42ZJ185 | 185       | S                         |
| JSK42ZJ225 | 225       | S                         |
| JSK42ZJ250 | 250       | S                         |



### **Plate mounting**



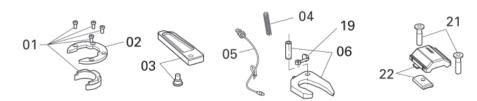
## **Spare parts for JSK42**



| Item | Designation                             | Order No.    | Quantity per JSK |
|------|---|--------------|------------------|
| 01a  | Wearing part with mounting bolt kit     | SKE001740020 | 1                |
| 01b  | Wear ring insert                        | SK310592     | 1                |
| 02a  | Mounting ring kit                       | SK310594     | 1                |
| 02b  | Wear ring                               | SK310593     | 1                |
| 03   | Locking bar with mounting bolt          | SKE001009720 | 1                |
| 04   | Tension spring                          | SK847        | 1                |
| 05   | Lubrication tube, compl. with cable tie | SK310802     | 1                |
| 06   | Lock jaw                                | SK322152 Z   | 1                |
| 07   | Double tension spring                   | SK310520     | 1                |
| 80   | Locking spring                          | SKE001440000 | 1                |
| 09   | Short handle, c/w 08                    | SKE001390020 | 1                |
| 09   | Long handle, c/w 08                     | SKE001390120 | 1                |
| 10   | Lever kit                               | SKE001380020 | 1                |
| 11   | Lever spring                            | SKE001009800 | 1                |

| Item | Designation                   | Order No.    | Quantity per JSK |
|------|-------------------------------|--------------|------------------|
| 12   | Lever bolts                   | SKE001750020 | 1                |
| 14   | Lever, compl.                 | SKE001620020 | 1                |
| 14a  | Sensor locking bar lever kit  | SKE001360300 | 1                |
| 15   | Lever bolt                    | SKE001650020 | 1                |
| 19   | Eye bolt, compl.              | SK212204     | 1                |
| 20   | Adjusting screw with guide    | SKE500740220 | 1                |
| 21   | Bolt                          | SKE001011400 | 4                |
| 22   | Collar, compl.                | SKE001370020 | 2                |
| 23   | Bridge                        | SKE001530220 | 2                |
| 24   | Skid plate with bolts, compl. | SKE100702010 | 1                |
| 24a  | Steel inserts                 | SKE6000      | 1                |
| 25   | Pedestal H 150                | SKE001005620 | 2                |
| 25   | Pedestal H 185                | SKE001005720 | 2                |
| 25   | Pedestal H 225                | SKE001005820 | 2                |
| 25   | Pedestal H 250                | SKE001005920 | 2                |

## Repair and retrofit kits

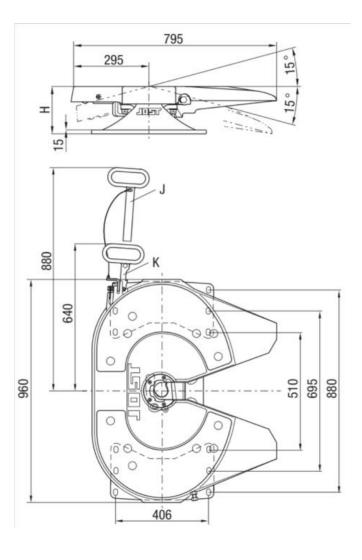


| Item                       | Designation   | Order No.    |
|----------------------------|---------------|--------------|
| 01, 02, 03, 04, 05, 06, 19 | Lock compl.   | SKE001640020 |
| 21, 22                     | Collar compl. | SKE001370020 |
| 24a                        | Steel Inserts | SKE6000      |



# **JSK37 Sensor Coupling**





#### Features

- Safety solution with remote dash display
- Road-Train rated 190kN
- JSK37C 3 point sensor with dash display
- Connections sensor, king pin sensor and coupling height sensor.
- Integrated dash display available (truck specific)
- Extended handle for easy operation
- Optional lubetronic technology.
- Greaseable and greaseless options available





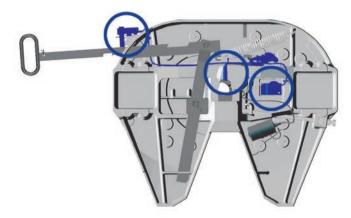
# **Sensor Coupling**

A = sensor for connection status

B = sensor for king pin

**C** = sensor for coupling height







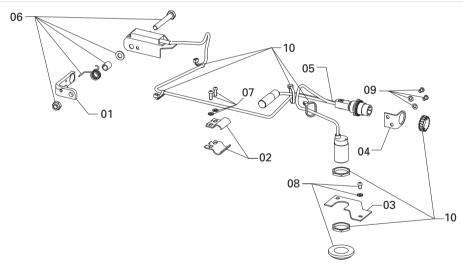
Cast coupling JSK37

#### Advantages at a glance

- Sensors provide best possible safety during the coupling process
- Increased safety even in poor visibility
- A remote display processes the signal and displays it in the driver's cab

#### **Technical Features**

- A sensor permanently monitors the connection status
- A second sensor controls the position of the king pin
- An additional third sensor monitors the contact locking position and displays it in the driver's cab.
- The sensors are located in protected zones on non-moving parts
- · Electromagnetical compatibility according to highest standards
- Also suitable for use in the transport of dangerous goods (ADR)

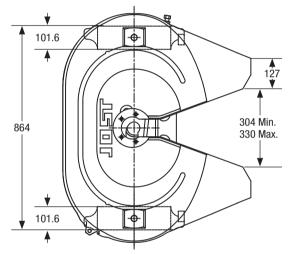


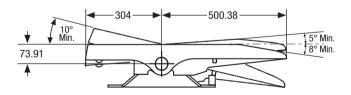
| Fig. | Description  | Remark                  | Part No.      | Quantity |
|------|--|-------------------------|---------------|----------|
| 01   | Latch plate with locking magnet  | with 06                 | SKE2905104    | 1        |
| 02   | Latch plate with locking magnet  | with 07                 | SK2905130     | 1        |
| 03   | Retaining plate for trailer sensor                                     | with 08                 | SKE003220100  | 1        |
| 04   | Retaining plate for trailer sensor                                     | with 09                 | SKE 004650000 | 1        |
| 05   | 3-sensor cable harness with retaining plate for locking sensor - JSK37 | with 06, 07, 08, 09, 10 | SKE002040500  | 1        |
|      | Sensor display with 3 sensors - 24V                                    | oΖ                      | SKE501620200  | 1        |
|      | Sensor display with 3 sensors - 12V                                    | oΖ                      | SKE501620500  | 1        |
|      | Extension cable, standard quality                                      | oZ                      | SKE002110100  | 1        |
|      | Extension cable, ADR quality   | oZ                      | SKE002110200  | 1        |

Refer to JSK37CZ and JSK37CZW for parts breakdown.

# **JSK37027 Roll Back Application**







Applications: Fridge van

Roll back application

Tipper Work

Low maintenance fifth wheel coupling:

- maintenance free top plate
- maintenance free rubber cushioned pivot bearings
- maintenance free wear ring
- only one remaining grease point the lock jaw (little grease required)

Lock jaw and wear ring can be replaced without difficulty in a few minutes with the fifth wheel still in position.

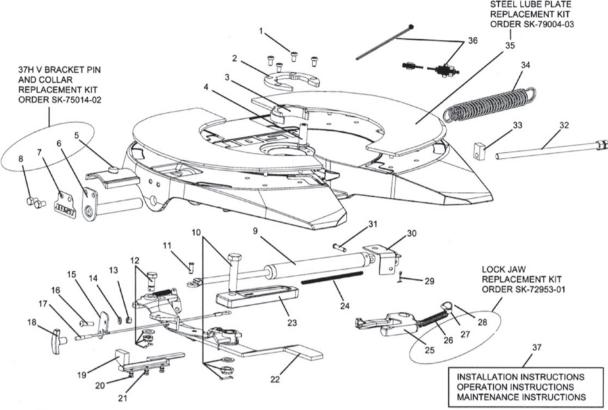
Mounting must be carried out in accordance with our instructions.

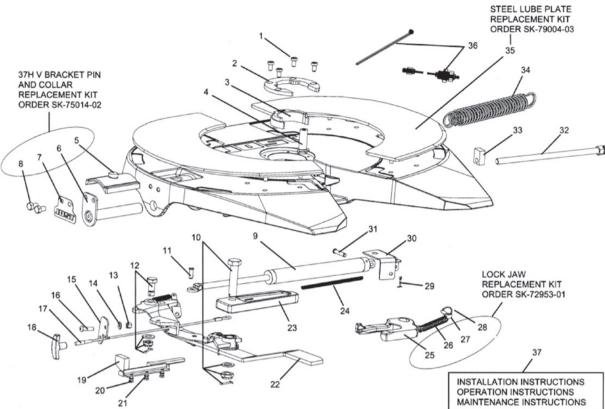
Pneumatic operation

Also available in low profile ball race assembly

| Туре        | Overall height mm | Imposed Load on tractor<br>kg | D-value<br>kN | Weight approx.<br>kg | Pedestal<br>Style | Approval<br>Number |
|-------------|-------------------|-------------------------------|---------------|----------------------|-------------------|--------------------|
| JSK37027150 | 165               | 20000                         | 190           | 123                  | Weld on           | CTA-038553         |
| JSK37027170 | 185               | 20000                         | 190           | 128                  | Weld on           |                    |
| JSK37027185 | 200               | 20000                         | 190           | 128                  | Weld on           |                    |
| JSK37027195 | 210               | 20000                         | 190           | 130                  | Weld on           |                    |
| JSK37027205 | 220               | 20000                         | 190           | 131                  | Weld on           |                    |
| JSK37027215 | 230               | 20000                         | 190           | 132                  | Weld on           |                    |
| JSK37027235 | 250               | 20000                         | 190           | 133                  | Weld on           |                    |
| JSK37027255 | 270               | 20000                         | 190           | 136                  | Weld on           |                    |

#### **Spare parts for JSK37027**





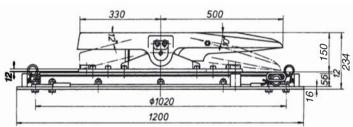
| Fig. | Description   | Part No.  | Fig. | Description                              | Part No.  |
|------|---|-----------|------|--|-----------|
| 01   | Cushion ring bolt                                       | SK7312155 | 21   | 1/4" split lock washer                   | SK7030305 |
| 02   | Cushion ring plate                                      | SK310593  | 22   | Release arm assembly                     | SK7901637 |
| 03   | Cushion ring insert                                     | SK310592  | 23   | Locking bar                              | SK320506  |
| 04   | Pivot pin for lock jaw                                  | SK7210667 | 24   | Cable spring                             | SK7100504 |
| 05   | Collar  | SK7310595 | 25   | Lock jaw                                 | SK1489LZ  |
| 06   | Bracket pin   | SK7310405 | 26   | Lock jaw spring                          | SK847     |
| 07   | Tab washer  | SK7310447 | 27   | Eyebolt                                  | SK210669  |
| 80   | $\frac{1}{2}$ 13 × $\frac{3}{4}$ hex bolt               | SK7020215 | 28   | Ring                                     | SK210670  |
| 09   | Air cylinder  | SK7902013 | 29   | $\frac{1}{8}$ " dia × 1" lg cotter pin   | SK7010103 |
| 10   | Locking bar bolt assembly                               | SK7322101 | 30   | Cylinder mount bracket                   | SK7902008 |
| 11   | $3\%$ " dia. $\times$ $3\%$ " lg slic pin               | SK7010501 | 31   | $3\%$ " dia $\times$ $13\%$ " clevis pin | SK7010201 |
| 12   | Pivot bolt assembly                                     | SK71513   | 32   | Adjustment screw with hex nut            | SK7901005 |
| 13   | 3/8 16 locknut  | SK7040102 | 33   | Guide piece                              | SK7320507 |
| 14   | 3/8" SAE flat washer                                    | SK7030201 | 34   | Double tension spring                    | SK310520  |
| 15   | Handle guide  | SK7901632 | 35   | Narrow topplate lube plate               | SK7900505 |
| 16   | 3% 16 × 11.4" button screw                              | SK7020602 | 35a  | Steel inserts                            | SK5000L&R |
| 17   | Pull cable assembly                                     | SK7901646 | 36   | Lubricating kit                          | SK310802  |
| 18   | Thandle air release                                     | SK7101200 | 37   | Info pack                                | SK7502016 |
| 19   | Lock/unlock plate weldment                              | SK7901622 | 38   | Nut and bolt                             | SK3121027 |
| 20   | $\frac{1}{4}20 \times \frac{3}{4}$ " hex head cap screw | SK7020228 | 39   | Pneumatic air release system             | JOSTRK001 |

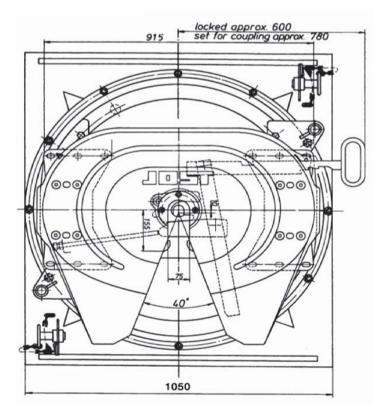
| Repair Kits        |                                     |              |  |  |
|--------------------|-------------------------------------|--------------|--|--|
| Fig.               | Repair Kits                         | Part No.     |  |  |
| 0136               | Repair kit for complete topplate    | SK7501315    |  |  |
| 0104, 2528, 36, 37 | Repair kit for cushion and lock jaw | SK7322150Z   |  |  |
| 5, 6, 7, 8 & Bush  | Repair kit includes both sides      | SK7501402AUS |  |  |
| 35a                | Steel insert kit                    | SK5000       |  |  |
| 35b                | Greaseless insert kit               | SK3106027    |  |  |



# LP37E Cast Top Stabilised Fifth Wheel Assembly 2"







Application: Highway work Tipper work

also available with:

16mm Base PlateLP37E 16 mm20mm Base PlateLP37E 20 mm

\*Note thicker base plate determines extra weight

\*\*Note other heights available on request

D-Value 190 kN
Overall height 234 mm
Imposed load 20000 kgs
Weight approx. 356 kgs

(for 16mm base plate)

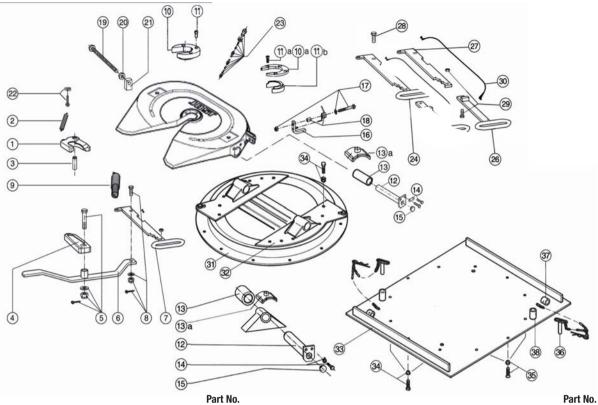
Approval Number JSK37E

- CTA-036821 LP Subassembly - CTA-047151

#### Twin lockouts.

Flush bolt heads on mounting plate in chassis mounting zone. Wear ring easily removed from above on JSK37E fifth wheel. Mounting must be carried out in accordance with our instructions.

## **Spare parts for LP37E Cast Top**





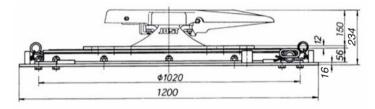
| Fig. | Description           | Part No.<br>LP37 E |
|------|-----------------------|--------------------|
| 01   | Jaw                   | SK1489Z            |
| 02   | Jaw Spring            | SK847              |
| 03   | Jaw Pivot             | SK210667           |
| 04   | Locking Bar           | SK320506           |
| 05   | Lock Bar Bolt         | SK322101           |
| 06   | Release Lever         | SK310518           |
| 07   | Operating Handle      | SK310515           |
| 80   | Head Bolt             | SK1513             |
| 09   | Double Tension Spring | SK310520           |
| 10   | Wear Ring Fixture     | SK210519           |
| 10a  | Wear Ring Fixture     | SK310593           |
| 11   | Wear Ring Bolt        | SK212107           |
| 11b  | Wear Ring Insert      | SK310592           |
| 11a  | Wear Ring Bolt        | SK312155           |
| 12   | Swivel Pin            | SK310405           |
| 13   | Pedestal Bush         | SK290520           |
| 13a  | Collar                | SK3105/95          |
| 14   | Swivel Pin Bolt       | SK312128           |
| 15   | Swivel Pin Plug       | JS110112           |
| 16   | Spring Latch          | SK312152           |
| 17   | Bolt for Spring Latch | SK352103           |
| 18   | Spring for Latch      | SK312159           |

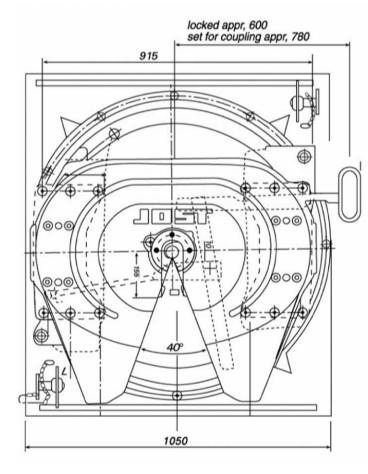
| Fig. | Description                                 | LP37 E    |
|------|---|-----------|
| 19   | Adjusting Screw                             | SK310597  |
| 20   | Hex Nut                                     | SK212178  |
| 21   | Guide Piece                                 | SK320507  |
| 22   | Eye Bolt Complete                           | SK212204  |
| 23   | Grease Line Complete                        | SK310802  |
| 24   | Operating Handle                            | SK310515  |
| 26   | Handle Extension                            | SK3105113 |
| 27   | Internal Operating Handle                   | SK3105115 |
| 28   | Head Bolt                                   | SK1513    |
| 29   | Extended Handle Bolt                        | SK242150  |
| 30   | Cable Extension                             | SK352102  |
| 31   | Ball bearing                                | KDL9006W  |
| 32   | Half Moon c/w 130mm or 150mm Ped.           | SK370402  |
| 33a  | Base plate (12mm) incl. 56, 57, 58          | SK370612  |
| 33b  | Base plate (16mm) incl. 56, 57, 58          | SK370616  |
| 33c  | Base plate (20mm) incl. 56, 57, 58          | SK370620  |
| 34   | Hex. bolt compl.                            | SK372104  |
| 35   | Countersunk bolt compl.                     | SK372105  |
| 36   | Lock out pin compl. with chain (old style)  | SK370610  |
| 36a  | Lock out pin compl. with R clip (new style) | SK370609  |
| 37   | Tube park                                   | SK370604  |
| 38   | Tube lock out (old style)                   | SK370605  |
| 38a  | Tube lock out (new style)                   | SK370504  |

| Repair Kits                |                               |            |  |  |
|----------------------------|-------------------------------|------------|--|--|
| Fig.                       | Repair Kits                   | Part No.   |  |  |
| 01, 02, 03                 | Repair kit for locking device | SK322152Z  |  |  |
| 12, 13, 13a, 14, 15        | Repair kit for locking device | SK3121061  |  |  |
| 01, 02, 03, 08, 11, 23, 28 | Repair kit for locking device | SK3121060Z |  |  |
| 10, 11a, 11b               | Repair kit for wear ring      | SK310594   |  |  |

# **LP37CZ Cast Top** Low Profile Stabilised Fifth Wheel Assembly 2"







Application: Stock crate Fridge van General freight **Tankers** 

also available with:

16mm Base Plate LP37CZ 16mm 20mm Base Plate LP37CZ 20mm Narrow chassis width available ie European spec

\*Note: thicker base plate determines extra weight and height.

\*\*Note: other heights are available on request

D-Value 190 kN Overall height 234 mm Imposed load 20000 kgs Gross comb. weight 135000 kgs Weight approx. 367 kgs

(for 12mm base plate)

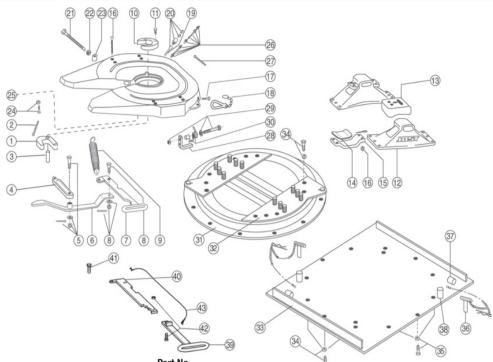
Approval Number JSK37CZ

- CTA-041876 LP Subassembly - CTA-047151

#### Twin lockouts.

Flush bolt heads on mounting plate in chassis mounting zone. Cast type unit equipped with external king pin grease point for additional lubrication to the jaw. Wear ring easily removed from above on JSK37CZ fifth wheel. Mounting must be carried out in accordance with our instructions.

## **Spare parts LP37CZ Cast Top**





| _    |                            | Part No.  | _    | A                        |
|------|----------------------------|-----------|------|--------------------------|
| Fig. | Description                | LP37 CZ   | Fig. | Description              |
| 01   | Lock jaw                   | SK1489Z   | 23   | Guide piece              |
| 02   | Lock jaw spring            | SK847     | 24   | Eye bolt compl.          |
| 03   | Pivot for lock jaw, compl. | SK210667  | 25   | Grease nipple            |
| 04   | Locking bar                | SK320506  | 26   | Lubrication tubing with  |
| 05   | Locking bar bolt, compl.   | SK322101  | 27   | Tubing clamp             |
| 06   | Lever                      | SK310518  | 28   | Spring Latch 1996 on     |
| 07   | Operating handle           | SK310515  | 29   | Bolt for Spring Latch    |
| 80   | Head bolt                  | SK1513    | 30   | Spring for Latch         |
| 09   | Double tension spring      | SK310520  | 31   | Ball bearing             |
| 10   | Wearing ring               | SK210519  | 32   | Half moon compl.         |
| 11   | Socket head bolt           | SK212107  | 33a  | Base plate (12mm) inc    |
| 12   | Pedestal (185mm)           | SK210401X | 33b  | Base plate (16mm) inc    |
|      | Pedestal (170mm)           | SK210421X | 33c  | Base plate (20mm) inc    |
|      | Pedestal (150mm)           | SK210402X | 34   | Hex. bolt compl.         |
| 13   | Upper rubber cushion       | SK1259    | 35   | Countersunk bolt com     |
| 14   | Lower rubber cushion       | SK210525  | 36   | Lock out pin compl. w    |
| 15   | Mounting bracket           | SK1372    | 36a  | Lock out pin compl. w    |
| 16   | Socket head bolt, compl.   | SK212115  | 37   | Tube park old style      |
| 17   | Split pin                  | SK1974    | 38   | Tube lock out (old style |
| 18   | Spring hook pre 1995       | SK1436    | 38a  | Tube lock out (new sty   |
| 18b  | Wedge                      | SK1436V   | 39   | Handle Extension         |
| 19   | Lubrication fitting        | SK1989    | 40   | Internal Operating Han   |
| 20   | Grease nipple compl        | SK1976    | 41   | Head Bolt                |
| 21   | Adjusting Screw            | SK310505  | 42   | Extended Handle Bolt     |
| 22   | Hexagon nut                | SK212178  | 43   | Cable Extension          |

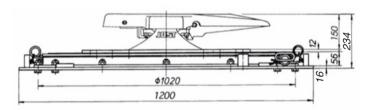
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|------|---|---------------------|
| Fig. | Description                                 | Part No.<br>LP37 CZ |
| 23   | Guide piece                                 | SK320507            |
| 24   | Eye bolt compl.                             | SK212204            |
| 25   | Grease nipple                               | SK312111            |
| 26   | Lubrication tubing with Fig. 27             | SK310802            |
| 27   | Tubing clamp                                | SK312113            |
| 28   | Spring Latch 1996 onwards                   | SK312152            |
| 29   | Bolt for Spring Latch                       | SK3521/03           |
| 30   | Spring for Latch                            | SK3121/59           |
| 31   | Ball bearing                                | KDL9006W            |
| 32   | Half moon compl.                            | SK370629            |
| 33a  | Base plate (12mm) incl. 36, 37, 38          | SK370612            |
| 33b  | Base plate (16mm) incl. 36, 37, 38          | SK370616            |
| 33c  | Base plate (20mm) incl. 36, 37, 38          | SK370620            |
| 34   | Hex. bolt compl.                            | SK372104            |
| 35   | Countersunk bolt compl.                     | SK372105            |
| 36   | Lock out pin compl. with chain (old style)  | SK370610            |
| 36a  | Lock out pin compl. with R clip (new style) | SK370609            |
| 37   | Tube park old style                         | SK370604            |
| 38   | Tube lock out (old style)                   | SK370605            |
| 38a  | Tube lock out (new style)                   | SK370504            |
| 39   | Handle Extension                            | SK3105113           |
| 40   | Internal Operating Handle                   | SK3105115           |
| 41   | Head Bolt                                   | SK1513              |
| 12   | Extended Handle Bolt                        | SK242150            |
| 43   | Cable Extension                             | SK352102            |
|      |   |                     |

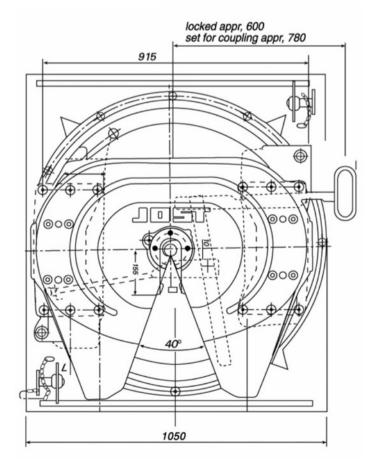
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|--------------------------------|-------------------------------|--------------|--|
| Fig.                           | Repair Kits                   | Part No.     |  |
| 01, 02, 03, 10, 11, 26         | Repair kit for locking device | SK322150Z    |  |
| 01, 02, 03, 26                 | Repair kit for locking device | SK322152Z    |  |
| 01, 02, 03, 08, 10, 11, 18, 26 | Repair kit for locking device | SK312150Z    |  |
| 13, 14, 16                     | Repair kit for rubber bearing | SK212169Z    |  |
| 28, 29, 30                     | Kit for latch                 | SK312152 KIT |  |

# LP37CX Cast Top Low Profile Stabilised Fifth Wheel Assembly 2"







Application: General freight Tankers Fridge van Stock crate

also available with:

16mm Base PlateLP37CX 16mm20mm Base PlateLP37CX 20mm

Narrow chassis width available ie. European spec

\*Note thicker base plate determines extra weight and height.

\*\*Note: other heights are available on request

D-value 240kN
Overall height 234mm
Imposed load 24000 kgs
Weight approx. 367 kgs

(for 12mm base plate)

Approval Number JSK37CX

- CTA-045374 LP Subassembly - CTA-047151

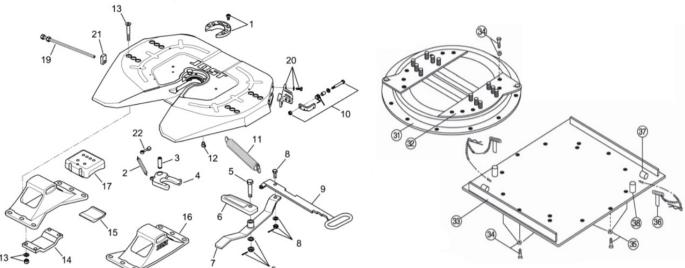
#### Twin lockouts.

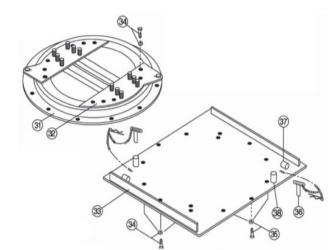
Flush bolt heads on mounting plate in chassis mounting zone. Cast type unit equipped with external king pin grease point for additional lubrication to the jaw.

Wearing easily removed from above on JSK37CX fifth wheel.

Mounting must be carried out in accordance with our instructions.

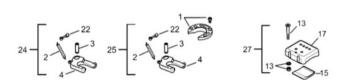
## **Spare parts for LP37CX Cast Top**





| Fig. | Description               | Code        |
|------|---------------------------|-------------|
| 01   | Wearing ring and bolts    | QR00269J00  |
| 02   | Lock jaw spring           | SK847       |
| 03   | Pivot                     | SK210667    |
| 04   | Locking jaw               | SK1489Z     |
| 05   | Bolt (complete)           | SK322101    |
| 06   | Lock bar                  | SK320506    |
| 07   | Lever with bushing        | SK310518    |
| 80   | Head bolt                 | SK1513      |
| 09   | Lever handle              | SK3105/15   |
| 10   | Latch kit                 | SK312152KIT |
| 11   | Double tension spring     | SK3105/20   |
| 12   | Fitting                   | SK312111    |
| 13   | Complete countersunk bolt | SK212115    |
| 14   | Mounting bracket          | QR00215J01  |
| 15   | Lower rubber cushion      | SK21025     |
| 16   | Pedestal (150mm)          | SK210402X   |
| 16a  | Pedestal (170mm)          | SK210421X   |
| 16b  | Pedestal (185mm)          | SK210401X   |
| 16c  | Pedestal (220mm)          | SK210418X   |
| 16d  | Pedestal (250mm)          | SK210414X   |
| 16e  | Pedestal (300mm)          | SK210420    |

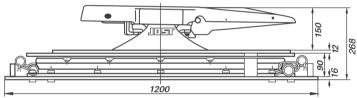
| Fig. | Description                                | Code       |
|------|--|------------|
| 17   | Upper Rubber Cushion                       | SK1259     |
| 19   | Adjustment screw                           | AD01148B80 |
| 20   | Guide latch complete security              | QR00270J00 |
| 21   | Guide with thread                          | SK320507   |
| 22   | Pin with eyelet                            | SK212204   |
| 31   | Ball bearing                               | KDL9006W   |
| 32   | Half mon complete                          | SK370629   |
| 33a  | Base plate (12mm) inc 36, 37, 38           | SK370612   |
| 33b  | Base plate (16mm) inc 36, 37, 38           | SK370616   |
| 33c  | Base plate (20mm) inc 36, 37, 38           | SK370620   |
| 34   | Hex bolt complete                          | SK372104   |
| 35   | Countersunk bolt complete                  | SK372105   |
| 36   | Lock out pin compl with chain (old style)  | SK370610   |
| 36a  | Lock out pin compl with R clip (new style) | SK370609   |
| 37   | Tube park (old style)                      | SK370604   |
| 38   | Tube lock out (old style)                  | SK370605   |
| 38a  | Tube lock out (new style)                  | SK370504   |

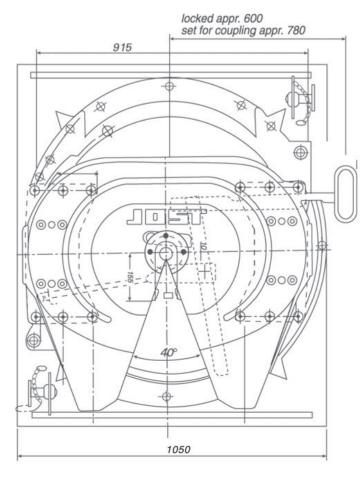


| Fig. | Repair Kits   | Part No.   |
|------|---|------------|
| 24   | Locking latch kit - items 2, 3, 4, 22                       | SK322152Z  |
| 25   | Kit locking claw - items 1, 2, 3, 4, 22                     | SK322150CX |
| 27   | Base plate fastening kit - items 13, 15, 17 (with 4 screws) | SK212169CX |

# DR37CZ CAST TOP Double Row Stabilised Fifth Wheel Assembly







# Application: General Freight Tankers

also available with:

16mm Base Plate DR37CZ 16mm 20mm Base Plate DR37CZ 20mm \*Note thicker base plate determines extra weight

and height.

Overall height 268 mm
Imposed load 20000 kgs
Gross comb. weight 135000 kgs
Weight approx. 405 kgs

(12mm Base)

D-Valve 190 kN Approval Number JSK37CZ - CTA-041876

DR Subassembly - CTA-060153

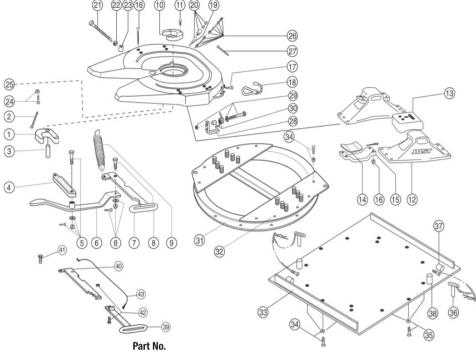
#### Twin lockouts.

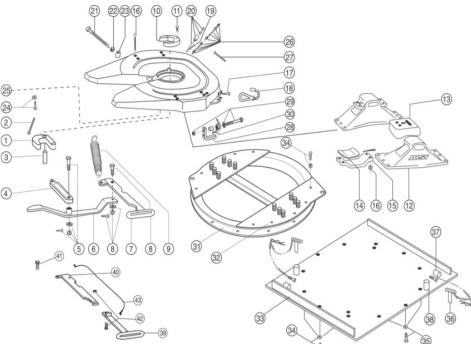
Flush bolt heads on mounting plate in chassis mounting zone. Cast type unit equipped with external king pin grease point for additional lubrication to the jaw.

Wearing ring easily removed from above on JSK37CZ fifth wheel.

Part No.

## **Spare parts for DR37CZ Cast Top**





| Fig. | Description                | DR 37 CZ  |
|------|----------------------------|-----------|
| 01   | Lock jaw                   | SK1489Z   |
| 02   | Lock jaw spring            | SK847     |
| 03   | Pivot for lock jaw, compl. | SK210667  |
| 04   | Locking bar                | SK320506  |
| 05   | Locking bar bolt, compl.   | SK322101  |
| 06   | Lever                      | SK310518  |
| 07   | Operating handle           | SK310515  |
| 08   | Head bolt                  | SK1513    |
| 09   | Double tension spring      | SK310520  |
| 10   | Wearing ring               | SK210519  |
| 11   | Socket head bolt           | SK212107  |
| 12   | Pedestal (185mm)           | SK210401X |
|      | Pedestal (170mm)           | SK210421X |
|      | Pedestal (150mm)           | SK210402X |
| 13   | Upper rubber cushion       | SK1259    |
| 14   | Lower rubber cushion       | SK210525  |
| 15   | Mounting bracket           | SK1372    |
| 16   | Socket head bolt, compl.   | SK212115  |
| 17   | Split pin                  | SK1974    |
| 18   | Spring hook                | SK1436    |
| 19   | Lubrication fitting        | SK1989    |
| 20   | Grease nipple compl        | SK1976    |
| 21   | Adjusting Screw            | SK310505  |
| 22   | Hexagon nut                | SK212178  |
|      |                            |           |

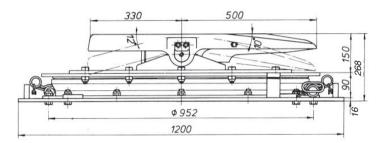
| Fig. | Description                                 | DR 37 CZ      |
|------|---|---------------|
| 23   | Guide piece                                 | SK320507      |
| 24   | Eye bolt compl.                             | SK212204      |
| 25   | Grease nipple                               | SK312111      |
| 26   | Tubing compl.                               | SK3353008     |
| 27   | Tubing clamp                                | SK312113      |
| 28   | Spring Latch 1996 onwards                   | SK312152      |
| 29   | Bolt for Spring Latch                       | SK3521/03     |
| 30   | Spring for Latch                            | SK3121/59     |
| 31   | Ball bearing                                | KLKDR41AS010K |
| 32   | Half moon compl.                            | SK370640      |
| 33a  | Base plate (12mm) incl. 36, 37, 38          | SK370630      |
| 33b  | Base plate (16mm) incl. 36, 37, 38          | SK370631      |
| 33c  | Base plate (20mm) incl. 36, 37, 38          | SK370632      |
| 34   | Hex. bolt compl.                            | SK372104      |
| 35   | Countersunk bolt compl.                     | SK372105      |
| 36   | Lock out pin compl. with chain (old style)  | SK370509      |
| 36a  | Lock out pin compl. with R clip (new style) | SK370514      |
| 37   | Tube park (old style)                       | SK370604      |
| 38   | Tube lock out (old style)                   | SK370510      |
| 38a  | Lockout tube (new style)                    | SK370515      |
| 39   | Handle Extension                            | SK3105113     |
| 40   | Internal Operating Handle                   | SK3105115     |
| 41   | Head Bolt                                   | SK1513        |
| 42   | Extended Handle Bolt                        | SK242150      |
| 43   | Cable Extension                             | SK352102      |

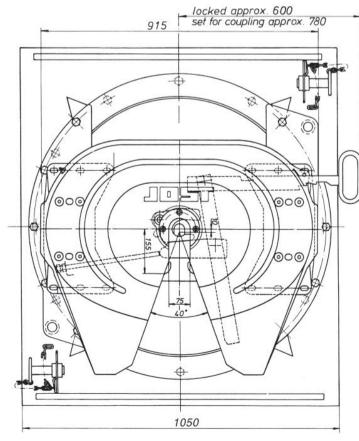
| Fig.                       | Repair Kits                   | Part No.     |
|----------------------------|-------------------------------|--------------|
| 01, 02, 03, 10, 11         | Repair kit for locking device | SK322150Z    |
| 01, 02, 03                 | Repair kit for locking device | SK322152Z    |
| 01, 02, 03, 08, 10, 11, 18 | Repair kit for locking device | SK312150Z    |
| 13, 14, 16                 | Repair kit for rubber bearing | SK212169Z    |
| 28, 29, 30                 | Latch Kit                     | SK312152 KIT |



# DR37E Cast Top Stabilised Fifth Wheel Assembly 2"







# Application: Highway work Tipper work

also available with:

16mm Base PlateDR37E 16mm20mm Base PlateDR37E 20mm

\*Note thicker base plate determines extra weight

\*\*Note only available on weld on feet

D-Value 190 kN
Overall height 268 mm
Imposed load 20000 kgs
Gross comb. weight 135000 kgs
Weight approx. 394 kgs

(for 12mm base plate) Complies with ADR 62, 63

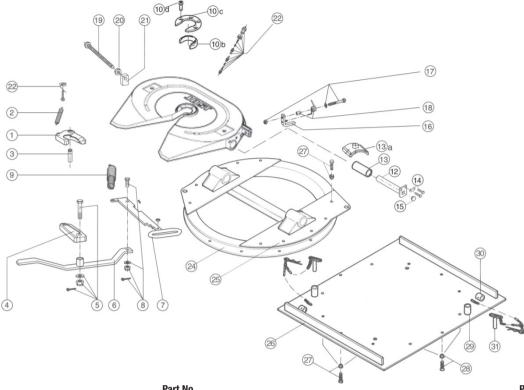
Approval Number JSK37E

- CTA-036821 DR Subassembly - CTA-060153

#### Twin lockouts.

Flush bolt heads on mounting plate in chassis mounting zone. Wearing ring easily removed from above on JSK37E fifth wheel.

## **Spare parts for DR37E Cast Top**





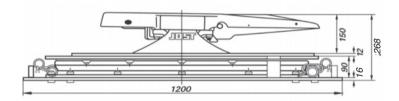
| Fig. | Description           | Part No.<br>DR 37 E |
|------|-----------------------|---------------------|
| 01   | Jaw                   | SK1489Z             |
| 02   | Jaw Spring            | SK847               |
| 03   | Jaw Pivot             | SK210667            |
| 04   | Locking Bar           | SK320506            |
| 05   | Lock Bar Bolt         | SK322101            |
| 06   | Release Lever         | SK310518            |
| 07   | Operating Handle      | SK310515            |
| 08   | Head Bolt             | SK1513              |
| 09   | Double Tension Spring | SK310520            |
| 10a  | Wear Ring Three Bolt  | SK210519            |
| 10b  | Wear Ring Four Bolt   | SK310592            |
| 10c  | Wear Ring Insert      | SK310593            |
| 10d  | Wear Ring Bolt        | SK312155            |
| 11   | Wear Ring Bolt        | SK212107            |
| 12   | Swivel Pin            | SK310405            |
| 13   | Pedestal Bush         | SK290520            |
| 13a  | Collar                | SK310595            |
| 14   | Swivel Pin Bolt       | SK312128            |

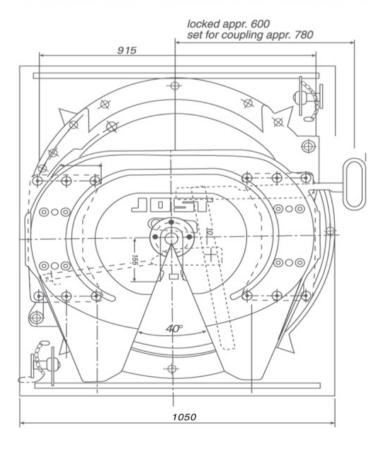
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| Repair Kits                |                               |              |
|----------------------------|-------------------------------|--------------|
| Fig.                       | Repair Kits                   | Part No.     |
| 01, 02, 03                 | Repair kit for locking device | SK322152Z    |
| 12, 13, 13a, 14, 15        | Repair kit for locking device | SK3121061    |
| 01, 02, 03, 08, 11, 23, 28 | Repair kit for locking device | SK3121060Z   |
| 10b, 10c, 10d              | Repair kit for wear ring      | SK310594     |
| 16, 17, 18                 | Repair kit Latch              | SK312152 KIT |

# **DR37CX Cast Top Double Row Stabilised Fifth Wheel Assembly**







**Application: General freight Tankers** 

Fridge van Stock crate

also available with:

16mm Base Plate DR37CX 16mm 20mm Base Plate DR37CX 20mm

\*Note thicker base plate determines extra weight

Overall height 268 mm Imposed load 24000 kgs Weight approx. 405 kgs

(for 12mm base plate)

D-Valve 240kN Approval Number JSK37CX - CTA-045374

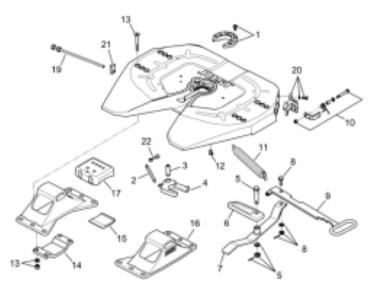
> DR Subassembly - CTA 060153

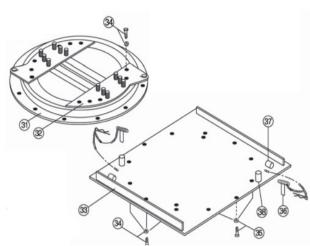
#### Twin lockouts.

Flush bolt heads on mounting plate in chassis mounting zone. Cast type unit equipped with external king pin grease point for additional lubrication to the jaw.

Wearing ring easily removed from above on JSK37CX fifth wheel.

## **Spare parts for DR37CX Cast Top**

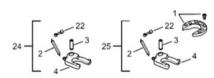






| Fig. | Description               | Code        |
|------|---------------------------|-------------|
| 01   | Wearing ring and bolts    | QR00269J00  |
| 02   | Lock jaw spring           | SK847       |
| 03   | Pivot                     | SK210667    |
| 04   | Locking                   | SK1489Z     |
| 05   | Bolt (complete)           | SK322101    |
| 06   | Locking bolt              | SK320506    |
| 07   | Lever with bushing        | SK310518    |
| 08   | Head bolt                 | SK1513      |
| 09   | Lever handle              | SK3105/15   |
| 10   | Latch kit                 | SK312152KIT |
| 11   | Double tension spring     | SK3105/20   |
| 12   | Fitting                   | SK312111    |
| 13   | Complete countersunk bolt | SK212115    |
| 14   | Mounting bracket          | QR00215J01  |
| 15   | Lower rubber cushion      | SK21025     |
| 16   | Pedestal (150mm)          | SK210402X   |
| 16a  | Pedestal (170mm)          | SK210421X   |
| 16b  | Pedestal (185mm)          | SK210401X   |
| 16c  | Pedestal (220mm)          | SK210418X   |
| 16d  | Pedestal (250mm)          | SK210414X   |
| 16e  | Pedestal (300mm)          | SK210420    |

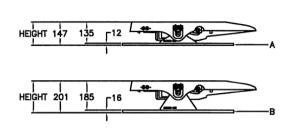
| Fig. | Description                                | Code          |
|------|--|---------------|
| 17   | Upper Rubber Cushion                       | SK1259        |
| 19   | Adjustment screw                           | AD01148B80    |
| 20   | Guide latch complete security              | QR00270J00    |
| 21   | Guide with thread                          | SK320507      |
| 22   | Pin with eyelet                            | SK212204      |
| 31   | Ball bearing                               | KLKDR41AS010K |
| 32   | Half mon complete                          | SK370640      |
| 33a  | Base plate (12mm) inc 36, 37, 38           | SK370630      |
| 33b  | Base plate (16mm) inc 36, 37, 38           | SK370631      |
| 33c  | Base plate (20mm) inc 36, 37, 38           | SK370632      |
| 34   | Hex bolt complete                          | SK372104      |
| 35   | Countersunk bolt complete                  | SK372105      |
| 36   | Lock out pin compl with chain (old style)  | SK370509      |
| 36a  | Lock out pin compl with R clip (new style) | SK370514      |
| 37   | Tube park (old style)                      | SK370604      |
| 38   | Tube lock out (old style)                  | SK370510      |
| 38a  | Tube lock out (new style)                  | SK370515      |

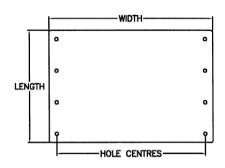




| Fig. | Repair Kits  | Part No.   |
|------|--|------------|
| 24   | Locking latch kit - items 2, 3, 4 e 22                       | SK322152Z  |
| 25   | Kit locking claw - items 1, 2, 3, 4 e 22                     | SK322150CX |
| 27   | Base plate fastening kit - items 13, 15 e 17 (with 4 screws) | SK212169CX |

# JOST Base Plates to Suit Pin & Bush Type Fifthwheels

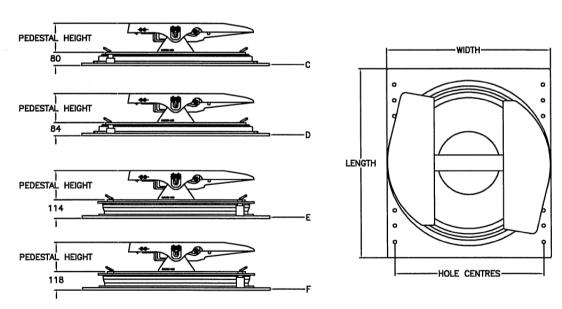




| Part number  | Style | Height (mm) | Length (mm) | Width (mm) | D-Value | Imposed load | Weight  | Hole centre options | Notes                            |
|--------------|-------|-------------|-------------|------------|---------|--------------|---------|---------------------|----------------------------------|
| MP0115E TYPE | Α     | 147         | 710         | 960/1050   | 190     | 20           | 74/80   | 880/953/Undrilled   | 135mm Pedestals, with 12mm Plate |
| MP0118/146MM | В     | 153         | 710         | 960/1050   | 190     | 20           | 94/102  | 880/953/Undrilled   | 135mm Pedestals, with 16mm Plate |
| MP0118/166MM | В     | 166         | 710         | 960/1050   | 190     | 20           | 96/104  | 880/953/Undrilled   | 150mm Pedestals, with 16mm Plate |
| MP0118/186MM | В     | 186         | 710         | 960/1050   | 190     | 20           | 101/109 | 880/953/Undrilled   | 170mm Pedestals, with 16mm Plate |
| MP0118/201MM | В     | 201         | 710         | 960/1050   | 190     | 20           | 101/109 | 880/953/Undrilled   | 185mm Pedestals, with 16mm Plate |
| MP0118/211MM | В     | 211         | 710         | 960/1050   | 190     | 20           | 102/110 | 880/953/Undrilled   | 195mm Pedestals, with 16mm Plate |
| MP0118/221MM | В     | 221         | 710         | 960/1050   | 190     | 20           | 104/112 | 880/953/Undrilled   | 205mm Pedestals, with 16mm Plate |
| MP0118/231MM | В     | 231         | 710         | 960/1050   | 190     | 20           | 105/113 | 880/953/Undrilled   | 215mm Pedestals, with 16mm Plate |
| MP0118/251MM | В     | 251         | 710         | 960/1050   | 190     | 20           | 107/115 | 880/953/Undrilled   | 235mm Pedestals, with 16mm Plate |
| MP0118/271MM | В     | 271         | 710         | 960/1050   | 190     | 20           | 110/118 | 880/953/Undrilled   | 255mm Pedestals, with 16mm Plate |

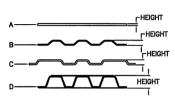
Note: Height is measured with fifthwheel and pedestals assembled together, refer example above. (Example, 16mm plate with 185 mm Pedestals= 201 mm overall)

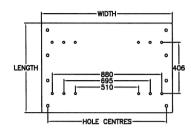
If using a 37-027 narrow spec fifthwheel, 15 mm is to be added to the overall height. Other base plate options available. Custom styles and drilling available. For further information please contact your local **JOST** branch



| Part Number       | Style | Height (mm) | Length (mm) | Width (mm) | D-Value | Imposed Load | Weight | <b>Hole Centres</b> | Notes                               |
|-------------------|-------|-------------|-------------|------------|---------|--------------|--------|---------------------|-------------------------------------|
| LP36AV2LT12       | С     | 80 + Peds   | 1200        | 1050       | 190     | 20           | 235    | Undrilled           | Low Profile Single Row-Wide Chassis |
| LP36AV2LT16       | D     | 84 + Peds   | 1200        | 1050       | 190     | 20           | 275    | Undrilled           | Low Profile Single Row-Wide Chassis |
| LP36AV2LT16 (KEN) | D     | 84 + Peds   | 1200        | 1050       | 190     | 20           | 275    | 953                 | Low Profile Single Row-Wide Chassis |
| DR36AV2LT12       | Ε     | 114 + Peds  | 1200        | 1050       | 190     | 20           | 288    | Undrilled           | Heavy Duty Double Row-Wide Chassis  |
| DR36AV2LT16       | F     | 118 + Peds  | 1200        | 1050       | 190     | 20           | 295    | Undrilled           | Heavy Duty Double Row-Wide Chassis  |
| DR36AV2LT16 (KEN) | F     | 118 + Peds  | 1200        | 1050       | 190     | 20           | 295    | 953                 | Heavy Duty Double Row-Wide Chassis  |
| LP36AV216LTINV    | D     | 84 + Peds   | 1200        | 960        | 190     | 20           | 261    | Undrilled           | Inverted B/Race for Narrow Chassis  |
| LP36AV216LTINV    | D     | 84 + Peds   | 1200        | 960        | 190     | 20           | 261    | 880                 | Inverted B/Race for Narrow Chassis  |
| LP37027LT16       | D     | 84 + Peds   | 1200        | 1050       | 200     | 20           | 265    | Undrilled           | Low Profile Single Row-Wide Chassis |

# JOST Base Plates to Suit Cushion "C" Type Fifthwheels



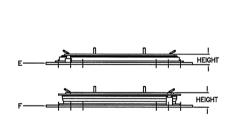


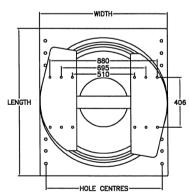


| Part number   | Style | Height (mm) | Length (mm) | Width (mm) | D-Value | Imposed load | Weight | Hole centre options | Notes                             |
|---------------|-------|-------------|-------------|------------|---------|--------------|--------|---------------------|-----------------------------------|
| MP0115        | Α     | 12          | 710         | 1050       | 160     | 20           | 72     | Undrilled           | Standard Chassis Width "C" Type   |
| MP0118        | Α     | 16          | 710         | 1050       | 260     | 36           | 94     | Undrilled           | Standard Chassis Width "C" Type   |
| MP0118ACTROS  | Α     | 16          | 700         | 960        | 260     | 36           | B6     | Undrilled           | Narrow Chassis Width "C" Type     |
| MP0118KEN/IH  | Α     | 16          | 710         | 1050       | 260     | 36           | 94     | 953                 | Standard Chassis Width "C" Type   |
| MPD118SCANIA  | Α     | 16          | 700         | 960        | 260     | 36           | 86     | 880                 | Narrow Chassis Width "C" Type     |
| MP0118/42     | Α     | 16          | 710         | 1050       | 260     | 36           | 94     | 953                 | Suit JSK42-Standard Chassis Width |
| MP0118/JSK38  | Α     | 16          | 710         | 1050       | 260     | 36           | 90     | 953                 | Cutout to Suit JSK38/160          |
| MP0119/KEN/IH | Α     | 20          | 710         | 1050       | 260     | 36           | 120    | 953                 | Standard Chassis Width "C" Type   |
| MP0119SCANIA  | Α     | 20          | 700         | 960        | 260     | 36           | 115    | 880                 | Narrow Chassis Width "C" Type     |
| MP2101        | В     | 22          | 710         | 960        | 190     | 20           | 44     | 880                 | Narrow Chassis Width "C" Type     |
| MP2103/350    | В     | 22          | 710         | 1050       | 190     | 20           | 48     | UnDrilled           | Standard Chassis Width "C" Type   |
| MP2103/350KEN | В     | 22          | 710         | 1050       | 190     | 20           | 48     | 953                 | Standard Chassis Width "C" Type   |
| MP0120        | Α     | 25          | 800         | 1050       | 300     | 50           | 165    | Undrilled           | Suit JSK50 Wide Chassis           |
| MP0120KW0RTH  | Α     | 25          | 800         | 1050       | 300     | 50           | 16S    | 953                 | Suit JSK50 Wide Chassis           |
| MP4111/350    | В     | 40          | 700         | 1050       | 190*    | 20*          | 48     | Undrilled           | Standard Chassis Width "C" Type   |
| MP4111/350KEN | В     | 40          | 700         | 1050       | 190*    | 20*          | 4B     | 953                 | Standard Chassis Width "C" Type   |
| MP4111/350SCA | В     | 40          | 700         | 960        | 190*    | 20*          | 45     | 880                 | Narrow Chassis Width "C" Type     |
| MP4126        | С     | 40          | 850         | 1050       | 260     | 36           | B1     | Undrilled           | Standard Chassis Width "C" Type   |
| MP5111SCANIA  | В     | 50          | 700         | 960        | 190*    | 20*          | 54     | 880                 | Narrow Chassis Width "C" Type     |
| MP5111/KEN    | В     | 50          | 700         | 1050       | 190*    | 20*          | 57     | 953                 | Standard Chassis Width "C" Type   |
| MPA6503       | D     | 65          | 710         | 1050       | 190*    | 20*          | 75     | Undrilled           | Standard Chassis Width "C" Type   |
| MPA6503KEN    | D     | 65          | 710         | 1050       | 190*    | 20*          | 78     | 953                 | Standard Chassis Width "C" Type   |
| MP1101        | D     | 100         | 765         | 970        | 190*    | 20*          | 79     | Undrilled           | Narrow Chassis Width "C" Type     |
| MP1103        | D     | 100         | 710         | 1050       | 190*    | 20*          | 85     | Undrilled           | Standard Chassis Width "C" Type   |

<sup>\*</sup> D-value and imposed load rating reduced if combination height exceeds 300 mm

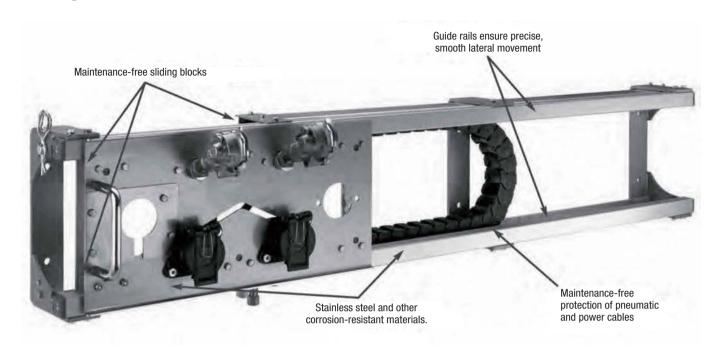
Other base plate options available. Custom styles and drilling available. For further information please contact your local **JOST** branch





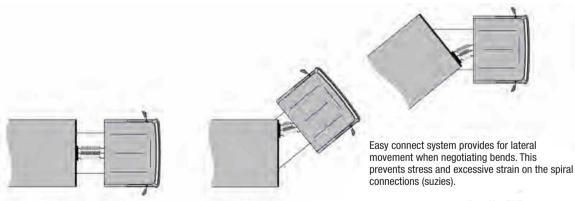
| Part Number      | Style | Height (mm) | Length (mm) | Width (mm) | D-Value | Imposed Load | Weight | Hole Centres | Notes                                |
|------------------|-------|-------------|-------------|------------|---------|--------------|--------|--------------|--------------------------------------|
| LP36CVLT12       | Е     | 80          | 1200        | 1050       | 190     | 20           | 235    | Undrilled    | Low Profile Single Row-Wide Chassis  |
| LP36CVLT16       | Е     | 84          | 1200        | 1050       | 240     | 24           | 275    | Undrilled    | Low Profile Single Row-Wide Chassis  |
| LP36CVLT16 (KEN) | Ε     | 84          | 1200        | 1050       | 240     | 24           | 275    | 953          | Low Profile Single Row-Wide Chassis  |
| DR36CVLT12       | F     | 114         | 1200        | 1050       | 190     | 20           | 255    | Undrilled    | Heavy Duty Double Row-Wide Chassis   |
| DR36CVLT16       | F     | 118         | 1200        | 1050       | 260     | 36           | 295    | Undrilled    | Heavy Duty Double Row-Wide Chassis   |
| DR36CVLT16 (KEN) | F     | 118         | 1200        | 1050       | 260     | 36           | 295    | 953          | Heavy Duty Double Row-Wide Chassis   |
| LP36CVLTSCANIAV8 | Ε     | 84          | 1000        | 960        | 240     | 24           | 258    | 880          | Inverted B/Race Suits Scania V8      |
| LPCV16LTINVSCA   | Е     | 84          | 1200        | 960        | 240     | 24           | 261    | Undrilled    | Inverted B/Race For Narrow Chassis   |
| LPCV16LTINVSCA   | Ε     | 84          | 1200        | 960        | 240     | 24           | 261    | 880          | Inverted B/Race For Narrow Chassis   |
| DRCV16/LTSCAN    | F     | 118         | 1200        | 1000       | 260     | 36           | 286    | 880          | Heavy Duty Double Row-Narrow Chassis |
| DR36CVLTSCANV8   | F     | 118         | 1100        | 1000       | 260     | 36           | 280    | 880          | Heavy Duty Double Row-Narrow Chassis |

# **Easy Connect**



# Fast, simple, secure Coupling and uncoupling without the need to raise or lower the unit

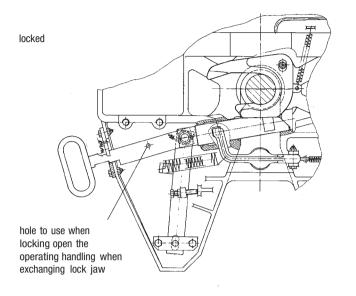
- Fast and easy attachment and disconnection of pneumatic and power cables.
- Access from side of vehicle to alleviate OH & S issues
- Easy Connect is universal and directly fits most trailer models
- Prevents damage to spiral connections (suzies, see illustration below)

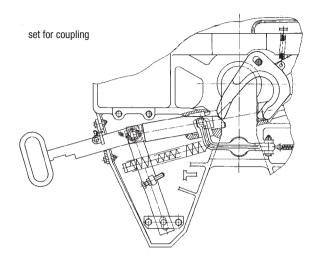


Part No: SKE0105000000

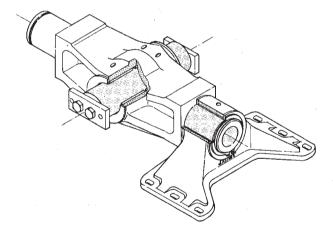


### **Locking Device**



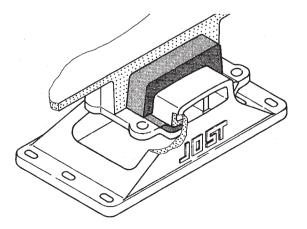


### **Type of Mounting**



#### JSK38G cardan mounting

- · wear resistant bushes
- lateral movement up to a max. of 7° for off road operation.
- lateral movement can be limited to approx. 0° for highway operation.

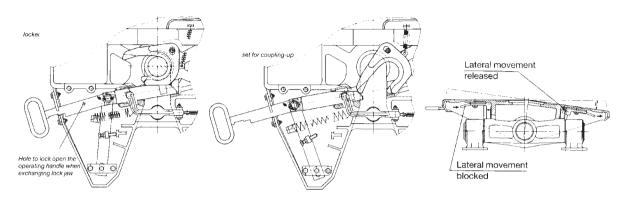


#### JSK38C, JSK39C, JSK38DV Rubber mounting

- shock absorbing by large rubber pads slack and maintenance free
- Oil and grease resistant

# **Operating and Maintenance Instructions** for JOST Fifth Wheel Couplings

#### Types JSK38C, JSK38DV, JSK38G, JSK39C, JSK50 and JSK52



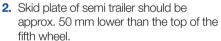


#### **Operating instructions**

The outfit should be parked on a flat and even road surface.

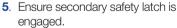
#### Coupling-up:

- 1. The fifth wheel must be in the reset position, i.e. the end of the operating handle standing out approx. 300 mm otherwise: Raise secondary safety latch'
  - (A) and move handle forward to unlock
- (B). Pull handle to end position (C).



**IMPORTANT**: Loss of pressure in the air suspension of the trailer can alter the height of the king pin.

- 3. Reverse tractor the mechanism locks automatically.
- 4. Check that the skid plate is resting on the fifth wheel plate with no gap between the two.



**IMPORTANT**: The secondary safety latch in the secured position ensures the locking mechanism is closed. If secondary safety latch is in raised position, the coupling-up procedure must be repeated.



#### **Un-coupling:**

- 1. Raise secondary safety latch (A). Move handle forward to unlock (B). Pull handle to end position (C).
- 2. Drive tractor away. The fifth wheel mechanism will automatically assume the coupling-up position (D).









#### Lateral movement on type JSK38G

The lateral movement should only be engaged for off-road use. On the road, and especially at higher speeds, it must be blocked for safety reasons.

#### To set the lateral movement: For normal road Use:

- 1. Release the hex bolts (2 each side width over flats 19 mm).
- 2. Push both blocks into the end of the oblong hole.
- 3. Re-tighten hex bolts (torque 80 Nm).

#### For off-road use:

- 1. Release the hex bolts (2 each side width over flats 19 mm).
- 2. Pull both blocks out to the end of the oblong hole.
- 3. Re-tighten the hex bolts (torque 80 Nm).

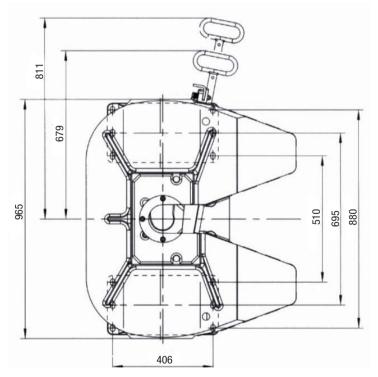
#### **Maintenance instructions:**

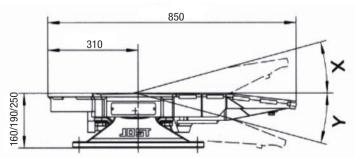
- 1. Uncouple semi-trailer at least once a week, certainly after more than 5000 km. Clean semi-trailer skid plate and fifth wheel plate. Lubricate fifth wheel plate, locking mechanism, fifth wheel throat and king pin, with heavy duty grease. We recommend the use of high pressure grease (EP) with MoS2 or graphite additive, for example BP L21, M, BP HTEP 1, BP LS 2, Esso universal grease M, Shell Retinax AM. Check operating handle and release lever pivots for free movement - clean and lubricate.
- 2. The bearings of the lock lever (item 28) and of the pedestals of the JSK38 G-1 and the pivot bearing of the JSK50 are to be regreased through grease nipples provided at each maintenance interval. The rubber cushions of the JSK38 C-1 are maintenance free. According to operating conditions we recommend checking parts for wear at 50,000 and 100,000 km distance driven.

# JSK38DV90 - Rubber Bearing

A heavy duty fifth wheel coupling for operation under arduous conditions.







Increased load (up to 28,000kg). With rubber bearing (model "C"): rubber cushions are shock- absorbent and maintenance-free.

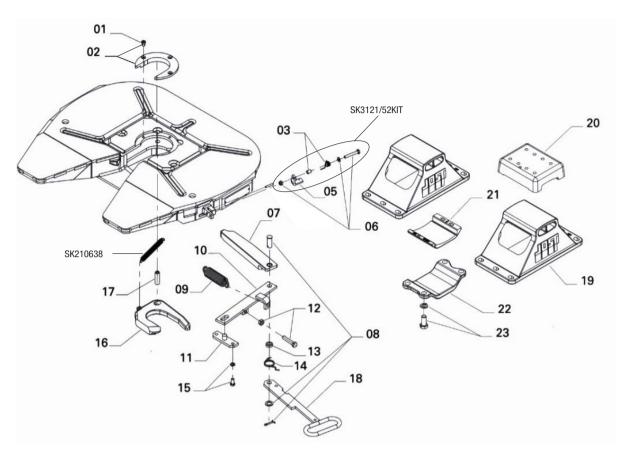
#### **Technical specification:**

Rubber bearing

The fifth wheel coupling complies with the directives/standards as per 94/20/EC - Class S, DIN 74084 and ISO 3842. Suitable for 3,5" (90) king pins as per 94/20/EC, DIN 74083 and ISO 4086. Fitted on a mounting plate.

Imposed weight 28,000 kg
D-value 260 kN
Weight 204 kg
CRN 36688

## Spare parts for fifth wheel couplings Type JSK38DV90





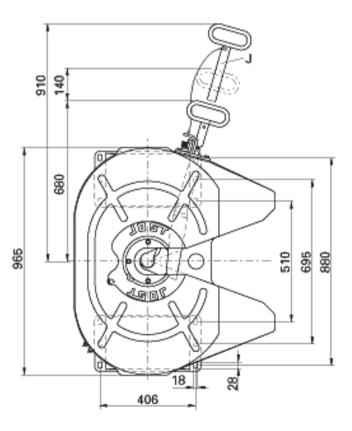
| Fig. | Description            | Part No.     |
|------|------------------------|--------------|
| 01   | Socket head bolt       | SK242108     |
| 02   | Wearig ring, complete  | SK242156     |
| 03   | Spring noose, complete | SK312159     |
| 04   | Jaw tension spring     | SK210638     |
| 05   | Latch kit, complete    | SK312152 KIT |
| 06   | Hexagon bolt, complete | SK352103     |
| 07   | Locking bar            | SKE003750000 |
| 80   | Bar bolt, complete     | SKE003760001 |
| 09   | Double tension spring  | SK240523     |
| 10   | Lever                  | SK240504     |
| 11   | Bearing                | SK240515     |
| 12   | Hexagon bolt, complete | SK242152     |
| 13   | Washer                 | SK240519     |
| 14   | Spring noose           | SK240509     |
| 15   | Hexagon bolt, complete | SK244153     |
| 16   | Lock jaw               | SK240514Z    |
| 17   | Pivot                  | SK240518     |
| 18   | Handle                 | SKE003740000 |

| Fig. | Description            | Part No. |
|------|------------------------|----------|
| 19a  | Pedestal 160mm         | SK240405 |
| 19b  | Pedestal 190mm         | SK240401 |
| 19c  | Pedestal 250mm         | SK240404 |
| 20   | Rubber cushion, upper  | SK2006   |
| 21   | Rubber cushion, lower  | SK2007   |
| 22   | Bridge                 | SK2005   |
| 23   | Hexagon bolt, complete | SK242155 |

| Fig.                   | Repair Kits                    | Part No.     |
|------------------------|--------------------------------|--------------|
| 01, 02, 04, 09, 16, 17 | Repair kit for lock 3.5"       | SK242176     |
| 20, 21, 23             | Repair kit for bearing         | SK242178     |
| 05, 03, 06             | Repair kit for latch, complete | SK312152 KIT |

# JSK38C1 / JSK38C2" - Rubber Mounting Interchangeable fifth wheel





A heavy duty fifth wheel coupling for operation under arduous conditions.

The well known **JOST** locking device together with the maintenance free rubber cushions ensures a high degree of stability and safety on the road.

This fifth wheel is available for use with 3½" and 2" king pins.

The conversion of a  $3\frac{1}{2}$ " or 2" locking mechanism or vice versa can easily be carried out with standard tools, without removing the fifth wheel coupling from the truck.

#### THREE HEIGHT OPTIONS

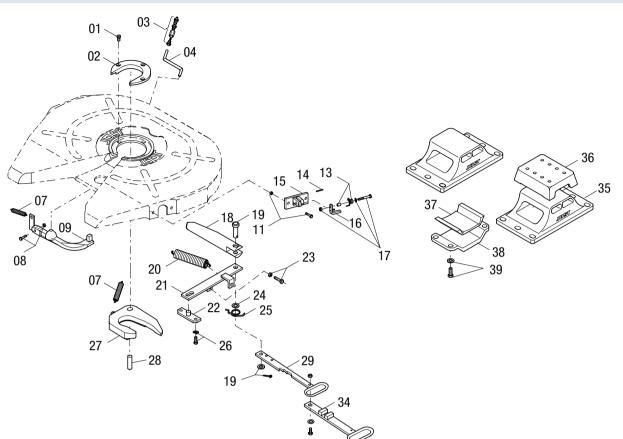
| 160 mm optional | (Bolt on/weldable feet) |
|-----------------|-------------------------|
| 190 mm optional | (Bolt on/weldable feet) |
| 250 mm optional | (Bolt on only)          |

| Туре     | King pin | Imposed<br>load | D-value | Weight | Approval<br>Number |
|----------|----------|-----------------|---------|--------|--------------------|
| JSK38C1  | 3½"      | 36 000kg        | 260kN   | 190kg  | E1 55R-01 0471     |
| JSK38C2" | 2"       | 28 000kg        | 170kN   | 190kg  | E1 55R-01 0472     |

Mounting must be carried out in accordance with our instructions.

The right to alter specifications is reserved.

## Spare parts for Type JSK38C1 / Type JSK38C2"





| Fig. | Description                        | Part No.     |
|------|------------------------------------|--------------|
| 01   | Socket head bolt                   | SK242108     |
| 02   | Wearing ring 31/2", compl. with 01 | SK242156     |
| 02   | Wearing ring 2", compl. with 01    | SK242157     |
| 03   | Nut and bolt                       | SK1989       |
| 04   | Lubrication tube                   | SK220512     |
| 07   | Tension spring                     | SK210638     |
| 80   | Hexagon bolt, compl.               | SK242151     |
| 09   | Latch                              | SK240527     |
| 11   | Hexagon bolt, compl.               | SK242150     |
| 13   | Spring noose with spacer           | SK312159     |
| 15   | Latch holder, compl. with 14       | SK2405084    |
| 16   | Latch, compl. incl. 13,14,17       | SK312152 KIT |
| 17   | Hexagon bolt, compl.               | SK352103     |
| 18   | Locking bar                        | SK240501     |
| 19   | Bar bolt, compl.                   | SK212225     |
| 20   | Double tension spring              | SK240523     |
| 21   | Lever                              | SK240504SA   |
| 22   | Bearing                            | SK240515     |

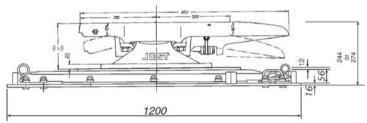
| Fig. | Description                | Part No.      |
|------|----------------------------|---------------|
| 23   | Hexagon bolt, compl.       | SK242152      |
| 24   | Washer                     | SK240519      |
| 25   | Spring noose               | SK240509      |
| 26   | Hexagon bolt, compl.       | SK242153      |
| 27   | Lock jaw 3½"               | SK240514      |
| 27   | Lock jaw 2"                | SK240513      |
| 27a  | Lock jaw, 3½" (Greaseable) | SK240514Z     |
| 27a  | Lock jaw, 2" (Greaseable)  | SK240513Z     |
| 28   | Pivot                      | SK240518      |
| 29   | Handle (standard version)  | SK2405066     |
| 34   | Handle, extended           | SK2405066 EXT |
| 35a  | Pedestal 160mm             | SK240405      |
| 35b  | Pedestal 190mm             | SK240401      |
| 35c  | Pedestal 250mm             | SK240404      |
| 36   | Rubber cushion, upper      | SK2006        |
| 37   | Rubber cushion, lower      | SK2007        |
| 38   | Bridge                     | SK2005        |
| 39   | Hexagon bolt, compl.       | SK242155      |

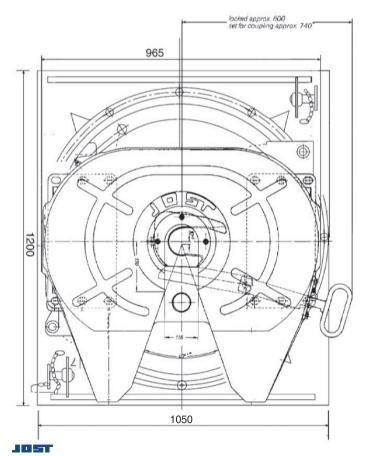
## **Repair and Conversion Kits**

| Fig.                  | Repair Kits                        | Part No. |
|-----------------------|------------------------------------|----------|
| 01, 02, 07, 20, 27,28 | Repair kit for lock 3½"            | SK242176 |
| 01, 02, 07, 20, 27,28 | Repair kit for lock 2"             | SK242177 |
| 36, 37, 39            | Repair kit for bearing             | SK242178 |
|                       | Conversion Kits                    |          |
| 01, 02, 07, 27        | Conversion kit from 3½" to 2" lock | SK242198 |
| 01, 02, 07, 27        | Conversion kit 2" to 3½"           | SK242199 |

# LP38C116016, LP38C119016 Cast Top LP38C216016, LP38C219016 Cast Top Low profile stabilised fifth wheel assembly







Heavy duty

Applications: Stock crate

Fridge van General freight Tankers

Standard with 16 mm base plate optional: 20 mm base plate

LP38C 20mm

\*Note thicker base plate determines extra weight and height.

D-Value

JSK38C1W 240 kN JSK38C2W 170 kN

Overall height

(with 190 mm Feet)274 mm(with 160 mm Feet)244 mmImposed load20000 kgsWeight approx.444 kgs

(for 16 mm base plate)

Approval Number

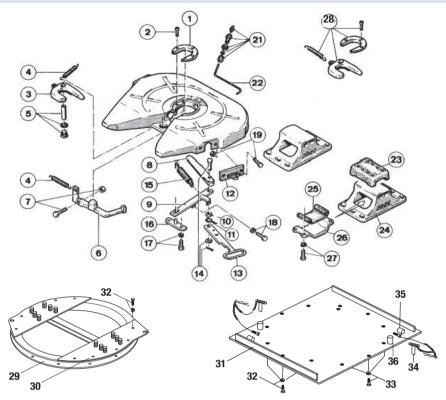
JSK38C1 ECE E1 55R-01 0471 JSK38C2 ECE E1 55R-01 0472

LP Subassembly CTA-047151

#### Twin lockouts.

Flush bolt heads on mounting plate in chassis mounting zone. Cast type unit equipped with JSK38 fifth wheel extra heavy duty unit. Jaws sizes can be changed from 50 mm or 90 mm diameter. Mounting must be carried out in accordance with our instructions.

### **Spare parts for LP38C Cast Top**





| Fig. | Description                         | Part No.  |
|------|-------------------------------------|-----------|
| 01   | Wearing ring 3½" compl. with item 2 | SK242156  |
| 01   | Wearing ring 2" compl. with item 2  | SK242157  |
| 02   | Socket head bolt                    | SK242108  |
| 03   | Lock jaw 3½"                        | SK240514  |
| 03   | Lock jaw 2"                         | SK240513  |
| 04   | Lock jaw spring                     | SK210601  |
| 05   | Bolt complete                       | SK242154  |
| 06   | Stopper                             | SK240527  |
| 07   | Hexagon head bolt                   | SK242151  |
| 80   | Locking bar                         | SK240501  |
| 09   | Lever                               | SK240504  |
| 10   | Disc                                | SK240519  |
| 11   | Spring loop                         | SK240509  |
| 12   | Support bracket                     | SK2405084 |
| 13   | Operating handle                    | SK240502  |
| 14   | Locking bar bolt                    | SK212114  |
| 15   | Double tension spring               | SK240523  |
| 16   | Support                             | SK240515  |
| 17   | Hexagon head bolt complete          | SK242153  |
| 18   | Hexagon head bolt complete          | SK242152  |
| 19   | Hexagon head bolt complete          | SK242150  |
| 20   | Spring hook complete                | SK1436    |

28b

| Fig. | Description                      | Part No.  |
|------|----------------------------------|-----------|
| 21   | Grease nipple complete           | SK1976    |
| 22   | Grease tube                      | SK220512  |
| 23   | Upper rubber cushion             | SK2006    |
| 24a  | Pedestal 160 mm Bolt on/weldable | SK240405  |
| 24b  | Pedestal 190 mm Bolt on/weldable | SK240401  |
| 24c  | Pedestal 250 mm Bolt on/weldable | SK240404  |
| 25   | Lower rubber cushion             | SK2007    |
| 26   | Mounting bracket                 | SK2005    |
| 26a  | For use with 160mm pedestals     | SK20051   |
| 27   | Hexagon head bolt                | SK242155  |
| 29   | Ball bearing                     | KDL 9006W |
| 30   | Half moon compl.                 | SK370629  |
| 31   | Base plate (16mm) incl. 34, 36   | SK370616  |
| 31b  | Base plate (20mm) incl. 34, 36   | SK370620  |
| 32   | Hex. bolt compl.                 | SK372104  |
| 33   | Countersunk bolt compl.          | SK372105  |
| 34   | lock out pin compl. old style    | SK370610  |
| 34a  | Lock out pin, new style          | SK370609  |
| 35   | Tube park old style              | SK370604  |
| 36   | Tube lock out                    | SK370605  |
| 36b  | Tube lock out, new style         | SK370504  |

| Repair and Conversion Kits |  |          |  |  |
|----------------------------|--|----------|--|--|
| Fig.                       | Repair Kits                                | Part No. |  |  |
| 01, 03, 04, 05, 15, 20     | Repair kit for locking device 3½"          | SK242176 |  |  |
| 01, 03, 04, 05, 15, 20     | Repair kit for locking device 2"           | SK242177 |  |  |
| 23, 25, 27                 | Repair kit for rubber bearing              | SK242178 |  |  |
|                            | Conversion Kits                            |          |  |  |
| 28a                        | Kit to convert 3½" to 2" locking mechanism | SK242198 |  |  |

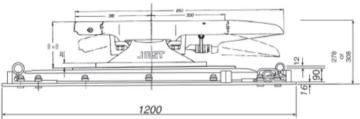
Kit to convert 2" to  $3 \ensuremath{\ensuremath{\%^{\prime\prime}}}$  locking mechanism

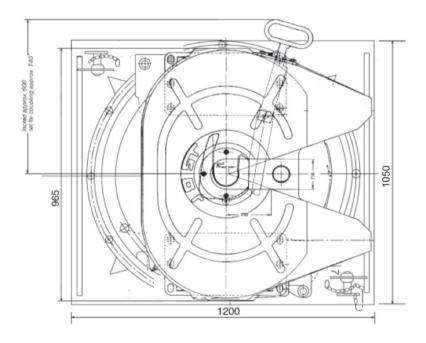
SK242199

# DR38C116016, DR38C119016 Cast Top DR38C216016, DR38C219016 Cast Top Double Row stabilised fifth wheel assembly

with mounting pattern according to DIN standard 74081 and 74084







Heavy duty

Applications: Stock crate

Fridge van General freight Tankers

Standard with 16 mm base plate optional: 20 mm base plate

DR38C 20mm

\*Note thicker base plate determines extra weight and height.

D-Value

JSK38C1W 260 kN JSK38C2W 170 kN

Overall height

 (with 190 mm Feet)
 308 mm

 (with 160 mm Feet)
 278 mm

 Imposed load
 20000 kgs

 Weight approx.
 472 kgs

(for 16mm base plate)

Approval Number

JSK38C1 ECE E1 55R-01 0471 JSK38C2 ECE E1 55R-01 0472

DR Subassembly CTA-060153

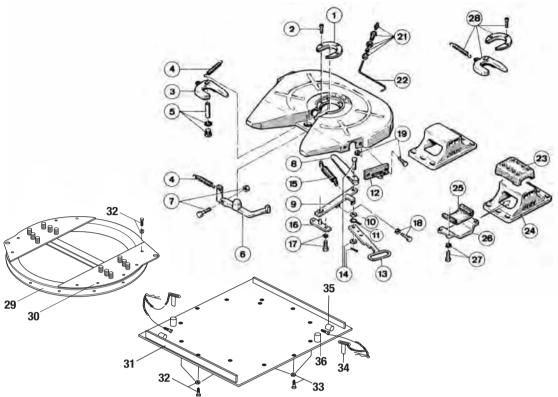
#### Twin lockouts.

Flush bolt heads on mounting plate in chassis mounting zone. Cast type unit equipped with JSK38 fifth wheel extra heavy duty unit. Jaws sizes can be changed from 50 mm or 90 mm diameter. Mounting must be carried out in accordance with our instructions.

Mounting must be carried out in accordance with our instructions.

The right to alter specifications is reserved.

## Spare parts for DR38C1, DR38C2, DR38C1160, DR38C2160





|      |                                     | ₽         |
|------|-------------------------------------|-----------|
| Fig. | Description                         | Part No.  |
| 01   | Wearing ring 3½" compl. with item 2 | SK242156  |
| 01   | Wearing ring 2" compl. with item 2  | SK242157  |
| 02   | Socket head bolt                    | SK242108  |
| 03   | Lock jaw 3½"                        | SK240514  |
| 03   | Lock jaw 2"                         | SK240513  |
| 04   | Lock jaw spring                     | SK210601  |
| 05   | Bolt complete                       | SK242154  |
| 06   | Stopper                             | SK240527  |
| 07   | Hexagon head bolt                   | SK242151  |
| 80   | Locking bar                         | SK240501  |
| 09   | Lever                               | SK240504  |
| 10   | Disc                                | SK240519  |
| 11   | Spring loop                         | SK240509  |
| 12   | Support bracket                     | SK2405084 |
| 13   | Operating handle                    | SK240502  |
| 14   | Locking bar bolt                    | SK212114  |
| 15   | Double tension spring               | SK240523  |
| 16   | Support                             | SK240515  |
| 17   | Hexagon head bolt complete          | SK242153  |
| 18   | Hexagon head bolt complete          | SK242152  |
| 19   | Hexagon head bolt complete          | SK242150  |

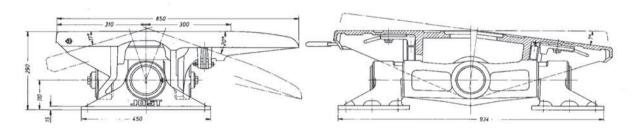
| Fig. | Description                      | Part No.      |
|------|----------------------------------|---------------|
| 21   | Grease nipple complete           | SK1976        |
| 22   | Grease tube                      | SK220512      |
| 23   | Upper rubber cushion             | SK2006        |
| 24a  | Pedestal 160 mm Bolt on/weldable | SK240405      |
| 24b  | Pedestal 190 mm Bolt on/weldable | SK240401      |
| 24c  | Pedestal 250 mm Bolt on/weldable | SK240404      |
| 25   | Lower rubber cushion             | SK2007        |
| 26   | Mounting bracket                 | SK2005        |
| 26a  | For use with 160mm pedestals     | SK20051       |
| 27   | Hexagon head bolt                | SK242155      |
| 29   | Ball bearing                     | KLKDR4100010K |
| 30   | Half moon compl.                 | SK370440      |
| 31   | Base plate (16mm) incl.56,57,58  | SK370631      |
| 31b  | Base plate (20mm) incl.56,57,58  | SK370632      |
| 32   | Hex. bolt compl.                 | SK372104      |
| 33   | Countersunk bolts compl          | SK372105      |
| 34   | Lock out pin, old style          | SK370509      |
| 34a  | Lock out pin, new style          | SK370514      |
| 35   | Tube park                        | SK370604      |
| 36   | Tube lock out, old style         | SK370510      |
| 36a  | Tube lock out, new style         | SK370515      |

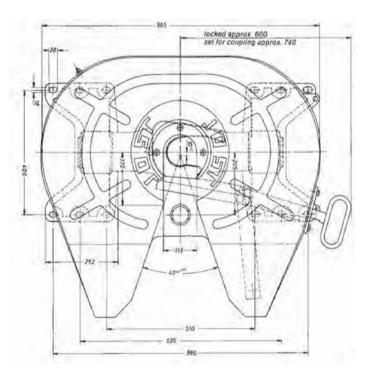
| Repair and Conversion Kits |  |          |  |  |
|----------------------------|--|----------|--|--|
| Fig.                       | Repair Kits                                | Part No. |  |  |
| 01, 03, 04, 05, 15         | Repair kit for locking device 3½"          | SK242176 |  |  |
| 01, 03, 04, 05, 15         | Repair kit for locking device 2"           | SK242177 |  |  |
| 23, 25, 27                 | Repair kit for rubber bearing              | SK242178 |  |  |
|                            | Conversion Kits                            |          |  |  |
| 28a                        | Kit to convert 3½" to 2" locking mechanism | SK242198 |  |  |
| 28b                        | Kit to convert 2" to 3½" locking mechanism | SK242199 |  |  |

## JSK38G1 / JSK38G2" - Cardan Mounting

with mounting pattern according to DIN 74 081 and 74 084







A heavy duty fifth wheel coupling for operation under arduous conditions.

The well known **JOST** locking device together with the maintenance free cardan mounting ensures a high degree of stability and safety on the road and off road.

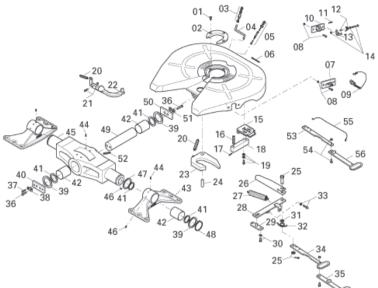
The lateral movement of  $7^{\circ}$  can be reduced to  $0^{\circ}$  for normal road operation.

This fifth wheel is available for use with 3½" & 2" king pins.

The conversion of 2"  $\& 3\frac{1}{2}$ " locking mechanism or vice versa can easily be carried out with standard tools, without removing the fifth wheel coupling from the tractive unit. Suitable for all types of rear axle steering systems.

| Туре     | King pin | Imposed<br>load | D-value | Weight | Approval<br>Number    |
|----------|----------|-----------------|---------|--------|-----------------------|
| JSK38G1  | 3½"      | 36 000kg        | 260kN   | 265kg  | ECE E1<br>55R-01 0336 |
| JSK38G2" | 2"       | 28 000kg        | 170kN   | 265kg  | ECE E1<br>55R-01 0443 |

## Spare parts for Type JSK38G1 / Type JSK38G2"





| Fig. | Description                               | Part No.    |
|------|---|-------------|
| 01   | Socket head cap screw                     | SK242108    |
| 02   | Wearing ring 3½" compl. with item 1       | SK242156    |
| 02   | Wearing ring 2" compl. with item 1        | SK242157    |
| 03   | Grease nipple compl.                      | SK1976      |
| 04   | Grease tube                               | SK1989      |
| 05   | Schmierleitung, compl. with item 6        | SK240802    |
| 06   | Tubing clamp                              | SK312113    |
| 07   | Guide plate up to series 70               | SK240522    |
| 80   | Hexagon head bolt comp.                   | SK242150    |
| 09   | Spring hook/chain up to series 70         | SK1436V     |
| 10   | Latch plate compl. with 11 from series 72 | SK2405084   |
| 11   | Split pin                                 | 000.003.027 |
| 12   | Spring compl. with spacer from series 72  | SK292130    |
| 13   | Latch compl. from series 72               | SK312152    |
| 14   | Bolt compl. form series 72                | SK352103    |
| 15   | Cover plate                               | SK250622    |
| 16   | Thrust spring                             | SK250615    |
| 17   | Clamping sleeve                           | SK252110    |
| 18   | Block                                     | SK250635    |
| 19   | Hexagon bolt                              | SK252150    |
| 20   | Lock jaw spring                           | SK210601    |
| 21   | Hexagon head bolt compl.                  | SK242151    |
| 22   | Pin                                       | SK240527    |
| 23   | Lock jaw 3½"                              | SK240514    |
| 23   | Lock jaw 2"                               | SK240513    |
| 24   | Pivot bolt                                | SK240518    |
| 25   | Pivot bolt compl.                         | SK212114    |
| 26   | Locking bar                               | SK240501    |
| 27   | Double tension spring                     | SK240523    |
| 28   | Lever                                     | SK240504    |

|      | , //                       |           |
|------|----------------------------|-----------|
| Fig. | Description                | Part No.  |
| 29   | Support                    | SK240515  |
| 30   | Hexagon head bolt compl.   | SK242153  |
| 31   | Disc                       | SK240519  |
| 32   | Spring loop                | SK240509  |
| 33   | Hexagon head bolt compl.   | SK242152  |
| 34   | Operating handle           | SK240566  |
| 35   | Handle                     | SK2405066 |
| 36   | Hexagon bolt               | SK2034    |
| 37   | Hexagon bolt               | SK252118  |
| 38   | Security plate             | SK250421  |
| 39   | Distance ring              | SK250414  |
| 40   | Plate                      | SK250418  |
| 41   | Seal                       | SK252107  |
| 42   | Bush                       | SK250416  |
| 43   | Pedestal with 42, 44, 46   | SK252152  |
| 44   | Dowel pin                  | SK1533    |
| 45   | Lock lever compl.          | SK252151  |
| 46   | Grease nipple              | SK252104  |
| 47   | Distance plate             | SK11921   |
| 48   | Circlip                    | SK1435    |
| 49   | Pivot                      | SK250417  |
| 50   | Lock                       | SK250419  |
| 51   | Security plate             | SK250420  |
| 52   | Grease nipple              | SK252157  |
| 53   | Extended handle lower part | SK2405067 |
| 54   | Hexagon bolt               | SK242150  |
| 55   | Latch cord compl.          | SK352102  |
| 56   | Extended handle grip       | SK3105113 |

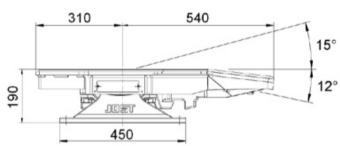
## **Repair and Conversion Kits**

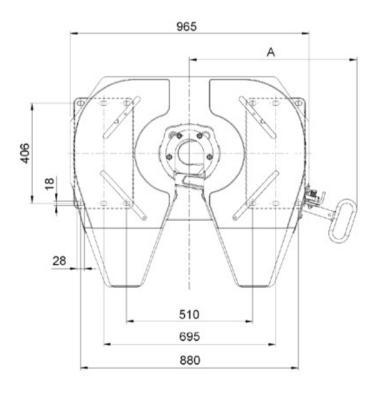
| Fig.                           | Repair Kits                       | Part No.  |
|--------------------------------|-----------------------------------|-----------|
| 01, 02, 05, 09, 20, 23, 24, 27 | Repair kit for locking device 3½" | SK242176  |
| 01, 02, 05, 09, 20, 23, 24, 27 | Repair kit for locking device 2"  | SK242177  |
| 35, 54, 55                     | Handle extension                  | SK3121063 |
|                                | Conversion kits                   |           |
| 01, 02, 20,23                  | Conversion from 3½" pin to 2" pin | SK242198  |
| 01, 02, 20,23                  | Conversion from 2" pin to 3½" pin | SK242199  |

# JSK39CS & JSK39CSW – Rubber Mounting Fifth Wheel coupling with wear steel top plate

Suitable for 31/2" king pins. Greaseless option available







Heavy duty

Applications: Mining

Stock crate Fridge van Forestry Off road

Suitable for 3½" king pins

D-Value 275 kN Overall height 190 mm

> 160 mm 250 mm

Imposed load 26000 kgs
Weight approx. 232 kgs
Approval Number CTA-045375

In accordance with the standards:

ISO3842, DIN 74081

#### **Features**

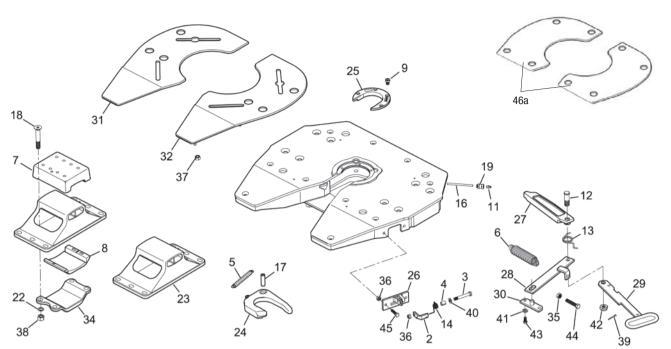
A heavy duty fifth wheel coupling for operation under arduous conditions.

Removable wear plates, bolted to the top plate, allowing an easier and cheaper maintenance. Also available in greaseless. Manual adjustment for the locking mechanism to extend the life cycle.

Rubber cushions pad mount. High reliability in the locking mechanism.

Mounting must be carried out in accordance with our instructions.

## Spare parts for JSK39CS & JSK39CSW





| Items | Description          | Note                             | Code       |
|-------|----------------------|----------------------------------|------------|
| 02    | Latch                |                                  | SK312152   |
| 03    | Latch Bolt           | $M10\times1.5\times70$           | SK352103   |
| 04    | Spring and spacer    |                                  | SK312159   |
| 05    | Jaw spring           |                                  | SK210638   |
| 06    | Spring double        |                                  | SK240523   |
| 07    | Upper rubber cushion |                                  | SK2006     |
| 80    | Lower rubber cushion |                                  | SK2007     |
| 09    | Socket head bolt     | $\text{M12}\times \text{15}$     | SK242108   |
| 11    | Fitting              |                                  | AD00896J80 |
| 12    | PINO Bar             |                                  | AD01096J80 |
| 13    | Spring noose         |                                  | AD01097J00 |
| 16    | Tube nylon 6mm       |                                  | AD01105J00 |
| 17    | Bolt                 |                                  | AD01126J80 |
| 18    | Screw                | $\text{M20} \times 2 \times 125$ | AD01141B81 |
| 19    | Input Connector      |                                  | AD01154J00 |
| 22    | Safety washer        |                                  | AD01196J00 |
| 23    | Pedestal 190mm       |                                  | SK240401   |
| 23b   | Pedestal 160mm       |                                  | SK240405   |

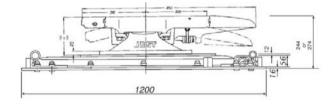
| Items | Description                       | Note                          | Code        |
|-------|-----------------------------------|-------------------------------|-------------|
| 23c   | Pedestal 250mm                    |                               | SK240404    |
| 24    | Jaw 3 ½"                          |                               | SK240514Z   |
| 25    | Wear Ring                         |                               | QR00166J01  |
| 26    | Latch holder                      |                               | SK2405084   |
| 27    | Lock Bar                          |                               | QR00187J01  |
| 28    | Lever                             |                               | QR00188J01  |
| 29    | Handle                            |                               | QR00190J01  |
| 30    | Bearing                           |                               | SK240515    |
| 31    | Wear plate                        | Left                          | QR00195J01  |
| 32    | Wear plate                        | right                         | QR00197J01  |
| 34    | Bridge                            |                               | SK2005      |
| 37    | Hex Nut                           | M12                           | ST03006B80  |
| 38    | Hex Nut                           | M20                           | ST03007B81  |
| 42    | Castellated nut                   | M20                           | ST12002J80  |
| 43    | Hex Bolt, complete                | $\text{M12} \times 25$        | SK242153    |
| 44    | Hex Bolt, complete                | $\text{M14} \times \text{70}$ | SK242152    |
| 45    | Hex Bolt, complete                | $M10 \times 40$               | SK242150    |
| 46    | Replacement insert kit            |                               | QR00248J00  |
| 46a   | Replacement greaseless insert kit |                               | SK3106039CS |

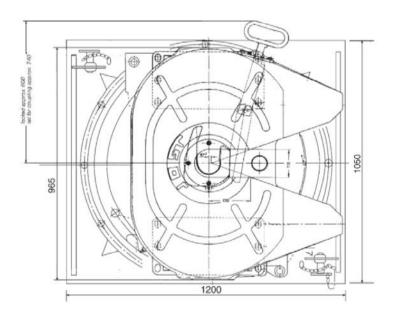
| Repair Kits            |                             |              |
|------------------------|-----------------------------|--------------|
| Items                  | Repair Kits                 | Code         |
| 09, 05, 06, 17, 24, 25 | Repair kit for lock 3.5"    | QR00245J00   |
| 07, 08, 18, 22, 38     | Repair kit for bearing      | SK242180     |
| 02, 03, 04             | Repair kit for spring latch | SK312152 KIT |
| 25, 09                 | Wear Ring, compl. with 09   | QR00244J00   |

# LP39CS & 39CSW Low Profile Stabilised Fifth Wheel Assembly

Suitable for 31/2" king pins. Greaseless option available







Heavy duty

**Applications: Stock crate** 

Fridge van General freight Tankers

Standard with 16 mm base plate optional: 20 mm base plate LP39C 20mm

\*Note thicker base plate determines extra weight and height.

D-Value

JSK39CS, CSW 240 kN Imposed load 24000 kgs Weight approx. 425 kgs

(for 16mm base plate)

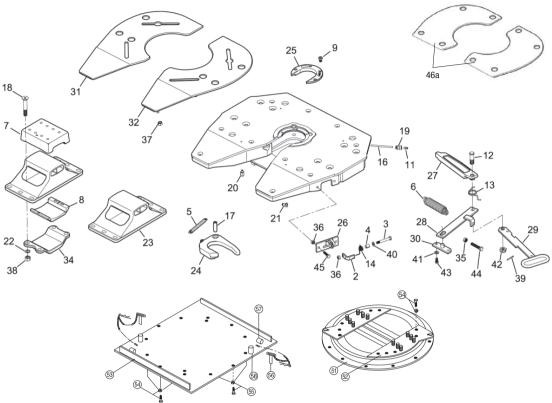
Approval Number JSK39CS / CSW

CTA-045375 LP Subassembly CTA-047151

#### Twin lockouts.

Flush bolt heads on mounting plate in chassis mounting zone. Cast type unit equipped with JSK39 CS fifth wheel extra heavy duty unit. Mounting must be carried out in accordance with our instructions.

## Spare parts for LP39CS & LP39CS





|       |                        | <u>_</u>               | <b>⋄</b> ∎ ∞ |
|-------|------------------------|------------------------|--------------|
| Items | Description            | Note                   | Code         |
| 02    | Latch                  |                        | SK312152     |
| 03    | Latch Bolt             | $M10\times1.5\times70$ | SK352103     |
| 04    | Spring and spacer      |                        | SK312159     |
| 05    | Jaw spring             |                        | SK210638     |
| 06    | Spring double          |                        | SK240523     |
| 07    | Upper rubber cushion   |                        | SK2006       |
| 08    | Lower rubber cushion   |                        | SK2007       |
| 09    | Socket head bolt       | M12 × 15               | SK242108     |
| 11    | Fitting                |                        | AD00896J80   |
| 12    | PINO Bar               |                        | AD01096J80   |
| 13    | Spring noose           |                        | AD01097J00   |
| 16    | Tube nylon 6mm         |                        | AD01105J00   |
| 17    | Pivot                  |                        | AD01126J80   |
| 18    | Screw                  | $M20\times2\times125$  | AD01141B81   |
| 19    | Input Connector        |                        | AD01154J00   |
| 22    | Safety washer          |                        | AD01196J00   |
| 23    | Pedestal 190mm         |                        | SK240401     |
| 23b   | Pedestal 160mm         |                        | SK240405     |
| 23c   | Pedestal 250mm         |                        | SK240404     |
| 24    | Jaw 31/2"              |                        | SK240514Z    |
| 24    | Jaw 31/2" (greaseable) |                        | SK240514     |
| 25    | Wear Ring              |                        | QR00166J01   |
| 26    | Latch holder           |                        | SK2405084    |
| 27    | Lock Bar               |                        | QR00187J01   |
| 28    | Lever                  |                        | QR00188J01   |

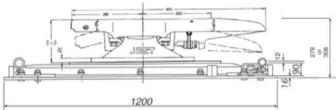
| Items | Description                       | Note                   | Code        |
|-------|-----------------------------------|------------------------|-------------|
| 29    | Handle                            |                        | QR00190J01  |
| 30    | Bearing                           |                        | SK240515    |
| 31    | Wear plate                        | Left                   | QR00195J01  |
| 32    | Wear plate                        | right                  | QR00197J01  |
| 34    | Bridge                            |                        | SK2005      |
| 37    | Hex Nut                           | M12                    | ST03006B80  |
| 38    | Hex Nut                           | M20                    | ST03007B81  |
| 42    | Castellated nut                   | M20                    | ST12002J80  |
| 43    | Hex Bolt, complete                | $\text{M12} \times 25$ | SK242153    |
| 44    | Hex Bolt, complete                | $\text{M14} \times 70$ | SK242152    |
| 45    | Hex Bolt, complete                | $\text{M10} \times 40$ | SK242150    |
| 46    | Replacement insert kit            |                        | QR00248J00  |
| 46a   | Replacement greaseless insert kit |                        | SK3106039CS |
| 51    | Ball bearing                      |                        | KDL9006W    |
| 52    | Half moon compl.                  |                        | SK370629    |
| 53    | Base plate (16mm) incl. 34, 36    |                        | SK370616    |
| 53a   | Base plate (20mm) incl. 34, 36    |                        | SK370620    |
| 54    | Hex. bolt compl.                  |                        | SK372104    |
| 55    | Countersunk bolt compl.           |                        | SK372105    |
| 56    | Lock out pin, old style           |                        | SK370610    |
| 56a   | Lock out pin, new style           |                        | SK370609    |
| 57    | Tube park                         |                        | SK370604    |
| 58    | Tube lock out, old style          |                        | SK370605    |
| 58a   | Tube lock out, new style          |                        | SK370504    |

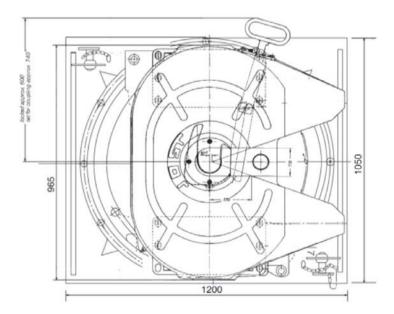
| Repair Kits            |                              |              |
|------------------------|------------------------------|--------------|
| Items                  | Repair Kits                  | Code         |
| 05, 06, 09, 17, 24, 25 | Repair kit for lock 3.5"     | QR00245J00   |
| 07, 08, 18, 22, 38     | Repair kit for bearing       | SK242180     |
| 02, 03, 04             | Repair kit for spring latch  | SK312152 KIT |
| 09, 25                 | Wearing Ring, compl. with 09 | QR00244J00   |

# DR39CS and DR39CSW Double Row Stabilised Fifth Wheel Assembly

Suitable for 31/2" king pins. Greaseless option available







**Heavy duty** 

**Applications: Stock crate** 

Fridge van General freight Tankers

Standard with 16 mm base plate optional: 20 mm base plate DR39C 20mm

\*Note thicker base plate determines extra weight and height.

D-Value

JSK39 CS & CSW 275 kN Imposed load 26000 kgs Weight approx. 485 kgs

(for 16mm base plate)

Approval Number JSK39CS / CSW

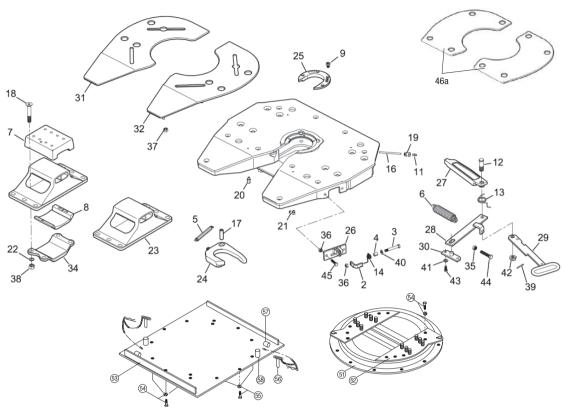
CTA-045375 DR Subassembly CTA-060153

#### Twin lockouts.

Flush bolt heads on mounting plate in chassis mounting zone. Cast type unit equipped with JSK39 CS fifth wheel extra heavy duty unit. Mounting must be carried out in accordance with our instructions.

Mounting must be carried out in accordance with our instructions.

## Spare parts for DR39CS & DR39CSW





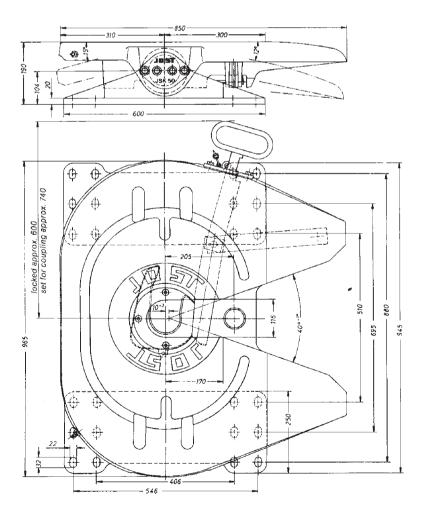
|       |                        | Θ.                                |            |
|-------|------------------------|-----------------------------------|------------|
| Items | Description            | Note                              | Code       |
| 02    | Latch                  |                                   | SK312152   |
| 03    | Latch Bolt             | $\text{M10} \times 1.5 \times 70$ | SK352103   |
| 04    | Spring and spacer      |                                   | SK312159   |
| 05    | Jaw spring             |                                   | SK210638   |
| 06    | Spring double          |                                   | SK240523   |
| 07    | Upper rubber cushion   |                                   | SK2006     |
| 08    | Lower rubber cushion   |                                   | SK2007     |
| 09    | Socket head bolt       | M12 × 15                          | SK242108   |
| 11    | Fitting                |                                   | AD00896J80 |
| 12    | PINO Bar               |                                   | AD01096J80 |
| 13    | Spring noose           |                                   | AD01097J00 |
| 16    | Tube nylon 6mm         |                                   | AD01105J00 |
| 17    | Pivot                  |                                   | AD01126J80 |
| 18    | Screw                  | $M20\times2\times125$             | AD01141B81 |
| 19    | Input Connector        |                                   | AD01154J00 |
| 22    | Safety washer          |                                   | AD01196J00 |
| 23    | Pedestal 190mm         | 190mm                             | SK240401   |
| 23b   | Pedestal 160mm         |                                   | SK240405   |
| 23c   | Pedestal 250mm         |                                   | SK240404   |
| 24    | Jaw 31/2"              |                                   | SK240514Z  |
| 24a   | Jaw 31/2" (greaseable) |                                   | SK240514   |
| 25    | Wear Ring              |                                   | QR00166J01 |
| 26    | Latch holder           |                                   | SK2405084  |
| 27    | Lock Bar               |                                   | QR00187J01 |
| 28    | Lever                  |                                   | QR00188J01 |

| Items | Description                       | Note                          | Code          |
|-------|-----------------------------------|-------------------------------|---------------|
| 29    | Handle                            |                               | QR00190J01    |
| 30    | Bearing                           |                               | SK240515      |
| 31    | Wear plate                        | Left                          | QR00195J01    |
| 32    | Wear plate                        | Right                         | QR00197J01    |
| 34    | Bridge                            |                               | SK2005        |
| 37    | Hex Nut                           | M12                           | ST03006B80    |
| 38    | Hex Nut                           | M20                           | ST03007B81    |
| 42    | Castellated nut                   | M20                           | ST12002J80    |
| 43    | Hex Bolt, complete                | $M12 \times 25$               | SK242153      |
| 44    | Hex Bolt, complete                | $\text{M14} \times \text{70}$ | SK242152      |
| 45    | Hex Bolt, complete                | $M10 \times 40$               | SK242150      |
| 46    | Replacement insert kit            |                               | QR00248J00    |
| 46a   | Replacement greaseless insert kit |                               | SK3106039CS   |
| 51    | Ball bearing                      |                               | KLKDR4100010K |
| 52    | Half moon compl.                  |                               | SK370640      |
| 53    | Base plate (16mm) incl. 34, 36    |                               | SK370631      |
| 53a   | Base plate (20mm) incl. 34, 36    |                               | SK370632      |
| 54    | Hex. bolt compl.                  |                               | SK372104      |
| 55    | Countersunk bolt compl.           |                               | SK372105      |
| 56    | Lock out pin, old style           |                               | SK370509      |
| 56a   | Lock out pin, new style           |                               | SK370414      |
| 57    | Tube park                         |                               | SK370604      |
| 58    | Tube lock out, old style          |                               | SK370510      |
| 58a   | Tube lock out, new style          |                               | SK370515      |

| Repair Kits            |                              |              |
|------------------------|------------------------------|--------------|
| Items                  | Repair Kits                  | Code         |
| 05, 06, 09, 17, 24, 25 | Repair kit for lock 3.5"     | QR00245J00   |
| 07, 08, 18, 22, 38     | Repair kit for bearing       | SK242180     |
| 02, 03, 04             | Repair kit for spring latch  | SK312152 KIT |
| 09, 25                 | Wearing Ring, compl. with 09 | QR00244J00   |

# **Pivot Bearing – JSK50**





A heavy duty fifth wheel for arduous conditions D rating 300 kN imposed load up, to 50,000 kg.

Suitable for all types of rear axle steering systems.

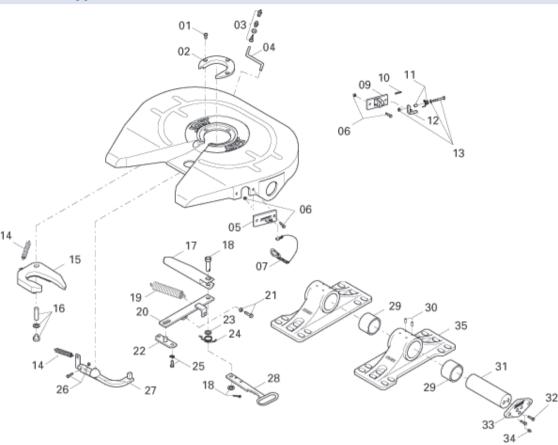
Weight: 290 Kg.

Bolt on type Pedestals

Approval Number - ECE E1 55R-01 2504

Mounting must be carried out in accordance with our instructions.

## **Spare parts for Type JSK50**





| Fig. | Description                        | Part No.    |
|------|------------------------------------|-------------|
| 01   | Socket head bolt                   | SK242108    |
| 02   | Wearing ring 31/2", compl. with 1  | SK242156    |
| 03   | Nut and bolt                       | SK1976      |
| 04   | Lubrication tube                   | SK1989003   |
| 05   | Guide plate                        | SK240522    |
| 06   | Hexagon bolt, complete             | SK242150    |
| 07   | Spring hook, complete              | SK1436      |
| 09   | Latch holder, compl. with 10       | SK2405084   |
| 10   | Clamping pin                       | 000.003.027 |
| 11   | Spring noose with spacer           | SK292130    |
| 12   | Latch, complete                    | SK312152    |
| 13   | Hexagon bolt, complete             | SK352103    |
| 14   | Tension spring                     | SK210638    |
| 15   | Lock jaw 3½"                       | SK240514    |
| 15a  | Lock jaw 3½" to suit grease nipple | SK240514Z   |
| 16   | Bolt, complete                     | SK242154    |
| 17   | Locking bolt                       | SK240501    |
| 18   | Bar bolt, complete                 | SK212114    |

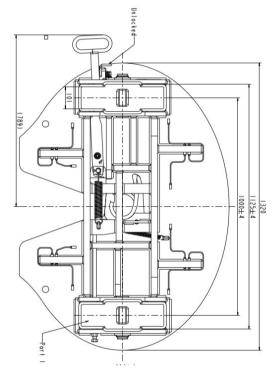
| Fig. | Description                   | Part No.  |
|------|-------------------------------|-----------|
| 19   | Double tension spring         | SK240523  |
| 20   | Lever                         | SK240504  |
| 21   | Hexagon bolt, complete        | SK242152  |
| 22   | Bearing                       | SK240515  |
| 23   | Washer                        | SK240519  |
| 24   | Spring noose                  | SK240509  |
| 25   | Hexagon bolt, complete        | SK242153  |
| 26   | Hexagon bolt, complete        | SK242151  |
| 27   | Latch                         | SK240527  |
| 28   | Handle                        | SK2405066 |
| 29   | Bearing bushing               | SK280503  |
| 30   | Cylindrical notched pin       | SK1533    |
| 31   | Pivot pin                     | SK280501  |
| 32   | Locking bolt                  | SK252105  |
| 33   | Plate                         | SK280502  |
| 34   | Grease nipple                 | SK252104  |
| 35   | Pedestal, compl. with 29 + 30 | SK282151  |

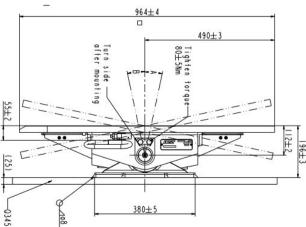
## **Repair and Conversion Kits**

| Fig.                       | Repair Kits                             | Part No. |
|----------------------------|---|----------|
| 1, 2, 5, 7, 12, 20, 27, 28 | Repair kit for lock 3½"                 | SK242176 |
|                            | Conversion Kits                         |          |
| 31, 32, 34                 | Handle extension retrofit kit, complete | SK282151 |

# JSK52 – Heavy Duty Fifth Wheel Coupling 3½" for extreme applications







A heavy duty fifth wheel coupling for operation under arduous conditions.

Increased load (up to 75,000kg).

With pivot bearing weld on pedestals.

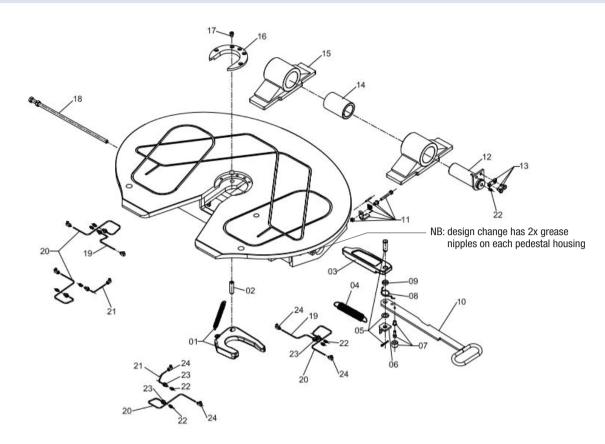
#### **Technical specification:**

#### Pin and bush

The fifth wheel coupling complies with the directives/standards as per 94/20/EC – Class S, DIN 74084 and ISO 3842. Suitable for 3.5" (90) king pins as per 94/20/EC, DIN 74083 and ISO 4086. Fitted on a mounting plate.

Imposed weight 75,000 kg
D-value 400 kN
Weight 450 kg
Approval Number CTA-046422

## **Spare parts for Type JSK52**





| Fig. | Description                      | Part No.                    |
|------|----------------------------------|-----------------------------|
| 1    | Jaw, complete                    | SK8301005                   |
| 2    | Lock bolt                        | SK8301307                   |
| 3    | Locking bar                      | SK8301209                   |
| 4    | Double tension spring            | SK8301210                   |
| 5    | Bar bolt                         | SK8301006                   |
| 6    | Spring pulling plate             | SK8101206                   |
| 7    | Bolt                             | SK8301007                   |
| 8    | Torsion spring                   | SK240509                    |
| 9    | Spacer                           | SK8101305                   |
| 10   | Pull handle                      | SK8301213                   |
| 11   | Latch mechanism                  | SK8301008                   |
| 12   | Pivot pin                        | SK8301205                   |
| 13   | Hex head screw & retaining sheet | 000.001.148 &<br>SK3104/046 |
| 14   | Rubber bushing                   | SK8301204                   |

| Fig. | Description       | Part No.  |
|------|-------------------|-----------|
| 15   | Pedestal 196mm    | SK8301216 |
| 16   | Wear ring Socket  | SK8301223 |
| 17   | Head bolt         | SK242108  |
| 18   | Adjusting screw   | SK8301301 |
| 19   | Oil pipe 1        | SK8301220 |
| 20   | Oil pipe 2        | SK8301221 |
| 21   | Oil pipe 3        | SK8301222 |
| 22   | Oil nipple        | SK8301308 |
| 23   | Oil pipe joint    | SK8301310 |
| 24   | 90 oil pipe joint | SK8301309 |

# JSK54 – Heavy Duty Fifth Wheel Coupling 4" for extreme applications



Extreme heavy duty fifth wheel coupling for use in offroad applications.

4" fifth wheel.

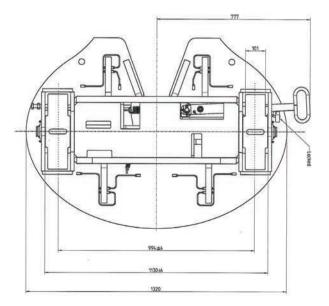
Compatible with 4" / 100mm king pins.

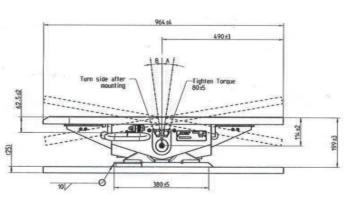
Imposed load 80t.

GCM rating 385T \*combination specific.

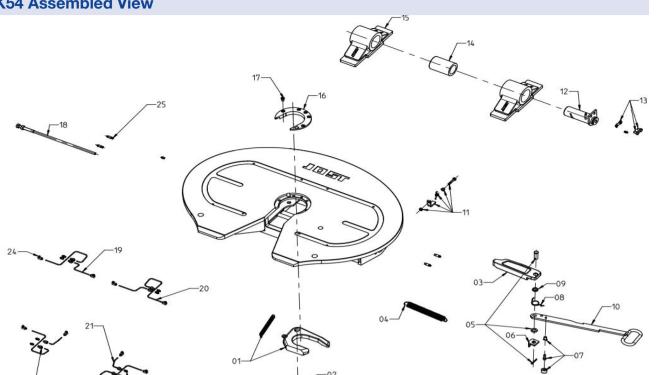
#### **Technical specification:**

D-value Weight 550 kN 2,500 kg





## **JSK54 Assembled View**





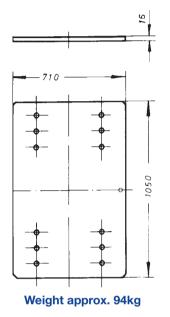
| No. | Description                          | Remark   | Order No.     | Quantity<br>/set |
|-----|--------------------------------------|----------|---------------|------------------|
| 1   | Lock jaw                             | 4" (100) | SK8303-005    | 1                |
| 2   | Pivot                                |          | SK8303-307    | 1                |
| 3   | Lock bar                             |          | SK8303-209    | 1                |
| 4   | Double tension spring                |          | SK8301-210-01 | 1                |
| 5   | Bar bolt                             |          | SK8301-006    | 1                |
| 6   | Fixing loop                          |          | SK8101-206    | 1                |
| 7   | Bolt                                 |          | SK8301-007    | 1                |
| 8   | Spring                               |          | SK2405-009    | 1                |
| 9   | Washer                               |          | SK8101-305    | 1                |
| 10  | Pull handle                          |          | SK8303-213    | 1                |
| 11  | Latch mechanism                      |          | SK8301-008    | 1                |
| 12  | Swivel pin with stop                 |          | SK8301-205    | 2                |
| 13  | Hexagon head screw + retaining sheet |          | SK2921-038    | 2                |
| 14  | Bushing                              |          | SK8301-204    | 2                |

| No. | Description                      | Remark   | Order No.     | Quantity<br>/set |
|-----|----------------------------------|----------|---------------|------------------|
| 15  | Pedestal (196mm)                 |          | SK8301-224    | 2                |
| 16  | Wearing ring                     | 4" (100) | SK8303-223    | 1                |
| 17  | Socket head cap screw            |          | SK2421-008-02 | 5                |
| 18  | Adjusting screw with hexagon nut |          | SK8301-301    | 1                |
| 19  | Oil pipe 1                       |          | SK8301-220    | 2                |
| 20  | Oil pipe 2                       |          | SK8301-221    | 4                |
| 21  | Oil pipe 3                       |          | SK8301-222    | 2                |
| 22  | Oil nipple                       |          | SK8301-308    | 10               |
| 23  | Oil pipe joint                   |          | SK8301-310    | 8                |
| 24  | 90 oil pipe joint                |          | SK8301-309    | 8                |
| 25  | Oil nipple-long                  |          | SK8301-308-01 | 4                |

# Mounting Plates Mounting height 16mm and 20mm

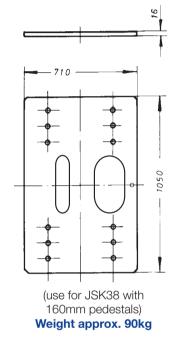
For fifth wheel couplings with mounting pattern according to DIN 74084, for example JSK38C1 and JSK38G1

#### **MP0118**



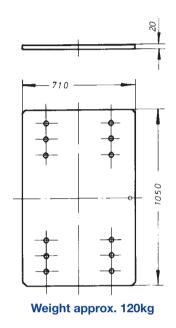
Drilling pattern according to DIN standard 74084 and ISO 3842

#### MP0118/JSK38



Drilling pattern according to DIN standard 74084 and ISO 3842

#### **MP0119**



Drilling pattern according to DIN standard 74084 and ISO 3842

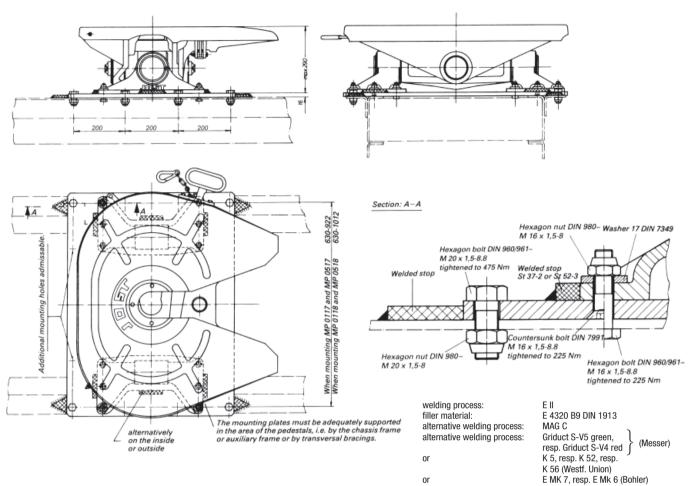
The mounting plates are suitable for all types of semi-trailers with rear axle steering systems.

Suitable for fifth wheel couplings up to 290 mm mounting height.

Imposed load 36000 kgs D-Value 260 kN

For fifth wheel couplings with JOST mounting pattern according to JOST standard type JSK38C and JSK38G.

#### **Mounting example**



#### **Mounting instructions**

When mounting the fifth wheel according to DIN 74084 on to a **JOST** mounting plate use 12 bolts M 16, preferably M  $16 \times 1,5$  grade at least 8.8, respectively M 20, preferably M  $20 \times 1,5$  for JSK38C1 and JSK38G1.

To fix the mounting plate on to the vehicle chassis at least 6 bolts M 16  $\times$  1,5, preferably M 16  $\times$  1,5, grade at least 8.8 respectively 4  $\times$  20, preferably M 20  $\times$  1,5 are required on each side.

To ease the shear load on the mounting bolts stop blocks should be welded to both sides of the pedestals and to the front and rear of the mounting plate. The fifth wheel plate must

be able to move freely and must touch neither the mounting plate nor the chassis or subframe.

The mounting instructions of the truck manufacturers and—if applicable—existing legal regulations must be adhered to. The bolts must be checked for tightness.

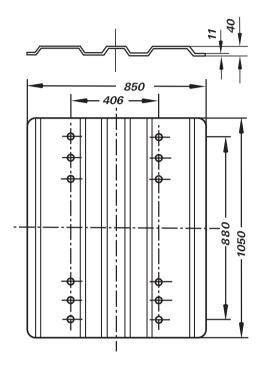
**JOST** 'Mounting instructions for 2" fifth wheel couplings' must be strictly adhered to. Fit fifth wheel in accordance to AS/ NZS 4968.2:2003 "Installation of fifth wheel and turntable assemblies".



# **Mounting Height 40mm**

For fifth wheel couplings with mounting pattern according to DIN 74084, for example JSK38C1 and JSK38G1

#### **MP4126**



Weight approx. 81kg

Drilling pattern according to DIN standard 74084 and ISO 3842

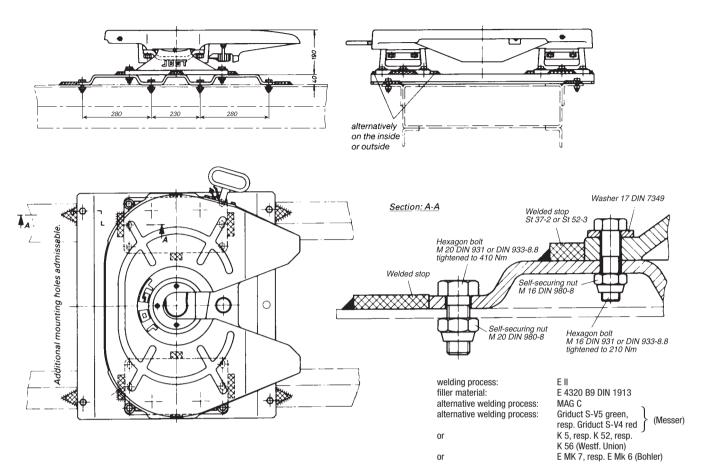
The mounting plates are suitable for all types of semi-trailers with rear axle steering systems.

Suitable for fifth wheel couplings up to 290 mm mounting height.

Imposed load 36000 kg D-value 260 kN

For fifth wheel couplings with **JOST** mounting pattern according to **JOST** standard type JSK38C and JSK38G

#### Mounting example - MP4126





When mounting the fifth wheel according to DIN standard 74084 onto a **JOST** mounting plate use 12 bolts M 16 preferably M  $16 \times 1,5$  grade at least 8.8 respectively M 20 preferably M  $20 \times 1,5$  for JSK38C and JSK38G.

To fix the mounting plate on to the vehicle chassis at least 6 bolts M 16, preferably M 16  $\times$  1,5, grade at least 8.8 respectively 4  $\times$  M 20, preferably M 20  $\times$  1,5 are required on each side.

To ease the shear load on the mounting bolts stop blocks should be welded to both sides of the pedestals and to the front and rear of the mounting plate.

The fifth wheel plate must be able to move freely and must touch neither the mounting plate nor the chassis or subframe.

The mounting instructions of the truck manufacturers and—if applicable—existing legal regulations must be adhered to. The bolts must be checked for tightness.

**JOST** 'Mounting instructions for 2" fifth wheel couplings" must be strictly adhered to. Fit fifth wheel in accordance to AS/NZS 4968.2:2003 "Installation of fifth wheel and turntable assemblies".

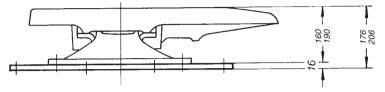


# Mounting Plate Summary for Heavy Duty Fifth Wheel Couplings up to 36000kg Imposed Load

#### **JSK 38C Height Variations – Type MP0118**

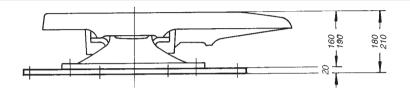
Imposed load D-value

36000 kg 260 kN



#### **Type MP0119**

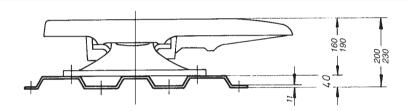
Imposed load D-value 36000 kg 260 kN



#### **Type MP4126**

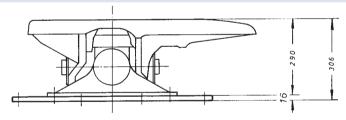
Imposed load D-value

36000 kg 260 kN



#### JSK38GI height variations - Type MP0118

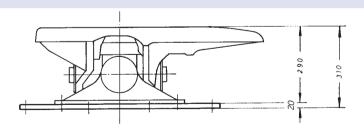
Imposed load D-value 36000 kg 260 kN



#### **Type MP0119**

Imposed load D-value

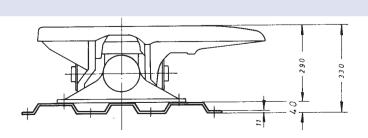
36000 kg 260 kN



#### **Type MP4126**

Imposed load D-value

36000 kg 260 kN



The right to alter specifications is reserved.



## JSKSL Slider Fifthwheel

#### Standard and XXL



#### **Multi-purpose**

- Fifth wheel coupling position freely adjustable in 50mm steps
  - o optimum shaft load and load distribution
  - o total traction length setting
- Various heights available on request
- Can be attached to all standard vehicle types
- Equipped with the tried and tested fifth wheel couplings JSK37E, JSK37EW

#### **Easy Mounting and operation**

- All standard customer hole patterns available ex works
- Easy to mount with a hexagonal bolt
- Base plate to suit European or North American spec chassis

#### Lightweight, compact and robust

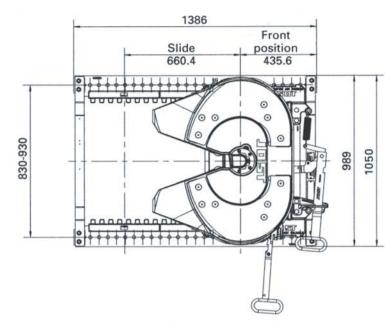
- 25% lighter than its predecessors
- Greater degree of travel with smaller external dimensions
- Cathodic electrophoretic painting for optimum anti corrosion

#### Top safety standards

- Self-locking mechanism, protected against accidental opening
- Elbow lever principle for greater locking force
- Fourfold, interlocking lock between the carriage and slider frame
- Forged gear tooth rows
- Cast pedestals

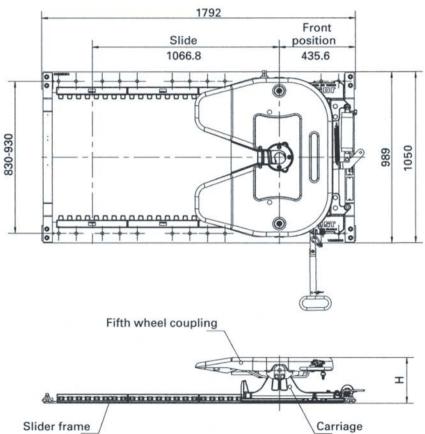
### **JSKSL - Technical Specifications**

#### Standard





**XXL** 

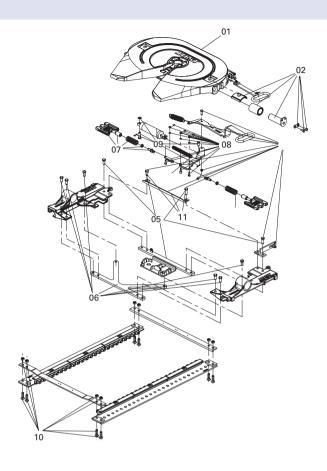


### **Technical specifications**

| Version  | Mounting height (mm) | Permitted imposed load (t) | D value<br>(kN) | Weight minus fifth wheel coupling (kg) | Approval<br>Number |
|----------|----------------------|----------------------------|-----------------|--|--------------------|
| Standard | 173/203/220/263      | 20t                        | 190kN           | approx. 118-248kg                      | CTA-042707         |
| XXL      | 173/203/220/263      | 20t                        | 190kN           | approx. 139-303kg                      |                    |

# **JSK SL**

## **Spare parts**



| Pos. | Description          | Remark                | Order No.    | pro<br>JSK |
|------|----------------------|-----------------------|--------------|------------|
| 01   | Fifth wheel coupling | *                     |              | 1          |
| 02   | Split pin            | **                    |              | 2          |
| 05   | Split pin, kit       |                       | SLE202210020 | 1          |
| 06   | Bracing, kit         |                       | SLE202120020 | 1          |
| 07   | Stopper, kit         |                       | SLE202520020 | 2          |
| 80   | Lever, kit           |                       | SLE202300020 | 1          |
| 09   | Cylinder, kit        | for pneumatic version | SLE202410020 | 1          |

|   | JSK |
|---|-----|
| 10 Traverse, kit SLE201380020                     | 2   |
| 10 Reinforced Traverse, Kit Scania SLE201380320   | 2   |
| 11 Bridge, kit for manual version SLE202770020    | 1   |
| 11 Bridge, kit for pneumatic version SLE203300020 | 1   |

<sup>\*</sup>For spare parts for the fifth wheel refer to JSK37E

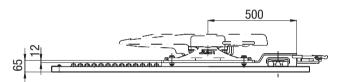
Spare pedestals are not available

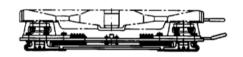
## **JSK37EVM Manual Slider Assembly**

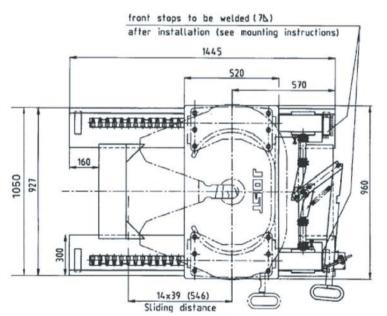
All normal fifth wheel couplings can be mounted on the sliding device. Standard mounting holes for the fifth wheel coupling according to DIN standard 74081 and ISO 3842 are provided.











Imposed Load 18,000 kg
Weight approx. 180-440 kg
(without fifth wheel)
D-value 190 kN
Approval Number CTA-026170

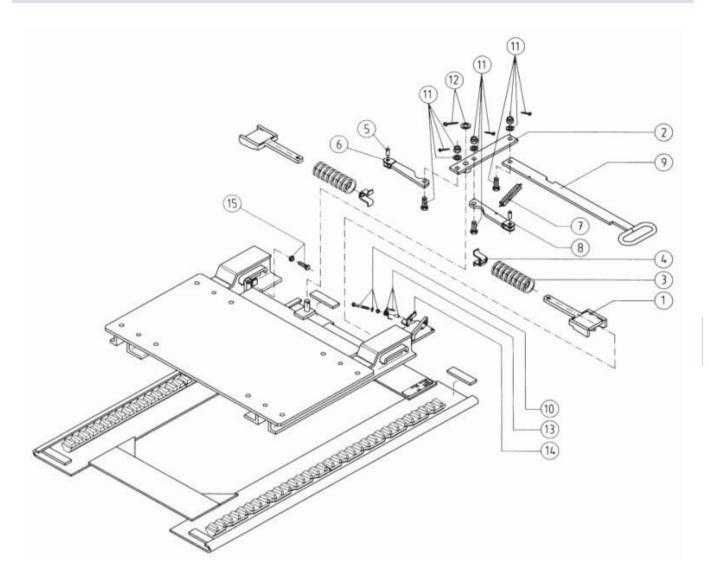
#### For use with JSK37CZ/150

Base plate to suit European or North American spec

The above loads apply to operation on ordinary roads and ordinary operating conditions as they are to be found in Europe. If the fifth wheels are being operated in other territories or under other conditions we would ask you to contact us regarding the type of fifth wheel to be used.

The right to alter specifications is reserved.

## **Spare Parts for EVM Slider**



| Fig. | Description     | Part No. |
|------|-----------------|----------|
| 01   | Locking plunger | V100501  |
| 02   | Handle, compl.  | V100535  |
| 03   | Spring          | V100503  |
| 04   | Spring retainer | V100504  |
| 05   | Pin             | V100505  |
| 06   | Lever           | V100548  |
| 07   | Tension spring  | SK12381  |
| 80   | Lever           | V1005139 |

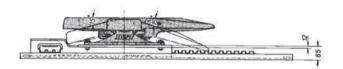
| Fig. | Description                     | Part No. |
|------|---------------------------------|----------|
| 09   | Operating handle                | V1005183 |
| 10   | Hexagon screw, compl.           | V102149  |
| 11   | Hexagon screw, compl.           | V102109  |
| 12   | Washer with split pin           | V102110  |
| 13   | Spring spacer, clamping sleeves | V102150  |
| 14   | Latch, compl.                   | V1005213 |
| 15   | Hexagon screw, compl.           | V102106  |
| 16   | Slide Upper Part                | V1002020 |

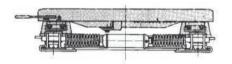
## **JSK37EVP Air-operated slider assembly**

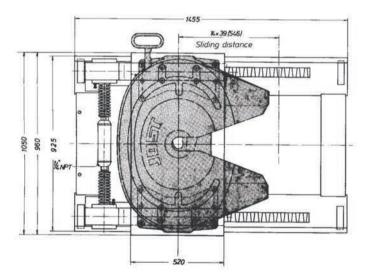
All normal fifth wheel couplings can be mounted on the sliding device. Standard mounting holes for the fifth wheel coupling according to DIN standard 74081 and ISO 3842 are provided.











Imposed Load 18,000 kg
Weight approx. 175- 435 kg
(without fifth wheel)
D-value 190 kN
Approval Number CTA-026170

#### For use with JSK37CZ/150

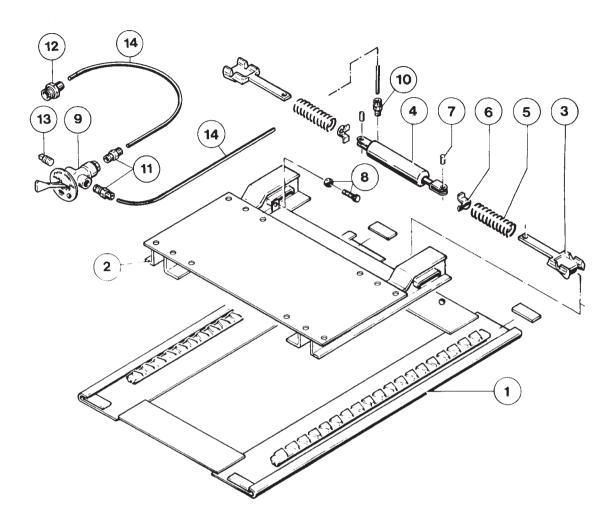
Base plate to suit European or North American spec

The complete pneumatic actuating device (items 9 to 14 of spare parts list shown overleaf) is supplied.

The above loads apply to operation on ordinary roads and ordinary operating conditions as they are to found in Europe. If the fifth wheels are being operated in other territories or under other conditions we would ask you to contact us regarding the type of fifth wheel to be used.

The right to alter specifications is reserved.

## **Spare Parts for EVP Slider**



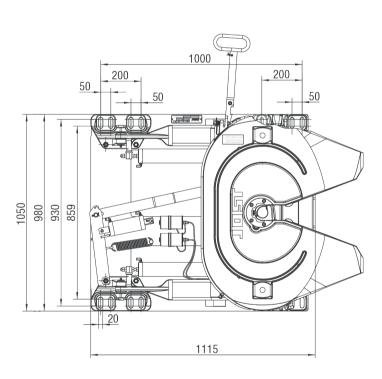
| Fig. | Description           | Part No. |
|------|-----------------------|----------|
| 01   | Slider base plate 23" | V1001006 |
| 02   | Slider upper part     | V100206  |
| 03   | Locking plunger       | V100501  |
| 04   | Air-cylinder          | V102105  |
| 05   | Spring                | V100503  |
| 06   | Spring retainer       | V100504  |
| 07   | Pin                   | V100505  |
| 80   | Hexagon screw, compl. | V102106  |

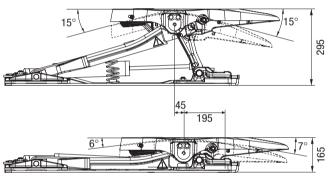
| Fig. | Description               | Part No. |
|------|---------------------------|----------|
| 09   | Air control valve, compl. | V102118  |
| 10   | Fitting                   | V102113  |
| 11   | Fitting                   | V102114  |
| 12   | Fitting                   | V102115  |
| 13   | Pipe plug                 | V102117  |
| 14   | Nylon airline             | V102116  |
|      |                           |          |

# DH200 Dual height fifth wheel









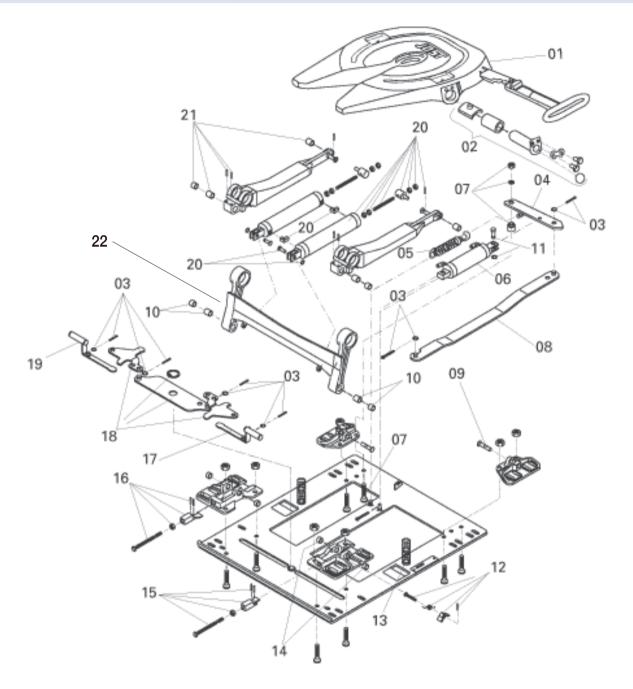
#### For overheight loads ie. European Containers

Load on main plate 15,000 kg
Weight approx. 260-360 kg
(with fifth wheel)
D-value 110 kN
Type approval number e1 00-1069
Approval Number ECE E1 55R
-01 1069

The above loads apply to operation on ordinary roads and ordinary operating conditions as they are to be found in Europe. If the fifth wheels are being operated in other territories or under other conditions we would ask you to contact us regarding the type of fifth wheel to be used.

The right to alter specifications is reserved.

## Spare parts Type DH200 Dual height fifth wheel system



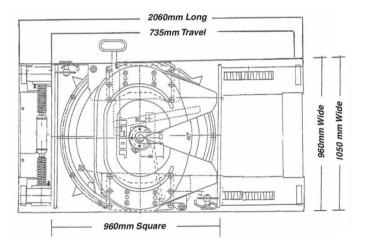
| Fig. | Description                        | Part No.         |
|------|------------------------------------|------------------|
| 01   | Fifth wheel coupling               | JSK 37 E/00128cm |
| 02   | Fifth wheel coupling bearing, comp | DH1019902        |
| 03   | Split pin, complete                | DH1019903        |
| 04   | Lever                              | DHE1011600       |
| 05   | Double tension spring              | SK240523         |
| 06   | Closing cylinder                   | DHE1011100       |
| 07   | Spacer bushing, complete           | DH1019907        |
| 08   | Lever                              | DH1019908        |
| 09   | Pivot pin                          | DH1019909        |
| 10   | Bushing set 1                      | DH1019910        |
| 11   | Bolt complete                      | DHE1003100       |

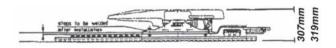
| Fig. | Description           | Part No.  |
|------|-----------------------|-----------|
| 12   | Latch, complete       | DH1019912 |
| 13   | Spring                | DH1019913 |
| 14   | Bushing set 2         | DH1019914 |
| 15   | Wedge right, complete | DH1019915 |
| 16   | Wedge left, complete  | DH1019916 |
| 17   | Locking pin, right    | DH1019917 |
| 18   | Elbow lever           | DH1019918 |
| 19   | Locking pin. left     | DH1019919 |
| 20   | Cylinder, complete    | DH1019920 |
| 21   | Bushing set 3         | DH1019921 |
| 22   | Paddle                | DHPADDLE  |

## **Ballrace Slider - Fifth Wheel System**



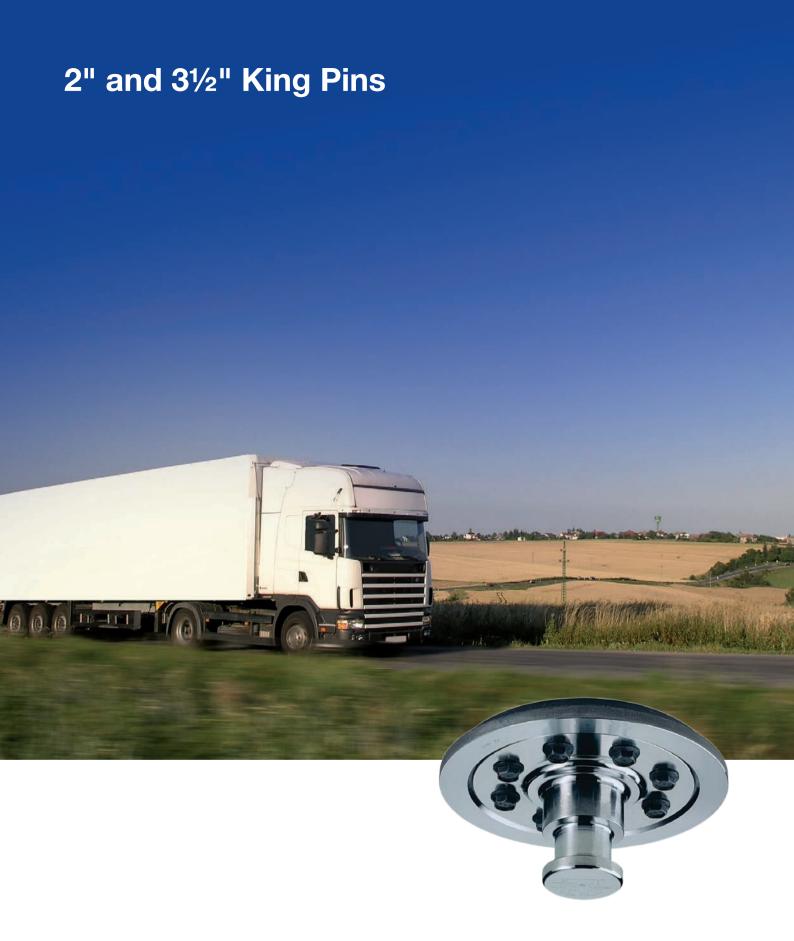






# **Base Assembly - EVPLP Slider LT** Fifth Wheel - JSK37CZ150

- Over 100 kgs lighter than other available products.
- 735 mm of travel.
- Total overall height including the fifth wheel of 307 or 319 mm.
- Total length of 2060 mm.
- Weight: 435-625 kg approx.
- Pneumatically operated.
- CRN's 24836 and 26170 apply.
- Supplied as standard with the proven tried and tested JSK37CZ Fifth Wheel - "The Industry Standard".
- Manufactured using only genuine **JOST** components.
- Imposed Load of 20,000 kgs.
- Will suit all North American and European chassis widths and A-trailers.



Refer to Jost website www.jostaustralia.com.au for installation and operation instructions.

## Technical Circular JOST King Pins – Bolt Torque

Until recently precise torque wrenches were not commonly available in workshops and garages. Because of this **JOST** prescribed onlt torque settings which could not damage the bolts.

The existing torque settings have proven themselves in numerous independent bench tests and in millions of miles of daily use, subject to our installation and maintenance instructions being adhered to. Nowadays the trailer manufacturers and workshops are using more precise torque wrenches, which are regularly calibrated. This is the prerequisite for a higher torque setting, without the danger of the bolt being damaged. The increase in torque will result in an optimum initial stressing force of the bolt.

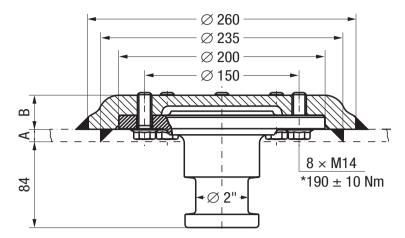
The new torque setting will enable the maintenance period to be increased to max. 50,000km resp. six months in line with that of the fifth wheel. The conditions of usage and the instructions of the trailer builders must however be observed.

#### **New JOST Torque Settings:**

|           | Bolt                  | Torque  |                            |  |
|-----------|-----------------------|---------|----------------------------|--|
| Part no.  | Size                  | Nm      | King pin type              |  |
| KZE101203 | M14 × 35              | 190 ±10 | KZ10081012, KZ1410, KZ1412 |  |
| KZE141603 | $M16 \times 45$       | 280 ±15 | KZ1416, KZ2816             |  |
| KZE101606 | $\text{M20}\times 50$ | 500 ±30 | KZ1016, KZ1516             |  |



## King Pins 2" – Access from underneath KZ1008 – KZ1012



| Skid Plate Thickness |          | Thickness | Compo     | onents         | Approval   |
|----------------------|----------|-----------|-----------|----------------|------------|
| Α                    | Туре     | В         | Retention | King Pin Plate | Number     |
| 8 mm                 | KZ1008   | 37 mm     | KZ100802  |                | CTA-024156 |
| 10 mm                | KZ1010   | 34 mm     | KZ101002  | KZ101201       | CTA-024156 |
| 12 mm                | KZ1012   | 33 mm     | KZ101202  |                | CTA-024156 |
| 16 mm                | KZ101216 | 30 mm     | KZ101216  |                | CTA-024156 |

#### **B. Double & Road Train Rated**

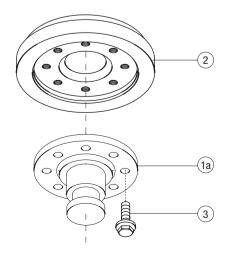
Dimensions according to DIN 74080 and ISO 337 **JOST** king pins can be used in self steering axle systems.

Mounting must be carried out according to the instructions.

## 

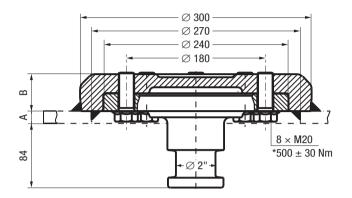
31/2" & 2" king pins are easily interchangeable

## Spare Parts for KZ1008 - KZ1012



| Fig. | Description          | Part No.  |
|------|----------------------|-----------|
| 1a   | King pin 2" Dia      | KZ101201  |
| 2    | Retention plate for: |           |
|      | 16 mm skid plate     | KZ101206  |
|      | 12 mm skid plate     | KZ101202  |
|      | 10 mm skid plate     | KZ101002  |
|      | 8 mm skid plate      | KZ100802  |
| 3    | Self securing bolt   | KZE101203 |

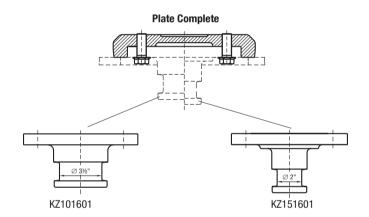
# King Pin 2" – Access from underneath KZ1516



#### \* Torque

## Selection table/Versions available

| Order No.<br>King pins, compl. | D value<br>(kN) | A<br>(mm) | B<br>(mm) | Approval<br>Number |
|--------------------------------|-----------------|-----------|-----------|--------------------|
| KZ1516                         | 170             | 16        | 48        | ECE E1             |
|                                |                 |           |           | 55R-01 0148        |



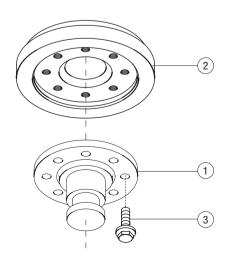
3½" and 2" king pins are easily interchangeable.

Dimensions according to DIN 74080 and ISO 337 **JOST** king pins can be used in self steering axle systems.

Mounting must be carried out according to our instructions.

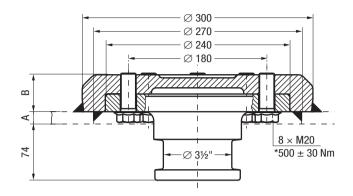


## **Spare Parts for KZ1516**



| Fig. | Description        | Part No.  |
|------|--------------------|-----------|
| 1    | King pin           | KZ151601  |
| 2    | Retention plate    | KZ101602  |
| 3    | Self-securing bolt | K7F101606 |

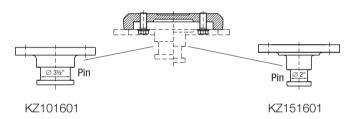
# King Pin 3½" – Access from underneath KZ1016



#### Selection table/Versions available

| Order No.<br>King pins, compl. | D value<br>(kN) | A<br>(mm) | B<br>(mm) | Approval<br>Number |
|--------------------------------|-----------------|-----------|-----------|--------------------|
| KZ1016                         | 320             | 16        | 48        | ECE E1             |
|                                |                 |           |           | 55R-01 0150        |

#### **Plate Complete**

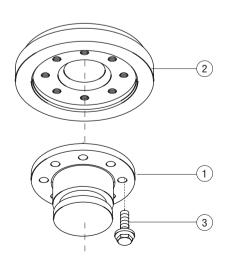


31/2" & 2" king pins are easily interchangeable

Dimensions according to DIN 74083 and ISO 4056 **JOST** king pins can be used in self steering axle systems.

Mounting must be carried out according to our instructions.

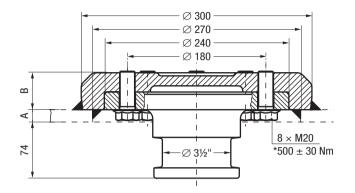
## **Spare Parts for KZ1016**



| Fig. | Description        | Part No.  |
|------|--------------------|-----------|
| 1    | King pin           | KZ101601  |
| 2    | Retention plate    | KZ101602  |
| 3    | Self-securing bolt | KZE101606 |

The right to alter specifications is reserved.

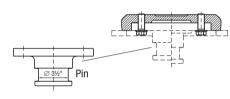
# Heavy Duty King Pin 3½" KZ5216



#### Selection table/Versions available

| Order No.<br>King pins, compl. | D value<br>(kN) | A<br>(mm) | B<br>(mm) | Approval<br>Number |
|--------------------------------|-----------------|-----------|-----------|--------------------|
| KZ5216                         | 400.0           | 16        | 48        | ECE E1             |
|                                |                 |           |           | 55R-01 2936        |

#### **Plate Complete**



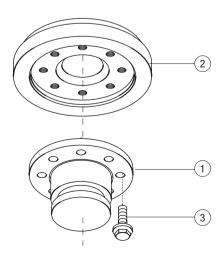
KZ521601

Dimensions according to DIN 74083 and ISO 4056 **JOST** king pins can be used in self steering axle systems.

Mounting must be carried out according to our instructions.

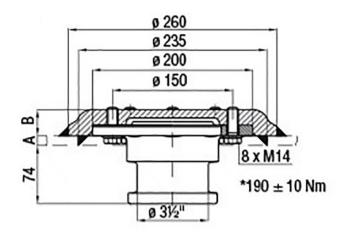


## **Spare Parts for KZ5216**

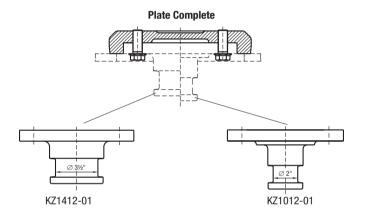


| Fig. | Description        | Part No.  |
|------|--------------------|-----------|
| 1    | King pin           | KZ521601  |
| 2    | Retention plate    | KZ101602  |
| 3    | Self-securing bolt | KZE101606 |

# King Pin 3½" – Access from underneath KZ1408 – KZ1412



| Skid plate<br>thickness |        | Compon          |          |       |
|-------------------------|--------|-----------------|----------|-------|
| A                       | Туре   | Retention plate | King pin | CRN   |
| 8mm                     | KZ1408 | KZ100802        | KZ141201 | 24811 |
| 10mm                    | KZ1410 | KZ101002        | KZ141201 | 24811 |
| 12mm                    | KZ1412 | KZ101202        | KZ141201 | 24811 |

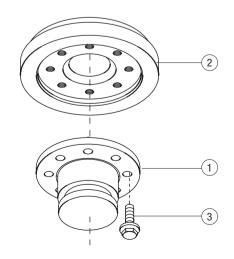


31/2" and 2" king pins are easily interchangeable.

Dimensions according to DIN 74083 and ISO 4086 **JOST** king pins can be used in self steering axle systems.

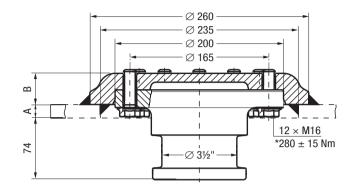
Mounting must be carried out according to our instructions.

## Spare Parts for KZ1408, KZ1410, KZ1412



| Fig. | Description                          | Part No.  |
|------|--------------------------------------|-----------|
| 1    | King pin                             | KZ141201  |
| 2    | Retention plate for 8 mm skid plate  | KZ100802  |
| 2    | Retention plate for 10 mm skid plate | KZ101002  |
| 2    | Retention plate for 12 mm skid plate | KZ101202  |
| 3    | Self-securing bolt                   | KZE101203 |

# King Pin 3½" – Access from underneath KZ1416



#### Selection table/Versions available

| Order No.         | D value | A    | B    | Approval   |
|-------------------|---------|------|------|------------|
| King pins, compl. | (kN)    | (mm) | (mm) | Number     |
| KZ1416            | 200.0   | 16   | 37   | CTA-024812 |

# Plate Complete Pin 22\* KZ141601 KZ281601

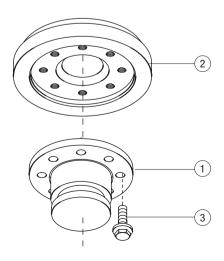
31/2" & 2" king pins are easily interchangeable

Dimensions according to DIN 74083 and ISO 4086 **JOST** king pins can be used in self steering axle systems.

Mounting must be carried out according to our instructions.

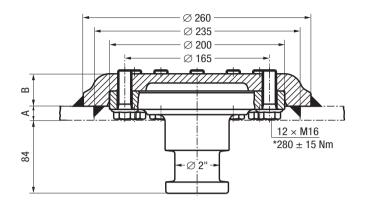


#### **Spare Parts for KZ1416**



| Fig. | Description        | Part No.  |
|------|--------------------|-----------|
| 1    | King pin           | KZ141601  |
| 2    | Retention plate    | KZ141602  |
| 3    | Self-securing bolt | KZE141606 |

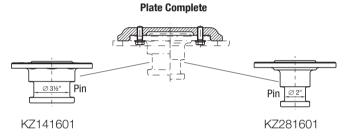
# King Pin 2" – Access from underneath KZ2816



#### Selection table/Versions available

| Order No.         | D value | A    | B    | Approval |
|-------------------|---------|------|------|----------|
| King pins, compl. | (kN)    | (mm) | (mm) | (ECE)    |
| KZ2816            | 152.0   | 16   | 37   | _        |

<sup>\*</sup> Torque

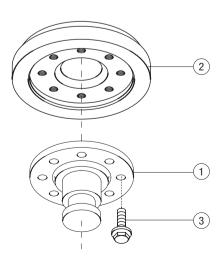


31/2" & 2" king pins are easily interchangeable

Dimensions according to DIN 74080 and ISO 337 **JOST** king pins can be used in self steering axle systems.

Mounting must be carried out according to our instructions.

## **Spare Parts for KZ2816**



| Fig. | Description        | Part No.  |
|------|--------------------|-----------|
| 1    | King pin           | KZ281601  |
| 2    | Retention plate    | KZ141602  |
| 3    | Self-securing bolt | KZE141606 |

The right to alter specifications is reserved.

## King Pin Lock for 2" King Pins

Low weight, handy,safe. For all 2" king pins. Completely protects not only the 2" neck, but all mounting bolts. Corrosion-resistant.

Cylinder lock of high quality, dust and water proof. Locking with normal or master keys possible.

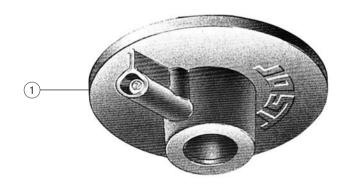
Part number: DS2000



## **Spare Parts for DS2000**







| Fig. | Description               | Part No. |
|------|---------------------------|----------|
| 1    | King pin lock, complete   | DS2000   |
| 2    | Cylinder lock with 2 keys | DS100003 |

When reording keys or cylinder locks for locking systems having same keys, please state code number.

## Wear Limit Gauge King Pin Gauge

Above item is designed as a NO GO wear limit indicator, for either 50mm or 90mm king pins.

Once king pin can pass through gauge the king pin must be replaced. Also designed to check king pin protrusion.

Part number: JOSTGAUGEKINGPIN





## **Landing gear Modul**

The Modul series of telescopic landing gear is extremely versatile. Thanks to its modular construction with variable mounting and operating heights, various crank handles and connection shaft lengths, plus five different foot types, all client requirements can be met.

Modul B is optimised standard telescopic landing gear. The Modul C range consists of various landing gears which are designed for special applications.

Both ranges offer convincing product advantages: the integrated gearbox has optimum protection, and requires minimum force to be applied on the crank handle in both directions. At the same time, Modul offers an extraordinary increase in lift of up to 120 mm combined with smaller dimensions for fitting. It goes without saying that the telescopic landing gear is extremely sturdy and complies with the strict AAR standard.

The landing gear is not a standalone, functional device. It is designed to be mounted on a trailer. The vehicle may not be operated until it has been ensured that the towed vehicle with the support complies with the applicable national road traffic regulations. In Germany, the relevant "TÜV" Safety Regulations and "StVZO" Motor Vehicle Safety Standards are to be observed. The telescopic landing gear is always to be used in conjunction with the instructions for use issued by the manufacturer of the relevant trailer.



## **Tried-and-tested Modul system**



Since the market entrance Modul landing gears are setting benchmarks. The modular construction allows a multitude of different varieties.

- Easy to assemble and replace foot system
- Greatest flexibility of installation thanks to a range of back plates
- Various crank handles and connection shaft lengths
- Significant gain in lifting force compared to comparable products
- Attractive design
- For universal application
- Type reduction thanks to modular system guarantees high level of flexibility in spare parts business

## The patented drive is perfectly protected by the internal construction. In addition it offers various advantages in daily

- Easy to change between high and low gears
- Very compact construction with high efficiency and extremely low wear
- Large lifting force per turn of the crank with low crank force allows easy and convenient operation
- · Reliably secured against run-down
- Maintenance-free

use:

# Patented Modul drive no neutral gear Low gear High gear

## **Support feet**

**Patented Modul drive** 

The Modul series of telescopic landing gear are available with a range of different feet: S, A, T and TC foot.



Foot-S (Standard)



Foot-A (Rocking foot)



Foot-TC (Flat sand shoe)



Foot-T (Sand shoe)

## **Additional advantages**

#### **Outstanding corrosion protection**

Landing gears from JOST are especially sturdy and resist also unfavorable exterior conditions.

- Careful pre-treatment
- Premium surface through powder coating
- Long-lasting protection against environmental influences and stone chips

Lubrication tube

#### Easy maintenance

The Modul landing gears are equipped with a long-term lubrication. Therefore they can be used three years without relubrication.

- · Long-lasting, maintenance-free drive
- No need for subsequent lubrication of our premium stabilisation and aluminium telescopic landing gears with lubrication tube



Tested and developed according to internationally recognized standards

- Regular inspection during series production based on the strict AAR standard
- Quality management in accordance with ISO/TS 16949
- Environmental management in accordance with ISO 14001
- 3 year guarantee

#### Top service

Locations worldwide and a broad network of dealers ensure qualified support.

- Competent and individual advice from Sales and Customer Service
- Support for our customers using CAD data during the planning phase
- High level of prevalence and global spare parts supply with short delivery times
- Easy to repair, such as using our foot replacement system

## Modul

#### Flexibility due to a modular ordering system

The ordering system allows clients to choose and put together a set of legs to suit their needs.



## **Installation height**

|            | max. lift |
|------------|-----------|
| 02 = 850mm | 520mm     |
| 03 = 800mm | 470mm     |
| 05 = 700mm | 400mm     |

## **Foot versions**

00 = without foot

| fitted             |                   | Part No. |
|--------------------|-------------------|----------|
| 01 = S Foot        | compensating foot | JSD01    |
| 02 = A Foot        | rocking foot      | JSD02    |
| 03 = R Foot        | wheels            | JSD03    |
| 04 = T Foot        | sand shoe         | JSD04    |
| 06 = Low Profile T |                   | JSD06    |

## Crank handle with parking hook

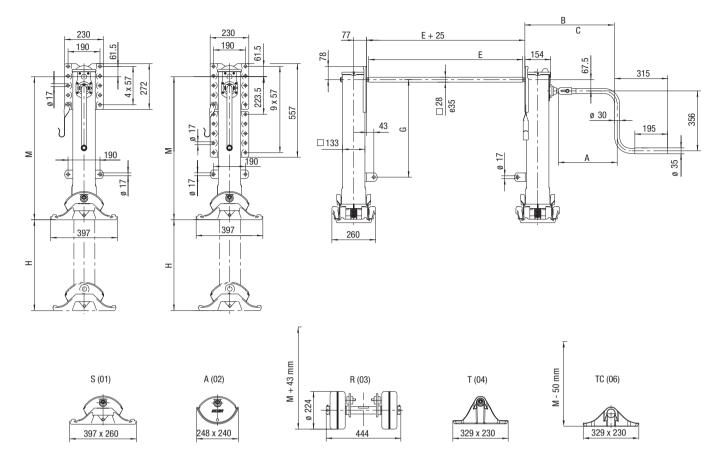
| 03 = 450mm | Optional |
|------------|----------|
| 05 = 520mm | Standard |

## **Connection Shaft**

10 = 1790mm Standard

Note: the connection shaft is square

## Modul



## Landing gear

| Reference | Mh  | Lift | Α   |
|-----------|-----|------|-----|
| M02       | 850 | 520  | 580 |
| M03       | 800 | 470  | 530 |
| M05       | 700 | 400  | 430 |

## **Technical date (per set)**

| M | odul | В |
|---|------|---|
|   |      |   |

| Lifting capacity                      | 24t                    |
|---------------------------------------|------------------------|
| Static load                           | 50t<br>35t with wheels |
| Lift per turn of handle               |                        |
| - low gear                            | 0.9mm                  |
| - high gear                           | 15.0mm                 |
| Crank force at 16t super imposed load | 210N                   |

Subject to change in dimensions and design

## Crank handle

| Reference | В   | C   | D   |
|-----------|-----|-----|-----|
| JSU03     | 450 | 634 | 658 |
| JSU05*    | 520 | 704 | 728 |

## **Connection shafts**

| Reference | E    | F    |
|-----------|------|------|
| JSL10     | 1790 | 1815 |

Standard with set of legs.

## **Foot versions**

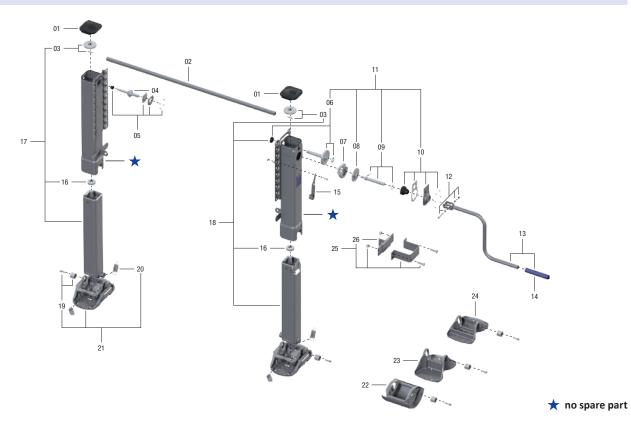
00 = without foot

| fitted         |                    |  |
|----------------|--------------------|--|
| JSD01 = S Foot | compensating foot  |  |
| JSD02 = A Foot | rocking foot       |  |
| JSD03 = R Foot | wheels             |  |
| JSD04 = T Foot | sand shoe          |  |
| JSD06 = LP T   | low profile T foot |  |



## Modul B

## **Spare parts**



| Item | Description                       | Remark                                   | Order No.   | per<br>kit |
|------|-----------------------------------|--|-------------|------------|
| 01   | Cover                             |  | JS E0046100 | 2          |
| 02   | See individual components         |  |             |            |
| 03   | Bevel gear with bolts             | from 020719/0126097                      | JS E0058600 | 2          |
| 04   | Shaft                             |  | JS E0001500 | 1          |
| 05   | Bearing                           | compl.                                   | JS E0046200 | 1          |
| 06   | Shaft with bearing                | a  | JS E0058700 | 1          |
| 07   | Grease tank                       | a  | JS E0002000 | 1          |
| 08   | Gear                              | a  | JS E0055800 | 1          |
| 09   | Crank shaft                       | compl.                                   | JS E0046500 | 1          |
| 10   | Bearing holder                    | compl.                                   | JS E0058800 | 1          |
| 11   | Drive                             | compl., with 06, 08, 09 + 10, a, c       | JS E0083700 | 1          |
| 12   | Bolts, washers, nuts              |  | JS E0043100 | 1          |
| 13   | See individual components         |  |             |            |
| 14   | Crank bushing                     |  | JS E0042700 | 1          |
| 15   | Crank parking hook                | for crank 350 mm, (JS U01), b            | JS E0040200 | 1          |
| 15   | Crank parking hook                | for crank 415–480 mm, (JS U02-JS U04), b | JS E0040201 | 1          |
| 15   | Crank parking hook                | for crank 520–620 mm (JS U05-JS U08), b  | JS E0040202 | 1          |
| 16   | Axial bearing ****                |  | JS E0066401 | 2          |
| 17   | Mh-01/900 inner tube I. + spindle | with 16 + 03                             | JS E0056401 | 1          |
| 17   | Mh-02/850 inner tube I. + spindle | with 16 + 03                             | JS E0056402 | 1          |
| 17   | Mh-03/800 inner tube I. + spindle | with 16 + 03                             | JS E0056403 | 1          |
| 17   | Mh-04/750 inner tube I. + spindle | with 16 + 03                             | JS E0056404 | 1          |
| 17   | Mh-05/700 inner tube I. + spindle | with 16 + 03                             | JS E0056405 | 1          |
| 17   | Mh-06/650 inner tube I. + spindle | with 16 + 03                             | JS E0056406 | 1          |
| 18   | Mh-01/900 inner tube r. + spindle | with 16 + 03                             | JS E0056201 | 1          |
| 18   | Mh-02/850 inner tube r. + spindle | with 16 + 03                             | JS E0056202 | 1          |
| 18   | Mh-03/800 inner tube r. + spindle | with 16 + 03                             | JS E0056203 | 1          |
| 18   | Mh-04/750 inner tube r. + spindle | with 16 + 03                             | JS E0056204 | 1          |
| 18   | Mh-05/700 inner tube r. + spindle | with 16 + 03                             | JS E0056205 | 1          |
| 18   | Mh-06/650 inner tube r. + spindle | with 16 + 03                             | JS E0056206 | 1          |
| 19   | Nut and bolt**                    |  | JS E1043300 | 2          |
| 20   | Spring                            |  | JS E0012900 | 4          |
| 21   | S-Foot                            | compl., with 19 + 20***                  | JS D01      | 2          |
| 22   | A-Foot                            | compl., with 19***                       | JS D02      | 2          |

## **Modul Series Landing Legs**

## Available in 400mm, 470mm, 520mm Travel Standard outside flange mounting models



9" Diameter Standard Wheels 9" Diameter Standard Wheels 9" Diameter Standard Wheels Modul R 400mm Modul R 470mm Modul R 520mm



329mm  $\times$  230mm Sand Shoes (T Feet) 329mm  $\times$  230mm Sand Shoes (T Feet) 329mm  $\times$  230mm Sand Shoes (T Feet)

Modul T 400mm Modul T 470mm Modul T 520mm



Air Suspension Feet (280mm × 240mm) Air Suspension Feet (280mm × 240mm) Air Suspension Feet (280mm × 240mm) Modul A 400mm Modul A 470mm Modul A 520mm



Compensating Feet (397mm × 260mm) Compensating Feet (397mm × 260mm) Compensating Feet (397mm × 260mm) Modul S 400mm Modul S 470mm Modul S 520mm



Supplied without Feet can take R.T.S or A Feet Supplied without Feet can take R.T.S or A Feet Supplied without Feet can take R.T.S or A Feet

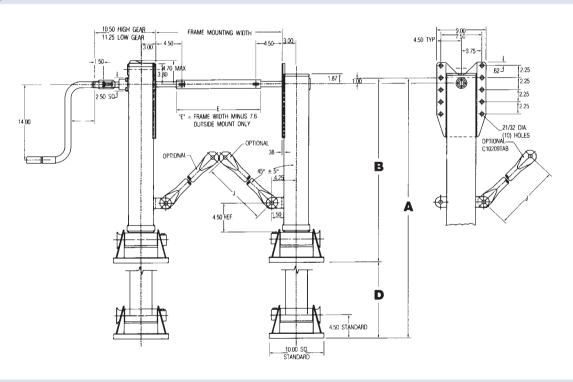
Modul WF 400mm Modul WF 470mm Modul WF 520mm

Note: Inside flange mounting models also available

## **Landing Legs – A400 Series**



## Landing Gear Dimensions - Outside Mount



## **Travel Option Dimensions**

| Model          | D - Travel    | A - Extended                   | B - Retracted     |
|----------------|---------------|--------------------------------|-------------------|
| A400/A/G/T/R/S | 14" (355.6mm) | 42 <sup>5</sup> " (1082.675mm) | 28 §" (727.075mm) |
| A400/A/G/T/R/S | 17" (431.8mm) | 48 5" (1235.075mm)             | 31 §" (803.275mm) |
| A400/A/G/T/R/S | 19" (482.6mm) | 52 5 (1366.675mm)              | 33 ½" (854.075mm) |
| A400G317       | 17" (431.8mm) | 45 §" (1158.875mm)             | 28 §" (727.075mm) |

## **Landing Legs – A400 Series**

## **Individual Components**

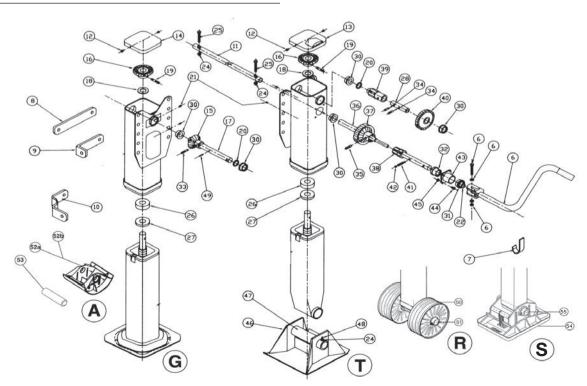
| Item | Description                      | Qty. | Part No.   |
|------|----------------------------------|------|------------|
| 06   | Standard Crank w/Hardware 17¾"   | 1    | C10592.4 & |
|      |                                  |      | C10592.4R  |
| 07   | Crank Hanger                     | 1    | B10261     |
| 10   | Brace Lug - W                    | 2    | C10108     |
| 11   | Intermediate Cross Shaft         | 1    | B10066     |
| 12   | Cover Screw                      | 4    | A10059.1   |
| 13   | Cover - 2 Speed                  | 1    | C10217     |
| 14   | Cover - 1 Speed                  | 1    | C10259     |
| 15   | Pinion Gear                      | 1    | C10177     |
| 16   | Bevel Gear                       | 2    | C10155     |
| 17   | Pinion Shaft - 1 Speed           | 1    | B10130     |
| 18   | Thrust Washer                    | 2    | A10102     |
| 19   | Grooved Pin                      | 2    | A10052.3   |
| 20   | Spacer Washer                    | 2    | A10218     |
| 21   | Grease Fitting                   | 4    | A10040     |
| 22   | Grease Seal                      | 1    | A10283     |
| 24   | Self Locking Nut                 | 4    | A10038.7   |
| 25   | Cross Shaft Bolt – 3/8" x 2" Gr5 | 2    | A10037.1   |
| 26   | Thrust Bearing                   | 2    | A10033     |
| 27   | Collar                           | 2    | A10101     |
| 28   | Output Shaft                     | 1    | A10212     |
| 30   | Bushing                          | 2    | A10255     |
| 33   | Roll Pin − 3/8" × 11/2"          | 1    | A10054.3   |
| 34   | Spiral Pin                       | 2    | A10260.1   |

| Item | Description                                   | Qty. | Part No.    |
|------|---|------|-------------|
| 35   | Roll Pin − 3/8" × 13/4"                       | 1    | A10054.7    |
| 36   | Output Cluster Shaft                          | 1    | B10236      |
| 37   | Output Cluster Gear                           | 1    | C10234      |
| 38   | Input Gear Shaft                              | 1    | C10233      |
| 39   | Output Spur Gear                              | 1    | C10078      |
| 40   | Input Spur Gear                               | 1    | C10085      |
| 41   | Detent Spring                                 | 1    | A10049      |
| 42   | Detent Ball                                   | 2    | A10048      |
| 43   | Shift Housing incl. 31, 32                    | 1    | B10229*     |
|      | Shift Housing incl. 41, 42                    | 1    | B10229S     |
| 44   | Shift Housing Bolt                            | 4    | A10230      |
| 45   | Self Locking Nut                              | 4    | A10038.6    |
| 46a  | Shoe – 10" $\times$ 10" $\times$ 4½" Standard | 2    | C10035      |
| 46b  | Low Profile T Foot                            | 2    | C10135      |
| 47   | Shoe Axle                                     | 2    | B10036      |
| 48   | Hex Head Bolt                                 | 2    | A10037.3    |
| 49   | Roll Pin − ¼" × ¼"                            | 1    | A10054.6    |
| 50   | 9" Dia Standard Wheel                         | 4    | C10342      |
| 51   | Wheel Axle                                    | 2    | B10300      |
| 52   | Air Suspension foot (pressed type) c/w axle   | 2    | JS11160340C |
| 53   | Axle for pressed air foot                     | 2    | B10036.1    |
| 54   | Compensating foot c/w axle                    | 2    | JS1116358CN |
| 55   | Axle for compl. foot                          | 2    | B10036.1    |

\*Not Available as single item, included in part number 43

## **Footwear Options**

| Description             | Order<br>Code | Description                                      | Order<br>Code |
|-------------------------|---------------|--|---------------|
| 10" × 10" Cushion Foot  | G             | Compensating foot                                | S             |
| 9" Dia. Standard Wheels | R             | $10" \times 10" \times 4\frac{1}{2}"$ Sand Shoes | T             |
| Air Suspension          | Α             | Low Profile T                                    | T1            |





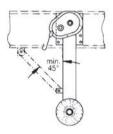
## Mounting and maintenance instructions

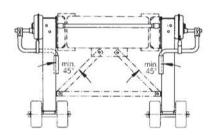
#### **Mounting instructions**

Before mounting, both jacks must be in retracted position, in order to take advantage of the total stroke after mounting connection shaft and to avoid premature ground touch of one jack. Otherwise one single jack would have to carry the total load, causing damage.

The jacks must be mounted parallel and properly aligned, otherwise the connection shaft could tilt and make the landing gear hard to operate.

Fitting and bracing should be carried out as shown below.





The introduction of air suspension on semi-trailers has resulted in an increase of related problems.

When the semi-trailer has been standing for a considerable time a loss of air in the suspension is liable to occur, causing the rear part of the trailer to sink down.

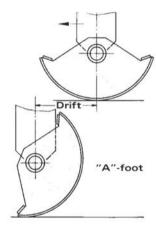
This in turn results in an angular movement of the axle, forcing the trailer in the direction of travel if the brakes are on. This movement depends on the type of air suspension, the spring deflection and the size of the tyres. The larger the drift and the greater the force the greater is the chance of the landing gear being subjected to a force with which it cannot cope, ultimately resulting in it being bent. This damage is a secondary consequence of the loss of air.

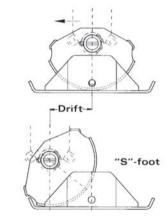
This can be avoided by using landing gear with drift compensation.

The **JOST** "A" foot is a semi-wheel which is able to compensate for the entire movement of the trailer and remove the force of drift from the landing gear.

A paved surface is essential for the correct function of this version.

A further variation is the **JOST** "S" foot. The large sand shoe cannot sink in and can therefore also be used on an unpaved surface.





#### **Operating instructions**

#### **Uncoupling:**

- 1. Block wheels of semi-trailer.
- 2. Unlock and engage crank handle.
- Wind down landing gear in high gear until ground is touched.
- 4. Shift to low gear position by pushing the crank handle towards the gear box for MODUL legs, pull he crank handle out to select low gear for A400 and E110 legs an lift to necessary height.

Caution: Stop cranking when end of travel is reached.

#### Coupling-up:

- 1. After locking the fifth wheel wind-in landing gear in low gear until inner leg has left the ground.
- 2. Shift to high gear by pulling the crank handle and wind-in inner leg.

Caution: Stop cranking when end of travel is reached.

**3.** Fasten crank handle in holder, making sure that high gear is still engaged.

#### **Maintenance instructions**

The landing gear received adequate initial lubrication during manufacture. Relubrication is possible through grease nipples provided.

The spindle is lubricated with BP grease JS12 by the lower of the two grease nipples located on the side of the housing. Prior to lubrication wind down the landing leg as far as possible and during lubrication slowly wind it up. For subsequent lubrication of the other greasing points we recommend the use of high pressure grease (EP) with MoS, or graphite additive, for example:

BP L2 1M BP HT-EP 1 BP JSS2 Esso universal grease M Shell Retinax AM

When inspecting the trailer, all parts which are subject to wear must be checked and replaced if necessary.

These instructions are based on normal conditions of use. In the case of difficult operating conditions the maintenance and lubrication intervals must be reduced accordingly.





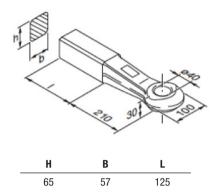
## **Towing eyes 40mm**

#### **ROE57374**

Towing eyes according to DIN 74054-40A pressed-in replaceable towing eye sleeve 40 mm inner diameter

Part number ROE57374
D-value 125kN
Weight 5kgs
Down load 250kgs

Approval Number ECE E1 55R-01 2203



## Towing eyes 50 mm

#### **ROE57272**

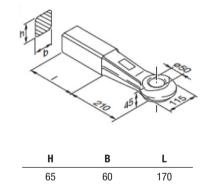
Towing eyes according to DIN 74053 pressed-in replaceable towing eye sleeve 50 mm inner diameter

Part no. ROE57272

Material: heat-treated steel St 52-3

**D-value:** 190 kN **Weight:** 10.3 kgs **Down Load:** 1000 kgs

Approval Number ECE E1 55R-01 2335



#### ROE57005 c/w solid bush

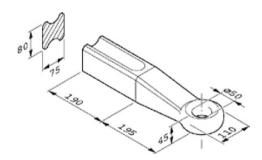
Part no. ROE57005

Material: heat-treated steel St 52-3

D-value: 314kN Weight: 13.4 kgs Down Load: 1000 kgs

D-value is reduced to 190kN with 100 kgs down load.

Approval Number ECE E1 55R-01 2146

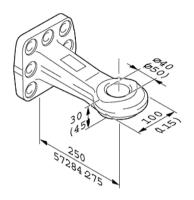


## **Tow Eye - Flange Mount**

#### **ROE57244**

Tow eye 8 bolt flange mount 50mm inner diameter

Part number ROE57244
D-Value 190kN
S-Value 2500kgs
V-Value 43.2kgs
Approval Number E1 SSR-01 0045



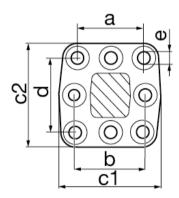
## Flange Mount - Backing Plate Including Bolts

#### **ROE70304**

Flange mount tow eye backing plate including bolts

Part number ROE70304
a (mm) 100
b (mm) 110
c1 (mm) 154
c2 (mm) 154
d (mm) 110
e (mm) 17.0

Part no: ROE70950 - Bolt kit if required separately



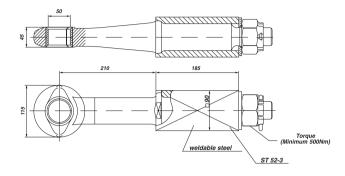
## Towing eyes 50mm - Replaceable Toweye

## **JOST 57254**

 Part no:
 JOST 57254

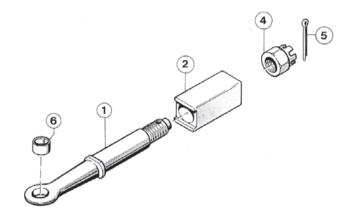
 D-Value:
 260 kN

**Weight:** 18,5 kg **CRN:** 42292



## Spare parts for towing eyes JOST 57254

| Fig.               | Description            | Part No.    |
|--------------------|------------------------|-------------|
| 01, 03, 04, 05, 06 | Towing eye with Fig. 6 | J0ST 57254E |
| 02                 | Towing eye housing     | JOST 57254B |
| 04, 05             | Nut                    | R56049      |
| 06                 | Solid Bush             | JOST 53362  |





## **Towing eyes**



Part no. BPCBDB1394

Model: 45-Ton Forged Heavy Duty Towing Eye

Description: Finished with black powder coat for

superior durability and corrosion resistance.

**D-Value:** 165kn **CRN:** 37264

**Dimensions:** 3" I.D. with 1.62" section drawbar with

4 hole square mounting plate.



Part no: JOST0063126

Model 76mm Demountable Pintle Eye

 D Value
 125kN

 V Value
 7 Tonne

 ATM
 25 Tonne

 CRN
 41615

 Eye Dimension
 76.5mm

 Shank Dimension
 50mm

Block Dimension 90x90x150mm

Total length 435mm

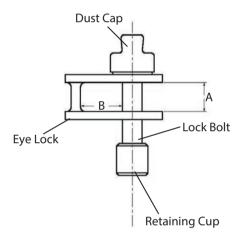
## **JOST Tow Eye Lock**

#### **Features:**

- 1. 10mm thick top and bottom plate, case hardened.
- 2. No padlock, uses highly developed Super Lock Bolt, 25.4mm diameter, case hardened body. Anti drill centre pin, 10 pin radial pin tumbler lock insert with over 1 million possible key combinations.
- **3.** Easy to operate, only the lock bolt needs to be removed to unlock trailer.
- Lock bolt can only be locked/unlocked using key, no accidental locking possible.
- 5. Dust cap provided to prevent ingress of dust and dirt into lock.
- 6. Finished in highly visible, yellow powder coating.
- **7.** 2 keys supplied with lock as standard. Multiple locks can be supplied with same key for fleet or multi user applications.
- **8.** Independently tested and approved by SCM. Approval No. MP030417.

| Model         | Dimension<br>'A' | Dimension 'B' | Weight |
|---------------|------------------|---------------|--------|
| SA12 Eye Lock | 51mm             | 95mm          | 5.0kg  |





## Welding instructions recommended for Rockinger Drawbar Eyes

- Rockinger drawbar eyes are provided for welding into the drawbar by electric arc welding, preferably done under a protective gas shield.
- The steel of the drawbar has to be weldable, e.g. made of St 37-2 or St 52-3 or any other compatible weldable steel with a carbon content of less than 0.22%.
- **3.** Remove all paint, grease and rust from welding surfaces. Heating up of drawbar eye to 200 250°C before beginning to weld is recommended.
- 4. The drawbar eye must not be welded within a length of \*mm measured from the middle of the drawbar eye access towards the back. This part should protrude out of the drawbar.
- The welding should be exercised in one seam at a time only, in order to avoid overheating the surrounding space of the welding seam.
- Carry the welding onwards to the direction of the drawbar eye access in one procedure.
- All seams have to be layed in longitudinal direction of the drawbar eye's shaft. Never and by no means crosswire.
- Each seam of welding should be set one by one diagonally opposite to the last one, so you maintain an even radiation of heat.

- Cooling down of the welding should take place where the air is still; do not immerse into water or pour water over it.
- 10. If wanted, you can place slot welds through the lateral surface of the drawbar's sectional steel. This is in order to fix the drawbar shaft to the drawbar additionally.
- The thickness of the welding seams is to be approximately 8mm in full V- shape or half V-shape.
- **12.** The thickness of the sectional connecting bars should be atleast 8mm, better from 10mm 12mm.

#### **Drawbar eyes:**

| 57268DIN                            | $65 \times 55$ | Ø 40mm = 210mm |
|-------------------------------------|----------------|----------------|
| 57262DIN                            | 50 × 40        | Ø 40mm = 210mm |
| 57260DIN                            | $40 \times 40$ | Ø 40mm = 210mm |
| 57272DIN + ISO                      | $65 \times 60$ | Ø 50mm = 210mm |
| 57254 Rockinger for 56, 561 and 702 |                | Ø 50mm = 195mm |
| 57006 ring 41 strong, NATO          |                | Ø 76mm = 180mm |



## Couplings and drawbar eyes

#### Coupling and drawbar eye size

- Hole pattern in the crossbar of the towing vehicle
- Hole pattern in the coupling flange
- Pin size of the coupling

#### **Characteristic values**

- · Values of the coupling
- Values of towing vehicle and trailer (see vehicle registration certificate)
- Values of the drawbar eye

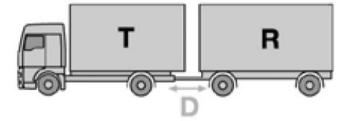
## Truck and trailer: D-value

- Theoretical horizontal force between towing vehicle and trailer
- The D-value can only be calculated with the permissible total weight of both truck and trailer.
- Calculation of the D-value [kN] with formula 1 (F1):
  - T: Total weight of the towing vehicle in t
  - R: total weight of the drawbar trailer in t
  - g: Gravitation acceleration 9,81 m/s<sup>2</sup>

The calculated D-value can be equal to or lower than the D-value of the coupling and of the drawbar eye.

In case of mounting on a trailer is permitted use formula 2 (F2):

R1 : Total weight of trailer where the coupling is mounted (max. 24 t) R1 ≥ R2



F1--> 
$$D(kN) = g \cdot \frac{T \cdot R}{T + R}$$

F2--> D (kN) = 
$$g \cdot \frac{R_1 \cdot R_2}{R_1 + R_2}$$

## Towing vehicle and central-axle trailer: Dc-value (Valid only in connection with the V-value

- Theoretical horizontal force between towing vehicle and trailer
- The Dc-value can only be calculated with the permissible total weight of both towing vehicle and central-axle trailer.
- Calculation of the Dc-value with formula 3 (F3):
  - T: Total weight of the towing vehicle in t
  - C: Sum of the axle loads of the central-axle trailer in t
  - g: Gravitation acceleration 9,81 m/s<sup>2</sup>

The calculated Dc-value can be equal to or lower than the Dc-value of the coupling and of the drawbar eye.

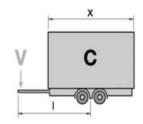


F3 --> 
$$Dc (kN) = g \cdot T \cdot C$$

## Central-axle trailer: V-value (Valid only in connection with the Dc-value)

- Vertical force for central-axle trailer
- Dependent on the rear axle suspension of the towing vehicle.
- Calculation of the V-value [kN] with formula 4 (F4):
  - a: An equivalent verticle acceleration in the coupling point in m/s² (a = 1, 8 for vehicles with air suspension/ a = 2, 4 for vehicles with other suspensions)
  - I: Theoretical drawbar length in meters
  - **x**: Length of the loading area in meters  $(x^2/l^2 : at least 1, 0)$
  - C: Sum of the axle loads of the central-axle trailer in t

The calculated V-value can be equal to or lower than the V-value of the coupling and of the draw- bar eye.



F4 --> V (kN) = 
$$a \cdot \frac{x^2}{|x|^2} \cdot 0$$

## Central-axle trailer: Static vertical load (Valid only in connection with the V-value)

- Vertical load of the central-axle trailer on the coupling point.
- The vertical load depends on the size of the coupling and the maximum is 10% of the gross weight of the trailer or 1000kg (whichever is less).
- When using a central-axle trailer the vertical load should amount to at 4% of the trailer weight in order to prevent increased wear caused by bouncing of the drawbar eye.



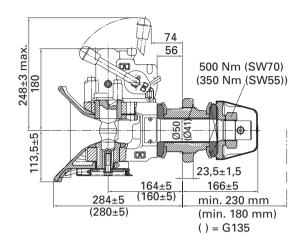
## **Series RO400B51001**

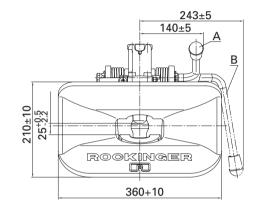
## **Standard hitch**



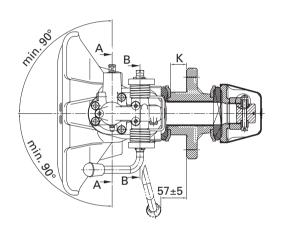


a = 40 mm DIN 74054, ECE R55-01 (Class S)







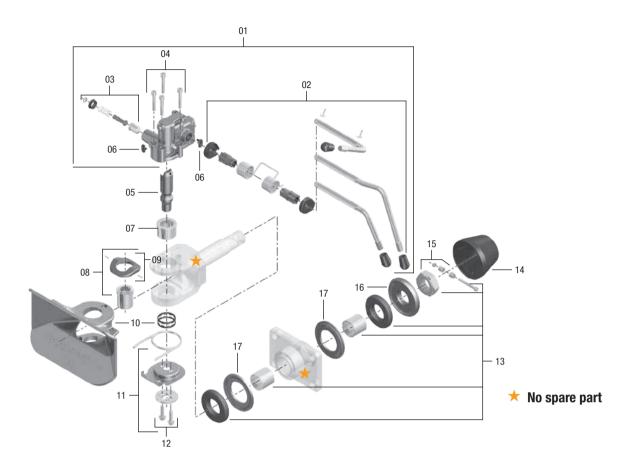


| Size    | a<br>(mm) | b<br>(mm) | c<br>(mm) | d<br>(mm) | e<br>(mm) | f<br>(mm) | k<br>(mm) | k<br>(mm) |  |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--|
| <br>150 | 160       | 100       | 200       | 140       | 21        | 94        | 11-35     | max. 35   |  |

## **Technical Data**

| Part no. | Size<br>(mm) | Hole pattern<br>(mm) | Admissible<br>D-value (kN) | Admissible<br>Dc-value (kg) | Admissible<br>V-value (kN) | Weight<br>(kg) | ECE    | CRN   | ROE   |
|----------|--------------|----------------------|----------------------------|-----------------------------|----------------------------|----------------|--------|-------|-------|
| 400A5100 | 150          | 160 x 100            | 130                        | 90                          | 35                         | 35             | 010350 | 43169 | 70971 |

## Spare parts for RO400B51001



| Fig. | Description | Part No   |
|------|-------------|-----------|
| 01   | A           | R0E71448A |
|      | В           | R0E71448B |
|      | B 400B36501 | R0E71835B |
| 02   | A           | R0E71795A |
|      | В           | R0E71795B |
|      | B 400B36501 | R0E71795B |
| 03   |             | R0E71491  |
| 04   |             | R0E30361  |
| 05   |             | R0E47099  |
| 06   |             | R0E25558  |
| 07   |             | R0E53520  |
| 80   |             | R0E71718  |
| 09   |             | R0E59415  |

| Fig. | Description | Part No  |
|------|-------------|----------|
| 10   |             | R0E46109 |
| 11   |             | R0E71331 |
| 12   |             | R0E30486 |
| 13   | G135        | R0E71639 |
|      | G145/150    | R0E71640 |
| 14   | G135        | R0E25254 |
|      | G145/150    | R0E25347 |
| 15   | G135        | R0E71641 |
|      | G145/150    | R0E71796 |
| 16   | G135        | R0E59280 |
|      | G145/150    | R0E59279 |
| 17   | G135        | R0E44160 |
|      | G145/150    | R0E44161 |

| Fig.               | Part No  |
|--------------------|----------|
| 03, 05, 07, 08, 11 | R0E71728 |



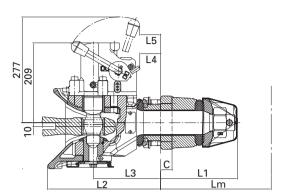
## **Series RO500B66500**

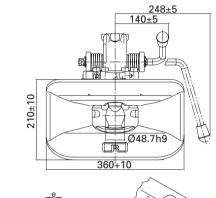
## Fully automatic towing hitch



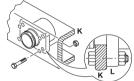


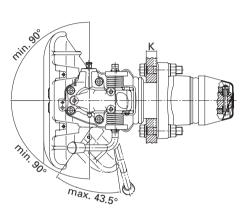
a = 50 mm DIN 74053, ECE R55-01 (Class D)









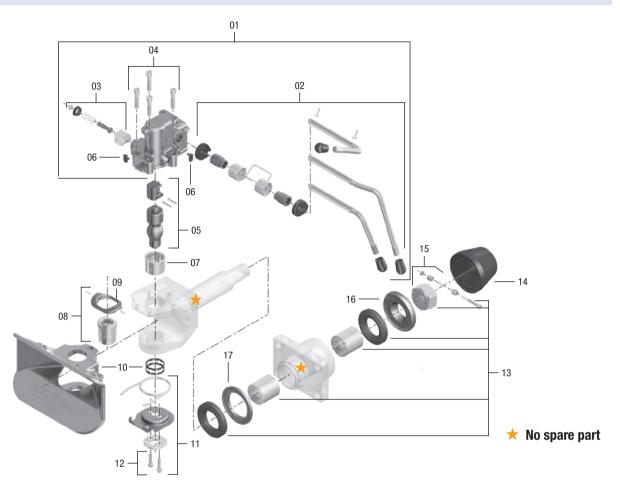


| Size | a<br>(mm) | b<br>(mm) | c<br>(mm) | d<br>(mm) | e<br>(mm) | f<br>(mm) |  |
|------|-----------|-----------|-----------|-----------|-----------|-----------|--|
| 6    | 160       | 100       | 200       | 140       | 21        | 94        |  |
|      | L1        | L2        | L3        | Lm        | С         | s         |  |
| Size | (mm)      | (mm)      | (mm)      | (mm)      | (mm)      | (mm)      |  |
| 6    | 202       | 297       | 177       | 54        | 55        | 35        |  |

## **Technical data**

| Order no.   | Size | Hole pattern<br>(mm) | Admissible<br>D-value² (kN) | Admissible<br>Dc-value*(kN) | Admissible static vertical load³ (kg) | Admissible<br>V-value² (kN) | Weight<br>(kg) | ECE    | CRN   |
|-------------|------|----------------------|-----------------------------|-----------------------------|---------------------------------------|-----------------------------|----------------|--------|-------|
| R0500B66500 | 6    | 160 × 100            | 200                         | 140                         | 2500                                  | 60                          | 50,5           | 011844 | 43546 |
| R0500B66500 | 6    | 160 x 100            | 285                         | 140                         | 1000                                  | 90                          | 50,5           | 011844 | 43545 |

## Spare parts for RO500B66500



| Fig. | Description | Part No   |
|------|-------------|-----------|
| 01   | ROxxxBxxxx  | R0E71442B |
| 02   | ROxxxBxxxx  | R0E71644B |
| 03   |             | R0E27009  |
| 04   |             | R0E30417  |
| 05   |             | R0E47130  |
| 06   |             | R0E25558  |
| 07   |             | R0E53604  |
| 80   |             | R0E53637  |
| 09   |             | R0E59428  |

| Fig. | Description | Part No  |
|------|-------------|----------|
| 10   |             | R0E46145 |
| 11   |             | R0E71331 |
| 12   |             | R0E30486 |
| 13   | G135        | R0E71801 |
| 14   | G145/150    | R0E25347 |
| 15   | G135        | R0E71802 |
| 16   | G145/150    | R0E59393 |
| 17   | G135        | R0E44177 |



| Fig.                    | Part No  |
|-------------------------|----------|
| 03, 04, 05a, 07, 08, 11 | R0E71805 |

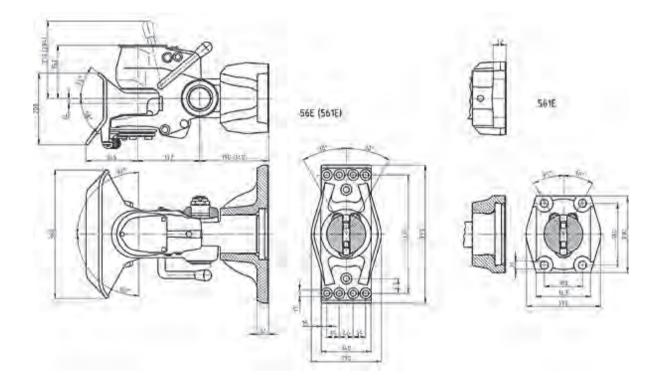
## Series RO56E



## Versions available

| Order no. | (mm)       | D-value | Weight | Approval<br>Number |
|-----------|------------|---------|--------|--------------------|
| R056E     | s. drawing | 314     | 80     | ECE E1             |
|           |            |         |        | 55R-01 1630        |

50mm fully automatic trailer coupling Heavy duty coupling for highway and off road



## **Spare parts for Series RO56E**



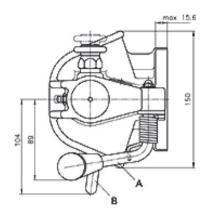
| Fig. | Description               | Remark           | Part<br>No. | Qty |
|------|---------------------------|------------------|-------------|-----|
| 01   | Funnel                    | with 3           | 70463       | 1   |
| 02   | Funnel spring             |                  | 55005       | 2   |
| 03   | Upper bush                |                  | 53019       | 1   |
| 04   | Lower bush                |                  | 53244       | 1   |
| 05   | Base plate                | for vers. E      | 65549       | 1   |
| 07   | Bolt M $10 \times 28$     | DIN 9311         | 57236       | 1   |
| 80   | Bolt M $10 \times 30$     |                  | 56024       | 1   |
| 10   | Spacer                    |                  | 15008       | 1   |
| 11   | Buffer cover              |                  | 25010       | 2   |
| 15   | Safety pin                |                  | 68000       | 1   |
| 16   | Hitch pin                 | for vers. E      | 47041       | 1   |
| 17   | Sealing cover             | with spring cap  | 65009       | 1   |
| 18   | Bolt M $6 \times 12$      |                  | 70249       | 1   |
| 19   | Washer 16                 |                  | 33011       | 1   |
| 20   | Notch lever               |                  | 51012       | 1   |
| 22   | Locking lever             |                  | 51013       | 1   |
| 23   | Grooved pin 8 $\times$ 30 | DIN 1474         | 32007       | 1   |
| 25   | Hand lever                | for type 561E    | 50092       | 1   |
| 25   | Hand lever                | B, for type 56EU | 50177       | 1   |
| 25   | Hand lever                | for type 56E     | 50084       | 1   |
| 26   | Lifting lever             | with pin 27      | 51036       | 1   |
| 28   | Locking spring cam        |                  | 13005       | 3   |

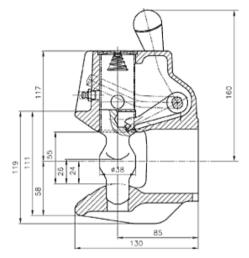
| Fig. | Description           | Remark   | Part<br>No. | Qty |
|------|-----------------------|--|-------------|-----|
| 29   | Locking spring        |  | 55024       | 3   |
| 30   | Support               |  | 65010       | 1   |
| 31   | Axle to lift up lever |  | 52002       | 1   |
| 33   | Bolt 18 ×113          |  | 52011       | 1   |
| 37   | Bolt 18 × 139         |  | 52009       | 1   |
| 38   | Leaf spring 2         |  | 55026       | 14  |
| 40   | Spring cap            | with 10, 11, 12  | 65066       | 1   |
| 43   | Washer 31             |  | 33002       | 1   |
| 46   | Notch cam             |  | 52014       | 2   |
| 47   | Cam spring            |  | 55028       | 1   |
| 50   | Spacer                |  | 54274       | 1   |
| 52   | Drawbar element       |  | 42016       | 1   |
| 53   | 0-ring or 129, 2-5, 7 | for type 56 E  | 25062       | 1   |
| 55   | Spacer                |  | 54276       | 1   |
| 56   | Drawbar element       | for type 561 E   | 42014       | 1   |
| 57   | 0-ring or 149, 2-5, 7 |  | 25063       | 1   |
| 58   | Сар                   |  | 25104       | 1   |
| R    | Repair set            | 03, 04, 16, 21, 24, 32, 34, 34-1, 35, 36, 39, 42, 44, 45, 48, 48-2, 49, 54       | 66920       |     |
| R    | Repair set            | 03, 04, 16, 21, 24, 32, 34, 34-1, 35, 36, 39, 42, 44, 45, 48, 48-1, 48-2, 49, 54 | 67252       |     |



# Series RO243







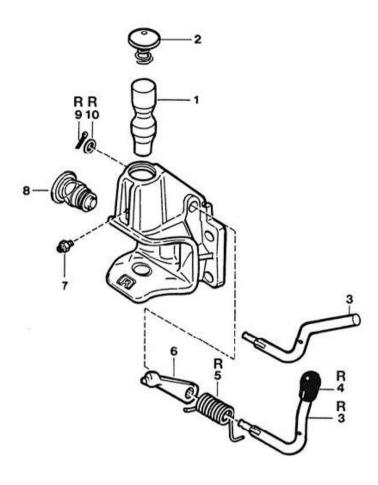
## **Versions available**

| Order no. | A/B | Size | Hole pattern<br>(mm) | Admissible<br>D-value¹ (kN) | Admissible<br>Dc-value¹ (kN) | Admissible static vertical load (kg) | Admissible<br>V-value¹ (kN) | (kg) | e1<br>CE/94/20/cl. C50-X |
|-----------|-----|------|----------------------|-----------------------------|------------------------------|--------------------------------------|-----------------------------|------|--------------------------|
| 243A3500  | Α   | 135  | 120 × 55             | 30                          | 30                           | 350                                  | 12,0                        | 4,4  | 00-0051                  |

Also for industrial trucks (transport carts, fork lift trucks, etc.) with maximum total weight up to 5t and maximum towed load up to 20t (without vertical load only for inside-factory transport).

<sup>&</sup>lt;sup>1</sup> s. p. 14 <sup>2</sup> diagonal

## **Spare parts for Series RO243**

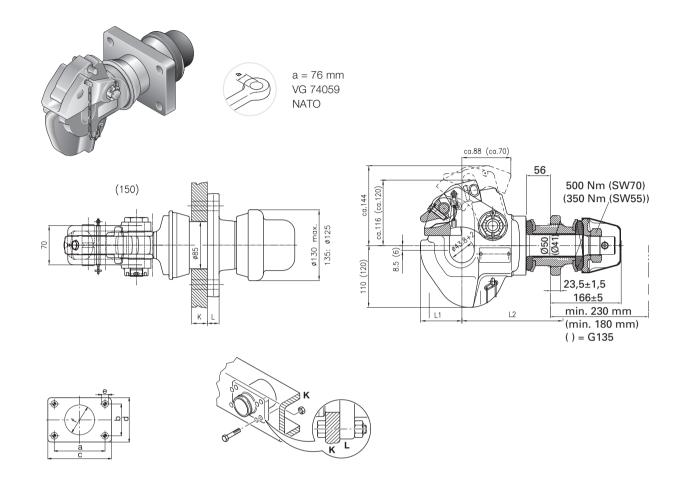


| Fig. | Description                            | Remark   | Part No. | Quantity |
|------|--|--|----------|----------|
| 01   | Coupling pin                           |  | R47026   | 1        |
| 02   | Sealing cover                          |  | R67411   | 1        |
| 03   | Hand lever                             | with 04, 09, 10 for vers. new A11, A12; old N, U | R70355   | 1        |
| 04   | Cap                                    |  | R25106   | 1        |
| 05   | Locking spring                         | in 06  |          | 1        |
| 06   | Repair set locking lever               | 03, 04, 05, 09, 10                               | R70927   | 1        |
| 07   | Drive-in grease nipple A $10 \times 1$ |  | R65018   | 1        |
| 08   | Safety system                          |  | R70618   | 1        |
| 09   | Split pin                              | in 03, 06  |          | 1        |
| 10   | Washer                                 | in 03, 06  |          | 1        |
|      | Type plate                             | on request                                       |          |          |



# Series RO283 - 76mm

## Hook trailer hitch with buffers and safety lock



| Size | L1   | L2   | L3   | L4   |
|------|------|------|------|------|
|      | (mm) | (mm) | (mm) | (mm) |
| 150  | 88   | 180  | 156  | 424  |

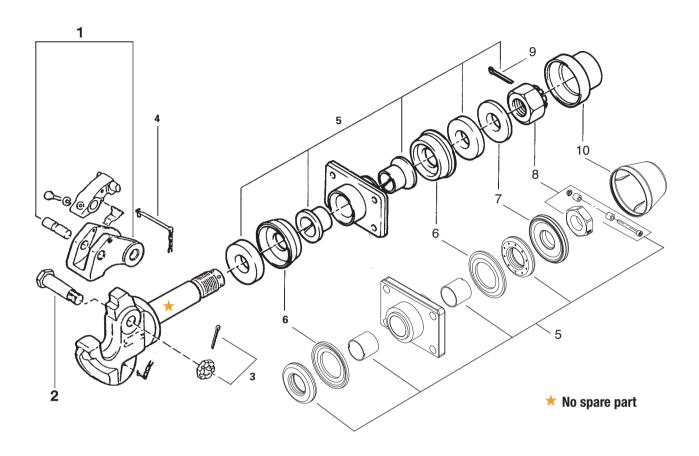
| Size  | а     | b     | C     | d     | е    | f    |
|-------|-------|-------|-------|-------|------|------|
| model | (mm)  | (mm)  | (mm)  | (mm)  | (mm) | (mm) |
| 150   | 160,0 | 100,0 | 200,0 | 140,0 | 21,0 | 94,0 |

| Size  | K    | K    |  |
|-------|------|------|--|
| model | (mm) | (mm) |  |
| 150   | 28   | 28   |  |

## **Technical data**

| Order no.    | Size | Hole pattern<br>(mm) | Admissible<br>D-value² (kN) | Admissible<br>Dc-value*(kN) | Admissible static vertical load³ (kg) | Admissible<br>V-value² (kN) | C<br>(t) | R<br>(t) | Weight<br>(kg) |
|--------------|------|----------------------|-----------------------------|-----------------------------|---------------------------------------|-----------------------------|----------|----------|----------------|
| R0 283A50002 | 150  | 160 × 100            | 160                         | 54                          | 1500                                  | 21,6                        | 9,0      | 40       | 31             |

## **Spare parts for Series RO283**



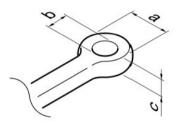
| Fig. | Description | Part No  |
|------|-------------|----------|
| 01   | 135, 145    | R0E66393 |
| 01   | 150         | R0E66324 |
| 01   | 283xxxxx2   | R0E70932 |
| 02   | 135, 145    | R0E52036 |
| 02   | 283xxxxx2   | R0E52037 |
| 03   |             | R0E56030 |
| 04   | 283A35xx1   | R0E71606 |
| 04   | 283Axxxxx   | R0E70285 |
| 05   | 135         | R0E70343 |
| 05   | 283A45xx0   | R0E70344 |

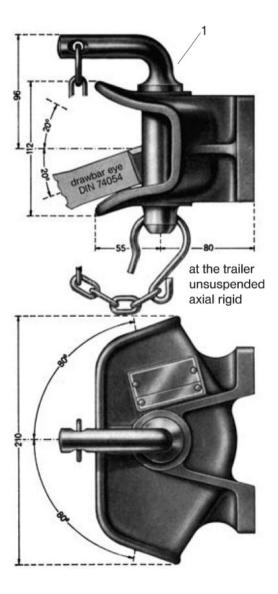
| Fig. | Description  | Part No  |
|------|--------------|----------|
| 05   | 283A45/50xx2 | R0E70344 |
| 06   | 135          | R0E44060 |
| 06   | 145, 150     | R0E44134 |
| 07   | 283A50xx2    | R0E59280 |
| 80   | 283A45/50xx2 | R0E71796 |
| 09   | 283xxxxx2    | R0E30492 |
| 10   | 135          | R0E56051 |
| 10   | 145, 150     | R0E56049 |
| 10   | 283A45/50xx2 | R0E25347 |



# Series RO805B







#### **Technical data:**

 Non-automatic trailer coupling with flange bearing hole pattern: 120mm x 55mm

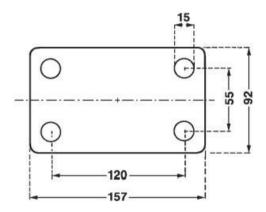
| Part no. | D¹ (kN) | S2 (t) | ABG M |  |
|----------|---------|--------|-------|--|
| 369U130  | 60,4    | 0,65   | 3455  |  |

- <sup>1</sup> D-value
- <sup>2</sup> Statical vertical load
- Usable on agricultural trailers only
   (R) (p.e. R¹ = 16t; R² = 10t)
- Admissible total weight of a vehicle combination of 40t

## **Usable drawbar eyes**

|            | nom | inal dimens | sions  | turn-angle (see fig.) |          |  |
|------------|-----|-------------|--------|-----------------------|----------|--|
| DIN a (mm) |     | b (mm)      | c (mm) | horizontal            | vertical |  |
| 74054      | 100 | 40          | 30,5   | min. 80°              | min. 20° |  |

## **Dimensions of the coupling**



## Spare parts for series RO\*805B

| no. | Designation | Piece | Part no.     |
|-----|-------------|-------|--------------|
| 1   | Insert pin  | 1     | R70323       |
|     | Type plate  |       | Upon request |

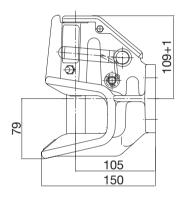
Capacity

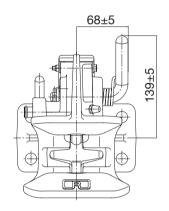
149

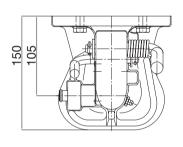
# Series RO244

## Compact hitch for industrial trucks and trailers





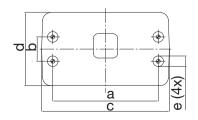




## **Technical data**

| Order no.   | Size | Hole pattern<br>(mm) | Admissible<br>D-value² (kN) | Admissible<br>Dc-value*(kN) | Admissible static<br>vertical load <sup>3</sup> (kg) | Admissible<br>V-value² (kN) | Weight<br>(kg) | ECE    |
|-------------|------|----------------------|-----------------------------|-----------------------------|--|-----------------------------|----------------|--------|
| R0244A35002 | 135  | 120 x 55             | 42                          | 30                          | 250  | 8,4                         | 6              | 011802 |

| Size  | a    | b    | c    | d    | e    |
|-------|------|------|------|------|------|
| model | (mm) | (mm) | (mm) | (mm) | (mm) |
| 135   | 120  | 55   | 155  | 90   | 15   |





# Choice of the coupling / calculation

## Choice of the coupling

#### tractor

#### bearing of the coupling



flange bearing

1. Hole pattern at rear tractor: coupling with flange bearing and corresponding hole pattern





lift bearing



insert pin bearing

2. Coupling holder of tractor

Coupling with lift bearing 2.1

2.2 Coupling with insert pin bearing



## **Calculation**

#### 1. total vehicle combination weight

Admissible total vehicle combination weight: currently 40t.

#### 2. towed load

#### In absence of D-value specification:

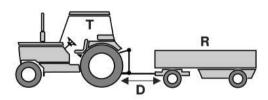
Admissible total vehicle combination weight (currently 40t) minus admissible total weight of tractor

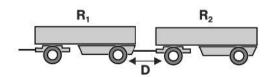
#### 3. D-value

**D-value** (not for all couplings)

Theoretical horizontal force between towing vehicle and trailer; comparative mathematical value of forces between moving masses.

The D-value can only be calculated with the permissible total weight of both truck and trailer.





Calculation of the D-value (kN):

$$D = g \cdot \frac{T \cdot R}{T + R}$$

T: total weight of the towing vehicle in t R: total weight of the turnable trailer in t

g: gravitation acceleration (9,81 m/s<sup>2</sup>)

The calculated D-value can be equal to or lower than the D-value

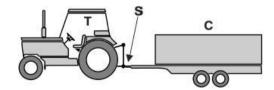
$$D = g \cdot \frac{R_1 \cdot R_2}{R_1 + R_2}$$

R1: total weight of trailer where the coupling is mounted (in

R1 ≥ R2

#### 3. Static verticle load

- · vertical load of the central-axle trailer on the coupling point
- The vertical load depends on the size of the coupling and the maximum is 10% of the gross weight of the trailer or 1000kg (whichever is less).
- When using a central-axle trailer the vertical load should amount to at 4% of the trailer weight in order to increased wear caused by bouncing of the drawbar eye.
- Size of static vertical load is also a function of speed.



#### Central-axle trailer (C):

Use admissible in principle:

- size of central-axle trailer depends on characteristics of drawbar eye and tractor unit
- please see table for restrictions

# Choice of the coupling / calculation

### **Drawbar eye**

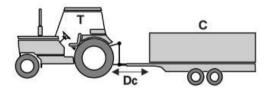
Couplings and drawbar eyes for the road traffic which have been verified according to european standard specification 94/20 have special fixed identying sizes, the Dc-value and the V-value, for the operation with the central-axle trailer.

These values are not of importance in the agriculture and forestry. Since the Dc-value and the V-value are indicated with some of the following mentioned drawbar eyes, these sizes are briefly explained.

## Towing vehicle and central-axle trailer Dc-value

(valid only in connection with the V-value)

- theoretical horizontal force between towing vehicle and trailer.
- The Dc-value can only be calculated with the permissible total weight of both towing vehicle and central-axle trailer.



• Calculation of the Dc-value (kN):

$$D(kN) = g \cdot \frac{T \cdot C}{T + C}$$

T: total weight of the towing vehicle in t

C: sum of the axle loads of the central-axle trailer.

g: gravitation acceleration 9,81 m/s<sup>2</sup>

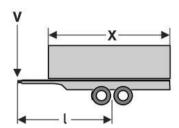
The calculated Dc-value can be **equal to or lower than** the Dc-value of the drawbar eye.

## Central-axle trailer:

#### V-value

(valid only in connection with the Dc-value)

- vertical force for central-axle trailer.
- dependent on the rear axle suspension of the towing vehicle



• Calculation of the V-value (kN):

$$V (kN) = a \cdot \frac{X_2}{I_2} \cdot C$$

- a: an equivalent vertical acceleration in the coupling point in m/s²
  - a = 1.8 for vehicles with air suspension
  - a = 2,4 for vehicles with other suspensions I: theoretical drawbar length in meters
- x: length of the loading area in meters  $x^2$  /  $I^2$ : atleast 1,0 C: sum of the axle loads of the central-axle trailer in t
- The calculated V value can be equal to an lower than the

The calculated V-value can be equal to or lower than the V-value of the drawbar eye.



# Rigid mounted pintle hooks

#### **BPCBH850MM (8 Ton)**

#### **Capacity**

3,000 lbs. maximum vertical load 16,000 lbs. M.G.T.W.

#### **Description**

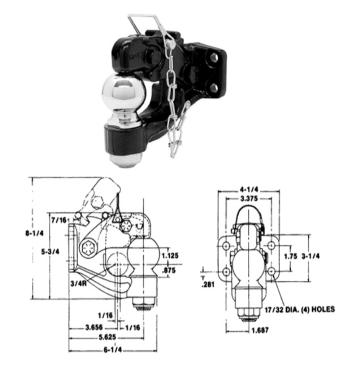
Drop forged combination pintle hook/ball hitch. Forged steel ball. Interchangeable hitch balls. Finished with black powder coat for durability and corrosion resistance.

#### **Drawbar Eye Dimensions**

2½" to 3" up to 1916 cross section.

Hitches are shipped with drilling template, capacity decal, and are individually boxed.

Weight 13 lbs CRN 37265



#### BPCP45AC4 & BPCPAC4BK (45 Ton) - BPCP45AC6 & BPCPAC6BK (45 Ton)

Buyers Pintle Hooks feature a "double-safe" locking system with a lock/ clasp/impact arm interacting design that combine to prevent release of the eye when air pressure is applied. The Air Compensated Pintle Hooks must be used with a brake chamber.

The air brake chamber is constructed to interact with the closed clasp to prevent uncoupling when air is applied.

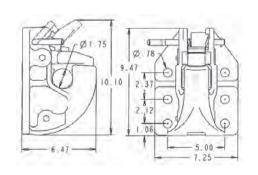
P45AC4 is to be used with a lunette eye having an internal diameter between 2%" and 3", and a material cross section between 1%" and 1%" in diameter.

P45AC6 is to be used with a lunette eye having an internal diameter between 2%" and 25%", and a material cross section between 15%" and 13%" in diameter.

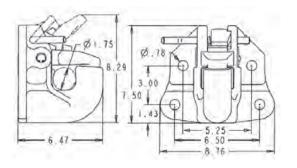
 Weight: BPC P 45 AC4
 26lbs

 Weight: BPC P 45 AC4BK
 3.2lbs

 CRN
 37266









# Rigid mounted pintle hooks

#### **BPCPH15WMK (15 Ton)**

#### Capacity

6,000 lbs. maximum vertical load 30,000 lbs. M.G.T.W.

#### **Description**

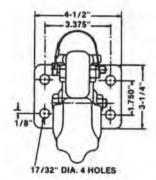
Drop forged alloy steel rigid type pintle hook. Finished with black powder coat for superior durability and corrosion resistance.

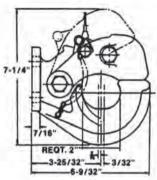
#### **Drawbar Eye Dimensions**

2" to 3" I.D. with  $1\frac{1}{4}$ " to  $1\frac{5}{8}$ " diameter section. Pintle hooks are individually boxed and include mounting information sheet, spec. sheet, adhesive backed drilling template, and vehicle capacity decal.

Weight 11.75lbs CRN 37267







## **BPCPH20WMK (20 Ton)**

#### Capacity

8,000 lbs. maximum vertical load 40,000 lbs. M.G.T.W.

#### **Description**

Drop forged alloy steel rigid type pintle hook. Finished with black powder coat for superior durability and corrosion resistance.

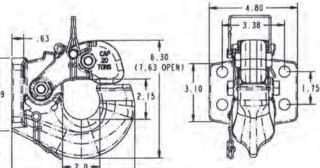
#### **Drawbar Eye Dimensions**

2" to 3" I.D. with  $1\frac{1}{4}$ " to  $1\frac{5}{8}$ " diameter section.

Pintle hooks are individually boxed and include mounting instructions, specifications sheet, adhesive backed drilling template, and vehicle capacity decal.

Weight 13.3lbs CRN 37268







# Rigid mounted pintle hooks

#### **BPCPH30 (Ton)**

#### Capacity

15,000 lbs. maximum vertical load 60,000 lbs. M.G.T.W.

#### **Description**

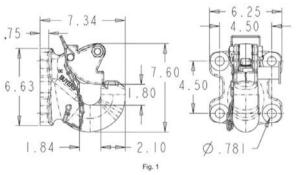
Drop forged alloy steel rigid type pintle hook. Designed for ease of use, long life and corrosion resistance.

#### **Drawbar Eye Dimensions**

2" to 3" I.D. with 11/4" to 15/8" diameter section. Pintle hooks are individually boxed and include mounting instructions, specification sheet, adhesive backed drilling template and vehicle capacity decal.

Weight 24lbs CRN 44894





## **BPCPH50AC**

#### Capacity

20,000 lbs. maximum vertical load 100,000 lbs. M.G.T.W.

#### **Description**

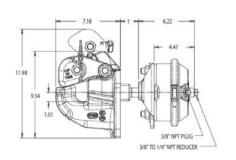
50 Ton air compensated pintle hook reduces wear and absorbs shock in heavy duty towing situation.

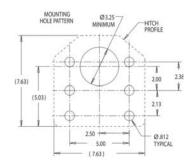
#### **Drawbar Eye Dimensions**

2.38" to 3" I.D. with  $1\frac{1}{4}$ " to  $1\frac{5}{8}$ " diameter section. Pintle hooks are individually boxed and include mounting instructions, specification sheet, adhesive backed drilling template, and vehicle capacity decal.

Weight 44.8lbs CRN 45107







# **Pintle Hook Mount**

Part Number: BPCPM87

#### Capacity:

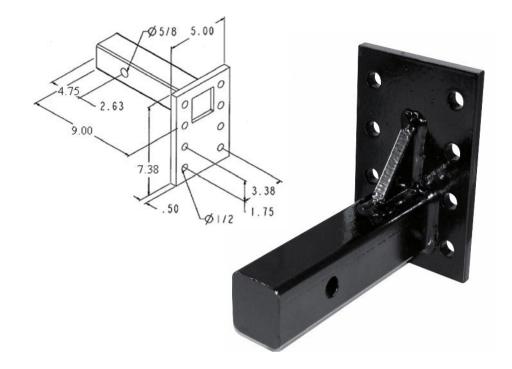
2800lb: maximum vertical load 14000lb: M.G.T.W.

#### **Description:**

Pintle Hook 8 hole mount

#### Weight:

15lb



Part Number: BPCPM84

#### Capacity:

4000lb: maximum vertical load 20000lb: M.G.T.W.

#### **Description:**

Pintle Hook 4 hole mount

#### Weight:

12lb







# **Hubodometer for all tyres sizes**

**JOST HUBODOMETER** is a precision instrument for all kinds of wheeled vehicles, e.g. semi-trailers trailers low-bed trailers buses trains and other equipment.

**JOST HUBODOMETER** will record information for maintenance schedules wear and tear controls mileage of leasing vehicles exact data for calculation of transport costs validating guarantees



#### **Smallest dimension**

Overall depth only 23 mm

#### **Mounting**

Directly to the wheel cap or shockproof mounting in a special wheel cap

#### **Recording mechanism**

Completely and permanently sealed. Filled with inert gas against fogging and ingress of moisture or dirt. Records forward and reverse motion. Completely tamperproof.

Records up to one million miles. Records in kilometres or miles. All parts corrosion resistant.

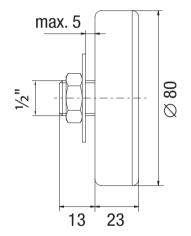
Weight: 0.24 kg

3 Year or 500,000kms warranty, whichever comes first.

When ordering please state:

- 1. exact tyre size resp. circumference
- 2. calibration for kilometres or miles.

| Circumference | Tyre Size   | JOST Part Number |
|---------------|---|------------------|
| 2915mm        | 275.70-22.5<br>11.70-22.5   | J2915MM          |
| 3175-3220mm   | 10.00-20<br>11.00-22.5<br>14.80-22.5<br>295.80-22.5<br>315.75-22.5<br>375.70-20 | J10/00/20        |





# **Mounting instructions for Hubodometer**

When mounting the hubodometer to your existing hub-cap proceed as follows:

Check whether there is enough clearance to the end of the axle, at least 6 mm clearance is required after mounting. The contact surface of the hub-cap must be flat, if necessary by machining. Drill the concentric 13 mm mounting hole. Install the hubodometer with the spring washer and nut supplied.

Torque the nut to 15Nm (1,5mkp) maximum, just sufficient to flatten the spring washer.

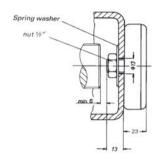
#### **Hubodometer - short version**

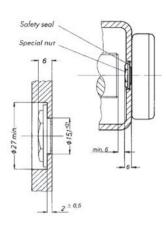
Where fitting has to take place in a restricted space this type of Hubodometer is used. It has a shortened clamping bolt. Fitting is effected using a special plain nut and a combined sealing/retaining ring. Tightening torque max. 15 Nm (1,5 mkp).

Fixing and centring in the axle cap requires a concentric hole of 15,1 mm diameter. With axle caps of more than 2 mm wall thickness the nut should be counterbored.

#### **Important**

The Hubodometer must be fitted concentrically. Oscillations due to running out of true will impair life and accuracy. Check that the permissible vehicle width is not exceeded when the Hubodometer is fitted. No chemical agents should be used when cleaning the Hubodometer.





# **JOST Alloy Wheels**

# JOST Forged Alloy Wheels

JOST Premium Forged Alloy Wheels are manufactured to exacting standards to suit Australian conditions.

- Half the weight of steel rims\*
- Reduced tyre wear
- Strong and durable
- Increased fuel economy
- Reduced brake maintenance
- 5 year unlimited km warranty
- Available in Machined, Polished and Superchrome<sup>™</sup> finishes
- Available for steel wheel conversions including sleeve nuts

<sup>\*</sup> average weight statement compared to a quality 22.5x8.25 Steel disc wheel equivalent.

| Part No.               | Description  | SIZE       | offset | PCD  | P.C.D | Stud     | С.В  | MAX    | WEIGHT       |
|------------------------|--|------------|--------|--|-------|----------|--|--------|--------------|
| T dit 110.             | Description  | OIZE       | (mm)   | HOLES  |       | (mm)     |  | LOAD   | (kg)         |
| JW 117528526P OE       | JOST WHEEL POLISHED 11.75 X 22.5. 285 PCD 26 BOLT                  | 22.5x11.75 | 120    | 10   | 285   | 26       | 220  | 5000KG | 25.6         |
| JW 1175285SS26P OE     | JOST WHEEL POLISHED 11.75 X 22.5 SUPER SINGLE 285 PCD 26 BOLT      | 22.5x11.75 | 0      | 10   | 285   | 26       | 220  | 5000KG | 25           |
| JW 117533526M OE       | JOST WHEEL MACHINED 11.75 X 22.5.335 PCD 26 BOLT                   | 22.5x11.75 | 120    | 10   | 335   | 26       | 281.2  | 5000KG | 24.5         |
| JW 117533526P OE       | JOST WHEEL POLISHED 11.75 X 22.5.335 PCD 26 BOLT                   | 22.5x11.75 | 120    | 10   | 335   | 26       | 281.2  | 5000KG | 24.5         |
| JW 117533526SC         | JOST WHEEL SUPERCHROMED 11.75 X 22.5 335 PCD 26 BOLT               | 22.5x11.75 | 120    | 10   | 335   | 26       | 281.2  | 5000KG | 24.9         |
| JW 117533532M OE       | JOST WHEEL MACHINED 11.75 X 22.5.335 PCD 32 BOLT                   | 22.5x11.75 | 120    | 10   | 335   | 32       | 281.2  | 5000KG | 24.5         |
| JW 117533532P OE       | JOST WHEEL POLISHED 11.75 X 22.5.335 PCD 32 BOLT 10 STUD           | 22.5x11.75 | 120    | 10   | 335   | 32       | 281.2  | 5000KG | 24.5         |
| JW 117533532SC         | JOST WHEEL SUPERCHROMED 11.75 X 22.5 335 PCD 32 BOLT 10 STUD       | 22.5x11.75 | 120    | 10   | 335   | 32       | 281.2  | 5000KG | 24.9         |
| JW 17567526IP OE       | JOST WHEELINSIDE POLISH 17.5 X 6.75 225 PCD 26 BOLT 10 STUD        | 17.5X675   | 120    | 10   | 225   | 26       | 176  | 2500KG | 14.2         |
| JW 17567526M OE        | JOST WHEEL MACHINED 17.5 X 6.75 225 PCD 26 BOLT 10 STUD            | 17.5X6.75  | 120    | 10   | 225   | 26       | 176  | 2500KG | 14.2         |
| JW 17567526SC          | JOST WHEEL SUPERCHROME 17.5 X 6.75 225 PCD 26 BOLT 10 STUD         | 17.5X6.75  | 120    | 10   | 225   | 26       | 176  | 2500KG | 14.7         |
| JW 19527526M OE        | JOST WHEEL MACHINED 19.5 X 7.5 275 PCD 26 BOLT 8 STUD              | 19.5X7.5   | 134    | 8  | 275   | 26       | 221  | 3000KG | 17           |
| JW 19527526IP OE       | JOST WHEEL INSIDE POLISHED 19.5 X 7.5 275 PCD 26 BOLT 8 STUD       | 19.5X7.5   | 134    | 8  | 275   | 26       | 221  | 3000KG | 17.3         |
| JW 82528526IP OE       | JOST WHEEL INSIDE POLISH 22.5 X 8.25 285 PCD 26 BOLT 10 STUD       | 22.5x8.25  | 143.5  | 10   | 285   | 26       | 220  | 3360KG | 23.6         |
| JW 82528526M OE        | JOST WHEEL MACHINED 8.25 X 22.5 285 PCD 26 BOLT 10 STUD            | 22.5x8.25  | 143.5  | 10   | 285   | 26       | 220  | 3360KG | 23.6         |
| JW 82528526P OE        | JOST WHEEL POLISHED 8.25 X 22.5 285 PCD 26 BOLT 10 STUD            | 22.5x8.25  | 143.5  | 10   | 285   | 26       | 220  | 3360KG | 23.6         |
| JW 82528526SC          | JOST WHEEL SUPERCHROMED 8.25 X 22.5 285 PCD 26 BOLT 10 STUD        | 22.5x8.25  | 143.5  | 10   | 285   | 26       | 220  | 3360KG | 24           |
| JW 82528526SC Steer    | JOST WHEEL SUPERCHROME STEER 8.25 X 22.5 285 PCD 26 10 STUD        | 22.5x8.25  | 143.5  | 10   | 285   | 26       | 220  | 3360KG | 24           |
| JW 82533526IP OE       | JOST WHEEL INSIDE POLISH 8.25 X 22.5 335 PCD 26 BOLT 10 STUD       | 22.5x8.25  | 145    | 10   | 335   | 26       | 281.2  | 3650KG | 23.9         |
| JW 82533526M OE        | JOST WHEEL MACHINED 8.25 X 22.5.335 PCD 26 BOLT 10 STUD            | 22.5x8.25  | 145    | 10   | 335   | 26       | 281.2  | 3650KG | 23.9         |
| JW 82533526P OE        | JOST WHEEL POLISHED 8.25 X 22.5. 335 PCD 26 BOLT 10 STUD           | 22.5x8.25  | 145    | 10   | 335   | 26       | 281.2  | 3650KG | 23.9         |
| JW 82533526SC          | JOST WHEEL SUPERCHROME 8.25 X 22.5. 335 PCD 26 BOLT 10 STUD        | 22.5x8.25  | 145    | 10   | 335   | 26       | 281.2  | 3650KG | 24.3         |
| JW 82533526SC Steer    | JOST WHEEL SUPERCHROME STEER 8.25 X 22.5 335 PCD 26 BOLT 10 STUD   | 22.5x8.25  | 145    | 10   | 335   | 26       | 281.2  | 3650KG | 24.3         |
| JW 82533532IP OE       | JOST WHEEL INSIDE POLISHED 8.25 X 22.5 335 PCD 32 BOLT 10 STUD     | 22.5x8.25  | 145    | 10   | 335   | 32       | 281.2  | 3650KG | 23.6         |
| JW 82533532M OE        | JOST WHEEL MACHINED 8.25 X 22.5 335 PCD 32 BOLT 10 STUD            | 22.5x8.25  | 145    | 10   | 335   | 32       | 281.2  | 3650KG | 23.6         |
| JW 82533532P OE        | JOST WHEEL POLISHED 8.25 X 22.5 335 PCD 32 BOLT 10 STUD            | 22.5x8.25  | 145    | 10   | 335   | 32       | 281.2  | 3650KG | 23.6         |
| JW 82533532SC          | JOST WHEEL SUPERCHROME 8.25 X 22.5 X 335 PCD 32 BOLT 10 STUD       | 22.5x8.25  | 145    | 10   | 335   | 32       | 281.2  | 3650KG | 24.1         |
| JW82528532SC Steer     | JOST WHEEL SUPERCHROME STEER 8.25 X 22.5 X 335 PCD 32 BOLT 10 STUD | 22.5x8.25  | 143.5  | 10   | 335   | 32       | 281.2  | 3650KG | 24.1         |
| JW 900285106P OE       | JOST WHEEL POLISHED 9.00 X 22.5 285 PCD 106 INSET 10 STUD          | 22.5x9.0   | 79     | 10   | 285   | 26       | 220.1  | 5000KG | 23.6         |
| JW 900335106P OE       | JOST WHEEL POLISHED 9.00 X 22.5 335 PCD 106 INSET 10 STUD          | 22.5x9.0   | 79     | 10   | 335   | 26       | 281.2  | 5000KG | 23.6         |
| JW 900335106SC         | JOST WHEEL SUPECHROME 9.00 X 22.5 335 PCD 106 INSET 10 STUD        | 22.5 X9.0  | 79     | 10   | 335   | 26       | 281.2  | 5000KG | 24.1         |
| JW 900285106SC         | JOST WHEEL SUPECHROME 9.00 X 22.5 285 PCD 106 INSET 10 STUD        | 22.5x9.0   | 79     | 10   | 285   | 26       | 220.1  | 5000KG | 24.1         |
| JW 90028526M OE        | JOST WHEEL MACHINED 9.00 x 22.5 285 PCD 26 BOLT 10 STUD            | 22.5x9.0   | 152.2  | 10   | 285   | 26       | 220.1  | 4125KG | 28.2         |
| JW 90028526P OE        | JOST WHEEL POLISHED 9.00 x 22.5 285 PCD 26 BOLT 10 STUD            | 22.5x9.0   | 152.2  | 10   | 285   | 26       | 220.1  | 4125KG | 28.2         |
| JW 90028526SC          | JOST WHEEL SUPERCHROME 9.00 x 22.5 285 PCD 26 BOLT 10 STUD         | 22.5x9.0   | 152.2  | 10   | 285   | 26       | 220.1  | 4125KG | 28.6         |
| JW 90028526SC Steer    | JOST WHEEL SUPERCHROME STEER 9.00 x 22.5 285 PCD 26 BOLT 10 STUD   | 22.5x9.0   | ì      | 10   | 285   | 26       | i  | 4125KG | 28.6         |
| JW 90033526M OE        | JOST WHEEL MACHINED 9.00 X 22.5 335 PCD 26 BOLT 10 STUD            | 22.5x9.0   |        | 10   | 335   | 26       | _  | 4125KG | 26.7         |
| JW 90033526P OE        | JOST WHEEL POLISHED 9.00 X 22.5 335 PCD 26 BOLT10 STUD             | 22.5x9.0   | 152.2  | 10   | 335   | 26       | 281.2  | 4125KG | 26.7         |
| JW 90033526SC          | JOST WHEEL SUPERCHROME 9.00 X 22.5 335 PCD 26 BOLT 10 STUD         | 22.5x9.0   | 152.2  | 10   | 335   | 26       | 281.2  | 4125KG | 27.1         |
| JW 90033526SC Steer    | JOST WHEEL SUPERCHROME STEER 9.00 X 22.5 335 PCD 26 BOLT 10 STUD   | 22.5x9.0   | 152.2  | 10   | 335   | 26       | 281.2  | 4125KG | 27           |
| JW 90033532M OE        | JOST WHEEL MACHINED 9.00 X 22.5 335 PCD 32 BOLT 10 STUD            | 22.5x9.0   | 152.2  | 10   | 335   | 32       | <del>                                     </del> | 4125KG | 26.7         |
| JW 90033532P OE        | JOST WHEEL POLISHED 9.00 X 22.5 335 PCD 32 BOLT 10 STUD            | 22.5x9.0   | _      | 10   | 335   | 32       | <del>                                     </del> | 4125KG | 26.7         |
| JW 90033532SC          | JOST WHEEL SUPERCHROME 9.00 X 22.5.335 PCD 32 BOLT 10 STUD         | 22.5x9.0   | 152.2  | 10   | 335   | 32       | 281.2  | 4125KG | 27           |
| JW 90033532SC Steer    | JOST WHEEL SUPERCHROME STEER 9.00 X 22.5.335 PCD 32 BOLT 10 STUD   | 22.5x9.0   | 152.2  | 10   | 335   | 32       |  | 4125KG | 27           |
| JW SLEEVE SINGLE 32MM  | SLEEVE NUT M22 X 1.5 MM 32MM HEX CAST STEEL STEER USE              |            |        |  |       | -        |  |        | <del>-</del> |
| JW SLEEVE TWIN 32MM    | SLEEVE NUT M22 X 1.5 MM 32MM HEX CAST STEEL DRIVE USE              |            |        |  |       |          |  |        |              |
| JW LUG NUT 32 MM       | LUG NUT FOR WHEELS M22 X 1.5 32 MM HEX CAST STEEL.                 |            |        | <del>                                     </del> |       |          |  |        | $\vdash$     |
| JW LUG NUT 33 MM       | LUG NUT FOR WHEELS M22 X 1.5 33 MM HEX CAST STEEL.                 |            |        |  |       |          |  |        |              |
| JW LUG NUT COVER 33 MM | LUG NUT COVER 33 MM STEEL AND CHROME.                              |            |        |  |       |          |  |        |              |
| JW NUT COVER 33MM      | 33MM LUG NUT COVERS  |            |        |  |       | $\vdash$ |  |        |              |
| JW RIM GAUGE           | JOST RIM GAUGE FLANGE WEAR INDICATOR                               |            |        | $\vdash$   |       | $\vdash$ | <u> </u>   |        | $\vdash$     |
|                        | SLEEVE NUT 33MM HEX 7/8 X 11 BSF THREAD STEER USE                  |            | _      | $\vdash$   |       | $\vdash$ |  |        | $\vdash$     |
|                        |  |            | -      | $\vdash$   |       | $\vdash$ | <u> </u>   |        | $\vdash$     |
| JW SCANIA SLEEVE TWIN  | SLEEVE NUT 33MM HEX 7/8 X 11 BSF THREAD DRIVE USE                  |            |        |  |       |          |  |        |              |

Refer to the JOST website www.jostaustralia.com.au for the full wheel catalogue.



# Hydraulic Cylinders

The extensive range of JOST tipping cylinders has been designed for the Australian market and are currently available in 3, 4 and 5 stage and stroke lengths ranging from 2760mm to 8675mm

- All stage hard chroming
- Large stage overlap creating market leading strength & stability
- Heavy Duty Forged double welded Trunnion
- Spherical seal and bearing design
- Full lifting capacity at industry standard 135bar operating pressure
- Full 2 year warranty backed by JOST Australia nationwide support

Refer to the JOST website www.jostaustralia.com.au for the full Hydraulic catalogue.



# **Service Tools**

#### **Tools To Make Your Job Easier**

- Jost Australia offer a selection of tools and gauges to make your job easier.
- Including simple 'No-Go' gauges in addition to rated lifting tools and fifth wheel testers.
- All tools are designed for common ADR specified wear limits as well as JOST specific tolerances.
- Tools to suit king pins, locking jaws, coupling pins, tow eye bushes, ball couplings and more.

| Fig. | Description                            | Part No.               |
|------|--|------------------------|
| 1    | Lock jaw gauge to suit 36, 37, 42      | JOSTGAUGELOCKJAW       |
| 2    | Skid plate gauge to suit 50mm king pin | JOSTGAUGESKIDPLATE50MM |
| 2a   | Skid plate gauge to suit 90mm king pin | JOSTGAUGESKIDPLATE90MM |
| 3    | Tow eye gauge                          | JOSTGAUGEGNIM150       |
| 4    | King pin Gauge                         | JOSTGAUGEKINGPIN       |
| 5    | R0500 gauge                            | JOSTGAUGERO500         |
| 6    | 50mm king pin lock tester              | SK7600000              |
| 6a   | 90mm king pin lock tester              | SK7600090              |



1.











5.

