Montage- und Betriebsanleitung

MONTAGEPLATTEN KLASSE J

(GB) **Installation and operating instructions for JOST Class J Mounting Plate**

(F) **Instructions de montage et d'utilisation pour les plaques de montage JOST classe J**

(I) **Istruzioni per il montaggio e l'uso del Pias di montaggio JOST Classe J**

(E) **Instrucciones de montaje y functionamiento para planchas de montaje JOST clase J**

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English

The safety information is compiled in one section. Where the user of the fifth wheel coupling is in danger, the safety information is repeated in the various sections and marked with the danger symbol shown here to the side.

The relevant safety regulations in your country (for example Health & Safety at Work) apply for working with mounting plates, fifth wheel couplings, tractor units and semi-trailers. The appropriate safety information in the owner's handbook for the tractor unit and the semi-trailer are valid and must be followed. For operation, servicing and assembly, the following safety instructions must be observed. Safety information directly linked to the activity is listed again individually.

1.1 Safety information for operation

- Only use mounting plates if they are in perfect technical condition.
- Comply with the relevant safety regulations when connecting a semi-trailer, for example the Health and Safety at Work Regulations.
  Only connect a semi-trailer on firm, flat ground.
- Check the fifth wheel coupling's locking mechanism before starting your journey to ensure that it is properly locked.
  Only drive the vehicle with the locking mechanism locked and secured, even when driving without a semi-trailer (solo driving).

1.2 Safety information for servicing

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

1.3 Safety information for installation

- Do not change the installation area defined by the tractor unit's manufacturer.
- The installation work may only be completed by authorised specialists.
- Refer to the instructions issued by the vehicle manufacturer, for example the type of fastening, fifth wheel position, fifth wheel height, axle load, clearance, slider, etc.
- Follow the installation instructions supplied by the fifth wheel coupling and slider manufacturers.
- On vehicles that are used to transport hazardous goods, a ground connection must be put in place between the fifth wheel coupling and the vehicle chassis.

It is a basic principle that screw connections must be tightened to the specified tightening torque as the setting for the torque wrench acc. to DIN ISO 6789 in classes A or B.

The mounting plates must be installed on the vehicle in accordance with the requirements of Appendix VII of Directive 94/20 EC or Appendix 7 of Directive ECE R55-01. It may also be necessary to comply with the licensing regulations of the appropriate country. §§ 19, 20 and 21 of the Road Traffic Act apply in Germany. In addition, your attention is drawn to the requirements of § 13 of the Vehicle Registration Ordinance in Germany relating to the data in the vehicle documents in terms of the maximum trailer load.

2.1 Usage

Fifth wheel couplings, mounting plates and kingpins are vehicle-connecting parts that must comply with very high safety requirements and must also undergo design approval tests.
Modifications of any kind will render both the warranty and the design approval void and therefore also cancel the vehicle's operating licence.

JOST mounting plates are built in accordance with Directives 94/20 EC or ECE R55-01 of Class J and must only be used in conjunction with class G50 fifth-wheel couplings or with comparable approved devices.

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

2.2 Specification

The mounting plates are specified with the vehicle by the vehicle manufacturer (the design must comply with Directive 94/20 EC, Appendix VII or Regulation ECE R55-01 Appendix 7).

In addition to the fifth wheel load, the D value is a criterion for the load capacity of fifth wheel couplings and mounting plates.

It is calculated using the following formula:

D = Drawing bar value [kN]
g = 9.81 m/s^2
R = Permissible total weight of the semi-trailer [t]
T = Permissible total weight of the towing vehicle, including U [t]
U = Permissible fifth wheel load [t]

$$D = g \times \frac{0.6 \times T \times R}{T+R-U} \text{ [kN]}$$

Sample calculation:

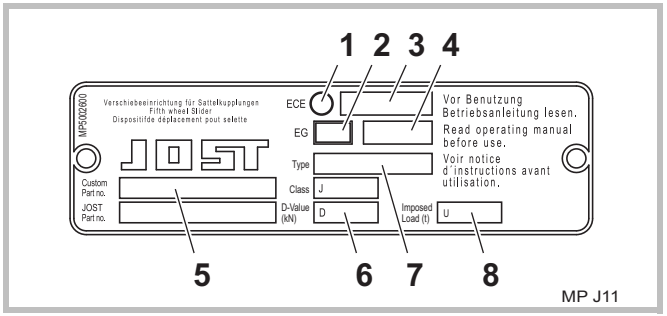
T = 17 t
R = 33 t
U = 10.5 t

$$D = 9.81 \times \frac{0.6 \times 17 \times 33}{17+33-10.5} \text{ kN} = 83.6 \text{ kN}$$

English

The permission load data for JOST mounting plates can be found in the table in Section 3.1. It is also listed on the relevant pages of the JOST catalogue and imprinted on the factory plate. This load data is applicable for proper usage pursuant to Directive 94/20 EC or Regulation ECE R55-01.

If they are subject to additional dynamic forces, for example if they are used on uneven road surfaces or on construction sites, do not use the complete fifth wheel load and D value, or use a thicker mounting plate. Alternatively, consult JOST.



1 ECE test mark
2 EC test mark
3 ECE approval number
4 EC approval number
5 Article no.
6 Maximum D value in kN
7 Type
8 Maximum imposed load U in t

3.1 Installation

In order to secure the fifth wheel coupling on the JOST mounting plate, use bolts (preferably with a fine thread (pitch 1.5 mm)) in a symmetrical arrangement in relation to the longitudinal and transverse axes of the fifth wheel coupling.
The same applies to fastening the JOST mounting plate on the chassis/flitch.

The required number, size and strength class of the screwed connections can be found in the table below:

Test mark, approval number and type	Design designation (1)	Height [mm]	Fifth wheel coupling height [mm]	D value [kN]	Fifth wheel load [t]	Mounting plate attachment on chassis (2)	Fifth wheel coupling attachment on mounting plate (3)	Strength class of the screwed connection
E1 55R-01 0367 MP00	MP0113, MP0123, MP0127, MP0173, MP0175, MP0813, MP0815, MP0844	12	up to max. 300 up to max. 250	max. 135 max. 152	max. 15 max. 20	min. 8 x M16 min. 12 x M16 or 8 x M20	min. 8 x M16 12 x M16	min. 8.8 preferably 10.9
	MP0101-MP0103	13	up to max. 300 up to max. 250	max. 135 max. 152	max. 15 max. 20	min. 8 x M16 min. 12 x M16 or 8 x M20	min. 8 x M16 12 x M16	
E1 55R-01 1734 MP02	MP02	12	up to max. 140	max. 126	max. 15	min. 8 x M16	with integrated pedestals, only to be used with JSK42 as assembly unit	
E1 55R-01 0368 MP20	MP2101-MP2111	22	up to max. 300 up to max. 250	max. 135 max. 152	max. 15 max. 20	min. 8 x M16 min 12 x M16 or 8 x M20	min. 8 x M16 12 x M16	
	MP2167	25						
	MP4101-MP4103 MP4111, MP4142 MP4135-MP4153	40						
E1 55R-01 1246 MP1000	MP1101-MP1103	100	up to max. 250 up to max. 200	max. 108 max. 152	max. 15 max. 20	min. 8 x M16 min. 12 x M16 or 8 x M20	min. 8 x M16 12 x M16	
E1 55R-01 1872 MP1007-1008	MP1107, MP1108	150	up to max. 250	max. 108	max. 15	min. 8 x M16	min. 8 x M16	
E1 55R-01 1682 MP4104	MP4104	40	up to max. 300 up to max. 250	max. 135 max. 152	max. 15 max. 20	min. 8 x M16 min. 12 x M16 or 8 x M20	min. 8 x M16 12 x M16	

Note the table!
In some cases, the D-value and fifth wheel load depend on the fifth wheel coupling height!

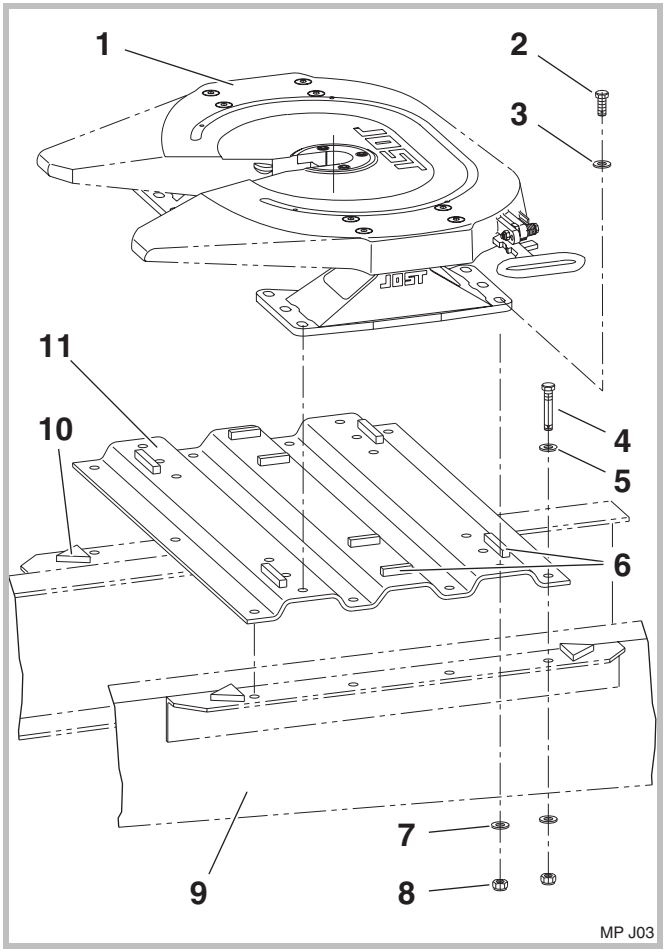
Test mark, approval number and type	Design designation (1)	Height [mm]	Fifth wheel coupling height [mm]	D value [kN]	Fifth wheel load [t]	Mounting plate attachment on chassis (2)	Fifth wheel coupling attachment on mounting plate (3)	Strength class of the screwed connection
E1 55R-01 0951 MP0017	MP0117-MP0119	16	up to max. 290	max. 260	max. 36	min. 12 x M16 min. 8 x M20	See the installation and operating manual for the relevant heavy-duty fifth wheel coupling	10.9
E1 55R-01 0950 MP4025	MP4125, MP4126 MP4157	40						
e9 00-3022 MP0925	MP0925	20	up to max. 190	max. 300	max. 50	min. 12 x M20		

(1) Other version names are permitted, the test symbol is decisive in terms of the table allocation.

(2) Other connections with at least the same strength are permitted, e.g. min. 16 x M12 or min. 16 x M14.

(3) We recommend using 12 bolts if the application conditions are harsh, e.g. construction site, positive steering as well as if the D-value is fully utilised.

Note the table!
In some cases, the D-value and fifth wheel load depend on the fifth wheel coupling height!



1 Fifth wheel coupling
2 Hexagonal bolt: DIN EN ISO 8765/8676 (DIN 960/961), M16 x 1.5
3 Washer: Washer 17 DIN 7349, 6 mm thick (min. HB 295)
4 Hexagonal bolt: DIN EN ISO 8765/8676 (DIN 960/961), M16 x 1.5 or M20 x 1.5
5 Washer or disc spring permitted
6 Thrust plates*:
Weld on middle thrust plates either facing the outside or inside of the pedestal.
7 Washer (min. HB 295) or disc spring permitted
8 Hexagonal nut: DIN EN ISO 10513 (DIN 980), M16 x 1.5 or M20 x 1.5
9 Vehicle chassis
10 Thrust plates*
11 Mounting plate

Fillet welds min. 5 mm.
Strength class and tightening torques see 3.3

*** We recommend securing the pedestals of the fifth wheel coupling in the longitudinal and lateral directions and the mounting plate in the longitudinal direction by welded-on thrust plates.**
There is no need to use thrust plates, however, if it can be ensured that the correct tightening torque for the bolts and therefore the perfect friction contact can be generated and maintained at all times. The bolt connections are to be designed so that the prescribed tightening torque values or prestressing forces can be applied permanently.
The general rule is that the coating thickness of the paintwork around the securing area of the bolts must be no more than 120 µm per component. The screw connections must be secured using state of the art methods to prevent them coming loose.

3.2 Tightening torques

Fastening material		Strength class 8.8	Strength class 10.9
Hexagonal bolt DIN EN ISO 4014/4017 (DIN 931/933) standard thread	M16	210 Nm	260 Nm
	M20	410 Nm	500 Nm
Hexagonal bolt DIN EN ISO 8765/8676 (DIN 960/961) fine thread	M16 x 1.5	225 Nm	280 Nm
	M20 x 1.5	460 Nm	500 Nm
Hexagonal bolt DIN EN ISO 10642	M16 or M16 x 1.5	170 Nm	250 Nm
	M20 or M20 x 1.5	330 Nm	400 Nm

Note:
The values shown above are guide values for a coefficient of friction $\mu_{tot.} = 0.14$. Further information is available in VDI 2230.

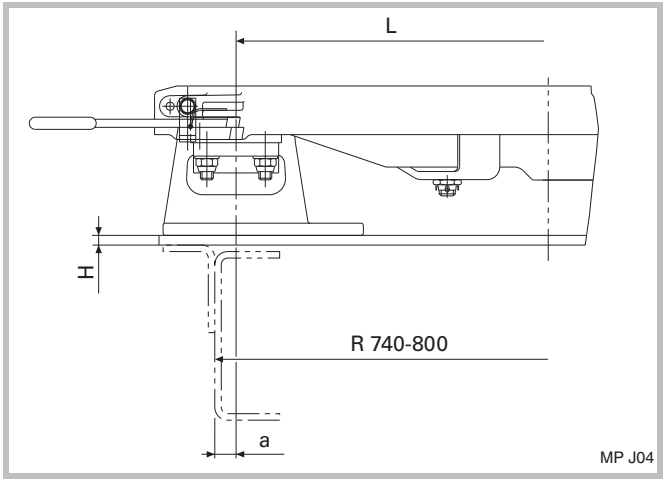
3.3 Welding process for attaching thrust plates

Welding process:	Additional material:
E II	Rod electrode DIN EN ISO 2560-A E38 2 B (min.)
MAG C, alternatively MAG M	Welding wire DIN EN ISO 14341-A-G 42 0 M G3Si1 DIN EN ISO 14341-A-G 42 0 C G3Si1 Inert gas DIN EN ISO 14175-C1 DIN EN ISO 14175-M21 DIN EN ISO 14175-M24 or other welding processes and welding metals authorised by TÜV for the material used

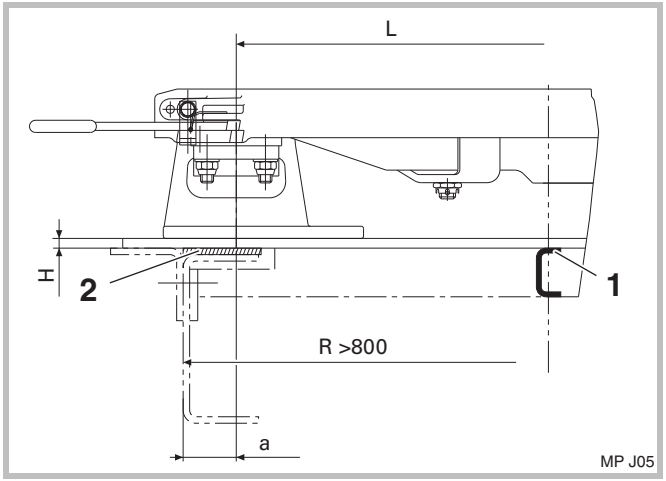
3.4 Lateral reinforcement

Depending on the height **"H"** of the mounting plate, distance between centre points **"L"** of the fifth wheel coupling and the frame width **"R"** of the vehicle, it may be necessary to have a supporting structure for the mounting plate.
If the height **"H"** of the mounting plate is at least **40 mm,** then no lateral reinforcement is required as a rule.
Situation with lower heights:
A lateral reinforcement is required if the frame width **"R"** is more than **800 mm** (see Fig. MP J05).
A lateral reinforcement is also required for a frame width **"R"** from **740 to 800** and a distance **"a"** of more than **50 mm** (see Fig. MP J05).
If the distance **"a"** here is less than **50mm,** then it is possible to do without lateral reinforcement (see Fig. MP J04).

Installation example without lateral reinforcement
Shown without securing bolts



Installation example with lateral reinforcement
Shown without securing bolts



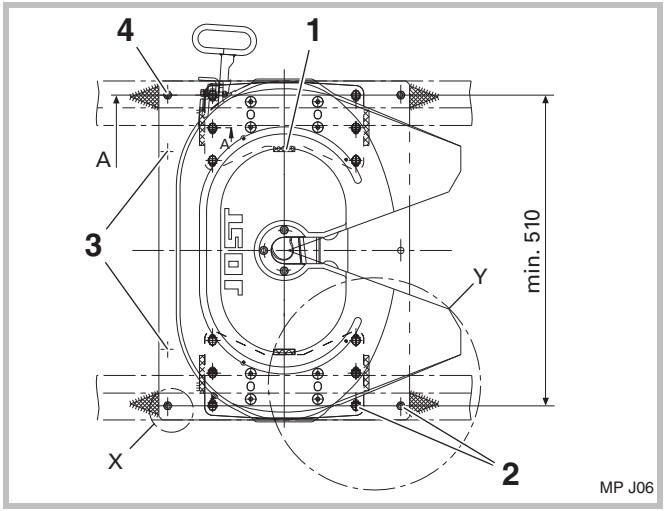
L Distance between centre points, e.g. in JSK37C = 770 mm
H Height of the mounting plate
B Width of the mounting plate
R Frame width
a Distance from bearing centre to chassis

1 Lateral reinforcement for supporting the pedestals
2 Shimming
Each shim must protrude by about 50 mm beyond the ends of the mounting plates. Ends resting on the chassis must be rounded.

English

3.5 Installation example

See also the installation and operating manual for JOST 2” fifth wheel couplings as well as the relevant brochures.



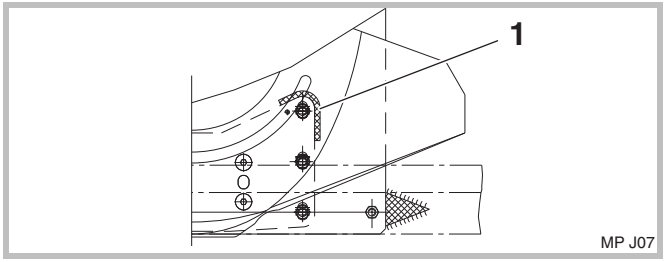
1 Thrust plate, preferably on the inside.

2 Please get in touch with us if you have a different securing hole pattern.

3 Additional securing holes are permitted.

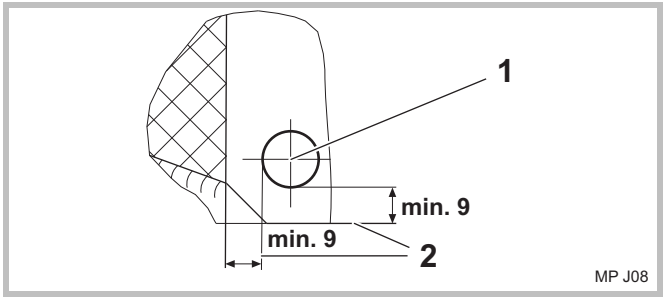
4 If a fifth wheel coupling with height 150 mm is installed, it is preferable for this bolt to be installed with the bolt head from above. If the bolt is installed with the head from below then the bolt must be shortened to the minimum length. However, a perfect screwed connection must be guaranteed.

Detail "Y"
Optional configuration of the thrust plates



1 Thrust plate either inside or outside, for JSK 37A only on outside.

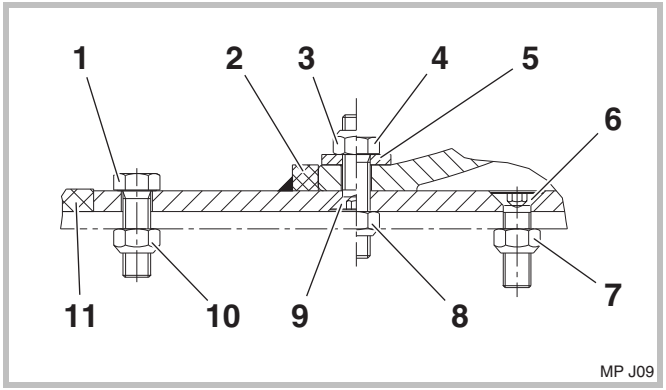
Detail "X"
Shown without bolt.
Countersunk holes acc. to DIN 74 are permitted with 12 and 13 mm high mounting plates.
Please get in touch with us if you have a slot configuration.



1 For M12: Diameter 14 mm +0.5/-1
For M14: Diameter 16 mm +0.5/-1
For M16: Diameter 18 mm +0.5/-1
For M18: Diameter 19 mm +0.5/-1
For M20: Diameter 22 mm +0.5/-1.5

2 In configuration MP1101-MP1103 min. 13 mm.

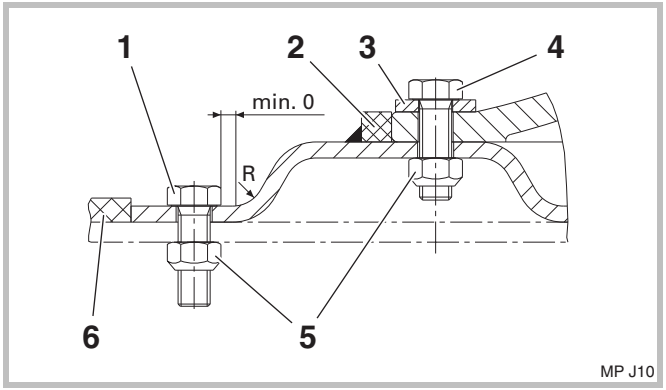
Section A-A
Installation example with flat mounting plate



1 Hexagonal bolt:
DIN EN ISO 8765/8676 (DIN 960/961) M16 x 1.5
2 Thrust plate:
S235 JR or S355 JR
3 Hexagonal nut DIN EN ISO 10513 (DIN 980) M16 x 1.5
4 Hexagonal bolt:
DIN EN ISO 8765/8676 (DIN 960/961) M16 x 1.5
Installation with bolt head down is permitted
5 Washer diameter 40, 6 mm thick, R_m min. HB 295, e.g. acc. to DIN 7349
6 Countersunk screw DIN EN ISO 10642 M16 x 1.5 *
7 Hexagonal nut DIN EN ISO 10513 (DIN 980) M16 x 1.5
8 Hexagonal nut DIN EN ISO 10513 (DIN 980) M16 x 1.5
9 Countersunk screw DIN EN ISO 10642 M16 x 1.5 *
10 Hexagonal nut DIN EN ISO 10513 (DIN 980) M16 x 1.5
11 Thrust plate

* Only with flat mounting plates
(If the depth of the countersunk holes is not sufficient to accommodate the bolt heads fully, then use bolts acc. to DIN 7991)

Section A-A
Installation example with undulating mounting plate



1 Hexagonal bolt:
DIN EN ISO 8765/8676 (DIN 960/961) M16 x 1.5
2 Thrust plate:
S235 JR or S355 JR
3 Washer diameter 40, 6 thick, R_m min. HB 295, e.g. acc. to DIN 7349
4 Hexagonal bolt:
DIN EN ISO 8765/8676 (DIN 960/961) M16 x 1.5
Installation with bolt head down is permitted
5 Hexagonal nut DIN EN ISO 10513 (DIN 980) M16 x 1.5
6 Thrust plate

English

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