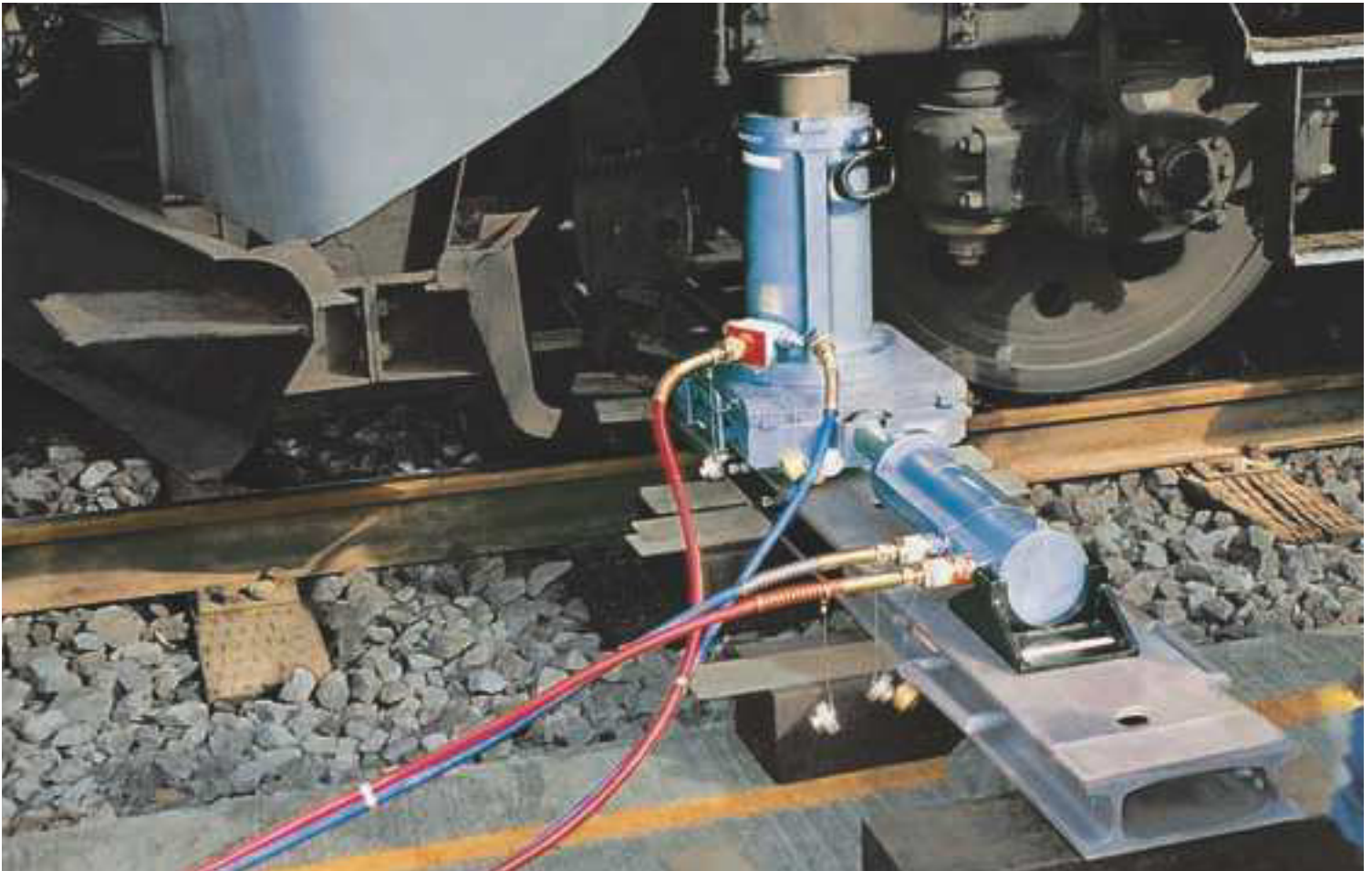


# Light-metal rerailing systems

for all rail vehicles



...technology in motion

Hegenscheidt  MFD

# Hegenscheidt-MFD light-metal rerailing systems safe, reliable and robust, for all rail vehicles



# The light-metal rerailing system from Hegenscheidt-MFD

## High level of safety and simplicity of handling

For over 100 years Hegenscheidt-MFD has been partner of the rail industry. The acknowledged high quality of Hegenscheidt-MFD rail engineering rests on many years of unbroken close collaboration with the world's leading railway organisations. Intensive dedication to the search for solutions to the problems of rail transportation meant that as early as 1926 rerailing equipment had been developed now forms the basis for rerailing technology throughout the world today.

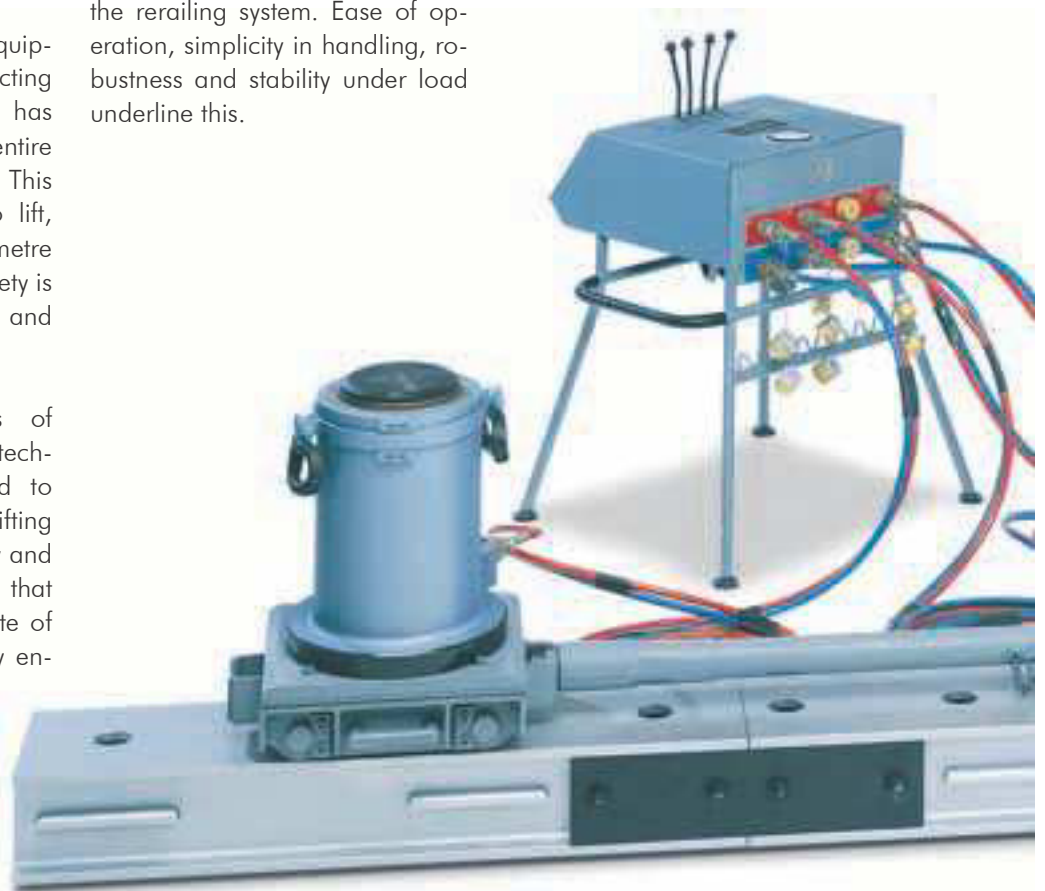
In more than 100 countries Hegenscheidt-MFD rerailing equipment is currently making a contribution to rail transportation.

Hegenscheidt-MFD rerailing equipment also uses the double-acting re-pressure system which has proved itself throughout the entire field of industrial hydraulics. This system makes it possible to lift, lower, push or pull with millimetre accuracy. Optimisation of safety is evidenced in the monitoring and correction features.

The individual components of Hegenscheidt-MFD rerailing technology have been matched to each other in their design, lifting height, load-bearing capacity and performance in such a way that they can be regarded as state of the art in the field of railway engineering.

The system has been designed so that, depending on how the components are put together, any rail vehicle (tram, subway or railway carriage, locomotive or traction unit, smelting plant vehicle and also the very heaviest transfer ladle car) can be uprighted and rerailed. The system is also particularly suitable for moving bridges and other heavy loads. The Hegenscheidt-MFD rerailing system can also be used on single-track sections. In the case of multiple track sections there is no blocking of the secondary track while in electrified sections no dismantling of overhead contact lines is required.

Hegenscheidt-MFD applies the very highest safety requirements to the rerailing system. Ease of operation, simplicity in handling, robustness and stability under load underline this.



## Special features

- Double-acting hydraulic re-pressure system (30 MPa)
- Fully controllable lifting, lowering, pushing, pulling, accurate to the mm.
- High stability of jacks under load due to integrated bottom flange
- Hydraulically releasable non-return valves to secure the load against accidental lowering in event of pressure loss (e.g., hose severance)
- Protection of the jacks against overload or misoperation by means of two integrated overload valves per jack
- Jerk-free operation of the jacks even under full load
- Reduced wear due to roller-burnished and hard-anodised contact surfaces
- Computer-calculated designs and use of high-strength light-metal alloy
- Extensive, integrated range of lifting jacks covering all normally occurring types of application
- Reliable and safe functioning of the system even at extreme temperatures from -40 °C to +70 °C
- Easy and fast connection of individual components by means of manually connectable threaded hose couplings with positive colour coding
- No oil leakage during coupling or uncoupling of the jacks
- Coupling and uncoupling is also possible under load
- Lightweight rerailing bridges made from computer-calculated profile sections with optimised static and dynamic properties
- Entire system can be operated by one man from the control unit which means that personnel need not enter the load area
- Integrated control "dead man control" which ensures that each control valve immediately and automatically goes into the neutral position as soon as the operator releases the lever, this is essential for safety reasons.
- Pneumatically operated airbags by connecting to a compressor with its own drive (combustion or electric motor)
- Hydraulically operated rescue gear (cutters, spreaders) by connecting to a pump with its own drive (combustion engine or electric motor)
- All components of the system have been weight-optimised and are therefore light and compact
- All equipment is GS-proved.



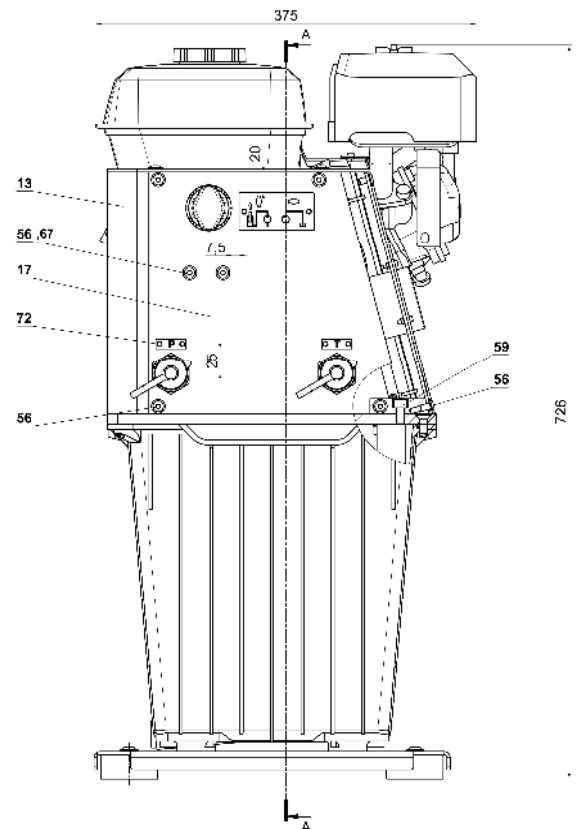
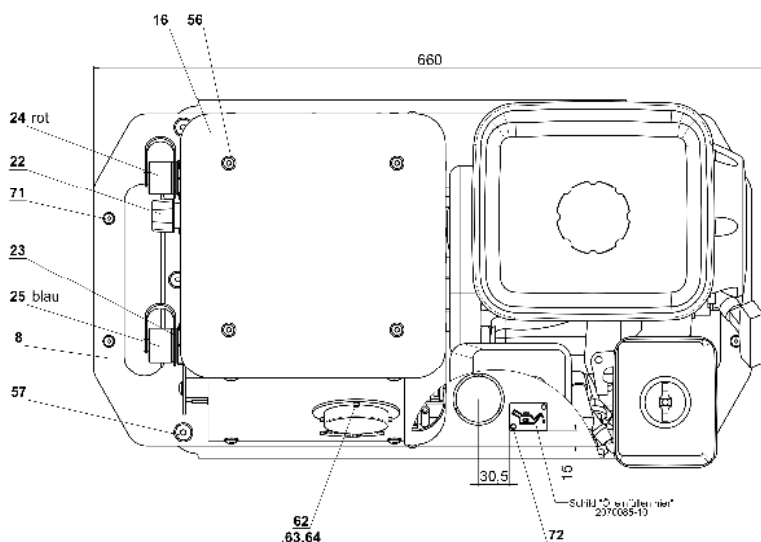
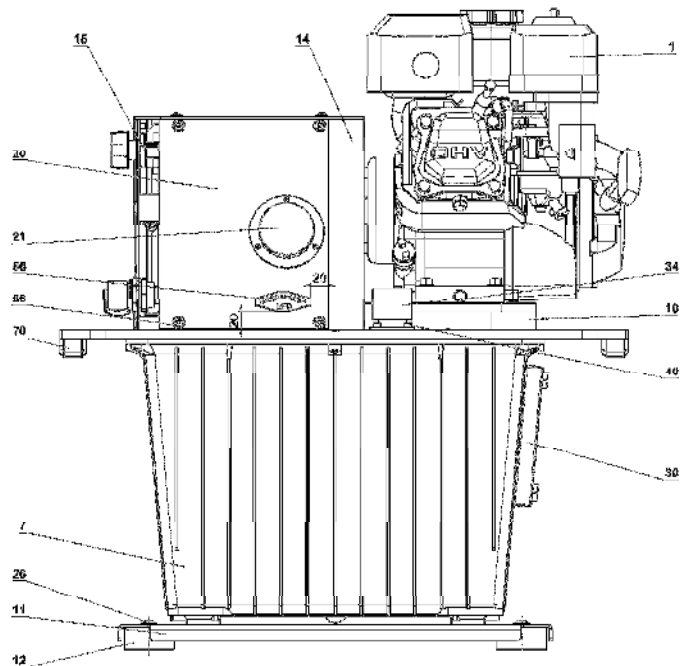
## TECHNICAL DATA SHEET HYDRAULIC DRIVE SYSTEM PA-B-K

### Specification

Pump unit with petrol engine

|                  |         |                |
|------------------|---------|----------------|
| <b>Order no.</b> |         | <b>02-4030</b> |
| Engine power     | kW      | 4.1            |
| Output           | l / min | 5.6            |
| Oil capacity     | l       | 30             |
| Useable capacity | l       | 27             |
| Length           | mm      | 660            |
| Width            | mm      | 375            |
| Height           | mm      | 726            |
| Weight **        | kg      | 61             |
| Working pressure | MPa     | 30             |

\*\* Excluding oil





## TECHNICAL DATA SHEET HYDRAULIC DRIVE SYSTEM PA-B-K

### Outstanding Characteristics

|                    |   |
|--------------------|---|
| General:           | <ul style="list-style-type: none"><li>• Oil tank, oil level indicator with integrated oil temperature indicator, input- and ventilation filter, return filter</li></ul> |
| Engine:            | <ul style="list-style-type: none"><li>• Petrol engine from reputable manufacturer</li></ul>   |
| Pump:              | <ul style="list-style-type: none"><li>• One stage pump from reputable manufacturer</li></ul>  |
| Filter:            | <ul style="list-style-type: none"><li>• Input and ventilation filter and return filter with maintenance indicator</li></ul>   |
| Valves and safety: | <ul style="list-style-type: none"><li>• On-off valve with integrated excess pressure valve (30 MPa)</li></ul>   |
| Connections:       | <ul style="list-style-type: none"><li>• Couplings for hose pair in red and blue equipped with protective caps</li></ul>   |

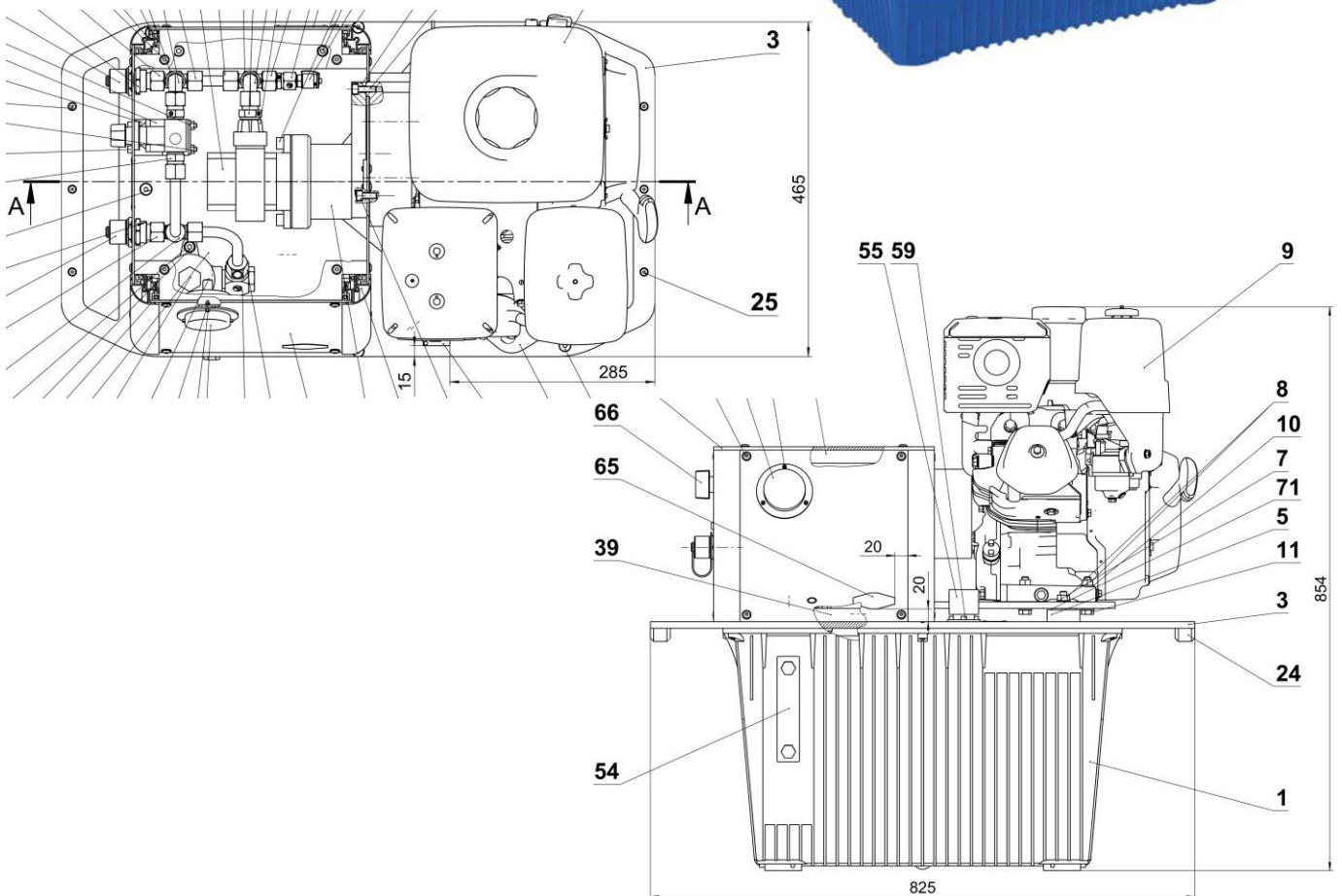
## TECHNICAL DATA SHEET HYDRAULIC DRIVE SYSTEM PA-B-G

### Specification

Pump unit with petrol engine

|                  |         |                |
|------------------|---------|----------------|
| <b>Order no.</b> |         | <b>02-4070</b> |
| Engine power     | kW      | 8.1            |
| Output           | l / min | 10.8           |
| Oil capacity     | l       | 70             |
| Useable capacity | l       | 63             |
| Length           | mm      | 825            |
| Width            | mm      | 465            |
| Height           | mm      | 854            |
| Weight **        | kg      | 87             |
| Working pressure | MPa     | 30             |

\*\* Excluding oil



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Hegenscheidt Platz  
D - 41812 Erkelenz  
Postfach 1652 / D-41806 Erkelenz  
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Telefax (0 24 31) 86-299  
Internet: [www.hegenscheidt-mfd.de](http://www.hegenscheidt-mfd.de)

Sitz der Gesellschaft ist Erkelenz  
Amtsgericht Mönchengladbach HRB 16665  
Geschäftsführende Gesellschafter:  
Hans J. Naumann, Prof. Dr.-Ing. E.h.  
John O. Naumann



## TECHNICAL DATA SHEET HYDRAULIC DRIVE SYSTEM PA-B-G

### Outstanding Characteristics

|                    |   |
|--------------------|---|
| General:           | <ul style="list-style-type: none"><li>• Oil tank, oil level indicator with integrated oil temperature indicator, input- and ventilation filter, return filter</li></ul> |
| Engine:            | <ul style="list-style-type: none"><li>• Petrol engine from reputable manufacturer</li></ul>   |
| Pump:              | <ul style="list-style-type: none"><li>• One stage pump from reputable manufacturer</li></ul>  |
| Filter:            | <ul style="list-style-type: none"><li>• Input and ventilation filter and return filter with maintenance indicator</li></ul>   |
| Valves and safety: | <ul style="list-style-type: none"><li>• On-off valve with integrated excess pressure valve (30 MPa)</li></ul>   |
| Connections:       | <ul style="list-style-type: none"><li>• Couplings for hose pair in red and blue equipped with protective caps</li></ul>   |



## TECHNICAL DATA SHEET HYDRAULIC DRIVE SYSTEM PA-D

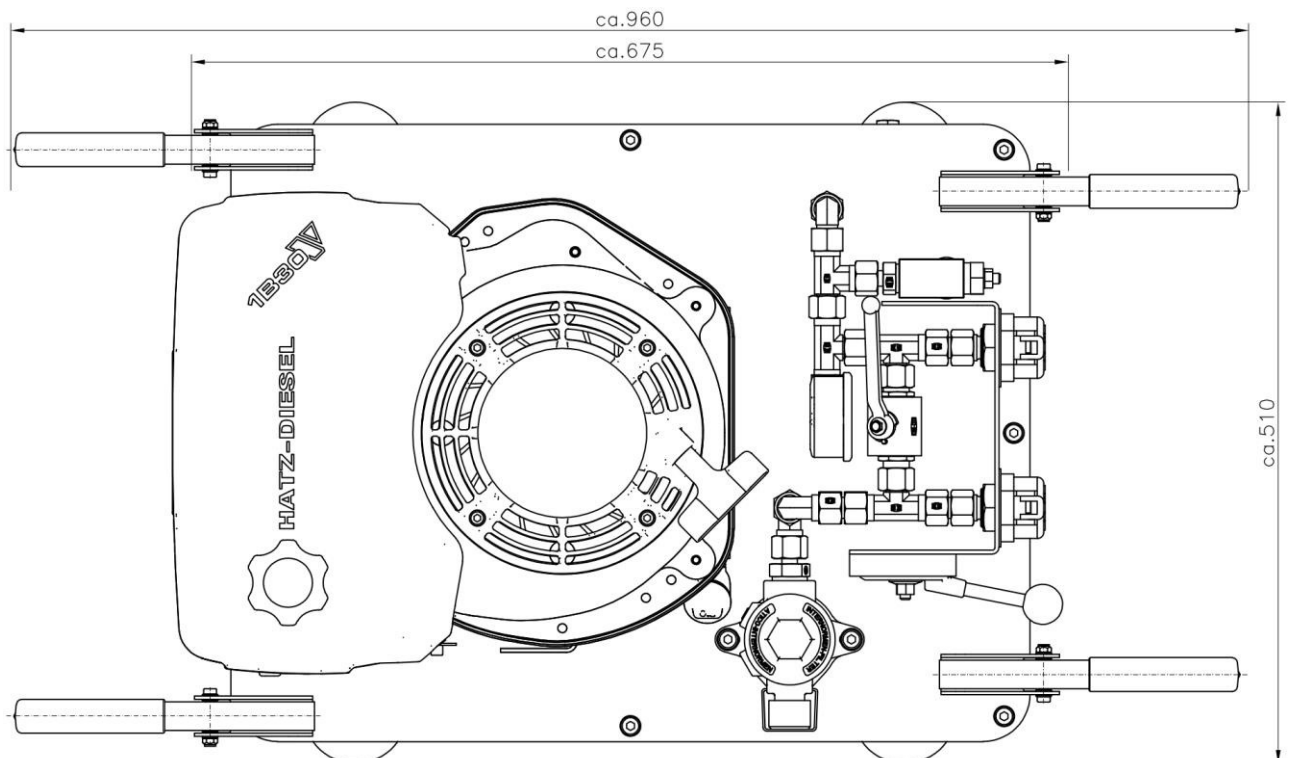
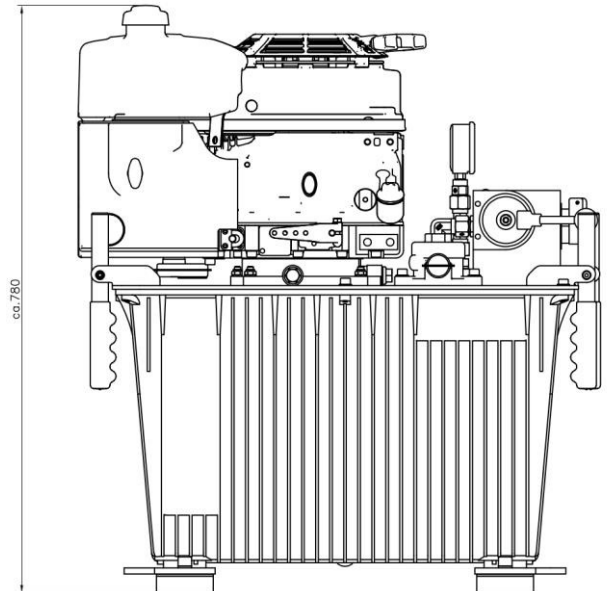
### Specification

Pump unit with diesel engine \*

|                  |         |                     |
|------------------|---------|---------------------|
| <b>Order no.</b> |         | <b>02-6000 TH-3</b> |
| Engine power     | kW      | 4                   |
| Output           | l / min | 7                   |
| Oil capacity     | l       | 70                  |
| Useable capacity | l       | 63                  |
| Length           | mm      | 675                 |
| Width            | mm      | 510                 |
| Height           | mm      | 780                 |
| Weight **        | kg      | 95                  |
| Working pressure | MPa     | 30                  |

\* Also available with electric starter

\*\* Excluding oil



## TECHNICAL DATA SHEET HYDRAULIC DRIVE SYSTEM PA-D

### Outstanding Characteristics

|                    |  |
|--------------------|--|
| General:           | <ul style="list-style-type: none"> <li>Oil tank, oil sight glasses, input- and ventilation filter, return filter with maintenance indicator and pressure limiting valve for oil return line</li> </ul> |
| Engine:            | <ul style="list-style-type: none"> <li>Diesel engine from reputable manufacturer</li> </ul>  |
| Pump:              | <ul style="list-style-type: none"> <li>One stage pump from reputable manufacturer</li> </ul>   |
| Filter:            | <ul style="list-style-type: none"> <li>Input and ventilation filter and return filter with maintenance indicator</li> </ul>  |
| Valves and safety: | <ul style="list-style-type: none"> <li>On-off valve with integrated excess pressure valve (30 MPa)</li> </ul>  |
| Connections:       | <ul style="list-style-type: none"> <li>Couplings for hose pair in red and blue equipped with protective caps</li> </ul>  |

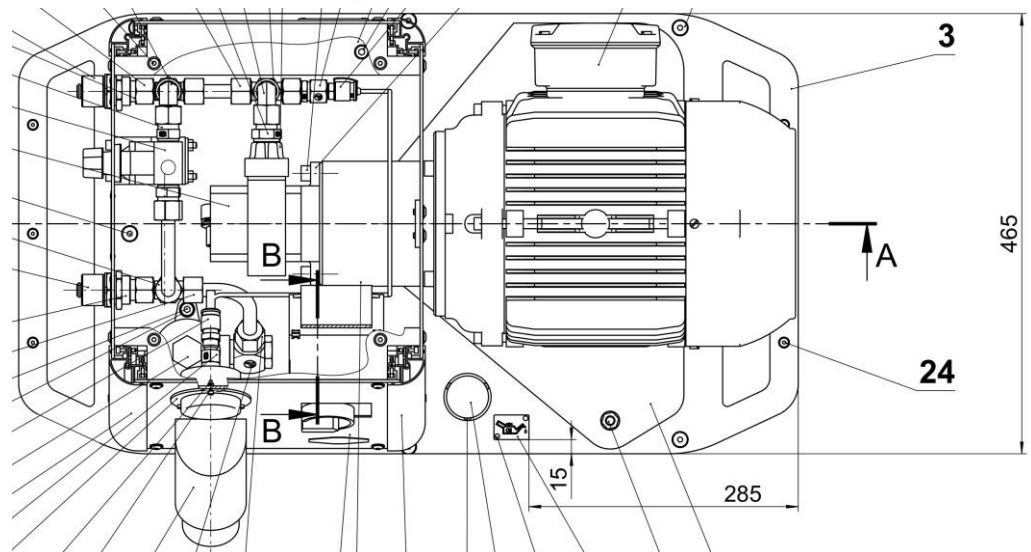
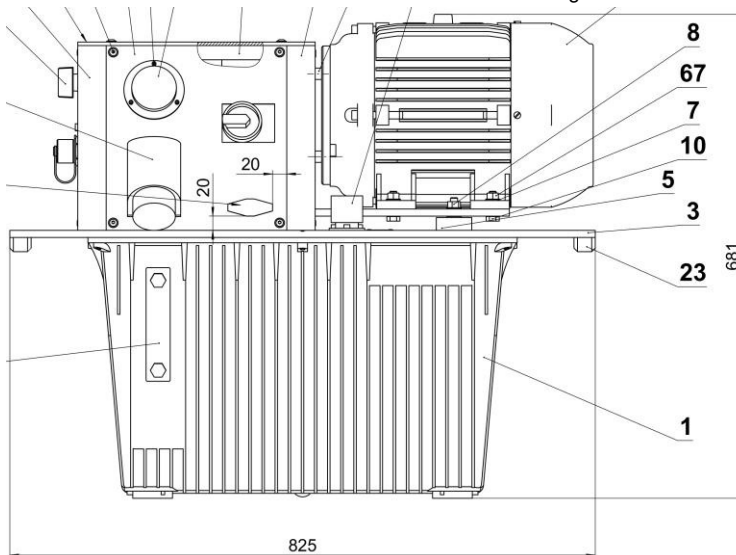
## TECHNICAL DATA SHEET HYDRAULIC DRIVE SYSTEM PA-E-G

### Specification

Pump unit with electric motor

|                  |         |                |
|------------------|---------|----------------|
| <b>Order no.</b> |         | <b>02-8070</b> |
| Engine power     | kW      | 5.5            |
| Output           | l / min | 8.5            |
| Oil capacity     | l       | 70             |
| Useable capacity | l       | 63             |
| Length           | mm      | 825            |
| Width            | mm      | 465            |
| Height           | mm      | 681            |
| Weight **        | kg      | 113            |
| Working pressure | MPa     | 30             |

\*\* Excluding oil





## TECHNICAL DATA SHEET HYDRAULIC DRIVE SYSTEM PA-E-G

### Outstanding Characteristics

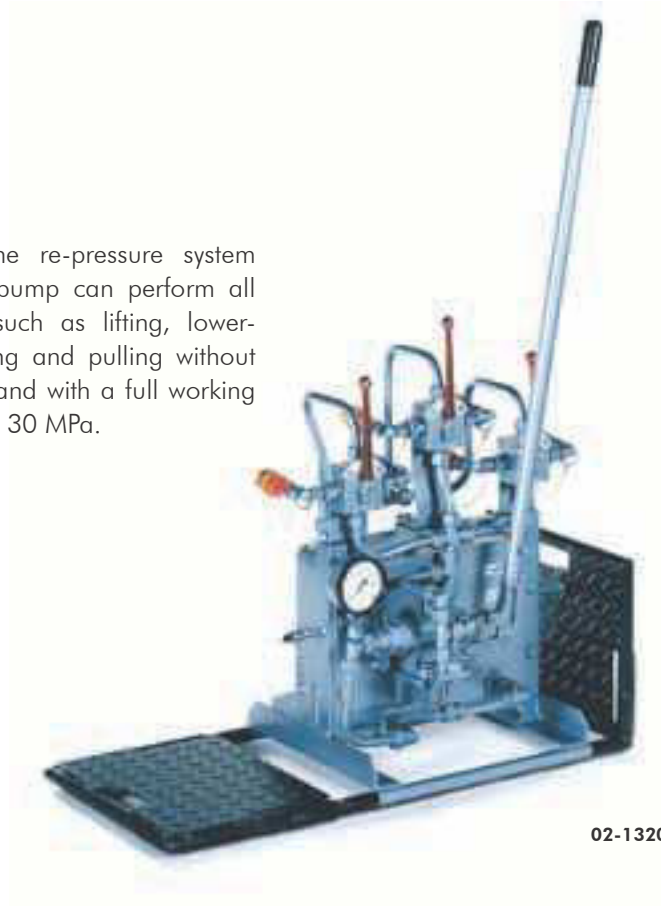
|                    |  |
|--------------------|--|
| General:           | <ul style="list-style-type: none"><li>• Oil tank, oil level indicator with integrated oil temperature indicator, input- and ventilation filter, return filter with maintenance indicator and pressure limiting valve for oil return line</li></ul> |
| Engine:            | <ul style="list-style-type: none"><li>• Electric motor from reputable manufacturer</li></ul>   |
| Pump:              | <ul style="list-style-type: none"><li>• One stage pump from reputable manufacturer</li></ul>   |
| Filter:            | <ul style="list-style-type: none"><li>• Input and ventilation filter and return filter with maintenance indicator</li></ul>  |
| Valves and safety: | <ul style="list-style-type: none"><li>• On-off valve with integrated excess pressure valve (30 MPa)</li></ul>  |
| Connections:       | <ul style="list-style-type: none"><li>• Couplings for hose pair in red and blue equipped with protective caps</li></ul>  |

## 2 Hydraulic drive system

### Hand pump

The hand pump is a complete unit for use in minor rerailling operations, especially where no separate power supply is available or when a pump set with combustion engine cannot be used due, for example, to the risk of explosion.

Due to the re-pressure system the hand pump can perform all functions such as lifting, lowering, pushing and pulling without restriction and with a full working pressure of 30 MPa.



02-1320



02-2120

### Emergency hand pump

This hand pump is used primarily as emergency equipment to make rerailling possible in cases where no pump set is available. All necessary rerailling functions can be carried out at a full operating pressure of 30 MPa.

| Drive system: hand pumps                  |            |   |                   |                       |                                   |             |              |                |
|---|------------|---|-------------------|-----------------------|-----------------------------------|-------------|--------------|----------------|
| Hand pump                                 | Order no.: | Output<br>cm <sup>3</sup> / double stroke | Oil capacity<br>l | Useable capacity<br>l | Lenght<br>working/transport<br>mm | Width<br>mm | Height<br>mm | Weight**<br>kg |
| 2 Connection/ 20 l                        | 02-1220    | 35  | 20                | 18                    | 1300/680                          | 450         | 730          | 68             |
| 2 Connection/ 30 l                        | 02-1230    | 35  | 30                | 28                    | 1300/680                          | 450         | 730          | 75             |
| 3 Connection/ 20 l                        | 02-1320    | 35  | 20                | 18                    | 1300/680                          | 450         | 730          | 70             |
| 3 Connection/ 30 l                        | 02-1330    | 35  | 30                | 28                    | 1300/680                          | 450         | 730          | 77             |
| Emergency hand pump<br>1 connection / 20l | 02-2120    | 16  | 20                | 18                    | 800                               | 300         | 380          | 26             |

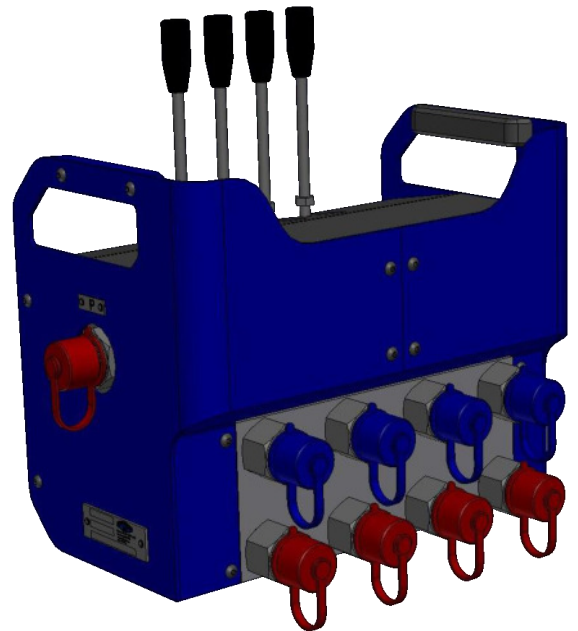
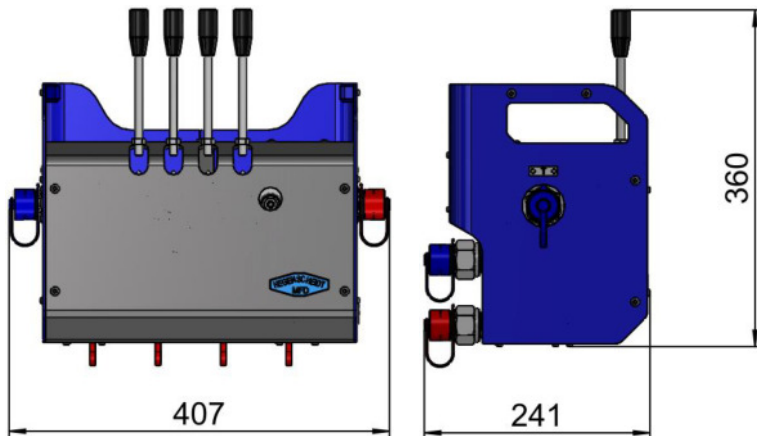
\*\*Excluding oil

## TECHNICAL DATA SHEET CONTROL UNIT SP4-E + TRIPOD

### Specification

Control unit for 4 hydraulic consumers

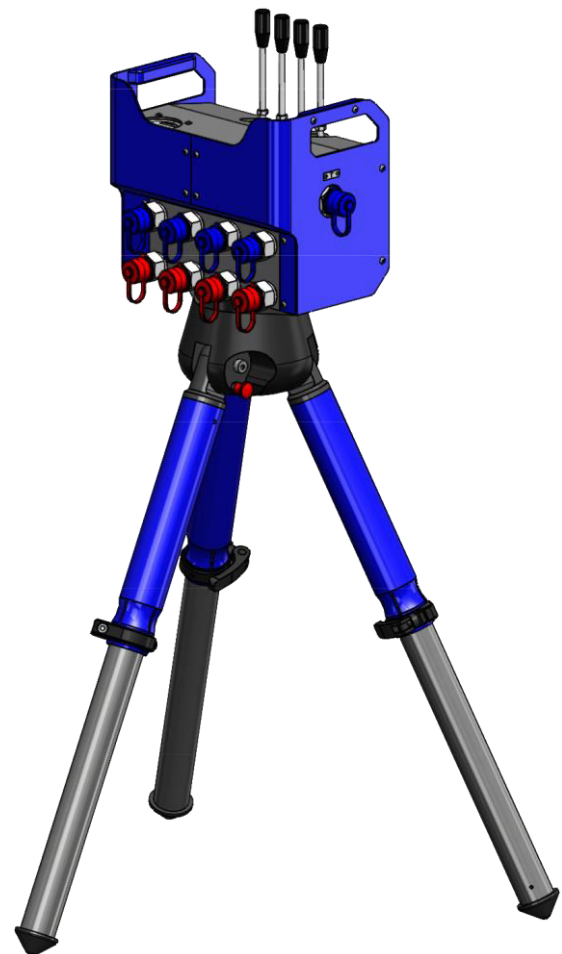
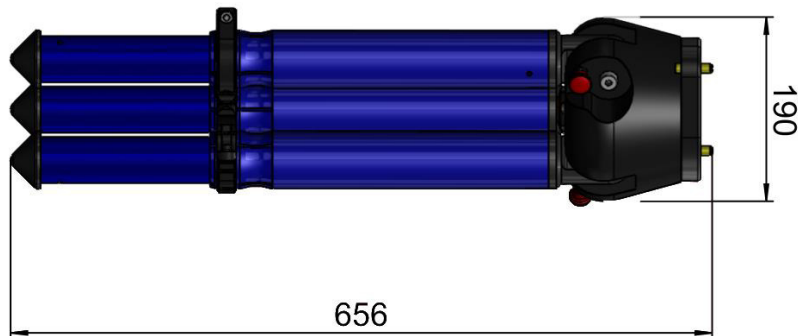
|                  |                |             |
|------------------|----------------|-------------|
| <b>Order no.</b> | <b>03-2004</b> |             |
| Connections      | 4              |             |
| Lever            | 4              |             |
| Length           | mm             | approx. 407 |
| Width            | mm             | approx. 241 |
| Height           | mm             | approx. 360 |
| Weight           | kg             | 25          |
| Working pressure | MPa            | 30          |



### Specification

Tripod

|                  |                |                   |
|------------------|----------------|-------------------|
| <b>Order no.</b> | <b>03-9001</b> |                   |
| Height           | mm             | approx. 656 – 900 |
| Weight           | kg             | 14                |



## TECHNICAL DATA SHEET CONTROL UNIT SP4-E + TRIPOD

### Outstanding Characteristics

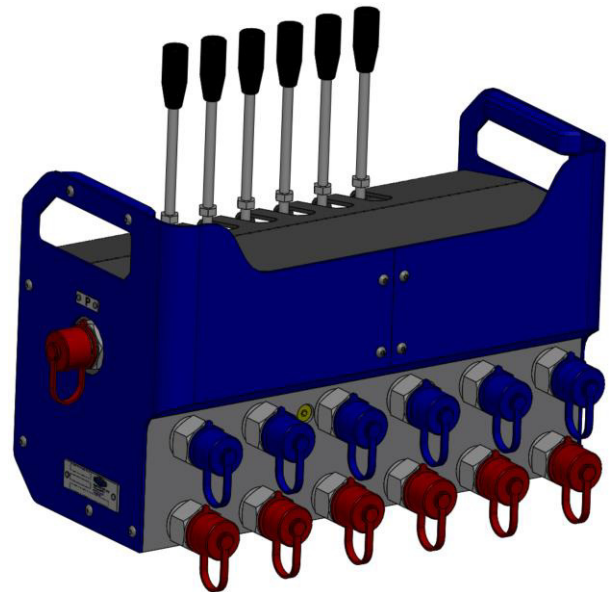
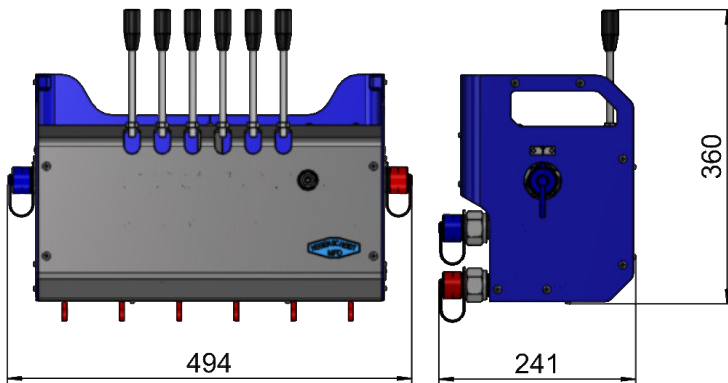
|              |   |
|--------------|---|
| General:     | <ul style="list-style-type: none"> <li>• Oil pressure distribution</li> <li>• Control of all hydraulic movement sequences of each connected rerailling device</li> <li>• Control and adjustment of movement direction and movement speed of lifting jacks and the displacing jack</li> <li>• Control of devices independently from each other by control levers</li> <li>• Dead-man's control: Released lever returns automatically into its neutral position</li> <li>• Compact housing with pressure gauge</li> <li>• 4 hydraulic connections arranged in two lines and coloured in red and blue corresponding to colour of hoses</li> <li>• Separate sturdy tripod for utmost stability</li> <li>• Tripod is foldable for compact dimensions during transport and storage</li> </ul> |
| Valves:      | <ul style="list-style-type: none"> <li>• Valve-block with 4 levers and integrated relief valve (30 MPa)</li> </ul>  |
| Safety:      | <ul style="list-style-type: none"> <li>• Pressure limiting valve (30 MPa) in control unit</li> <li>• Valve block with dead man's control for all connected hydraulically consumers</li> <li>• High stability</li> </ul>   |
| Connections: | <ul style="list-style-type: none"> <li>• Couplings to connect one pump unit</li> <li>• Couplings for 4 hose pairs to connect lifting jacks and displacing jacks</li> </ul>  |

## TECHNICAL DATA SHEET CONTROL UNIT SP6-E + TRIPOD

### Specification

Control unit for 6 hydraulic consumers

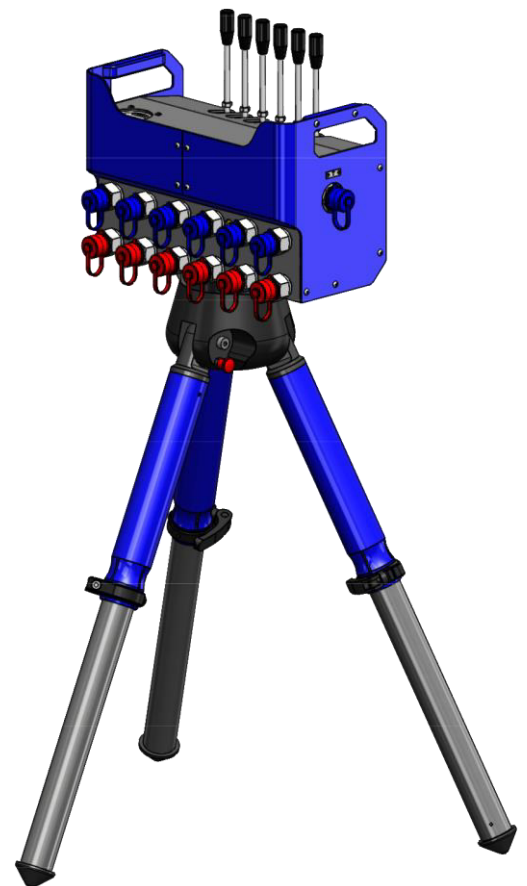
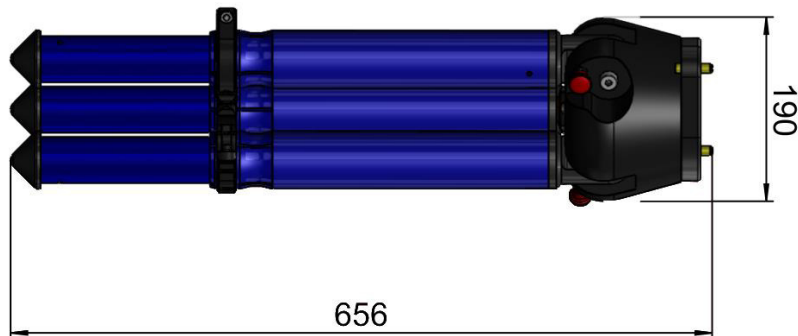
|                  |                |             |
|------------------|----------------|-------------|
| <b>Order no.</b> | <b>03-2006</b> |             |
| Connections      | 6              |             |
| Lever            | 6              |             |
| Length           | mm             | approx. 494 |
| Width            | mm             | approx. 241 |
| Height           | mm             | approx. 360 |
| Weight           | kg             | approx. 36  |
| Working pressure | MPa            | 30          |



### Specification

Tripod

|                  |                |                   |
|------------------|----------------|-------------------|
| <b>Order no.</b> | <b>03-9001</b> |                   |
| Height           | mm             | approx. 656 – 900 |
| Weight           | kg             | 14                |





## TECHNICAL DATA SHEET CONTROL UNIT SP6-E + TRIPOD

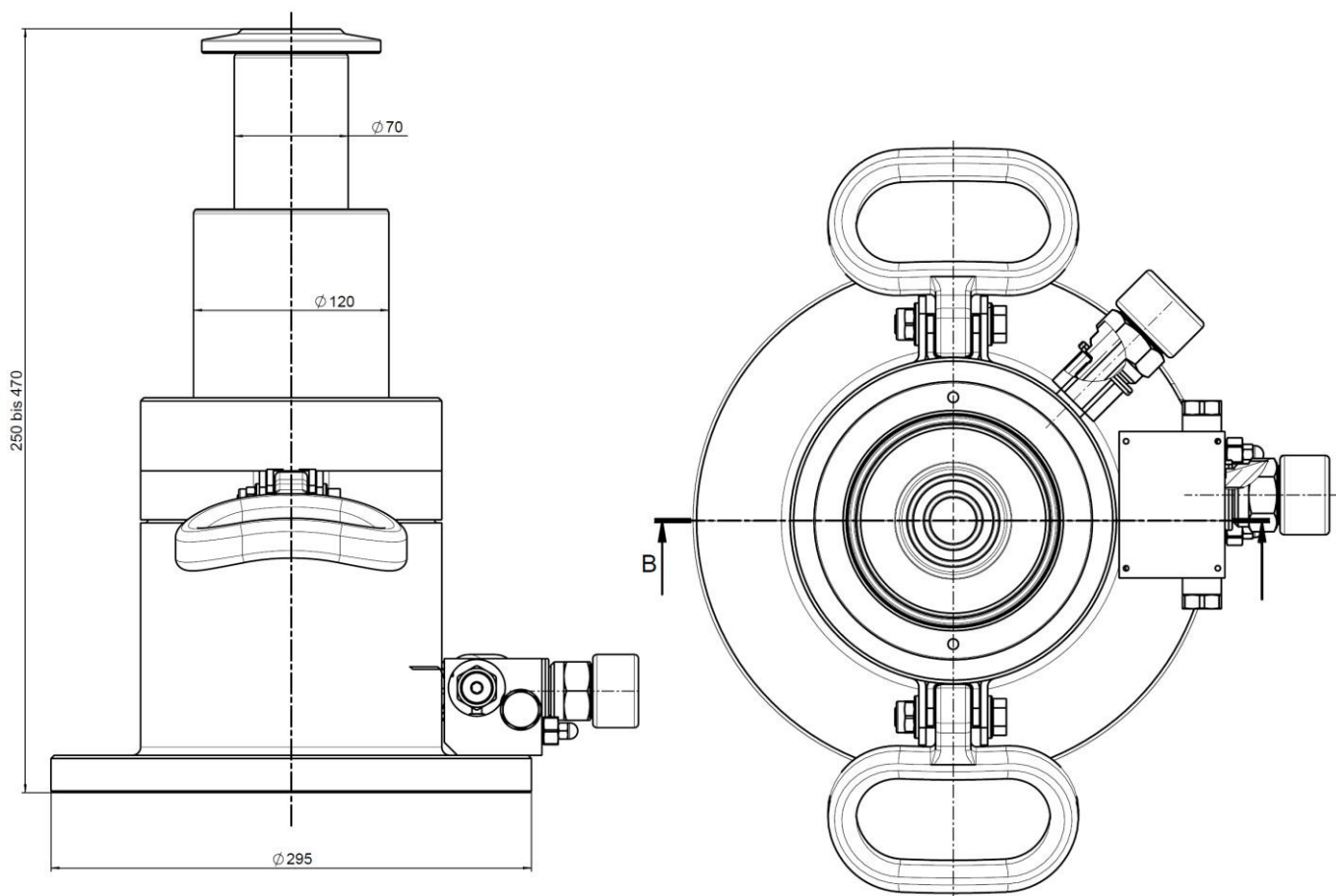
### Outstanding Characteristics

|              |   |
|--------------|---|
| General:     | <ul style="list-style-type: none"> <li>• Oil pressure distribution</li> <li>• Control of all hydraulic movement sequences of each connected rerailling device</li> <li>• Control and adjustment of movement direction and movement speed of lifting jacks and the displacing jack</li> <li>• Control of devices independently from each other by control levers</li> <li>• Dead-man's control: Released lever returns automatically into its neutral position</li> <li>• Compact housing with pressure gauge</li> <li>• 6 hydraulic connections arranged in two lines and coloured in red and blue corresponding to colour of hoses</li> <li>• Separate sturdy tripod for utmost stability</li> <li>• Tripod is foldable for compact dimensions during transport and storage</li> </ul> |
| Valves:      | <ul style="list-style-type: none"> <li>• Valve-block with 6 levers and integrated relief valve (30 MPa)</li> </ul>  |
| Safety:      | <ul style="list-style-type: none"> <li>• Pressure limiting valve (30 MPa) in control unit</li> <li>• Valve block with dead man's control for all connected hydraulically consumers</li> <li>• High stability</li> </ul>   |
| Connections: | <ul style="list-style-type: none"> <li>• Couplings to connect one pump unit</li> <li>• Couplings for 6 hose pairs to connect lifting jacks and displacing jacks</li> </ul>  |

## TECHNICAL DATA SHEET LIFTING JACK TH-30 400/200-250

### Specification

|                    |     |                      |
|--------------------|-----|----------------------|
| <b>Order no.</b>   |     | <b>04-1042 TH-30</b> |
| Closed height      | mm  | 250                  |
| Number of pistons  |     | 2                    |
| Total stroke       | mm  | 220                  |
| Stroke I           | mm  | 116                  |
| Stroke II          | mm  | 104                  |
| Effective force I  | kN  | 429                  |
| Effective force II | kN  | 191                  |
| Oil capacity       | l   | 2,4                  |
| Bottom flange dia. | mm  | 295                  |
| Weight             | kg  | 27,1                 |
| Working pressure   | MPa | 30                   |



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 Internet: [www.hegenscheidt-mfd.de](http://www.hegenscheidt-mfd.de)

Sitz der Gesellschaft ist Erkelenz  
 Amtsgericht Mönchengladbach HRB 16665  
 Geschäftsführende Gesellschafter:  
 Hans J. Naumann, Prof. Dr.-Ing. E.h.  
 John O. Naumann



## TECHNICAL DATA SHEET LIFTING JACK TH-30 400/200-250

### Outstanding Characteristics

#### General:

- High stability because of integrated bottom flange
- Extremely hard surface of pistons (approx. 500 HV) guarantees superior wear resistance and long service life
- Double-acting hydraulic system, operating pressure approx. 30 MPa
- Consisting of a high-strength light metal
- Special seals for use within a temperature range from  $-40^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$
- Turnable carrying ring with two handles for transportation

#### Valves and safety:

- Safety valve includes a hydraulically pilot-controlled non-return valve and two independently operating pressure relief valves
- Safety valve holds load on the jack even in the unlikely case of hose breakage or while disconnecting screw couplings
- Guarantees fully sensitive lifting and lowering of load without jerk even under full load conditions
- Due to its compact construction the whole valve is extremely solid and protected against any exterior damage

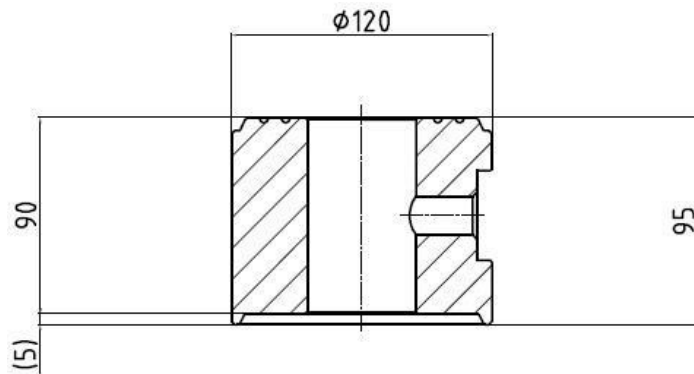
#### Connections:

- Two screw couplings for one hose pair
- Both located close to bottom flange
- Protective caps to prevent contamination

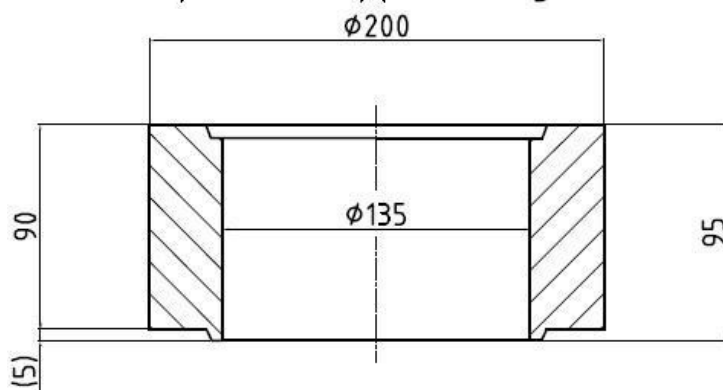
## TECHNICAL DATA SHEET SUPPORT SET A 400-250

### Specification

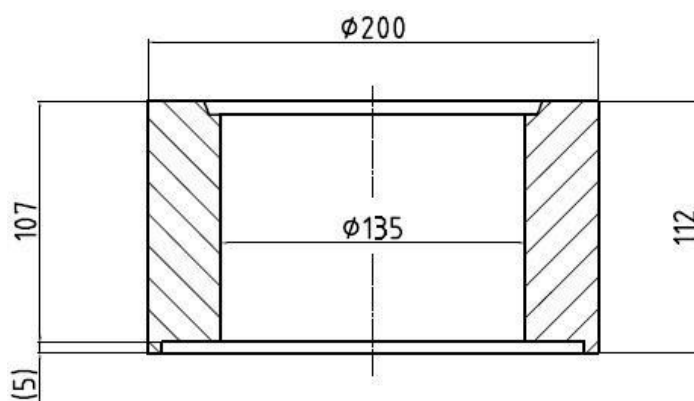
|                  |    |                |
|------------------|----|----------------|
| <b>Order no.</b> |    | <b>04-1044</b> |
| Stroke extension | mm | 4 x 90 = 360   |
| Weight           | kg | 25             |



piston support ring (4x)



cylinder support ring II (3x)



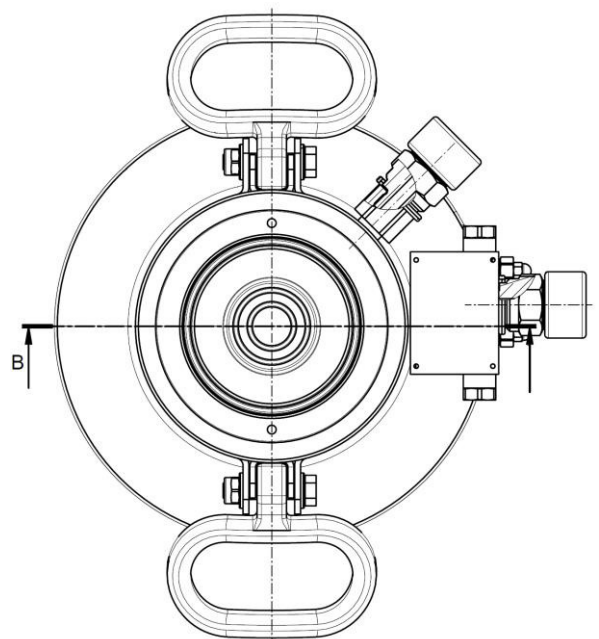
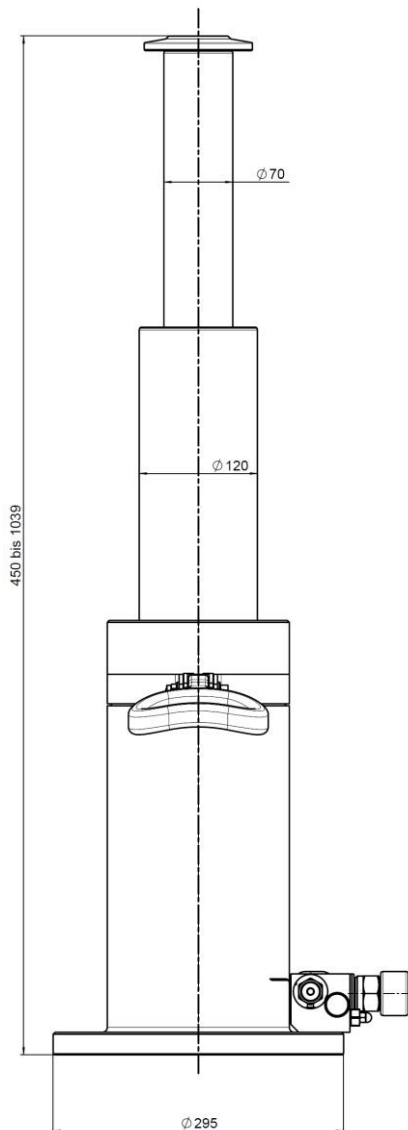
cylinder support ring I (1x)



## TECHNICAL DATA SHEET LIFTING JACK TH-30 400/200-450

### Specification

|                    |     |                      |
|--------------------|-----|----------------------|
| <b>Order no.</b>   |     | <b>04-2042 TH-30</b> |
| Closed height      | mm  | 450                  |
| Number of pistons  |     | 2                    |
| Total stroke       | mm  | 589                  |
| Stroke I           | mm  | 299                  |
| Stroke II          | mm  | 290                  |
| Effective force I  | kN  | 429                  |
| Effective force II | kN  | 191                  |
| Oil capacity       | l   | 6,2                  |
| Bottom flange dia. | mm  | 295                  |
| Weight             | kg  | 38,8                 |
| Working pressure   | MPa | 30                   |



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## TECHNICAL DATA SHEET LIFTING JACK TH-30 400/200-450

### Outstanding Characteristics

#### General:

- High stability because of integrated bottom flange
- Extremely hard surface of pistons (approx. 500 HV) guarantees superior wear resistance and long service life
- Double-acting hydraulic system, operating pressure approx. 30 MPa
- Consisting of a high-strength light metal
- Special seals for use within a temperature range from  $-40^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$
- Turnable carrying ring with two handles for transportation

#### Valves and safety:

- Safety valve includes a hydraulically pilot-controlled non-return valve and two independently operating pressure relief valves
- Safety valve holds load on the jack even in the unlikely case of hose breakage or while disconnecting screw couplings
- Guarantees fully sensitive lifting and lowering of load without jerk even under full load conditions
- Due to its compact construction the whole valve is extremely solid and protected against any exterior damage

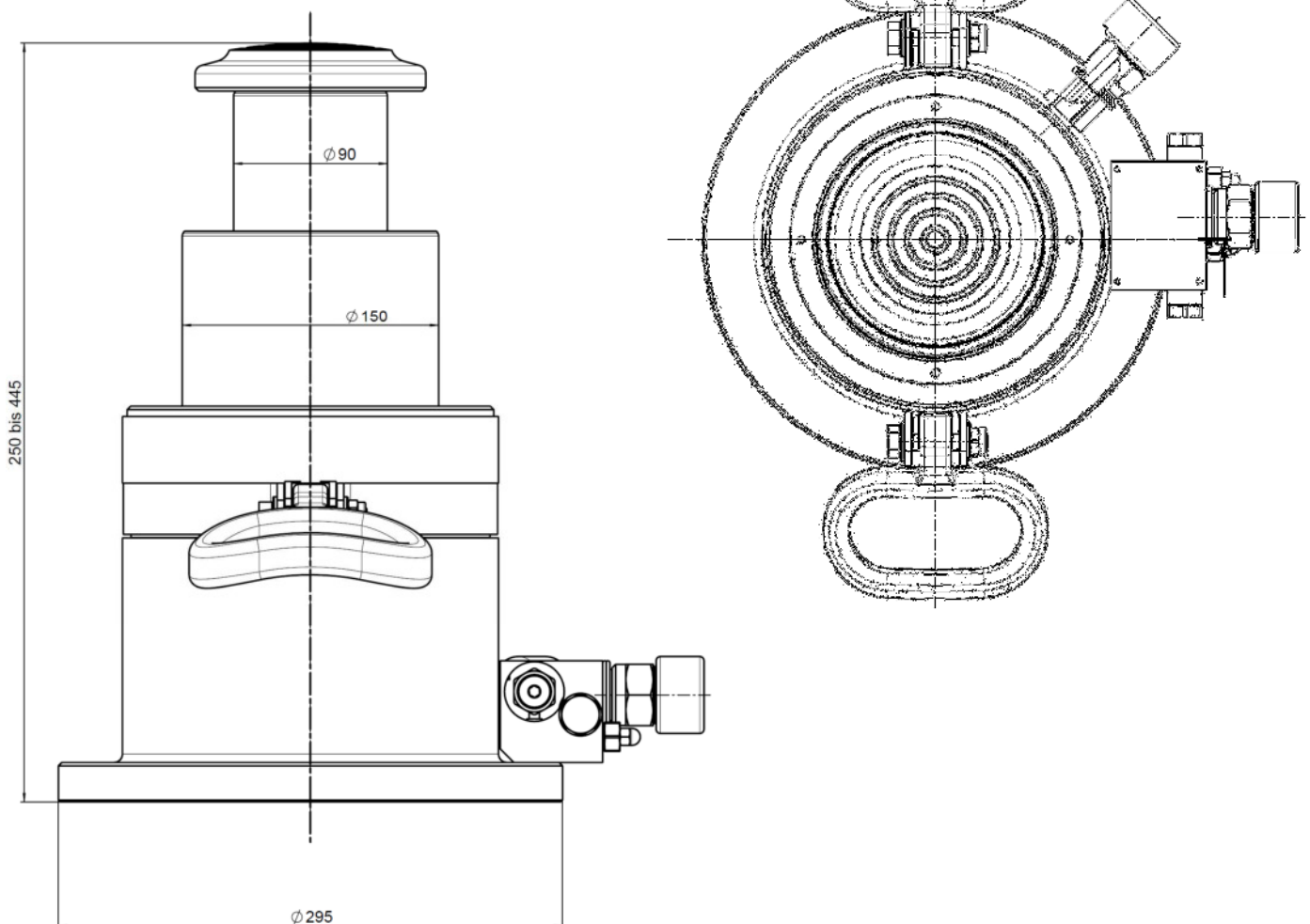
#### Connections:

- Two screwed couplings for one hose pair
- Both located close to bottom flange
- Protective caps to prevent contamination

## TECHNICAL DATA SHEET LIFTING JACK TH-30 600/300-250

### Specification

|                    |                      |      |
|--------------------|----------------------|------|
| <b>Order no.</b>   | <b>04-1062 TH-30</b> |      |
| Closed height      | mm                   | 250  |
| Number of pistons  |                      | 2    |
| Total stroke       | mm                   | 195  |
| Stroke I           | mm                   | 103  |
| Stroke II          | mm                   | 92   |
| Effective force I  | kN                   | 641  |
| Effective force II | kN                   | 312  |
| Oil capacity       | l                    | 3,3  |
| Bottom flange dia. | mm                   | 295  |
| Weight             | kg                   | 33,1 |
| Working pressure   | MPa                  | 30   |



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## TECHNICAL DATA SHEET LIFTING JACK TH-30 600/300-250

### Outstanding Characteristics

#### General:

- High stability because of integrated bottom flange
- Extremely hard surface of pistons (approx. 500 HV) guarantees superior wear resistance and long service life
- Double-acting hydraulic system, operating pressure approx. 30 MPa
- Consisting of a high-strength light metal
- Special seals for use within a temperature range from  $-40^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$
- Turnable carrying ring with two handles for transportation

#### Valves and safety:

- Safety valve includes a hydraulically pilot-controlled non-return valve and two independently operating pressure relief valves
- Safety valve holds load on the jack even in the unlikely case of hose breakage or while disconnecting screw couplings
- Guarantees fully sensitive lifting and lowering of load without jerk even under full load conditions
- Due to its compact construction the whole valve is extremely solid and protected against any exterior damage

#### Connections:

- Two screwed couplings for one hose pair
- Both located close to bottom flange
- Protective caps to prevent contamination



## TECHNICAL DATA SHEET SUPPORT SET A 600-250

### Specification

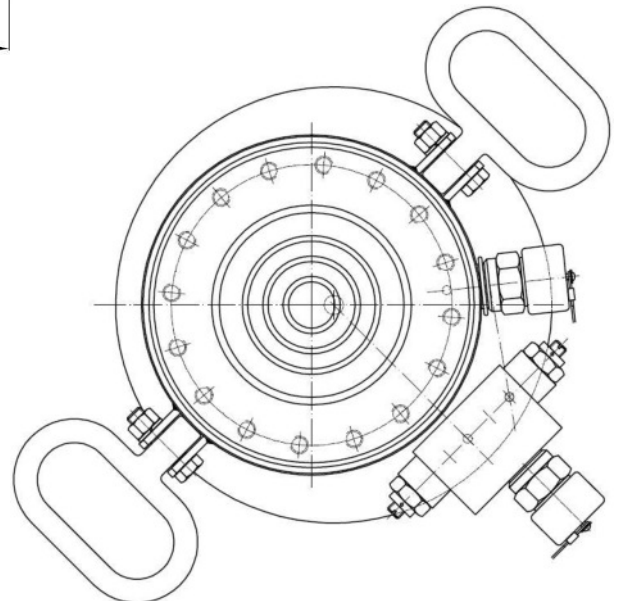
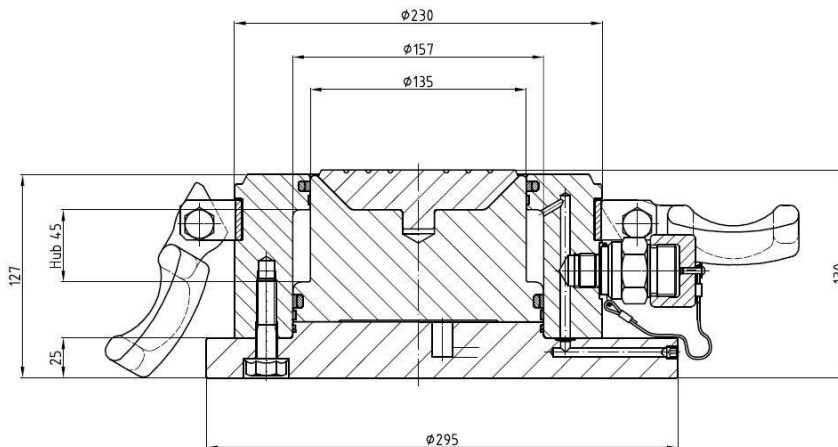
|                  |    |                |
|------------------|----|----------------|
| <b>Order no.</b> |    | <b>04-1064</b> |
| Stroke extension | mm | 4 x 80 = 320   |
| Weight           | kg | 29             |



## TECHNICAL DATA SHEET LIFTING JACK EH 600-130

### Specification

|                    |     |                |
|--------------------|-----|----------------|
| <b>Order no.</b>   |     | <b>04-1065</b> |
| Closed height      | mm  | 130            |
| Number of pistons  |     | 1              |
| Total stroke       | mm  | 45             |
| Stroke I           | mm  | 45             |
| Effective force I  | kN  | 581            |
| Oil capacity       | l   | 0,9            |
| Bottom flange dia. | mm  | 295            |
| Weight             | kg  | 22             |
| Working pressure   | MPa | 30             |



## TECHNICAL DATA SHEET LIFTING JACK EH 600-130

### Outstanding Characteristics

#### General:

- High stability because of integrated bottom flange
- Extremely hard surface of pistons (approx. 500 HV) guarantees superior wear resistance and long service life
- Double-acting hydraulic system, operating pressure approx. 30 MPa
- Consisting of a high-strength light metal
- Pressure piece made of steel for hard surface treatment
- Special seals for use within a temperature range from  $-40^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$
- Turnable carrying ring with two handles for transportation

#### Valves and safety:

- Safety valve includes a hydraulically pilot-controlled non-return valve and two independently operating pressure relief valves
- Safety valve holds load on the jack even in the unlikely case of hose breakage or while disconnecting screw couplings
- Guarantees fully sensitive lifting and lowering of load without jerk even under full load conditions
- Due to its compact construction the whole valve is extremely solid and protected against any exterior damage

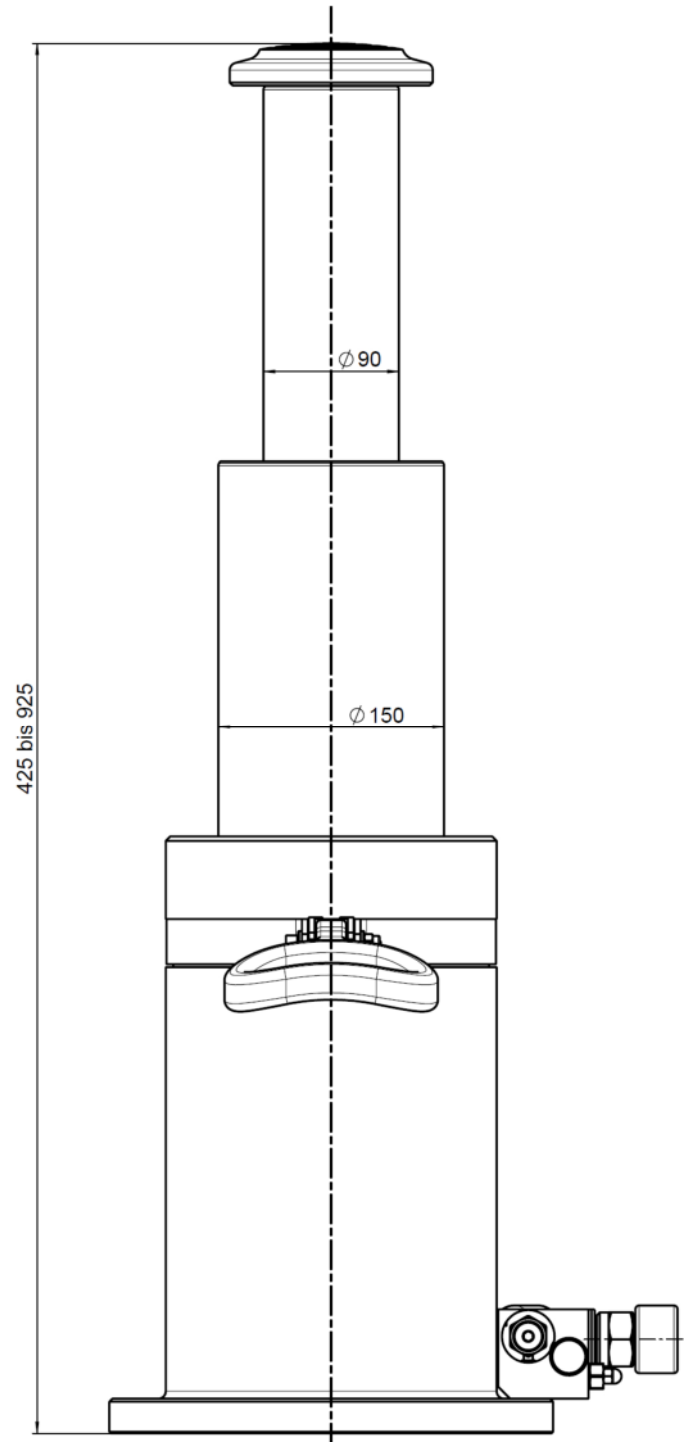
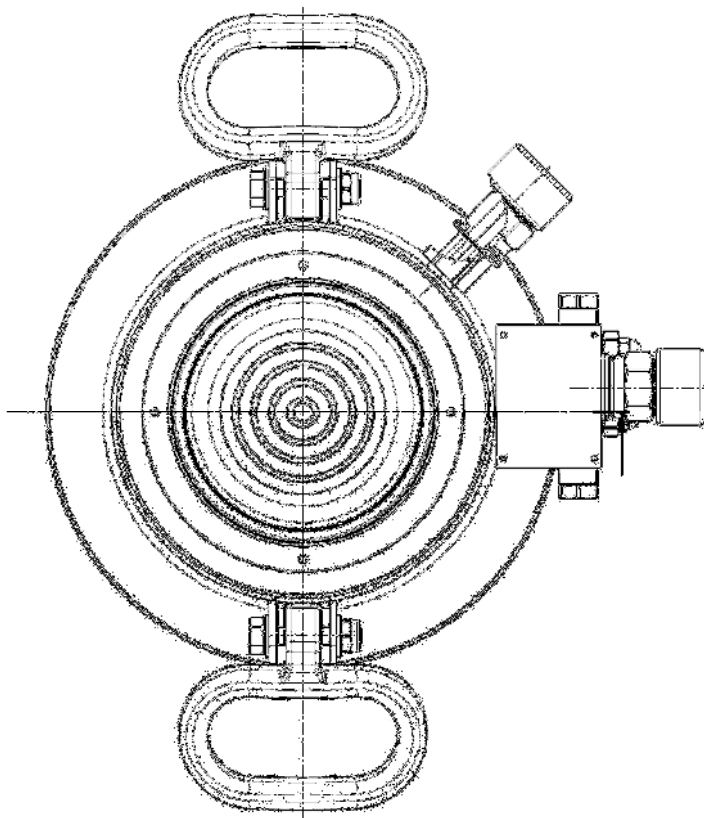
#### Connections:

- Two screwed couplings for one hose pair
- Both located close to bottom flange
- Protective caps to prevent contamination

## TECHNICAL DATA SHEET LIFTING JACK TH-30 600/300-425

### Specification

|                    |                      |      |
|--------------------|----------------------|------|
| <b>Order no.</b>   | <b>04-2062 TH-30</b> |      |
| Closed height      | mm                   | 425  |
| Number of pistons  |                      | 2    |
| Total stroke       | mm                   | 500  |
| Stroke I           | mm                   | 250  |
| Stroke II          | mm                   | 250  |
| Effective force I  | kN                   | 641  |
| Effective force II | kN                   | 312  |
| Oil capacity       | l                    | 8,1  |
| Bottom flange dia. | mm                   | 295  |
| Weight             | kg                   | 46,7 |
| Working pressure   | MPa                  | 30   |



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## TECHNICAL DATA SHEET LIFTING JACK TH-30 600/300-425

### Outstanding Characteristics

#### General:

- High stability because of integrated bottom flange
- Extremely hard surface of pistons (approx. 500 HV) guarantees superior wear resistance and long service life
- Double-acting hydraulic system, operating pressure approx. 30 MPa
- Consisting of a high-strength light metal
- Special seals for use within a temperature range from  $-40^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$
- Turnable carrying ring with two handles for transportation

#### Valves and safety:

- Safety valve includes a hydraulically pilot-controlled non-return valve and two independently operating pressure relief valves
- Safety valve holds load on the jack even in the unlikely case of hose breakage or while disconnecting screw couplings
- Guarantees fully sensitive lifting and lowering of load without jerk even under full load conditions
- Due to its compact construction the whole valve is extremely solid and protected against any exterior damage

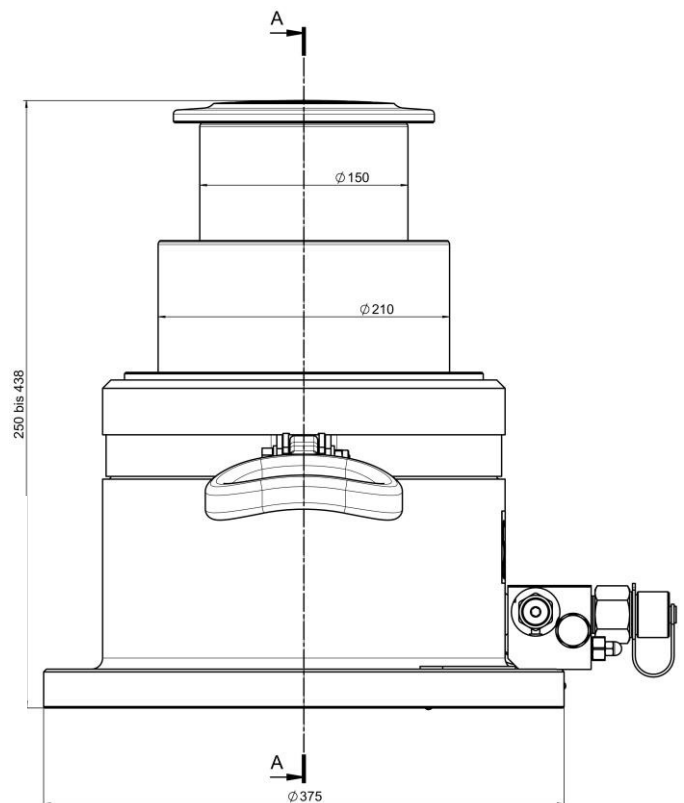
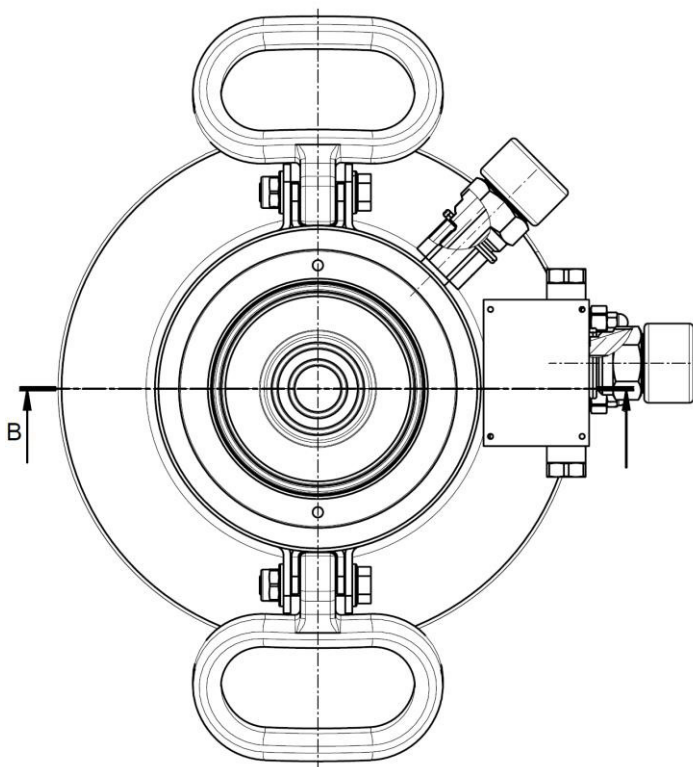
#### Connections:

- Two screwed couplings for one hose pair
- Both located close to bottom flange
- Protective caps to prevent contamination

## TECHNICAL DATA SHEET LIFTING JACK TH-30 1200/600-250

### Specification

|                    |     |                      |
|--------------------|-----|----------------------|
| <b>Order no.</b>   |     | <b>04-1122 TH-30</b> |
| Closed height      | mm  | 250                  |
| Number of pistons  |     | 2                    |
| Total stroke       | mm  | 188                  |
| Stroke I           | mm  | 95                   |
| Stroke II          | mm  | 93                   |
| Effective force I  | kN  | 1246                 |
| Effective force II | kN  | 642                  |
| Oil capacity       | l   | 6,2                  |
| Bottom flange dia. | mm  | 370                  |
| Weight             | kg  | 53,3                 |
| Working pressure   | MPa | 30                   |



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## TECHNICAL DATA SHEET LIFTING JACK TH-30 1200/600-250

### Outstanding Characteristics

#### General:

- High stability because of integrated bottom flange
- Extremely hard surface of pistons (approx. 500 HV) guarantees superior wear resistance and long service life
- Double-acting hydraulic system, operating pressure approx. 30 MPa
- Consisting of a high-strength light metal
- Special seals for use within a temperature range from  $-40^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$
- Turnable carrying ring with two handles for transportation

#### Valves and safety:

- Safety valve includes a hydraulically pilot-controlled non-return valve and two independently operating pressure relief valves
- Safety valve holds load on the jack even in the unlikely case of hose breakage or while disconnecting screw couplings
- Guarantees fully sensitive lifting and lowering of load without jerk even under full load conditions
- Due to its compact construction the whole valve is extremely solid and protected against any exterior damage

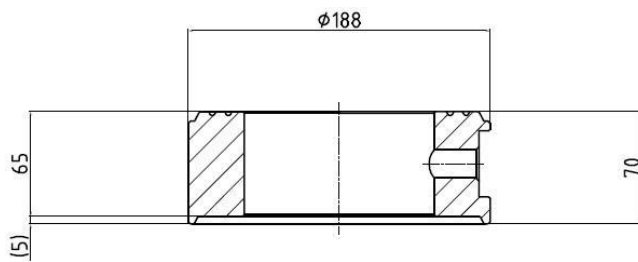
#### Connections:

- Two screwed couplings for one hose pair
- Both located close to bottom flange
- Protective caps to prevent contamination

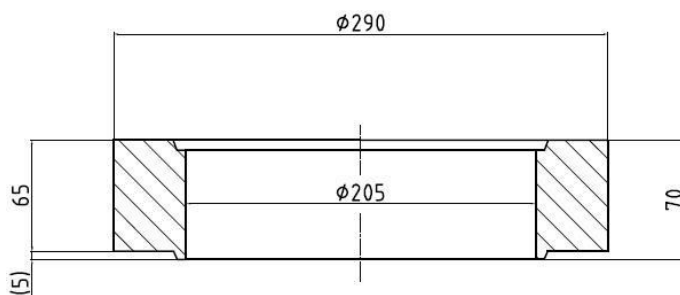
## TECHNICAL DATA SHEET SUPPORT SET A 1200-250

### Specification

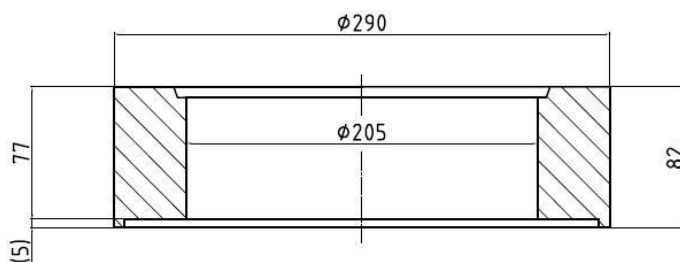
|                  |    |                |
|------------------|----|----------------|
| <b>Order no.</b> |    | <b>04-1124</b> |
| Stroke extension | mm | 4 x 65 = 260   |
| Weight           | kg | 41             |



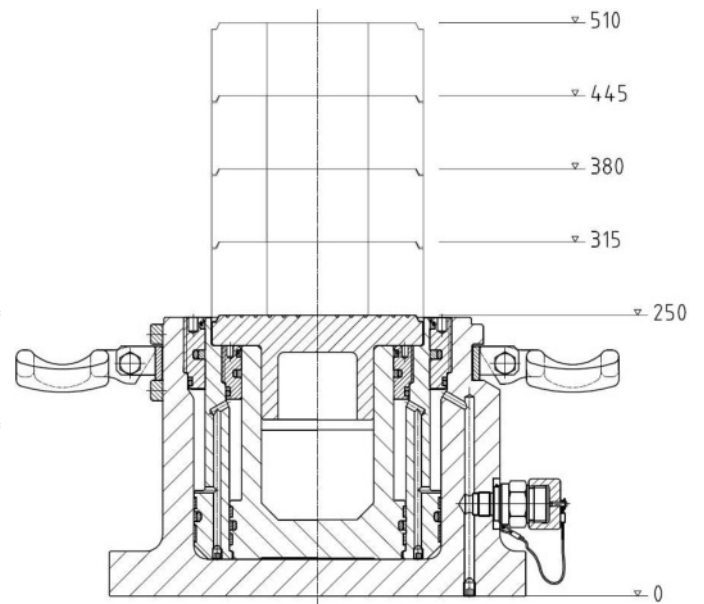
piston support ring (4x)



cylinder support ring II (3x)



cylinder support ring I (1x)



Telescopic jack (04-1122)



## TECHNICAL DATA SHEET LIFTING JACK EH 1200-140

| Specification      |     |                |
|--------------------|-----|----------------|
| <b>Order no.</b>   |     | <b>04-1125</b> |
| Closed height      | mm  | 140            |
| Number of pistons  |     | 1              |
| Total stroke       | mm  | 41             |
| Stroke I           | mm  | 41             |
| Effective force I  | kN  | 1140           |
| Oil capacity       | l   | 1,6            |
| Bottom flange dia. | mm  | 380            |
| Weight             | kg  | 45             |
| Working pressure   | MPa | 30             |



## TECHNICAL DATA SHEET LIFTING JACK EH 1200-140

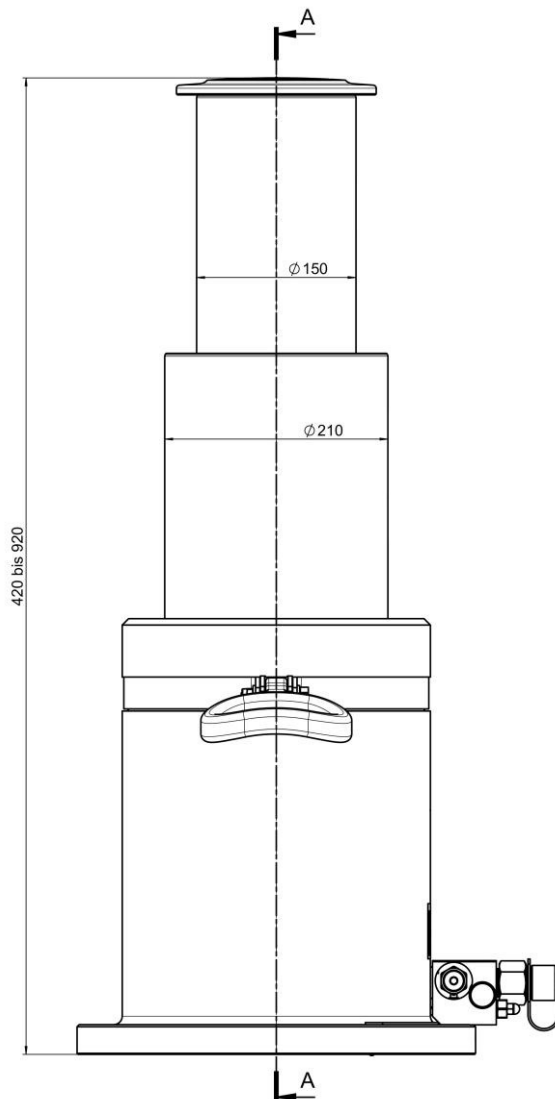
### Outstanding Characteristics

|                           |   |
|---------------------------|---|
| <p>General:</p>           | <ul style="list-style-type: none"> <li>• High stability because of integrated bottom flange</li> <li>• Extremely hard surface of pistons (approx. 500 HV) guarantees superior wear resistance and long service life</li> <li>• Double-acting hydraulic system, operating pressure approx. 30 MPa</li> <li>• Consisting of a high-strength light metal</li> <li>• Pressure piece made of steel for hard surface treatment</li> <li>• Special seals for use within a temperature range from <math>-40^{\circ}\text{C}</math> to <math>+70^{\circ}\text{C}</math></li> <li>• Turnable carrying ring with two handles for transportation</li> </ul> |
| <p>Valves and safety:</p> | <ul style="list-style-type: none"> <li>• Safety valve includes a hydraulically pilot-controlled non-return valve and two independently operating pressure relief valves</li> <li>• Safety valve holds load on the jack even in the unlikely case of hose breakage or while disconnecting screw couplings</li> <li>• Guarantees fully sensitive lifting and lowering of load without jerk even under full load conditions</li> <li>• Due to its compact construction the whole valve is extremely solid and protected against any exterior damage</li> </ul>   |
| <p>Connections:</p>       | <ul style="list-style-type: none"> <li>• Two screwed couplings for one hose pair</li> <li>• Both located close to bottom flange</li> <li>• Protective caps to prevent contamination</li> </ul>  |

## TECHNICAL DATA SHEET LIFTING JACK TH-30 1200/600-420

### Specification

|                    |     |                      |
|--------------------|-----|----------------------|
| <b>Order no.</b>   |     | <b>04-2122 TH-30</b> |
| Closed height      | mm  | 420                  |
| Number of pistons  |     | 2                    |
| Total stroke       | mm  | 500                  |
| Stroke I           | mm  | 250                  |
| Stroke II          | mm  | 250                  |
| Effective force I  | kN  | 1246                 |
| Effective force II | kN  | 642                  |
| Oil capacity       | l   | 16                   |
| Bottom flange dia. | mm  | 370                  |
| Weight             | kg  | 76,8                 |
| Working pressure   | MPa | 30                   |



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## TECHNICAL DATA SHEET LIFTING JACK TH-30 1200/600-420

### Outstanding Characteristics

|                           |  |
|---------------------------|--|
| <p>General:</p>           | <ul style="list-style-type: none"> <li>• High stability because of integrated bottom flange</li> <li>• Extremely hard surface of pistons (approx. 500 HV) guarantees superior wear resistance and long service life</li> <li>• Double-acting hydraulic system, operating pressure approx. 30 MPa</li> <li>• Consisting of a high-strength light metal</li> <li>• Special seals for use within a temperature range from <math>-40^{\circ}\text{C}</math> to <math>+70^{\circ}\text{C}</math></li> <li>• Turnable carrying ring with two handles for transportation</li> </ul> |
| <p>Valves and safety:</p> | <ul style="list-style-type: none"> <li>• Safety valve includes a hydraulically pilot-controlled non-return valve and two independently operating pressure relief valves</li> <li>• Safety valve holds load on the jack even in the unlikely case of hose breakage or while disconnecting screw couplings</li> <li>• Guarantees fully sensitive lifting and lowering of load without jerk even under full load conditions</li> <li>• Due to its compact construction the whole valve is extremely solid and protected against any exterior damage</li> </ul>                  |
| <p>Connections:</p>       | <ul style="list-style-type: none"> <li>• Two screwed couplings for one hose pair</li> <li>• Both located close to bottom flange</li> <li>• Protective caps to prevent contamination</li> </ul>   |

## 4 Hydraulic lifting jacks (other jacks)

### Single-piston jacks EH 350 and EH 200

These lifting jacks can be used in combination with different add-on parts for various tasks:

1. By using the claw (order no. 04-0041-P) long strokes are possible from low lifting points.
2. When fitted with the pressure piece (supplied as standard accessory) it is used whenever long strokes are required from high lifting points.
3. When used with the head piece (06-2352), rounded head piece (06-2353) and also rocker bearing support (06-3351) the jack 04-0041 forms an important part of the uprighting device. (see equipment group 6, p. 20)



04-0041-P



04-0041



04-0021-1

## Tilting jack

The tilting jack is used for lifting two-axle vehicles and putting them back on the track.

During this operation the tilting jack performs the lifting and lateral displacement movements simultaneously while the associated hooked wheel stop prevents the wheel coming off the rail.



04-0021-2



04-0010

## Internal lifting jack EH 100

This single piston jack is intended for use with interior lifting points in trams and subway carriages.

The internal lifting jack has an unlockable non-return valve with a pressure safety device at each end. The downward travelling piston is equipped with a rocker support which

can compensate for inclined positions of the jack. The form of the jack can be adapted to different lifting devices or to adapter types, threaded connections and attachment functions. The bayonet adapter can be positioned as desired, such as centrally or at the top.

| Other lifting jacks |    |                 |                |                  |                  |                |                |
|---------------------|----|-----------------|----------------|------------------|------------------|----------------|----------------|
| Type                |    | EH 350-1030     | EH 350-1030    | EH 200-658       | EH 200-597       | EH 100         | EH 200         |
|                     |    | Large claw jack | Without claw   | Small claw jack  | Tilting jack     | Internal jack  | Internal jack  |
| <b>Order no.:</b>   |    | <b>04-0041P</b> | <b>04-0041</b> | <b>04-0021-1</b> | <b>04-0021-2</b> | <b>04-0010</b> | <b>04-0020</b> |
| Closed height       | mm | 1030            | 1030           | 658              | 597              | ***            | ***            |
| Number of pistons   |    | 1               | 1              | 1                | 1                | 1              | 1              |
| Total stroke        | mm | 660             | 825            | 416              | 400              | ***            | ***            |
| Effective force I*  | kN | 339             | 339            | 190              | 199              | 115            | 212            |
| Oil capacity        | l  | 7,5             | 9,3            | 2,6              | 2,7              | ***            | ***            |
| Weight              | kg | 125             | 70             | 41               | 57/16            | ***            | ***            |
| Claw height         | mm | 105             | -              | 100**            | -                | -              | -              |

Internal jacks with even greater effective force can be supplied

\* Possible deviation from forces specified:  $\pm 5\%$

\*\* including rocker bearing support

\*\*\* Depending on the vehicle type

# 5 Equipment for lateral displacement

## Lateral displacement

Lateral displacement equipment allows the lifted derailed vehicle to be pulled and pushed until it is precisely aligned with the track and transported. The lateral displacement components described below should be selected in accordance with requirements.



Overall height 95 mm



Overall height 180 mm

### Rerailing bridges

The bridges are hollow extruded sections of high-strength light-metal alloy. All bridges can be coupled together and are equipped with four retractable handles. The upper side has drilled holes to accommodate the countersupport.

### Bridge coupling

The bridge coupling is used for joining together two rerailing bridges.



05-2000

| Rerailing bridges and bridge couplings |            |           |           |          |           |                           |                            |
|--|------------|-----------|-----------|----------|-----------|---------------------------|----------------------------|
| Type                                   | Order no.: | Height mm | Length mm | Width mm | Weight kg | Load-bearing capacity* kN | Load-bearing capacity** kN |
| AB 4500-180                            | 05-2450    | 180       | 4500      | 280      | 175       | 600                       | 1200                       |
| AB 3300-180                            | 05-2330    | 180       | 3300      | 280      | 128       | 600                       | 1200                       |
| AB 2250-180                            | 05-2225    | 180       | 2250      | 280      | 88        | 600                       | 1200                       |
| AB 1200-180                            | 05-2120    | 180       | 1200      | 280      | 47        | 600                       | 1200                       |
| BK 180                                 | 05-2000    | -         | -         | -        | 37,5      | -                         | -                          |
| AB 4500-95                             | 05-1450    | 95        | 4500      | 280      | 125       | 100                       | 600                        |
| AB 3300-95                             | 05-1330    | 95        | 3300      | 280      | 92        | 100                       | 600                        |
| AB 2250-95                             | 05-1225    | 95        | 2250      | 280      | 63        | 100                       | 600                        |
| AB 1200-95                             | 05-1120    | 95        | 1200      | 280      | 34        | 100                       | 600                        |
| BK 95                                  | 05-1000    | -         | -         | -        | 22        | -                         | -                          |

\*Average loading over a free span 1500 mm

\*\* Loading with a rerailing bridge wedged over its full area

## Roller carriage

The roller carriages are used for traversing the load on the rerailing bridge. Well dimensioned rollers with maintenance-free

bearings permit easy lateral transport with little expenditure of energy.

| Roller carriages |                             |                |                 |                            |                         |              |
|------------------|-----------------------------|----------------|-----------------|----------------------------|-------------------------|--------------|
| Type             | Roller carriage designation | Order no.:     | Max. load<br>kN | Height without plate<br>mm | Height with plate<br>mm | Weight<br>kg |
| RW 150           | 150 kN, without plate       | <b>05-1015</b> | 150             | 66                         | -                       | 18           |
| RWP 150          | 150 kN, with plate          | <b>05-1016</b> | 150             | 66                         | 101                     | 30           |
| RW 600           | 600 kN, without plate       | <b>05-2061</b> | 600             | 108                        | -                       | 58           |
| RWP 600          | 600 kN, with plate          | <b>05-2062</b> | 600             | 108                        | 140                     | 82           |
| RW 1200          | 1200 kN, without plate      | <b>05-2121</b> | 1200            | 108                        | -                       | 70           |
| RWP 1200         | 1200 kN, with plate         | <b>05-2122</b> | 1200            | 108                        | 140                     | 94           |

### 150 kN

Provided with two pockets for accommodating displacing jacks, distance bars or stopping devices. Due to its extremely low overall height this roller carriage is preferably used with trams or subway carriages.



05-1015

### 150 kN with plate

With rotating and sliding plate to compensate for radial forces occurring when loads lifted at one end are being moved.



05-1016

### 600 kN/1200 kN

Provided with two pockets for accommodating displacing jacks, distance bars, stopping devices.



05-2061 und 05-2121

### 600 kN/1200 kN with plate

With rotating and sliding plate to compensate for radial forces occurring when loads lifted at one end are being moved.



05-2062 und 05-2122



# 5 Equipment for lateral displacement

## Displacing jack

The displacing jack has a pushing force of 120 kN and a pulling force of 60 kN. Both pushing and pulling is therefore possible during the lateral displacement movement. This is a special advantage of the re-pressure system. The displacing cylinder is also a component of the axle pusher unit. (see p. 23)



05-0011

| Displacing jack |            |                     |                      |              |                                |                                |                   |              |
|-----------------|------------|---------------------|----------------------|--------------|--------------------------------|--------------------------------|-------------------|--------------|
| Type            | Order no.: | Closed length<br>mm | Number<br>of pistons | Stroke<br>mm | Effective pushing force*<br>kN | Effective pulling force*<br>kN | Oil capacity<br>l | Weight<br>kg |
| EH 120/60-575   | 05-0011    | 575                 | 1                    | 350          | 129                            | 57                             | 1,5               | 16,5         |

\* Possible deviation from forces specified:  $\pm 5\%$



Type I - 05-5001

### Type I distance bar

For coupling two roller carriages, length continuously adjustable from 1023 mm to 1904 mm.



Type II - 05-5002

### Type II distance bar

For coupling two roller carriages, length continuously adjustable from 1046 mm to 2645 mm.

| Distance bars |            |                          |      |              |
|---------------|------------|--------------------------|------|--------------|
| Type          | Order no.: | Range of adjustment (mm) |      | Weight<br>kg |
|               |            | min                      | max  |              |
| Type I        | 05-5001    | 1023                     | 1904 | 20           |
| Type II       | 05-5002    | 1046                     | 2645 | 24           |
| Type III      | 05-5003    | 780                      | 1967 | 18,5         |

| Accessories for lateral displacement |  |              |
|--------------------------------------|--|--------------|
| Order no.:                           | Designation                                | Weight<br>kg |
| 05-4001                              | Single counter support                     | 8            |
| 05-4001-1                            | Counter support with bolt lock             | 21           |
| 05-4002                              | Twin counter support                       | 16           |
| 05-3000                              | Twin head socket                           | 9            |
| 05-6000                              | Stopping device and single counter support | 12           |

### Twin counter support and twin head socket

The twin counter support in combination with the twin head socket is always used when high lateral pushing forces are needed. The twin head socket is to be positioned in a pocket of the roller carriage and should accommodate two parallel operating displacing jacks.

### Single counter support

To be inserted into the bores of the rerailing bridge. It is used for holding the displacing jack.



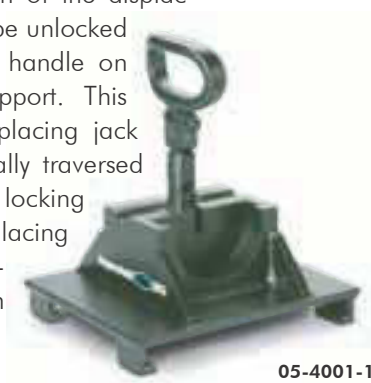
Single counter support application



Twin counter support with twin head socket application

### Counter support with bolt lock

This is also used for holding the displacing jack. The support is fixed to the rerailing bridge using a spring-loaded bolt which automatically locks into the next hole in the rerailing bridge during hydraulic operation of the displacing jack. It can be unlocked by means of a handle on the counter support. This enables the displacing jack to be hydraulically traversed with automatic locking so that the displacing stroke can be repeated as often as necessary.



05-4001-1

### Stopping device for roller carriages

Use in combination with a counter support. It is used for locking the roller carriages when relocating the displacing jacks (especially in the case of superelevations).



05-6000

# 6 Equipment for uprighting

This equipment is used for uprighting overturned vehicles. It basically consists of the single-piston jacks 350 kN (order no. 04-0041; see p. 14), rope lifting belts, head pieces and rocker bearing supports.



## Head piece and rounded head piece

These are used instead of the jack thrust pad for holding the rope lifting belt loop.



06-2352



06-2353

## Rocker bearing support

It is used for compensating for the angular movement of the lifting jack and for safely transmitting the counterforce to the ground.



06-3351

| Uprighting unit                                 |                |                       |                    |                                |                                   |                                  |              |
|---|----------------|-----------------------|--------------------|--------------------------------|-----------------------------------|----------------------------------|--------------|
| Designation                                     | Order no.:     | Lenght of belts<br>mm | Number<br>of loops | Load bearing<br>capacity<br>kN | Lenght of attachment<br>rope<br>m | Lenght of retaining<br>rope<br>m | Weight<br>kg |
| Lifting belt, complete                          | <b>06-1350</b> | 3025                  | 6                  | 350                            | 4                                 | 6                                | 33           |
| Head piece for<br>EH 350-1030 (04-0041)         | <b>06-2352</b> | -                     | -                  | -                              | -                                 | -                                | 9            |
| Rounded head piece for<br>EH 350-1030 (04-0041) | <b>06-2353</b> | -                     | -                  | -                              | -                                 | -                                | 5            |
| Rocker bearing support<br>EH 350-1030 (04-0041) | <b>06-3351</b> | -                     | -                  | -                              | -                                 | -                                | 16,5         |

### Lifting cable ladder carrying capacity 350 kN

With an overturned vehicle this substitutes for the missing fixing points for the lifting jacks and consists of:

- Lifting cable ladder
- Connecting bolts
- Fastening rope
- Retaining rope

06-1350



### Haulage device

Used either for moving rail vehicles with locked axles or for pulling apart vehicles which are locked together due to an accident. The device is attached to the track by means of rail blocks, wedges and retaining ropes. It can also be used for uprighting overturned vehicles.

Accessories:

2 rail blocks

4 wedges

swivels, fastening, pulling and retaining ropes



#### Haulage device

| Order no.:     | Lenght of pulling rope | Lenght of fasten rope | Lenght of retaining rope | Tractive force | Weight (without accessories) | Weight (with accessories) |
|----------------|------------------------|-----------------------|--------------------------|----------------|------------------------------|---------------------------|
|                | m                      | m                     | m                        | kN             | kg                           | kg                        |
| <b>07-1250</b> | 10                     | 10                    | 10                       | 250            | 107                          | 250                       |

\* Possible deviation from forces specified:  $\pm 10\%$

# Rescue Tow Dolly



Rescue Tow Dollies are used for supporting and transporting railway vehicles which do have defective bogie parts.

The lifting of the vehicle required for positioning the Rescue Tow Dollies can be carried out by using our Rerailing Technology.



Rescue Tow Dollies from Hegenscheidt-MFD are always customized versions. Therefore please fill in our datasheet which you can find on the backside of this sheet.

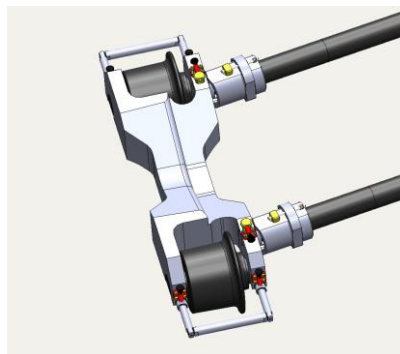
The running-wheels of our Rescue Tow Dollies are provided with the original wheel profile of the customer's rolling stock.



The support beams are manufactured out of milled solid aluminum body. This compact design means less assembly parts and less interfaces which leads to a high stability.

The assembly of the dolly can be done quick and easy without any tools.

Each assembly group of the whole truck is very light weight.



Rescue Tow Dollies in a pivoted version are designed for track curves less than 30 meters

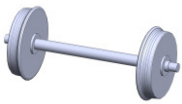


All parts made of aluminum are anodized. Therefore our Rescue Tow Dollies are durable weather- and corrosion-resistant and they are protected against mechanical impacts.

The customer can choose the colour of the anodized parts.

The maximum towing speed on a straight track is 40 km/h.

# Rescue Tow Dolly



*Details about customer's wheelsets*



*Details about railway track*

Wheel tread-Ø (A)   [mm]

Track gauge (D)  [mm]

Back-to-back (E)   [mm]

Wheel width (B)   [mm]

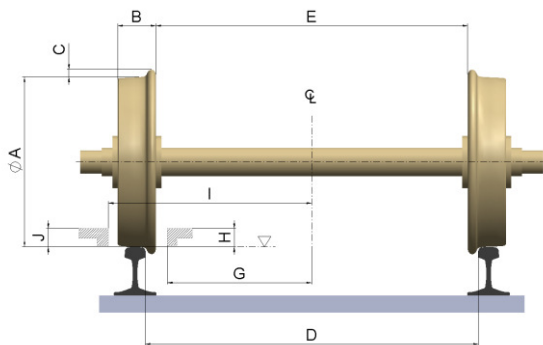
Flange height (C)  [mm]

track obstacle (I)  [mm]

track obstacle (J)  [mm]

track obstacle (G)  [mm]

track obstacle (H)  [mm]



least curve radius  [m]

type of rail

>>> please provide us with a dimensioned profile drawing of a basic wheelset <<<



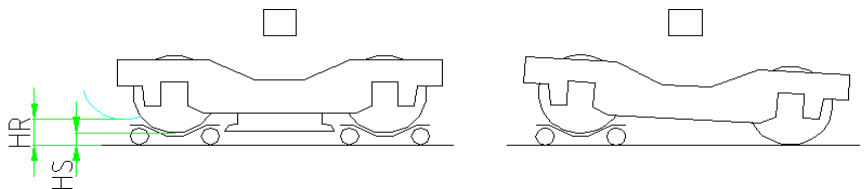
*Details about customer's vehicle / -bogie*

working load on a single tow-dolly  [t]

number of required tow-dollies per bogie

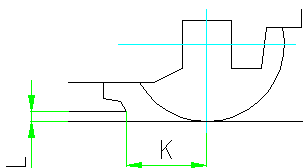
lifting height (HR)  [mm]

towing height (HS)  [mm]



bogie obstacle (K)  [mm]

bogie obstacle (L)  [mm]



desired coloring for beams

(desired coloring for track rods)

blue / green / red / (gold) / gray

**Hegenscheidt Platz**  
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**+49 (0)2431 - 86 - 506**

**s.raemaekers@nshgroup.com**

*in-house statistics*

reference No.

customer

type of dolly

asm-drawing

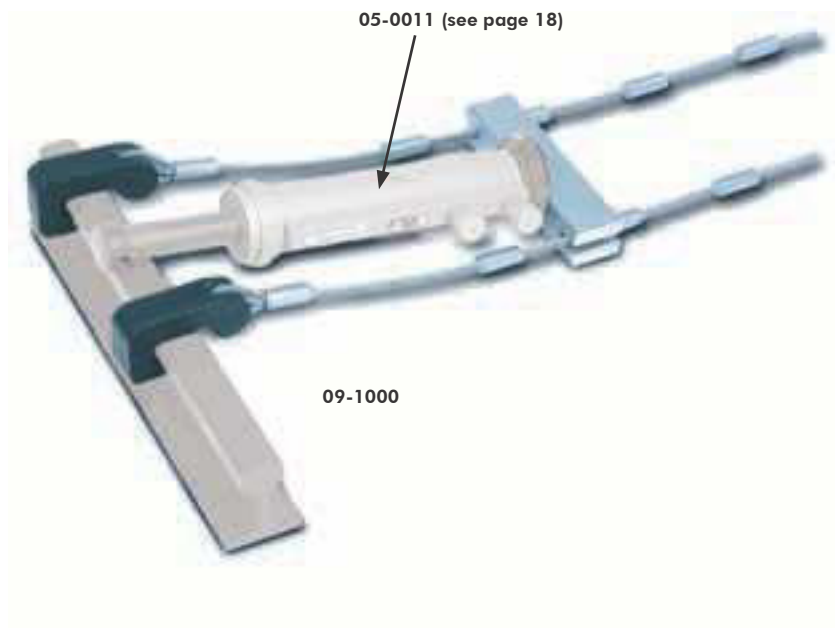
# Accessories

## Axle pusher unit

To be used in combination with the displacing jack to move a wheel resting on the rail by its flange or as an auxiliary device for the lateral displacement of a lifted vehicle.

This device often makes a complete lifting operation unnecessary. It consists of two retaining ropes with hooks and bolts together with a crossbeam of light-metal alloy.

The displacing cylinder\* is not included with this order number.



| Axle pusher units |                   |                             |              |
|-------------------|-------------------|-----------------------------|--------------|
| Order no.:        | Rope length<br>mm | Distance between rope<br>mm | Weight<br>kg |
| 09-1000           | 1500              | 300                         | 22,5         |
| 09-1001           | 2440              | 300                         | 25,0         |

\*To be ordered separately (see p. 18)

# 9 Accessories



09-2005 / 09-2010

## High-pressure hoses

The high-pressure hoses bundled in pairs serve to connect the control unit, the pump unit and the hydraulic components. The screw couplings are provided with integrated stop valves to prevent any oil leakage even when the hoses are uncoupled. The screw couplings can be coupled and uncoupled manually even under residual pressure.

## Hose couplings

Hose couplings are used for extending the high-pressure hose lines. Hose coupling 09-2101 is fitted with a stop valve at each end. This means that two hoses can be coupled together without loss of oil.



09-2101

09-2100

| High-pressure hoses (in pairs) |                      |                        |                      |                           |                        |              |
|--------------------------------|----------------------|------------------------|----------------------|---------------------------|------------------------|--------------|
| Order no.:                     | Standard length<br>m | Nominal diameter<br>mm | Bending radius<br>mm | Operating pressure<br>MPa | Design pressure<br>MPa | Weight<br>kg |
| 09-2005                        | 5                    | 10                     | 100                  | 31,5                      | 75,0                   | 5            |
| 09-2010                        | 10                   | 10                     | 100                  | 31,5                      | 75,0                   | 9            |

| Hose couplings |                                 |        |              |
|----------------|---------------------------------|--------|--------------|
| Order no.:     | Designation                     | Thread | Weight<br>kg |
| 09-2100        | Hose coupling (single)          | Rd32x3 | 0,3          |
| 09-2101        | Hose coupling (with stop valve) | Rd32x3 | 1,0          |

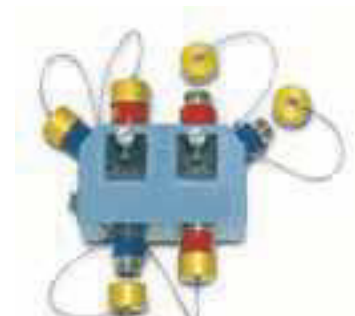
## Distribution valves

For connecting an additional hydraulic component.

Distribution valves with regulators are able to compensate for any loss of pressure in the lines which means that connected hydraulic components can be extended and withdrawn evenly.



09-2200



09-2201

| Distributions valves |                                     |  |              |
|----------------------|-------------------------------------|--|--------------|
| Order no.:           | Designation                         | Connections  | Weight<br>kg |
| 09-2200              | Distribution valve (simple)         | 1 pair (red/blue)-input<br>2 pairs (red/blue)-output | 7            |
| 09-2201              | Distribution valve (with regulator) | 1 pair (red/blue)-input<br>2 pairs (red/blue)-output | 8            |



## Bogie suspensions

They are used with bogies which are not firmly attached to the vehicle.

- **Type A** is hooked onto the vehicle frame.
- **Type B** is clamped additionally to the vehicle frame during the lifting process.



Type A – 09-3001



Type B – 09-3002

| Bogie suspensions |                           |              |                    |
|-------------------|---------------------------|--------------|--------------------|
| Order no.:        | Designation               | Weight<br>kg | Chain Weight<br>kg |
| 09-3001           | Type A (simple)           | 3,5          | 13                 |
| 09-3002           | Type B (with spring hook) | 14           | 13                 |

## Carrier vehicles

These combined road/rail vehicles can transport rerailing equipment as well as all other required equipment to the site of the accident by the quickest route.

The add-on hydraulic unit specially developed by Hegenscheidt-MFD is attached to the front of the vehicle and replaces the pump unit and control panel which would otherwise be required.

(see p. 9)



The space saved in this way on the vehicle floor can be used for stowing other equipment.

The Hegenscheidt-MFD system provides an optimum load distribution and equipment stowage in the vehicle.

The configuration of the carrier vehicle can be customised by Hegenscheidt-MFD to suit special requirements.



# 11 Rescue equipment and accessories

Supplementing the rerailing system Hegenscheidt-MFD also offers rescue equipment.



| Hydraulic pump* |                     |                           |                             |              |
|-----------------|---------------------|---------------------------|-----------------------------|--------------|
| Order no.:      | Designation         | Operating pressure<br>MPa | Dimension<br>L x W x H (mm) | Weight<br>kg |
| 11-3005         | Pump type TPU 35 PF | 72                        | 410 x 325 x 375             | 25           |



| Cutters*   |                        |                                   |  |                   |                           |              |
|------------|------------------------|-----------------------------------|--|-------------------|---------------------------|--------------|
| Order no.: | Designation            | max. cutting force<br>(recess) kN | Max. cutting force<br>(centre of opening) kN | max.<br>jaw width | Operating pressure<br>MPa | Weight<br>kg |
| 11-3010    | Cutter<br>Type CU 4020 | 341                               | 188  | 152               | 72                        | 10,6         |



| Spreaders* |                          |                         |                          |                      |                           |                           |              |
|------------|--------------------------|-------------------------|--------------------------|----------------------|---------------------------|---------------------------|--------------|
| Order no.: | Designation              | Max. spread force<br>kN | Max. tensile force<br>kN | Max. spread<br>width | Max. traction<br>distance | Operating pressure<br>MPa | Weight<br>kg |
| 11-3020    | Spreader<br>Type SP 4240 | 157                     | 83,4                     | 686                  | 450                       | 72                        | 18,1         |

| Accessories |  |
|-------------|--|
| Order no.:  | Designation                            |
| 11-3021     | Pull chain with hook<br>length 4500 mm |
| 11-3024     | Connection                             |
| 11-3100     | Extensionhose,<br>10 m                 |

\* Additional equipment on request

# Air bags and accessories

In extremely difficult rerailing situations (very low lifting points, derailments close to tunnel walls, and so on) the use of pneumatic air bags has proved itself.

The drive unit has a mobile compressor equipped with its own prime mover which is available either as a combustion engine or as an electric motor.

It should be particularly emphasised that this design means virtually unlimited compressed air.



12-1010-1

| Air bags*  |                |                                    |                        |                  |                     |              |
|------------|----------------|------------------------------------|------------------------|------------------|---------------------|--------------|
| Order no.: | Designation    | max. lift force<br>(at 0,8 MPa) kN | max. lift height<br>mm | Dimensions<br>mm | Bag thickness<br>mm | Weight<br>kg |
| 12-4290    | Air bag HLB 29 | 300                                | 348                    | 611 x 611        | 25                  | 9,8          |
| 12-4320    | Air bag HLB 32 | 320                                | 380                    | 658 x 658        | 25                  | 13           |
| 12-4400    | Air bag HLB 40 | 400                                | 405                    | 714 x 714        | 25                  | 15,1         |
| 12-4670    | Air bag HLB 67 | 670                                | 520                    | 908 x 908        | 25                  | 23,5         |

| Compressors* |                                |                           |                                   |                              |                        |
|--------------|--------------------------------|---------------------------|-----------------------------------|------------------------------|------------------------|
| Order no.:   | Designation                    | Operating pressure<br>MPa | Air volume<br>m <sup>3</sup> /min | Dimensions<br>L x W x H (mm) | Operating weight<br>kg |
| 12-1010-1    | Compressor with petrol engine  | 0,7                       | 1,4                               | 960 x 700 x 630              | 160                    |
| 12-1010-2    | Compressor with electric motor | 0,8                       | 0,37                              | 1.190 x 500 x 840            | 80                     |

| Accessories* |                         |
|--------------|-------------------------|
| Order no.:   | Designation             |
| 12-1002      | Dual control device     |
| 12-1100B     | Air hose (blue), 10 m   |
| 12-1100R     | Air hose (red), 10 m    |
| 12-1100Y     | Air hose (yellow), 10 m |

\* Additional equipment on request



12-1002

12-1100R

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