



# Holmatro

## Industrial Tools



 holmatro  
mastering power



### **Mastering power**

Holmatro products are all about the principle that only controlled power can be deployed effectively. We have expressed this vision in the slogan 'Mastering Power' which applies perfectly to both business units that together form the Holmatro Group.

Industrial Equipment is about applying and mastering high pressure power in heavy industrial. And with Rescue Equipment it is a matter of life and death for fire brigades and rescue organisations to work in a controlled, precise and well-thought-out way with the proper equipment.

[www.holmatro.com](http://www.holmatro.com)



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company movie



## → Introduction

<b>About Holmatro</b>	8
<b>What Holmatro Stands For</b>	9
<b>Holmatro's Industrial Tools</b>	10
<b>Basic Knowledge Of Hydraulics</b>	14

## → Hydraulic Cylinders

<b>Composing A Hydraulic Cylinder System</b>	18
<b>Holmatro Cylinders</b>	20
<b>Selection List Cylinders</b>	22
<b>Selection List Hollow Plunger Cylinders</b>	26
<b>Multi Purpose Cylinders</b>	
Spring Return	28
<b>Aluminium Cylinders</b>	
Spring Return	38
Hydraulic Return	42
<b>Flat Cylinders</b>	
Spring Return	48
<b>Short Stroke Cylinders</b>	
Spring Return	52
<b>Telescopic Cylinders</b>	
Gravity Return	54
<b>High Tonnage Cylinders</b>	
Gravity Return	56
Hydraulic Return	60
<b>Locknut Cylinders</b>	
Gravity Return	64
Hydraulic Return	66
<b>Construction Cylinders</b>	
Hydraulic Return	70
<b>Hollow Plunger Cylinders</b>	
Gravity Return	72
Spring Return	74
Hydraulic Return	78
<b>Pulling Cylinders</b>	
Spring Return	80
Hydraulic Return	82
Pulling Eyes	84
Clevis Eyes	85
Protection Springs	86
<b>Multi Purpose Cylinder Set</b>	
Set	87
Parts	88



**Accessories**

5 Tons Cylinder	91
10 Tons Cylinder	91
15 Tons Cylinder	91
25 Tons Cylinder	91
50 Tons Cylinder	91


**Saddles**

Tilting Saddles	97
Thread And Flat Saddles	99

**→ Lifting Tools**
**Machine Lift**

Spring Return	102
---------------	-----


**Toe Cylinder**

Spring Return	103
---------------	-----

**Vertical Lifting Wedge**

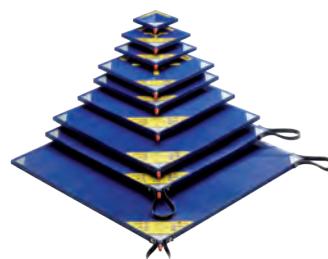
Spring return	104
---------------	-----


**Wedge**

Spring Return	105
Hydraulic Return	106

**Lifting Bags**

Lifting Bags	107
Lifting Capacity / Height Diagrams	109
Hoses	110
Operating Valves	111
Accessories	112
Control Sets	113


**Chocks And Blocks**

Set A	114
Set B	115

**Mechanical Tools**

Jacks	116
Jacks - Aluminium	120
Pulling Jack	121
Toe Jacks	122
Accessories	123


**Ship Wedges**

126
-----

**→ Hand Tools**
**Puller Sets**

Spring Return	128
---------------	-----


**Flange Spreaders**

Spring Return	130
---------------	-----

**Nut Splitters**

Spring Return	132
---------------	-----

**Steel Cable Cutters**

Spring Return	134
---------------	-----


**Power Cable Cutters**

Spring Return	135
Hydraulic Return	136

**Pipe Squeezer**

Spring Return	137
---------------	-----

**→ Hydraulic Pumps**
**Hand Pumps**

1-stage	140
2-stage	142


**Foot Pump**

144
-----

**Compact Air Pumps**

Single-acting	146
Double-acting	147


**Compact Electric Pump**

148
-----

**Vari Pumps**

Configurator	149
230V - 1-stage	152
230V - 2-stage	153
400V - 1-stage	154
400V - 2-stage	155
Twin - 400V - 1-stage	156
Air - 1-stage - 8 Bars	157
Air - 2-stage - 8 Bars	158
Petrol - 1-stage - 4-stroke	159
Petrol - 2-stage - 4-stroke	160


**Control Valves**

Hand Pumps	161
Vari Pumps	161


**Accessories**

Hand Pumps	162
Vari Pumps	162


**→ System Components**
**Hydraulic Hoses**

Single Hoses	166
Standard Hoses	167
Extension Hoses	168

**Couplers**

169
-----

**Pressure Gauges**

Scale Division In Bars	171
Scale Division In Ton	172
Pressure Gauge Adaptors	173
Pressure Gauge Sets	173


**Valve Blocks 'FlowPanel'**

Single-acting	174
Double-acting	176

**Valves**

178

**Accessories Hydraulics**

179

**Assembly Materials**

Connector	182
Reducing Bushing	182
Nipple	182
Connector	182


**Oils**

183

**Lubricants**

184


**→ Tensioning Hydraulics**
**Selection Of Stud Tension Cylinders**

186

**Stud Tension Cylinders**

Including Cylinder Bridge	188
Excluding Cylinder Bridge	190

**Pump**

194

**Hydraulic Hoses**

Single Hoses - 1000 bars	196
Extension Hoses - 1000 bars	196


**Couplers And Accessories**

197

**→ Propeller Sets**
**Propeller Cylinders**

200

**Selection Chart Of Propeller Cylinders**

201

**Pump**

202

**Hydraulic Hoses**

Single Hoses - 2000 Bars	203
Extension Hoses - 2000 Bars	203


**Couplers And Accessories**

204

**→ Industrial Solutions**
**Industrial Solutions**

206

**→ Service & Safety**
**Service & Safety**

214



## About Holmatro

Holmatro, founded in the Netherlands in 1967, originally traded in high-pressure hydraulic tools for the shipbuilding industry. Nowadays we design, develop, manufacture and deliver hydraulic equipment and systems that are used for rescue, industrial and special tactics operations around the world. Our strategy, products and services are aimed at helping customers to succeed in mastering the power they need.

## Industrial Tools

The publication you have before you is our Industrial Tools catalogue. It contains a large number of high-pressure hydraulic, pneumatic and mechanical tools. The extensive product range of Industrial Tools includes hydraulic cylinders, lifting tools, hand tools, hydraulic pumps, system components, tensioning hydraulics and propeller sets. All tools are designed for generating and controlling precision power in various industrial applications, such as shipbuilding, heavy transport, maintenance, petrochemical, offshore, construction & installation, mining and civil engineering.



Besides Industrial Tools, we also offer:

- **Industrial Solutions;**

Results-oriented customised hydraulic solutions for loads that are difficult to move with standard tools. This includes challenges relating to lifting, pushing, pulling, lowering, weighing, tilting and horizontal movement. We work closely with users to achieve the correct solution.

- **Industrial Cutting Tools;**

Cutting tools specially designed for cutting various materials. Mainly used in cable recycling, vehicles recycling, household appliances recycling and in various demolition industries.

- **Foundry Tools;**

Foundry wedges for the nodular cast iron industry to remove feeders and risers from castings quickly and safely without damaging the casting itself, and with much less physical effort.

- **Vehicle Rescue Tools;**

Tools specially made for extricating victims who are trapped after road traffic accidents, involving personal vehicles, transport vehicles, public transportation or defence vehicles.

- **Emergency Response Rescue Tools;**

Emergency Response Rescue Tools solutions support rescuers to generate the immense forces needed during rescue activities after natural or man-made disasters.

- **Special Tactics;**

Tools designed for Special Tactics operations. These tools are equipped with features such as low visibility, quick and quiet operation and optimal portability.

Essential to all Holmatro products is the control of immense power. You must be able to rely on that for every application under any circumstances. To ensure this, regular maintenance and periodic certification is essential; as well as the deliberate and safe use of your hydraulic equipment. Working safely is not only more efficient but also contributes to the increased lifespan of the tools. Our tools are high quality and extremely durable, not least because of our extensive service program.

[www.holmatro.com](http://www.holmatro.com)



## What Holmatro Stands For

### The power of innovation

In order to maintain our leading position as a specialist in high-pressure hydraulics, we continuously invest in research and product development. It is our ambition to continue to develop innovative solutions combining extreme power with controllability, user friendliness and safety. Our product development is fully focused on finding result-oriented solutions for specific markets and applications. To achieve this, we closely work together with you, the professional user.

### Quality in everything we do

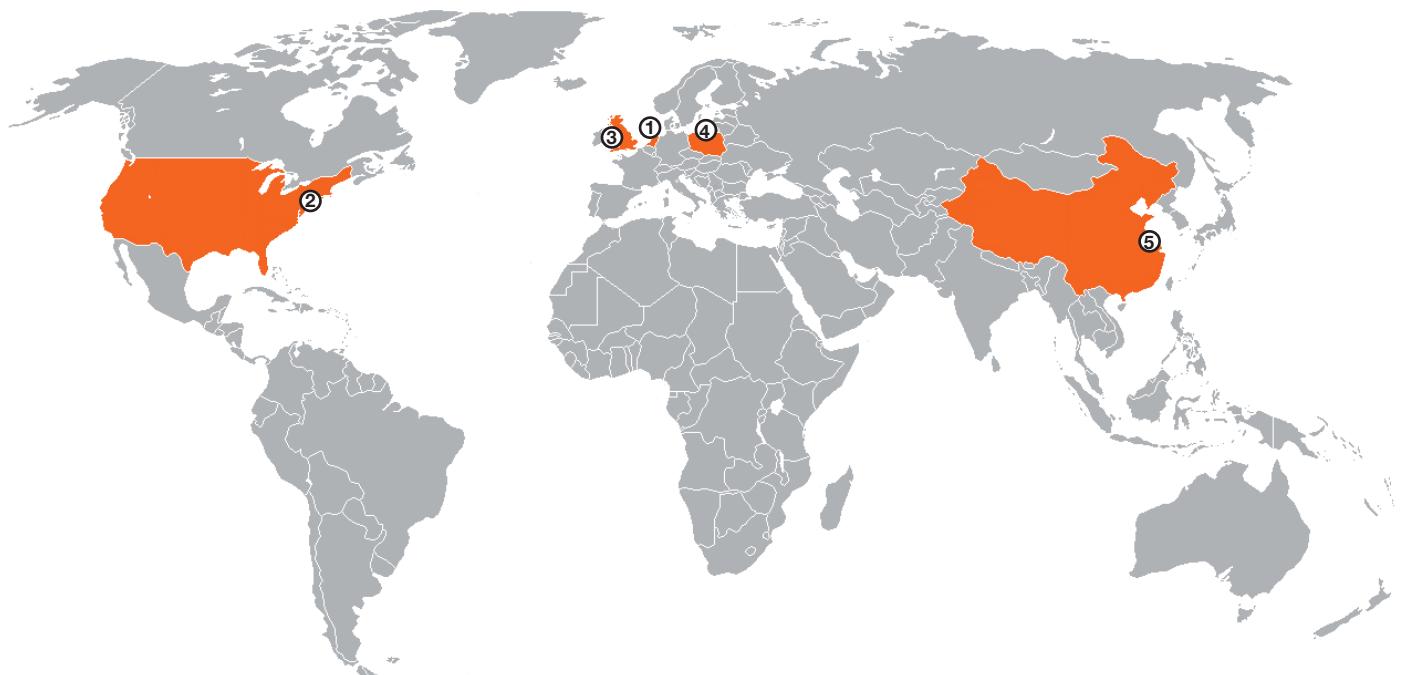
At Holmatro we work according to the ISO 9001 Quality Management Standard and the SCC\* Safety Health and Environment (SHE) Checklist Contractors. Our products comply with all international standards such as the European EN 13204, EN 13731 and the American NFPA 1936. Holmatro tools are developed, manufactured and maintained in conformity with the highest quality standards of durability, side load, mechanical distortion and overpressure. As they must be resistant to the most extreme conditions, our products are thoroughly tested before they are authorised for use in practice.



### (Inter)national sales network

Our experience of many years and in-house engineering enable us to provide you with expert advice on both our products and applications. Besides the head office in the Netherlands, Holmatro has manufacturing plants and sales offices in the Netherlands and the United States. We have representative offices in the People's Republic of China, the United Kingdom and Poland.

Our sales organisation and worldwide dealer network - fully trained in our own training centre - guarantee the same Holmatro standard of quality and a perfect after sales service for all our products.



Holmatro **Netherlands**

①

Holmatro **USA**

②

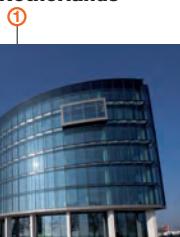
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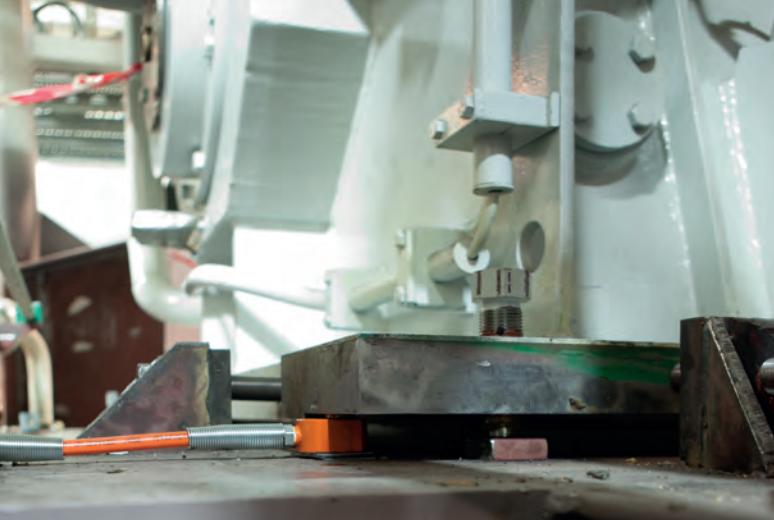
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Holmatro **Poland**

④

Holmatro **China**

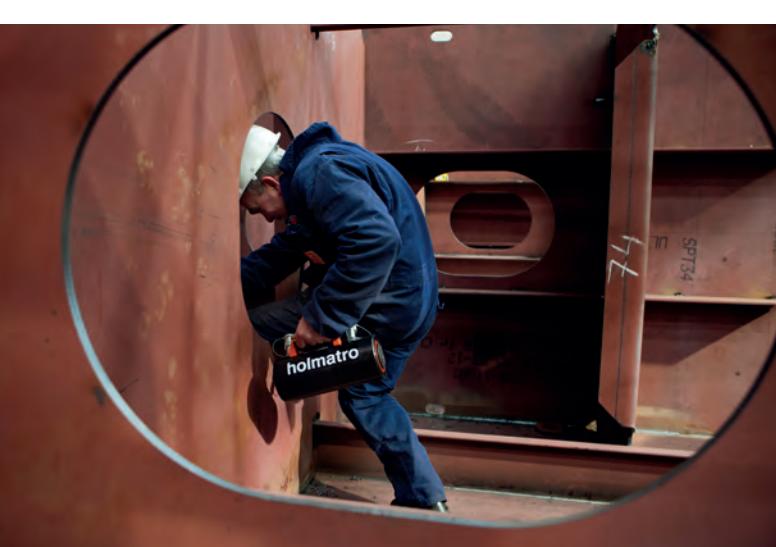


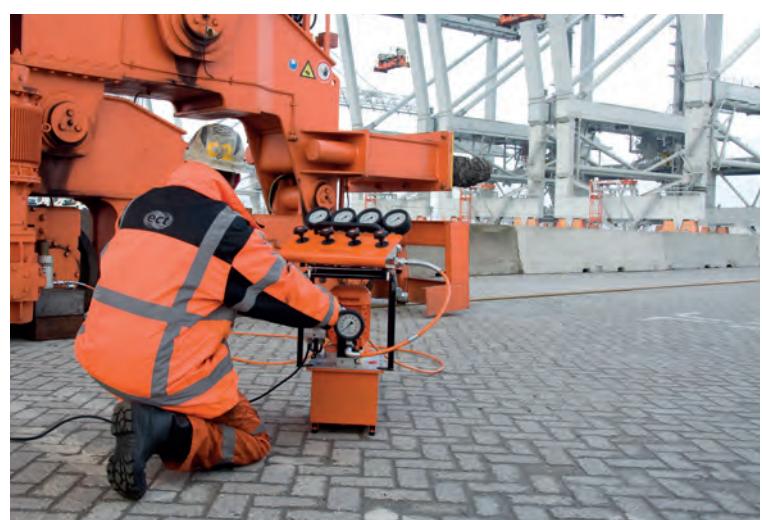


## Holmatro's Industrial Tools

The needs of our customers inspire us to develop new solutions for even more efficiency in generating and mastering precision power. These pages illustrate some examples of applications of our industrial tools. New applications are added every day.









### Pascal's law

Pressure applied at any point upon a confined liquid is transmitted undiminished in all directions (Fig. 1 and 2).

Figure 1

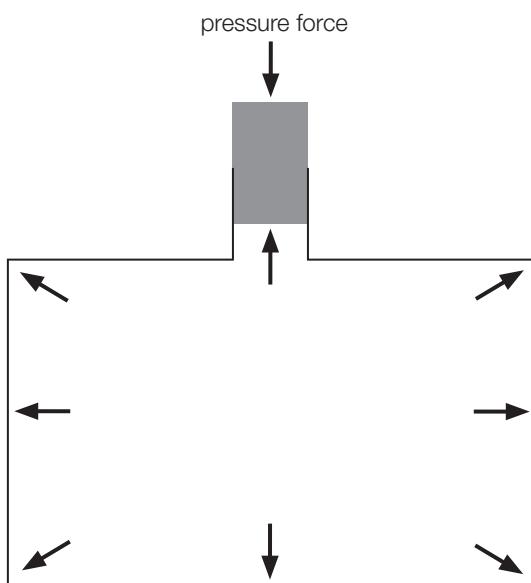
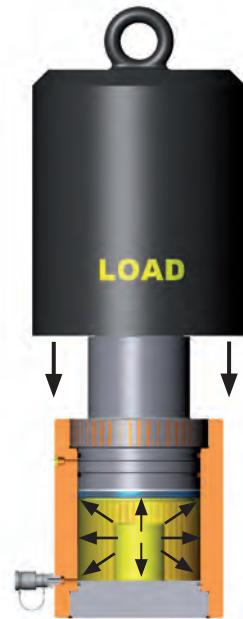


Figure 2



According to Pascal's law, the oil flow always chooses the line of least resistance in a hydraulic system. This means that when using several hydraulic cylinders, each cylinder lifts at its own speed. When the cylinders have the same capacity, they will first start moving at the point of the lightest load and last at the point of the heaviest load (Fig. 3).

A valve block must be added to the lifting system to make sure that the oil flow can be controlled such, that all cylinders operate evenly and the load can be lifted horizontally (Fig. 4).

Figure 3



Figure 4



### Recommended total cylinder capacity

In connection with various uncertainties as mentioned below, Holmatro recommends a system with sufficient extra capacity:

- The exact weight of the load
- The spreading of the load among the cylinders
- Possible moving of the load in case of calamities



#### → Symmetric load:

Recommended total cylinder capacity =  $1.5 \times \text{load}$



#### → Asymmetric load:

Recommended total cylinder capacity =  $2 \times \text{load}$

### Force of a cylinder

The force (capacity) generated by a cylinder is equal to the hydraulic pressure multiplied by the effective pressure area of the plunger.

$$\text{Force (N)} = \text{hydraulic operating pressure (N/cm}^2\text{)} \times \text{effective pressure area of the plunger (cm}^2\text{)}$$

$$F = P$$

$$P = F$$

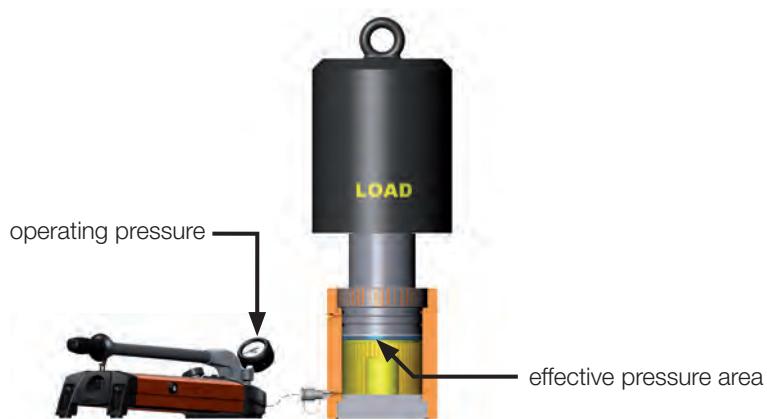
$$A = F$$

$$\times A$$

$$/ A$$

$$/ P$$

This formula can be used for determining the force, pressure or the area when two out of three variables are known.



**Minimum** effective tank volume of pump

**Minimum effective tank volume of pump = (oil volume of cylinder 1 + 2 + ...) x 1,2** (safety margin)

**Oil volume of cylinder:**

The volume in cm<sup>3</sup> required for achieving the full stroke of the cylinder. For oil volume specifications see section 'Hydraulic cylinders'.

NB. For double-acting cylinders: Reduce the volume above the plunger section with the volume under the plunger section.


**Required** operating speed

**Operating speed =  $\frac{\text{oil volume of cylinders 1 + 2 + ...}}{\text{pump output}}$**

**Operating speed:**

With hand/foot pumps: the number of pump strokes required for fully pumping out the cylinder. With motor pumps: the number of minutes required for fully pumping out the cylinder.

**Oil volume of cylinders:**

With hand/foot pumps: the volume in cm<sup>3</sup> required for achieving the full cylinder stroke. With motor pumps: the volume in litres required for achieving the full cylinder stroke. See table on product pages.

NB. When two figures are given, only take the value for below or above the plunger part.

**Pump output:**

With hand/foot pumps: the output of the pump in cm<sup>3</sup>/stroke. With motor pumps: the output of the pump in l/min. See tables in section 'Hydraulic pumps', for the output of your pump.

**Important** conversion factors

1	bar	=	1,10197	kg/cm <sup>2</sup>
1	bar	=	14,504	psi
1	bar	=	100	kPa
1	bar	=	0,1	MPa
1	bar	=	10	N/cm <sup>2</sup>
1	ton	=	9,80665	kN
1	ton	=	9806,65	N
1	ton	=	1000	kg
1	cm <sup>2</sup>	=	0,155	in <sup>2</sup>
1	cm <sup>3</sup>	=	0,06102	in <sup>3</sup>
1	cm <sup>3</sup>	=	0,001	l
1	kgf	=	9,8066	N
1	kg	=	2,2046	lb

1	kg/cm <sup>2</sup>	=	0,98066	bar
1	psi	=	0,0689	bar
1	kPa	=	0,01	bar
1	MPa	=	10	bar
1	N/cm <sup>2</sup>	=	0,1	bar
1	kN	=	0,1020	ton
1	N	=	0,0001	ton
1	kg	=	0,001	ton
1	in <sup>2</sup>	=	6,4516	cm <sup>2</sup>
1	in <sup>3</sup>	=	16,3881	cm <sup>3</sup>
1	l	=	1000	cm <sup>3</sup>
1	N	=	0,1020	kgf
1	lb	=	0,4536	kg

# Hydraulic Cylinders



**3-step plan** for composing a hydraulic cylinder system**Step 1**

Select one or more cylinders.

Considerations:

- What is the weight of the load to be lifted?
- What is the total recommended cylinder capacity?
- With how many cylinders must/can the load be lifted?
- What capacity for each cylinder is required then?
- What is the required stroke length of the cylinder?
- What is the required closed height (overall dimensions) of the cylinder?
- How must the plunger return; gravity, spring or hydraulic?
- Is lifting in one or more steps possible?

See 'Selection list cylinders', page 22, 23, 24 and 25.

**Step 2**

Select the proper pump.

Considerations:

- Select from hand, foot, pneumatically, electrically, petrol or diesel driven pumps
- Hand / foot pumps: with a double-acting cylinder (hydraulic return), mount a double-acting valve on your hand pump (only possible with PA \*8 models)
- Vari pumps: dependent on whether you use a single- or double-acting cylinder, mount a single-acting or double-acting valve on the Vari pump
- What minimum tank volume of the pump is required?
- Select a pump output corresponding with the required operating speed

See section 'Hydraulic pumps', page 139.



Put together hydraulic cylinder systems  
**quickly and easily!**

[holmatro.com/en/configurator](http://holmatro.com/en/configurator)

**3-step plan** for composing a hydraulic cylinder system

**Step 3**

Select the accessories you need.

Considerations:

- Choose the correct number of hoses that you need and the required length. Take the required (safe) distance between cylinders and operation (pump and/or valve block) into account
- When the system contains several cylinders controlled by one pump, we recommend you to install a FlowPanel between the cylinders and the pump for accurate control of the oil flow to the cylinders
- Select any necessary couplers, pressure gauges, valves and/or assembly material

**Four examples**

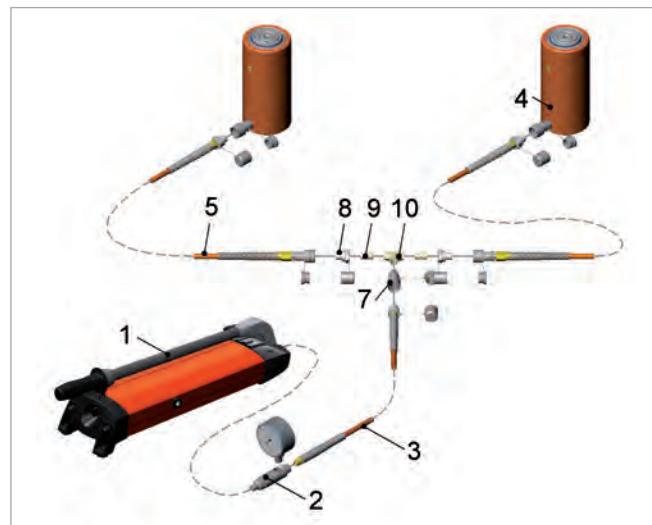
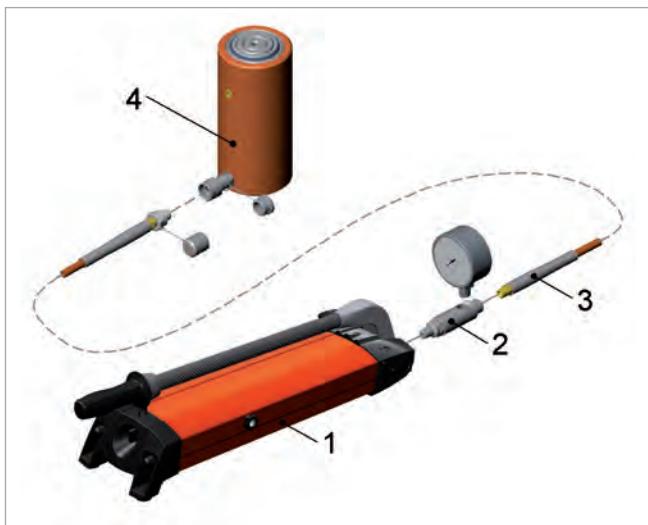
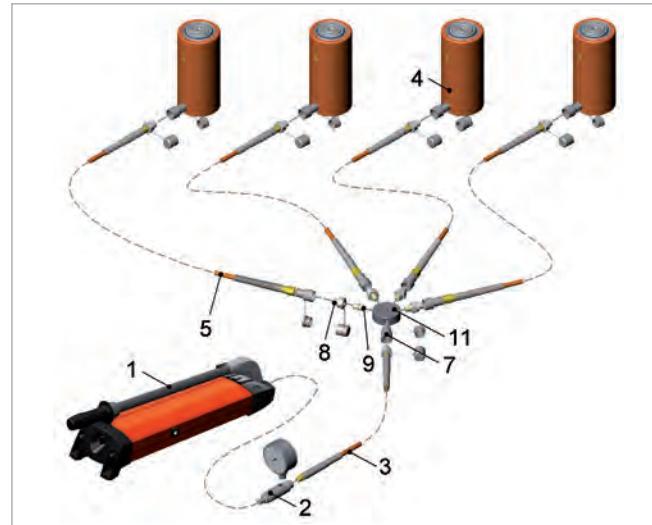
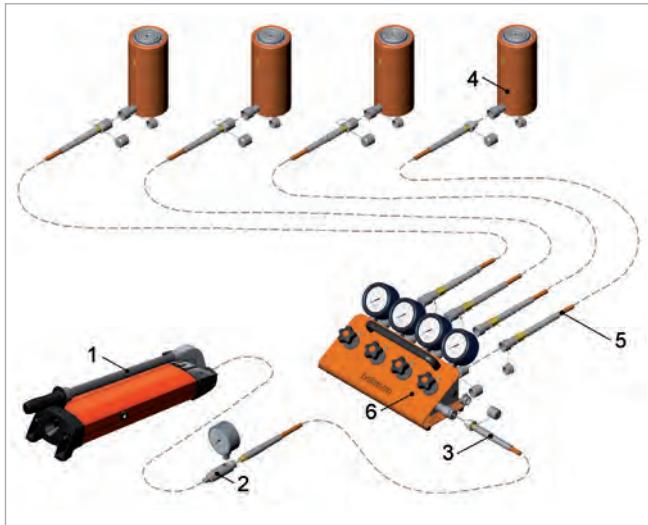
Of a hydrauliuc cylinder system.

no	description	art no	page
1	hand pump PA 18 H 2	100.142.035	143
2	pressure gauge set for PA *8 pumps	100.182.214	173
3	hydraulic hose H 2 SOU	100.572.102	167
4	single-acting cylinder		
5	hydraulic hose VL 5 SOU	100.572.305	168
6	valve block HMS 4 C	100.172.047	174
7	High Flow coupler, female, A 118	100.181.118	169
8	High Flow coupler, male, A 119	100.181.119	169
9	nipple 3/8" NPT, male	100.581.101	182
10	T-piece	100.001.010	179
11	manifold	100.181.125	181

See section 'System components', page 165.

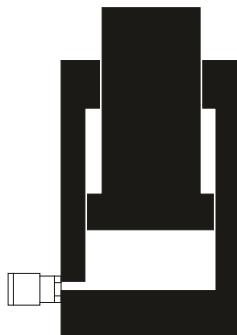
**Any questions?**

**Our sales department is happy to be of assistance!**

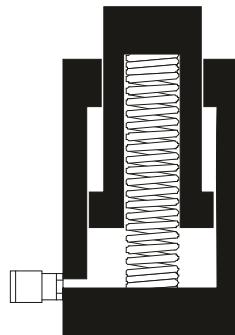


The Holmatro product range includes over 100 different cylinders in 10 different types and 4 different return types. A short explanation about the standard return types and the models will be given below.

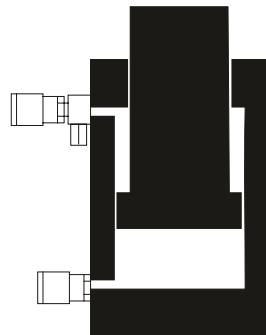
### Various return types



Gravity return



Spring return



Hydraulic return

**Gravity return** - Return of the plunger by means of the load or another external force.

**Spring return** - Return of the plunger by means of a spring integrated in the cylinder.

**Hydraulic return** - Return of the plunger by means of hydraulic pressure. Cylinders in which the plunger hydraulically extends and returns are also called 'double-acting' cylinders.

### Various cylinder types

#### Multi Purpose cylinders - spring return

With a lifting capacity of 5 up to 100 tons and a stroke length varying between 25 and 450 mm the Multi Purpose cylinder range is the most extensive on the market and suitable for the most varied applications. The cylinders are fitted with base mounting holes and collar thread. There is also internal plunger thread on all models to 50 tons.



#### Aluminium cylinders - spring return & hydraulic return

The Aluminium cylinders combine the best of two worlds; They are more than 50% lighter, but are just as robust as their steel equivalent. With a lifting capacity of 20 up to 150 tons and a stroke length varying between 50 and 300 mm the cylinder range is very suitable for lifting activities requiring frequently moving the cylinder, making a low weight essential.



#### Flat cylinders - spring return

Cylinders with a very low construction height and a lifting capacity of 5 up to 150 tons. Especially developed in case of limited insertion space.



### **Short Stroke cylinders - spring return**

Cylinders with a short stroke, a low construction height and a lifting capacity of 10 up to 100 tons. Very suitable for general lifting activities.



### **Telescopic cylinders - gravity return**

Cylinders with a very low construction height, two different capacities and stroke lengths in one cylinder. Very suitable for various adjustment activities.



### **High Tonnage cylinders - gravity return & hydraulic return**

#### **return**

Cylinders with a lifting capacity of 50 up to 500 tons and a stroke length varying between 50 and 300 mm. Very suitable for heavy lifting activities.



### **Locknut cylinders - gravity return & hydraulic return**

Cylinders with mechanical load locking, a lifting capacity of 10 up to 500 tons and a stroke length of 50, 150 or 300 mm. Because of the smart return-plunger the hydraulic return locknut cylinders are hardly higher than the gravity return locknut cylinders. All suitable for sustained load because of mechanical load locking.



### **Construction cylinders - hydraulic return**

Cylinders especially for use in combination with extension tubes and accessories, with a lifting capacity of 10 up to 25 tons and a stroke length varying between 150 and 250 mm. These cylinders can be extended using tubes. Various accessories are available. This cylinder type is also suitable for assembly into a construction.



### **Hollow Plunger cylinders - gravity return, spring return & hydraulic return**

Cylinders with a hollow plunger for both pushing and pulling, with a capacity of 5 up to 110 tons and a stroke length varying between 25 and 150 mm. Especially developed for pulling using pulling rods.



### **Pulling cylinders - spring return & hydraulic return**

Cylinders with a pulling capacity of 11 up to 100 tons and a stroke length of 150 mm. Especially developed for, among other things, pulling heavy objects towards each other.




**Selection List Cylinders**

capacity tons	closed height mm	stroke mm	return	type	material	model	art no	page
5	31	5	spring	flat	steel	<b>HFC 5 S 0.5</b>	100.112.290	49
	44	15	spring	flat	steel	<b>HFC 5 S 1.5</b>	100.112.291	49
	105	25	spring	multi purpose	steel	<b>HGC 5 S 2.5</b>	100.112.211	29
	130	50	spring	multi purpose	steel	<b>HGC 5 S 5</b>	100.112.212	29
	155	75	spring	multi purpose	steel	<b>HGC 5 S 7.5</b>	100.112.213	29
	180	100	spring	multi purpose	steel	<b>HGC 5 S 10</b>	100.112.214	29
	206	125	spring	multi purpose	steel	<b>HGC 5 S 12.5</b>	100.112.215	29
	268	175	spring	multi purpose	steel	<b>HGC 5 S 17.5</b>	100.112.216	29
	318	225	spring	multi purpose	steel	<b>HGC 5 S 22.5</b>	100.112.217	30
10	46	15	spring	flat	steel	<b>HFC 10 S 1.5</b>	100.112.292	49
	49	41 / 20	gravity	telescopic	steel	<b>HFJ 10/30 G 4</b>	100.111.005	55
	97	25	spring	multi purpose	steel	<b>HGC 10 S 2.5</b>	100.112.218	30
	100	50	spring	short stroke	steel	<b>HSC 10 S 5</b>	100.112.300	53
	122	50	spring	multi purpose	steel	<b>HGC 10 S 5</b>	100.112.219	30
	122	50	spring	multi purpose	steel	<b>HGC 10 S 5</b>	100.112.219	30
	172	100	spring	multi purpose	steel	<b>HGC 10 S 10</b>	100.112.220	30
	240	150	spring	multi purpose	steel	<b>HGC 10 S 15</b>	100.112.221	31
	240	150	spring	multi purpose	steel	<b>HGC 10 S 15</b>	100.112.221	31
	270	150	gravity	lock nut	steel	<b>HJ 10 G 15 SN</b>	100.082.003	65
	290	200	spring	multi purpose	steel	<b>HGC 10 S 20</b>	100.112.222	30
	338	150	hydraulic	construction	steel	<b>HCJ 10 H 15</b>	100.122.066	71
	340	250	spring	multi purpose	steel	<b>HGC 10 S 25</b>	100.112.223	31
	390	300	spring	multi purpose	steel	<b>HGC 10 S 30</b>	100.112.224	31
	440	350	spring	multi purpose	steel	<b>HGC 10 S 35</b>	100.112.225	31
	490	400	spring	multi purpose	steel	<b>HGC 10 S 40</b>	100.112.226	31
15	123	25	spring	multi purpose	steel	<b>HGC 15 S 2.5</b>	100.112.227	31
	148	50	spring	multi purpose	steel	<b>HGC 15 S 5</b>	100.112.228	31
	198	100	spring	multi purpose	steel	<b>HGC 15 S 10</b>	100.112.229	32
	265	150	spring	multi purpose	steel	<b>HGC 15 S 15</b>	100.112.230	32
	315	200	spring	multi purpose	steel	<b>HGC 15 S 20</b>	100.112.231	32
	365	250	spring	multi purpose	steel	<b>HGC 15 S 25</b>	100.112.232	32
	415	300	spring	multi purpose	steel	<b>HGC 15 S 30</b>	100.112.233	32
	465	350	spring	multi purpose	steel	<b>HGC 15 S 35</b>	100.112.234	32
	515	400	spring	multi purpose	steel	<b>HGC 15 S 40</b>	100.112.235	33
20	55	15	spring	flat	steel	<b>HFC 20 S 1.5</b>	100.112.293	49
	103	50	spring	short stroke	steel	<b>HSC 20 S 5</b>	100.112.301	53
	140	111 / 55	gravity	telescopic	steel	<b>HJ 20/50 G 11</b>	100.112.103	55
	164	50	spring	standard	aluminium	<b>HAC 20 S 5</b>	100.112.267	39
	214	100	spring	standard	aluminium	<b>HAC 20 S 10</b>	100.112.265	39
	264	150	spring	standard	aluminium	<b>HAC 20 S 15</b>	100.112.261	39
25	138	25	spring	multi purpose	steel	<b>HGC 25 S 2.5</b>	100.112.236	33
	165	50	spring	multi purpose	steel	<b>HGC 25 S 5</b>	100.112.237	33
	215	100	spring	multi purpose	steel	<b>HGC 25 S 10</b>	100.112.238	33
	265	150	spring	multi purpose	steel	<b>HGC 25 S 15</b>	100.112.239	33
	283	150	gravity	lock nut	steel	<b>HJ 25 G 15 SN</b>	100.082.002	65
	315	200	spring	multi purpose	steel	<b>HGC 25 S 20</b>	100.112.240	33
	350	150	hydraulic	construction	steel	<b>HCJ 25 H 15</b>	100.122.067	71
	374	250	spring	multi purpose	steel	<b>HGC 25 S 25</b>	100.112.241	34
	424	300	spring	multi purpose	steel	<b>HGC 25 S 30</b>	100.112.242	34
	450	250	hydraulic	construction	steel	<b>HCJ 25 H 25</b>	100.122.068	71


**Selection List Cylinders**

capacity tons	closed height mm	stroke mm	return	type	material	model	art no	page
25	474	350	spring	multi purpose	steel	<b>HGC 25 S 35</b>	100.112.243	34
	574	450	spring	multi purpose	steel	<b>HGC 25 S 45</b>	100.112.244	34
30	50	5	spring	flat	steel	<b>HFC 30 S 0.5</b>	100.112.294	49
	60	15	spring	flat	steel	<b>HFC 30 S 1.5</b>	100.112.295	49
	106	50	spring	short stroke	steel	<b>HSC 30 S 5</b>	100.112.302	53
	182	50	spring	standard	aluminium	<b>HAC 30 S 5</b>	100.112.269	39
	197	50	hydraulic	standard	aluminium	<b>HAC 30 H 5</b>	100.122.086	43
	232	100	spring	standard	aluminium	<b>HAC 30 S 10</b>	100.112.268	39
	247	100	hydraulic	standard	aluminium	<b>HAC 30 H 10</b>	100.122.085	43
	282	150	spring	standard	aluminium	<b>HAC 30 S 15</b>	100.112.262	39
	297	150	hydraulic	standard	aluminium	<b>HAC 30 H 15</b>	100.122.080	43
	347	200	hydraulic	standard	aluminium	<b>HAC 30 H 20</b>	100.122.079	43
35	397	250	hydraulic	standard	aluminium	<b>HAC 30 H 25</b>	100.122.103	43
	447	300	hydraulic	standard	aluminium	<b>HAC 30 H 30</b>	100.122.060	43
	184	50	spring	multi purpose	steel	<b>HGC 35 S 5</b>	100.112.245	34
	234	100	spring	multi purpose	steel	<b>HGC 35 S 10</b>	100.112.246	34
	284	150	spring	multi purpose	steel	<b>HGC 35 S 15</b>	100.112.247	35
50	334	200	spring	multi purpose	steel	<b>HGC 35 S 20</b>	100.112.248	35
	71	15	spring	flat	steel	<b>HFC 50 S 1.5</b>	100.112.296	50
	117	50	spring	short stroke	steel	<b>HSC 50 S 5</b>	100.112.303	53
	142	60	gravity	high tonnage	steel	<b>HJ 50 G 6</b>	100.112.073	57
	176	50	spring	multi purpose	steel	<b>HGC 50 S 5</b>	100.112.249	35
	183	50	spring	standard	aluminium	<b>HAC 50 S 5</b>	100.112.271	40
	201	50	hydraulic	standard	aluminium	<b>HAC 50 H 5</b>	100.122.095	44
	208	50	hydraulic	lock nut	steel	<b>HLC 50 H 5</b>	100.122.123	67
	226	100	spring	multi purpose	steel	<b>HGC 50 S 10</b>	100.112.250	35
	233	100	spring	standard	aluminium	<b>HAC 50 S 10</b>	100.112.270	40
	251	100	hydraulic	standard	aluminium	<b>HAC 50 H 10</b>	100.122.108	44
	276	150	spring	multi purpose	steel	<b>HGC 50 S 15</b>	100.112.251	35
	282	150	gravity	high tonnage	steel	<b>HJ 50 G 15</b>	100.112.035	57
	282	150	hydraulic	high tonnage	steel	<b>HJ 50 H 15</b>	100.122.002	61
	283	150	spring	standard	aluminium	<b>HAC 50 S 15</b>	100.112.263	40
	301	150	hydraulic	standard	aluminium	<b>HAC 50 H 15</b>	100.122.097	44
	307	150	gravity	lock nut	steel	<b>HJ 50 G 15 SN</b>	100.082.001	65
75	326	200	spring	multi purpose	steel	<b>HGC 50 S 20</b>	100.112.252	35
	327	150	hydraulic	lock nut	steel	<b>HLC 50 H 15</b>	100.122.124	67
	351	200	hydraulic	standard	aluminium	<b>HAC 50 H 20</b>	100.122.098	44
	376	250	spring	multi purpose	steel	<b>HGC 50 S 25</b>	100.112.253	36
	401	250	hydraulic	standard	aluminium	<b>HAC 50 H 25</b>	100.122.099	44
	451	300	hydraulic	standard	aluminium	<b>HAC 50 H 30</b>	100.122.100	44
	463	300	gravity	high tonnage	steel	<b>HJ 50 G 30</b>	100.112.036	57
	463	300	hydraulic	high tonnage	steel	<b>HJ 50 H 30</b>	100.122.022	61
	476	350	spring	multi purpose	steel	<b>HGC 50 S 35</b>	100.112.254	36
	498	300	hydraulic	lock nut	steel	<b>HLC 50 H 30</b>	100.122.125	67
	80	15	spring	flat	steel	<b>HFC 75 S 1.5</b>	100.112.297	50
	285	150	spring	multi purpose	steel	<b>HGC 75 S 15</b>	100.112.255	36
347	347	150	gravity	high tonnage	steel	<b>HJ 75 G 15</b>	100.112.037	57
	347	150	hydraulic	high tonnage	steel	<b>HJ 75 H 15</b>	100.122.003	61
	485	350	spring	multi purpose	steel	<b>HGC 75 S 35</b>	100.112.256	36
	497	300	gravity	high tonnage	steel	<b>HJ 75 G 30</b>	100.112.038	57


**Selection List Cylinders**

capacity tons	closed height mm	stroke mm	return	type	material	model	art no	page
75	497	300	hydraulic	high tonnage	steel	<b>HJ 75 H 30</b>	100.122.004	61
100	90	15	spring	flat	steel	<b>HFC 100 S 1.5</b>	100.112.298	50
	141	50	spring	short stroke	steel	<b>HSC 100 S 5</b>	100.112.304	53
	158	60	gravity	high tonnage	steel	<b>HJ 100 G 6</b>	100.112.093	57
	170	50	hydraulic	high tonnage	steel	<b>HJ 100 H 5</b>	100.122.009	61
	218	50	spring	multi purpose	steel	<b>HGC 100 S 5</b>	100.112.257	36
	225	50	spring	standard	aluminium	<b>HAC 100 S 5</b>	100.112.273	40
	246	50	hydraulic	standard	aluminium	<b>HAC 100 H 5</b>	100.122.094	45
	248	50	hydraulic	lock nut	steel	<b>HLC 100 H 5</b>	100.122.126	67
	268	100	spring	multi purpose	steel	<b>HGC 100 S 10</b>	100.112.258	36
	275	100	spring	standard	aluminium	<b>HAC 100 S 10</b>	100.112.272	40
	296	100	hydraulic	standard	aluminium	<b>HAC 100 H 10</b>	100.122.109	45
	309	150	gravity	high tonnage	steel	<b>HJ 100 G 15</b>	100.112.039	58
	309	150	hydraulic	high tonnage	steel	<b>HJ 100 H 15</b>	100.122.052	61
	318	150	spring	multi purpose	steel	<b>HGC 100 S 15</b>	100.112.259	37
	323	150	gravity	lock nut	steel	<b>HJ 100 G 15 SN</b>	100.082.000	65
	325	150	spring	standard	aluminium	<b>HAC 100 S 15</b>	100.112.264	40
	346	150	hydraulic	standard	aluminium	<b>HAC 100 H 15</b>	100.122.107	45
	370	150	hydraulic	lock nut	steel	<b>HLC 100 H 15</b>	100.122.127	67
	396	200	hydraulic	standard	aluminium	<b>HAC 100 H 20</b>	100.122.088	45
	418	250	spring	multi purpose	steel	<b>HGC 100 S 25</b>	100.112.260	37
	446	250	hydraulic	standard	aluminium	<b>HAC 100 H 25</b>	100.122.089	45
	496	300	hydraulic	standard	aluminium	<b>HAC 100 H 30</b>	100.122.090	45
	497	300	gravity	high tonnage	steel	<b>HJ 100 G 30</b>	100.112.040	58
	497	300	hydraulic	high tonnage	steel	<b>HJ 100 H 30</b>	100.122.054	62
	546	300	hydraulic	lock nut	steel	<b>HLC 100 H 30</b>	100.122.128	67
150	100	15	spring	flat	steel	<b>HFC 150 S 1.5</b>	100.112.299	50
	248	50	hydraulic	standard	aluminium	<b>HAC 150 H 5</b>	100.122.075	46
	275	50	hydraulic	lock nut	steel	<b>HLC 150 H 5</b>	100.122.129	68
	298	100	hydraulic	standard	aluminium	<b>HAC 150 H 10</b>	100.122.074	46
	317	150	gravity	high tonnage	steel	<b>HJ 150 G 15</b>	100.112.046	58
	317	150	hydraulic	high tonnage	steel	<b>HJ 150 H 15</b>	100.122.061	62
	348	150	hydraulic	standard	aluminium	<b>HAC 150 H 15</b>	100.122.073	46
	363	150	gravity	lock nut	steel	<b>HJ 150 G 15 SN</b>	100.112.136	65
	398	200	hydraulic	standard	aluminium	<b>HAC 150 H 20</b>	100.122.070	46
	400	150	hydraulic	lock nut	steel	<b>HLC 150 H 15</b>	100.122.130	68
	448	250	hydraulic	standard	aluminium	<b>HAC 150 H 25</b>	100.122.069	46
	498	300	hydraulic	standard	aluminium	<b>HAC 150 H 30</b>	100.122.064	46
	502	300	gravity	high tonnage	steel	<b>HJ 150 G 30</b>	100.112.047	58
	502	300	hydraulic	high tonnage	steel	<b>HJ 150 H 30</b>	100.122.062	62
	580	300	hydraulic	lock nut	steel	<b>HLC 150 H 30</b>	100.122.131	68
200	327	150	gravity	high tonnage	steel	<b>HJ 200 G 15</b>	100.112.048	58
	327	150	hydraulic	high tonnage	steel	<b>HJ 200 H 15</b>	100.122.071	62
	507	300	gravity	high tonnage	steel	<b>HJ 200 G 30</b>	100.112.049	58
	507	300	hydraulic	high tonnage	steel	<b>HJ 200 H 30</b>	100.122.072	62
250	317	50	hydraulic	lock nut	steel	<b>HLC 250 H 5</b>	100.122.132	68
	385	150	gravity	lock nut	steel	<b>HJ 250 G 15 SN</b>	100.112.083	65
	444	150	hydraulic	lock nut	steel	<b>HLC 250 H 15</b>	100.122.133	68
	625	300	hydraulic	lock nut	steel	<b>HLC 250 H 30</b>	100.122.134	68
300	382	150	gravity	high tonnage	steel	<b>HJ 300 G 15</b>	100.112.050	59

**Selection List Cylinders**



capacity tons	closed height mm	stroke mm	return	type	material	model	art no	page
300	382	150	hydraulic	high tonnage	steel	<b>HJ 300 H 15</b>	100.122.084	62
	547	300	gravity	high tonnage	steel	<b>HJ 300 G 30</b>	100.112.099	59
	547	300	hydraulic	high tonnage	steel	<b>HJ 300 H 30</b>	100.122.083	63
400	402	150	gravity	high tonnage	steel	<b>HJ 400 G 15</b>	100.112.100	59
	402	150	hydraulic	high tonnage	steel	<b>HJ 400 H 15</b>	100.122.091	63
	572	300	gravity	high tonnage	steel	<b>HJ 400 G 30</b>	100.112.056	59
	572	300	hydraulic	high tonnage	steel	<b>HJ 400 H 30</b>	100.122.092	63
500	442	150	gravity	high tonnage	steel	<b>HJ 500 G 15</b>	100.112.139	59
	442	150	hydraulic	high tonnage	steel	<b>HJ 500 H 15</b>	100.122.043	63
	587	300	gravity	high tonnage	steel	<b>HJ 500 G 30</b>	100.112.138	59
	587	300	hydraulic	high tonnage	steel	<b>HJ 500 H 30</b>	100.122.038	63

**Cylinder System Configurator**

holmatro.com/en/configurator

**Selection List Hollow Plunger Cylinders**


capacity tons	Ø hole in plunger mm	closed height mm	stroke mm	return	type	material	model	art no	page
5	17	87	25	spring	hollow plunger	steel	<b>HHJ 5 S 2.5</b>	100.111.002	75
12	21	156	50	spring	hollow plunger	steel	<b>HHJ 12 S 5</b>	100.111.021	75
	21	298	150	spring	hollow plunger	steel	<b>HHJ 12 S 15</b>	100.111.029	75
17	27	192	50	spring	hollow plunger	steel	<b>HHJ 17 S 5</b>	100.112.023	75
20	27	182	50	spring	hollow plunger	steel	<b>HHJ 20 S 5</b>	100.112.033	75
	27	389	150	spring	hollow plunger	steel	<b>HHJ 20 S 15</b>	100.112.030	75
30	33	120	50	gravity	hollow plunger	steel	<b>HHJ 30 G 5</b>	100.111.053	73
	33	226	75	spring	hollow plunger	steel	<b>HHJ 30 S 7.5</b>	100.112.055	77
	33	285	150	hydraulic	hollow plunger	steel	<b>HHJ 30 H 15</b>	100.122.045	79
	33	362	150	spring	hollow plunger	steel	<b>HHJ 30 S 15</b>	100.112.034	76
45	39	388	150	spring	hollow plunger	steel	<b>HHJ 45 S 15</b>	100.112.061	76
60	45	272	75	spring	hollow plunger	steel	<b>HHJ 60 S 7.5</b>	100.112.081	76
	45	334	200	hydraulic	hollow plunger	steel	<b>HHJ 60 H 20</b>	100.122.031	79
100	54	265	100	hydraulic	hollow plunger	steel	<b>HHJ 100 H 10</b>	100.122.051	79
	54	395	200	hydraulic	hollow plunger	steel	<b>HHJ 100 H 20</b>	100.122.053	79
110	80	315	75	spring	hollow plunger	steel	<b>HHJ 110 S 7.5</b>	100.112.101	76






**Features & benefits**

- A range of 50 models with different tonnages and stroke lengths
- Collar thread and base mounting holes
- Internal plunger thread on all models to 50 tons
- Duplex Power Coating makes the plunger corrosion-resistant
- Duo Power Ring; seal and bearing for long life span
- Thread Protector protects the thread on the cylinder housing
- XL Saddle+ protects the plunger and limits eccentric loads

**Standard supplied with**

- High Flow female coupler A 118
- Flat saddle

**Available on request**

- Cylinders manufactured in conformity with customer specifications

Accessories	page	91
Tilting Saddles	page	97
Hydraulic Pumps	page	139
Hydraulic Hoses	page	166
Pressure Gauges	page	171



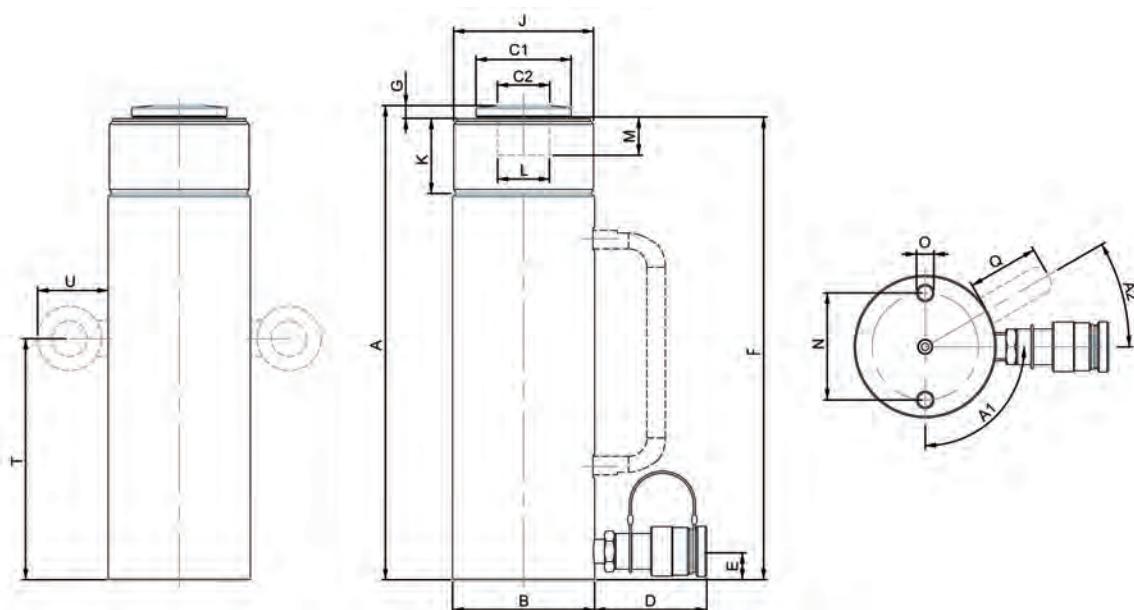
Internal plunger thread on all models to 50 tons

**Multi Purpose Cylinders - Spring Return**


model	HGC 5 S 2.5	HGC 5 S 5	HGC 5 S 7.5	HGC 5 S 10	HGC 5 S 12.5	HGC 5 S 17.5
art no	100.112.211	100.112.212	100.112.213	100.112.214	100.112.215	100.112.216
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	5	5	5	5	5	5
<b>stroke mm</b>	25	50	75	100	125	175
<b>closed height mm</b>	105	130	155	180	206	268
capacity kN/t	51 / 5.2	51 / 5.2	51 / 5.2	51 / 5.2	51 / 5.2	51 / 5.2
effective pressure area cm <sup>2</sup>	7.1	7.1	7.1	7.1	7.1	7.1
required oil content (effective) cc	18	35	53	71	88	124
connection	A 118					
cylinder type	multi purpose					
acting type	single	single	single	single	single	single
return type	spring	spring	spring	spring	spring	spring
material	steel	steel	steel	steel	steel	steel
weight, ready for use kg	1.1	1.3	1.5	1.7	1.8	2.3

**Multi Purpose Cylinders - Spring Return (dimensions)**


model	HGC 5 S 2.5	HGC 5 S 5	HGC 5 S 7.5	HGC 5 S 10	HGC 5 S 12.5	HGC 5 S 17.5
dimension A mm	105	130	155	180	206	268
dimension B mm	40	40	40	40	40	40
dimension C1 mm	27	27	27	27	27	27
dimension C2 mm	15	15	15	15	15	15
dimension D mm	80	80	80	80	80	80
dimension E mm	20	20	20	20	20	20
dimension F mm	102	127	152	177	203	265
dimension G mm	4	4	4	4	4	4
dimension J threadsize	1½"-16-UN	1½"-16-UN	1½"-16-UN	1½"-16-UN	1½"-16-UN	1½"-16-UN
dimension K mm	30	30	30	30	30	30
dimension L threadsize	¾"-16-UNF	¾"-16-UNF	¾"-16-UNF	¾"-16-UNF	¾"-16-UNF	¾"-16-UNF
dimension M mm	20	20	20	20	20	20
dimension N mm	25	25	25	25	25	25
dimension O threadsize	M6x9 (2x)	M6x9 (2x)	M6x9 (2x)	M6x9 (2x)	M6x9 (2x)	M6x9 (2x)
angle A1 °	90	90	90	90	90	90

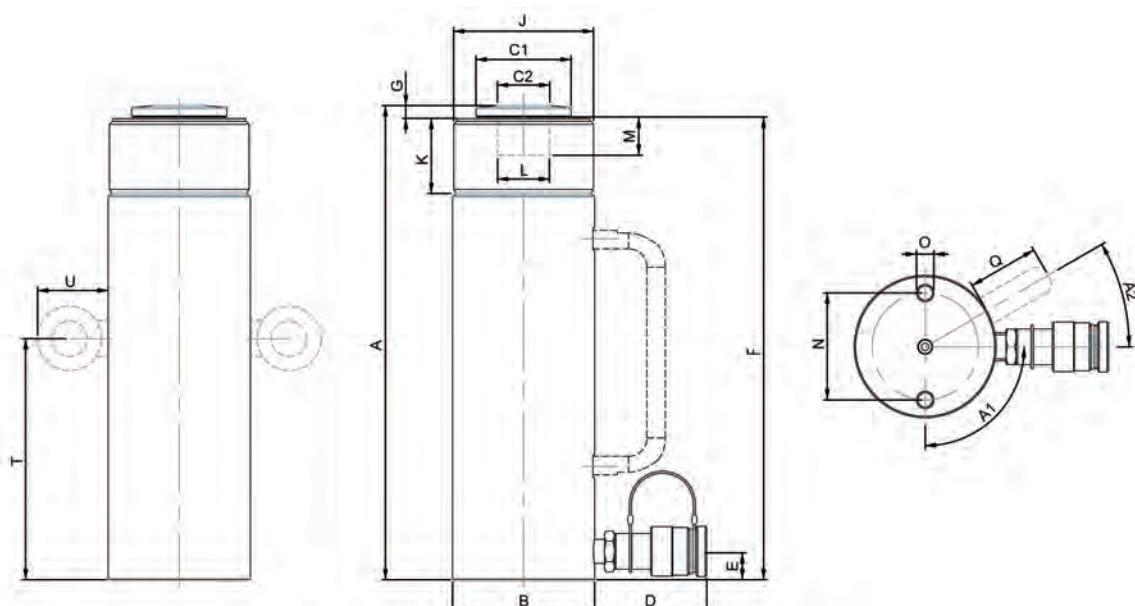


**Multi Purpose Cylinders - Spring Return**


model	HGC 5 S 22.5	HGC 10 S 2.5	HGC 10 S 5	HGC 10 S 10	HGC 10 S 15	HGC 10 S 20
art no	100.112.217	100.112.218	100.112.219	100.112.220	100.112.221	100.112.222
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	5	10	10	10	10	10
<b>stroke mm</b>	225	25	50	100	150	200
<b>closed height mm</b>	318	97	122	172	240	290
capacity kN/t	51 / 5.2	100 / 10.2	100 / 10.2	100 / 10.2	100 / 10.2	100 / 10.2
effective pressure area cm <sup>2</sup>	7.1	13.9	13.9	13.9	13.9	13.9
required oil content (effective) cc	159	35	69	139	208	277
connection	A 118					
cylinder type	multi purpose					
acting type	single	single	single	single	single	single
return type	spring	spring	spring	spring	spring	spring
material	steel	steel	steel	steel	steel	steel
weight, ready for use kg	2.6	2.1	2.5	3.4	4.6	5.5

**Multi Purpose Cylinders - Spring Return (dimensions)**


model	HGC 5 S 22.5	HGC 10 S 2.5	HGC 10 S 5	HGC 10 S 10	HGC 10 S 15	HGC 10 S 20
dimension A mm	318	97	122	172	240	290
dimension B mm	40	60	60	60	60	60
dimension C1 mm	27	38	38	38	38	38
dimension C2 mm	15	21	21	21	21	21
dimension D mm	80	80	80	80	80	80
dimension E mm	20	20	20	20	20	20
dimension F mm	315	93	118	168	236	286
dimension G mm	4	5	5	5	5	5
dimension J threadsize	1½"-16-UN	2¼"-14-UNS	2¼"-14-UNS	2¼"-14-UNS	2¼"-14-UNS	2¼"-14-UNS
dimension K mm	30	31	31	31	31	31
dimension L threadsize	¾"-16-UNF	1"-8-UNC	1"-8-UNC	1"-8-UNC	1"-8-UNC	1"-8-UNC
dimension M mm	20	20	20	20	20	20
dimension N mm	25	40	40	40	40	40
dimension O threadsize	M6x9 (2x)	M8x12 (2x)	M10x15 (2x)	M8x12 (2x)	M8x12 (2x)	M8x12 (2x)
angle A1 °	90	90	90	90	90	90

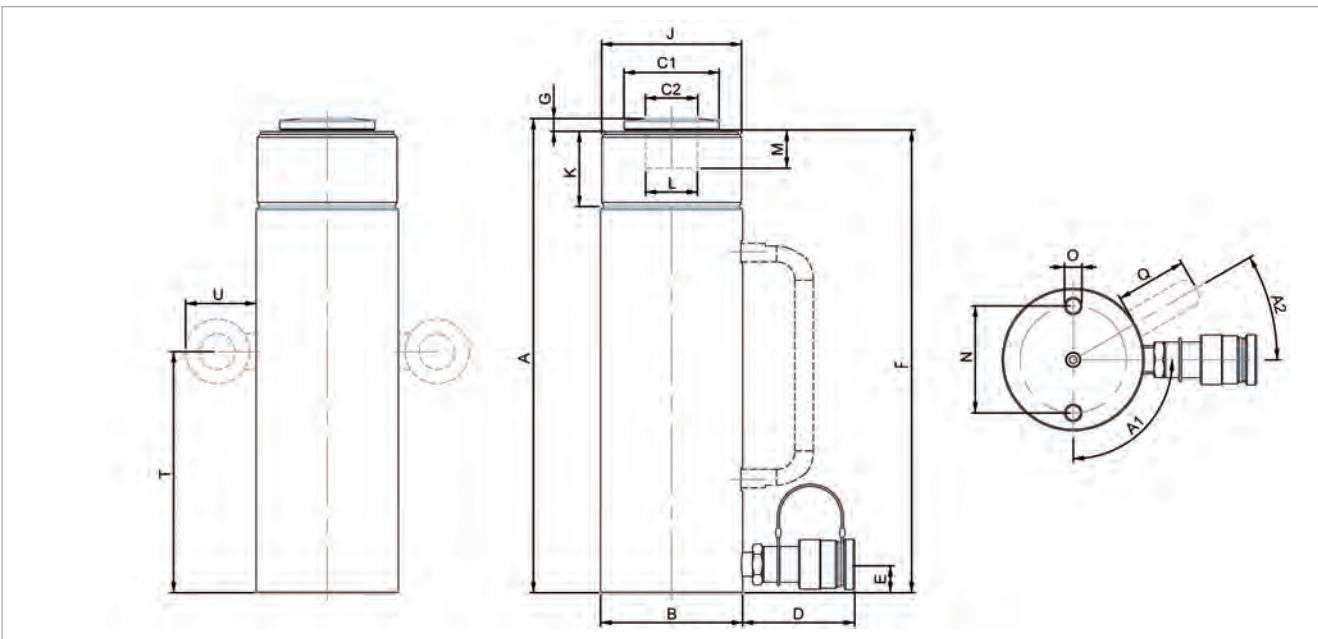



**Multi Purpose Cylinders - Spring Return**

model	HGC 10 S 25	HGC 10 S 30	HGC 10 S 35	HGC 10 S 40	HGC 15 S 2.5	HGC 15 S 5
art no	100.112.223	100.112.224	100.112.225	100.112.226	100.112.227	100.112.228
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	10	10	10	10	15	15
<b>stroke mm</b>	250	300	350	400	25	50
<b>closed height mm</b>	340	390	440	490	123	148
capacity kN/t	100 / 10.2	100 / 10.2	100 / 10.2	100 / 10.2	171 / 17.4	171 / 17.4
effective pressure area cm <sup>2</sup>	13.9	13.9	13.9	13.9	23.8	23.8
required oil content (effective) cc	346	416	485	554	59	119
connection	A 118					
cylinder type	multi purpose					
acting type	single	single	single	single	single	single
return type	spring	spring	spring	spring	spring	spring
material	steel	steel	steel	steel	steel	steel
weight, ready for use kg	6.4	7.3	8.1	9.0	3.4	3.9


**Multi Purpose Cylinders - Spring Return (dimensions)**

model	HGC 10 S 25	HGC 10 S 30	HGC 10 S 35	HGC 10 S 40	HGC 15 S 2.5	HGC 15 S 5
dimension A mm	340	390	440	490	123	148
dimension B mm	60	60	60	60	70	70
dimension C1 mm	38	38	38	38	47	47
dimension C2 mm	21	21	21	21	23	23
dimension D mm	80	80	80	80	80	80
dimension E mm	20	20	20	20	20	20
dimension F mm	336	386	436	486	117	142
dimension G mm	5	5	5	5	7	7
dimension J threadsize	2 1/4"-14-UNS	2 1/4"-14-UNS	2 1/4"-14-UNS	2 1/4"-14-UNS	2 3/4"-16-UN	2 3/4"-16-UN
dimension K mm	31	31	31	31	31	31
dimension L threadsize	1"-8-UNC	1"-8-UNC	1"-8-UNC	1"-8-UNC	1"-8-UNC	1"-8-UNC
dimension M mm	20	20	20	20	27	27
dimension N mm	40	40	40	40	48	48
dimension O threadsize	M8x12 (2x)	M8x12 (2x)	M8x12 (2x)	M8x12 (2x)	M10x15 (2x)	M10x15 (2x)
angle A1 °	90	90	90	90	90	90

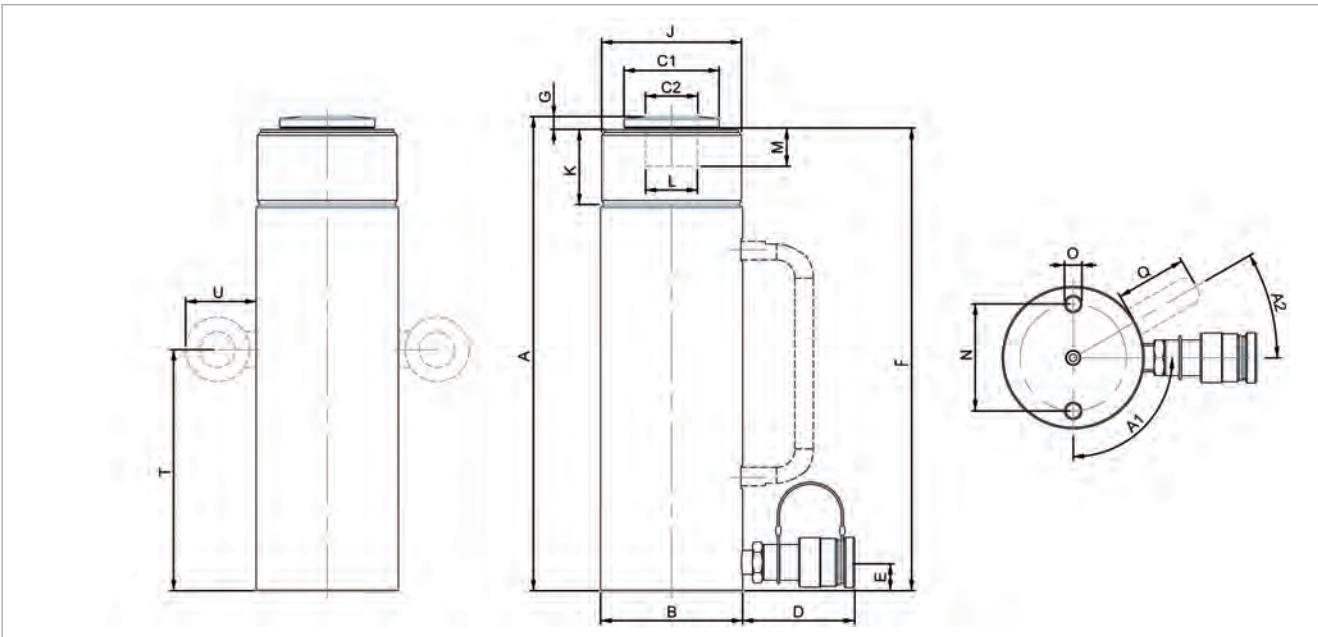



**Multi Purpose Cylinders - Spring Return**

model	HGC 15 S 10	HGC 15 S 15	HGC 15 S 20	HGC 15 S 25	HGC 15 S 30	HGC 15 S 35
art no	100.112.229	100.112.230	100.112.231	100.112.232	100.112.233	100.112.234
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	15	15	15	15	15	15
<b>stroke mm</b>	100	150	200	250	300	350
<b>closed height mm</b>	198	265	315	365	415	465
capacity kN/t	171 / 17.4	171 / 17.4	171 / 17.4	171 / 17.4	171 / 17.4	171 / 17.4
effective pressure area cm <sup>2</sup>	23.8	23.8	23.8	23.8	23.8	23.8
required oil content (effective) cc	238	356	475	594	713	832
connection	A 118					
cylinder type	multi purpose					
acting type	single	single	single	single	single	single
return type	spring	spring	spring	spring	spring	spring
material	steel	steel	steel	steel	steel	steel
weight, ready for use kg	4.9	6.4	7.4	8.4	9.4	10.5


**Multi Purpose Cylinders - Spring Return (dimensions)**

model	HGC 15 S 10	HGC 15 S 15	HGC 15 S 20	HGC 15 S 25	HGC 15 S 30	HGC 15 S 35
dimension A mm	198	265	315	365	415	465
dimension B mm	70	70	70	70	70	70
dimension C1 mm	47	47	47	47	47	47
dimension C2 mm	23	23	23	23	23	23
dimension D mm	80	80	80	80	80	80
dimension E mm	20	20	20	20	20	20
dimension F mm	192	259	309	359	409	459
dimension G mm	7	7	7	7	7	7
dimension J threadsize	2 <sup>3</sup> / <sub>4</sub> "-16-UN					
dimension K mm	31	31	31	31	31	31
dimension L threadsize	1"-8-UNC	1"-8-UNC	1"-8-UNC	1"-8-UNC	1"-8-UNC	1"-8-UNC
dimension M mm	27	27	27	27	27	27
dimension N mm	48	48	48	48	48	48
dimension O threadsize	M10x15 (2x)					
angle A1 °	90	90	90	90	90	90

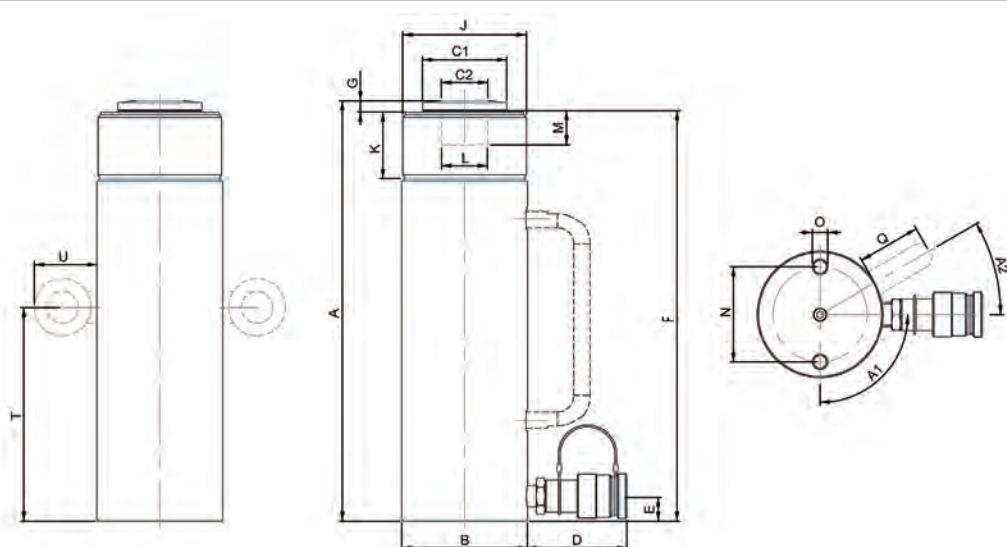



**Multi Purpose Cylinders - Spring Return**

model	HGC 15 S 40	HGC 25 S 2.5	HGC 25 S 5	HGC 25 S 10	HGC 25 S 15	HGC 25 S 20
art no	100.112.235	100.112.236	100.112.237	100.112.238	100.112.239	100.112.240
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	15	25	25	25	25	25
<b>stroke mm</b>	400	25	50	100	150	200
<b>closed height mm</b>	515	138	165	215	265	315
capacity kN/t	171 / 17.4	239 / 24.4	239 / 24.4	239 / 24.4	239 / 24.4	239 / 24.4
effective pressure area cm <sup>2</sup>	23.8	33.2	33.2	33.2	33.2	33.2
required oil content (effective) cc	950	83	166	332	498	664
connection	A 118					
cylinder type	multi purpose					
acting type	single	single	single	single	single	single
return type	spring	spring	spring	spring	spring	spring
material	steel	steel	steel	steel	steel	steel
weight, ready for use kg	11.5	5.5	6.4	8.0	9.7	11.3


**Multi Purpose Cylinders - Spring Return (dimensions)**

model	HGC 15 S 40	HGC 25 S 2.5	HGC 25 S 5	HGC 25 S 10	HGC 25 S 15	HGC 25 S 20
dimension A mm	515	138	165	215	265	315
dimension B mm	70	85	85	85	85	85
dimension C1 mm	47	57	57	57	57	57
dimension C2 mm	23	32	32	32	32	32
dimension D mm	80	80	80	80	80	80
dimension E mm	20	20	20	20	20	20
dimension F mm	509	132	159	209	259	309
dimension G mm	7	7	7	7	7	7
dimension J threadsize	2 3/4"-16-UN	3 5/16"-12-UN				
dimension K mm	31	55	55	55	55	55
dimension L threadsize	1"-8-UNC	1 1/2"-16-UN				
dimension M mm	27	27	27	27	27	27
dimension N mm	48	60	60	60	60	60
dimension O threadsize	M10x15 (2x)	M12x18 (2x)	M12x18 (2x)	M12x18 (2x)	M12x18 (2x)	M12x18 (2x)
dimension Q mm					50	50
angle A1 °	90	90	90	90	90	90
angle A2 °					40	40

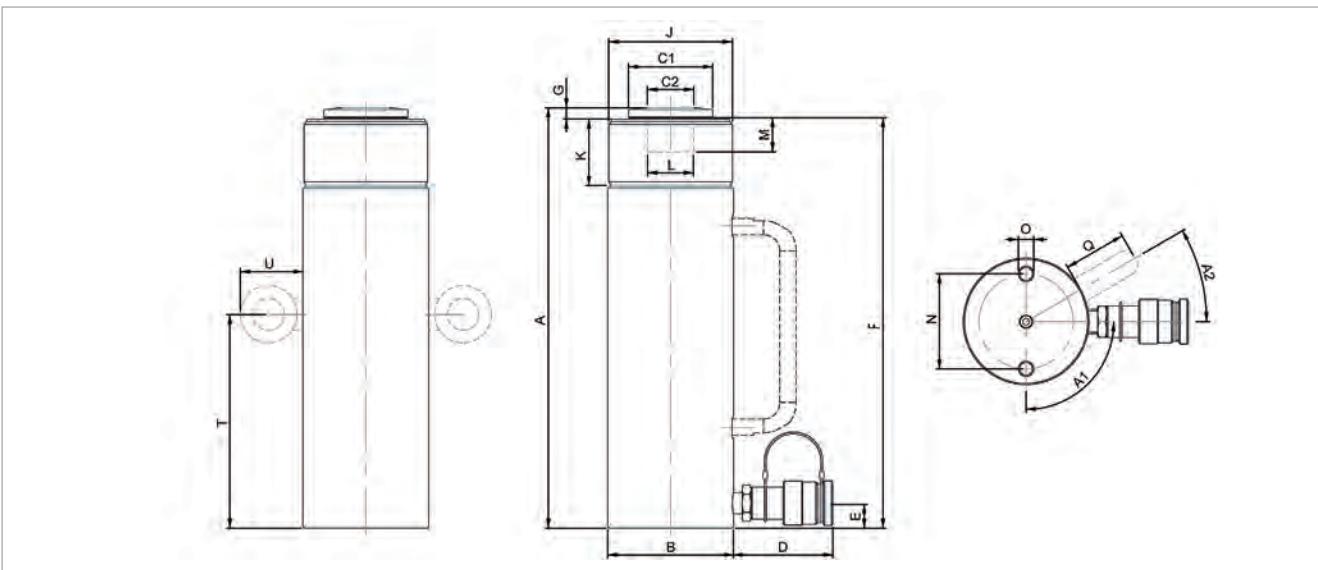



**Multi Purpose Cylinders - Spring Return**

model	HGC 25 S 25	HGC 25 S 30	HGC 25 S 35	HGC 25 S 45	HGC 35 S 5	HGC 35 S 10
art no	100.112.241	100.112.242	100.112.243	100.112.244	100.112.245	100.112.246
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	25	25	25	25	35	35
<b>stroke mm</b>	250	300	350	450	50	100
<b>closed height mm</b>	374	424	474	574	184	234
capacity kN/t	239 / 24.4	239 / 24.4	239 / 24.4	239 / 24.4	362 / 36.9	362 / 36.9
effective pressure area cm <sup>2</sup>	33.2	33.2	33.2	33.2	50.3	50.3
required oil content (effective) cc	830	996	1161	1493	251	503
connection	A 118					
cylinder type	multi purpose					
acting type	single	single	single	single	single	single
return type	spring	spring	spring	spring	spring	spring
material	steel	steel	steel	steel	steel	steel
weight, ready for use kg	13.3	14.9	16.5	19.8	9.3	11.4


**Multi Purpose Cylinders - Spring Return (dimensions)**

model	HGC 25 S 25	HGC 25 S 30	HGC 25 S 35	HGC 25 S 45	HGC 35 S 5	HGC 35 S 10
dimension A mm	374	424	474	574	184	234
dimension B mm	85	85	85	85	100	100
dimension C1 mm	57	57	57	57	67	47
dimension C2 mm	32	32	32	32	37	37
dimension D mm	80	80	80	80	80	80
dimension E mm	20	20	20	20	20	20
dimension F mm	368	418	468	568	176	226
dimension G mm	7	7	7	7	9	9
dimension J threadsize	3 5/16"-12-UN	3 5/16"-12-UN	3 5/16"-12-UN	3 5/16"-12-UN	3 7/8"-12-UN	3 7/8"-12-UN
dimension K mm	55	55	55	55	55	55
dimension L threadsize	1 1/2"-16-UN	1 1/2"-16-UN	1 1/2"-16-UN	1 1/2"-16-UN	1 1/2"-16-UN	1 1/2"-16-UN
dimension M mm	27	27	27	27	27	27
dimension N mm	60	60	60	60	75	75
dimension O threadsize	M12x18 (2x)	M12x18 (2x)	M12x18 (2x)	M12x18 (2x)	M12x18 (2x)	M12x18 (2x)
dimension Q mm	50	50	50	50		50
angle A1 °	90	90	90	90	90	90
angle A2 °						40

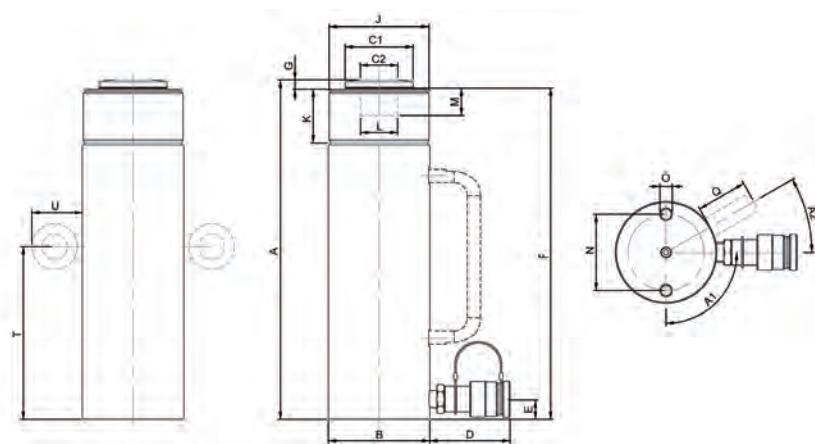


**Multi Purpose Cylinders - Spring Return**


model	HGC 35 S 15	HGC 35 S 20	HGC 50 S 5	HGC 50 S 10	HGC 50 S 15	HGC 50 S 20
art no	100.112.247	100.112.248	100.112.249	100.112.250	100.112.251	100.112.252
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	35	35	50	50	50	50
<b>stroke mm</b>	150	200	50	100	150	200
<b>closed height mm</b>	284	334	176	226	276	326
capacity kN/t	362 / 36.9	362 / 36.9	510 / 52	510 / 52	510 / 52	510 / 52
effective pressure area cm <sup>2</sup>	50.3	50.3	70.9	70.9	70.9	70.9
required oil content (effective) cc	754	1005	354	709	1063	1418
connection	A 118					
cylinder type	multi purpose					
acting type	single	single	single	single	single	single
return type	spring	spring	spring	spring	spring	spring
material	steel	steel	steel	steel	steel	steel
weight, ready for use kg	13.5	15.5	15.1	18.9	22.6	26.4

**Multi Purpose Cylinders - Spring Return (dimensions)**


model	HGC 35 S 15	HGC 35 S 20	HGC 50 S 5	HGC 50 S 10	HGC 50 S 15	HGC 50 S 20
dimension A mm	284	334	176	226	276	326
dimension B mm	100	100	127	127	127	127
dimension C1 mm	47	47	82	82	82	82
dimension C2 mm	37	37	55	55	55	55
dimension D mm	80	80	80	80	80	80
dimension E mm	20	20	25	25	25	25
dimension F mm	276	326	170	220	270	320
dimension G mm	9	9	8	8	8	8
dimension J threadsize	3 7/8"-12-UN	3 7/8"-12-UN	5"-12-UN	5"-12-UN	5"-12-UN	5"-12-UN
dimension K mm	55	55	57	57	57	57
dimension L mm			65	65	65	65
dimension L threadsize	1 1/2"-16-UN	1 1/2"-16-UN				
dimension M mm	27	27	10	10	10	10
dimension N mm	75	75	85	85	85	85
dimension O threadsize	M12x18 (2x)	M12x18 (2x)	M12x18 (2x)	M12x18 (2x)	M12x18 (2x)	M12x18 (2x)
dimension Q mm	50	50		50	50	
dimension T mm						180
dimension U mm						54
angle A1 °	90	90	90	90	90	90
angle A2 °	40			40	40	

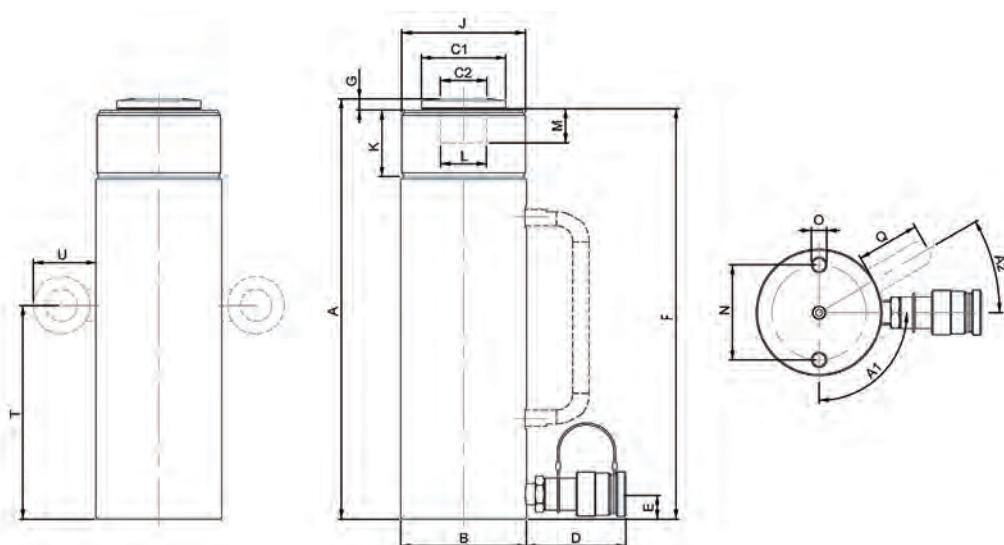



**Multi Purpose Cylinders - Spring Return**

model	HGC 50 S 25	HGC 50 S 35	HGC 75 S 15	HGC 75 S 35	HGC 100 S 5	HGC 100 S 10
art no	100.112.253	100.112.254	100.112.255	100.112.256	100.112.257	100.112.258
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	50	50	75	75	100	100
<b>stroke mm</b>	250	350	150	350	50	100
<b>closed height mm</b>	376	476	285	485	218	268
capacity kN/t	510 / 52	510 / 52	748 / 76.3	748 / 76.3	1031 / 105.1	1031 / 105.1
effective pressure area cm <sup>2</sup>	70.9	70.9	103.9	103.9	143.1	143.1
required oil content (effective) cc	1772	2481	1558	3635	716	1431
connection	A 118					
cylinder type	multi purpose					
acting type	single	single	single	single	single	single
return type	spring	spring	spring	spring	spring	spring
material	steel	steel	steel	steel	steel	steel
weight, ready for use kg	30.1	37.5	30.9	50.0	35.3	42.2


**Multi Purpose Cylinders - Spring Return (dimensions)**

model	HGC 50 S 25	HGC 50 S 35	HGC 75 S 15	HGC 75 S 35	HGC 100 S 5	HGC 100 S 10
dimension A mm	376	476	285	485	218	268
dimension B mm	127	127	147	147	175	175
dimension C1 mm	82	82	97	97	117	117
dimension C2 mm	55	55	62	62	72	72
dimension D mm	80	80	80	80	80	80
dimension E mm	25	25	25	25	30	30
dimension F mm	370	470	279	479	210	260
dimension G mm	8	8	8	8	10	10
dimension J threadsize	5"-12-UN	5"-12-UN	5¾"-12-UN	5¾"-12-UN	6 7/8"-12-UN	6 7/8"-12-UN
dimension K mm	57	57	57	57	57	57
dimension L mm	65	65	75	75	80	80
dimension M mm	10	10	10	10	10	10
dimension N mm	85	85	115	115	146	146
dimension O threadsize	M12x18 (2x)	M12x18 (2x)	M12x18 (2x)	M12x18 (2x)	M12x24 (4x)	M12x24 (4x)
dimension T mm	210	255	165	260	125	150
dimension U mm	54	54	54	54	54	54
angle A1 °	90	90	90	90	45	45

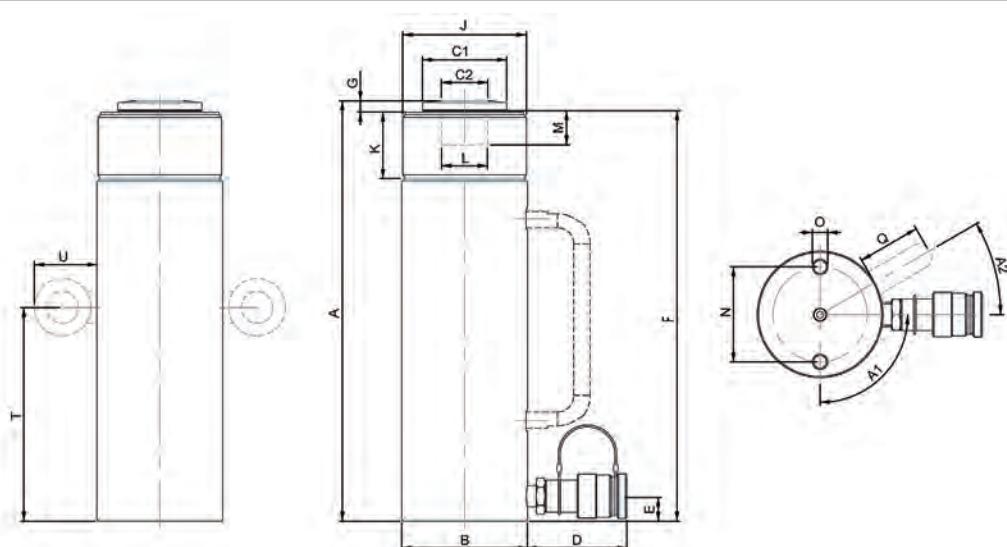



**Multi Purpose Cylinders - Spring Return**

model	HGC 100 S 15	HGC 100 S 25
art no	100.112.259	100.112.260
max. working pressure bar/Mpa	720 / 72	720 / 72
<b>tonnage t</b>	100	100
<b>stroke mm</b>	150	250
<b>closed height mm</b>	318	418
capacity kN/t	1031 / 105.1	1031 / 105.1
effective pressure area cm <sup>2</sup>	143.1	143.1
required oil content (effective) cc	2147	3579
connection	A 118	A 118
cylinder type	multi purpose	multi purpose
acting type	single	single
return type	spring	spring
material	steel	steel
weight, ready for use kg	50.0	64.1


**Multi Purpose Cylinders - Spring Return (dimensions)**

model	HGC 100 S 15	HGC 100 S 25
dimension A mm	318	418
dimension B mm	175	175
dimension C1 mm	117	117
dimension C2 mm	72	72
dimension D mm	80	80
dimension E mm	30	30
dimension F mm	310	410
dimension G mm	10	10
dimension J threadsize	6 7/8"-12-UN	6 7/8"-12-UN
dimension K mm	57	57
dimension L mm	80	80
dimension M mm	10	10
dimension N mm	146	146
dimension O threadsize	M12x24 (4x)	M12x24 (4x)
dimension T mm	175	225
dimension U mm	54	54
angle A1 °	45	45




**Features & benefits**

- 50% lighter cylinders; easy to work with and better for the welfare of your employees
- Duo Power Ring; seal, bearing and resistance to lateral loads to a maximum of 10% for a longer life span
- The plunger is specially coated with a hardened anodised layer that makes it extremely wear and corrosion resistant
- The XL Saddle optimally protects the plunger and guides the load as effectively as possible
- All cylinders meet the stringent quality requirements that Holmatro enforces for its products
- A range of more than 12 models with different tonnages and stroke lengths
- Almost all cylinders have a handle

**Standard supplied with**

- High Flow female coupler A 118
- Flat saddle

**Available** on request

- Collar thread
- Base mounting holes
- Steel plate for protection of the cylinder bottom
- Cylinders manufactured in conformity with customer specifications

**Additional** information

Aluminium versus steel: aluminium cylinders offer an easy to handle alternative to steel. They should last a lifetime of use in average heavy duty lifting applications. However, aluminium cylinders should NOT be used in high cycle applications. Aluminium cylinders obtained from Holmatro are designed to safely withstand up to 5,000 cycles at their maximum working pressure.

Tilting Saddles	page	97
Hydraulic Pumps	page	139
Hydraulic Hoses	page	166
Pressure Gauges	page	171

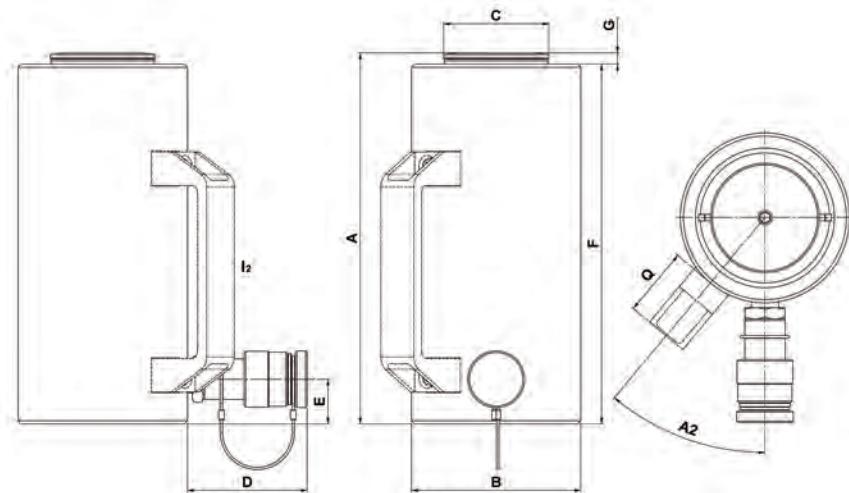



**Aluminium Cylinders - Spring Return**

model	HAC 20 S 5	HAC 20 S 10	HAC 20 S 15	HAC 30 S 5	HAC 30 S 10	HAC 30 S 15
art no	100.112.267	100.112.265	100.112.261	100.112.269	100.112.268	100.112.262
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	20	20	20	30	30	30
<b>stroke mm</b>	50	100	150	50	100	150
<b>closed height mm</b>	164	214	264	182	232	282
capacity kN/t	204 / 20.8	204 / 20.8	204 / 20.8	318.1 / 32.4	318.1 / 32.4	318.1 / 32.4
effective pressure area cm <sup>2</sup>	28.3	28.3	28.3	44.2	44.2	44.2
required oil content (effective) cc	141	283	424	221	442	663
connection	A 118	A 118	A 118	A 118	A 118	A 118
cylinder type	standard	standard	standard	standard	standard	standard
acting type	single	single	single	single	single	single
return type	spring	spring	spring	spring	spring	spring
material	aluminium	aluminium	aluminium	aluminium	aluminium	aluminium
weight, ready for use kg	2.6	3.2	3.9	4.7	5.9	7.0


**Aluminium Cylinders - Spring Return (dimensions)**

model	HAC 20 S 5	HAC 20 S 10	HAC 20 S 15	HAC 30 S 5	HAC 30 S 10	HAC 30 S 15
dimension A mm	164	214	264	182	232	282
dimension B mm	82	82	82	106	106	106
dimension C mm	52	52	52	66	66	66
dimension D mm	76	76	76	76	76	76
dimension E mm	25	25	25	28	28	28
dimension F mm	157	207	257	175	225	275
dimension G mm	7	7	7	7	7	7
dimension Q mm					43	43
angle A2 °					40	40
I type					I <sub>2</sub>	I <sub>2</sub>

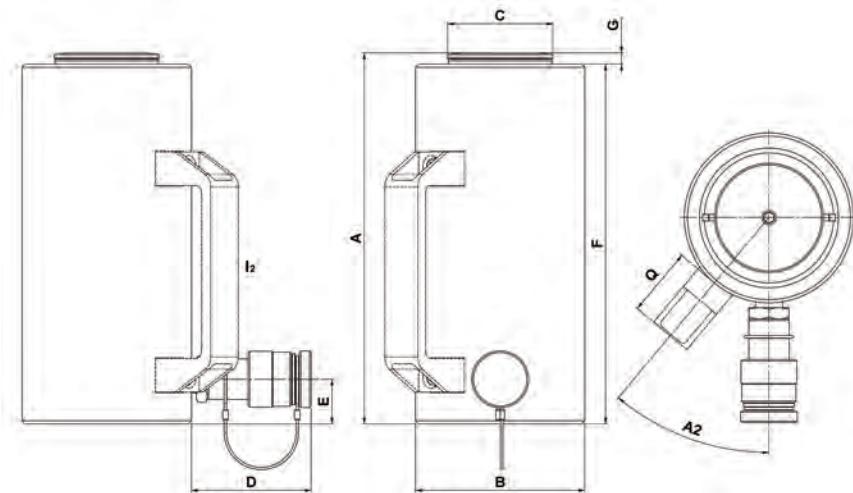


**Aluminium Cylinders - Spring Return**


model	HAC 50 S 5	HAC 50 S 10	HAC 50 S 15	HAC 100 S 5	HAC 100 S 10	HAC 100 S 15
art no	100.112.271	100.112.270	100.112.263	100.112.273	100.112.272	100.112.264
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	50	50	50	100	100	100
<b>stroke mm</b>	50	100	150	50	100	150
<b>closed height mm</b>	183	233	283	225	275	325
capacity kN/t	510.4 / 52	510.4 / 52	510.4 / 52	1030.6 / 105.1	1030.6 / 105.1	1030.6 / 105.1
effective pressure area cm <sup>2</sup>	70.9	70.9	70.9	143	143	143
required oil content (effective) cc	354	709	1063	716	1431	2147
connection	A 118	A 118	A 118	A 118	A 118	A 118
cylinder type	standard	standard	standard	standard	standard	standard
acting type	single	single	single	single	single	single
return type	spring	spring	spring	spring	spring	spring
material	aluminium	aluminium	aluminium	aluminium	aluminium	aluminium
weight, ready for use kg	6.9	8.3	9.6	17.8	20.9	24.1

**Aluminium Cylinders - Spring Return (dimensions)**


model	HAC 50 S 5	HAC 50 S 10	HAC 50 S 15	HAC 100 S 5	HAC 100 S 10	HAC 100 S 15
dimension A mm	183	233	283	225	275	325
dimension B mm	130	130	130	189	189	189
dimension C mm	72	72	72	107	107	107
dimension D mm	76	76	76	76	76	76
dimension E mm	30	30	30	35	35	35
dimension F mm	175	225	275	217	321	317
dimension G mm	8	8	8	8	8	8
dimension Q mm		44	44	44	44	44
angle A2 °		40	40	40	40	40
I type		l <sub>2</sub>				






**Features & benefits**

- 50% lighter cylinders; easy to work with and better for the welfare of your employees
- Duo Power Ring; seal, bearing and resistance to lateral loads to a maximum of 10% for a longer life span
- The plunger is specially coated with a hardened anodised layer that makes it extremely wear and corrosion resistant
- The XL Saddle optimally protects the plunger and guides the load as effectively as possible
- All cylinders meet the stringent quality requirements that Holmatro enforces for its products
- A range of more than 24 models with different tonnages and stroke lengths
- Almost all cylinders have a handle

**Standard supplied with**

- High Flow female coupler A 118
- Flat saddle

**Available** on request

- Collar thread
- Base mounting holes
- Steel plate for protection of the cylinder bottom
- Cylinders manufactured in conformity with customer specifications

**Additional** information

Aluminium versus steel: aluminium cylinders offer an easy to handle alternative to steel. They should last a lifetime of use in average heavy duty lifting applications. However, aluminium cylinders should NOT be used in high cycle applications. Aluminium cylinders obtained from Holmatro are designed to safely withstand up to 5,000 cycles at their maximum working pressure.

Tilting Saddles	page	97
Hydraulic Pumps	page	139
Hydraulic Hoses	page	166
Pressure Gauges	page	171

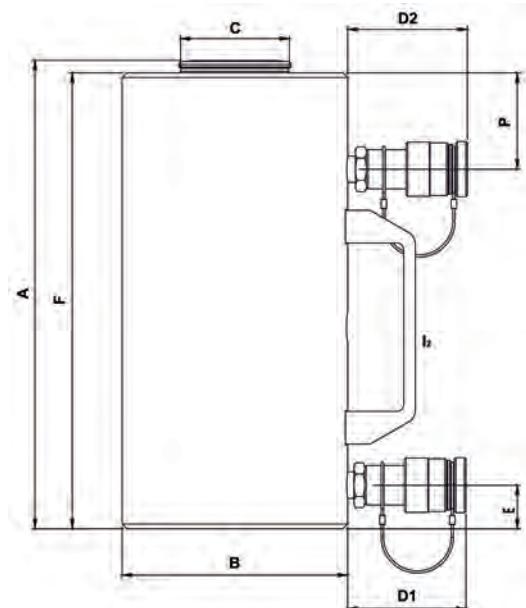


**Aluminium Cylinders - Hydraulic Return**


model	HAC 30 H 5	HAC 30 H 10	HAC 30 H 15	HAC 30 H 20	HAC 30 H 25	HAC 30 H 30
art no	100.122.086	100.122.085	100.122.080	100.122.079	100.122.103	100.122.060
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	30	30	30	30	30	30
<b>stroke mm</b>	50	100	150	200	250	300
<b>closed height mm</b>	197	247	297	347	397	447
capacity kN/t	318.1 / 32.4	318.1 / 32.4	318.1 / 32.4	318.1 / 32.4	318.1 / 32.4	318.1 / 32.4
effective pressure area (press) cm <sup>2</sup>	44.2	44.2	44.2	44.2	44.2	44.2
effective pressure area (retract) cm <sup>2</sup>	11	11	11	11	11	11
required oil content (press) cc	221	442	663	884	1105	1325
required oil content (retract) cc	55	110	165	220	275	330
connection	A 118					
cylinder type	standard	standard	standard	standard	standard	standard
acting type	double	double	double	double	double	double
return type	hydraulic	hydraulic	hydraulic	hydraulic	hydraulic	hydraulic
material	aluminium	aluminium	aluminium	aluminium	aluminium	aluminium
weight, ready for use kg	6.9	8.5	10.2	11.6	13.2	14.7

**Aluminium Cylinders - Hydraulic Return (dimensions)**


model	HAC 30 H 5	HAC 30 H 10	HAC 30 H 15	HAC 30 H 20	HAC 30 H 25	HAC 30 H 30
dimension A mm	197	247	297	347	397	447
dimension B mm	125	125	125	125	125	125
dimension C mm	65	65	65	65	65	65
dimension D1 mm	76	76	76	76	76	76
dimension D2 mm	76	76	76	76	76	76
dimension E mm	28	28	28	28	28	28
dimension F mm	191.1	241.5	291.5	341.5	391.5	441.5
dimension P mm	72	72	72	72	72	72
I type			I <sub>2</sub>	I <sub>2</sub>	I <sub>2</sub>	I <sub>2</sub>

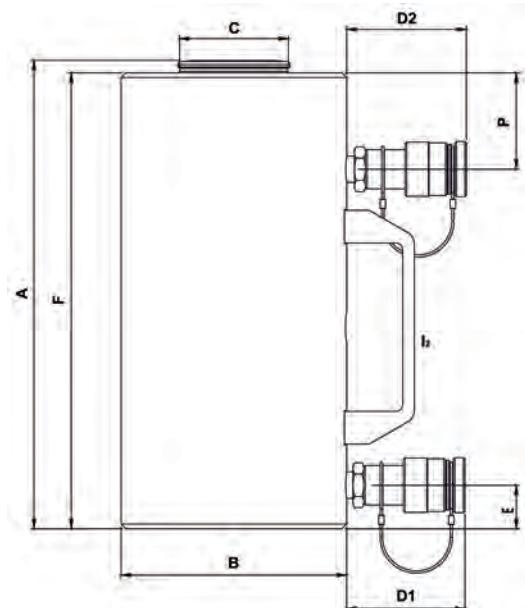


**Aluminium Cylinders - Hydraulic Return**


model	HAC 50 H 5	HAC 50 H 10	HAC 50 H 15	HAC 50 H 20	HAC 50 H 25	HAC 50 H 30
art no	100.122.095	100.122.108	100.122.097	100.122.098	100.122.099	100.122.100
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	50	50	50	50	50	50
<b>stroke mm</b>	50	100	150	200	250	300
<b>closed height mm</b>	201	251	301	351	401	451
capacity kN/t	510.4 / 52	510.4 / 52	510.4 / 52	510.4 / 52	510.4 / 52	510.4 / 52
effective pressure area (press) cm <sup>2</sup>	70.9	70.9	70.9	70.9	70.9	70.9
effective pressure area (retract) cm <sup>2</sup>	32.4	32.4	32.4	32.4	32.4	32.4
required oil content (press) cc	354	709	1063	1418	1772	2127
required oil content (retract) cc	162	324	486	648	810	972
connection	A 118					
cylinder type	standard	standard	standard	standard	standard	standard
acting type	double	double	double	double	double	double
return type	hydraulic	hydraulic	hydraulic	hydraulic	hydraulic	hydraulic
material	aluminium	aluminium	aluminium	aluminium	aluminium	aluminium
weight, ready for use kg	9.5	11.5	13.3	15.4	17.4	19.3

**Aluminium Cylinders - Hydraulic Return (dimensions)**


model	HAC 50 H 5	HAC 50 H 10	HAC 50 H 15	HAC 50 H 20	HAC 50 H 25	HAC 50 H 30
dimension A mm	201	251	301	351	401	451
dimension B mm	145	145	145	145	145	145
dimension C mm	70	70	70	70	70	70
dimension D1 mm	76	76	76	76	76	76
dimension D2 mm	76	76	76	76	76	76
dimension E mm	28	28	28	28	28	28
dimension F mm	193	243	293	343	393	443
dimension P mm	72	72	72	72	72	72
I type		I <sub>2</sub>				

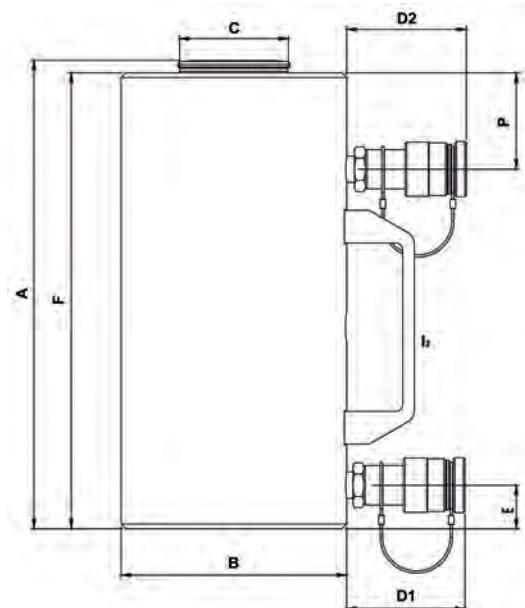


**Aluminium Cylinders - Hydraulic Return**


model	HAC 100 H 5	HAC 100 H 10	HAC 100 H 15	HAC 100 H 20	HAC 100 H 25	HAC 100 H 30
art no	100.122.094	100.122.109	100.122.107	100.122.088	100.122.089	100.122.090
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	100	100	100	100	100	100
<b>stroke mm</b>	50	100	150	200	250	300
<b>closed height mm</b>	246	296	346	396	446	496
capacity kN/t	1030.6 / 105.1	1030.6 / 105.1	1030.6 / 105.1	1030.6 / 105.1	1030.6 / 105.1	1030.6 / 105.1
effective pressure area (press) cm <sup>2</sup>	143.1	143.1	143.1	143.1	143.1	143.1
effective pressure area (retract) cm <sup>2</sup>	56.5	56.5	56.5	56.5	56.5	56.5
required oil content (press) cc	716	1431	2147	2863	3579	4294
required oil content (retract) cc	283	565	848	1131	1414	1696
connection	A 118					
cylinder type	standard	standard	standard	standard	standard	standard
acting type	double	double	double	double	double	double
return type	hydraulic	hydraulic	hydraulic	hydraulic	hydraulic	hydraulic
material	aluminium	aluminium	aluminium	aluminium	aluminium	aluminium
weight, ready for use kg	19.7	23.0	26.8	29.9	33.2	36.6

**Aluminium Cylinders - Hydraulic Return (dimensions)**


model	HAC 100 H 5	HAC 100 H 10	HAC 100 H 15	HAC 100 H 20	HAC 100 H 25	HAC 100 H 30
dimension A mm	246	296	346	396	446	496
dimension B mm	195	195	195	195	195	195
dimension C mm	105	105	105	105	105	105
dimension D1 mm	76	76	76	76	76	76
dimension D2 mm	76	76	76	76	76	76
dimension E mm	35	35	35	35	35	35
dimension F mm	235	285	335	385	435	485
dimension P mm	72	72	72	72	72	72
I type	I <sub>2</sub>					

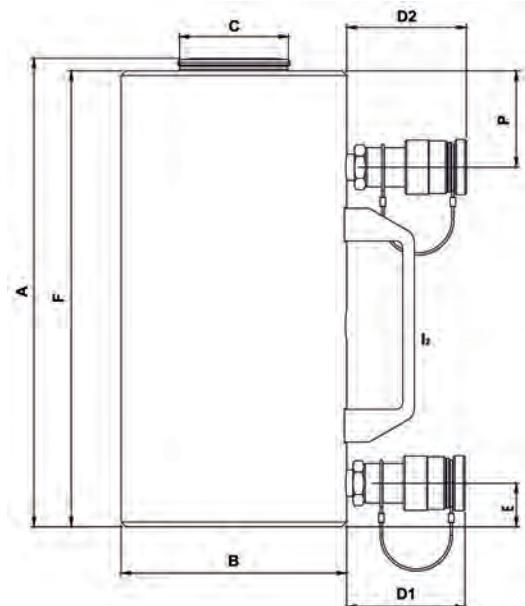


**Aluminium Cylinders - Hydraulic Return**


model	HAC 150 H 5	HAC 150 H 10	HAC 150 H 15	HAC 150 H 20	HAC 150 H 25	HAC 150 H 30
art no	100.122.075	100.122.074	100.122.073	100.122.070	100.122.069	100.122.064
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	150	150	150	150	150	150
<b>stroke mm</b>	50	100	150	200	250	300
<b>closed height mm</b>	248	298	348	398	448	498
capacity kN/t	1539.5 / 157	1539.5 / 157	1539.5 / 157	1539.5 / 157	1539.5 / 157	1539.5 / 157
effective pressure area (press) cm <sup>2</sup>	213.8	213.8	213.8	213.8	213.8	213.8
effective pressure area (retract) cm <sup>2</sup>	91.1	91.1	91.1	91.1	91.1	91.1
required oil content (press) cc	1069	2138	3207	4277	5346	6415
required oil content (retract) cc	456	911	1367	1822	2278	2733
connection	A 118					
cylinder type	standard	standard	standard	standard	standard	standard
acting type	double	double	double	double	double	double
return type	hydraulic	hydraulic	hydraulic	hydraulic	hydraulic	hydraulic
material	aluminium	aluminium	aluminium	aluminium	aluminium	aluminium
weight, ready for use kg	27.7	32.3	38.0	41.5	46.1	50.6

**Aluminium Cylinders - Hydraulic Return (dimensions)**


model	HAC 150 H 5	HAC 150 H 10	HAC 150 H 15	HAC 150 H 20	HAC 150 H 25	HAC 150 H 30
dimension A mm	248	298	348	398	448	498
dimension B mm	235	235	235	235	235	235
dimension C mm	125	125	125	125	125	125
dimension D1 mm	76	76	76	76	76	76
dimension D2 mm	76	76	76	76	76	76
dimension E mm	35	35	35	35	35	35
dimension F mm	240	290	340	390	440	490
dimension P mm	72	72	72	72	72	72
I type	I <sub>2</sub>					






**Features & benefits**

- Compact, flat version, efficient in case of limited insertion space
- Usable in all positions
- Standard provided with fixing holes for easy assembly
- Protected against ejection of the plunger
- Dirt scraper ring
  - Protects against pollution
  - Increases the life span
- Splined plunger, no saddle needed

**Standard supplied with**

- High Flow female coupler A 118

**Available on request**

- Cylinders manufactured in conformity with customer specifications

Hydraulic Pumps

page 139

Hydraulic Hoses

page 166

Pressure Gauges

page 171



Standard provided with fixing holes for easy assembly



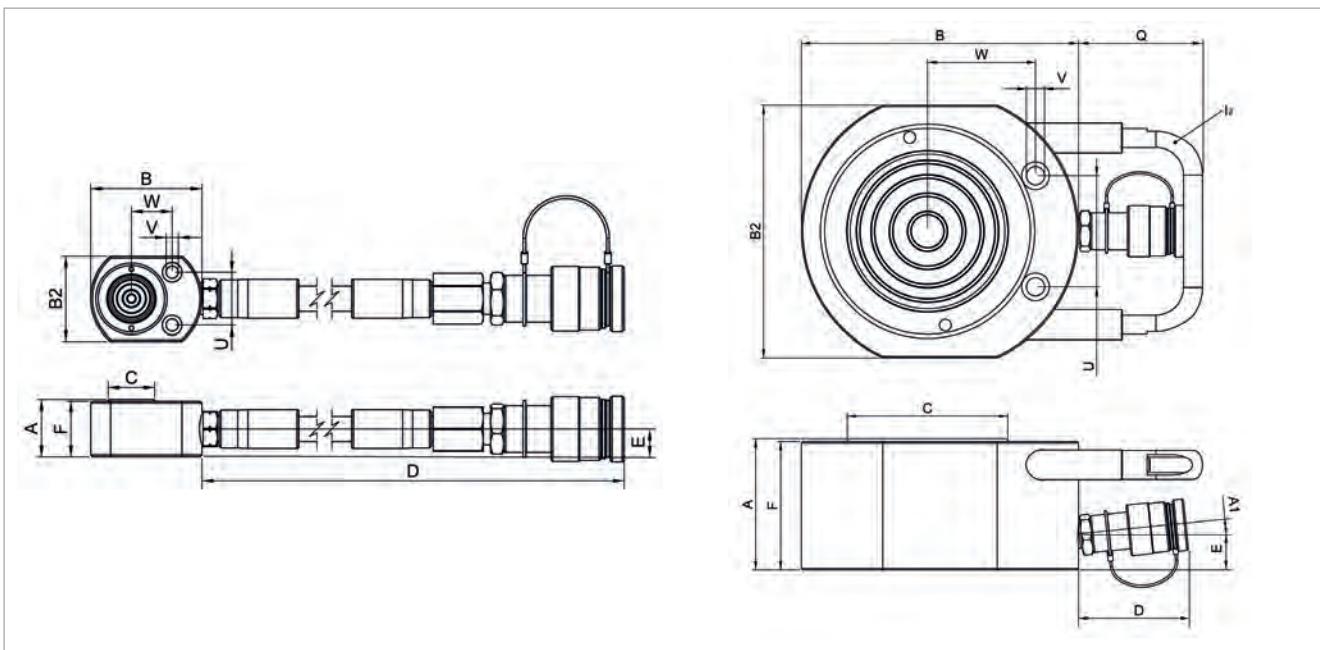
Splined plunger, no saddle needed

**Flat Cylinders - Spring Return**


model	HFC 5 S 0.5	HFC 5 S 1.5	HFC 10 S 1.5	HFC 20 S 1.5	HFC 30 S 0.5	HFC 30 S 1.5
art no	100.112.290	100.112.291	100.112.292	100.112.293	100.112.294	100.112.295
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	5	5	10	20	30	30
<b>stroke mm</b>	5	15	15	15	5	15
<b>closed height mm</b>	31	44	46	55	50	60
capacity kN/t	50.9 / 5.2	50.9 / 5.2	99.8 / 10.2	203.6 / 20.8	318.1 / 32.4	318.1 / 32.4
effective pressure area cm <sup>2</sup>	7.1	7.1	13.9	28.3	44.2	44.2
required oil content (effective) cc	4	11	28.8	42.4	22	66.3
connection	A 118	A 118	A 118	A 118	A 118	A 118
hose	yes					
cylinder type	flat	flat	flat	flat	flat	flat
acting type	single	single	single	single	single	single
return type	spring	spring	spring	spring	spring	spring
material	steel	steel	steel	steel	steel	steel
weight, ready for use kg	1.2	1.0	1.6	2.9	3.6	4.2

**Flat Cylinders - Spring Return (dimensions)**


model	HFC 5 S 0.5	HFC 5 S 1.5	HFC 10 S 1.5	HFC 20 S 1.5	HFC 30 S 0.5	HFC 30 S 1.5
dimension A mm	31	44	46	55	50	60
dimension B mm	60	60	85	100	116	116
dimension B2 mm	46	46	55	80	95	95
dimension C mm	25	25	36	55	62	62
dimension D mm	362	77	76	77	77	77
dimension E mm	15	15	19	19	19	19
dimension F mm	30	43	46	54	48	58
dimension U mm	29	29	37	49	52	52
dimension V mm	7	7	7	9	11	11
dimension W mm	55	22	34	39	44	44
angle A1 °		5		5	5	5

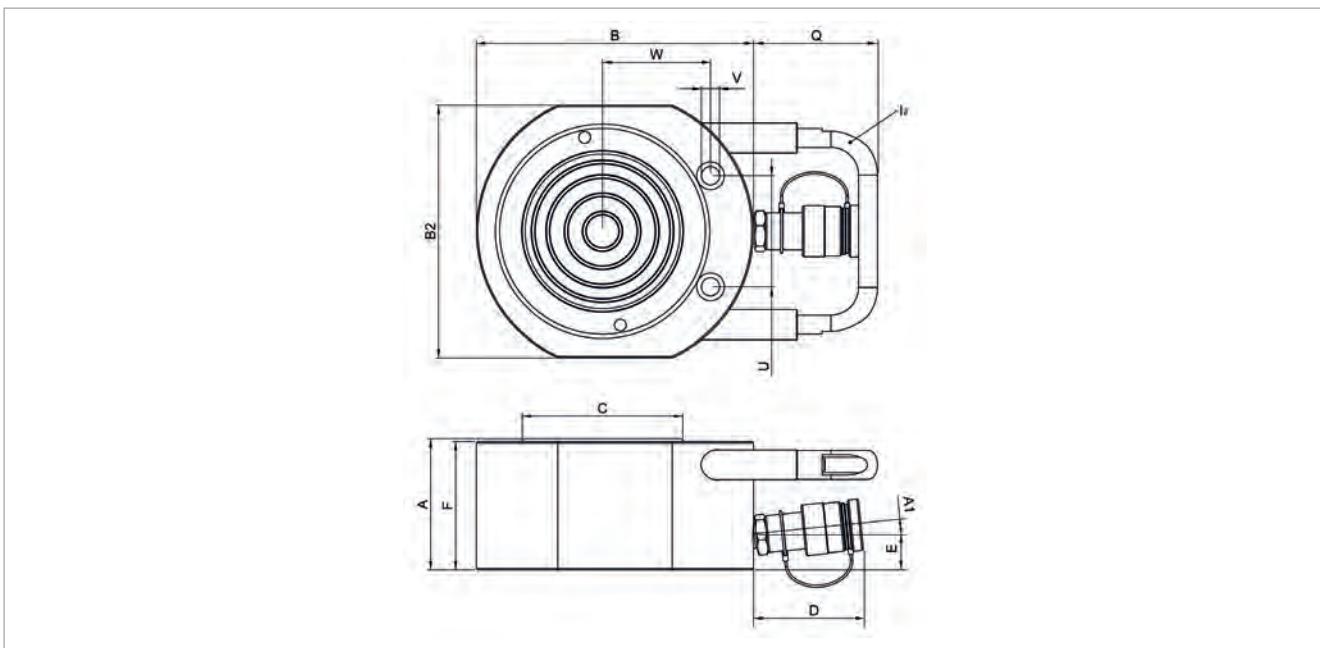



**Flat Cylinders - Spring Return**

model	HFC 50 S 1.5	HFC 75 S 1.5	HFC 100 S 1.5	HFC 150 S 1.5
art no	100.112.296	100.112.297	100.112.298	100.112.299
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	50	75	100	150
<b>stroke mm</b>	15	15	15	15
<b>closed height mm</b>	71	80	90	100
capacity kN/t	510.4 / 52	747.9 / 76.3	1030.5 / 105.1	1447.6 / 147.6
effective pressure area cm <sup>2</sup>	70.9	103.9	143.1	201.1
required oil content (effective) cc	106	156	215	302
connection	A 118	A 118	A 118	A 118
cylinder type	flat	flat	flat	flat
acting type	single	single	single	single
return type	spring	spring	spring	spring
material	steel	steel	steel	steel
weight, ready for use kg	7.0	11.0	18.1	25.7


**Flat Cylinders - Spring Return (dimensions)**

model	HFC 50 S 1.5	HFC 75 S 1.5	HFC 100 S 1.5	HFC 150 S 1.5
dimension A mm	71	80	90	100
dimension B mm	140	165	190	215
dimension B2 mm	119	144	173	200
dimension C mm	75	80	110	125
dimension D mm	77	76	76	76
dimension E mm	19	19	19	24
dimension F mm	68	77	86	96
dimension Q mm			85	71
dimension U mm	67	76	76	117
dimension V mm	13	13	13	13
dimension W mm	53	66	74	82
angle A1 °	5			
I type			I <sub>2</sub>	I <sub>2</sub>






**Features & benefits**

- Compact, flat version, efficient in case of limited insertion space
- Usable in all positions
- Protected against ejection of the plunger
- Dirt scraper ring
  - Protects against pollution
  - Increases the life span
- Splined plunger, no saddle needed

**Standard supplied with**

- High Flow female coupler A 118

**Available on request**

- Cylinders manufactured in conformity with customer specifications
- Collar thread
- Base mounting holes

Hydraulic Pumps

page 139

Hydraulic Hoses

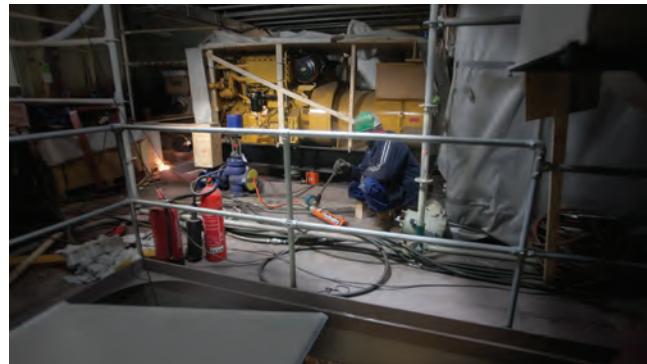
page 166

Pressure Gauges

page 171



Splined plunger, no saddle needed

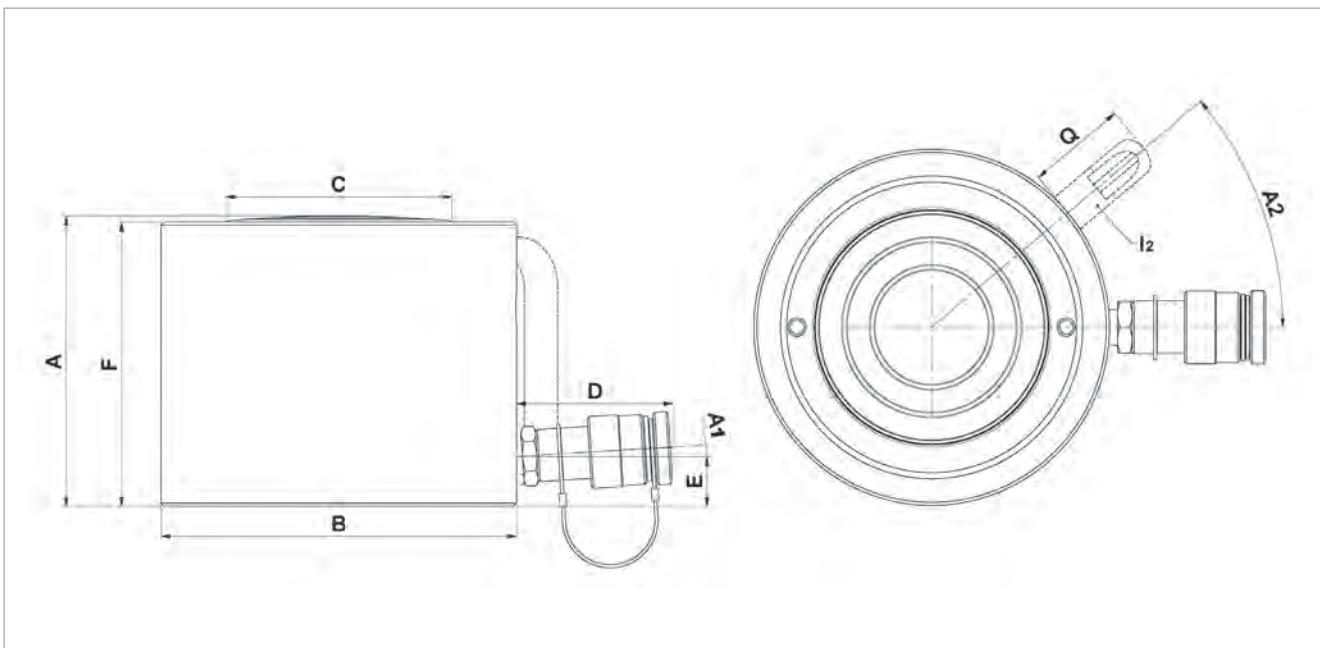



**Short Stroke Cylinders - Spring Return**

model	HSC 10 S 5	HSC 20 S 5	HSC 30 S 5	HSC 50 S 5	HSC 100 S 5
art no	100.112.300	100.112.301	100.112.302	100.112.303	100.112.304
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	10	20	30	50	100
<b>stroke mm</b>	50	50	50	50	50
<b>closed height mm</b>	100	103	106	117	141
capacity kN/t	99.8 / 10.2	203.6 / 20.8	318.1 / 32.4	510.4 / 52	1030.6 / 105.1
effective pressure area cm <sup>2</sup>	13.9	28.3	44.2	70.9	143.1
required oil content (effective) cc	69.3	141.4	221	354	716
connection	A 118				
cylinder type	short stroke				
acting type	single	single	single	single	single
return type	spring	spring	spring	spring	spring
material	steel	steel	steel	steel	steel
weight, ready for use kg	2.9	5.5	6.1	9.7	22.2


**Short Stroke Cylinders - Spring Return (dimensions)**

model	HSC 10 S 5	HSC 20 S 5	HSC 30 S 5	HSC 50 S 5	HSC 100 S 5
dimension A mm	100	103	106	117	141
dimension B mm	70	98	104	128	173
dimension C mm	36	50	62	75	110
dimension D mm	77	77	76	76	76
dimension E mm	15	15	19	19	24
dimension F mm	99	102	104	116	139
dimension Q mm					49
angle A1 °	5	5			
angle A2 °					40
I type					I <sub>2</sub>




**Features & benefits**

- Compact
- Lightweight
- Usable in all positions
- Protected against ejection of the plunger

**Standard supplied with**

- High Flow female coupler A 118
- HFJ 10/30 G 4 contains a 30 cm connecting hose with anti-kink spring
- HJ 20/50 G 11 contains a flat saddle

**Available on request**

- Cylinders manufactured in conformity with customer specifications
- Base mounting holes

[Hydraulic Pumps](#)
[page 139](#)
[Hydraulic Hoses](#)
[page 166](#)
[Pressure Gauges](#)
[page 171](#)


Protected against ejection of the plunger

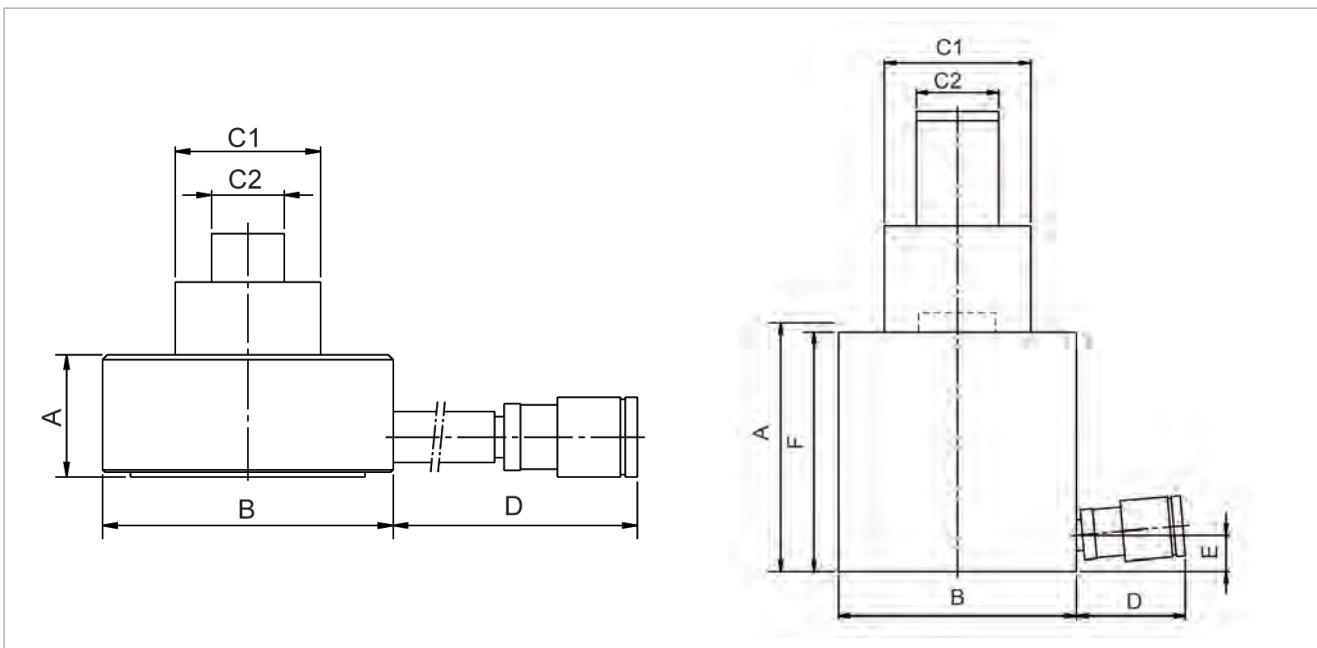



**Telescopic Cylinders - Gravity Return**

model	HFJ 10/30 G 4	HJ 20/50 G 11
art no	100.111.005	100.112.103
max. working pressure bar/Mpa	720 / 72	720 / 72
<b>tonnage t</b>	10	20
<b>stroke 1st plunger mm</b>	41	111
<b>stroke 2nd plunger mm</b>	20	55
<b>closed height mm</b>	49	140
capacity 1st plunger kN/t	318 / 32.4	510 / 52
capacity 2nd plunger kN/t	99.7 / 10.2	203.5 / 20.8
effective pressure area 1st plunger cm <sup>2</sup>	44.2	70.8
effective pressure area 2nd plunger cm <sup>2</sup>	13.9	28.3
required oil content (effective) cc	118	554
connection	A 118	A 118
hose	yes	
cylinder type	telescopic	telescopic
acting type	single	single
return type	gravity	gravity
material	steel	steel
weight, ready for use kg	4.5	12.5


**Telescopic Cylinders - Gravity Return (dimensions)**

model	HFJ 10/30 G 4	HJ 20/50 G 11
dimension A mm	49	140
dimension B mm	120	125
dimension C1 mm	60	80
dimension C2 mm	30	45
dimension D mm	385	70
dimension E mm		70
dimension F mm		131




**Features & benefits**


- Usable in all positions
- Protected against ejection of the plunger
- Flat saddle
  - Prevents damage to the plunger
  - Easy to replace with tilting saddle

**Standard supplied with**


- High Flow female coupler A 118
- Flat saddle

**Available on request**


- Cylinders manufactured in conformity with customer specifications
- Collar thread
- Base mounting holes

Tilting Saddles

page

97

Hydraulic Pumps

page

139

Hydraulic Hoses

page

166

Pressure Gauges

page

171



Flat saddle

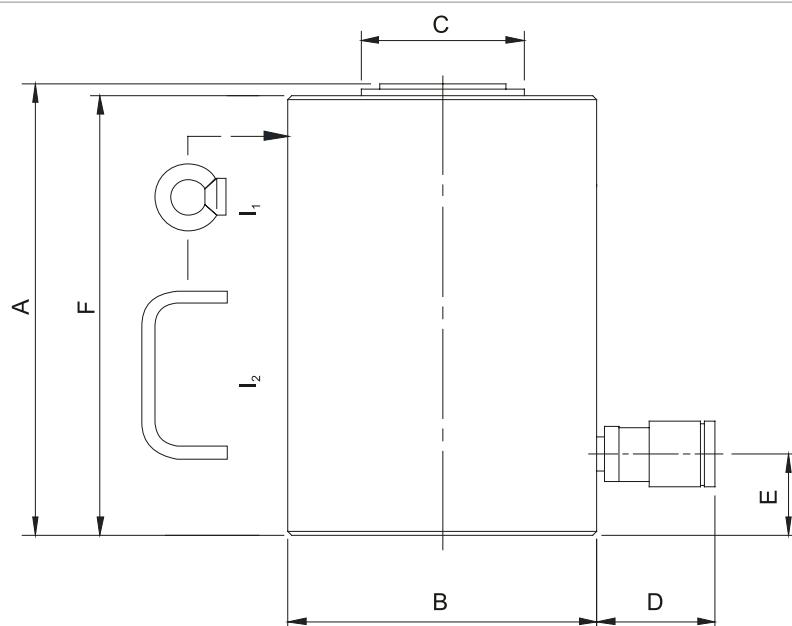



**High Tonnage Cylinders - Gravity Return**

model	HJ 50 G 6	HJ 50 G 15	HJ 50 G 30	HJ 75 G 15	HJ 75 G 30	HJ 100 G 6
art no	100.112.073	100.112.035	100.112.036	100.112.037	100.112.038	100.112.093
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	50	50	50	75	75	100
<b>stroke mm</b>	60	150	300	150	300	60
<b>closed height mm</b>	142	282	463	347	497	158
capacity kN/t	510.3 / 52	510.3 / 52	510.3 / 52	747.9 / 76.3	747.9 / 76.3	1029.3 / 105
effective pressure area cm <sup>2</sup>	70.9	70.9	70.9	103.9	103.9	143
required oil content (effective) cc	425	1064	2127	1559	3117	860
connection	A 118					
cylinder type	high tonnage					
acting type	single	single	single	single	single	single
return type	gravity	gravity	gravity	gravity	gravity	gravity
material	steel	steel	steel	steel	steel	steel
weight, ready for use kg	12.5	27.0	39.5	46.0	63.0	29.0


**High Tonnage Cylinders - Gravity Return (dimensions)**

model	HJ 50 G 6	HJ 50 G 15	HJ 50 G 30	HJ 75 G 15	HJ 75 G 30	HJ 100 G 6
dimension A mm	142	282	463	347	497	158
dimension B mm	130	130	130	156	156	185
dimension C mm	80	80	80	80	80	105
dimension D mm	70	70	70	70	70	70
dimension E mm	20	25	38	47	47	27
dimension F mm	135	275	456	340	490	151
I type		l <sub>2</sub>	l <sub>2</sub>	l <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>

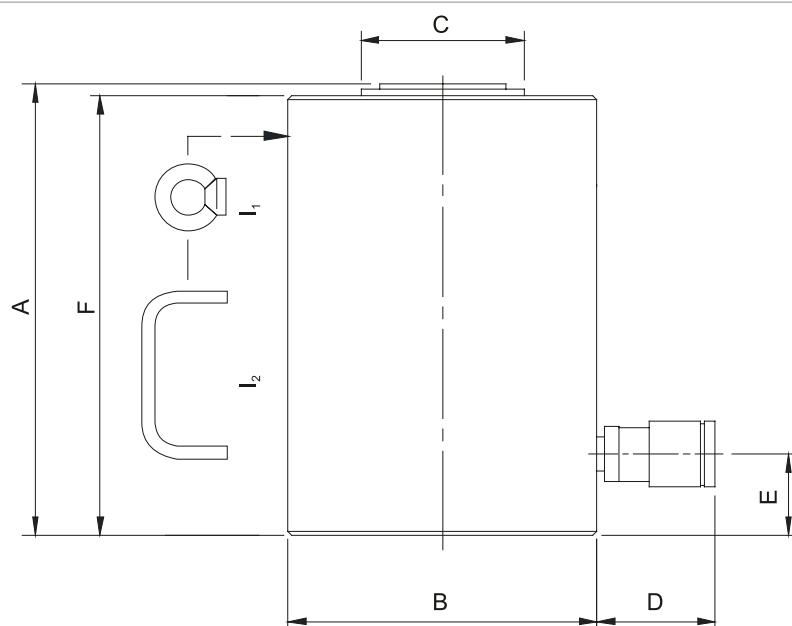



**High Tonnage Cylinders - Gravity Return**

model	HJ 100 G 15	HJ 100 G 30	HJ 150 G 15	HJ 150 G 30	HJ 200 G 15	HJ 200 G 30
art no	100.112.039	100.112.040	100.112.046	100.112.047	100.112.048	100.112.049
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	100	100	150	150	200	200
<b>stroke mm</b>	150	300	150	300	150	300
<b>closed height mm</b>	309	497	317	502	327	507
capacity kN/t	1029.3 / 105	1029.3 / 105	1538.9 / 156.9	1538.9 / 156.9	2040.6 / 208.1	2040.6 / 208.1
effective pressure area cm <sup>2</sup>	143	143	213.8	213.8	283.5	283.5
required oil content (effective) cc	2145	4290	3207	6414	4253	8505
connection	A 118	A 118	A 118	A 118	A 118	A 118
cylinder type	high tonnage	high tonnage	high tonnage	high tonnage	high tonnage	high tonnage
acting type	single	single	single	single	single	single
return type	gravity	gravity	gravity	gravity	gravity	gravity
material	steel	steel	steel	steel	steel	steel
weight, ready for use kg	51.0	82.0	74.6	125.3	120.0	184.0


**High Tonnage Cylinders - Gravity Return (dimensions)**

model	HJ 100 G 15	HJ 100 G 30	HJ 150 G 15	HJ 150 G 30	HJ 200 G 15	HJ 200 G 30
dimension A mm	309	497	317	502	327	507
dimension B mm	178	178	227	227	261	261
dimension C mm	105	105	115	115	160	160
dimension D mm	70	70	70	70	70	70
dimension E mm	52	52	57	57	60	60
dimension F mm	302	490	310	495	320	500
I type	l <sub>1</sub>					

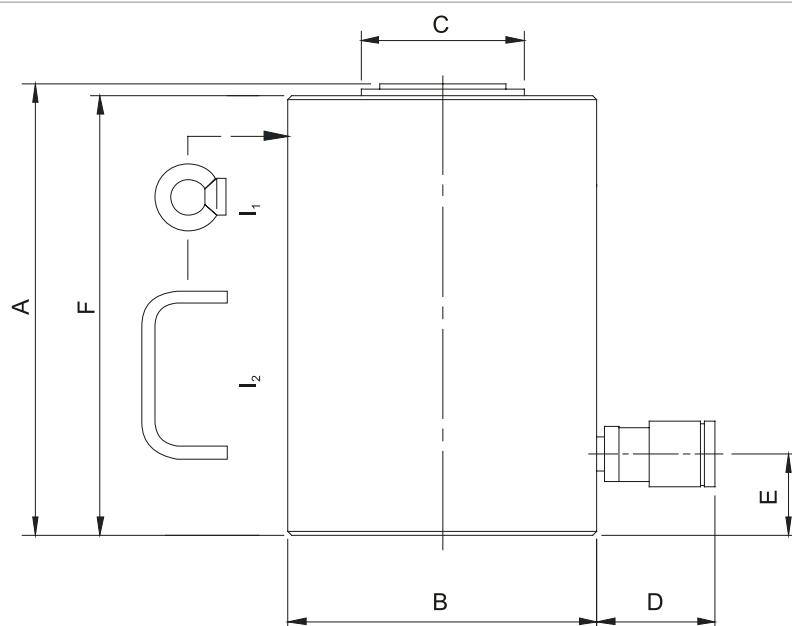



**High Tonnage Cylinders - Gravity Return**

model	HJ 300 G 15	HJ 300 G 30	HJ 400 G 15	HJ 400 G 30	HJ 500 G 15	HJ 500 G 30
art no	100.112.050	100.112.099	100.112.100	100.112.056	100.112.139	100.112.138
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	300	300	400	400	500	500
<b>stroke mm</b>	150	300	150	300	150	300
<b>closed height mm</b>	382	547	402	572	442	587
capacity kN/t	2933 / 299.1	2933 / 299.1	3750 / 382.4	3750 / 382.4	4994 / 509.2	4994 / 509.2
effective pressure area cm <sup>2</sup>	415	415	530	530	707	707
required oil content (effective) cc	6225	12450	7950	15900	10605	21210
connection	A 118					
cylinder type	high tonnage					
acting type	single	single	single	single	single	single
return type	gravity	gravity	gravity	gravity	gravity	gravity
material	steel	steel	steel	steel	steel	steel
weight, ready for use kg	238.0	257.0	322.0	408.0	386.0	511.0


**High Tonnage Cylinders - Gravity Return (dimensions)**

model	HJ 300 G 15	HJ 300 G 30	HJ 400 G 15	HJ 400 G 30	HJ 500 G 15	HJ 500 G 30
dimension A mm	382	547	402	572	442	587
dimension B mm	316	316	358	358	412	412
dimension C mm	190	190	200	200	210	210
dimension D mm	70	70	70	70	70	70
dimension E mm	70	70	76	76	85	85
dimension F mm	370	540	395	565	435	580
I type	l <sub>1</sub>					




**Features & benefits**

- Usable in all positions
- Protected against ejection of the plunger
- Protected against overpressure on return side
- Flat saddle
  - Prevents damage to the plunger
  - Easy to replace with tilting saddle

**Standard supplied with**

- High Flow female coupler A 118
- Flat saddle

**Available on request**

- Cylinders manufactured in conformity with customer specifications
- Collar thread
- Base mounting holes

Tilting Saddles

page 97

Hydraulic Pumps

page 139

Hydraulic Hoses

page 166

Pressure Gauges

page 171



Protected against overpressure on return side

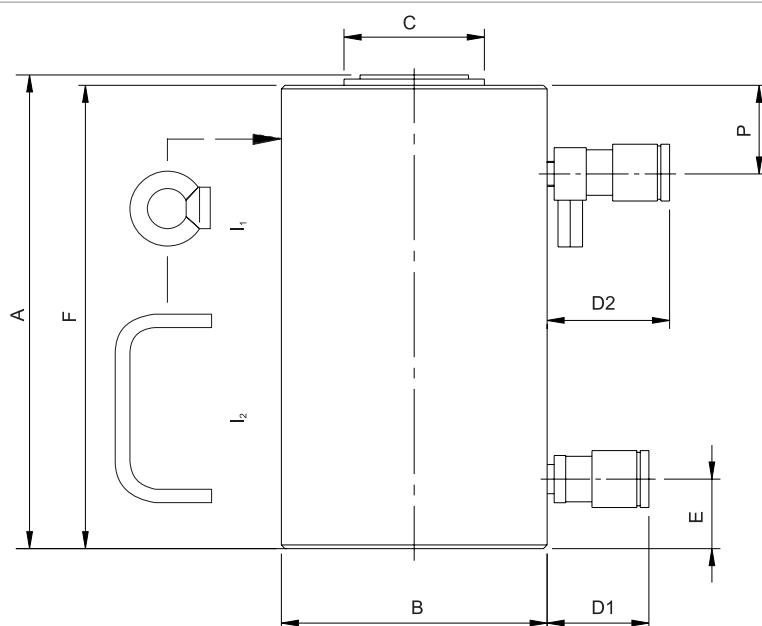


**High Tonnage Cylinders - Hydraulic Return**


model	HJ 50 H 15	HJ 50 H 30	HJ 75 H 15	HJ 75 H 30	HJ 100 H 5	HJ 100 H 15
art no	100.122.002	100.122.022	100.122.003	100.122.004	100.122.009	100.122.052
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	50	50	75	75	100	100
<b>stroke mm</b>	150	300	150	300	50	150
<b>closed height mm</b>	282	463	347	497	170	309
capacity kN/t	510.3 / 52	510.3 / 52	747.9 / 76.3	747.9 / 76.3	1029.3 / 105	1029.3 / 105
effective pressure area (press) cm <sup>2</sup>	70.9	70.9	103.9	103.9	143	143
effective pressure area (retract) cm <sup>2</sup>	20.6	20.6	53.6	53.6	56.6	56.6
required oil content (press) cc	1064	2127	1559	3117	716	2145
required oil content (retract) cc	309	620	755	1509	283	848
connection	A 118					
cylinder type	high tonnage					
acting type	double	double	double	double	double	double
return type	hydraulic	hydraulic	hydraulic	hydraulic	hydraulic	hydraulic
material	steel	steel	steel	steel	steel	steel
weight, ready for use kg	27.0	44.0	46.0	63.0	29.0	53.0

**High Tonnage Cylinders - Hydraulic Return (dimensions)**


model	HJ 50 H 15	HJ 50 H 30	HJ 75 H 15	HJ 75 H 30	HJ 100 H 5	HJ 100 H 15
dimension A mm	282	463	347	497	163	309
dimension B mm	130	130	156	156	178	178
dimension C mm	80	80	80	80	105	105
dimension D1 mm	70	70	70	70	70	70
dimension D2 mm	85	85	85	85	85	85
dimension E mm	25	38	47	47	27	52
dimension F mm	275	456	340	490	163	302
dimension P mm	70	70	83	83	52	52
I type	I <sub>2</sub>	I <sub>2</sub>	I <sub>2</sub>	I <sub>1</sub>	I <sub>1</sub>	I <sub>1</sub>

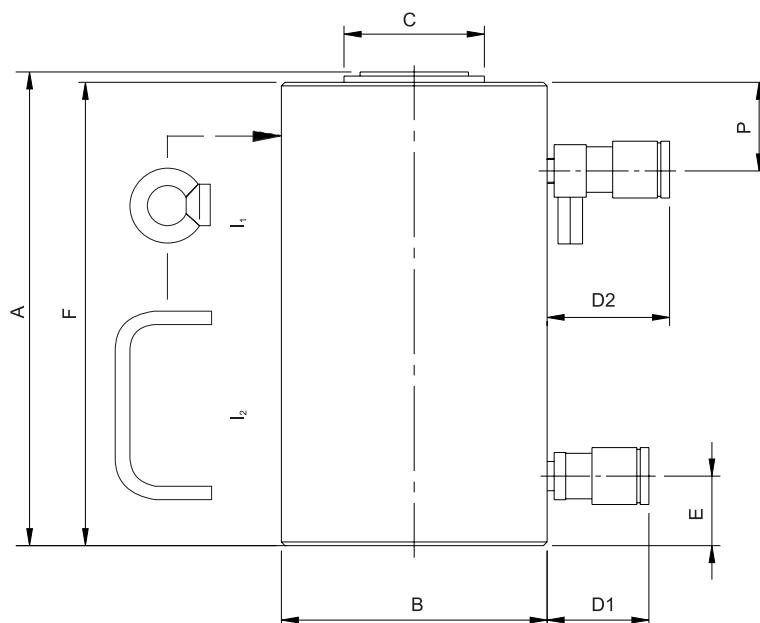


**High Tonnage Cylinders - Hydraulic Return**


model	HJ 100 H 30	HJ 150 H 15	HJ 150 H 30	HJ 200 H 15	HJ 200 H 30	HJ 300 H 15
art no	100.122.054	100.122.061	100.122.062	100.122.071	100.122.072	100.122.084
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	100	150	150	200	200	300
<b>stroke mm</b>	300	150	300	150	300	150
<b>closed height mm</b>	497	317	502	327	507	382
capacity kN/t	1029.3 / 105	1538.9 / 156.9	1538.9 / 156.9	2040.6 / 208.1	2040.6 / 208.1	2933 / 299.1
effective pressure area (press) cm <sup>2</sup>	143	213.8	213.8	283.5	283.5	415.5
effective pressure area (retract) cm <sup>2</sup>	56.6	110	110	82.5	82.5	131.9
required oil content (press) cc	4290	3207	6414	4253	8505	6225
required oil content (retract) cc	1695	1650	3300	1238	2475	1965
connection	A 118	A 118	A 118	A 118	A 118	A 118
cylinder type	high tonnage	high tonnage	high tonnage	high tonnage	high tonnage	high tonnage
acting type	double	double	double	double	double	double
return type	hydraulic	hydraulic	hydraulic	hydraulic	hydraulic	hydraulic
material	steel	steel	steel	steel	steel	steel
weight, ready for use kg	85.0	76.0	128.0	121.0	186.0	240.0

**High Tonnage Cylinders - Hydraulic Return (dimensions)**


model	HJ 100 H 30	HJ 150 H 15	HJ 150 H 30	HJ 200 H 15	HJ 200 H 30	HJ 300 H 15
dimension A mm	497	317	502	327	507	382
dimension B mm	178	227	227	261	261	316
dimension C mm	105	115	115	160	160	190
dimension D1 mm	70	70	70	70	70	70
dimension D2 mm	85	85	85	85	85	85
dimension E mm	52	57	57	60	60	80
dimension F mm	490	310	495	320	500	370
dimension P mm	70	55	70	60	70	75
I type	I <sub>1</sub>					

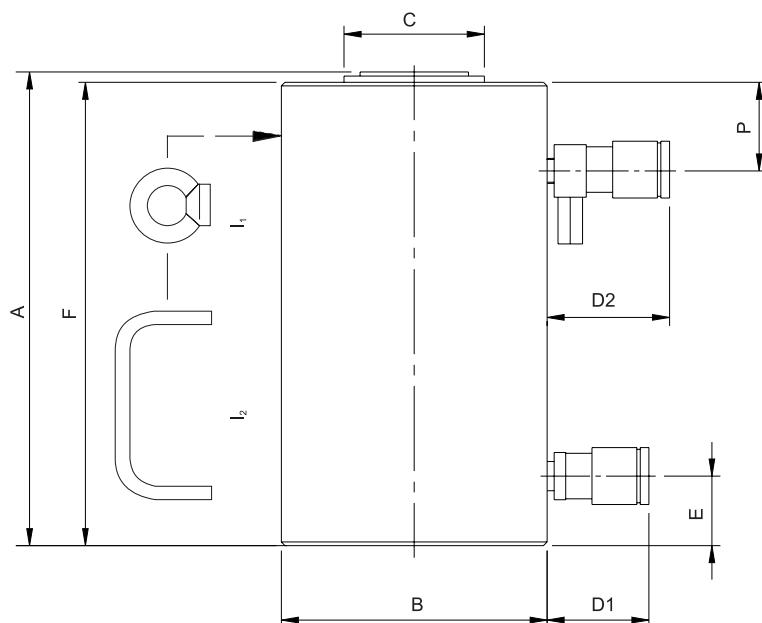



**High Tonnage Cylinders - Hydraulic Return**

model	HJ 300 H 30	HJ 400 H 15	HJ 400 H 30	HJ 500 H 15	HJ 500 H 30
art no	100.122.083	100.122.091	100.122.092	100.122.043	100.122.038
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	300	400	400	500	500
<b>stroke mm</b>	300	150	300	150	300
<b>closed height mm</b>	547	402	572	442	587
capacity kN/t	2933 / 299.1	3750 / 382.4	3750 / 382.4	4994 / 509.2	4994 / 509.2
effective pressure area (press) cm <sup>2</sup>	415.5	530.9	530.9	707	707
effective pressure area (retract) cm <sup>2</sup>	131.9	216.7	216.7	360.3	360.3
required oil content (press) cc	12450	7950	15900	10605	21210
required oil content (retract) cc	3930	3238	6476	5400	10800
connection	A 118				
cylinder type	high tonnage				
acting type	double	double	double	double	double
return type	hydraulic	hydraulic	hydraulic	hydraulic	hydraulic
material	steel	steel	steel	steel	steel
weight, ready for use kg	360.0	325.0	413.0	390.0	520.0


**High Tonnage Cylinders - Hydraulic Return (dimensions)**

model	HJ 300 H 30	HJ 400 H 15	HJ 400 H 30	HJ 500 H 15	HJ 500 H 30
dimension A mm	547	402	572	442	587
dimension B mm	316	358	358	412	412
dimension C mm	190	200	200	210	210
dimension D1 mm	70	70	70	70	70
dimension D2 mm	85	85	85	85	85
dimension E mm	80	76	76	85	85
dimension F mm	540	395	565	435	580
dimension P mm	75	80	80	90	90
I type	I <sub>1</sub>				




**Features & benefits**

- Usable in all positions
- Safe because of mechanical load locking
- Suitable for sustained load
- Flat saddle
  - Prevents damage to the plunger
  - Easy to replace with tilting saddle

**Standard supplied with**

- High Flow female coupler A 118
- Flat saddle

**Available on request**

- Cylinders manufactured in conformity with customer specifications
- Collar thread
- Base mounting holes

Tilting Saddles

page 97

Hydraulic Pumps

page 139

Hydraulic Hoses

page 166

Pressure Gauges

page 171



Safe because of mechanical load locking

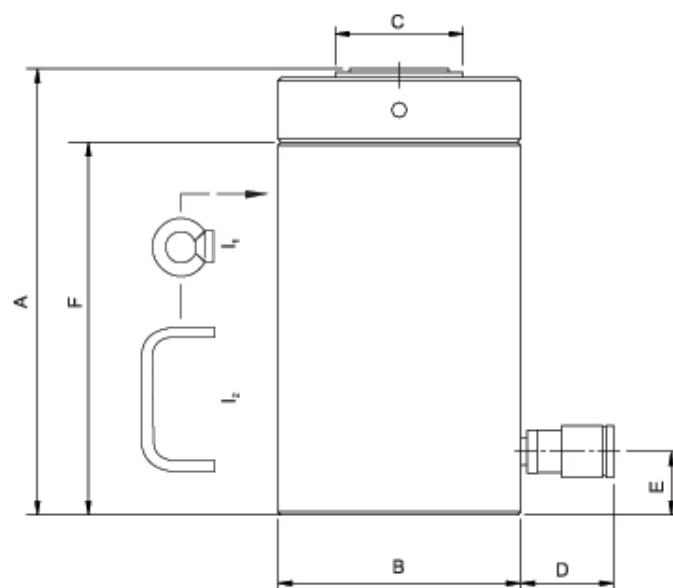


**Locknut Cylinders - Gravity Return**


model	HJ 10 G 15 SN	HJ 25 G 15 SN	HJ 50 G 15 SN	HJ 100 G 15 SN	HJ 150 G 15 SN	HJ 250 G 15 SN
art no	100.082.003	100.082.002	100.082.001	100.082.000	100.112.136	100.112.083
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	10	25	50	100	150	250
<b>stroke mm</b>	150	150	150	150	150	150
<b>closed height mm</b>	270	283	307	323	363	385
capacity kN/t	99.3 / 10.1	238.9 / 24.4	510.3 / 52	1029.3 / 105	1538.9 / 156.9	2493.8 / 254.3
effective pressure area cm <sup>2</sup>	13.8	33.2	70.9	143	213.8	340.6
required oil content (effective) cc	210	498	1065	2150	3207	5195
connection	A 118	A 118	A 118	A 118	A 118	A 118
cylinder type	lock nut	lock nut	lock nut	lock nut	lock nut	lock nut
acting type	single	single	single	single	single	single
return type	gravity	gravity	gravity	gravity	gravity	gravity
material	steel	steel	steel	steel	steel	steel
weight, ready for use kg	5.9	14.0	34.0	71.0	101.0	180.0

**Locknut Cylinders - Gravity Return (dimensions)**


model	HJ 10 G 15 SN	HJ 25 G 15 SN	HJ 50 G 15 SN	HJ 100 G 15 SN	HJ 150 G 15 SN	HJ 250 G 15 SN
dimension A mm	270	283	307	323	363	385
dimension B mm	60	90	135	190	212	300
dimension C mm	42	65	95	135	165	210
dimension D mm	70	70	70	70	70	70
dimension E mm	25	25	25	25	35	40
dimension F mm	242	257	272	287	305	330
I type		$l_2$	$l_2$	$l_1$	$l_1$	$l_1$




**Features & benefits**

- Extreme low closed height and a maximum side load resistance of 10%. Therefor useful for many different applications
- Double-acting for controlled lifting and lowering
- Integrated safety valves for protection against overpressure on return side
- Multiple-start and rounded thread on plunger for a quicker positioning of the locknut and easy dirt removal
- Hard chromed cylinder wall for optimal wear resistance and corrosion protection
- QPQ treated mechanical locknut with optimised grip and 4 tommy bar holes for easy locking and unlocking
- XL Saddle+: QPQ tilting saddle protects the plunger and limits eccentric loads
- Cover plate for keeping water and dirt out of the cylinder when it is stored

**Standard supplied with**

- High Flow female coupler A 118
- Tilting saddle

**Available on request**

- Lower closed height by using a maximum side load resistance of 5%

Hydraulic Pumps

page 139

Hydraulic Hoses

page 166

Pressure Gauges

page 171



Double-acting for controlled lifting and lowering



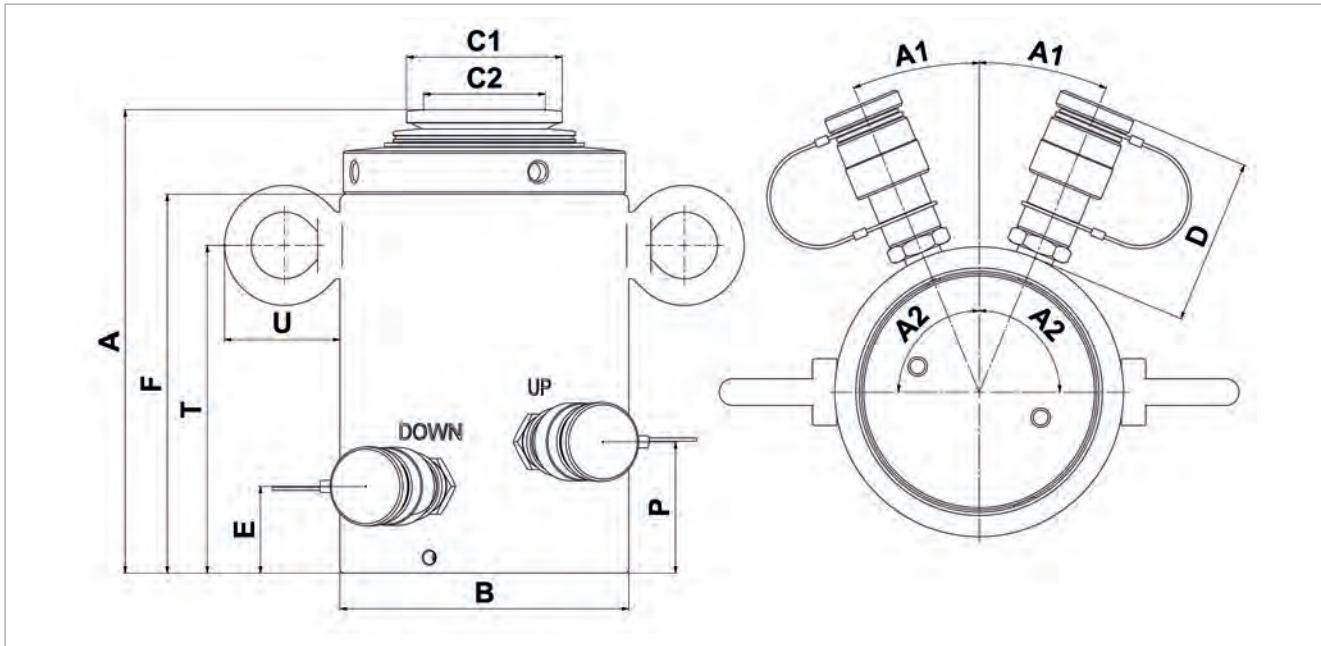
Multiple-start and rounded thread on plunger for a quicker positioning of the locknut and easy dirt removal


**Locknut Cylinders - Hydraulic Return**

model	HLC 50 H 5	HLC 50 H 15	HLC 50 H 30	HLC 100 H 5	HLC 100 H 15	HLC 100 H 30
art no	100.122.123	100.122.124	100.122.125	100.122.126	100.122.127	100.122.128
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	50	50	50	100	100	100
<b>stroke mm</b>	50	150	300	50	150	300
<b>closed height mm</b>	208	327	498	248	370	546
max. side-load resistance %	10	10	10	10	10	10
capacity kN/t	510 / 52	510 / 52	510 / 52	1001 / 102.1	1001 / 102.1	1001 / 102.1
effective pressure area (press) cm <sup>2</sup>	77.2	77.2	77.2	138.9	138.9	138.9
effective pressure area (retract) cm <sup>2</sup>	13.6	13.6	13.6	25.9	25.9	25.9
required oil content (effective) cc	318	954	1909	566	1697	3393
connection	A 118	A 118	A 118	A 118	A 118	A 118
cylinder type	lock nut	lock nut	lock nut	lock nut	lock nut	lock nut
acting type	double	double	double	double	double	double
return type	hydraulic	hydraulic	hydraulic	hydraulic	hydraulic	hydraulic
material	steel	steel	steel	steel	steel	steel
weight, ready for use kg	19.5	29.5	44.0	35.0	50.0	72.5


**Locknut Cylinders - Hydraulic Return (dimensions)**

model	HLC 50 H 5	HLC 50 H 15	HLC 50 H 30	HLC 100 H 5	HLC 100 H 15	HLC 100 H 30
dimension A mm	208	327	498	248	370	546
dimension B mm	130	130	130	160	160	160
dimension C1 mm	70	70	70	105	105	105
dimension C2 mm	55	55	55	72	72	72
dimension D mm	75	75	75	75	75	75
dimension E mm	39	39	39	48	48	48
dimension F mm	170	289	460	201	323	499
dimension P mm	58	58	58	72	72	72
dimension T mm	115	174	260	136	198	284
dimension U mm	54	54	54	54	54	54
angle A1 °	23	23	23	23	23	23
angle A2 °	90	90	90	90	90	90

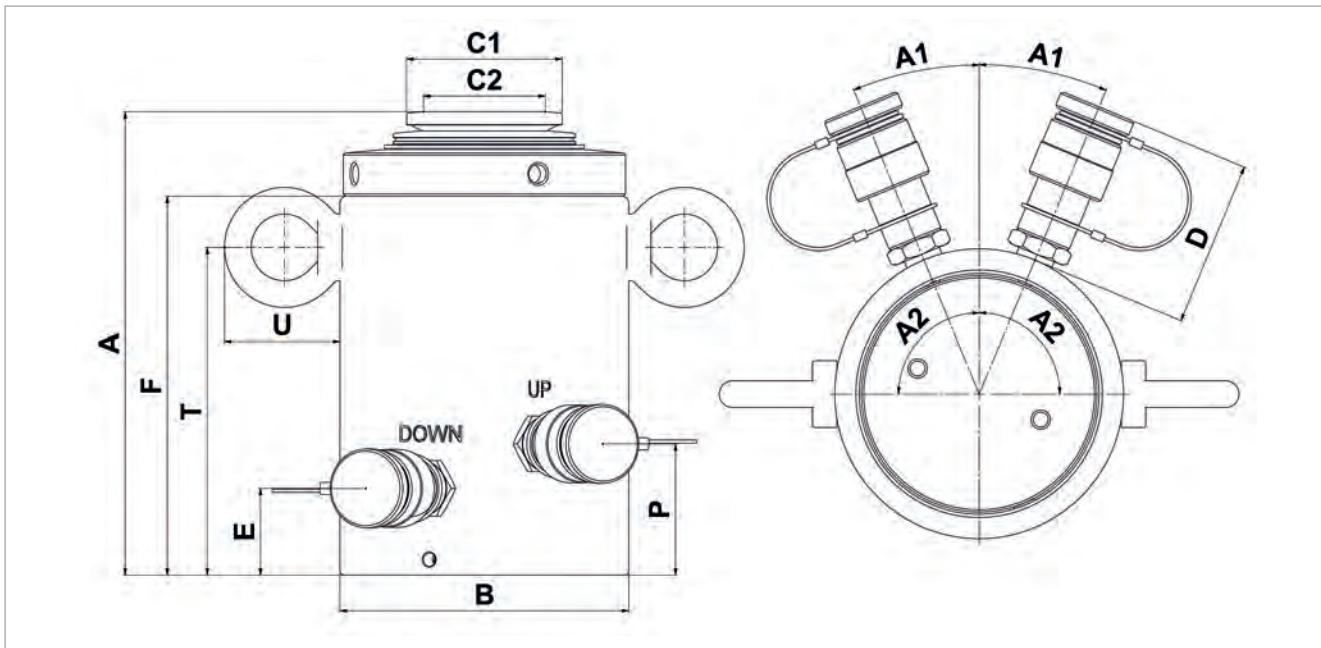



**Locknut Cylinders - Hydraulic Return**

model	HLC 150 H 5	HLC 150 H 15	HLC 150 H 30	HLC 250 H 5	HLC 250 H 15	HLC 250 H 30
art no	100.122.129	100.122.130	100.122.131	100.122.132	100.122.133	100.122.134
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	150	150	150	250	250	250
<b>stroke mm</b>	50	150	300	50	150	300
<b>closed height mm</b>	275	400	580	317	444	625
max. side-load resistance %	10	10	10	10	10	10
capacity kN/t	1493 / 152.2	1493 / 152.2	1493 / 152.2	2618 / 267	2618 / 267	2618 / 267
effective pressure area (press) cm <sup>2</sup>	214.3	214.3	214.3	358.9	358.9	358.9
effective pressure area (retract) cm <sup>2</sup>	37.7	37.7	37.7	75.6	75.6	75.6
required oil content (effective) cc	884	2651	5301	1418	4253	8506
connection	A 118	A 118	A 118	A 118	A 118	A 118
cylinder type	lock nut	lock nut	lock nut	lock nut	lock nut	lock nut
acting type	double	double	double	double	double	double
return type	hydraulic	hydraulic	hydraulic	hydraulic	hydraulic	hydraulic
material	steel	steel	steel	steel	steel	steel
weight, ready for use kg	56.3	79.0	112.9	103.0	144.0	203.0


**Locknut Cylinders - Hydraulic Return (dimensions)**

model	HLC 150 H 5	HLC 150 H 15	HLC 150 H 30	HLC 250 H 5	HLC 250 H 15	HLC 250 H 30
dimension A mm	275	400	580	317	444	625
dimension B mm	194	194	194	245	245	245
dimension C1 mm	105	105	105	170	170	170
dimension C2 mm	72	72	72	120	120	120
dimension D mm	75	75	75	75	75	75
dimension E mm	58	58	58	70	70	70
dimension F mm	221	346	526	253	380	561
dimension P mm	83	83	83	96	96	96
dimension T mm	146	211	296	168	230	320
dimension U mm	54	54	54	54	54	54
angle A1 °	23	23	23	15	15	15
angle A2 °	90	90	90	90	90	90






**Features & benefits**

- Compact
- Lightweight
- Usable in all positions
- Protected against ejection of the plunger
- Screw-on saddle
  - Prevents damage to the plunger
  - Easy to replace
- Standard fixing thread
  - On plunger head
  - On cylinder housing
  - In cylinder bottom
  - Designed for maximum cylinder load

**Standard supplied with**

- High Flow female coupler A 118
- Flat saddle

**Available on request**

- Cylinders manufactured in conformity with customer specifications

**Additional information**

ATTENTION: Consult the user manual before fitting cylinder accessories to these cylinders. The maximum working pressure and total construction length is restricted when using cylinder accessories!

Accessories	page	91
Hydraulic Pumps	page	139
Hydraulic Hoses	page	166
Pressure Gauges	page	171



Screw-on saddle



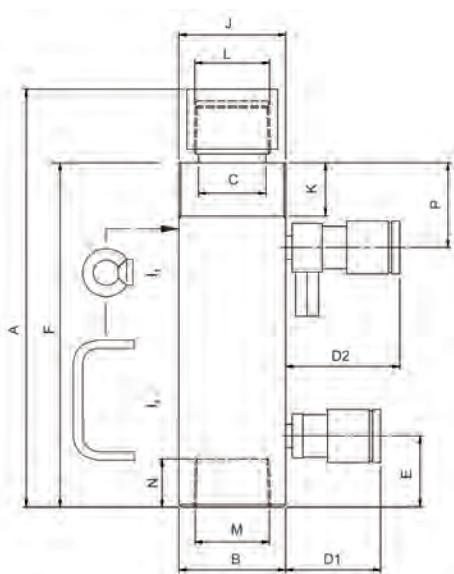
Standard fixing thread


**Construction Cylinders - Hydraulic Return**

model	HCJ 10 H 15	HCJ 25 H 15	HCJ 25 H 25
art no	100.122.066	100.122.067	100.122.068
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	10	25	25
<b>stroke mm</b>	150	150	250
<b>closed height mm</b>	338	350	450
capacity kN/t	99.3 / 10.1	238.9 / 24.4	238.9 / 24.4
effective pressure area (press) cm <sup>2</sup>	13.8	33.2	33.2
effective pressure area (retract) cm <sup>2</sup>	6.8	17.3	17.3
required oil content (press) cc	207	498	829
required oil content (retract) cc	102	260	432
connection	A 118	A 118	A 118
cylinder type	construction	construction	construction
acting type	double	double	double
return type	hydraulic	hydraulic	hydraulic
material	steel	steel	steel
weight, ready for use kg	6.1	12.7	18.2


**Construction Cylinders - Hydraulic Return (dimensions)**

model	HCJ 10 H 15	HCJ 25 H 15	HCJ 25 H 25
dimension A mm	338	350	450
dimension B mm	60	85	85
dimension C mm	30	45	45
dimension D1 mm	70	70	70
dimension D2 mm	85	85	85
dimension E mm	40	56	56
dimension F mm	287	297	397
dimension J threadsize	M60 x 2	M85 x 2	M85 x 2
dimension K mm	30	40	40
dimension L threadsize	1 1/4" NPT	2" NPT	2" NPT
dimension M threadsize	1 1/4" NPT	2" NPT	2" NPT
dimension N mm	27	27	27
dimension P mm	48	60	60
I type			I <sub>2</sub>





HHJ 30 G 5

**Features** & benefits 

- Compact
- Usable in all positions
- Protected against ejection of the plunger

**Standard** supplied with 

- High Flow female coupler A 118

**Available** on request 

- Cylinders manufactured in conformity with customer specifications
- Collar thread
- Base mounting holes

Hydraulic Pumps

page 139

Hydraulic Hoses

page 166

Pressure Gauges

page 171

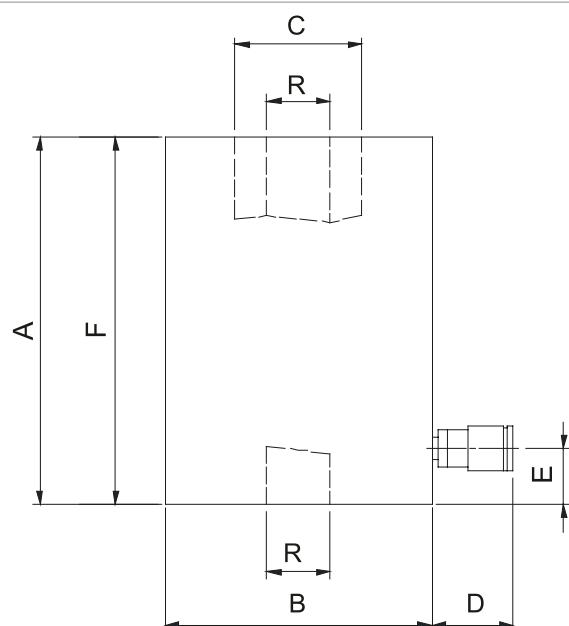



**Hollow Plunger Cylinders - Gravity Return**

<b>model</b>	<b>HHJ 30 G 5</b>
art no	100.111.053
max. working pressure bar/Mpa	720 / 72
<b>tonnage t</b>	30
<b>stroke mm</b>	50
<b>closed height mm</b>	120
capacity kN/t	293.7 / 29.9
effective pressure area cm <sup>2</sup>	40.8
required oil content (effective) cc	204
connection	A 118
cylinder type	hollow plunger
acting type	single
return type	gravity
material	steel
weight, ready for use kg	10.0


**Hollow Plunger Cylinders - Gravity Return (dimensions)**

<b>model</b>	<b>HHJ 30 G 5</b>
dimension A mm	120
dimension B mm	118
dimension C mm	70
dimension D mm	90
dimension E mm	33
dimension F mm	120
dimension R mm	33




**Features & benefits**

- Compact
- Usable in all positions
- Protected against ejection of the plunger
- Hollow saddle
  - Prevents damage to the plunger
  - Easy to replace with threaded or flat saddle

**Standard supplied with**

- High Flow female coupler A 118
- Hollow saddle, with the exception of the HHJ 5 S 2.5, HHJ 12 S 5 and HHJ 12 S 15 cylinders

**Available on request**

- Cylinders manufactured in conformity with customer specifications
- Collar thread
- Base mounting holes

**Accessories**

- Saddles: threaded and flat saddles

Thread And Flat Saddles	page	99
Hydraulic Pumps	page	139
Hydraulic Hoses	page	166
Pressure Gauges	page	171



Hollow saddle

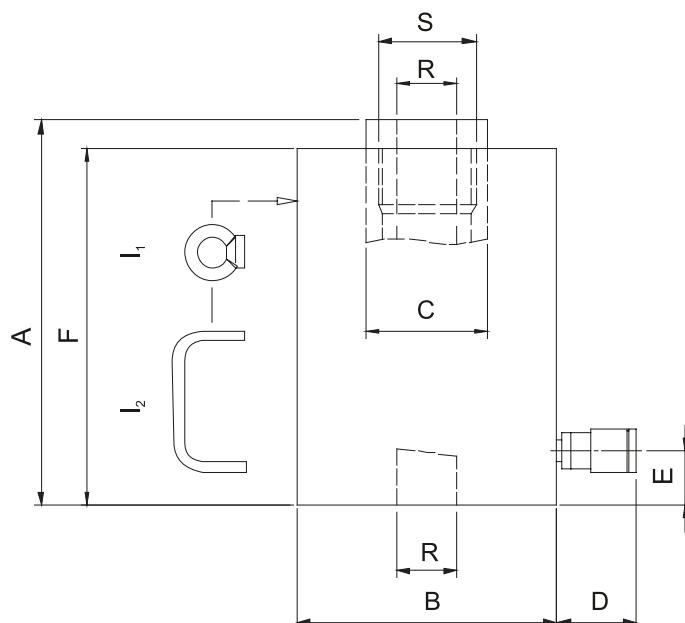



**Hollow Plunger Cylinders - Spring Return**

model	HHJ 5 S 2.5	HHJ 12 S 5	HHJ 12 S 15	HHJ 17 S 5	HHJ 20 S 5	HHJ 20 S 15
art no	100.111.002	100.111.021	100.111.029	100.112.023	100.112.033	100.112.030
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	5	12	12	17	20	20
<b>stroke mm</b>	25	50	150	50	50	150
<b>closed height mm</b>	87	156	298	192	182	389
capacity kN/t	54.3 / 5.5	126.7 / 12.9	126.7 / 12.9	169.6 / 17.3	223.9 / 22.8	223.9 / 22.8
effective pressure area cm <sup>2</sup>	7.5	17.6	17.6	23.6	31.1	31.1
required oil content (effective) cc	19	88	264	118	156	467
connection	A 118					
cylinder type	hollow plunger					
acting type	single	single	single	single	single	single
return type	spring	spring	spring	spring	spring	spring
material	steel	steel	steel	steel	steel	steel
weight, ready for use kg	1.9	6.3	11.0	7.3	8.6	18.0


**Hollow Plunger Cylinders - Spring Return (dimensions)**

model	HHJ 5 S 2.5	HHJ 12 S 5	HHJ 12 S 15	HHJ 17 S 5	HHJ 20 S 5	HHJ 20 S 15
dimension A mm	87	156	298	192	182	389
dimension B mm	60	86	86	90	100	100
dimension C mm	28	40	40	46	50	50
dimension D mm	90	90	90	90	90	90
dimension E mm	24	27	27	31	31	31
dimension F mm	87	156	298	178	170	377
dimension R mm	17	21	21	27	27	27
dimension S threadsize				M38x1,5	M38x1,5	M38x1,5
I type						I <sub>2</sub>

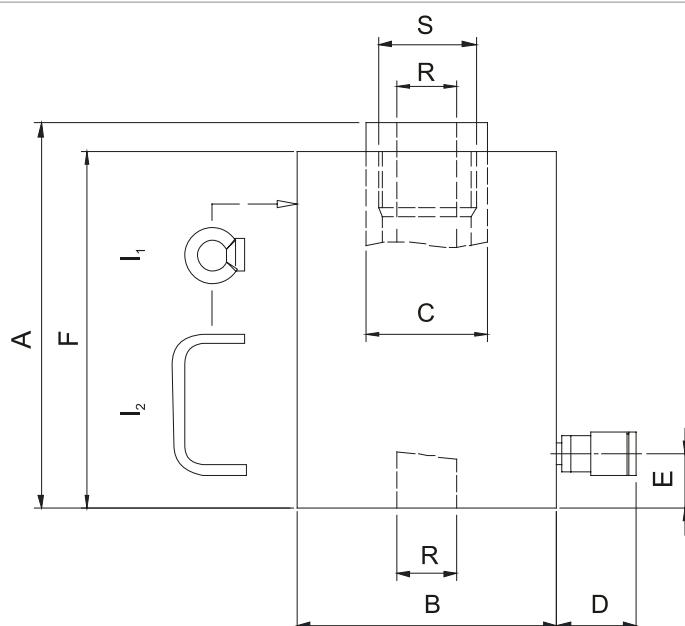



**Hollow Plunger Cylinders - Spring Return**

model	HHJ 30 S 7.5	HHJ 30 S 15	HHJ 45 S 15	HHJ 60 S 7.5	HHJ 110 S 7.5
art no	100.112.055	100.112.034	100.112.061	100.112.081	100.112.101
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	30	30	45	60	110
<b>stroke mm</b>	75	150	150	75	75
<b>closed height mm</b>	226	362	388	272	315
capacity kN/t	293.7 / 29.9	293.7 / 29.9	453.5 / 46.2	610.4 / 62.2	1107.8 / 113
effective pressure area cm <sup>2</sup>	40.8	40.8	63	84.8	153.9
required oil content (effective) cc	306	612	945	636	1155
connection	A 118				
cylinder type	hollow plunger				
acting type	single	single	single	single	single
return type	spring	spring	spring	spring	spring
material	steel	steel	steel	steel	steel
weight, ready for use kg	15.0	25.0	35.5	34.5	78.3


**Hollow Plunger Cylinders - Spring Return (dimensions)**

model	HHJ 30 S 7.5	HHJ 30 S 15	HHJ 45 S 15	HHJ 60 S 7.5	HHJ 110 S 7.5
dimension A mm	226	362	388	272	315
dimension B mm	118	120	140	166	238
dimension C mm	60	60	65	80	130
dimension D mm	90	90	70	70	70
dimension E mm	33	32	36	41	40
dimension F mm	214	350	376	257	295
dimension R mm	33	33	39	45	80
dimension S threadsize	M50x1,5	M50x1,5	M54x1,5	M65x1,5	M105x2
I type		I <sub>1</sub>	I <sub>2</sub>	I <sub>2</sub>	I <sub>1</sub>






**Features & benefits**

- Usable in all positions
- Protected against ejection of the plunger
- Protected against overpressure on return side
- Hollow saddle
  - Prevents damage to the plunger
  - Easy to replace with threaded or flat saddle

**Standard supplied with**

- High Flow female coupler A 118 on inlet port
- High Flow female coupler with pressure relief valve A 418 on outlet port
- Hollow saddle

**Available on request**

- Cylinders manufactured in conformity with customer specifications
- Collar thread
- Base mounting holes

**Accessories**

- Saddles: threaded and flat saddles

Thread And Flat Saddles	page	99
Hydraulic Pumps	page	139
Hydraulic Hoses	page	166
Pressure Gauges	page	171



Hollow saddle

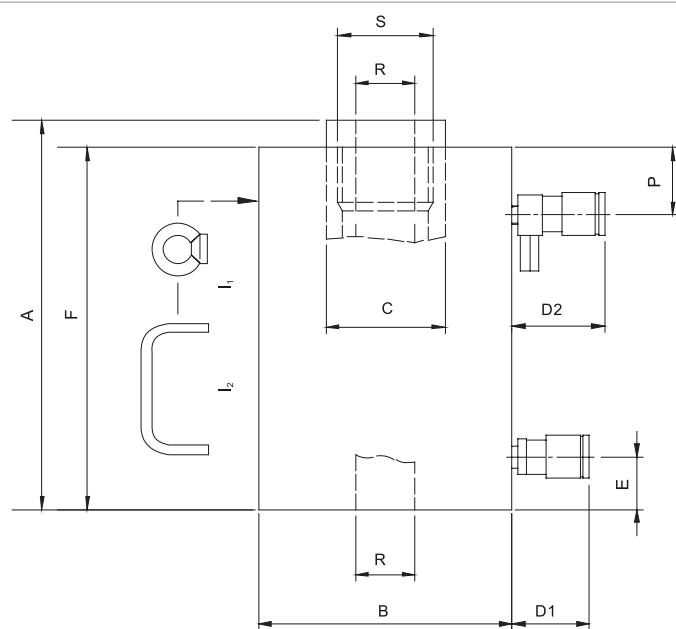



**Hollow Plunger Cylinders - Hydraulic Return**

model	HHJ 30 H 15	HHJ 60 H 20	HHJ 100 H 10	HHJ 100 H 20
art no	100.122.045	100.122.031	100.122.051	100.122.053
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	30	60	100	100
<b>stroke mm</b>	150	200	100	200
<b>closed height mm</b>	285	334	265	395
capacity (press) kN/t	293.7 / 29.9	610.4 / 62.2	1018.5 / 103.9	1018.5 / 103.9
capacity (retract) kN/t	131 / 13.4	452.4 / 46.1	706.9 / 72.1	706.9 / 72.1
effective pressure area (press) cm <sup>2</sup>	40.8	84.8	141.5	141.5
effective pressure area (retract) cm <sup>2</sup>	18.2	62.8	98.2	98.2
required oil content (press) cc	613	1696	1415	2830
required oil content (retract) cc	274	1256	982	1964
connection	A 118	A 118	A 118	A 118
cylinder type	hollow plunger	hollow plunger	hollow plunger	hollow plunger
acting type	double	double	double	double
return type	hydraulic	hydraulic	hydraulic	hydraulic
material	steel	steel	steel	steel
weight, ready for use kg	23.0	40.0	53.0	78.0


**Hollow Plunger Cylinders - Hydraulic Return (dimensions)**

model	HHJ 30 H 15	HHJ 60 H 20	HHJ 100 H 10	HHJ 100 H 20
dimension A mm	285	334	265	395
dimension B mm	120	166	210	210
dimension C mm	70	80	100	100
dimension D1 mm	70	70	70	70
dimension D2 mm	85	85	85	85
dimension E mm	40	41	52	52
dimension F mm	275	319	245	375
dimension P mm	50	39	55	75
dimension R mm	33	45	54	54
dimension S threadsize	M50x1,5	M65x1,5	M72x2	M72x2
I type	I <sub>2</sub>	I <sub>2</sub>	I <sub>1</sub>	I <sub>1</sub>




**Features & benefits**

- Compact
- Usable in all positions
- Protected against ejection of the plunger
- Protected against overpressure

**Standard** supplied with

- High Flow female coupler with pressure relief valve A 418

**Available** on request

- Cylinders manufactured in conformity with customer specifications
- Collar thread

**Accessories**

- Pulling eyes and clevis eyes (to be ordered separately, 2 pieces per cylinder)
- Protection spring (to be ordered separately)

Pulling Eyes	page	84
Clevis Eyes	page	85
Protection Springs	page	86
Hydraulic Pumps	page	139
Hydraulic Hoses	page	166
Pressure Gauges	page	171

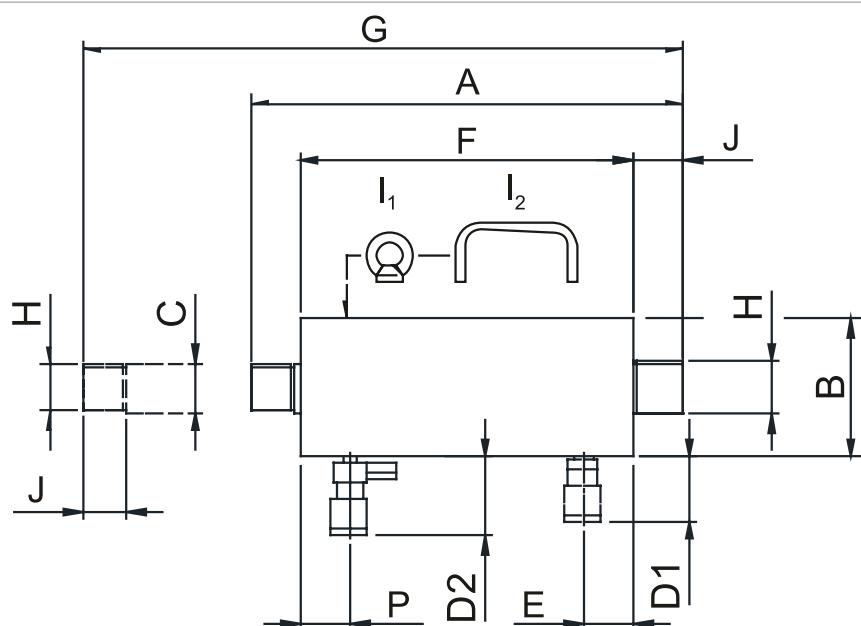



**Pulling Cylinders - Spring Return**

model	HPJ 11 S 15	HPJ 30 S 15	HPJ 60 S 15
art no	100.131.001	100.131.011	100.131.021
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72
<b>tonnage t</b>	11	30	60
<b>stroke mm</b>	150	150	150
capacity kN/t	113 / 11.5	298.7 / 30.5	610.4 / 62.2
effective pressure area cm <sup>2</sup>	15.7	41.5	84.8
required oil content (effective) cc	236	623	1272
connection	A 118	A 118	A 118
cylinder type	pulling	pulling	pulling
acting type	single	single	single
return type	spring	spring	spring
material	steel	steel	steel
weight, ready for use kg	11.5	26.0	45.0


**Pulling Cylinders - Spring Return (dimensions)**

model	HPJ 11 S 15	HPJ 30 S 15	HPJ 60 S 15
dimension A mm	320	470	530
dimension B mm	92	118	157
dimension C mm	40	40	60
dimension D2 mm	85	85	85
dimension F mm	250	380	400
dimension G mm	470	620	680
dimension H threadsize	M38x1.5	M38x1.5	M54x1.5
dimension J mm	30	40	60
dimension P mm	38	44	52





HPJ 100 H 15

**Features & benefits**

- Compact
- Usable in all positions
- Protected against ejection of the plunger
- Protected against overpressure

**Standard** supplied with

- High Flow female coupler with pressure relief valve A 418

**Available** on request

- Cylinders manufactured in conformity with customer specifications
- Collar thread

**Accessories**

- Pulling eyes and clevis eyes (to be ordered separately, 2 pieces per cylinder)
- Protection spring (to be ordered separately)

Pulling Eyes	page	84
Clevis Eyes	page	85
Protection Springs	page	86
Hydraulic Pumps	page	139
Hydraulic Hoses	page	166
Pressure Gauges	page	171

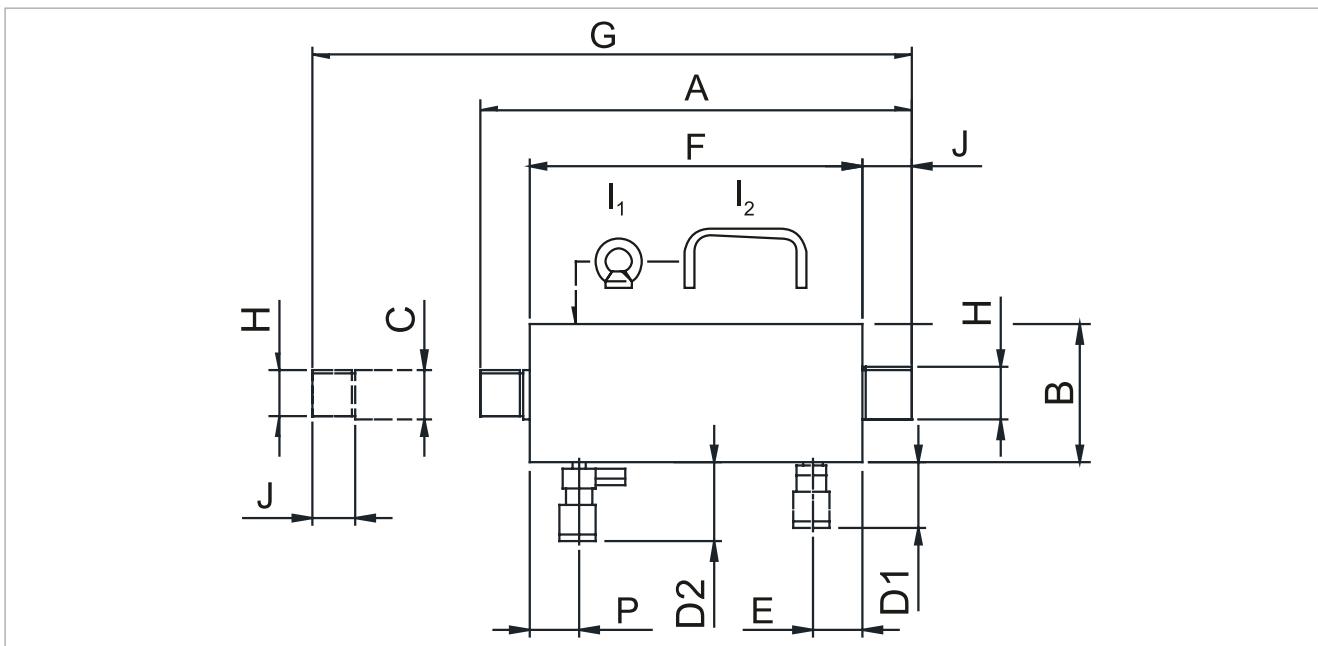



**Pulling Cylinders - Hydraulic Return**

<b>model</b>	<b>HPJ 100 H 15</b>
art no	100.122.042
max. working pressure bar/Mpa	720 / 72
<b>tonnage t</b>	<b>100</b>
<b>stroke mm</b>	<b>150</b>
capacity (press) kN/t	1271.9 / 129.7
capacity (retract) kN/t	953.7 / 97.3
effective pressure area (press) cm <sup>2</sup>	176.7
effective pressure area (retract) cm <sup>2</sup>	132.5
required oil content (press) cc	2651
required oil content (retract) cc	1988
connection	A 118
cylinder type	pulling
acting type	double
return type	hydraulic
material	steel
weight, ready for use kg	75.0


**Pulling Cylinders - Hydraulic Return (dimensions)**

<b>model</b>	<b>HPJ 100 H 15</b>
dimension A mm	462
dimension B mm	210
dimension C mm	75
dimension D1 mm	70
dimension D2 mm	85
dimension E mm	57
dimension F mm	310
dimension G mm	612
dimension H threadsize	M72x2
dimension J mm	60
dimension P mm	57
I type	I <sub>1</sub>





HPJ 11 S 15

**Features & benefits**

- Made of milled steel
- Chemical blacked coating

**Additional information**

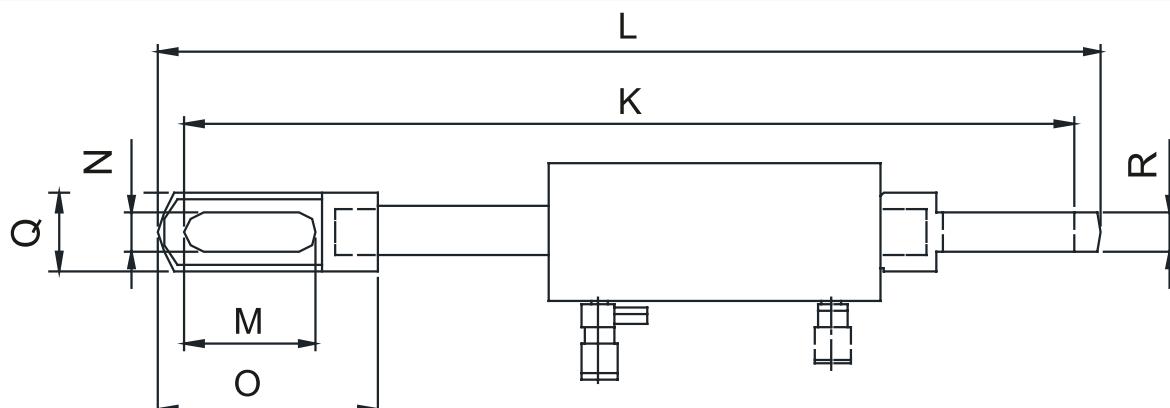
- To be ordered separately, 2 pieces per cylinder

**Pulling Cylinders - Pulling Eyes**

model	HPJ 11 S 15	HPJ 30 S 15	HPJ 60 S 15	HPJ 100 H 15
art no	100.181.051	100.181.051	100.181.052	100.181.053

**Pulling Cylinders - Pulling Eyes (dimensions)**

model	HPJ 11 S 15	HPJ 30 S 15	HPJ 60 S 15	HPJ 100 H 15
dimension K	mm 760	890	1000	1012
dimension L	mm 810	940	1080	1132
dimension M	mm 120	120	150	200
dimension N	mm 35	35	45	45
dimension O	mm 200	200	260	320
dimension Q	mm 70	70	115	135
dimension R	mm 35	35	40	50





HPJ 11 S 15

**Features & benefits**

- Made of milled steel
- Complete with pin and quick lock ring
- Specially suitable for use with slings

**Additional information**

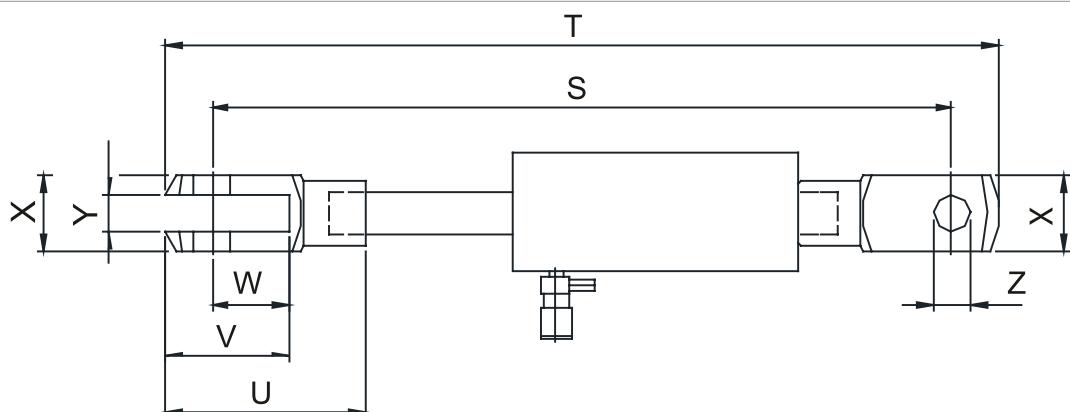
- To be ordered separately, 2 pieces per cylinder

**Pulling Cylinders - Clevis Eyes**


model	HPJ 11 S 15	HPJ 30 S 15
art no	100.181.056	100.181.057

**Pulling Cylinders - Clevis Eyes (dimensions)**


model	HPJ 11 S 15	HPJ 30 S 15
dimension S	mm 650	828
dimension T	mm 730	916
dimension U	mm 160	188
dimension V	mm 100	116
dimension W	mm 60	72
dimension X	mm 60	70
dimension Y	mm 30	36
dimension Z	mm 30	35





HPJ 11/30 S 15

**Features & benefits** 

- Protects the plunger against dirt and elding spots

**Additional information** 

- To be ordered separately

**Pulling Cylinders - Protection Springs** 

model	HPJ 11/30 S 15	HPJ 60 S 15	HPJ 100 H 15
art no	100.581.160	100.581.161	100.581.162


**HIK 10 M**
**Features & benefits**

- Consists of:
  - 2x Multi Purpose cylinder, 1x Hydraulic wedge
  - 4x Extension tube
  - 1x Connection socket, 1x Connection nipple
  - 1x Round base plate
  - 1x Cross head, 1x Wedge head
  - 1x Cylinder toe, 1x Plunger toe
  - 1x Plunger adapter, 1x Cylinder body adapter
  - 1x Pump with pressure gauge
  - 1x 2 meter hose with male coupler
  - 1x Storage case

**Available** on request

- Cylinders manufactured in conformity with customer specifications

**Additional** information

ATTENTION: Consult the user manual before fitting cylinder accessories to these cylinders. The maximum working pressure and total construction length is restricted when using cylinder accessories!

 Multi Purpose Cylinders  
 Parts

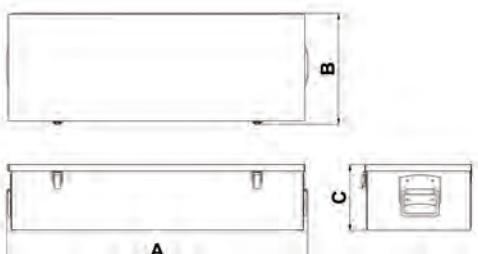
 page 28  
 page 88

**Multi Purpose Cylinder Set - Set**

model	<b>HIK 10 M</b>	
art no	100.062.003	
return type	spring	
material	steel	
weight, ready for use	kg	44.0

**Multi Purpose Cylinder Set - Set (dimensions)**

model	<b>HIK 10 M</b>	
dimension A	mm	782
dimension B	mm	287
dimension C	mm	171




**Multi Purpose Cylinder Set - Parts**

image	description	model	art no
	High quality Multi Purpose Cylinder. Fitted with unique features that considerably lengthen its life span and service life. Offers appropriate solutions for the most varied applications. Holmatro Multi Purpose Cylinders come in 50 models and are available in different capacities and with different stroke lengths.	HGC 10 S 5	100.112.219
	High quality Multi Purpose Cylinder. Fitted with unique features that considerably lengthen its life span and service life. Offers appropriate solutions for the most varied applications. Holmatro Multi Purpose Cylinders come in 50 models and are available in different capacities and with different stroke lengths.	HGC 10 S 15	100.112.221
	Hydraulic wedge, spring return <ul style="list-style-type: none"> <li>To lift a load from a flat surface where there is a minimum insertion space available</li> <li>Highly suitable to carry out maintenance in places that are difficult to access</li> <li>Applications: lifting machines, dismantling and assembly, adjustment and alignment</li> </ul>	HW 1000	100.562.009
	Extension tube <ul style="list-style-type: none"> <li>Suitable for HGC 10 and HCJ 10 cylinders</li> <li>Length: 125 mm</li> <li>Thread size: 1¼" NPT male (2x)</li> <li>Max. working pressure: 360 bar</li> </ul>	125 - HGC 10 / HCJ 10	100.002.984
	Extension tube <ul style="list-style-type: none"> <li>Suitable for HGC 10 &amp; HCJ 10 cylinders</li> <li>Length: 250 mm</li> <li>Thread size: 1¼" NPT male (2x)</li> <li>Max. working pressure: 360 bar</li> </ul>	250 - HGC 10 / HCJ 10	100.002.985
	Extension tube <ul style="list-style-type: none"> <li>Suitable for HGC 10 and HCJ 10 cylinders</li> <li>Length: 500 mm</li> <li>Thread size: 1¼" NPT male (2x)</li> <li>Max. working pressure: 360 bar</li> </ul>	500 - HGC 10 / HCJ 10	100.002.987
	Extension tube <ul style="list-style-type: none"> <li>Suitable for HGC 10 and HCJ 10 cylinders</li> <li>Length: 750 mm</li> <li>Thread size: 1¼" NPT male (2x)</li> <li>Max. working pressure: 360 bar</li> </ul>	750 - HGC 10 / HCJ 10	100.002.989
	Connection socket <ul style="list-style-type: none"> <li>To connect 2 extension tubes</li> <li>Suitable for HGC 10 and HCJ 10 cylinders</li> <li>Thread size: 1¼" NPT female (2x)</li> <li>Max. working pressure: 360 bar</li> </ul>	HGC 10 / HCJ 10	100.002.980


**Multi Purpose Cylinder Set - Parts**

image	description	model	art no
	Connection nipple • To connect accessories to cylinders • Suitable for HGC 10 and HCJ 10 cylinders • Thread size: 1 1/4" NPT male (2x) • Max. working pressure: 360 bar	HGC 10 / HCJ 10	100.002.982
	Round base plate • To mount on bottom side of cylinder • Suitable for HGC 10 and HCJ 10 cylinders • Thread size: 1 1/4" NPT female • Max. working pressure: 360 bar	HGC 10 / HCJ 10	100.002.978
	Cross head • To provide better grip • Suitable for HGC 10 and HCJ 10 cylinders • Thread size: 1 1/4" NPT female • Max. working pressure: 360 bar	HGC 10 / HCJ 10	100.002.966
	Wedge head • For spreading • Suitable for HGC 10 and HCJ 10 cylinders • Thread size: 1 1/4" NPT female • Max. working pressure: 360 bar	HGC 10 / HCJ 10	100.002.968
	Cylinder toe • Suitable for HGC 10 cylinders • Thread size: 2 1/4"-14 UNS female • Max. working pressure: 144 bar	HGC 10	100.002.992
	Plunger toe • Suitable for HGC 10 and HCJ 10 cylinders • Thread size: 1 1/4" NPT female • Max. working pressure: 144 bar	HGC 10 / HCJ 10	100.002.991
	Cylinder body adapter • Suitable for HGC 10 cylinders • Thread size: 1 1/4" NPT female • Max. working pressure: 360 bar • Standard supplied with 2x bolt M8x16	HGC 10	100.002.969
	Plunger Adapter • Suitable for HGC 10 cylinders • Thread size: 1 1/4" NPT male - 1"-8 UNC male • Max. working pressure: 360 bar	HGC 10	100.002.964


**Multi Purpose Cylinder Set - Parts**

image	description	model	art no
	The PA 04 H 2 is the most compact, single acting, 2 stage hand pump in the hand pump range. The pump is ergonomically designed, has a robust, compact construction, is service- and maintenance-friendly and combines a low operating force with a high oil output. This all combined with a range of handy features makes this pump a worthwhile asset for you and your tools. This pump is ideal when you are working with smaller hydraulic tools and you want to profit from a very high oil output in the first stage (up to 45 bar) to speed things up.	PA 04 H 2	100.142.033
	Standard hose with male coupler A 119 on one side	H 2 SOU	100.572.102
	Pressure gauge set PA 04/09 pump <ul style="list-style-type: none"> <li>• 0-720 bars</li> <li>• Pointer damped with glycerine</li> <li>• Stainless steel</li> <li>• Housing Ø 63 mm</li> <li>• Including rubber protection cover</li> <li>• Connection: 1/4" NPT male</li> </ul>	-	100.182.213
	Carrying storage box of hydraulic jack set HIK 10 M / HRK 10 M	-	150.581.001




**Accessories - 5 Tons Cylinder**

image	description	model	art no
	Aluminium base plate <ul style="list-style-type: none"> <li>• Suitable for HGC 5 and HGC 10</li> <li>• Max. working pressure: 720 bar</li> <li>• Standard supplied with 2x bolt M8x20 and 2x bolt M6x20</li> </ul>	HGC 5 / 10	100.003.004
	Assembly / Welding Ring <ul style="list-style-type: none"> <li>• Suitable for HGC 5 cylinders</li> <li>• Thread size: 1½"-16 UN</li> <li>• Max. working pressure: 720 bar</li> </ul>	HGC 5	100.182.189


**Accessories - 10 Tons Cylinder**

image	description	model	art no
	Plunger Adapter <ul style="list-style-type: none"> <li>• Suitable for HGC 10 cylinders</li> <li>• Thread size: 1¼" NPT male - 1"-8 UNC male</li> <li>• Max. working pressure: 360 bar</li> </ul>	HGC 10	100.002.964
	Cross head <ul style="list-style-type: none"> <li>• To provide better grip</li> <li>• Suitable for HGC 10 and HCJ 10 cylinders</li> <li>• Thread size: 1¼" NPT female</li> <li>• Max. working pressure: 360 bar</li> </ul>	HGC 10 / HCJ 10	100.002.966
	Wedge head <ul style="list-style-type: none"> <li>• For spreading</li> <li>• Suitable for HGC 10 and HCJ 10 cylinders</li> <li>• Thread size: 1¼" NPT female</li> <li>• Max. working pressure: 360 bar</li> </ul>	HGC 10 / HCJ 10	100.002.968
	Cylinder body adapter <ul style="list-style-type: none"> <li>• Suitable for HGC 10 cylinders</li> <li>• Thread size: 1¼" NPT female</li> <li>• Max. working pressure: 360 bar</li> <li>• Standard supplied with 2x bolt M8x16</li> </ul>	HGC 10	100.002.969
	Round base plate <ul style="list-style-type: none"> <li>• To mount on bottom side of cylinder</li> <li>• Suitable for HGC 10 and HCJ 10 cylinders</li> <li>• Thread size: 1¼" NPT female</li> <li>• Max. working pressure: 360 bar</li> </ul>	HGC 10 / HCJ 10	100.002.978
	Connection socket <ul style="list-style-type: none"> <li>• To connect 2 extension tubes</li> <li>• Suitable for HGC 10 and HCJ 10 cylinders</li> <li>• Thread size: 1¼" NPT female (2x)</li> <li>• Max. working pressure: 360 bar</li> </ul>	HGC 10 / HCJ 10	100.002.980


**Accessories - 10 Tons Cylinder**

image	description	model	art no
	<p>Connection nipple</p> <ul style="list-style-type: none"> <li>• To connect accessories to cylinders</li> <li>• Suitable for HGC 10 and HCJ 10 cylinders</li> <li>• Thread size: 1¼" NPT male (2x)</li> <li>• Max. working pressure: 360 bar</li> </ul>	HGC 10 / HCJ 10	100.002.982
	<p>Extension tube</p> <ul style="list-style-type: none"> <li>• Suitable for HGC 10 and HCJ 10 cylinders</li> <li>• Length: 125 mm</li> <li>• Thread size: 1¼" NPT male (2x)</li> <li>• Max. working pressure: 360 bar</li> </ul>	125 - HGC 10 / HCJ 10	100.002.984
	<p>Extension tube</p> <ul style="list-style-type: none"> <li>• Suitable for HGC 10 &amp; HCJ 10 cylinders</li> <li>• Length: 250 mm</li> <li>• Thread size: 1¼" NPT male (2x)</li> <li>• Max. working pressure: 360 bar</li> </ul>	250 - HGC 10 / HCJ 10	100.002.985
	<p>Extension tube</p> <ul style="list-style-type: none"> <li>• Suitable for HGC 10 and HCJ 10 cylinders</li> <li>• Length: 500 mm</li> <li>• Thread size: 1¼" NPT male (2x)</li> <li>• Max. working pressure: 360 bar</li> </ul>	500 - HGC 10 / HCJ 10	100.002.987
	<p>Extension tube</p> <ul style="list-style-type: none"> <li>• Suitable for HGC 10 and HCJ 10 cylinders</li> <li>• Length: 750 mm</li> <li>• Thread size: 1¼" NPT male (2x)</li> <li>• Max. working pressure: 360 bar</li> </ul>	750 - HGC 10 / HCJ 10	100.002.989
	<p>Aluminium base plate</p> <ul style="list-style-type: none"> <li>• Suitable for HGC 5 and HGC 10</li> <li>• Max. working pressure: 720 bar</li> <li>• Standard supplied with 2x bolt M8x20 and 2x bolt M6x20</li> </ul>	HGC 5 / 10	100.003.004
	<p>Plunger toe</p> <ul style="list-style-type: none"> <li>• Suitable for HGC 10 and HCJ 10 cylinders</li> <li>• Thread size: 1¼" NPT female</li> <li>• Max. working pressure: 144 bar</li> </ul>	HGC 10 / HCJ 10	100.002.991
	<p>Cylinder toe</p> <ul style="list-style-type: none"> <li>• Suitable for HGC 10 cylinders</li> <li>• Thread size: 2½"-14 UNS female</li> <li>• Max. working pressure: 144 bar</li> </ul>	HGC 10	100.002.992


**Accessories - 10 Tons Cylinder**

image	description	model	art no
	Cylinder toe • Suitable for HCJ 10 cylinders • Thread size: M60x2 female • Max. working pressure: 144 bar	10 E	100.002.993
	Screw-on saddle • Suitable for HCJ 10 cylinders • Thread size: 1¼" NPT female	10 D	100.181.091
	Bottom plug • Suitable for HCJ 10 cylinders • Thread size: 1¼" NPT male	10 K	100.181.519
	Assembly / Welding Ring • Suitable for HGC 10 cylinders • Thread size: 2½"-14 UNS • Max. working pressure: 720 bar	HGC 10	100.182.190
	Assembly / Welding Ring • Suitable for HCJ 10 cylinders • Thread size: M60x2 • Max. working pressure: 720 bar	HCJ 10	100.181.522


**Accessories - 15 Tons Cylinder**

image	description	model	art no
	Aluminium base plate • Suitable for HGC 15 and HGC 25 • Max. working pressure: 720 bar • Standard supplied with 2x bolt M12x30 and 2x bolt M10x30	HGC 15 / 25	100.003.005


**Accessories - 25 Tons Cylinder**

image	description	model	art no
	Plunger Adapter • Suitable for HGC 25 cylinders • Thread size: 2" NPT male - 1½"-16 UN male • Max. working pressure: 360 bar	HGC 25	100.002.965
	Cross head • To provide better grip • Suitable for HGC 25 and HCJ 25 cylinders • Thread size: 2" NPT female • Max. working pressure: 360 bar	HGC 25 / HCJ 25	100.002.967
	Cylinder body adapter • Suitable for HGC 25 cylinders • Thread size: 2" NPT female • Max. working pressure: 360 bar • Standard supplied with 2x bolt M12x20	HGC 25	100.002.970
	Round base plate • To mount on bottom side of cylinder • Suitable for HGC 25 and HCJ 25 cylinders • Thread size: 2" NPT female • Max. working pressure: 360 bar	HGC 25 / HCJ 25	100.002.979
	Connection socket • To connect 2 extension tubes • Suitable for HGC 25 and HCJ 25 cylinders • Thread size: 2" NPT female (2x) • Max. working pressure: 360 bar	HGC 25 / HCJ 25	100.002.981
	Connection Nipple • To connect accessories to cylinders • Suitable for HGC 25 and HCJ 25 cylinders • Thread size: 2" NPT male (2x) • Max. working pressure: 360 bar	HGC 25 / HCJ 25	100.002.983
	Extension tube • Suitable for HGC 25 and HCJ 25 cylinders • Length: 250 mm • Thread size: 2" NPT male (2x) • Max. working pressure: 360 bar	250 - HGC 25 / HCJ 25	100.002.986
	Extension tube • Suitable for HGC 25 and HCJ 25 cylinders • Length: 500 mm • Thread size: 2" NPT male (2x) • Max. working pressure: 360 bar	500 - HGC 25 / HCJ 25	100.002.988


**Accessories - 25 Tons Cylinder**

image	description	model	art no
	Extension tube • Suitable for HGC 25 and HCJ 25 cylinders • Length: 750 mm • Thread size: 2" NPT male (2x) • Max. working pressure: 360 bar	750 - HGC 25 / HCJ 25	100.002.990
	Aluminium base plate • Suitable for HGC 15 and HGC 25 • Max. working pressure: 720 bar • Standard supplied with 2x bolt M12x30 and 2x bolt M10x30	HGC 15 / 25	100.003.005
	Screw-on saddle • Suitable for HCJ 25 cylinders • Thread size: 2" NPT female	24 D	100.181.092
	Bottom plug • Suitable for HCJ 25 cylinders • Thread size: 2" NPT male	25 K	100.181.569
	Assembly / Welding Ring • Suitable for HGC 25 cylinders • Thread size: 3 5/16"-12 UN • Max. working pressure: 720 bar	HGC 25	100.182.193
	Assembly / Welding Ring • Suitable for HCJ 25 cylinders • Thread size: M85x2 • Max. working pressure: 720 bar	HCJ 25	100.181.572

**Accessories - 50 Tons Cylinder**

image	description	model	art no
	Assembly / Welding Ring <ul style="list-style-type: none"><li>• Suitable for HGC 50 cylinders</li><li>• Thread size: 5"-12 UN</li><li>• Max. working pressure: 720 bar</li></ul>	HGC 50	100.182.194


**Features & benefits**


- For load to a maximum angle of 5°
- Hardened
- Anti-skid grooves

**Saddles - Tilting Saddles - Multi Purpose Cylinders**


model	TS HGC 5	TS HGC 10	TS HGC 15	TS HGC 25	TS HGC 35	TS HGC 50
art no	100.182.151	100.182.152	100.182.153	100.182.154	100.182.155	100.182.156
cylinder tonnage	t 5	30	15	25	35	50
diameter	mm 20	30	30	45	45	70
additional height (vs flat saddle)	mm 5	5	5	7	7	9

**Saddles - Tilting Saddles - Multi Purpose Cylinders**


model	TS HGC 75	TS HGC 100
art no	100.182.160	100.182.150
cylinder tonnage	t 75	100
diameter	mm 70	105
additional height (vs flat saddle)	mm 9	12


**Features & benefits**


- For load to a maximum angle of 5°
- Hardened
- Anti-skid grooves

**Saddles - Tilting Saddles - Aluminium Cylinders**


model	TS HAC 20	TS HAC 30	TS HAC 50	TS HAC 100	TS HAC 150
art no	100.182.164	100.182.163	100.182.165	100.182.159	100.182.161
cylinder tonnage t	20	30	50	100	150
diameter mm	45	45	70	105	105
additional height (vs flat saddle) mm	8	8	9	12	12

**Saddles - Tilting Saddles - High Tonnage Cylinders**


model	S 50 TN	S 100 TN	S 200 TN	S 500 TN
art no	100.181.043	100.181.044	100.999.040	100.999.232
cylinder tonnage t	50	100	200	500
diameter mm	65	90	140	180
additional height (vs flat saddle) mm	11	11	23	38

**Saddles - Tilting Saddles - Locknut Cylinders - Gravity Return**


model	S 10 TN	S 25 TN	S 50 TN	S 100 TN	S 200 TN
art no	100.181.041	100.181.042	100.181.043	100.181.044	100.999.040
cylinder tonnage t	10	25	50	100	200
diameter mm	35	45	65	90	140
additional height (vs flat saddle) mm	17	10	11	11	23


**Features & benefits**


- Perfect to combine with tension rods

**Available on request**


- Different screw-thread sizes in threaded saddles

**Saddles - Thread And Flat Saddles - Thread Saddles - Hollow Plunger Cylinders**


model	<b>S 20 C</b>	<b>S 35 C</b>	<b>S 45 C</b>	<b>S 60 C</b>	<b>S 100 C</b>	<b>S 110 C</b>
art no	100.181.013	100.181.016	100.181.019	100.181.022	100.181.025	100.181.028
cylinder tonnage	t 20	30	45	60	100	110
diameter	mm 48	58	63	78	95	125
thread hole	threadsize 1" - 8 UNC	1 1/4" - 7 UNC	1 1/2" - 8 UNS	1 5/8" - 8 UNS	2" - 8 UNS	2" - 8 UNS

**Saddles - Thread And Flat Saddles - Flat Saddles - Hollow Plunger Cylinders**


model	<b>S 20 B</b>	<b>S 35 B</b>	<b>S 45 B</b>	<b>S 60 B</b>	<b>S 100 B</b>	<b>S 110 B</b>
art no	100.181.012	100.181.015	100.181.018	100.181.021	100.181.024	100.181.027
cylinder tonnage	t 20	30	45	60	100	110
diameter	mm 48	58	63	78	95	125



# Lifting Tools





HMJ 10 S 15 M

**Features & benefits**

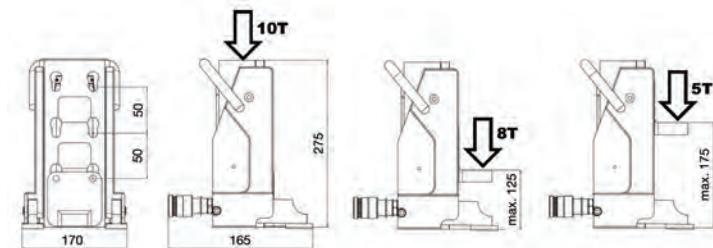

- Toe height adjustable in 3 positions: 25, 100 and 175 mm
- Protected against ejection of the plunger
- Telescopic support legs
- Duplex Power Coating makes the plunger corrosion-resistant
- Duo Power Ring; seal and bearing for long life span

Hydraulic Pumps  
 Hydraulic Hoses  
 Pressure Gauges

page 139  
 page 166  
 page 171

**Machine Lift - Spring Return**


model	<b>HMJ 10 S 15 M</b>	
art no	100.062.004	
max. working pressure	bar/Mpa	720 / 72
<b>tonnage</b>	<b>t</b>	10
<b>stroke</b>	<b>mm</b>	150
<b>closed height</b>	<b>mm</b>	275
capacity (head)	kN/t	100 / 10.2
capacity (toe), min.	kN/t	49 / 5
capacity (toe), max.	kN/t	78.5 / 8
required oil content (effective)	cc	208
return type	spring	
connection	A 118	
weight, ready for use	kg	18.5





TJ 8 S 13

**Features & benefits**

- Anti-skid profile on the toe
- Usable in all positions
- Compact construction, low weight
- Minimum tip clearance 18.5 mm
- Toe can be rotated 360°

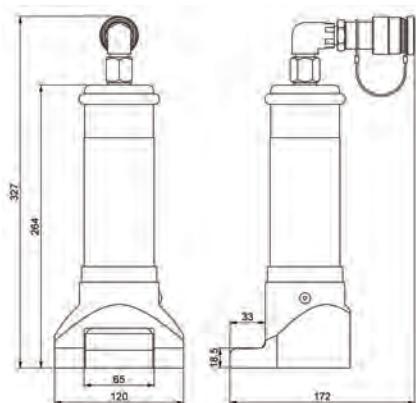


Hydraulic Pumps  
 Hydraulic Hoses  
 Pressure Gauges

page 139  
 page 166  
 page 171

**Toe Cylinder - Spring Return**


model	TJ 8 S 13
art no	100.112.102
max. working pressure bar/Mpa	720 / 72
<b>tonnage</b>	<b>t</b> 8
<b>stroke</b>	<b>mm</b> 130
<b>closed height</b>	<b>mm</b> 319
capacity (toe), min.	kN/t 88.3 / 9
required oil content (effective)	cc 207
return type	spring
connection	A 118
weight, ready for use	kg 6.5





HVLW 16 S 2


**Features & benefits**

- 100% vertical lifting movement; prevents misalignment of load
- Automatic mechanical retraction of lifting plate
- Minimum insertion space of 9 mm
- Vertical lifting stroke of 20 mm at each step

**Standard supplied with**

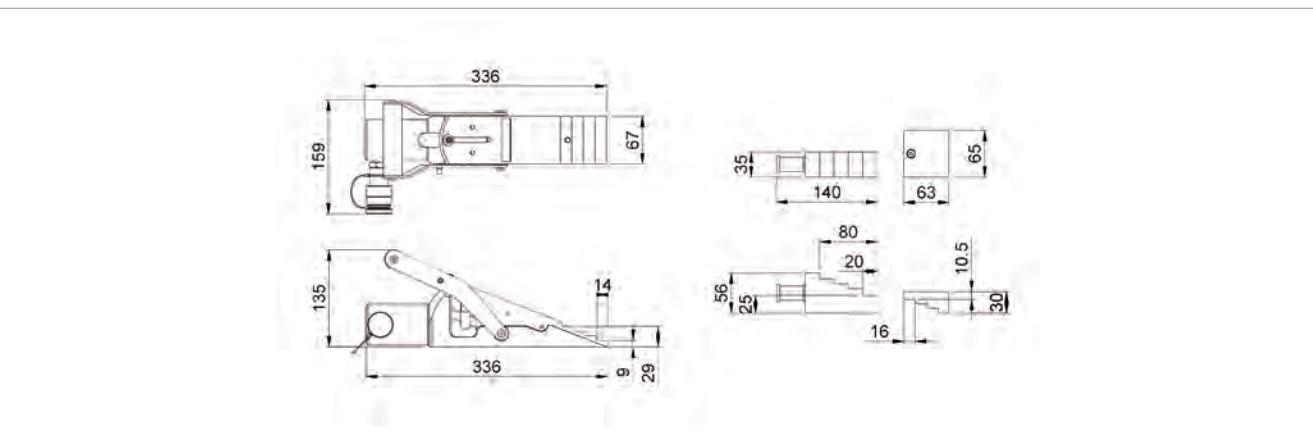
- Safety block
- Step block
- Grease pistol
- Grease cartridge Molycote®
- Plastic carrying / storage box

Hydraulic Pumps  
 Hydraulic Hoses  
 Pressure Gauges

page 139  
 page 166  
 page 171

**Vertical Lifting Wedge - Spring return**

<b>model</b>	<b>HVLW 16 S 2</b>
art no	100.112.104
max. working pressure	bar/Mpa 720 / 72
<b>tonnage</b>	<b>t 16</b>
min. insertion space	mm 9
lifting stroke	mm 20
max. spreading force	kN/t 156.6 / 16
required oil content (effective)	cc 75
return type	spring
weight, ready for use	kg 8.8





HW 1000


**Features & benefits**

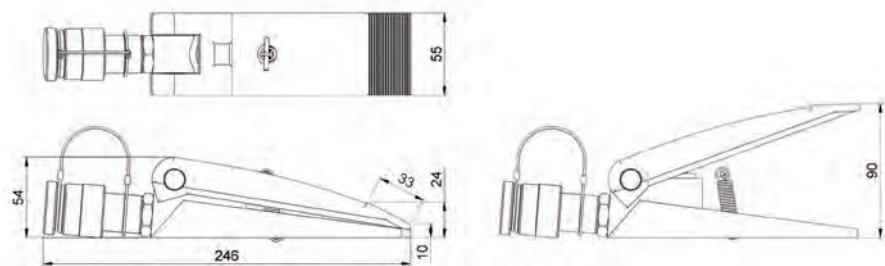

- Compact
- Lightweight
- Anti-skid profile on wedge arms
- Usable in all positions

Hydraulic Pumps  
 Hydraulic Hoses  
 Pressure Gauges

page 139  
 page 166  
 page 171

**Wedge - Spring Return**


<b>model</b>	<b>HW 1000</b>
art no	100.562.009
max. working pressure	bar/Mpa 720 / 72
<b>tonnage t</b>	<b>1</b>
min. insertion space	mm 15
lifting stroke	mm 90
max. spreading force	kN/t 10 / 1
required oil content (effective)	cc 10
return type	spring
weight, ready for use	kg 2.1





HWJ 25 U


**Features & benefits**

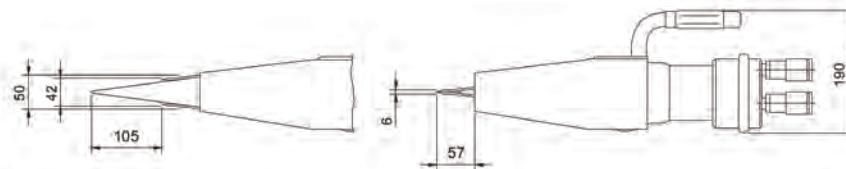
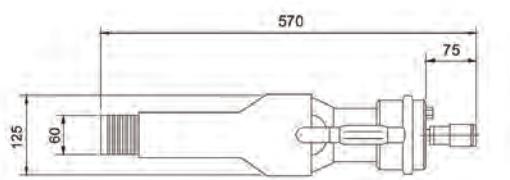
- Minimum insertion space of 6 mm
- Compact construction
- Low weight
- Anti-skid profile on wedge blades
- Usable in all positions

Hydraulic Pumps  
 Hydraulic Hoses  
 Pressure Gauges

page 139  
 page 166  
 page 171

**Wedge - Hydraulic Return**


model	HWJ 25 U	
art no	100.102.021	
max. working pressure	bar/Mpa	720 / 72
<b>tonnage</b>	<b>t</b>	25
min. insertion space	mm	6
lifting stroke	mm	44
max. spreading force	kN/t	253 / 25.8
return type	hydraulic	
required oil content (press)	cc	328
required oil content (retract)	cc	217
weight, ready for use	kg	8.1




**Features & benefits**


- Made of aramid reinforced nitril rubber NBR
  - No corrosion
  - Durable
- Reinforced with 3 aramide inlays
  - Lightweight
  - Highly flexible
  - Proven durability
- Revolutionary non-slip design
  - Maximum grip on all surfaces
  - Interlocking when 2 bags are placed on top of each other
- Unique lower profile edges; easy insertion under all circumstances
- CE-icons; optimal safety for the user
- Light reflecting labels on top side; better visibility in dark environment which improves safety and user friendliness
- Centring cross on both sides; easy and safe positioning

**Standard supplied with**


- "Autolock" couplers; quick connection with automatic double locking system
- Carrying straps on HLB 40 and HLB 67

**Available on request**


- Lifting capacity / height diagrams per model

**Lifting Capacity / Height Diagrams**
**page** 109

**Hoses** **page** 110

**Operating Valves** **page** 111

**Accessories** **page** 112

**Control Sets** **page** 113

**Lifting Bags - Lifting Bags**


model	HLB 1	HLB 3	HLB 5	HLB 10	HLB 12	HLB 18
art no	350.321.003	350.321.004	350.321.006	350.321.007	350.321.008	350.321.009
max. working pressure	bar/Mpa	8 / 0.8	8 / 0.8	8 / 0.8	8 / 0.8	8 / 0.8
max. inflation height	mm	80	130	150	215	225
thickness incl. profile	mm	22	22	22	25	25
max. lifting capacity	kN/t	10 / 1	35 / 3.6	50 / 5.1	100 / 10.2	120 / 12.2
air content (8 bar)	l	6.3	16.2	22.5	76.5	90
water content (8 bar)	l	0.7	1.8	2.5	8.5	10
min. bursting pressure	bar/Mpa	32 / 3.2	32 / 3.2	32 / 3.2	32 / 3.2	32 / 3.2
weight, ready for use	kg	0.6	1.5	2.0	3.8	5.0
dimensions (LxW)	mm	150 x 150	228 x 228	270 x 270	380 x 380	408 x 408
						660 x 360


**Features & benefits**


- Made of aramid reinforced nitril rubber NBR
  - No corrosion
  - Durable
- Reinforced with 3 aramide inlays
  - Lightweight
  - Highly flexible
  - Proven durability
- Revolutionary non-slip design
  - Maximum grip on all surfaces
  - Interlocking when 2 bags are placed on top of each other
- Unique lower profile edges; easy insertion under all circumstances
- CE-icons; optimal safety for the user
- Light reflecting labels on top side; better visibility in dark environment which improves safety and user friendliness
- Centring cross on both sides; easy and safe positioning

**Standard supplied with**


- "Autolock" couplers; quick connection with automatic double locking system
- Carrying straps on HLB 40 and HLB 67

**Available on request**


- Lifting capacity / height diagrams per model

**Lifting Capacity / Height Diagrams**

page 109

Hoses page 110

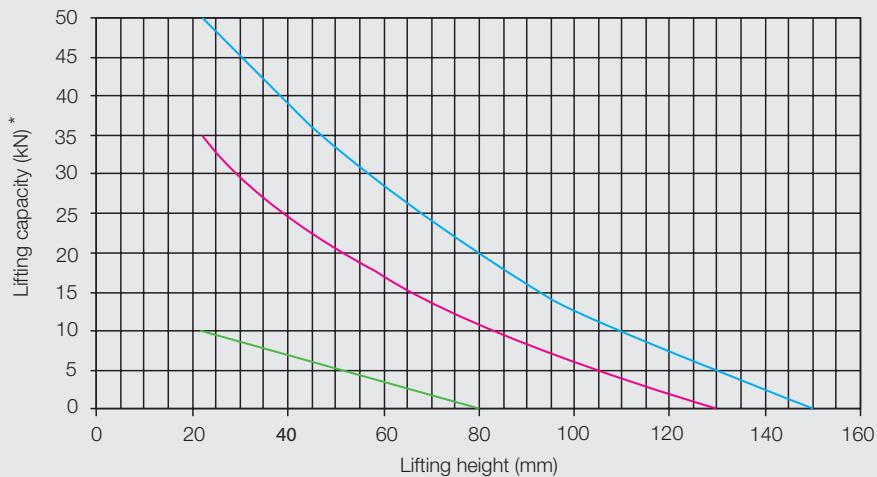
Operating Valves page 111

Accessories page 112

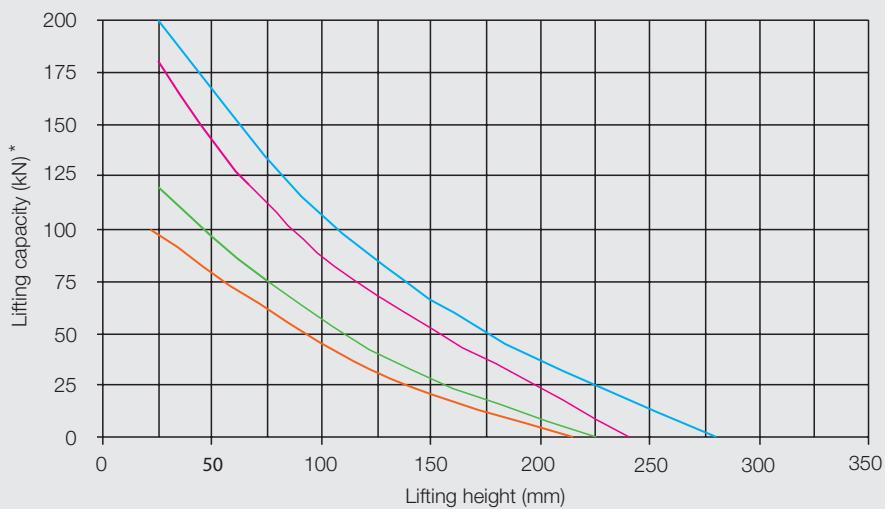
Control Sets page 113

**Lifting Bags - Lifting Bags**

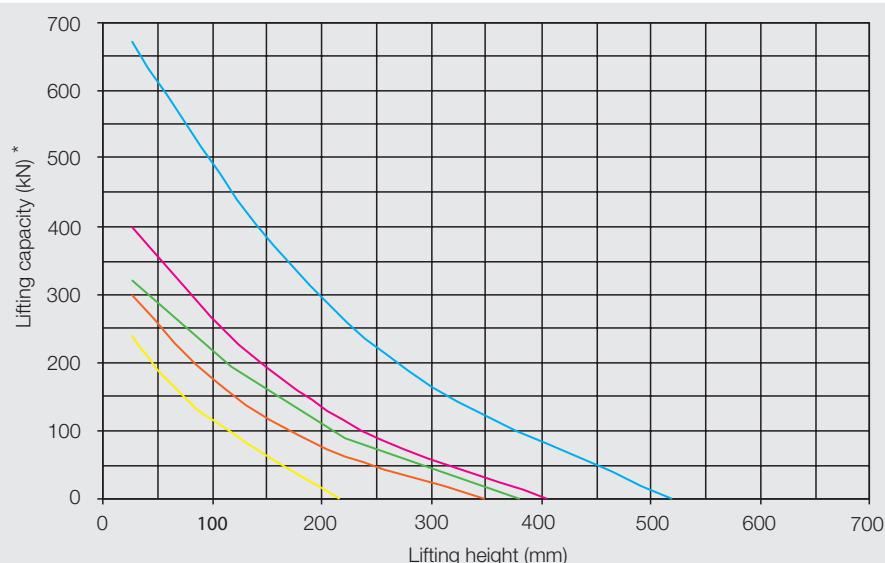

model	HLB 20	HLB 24	HLB 29	HLB 32	HLB 40	HLB 67
art no	350.321.010	350.321.012	350.321.017	350.321.013	350.321.014	350.321.015
max. working pressure	bar/Mpa	8 / 0.8	8 / 0.8	8 / 0.8	8 / 0.8	8 / 0.8
max. inflation height	mm	290	215	348	380	405
thickness incl. profile	mm	25	25	25	25	25
max. lifting capacity	kN/t	200 / 20.4	240 / 24.5	300 / 30.6	320 / 32.6	400 / 40.8
air content (8 bar)	l	189	216	373	450	558
water content (8 bar)	l	21	24	41.5	50	62
min. bursting pressure	bar/Mpa	32 / 3.2	32 / 3.2	32 / 3.2	32 / 3.2	32 / 3.2
weight, ready for use	kg	6.7	9.5	9.8	13.0	15.1
dimensions (LxW)	mm	508 x 508	1000 x 310	611 x 611	658 x 658	714 x 714
						903 x 903

**Diagram 1** - HLB 1 up to 5


— HLB 1  
— HLB 3  
— HLB 5

**Diagram 2** - HLB 10 up to 20


— HLB 10  
— HLB 12  
— HLB 18  
— HLB 20

**Diagram 3** - HLB 24 up to 67


— HLB 24  
— HLB 29  
— HLB 32  
— HLB 40  
— HLB 67

\* Actual lifting capacity can deviate 10%


**Features & benefits**

- Flexible
- 4:1 safety ratio

**Standard supplied with**

- Male and female air coupler

**Available on request**

- Different lengths and colours

**Lifting Bags - Hoses**

model	AH 5 YU	AH 5 BU	AH 5 RU	AH 10 YU	AH 10 BU	AH 10 RU
art no	350.572.006	350.572.007	350.572.008	350.572.009	350.572.011	350.572.012
max. working pressure	bar/Mpa	16 / 1.6	16 / 1.6	16 / 1.6	16 / 1.6	16 / 1.6
color		yellow	blue	red	yellow	blue
length	m	5	5	5	10	10
temperature range	°C	-20 + 80	-20 + 80	-20 + 80	-20 + 80	-20 + 80


**Lifting Bags - Operating Valves**

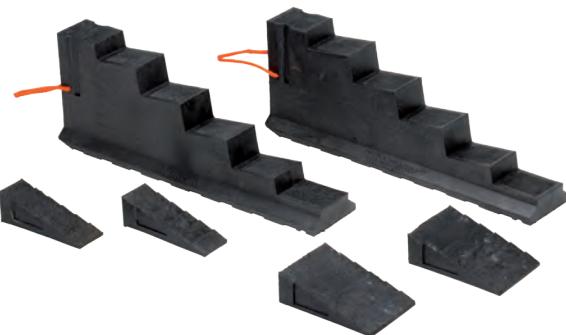
image	description	model	art no
	<p>Single control unit</p> <ul style="list-style-type: none"> <li>• For the control of 1 high-pressure lifting bag</li> <li>• Safety valves set at 8.5 bars</li> </ul>	SCV 10 U	350.582.042
	<p>Double control unit</p> <ul style="list-style-type: none"> <li>• For the control of 2 high-pressure lifting bags</li> <li>• Safety valves set at 8.5 bars</li> </ul>	DCV 10 U	350.582.034
	<p>Triple control unit</p> <ul style="list-style-type: none"> <li>• For the control of 3 high-pressure lifting bags</li> <li>• Safety valves set at 8.5 bars</li> </ul>	TCV 10 U	350.582.059
	<p>Quadruple control unit</p> <ul style="list-style-type: none"> <li>• For the control of 4 high-pressure lifting bags</li> <li>• Safety valves set at 8.5 bars</li> </ul>	QCV 10 U	350.582.060
	<p>Synthetic control box</p> <ul style="list-style-type: none"> <li>• For operation of 2 lifting bags</li> <li>• Safety valves set at 8.5 bar</li> </ul>	HDC 10 AU	350.182.003
	<p>Synthetic control box</p> <ul style="list-style-type: none"> <li>• For operation of 2 lifting bags</li> <li>• Safety valves set at 0,85 MPa</li> </ul>	HDC 10 AJU	350.182.004


**Lifting Bags - Accessories**

image	description	model	art no
	Shut-off hose with safety • To close high-pressure lifting bags while remaining under pressure in order to use hose and air source elsewhere	-	350.582.035
	Air bottle, 200 bar, 6 litres • For use with all air operated tools and pumps	-	350.581.086
	Air bottle, 300 bar, 6 litres • For use with all air operated tools and pumps	-	350.581.096
	Connection piece • For connection of 2 air bottles 200 bar	-	350.582.420
	Connection piece • For connection of 2 air bottles 300 bar	-	350.582.430
	Pressure reducer • For both 200 and 300 air bottles • Complete with hose 2 m	PRV 823 AU	350.182.002
	Adapter set • Synthetic carrying/storage case with various adapters for connection high-pressure lifting bags on various air sources	UAS 10	350.582.050


**Lifting Bags - Control Sets**

image	description	model	art no
	Air control set • Synthetic orange carrying/storage case with control box, hoses, shut-off hose, pressure reducer and connection piece for air bottles 200 bar	HCS 10 U_200	350.582.435
	Air control set • Synthetic orange carrying/storage case with control box, hoses, shut-off hose, pressure reducer and connection piece for air bottles 300 bar	HCS 10 U_300	350.582.038
	Air control set • Synthetic orange carrying/storage case with control unit, hoses, shut-off hose, pressure reducer and connection piece for air bottles 200 bar	DCS 10 U_200	350.582.436
	Air control set • Synthetic orange carrying/storage case with control unit, hoses, shut-off hose, pressure reducer and connection piece for air bottles 300 bar	DCS 10 U_300	350.582.039



Set A


**Features & benefits**

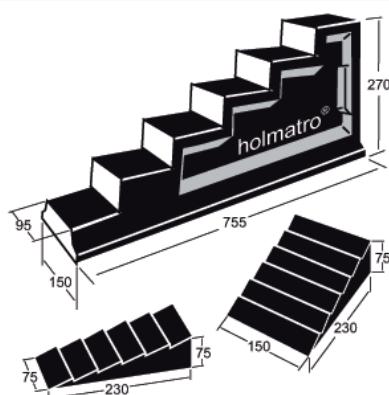
- Environment-friendly
  - Made of recycled polyethylene
  - 100% re-usable
- Longer life span than wood; virtually indestructible through one piece moulding
- Non-absorbent material; total resistance to water and oil
- Stackable; non-slip with unique surface profile design
- Extra grip due to elasticity of material under load
- Higher surface pressure allowed; supports 100 kg/cm<sup>2</sup> in all directions
- Lightweight; floats on water
- Safe; no splintering

**Standard supplied with**

- 2 x 1 step chock, 6.3 kg (150.563.060)
- 2 x 1 wedge small, 0.5 kg (150.563.049)
- 2 x 1 wedge large, 1.0 kg (150.563.050)

**Chocks And Blocks - Set A**

model	Set A
art no	150.562.010
weight, ready for use	kg 15.6





Set B


**Features & benefits**
↓

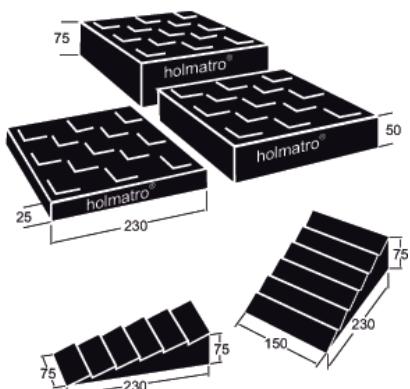
- Environment-friendly
  - Made of recycled polyethylene
  - 100% re-usable
- Longer life span than wood; virtually indestructible through one piece moulding
- Non-absorbent material; total resistance to water and oil
- Stackable; non-slip with unique surface profile design
- Extra grip due to elasticity of material under load
- Higher surface pressure allowed; supports 100 kg/cm<sup>2</sup> in all directions
- Lightweight; floats on water
- Safe; no splintering

**Standard supplied with**
↓

- 2 x 1 wedge small, 0.5 kg (150.563.049)
- 2 x 1 wedge large, 1.0 kg (150.563.050)
- 2 x 1 lock block low, 1.0 kg (150.563.061)
- 2 x 1 lock block medium, 2.0 kg (150.563.071)
- 2 x 1 lock block high, 3.0 kg (150.563.073)

**Chocks And Blocks - Set B**
↓

model	<b>Set B</b>
art no	150.562.004
weight, ready for use	kg 15.0




**Features & benefits**

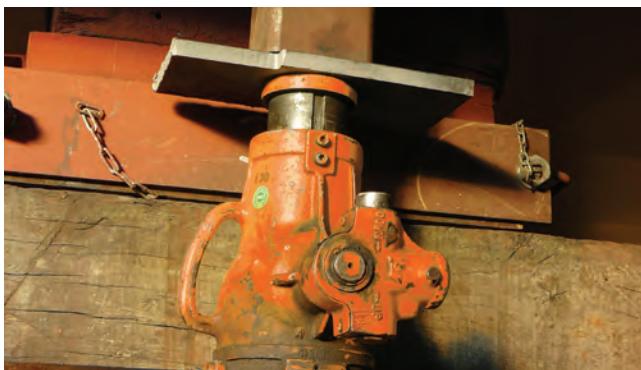
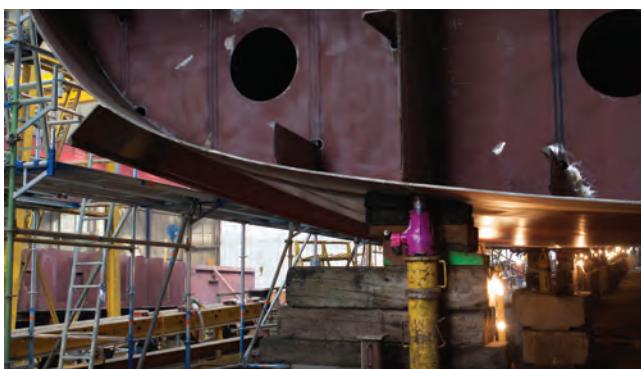
- Made of cast iron; resistant to continuous heavy operating conditions
- Unique ratchet handle for engagement both wheel and plunger
- Self-locking; for safe working
- Robust; can be used close to welding works and under water
- Low maintenance
- A range of 13 models with different capacities and stroke lengths
- Almost all jacks have a handle

**Standard supplied with**

- Handle bar

Traversing Beds  
Base Plates

page 123  
page 125

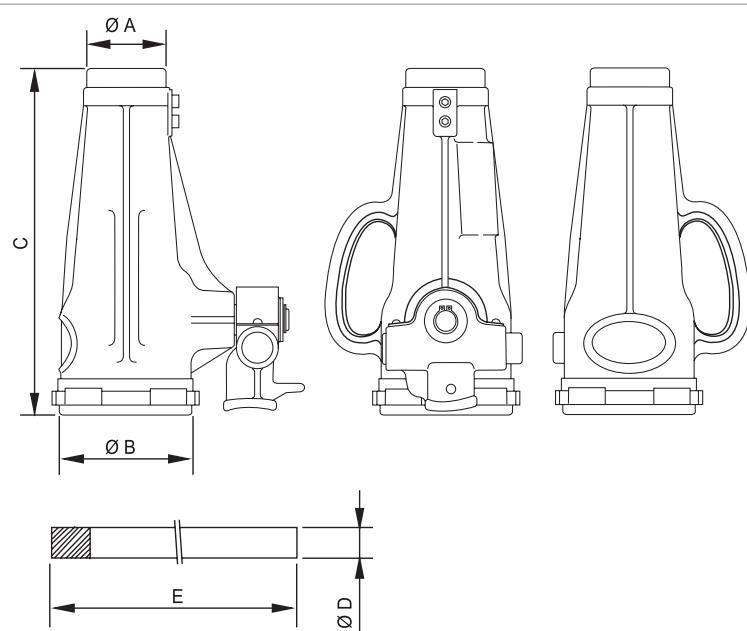



**Mechanical Tools - Jacks**

model	JJ 1015	JJ 1513	JJ 2513	JJ 2525	JJ 2533	JJ 3020
art no	200.401.001	200.401.011	200.401.021	200.102.001	200.102.005	200.102.002
<b>tonnage</b>	<b>t</b>	10	15	25	25	30
<b>stroke</b>	<b>mm</b>	150	125	125	250	330
<b>closed height</b>	<b>mm</b>	280	255	255	395	485
capacity	kN/t	98.1 / 10	147.2 / 15	245.3 / 25	245.3 / 25	294 / 30
weight, ready for use	kg	12.0	12.0	16.0	21.0	25.0
						26.0


**Mechanical Tools - Jacks (dimensions)**

model	JJ 1015	JJ 1513	JJ 2513	JJ 2525	JJ 2533	JJ 3020
dimension A	mm	65	63	77	77	95
dimension B	mm	108	113	127	127	148
dimension C	mm	280	255	255	395	485
dimension D	mm	25	25	25	25	25
dimension E	mm	600	600	700	700	700

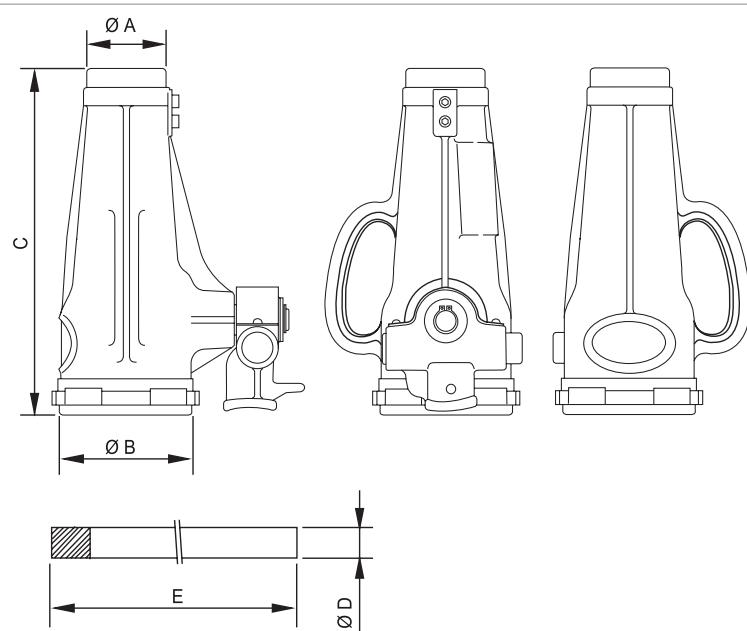



**Mechanical Tools - Jacks**

model	JJ 3513	JJ 3525	JJ 3535	JJ 5013	JJ 5025	JJ 5035
art no	200.401.031	200.102.003	200.102.006	200.401.041	200.102.004	200.102.007
<b>tonnage</b>	<b>t</b>	35	35	35	50	50
<b>stroke</b>	<b>mm</b>	130	250	350	130	250
<b>closed height</b>	<b>mm</b>	280	410	535	290	445
capacity	kN/t	343.4 / 35	343.4 / 35	343.4 / 35	490.5 / 50	490.5 / 50
weight, ready for use	kg	24.0	32.0	37.0	31.0	42.0
						47.0


**Mechanical Tools - Jacks (dimensions)**

model	JJ 3513	JJ 3525	JJ 3535	JJ 5013	JJ 5025	JJ 5035
dimension A	mm	87	87	87	105	105
dimension B	mm	147	147	147	166	166
dimension C	mm	280	410	535	290	445
dimension D	mm	32	32	32	32	32
dimension E	mm	700	700	700	800	800

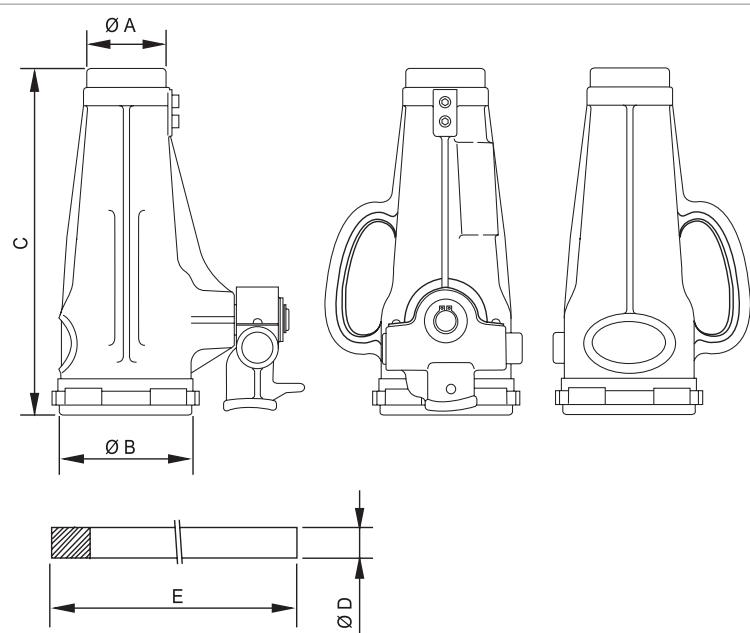



**Mechanical Tools - Jacks**

<b>model</b>	<b>JJ 10011</b>
art no	200.401.051
<b>tonnage</b>	<b>t</b> 100
<b>stroke</b>	<b>mm</b> 105
<b>closed height</b>	<b>mm</b> 310
capacity	kN/t 981 / 100
weight, ready for use	kg 75.0


**Mechanical Tools - Jacks (dimensions)**

<b>model</b>	<b>JJ 10011</b>
dimension A	mm 127
dimension B	mm 235
dimension C	mm 310
dimension D	mm 32
dimension E	mm 1500




**Features & benefits**

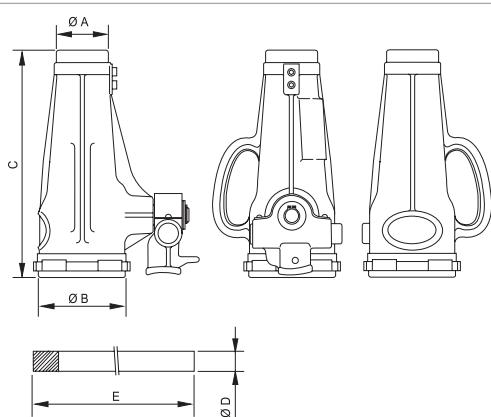

- Compact and lightweight construction; easy to work with and better for the welfare of your employees
- Special sliding pad instead of ball bearings
- Self-locking; for safe working
- Extendable handle bar
- All jacks have a handle

**Mechanical Tools - Jacks - Aluminium**


model	AJ 1008	AJ 1510	AJ 2510
art no	200.401.004	200.401.003	200.401.002
<b>tonnage</b> <b>t</b>	10	15	25
<b>stroke</b> <b>mm</b>	80	100	100
<b>closed height</b> <b>mm</b>	175	200	200
capacity                    kN/t	100 / 10.2	150 / 15.3	250 / 25.5
weight, ready for use      kg	6.1	6.8	9.5

**Mechanical Tools - Jacks - Aluminium (dimensions)**


model	AJ 1008	AJ 1510	AJ 2510
dimension A                mm	58	58	73
dimension B                mm	102	102	122
dimension C                mm	175	200	200
dimension D                mm	27	27	30
dimension E                mm	575	575	675





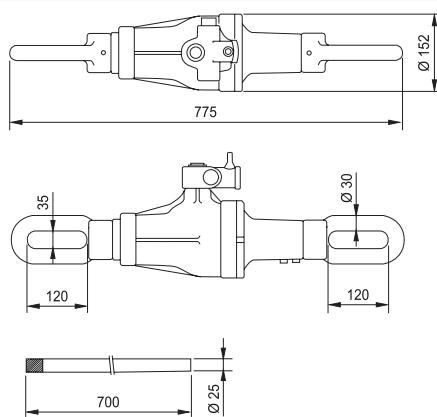
PL 2510

**Features & benefits**


- Made of cast iron; resistant to continuous heavy operating conditions
- Unique ratchet handle for engagement both wheel and plunger
- Pulling eyes and an handle bar
- Self-locking; for safe working
- Robust; can be used close to welding works and under water
- Usable in all positions
- Low maintenance

**Mechanical Tools - Pulling Jack**


<b>model</b>	<b>PL 2510</b>
art no	200.421.001
<b>tonnage</b>	<b>t</b> 25
<b>stroke</b>	<b>mm</b> 100
retracted length	mm 775
capacity	kN/t 245.3 / 25
weight, ready for use	kg 32.0





NJ 0615

**Features & benefits**

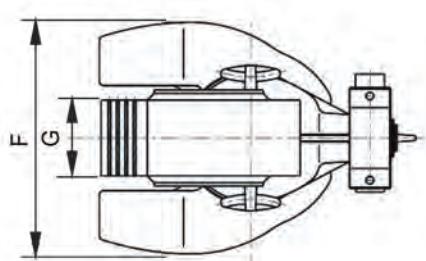
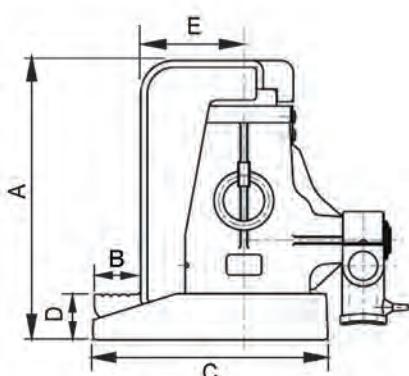

- Made of cast iron; resistant to continuous heavy operating conditions and low maintenance
- Unique ratchet handle for engagement both wheel and plunger
- Self-locking; for safe working
- Robust; can be used close to welding works and under water

**Mechanical Tools - Toe Jacks**


model	NJ 0615	NJ 1013	NJ 1513	NJ 2513
art no	200.102.022	200.102.023	200.102.024	200.102.025
<b>tonnage t</b>	6	10	15	25
<b>stroke mm</b>	150	125	125	130
<b>closed height mm</b>	310	290	297	332
capacity kN/t	60 / 6.1	100 / 10.2	150 / 15.3	250 / 25.5
weight, ready for use kg	23.0	29.0	38.0	60.0

**Mechanical Tools - Toe Jacks (dimensions)**


model	NJ 0615	NJ 1013	NJ 1513	NJ 2513
dimension A mm	310	290	297	332
dimension B mm	45	50	50	55
dimension C mm	208	227	242	280
dimension D mm	30	40	45	55
dimension E mm	85	93	101	123
dimension F mm	195	210	230	275
dimension G mm	70	75	80	90





TB 1030


**Features & benefits**

- Made of cast iron; resistant to continuous heavy operating conditions
- Screw shaft and handle bar; for easy operating
- Self-locking; for safe working
- Robust; can be used close to welding works and under water
- Low maintenance

**Additional information**

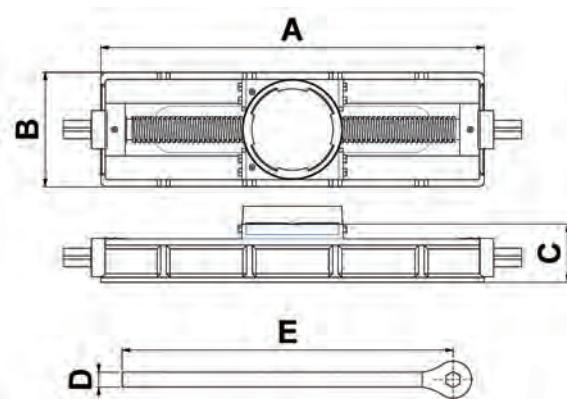
ATTENTION: Cannot be used with JJ 10011, Aluminium Mechanical jacks and Mechanical Toe jacks!

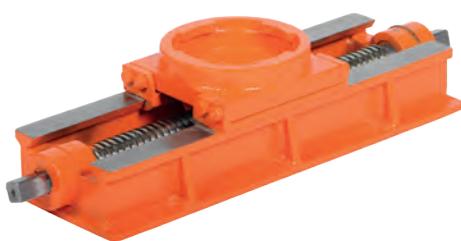
**Mechanical Tools - Accessories - Traversing Beds**

model	TB 1030	TB 1530	TB 2530	TB 2545	TB 3530	TB 3545
art no	200.102.008	200.102.009	200.102.010	200.102.011	200.102.012	200.102.013
suitable for jack	JJ 1015	JJ 1513	JJ 25**	JJ 25**	JJ 30** / JJ 35**	JJ 30** / JJ 35**
max. horizontal displacement	mm 300	300	300	450	450	450
weight, ready for use	kg 20.0	20.0	25.0	31.0	33.0	38.0

**Mechanical Tools - Accessories - Traversing Beds (dimensions)**

model	TB 1030	TB 1530	TB 2530	TB 2545	TB 3530	TB 3545
dimension A	mm 465	465	470	620	505	655
dimension B	mm 165	165	185	185	200	200
dimension C	mm 85	85	90	90	97	97
dimension D	mm 24	24	30	30	30	30
dimension E	mm 535	535	600	600	600	600





TB 5030


**Features & benefits**

- Made of cast iron; resistant to continuous heavy operating conditions
- Screw shaft and handle bar; for easy operating
- Self-locking; for safe working
- Robust; can be used close to welding works and under water
- Low maintenance

**Additional information**

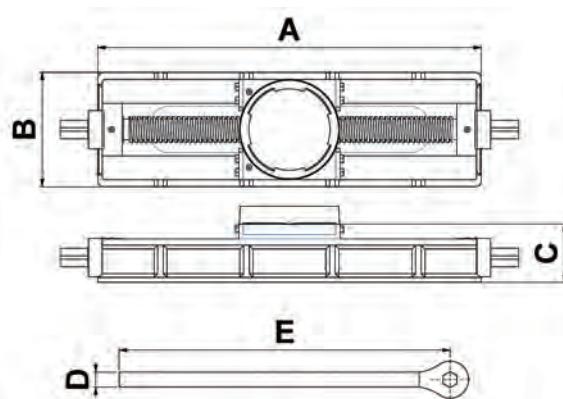
ATTENTION: Cannot be used with JJ 10011, Aluminium Mechanical jacks and Mechanical Toe jacks!

**Mechanical Tools - Accessories - Traversing Beds**

model	TB 5030	TB 5045
art no	200.102.014	200.102.015
suitable for jack	JJ 50**	JJ 50**
max. horizontal displacement	mm 300	450
weight, ready for use	kg 43.0	66.0

**Mechanical Tools - Accessories - Traversing Beds (dimensions)**

model	TB 5030	TB 5045
dimension A	mm 530	670
dimension B	mm 210	220
dimension C	mm 108	128
dimension D	mm 30	30
dimension E	mm 600	600





SB 10

**Features & benefits**

- Made of cast iron; resistant to continuous heavy operating conditions
- Robust; can be used close to welding works and under water
- Low maintenance

**Additional information**

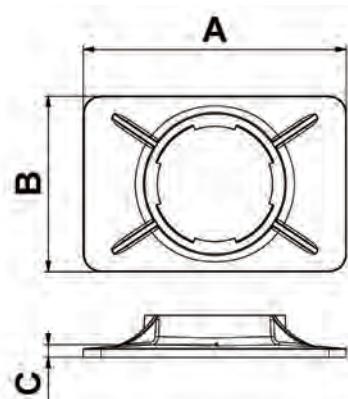
ATTENTION: Cannot be used with JJ 10011, Aluminium Mechanical jacks and Mechanical Toe jacks!

**Mechanical Tools - Accessories - Base Plates**

model	SB 10	SB 15	SB 25	SB 35	SB 50
art no	200.102.016	200.102.017	200.102.018	200.102.020	200.102.021
suitable for jack	JJ 1015	JJ 1513	JJ 25**	JJ 30** / JJ 35**	JJ 50**
weight, ready for use	kg 2.0	5.0	7.5	9.5	20.0

**Mechanical Tools - Accessories - Base Plates (dimensions)**

model	SB 10	SB 15	SB 25	SB 35	SB 50
dimension A	mm 220	240	300	300	400
dimension B	mm 180	190	200	220	300
dimension C	mm 10	12	15	18	19





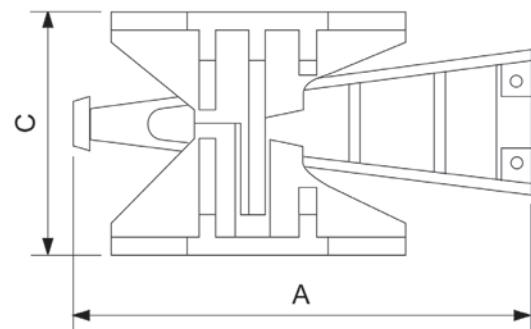
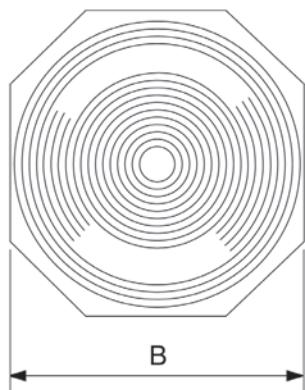
W 50


**Features & benefits**


- Unloads in one go with maximum load
- Robust; resistant to continuous heavy operating conditions
- Can be used close to welding works
- Low maintenance

**Ship Wedges**


model	W 50	W 80
art no	500.501.050	500.501.080
max. height	mm 225	340
min. height	mm 200	275
capacity	kN/t 490.5 / 50	784.8 / 80
weight, ready for use	kg 29.0	64.5
dimensions (AxBxC)	mm 390 x 255 x 200	570 x 345 x 275



# Hand Tools



32  
36  
41  
6

1"1/4  
1"7/16  
1"5/8  
1"13/16  
2"  
INCH


**Features & benefits**

- Adjustable for broad range of pulleys
- Compact and lightweight
- Usable in all positions

**Available** on request

- Cylinders manufactured in conformity with customer specifications

**Additional** information

- Puller sets can also be used in combination with cylinders having other stroke lengths

Hydraulic Pumps

page 139

Hydraulic Hoses

page 166

Pressure Gauges

page 171

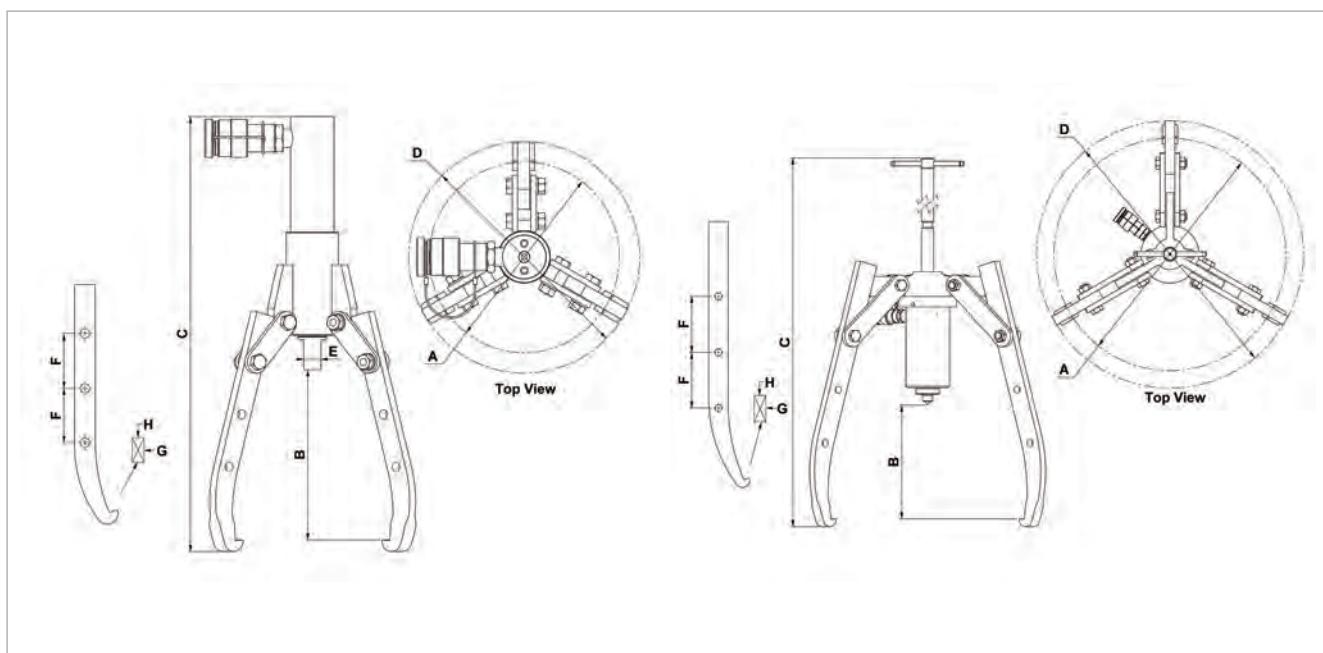



**Puller Sets - Spring Return**

model	HP 5 M	HP 10 M	HP 17	HP 30
art no	100.012.014	100.012.015	100.562.003	100.562.004
required cylinder	HGC 5 S 12.5	HGC 10 S 15	HHJ 17 S 5	HHJ 30 S 7.5
return type	spring	spring	spring	spring
connection	A 118	A 118	A 118	A 118
weight, excl. cylinder	kg 2.3	8.4	18.5	36.5
weight, incl. cylinder	kg 4.1	13.0	27.5	51.0


**Puller Sets - Spring Return (dimensions)**

model	HP 5 M	HP 10 M	HP 17	HP 30
dimension A (min.)	mm 30	50	80	100
dimension A (max.)	mm 175	360	390	485
dimension B (min.)	mm 57	157	10	60
dimension B (max.)	mm 157	321	240	310
dimension C (max.)	mm 400	622	950	1200
dimension D (max.)	mm 213	417	490	630
dimension E	mm 16	19		
dimension F	mm 50	82	115	125
dimension G	mm 20	25	32	40
dimension H	mm 7	15	18	22




**Features & benefits**

- Safe; no flying off parts or sparks
- Compact and lightweight
- Easy to use
- Two or more can be used for a more equal distribution of forces

**Standard supplied with**

- High Flow female coupler A 118
- 60° Spreading wedge
- Plastic carrying box, including high-grade grease Molycote®

**Available on request**

- Spreading wedge with 30° angle:
  - FLS 85 M, art no 100.103.009
  - FLS 170 M, art no 100.103.018
  - FLS 210 M, art no 100.182.141
- Flange spreader with opening larger than 210 mm

Hydraulic Pumps

page 139

Hydraulic Hoses

page 166

Pressure Gauges

page 171

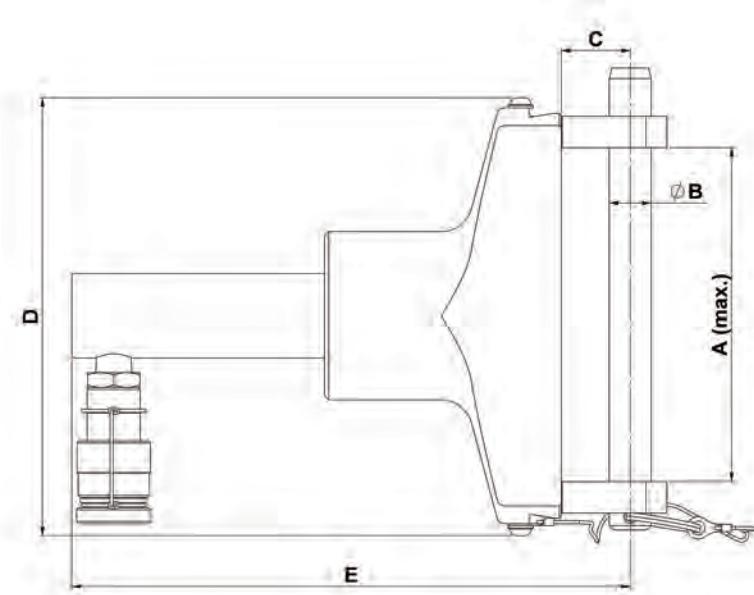



**Flange Spreaders - Spring Return**

model	FLS 85 M	FLS 170 M	FLS 210 M
art no	100.012.011	100.012.012	100.012.013
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72
flange opening 30° wedge (min.) mm	2	2	2
flange opening 30° wedge (max.) mm	25	25	25
flange opening 60° wedge (min.) mm	3	3	3
flange opening 60° wedge (max.) mm	32	32	32
spreading force 30° wedge kN/t	73.5 / 7.5	73.5 / 7.5	73.5 / 7.5
spreading force 60° wedge kN/t	34.3 / 3.5	34.3 / 3.5	34.3 / 3.5
required oil content (effective) cc	53	53	53
return type	spring	spring	spring
connection	A 118	A 118	A 118
weight, ready for use kg	4.5	8.0	9.5
weight, incl. case kg	6.3	9.5	11.0


**Flange Spreaders - Spring Return (dimensions)**

model	FLS 85 M	FLS 170 M	FLS 210 M
dimension A mm	85	170	21
dimension B mm	15	20	30
dimension C mm	30	32.8	75
dimension D mm	129	209	260
dimension E mm	264	266	309




**Features & benefits**


- Compact
- Lightweight
- Usable in all positions
- Safe; no flying off parts or sparks
- Adjustable blade; prevents damage to the thread

**Standard supplied with**


- High Flow female coupler A 118
- Plastic carrying box, including:
  - High-grade grease Molycote®
  - Spare blade

Hydraulic Pumps  
 Hydraulic Hoses  
 Pressure Gauges

page 139  
 page 166  
 page 171



Adjustable blade; prevents damage to the thread

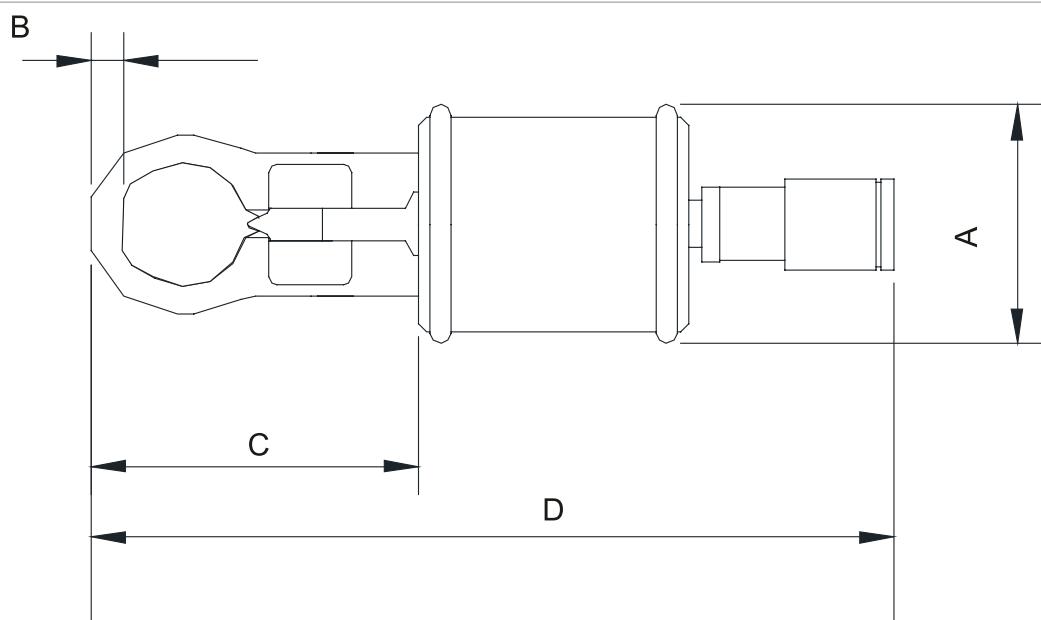



**Nut Splitters - Spring Return**

model	HNC 1536 NU	HNC 3250 U
art no	100.102.009	100.102.006
max. working pressure bar/Mpa	720 / 72	720 / 72
min. reach bolt	M12 (1/2")	M22 (7/8")
max. reach category 8 bolt	M24 (7/8")	M33 (1 1/4")
max. reach 2H bolt	M20 (3/4")	M33 (1 1/4")
capacity kN/t	148 / 15.1	316 / 32.2
required oil content (effective) cc	32	57
return type	spring	spring
weight, ready for use kg	2.9	7.2
weight, incl. case kg	4.2	8.6
thickness cutting head mm	23	33


**Nut Splitters - Spring Return (dimensions)**

model	HNC 1536 NU	HNC 3250 U
dimension A mm	86	118
dimension B mm	11	19
dimension C mm	104	139
dimension D mm	277	321




**Features & benefits**


- Compact
- Lightweight
- Spark-free; safe alternative for grinding
- Quick and reliable
- Usable in all positions
- Hardened blade that can be sharpened

**Standard supplied with**

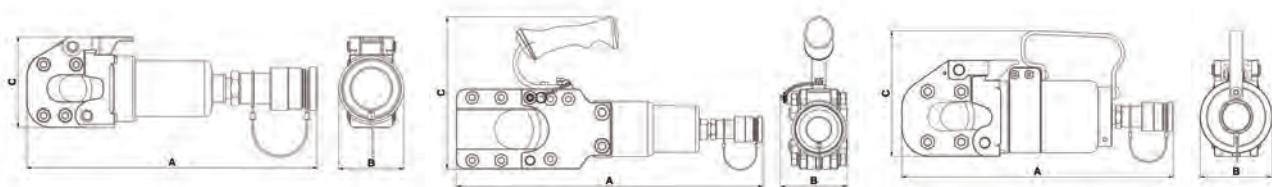
- Carrying/storage bag

Hand Pumps  
 Hydraulic Hoses  
 Pressure Gauges

page 140  
 page 166  
 page 171

**Steel Cable Cutters - Spring Return**


model	HWC 16 A	HWC 25 A	HWC 32 A
art no	100.012.017	100.012.018	100.012.019
cutter type	steel cable	steel cable	steel cable
max. working pressure	bar/Mpa	720 / 72	720 / 72
max. jaw opening	mm	20	32
capacity Ø steel cable 6x7	mm	16	32
capacity Ø steel cable 6x12	mm	20	32
capacity Ø steel cable 6x19	mm	20	32
capacity Ø solid steel	mm	13	25
capacity Ø reinforcing steel	mm	13	25
capacity Ø ground cable	mm	18	32
capacity	kN/t	52 / 5.3	146 / 14.9
required oil content (effective)	cc	49	106
return type		spring	spring
weight, ready for use	kg	2.0	8.4
temperature range	°C	-20 + 55	-20 + 55
dimensions (AxBxC)	mm	242 x 54 x 75	425 x 91 x 210
			340 x 90 x 156




**Features & benefits**


- Compact
- Lightweight
- Spark-free; safe alternative for grinding
- Quick and reliable
- Usable in all positions
- Hardened blade that can be sharpened

**Standard supplied with**

- Carrying/storage bag

Hydraulic Pumps

page 139

Hydraulic Hoses

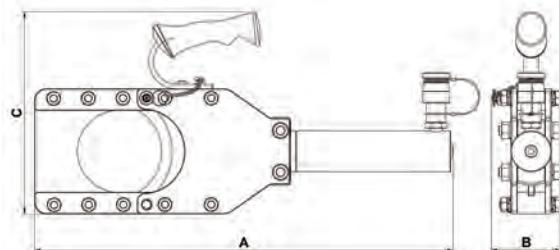
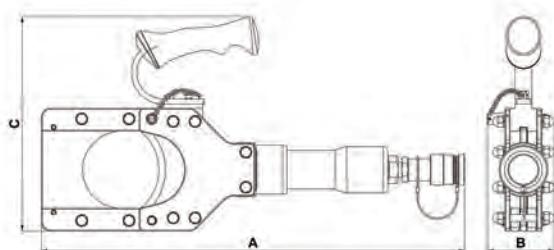
page 166

Pressure Gauges

page 171

**Power Cable Cutters - Spring Return**


model	HCC 85 A	HCC 100 A
art no	100.012.020	100.012.021
cutter type	power cable	power cable
max. working pressure	bar/Mpa	720 / 72
max. jaw opening	mm	85
capacity Ø ground cable	mm	50
capacity Ø telephone cable	mm	85
capacity	kN/t	49 / 5
required oil content (effective)	cc	65
return type		spring
weight, ready for use	kg	6.8
temperature range	°C	-20 + 55
dimensions (AxBxC)	mm	485 x 76 x 245
		545 x 85 x 263





HCC 150


**Features & benefits**

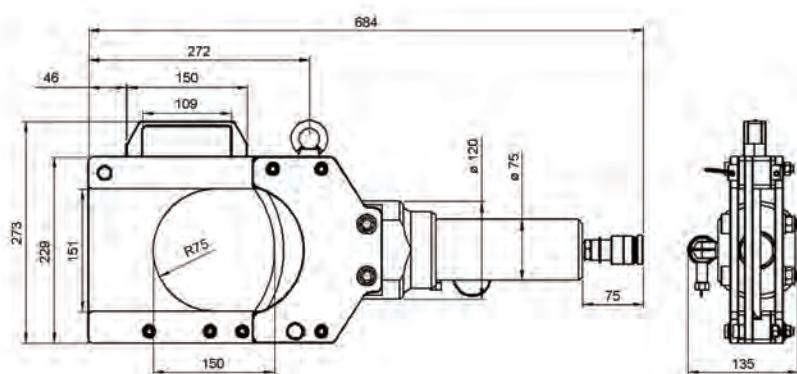

- Compact
- Lightweight
- Spark-free; safe alternative for grinding
- Quick and reliable
- Usable in all positions
- Hardened blade that can be sharpened

Hydraulic Pumps  
 Hydraulic Hoses  
 Pressure Gauges

page 139  
 page 166  
 page 171

**Power Cable Cutters - Hydraulic Return**


model	HCC 150	
art no	100.522.150	
cutter type	power cable	
max. working pressure	bar/Mpa	720 / 72
max. jaw opening	mm	150
capacity Ø ground cable	mm	140
capacity Ø telephone cable	mm	150
capacity	kN/t	203.6 / 20.8
required oil content (effective)	cc	452
return type	hydraulic	
weight, ready for use	kg	24.9





HPS 60 AU


**Features & benefits**

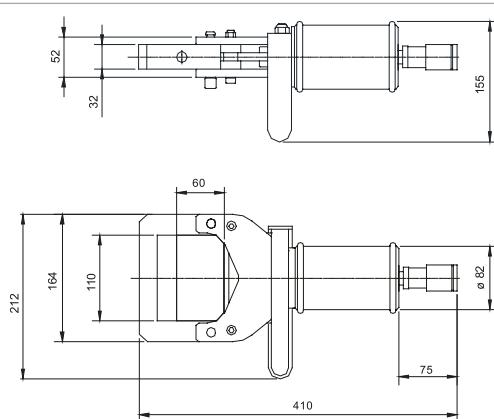
- Environmentally friendly; limits leaking of dangerous liquids
- Large squeeze surface of 60 mm; squeezes pipes with a maximum diameter of 60 mm
- Easy to install; can be opened and closed by hand very quickly without any tools
- Prevents/limits potentially dangerously situations; saves costs in case of accidents

[Hydraulic Pumps](#)  
[Hydraulic Hoses](#)  
[Pressure Gauges](#)

page 139  
page 166  
page 171

**Pipe Squeezer - Spring Return**

model	HPS 60 AU
art no	100.102.019
max. working pressure	bar/Mpa 720 / 72
max. outside diameter pipe	mm 60
max. wall thickness pipe	mm 4
max. squeezing force	kN/t 152.9 / 15.6
required oil content (effective)	cc 130
return type	spring
remaining opening	mm 2
weight, ready for use	kg 8.6
dimensions (LxWxH)	mm 410 x 212 x 155
temperature range	°C -20 + 55





# Hydraulic Pumps




**Features & benefits**


- Ergonomic design
  - Light weight; easy to carry and operate
  - Low operating force required; minimal user effort
  - Soft-grip handles; more comfort and grip
  - Anti-slip rubber underneath; pump is stable and does not shift
  - Pump handle lock; easy and safe to carry
- Service- and maintenance-friendly; technical parts are easy to access and replace without removing the tank
- High oil output; quicker action both in the first and second stage
- Accurately adjustable pressure release valve; loads can be lowered safely and with extreme control
- Pressure gauge connection on the pump block; the pressure gauge can be directly mounted on the pump at an angle of 45 degrees, making it easily readable
- Oil level glass in the tank; easily check the oil level in both horizontal and vertical position
- Integrated filler funnel; top up oil easily and quickly without extra accessories
- Push & Unlock pump handle lock; unlocking is quick and easy with one brief push on the pump handle

Control Valves	page	161
Accessories	page	162
Hydraulic Hoses	page	166
Pressure Gauge Sets	page	173
Valve Blocks 'FlowPanel'	page	174



Accurately adjustable pressure release valve; loads can be lowered safely and with extreme control



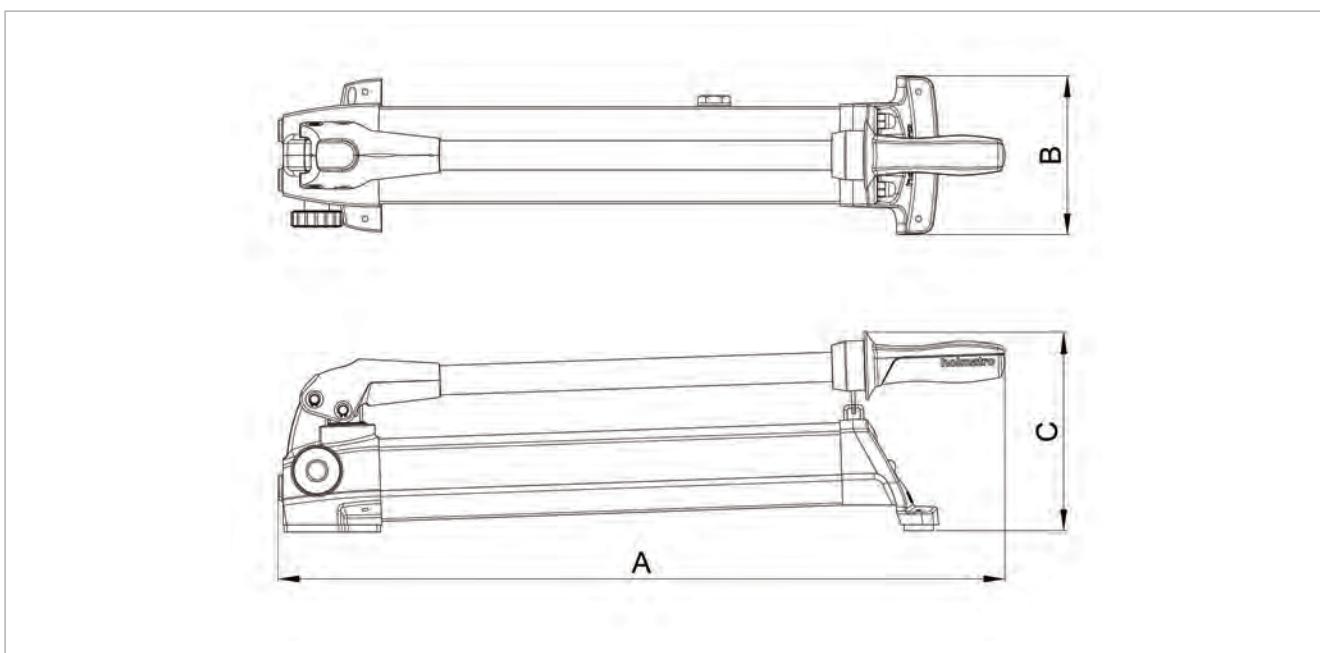
Pressure gauge connection on the pump block; the pressure gauge can be directly mounted on the pump at an angle of 45 degrees, making it easily readable


**Hand Pumps - 1-stage**

model	PA 04 H 1	PA 09 H 1
art no	100.142.031	100.142.032
max. working pressure bar/Mpa	720 / 72	720 / 72
capacity oil tank (effective) cc	400	900
capacity oil tank cc	500	1000
first stage output (per stroke) cc	1.8	2.6
first stage pressure range bar/Mpa	0-720 / 0-72	0-720 / 0-72
max. operating force kg	40.0	39.0
connection	3/8" NPT female	3/8" NPT female
operator type	hand	hand
weight, ready for use kg	3.5	4.8


**Hand Pumps - 1-stage (dimensions)**

model	PA 04 H 1	PA 09 H 1
dimension A mm	434	619
dimension B mm	135	135
dimension C mm	165	170




**Features & benefits**


- Ergonomic design
  - Light weight; easy to carry and operate
  - Low operating force required; minimal user effort
  - Soft-grip handles; more comfort and grip
  - Anti-slip rubber underneath; pump is stable and does not shift
  - Pump handle lock; easy and safe to carry
- Service- and maintenance-friendly; technical parts are easy to access and replace without removing the tank
- High oil output; quicker action both in the first and second stage
- Accurately adjustable pressure release valve; loads can be lowered safely and with extreme control
- Pressure gauge connection on the pump block; the pressure gauge can be directly mounted on the pump at an angle of 45 degrees, making it easily readable
- Oil level glass in the tank; easily check the oil level in both horizontal and vertical position
- Integrated filler funnel; top up oil easily and quickly without extra accessories
- Push & Unlock pump handle lock; unlocking is quick and easy with one brief push on the pump handle

Control Valves	page	161
Accessories	page	162
Hydraulic Hoses	page	166
Pressure Gauge Sets	page	173
Valve Blocks 'FlowPanel'	page	174



Accurately adjustable pressure release valve; loads can be lowered safely and with extreme control



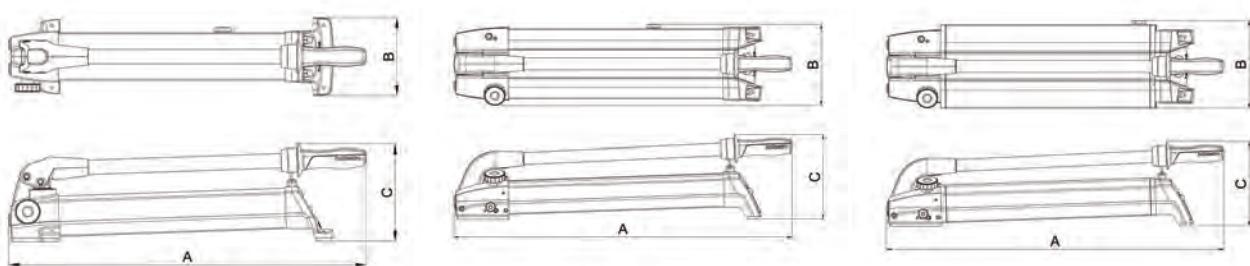
Pressure gauge connection on the pump block; the pressure gauge can be directly mounted on the pump at an angle of 45 degrees, making it easily readable


**Hand Pumps - 2-stage**

model	PA 04 H 2	PA 09 H 2	PA 18 H 2	PA 38 H 2	PA 58 H 2
art no	100.142.033	100.142.034	100.142.035	100.142.037	100.142.038
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
capacity oil tank (effective) cc	400	900	1800	3800	5800
capacity oil tank cc	500	1000	1990	4150	6150
first stage output (per stroke) cc	18.4	22	42.8	42.8	50.5
second stage output (per stroke) cc	1.4	2.1	3.1	3.1	4
first stage pressure range bar/Mpa	0-45 / 0-4.5	0-45 / 0-4.5	0-45 / 0-4.5	0-45 / 0-4.5	0-45 / 0-4.5
second stage pressure range bar/Mpa	45-720 / 4.5-72	45-720 / 4.5-72	45-720 / 4.5-72	45-720 / 4.5-72	45-720 / 4.5-72
max. operating force kg	32.0	33.0	35.0	35.0	34.0
connection	3/8" NPT female				
operator type	hand	hand	hand	hand	hand
double acting optional	no	no	yes	yes	yes
weight, ready for use kg	3.4	4.7	7.6	11.4	14.6


**Hand Pumps - 2-stage (dimensions)**

model	PA 04 H 2	PA 09 H 2	PA 18 H 2	PA 38 H 2	PA 58 H 2
dimension A mm	434	619	700	700	897
dimension B mm	135	135	169	183	182
dimension C mm	165	170	175	175	185





PA 18 F 2

**Features & benefits**


- Ergonomic design
  - Light weight; easy to carry and operate
  - Low operating force required; minimal user effort
  - Anti-slip rubber underneath; pump is stable and does not shift
  - Pump handle lock; easy and safe to carry
- Service- and maintenance-friendly; technical parts are easy to access and replace without removing the tank
- High oil output; quicker action both in the first and second stage
- Accurately adjustable pressure release valve; loads can be lowered safely and with extreme control
- Pressure gauge connection on the pump block; the pressure gauge can be directly mounted on the pump at an angle of 45 degrees, making it easily readable
- Oil level glass in the tank; easily check the oil level in both horizontal and vertical position
- Integrated filler funnel; top up oil easily and quickly without extra accessories
- Push & Unlock pump handle lock; unlocking is quick and easy with one brief push on the pump handle

Control Valves	page	161
Accessories	page	162
Hydraulic Hoses	page	166
Pressure Gauge Sets	page	173
Valve Blocks 'FlowPanel'	page	174



Accurately adjustable pressure release valve; loads can be lowered safely and with extreme control



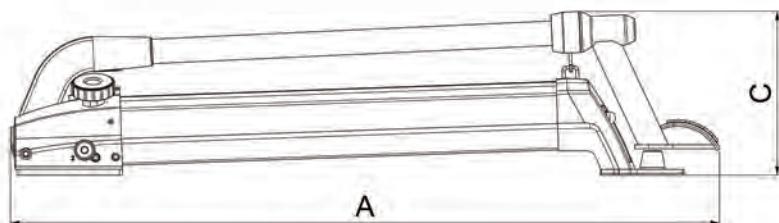
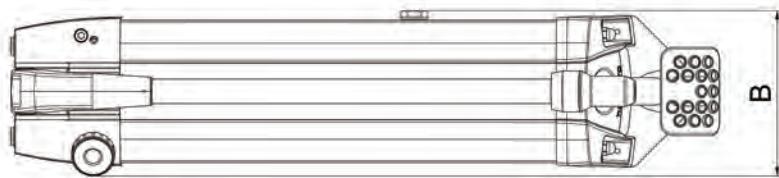
Pressure gauge connection on the pump block; the pressure gauge can be directly mounted on the pump at an angle of 45 degrees, making it easily readable


**Foot Pump**

<b>Foot Pump</b>	
<b>model</b>	<b>PA 18 F 2</b>
art no	100.142.036
max. working pressure bar/Mpa	720 / 72
capacity oil tank (effective) cc	1800
capacity oil tank cc	1990
first stage output (per stroke) cc	42.8
second stage output (per stroke) cc	3.1
first stage pressure range bar/Mpa	0-45 / 0-4.5
second stage pressure range bar/Mpa	45-720 / 4.5-72
max. operating force kg	37.0
connection	3/8" NPT female
operator type	foot
double acting optional	yes
weight, ready for use kg	8.3


**Foot Pump (dimensions)**

<b>Foot Pump (dimensions)</b>	
<b>model</b>	<b>PA 18 F 2</b>
dimension A mm	724
dimension B mm	169
dimension C mm	167





AHS 1400 FS

**Features & benefits**

- Usable at any place because of compact construction
- Lightweight
- Safe; when the air pressure is lost, the oil pressure is maintained
- Spark-free; suitable for explosive rooms
- Low-noise because of built-in silencer
- Energy-saving; stops as soon as the maximum pressure has been reached

**Standard supplied with**

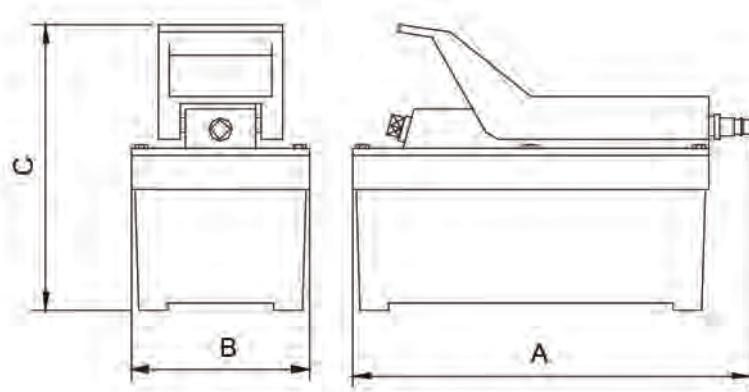
- Compressed air connector

Hydraulic Hoses  
 Pressure Gauges  
 Valve Blocks 'FlowPanel'

page 166  
 page 171  
 page 174

**Compact Air Pumps - Single-acting**

model	<b>AHS 1400 FS</b>	
art no	100.602.001	
max. working pressure	bar/Mpa	720 / 72
output unloaded	cc/min	960
output loaded	cc/min	410
air consumption unloaded	l/min	700
air consumption loaded	l/min	580
capacity oil tank (effective)	cc	1400
max. air pressure	bar/Mpa	8.5 / 0.9
connection	3/8" NPT female	
operator type	air	
suitable for (tool type)	single acting	
weight, ready for use	kg	6.5
temperature range	°C	-20 + 55
dimensions (AxBxC)	mm	282 x 128 x 200





AHS 1400 D

**Features & benefits**

- Usable at any place because of compact construction
- Lightweight
- Spark-free; suitable for explosive rooms
- Low-noise because of built-in silencer
- Energy-saving; stops as soon as the maximum pressure has been reached
- Unsuitable for lifting applications, because the pump has no load holding valve

**Standard supplied with**

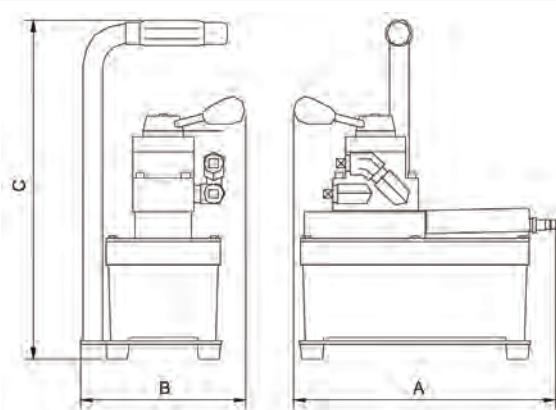
- Compressed air connector

Hydraulic Hoses  
 Pressure Gauges  
 Valve Blocks 'FlowPanel'

page 166  
 page 171  
 page 174

**Compact Air Pumps - Double-acting**

model	<b>AHS 1400 D</b>	
art no	100.602.002	
max. working pressure	bar/Mpa	720 / 72
output unloaded	cc/min	960
output loaded	cc/min	410
air consumption unloaded	l/min	700
air consumption loaded	l/min	580
capacity oil tank (effective)	cc	1400
max. air pressure	bar/Mpa	8.5 / 0.9
connection	3/8" NPT female	
operator type	air	
suitable for (tool type)	double acting	
weight, ready for use	kg	9.6
temperature range	°C	-20 + 55
dimensions (AxBxC)	mm	315 x 180 x 372




**EHW 1650 RC**


With option 3 the pump is suitable for lifting applications

**Features & benefits**

- Usable at any place because of compact construction
- Lightweight
- For both horizontal and vertical use
- Perfectly suitable for cable cutters and nut crackers
- Suitable for single-acting tools and cylinders
- With option 3 the pump is suitable for lifting applications

**Standard** supplied with

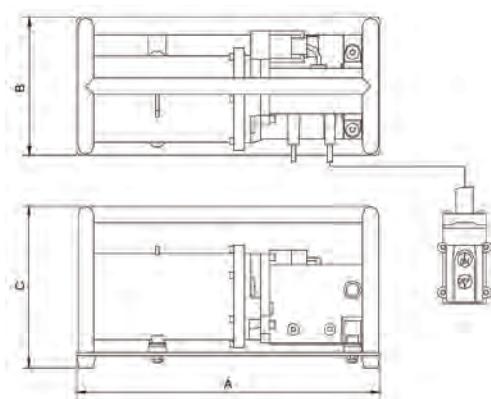
- Waterproof (IP 54) Remote Control with 2.3 m long electric cord

**Additional** information

- Option 1: Needle valve for controlled oil return (art no 100.182.157)
- Option 2: Pressure gauge for reading the pressure (art no 100.182.158)
- Option 3: Needle valve and pressure gauge (art no 100.182.162)

**Compact Electric Pump**

model	EHW 1650 RC	
art no	100.551.001	
max. working pressure	bar/Mpa	720 / 72
first stage output / min.	cc	2000
second stage output / min.	cc	250
capacity oil tank (effective)	cc	1650
connection	3/8" NPT female	
engine	230 VAC - 0.35 kW - 50 Hz - 1 Ph	
charge remote control	V	15
weight, ready for use	kg	11.6
dimensions (AxBxC)	mm	
	416 x 190 x 222	





**5-step plan** for selection of vari pumps

**Step 1**

Select the power source.

- Air motor
- Electric motor  
(230 V - 1 ph - 50 Hz)
- Electric motor  
(400 V - 3 ph - 50 Hz)
- Petrol engine

**Step 2**

Select pump type.

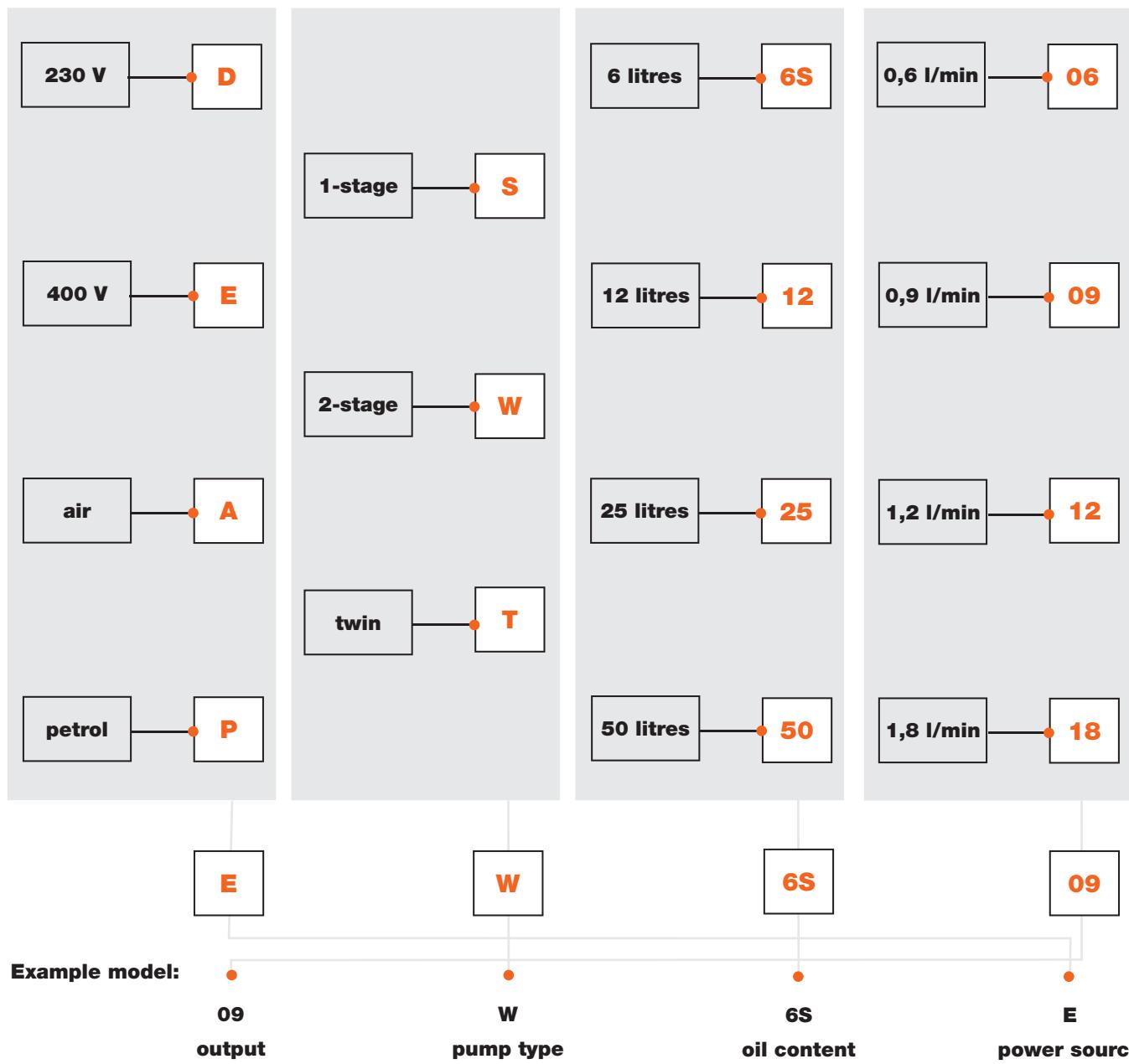
- Single-stage
- Two-stage for higher operating speed
- Twin, with 2 independant outlets

**Step 3**

Select the correct content for the oil tank.

**Step 4**

Select the correct pump output in litres per minute.



## 5-step plan for selection of vari pumps

### Step 5

Select the correct control valve (for twin pumps 2 valves required).

For single-acting tools:

- M 311 (hand operation)

For double-acting tools:

- M 322 (hand operation)
- M 323 (hand operation with deadman's handle)
- M 324 (electromagnetic operation)

The following items must be additionally ordered with this valve:

- Remote control (art no 100.151.060)

For use in combination with EC-vari pumps

Contact our sales department for additional information

- M 325 (air-powered operation)

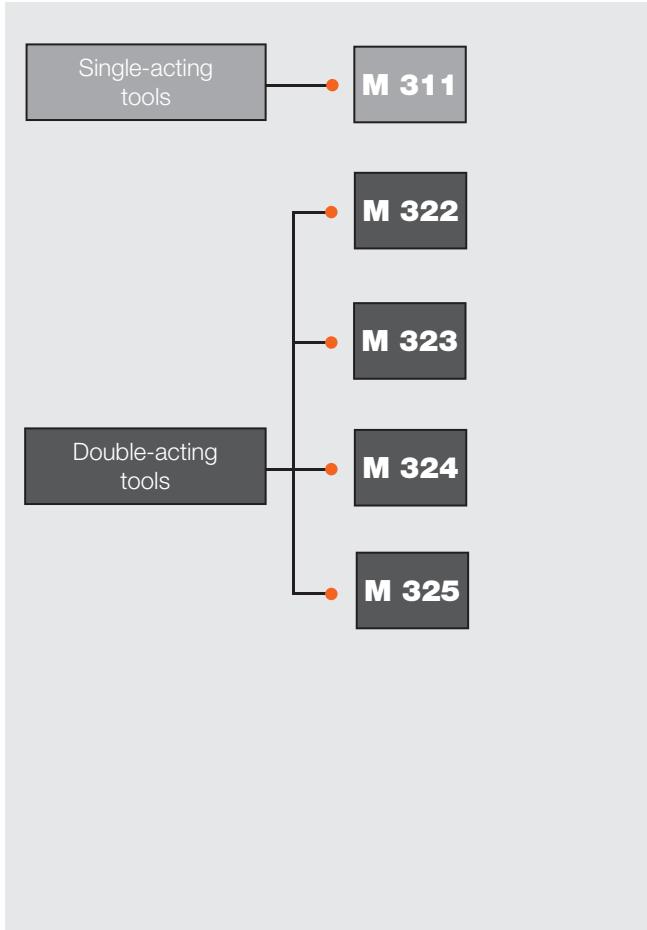
The following items must be additionally ordered with this valve:

- Remote control (art no 100.161.004)

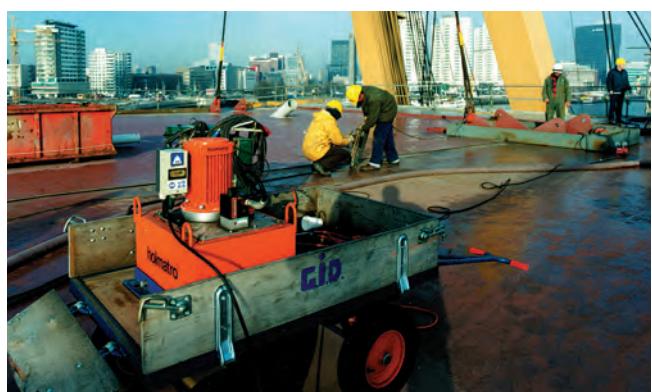
### You now have a functional pump

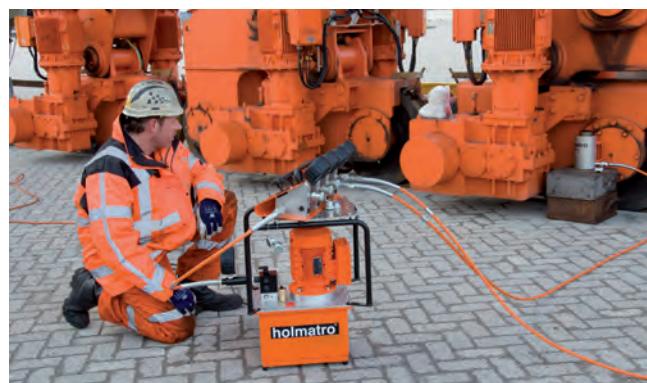
Do not forget to specify the couplers and/or hoses

Control valves	page	161
Accessories	page	162
Hydraulic hoses	page	166
Pressure gauges	page	171



**Example model:  
09 W 6S E + M 323**




**06 S 6 SD**

**Features & benefits**


- Safe
  - In case of a power failure, the oil pressure is maintained
  - Protected against pressure drop by pressure-controlled non-return valve
- Excluding single-acting or double-acting control valve

**Available on request**


- Larger tank
- Other voltages / frequencies

Control Valves	page	161
Accessories	page	162
Hydraulic Hoses	page	166
Pressure Gauges	page	171
Valve Blocks 'FlowPanel'	page	174

**Vari Pumps - 230V - 1-stage**

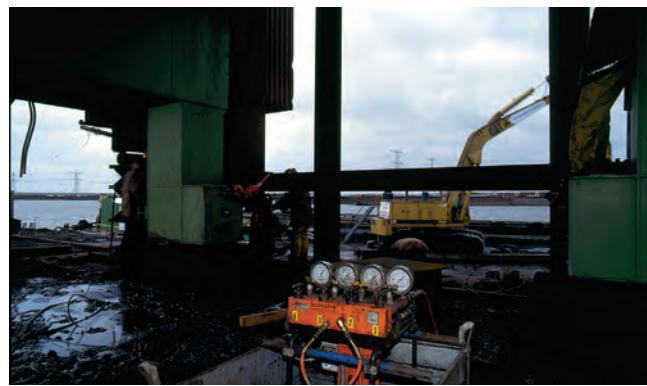

model	06 S 6 SD	06 S 12 D	09 S 6 SD	09 S 12 D	09 S 25 D	09 S 50 D
art no	100.152.012	100.152.013	100.152.015	100.152.016	100.152.017	100.152.018
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
capacity oil tank (effective) cc	6000	12000	6000	12000	25000	50000
first stage output / min. cc	600	600	900	900	900	900
first stage pressure range bar/Mpa	0-720 / 0-72	0-720 / 0-72	0-720 / 0-72	0-720 / 0-72	0-720 / 0-72	0-720 / 0-72
operator type	electric motor					
engine	230 VAC - 1.1 kW - 50 Hz - 1 Ph	230 VAC - 1.1 kW - 50 Hz - 1 Ph	230 VAC - 1.1 kW - 50 Hz - 1 Ph	230 VAC - 1.1 kW - 50 Hz - 1 Ph	230 VAC - 1.1 kW - 50 Hz - 1 Ph	230 VAC - 1.1 kW - 50 Hz - 1 Ph
weight, ready for use kg	36.0	44.0	38.0	46.0	65.0	95.0
dimensions (LxWxH) mm	400 x 300 x 411	400 x 300 x 541	400 x 300 x 541	400 x 300 x 541	500 x 380 x 541	500 x 380 x 676

**Vari Pumps - 230V - 1-stage**


model	12 S 6 SD	12 S 12 D	12 S 25 D	12 S 50 D
art no	100.152.020	100.152.021	100.152.022	100.152.023
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72
capacity oil tank (effective) cc	6000	12000	25000	50000
first stage output / min. cc	1200	1200	1200	1200
first stage pressure range bar/Mpa	0-720 / 0-72	0-720 / 0-72	0-720 / 0-72	0-720 / 0-72
operator type	electric motor	electric motor	electric motor	electric motor
engine	230 VAC - 1.5 kW - 50 Hz - 1 Ph	230 VAC - 1.5 kW - 50 Hz - 1 Ph	230 VAC - 1.5 kW - 50 Hz - 1 Ph	230 VAC - 1.5 kW - 50 Hz - 1 Ph
weight, ready for use kg	38.0	46.0	65.0	95.0
dimensions (LxWxH) mm	400 x 300 x 441	400 x 3200 x 541	500 x 380 x 541	500 x 3800 x 676



06 W 6 SD


**Features & benefits**


- Safe
  - In case of a power failure, the oil pressure is maintained
  - Protected against pressure drop by pressure-controlled non-return valve
- Excluding single-acting or double-acting control valve

**Available on request**


- Larger tank
- Other voltages / frequencies

Control Valves	page	161
Accessories	page	162
Hydraulic Hoses	page	166
Pressure Gauges	page	171
Valve Blocks 'FlowPanel'	page	174

**Vari Pumps - 230V - 2-stage**

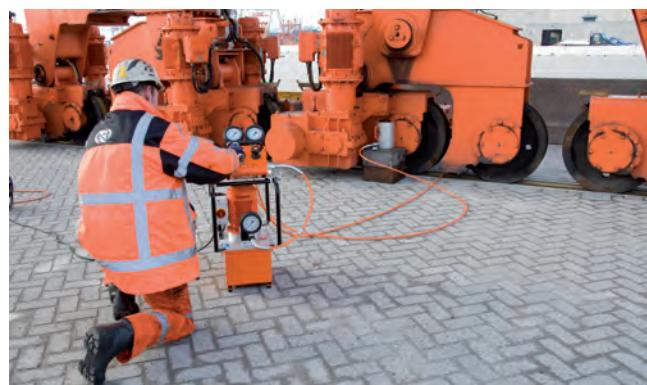

model	06 W 6 SD	06 W 12 D	09 W 6 SD	09 W 12 D	09 W 25 D	09 W 50 D
art no	100.152.025	100.152.026	100.152.028	100.152.029	100.152.030	100.152.031
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
capacity oil tank (effective) cc	6000	12000	6000	12000	25000	50000
first stage output / min. cc	1600	1600	2500	2500	2500	2500
second stage output / min. cc	600	600	900	900	900	900
first stage pressure range bar/Mpa	0-200 / 0-20	0-200 / 0-20	0-200 / 0-20	0-200 / 0-20	0-200 / 0-20	0-200 / 0-20
second stage pressure range bar/Mpa	200-720 / 20-72	200-720 / 20-72	200-720 / 20-72	200-720 / 20-72	200-720 / 20-72	200-720 / 20-72
operator type	electric motor					
engine	230 VAC - 1.1 kW - 50 Hz - 1 Ph	230 VAC - 1.1 kW - 50 Hz - 1 Ph	230 VAC - 1.1 kW - 50 Hz - 1 Ph	230 VAC - 1.1 kW - 50 Hz - 1 Ph	230 VAC - 1.1 kW - 50 Hz - 1 Ph	230 VAC - 1.1 kW - 50 Hz - 1 Ph
weight, ready for use kg	38.0	46.0	40.0	48.0	67.0	96.0
dimensions (LxWxH) mm	400 x 300 x 441	400 x 300 x 541	400 x 300 x 441	400 x 300 x 541	500 x 380 x 541	500 x 380 x 676

**Vari Pumps - 230V - 2-stage**


model	12 W 6 SD	12 W 12 D	12 W 25 D	12 W 50 D
art no	100.152.033	100.152.034	100.152.035	100.152.036
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72
capacity oil tank (effective) cc	6000	12000	25000	50000
first stage output / min. cc	3200	3200	3200	3200
second stage output / min. cc	1200	1200	1200	1200
first stage pressure range bar/Mpa	0-200 / 0-20	0-200 / 0-20	0-200 / 0-20	0-200 / 0-20
second stage pressure range bar/Mpa	200-720 / 20-72	200-720 / 20-72	200-720 / 20-72	200-720 / 20-72
operator type	electric motor	electric motor	electric motor	electric motor
engine	230 VAC - 1.5 kW - 50 Hz - 1 Ph	230 VAC - 1.5 kW - 50 Hz - 1 Ph	230 VAC - 1.5 kW - 50 Hz - 1 Ph	230 VAC - 1.5 kW - 50 Hz - 1 Ph
weight, ready for use kg	40.0	48.0	67.0	96.0
dimensions (LxWxH) mm	400 x 300 x 441	400 x 300 x 541	500 x 380 x 541	500 x 380 x 676



06 S 6 SE


**Features & benefits**


- Safe
  - In case of a power failure, the oil pressure is maintained
  - Protected against pressure drop by pressure-controlled non-return valve
- Excluding single-acting or double-acting control valve

**Available on request**


- Larger tank
- Other voltages / frequencies

Control Valves	page	161
Accessories	page	162
Hydraulic Hoses	page	166
Pressure Gauges	page	171
Valve Blocks 'FlowPanel'	page	174

**Vari Pumps - 400V - 1-stage**


model	06 S 6 SE	06 S 12 E	09 S 6 SE	09 S 12 E	09 S 25 E	12 S 6 SE
art no	100.152.038	100.152.039	100.152.041	100.152.042	100.152.043	100.152.046
max. working pressure	bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
capacity oil tank (effective)	cc	6000	12000	6000	12000	25000
first stage output / min.	cc	600	600	900	900	1200
first stage pressure range	bar/Mpa	0-720 / 0-72	0-720 / 0-72	0-720 / 0-72	0-720 / 0-72	0-720 / 0-72
operator type		electric motor				
engine		400 VAC - 1.1 kW - 50 Hz - 3 Ph	400 VAC - 1.1 kW - 50 Hz - 3 Ph	400 VAC - 1.1 kW - 50 Hz - 3 Ph	400 VAC - 1.1 kW - 50 Hz - 3 Ph	400 VAC - 1.5 kW - 50 Hz - 3 Ph
weight, ready for use	kg	33.0	41.0	36.0	44.0	63.0
dimensions (LxWxH)	mm	400 x 300 x 441	400 x 300 x 541	400 x 300 x 441	400 x 300 x 541	500 x 380 x 541
						400 x 300 x 441

**Vari Pumps - 400V - 1-stage**


model	12 S 12 E	12 S 25 E	12 S 50 E	18 S 12 E	18 S 25 E	18 S 50 E
art no	100.152.047	100.152.048	100.152.049	100.152.050	100.152.051	100.152.052
max. working pressure	bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
capacity oil tank (effective)	cc	12000	25000	50000	12000	25000
first stage output / min.	cc	1200	1200	1200	1800	1800
first stage pressure range	bar/Mpa	0-720 / 0-72	0-720 / 0-72	0-720 / 0-72	0-720 / 0-72	0-720 / 0-72
operator type		electric motor				
engine		400 VAC - 1.5 kW - 50 Hz - 3 Ph	400 VAC - 1.5 kW - 50 Hz - 3 Ph	400 VAC - 1.5 kW - 50 Hz - 3 Ph	400 VAC - 2.2 kW - 50 Hz - 3 Ph	400 VAC - 2.2 kW - 50 Hz - 3 Ph
weight, ready for use	kg	43.0	62.0	92.0	45.0	64.0
dimensions (LxWxH)	mm	400 x 300 x 541	500 x 380 x 541	500 x 380 x 676	500 x 380 x 541	500 x 380 x 676



06 W 6 SE


**Features & benefits**


- Safe
  - In case of a power failure, the oil pressure is maintained
  - Protected against pressure drop by pressure-controlled non-return valve
- Excluding single-acting or double-acting control valve

**Available on request**


- Larger tank
- Other voltages / frequencies

Control Valves	page	161
Accessories	page	162
Hydraulic Hoses	page	166
Pressure Gauges	page	171
Valve Blocks 'FlowPanel'	page	174

**Vari Pumps - 400V - 2-stage**


model	06 W 6 SE	06 W 12 E	09 W 6 SE	09 W 12 E	09 W 25 E	12 W 6 SE
art no	100.152.054	100.152.055	100.152.057	100.152.058	100.152.059	100.152.062
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
capacity oil tank (effective) cc	6000	12000	6000	12000	25000	6000
first stage output / min. cc	1600	1600	2500	2500	2500	3200
second stage output / min. cc	600	600	900	900	900	1200
first stage pressure range bar/Mpa	0-200 / 0-20	0-200 / 0-20	0-200 / 0-20	0-200 / 0-20	0-200 / 0-20	0-200 / 0-20
second stage pressure range bar/Mpa	200-720 / 20-72	200-720 / 20-72	200-720 / 20-72	200-720 / 20-72	200-720 / 20-72	200-720 / 20-72
operator type	electric motor	electric motor	electric motor	electric motor	electric motor	electric motor
engine	400 VAC - 1.1 kW - 50 Hz - 3 Ph	400 VAC - 50 Hz - 3 Ph	230 VAC - 1.1 kW - 50 Hz - 1 Ph	400 VAC - 1.1 kW - 50 Hz - 3 Ph	400 VAC - 1.1 kW - 50 Hz - 3 Ph	400 VAC - 1.5 kW - 50 Hz - 3 Ph
weight, ready for use kg	35.0	43.0	38.0	46.0	65.0	37.0
dimensions (LxWxH) mm	400 x 300 x 441	400 x 300 x 541	400 x 300 x 441	400 x 300 x 541	500 x 380 x 541	400 x 300 x 441

**Vari Pumps - 400V - 2-stage**


model	12 W 12 E	12 W 25 E	12 W 50 E	18 W 12 E	18 W 25 E	18 W 50 E
art no	100.152.063	100.152.064	100.152.065	100.152.066	100.152.067	100.152.068
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
capacity oil tank (effective) cc	12000	25000	50000	12000	25000	50000
first stage output / min. cc	3200	3200	3200	5000	5000	5000
second stage output / min. cc	1200	1200	1200	1800	1800	1800
first stage pressure range bar/Mpa	0-200 / 0-20	0-200 / 0-20	0-200 / 0-20	0-200 / 0-20	0-200 / 0-20	0-200 / 0-20
second stage pressure range bar/Mpa	200-720 / 20-72	200-720 / 20-72	200-720 / 20-72	200-720 / 20-72	200-720 / 20-72	200-720 / 20-72
operator type	electric motor					
engine	400 VAC - 1.5 kW - 50 Hz - 3 Ph	400 VAC - 1.5 kW - 50 Hz - 3 Ph	400 VAC - 1.5 kW - 50 Hz - 3 Ph	400 VAC - 2.2 kW - 50 Hz - 3 Ph	400 VAC - 2.2 kW - 50 Hz - 3 Ph	400 VAC - 2.2 kW - 50 Hz - 3 Ph
weight, ready for use kg	45.0	64.0	94.0	47.0	96.0	96.0
dimensions (LxWxH) mm	400 x 300 x 541	500 x 380 x 541	500 x 380 x 676	400 x 300 x 541	500 x 380 x 676	500 x 380 x 676



06 T 6 SE


**Features & benefits**


- Pump with 2 separate outlets
- Safe
  - In case of a power failure, the oil pressure is maintained
  - Protected against pressure drop by pressure-controlled non-return valve
- Excluding single-acting or double-acting control valve

**Available on request**


- Larger tank
- Other voltages / frequencies

Control Valves	page	161
Accessories	page	162
Hydraulic Hoses	page	166
Pressure Gauges	page	171
Valve Blocks 'FlowPanel'	page	174

**Vari Pumps - Twin - 400V - 1-stage**


model	06 T 6 SE	06 T 12 E	09 T 12 E	09 T 25 E	09 T 50 E
art no	100.152.070	100.152.071	100.152.072	100.152.073	100.152.074
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
capacity oil tank (effective) cc	6000	12000	12000	25000	50000
first stage output / min.	cc 600	600	900	900	900
first stage pressure range bar/Mpa	0-720 / 0-72	0-720 / 0-72	0-720 / 0-72	0-720 / 0-72	0-720 / 0-72
operator type	electric motor				
engine	400 VAC - 1.5 kW - 50 Hz - 3 Ph	400 VAC - 1.5 kW - 50 Hz - 3 Ph	400 VAC - 2.2 kW - 50 Hz - 3 Ph	400 VAC - 1.5 kW - 50 Hz - 3 Ph	400 VAC - 2.2 kW - 50 Hz - 3 Ph
weight, ready for use kg	40.0	47.0	52.0	71.0	100.0
dimensions (LxWxH) mm	400 x 300 x 441	400 x 300 x 541	400 x 300 x 541	500 x 380 x 541	500 x 380 x 676



12 S 6 SA


**Features & benefits**


- Safe
  - In case of a power failure, the oil pressure is maintained
  - Protected against pressure drop by pressure-controlled non-return valve
- Excluding single-acting or double-acting control valve

**Available on request**


- Larger tank
- Other voltages / frequencies

Control Valves	page	161
Accessories	page	162
Hydraulic Hoses	page	166
Pressure Gauges	page	171
Valve Blocks 'FlowPanel'	page	174

**Vari Pumps - Air - 1-stage - 8 Bars**


model	12 S 6 SA	12 S 12 A	12 S 25 A	12 S 50 A	18 S 12 A	18 S 25 A
art no	100.162.018	100.162.019	100.162.020	100.162.022	100.162.023	100.162.024
max. working pressure	bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
capacity oil tank (effective)	cc	6000	12000	25000	50000	12000
first stage output / min.	cc	1300	1300	1300	2000	2000
first stage pressure range	bar/Mpa	0-720 / 0-72	0-720 / 0-72	0-720 / 0-72	0-720 / 0-72	0-720 / 0-72
operator type		air	air	air	air	air
engine		8 bars - 3.0 kW				
weight, ready for use	kg	33.0	41.0	60.0	89.0	42.0
dimensions (LxWxH)	mm	400 x 300 x 348	400 x 300 x 448	500 x 380 x 448	500 x 380 x 583	400 x 300 x 448

**Vari Pumps - Air - 1-stage - 8 Bars**


model	18 S 50 A
art no	100.162.025
max. working pressure	bar/Mpa
capacity oil tank (effective)	cc
first stage output / min.	cc
first stage pressure range	bar/Mpa
operator type	
engine	
weight, ready for use	kg
dimensions (LxWxH)	mm



12 W 6 SA


**Features & benefits**


- Safe
  - In case of a power failure, the oil pressure is maintained
  - Protected against pressure drop by pressure-controlled non-return valve
- Excluding single-acting or double-acting control valve

**Available on request**


- Larger tank
- Other voltages / frequencies

Control Valves	page	161
Accessories	page	162
Hydraulic Hoses	page	166
Pressure Gauges	page	171
Valve Blocks 'FlowPanel'	page	174

**Vari Pumps - Air - 2-stage - 8 Bars**


model	12 W 6 SA	12 W 12 A	12 W 25 A	12 W 50 A	18 W 12 A	18 W 25 A
art no	100.162.027	100.162.028	100.162.029	100.162.030	100.162.032	100.162.033
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
capacity oil tank (effective) cc	6000	12000	25000	50000	12000	25000
first stage output / min. cc	3600	3600	3600	3600	5700	5700
second stage output / min. cc	1300	1300	1300	1300	2000	2000
first stage pressure range bar/Mpa	0-200 / 0-20	0-200 / 0-20	0-200 / 0-20	0-200 / 0-20	0-200 / 0-20	0-200 / 0-20
second stage pressure range bar/Mpa	200-720 / 20-72	200-720 / 20-72	200-720 / 20-72	200-720 / 20-72	200-720 / 20-72	200-720 / 20-72
operator type	air	air	air	air	air	air
engine	8 bars - 3.0 kW					
weight, ready for use kg	35.0	43.0	62.0	91.0	44.0	63.0
dimensions (LxWxH) mm	400 x 300 x 348	400 x 300 x 448	500 x 380 x 448	500 x 380 x 583	400 x 300 x 448	500 x 380 x 448

**Vari Pumps - Air - 2-stage - 8 Bars**


model	18 W 50 A
art no	100.162.034
max. working pressure bar/Mpa	720 / 72
capacity oil tank (effective) cc	50000
first stage output / min. cc	5700
second stage output / min. cc	2000
first stage pressure range bar/Mpa	0-200 / 0-20
second stage pressure range bar/Mpa	200-720 / 20-72
operator type	air
engine	8 bars - 3.0 kW
weight, ready for use kg	93.0
dimensions (LxWxH) mm	500 x 380 x 583



12 S 6 SP

**Features & benefits**


- Safe
  - In case of a power failure, the oil pressure is maintained
  - Protected against pressure drop by pressure-controlled non-return valve
- Excluding single-acting or double-acting control valve

**Available on request**


- Larger tank

Control Valves	page	161
Accessories	page	162
Hydraulic Hoses	page	166
Pressure Gauges	page	171
Valve Blocks 'FlowPanel'	page	174

**Vari Pumps - Petrol - 1-stage - 4-stroke**


model	12 S 6 SP	12 S 12 P	12 S 25 P	12 S 50 P	18 S 12 P	18 S 25 P
art no	100.162.002	100.162.003	100.162.004	100.162.005	100.162.006	100.162.007
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
capacity oil tank (effective) cc	6000	12000	25000	50000	12000	25000
first stage output / min. cc	1300	1300	1300	1300	2000	2000
first stage pressure range bar/Mpa	0-720 / 0-72	0-720 / 0-72	0-720 / 0-72	0-720 / 0-72	0-720 / 0-72	0-720 / 0-72
operator type	petrol engine					
engine	4-stroke - 4.2 HP - 3.1 kW					
weight, ready for use kg	35.0	43.0	62.0	91.0	44.0	64.0
dimensions (LxWxH) mm	400 x 300 x 462	400 x 300 x 562	500 x 380 x 562	500 x 380 x 697	400 x 300 x 562	500 x 380 x 562

**Vari Pumps - Petrol - 1-stage - 4-stroke**


model	18 S 50 P
art no	100.162.008
max. working pressure bar/Mpa	720 / 72
capacity oil tank (effective) cc	50000
first stage output / min. cc	2000
first stage pressure range bar/Mpa	0-720 / 0-72
operator type	petrol engine
engine	4-stroke - 4.2 HP - 3.1 kW
weight, ready for use kg	93.0
dimensions (LxWxH) mm	400 x 380 x 697



12 W 6 SP

**Features & benefits**

- Safe
  - In case of a power failure, the oil pressure is maintained
  - Protected against pressure drop by pressure-controlled non-return valve
- Excluding single-acting or double-acting control valve

**Available** on request

- Larger tank

Control Valves	page	161
Accessories	page	162
Hydraulic Hoses	page	166
Pressure Gauges	page	171
Valve Blocks 'FlowPanel'	page	174

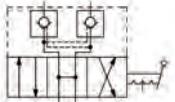
**Vari Pumps - Petrol - 2-stage - 4-stroke**

model	12 W 6 SP	12 W 12 P	12 W 25 P	12 W 50 P	18 W 12 P	18 W 25 P
art no	100.162.010	100.162.011	100.162.012	100.162.013	100.162.014	100.162.015
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
capacity oil tank (effective) cc	6000	12000	25000	50000	12000	25000
first stage output / min. cc	3600	3600	3600	3600	5700	5700
second stage output / min. cc	1300	1300	1300	1300	2000	2000
first stage pressure range bar/Mpa	0-200 / 0-20	0-200 / 0-20	200-0 / 20-0	0-200 / 0-20	0-200 / 0-20	0-200 / 0-20
second stage pressure range bar/Mpa	200-720 / 20-72	200-720 / 20-72	200-720 / 20-72	200-720 / 20-72	200-720 / 20-72	200-720 / 20-72
operator type	petrol engine					
engine	4-stroke - 4.2 HP - 3.1 kW					
weight, ready for use kg	37.0	45.0	64.0	93.0	46.0	65.0
dimensions (LxWxH) mm	400 x 300 x 462	400 x 300 x 562	500 x 380 x 562	500 x 380 x 697	400 x 300 x 562	500 x 380 x 562

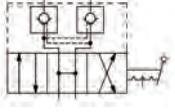
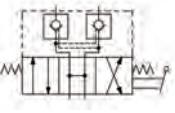
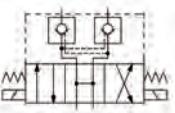
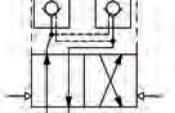
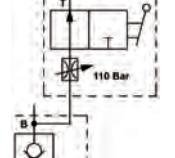
**Vari Pumps - Petrol - 2-stage - 4-stroke**

model	18 W 50 P
art no	100.162.016
max. working pressure bar/Mpa	720 / 72
capacity oil tank (effective) cc	50000
first stage output / min. cc	5700
second stage output / min. cc	200
first stage pressure range bar/Mpa	0-2000 / 0-200
second stage pressure range bar/Mpa	200-720 / 20-72
operator type	petrol engine
engine	4-stroke - 4.2 HP - 3.1 kW
weight, ready for use kg	95.0
dimensions (LxWxH) mm	500 x 380 x 697


**Control Valves - Hand Pumps**

image	hydraulic diagram	description	model	art no
		<p>Control valve</p> <ul style="list-style-type: none"> <li>• Suitable for double-acting tools</li> <li>• Handle stops in each position</li> <li>• With pressure controlled non-return valves for securing the load</li> <li>• 3-position 4-way valve</li> <li>• Connection: 3/8" NPT female (2x)</li> </ul>	VM 43 L	100.182.175


**Control Valves - Vari Pumps**

image	hydraulic diagram	description	model	art no
		<p>Control Valve</p> <ul style="list-style-type: none"> <li>• Suitable for single-acting tools</li> <li>• Handle stops in each position</li> <li>• 3-position, 3-way Valve</li> <li>• Not in combination with a vari pump model (name) starting with 18 W</li> <li>• Connection 3/8" NPT female thread (2x)</li> </ul>	M 311	100.181.311
		<p>Control Valve</p> <ul style="list-style-type: none"> <li>• Suitable for double-acting tools</li> <li>• Handle stops in each position</li> <li>• With pressure-controlled non-return valves for securing the load</li> <li>• 3-position 4-way Valve</li> <li>• Connection: 3/8" NPT female (2x)</li> </ul>	M 322	100.181.322
		<p>Control Valve</p> <ul style="list-style-type: none"> <li>• Suitable for double-acting tools</li> <li>• Handle with dead man's function, automatically goes to "O" position</li> <li>• With pressure-controlled non-return valves for securing the load</li> <li>• 3-position, 4-way Valve</li> <li>• Connection: 3/8" NPT female (2x)</li> </ul>	M 323	100.181.323
		<p>Control Valve</p> <ul style="list-style-type: none"> <li>• Only suitable in combination with EC-version Vari pumps. Contact our sales department for additional information</li> <li>• Suitable for double-acting tools. Valve with electromagnetic control (24 VDC)</li> <li>• With pressure-controlled non-return valves for securing the load</li> <li>• 3-position, 4-way valve</li> <li>• Connection: 3/8" NPT female (2x)</li> <li>• Remote control, art no 100.151.060 (to be ordered separately)</li> <li>• 4 buttons (on, off, lift and lower)</li> </ul>	M 324	100.181.324
		<p>Control Valve</p> <ul style="list-style-type: none"> <li>• Suitable for double-acting tools</li> <li>• Valve with air control. Only suitable in combination with air-powered Vari pumps</li> <li>• With pressure-controlled non-return valves for securing the load</li> <li>• 2-position 4-way Valve</li> <li>• Connection: 3/8" NPT female (2x)</li> <li>• Remote control, art no 100.161.004 (to be ordered separately)</li> <li>• 2 buttons (lift and lower)</li> </ul>	M 325	100.181.325
		<p>Single/double-acting valve</p> <ul style="list-style-type: none"> <li>• For assembly on the varipump underneath a double-acting valve (M 322, M 323, M324 or M 325)</li> <li>• This valve makes it possible to drive both single and double acting tools with just one pump</li> <li>• Switch with A + B function (double-acting) or A (single-acting)</li> </ul>	M304	100.172.051


**Accessories - Hand Pumps**

image	description	model	art no
	Foot Plate Set • Suitable for PA 09 pumps	-	100.182.218
	Foot Plate Set • Suitable for PA 18/38 pumps	-	100.182.217
	Foot Plate Set • Suitable for PA 18/38 pumps including VM 43 L valve	-	100.182.219


**Accessories - Vari Pumps**

image	description	model	art no
	Connecting plate • For remote or separately from the pump placing of the valves M 311, M 322, M 323, M 324 or M 325 (if necessary combined with pressure control valve M 303) • Connection: 1/4" BSP female	M 302	100.181.302
	Connecting block • For mounting couplers or hoses • To be mounted on the pump when using connecting plate M 302 instead of control valve • Provided with pressure relief valve • Connection: 1/4" BSP female (2x), 3/8" NPT female (1x) • Mounting of pressure gauge A 500 possible using nipple 100.581.104 • Mounting pressure gauge A 150 possible using nipple 100.581.128	M 301 B	100.182.088
	Pressure Control Valve • For mounting unto the Pump or unto the connecting plate M 302 (below the connecting block M 301 or below the Valves M 311, M 322, M 323, M 324 or M 325) • Pressure adjustable between 0 and 720 Bars	M 303	100.181.303
	Protection frame for 6, 12, 25 and 50 liter pumps	-	100.151.056
	Cover plate for protection frame	-	100.151.040


**Accessories - Vari Pumps**

image	description	model	art no
	Carrying handle set for 6 and 12 litre pumps	-	100.151.053
	Carrying handle set for 25 and 50 litre pumps	-	100.151.054
	Set of wheels for 25 and 50 litre pumps	-	100.151.039
	Carriage-frame for 6, 12, 25 and 50 litre pumps	-	100.151.038
	Silencer for air vari pumps	HSR 0.5 U	100.182.015
	Air treatment set for air Vari pump (separately delivered)	A 181 U	100.582.181
	Air treatment set for air vari pump (to be mounted)	-	100.161.003



# System Components





H 1 SO

**Features & benefits**

- Anti-kink springs on both sides
- 4:1 safety ratio

**Available** on request

- Different lengths
- Other colour

**Hydraulic Hoses - Single Hoses**

model	H 1 SO	H 2 SO	H 3 SO	H 4 SO	H 5 SO	H 6 SO
art no	100.571.101	100.571.102	100.571.103	100.571.104	100.571.105	100.571.106
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
color	orange	orange	orange	orange	orange	orange
hose connection A	3/8" NPT male					
hose connection B	3/8" NPT male					
length m	1	2	3	4	5	6

**Hydraulic Hoses - Single Hoses**

model	H 8 SO	H 10 SO	H 15 SO	H 20 SO
art no	100.571.108	100.571.110	100.571.115	100.571.120
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72
color	orange	orange	orange	orange
hose connection A	3/8" NPT male	3/8" NPT male	3/8" NPT male	3/8" NPT male
hose connection B	3/8" NPT male	3/8" NPT male	3/8" NPT male	3/8" NPT male
length m	8	10	15	20



H 1 SOU

**Features & benefits**

- Anti-kink springs on both sides
- 4:1 safety ratio

**Available** on request

- Different lengths
- Other colour

**Hydraulic Hoses - Standard Hoses**

model	H 1 SOU	H 2 SOU	H 3 SOU	H 4 SOU	H 5 SOU	H 6 SOU
art no	100.572.101	100.572.102	100.572.103	100.572.104	100.572.105	100.572.106
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
color	orange	orange	orange	orange	orange	orange
hose connection A	3/8" NPT male					
hose connection B	A 119					
length m	1	2	3	4	5	6

**Hydraulic Hoses - Standard Hoses**

model	H 8 SOU	H 10 SOU	H 15 SOU	H 20 SOU
art no	100.572.108	100.572.110	100.572.115	100.572.120
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72
color	orange	orange	orange	orange
hose connection A	3/8" NPT male	3/8" NPT male	3/8" NPT male	3/8" NPT male
hose connection B	A 119	A 119	A 119	A 119
length m	8	10	15	20



VL 1 SOU

**Features & benefits**

- Anti-kink springs on both sides
- 4:1 safety ratio

**Available on request**

- Different lengths
- Other colour

**Hydraulic Hoses - Extension Hoses**

model	VL 1 SOU	VL 2 SOU	VL 5 SOU	VL 10 SOU	VL 15 SOU	VL 20 SOU
art no	100.572.301	100.572.302	100.572.305	100.572.310	100.572.315	100.572.320
max. working pressure bar/Mpa	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72	720 / 72
color	orange	orange	orange	orange	orange	orange
hose connection A	A 119					
hose connection B	A 118					
length m	1	2	5	10	15	20


**Couplers**

image	description	model	art no
	<p>High Flow Coupler, female, including steel dust cap</p> <ul style="list-style-type: none"> <li>• Connection: 3/8" NPT, male</li> <li>• Fits: A 119</li> </ul>	A 118	100.181.118
	<p>High Flow Coupler, male, including steel dust cap</p> <ul style="list-style-type: none"> <li>• Connection: 3/8" NPT, female</li> <li>• Fits: A 118, A 134 N and A 418</li> </ul>	A 119	100.181.119
	<p>High Flow Coupler, female, like A 118, with built-in pressure relief Valve</p> <ul style="list-style-type: none"> <li>• Adjusted to ca. 750 Bars</li> <li>• Connection: 3/8" NPT, male</li> <li>• Fits: A 119</li> </ul>	A 418	100.181.418
	<p>High flow coupler, female, like A 118, with built-in-non-return valve</p> <ul style="list-style-type: none"> <li>• Suitable for hose rupture security</li> <li>• Not to be used with double-acting systems</li> <li>• Connection: 3/8" NPT, male</li> <li>• Fits: A 119</li> </ul>	A 134 N	100.181.434
	<p>High Flow Coupler, female, including dust cap</p> <ul style="list-style-type: none"> <li>• Connection: 3/8" NPT, male</li> <li>• Fits: A 119 SS</li> <li>• This coupler cannot be assembled on aluminium parts because of contact corrosion!</li> </ul>	A 118 SS	100.002.499
	<p>High Flow Coupler, male, including dust cap</p> <ul style="list-style-type: none"> <li>• Connection: 3/8" NPT, female</li> <li>• Fits: A 118 SS</li> <li>• This coupler cannot be assembled on aluminium parts because of contact corrosion!</li> </ul>	A 119 SS	100.002.500
	<p>Loose steel dust cap</p> <ul style="list-style-type: none"> <li>• With fixing thread</li> <li>• Fits: A 118</li> </ul>	A 118 SK	100.181.828
	<p>Loose steel dust cap</p> <ul style="list-style-type: none"> <li>• With fixing thread</li> <li>• Fits: A 119</li> </ul>	A 119 SK	100.181.829


**Couplers**

image	description	model	art no
	Loose dust cap • With fixing thread • Fits: A 118 SS	A 118 SK SS	100.002.503
	Loose dust cap • With fixing thread • Fits: A 119 SS	A 119 SK SS	100.002.504
	Relief valve • For reducing any remnant pressure • Suitable for: A 118	A 118	100.181.840
	Relief valve • For reducing any remnant pressure • Suitable for: A 119	A 119	100.181.841


**Pressure Gauges - Scale Division In Bars**

image	description	model	art no
	Universal pressure gauge • 0 - 720 bars • Pointer damped with glycerine • Stainless steel • Housing Ø 100 mm • Connection: 1/2" NPT male	A 500	100.582.500
	Rubber protection cover • Suitable for Ø 100 mm pressure gauges	-	350.581.160
	Pressure gauge • 0 - 720 bars • Pointer damped with glycerine • Stainless steel • Housing Ø 60 mm • Connection: 1/4" NPT male	A 150	100.581.036
	Rubber protection cover • Suitable for Ø 60 mm pressure gauges	-	350.581.152
	Pressure gauge digital • 0 - 1000 Bars • Peak pressure memory • Connection: 1/4" BSP male	-	150.581.091



A 501

**Features & benefits**


- Pointer damped with glycerine
- Stainless steel
- Housing Ø 100 mm
- Connection: 1/2" NPT male

**Pressure Gauges - Scale Division In Ton**


model	A 501	A 502	A 503	A 504	A 505	A 506
art no	100.582.501	100.582.502	100.582.503	100.582.504	100.582.505	100.582.506
1st scale range	t 5	25	52	105	210	509
2nd scale range	t 11	33	77	160	305	382
3rd scale range	t 21	51				
1st scale division per mark	kg 100.0	500.0	1000.0	2000.0	5000.0	10000.0
2nd scale division per mark	kg 200.0	500.0	1000.0	2000.0	5000.0	10000.0
3rd scale division per mark	kg 500.0	1000.0				
connection	1/2" NPT male					
material	stainless steel					
housing diameter	mm 100	100	100	100	100	100

**Pressure Gauges - Scale Division In Ton**

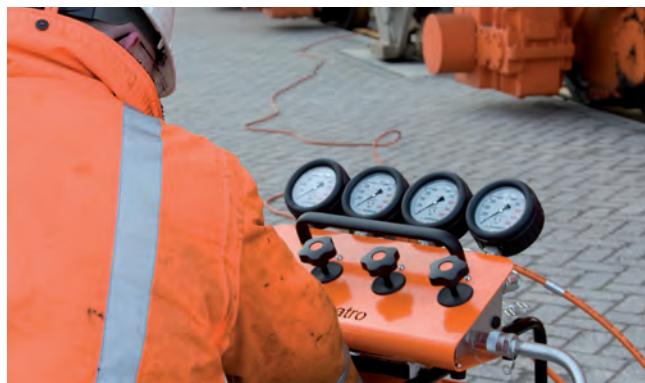

model	A 507	A 508	A 509	A 510
art no	100.582.507	100.582.508	100.582.509	100.582.510
1st scale range	t 6	30	63	12
2nd scale range	t 12	47	104	31
3rd scale range	t 23	63		63
4th scale range	t	113		98
1st scale division per mark	kg 100.0	500.0	1000.0	200.0
2nd scale division per mark	kg 200.0	1000.0	2000.0	500.0
3rd scale division per mark	kg 500.0	1000.0		2000.0
4th scale division per mark	kg	2000.0		2000.0
connection	1/2" NPT male	1/2" NPT male	1/2" NPT male	1/2" NPT male
material	stainless steel	stainless steel	stainless steel	stainless steel
housing diameter	mm 100	100	100	100


**Pressure Gauges** - Pressure Gauge Adaptors

image	description	model	art no
	Pressure Gauge connecting block for vari pumps • Suitable for single-acting control Valve M 311 • Provided with: 1 x 3/8" NPT female, 1 x 3/8" NPT male and 1/2" NPT female for pressure gauge • Pressure Gauge can be placed in an angle of 45° using Elbow, art no 100.581.240	A 108	100.181.108
	Pressure Gauge connecting block for vari pumps • Suitable for double-acting control valves M 322, M 323, M 324 and M 325 • Supplies pressure to port A or B, dependent on which is highest • Provided with: 1 x 1/2" NPT female	M 308	100.182.308


**Pressure Gauges** - Pressure Gauge Sets

image	description	model	art no
	Pressure gauge set PA 04/09 pump • 0-720 bars • Pointer damped with glycerine • Stainless steel • Housing Ø 63 mm • Including rubber protection cover • Connection: 1/4" NPT male	-	100.182.213
	Pressure gauge set PA *8 pumps • 0-720 bars • Pointer damped with glycerine • Stainless steel • Housing Ø 63 mm • Including rubber protection cover • Connection: 1/4" NPT male	-	100.182.214
	Pressure gauge set PA pumps • 0-720 bars • Pointer damped with glycerine • Stainless steel • Housing Ø 100 mm • Including rubber protection cover • Connection: 1x 3/8" NPT female and 1x 3/8" NPT male	-	100.182.215
	Pressure gauge set VM 43 L valve • 0-720 bars • Pointer damped with glycerine • Stainless steel • Housing Ø 63 mm • Including rubber protection cover • Connection: 1/4" NPT male	-	100.182.216
	Plug-in type gauge set • 0-720 bars • Connection: couplers A 118 - A 119	A 111 U	100.582.111


**Features & benefits**

- Excellent control over your load; extremely accurate regulation of oil flow under high pressure
- Safe; stable construction
- Ergonomic
  - Regulator valves with comfortable rotary knobs
  - Pressure gauges that are easy to read
  - Installation on vari pump is possible for comfortable working position
  - Carry-handle positioned above centre of gravity

**Available** on request

- Can be mounted on the protection frame of the Vari pumps

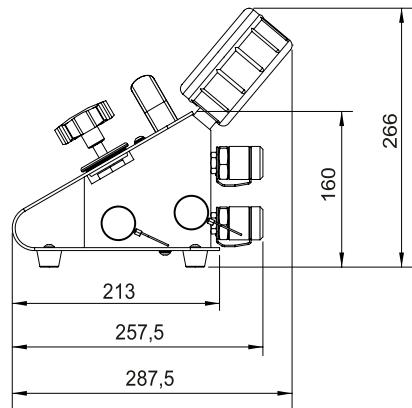
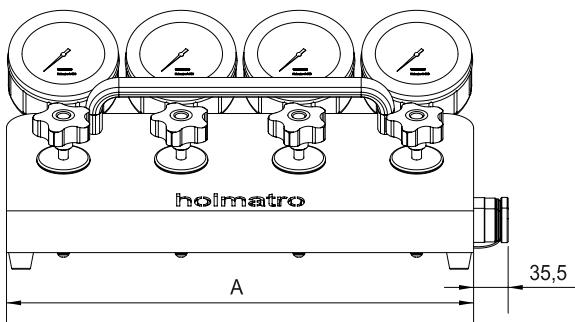
Hydraulic Hoses                                  page 166  
 Couplers                                          page 169  
 Pressure Gauges                                page 171

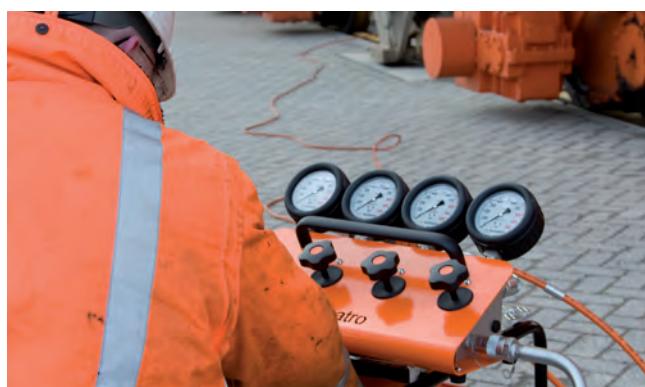
**Valve Blocks 'FlowPanel'** - Single-acting

model	HMS 2 A	HMS 2 B	HMS 2 C	HMS 4 A	HMS 4 B	HMS 4 C
art no	100.172.048	100.172.049	100.172.050	100.172.045	100.172.046	100.172.047
number of outlet ports	2	2	2	4	4	4
couplers		yes	yes		yes	yes
pressure gauge			yes			yes
weight, ready for use	kg 6.2	7.1	9.0	12.5	13.9	17.8

**Valve Blocks 'FlowPanel'** - Single-acting (dimensions)

model	HMS 2 A	HMS 2 B	HMS 2 C	HMS 4 A	HMS 4 B	HMS 4 C
dimension A	mm 238	238	238	480	480	480




**Features & benefits**


- Excellent control over your load; extremely accurate regulation of oil flow under high pressure
- Safe; stable construction
- Ergonomic
  - Regulator valves with comfortable rotary knobs
  - Pressure gauges that are easy to read
  - Installation on vari pump is possible for comfortable working position
  - Carry-handle positioned above centre of gravity

**Available on request**


- Can be mounted on the protection frame of the Vari pumps

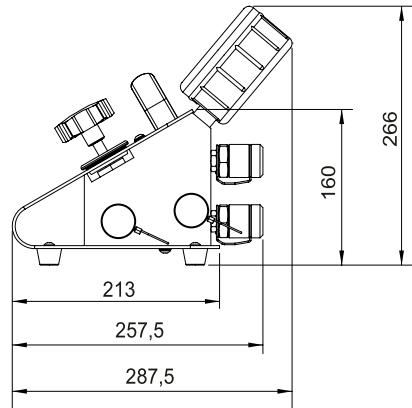
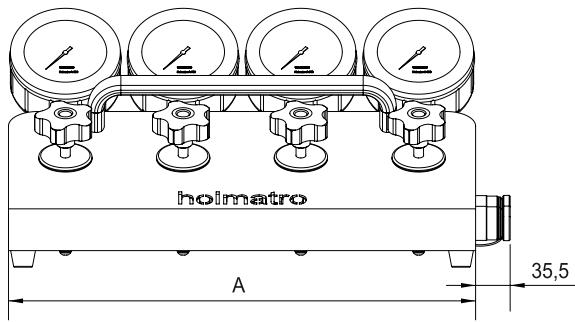
Hydraulic Hoses                                    page 166  
 Couplers                                                page 169  
 Pressure Gauges                                      page 171

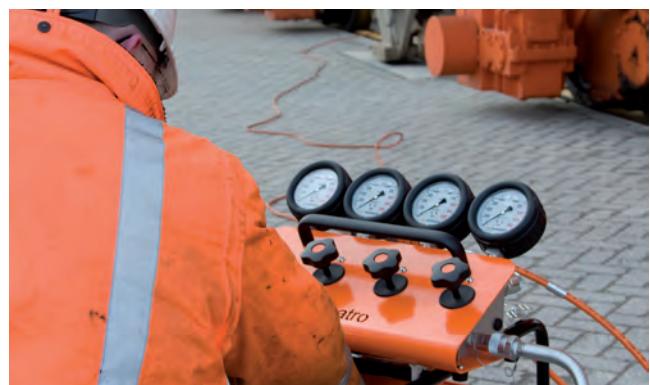
**Valve Blocks 'FlowPanel'** - Single-acting


model	HMS 6 A	HMS 6 B	HMS 6 C
art no	100.172.052	100.172.053	100.172.054
number of outlet ports	6	6	6
couplers		yes	yes
pressure gauge			yes
weight, ready for use	kg 18.5	20.5	26.6

**Valve Blocks 'FlowPanel'** - Single-acting (dimensions)


model	HMS 6 A	HMS 6 B	HMS 6 C
dimension A	mm 722	722	722




**Features & benefits**

- Excellent control over your load; extremely accurate regulation of oil flow under high pressure
- Safe; stable construction
- Ergonomic
  - Regulator valves with comfortable rotary knobs
  - Pressure gauges that are easy to read
  - Installation on vari pump is possible for comfortable working position
  - Carry-handle positioned above centre of gravity

**Available** on request

- Can be mounted on the protection frame of the Vari pumps

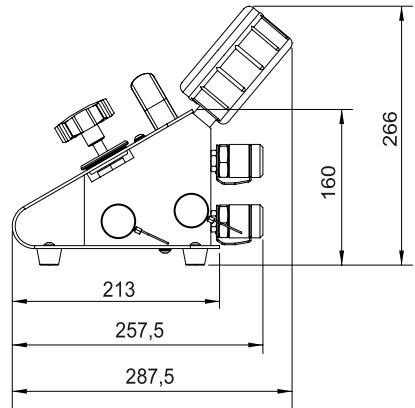
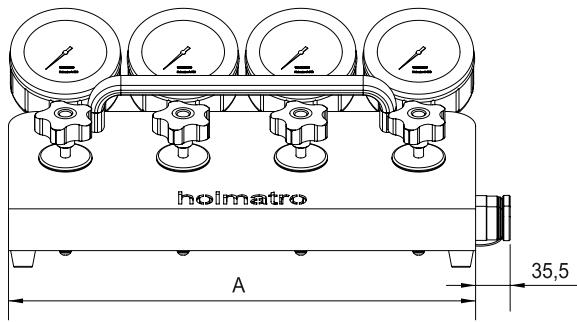
Hydraulic Hoses                                    page 166  
 Couplers                                            page 169  
 Pressure Gauges                                    page 171

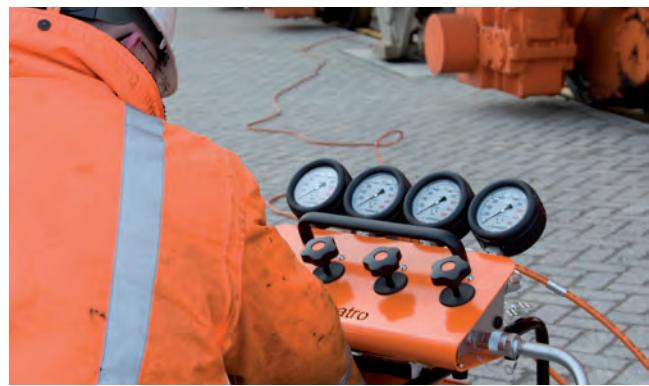
**Valve Blocks 'FlowPanel'** - Double-acting

model	HMD 2 A	HMD 2 B	HMD 2 C	HMD 4 A	HMD 4 B	HMD 4 C
art no	100.172.042	100.172.043	100.172.044	100.172.039	100.172.040	100.172.041
number of outlet ports	2	2	2	4	4	4
couplers		yes	yes		yes	yes
pressure gauge			yes			yes
weight, ready for use	kg 7.2	8.1	10.0	14.2	15.6	19.7

**Valve Blocks 'FlowPanel'** - Double-acting (dimensions)

model	HMD 2 A	HMD 2 B	HMD 2 C	HMD 4 A	HMD 4 B	HMD 4 C
dimension A	mm 238	238	238	480	480	480




**Features & benefits**

- Excellent control over your load; extremely accurate regulation of oil flow under high pressure
- Safe; stable construction
- Ergonomic
  - Regulator valves with comfortable rotary knobs
  - Pressure gauges that are easy to read
  - Installation on vari pump is possible for comfortable working position
  - Carry-handle positioned above centre of gravity

**Available** on request

- Can be mounted on the protection frame of the Vari pumps

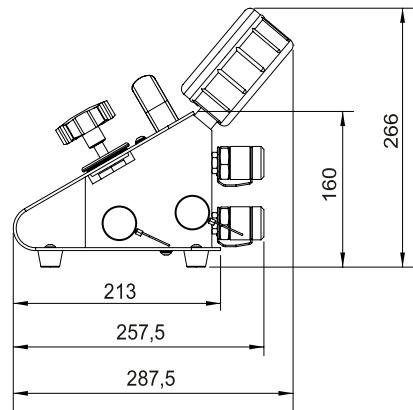
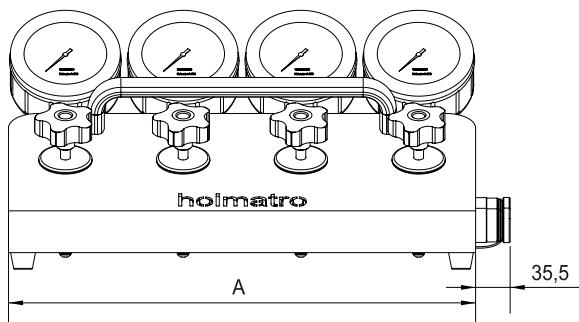
Hydraulic Hoses                                                  page 166  
 Couplers                                                          page 169  
 Pressure Gauges                                                page 171

**Valve Blocks 'FlowPanel'** - Double-acting

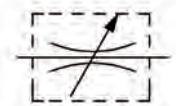
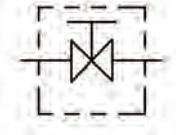
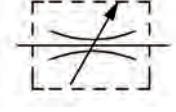
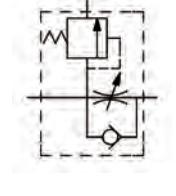
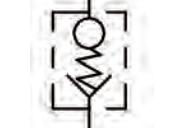
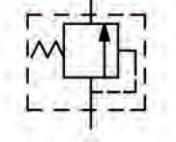
model	HMD 6 A	HMD 6 B	HMD 6 C
art no	100.172.055	100.172.056	100.172.057
number of outlet ports	6	6	6
couplers		yes	yes
pressure gauge			yes
weight, ready for use	kg 21.0	23.0	29.1

**Valve Blocks 'FlowPanel'** - Double-acting (dimensions)

model	HMD 6 A	HMD 6 B	HMD 6 C
dimension A	mm 722	722	722




**Valves**

image	hydraulic diagram	description	model	art no
		<p>Needle valve A 109 N</p> <ul style="list-style-type: none"> <li>• For accurate control of the oil flow, also under maximum pressure</li> <li>• Connection: 3/8" NPT female (2x)</li> </ul>	A 109 N	100.581.609
		<p>Ball valve</p> <ul style="list-style-type: none"> <li>• Very suitable for quick shut-off valve (open-close)</li> <li>• Can be operated under maximum pressure</li> <li>• Connection: 3/8" NPT female (2x)</li> </ul>	A 195	100.581.200
		<p>Needle valve A 130</p> <ul style="list-style-type: none"> <li>• For accurate control of the oil flow, also under maximum pressure</li> <li>• Connection: 3/8" NPT male and 3/8" NPT female</li> </ul>	A 130	100.181.130
		<p>Breaking safety (load security) valve</p> <ul style="list-style-type: none"> <li>• Protects against sudden pressure drop in the supply pipe, for example in case of hose rupture</li> <li>• To be mounted between pump and cylinder as close to the cylinder as possible</li> <li>• Provided with pressure relief valve, set at 830 bars</li> <li>• While pumping: valve closed, safety valve active</li> <li>• For relief: open valve, safety valve not active</li> <li>• Connection: 3/8" NPT female and 3/8" NPT male</li> </ul>	A 110	100.181.110
		<p>High flow coupler, female, like A 118, with built-in non-return valve</p> <ul style="list-style-type: none"> <li>• Suitable for hose rupture security</li> <li>• Not to be used with double-acting systems</li> <li>• Connection: 3/8" NPT, male</li> <li>• Fits: A 119</li> </ul>	A 134 N	100.181.434
		<p>Non-Return Valve</p> <ul style="list-style-type: none"> <li>• Spring-loaded</li> <li>• Connection: 3/8" NPT male (2x)</li> </ul>	A 209	100.581.209
		<p>Pressure relief valve</p> <ul style="list-style-type: none"> <li>• Set to 750 bars</li> <li>• Connection: 1x 3/8" NPT female and 1x 3/8" NPT male</li> </ul>	A 135	100.181.135


**Accessories Hydraulics**

image	description	model	art no
	45° elbow with 1x 1/2" NPT female and 1x 1/2" NPT male	-	100.581.240
	Adjustable pin key, complete with 4 pairs of exchangeable pins	-	100.581.132
	Cross piece with 4x 3/8" NPT female	-	100.581.139
	T-piece with 3x 3/8" NPT female	-	100.001.010
	Y-piece with 3x 3/8" NPT female	-	100.182.104
	Swivel connector with 1x 3/8" NPT male and 3/8" NPT female	-	100.581.115
	90° Elbow with 1x 3/8" NPT female and 1x 3/8" NPT male	-	100.581.113
	90° Elbow with 2x 3/8" NPT male	-	100.581.213

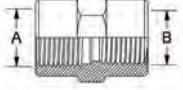
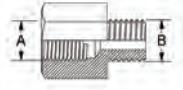

**Accessories Hydraulics**

image	description	model	art no
	45° Elbow with 1x 3/8" NPT female and 1x 3/8" NPT male	-	100.581.114
	90° bend with 1x 1/4" BSP female swivel Nut and 1x 1/4" BSP male	-	150.581.219
	Straight tube connector for 12 mm tube with 3/8" NPT male	-	100.581.136
	90° pipe connector for 12 mm tube with 3/8" NPT male	-	100.581.137
	Plug with 3/8" NPT	-	100.581.105
	Sealing ring for M12	-	190.593.275
	Sealing ring for 1/4" BSP	-	150.581.230
	Sealing ring for M14	-	190.593.075

**Accessories** Hydraulics

image	description	model	art no
	Sealing ring for M18	-	100.581.158
	Manifold with 5 interconnected ports with 3/8" NPT female	A 125	100.181.125


**Assembly**

image	technical drawing	description	thread A	thread B	art no
		Connection socket	1/4" NPT	1/4" NPT	100.581.238
		Connection socket	1/4" NPT	1/4" BSP	150.581.228
		Connection socket	1/4" BSP	M18 x 1.5	100.181.227
		Connection socket	3/8" NPT	3/8" NPT	100.581.102
		Connection socket	3/8" NPT	M18 x 1.5	100.181.228
		Reducing bushing	1/4" NPT	3/8" NPT	100.581.128
		Reducing bushing	3/8" NPT	1/2" NPT	100.581.103
		Reducing bushing	3/8" NPT	3/4" NPT	100.581.133
		Reducing bushing	1/8" BSP	1/2" BSP	150.581.085
		Nipple	1/8" NPT	3/8" NPT	110.013.004
		Nipple	1/4" NPT	1/4" BSP	150.581.227
		Nipple	1/4" NPT	M14 x 1.5	100.581.226
		Nipple	1/4" BSP	M12 x 1.75	110.013.044
		Nipple	1/4" BSP	M14 x 1.5	100.581.211
		Nipple	1/4" BSP	M14 x 2	100.181.156
		Nipple	1/4" BSP	1/4" BSP	150.581.216
		Nipple	1/4" BSP	3/8" NPT	150.581.218
		Nipple	3/8" NPT	3/8" NPT	100.581.101
		Nipple	3/8" NPT	M14 x 2	100.181.151
		Nipple	1/2" BSP	1/2" NPT	150.581.088
		Nipple	1/4" BSP	M10 x 1	110.013.005
		Nipple	1/4" NPT	3/8" NPT	150.581.244
		Nipple	1/2" BSP	3/8" NPT	150.581.087
		Nipple	1/4" NPT	1/4" NPT	100.581.239
		Connector	1/4" BSP	1/4" NPT	100.181.223
		Connector	1/4" BSP	3/8" BSP	100.581.235
		Connector	1/4" BSP	M14 x 2	100.181.159
		Connector	3/8" NPT	1/4" BSP	150.581.217
		Connector	3/8" NPT	1/4" NPT	100.581.107
		Connector	3/8" NPT	M14 x 2	100.181.153
		Connector	1/2" NPT	3/8" NPT	100.581.104
		Connector	M14 x 1.5	3/8" NPT	100.181.129
		Connector	M14 x 1.5	1/4" BSP	150.581.058
		Connector	M18 x 1.5	3/8" NPT	100.181.154
		Connector	M18 x 1.5	1/4" BSP	100.181.157
		Connector	1/4" NPT	M10 x 1	100.181.047
		Connector	1/4" BSP	3/8" NPT	150.000.398



<b>Oils</b>			
<b>image</b>	<b>description</b>	<b>model</b>	<b>art no</b>
	<p>Hydraulic oil ECO Power, DIN 51524.3 HVLP, bottle 1 litre</p> <ul style="list-style-type: none"> <li>• Fully mineral oil</li> <li>• Optimum lubricating properties</li> <li>• Excellent protection against wear and corrosion</li> <li>• Up to 3x longer service life than the leading hydraulic oils</li> <li>• Standard oil for all Holmatro motor pumps</li> </ul>	ISO VG 36 - 1L	180.000.857
	<p>Hydraulic oil ECO Power, DIN 51524.3 HVLP, bottle 5 litres</p> <ul style="list-style-type: none"> <li>• Fully mineral oil</li> <li>• Optimum lubricating properties</li> <li>• Excellent protection against wear and corrosion</li> <li>• Up to 3x longer service life than the leading hydraulic oils</li> <li>• Standard oil for all Holmatro motor pumps</li> </ul>	ISO VG 36 - 5L	180.000.815
	<p>Hydraulic oil ECO Power, DIN 51524.3 HVLP, drum 60 litres</p> <ul style="list-style-type: none"> <li>• Fully mineral oil</li> <li>• Optimum lubricating properties</li> <li>• Excellent protection against wear and corrosion</li> <li>• Up to 3x longer service life than the leading hydraulic oils</li> <li>• Standard oil for all Holmatro motor pumps</li> </ul>	ISO VG 36 - 60L	130.103.025
	<p>Hydraulic oil ECO Power, DIN 51524.3 HVLP, bottle 1 litre</p> <ul style="list-style-type: none"> <li>• Fully mineral oil</li> <li>• Optimum lubricating properties</li> <li>• Excellent protection against wear and corrosion</li> <li>• Up to 3x longer service life than the leading hydraulic oils</li> <li>• Standard oil for all Holmatro tools and hand pumps</li> </ul>	ISO VG 15 - 1L	100.581.051
	<p>Hydraulic OIL ECO Power, DIN 51524.3 HVLP, bottle of 5 litres</p> <ul style="list-style-type: none"> <li>• Fully mineral oil</li> <li>• Optimum lubricating properties</li> <li>• Excellent protection against wear and corrosion</li> <li>• Up to 3x longer service life than the leading hydraulic oils</li> <li>• Standard oil for all Holmatro tools and hand pumps</li> </ul>	ISO VG 15 - 5L	100.581.055
	<p>Motor oil, API SJ/CH-4, bottle 0.6 litre</p> <ul style="list-style-type: none"> <li>• Very good detergent and dispersant</li> <li>• Optimum protection against wear, corrosion and foam</li> <li>• High and stable viscosity</li> <li>• Low sulphate ash content</li> </ul>	10 W 30	150.581.103


**Lubricants**

image	description	model	art no
	Molykote® grease paste • For mounting and lapping of metal parts • Tube 100 g	-	100.581.081
	High-quality Molykote® grease • For metal / metal combinations at slow to fast movements with medium to heavy load • Cartridge 400 g	-	100.581.082
	Brake cleaner (degreasant) Motip® • For cleaning and pre-treatment of surfaces • Spray can 500 ml	-	170.000.252
	Teflon lubricating oil Sir John® • High-quality lubricant and maintenance oil • Spray can 400 ml	-	150.581.095
	Anti-friction coating Bel Ray® • Dry spray coating for protection under dusty, dirty and abrasive conditions • Spray can 400 ml	-	150.581.093

# Tensioning Hydraulics



**6-step plan** for selection of stud tension cylinders

**Step 1**

Cylinder selection by bolt diameter.

**Step 2**

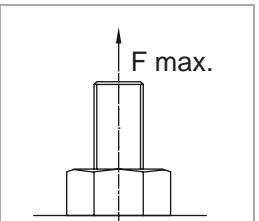
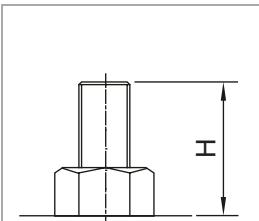
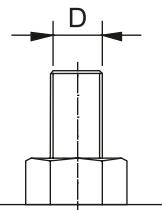
Check height of threaded rod.

**Step 3**

Check stud tension force.

**Step 4**

Check cylinder dimensions.



stud tension cylinder	bolt diameter - through to	
	mm	inch
HHX 14	M20 - M22	3/4 - 7/8
HHX 22	M24 - M28	1 - 1 1/8
HHX 35	M30 - M34	1 1/4 - 1 3/8
HTX 50	M36 - M40	1 1/2 - 1 5/8
HTX 70	M42 - M46	1 3/4 - 1 7/8
HTX 100	M48 - M56	2 - 2 1/4
HTX 150	M60 - M68	2 1/2 - 2 3/4
HTX 180	M72 - M76	2 3/4 - 3
HTX 220	M76 - M80	3 - 3 1/4
HTX 260	M80 - M85	3 1/4 - 3 1/2

minimum height of threaded rod above flange	mm
28 + D	
30 + D	
35 + D	
55 + D	
65 + D	
70 + D	
90 + D	
90 + D	
85 + D	
105 + D	

max. pulling force	ton	kN
14	140	
22	221	
35	352	
50	501	
70	702	
100	999	
150	1500	
180	1803	
220	2174	
260	2601	

See table stud tension cylinders (pages 188-192)

**Stud tension cylinder system**


Placing cylinder and pulling nut over nut socket and bolt



The tommy bar makes the nut socket (and therefore the nut) turn very easily

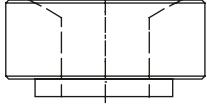
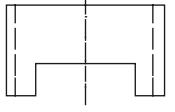
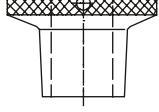


A complete set-up in which a cylinder has been placed on every bolt (so-called 100% occupation)

**6-step plan** for selection of stud tension cylinders

**Step 5**

Assembly of a stud tension cylinder.

				
stud tension cylinder	cylinder bridge	pulling nut*	nut socket**	tommy bar
model	art no	model	model	art no
HHX 14	110.011.101	-	PN 14 + THREAD	110.181.090
HHX 22	110.011.002	-	PN 22 + THREAD	110.181.091
HHX 35	110.011.012	-	PN 35 + THREAD	110.181.091
HTX 50	110.011.121	BR 50	PN 50 + THREAD	110.181.091
HTX 70	110.011.131	BR 70	PN 70 + THREAD	110.181.092
HTX 100	110.011.141	BR 100	PN 100 + THREAD	110.181.092
HTX 150	110.011.151	BR 150	PN 150 + THREAD	110.181.093
HTX 180	110.011.161	BR 180	PN 180 + THREAD	110.181.093
HTX 220	110.011.171	BR 220	PN 220 + THREAD	110.181.093
HTX 260	110.011.181	BR 260	PN 260 + THREAD	110.181.094
				ø mm
				6
				8
				8
				10
				10
				12
				12
				12
				16

\* THREAD = thread type x pitch (e.g. M36 x 4)

\*\* SLW = key size of nut (e.g. SLW 50)

**Step 6**

Additional items for connection or operation, based on the n-number of cylinders that are used in a coupled situation.

no	description	mention with order
n	Connection pieces	Connection pieces A 240 U, art no 110.582.240
n-1	Hoses between the cylinders	E.g. hose, model X 1.2 MU, art no 110.572.012 (for further specifications see section 'Hydraulic Hoses', page 196)
2	Hoses to pump and pressure gauge	E.g. hose, model X 3 MU, art no 110.572.030 (for further specifications see section 'Hydraulic Hoses', page 196)
1	Pump (hand or foot operated)	E.g. hand pump, model PAX 18 H 2, art no 110.142.005 (for further specifications see section 'Pump', page 194)
1	Pressure gauge	Pressure gauge A 148 U, art no 110.582.348 (for further specifications see section 'Couples And Accessories', page 197)

Recommendation with respect to the number of cylinders to be used: the best result is achieved with a 100% occupation. This means that every threaded rod is fitted with a stud tension cylinder and is tensioned simultaneously. A lower occupation level is possible. However, you must take account of the fact that the force is increased evenly and in steps along the contour of the object to be tensioned.



HHX 14

**Features & benefits**

- HHX-cylinders standard provided with cylinder seat
- Compact and lightweight
- Usable in all positions
- High-quality and refined chrome nickel steel
- Automatically locking quick coupler
- Pulling nut is manufactured in conformity with customer specifications based on exact thread and bolt dimensions
- Nut socket is manufactured in conformity with customer specifications based on exact key size of the nut
- Advantages compared with traditional stud tensioning methods
  - The effects of frictions are negligible; higher accuracy when tightening the bolt
  - Time-saving; several cylinders can be coupled for simultaneously tensioning several bolt connections

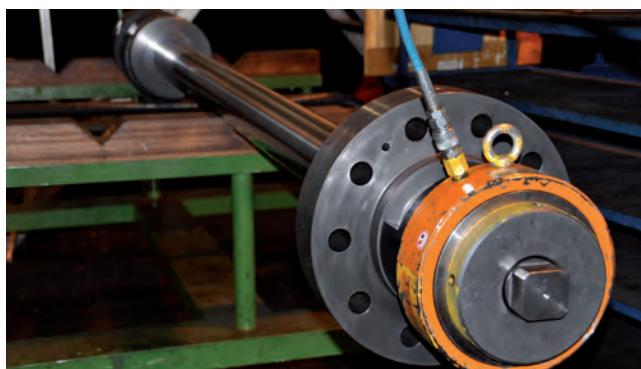
**Available** on request

- Stud tension cylinders manufactured in conformity with customer specifications
- Extended pulling nut
- Heightened or lowered bridges (HTX)

**Accessories**

- Pulling nut
- Nut socket
- Tommy bar

Pump	page	194
Hydraulic Hoses	page	196
Couplers And Accessories	page	197

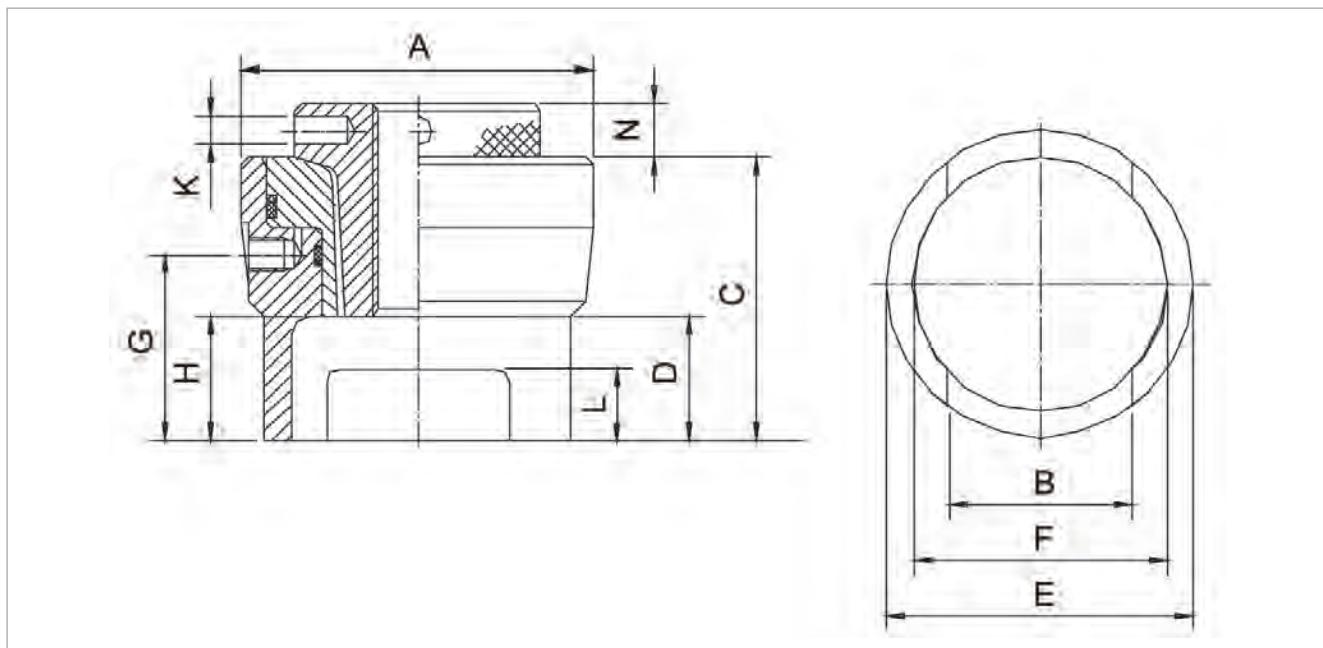



**Stud Tension Cylinders - Including Cylinder Bridge**

model	<b>HHX 14</b>	<b>HHX 22</b>	<b>HHX 35</b>
art no	110.011.101	110.011.002	110.011.012
max. working pressure bar/Mpa	1000 / 100	1000 / 100	1000 / 100
<b>stroke mm</b>	<b>8</b>	<b>8</b>	<b>8</b>
min. reach bolt	M20	M24	M30
max. reach bolt	M22	M28	M34
capacity kN/t	140 / 14.3	221 / 22.5	352 / 35.9
required oil content (effective) cc	11.2	17.7	28.2
weight, ready for use kg	1.4	2.1	2.5


**Stud Tension Cylinders - Including Cylinder Bridge (dimensions)**

model	<b>HHX 14</b>	<b>HHX 22</b>	<b>HHX 35</b>
dimension A mm	70	90	100
dimension B mm	36	47	52
dimension C mm	85	80	80
dimension D mm	28	30	35
dimension E mm	56	76	87
dimension F mm	47	60	72
dimension G mm	58	53	53
dimension H mm	28	30	35
dimension K mm	6	8	8
dimension L mm	20	20	20
dimension N mm	15	15	15





HTX 50

**Features & benefits**

- Compact and lightweight
- Usable in all positions
- High-quality and refined chrome nickel steel
- Automatically locking quick coupler
- Pulling nut is manufactured in conformity with customer specifications based on exact thread and bolt dimensions
- Nut socket is manufactured in conformity with customer specifications based on exact key size of the nut
- Advantages compared with traditional stud tensioning methods
  - The effects of friction are negligible; higher accuracy when tightening the bolt
  - Time-saving; several cylinders can be coupled for simultaneously tensioning several bolt connections

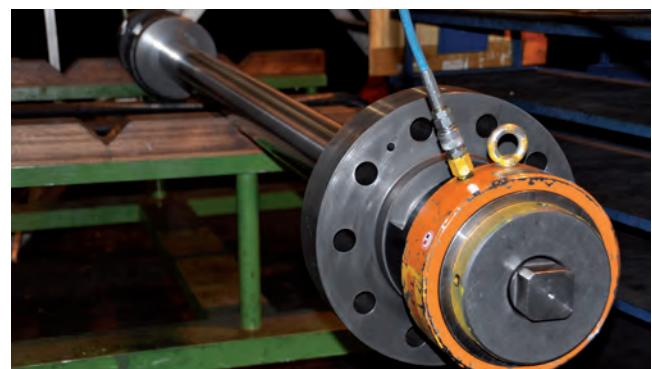
**Available** on request

- Stud tension cylinders manufactured in conformity with customer specifications
- Extended pulling nut
- Heightened or lowered bridges (HTX)

**Accessories**

- Cylinder bridge
- Pulling nut
- Nut socket
- Tommy bar

Pump	page	194
Hydraulic Hoses	page	196
Couplers And Accessories	page	197

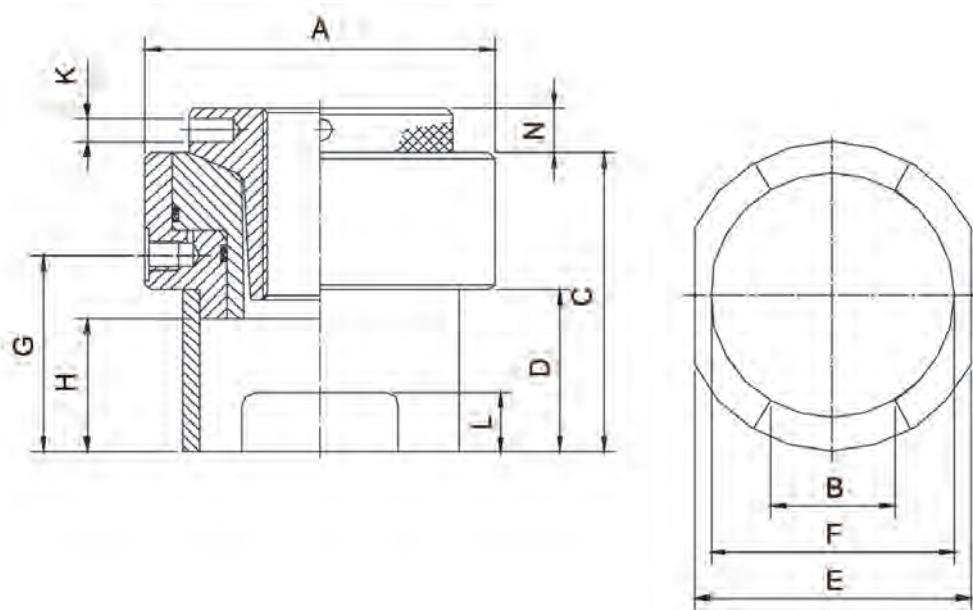



**Stud Tension Cylinders - Excluding Cylinder Bridge**

model	HTX 50	HTX 70	HTX 100	HTX 150	HTX 180	HTX 220
art no	110.011.121	110.011.131	110.011.141	110.011.151	110.011.161	110.011.171
max. working pressure bar/Mpa	1000 / 100	1000 / 100	1000 / 100	1000 / 100	1000 / 100	1000 / 100
<b>stroke mm</b>	12	12	12	12	12	12
min. reach bolt	M36	M42	M48	M60	M72	M76
max. reach bolt	M40	M46	M56	M68	M76	M80
capacity kN/t	501 / 51.1	702 / 71.6	999 / 101.9	1500 / 153	1803 / 183.9	2174 / 221.7
required oil content (effective) cc	60.2	84.2	120	180	216	261
weight, ready for use kg	3.4	4.6	6.8	10.9	14.1	20.4


**Stud Tension Cylinders - Excluding Cylinder Bridge (dimensions)**

model	HTX 50	HTX 70	HTX 100	HTX 150	HTX 180	HTX 220
dimension A mm	119	139	166	203	220	248
dimension B mm	60	56	65	79	85	92
dimension C mm	102	107	120	139	150	165
dimension D mm	55	60	70	85	90	95
dimension E mm	96	111	125	154	174	186
dimension F mm	83	94	112	136	148	156
dimension G mm	67	72	82	98	103	110
dimension H mm	45	50	60	75	80	85
dimension K mm	8	10	10	12	12	12
dimension L mm	20	25	30	35	40	40
dimension N mm	15	20	20	25	25	30

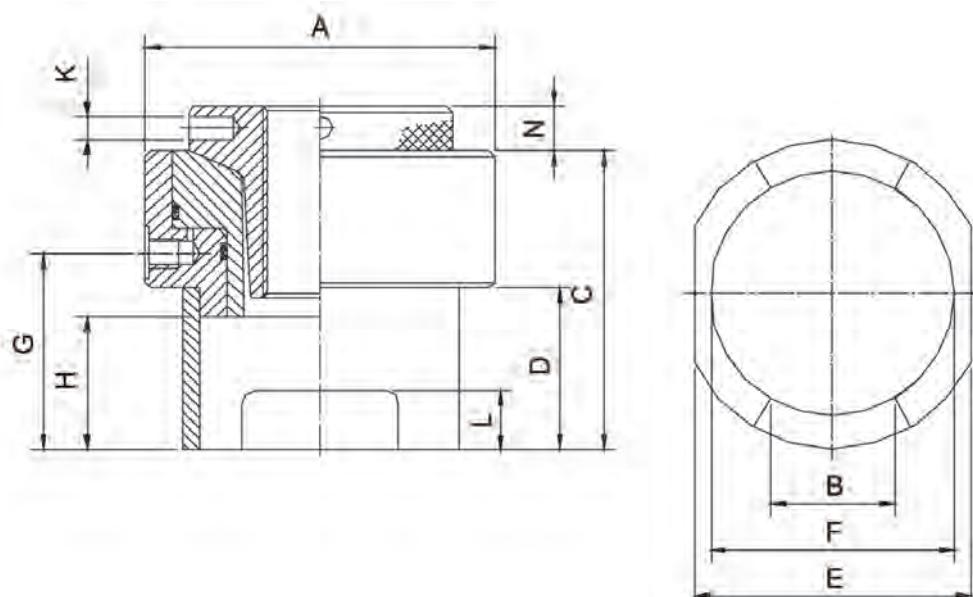


**Stud Tension Cylinders - Excluding Cylinder Bridge**
▼

<b>model</b>	<b>HTX 260</b>
art no	110.011.181
max. working pressure bar/Mpa	1000 / 100
<b>stroke mm</b>	<b>12</b>
min. reach bolt	M80
max. reach bolt	M85
capacity kN/t	2601 / 265.2
required oil content (effective) cc	312
weight, ready for use kg	28.0

**Stud Tension Cylinders - Excluding Cylinder Bridge (dimensions)**
▼

<b>model</b>	<b>HTX 260</b>
dimension A mm	270
dimension B mm	99
dimension C mm	195
dimension D mm	115
dimension E mm	228
dimension F mm	170
dimension G mm	128
dimension H mm	105
dimension K mm	16
dimension L mm	40
dimension N mm	35





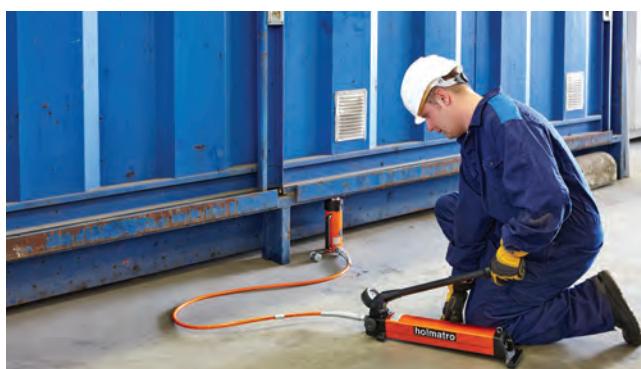


PAX 18 H 2

**Features & benefits**


- Ergonomic design
  - Light weight; easy to carry and operate
  - Low operating force required; minimal user effort
  - Soft-grip handles; more comfort and grip
  - Anti-slip rubber underneath; pump is stable and does not shift
  - Pump handle lock; easy and safe to carry
- Service- and maintenance-friendly; technical parts are easy to access and replace without removing the tank
- High oil output; quicker action both in the first and second stage
- Oil level glass in the tank; easily check the oil level in both horizontal and vertical position
- Integrated filler funnel; top up oil easily and quickly without extra accessories
- Push & Unlock pump handle lock; unlocking is quick and easy with one brief push on the pump handle

 Hydraulic Hoses  
 Couplers And Accessories

 page 196  
 page 197


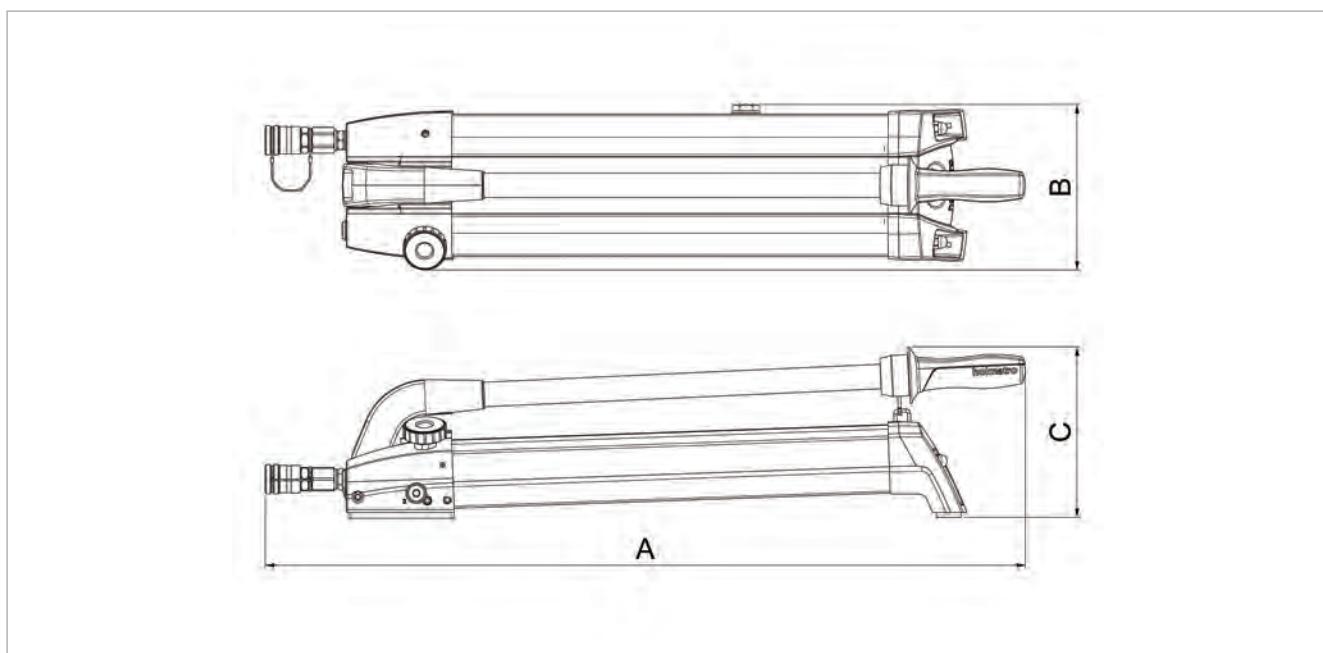
Integrated filler funnel; top up oil easily and quickly without extra accessories


**Pump**

<b>PAX 18 H 2</b>	
model	<b>PAX 18 H 2</b>
art no	110.142.005
max. working pressure bar/Mpa	1000 / 100
capacity oil tank (effective) cc	1800
capacity oil tank cc	1990
first stage output (per stroke) cc	42.8
second stage output (per stroke) cc	2.2
first stage pressure range bar/Mpa	0-45 / 0-4.5
second stage pressure range bar/Mpa	45-720 / 4.5-72
max. operating force kg	34.0
connection	A 238
operator type	hand
weight, ready for use kg	7.8


**Pump (dimensions)**

<b>PAX 18 H 2</b>	
dimension A mm	777
dimension B mm	169
dimension C mm	175




**Features & benefits**


- 4:1 safety ratio

**Hydraulic Hoses - Single Hoses - 1000 bars**


model	X 1.2 M	X 3 M	X 5 M
art no	110.571.012	110.571.030	110.571.050
equipped with (connector type)	single hose	single hose	single hose
max. working pressure bar/Mpa	1000 / 100	1000 / 100	1000 / 100
color	blue	blue	blue
hose connection A	1/4" BSP male	1/4" BSP male	1/4" BSP male
length m	1.2	3	5

**Hydraulic Hoses - Extension Hoses - 1000 bars**


model	X 1.2 MU	X 3 MU	X 5 MU
art no	110.572.012	110.572.030	110.572.050
equipped with (connector type)	single hose	single hose	single hose
max. working pressure bar/Mpa	1000 / 100	1000 / 100	1000 / 100
color	blue	blue	blue
hose connection A	A 239	A 239	A 239
length m	1.2	3	5


**Couplers And Accessories**

image	description	model	art no
	Quick coupler, female, including aluminium dust cap • Connection: 1/4" BSP female • Fits: A 239	A 238	150.581.238
	Quick coupler, female, including aluminium dust cap • Connection: 1/4" BSP female • Fits: A 239 • Extra lock ring	A 240	150.581.240
	Quick coupler, male, including aluminium dust cap • Connection: 1/4" BSP female • Fits: A 238 and A 240	A 239	150.581.239
	2 Aluminium dust caps, 1 male and 1 female • Fits: A 238, A 239 and A 240	-	150.182.010
	Pressure gauge, 0-1000 bars, including protection frame • Pressure gauge Ø 162 mm • Including quick coupler female, A 238	A 148 U	110.582.348
	Coupling piece • Including quick coupler female, A 238 (3x)	A 240 U	110.582.240
	Foot Plate Set • Suitable for PA 18/38 pumps	-	100.182.217



# Propeller Set





HY 100 G 1 U


**Features & benefits**

- Compact
- Lightweight
- Can be adjusted to fit each propeller shaft diameter by coupling using connecting plates

**Available** on request

- Cylinders manufactured in conformity with customer specifications

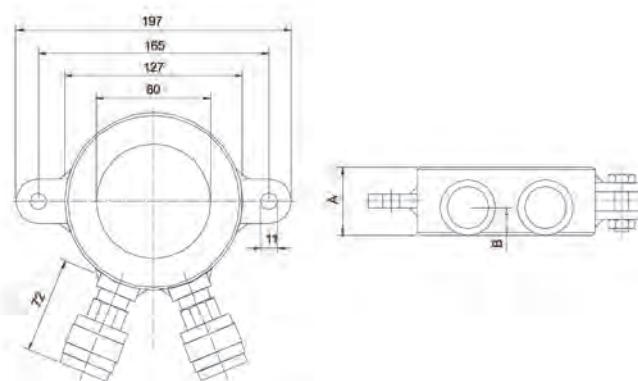
Pump	page	202
Hydraulic Hoses	page	203
Couplers And Accessories	page	204

**Propeller Cylinders**

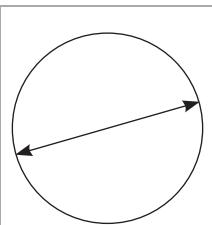
model	HY 100 G 1 U	HY 100 G 3.5 U
art no	120.012.001	120.012.011
max. working pressure bar/Mpa	2000 / 200	2000 / 200
capacity kN/t	1000.5 / 102	1000.5 / 102
effective pressure area cm <sup>2</sup>	50.27	50.27
required oil content (effective) cc	50	176
connection	Y 218 (2x)	Y 218 (2x)
acting type	single	single
return type	gravity	gravity
material	steel	steel
weight, ready for use kg	6.0	8.1

**Propeller Cylinders (dimensions)**

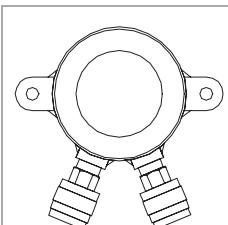
model	HY 100 G 1 U	HY 100 G 3.5 U
dimension A mm	49	85
dimension B mm	25	24



**Selection chart** of propeller cylinders

**Max. Number of cylinders for propeller shaft**


propeller shaft diameter



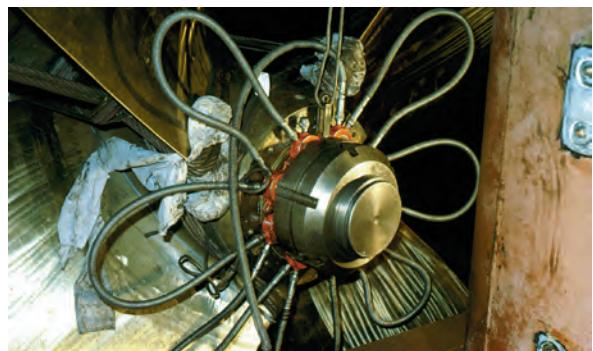
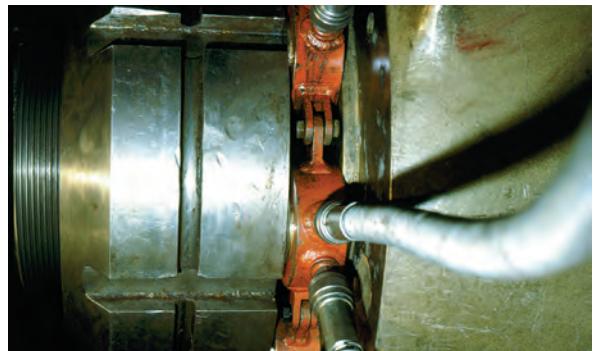
max. number of cylinders

F

max. available force

mm	inch
200	8
250	10
300	12
350	14
400	16
450	18
400	20
550	22
600	24
650	26
700	28
750	30
800	32
850	34
900	36
950	38
1000	40

ton	kN
700	6867
800	7848
900	8829
1000	9810
1100	10791
1200	11772
1300	12753
1400	13734
1500	14715
1500	14715
1600	15696
1700	16677
1800	17658
1900	18639
2000	19650
2100	20601
2200	21583





HTWY 2300 U


**Features & benefits**


- Compact and lightweight
- Low maintenance
- Suitable for large volumes
- Automatic transition from first to second stage
- Large pomp output per stroke
- Provided with dipstick

 Pressure Gauge Sets  
 Hydraulic Hoses

 page  
 page

 204  
 203

**Pump**


model	HTWY 2300 U	
art no	120.442.001	
max. working pressure	bar/Mpa	2000 / 200
capacity oil tank (effective)	cc	2300
first stage output (per stroke)	cc	31
second stage output (per stroke)	cc	1.6
first stage pressure range	bar/Mpa	0-30 / 0-3
second stage pressure range	bar/Mpa	30-2000 / 3-200
max. operating force	kg	36.0
operator type	hand	
number of tool connections	1	
weight, ready for use	kg	16.0


**Features & benefits**


- 3:1 safety ratio

**Hydraulic Hoses - Single Hoses - 2000 Bars**


model	<b>Y 1.5 MK</b>	<b>Y 3 MK</b>	<b>Y 5 MK</b>
art no	120.570.002	120.570.004	120.570.005
equipped with (connector type)	single hose	single hose	single hose
max. working pressure bar/Mpa	2000 / 200	2000 / 200	2000 / 200
color	red	red	red
hose connection A	M26 x 1.5	M26 x 1.5	M26 x 1.5
hose connection B	M26 x 1.5	M26 x 1.5	M26 x 1.5
length m	1.5	3	5

**Hydraulic Hoses - Extension Hoses - 2000 Bars**


model	<b>Y 1.5 MKU</b>	<b>Y 3 MKU</b>	<b>Y 5 MKU</b>
art no	120.570.003	120.570.006	120.570.007
max. working pressure bar/Mpa	2000 / 200	2000 / 200	2000 / 200
color	red	red	red
hose connection A	Y 219	Y 219	Y 219
hose connection B	Y 219	Y 219	Y 219
length m	1.5	3	5


**Couplers And Accessories**

image	description	model	art no
	Coupler, female, including steel dust cap • Connection: M22 x 1.5 male • Fits: Y 219	Y 218	120.481.218
	Coupler, male, including steel dust cap • Connection: M22 x 1.5 female • Fits: Y 218	Y 219	120.481.219
	Nipple • Connection: M26 x 1.5 female - M22 x 1.5 male • For mounting Y 219 or Y 218 on loose hose	2000 bar	120.000.007
	Pressure gauge 0-2000 bar, including protection frame • Pressure gauge Ø 162 mm • Including coupler female, Y 218	Y 220 U	120.182.220
	Rotation elbow • Including coupler male, Y 219 and coupler female Y 218	Y 215 U	120.182.215
	Connecting plate • Centre to centre size: 84 mm	Y 200	120.481.200
	Suspension hook	Y 205	120.181.205

# Industrial Solutions



Synchronized Positioning System

# Computer-controlled synchronized positioning of heavy loads



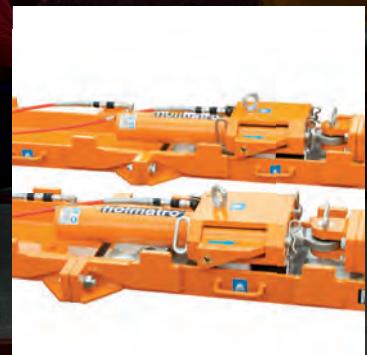
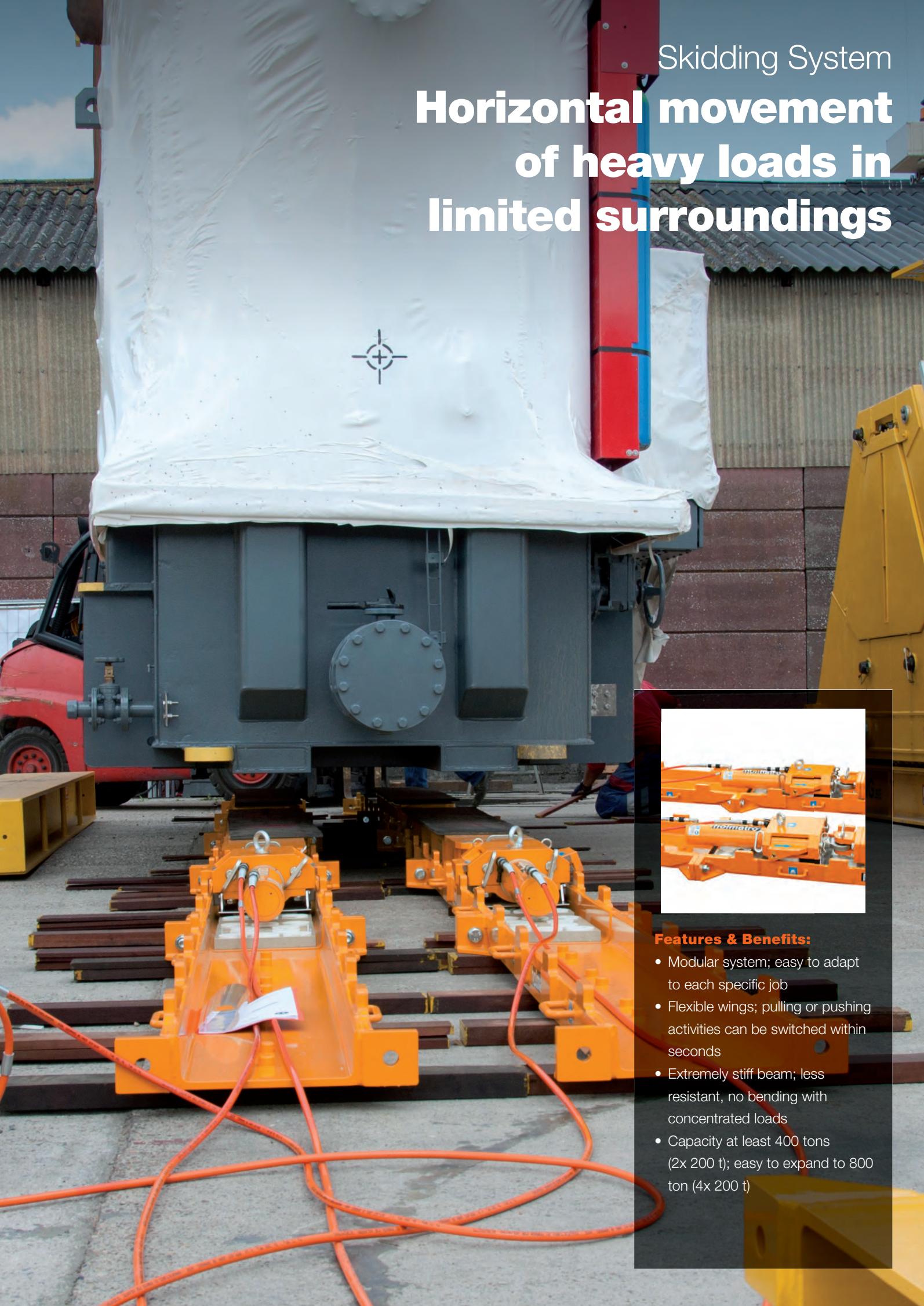
## Features & Benefits:

- Use of multiple-split-flow pumps; accurate and controlled oil flow to lifting points
- Advanced software; calculates continuously and corrects when needed
- Automatic stop; safe working
- Data logging and calibrating-function
- HMI PLC control unit with touchscreen; user-friendly control
- Pump trolley; easy relocating of the pump



Skidding System

# Horizontal movement of heavy loads in limited surroundings

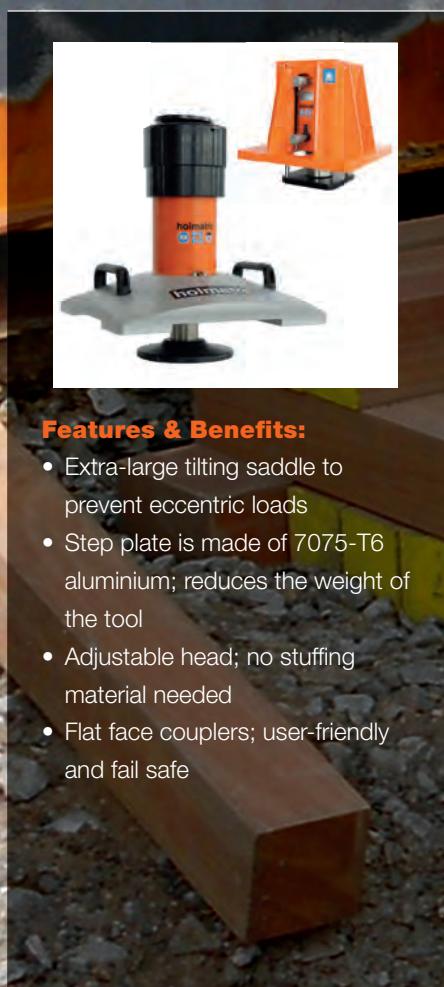


#### Features & Benefits:

- Modular system; easy to adapt to each specific job
- Flexible wings; pulling or pushing activities can be switched within seconds
- Extremely stiff beam; less resistant, no bending with concentrated loads
- Capacity at least 400 tons (2x 200 t); easy to expand to 800 ton (4x 200 t)

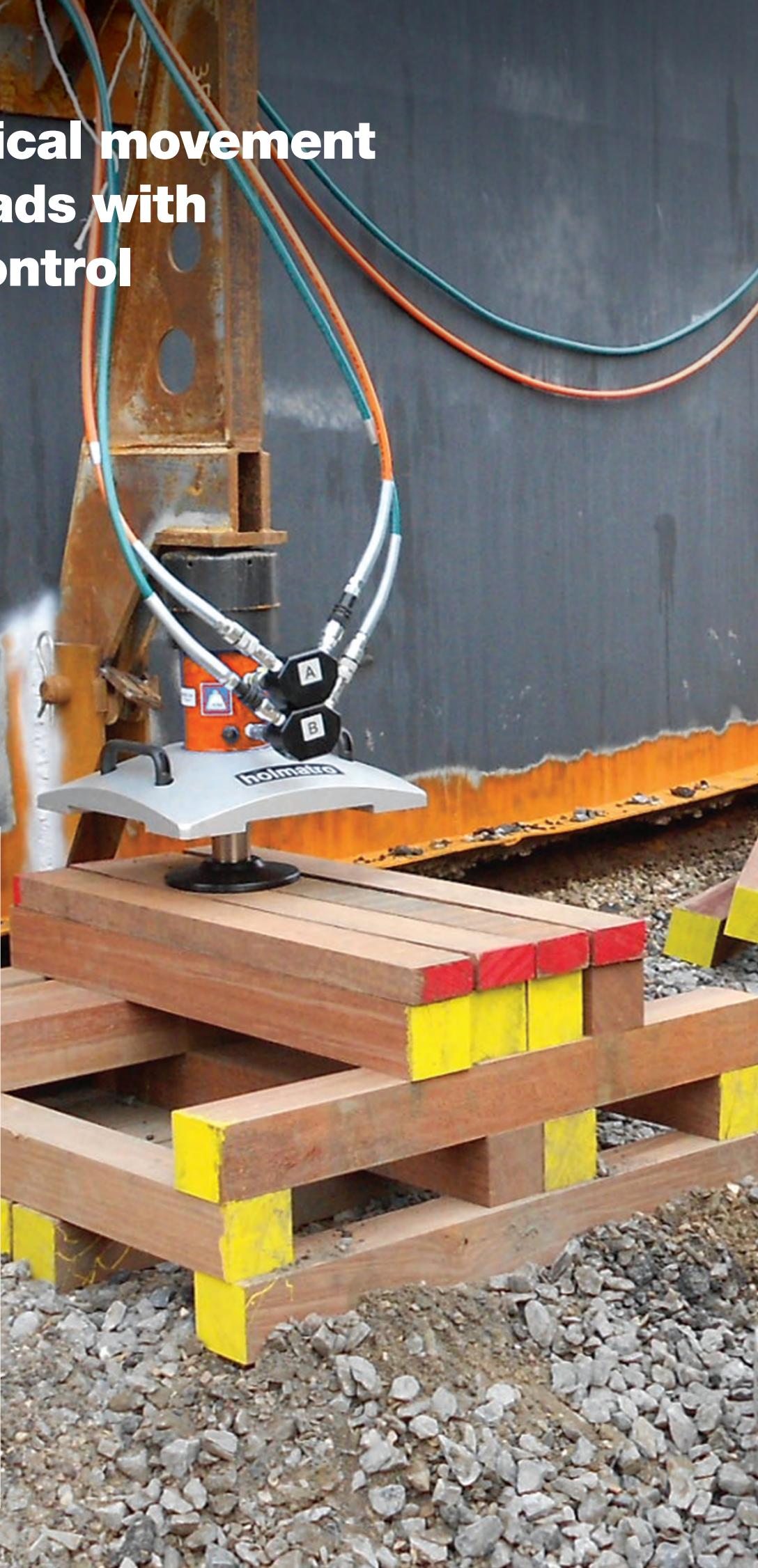
Step Cylinder Set

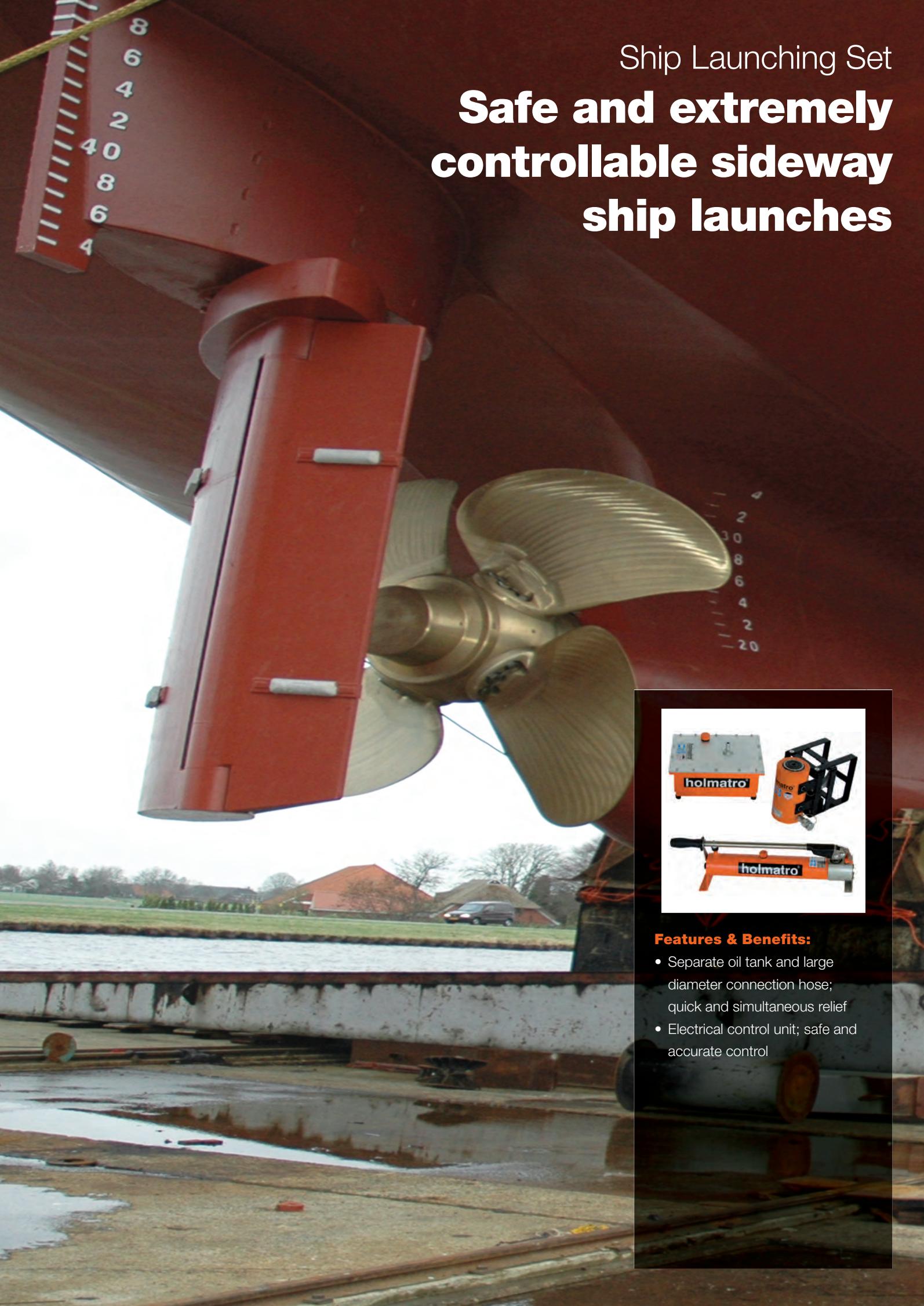
# Larger vertical movement of heavy loads with accurate control



## Features & Benefits:

- Extra-large tilting saddle to prevent eccentric loads
- Step plate is made of 7075-T6 aluminium; reduces the weight of the tool
- Adjustable head; no stuffing material needed
- Flat face couplers; user-friendly and fail safe





Ship Launching Set

# Safe and extremely controllable sideway ship launches



## Features & Benefits:

- Separate oil tank and large diameter connection hose; quick and simultaneous relief
- Electrical control unit; safe and accurate control

Rerailing System

# Fast, accurate and safe replacing of trains on their track



## Features & Benefits:

- Lightweight; components are 50% lighter than similar systems
- User-friendly
- Accurate lifting and lowering; four independent control valves
- Controlled moving; sleeve bearings under the traverse sliders ensure controlled lateral movement
- Flexible; the wireless remote control makes the operator mobile
- Safe; the load is secured by special stacking rings



Offshore Wind Hydraulic Solutions

# Powerful systems for offshore wind



#### Features & Benefits:

- Custom-made systems; designed for your specific job
- Capacity of 50 tons or more; powerful lightweight cylinders
- Corrosion-resistant; expanded life span



# Custom Made Solutions

Those who have challenged us already



**Truck brake disc press**

**400 tons hollow plunger cylinder**

**280 tons double-acting offshore cylinders**

**Pulley Puller**



**605 tons locknut cylinders**



**Offshore aluminium pull cylinders**



**Cylinders with an extreme high side load capacity**



**590 tons heavy lift cylinders**

No one knows the technical challenges of your company better than you. Every day, you experience project bottlenecks and face technical limitations. With our more than 45 years of experience, we are pleased to assist you in finding a solution to your problem. Whether it involves greater efficiency in the execution of complex projects, improving safety or excelling in extreme situations: Holmatro provides the right solution.

**Are you curious about what we can do for you? Challenge us and Feel the Power!**

**Industrial Solutions catalogue?**

→ Call **+31 (0)162-751500** or send  
an e-mail to **industry@holmatro.com**

# Service & Safety







## Holmatro Service Programme

### A Total Solution

Applicable to all brands of hydraulic equipment is that malfunctions and defects will occasionally occur over time. Regular maintenance and correct usage are of great importance in ensuring that your equipment can continue to be employed optimally and safely during its entire operating life span.

Holmatro can help you here. As a manufacturer of hydraulic equipment we are the ideal service specialist in the field. We know, how important professional maintenance is; not only for optimal functioning of the equipment, but also for the safety of the people who use it.

This is why Holmatro offers a comprehensive service programme for the following hydraulic tools from 500 to 4,000 bar:

- Industrial tools (cylinders, pumps and system components)
- Hydraulic Cutters
- **NEW Hydraulic Torque Tools (bolting tools)**
- Additionally we also provide a service programme for hydraulic foundry tools.

The Holmatro service programme consists of the following services:

- Periodic maintenance
- Repairs
- Testing and certification
- Training and advice

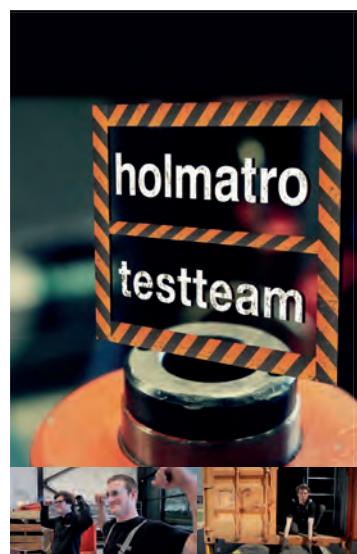


We will be happy to help you draw up a customized service solution

### Holmatro Testteam

At Holmatro we combine high pressure hydraulics with innovative design and material use. The result is powerful, lightweight tools. Hydraulics is a form of drive technology. Power and movement is transferred and controlled using pressurised oil.

The Holmatro Testteam gives an animated look at the possibilities and results of working with high pressure hydraulics. Let Holmatro's service engineers surprise you and watch the films on our website!

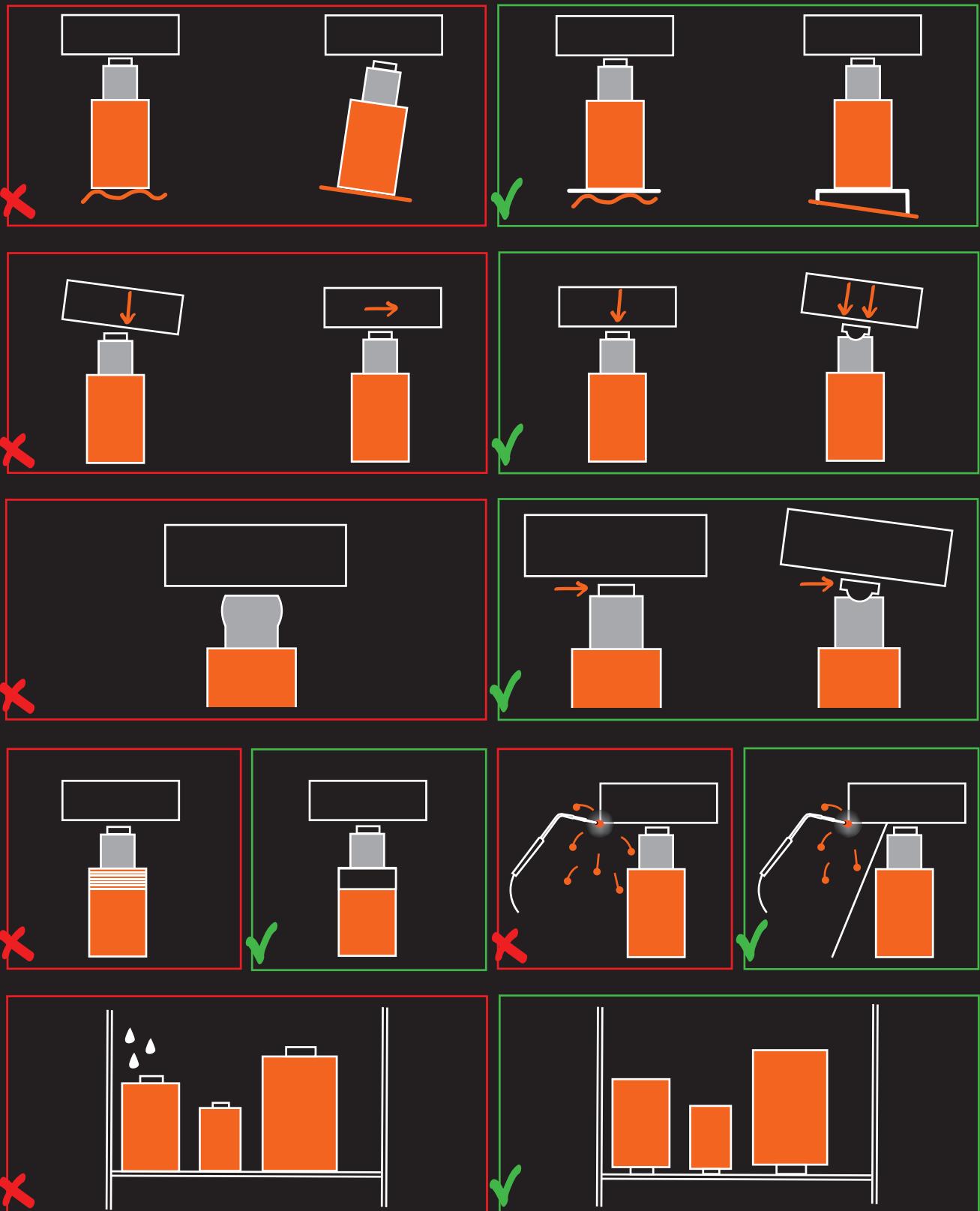


← Professional maintenance and periodic inspection is essential to guarantee the continued correct functioning of your tools.

# DO YOU FEEL THE PRESSURE? TO WORK SAFE



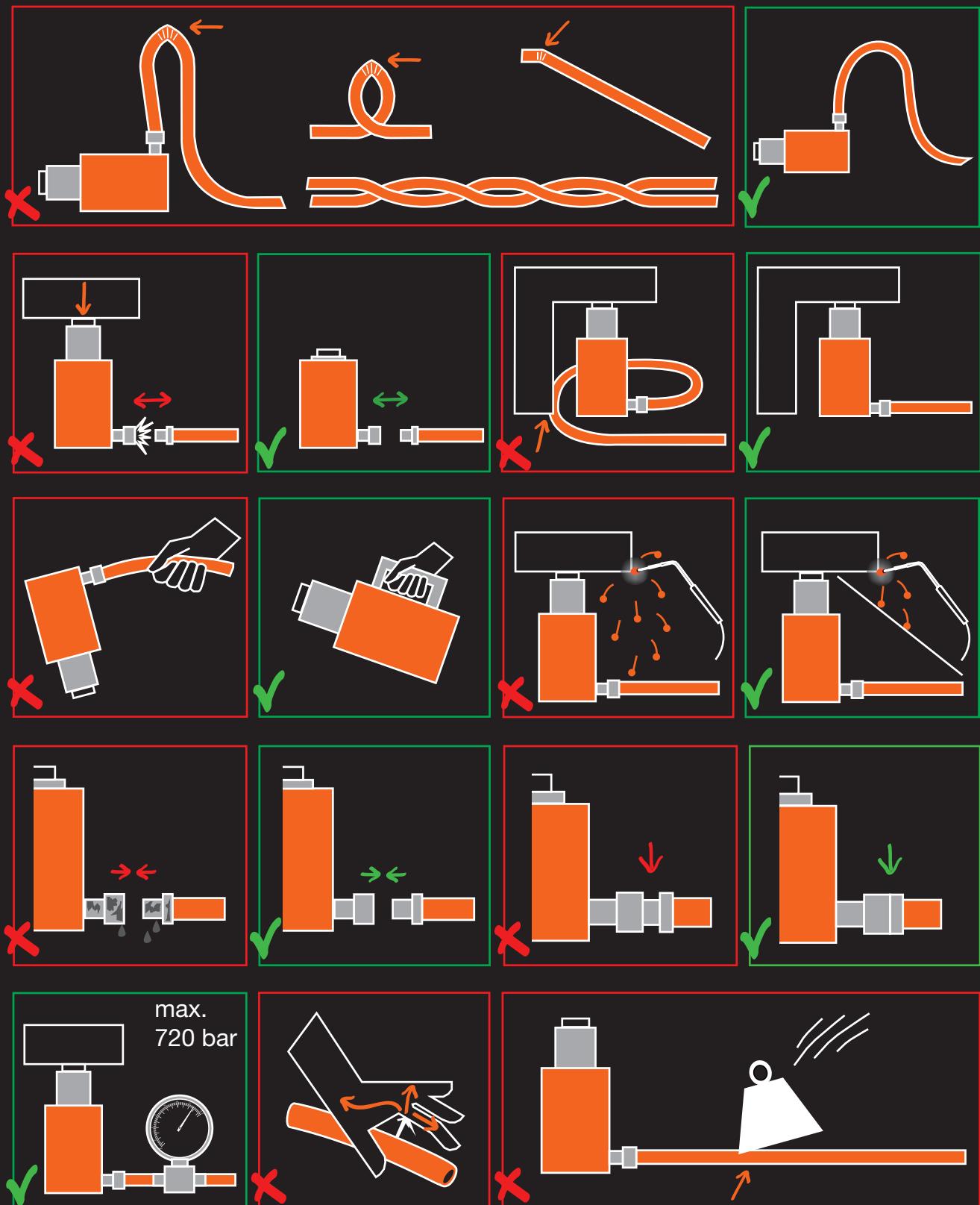
## Safety Guide | **Hydraulic cylinders**



# DO YOU FEEL THE PRESSURE TO WORK SAFE?



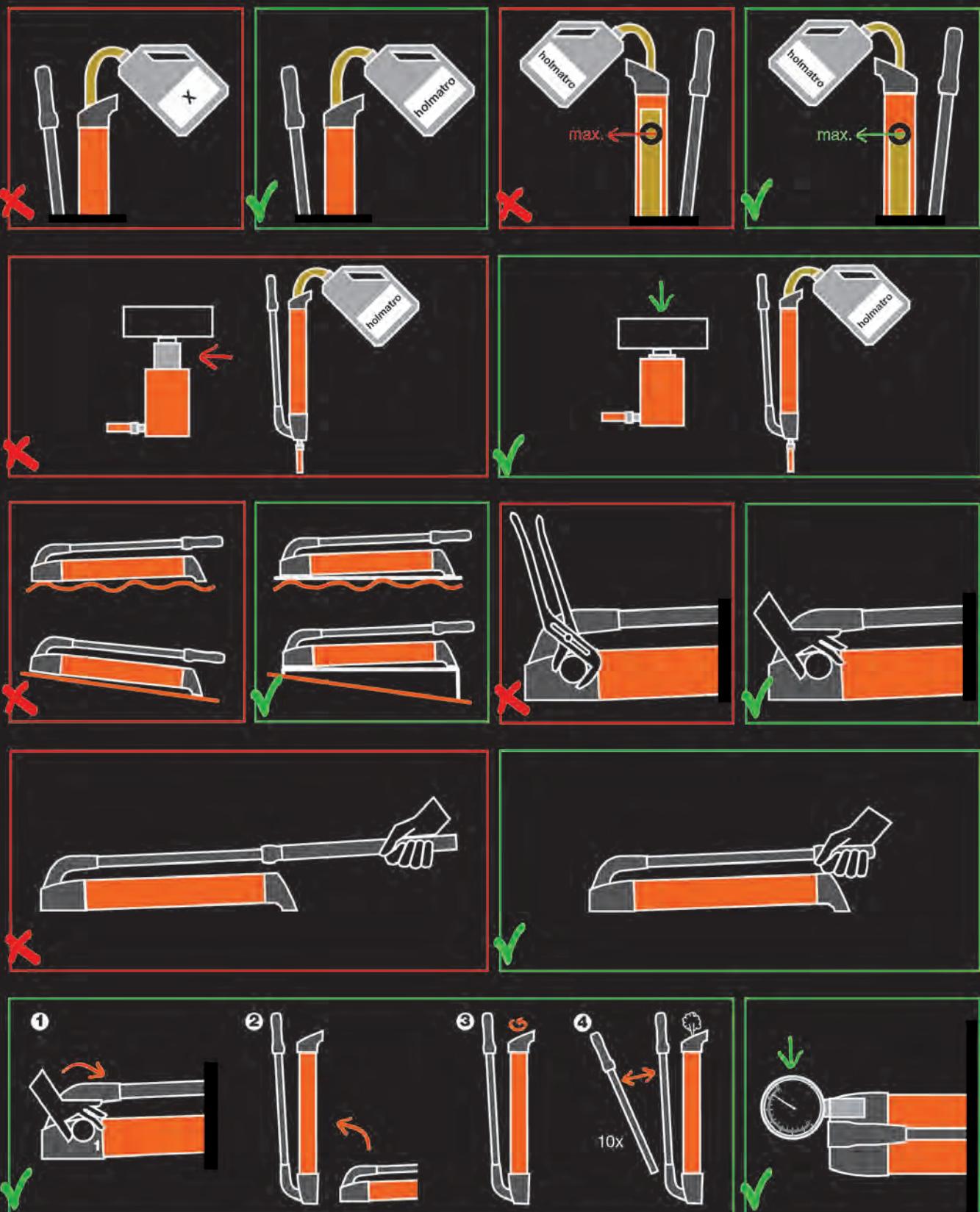
## Safety Guide | Hoses and couplers



# DO YOU FEEL THE PRESSURE TO WORK SAFE?



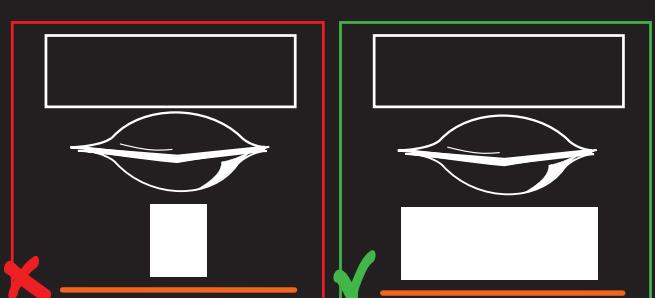
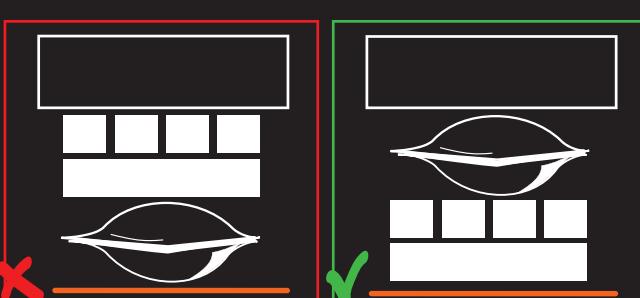
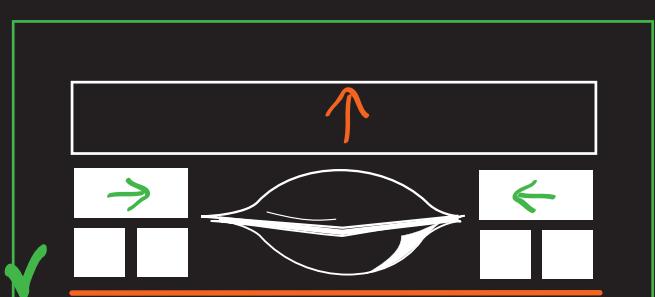
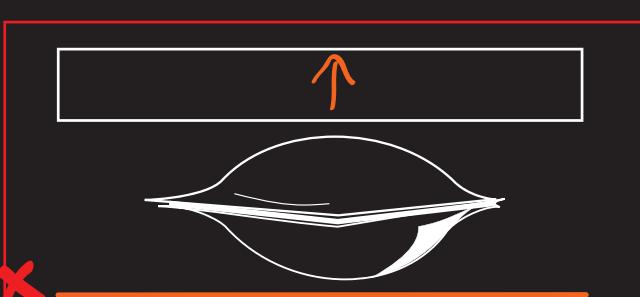
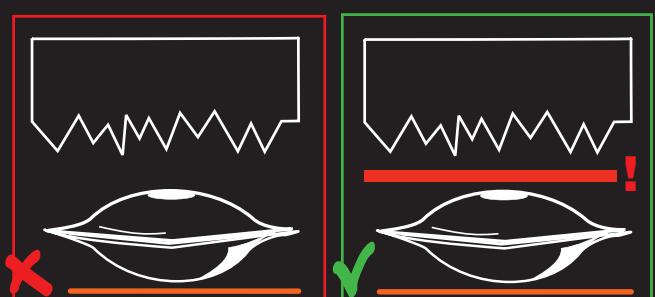
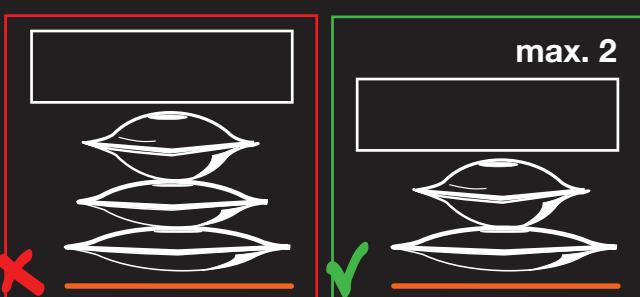
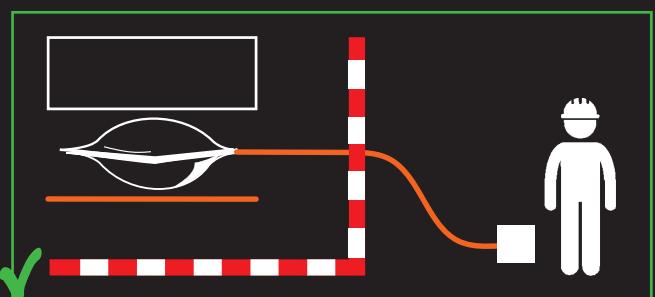
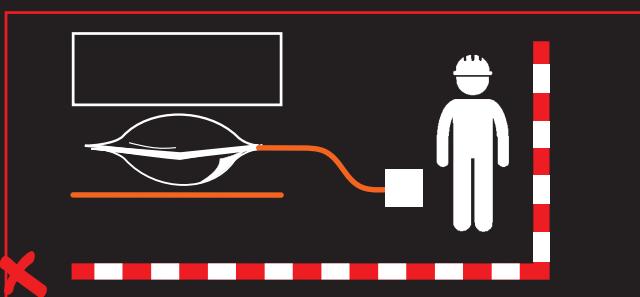
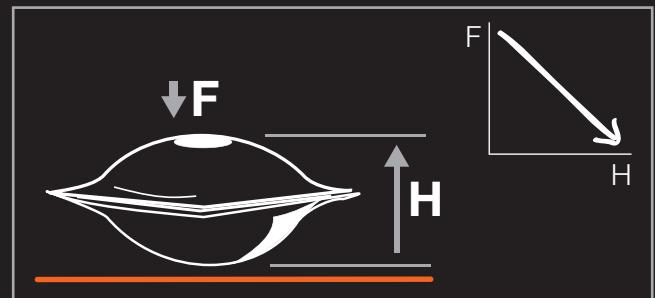
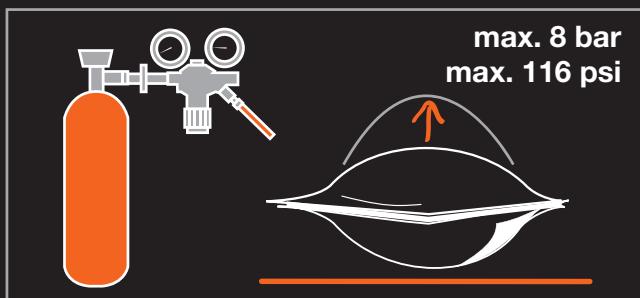
## Safety Guide | Pumps



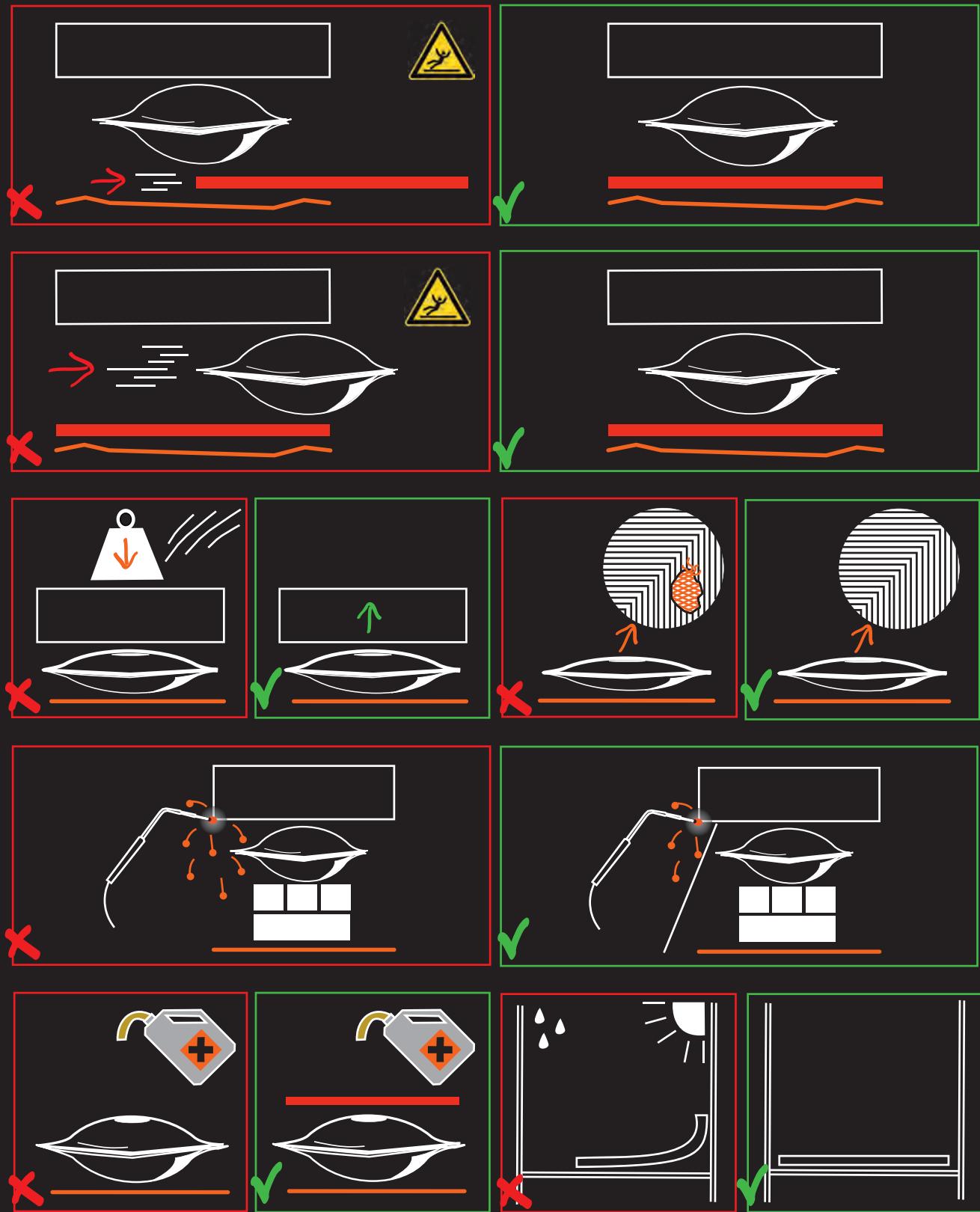
# DO YOU FEEL THE PRESSURE TO WORK SAFE?



## Safety Guide | Lifting bags



## Safety Guide | Lifting bags









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