HYDROKOMP®
Hydraulische Komponenten GmbH
Technology that connects

Clamping Elements

500 bar / 70 bar

versatile

reliable

durable

Innovative clamping technology made easy




Description:

Hydraulic threaded body cylinders are integrated directly into the fixture body to save space. The threaded body cylinder, due to its compact design, does not have an internal stop for the return stroke, rather it uses the bottom of the assembly bore. Cylinder sealing is done using O-rings and support rings. Oil supply is done in the fixture body via drilled channels.

The threaded body cylinder is fitted with a soft and/or metal wiper depending on the design. The soft wiper reduces dynamic leaks. In addition, the metal wiper prevents shavings from penetrating into the soft wiper and thereby damaging the piston rod surface. This preventative measure protects the seals from damage and increases the operating availability of the threaded body cylinder.

Threaded body cylinder with internal stroke limits can also be actuated without a counter-clamp surface.

Portfolio:

double-acting:

The double-acting function permits cycle linked strokes during cylinder extension and retraction. Extension and retraction strokes are force-actuated.

single-acting:

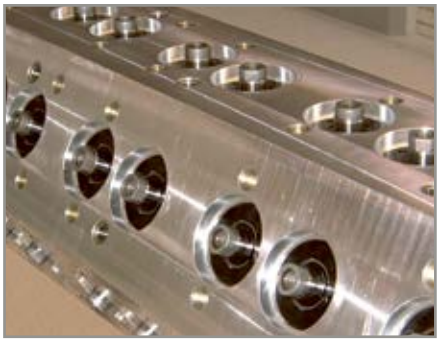
This function permits clear extension times. The piston is retracted to the depressurised start position by an integrated return spring.

HYDROKOMP offers the threaded body cylinder in a catalogued standard range and as customer-specific custom variants.

Standard range:

- EZY with metal wiper Page 3
- EZY with stroke limiter Page 3
- EZY with spring reset Page 4
- EZY with soft wiper Page 4

Threaded body cylinder in practical use:



Multiple rotary clamping fixture

A controlled rotation is installed in the counter-bearing of this clamping fixture so that only the upper facing fixture side can be clamped or released. The function of this rotating connection is based on the principle of a rotary disc.

Hydraulic threaded body cylinders are designed as single-acting tension pull cylinders and are integrated into the fixture body. The pressure oil supply is done within the fixture and only via the drilled oil channels.

With this design, it is possible to supply the fixture with continuous pressure and only the sixth, upwards facing side can be clamped or released. The hydraulic rotary clamping fixture offers enormous economical advantages during processing of rotating workpieces in series manufacture. These are:

- Multi-side workpiece processing
- Reduction in tool change times
- Reduction of workpiece change times
- High clamping security and quality
- Increase in machine runtime

Integrated threaded body cylinder:
EZY with metal wiper (custom variant)

Multiple clamping fixture:

Use in a multiple clamping fixture for series manufacture of different workpieces (e.g. flange plates).

The fixture is located on a rotary table. The clamping length is 600 mm.

48 single acting threaded body cylinders with a piston diameter of 20mm and a stroke of 15mm are used, and a controlled rotation, single acting with 6 stations with a nominal width of 5.

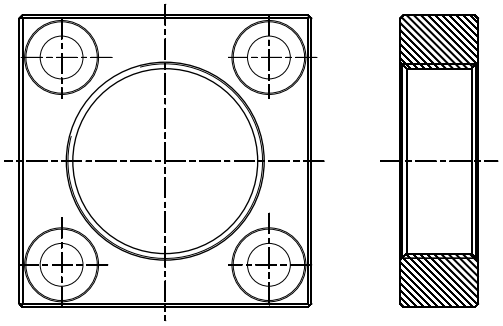
Integrated threaded body cylinder:
EZY with spring reset

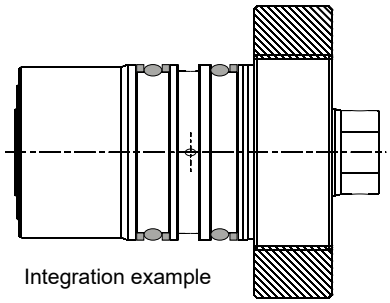
EZY with metal wiper

Operating pressure:	pmax. 500 bar
Operating method:	double-acting
Piston Ø:	16, 20, 25, 32, 40 and 50 mm
Stroke:	16, 20, 25, 32, 50, 100 and 160 mm
Pushing force:	from 2 kN (100 bar) up to 98,5 kN (500 bar)
Pulling force:	from 1,22 kN (100 bar) up to 57,9 kN (500 bar)
Oil connection:	drilled channels
Seal type:	NBR -10°C to +80°C, FKM to 150°C
Wiper:	soft wiper and metal wiper
Characteristics:	- fully immersible housing
	- use of pressure screws possible
	- mounting plate available as an accessory

Data sheet:: 200-2 Webcode: 020002

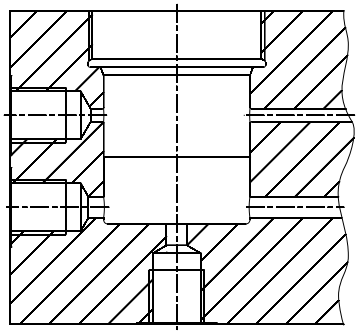
Mounting plate (accessory):





Integration example

Integration contour:



EZY with stroke limiter

Operating pressure:	pmax. 500 bar
Operating method:	single acting with spring reset
Piston Ø:	20, 25 and 32 mm
Pushing force:	4 and 8 mm
Pulling force:	from 3,1 kN (100 bar) up to 40,2 kN (500 bar)
Oil connection:	drilled channels
Seal type:	NBR -10°C to +80°C, FKM to 150°C
Wiper:	with/without soft wiper
Characteristics:	- usable as a clamping or tensioning cylinder
	- can also be implemented without
	a counter-clamp surface
	- large rounded piston surface

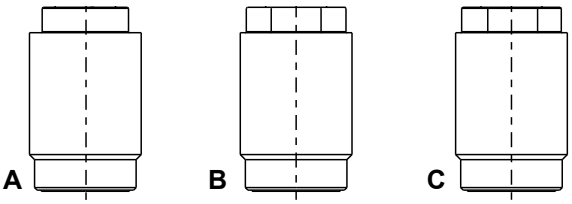
Data sheet: 210-1 Webcode: 021001

EZY with spring reset

Operating pressure:	pmax. 400 bar
Operating method:	single-acting with spring reset
Piston Ø:	12, 16, 20, 25 and 32 mm
Stroke:	10, 12, 15, 16 and 20 mm
Pushing force:	from 1,1 kN (100 bar) up to 32 kN (400 bar)
Pulling force:	from 30 N up to 200 N
Oil connection:	drilled channels
Seal type:	NBR -10°C to +80°C, FKM to 150°C
Wiper:	without/with double wiper
Characteristics:	- can also be fully loaded when retracted
	- does not require a venting connection
	- variable with different designs

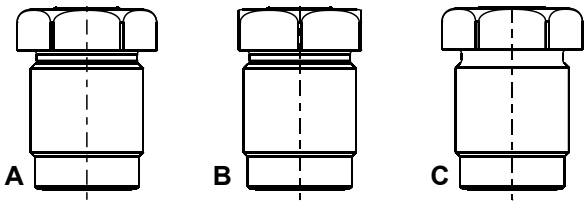
Data sheet: 210-2 Webcode: 021002

Design 1:



Threaded body cylinder with spring reset without double wiper

Design 2:



Threaded body cylinder with spring reset and double wiper

EZY with soft wiper

Operating pressure:	pmax. 500 bar
Operating method:	single-acting with spring reset
Piston Ø:	8, 12, 16, 25 and 32 mm
Stroke:	4, 6, 12 and 16 mm
Pushing force:	from 0,5 kN (100 bar) up to 40 kN (500 bar)
Pulling force:	from 25 N up to 183 N
Oil connection:	drilled channels
Seal type:	NBR -10°C to +80°C, FKM to 150°C
Wiper:	soft wiper
Characteristics:	- rounded piston surface
	- seal with a metallic sealing rim
	- optimum for high clamping forces and force sealing

Data sheet: 210-3 Webcode: 021003




Description:

Block cylinders are popular design elements in all areas where short strokes with high force are required. You have a piston rod thread that is either internal or external depending on the design. For example, pressure screws can be securely screwed into an interior thread and thread pivoting heads can be mounted on the exterior thread.

The compact cubic design of the block cylinder makes cylinder fastening easier and guarantees high operating pressures. Different variants of the pressure oil supply cover the spectrum of applications.

A double hydraulic seal is used as standard in our block cylinder, which guarantees an extreme leak-tight continuous operation. All block cylinders are additionally fitted with a metal wiper, which prevents penetration of metal shavings into the soft wiper and this significantly increases the operating availability of the block cylinder.

Portfolio:

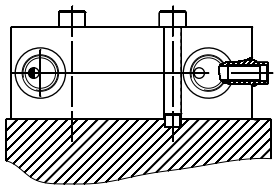
HYDROKOMP offers the block cylinder in a catalogued standard range and as customer-specific custom variants.

double-acting:
The double-acting function permits precise stroke times as the piston is extended and retracted. Extension and retraction strokes are force-actuated.

single-acting:
HYDROKOMP offers single-acting block cylinders with or without spring return. With a spring reset function the piston is pulled by the spring into the start position when depressured. Block cylinders without spring reset do not have an automatic piston return.

Standard range:

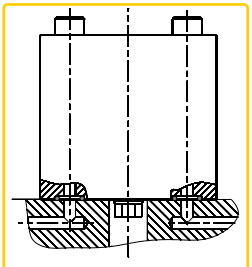
Designs:



Type A

Oil supply via thread
G1/4 and G1/2

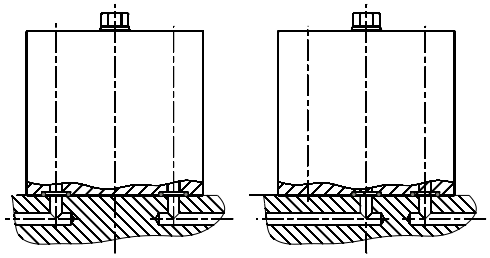
Mounting bores
in the housing:
lengthwise and
crosswise



Type C

Oil connection
manifold with O-ring,
rod side

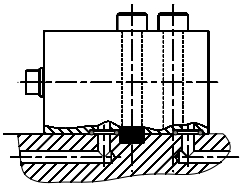
Mounting bores
in the housing:
lengthwise



Type D

Oil connection
manifold with O-ring, bottom side
Fig. left variant 1 "Standard",
Fig. right variant 2 "Centre"

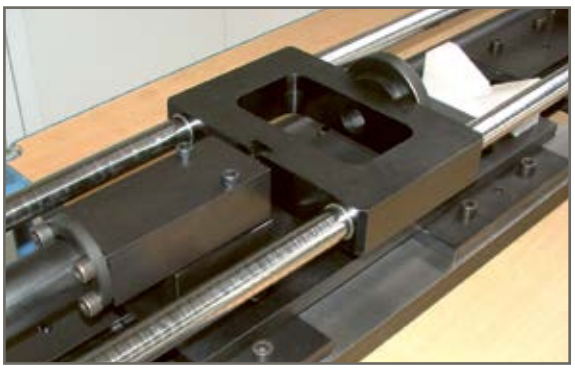
Mounting bores in the housing:
lengthwise



Type E

Oil connection
manifold with
O-ring

Mounting bores
in the housing:
crosswise



Practical example:

Press fit fixture

The figure shows a press fit fixture where bearings are pressed onto shafts. The block cylinder used has a stroke of 100 mm in order to bridge any spaces. Due to the range of workpieces, the carriage can be fitted appropriately with the block cylinder. Different support lengths are mounted axially behind the block cylinder for this purpose. This flexible solution means that very low bending forces are introduced into the total design.

A special feature of the fixture is the pressure reduction of the manual pressure generator. After pre-mounting the bearing, it is mechanically secured under pre-tension. For this, the mounting pressure is set to approx. 60 bars via a manual ball valve and is discharged downstream via a pressure limiting valve.

Integrated block cylinder:
BZY with interior piston thread

BZY with interior piston thread

Operating pressure:	pmax. 500 bar
Operating method:	single-acting / double-acting
Piston Ø:	16, 20, 25, 32, 40, 50, 63, 80 and 100 mm
Stroke:	numerous strokes from 8 to 200 mm
Extraction force:	from 2 kN (100 bar) up to 392 kN (500 bar)
Retraction force:	from 1,2 kN (100 bar) up to 23 kN (500 bar)
Oil connection:	- thread G1/4 and G1/2
Sealing:	- manifold with O-ring
Wiper:	NBR -10°C to +80°C, FKM to 150°C
Characteristics:	soft wiper and metal wiper
	- interior piston thread for accessories
	- ideal for leak-tight continuous operation

Data sheet: 200-3 **Webcode:** 020003

BZY with exterior piston thread

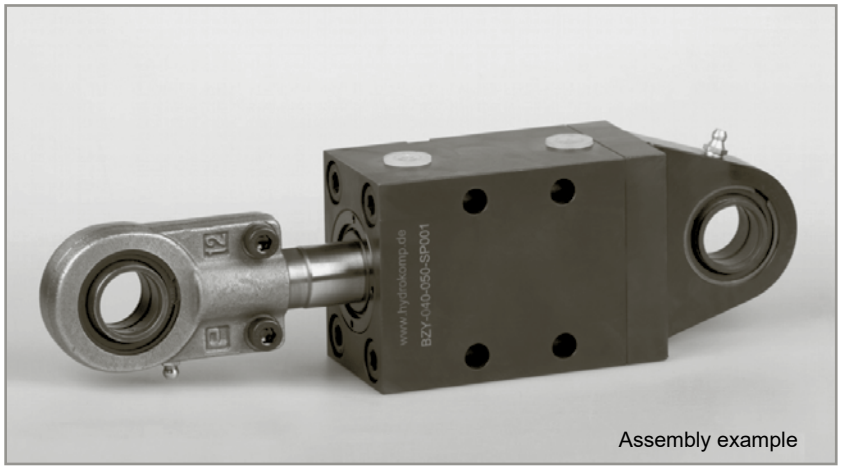
Operating pressure:	pmax. 500 bar
Operating method:	double-acting
Piston Ø:	25, 32, 40, 50 and 63 mm
Stroke:	50 and 63 mm
Extraction force:	from 4,9 kN (100 bar) up to 156 kN (500 bar)
Retraction force:	from 2,9 kN (100 bar) up to 93 kN (500 bar)
Oil connection:	- thread G1/4 and G1/2
	- manifold with O-ring
Seal type:	NBR -10°C to +80°C, FKM to 150°C
Wiper:	soft wiper and metal wiper
Characteristics:	- exterior piston thread for accessories
	- pivot head and bearing blocks can be purchased

Data sheet: 200-5 **Webcode:** 020005

Fastening elements (Accessories):

Joint heads
to screw onto the exterior thread of the piston rod

Bearing supports
for fastening onto the housing with 4 cylinder head screws (screws included in the scope)



Assembly example

BZY with end position control (BZP1)

Operating pressure:	**pmax. 500 bar**
Operating method:	**double-acting**
Piston Ø:	**16, 20, 25, 32, 40, 50, 63, 80 and 100 mm**
Stroke:	**numerous strokes from 16 to 160 mm**
Pushing force:	**from 2 kN (100 bar) up to 392 kN (500 bar)**
Pulling force:	**from 1,2 kN (100 bar) up to 237 kN (500 bar)**
Oil connection:	**- thread G1/4 and G1/2**
	- manifold with O-ring
Seal type:	**FKM from -10°C up to 150°C**
Wiper:	**soft wiper and metal wiper**
Characteristics:	**- ideal for automated systems**
	- high monitoring precision

Data sheet: **200-10** **Webcode:** **020010**

Practical example:

Test fixture for coupling systems

HYDROKOMP developed the illustrated test fixture for coupling systems. Coupling mechanical plates to be tested are hydraulically connected on the lower fixture plate. The coupling nipple plates are fastened to the upper fixture plate. The block cylinder lowers the upper fixture plate and docks both systems together.

The cylinder piston docking process is monitored by inductive sensors. Only after the piston has been completely extended and the coupling process completed, is the system placed under pressure and checked for functionality.

Integrated block cylinder:
BZY with end position control (BZP1)

BZY as pull cylinder (ZZY)

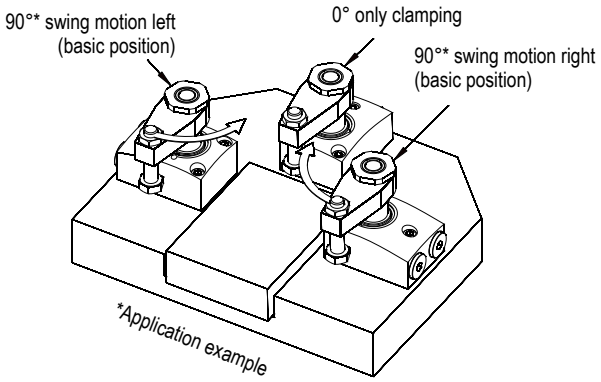
Operating pressure:	**pmax. 500 bar**
Operating method:	**single-acting with spring reset**
Piston Ø:	**16, 20, 25, 32, 40, 50, 63, 80 and 100 mm**
Stroke:	**8, 10 and 12 mm**
Pushing force:	**from 1,1 kN (100 bar) up to 235 kN (500 bar)**
Pulling force:	**from 40 N up to 1200 N**
Oil connection:	**- thread G1/4 and G1/2**
	- manifold with O-ring
Seal type:	**NBR -10°C to +80°C, FKM to 150°C**
Wiper:	**soft wiper and metal wiper**
Characteristics:	**- A venting line can be connected**
	- ideal for small non-sequenced systems

Data sheet: **200-6** **Webcode:** **020006**

Description:

Functional principle:
Hydraulic swing pivot clamp cylinders release the workpiece clamping area when de-clamping. This makes workpiece exchange much easier. Swing clamp cylinders work singleacting with spring reset or double-acting, depending on design. The functional principle is similar to a pull cylinder where a part of the stroke is used to swing the piston.

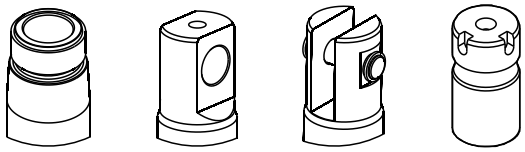
Swing angle:
Right or left swing variants can be selected with different standard swing angles 0°, 30°, 45°, 60° or 90° can be supplied. The variant with a swing angle of 0° functions as a pure pull cylinder. Variants with other swing angles are offered as custom variants.



Pressure oil supply:
Swing clamp cylinders are fitted with pipe threads or manifold connections with O-ring for bored channels for pressure oil supply.

Protecting metal wiper:
All swing clamp cylinders up to compact clamping have an additional integrated metal wiper as standard. This prevents penetration of metal shavings into the soft wiper and thereby increases the operating availability of the swing clamp cylinder.

Clamp arm holder:
Piston rods can be purchased with forked head, tapered fixture 1:10 or pendulum eye to accept the clamp arm. In addition to the clamp arm from our catalogue range, customer specific custom clamp arms can be mounted.

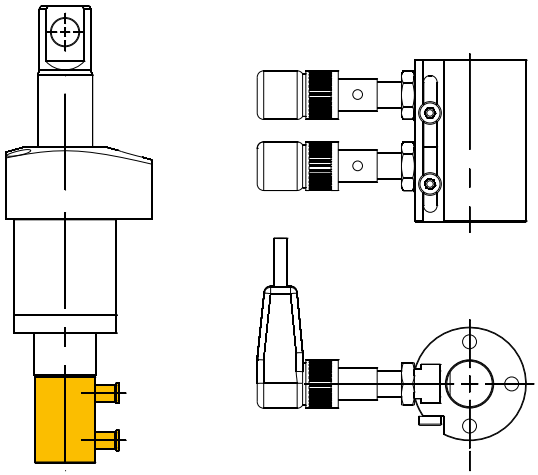


(SP**K**) (SP**P**) (SP**G**) (SP**Z**)

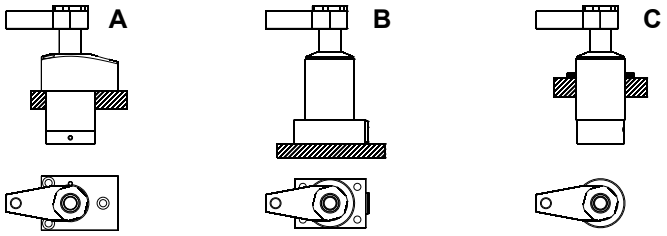
SP**K**= Taperaufnahme
SP**P**= Pendelauge
SP**G**= Gabelkopf
SP**Z**= Zylinderaufnahme

Overload protection:
Depending on the design, the swing clamp cylinder is fitted with an integrated overload protection. This protects the swing mechanics from damage, e.g. by blocking the swing process during operation or if the clamp arm was mounted improperly.

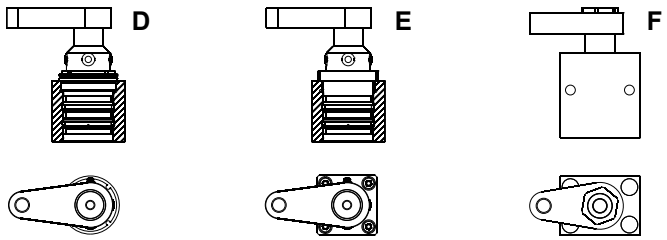
Position control:
Swing clamp cylinders can be supplied with electrical or pneumatic position control, variant dependent. Position control monitors the clamped and unclamped position of the cylinder. Position controls are available as accessories.



Housing design:
There are different installation options for the swing clamp cylinder depending on the design type. In the first instance, these are dependent on the housing design and the connection options for oil supply



Flange upwards | Flange downwards | Threaded body



Threaded body with drilled channels | Plug-in design with drilled channels | Block housing

HYDROKOMP offers the swing clamp cylinders in a standard range and as customer-specific custom variants.

SSZY compact with flange and thread

Swing motion:	neutral / left / right
Operating method:	single-acting / double-acting
Swing angle:	0° / 45° / 60° / 90°
Housing design:	A = upper flange
Piston Ø:	14 mm
Clamping stroke:	sa. 6 mm / da. 8 mm
Clamp arm holder:	taper, ratio 1:10
Overload protection:	without
Position control:	without
Oil supply:	pipe thread / manifold with O-rings
Operating pressure:	pmin. 25 bar / pmax. 350 bar

Data sheet: 240-1 Webcode: 024001

SSZY compact with flange and thread

Swing motion:	neutral / left / right
Operating method:	single-acting / double-acting
Swing angle:	0° / 45° / 60° / 90°
Housing design:	B = lower flange
Piston Ø:	14 mm
Clamping stroke:	sa. 6 mm / da. 8 mm
Clamp arm holder:	taper, ratio 1:10
Overload protection:	without
Position control:	without
Oil supply:	pipe thread / manifold with O-ring
Operating pressure:	pmin. 25 bar / pmax. 350 bar

Data sheet: 240-2 Webcode: 024002

SSZY compact with threaded body

Swing motion:	neutral / left / right
Operating method:	single-acting / double-acting
Swing angle:	0° / 45° / 60° / 90°
Housing design:	D = Einschraubgewinde
Piston Ø:	14 mm
Clamping stroke:	ew. 6 mm / dw. 8 mm
Clamp arm holder:	Kegelaufnahme
Overload protection:	ohne
Position control:	ohne
Oil supply:	gebohrte Kanäle
Operating pressure:	pmin. 25 bar / pmax. 350 bar

Data sheet: 240-3 Webcode: 024003

SSZY with upper flange

Swing motion:	neutral / left / right
Operating method:	single-acting / double-acting
Swing angle:	0° / 30° / 45° / 60° / 90°
Housing design:	A = upper flange
Piston Ø:	25 / 40 / 50 / 63 mm
Clamping stroke:	10, 13, 15, 25 or 50 mm
Clamp arm holder:	taper, ratio 1:10
Overload protection:	with
Position control:	without
Oil supply:	pipe thread / manifold with O-ring
Operating pressure:	pmin. 30 bar / pmax. 500 bar

Data sheet: 240-10 Webcode: 024010

SSZY with flange and position control

Swing motion:	neutral / left / right
Operating method:	double-acting
Swing angle:	0° / 30° / 45° / 60° / 90°
Housing design:	A = upper flange
Piston Ø:	25 or 40 mm
Clamping stroke:	25 or 22 mm
Clamp arm holder:	clevis / pendulum
Overload protection:	without / with reinforced swing mechanism
Position control:	without / inductive / pneumatic
Oil supply:	pipe thread / manifold with O-ring
Operating pressure:	pmin. 30 bar / pmax. 500 bar

Data sheet: 240-20 Webcode: 024020

SSZY with lower flange and thread

Swing motion:	neutral / left / right
Operating method:	single-acting / double-acting
Swing angle:	0° / 30° / 45° / 60° / 90°
Housing design:	B = lower flange, C = thread
Piston Ø:	25 / 40 / 50 / 63
Clamping stroke:	10, 13, 15, 25 or 50 mm
Clamp arm holder:	taper, ratio 1:10
Overload protection:	without / with
Position control:	without
Oil supply:	drilled channels
Operating pressure:	pmin. 30 bar / pmax. 500 bar

Data sheet: 240-30 Webcode: 024030

SSZY with block housing

Swing motion:	neutral / left / right
Operating method:	single-acting / double-acting
Swing angle:	0° / 30° / 45° / 60° / 90°
Housing design:	F = block housing
Piston Ø:	25 / 40 / 63 mm
Clamping stroke:	7, 8, or 11 mm
Clamp arm holder:	taper
Overload protection:	with
Position control:	without
Oil supply:	pipe thread / O-ring flange
Operating pressure:	pmin. 30 bar / pmax. 500 bar

Data sheet; 240-40 Webcode: 024040

SSZY with threaded body housing

Swing motion:	neutral / left / right
Operating method:	single-acting / double-acting
Swing angle:	0°, 30°, 45°, 60° and 90°
Housing design:	D (threaded body with drilled channels)
Piston Ø:	25, 40 and 63 mm
Clamping stroke:	10, 13 and 14 mm
Clamp arm holder:	taper
Overload protection:	with
Position control:	without
Oil supply:	drilled channels
Operating pressure:	pmin. 30 bar / pmax. 500 bar

Data sheet; 240-50 Webcode: 024050

SSZY cartridge design

Swing motion:	neutral / left / right
Operating method:	double-acting
Swing angle:	0° / 30° / 45° / 60° / 90°
Housing design:	E = cartridge design
Piston Ø:	25 / 40 / 50 / 63 mm
Clamping stroke:	11, 14, 15 or 25 mm
Clamp arm holder:	taper
Overload protection:	with
Position control:	without
Oil supply:	drilled channels
Operating pressure:	pmin. 30 bar / pmax. 500 bar

Data sheet; 240-60 Webcode: 024060

SSZY for low pressure range

Swing motion:	neutral / left / right
Operating method:	double-acting
Swing angle:	0° / 30° / 45° / 60° / 90°
Housing design:	A = upper flange
Piston Ø:	37 / 44 or 51 mm
Clamping stroke:	8 or 10 mm
Clamp arm holder:	cylindrical holder
Overload protection:	without
Position control:	without
Oil supply:	pipe thread / manyfold with O-ring
Operating pressure:	pmin. 15 bar / pmax. 70 bar

Data sheet: 240-70 **Webcode:** 024070

Lever clamp cylinders (HSZY)

HSZY without/with position controle

Operating pressure:	pmax. 350 bar (200 bar at piston Ø 40 mm)
Operating method:	double-acting
Piston Ø:	16, 25 and 40 mm
Clamping force:	from 1,5 kN (100 bar) up to 19 kN (pmax.)
Oil supply:	- threaded port G1/8 or G1/4
	- manifold with O-ring
	- drilled channels
Sealing:	FKM from -10°C up to 150°C
Wiper:	soft wiper and metal wiper
Position control:	accessory

Data sheet: 250-1 **Webcode:** 025001

Description:

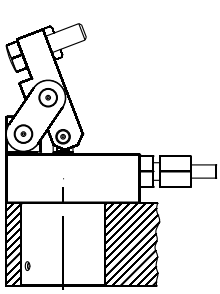
Lever clamping cylinders are primarily for uses where the clamping location for workpiece handling shall be free after de-clamping. The advantage compared to swing clamp cylinders is in its compact design and a high clamping force.

The lever clamp cylinder is specifically for uses where contours interfere, meaning swing clamp cylinders cannot be used.

The high force density is guided via a pressure piston into the clamping lever. The moving bearing of the clamping lever releases the clamping point when unclamping. Hydraulic lever clamp cylinders are double-acting. This gives clear opening and closing times.

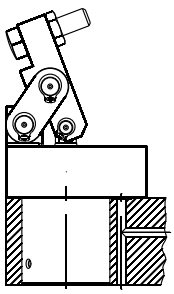
The lever clamp cylinder can be fitted with a continuous piston rod. This permits use of a position control (accessory) to monitor the piston location. Query of position can be done via inductive proximity switch or pneumatically.

Types of connection:



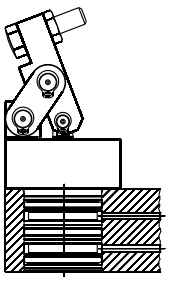
Type A

Plug-in design,
oil supply via thread
G1/8 and G1/4



Type B

Plug-in design,
oil supply manifold
with O-ring



Type C

Plug-in design,
oil supply via
drilled channels

Built-in pistons with threaded bushing

Operating pressure:	pmax. 500 bar
Operating method:	double-acting
Piston Ø:	16, 20, 25, 32, 40, 50, 63, 80 and 100 mm
Stroke:	numerous strokes from 16 to 160 mm
Pushing force:	from 2 kN (100 bar) up to 392 kN (500 bar)
Oil connection:	drilled channels
Seal type:	NBR -10°C to +80°C, FKM to 150°C
Wiper:	soft wiper and metal wiper
Characteristics:	- space saving integrated option
	directly into the fixture body of the fixture
	- interior piston thread for accessories

Data sheet:: 200-4 Webcode: 020004

Universal cylinders SA

Operating pressure:	pmax. 500 bar (piston Ø 50 mm 400 bar)
Operating method:	single-acting
Piston Ø:	10, 25, 40 and 50 mm
Stroke:	20, 22 and 50 mm
Pushing force:	from 0,7 kN (100 bar) to 78 kN (500 bar)
Reset force:	from 28 N up to 390 N
Oil connection:	thread G1/4
Seal type:	NBR -10°C to +80°C
Wiper:	soft wiper and metal wiper
Characteristics:	- integrated depth adjustable in 10 mm increments
	- suitable for changing workpiece sizes

Data sheet:: 220-2 Webcode: 020002

Universal cylinders DA

Operating pressure:	pmax. 500 bar
Operating method:	double-acting
Piston Ø:	25, 32, 40, 50 and 63 mm
Stroke:	32, 40, 50 and 64 mm
Pushing force:	from 4,9 kN (100 bar) up to 124,4 kN (500 bar)
Pulling force:	from 3,3 kN (100 bar) up to 84 kN (500 bar)
Oil connection:	thread G1/4 and G 3/8
Seal type:	NBR -10°C up to +80°C
Wiper:	soft wiper
Characteristics:	- integrated depth adjustable in 2 mm increments
	- thread connections axial and radial

Data sheet: 220-3 Webcode: 022003

Hollow piston cylinders

Operating pressure:	pmax. 500 bar
Operating method:	single-acting / double-acting
Piston Ø:	20, 32, 40, 50, 63 and 80 mm
Stroke:	6, 8, 10, 12, 16, 20, 32 and 40 mm
Pushing force:	from 2 kN (100 bar) up to 153 kN (500 bar)
Pulling force:	from 2 kN (100 bar) up to 188,5 kN (500 bar)
Reset force:	from 90 N up to 950 N
Oil connection:	thread G1/4
Seal type:	NBR -10°C up to +80°C
Wiper:	soft wiper and metal wiper
Characteristics:	through drilled piston with thread

Data sheet: 220-6 **Webcode:** 022006

Work supports with threaded body

Operating pressure:	pmax. 500 bar
Operating method:	advance by spring or hydraulics
Plunger:	Ø 16 mm, stroke 8 mm
Support force:	max. 12 kN at 500 bar
Spring force min.:	8 N (spring) 10 N (hydraulics)
Spring force max.:	23 N (spring) 13 N (hydraulics)
Oil connection:	drilled channels
Wiper:	soft wiper and metal wiper
Characteristics:	- possibility to clamp separately or combined
	with the clamping process
	- horizontal and vertical integration possible

Data sheet: 280-1 **Webcode:** 028001

Work supports with threaded body and flange

Operating pressure:	pmax. 500 bar
Operating method:	advance via spring force (adjustable)
Plunger:	Ø 32 stroke 16 mm, 40 mm, Ø 40 stroke 18 mm
Support force:	max. 60 kN at 500 bar
Advance force:	from 40 N up to 100 N
Oil connection:	- thread G1/4
	- manifold with O-ring
Wiper:	metal wiper
Characteristics:	- support bolts with interior thread
	- possibility to clamp separately or combined
	with the clamping process

Data sheet: 280-10 **Webcode:** 028010

Low-block clamping cylinders

Operating pressure:	pmax. 500 bar
Operating method:	single-acting with spring reset
Piston Ø:	16, 25 and 36 mm
Stroke:	8 and 10 mm
Clamping force:	from 1,7 kN (100 bar) up to 40 kN (500 bar)
Stroke limiter:	with
Oil connection:	- thread G1/4
	- manifold with O-ring
Seal type:	NBR -10°C up to +80°C
Characteristics:	guides the clamping force sideways
	into the workpiece

Data sheet: 230-1 Webcode: 023001

Locking cylinders

Operating pressure:	pmax. 500 bar
Operating method:	single-acting without spring reset
Piston:	available with 1 piston or 2 pistons
Stroke:	5 mm (1 piston), 2 mm (2 pistons)
Clamping force:	from 4,9 kN (100 bar) up to 49 kN (500 bar)
Oil connection:	thread G1/4
Seal type:	NBR -10°C up to +80°C
Characteristics:	- impact is done hydraulically
	- discharge by pressure reduction
	- clamping pressure monitoring possible

Data sheet: 230-2 Webcode: 023002

Rotary lever clamps

Operating pressure:	pmax. 400 bar
Operating method:	single-acting / double-acting
Design:	for hydraulics or pneumatics
Piston Ø:	12, 16, 20, 25, 32, 40 and 50 mm
Clamping force:	from 1,1 kN (100 bar) up to 95 kN (400 bar)
Oil connection:	- thread G1/8 and G1/4
	- manifold with O-ring
Characteristics:	- permits clamping without shear forces
	- housing can be lowered partially
	- clamping lever and housing blocks can be supplied

Data sheet: 250-10 Webcode: 025010

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