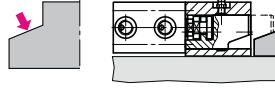


## Wedge clamps

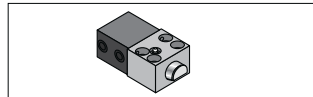


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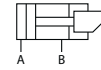
### Wedge clamps for dies with tapered clamping edge



Without position monitoring

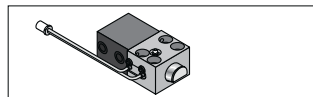


up to 160°C\*

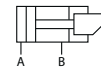


2.24000

With position monitoring lateral fastening

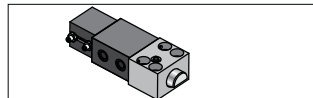


up to 100°C\*\*

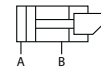


2.24001

With position monitoring rear side fastening

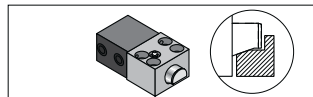


up to 120°C\*\*

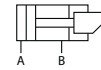


2.24002

With safety step

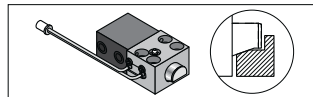


up to 160°C\*

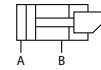


2.24003

With safety step + position monitoring

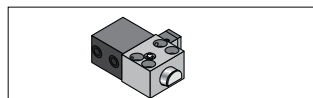


up to 100°C\*\*

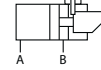


2.24004

With locking bolt

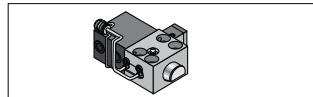


up to 160°C\*

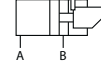


2.24005

With locking bolt + position monitoring

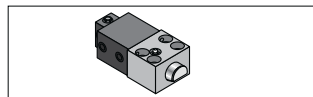


up to 100°C\*\*

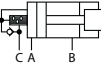


2.24006

With sequence valve control

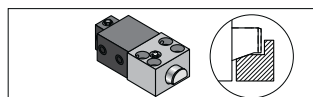


up to 160°C\*

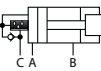


2.24007

With sequence valve control + safety step

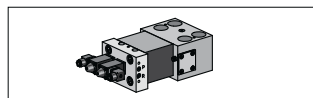


up to 160°C\*

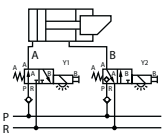


2.24008

With flanged directional seat valves

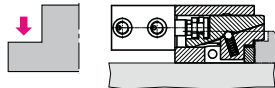


up to 100°C\*\*



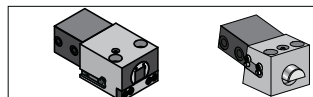
2.24009

### Wedge clamps for dies with flat clamping edge

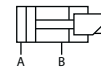


(\*250°C on request)

Without position monitoring

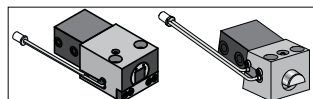


up to 160°C

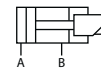


2.2451

With position monitoring



up to 100°C\*\*



2.2460

(\*\* 120°C for 1000 working hours)

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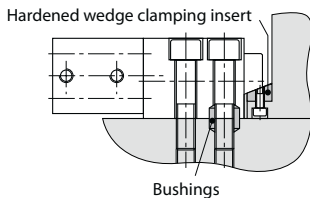
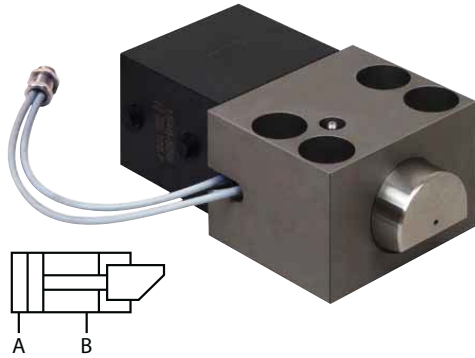
2.2400

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## Wedge clamp, double-acting for dies with tapered clamping edge



**Retrofit:** In many cases, existing dies can be standardised by adding **wedge inserts**. Max. hardness: 50 HRC.

The occurring transverse forces must be absorbed by **bushings** to be drilled into the fixture plate (see table for accessories)

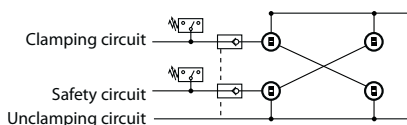
**Please note:**

In case of incorrect operation of the wedge clamping element, the clamping bolt may fully retract into the guide housing and thus cause the upper die falling off the slide.

The greasing intervals (high-temperature grease) should be scheduled in accordance with the operating conditions. **Greasing of the clamping bolt should only be made with the elements being retracted.**

Clamping elements with wedge clamping bolt must be protected against dirt, scale, swarf, coolant, etc. by means of a suitable covering. Dies clamped by means of wedge clamping elements are subject to transverse forces which may be strong enough to displace them. Therefore, location pins or suitable limit stops should be provided, in order to keep the dies in their correct position.

When using wedge clamping elements on the press slide, it is recommended that multiple-circuit hydraulic supply of the clamping elements and pilot-controlled check valves are used in the clamping lines for securing hydraulic clamping.



**Application:**

- safe clamping of dies with a tapered clamping edge
- for clamping of dies on a press bed and slide
- for clamping of dies in injection moulding machines

**Design:**

Double-acting wedge clamp for clamping dies on a press bed or slide or for clamping dies in injection moulding machines.

The wedge clamp consists of a hydraulic block cylinder and a piston guided in a housing.

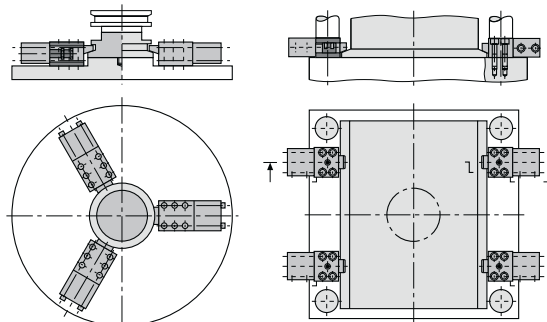
The clamping bolt is provided with 20° bevel to clamp on the tapered clamping surface of the die.

Based on the internal design of the wedge clamp and the 20° clamping bevel the system is providing internal friction. For reasons of safety and in order to comply with the specifications of the 'Machinery' directive no. ML98/37/EC, hydraulic pressure must always be maintained.

When upper dies are clamped by wedge clamps, they must be secured mechanically when maintenance work is carried out.

**Special features:**

- ◆ available in sizes between 25 kN and 1250 kN
- ◆ high functional reliability ensured by position monitoring and an automatic cycle
- ◆ rugged and well-proven clamping element with high degree of safety and long service life



**Principle of die clamping**

In general, dies with round geometry are clamped using three clamping elements for each half, whereas dies with square or rectangular geometry are clamped using four clamping elements for each half.

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## Wedge clamp, double-acting without position monitoring

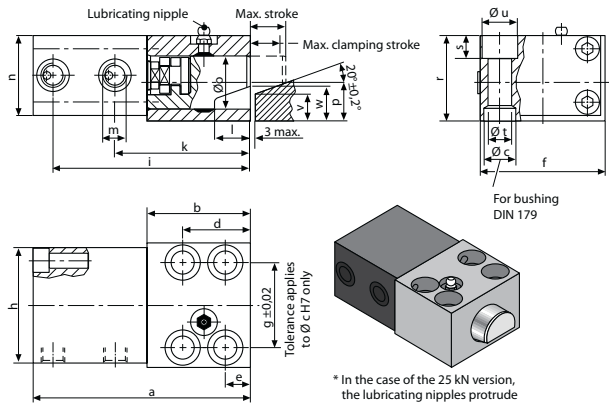
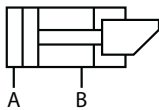


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Wedge clamp, double-acting  
for dies with tapered clamping edge

Clamping bolt with 20° bevel,  
design without proximity switch

Resistant to temperatures of up to 160°C  
(for higher temperatures, please consult us)



\* In the case of the 25 kN version,  
the lubricating nipples protrude  
by 5 mm and are offset by 9.5 mm

### \* Clamping force

This is the force that the clamping element applies to the workpiece at maximum operating pressure. The die is clamped on the fixture plate by means of this force. Under normal conditions, the external forces acting on the die (i.e. the ejecting force or die cushion force) shall not exceed the totality of the clamping forces of the elements.

### \*\* Perm. retention force

This is the holding power of clamping element and fastener (screw property class 8.8). The above data is based on the condition that the appropriate tightening torque has been applied, and that material and geometry of the fixtures are suitable for the purpose. It must be ensured that in cases of emergency, e.g. workpiece jammed in the die, the totality of the retention forces of the elements is not exceeded.

	25	50	100	160	250	400	630
<b>Max. clamping force * (kN)</b>	<b>25</b>	<b>50</b>	<b>100</b>	<b>160</b>	<b>250</b>	<b>400</b>	<b>630</b>
Perm. retention force** (kN)	35	65	130	210	320	520	820
Screw property class 8.8							
<b>Max. operating pressure (bar)</b>	<b>350</b>	<b>275</b>	<b>350</b>	<b>350</b>	<b>350</b>	<b>350</b>	<b>350</b>
Cylinder-Ø (mm)	25	40	50	63	80	100	125
Max. stroke (mm)	20	25	25	30	32	40	40
Clamping stroke (from/to) (mm)	15 - 18	18 - 22	19 - 22	23 - 27	24 - 29	30 - 36	30 - 36
Max. oil consumption (cm <sup>3</sup> )	10	31	49	94	161	314	491
a (mm)	122	157	190	227	267	310	375
b (mm)	58	78	100	125	150	180	225
Ø c H7 x depth (mm)	18/7	26/9	30/11	35/11	48/13	55/16	62/16
d (mm)	38	46	58	75	78	95	108
e (mm)	14	16	20	25	26	32	38
f (mm)	70	95	120	150	200	240	280
g (mm)	48	65	85	106	140	180	210
h (mm)	65	85	100	125	160	200	230
i (mm)	111	146	177	210	246	285	344
k (mm)	76	102	127	151	184	215	272
l (mm)	20	25	26	32	40	45	50
m	G ¼	G ¼	G ¼	G ½	G ½	G ½	G ½
n (mm)	45	63	75	95	120	150	180
Ø o (mm)	30	40	55	70	80	100	125
p (mm)	21,5	28	37	49	55	75	85
r (mm)	48	65	80	105	125	160	190
s (mm)	13	18	20	26	32	38	44
Ø t (mm)	13	17	21	26	33	39	45
Ø u (mm)	20	26	32	40	48	57	66
v (mm)	15	18	25	30	30	50	60
w (mm)	19,5	23,5	30,5	37	38	60	70
Screw DIN 912-8.8 (4 pieces)	M 12	M 16	M 20	M 24	M 30	M 36	M 42
Tightening torque (Nm)	86	210	410	710	1450	2520	4050
Weight (kg)	2,4	5,8	10,6	21	40	74	125
<b>Part no.</b>	<b>4604 620</b>	<b>4604 621</b>	<b>4604 622</b>	<b>4604 623</b>	<b>4604 634</b>	<b>4604 635</b>	<b>4604 636</b>
<b>Accessories</b>							
Bushings DIN 179	12 x 12	17 x 16	21 x 20	26 x 20	32 x 25	38 x 30	44 x 30
<b>Part no.</b>	<b>3300 285</b>	<b>3300 287</b>	<b>3300 288</b>	<b>3300 289</b>	<b>3300 420</b>	<b>3300 430</b>	<b>3300 440</b>

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**2.24000**

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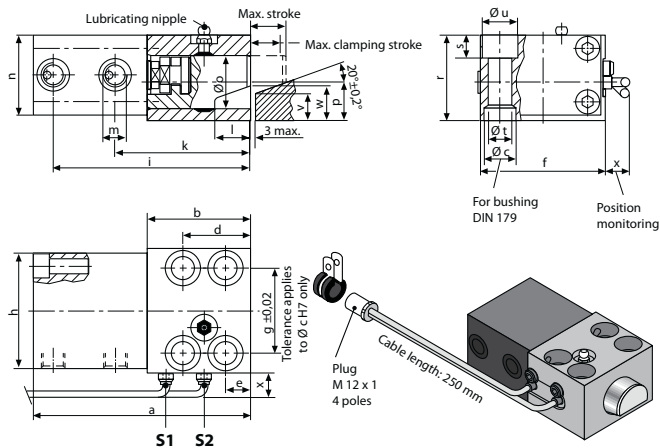
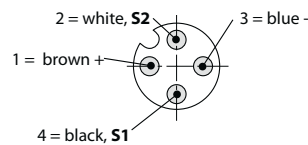
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## Wedge clamp, double-acting with position monitoring (lateral fastening)

The inductive proximity switches are installed in the guide housing. They are activated by the clamping bolt. The contact areas are designed in such a way that one signal each is provided for the bolt in its initial position and in the clamping position.

Resistant to temperatures of up to 100°C,  
120°C for 1000 working hours.  
Cable length: 250 mm  
4-pole plug

### Pin assignment:



\* In the case of the 25 kN version,  
the lubricating nipples protrude  
by 5 mm and are offset by 9.5 mm

Connecting lead with screw coupling:  
cable length 5 m **part no. 5700013**  
cable length 10 m **part no. 5700014**

\* **Clamping force** \*\* **Permissible retention force** (for details, please see 2.2400, page 2)

	25	50	100	160	250	400	630
<b>Max. clamping force * (kN)</b>	<b>25</b>	<b>50</b>	<b>100</b>	<b>160</b>	<b>250</b>	<b>400</b>	<b>630</b>
Perm. retention force** (kN)	35	65	130	210	320	520	820
Screw property class 8.8							
<b>Max. operating pressure (bar)</b>	<b>350</b>	<b>275</b>	<b>350</b>	<b>350</b>	<b>350</b>	<b>350</b>	<b>350</b>
Cylinder-Ø (mm)	25	40	50	63	80	100	125
Max. stroke (mm)	20	25	25	30	32	40	40
Clamping stroke (from/to) (mm)	15 - 18	18 - 22	19 - 22	23 - 27	24 - 29	30 - 36	30 - 36
Max. oil consumption (cm <sup>3</sup> )	10	31	49	94	161	314	491
a (mm)	122	157	190	227	267	310	375
b (mm)	58	78	100	125	150	180	225
Ø c H7 x depth (mm)	18/7	26/9	30/11	35/11	48/13	55/16	62/16
d (mm)	38	46	58	75	78	95	108
e (mm)	14	16	20	25	26	32	38
f (mm)	70	95	120	150	200	240	280
g (mm)	48	65	85	106	140	180	210
h (mm)	65	85	100	125	160	200	230
i (mm)	111	146	177	210	246	285	344
k (mm)	76	102	127	151	184	215	272
l (mm)	20	25	26	32	40	45	50
m	G ¼	G ¼	G ¼	G ½	G ½	G ½	G ½
n (mm)	45	63	75	95	120	150	180
Ø o (mm)	30	40	55	70	80	100	125
p (mm)	21,5	28	37	49	55	75	85
r (mm)	48	65	80	105	125	160	190
s (mm)	13	18	20	26	32	38	44
Ø t (mm)	13	17	21	26	33	39	45
Ø u (mm)	20	26	32	40	48	57	66
v (mm)	15	18	25	30	30	50	60
w (mm)	19,5	23,5	30,5	37	38	60	70
x (mm)	12	5	0	0	0	0	0
Screw DIN 912-8.8 (4 pieces)	M 12	M 16	M 20	M 24	M 30	M 36	M 42
Tightening torque (Nm)	86	210	410	710	1450	2520	4050
Weight (kg)	2,4	5,8	10,6	21	40	74	125
<b>Part no.</b>	<b>8.2403.0500</b>	<b>8.2404.0500</b>	<b>8.2405.0500</b>	<b>8.2406.0500</b>	<b>8.2407.0500</b>	<b>8.2408.0500</b>	<b>8.2409.0500</b>
<b>Accessories</b> Bushings DIN 179	12 x 12	17 x 16	21 x 20	26 x 20	32 x 25	38 x 30	44 x 30
<b>Part no.</b>	<b>3300 285</b>	<b>3300 287</b>	<b>3300 288</b>	<b>3300 289</b>	<b>3300 420</b>	<b>3300 430</b>	<b>3300 440</b>

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## Technical details of accessories:

Adjustable position monitoring for wedge clamps

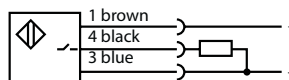
### Description

The position monitoring unit is fixed to the cylinder bottom by means of screws. It can be fastened in a position turned by 180°. Various versions are available to suit different applications. The trip cam for activating the proximity switches is positioned on the continuous piston rod. The tripping position is adjusted by displacing the proximity switches in the lateral slot. The proximity switches are activated by the trip cam within a stroke of approx. 6 mm. The minimum distance of the tripping positions depends on the type of switch and is indicated in the table.

### Function

1. Function message of the unclamped position, i.e. the piston rod has retracted.
2. Message of the clamped position, i.e. the piston rod has extended and is in the clamping range.

### Wiring diagram



### Important information

The position monitoring unit is not suitable for use in areas with coolant. Also, additional covers must be provided to protect the system from any swarf.

### Planning - Conditions of application - Protective measures

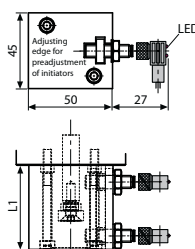
Careful planning is of great importance. The conditions of application and the protective measures must be taken into consideration and ensured.

**Please contact us for more detailed information.**

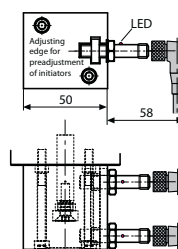
### Technical data of inductive proximity switches

Operating voltage:	10 ... 30 V DC
Residual ripple:	max. 15%
Tripping function:	NO
Type:	PNP
Material of housing:	corrosion-proof steel
Protective system (DIN 40050):	IP 67

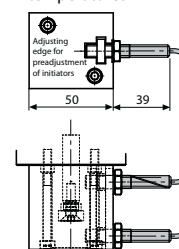
**Version A (standard)**  
Compact version M8



**Version B**  
Long version M12



**Version C**  
High ambient temperatures



	Ambient temperature TA	-25° ... +70°C	-25° ... +70°C	-25° ... +120°C
Min. distance of tripping position (mm)	8	13	8	
Type of connection	plug	plug	Teflon cable 3 x 0,14 mm <sup>2</sup>	
LED visualisation of function	in the plug	yes	no	
Max. constant current (mA)	200	200	200 - (from 70°C) 100	
Nominal tripping distance (mm)	1,5	1,5	2	
Short-circuit proof	yes	yes	no	
Connecting cable (m)	5	5	3	
<b>Proximity switch Part no.</b>	<b>6.3829.0980</b>	<b>2.5012.0064</b>	<b>6.3829.0870</b>	
<b>Plug with cable Part no.</b>	<b>3829099</b>	<b>2.0975.0024</b>	<b>fixed</b>	
L1 complete (mm)	50	50	50	
<b>Position monitoring up to 30 mm total stroke Part no.</b> (without a plug) up to type 4604 673	<b>7.6282.0010 A</b>	<b>7.6282.0010 B</b>	<b>7.6282.0010 C</b>	
L1 complete (mm)	60	60	60	
<b>Position monitoring up to 50 mm total stroke Part no.</b> (without a plug) from type 4604 674	<b>7.6282.0011 A</b>	<b>7.6282.0011 B</b>	<b>7.6282.0011 C</b>	

**2.24002**

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## Wedge clamp with safety step



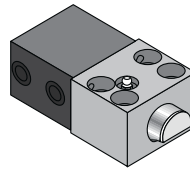
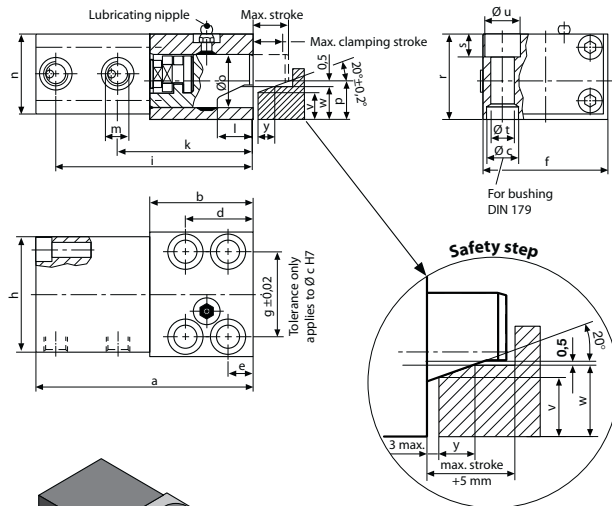
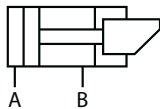
**ROEMHELD**  
HILMA ■ STARK

### A high degree of safety:

This design features a clamping bolt with an additional accommodation surface, which is parallel to the clamping edge.

Should the pressure drop (machine failure or standstill), the upper die will lower onto the safety step where it is safely held in position.

Resistant to temperatures of up to 160°C  
(higher temperatures on request)



Preferably to be used on the slide

\* In the case of the 25 kN version, the lubricating nipples protrude by 5 mm and are offset by 9.5 mm

\*Clamping force \*\*Permissible retention force (for details, see 2-2400, page 2)

	25	50	100	160	250	400	630
<b>Max. clamping force * (kN)</b>	<b>25</b>	<b>50</b>	<b>100</b>	<b>160</b>	<b>250</b>	<b>400</b>	<b>630</b>
Perm. retention force** (kN)	35	65	130	210	320	520	820
Screw property class 8.8							
<b>Max. operating pressure (bar)</b>	<b>350</b>	<b>275</b>	<b>350</b>	<b>350</b>	<b>350</b>	<b>350</b>	<b>350</b>
Cylinder-Ø (mm)	25	40	50	63	80	100	125
Max. stroke (mm)	20	25	25	30	32	40	40
Clamping stroke (from/to) (mm)	15 - 18	18 - 22	19 - 22	23 - 27	24 - 29	30 - 36	30 - 36
Max. oil consumption (cm <sup>3</sup> )	10	31	49	94	161	314	491
a (mm)	122	157	190	227	267	310	375
b (mm)	58	78	100	125	150	180	225
Ø c H7 x depth (mm)	18/7	26/9	30/11	35/11	48/13	55/16	62/16
d (mm)	38	46	58	75	78	95	108
e (mm)	14	16	20	25	26	32	38
f (mm)	70	95	120	150	200	240	280
g (mm)	48	65	85	106	140	180	210
h (mm)	65	85	100	125	160	200	230
i (mm)	111	146	177	210	246	285	344
k (mm)	76	102	127	151	184	215	272
l (mm)	20	25	26	32	40	45	50
m	G ¼	G ¼	G ¼	G ½	G ½	G ½	G ½
n (mm)	45	63	75	95	120	150	180
Ø o (mm)	30	40	55	70	80	100	125
p (mm)	21,5	28	37	49	55	75	85
r (mm)	48	65	80	105	125	160	190
s (mm)	13	18	20	26	32	38	44
Ø t (mm)	13	17	21	26	33	39	45
Ø u (mm)	20	26	32	40	48	57	66
v (mm)	15	18	25	30	30	50	60
w (mm)	17,5	21,2	28,2	34,7	35,3	57,3	67,3
y (mm)	7	9	10	14	14	20	21
Screw DIN 912-8.8 (4 pieces)	M 12	M 16	M 20	M 24	M 30	M 36	M 42
Tightening torque (Nm)	86	210	410	710	1450	2520	4050
Weight (kg)	2,4	5,8	10,6	21	40	74	125
<b>Part no.</b>	<b>8.2403.1000</b>	<b>8.2404.1000</b>	<b>8.2405.1000</b>	<b>8.2406.1000</b>	<b>8.2407.1000</b>	<b>8.2408.1000</b>	<b>8.2409.1000</b>
<b>Accessories Bushings DIN 179</b>	12 x 12	17 x 16	21 x 20	26 x 20	32 x 25	38 x 30	44 x 30
<b>Part no.</b>	<b>3300 285</b>	<b>3300 287</b>	<b>3300 288</b>	<b>3300 289</b>	<b>3300 420</b>	<b>3300 430</b>	<b>3300 440</b>

Subject to technical modification

**2.24003**

12/2011



**ROEMHELD**  
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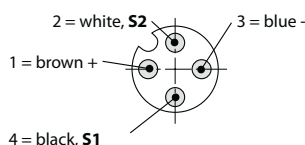
## Wedge clamp with safety step + position monitoring

### A high degree of safety:

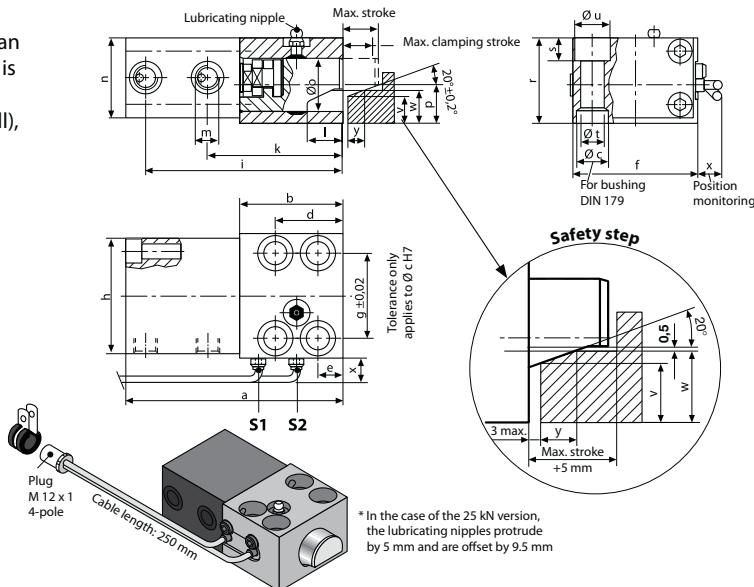
This design features a clamping bolt with an additional accommodating surface which is parallel to the clamping edge. Should the pressure drop (machine failure or standstill), the upper die will lower onto the safety step where it is safely held in position.

Resistant to temperatures of up to 100°C,  
120°C for 1000 working hours  
Cable length: 250 mm  
4-pole plug

### Pin assignment:



Connecting lead with screw coupling:  
Cable length 5 m - **part no. 5700013**  
Cable length 10 m - **part no. 5700014**



\*Clamping force \*\*Permissible retention force (for details, see 2.2400, page 2)

	25	50	100	160	250	400	630
<b>Max. clamping force * (kN)</b>	<b>25</b>	<b>50</b>	<b>100</b>	<b>160</b>	<b>250</b>	<b>400</b>	<b>630</b>
Perm. retention force** (kN)	35	65	130	210	320	520	820
Screw property class 8.8							
<b>Max. operating pressure (bar)</b>	<b>350</b>	<b>275</b>	<b>350</b>	<b>350</b>	<b>350</b>	<b>350</b>	<b>350</b>
Cylinder-Ø (mm)	25	40	50	63	80	100	125
Max. stroke (mm)	20	25	25	30	32	40	40
Clamping stroke (from/to) (mm)	15 - 18	18 - 22	19 - 22	23 - 27	24 - 29	30 - 36	30 - 36
Max. oil consumption (cm <sup>3</sup> )	10	31	49	94	161	314	491
a (mm)	122	157	190	227	267	314	375
b (mm)	58	78	100	125	150	180	225
Ø c H7 x depth (mm)	18/7	26/9	30/11	35/11	48/13	55/16	62/16
d (mm)	38	46	58	75	78	95	108
e (mm)	14	16	20	25	26	32	38
f (mm)	70	95	120	150	200	240	280
g (mm)	48	65	85	106	140	180	210
h (mm)	65	85	100	125	160	200	230
i (mm)	111	146	177	210	246	285	344
k (mm)	76	102	127	151	184	215	272
l (mm)	20	25	26	32	40	45	50
m	G ¼	G ¼	G ¼	G ½	G ½	G ½	G ½
n (mm)	45	63	75	95	120	150	180
Ø o (mm)	30	40	55	70	80	100	125
p (mm)	21,5	28	37	49	55	75	85
r (mm)	48	65	80	105	125	160	190
s (mm)	13	18	20	26	32	38	44
Ø t (mm)	13	17	21	26	33	39	45
Ø u (mm)	20	26	32	40	48	57	66
v (mm)	15	18	25	30	30	50	60
w (mm)	17,5	21,2	28,2	34,7	35,3	57,3	67,3
x Position monitoring (mm)	12	5	0	0	0	0	0
y (mm)	7	9	10	14	14	20	21
Screw DIN 912-8.8 (4 pieces)	M 12	M 16	M 20	M 24	M 30	M 36	M 42
Tightening torque (Nm)	86	210	410	710	1450	2520	4050
Weight (kg)	2,4	5,8	10,6	21	40	74	125
<b>Part no.</b>	<b>8.2403.2000</b>	<b>8.2404.2000</b>	<b>8.2405.2000</b>	<b>8.2406.2000</b>	<b>8.2407.2000</b>	<b>8.2408.2000</b>	<b>8.2409.2000</b>
<b>Accessories Bushings DIN 179</b>	12 x 12	17 x 16	21 x 20	26 x 20	32 x 25	38 x 30	44 x 30
<b>Part no.</b>	<b>3300 285</b>	<b>3300 287</b>	<b>3300 288</b>	<b>3300 289</b>	<b>3300 420</b>	<b>3300 430</b>	<b>3300 440</b>

2.24004

12/2011

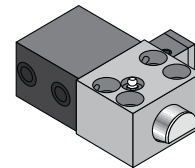
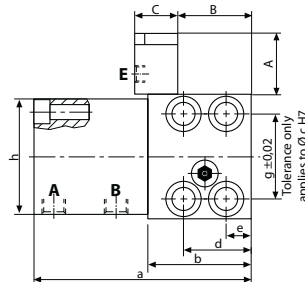
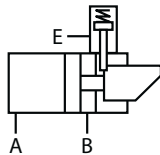
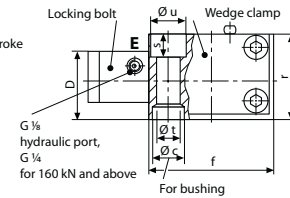
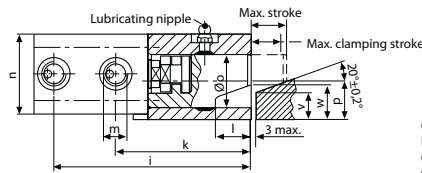
Subject to technical modification

## Wedge clamps with locking bolt

### Wedge clamps for maximum safety:

The locking bolt of the wedge clamp is prevented from retracting using an additional locking cylinder. Only after the locking bolt has been unlocked can the clamping position be used.

Resistant to temperatures of up to 160°C (higher temperatures on request)



\* In the case of the 25 kN version, the lubricating nipples protrude by 5 mm and are offset by 9.5 mm

\*Clamping force \*\*Permissible retention force (for details, see 2.2400, page 2)

Max. clamping force * (kN)	25	50	100	160	250	400	630
Perm. operating pressure** (kN)	35	65	130	210	320	520	820
Screw property class 8.8							
Max. operating pressure (bar)	350	275	350	350	350	350	350
Cylinder-Ø (mm)	25	40	50	63	80	100	125
Max. stroke (mm)	20	25	25	30	32	40	40
Clamping stroke (from/to) (mm)	15 - 18	18 - 22	19 - 22	23 - 27	24 - 29	30 - 36	30 - 36
Oil consumption clamping/unlocking (cm <sup>3</sup> )	10/3	31/3	49/3	94/2,5	161/2,5	314/2,5	491/2,5
a (mm)	122	157	190	227	267	310	375
b (mm)	58	78	100	125	150	180	225
Ø c H7 x depth (mm)	18/7	26/9	30/11	35/11	48/13	55/16	62/16
d (mm)	38	46	58	75	78	95	108
e (mm)	14	16	20	25	26	32	38
f (mm)	70	95	120	150	200	240	280
g (mm)	48	65	85	106	140	180	210
h (mm)	65	85	100	125	160	200	230
i (mm)	111	146	177	210	246	285	344
k (mm)	76	102	127	151	184	215	272
l (mm)	20	25	26	32	40	45	50
m	G 1/4	G 1/4	G 1/4	G 1/2	G 1/2	G 1/2	G 1/2
n (mm)	45	63	75	95	120	150	180
Ø o (mm)	30	40	55	70	80	100	125
p (mm)	21,5	28	37	49	55	75	85
r (mm)	48	65	80	105	125	160	190
s (mm)	13	18	20	26	32	38	44
Ø t (mm)	13	17	21	26	33	39	45
Ø u (mm)	20	26	32	40	48	57	66
v (mm)	15	18	25	30	30	50	60
w (mm)	19,5	23,5	30,5	37,0	38,0	60	70,0
A (mm)	57,5	57,5	57,5	60	60	65	65
B (mm)	27	44	66	94	119	144,5	189,5
C (mm)	40	40	40	45	45	40	40
D (mm)	48	58	67	89	95	110	120
Screw DIN 912-8.8 (4 pieces)	M 12	M 16	M 20	M 24	M 30	M 36	M 42
Tightening torque (Nm)	86	210	410	710	1450	2520	4050
Weight (kg)	3,0	6,5	11,4	21,7	41	74,7	126
<b>Part no.</b>	<b>8.2403.1500</b>	<b>8.2404.1500</b>	<b>8.2405.1500</b>	<b>8.2406.1500</b>	<b>8.2407.1500</b>	<b>8.2408.1500</b>	<b>8.2409.1500</b>
<b>Accessories Bushings DIN 179</b>	12 x 12	17 x 16	21 x 20	26 x 20	32 x 25	38 x 30	44 x 30
<b>Part no.</b>	<b>3300 285</b>	<b>3300 287</b>	<b>3300 288</b>	<b>3300 289</b>	<b>3300 420</b>	<b>3300 430</b>	<b>3300 440</b>

Subject to technical modification

2.24005

05/2011



**ROEMHELD**  
HILMA ■ STARK

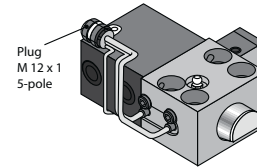
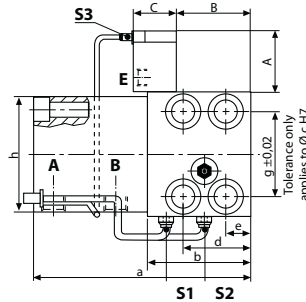
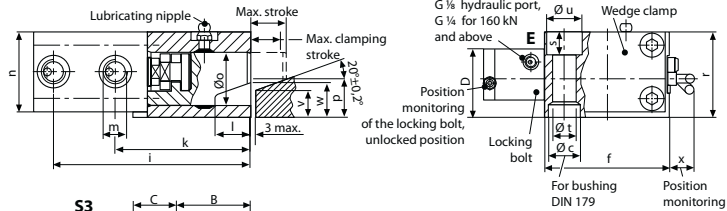
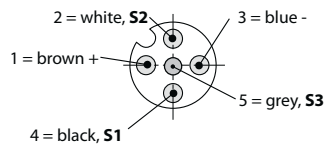
## Wedge clamp with locking bolt + position monitoring

### Wedge clamps for maximum safety:

The locking bolt of the wedge clamp is prevented from retracting using an additional locking cylinder. Only after the locking bolt has been unlocked can the clamping position be used.

Resistant to temperatures of up to 100°C,  
120°C for 1000 working hours.  
Cable length: 250 mm  
5-pole plug

### Pin assignment:



\* In the case of the 25 kN version, the lubricating nipples protrude by 5 mm and are offset by 9.5 mm

\*Clamping force \*\*Permissible retention force (for details, see 2.2400, page 2)

Max. clamping force * (kN)	25	50	100	160	250	400	630
Perm. retention force** (kN)	35	65	130	210	320	520	820
Screw property class 8.8							
Max. operating pressure (bar)	350	275	350	350	350	350	350
Cylinder-Ø (mm)	25	40	50	63	80	100	125
Max. stroke (mm)	20	25	25	30	32	40	40
Clamping stroke (from/to) (mm)	15 - 18	18 - 22	19 - 22	23 - 27	24 - 29	30 - 36	30 - 36
Oil consumption clamping/unlocking (cm <sup>3</sup> )	10/3	31/3	49/3	94/2,5	161/2,5	314/2,5	491/2,5
a (mm)	122	157	190	227	267	310	375
b (mm)	58	78	100	125	150	180	225
Ø c H7 x depth (mm)	18/7	26/9	30/11	35/11	48/13	55/16	62/16
d (mm)	38	46	58	75	78	95	108
e (mm)	14	16	20	25	26	32	38
f (mm)	70	95	120	150	200	240	280
g (mm)	48	65	85	106	140	180	210
h (mm)	65	85	100	125	160	200	230
i (mm)	111	146	177	210	246	285	344
k (mm)	76	102	127	151	184	215	272
l (mm)	20	25	26	32	40	45	50
m	G ¼	G ¼	G ¼	G ½	G ½	G ½	G ½
n (mm)	45	63	75	95	120	150	180
Ø o (mm)	30	40	55	70	80	100	125
p (mm)	21,5	28	37	49	55	75	85
r (mm)	48	65	80	105	125	160	190
s (mm)	13	18	20	26	32	38	44
Ø t (mm)	13	17	21	26	33	39	45
Ø u (mm)	20	26	32	40	48	57	66
v (mm)	15	18	25	30	30	50	60
w (mm)	19,5	23,5	30,5	37,0	38,0	60	70,0
x Position monitoring (mm)	12	5	0	0	0	0	0
A (mm)	57,5	57,5	57,5	60	60	65	65
B (mm)	27	44	66	94	119	144,5	189,5
C (mm)	40	40	40	45	45	40	40
D (mm)	48	58	67	89	95	110	120
Screw DIN 912-8.8 (4 pieces)	M 12	M 16	M 20	M 24	M 30	M 36	M 42
Tightening torque (Nm)	86	210	410	710	1450	2520	4050
Weight (kg)	3,0	6,5	11,4	21,7	41	74,7	126
<b>Part no.</b>	<b>8.2403.3000</b>	<b>8.2404.3000</b>	<b>8.2405.3000</b>	<b>8.2406.3000</b>	<b>8.2407.3000</b>	<b>8.2408.3000</b>	<b>8.2409.3000</b>
<b>Accessories</b> Bushings DIN 179	12 x 12	17 x 16	21 x 20	26 x 20	32 x 25	38 x 30	44 x 30
<b>Part no.</b>	<b>3300 285</b>	<b>3300 287</b>	<b>3300 288</b>	<b>3300 289</b>	<b>3300 420</b>	<b>3300 430</b>	<b>3300 440</b>

2.24006

05/2011

Subject to technical modification

## Wedge clamp with sequence valve control

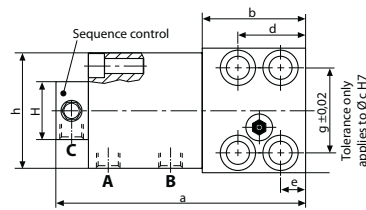
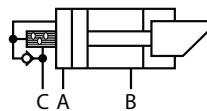
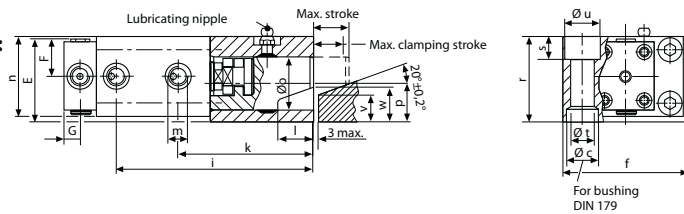


**ROEMHELD**  
HILMA ■ STARK

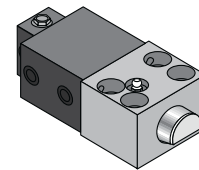
### Wedge clamps with hydraulic position monitoring, suitable for high temperatures:

An additional valve block on the standard wedge clamp enables hydraulic control of the clamping position. Only after the last wedge clamp has been clamped is the machine control released by a pressure switch on the pressure generator.

Resistant to temperatures of up to 160°C  
(higher temperatures on request)



A = Hydraulic port "clamping"  
B = Hydraulic port "unclamping"  
C = Hydraulic port "sequence valve"



\* In the case of the 25 kN version, the lubricating nipples protrude by 5 mm and are offset by 9.5 mm

\*Clamping force \*\*Permissible retention force (for details, see 2.2400, page 2)

<b>Max. clamping force * (kN)</b>	<b>25</b>	<b>50</b>	<b>100</b>	<b>160</b>	<b>250</b>	<b>400</b>	<b>630</b>
Perm. retention force** (kN)	35	65	130	210	320	520	820
Screw property class 8.8							
<b>Max. operating pressure (bar)</b>	<b>350</b>	<b>275</b>	<b>350</b>	<b>350</b>	<b>350</b>	<b>350</b>	<b>350</b>
Cylinder-Ø (mm)	25	40	50	63	80	100	125
Max. stroke (mm)	20	25	25	30	32	40	40
Clamping stroke (from/to) (mm)	15 - 18	18 - 22	19 - 22	23 - 27	24 - 29	30 - 36	30 - 36
Max. oil consumption (cm <sup>3</sup> )	10	31	49	94	161	314	491
Sequence control at (mm)	12	14	14	17	17	22	22
a (mm)	152	187	220	262	302	345	410
b (mm)	58	78	100	125	150	180	225
Ø c H7 x depth (mm)	18/7	26/9	30/11	35/11	48/13	55/16	62/16
d (mm)	38	46	58	75	78	95	108
e (mm)	14	16	20	25	26	32	38
f (mm)	70	95	120	150	200	240	280
g (mm)	48	65	85	106	140	180	210
h (mm)	65	85	100	125	160	200	230
i (mm)	111	146	177	210	246	285	344
k (mm)	76	102	127	151	184	215	272
l (mm)	20	25	26	32	40	45	50
m	G ¼	G ¼	G ¼	G ½	G ½	G ½	G ½
n (mm)	45	63	75	95	120	150	180
Ø o (mm)	30	40	55	70	80	100	125
p (mm)	21,5	28	37	49	55	75	85
r (mm)	48	65	80	105	125	160	190
s (mm)	13	18	20	26	32	38	44
Ø t (mm)	13	17	21	26	33	39	45
Ø u (mm)	20	26	32	40	48	57	66
v (mm)	15	18	25	30	30	50	60
w (mm)	19,5	23,5	30,5	37,0	38,0	60	70,0
E (mm)	48	68	75	89	96,5	116,5	131,5
F (mm)	22,5	31,5	37,5	47,5	60	75	90
G (mm)	16	14	14	16	16	16	16
H (mm)	64	48	48	90	90	90	90
Screw DIN 912-8.8 (4 pieces)	M 12	M 16	M 20	M 24	M 30	M 36	M 42
Tightening torque (Nm)	86	210	410	710	1450	2520	4050
Weight (kg)	3,0	6,5	11,4	21,7	41	74,7	126
<b>Part no.</b>	<b>8.2403.2500</b>	<b>8.2404.2500</b>	<b>8.2405.2500</b>	<b>8.2406.2500</b>	<b>8.2407.2500</b>	<b>8.2408.2500</b>	<b>8.2409.2500</b>
<b>Accessories Bushings DIN 179</b>	12 x 12	17 x 16	21 x 20	26 x 20	32 x 25	38 x 30	44 x 30
<b>Part no.</b>	<b>3300 285</b>	<b>3300 287</b>	<b>3300 288</b>	<b>3300 289</b>	<b>3300 420</b>	<b>3300 430</b>	<b>3300 440</b>

Subject to technical modification

**2.24007**

05/2011



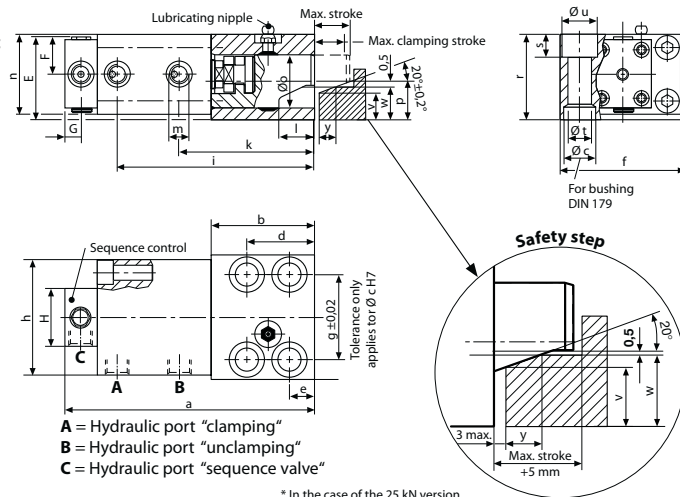
**ROEMHELD**  
HILMA ■ STARK

## Wedge clamp with sequence valve control + safety step

**Wedge clamps with hydraulic position monitoring, suitable for high temperatures:**  
An additional valve block on the standard wedge clamp enables hydraulic control of the clamping position. Only after the last wedge clamp has been clamped is the machine control released by a pressure switch on the pressure generator.

**A high degree of safety:**  
This design features a clamping bolt with an additional accommodation surface which is parallel to the clamping edge. Should the pressure drop (machine failure or standstill), the upper die will lower onto the safety step where it is safely held in position.

Resistant to temperatures of up to 160°C  
(higher temperatures on request)



\*Clamping force \*\*Permissible retention force (for details, see 2.2400, page 2)

	25	50	100	160	250	400	630
<b>Max. clamping force * (kN)</b>	<b>25</b>	<b>50</b>	<b>100</b>	<b>160</b>	<b>250</b>	<b>400</b>	<b>630</b>
Perm. retention force** (kN)	35	65	130	210	320	520	820
Screw property class 8.8							
<b>Max. operating pressure (bar)</b>	<b>350</b>	<b>275</b>	<b>350</b>	<b>350</b>	<b>350</b>	<b>350</b>	<b>350</b>
Cylinder-Ø (mm)	25	40	50	63	80	100	125
Max. stroke (mm)	20	25	25	30	32	40	40
Clamping stroke (from/to) (mm)	15 - 18	18 - 22	19 - 22	23 - 27	24 - 29	30 - 36	30 - 36
Max. oil consumption (cm <sup>3</sup> )	10	31	49	94	161	314	491
Sequence control at (mm)	12	14	14	17	17	22	22
a (mm)	152	187	220	262	302	345	410
b (mm)	58	78	100	125	150	180	225
Ø c H7 x depth (mm)	18/7	26/9	30/11	35/11	48/13	55/16	62/16
d (mm)	38	46	58	75	78	95	108
e (mm)	14	16	20	25	26	32	38
f (mm)	70	95	120	150	200	240	280
g (mm)	48	65	85	106	140	180	210
h (mm)	65	85	100	125	160	200	230
i (mm)	111	146	177	210	246	285	344
k (mm)	76	102	127	151	184	215	272
l (mm)	20	25	26	32	40	45	50
m	G ¼	G ¼	G ¼	G ½	G ½	G ½	G ½
n (mm)	45	63	75	95	120	150	180
Ø o (mm)	30	40	55	70	80	100	125
p (mm)	21,5	28	37	49	55	75	85
r (mm)	48	65	80	105	125	160	190
s (mm)	13	18	20	26	32	38	44
Ø t (mm)	13	17	21	26	33	39	45
Ø u (mm)	20	26	32	40	48	57	66
v (mm)	15	18	25	30	30	50	60
w (mm)	17,5	21,2	28,2	34,7	35,3	57,3	67,3
y (mm)	7	9	10	14	14	20	21
E (mm)	48	68	75	89	96,5	116,5	131,5
F (mm)	22,5	31,5	37,5	47,5	60	75	90
G (mm)	16	14	14	16	16	16	16
H (mm)	64	48	48	90	90	90	90
Screw DIN 912-8.8 (4 pieces)	M 12	M 16	M 20	M 24	M 30	M 36	M 42
Tightening torque (Nm)	86	210	410	710	1450	2520	4050
Weight (kg)	3,0	6,5	11,4	21,7	41	74,7	126
<b>Part no.</b>	<b>8.2403.3500</b>	<b>8.2404.3500</b>	<b>8.2405.3500</b>	<b>8.2406.3500</b>	<b>8.2407.3500</b>	<b>8.2408.3500</b>	<b>8.2409.3500</b>
<b>Accessories</b> Bushings DIN 179	12 x 12	17 x 16	21 x 20	26 x 20	32 x 25	38 x 30	44 x 30
<b>Part no.</b>	<b>3300 285</b>	<b>3300 287</b>	<b>3300 288</b>	<b>3300 289</b>	<b>3300 420</b>	<b>3300 430</b>	<b>3300 440</b>

2.24008

12/2011

Subject to technical modification

## Wedge clamp with flanged single valve control

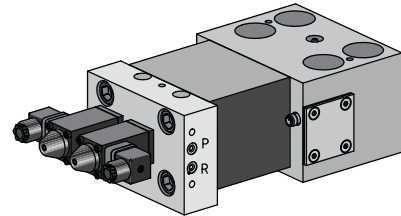


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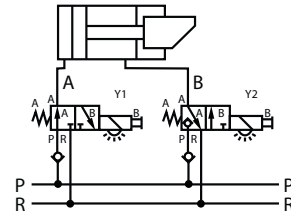
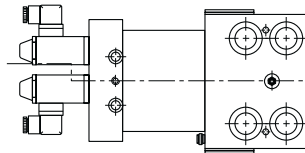
**Wedge clamps with directional seat valves flanged to the rear serving as control valves for an individual activation of all clamps**

Benefits:

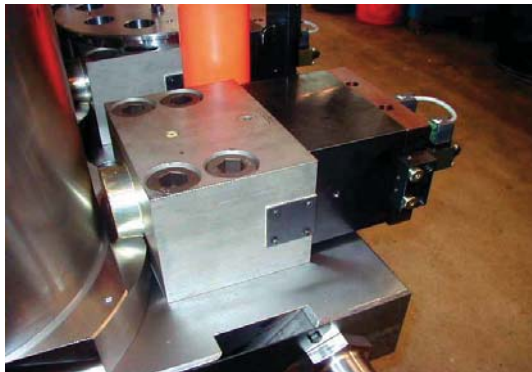
- Each element can be individually activated
- Single dies can be clamped
- Little installation work as a result of a plug-type closed hydraulic circuit
- Suitable for BUS systems
- High degree of operational safety thanks to integral position monitoring and check valves.
- On request available with a safety step.
- Very rugged clamp with a high standard of safety and a long service life



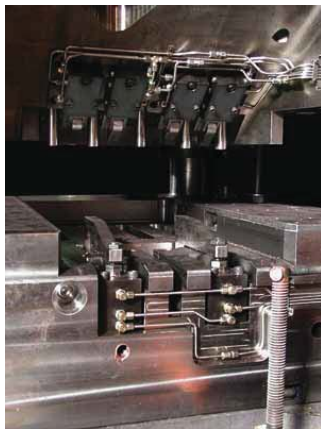
Resistant to temperatures of up to 100°C,  
120°C for 1000 working hours  
Clamping force from 100 to 630 kN  
Operating pressure 350 bar  
Valve voltage 24 V DC



**Dimensions, interfaces  
and other technical details  
will be defined in the planning phase.**



5-stage drop forging press equipped with wedge clamps with directional seat valves to activate the different stages



Use of wedge clamps with sequence valve control in a forging press



Wedge clamps with flanged directional seat valves. Clamping and unclamping positions are electrically controlled. Little installation work as a result of plug-type connections between the clamps.

Subject to technical modification

**2.24009**

05/2011