Content
Product group 6

Hilma-Römheld GmbH
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High-pressure spindle, mechanical with integral wedge system

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Original size
Section of high-pressure spindle

Applications:

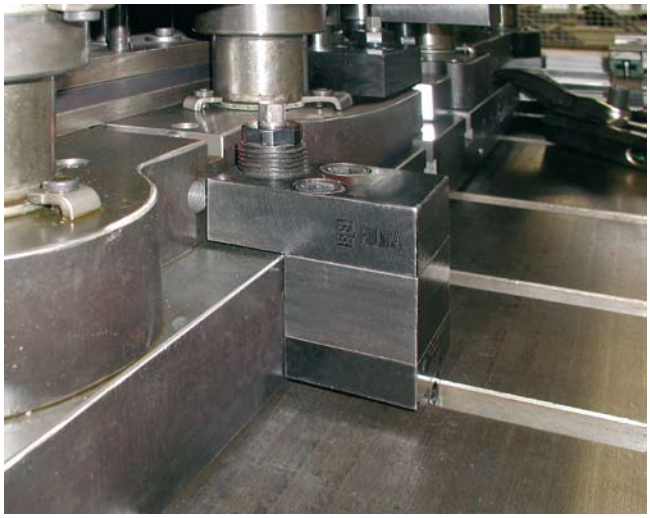
- in ledges and blocks
- for workpiece and die clamping and locking
- when the available space is limited
- in presses, punching machines and machine tools

Function:

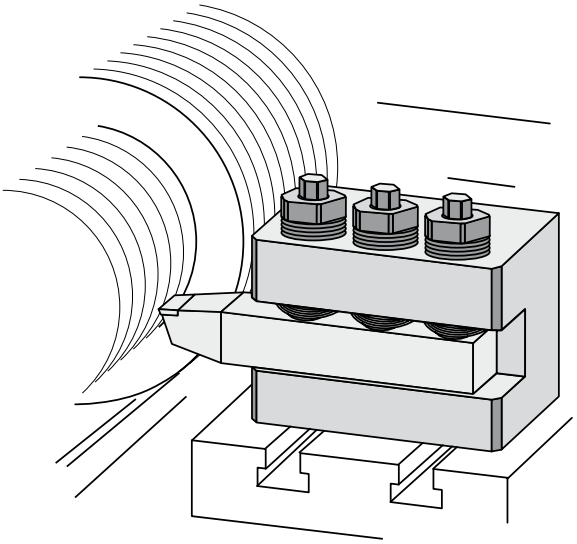
Following manual positioning of the high-pressure spindle against the clamping edge, the wedge system is brought into action by turning the hexagon nut (SW1), and the clamping force is transmitted axially to the clamping point. The required clamping force is achieved by selecting the appropriate torque on the torque wrench (see force - torque diagram). For unclamping, proceed in the reverse order.

Special features:

- Suitable for retrofit
- Compact design allows for multiple clamping
- Clamping force of between 40 and 120 kN
- High clamping force with low torque
- Self-locking by patented wedge system
- Individually usable



Example of application



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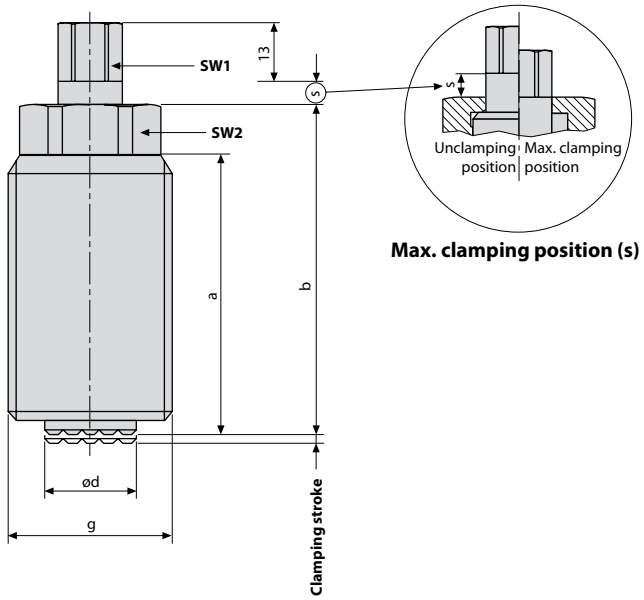
High-pressure spindle, mechanical with integral wedge system

Clamping force (kN)	**40**	**80**	**120**
Clamping stroke (mm)	**1,5**	**2,2**	**2,5**
Max. tightening torque (Nm)	45	90	140
Static load max. (kN)	80	160	240
a (mm)	62	75	90
b (mm)	73	90	110
Ød (mm)	19	28	39
g (mm)	M 36 x 3	M 48 x 3	M 64 x 4
Monitoring of clamping stroke s (mm)	5	7,5	8,5
SW 1 (mm)	13	17	19
SW 2 (mm)	30	41	55
Weight (kg)	0,5	2,0	2,5
Part no..	**2272-210**	**2273-210**	**2274-210**

Other sizes and threads (e.g. inch) are available on request.



Max. clamping position (s)

Accessories:

Torque wrench 20 - 100 Nm
Part no. 9.3792.6610
Torque wrench 40 - 200 Nm
Part no. 9.3792.6620

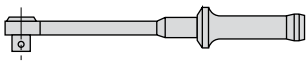
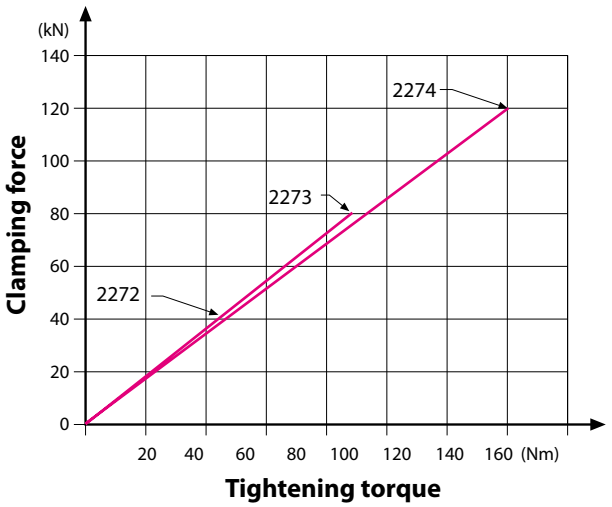


Diagram:
Clamping force - tightening torque



Note:

Before applying the tightening torque, the high-pressure spindle must be screwed against the clamping edge so that there is no play. If the parts are not rigid, tighten the high-pressure spindle using the hexagon nut (SW 2) until there is no play.
High-pressure spindles are permanently lubricated and are maintenance-free under normal conditions of use.

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Clamping nut, mechanical with integral planetary gear

Planetary gear
inside the clamping nut
for clamping force multiplication

Applications:

- for clamping and locking dies on press beds and rams
- on beds of machine tools
- when the available space is limited

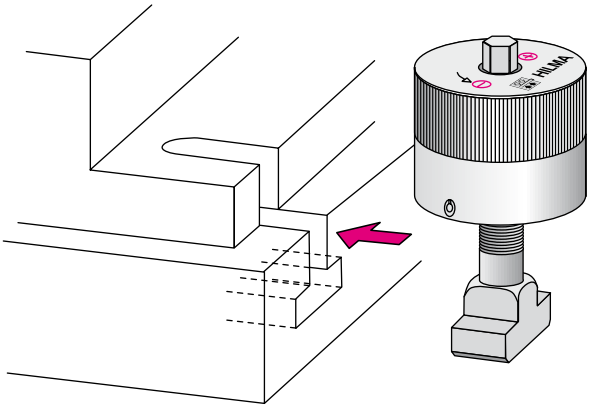
Function:

Following manual positioning of the clamping nut against the clamping edge, the integral planetary gear is brought into action by turning the hexagon nut. As a result of the gear transmission, the tightening torque is multiplied. In order to reliably ensure the required clamping force, we recommend that a torque wrench is used.

Special features:

- Suitable for retrofit
- Compact design allows for multiple clamping
- Intensification of clamping force possible in case of multiple clamping
- High clamping force with low torque
- Compensates for large clamping edge tolerances
- Easy manual clamping and unclamping

Example of application



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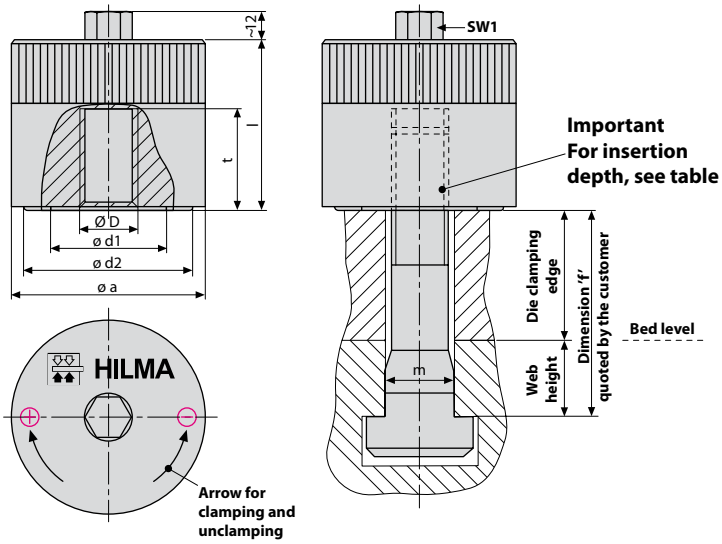
Clamping nut, mechanical with integral planetary gear

Example of ordering: 2275-820/ F80

Clamping nut, mechanical
T-slot: 22 mm
Clamping force: 60 kN

Functional dimension '**f**' = 80 (mm) to be quoted in the order

Functional dimension 'f':
die clamping edge
+ web height of T-slot
= dimension '**f**'



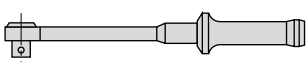
Clamping nut with and without a T-slot adapter

T-slot DIN 650 (mm)	18	22	28	36	42	42
Clamping force (kN)	**60**	**60**	**100**	**150**	**150**	**200**
Tightening torque (Nm)	25	30	45	70	75	120
D (mm)	M 16	M 20	M 24	M 30	M 36	M 36
a (mm)	62	62	73	83	83	120
d1 (mm)	32	32	42	52	52	82
d2 (mm)	60	60	71	81	81	118
l (mm)	50	50	70	75	75	80
t (mm)	24	24	35	40	40	45
SW 1 (mm)	13	13	15	17	17	17
Insertion depth min. (mm)	16	16	25	30	30	35
Insertion depth max. (mm)	24	24	35	40	40	45
Clamping nut with T-slot adapter Part no.	**2275-816**	**2275-820**	**2276-824**	**2277-830**	**2277-836**	**2278-836**
Weight ca.(kg)	2,0	2,1	3,2	5,5	6,5	6,5
Clamping nut without T-slot adapter Part no.	**2275-716**	**2275-720**	**2276-724**	**2277-730**	**2277-736**	**2278-736**
Weight ca. (kg)	0,9	0,85	1,7	2,2	2,1	4,6

Other sizes and threads (e.g. inch) are available on request.

Accessories:

Torque wrench 20 - 100 Nm
Part no. 9.3792.6610
Torque wrench 40 - 200 Nm
Part no. 9.3792.6620



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Clamping nut, hydro-mechanical

maximum power density in the smallest space

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Applications:

- for clamping and locking dies on press beds and rams
- on beds of machine tools
- when maximum clamping force is required in the smallest space
- when no power unit is available

Function:

Following manual positioning of the clamping nut against the clamping edge, the integral hydraulic cushion is pre-loaded by turning the hexagon socket. A low torque is translated into a high clamping force.
In the case of versions without clamping force control, use a torque wrench to ensure safe and defined build-up of the clamping force. In the case of versions with clamping force control, the clamping force indicator pin will project by approx. 2.5 mm when the clamping force is reached.

Special features:

- Clamping nut with a through thread, which means high adaptability to varying heights of clamping edges and tolerances.
- Safe clamping using the clamping force indicator pin (option)
- No need for adaptation of the tie rod length
- Suitable for retrofit
- Intensification of clamping force possible in the case of multiple clamping
- High clamping force with low torque
- Easy manual clamping and unclamping

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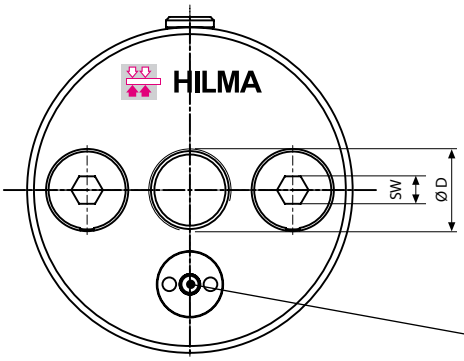
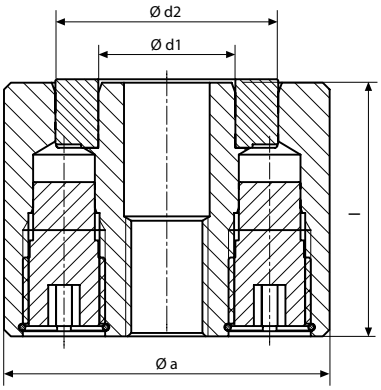
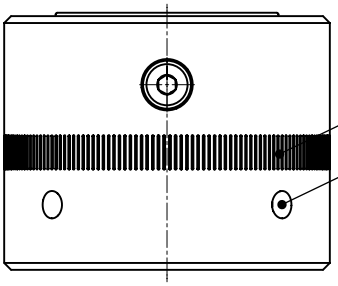
Clamping nut, hydro-mechanical

maximum power density in the smallest space



Clamping force indicator pin (option)
Upon reaching of the nominal clamping force the indicator pin will project by 2.5 mm





Grooves to give grip

Borehole for preloading the nut using a sickle spanner

Clamping nut, supplied separately

Clamping force (kN)	60	100	150
Max. stroke* (mm)	2	2	2
Tightening torque (Nm)	9	30	—
D (mm)	M 20	M 24	M 30
a (mm)	70	95	112
d1 (mm)	30	40	50
d2 (mm)	50	65	80
SW (mm)	8	8	10
l (mm)	71	75	90
Weight (kg)	2,0	3,7	6,1
without clamping force display Part no.	**8.2275.0001**	**8.2276.0001**	**8.2277.0001**
with clamping force display Part no.**	**8.2275.0002**	**8.2276.0002**	**8.2277.0002**

* Stroke at maximum adjustment of pressure screws. Preload the nut using a sickle spanner before operating the pressure screws.

** Supplied including Allen key, no torque wrench is required.
Permissible temperature variation: ±20°C

T-slot adapter, supplied separately

For T-slot (mm)	22	28	36
Thread	M 20	M 24	M 30
Length (mm)	200	250	250
Property class	8.8	8.8	8.8
Part no.	**5700023**	**5700024**	**5700048**

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