GERMA
HYDRAULIKZYLINDER

SPRING CLAMPING CYLINDER TYPE 82-70
PUSHING AND PULLING

- **Clamping force:** 15 kN – 130 kN
- **Release stroke:** 2 mm or 4 mm
- **Seal variants:** NBR (80°C)
- **Piston rod:** Internal thread
- **Accessories:** Locknuts
- **Possible custom series:** Special housing, Special stroke lengths, Special pistons

TYPE 82-70

Operating pressure: see clamping force diagram
Lateral forces on the piston rod must be avoided

Spring clamping cylinders are particularly suitable for **long-term clamping** applications, such as fixtures, pallets, and workpieces.

Clamping is performed **mechanically** via the **disc spring stack** integrated in the cylinder. Release is carried out **hydraulically** (see clamping force diagram). As a result, the clamping force is **maintained** even in the event of a pressure drop.

In the depressurized state, the piston is in its mechanical end position. When the piston is subjected to a so-called **release pressure**, this pressure compresses the **disc spring stack** (depending on the applied release pressure), causing the piston to move through a corresponding **release stroke**.
As soon as the pressure on the piston is removed, the integrated disc spring stack pushes the piston back – the cylinder clamps mechanically.

Our spring clamping cylinders are available in four different sizes. Each **size** can optionally be supplied with a **2 mm** or **4 mm** release stroke.

PERFORMANCE FEATURES TYPE 82-70

- **Can be used as both pulling and pushing cylinder**
- **Available with two stroke variants (2 mm and 4 mm)**
- **Large adjustment range due to long external thread on the cylinder bod**
- **Mounting via locknuts or by means of 4 holes on the flange**
- **Clamping is performed mechanically**
- **Release is carried out hydraulically**
- **Roller-burnished cylinder bore**

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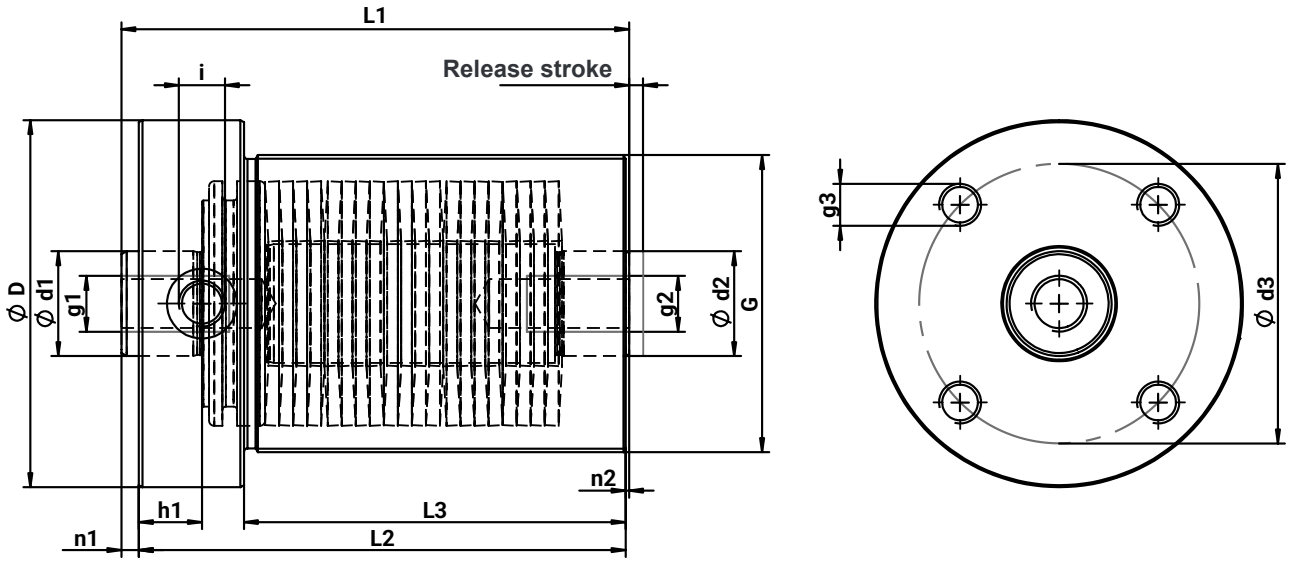
DIMENSION TABLE
AND ORDER NUMBER

TYPE 82-70



Basic designation		82-70	82-71	82-72	82-73
D	(mm)	75	90	105	130
d1	(mm)	20	30	30	50
d2	(mm)	18	25	30	40
d3	(mm)	56	70	80	106
G		M52x1,5	M75x1,5	M85x2	M115x2
g1		M12x20	M16x25	M16x30	M24x30
g2		M10x20	M12x20	M16x30	M20x30
g3		M6x15	M10x12	M12x12	M14x15
h1	(mm)	13	14	18	23
i		G1/4	G1/4	G1/4	G1/4

Release stroke	(mm)	**2**	**2**	**2**	**2**
L1	(mm)	102	111	145	163
L2	(mm)	98	105	139	154
L3	(mm)	73	80	109	119
n1	(mm)	3 (1)	5 (3)	5 (3)	8 (6)
n2	(mm)	1(3)	1 (3)	1 (3)	1 (3)
Order number		**82-70-1**	**82-71-1**	**82-72-1**	**82-73-1**

Release stroke	(mm)	**4**	**4**	**4**	**4**
L1	(mm)	168	170	230	249
L2	(mm)	162	164	224	240
L3	(mm)	137	139	194	205
n1	(mm)	5 (1)	5 (1)	5 (1)	8 (4)
n2	(mm)	1 (5)	1 (5)	1 (5)	1 (5)
Order number		**82-70-2**	**82-71-2**	**82-72-2**	**82-73-2**

The values in brackets for dimensions n1 and n2 indicate the dimension at fully extended release stroke.

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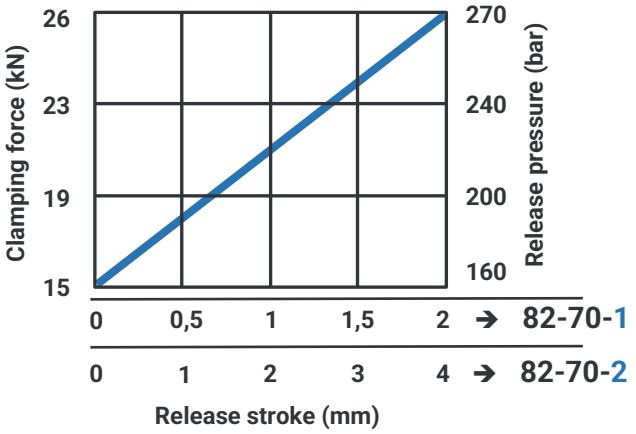
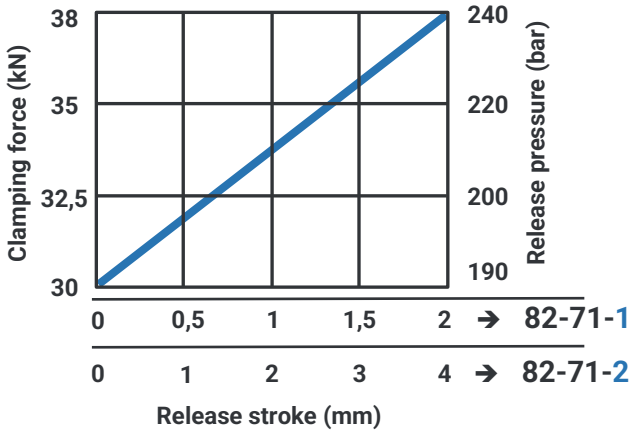
CLAMPING FORCE DIAGRAMS TYPE 82-70

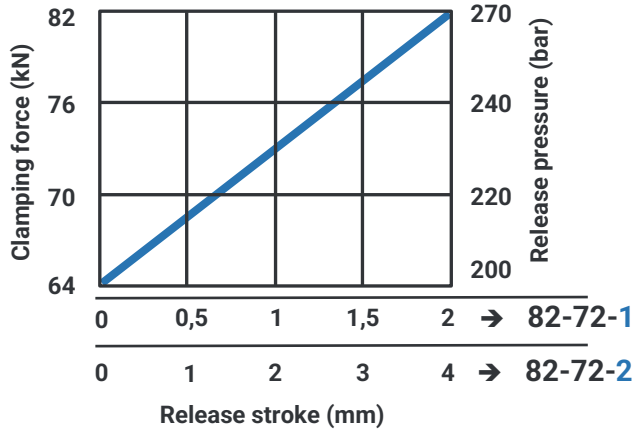
Clamping force diagram 82-70-



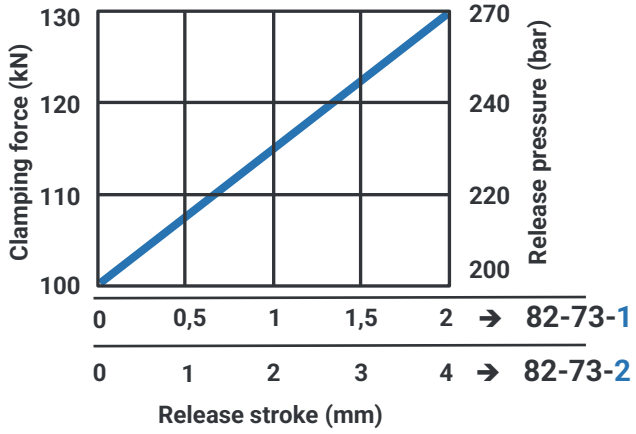
Clamping force diagram 82-71-



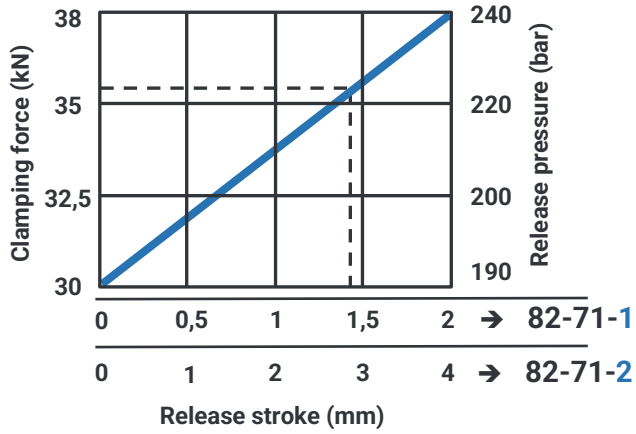
Clamping force diagram 82-72-



Clamping force diagram 82-73-



Explanation of the diagram



Example for 82-71-1/2

On the left, the clamping force diagram for 82-71-1 and 82-71-2 is shown as an example.

For cylinder **82-71-1**, the clamping force is 35.5 kN after a release stroke of **1.4 mm**. The required release pressure for this is approx. 223 bar.

For cylinder **82-71-2**, the clamping force is 35.5 kN after a release stroke of **2.8 mm**. The required release pressure for this is approx. 223 bar.

Note: According to DIN EN 16983 (formerly DIN 2093), force tolerances of +15% to -7.5% are possible.

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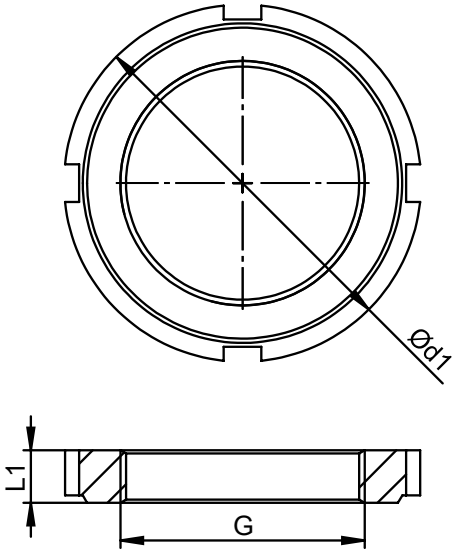
ACCESSORIES
Locknuts

TYPE 82-70



Locknuts

Locknuts are available for GERMA spring clamping cylinders, allowing the cylinder to be mounted and locked in position on the fine thread.

Order No.:	G	d1	L1
NM-52	M52x1,5	80	13
NM-75	M75x1,5	110	14
NM-85	M85x2	120	16
NM-115	M115x2	165	18

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