



• Piston diameter:	25 mm – 80 mm
• Stroke:	10 mm – 25 mm
• Seal variants:	NBR (80°C) and FKM (180°C)
• Piston rod:	Through-bore with/without internal thread
• Accessories:	Locknuts
• Possible custom series:	Special housing Special stroke lengths Special pistons

TYPE 82-60

Operating pressure: max. 500bar
Lateral forces on the piston rod
must be avoided

Our **hollow piston cylinders** are designed to meet the requirements of a wide range of applications and are used in **mechanical engineering, fixture construction, mold and tool making**, as well as **plant engineering**. In **double-acting hollow piston cylinders**, both extension and retraction of the piston rod are performed hydraulically. This allows movement under pressure in both directions.

Type 82-60 – Double-acting

The **Type 82-60 hollow piston cylinder** features a through-bore in the piston rod. Especially in combination with a tie rod, this enables a wide range of applications. The diameter of the through-bore in the piston is matched to the corresponding tie rod (strength class 8.8). The cylinder can be used as both a pushing and pulling cylinder. The pressure medium is supplied via pipe thread connections according to DIN ISO 228-1.

If a piston rod with a metric ISO internal thread is required, a Heli-Coil insert with a length of $1.5 \times d$ is screwed into the standard HC thread (see dimension "g") prior to delivery (order index "1").

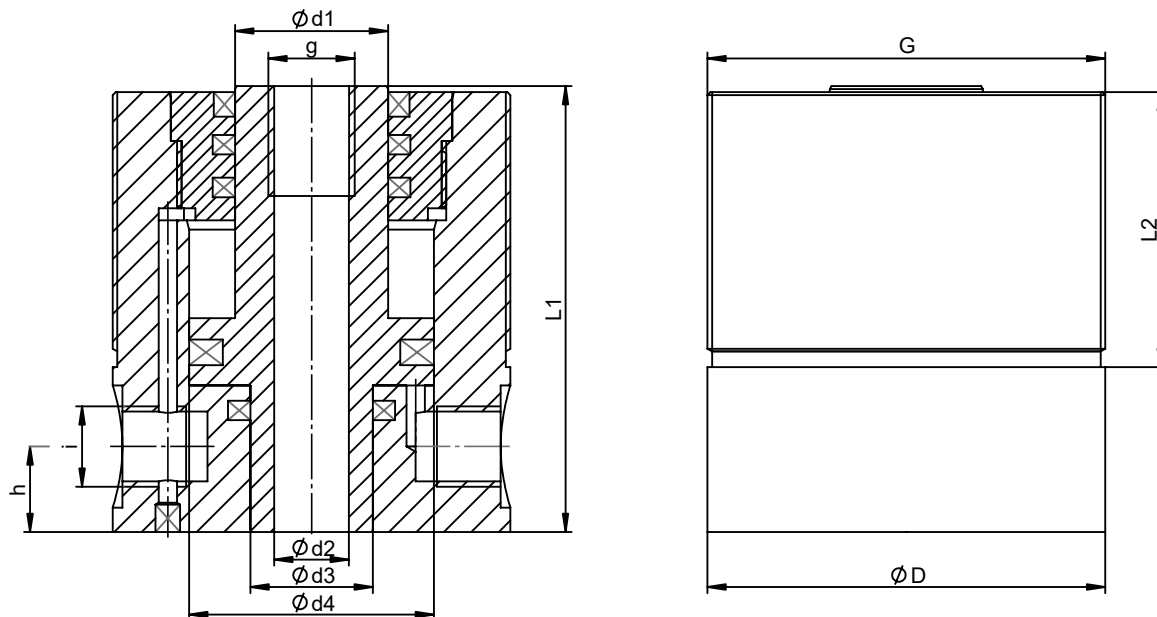
Example:

HC M8 corresponds to M8×12 after installation of the thread insert.

PERFORMANCE FEATURES

TYPE 82-60

- **High force output**
- **Very compact and space-saving design**
- **Internal thread in the piston rod possible by means of an HC insert**
- **Mounting via external thread using a locknut**
- **Application-specific sealing systems**
- **Roller-burnished cylinder bore**



Basic designation		82-60-2	82-61-2	82-62-2	82-63-2	82-64-2	82-65-2
Stroke	(mm)	10	10	16	16	20	25
Compressive force per 100 bar	(kN)	3,77	6,03	9,42	14,72	23,12	37,68
Tensile force per 100 bar	(kN)	2,89	4,90	7,65	11,59	18,60	30,63
Piston area (forward stroke)	(cm ²)	3,77	6,03	9,42	14,72	23,12	37,68
Piston area (return stroke)	(cm ²)	2,89	4,90	7,65	11,59	18,60	30,63
d1	(mm)	16	20	25	32	40	50
d2	(mm)	8,2	10,2	12,2	16,2	20,2	27,2
d3	(mm)	12	16	20	25	32	40
d4	(mm)	25	32	40	50	63	80
D	(mm)	50	55	65	70	80	100
g		HC M8	HC M10	HC M12	HC M16	HC M20	HC M27
G	(mm)	M50x1,5	M55x1,5	M65x1,5	M70x1,5	M80x2	M100x2
h	(mm)	11	12	14	14	18	22
i		G1/8	G1/4	G1/4	G1/4	G1/4	G1/4
L1	(mm)	60	65	73	79	96	110
L2	(mm)	36	41	45	50	60	65

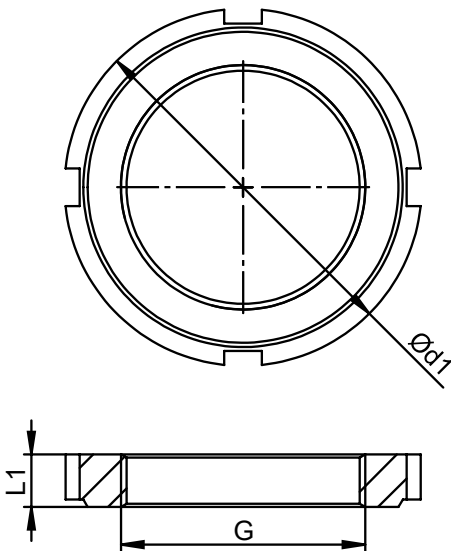
Order number without thread insert	82-60-2-0	82-61-2-0	82-62-2-0	82-63-2-0	82-64-2-0	82-65-2-0
Piston rod with HC thread without thread insert (dimension d2 is continuous)						

Order number with thread insert	82-60-2-1	82-61-2-1	82-62-2-1	82-63-2-1	82-64-2-1	82-65-2-1
Thread in the piston rod (dimension g)	M8	M10	M12	M16	M20	M27

FKM seals

All hollow piston cylinders can optionally be equipped with **FKM seals**. These increase the permissible operating temperature from 80°C to 180°C. For this version, the suffix „-V“* must be added to the order number.

Example: 82-62-2-0-V



Locknuts

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

Order No.:	G	d1	L1
NM-50	M50x1,5	75	13
NM-55	M55x1,5	80	13
NM-65	M65x1,5	95	14
NM-70	M70x1,5	100	14
NM-80	M80x2	115	16
NM-100	M100x2	145	16