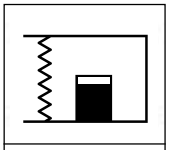
SCHAAF®

Hydraulic Nut

with integrated pressure source (axial)

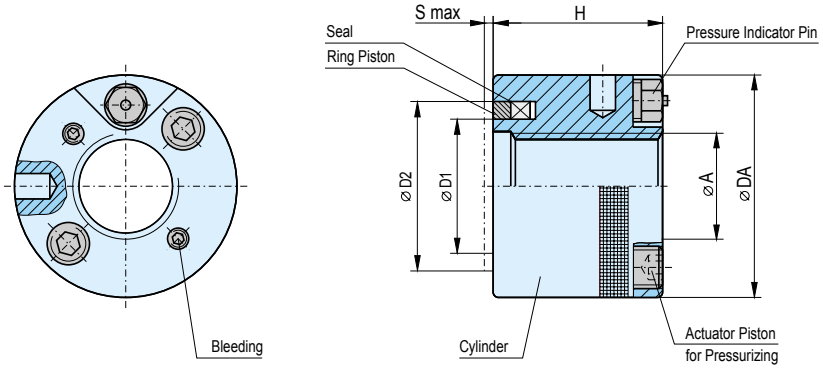
and Pressure Indicator Pin, 2 mm stroke (A 4601) and 4 mm stroke (A 4651)



PG 9

A 4601

A 4651



Article No.	Thread up to Ø A mm	Clamping Force max. kN	OD DA mm	Height H mm	Ring Piston Ø D1 mm	Ring Piston Ø D2 mm	Stroke S max. mm
A 4601.02	20	45	47,5	47	26	34	2
A 4651.02	20	37	54	60	26	34	4
A 4601.03	24	45	55,5	47	32	40	2
A 4651.03	24	45	60	67	32	40	4
A 4601.04	30	52	63	48	38	46	2
A 4651.04	30	78	72	75	40	52	4
A 4601.05	36	60	69	48	44	52	2
A 4651.05	36	76	78	77	44	55	4
A 4601.06	42	95	80	56	50	62	2
A 4651.06	42	95	88	76	50	62	4
A 4601.07	52	111	90	60	60	72	2
A 4651.07	52	74	98	80	60	72	4
A 4601.08	68	122	107	60	82	92	2
A 4651.08	68	81	120	80	82	92	4
A 4601.09	80	159	119	70	88	100	2
A 4651.09	80	76	130	85	88	100	4
A 4601.10	100	166	145	80	110	125	2
A 4651.10	100	83	155	95	110	125	4
A 4651...	1000	Any other design possible due to our own design department.					

The distinguishing feature of Hydraulic Nut **A 4601 and A 4651** is the self-contained system for pressurizing.
No bleeding hydraulic medium (grease).
No connecting and disconnecting to an external pressure source necessary.
A simple Allen key is sufficient to produce high clamping forces.
Ready to use every time!
The pressure indicator pin monitors the nominal clamping force achieved.
Compact OD. Operated from the end face.

How to select:
1. The thread size must be covered by the type in consideration, e.g. M 72 x 4 LH requires at least A 4601.**09**; with 4 mm stroke A 4651.**09**
2. The Ring Piston must match the counterface. If, in the example of M 72 x 4 LH, the counterface has an ID of 90 mm, the next bigger type of Nut is required, i.e. A 4601.**10**. or A 4651.**10,** resp.
3. Please check all relevant dimensions. If they do not fit, ask SCHAAF's consulting service.

Example for ordering: SCHAAF-article No. A 4601.10 with thread M 72 x 4, Left Hand. With 4 mm stroke A 4651.10 with thread M 72 x 4, Left Hand.

Please let us know your requirements; we will be pleased to submit a quick quotation without obligation for you.

www.schaaf-gmbh.com
Visit us on the internet and convince yourself of our innovative services and products.
SCHAAF has been developing and manufacturing high-pressure hydraulic tools since 1954.

TÜV CERT DIN EN ISO 9001:2008 Zertifikat: 09 100 70 172

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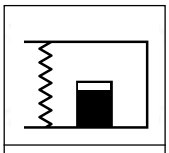

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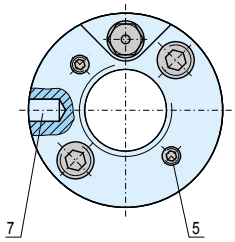
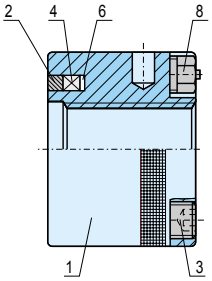
A 4601

A 4651





Functional Characteristics

A SCHAAF Hydraulic Nut of this design has a circular groove which is sealed to the exterior by an axially sliding ring piston and, thus, forms an annular hydraulic chamber. When pressurized, the ring piston is pushed out, contacts the counterface and generates an axial pressure force. Since the ring piston is self aligning it can, within certain limits, adapt to errors in run-out and to an uneven counterface. This characteristic offers a great advantage, in a lot of applications.
In the case of the Hydraulic Nuts, type **A 4601 and A 4651**, the pressure is generated by turning an actuator screw with a simple Allen key which, in turn, displaces the actuator piston. The nominal clamping force has been achieved as soon as the Pressure Indicator Pins is flush with the face of its cartridge.

Advantages:

- torsion free, purely axial generation of the clamping force
- high clamping forces in compact design, accurate repeatability
- long service life without connecting to a pressure source
- due to leakproof seal systems pressure safe = autarkic system
- to use as a machine part i.e. on rotating arbours
- resulting clamping force is independent of the stroke
- no friction in the thread since the Hydraulic Nut is not turned under load (no thread wear)
- SCHAAF-Hydraulic Nuts can be serviced by the customer on site (overhaul by our service department on request)

Examples for Application:

- Fixing a milling cutter on the milling shaft
- Fixing the grinding wheel on the grinding arbour
- Fixing gear tools and components on gear cutting machines
- Fixing the forming rolls on roll forming lines
- Fixing the wheels on roll welding machines
- Fixing of components on the machine table

Note:

- Stroke limited to 2 mm max. (bigger stroke on request)

SCHAAF - Quality means:

- Components manufactured from high tensile materials (wear resisting)
- Constant monitoring to improve quality for all products
- Each Hydraulic Nut and other hydraulic accessories are tested to the operating pressure or higher
- All products are delivered ready for operation
- Detailed technical documentation are part of the delivery (operating manual, drawing and parts list)

Standard Features

Standard SCHAAF Hydraulic Nuts, Type A 4601 or A 4651 resp., consist of:

- Cylinder, knurled (1)
- Ring Piston (retained in the cylinder to prevent loss) (2)
- 2 Actuator Pistons with Actuator Screw, axial (3)
- High Pressure Seal Set for temperatures from -30°C through to +100°C (4)
- Bleeding Screw (5)
- Pressure medium (special high pressure grease) (6)
- Pressure Indicator Pin (8)

and are equipped with:

- radial tommy bar holes (7)
- thread recess for centering
- surface treatment (chemi-blackened)
- Allen key

Variations in equipment:

- **Material**
  - stainless and acidproof steel
  - aluminium alloys
  - various combinations of material
  - seals for elevated temperatures
- **Pressure control by**
  - pressure gauge
  - other methods
- **Locking of the hydraulically generated pre-tensioning force**
  - shims
- **Surface finish**
  - lacquered
  - chemi-nickel coating
  - on customer's request
- **Certificates and Approvals**
  - force characteristic curve
  - work's test certificate
  - approval to customer's specifications

Accessories (optional)

- **Assembly Tools**
  - guiding shaft
  - guiding sleeve
  - sling gear
  - auxiliaries to customer's requirements
- **Service Set for Maintenance by the Customer**

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