

Accurate linear positioning



ETP-OCTOPUS is available as standard for shafts 30-100 mm. Number of mountings 100 000 – 500 000. (pressure dependent). ETP-OCTOPUS is easy to build in, as no hub is required, and allows for fast, frequent and accurate positioning. Customized designs are also offered on request.

Construction

ETP-OCTOPUS is a hydraulic connection which consists of a double-walled hardened steel sleeve with a flange. In the flange there are bores for mounting of a hub and a scraper with a screw joint, threaded connection for hydraulic oil and an air relief screw. The inner diameter has spiral tracks in order to get an even friction and a defined locking force to the shaft.

Operation

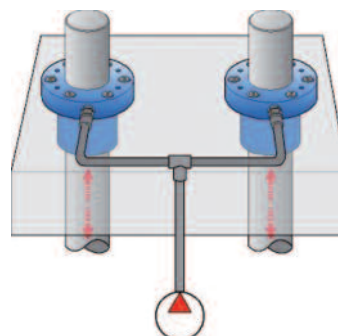
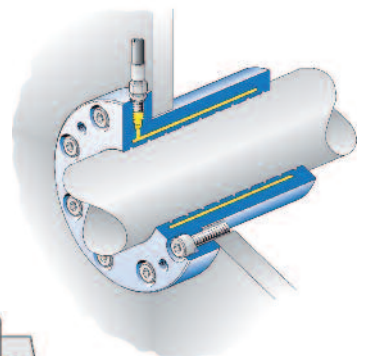
The assembly of the hub is done with the screw joint. When hydraulically pressurized the inner sleeve expands uniformly against the shaft and creates a rigid joint. The sleeve does not expand to the outside.

When the pressure is released the sleeve returns to its original size and can then easily be moved along the shaft to its new position and be re-pressurized.

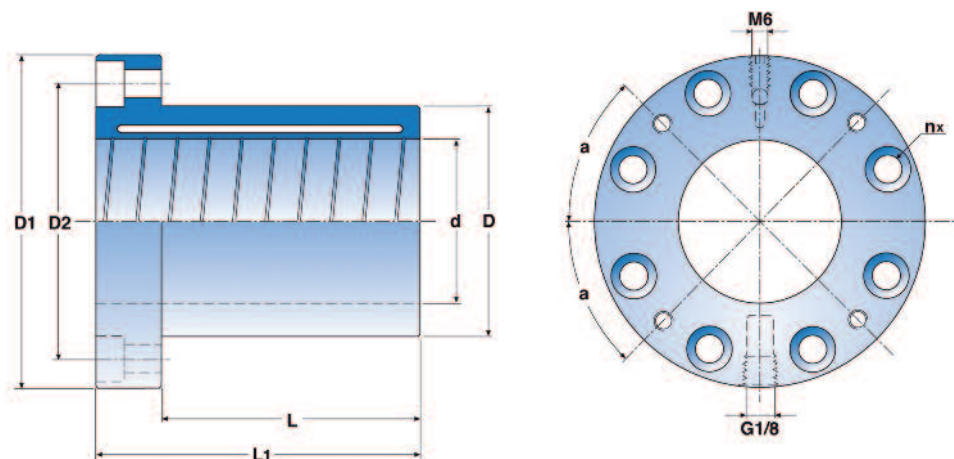
BENEFITS & FEATURES

- Easy to build in.
- Fast and accurate positioning.
- Allows up to 500 000 pressure settings
- High torsional stiffness.
- Both axial force and torque can be transmitted.

No hub is required for a design with ETP-OCTOPUS as the sleeve is thick enough to withstand the hydraulic pressure.



Pressure setting is done with an external pressure source. Several connections can be clamped/loosened simultaneously.



Notation: ETP-OCTOPUS - XX

Technical Specification ETP-OCTOPUS

ETP-OCTOPUS	Dimensions					Transmittable torque or axial force				Screw joint for screw: DIN 912, 12.9				Bore M6 (4 pcs.) for scraper a°	Weight kg
	d mm	D mm	D ₁ mm	L mm	L ₁ mm	T ₁ Nm	T ₂ Nm	FA ₁ kN	FA ₂ kN	n	D ₂ mm	Dim.	T _t Nm		
30	30	42	66	55	75	140	230	9	15	6	52	M6	17	30	0,7
35	35	48	72	55	75	180	300	10	17	6	58	M6	17	30	0,8
40	40	55	79	55	75	270	420*	13	21	6	65	M6	17	30	1,0
45	45	62	86	55	75	370	460*	16	25	6	72	M6	17	30	1,2
50	50	70	101	80	100	710	1000	28	42	8	84	M8	40	45	2,0
60	60	83	114	100	120	1200	1500*	42	62	8	97	M8	40	45	3,0
70	70	97	128	120	140	1700*	1700*	64	92	8	111	M8	40	45	4,6
80	80	110	148	130	150	3300	4000*	84	110	10	128	M10	79	54	6,2
90	90	125	163	130	150	4100	4400*	91	130	10	143	M10	79	54	8,0
100	100	138	176	130	150	4800*	4800*	105	140	10	156	M10	79	54	9,5

T_1 resp. T_2 = transmittable torque when axial force is 0. } At pressure p_1 (350 bar) resp. p_2 (450 bar).
 FA_1 resp. FA_2 = transmittable axial force when torque is 0. }
 *) For these torque values the screw joint sets the upper limit for the torque.
 T_t = recommended tightening torque for the screws.

Dimensions subject to alterations without notice.

TOLERANCES

Shaft: f7.
Hub: H7 for clearance fit.
N7 for light press fit.
Can also be used without a hub.

OPERATING TEMPERATURE

Depends on the surrounding components within the system (connections/hoses).

PRESSURE MEDIUM

All types of hydraulic oils can be used.

SCRAPER

To prevent abnormal wear of the contact surfaces, the use of a scraper to clean the shaft is recommended. It can be mounted in a ring which is fastened with screws to the flange.

NUMBER OF PRESSURE SETTINGS

The number of cycles mainly depends on the pressure. The following guide values can be used:
 $p = 300$ bar: 500 000 cycles.
 $p = 350$ bar: 300 000 cycles.
 $p = 450$ bar: 100 000 cycles.
 More cycles may cause the sleeve to fatigue.

HYDRAULIC PRESSURE

T and FA changes linearly between the given pressures for a certain shaft size. We do not recommend pressures above 450 bar.

LUBRICATION

The surfaces between ETP-OCTOPUS and the shaft should when moving, create a minimum amount of friction in order to avoid wear, but at the same time when clamping give enough holding force.

This will also be maintained if, as we recommend, the surfaces are reasonably lubricated with mineral oil. The spiral tracks inside the sleeve ensures that any unnecessary amount of lubricant is transferred away. Grease or Molybdendisulfide based lubricants should not be used. We recommend the use of nickel or chrome plated shafts as these are the best from a wear point of view because of reduced friction.

SPECIAL DESIGNS

For models which clamp only to the outside or in both directions there are possible solutions. For such cases please send us information and we will then send a suggestion/quotation.