ETP-POWER®

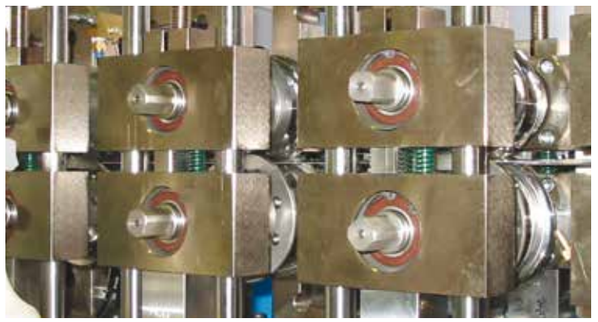
Fast mounting and high radial loads

ETP-POWER is a hydraulic connection with the highest performance among the single screw ETP hub-shaft connections. With ETP-POWER all the positive benefits and features of hydraulic clamping, such as easy handling, compact design and precision, is combined with high radial load capacity due to the specific properties of the pressure medium.

Facilitates assembly of a machine
Manufacturing lines for laminated flooring contains many components, for example levers and timing pulleys, which need to be synchronised and free from backlash. When adjusting the timing belt drive, the pulley can be freely turned around and moved along the shaft and the belt tensioned.

ETP-POWER is used to fasten the large pulley as the tensioning forces applied by the belt leads to high radial loads. Also maintenance work time is saved as only one screw needs to be loosened/ tightened.

Good runout, no axial displacement
In this manufacturing line for aluminium radiators for cars, the rollers are fastened with ETP-POWER. In roller applications there are most often high radial loads applied making ETP-POWER the ideal choice. Also the positioning along the shaft is critical, this is easily adjusted and does not change when the screw is tightened. There are a lot of rollers in the line which are easily changed thanks to the features and benefits of ETP-POWER, when the production is changed.



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ETP-POWER®

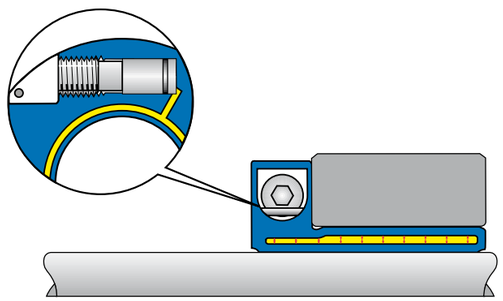
ETP-POWER is available as standard for shafts 15 – 40 mm. Runout ≤ 0,03 mm. Number of mountings 200 - 500 (size dependent). ETP-POWER combines quick mounting with a high radial load capacity due to the specially developed pressure medium.

Construction
ETP-POWER is a hydraulic connection which consists of a double-walled hardened steel sleeve filled with a specially developed pressure medium and a flange. The flange part contains screw and piston with seals to maintain pressure. In the flange there are two pre-machined bores which can be used for mounting location pins, screws to the hub or similar.

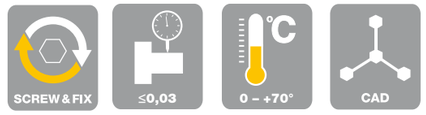
Operation
When the pressure screw is tightened the double-walled sleeve expands uniformly against shaft and hub and creates a rigid joint. Dismantling is done by loosening the screw. ETP-POWER returns to its original dimensions and can easily be dismantled.

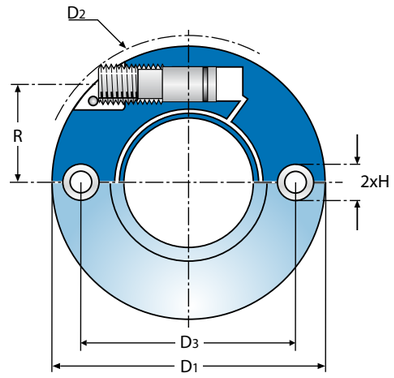
Benefits and features

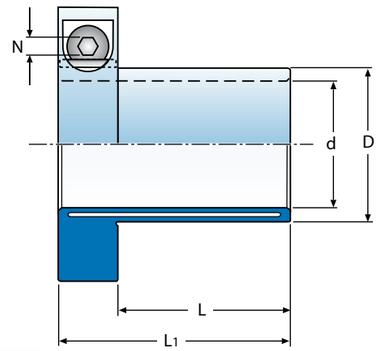
- High radial load capacity.
- Fast mounting/dismantling with only ONE screw.
- Small built-in dimensions.
- Radial tightening of the screw saves space along the shaft.
- Accurate positioning, no axial movement when mounting.
- Good concentricity, also after several mountings.



When the pressure screw is tightened to the recommended tightening torque, the piston has reached the bottom of the bore. ETP-POWER has created a uniform surface pressure against the shaft and hub.







Notation: ETP-POWER XX

Technical specification ETP-POWER®

ETP-POWER®	Dimensions						Transmittable torque	Transmittable axial force	Transmittable radial force	Pressure screw DIN 915, 12.9				Bores 2xH suitable for MC6S screws		Polar moment of inertia J kgm² x10⁻³	Weight kg
	d mm	D mm	D1 mm	D2* mm	L mm	L1 mm	T Nm	FA kN	FR kN	Dim.	R mm	N mm	Tt Nm	D3 mm	Screw Dim.		
15	15	20	51	55	21	35	60	7	2	M10	17,1	5	8	36	M5	0,06	0,19
19	19	26	54	58	27	41	100	8	4	M10	18,2	5	8	40	M5	0,08	0,23
3/4”	19,05	26	54	58	27	41	100	8	4	M10	18,2	5	8	40	M5	0,08	0,23
20	20	27	55	59	28	42	130	11	4	M10	18,9	5	8	41	M5	0,09	0,24
22	22	29	58	62	29	43	210	15	4,8	M10	20,5	5	8	41	M5	0,11	0,27
24	24	32	64	70	33	47	230	15	5,6	M10	22,7	5	8	48	M6	0,17	0,34
25	25	33	67	72	34	48	300	20	6	M10	23,2	5	8	50	M6	0,21	0,38
1”	25,4	33	67	72	34	48	300	20	6	M10	23,2	5	8	50	M6	0,21	0,38
28	28	37	70	76	35	49	325	20	7,2	M10	24,9	5	8	53,5	M6	0,26	0,43
30	30	39	72	80	36	50	530	26	8	M10	26	5	8	55,5	M6	0,29	0,45
1 1/4”	31,75	43	85	92	38	58	550	26	8,8	M16	31	8	25	64,5	M8	0,73	0,82
32	32	43	85	92	38	58	550	26	8,8	M16	31	8	25	64,5	M8	0,73	0,82
35	35	46	88	94	40	60	900	40	10	M16	32,4	8	25	67	M8	0,85	0,88
38	38	50	90	96	44	64	1150	47	11,2	M16	33,1	8	25	70	M8	0,94	0,92
1 1/2”	38,1	50	90	96	44	64	1150	47	11,2	M16	33,1	8	25	70	M8	0,94	0,92
40	40	53	91	96	47	67	1200	47	12	M16	34,2	8	25	72	M8	1,0	1,0
1 3/4”	44,45	58	103	114	51	71	1600	70	14	M16	37,9	8	25	80,5	M8	1,3	1,3

T= Transmittable torque when axial force is 0.
FA=Transmittable axial force when torque is 0.
FR=Max transmittable radial force at continuous operation.
Max allowed bending torque: 10% of transmittable torque T.
} When the screw is tightened to Tt

Tt= Recommended tightening torque for the screw.
Further tightening does not increase the pressure.
*) D2 is valid before mounting.
Dimensions subject to alterations without notice.

TOLERANCES
Shaft k6-h7 for d = 19, 22, 24, 28, 32, 38 mm.
Shaft h8 for all other dimensions d.
Hub H7.

Type of torque
Transmittable torque, T, is for static load.
If the load is alternating or pulsating torque, reduce the transmittable torque, T, with the following factors: (factor x T).
Alternating: 0,5 x T.
Pulsating: 0,6 x T.

For further information see section Technical information/Design tips, page 52-55.

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