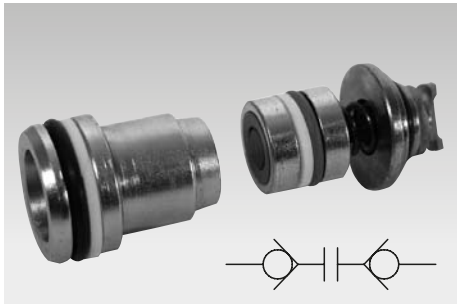




Coupling elements
built-in type and threaded-body type



Built-in type

Application

Coupling elements are used in order to transmit liquid or gaseous media as hydraulic oil or compressed air e.g. in machine tool machines with pallet transfer systems from the machine tool table to the fixture. Due to their compact exterior dimensions these couplings can very well be integrated in fixture designs.

Description

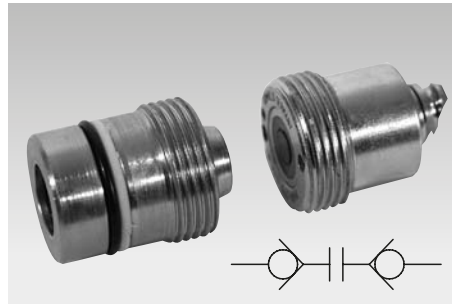
Coupling mechanism and coupling nipple are provided with axial seals (see coupling situation). This results in a very short coupling stroke as well as a smooth front face of the coupling mechanism and thereby only little area of attack by dirt and swarf. The built-in types are designed for mounting in plates and are particularly suitable for the use in multi-couplings (see also data sheet F 9.440)

The threaded-body types can be screwed in directly in the fixture body and are therefore optimum line connections between two components as e.g. basic fixture and changing fixture.

The axial forces generated in the coupling situation have to be compensated externally positively or non-positively.

According to the version the coupling elements can be coupled and uncoupled against pressure or only in depressurised mode (depending on the sealing material).

The long coupling nipple provided with a preloaded valve (PV) can be installed in the return or unclamping line of a clamping fixture. The valve limits a possible pressure build up in uncoupled (static) condition to approx. 5 bar. The preloaded valve is not effective in coupled condition.



Threaded-body type

Advantages

- Coupling elements made of stainless steel
- Only minimum installation dimensions required due to space-saving exterior dimensions
- Three different nominal diameters for optimum adaptation to the flow rate
- Transmission of hydraulic oil, compressed air and vacuum
- Large axial and radial positioning tolerances
- Flush-faced coupling mechanism, thereby reduced danger of contamination and simple cleaning
- Simple fabrication of the location hole for the coupling mechanism by additional bushing
- Threaded-body type with integrated nozzle for cleaning of sealing surfaces (see also page 4)
- Large selection of variants

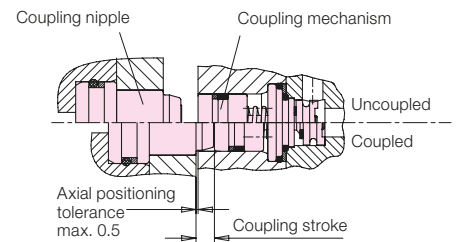
Important notes

The sealing surfaces on the face of the coupling elements have to be cleaned before coupling, to ensure the tightness in coupled condition. We recommend to wash the elements and finally clean them with compressed air. Protection covers should be used as far as possible.

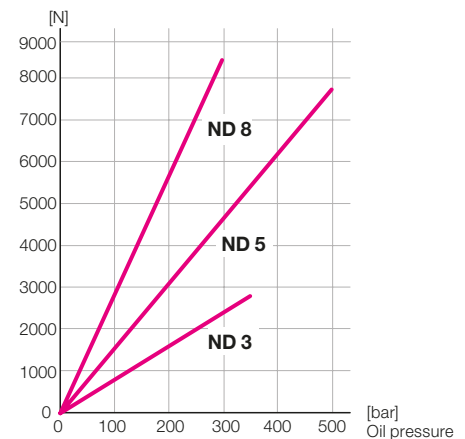
The fixture bodies which are to take up the coupling elements have to be guided 2–3 mm parallel before they are coupled without exceeding the radial positioning tolerance.

To transmit compressed air and vacuum the coupling elements must only be used in depressurised mode.

Coupling situation

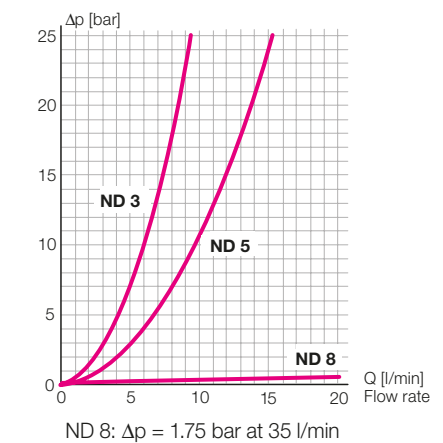


Coupling force



Δp-Q characteristic curve

for cinematic viscosity of $53 \times 10^{-6} \text{ m}^2/\text{s}$ (HLP 22 at 20 °C)



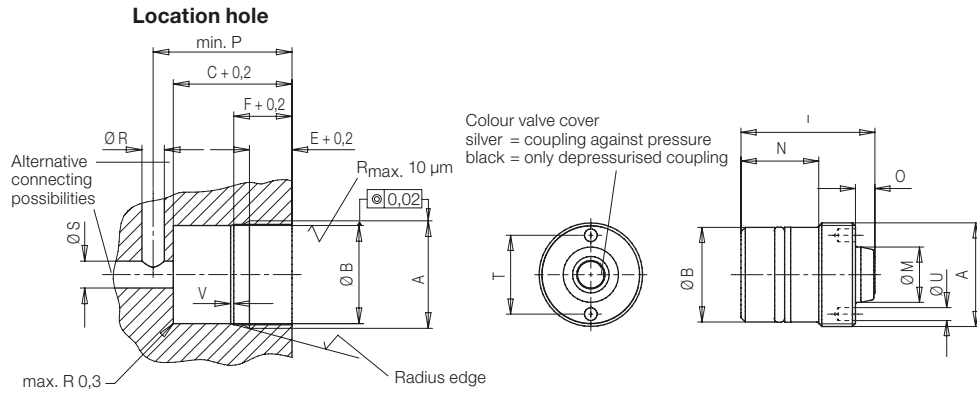
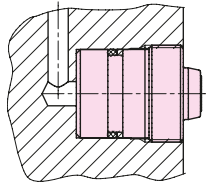
General technical data

Type		Threaded-body	Built-in	Threaded-body	Threaded-body with nozzle	Built-in	Threaded-body	Built-in
Nominal diameter	[ND]	3	3	5	5	5	8	8
Max. operating pressure	[bar]	350	300	500	500	300	300	300
Max. flow rate	[l/min]	8	8	12	12	12	35	35
Coupling stroke	[mm]	4.5	4.5	4.5	4.5	4.5	7.4	7.4
Axial coupling force against pressure per coupling port	[N]	F[N] = 7.9 x p [bar]			F[N] = 15.4 x p [bar]		F[N] = 28.4 x p [bar]	
axial coupling force at 0 bar	[N]	60	60	90	90	90	105	105
axial positioning tolerance	[mm]	+0.5	+0.5	+0.5	+0.5	+0.5	+0.5	+0.5
radial positioning tolerance	[mm]	±0.1	±0.1	±0.25	±0.2	±0.2	±0.2	±0.2
radial positioning tolerance for 0460-776 / -751	[mm]	-	-	±0.5	-	-	-	-
adm. angular deviation	[°]	1	1	1	1	1	1	1

Coupling nipple

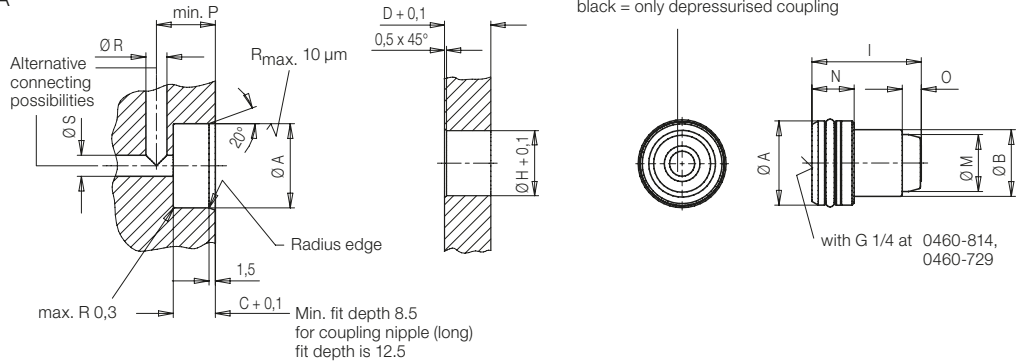
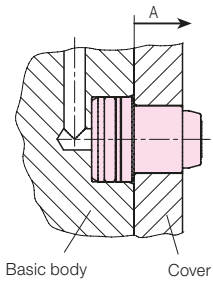
Threaded-body type

Installation example



Built-in type

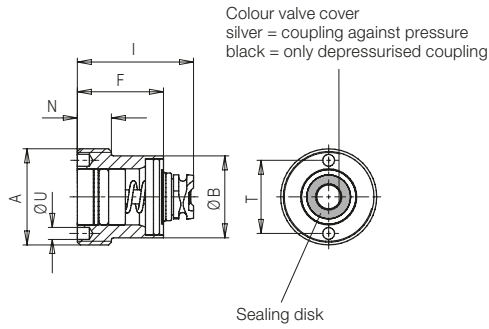
Holding force for cover > axial force A



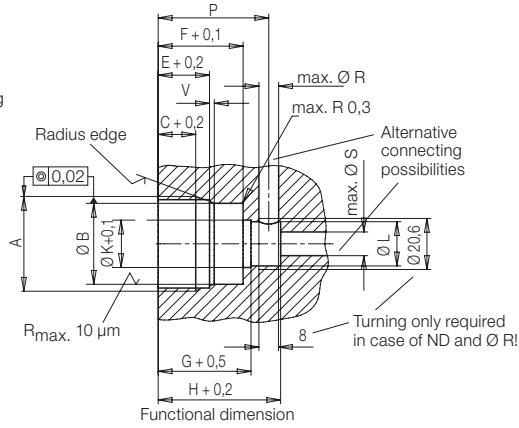
Coupling nipple		Built-in	Threaded-body	Threaded-body with PV	Built-in	Built-in long	Threaded-body	Threaded-body with PV	Built-in	Threaded-body
ND		3	3	3	5	5	5	5	8	8
A	[mm]	20 H7	M20x1.5	M20x1.5	20 H7	20 H7	M24x1.5	M24x1.5	24 H8	M32x1.5
B	[mm]	15.8	17 H7	17 H7	15.8	15.8	21.9 H8	21.9 H8	21	24 H7
C	[mm]	10	22	27.5	10	16.5	26.5	27.5	9	24
D	[mm]	11.5	-	-	11.5	17.1	-	-	15	-
E	[mm]	-	9.5	9.5	-	-	9.5	9.5	-	12.5
F	[mm]	-	11	11	-	-	13	13	-	15
H	[mm]	16	-	-	16	16	-	-	21 H8	-
I	[mm]	25.9	26.5	32	25.9	38.1	31	32	31.4	31.4
M	[mm]	9.8	9.8	9.8	13.5	13.5	12.8	12.8	18.4	18.4
N	[mm]	10	13.5	19	10	16.5	18	19	9	12
O	[mm]	4.5	4.5	4.5	4.5	4.5	4.5	4.5	7.4	7.4
P	[mm]	14	27	32	14	21.1	31	32	14	29
R	[mm]	5	5	5	5	5	5	5	8	8
S	[mm]	5	6	6	5	5	6	6	10	10
T	[mm]	-	15	15	-	-	18.25	18.25	-	24.6
U	[mm]	-	3	3	-	-	3	3	-	4.1
V	[°]	-	1.5x20°	1.5x20°	-	-	0.7x15°	0.7x15°	-	2x30°
Axial force A	[N]	31.4xp [bar]	-	-	31.4xp [bar]	31.4xp [bar]	-	-	45.2xp [bar]	-
Seating torque	[Nm]	-	37	37	-	-	40	40	-	45
Part no.										
Coupling against pressure		0460-692	0460-836	-	0460-691	0460-814	0460-831	-	0460-714	0460-713
Only depressurised coupling		0460-743	0460-838	-	0460-682	0460-729	0460-751	-	0460-841	0460-772
with preloaded valve (PV)		-	-	0460-834	-	0460-837	-	0460-835	-	-
Screw-in tool		-	2010-905	2010-905	-	-	2010-904	2010-904	-	2010-903

Coupling mechanism

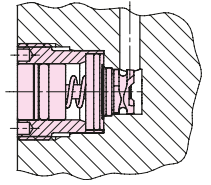
Threaded-body type



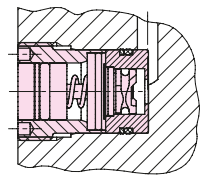
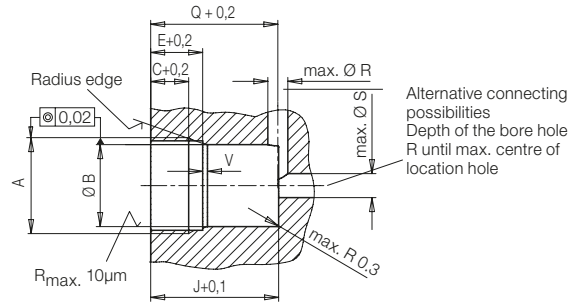
Location hole



Installation example

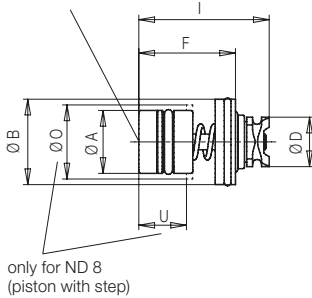


Additional bushing for threaded-body type for simple location holes

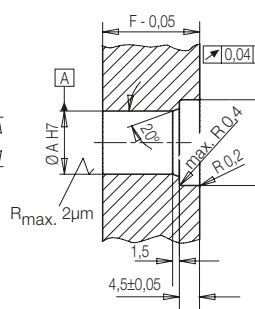


Built-in type

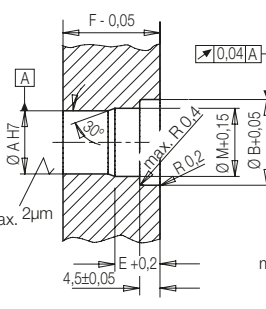
Colour valve cover
silver = coupling against pressure
black = only depressurised coupling



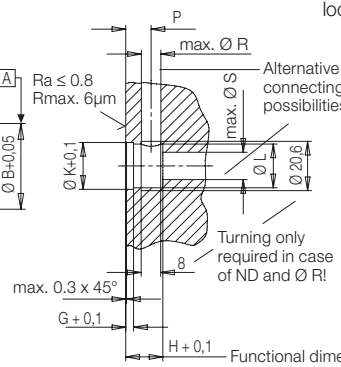
Location plate for ND3 and ND5



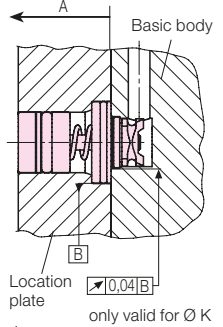
Location plate for ND8



Basic body



Holding force for location plate > axial force A



Coupling mechanism		Threaded-body	Built-in	Threaded-body	Built-in	Threaded-body	Built-in
ND		3	3	5	5	8	8
A	[mm]	M20x1.5	10	M24x1.5	14	M32x1.5	19
B	[mm]	18 H7	15	20.5 H8	19	27 H7	24
C	[mm]	9.5	-	9.5	-	13	-
D	[mm]	-	10.8	-	10.8	-	18
E	[mm]	13	-	13	-	16	14
F	[mm]	21.5	21.5	21.5	21.5	31	31
G	[mm]	23.5	2	23.5	2	-	-
H	[mm]	31	9.5	31	9.5	46.5	15.5
I	[mm]	29.2	29.2	29.2	29.2	44	44
J	[mm]	32	-	32	-	49	-
K	[mm]	12	12	12	12	-	-
L	[mm]	11.2	11.2	11.2	11.2	18 H8	18 H8
M	[mm]	-	-	-	-	-	20.5
N	[mm]	8.5	-	8.5	-	12	-
O	[mm]	-	-	-	-	-	20.2
P	[mm]	28	6.5	28	6.5	38.5	7.5
Q	[mm]	31.8	-	31.8	-	48.8	-
R	[mm]	5	5	5	5	8	8
S	[mm]	6	7	6	7	8	10
T	[mm]	15	-	18.25	-	25	-
U	[mm]	3	-	3	-	4.1	17.5
V	[°]	0.5x20°	-	1.2x15°	-	1x60°	-
Axial force A	[N]	-	17.7xp [bar]	-	28.4xp [bar]	-	45.2xp [bar]
Seating torque	[Nm]	37	-	40	-	45	-
Part no.							
Coupling against pressure		0460-832	0460-818	0460-830	0460-656	0460-711	0460-712
Only depressurised coupling		0460-833	0460-819	0460-776	0460-659	0460-771	0460-839
Additional bushing for simple location hole		0460-884	-	0460-777	-	0460-847	-
Screw-in tool		2010-905	-	2010-904	-	2010-903	-
Sealing disk (spare part)		3001-997	3001-997	3001-999	3001-999	3001-998	3001-998
Mounting tool for sealing disk		-	-	0460-873	0460-873	0460-914	0460-914

