PNEUMATIC CLUTCHES (SAFETY COUPLINGS)

Up to 30.000 Nm of torque and 120 mm bore

AP

ComInTec®
Technology for Safety

AP - pneumatic clutches: introduction

- Simple and precise calibration.
- Transmission engagement / disengagement and torque limiter functions (safety coupling).
- Reliability and repetitiveness of the calibration torque.
- Torque variation whilst in motion, by pressure regulation.
- Free rotation after the disengagement through a complete disconnection between the parts.
- Low residual torque on disconnected parts.
- Models available only with finished bore.

ON REQUEST

- Complete with transmission element machined and assembled (plate wheel, pulley, gear, ...).
- Can be supplied with various types of rigid/elastic couplings for in-line shafts transmission.
- Possibility of shaft connection with finished bore, locking assembly or other systems.
- Available in anti-corrosive version, with specific surface treatments.

A friction clutch or roller with torque adjustment even during operation. Ability to disengage the drive and driven by pneumatic or electrical impulse. Low residual torque after disengagement. Calibration adjustable by changing the pressure (pneumatic) air supply.

APPLICATION FIELD

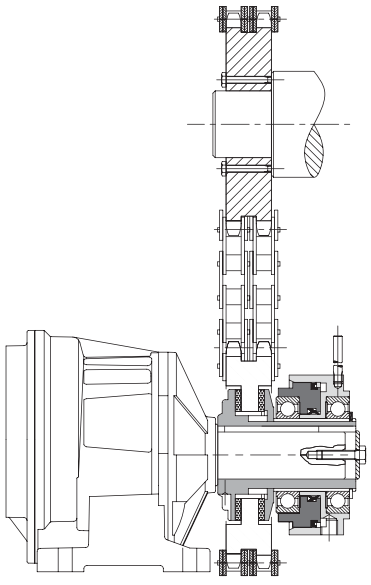
- Machines with variable torque requirements.
- Test benches.
- Coiler and uncoilers.
- Cut format systems.

ADVANTAGES AND BENEFITS

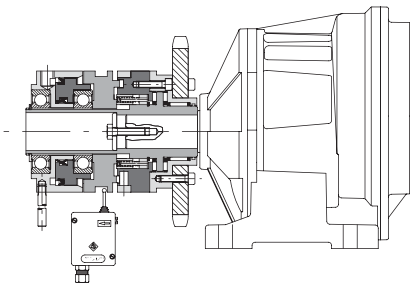
- Engage/disengage different product transmission lines.
- Maintain tension of wire/film coils.
- Regulate different torques depending on the change of the format.
- Protect the motor gearbox against every form of overload.

	DSR/F/AP: Complete engagement-disengagementof the transmission, also for long periods	from 7 to 30000 Nm 120 mm max bore	Page 67
	DSR/F/AP + GEC: compact coaxial connection for simple maintenance without being forced to remove the coupling	from 7 to 30000 Nm 180 mm max bore	Page 68
	DSF/TF/AP: friction motion transmission as tensioner.	from 3 to 875 Nm 65 mm max bore	Page 69
	DSF/TF/AP/TAC: simple and economic coaxial shaft connection.	from 3 to 875 Nm 80 mm max bore	Page 70

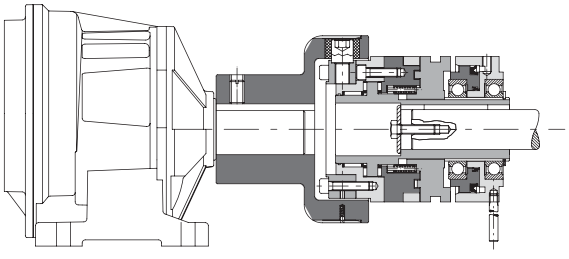
ASSEMBLY EXAMPLES



*Model **DSF/TF/AP** with plate wheel for parallel shaft transmission.*



*Model **DSR/F/AP** with plate wheel for parallel shaft transmission.*



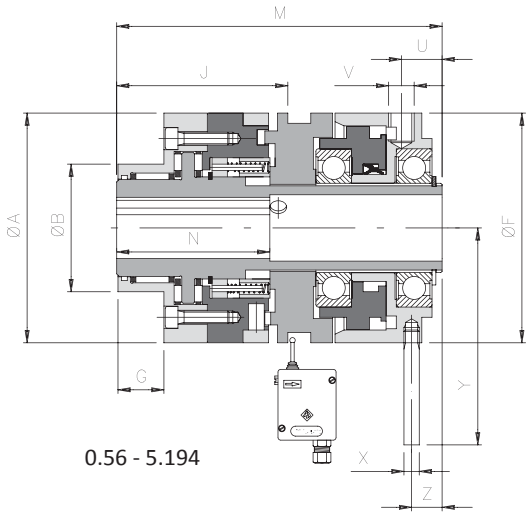
*Model **DSR/F/AP** Compact elastic coupling **GEC** for coaxial shaft transmission.*

NOTES

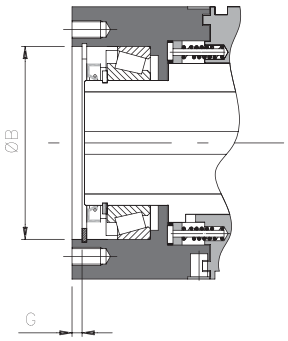
- Avoid rigid locking of the anti-rotating pin of the cylinder as it can cause imbalances during rotation

DSR/F/AP - roller phase pneumatic clutch: technical data

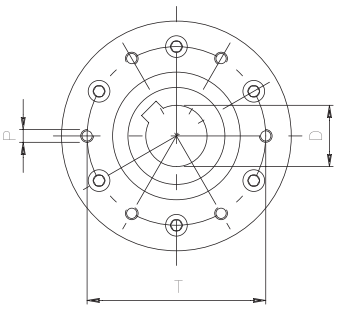
- Transmission through rollers with re-engagement in phase 360° (equidistant on request, 30°, 45°, …).
- Free rotation for long periods after overload: … / CS.
- Suitable for high rotation speeds.
- Maintenance free for high reliability.
- Arranged to add a microswitch / proximity to stop the motor drive.
- Torque range: 5 – 30.000 Nm; max. bore ø120 mm.



0.56 - 5.194



6.240 - 7.280



DIMENSIONS

Size	A	Standard flange				D H7	F	J	M	N	U	V	Z	X	Y	Inertia *[Kgm²]*		Max speed *[Rpm]*	Weight *[Kg]*
		B h7	G	P	T	max										Flange side	Cilinder side		
0.56	56	38	10	M5	48	18	56	56	97	45	11,5	1/8"	7,5	6	63	0,000152	0,000301	11000	1,5
1.90	90	50	18	M5	70	25	90	67,5	127,5	60	15	1/4"	11	6	80	0,001791	0,002622	7000	5
2.110	110	60	20	M6	89	38	110	85	147,5	70	17,5	1/4"	13,5	8	105	0,005122	0,006831	5000	9
3.130	130	80	19	M8	105	45	130	90,5	160	100	18,5	1/4"	14,5	8	115	0,010921	0,014132	4300	13,3
4.160	160	100	22	M10	125	55	160	109	191,5	115	25	1/4"	17	10	146	0,030883	0,030793	3600	19
5.194	194	120	26	M12	155	65	215	125	201,5	145	30	1/4"	22	12	184	0,059572	0,093061	3200	35,8
▲ **6.240 CB**	240			M16	200	90	290		306,5										
▲ **6.240 CA**	240			M16	200	90	290		356,5										
▲ **7.280 CB**	280			M20	230	120	345		320										
▲ **7.280 CA**	280			M20	230	120	345		375										

TECHNICAL DETAILS

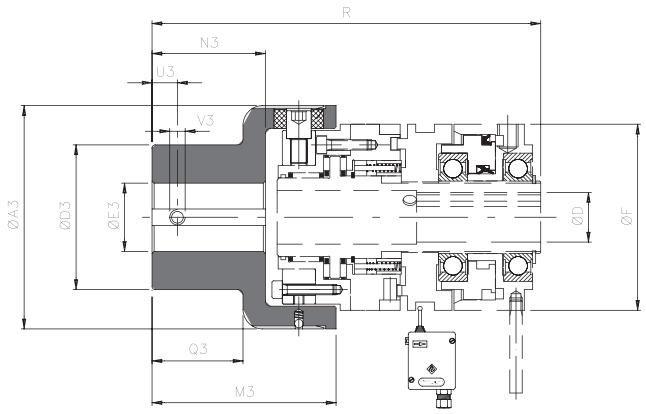
Size	Torque *[Nm]*	Torque transmission *[Nm]* according to the pressure *[bar]*							
		1	**2**	**3**	**4**	**5**	**6**	**10**	**15**
0.56	7 - 70	7	11	16	20	24	29	45	70
1.90	15 - 280	15	35	55	75	95	115	185	280
2.110	20 - 480	20	50	85	125	160	195	330	480
3.130	25 - 780	25	80	135	195	250	310	520	780
4.160	55 - 1335	55	150	245	340	435	530	900	1335
5.194	330 - 3970	330	550	830	1085	1340	1600	2600	3970
▲ **6.240 CB**	1100 - 5800	1100	2000	3000	3900	4800	5800	-	-
▲ **6.240 CA**	3400 - 15000	3400	6200	9040	11760	15000	-	-	-
▲ **7.280 CB**	1500 - 7500	1500	2500	3700	5000	6200	7500	-	-
▲ **7.280 CA**	7000 - 30000	5000	10000	15000	20000	25000	30000	-	-

▲ On request

NOTES

- Weights are relevant only to the pilot bore (DSR/F/AP), inertias refer to the connection (DSR/F/AP) hole max.
- Microswitches EM1 or EM2 and inductive sensor PRX see page 73

... + GEC - model with compact elastic coupling: technical data



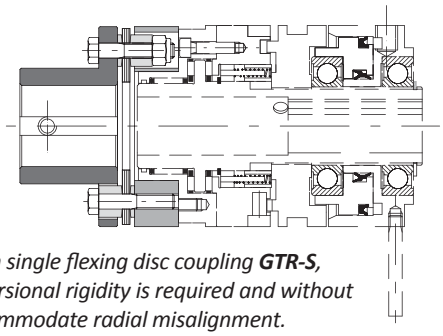
DIMENSIONS

Size		Torque *[Nm]*		A3	D3	E3 H7		M3	N3	U3	V3	Q3	D H7	F	R	U3	V3
DSR/F/AP	GEC	Nom	Max			pilot bore	max						max				
0.56	0	70	110	78	50	10	28	63,5	32	10	M5	28	18	56	142	10	M5
1.90	1	280	420	108	70	12	38	89	49	12	M6	44	25	90	189	12	M6
2.110	2	570	860	130	80	15	45	111	65	15	M8	59	38	110	228	15	M8
3.130	3	980	1500	161	100	15	60	140	85	15	M8	77	45	130	268	15	M8
4.160	4	2340	3600	206	120	20	70	168	105	20	M10	97	55	160	323	20	M10
5.194	5	3880	5800	239	135	30	80	201	130	20	M10	120	65	215	360	20	M10
▲ **6.240 CB**	6	15000	20000														
▲ **6.240 CA**																	
▲ **7.280 CB**	7	30000	35000														
▲ **7.280 CA**																	

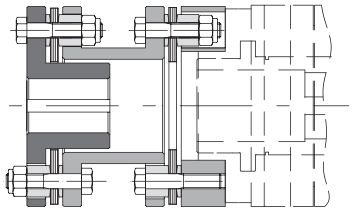
TECHNICAL DETAILS

Size		Misalignments						Max speed *[Rpm]*	Weight *[Kg]*
DSR/F/AP	GEC	Angular α *[°]*		Axial X *[mm]*		Radial K *[mm]*			
		continuous	intermittent	continuous	intermittent	continuous	intermittent		
0.56	0	1°	1° 30'	± 0,7	± 1,5	0,5	0,7	5500	1,1
1.90	1	0° 48'	1°	± 0,7	± 1,5	0,5	0,7	5000	3,3
2.110	2	0° 36'	0° 48'	± 0,7	± 1,5	0,6	0,7	4500	5,9
3.130	3	0° 30'	0° 42'	± 0,8	± 1,6	0,6	0,8	4000	10,9
4.160	4	0° 24'	0° 30'	± 0,8	± 1,6	0,6	0,8	3100	19,8
5.194	5	0° 24'	0° 30'	± 0,8	± 1,6	0,6	0,8	2800	30,5
▲ **6.240**	6	0° 24'	0° 30'	± 0,8	± 1,6	0,6	0,8	-	-
▲ **7.280**	7	0° 24'	0° 30'	± 0,8	± 1,6	0,6	0,8	-	-

OTHER COUPLING MODELS ON REQUEST



*Model **DSR/F/AP** with single flexing disc coupling **GTR-S**, for applications where torsional rigidity is required and without the ability to accommodate radial misalignment.*



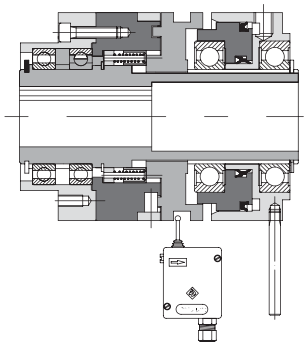
*Model **DSR/F/AP** with double flexing torsionally rigid metal disc coupling **GTR-D**, when torsional rigidity is required and ability to accommodate radial misalignment.*

NOTES

▲ On request

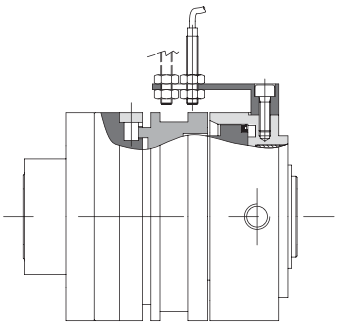
- These details refer only for the coupling (GEC); for connection details see on page 67.
- Weights are relevant only to the pilot bore (GEC).
- Microswitches EM1 or EM2 and inductive sensor PRX see page 73

AP - pneumatic clutch: versions on request



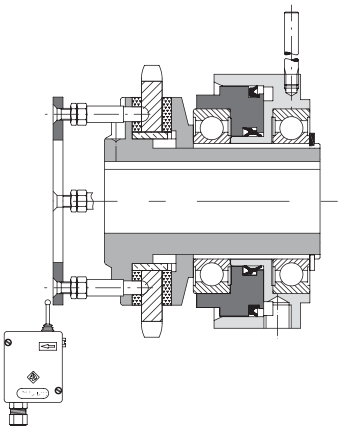
DSR/F/AP/CS

Version with ball bearings as an alternative to the rollers.
Suitable for long rotation on disengagement.



.../PRX

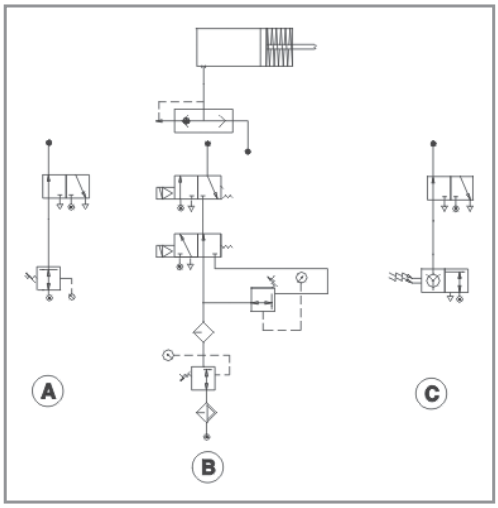
Version with proximity inductive sensor PRX M8x1, integrated into the DSR/F/AP. Compact and versatile solution, without adding equipment and/or external components.



DSF/TF/AP/SI

Friction clutch with intervention signal and further automatic re-engagement. This characteristic requires particular machining on the drive element, which has to be supplied together with the torque limiter.

AP - pneumatic clutch: additional information



EXAMPLE CIRCUIT CONNECTION TYRE

The pneumatic clutch are designed for the connection of pneumatic circuit with connection type *"GAS"*.
Some examples for the control to the pressure are shown here:

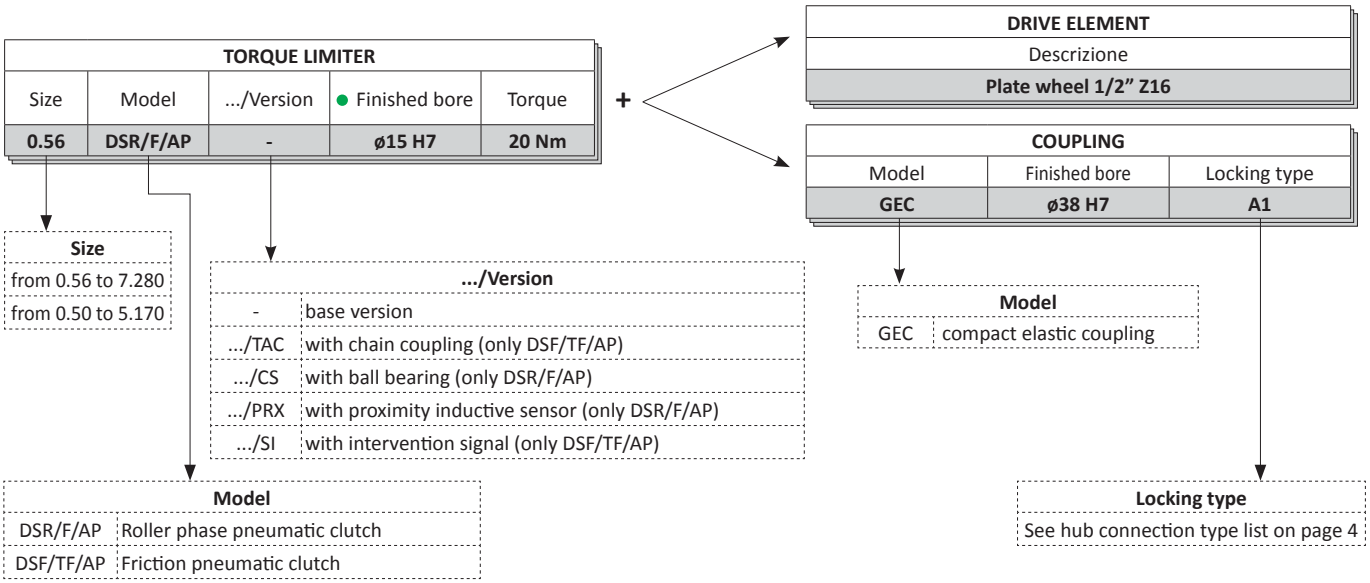
A) Adjustable pressure with pressure regulator.

B) Control of two pressures using solenoid valves.

C) Control of variable pressure by PLC.

AP - pneumatic clutch: additional information

ORDER EXAMPLE



- Both models available only with finished bores.