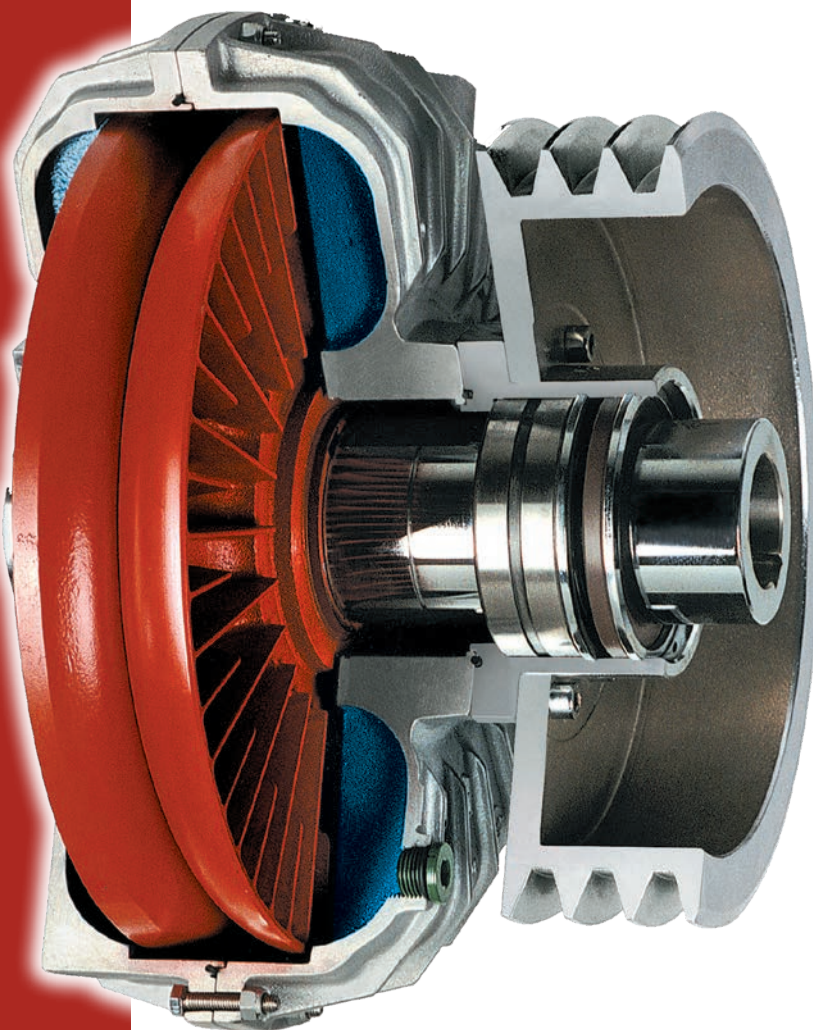




WESTCAR s.r.l.

ROTOFLUID

Fluid Couplings



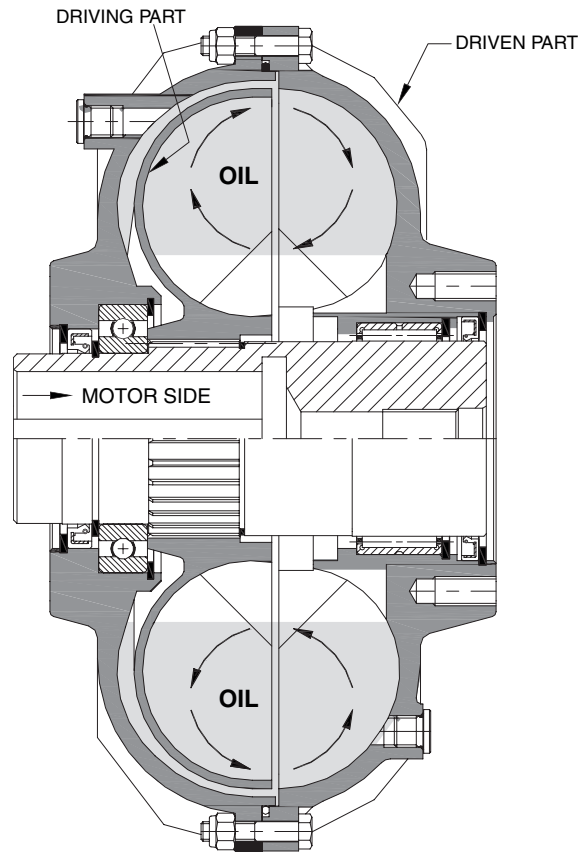


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ROTOFLUID fluid coupling is designed to provide your plant with optimum reliability and durability. It is fitted between the motor (drive) and machine (driven component).

ROTOFLUID fluid coupling comprises basically two impellers, with radial blades, opposed to each other, one connected to the motor shaft and the other to the input shaft of the Driven Equipment or Machine. ROTOFLUID fluid coupling acts like a centrifugal clutch, by driving an impeller, the oil passing from the blades to the driven part, which acts as a driven impeller, transmits the power to the Equipment or Machine.

The oil, which fills the fluid coupling, transfers the torque and also lubricates moving parts.

Fluid couplings are the easiest and cheapest way of creating a perfectly Flexible Drive Train, because no mechanical parts are necessary between the motor and the Equipment or Machine being driven. Without mechanical parts, there is practically no wear.

Losses in the fluid coupling become power losses according to the following formula:

$$S\% = \frac{n_m - n_u}{n_m} \times 100$$

where:

n_m = motor speed (rpm)

n_u = output speed from the fluid coupling (rpm)

The elasticity of the fluid coupling solves problems of power peaks between electric motors and driven machines.

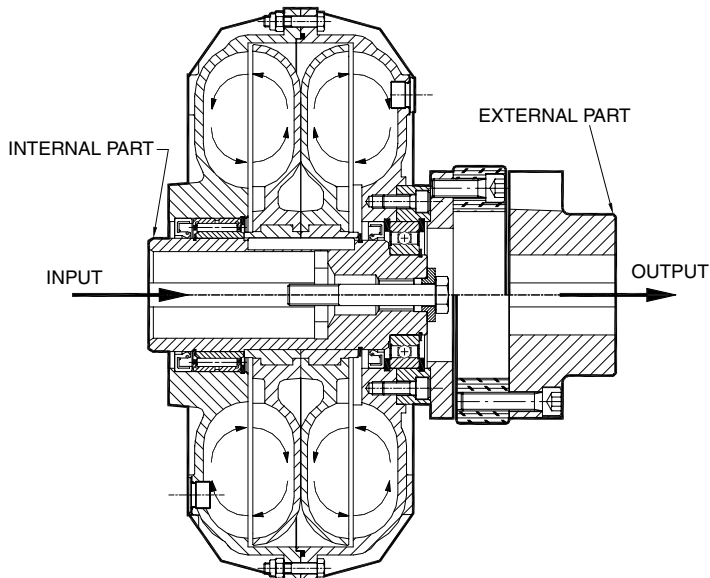
ADVANTAGES OF USING FLUID COUPLINGS

- easy start-up with gradual acceleration of the driven component
- automatic load speed adjustment on the basis of the synchronous speed of two or more motors
- the drive train is protected against overloads
- torsional vibrations are dampened
- the torque transmitted complies with pre-set values
- direct on-line start electric motors can be used, without star-delta starters or slip-ring motors with rheostat

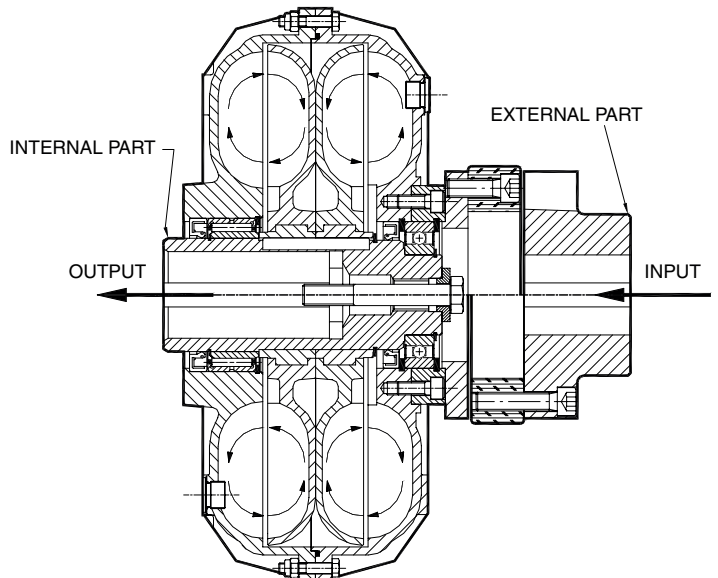
ADVANTAGES OF USING ROTOFLUID FLUID COUPLINGS

- a large range of accessories
- interchangeable accessories on the basic cell
- the dimensions of the shaft-pulley system are perfectly suited to the needs of the drive train
- all fluid couplings that utilise a belt drive are fitted with ball bearings to guarantee above-standard radial loads
- all the fluid couplings used for horizontal applications are fitted with an elastic flexible coupling, which gives the advantage to the user of being able to replace the flexible element, by removing it radially from the coupling, without either disturbing the Motor or the Driven Equipment or Machine.

STANDARD MOUNTING



REVERSE MOUNTING



ADVANTAGES OF STANDARD MOUNTING

In **STANDARD** assemblies, the fluid coupling is mounted with the inner part connected to the motor shaft.

This is common for couplings with pulleys and in line application, providing the following benefits:

- standardisation of bores in compliance with UNEL MEC motors
- during start-up motor is less loaded due the low inertia of the inner part, operating speed is reach with reduced current peak
- in inline applications, where a brake is required, disc/drum is mounted directly on the reduction gear shaft without increasing the axial length of the coupling
- in couplings with delay fill chambers, start-up is smoother because the oil pass from the delay fill chamber into the circuit due to centrifugal force reducing the pick torque
- flexible element mounted on the fluid coupling is less stressed, because the torque is transmitted by the fluid and not with a direct connection to the motor.

ADVANTAGES OF REVERSE MOUNTING

In a **REVERSE** assembly, the fluid coupling is mounted with the outer part connected to the motor shaft.

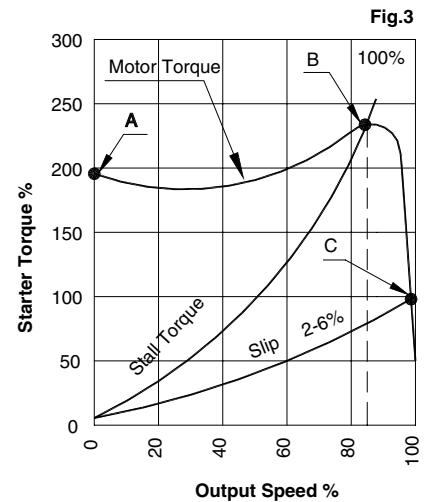
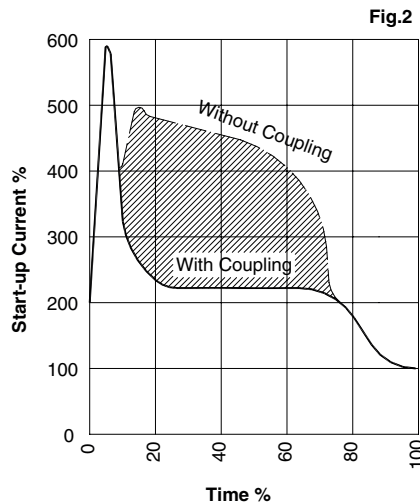
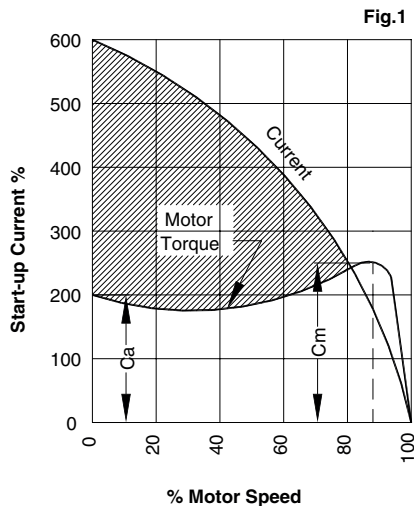
This type of assembly is possible whenever the fluid coupling is mounted between motor and gear box.

For couplings with a V Pulley, the unit must be fitted to the driving shaft, pay attention between the driving and driven pulley ratio. In case of need consult WESTCAR srl.

This type of assembly has the following important advantages:

- higher heat dissipation, recommended in case of extended and frequent motor start-ups
- easier regulation and filling of the oil level in the coupling, since the external part can be rotated without moving the driven machine
- **IMPORTANT!** When the coupling is mounted with **THERMAL SWITCHING PIN**, even in case of stop of the driven side the function of the safety device is guarantee.

In the absence of special needs or requests, the coupling will be supplied in its **STANDARD** configuration.



START-UP WITHOUT FLUID COUPLING

Figure 1 represents the typical start-up of an electric motor directly connected to the load. The dotted line represents the energy lost bringing the motor and load up to operating speed.

As can be seen, direct start-up has the following disadvantages:

- the difference between start-up torque (C_a) and the load requirement (C_m) is very low; the maximum torque is between 80%-85% of the operating speed
- the current absorbed during start-up may be up to 6 times the rated current, causing electrical overloads and higher costs, an increase in motor temperature and fewer possible start-ups.
- difficulty of application when a high starting torque is required.

START-UP WITH ROTOFUID FLUID COUPLING

Figure 2 compares the current absorbed by the electric motor starter with and without hydrodynamic coupling.

The first curve "Without coupling" is a start-up with direct connection in short-circuit. The second curve "With coupling" is the same start-up interposed with the hydrodynamic coupling. The crossed-out part represents the difference in energy used for the same start-up with and without hydrodynamic coupling.

In the first curve "Without coupling" the current reaches a peak of about six times the nominal and persists with high values up to the rated engine speed.

In the second curve "With coupling" the peak current remains high for only a few seconds (energy required to accelerate the motor rotor only) and goes down to acceptable values for the time necessary to bring the machine to scheme.

When the hydrodynamic coupling ROTOFUID is interposed between the electric motor and the driven machine, the motor can start-up in short circuit.

CHARACTERISTIC CURVES FOR START-UP WITH FLUID COUPLING

Figure 3 shows a characteristic torque curve for an electric motor, the stall curve of the fluid coupling and the slip curve at operating speed. The fluid coupling allows the motor to reach 80-85% speed in a few seconds (shift from point A to point B) where it meets the stall curve of the fluid coupling (slip=100%), the point of maximum motor torque.

Point C is the point of functioning of the fluid coupling after the motor has reached operating speed.

The use of a fluid coupling with a delay fill chamber limits maximum torque during start-up, without prejudicing slipping in normal functioning. This allows the motor to quickly increase speed [revs] without hitting the resistant torque (as if it started unloaded).

A fluid coupling with a delay fill feature is fitted with additional chamber in order to reduce the quantity of oil in the working circuit (see Fig.1). The chamber is in contact with the circuit via calibrated nozzles, which can be set as required (see Fig.2). The variation in the calibrated nozzle holes changes the time it takes for the oil in the chamber to reach the working circuit, thereby, increasing or decreasing start-up time for the driven machine.

When all the oil has flowed from the chamber into the circuit, the fluid coupling reaches the rated speed, transmitting the required torque with minimum slippage (see Fig.3).

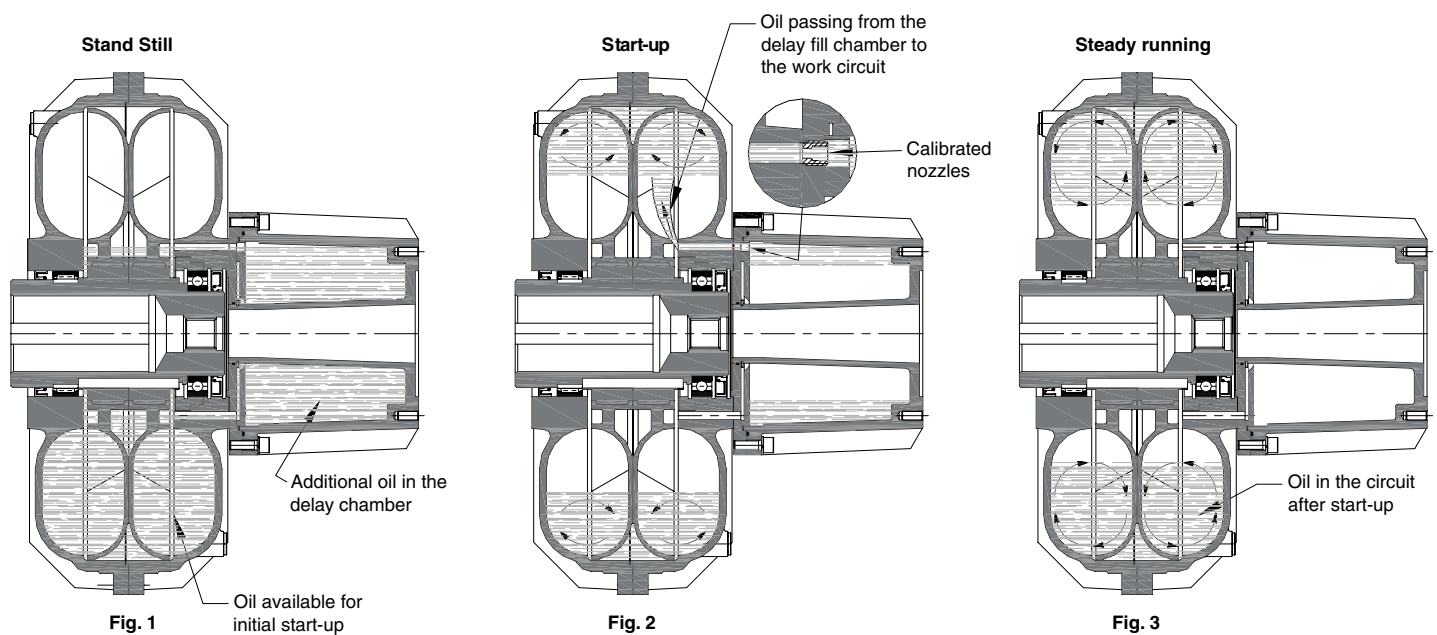
Fluid couplings may be fitted with either a single or double delay fill chamber.

With a single delay fill chamber, Ca/Cn torque limitation varies from 180% to 150%, adjusting the quantity of oil.

With a double delay fill chamber, Ca/Cn torque limitation varies from 150% to 120%, adjusting the quantity of oil.

The advantages of delay fill chambers are enhanced as the power requirement rises.

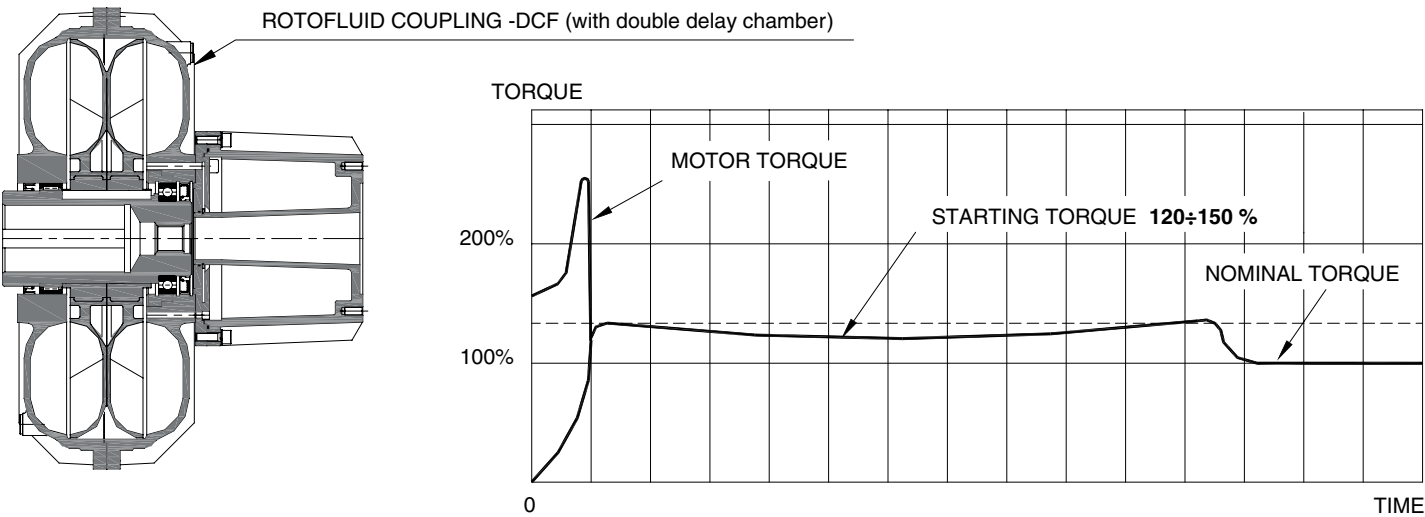
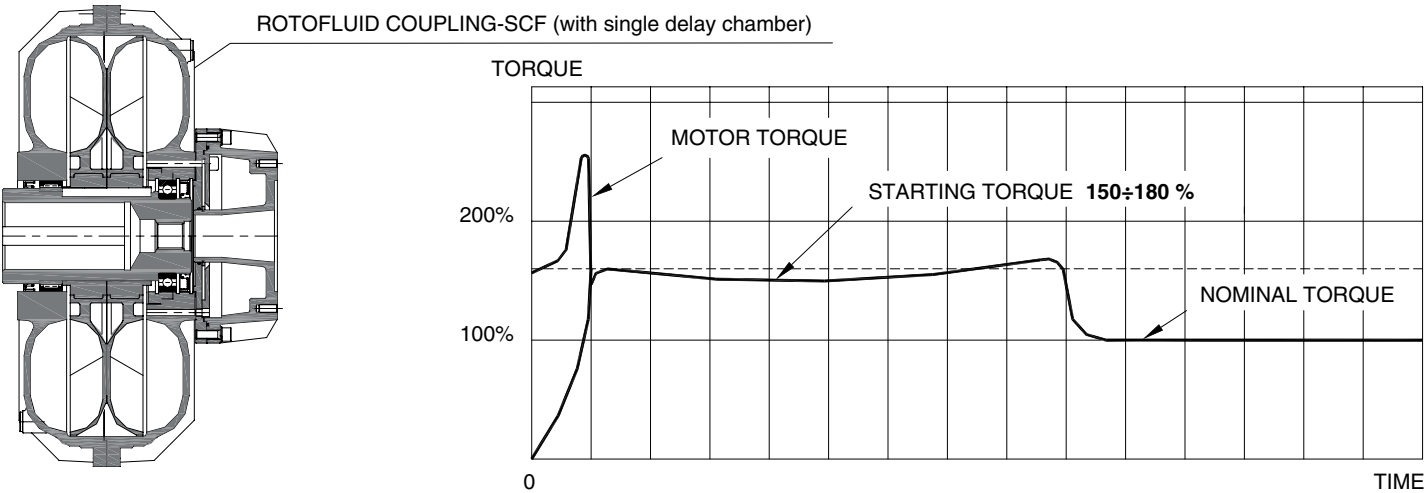
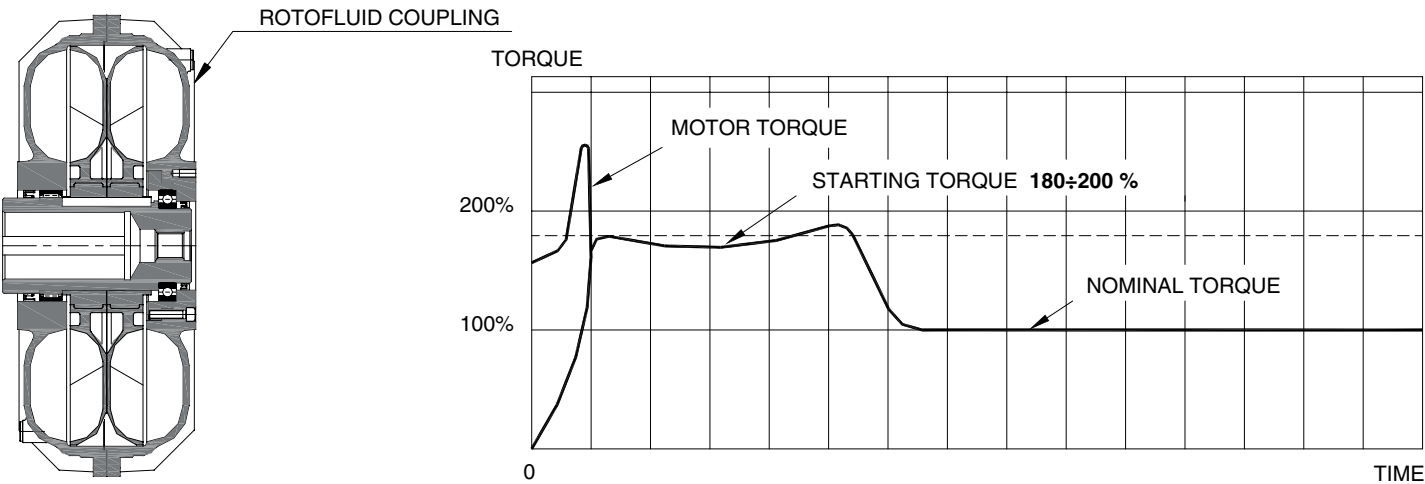
SCF and DCF delay fill chambers are available from size 30 to size 95P.



ADVANTAGES

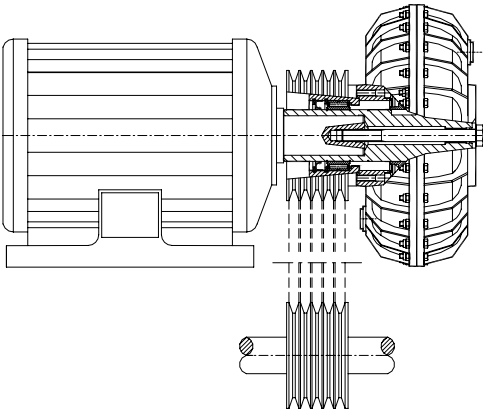
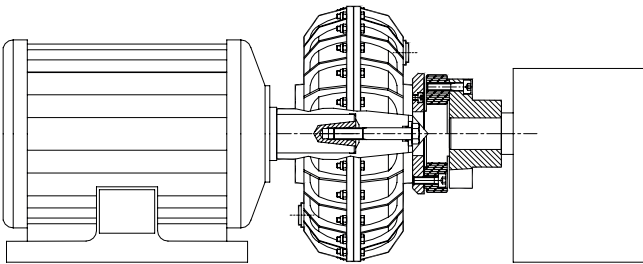
- Low energy loss even where inertia is high
- Start-up time can be adjusted
- Start-up torque is limited to pre-set values without affecting slip
- Limitation of start-up current prolongs the life of the motor
- For controls with several drives the coupling automatically adjusts the load speed on the basis of synchronous speed
- More start-ups per hour

The ROTOFLUID SCF/DCF peculiarities are more evident comparing the curve of the ROTOFLUID coupling without delay chamber.



ROTOFLUID COUPLING ALFA

ROTOFLUID COUPLING BETA



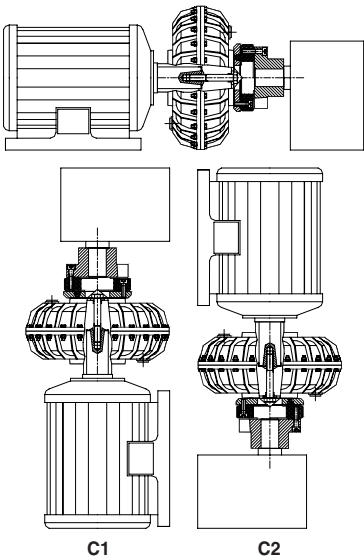
ROTOFLUID COUPLINGS **ALFA** are used for in-line transmission between equipment.

ALFA couplings can be supplied with several accessories that allow easy installations and maintenance.

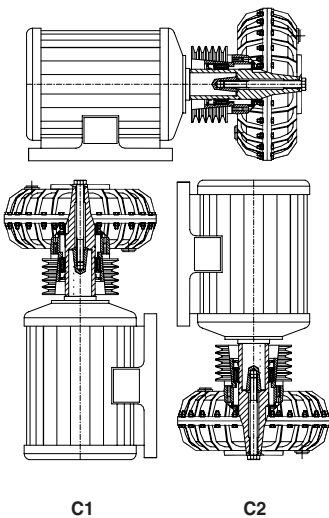
ROTOFLUID COUPLINGS **BETA** are used for pulleys transmission equipment between parallel shafts.

These couplings are available also with Delay Fill Chambers.

ALFA



BETA



INSTALLATION OPTIONS

ROTOFLUID couplings **ALFA** and **BETA** can be horizontally or vertically mounted

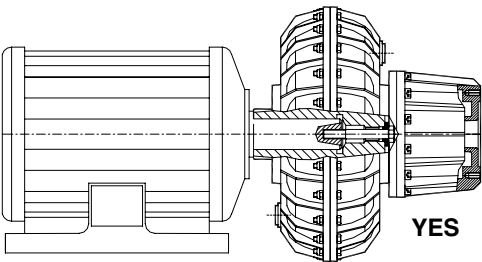
In case of Vertical Installation (C1 or C2) contact WESTCAR

ALFA and **BETA** couplings are supplied with fixing screw.

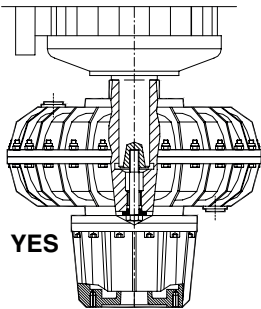
IMPORTANT

COUPLING WITH DELAY CHAMBER CORRECT INSTALLATION

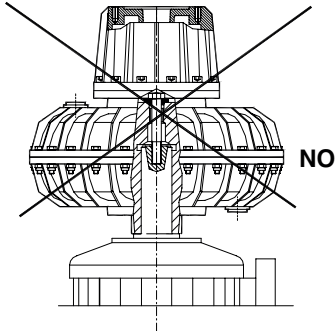
HORIZONTAL SHAFT



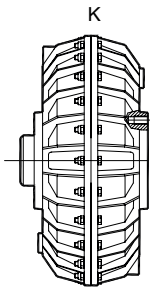
VERTICAL SHAFT WITH
DOWNWARD DELAY CHAMBER



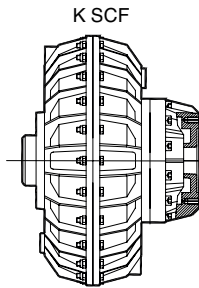
VERTICAL SHAFT WITH UPWARD
DELAY CHAMBER



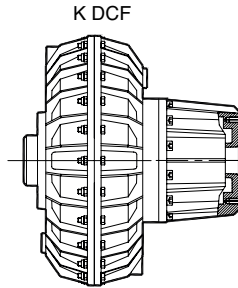
ROTOFLUID ALFA without accessories



PAG. 14

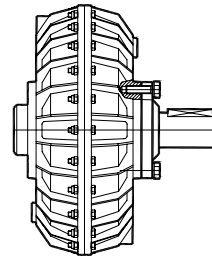


PAG. 14



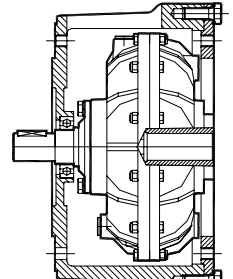
PAG. 14

ROTOFLUID ALFA K-S



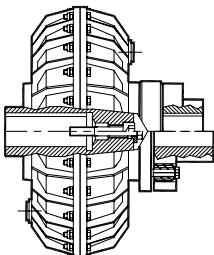
PAG. 16

ROTOFLUID ALFA CKS



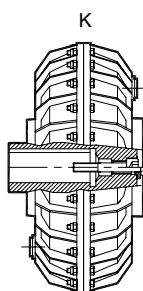
PAG. 25

ROTOFLUID ALFA K
with elastic coupling
K-RNV
K-AB

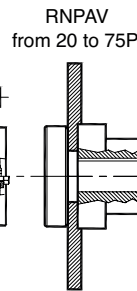


PAG. 17

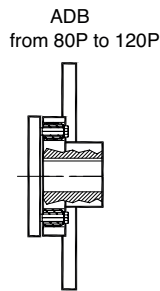
ROTOFLUID ALFA K
with elastic coupling and Brake Disc



PAG. 18

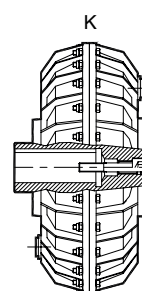


RNPV
from 20 to 75P

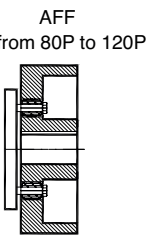


ADB
from 80P to 120P

ROTOFLUID ALFA K
with elastic coupling and Brake Drum



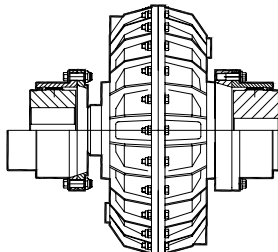
RND
from 20 to 75P



AFF
from 80P to 120P

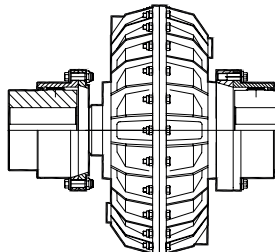
PAG. 19

ALFA WAG-G



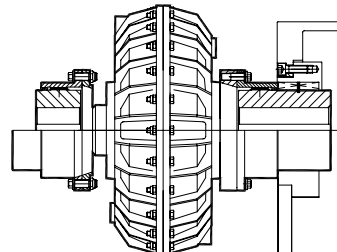
PAG. 20

ALFA WAG-GU

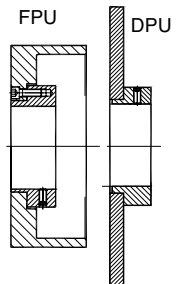


PAG. 20

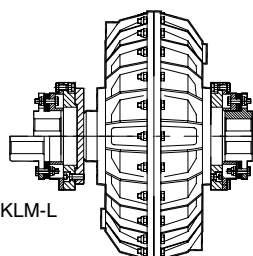
ALFA WAG-GPU



ALFA WAG-GPUU
PAG. 21

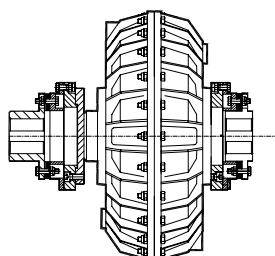


ALFA KLM-RH



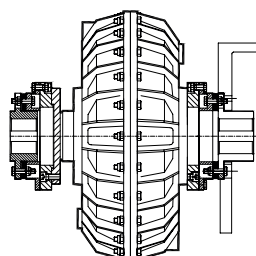
PAG. 22

ALFA KLM-L



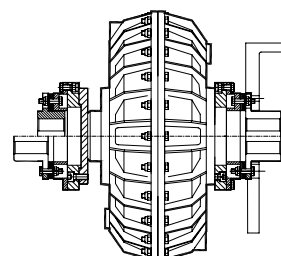
PAG. 22

ALFA KLM-LF

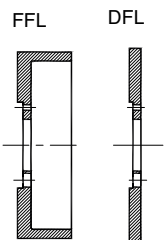


PAG. 23

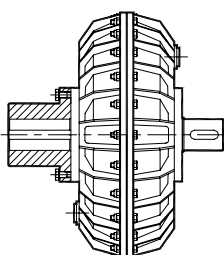
ALFA KLM-LLF



PAG. 23

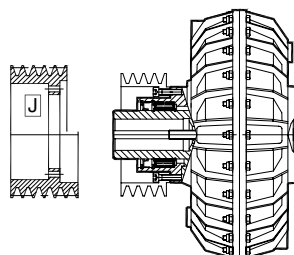


ALFA NY-FB



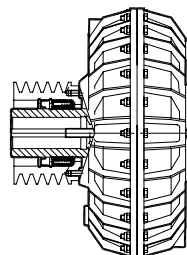
PAG. 24

BETA J



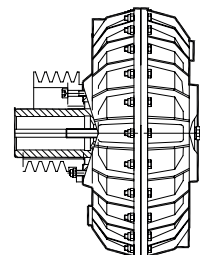
PAG. 26

BETA X

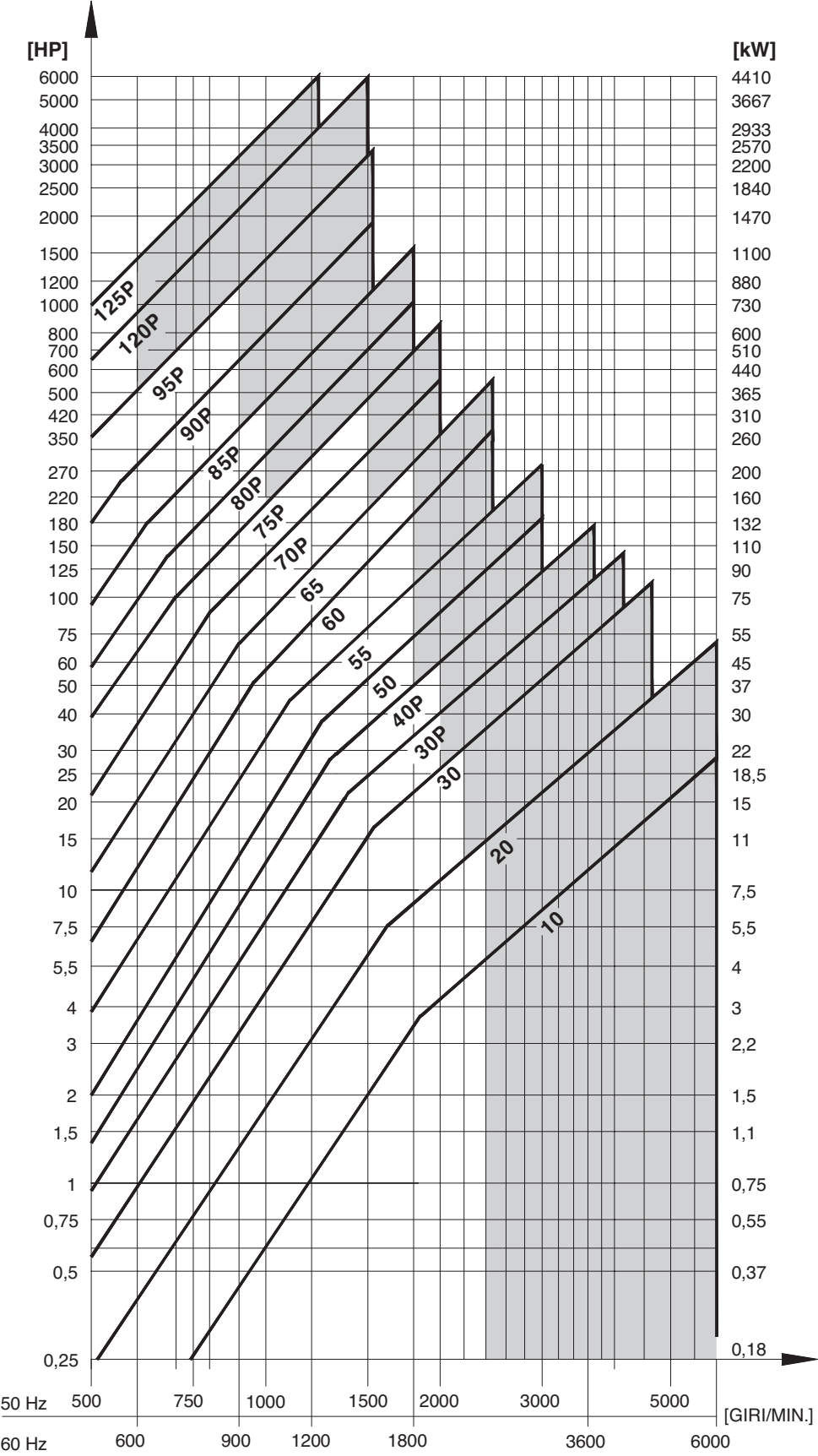


PAG. 26

BETA Z



PAG. 26



Select coupling size on input power and speed

The curves show limit capacity of couplings

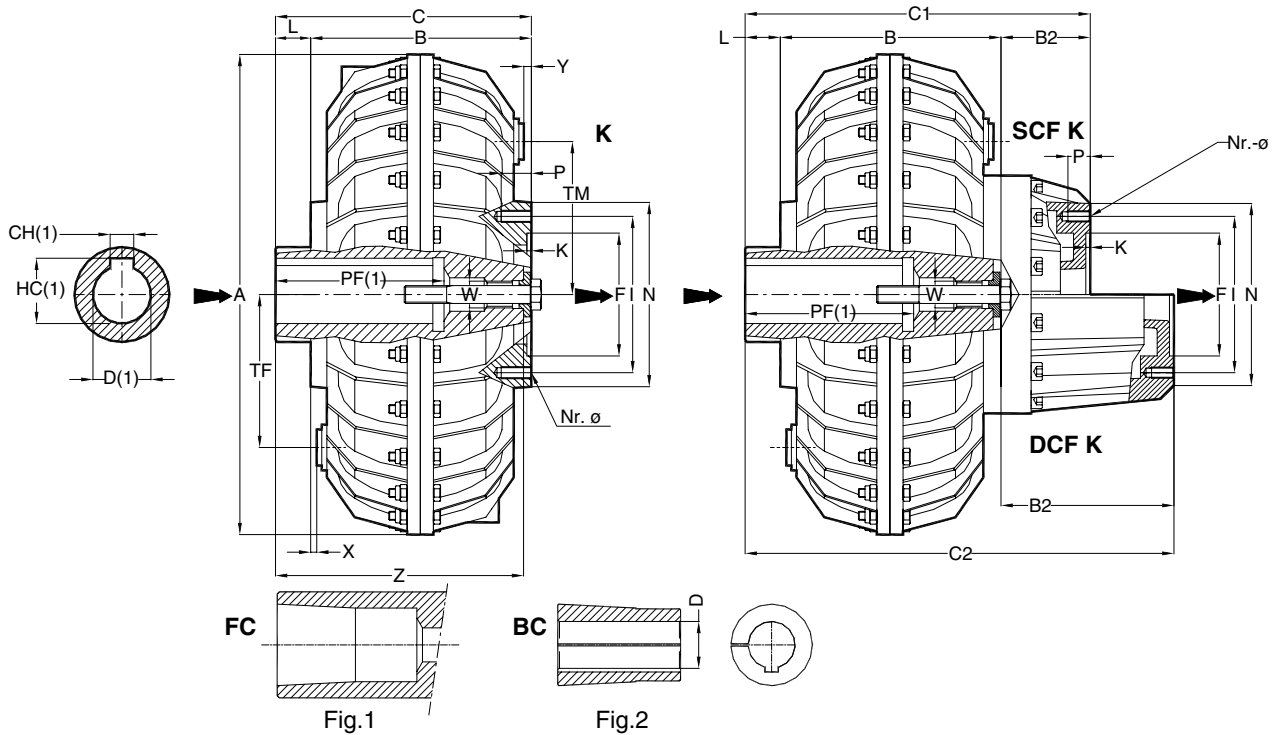
If the selection point falls on or close to the max capacity limit line of a given coupling size, please contact WESTCAR

For use at rpm included in the marked ranges, balancing with oil is required

ROTOFLUID COUPLING SELECTION TABLE FOR 50 Hz AND 60 Hz UNEL MEC ELECTRIC MOTORS

STANDARD ELECTRIC MOTORS		Motor speed 50 Hz												Motor speed 60 Hz						
		8 poles 750 rpm			6 poles 1000 rpm			4 poles 1500 rpm			2 poles 3000 rpm			6 poles 1200 rpm			4 poles 1800 rpm			
Type	Ø Shaft	kW	HP	Coupling	kW	HP	Coupling	kW	HP	Coupling	kW	HP	Coupling	kW	HP	Coupling	kW	HP	Coupling	
71	14	-	-	-	0,25	0,33	10	0,25	0,33	10	0,37	0,5	10	0,25	0,35	10	0,25	0,35	10	
80	19	-	-	-	0,37	0,5		0,37	0,5		0,55	0,75		0,37	0,5					
90S	24	-	-	-	0,55	0,75		0,55	0,75		0,75	1		0,55	0,75					
90L	24	0,55	0,75	20	1,1	1,5	20	0,75	1	20	1,1	1,5	20	0,75	1	20	1,1	1,5	20	
100L	28	1,1	1,5	30	1,5	2		1,5	2		2,2	3		1,1	1,5					
112M	28	1,5	2	30P	2,2	3	30	2,2	3	20	3	4	20	1,5	2	20	2,2	3	20	
132	38	-	-		3	4		4	5,5		4	5,5		5,5	7,5		7,5	10		
132M	38	3	4		40P	4		5,5	5,5		7,5	7,5		10	-		-	7,5		10
160M	42	4	5,5	50	7,5	10	40P	11	15	30P	11	15	30P	15	20	30P	11	15	30	
160L	42	7,5	10	55	11	15		15	20		15	20		18,5	25		18,5	25		
180M	48	-	-		-	-	-	50	18,5	25	40P	22	30	40P	22	30	40P	18,5	25	30P
180L	48	11	15		15	20	22		30	22		30	-		-	-		-	22	
200L	55	15	20	60	18,5	25	55	30	40	50	30	40	50	37	50	50	30	40	40P	
225S	60	18,5	25		22	30		37	50		37	50		-	-		-	-		37
225M	55 60	- 22	- 30	65	- 30	- 40	60	- 45	- 60	55	45 -	60 -	55	45 -	60 -	55	45 -	60 -	50	
250M	60 65	- 30	- 40		- 37	- 50		- 55	- 75		- 55	- 75		55 -	75 -		55 -	75 -		
280S	65 75	- 37	- 50		70P	- 45	- 60	65	- 75	- 100	60	75 -	100 -	60	75 -	100 -	60	75 -	100 -	55
280M	65 75	- 45	- 60	- 55		- 75	- 90		- 125	- 90		- 125	90 -		125 -	90 -		125 -		
315S	65 80	- 55	- 75	75P	- 75	- 100	70P	- 110	- 150	65	110 -	150 -	65	110 -	150 -	65	110 -	150 -	60	
315M	65	- 75	- 100		- 90	- 125		- 132	- 180		- 132	- 180		132 180	180		180	220		55
	80	75	100		90	125	110	150	160	220	70P	-	-	-	-	-	90	125	132	180
		110	150	80P	132	180	200	270	200	270	-	-	-	-	160		220	160	220	
355S	80	-	-	80P	-	-	80P	-	-	75P	-	-	75P	-	-	75P	-	-	70P	
355M	100	132	180		85P	160		220	250		340	250		340	-		-	-		-
	80	-	-		85P	-	-	-	-	85P	-	-	-	-	-	-	-	-	-	-
	100	160	220	90P	200	270	250	340	85P	315	430	-	-	-	-	200	270	250	340	75P
NON STANDARD ELECTRIC MOTORS For max. power transmitted		330	450	90P	370	500	85P	510	700	80P										
		600	800	95P	600	800	90P	810	1100	85P										
		800	1100	120P	1000	1360	95P	1300	1740	90P										
		1000	1360	125P	2000	2720	120P	2300	3100	95P										
						3300	4500	125P	3850	5250										120P
		310	420	80P	440	600	75P													
		440	600	85P	700	950	80P													
		800	1100	90P	1000	1360	85P													
		1380	1880	95P																
		2580	3500	120P																
4200	5710	125P																		

• For couplings at 3000 rpm, ask for balancing required



NOTES: (1) for bore and keyway dimensions see sheet 10-019E / (2) the arrows ► indicate input and output

ROTOFLUID SIZE	Dimensions in mm														K			SCF K				DCF K													
															mm			kg*	mm			kg*	mm			kg*									
	Bore D	A	B	K	I	L	N	Nr.ø	P	TF TM	W	X	Y	Z	Type	C	F ^{H7}	W.	Type	B2	C1	F ^{H7}	W.	Type	B2	C2	F ^{H7}	W.							
10	19-24	193	88	4	60	10	75	6-M6	12	66	M10	0,5	0	94	K1	98	47	4	--	--	--	--	--	--	--	--	--	--							
20	24-28	230	115		78		94	6-M8	16	80	M14	2	7	120	K1	125	62	6	--	--	--	--	--	--	--	--	--	--	--						
30	□FC	290	150		100		12	114		8-M8	110	M24	9	9	157,5	K2	162	72	13,2	K2	55	217	72	15,6	K2	95	257	72	16,2						
30P	□FC	327											21	K2		23,4			K2	24															
40P	□FC	338	183	125	15	145	8-M10	22		130	29		16	194	K2	198	90	22	K2	58		256	90	25,7	K2		130	328	90	27,2					
50	□FC	430	154	140	25	165			150		M30		20	176,5	K2	179	110	30	K2	80		259		110	35,8		K2	155		334	110	38			
55	□FC		196		15	165						6	208,5	K2	211	40		K2	291	45,8	K2	366	48												
60	□FC 75	520	172	4,5	160	20						185	205	M30	20	192	K2	192	125	46	K2	90	282	125	54,4	K2	170	362	125	58					
65	□FC 75-80		220				6	240		K2					240	66	K2	330		74,4	K2		410		78										
70P	80-90 100	640	190				4	195	20	225	8-M16				24	265	15	234 274	K2N K3N	240 280	150	86	K2N K3N	110	350 390	150		99		K2N K3N	225	465 505	150	106	
75P	80-90 100		245														0	254 269	K2N K3N	265 280		117	K2N K3N		375 390			135		K2N K3N		490 505		147	
80P	Max.110 Max.125**	810	226	230	44 60	270						8-M18	28	325			M36	20	264 280	K2N K3N	270 286	160	180	K2N K3N	118	388 404	160	196	K2N K3N	218		488 504		160	208
85P	Max.125 Max.130		300															0	334	K2N K3N	340		252	K2N K3N		458		280	K2N K3N			558			300
90P	Max.130 Max.140** Max.160***	1000	344				5	20 120 160	550	16-M20	32				416	0		35	343 443 483	K2 K3 K5	364 464 504	445	350 390 410	K2 K3 K5	120	424 524 564	445	302 342 362	K2 K3 K5		200	504 604 644	445		317 357 377
95P	Max.130 Max.140** Max.160***		466																420 520 560	K2 K3 K5	479 586 626		505 555 575	K2 K3 K5		599 706 746		545 595 615	K2 K3 K5			679 786 826			560 610 630
120P	Max.190	1300	449	7	310	7						570	36	430			30		419	K2	456	220	1800	--	--	--	220	--	--	--		748		220	--

* Weight with oil - ** Bore depth PF=210 - *** Bore depth PF=250

DIMENSIONS ARE NOT BINDING

• Supplied with OVERSIZED CHAMBER SCFM or DCFM

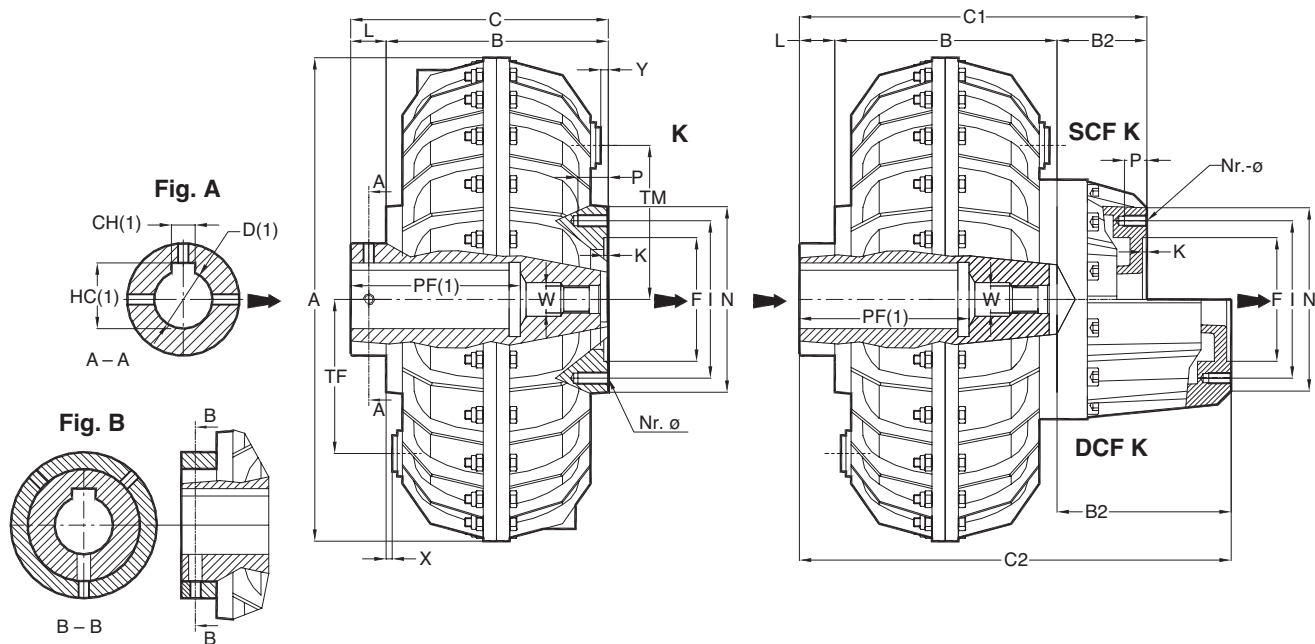
□ Couplings with conical bore FC are supplied with Taper Bush BC and fixing screw (Fig. 1 and 2)

In case of mounting on shafts without shoulder contact WESTCAR

Example of order of a coupling with taper bush: ALFA 55 K2 FC + 55BC L15 D=60

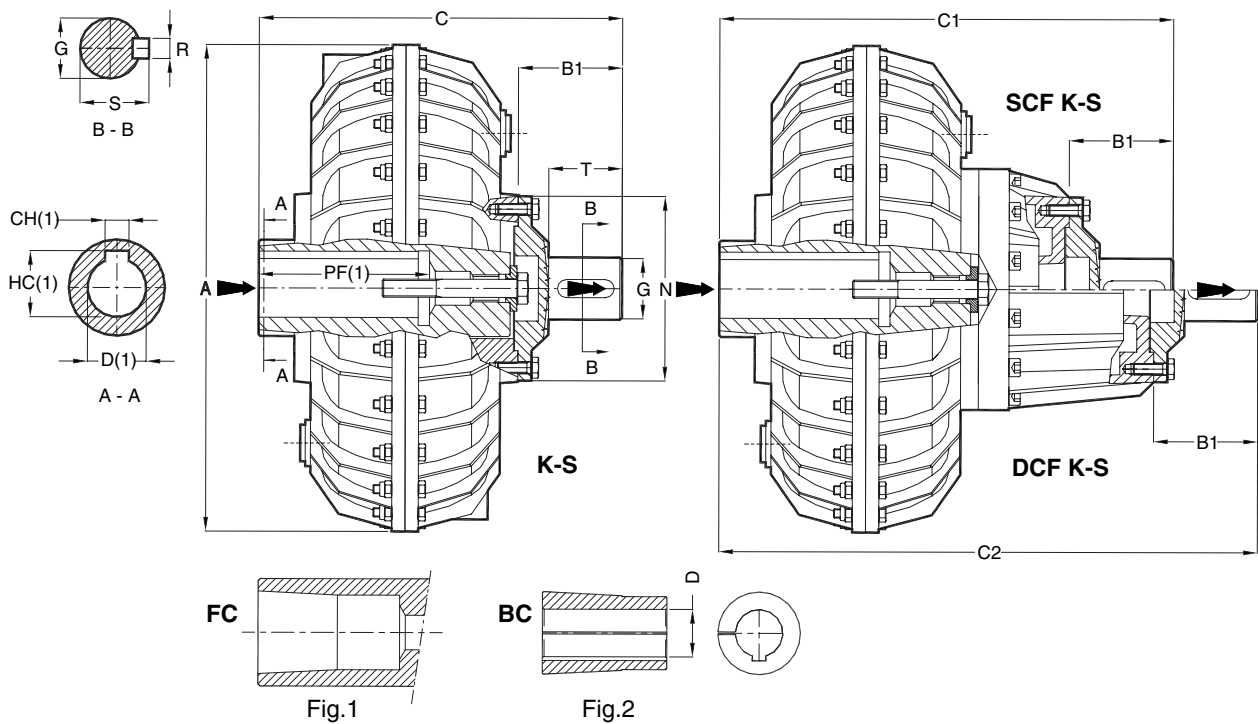
TAPER BUSH BC WITH FIXING SCREW							
COUPLING SIZE	Type	Standard D Bore					
30/30P	3BC	38	42	48	-	-	48
40P	4BC	38	42	48	50	-	50
50 - 55	5BC	-	42	48	55	60	65
60 - 65	6BC	-	-	48	55	60	70

■ Taper Bushes are supplied without keyway



NOTES: (1) the arrows ➡ indicate input and output

ROTOFLUID SIZE	inches	Dimensions in mm															K			SCF K			DCF K									
	Cyl. bore D	Fig.	A	B	F ^{H7}	K	I	L	N	Nr.ø	P	TF TM	W	X	Y	PF	Type	mm C	kg* W.	Type	mm		kg* W.	Type	mm		kg* W.					
																					B2	C1			B2	C2						
10 KA	0,875 1,125	A B	193	88	47	4	60	10 25,4	75	6-M6	12	66	M10	0,5	0	57,15 69,85	KA	98 113,4	4	--	--	--	--	--	--	--	--	--				
20 KA	1,125 ■1,375	A B	230	115	52		78	10 25,4	94		80	M14	2	7	69,85 85,72	KA	125 140,4	6	--	--	--	--	--	--	--	--	--	--				
30 KA	1,625 ■1,875	A B	290	150	72		100	12 40	114	8-M8	16	110	M24	9	9	101,6 117,47	KA	162 190	13,2	KA	55	217 245	15,6	KA	95	257 285	16,2					
30P KA	1,625 ■1,875	A B	327				100	12 40						6	6		85,72	162 190	21	KA		217 245	23,4	KA		257 285	24					
40P KA	1,625 1,875 2,125	A	338	183	90		125	15	145	8-M10	22	150		6	29	16	101,6 117,47 133,35	KA	198	22	KA	58	256	25,7	KA	130	328	27,2				
50 KA	1,875 2,125 2,375	A A B	430	154	110	140	25 25 32	165	20						117,47 133,35 149,22	KA	179 179 186	30	KA	80	259 259 266	35,8	KA	155	334 334 341	38						
55 KA	2,125 2,375 ■2,875	A B B				140	15 20 54		6						6	133,35 149,22 184,15	KA	211 216 250	40		KA	291 296 330	45,8		KA	366 371 405	48					
60 KA	2,375 2,875 ■3,375	A A B	520	172	125	160	20 57 108	185	8-M16				24		265	M30	6	20	149,22 184,15 215,9	KA	192 229 280	46,5 46,5 50,5	KA	90	282 319 370	54,4 56 66	KA	170	362 399 450	57,5 58,5 68,5		
65 KA	2,375 2,875 ■3,875	A A B				160	20 20 61											6	6	149,22 184,15 215,9	KA	240 240 281	66		KA	330 330 371	74,4		KA	410 410 451	78	
70P KA	2,875 3,375 ■3,875	A	640	190	150	4	195	50 90 126		225	8-M18	28		325				M36	0	15	184,15 215,9 250,82	KA	240 280 316	86	KA	110	350 390 426	99	KA	225	465 505 541	106
75P KA	3,375 ■3,875	A B					195	40 76												0	0	215,9 250,82	KA	285 321	117		KA	395 431	135		KA	510 546
80P KA	3,375 3,875 4,750	A	810	226	160		230	44 44 76		270										8-M20	32	416	15	215,9 250,82 250,82	KA	270 270 302	180	KA	118	388 388 420	196	KA
85P KA	3,875 4,750	A					230		0				0		250,82	KA	340						252	KA	458	280	KA	558		300		
90P KA	3,875 4,750 5,250	A	1000	344	445	5	506	40	550	16-M20	32	416	35	250,82	KA	384	350						KA	120	504	302	KA	200	584	317		
95P KA	3,875 4,750 5,250	A											35	250,82	KA	506	505						KA		626	545	KA		706	560		



NOTES: (1) for bore and keyway dimensions see sheet 10-019E / (2) the arrows ➡ indicate input and output

ROTOFLUID SIZE	Dimensions in mm								K-S			SCF K-S			DCF K-S		
									Type	mm	kg*	Type	mm	kg*	Type	mm	kg*
	C	Weight	C1	Weight	C2	Weight											
10	19-24	193	35	19	75	6	21,5	25	K1-S1	133	4,3	--	--	--	--	--	--
20	24-28	230	44	24	94	8	27	32	K1-S2	169	6,6	--	--	--	--	--	--
30	□FC	290	63	38	114	10	41	45	K2-S3	225	14,3	K2-S3	280	16,7	K2-S3	320	17,3
30P	□FC	327							K2-S3	22,1	K2-S3	24,5		K2-S3	25,1		
40P	□FC	338	76	48	145	14	51,5	55	K2-S4	274	24,2	K2-S4	332	27,9	K2-S4	404	29,4
50	□FC	430	92	55	165	16	59	65	K2-S5	271	33,2	K2-S5	351	39	K2-S5	426	41,2
55	□FC								K2-S5	303	43,2	K2-S5	383	49	K2-S6	458	51,2
60	□FC 75	520	110	60	185	18	64	80	K2-S6	302	50,6	K2-S6	392	59	K2-S6	472	62,6
65	□FC 75-80								K2-S6	350	70,6	K2-S6	440	79	K2-S6	520	82,6
70P	80-90 100	640	122	70	225	20	74,5	90	K2N-S7 K3N-S7	362 402	95	K2N-S6	472 512	108	K2N-S7	587 627	115
75P	80-90 100								K2N-S7 K3N-S7	387 402	126	K2N-S7 K3N-S7	497 512	144	K2N-S7 K3N-S7	612 627	156
80P	Max.110 Max.125**	810	145	80	270	22	85	110	K2N-S8 K3N-S8	415 431	198	K2N-S8 K3N-S8	533 549	214	K2N-S8 K3N-S8	633 649	226
85P	Max.125 Max.130								K2N-S8 K3N-S8	485	270	K2N-S8 K3N-S8	603	298	K2N-S8 K3N-S8	703	318
90P	Max.130 Max.140** Max.160***	1000	220	110	550	28	116	180	K2-S9 K3-S9 K5-S9	584 684 724	416 456 476	K2-S9 K3-S9 K5-S9	644 744 784	368 408 428	K2-S9 K3-S9 K5-S9	724 824 864	383 423 443
95P	Max.130 Max.140** Max.160***			160		40	169		K2-S9 K3-S9 K5-S9	669 806 846	586 636 656	K2-S9 K3-S9 K5-S9	819 926 966	626 676 696	K2-S9 K3-S9 K5-S9	899 1006 1046	641 691 711
120P	Max.190			1300		290	180		45	190	250	K2-S12	746	1900	--	--	--

* Weight with oil - ** Bore depth PF=210 - *** Bore depth PF=250

DIMENSIONS ARE NOT BINDING

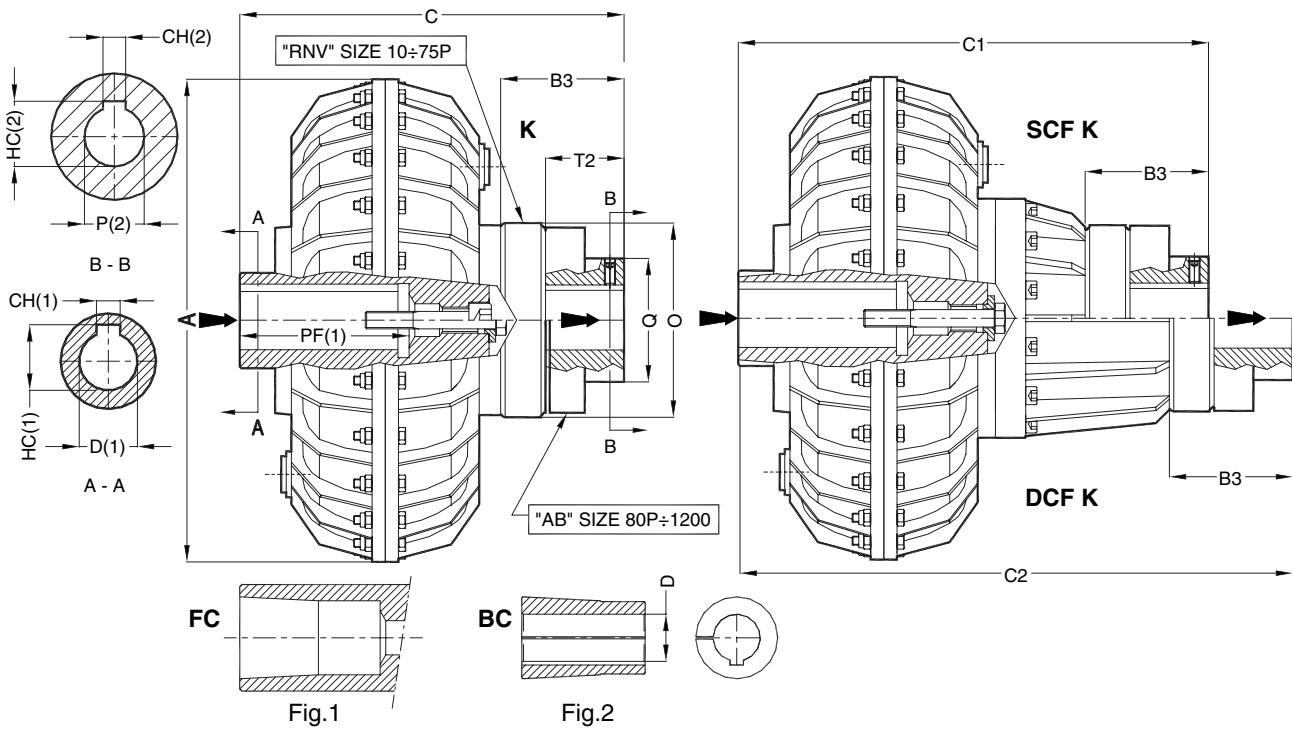
• Supplied with OVERSIZED CHAMBER SCFM or DCFM

□ Couplings with conical bore FC are supplied with Taper Bush BC and fixing screw (Fig. 1 and 2)
In case of mounting on shafts without shoulder contact WESTCAR

Example of order of a coupling with taper bush: ALFA 55 K2 FC + 55BC L15 D=60 + S5

TAPER BUSH BC WITH FIXING SCREW								
COUPLING SIZE	Type	Standard D Bore						Max D Bore
30/30P	3BC	38	42	48	-	-	-	48
40P	4BC	38	42	48	50	-	-	50
50 - 55	5BC	-	42	48	55	60	65	65
60 - 65	6BC	-	-	48	55	60	65	70

■ Taper Bushes are supplied without keyway



NOTES: (1) for bore and keyway dimensions see sheet 10-019E / (2) upon request: bore P finished / (3) the arrows ➡ indicate input and output

ROTOFLUID SIZE	Dimensions in mm							K with EL. Coupling			SCF K with EL. Coupling			DCF K with EL. Coupling			ELASTIC COUPLING
								Type	mm	kg*	Type	mm	kg*	Type	mm	kg*	
	Bore D	A	B3	O	P Max.	Q	T2		C	Weight		C1	Weight		C2	Weight	
10	19-24	193	48	88	28	45	30	K1	146	4,7	--	--	--	--	--	--	RNV-1
20	24-28	230	67	110	38	56	45	K1	192	7,6	--	--	--	--	--	--	RNV-2
30	□FC	290	85	140	48	68	55	K02	247	16,2	K02	302	18,6	K02	342	19,2	RNV-3
30P	□FC	327						K02		24	K02		26,4	K02		27	
40P	□FC	338	94	176	60	91	60	K02	292	26,6	K02	350	30,3	K02	422	31,8	RNV-4
50	□FC	430	108	194	70	106	70	K02	287	37	K02	367	42,8	K02	442	45	RNV-5
55	□FC							K02	319	47	K02	399	52,8	K02	474	55	
60	□FC 75	520	122	216	80	121	80	K02	314	56,3	K02	404	64,7	K02	484	68,3	RNV-6
65	□FC 75-80							K02	362	76,3	K02	452	84,7	K02	532	88,3	
70P	80-90 100	640	138	266	100	146	90	K2N K3N	378 418	101,5	K2N K3N	488 528	114,5	K2N K3N	603 643	121,5	RNV-7
75P	80-90 100	640	194	309	110	156	110	K2N K3N	459 474	154	--	--	--	--	--	--	FRNV-8
	80-90 100		166					--	--	--	K2M K3M	541 556	163,7	K2M K3M	656 671	175,7	RNV-8
80P	Max.110 Max.125**	810	196	330	110	170	140	K2N K3N	466 482	238,5	K2N K3N	584 600	254,5	K2N K3N	684 700	266,5	AB-8
85P	Max.125 Max.130		226	400	155	236	170	K2N K3N	566	363	K2N K3N	684	391	K2N K3N	784	411	AB-8M
90P	Max.130 Max.140** Max.160***	1000	318	550	180	290	250	K2 K3 K5	682 782 822	604 644 664	K2 K3 K5	742 842 882	556 596 616	K2 K3 K5	882 982 1022	571 611 631	AB-9
95P	Max.130 Max.140** Max.160***							K2 K3 K5	797 904 944	759 809 829	K2 K3 K5	917 1024 1064	799 849 869	K2 K3 K5	997 1104 1144	814 864 884	AB-9
120P	Max. 190	1300	318	550	180	290	250	K2	774	2050	--	--	--	--	--	--	AB-9/12

* Weight with oil - ** Bore depth PF=210 - *** Bore depth PF=250

DIMENSIONS ARE NOT BINDING

• Supplied with OVERSIZED CHAMBER SCFM or DCFM

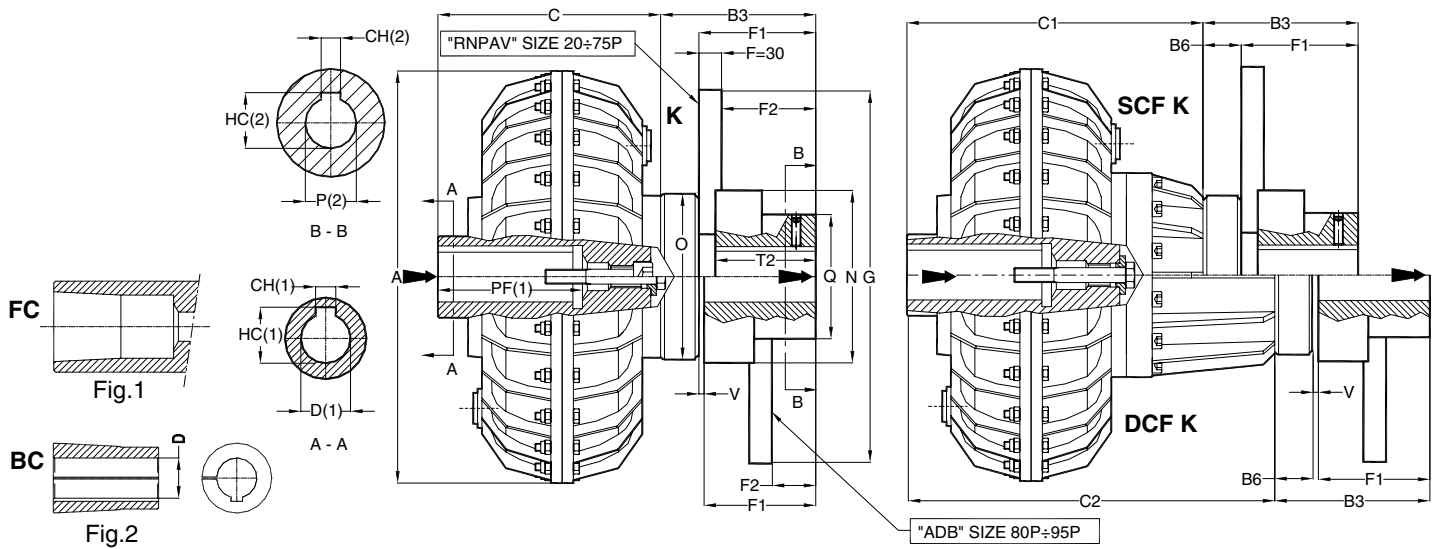
□ Couplings with conical bore FC are supplied with Taper Bush BC and fixing screw (Fig. 1 and 2)

In case of mounting on shafts without shoulder contact WESTCAR

Example of order of a coupling with taper bush: ALFA 55 K02 FC + 55BC L15 D=60 + RVN5 P=48

TAPER BUSH BC WITH FIXING SCREW								
COUPLING SIZE	Type	Standard D Bore						Max D Bore
30/30P	3BC	38	42	48	-	-	-	48
40P	4BC	38	42	48	50	-	-	50
50 - 55	5BC	-	42	48	55	60	65	65
60 - 65	6BC	-	-	48	55	60	65	70

■ Taper Bushes are supplied without keyway



NOTES: (1) for bore and keyway dimensions see sheet 10-019E / (2) upon request: bore P finished / (3) the arrows ► indicate input and output

ROTOFLUID SIZE	Dimensions in mm									K			SCF K			DCF K			ELASTIC ELEMENT WITH BRAKE DISC
										Type	mm	kg*	Type	mm	kg*	Type	mm	kg*	
	Foro D	A	B3	B6	O	P Max	Q	N	V		C	Weight		C1	Weight		C2	Weight	
20	24-28	230	93	22	110	38	56	94	--	K1	125	6	--	--	--	--	--	--	RNPAV2
30	□FC	290	111	30	140	48	68	118	--	K02	162	13,2	K02	15,6	K02	257	16,2	RNPAV3	
30P	□FC	327								21		K02	217	23,4	K02		24		
40P	□FC	338	120	34	176	60	91	147	--	K02	198	22	K02	256	25,7	K02	328	27,2	RNPAV4
50	□FC	430	134	38	194	70	106	165	--	K02	179	30	K02	259	35,8	K02	334	38	RNPAV5
55	□FC									K02	211	40	K02	291	45,8	K02	366	48	
60	□FC 75	520	148	42	216	80	121	185	--	K02	192	46	K02	282	54,4	K02	362	58	RNPAV6
65	□FC 75-80									K02	240	66	K02	330	74,4	K02	410	78	
70P	80-90 100	640	164	48	266	100	146	226	--	K2N K3N	240 280	86	K2N K3N	350 390	99	K2N K3N	465 505	106	RNPAV7
75P	80-90 100	640	220	84	309	110	156	270	--	K2N K3N	265 280	117	--	--	--	--	--	--	FRNPAV8
	80-90 100		192							--	--	--	K2M K3M	347 362	135	K2M K3M	462 477	147	RNPAV8
80P	Max.110 Max.125**	810	196	50	330	110	170	330	6	K2N K3N	270 286	180	K2N K3N	388 404	196	K2N K3N	488 504	208	ADB8
85P	Max.125 Max.130		226		400	155	236	400	6	K2N K3N	340	252	K2N K3N	458	280	K2N K3N	558	300	ADB8M
90P	Max.130 Max.140** Max.160***	1000	318	62	550	180	290	550	6	K2 K3 K5	364 464 504	350 390 410	K2 K3 K5	424 524 564	302 342 362	K2 K3 K5	504 604 644	317 357 377	ADB9 ADB9
95P	Max.130 Max.140** Max.160***									K2 K3 K5	479 586 626	505 555 575	K2 K3 K5	599 706 746	545 595 615	K2 K3 K5	679 786 826	560 610 630	

* Weight with oil and without Brake Disc RNPV o ADB - ** Bore depth PF=210 - *** Bore depth PF=250

DIMENSIONS ARE NOT BINDING

• Supplied with OVERSIZED CHAMBER SCFM or DCFM

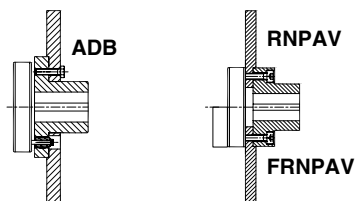
□ Couplings with conical bore FC are supplied with Taper Bush BC and fixing screw (Fig. 1 and 2) - see page 14

BRAKE DISC RNPV / FRNPV with elastic coupling

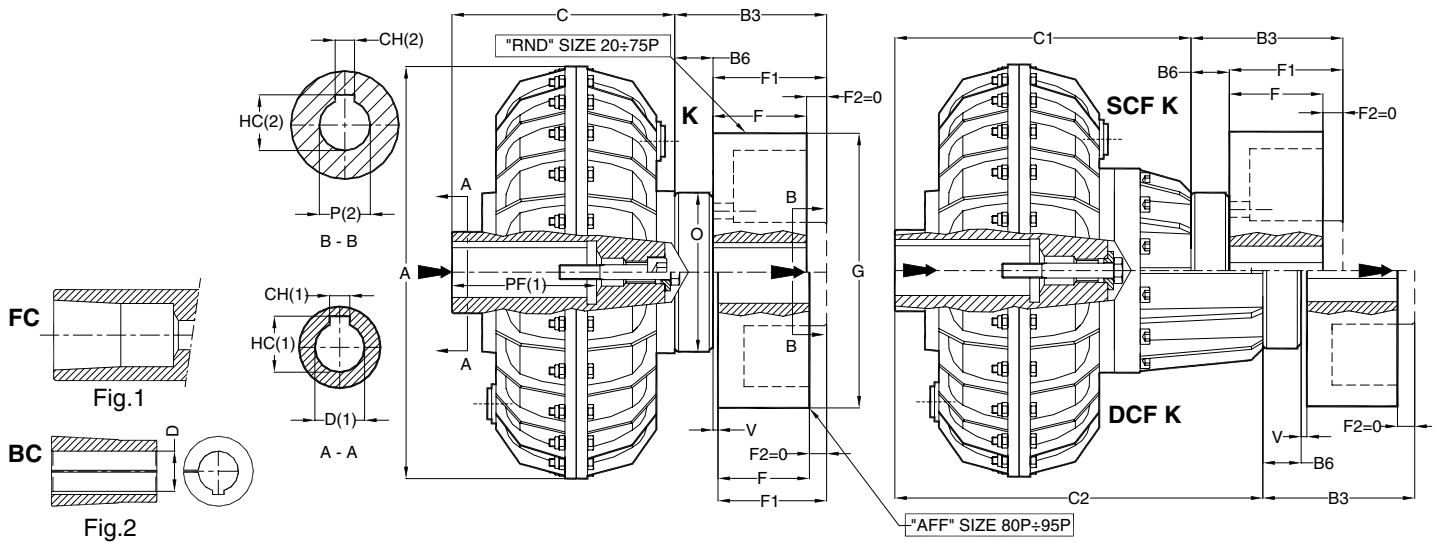
ROTOFLUID	20	30/30P	40P	50/55				60/65				70P				75P																
Brake Disc	RNPV2	RNPV3	RNPV4	RNPV5				RNPV6				RNPV7				FRNPV8				RNPV8												
øG	200	200	250	315	250	315	355	400	315	355	400	450	500	560	630	400	450	500	560	630	450	500	560	630	710	800	450	500	560	630	710	800
F1	71	81	86	96				106				116				136				136												
F2	41	51	56	66				76				86				106				106												
T2	45	55	60	70				80				90				110				110												
Weight kg	7,3	8,6	13,7	21,1	16,1	22,6	27,6	33,9	25,2	30,1	36,3	43,6	52,4	64,2	79,6	40,5	48,4	57,2	69,0	84,6	68,6	76,4	88,2	103,5	121,5	146,5	45,6	54,4	66,2	81,9	101,5	126,7

BRAKE DISC ADB with elastic coupling

ROTOFLUID	80P								85P								90P/95P							
Brake Disc	ADB8								ADB8M								ADB9							
øG	450	500	560	630	710	800	900	1000	630	710	800	900	1000	710	800	900	1000	1000	1250					
F1	140								170								250							
F2	50								80								143							
Weight kg	99	103	107	122	142	167	199	234	172	192	215	248	283	325	350	382	417	520						



Example of order of a coupling with taper bush: ALFA 55 K02 FC + 55BC L15 D=60 + RNPV5 315x30 P=48



NOTES: (1) for bore and keyway dimensions see sheet 10-019E / (2) upon request: bore P finished / (3) the arrows ► indicate input and output

ROTOFLUID SIZE	Dimensions in mm				K				SCF K				DCF K				ELASTIC ELEMENT WITH BRAKE DRUM
					Type	mm		kg*	Type	mm		kg*	Type	mm		kg*	
	Bore D	A	O	V		B6	C	Weight		B6	C1	Weight		B6	C2	Weight	
30	□FC	290	140	--	K02	30	162	13,2	K02	30	217	15,6	K02	30	257	16,2	RND3
30P	□FC	327			K02			21	K02			23,4	K02			24	
40P	□FC	338	176	--	K02	34	198	22	K02	34	256	25,7	K02	34	328	27,2	
50	□FC	430	194	--	K02	38	179	30	K02	38	259	35,8	K02	38	334	38	RND5
55	□FC				K02			211	40			K02	291			45,8	
60	□FC 75	520	216	--	K02	42	192	46	K02	42	282	54,4	K02	42	362	58	
65	□FC 75-80				K02			240	66			K02	330			74,4	K02
70P	80-90 100	640	266	--	K2N K3N	48	240 280	86	K2N K3N	48	350 390	99	K2N K3N	48	465 505	106	RND7
• 75P	80-90 100	640	309	--	K2N K3N	84	265 280	117	--	--	--	--	--	--	--	--	FRND8
	80-90 100				--	--	--	--	K2M K3M	56	375 390	135	K2M K3M	56	490 505	147	RND8
80P	Max.110 Max.125**	810	330	6	K2N	50	270	180	K2N	50	388	196	K2N	50	488	208	AFF8
• 85P	Max.125 Max.130		400	6	K2N K3N		340	252	K2N K3N		458 458	280	K2N K3N		558 558	300	AFF8M
90P	Max.130 Max.140** Max.160***	1000	550	6	K2 K3 K5	62	364 464 504	350 390 410	K2 K3 K5	62	424 524 564	302 342 362	K2 K3 K5	62	504 604 664	317 357 377	AFF9
95P	Max.130 Max.140** Max.160***				K2 K3 K5		479 586 626	505 555 575	K2 K3 K5		599 706 746	545 595 615	K2 K3 K5		679 786 826	560 610 630	

* Weight with oil and without Brake Drum - ** Bore depth PF=210 - *** Bore depth PF=250

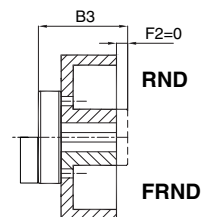
DIMENSIONS ARE NOT BINDING

• Supplied with OVERSIZED CHAMBER SCFM or DCFM

□ Couplings with conical bore FC are supplied with Taper Bush BC and fixing screw (Fig. 1 and 2) - see page 14

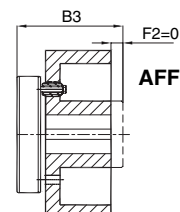
BRAKE DRUM RND with elastic coupling

ROTOFLUID	30/30P		40P		50/55		60/65		70P		75P-K		75P SCF K/DCF K	
Brake Drum	RND3		RND4		RND5		RND6		RND7		FRND8		RND8	
øG	160	200	250	160	200	250	315	200	250	315	400	200	250	315
F=F1	60	75	95	60	75	95	118	75	95	118	150	75	95	118
B3	90	105	125	94	109	129	152	113	133	156	188	117	137	160
P max	48	48	48	60	60	60	70	70	70	70	80	80	80	100
Weight kg	4,4	6,6	14	5	7,8	14,6	25,8	8,5	15,6	27,4	46,3	9,6	17,6	30,3

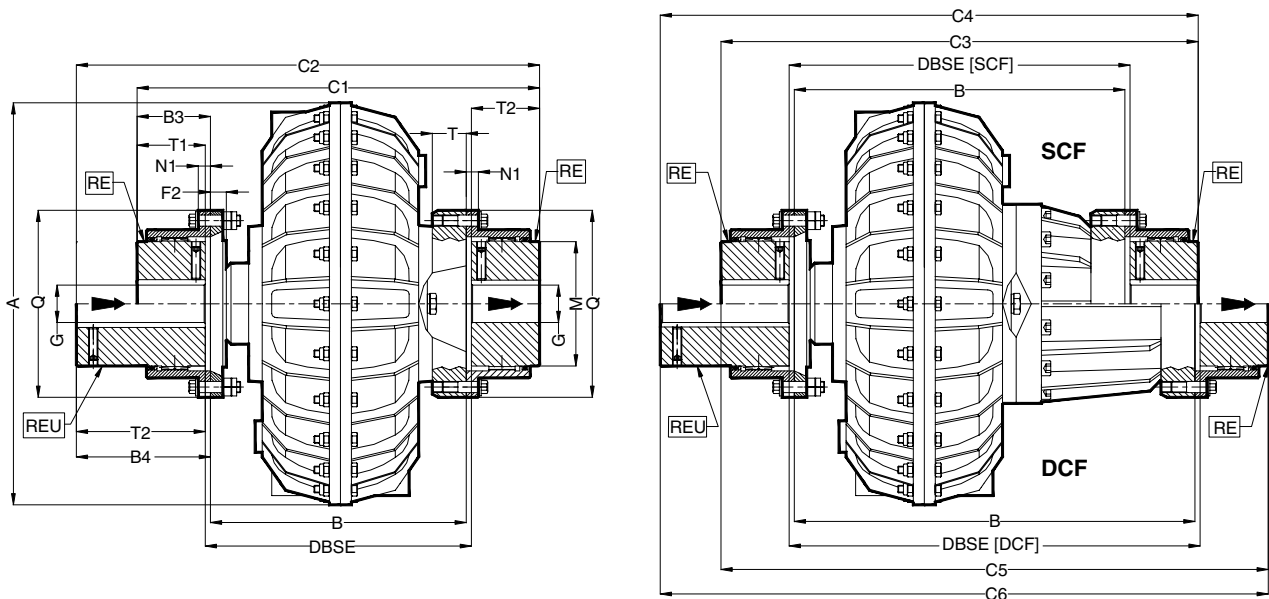


BRAKE DRUM AFF with elastic coupling

ROTOFLUID	80P		85P		90P/95P	
Brake Drum	AFF8		AFF8M		AFF9	
øG	400	500	630	500	630	710
F=F1	150	190	236	190	236	265
B3	206	246	292	246	292	304
P max	110	110	110	160	160	180
Weight kg	105	161	208	193	252	341



Example of order of a coupling with taper bush: ALFA 55 K02 FC + 55BC L15 D=60 + RND5 315x118 P=48



NOTES: (1) upon request: bore G finished / (2) the arrows ► indicate input and output / (3) reverse mounting is possible upon request

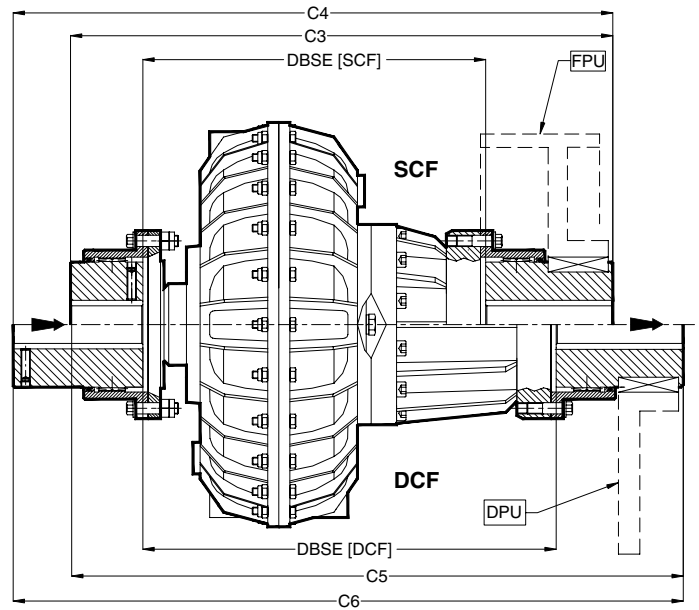
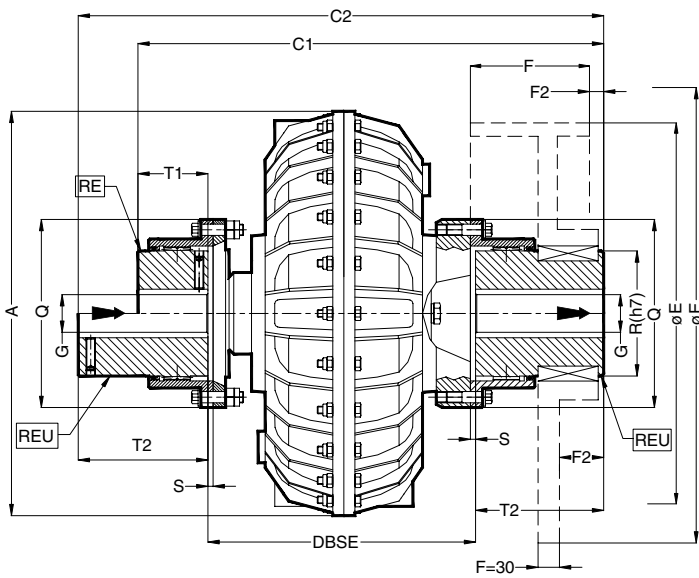
ROTOFLUID SIZE	Dimensions in mm								WAG-G						WAG-GU							
									GEAR COUPLING	Dimensions in mm				kg*	GEAR COUPLING	Dimensions in mm				kg*		
	A	B	F2	M	N1	Q	T	DBSE		C1	G		B3	T1		Weight	C2	G		B4	T2	Weight
											Raw	Max						Raw	Max			
20	230	162	14	69	12	111	23	165	RE40	251	10	45	44,5	43	13	RE40U	313	10	45	106,5	105	15
30	290	197	12	85	10	142	23	200	RE55	300	18	60	51,5	50	26,5	RE55U	365	18	60	116,5	115	29,5
30P	327														34,5							37,5
40P	338														233							36,2
50	430	214													217							317
55	430	256,5	17,5	133	13	200	28	261,5	RE85	413,5	40	95	78,5	76	79,3	RE85U	487,5	40	95	152,2	150	85
60	520	265					270	422		86					496		92					
65		313					318	470		107,2					544		113					
70P	640	293,5	23	152	13	225	60,5	298,5	RE100	478,5	50	110	92,5	90	146,7	RE100U	558,5	50	110	172,5	170	156
75P		348,5					353,5	533,5		187,5					613,5		197					
80P	810	370	28	178	22	265	72	376	RE120	586	60	130	108	105	262	RE120U	666	60	130	188	185	274
85P		440					446	656		324					736		349					
90P	1000	440	34	254	24	370	42	448	RE180	748	95	190	154	150	550	RE180U	893	95	190	299	295	595
95P		555					563	863		710					1008		800					
120P	1300	512	50	305	25	438	49	520	RE220	900	120	230	194	190	2200	RE220U	1015	120	230	309	305	2245
125P	UPON REQUEST								RE250	UPON REQUEST						RE250U	UPON REQUEST					

ROTOFLUID SIZE	Dimensions in mm		SCF								Dimensions in mm		DCF							
	B	DBSE	WAG-G				WAG-GU				B	DBSE	WAG-G				WAG-GU			
			GEAR COUPLING	mm	kg*	GEAR COUPLING	mm	kg*					GEAR COUPLING	mm	kg*	GEAR COUPLING	mm	kg*		
				C3	T1	Weight	C4	T2	Weight					C5	T1	Weight	C6	T2	Weight	
30	252	255	RE55	355	50	28,5	420	115	31	292	295	RE55	395	50	29,5	RE55U	460	115	31,5	
30P						36,5			39,5						37				39,5	
40P						40			43						41				44	
50						50			53						52				55	
55						85			91						87				93	
60	355	360	RE85	512	76	94,5	586	150	100,5	435	440	RE85	592	76	98	RE85U	666	150	104	
65	403	408		560		115,5			121,5	483	488		640		119		714		125	
70P	403,5	408,5		588,5	90	160			169	518,5	523,5	RE100	703,5	90	166,5	RE100U	783,5	170	179	
75P	458,5	463,5	RE100	643,5		200,5	723,5	170	209,5	573,5	578,5		758,5		207,5		838,5		216,5	
80P	488	494		704	105	278			280,5	588	594	RE120	804	105	290	RE120U	884	185	302,5	
85P	558	564		774		374			398	658	664		874		392		954		416	
90P	500	508	RE180	808	150	542	953	295	587	580	588	RE180	888	150	557	RE180U	1033	295	602	
95P	675	683		983		750			840	755	763		1063		855		1208		945	

* Weight with oil

• Supplied with OVERSIZED CHAMBER SCFM or DCFM

DIMENSIONS ARE NOT BINDING



NOTES: (1) upon request: bore G finished / (2) the arrows ➡ indicate input and output

ROTOFLUID SIZE	GEAR COUPLINGS		Dimensions in mm													SCF					DCF											
																WAG-GPU		WAG-GPUU				WAG-GPU		WAG-GPUU				WAG-GPU		WAG-GPUU		
	Standard Hub	Long Hub	A	G min	G max	Q	R (h7)	S	T1 RE	T2 RE U	mm	mm	kg*	mm	kg*	mm	mm	kg*	mm	kg*	mm	mm	kg*	mm	mm	kg*						
											DBSE	C1	W.	C2	W.	DBSE	C3	W.	C4	W.	DBSE	C5	W.	C6	W.							
30	RE55	RE55U	290	18	60	142	80	1,5	50	115	200	365	28,9	430	31,3	255	420	30,9	485	33,3	295	460	31,9	525	34,3							
30P																																
40P																																
50																																
55	RE85	RE85U	430	40	95	200	125	2,5	76	150	261,5	487,5	85,3	561,5	91	341,5	567,5	91	641,5	97	416,5	642,5	93	716,5	99							
60																																
65																																
70P	RE100	RE100U	640	50	110	225	145	2,5	90	170	298,5	558,5	156	638,5	165	408,5	668,5	169	748,5	178	523,5	783,5	176	863,5	185							
75P																																
80P	RE120	RE120U	810	60	130	265	175	3	105	185	376	666	275	746	287	494	784	291	864	303	594	884	303	964	315							
85P																																
90P	RE180	RE180U	1000	95	190	370	245	4	150	295	448	893	595	1038	640	508	953	587	1098	632	588	1033	602	1178	647							
95P																																
120P	RE220	RE220U	1300	120	230	438	290	5	190	305	520	900	2200	1015	2245	UPON REQUEST					UPON REQUEST											

* Weight with oil • Supplied with OVERSIZED CHAMBER SCFM or DCFM

Example of order with standard hub: ALFA 80P SCF WAG-G RE120PU G(m)= 100 G(r)=90

Example of order with long hub: ALFA 80P SCF WAG-G RE120PUU G(m)= 100 G(r)=90

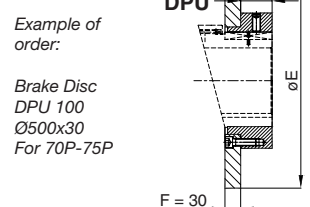
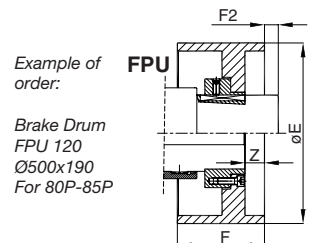
BRAKE DRUM FPU

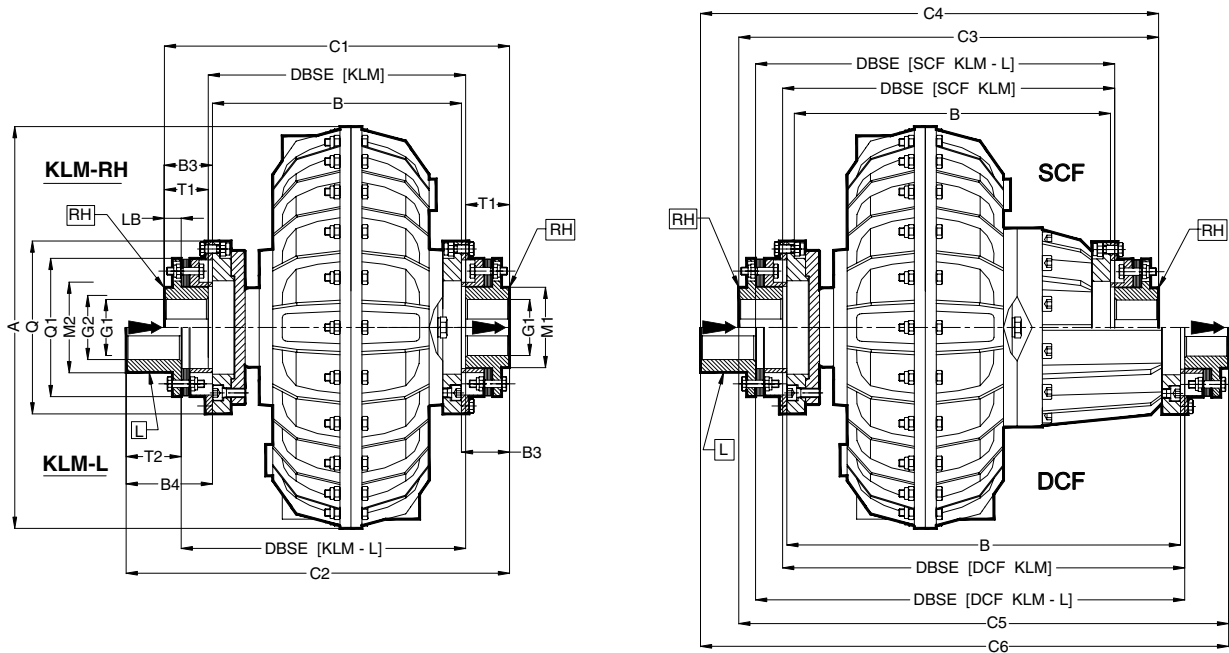
ROTOFLUID	30-30P-40P-50					55-60-65					70P-75P					80P-85P					90P-95P					120P				
Type FPU	FPU-55					FPU-85					FPU-100					FPU-120					FPU-180					FPU-220				
Ø E	160	200	250	315	400	250	315	400	315	400	500	400	500	630	500	630	710	630	710	800	500	630	710	630	710	800	500	630	710	800
F	60	75	95	118	150	95	118	150	118	150	190	150	190	236	190	236	265	236	265	300	190	236	265	236	265	300	190	236	265	300
F2	UPON REQUEST																													
Z	0	0	0	3	35	0	0	0	0	0	20	0	5	51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Weight kg	5,4	9,2	14,5	29	50,8	19,5	30,8	52,8	35,9	58,3	96,8	57	95,6	134	105	142	178	145	180	254	105	142	178	145	180	254	105	142	178	254

BRAKE DISC DPU

ROTOFLUID	30-30P-40P-50					55-60-65					70P-75P					80P-85P					90P-95P					120P				
Type DPU	DPU-55					DPU-85					DPU-100					DPU-120					DPU-180					DPU-220				
Ø E	250	315	355	400	355	400	450	500	500	560	630	710	500	560	630	710	800	1000	710	800	1000	1250	800	1000	1250	800	1000	1250	800	1000
F2	41	41	41	41	45	45	45	45	60	60	60	60	60	60	60	60	60	60	60	60	105	105	105	105	105	105	105	105	105	105
Weight kg	11,7	18,5	23,5	28,8	25,2	31,5	38,5	47,3	51	63	78	98	50	61,6	77	97	122	188	105	130	197	300	105	130	197	300	105	130	197	300

DIMENSIONS ARE NOT BINDING





NOTES: (1) upon request: bore G finished / (2) the arrows ► indicate input and output / (3) reverse mounting is possible upon request

ROTOFLUID SIZE	DISC COUPLING HBSX	KLM-RH												KLM-L							
		Dimensions in mm											kg*	Dimensions in mm					kg*		
		A	B	C1	G1 max	DBSE	B3	LB	M1	Q	Q1	T1	Weight	C2	G2 max	DBSE	B4	M2	T2	Weight	
30	170	290		C1	48	217		LB	M1	Q	Q1	43	26,4	346,7	55	243,7	88,2	75	60	27,2	
30P		327	214	303		217	44,5	16.3	64	155	119	34,2	243,7			35					
40P		338	250	339		253							37			382,7				279,7	37,8
50	330	430	234	337	65	237	51,5	18	86	185	148	50	51,6	389	65	269	103,5	92	70	52,9	
55			266	369		269							61,6	421		301				62,9	
60	650	520	256	383	85	259	63,5	25	120	260	214	62	94,5	468	95	296	148,5	135	110	101,5	
65			304	431		307							114,5	516		344				121,5	
70P	1260	640	276	433	100	281	78,5	28	138	295	246	76	161	525	110	329	170,5	155	120	169,4	
75P			331	488		336							192	580		384				200,4	
80P	2700 3160	810	360	576 606	105 125	366	108 123	35 41	150 175	330 365	275 308	105 120	322 357	666 710	120 135	436 445	198 227	165 190	125 145	328,9 366,7	
85P	3160		430	676	125	436	123	41	175	365	308	120	429	780	135	515	227	190	145	438,7	
90P	3160	1000	461	707	125	467	123	41	175	365	308	120	530	811	135	546	227	190	145	545,3	
95P	4630		576	854	140	584	139	46	195	415	346	135	740	973	150	673	258	215	165	755,3	
120P		UPON REQUEST																			

UPON REQUEST

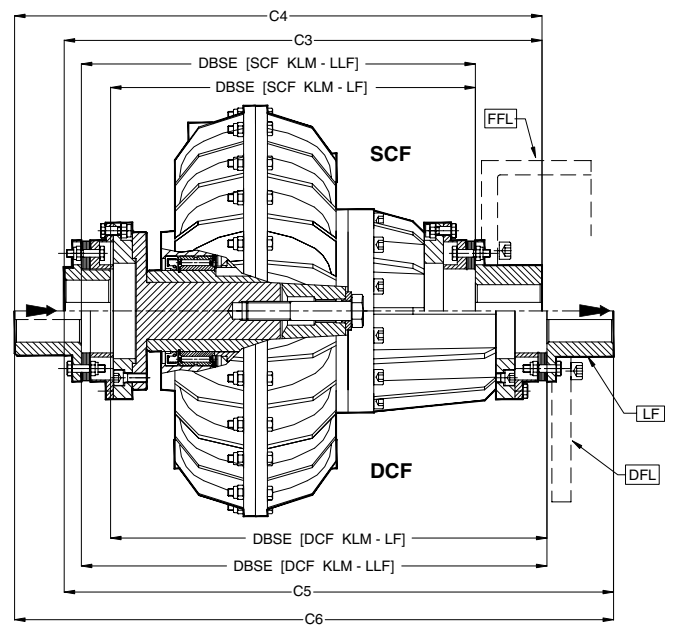
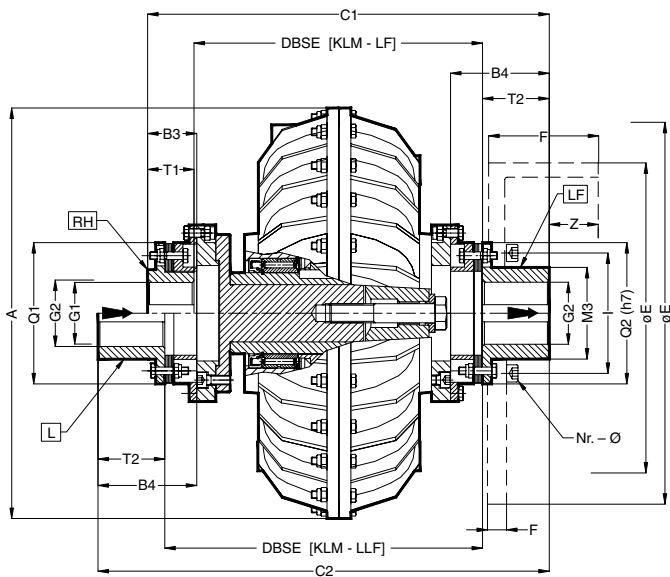
* Weight with oil

DIMENSIONS ARE NOT BINDING

ROTOFLUID SIZE	DISC COUPLING HBSX	SCF KLM-RH					SCF KLM-L				ROTOFLUID SIZE	DISC COUPLING HBSX	DCF KLM-RH					DCF KLM-L				
		mm				kg*	mm			kg*			mm				kg*	mm			kg*	
		B	DBSE	C3	T1	Weight	DBSE	C4	T2	Weight			B	DBSE	C5	T1	Weight	DBSE	C6	T2	Weight	
30	170					28,8				29,6	30	170					29,4					30,2
30P		269	272	358	43	36,6	298,7	401,7	60	37,4	30P		309	312	398	43	37,2	338,7	441,7	60	38,2	
40P		308	311	397		41,4	337,7	440,7		42,2	40P		380	383	469		42,2	409,7	512,7		43	
50	330	314	317	417	50	57,4	349	469	70	58,7	50	330	389	392	492	50	59,6	424	544	70	60,9	
55		346	349	449		67,4	381	501		68,7	55		421	424	524		69,6	456	576		70,9	
60	650	346	349	473	62	102,9	386	558	110	109,9	60	650	426	429	553	62	106,5	466	638	110	113,8	
65		394	397	521		122,9	434	606		129,9	65		474	477	601		126,5	514	686		133,5	
70P	1260	386	391	543	76	174	439	635	120	182,4	70P	1260	501	506	658	76	181	554	750	120	189,4	
75P		441	446	598		205	494	690		213,4	75P		556	561	713		212	609	805		220,4	
80P	2700 3160	478	484	694 724	105 120	338 373	554 563	784 828	125 145	344,9 382,7	80P	2700 3160	578	584	794 824	105 120	350 385	654 663	884 928	125 145	356,9 394,7	
85P	3160	548	554	794	120	457	633	898	145	466,7	85P	3160	648	654	894	120	477	733	998	145	486,7	
90P	3160	521	527	767	120	482	606	871	145	497,3	90P	4630	601	607	847	135	497	686	951	145	512,3	
95P	4630	696	704	974	135	780	793	1093	165	795,3	95P	4630	776	784	1054	135	795	873	1173	165	810,3	

• Supplied with OVERSIZED CHAMBER SCFM or DCFM

Example of order : ALFA 55KLM-L 330 RH (with 1 RH hub and 1 L hub)



NOTES: (1) upon request: bore G finished / (2) the arrows ➡ indicate input and output

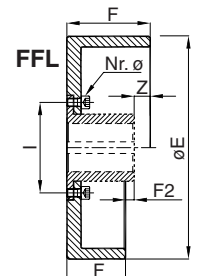
ROTOFLUID SIZE	DISC COUPLING HBSX	mm								KLM									SCF KLM						DCF KLM					
										LF					LLF				LF			LLF			LF			LLF		
										mm			kg*		mm		kg*	mm		kg*	mm		kg*	mm		kg*	mm		kg*	mm
		A	B3	B4	ØG1 max	ØG2 max	M3	Q1	Q2	DBSE	C1	T1	W.	DBSE	C2	T2	W.	DBSE	C3	W.	DBSE	C4	W.	DBSE	C5	W.	DBSE	C6	W.	
30	170	290							243,7	346,7	43	27,2	270,4	390,4	60	28	298,7	401,7	29,6	325,4	445,4	30,4	338,7	441,7	30,2	365,4	485,4	31		
30P		327	44,5	88,2	48	55	75	119	118,5			35			35,8			37,4	325,4	445,4	38,2			38,2	365,4		39			
40P		338								279,7	382,7	43	37,8	306,4	426,4	60	38,6	337,7	440,7	42,2	364,4	484,4	43	409,7	512,7	43	436,4	556,4	43,8	
50	330	430							269	389		52,9	301	441		54,2	349	469	58,7	381	521	60	424	544	60,9	456	596	62,2		
55		430	51,5	103,5	65	65	92	148	147,5	301	421	50	62,9	333	473	70	64,2	381	501	68,7	413	553	70	456	576	70,9	488	628	72,2	
60		520								296	468		101,5	333	553		108,5	386	558	109,9	423	643	116,9	466	638	113,8	503	723	123	
65	650	520	63,5	148,5	85	95	135	214	213	344	516	62	121,5	381	601	110	128,5	434	606	129,9	471	691	136,9	514	686	133,5	551	771	140,5	
70P		640							329	525		169,4	377	617		177,8	439	635	182,4	487	727	190,8	554	750	189,4	602	842	197,8		
75P		640	78,5	170,5	100	110	155	246	245	384	580	76	200,4	432	672	120	208,8	494	690	213,4	542	782	221,8	609	805	220,4	657	897	228,8	
80P	2700 3160	810	108	198	105	120	165	275	274	436	666	105	328,9	506	756	125	335,8	554	784	344,9	624	874	351,8	654	884	356,9	724	974	363,8	
85P		123	227	125	135	190	308	307	445	710	120	366,7	524	814	145	377,4	563	828	382,7	642	932	392,4	663	928	394,7	742	1032	404,4		
90P		123	227	125	135	190	308	307	515	780	120	438,7	594	884	145	448,4	633	898	466,7	712	1002	476,4	733	998	486,7	812	1102	496,4		
95P	3160	1000	123	227	125	135	190	308	307	546	811	120	545,3	625	915	145	560,6	606	871	497,3	685	975	512,6	686	951	512,3	765	1055	527,6	
95P		4630	1000	139	258	140	150	215	346	673	973	135	755,3	762	1092	165	770,6	793	1093	795,3	882	1212	810,6	873	1173	810,3	962	1292	825,6	
120P		UPON REQUEST																												

* Weight with oil

DIMENSIONS ARE NOT BINDING

BRAKE DRUM FFL

ROTOFLUID	30-30P-40P				50-55				60-65			70P-75P			80P		85P-90P		95P	
FFL	FFL 170				FFL 330				FFL 650			FFL 1260			FFL 2700		FFL 3160		FFL 4630	
Ø E	160	200	250	315	200	250	315	400	250	315	400	315	400	500	400	500	500	630	630	710
F	60	75	95	118	75	95	118	150	95	118	150	118	150	190	150	190	190	236	236	265
F2	0	-	-	-	-	-	-	-	15	-	-	2	-	-	-	-	-	-	-	-
Z	0	15	35	58	5	25	48	80	-	8	40	-	30	70	25	65	45	91	71	100
I	100				128				195			224			216		282		314	
Nr.-Ø	8 M10				8 M12				16 M12			16 M14			8 M20		16 M20		16 M20	
Weight kg	4	6,8	11,5	28	6,5	11,1	27,7	49,1	9,9	25	47,5	24	46	85	46,1	84,7	83,3	121	119	154,8

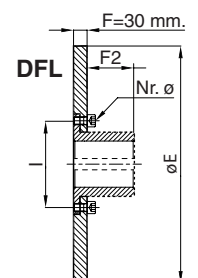


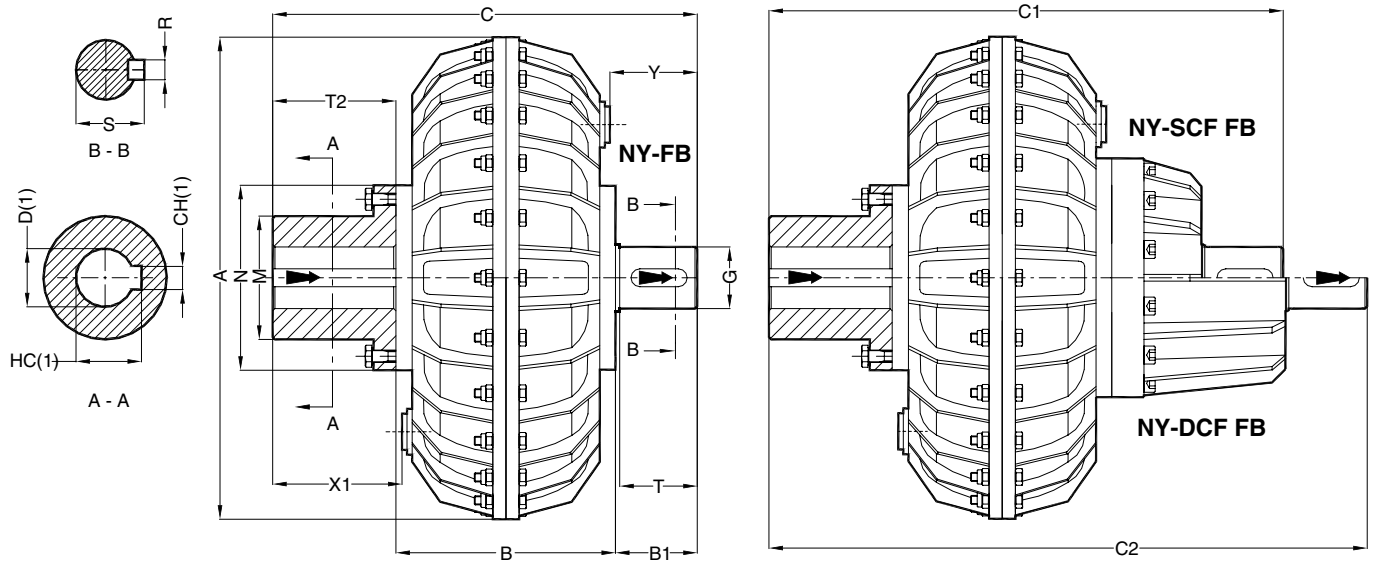
BRAKE DISC DFL

FRAME DISC DFL																																
ROTOFLUID	30-30P-40P						50-55				60-65				70P-75P						80P				85P-90P				95P			
DFL	DFL 170						DFL 330				DFL 650				DFL 1260						DFL 2700				DFL 3160				DFL 4630			
Ø E	250	315	355	315	355	400	450	400	450	500	500	560	630	710	800	500	630	710	800	630	710	800	710	800	1000	1250						
F	30						30				30				30						30				30							
F2	27.5						34.5				70				79						81				96				113			
I	100						128				195				224						216				282				314			
Nr.-Ø	8 M10						8 M12				16 M12				16 M14						8 M20				16 M20				16 M20			
Weight kg	10,5	17	22,3	16	21,8	28	35,9	26,2	34	42,8	41,7	53,5	70	88,8	114	41,2	53	68,4	88,2	66,7	86,5	112	84,7	109,8	176,3	280,3						

* Supplied with OVERSIZED CHAMBER SCFM or DCFM

Example of order: ALFA 55 SCF KLM 330 LF G(m)=60 G(r)=40 with Brake Drum FFL 330 ØE 315x118





NOTES: (1) for bore and keyway dimensions see sheet 10-019E / (2) the arrows ► indicate input and output

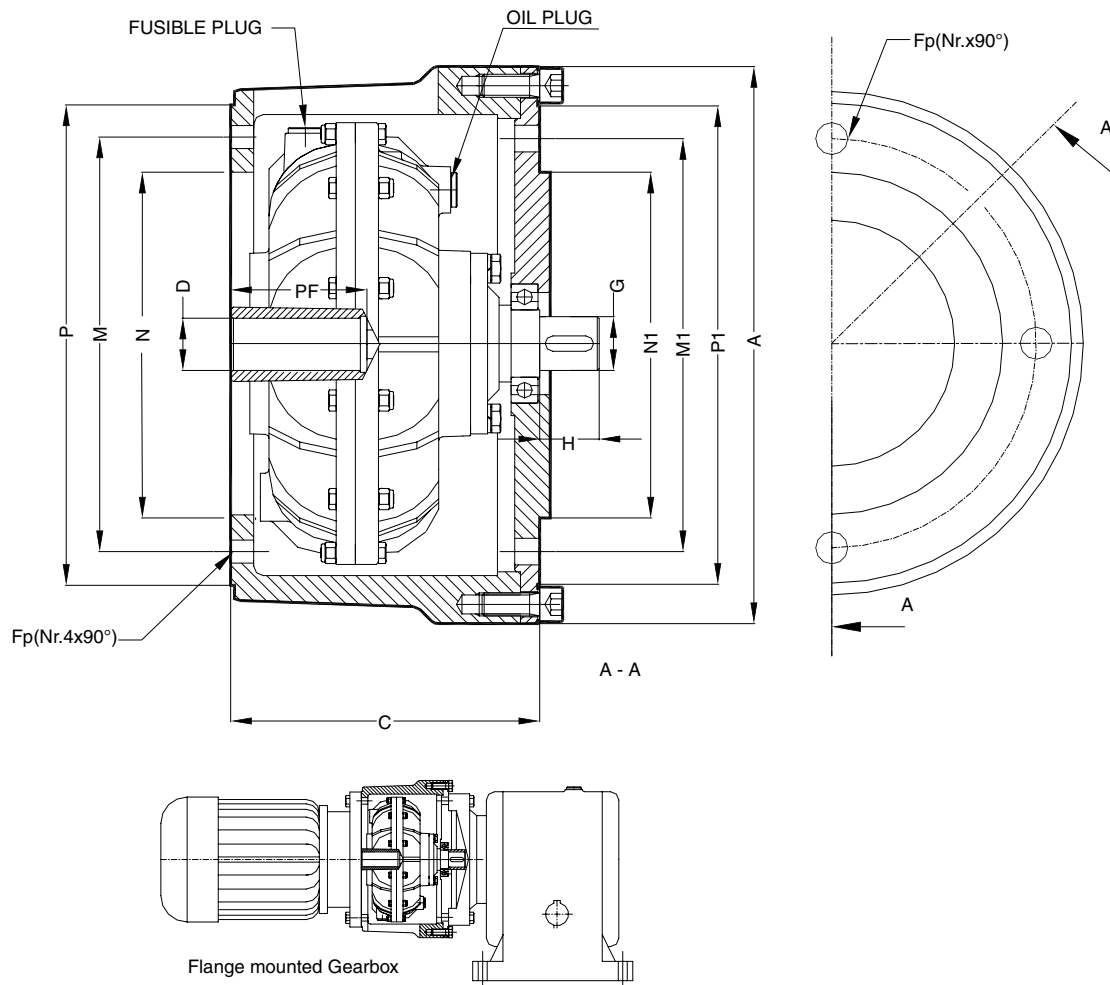
ROTOFLUID SIZE	NY-FB															NY-SCF FB		NY-DCF FB	
	Dimensions in mm														kg*	mm	kg*	mm	kg*
	D G7	A	B	B1	C	G h7	N	M	R	S	T	T2	X1	Y	Weight	C1	Weight	C2	Weight
30	28 38 42-48-55	290	150	51	261	38	116	80	10	41	45	60	69	55	19	316	21,5	356	22,1
30P	28 38 42-48-55	327											64		28	316	30,5		
40P	38 42-48-55	338	183	61	324	48	145	91	14	51,5	55	80	104	72	31	382	35	454	37
50	42-48-55 60-65-75	430	154	71	325	55	165	110	16	59	65	100	106	91	44	405	50	480	52
55	42-48-55 60-65-75		196		367									77	54	447	60	522	62
60	48-55 60-65-75 80	520	172	86	368	60	185	135	18	64	80	110	116	106	71	458	79	538	83
65	55 60-65-75 80		220		416									92	91	506	99	586	103
70P	65-75 80-90 100	640	190	96	426	70	225	160	20	74,5	90	140	140	111	129	536	142	651	149
75P	65-75 80-90 100		245		481					75,5				96	170	591	183	706	190
80P	60-65-75 80-90 100-110	810	226	116	482	80	270	170	22	85	110	170	170	131	238	600	254	700	266
85P	60-65-75 80-90 100-110		300		556									116	310	674	336	774	348
90P	80-90-95 100-110 120-140	1000	344	186	700	110	345	250	28	116	180	170	170	240	470	760	510	840	530

* Weight with oil

● Supplied with OVERSIZED CHAMBER SCFM or DCFM

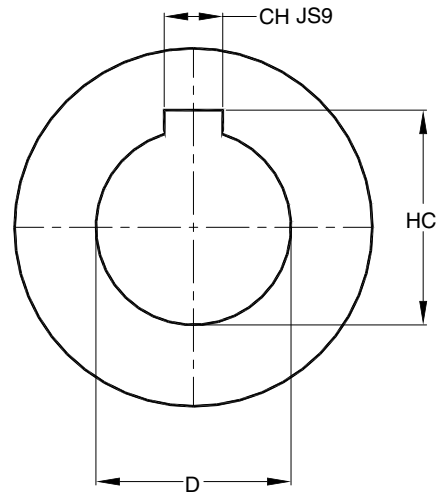
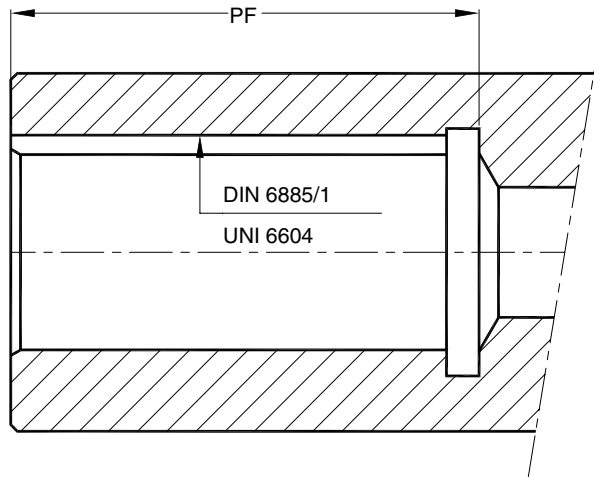
Example of order: ALFA 55 NY-FB D=65
ALFA 55 NY-SCF FB D=65
ALFA 55 NY-DCF FB D=65

DIMENSIONS ARE NOT BINDING



COUPLING		MOTOR		Dimensions in mm													kg*	
Grand.	Tipo	Tipo	kW	A	C	D	Fp	G h7	H	M	M1	N F7	N1 h7	P	P1	PF	Weight	
10	CKS-19-19	80	0,55	240	128	19 G7	ø11	19	25	165	165	130	130	200	200	40	8,5	
			0,75			24 G7		24								50		
	CKS-24-24	90 S	1,1															
		90 L	1,5															
20	CKS-28-28	100	2,2	292	161	28 G7	ø13	28	32	215	215	180	180	250	250	60	24	
			3															38
		112 M	4															
30	CKS-38-38	132S 132M	5,5 7,5	350	210	38 F7		ø17	38	45	300	300	250	250	350	350	110	40
30P	CKS-42-42	160 M	11	400		255			42 F7									
		160 L	15		48 F7		48		55	42								
40P	CKS-48-48	180 M	18,5	400		255					48 F7	ø17	48	55	300	300	250	250
		180 L	22															

* Weight with oil



D	Tolerance	PF	CH	HC	Tolerance
10	H7	25	3	11,4	+ 0,1 0
11 *		25	4	12,8	
12		25	4	13,8	
13		30	5	15,3	
14 *			5	16,3	
15			5	17,3	
16		40	5	18,3	+0,2 0
17			5	19,3	
18			6	20,8	
19 *			6	21,8	
20		50	6	22,8	
21			6	23,8	
22			6	24,8	
23			8	26,3	
24 *			8	27,3	
25			8	28,3	
26			8	29,3	
27			8	30,3	
28 *		60	8	31,3	
30			8	33,3	
32			10	35,3	
33			10	36,3	
34	G7	80	10	37,3	
35			10	38,3	
36			10	39,3	
38 *			10	41,3	

D	Tolerance	PF	CH	HC	Tolerance
40	G7	110	12	43,3	+0,2 0
42 *			12	45,3	
45			14	48,8	
48 *			14	51,8	
50			14	53,8	
55 *			16	59,3	
60 *		140	18	64,4	
65 *			18	69,4	
70 *			20	74,9	
75 *			20	79,9	
80 *		170	22	85,4	
85 *			22	90,4	
90 *			25	95,4	
95			25	100,4	
100 *		210	28	106,4	
105			28	111,4	
110 *			28	116,4	
115			32	122,4	
120		250	32	127,4	
125 *			32	132,4	
130			32	137,4	
135 *			36	143,4	
140			36	148,4	
160			40	169,4	
180			45	190,4	

* STANDARD BORES FOR UNEL MEC ELECTRIC MOTORS

FUSIBLE PLUG TF

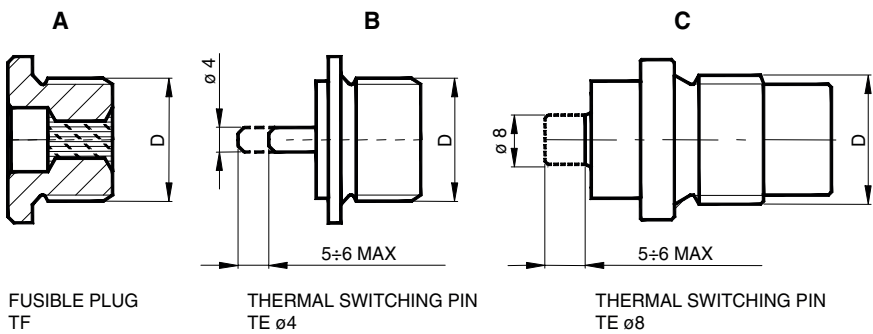
In case of overheating, the fusible plug allows the oil out and thereby disconnects the power transmitted to the output shaft. Fusible plugs are available for four different melting temperatures: 96°C, 120°C, 145°C and 180°C. WESTCAR standard couplings are supplied with fusible plug at 145° C.

THERMAL SWITCHING PIN TE

In case of coupling overheating with a thermal switching pin, a pin is released and collide against a limit switch which activates an alarm or shuts off the electric motor. This method avoids the oil leakage from the coupling.

Fusible switching pins are available for four different temperatures: 96°C, 120°C, 145°C and 180°C.

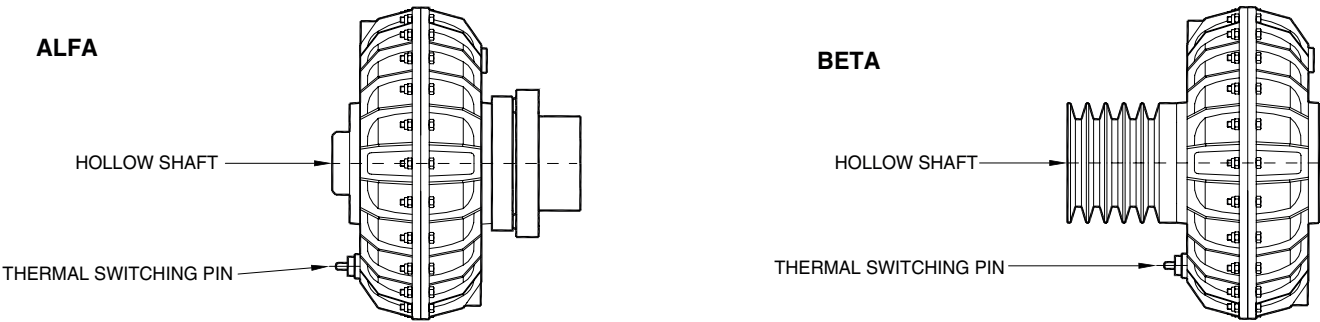
In case of stall conditions, motor running and machine locked, the coupling housing must be driving to guarantee the signal survey.



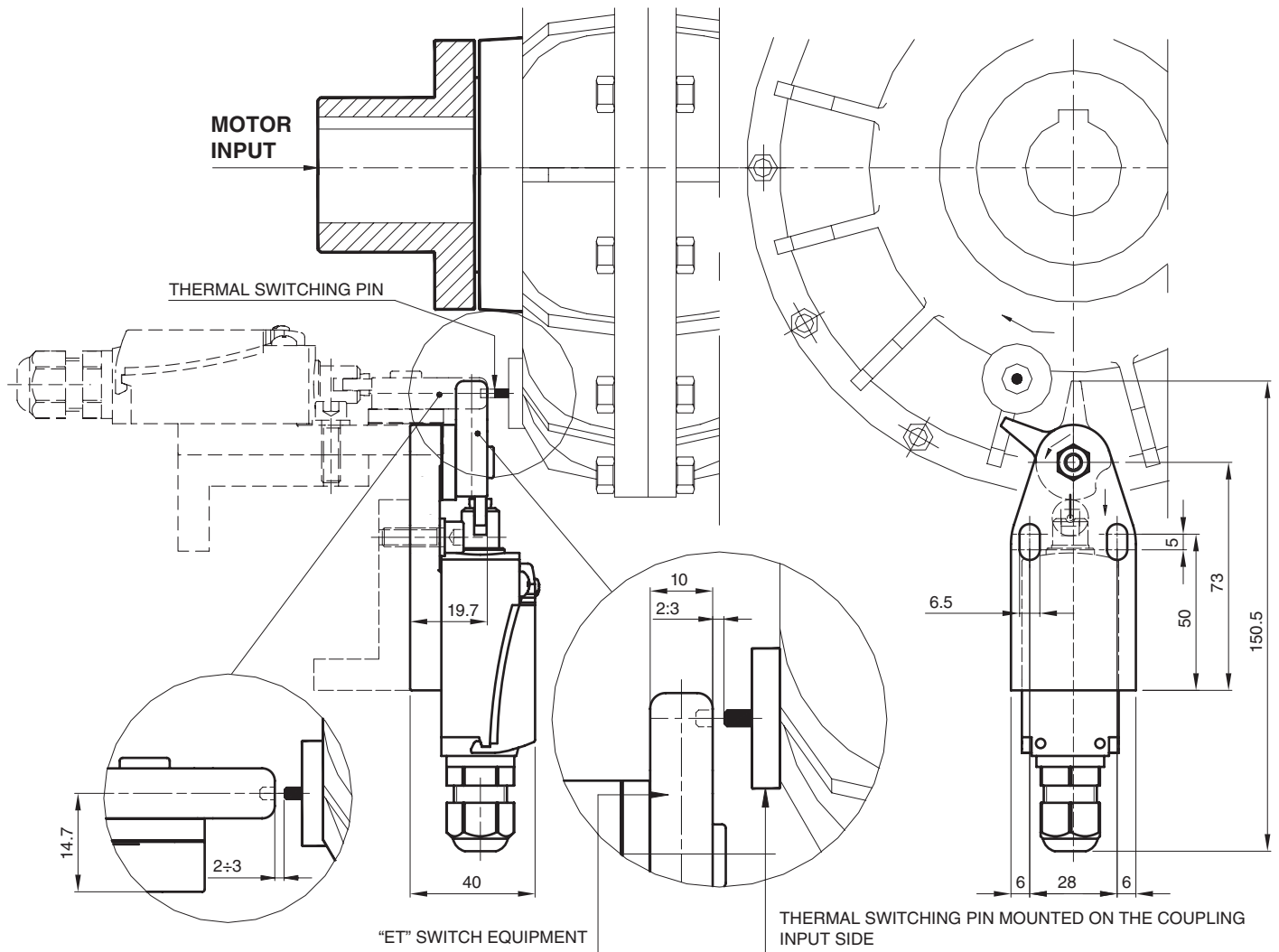
ROTOFLUID SIZE	DIMENSIONS				TEMPERATURE					
	D	A	B	C	96 °C BLUE	120 °C WHITE	140 °C RED	160 °C ORANGE	180 °C GREEN	199 °C LIGHT GREEN
10 20 30-30P 40P	1/4 GAS	X	X	-	●	●	●	●	●	●
50-55 60-65	1/2 GAS	X	X	-	●	●	●	●	●	●
70P-75P 80P-85P	1/2 GAS	X	-	X	●	●	●	●	●	●
90P-95P	3/4 GAS	X	-	X	●	●	●	●	●	●

When ordering specify: dimension D, safety plug melting temperature and colour.
 Example of order: **Thermal switching pin TE ¼ GAS 145°C RED.**

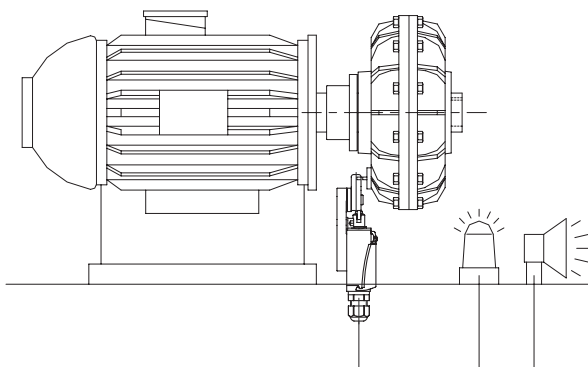
THERMAL SWITCHING PIN STANDARD POSITION



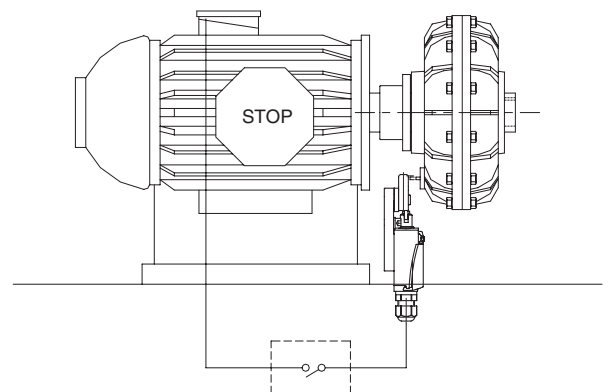
The thermal switching pin is normally mounted by the hollow shaft side but in case of need can be located in the opposite side.



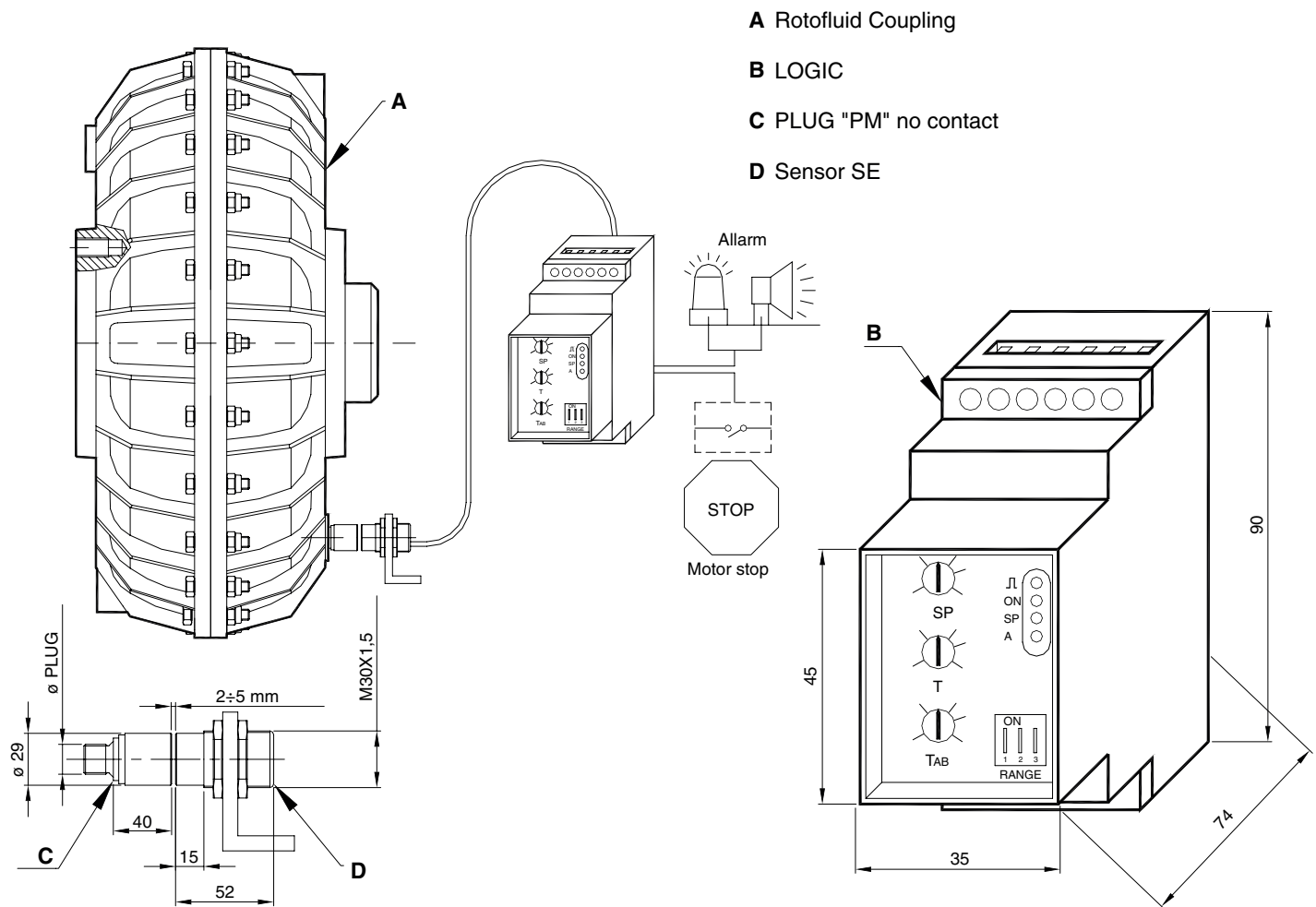
"ET" CONNECTED TO A LIGHT SOUND SIGNAL



"ET" CONNECTED TO SWITCH OFF THE DRIVE



The ET safety device consists of a microswitch and a cam mounted on a base and operates in combination with a thermal switching pin fitted on the fluid coupling housing. In case of coupling overheating due to overloads and machine jams or reduced oil filling, the oil temperature can exceed the melting temperature set for the thermal switching pin. The pin then extends and makes contact with the cam of the microswitch sounding an alarm or shutting down the drive.



DEVICE T09 WITH PM

The Plug PM is fitted on the outer impeller, in contact with the oil inside the coupling.

The outer wheel of the coupling (A) can be connected to the machine (driven side) or connected to the motor (drive side).

If the Plug PM is mounted on the driven side the system detects the variation of temperature and speed. If it is mounted on the drive side the system detects only the temperature.

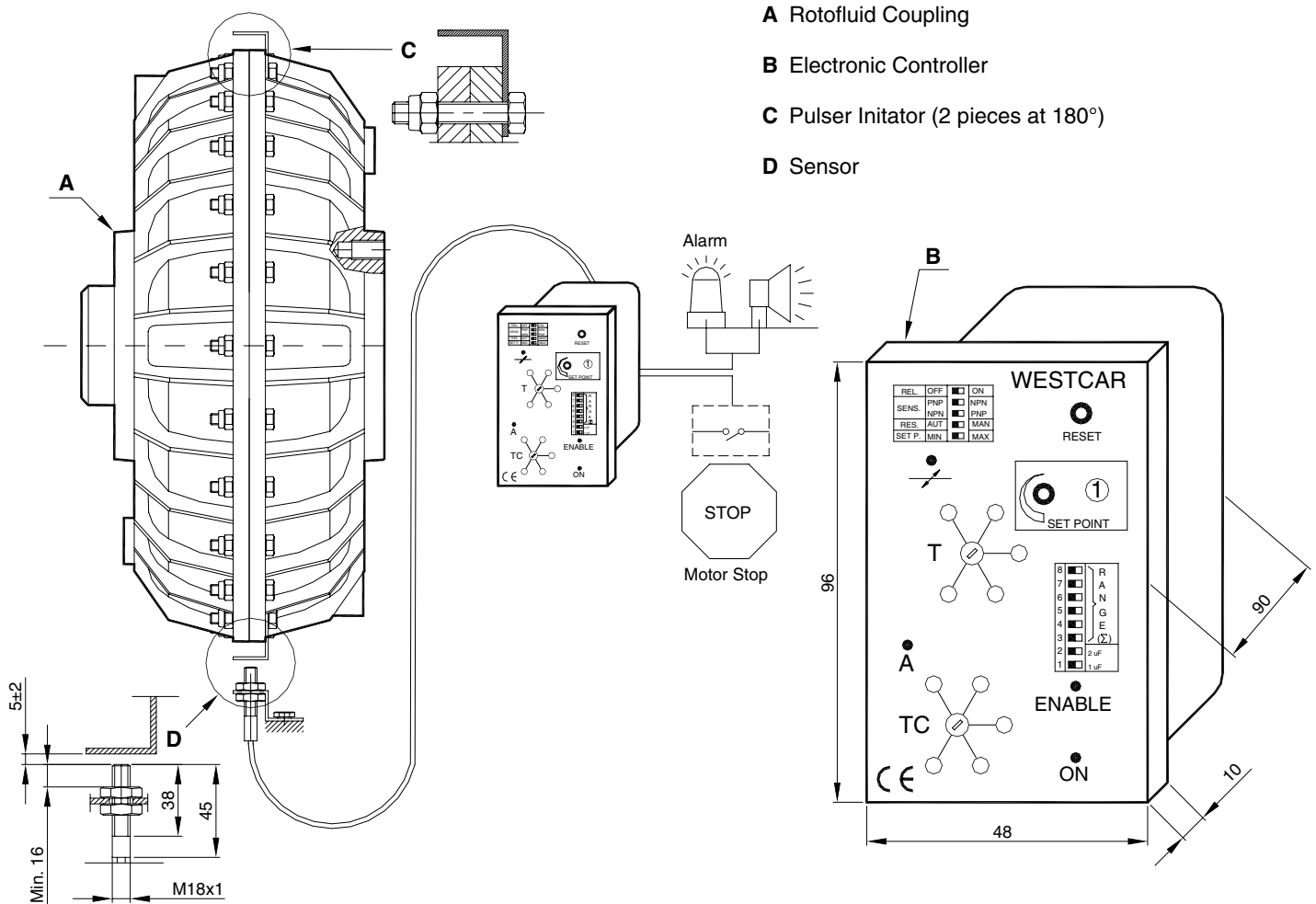
WORKING PRINCIPLE

The Plug PM contains a thermal element that changes its status at the temperature of 120°C (or upon request: 80°C, 100°C, 140°C or 160°C).

The plug PM, normally closed, crossing the SE sensor acts as a pulse generator, consequently the SE sensor sends impulses to the device LOGIC T09.

Once the temperature limit is reached the thermal element opens and the plug PM and the sensor SE no longer generate impulses. The device LOGIC T09 not receiving more signals, will switch the inner relay, providing an alarm signal or stopping the motor.

POWER SUPPLY: Standard tension 24Vac (upon request: 115 Vac, 230 Vac or 24Vdc).



DEVICE SCD

The **SCD** Device can be applied to guarantee the safety of coupling the machine and the product quality.

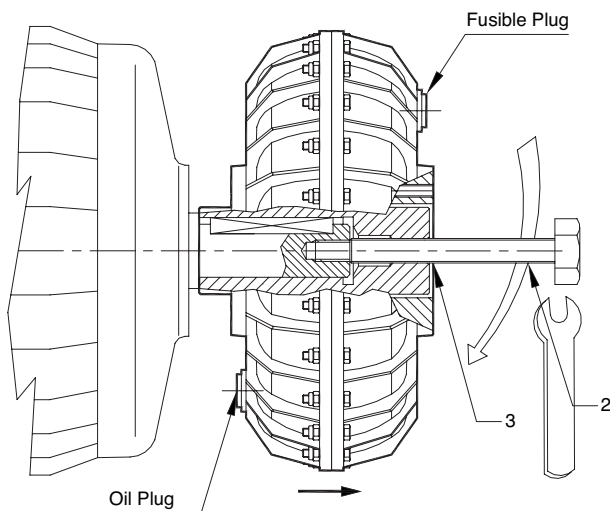
The **SCD** device is an electronic controller which receives a train of pulses by a sensor. The pulses are converted into a proportional voltage to the pulses frequency. This voltage is compared with a variable reference voltage (**SET POINT**). The internal relay changes over when the input speed is faster or lower than the fixed (**SET POINT**). It is used to control the shaft revolution speed. In case of speed decrease, the device gives a signal to the operator.

WORKING PRINCIPLE

As the transmitted torque is increased, this gives rise to an increased slip of the fluid coupling. Possible overload can be detected by measuring the resulting speed reduction in the driven half coupling by means of overload **SCD**. This with change-over contact at the output may either emit an alarm signal or switch off the main motor. A delaying action (max 120 sec) prevents the unnecessary triggering of the relay, when the motor is started. It only occurs once when the operating voltage is applied. False alarms are prevented arising from very short torque fluctuations, by the introduction of a preset time lag (max 30 seconds).

POWER SUPPLY: Standard tension 24 Vac (upon request: 115 Vac, 230 Vac or 24 Vdc).

SCREW PULLER “VE” TYPE

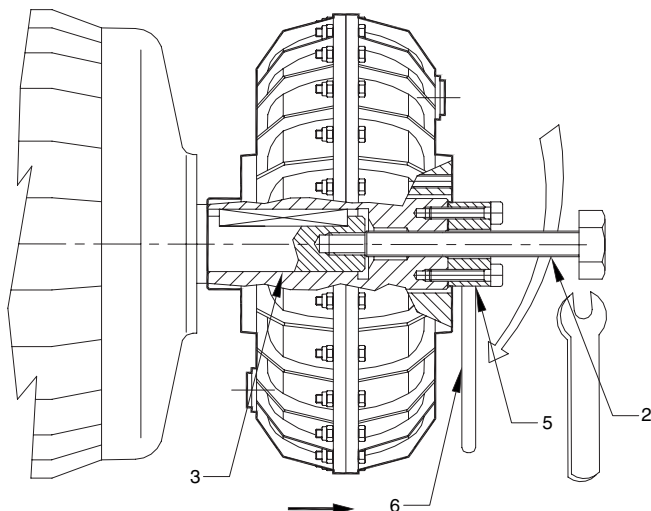


VE SYSTEM	SIZE	ROTOFLUID COUPLING				
		VERSIONS				
Type		K	Z	J	H	X
VE M14	20	K1	Z70	J70	H55	XN70
VE M16		K3	Z69	-	-	-
VE M20				J103	H85	X103
VE M24	30	ALL VERSIONS				
	30P					
	40P					
	50					
VE M30	55	UP TO Ø 65				
	55	FOR Ø75 Ø 80				
	60	ALL VERSIONS				
VE M36	65					
	70P					
	75P					
	80P					
	85P					
	90P					
	95P					

To pull off the ROTOFLUID coupling proceed as follows:

- 1) Remove tightening screw
- 2) Tighten the screw (2) into the threaded hole of the coupling shaft (3), taking care to lock the rotation of the drive shaft.

PULLING OFF SYSTEM “SE” TYPE



SE SYSTEM	SIZE	ROTOFLUID COUPLING				
		VERSIONS				
Type		K	Z	J	H	X
SE M20	20	-	-	J 103	H 85	X 103
SE M24/35	30	ALL VERSIONS				
SE M24/40	30P					
	40P					
	50					
SE M30	55	UP TO A Ø 65				
	55	FOR Ø75 Ø 80				
	60	ALL VERSIONS				
SE M36	65					
	70P					
	75P					
	80P					
	85P					
	90P					
	95P					

To pull off the ROTOFLUID coupling proceed as follows:

- 1) Remove tightening screw
- 2) Lock the bush (5) to the shaft end (3) with 2 securing screws. Tight the screw puller (2) in the shaft threaded hole keeping locked the rod (6) to avoid the motor shaft rotation.

The mass moment of inertia values listed in the table below are referred to inner part, outer part and oil where:

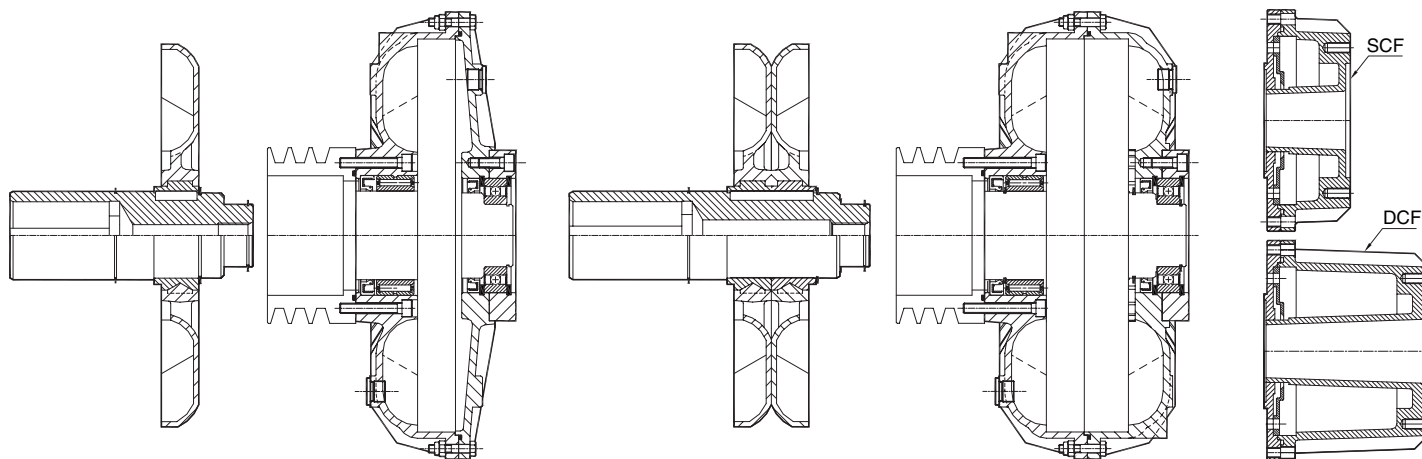
- **INNER PART** = hollow shaft, impeller pump, half oil

- **OUTER PART** = turbine and cover housing, half oil

Values valid for ROTOFLUID couplings with oil level at 45° off center pulleys, flexible couplings and other accessories are not included.

For couplings with delay fill chamber SCF/DCF, add their values to the correspondent of the outer part of the couplings.

INNER PART OUTER PART		INNER PART OUTER PART		DELAY CHAMBER
SIZES: 10, 20, 30, 30P, 40P, 50, 60, 70P, 80P, 90P		SIZES: 55, 65, 75P, 85P, 95P		



$$\text{MOMENT OF INERTIA } J = \frac{m \times R^2}{2} \text{ (Kgm}^2\text{)}$$

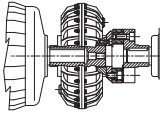
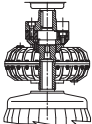
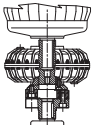
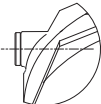
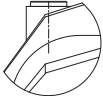
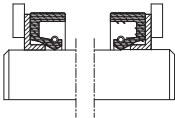
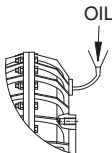
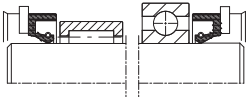
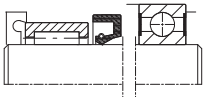
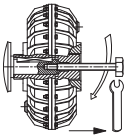
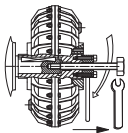
ROTOFLUID COUPLING SIZE	ALFA VERSION		BETA VERSION						DELAY CHAMBER	
	Type K		Type Z, X		Type J		Type H		SCF	DCF
	J INNER kgm ²	J OUTER kgm ²	J INNER kgm ²	J OUTER kgm ²	J INNER kgm ²	J OUTER kgm ²	J INNER kgm ²	J OUTER kgm ²	J kgm ²	J kgm ²
10	0,003	0,011	0,003	0,011	--	--	0,003	0,012	--	--
20	0,006	0,024	0,006	0,024	0,006	0,026	0,006	0,027	--	--
30	0,021	0,081	0,022	0,081	0,022	0,084	0,022	0,086	0,006	0,007
30P	0,040	0,140	0,045	0,140	0,045	0,144	0,045	0,147	0,006	0,007
40P	0,060	0,179	0,065	0,179	0,065	0,190	0,065	0,197	0,013	0,016
50	0,105	0,363	0,109	0,363	0,109	0,376	0,109	0,385	0,026	0,032
55	0,208	0,474	0,214	0,474	0,214	0,487	0,214	0,496	0,026	0,032
60	0,311	0,795	0,326	0,795	0,326	0,823	0,326	0,842	0,053	0,062
65	0,564	1,040	0,583	1,040	0,583	1,068	0,583	1,087	0,053	0,062
70P	0,678	2,386	0,740	2,386	0,740	2,473	0,740	2,551	0,160	0,200
75P	1,236	2,782	1,260	2,782	1,260	2,869	1,260	2,947	• 0,350	• 0,550
80P	2,389	7,276	2,499	7,276	2,499	7,393	--	--	0,350	0,550
85P	4,668	9,977	4,792	9,977	4,792	10,094	--	--	• 0,900	• 1,400
90P	8,372	23,200	--	--	--	--	--	--	1,200	1,600
95P	15,613	28,855	--	--	--	--	--	--	1,200	1,600
120P	54,000	260,000	--	--	--	--	--	--	--	--
125P	104,000	320,000	--	--	--	--	--	--	--	--

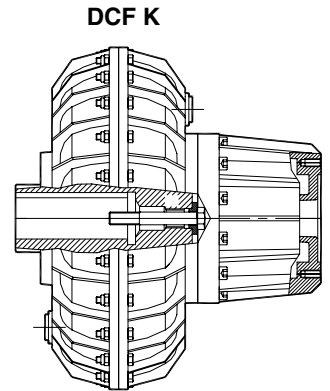
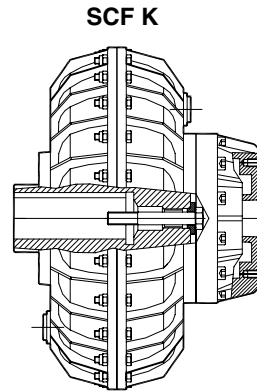
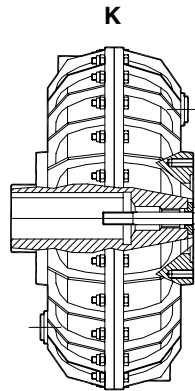
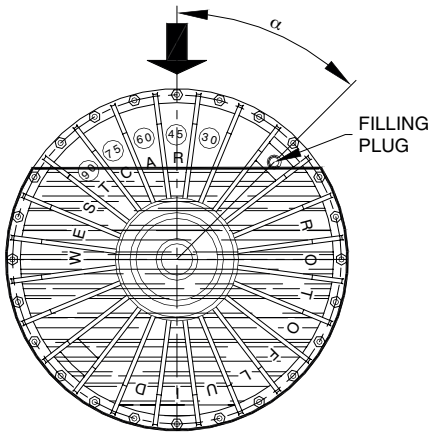
• OVERSIZED CHAMBER SCFM / DCFM

GENERAL DESCRIPTIONS THAT
CHANGE THE BASE UNIT

ROTOFLUID COUPLING

OPTIONAL

SIZE	VERSION	BORE	[: : : : :]					
		D.						
IN LINE INSTALLATION INSTALLATION WITH MOTOR SHAFT UP INSTALLATION WITH MOTOR SHAFT DOWN		Standard						
		C1						
		C2						
FUSIBLE PLUG IN LINE		Standard						
OIL PLUG PERPENDICULAR TO THE COUPLING AXIS		R						
RETAINER FOR SEAL		ZZ						
OIL FILLING FOR AMBIENT TEMPERATURE -20°C TO +180°C (STANDARD) OIL FILLING WITH FIRE RESISTANT OIL (I) OIL FILLING FOR AMBIENT TEMPERATURE -40°C TO +160°C (B)		Standard						
		I						
		B						
BEARINGS LUBRICATION WITH IN- NER COUPLING OIL		Standard						
FORCED LUBRICATION FOR LONG LIFE LUBRICATED BEARINGS		G						
COUPLING FOR "VE" DISMOUNTING SYSTEM		Standard						
COUPLING FOR "S.E." DISMOUNTING SYSTEM		E						



OIL REPLACEMENT

The oil in the coupling must be changed for the first time after 2000 working hours and subsequently after each 4000 working hours. To change the oil, proceed as follows:

- 1) Rotate the coupling to bring the filling plug to its highest position
- 2) Unscrew and remove the filling plug
- 3) Determine the correct filling level by rotating the coupling until the filling hole corresponds to the current oil level
- 4) Completely drain the oil in the coupling by bringing the filling hole to its lowest point
- 5) Rotate the coupling again to bring the filling hole to correspond to the filling level determined at point 3
- 6) Pour in the new oil until the oil filling level is reached.

The quantity and type of oil recommended is listed in Table 1.

Results achieved by decreasing the oil quantity:

- Slower and more gradual startings
- Less absorption of startings current
- Better protection to the transmission elements in the event of overload
- Higher slip value at running.

IMPORTANT:

An excessive decrease in the oil quantity can cause the following problems:

- The impossibility of rapidly accelerating the machine due to insufficient torque.
- The overheating of the coupling, with consequent damage to the oil seals.

Results achieved by increasing the oil quantity:

- Faster startings
- Lower slip value at running
- Higher absorption of starting current during acceleration phases
- Greater strain on transmission elements.

IMPORTANT:

An excessive oil quantity can cause the following problems:

- The overloading of the electric motor
- The cracking of the coupling housing due to the internal overpressure caused by the lack of internal space for sufficient oil expansion

TYPES OF OIL RECOMMENDED FOR STANDARD WORKING TEMPERATURE

Working Temperature from -20°C to +180°C

- TOTAL AZOLLA ZS 22 consigliato da WESTCAR
- BP ENERGOL HPL 22
- CASTROL HYSPIN AWS 22
- Q8 VERDI 22
- SHELL TELLUS 22

Tab. 1

COUPLING SIZE	OIL QUANTITY FOR STANDARD FILLING					
	K		SCF K		DCF K	
	α	Liter	α	Liter	α	Liter
10	45°	0,55	--	--	--	--
20	45°	1,20	--	--	--	--
30	45°	2,39	55°	2,43	65°	2,42
30P	45°	4,05	55°	3,94	65°	3,78
40P	45°	4,07	55°	4,06	70°	4,09
50	45°	4,39	65°	4,37	75°	4,59
55	45°	7,19	60°	7,04	70°	7,17
60	45°	8,61	65°	8,23	75°	8,41
65	45°	13,48	60°	12,80	70°	12,77
70P	45°	18,05	65°	16,89	75°	17,64
•75P	45°	30,14	65°	29,36	75°	29,68
80P	45°	35,53	65°	35,21	75°	35,27
•85P	45°	60,64	65°	57,79	75°	56,28
90P	45°	91,92	60°	81,70	70°	90,62
95P	45°	153,3	60°	154,9	70°	146,7
120P	45°	185	--	--	--	--
125P	45°	360	--	--	--	--

• OVERSIZED CHAMBERS SCFM, DCFM

The coupling can be supplied with first fill oil on request

For more information, consult WESTCAR.

Do not exceed Quantity of oil indicated in Table 1.

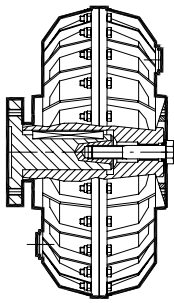


Fig. 1

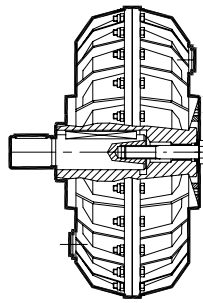


Fig. 2

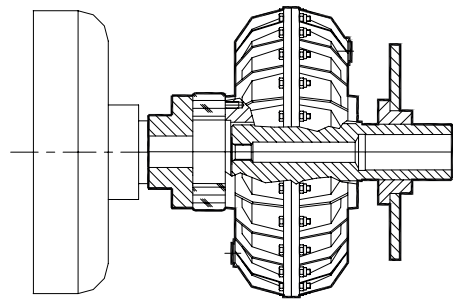


Fig. 3

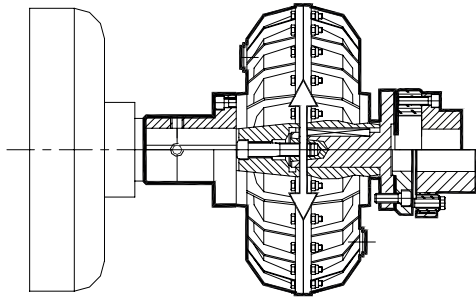


Fig. 4

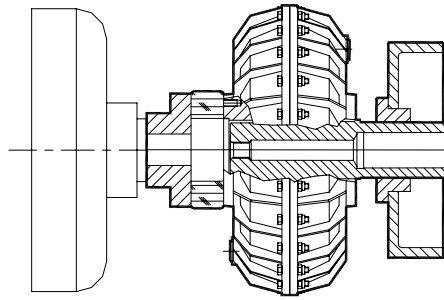


Fig. 5

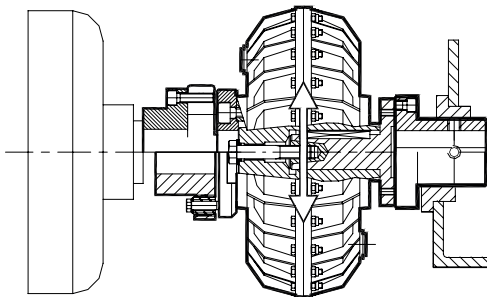


Fig. 6

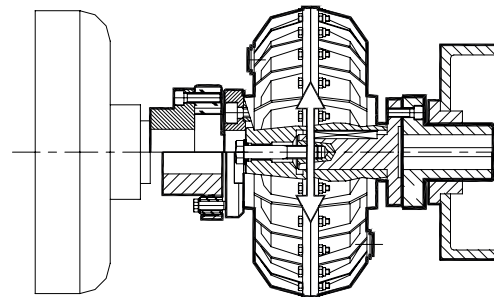


Fig. 7

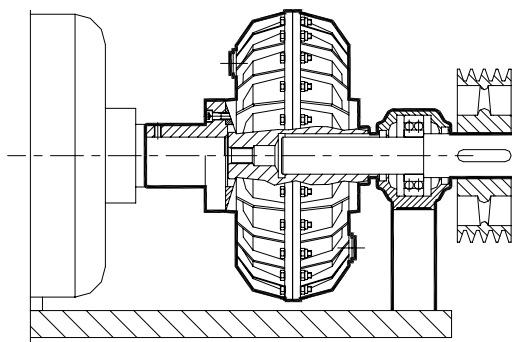


Fig. 8

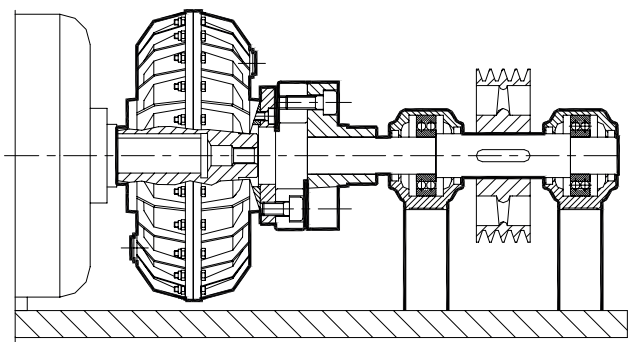


Fig. 9

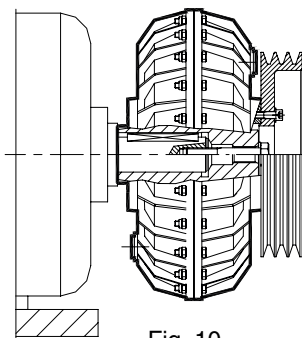


Fig. 10

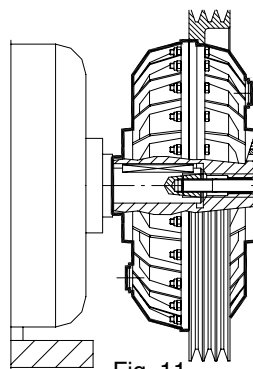


Fig. 11

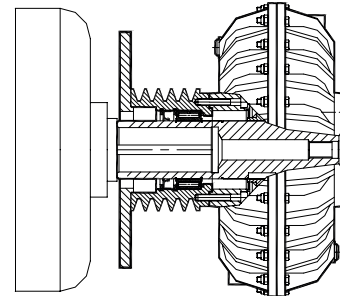


Fig. 12

BUILDING - CONSTRUCTION - MINING - BRICKS

- Tower Cranes
- Belt Conveyors
- Rotary kilns
- Crushers
- Rolling Mills
- Bucket elevators
- Rotating screens
- Rotary arrow
- Brick Moulders
- Kiln cars

TEXTILE

- Drum Tumblers
- Centrifuges
- Carding machines
- Industrial Washing machines
- Dryers

CHEMICAL - FOOD - CANNING

- Stirrers
- Dryers
- Decanters
- Rotating filters
- Soap cutters
- Calanders and gum mixers
- Palletizers
- Labelling Machine
- Bottling Plants
- Centrifugal separators

MECHANICAL ENGINEERING

- Twisting machines for rope and wire
- Rod iron straighteners
- Presses
- Profiling machines
- Drawbenches
- Cutters

AUTOMOTIVE INDUSTRY

- Balancing machines
- Gates open/closing drive

PAPER PROCESSING

- Winders
- Pulpers
- Mixers

TIMBER PROCESSING

- Drum barkers
- Hardboard presses
- Shredders

MARBLE PROCESSING

- Gantry cranes
- Multi-blade frames

ECOLOGY

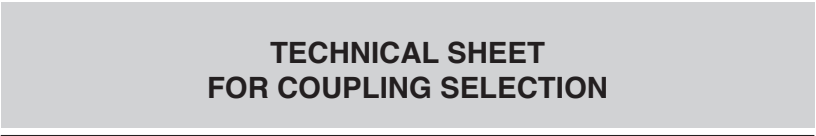
- Blenders
- Sludge purification plant

CERAMICS

- Continuous and intermittent ball mills
- Mixers
- Presses

OTHERS

- Winches
- Windlasses
- Centrifugal and alternative compressors
- Suction and centrifugal fans
- Centrifugal pumps
- Fire pumps
- Elevators
- Cable cars
- Amusements park rides
- Haulage wagons in steelworks and mines
- Stack-up coating plants
- Sprayers
- Refineries
- Ski lift
- Sand mixers
- Fan & Blowers
- Refiners

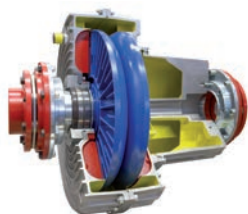




ROTOFLUID



ROTOFLEXI



ROTOFLUID CA



ROTOGEAR RE



ROTOMECH



ROTOGEAR AR



DRUM BRAKES BD



STEELFLEX



DRUM BRAKES CD



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