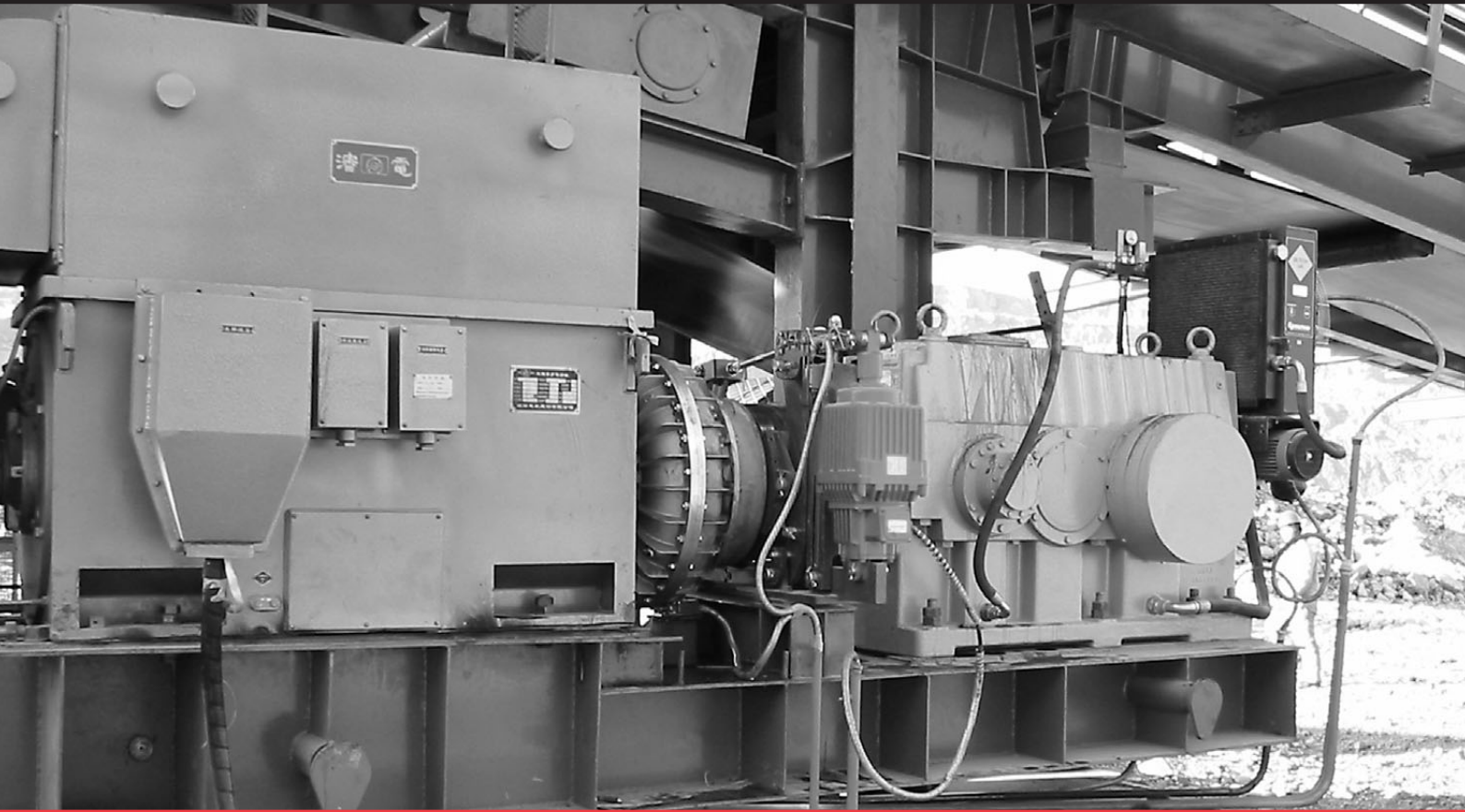




DRIVES



TRANSFLUID
trasmissioni industriali

FLUID COUPLINGS

Technical Guide

BMG DRIVES - HUBS

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A DIVISION OF THE BEARING MAN GROUP

SANS ISO 9001:2008

QUALITY AS A STANDARD

Established since 1957, TRANSFLUID is today a market leader in the field of industrial power transmission and associated components.

Apart from often being required to find specific solutions to customers' individual problems, we also have a complete range of standard products.

The TRANSFLUID product range includes:

- Fluid and flex couplings
- Clutches & brakes
- Power shift transmissions
- Torque control products
- Variable speed drives
- Elastic couplings
- Power Take-offs for marine and industrial engines

TRANSFLUID involvement extends from first customer contact, to design and production, and through full field support.

DESCRIPTION

The TRANSFLUID coupling (K series) is a constant fill type, comprising of three main elements:

- 1 - driving impeller (pump) mounted on the input shaft.
- 2 - driven impeller (turbine) mounted on the output shaft.
- 3 - cover, flanged to the outer impeller, with an oil-tight seal.

The first two elements can work both as pump or turbine.

The slip is essential for the correct operation of the coupling - there could not be torque transmission without slip! The formula for slip, from which the power loss can be deduced is as follows:

$$\text{slip \%} = \frac{\text{input speed} - \text{output speed}}{\text{input speed}} \times 100\%$$

OPERATING CONDITIONS

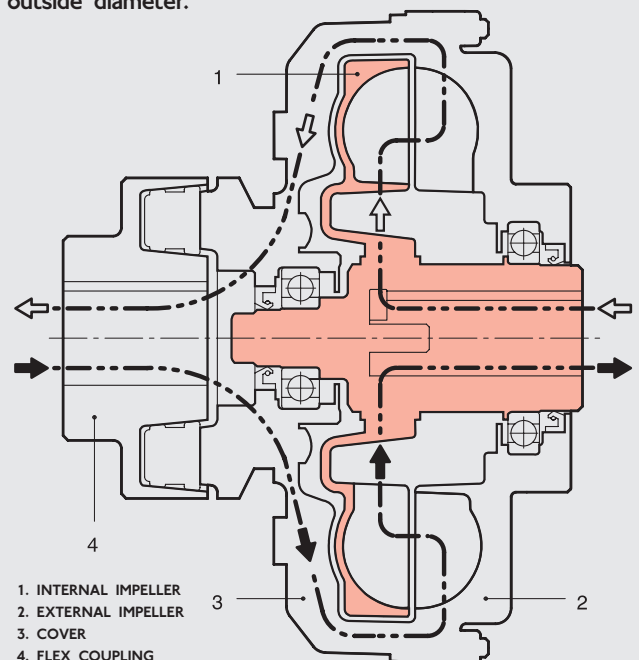
The TRANSFLUID coupling is a hydrodynamic transmission. The impellers perform like a centrifugal pump and a hydraulic turbine. With an input drive to the pump (e.g. electric motor or Diesel engine) kinetic energy is transferred to the oil in the coupling. The oil is forced, by centrifugal force, across the blades of the pump towards the outside of the coupling. The turbine absorbs kinetic energy and generates a torque always equal to input torque, thus causing rotation of the output shaft. Since there are no mechanical connections, the wear is practically zero. The efficiency is influenced only by the speed difference (slip) between pump and turbine.

In normal conditions (standard duty), slip can vary from 1,5% (large power applications) to 6% (small power applications). TRANSFLUID couplings follow the laws of all centrifugal machines:

- 1 - transmitted torque is proportional to the square of input speed;
- 2 - transmitted torque is proportional to the third power of input speed;
- 3 - transmitted power is proportional to the fifth power of circuit outside diameter.

APPLICATIONS

- Mining - Material handling conveyors. Bucket wheel
- Process plants - Mills. Crushers. Shredders
- Petro chemical - Centrifuges. Fans. Pumps. Mixers
- Food & textile - Agitators. Palletizes. Mixers
- Steel plants - Shredders. Presses. Wiredrawing machines
- Power generation - Pumps. Fans. Conveyors. Compressors



STARTING TORQUE & SELECTION CHART



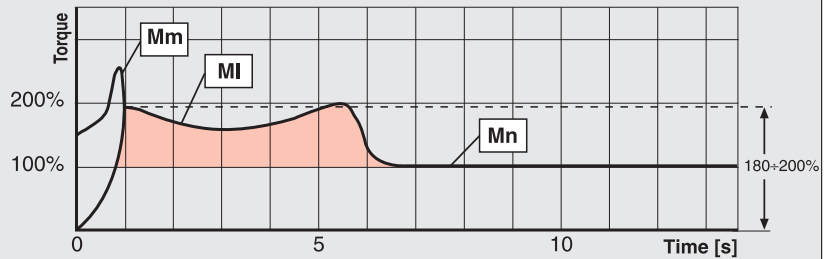
CKRG TYPE



KXG TYPE

START TORQUE CHARACTERISTICS

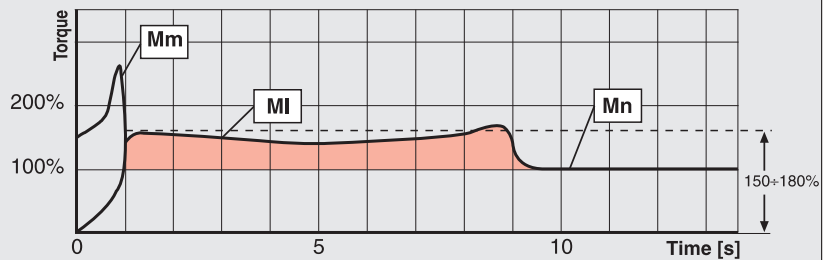
- MI = Transmitted torque from fluid coupling
- Mm = Starting torque of electric motor
- Mn = Nominal torque at full load
- = Accelerating torque



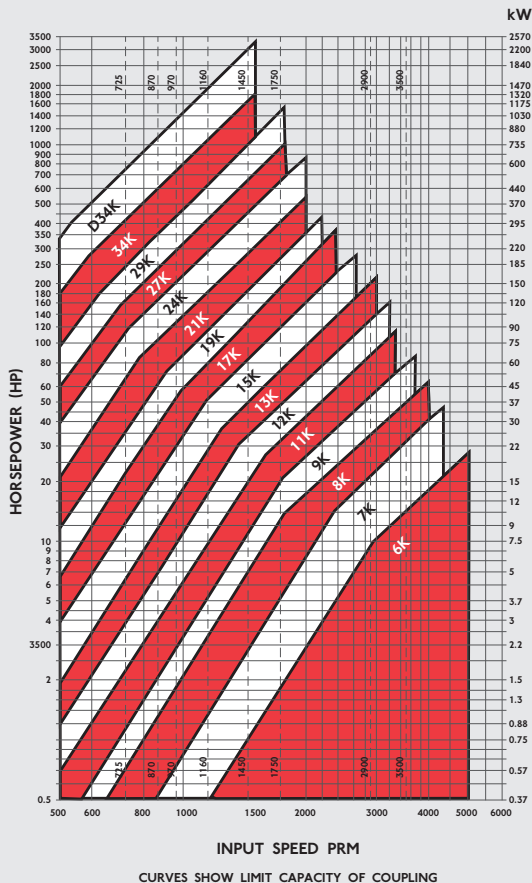
K TYPE (Standard Circuit)

SELECTION CHART

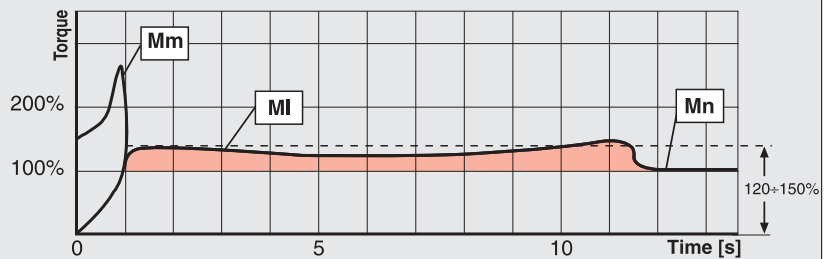
The chart below may be used to select a unit size from the horsepower and input speed. If the selection point falls on a size limit line dividing one size from the other, it is advisable to select the larger size with a proportionally reduced oil fill.



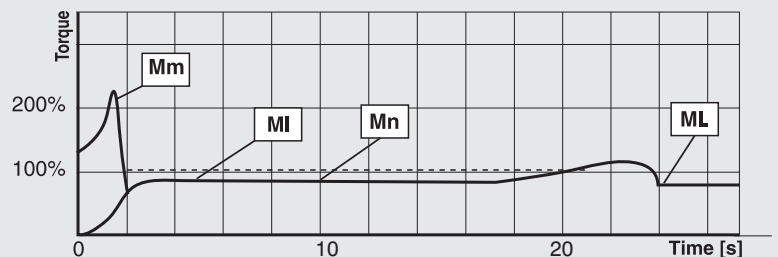
CK TYPE (Circuit with a delayed chamber)



CURVES SHOW LIMIT CAPACITY OF COUPLING

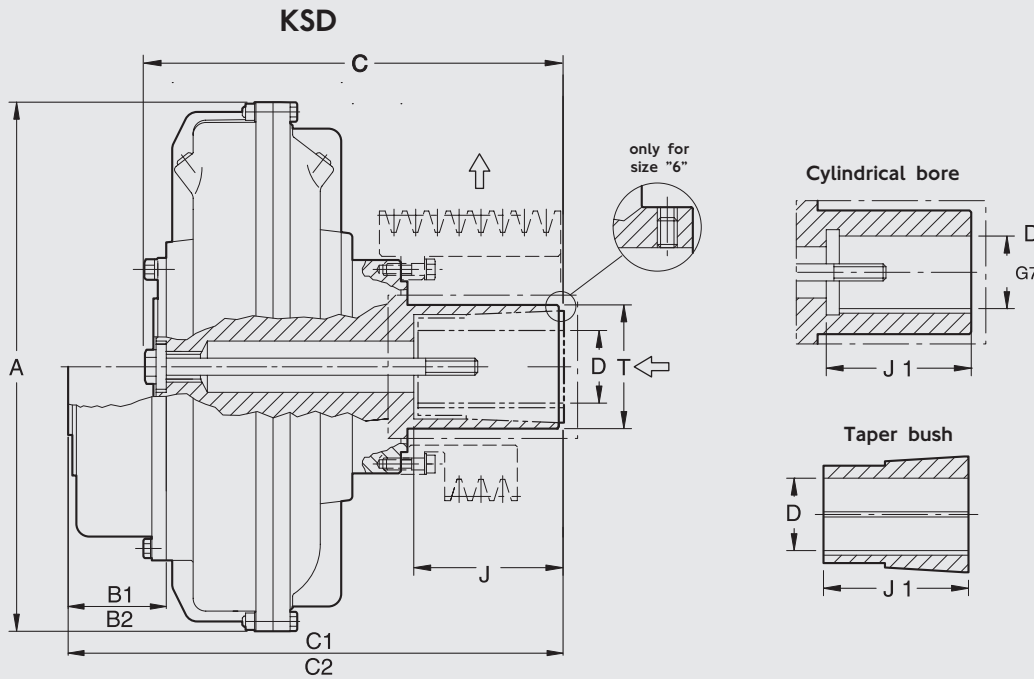


CCK TYPE (Circuit with a double delayed chamber)



KK TYPE (Special circuit with scoop)

PULLEY SERIES 6 - 27 : KSD - CKSD - CCKSD



Weight Kg
(Without Oil)

	KDM	CKDM	CCKDM
6	3.2	-	-
7	5.9	-	-
8	6.5	-	-
9	13	-	-
11	15	17.5	-
12	1	22	-
13	31	34	-
15	46	50	57.5
17	74	80	89
19	82	88	97
21	110	120	128
24	127	137	145
27	184	202	221

CKSD - CCKSD

NB: The arrows ← indicate input & output in the standard version

In case of installation on shafts without shoulders, please contact a BMG representative

Size	D		J	J1		A	B1	B2	C	C1	C2	T
	CKSD	CCKSD		KSD	CKSD		CCKSD	max				
6	19●	-	-	45	-	195	-	-	140	-	-	35
7	19	24	69	40	50	228	-	-	159	-	-	50
	28	60		174								
8	24	-	69	50	-	256	-	-	194	-	-	50
	28	60		194								
9	28	38	111	60	80	295	-	-	250	-	-	69
	42●●●	80		250								
11	28	38	111	60	80	325	73.5	-	259	289.5	-	69
	42●●●	80		259								
12	38	42	113	80	110	372	80	-	274	327	-	80
	48●●●	110		274								
13	42	48	114	110	-	398	-	-	367	407	-	88
	55●●● 60●●●	110 58.5		367								
15	48	55	145	110	-	460	92	140	390	4328	486	100
	60	65●●●		140	390							
17	48	55	145	110	-	520	101	181	455	516	596	132
	60	65●●●		140	110							
	75●	80●	-	140	170							
19	48	55	145	110	-	565	101	181	455	516	596	132
	60	65●●●		140	110							
	75●	80●	-	140	170							
21	80●	-	-	170	-	620	115	205	505	580	670	145
24	100●	-	-	210	-	620	115	205	545	620	710	145
27	80●	-	-	170	-	714	115	205	505	580	670	145
29	100●	-	-	210	-	714	115	205	545	620	710	145
34	120max	-	-	210	-	780	138	-	-	-	-	-

TAPER BUSH VERSION

D BORES RELATIVE TO TAPER BUSHES WITH A KEYWAY ACCORDING TO ISO 773 - DIN 6885/1

PARTICULAR CASES:

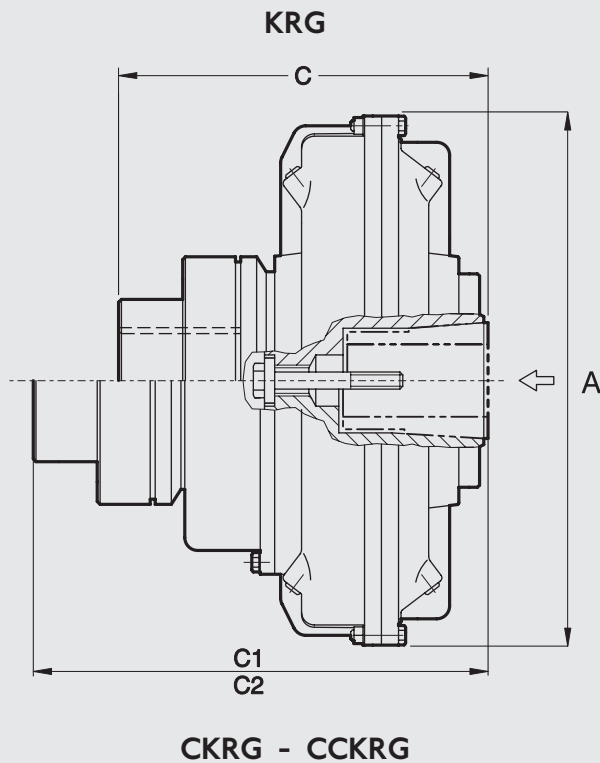
- CYLINDRICAL BORE WITHOUT TAPER BUSH WITH A KEYWAY ISO 773 - DIN 6885/1
- TAPER BUSH WITHOUT KEYWAY

CYLINDRICAL BORE VERSION

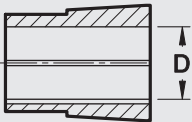
- STANDARD CYLINDRICAL BORES WITH KEYWAYS ACCORDING TO ISO 773 - DIN 6885/1

- WHEN ORDERING SPECIFY: SIZE, MODEL, D DIAMETER
EXAMPLE: 1KSD - D 42

INLINE SERIES 6 - 46 : KR-CKR-CCKR



Taper Bush



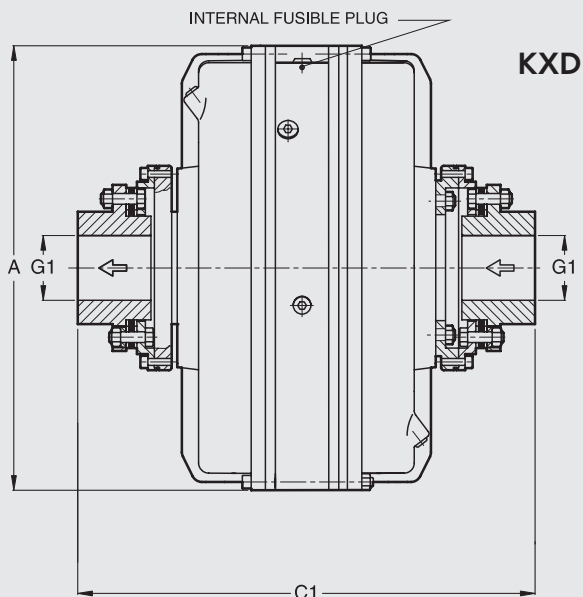
In case of installation on shafts without shoulders, please contact your nearest BMG representative

NB: The arrows ← indicate input & output in the standard version

Size	A	C KRG	C1 CKRG	C2 CCKRG	D	
6	195	189			19●	24●
7	228	189			19	228
					28	
8	256	194	-	-	24	
					28	
9	295	246			28	38
					42●●●	48●
11	325	255	301		28	38
					42●●●	48●
12	372		322		28	38
					42●●●	48●
13	398	285	345		42	38
					55●●●	48●
15	460	343	411	459	48	38
					60	48●
17	520	362	442	522	48	38
					60	48●
					75●	80●
19	565				48	55
					48	65●●●
					75●	80●
21	620	433	533	623	●80	90
					●●100	
24	714				●80	90
					●●100	
27	780	484	602	702	120 Max	
29	860	513	631	731	135 Max	
34	1000	638	749	849	150 Max	
46	1330	-	-	-	180 Max	

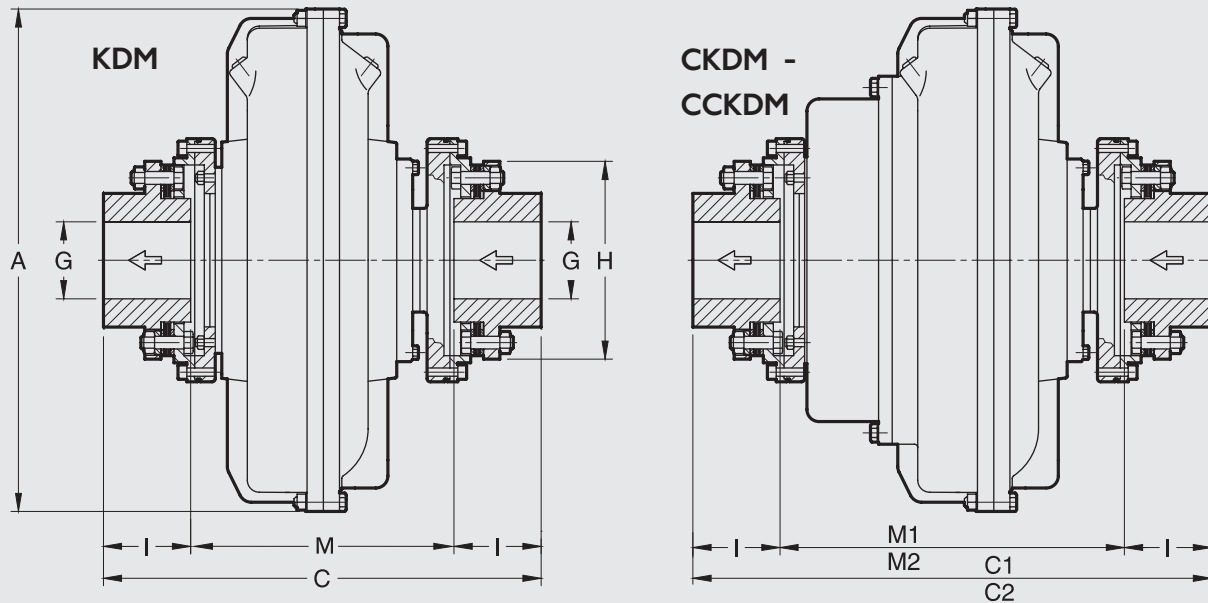
INLINE SERIES 15 - 29 : KX

FOR DELAYED STARTING OF LARGE INERTIA MACHINES



Size	A	C1	G1 MAX	Disc coupling size	Weight Kg (Without Oil)	Fluid Max (t)
15	490	507	75	1075	105	8.5
19	595	604	90	1085	169	15.5
24	745	730	115	110	291	32
27	810	862	135	1140	394	46
29	890	891			526	59

DROP OUT SERIES 9 - 34 : KDM - CKDM - CCKDM



NB: The arrows ← indicate input & output in the standard version

Fluid coupling fitted with half disc couplings, without maintenance and prescribed for particular ambient conditions. To be Radially disassembled without moving the machines.

Size	A	C	C ₁	C ₂	G	H	I	M	M ₁	M ₂	Disc Coupling Size	Weight Kg (Without Oil)			
												KDM	CKDM	CCKDM	
9	295	278	-					180	-		1055	20.5	-		
11	325	289	338	-	55	123	50	189	235	-		1065	22.5	25	-
12	372		356						26				29		
13	398	339	399			65	147	60	219		279		1075	41.3	
15	460	391	459	507	75	166	70	251	319	367	1085	65	69	76.7	
17	520	444	524	604	90	192	85	274	354	434	1110	89	95	104	
19	565											96	102	111	
21	620	540	640	730	115	244	110	320	420	510	1140	159	169	177	
24	714											177	187	195	
27	780	644	762	862	135	300	140	364	482	582	1160	289	307	326	
29	860	673	790	890				393	511	611		342	360	370	
34	1000	768	899	999	165	340	160	448	579	679		556	562	572	

- WHEN ORDERING, SPECIFY: SIZE - MODEL - FINISHED G BORE UPON REQUEST EXAMPLE: 27 CKDM DIMENSIONS ARE SUBJECT TO ALTERATION WITHOUT NOTICE

24 HR TOLL-FREE EMERGENCY
BRANCH HELPLINE:

0800 022 224

WEBSITE:

www.bmgworld.net



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