SERIES C and C... M

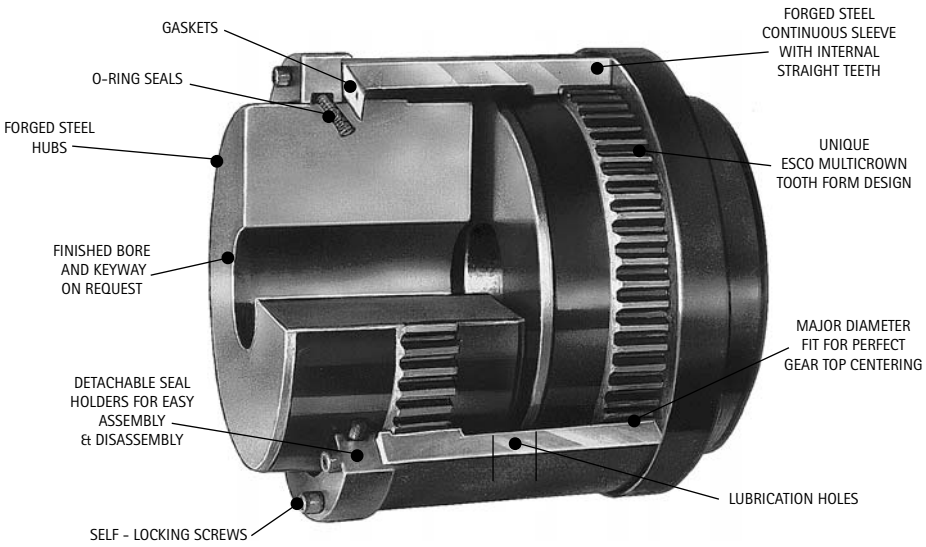
The most compact solution

Maximum torque: up to 174 000 Nm
Bores: up to 290 mm

COMPACT

SIMPLE AND ROBUST

EASY TO ASSEMBLE



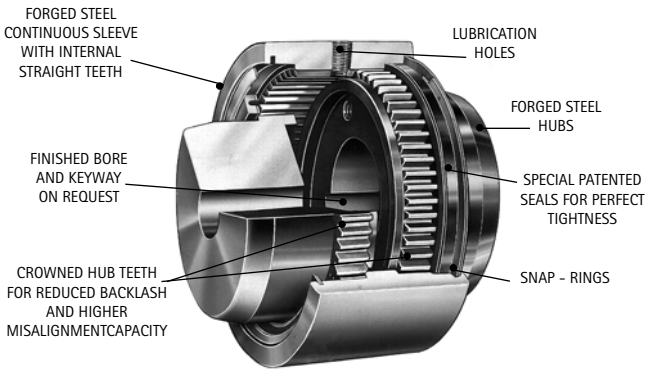
Maximum torque: up to 8 500 Nm
Bores: up to 110 mm

COMPACT

SIMPLE AND ROBUST

ONLY 7 PARTS:

Two snap rings
Two hubs and one sleeve
Two seals

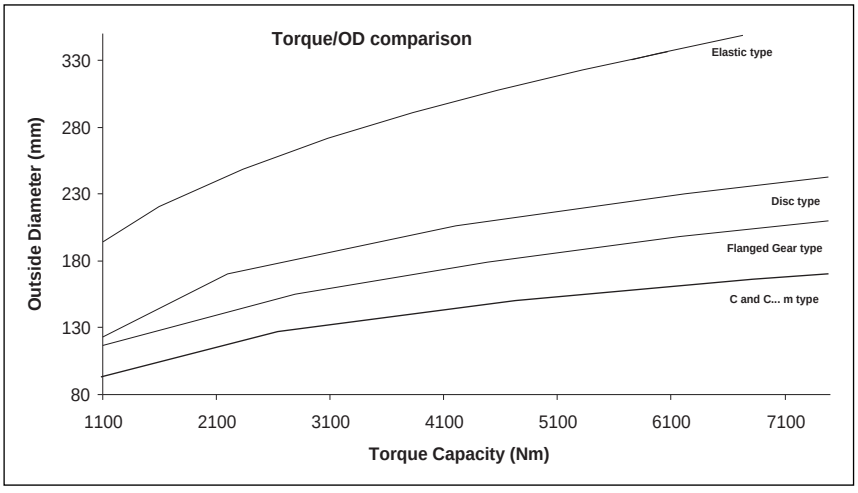


Most compact solution

Thanks to the high torque capacity and the continuous sleeve design, the escogear C and C... M couplings are the most compact answer to any transmission applications. In comparison to other types of couplings and for a given torque they have a substantly lower weight and reduced outside diameter:

<-> Flanged Gear type : 17% smaller O.D.
<-> Disc type : 30% smaller O.D.
<-> Elastic type : 52% smaller O.D.

This compactness makes the escogear C series ideal for use in applications where space is limited and weight important



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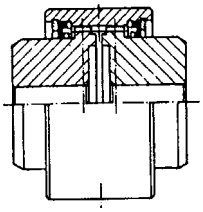
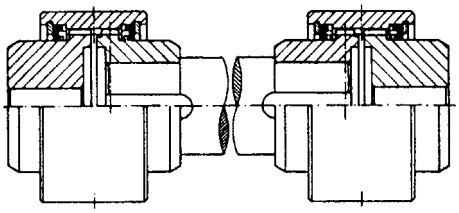
www.rsvindustries.com
sales@rsvindustries.com
+91 74004 33355

AVAILABILITIES

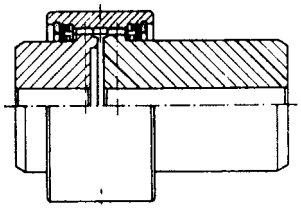
CST ← A310 STANDARD



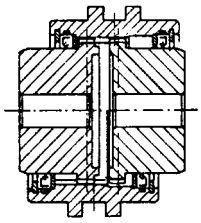
CFS - CFS... M ← A311 FLOATING SHAFT



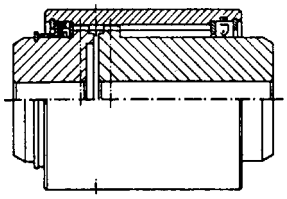
CMM ← A312 MILL MOTOR



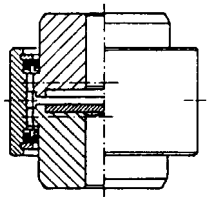
CCO ← A314 CUT-OUT



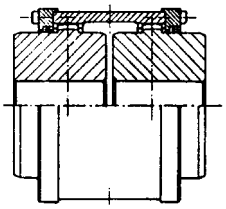
CSH ← A315 SLIDING HUB



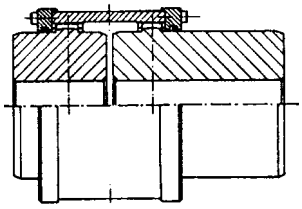
CSV ← A316 STANDARD VERTICAL



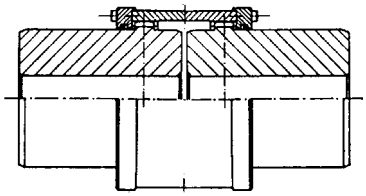
CST... M ← B310 STANDARD



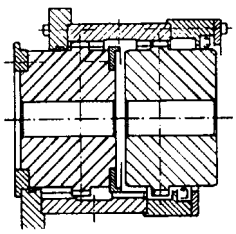
CMM... M ← B312 MILL MOTOR



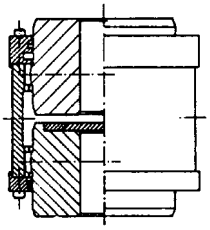
CDMM... M ← B313 MILL-MOTOR



CCO... M ← B314 CUT-OUT



CSV... M ← B316 STANDARD VERTICAL



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RSV Industries Pvt. Ltd.
www.rsvindustries.com
sales@rsvindustries.com
+91 74004 33355
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HOW TO SELECT THE RIGHT COUPLING SIZE

A. Select the size of ESCOGEAR coupling that will accommodate the largest shaft diameter.

B. Make sure this coupling has the required torque capacity according to following formula:

$$\text{torque in Nm} = \frac{9550 \times P \times F_u \times F\,Ex}{n}$$

P = power in kW; n = speed in rpm; F_u = service factor according to tabulation 1.
F Ex = 2 in case of use in potentionally explosive atmospheres Ex , European Directive 94/9/EC. In normal atmospheres, F Ex = 1.

The coupling selected per **(A)** must have an equal or greater torque capacity than the result of the formula **(B)**. If not select a larger size coupling.
Check if application peak torque does not exceed tabulated peak torque Tp indicated planographs A310 to B317.
Check also max. allowable misalignment using the graph of tabulations 2 and 3.

C. Check if shaft/hub connection will transmit the torque. If necessary, select a longer hub.

D. Read carefully assembly and maintenance instructions IM/A300 and IM/B300.

TABULATION 1

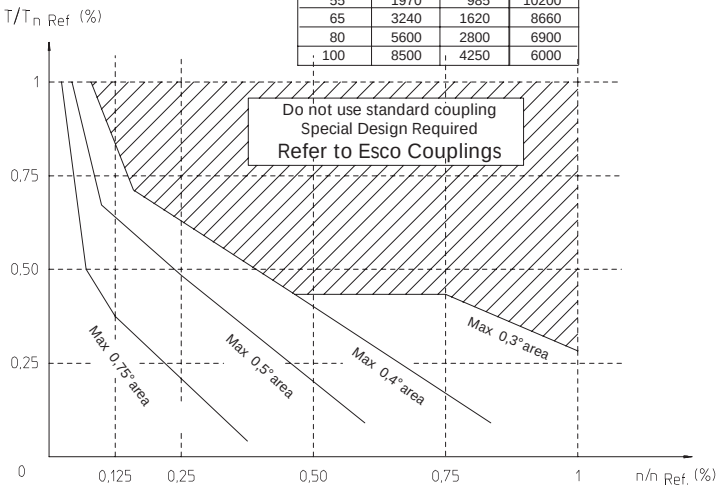
		APPLICATIONS	DRIVER MACHINE: Electric motors Turbines	DRIVER MACHINE: Hydraulic motors Gears drivers	DRIVER MACHINE: Reciprocating engine Electric motors frequent starts
			Service factor F_u		
DRIVEN MACHINE	UNIFORM	Generators - Blowers: centrifugal vane, fans - Centrifugal pumps and compressors - Machine tools: auxiliary drives - Conveyors: belt and chain, uniformly loaded, escalators - Can filling machines and bottling machinery - Agitators: pure liquids.	0,8 to 1,25	1 to 1,5	1,25 to 1,75
		Propeller - Waterjet pumps	1,25	1,5	1,75
	MODERATE SHOCKS	Blowers: lobe - Pumps: gear and lobe types - Vane compressors - Machine tools: main drives - Conveyors: belt and chain not uniformly fed bucket and screw - Elevators, cranes, tackles and winches - Wire winding machines, reels, winders (paper industry) - Agitators liquids and solids, liquids variable density.	1,25 to 1,5	1,5 to 1,75	1,75 to 2
	HEAVY SHOCKS	Generators (welding) - Reciprocating pumps and compressors - Laundry washers - Bending roll, punch press, tapping machines - Barkers, calanders, paper presses - Briquetter machines, cement furnace - Crushers: ore and stone, hammer mill, rubber mill - Metal mills: forming machines, table conveyors - Draw Bench, wire drawing and flattening machines - Road & railroad equipment.	1,5 to 2	1,75 to 2,25	2 to 2,5

1) MAXIMUM MISALIGNMENT

TABULATION 2

CST

CST Size	Tn Nm	Tn Ex Nm	n Ref min-1
30	550	275	16000
40	1100	550	13800
55	1970	985	10200
65	3240	1620	8660
80	5600	2800	6900
100	8500	4250	6000

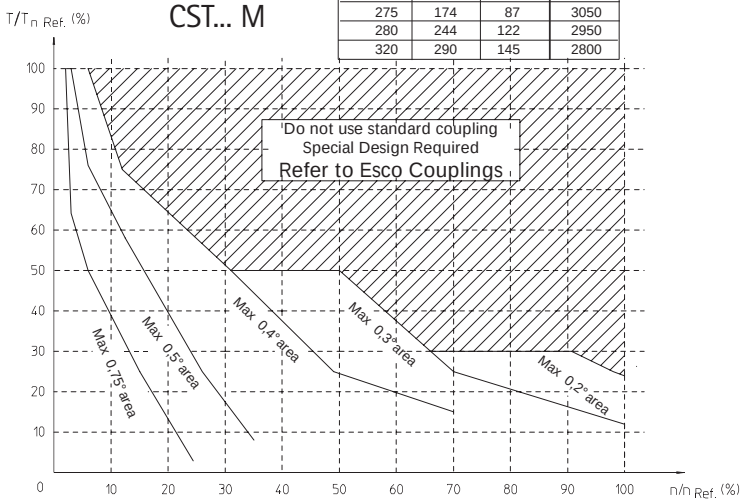


TABULATION 3

GRAPH (T, n)

CST... M

CST...M Size	Tn kNm	Tn Ex kNm	n Ref min-1
110	16	8	6050
130	22	11	5150
155	32	16	4300
175	45	22,5	3950
195	62	31	3600
215	84	42	3450
240	115	57,5	3300
275	174	87	3050
280	244	122	2950
320	290	145	2800



HOW TO USE THE GRAPH ?
Maximum torque, maximum speed and maximum misalignment may not occur simultaneously.
Graph must be used as follows:

1. Calculate Tn and Tp and select coupling size as usual. Tn = nominal torque; Tp = peak torque
2. Calculate Tn/TnRef and n/nRef and plot the resulting point in the graph.
3. If the resulting point is located in the white area, a standard coupling may be used as far as maximum misalignment doesn't exceed the maximum misalignment indicated in the graph.
4. If the resulting point is located in the shaded area, refer to ESCO
5. In case of use in potentionally explosive atmospheres Ex , proceed the same way but using Tn Ref Ex for the calculation. Max misalignement may not exceed 0,5° per gear mesh.

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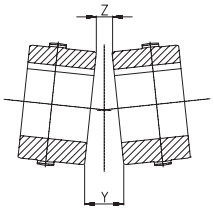
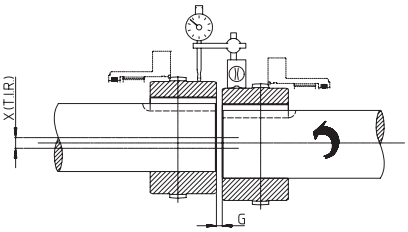
2) MINIMUM MISALIGNMENT = $\Delta K_w min = 0{,}1°$

3) MISALIGNMENT CONTROL

1- Measure X (TIR) - 2- Measure Y-Z - 3- Verify the relationship for the misalignment control: $\Delta K_w min \leq \frac{X}{Kx} + \frac{Y\text{-}Z}{Ky} \leq 0{,}75 \times \Delta K_w max$

CST...M	Kx	Ky
110	3,80	5,27
130	4,47	6,21
155	5,03	7,44
175	5,72	8,20
195	6,35	9,18
215	7,47	9,98
240	8,24	11,00
275	9,18	12,99





4) EXAMPLES:

Calculation

T/Tn ref = 30%
n/n ref = 30%
} $\Delta K_w max = 0{,}4°$

CST...M 175: Kx = 5,72 Ky = 8,2

Measurement

X (TIR) = 0,9 mm Y-Z = 0,4 mm

Control

Formule:

$$\Delta K_w min \leq \frac{X}{Kx} + \frac{Y\text{-}Z}{Ky} \leq 0{,}75 \times \Delta K_w max$$

Calculation : $0{,}1° \leq \frac{0{,}9}{5{,}7} + \frac{0{,}4}{8{,}2} \leq 0{,}75 \times 0{,}4$

LEGEND OF USED PICTOGRAMS

d Ø nominal max.	MAXIMUM NOMINAL BORE (mm)
d Ø min.	MINIMUM BORE (mm)
d Ø max.	MAXIMUM BORE (mm)
Tn	MAXIMUM NOMINAL TORQUE (Nm)
Tp	MAXIMUM PEAK TORQUE (Nm)
min.max.	MAXIMUM SPEED (rpm)
	MAXIMUM OFFSET (mm)
α	MAXIMUM ANGULAR MISALIGNMENT (degree)
J (WR²)	INERTIA (kgm²)
	WEIGHT (kg)
Grease	GREASE QUANTITY (dm³)

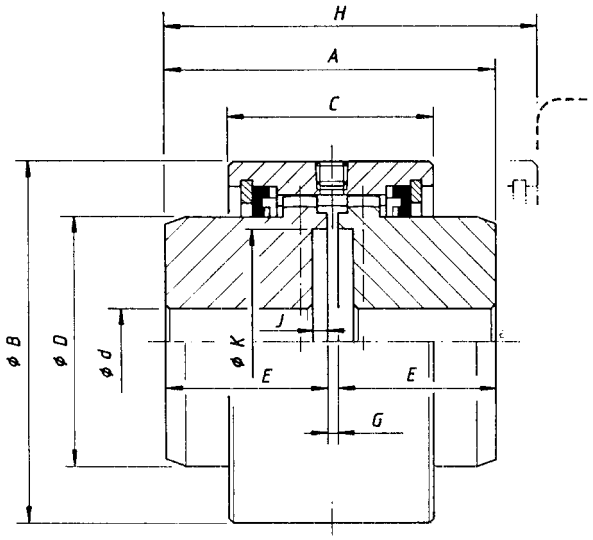
Notes for series C / CST...M

1	For key according to ISO R 773.
2	Gear maximum continuous transmissible torque for the tabulated misalignment. The effective transmissible torque depends on the bore and shaft/hub connection.
3	Higher speed on special request.
3.1	For grease withstanding centrifugal acceleration of 1.000g. See installation and maintenance manual IM.
3.2	For grease withstanding centrifugal acceleration of 2.000g. See installation and maintenance manual IM.
3.3	Depends on S.
3.4	For long operation in disconnected position contact us.
4	For solid bore.
4.1	Depends on S.
4.2	For solid bore and S minimum.
4.3	Per 100 mm spacer length.
4.4	Depends on L and R.
5	For pilot bored hubs.
5.1	Depends on S.
5.2	For pilot bored hubs and S minimum.
5.3	Per 100 mm spacer length.
5.4	Depends on L and R.
6	See installation and maintenance manual IM.
6.1	Depends on S. Values given for S maximum.
7	On request. For larger S contact us.
8	Values for S minimum. S maximum depends on torque and speed.
9	G must remain constant during operation.
10	Needed to control the alignment and inspect the gears.

* *Max. torque, speed and misalignment tabulated values may not be cumulated. See IM/A300, IM/B300.*

escogear

CST 30 ⇨ 100



max. 1,5°

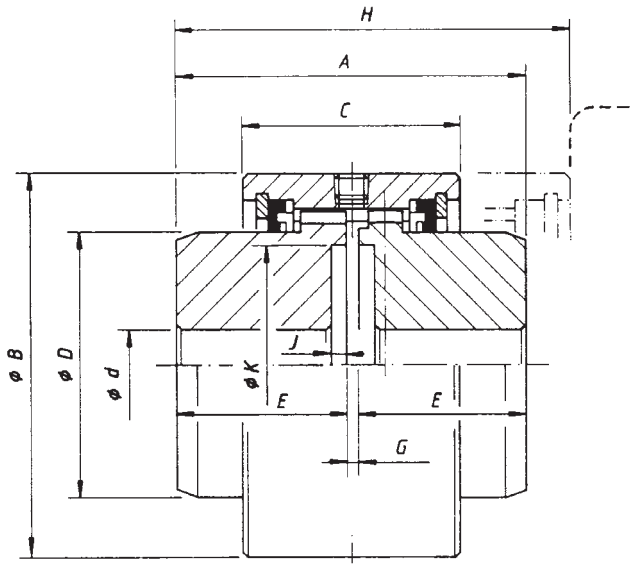
←A150				Type CST 30	40	55	65	80	100
d Ø nominal max.		1	mm	**32**	**42**	**57**	**70**	**85**	**100**
d Ø min.		1	mm	0	0	22	25	38	38
* d Ø max.		1	mm	35	42	63	75	90	110
1m Nm	Tn	2	Nm	**550**	**1100**	**1970**	**3240**	**5600**	**8500**
	Tp	2	Nm	1100	2200	3940	6480	11200	17000
min.max.		3.1	tr/min omw/min rpm min^{-1}	5500	5100	4400	4000	3600	3400
		3.2	tr/min omw/min rpm min^{-1}	7750	7200	6200	5600	5100	4800
α α		–	degré graad degree Grad	**2x0,75**	**2x0,75**	**2x0,75**	**2x0,75**	**2x0,75**	**2x0,75**
		–	mm	0,1	0,14	0,14	0,19	0,22	0,23
J (WR^2)		4	kgm^2	0,002	0,004	0,010	0,022	0,052	0,122
		5	kg	2	3,4	6	9,1	15	29
Grease		6	dm^3	0,022	0,036	0,063	0,114	0,201	0,270
mm: ±	A		mm	80	95	110	120	140	222
	B		mm	84	95	120	140	168	190
	C		mm	50	65	68	80	95	102
	D		mm	50,9	60,4	82,6	100	121	143
	E		mm	38,5	46	53,5	57	67	108
	G		mm	3	3	3	6	6	6
	H		mm	96	117	124	146	175	223
	J		mm	3	5	5	6	6	6
	K		mm	49	57	76	95	121	140

* Consult us

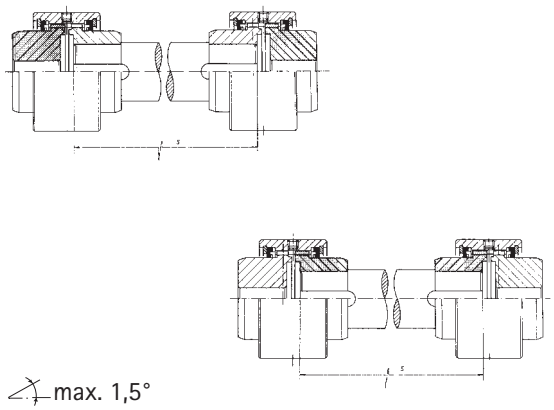
escogear

CFS 30 ⇨ 100

FLEX - RIGID



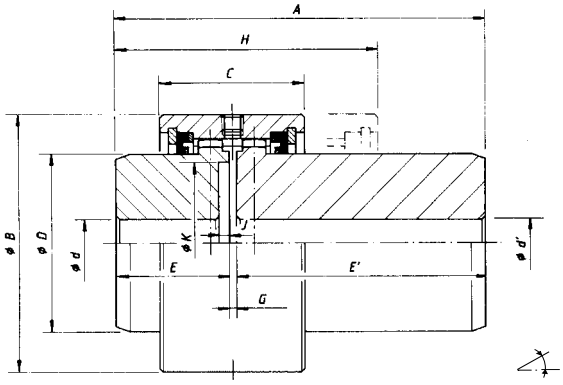
SET FLOATING SHAFT



Shaft can be supplied at demands

←A150				Type CFS 30	40	55	65	80	100
d Ø nominal max.		1	mm	32	42	57	70	85	100
d Ø min.		1	mm	0	0	22	25	38	38
* d Ø max.		1	mm	35	42	63	75	90	110
1m Nm	Tn	2	Nm	550	1100	1970	3240	5600	8500
	Tp	2	Nm	1100	2200	3940	6480	11200	17000
min.max.		3.3	tr/min omw/min rpm min^{-1}						
α α		–	degré graad degree Grad	0,75	0,75	0,75	0,75	0,75	0,75
J (WR^2)		4	kgm^2	0,002	0,004	0,010	0,022	0,052	0,122
		5	kg	2	3,4	6	9,1	15	29
Grease		6	dm^3	0,022	0,036	0,063	0,114	0,201	0,270
mm: ±	A		mm	80	95	110	120	140	222
	B		mm	84	95	120	140	168	190
	C		mm	50	65	68	80	95	102
	D		mm	50,9	60,4	82,6	100	121	143
	E		mm	38,5	46	53,5	57	67	108
	G		mm	3	3	3	6	6	6
	H	10	mm	96	117	124	146	175	223
	J		mm	3	5	5	6	6	6
	K		mm	49	57	76	95	121	140
min.	S	8	mm	76	92	105	114	133	204

* Consult us



				Type CMM					
←A150				30	40	55	65	80	100
d Ø nominal max.			mm	**32**	**42**	**57**	**70**	**85**	**100**
d Ø min.		1	mm	0	0	22	25	38	38
* d Ø max.			mm	35	42	63	75	90	110
d' Ø nominal max.			mm	32	42	57	70	85	100
d' Ø min.		1	mm	0	0	0	0	40	40
* d' Ø max.			mm	35	42	63	75	90	110
Nm 1m	Tn	2	Nm	**550**	**1100**	**1970**	**3240**	**5600**	**8500**
	Tp			1100	2200	3940	6480	1120	17000
min.max.		3.1	tr/min omw/min rpm min^{-1}	5500	5100	4400	4000	3600	3400
		3.2		7750	7200	6200	5600	5100	4800
α α		–	degré graad degree Grad	**2x0,75**	**2x0,75**	**2x0,75**	**2x0,75**	**2x0,75**	**2x0,75**
		–	mm	0,1	0,14	0,14	0,19	0,22	0,23
J (WR^2)		4	kgm^2	0,002	0,004	0,012	0,028	0,065	0,140
		5	kg	2,8	4,5	8,5	13,3	21,4	35,7
Grease		6	dm^3	0,022	0,036	0,063	0,114	0,201	0,270
mm: ±	A		mm	136,7	150	174	193	219	279
	B		mm	84	95	120	140	168	190
	C		mm	50	65	68	80	95	102
	D		mm	50,9	60,4	82,6	100	121	143
	E		mm	38,5	46	53,5	57	67	108
	E'		mm	95,2	101	117,5	130	146	165
	G		mm	3	3	3	6	6	6
	H	10	mm	96	117	124	146	175	223
	J		mm	3	5	5	6	6	6
	K		mm	49	57	76	95	121	140

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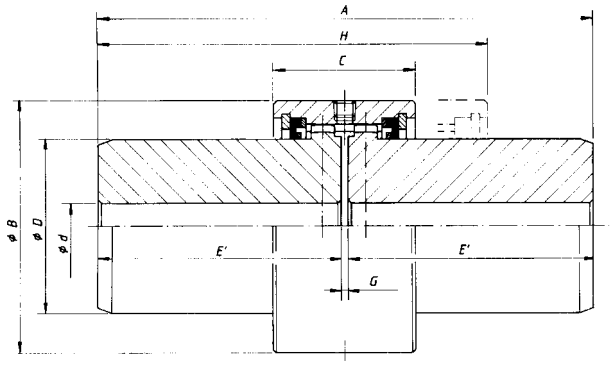
www.rsvindustries.com
sales@rsvindustries.com
+91 74004 33355



max. 1,5°

				Type CDMM					
←A150				30	40	55	65	80	100
d Ø nominal max.		1	mm	**32**	**42**	**57**	**70**	**85**	**100**
d Ø min.			mm	0	0	0	0	40	40
* d Ø max.			mm	35	42	63	75	90	110
1m Nm	Tn	2	Nm	**550**	**1100**	**1970**	**3240**	**5600**	**8500**
	Tp			1100	2200	3940	6480	11200	17000
min.max.		3.1	tr/min omw/min rpm min^{-1}	5500	5100	4400	4000	3600	3400
		3.2		7750	7200	6200	5600	5100	4800
α α		–	degré graad degree Grad	**2x0,75**	**2x0,75**	**2x0,75**	**2x0,75**	**2x0,75**	**2x0,75**
		–	mm	0,1	0,14	0,14	0,19	0,22	0,23
J (WR^2)		4	kgm^2	0,003	0,005	0,015	0,033	0,078	0,158
		5	kg	3,8	8,5	11,4	18	27,6	42,2
Grease		6	dm^3	0,022	0,036	0,063	0,114	0,201	0,270
mm: ±	A		mm	193,4	205	238	266	298	336
	B		mm	84	95	120	140	168	190
	C		mm	50	65	68	80	95	102
	D		mm	50,9	60,4	82,6	100	121	143
	E'		mm	95,2	101	117,5	130	146	165
	G		mm	3	3	3	6	6	6
	H	10	mm	152	172	188	219	254	280

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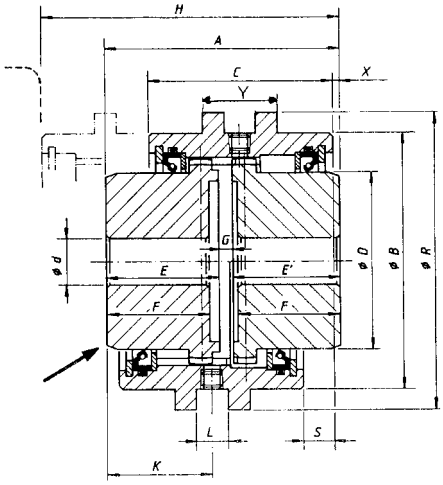
CCO 30 ⇨ 100



CE MOYEU A L'ARRET EN CONDITION DEBRAYEE
WANNEER UITGESCHAKELD STAAT DEZE NAAF STIL
THIS HUB IN STAND STILL WHEN DISCONNECTED
Im ausgeschalteten Zustand steht die Nabe still

max. 1°

				Type CCO					
←A150				30	40	55	65	80	100
d Ø max.		1	mm	**32**	**42**	**57**	**70**	**85**	**100**
Ø min.			mm	0	0	22	25	38	38
Nm 1m	Tn	2	Nm	**550**	**1100**	**1970**	**3240**	**5600**	**8500**
	Tp			1100	2200	3940	6480	11200	17000
min.max.		3.4	tr/min omw/min rpm min^{-1}	4500	3800	2750	2200	1850	1600
α α		–	degré graad degree Grad	**2x0,5**	**2x0,5**	**2x0,5**	**2x0,5**	**2x0,5**	**2x0,5**
J (WR^2)		4.4	kgm^2	0,004	0,009	0,022	0,035	0,08	0,17
		5.4	kg	3,0	5,0	8,5	11,4	18,5	33
Grease		6	dm^3	0,035	0,058	0,094	0,172	0,295	0,435
	A		mm	80	94,8	110	117	139	222,5
	B		mm	84	95	120	140	168	190
	C		mm	68	87	93,5	101	111	125,5
	D		mm	50	60	82	100	120	140
	E		mm	38,5	46	53,5	57	67	108
	E'		mm	35,5	42,8	50,5	53	61	102
	F		mm	35,5	41	48,5	51	61	102
mm: ±	G		mm	6	6	6	7	11	12,5
	H		mm	125	140	155	165	195	250
	K		mm	35,5	39,5	47,5	50,5	60	101,5
max.	R		mm	120	135	170	180	215	240
max.	L		mm	30	35	40	45	45	50
	S		mm	9,5	16	14	17,5	19	20,5
	X		mm	0,9	-4,1	1,4	-1,5	4,3	37,5
	Y		mm	45	55	60	65	70	75

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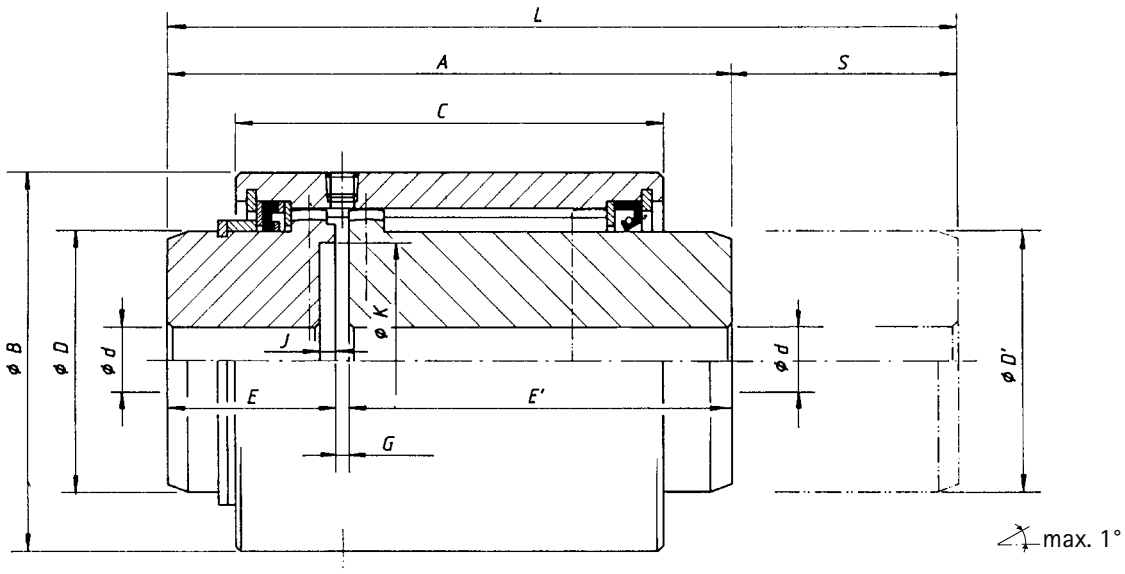
CSH 30 ⇨ 100



				Type CSH					
←A150				30	40	55	65	80	100
d Ø max.		1	mm	**32**	**42**	**57**	**70**	**85**	**100**
Ø min.			mm	0	0	22	25	38	38
1m Nm	Tn	2	Nm	**550**	**1100**	**1970**	**3240**	**5600**	**8500**
	Tp			1100	2200	3940	6480	11200	17000
min.max.		3.3	tr/min omw/min rpm min^{-1}						
α α		–	degré graad degree Grad	**2x0,5**	**2x0,5**	**2x0,5**	**2x0,5**	**2x0,5**	**2x0,5**
J (WR^2)		4.1	kgm^2						
		5.1	kg						
Grease		6.1	dm^3						
	A	6.1	mm	109,2	117	179,5	186,2	216,2	263
	B		mm	84	95	120	140	168	190
	C	6.1	mm	83	90,5	142,5	143,5	166,5	169,5
	D		mm	50,9	60,4	82,6	100	121	143
	D'		mm	50	60	82	100	120	140
mm: ±	E		mm	38,5	46	53,5	57	67	108
	E'	6.1	mm	67	67	122	125	145	150
	G		mm	3,7	4	4	4,2	4,2	5
	J		mm	3	5	5	6	6	6
	K		mm	49	57	76	95	121	140
	L	6.1	mm	139,7	141	250,9	253,5	297,2	342
max.	S	7	mm	30,5	24	71,4	67,3	81	79

TAILLES SUPERIEURES A LA DEMANDE

GROTERE MODELLEN OP AANVRAAG

LARGER SIZES ON REQUEST

GROESSERE ABMESSUNGEN AUF ANFRAGE

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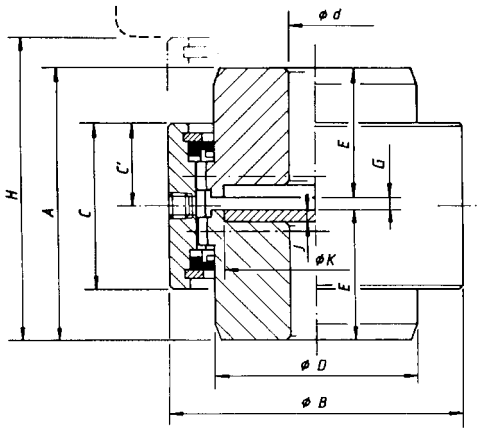
RSV Industries Pvt. Ltd.
www.rsvindustries.com
sales@rsvindustries.com
+91 74004 33355



max. 1°

←A150				Type CSV 30	40	55	65	80	100
d Ø nominal max.	1		mm	**32**	**42**	**57**	**70**	**85**	**100**
d Ø min.			mm	0	0	22	25	38	38
* d Ø max.			mm	35	42	63	75	90	110
Nm 1m Tn	2	Nm		**550**	**1100**	**1970**	**3240**	**5600**	**8500**
Tp				1100	2200	3940	6480	11200	17000
min.max.	3	tr/min omw/min rpm min^{-1}		5500	5100	4400	4000	3600	3400
α α	–	degré graad degree Grad		**2x0,5**	**2x0,5**	**2x0,5**	**2x0,5**	**2x0,5**	**2x0,5**
	–	mm		0,07	0,09	0,09	0,12	0,14	0,15
J (WR^2)	4	kgm^2		0,002	0,004	0,010	0,022	0,052	0,122
	5	kg		2	3,4	6	9,1	15	29
Grease	6	dm^3		0,022	0,036	0,063	0,120	0,201	0,273
	A		mm	80	95	110	120	140	222
	B		mm	84	95	120	140	168	190
	C		mm	50	65	68	80	95	102
	C'		mm	25	32,5	34	40	47,5	51
	D		mm	50,9	60,4	82,6	100	121	143
	E		mm	38,5	46	53,5	57	67	108
mm: ±	G	9	mm	3	3	3	6	6	6
	H		mm	96	117	124	146	175	223
	J		mm	3	5	5	6	6	6
	K		mm	49	57	76	95	121	140

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