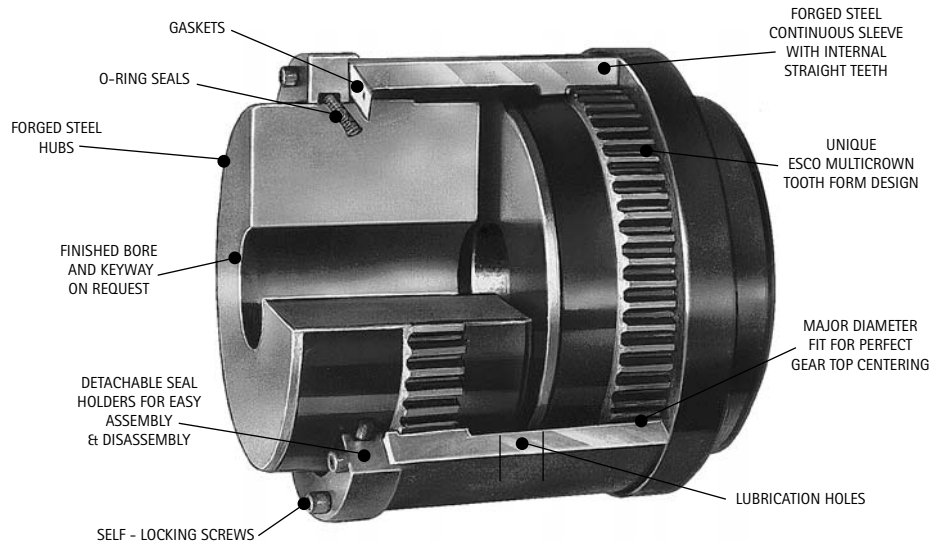


# SERIES C and C... M

## The most compact solution

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

COMPACT  
SIMPLE AND ROBUST  
EASY TO ASSEMBLE

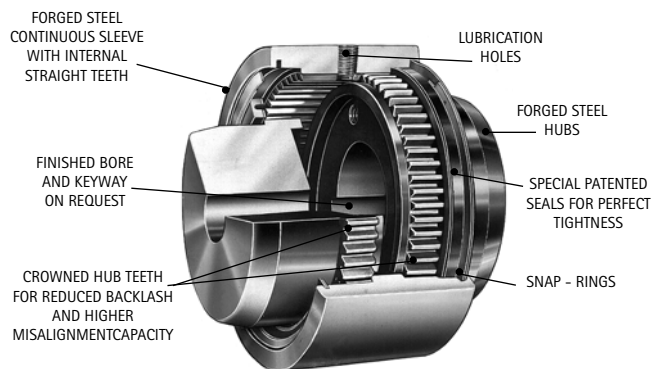


Maximum torque: up to 8 500 Nm  
Bores: up to 110 mm

COMPACT  
SIMPLE AND ROBUST

ONLY 7 PARTS:

*Two snap rings  
Two hubs and one sleeve  
Two seals*

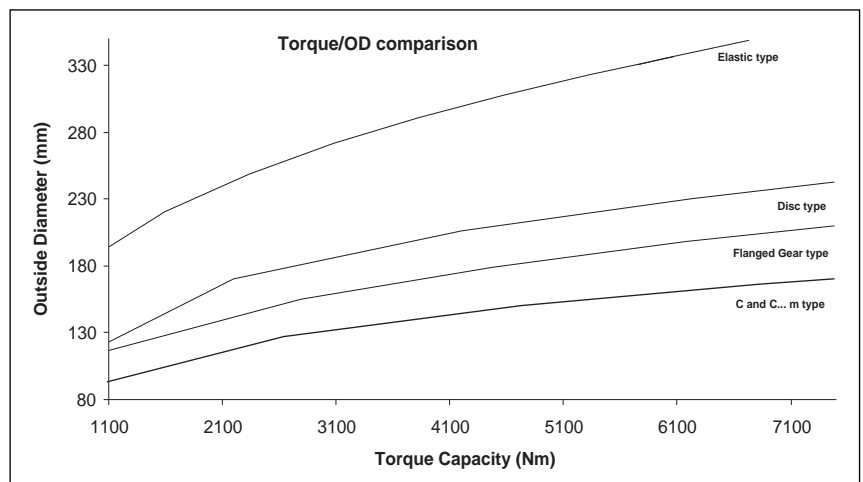


### Most compact solution


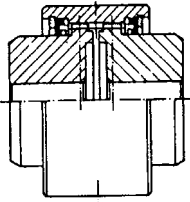

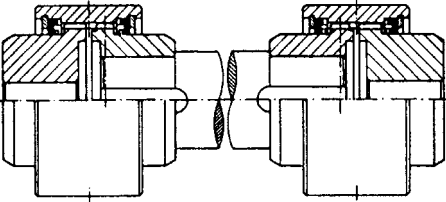

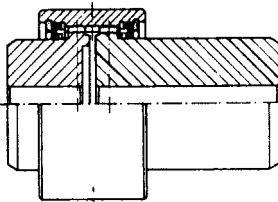

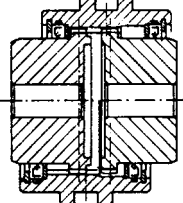

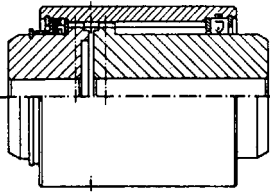

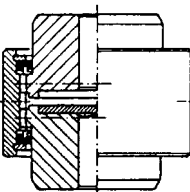
Thanks to the high torque capacity and the continuous sleeve design, the escogear C and C... M couplings are the most compact answer to any transmission applications. In comparison to other types of couplings and for a given torque they have a substantially lower weight and reduced outside diameter:


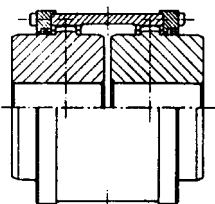

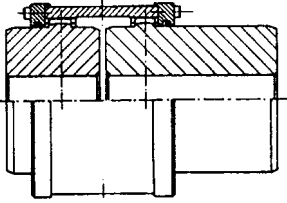

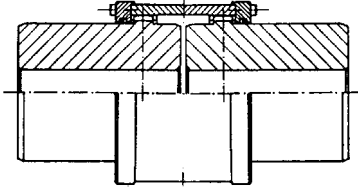

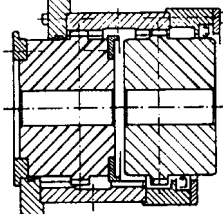

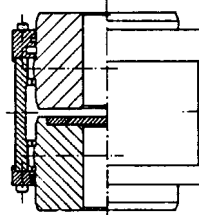
- <-> Flanged Gear type : 17% smaller O.D.
- <-> Disc type : 30% smaller O.D.
- <-> Elastic type : 52% smaller O.D.

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



# 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
		

## 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: 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 potentially 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  $T_p$  indicated planographs A310 to B317.

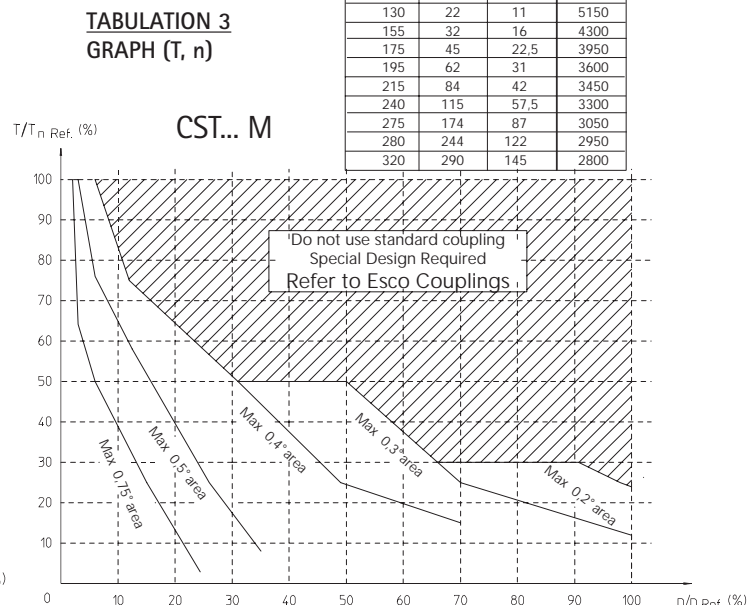
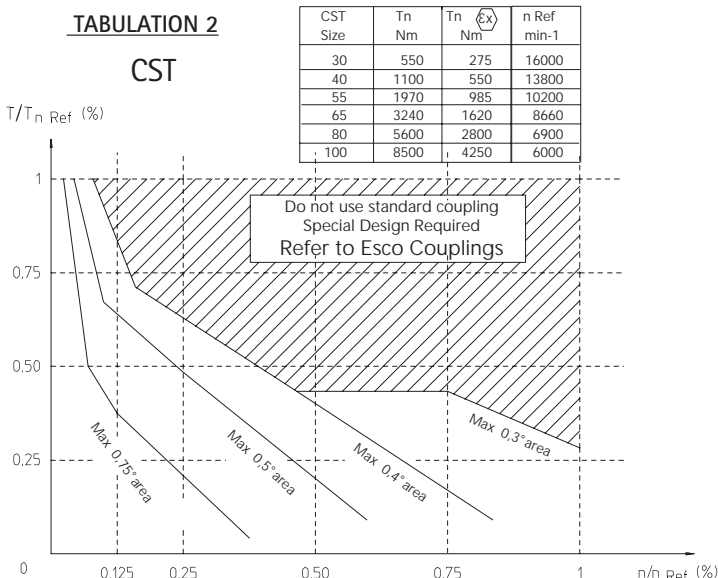
Check also max. allowable misalignment using the graph of tabulations 2 and 3.

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.

DRIVEN MACHINE		APPLICATIONS	DRIVER MACHINE		
			Electric motors Turbines	Hydraulic motors Gears drivers	Reciprocating engine Electric motors frequent starts
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	Service factor $F_u$		
		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



#### HOW TO USE THE GRAPH ?

Maximum torque, maximum speed and maximum misalignment may not occur simultaneously.

Graph must be used as follows:

1. Calculate  $T_n$  and  $T_p$  and select coupling size as usual.  $T_n$  = nominal torque;  $T_p$  = peak torque
2. Calculate  $T_n/T_nRef$  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 potentially explosive atmospheres (Ex), proceed the same way but using  $T_n Ref (Ex)$  for the calculation. Max misalignment may not exceed 0,5° per gear mesh.

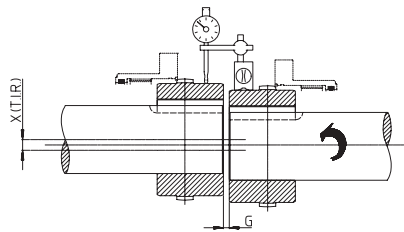
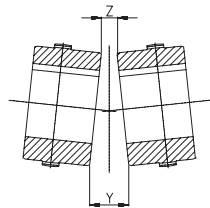


2) MINIMUM MISALIGNMENT =  $\Delta K_{w\min} = 0,1^\circ$

### 3) MISALIGNMENT CONTROL

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

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

$$\left. \begin{aligned} T/T_n \text{ ref} &= 30\% \\ n/n \text{ ref} &= 30\% \end{aligned} \right\} \Delta K_{w\max} = 0,4^\circ$$

CST...M 175:  $K_x = 5,72$   $K_y = 8,2$

#### Measurement

X (TIR) = 0,9 mm      Y-Z = 0,4 mm

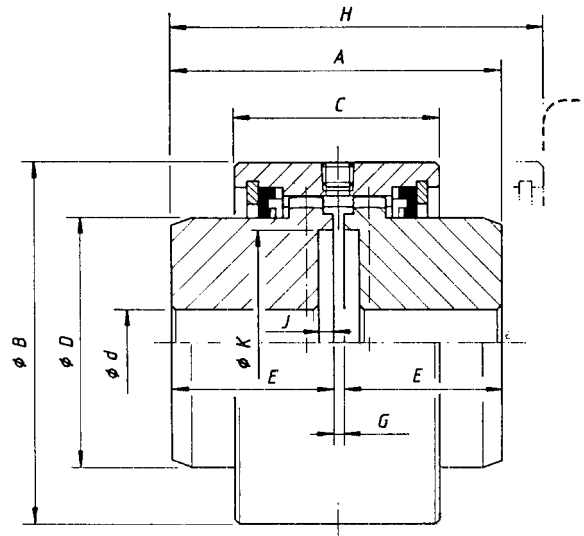
#### Control

Formule:

$$\Delta K_{w\min} \leq \frac{X}{K_x} + \frac{Y-Z}{K_y} \leq 0,75 \times \Delta K_{w\max}$$

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

LEGEND OF USED PICTOGRAMS		Notes for series C / CST...M	
	MAXIMUM NOMINAL BORE (mm)	<ol style="list-style-type: none"> <li>1 For key according to ISO R 773.</li> <li>2 Gear maximum continuous transmissible torque for the tabulated misalignment. The effective transmissible torque depends on the bore and shaft/hub connection.</li> <li>3 Higher speed on special request.</li> <li>3.1 For grease withstanding centrifugal acceleration of 1.000g. See installation and maintenance manual IM.</li> <li>3.2 For grease withstanding centrifugal acceleration of 2.000g. See installation and maintenance manual IM.</li> <li>3.3 Depends on S.</li> <li>3.4 For long operation in disconnected position contact us.</li> <li>4 For solid bore.</li> <li>4.1 Depends on S.</li> <li>4.2 For solid bore and S minimum.</li> <li>4.3 Per 100 mm spacer length.</li> <li>4.4 Depends on L and R.</li> <li>5 For pilot bored hubs.</li> <li>5.1 Depends on S.</li> <li>5.2 For pilot bored hubs and S minimum.</li> <li>5.3 Per 100 mm spacer length.</li> <li>5.4 Depends on L and R.</li> <li>6 See installation and maintenance manual IM.</li> <li>6.1 Depends on S. Values given for S maximum.</li> <li>7 On request. For larger S contact us.</li> <li>8 Values for S minimum. S maximum depends on torque and speed.</li> <li>9 G must remain constant during operation.</li> <li>10 Needed to control the alignment and inspect the gears.</li> </ol> <p>* Max. torque, speed and misalignment tabulated values may not be cumulated. See IM/A300, IM/B300.</p>	
	MINIMUM BORE (mm)		
	MAXIMUM BORE (mm)		
	Tn		MAXIMUM NOMINAL TORQUE (Nm)
	Tp		MAXIMUM PEAK TORQUE (Nm)
			MAXIMUM SPEED (rpm)
			MAXIMUM OFFSET (mm)
			MAXIMUM ANGULAR MISALIGNMENT (degree)
	J (WR <sup>2</sup> )		INERTIA (kgm <sup>2</sup> )
			WEIGHT (kg)
		GREASE QUANTITY (dm <sup>3</sup> )	

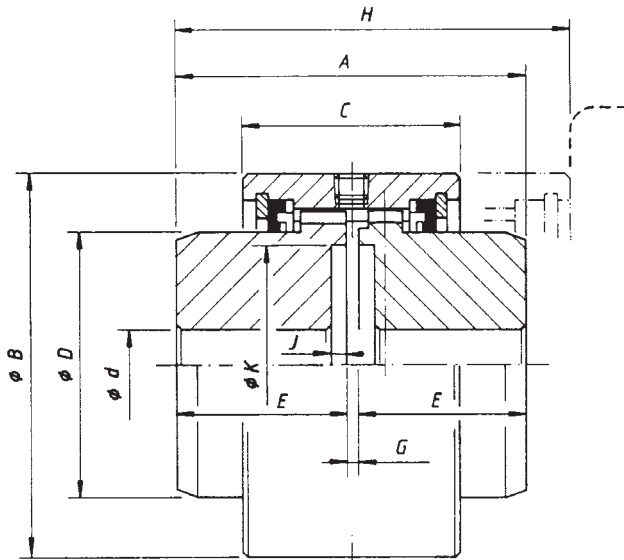


max. 1,5°

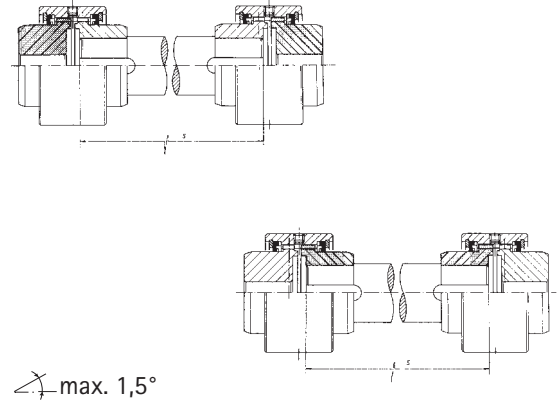
←A150			Type CST					
			30	40	55	65	80	100
	d Ø nominal max.	mm	<b>32</b>	<b>42</b>	<b>57</b>	<b>70</b>	<b>85</b>	<b>100</b>
	d Ø min.	mm	0	0	22	25	38	38
	* d Ø max.	mm	35	42	63	75	90	110
	Tn	Nm	<b>550</b>	<b>1100</b>	<b>1970</b>	<b>3240</b>	<b>5600</b>	<b>8500</b>
	1m ↓ Tp		1100	2200	3940	6480	11200	17000
	3.1	tr/min omw/min	5500	5100	4400	4000	3600	3400
	3.2	rpm min <sup>-1</sup>	7750	7200	6200	5600	5100	4800
	—	degré graad degree Grad	<b>2x0,75</b>	<b>2x0,75</b>	<b>2x0,75</b>	<b>2x0,75</b>	<b>2x0,75</b>	<b>2x0,75</b>
	—	mm	0,1	0,14	0,14	0,19	0,22	0,23
	4	kgm <sup>2</sup>	0,002	0,004	0,010	0,022	0,052	0,122
	5	kg	2	3,4	6	9,1	15	29
	6	dm <sup>3</sup>	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

## FLEX - RIGID



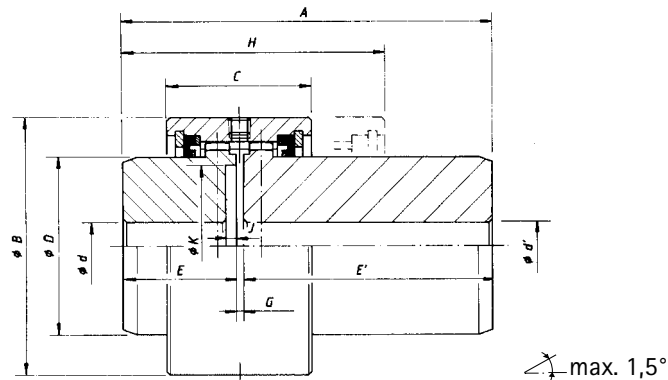
## SET FLOATING SHAFT



Shaft can be supplied at demands

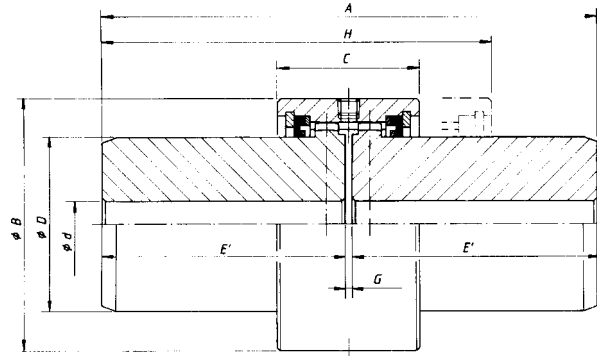
← A150			Type CFS						
			30	40	55	65	80	100	
d Ø nominal max. d Ø min. * d Ø max.	1	mm	32	42	57	70	85	100	
		mm	0	0	22	25	38	38	
		mm	35	42	63	75	90	110	
1m Nm	Tn	Nm	550	1100	1970	3240	5600	8500	
	Tp	Nm	1100	2200	3940	6480	11200	17000	
/min.max.	3.3	tr/min omw/min rpm min <sup>-1</sup>							
α	—	degré graad degree Grad	0,75	0,75	0,75	0,75	0,75	0,75	
J (WR <sup>2</sup> )	4	kgm <sup>2</sup>	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 <sup>3</sup>	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









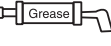


←A150		Type CMM							
		30	40	55	65	80	100		
	d Ø nominal max.	mm	32	42	57	70	85	100	
	d Ø min.	mm	0	0	22	25	38	38	
	* d Ø max.	mm	35	42	63	75	90	110	
	d' Ø nominal max.	mm	32	42	57	70	85	100	
	d' Ø min.	mm	0	0	0	0	40	40	
	* d' Ø max.	mm	35	42	63	75	90	110	
	Tn	Nm	550	1100	1970	3240	5600	8500	
	1m Tp		1100	2200	3940	6480	1120	17000	
	3.1	tr/min omw/min	5500	5100	4400	4000	3600	3400	
	3.2	rpm min <sup>-1</sup>	7750	7200	6200	5600	5100	4800	
	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 <sup>2</sup> )	kgm <sup>2</sup>	0,002	0,004	0,012	0,028	0,065	0,140	
		kg	2,8	4,5	8,5	13,3	21,4	35,7	
	Grease	dm <sup>3</sup>	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	mm	96	117	124	146	175	223
	J	mm	mm	3	5	5	6	6	6
	K	mm	mm	49	57	76	95	121	140

\* Consult us

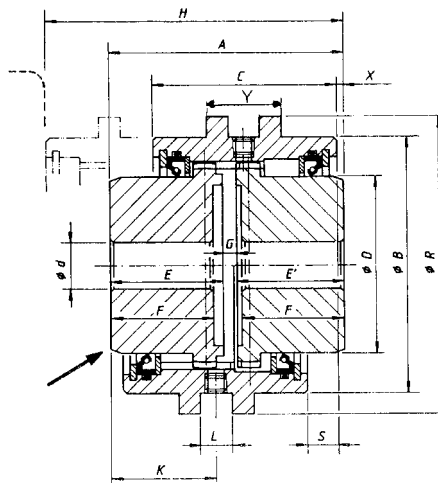


∠ max. 1,5°

 ←A150			Type CDMM						
			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
	Tn	2	Nm	550	1100	1970	3240	5600	8500
	1m Tp			1100	2200	3940	6480	11200	17000
	/min.max.	3.1	tr/min omw/min rpm	5500	5100	4400	4000	3600	3400
		3.2	min <sup>-1</sup>	7750	7200	6200	5600	5100	4800
		—	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 <sup>2</sup> )	4	kgm <sup>2</sup>	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
		6	dm <sup>3</sup>	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

\* Consult us

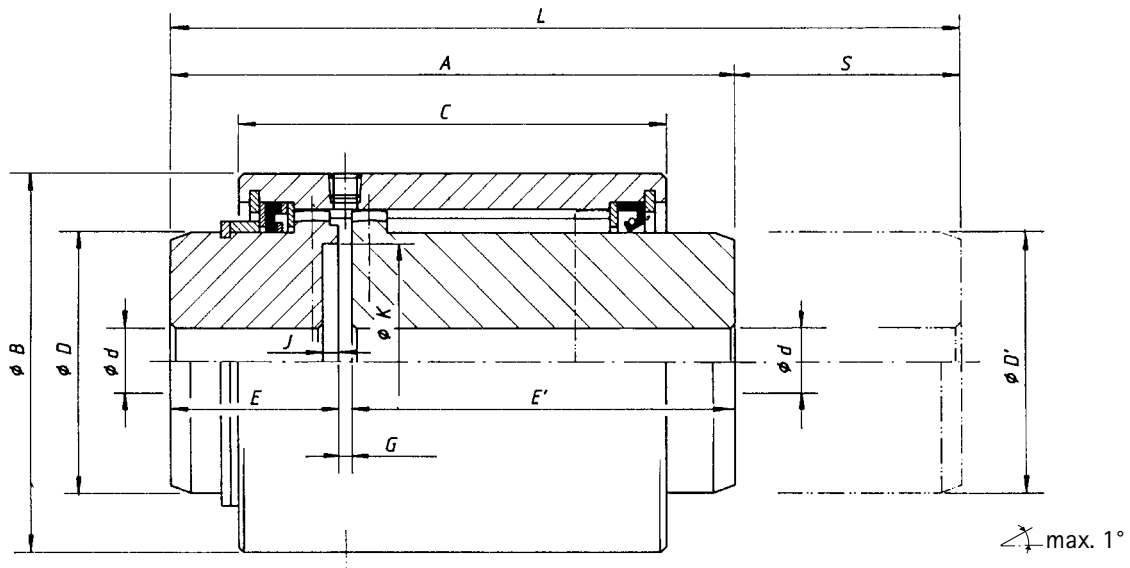




CE MOYEU A L'ARRET EN CONDITION DEBRAYEE  
 WANNEER UITGESCHAKELD STAAT DEZE NAAF STIL  
 THIS HUB IN STAND STILL WHEN DISCONNECTED  
 Im ausgeschalteten Zustand steht die Nabe still

max. 1°

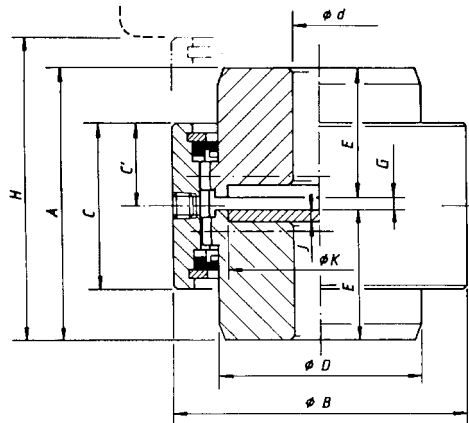
← A150			Type CCO					
			30	40	55	65	80	100
	1	mm	32	42	57	70	85	100
		mm	0	0	22	25	38	38
	2	Tn	550	1100	1970	3240	5600	8500
		Tp	1100	2200	3940	6480	11200	17000
	3.4	tr/min omw/min rpm min <sup>-1</sup>	4500	3800	2750	2200	1850	1600
	—	degré graad degree Grad	2x0,5	2x0,5	2x0,5	2x0,5	2x0,5	2x0,5
	4.4	J (WR <sup>2</sup> )	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
	6	dm <sup>3</sup>	0,035	0,058	0,094	0,172	0,295	0,435
mm: ±	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
	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. max.	R	mm	120	135	170	180	215	240
	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



← A150			Type CSH						
			30	40	55	65	80	100	
 $\phi$ max. $\phi$ min.	1	mm	32	42	57	70	85	100	
		mm	0	0	22	25	38	38	
 1m Nm	2	Tn	550	1100	1970	3240	5600	8500	
		Tp	1100	2200	3940	6480	11200	17000	
 /min.max.	3.3	tr/min omw/min rpm min <sup>-1</sup>							
 $\alpha$	—	degré graad degree Grad	2x0,5	2x0,5	2x0,5	2x0,5	2x0,5	2x0,5	
 J (WR <sup>2</sup> )	4.1	kgm <sup>2</sup>							
	5.1	kg							
 Grease	6.1	dm <sup>3</sup>							
mm: ±	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
	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
max.	L	6.1	mm	139,7	141	250,9	253,5	297,2	342
	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

\* Consult us



$\alpha$  max. 1°

← A150			Type CSV					
			30	40	55	65	80	100
	1	d Ø nominal max. 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
	2	Tn Nm	550	1100	1970	3240	5600	8500
		Tp Nm	1100	2200	3940	6480	11200	17000
	3	tr/min omw/min rpm min <sup>-1</sup>	5500	5100	4400	4000	3600	3400
	—	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
	4	J (WR <sup>2</sup> ) kgm <sup>2</sup>	0,002	0,004	0,010	0,022	0,052	0,122
	5	kg	2	3,4	6	9,1	15	29
	6	dm <sup>3</sup>	0,022	0,036	0,063	0,120	0,201	0,273
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
	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
	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