

Airflex[®] CM Construction and Features



The CM element provides all of the features associated with the type CB element plus greater heat dissipation characteristics. They are used in applications where moderate slippage is encountered which would shorten the operating life of a CB element.

The actuating tube of the CM element is bonded to a steel rim. The rim has male and female registers which allows the elements to be easily assembled into dual and triple arrangements. Ventilated friction shoes are attached to the tube by pins which in turn are held in position by cotter pins. Rubber lugs on the inside diameter of the actuating tube fit into recesses in the friction shoe backing plate providing a positive interface between the shoe and tube.

Element torque capacity is dependent upon the applied pressure and rotating speed. Catalog ratings are given at 75 psi (5,2 bar) and zero speed. Tube construction for the CM elements permits a higher operating pressure than that recommended for CB element. Maximum recommended pressure is 150 psi (10,3 bar). Adjustment for pressure and speed is explained under Selection Procedure.

CM elements are available in 5 sizes which are identified by the drum diameter in inches on which they constrict and the width in inches of its friction lining. For instance, size 26CM475 is designed to constrict on a 26 inch diameter drum and has a friction lining width of 4.75 inches. The smallest CM element will constrict on a 26 inch (660 mm) diameter drum and the largest on a 48 inch (1219 mm). Individual elements can be bolted together to form dual or triple elements having twice or triple the torque capacity of a single element.

Because the rubber tube is the connecting member between the driving and driven shafts, the CM design offers the following features in addition to the constricting features described earlier in this section.

One moving component

The tube is the only moving component.

There are no springs or sliding parts.

Cushioned action

The tube transmits the torque through its sidewalls, cushioning damaging shock loads thereby protecting drive components. The rubber tube construction dampens the effects of torsional vibrations.

Flexible coupling

The tube flexibility is able to compensate for minor shaft misalignment and axial movement.

Ventilated construction



Friction shoe backing plates have air passages through their entire length resulting in greater thermal capacity.

Where Used:

- Marine Propulsion

Size	Torque Ratings	
	English	SI
	lb·in @ 75 psi	N·m @ 5,2 bar
26CM475	120000	13600
30CM500	171000	19300
35CM500	240000	27100
40CM550	336000	38000
48CM650	558000	63100

Airflex® CM Elements



Technical Data – Sizes 26 thru 48

English		lb in @ 75 psi	rpm	psi/rpm ²	lb ft ²	lb	in ²	inches		in ³	in
26CM475	146211	120000	1030	40 E-06	280	160	302	0.30	0.21	120	25.81
30CM500	146212	171000	915	48 E-06	430	190	379	0.33	0.18	210	29.81
35CM500	146207	240000	790	58 E-06	760	250	433	0.33	0.18	250	34.81
40CM550	146208	336000	700	68 E-06	1150	310	540	0.33	0.18	320	39.81
48CM650	146209	558000	605	79 E-06	2020	400	752	0.33	0.18	430	47.75

Size	Part Number	M ¹ Torque Rating	Maximum Speed	C _s Centrifugal Loss Constant	Wk ²		Friction Area	Friction Lining Thickness		Air Cavity Volume ⁵	Minimum Drum Diameter
					J	Mass		New	Worn		
								New	Worn		
26CM475	146211	13600	1030	2,8 E-06	11,76	72	2099	8	5	1,97	656
30CM500	146212	19300	915	3,3 E-06	18,06	86	2634	8	5	3,44	757
35CM500	146207	27100	790	4,0 E-06	31,92	113	3009	8	5	4,10	884
40CM550	146208	38000	700	4,7 E-06	48,30	140	3753	8	5	5,25	1011
48CM650	146209	63100	605	5,5 E-06	84,84	181	5226	8	5	7,05	1213

SI		Nm @ 5,2 bar	rpm	bar/rpm ²	kg m ²	kg	cm ²	millimeters		dm ³	mm
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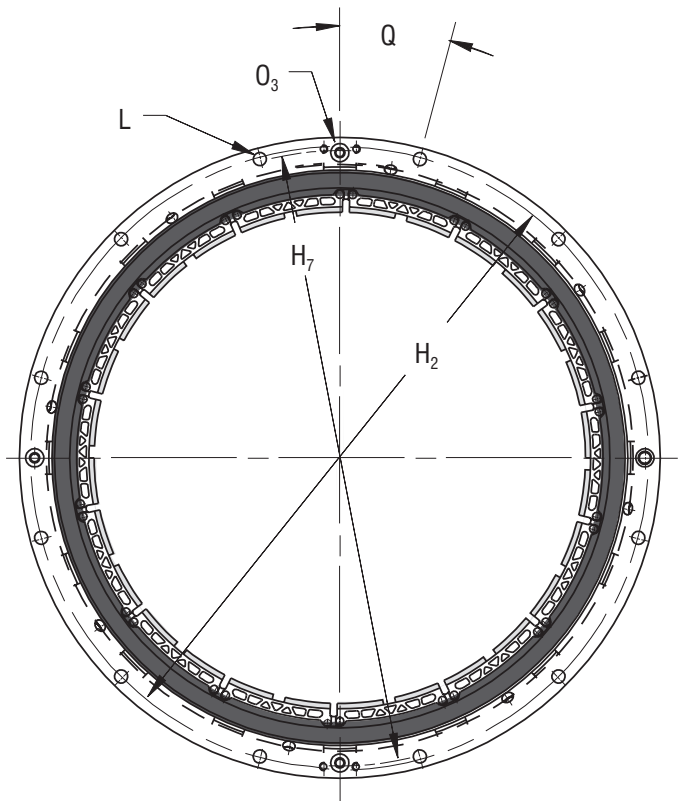
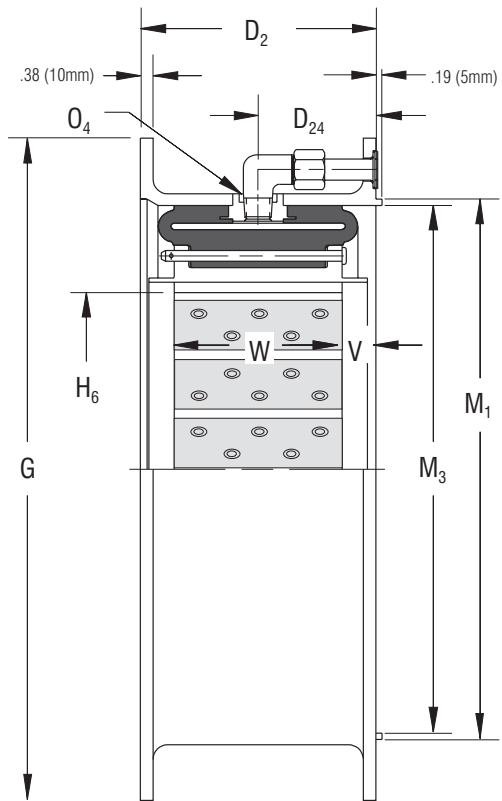
Notes:

- ① Dynamic torque shown, static torque approximately 25% greater. Torque in each application is dependent upon air pressure and speed.
- ② Tolerance +0.000/-0.006 in (+0,00/-0,15 mm).
- ③ Tolerance +0.005/-0.000 in (+0,13/-0,00 mm).
- ④ American National Pipe Thread
- ⑤ Drum contact with worn shoes.

Airflex[®] CM Elements



Dimensional Data – Sizes 26 thru 48

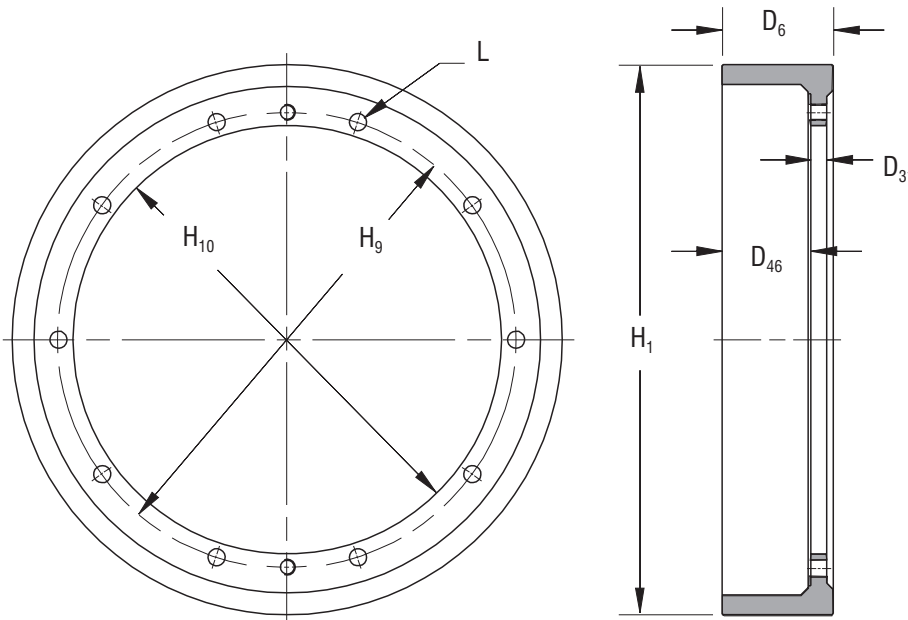


English		lb in @ 75 psi	Dimensions in inches														
Size	Part Number	M _t Torque Rating	D ₂	D ₂₄	G	H ₂	H ₆	H ₇	No.	Dia.	M ₁	M ₃	O ₃	O ₄	Q (Deg)	V	W
26CM475	146211	120000	6.94	3.38	34.750	33.438	26.19	32.88	12	0.69	31.500	31.125	0.38	3/8-18	15.000	1.00	4.75
30CM500	146212	171000	7.19	3.50	39.375	38.000	30.19	37.50	12	0.81	35.750	35.380	0.50	1/2-14	15.000	1.00	5.00
35CM500	146207	240000	7.69	3.75	45.875	44.375	35.19	43.75	12	0.81	42.000	41.380	0.63	3/4-14	15.000	1.25	5.00
40CM550	146208	336000	8.44	4.13	51.375	49.875	40.19	49.25	12	0.81	47.375	46.755	0.63	3/4-14	15.000	1.38	5.50
48CM650	146209	558000	9.06	4.44	59.500	58.000	48.19	57.25	16	0.81	55.375	54.760	0.63	3/4-14	11.250	1.19	6.50
SI	Part Number	N m @ 5,2 bar	Dimensions in millimeters														
26CM475	146211	13600	176	86	882,7	849,3	665	835	12	18	800,1	790,6	10	3/8-18	15,000	25	121
30CM500	146212	19300	183	89	1000,1	965,2	767	953	12	21	908,1	898,7	13	1/2-14	15,000	25	127
35CM500	146207	27100	195	95	1165,2	1127,1	894	1111	12	21	1066,8	1051,1	16	3/4-14	15,000	32	127
40CM550	146208	38000	214	105	1304,9	1266,8	1021	1251	12	21	1203,3	1187,6	16	3/4-14	15,000	35	140
48CM650	146209	63100	230	113	1511,3	1473,2	1224	1454	16	21	1406,5	1390,9	16	3/4-14	11,250	30	165

Airflex® CM Mounting Components



Drums – Dimensional and Technical Data



Notes:

- ① Tolerance +0.000/-0.010 in
(+0,00/-0,25 mm).
- ② Tolerance +0.003/-0.000 in
(+0.08/-0.00 mm).

English		Dimensions in inches										
26CM475	0.75	26	10	0.81	5.25	3.25	16.130	14.750	5.25	4.19	21.630	20.250
30CM500	0.75	30	10	0.88	5.50	3.75	20.130	18.750	5.50	3.88	25.630	24.250
35CM500	1.00	35	10	1.00	6.50	4.25	23.505	21.875	6.69	4.25	30.005	28.375
40CM550	1.25	40	10	1.06	6.50	4.00	26.255	24.375	6.50	3.50	33.755	31.875
48CM650	1.25	48	12	1.06	7.00	3.06	37.760	35.875	7.00	4.50	42.010	40.000
Size	D ₃₁	① H ₁	Dimensions in inches									
			No.	Dia.	D ₆	D ₄₆	H ₉ ①	H ₁₀ ②	D ₆	D ₄₆	H ₉ ①	H ₁₀ ②
			Forward Drive Drum					Reverse Drive Drum				
		SI										
		Dimensions in millimeters										

Forward Drive Drum					
Size	Part Number	English		SI	
		Weight lb	Wk ² lb ft ²	Mass kg	J kg m ²
26CM475	512239	190	170	86	7,14
30CM500	512349	210	280	95	11,76
35CM500	512241	310	570	140	23,94
40CM550	512243	460	990	208	41,58
48CM650	512245	590	1970	267	82,74

Reverse Drive Drum					
Size	Part Number	English		SI	
		Weight lb	Wk ² lb ft ²	Mass kg	J kg m ²
26CM475	512240	145	150	66	6,30
30CM500	512350	175	250	79	10,50
35CM500	512242	245	490	111	20,58
40CM550	512244	350	830	159	34,86
48CM650	512246	500	1750	227	73,50