

# Airflex®CM Construction and Features

## Section B

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 lb · in @ 75 psi	SI N · m @ 5, 2 bar
26CM475	132000	14920
30CM500	188000	21250
35CM500	264000	29850
40CM550	369500	41770
48CM650	613500	69360

# Airflex®CM Elements

## Technical Data — Sizes 26 thru 48

### Section B

English		lb·in @75psi	rpm	psi/rpm <sup>2</sup>	lb · ft <sup>2</sup>	lb	in <sup>2</sup>	inches		in <sup>3</sup>	in
26CM475	146211	132000	1030	40 E-06	280	160	302	0.30	0.21	120	25.81
30CM500	146212	188000	915	48 E-06	430	190	379	0.33	0.18	210	29.81
35CM500	146207	264000	900	900 E-06	900	250	433	0.33	0.18	250	34.81
40CM550	146208	369500	900	68 E-06	1150	310	540	0.33	0.18	320	39.81
48CM650	146209	613500	900	79 E-06	900	400	752	0.33	0.18	430	47.75

Size	Part Number	Mr Torque Rating	Maximum Speed	Cs Centrifugal Loss Constant	Wk <sup>2</sup> J	Weight		Friction Area	Friction Lining Thickness		Air Cavity Volume	Minimum Drum Diameter
						Mass			New	Worn		
26CM475	146211	14920	1030	2,8 E-06	11,76	72	2099	8	5	1,97	656	
30CM500	146212	21250	915	3,3 E-06	18,06	86	2634	8	5	3,44	757	
35CM500	146207	29850	900	4,0 E-06	31,92	113	3009	8	5	4,10	884	
40CM550	146208	41770	900	4,7 E-06	48,30	140	3753	8	5	5,25	1011	
48CM650	146209	69360	900	5,5 E-06	84,84	181	5226	8	5	7,05	1213	

SI		N · m @ 5, 2 bar	rpm	bar/rpm <sup>2</sup>	kg · m <sup>2</sup>	kg	cm <sup>2</sup>	millimeters		dm <sup>3</sup>	mm
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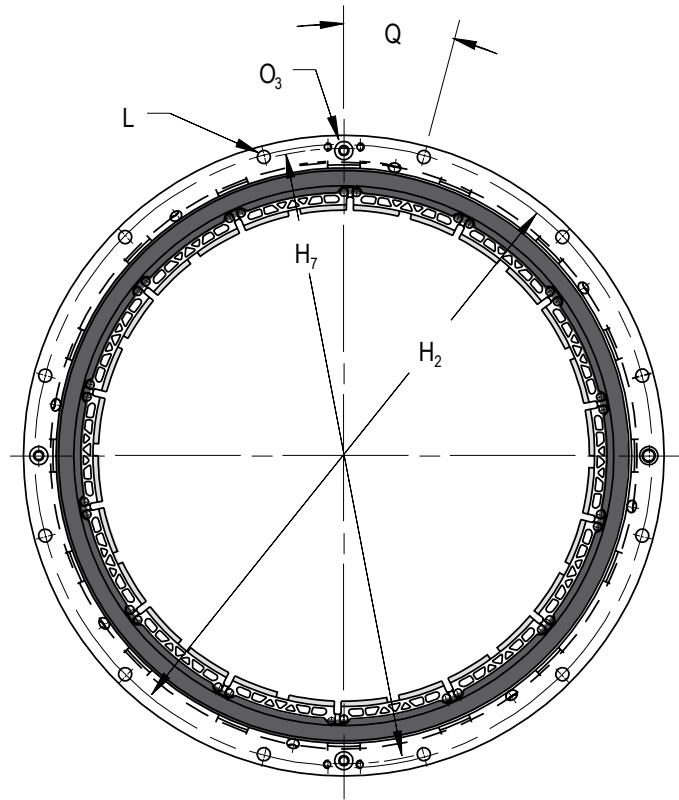
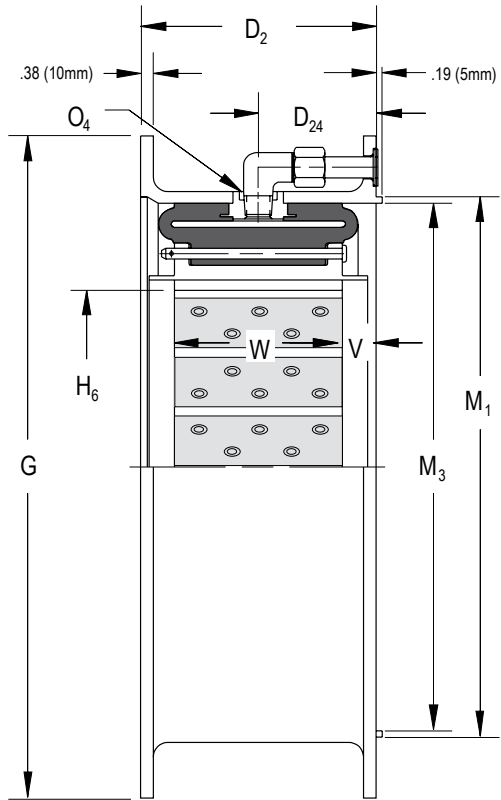
#### Notes:

- 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

### Section B



English		lb · in @ 75 psi	Dimensions in inches														
26CM475	146211	132000	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	188000	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	264000	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	369500	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	613500	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

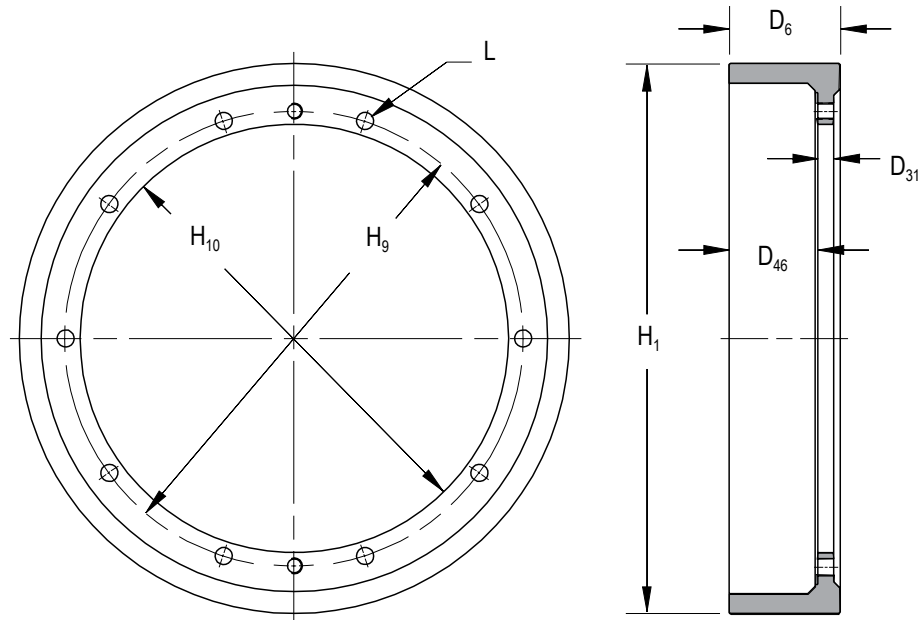
Size	Mr Part Number	Torque Rating	D <sub>2</sub>	D <sub>24</sub>	G	H <sub>2</sub>	H <sub>6</sub>	H <sub>7</sub>	L	M <sub>1</sub>	M <sub>3</sub>	O <sub>3</sub>	O <sub>4</sub>	Q (Deg)	V	W	No. Dia.		
26CM475	146211	14920	176	86	882,7	849,3	665	835	12	18	800,1	790,6	10	3/8-18	15,000	25	121		
30CM500	146212	21250	183	89	1000,1	965,2	767	953	12	21	908,1	898,7	13	1/2-14	15,000	25	127		
35CM500	146207	29850	195	95	1165,2	1127,1	894	1111	12	21	1066,8	1051,1	16	3/4-14	15,000	32	127		
40CM550	146208	41770	214	105	1304,9	1266,8	1021	1251	12	21	1203,3	1187,6	16	3/4-14	15,000	35	140		
48CM650	146209	69360	230	113	1511,3	1473,2	1224	1454	16	21	1406,5	1390,9	16	3/4-14	11,250	30	165		

SI		N · m @ 5,2 bar	Dimensions in millimeters													
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# Airflex®CM Mounting Components

## Drums — Dimensional and Technical Data

### Section B



#### 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 <sub>31</sub>	H <sub>1</sub>	L	Forward Drive Drum				Reverse Drive Drum				
			No.	Dia.	D <sub>6</sub>	D <sub>46</sub>	H <sub>9</sub> ①	H <sub>10</sub> ②	D <sub>6</sub>	D <sub>46</sub>	H <sub>9</sub> ①	H <sub>10</sub> ②
26CM475	19	660	10	21	133	83	409,7	374,7	133	106	549,4	514,4
30CM500	19	762	10	22	140	95	511,3	476,3	140	99	651,0	616,0
35CM500	25	889	10	25	165	108	597,0	555,6	170	108	762,1	720,7
40CM550	32	1016	10	27	165	102	666,9	619,1	165	89	857,4	809,6
48CM650	32	1219	12	27	178	78	959,1	911,2	178	114	1067,1	1016,0
SI	Dimensions in millimeters											

#### Forward Drive Drum

Size	Part Number	English		SI	
		Weight lb	Wk <sup>2</sup> lb · ft <sup>2</sup>	Mass kg	J kg · m <sup>2</sup>
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 <sup>2</sup> lb · ft <sup>2</sup>	Mass kg	J kg · m <sup>2</sup>
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