

Sumitomo Drive Technologies
Always on the Move

Cyclo[®] Capstan

Gearmotors and Brakemotors



BROCHURE 04.611.51.001

Cyclo® Capstan

Sumitomo Drive Technologies
Always on the Move

Compact, Powerful and Reliable

- High torque-density means compact mounting envelop.
- Cycloidal technology for rugged performance.
- Quiet and low vibration.

1. Nomenclature

C 10WM 36 – 6165 – B – 87

- Reduction ratio
 - Brake (Without brake: no code; with brake: B)
 - Cyclo® Size
 - Motor capacity code
 - Capstan
 - Type Cyclo®
- (10WM: Direct coupling to motor; without drum)
(11WM: Direct coupling to motor; with drum)

Capacity code	HP
36	3
56	5
86	7.5
106	10
156	15

2. Construction

Figure 1 11WM

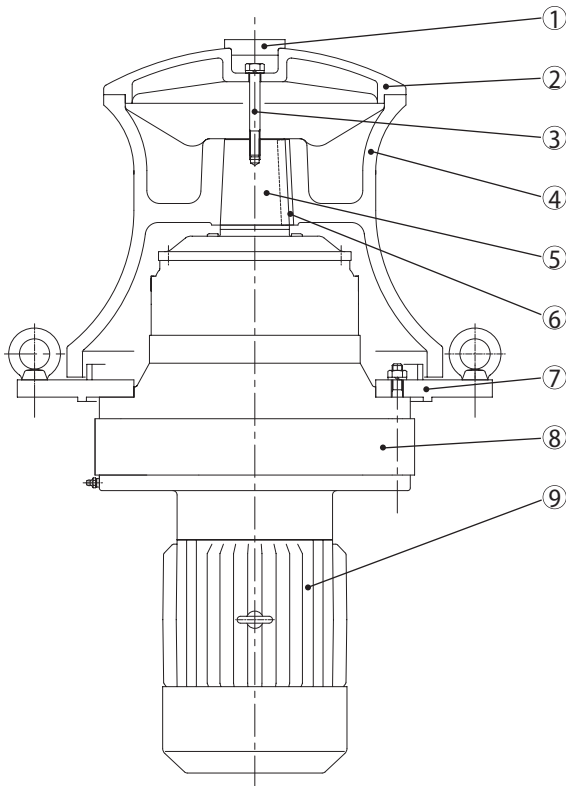


Table 1 Major parts

Part No.	Parts
1	Cap
2	Drum cover
3	Upper bolt
4	Drum
5	Slow-speed shaft
6	Key
7	Mounting plate
8	CYCLO® Gearmotor
9	Motor

3. Standard Cyclo® Capstan

Figure 2 10WM Configuration (Drum Less)

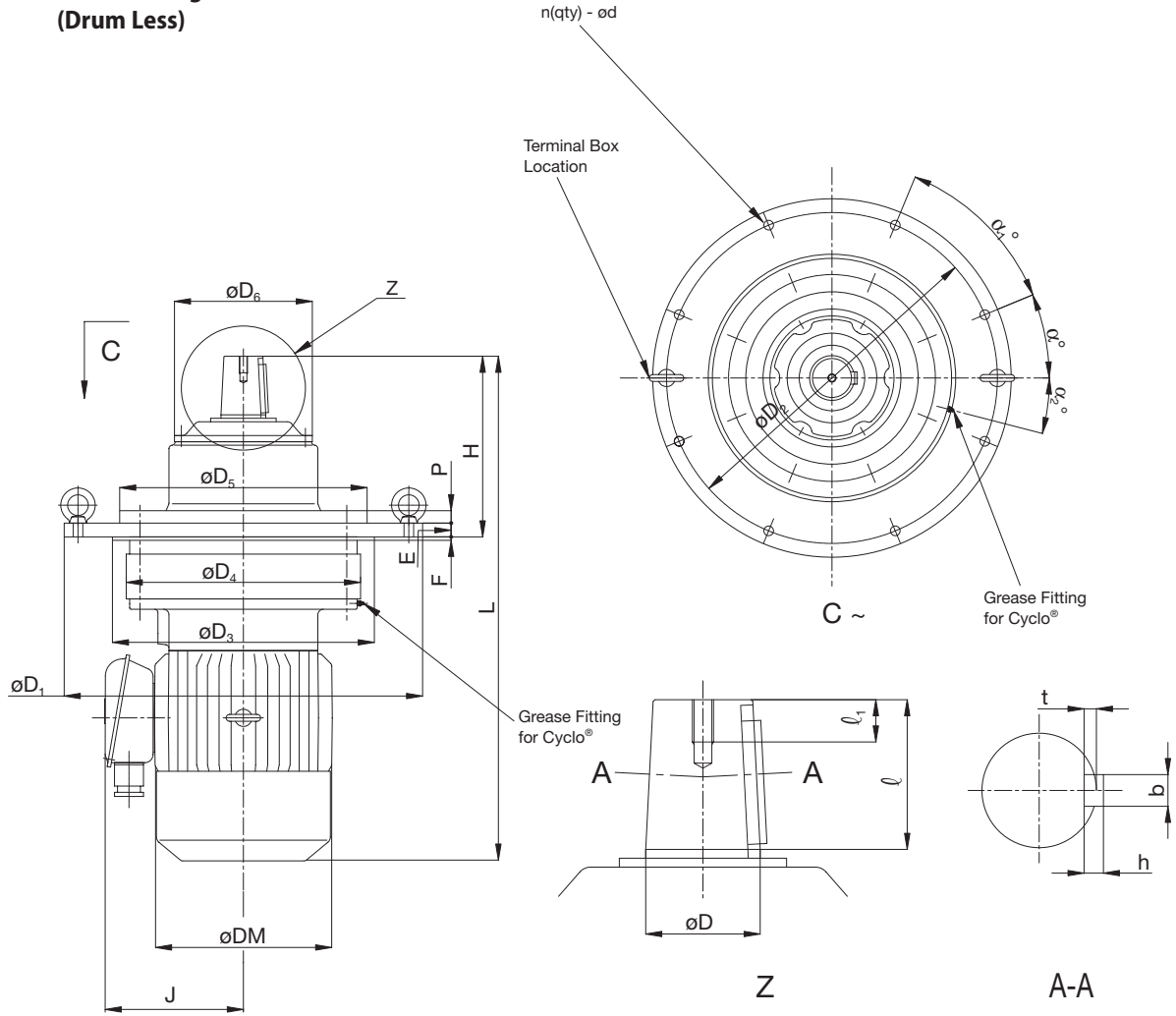


Table 2

Type	Reduction Ratio	Motor		Warping capacity x Warping speed	D	D ₁	D ₂	D ₃	D ₄	D ₅	D ₆	H	L	E
		HP	rpm											
C10WM36-6165	87	3	1200 (60Hz)	1 t·f x 42.7 ft/min	2.17	18.11	16.54	13.23	11.81	12.60	6.69	8.74	26.18	0.71
C10WM56-6175		5		1.5 t·f x 42.7 ft/min	2.56	20.47	18.90	14.96	13.39	14.13	7.87	10.31	29.21	0.79
C10WM86-6185		7.5		2.5 t·f x 42.7 ft/min	3.15	21.65	20.08	16.14	14.57	15.31	8.78	11.77	33.03	0.79
C10WM106-6195		10		3.5 t·f x 42.7 ft/min	3.74	22.83	21.26	19.69	16.93	17.09	10.24	14.37	37.44	0.98
C10WM156-6197		15		5 t·f x 42.7 ft/min	3.74	26.77	24.80	22.83	16.93	17.09	10.24	14.37	39.17	1.18

Type	F	P	DM	J	N	d	l	e	S	l ₁	b	h	t	α	α ₁	α ₂	Weight (lbs.)	With brake			
																		DM	J	L	Weight (lbs.)
C10WM36-6165	0.16	0.71	8.35	6.26	0.24	0.43	3.35	0.20	M10	0.71	0.63	0.39	0.24	—	2.36	0.59	251	8.35	6.26	29.02	273
C10WM56-6175	0.20	0.71	9.88	7.32	0.31	0.55	3.35	0.20	M12	0.94	0.71	0.43	0.28	0.89	1.77	—	367	9.88	7.32	32.95	407
C10WM86-6185	0.20	0.71	9.88	7.32	0.31	0.71	3.94	0.39	M12	0.94	0.87	0.55	0.35	0.89	1.77	—	473	9.88	7.32	36.77	513
C10WM106-6195	0.20	0.71	12.76	9.13	0.31	0.71	5.12	0.20	M20	1.34	0.98	0.55	0.35	0.89	1.77	—	693	12.76	9.13	40.98	768
C10WM156-6197	0.31	0.71	12.76	9.13	0.47	0.87	5.12	0.20	M20	1.34	0.98	0.55	0.35	—	1.18	—	805	12.76	9.13	42.72	880

- Motor: Totally enclosed, fan-cooled, squirrel cage type, 3-phase induction motor (60 min. rating; 200V 50/60Hz or 220V 60Hz with marine cable gland)
Models with a brake are also available. Standard models for 7.5hp or less are equipped with an FB brake, while those for 10hp or more are equipped with a CMB brake.
- The dimensional tolerance for D₃ is JIS B0401-1965 h8.
- The key conforms to JIS B1301-1976 Parallel Key.
- The warping speed is calculated assuming that the drum dia. is 11.02" and wire rope dia. is 0.79", not including the motor slippage.
- The dimensions D₁, D₂, and D₃ are different from the dimensions shown above when the motor specifications are explosion-proof type or higher-safety explosion-proof type.
Contact the factory for details.
- The dimensions and specifications shown in the dimensional drawing are subject to change without notice.

Figure 3 11WM Configuration (With Drum)

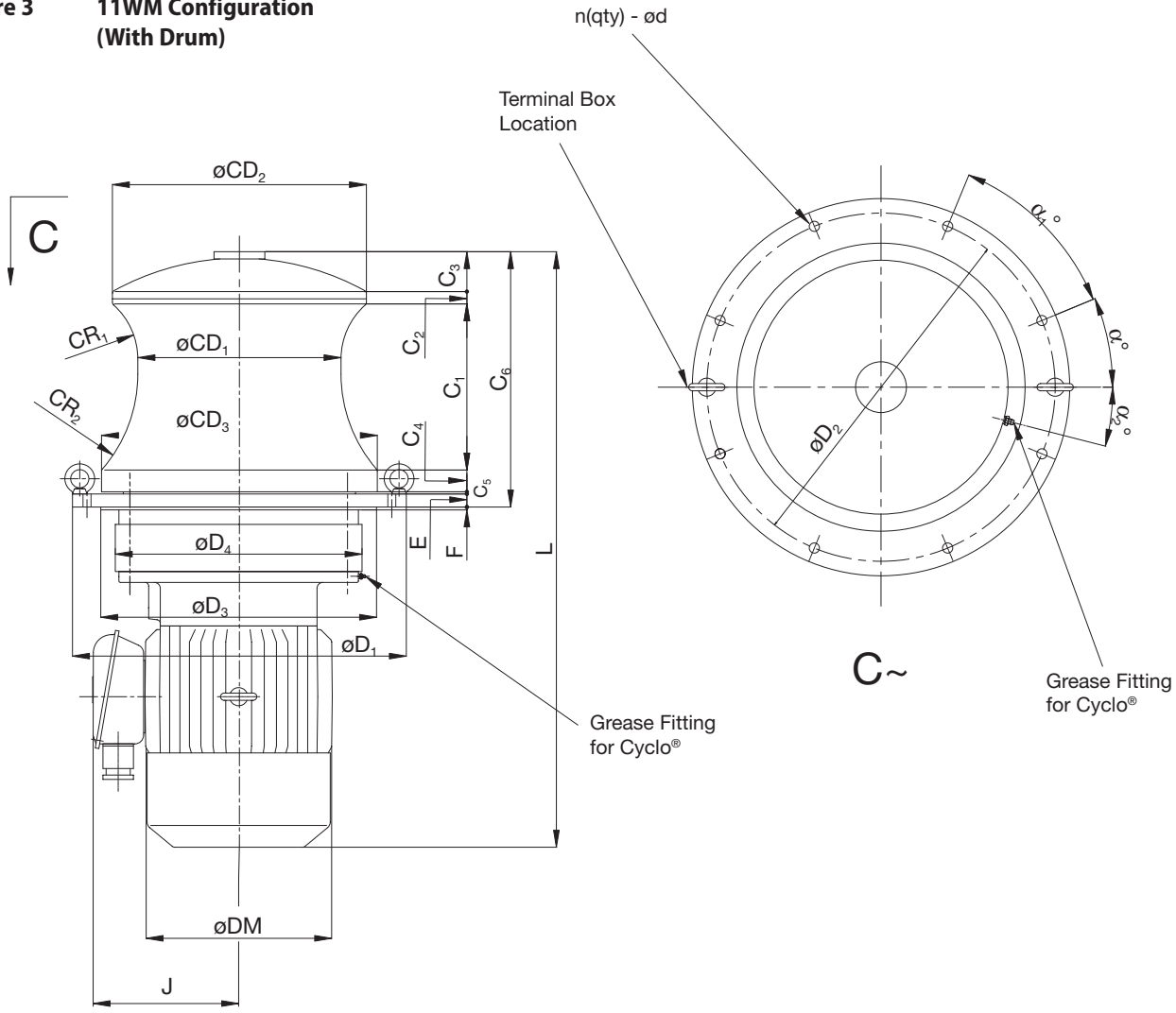


Table 3

Type	Reduction Ratio	Motor		Warping capacity x Warping speed	D ₁	D ₂	D ₃	D ₄	CD ₁	CD ₂	CD ₃	L	E	F	C ₁
		HP	rpm												
C11WM36-6165	87	3	1200 (60Hz)	1 t·f x 42.7 ft/min	18.11	16.54	13.23	11.81	11.02	13.78	14.96	31.30	0.71	0.16	9.02
C11WM56-6175		5		1.5 t·f x 42.7 ft/min	20.47	18.90	14.96	13.39	11.02	13.78	15.63	34.33	0.79	0.20	9.88
C11WM86-6185		7.5		2.5 t·f x 42.7 ft/min	21.65	20.08	16.14	14.57	11.02	13.78	17.13	37.60	0.79	0.20	11.02
C11WM106-6195		10		3.5 t·f x 42.7 ft/min	22.83	21.26	19.69	16.93	11.02	13.78	18.90	42.36	0.98	0.20	12.20
C11WM156-6197		15		5 t·f x 42.7 ft/min	26.77	24.80	22.83	16.93	11.02	13.78	18.90	44.09	1.18	0.31	12.20

Type	C ₂	C ₃	C ₄	C ₅	C ₆	CR ₁	CR ₂	DM	J	N	d	α	α ₁	α ₂	Weight (lbs.)	With brake			
																DM	J	L	Weight (lbs.)
C11WM36-6165	0.67	2.17	1.18	0.12	13.86	3.94	7.87	8.35	6.26	0.24	0.43	—	2.36	0.59	348	8.35	6.26	34.13	370
C11WM56-6175	1.06	2.17	1.42	0.12	15.43	3.94	7.87	9.88	7.32	0.31	0.55	0.89	1.77	—	475	9.88	7.32	38.07	515
C11WM86-6185	0.87	2.17	1.38	0.12	16.34	3.94	7.87	9.88	7.32	0.31	0.71	0.89	1.77	—	614	9.88	7.32	41.34	653
C11WM106-6195	1.18	2.17	2.64	0.12	19.29	2.76	15.75	12.76	9.13	0.31	0.71	0.89	1.77	—	893	12.76	9.13	45.91	968
C11WM156-6197	1.18	2.17	2.44	0.12	19.29	2.76	15.75	12.76	9.13	0.47	0.87	—	1.18	—	1,003	12.76	9.13	47.64	1,078

- Motor: Totally enclosed, fan-cooled, squirrel cage type, 3-phase induction motor (60 min. rating; 200V 50/60Hz or 220V 60Hz with marine cable gland)
Models with a brake are also available. Standard models for 7.5hp or less are equipped with an FB brake, while those for 10hp or more are equipped with a CMB brake.
- The dimensional tolerance for D3 is JIS B0401-1965 h8.
- The warping speed is calculated assuming that the wire rope dia. is 0.79", not including the motor slippage.
- Models with a reduction ratio other than 87 is available. Contact the factory for details.
- The dimensions D1, D2, and D3 are different from the dimensions shown above when the motor specifications are explosion-proof type or higher-safety explosion-proof type. Contact us for details.
- The dimensions and specifications shown in the dimensional drawing are subject to change without notice.

4. Lubrication

All Cyclo® Capstan gearmotors and brakemotors are grease lubricated. Grease is filled before shipment, so Cyclo® Capstan is ready for installation and use upon receipt.

Table 4 Standard grease

Ambient Temperature	Cyclo®		Motor
	Cosumo Oil	Showa Shell Sekiyu	Kyodo Yushi
-10°C / 50°C	Cosumo Grease Dynamax	Alvania Grease	Multemp

Cyclo® gearmotor is filled with Cosumo Grease Dynamax SH No. 2 before shipment from the factory. The grease may be mixed with Alvania Grease 2.

5. Maintenance

5.1 Cyclo® Drive

(1) Grease supply/change time

Table 5 Supply/change time

Supply	Once/6–12 months	Shorten the supply interval for models with larger frame sizes.
Change	Once/3–5 years	

Maintain grease according to Table 5. If the unit is not operated for one year or longer, replace the grease **before** resuming operation.

Disassemble the Cyclo® gearmotor and replace the old grease with new grease. When disassembly is impossible, supply new grease.

(2) Procedure for supplying/discharging grease

Supply:

- Supply grease with a grease gun through the grease fitting in the motor coupling cover.
- For easy operation, supply grease during operation.
- The appropriate quantity to be supplied is 1/3–1/2 of the grease shown in Table 6. Surplus grease will cause temperature rise.

Change:

- Disassemble Cyclo® gearmotor, remove the old grease, and apply new grease.
- Table 6 shows the quantity.
- Supply a large quantity of grease to the bearing (especially the eccentric bearing), pin roller section, curved plate, and tooth flank.

Table 6 Quantity of grease to fill in when replacing grease (oz.)

Frame size	6165	6175	6185	6195–6197
Speed-reducing mechanism	26.5	32.3	38.8	52.9
Slow-speed shaft bearing	10.6	16.2	21.2	24.7

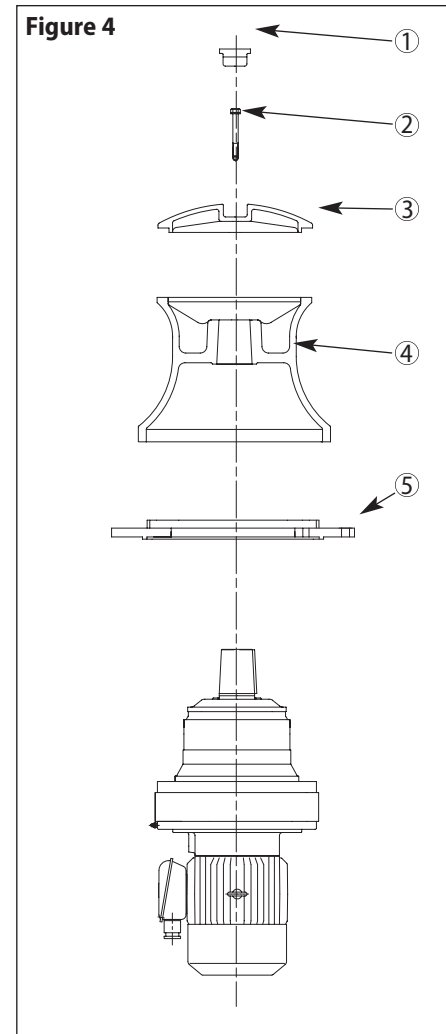
5.2 Motor

Shielded bearings are used for motors to dispense with grease supply. Conduct periodical inspection every 2–3 years to check each bearing.

6. Disassembly/Reassembly

6.1 DISASSEMBLY

- Remove Cyclo® Capstan from the mounting foundation.
- Remove the drum section in the sequence shown in Figure 4.
- Refer to the Cyclo® gearmotor Operation Manual for disassembly instructions.



6.2 REASSEMBLY

- Reverse the disassembly order.
- Refer to the Cyclo® gearmotor Operation Manual for reassembly instructions.

7. Precautions

- The warping load and speed shall not exceed the range shown in the catalog.
- The warping speed shown in the catalog assumes 0.79" diameter rope, and the warping speed changes as the rope diameter changes.
- Models for nonstandard rope diameter/warping load/warping speed are also available. Contact the factory for details.
- Use a waterproofing cover when Cyclo® Capstan will be exposed to a large quantity of water for a long time.

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