



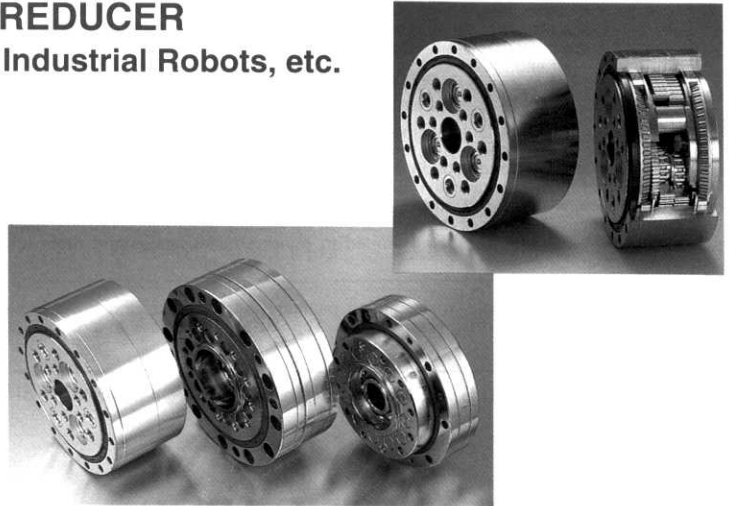
Bertolami Transmisiones
 Acevedo 1069 (C1414DJU)
 Bs. As. - Argentina
 Tel. (54) 11-4773-1953 / 4428-2200
 Fax. 4778-0315
 email: bertrans@arnet.com.ar

Reductores por ciclo hidraulico

Productos y Servicios para la Industria

THE FA & FT SERIES OF CYCLO REDUCER The Champion of Precision Control for Industrial Robots, etc.

The FA and FT series of CYCLO DRIVES are reducers that are designed for precision positioning control. These series designed and manufactured by the essence of the latest techniques are most adapted to the driving and control of industrial robots, machine tools, and factory-automation-related equipment.



THE CYCLO WHEEL

The Cyclo reducer is built into the wheel, serving as compact travelling drive, with exceptional durability.



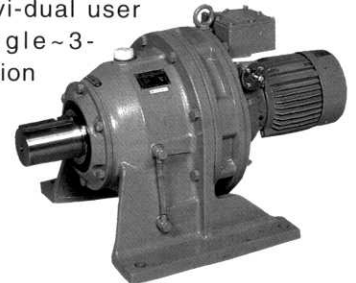
CYCLO REDUCER

The widely acclaimed Cyclo reducer, for easy coupling with the standard flanged motor, offering unlimited potentials.



CYCLO REDUCER WITH TORQUE LIMITER

The performance of the Cyclo reducer with torque limiter of simple construction with overload protection device has been further enhanced, with a compact and reliable quick response torque sensor mechanism. Available in a wide range of specifications, to satisfy individual user needs. (Single~3-stage reduction type)



CYCLO REDUCER FOR AGITATION, MIXING AND REACTOR TANKS

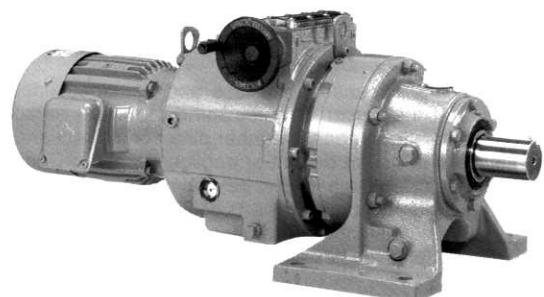
The C14VM, C15VM, C17VM and C18VM Series of the Cyclo reducer has been specifically designed for agitation, mixing and reactor tanks in water treatment and processing of chemicals, pharmaceuticals and foods. Installed at the top of the tank, it can be used by coupling directly to the agitator shaft.



THE BEIER CYCLO VARIATOR

The Beier · Cyclo Variator, is a unique combination which incorporates the distinctive features of the Cyclo reducer and Beier Variator. This extremely compact unit is most suitable, where stepless variable speed in the low speed range is required.

- Input capacity: 0.1~75kW
- Speed variation ratio: 1:4, 1:10
- Reduction ratio: 1/6~1/7569~





Bertolami Transmisiones

Acevedo 1069 (C1414DJU)
Bs. As. - Argentina
Tel. (54) 11-4773-1953 / 4428-2200
Fax. 4778-0315
email: bertrans@arnet.com.ar

Reductores por ciclo hidraulico

Productos y Servicios para la Industria

The optimum application for inverter drive **CYCLO REDUCER COUPLED WITH AF MOTOR**

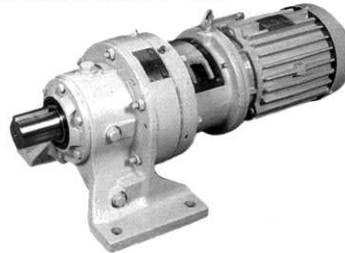
When a standard motor is driven by an inverter, anguish is often encountered with the lack of continuous torque in the low rotation area. The Sumitomo AF motor resolves this problem, by providing high starting torque and continuous constant torque operation features of 1:10 (6~60Hz). A series of pressure-tight explosion-proof type is also available.



CYCLO PARK

Featuring high response characteristics, sure operations, stable operation at high frequency, rigid with long service life, but yet highly efficient and economic. This Cyclo reducer coupled with a clutch/brake, is a compact combination of the high performance dry type simplex plate electromagnetic clutch/brake.

- Input capacity: 0.2~7.5kW
- Reduction ratio: 1/6~1/87



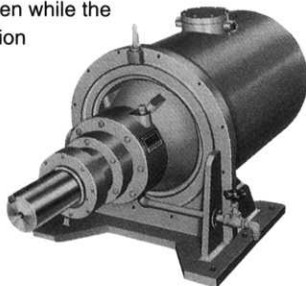
CYCLO MOTOR PULLEY

A Cyclo gearmotor is built-in to the pulley drum of the Cyclo motor pulley. The distinguished features of the Cyclo reducer are vividly exhibited, with its simple construction and ease of handling.



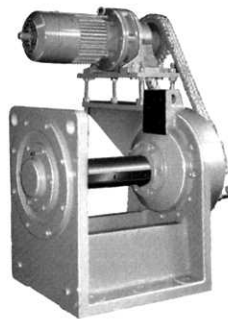
SUBMERGIBLE CYCLO REDUCER FOR DUST- PROOFING MACHINES

The pumping station of water treatment facilities are sometimes inundated with water from heavy rains or typhoons. Even in the event of such an emergency, the over facilities must continue to operate and the submergible Cyclo reducer is designed to continue operation, even while the pumping station may be temporarily inundated.



CYCLO TURNING GEAR

A compact, light weight and powerful turning gear, which is fault-free and highly reliable, can become a reality by using the highly efficient Cyclo reducer for the turning gear of diesel engines.



Available for every control **CYCLO SPEED REDUCER FOR SERVO MOTOR**

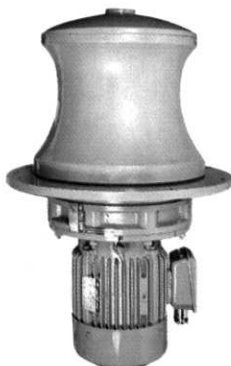
Best partner responding well to servo characteristics, speed control, position control and torque control.

A low backlash less than 0.1° is reasonably attained with out applying a preload. It is a special cyclo speed reducer for servo motor permitting ease of every servo control.



CYCLO CAPSTAN

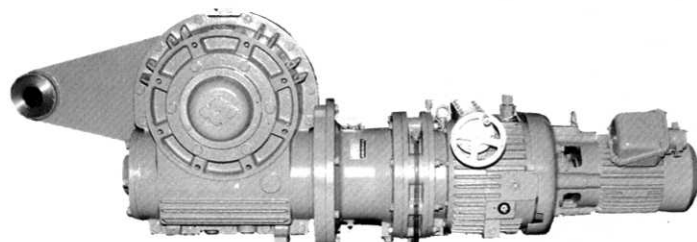
The Cyclo capstan, exclusively designed in Series ofr capstans, features fault-free operation, ease of maintenance with limited space requirements for installation.



HEDCON WORM GEAR, WITH BEIER/CYCLO VARIABLE SPEED REDUCER

This is a direct coupling of the HEDCON hollow type worm shaft to the standard Beier/Cyclo variable speed reducer, which features compactness and ease of maintenance.

The high reduction ratio assures extremely quiet and smooth operation, while the parallel shaft enables installation in parallel with the driven machine, for savings in installation space requirements.





Bertolami Transmisiones

Acevedo 1069 (C1414DJU)
Bs. As. - Argentina
Tel. (54) 11-4773-1953 / 4428-2200
Fax. 4778-0315
email: bertrans@arnet.com.ar

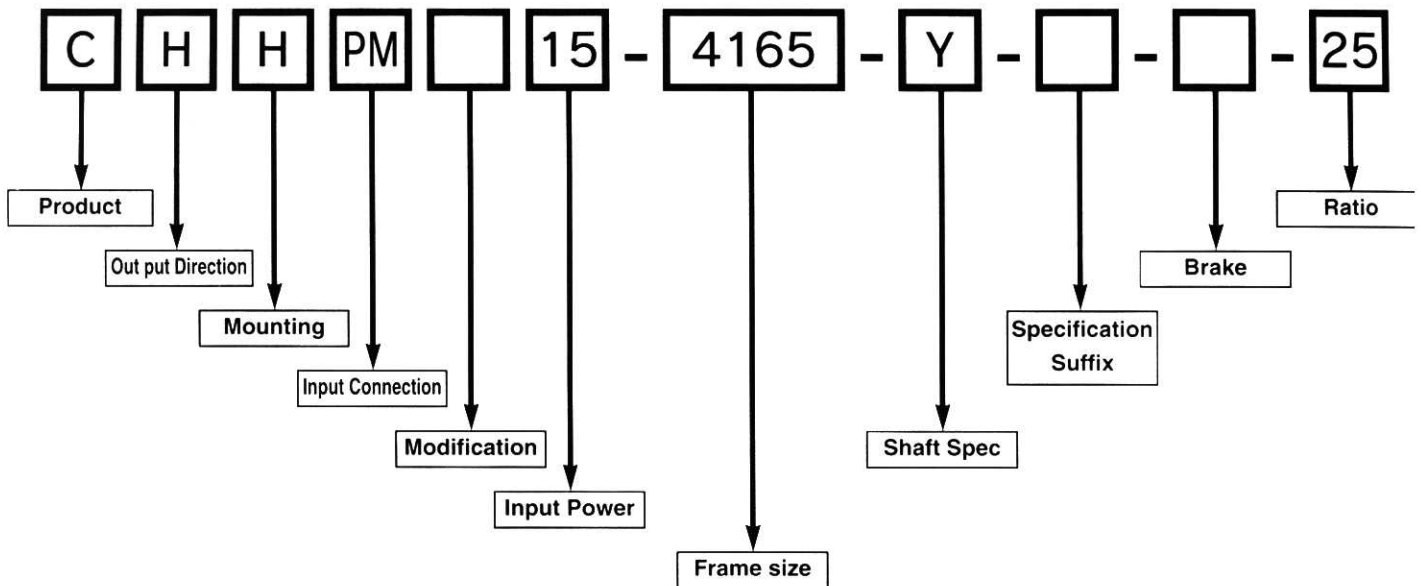
Reductores por ciclo hidraulico

Productos y Servicios para la Industria

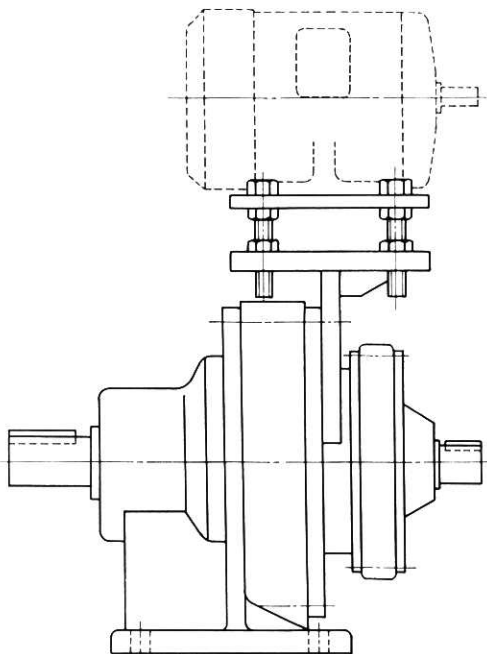
FEATURES AND BENEFITS

1. Fabricated steel motor mount bolts directly to Speed Reducer
2. Simple Adjusting screws for belt tensioning
3. Motor mounts are furnished with pre-drilled holes for easa of motorassembly

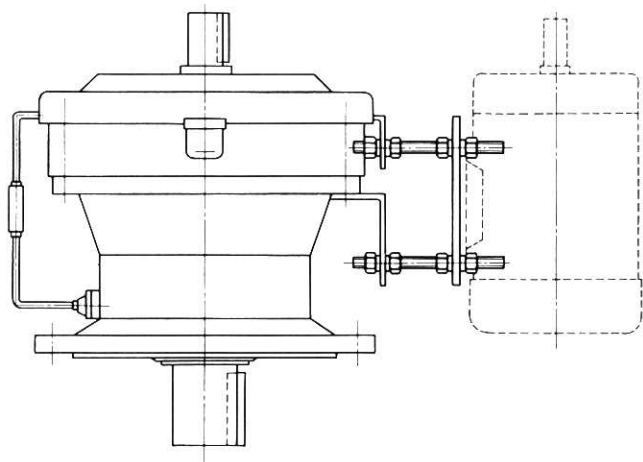
Nomenclature



Construction



Model CHHP

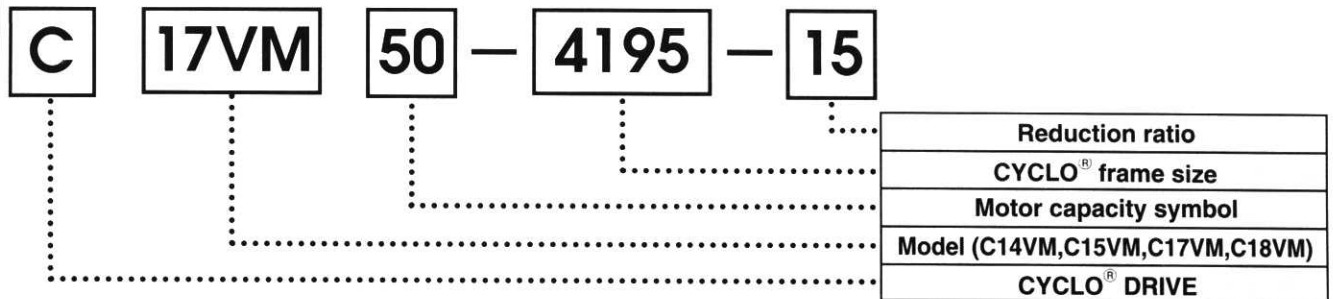


Model CVVP

For further information please consult us.



Nomenclature



Standard Specifications

Table 12.

Reduction Ratio	6	8	11	13	15	17	21	25	29	35	43	51	59	71	87	119
Standard input speed:rpm	Output speed:rpm															
1800 (4P 60Hz)	300	225	164	138	120	106	86	72	62	51	42	35	31	25	21	15
1500 (4P 50Hz)	250	188	136	115	100	88	71	60	52	43	35	29	25	21	17	13
1200 (6P 60Hz)			109		80		57		41		28		20		14	
1000 (6P 50Hz)			91		67		48		34		23		17		11	

- (1) The slippage in motor is not taken into account in rpm values.
- (2) Consult with us on the different input speeds.
- (3) Multiplereduction type units over 119 reduction rates can be easily manufactured to order.

Item		Standard Specification		
Motor	Capacity Range	0.2kw × 4Poles ~ 30kw × 4Poles 15kw × 6Poles ~ 55kw × 6Poles		
	Enclosure	Totally enclosed fan cooled type		
	Power Source	200V 50/60Hz , 220V 60Hz		
	Insulation	Insulation Poles	4	6
		Class E	0.2 ~ 0.4kw	
		Class B	0.75 ~ 22kw	15kw
	Class F	30kw	18.5 ~ 55kw	
Time Rating	Continuous rating			

Allowable Bending Moment and Thrust Load

Table 13.

Cyclo Size	4095, 4105		4115, 4125		4130,4135,4145,4155		4160, 4165		4170, 4175		4180, 4185		4190, 4195	
Model	C14V	C15V	C14V	C15V	C14V	C15V	C14V	C15V	C14V	C15V	C14V	C15V	C14V	C15V
Permissible Bending Moment (kgf.m)	35		65		110		160		230		300		390	
Permissible Thrust Load (kgf)	100		170		270		380		500		630		780	

Table 14

Cyclo Size	4095, 4105		4115, 4125		4130,4135,4145,4155		4160, 4165		4170, 4175		4180, 4185		4190, 4195	
Model	C17V	C18V	C17V	C18V	C17V	C18V	C17V	C18V	C17V	C18V	C17V	C18V	C17V	C18V
Permissible Bending Moment (kgf.m)	70		125		220		320		450		600		770	
Permissible Thrust Load (kgf)	100		170		270		380		500		630		780	

Cyclo Size	4205		4215		4225		4235		4245		4255		4265	
Model	C17V	C18V	C17V	C18V	C17V	C18V	C17V	C18V	C17V	C18V	C17V	C18V	C17V	C18V
Permissible Bending Moment (kgf.m)	1100		1400		1600		1900		2500		3200		3800	
Permissible Thrust Load (kgf)	1000		1200		1400		1600		2100		2500		3000	



Bertolami Transmisiones
 Acevedo 1069 (C1414DJU)
 Bs. As. - Argentina
 Tel. (54) 11-4773-1953 / 4428-2200
 Fax. 4778-0315
 email: bertrans@arnet.com.ar

Reductores por ciclo hidraulico

Productos y Servicios para la Industria

The 14V,15V,17V and 18V Series CYCLO[®] DRIVES are designed especially for applications such as agitator,mixer and reaction vessel drives in water treatment,chemical pharmaceutical and food industries.The 17V and 18V Series are particularly suited for the drives of aerators.This series has a design that can be readily installed on tanks and/or vessels prepared by the users.

FEATURES AND BENEFITS

1. Easy Installation

In the basic design of this series the CYCLO[®] DRIVE slow speed side is directly connected with the special lantern (vertical base) for the mixer shaft.

All the CYCLO[®] DRIVE advantages of high efficiency,compact size,robust and long life,and low noise level are included in this series.

2.Simple Design

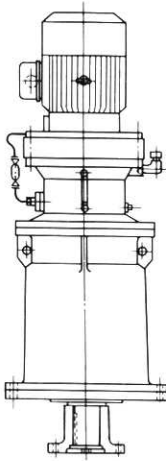
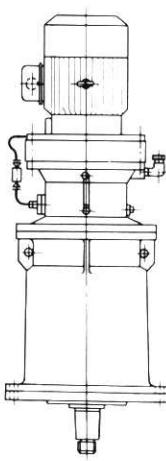
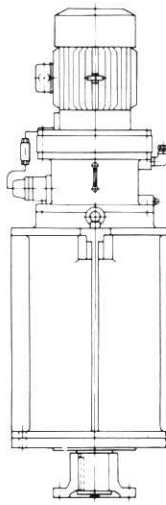
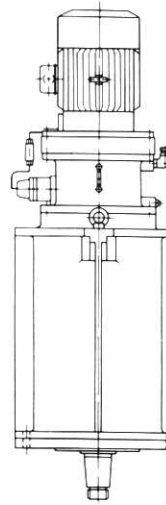
The electric motor,CYCLO[®] DRIVE,and the vertical base are coaxially arranged,making a total configuration that is simple and easily accessible.

3.Simple Shaft Connection

The mixing operation can be started by simply connecting to the mixer shaft.

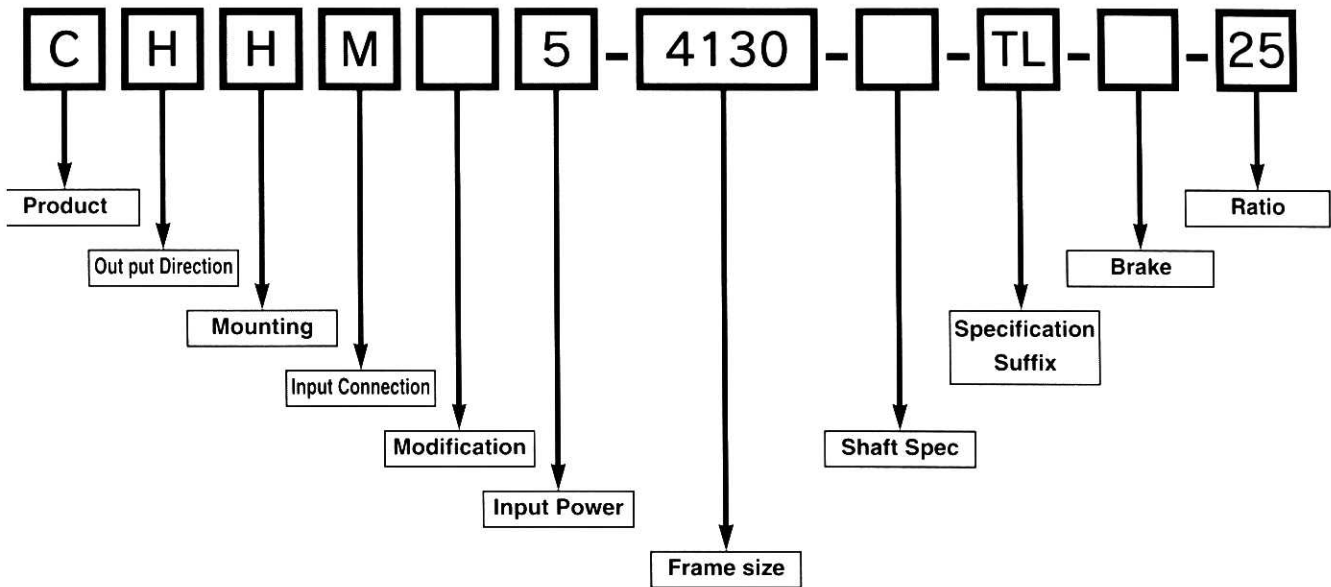
4.Low Maintenance

Radial and thrust bearings are grease lubricated for ease of maintenance.

Compact Type		Standard Type	
C14VM Model	C15VM Model	C17VM Model	C18VM Model
			
The straight output shaft is equipped with a rigid coupling (only on the upper side).	The base section is designed to be the same as that of the C14VM model,and therefore, has a taperd shaft end.	The straight output shaft is equipped with a rigid coupling(only on the upper side).	The base section is designed to be the same as that of the C17VM model,and therefore, has a taperd shaft end.
* C14VM and C15VM models have a smaller base section than that of the C17VM and C18VM models and are suitable for applications where the bending moment is relatively small.			



Productos y Servicios para la Industria



Standard Specifications

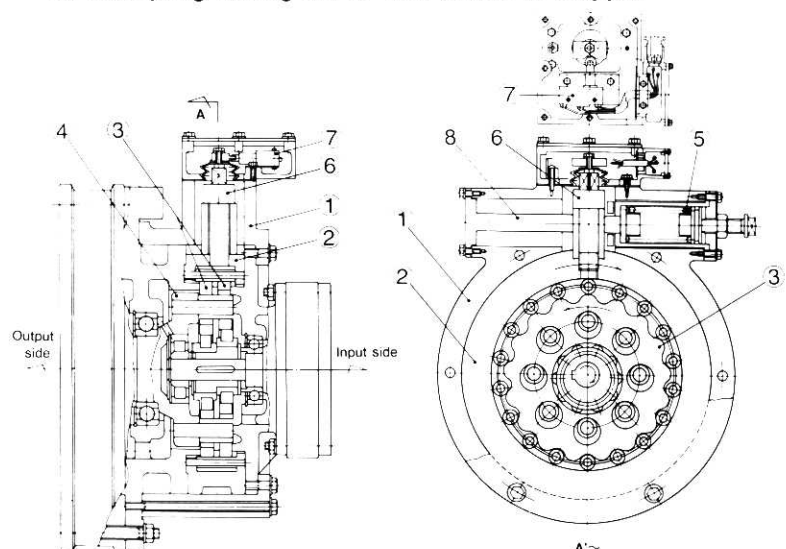
Table 11 Reduction Ratio and Output Speed
(With 4-pole motors)

Reduction Ratio	Output Speed	
	50Hz	60Hz
6	250	300
8	188	225
11	136	164
13	115	138
15	100	120
17	88.2	106
21	71.4	85.7
25	60.0	72.0
29	51.7	62.1
35	42.9	51.4
43	34.9	41.9
51	29.4	35.3
59	25.4	30.3
66	22.7	27.3
71	21.1	25.4
78	19.2	23.1
87	17.2	20.7
88	17.0	20.5
104	14.4	17.3
121	12.4	14.9
143	10.5	12.6
165	9.09	10.9
195	7.69	9.23
231	6.49	7.79
273	5.49	6.59
319	4.70	5.64
377	3.98	4.77
473	3.17	3.81
559	2.68	3.22
649	2.31	2.77
731	2.05	2.46
841	1.78	2.14

Item	Standard Specification	
Capacity Range	0.2kw ×4Poles ~ 30kw ×4Poles	
Enclosure	Totally enclosed fan cooled type	
Power Source	200V 50/60Hz 220V 60Hz	
Insulation	Poles	4
	Class E	0.2 ~ 0.4kw
	Class B	0.75 ~ 22kw
	Class F	30kw
Time Rating	Continuous rating	

Construction

- ① Fixed Frame
- ② Frame
- ③ Cycl Disc
- ④ Slow Speed Shaft
- ⑤ Coil Spring
- ⑥ Dog Bar
- ⑦ Limit Switch
- ⑧ Stopper



The slippage in motor is not taken into account in rpm values.

For further information please consult us.



Bertolami Transmisiones

Acevedo 1069 (C1414DJU)
Bs. As. - Argentina
Tel. (54) 11-4773-1953 / 4428-2200
Fax. 4778-0315
email: bertrans@arnet.com.ar

Reductores por ciclo hidraulico

Productos y Servicios para la Industria

Torque Limiter Equipped CYCLO[®] DRIVES offered as optional equipment for specific models of CYCLO[®] gearmotor and speed reducer. Torque limiting devices which prevent damage to machinery from overloads and jams, thereby reducing costly downtime. With torque limiter equipped CYCLO[®] speed reducers, when the gearmotors and reducers output torque exceeds a predetermined limit, a micro switch instantly breaks the motor circuit, protecting process equipment. These controls can be supplied for either one or both directions of rotation.

FEATURES AND BENEFITS

1. Safe Unattended Operation

Reliable Torque Limiter response to overload cuts motor power automatically, stopping the machine. This eliminates costly inspection and repair.

2. Cost Affective Machine Design

The torque setting on CYCLO[®] DRIVE equipped with Torque Limiter is more accurate and reliable when compared with conventional Torque Limiters. Consequently, the use of a lower safety factor on auxiliary equipment may be considered, which will decrease the cost of the entire system.

3. BI-Directional Torque Setting

Normally, the torque Limiter is set to limit torque relative to one direction of slow speed shaft rotation. the torque limiter can be set in both directions upon request.

4. Easy Set Point Adjustment

All calibration levels are factory set. No further adjustments are required. If recalibration is desired, simply rotate the adjusting bolt which changes restraint spring load and set point. Adjustment that can be made is within $\pm 25\%$ of set torque.

5. Enclosed Structure

Structure of the Torque Limiter is enclosed to prevent entrance of gas, dust and other environmental contaminants.

6. Combination with Other Protective Devices

The Torque Limiter may be connected to another alarm system (i.e., buzzer and/or lamp) as an option to warn about power failure.

7. High Precision

Basic component of the Torque Limiter is a high precision coil spring. Under load, the spring deflects in proportion to torque. Repeatability of the torque set point is $\pm 5\%$ to $\pm 10\%$.

8. Positive Mechanical Operation

Reliable safety device at overload.

9. Instantaneous Response to Overload

Less time delay compared with electrical systems. Reaction to corresponding overload is much faster.

10. Selected Starting Torque

Torque set point can optionally be selected to withstand start-up torque by by-passing limit switch current.



Model CHHM with double reduction



Model CHH with single reduction



Model CVVM with triple reduction



Productos y Servicios para la Industria

Gearmotors

Item	Standard Specification			Standard Specification with Built-in Brake			
Capacity Range	0.1kW×4Poles ~ 55kW×4Poles 15kW×6Poles ~ 55kW×6Poles			0.1kW×4Poles ~ 4Poles • FB Brake (Non Asbestos) 11kW×4Poles ~ 15kW×4Poles • CMB Brake			
Enclosure	Totally enclosed fan cooled type (0.1kW×4 Poles totally enclosed non ventilated)			Totally enclosed fan cooled type (0.1kW×4 Poles totally enclosed non ventilated)			
Power Source	55kW and smaller 200V 50/60Hz 220V 60Hz			15kW and smaller 200V 50/60Hz 220V 60Hz			
Insulation	Insulation	Poles	4	6	Insulation	Poles	4
	Class E		0.1 ~ 0.4kW		Class E		0.1 ~ 0.4kW
	Class B		0.75 ~ 22kW	15 kW	Class B		0.75 ~ 15kW
	Class F		30~55 kW	18.5~55 kW			
Time Rating	Continuous rating			Continuous rating			
Terminal box position & lead wire direction	Regarding the drawout hole direction on the left side viewed from the load side, refer to Table 4 (2 pcs.).			Regarding the drawout hole direction on the left side viewed from the load side, refer to Table 4 (2 pcs.).			
Lead wiring (Lug type)	Number of lead wire	Poles	4	6	Number of lead wire	Poles	4
	3		0.1~7.5 kW Direct starting		5		0.1~7.5 kW Direct starting
	6		11~55 kW (λ-Δ starting)	15~55 kW (λ-Δ starting)	8		11~15 kW (λ-Δ starting)
Standards	According to JIS.						
Lubrication Method	Grease lubricated and oil lubricated models available.						
Speed reduction method	Internal planetary gear mechanism with trochoidal curved tooth profile.						
Direction of output shaft rotation	Single reduction	Clockwise rotation		As observed from the load side when connected to R-U, S-V, T-W motors.			
	Double reduction	Counter-clockwise rotation					
Place of installation	Indoors (Place of minimum dust and humidity)						
Ambient temperature	-10°C~40°C						
Ambient humidity	Under 85%						
Elevation	Under 1,000 meters						
Atmosphere	Well ventilated location, free of corrosive gases, explosive gases, vapors and dust.						
Method of Mounting	CHHM type-with slow speed shaft in horizontal direction and with foot. CVVM type-with slow speed shaft down in vertical direction and with mount. (No restrictions in mounting position of maintenance-free grease lubricated models, and the 2nd digit of type symbol provides "N").						
Method of coupling with driven machine	Coupling, gears, chain sprocket or belt.						
Painting	Under-coating : One coat of zinc chromate primer (JIS K5627, Type 2) Top-coating : One coat of medium oil phthalic acid type paint (JIS K5572, Type 2) Paint color of mangel 10B 5/3.						

Note 1) Refer to the technical document "Electric motors" for motor specification other than standard one.
 2) Inquire about maintenance-free models other than standard specification with output shaft in any direction other than horizontal one.

Table 4. Direction of Withdrawing Lead Wire.

Main frame mounting direction	Indoors (Standard)
Horizontal Type (Slow speed shaft in horizontal direction).	
Vertical Type (Slow speed shaft in vertical down direction).	

Note: Whenever not specified, the above direction shall be applied. When the direction of withdrawal from the terminal box is other than specified above, refer to Page 245.



Bertolami Transmisiones

Acevedo 1069 (C1414DJU)
 Bs. As. - Argentina
 Tel. (54) 11-4773-1953 / 4428-2200
 Fax. 4778-0315
 email: bertrans@arnet.com.ar

Reductores por ciclo hidraulico

Productos y Servicios para la Industria

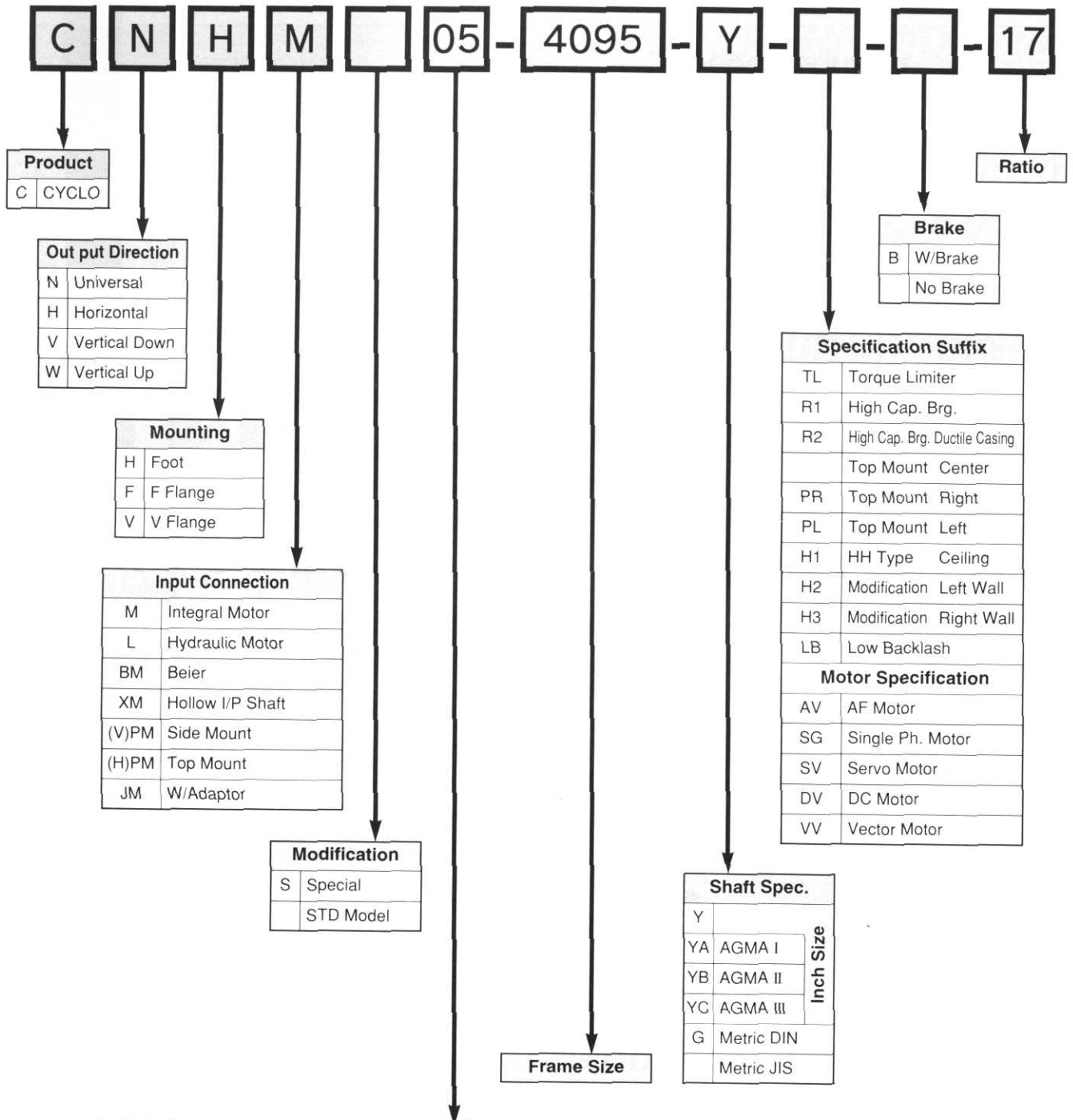
Shaft Position	Mounting		
	Foot Mounting H	F Flange Mounting F	V Flange Mounting V
H = Horizontal	CHHM 	CHFМ 	CHVM
V = Vertical Down	CVHM 	CVFM 	CVVM
W = Vertical Up	CWHM 	CWFM 	CWVM
N = Universal Mounting Maintenance-Free Size 4075-4125	CNHM 	CNFM 	CNVM

AVAILABLE REDUCTION RATIOS

Single Reduction									
6	8	11	13	15	17	21	25	29	35
43	51	59	71	87	119				
Double Reduction									
102* (17×6)	104 (13×8)	121 (11×11)	143 (13×11)	165 (15×11)	174* (29×6)	187* (17×11)	195 (15×13)	210* (35×6)	231 (21×11)
258* (43×6)	273 (21×13)	289* (17×17)	319 (29×11)	354* (59×6)	357* (21×17)	377 (29×13)	385* (35×11)	425* (25×17)	435* (29×15)
473 (43×11)	493* (29×17)	522* (87×6)	525* (25×21)	559 (43×13)	595* (35×17)	649 (59×11)	731 (43×17)	841 (29×29)	957* (87×11)
1003 (59×17)	1131* (87×13)	1225* (35×35)	1247 (43×29)	1479 (87×17)	1505* (43×35)	1711* (59×29)	1849 (43×43)	2065 (59×35)	2193* (51×43)
2537 (59×43)	3045 (87×35)	3481 (59×59)	3741* (87×43)	4437 (87×51)	5133 (87×59)	6177 (87×71)	7569 (87×87)		
Reduction ratios marked with * and higher reduction ratios are available									



NOMENCLATURE OF GEARMOTORS



Input Power - For Integral Motor Units Only																			
kW		0.1	0.2	0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75
Symbol	4 Pole	01	02	05	1	2	3	5	8	10	15	20	25	30	40	50	60	75	100
	6 Pole											206	256	306	406	506	606	756	1006



Bertolami Transmisiones

Acevedo 1069 (C1414DJU)
 Bs. As. - Argentina
 Tel. (54) 11-4773-1953 / 4428-2200
 Fax. 4778-0315
 email: bertrans@arnet.com.ar

Reductores por ciclo hidraulico

Productos y Servicios para la Industria

A combination of the world famous CYCLO[®] speed reducer and a single stage parallel shaft helical gearbox in shaft mounted design, the SM-Buddybox drive incorporates the well known shock load characteristics of the cycloidal reducer with the adaptability of a shaft mounted design.

FEATURES AND BENEFITS

1. High Efficiency Even at High Ratios
2. Ease of Installation
3. No On-Site Assembly
4. Taper-Grip™ Features Standard bores require no key or keyway
5. Product Liability & Safety
6. Backstops The SM-Buddybox can be supplied with integral backstop.



Nomenclature

