





### Products [1]

# SMALL GEAR MOTORS 6W-90W

The PTC-Group has an extensive lineup of small gear motors of 90 watts or less.

The most common gear motor is the parallel type ASTERO<sup>™</sup> gear motor. The motor and gear head are sold separately, so customers can freely create their own combinations. Customers can choose a combination that suits their needs from a wide variation of motors.

The HYPONIC<sup>®</sup> gear motor is a high-efficiency, high-torque gear motor that uses a hypoid gear. It has a compact, high output design with no torque limitations up to a reduction ratio of 1/200. Another important aspect is that hypoid gears are very quiet.

ALTAX<sup>®</sup> gear motors are very strong motors that utilize the Cyclo<sup>®</sup> gear mechanism. They are ideal for operating in conditions requiring durability.





# GEAR MOTORS 0.1-2.2kW



The PTC-Group 0.1kW to 2.2kW class small gear motors of in-line and right-angle type are leaders in the industry.

The in-line ALTAX<sup>®</sup>  $\alpha$  gear motor is created for compact size and uses the Cyclo<sup>®</sup> gear mechanism. Its casing has both strength and compact size due to the use of three-dimensional CAD stress analysis. The Cyclo<sup>®</sup> gear mechanism offers toughness and long life in gear motors.

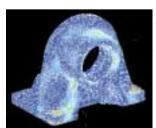
The right-angle HYPONIC DRIVE® NEO series gear motor is a high-efficiency,

low noise gear motor that uses a hypoid gear.

It achieves operating efficiency that is several tens of percent higher than the general worm reduction mechanism. Compared with conventional HYPONIC motors, this series offers optimum design and much more compact size.

The PREST<sup>®</sup>-C gear motor is designed for use in mechanical multi-story parking facilities. With operation in residential areas in mind, this gear motor is designed for extremely low operating and braking noise. The radial load has been increased and the casing width decreased.

This was done in order for easier design of multilevel parking facilities.



Casing Designed for ALTAX®  $\alpha$ This combines the three-dimensional CAD finite element analysis system with Sumitomo technology. It achieves both strength and compact size.

> HYPONIC Hypoid Gear The hypoid gear is midway between a worm gear and a bevel gear. It is more efficient than a worm gear and much quieter than a bevel gear. It is the optimum gear for use in small right-angle gear motors.



₀18



### Products [2]

# CYCLO® DRIVE 0.1kW-132kW

Ever since it first went on sale in 1939, the Cyclo<sup>®</sup> Drive has been highly evaluated by customers for its strength and reliability.

The secret to this product is its unique gear teeth and mechanism.

As a cycloidal tooth profile in the inner gear and a epitrochoidal prarallel curve in the outer gear has been adopted, the gear engagement ratio is very high, to eliminate the risk of tooth breakage and greatly raising the reliability of the reducer.

Further more, high carbon and chromium bearing steel noted for their heat and fatigue resisting properties have been used.

The Sumitomo-unique mechanism offers high reduction ratios of 1/6 to 1/119 for the single stage type and 1/121 to 1/7569 for the double stage type, making the drives much more compact than when normal involute gears are used.

The very high reduction ratio of 1/9251 to 1/658503 for the three-stage type, impossible with normal involute gears, can be achieved easily with this mechanism.

In addition to the characteristics of the Cyclo<sup>®</sup> Drive mechanism, the greater load capacity of the 6000 series offers up to 40 percent more size reduction.

Elasticity analysis and development of a new tooth profile has helped to further reduce noise.

The BEVEL BUDDY BOX<sup>®</sup>, with right-angle shaft, and HELICAL BUDDY BOX<sup>®</sup>, with parallel shaft, are designed to take advantage of the superior characteristics of this Cyclo<sup>®</sup> gear mechanism by using bevel gears and helical gears for the output stage.

These two product lineups make Cyclo® drives even easier to use.





# MOTION CONTROL

These are Cyclo® Drives used for precision control.

They combine the high strength and impact resistance of Cyclo<sup>®</sup> Drive with very low backlash design. Because they are the component type, they are easy to install in customer machines. High precision alignment is made possible when combined with servo motors. This line is ideal for applications that require higher rigidity and precision stopping. They are used in machine tools, industrial robots and factory automation equipment. The FC-A, F1C-A and F2C-T series are available to suit different types of applications.

The LB series Cyclo Drive can be directly connected to general-purpose servo motors. There are standard backlash models and low 0.1° backlash models.

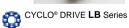
The IB series low backlash reduction gears use a Sumitomo-unique planetary gear mechanism. When combined with servo motors, they can be used in all types of precision alignment applications, such as robots for injection molding machines, machine tools and packaging machines.



IN-LINE

### IN-LINE





 
 Low Backlash Servo Cyclo Reducers

 Torque
 30N · m~630N · m

 Ratio
 1/11~1/29

 Backlash
 0.1°

 Input shaft
 Hollow high speed Shaft for Servo motors



 Reducer for Servo motors

 Torque
 15N · m~127N · m

 Ratio
 1/5~1/45

 Backlash
 P Type 3min, 10min

### Products [3]

# SPEED REDUCERS





















Sumitomo Heavy Industries also provides an extensive line of medium and large-sized speed reducers.

Two types of speed reducers are provided for the Paramax<sup>®</sup> series. One is a parallel gearbox with helical gears and the other combines helical gears and bevel gears in a right-angle gearbox.

Systematic combinations of individual components has led to standardization of almost all gears, shafts and cases. This makes both higher quality and shorter delivery times possible for speed reducers. Compared with the ordinary pressure angle of 20°, a 25° pressure angle offers tooth form with thicker dedendum. This provides the higher tooth strength rating that is essential for shock load applications.

FEM analysis is used to maximize housing strength and rigidity, thereby ensuring correct gear alignment and noise reduction. The new 9000 series right-angle models allow direct motor mounting. This eliminates the need for coupling and simplifies motor installation, enabling more compact design.

The HEDCON<sup>®</sup> worm gear speed reducer is based on the unique dual contact theory, which creates a high-efficiency, high-strength worm reduction mechanism. A high-precision series featuring low backlash is also available.

The COMPOWER<sup>®</sup> model's planetary gear utilizes a unique isosteric mechanism combined with high-precision carburized ground gears. The result is a compact and powerful planetary gear speed reducer. This series includes the very large 75,000kgf·m class model.







# SPEED CONTROL



Sumitomo Heavy Industries offers two types of speed control drives. One is a mechanical series and the other an electrical series.

The electrical series includes the AC inverter that is now widely used, an AF motor specifically designed for that AC inverter and an IV-DRIVE, which combines the AC inverter and motor.

Sumitomo Heavy Industries has optimized the inverter and Cyclo gear motor combination

by designing the inverter to store motor characteristics when the two are used together.

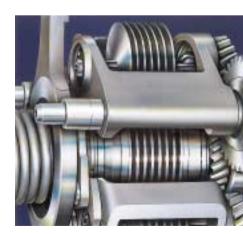
Torque performance, including starting torque, has been improved to create greater operating power.

The Beier  $\ensuremath{^\circ}$  Variator, with a 50 year history and sales of 700,000 units,

is provided as a stepless variable speed reducer.

The Beier Cyclo® Variator, which combines Cyclo Drive, is provided as a variable speed reducer.

The key characteristics of this series are a choice of constant horsepower or a combination of constant horsepower and torque, which offers especially high torque in the low-speed range.



International Operations [1]

# North America+South America

### U.S.A

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### Mexico

**★**Sumitomo Machinery Corporation of America (SMA) Headquarters: Chesapeake

Address: 4200 Holland Blvd. Chesapeake, VA 23323 Tel: (1) 757-485-3355 Fax: (1) 757-487-3193 Time Difference GMT-5

### SMA Branch Chicago Office

Address: 175 West Lake Drive, Glendale Heights, IL 60139 Tel: (1) 630-752-0200 Fax: (1) 630-752-0208 Time Difference GMT-6

### •SMA Branch LosAngeles Office

Address: 2375 Railroad St., Corona, CA 92880 Tel: (1) 909-340-4100 Fax: (1) 909-340-4108 Time Difference GMT-8

### **SMA Branch Dallas Office**

Address: 1420 Halsey Way #130 Carrollton, TX 75007 Tel: (1) 972-323-9600 Fax: (1) 972-323-9308 Time Difference GMT-6

### **Technical Support**

Sumitomo Machinery Corporation of America (SMA) Address: 4200 Holland Blvd. Chesapeake, VA 23323 Tel: (1) 757-485-3355 Fax: (1) 757-487-3193

•SM-Cyclo De Mexico, S.A. de C.V. (SMME) Headquarters: Monterrey Address: Calle "C" No. 506A Parque Industrial Almacentro Apodaca, N. L., Mexico 66600 Tel: (52) 8-369-3697 Fax: (52) 8-369-3699 Time Difference GMT-7

### Brazil

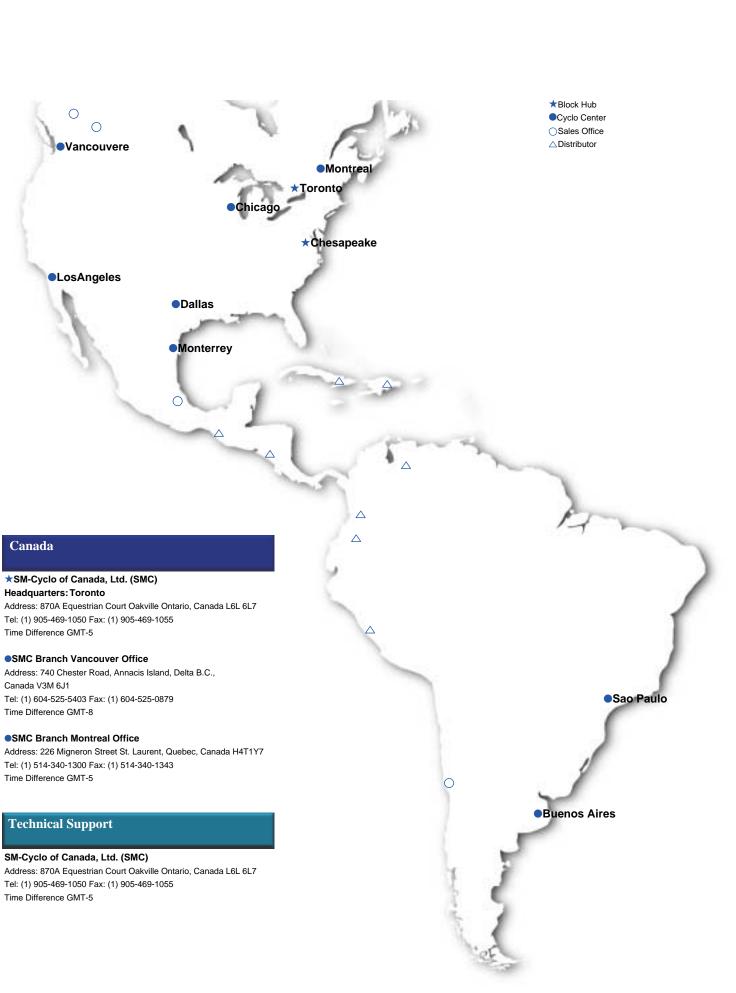
SM-Cyclo Reductores Do Brazil, Ltda. (SMBR) Headquarters: Sao Paulo Address: Av. Dr. Ulysses Guimaraes, 3533 09990-080, Diadema Sao Paulo, Brazil Tel: (55) 11-4071-4388 Fax: (55) 11-4071-2922 Time Difference GMT-3

### Argentina

•SM-Cyclo De Argentina S.A. (SMAR) Headquarters: Buenos Aires Address: Montes de Oca #6719, (B1606BMG) Munro, Buenos Aires, Argentina Tel: (54) 11-4765-5332 Fax: (54) 11-4765-5517 Time Difference GMT-3

### Chile

○ SM-Cyclo De Chile, Ltda. (SMCH) Headquarters: Santiago Address: Napoleon 3565 of 510-Las Condes, Santiago, Chile Tel: (56) 2-203-7300 Fax: (56) 2-203-7195 Time Difference GMT-4



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Address: 870A Equestrian Court Oakville Ontario, Canada L6L 6L7 Tel: (1) 905-469-1050 Fax: (1) 905-469-1055 Time Difference GMT-5

International Operations [2]

### Europe

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### **United Kingdom**

### ★Sumitomo (SHI) Cyclo Drive Europe, Ltd. (SCE) Headquarters: Hull

Address: Marfleet, Kingston upon Hull HU9 5RA, United Kingdom Tel: (44) 1482-788022 Fax: (44) 1482-713205 Time Difference GMT0

### SM-Cyclo U.K. Ltd. (SMUK) Headquarters: Hull

Address: Marfleet, Kingston upon Hull HU9 5RA, United Kingdom Tel: (44) 1482-790340 Fax: (44) 1482-790321 Time Difference GMT0

### France

### •SM-Cyclo France E.U.R.L. (SMFR) Headquarters: Paris Address: 65/75 Avenue Jean Mermoz F-93120 La Courneuve France Tel: (33) 149-929494 Fax: (33) 149-929490 Time Difference GMT+1

### Italy

### SM-Cyclo Italy Srl (SMIT) Headquarters: Milano

Address: Via dell' Artigianato 23 20010 Cornaredo (Mi), Italy Tel: (39) 02-9356-2121 Fax: (39) 02-9356-9893 Time Difference GMT+1

### Netherlands

SM-Cyclo Benelux BV (SMBE) Headquarters: Eindhoven Address: Den Engelsman 16D NL-6026 RB Maarheeze The Netherlands Tel: (31) 495599777 Fax: (31)495593177 Time Difference GMT+1

### Sweden

### •SM-Cyclo Scandinavia AB (SMSC) Headquarters: Malmö

Address: Företagsvägen 30A S-232 37 Arlöv, Sweden Tel: (46) 40430220 Fax: (46)40431001 Time Difference GMT+1

### Spain

### SM-Cyclo Iberia, S.L. (SMIB) Headquarters: Valencia Address: Pol. Ind. C/En Proyecto No.29, Parc. 66, Nave B 46470

Catarroja (Valencia) Spain Tel: (34) 9-6-1264461 Fax: (34) 9-6-1265602 Time Difference GMT+1

### Switzerland

### SM-Cyclo Switzerland AG (SMSW) Headquarters: Zurich Address: Lerzenstrasse 27 CH 8953 Dietikon Tel: (41) 56-6-33 0441 Fax: (41) 56-6-33 0442 Time Difference GMT+1

Belgium

### ○ SMBE Branch Belgium Office Address: Gentsesteenweg 1387 B-1082 Brüssel Tel: (32) 2-469-0517 Fax: (32) 2-469-0207 Time Difference GMT+1

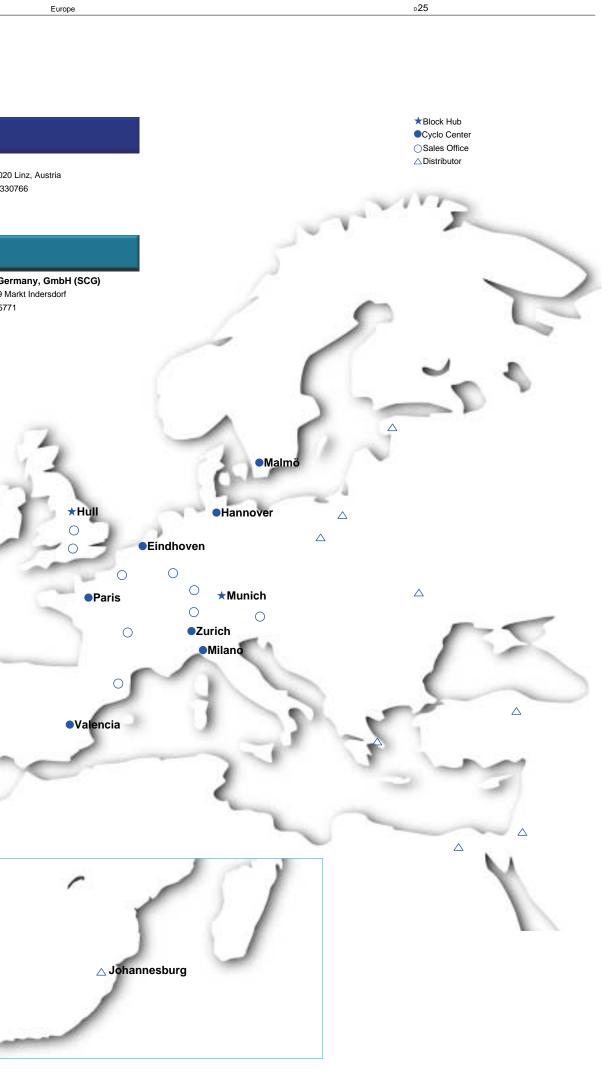
### **Technical Support**

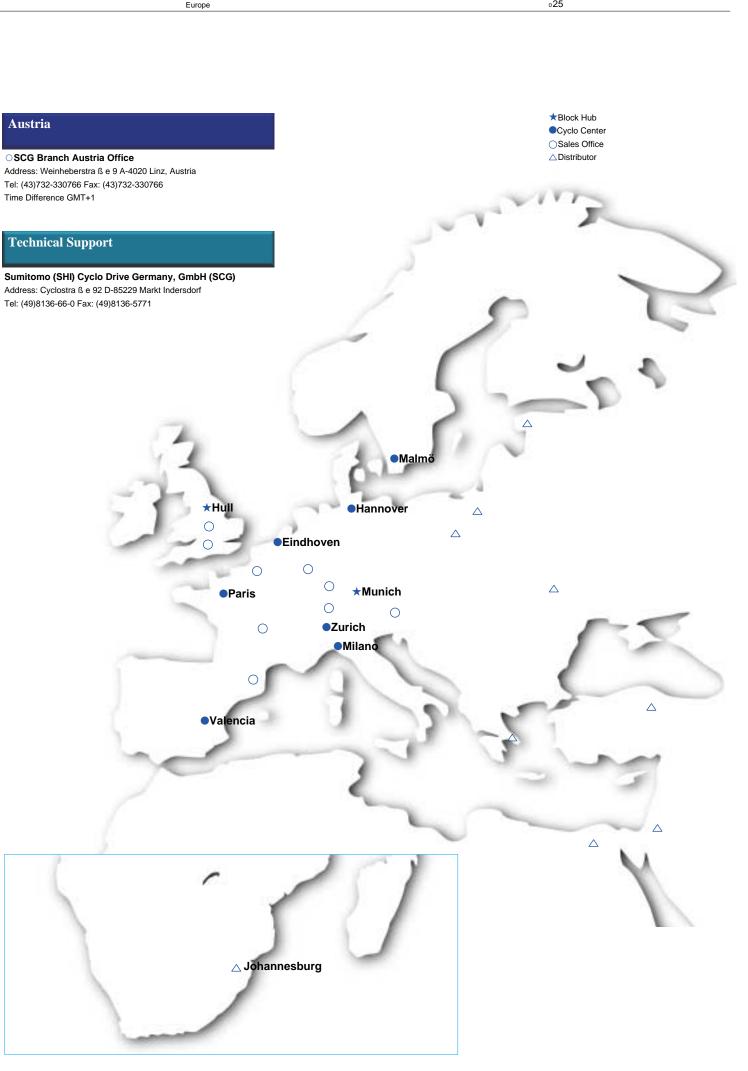
Sumitomo (SHI) Cyclo Drive Europe, Ltd. (SCE) Address: Marfleet, Kingston upon Hull HU9 5RA, United Kingdom Tel: (44) 1482-788022 Fax: (44) 1482-713205

### Germany

★Sumitomo (SHI) Cyclo Drive Germany, GmbH (SCG) Headquarters: Munich Address: Cyclostra ß e 92 D-85229 Markt Indersdorf Tel: (49) 8136-66-0 Fax: (49) 8136-5771 Time Difference GMT+1

SCG Branch Hannover Office Address: Auf dem kessel lande 4 30900 Wedemark Tel: (49) 5130-7922-71 Fax: (49) 5130-7922-79 Time Difference GMT+1







International Operations [3]

# Asia+Oceania

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China	Korea
★Sumitomo (SHI) Cyclo Drive China, Ltd. (SCT)	★SM-Cyclo of Korea Co., Ltd. (SCK)
Headquarters:Tianjin	Headquarters: Seoul
Address: No.7 Sanjing Road, Dongli Economic Development Zone, Tianjin	Address: Royal Bldg. 9F Rm.913, 5 Danju-dong Chongro-ku,
Tel: (86) 22-2499-3501 Fax: (86) 22-2499-3133	Seoul 110
Time Difference GMT+8	Tel: (82) 2-730-0151 Fax: (82) 2-730-0156
	OSCK Branch Inchon Offece
○SCT Branch Beijing Office	Address: 101BL-11Lot Namdong, Industrial Area 661-10,
Address: Grand Skylight Hotel Room No.566 No.45 Beixin Hua Street	Gojan-Dong, Namdong-Ku, Inchon-City, Korea
Xi Cheng District, Beijing 100031	Tel: (82) 32-819-4604 Fax: (82) 32-819-4606
Tel & Fax: (86) 10-6608-8793	Plant: Inchon
Time Difference GMT+8	Address: 101BL-11Lot Namdong, Industrial Area 661-10,
	Gojan-Dong, Namdong-KU, Inchon-City, Korea
○SCT Branch Shanghai Office	Tel: (82) 32-819-8916 Fax: (82) 32-819-2484
Address: 2701-02 & 2712 Citic Square No,1168, Nangjing West	Time Difference GMT+9
Road, Shanghai, China Post Code:20041	
Tel: (86) 21-52925840 Fax: (86) 21-52925679	○SCK Branch Pusan Office
Time Difference GMT+8	Address: Room#1815 Hanil Officetel 815 Munhyun 4-Dong, Nam-ku
	Pusan
Shanghai Cyclo Center	Tel: (82) 51-636-1502 Fax: (82) 51-636-1508
Address: 535 East Rong-le Road of Songjiang District, Shanghai, China	Time Difference GMT+9
Time Difference GMT+8	
	Technical Support
Technical Support	
	SM-Cyclo of Korea Co., Ltd. (SCK)
Sumitomo (SHI) Cyclo Drive China, Ltd. (SCT)	Address: Royal Bldg. 9F Rm.913, 5 Danju-dong Chongro-ku, Seoul 110
Address: No. 7 Sanjing Road, Dongli Economic Development Zone, Tianjin	Tel: (82) 2-730-0151 Fax: (82) 2-730-0156
Tanjin Tel: (86) 22-2499-3501 Fax: (86) 22-2499-3133	
Tel. (00) 22-2499-3301 Fax. (00) 22-2499-3133	Australia
	Australia
Taiwan	

SM-Cyclo of Australia Pty., Ltd. (SMAU) Headquarters: Sydney Address: 13 Centre Place Wetherill Park, NSW 2164 Tel: (61) 2-9756-2455 Fax: (61) 2-9756-2002 Time Difference GMT+10

### **Technical Support**

SM-Cyclo of Australia Pty., Ltd. (SMAU) Address: 13 Centre Place Wetherill Park, NSW 2164 Tel: (61) 2-9756-2455 Fax: (61) 2-9756-2002

★Block Hub Cyclo Center ○Sales Office △Distributor



### Singapore

★Cyclo Drive Asia Pacific Pte. Ltd. (SCA) Headquarters: Singapore Address: No. 36 Tuas South Street 3, Singapore 638031 Tel: (65) 6863-2238 Fax: (65) 6863-4238 Time Difference GMT+8

### Malaysia

•SM-Cyclo of Malaysia Sdn. Bhd. (SMMA) Headquarters: Kuala Lumpur Address: No.2, Jalan TP7/5, Sime-uep Industrial Park 40400, Shah Alam, Selangor, Malaysia Tel: (60) 3-5192-8909 Fax: (60) 3-5192-8809 Time Difference GMT+8

### Taiwan

☆Tatung SM-Cyclo Co., Ltd. (TSC) Headquarters: Taipei Address: 22 Chungshan N. Road 3rd., Sec. Taipei, Taiwan 104 R.O.C.

Tel: (886)2-2595-7275 Fax: (886) 2-2595-5594 Plant: San-Hsia

Address: 352 Shi-Tong Road., San-Hsia, 237, Taipei County, Taiwan, R.O.C. Tel: (886) 2-2674-1383 Fax: (886) 2-2674-1285 Time Difference GMT+8

### **Technical Support**

Tatung SM-Cyclo Co., Ltd. (TSC) Address: 22 Chungshan N. Road 3rd. Sec, Taipei, Taiwan 104 R.O.C. Tel: (886) 2-2595-7275 Fax: (886) 2-2595-5594

### Thailand

### SM-Cyclo of Thailand Co., Ltd. (SMTH) Headquarters: Bangkok

Address: 195, Empire Tower Unit 1504, 15th Floor South Sathorn Road, Yannawa Sathorn Bangkok 10120, Thailand Tel: (66) 2-670-0998 Fax: (66) 2-670-0999

### Plant: Pattaya

Address: #700/423 Moo 7, Bangpakong Industrial Estate 2, Tambol Donhaurch, Muang District, Chonburi 20000 Tel: (66) 38-213284 Fax: (66) 38-213287 Time Difference GMT+7

### Hong Kong

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### ○SM-Cyclo of Hong Kong Co., Ltd. (SMHK) Headquarters: Hong Kong

Address: Rm708, Kowloon Plaza, 485 Castle Peak Road, Kowloon, Hong Kong Tel: (852) 2460-1881 Fax: (852) 2460-1882

Time Difference GMT+8

### Philippines

SCA Branch Philippines Office Address: Unit 504, Amberland Plaza Condominium, Julia Vargas Ave., Ortigas Center Metro Manila Tel: (63) 2-637-2106 Fax: (63) 2-632-7372 Time Difference GMT+8

### **Technical Support**

Sydney

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### Sumitomo (SHI) Cyclo Drive Asia Pacific Pte. Ltd.(SCA) Headquarters: Singapore Address: No. 36 Tuas South Street 3, Singapore 638031 Tel: (65) 6863-2238 Fax: (65) 6863-4238

Wellington (

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### **GENERAL INFORMATION**

9-11, Kita-Shinagawa 5-chome,

Company Name

Foundation

President

Capital

Employees

Net Sales

Web Site

■ TEL.

Head Office

Establishment

### Sumitomo Heavy Industries, Ltd.

November 20, 1888

November 1, 1934

Shinagawa-ku, Tokyo

(as of 31st March, 2001)

4,699 (non-consolidated )

(as of 31st March, 2001)

http://www.shi.co.jp/ptc/

Tokyo (81)-3-5488-8363

Osaka (81)-3-5488-8355

¥513,753million (consolidated)

¥305,610million (non-consolidated)

12,411 (consolidated)

141-8686, Japan

¥30,871,650,000

Yoshio Hinoh

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International	Operation	[4]

# Japan

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# Japan

### ★Sumitomo Heavy Industries, Ltd.

Headquarters:Tokyo Address: 9-11, Kitashinagawa 5-chome Shinagawa-ku, Tokyo 141-8686, Japan TEL: (81)-3-5488-8363 FAX: (81)-3-5488-8056 Time Difference GMT+9 Web Site http://www.shi.co.jp/ptc/

### ○Sales Office

Sapporo Sendai Saitama Tokyo Yokohama Shizuoka Nagoya Kanazawa Osaka Kobe Takamatsu Niihama Okayama Hiroshima Kita Kyushu Fukuoka

### ★Nagoya Plant

Address: 1,Asahi-machi 6-chome,Ohbu-shi, Aichi 474-8501,Japan TEL: (81)-562-48-5218 FAX: (81)-562-48-8947 Time Difference GMT+9

Products: CYCLO DRIVE, BEIER VARIATOR, RHYTAX, BUDDYBOX, Motors, Inverters

### ★Okayama Gearbox Plant

Address: 8230, Tamashima-Otoshima, Kurashiki-shi, Okayama, 713-8501,Japan TEL: (81)-86-525-6341 FAX: (81)-86-525-6315 Time Difference GMT+9

Products: PARAMAX, COMPOWER, HEDCON

### ★Okayama Gearmotor Plant

Address: 8230, Tamashima-Otoshima, Kurashiki-shi, Okayama, 713-8501,Japan TEL: (81)-86-525-6194 FAX: (81)-86-525-6124 Time Difference GMT+9

Products: ALTAX, HYPONIC

### ★Astero Business center

Address: 1,Asahi-machi 6-chome,Ohbu-shi, Aichi 474-8501,Japan TEL: (81)-562-48-5139 FAX: (81)-562-48-5238 Time Difference GMT+9

Products: Astero





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# Okayama Plant

# Nagoya Plant

### Subsidiaries of Power Transmission & Controls Group

S.A.	
5.A.	Sumitomo Machinery Corporation of America (SMA)
pital	US\$7,723 thousand
undation	June 1966
eb Site	http://www.smcyclo.com/
ermany	Sumitomo (SHI) Cyclo Drive Germany, GmbH
pital	DM12 million
undation	June 1974
eb Site	http://www.smcyceuro.com/
ina	Sumitomo (SHI)Cyclo Drive China,Ltd.
pital	RMB87,000 thousand
undation	December 1994
eb Site	http://www.cyclodrive.com/chine/
en Sile	http://www.cyclounve.com/chine/
ngapore	Sumitomo (SHI) Cyclo Drive Asia Pacific Pte.,Ltd
pital	S\$3000 thousand
undation	September 1995
nada	SM-Cyclo of Canada,Ltd.
pital	CA\$10 thousand
undation	September 1993
iwan	Tatung SM-Cyclo Co.,Ltd.
pital	NT\$75 million
undation	April 1996
-	Sumitomo (SHI) Cyclo Drive Europe,Ltd.
pital	£6400 thousand
undation	December 1996
eb Site	http://www.smcyceuro.com/
rea	SM-Cyclo of Korea Co.,Ltd.
pital	SM-Cyclo of Korea Co.,Ltd. Won1,000 million
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