Discontinue

New Products

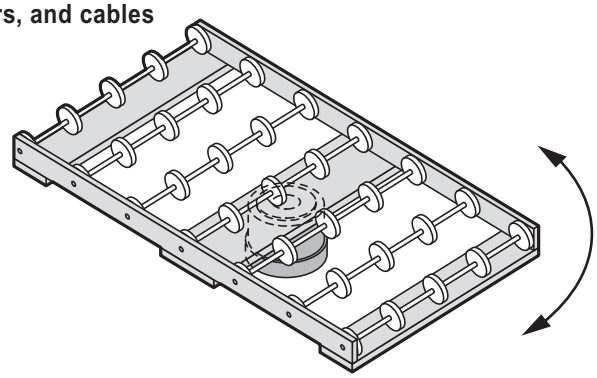
Large direct drive actuator AX400WG Series (AX410WGH)

New Product

Introducing the large type (1000N·m) !

Features

- **New large type** Optimum for large panel transfer
  - Maximum output torque 1000N·m
  - Allowable load moment of inertia 600kg·m^2
- **Compatible functions** Freely combined drivers, actuators, and cables
  - Easy maintenance and control
  - Easy wiring
- **Precise**
  - Compatible with conventional units while maintaining a precise index ±30 sec.
- **Large hollow shaft**
  - Useful for cable wiring
  - Useful for air piping



⚠ Refer to the safety precautions on pages 1 and 3, and in "Direct drive actuator General Catalog (No. CB-32A)" before operating.

CKD Corporation
CC-866A

Discontinue

Large direct drive actuator

AX400WG Series

Interchangeable functions enabling free driver, actuator, and cable combinations, large hollow handy for cable wiring and piping, and a variety of options

- Max. torque: 1000N·m
- Compatible driver: WGH type driver

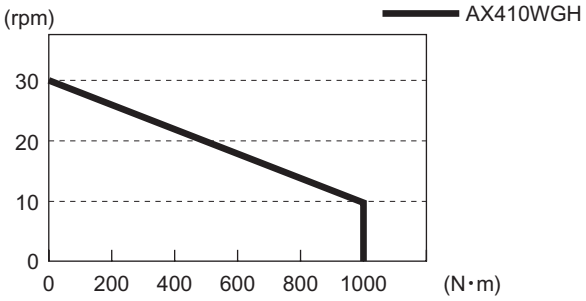
Actuator specifications

Descriptions		AX410WG
Max. output torque	N·m	1000
Continuous output torque	N·m	330
Max. rotation speed	rpm	30
Allowable axial load	N	20000
Allowable moment load	N·m	400
Output shaft moment of inertia	kg·m^2	2.72
Allowable load moment of inertia	kg·m^2	600.00
Index precision (Note 1)	sec.	±30
Repeatability	sec.	±5
Output shaft friction torque	N·m	20.0
Resolver resolution	P/rev	540672
Motor insulation grade		Class F
Motor withstanding voltage		1500 VAC for one minute
Motor insulation resistance		10MΩ and over 500 VDC
Working ambient temperature range		0 to 45°C
Working ambient humidity range		20 to 85% RH with no dew condensation
Storage ambient temperature range		-20 to 80°C
Storage ambient humidity range		20 to 90% RH with no dew condensation
Weight	kg	198
Run out of output shaft	mm	0.03
Surface run out of output shaft	mm	0.08

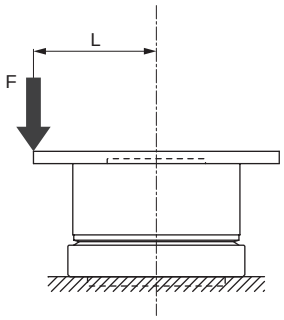
Note 1: Refer to the "Technical explanation, Static index precision" in "CKD index units General Catalog" (CB-019SA) for details on index precision.

Speed/max. torque characteristics

●AX410WGH

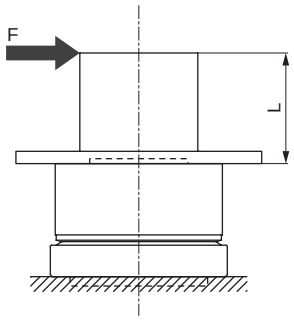


(Note) Moment load



(Fig. a)

M (N·m) = F (N) x L (m)
M: Moment load
F: Load
L: Distance from output shaft center



(Fig. b)

M (N·m) = F (N) x (L + 0.02) (m)
M: Moment load
F: Load
L: Distance from output shaft flange plane

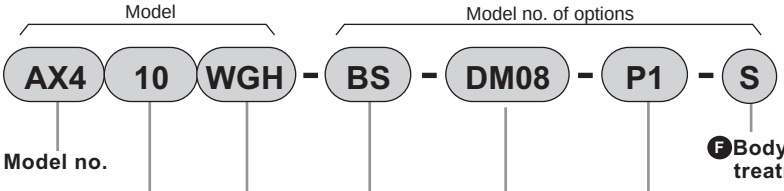
Safety precautions

WARNING

Depending on the rotational speed and load moment of inertia, it may take several seconds to stop in an emergency.

Discontinue

How to order



Model no.

Ⓐ Size (max. torque)

Ⓑ Driver type

Ⓒ Mounting base Note 2, Note 3

Ⓓ Cable changes Note 1

Ⓔ Dowel hole Note 3, Note 4

Ⓕ Body surface treatment Note 2

Symbol	Descriptions
Ⓐ Size (max. torque)	
10	1000 N·m
Ⓑ Driver type	
WGH	With WGH type driver
Ⓒ Mounting base (cannot be used with dowel holes P2 and P3)	
Blank	Standard (without mounting base)
B	With blackening mounting base
BS	Electroless nickel plating, surface treatment mounting base Use with body surface treatment S.
Ⓓ Cable changes	
Blank	Standard (cable length 4 m)
D**	Cable length changes
DM**	Movable cable length changes

** cable length		
Blank	4m	Movable cable 4 m: DM
06	6m	[Caution] Use the noise filter for the motor cable if the cable is longer than 6 m.
08	8m	
10	10m	
15	15m	
20	20m	

Ⓔ Dowel hole	
Blank	Standard (without dowel hole)
P1	1 on top
P2	1 on bottom
P3	1 each on both top and bottom
Ⓕ Body surface treatment	
Blank	Standard (rotational section - blackening, fixing section casting surface plane - paint)
S	Rotational section: electroless nickel plating treatment, fixing section: nitriding

Note on model no. selection

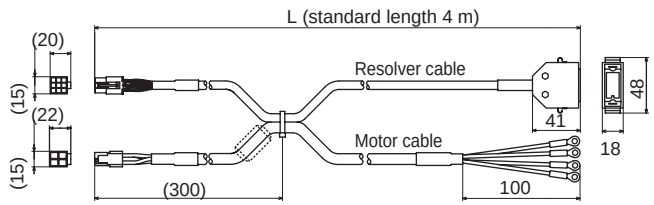
Note 1: Use the optional movable cable in applications where the cable is repeatedly bent. Refer to page 3 for cable dimensions.
Note 2: Designate surface treatment and mounting base surface treatment with Ⓒ and Ⓕ.
Note 3: "P2" and "P3" cannot be selected if "B" blackening mounting base or "BS" electroless nickel plating, surface treatment mounting base is designated for the Ⓒ mounting base.
Note 4: In some cases, the dowel hole may not be surface-treated.

* Contact CKD for individual orders for maintenance purposes.

Cable specifications

Min. cable bending radius

Cable dimensions

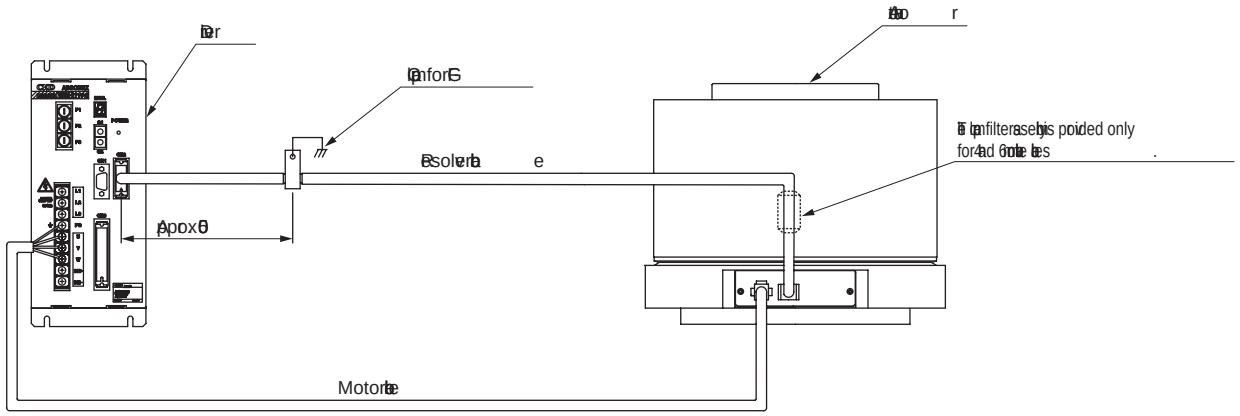


	Standard cable	Movable cable
Resolver cable	50 mm	60 mm
Motor cable	100 mm	110 mm

Note) The clamp filter assembly is provided only for 4 and 6 m movable cables.

Safety precautions

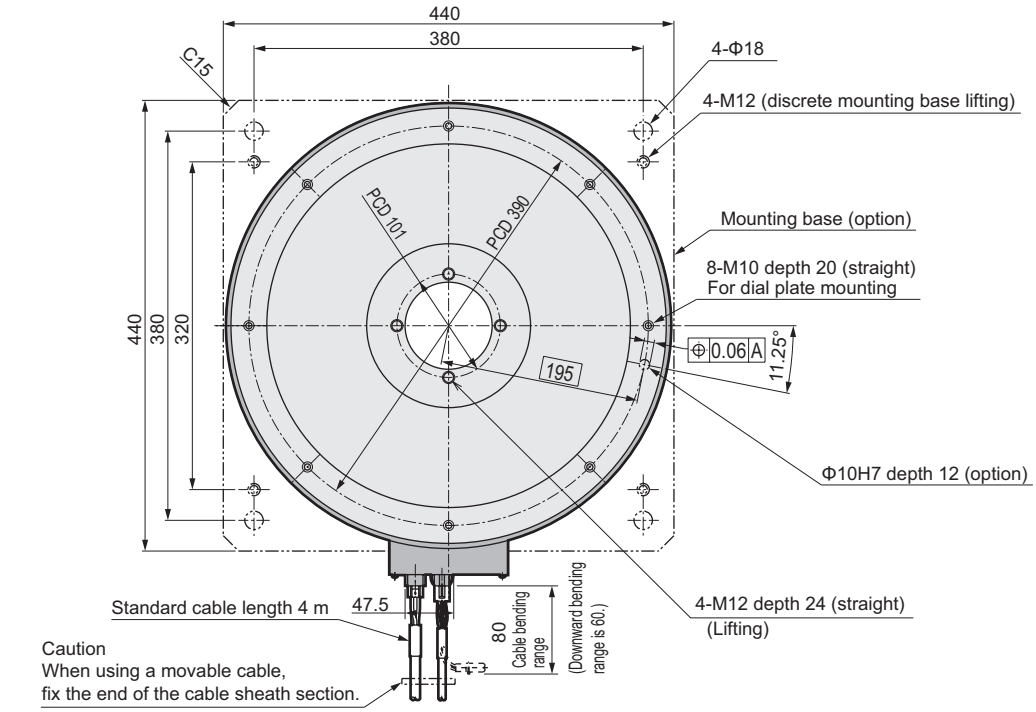
- When connecting the motor cable and driver, check that the cable's mark tubes and the driver's indications are correct.
- Peel the resolver cable sheath near the driver, and ground the shield to the device with the FG clamp.

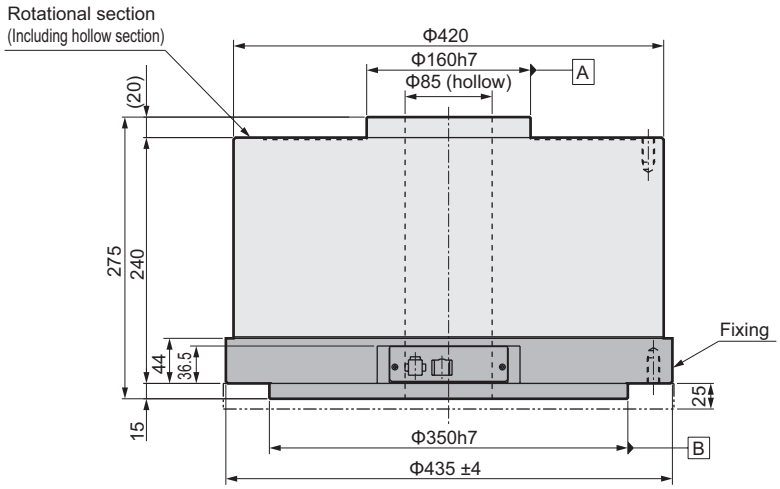


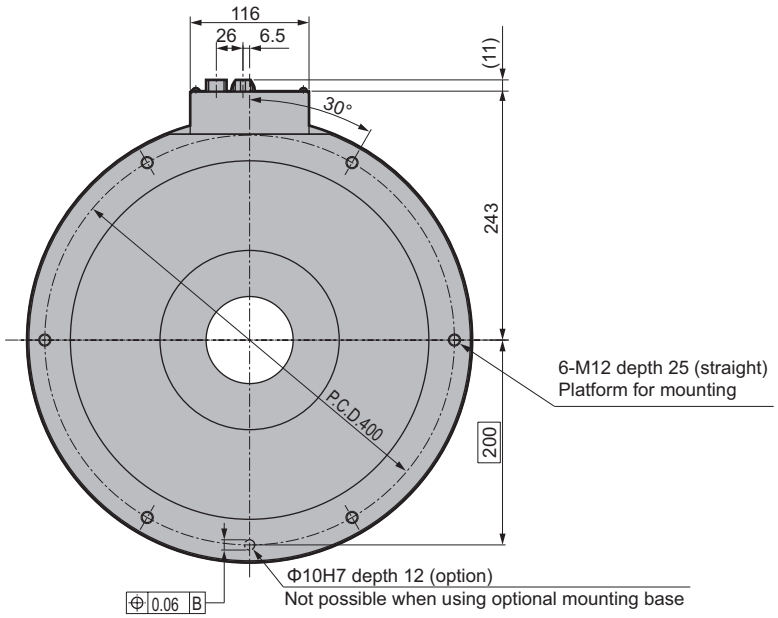
- When connecting the cable, insert the connector securely to the back. Tighten the connector's set screws and fixing screws.
- Use the optional movable cable in applications where the cable is repeatedly bent.
  When a movable cable is used, fix the cable sheath near the actuator connector.
- Do not modify cable by cutting or extending it. Failure to observe this could result in faults or malfunctions.
- Use the noise filter for the motor cable if the cable is longer than 6 m.

Dimensions

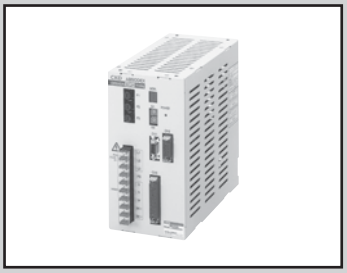
●AX410WG







Discontinue



Direct drive actuator

WGH type driver

Common specifications

Descriptions	Model WGH type driver AX900WGH
Power voltage	200 VAC -10% to 230 VAC +10% three phase
Power frequency	50/60 Hz
Structure	Driver and controller integrated type (open frame)
Working ambient temperature range	0 to 50°C
Working ambient humidity range	20 to 90% RH (with no dew condensation)
Storage ambient temperature range	-20 to 80°C
Storage ambient humidity range	20 to 90% RH (with no dew condensation)
Atmosphere	With no corrosive gas nor powder dust
Noise-resistance	1000V (P-P), pulse amplitude 1μsec., start up 1nsec.
Vibration resistance	4.9m/s^2
Mass	Approx. 3.2 kg

Power supply wattage and breaker capacity

WGH type driver

Actuator model no.	Driver model no.	Power supply wattage (KVA)		Breaker capacity
		Max.	Rated	Rated current (A)
AX410WG	AX900WGH	4.0	2.0	20

CN3 input signal

Pin No.	Signal name	Logic	Judgment
1 to 2	External power input +24V±10%		
3 to 4	External power input GND		
5	Program No. selection input (bit 0)	Positive	Level
6	Program No. selection input (bit 1)	Positive	Level
7	Program No. selection input (bit 2)	Positive	Level
8	Program No. selection input (bit 3)	Positive	Level
9	Program No. selection input (bit 4) /program No. setting input 2nd digit	Positive	Level Edge
10	Program No. setting input 1st digit	Positive	Edge
11	Reset input	Positive	Edge
12	Return to origin command input	Positive	Edge
13	Start input	Positive	Edge
14	Program stop input	Positive	Edge
15	Continuous rotation stop input	Positive	Edge
16	Answer input	Positive	Edge
17	Emergency stop input	Negative	Level
18	Brake release input	Positive	Level

CN3 pulse string input signal

Pin No.	Signal name
19	PULSE/UP/A phase
20	-PULSE/-UP/-A phase
21	DIR/DOWN/B phase
22	-DIR/-DOWN/-B phase

Performance specifications

Descriptions	
Number of control axis	1 axis, 540672 pulse/rotation (name: A axis)
Angle setting unit	° (degree), pulse, index number
Min. angle setting unit	0.001°, pulse
Speed setting unit	Second, rpm
Speed setting range	0.01 to 100 sec. / 0.01 to 100 rpm (Note) Max. rotation speed varies depending on the actuator to be connected.
Equal index number	1 to 255
Maximum command value	7-digits input ±9999999
Timer	0.01 sec. to 99.99 sec.
Programming language	NC language
Programming method	Interactive terminal or personal computer, etc.
Operation mode	Data is set via the RS232C port. Automatic, MDI, jog, single block, Servo OFF, pulse string input mode
Coordinates	Absolute and incremental <5 types>
Acceleration curve	Modified sine (MS), modified constant velocity (MC/MC2), Modified trapezoidal (MT), Trapecloid (TR)
Status display	Power supply display with LED
Operating indication	Display with 7 segment LED
Communication interface	RS-232C conformed
I/O signal	<Input> Return to origin command, reset, start, stop, continuous rotation stop, emergency stop, answer, program No. selection, brake release, program No. setting, pulse string input <Output> Alarm 1/2, positioning complete, in-position, start input waiting M code 8 points, during indexing 1 (Z phase output), during indexing 2, timing, M code strobing, index position strobing
Program capacity	Approx. 6000 characters (256 programs)
Electronic thermal	Actuator overheat protection

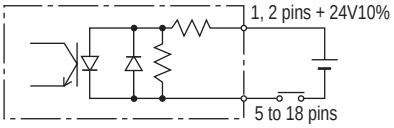
CN3 output signal

Pin No.	Signal name	Logic
33	M code output (bit 0)	Positive
34	M code output (bit 1)	Positive
35	M code output (bit 2)	Positive
36	M code output (bit 3)	Positive
37	M code output (bit 4)	Positive
38	M code output (bit 5)	Positive
39	M code output (bit 6)	Positive
40	M code output (bit 7)	Positive
41	In-position output	Positive
42	Positioning complete output	Positive
43	Start input waiting output	Positive
44	Alarm output 1	Negative
45	Alarm output 2	Negative
46	Output during indexing 1/Z phase output	Positive
47	Output during indexing 2	Positive
48	Output of time (Note 2)	Positive
49	Index position strobing output	Positive
50	M code strobing output	Positive

Note 1: Timing output cannot be used when the continuous rotation direction is CCW.

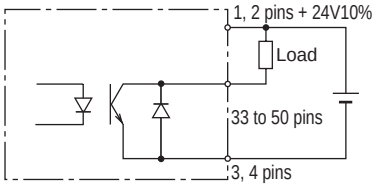
CN3 I/O circuit specifications

●Input circuit



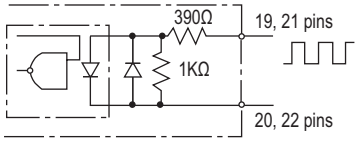
Rated voltage 24V10%, rated current 7.5mA
Time constant Approx. 5msec.

●Output circuit



Rated voltage 24V10%, rated current 150mA (Max.)

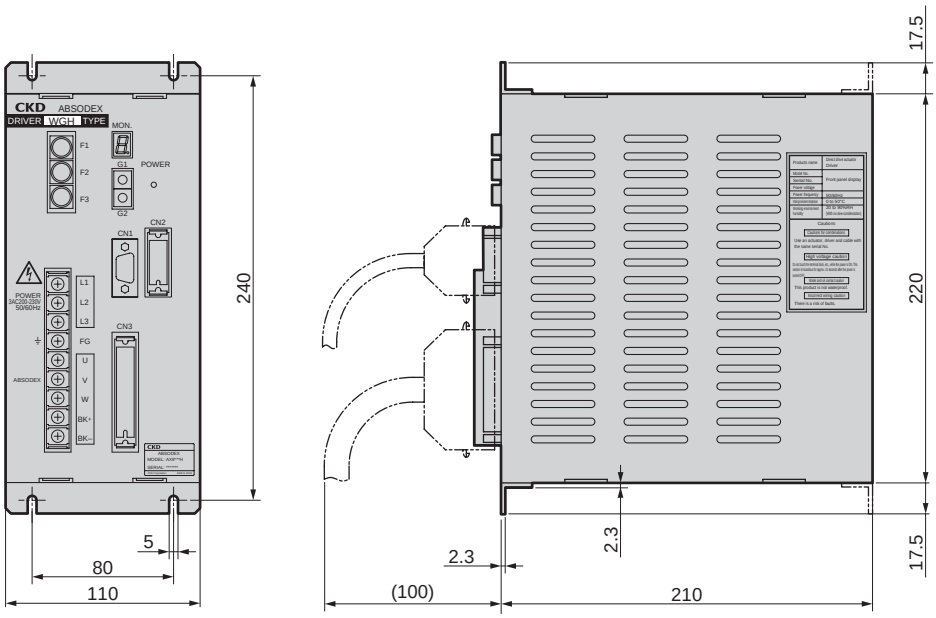
●Pulse string input circuit



Rated voltage 5V±10%
Line driver 400Kpps
Open collector 250Kpps

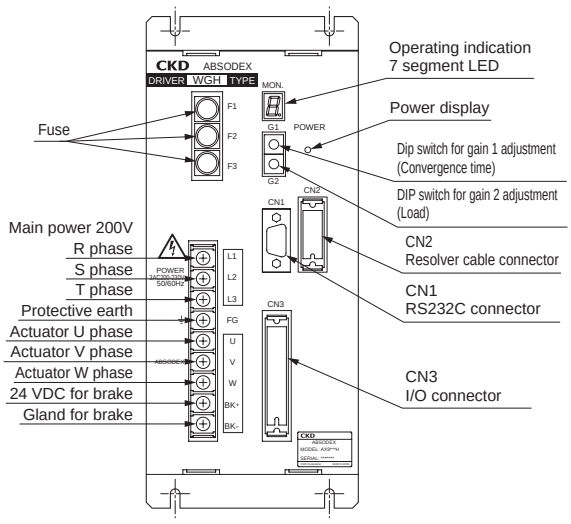
Dimensions

●WGH type driver (with controller)



Panel explanation

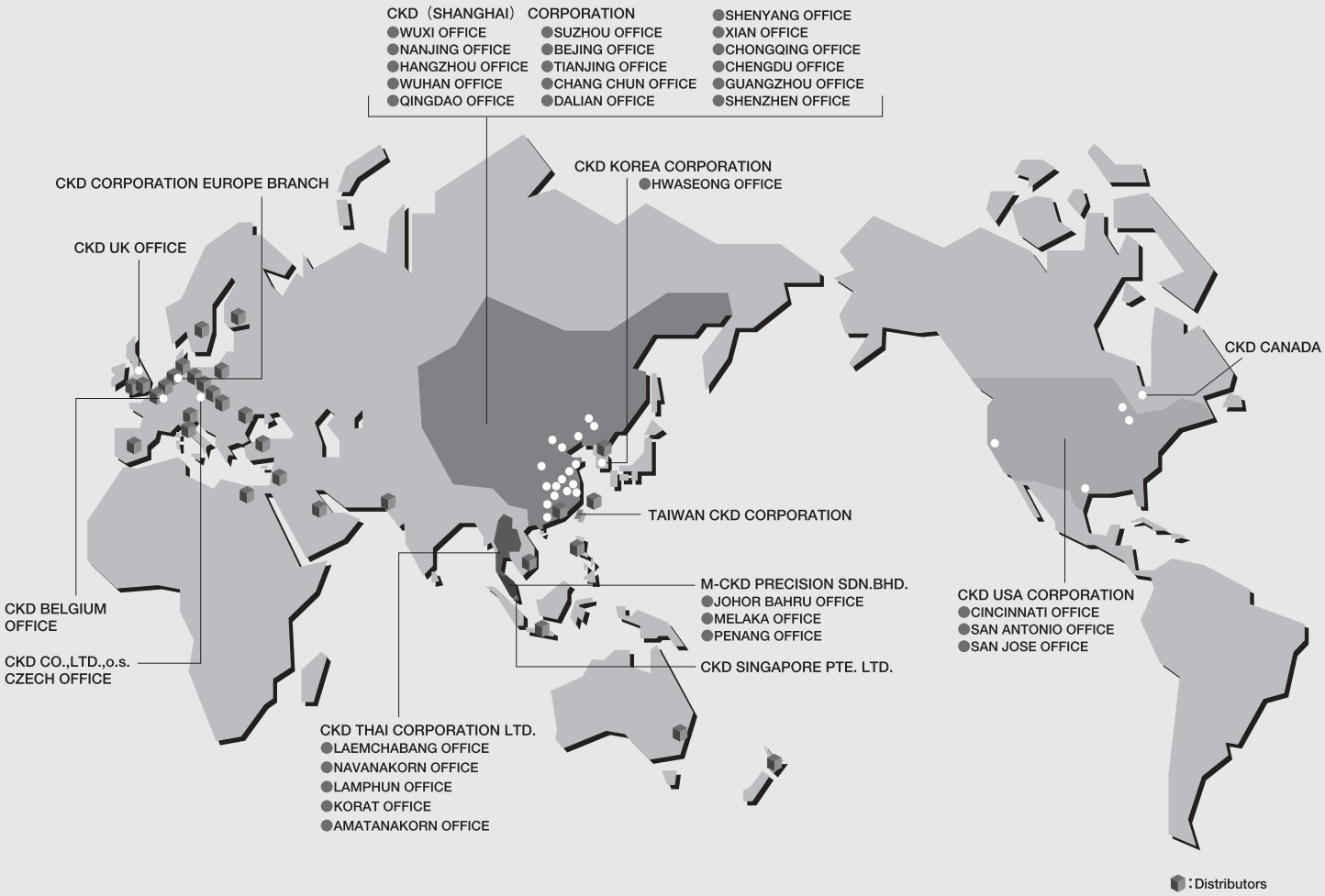
●WGH type driver (with controller)



WGH type driver

Discontinue

WORLD NETWORK



CKD Corporation

Website http://www.ckd.co.jp/

OVERSEAS DPT. SALES DIV. 2-250 Ouji Komaki, Aichi 485-8551, Japan
PHONE +81-(0)568-74-1338 FAX +81-(0)568-77-3461

U.S.A
CKD USA CORPORATION
● HEADQUARTERS
4080 Winnetka Avenue, Rolling Meadows, IL 60008 USA
PHONE +1-847-368-0539 FAX +1-847-788-0575

EUROPE
CKD EUROPE BRANCH
De Fruittuinen 28 Hoofddorp 2132NZ The Netherlands
PHONE +31-(0)23-5541490 FAX +31-(0)23-5541491

Malaysia
M-CKD PRECISION SDN.BHD.
● HEADQUARTERS
Lot No.6,Jalan Modal 23/2, Seksyen 23, Kawasan, MIEL, Fasa 8, 40300 Shah Alam,Selangor Darul Ehsan, Malaysia
PHONE +60-(0)3-5541-1468 FAX +60-(0)3-5541-1533

Thailand
CKD THAI CORPORATION LTD.
● SALES HEADQUARTERS-BANGKOK OFFICE
Suwan Tower, 14/1 Soi Saladaeng 1, North Sathorn Rd., Bangrak, Bangkok 10500 Thailand
PHONE +66-(0)2-267-6300 FAX +66-(0)2-267-6305

Singapore
CKD SINGAPORE PTE LTD.
705 Sims Drive #03-01/02, Shun Li Industrial Complex, 387384 Singapore
PHONE +65-6744-2623 FAX +65-6744-2486

Taiwan
TAIWAN CKD CORPORATION
1F., No.16, Wucyuan 5th Rd., Wugu Township, Taipei Country 248, Taiwan（R.O.C）
PHONE +886-(0)2-2298-2866 FAX +886-(0)2-2298-0322

China
CKD (SHANGHAI) CORPORATION
● SALES HEADQUARTERS / SHANGHAI OFFICE
Room 1903, 333 Jiujiang Road, Shanghai, 200001, China
PHONE +86-(0)21-63602277 FAX +86-(0)21-63511661

Korea
CKD KOREA CORPORATION
Room No.1105, 11th FL, The Korea Teachers Pention B/L. 27-2, Yoido-Dong, Youngdeungpo-Gu, Seoul, 150-742, Korea
PHONE +82-(0)2-783-5201～5203 FAX +82-(0)2-783-5204

2007.9.DCC