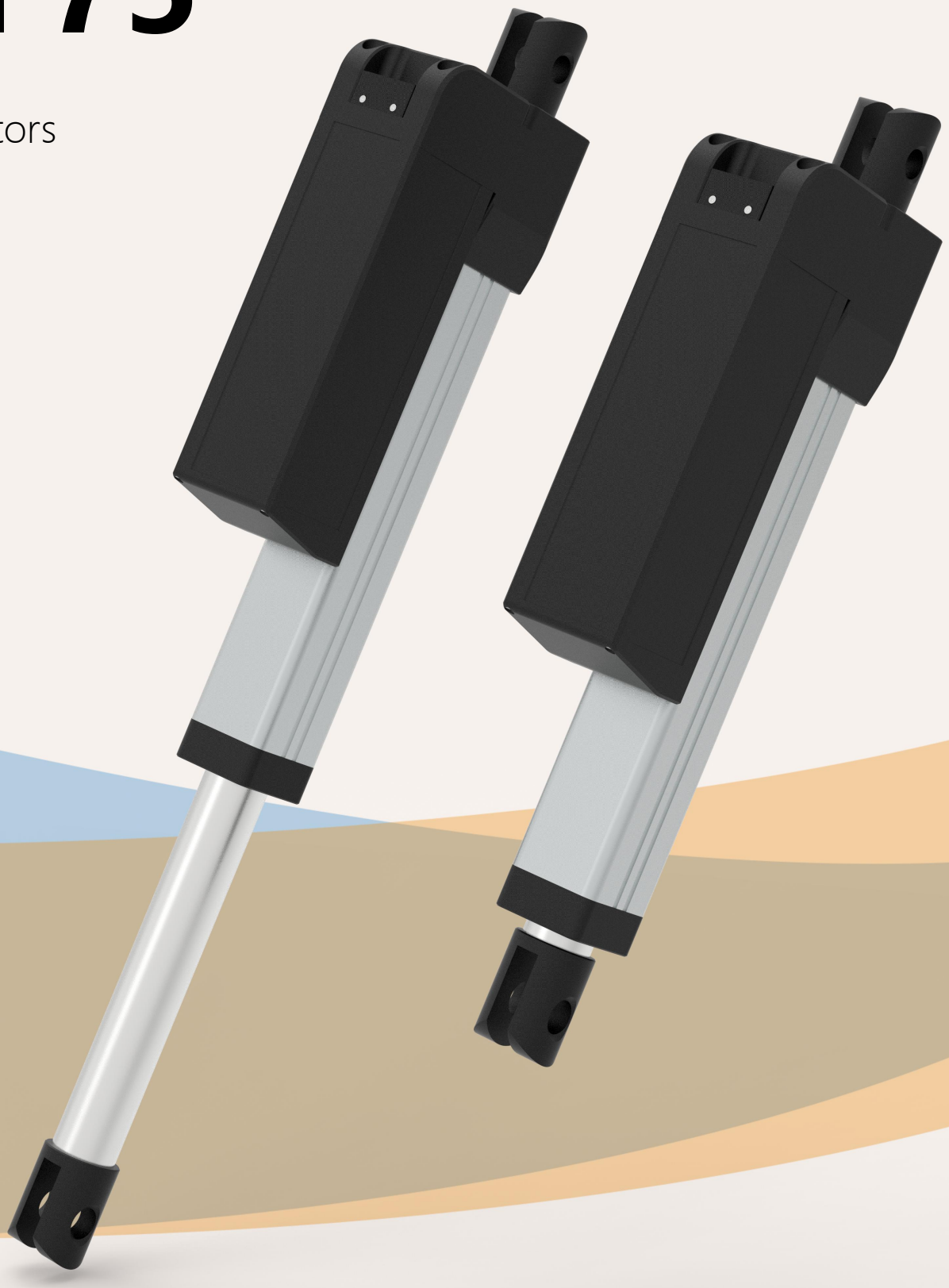
GeMinG Linear Drive

TF75

Series
Actuators



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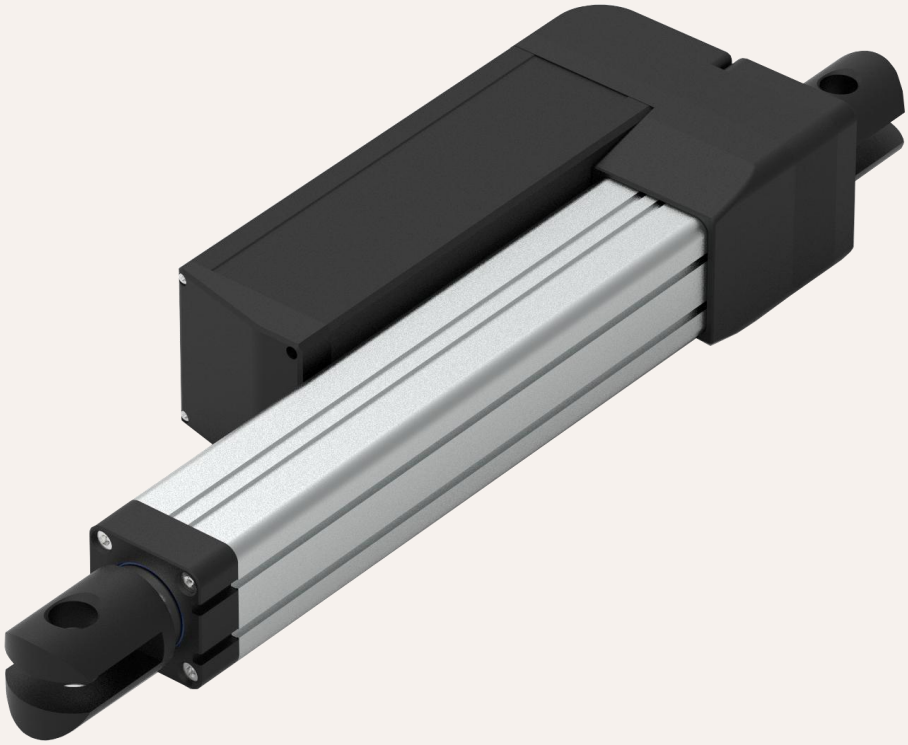


Product Category

1、 Industrial application

2、Military application

3、Agricultural machinery

4、Mining applications

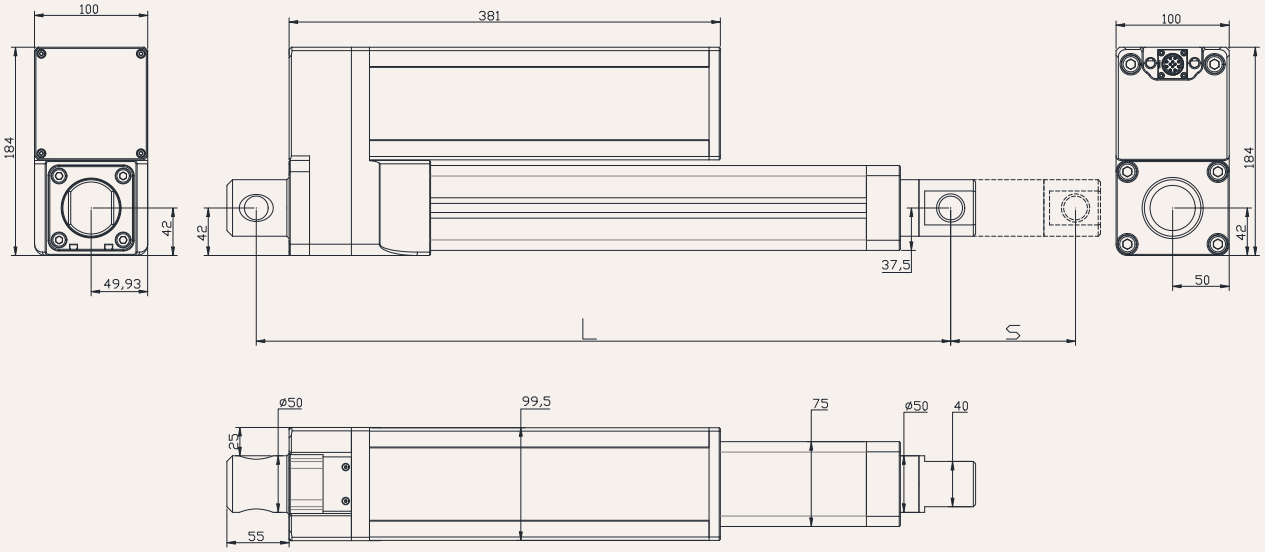
TF75 is a push rod designed for heavy industrial environments with high loads, especially for some mechanical equipment with high wear and tear, such as agricultural machinery and industrial application equipment. If you are looking for a push rod that can be used in harsh industrial environments and must meet strict specifications and standards, the smart electromechanical actuator is equipped with onboard electronic components and does not require a separate control system. With higher loads up to 70 kN, it opens up more possibilities for hydraulic to electric applications.

Functional Overview

Voltage:	48V DC, 220V AC
Motor options:	DC motor, brushless DC motor
Maximum thrust (pull force):	70 KN / 50KN
Slowest speed under load:	8.0mm/s (load 70KN)
Maximum speed under load:	250 mm/s (load 4KN)
Minimum installation size:	Stroke + 300mm
Dynamic lateral moment:	1,000Nm
Static lateral moment:	800Nm
color:	Silver gray, black
Voice:	60~75 DB
Adaptable temperature range:	-45°C ~ +75°C
Protection level:	IP67
Screw selection:	I ball screw, trapezoidal screw
Switch type:	Built-in limit switch,
Signal options:	Potentiometer, Hall sensor, endpoint signal
Control options:	Synchronous control, independent control,
safety certificate:	integrated control, CAN bus control, Comply with ISO9001-2008,
High-strength metal zinc alloy gearbox and housing,	CE and RoHS regulations,

Drawings

Standard size
MM



S: Stroke

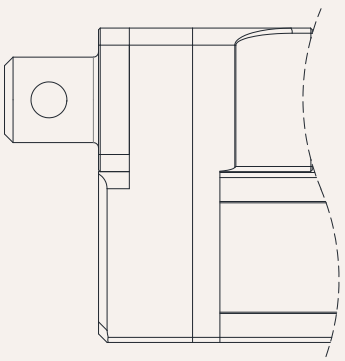
L: Retracted length

L= Stroke +300mm

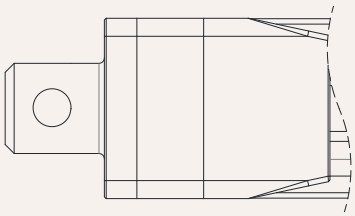
Greater than 600MM stroke, installation dimensions L= Stroke +350MM

Installation angle (counterclockwise):

0 =0 Degrees



9 =90 Degrees



Stroke: minimum value ≥ 20mm, please refer to the table below for the maximum value of load and stroke

load (N)	Maximum stroke (mm)
50000	50-200
30000	201-600
20000	601-1200

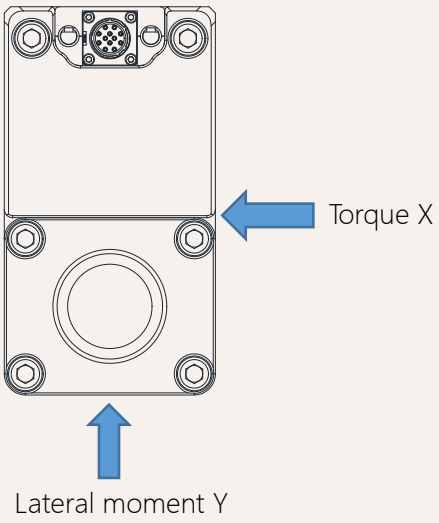
Remark:

Lateral moment Y direction = X*0.8

Static lateral moment = dynamic*2

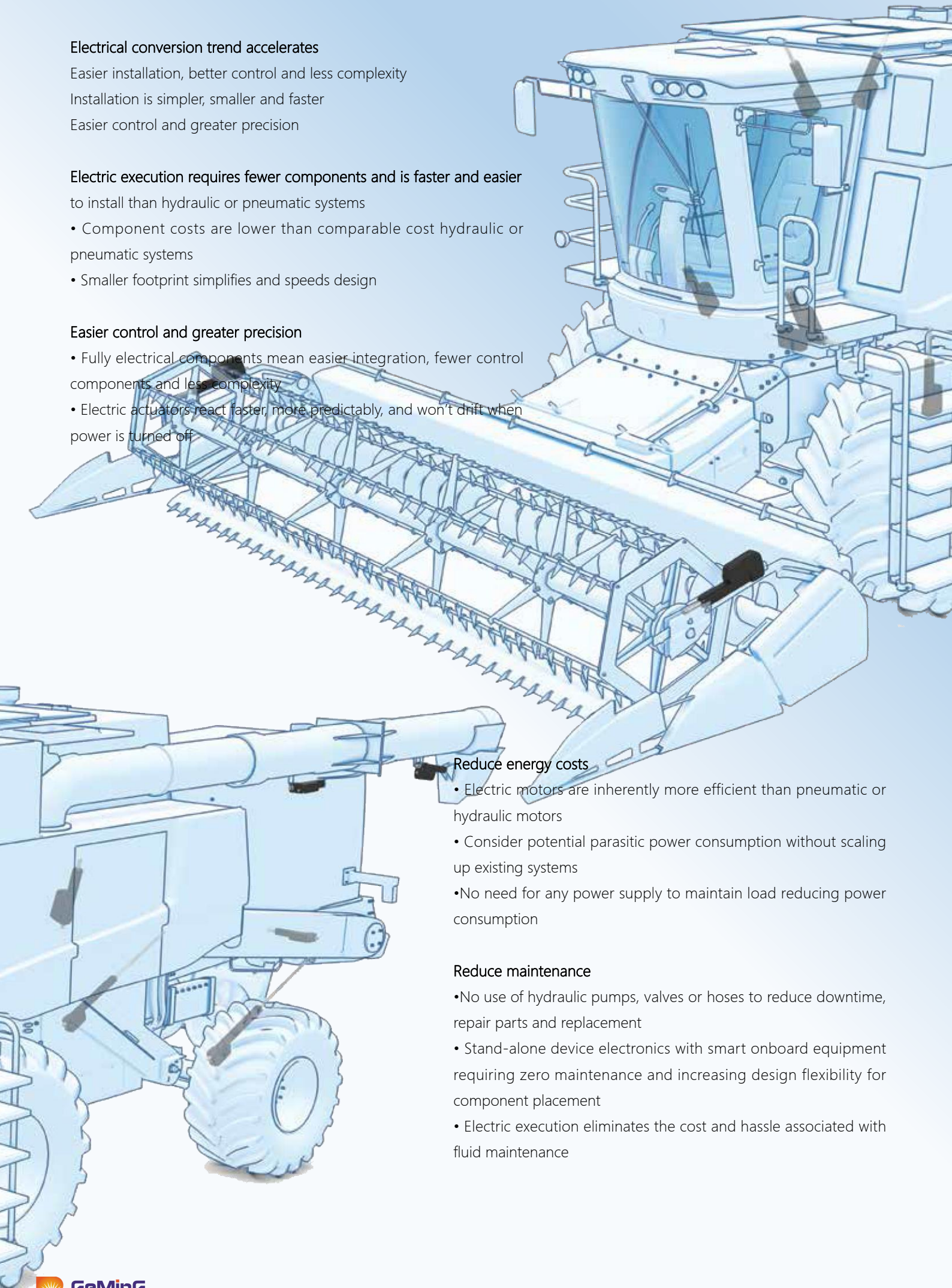
Dynamic lateral moment (Nm)-X direction

stroke	S+300	S+350
100-200	300	400
300-500	250	350
500-700	200	300
700-900	100	200



Stroke installation size reference chart

TF75-L Series	stroke ± 2 (mm)				Install ± 2 (mm)				
strokeMM	100	150	200	250	300	350	400	450	500
Install MM	400	450	500	550	600	650	700	750	800
weight KG	18	20	22	24	26	28	30	32	34



Electrical conversion trend accelerates

Easier installation, better control and less complexity

Installation is simpler, smaller and faster

Easier control and greater precision

Electric execution requires fewer components and is faster and easier

to install than hydraulic or pneumatic systems

• Component costs are lower than comparable cost hydraulic or pneumatic systems

• Smaller footprint simplifies and speeds design

Easier control and greater precision

• Fully electrical components mean easier integration, fewer control components and less complexity

• Electric actuators react faster, more predictably, and won't drift when power is turned off

Reduce energy costs

• Electric motors are inherently more efficient than pneumatic or hydraulic motors

• Consider potential parasitic power consumption without scaling up existing systems

•No need for any power supply to maintain load reducing power consumption

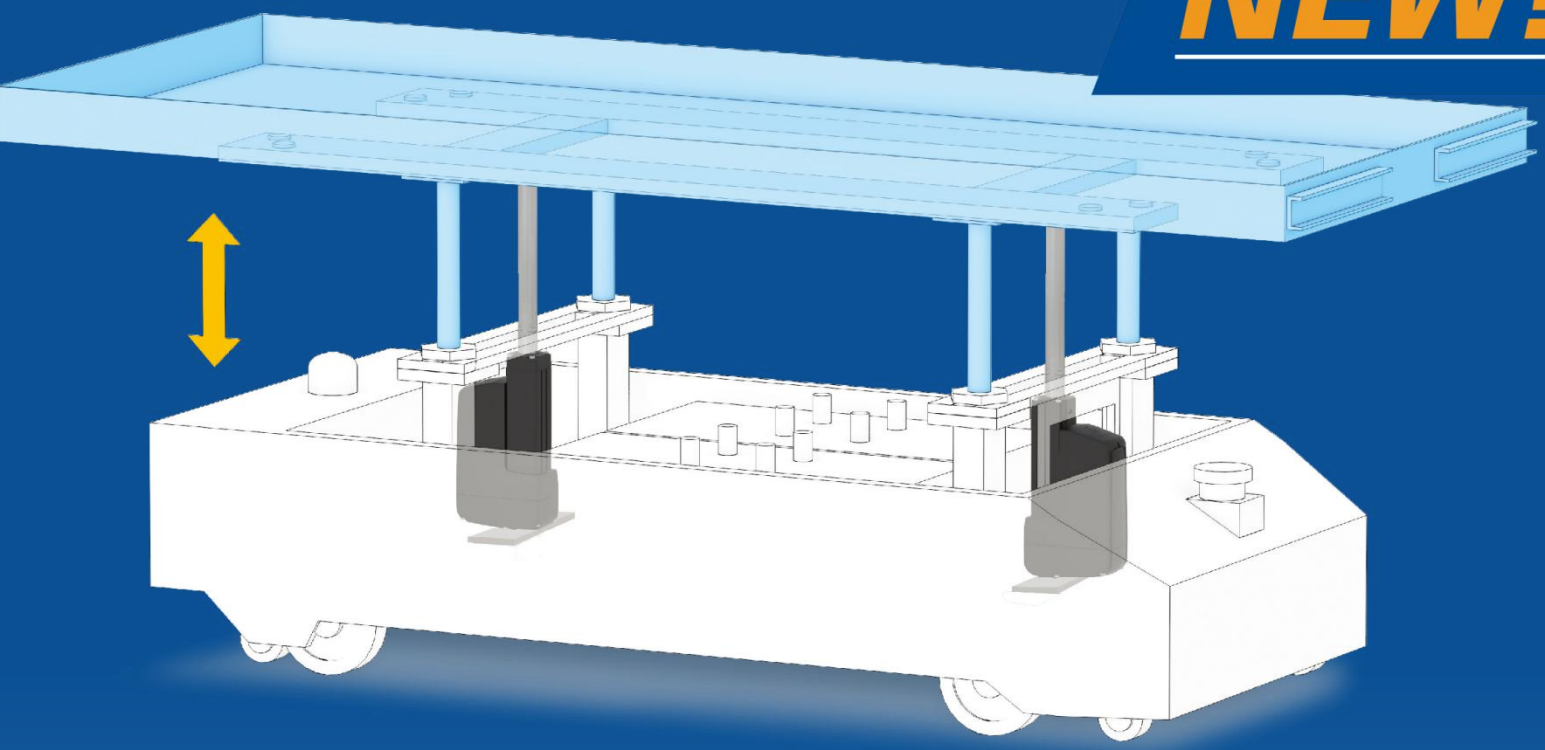
Reduce maintenance

•No use of hydraulic pumps, valves or hoses to reduce downtime, repair parts and replacement

• Stand-alone device electronics with smart onboard equipment requiring zero maintenance and increasing design flexibility for component placement

• Electric execution eliminates the cost and hassle associated with fluid maintenance

NEW!



Rear installation can be retrofitted with flange installation

Electric linear actuators for automated guided vehicles, mobile equipment and industrial automation

height adjustment

Positioning adjustment

More compact design,

making it easier to install in small spaces,

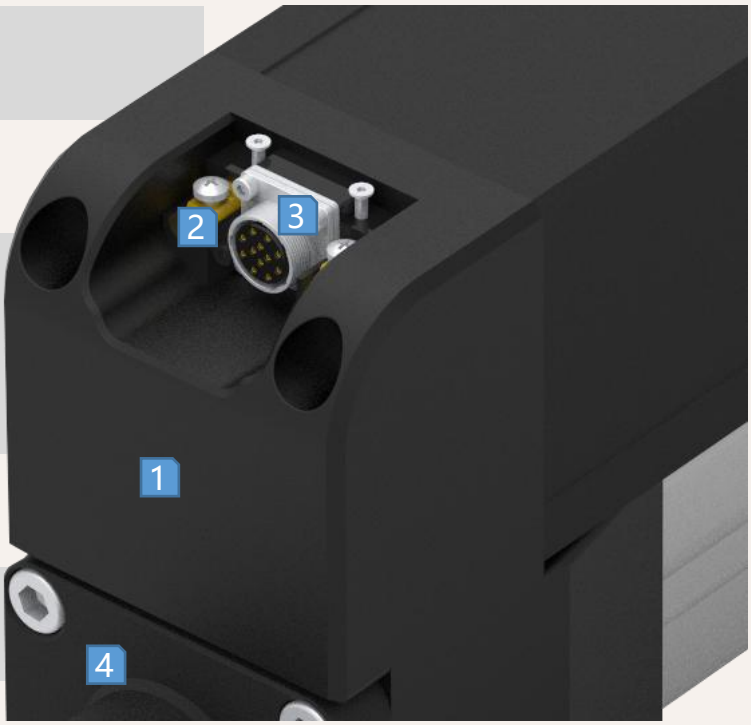
Very suitable for designing different types of automation equipment,

unmanned trucks and lifting equipment,

All while retaining many of the benefits that make it so popular!

Actuator electrical specifications

Input voltage:	V DC V AC	24,48 220
Voltage range: 24 Voltage range: 48 Voltage range: 220	V DC V DC V AC	18-32 36-60 180-240
Current consumption: 24 Current consumption: 48 Current consumption: 220	A	8-28 6-16 1-5
Power cord fixing terminal		M4
Signal connector type		HS16N10S



1 Gearbox
2 Power supply terminal
3 Signal connector
4 Tail Mount Connector
5 Wiring dust box
6 Motor protection cover

* Control signal connector and power wiring location

load and speed

Code	Rated load Thrust N	Pull N	Self-locking force static conditions static N	Rated load current A	Output speed no load 48V DC mm/s	Rated load 48V DC mm/s
Motor voltage (48V DC , 0.75KW)						
A	50,000	50,000	60,000	17.5	8.0	7.0
B	45,000	45,000	50,000	17.5	10	9.0
C	35,000	35,000	40,000	17.5	12	11
D	27,000	27,000	30,000	17.5	16	15
E	18,000	18,000	20,000	17.5	25	24
F	12,000	12,000	15,000	17.5	35	24
G	9,000	9,000	10,000	17.5	50	48
H	7,000	7,000	8,000	17.5	62	60
I	5,000	5,000	6,000	17.5	83	80
J	3,500	3,500	4,000	17.5	125	97
K	2,000	2,000	2,000	17.5	165	245
L	1,500	1,500	2,000	17.5	250	250

Remark

1. The speed and current on the upper side are the materials that extend when pushed.

2. For a 220VAC motor, the speed is about the same and the current is about 4.5 times lower.

3. The current & speed in the table are the test average values in the extension direction under thrust application.

4. The current & speed in the table and graph are the test average values of the GeMinG control box configuration, and there is an error of about 10% depending on the control box model.

(The voltage is about 50V DC at no load, and drops to about 48V DC at rated load)

load and speed

Code	Rated load Thrust N	Pull N	Self-locking force static conditions static N	Rated load current A	Output speed no load 48V DC mm/s	Rated load 48V DC mm/s
Motor voltage (48V DC , 1 KW)						
A	70,000	70,000	70,000	22	8.0	7.0
B	60,000	60,000	60,000	22	10	9.0
C	48,000	48,000	50,000	22	12	11
D	35,000	35,000	40,000	22	16	15
E	24,000	24,000	25,000	22	25	24
F	17,000	17,000	17,000	22	35	24
G	12,000	12,000	12,000	22	50	48
H	9,500	9,500	10,000	22	62	60
I	7,000	7,000	8,000	22	83	80
J	4,500	4,500	5,000	22	125	97
K	3,000	3,000	3,000	22	165	245
L	2,000	2,000	2,000	22	250	250

Remark

1. The speed and current on the upper side are the materials that extend when pushed.

2. For a 220VAC motor, the speed is about the same and the current is about 4.5 times lower.

3. The current & speed in the table are the test average values in the extension direction under thrust application.

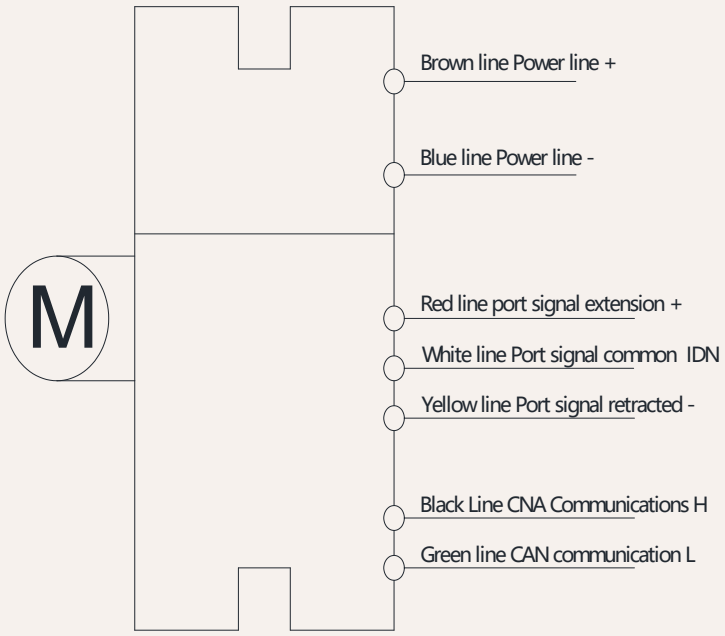
4. The current & speed in the table and graph are the test average values of the GeMinG control box configuration, and there is an error of about 10% depending on the control box model.

(The voltage is about 50V DC at no load, and drops to about 48V DC at rated load)

Signal feedback Port Control

Schematic diagram of port control motor circuit

Code：Y



Wiring Instructions:

1】Brown lead: Power supply positive (+)
2】Blue lead: Power supply negative (-)
3】Red lead: Port signal extended (+)
4】White lead: Port signal common (IDN)
5】Yellow lead: Port signal retracted (-)
6】Black lead: CAN communication (H)
6】Green lead: CAN communication (L)

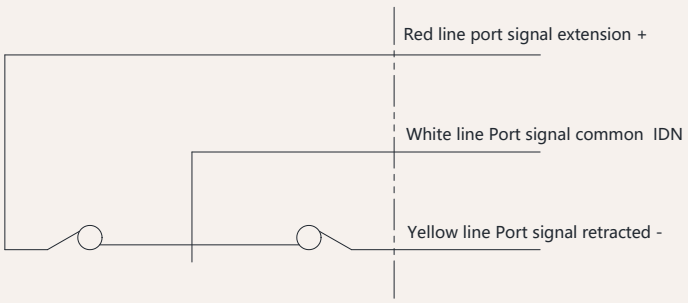
Note:

1. Do not connect the brown and blue power cables in reverse, as this may damage the driver.
2. CAN bus included, does not include termination resistors; complies with J1939.
3. Speed: Baud rate: 500kbps

Communication wiring: Shielded twisted pair

Cable impedance: 120Ω (+/-10%)

CAN Control instructions



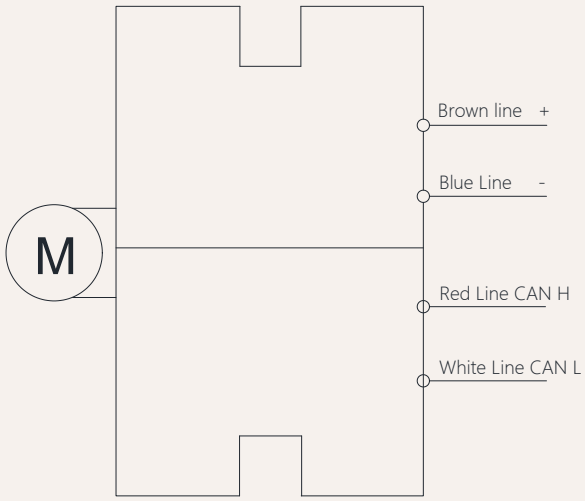
1】When the push rod is extended: Red and white leads indicate the push rod is extended.

2】When the push rod is retracted: Yellow and white leads indicate the push rod is retracted.

Signal feedback CAN bus

CANCommunication motor circuit diagram

Code：CN



Wiring Instructions:

1】Brown lead: positive pole of motor +
2】Blue lead: negative pole of motor -
3】Red lead: CAN H
5】White lead: CAN L

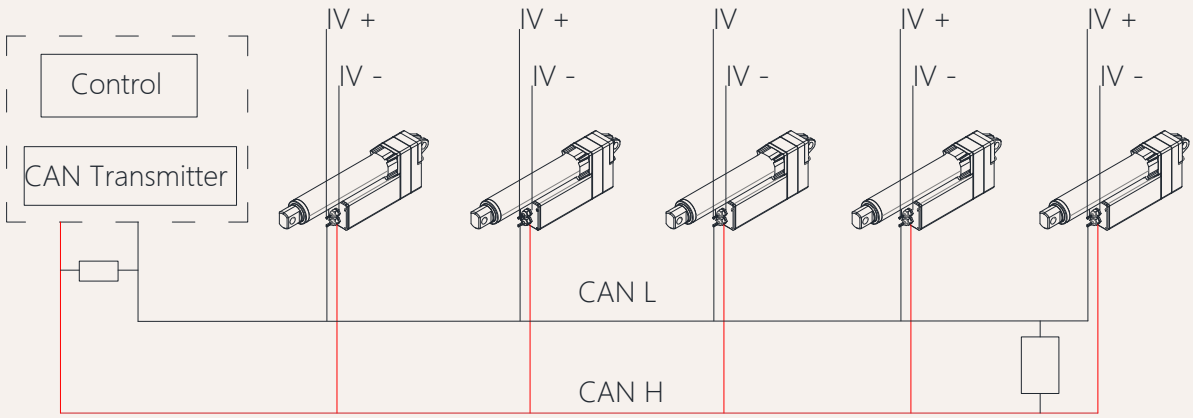
Note:

1. The brown\blue power cord cannot be reversed, otherwise the driver may be burned.
2. With CAN bus, excluding terminal resistor: compliant with J1939
3. Speed: Baud rate: 500kbps

Communication wiring: shielded twisted pair

Cable impedance: 120Ω (+10%)

CAN Control instructions



TF75 Model Description Selection Code Table

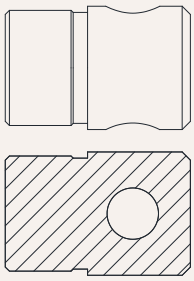
TF75	-	48	A	***	***	-	O1	O1	0	1	T	A	N	07
①		②	③	④	⑤		⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬

①	Product number	TF75L=L-type fold-back type		TF75I =I-type direct connection	
②	Voltage	48=48V DC	22=220V AC	38=380V AC	
③	Load(n)@Speed (mm/s)	See page 06			
④	Stroke(mm)	See page 06			
⑤	Installation size(mm)	Note: Before selecting a size, please refer to the valid data sheet! See page 05			
⑥	Upper type See page 13	O1 = Ordinary type, hole diameter 20.5mm		O2 = Ordinary type, hole diameter 25.5mm	
		U1 = groove width 15.5mm, hole diameter 20.5mm		U2 = Groove width 1.5mm, hole diameter25.5mm	
		M1 = Type M, M25 thread, depth 20 mm		M2 = Type M, M30 thread, depth 20 mm	
		T1 = T-type, M25 thread, length 20mm		T2 = T-type, M30 thread, length 20mm	
		L1 = L shape, width 25mm, aperture 20.5mm		L2 = L shape, width 30mm, aperture 25.5mm	
		G1 = Spherical bearing, bore 20mm, model GS20		G2 = Spherical bearing, bore 25mm, model GS25	
⑦	lower type See page 14	O1 = Ordinary type, hole diameter 20.5mm		O2= Ordinary type, hole diameter 22.5mm	
		P1 = Flat surface mounting		KZ = Customized	
⑧	Installation angle (counterclockwise)	0 =0°, Degree		9 =90°, Degree	
⑨	Motor options	H = Standard Huichuan brand		X = Customer self-configuration	
⑩	Lead screw options	G=Ball screw (default preferred)		T = Trapezoidal screw	
⑪	Control method	C = CAN bus	Y = CAT bus	N= 485 communication	T = Synchronous control
		D = Customized			
⑫	Signal output options	N = None	H = NPN normally open	D = NPN normally closed	U= PNP normally open
		W=PNP normally closed			
⑬	Cable length	07 =Cable length 0.7 M	10 = Cable length 1.0 M	15 =Cable length 1.5 M	20= Cable length 2.0 M
		30 =Cable length 3.0 M	40 =Cable length 4.0M	50 =Cable length 5.0 M	60= Cable length 6.0M
		70 =Cable length 7.0 M	70 =Cable length 8.0 M	90 =Cable length 9.0 M	00 =Customization

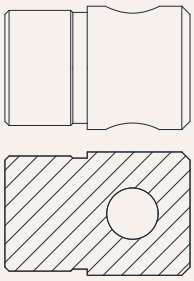
TF75 Attachment Description Selection Code Table

Upper rod head component (extended):

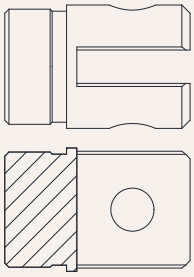
O1=Ordinary type, hole diameter 20.5mm



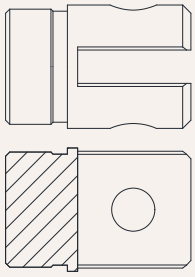
O2=Ordinary type, hole diameter 25.5mm



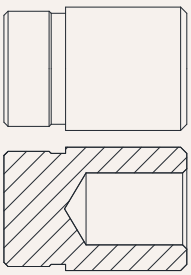
U1 = groove width 19.5mm, hole diameter 20.5mm



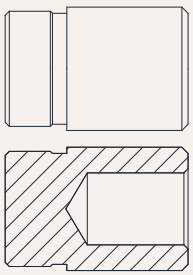
U2 = groove width 19.5mm, hole diameter 25.5mm



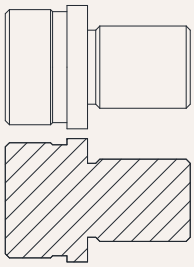
M1 = Type M, M30 thread, depth 20 mm



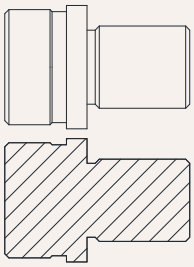
M2 = Type M, M35 thread, depth 20 mm



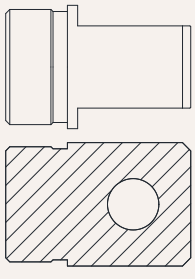
T1 = T-type, M30 thread, length 20mm



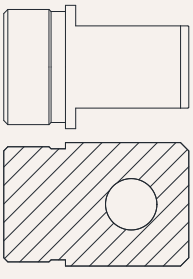
T2 = T-type, M35 thread, length 20mm



L1 = L shape, width 40mm, aperture 20.5mm



L2 =L shape, width 40mm, aperture 25.5mm



G1 = Spherical bearing, bore 20mm, model GS20

G1 = Spherical bearing, bore 30mm, model GS30

KZ = Customized

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TF75

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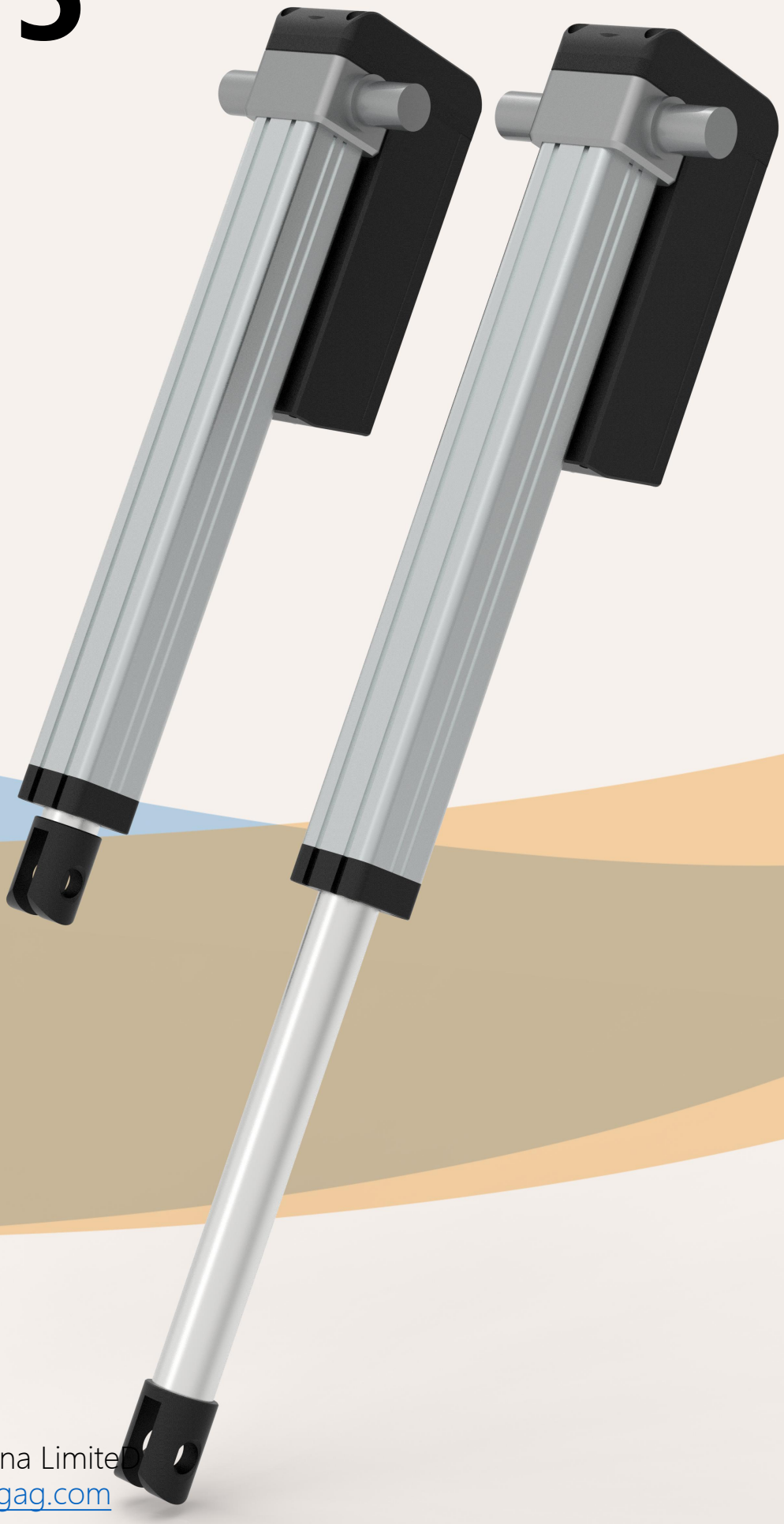

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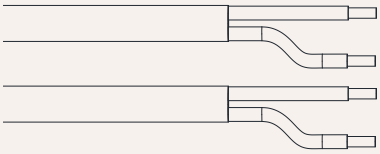
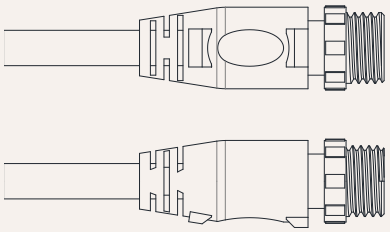
Power Cord Plug Type Code Table

1 = Dare wire



8 = Waterproof plug



0 = Customized

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