



Max Jac[®] Electric Linear Actuators

Heavy Duty IP69K Actuator for the Toughest Conditions

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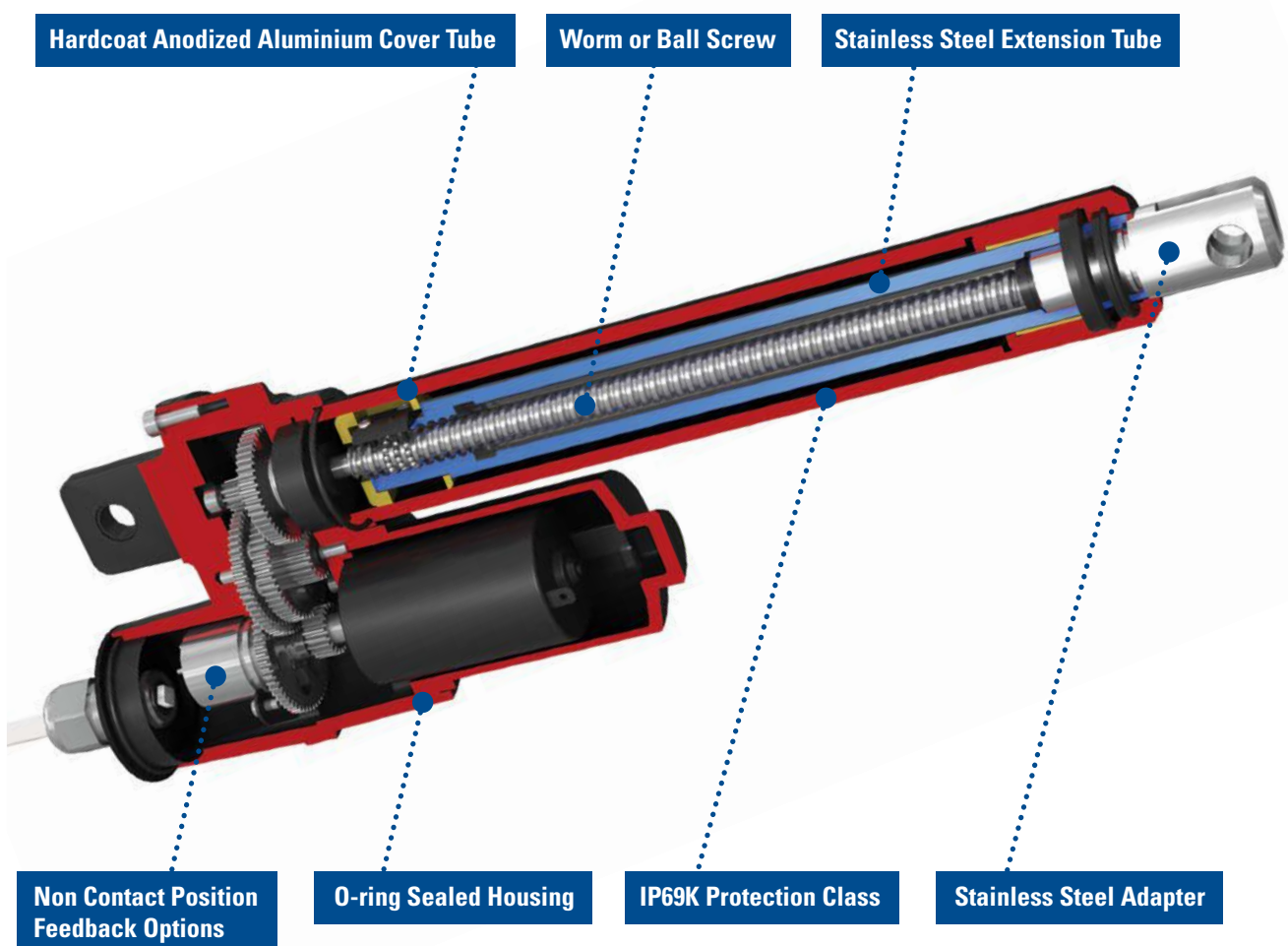
Introduction

The new Thomson Max Jac® linear actuator is the result of decades of extensive success in making linear actuators for the mobile-off-highway market. The Max Jac is built to work virtually maintenance-free in environments where it encounters fertilizers, mud, sand, high pressure water jets, slush, salt water, snow, heat or heavy vibrations.

The Max Jac is not only tough but also a high performer that delivers high speed, efficiency, and accuracy in a compact envelope. Like all Thomson linear actuators, the Max Jac can easily be customized to match your application's requirements.

Tough, Tougher, Max Jac® ...

State of the art technology and the best materials available make the Max Jac strong and reliable within a lightweight package. The Max Jac has undergone rigorous testing throughout the entire development process to ensure that it will deliver trouble free operation, long life, and outstanding performance in demanding environments.



Max Jac Main Features

- Long life
- Reliability
- High speed
- High efficiency
- Small envelope
- Minimal backlash
- Vibration resistant
- Duty cycle up to 100%
- Short total length versus stroke
- High degree corrosion protection
- High accuracy position feedback options

Features and Benefits

The Max Jac® can be used in many types of applications, but it excels when used under the harshest conditions. Every aspect of the actuator has been designed to ensure longevity, reliability, and performance.



Let the Max Jac Work in Dust, Dirt, and Mud...

The Max Jac electric linear actuator is designed to endure the harshest environments. It is rated for IP66/IP69K and has been tested for 500 hours of salt spray. It withstands dirt, dust and water, and also aggressive substances such as fertilizers, acid, oil, grease, and cleaning agents.



... in Arctic to Desert Temperatures ...

The operating temperature range of the Max Jac stretches from -40 to +85 °C which is the greatest range of any actuator on the market. It can operate in almost any place on the Earth whether it be in the arctic region or in a desert.



... and Just Wash it Off!

Unlike most actuators the Max Jac can be washed directly with high pressure water jets and even be submerged for short periods when not operating. This eliminates the need for bellows or other protective devices. The Max Jac simplifies cleaning and installation, reduces the size of the installation, and lowers the total cost.

Features, Benefits and Applications

Best In Class

The Max Jac® is the best overall choice among actuators when designing for demanding applications. It offers the following advantages.

- Shortest overall length versus stroke
- Fastest among its peers
- Resistant against vibration and impacts
- Largest operating temperature range
- Possibility to work at 100% duty cycle
- Long and completely maintenance free life.

Non Contact Position Feedback Options

The Max Jac can be equipped with two kinds of position feedback options that fit in to the standard housing without adding to the outer dimensions:

- analog position output signal
- digital encoder output.

Both use non contact position sensors which ensure that the life of the position feedback device is at least as long as the life of the actuator itself. It also means that the signal does not vary over time due to wear and the system therefore never requires any re-calibration.

Worm or Ball Screw Models

Max Jac is available with either worm or ball screws, each with unique advantages. The worm screw version is self-locking and will not back drive on power-off. The ball screw version will go faster, take higher loads and operate at higher duty cycles.

Suitable for Pneumatic Conversion

Compared to pneumatic cylinders, electric linear actuators:

- Easier to install
- Offer more control options
- Reduce energy costs.

The Max Jac has many properties that make it suitable for pneumatic conversion. It is:

- Fast
- Small

- Long life
- High duty cycle
- Able to withstand harsh environments.

Typical applications where the Max Jac can replace pneumatic cylinders are found in the food, packaging and handling industries and in all types of vehicles, construction and farming equipment.

Applications

The Max Jac® is the ideal choice whenever the environment is tough and wherever long life and trouble free operation is essential. The Max Jac is specifically designed to be used in applications that need:

- High duty cycles
- Accuracy
- Ability to withstand water
- Ability to withstand aggressive chemicals.

The Max Jac can be used to control sand/salt/fertilizer spreaders, hatches, doors and throttles and is ideal in vehicles used for:

- Farming equipment
- Road maintenance
- Construction work
- Military

The Max Jac linear actuator is also an excellent choice for yacht, ship and oil platform applications due it's ability to withstand water, salt and chemicals as well as its great operating temperature range. Other suitable application areas includes:

- Food industry
- Trains and trams
- Mining equipment

Specifications



Standard Features and Benefits

- Designed for industrial applications
- Rugged aluminum housing with IP69K
- High efficiency
- Long life
- Hard coat anodizing for high corrosion resistance
- Virtually maintenance free
- Worm or ball screw models
- Non contact analog position feedback signal

General Specifications

Parameter	Max Jac
Screw type	worm or ball
Internally restrained	no
Manual override	no
Dynamic braking	no
Self locking	
worm screw models	yes
ball screw models	no
End of stroke protection	no
Mid stroke protection	no
Motor protection	no
Motor connection	flying leads or cable with connector
Motor connector	AMP Superseal Series 1,5
Certificates	CE
Options	Encoder position feedback

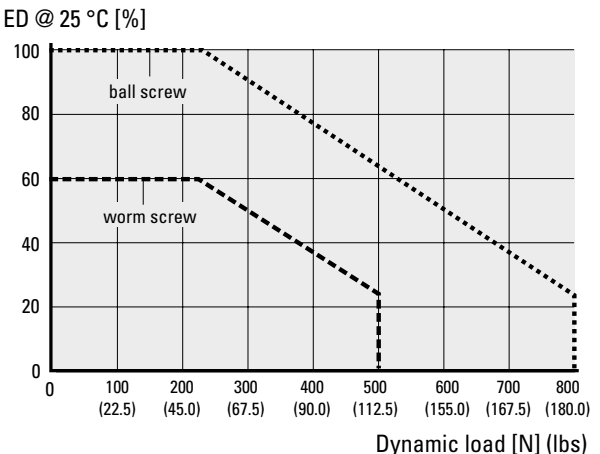
Performance Specifications	
Parameter	Max Jac
Maximum load, dynamic / static [N]	
MX •• W (worm screw)	500 / 2000
MX •• B (ball screw)	800 / 100 - 350 ⁽¹⁾
Speed, at no load / at maximum load [mm/s]	
MX •• W (worm screw)	33 / 19
MX •• B (ball screw)	60 / 30
Available input voltages [VDC]	12, 24
Standard stroke lengths [mm]	50, 100, 150 200, 250 ⁽²⁾ , 300 ⁽²⁾
Operating temperature limits [°C]	-40 to +85
Full load duty cycle @ 25 °C [%]	25
End play, maximum [mm]	0,3
Restraining torque [Nm]	2
Lead cross section [mm ²]	1
Standard cable lengths [mm]	300, 1600
Protection class	IP66/IP69K
Salt spray resistance [h]	500
Life [cycles]	500000 ⁽³⁾
Analog position feedback signal [VDC]	0,5 - 4,5
Encoder position feedback option	
Supply voltage [VDC]	5
Pulses per mm, worm / ball screw	9,86 / 5,84
Channels	A, B

⁽¹⁾ The static force (i.e. the backdriving force) for a ball screw unit varies and is dependant on the number of cycles it have been running and at wich loads.

⁽²⁾ Strokes possible for ball screw models only.

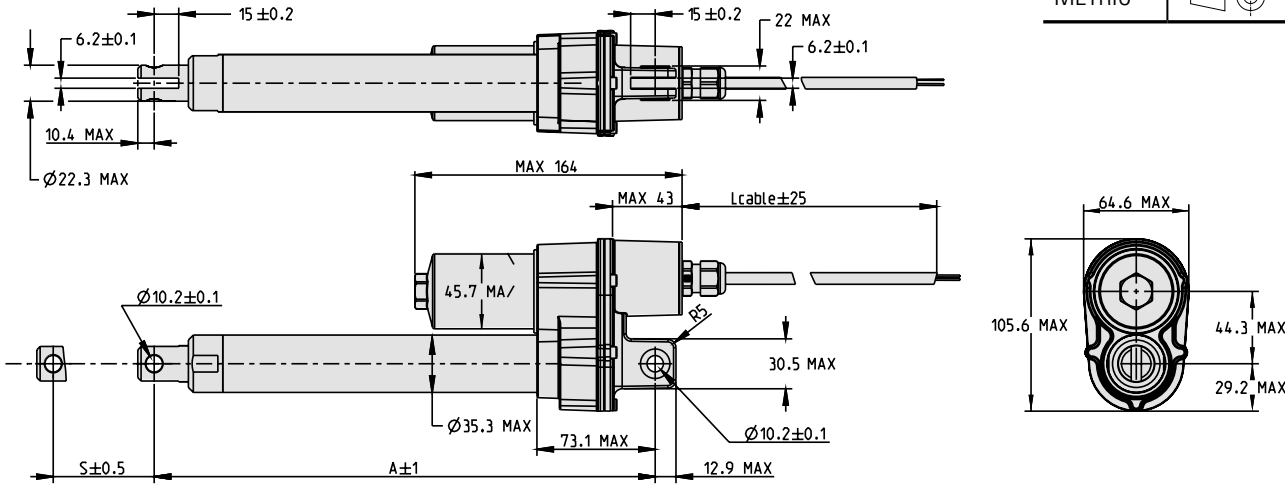
⁽³⁾ For ball screw actuator with 100 mm stroke, average load of 500 N and changing load direction.

Duty Cycle vs. Load



Dimensions, Performance and Ordering Key

Dimensions	Projection
METRIC	

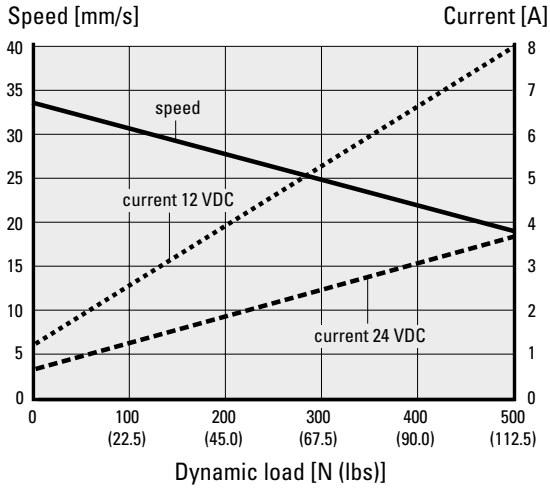


Stroke (S)	[mm (inch)]	50 (1.97)	100 (3.94)	150 (5.91)	200 (7.87)	250 (9.84) *	300 (11.81) *
Retracted length (A)	[mm (inch)]	206 (8.11)	256 (10.08)	306 (12.05)	356 (14.02)	406 (15.98)	456 (17.95)
Weight	[kg]	1,5	1,7	1,9	2,1	2,2	2,4

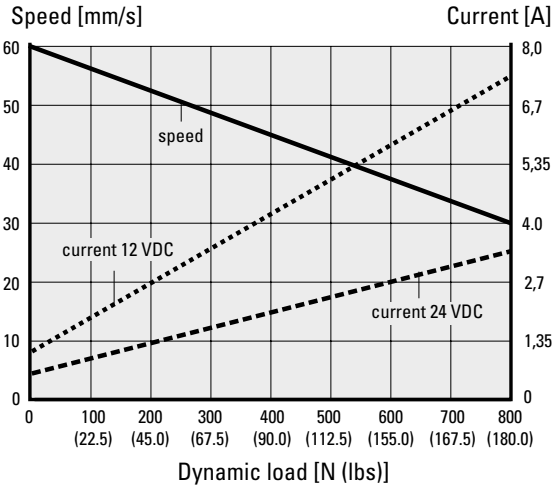
* Strokes possible for ball screw models only.

Performance Diagrams

Worm Screw Models (MX • • W)



Ball Screw Models (MX • • B)



Ordering Key

Position	1	2	3	4	5
Example	MX12-	B8	M15	P	1

- Actuator type and supply voltage
MX12- = Max Jac 12 VDC
MX24- = Max Jac 24 VDC
- Max. dynamic load, screw type and max. speed
B8 = 800 N, ball screw, 55 mm/s
W1 = 500 N, worm screw, 35 mm/s

- Stroke (S)
M05 = 50 mm
M10 = 100 mm
M15 = 150 mm
M20 = 200 mm
M25 = 250 mm*
M30 = 300 mm*

- Position feedback option
P = analog signal (standard)
E = encoder signal

- Cable and connectors
0 = 300 mm long flying leads
1 = 300 mm long cable and connector **
2 = 1600 mm long cable and connector **
** AMP Super seal series 1,5 connector

* Strokes possible for ball screw models only.

EUROPE

United Kingdom

Thomson
Phone: +44 (0) 1271 334 500
Fax: +44 (0) 1271 334 501
E-mail: sales.uk@thomsonlinear.com

Germany

Thomson
Nürtinger Straße 70
72649 Wolfschlugen
Phone: +49 (0) 7022 504 0
Fax: +49 (0) 7022 504 405
E-mail: sales.germany@thomsonlinear.com

France

Thomson
Phone: +33 (0) 243 50 03 30
Fax: +33 (0) 243 50 03 39
E-mail: sales.france@thomsonlinear.com

Italy

Thomson
Largo Brughetti
20030 Bovisio Masciago
Phone: +39 0362 594260
Fax: +39 0362 594263
E-mail: info@thomsonlinear.it

Spain

Thomson
Rbla Badal, 29-31 7th, 1st
08014 Barcelona
Phone: +34 (0) 9329 80278
Fax: + 34 (0) 9329 80278
E-mail: sales.esm@thomsonlinear.com

Sweden

Thomson
Estridsväg 10
29109 Kristianstad
Phone: +46 (0) 44 24 67 00
Fax: +46 (0) 44 24 40 85
E-mail: sales.scandinavia@thomsonlinear.com

SOUTH AMERICA

Thomson
Sao Paulo, SP Brasil
Phone: +55 11 3879 6600
Fax: +55 11 3879 6656
Email: sales.brasil@thomsonlinear.com

USA, CANADA and MEXICO

Thomson
203A West Rock Road
Radford, VA 24141, USA
Phone: 1-540-633-3549
Fax: 1-540-633-0294
E-mail: thomson@thomsonlinear.com
Literature: literature.thomsonlinear.com

ASIA

Asia Pacific

Thomson
750, Oasis, Chai Chee Road,
#03-20, Technopark @ Chai Chee,
Singapore 469000
E-mail: sales.hk@thomsonlinear.com

China

Thomson
Rm 2205, Scitech Tower
22 Jianguomen Wai Street
Beijing 100004
Phone: +86 400 6661 802
Fax: +86 10 6515 0263
E-mail: sales.china@thomsonlinear.com

India

Thomson India
1001, Sigma Building
Hiranandani Business Park
Powai, Mumbai – 400076
Phone: +91 22 422 70 300
Fax: +91 22 422 70 338
E-mail: sales.india@thomsonlinear.com

Japan

Thomson
Minami-Kaneden 2-12-23, Suita
Osaka 564-0044
Phone: +81-6-6386-8001
Fax: +81-6-6386-5022
E-mail: csinfo_dicgi@danaher.co.jp

Korea

Thomson
F12 Ilsong Bldg, 157-37
Samsung-dong, Kangnam-gu
Seoul (135-090)
Phone: +82 2 6917 5049
Fax: +82 2 6917 5007
E-mail: sales.korea@thomsonlinear.com

www.thomsonlinear.com

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