

## MTS Series Internally And Externally Guided Belt Driven Actuator

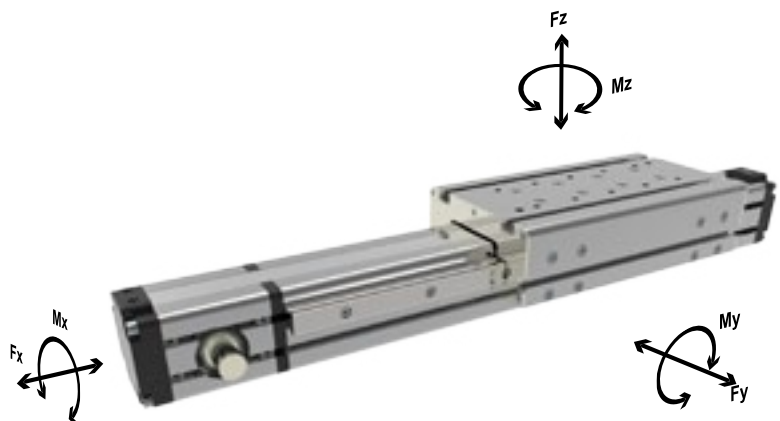
The MTS series actuator is Matarara's ultra high load belt drive. Whilst also using an internal rail system, this unit externally incorporates a rail and two carriages either side of the piston. If this actuator is required in a specialist environment, all of the rails and carriages can be supplied with corrosion resistant Armoloy coating. These units, with their high degree of rigidity and accuracy, are particularly useful in X Y Z axis systems.

Technical Data				
Size			55x55	80x80
Max. speed	m/s		3	3
Max. stroke length	mm		6700	6700
Min. stroke length	mm		100	100
Pulley drive ratio	mm		120	160
Number of teeth of pulley			24	32
Tooth belt with Steel Reinforced Polyurethane ATL 5 profile clearance 0, width 16 mm	mm		16	25
Max rpm	rpm		1500	1000
Base weight	Kg		4.8	8.8
Add for 100 mm of stroke	Kg		0.37	1.1
Max. load*	Fx	N	820	1950
	Fy	N	10800	20200
	Fz	N	10800	20200
Moments*	Mx	Nm	395	620
	My	Nm	480	730
	Mz	Nm	480	730
Inertia moment Aluminium profile	Ix	cm <sup>4</sup>	36	183
Inertia moment Aluminium profile	Iy	cm <sup>4</sup>	45	226
Repeatability	mm		± 0.05	± 0.05
Max. radial load on input shaft	N		300	300
No load torque	Nm		>0.5	>0.7

\* Max values for dynamic conditions.  
Please refer to the following formula when combined loads are applied.

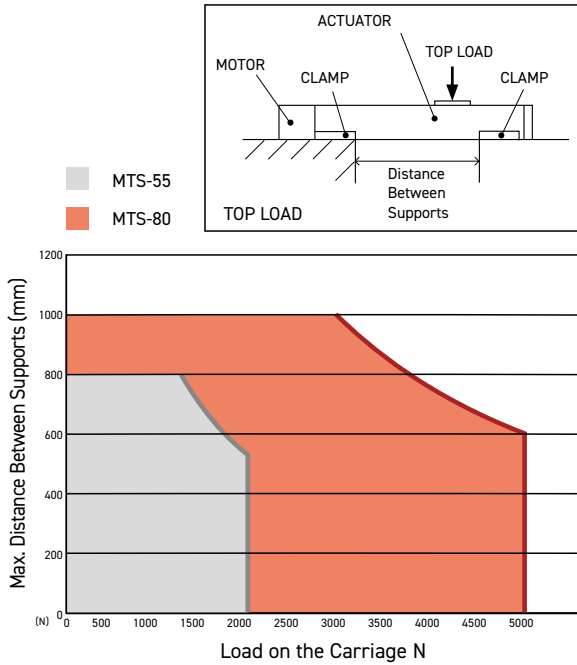
$$\frac{F_{yA}}{F_y} + \frac{F_{zA}}{F_z} + \frac{M_{xA}}{M_x} + \frac{M_{yA}}{M_y} + \frac{M_{zA}}{M_z} \leq 1$$

The A letters show the calculated value.

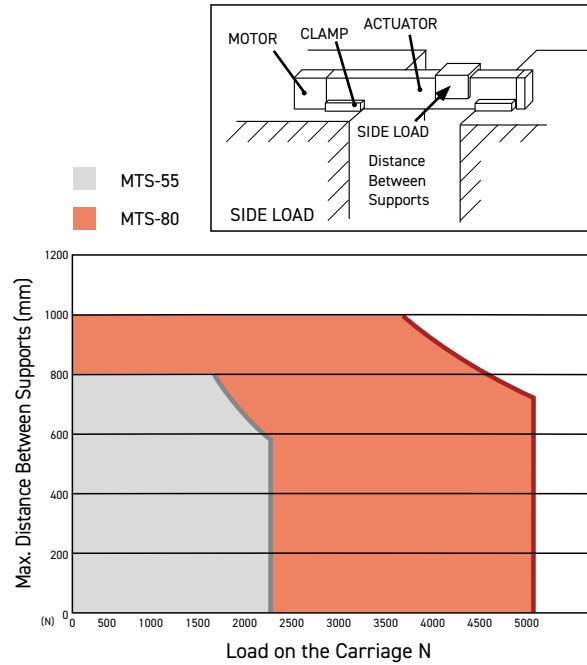


# Deflection of Linear Unit

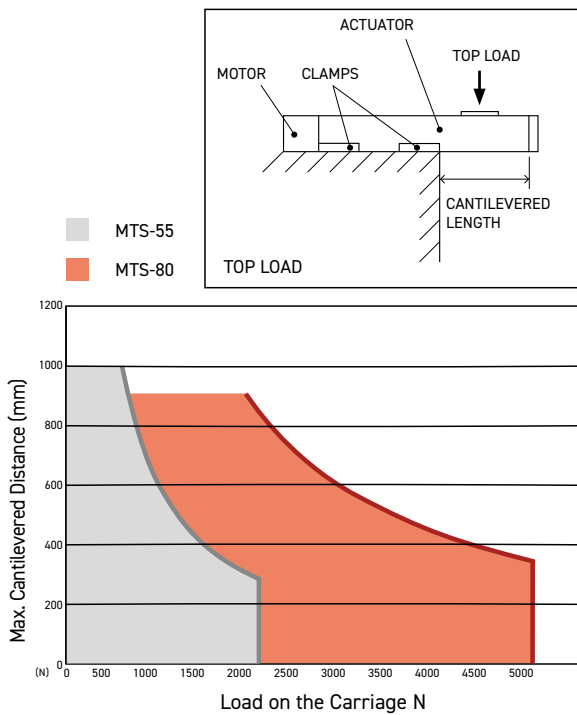
End supported top load



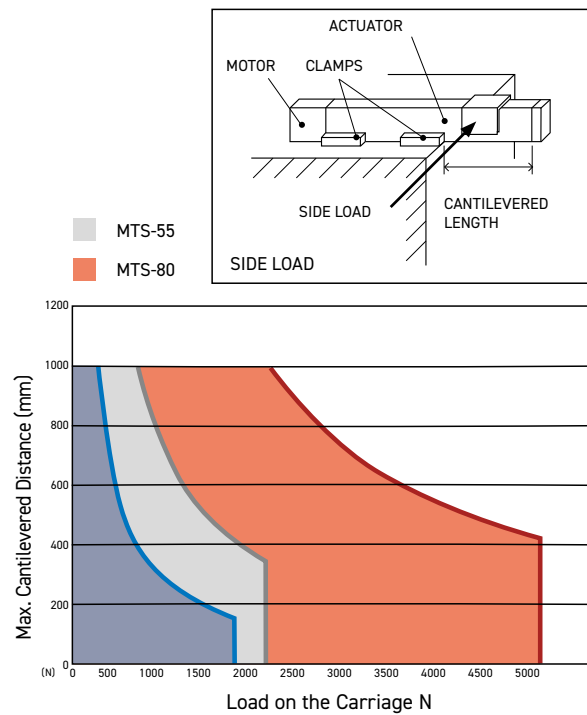
End supported side load



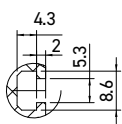
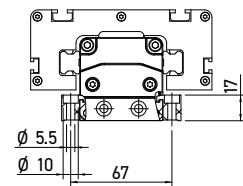
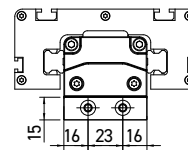
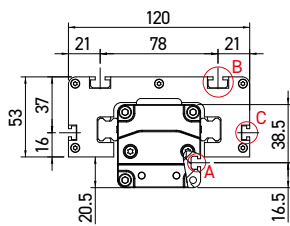
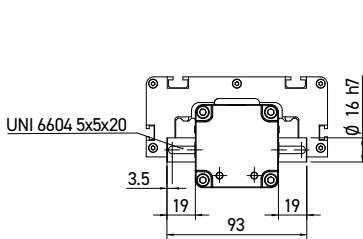
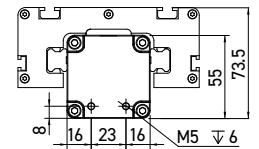
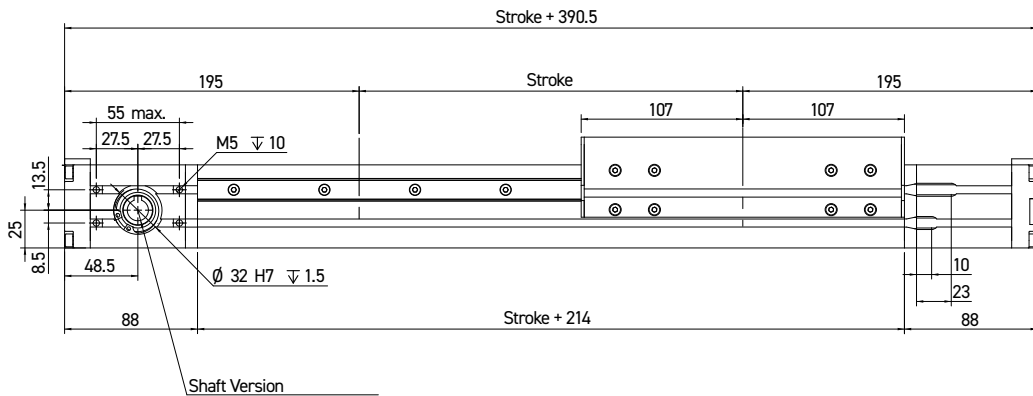
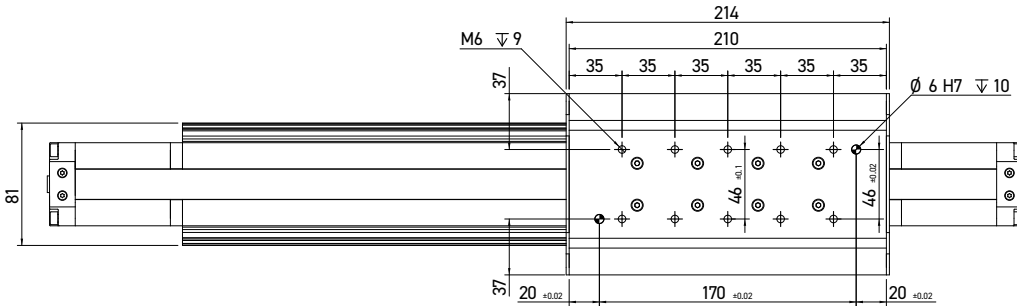
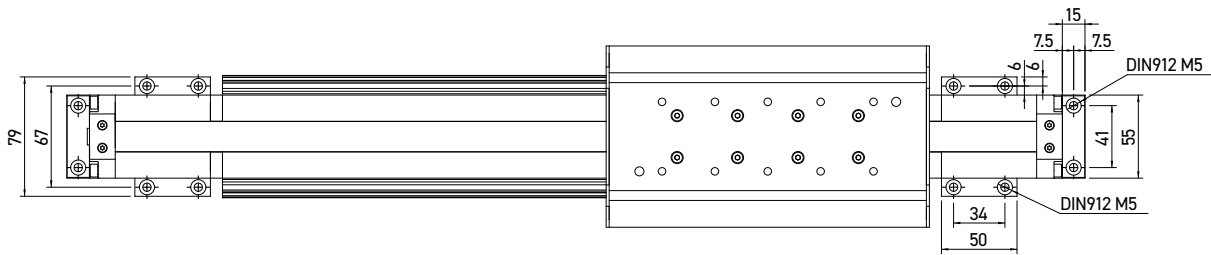
Cantilevered top load



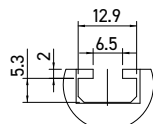
Cantilevered side load



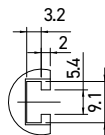
## MTS55 Series Dimensions



View A



View B



View C



Female mount F4



Left mount M6L

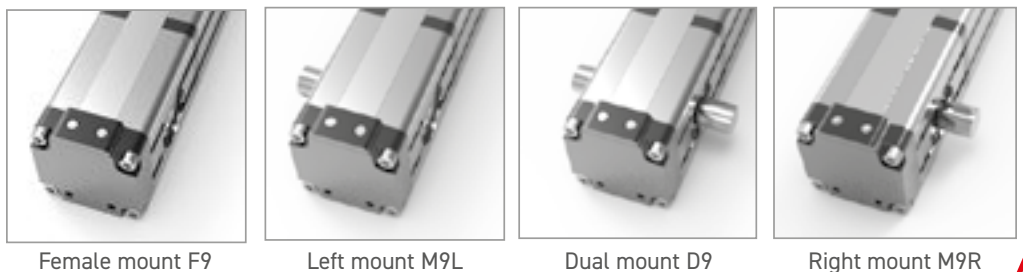
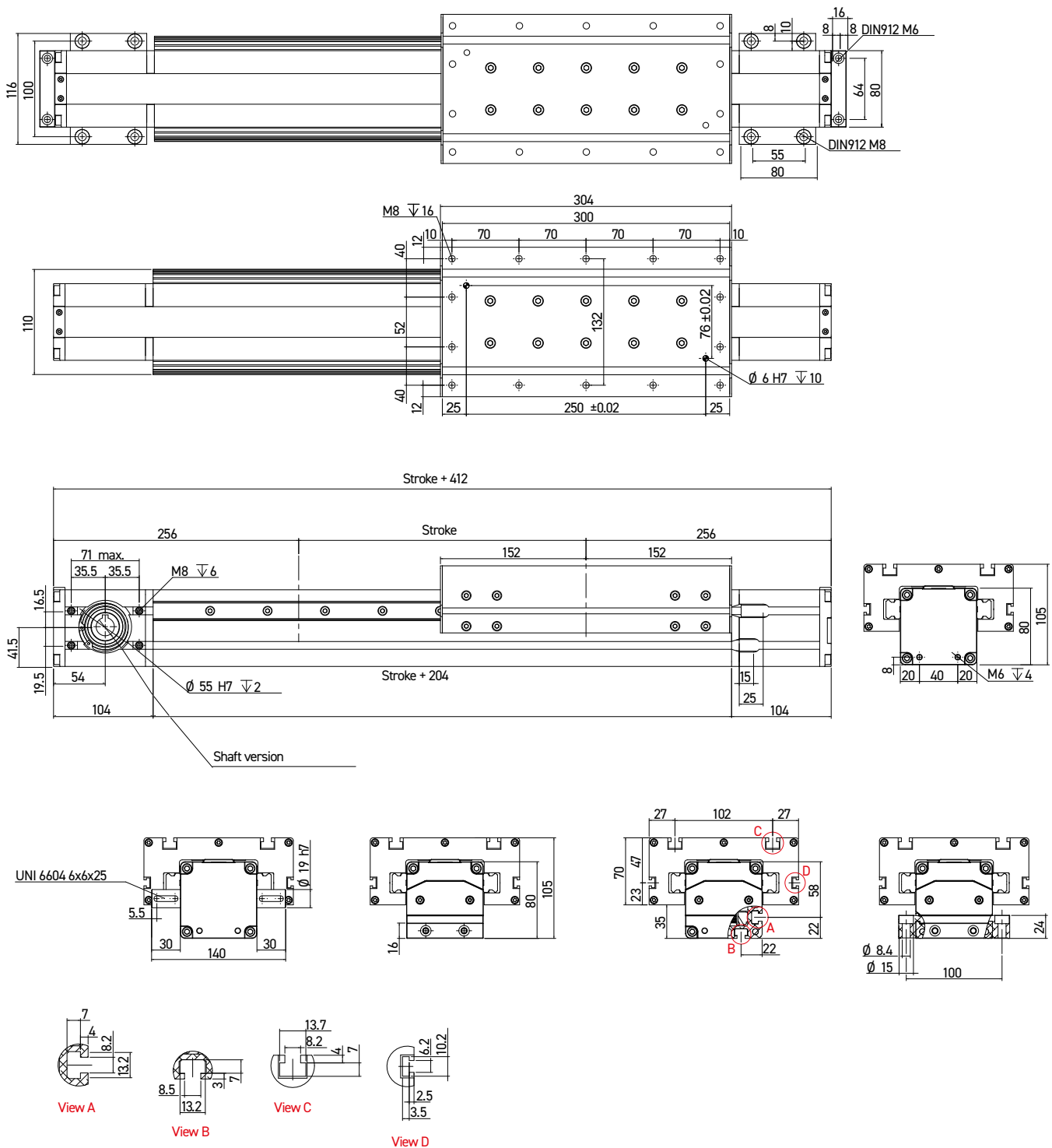


Dual mount D6



Right mount M6R

# MTS80 Series Dimensions



Female mount F9

Left mount M9L

Dual mount D9

Right mount M9R

## MTS Series Order Example

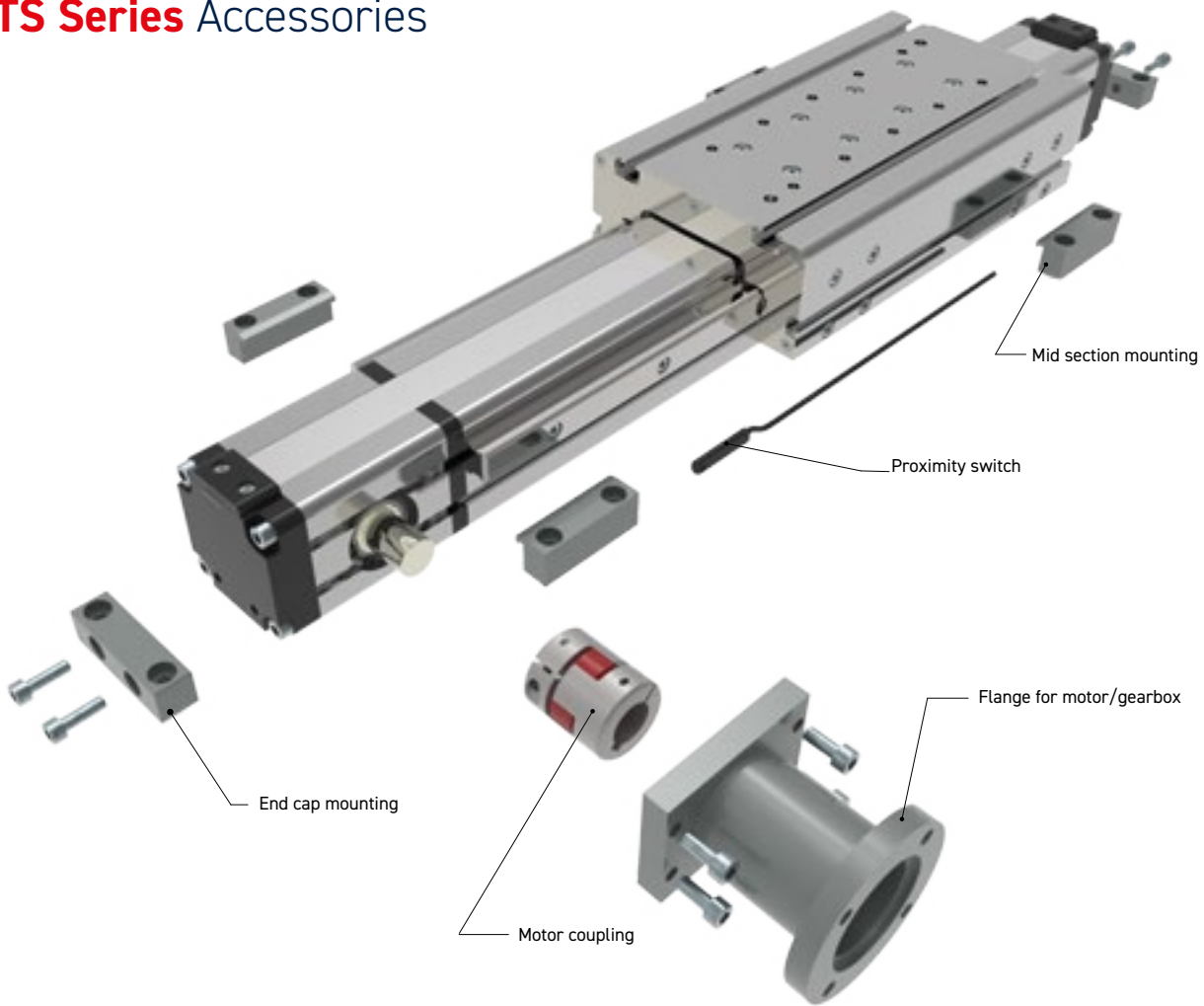
Code: **MTS** **55** - **2100** - **F2**  
Options: 1 2 3 4

Options		Selection	
1	Series	MTS	
2	Size	55 (55x55)	80 (80x80)
3	Stroke	0-6700 mm	
4	Shaft Versions *	F2 F4 M6L M6R D6	F6 F9 M9L M9R D9

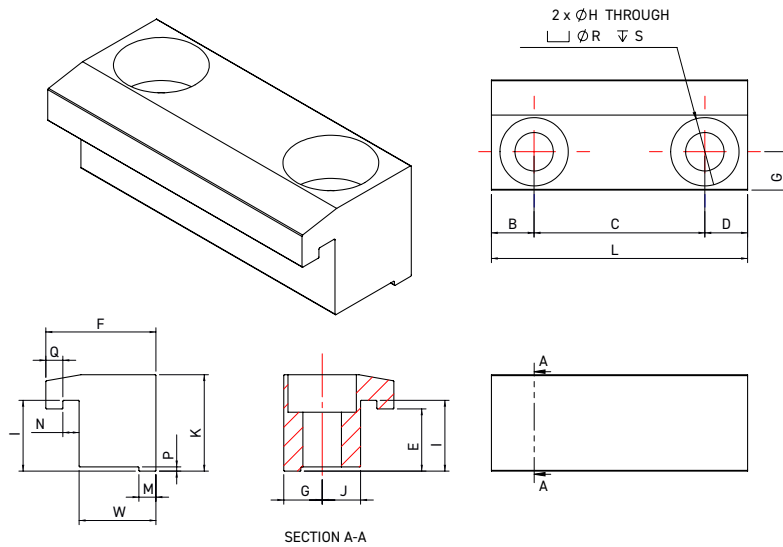
### \*Shaft Version Codes

F2	Female shaft Ø12 mm with keyshaft	M6L	Male shaft Ø16 mm mount left	D6	Double male shaft Ø16 mm
F4	Female shaft Ø14 mm with keyshaft	M9L	Male shaft Ø19 mm mount left	D9	Double male shaft Ø19 mm
F6	Female shaft Ø16 mm with keyshaft	M6R	Male shaft Ø16 mm mount right		
F9	Female shaft Ø19 mm with keyshaft	M9R	Male shaft Ø19 mm mount right		

# MTS Series Accessories

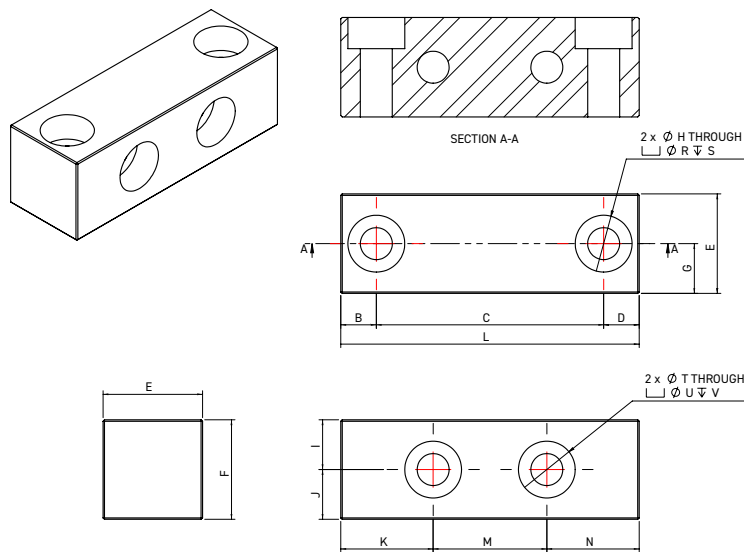


## Mid Section Mounting



Linear Unit	Dimensions (mm)															ØH	ØR	∇S	Code
	B	C	D	E	F	G	I	J	K	L	M	N	P	Q	W				
MTS 55	8	34	8	12.9	16	6	13.9	6	17	50	2	2.5	0.5	1.5	12	5.5	10	5.4	A1AA003L
MTS 80	12.5	55	12.5	16	26.5	8	17.9	10	24	80	2	4.5	0.5	4	18	8.4	15	8.6	A2AA003L

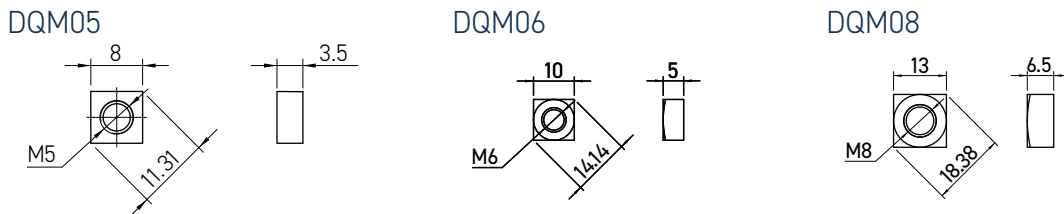
### End Cap Mounting



Linear Unit	Dimensions (mm)												ØH	ØR	↓S	ØT	ØU	↓V	Code
	B	C	D	E	F	G	I	J	K	L	M	N							
MTS 55	7	41	7	15	15	7.5	7	8	16	55	23	16	5.5	10	5	5.5	10	5	A1AA001L
MTS 80	8	64	8	16	16	8	8	8	20	65	40	20	6.6	11	6	6.6	11	6	A2AA001L

### Slot Nuts

#### Square Nuts

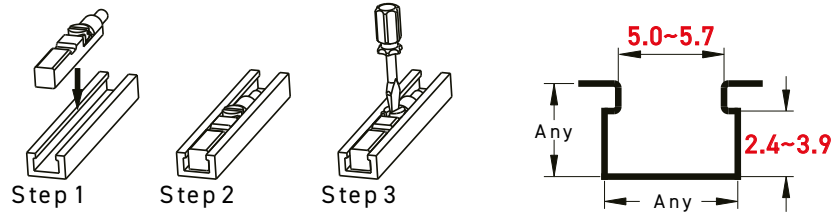


#### T Nuts



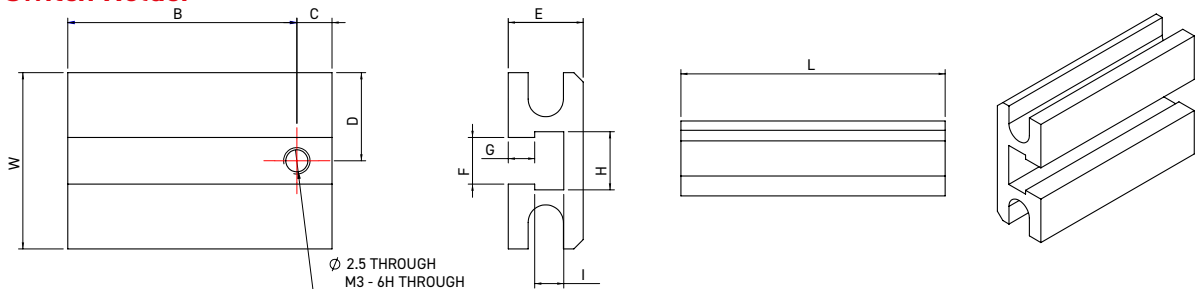
Code	Nut Type	MTS 55	MTS 80
DQM05	Square Nut - M5	X	
DQM06	Square Nut - M6		X
DQM08	Square Nut - M8		X
DTM05-M5	Slot Nut T - M5	X	
DTM06-M6	Slot Nut T - M6		X

**Magnetic Sensor**



Characteristic	AL39-R	AL39-S
Switching Logic	SPST Normally Open	Solid State Output, Normally Open
Sensor Type	Reed Switch	NPN/PNP Automatic Detection
Operating Voltage	5~240V DC/AC	5~30V DC
Switching Current	100 mA Max.	100 mA Max.
Switching Rating	10 W Max.	3 W Max.
Current Consumption	—	7.5 mA Max. @ 24V
Voltage Drop	2.5V Max. @ 100mA DC	1 V Max. @ 200 mA DC
Leakage Current	—	0.01 mA Max.
Indicator	Red LED	Red LED
Cable	2.9 , 2C, Grey Oil Resistat PUR	2.9 , 3C, Black Oil Resistat PUR
Sensitivity	35 ~ 45 Gauss	40 ~ 800 Gauss
Switching Frequency	200 Hz	5000 Hz
Temperature range	-10 ~ 70°C	-10 ~ 70°C
Shock	30 G	50 G
Vibration	9 G	9 G
Enclosure Classification	IP 65 (EN60529)	IP 65 (EN60529)
Protection Circuit	—	Power Reverse Polarity; Surge Suppression
CE Certificate NO.	E8N 11 0 4 53334 005	—
3C Certificate NO.	No. : 2 004010305127433	—
CNEx Certificate NO.	CNEx16.2333X(ExnCIIT6GC)	—
Connect Diagram		
	<p>AL-39R AL-39R-QD8 AL-39R-QD12 AL-39R-EZ2M</p>	<p>M8, M12, EZ QUICK CONNECT OR (IEC61076-2-101)</p> <p>2 wire QD wiring</p> <p>M83M </p> <p>M124M </p> <p>EZ2M </p> <p>3 wire QD wiring</p> <p>M83M </p> <p>M124M </p> <p>EZ3M </p>

**Sensor Switch Holder**



Linear Unit	Dimensions (mm)										Code
	B	C	D	E	F	G	H	I	L	W	
MTS 80	26	4	6.5	6.5	5.3	1.8	6.6	3.3	30	13	A9AA_AD80