MX Disc Brake Caliper Range

The Twiflex MX13, MX25, MX30 and MX40 series of disc brake calipers are suitable for use with discs of 12.7mm (0.50 in), 25.4mm (1 in), 30mm (1.18 in) and 40mm (1.37 in) thick respectively. The SMX caliper is only suitable for use with discs 12.7mm (0.50 in) thick. Minimum disc diameter is 300mm (11.81 in).

The MX/SMX calipers may be used with any of the Twiflex series of thrusters and feature a patented link mechanism to ensure uniform pad wear.

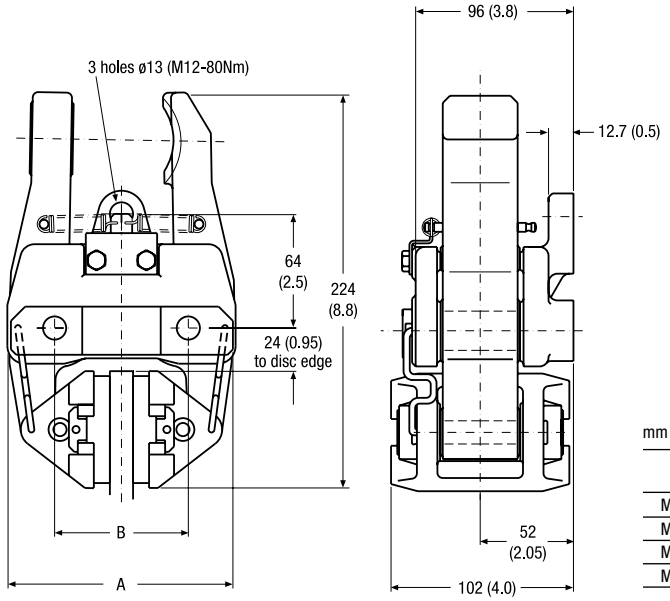
Normally one or two calipers are used per disc, but the number may be increased depending on disc size. The brakes may be positioned at any angle around the periphery of the disc, but should ideally be mounted horizontally (i.e. at the 3 o'clock or 9 o'clock position). If the caliper mounting angle is greater than 10° from the horizontal, or on vertical shaft applications, it should be fitted with an inclined mounting kit or equalising link. A range of brake discs is available from Twiflex (see Disc and Hub Assemblies).

For pneumatic operation use dry, filtered and non-lubricated compressed air. Pneumatic brakes require a control valve, operated either manually or by pneumatic or electrical signal.

The ratings shown on the graphs are based on fully bedded in and conditioned brake pads with a nominal friction coefficient μ = 0.4. Twiflex disc brakes must be used with Twiflex asbestos free brake pads.

Effective disc radius = actual radius (m) – 0.033m
(Effective disc radius = actual radius (ft) – 0.011 ft)

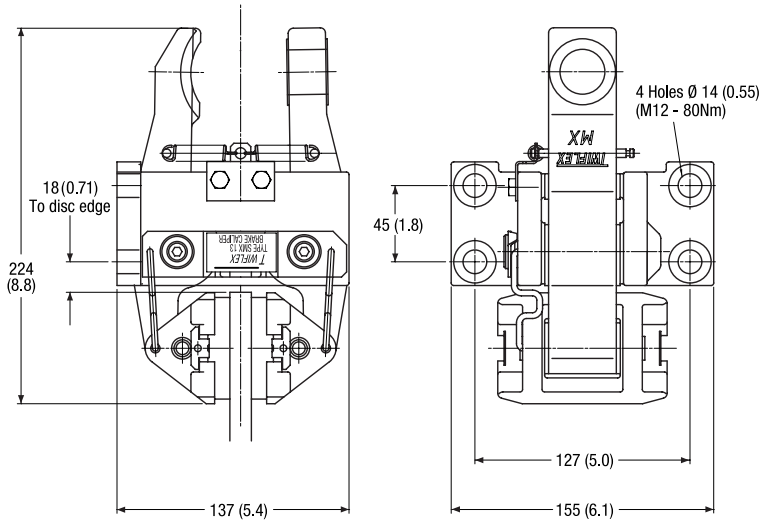
MX Disc Brake Caliper



mm (in)

	Disc Thickness	A	B
MX13	13 (0.50)	130 (5.12)	75 (2.95)
MX25	25 (1.00)	134 (5.28)	84 (3.31)
MX30	30 (1.18)	142 (5.59)	75 (2.95)
MX40	40 (1.37)	150 (5.91)	84 (3.31)

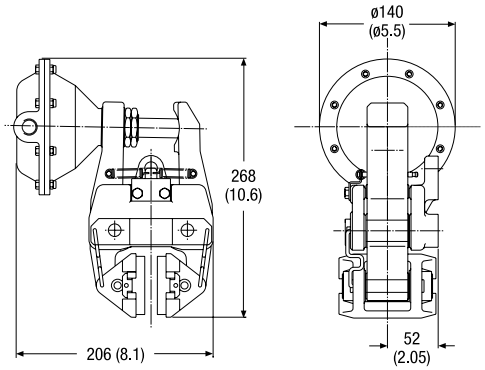
SMX Disc Brake Caliper

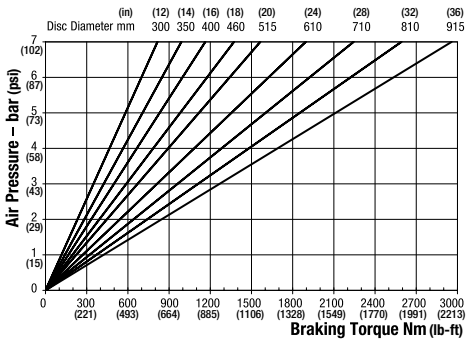


Retraction pressures where shown are calculated and may vary depending on spring tolerance.

MX Series

MXA Pneumatically Applied – Spring Released

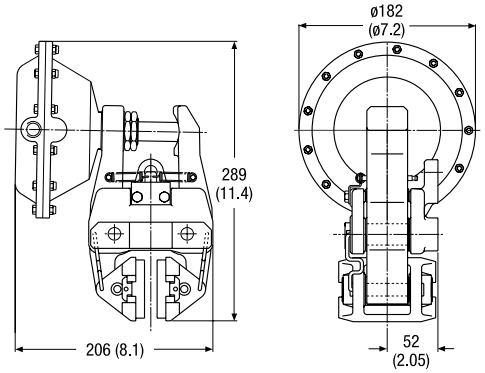


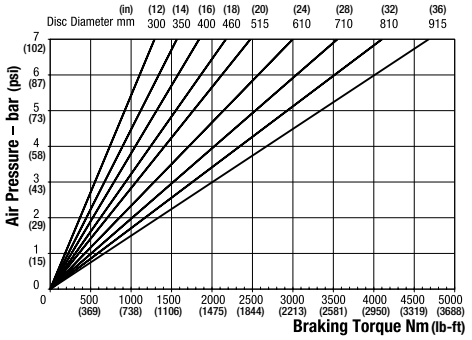


Maximum Pressure 7 bar (102 psi)
Maximum Braking Force = 6.9kN @ 7 bar (1551.18 lbf @ 102 psi)
Weight of caliper and thruster - 8.32kg (18.39 lb)

Weight of thruster only - 1.32kg (2.91 lb)
Volume displacement of thruster at full stroke = 300ml (10.14 fl oz)

MXB Pneumatically Applied – Spring Released

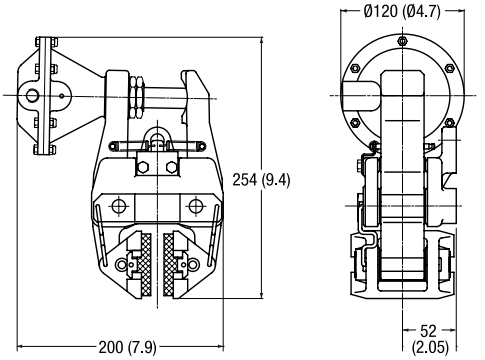


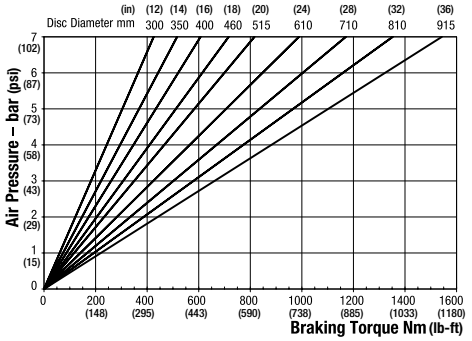


Maximum Pressure 7 bar (102 psi)
Maximum Braking Force = 11kN @ 7 bar (2472.89 @ 102 psi)
Weight of caliper and thruster - 9.06kg (19.97 lb)

Weight of thruster only - 2.06kg (4.54 lb)
Volume displacement of thruster at full stroke = 426ml (14.40 fl oz)

MXD Pneumatically Applied – Spring Released

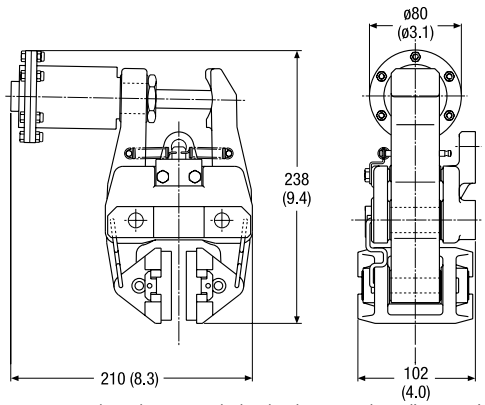


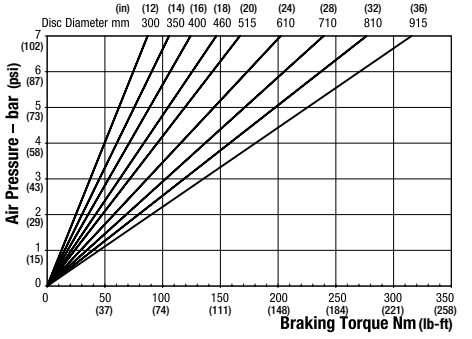


Maximum Pressure 7 bar (102 psi)
Maximum Braking Force = 3.6kN @ 7 bar (809.31 lb @ 102 psi)
Weight of caliper and thruster - 8.15kg (17.96 lb)

Weight thruster only - 1.15kg (2.53 lb)
Volume displacement of thruster at full stroke = 150ml (5.07 fl oz)

MXE Pneumatically Applied – Spring Released



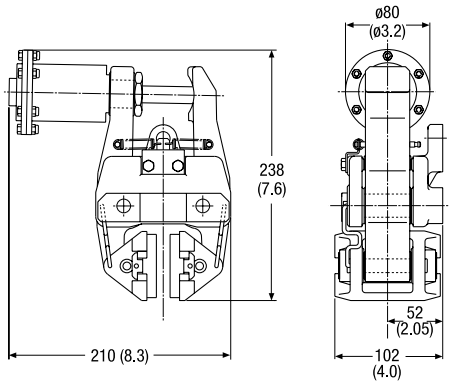


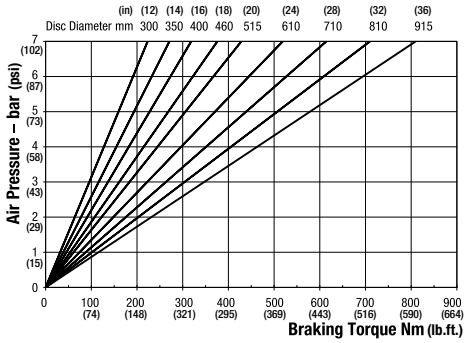
Maximum Pressure 7 bar (102 psi)
Maximum Braking Force = 0.74kN @ 7 bar (? @ 102 psi)
Weight of caliper and thruster - 7.34kg (16.18 lb)

Weight of thruster only - 0.34kg (0.74 lb)
Volume displacement of thruster at full stroke = 25ml (0.84 fl oz)

Retraction pressures where shown are calculated and may vary depending on spring tolerance.

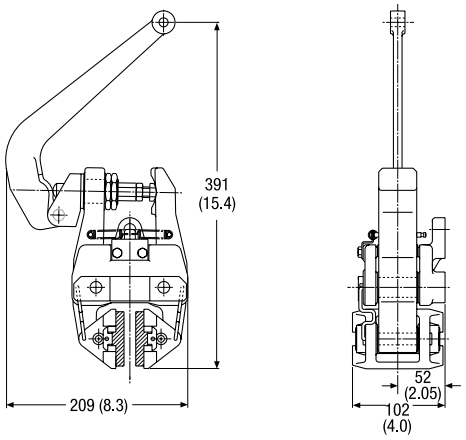
MXG Pneumatically Applied – Spring Released

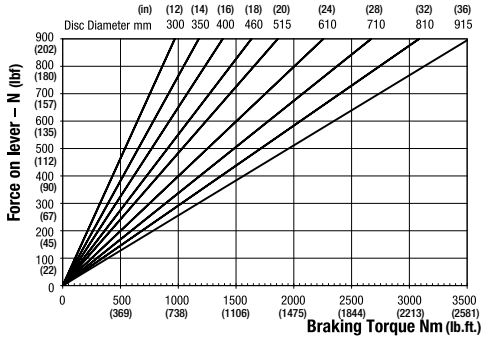




Maximum Pressure 7 bar (102 psi)
Maximum Braking Force = 1.9kN @ 7 bar (427.13 lbf @ 102 psi)
Weight of caliper and thruster - 7.3kg (16.09 lb)
Weight of thruster only - 0.3kg (0.66 lb)
Volume displacement of thruster at full stroke = 64ml (2.16 fl oz)

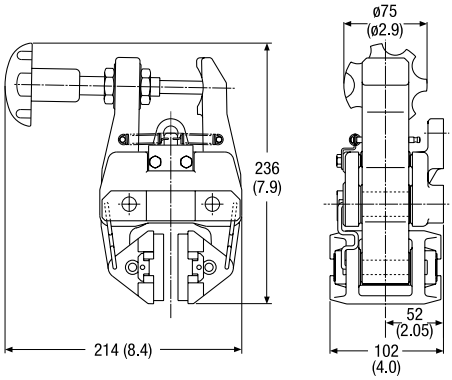
MXH Mechanically Applied – Lever Operated

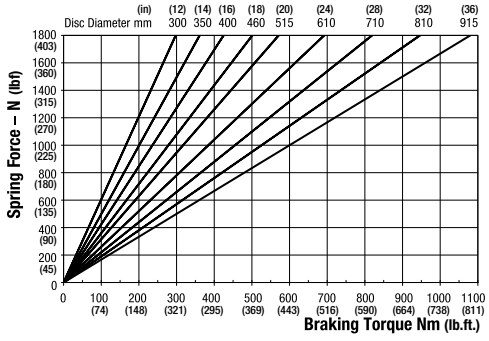




Weight of caliper and lever assembly - 8.4kg (18.51 lb)
Weight of lever assembly only - 1.4kg (3.08 lb)
Maximum Braking Force = 8.3kN @ 0.9kN force on lever (1865.91 @ 202.32 lbf force on lever)

MXW Mechanically Applied – Hand Operated



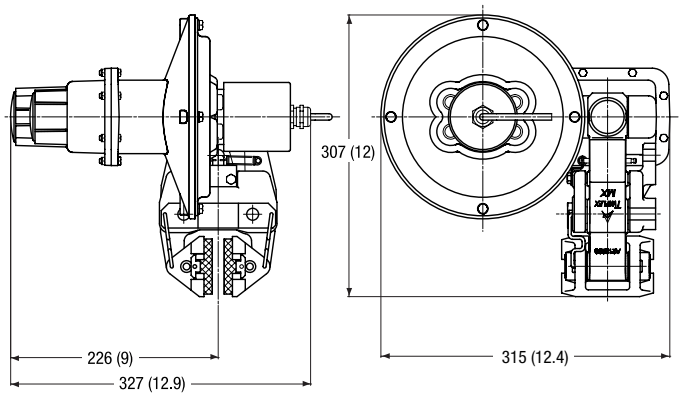


Weight of caliper and hand wheel assembly - 8.3kg (18.29 lb)
Weight of hand wheel assembly only - 1.3kg (2.86 lb)
Maximum Braking Force = 2.68kN (602.48 lbf)

Retraction pressures where shown are calculated and may vary depending on spring tolerance.

MX Series

MXEA Spring Applied – Electrically Released, Self Adjusting



Maximum Braking Force = 6kN (4425 ft lb)
Weight of caliper and actuator - 15.7kg (34.61 lb)

Weight actuator only - 8.7kg (19.18 lb)
Weight of controller - 5.5kg (12.13 lb)

The EA actuator is a spring applied, electrically released unit designed for use with the Twiflex MX range of disc brake calipers. A 175W pancake motor drives a ball screw mechanism, retracting the brake.

A feature of the unit is a patented self-adjusting mechanism which maintains a constant air gap (and consequently braking force) between pad and disc as the pads wear.

The assembly is contained in a rugged, cast aluminium housing, designed for service in the harshest environments, which mounts directly to one arm of the MX caliper.

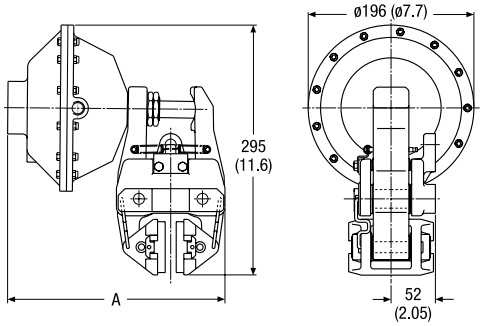
The MXEA is supplied complete with a solid state controller, suitable for all AC supply voltages, which converts the supply to the required DC output for the pancake motor. A 24VDC unit is also available. The brake is released when power to the controller is switched on, and applied when power is disconnected. Controlled application of the brake occurs, electrically damped by using the motor back E.M.F. and a damping resistor.

The controller is housed in a strong, steel, wall mounted enclosure (215mm x 215mm x 150mm deep) (8.46 in x 8.46 in x 5.90 in deep), protected to IP44 as standard (higher rating on request).

Braking force adjustable to 50% of maximum.

Retraction pressures where shown are calculated and may vary depending on spring tolerance.

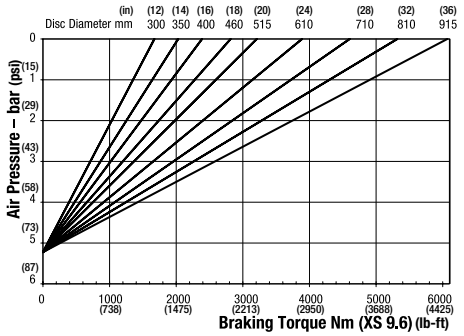
MXS Spring Applied – Pneumatically Released, Self Adjusting



(With new pads)

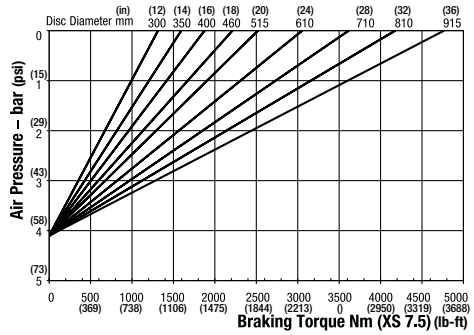
Caliper	A
MX13	269.5 (10.6)
MX25	276.0 (10.9)
MX30	275.5 (10.8)
MX40	284.0 (11.2)

For XS9.6 add 11mm (0.4)



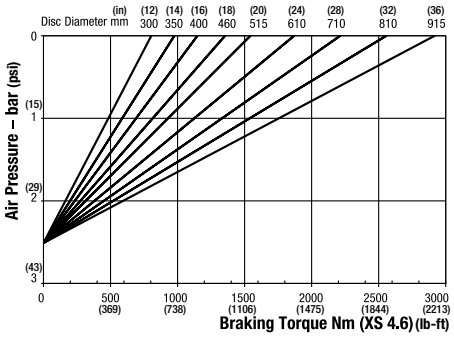
Minimum Pressure for full retraction: 6.4 bar (93 psi)
Maximum Braking Force XS 9.6: 14.3kN (3214.76 lbf)
Weight of caliper and thruster - 12.1kg (26.67 lb)

Weight of thruster only - 5.1kg (11.24 lb)
Volume displacement of thruster at full retraction = 1.19ml (0.06 fl oz)



Minimum Pressure for full retraction: 5.5 bar (80 psi)
Maximum Braking Force XS 7.5: 11.2kN (517.86 lbf)
Weight of caliper and thruster - 11.9kg (26.23 lb)

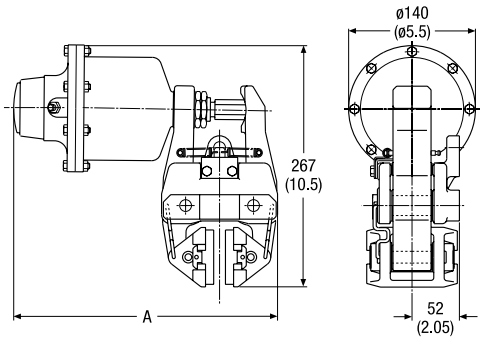
Weight of thruster only - 4.9kg (10.80 lb)
Volume displacement of thruster at full retraction = 1.19ml (0.06 fl oz)



Minimum Pressure for full retraction: 3.1 bar (45 psi)
Maximum Braking Force XS 4.6: 6.8kN (528.70 lbf)
Weight of caliper and thruster - 11.5kg (25.35 lb)

Weight of thruster only - 4.5kg (9.92 lb)
Volume displacement of thruster at full retraction = 1.19ml (0.06 fl oz)

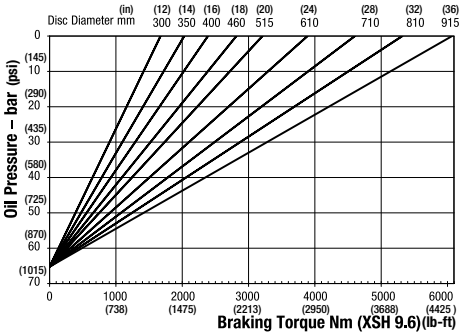
MXSH Spring Applied – Hydraulically Released, Self Adjusting



(With new pads)

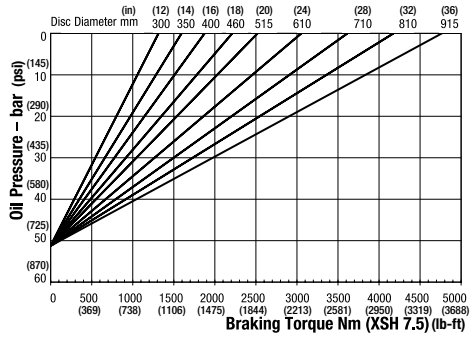
Caliper	A
MX13	295.5 (11.6)
MX25	302.0 (11.9)
MX30	301.5 (11.9)
MX40	310.0 (12.2)

For XSH9.6 add 25mm (1.0)



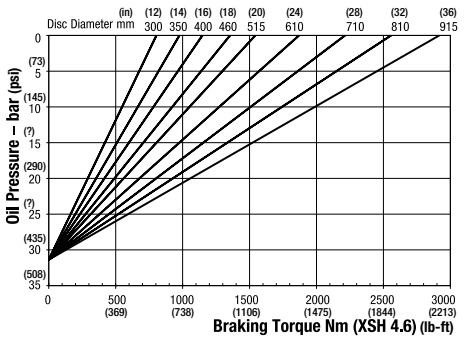
Minimum Pressure for full retraction: 82 bar (1189 psi)
Maximum Braking Force XSH 9.6: 14.3kN (3214.76 lbf)
Weight of caliper and thruster - 11.6kg (25.57 lb)

Weight of thruster only - 4.6kg (10.14 lb)
Volume displacement of thruster at 6mm (0.24 in) retraction = 9.1ml (0.30 fl oz)



Minimum Pressure for full retraction: 65 bar (943 psi)
Maximum Braking Force XSH 7.5: 11.2kN (2517.86 lbf)
Weight of caliper and thruster - 11.4kg (25.13 lb)

Weight of thruster only - 4.4kg 9.70 lb)
Volume displacement of thruster at 6mm (0.24 in) retraction = 9.1ml (0.30 fl oz)



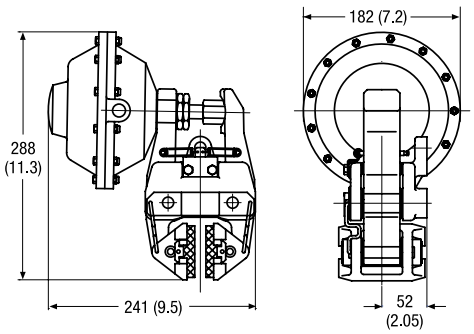
Minimum Pressure for full retraction: 40 bar (580 psi)
Maximum Braking Force XSH 4.6: 6.8kN (1528.70 lbf)
Weight of caliper and thruster - 11kg (24.25 lb)

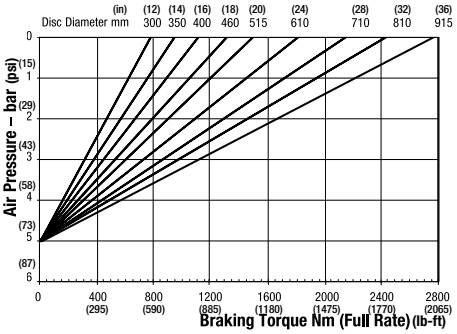
Weight of thruster only - 4kg (8.81 lb)
Volume displacement of thruster at 6mm (0.24 in) retraction = 9.1ml (0.30 fl oz)

Retraction pressures where shown are calculated and may vary depending on spring tolerance.

MX Series

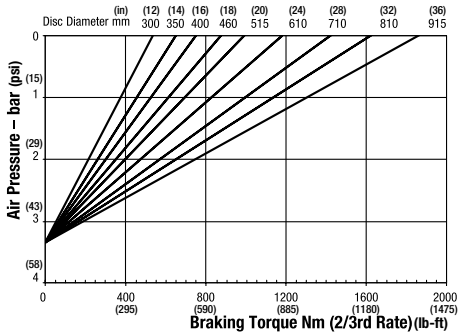
MXK Spring Applied – Pneumatically Released, Self Adjusting





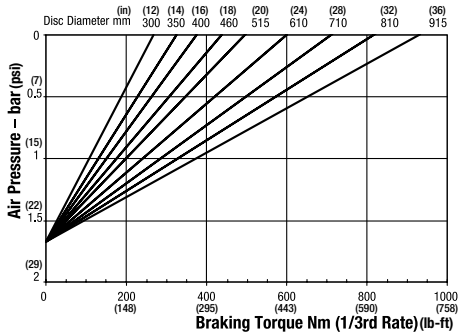
Minimum Pressure for full retraction: 5 bar (73 psi)
Maximum Braking Force full rate: 6.4kN (1438.77 lbf)
Weight of caliper and thruster - 10.5kg (23.14 lb)

Weight of thruster only - 3.5kg (7.71 lb)
Volume displacement of thruster at full retraction = 950ml (32.12 oz)



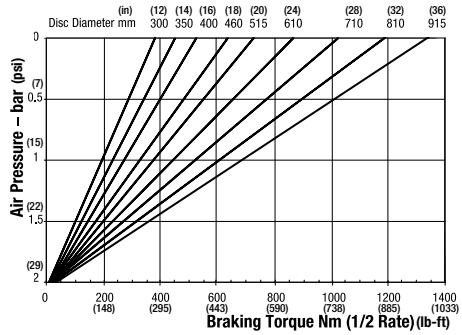
Minimum Pressure for full retraction: 3.3 bar (48 psi)
Maximum Braking Force 2/3 rate: 4.3kN (966.67 lbf)
Weight of caliper and thruster - 10.5kg (23.14 lb)

Weight of thruster only - 3.5kg (7.71 lb)
Volume displacement of thruster at full retraction = 950ml (32.12 fl oz)



Minimum Pressure for full retraction: 1.7 bar (25 psi)
Maximum Braking Force 1/3 rate: 2.2kN (497.57 lbf)
Weight of caliper and thruster - 10.5kg (28.14 lb)

Weight of thruster only - 3.5kg (7.71 lb)
Volume displacement of thruster at full retraction = 950ml (32.12 fl oz)

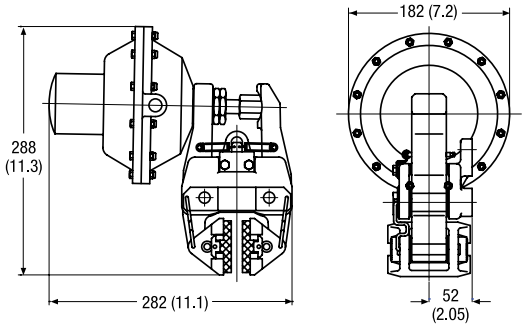


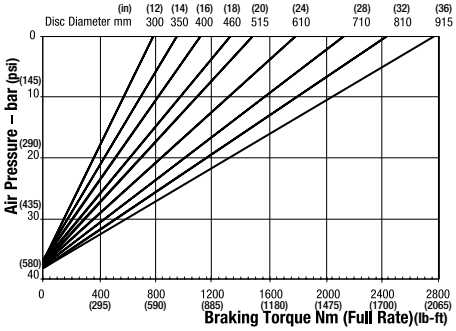
Minimum Pressure for full retraction: 2.5 bar (36 psi)
Maximum Braking Force 1/2 rate: 3.2kN (719.38 lbf)
Weight of caliper and thruster - 10.5kg (23.14 lb)

Weight of thruster only - 3.5kg (7.71 lb)
Volume displacement of thruster at full retraction = 950ml (32.12 fl oz)

Retraction pressures where shown are calculated and may vary depending on spring tolerance.

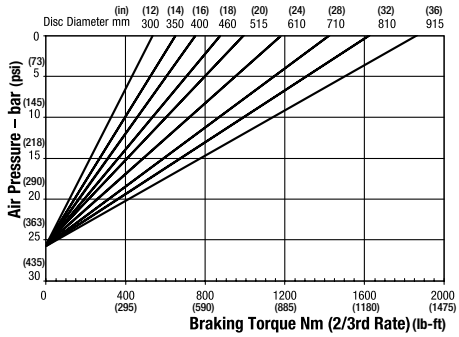
MXL Spring Applied – Hydraulically Released, Self Adjusting





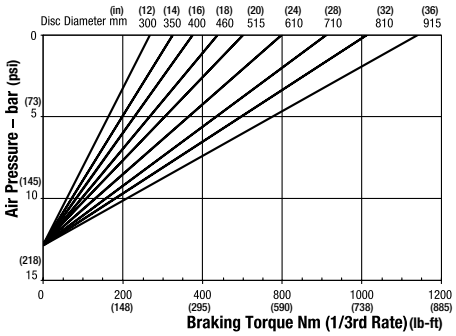
Minimum Pressure for full retraction: 50 bar (725 psi)
Maximum Braking Force full rate: 6.4kN (1438.77 lbf)
Weight of caliper and thruster - 11kg (24.25 lb)

Weight of thruster only - 4.0kg (8.81 lb)
Volume displacement of thruster at 4mm (0.16 in) retraction = 5ml (0.16 fl oz)



Minimum Pressure for full retraction: 33 bar (479 psi)
Maximum Braking Force 2/3 rate: 4.3kN (966.67 lbf)
Weight of caliper and thruster - 11kg (24.25 lb)

Weight of thruster only - 4.0kg (8.81 lb)
Volume displacement of thruster at 4mm (0.16 in) retraction = 5ml (0.16 fl oz)



Minimum Pressure for full retraction: 17 bar (247 psi)
Maximum Braking Force 1/3rd rate: 2.2kN (497.57 lbf)
Weight of caliper and thruster - 11kg (24.25 lb)

Weight of thruster only - 4.0kg (8.81 lb)
Volume displacement of thruster at 4mm (0.16 in) retraction = 5ml (0.16 fl oz)

Retraction pressures where shown are calculated and may vary depending on spring tolerance.