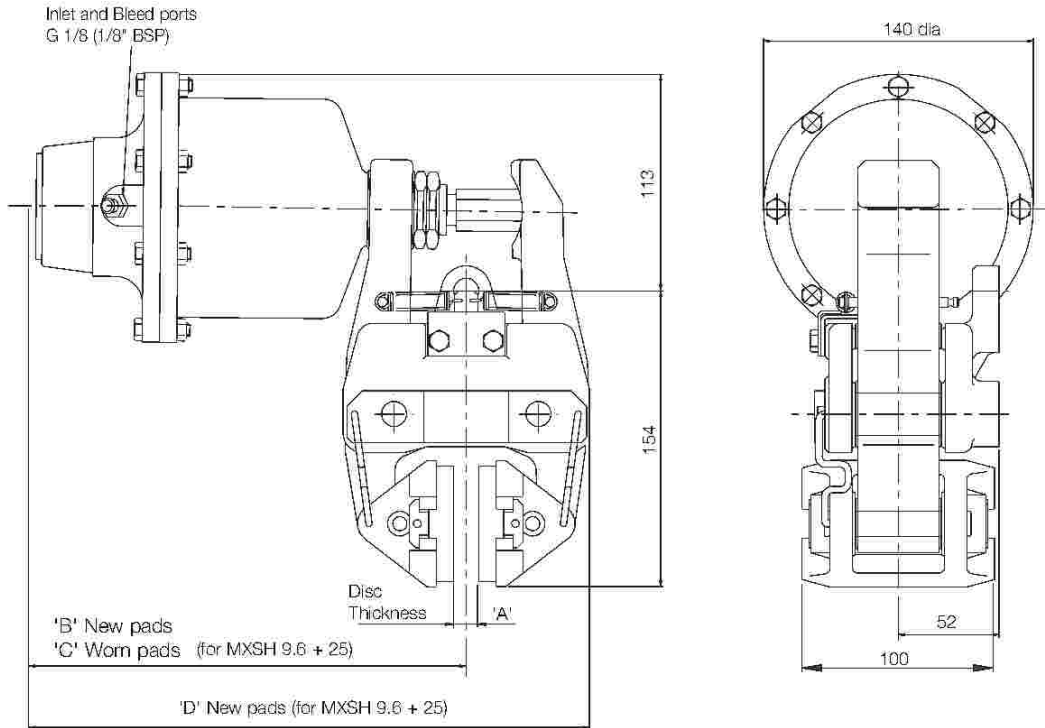




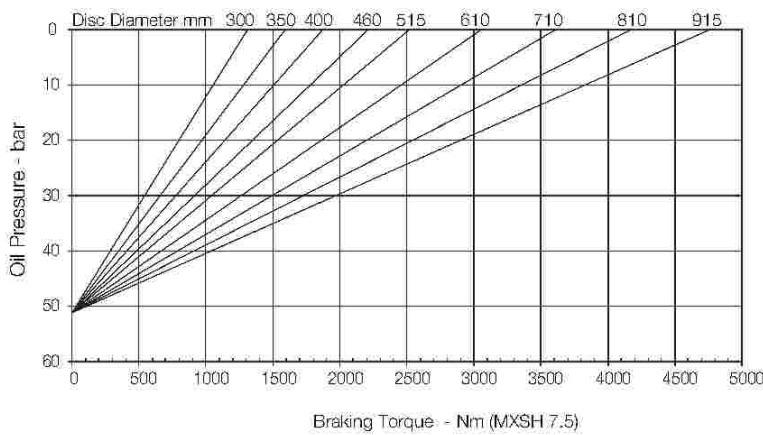
**MXSH Disc Brake Caliper - Spring Applied, Hydraulically Released**

Nominal dimensions given  
For caliper dimensions see DS2500

**DS2510**



Caliper	Dimensions in mm			
	'A'	'B'	'C'	'D'
MXSH 13	13	230.5	238.5	295.5
MXSH 25	25	235	243	302
MXSH 30	30	230.5	238.5	301.5
MXSH 40	40	235	243	310



Weight MXSH 9.6 caliper and thruster - 11.6kg  
MXSH 7.5 caliper and thruster - 11.4kg  
MXSH 4.6 caliper and thruster - 11.0kg  
Caliper only - 7.0kg

Volume displacement of thruster at 6mm Retraction is 9.1 ml

**Maximum pressure - 120 bar**

Thruster	Maximum Braking Force - kN	Minimum Pressure for Full Retraction - bar
XSH 9.6	14.3	82
XSH 7.5	11.2	65
XSH 4.6	6.8	40

The ratings shown on the above graph are based on fully bedded and conditioned brake pads with nominal friction coefficient  $\mu = 0.4$ .

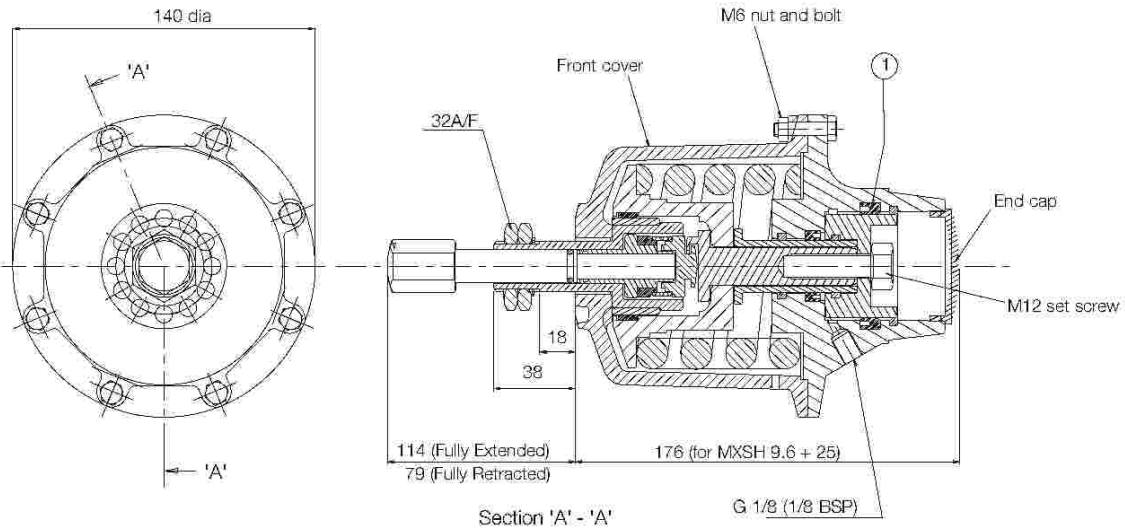
For bedding-in and conditioning procedures see Publication M1060.

Braking Force is defined as the Tangential Force acting on the brake disc at the Effective Disc Radius.  
Braking Torque (Nm) = Braking Force (N) x Effective Disc Radius (m) where Effective Disc Radius = Actual Disc Radius - 0.033.

Twiflex Disc Brakes must be used with Twiflex asbestos free brake pads. The use of any other brake pads will invalidate the warranty.  
Twiflex Limited reserves the right to modify or change the design without prior notice.



## MXSH Disc Brake Caliper - Spring Applied Hydraulically Released



AVAILABLE SPARES		
Item	Component	Part No.
1	Seal Kit	6000356

### Thruster Part Number:

XSH 9.6 7500195  
XSH 7.5 7500147  
XSH 4.6 7500163

This thruster requires no routine maintenance but if it becomes necessary to dismantle it for any reason, it is important to remember that it houses a powerful compressed spring.

The sequence in which it is dismantled should be as follows

1. Remove from caliper
2. Unscrew and remove the push rod
3. Remove the 8 - M6 nuts and bolts securing the front cover (see drawing)
4. Remove the complete front cover assembly
5. Remove the M12 set screw (see drawing)

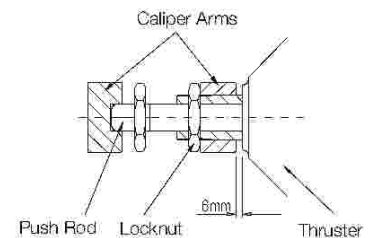
All the internal parts may now be dismantled for inspection or replacement. Re-assembly is carried out by reversing the above sequence.

Tighten torque for the M12 set screw is 80 Nm

Tighten torque for the M6 bolts is 10 Nm

### Thruster fitment

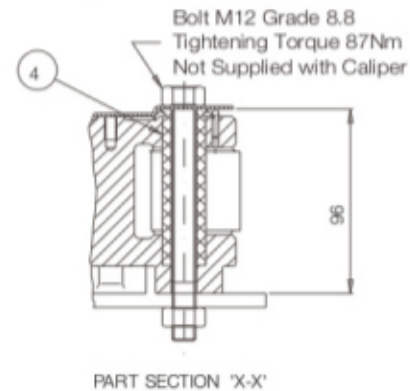
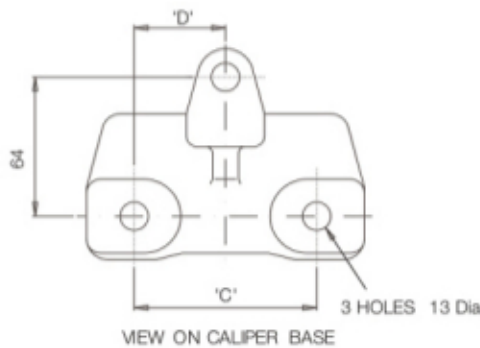
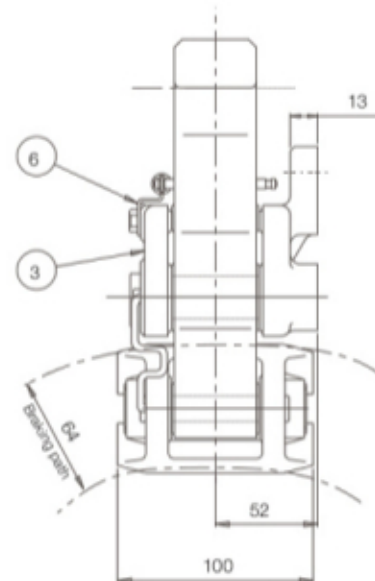
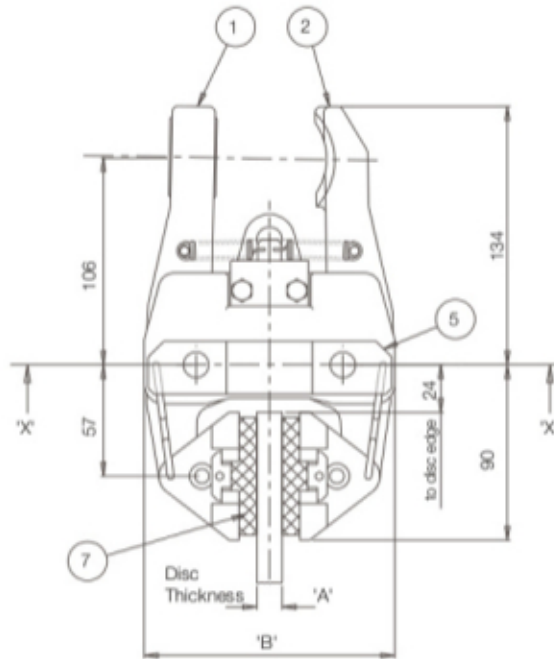
1. Make sure the thruster rod is extended i.e. it is not pressurised.
2. Take hold of the thruster and turn the push rod via the hex portion clockwise until it stops rotating: so a 'clicking' can be heard from the ratchet. **Do this by hand, do not apply heavy force to push the rod once it stops turning.**
3. Offer thruster to caliper making sure that both lock nuts are removed before placing hex section of push rod through caliper arm.
4. Pull caliper arms apart so that the pads are hard against the disc.
5. Fit lock nuts to thruster body loosely and unwind push rod until the gap between the body and the arm is 6mm. Make sure that the hex section of the push rod is within the slot of the other arm.
6. Tighten first lock nut to 50 - 60Nm then tighten the second nut against the first.
7. Fit tension spring to arms.





**MX13, 25, 30 and 40 Disc Brake Caliper**

**DS2500**



Caliper	Part No.	Dimensions in mm			
		A	B	C	D
MX13	6780685	12.7	130	75	37.5
MX25	6780710	25.4	134	84	42
MX30	6780711	30	142	75	37.5
MX40	6780712	40	150	84	42

Weight of Caliper - 7.0kg  
 Total pad area - 104cm<sup>2</sup> (2pads)  
 Pad dimensions new - 60 x 90 x 13mm thick  
 Pad material - Asbestos-free high friction material  
 Allowable pad wear - 8mm per pad

The standard MX series brake caliper, is supplied as a right-hand assembly. (as shown above) Left-hand assembly can be supplied on request, or can easily be changed on site.

Twiflex Disc Brakes must be used with Twiflex asbestos free brake pads. The use of any other brake pads will invalidate the warranty. Twiflex Limited reserves the right to modify or change the design without prior notice.



## MX13, 25, 30 and 40 Disc Brake Caliper

### General Description

The Twiflex MX13, MX25, MX30 & MX40 disc brake calipers are used with brake discs of 12.7, 25.4, 30 & 40mm thickness respectively. They may be used with any of the series of actuators listed below. Normally one or two units will be used per disc but the number may be increased, depending on disc size

Thruster	Description	Data Sheet	Maximum Braking Force
A	Pneumatically applied spring released	2501	6.9
B	Pneumatically applied spring released	2502	11
D	Pneumatically applied spring released	2503	3.6
E	Pneumatically applied spring released	2504	0.74
G	Pneumatically applied spring released	2505	1.9
H	Mechanically applied hand operated	2506	8.3
K	Spring applied pneumatically released	2507	2.15, 4.3 and 6.4
L	Spring applied pneumatically released	2508	2.15, 4.3 and 6.4
XS	Spring applied pneumatically released	2509	6.8, 11.2 and 14.3
XSH	Spring applied hydraulically released	2510	6.8, 11.2 and 14.3
W	Mechanically applied hand operated	2511	2.68
EMX	Spring applied electrically released	2512	6.1

The brake units can be positioned at any angle around the periphery of the disc, but ideally they should be mounted horizontally ( in 3 or 9 o'clock positions ) in relation to the disc. If a caliper is mounted at an angle of more than about 10 deg. from the horizontal it should be fitted with an inclined mounting kit or equalising link. This applies also to calipers used on vertical shaft installations.

### Discs:

A range of standard discs of 12.7mm and 25.4mm thickness are available from Twiflex see Data Sheet DS5002. Minimum disc diameter for the MX caliper is 300mm

### Controllers:

Standard Twiflex Controllers are available for single or multi-caliper installations for use with electric, pneumatic and hydraulic signalling systems.

### Pad replacement in air applied calipers:

To replace the pads, secure the installation to ensure safety. Straighten tabs at each end of the brake pads, and remove worn pads. Clean disc and the pad recesses in the shoes with a suitable cleaning agent such as white spirit. Fit new pads, and bend tabs through 90 deg. so as to hold pads in position, the pad should be free to move sideways.

AVAILABLE SPARES					
Caliper		MX13	MX25	MX30	MX40
Item	Component	Part No.	Part No.	Part No.	Part No.
1	Arm Assembly -Thruster	6630145	6630145	6630149	6630149
2	Arm Assembly -Slotted	6630146	6630145	6630150	6630150
3	Caliper Base	8030025	8030026	8030025	8030026
4	Pivot Pin	7952383	7952383	7952383	7952383
5	Retaining Plate	7951480	7951480	7951480	7951480
6	Spring Anchor Plate	7951501	7951501	7951501	7951501
7	Pad Assembly ( 2 Pads )	7080118-Z-SS2	7080118-Z-SS2	7080118-Z-SS2	7080118-Z-SS2
	Spring Kit	7902813	7902813	7902813	7902813
	Inclined Mounting Kit	7901512	7901512	7901512	7901512

### Pad replacement in spring applied calipers:

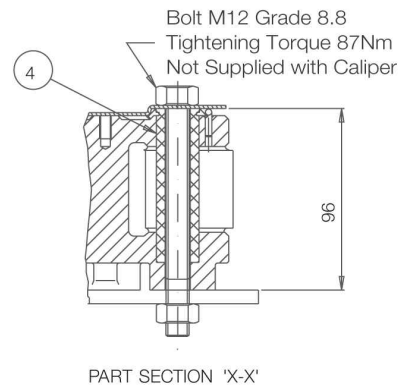
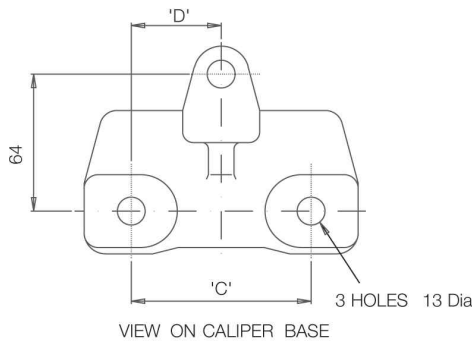
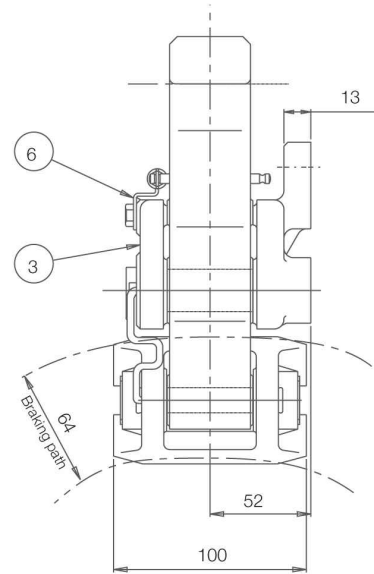
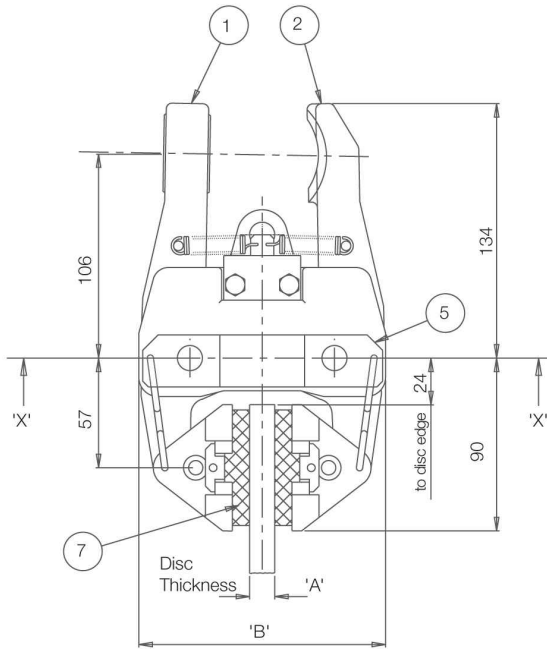
To replace the pads, secure the installation to ensure safety. Slacken the two locknuts holding the thruster, and screw back the push rod to create space between pad and disc. Straighten tabs at each end of the brake pads, and remove worn pads. Clean disc and the pad recesses in the shoes with a suitable cleaning agent such as white spirit. Fit new pads, and bend tabs through 90 deg. so as to hold pads in position, the pad should be free to move sideways. Refit the thruster as described in the relevant data sheet.

For bedding-in and conditioning procedures see publication M1060. Health and Safety data sheet refers to DS0500.



**MX13, 25, 30 and 40 Disc Brake Caliper**

**DS2500**



Caliper	Part No.	Dimensions in mm			
		A	B	C	D
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MX40	6780712	40	150	84	42

Weight of Caliper - 7.0kg

Total pad area - 104cm<sup>2</sup> (2pads)

Pad dimensions new - 60 x 90 x 13mm thick

Pad material - Asbestos-free high friction material

Allowable pad wear - 8mm per pad

The standard MX series brake caliper, is supplied as a right-hand assembly. (as shown above) Left-hand assembly can be supplied on request, or can easily be changed on site.

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## MX13, 25, 30 and 40 Disc Brake Caliper

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### Discs:

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### Controllers:

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Item	Component	Part No.	Part No.	Part No.	Part No.
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7	Pad Assembly ( 2 Pads )	7080118-Z-SS2	7080118-Z-SS2	7080118-Z-SS2	7080118-Z-SS2
	Spring Kit	7902813	7902813	7902813	7902813
	Inclined Mounting Kit	7901512	7901512	7901512	7901512

### Pad replacement in spring applied calipers:

To replace the pads, secure the installation to ensure safety. Slacken the two locknuts holding the thruster, and screw back the push rod to create space between pad and disc. Straighten tabs at each end of the brake pads, and remove worn pads. Clean disc and the pad recesses in the shoes with a suitable cleaning agent such as white spirit. Fit new pads, and bend tabs through 90 deg. so as to hold pads in position, the pad should be free to move sideways. Refit the thruster as described in the relevant data sheet.

For bedding-in and conditioning procedures see publication M1060. Health and Safety data sheet refer to DS0500.