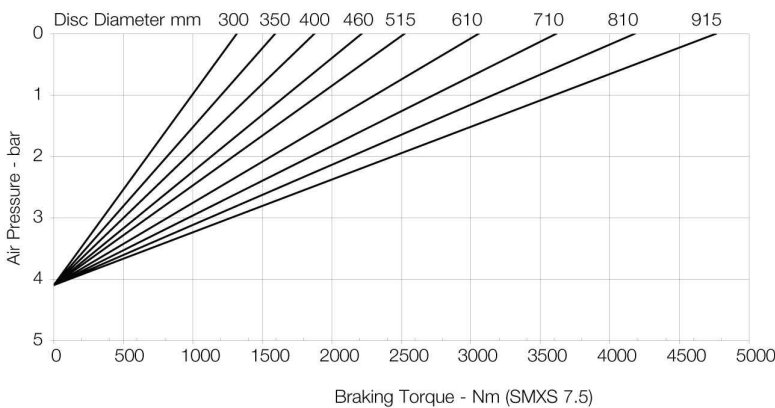
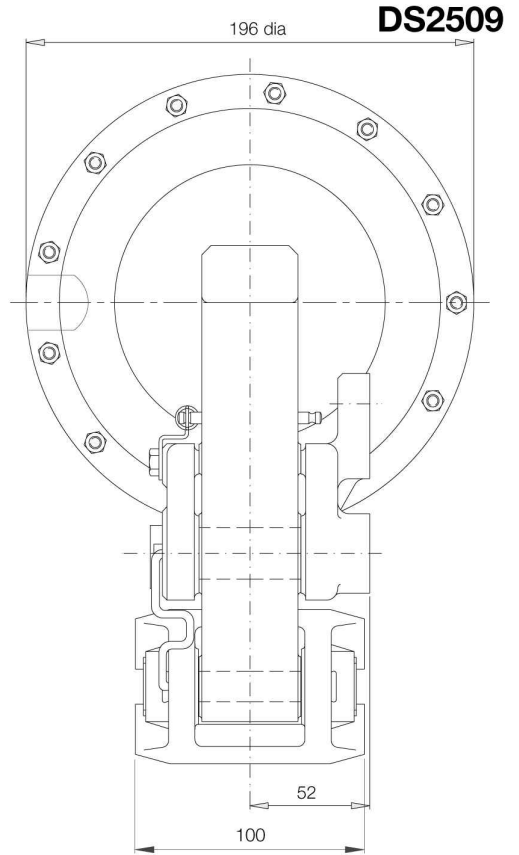
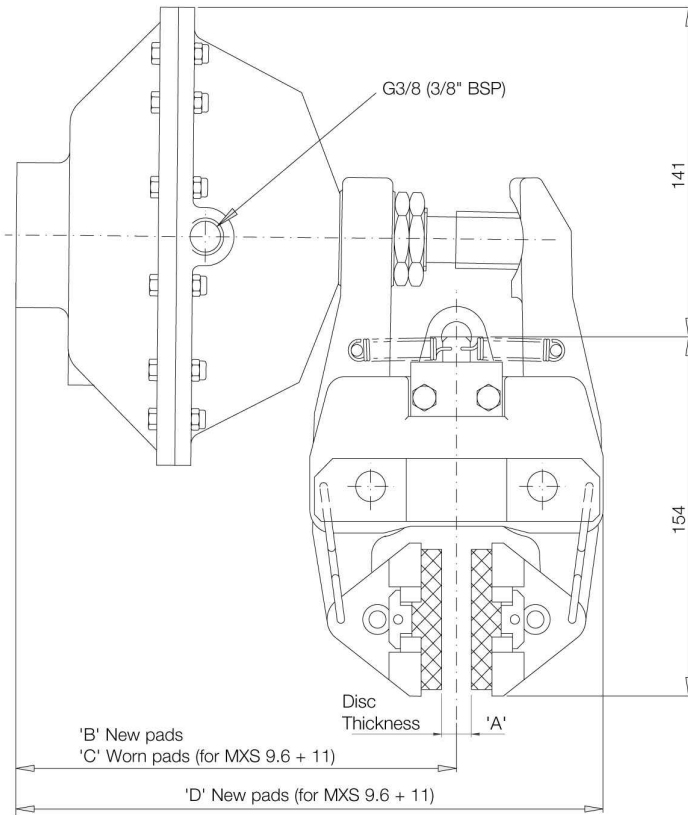




MXS Disc Brake Caliper - Spring Applied, Pneumatically Released

Nominal dimensions given
For caliper dimensions see DS2500



Dimensions in mm				
Caliper	A	B	C	D
MXS 13	13	204.5	212.5	269.5
MXS 25	25	209	217	276
MXS 30	30	204.5	212.5	275.5
MXS 40	40	209	217	284

Weight MXS 9.6 caliper and thruster - 12.1kg
 MXS 7.5 caliper and thruster - 11.9kg
 MXS 4.6 caliper and thruster - 11.5kg
 Caliper only - 7.0kg
 Volume displacement of thruster at full Retraction is 1.19 l

Maximum pressure - 7 bar

Thruster	Maximum Braking Force - kN	Minimum Pressure for Full Retraction - bar
XS 9.6	14.3	6.4
XS 7.5	11.2	5.5
XS 4.6	6.8	3.1

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

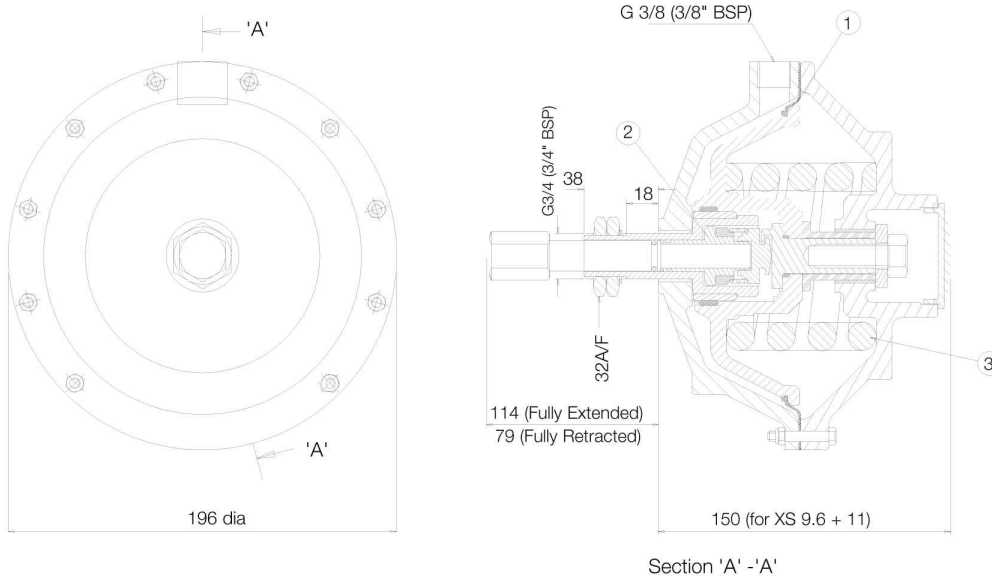
For bedding-in and conditioning procedures see Publication M1060.

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.



MXS Disc Brake Caliper - Spring Applied, Pneumatically Released



AVAILABLE SPARES		
Item	Component	Part No.
1	Diaphragm Kit	7902798
2	Self Adjusting Repair Kit	7902982
3	Spring Kit	7902800

Thruster Part Number:

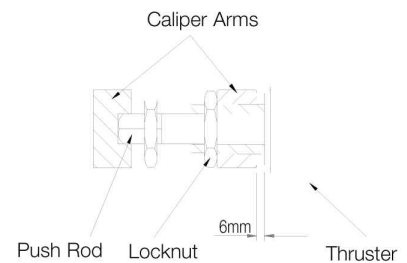
XS 9.6 7201222
XS 7.5 7201046
XS 4.6 7201076

This range of pneumatically operated brakes uses dry and filtered compressed air at pressures up to 7 bar. Pneumatic brakes require a control valve which may be operated either manually, or by pneumatic or electrical signal.

Should it become necessary to replace a diaphragm, Remove from caliper and ensure air supply is disconnected. Unscrew and remove push rod. Remove the M5 bolts and the rear cap of the thruster. Remove the worn diaphragm; clean-up the contacting surfaces and re-assemble with the new diaphragm and M5 bolts in position (Tightening Torque 5.7Nm).

Thruster fitment

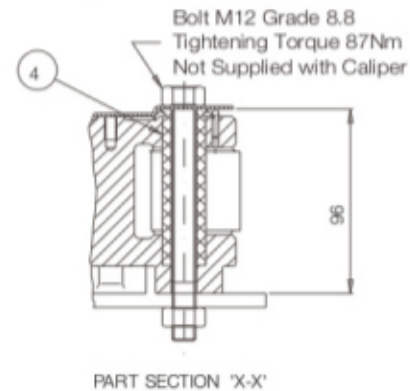
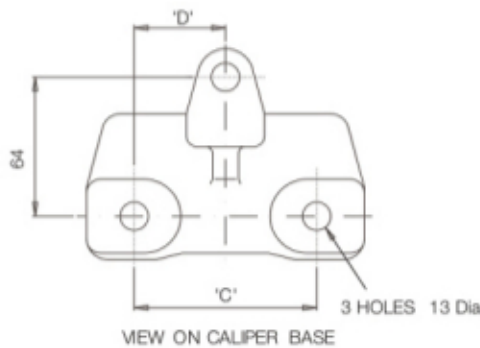
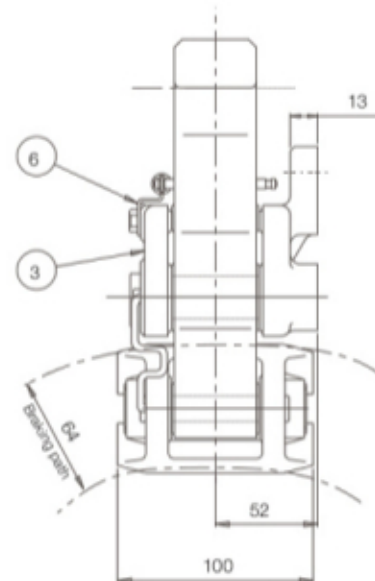
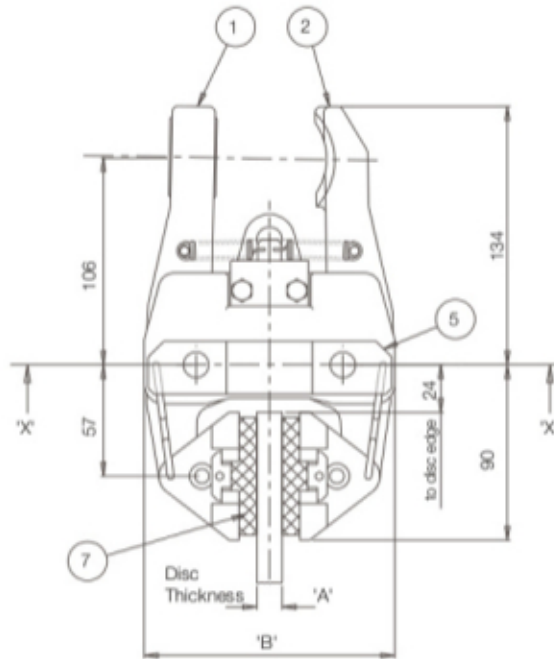
1. Make sure the thruster rod is extended i.e. it is not pressurised.
2. Take hold of the thruster and turn the push rod via the hex portion clockwise until it stops rotating: so a 'clicking' can be heard from the ratchet. **Do this by hand, do not apply heavy force to push the rod once it stops turning.**
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 - 104cm² (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:

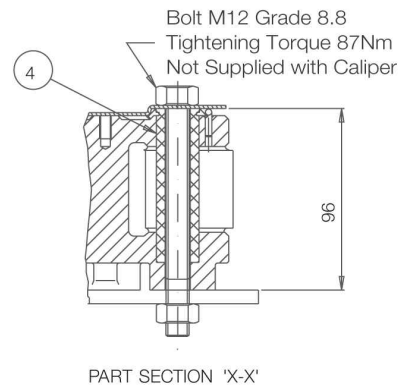
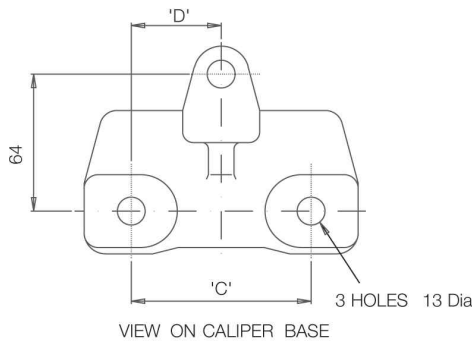
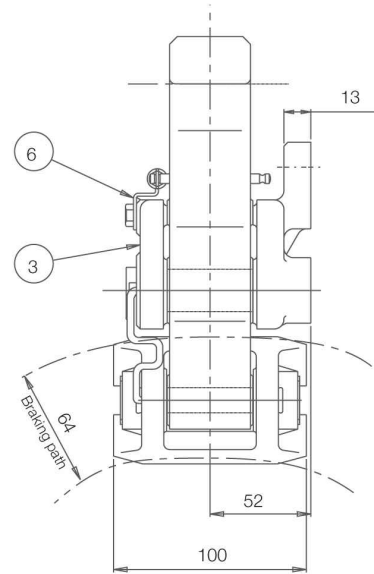
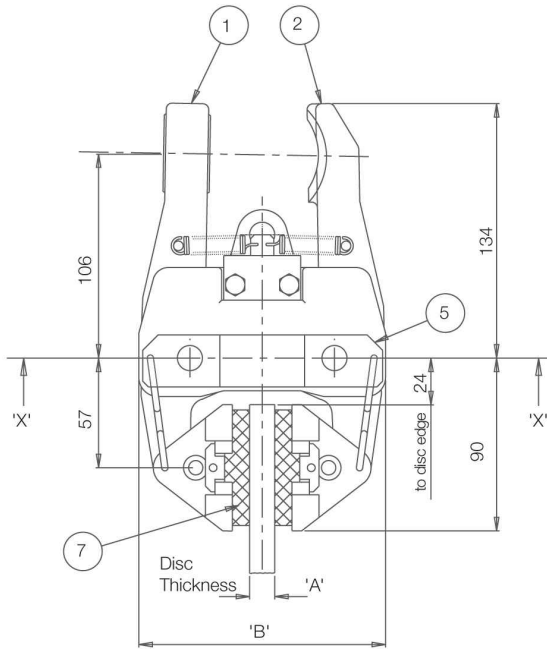
To replace the pads, secure the installation to ensure safety. Slacken the two locknuts holding the thruster, and screw back the push rod to create space between pad and disc. Straighten tabs at each end of the brake pads, and remove worn pads. Clean disc and the pad recesses in the shoes with a suitable 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
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 - 104cm² (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 refer to DS0500.



**INSTALLATION, OPERATION AND
MAINTENANCE INSTRUCTIONS
FOR
MXS BRAKE CALIPER ASSEMBLY**

M1240



AMENDMENT RECORD
M1240

AMENDMENT NUMBER ISSUE AND DATE			SIGNATURE AND DATE WHEN AMENDMENT ISSUED

(i)



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b) XS Thruster, spring applied - air released	9

Reference Drawings

A12463	MXS Brake Caliper Assembly
A11381	MX Caliper Assembly
A11534	XS Thruster Assembly



BRAKE CALIPER TYPE MXS

Drawing References:

A12463	MXS Disc Brake Caliper Assembly
A11381	MX13 Caliper Assembly (Text Ref. 01)
A11534	XS Thruster Assembly (Text Ref. 02)

Numbers in the bracket after the text ref. above refer to item numbers on the drawing.

General Description

The MXS series of spring applied - air released disc brake calipers with automatic stroke adjustment is designed for heavy duty stopping and holding applications.

The Twiflex MXS, MX25S, MX30S and MX40S disc brake calipers are used with brake discs of 12.7, 25.4, 30 and 40mm thickness respectively. Normally one or two units will be used per disc but the number may be increased, depending on disc size and brake torque required.

The brake units may 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 10^0 from the horizontal it should be fitted with an inclined mounting kit (Part No. 7901512). This applies also to calipers used on vertical shaft installations (i.e. disc mounted horizontally).

The standard 'MXS' series of disc brake calipers is normally supplied assembled right handed as shown. If a left-handed version is required the caliper may be easily dismantled and the arm assemblies changed over. Mounting bolts should be re-tightened to 87 Nm (64 pounds feet) torque.

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

Friction Pads: High friction material of bounded asbestos-free type is used with MX brake calipers. Allowable pad wear is 5mm. Total pad area = 104 cm^2 (2 pads).

New pad dimensions: 60 x 90 x 13mm thick.

Installation, Operation and Maintenance

1. Installation

1.1 The brake is supplied in two parts:

(a) Type MX Caliper

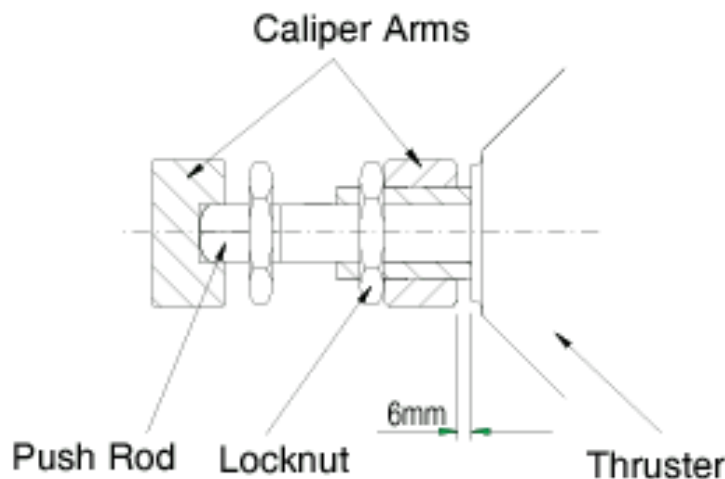
Typically two M12 x 120 and one M12 x 40 bolts are used for fixing the caliper to the base structure. The fixing bolts (M12 grade 8.8 minimum) will normally be supplied by the user but may be supplied by Twiflex if requested. These bolts should be tightened to 87 Nm (64 lbf-ft) torque.

(b) Type XS Thruster with two 3/4" BSP locking nuts

1.2 The calipers should be mounted horizontally on a rigid base, and aligned to the disc centre line.

1.3 Check that the disc and brake pads are clean and free from oil and other contaminants.

1.4 To fit the thruster remove the two 3/4" BSP (ISO G^{3/4}) locknuts and offer the hexagon pushrod through the hole in one of the caliper arms, place locknuts on pushrod, and make sure the hexagon fits into the slot in the opposite arm. Pull the arms apart so that the brake pads are pressing against the disc (this is made easier by removing the two tension return springs at the back of the arms) and rotate the hexagon pushrod until the gap between the thruster body and the arm is 6mm with the hexagon fully engaged in the slot (see diagram). Tighten one locknut. 50 - 60 Nm (37 - 44 pounds feet) torque, to secure the thruster to the arm. Tightening this nut compresses a spring inside the thruster and it should be tightened until the 6mm gap disappears. The second locknut is now tightened against the first. Replace the tension springs. For opposite hand assembly, the caliper arms may be interchanged. The thruster to be mounted in any position to suit the air line.



1.5 Connect the air line to the 3/8" BSP (ISO G^{3/8}) air port on the thruster using a parallel

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thread fitting and suitable sealing means (washer or thread sealant). For maximum brake release speed, the air line should be not less than 10mm ($\frac{3}{8}$ " nominal bore. A quick exhaust valve should be fitted to the thruster if rapid brake application is required. The air line must be flexible to permit free movement of the thruster to take place during operation. Nylon piping is excellent for this purpose provided there is no special fire hazard or any other considerations, which prohibit its use.

- 1.6 Operate the brake a few times (with the machine running if possible, to condition the brake pad material), then carry out any statutory or other testing that may be required. If the brake is designed for severe emergency use, which might afterwards require disc re-surfacing and or pad replacement, this should be borne in mind and testing at 50% or 75% full speed may be considered sufficient.

2. Operation

- 2.1 Brake is 'ON' when the air pressure is OFF.
- 2.2 If an electrical solenoid valve is used to control the brake operation, the delay time between the electrical signal and full brake release depends on the solenoid response time, pipe sizes and lengths, number of brake calipers and the air pressure. Typical brake release times using standard Twiflex controllers are as follows:
Type GL Controller 100-200 ms
Type GK Controller 40-100 ms
- 2.3 The delay time to brake fully on will be similar to the release time unless a quick exhaust valve is fitted, in which case the delay will be only 20-50 ms depending on the solenoid, and pipe lengths, as above.
- 2.4 A constant pushrod stroke of 6mm is maintained by the automatic stroke adjusting mechanism, which ensures consistent response times and spring thrust independently of friction pad wear. In order to release the brake and activate the adjusting mechanism, a pressure of at least 5 bar (72 psi) must be applied to the XS7.5 thruster or 3 bar (43 psi) to the XS4.6 thruster.
- 2.5 To verify that the automatic adjusting mechanism in the thruster is functioning correctly after an extended period of use; release the brake (see 2.4) pull apart the outer ends of the caliper arms and check the clearance between the end of the pushrod and the slot in the arm opposite. This should be 6 to 6.5mm.

3. Maintenance

- 3.1 Check the brake as necessary to ensure that it remains clean and dry, and especially that the pads and disc brake path are free of oil or other pollutants. The caliper and thruster are lubricated during assembly and will require little or no further attention in this respect. However, to maintain efficiency and reduce wear, it is recommended that the pivot pins and other bearing surfaces of the caliper be lubricated in clean environmental conditions.

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Care must be taken not to contaminate the brake pads with grease, as this would cause a severe reduction of brake torque.

- 3.2 Carry out any periodic statutory testing that is required, or otherwise check for satisfactory performance.
- 3.3 Replace friction pads when worn. The stroke of the hexagon pushrod is maintained at approximately 6mm by the automatic adjusting mechanism in the thruster as pad wear occurs, maintaining constant spring thrust. When any one pad is worn down by 5mm from new (pad wear allowance) both brake pads should be replaced.

The pivoted shoe design of the MX caliper ensures as far as possible that wear is even over the whole surface of the pads. The attainment of even wear is, however, dependent on a number of factors such as disc diameter, disc material and condition, disc temperature, pad material, power dissipation and rubbing speed. It may not always be possible therefore to obtain the ideal even wear pattern in service under diverse operating conditions and, if it is considered economic to do so, it is suggested that the pads be "turned around" periodically if inspection shows a tapered wear pattern to be developing.

3.2 Brake pad replacement:

To replace the pads, secure the installation as necessary to ensure safety. With air pressure released, remove the tension springs on the back of the caliper arms, slacken the two $\frac{3}{4}$ "BSP (G $\frac{3}{4}$) locknuts (02/12) securing the thruster and screw back the hexagon pushrod (02/7) to create space between pads and disc.

Straighten the steel tabs at each end of the brake pads and remove the worn pads. Clean the brake disc and the pads recesses in the shoes. Fit new pads and bend the tabs through 90° to secure the pads in position.

Refit the Thruster, following the procedure described in (1.4) and retighten the nuts. Replace the tension springs.

- 3.3 Re-machining of the disc brake paths is not necessary unless they are cracked or badly pitted. Some grooving of the disc is normal and not detrimental to performance, provided the surface has a polished appearance. Disc wear is generally negligible if standard Twiflex brake pads are used. If skimming of the brake paths does become necessary however, the following tolerances must be observed:

Thickness variation of disc flange: 0.05mm total variation at any given radius.

Minimum thickness of flange: 75% of initial thickness.

Maximum run-out of flange: 0.15mm T.I.R.

Surface finish r braking paths: 2 micron or better

- 3.4 The thruster requires no routine maintenance but if it becomes necessary to dismantle it for

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any reason, it is important to remember that it houses a powerful compressed spring.

3.5 Replacement of push rod seal (02/26) and diaphragm (02/13)

Remove the thruster from the caliper after securing the safety of the installation. Access to the 'O' ring seal is obtained simply by unscrewing the push rod. After doing this the front and back halves of the thruster can be separated by unscrewing the twelve M6 bolted connections round the flange. The diaphragm (02/13) is then easily replaced together with the 'O' ring (02/23) if necessary. Lightly smear the inside diameter of the new diaphragm and the outside of the push rod with mineral grease before fitting. If the interior of the thruster shows evidence of excessive moisture or contamination, check the arrangements for cleaning, drying and lubricating the air supply. Re-assemble, making sure that the lugs on the floating pawl engage with the helical slots in the cylindrical end of the mounting barrel (02/8). Check air tightness. Remount the thruster to the caliper using the installation procedure (section 1).

Tighten the M6 nuts to 10 Nm torque (7.4 lbf-ft)

Tighten the M12 set screw to 80 Nm torque (59 lbf-ft)

4. Recommended Spares

For each brake in use at remote sites or in marine installation, the following spares should be carried:-

One set of Brake Pads.

These are to be stored in a dry place away from contact with oil or grease.

Component	Part No.	Qty.
Pad Assembly (Asbestos Free)	7080118-Z	2
One bearing and seal kit for thruster comprising:	6000358	1

Item	Description	Part No.	Qty.
13	Diaphragm	7201043	1
21	Bearing Ring	7201712	1
23	'O' Ring	6000322	1
24	'O' Ring	6000228	1
25	'O' Ring	6000210	1
26	'O' Ring	6000229	1



5. Service

Address all enquiries regarding this equipment to your Twiflex agent or direct to Twiflex Limited.

6. Range of XS Thrusters available for use with MX Type Brake Calipers

Thruster Spring Force	Thruster Type	Thruster Part No.	Braking Force Using std. pads Part Nos. 7080118	Min Pressure for Full Retraction
Standard	XS 7.5	7201046	11.0 kN	5 bar
Medium	XS 4.6	7201076	6.75 kN	3 bar

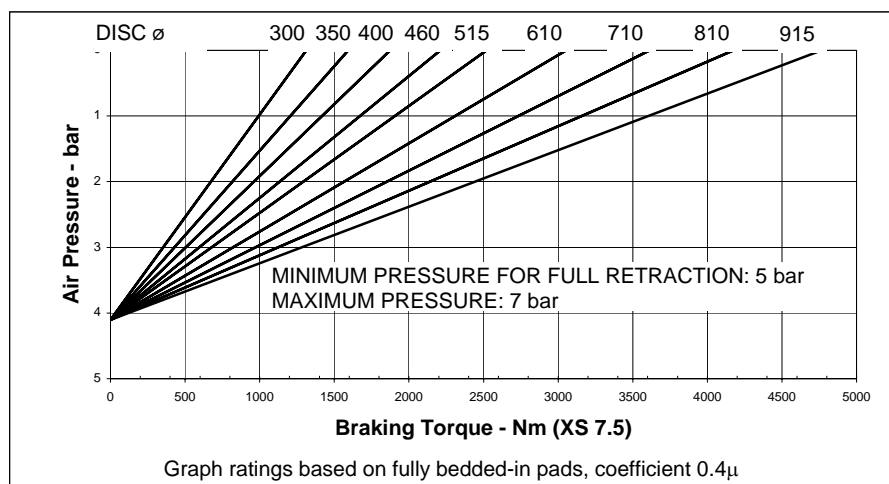
IMPORTANT

The above Braking force figures are for bedded and conditioned general purpose brake pads having a dynamic friction coefficient of 0.4 when used with standard Twiflex brake discs. An appropriate service factor should be applied when designing the brake system, and in the case of brakes used for holding duties or in wet conditions this should be not less than 2.0.

7. Performance Data:

Braking Force = 11000 N (maximum rating) using standard, full rate spring at zero pressure.

Braking Torque (Nm) = Braking Force (N) x Effective Disc Radius (m)
where Effective Disc Radius = Actual Disc Radius - 0.033





8 a)

**PARTS LIST FOR
BRAKE CALIPER TYPE: MX13
DRG. A11381**

ITEM No.	COMPONENT	PART NO.	QTY.
1	Caliper Arm Assy. - Thruster Side	6600147	1
2	Caliper Arm Assy. - Slotted Side	6630148	1
3	Brake Pad Assy.	7080118-Z	2
4	Caliper Base	8030025	1
5	Spring Link	2500198	2
6	Retaining Plate	7951480	1
7	Pivot Pin	7952383	2
8	Tension Spring	2400158	2
9	Spring Anchor Bracket	7951501	1
10	Label	7901503	1
11			
12	Setscrew, M6 x 10 Hex. Head	5350228	2

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8 b)

**PARTS LIST FOR
THRUSTER TYPE: XS
DRG. A11534**

ITEM No.	COMPONENT	PART NO.	QTY.
1	Front Cap	7941705	1
2	Rear Cap	7941723	1
3	Thrust Bearer	7941711	1
4	Rack Screw	7901808	1
5	Rack Spring	2500118	1
6	Rack Ring	7901807	1
7	Push Rod	7250585	1
8	Mounting Barrel	7941703	1
9	Spacer Ring (for XS4.6 only)	1600489	1
10	Compression Spring (for XS4.6)	2500076	1
	Compression Spring (for XS7.5)	2500217	1
	Compression Spring (for XS(S) 9.6)	2500257	1
11	Thrust Cap	7951724	1
12	Locknut, 3/8" BSP	5100051	2
13	Diaphragm	7201043	1
14	Bearing Sleeve	7951713	1
15	Thrust Rod	7951720	1
16	Spacer	7951721	1
17	End Cap	8300013	1
18	Washer	7951722	1
19			
20			
21	Bearing Ring	7901712	1
22	Bush	1800381	1
23	'O' Ring	6000322	1
24	'O' Ring	6000228	1
25	'O' Ring	6000210	1
26	'O' Ring	6000229	1
27	Setscrew, M12 x 30	5300187	1
28	Bolt, M6 x 40 Hex. Head	5000778	12
29	Nut, M6	5100291	12
30			
31			
32	Label	7901778	1

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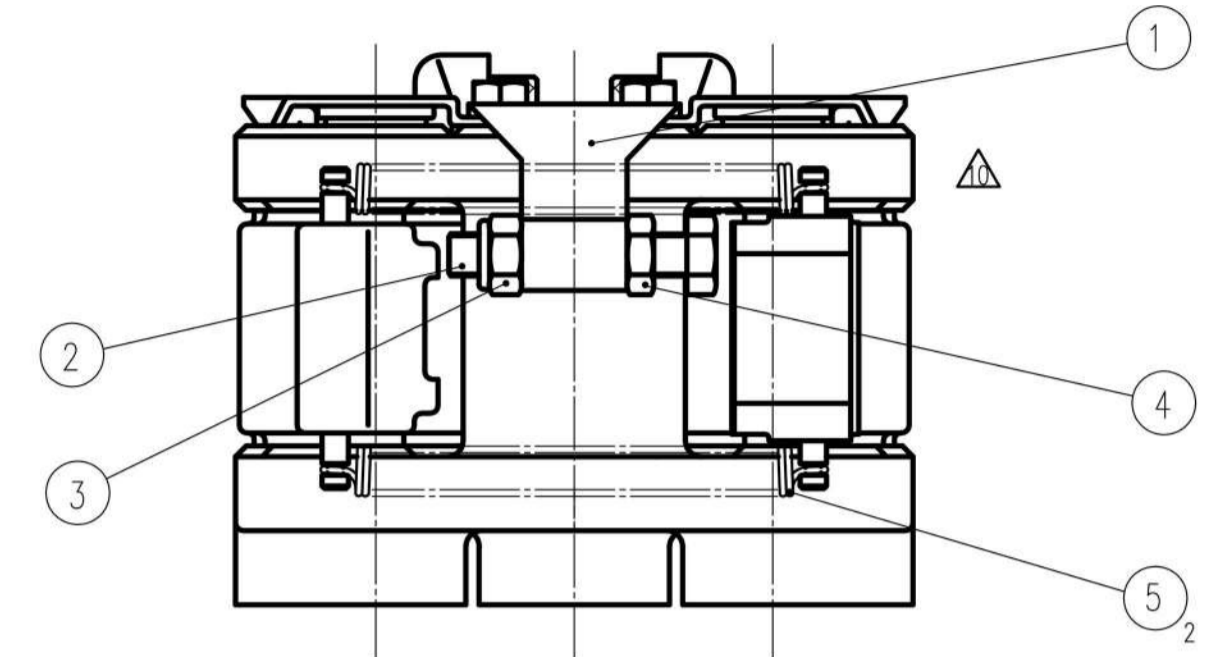
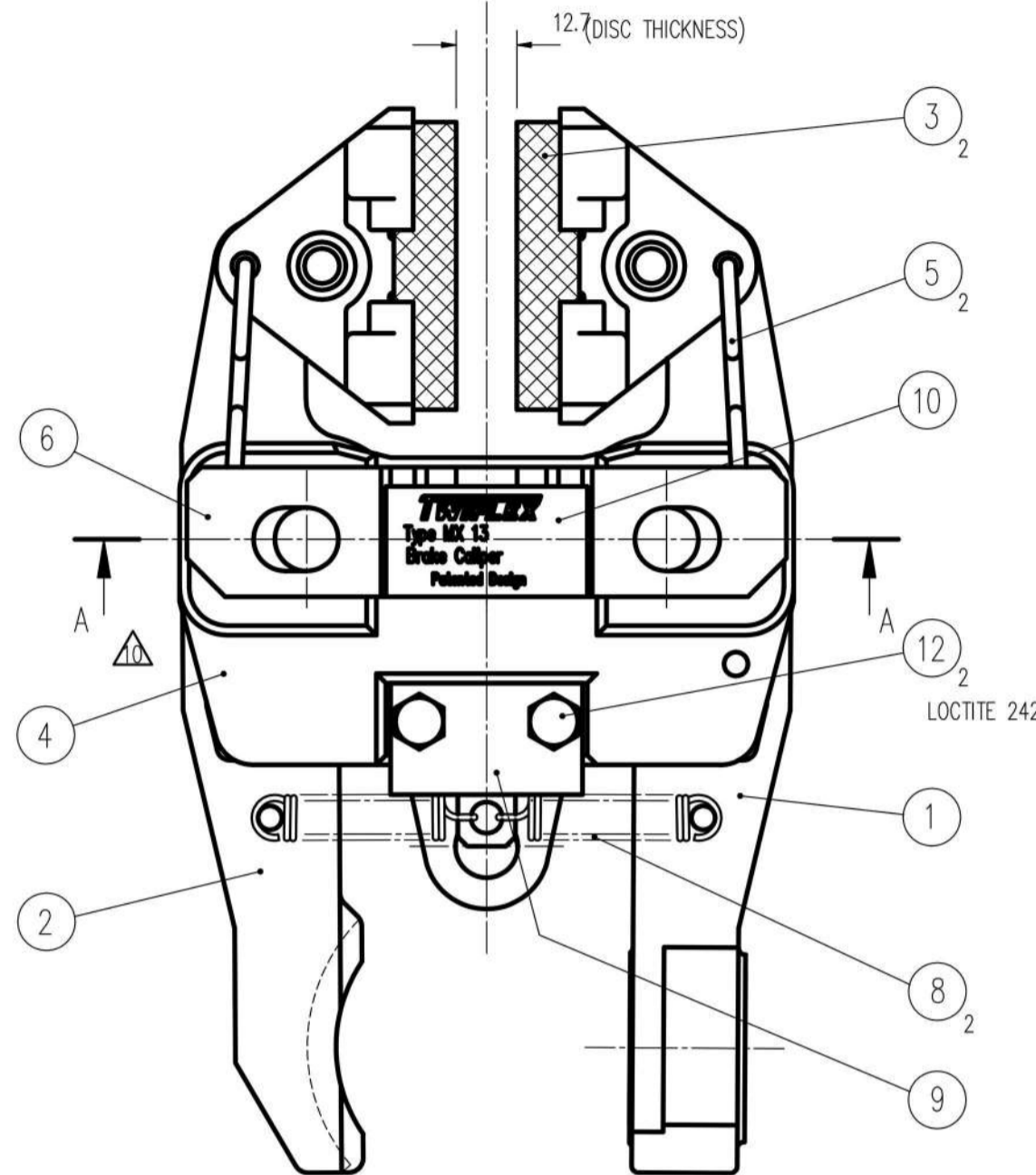
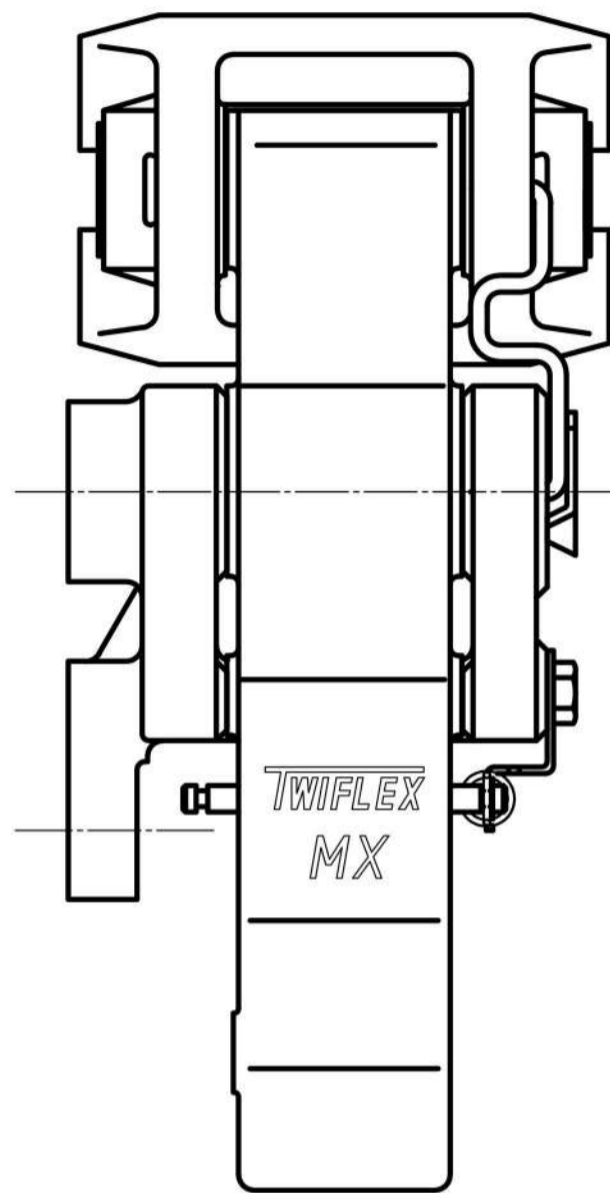
METRIC 0 10 50 100 mm

THIRD ANGLE PROJECTION

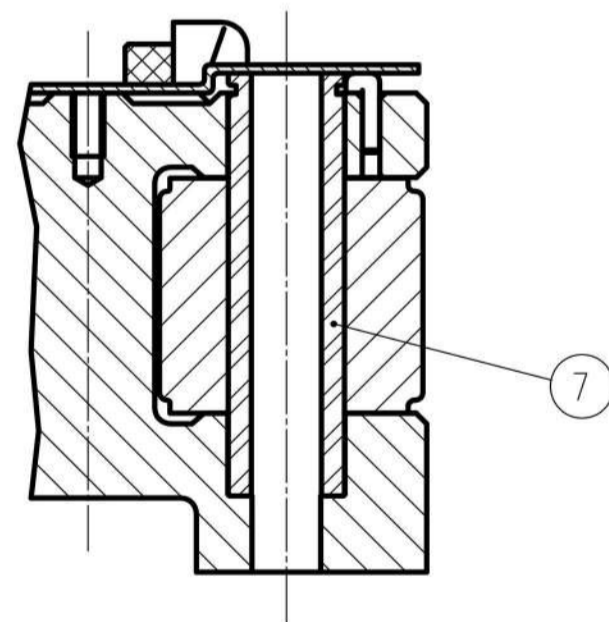
REMOVE SHARP EDGES

DO NOT SCALE

DIMENSIONS AND TOLERANCES TO BS 308



END ELEVATION SHOWING INCLINED MOUNTING KIT FITTED
SCHEDULE Z152/6A (MARINE Z152/6B)
NOTE, WHEN INCLINED MOUNTING KIT FITTED DELETE
ITEMS 8 AND 9 FROM SCHEDULE Z152/1



PART SECTION AA

- NOTES
- RETAINING PLATE (ITEM 6) TO BE DEGREASED PRIOR TO APPLYING SELF-ADHESIVE LABEL (ITEM 10). APPLY LABEL AS SHOWN TO ENABLE CENTRALISING MARKS ON RETAINING PLATE TO BE VISIBLE.
 - ALL MOVING PARTS TO BE COATED WITH 'MOLYKOTE CU7439' GREASE.
 - RETAINING PLATE (ITEM 6) AND PIVOT PINS (ITEM 7) TO BE HELD IN POSITION FOR TRANSIT WITH THE WRAPS.
 - USE 'LOCTITE 242' TO SECURE SETSCREWS (ITEM 12).

ISSUE No.	ALT.No.	DATE	DESCRIPTION	GRID REF
10	12758	18-06-01	INCLINED MOUNTING KIT CHANGED, BASE PROFILE CHANGED, REDRAWN ON CAD NOTE 1 CHANGED, NOTES 3 AND 4 ADDED.	
09	12095	10-11-97	NUT, PART No. 5100220 WAS 5100276	
08	11793	21-6-96	TENSION SPRING, PART No. 2400158 WAS 2400144	
07	11446	10-4-95	PART No. 6701172 ADDED	
06	10695	2-12-92	NOTE 3 ADDED/PIVOT PIN, PART No. 7952383 WAS 7951459	
05	9589	21-6-88	CALIPER ARM ASSEMBLIES PART Nos. ALTERED	
04	9271	10-11-86	TENSION SPRING ADDED TO INCLINED MOUNTING KIT	
03	9078	10-3-86	NUT AND BOLT MODIFICATION	
02				
01		2-4-85		
ALTERATION				GRID REF

PART No.	DESCRIPTION	SCHEDULE No.
6780685	MX13 BRAKE CALIPER ASSEMBLY	Z152/1
6780685/AS35	MX13 BRAKE CALIPER ASSEMBLY WITH INCLINED MOUNTING KIT	Z152/1 AND 6A



DIMENSIONS IN mm.
OPEN TOLERANCES ± 0.25
ANGLES ± 0.5°
GENERAL M/C FINISH = 1.6 µm
SURFACE FINISH IN MICRONS
e.g. $\frac{1}{2}$ = 2 MICRONS
(0.002mm) CLA
(= 80 MICRO-INCHES CLA)

CERT'D	
CHECKED	<i>J.M.</i>
DRAWN	J.M.
DATE	2-4-85
SCALE	1 : 1

DESCRIPTION	
MX13 BRAKE CALIPER ASSEMBLY	
MATERIAL	FINISH
-	-

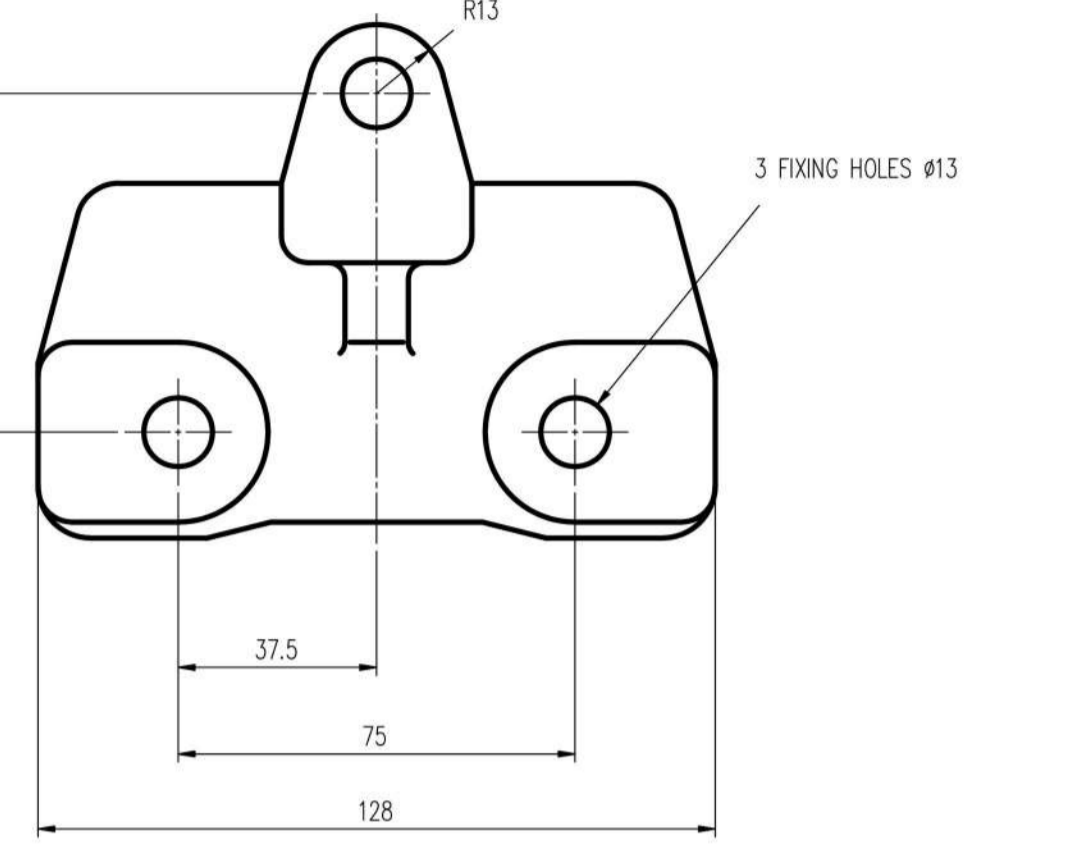
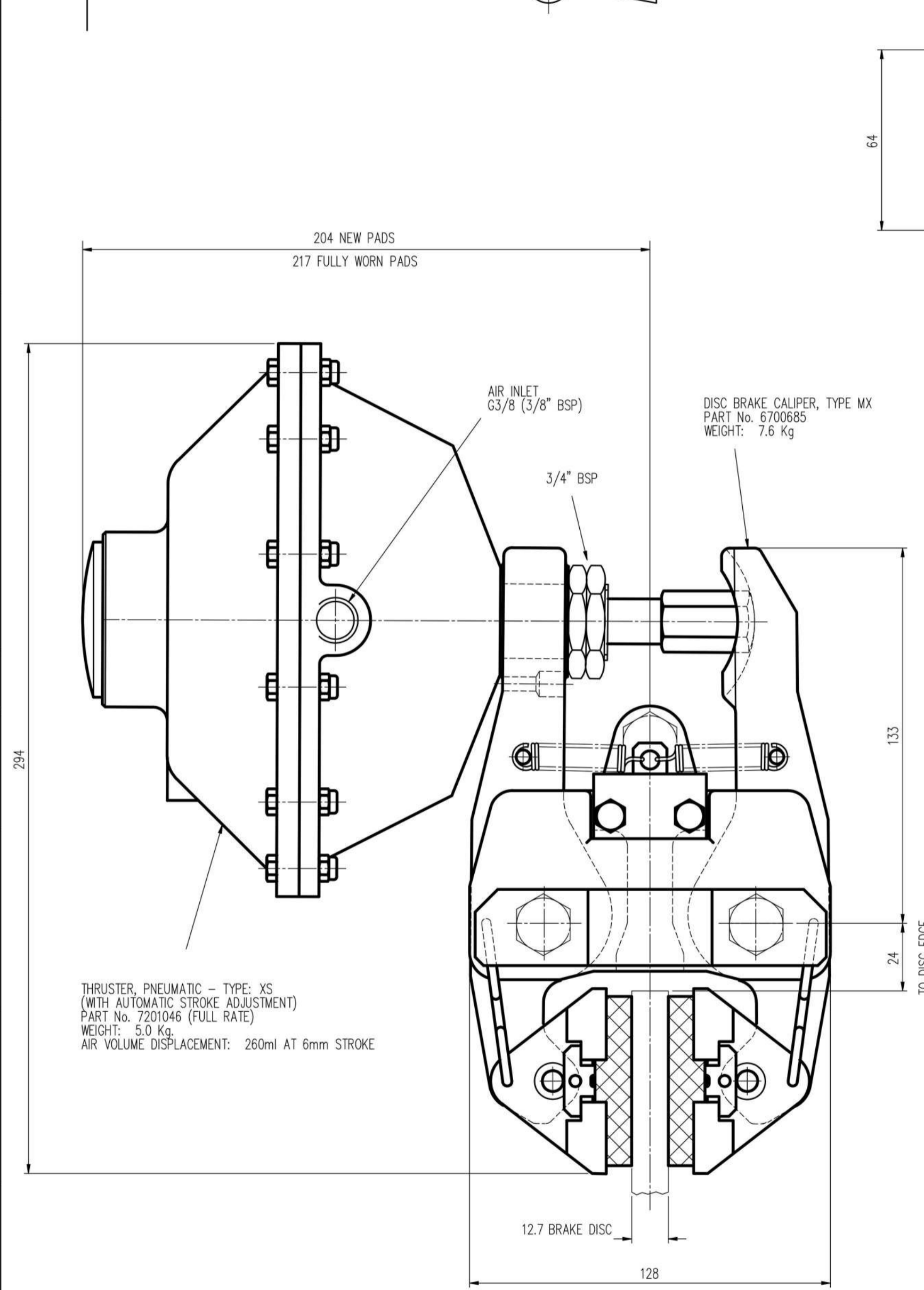
INERTIA	WEIGHT
- kg m ²	7.0 kg
PART No.	SEE TABLE
DRG. No.	A11381

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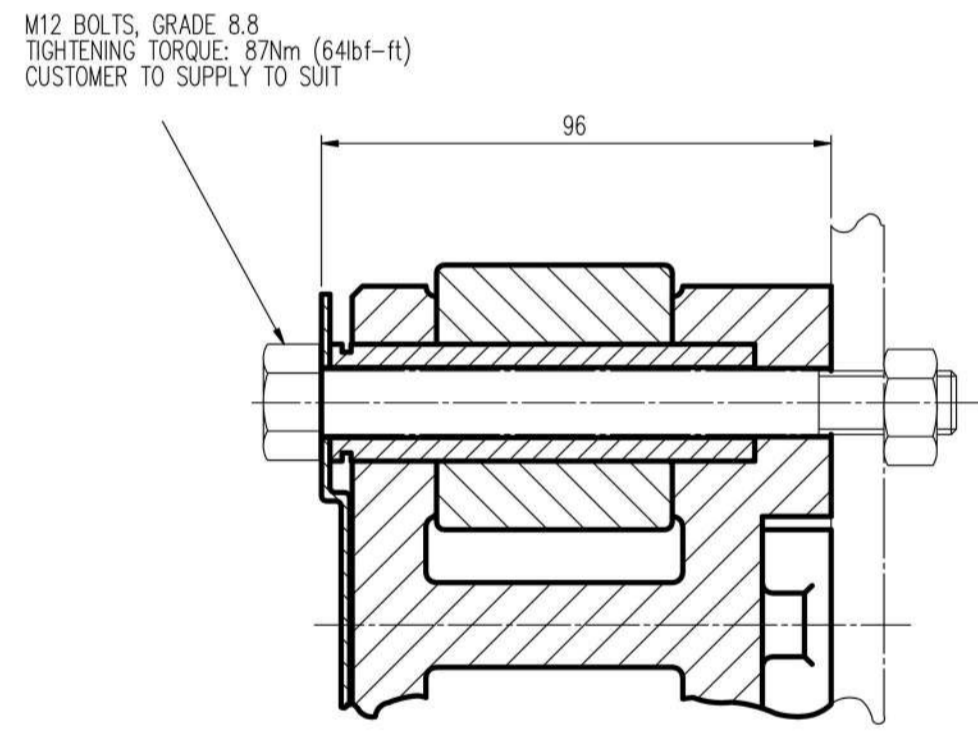
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METRIC 0 10 50 100 mm REMOVE SHARP EDGES DO NOT SCALE DIMENSIONS AND TOLERANCES TO BS 308

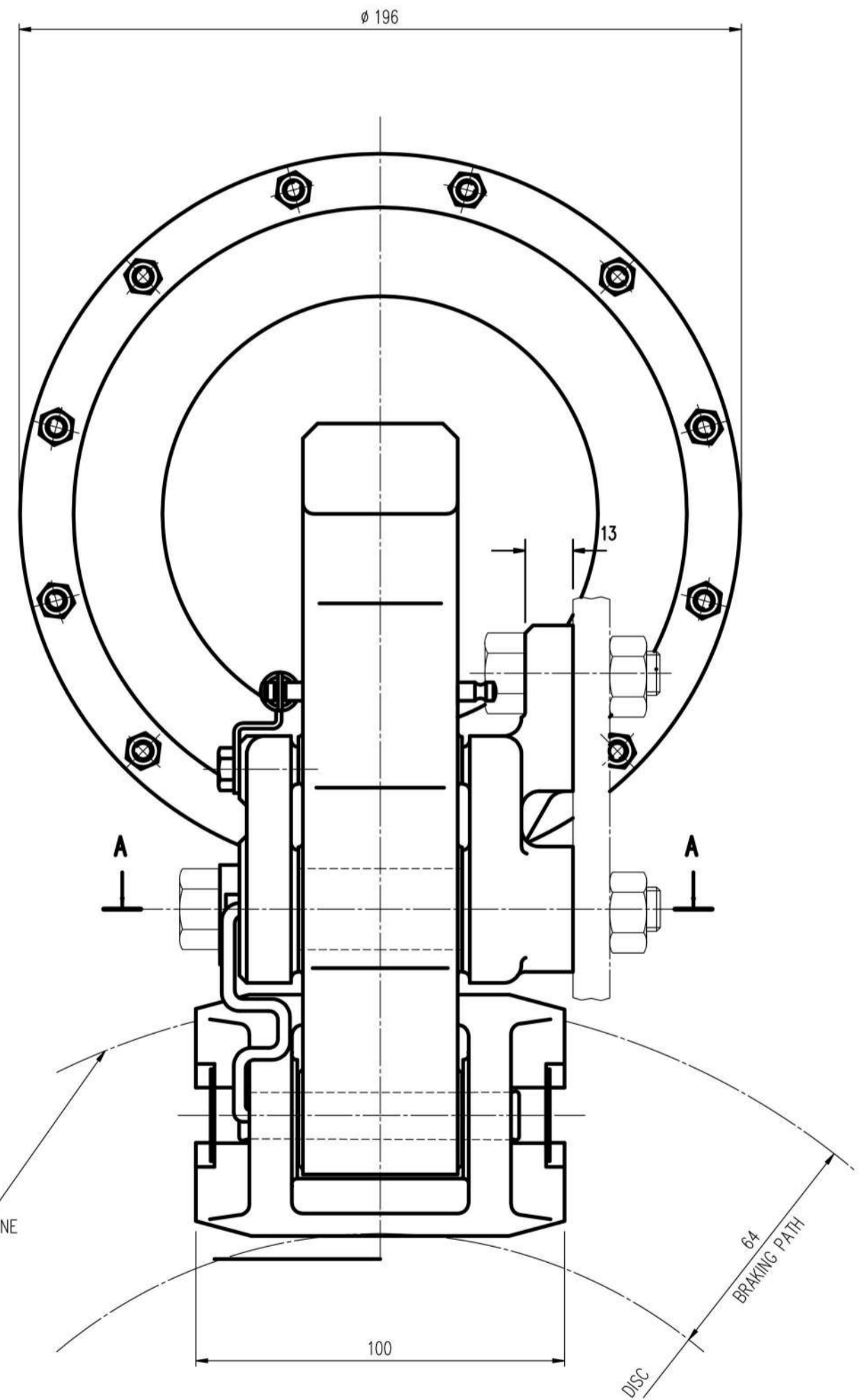
THIRD ANGLE PROJECTION



VIEW ON CALIPER BASE



HALF SECTION ON A-A



DATA SHEET: DB4061
MANUAL: M1240

ISSUE No.	ALT.No.	DATE	DESCRIPTION	GRID REF
01		27-2-95		
ALTERATION				



DIMENSIONS IN mm.
OPEN TOLERANCES ± 0.25
ANGLES ± 0.5°
GENERAL M/C FINISH = 1.6 µm
SURFACE FINISH IN MICRONS
e.g. 2 = 2 MICRONS
(0.002mm) CLA
(= 80 MICRO-INCHES CLA)

CERT'D	
CHECKED	<i>REB</i>
DRAWN	A.D.
DATE	27-2-95
SCALE	1:1

DESCRIPTION DISC BRAKE CALIPER ASSEMBLY TYPE MXS	
MATERIAL	FINISH

INERTIA	kg m ²	WEIGHT	kg
PART No.	-	DRG. No.	A12463

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