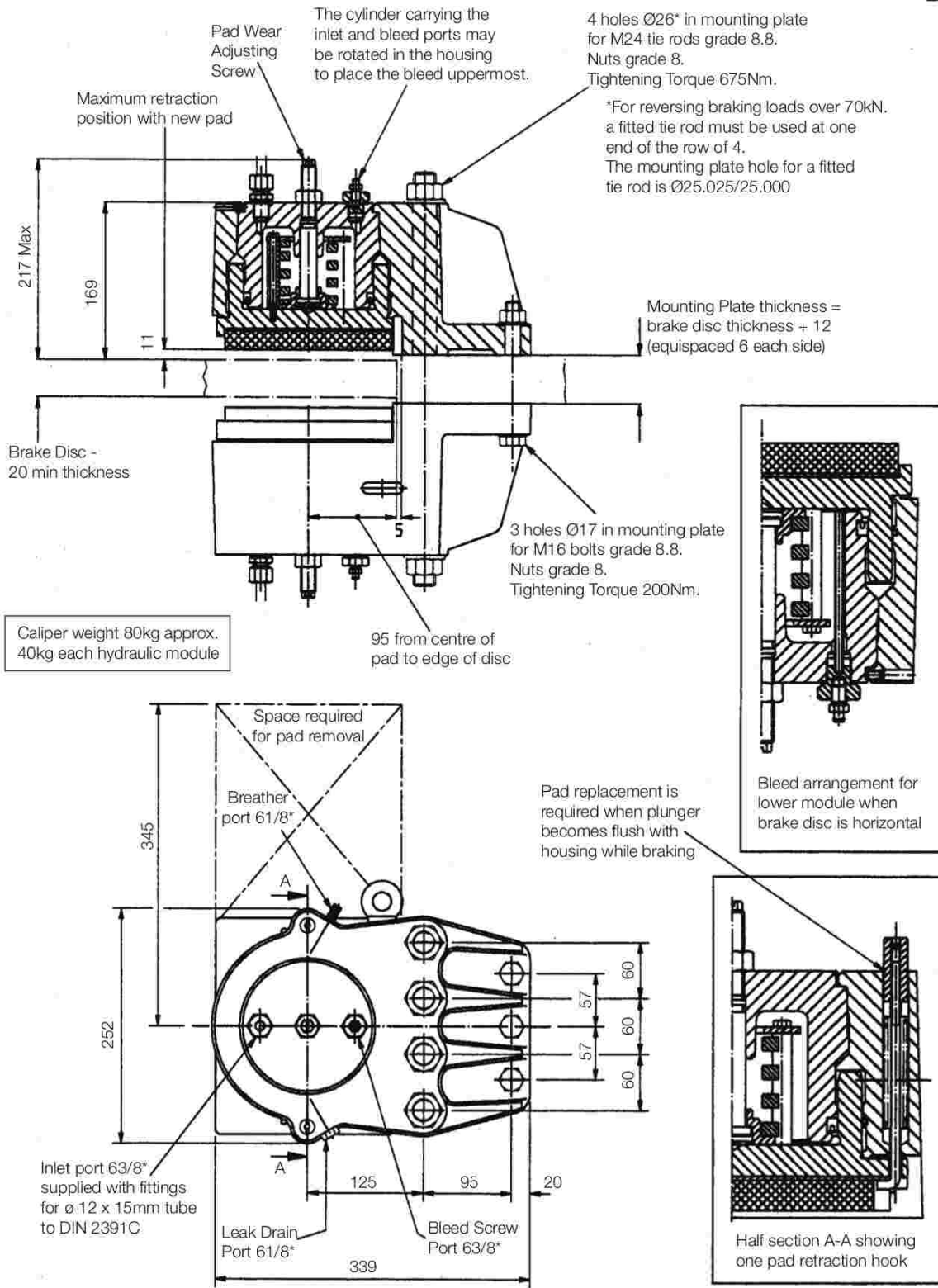




VKHD Disc Brake Caliper - Hydraulic Applied - Spring Released

DB2019





## VKHD Disc Brake Caliper - Hydraulic Applied - Spring Released

### Technical Data

The VKHD is a hydraulically applied spring retracted disc brake caliper which as 2 similar halves or hydraulic modules. In installation the modules are bolted each side of a fixed plate and mounted astride a brake disc. The brake disc may be either in a vertical plane or horizontal but for the latter mounting special bleed arrangements are required.

### Brake Disc

Diameter - 1000mm minimum. There is no maximum limit except for practical considerations.

Thickness - 20mm minimum. There is no maximum limit except for practical considerations.

Material - standard discs sg iron to BS2789 grade 420/12. (Twiflex data sheet DB 5002).

Finish - brake path surface to be 2µm or better.

### Brake Pads

Length	Wide	Thickness	Area (2 pads)	Wear Allowance
208mm	180mm	22mm	726cm <sup>2</sup>	10mm

### Hydraulics

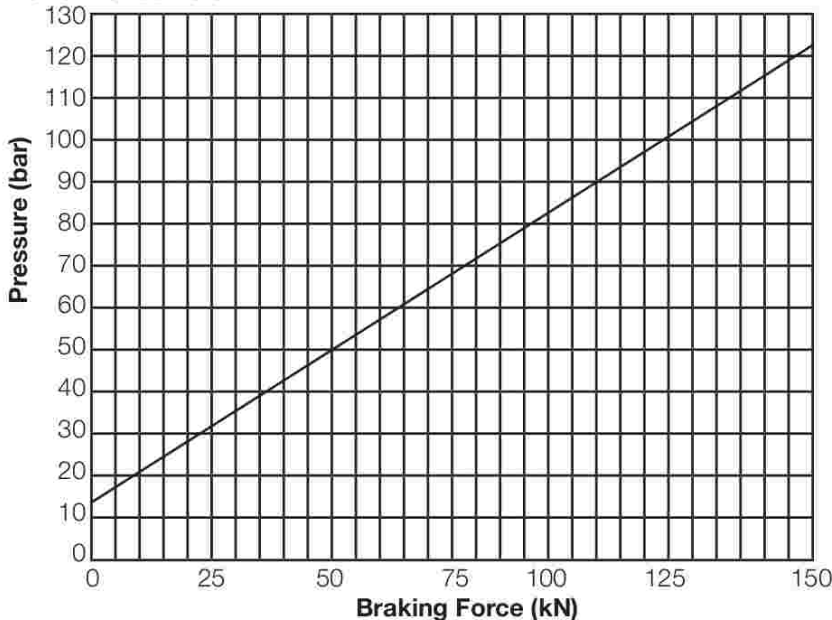
The recommended fluid is mineral oil based hydraulic fluid. Water based fluid types ISO-L-HFAE, ISO-L-HFB, and ISO-L-HFC may also be used.

Fluid displacement for 1mm retraction at both pads - 31ml.

### Brake Adjustments

The adjusting screw sets the air gap between brake pad and the brake disc and allows pad wear to be taken up. A typical air gap is 2mm. The smaller the air gap, the smaller the hydraulic fluid volume flow required. In a high wear situation, resetting should be frequent. See installation, Operation and Maintenance Instructions M1144 for adjustment for pad wear. An electrical monitoring unit is optionally available to indicate when pad replacement is required.

### Performance Data:



Braking force assumes a coefficient of friction between brake pad and brake disc of 0.4.

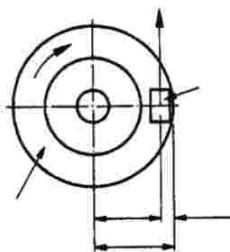
This is only achieved by fully bedded-in and conditioned brake pads and a high standard of cleanliness and dryness at the friction surfaces.

A bedding in procedure is available in publication M1060.

An appropriate service factor should be applied according to the duty. In case of holding brakes or wet conditions this should be at least 2.

Pressures stated allow for small loss of force due to seal friction.

Normal maximum working pressure 100 bar.



### Braking Torque

Braking Torque (Tb) = Braking Force (Fb) x Effective disc radius (Re)

Effective Disc Radius (Re) = Actual disc radius (R) - 0.095m.

For Tb in Nm, apply Fb in Newtons and R in metres

$$Tb = Fb \times Re \quad (Re = R - 0.095) \text{ Nm}$$

$$Tb = Fb (R - 0.095m)$$

For Tb in lbf ft, apply Fb in lbf and R in ft

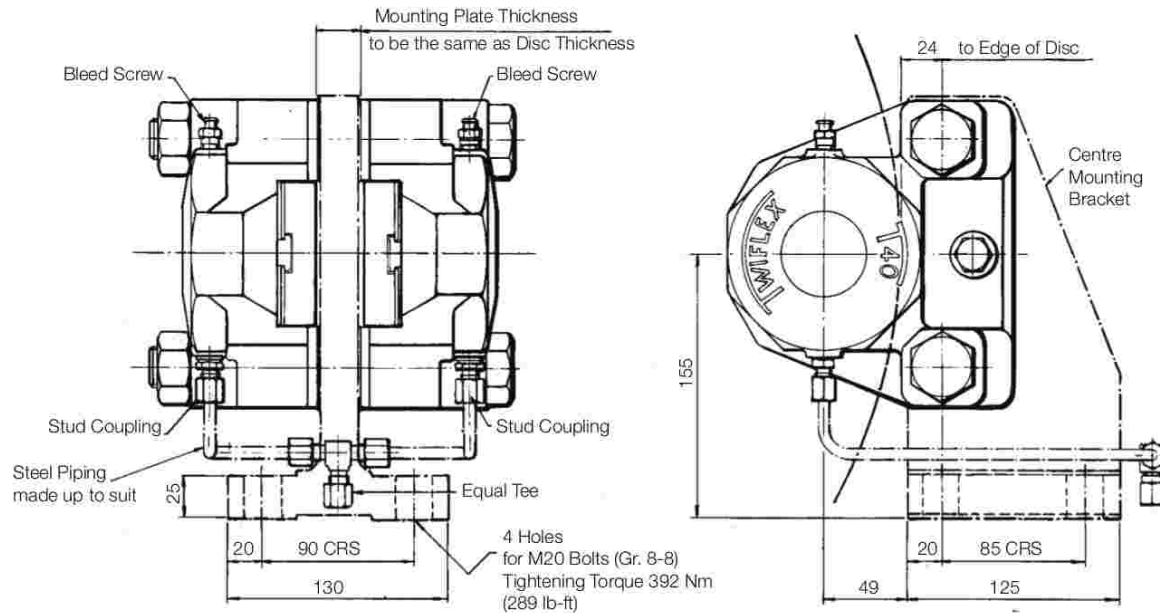
$$Tb = Fb (R - 0.312ft) \text{ lbf ft}$$

Twiflex disc brakes must be used with Twiflex asbestos free pads. The use of any other brake pad will invalidate the warranty. Twiflex Limited reserves the right to modify or change the design without prior notice. This document is the intellectual property of Twiflex Limited.



## Disc Brake Caliper - Type T40 Hydraulically Applied

Nominal dimensions given. For specific dimensions please contact Twiflex Limited.



**Typical T40 Piping Layout with Twiflex Centre Mounting Bracket**

### General Description

The Twiflex T40 Disc Brake is a directly applied hydraulic caliper of split design consisting of identical halves which are bolted to each side of a central mounting plate or bracket. The mounting plate should be of the same thickness as the brake disc and this may range from 20mm and upwards. Brake discs may be of any diameter from 300mm diameter with no upper limit.

Normally one, or two calipers will be used with a disc and ideally they will be mounted on the horizontal centre-line of the disc. Where this is not possible, or where more than two calipers are used, it may be necessary to provide special bleed screw arrangements.

The T40 caliper is fitted with hardened and ground steel pistons, and special seals provide automatic pad retraction of approximately 1mm when the brake is released. Asbestos-free, easy change brake pads are fitted as standard.

To fixing bolts (M24 grade 8.8) are used to secure the caliper to the mounting plate or bracket. It is important that these bolts are tightened to 680 Nm (500 lbf-ft) torque. Standard centre mounting brackets are available for calipers used with 25.4mm or 30mm thick brake discs.

The standard T40 brake caliper is for use with Mineral Oil based hydraulic fluids; and must not be used with automotive type brake fluids.

### Pad Removal / Replacement

Brake pads can be easily changed with the brake in situ. Pad replacement is carried out from the rear of the caliper. With the brake off the worn pads may be removed after unscrewing the pad retaining screws (7) and removing the pad retaining plates (3).

Re-assembly of the new replacement pads follows the reverse of this procedure, but note that the mating surfaces are clean and that the slotted pad backing plate is located around the keep button on the piston. The pads should slide easily into position.



**Disc Brake Caliper - Type T40 Hydraulically Applied**

**Caliper Packages**

Caliper T40	Pipe Fittings Kit	Combined Part No. Caliper and Pipe Fittings Kit
Basic Caliper (1) Part No. 6780880	Metric (2) Part No. 7300844	6780880/AH61
	North American (3) Part No. 7300845	6780880/AH61

- (1) T40 Basic Caliper (6780880) comprising - two identical caliper halves fitted with friction pads and bleed screws.
- (2) Pipe Fitting Kit (Metric) (7300844) comprising - 2 Male Stud Couplings G18 (1/8" BSP) to 6mm O/D Tube and 1 Equal Tee Coupling to suit 6mm O/D Tube.
- (3) Pipe Fitting Kit (North American) (7300845) comprising - 2 Conversion Adaptors G1/8" male to 1/8" NPT female and 2 Sealing Washers.

**Optional Items**

- 1 Bolt Assembly Kit (to suit 25.4 and 30mm brake discs) comprising - 2 bolts M24 grade 8.8 x 200 long and 2 nuts M24 grade 8 Part No. 6700879
- 2 Centre Mounting Bracket only (to suit 25.4mm disc) Part No. 6950374
- 3 Centre Mounting Bracket only (to suit 30mm disc) Part No. 6950375
- 4 Steel Tubing 6mm outside diameter x 3m long to BS3602 grade CDS 23 (DIN 2391/C) Part No. 7300776

**Recommended Spares**

- Pad Assembly (asbestos free) (2 required per caliper) Part No. 7080142
  - Seal Kit comprising - 2 main seals (2 parts) and 2 O-Rings Part No. 6000360
- for use with mineral based hydraulic fluids.

**Service**

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

Twiflex Disc Brakes must be used with Twiflex Asbestos Free Brake Pads.  
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