Twiflex® Limited

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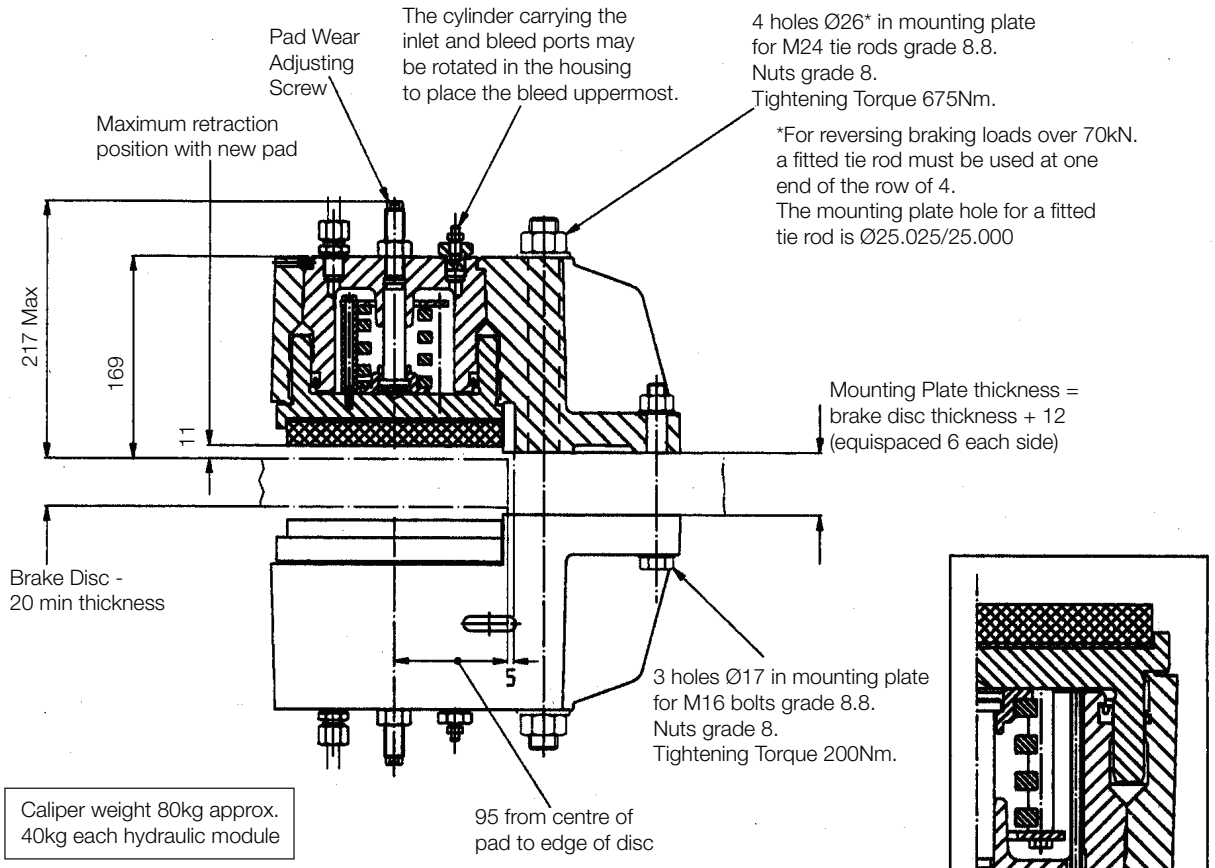
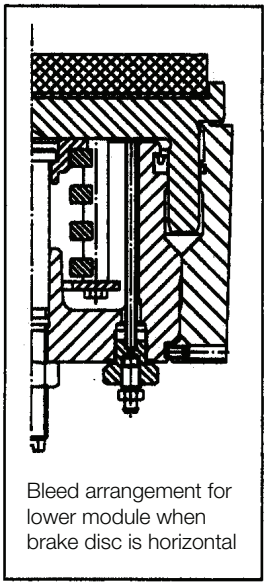
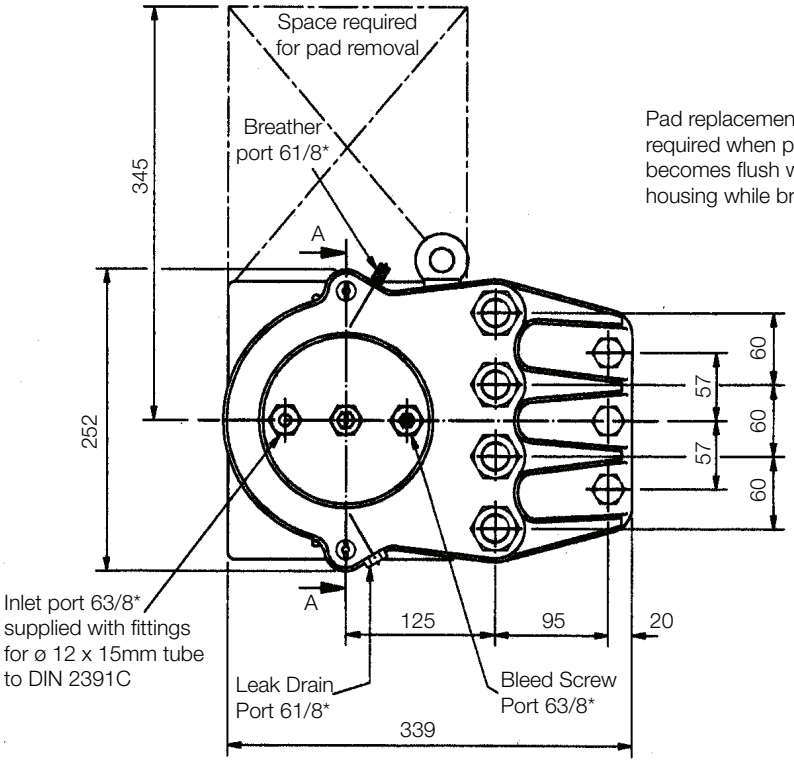
VKHD Disc Brake Caliper - Hydraulic Applied - Spring Released



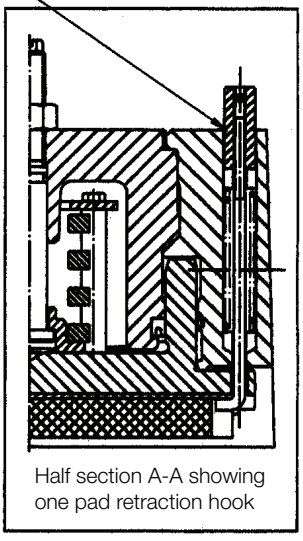
Caliper weight 80kg approx.
40kg each hydraulic module



Bleed arrangement for lower module when brake disc is horizontal



Pad replacement is required when plunger becomes flush with housing while braking



Half section A-A showing one pad retraction hook

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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 of horizontal but for the latter mounting special bleed arangements 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^2	10mm

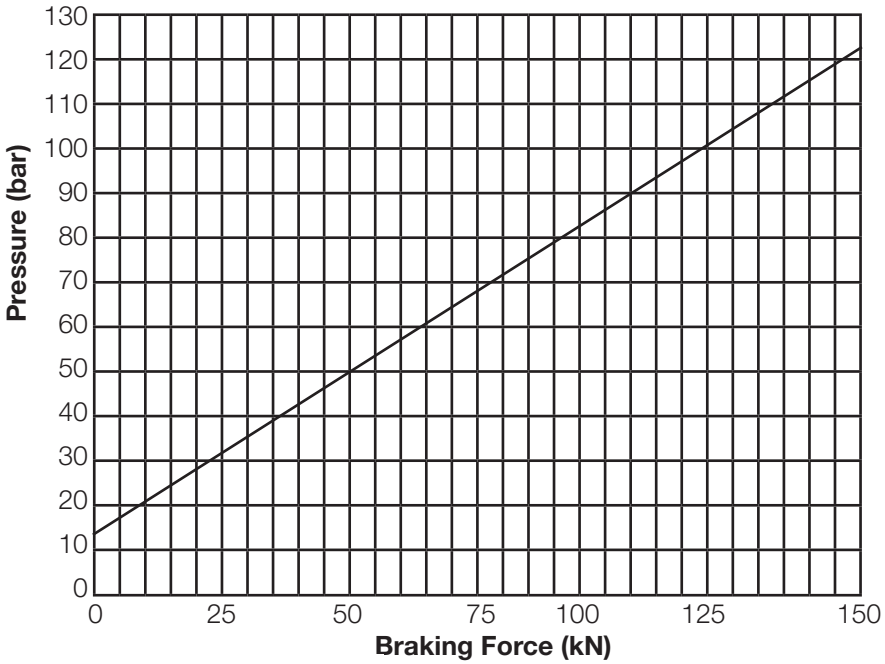
Hydraulics

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 displcacement 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.

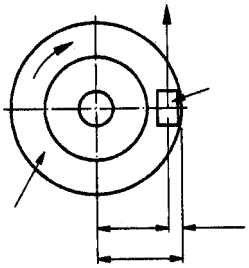
Performance Data:



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 x Re (Re = R - 0.095) Nm
Tb = Fb (R - 0.095m)
For Tb in lbf ft, apply Fb in lbf and R in ft
Tb = Fb (R - 0.312ft) 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.

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