

## MR Disc Brake Caliper Range

The Twiflex MR series of disc brake calipers is suitable for use with discs of 12.7mm or 25.4mm thick. Minimum disc diameter is 250mm. Minimum disc diameter for the MR2 is 460mm.

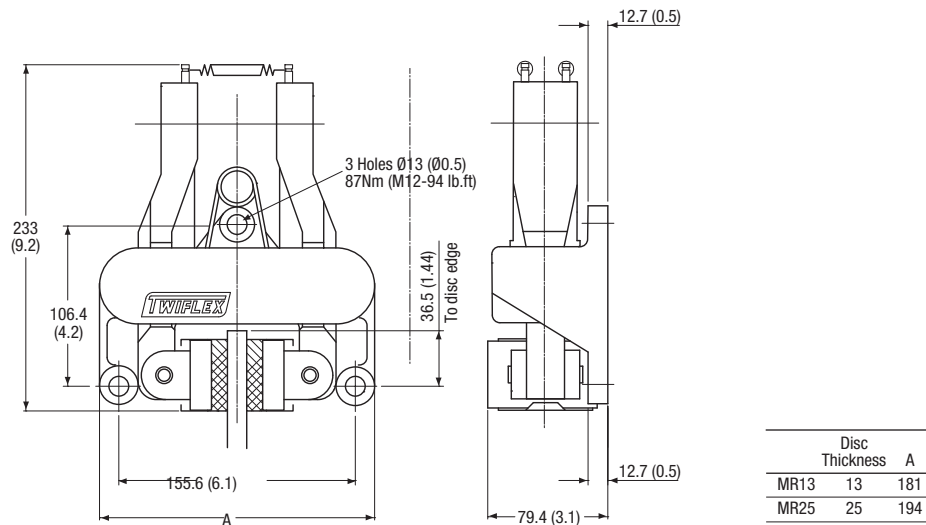
Normally one or two calipers are used per disc, but the number may be increased depending on disc size. The brakes may be positioned at any angle around the periphery of the disc, but should ideally be mounted horizontally (i.e. at the 3 o'clock or 9 o'clock position). If the caliper mounting angle is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

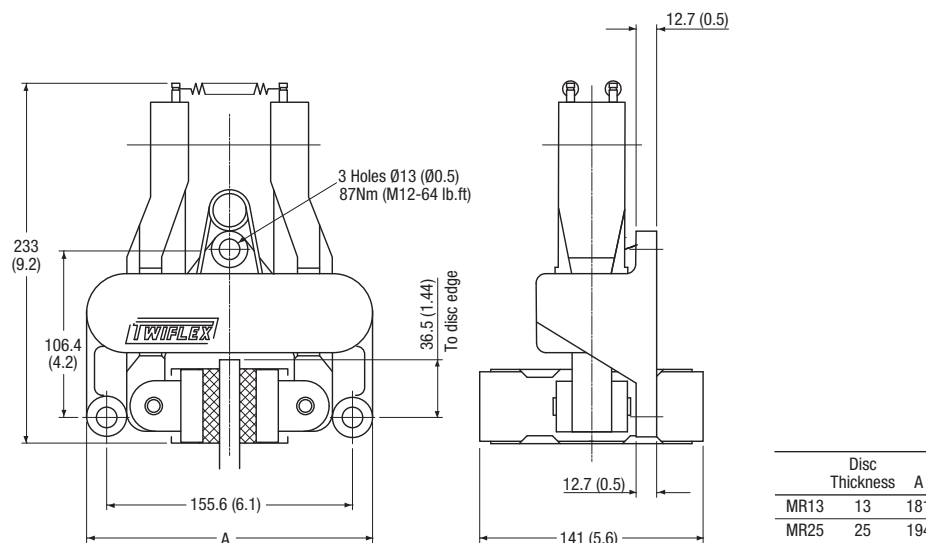
The ratings shown on the graphs are based on fully bedded in and conditioned brake pads with a nominal friction coefficient  $\mu = 0.4$ . Twiflex disc brakes must be used with Twiflex asbestos free brake pads.

Effective disc radius = actual radius (m) – 0.03m.

### MR Disc Brake Caliper



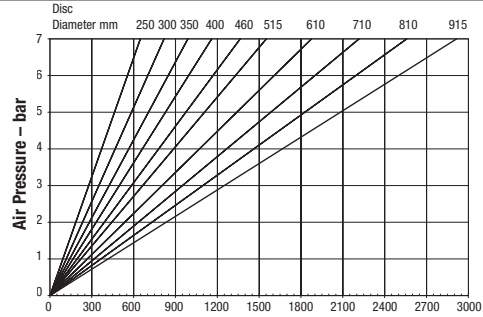
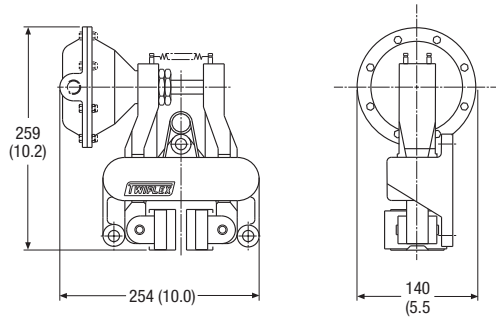
### MR2 Disc Brake Caliper



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

# MR Series

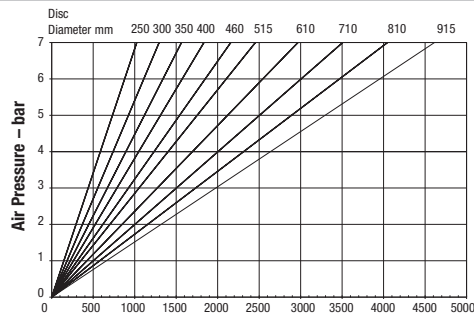
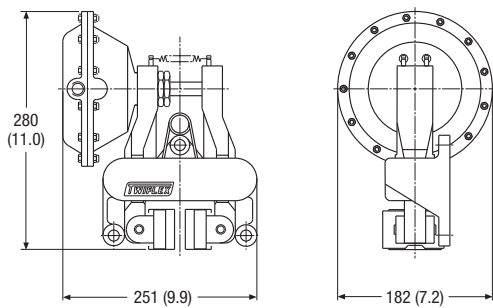
## MRA Pneumatically Applied – Spring Released



Maximum Pressure 7 bar  
 Maximum Braking Force = 6.9kN @ 7 bar  
 Weight of MR caliper and thruster - 7.82kg  
 Weight of MR2 caliper and thruster - 8.32kg

**Braking Torque Nm**  
 Weight of thruster only - 1.32kg  
 Volume displacement of thruster at full stroke = 300

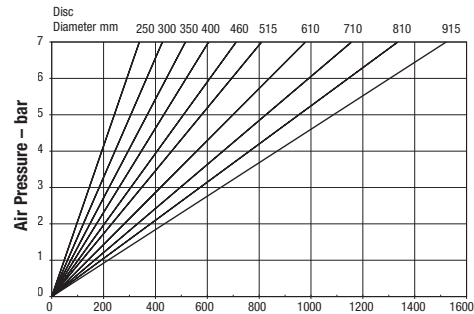
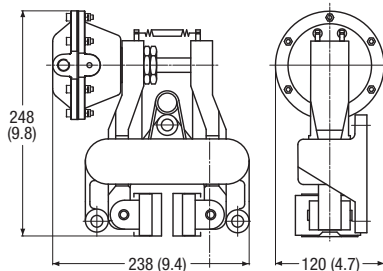
## MRB Pneumatically Applied – Spring Released



Maximum Pressure 7 bar  
 Maximum Braking Force = 10.8kN @ 7 bar  
 Weight of MR caliper and thruster - 8.56kg  
 Weight of MR2 caliper and thruster - 9.06kg

**Braking Torque Nm**  
 Weight of thruster only - 2.06kg  
 Volume displacement of thruster at full stroke = 426ml

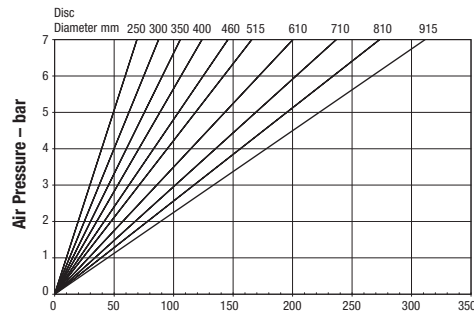
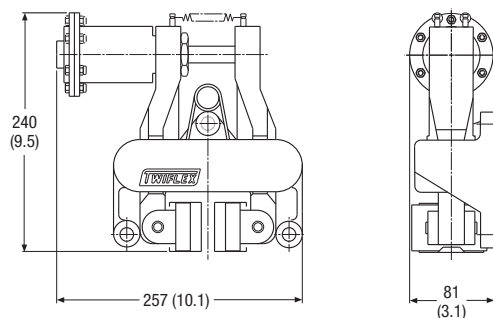
## MRD Pneumatically Applied – Spring Released



Maximum Pressure 7 bar  
 Maximum Braking Force = 3.5kN @ 7 bar  
 Weight of MR caliper and thruster - 7.65kg  
 Weight of MR2 caliper and thruster - 8.15kg

**Braking Torque Nm**  
 Weight thruster only - 1.15kg  
 Volume displacement of thruster at full stroke = 150ml

## MRE Pneumatically Applied – Spring Released

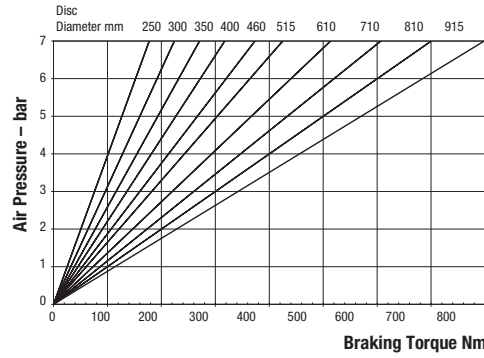
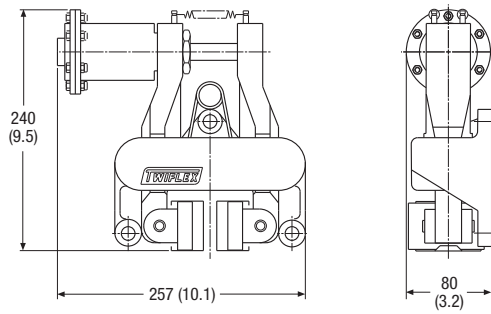


Maximum Pressure 7 bar  
 Maximum Braking Force = 0.74kN @ 7 bar  
 Weight of MR caliper and thruster - 6.84kg  
 Weight of MR2 caliper and thruster - 7.34kg

**Braking Torque Nm**  
 Weight of thruster only - 0.34kg  
 Volume displacement of thruster at full stroke = 25ml

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

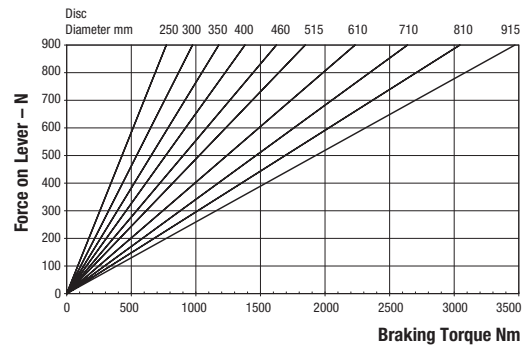
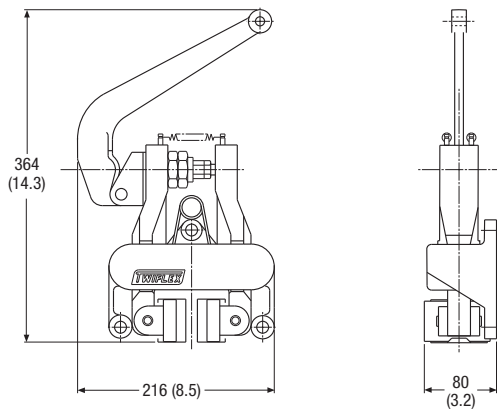
## MRG Pneumatically Applied – Spring Released



Maximum Pressure 7 bar  
 Maximum Braking Force = 1.9kN @ 7 bar  
 Weight of MR caliper and thruster - 6.8kg

Weight of MR2 caliper and thruster - 7.3kg  
 Weight of thruster only - 0.3kg  
 Volume displacement of thruster at full stroke = 64ml

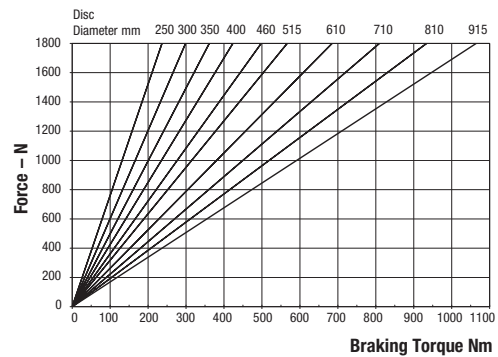
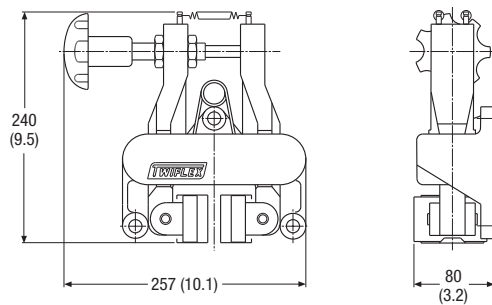
## MRH Mechanically Applied – Lever Operated



Weight of MR caliper and thruster - 7.9kg  
 Weight of MR2 caliper and thruster - 8.4kg

Weight of lever assembly only - 1.4kg  
 Maximum Braking Force = 8.3kN @ 0.9kN force on lever

## MRW Mechanically Applied – Hand Operated



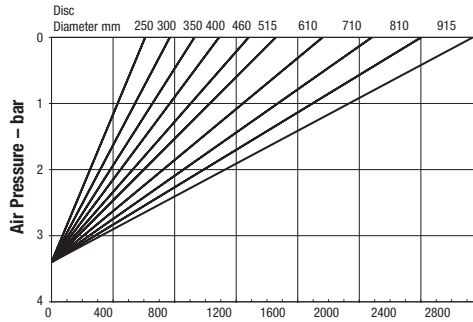
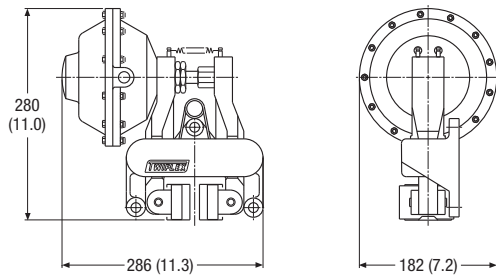
Weight of MR caliper and hand wheel assembly - 7.8kg  
 Weight of MR2 caliper and hand wheel - 8.3kg

Weight of hand wheel assembly only - 1.3kg  
 Maximum Braking Force = 2.68kN

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

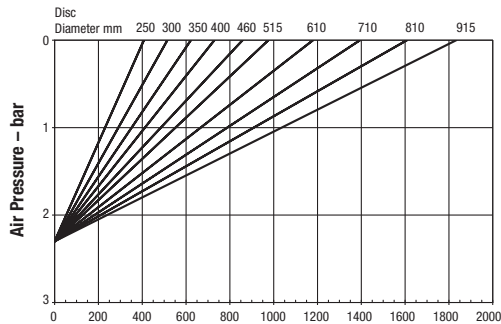
# MR Series

MRK Spring Applied – Pneumatically Released, Self Adjusting



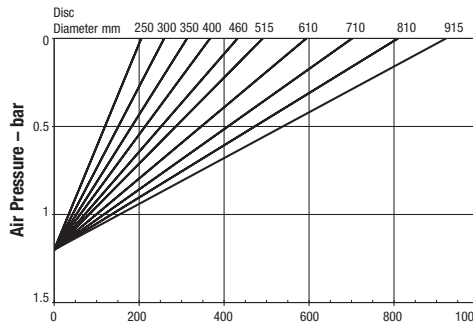
**Braking Torque Nm (Full Rate)**

Minimum Pressure for full retraction: 5 bar  
 Maximum Braking Force full rate: 6.4kN  
 Weight of MR caliper and thruster - 10.0kg  
 Weight of MR2 caliper and thruster - 10.5kg  
 Weight of thruster only - 3.5kg  
 Volume displacement of thruster at full retraction is 950ml



**Braking Torque Nm (2/3rd Rate)**

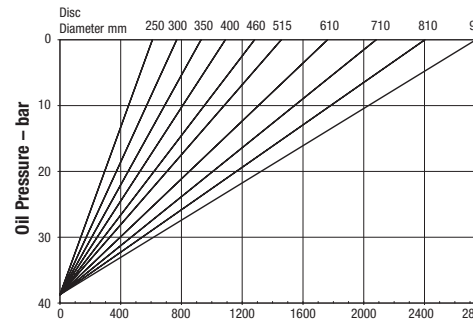
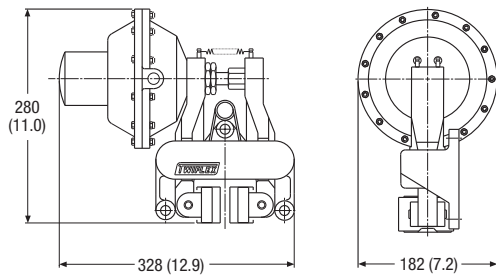
Minimum Pressure for full retraction: 3.3 bar  
 Maximum Braking Force 2/3rd rate: 4.3kN  
 Weight of MR caliper and thruster - 10.0kg  
 Weight of MR2 caliper and thruster - 10.5kg  
 Weight of thruster only - 3.5kg  
 Volume displacement of thruster at full retraction is 950ml



**Braking Torque Nm (1/3rd Rate)**

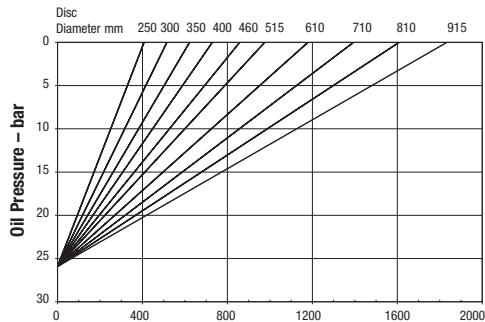
Minimum Pressure for full retraction: 1.7 bar  
 Maximum Braking Force 1/3rd rate: 2.2kN  
 Weight of MR caliper and thruster - 10.0kg  
 Weight of MR2 caliper and thruster - 10.5kg  
 Weight of thruster only - 3.5kg  
 Volume displacement of thruster at full retraction is 950ml

# MRL Spring Applied – Hydraulically Released, Self Adjusting



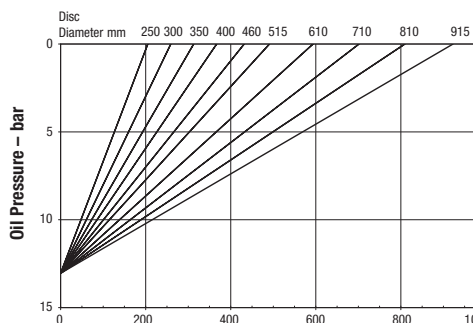
**Braking Torque Nm (Full Rate)**

Minimum Pressure for full retraction: 50 bar  
 Maximum Braking Force full rate: 6.4kN  
 Weight of MR caliper and thruster - 10.5kg  
 Weight of MR2 caliper and thruster - 11kg  
 Weight of thruster only - 4kg  
 Volume displacement of thruster at 4mm retraction = 5ml



**Braking Torque Nm (2/3rd Rate)**

Minimum Pressure for full retraction 33 bar  
 Maximum Braking Force 2/3rd rate: 4.3kN  
 Weight of MR caliper and thruster - 10.5kg  
 Weight of MR2 caliper and thruster - 11kg  
 Weight of thruster only - 4kg  
 Volume displacement of thruster at 4mm retraction = 5ml



**Braking Torque Nm (1/3rd Rate)**

Minimum Pressure for full retraction: 17 bar  
 Maximum Braking Force 1/3rd rate: 2.2kN  
 Weight of MR caliper and thruster - 10.5kg  
 Weight of MR2 caliper and thruster - 11kg  
 Weight of thruster only - 4kg  
 Volume displacement of thruster at 4mm retraction = 5ml

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