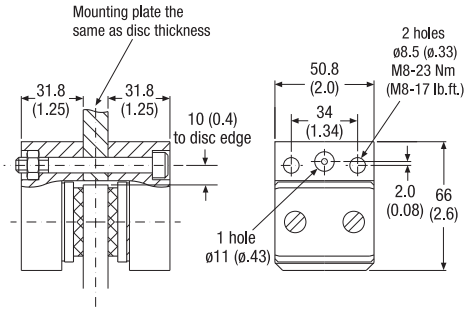
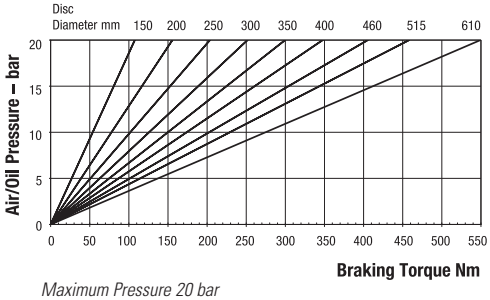
Modular Series

T2 Pneumatically or Hydraulically Applied





Maximum Pressure 20 bar
Maximum Braking Force = 2kN @ 20 bar oil or air pressure
Weight of caliper - 0.75kg
Volume displacement per 1mm stroke = 3ml

The Twiflex T2 disc brake caliper is split caliper design suitable for use with a minimum disc thickness of 5mm. The modules are mounted each side of a central mounting plate of the same thickness as the brake disc. Minimum disc diameter is 120mm. Alternatively, the brake may be side-mounted with a spacer equal to the disc thickness between the two halves.

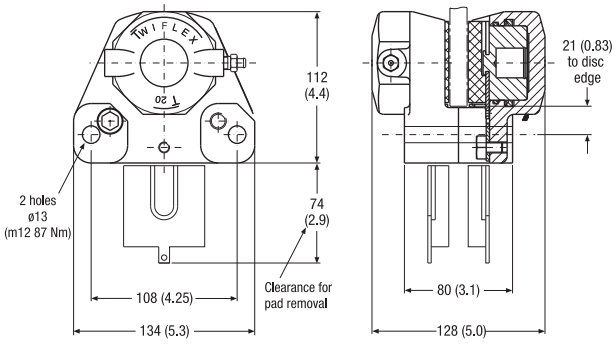
For pneumatic operation, use dry and filtered compressed air. Pneumatic brakes require a control valve, operated either manually or by pneumatic or electrical signal.

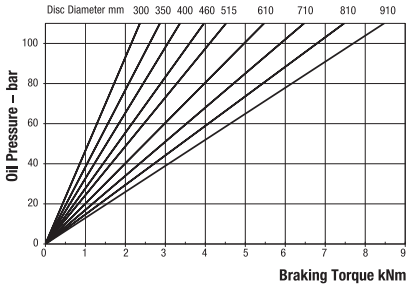
Normally one or two calipers are used per disc, but the number may be increased depending on disc size. The brakes may be positioned at any angle around the periphery of the disc, but should ideally be mounted horizontally (i.e. at the 3 o'clock or 9 o'clock position). A range of brake discs is available from Twiflex (see Disc and Hub Assemblies).

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

Effective disc radius = actual radius (m) – 0.019m.

T20 Hydraulically Applied





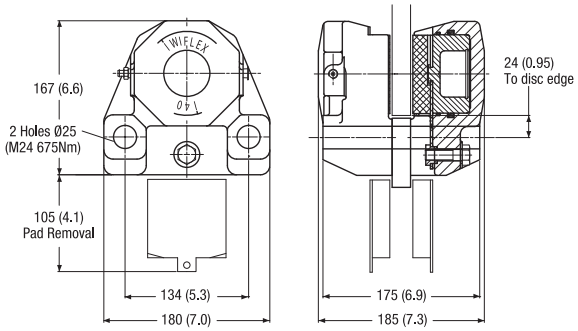
Maximum Pressure 110 bar
Maximum Braking Force = 20kN @ 110 bar
Weight of caliper - 5.82kg
Volume displacement per 1mm stroke at each pad = 4.8ml

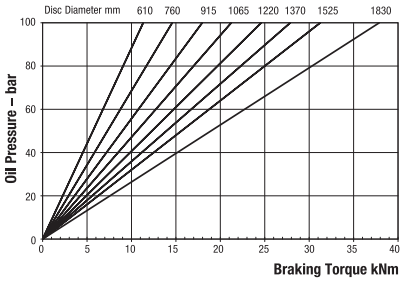
The standard Twiflex T20 disc brake caliper is split caliper design suitable for use with a minimum disc thickness of 12.7mm. Optionally, the caliper may be supplied in a modified form for use with a minimum disc thickness of 8mm. Normally the brake is side mounted, however, for use with a disc thickness greater than 20mm, the split design allows the modules to be mounted each side of a central mounting plate of the same thickness as the brake disc. Minimum disc diameter is 300mm.

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. A range of brake discs is available from Twiflex (see Disc and Hub Assemblies).

The ratings shown on the graph are based on fully bedded in and conditioned brake pads with a nominal friction coefficient μ = 0.4. Twiflex disc brakes must be used with Twiflex asbestos free brake pads. Effective disc radius = actual radius (m) – 0.032m.

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





Maximum Pressure 100 bar
Maximum Braking Force = 45kN @ 100 bar
Weight of caliper - 18.6kg
Volume displacement per 1mm stroke at each pad = 15ml

The Twiflex T40 disc brake caliper is split caliper design suitable for use with a minimum disc thickness of 20mm. The modules are mounted each side of a central mounting plate of the same thickness as the brake disc. Minimum disc diameter is 300mm.

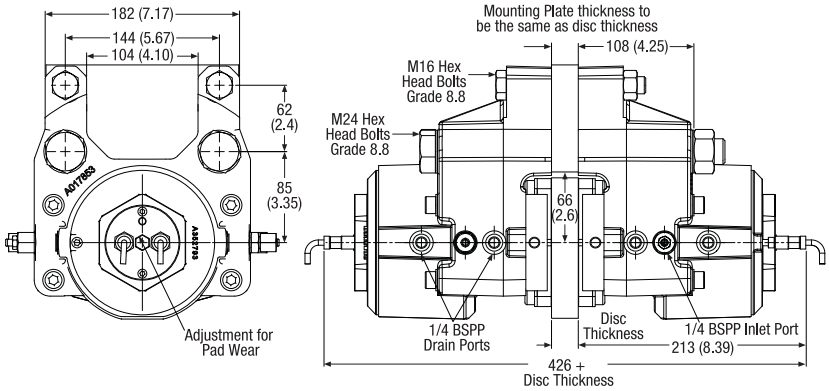
Normally one or two calipers are used per disc, but the number may be increased depending on disc size. The brakes may be positioned at any angle around the periphery of the disc. A range of brake discs is available from Twiflex (see Disc and Hub Assemblies).

The ratings shown on the graph are based on fully bedded in and conditioned brake pads with a nominal friction coefficient μ = 0.4. Twiflex disc brakes must be used with Twiflex asbestos free brake pads. Effective disc radius = actual radius (m) – 0.045m.

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

Modular Series

VCSMk4 Spring Applied – Hydraulically Released



Caliper Type	Disc/Pad Air Gap mm	Braking Force kN	Minimum Pressure for Full Retraction bar
VCS70	1.7	62	160
VCS60	2.0	53	148
VCS50	2.0	44	131
VCS40	2.0	35	113
VCS30	2.0	25	94

Weight of caliper (2 modules) - 50kg
Volume displacement per 1mm stroke at both pads = 21ml

The Twiflex VCS Mk4 disc brake caliper is comprised of two halves, or spring modules, and is suitable for use with a minimum disc thickness of 20mm. The modules are mounted each side of a central mounting plate of the same thickness as the brake disc. Minimum disc diameter is 500mm.

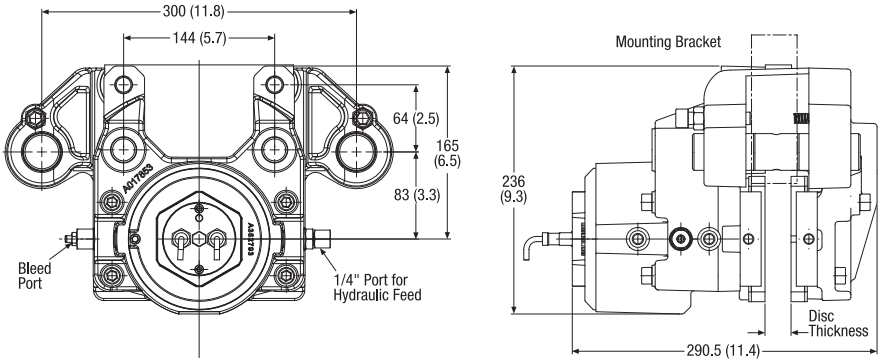
Normally one or two calipers are used per disc, but the number may be increased depending on disc size. The brakes may be positioned at any angle around the periphery of the disc, but should ideally be mounted horizontally (i.e. at the 3 o'clock or 9 o'clock position). A range of brake discs is available from Twiflex (see Disc and Hub Assemblies).

Braking force ratings are achieved through a combination of shim number and air gap setting. Spring fatigue life is a function of the caliper rating.

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

Effective disc radius = actual radius (m) – 0.064m.

VCS-FL Spring Applied – Hydraulically Released



The Twiflex VKCS-FL disc brake caliper comprises a single spring module forming the 'active' side of this floating unit and is available for use where space is limited or to accommodate axial disc float of ±6mm.

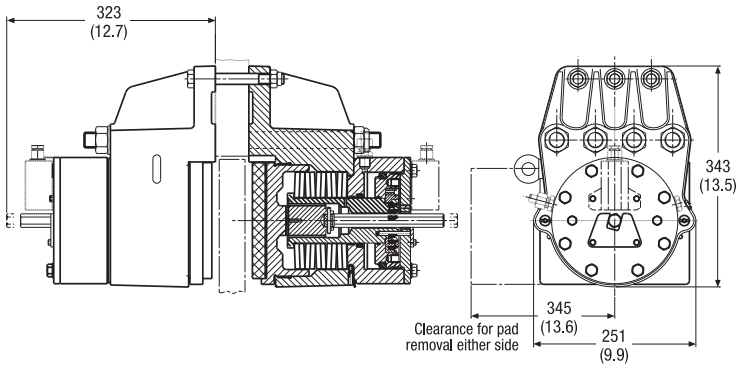
Braking force ratings are achieved through a combination of shim number and air gap setting. Spring fatigue life is a function of the caliper rating.

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

Effective disc radius = actual radius (m) – 0.064m.

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

VKSD Spring Applied – Hydraulically Released



Caliper Type	Disc/Pad Air Gap mm	Braking Force kN	Minimum Pressure for Full Retraction bar
VKSD119	2	119	138
VKSD112	2	112	131
VKSD104	2	104	124
VKSD96	2	96	116
VKSD88	2	88	108
VKSD80	2	80	100
VKSD71	2	71	92
VKSD62	2	62	83
VKSD58	2	58	63
VKSD53	2	53	58
VKSD47	2	47	53
VKSD41	2	41	47
VKSD34	2	34	41
VKSD28	2	28	34

Weight of caliper (2 modules) - 146kg
Volume displacement per 1mm stroke at both pads = 28ml

The Twiflex VKSD disc brake caliper is comprised of two halves, or spring modules, and is suitable for use with a minimum disc thickness of 20mm. The modules are mounted each side of a central mounting plate 12mm thicker than the brake disc. Minimum disc diameter is 1000mm.

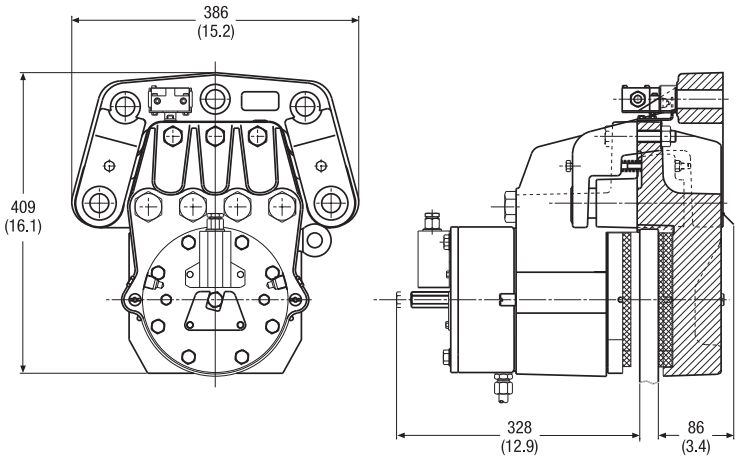
Normally one or two calipers are used per disc, but the number may be increased depending on disc size. The brakes may be positioned at any angle around the periphery of the disc, but should ideally be mounted horizontally (i.e. at the 3 o'clock or 9 o'clock position). A range of brake discs is available from Twiflex (see Disc and Hub Assemblies).

Braking force ratings are achieved through a combination of different springs, shims and air gap settings. Spring fatigue life is a function of the caliper rating.

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

Effective disc radius = actual radius (m) – 0.095m.

VKSD-FL Spring Applied – Hydraulically Released



The Twiflex VKSD-FL disc brake caliper comprises a single spring module forming the 'active' side of this floating unit and is available for use where space is limited or to accommodate axial disc float of ±6mm.

Braking force ratings are achieved through a combination of different springs, shims and air gap settings. Spring fatigue life is a function of the caliper rating.

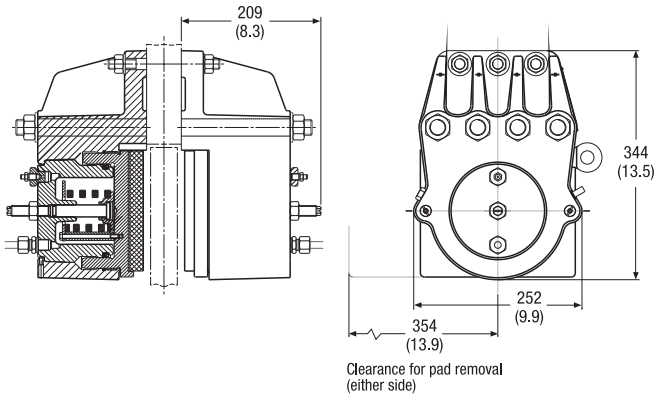
The ratings shown in the table are based on fully bedded in and conditioned brake pads with a nominal friction coefficient μ = 0.4. Twiflex disc brakes must be used with Twiflex asbestos free brake pads.

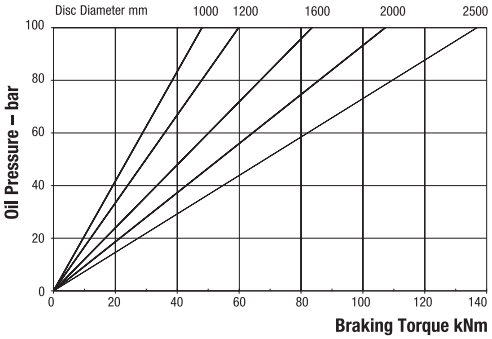
Effective disc radius = actual radius (m) – 0.095m.

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

Modular Series

VKHD Hydraulically Applied – Spring Released





Maximum Pressure 100 bar
Maximum Braking Force = 118kN @ 100 bar
Weight of caliper (2 modules) - 80kg
Volume displacement per 1mm stroke at both pads = 31ml

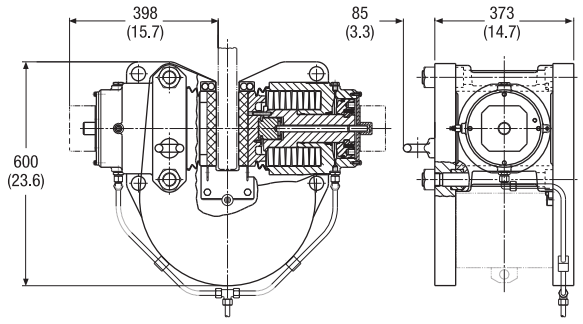
The Twiflex VKHD disc brake caliper is comprised of two halves, or hydraulic modules, and is suitable for use with a minimum disc thickness of 20mm. The modules are mounted each side of a central mounting plate 12mm thicker than the brake disc. Minimum disc diameter is 1000mm.

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). A range of brake discs is available from Twiflex (see Disc and Hub Assemblies).

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

Effective disc radius = actual radius (m) – 0.095m.

VSMk2 Spring Applied – Hydraulically Released



Caliper Type	Disc/Pad Air Gap mm	Braking Force kN	Minimum Pressure for Full Retraction bar
VS230	4	185	180
VS205	4	165	163
VS190	4	153	154
VS175	4	141	144
VS155	4	125	131
VS137	4	111	108
VS100	4	81	84

Weight of caliper = 410kg
Volume displacement per 1mm stroke at both pads = 32ml

The Twiflex VS Mk2 disc brake caliper is comprised of two modules secured between U-shaped top and bottom mounting plates by tie rods.

Typically 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, but ideally mounted horizontally (at the 3 o'clock or 9 o'clock positions).

Minimum disc diameter is 1000mm with no maximum except for practical limitations. The standard caliper can accommodate disc thicknesses from 38mm to 50mm - consult Twiflex for discs thicker than 50mm.

A tandem caliper arrangement is available sharing a common, central, mounting plate; minimum disc diameter is 2000mm

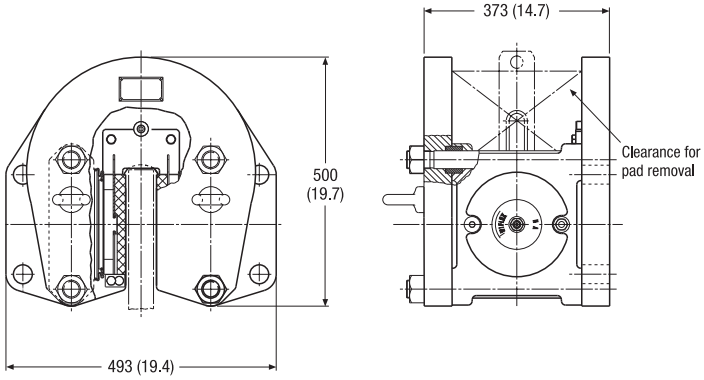
The ratings shown on the tables are based on fully bedded in and conditioned brake pads with a nominal friction coefficient μ = 0.4. Twiflex disc brakes must be used with Twiflex asbestos free brake pads.

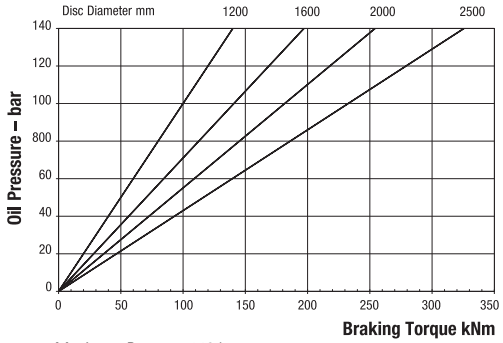
Effective disc radius = actual radius (m) – 0.110m.

Note: Spring fatigue life is a function of the caliper rating.

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

VH Hydraulically Applied – Spring Released





Maximum Pressure 140 bar
Maximum Braking Force = 285kN @ 140 bar
Weight of caliper - 287kg
Volume displacement per 1mm stroke at both pads = 51.7ml

The Twiflex VH disc brake caliper is comprised of two modules secured between U-shaped top and bottom mounting plates by tie rods.

Typically 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, but ideally mounted horizontally (at the 3 o'clock or 9 o'clock positions).

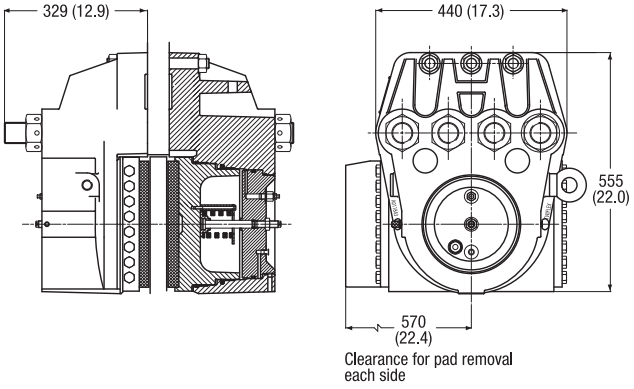
Minimum disc diameter is 1000mm with no maximum except for practical limitations. The standard caliper can accommodate disc thicknesses from 38mm to 50mm - consult Twiflex for discs thicker than 50mm.

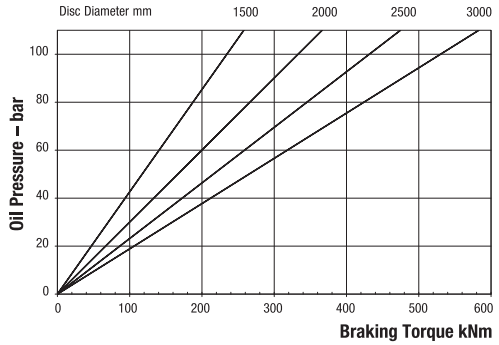
A tandem caliper arrangement is available sharing a common, central, mounting plate; minimum disc diameter is 2000mm

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

Effective disc radius = actual radius (m) – 0.110m.

VMH2 Hydraulically Applied – Spring Released





Maximum Pressure 110 bar
Maximum Braking Force = 433kN @ 110 bar
Weight of caliper (2 modules) - 580kg
Volume displacement per 1mm stroke at both pads = 101.5ml

The Twiflex VMH2 disc brake caliper is comprised of two modules bolted to a central mounting plate, 12mm thicker than the brake disc. Minimum disc thickness is 38mm and minimum disc diameter is 1500mm with no maximum except for practical limitations.

Typically one or two calipers are used per disc, positioned at any angle around the periphery, but the number may be increased depending on disc size.

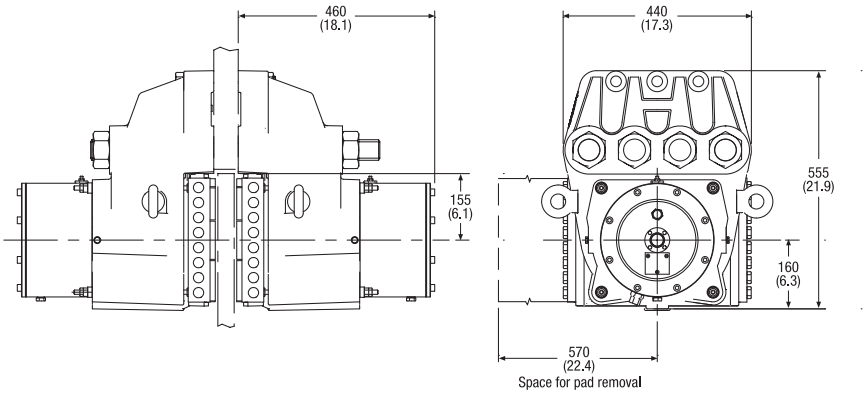
The ratings shown on the graph are based on fully bedded in and conditioned brake pads with a nominal friction coefficient μ = 0.4. Twiflex disc brakes must be used with Twiflex asbestos free brake pads.

Effective disc radius = actual radius (m) – 0.155m.

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

Modular Series

VMS3SPS Spring Applied – Hydraulically Released



Caliper Type	Disc/Pad Air Gap mm	Braking Force kN	Minimum Pressure for Full Retraction bar
VMS3 SPS276	3	276	158
VMS3 SPS268	3	268	154
VMS3 SPS260	3	260	149
VMS3 SPS252	3	252	145
VMS3 SPS244	3	244	141
VMS3 SPS236	3	236	137
VMS3 SPS227	3	227	132
VMS3 SPS219	3	219	128
VMS3 SPS211	3	211	124
VMS3 SPS202	3	202	119
VMS3 SPS194	3	194	115
VMS3 SPS185	3	185	110
VMS3 SPS177	3	177	106
VMS3 SPS168	3	168	101
VMS3 SPS159	3	159	96
VMS3 SPS150	3	150	91
VMS3 SPS141	3	141	87

Weight of Caliper (2 Modules) = 675kg
Volume displacement per 1mm stroke at both pads = 52ml

The Twiflex VMS3-SPS disc brake caliper is comprised of two modules bolted to a central mounting plate, 12mm thicker than the brake disc. Minimum disc thickness is 38mm and minimum disc diameter is 1500mm with no maximum except for practical limitations. Based on a development of the earlier Twiflex VMS2-SP disc brake, the VMS3-SPS provides a significant increase in braking force but in a similarly sized package.

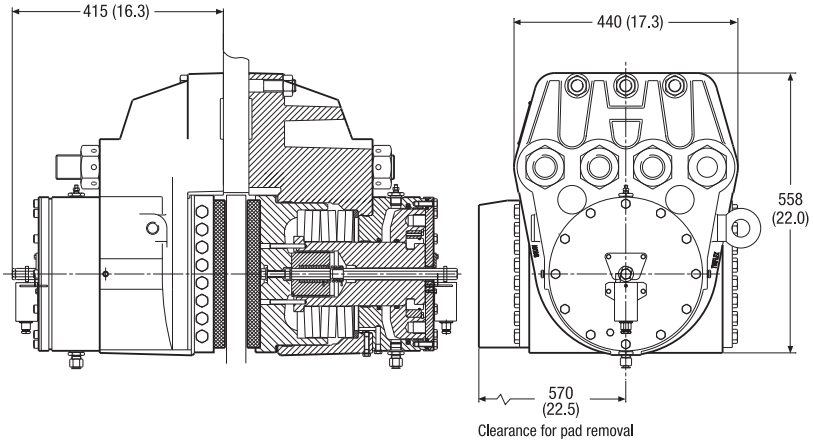
Infinite fatigue life (>2 x 10^6 cycles) is achievable for most units at the 3mm air gap shown in the table and possible, by reducing this setting, for the higher rated brakes – contact Twiflex for further information.

The braking force is a function of both the air-gap setting and the thickness of the shim pack (if used) but may be also controlled using hydraulic back pressure during braking.

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

Effective disc radius = actual radius (m) – 0.155m.

VMS2 Spring Applied – Hydraulically Released



Caliper Type	Disc/Pad Air Gap mm	Braking Force kN	Hydraulic Pressure for Full Retraction bar
VMS392	3	392	210
VMS356	3	356	197
VMS320	3	320	184
VMS283	3	283	167
VMS245	3	245	154
VMS206	3	206	138
VMS167	3	167	122

Weight of Caliper (2 Modules) = 670kg
Volume displacement per 1mm stroke at both pads = 77ml

The Twiflex VMS2 disc brake caliper is comprised of two modules bolted to a central mounting plate, 12mm thicker than the brake disc. Minimum disc thickness is 38mm and minimum disc diameter is 1500mm with no maximum except for practical limitations.

Typically one or two calipers are used per disc, positioned at any angle around the periphery, but the number may be increased depending on disc size.

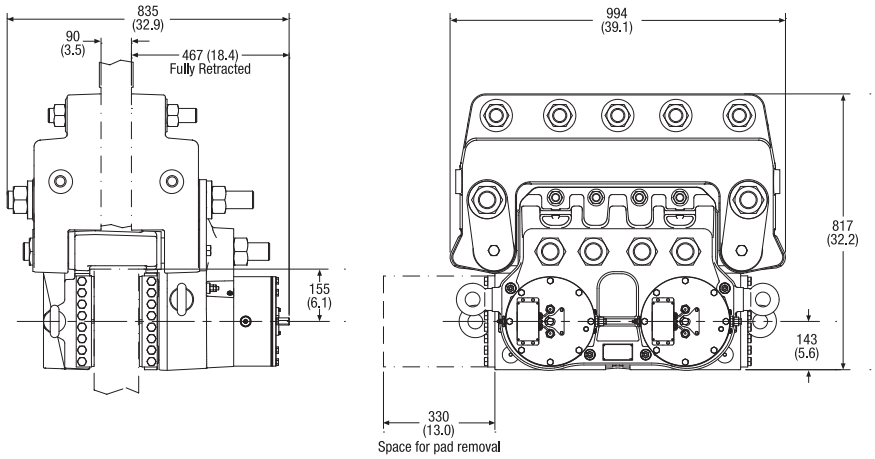
The braking force is a function of both the air-gap setting and the thickness of the shim pack used (see table) but may be also controlled using hydraulic back pressure during braking.

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

Effective disc radius = actual radius (m) – 0.155m.

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

VMSDP Spring Applied – Hydraulically Released



Shim Pack	Braking Force kN	Minimum Pressure for Full Retraction bar	Spring Life Cycles
0	590	169	>100000
1	639	181	>100000
2	688	192	>20000
3	737	204	>20000

Weight of caliper = 1887Kg
Volume displacement per 2mm stroke = 174ml

Similar to the Twiflex VMS2 disc brake, the VMS-DP comprises 2 spring modules; this time mounted in a common housing to form the 'active' side of a floating brake caliper. This arrangement allows the assembly to accommodate ±10mm of axial disc movement.

Minimum disc diameter is 4500mm with no maximum except for practical limitations. Disc thickness for the standard caliper range from 117mm to 130mm with the mounting bracket being machined accordingly.

The braking force is a function of both the air-gap setting and the thickness of the shim pack used (see table) but may be also controlled using hydraulic back pressure during braking.

The VMS-DP is primarily intended to function as a holding brake, but may be used for a dynamic duty where spring life is not a consideration (for example, occasional emergency stopping).

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

Effective disc radius = actual radius (m) – 0.155m.

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