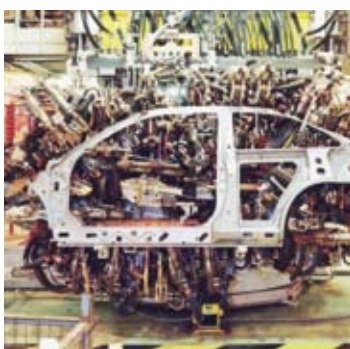




aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



Midget & Intermediate Manual and Mechanical Valves

G1/8 - G1/4 body ported

Catalogue PDE2623TCUK. Edition June 09



ENGINEERING YOUR SUCCESS.

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**Important !**

Before carrying out any service work, ensure that the valve and manifold have been vented. Remove the primary supply air hose to ensure total disconnection of the air supply before dismantling valves or blank connection blocks.

**NB !**

All technical data in this catalogue is typical only. The air quality is decisive for the valve life: see ISO 8573.

**WARNING**

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

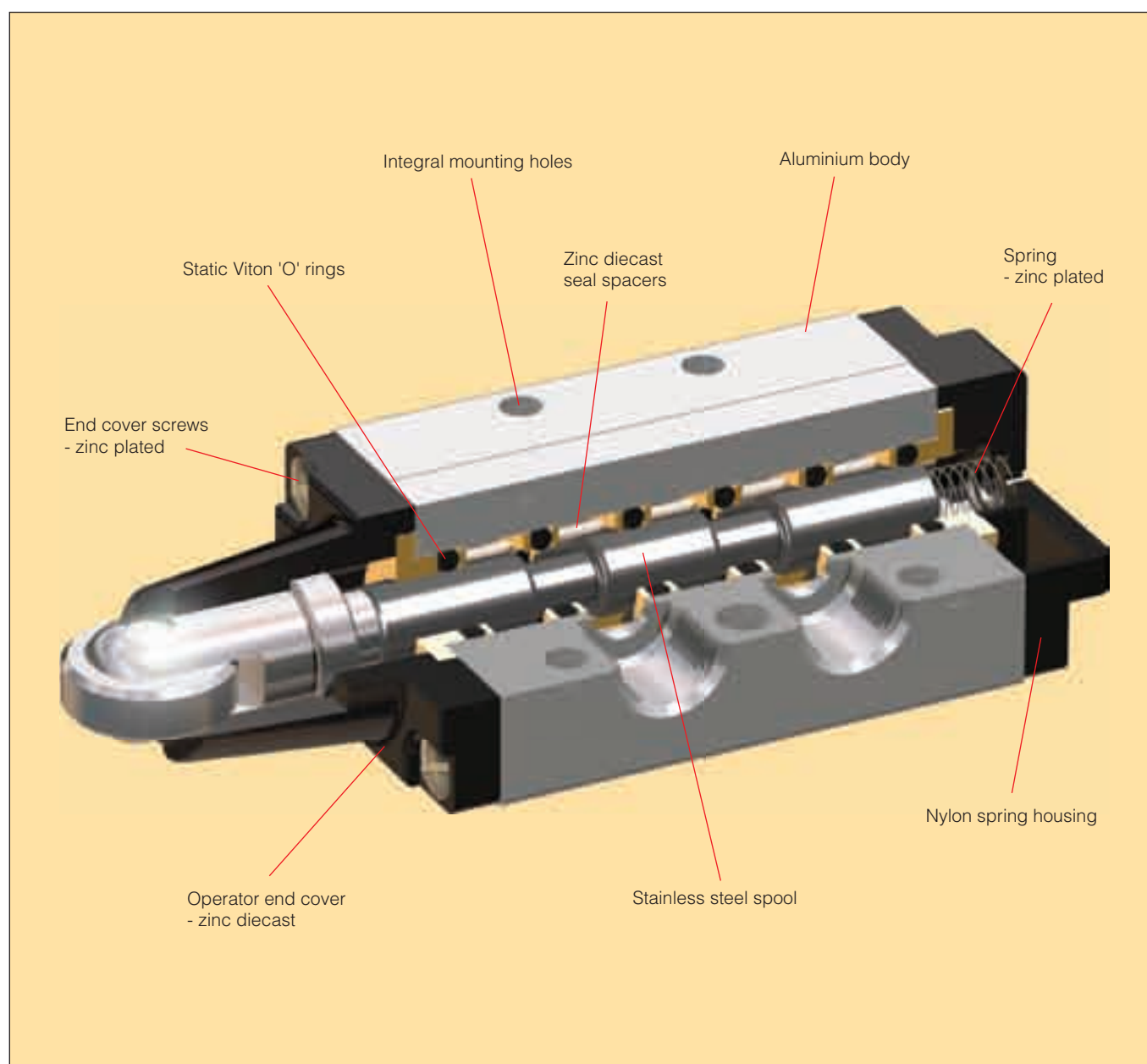
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Marketing Applications

- Manufacturing
- Packaging
- General Automation



Midget & Intermediate Manual and Mechanical Valves

Midget / Intermediate G1/8 & G1/4 Control Valves

The compact design of these valves make them a popular choice for manual or mechanical operation and their modular construction permit different operators to be fitted to the actuator and return assemblies.

Wide application range

The Midget and Intermediate valves are designed to have balanced forces across the spool so that 3/2 valves can be piped normally open or normally closed by changing the inlet supply from port 1 to port 3. Because forces across the spool are balanced 5/2 valves can also be piped in different ways to suit applications which require different pressures through the same valve. For example when a cylinder needs to advance with low force (pressure) to avoid bruising a component and retracts with normal pressure.

Fast operating speeds

The G1/8 Midget valve has a short travel and lightweight spool so that high operating speeds are possible. These valves have been tested at over 3000 cycles per minute.

High reliability

Valves easily comply with the requirements for the EU Machinery Directive standards EN292-2 and EN983. The bodies of the Midget and Intermediate valves are manufactured from aluminium with stainless steel spool, sealed by static viton 'O' rings. All operating parts exposed to the working fluid are of non-corrosive material and all ports threaded G1/8 or G1/4. The valves are designed to give long trouble free service life when used with or without lubrication.

Modular construction

The modular construction of the valves allows any of the actuators to be spring return or air pilot return. Roller versions are designed to give a common height on both 3/2 and 5/2 valves to ensure uniformity and efficiency in a multi-valve assembly.

Maintenance

These valves can be serviced without disturbing the pipe-work simply by unscrewing the actuator and return assemblies and then removing the spool and 'O' ring assembly.

Working medium, air quality

Working medium: Dry, filtered compressed air to
ISO 8573-1 class 3.4.3.

Recommended air quality for valves

For best possible service life and trouble free operation, ISO 8573-1 quality class 3.4.3 should be used. This means 5µm filter (standard filter) dew point +3°C for indoor operation (a lower dew point should be selected for outdoor operation) and oil concentration 1.0 mg oil/m³, which is what a standard compressor with a standard filter gives.

ISO 8573-1 quality classes

Quality class	Pollution		Water max. press. dew point (°C)	Oil max. concentration (mg/m ³)
	particle size (µm)	max. concentration (mg/m ³)		
1	0,1	0,1	-70	0,01
2	1	1	-40	0,1
3	5	5	-20	1,0
4	15	8	+3	5,0
5	40	10	+7	25
6	-	-	+10	-

Midget & Intermediate Manual and Mechanical Valves

Material specification

Valve body	Aluminium
Spool	Stainless steel
Seal spacers	Zinc die cast
Seals	Viton
Spring housing	Nylon
Spring	Zinc plated
End covers	Zinc die cast
Actuators	Zinc die cast
End cover screws	Zinc plated

Technical information

Type	Spool valves
Style	Body ported
Port size	G1/8 & G1/4
Mounting	Any plane
Pressure range	Vacuum to 10 bar
Temperature range	-10°C to +80°C
Flow acc. (to ISO 6358)	

Midget B43 series Intermediate B53 series

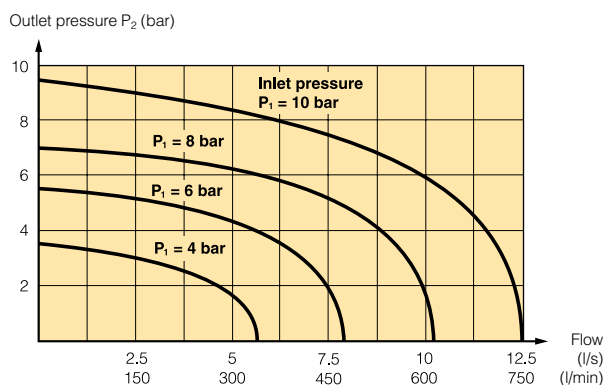
$c = 1.13 \text{ NI/s} \times \text{bar}$	$c = 3.69 \text{ NI/s} \times \text{bar}$
$b = 0.36$	$b = 0.33$
$Q_n = 5.5 \text{ l/s}$	$Q_n = 17.5 \text{ l/s}$
$Q_{\max} = 9.0 \text{ l/s}$	$Q_{\max} = 29 \text{ l/s}$
$C_v = 0.24$	$C_v = 1.02$

Flow characteristics

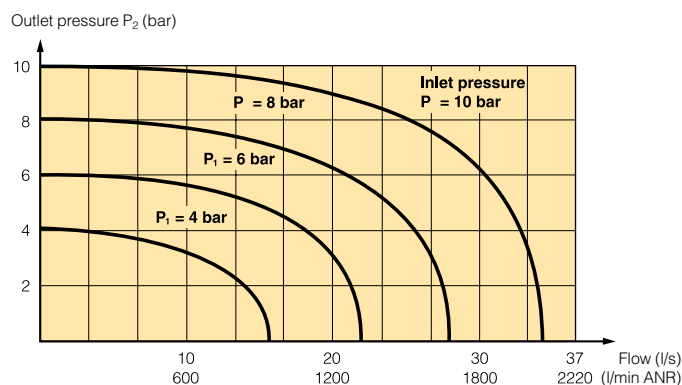
Flow capacities in accordance with ISO 6358

The flow curves shown below are typical.

Midget B43 series valves

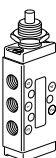
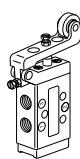
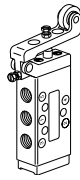
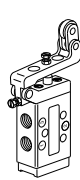
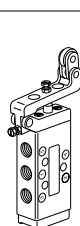
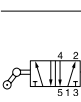


Intermediate B53 series valves



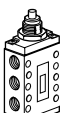
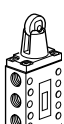


Midget mechanically operated valves, B43 series

	Symbol	Type	Actuator	Return	Operating force at 6 bar, N	Size	Weight Kg	Order code
		3/2	Plunger	Spring	36	G1/8	0,182	B43003CS
		3/2	Plunger	Air	14	G1/8	0,202	B43003CP
		5/2	Plunger	Spring	36	G1/8	0,222	B43004CS
		5/2	Plunger	Air	14	G1/8	0,242	B43004CP
		3/2	Roller Lever	Spring	20	G1/8	0,234	B43003RS
		3/2	Roller lever	Air	7	G1/8	0,254	B43003RP
		5/2	Roller Lever	Spring	20	G1/8	0,274	B43004RS
		5/2	Roller lever	Air	7	G1/8	0,294	B43004RP
		3/2	One way roller lever	Spring	20	G1/8	0,274	B43003RTS
		3/2	One way roller lever	Air	7	G1/8	0,294	B43003RTP
		5/2	One way roller lever	Spring	20	G1/8	0,314	B43004RTS
		5/2	One way roller lever	Air	7	G1/8	0,334	B43004RTP

 Indicates stocked product.

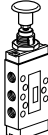
Intermediate mechanically operated valves, B53 series

	Symbol	Type	Actuator	Return	Operating force at 6 bar, N	Size	Weight Kg	Order code
		3/2	Plunger	Spring	53	G1/4	0,348	B53003CS
		3/2	Plunger	Air	27	G1/4	0,388	B53003CP
		5/2	Plunger	Spring	53	G1/4	0,478	B53004CS
		5/2	Plunger	Air	27	G1/4	0,518	B53004CP
		3/2	Roller	Spring	53	G1/4	0,350	B53003RS
		3/2	Roller	Air	27	G1/4	0,390	B53003RP
		5/2	Roller	Spring	53	G1/4	0,480	B53004RS
		5/2	Roller	Air	27	G1/4	0,520	B53004RP



Indicates stocked product.

Midget manually operated valves, B43 series

	Symbol	Type	Actuator	Return	Operating force at 6 bar, N	Size	Weight Kg	Order code
		3/2	Button, black	Spring	36	G1/8	0,200	B43003BXS
		3/2	Button, black	Button	13	G1/8	0,200	B43003HXS
		5/2	Button, black	Spring	36	G1/8	0,240	B43004BXS
		5/2	Button, black	Button	13	G1/8	0,240	B43004HXS
		3/2	Button, black	Air	13	G1/8	0,200	B43003BXP
		3/2	Button, black	Air or button	13	G1/8	0,200	B43003HXP
		5/2	Button, black	Air	13	G1/8	0,240	B43004BXP
		5/2	Button, black	Air or button	13	G1/8	0,280	B43004XHP
		3/2	Lock down lever	Spring	9	G1/8	0,202	B43003LS
		3/2	Lock down lever	Spring	9	G1/8	0,242	B43004LS
		3/2	Lock down lever	Air	3	G1/8	0,240	B43003LP
		3/2	Lock down lever	Air	3	G1/8	0,280	B43004LP

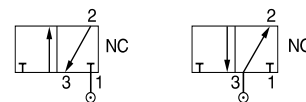
Note: The standard button colour is black (X)

For optional colour buttons change 8th character of order code
e.g. B43004HXS = Black button, B43004HXS = Green button,
B43004HYS = Red button.

X = Black

Z = Green

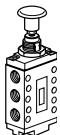
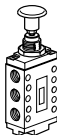
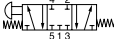
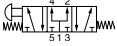
Y = Red



All 3/2 type B43 & B53 valves can be connected either as normally closed 3/2 valve (NC) or normally open 3/2 valve (NO) as required, by connecting the primary air supply to port 1 or port 3

 Indicates stocked product.

Intermediate manually operated valves, B53 series

	Symbol	Type	Actuator	Return	Operating force at 6 bar, N	Size	Weight Kg	Order code
		3/2	Button, black	Spring	53	G1/4	0,368	B53003HXS
		3/2	Button, black	Button	27	G1/4	0,368	B53003HX
		3/2	Button, black	Air	27	G1/4	0,380	B53003HXP
		5/2	Button, black	Spring	53	G1/4	0,498	B53004HXS
		5/2	Button, black	Button	27	G1/4	0,498	B53004HX
		5/2	Button, black	Air	27	G1/4	0,510	B53004HXP
		5/3	Button Closed centre position	Button Self centring	53	G1/4	0,623	B53004HXX
		5/3	Button Vented centre position	Button Self centring	53	G1/4	0,623	B53004HXY
		5/3	Button Pressurised centre position	Button Self centring	53	G1/4	0,623	B53004HXZ

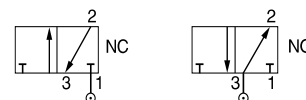
Note: The standard button colour is black (X)

For optional colour buttons change 8th character of order code
e.g. B43004HXS = Black button, B43004HZS = Green button,
B43004HYS = Red button.

X = Black

Z = Green

Y = Red

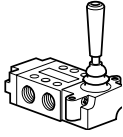
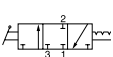
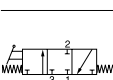
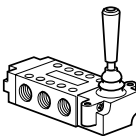
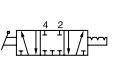
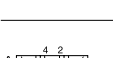
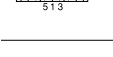
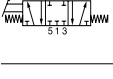
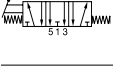


All 3/2 type B43 & B53 valves can be connected either as normally closed 3/2 valve (NC) or normally open 3/2 valve (NO) as required, by connecting the primary air supply to port 1 or port 3

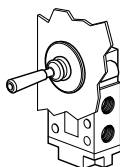


Indicates stocked product.

Intermediate lever operated valves, B53 series

	Symbol	Type	Actuator	Return	Operating force at 6 bar, N	Size	Weight Kg	Order code
		3/2	Lever	Spring	14	G1/4	0,504	B53003LS
		3/2	Lever	Air	9	G1/4	0,520	B53003LP
		3/2	Lever	Lever	9	G1/4	0,500	B53003LT
		5/3	Lever Closed centre position	Lever	9	G1/4	0,504	B53003L
		5/3	Lever Closed centre position	Lever Self centring	14	G1/4	0,780	B53003LX
		5/2	Lever	Spring	14	G1/4	0,506	B53004LS
		5/2	Lever	Air	14	G1/4	0,526	B53004LP
		5/2	Lever	Lever	14	G1/4	0,632	B53004LT
		5/3	Lever Closed centre position	Lever held in three positions	9	G1/4	0,640	B53004L
		5/3	Lever Vented centre position	Lever held in three positions	9	G1/4	0,640	B53004LW
		5/3	Lever Pressurised centre position	Lever held in three positions	9	G1/4	0,640	B53004LN
		5/3	Lever Closed centre position	Lever Self centring	14	G1/4	0,780	B53004LX
		5/3	Lever Vented centre position	Lever Self centring	14	G1/4	0,780	B53004LY
		5/3	Lever Pressurised centre position	Lever Self centring	14	G1/4	0,780	B53004LZ

Mounting kit



Panel mounting kit

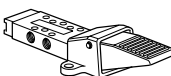
0,040

M53004L-10A

Kit includes panel plate and M5 counter sunk head screws

 Indicates stocked product.

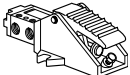
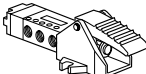
Midget foot operated valves, B43 series

	Symbol	Type	Actuator	Return	Operating force at 6 bar, N	Size	Weight Kg	Order code
		3/2	Foot pedal	Spring	16	G1/8	0,312	B43003FS
		5/2	Foot pedal	Spring	16	G1/8	0,370	B43004FS

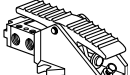
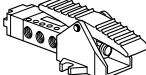
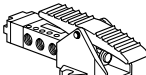
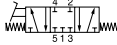
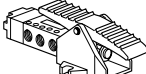
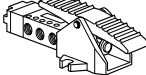
Intermediate foot operated valves, B53 series

Symbol	Type	Actuator	Return	Operating force at 6 bar, N	Size	Weight Kg	Order code
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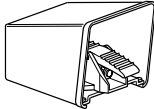
Single pedal operated

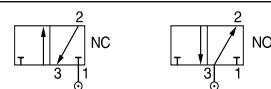
		3/2	Foot pedal	Spring	95	G1/4	1,34	B53003FS
		5/2	Foot pedal	Spring	95	G1/4	1,48	B53004FS

Rocker pedal operated

		3/2	Foot pedal	Foot pedal	18	G1/4	1,38	B53003G
		5/2	Foot pedal	Foot pedal	18	G1/4	1,58	B53004G
		5/3	Foot pedal Closed centre position	Foot pedal Self centring	18	G1/4	1,68	B53004GX
		5/3	Foot pedal Vented centre position	Foot pedal Self centring	18	G1/4	1,68	B53004GY
		5/3	Foot pedal Pressurised centre position	Foot pedal Self centring	18	G1/4	1,68	B53004GZ

Accessories

	Foot guard kit					1,16	3117
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All 3/2 type B43 & B5/3 valves can be connected either as normally closed 3/2 valve (NC) or normally open 3/2 valve (NO) as required, by connecting the primary air supply to port 1 or port 3

 Indicates stocked product.

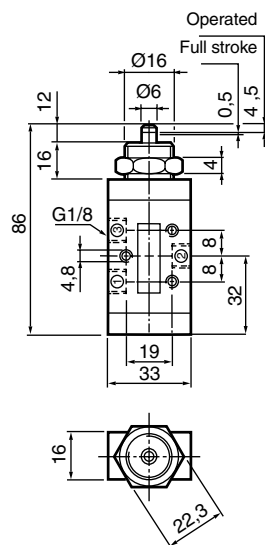
Dimensions, G1/8 ported spool valves

All dimensions in mm unless otherwise stated

Mechanically operated valves

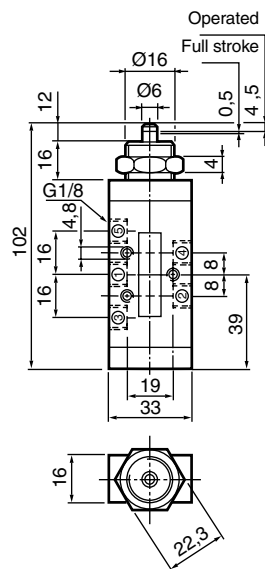
3/2 valves

Plunger operated spring return



5/2 valves

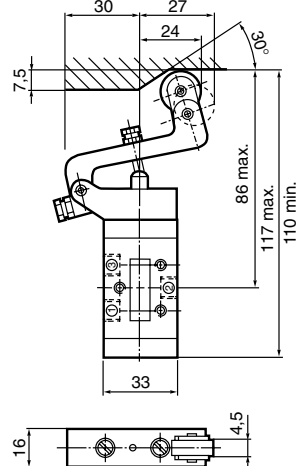
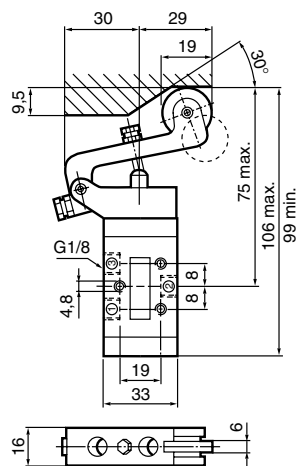
Plunger operated spring return



3/2 valves

Roller operated spring return

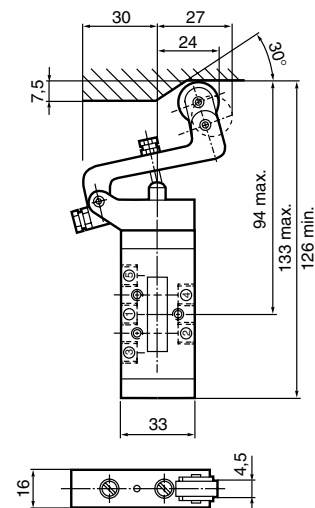
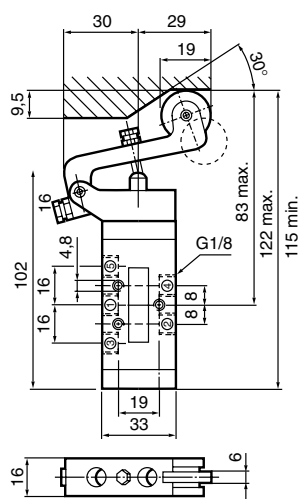
One way roller trip operate
spring return



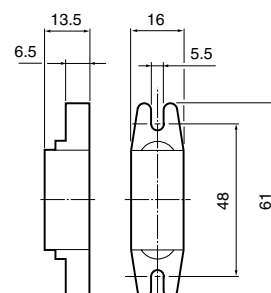
5/2 valves

Roller operated spring return

One way roller trip operate
spring return



Optional foot mounted -
Spring return housing



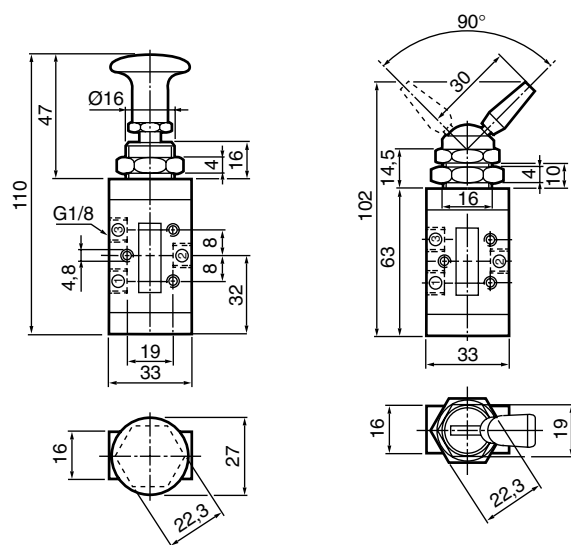
Dimensions, G1/8 ported spool valves

All dimensions in mm unless otherwise stated

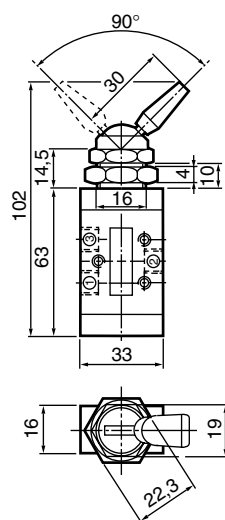
Manually operated valves

3/2 valves

Button operated spring return
or button returned

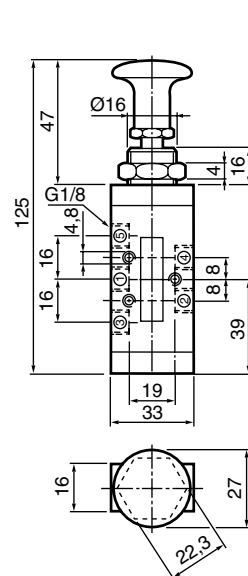


Lock down lever
operated spring return

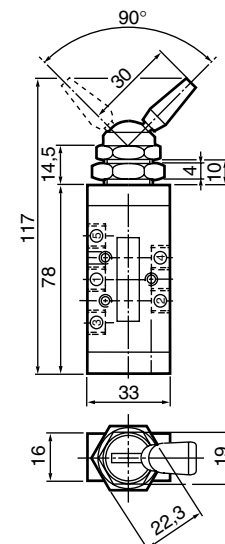


5/2 valves

Button operated spring return
or button returned

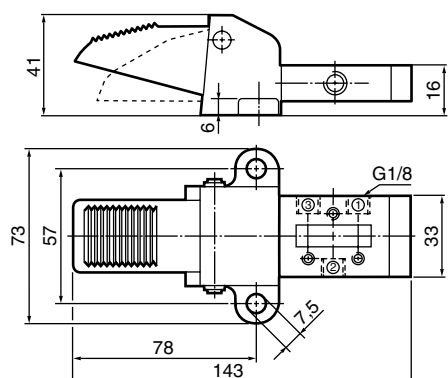


Lock down lever
operated spring return



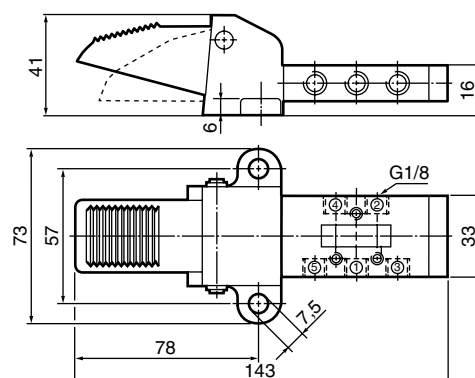
3/2 valves

Foot pedal operated spring return



5/2 valves

Foot pedal operated spring return



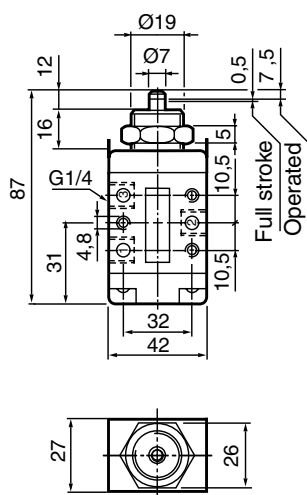
Dimensions, G1/4 ported spool valves

All dimensions in mm unless otherwise stated

Mechanically operated valves

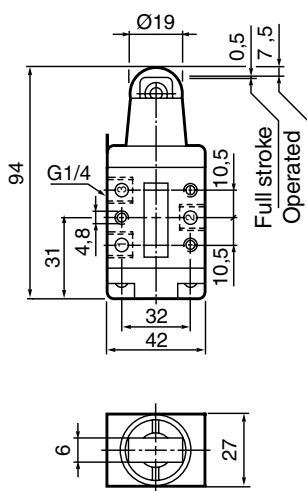
3/2 valves

Plunger operated spring return



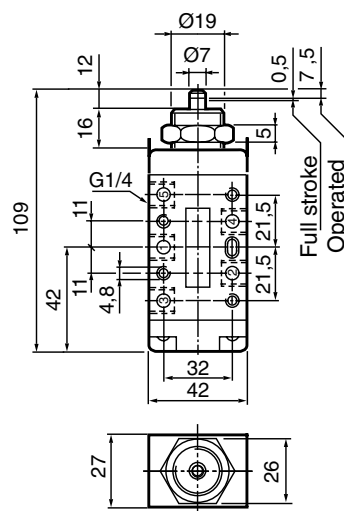
3/2 valves

Roller operated spring return



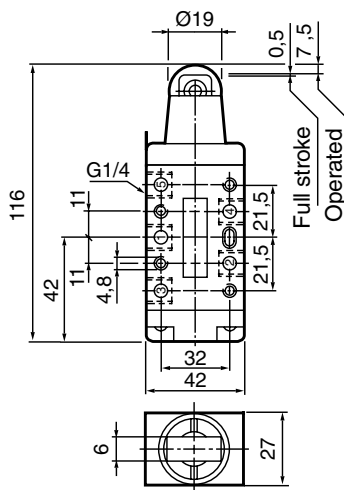
5/2 valves

Plunger operated spring return



5/2 valves

Roller operated spring return



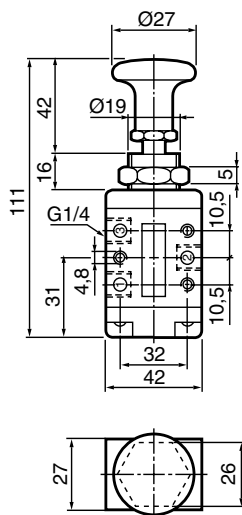
Dimensions, G1/4 ported spool valves

All dimensions in mm unless otherwise stated

Manually operated valves

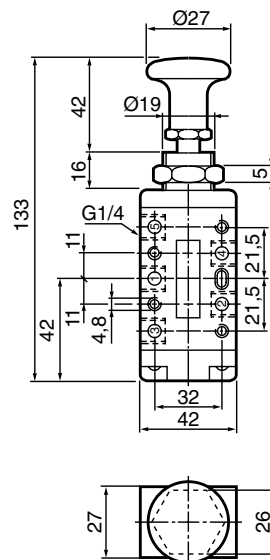
3/2 valves

Button operated spring return
or button returned



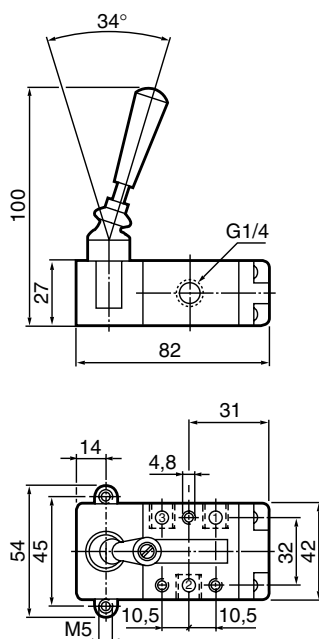
5/2 valves

Button operated spring return
or button returned



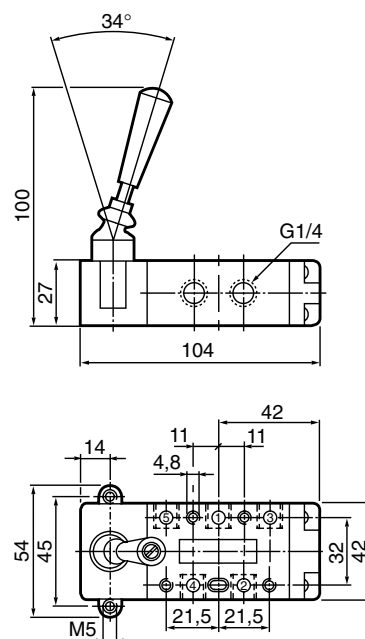
3/2 valves

Lever operated



5/2 valves

Lever operated



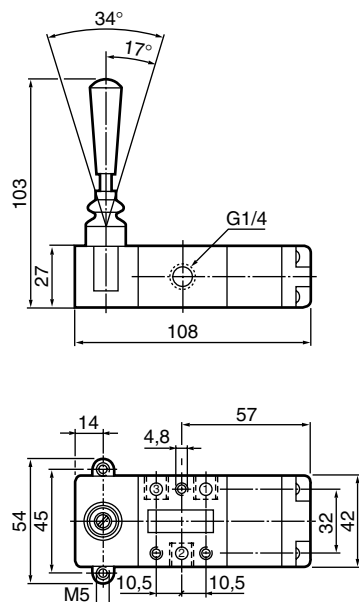
Dimensions, G1/4 ported spool valves

All dimensions in mm unless otherwise stated

Manually operated valves

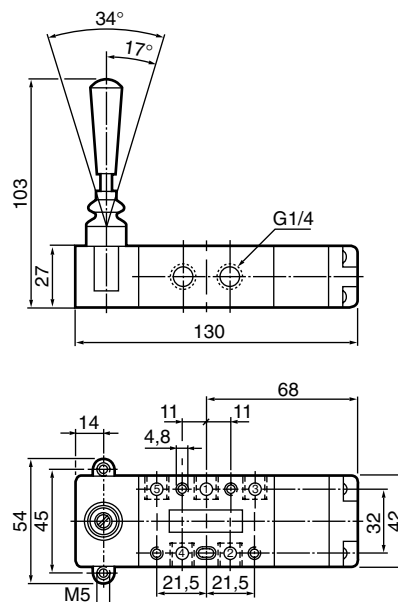
3/3 valves (Self centring)

Lever operated



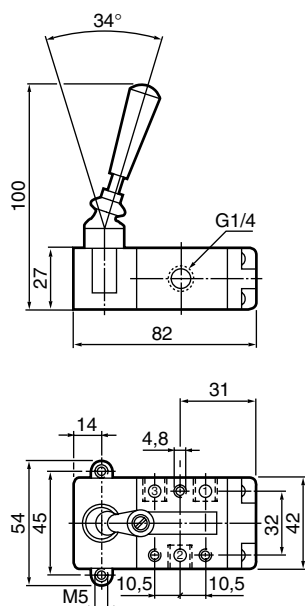
5/3 valves (Self centring)

Lever operated



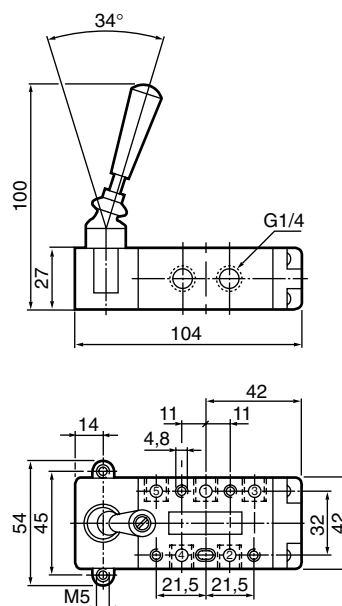
3/3 valves (3 positions)

Lever operated



5/3 valves (3 positions)

Lever operated



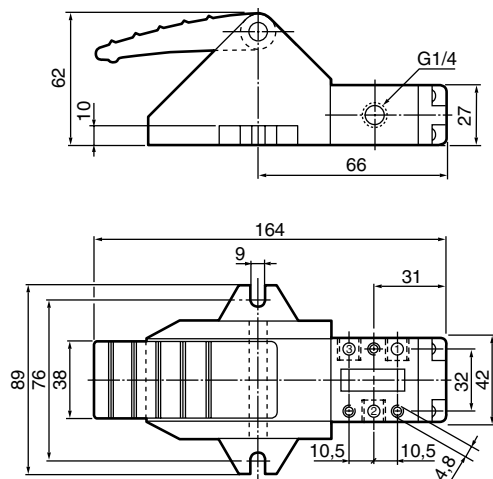
Dimensions, G1/4 ported spool valves

All dimensions in mm unless otherwise stated

Manually operated valves

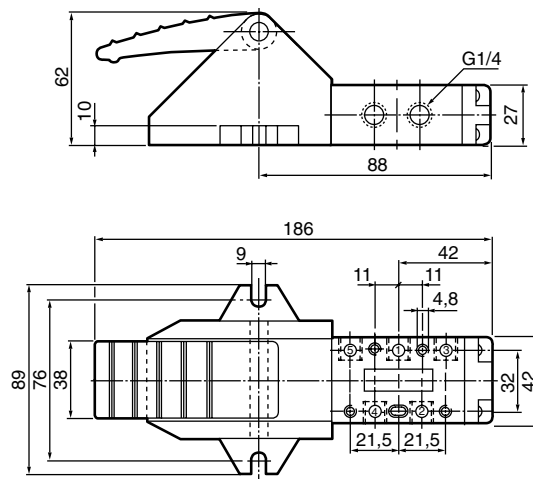
3/2 valves

Foot pedal operated spring return



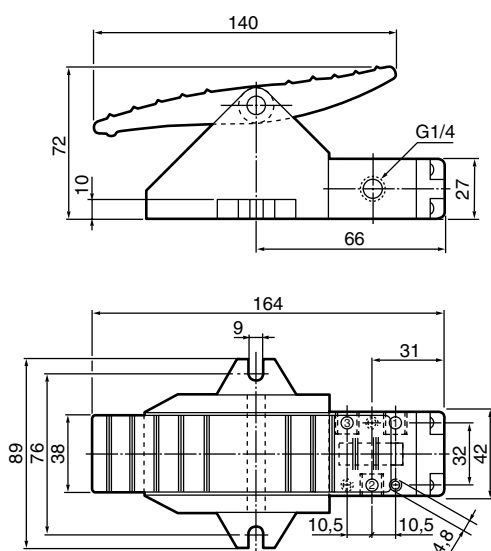
5/2 valves

Foot pedal operated spring return



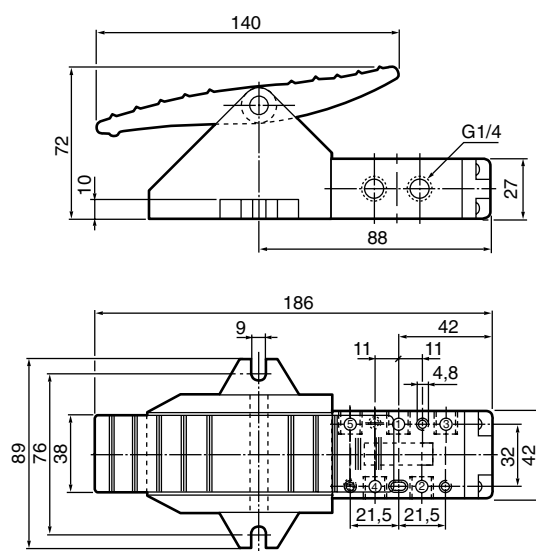
3/2 valves

Foot pedal operated



5/2 valves

Foot pedal operated



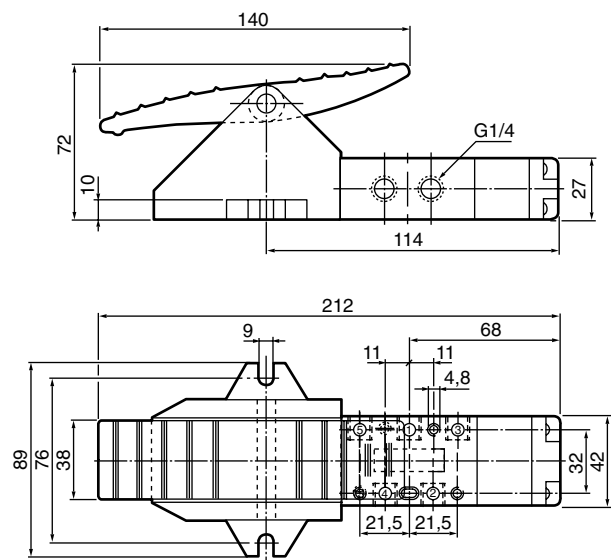
Dimensions, G1/4 ported spool valves

All dimensions in mm unless otherwise stated

Manually operated valves

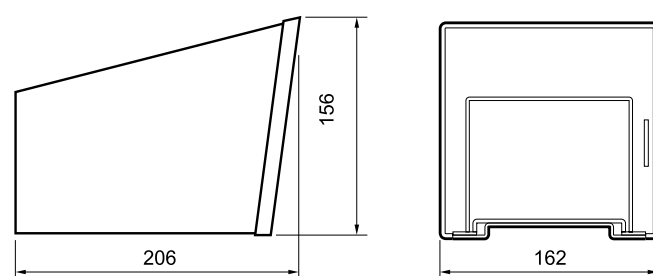
5/3 valves

Foot pedal operated



Foot guard kit

3117



Service and Replacement Parts

B43 Series Manually Operated Valves

Order code	Actuator	Replacement actuator	Repair kit
B43003BXS	Button	43004BX-100	Body seal 43007A
B43004BXS	Button		
B43004HXS	Button, Push/Pull	43004H-100	
B43003LS	Lockdown lever	43004L-200	
B43004LS	Lockdown lever		

B53 Series Manually Operated Valves

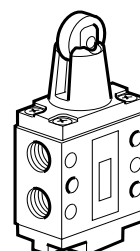
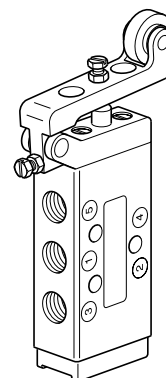
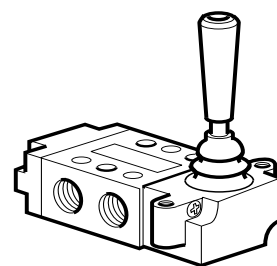
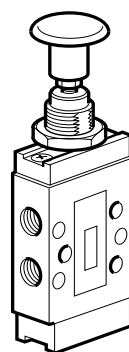
Order code	Actuator	Replacement actuator	Repair kit
B53003HXS	Button	53004HX-100	Body seal 53007
B53004HXS	Button		
B53003HX	Button, Push/Pull		
B53004HX	Button, Push/Pull		
B53004HXX	Button, Self centring		
B53004HXY	Button, Self centring		
B53004HXZ	Button, Self centring	53004F-100	Lever kit 53004L-300R
B53003FS	Foot		
B53004FS	Foot		
B53003LS	Lever		
B53004LS	Lever		
B53003LT	Lever, 2 positions		
B53004LT	Lever, 2 positions		
B53004L	Lever, 3 positions	53004L-100	Body seal 53007
B53004LW	Lever, 3 positions		
B53004LX	Lever, Self centring		
B53004LY	Lever, Self centring		

B43 Series Mechanically Operated Valves

Order code	Actuator	Replacement actuator	Repair kit
B43003CS	Plunger	43004C-100	Body seal 43007A
B43004CS	Plunger		
B43003RS	Roller Lever	43004R-200	
B43004RS	Roller Lever		

B53 Series Mechanically Operated Valves

Order code	Actuator	Replacement actuator	Repair kit
B53003CS	Plunger	53004C-100	Body seal 53007
B53004CS	Plunger		
B53003RS	Roller	53004R-100	
B53004RS	Roller		



 Indicates stocked product.

Lubricating Oils

To ensure long life and trouble free service from valves, it is recommended the equipment should be adequately lubricated by means of lubricators which disperse oil into the system.

Only paraffinic based oils can be used, and the following recommendations are given as a general guide to types of oil that are suitable for use with Parker Pneumatic equipment.

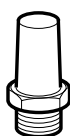
The list opposite does not preclude the use of oils manufactured by other companies but oils must be paraffinic based.

As a general guide, lubricator drip rates should be 1 drip/minute for every 5 litre/second (10 cubic feet per minute) passed through the equipment.

Oil company	Grade	Viscosity
Century oils	P.W.L.A	32
Alexander Duckham	Zircon 4	32
Gulf oil (GB) Limited	Harmony 43 AW	32
Shell (UK) oil	Tellus 37	37
Burmah Castrol	Hyspin AWS 32	32
Edgar Vaughan	Y Hydrodrive HP 100	32
Esso Petroleum	Nuto H32	32
B.P.	HLP 32	32
Mobile Oil Company	DTE Oil - Light	32
Motul	VPI-A	32
Silkolene	Derwent 32	32

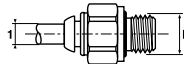
Accessories

Sintered bronze series



Port	Order code	Pack Qty
G1/8	9090050700	1
G1/4	P6M-BAA2	1

Male straight connectors - Parallel thread



Tube Ø1	Thread B	Order code	Box Qty
4	1/8	F4PMB4-1/8	20
6	1/8	F4PMB6-1/8	30
6	1/4	F4PMB6-1/4	30
8	1/8	F4PB8-1/8	40
8	1/4	F4PB8-1/4	30
8	3/8	F4PB8-3/8	20
10	1/4	F4PB10-1/4	20

 Indicates stocked product.

Parker Worldwide

AE – UAE, Dubai
Tel: +971 4 8127100
parker.me@parker.com

AR – Argentina, Buenos Aires
Tel: +54 3327 44 4129

AT – Austria, Wiener Neustadt
Tel: +43 (0)2622 23501-0
parker.austria@parker.com

AT – Eastern Europe, Wiener Neustadt
Tel: +43 (0)2622 23501 900
parker.easteurope@parker.com

AU – Australia, Castle Hill
Tel: +61 (0)2-9634 7777

AZ – Azerbaijan, Baku
Tel: +994 50 2233 458
parker.azerbaijan@parker.com

BE/LU – Belgium, Nivelles
Tel: +32 (0)67 280 900
parker.belgium@parker.com

BR – Brazil, Cachoeirinha RS
Tel: +55 51 3470 9144

BY – Belarus, Minsk
Tel: +375 17 209 9399
parker.belarus@parker.com

CA – Canada, Milton, Ontario
Tel: +1 905 693 3000

CH – Switzerland, Etoy
Tel: +41 (0) 21 821 02 30
parker.switzerland@parker.com

CL – Chile, Santiago
Tel: +56 2 623 1216

CN – China, Shanghai
Tel: +86 21 5031 2525

CZ – Czech Republic, Klecany
Tel: +420 284 083 111
parker.czechrepublic@parker.com

DE – Germany, Kaarst
Tel: +49 (0)2131 4016 0
parker.germany@parker.com

DK – Denmark, Ballerup
Tel: +45 43 56 04 00
parker.denmark@parker.com

ES – Spain, Madrid
Tel: +34 902 33 00 01
parker.spain@parker.com

FI – Finland, Vantaa
Tel: +358 (0)20 753 2500
parker.finland@parker.com

FR – France, Contamine s/Arve
Tel: +33 (0)4 50 25 80 25
parker.france@parker.com

GR – Greece, Athens
Tel: +30 210 933 6450
parker.greece@parker.com

HK – Hong Kong
Tel: +852 2428 8008

HU – Hungary, Budapest
Tel: +36 1 220 4155
parker.hungary@parker.com

IE – Ireland, Dublin
Tel: +353 (0)1 466 6370
parker.ireland@parker.com

IN – India, Mumbai
Tel: +91 22 6513 7081-85

IT – Italy, Corsico (MI)
Tel: +39 02 45 19 21
parker.italy@parker.com

JP – Japan, Tokyo
Tel: +(81) 3 6408 3901

KR – South Korea, Seoul
Tel: +82 2 559 0400

KZ – Kazakhstan, Almaty
Tel: +7 7272 505 800
parker.easteurope@parker.com

LV – Latvia, Riga
Tel: +371 6 745 2601
parker.latvia@parker.com

MX – Mexico, Apodaca
Tel: +52 81 8156 6000

MY – Malaysia, Shah Alam
Tel: +60 3 7849 0800

NL – The Netherlands, Oldenzaal
Tel: +31 (0)541 585 000
parker.nl@parker.com

NO – Norway, Ski
Tel: +47 64 91 10 00
parker.norway@parker.com

NZ – New Zealand, Mt Wellington
Tel: +64 9 574 1744

PL – Poland, Warsaw
Tel: +48 (0)22 573 24 00
parker.poland@parker.com

PT – Portugal, Leca da Palmeira
Tel: +351 22 999 7360
parker.portugal@parker.com

RO – Romania, Bucharest
Tel: +40 21 252 1382
parker.romania@parker.com

RU – Russia, Moscow
Tel: +7 495 645-2156
parker.russia@parker.com

SE – Sweden, Spånga
Tel: +46 (0)8 59 79 50 00
parker.sweden@parker.com

SG – Singapore
Tel: +65 6887 6300

SK – Slovakia, Banská Bystrica
Tel: +421 484 162 252
parker.slovakia@parker.com

SL – Slovenia, Novo Mesto
Tel: +386 7 337 6650
parker.slovenia@parker.com

TH – Thailand, Bangkok
Tel: +662 717 8140

TR – Turkey, Istanbul
Tel: +90 216 4997081
parker.turkey@parker.com

TW – Taiwan, Taipei
Tel: +886 2 2298 8987

UA – Ukraine, Kiev
Tel: +380 44 494 2731
parker.ukraine@parker.com

UK – United Kingdom, Warwick
Tel: +44 (0)1926 317 878
parker.uk@parker.com

US – USA, Cleveland
Tel: +1 216 896 3000

VE – Venezuela, Caracas
Tel: +58 212 238 5422

ZA – South Africa, Kempton Park
Tel: +27 (0)11 961 0700
parker.southafrica@parker.com

European Product Information Centre
Free phone: 00 800 27 27 5374
(from AT, BE, CH, CZ, DE, DK, ES, FI, FR, IE, IT, NL, NO, PL, PT, RU, SE, UK, ZA)

