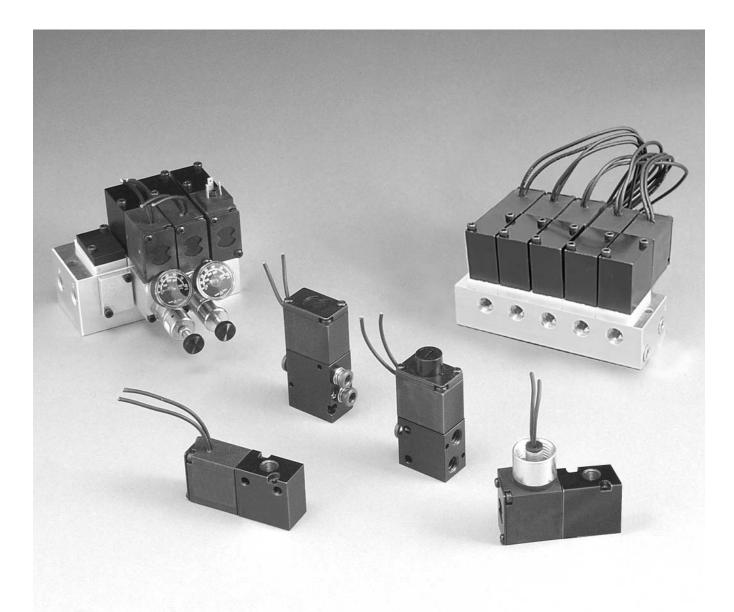


MicroKing

Air Control Valves Direct Acting, M5 & 1/8" Port 3-Way: .19 Cv 4-Way: .18 Cv

Catalog MicroKing-E/USA May, 2005



Note: Shaded options have been discontinued. Refer to back of Catalog for Cross Reference Information.

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Bold text part numbers are standard.

Standard text part numbers may have longer lead times.



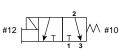
3-Way, 2-Position, Normally Closed

₩ #10

De-energized position – Solenoid #12 de-energized. Pressure at inlet port 1 blocked, outlet port 2 connected to exhaust port 3.

Energized position – Solenoid #12 energized. Pressure at inlet port 1 is connected to outlet port 2, exhaust port 3 is blocked.

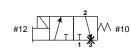
3-Way, 2-Position, Diverter



De-energized position – Solenoid #12 de-energized. Pressure at inlet port 2 connected to outlet port 3. Port 1 is blocked.

Energized position – Solenoid #12 energized. Pressure at inlet port 2 is connected to outlet port 1. Port 3 is blocked.

2-Way, 2-Position, Normally Closed

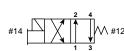


De-energized position – Solenoid #12 de-energized. Pressure at inlet port 1 blocked, port 2 is connected to port 3, which is plugged.

Energized position – Solenoid #12 energized. Pressure at inlet port 1 is connected to outlet port 2. Port 3 is blocked.

* Plug port 3.

4-Way, 2-Position

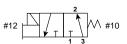


De-energized position – Solenoid #14 de-energized. Pressure at inlet port 1 connected to outlet port 2. Outlet port 4 connected to exhaust port 3.

Energized position – Solenoid #14 energized. Pressure at inlet port 1 is connected to outlet port 4. Outlet port 2 is connected to exhaust port 3. 4-Way valve can be used as a 3-Way NC/NO or a 2-Way valve by plugging the appropriate ports.

MicroKing 3-Way Subbase Valve on 3-Port Subbase Bar Manifold is available as 3-Way NC and 3-Way NO. When choosing either an NC or NO valve, the valve is the same but the selector gasket is different to give the desired function.

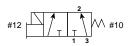
3-Way, 2-Position, Normally Open



De-energized position – Solenoid #12 de-energized. Pressure at inlet port 3 connected to outlet port 2, exhaust port 1 is blocked.

Energized position – Solenoid #12 energized. Pressure at inlet port 3 blocked, outlet port 2 connected to exhaust port 1.

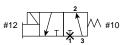
3-Way, 2-Position, Selector



De-energized position – Solenoid #12 de-energized. Pressure at inlet port 1 is blocked. Pressure at inlet port 3 is connected to outlet port 2.

Energized position – Solenoid #12 energized. Pressure at inlet port 1 is connected to outlet port 2. Pressure at port 3 is blocked.

2-Way, 2-Position, Normally Open



De-energized position – Solenoid #12 de-energized. Pressure at inlet port 3 is connected to outlet port 2. Port 1 is blocked.

Energized position – Solenoid #12 energized. Pressure at inlet port 3 is blocked. Port 2 is connected to port 1, which is plugged.

* Plug port 1.



MicroKing Series Valves Air Control Valves

MicroKing

Flow Characteristics

- MK 3-Way: .19 Cv
- MK 4-Way: .18 Cv

Operating Pressure

Vacuum to 120 PSIG

Ports

- 1/8" NPT
- M5
- 1/4 Inch Tube

Mounting

- Inline Universal Function
 - NC, NO
 - Selector, Diverter
- IEM Bar Manifold
- Subbase Valve
 - NC, NO, Selector
- 3-Port Subbase Aluminum Bar Manifold
- 4-Port Subbase Aluminum Bar Manifold

Solenoids

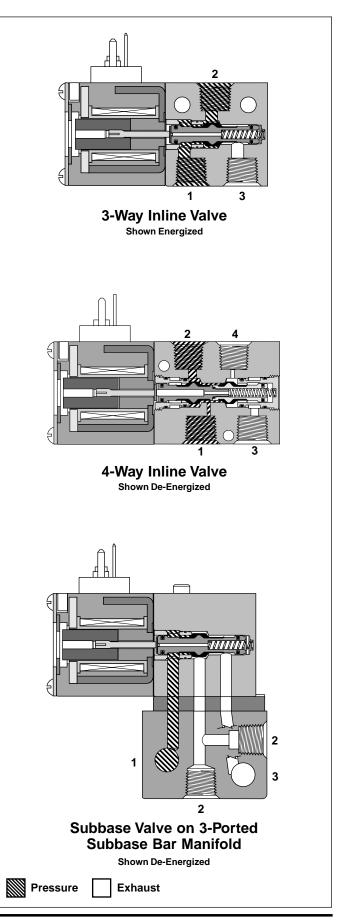
- Continuous Duty Rated
 - 24" Grommet, 15mm 3-Pin DIN 43650C, 1/2" Conduit
 - 12VDC to 240VAC

Balanced Poppet

- Buna-N
- Fluorocarbon

Certification / Approval

 Approved to be CSA and CE marked



2-1 Ker Pneumatic

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#12

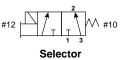
3-Way Universal Inline



∧ #10



1 3 Diverter



24" Grommet	3-Pin 15mm DIN 43650C	1/2" Conduit / 24" Leads	Voltage	Port Size
MKH0NBG45A	MKH0NB545A	MKH0NBH45A	12VDC	
MKH0NBG49A	MKH0NB549A	MKH0NBH49A	24VDC	1/8" NPT
MKH0NBG53A	MKH0NB553A	MKH0NBH53A	120VAC	
MKHFNBG45A	MKHFNB545A	MKHFNBH45A	12VDC	1/4" Tube
MKHFNBG49A	MKHFNB549A	MKHFNBH49A	24VDC	Port #2 1/8" NPT
MKHFNBG53A	MKHFNB553A	MKHFNBH53A	120VAC	Port #1 & #3

Note: All units with non-locking flush override.

3-Way Subbase Mount



√ #10 #12

Normally Closed

Normally Open



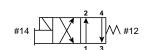
24" Grommet	3-Pin 15mm DIN 43650C	Voltage	Function
MKVVNBG45A	MKVVNB545A	12VDC	N 1 II
MKVVNBG49A	MKVVNB549A	24VDC	Normally Closed
MKVVNBG53A	MKVVNB553A	120VAC	
MKWVNBG45A	MKWVNB545A	12VDC	Newselly
MKWVNBG49A	MKWVNB549A	24VDC	Normally Open
MKWVNBG53A	MKWVNB553A	120VAC	

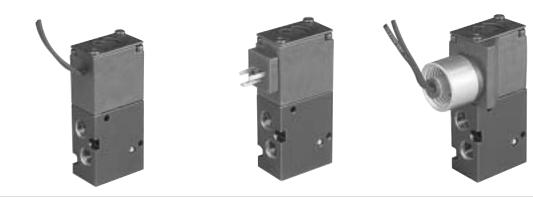
Note: All units with non-locking flush override. Valve includes mounting bolts & appropriate NC or NO selector gasket.

Subbase valves must be used on PSEK & PSFK Bar Manifolds (Page 8).



4-Way Inline

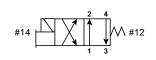




24" Grommet	3-Pin 15mm DIN 43650C	1/2" Conduit / 24" Leads	Voltage	Port Size
MKE0NBG45A	MKE0NB545A	MKE0NBH45A	12VDC	
MKE0NBG49A	MKE0NB549A	MKE0NBH49A	24VDC	1/8" NPT
MKE0NBG53A	MKE0NB553A	MKE0NBH53A	120VAC	
MKEFNBG45A	MKEFNB545A	MKEFNBH45A	12VDC	1/4" Tube
MKEFNBG49A	MKEFNB549A	MKEFNBH49A	24VDC	Port #2 & #4 1/8" NPT
MKEFNBG53A	MKEFNB553A	MKEFNBH53A	120VAC	Port #1 & #3

Note: All units with non-locking flush override.

4-Way Subbase Mount



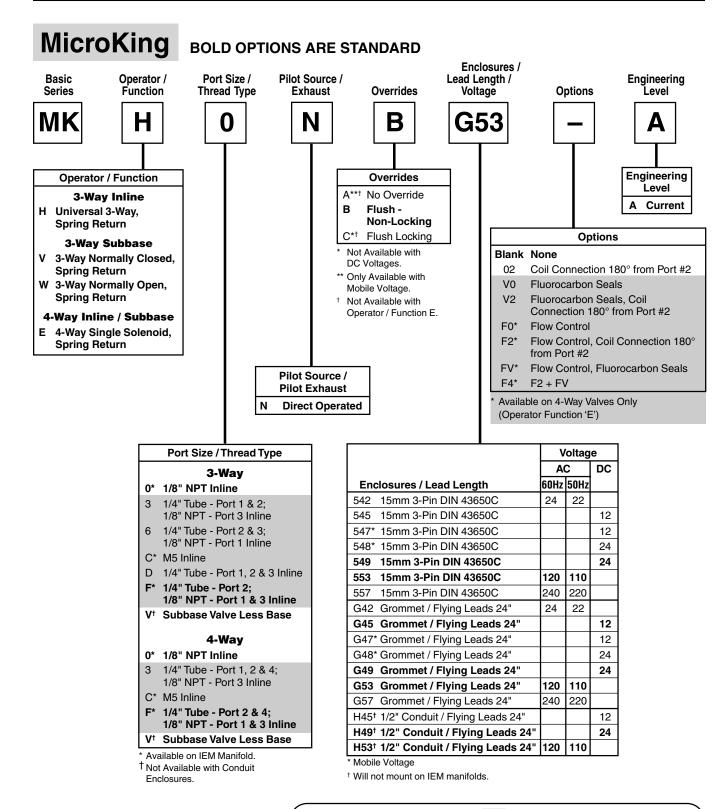




24" Grommet	3-Pin 15mm DIN 43650C	Voltage
MKEVNBG45A	MKEVNB545A	12VDC
MKEVNBG49A	MKEVNB549A	24VDC
MKEVNBG53A	MKEVNB553A	120VAC

Note: All units with non-locking flush override. Valve includes mounting bolts and gasket. Subbase valves must be used on PSEK & PSFK Bar Manifolds (Page 8).



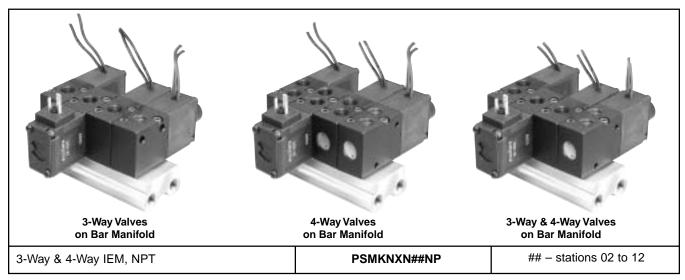


Note: Overrides

No Override option is recommended in applications which require an increased resistance to moisture. This option also includes a special gasket. Subbase valves with option '02' or 'V2' will not mount on Subbase Manifolds with the Regulator Option.

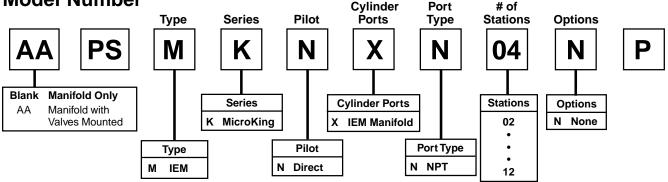
Locking Override Option (Option "C") not available with Regulator Gauges.

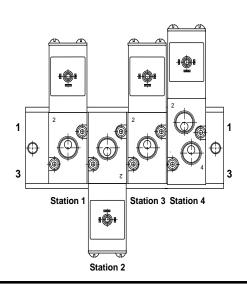
Inline valves with option '02', 'V2', 'F2' or 'F4' will not mount on IEM Manifolds with Sandwich Regulators when the valve is configured for Normally Closed function.



- IEM Bar Manifold allows for mounting of 3-Way & 4-Way Inline MicroKing Valves. For 4-Way valves, inlet should always be at Port 1.
- Standard Manifold allows mounting of Normally Closed and Normally Open 3-Way Valves simultaneously by rotating valve mounting as shown in picture.
- Manifolds available in all station lengths 2 thru 12.
- Manifold Kit includes o-rings and bolts.
- Ports 1 & 3 are always 1/8" Pipe.

Model Number



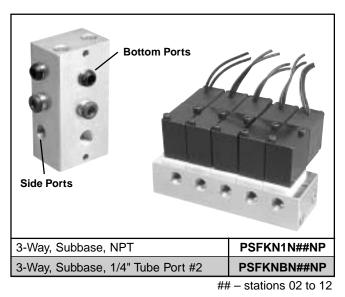


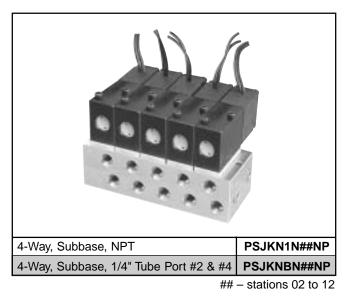
How to Order an Add-A-Fold Assembly

ltem	Qty	Part Number
001	1	AAPSMKNXN04NP
002	3	MKH0NB549A
		- Station 1, 3 - Normally Closed - Station 2 - Normally Open
003	2	PS2130166P*
		- Station 1, 2
004	1	MKE0NB549A
		- Station 4

* Regulator Gauges included but not assembled. When ordering Add-A-Folds, list valves left to right when looking at the Port #3 side of the manifold.

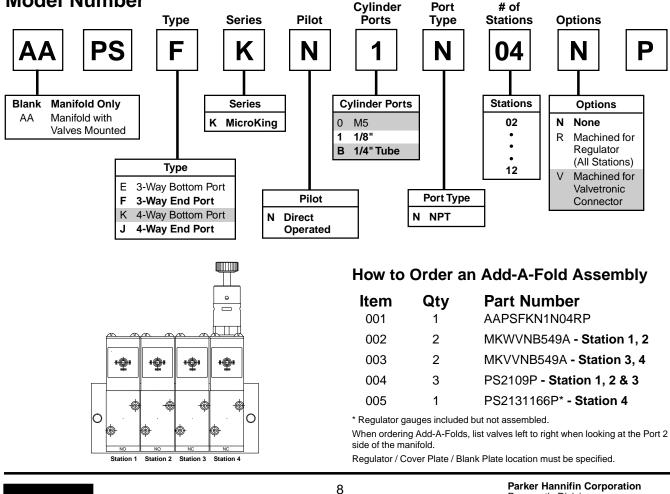
Valve Function NC or NO and Regulator / Blank Plate location must be specified.

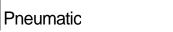




- 3 & 4-Ported Subbase Bar Manifold uses 3 & 4-Way Subbase mount MicroKing Valves.
- Standard Manifold allows mounting of 3-Way Normally Closed and Normally Open Valves simultaneously by use of selector gaskets.
- Bar Manifold Regulator Option is available with Option Code 'R'.
- 3-Way Valve includes selector plate and mounting bolts. 4-Way valve will include sandwich plate and mounting screws.
- Ports 1 & 3 are always 1/8" Pipe.

Model Number





IEM Sandwich Regulator

- Pressure regulation for individual valves mounted on IEM Bar Manifold.
- Same Sandwich Regulator used for 3-Way Normally Closed and Normally Open Valves and 4-Way Valves.

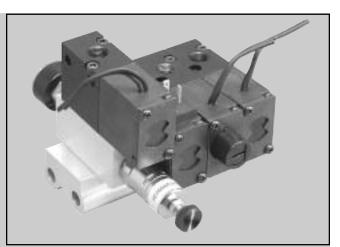
PSI	PSI Common Port Common Port with Gauge * without Gauge		Cv
60 PSI	PS2130155P	PS2130122P	.11
125 PSI	PS2130166P	PS2130133P	. ()

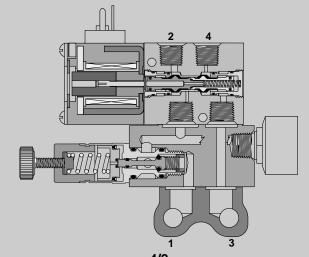
* Gauge is 160 PSI.

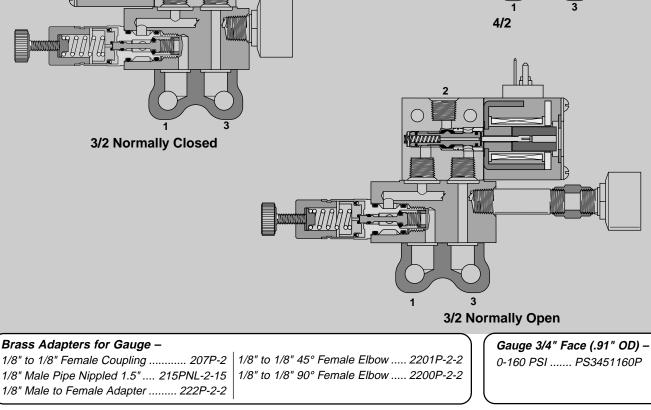
When mounting Regulators side-by-side or with Normally Open valves, gauges must be staggered. Brass adapters are listed at the bottom of the page.

Regulator without gauge includes 1/8" gauge plug.

Regulator with gauge includes 1/8" gauge plug & gauge (unassembled).









Subbase Manifold Regulator

- Pressure regulation for individual valves mounted on 3-Port or 4-Port Subbase Bar Manifold.
- Use Manifold with Option Code 'R' all stations prepared to accept Regulator Kits or Cover Kits.
- Regulator Kits and Cover Kits ordered separately.

PSI	Common Port with Gauge *	Common Port without Gauge	Cv
60 PSI	PS2131155P	PS2131122P	.11
120 PSI	PS2131166P	PS2131133P	.11

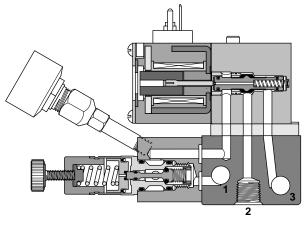
* Gauge is 160 PSI.

When mounting Regulators side-by-side, gauges must be staggered. Brass adapters are listed at the bottom of the page.

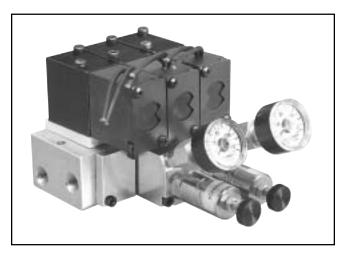
Regulator without gauge includes M5 gauge plug.

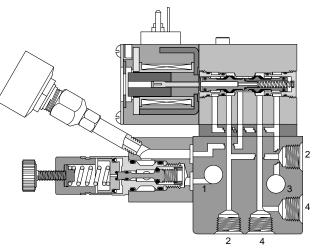
Regulator with gauge includes M5 gauge plug, 10-32x1/8" swivel fitting & gauge (unassembled).

Regulator	Cover Plate		PS2109P
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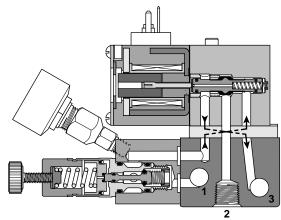


3/2 Normally Closed





4/2



3/2 Normally Open

Note: Valve with Locking Override Option 'C' not available when Regulator Gauge is used.

(Brass Adapters for Gauge –

	2 aco nauptoro i o dago	
	#10-32 Male to #10-32 Female Extender (Qty. 10)	PS2195P
ļ	#10-32 Male to 1/8" Female Straight Swivel (Qty. 5)	PS2196P

Gauge 3/4" Face (.91" OD) – 0-160 PSI PS3451160P



Performance Information

	Electrical					FI	ow		
	Voltage Power Holding			Cv Chart - Buna-N (Fluorocarbon)					
Code	A	C	DC	Consumption	Current		Inline		Subbase
	60Hz	50Hz		(W / VA)	(Amps)	M5	1/8", 1/4" Tube	M5	1/8", 1/4" Tube
42	24	22	—	5.4VA	.228		40 (45)		
45	_	—	12	4.8W	.401	.15 (.11)	.19 (.15)	.11 (.11)	.15 (.15)
47*	_	_	12	4.3W	.402	45 (44)			
48*		_	24	4.9W	.204	.15 (.11)	.15 (.15)	.11 (.11)	.15 (.15)
49	_	_	24	4.9W	.203				
53	120	110	—	5.4VA	.045	.15 (.11)	.11 (.1] .15 (.11) .19 (.15) .11 (.1	.11 (.11)	.15 (.15)
57	240	220	—	6.0VA	.025				

Note: Voltage Tolerance: +10 / -15%

* Mobile voltage applications: +25 / -30%, not available with 4-Way

Cv tested per ANSI / (NFPA) T3.21.3

Response Time

Code	Valtaria	0 Cu. In. Test Chamber		12 Cu. In. Test Chamber	
Code	Voltage	Fill	Exhaust	Fill	Exhaust
49	24VDC	.025	.018	.335	.374
53	120VAC	.021	.029	.309	.389

Average Fill Time (Seconds): With 100 PSIG supply, time required to fill from 0-90 PSIG and exhaust from 100 PSIG to 10 PSIG is measured from instant of energizing, or de-energizing solenoid. Times shown are average.

Tested per ANSI / (NFPA) T3.21.8.

Operating Pressure

Туре	Minimum	Maximum
3 & 4-Way	Vac	120 PSIG

Temperature Rating

Buna-N:	5°F to 120°F (-15°C to 49°C)
Fluorocarbon:	5°F to 140°F (-15°C to 60°C)

15mm 3-Pin DIN 43650C

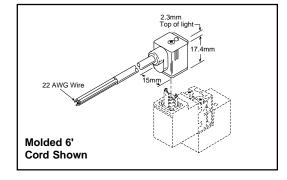
Connector	Connector with 6' (2m) Cord	Description
PS2932BP	PS2932JBP	Unlighted
PS294675BP	PS2946J75BP*	Light – 12VAC or DC
PS294679BP	PS2946J79BP*	Light – 24VAC or DC
PS294683BP	PS2946J83BP*	Light – 110/120VAC
PS294687BP	N/A	Light – 240/230VAC

* LED with surge suppression.

Note: Max ø6.5mm cable size required for connector w/o 6' (2m) cord.

Engineering Data:

Conductors: 2 Poles Plus Ground Cable Range (Connector Only): 4 to 6mm (0.16 to 0.24 Inch) Contact Spacing: 8mm

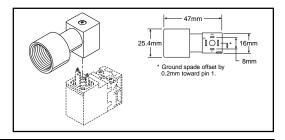


15mm DIN 43650C to 1/2" Conduit

Connector	Description
PS2998P	1/2" NPTF Conduit – Unlighted with 3' (1m) Leads 20 AWG Wire

Note: Rated up to 250VAC or VDC; 6 Amps





Selector Sandwich

Model Number	Description
PS2144P	Selector Sandwich

Kit Includes: (1) Selector Sandwich, (2) Screws, (4) O- rings, (2) 1/8" pipe plugs.

Note: For use with MicroKing 3-Way or 4-Way inline valves. The Selector Sandwich can be used to select a separate supply or separate exhaust for a individual valve which is mounted on an IEM bar manifold.

Blanking Plate

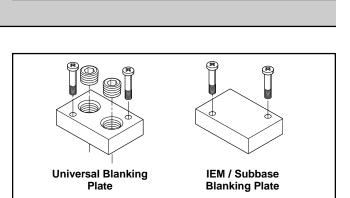
	Kit Number			
Туре	IEM Universal		IEM	Subbase
	NPT	BSPP "G"	Blank	Blank
3-Way	PS2166P	PS2167P	PS2169P	PS2194P
4-Way	PS2166P	PS2167P	PS2169P	PS219401P

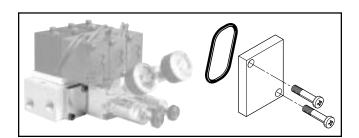
Kit includes: (1) Plate, (2) Screws, Gaskets

Regulator Cover Plate

Туре	Kit Number
3-Way / 4-Way	PS2109P

Kit includes: (1) Cover plate, (2) Screws,(1) O-ring





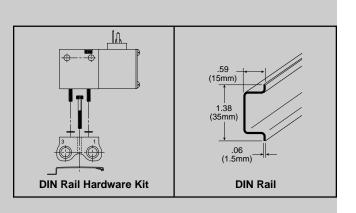
DIN Rail Hardware Kit

Туре	IEM Bar	4-Port Subbase Bar
3-Way	PS2190P	PS2190P
4-Way	PS2190P	PS2190P

Kit includes: (2) Screws, (2) Nuts, (2) Clamps

DIN Rail

AM1DE200 6 Foot Rail Length



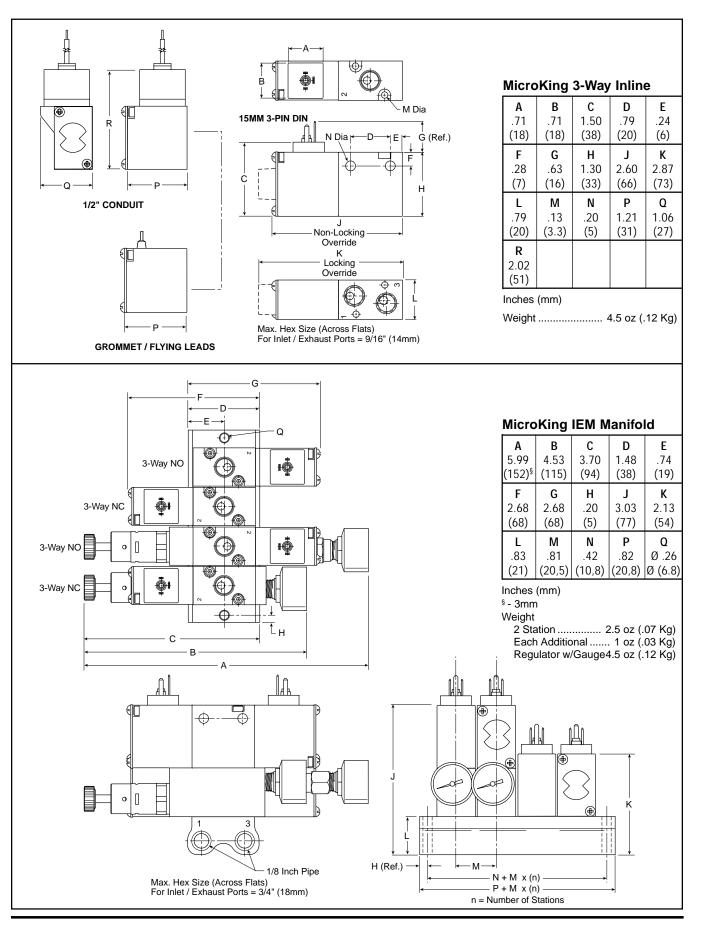
Replacement Kits

PS2184P	IEM Valve/Manifold O-ring Kit (10)
PS2187P	IEM Valve/Manifold Bolt Kit (10)
PS2105P	3-Way Selector Gasket NC

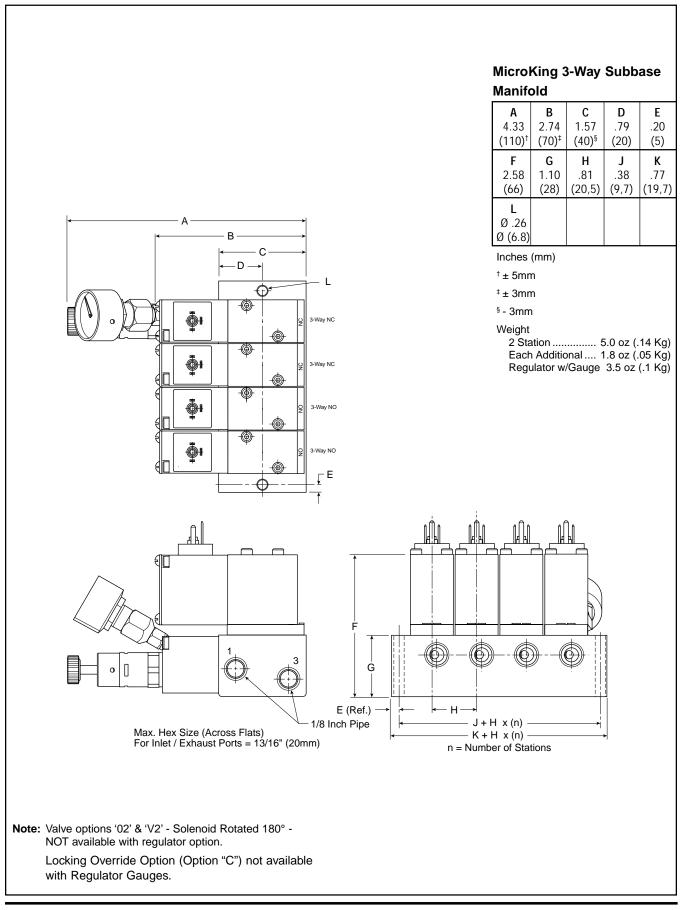
PS2106P	3-Way Selector Gasket NO
PS2188P	Subbase Valve / Manifold Bolt Kit (10)
PS210501P	4-Way Subbase Valve Sandwich Plate Kit (10)

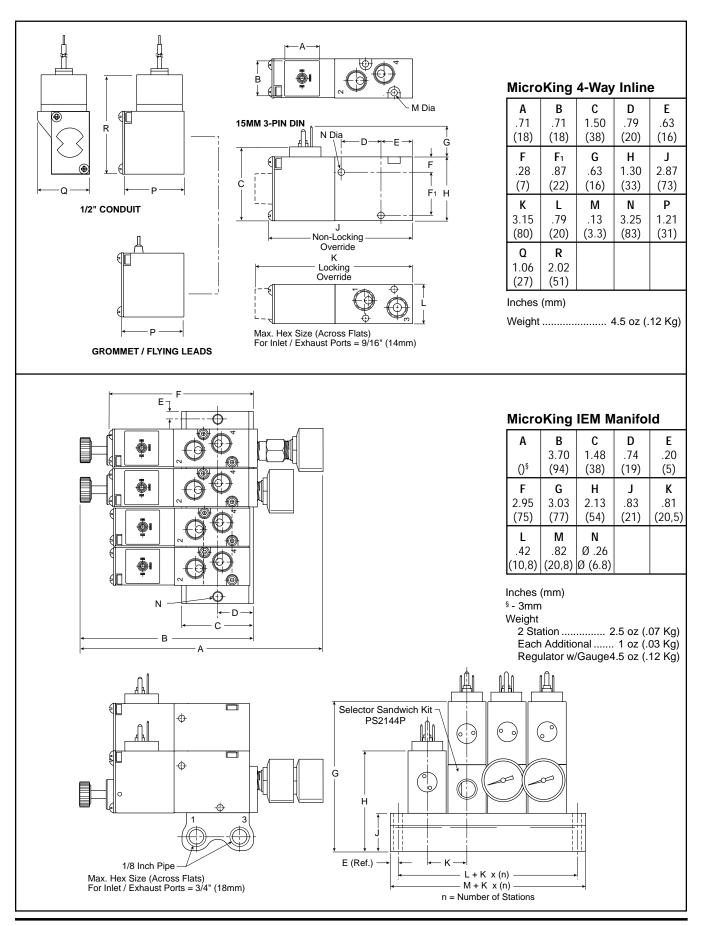


Parker Pneumatic

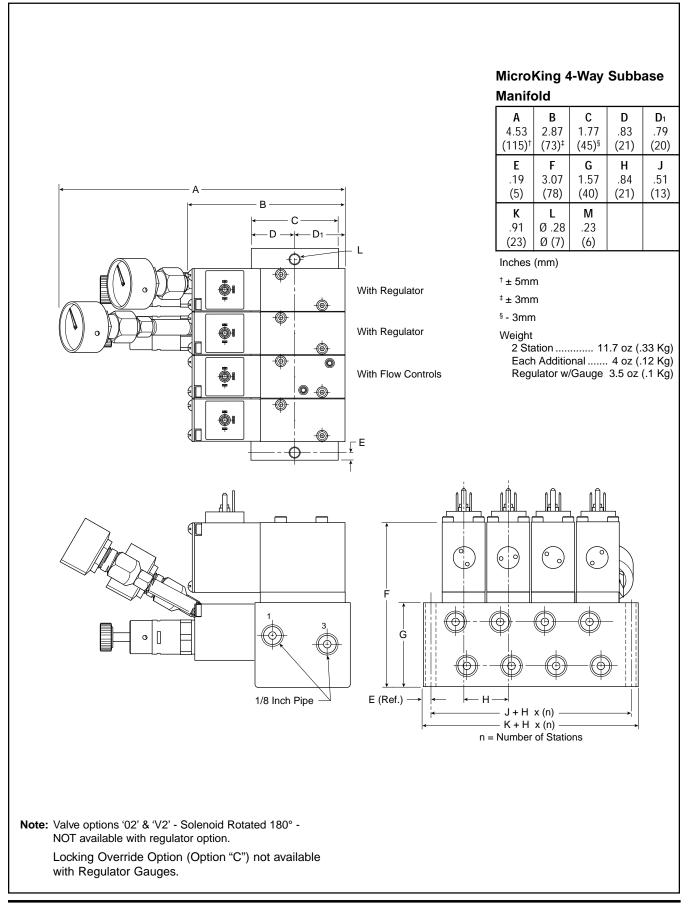


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Obsolete Part Number	Suggested Replacement	Difference of Suggested Replacement and / or Recommended Kits
MKEFNBH49A	MKE0NBH49A	Replacement Valve Difference, 1/4" Tube - Port 2 & 4, 1/8 NPT - Port 1 & 3to 1/8" NPT Inline
MKEFNBH53A	MKE0NBH53A	Replacement Valve Difference, 1/4" Tube - Port 2 & 4, 1/8 NPT - Port 1 & 3to 1/8" NPT Inline
MKEVNCG49A	MKEVNBG49A	Replacement Valve Difference, Flush - Locking to Flush - Non-locking
MKEVNCG53A	MKEVNBG53A	Replacement Valve Difference, Flush - Locking to Flush - Non-locking
MKEVNCG53F0A	MKEVNBG53A	Replacement Valve Difference, Flush - Locking to Flush - Non-locking and No Flow Control
MKH0NA549A	MKH0NB549A	Replacement Valve Difference, No Override to Flush - Non-locking
MKH0NAG45A	MKH0NBG45A	Replacement Valve Difference, No Override to Flush - Non-locking
MKH0NAG49A	MKH0NBG49A	Replacement Valve Difference, No Override to Flush - Non-locking
MKH0NAH49V2A	MKH0NBH4902A	Replacement Valve Difference, No Override to Flush - Non-locking and No Fluorocarbon Seals
MKH0NAH53A	MKH0NBH53A	Replacement Valve Difference, No Override to Flush - Non-locking
MKH0NBQ49A	MKH0NBG49A	Replacement Valve Difference, Grommet / Flying Leads 72" to Grommet / Flying Leads 24"
MKH0NBQ53A	MKH0NBG53A	Replacement Valve Difference, Grommet / Flying Leads 72" to Grommet / Flying Leads 24"
MKH0NC545A	MKH0NB545A	Replacement Valve Difference, Flush - Locking to Flush - Non-locking
MKH0NC547A	MKH0NB547A	Replacement Valve Difference, Flush - Locking to Flush - Non-locking
MKH0NC548A	MKH0NB548A	Replacement Valve Difference, Flush - Locking to Flush - Non-locking
MKH0NC549A	MKH0NB549A	Replacement Valve Difference, Flush - Locking to Flush - Non-locking
MKH0NCG49A	MKH0NBG49A	Replacement Valve Difference, Flush - Locking to Flush - Non-locking
MKH0NCH49A	MKH0NBH49A	Replacement Valve Difference, Flush - Locking to Flush - Non-locking
MKH0NCQ49A	MKH0NBG49A	Replacement Valve Difference, Flush - Locking to Flush - Non-locking and Grommet / Flying Leads 72" to Grommet / Flying Leads 24"
MKH3NB549A	MKH0NB549A	Replacement Valve Difference, 1/4" Tube - Port 1& 2; 1/8" NPT - Port 3 Inline to 1/8" NPT Inline
VKH3NB553A	MKH0NB553A	Replacement Valve Difference, 1/4" Tube - Port 1& 2; 1/8" NPT - Port 3 Inline to 1/8" NPT Inline
VKH3NBG42A	MKH0NBG42A	Replacement Valve Difference, 1/4" Tube - Port 1& 2; 1/8" NPT - Port 3 Inline to 1/8" NPT Inline
VKH3NBG45A	MKH0NBG45A	Replacement Valve Difference, 1/4" Tube - Port 1& 2; 1/8" NPT - Port 3 Inline to 1/8" NPT Inline
VKH3NBG53A	MKH0NBG53A	Replacement Valve Difference, 1/4" Tube - Port 1& 2; 1/8" NPT - Port 3 Inline to 1/8" NPT Inline
MKH3NBH53A	MKH0NBH53A	Replacement Valve Difference, 1/4" Tube - Port 1& 2; 1/8" NPT - Port 3 Inline to 1/8" NPT Inline
MKH3NC549A	MKH0NB549A	Replacement Valve Difference, 1/4" Tube - Port 1& 2; 1/8" NPT - Port 3 Inline to 1/8" NPT Inline
MKH6NBG53A	MKH0NBG53A	Replacement Valve Difference, 1/4 NPT Tube - Port 2 & 3; 1/8" NPT - Port 1 Inline to 1/8" NPT Inlin
MKHCNB549A	MKH0NB549A	Replacement Valve Difference, M5 Inline to 1/8" NPT Inline
MKHDNB549A	MKH0NB549A	Replacement Valve Difference, 1/4" Tube - Port 1, 2, & 3 Inline to 1/8"
MKHDNBG45A	MKH0NBG45A	Replacement Valve Difference, 1/4" Tube - Port 1, 2, & 3 Inline to 1/8"
MKHDNBG47A	MKH0NBG47A	Replacement Valve Difference, 1/4" Tube - Port 1, 2, & 3 Inline to 1/8"
MKHDNBG48A	MKH0NBG48A	Replacement Valve Difference, 1/4" Tube - Port 1, 2, & 3 Inline to 1/8"
MKHDNBG49A	MKH0NBG49A	Replacement Valve Difference, 1/4" Tube - Port 1, 2, & 3 Inline to 1/8"
MKHDNBG53A	MKH0NBG49A MKH0NBG53A	Replacement Valve Difference, 1/4 Tube - Port 1, 2, & 3 Inline to 1/8
MKHDNBH45A		
-	MKH0NBH45A	Replacement Valve Difference, 1/4" Tube - Port 1, 2, & 3 Inline to 1/8"
MKHDNBH53A	MKHONBH53A	Replacement Valve Difference, 1/4" Tube - Port 1, 2, & 3 Inline to 1/8"
MKHFNB545A	MKH0NB545A	Replacement Valve Difference, 1/4" Tube - Port 2; 1/8" NPT - Port 1 & 3 Inline to 1/8" NPT Inline
MKHFNB547A	MKH0NB547A	Replacement Valve Difference, 1/4" Tube - Port 2; 1/8" NPT - Port 1 & 3 Inline to 1/8" NPT Inline
MKHFNB549A	MKH0NB549A	Replacement Valve Difference, 1/4" Tube - Port 2; 1/8" NPT - Port 1 & 3 Inline to 1/8" NPT Inline
MKHFNB553A	MKH0NB553A	Replacement Valve Difference, 1/4" Tube - Port 2; 1/8" NPT - Port 1 & 3 Inline to 1/8" NPT Inline
MKHFNBG45A	MKH0NBG45A	Replacement Valve Difference, 1/4" Tube - Port 2; 1/8" NPT - Port 1 & 3 Inline to 1/8" NPT Inline
MKHFNBG49A	MKH0NBG49A	Replacement Valve Difference, 1/4" Tube - Port 2; 1/8" NPT - Port 1 & 3 Inline to 1/8" NPT Inline
MKHFNBG53A	MKH0NBG53A	Replacement Valve Difference, 1/4" Tube - Port 2; 1/8" NPT - Port 1 & 3 Inline to 1/8" NPT Inline
MKHFNBH53A	MKH0NBH53A	Replacement Valve Difference, 1/4" Tube - Port 2; 1/8" NPT - Port 1 & 3 Inline to 1/8" NPT Inline
MKVVNC549A	MKVVNB549A	Replacement Valve Difference, Flush - Locking to Flush - Non-locking
MKE0NB549F0A	MKE0NB549A	Replacement Valve Difference, No Flow Control
MKE0NB553F0A	MKE0NB553A	Replacement Valve Difference, No Flow Control
VKE0NBG45F0A	MKE0NBG45A	Replacement Valve Difference, No Flow Control
MKE0NBG49F0A	MKE0NBG49A	Replacement Valve Difference, No Flow Control
MKE0NBG53F0A	MKE0NBG53A	Replacement Valve Difference, No Flow Control
MKE0NBG53V0A	MKE0NBG53A	Replacement Valve Difference, No Fluorocarbon Seals
MKEVNB549F0A	MKEVNB549A	Replacement Valve Difference, No Flow Control
MKEVNB553F0A	MKEVNB553A	Replacement Valve Difference, No Flow Control
MKEVNBG49F0A	MKEVNBG49A	Replacement Valve Difference, No Flow Control
MKH0NB542V0A	MKH0NB542A	Replacement Valve Difference, No Fluorocarbon Seals

Obsolete Part Number	Suggested Replacement	Difference of Suggested Replacement and / or Recommended Kits
MKH0NB549V0A	MKH0NB549A	Replacement Valve Difference, No Fluorocarbon Seals
MKH0NB549V2A	MKH0NB54902A	Replacement Valve Difference, No Fluorocarbon Seals
MKH0NBG49V0A	MKH0NBG49A	Replacement Valve Difference, No Fluorocarbon Seals
MKH0NBG53V0A	MKH0NBG53A	Replacement Valve Difference, No Fluorocarbon Seals
MKH0NBH53V0A	MKH0NBH53A	Replacement Valve Difference, No Fluorocarbon Seals
MKVVNBG45V0A	MKVVNBG45A	Replacement Valve Difference, No Fluorocarbon Seals
MKVVNBG53V0A	MKVVNBG53A	Replacement Valve Difference, No Fluorocarbon Seals
MKH0NCG45A	MKH0NBG45A	Replacement Valve Difference, Flush - Locking to Flush - Non-locking
MKH0NCG4902A	MKH0NBG4902A	Replacement Valve Difference, Flush - Locking to Flush - Non-locking
MKH3NCG47A	MKH0NBG47A	Replacement Valve Difference, 1/4" Tube - Port 1& 2; 1/8" NPT - Port 3 Inline to 1/8" NPT Inline and Flush - Locking to Flush - Non-locking
MKH3NCG49A	MKH0NBG49A	Replacement Valve Difference, 1/4" Tube - Port 1& 2; 1/8" NPT - Port 3 Inline to 1/8" NPT Inline and Flush - Locking to Flush - Non-locking
MKH3NCG4902A	MKH0NBG4902A	Replacement Valve Difference, 1/4" Tube - Port 1& 2; 1/8" NPT - Port 3 Inline to 1/8" NPT Inline and Flush - Locking to Flush - Non-locking
MKH5NC549A	MKH5NB549A	Replacement Valve Difference, Flush - Locking to Flush - Non-locking
MKVVNCG45A	MKVVNBG45A	Replacement Valve Difference, Flush - Locking to Flush - Non-locking
MKVVNCG47A	MKVVNBG47A	Replacement Valve Difference, Flush - Locking to Flush - Non-locking
MKVVNCG49A	MKVVNBG49A	Replacement Valve Difference, Flush - Locking to Flush - Non-locking
MKE0NAG45A	MKE0NBG45A	Replacement Valve Difference, No Override to Flush - Non-locking
MKE0NA549A	MKE0NB549A	Replacement Valve Difference, No Override to Flush - Non-locking
MKEVNC549A	MKEVNB549A	Replacement Valve Difference, Flush - Locking to Flush - Non-locking
MKE0NCG4902A	MKE0NBG4902A	Replacement Valve Difference, Flush - Locking to Flush - Non-locking
MKE0NC549A	MKE0NB549A	Replacement Valve Difference, Flush - Locking to Flush - Non-locking
MKE0NC54902A	MKE0NB54902A	Replacement Valve Difference, Flush - Locking to Flush - Non-locking
MKE0NC557A	MKE0NB557A	Replacement Valve Difference, Flush - Locking to Flush - Non-locking
MKE3NCG49A	MKE0NBG49A	Replacement Valve Difference, 1/4" Tube - Port 1, 2, & 4; 1/8" NPT - Port 3 Inline to 1/8" NPT Inline and Flush - Locking to Flush - Non-locking
MKE3NCG4902A	MKE0NBG4902A	Replacement Valve Difference, 1/4" Tube - Port 1, 2, & 4; 1/8" NPT - Port 3 Inline to 1/8" NPT Inline and Flush - Locking to Flush - Non-locking
MKE0NBQ53F0A	MKE0NBG53A	Replacement Valve Difference, Grommet / Flying Leads 72" to Grommet / Flying Leads 24" and No Flow Control
MKH0NBQ45A	MKH0NBG45A	Replacement Valve Difference, Grommet / Flying Leads 72" to Grommet / Flying Leads 24"
MKVVNBQ45A	MKVVNBG45A	Replacement Valve Difference, Grommet / Flying Leads 72" to Grommet / Flying Leads 24"
MKVVNBQ49A	MKVVNBG49A	Replacement Valve Difference, Grommet / Flying Leads 72" to Grommet / Flying Leads 24"
MKVVNBQ53A	MKVVNBG53A	Replacement Valve Difference, Grommet / Flying Leads 72" to Grommet / Flying Leads 24"
MKE0NBG57V0A	MKE0NBG57A	Replacement Valve Difference, No Fluorocarbon Seals
MKH0NAH49V0A	MKH0NBH49A	Replacement Valve Difference, No Override to Flush - Non-locking and No Fluorocarbon Seals
MKH0NBG42V0A	MKH0NBG42A	Replacement Valve Difference. No Fluorocarbon Seals
MKH0NBG45V0A	MKH0NBG45A	Replacement Valve Difference, No Fluorocarbon Seals
MKH0NBG47V0A	MKH0NBG47A	Replacement Valve Difference, No Fluorocarbon Seals
MKH0NBG57V0A	MKH0NBG57A	Replacement Valve Difference, No Fluorocarbon Seals
MKH0NB545V0A	MKH0NB545A	Replacement Valve Difference, No Fluorocarbon Seals
MKH0NB547V0A	MKH0NB547A	Replacement Valve Difference, No Fluorocarbon Seals
MKH0NB553V0A	MKH0NB553A	Replacement Valve Difference, No Fluorocarbon Seals
MKH5NB549V0A	MKH5NB549A	Replacement Valve Difference, No Fluorocarbon Seals
MKVVNBG47V0A	MKVVNBG47A	Replacement Valve Difference, No Fluorocarbon Seals
MKVVNB549V0A	MKVVNB549A	Replacement Valve Difference, No Fluorocarbon Seals
MKVVNB549V0A MKVVNB553V0A	MKVVNB553A	Replacement Valve Difference, No Fluorocarbon Seals
MKVVNB557V0A MKVVNB557V0A	MKVVNB557A	Replacement Valve Difference, No Fluorocarbon Seals
	MKVVNB549A	Replacement Valve Difference, Flush - Locking to Flush - Non-locking and No Fluorocarbon Seals
MKWVNBG45V0A	MKWVNBG45A	Replacement Valve Difference, No Fluorocarbon Seals
MKWVNB542V2A	MKWVNB54202A	Replacement Valve Difference, No Fluorocarbon Seals
MKECNB549A	MKE0NB549A	Replacement Valve Difference, M5 Inline to 1/8" NPT Inline
MKECNB553A	MKE0NB553A	Replacement Valve Difference, M5 Inline to 1/8" NPT Inline
MKHCNBG45A	MKH0NBG45A	Replacement Valve Difference, M5 Inline to 1/8" NPT Inline

Obsolete Part Number	Suggested Replacement	Difference of Suggested Replacement and / or Recommended Kits
MKHCNBG47A	MKH0NBG47A	Replacement Valve Difference, M5 Inline to 1/8" NPT Inline
MKH6NBH53A Inline	MKH0NBH53A	Replacement Valve Difference, 1/4 NPT Tube - Port 2 & 3; 1/8" NPT - Port 1 Inline to 1/8" NPT
MKH6NB549A Inline	MKH0NB549A	Replacement Valve Difference, 1/4 NPT Tube - Port 2 & 3; 1/8" NPT - Port 1 Inline to 1/8" NPT
MKH6NB553A Inline	MKH0NB553A	Replacement Valve Difference, 1/4 NPT Tube - Port 2 & 3; 1/8" NPT - Port 1 Inline to 1/8" NPT
MKH7NBG49A	MKH5NBG49A	Replacement Valve Difference, 1/8" Bspt Inline to 1/8" BSPP
MKH7NBG53A	MKH5NBG53A	Replacement Valve Difference, 1/8" Bspt Inline to 1/8" BSPP
MKH7NB548A	MKH5NB548A	Replacement Valve Difference, 1/8" Bspt Inline to 1/8" BSPP
MKHDNBQ45A	MKH0NBG45A	Replacement Valve Difference, 1/4" Tube - Port 1, 2, & 3 Inline to 1/8" and Grommet / Flying Leads 72" to Grommet / Flying Leads 24"
MKHDNBQ49A	MKH0NBG49A	Replacement Valve Difference, 1/4" Tube - Port 1, 2, & 3 Inline to 1/8" and Grommet / Flying Leads 72" to Grommet / Flying Leads 24"
MKHDNBQ53A	MKH0NBG53A	Replacement Valve Difference, 1/4" Tube - Port 1, 2, & 3 Inline to 1/8" and Grommet / Flying Leads 72" to Grommet / Flying Leads 24"
MKHDNBH49A	MKH0NBH49A	Replacement Valve Difference, 1/4" Tube - Port 1, 2, & 3 Inline to 1/8"
MKHDNB553A	MKH0NB553A	Replacement Valve Difference, 1/4" Tube - Port 1, 2, & 3 Inline to 1/8"
MKHDNCG47A	MKH0NBG47A	Replacement Valve Difference, 1/4" Tube - Port 1, 2, & 3 Inline to 1/8"
		and Flush - Locking to Flush - Non-locking
MKHDNCG57A	MKH0NCG57A	Replacement Valve Difference, 1/4" Tube - Port 1, 2, & 3 Inline to 1/8"
MKHDNC557A	MKH0NC557A	Replacement Valve Difference, 1/4" Tube - Port 1, 2, & 3 Inline to 1/8"
MKEFNBG45F0A	MKE0NBG45A	Replacement Valve Difference, 1/4" Tube - Port 2 & 4, 1/8 NPT - Port 1 & 3 to 1/8" NPT Inline and No Flow Control
MKEFNBG49F0A	MKE0NBG49A	Replacement Valve Difference, 1/4" Tube - Port 2 & 4, 1/8 NPT - Port 1 & 3 to 1/8" NPT Inline and No Flow Control
MKEFNBG53F0A	MKE0NBG53A	Replacement Valve Difference, 1/4" Tube - Port 2 & 4, 1/8 NPT - Port 1 & 3 to 1/8" NPT Inline and No Flow Control
MKEFNBH45F0A	MKE0NBH45A	Replacement Valve Difference, 1/4" Tube - Port 2 & 4, 1/8 NPT - Port 1 & 3 to 1/8" NPT Inline and No Flow Control
MKEFNBH49F0A	MKE0NBH49A	Replacement Valve Difference, 1/4" Tube - Port 2 & 4, 1/8 NPT - Port 1 & 3 to 1/8" NPT Inline and No Flow Control
MKEFNBH53F0A	MKE0NBH53A	Replacement Valve Difference, 1/4" Tube - Port 2 & 4, 1/8 NPT - Port 1 & 3 to 1/8" NPT Inline and No Flow Control
MKEFNB545F0A	MKE0NB545A	Replacement Valve Difference, 1/4" Tube - Port 2 & 4, 1/8 NPT - Port 1 & 3 to 1/8" NPT Inline and No Flow Control
MKEFNB549F0A	MKE0NB549A	Replacement Valve Difference, 1/4" Tube - Port 2 & 4, 1/8 NPT - Port 1 & 3 to 1/8" NPT Inline and No Flow Control
MKEFNB553F0A	MKE0NB553A	Replacement Valve Difference, 1/4" Tube - Port 2 & 4, 1/8 NPT - Port 1 & 3 to 1/8" NPT Inline and No Flow Control
MKHFNAG47V0A	MKH0NAG47A	Replacement Valve Difference, 1/4" Tube - Port 1& 2; 1/8" NPT - Port 3 Inline to 1/8" NPT Inline and No Fluorocarbon Seals
MKEFNBG42A	MKE0NBG42A	Replacement Valve Difference, 1/4" Tube - Port 2 & 4, 1/8 NPT - Port 1 & 3 to 1/8" NPT Inline
MKEFNBG49A	MKE0NBG49A	Replacement Valve Difference, 1/4" Tube - Port 2 & 4, 1/8 NPT - Port 1 & 3 to 1/8" NPT Inline
MKEFNBG53A	MKE0NBG53A	Replacement Valve Difference, 1/4" Tube - Port 2 & 4, 1/8 NPT - Port 1 & 3 to 1/8" NPT Inline
MKEFNBH45A	MKE0NBH45A	Replacement Valve Difference, 1/4" Tube - Port 2 & 4, 1/8 NPT - Port 1 & 3 to 1/8" NPT Inline
MKEFNB542A	MKE0NB542A	Replacement Valve Difference, 1/4" Tube - Port 2 & 4, 1/8 NPT - Port 1 & 3 to 1/8" NPT Inline
MKEFNB545A	MKE0NB545A	Replacement Valve Difference, 1/4" Tube - Port 2 & 4, 1/8 NPT - Port 1 & 3 to 1/8" NPT Inline
MKEFNB553A	MKE0NB553A	Replacement Valve Difference, 1/4" Tube - Port 2 & 4, 1/8 NPT - Port 1 & 3 to 1/8" NPT Inline
MKHFNBG4502A	MKH0NBG4502A	Replacement Valve Difference, 1/4" Tube - Port 1& 2; 1/8" NPT - Port 3 Inline to 1/8" NPT Inline
MKHFNBG47A	MKH0NBG47A	Replacement Valve Difference, 1/4" Tube - Port 1& 2; 1/8" NPT - Port 3 Inline to 1/8" NPT Inline
MKHFNBG4902A	MKH0NBG4902A	Replacement Valve Difference, 1/4" Tube - Port 1& 2; 1/8" NPT - Port 3 Inline to 1/8" NPT Inline
MKHFNBG5302A	MKH0NBG5302A	Replacement Valve Difference, 1/4" Tube - Port 1& 2; 1/8" NPT - Port 3 Inline to 1/8" NPT Inline
MKHFNBH45A	MKH0NBH45A	Replacement Valve Difference, 1/4" Tube - Port 1& 2; 1/8" NPT - Port 3 Inline to 1/8" NPT Inline
MKHFNBH49A	MKH0NBH49A	Replacement Valve Difference, 1/4" Tube - Port 1& 2; 1/8" NPT - Port 3 Inline to 1/8" NPT Inline
MKHFNB54502A	MKH0NB54502A	Replacement Valve Difference, 1/4" Tube - Port 1& 2; 1/8" NPT - Port 3 Inline to 1/8" NPT Inline
MKHFNB54902A	MKH0NB54902A	Replacement Valve Difference, 1/4" Tube - Port 1& 2; 1/8" NPT - Port 3 Inline to 1/8" NPT Inline
MKHFNB55302A	MKH0NB55302A	Replacement Valve Difference, 1/4" Tube - Port 1& 2; 1/8" NPT - Port 3 Inline to 1/8" NPT Inline
MKHFNCG53A	MKH0NCG53A	Replacement Valve Difference, 1/4" Tube - Port 1& 2; 1/8" NPT - Port 3 Inline to 1/8" NPT Inline



Obsolete Part Number	Suggested Replacement	Difference of Suggested Replacement and / or Recommended Kits
MKEVNBG45F0A	MKEVNBG45A	Replacement Valve Difference, No Flow Control
MKEVNBG53F0A	MKEVNBG53A	Replacement Valve Difference, No Flow Control
MKEVNBH49F0A	MKEVNBH49A	Replacement Valve Difference, No Flow Control
MKEVNB545F0A	MKEVNB545A	Replacement Valve Difference, No Flow ControL
MKE0NBG49F2A	MKE0NBG4902A	Replacement Valve Difference, No Flow Control
MKE0NBH45F0A	MKE0NBH45A	Replacement Valve Difference, No Flow Control
MKE0NBH49F0A	MKE0NBH49A	Replacement Valve Difference, No Flow Control
MKE0NBH49F2A	MKE0NBH4902A	Replacement Valve Difference, No Flow Control
MKE0NBH53F0A	MKE0NBH53A	Replacement Valve Difference, No Flow Control
MKE0NB545F0A	MKE0NB545A	Replacement Valve Difference, No Flow Control
MKE0NB553FVA	MKE0NB553A	Replacement Valve Difference, No Flow Control and No Fluorocarbon Seals
MKE3NBG49F0A	MKE0NBG49A	Replacement Valve Difference, 1/4" Tube - Port 1, 2, & 4;

1/8" NPT - Port 3 Inline to 1/8" NPT Inline and No Flow Control

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7. Special Tooling: A tooling charge may be imposed for any special tooling, including without limitations, dies, fixtures, molds and patterns, acquired to manufacture items sold pursuant to this contract. Such special tooling shall be and remain Seller's property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the manufacture of the items sold hereunder, even if such apparatus has been specially converted or adapted for such manufacture and notwithstanding any

charges paid by Buyer. Unless otherwise agreed, Seller shall have the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.

8. Buyer's Property: Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer, or any other items which become Buyer's property, may be considered obsolete and may be destroyed by Seller after two (2) consecutive years have elapsed without Buyer placing an order for the items which are manufactured using such property. Seller shall not be responsible for any loss or damage to such property while it is in Seller's possession or control.

9. Taxes: Unless otherwise indicated on the face hereof, all prices and charges are exclusive of excise, sales, use, property, occupational or like taxes which may be imposed by any taxing authority upon the manufacture, sale or delivery of the items sold hereunder. If any such taxes must be paid by Seller or if Seller is liable for the collection of such tax, the amount thereof shall be in addition to the amounts for the items sold. Buyer agrees to pay all such taxes or to reimburse Seller therefore upon receipt of its invoice. If Buyer claims exemption from any sales, use or other tax imposed by any taxing authority, Buyer shall save Seller harmless from and against any such tax, together with any interest or penalties thereon which may be assessed if the items are held to be taxable.

10. Indemnity For Infringement of Intellectual Property Rights: Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this Part 10. Seller will defend and indemnify Buyer against allegations of infringement of U.S. patents, U.S. trademarks, copyrights, trade dress and trade secrets (hereinafter "Intellectual Property Rights"). Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on an allegation that an item sold pursuant to this contract infringes the Intellectual Property Rights of a third party. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of such allegations of infringement, and Seller having sole control over the defense of any allegations or actions including all negotiations for settlement or compromise. If an item sold hereunder is subject to a claim that it infringes the Intellectual Property Rights of a third party, Seller may, at its sole expense and option, procure for Buyer the right to continue using said item, replace or modify said item so as to make it noninfringing, or offer to accept return of said item and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller shall have no liability for claims of infringement based on information provided by Buyer, or directed to items delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any item sold hereunder. The foregoing provisions of this Part 10 shall constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for infringement of Intellectual Property Rights.

If a claim is based on information provided by Buyer or if the design for an item delivered hereunder is specified in whole or in part by Buyer, Buyer shall defend and indemnify Seller for all costs, expenses or judgements resulting from any claim that such item infringes any patent, trademark, copyright, trade dress, trade secret or any similar right.

11. Force Majeure: Seller does not assume the risk of and shall not be liable for delay or failure to perform any of Seller's obligations by reason of circumstances beyond the reasonable control of Seller (hereinafter "Events of Force Majeure"). Events of Force Majeure shall include without limitation, accidents, acts of God, strikes or labor disputes, acts, laws, rules or regulations of any government or government agency, fires, floods, delays or failures in delivery of carriers or suppliers, shortages of materials and any other cause beyond Seller's control.

12. Entire Agreement/Governing Law: The terms and conditions set forth herein, together with any amendments, modifications and any different terms or conditions expressly accepted by Seller in writing, shall constitute the entire Agreement concerning the items sold, and there are no oral or other representations or agreements which pertain thereto. This Agreement shall be governed in all respects by the law of the State of Ohio. No actions arising out of sale of the items sold hereunder or this Agreement may be brought by either party more than two (2) years after the cause of action accrues.





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