

HUMPHREY SELECTION GUIDE

Organized by Port Size

SOLENOID

2-, 3-way

M3	C _v	10-32	C _v	1/8"	C _v	1/4"	C _v	3/8"	C _v	1/2"	C _v	3/4"	C _v
H010E1	0.01	3E1	0.01	31E1	0.09	(V)062E1	0.12			(VA/VV)500(A)E1	2.16	(VA)590(A)E1	2.56
H041E1	0.08	M3E1	0.01	M31E1	0.06	T062E1	0.11			500E2	2.16	(VA)590(A)E2	2.56
H040 E1	0.08	M3E1-81-MTL	0.01	310	0.12	125E1	0.19			501E1	2.20		
		3E1-PCM	0.01	S310	0.15	T125E1	0.17			501E2	2.20		
		3E1-39-BOU	0.01	M310	0.12	(VA/VV)250(A)E	0.63						
		3E1-TSD	0.01	(VA)125(A)E1L	0.24	250E2	0.63						
		H(V)030E1	0.03	M125E1LW	0.17	320	1.00						
		H110E1	0.23	H181E1	0.57								
		H111E1	0.23										

4-way

M3	C _v	10-32	C _v	1/8"	C _v	1/4"	C _v	3/8"	C _v	1/2"	C _v	3/4"	C _v
H040 4E1	0.08	401	0.05	41E1	0.03	42E1	0.43			501-4E1	1.80		
H040 4E2	0.08	M401	0.05	M41E1	0.03	M42E1	0.39			501-4E2	1.80		
		402	0.04	MC41E1	0.03	42E2	0.43						
		M402	0.04	410	0.14	062-4E1	0.07						
		H030-4E1	0.03	410-70	0.14	125-4E1	0.11						
		H110-4E1	0.23	S410	0.13	T062-4E1	0.07						
		H110-4E2	0.23	S410-70	0.13	T125-4E1	0.11						
		H113-4E2	0.21	M410	0.13	M42E2	0.39						
				M410-70	0.13	250-4E1	0.58						
				H180-4E1	0.57	250-4E2	0.88						
				H180-4E2	0.57	H240-4E1	0.88						
				H183-4E2	0.50	H243-4E2	0.83						
						S420	1.00						
						M420	1.00						

AIR PILOTED

2-, 3-way

M3	C _v	10-32	C _v	1/8"	C _v	1/4"	C _v	3/8"	C _v	1/2"	C _v	3/4"	C _v
		2P	0.09	31P	0.29	(VA/VV)250A	0.63			(VA)500A	2.20	(VA)590A	3.73
		3P	0.09	(VA)125A	0.22	250AA	0.85			500AB	2.20	590AB	3.73
				125AA	0.23	250AL	0.65			500AG	2.20	590AG	3.73
				125LA	0.15	250AH	0.50			501A	2.41		
				125AH	0.17					501AA	2.49		

4-way

M3	C _v	10-32	C _v	1/8"	C _v	1/4"	C _v	3/8"	C _v	1/2"	C _v	3/4"	C _v
		4P	0.11	41P	0.29	42A	0.38			501-4A	1.89		
		4PP	0.11	41PP	0.28	42A2	0.35			501-4AA	1.89		
		110-4A	0.23	H180-4A	0.50	M42A2	0.32						
		110-4A2	0.23	H180-4A2	0.50	250-4A	0.49						
						250-4AA	0.75						

MANUAL/MECHANICAL

2-, 3-way

M3	C _v	10-32	C _v	1/8"	C _v	1/4"	C _v	3/8"	C _v	1/2"	C _v	3/4"	C _v
		2P	0.09	31P	0.29	250PL	0.83			501V	2.20	590C	3.85
		2V	0.09	31V	0.29	250P	0.84			(V)500C	2.20		
		3P	0.09	125PLG	0.22	250HO	0.83						
		3V	0.09	125P	0.22	250F	0.83						
				125HO	0.22	(V)250C	0.83						
				125B	0.23	250T	0.83						
				125MP	0.22	(V)250V	0.83						
				125MC	0.22								
				125MOC	0.22								
				125C	0.22								
				125T	0.22								
				(V)125V	0.22								

4-way

M3	C _v	10-32	C _v	1/8"	C _v	1/4"	C _v	3/8"	C _v	1/2"	C _v	3/4"	C _v
		4P	0.11	41P	0.29	42P	0.39						
		4PP	0.11	41PP	0.29	42PP	0.39						
		4PPX	0.29	41PPX	0.29	M42P	0.32						
		4PP/PPX	0.29	41PP/PPX	0.29	M42PP	0.29						
		4V	0.11	41V	0.29	M42PA	0.29						
				41T	0.09	250-4F	0.75						
				41R	0.09	250-4H	0.75						

Humphrey General Guidelines

Don't take chances

Compressed air is an extremely powerful medium. Always take maximum precautions when handling any component of a compressed air system.

Never attempt to construct, replace, operate or service any component of a compressed air system unless you have been specifically and properly trained to do so.

Always disconnect the supply air and exhaust the air system before attempting to remove or service a component of that system.

Failure to heed these warnings could result in **SERIOUS, EVEN FATAL, PERSONAL INJURY.**

Use the right valve

Humphrey valves are general purpose air valves designed for use in general industrial applications in accordance with the limitations described in this catalog for each valve. The specifications of individual products are subject to change without notice. Consult factory for specific information concerning valve/application compatibility

Each Humphrey valve is tested before it leaves our factory to assure the valve's conformance to catalog specifications.

Any use or application which deviates from the valve's specifications will void the warranty unless Humphrey has provided specific and written authorization beforehand.

Use the right lubrication

Except where model specifications state "No lubrication required," all Humphrey valves require appropriate lubrication. Humphrey recommends a non-detergent, 20w or 30w, mineral-based petroleum oil for most of its valves.

Some lubricants may cause swelling or deterioration of the valve's seals, therefore lubricant/seal compatibility must be confirmed. Read specifications carefully. If there is any doubt, consult factory.

Use the right air supply

The valved medium, including the lubricants and other substances it may contain, must be compatible with the materials of which the valve is constructed. Read the specifications carefully; if there is any doubt, consult factory.

Some valve models are vulnerable to contaminated or moisture-laden compressed air. To promote proper functioning and long life in such instances, appropriate air

treatment equipment should be installed. Consult your supplier of air filters, regulators, and lubricators.

Use proper service procedures

Never attempt to service a Humphrey valve or any system component unless you have been properly trained to do so. A properly trained person will never attempt to remove or service a component of a compressed air system unless the compressed air has been disconnected and the system thoroughly exhausted.

Some Humphrey valves can be repaired in the field. Humphrey makes available factory seal repair kits (SRKs) and individual valve components for this purpose. All repaired valves should be tested for conformance to specifications before they are returned to service. Field repairing of Humphrey valves voids their warranty.

Design a proper system

Always strive to design systems which are safe as well as efficient. Either eliminate potential hazards completely or install safety features which neutralize them.

Give special consideration to any potential for accidental actuation of a valve. Either select a model that resists accidental actuation or mount the valve to prevent unintended actuation.

Consider the adverse consequences of individual component failure and design to prevent or minimize these consequences. Design a system that will fail safe under conditions of pressure variation, pressure loss, or other system failures.

Read the component literature carefully. If a model is not completely understood, do not apply it without first consulting the factory.

Size valves properly. A model having a capacity insufficient to the system may cause the entire system to be inefficient. Always note the size of the valve orifice — this is often more important than the pipe connection.

The circuit drawings in this catalog are intended *only* as examples of circuits in which certain components might typically be used. They are not to be considered recommendations of specific applications. The proper, safe functioning of any system must be insured by the system's designer or user.

The following are registered trademarks of the companies indicated: Delrin, Zytel, E.I., duPont; Rylton, Phillips Petroleum.

Specifications subject to change without notice.

All port connections are available in metric sizes. Specify metric port threads by using letter E as a model number prefix. The bottom number in all drawing dimensions is shown in millimeters.

YI022 June 17, 1994
Components - Valves, Electrically Operated

HUMPHREY PRODUCTS **MH6681 (N)**
KILGORE AND SPRINKLE ROADS P O BOX 2008, **CSA LR41336**
KALAMAZOO MI 49003

The following models are UL RECOGNIZED for component use.

Models 3E1, M3E1 valves; Models DMZ1, MZ1 manifolds.

Models 31E1, 41E1, M31E1, M41E1, MC41E1 valves; Models MM-2 through -7, MMC-2 through -7 manifolds.

Models 062-4E1, 062-4E2, 062E1, 062E2, VO62E1 valves, may be prefixed by T. Models TM-1R through -12R manifolds.

Models 125-4E1, 125E1, V125E1 valves, may be prefixed by T. Models TM-1R through -12R manifolds.

Model 310 may be prefixed by E, EM, ES, ESMP, EV, EVM, EVS, EVSMP, M, S, SMP, V, VM, VS, VSMP, may be suffixed by 2, 21, 39, 50, 81, 87, LL, MOV, RC, or SA, suffixed by UR.

Model 410 may be prefixed by E, EM, ES, ESMP, M, S, SMP, may be suffixed by 21, 39, 50, 70, 81, 87, LL, MOV, RC, or SA, suffixed by UR.

Models 250E1, 250E2.

The following models are UL LISTED for General use.

Model 062-4E1 with or without suffix 21, followed by 36, with or without suffixes 61 and/or 70.

Models 062E1, VO62E1 followed by 2 or 3, followed by 10 or 11, with or without suffix 20 or 21, followed by 36, with or without suffix 61.

Model 125-4E1 may be prefixed by T, with or without suffix 21, followed by 36, with or without suffix 60 or 70,

Model 125E1 may be prefixed by T, suffixed by 2 or 3, followed by 10 or 11, with or without suffix 20 or 21, followed by 36, may be followed by 60.

Model V125E1 followed by 2 or 3, followed by 10 or 11, with or without suffix 20 or 21, followed by 36, may be followed by 60.

Model V125E1 followed by 2 or 3, followed by 10 or 11, with or without suffix 20 or 21, followed by 36.

Models 250-4E1, 250-4E2 with or without suffix 21.

Model 250E1 followed by 2 or 3, followed by 10 or 11, followed by 20 or 21, followed by 36, with or without suffix 61.

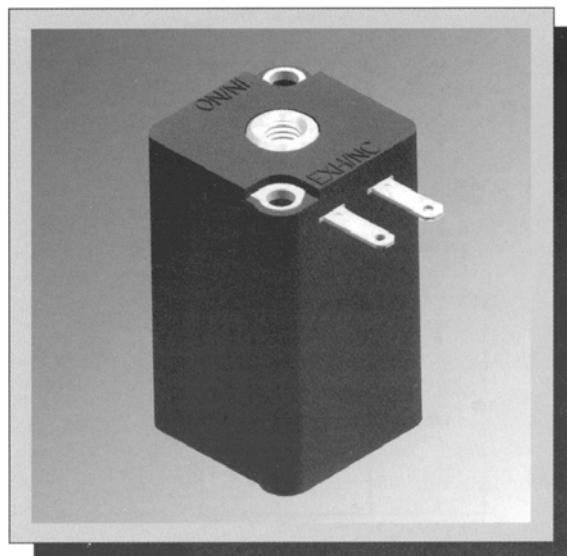
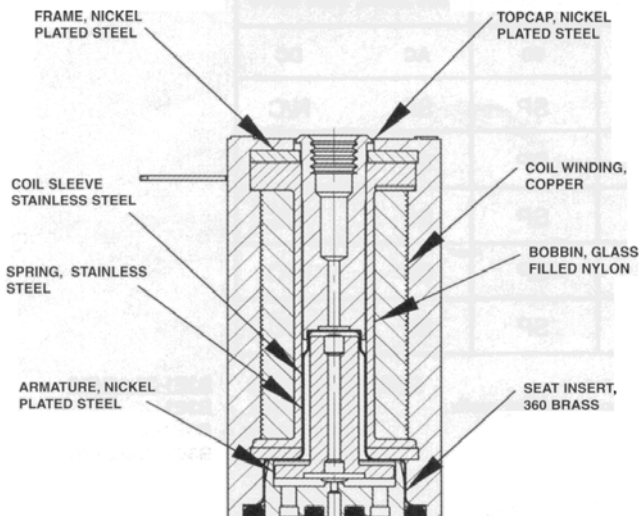
Models TM-1L thru -12L manifolds.

NEW MINI-MIZER**NEW MINI-MIZER***Interchangeable with Current MINI-MIZER*

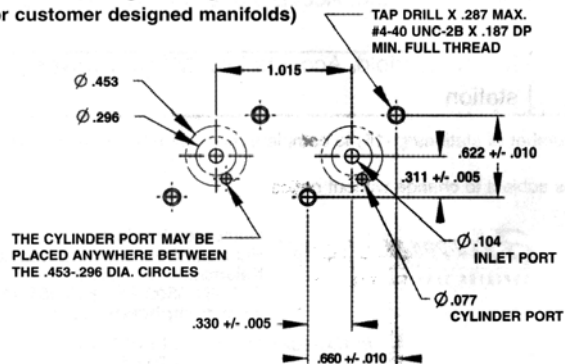
The new 2-way and 3-way MINI-MIZER valve was designed to accommodate a wide range of pneumatic applications that require high cycling, small flow, and low wattage type valving. This valve is ideal for battery operation, micro-processor controlled and printed circuit board type applications.

The new MINI-MIZER provides enhanced performance, interchangeability with the old series Mizer, a wide offering of coil voltages, and power consumption as low as .5 watt. Increased coil forces provide consistent actuation. The one piece construction and metal coil frame makes the MINI-MIZER a more sturdy and durable product.

The enhanced MINI-MIZER design is very adaptable to customer specific applications. This new robust design allows the MINI-MIZER to function in a wider temperature range (-40 to +150 °F). Humphrey has the ability to provide product modifications such as different media, wattage, orifice sizes, pressures and temperatures. The captured seal construction allows for easy design of custom manifolds. Please consult the factory for custom modifications.

**NEW MINI-MIZER****Machining Footprint**

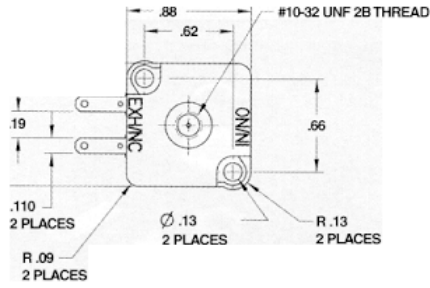
(for customer designed manifolds)

**NOTE:** Valve can only be rotated 180°**STANDARD SPECIFICATIONS**

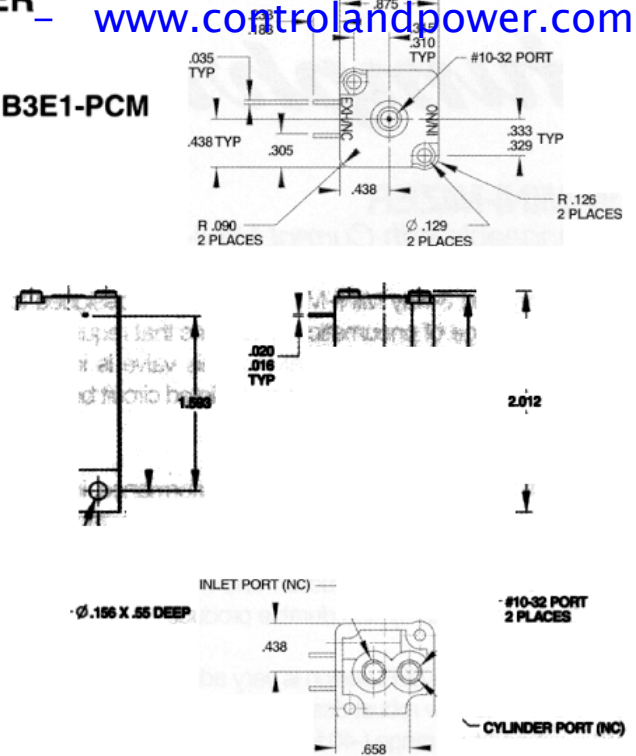
PRESSURE RANGE:	0-100 psi
MEDIA:	Dry Air (Inert gases)
LUBRICATION:	Not Required
FILTRATION:	40 Microns minimum (Recommended)
FLOW CHARACTERISTICS:	@ 100psi Cv=0.01, CFM=1.3, 36.8 LPM
LEAK RATE:	Maximum 4cc/min. @ 100psi
SEALS:	Buna-N (NBR)
TEMPERATURE RANGE:	-40°F to 150°F (-40°C to 66°C) Media or Ambient
POWER:	DC = 0.5 watt, AC = 1.0 watt
VOLTAGE TOLERANCE:	+10% / -15%
RESPONSE TIME:	On: 5 MS Off: 6 MS
OPERATING SPEED:	600 CPM
VOLTAGES AVAILABLE:	1.5, 5, 12, 24VDC, 24, 120, 240VAC
ORIFICE SIZE:	N/C = IN to CYL .031 CYL to EXH .028 N/O = IN to CYL .028 CYL to EXH .031
INTERNAL VOLUME:	0.458 cm ³
WEIGHT:	0.147 lb. (average)
LEAD WIRE GAGE:	22 AWG

Consult factory for special specifications.

MINI-MIZER



B3E1-PCM



HOW TO ORDER

Model	Bottom Inlet	Two-Way	Normally Open/ Multi-Purpose	Spade Terminals	(18") Lead Wires	DIN Connector	Transient Suppression Diode (DC only)	Specify Voltage 1.5VDC, 5VDC, 12VDC, 24VDC, 24V 50/60, 120V 50/60, 240V 50/60	
Option Code	BIN	2	11		38	39	50	AC	DC
B3E1	SP	SP	N/C	STD	SP	SP	SP	SP	N/C
B3E1BOU	NA	SP	N/C	STD	SP	SP	SP	SP	N/C
B3E1PCM	SP	SP	N/C	STD	NA	NA	SP	SP	N/C
MB3E1	NA	SP	N/C	STD	SP	SP	SP	SP	N/C
MB3E1MTL	NA	SP	N/C	STD	SP	SP	SP	SP	N/C

STD=Standard N/A=Not Available SP=Specify (additional charges for this option) N/C=No Charge
 All port connections are available in metric sizes. Specify metric port threads by using letter E as a model number prefix.
 BOU = Threaded Bottom Outlet
 PCM = Printed Circuit Board Mount

ORDER EXAMPLE: B3E1-39-12VDC
 3-Way Option = B3E1
 Din Connector = B3E1-39
 Voltage 12VDC = B3E1-39-12VDC

ACCESSORIES

Model	Description
8-5A	Mounting base, with 2 screws (Bag of 10)
	Plug Fitting, #10-32 w/gasket (Bag of 10)
BF**	Barbed Fitting, #10-32 thread to 1/8" O.D. hose
BF1**	Barbed Fitting, 1/4" O.D. hose
PBF**	Barbed Fitting, 1/8" pipe (Bag of 10)
150-30A**	Muffler, #10-32 thread (Bag of 10)
HS-2	DIN Connector for use w/Code 39
HS-2LED	DIN Connector w/LED for use w/Code 39 (5VDC, 12VDC, 24VDC only)
28-650A**	Insulated receptacles (Bag of 10)
28-651A**	Suppression, Diode Terminal (Bag of 10)
47-63A**	1000V, 1 amp, Silicon Diode (Bag of 10)
	Adapter Gasket (B-Series Mizer to current manifold MTL)

MANIFOLDS

Model	Description
MTL	Metal manifold. Accepts one "M" type valve per station
DMTL	Metal manifold. Accepts two "M" type valves per station

Specify number of stations (1-16) to complete model number. Example: MTL-4

Specifications subject to change without notice.



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