Title: SQE1, SQE2, QE2,QE3, QE4, QE5, SQE Quick Exhaust

ISO Date: April 10, 2006

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.

Design And Specifications
The design and specifications and other product information contained in this catalog is for general reference purposes based upon customary and usual manufacturing standards and product applications. However, it is difficult to predict or to anticipate the functioning or suitability of the product for any particular application or use. Therefore, nothing herein shall be deemed a representation or warranty of the product design or specifications and Buyer shall have the responsibility for investigating and testing the product in any particular application or use and all risks attendant in such use.

Humphrey Products Company
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Kalamazoo, MI 49003
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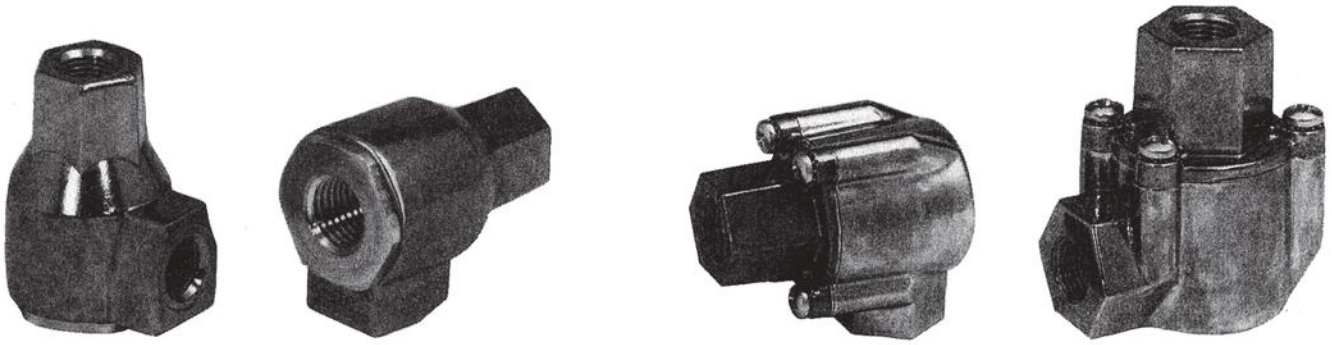
Humphrey Super Quick Exhaust Valves

Humphrey Super Quick Exhaust valves feature a special molded shuttle designed especially for quick exhaust valve service. The shuttle's full-formed seating surface provides long cycle life and outperforms the flat-disk (sheet stock) diaphragms found in competitive valve designs. Because of its shuttle design, the Humphrey Super Quick Exhaust valve does not require the flow-restricting metal body webbing used in flat-disk designs. There are many practical uses for these low-cost Super Quick Exhaust valves, and there is a size for virtually every need, with pipe ports from #10-32 to ¾-inch.

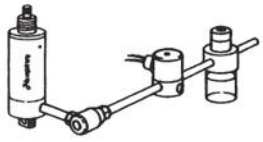


SQE1 **SQE2** **QE2** **QE3**

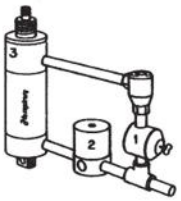
How Super Quick Exhaust Valves are used to enhance the performance of air cylinders

Lubrication Problem. Small bore cylinders are often poorly lubricated due to the small displacement of air per cycle. Lubricant back-flows through control valve on the exhaust cycle without reaching cylinder. Oil traces at the valve exhaust port does not prove proper cylinder lubrication.

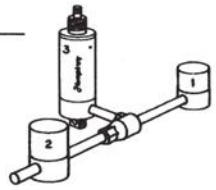
Solution: Close nipple Super Quick Exhaust to cylinder. This stops back-flow and allows progressive oil flow to cylinder. Oil traces at the Super QE exhaust port prove cylinder lubrication.



"Air Spring" Return. Provides controlled "air spring" return, a potential advantage over standard spring return cylinders in that the "air spring" return force can be adjusted by a regulator. Also provides a method of controlling double acting cylinders with a 3-way valve. Return-regulator (1) set at selected pressure. (2) Normally closed 3-way valve. (3) Double acting cylinder. Example of use: Cylinder rod extends with high pressure for impact. Rod retracts under low pressure.



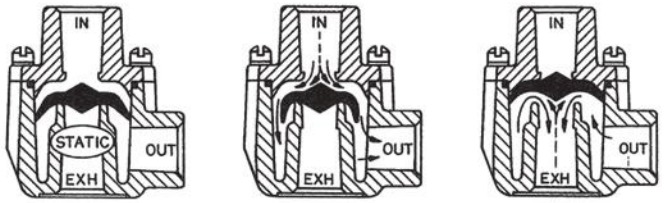
Super Quick Exhaust used as a shuttle valve. Air from 3-way valves (1 or 2) always directed to cylinder (3).



High-Low Pressure. Reduce noise, shock, and stress on cylinder. Extend rod with low pressure (2) to position, hold, etc. Switch to high pressure (1) to lock, bend, reposition, etc. Return to low pressure by closing (1), or retract rod by closing (1) and (2).

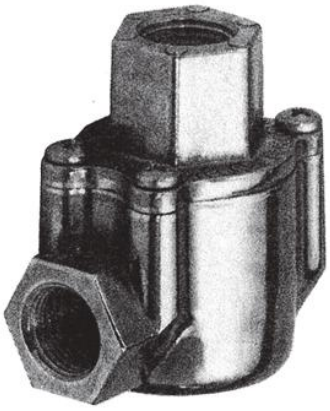
How It Works:

(Broken Lines - Shuttle Valve)
(Solid Lines - Quick Exhaust)

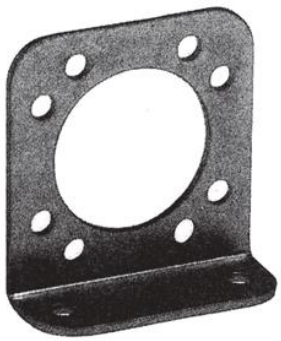


*Always exhausts out this port. Add muffler to reduce noise. Plug for use as check valve.

QE4



QE5



8-12 Mounting Bracket for QE4 and QE5

8-1A Mounting Bracket for QE2 and QE3

Specifications

MEDIA:
Compressed Air (Consult factory for others)
PRESSURE RANGE:
150 psig (10.7 bars) Maximum
TEMPERATURE RANGE:
–25 to 180°F (–31.7 to 82.2°C)

OPERATING SPEEDS:
To 600 CPM
MATERIALS:
Zinc & Aluminum Die Cast, Zinc Plated Steel Fasteners, Buna N, Polyurethane
LUBRICATION ..... Not required

	PORT SIZE			PSI/BARS		30 PSIG	(2.1 BARS)	50 PSIG	(3.5 BARS)
MODEL	IN	OUT	EXHAUST	MIN	MAX	CFM	LPM	CFM	LPM
SQE1	⅛″	⅛″	⅛″	4/.3	150/10.7	22.5	636.8	33.5	948.1
SQE2	¼″	¼″	¼″	4/.3	150/10.7	32.0	905.6	47.0	1330.1
QE2	¼″	¼″	⅜″	3/.2	150/10.7	45.0	1273.5	65.0	1839.5
QE3	⅜″	⅜″	⅜″	2/.14	150/10.7	55.0	1556.5	80.0	2264.0
QE4	½″	½″	¾″	1/.07	150/10.7	Consult Factory			
QE5	¾″	¾″	¾″	1/.07	150/10.7				

Air Flow to Atmosphere

	80 PSIG	(5.5 BARS)	100 PSIG	(7.0 BARS)	125 PSIG	(8.6 BARS)
MODEL	CFM	LPM	CFM	LPM	CFM	LPM
SQE1	51.0	1443.3	63.0	1782.9	75.0	2122.5
SQE2	70.0	1981.0	85.0	2405.5	104.0	2943.2
QE2	96.0	2716.8	120.0	3396.0	150.0	4245.0
QE3	125.0	3537.5	155.0	4386.5	190.0	5377.0
QE4	Consult Factory					
QE5						

Weight

	ACTUAL	
MODEL	LBS	KGS
SQE1	0.17	0.08
SQE2	0.16	0.07
QE2	0.31	0.14
QE3	0.29	0.13
QE4	0.99	0.45
QE5	0.93	0.42

MODEL	Cv
SQE1	.72
SQE2	.97
QE2	1.44
QE3	1.48
QE4	2.09
QE5	4.10

Fill/Exhaust Time (Seconds)

	PORT-NPT			A = 10 CU. IN. (164cc)	B = 100 CU. IN. (1640cc)	C = 1000 CU. IN. (16,400cc)
MODEL	IN	OUT	EXHAUST	FILL 0-80 PSIG (0-5.5 BARS) EXHAUST 100-20 PSIG (7.0-1.4 BARS)		
SQE1	⅛″	⅛″	⅛″	A	.036	.022
SQE2	¼″	¼″	¼″	A	.027	.021
QE2	¼″	¼″	⅜″	B	.170	.160
QE3	⅜″	⅜″	⅜″	B	.130	.100
QE4	½″	½″	¾″	C	.537	.440
QE5	¾″	¾″	¾″	C	.508	.417

Dimensions

MODEL	A	B	C	D	E	F	G	H	J	K	L	
SQE1	1.09	.55	.81	1.22	1.67	BRACKET NOT AVAILABLE						INCHES
SQE2	27.7	13.9	20.5	30.9	62.6							MM
QE2	1.50	.83	1.25	1.78	2.38	1.14	1.50	2.19	.86	.55	.34	INCHES
QE3	38.1	21.1	31.8	45.2	60.4	28.9	38.1	55.6	21.8	13.9	.86	MM
QE4	2.18	1.14	1.81.	2.78	3.66	1.48	2.00	2.75	1.33	.61	.27	INCHES
QE5	55.4	28.9	45.9	70.6	92.9	37.5	50.8	69.8	33.7	15.4	.68	MM

Steel brackets 8-1A (14 gauge) and 8-12 (12 gauge) are shipped loose. Mount to valve at 90° increment.