HANSEN TECHNOLOGIES

MVPb
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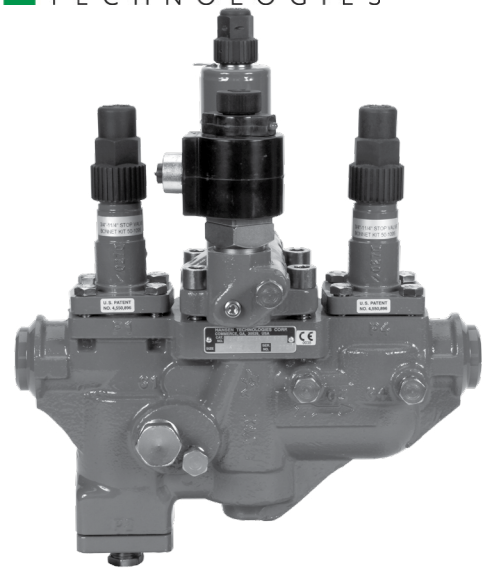

MVP Multi-Valve Platform

Specifications, Applications, Service Instructions & Parts

MVP MULTI-VALVE PLATFORM VALVE STATION

1/2" through 2" Port (13mm through 50mm) FPT, SW, BW, ODS for Refrigerants

CRN Canadian Registration CE

INTRODUCTION

Hansen Technologies introduces the Multi-Valve Platform (MVP). The MVP is a rugged, compact refrigerant control valve station. Ships pre-tested and assembled for quick and easy installation, requiring only two welds to complete most valve station applications. No disassembly is required for installation. Hansen control valve functions include solenoid valve, two-step solenoid valve, all common Hansen pressure regulator functions (inlet, outlet, dual pressure), and sealed motor valve (1½″ and 2″ port size). MVP valves use the same pilot modules and internal parts as the standard Hansen pressure regulators and solenoid valves.

APPLICATIONS

The MVP valve is well suited for applications including pumped liquid feed to evaporators, liquid make-up to flooded and recirculator vessels, liquid injection for screw compressors, hot gas defrost to evaporators, and evaporator pressure control. Up to six separate functions are possible: stop valve, strainer, control valve (solenoid/pressure regulator/motorized), check, hand expansion, and stop check valve.

ADVANTAGES

Installed cost savings is a huge advantage of the MVP valve. Faster installation, less pipe cutting, welding assembly time, insulation, and freight equal reduced costs. In addition, the compact valve body saves installation space and valve group weight.

MVP20–50 valves includes six pressure gauge ports to measure pressure at multiple locations on the valve, as well as a ¾″ NPT side connection for pilot line to gas-powered suction valve.

KEY FEATURES

Reduced installation time and cost
Eliminates flange gasket leak potential
Pressure regulator or solenoid control function
Most parts are the same as standard Hansen valves — saves on stocking spare parts and training
Simple, identifiable configuration
Manual opening function standard
All stop valve stems are in vertical up position
Full size stainless steel mesh strainer
Four to six control functions in one
Suitable for all Hansen approved refrigerants including R717, R134a, R404, R507 and CO2

PORT SIZES

½″–2″ (13mm–50mm)

CONNECTION STYLES AND SIZES

FPT (MVP13 only): ½″–¾″ (13mm–20mm)
Socket Weld: ½″–2″ (13mm–50mm)
Butt Weld: ½″–2½″ (13mm–65mm)
ODS: ⅝″–2⅝″ (16mm–67mm)

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MATERIAL SPECIFICATIONS

Safe Working Pressure: 600 psig (41 bar g)
400 psig (28 bar g) with Sealed Motor Valve

Operating Temperature: -60°F to 240°F (-51°C to 115°C)

MATERIALS

Body: MVP13 Forged steel, ASTM A105;
MVP20–50 Cast steel, ASTM A352 Grade LCB

Gaskets: Non-asbestos graphite composite

Stem Packing: Graphite composite plus neoprene O-ring in series

POSITION 1 SHUT-OFF VALVE

Bonnet: Ductile iron ASTM A536

Stem: Polished stainless steel

Disc Holder: Plated steel

Seat Disc: Retained Teflon

Ball Bearings: Stainless steel

Packing Nut: Zinc plated steel

Seal Cap: MVP13–MVP32 Glass filled polymer (black), safety vented;
MVP40–MVP50 Zinc plated steel

Hand Wheel (Optional): MVP13–MVP32 Zinc plated alloy; MVP40–MVP50, Zinc plated iron alloy

POSITION 2 STRAINER

Cover: MVP13 Steel ASTM A311
MVP20–50 ASTM A36

Screen: MVP13 Stainless steel, 100 mesh (150 micron)
MVP20–50 Stainless steel
60 mesh (233 microns), Standard
100 mesh (150 micron), Optional

Drain Plug: MVP13 ¼˝ NPT Optional
MVP20–50 ½˝ NPT Standard

POSITION 3 CONTROL VALVE: MVP13

(*Solenoid)*

Bonnet: Steel, ASTM A311

Piston/Seat: Stainless steel with teflon seat

Valve Seat: Stainless steel, removable

Manual Open Stem: Solenoid, Stainless steel
Pulse Width Expansion, Stainless steel, zinc plated yellow

Seal Cap: Glass-filled polymer; safety vented; solenoid (black), PXV (painted yellow)

Maximum Operating Pressure Differential:
Solenoid, 300 psi (20.7 bar), standard
500 psi (34.5 bar) available upon request

POSITION 3 CONTROL VALVE: MVP20-50

(*Solenoid, 'SD' Solenoid, or Regulator)*

Adapter: Ductile Iron, ASTM A536

Piston: Steel, disc type, spring energized teflon seal

V-port/Seat: Ductile iron with teflon seat

Main Seat: Stainless steel, removable

Manual Opening Stem: Steel, plated

Pilots: Ductile iron or steel

Pilot Orifice: Stainless steel

'SD' Upper Piston: Steel, disc type, spring energized teflon seal

'SD' Upper Housing: Ductile iron, ASTM A536

Maximum Operating Pressure Differential:
300 psi (20.7 bar) standard
500 psi (34.5 bar) available upon request

POSITION 3 CONTROL VALVE: MVP40-50

(*Sealed Motor Valve)*

Bonnet Plate: Steel, zinc plated yellow

V-port Seat: Teflon

Rotor Can: Stainless steel

Rotor Can O-ring: Neoprene

Stator Housing: Stainless steel

Maximum Operating Pressure Differential:
300 psi (20.7 bar)

POSITION 4 SHUT-OFF (-1) HAND EXPANSION (-2) STOP-CHECK/HEV (-3) STOP-CHECK (-4) CHECK (-5) BLANK COVER (-6)

Bonnet: Ductile iron ASTM A536
MVP20–32 (-5) Steel ASTM A36;

Stem (-1 thru -4): Polished stainless steel

Disc Holder (-1): Plated steel

Seat Disc (-1 thru -4): Teflon

Ball Bearings (-1 & -2): Stainless steel

Packing Nut (-1 thru -4): Zinc plated steel

Seal Cap: Color is -1 Black or zinc plated steel, -2 & -3 Yellow, -4 Green
MVP13–MVP32 Glass filled polymer, safety vented;
MVP40–MVP50 Zinc plated steel

Handwheel (-1 & -4): MVP13–MVP32 Zinc plated alloy; MVP40–MVP50, Zinc plated iron alloy

Bar Handle (-2 & -3): Zinc plated steel

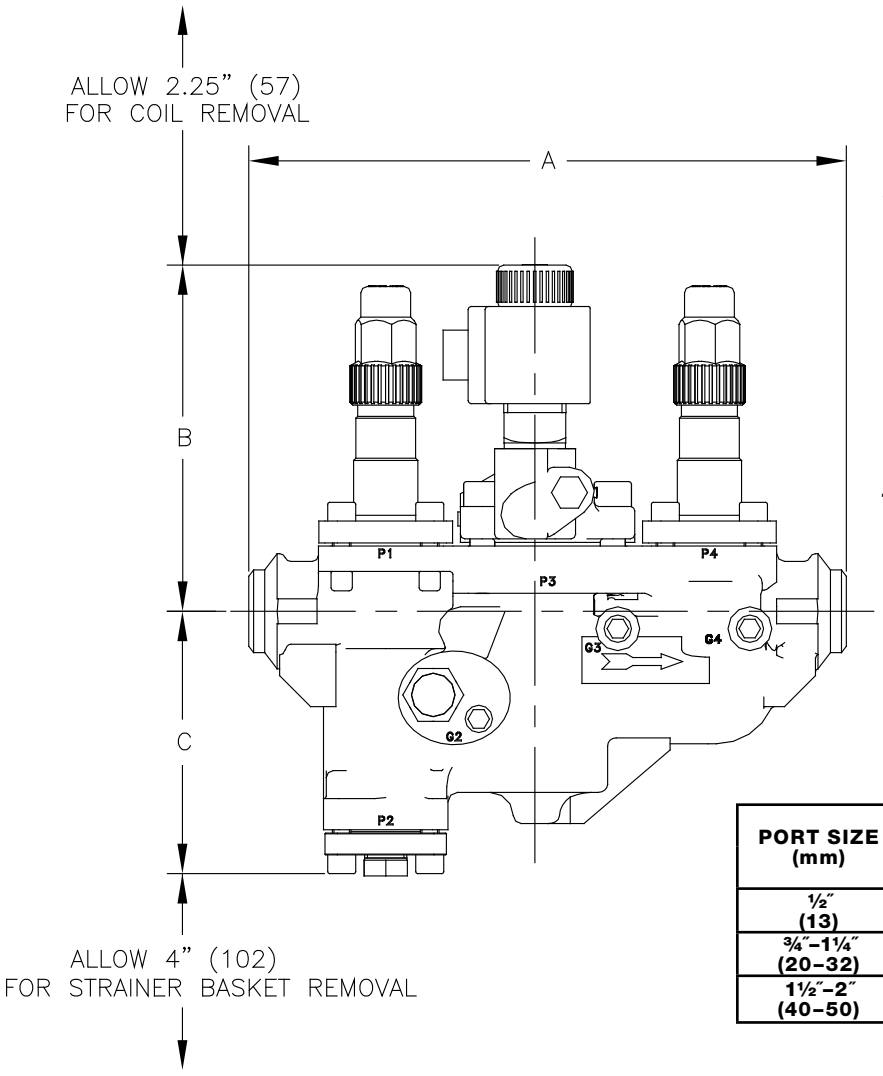
Spring (-3 thru -5): Stainless steel

Throttling Plug (-2): Zinc plated carbon steel

Piston/Seat (-3 thru -5): Ductile iron with teflon seat

Spool Insert/Seat (-1 thru -5):
MVP13 Stainless steel, removable
MVP20-50 Ductile iron, ASTM A536, removable

INSTALLATION DIMENSIONS INCHES (MM)



Socket Weld:

ID matches steel pipe

Depth	½″–1″ Connections	0.50 in (13mm)
	1¼″ & 1½″ Connections	0.62 in (16mm)
	2″ Connections	0.88 in (22mm)

Butt weld (Weld neck):

OD and ID

matches schedule 80 steel pipe ½″–1½″

matches schedule 40 steel pipe 2″–2½″

Threaded (MVP13 only):

Female threads match steel pipe ½″–¾″

PORT SIZE (mm)	DIMENSIONS (mm)			
	A	B (MIN/MAX)	C	D (WIDTH MAX)
½″ (13)	9.50″ (241)	6.70″–8.50″ (170–216)	4.50″ (114)	4″ (102)
¾″–1¼″ (20–32)	12.00″ (305)	6.95″–15.6″ (176–396)	4.89″ (124)	12″ (305)
1½″–2″ (40–50)	16″ (368)	7.58″–16.23″ (193–412)	6.94″ (176)	12″ (305)

INSTALLATION

Protect the interior of the valve from dirt and moisture during storage and installation. Hansen MVP valves should be installed in horizontal lines with the arrow on the body pointed in the normal direction of flow with pilots and manual opening stems upright. Install a check valve in position 4 if reverse flow is undesirable.

Because of the many regulator pilot combinations, during installation of a large job, the regulator nameplates should be checked against piping drawings to guarantee proper function for each location. Where pilot solenoid control modules are used, the nameplate coil voltage should be checked before wiring. Pipe size, anchoring, valve rating, system design, and other precautionary factors should be taken into consideration to ensure "liquid hammer" will not occur when the valve opens or closes. Before putting valves into service, all pipe connections, valve seats, cover seals, and stem seals should be tested for leaks at pressure levels called for in appropriate codes.

Where it is necessary or standard practice to weld a valve into the line without shut-off valve bonnet removal, the stem should be opened several turns to prevent heat damage to the seat disc. Consider removing the check spring, and piston assemblies in position 4 before welding to protect Teflon seat from welding heat and weld slag. Clean welding debris prior to operation. If the shut-off bonnets are removed for welding, the valve stems should be several turns open to prevent damage. Care should be taken to protect the Teflon seats when outside the valve body. Welds should be annealed as necessary in accordance with good practice. Painting of valves and welds is recommended for corrosion protection.

POSITION 1

Position 1 is always a shut-off valve. The shut-off valve size is ¾″ for ½″ port sizes (MVP13). The shut-off valve size is 1¼″ for the ¾″ thru 1¼″ port sizes (MVP20–MVP32). The shut-off valve size is 2″ for the 1½″ and 2″ port sizes (MVP40 and MVP50).

POSITION 2

Position 2 is the strainer. 100 mesh (150 micron) strainer is standard for MVP13. 60 mesh strainer (233 micron) is standard (MVP20–MVP50). 100 mesh (150 micron) is optional. For 100 mesh, add (-S) to model number in the options.

POSITION 3

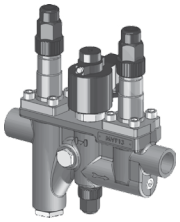
Position 3 is the control valve function. Most of the control valves offered on the standard Hansen control valves are available on the MVP line. MVP 13 is available only as a solenoid valve (HS8A). MVP20 thru MVP50 are available as a solenoid valve (HS4A), a two-step solenoid valve (HS4D), and a pressure regulator (HA4A) with most variations. MVP40 and MVP50 are available as a Sealed Motor Valve.

POSITION 4

Position 4 can be several functions; shut-off valve (-1), hand expansion valve (-2), stop check/hand expansion valve (-3), stop check valve (-4), check valve (-5), or blank cover (-6). The MVP13 has a stainless steel removable seat. The MVP20–50 has a ductile iron removable spool insert. The MVP20 comes with a ¾″ port in the spool when the configuration is (-2) thru (-5) and a 1¼″ port in the spool when the configuration is (-1). The MVP25 and MVP32 come with a 1¼″ port in the spool for configurations (-1) thru (-5). The MVP40 and MVP50 come with a 2″ port in the spool for configurations (-1) thru (-5). When a (-6) configuration is specified there is no spool or seat installed. This is important for retrofitting to a different configuration as the spool or seat kit will have to be ordered along with the necessary bonnet kit and piston kit if applicable.

Identifying markings: a shut-off valve (-1) will be equipped with a black plastic seal cap or a zinc plated steel seal cap or a hand wheel, a hand expansion valve (-2) will be equipped with a yellow seal cap or a bar handle, a stop check/expansion valve (-3) will have a groove machined into the bonnet and a yellow seal cap or bar handle, a stop check valve (-4) will have a groove machined into the bonnet and a green seal cap or hand wheel, a check valve (-5) will have a flat bonnet and may have a drain plug, and a blank valve (-6) will have a raised hexagon.

MVP13-1 SOLENOID



MVP13-1

Solenoid valves are used to control the on/off flow of liquid or vapor. Liquid applications include makeup to vessels and chillers or feed to evaporators. Hot gas supply for defrost, pilots for gas powered suction stop valves, and purge point valves are common vapor application.

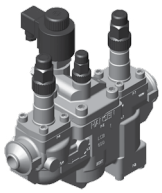
Solenoid Maximum Ratings Ammonia

Liquid, Receiver Pressure: 110 Tons (387 kW)
Recirculation, 4 to 1: 36 Tons (127 kW)
Hot Gas: 10 Tons (35 kW)
Suction: 5.0 Tons (18kW)

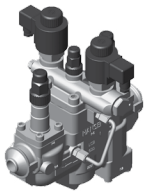
COMMON MVP20 THRU MVP50 VARIATIONS

MVP-1, MVP-1SD SOLENOID, TWO-STEP SOLENOID

Solenoid valves are used to control the on/off flow of liquid or vapor. Liquid applications include makeup to vessels and chillers or feed to evaporators. Hot gas supply for defrost is a common vapor application. Solenoids are also used for evaporator suction line control. The two-step solenoid design provides two opening positions soft opening/soft closing (10% rated flow) and full opening.



MVP-1



MVP-1SD

MVP-1A PRESSURE REGULATOR

This most common pressure regulator modulates to control evaporator pressure, condensing pressure, pressure in a vessel, or pressure in a portion of a system. It is frequently called an evaporator pressure regulator (EPR) or back pressure regulator. Opens on rising inlet pressure. Shown with M3W pilot.

MVP-1A

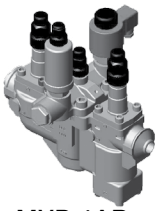
MVP-1AS ELECTRIC SHUT-OFF

This control is commonly used for temperature control or defrost. Regulates at the set-for pressure when energized. When de-energized, the valve closes tight regardless of the pressure setting.

MVP-1AS

MVP-1AB ELECTRIC WIDE OPENING

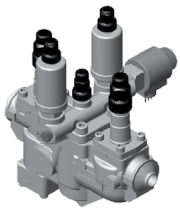
Commonly regulates for defrost or temperature, but opens wide for maximum cooling. Regulating at the set-for pressure when de-energized; regulator opens when energized.



MVP-1AB

MVP-1AD DUAL REGULATOR

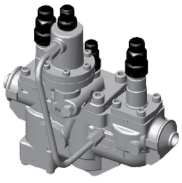
Regulates (evaporator) pressure at a setting when energized, and at a higher setting for defrost, temperature control, or pressure relief when de-energized.



MVP-1AD

MVP-1AL DIFFERENTIAL REGULATOR

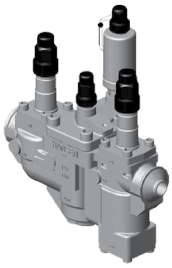
Commonly used as liquid pump relief, condenser-receiver pressure difference control, discharge pressure boosting for defrosting or heat recovery, and other similar applications. This control modulates to maintain the set-for difference between inlet and outlet pressure.



MVP-1AL

MVP-1AK, MVP-4AK RESEATING RELIEF REGULATOR

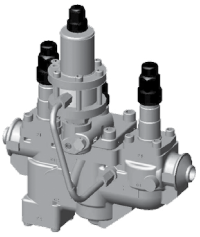
Used for defrost, high-to-low side relief, or non atmosphere relief to other parts of the system. This control opens when system upstream pressure is above the tagged and sealed set point pressure, and repeatedly reseats after operation.



MVP-1AK

MVP-1AO OUTLET PRESSURE REGULATOR

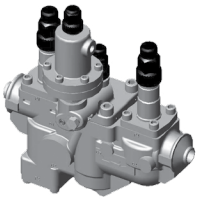
Controls outlet pressure by opening as downstream pressure falls below the set point. Used for hot gas to provide artificial refrigeration loading, for condenser and receiver pressure control by means of gas bypass, limiting hot gas pressure supply in defrosting evaporator in conjunction with liquid drain traps, or for compressor suction pressure limitation. Can be combined with electric shut-off, temperature-operated, dual, or wide-opening features.



MVP-1AO

MVP-1AP PNEUMATICALLY COMPENSATED REGULATOR

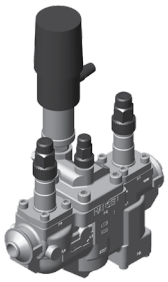
Commonly used for precise air or liquid temperature control via pneumatic controller. An air, vapor, or liquid pressure signal to the control module bonnet increases inlet pressure from the set-for pressure value at a 1:1 ratio.



MVP-1AP

MVP-1AM, MVP-1AQ ELECTRIC MOTOR COMPENSATED REGULATOR

Commonly used for precise room temperature control or liquid chiller control. The controlling motor changes regulator pressure setting in accordance with a temperature controller.



MVP-1AQ

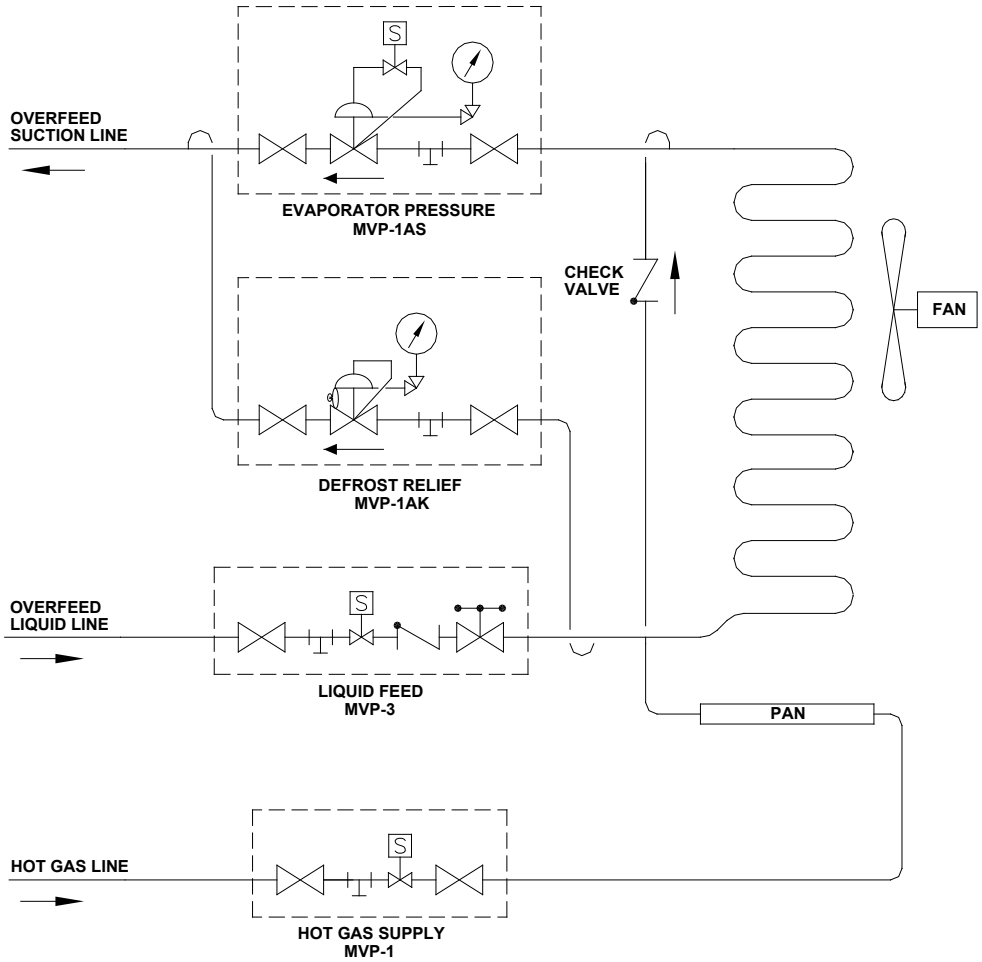
*Refer to page 12 for additional options and MVP configurations.

NOTE: Many other control functions can be achieved by combining the control modules in different arrangements. For example: a dual regulator with an electronic control module and secondary pressure relief pilot; i.e. MVP-1ADQ .

EVAPORATOR VALVE SIZING – AMMONIA (TONS)

LINE	CONTROL VALVE PRESSURE DROP*	10	20	30	40	50	60	70	80	90
HOT GAS	2	MVP20-2	MVP25-2	MVP32-2	MVP40-2SD (Two-Step)			MVP50-2SD (Two-Step)		
DEFROST RELIEF	70 psig Set Point	MVP-1AK 50%	MVP20-1AK	MVP25-1AK	MVP32-1AK		MVP40-1AK			
LIQUID 4:1 OVERFEED	2	MVP20-3 50%	MVP 20-3		MVP25-3			MVP32-3		
SUCTION LINE +40°F (+5°C)	2	MVP20-1AS	MVP25-1AS	MVP32-1AS	MVP40-1AS			MVP50-1AS		2½˝ HA4AS
	5	MVP20-1AS 50%	MVP20-1AS	MVP25-1AS	MVP32-1AS	MVP40-1AS				
	10	MVP20-1AS 25% / 50%	MVP20-1AS	MVP25-1AS		MVP32-1AS	MVP40-1AS			
SUCTION LINE +20°F (-7°C)	2	MVP20-1AS	MVP25-1AS	MVP32-1AS	MVP40-1AS		MVP50-1AS		2½˝ HA4AS	
	5	MVP20-1AS	MVP25-1AS	MVP32-1AS	MVP40-1AS			MVP50-1AS		
	10	MVP20-1AS 25% / 50%	MVP20-1AS	MVP25-1AS		MVP32-1AS	MVP40-1AS			
SUCTION LINE 0°F (-18°C)	2	MVP20-1AS	MVP__-1AS 25 / 32	MVP40-1AS		MVP50-1AS		2½˝ HA4AS		3˝ HA4AS
	5	MVP20-1AS	MVP25-1AS	MVP32-1AS	MVP40-1AS			MVP50-1AS		2½˝ HA4AS
SUCTION LINE -20°F (-29°C)	2	MVP25-1AS	MVP__-1AS 32 / 40		MVP50-1AS		2½˝ HA4AS		3˝ HA4AS	4˝ HA4AS
AMMONIA (kW)		35	70	105	141	176	211	246	281	316

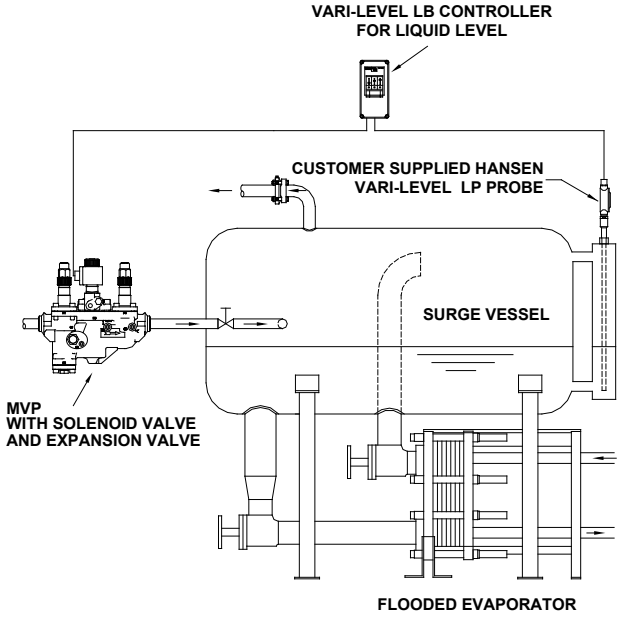
*Dry suction line conditions, 2 psid pressure drop across control valve in Position 3. Allow 2 to 3 times the control valve pressure drop for the entire valve. Hot Gas Defrost valve based on 86°F (30°C) condensing temperature. These capacities can be modified up or down depending on type of evaporator, temperature, mass, frost thickness, and defrosting time. For liquid overfeed conditions add 20% to the dry suction capacity to select valve size. Capacities are within 10% between -40°F (-40°C) and +40°F (5°C). Contact the factory for other conditions and refrigerants.



EVAPORATOR VALVE SIZING – CO2 (TONS)

LINE	CONTROL VALVE PRESSURE DROP*	5	10	15	20	30	40	50	60	70	80
HOT GAS	2	MVP20-2 50%	MVP20-2	MVP25-2	MVP32-2	MVP40-2					MVP50-2
DEFROST RELIEF	Set at 40°F (5°C)	MVP20-2 50%	MVP20-2	MVP25-2	MVP32-2	MVP40-2					
LIQUID 2:1 OVERFEED	2 psid @ +20°F (-7°C)	MVP20-3	MVP25-3	MVP32-3	MVP40-3						
	2 psid @ -20°F (-29°C)	MVP20-3	MVP25-3	MVP32-3	MVP40-3						
	2 psid @ -40°F(-40°C)	MVP20-3	MVP25-3	MVP32-3	MVP40-3						
SUCTION LINE +20°F (-7°C)	2	MVP20-1AS	MVP25-1AS	MVP32-1AS	MVP40-1AS	MVP50-1AS	2 1/2″ HA4AS				
	5	MVP20-1AS	MVP25-1AS	MVP32-1AS	MVP40-1AS						
	10	MVP20-1AS	MVP25-1AS	MVP32-1AS	MVP40-1AS						
SUCTION LINE -20°F (-29°C)	2	MVP20-1AS	MVP25-1AS	MVP32-1AS	MVP40-1AS	MVP50-1AS	2 1/2″ HA4AS				
	5	MVP20-1AS	MVP25-1AS	MVP32-1AS	MVP40-1AS	MVP50-1AS	2 1/2″ HA4AS				
	10	MVP20-1AS	MVP25-1AS	MVP32-1AS	MVP__-1AS 40	50					
SUCTION LINE -40°F (-40°C)	2	MVP20-1AS	MVP25-1AS	MVP32-1AS	MVP40-1AS	MVP50-1AS	2 1/2″ HA4AS	3″ HA4AS			
	5	MVP20-1AS	MVP__-1AS 25	32	MVP40-1AS	MVP50-1AS	2 1/2″ HA4AS				
SUCTION LINE -60°F (-51°C)	2	MVP20-1AS	MVP25-1AS	MVP32-1AS	MVP40-1AS	MVP50-1AS	2 1/2″ HA4AS	3″ HA4AS			
	5	MVP20-1AS	MVP25-1AS	MVP32-1AS	MVP40-1AS	MVP50-1AS	2 1/2″ HA4AS				
CO2 (kW)		18	25	35	53	70	105	141	176	211	246	281

*Dry suction line conditions, 2 psid pressure drop across control valve in Position 3. Total pressure drop across the MVP is 2 to 3 times the pressure drop across the control valve. Hot Gas Defrost valve based on 43°F (6°C) condensing temperature. These capacities can be modified up or down depending on type of evaporator, temperature, mass, frost thickness, and defrosting time. For liquid overfeed, add 20% to the dry suction capacity to select valve size. Contact the factory for other conditions and refrigerants.

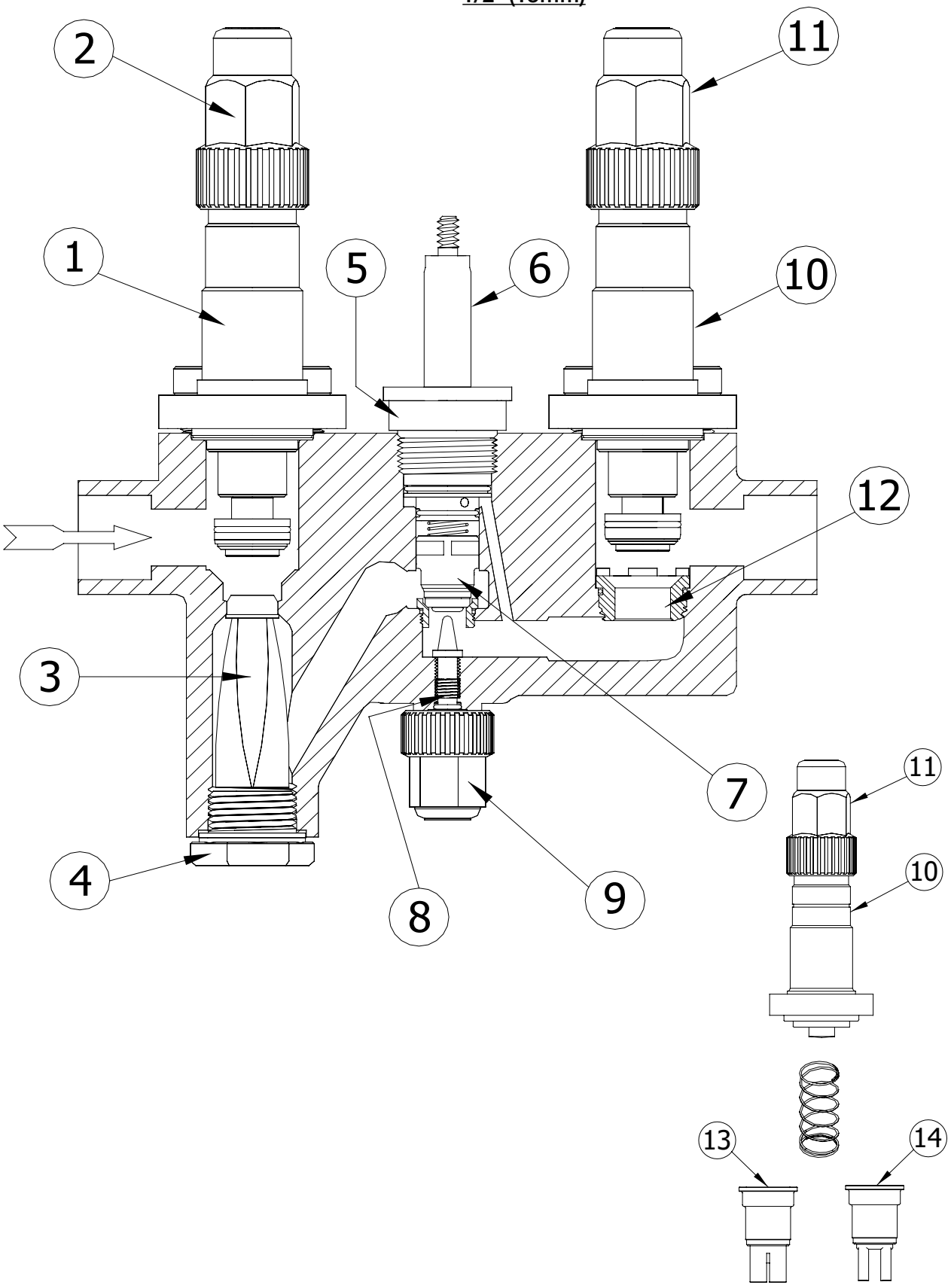


MVP LIQUID MAKE-UP CAPACITIES - TONS (kW)				
PORT SIZE (MM)	MODEL	RECOMMENDED CONN SIZE (MM)	NH3	C02
½″ (13)	MVP13-2	¾″ (25)	56 (196)	18 (63)
¾″ (20)	MVP20-2	1″ (25)	93 (327)	33 (116)
1″ (25)	MVP25-2	1¼″ (30)	171 (601)	44 (155)
1¼″ (32)	MVP32-2	1½″ (40)	244 (858)	74 (260)
1½″ (40)	MVP40-2	2″ (50)	479 (1685)	258 (907)
2″ (50)	MVP50-2	2½″ (65)	705 (2479)	406 (1428)

Note: Capacities suitable for high-to-intermediate and intermediate-to-low temperature conditions and are based on the recommended connection size.

MVP13 KIT LIST

1/2″ (13mm)



POSITION 4

(-3) STOP CHECK/HEV & (-4) STOP CHECK

MVP13 KIT LIST

1/2˝ (13mm)

POSITION 1		
ITEM	DESCRIPTION	KIT NO
1	**Bonnet Kit:**	
	MVP13 (1/2")	50-1094
2	**Seal Cap Kit (Standard):**	
	MVP13 (1/2") (Black)	50-1036
	Handwheel Kit (Optional)	
	MVP13 (1/2")	50-1005

POSITION 2		
ITEM	DESCRIPTION	KIT NO
3	**Screen Assemby Kit:**	
	Standard (100 Mesh)	
	MVP13 (1/2")	78-1001
4	**Strainer Plug (1/4" NPT) (Optional)**	75-0189

POSITION 3		
ITEM	DESCRIPTION	KIT NO
5	**Bonnet Cartridge Kit:**	
	MVP13 (1/2") Solenoid	70-1001
6	**Solenoid Tube/Plunger Kit:**	
	MVP13 (1/2") Solenoid	70-1059
7	**Piston/Seat Ring Kit:**	
	MVP13 (1/2") Solenoid	70-1132
8	**Stem Kit:**	
	MVP13 (1/2") Solenoid	70-1003
9	**Seal Cap Kit:**	
	MVP13 (1/2") Solenoid (Black)	70-1075

POSITION 4		
ITEM	DESCRIPTION	KIT NO
10	**Bonnet Kit:**	
	MVP13-1 (Shut-Off) (1/2")	50-1094
	MVP13-2 (Hand Expansion) (1/2")	50-1104
	MVP13-3 (Stop Check/HEV) & -4 (Stop Check) (1/2")	75-1305
	MVP13-5 (Check) (1/2")	75-1306
	MVP13-6 (Blank) (1/2")	75-1307
11	**Seal Cap Kit (Standard):**	
	MVP13-1 (Shut-Off) (1/2") (Black)	50-1036
	MVP13-2 (HEV) & -3 (Stop Check/HEV) (1/2") (Yellow)	50-1049
	MVP13-4 (Stop Check) (1/2") (Green)	50-1212
	Handwheel Kit (Optional):	
	MVP13-1 (Shut-Off) & -4 (Stop Check) (1/2")	50-1005
	Bar Handle Kit (Optional):	
	MVP13-2 (Hand Expansion) & -3 (Stop Check/HEV)	50-1012
12	**Seat Kit:**	
	MVP13 (1/2")	75-1302
13	**Stop Check/Hand Expansion (-3) Piston Kit:**	
	MVP13-3 (Stop Check/HEV) (1/2")	75-1304
14	**Stop Check (-4) & Check (-5) Piston Kit:**	
	MVP13-4 (Stop Check) & -5 (Check) (1/2")	75-1303
	HEV Turns Open Tag Kit	75-2735

SERVICE AND MAINTENANCE

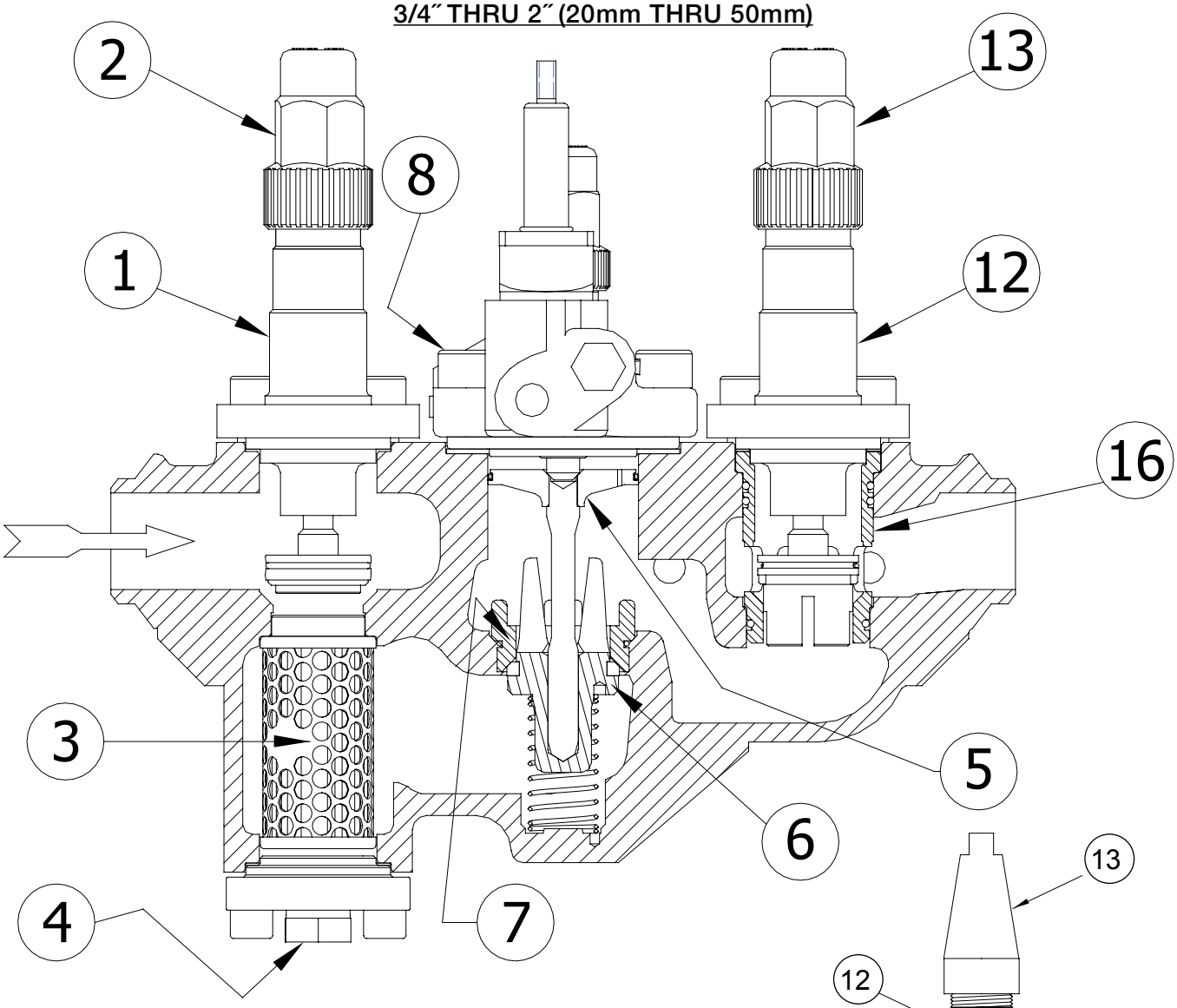
The solenoid, pulse width expansion, and hand expansion valves are designed to have the same capacity as the standard Hansen control valves. Service and maintenance instructions for the MVP13 valves can be found in the following Hansen documents:

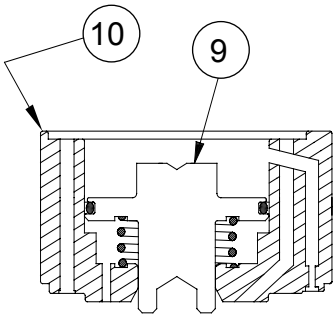
G209 Shut-Off Valves
G510 Expansion Valve
S119 HS8A Solenoid Valve
T479 Strainers

The above documents also have detailed parts descriptions and service and troubleshooting tips.

MVP20 THRU MVP50 KIT LIST

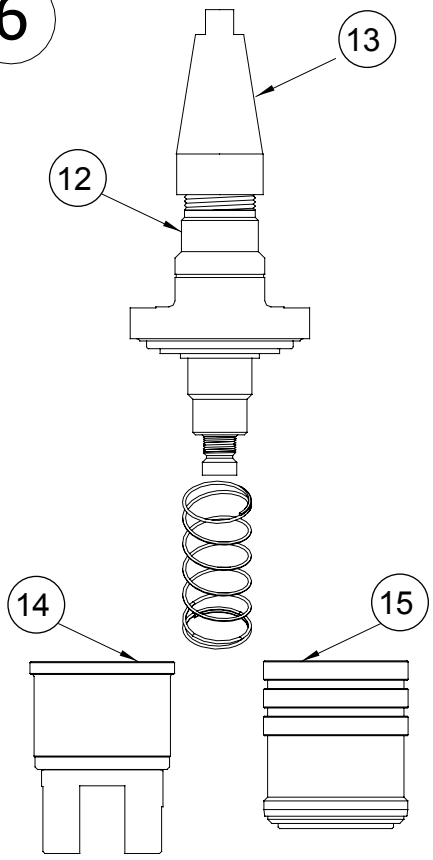
3/4˝ THRU 2˝ (20mm THRU 50mm)





POSITION 3

TWO-STEP SOLENOID 'SD' KITS



POSITION 4

(-3) STOP CHECK/HEV & (-4) STOP CHECK

MVP20 THRU MVP50 KIT LIST

3/4″ THRU 2″ (20mm THRU 50mm)

POSITION 1		
ITEM	DESCRIPTION	KIT NO
1	**Bonnet Kit:**	
	MVP20 thru MVP32 (3/4"–1-1/4")	50-1095
	MVP40 thru MVP50 (1-1/2"–2")	50-1024
2	**Seal Cap Kit (Standard):**	
	MVP20 thru MVP32 (3/4"–1-1/4") (Black)	50-1036
	MVP40 thru MVP50 (1-1/2"–2") (Steel)	50-1027
	Handwheel Kit (Optional)	
	MVP20 thru MVP32 (3/4"–1-1/4")	50-1005
	MVP40 thru MVP50 (1-1/2"–2")	50-1026

POSITION 2		
ITEM	DESCRIPTION	KIT NO
3	**Strainer Kit:**	
	Standard (60 MESH)	
	MVP20 thru MVP32 (3/4"–1-1/4")	78-1020
	MVP40 thru MVP50 (1-1/2"–2")	78-1005
	Optional (100 MESH)	
	MVP20 thru MVP32 (3/4"–1-1/4")	78-1027
	MVP40 thru MVP50 (1-1/2"–2")	78-1025
4	**Strainer Plug (1/2" NPT)**	20-1408

POSITION 3		
ITEM	DESCRIPTION	KIT NO
5	**Piston Kit:**	
	MVP20 thru MVP32 (3/4"–1-1/4")	75-1019
	MVP40 thru MVP50 (1-1/2"–2")	75-1025
6	**V-Port/Seat Kit:**	
	MVP20 (3/4")	75-1020
	MVP20 (3/4"–25%)	75-1279
	MVP20 (3/4"–50%)	75-1280
	MVP25 (1")	75-1021
	MVP32 (1-1/4")	75-1022
	MVP40 (1-1/2")	75-1029
	MVP50 (2")	75-1030
	V-Port/Seat Kit (AK & AO):	
	MVP20 (3/4")	75-1129
	MVP25 (1")	75-1130
	MVP32 (1-1/4")	75-1131
7	**Seat Ring Kit:**	
	MVP20-25 (3/4"–1")	75-1276
	MVP32 (1-1/4")	75-1278
	MVP40-50 (1-1/2"–2")	75-1287
8	**Adapter Kit (1 Port):**	
	MVP20 thru MVP32 (3/4"–1-1/4")	75-1047
	MVP40 thru MVP50 (1-1/2"–2")	75-1049
	Adapter Kit (3 Port):	
	MVP20 thru MVP32 (3/4"–1-1/4")	75-1048
	MVP40 thru MVP50 (1-1/2"–2")	75-1050
	Two-Step 'SD' Adapter Kit:	
	MVP20 thru MVP32 (3/4"–1-1/4")	75-3237
	MVP40 thru MVP50 (1-1/2"–2")	75-3236
9	**Two-Step'SD' Upper Piston Kit:**	
	MVP20 thru MVP32 (3/4"–1-1/4")	70-1109
	MVP40 thru MVP50 (1-1/2"–2")	70-1110
10	**Two-Step 'SD' Upper Housing Kit:**	
	MVP20 -32 (3/4"–1-1/4")	70-1140
	MVP40 -50 (1-1/2"–2")	70-1141

POSITION 4		
ITEM	DESCRIPTION	KIT NO
12	**Bonnet Kit:**	
	MVP20-1 thru MVP32-1 (Shut-Off) (3/4"–1-1/4")	50-1095
	MVP40-1 thru MVP50-1 (Shut-Off) (1-1/2"–2")	50-1024
	MVP20-2 (Hand Expansion) (3/4")	75-1248
	MVP25-2 (1") (Hand Expansion)	50-1106
	MVP32-2 (Hand Expansion) (1-1/4")	50-1107
	MVP40-2 (Hand Expansion) (1-1/2")	50-1031
	MVP50-2 (Hand Expansion) (2")	50-1032
	MVP20-3 thru MVP32-3 (Stop Check/HEV) (3/4"–1-1/4")	75-1247
	MVP40-3 thru MVP50-3 (Stop Check/HEV) (1-1/2"–2")	75-1252
	MVP20-4 thru MVP32-4 (Stop Check) (3/4"–1-1/4")	75-1247
	MVP40-4 thru MVP50-4 (Stop Check) (1-1/2"–2")	75-1252
	MVP20-5 & MVP32-5 (Check) (3/4"–1-1/4")	50-1215
	MVP40-5 thru MVP50-5 (Check) (1-1/2"–2")	50-1216
	MVP20-6 thru MVP32-6 (Blank) (3/4"–1-1/4")	50-1217
	MVP40-6 thru MVP50-6 (Blank) (1-1/2"–2")	50-1218
13	**Seal Cap Kit (Standard):**	
	MVP20-1 thru MVP32-1 (Shut-Off) (3/4"–1-1/4") (Black)	50-1036
	MVP40-1 thru MVP50-1 (Shut-Off) (1-1/2"–2") (Steel)	50-1027
	MVP20-2 thru MVP32-2 (HEV) (3/4"–1-1/4") (Yellow)	50-1049
	MVP40-2 thru MVP50-2 (HEV) (1-1/2"–2") (Yellow)	50-1048
	MVP20-3 thru MVP32-3(Stop Ck/HEV)(3/4"–1-1/4")(Yellow)	50-1049
	MVP40-3 thru MVP50-3(Stop Ck/HEV)(1-1/2"–2") (Yellow)	50-1048
	MVP20-4 thru MVP32-4 (Stop Check) (3/4"–1-1/4") (Green)	50-1212
	MVP40-4 thru MVP50-4 (Stop Check)(1-1/2"–2") (Light Grn)	50-1213
	Handwheel Kit (Optional):	
	MVP20-1 thru MVP32-1 (Shut-Off) (3/4"–1-1/4")	50-1005
	MVP40-1 thru MVP50-1 (Shut-Off) (1-1/2"–2")	50-1026
	Bar Handle Kit (Optional):	
	MVP20-2 thru MVP32-2 (Hand Expansion) (3/4"–1-1/4")	50-1012
	MVP40-2 thru MVP50-2 (Hand Expansion) (1-1/2"–2")	50-1039
	MVP20-3 thru MVP32-3 (Stop Check/HEV) (3/4"–1-1/4")	50-1012
	MVP40-3 thru MVP50-3 (Stop Check/HEV) (1-1/2"–2")	50-1039
14	**Stop Check/Hand Expansion (-3) Piston Kit:**	
	MVP20-3 (3/4")	75-1257
	MVP25-3 (1")	75-1258
	MVP32-3 (1-1/4")	75-1259
	MVP40-3 (1-1/2")	75-1260
	MVP50-3 (2")	75-1261
15	**Stop Check (-4) & Check (-5) Piston Kit:**	
	MVP20-4 & -5 (3/4")	75-1262
	MVP25-4 & -5 (1")	75-1263
	MVP32-4 & -5 (1-1/4")	75-1264
	MVP40-4 & -5 (1-1/2")	75-1265
	MVP50-4 & -5 (2")	75-1266
16	**Spool Kit:**	
	Shut-Off (-1)	
	MVP20-1 thru MVP32-1 (3/4"–1-1/4")	75-3246
	MVP40-1 thru MVP50-1 (1-1/2"–2")	75-3247
	Hand Expansion (-2), Stop Check/HEV (-3),	
	Stop Check (-4) & Check (-5)	
	MVP20-2, -3, -4, & -5 (3/4")	75-3245
	MVP25-2, -3, -4 & -5 thru MVP32-2, -3, -4 & -5 (1"–1-1/4")	75-3246
	MVP40-2, -3, -4 & -5 thru MVP50-2, -3, -4 & -5 (1-1/2"–2")	75-3247
	HEV Turns Open Tag Kit	75-2735

SERVICE AND MAINTENANCE

The solenoid, pressure regulator, and hand expansion valves are designed to have the same capacity as the standard Hansen control valves. Service and maintenance instructions for the MVP 20–50 valves can be found in the following Hansen documents:

- G209 Shut-Off Valves
- R429 HA4A Modular Pressure Regulators
- R629 Sealed Motor Valve & Controllers
- S429 HS4A Solenoid Valve
- S439 HS4D Two-Step Solenoid Valves
- G510 Expansion Valve

The above documents also have detailed parts descriptions and service and troubleshooting tips.

ORDERING INFORMATION

SAMPLE MODEL #: MVP 40 - 1 AD - Z , 2"SW

- 40 — SIZE (PORT)
- 1 — CONFIGURATION
- AD — BLANK=SOLENOID VALVE; FOR REGULATORS SEE PAGE 5
- Z — OPTIONS
- 2"SW — CONNECTION SIZE & STYLE

POSITION 4 CONFIGURATIONS				
MVP CONFIGURATION	POSITION 1	POSITION 2	POSITION 3	POSITION 4
1	SHUT-OFF	STRAINER	CONTROL VALVE	SHUT-OFF
2	SHUT-OFF	STRAINER	CONTROL VALVE	HAND EXPANSION
3	SHUT-OFF	STRAINER	CONTROL VALVE	STOP-CHECK/ HAND EXPANSION
4	SHUT-OFF	STRAINER	CONTROL VALVE	STOP-CHECK
5	SHUT-OFF	STRAINER	CONTROL VALVE	CHECK
6	SHUT-OFF	STRAINER	CONTROL VALVE	BLANK COVER

To Order: Specify MVP valve station port size, configuration (1 thru 6) and connection size and style (SW/BW/ODS). Specify control valve configuration (solenoid/pressure regulator/motorized), coil voltage and connection (leaded or DIN) range and options if required. For Pressure Regulator Variations, see page 5. Unless specified, Solenoid will have standard coil with 18″ leads and ½″ fitting, 115V; Pressure Regulators. Specify pressure range. Approximate weight: MVP13, 16 lbs (7 kg); MVP20–32, 35 lbs (16 kg); MVP40–50, 75 lbs (34 kg).

Ordering Example: 1½″ Port Dual Pressure Regulator, Stop Valve in Position 4, 2″ SW Connection, Zinc and Green Paint, 115V Leaded Coil, Range A.

POSITION 1

Position 1 is always a shut-off valve. The shut-off valve size is ¾″ for ½″ port sizes (MVP13). The shut-off valve size is 1¼″ for the ¾″ thru 1¼″ port sizes (MVP20–MVP32). The shut-off valve size is 2″ for the 1½″ and 2″ port sizes (MVP40 and MVP50).

POSITION 2

Position 2 is the strainer. 100 mesh (150 micron) strainer is standard for MVP13. 60 mesh strainer (233 micron) is standard (MVP20–MVP50). 100 mesh (150 micron) is optional. For 100 mesh, add (-S) to model number.

POSITION 3

Position 3 is the control valve function. MVP 13 is available only as a solenoid valve (HS8A). MVP20 thru MVP50 are available as a solenoid valve (HS4A), a two-step solenoid valve (HS4D), and a pressure regulator (HA4A) with most variations. MVP40 and MVP50 are available as a Sealed Motor Valve.

POSITION 4

Position 4 can be several functions; shut-off valve (-1), hand expansion valve (-2), stop check/hand expansion valve (-3), stop check valve (-4), check valve (-5), or blank cover (-6). The MVP13 has a stainless steel removable seat. The MVP20–50 has a ductile iron removable spool insert. The MVP20 comes with a ¾″ port in the spool when the configuration is (-2) thru (-5) and a 1¼″ port in the spool when the configuration is (-1). The MVP25 and MVP32 come with a 1¼″ port in the spool for configurations (-1) thru (-5). The MVP40 and MVP50 come with a 2″ port in the spool for configurations (-1) thru (-5). When a (-6) configuration is specified there is no spool or seat installed.

MODEL NO.	PORT SIZE IN (MM)	CONNECTION STYLES AND SIZES				
		SW		BW		ODS
		STD	ALSO	STD	ALSO	STD
MVP13*	½″ (20)	½″	¾″	½″	¾″ 1″	⅝″
MVP20	¾″ (20)	¾″	1″ 1¼″	¾″	1″ 1¼″	⅞″
MVP25	1″ (25)	1″	1¼″	1″	1¼″ 1½″	1⅛″
MVP32	1¼″ (32)	1¼″	–	1¼″	1½″	1⅜″
MVP40	1½″ (40)	1½″	2″	1½″	2″, 2½″	1⅝″
MVP50	2″ (50	2″	–	2″	2½″	2⅝″

*Also available as ½" and ¾" NPT

MVP OPTIONS
NO (Normally Open)
E (Ext Neck with SS Trim on SOV) (-1,-2,-5 & -6 only)
H (Handwheels and Bar Handle on HEV)
S (100 Mesh Strainer Basket) (MVP20–MVP50 only)
Z (Zinc and Green Paint)
X (Explosion Proof Solenoid Coil) (MVP20–MVP50 only)
D (Drain Plug) (MVP13 only)

CAUTION

These instructions must be completely read and understood before selecting, using or servicing Hansen valves and electronics. Only knowledgeable, trained refrigeration mechanics should install, operate, or service. Stated temperature and pressure limits should not be exceeded. Bonnets, solenoid tubes, etc. should not be removed from valves unless system has been evacuated to zero pressure. Install a service valve to facilitate pump out of the MVP valve. See also Safety Precautions supplied with product.

WARRANTY

All Hansen products, except electronics, are guaranteed against defective materials or workmanship for one year F.O.B. factory. Electronics are guaranteed against defective materials or workmanship for 90 days F.O.B. factory. No consequential damages or field labor is included.

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