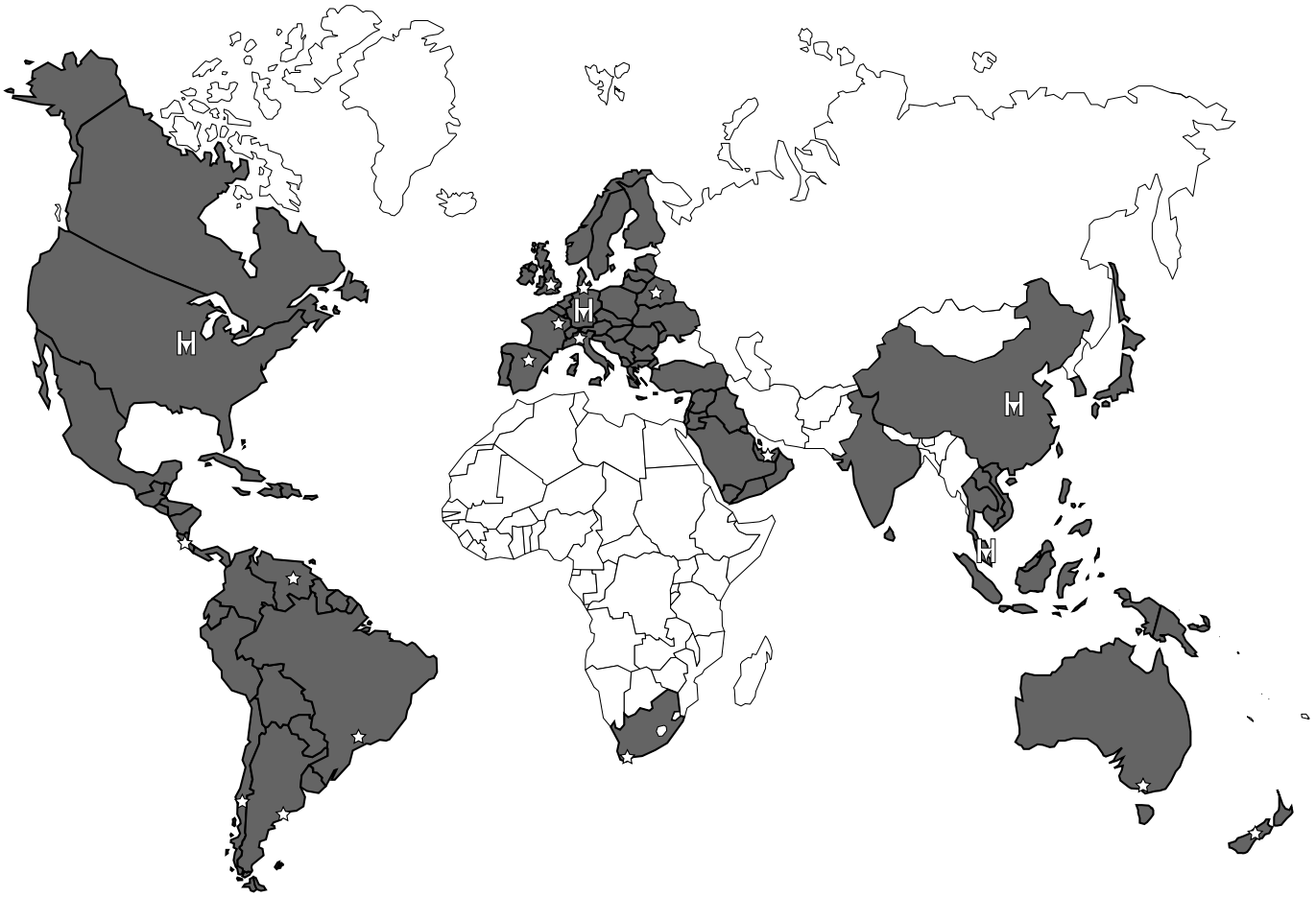
HANSEN TECHNOLOGIES

LP0417
April 2017

2017
LIST PRICE SCHEDULE
& PARTS LIST PRICING

Supercedes LP0416



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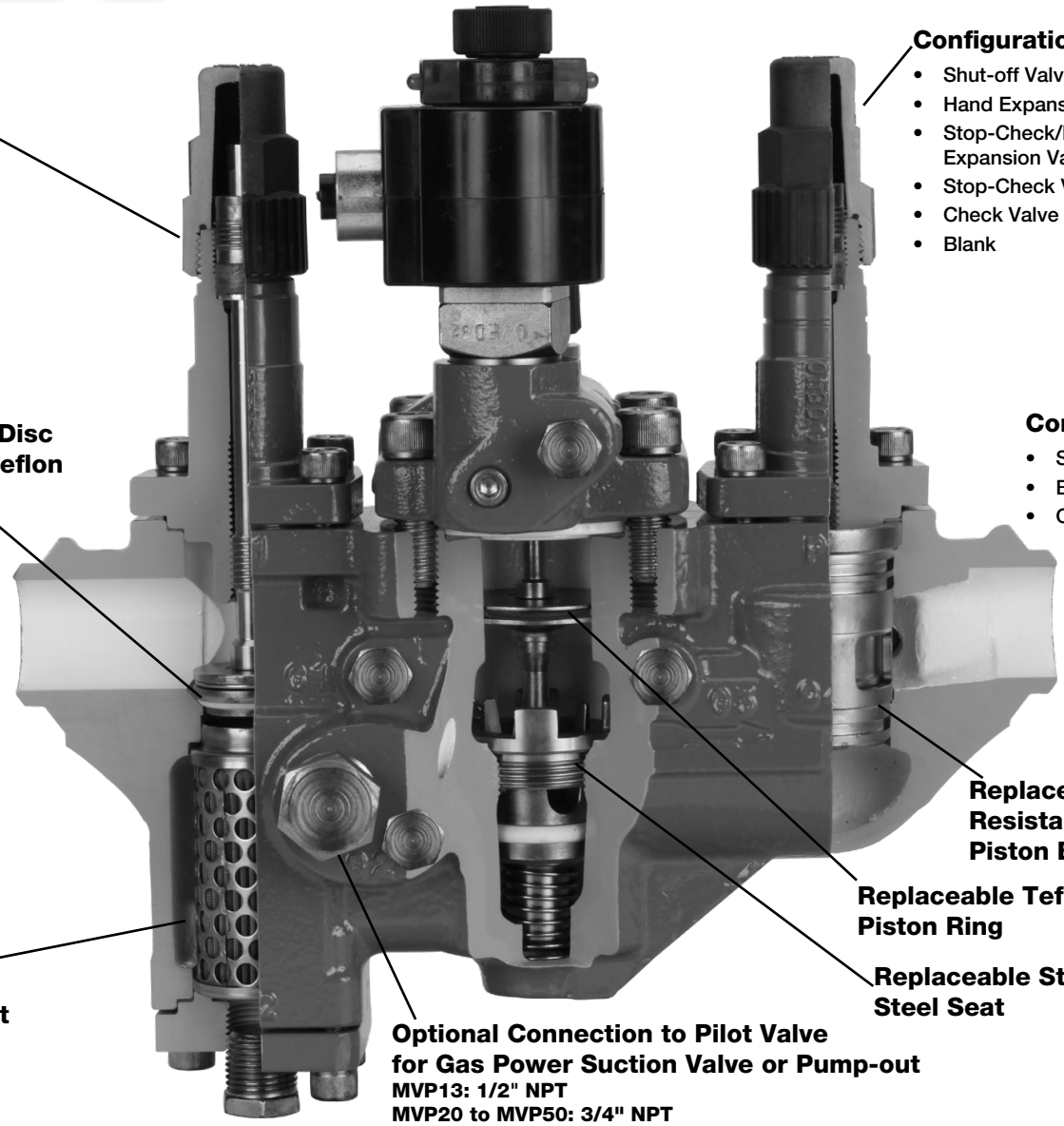
MVP Multi-Valve Platform

MULTIPLE SOLUTIONS TO FIT YOUR APPLICATION

Control Valve with Manual Opening Stem

MVP13: (Solenoid)
MVP20 to MVP50: (Solenoid/Pressure Regulator/Motorized/Two Step Solenoid)



Non-leak Dual Stem Packing

Configurations

- Shut-off Valve
- Hand Expansion Valve
- Stop-Check/Hand Expansion Valve
- Stop-Check Valve
- Check Valve (HCK1 type)
- Blank

Anti-Spin Seat Disc Tight Seating Teflon

Connections:

- Socket Weld
- Butt Weld
- ODS

Replaceable Wear Resistant Seat and Piston Bore

Replaceable Teflon Piston Ring

Replaceable Stainless Steel Seat

Stainless Steel Strainer Basket

Optional Connection to Pilot Valve for Gas Power Suction Valve or Pump-out
MVP13: 1/2" NPT
MVP20 to MVP50: 3/4" NPT

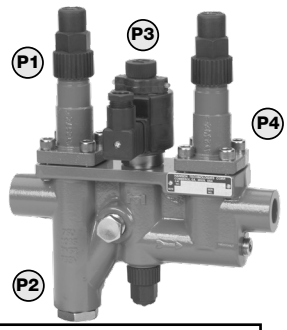
NEW!! MCV Available

MVP Options	Port Size		
	MVP13 1/2" (13 mm)	**MVP20 to MVP32** 3/4" to 1-1/4" (20 to 32 mm)	**MVP40 to MVP50** 1-1/2" to 2" (40 to 50 mm)
MV=Motorized Control Valve	—	List Extra $3419	List Extra $3525
NO=Normally Open, List Extra per coil	List Extra $179	List Extra $179	List Extra $179
E=Extended Neck and Stainless Steel Trim on SOV (1 & 2 Only)	List Extra $131	List Extra $213	List Extra $248
H=Handwheels and Bar Handle on HEV	List Extra $67	List Extra $67	List Extra $109
S=100 Mesh Strainer Basket	STANDARD	List Extra $129	List Extra $223
Z=Zinc and Green Paint	List Extra $82	List Extra $174	List Extra $346
X=Explosion Proof Solenoid Coil, List Extra per coil	—	List Extra $692*	List Extra $692*
D=Drain Plug, Strainer	List Extra $23	STANDARD	STANDARD
SD=Two Step Solenoid	—	List Extra $637	List Extra $637

*24 VDC Special Order - List Extra $1012

MVP MULTI-VALVE PLATFORM VALVE STATION

The MVP is a rugged, compact refrigerant control valve station offering multiple variations and functions to accommodate a wide range of capacities and application requirements. Standard features include manual opening stem, 60 mesh strainer (100 mesh strainer standard on MVP13), seal caps and 600 psig (41 bar g) pressure rating. Gauge port connections available. Interchangeable parts and parts kits with existing Hansen valves. Ships pre-tested and assembled for quick, easy two weld installation.



To Order: Specify MVP valve station 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), pressure setting range (See Page 8) and options if required. For Pressure Regulator Variations, see page 9 for List Extra pricing. Unless specified, Solenoid will have standard coil with 18˝ leads and ½˝ fitting, 115V; Pressure Regulators will have standard pressure range and factory setting. For Motorized Valve applications, 2-Step Solenoid similar to HS4D and other MVP options.

Approximate weight: MVP13, 16 lbs (7 kg); MVP20-32, 35 lbs (16 kg); MVP40-50, 75 lbs (34 kg).

STANDARD MVP VALVE STATION CONFIGURATIONS				
MVP CONFIGURATION	(P1) POSITION 1	(P2) POSITION 2	(P3) POSITION 3	(P4) 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

MVP WITH SOLENOID CONTROL VALVE

Size	Port Size inch (mm)	Connection inch (mm)	Configuration (Position 4)					
			SHUT-OFF	HAND EXP	STOP-CHECK/HAND EXP	STOP-CHECK	CHECK	BLANK
			1	2	3	4	5	6
MVP13	1/2" (13)	1/2" (13)	$1,336	$1,353	$1,529	$1,513	$1,327	$1,151
		3/4" (20)	$1,405	$1,415	$1,591	$1,583	$1,361	$1,184
		1" BW (25)	$1,469	$1,484	$1,664	$1,645	$1,393	$1,216
MVP20	3/4" (20)	3/4" (20)	$1,795	$1,807	$2,050	$2,040	$1,766	$1,520
		1" (25)	$1,857	$1,903	$2,147	$2,101	$1,797	$1,551
		1-1/4" (32)	$2,086	$2,107	$2,350	$2,329	$1,910	$1,665
		1-1/2" BW (40)	$2,421	$2,512	$2,757	$2,668	$2,078	$1,835
MVP25	1" (25)	1" (25)	$2,127	$2,173	$2,484	$2,440	$2,134	$1,821
		1-1/4" (32)	$2,358	$2,377	$2,689	$2,669	$2,250	$1,935
		1-1/2"BW (40)	$2,691	$2,782	$3,094	$3,005	$2,416	$2,104
MVP32	1-1/4" (32)	1-1/4" (32)	$2,432	$2,450	$2,868	$2,847	$2,455	$2,039
		1-1/2"BW (40)	$2,745	$2,829	$3,246	$3,162	$2,612	$2,195
MVP40	1-1/2" (40)	1-1/2" (40)	$3,278	$3,353	$3,834	$3,757	$3,267	$2,788
		2" (50)	$3,430	$3,504	$3,981	$3,909	$3,343	$2,865
		2-1/2"BW (65)	$3,818	$4,087	$4,568	$4,298	$3,537	$3,058
MVP50	2" (50)	2" (50)	$3,596	$3,667	$4,212	$4,139	$3,573	$3,028
		2-1/2"BW (65)	$3,985	$4,254	$4,795	$4,528	$3,768	$3,223

MVP WITH PRESSURE REGULATOR CONTROL VALVE

Size	Port Size inch (mm)	Connection inch (mm)	Configuration (Position 4)					
			SHUT-OFF	HAND EXP	STOP-CHECK/HAND EXP	STOP-CHECK	CHECK	BLANK
			1A*	2A*	3A*	4A*	5A*	6A*
MVP20	3/4" (20)	3/4" (20)	$1,698	N/A	N/A	$1,944	$1,670	$1,425
		1" (25)	$1,761	N/A	N/A	$2,005	$1,701	$1,458
		1-1/4" (32)	$1,992	N/A	N/A	$2,237	$1,816	$1,572
		1-1/2" BW (40)	$2,327	N/A	N/A	$2,571	$1,984	$1,739
MVP25	1" (25)	1" (25)	$1,999	N/A	N/A	$2,312	$2,005	$1,694
		1-1/4" (32)	$2,230	N/A	N/A	$2,543	$2,123	$1,809
		1-1/2"BW (40)	$2,565	N/A	N/A	$2,876	$2,289	$1,977
MVP32	1-1/4" (32)	1-1/4" (32)	$2,329	N/A	N/A	$2,747	$2,356	$1,938
		1-1/2"BW (40)	$2,642	N/A	N/A	$3,060	$2,512	$2,094
MVP40	1-1/2" (40)	1-1/2" (40)	$3,171	N/A	N/A	$3,649	$3,160	$2,681
		2" (50)	$3,324	N/A	N/A	$3,801	$3,236	$2,757
		2-1/2"BW (65)	$3,713	N/A	N/A	$4,190	$3,968	$4,436
MVP50	2" (50)	2" (50)	$3,539	N/A	N/A	$4,083	$3,561	$4,088
		2-1/2"BW (65)	$3,929	N/A	N/A	$4,471	$4,130	$4,656

*For Pressure Regulator Variations add suffix (such as: S, B, D, L) and add List Adder, see page 9.

Toll: 800.426.7368 Tel: 630.325.1565 Fax: 630.325.1572 Email: sales@hantech.com Web: www.hantech.com

SOLENOID VALVES

Flanged and Weld-in (For Ammonia, Halocarbons, CO_2)

For use in liquid, suction, hot gas, discharge and purge lines. Compact and reliable. Tested to ensure reliable operation, safety and tightness.

To Order: Specify model, port size, connection style and size, coil connection style, voltage, and strainer; weld-in or zinc if required. Unless specified, standard coil with ½˝ fitting will be supplied; DIN Coil with Socket, **List Extra $13**

HS4AX Explosion Proof (Class I, Division II) available (115V Standard, 230V or 24 VAC), **List Extra $692** (24 VDC Explosion Proof - Special Order, **List Extra $1012**).
Normally Open Solenoid, **List Extra $179**.

HS8A with Strainer *HS8W with Strainer* *HS4A* *HS4W*

LESS STRAINER

Model	Port Size inch (mm)	Flange Styles and Sizes Connections Available: FPT, SW, WN (DN) Standard	Also	ODS (DN/ODS) (Standard)	List Price Less Strainer with Flanges: FPT, SW	WN, ODS	List Price Weld-In Less Strainer	Add Zinc	Weight lbs (kg)
HS2+	5/32" (4)	½" (15)	¼", ⅜" (7,10)	—	$316	—	—	STD	2 (0.9)
HS2F	5/32" (4)	½" (15)	¼", ⅜", ¾" (7,10,20)	⅝" (16)	$329	$353	—	$12	3 (1.4)
HS2B	5/32" (4)	1/4" (7)			$336	—	—	—	2 (0.9)
HS6	5/32" (4)	½" (15)	¼", ⅜", ¾" (7,10,20)	⅝" (16)	$348	$372	—	$25	4 (1.8)
HS8A	½" (13)	½" (15)	⅜", ¾" (10,20)	⅝" (16)	$415	$439	—	$25	5 (2.3)
HS7	¾" (20)	¾" (20)	1", 1¼" (25,32)	⅞" (22)	$525	$553	—	$74	17 (7.7)
	1" (25)	1" (25)	1¼" (32)	1⅛" (28)	$733	$761	—	$74	17 (7.7)
	1¼" (32)	1¼" (32)	1½" WN (40)	1⅜" (35)	$905	$933	—	$74	17 (7.7)
HS4A HS4W	¾" (20)	¾" (20)	1", 1¼" (25,32)	⅞" (22)	$645	$673	$794	$94	23 (10)
	1" (25)	1" (25)	1¼" (32)	1⅛" (28)	$796	$824	$979	$94	23 (10)
	1¼" (32)	1¼" (32)	1½" WN (40)	1⅜" (35)	$962	$990	$1,172	$94	23 (10)
	1½" (40)	1½" (40)	2" (50)	1⅝" (42)	$1,349	$1,378	$1,580	$154	47 (21)
	2" (50)	2" (50)	—	2⅛" (54)	$1,482	$1,511	$1,747	$154	47 (21)
	2½" (65)	2½" (65)	3" (80)	2⅝" (67)	$2,036	$2,076	$2,384	$281	75 (34)
	3" (80)	3" (80)	—	3⅛" (79)	$2,955	$3,032	$3,426	$331	86 (39)
	4" (100)	4" (100)	—	4⅛" (105)	$4,228	$4,345	$4,724	$528	134 (61)
	5" (125)	5"BW (125)	—	—	—	—	$6,818	$1,016	250 (113)
	6" (150)	6"BW (150)	—	—	—	—	$10,737	$1,100	270 (122)

WITH STRAINER

Model	Port Size inch (mm)	Flange Styles and Sizes Connections Available: FPT, SW, WN (DN) Standard	Also	ODS (DN/ODS) (Standard)	List Price With Strainer and Flanges: FPT,SW	WN,ODS	List Price Weld-In* With Strainer	Add Zinc	Weight lbs (kg)
HS6	5/32" (4)	½" (15)	¼", ⅜" (7, 10)	⅝" (16)	$445	$469	—	$38	6 (2.7)
HS8A	½" (13)	½" (15)	3/4" (20)	⅝" (16)	$512	$536	—	$38	7 (3.2)
HS8W	½" (13)	½" (15)	3/4" (1" BW) 20 (25)	5/8", 7/8", 1 1/8" (16), (22), (28)	—	—	$645	—	7 (3.2)
HS7	¾" (20)	¾" (20)	1", 1¼" (25, 32)	⅞" (22)	$761	$789	—	$121	26 (12)
	1" (25)	1" (25)	1¼" (32)	1⅛" (28)	$969	$997	—	$121	26 (12)
	1¼" (32)	1¼" (32)	1½" WN (40)	1⅜" (35)	$1,141	$1,169	—	$121	26 (12)
HS4A HS4W	¾" (20)	¾" (20)	1", 1¼" (25, 32)	⅞" (22)	$881	$909	$1,298	$141	32 (15)
	1" (25)	1" (25)	1¼" (32)	1⅛" (28)	$1,032	$1,060	$1,483	$141	32 (15)
	1¼" (32)	1¼" (32)	1½" WN (40)	1⅜" (35)	$1,198	$1,226	$1,676	$141	32 (15)
	1½" (40)	1½" (40)	2" (50)	1⅝" (42)	$1,866	$1,895	$2,515	$290	79 (36)
	2" (50)	2" (50)	—	2⅛" (54)	$1,999	$2,028	$2,682	$290	79 (36)
	2½" (65)	2½" (65)	3" (80)	2⅝" (67)	$2,755	$2,795	$3,738	$500	125 (57)
	3" (80)	3" (80)	—	3⅛" (79)	$3,823	$3,900	$5,089	$588	150 (68)
	4" (100)	4" (100)	—	4⅛" (105)	$5,943	$6,060	$7,402	$939	236 (107)
	5" (125)	5"BW (125)	—	—	—	—	$10,302	$1996	500 (227)
	6" (150)	6"BW (150)	—	—	—	—	$16,803	$2156	540 (245)

* Weld-in valves supplied as separate pieces, not as welded assemblies. Weld-in connection style ½˝ to 2½˝ (13 to 65 mm) SW, 3˝–6˝ (80 to 150 mm) BW.
HS2 † has threaded end connections instead of flanges.
Note: Valves less flanges for replacement, deduct list price of equivalent flange kit from above, see page 7. Strainer ¼˝ plug standard ST100, ¼˝ plug optional **ST050D, List Extra $23**. Close-coupled HCK4 check valves also available, refer to page 14. 1¼˝ is standard 2-bolt flange design; 4-bolt flange style available to replace 1¼˝ R/S, **HS4A-4 10% List Extra**. Valves for CO_2, contact factory.

HS4D/HS4DW TWO STEP DUAL SOLENOID VALVE

Flanged and Weld-in

This heavy duty, reliable two step dual solenoid design allows for closed, partially open and fully open valve positions. Reverts to closed position in the event of power failure. Includes two encapsulated solenoid coils. Available with close-coupled strainer/check valve and optional wireless pilot lights. Flange-to-flange drop in for standard HS4A.

To Order: Specify model, port size, connection style and size, coil connection style, voltage, and strainer, weld-in or zinc if required. Unless specified, standard coil with ½˝ fitting will be supplied.

HS4D

LESS STRAINER

Model	Port Size inch (mm)	Flange Styles and Sizes Connections Available				List Price Less Strainer with Flanges		List Price Weld-In Less Strainer	Add Zinc	Weight lbs (kg)	
		FPT, SW, WN (DN)			ODS (DN/ODS) (Standard)						
		Standard	Also			FPT,SW	WN,ODS				
HS4D HS4DW	¾" (20)	¾" (20)	1", 1¼"	(25,32)	⅞" (22)	$1,398	$1,426	$1,541	$181	30	(13.6)
	1" (25)	1" (25)	1¼"	(32)	1⅛" (28)	$1,432	$1,460	$1,607	$181	30	(13.6)
	1¼" (32)	1¼" (32)	1½" WN	(40)	1⅜" (35)	$1,501	$1,529	$1,699	$181	30	(13.6)
	1½" (40)	1½" (40)	2"	(50)	1⅝" (42)	$1,940	$1,969	$2,153	$382	58	(26)
	2" (50)	2" (50)	—		2⅛" (54)	$2,182	$2,211	$2,428	$382	58	(26)
	2½" (65)	2½" (65)	—		2⅝" (67)	$2,590	$2,630	$2,907	$480	90	(41)
	3" (80)	3" (80)	—		3⅛" (79)	$3,818	$3,895	$4,245	$498	100	(45)
	4" (100)	4" (100)	—		4⅛" (105)	$5,057	$5,174	$5,586	$618	138	(63)

WITH STRAINER

Model	Port Size inch (mm)	Flange Styles and Sizes Connections Available				List Price With Strainer and Flanges		List Price Weld-In* With Strainer	Add Zinc	Weight lbs (kg)	
		FPT, SW, WN (DN)			ODS (DN/ODS) (Standard)						
		Standard	Also			FPT,SW	WN,ODS				
HS4D HS4DW	¾" (20)	¾" (20)	1", 1¼"	(25, 32)	⅞" (22)	$1,634	$1,662	$2,045	$228	44	(20)
	1" (25)	1" (25)	1¼"	(32)	1⅛" (28)	$1,668	$1,696	$2,111	$228	44	(20)
	1¼" (32)	1¼" (32)	1½" WN	(40)	1⅜" (35)	$1,737	$1,765	$2,203	$228	44	(20)
	1½" (40)	1½" (40)	2"	(50)	1⅝" (42)	$2,457	$2,486	$3,088	$518	99	(45)
	2" (50)	2" (50)	—		2⅛" (54)	$2,699	$2,728	$3,363	$518	99	(45)
	2½" (65)	2½" (65)	3"	(80)	2⅝" (67)	$3,309	$3,349	$4,261	$699	158	(72)
	3" (80)	3" (80)	—		3⅛" (79)	$4,686	$4,763	$5,898	$755	179	(81)
	4" (100)	4" (100)	—		4⅛" (105)	$6,772	$6,889	$8,264	$1029	266	(121)

* Weld-in valves supplied as separate pieces, not as welded assemblies. Weld-in connection type ¾˝ to 2½˝ (20 to 65 mm) SW, 3˝ to 4˝ (80 to 100 mm) BW.

Toll: 800.426.7368 Tel: 630.325.1565 Fax: 630.325.1572 Email: sales@hantech.com Web: www.hantech.com

ENCAPSULATED SOLENOID COILS

Watertight encapsulated solenoid coils. Available with 18˝ (450 mm) wire leads with ½˝ NPSM fitting for conduit, and plug-in DIN connection socket. Wire leads are standard for 115V, 208/230V, or 24V; 50/60Hz. Weight 1 lb (0.5 kg).

To Order: Specify catalog number, voltage and connection.

Standard Coil

Plug-in Coil

Plug-in Coil with DIN Socket

Encapsulated Solenoid Coil Kit (Coil, Knob & O-Ring)			
Catalog No.	**Voltage**	**Connection**	**List Price**
70-1085	115V	18" leads, 1/2" NPSM conduit	**$83**
70-1086	230V	18" leads, 1/2" NPSM conduit	
70-1087	24VAC	18" leads, 1/2" NPSM conduit	
Encapsulated Solenoid Coil (Coil Only)			
70-0580	115V	18" leads, 1/2" NPSM conduit	**$54**
70-0581	230V	18" leads, 1/2" NPSM conduit	
70-0582	24VAC	18" leads, 1/2" NPSM conduit	
Plug-in Encapsulated Solenoid Coil Kit (Coil, Knob & O-Ring)			
70-1088	115V	Plug-in less DIN socket	**$86**
70-1089	230V	Plug-in less DIN socket	
70-1090	24VAC	Plug-in less DIN socket	
70-1091	24VDC	Plug-in less DIN socket	
Plug-in Encapsulated Solenoid Coil (Coil Only)			
70-0584	115V	Plug-in less DIN socket	**$58**
70-0585	230V	Plug-in less DIN socket	
70-0586	24VAC	Plug-in less DIN socket	
70-0583	24VDC	Plug-in less DIN socket	
Plug-in Encapsulated Solenoid Coil with DIN Socket (Coil, Knob & O-Ring)			
70-1092	115V	Plug-in with DIN socket	**$96**
70-1093	230V	Plug-in with DIN socket	
70-1094	24VAC	Plug-in with DIN socket	
70-1095	24VDC	Plug-in with DIN socket	
Solenoid Coil with Junction Box (Replacement Coil for use with AP Purgers)			
70-1105	115V	Junction Box	**$100**
70-1106	230V	Junction Box	
Solenoid Coil with Conduit Connection (Replacement Coil for use with AP Purgers)			
70-0622	115V	Conduit (60" leads)	**$83**
70-0621	230V	Conduit (60" leads)	

BEACON PILOT LIGHTS AND ADAPTER KITS FOR SOLENOID COILS

Convenient and easy to install; no extra wiring required. Designed to sit atop all solenoid coils except normally open solenoid model. Kits include pilot light, o-ring and knob.

To Order: Specify catalog number.

Beacon Pilot Light Kit

Catalog No.	Description	List Price
70-1100	RED Pilot Light Kit; AC Coils Only	**$76**
70-1101	AMBER Pilot Light Kit; AC Coils Only	
70-1102	GREEN Pilot Light Kit; AC Coils Only	
70-1104	European Coil Adapter Kit	**$27**

FLANGES & ADAPTER RINGS

Hansen flanges through 1¼˝ (32 mm) port are the 2-bolt oval flange style, standard. From 1½˝ to 4˝ (40 to 100 mm), the standard is 4-bolt square. All flanges are male tongue only. ODS solder flange construction is steel bored to accept copper tubing.

WN Flange 2-Bolt

SW Flange 4-Bolt

To Order Flange Kits: Specify flange size, and connection style and size. Example: Number 100 Flange Kit with ¾˝ FPT. For a union, order Union Kit plus appropriate Flange Kit. Contains one pair of flanges (of the same size and style) without bolts, nuts or gaskets for a Hansen flanged valve.

If ordering flange gaskets in quantities of 12 or more, **Deduct Extra 50%.**

To Order Adapter Rings: Specify FAR (Female Adapter Rings) or MAR (Male Adapter Rings), and flange size; Examples: FAR100, MAR100.

To Order Union Kits: Specify model number. Contains one female adapter ring, bolts, nuts and two flange gaskets.

For Valve Port Size	Flange Size	Flange Connection Size (All Flanges are Male Tongue Only)				Flange Connection Style					Adapter Rings		Union Kit	
						FPT or SW		WN or ODS						
		FPT, SW, WN, (DN)		ODS (DN/ODS)		List Price	Zinc List Price	List Price	Zinc List Price	Weight lbs (kg)	MAR List	FAR List	Model	List Price
up to ½"	050	¼", ⅜", ½", ¾"	(7, 10, 13, 20)	⅝"	(16)	$55	$67	$79	$91	1 (0.5)	$28	$24	UK050	$49
¾", 1", 1¼"	100	¾", 1", 1¼"; 1½" WN	(20, 25, 32, 40)	⅞", 1⅛", 1⅜"	(22, 28, 35)	$71	$86	$99	$114	3 (1.4)	$34	$29	UK100	$62
		SW, WN, (DN)		ODS (D/OD)		FPT or SW Flange Kit		WN or ODS Flange Kit			Adapter Rings		Union Kit	
1½", 2"	200	1½", 2"	(40, 50)	1⅝", 2⅛"	(42, 54)	$113	$139	$142	$168	8 (3.6)	$49	$88	UK200	$141
2½"	250	2½", 3"	(65)	2⅝"	(67)	$196	$237	$236	$277	15 (6.8)	$56	$113	UK250	$163
3"	300	3"	(80)	3⅛"	(79)	$222	$274	$299	$351	14 (6.4)	$58	$128	UK300	$183
4"	400	4"	(100)	4⅛"	(105)	$341	$438	$458	$555	22 (10)	$86	$167	UK400	$239

REFRIGERANT STRAINERS (FILTERS)

For refrigerants or oil. Close-couples to flanged valves, 60 Mesh (233 micron) stainless steel screen, ST050 has 100 Mesh (150 micron), ½˝ threaded pumpout plug standard ST200 & larger; ¼˝ plug standard ST100, ¼˝ plug optional ST050D

ST200

To Order: Specify catalog number and connections. When ordering less flanges for close-coupling, specify for close-coupling to receive correct length bolts. WN or ODS flanges available at extra cost. Weld-in connections: ¾˝ thru 2˝ (20 to 50mm) SW inlet x BW outlet; 2½˝ (65 mm) SW; 3˝ to 6˝ (80 to 150 mm) BW. For CO_2 service, contact factory.

Options for Strainers

Perforated Metal Strainer Basket: For protection of compressors in suction side port applications 1½˝ to 3˝ (40 to 80 mm); contact factory.

Cloth Bags: Available 3/4˝ to 4˝ (20 to 100 mm) for system start-up. Requires ST100HD heavy duty strainer basket.

STW

For Valve Size inch (mm)	Model	List Price				Weight lbs (kg)
		FPT, SW ‡	Less Flanges	Weld-In	Add Zinc With Flanges	
$^5/_{32}$" - ½" (4-13)	ST050	$176	$97	—	$25	3 (1.4)
	ST050D†	$199	$120			
$^3/_4$" - 1¼" (20-32)	ST100, STW100	$336	$236	$504	$62	14 (6.4)
	ST100HD, STW100HD*	$390	$290	$559		
	ST100/100, STW100/100**	$465	$365	$636		
1½" - 2" (40-50)	ST200, STW200	$718	$517	$935	$162	41 (19)
	ST200/100, STW200/100**	$941	$740	$1,162		
2½" (65)	ST250, STW250	$1,028	$719	$1,354	$260	68 (31)
	ST250/100, STW250/100**	$1,368	$1,059	$1,700		
3" (80)	ST300, STW300	$1,218	$868	$1,653	$309	79 (36)
4" (100)	ST400, STW400	$2,223	$1,715	$2,678	$508	128 (58)
5" (125)	STW500	—	—	$3,484	$980	240 (109)
6" (150)	STW600	—	—	$6,066	$1,058	260 (118)

‡ WN or ODS flanges also available; see above
† ST050D includes drain plug.
* Includes stainless steel screen with perforated metal backup.
** 100 mesh (150 micron rating) stainless steel screen.

Toll: 800.426.7368 Tel: 630.325.1565 Fax: 630.325.1572 Email: sales@hantech.com Web: www.hantech.com

HA4A/HA4W REFRIGERANT PRESSURE REGULATORS

Flanged and Weld-in

(For Ammonia, Halocarbons, CO_2)

HA4A

HA4W

The complete line of modular Pressure Regulators has been designed for simple, reliable operation. These pressure regulators use a series of easily changed, screw-in control modules (pilots) to determine regulating functions. Shipped fully assembled and 100% pressure tested. CRN Registration and CSA Certification standard.

To Order: Specify model, port size, connection style and size, range, and strainer; weld-in or zinc if required.

Explosion Proof (Class I, Division II) available: HA4ADX, HA4ASX and HA4ABX (120 V STD), **List Extra $692 (**24 VDC - Special Order, **List Extra $1012).**
Normally open pilot solenoid (HA4ADNO,HA4ASNO, HA4ABNO) **List Extra $179**

LESS STRAINER

Model	Port Size inch (mm)	Flange Styles and Sizes Connections Available				List Price Less Strainer with Flanges		List Price Weld-In Less Strainer	Add Zinc	Weight lbs (kg)	
		FPT, SW, WN (DN)			ODS (DN/ODS) Standard						
		Standard		Also		FPT,SW	WN,ODS				
HA4A HA4W	¾"† (20)	¾" (20)		1", 1¼", 1½" (25, 32)	⅞" (22)	**$541**	**$569**	**$689**	**$106**	26	(12)
	1" (25)	1" (25)		1¼", 1½" (32)	1⅛" (28)	**$659**	**$687**	**$840**	**$106**	26	(12)
	1¼" (32)	1¼" (32)		1½" WN (40)	1⅜" (35)	**$852**	**$880**	**$1,060**	**$106**	26	(12)
	1½" (40)	1½" (40)		2" (50)	1⅝" (42)	**$1,233**	**$1,262**	**$1,462**	**$190**	50	(23)
	2" (50)	2" (50)		—	2⅛" (54)	**$1,415**	**$1,444**	**$1,682**	**$190**	50	(23)
	2½" (65)	2½" (65)		3" (80)	2⅝" (67)	**$1,864**	**$1,904**	**$2,210**	**$294**	78	(35)
	3" (80)	3" (80)		—	3⅛" (79)	**$2,583**	**$2,660**	**$3,051**	**$352**	89	(40)
	4" (100)	4" (100)		—	4⅛" (105)	**$3,855**	**$3,972**	**$4,441**	**$536**	137	(62)
	5" (125)	5" BW (125)		—	—	**—**	**—**	**$6,281**	**$1,013**	250	(113)
	6" (150)	6" BW (150)		—	—	**—**	**—**	**$10,665**	**$1,100**	270	(122)

WITH STRAINER

Model	Port Size inch (mm)	Flange Styles and Sizes Connections Available				List Price With Strainer and Flanges		List Price Weld-In* With Strainer	Add Zinc	Weight lbs (kg)	
		FPT, SW, WN (DN)			ODS (DN/ODS) Standard						
		Standard		Also		FPT,SW	WN,ODS				
HA4A HA4W	¾"† (20)	¾" (20)		1", 1¼" (25, 32)	⅞" (22)	**$777**	**$805**	**$1,193**	**$153**	35	(16)
	1" (25)	1" (25)		1¼" (32)	1⅛" (28)	**$895**	**$923**	**$1,344**	**$153**	35	(16)
	1¼" (32)	1¼" (32)		1½" WN (40)	1⅜" (35)	**$1,088**	**$1,116**	**$1,564**	**$153**	35	(16)
	1½" (40)	1½" (40)		2" (50)	1⅝" (42)	**$1,750**	**$1,779**	**$2,397**	**$326**	82	(37)
	2" (50)	2" (50)		—	2⅛" (54)	**$1,932**	**$1,961**	**$2,617**	**$326**	82	(37)
	2½" (65)	2½" (65)		3" (80)	2⅝" (67)	**$2,583**	**$2,623**	**$3,564**	**$513**	128	(58)
	3" (80)	3" (80)		—	3⅛" (79)	**$3,451**	**$3,528**	**$4,704**	**$609**	153	(69)
	4" (100)	4" (100)		—	4⅛" (105)	**$5,570**	**$5,687**	**$7,119**	**$947**	239	(108)
	5" (125)	5" BW (125)		—	—	**—**	**—**	**$9,765**	**$1,993**	500	(227)
	6" (150)	6" BW (150)		—	—	**—**	**—**	**$16,731**	**$2,158**	540	(245)

* Weld-in-line valves supplied as separate pieces, not as welded assemblies. Weld-in connection type ¾˝ to 2½˝ (20 to 65 mm) SW, 3˝ to 6˝ (80 to 150 mm) BW.
† 25% & 50% Reduced Capacity Plugs are available.

Note: Valves less flanges for replacement, deduct list price of equivalent flange kit from above, see page 7. Close-coupled HCK4 check valves also available, refer to page 14. 1¼˝ is standard 2-bolt flange design; 4-bolt flange style available to replace 1¼˝ (32 mm) R/S, **H4A4-4, 10% List Extra**. For CO_2 service, contact factory.

REGULATOR PRESSURE SETTINGS

The HA4A regulator family can control temperature, inlet, outlet, or differential pressure. Regulator variations are available that enable one regulator to perform several functions. Combinations of variations also available.

Regulators include a manual opening stem, and ¼˝ FPT gauge port. Shipped fully assembled and tested.

HA4A Standard Regulator includes upstream pressure control module. Controls inlet pressure for evaporator, condenser or heat recovery control or defrost relief.

Single Control Module: Range A, 0 to 150 psig (0 to 10 bar g)

Alternates:
Range B, 30 to 300 psig (2 to 21 bar g)
Range C, 100 to 550 psig (6 to 38 bar g) **List Extra $183**
Range D, 30 to 450 psig (0 to 31 bar g)
Range V, 20˝ to 130 psig (–0.67 to 9 bar g) **List Extra $195**

PRESSURE REGULATOR VARIATIONS

To Order: Specify regulator model, port size, flange connection style and size, range, coil connection style, voltage if applicable, combination of variation and special variation options desired, and strainer if required. Optional strainers are generous close-coupled, 60 mesh (233 Micron Rating) or 100 mesh accessible (150 Micron Rating). **Explosion Proof (Class I, Division II) available, List Extra $692.**

Variation	Description	Range					List Extra
		A	B	C	D	V	
S	**Electric Shut-Off** Controls pressure when electrically energized; closed when not energized. For temperature control and defrost, or similar uses. Specify voltage, range, and special variation if required.	✓	✓	✓	✓	✓	**$418**
B	**Electric Wide-Opening** Controls pressure when not electrically energized; open when energized. For defrost regulation or heat recovery and wide-opening for maximum cooling or similar. Specify voltage, range, and special variation if required.	✓	✓	✓	✓	✓	**$418**
SB	**Electric Wide-Opening and Shut-off** Closed when both coils not energized. Controls pressure when SI coil electrically energized. Open when P coil is electrically energized. For defrost regulation or similar uses or wide-opening for maximum cooling.	✓	✓	✓	✓	✓	**$650**
D	**Dual Pressure Regulator** Controls at lower pressure when electrically energized, at higher pressure when not energized. Used for two pressure (temperature) control or defrost pressure relief and pressure (temperature) control. Specify voltage, range, and special variation if required.	✓	✓	✓	✓	✓	**$775**
L	**Differential Pressure** For pump relief, oil control, or any differential pressure control.	✓					**$231**
O	**Outlet Pressure** Opens as outlet pressure drops. For hot gas bypass to suction, crankcase pressure control, or for receiver pressure control.		✓			✓	**$346**
K	**Reseating Relief** Defrost relief or high-to-low system relief. Set and Tagged. Specify Setting; otherwise setting will be at 70 psig (4.8 bar).	✓	✓	✓	✓		**$73**
R	**Regulator only with External Connection for Remote Pilot** See pages 12 and 13 for AR1, AR3 and M3E25 External Connection.						**See Pages 12 and 13**
P	**Pneumatically Compensated** Air pressure or other pressure in bonnet raises inlet pressure setting at 1:1 ratio.	✓				✓	**$113**
Q	**Electronic Control Module with Actuator** Precise temperature control or liquid chiller control. For indoor or outdoor use. 4-20 mA control signal. **Range 0 to 87 psig (o to 6 bar)** *24VAC power, see TR40 Transformer below* *Temperature controller options shown below*	✓					**$2,130**
M	**Electric Motor Compensated "M" Hardware CAM and Pilot (Less Motor)** Commonly used for precise room temperature control or liquid chiller control. A motor changes regulator pressure setting in accordance with temperature controller. Includes control module, cam, motor bracket. Specify low rise or high rise cam and range.	✓	✓			✓	**(Less Motor) $1386**
	Honeywell Motor Mounting Kit, Part No. 75-1143						**$28**
Options	**Motor,** HONEYWELL						**$952**
	115VAC/230VAC: 24VAC Transformer TR40, Part Number 75-0718						**$243**
	Temperature Controller with Sensor, Part Number 75-0854						**$560**
	Digital Readout for Controller, Part Number 75-0855						**$324**

PRESSURE REGULATOR ACCESSORIES

Quality bottom mount gauges with 3½˝ (90 mm) diameter face and safe plastic lens; ¼˝ MPT connection. 4˝ (100 mm) diameter stainless steel gauge features ¼˝ stainless steel NPT bottom connection, glycerine filled with clear polycarbonate lens. Scale is printed in pressure and temperature.

To Order: Specify model number.

GA1

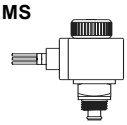
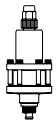
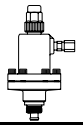
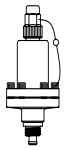
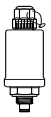
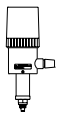
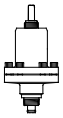
Model	Description	List Price
GA1	Ammonia Gauge (psi/degree F) 30" to 300 psig	**$168**
GA1M	Ammonia Gauge (bar/degree C) –1 to 12 bar	
GA2	Ammonia Gauge (psi/degree F) 30" to 150 psig	
GA2M	Ammonia Gauge (bar/degree C) –1 to 21 bar	
G3	Halocarbon/Ammonia Gauge (psi/bar only) 30" to 350 psig	**$168**
G4	Halocarbon/Ammonia Gauge (psi/bar only) 30" to 150 psig	
HGV1	HGV1 Long Neck® Gauge Valve, ¼" MPT x FPT	**$80**
GA1-S	Stainless Steel Ammonia Gauge (psi/degree F) 30" to 300 psig	**$268**
GA1M-S	Stainless Steel Ammonia Gauge (bar/degree C) –1 to 12 bar	
GA2-S	Stainless Steel Ammonia Gauge (psi/degree F) 30" to 170 psig	
GA2M-S	Stainless Steel Ammonia Gauge (bar/degree C) –1 to 25 bar	
G5M-S	Stainless Steel Halocarbon Gauge (bar/degree C) –1 to 12 bar	**$268**
G6M-S	Stainless Steel Halocarbon Gauge (bar/degree C) –1 to 25 bar	

Toll: 800.426.7368 Tel: 630.325.1565 Fax: 630.325.1572 Email: sales@hantech.com Web: www.hantech.com

CONTROL MODULES (PILOTS) FOR REGULATORS

Control modules enable the main regulator to perform different control functions. Pilots are factory installed, or can be retrofitted. Non-rising stem can be adjusted by using a ¼˝ wrench. Catalog numbers are for the screw-on pilot module.

To Order: Specify control module catalog number, range, setting and coil connection style and voltage if applicable.

Control Module	Description	List Price	Zinc	Weight lbs (kg)
M3	**Inlet Pressure.** Specify Range. Range A: **Part Number 75-1097** Range B: **Part Number 75-1098** Range D: **Part Number 75-1205**	**$319**	**$341**	5 (2)
	Range C: **Part Number 75-1204**	**$501**	**$523**	
	Range V: **Part Number 75-1099**	**$513**	**$535**	
M3W	**Inlet Pressure. Range A: Part Number 75-1126** M3W compact welded pressure pilot is standard on ¾" to 1¼" (20 to 32mm) valves.	**$319**	**$341**	5 (2)
MS 	**Solenoid. Part Number 70-1052 Normally Closed** Facilitates on/off control of flow through control module. *Requires solenoid coil, see page 8 for selection.*	**$154**	**N/A**	1 (.5)
	Part Number 70-1113 Normally Open	**$333**	**N/A**	1 (.5)
M3O 	**Outlet Pressure.** Specify Range. Range B: **Part Number 75-1101** Range V: **Part Number 75-1100**	**$615**	**$637**	6 (3)
M3L 	**Differential Pressure. Range A: Part Number 75-1081**	**$424**	**$446**	5 (2)
M3P	**Pneumatically Compensated. Range A: Part Number 75-1081** Air or other pressure in bonnet raises inlet pressure setting on a 1:1 ratio.	**$424**	**$446**	5 (2)
	Range V: **Part Number 75-1249**	**$618**	**$640**	
M3K 	**Reseating Relief.** Set and Tagged. Specify Range and Setting. Range A: **Part Number 75-1103** Range B: **Part Number 75-1104** Range D: **Part Number 75-1203** Standard setting (for ammonia defrost) 70 psig (4.8 bar).	**$383**	**$405**	5 (2)
	Range C: **Part Number 75-1202**	**$564**	**$586**	
M3KW 	**Reseating Relief. Range A: Part Number 75-1127** Compact welded pressure pilot is standard on valves sizes ¾" to 1¼" (20 to 32 mm). Standard setting (for ammonia defrost) 70 psig (4.8 bar).	**$383**	**$405**	5 (2)
M3Q 	**Electronically Controlled. Part Number 75-1146** 4-20mA or 0-10V control signal, 24VAC power. Range: 0 to 87 psig (0 to 6 bar). *(includes module and actuator)*	**$2,456**	**$2,478**	5 (2)
M3E25	**External Connection. Part Number 35-1015** Enables a remote pressure source to be introduced to the regulator via a pilot line (replaces a pilot). ¼" FPT with separate 4" (100 mm) long weld nipple.	**$122**	**STD**	1 (.5)
M3S	**Stopping Plugs. Part Number 75-1063** To be used in regulator's pilot valve port when port is not utilized. Stopping plugs have square head and are marked with “0”.	**$26**	**STD**	.5 (.2)
M3B	**Straight Through Plugs. Part Number 75-1064** To be used in regulator's pilot valve port when port is not utilized. Straight through flow plugs have a hex head and are marked with “1”.	**$26**	**STD**	.5 (.2)
M3M 	**Electric Motor.** Specify Range. (Module Only) Range A: **Part Number 75-1193** Range B: **Part Number 75-1283**	**$375**	**$397**	5 (2)
	Range V: **Part Number 75-1285**	**$570**	**$592**	

MODULAR REGULATOR BODIES

Modular regulator bodies less pilots and less flanges. Model AR1 (one pilot port) and Model AR3 (three pilot ports). Includes flange gaskets, bolts and nuts, and a plugged ¼˝ outlet pressure access port for connecting outlet or differential control module sensing lines or gauges.

To Order: Specify model number and port size.

AR1, LESS FLANGES

Model	Port Size inch (mm)	List Price			Weight lbs (kg)
		Less Flanges	Zinc	Weld-in	
75-1082	¾" (20)	**$463**	**$568**	**$681**	24 (11)
75-1083	1" (25)	**$495**	**$600**	**$747**	24 (11)
75-1084	1¼" (32)	**$679**	**$784**	**$956**	24 (11)
75-1085	1½" (40)	**$987**	**$1,176**	**$1,326**	48 (22)
75-1086	2" (50)	**$1,200**	**$1,390**	**$1,578**	48 (22)
75-1087	2½" (65)	**$1,564**	**$1,856**	**$2,104**	76 (34)
75-1088	3" (80)	**$2,265**	**$2,761**	**$2,951**	87 (40)
75-1089	4" (100)	**$3,410**	**$3,945**	**$4,335**	135 (61)

AR1

AR3, LESS FLANGES

Model	Port Size inch (mm)	List Price			Weight lbs (kg)
		Less Flanges	Zinc	Weld-in	
75-1090	¾" (20)	**$573**	**$678**	**$793**	33 (15)
75-1091	1" (25)	**$606**	**$711**	**$859**	33 (15)
75-1092	1¼" (32)	**$800**	**$905**	**$1,080**	33 (15)
75-1093	1½" (40)	**$1,121**	**$1,309**	**$1,463**	80 (36)
75-1094	2" (50)	**$1,322**	**$1,509**	**$1,700**	80 (36)
75-1095	2½" (65)	**$1,685**	**$1,976**	**$2,225**	126 (57)
75-1096	3" (80)	**$2,386**	**$2,882**	**$3,075**	151 (68)
75-1128	4" (100)	**$3,530**	**$4,066**	**$4,459**	237 (108)

AR3

SMALL PRESSURE REGULATORS

Compact, flanged pressure regulators ideal for pilot application. Frequently used as small relief devices and as remote pilots for main regulators. Standard flange is ½˝ FPT. ¾˝ FPT and ½˝, ¾˝ SW; WN available **List Extra $24**. ¼˝ FPT Gauge Port. Optional close-coupled inlet strainer type **ST050 List $97**.

To Order: Specify model, range, connection style and size, and strainer if required. For CO_2 service, contact factory.

HA2A

Model	Function	Range	List Price	Zinc	Weight lbs (kg)
HA2B	Back Pressure	A: 0 to 150 psig (0 to +10 bar) B: 30 to 300 psig (+2 to +21 bar) C: 100 to 550 psig (6 to 38 bar) D: 30 to 450 psig (0 to 31 bar) V: 20" to 130 psig (–0.67 to +9 bar)	**$356** **$356** **$539** **$356** **$551**	**$395** **$395** **$578** **$395** **$590**	8 (3.6)
HA2A	Back Pressure (high capacity)	A: 0 to 150 psig (0 to +10 bar) B: 30 to 300 psig (+2 to +21 bar) C: 100 to 550 psig (6 to 38 bar) D: 30 to 450 psig (0 to 31 bar)	**$452** **$452** **$635** **$452**	**$491** **$491** **$674** **$491**	9 (4.1)
HA2BK	Relief	A: 0 to 150 psig (0 to +10 bar) B: 30 to 300 psig (+2 to +21 bar) C: 100 to 550 psig (6 to 38 bar) D: 30 to 450 psig (0 to 31 bar) V: 20" to 130 psig (–0.67 to +9 bar)	**$429** **$429** **$612** **$429** **$624**	**$468** **$468** **$651** **$468** **$663**	8 (3.6)
HA2BO	Outlet	V: 20" to 130 psig (–0.67 to +9 bar) B: 30 to 300 psig (+2 to +21 bar)	**$702**	**$741**	9 (4.1)
HA2BL	Differential	A: 0 to 150 psig (0 to +10 bar)	**$587**	**$626**	8 (3.6)
HA2BQ	Electronic*	0 to 87 psig (0 to 6 bar)	**$2,550**	**$2,589**	7 (3.3)
HA2BP	Pneumatic	A: 0 to 150 psig (0 to +10 bar)	**$469**	**$508**	8 (3.6)
HA2BM	Motor**	A: 0 to 150 psig (0 to +10 bar) (less motor)	**$1,742**	**$1,781**	12 (5.4)

* See item Q on page 9 for Electronic Control Module.
** See page 9 for motor and controller options.

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HCK2/HCK2W GAS-POWERED SUCTION STOP VALVES

Flanged and Weld-in

Heavy duty, flanged and weld-in, gas-powered suction stop valves. Gas power to close, internal bleed to open. Rugged ductile iron body. ½˝ SW (FPT on request) flange union with internal disc strainer included. 5˝ and 6˝ (125 and 150 mm) are integral butt weld end only.

To Order: Specify model, port size, pilot solenoid and strainer if applicable, voltage and connection size and style.

HCK2

Model	Port Size inch (mm)	Connections Available Flange Styles and Sizes		List Price							Weight lbs (kg) Complete with Pilot & Flanges	
		FPT, SW, WN (DN) ODS (DN/ODS)		Less Pilot Solenoid				Add Pilot Solenoid*				
		Standard	Also	FPT,SW	WN,ODS	Weld-In**	Add Zinc	Without Strainer	With Strainer	Model		
HCK2 HCK2W	1¼" (32)	1¼" (32)	1½" WN (40)	$775	$803	—	$107	$348	$445	HS6	22	(10)
	1½" (40)	1½" (40)	2" (50)	$1,007	$1,036	$1,233	$166				46	(21)
	2" (50)	2" (50)	1½" (40)	$1,067	$1,096	$1,327	$166				46	(21)
	2½" (65)	2½" (65)	3" (80)	$1,478	$1,518	$1,816	$264				78	(35)
	3" (80)	3" (80)	—	$1,868	$1,945	$2,320	$303				90	(41)
	4" (100)	4" (100)	—	$2,838	$2,955	$3,402	$469	$415	$512	HS8A	142	(64)
	5" (125)	5"BW (125)	—	—	—	$5,429	$1,040				250	(113)
	6" (150)	6"BW (150)	—	—	—	$8,598	$1,122				270	(122)

* For weld-in valves, pilot solenoid is weld-in, **Type HS8W with integral strainer, List Each $645.**
** Weld-in connection type 1½˝ to 2½˝ (32 to 65 mm) SW, 3˝ to 6˝ (80 to 150 mm) BW.

HS9B/HS9BW GAS-POWERED SOLENOID VALVES

Flanged and Weld-in

Solenoid exhaust to open, solenoid gas power to close (with dual pilot solenoid valves). Rugged, ductile iron body. ½˝ SW (FPT on request) flange union with an internal disc strainer is included. 5˝ and 6˝ (125 and 150 mm) are integral butt weld end only. Pilot solenoid valves provided in prepiped assembly, including standard coils with 18" wire leads.

To Order: Specify model, port size, voltage and connection size and style.

Note: Pilot valve assembly direct weld-in available upon request. Pilot valve assembly is flanged.

HS9B

Model	Port Size inch (mm)	Connections Available Flange Styles and Sizes			List Price				Weight lbs (kg) Complete with Pilots & Flanges	
		FPT, SW, WN (DN) ODS (DN/ODS)		Pilot Line FPT	With 2 Pilot Solenoid Valve Assembly					
		Standard	Also		FPT, SW	WN, ODS	Weld-In*	Add Zinc		
HS9B HS9BW	1¼" (32)	1¼" (32)	1½" WN (40)	½"	$1,991	$2,019	—	$121	29	(13)
	1½" (40)	1½" (40)	2" (50)	½"	$2,205	$2,234	$3,153	$180	53	(24)
	2" (50)	2" (50)	1½" (40)	½"	$2,232	$2,261	$3,216	$180	53	(24)
	2½" (65)	2½" (65)	3" (80)	½"	$2,791	$2,831	$3,854	$275	84	(38)
	3" (80)	3" (80)	—	½"	$3,402	$3,479	$4,560	$317	96	(44)
	4" (100)	4" (100)	—	½"	$4,520	$4,637	$5,442	$483	148	(67)
	5" (125)	5"BW (125)	—	½"	—	—	$8,737	$1,053	259	(117)
	6" (150)	6"BW (150)	—	½"	—	—	$11,675	$1,129	279	(126)

* Weld-in connection type 1½˝ to 2½˝ (32 to 65 mm) SW, 3˝ to 6˝ (80 to 150 mm) BW.

HCK5D/HCK5DW GAS-POWERED TWO STEP SUCTION STOP VALVES

Flanged and Weld-in

Heavy duty, flanged or weld-in, gas-powered two step suction stop valves. Self-equalizing with a delayed opening feature after defrost or power failure. Internal, controlled bleed down piston design. ½˝ SW (FPT on request) flange union with internal disc strainer included.

To Order: Specify model, port size, voltage and connection size and style.

HCK5D

Model	Port Size inch (mm)	Connections Available Flange Styles and Sizes		List Price							Weight lbs (kg) Complete with Pilot & Flanges
		FPT, SW, WN (DN) ODS (DN/ODS)		Less Pilot Solenoid				Add Pilot Solenoid*			
		Standard	Also	FPT,SW	WN,ODS	Weld-In**	Add Zinc	Without Strainer	With Strainer	Model	
HCK5D HCK5DW	1½" (40)	1½" (40)	2" (50)	**$1,700**	**$1,729**	**$1,936**	**$163**	**$415**	**$512**	**HS8A**	59 (27)
	2" (50)	2" (50)	1½" (40)	**$1,760**	**$1,789**	**$2,034**	**$163**				59 (27)
	2½" (65)	2½" (65)	3" (80)	**$2,161**	**$2,201**	**$2,512**	**$261**				91 (41)
	3" (80)	3" (80)	—	**$2,528**	**$2,605**	**$2,992**	**$304**				103 (47)
	4" (100)	4" (100)	—	**$3,745**	**$3,862**	**$4,325**	**$563**				155 (70)

* For weld-in valves, pilot solenoid is weld-in, **Type HS8W with integral strainer, List Each $645.**
** Weld-in connection type 1½˝ to 2½˝ (40 to 65 mm) SW, 3˝ to 4˝ (80 to 100 mm) BW.

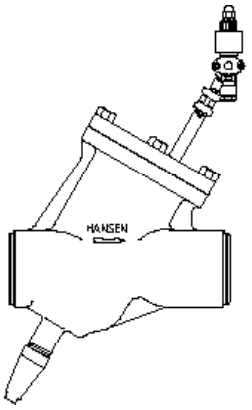
HCK5W GAS-POWERED SUCTION STOP VALVES

Weld-In

HCK5W Suction Stop Valves are available having delayed opening in case of power failure. A pressure pilot gradually bleeds down evaporator pressure to a safe differential. Pressure and solenoid pilots provided in prepiped 3/4" FPT flanged assembly.

To Order: Specify model, port size, voltage and connection size and style.

Model	Port Size inch (mm)	Connections Available Flange Styles and Sizes		List Price				Weight lbs (kg) Complete with Pilot & Flanges
		FPT, SW, WN (DN), ODS		With Pilot Assembly				
		Standard	Also	FPT,SW	WN,ODS	Weld-In	Add Zinc	
HCK5W	5" (125)	5"BW (125)	—	**—**	**—**	**$6,354**	**$1,040**	263 (119)
	6" (150)	6"BW (150)	—	**—**	**—**	**$9,524**	**$1,122**	283 (128)



HCK5W

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HCK4 IN-LINE CHECK VALVES

Flanged

HCK4

Compact, flanged, in-line (non-return) check valves open wide for flow in arrow direction on body, valves close when pressure reversals occur. Seat discs and springs are stainless steel.

HCK4LR Gravity Drain Low Pressure Drop

The HCK4LR series of in-line gravity drain check valves are dependable, compact and rugged. The HCK4LR gravity drain check valves feature a low wide-opening pressure differential suitable for liquid transfer systems and other low pressure drop applications. Available in 2", 3" and 4" (50, 80, and 100 mm); add suffix "LR" to model.

Kits available with spacer for direct replacement of Wolf-Linde/H.A. Phillips:

3˝ (80 mm) Replacement Kit, Part No. 72-1001, List $902

4˝ (100 mm) Replacement Kit, Part No. 72-1002, List $1411

To Order: Specify model, flange connection style and size. For CO_2 service, contact factory; UL Listed.

Note: Add "Z" Suffix to model number (e.g. HCK4Z-2) to indicate standard zinc plus green paint with zinc plated flanges, contact factory for pricing.

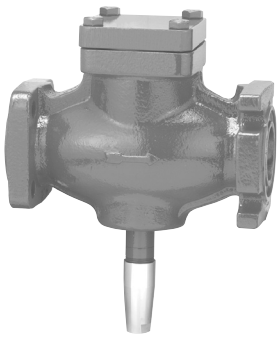
Model	Port Size inch (mm)		List Price			Weight lbs (kg)	
			FPT, SW	WN, ODS	Less Flanges w/Adapter†		
HCK4-2	⅝"	(16)	**$185**	**$209**	**$158**	2	(0.9)
HCK4-3	¾"	(20)	**$210**	**$238**	**$173**	5	(2.3)
HCK4-4	1"	(25)	**$262**	**$290**	**$225**	5	(2.3)
HCK4-5*	1¼"	(32)	**$350**	**$378**	**$313**	5	(2.3)
HCK4-7	1½"	(40)	**$465**	**$494**	**$401**	14	(6.4)
HCK4-8	2"	(50)	**$520**	**$549**	**$456**	15	(6.8)
HCK4-9	2½"	(65)	**$765**	**$805**	**$625**	26	(12)
HCK4-0	3"	(80)	**$988**	**$1,065**	**$824**	27	(12)
HCK4-1	4"	(100)	**$1,589**	**$1,706**	**$1,334**	35	(16)
HCK4-8LR	2"	(50)	**$520**	**$549**	–	15	(68)
HCK4-0LR	3"	(80)	**$988**	**$1,065**	–	27	(12)
HCK4-1LR	4"	(100)	**$1,589**	**$1,706**	–	35	(16)

† Adapter ring MAR needed for close-coupling to valves. Special loaded check valves for defrost condensate float drain applications are available, specify model HCK4-2-10, HCK4-2-18 or HCK4-2-30 (used with liquid drainer HD101, see page 27).

* 1¼˝ is standard 2-bolt flange design; HCK4-6 4-bolt flange style available to replace 1¼˝ R/S, contact factory.

HCK1/HCK1W PISTON TYPE CHECK VALVES

Flanged and Weld-in



HCK1

Heavy duty, piston type check valves control the flow of refrigerant, and compressor discharge. Valves open wide for flow in arrow direction on valve body and close when flow reversals occur.

The HCK1 is suitable for compressor or pump discharge, hot gas lines and pulsating pressure applications. Contact factory for Screw Compressor Side Port Applications. Suitable for Ammonia, R-22, R-134a, and other approved refrigerants.

To Order: Specify model, flange connection style and size.

Model	Port Size inch (mm)		List Price		Weld-In*	Add Zinc	Weight lbs (kg)	
			FPT, SW	WN, ODS				
	¾"	(20)	**$441**	**$469**	**$587**	**$70**	20	(9)
	1"	(25)	**$465**	**$493**	**$643**	**$70**	20	(9)
	1¼"	(32)	**$668**	**$696**	**$874**	**$70**	20	(9)
	1½"	(40)	**$873**	**$902**	**$1,096**	**$165**	44	(20)
HCK1	2"	(50)	**$937**	**$966**	**$1,194**	**$165**	44	(20)
HCK1W	2½"	(65)	**$1,207**	**$1,247**	**$1,541**	**$262**	76	(35)
	3"	(80)	**$1,668**	**$1,745**	**$2,115**	**$303**	88	(40)
	4"	(100)	**$2,577**	**$2,694**	**$3,134**	**$467**	146	(66)
	5"	(125)	—	—	**$4,733**	**$1,040**	250	(113)
	6"	(150)	—	—	**$7,861**	**$1,122**	270	(122)

* Weld-in connection type ¾˝ to 2½˝ (20 to 65 mm) SW, 3˝ to 6˝ (80 to 150 mm) BW.

COMBINATION STOP/CHECK VALVES

Socket Weld and Butt Weld

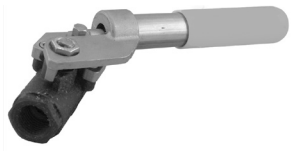
HSCK200C

Durable, carbon-steel-bodied valves are a combination stop valve and normally-spring-closed check valve. Valves open wide for full flow in the arrow direction on the valve body and promptly reseat when reverse flow occurs. Stainless steel valve stems facilitate positive manual closing while Teflon disc seats assure reliable, long-life seating. Use of these combination valves reduces pressure drop, minimizes space requirements, and simplifies installation. Angle body is standard. Straight through bodied valves available on special order; contact factory. Handwheels also available.

To Order: Specify catalog number. Check valve capacity prior to ordering, line sizing is not recommended.

Catalog Number		Port Size inch (mm)		List Price	Zinc	Weight lbs (kg)	
Socket Weld	HSCK125C	1¼"	(32)	$588	$610	7	(3.2)
	HSCK150C	1½"	(40)	$636	$686	8	(3.6)
	HSCK200C	2"	(50)	$879	$932	12	(5.4)
Butt Weld	HSCK250C	2½"	(65)	$1,212	$1,293	21	(9.5)
	HSCK300C	3"	(80)	$1,562	$1,648	29	(13)
	HSCK400C	4"	(100)	$2,012	$2,151	44	(20)
	HSCK500C	5"	(125)	$3,201	$3,463	65	(29)
	HSCK600C	6"	(150)	$4,047	$4,623	82	(37)

LIQUID DRAIN BALL VALVES



Liquid Drain Ball Valve

Spring return ball valves available with carbon steel or stainless steel valve bodies.

To Order: Specify catalog number.

Catalog Number		Size inch (mm)		List Price	Weight lbs (kg)	
Carbon Steel	50-2644	½"	(13)	$350	1.3	(0.6)
	50-2645	¾"	(20)	$429	2.0	(0.9)
	50-2646	1"	(25)	$452	2.3	(1.0)
Stainless Steel	50-2647	½"	(13)	$387	1.3	(0.6)
	50-2648	¾"	(20)	$474	2.0	(0.9)
	50-2649	1"	(25)	$544	2.3	(1.0)

Toll: 800.426.7368 Tel: 630.325.1565 Fax: 630.325.1572 Email: sales@hantech.com Web: www.hantech.com

SHUT-OFF VALVES

(For Ammonia, Halocarbons, CO_2)

Rugged shut-off valves are a strong, reliable component for modern industrial refrigeration applications and suitable for liquid, suction, hot gas, discharge, recirculating liquid or oil lines.

Screwed Bonnet Threaded Valves feature non-leak stainless steel stems, and ductile iron bodies. Threaded, Socket Weld and Butt Weld Bolted Bonnet Valves feature large bonnet bolts for exceptional strength, non-leak stainless steel stems, and forged steel or low temperature cast steel bodies. SS Trim denotes 316 stainless steel packing nut.

To Order: Specify model. For CO_2 service, contact factory for pricing. Optional zinc plating available, order example: GSZ150H. Optional stainless steel trim available on shut-off valves. CE Mark for 1¼˝ (32 mm) and larger; **10% List Extra**.
5/8˝ thru 4-1/8˝ ODS angle valves available, **20% List Extra**.

GSB076H

AW200C

Size inch (mm)	End Connection	Globe		Angle		List Prices				Add SS Trim	Weight lbs (kg)	
						Standard		Zinc Plated				
		Handwheel	Seal Cap	Handwheel	Seal Cap	Globe	Angle	Globe	Angle		Globe	Angle
3/8" (10)	Thrd/Scrwd Bonnet	GT038H	GT038C	AT038H	AT038C	**$137**	**$137**	**$159**	**$159**	–	3 (1.4)	3 (1.4)
1/2" (13)	Thrd/Scrwd Bonnet	GT051H	GT051C	AT051H	AT051C	**$141**	**$141**	**$162**	**$162**	–	3 (1.4)	3 (1.4)
	Threaded	GTB051H	GTB051C	ATB050H	ATB050C	**$163**	**$163**	**$185**	**$185**	**$45**	5 (2.3)	5 (2.3)
	Socket Weld	GSB051H	GSB051C	ASB050H	ASB050C	**$165**	**$165**	**$187**	**$187**	**$45**	5 (2.3)	5 (2.3)
	Butt Weld	GWB051H	GWB051C	AWB050H	AWB050C	**$180**	**$180**	**$200**	**$200**	**$45**	5 (2.3)	5 (2.3)
3/4" (20)	Thrd/Scrwd Bonnet	GT076H	GT076C	AT076H	AT076C	**$161**	**$161**	**$183**	**$183**		3 (1.4)	3 (1.4)
	Threaded	GTB076H	GTB076C	ATB075H	ATB075C	**$195**	**$195**	**$217**	**$217**	**$45**	5 (2.3)	5 (2.3)
	Socket Weld	GSB076H	GSB076C	ASB075H	ASB075C	**$196**	**$196**	**$218**	**$218**	**$45**	5 (2.3)	5 (2.3)
	Butt Weld	GWB076H	GWB076C	AWB075H	AWB075C	**$213**	**$213**	**$234**	**$234**	**$45**	5 (2.3)	5 (2.3)
1" (25)	Threaded	GTB101H	GTB101C	ATB100H	ATB100C	**$204**	**$204**	**$228**	**$228**	**$45**	6 (2.7)	6 (2.7)
	Socket Weld	GSB101H	GSB101C	ASB100H	ASB100C	**$206**	**$206**	**$230**	**$230**	**$45**	6 (2.7)	6 (2.7)
	Butt Weld	GWB101H	GWB101C	AWB100H	AWB100C	**$224**	**$224**	**$247**	**$247**	**$45**	6 (2.7)	6 (2.7)
1-1/4" (32)	Threaded	GTB126H	GTB126C	ATB125H	ATB125C	**$285**	**$285**	**$307**	**$307**	**$45**	6 (2.7)	6 (2.7)
	Socket Weld	GSB126H	GSB126C	ASB125H	ASB125C	**$285**	**$285**	**$307**	**$307**	**$45**	6 (2.7)	6 (2.7)
	Butt Weld	GWB126H	GWB126C	AWB125H	AWB125C	**$312**	**$312**	**$335**	**$335**	**$45**	6 (2.7)	6 (2.7)
1-1/2" (40)	Socket Weld	GS150H	GS150C	AS150H	AS150C	**$397**	**$397**	**$464**	**$448**	**$49**	20 (9)	15 (6.8)
	Butt Weld	GW150H	GW150C	AW150H	AW150C	**$422**	**$422**	**$489**	**$473**	**$49**	20 (9)	15 (6.8)
2" (50)	Socket Weld	GS200H	GS200C	AS200H	AS200C	**$458**	**$458**	**$533**	**$511**	**$49**	21 (9.5)	16 (7.2)
	Butt Weld	GW200H	GW200C	AW200H	AW200C	**$474**	**$474**	**$548**	**$527**	**$49**	21 (9.5)	16 (7.2)
2-1/2" (65)	Socket Weld	GS251H	GS251C	AS251H	AS251C	**$614**	**$614**	**$745**	**$697**	**$63**	40 (18)	25 (11)
	Butt Weld	GW251H	GW251C	AW251H	AW251C	**$631**	**$631**	**$762**	**$714**	**$63**	40 (18)	25 (11)
3" (80)	Butt Weld	GW301H	GW301C	AW301H	AW301C	**$913**	**$913**	**$1,048**	**$1,001**	**$63**	41 (19)	26 (12)
4" (100)	Butt Weld	GW402H	GW402C	AW402H	AW402C	**$1,182**	**$1,182**	**$1,346**	**$1,321**	**$63**	50 (23)	43 (20)
5" (125)	Butt Weld	GW500H	GW500C	AW500H	AW500C	**$2,153**	**$1,996**	**$2,476**	**$2,258**	**$185**	79 (37)	64 (29)
6" (150)	Butt Weld	GW600H	GW600C	AW600H	AW600C	**$2,493**	**$2,307**	**$3,206**	**$2,883**	**$185**	108 (49)	88 (40)
8" (200)	Butt Weld	GW800H	GW800C	AW800H	AW800C	**$5,284**	**$4,894**	**$6,406**	**$5,889**	**$305**	249 (113)	196 (89)
10" (250)	Butt Weld	GW1000H	GW1000C	AW1000H	AW1000C	**$11,225**	**$10,392**	**$14,074**	**$12,700**	**$1,033**	379 (172)	312 (142)
12" (300)	Butt Weld	GW1200H	GW1200C	AW1200H	AW1200C	**$16,359**	**$15,152**	**$21,122**	**$19,152**	**$1,456**	703 (320)	583 (265)
14" (350)	Butt Weld	GW1400H	GW1400C	AW1400H	AW1400C	**$32,828**	**$30,382**	**$39,418**	**$35,587**	–	895 (407)	718 (326)
16" (400)	Butt Weld	–	–	AW1600H	AW1600C	–	**$42,015**	–	–	–	1037 (470)	1037 (470)
18" (450)	Butt Weld	–	–	AW1800H	AW1800C	–	**$51,021**	–	–	–	1216 (553)	1216 (553)

*Note: 1" and 1-1/4" Threaded/Screwed Bonnet Valves were obsoleted in June 2013.

HAND EXPANSION VALVES

(For Ammonia, Halocarbons, CO_2)

Precision-calibrated, adjustable, slotted plug flow regulating Hand Expansion Valves are ideal for metering or flashing expansion of liquid refrigerants. Featuring slotted plugs for linear flow regulation along with Teflon seat discs for tight closing. Slotted plugs increase accuracy and are more tolerant of dirt particles than metal-seated tapered-plug expansion valves.

Valve stems are stainless steel and have double seals to eliminate stem leakage. The patented non-leak seal plus packing design permits low torque operation for valve adjustments since the packing nut requires little tightening. Bar handle or yellow seal caps distinguish these regulators from shut-off valves. SS Trim denotes 316 stainless steel packing nut.

To Order: Specify model. For CO_2 service, contact factory for pricing. Optional zinc plating available, order example: RSZ150H. Optional stainless steel trim available on shut-off valves.

CE Mark for 1¼˝ (32 mm) and larger; **10% List Extra.**
5/8˝ thru 4-1/8˝ ODS angle valves available, **20% List Extra.**

RSB076H SOCKET WELD

VSB125C SOCKET WELD

Size inch (mm)	End Connection	Globe		Angle		List Price				Add SS Trim	Weight lbs (kg)	
						Standard		Zinc plated				
		Bar Handle	Seal Cap	Bar Handle	Seal Cap	Globe	Angle	Globe	Angle		Globe	Angle
3/8" (10)	Thrd, Scrwd Bonnet	RT038H	RT038C	VT038H	VT038C	**$149**	**$149**	**$169**	**$169**	–	3 (1.4)	3 (1.4)
1/2" (13)	Thrd, Scrwd Bonnet	RT051H	RT051C	VT051H	VT051C	**$155**	**$155**	**$176**	**$176**	–	3 (1.4)	3 (1.4)
	Threaded	RTB051H	RTB051C	VTB050H	VTB050C	**$177**	**$177**	**$198**	**$198**	**$45**	5 (2.3)	5 (2.3)
	Socket Weld	RSB051H	RSB051C	VSB050H	VSB050C	**$181**	**$181**	**$201**	**$201**	**$45**	5 (2.3)	5 (2.3)
	Butt Weld	RWB051H	RWB051C	VWB050H	VWB050C	**$196**	**$196**	**$218**	**$218**	**$45**	5 (2.3)	5 (2.3)
3/4" (20)	Thrd, Scrwd Bonnet	RT076H	RT076C	VT076H	VT076C	**$173**	**$173**	**$194**	**$194**	–	3 (1.4)	3 (1.4)
	Threaded	RTB076H	RTB076C	VTB075H	VTB075C	**$200**	**$200**	**$222**	**$222**	**$45**	5 (2.3)	5 (2.3)
	Socket Weld	RSB076H	RSB076C	VSB075H	VSB075C	**$203**	**$203**	**$225**	**$225**	**$45**	5 (2.3)	5 (2.3)
	Butt Weld	RWB076H	RWB076C	VWB075H	VWB075C	**$213**	**$213**	**$234**	**$234**	**$45**	5 (2.3)	5 (2.3)
1" (25)	Threaded	RTB101H	RTB101C	VTB100H	VTB100C	**$235**	**$235**	**$259**	**$259**	**$45**	6 (2.7)	6 (2.7)
	Socket Weld	RSB101H	RSB101C	VSB100H	VSB100C	**$238**	**$238**	**$262**	**$262**	**$45**	6 (2.7)	6 (2.7)
	Butt Weld	RWB101H	RWB101C	VWB100H	VWB100C	**$255**	**$255**	**$278**	**$278**	**$45**	6 (2.7)	6 (2.7)
1-1/4" (32)	Threaded	RTB126H	RTB126C	VTB125H	VTB125C	**$298**	**$298**	**$322**	**$322**	**$45**	6 (2.7)	6 (2.7)
	Socket Weld	RSB126H	RSB126C	VSB125H	VSB125C	**$298**	**$298**	**$322**	**$322**	**$45**	6 (2.7)	6 (2.7)
	Butt Weld	RWB126H	RWB126C	VWB125H	VWB125C	**$328**	**$328**	**$351**	**$351**	**$45**	6 (2.7)	6 (2.7)
1-1/2" (40)	Socket Weld	RS150H	RS150C	VS150H	VS150C	**$457**	**$457**	**$524**	**$508**	**$49**	20 (9)	15 (6.8)
	Butt Weld	RW150H	RW150C	VW150H	VW150C	**$514**	**$514**	**$581**	**$565**	**$49**	20 (9)	15 (6.8)
2" (50)	Socket Weld	RS200H	RS200C	VS200H	VS200C	**$517**	**$517**	**$591**	**$570**	**$49**	21 (9.5)	16 (7.2)
	Butt Weld	RW201H	RW201C	VW201H	VW201C	**$536**	**$536**	**$610**	**$589**	**$49**	21 (9.5)	16 (7.2)
2-1/2" (65)	Butt Weld	RW251H	RW251C	VW251H	VW251C	**$832**	**$832**	**$963**	**$914**	**$63**	40 (18)	25 (11)
3" (80)	Butt Weld	RW301H	RW301C	VW301H	VW301C	**$1,124**	**$1,124**	**$1,259**	**$1,212**	**$63**	41 (19)	26 (12)
4" (100)	Butt Weld	RW402H	RW402C	VW402H	VW402C	**$1,453**	**$1,453**	**$1,616**	**$1,591**	**$63**	50 (23)	43 (20)

***Note: 1" and 1-1/4" Threaded/Screwed Bonnet Valves were obsoleted in June 2013.**

Toll: 800.426.7368 Tel: 630.325.1565 Fax: 630.325.1572 Email: sales@hantech.com Web: www.hantech.com

SHUT-OFF VALVES: EXTENDED NECK

(For Ammonia, Halocarbons, CO_2)

Bolted bonnet, large bonnet bolts for exceptional strength, non-leak, stainless steel stems, forged steel or low temperature cast steel bodies.

Extended Neck Shut-off Valves are bolted bonnet design with 316 stainless steel stem and 316 stainless steel packing nut. Extended Neck valves meet or exceed the insulation thickness recommended in IIAR Piping Handbook.

To Order: Specify model. For CO2 service, contact factory for pricing. Optional zinc plating available, order example: GSEZ150H. Stainless steel trim standard on extended neck valves. CE Mark for 1¼˝ (32 mm) and larger; **10% List Extra.** 5/8˝ thru 4-1/8˝ ODS angle valves available, **20% List Extra.**

GSE076H EXTENDED NECK SOCKET WELD

ATE075C EXTENDED NECK SOCKET WELD

Size inch (mm)	End Connection	Globe		Angle		List Price				Weight lbs (kg)	
						Standard		Zinc Plated			
		Handwheel	Seal Cap	Handwheel	Seal Cap	Globe	Angle	Globe	Angle	Globe	Angle
1/2" (13)	Threaded	GTE051H	GTE051C	ATE050H	ATE050C	**$237**	**$237**	**$260**	**$260**	5 (2.3)	5 (2.3)
	Socket Weld	GSE051H	GSE051C	ASE050H	ASE050C	**$239**	**$239**	**$262**	**$262**	5 (2.3)	5 (2.3)
	Butt Weld	GWE051H	GWE051C	AWE050H	AWE050C	**$255**	**$255**	**$277**	**$277**	5 (2.3)	5 (2.3)
3/4" (20)	Threaded	GTE076H	GTE076C	ATE075H	ATE075C	**$270**	**$270**	**$293**	**$293**	5 (2.3)	5 (2.3)
	Socket Weld	GSE076H	GSE076C	ASE075H	ASE075C	**$271**	**$271**	**$294**	**$294**	5 (2.3)	5 (2.3)
	Butt Weld	GWE076H	GWE076C	AWE075H	AWE075C	**$290**	**$290**	**$312**	**$312**	5 (2.3)	5 (2.3)
1" (25)	Threaded	GTE101H	GTE101C	ATE100H	ATE100C	**$321**	**$321**	**$345**	**$345**	6 (2.7)	6 (2.7)
	Socket Weld	GSE101H	GSE101C	ASE100H	ASE100C	**$323**	**$323**	**$347**	**$347**	6 (2.7)	6 (2.7)
	Butt Weld	GWE101H	GWE101C	AWE100H	AWE100C	**$340**	**$340**	**$365**	**$365**	6 (2.7)	6 (2.7)
1-1/4" (32)	Threaded	GTE126H	GTE126C	ATE125H	ATE125C	**$403**	**$403**	**$428**	**$428**	6 (2.7)	6 (2.7)
	Socket Weld	GSE126H	GSE126C	ASE125H	ASE125C	**$403**	**$403**	**$428**	**$428**	6 (2.7)	6 (2.7)
	Butt Weld	GWE126H	GWE126C	AWE125H	AWE125C	**$432**	**$432**	**$456**	**$456**	6 (2.7)	6 (2.7)
1-1/2" (40)	Socket Weld	GSE150H	GSE150C	ASE150H	ASE150C	**$535**	**$535**	**$605**	**$588**	20 (9)	15 (6.8)
	Butt Weld	GWE150H	GWE150C	AWE150H	AWE150C	**$493**	**$493**	**$563**	**$546**	20 (9)	15 (6.8)
2" (50)	Socket Weld	GSE200H	GSE200C	ASE200H	ASE200C	**$600**	**$600**	**$677**	**$656**	21 (9.5)	16 (7.2)
	Butt Weld	GWE200H	GWE200C	AWE200H	AWE200C	**$613**	**$613**	**$690**	**$668**	21 (9.5)	16 (7.2)
2-1/2" (65)	Socket Weld	GSE251H	GSE251C	ASE251H	ASE251C	**$791**	**$791**	**$926**	**$876**	40 (18)	25 (11)
	Butt Weld	GWE251H	GWE251C	AWE251H	AWE251C	**$807**	**$807**	**$943**	**$894**	40 (18)	25 (11)
3" (80)	Butt Weld	GWE301H	GWE301C	AWE301H	AWE301C	**$1,101**	**$1,101**	**$1,241**	**$1,190**	41 (19)	26 (12)
4" (100)	Butt Weld	GWE400H	GWE400C	AWE402H	AWE402C	**$1,440**	**$1,440**	**$1,610**	**$1,599**	50 (23)	43 (20)

HAND EXPANSION VALVES: EXTENDED NECK

(For Ammonia, Halocarbons, CO_2)

Bolted bonnet, large bonnet bolts for exceptional strength, non-leak, stainless steel stems, forged steel or low temperature cast steel bodies.

Extended Neck Hand Expansion Valves are bolted bonnet design with 316 stainless steel stem and 316 stainless steel packing nut. Extended Neck valves meet or exceed the insulation thickness recommended in IIAR Piping Handbook.

To Order: Specify model. For CO_2 service, contact factory for pricing. Optional zinc plating available, order example: RSEZ150H. Stainless steel trim standard on extended neck valves. CE Mark for 1¼˝ (32 mm) and larger; **10% List Extra**. 5/8˝ thru 4-1/8˝ ODS angle valves available, **20% List Extra**.

VSE075C
SOCKET WELD

RTE076H
THREADED

Size inch (mm)	End Connection	Globe		Angle		List Price				Weight lbs (kg)	
						Standard		Zinc Plated			
		Bar Handle	Seal Cap	Bar Handle	Seal Cap	Globe	Angle	Globe	Angle	Globe	Angle
1/2" (13)	Threaded	RTE051H	RTE051C	VTE050H	VTE050C	**$257**	**$257**	**$279**	**$279**	5 (2.3)	5 (2.3)
	Socket Weld	RSE051H	RSE051C	VSE050H	VSE050C	**$259**	**$259**	**$281**	**$281**	5 (2.3)	5 (2.3)
	Butt Weld	RWE051H	RWE051C	VWE050H	VWE050C	**$273**	**$273**	**$296**	**$296**	5 (2.3)	5 (2.3)
3/4" (20)	Threaded	RTE076H	RTE076C	VTE075H	VTE075C	**$296**	**$296**	**$318**	**$318**	5 (2.3)	5 (2.3)
	Socket Weld	RSE076H	RSE076C	VSE075H	VSE075C	**$297**	**$297**	**$319**	**$319**	5 (2.3)	5 (2.3)
	Butt Weld	RWE076H	RWE076C	VWE075H	VWE075C	**$315**	**$315**	**$337**	**$337**	5 (2.3)	5 (2.3)
1" (25)	Threaded	RTE101H	RTE101C	VTE100H	VTE100C	**$350**	**$350**	**$374**	**$374**	6 (2.7)	6 (2.7)
	Socket Weld	RSE101H	RSE101C	VSE100H	VSE100C	**$352**	**$352**	**$376**	**$376**	6 (2.7)	6 (2.7)
	Butt Weld	RWE101H	RWE101C	VWE100H	VWE100C	**$369**	**$369**	**$394**	**$394**	6 (2.7)	6 (2.7)
1-1/4" (32)	Threaded	RTE126H	RTE126C	VTE125H	VTE125C	**$435**	**$435**	**$459**	**$459**	6 (2.7)	6 (2.7)
	Socket Weld	RSE126H	RSE126C	VSE125H	VSE125C	**$435**	**$435**	**$459**	**$459**	6 (2.7)	6 (2.7)
	Butt Weld	RWE126H	RWE126C	VWE125H	VWE125C	**$464**	**$464**	**$488**	**$488**	6 (2.7)	6 (2.7)
1-1/2" (40)	Socket Weld	RSE150H	RSE150C	VSE150H	VSE150C	**$599**	**$599**	**$669**	**$652**	20 (9)	15 (6.8)
	Butt Weld	RWE150H	RWE150C	VWE150H	VWE150C	**$659**	**$659**	**$729**	**$712**	20 (9)	15 (6.8)
2" (50)	Socket Weld	RSE200H	RSE200C	VSE200H	VSE200C	**$660**	**$660**	**$736**	**$715**	21 (9.5)	16 (7.2)
	Butt Weld	RWE200H	RWE200C	VWE200H	VWE200C	**$677**	**$677**	**$753**	**$732**	21 (9.5)	16 (7.2)
2-1/2" (65)	Butt Weld	RWE251H	RWE251C	VWE251H	VWE251C	**$1,018**	**$1,018**	**$1,154**	**$1,105**	40 (18)	25 (11)
3" (80)	Butt Weld	RWE301H	RWE301C	VWE301H	VWE301C	**$1,321**	**$1,321**	**$1,461**	**$1,411**	41 (19)	26 (12)
4" (100)	Butt Weld	RWE400H	RWE400C	VWE402H	VWE402C	**$1,723**	**$1,723**	**$1,893**	**$1,867**	50 (23)	43 (20)

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PRESSURE RELIEF VALVES

H5600A

Designed to provide emergency relief from excessive pressure in refrigerant containing vessels. Built in strict conformance with ASME Boiler and Pressure Vessel Code requirements for safety relief devices. Each valve bears the ASME code symbol of certification (UV). Capacities are rated by the National Board of Boiler and Pressure Vessel Inspectors. All pressure relief valves feature an installation date tag.

Reduced Capacity
Reduced capacity pressure relief valves meet discharge line sizing requirements; pressure drop through the Hansen three-way dual manifold valve is less than 3% of the pressure setting. Green date tag indicates reduced capacity valve. Add "R" suffix to model number.

To Order: Specify model number, inlet/outlet connection size and pressure setting. For reduced capacity, dual or dual union options, add appropriate suffix to model number. For CO_2 service, contact factory.
Setting Certificate, $34 List Extra/Valve

Model	Connections		List Price				Weight			
			Single		Dual†		Single		Dual	
	Bottom Inlet	Side Outlet	Standard	Zinc Plated	Standard	Zinc Plated	lbs	(kg)	lbs	(kg)
H5600A	½" FPT	¾" FPT	**$233**	**$254**	**$766**	**$830**	4	(1.8)	12	(5.4)
H5601	½" FPT	1" FPT	**$240**	**$261**	**$780**	**$844**	4	(1.8)	12	(5.4)
H5602	¾" FPT	1" FPT	**$323**	**$342**	**$969**	**$1,028**	4	(1.8)	12	(5.4)
H5613	1" FPT	1¼" FPT	**$505**	**$531**	**$1,525**	**$1,606**	8	(3.6)	27	(12.2)
H5604	1¼" FPT	1½" FPT	**$932**	**$958**	**$2,596**	**$2,677**	8	(3.6)	27	(12.2)
Reduced Capacity Pressure Relief Valves										
H5600R	½" FPT	¾" FPT	**$233**	**$254**	**$766**	**$830**	4	(1.8)	12	(5.4)
H5602R	¾" FPT	1" FPT	**$323**	**$342**	**$969**	**$1,028**	4	(1.8)	12	(5.4)
H5632R	¾" FPT	1" FPT	**$323**	**$342**	**$969**	**$1,028**	4	(1.8)	12	(5.4)
H5633R	1" FPT	1¼" FPT	**$505**	**$531**	**$1,525**	**$1,606**	8	(3.6)	27	(12.2)
H5634R	1¼" FPT	1½" FPT	**$932**	**$958**	**$2,596**	**$2,677**	8	(3.6)	27	(12.2)

†Dual Pressure Relief Valve Kit includes two pressure relief valves, a three-way dual shut-off valve, and two nipples, unassembled. Add "D" suffix to model number.

* Standard pressure settings: 150*,175, 200, 225, 250*, 275, 300*, 325, 350 psig. 400 psig (28 bar g) available for all models except H5601 and H5602. (*Stock pressure settings.) Custom pressure settings in psig, bar, or kPa are available upon request. Minimum pressure setting is 150 psig. For halocarbon systems, rupture disc assemblies are required; see below.

THREE-WAY DUAL SHUT-OFF VALVES

H8021

For parallel installation of pressure relief valves in accordance with ANSI/ASHRAE 15-2007 Safety Code for Mechanical Refrigeration (pressure vessels having 10 cubic feet or more of internal gross volume, shall be fitted with dual pressure relief valves). Considered the only acceptable type of shut-off valve for use with refrigerant relief piping because one valve remains operational, while the other is being replaced; thereby eliminating the need to remove refrigerant from the vessel. UPDATED NOTE: 600 PSIG SWP

To Order: Specify model number and connection size.

Model*	Size	List Price				Weight	
		FPT		SW, BW		lbs	(kg)
		Standard	Zinc	Standard	Zinc		
H8021	½"	**$264**	**$286**	**$317**	**$338**	3	(1.3)
H8022	¾"	**$276**	**$297**	**$331**	**$352**	3	(1.3)
H8024	1"	**$437**	**$466**	**$525**	**$554**	10	(4.5)
H8025	1¼"	**$611**	**$640**	**$734**	**$763**	10	(4.5)

* Standard Inlet and outlet connections are threaded female NPT all the same size. Add "S" suffix (socket weld) or "W" suffix (butt weld) to model number, ie H8021S, H8022W

RUPTURE DISC ASSEMBLY

Three Way Dual Relief Valve with Rupture Disc Assembly and Pressure Gauges

Relief device used in series with a pressure relief valve. Two 1/8˝ FPT side ports are provided for installation of a pressure gauge or switch to indicate a discharge. For halocarbon systems, rupture disc assemblies are required; see below.

To Order: Specify model number, pressure setting (150, 250, 300, 350 or 400* psi), and optional pressure gauge or pressure switch. *400 psi available for RDA1 and RDA2 only.

1/8˝ MPT Pressure Gauge, **HG25: List Price $101.** 1/8˝ MPT Pressure Switch, **HPS: List Price $420.**

Stamped capacity of relief valve when installed with rupture disc device between the inlet of the valve and the vessel shall be multiplied by a factor 0.90 of the rated relieving capacity of the relief valve alone.

Model	Connection Size MPT x MPT	List Price	Weight	
			lbs	(kg)
RDA1	½" MPT x MPT	**$428**	1	(0.5)
RDA2	¾" MPT x MPT	**$552**	2	(0.9)
RDA4A	1" MPT x FPT	**$626**	2	(0.9)
RDA5A	1¼" MPT x FPT	**$721**	3	(1.4)

EZ-SRV™ CARTRIDGE RELIEF VALVES

Designed to provide emergency relief from excessive pressure in refrigerant containing vessels. These valves are built in strict conformance with both ASME Boiler and Pressure Vessel Code requirements and ISO 4126 — Safety Devices for Protection of Excessive Pressure. Each valve bears the ASME code symbol of certification (UV), and features an installation date tag. Valve capacities are rated by the National Board of Boiler and Pressure Vessel Inspectors (NB).

EZ-SRV™ cartridge valves offer the same reduced capacities as Hansen H5600 "R" series relief valves. The revolutionary cartridge design allows for quick, easy replacement with no need to disconnect from the relief piping. The EZ-Fitting is available with welded or threaded end connections. EZ-Fittings have a built-in ¼˝ NPT gauge port connection to facilitate safer and controlled servicing. A ¼˝ MPTxFPT gauge valve such as the H7771 can be installed in gauge port to facilitate servicing. The optional HG27 compact gauge has two pressure needles. The black needle shows current pressure and the red tell-tale needle shows highest pressure seen by gauge.

EZ-SRV™ Cartridge Relief Valve shown with EZ-Fitting

Retrofitting Existing Valves

The Hansen EZ-Adapter component simplifies retrofitting of existing Hansen relief valves. The EZ-Adapter provides the same centerline dimensions as the H5600 series relief valve installed with a 2˝ long nipple, thereby minimizing piping changes to discharge line connections.

EZ-SRV™ Cartridge Relief Valve

OPTIONAL ACCESSORIES

HG27 Gauge, 2˝ Face, Tell-tale needle 0-600 psi. 1/4˝ MPT; **List $145**

H7771 Angle Gauge Valve, 1/4˝ MPTxFPT; **List $67**

EZ-Adapter (MxF), for replacement of existing H5600 Series valves:

1/2˝ EZ-Adapter, Part No. 40-0331, List $58

3/4˝ EZ-Adapter, Part No. 40-0332, List $64

Plated Coupling (FxF), for use with rupture disc:

1/2˝ Plated Coupling, Part No. 40-0333, List $25

3/4˝ Plated Coupling, Part No. 40-0334, List $31

Setting Certificate, $34 List Extra/Valve

EZ-Adapter

H7771 Gauge Valve shown with HG27 Gauge

REFRIGERANT GAS SERVICE ONLY RELIEF VALVES

CATALOG NUMBER (EZ-SRV + EZ-FITTING)		CONNECTION SIZE		EQUIVALENT H5600 SERIES VALVE	LIST PRICE		REPLACEMENT EZ-SRV CARTRIDGE VALVE ONLY	
THREADED	WELDED	BOTTOM INLET	SIDE OUTLET		SINGLE	DUAL†	CATALOG NUMBER	LIST PRICE
EZB-BT1	EZB-BW1	1/2" (13 MM)	3/4" (20 MM)	H5600R	**$ 427**	**$ 1,118**	EZB	**$ 283**
EZB-BT2	EZB-BW2	3/4" (20 MM)	1" (25 MM)	H5602R	**$ 500**	**$ 1,276**	EZB	**$ 283**
EZC-BT2	EZC-BW2	3/4" (20 MM)	1" (25 MM)	H5632R	**$ 549**	**$ 1,374**	EZC	**$ 330**
EZE-BT4	EZE-BW4	1" (25 MM)	1-1/4" (32 MM)	H5633R	**$ 785**	**$ 2,007**	EZE	**$ 524**
EZF-BT5	EZF-BW5	1-1/4" (32 MM)	1-1/2" (40 MM)	H5634R	**$ 1,452**	**$ 3,515**	EZF	**$ 968**

† Currently available as threaded connection only. Includes a three-way dual shut-off valve, two EZ-SRV and two EZ-Fittings.

Standard pressure settings are: 150, 175, 200, 225, 250*, 275, 300*, 325, 350, 400, 450, 500, 550, and 600 psig (41 bar g). Except for EZE & EZF (400 psig/28 bar g max). (*Stock pressure settings.) Custom pressure settings are available; can be set bar or kpa, contact factory. May require extra delivery time.

To Order: Specify catalog number, pressure setting, optional H7771 Gauge Valve and HG27 Pressure Gauge, EZ-Adapter if needed, and accessories. For halocarbon applications, a rupture disc assembly is required, see page 20.

To Order Dual Kits: Add "D" suffix for Dual Kit to EZ-SRV™ pressure-relief valve catalog number. Specify inlet/outlet connection size and pressure setting.

Example: Dual Kit: EZB-BT1D, set at 250 psig.

REFRIGERANT LIQUID RELIEF VALVES

Hansen offers the EZLQ liquid relief valve, rated U.S. GPM. Typical applications include ASME vessels, oil coolers and other components that can be isolated by control valves or manual shut-off valves.

CATALOG NUMBER (EZ-SRV + EZ-FITTING)		CONNECTION SIZE		LIST PRICE	CAPACITY** GPM - WATER	REPLACEMENT EZ-SRV CARTRIDGE VALVE ONLY	
THREADED	WELDED	BOTTOM INLET	SIDE OUTLET			CATALOG NUMBER	LIST PRICE
EZLQ-BT1	EZLQ-BW1	1/2" (13 MM)	3/4" (20 MM)	**$ 416**	13 GPM@50 PSID 16 GPM@75 PSID 18 GPM@100 PSID	EZLQ	**$ 272**
EZLQ-BT2	EZLQ-BW2	3/4" (20 MM)	1" (25 MM)	**$ 491**			

To Order: Specify catalog number and pressure setting: 50, 75, or 100 psid (3.5, 5.0, or 7.0 bar g).

Toll: 800.426.7368 Tel: 630.325.1565 Fax: 630.325.1572 Email: sales@hantech.com Web: www.hantech.com

GAUGE, PURGE & TRANSDUCER VALVES

Threaded

These specially designed refrigerant gauge, purge and transducer valves feature tough, forged steel bodies, compact size, and polished stainless steel stems. The patented o-ring plus packing dual seal design and polished stainless steel stem virtually eliminates stem seal leakage. Safety stems are designed to be non-removable from the body to avoid dangerous stem "blow out".

Gauge valves are available with seal caps, bar handles or bare stems. Often used to isolate pressure gauges on regulators and safety relief valves. These valves may also be used for pumpout and purging of refrigerant liquid or gas. The transducer valve makes it easy to calibrate or replace the device without pumping down the system.

To Order: Specify catalog number. If ordering 100 or more of any one model, **Deduct Extra 10%.** Weight 0.6 lb (0.3 kg).

H957H

H7771

HGV1

H9490

Description	Seal Cap		Bar Handle		Bare Stem	
	Model	List Price	Model	List Price	Model	List Price
¼" MPT x FPT, Angle, Long Neck®†	**HGV1***	**$80**	**HGV1H**	**$82**	**HGV2**	**$76**
¼" MPT x FPT, Angle	**H7771***	**$67**	**H7771H**	**$76**	**H965**	**$64**
¼" FPT x FPT, Angle	**H7772**	**$71**	**H7772H**	**$77**	**H967**	**$66**
¼" FPT x FPT, Globe	**H957C**	**$81**	**H957H**	**$83**	**H957**	**$77**
⅜" MPT x FPT, Angle	**H7773**	**$98**	**H7773H**	**$101**		
⅜" FPT x FPT, Angle	**H7774**	**$99**	**H7774H**	**$101**		
⅜" FPT x FPT, Globe	**H958C**	**$97**	**H958H**	**$103**		
½" MPT x 3/8" FPT, Angle	**H7777**	**$103**				
½" MPT x ¼" FPT, Angle	**H7778**	**$103**				
¼" MPT x FPT x FPT, Transducer Valve	**H9490**	**$127**				

† Long Neck® valves provide additional length for insulation and pressure gauge turning clearance.
* HGV1 and H7771, available as welded versions, HGV1W and H7771W. Delivered with painted body and butt weld inlet connection; same list price as standard version.

REFRIGERANT FLOAT SWITCHES

Steel tank assembly with combination ¾″ FPT/1″ butt weld connections. Standard 2″ (50 mm) differential prevents most short cycling due to momentary changes in liquid level; other differentials down to ½″ (13 mm) are available from stock. Optional switch housing heater is available for preventing moisture penetration in humid environments. CSA certification on HLL and HLLS for Canada. Switch assembly is NEMA4X.

To Order: Specify model number. Standard connection ½″ fitting with three 18″ (450 mm) wire leads. Add "E" suffix for switch with 4 wire, grounded DIN plug connector, Example: HLLE. For CO_2 service, consult factory.

HLL

HLLE

Model	Description	List Price	Weight lbs (kg)
HLL	Side & Bottom Connections	**$929**	12 (5.4)
HLLS	2 Side & 1 Bottom Connections	**$1,049**	13 (5.9)
HLLC	Side & Bottom Connections with Metal Cover	**$1,050**	13 (5.9)
HLLSC	2 Side & 1 Bottom Connections with Metal Cover	**$1,170**	14 (6.4)
E	DIN Plug on Any of Above, Add E Suffix. List Extra.	**$53**	1 (0.5)
HLLSW	Switch Assembly Replacement Only, Hermetic	**$458**	2 (0.9)
HLLSWE	Switch Assembly Replacement for DIN Plug "E"	**$510**	2 (0.9)
COV	Metal Cover Only for All HLL	**$121**	1 (0.5)
HTR1*	10 Watt 115V Heater for All HLL	**$238**	1 (0.5)
HTR2*	10 Watt 230V Heater for All HLL	**$238**	1 (0.5)

* To order float switch with heater, add HTR1 or HTR2, example: HLL/HTR1, 115v.

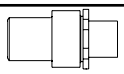
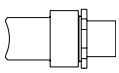
UL Recognized Component

SEE-LEVEL™ LIQUID INDICATORS

H1100-R

Liquid indicators for simple indication of true liquid levels in industrial and commercial refrigeration systems. Pre-stressed glass lens fused in steel retainer ring. Optional frost shield for clear viewing in frost conditions. Suitable for Ammonia, R-22, R-134a, CO_2 and other approved refrigerants. Housings meet requirements of ASME and PED for direct welding to vessels, receivers, level columns or liquid lines. Each unit marked for material traceability by lot code; certifications available on request. Large diameter Fused Metal reflex lens for easy viewing; clear lens also available. Frost shield length is suitable for temperatures down to -60ºF (-51°C). Standard housing can be welded (fillet weld) into a 1.94″/2″ diameter opening or 1½″ socket weld fitting, or butt welded to a 1½″ pipe (Schedule 80). The scarfed (saddle milled) housing is available for simplified welding over a 1.5″ (38 mm) hole, onto 2½″, 3″, or 4″ pipe, such as for level columns or liquid lines. Zinc plating standard.

To Order: Specify model number, and whether material certificate is required. 600 psi (41 bar g) standard rating.

Model Reflex Lens	Model Clear Lens	Description		List Price	Weight lbs (kg)
H1100-R	H1100		Standard SEE-LEVEL™	**$200**	2 (0.9)
H1100-RN	H1100-N		With Frost Shield	**$239**	2 (0.9)
H1100C-R	H1100C		With Saddle Milled Housing	**$219**	2 (0.9)
H1100C-RN	H1100C-N		With Saddle Milled Housing & Frost Shield	**$258**	2 (0.9)

Toll: 800.426.7368 Tel: 630.325.1565 Fax: 630.325.1572 Email: sales@hantech.com Web: www.hantech.com

VARI-LEVEL ADJUSTABLE LEVEL CONTROLS FOR REFRIGERANTS

The Vari-Level® consists of a level probe for a 3″ or 4″ pipe level column, a control unit for ON-OFF of up to five relay operated level control points: typically, a high alarm/cutout, operating level, and low alarm/cutout (3 points). For Ammonia, R-22, R-134a and other compatible refrigerants. CSA/US Certified and CE Mark standard.

LB3

Control Unit

Bright digital LED displays percent level in vessel. Each level control point is adjustable for height and operating differential with a built-in level simulator. Standard electrical input is 115V, 50/60Hz; 230V, 50/60Hz available. Options: 4-20 mA output module, MOD420, available for computer interface or remote digital readout. Mounts inside control unit.

Probes

Probe connection ¾″ MPT. Probes available in standard lengths. Custom lengths made to order. Probe length cannot be shortened in field. 50 feet (15 m) of cable included. Longer cable lengths available, **List Extra $49** per each additional 50 feet (15 m). For low temperature applications below -60ºF (-51°C), a 5″ (125 mm) extended stainless steel neck is available: **List Extra $397.**

Level Columns

Level Columns are 3″ Schedule 40 pipe. Columns include one level sight glass for re-calibration plus high level float switch connections. Top probe connection on column is a ¾″ FPT; connections to vessel are combination 1″ FPT / 1¼″ butt weld. Top or bottom ¾″ FPT level column cap for field level column fabrication using 3″ standard pipe: **Part No. 77-0129, List $70.**

To Order: Specify model number, refrigerant, active probe length, and voltage. Custom level probe and level column lengths available in 1" increments; nonreturnable. **Add $227 List Extra** to next longer length probe or column.

Note: Use Technical Equipment Discount Schedule.

Control Unit Less Probe				Weight
Model	**# of Relays**	**Control Points (Typical)**	**List Price**	**lbs (kg)**
LB1	1	Operating Level	**$1,287**	10 (5)
LB2	2	Operating and Low Level	**$1,419**	10 (5)
LB3	3	Operating, Low and High Level	**$1,545**	10 (5)
LB5	5	Operating (2), Low Level (2), and High Level	**$1,956**	10 (5)
Options				
MOD420	4–20 mA Output Module		**$498**	.5 (.2)
PSU	Optional 115VAC/230VAC:24VDC power supply unit		**$369**	.5 (.2)

Level Probe

VLT with Digital Readout

Probe								Level Column			
Model	**Active Probe Length* inch (mm)**		**Nominal Insertion Length inch (mm)**		**List Price**	**Weight† lbs (kg)**		**Model**	**List Price**	**Weight† lbs (kg)**	
LP-02	20"	(510)	25"	(635)	**$692**	11	(5)	**LC-02**	**$674**	38	(17)
LP-03	30"	(760)	35"	(890)	**$763**	12	(5.5)	**LC-03**	**$697**	50	(23)
LP-04	40"	(1015)	45"	(1140)	**$886**	13	(6)	**LC-04**	**$737**	61	(28)
LP-06	60"	(1525)	65"	(1650)	**$984**	16	(7.3)	**LC-06**	**$983**	80	(36)
LP-08	80"	(2030)	85"	(2160)	**$1,172**	18	(8.2)	**LC-08**	**$1,093**	97	(44)
LP-10	100"	(2540)	105"	(2670)	**$1,327**	22	(10)	**LC-10**	**$1,227**	115	(52)
LP-12	120"	(3050)	125"	(3175)	**$1,524**	26	(11.8)	**LC-12**	**$1,439**	145	(66)
LP-14	144"	(3660)	149"	(3785)	**$2,430**	30	(13.6)	–	**–**	–	–
LP-16	168"	(4270)	173"	(4395)	**$2,996**	35	(16)	–	**–**	–	–

†Weight includes probes and level columns packed in crates. (Shipping Weight).

TECHNI-LEVEL™ TRANSDUCER PROBES

Level transducer probes with 4-20 mA isolated output for refrigerant level control in computer operated plants. Electronics are located on top of probe. 50 feet (15 m) of two wire cable is included. Level column connection on probe is ¾″ MPT. For Ammonia, R-22, R-134a and other approved refrigerants. CSA/US Certified.

Options

Built-in LCD digital readout. Add suffix "DR" to model, **List $493**.

Optional remote digital readout (RDR), **List $655**.

Optional 115 VAC/230 VAC:24 VDC power supply unit (PSU), **List $369**.

To Order: Specify model number, refrigerant, active probe length, and application. For CO_2 service, contact factory (40″ to 120″ only). Level Columns may be ordered for use with this product (for probe lengths up to 120″ only), see Vari-Level® above. For low temperature applications below -60ºF (-51°C), a 5″ (125 mm) extended stainless steel neck is available, **List Extra $397.** Explosion proof available **Add List $1425**

Note: Use Technical Equipment Discount Schedule.

Level Transducer Probe							
Model	**Active Probe Length* inch (mm)**		**Nominal Insertion Length inch (mm)**		**List Price**	**Weight† lbs (kg)**	
VLT-02	20"	(510)	25"	(635)	**$1,415**	11	(5)
VLT-03	30"	(760)	35"	(890)	**$1,523**	12	(5.5)
VLT-04	40"	(1015)	45"	(1140)	**$1,635**	13	(6)
VLT-06	60"	(1525)	65"	(1650)	**$1,746**	16	(7.3)
VLT-08	80"	(2030)	85"	(2160)	**$1,902**	18	(8.2)
VLT-10	100"	(2540)	105"	(2670)	**$2,117**	22	(10)
VLT-12	120"	(3050)	125"	(3175)	**$2,354**	26	(11.8)
VLT-14	144"	(3660)	149"	(3785)	**$3,332**	30	(13.6)
VLT-16	168"	(4270)	173"	(4395)	**$3,916**	35	(16)

*Custom Level Probe and Level Column lengths are available; nonreturnable. **Add $220 List Extra** to next longer Length probe.

†Weight includes probes and level columns packed in crates. (Shipping Weight).

RECEIVER LEVEL TRANSDUCER PROBES

(For Halocarbon Systems, especially Supermarkets)

Designed to be inserted directly into refrigerant receivers and facilitate the continuous measurement of refrigerant liquid levels. The following results can be tracked: refrigerant loss detection, refrigerant inventory measurements, warnings of excessive refrigerant levels, and insufficient refrigerant quantity.

Factory pre-calibrated and tested with no moving parts to break, jam, or fail.

Horizontal Receiver Probes (SHP) can also be used in short [less than 30˝ (762 mm) insertion] vertical receivers.

For vertical receivers 12˝ to 20˝ (305 to 508 mm) diameter (other diameters need special engineering). Maximum insertion length is 69˝ (1752 mm).

Output signal 0-5V, 0-10V, or 1-6V.

Optional, 3-wire 4-20 mA output available, Model SHA or SVA, **List Extra $227**.

To Order: Specify model number; insertion length; refrigerant; and receiver diameter. Standard connection (¾˝ NPT) or Rotalock connection (1¼˝–12˝) available. Custom probe lengths available; nonreturnable.

Add $227 List Extra to next longer length. For applications where refrigerant liquid temperature is below 32ºF (0ºC), use Techni-Level™ or Vari-Level level probes. Heavy-Duty construction is available for liquid temperatures below 50ºF to 32ºF, Model SSHP or SSVP, **List Extra $261**

Note: Use Technical Equipment Discount Schedule.

SHP SVP SHPR

For Horizontal Receivers, Standard Connection			
Model	**Insertion Length inch (mm)**		**List Price**
SHP06	6"	(152)	**$823**
SHP08	8"	(203)	**$842**
SHP10	10"	(254)	**$861**
SHP12	12"	(305)	**$882**
SHP14	14"	(356)	**$926**
SHP16	15.3"	(388)	**$946**
SHP20	19.2"	(487)	**$964**
SHP24	23.1"	(586)	**$1,016**
SHPxx	Custom Length		**FACTORY**

For Vertical Receivers, Standard Connection			
Model	**Insertion Length inch (mm)**		**List Price**
SVP30	30"	(762)	**$875**
SVP36	36"	(914)	**$904**
SVP48	48"	(1219)	**$960**
SVP54	54"	(1372)	**$989**
SVP60	60"	(1524)	**$1,017**
SVP69	69"	(1753)	**$1,048**
SVPxx	Custom Length		**FACTORY**

For Horizontal Receivers, Rotalock Connection			
Model	**Insertion Length inch (mm)**		**List Price**
SHPR06	6"	(152)	**$847**
SHPR08	8"	(203)	**$866**
SHPR12	12"	(305)	**$906**
SHPR14	14"	(356)	**$950**
SHPR16	15.3"	(388)	**$970**
SHPR20	19.2"	(487)	**$987**
SHPR24	23.1"	(586)	**$1,040**
SHPR30	30"	(762)	**$1,336**
SHPRxx	Custom Length		**FACTORY**

For Vertical Receivers, Rotalock Connection			
Model	**Insertion Length inch (mm)**		**List Price**
SVPR36	36"	(914)	**$927**
SVPR48	48"	(1219)	**$984**
SVPR54	54"	(1372)	**$1,013**
SVPR60	60"	(1524)	**$1,041**
SVPR69	69"	(1753)	**$1,072**
SVPRxx	Custom Length		**FACTORY**

SINGLE POINT LEVEL CONTROLS

Designed to detect the presence of liquid refrigerant at a specific location in receivers/vessels, intercoolers, control pressure receivers, packaged chillers, compressor packages, pump packages, surge drums, and flooded evaporators.

May be used in place of float switches, for high and low level alarms in conjunction with plant computers, PLCs, or shut-off solenoid valves.

The relay output from the SPS level switch is suitable for direct connection to solenoids, alarms, and computers. No moving parts; plug-in electronics. Unaffected by normal splash or oil coating. Watertight NEMA 3R sensor housing. Sensor connection ½˝ MPT.

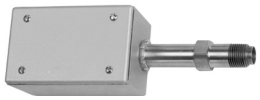
To Order: Specify model number and refrigerant. Standard connection is ½˝ MPT.

Adapter for use with Hansen See-Level™ and Phillips Level Eye®: **Part No. 77-1009, List $113**

Adapter for use with Henry Type LI liquid indicators: **Part No. 77-1010, List $113**

Note: Use Technical Equipment Discount Schedule.

SPL



SPS

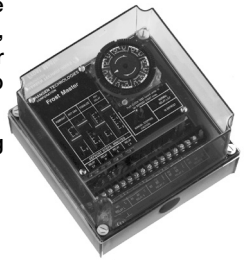
Model		Description	List Price
Ammonia	**Halocarbon**		
SPLN	**SPLF**	Sensor 24V, 80mA	**$500**
SPSN(1)	**SPSF(1)**	Switch 115V, 10A	**$565**
SPSN(2)	**SPSF(2)**	Switch 230V, 5A	

FROST MASTER® DEFROST CONTROLLERS

Frost Master® defrost controllers (timers) operate various control valves and fan relays to efficiently remove frost and ice accumulation from evaporator surfaces. There are four easy-to-set defrost steps: PUMPOUT, HOT GAS, EQUALIZE, and FAN DELAY. Defrost time and step duration are always visible. ¼˝ (6.4 mm) spade terminals for optional sensor defrost initiation and termination are provided. Available with 24-Hour or 7-Day Scheduling. SPDT relays, 10 amp switch rating with battery backup and NEMA 4 enclosure (watertight). CSA/NRTL Certified. Weight 4 lbs (1.8 kg).

To Order: Specify model number. The Frost Master® may be ordered less enclosure and with necessary metal mounting plate for panel installation, add "L" suffix to model number. CE Mark not available.

Note: Use Technical Equipment Discount Schedule.



Frost Master® FM-71

FROST MASTER® *PLUS*

The Frost Master® Plus includes an additional fifth defrost step, SOFT GAS, for individually timed opening of small soft (hot) gas solenoid valve prior to primary, hot gas solenoid valve for evaporator defrosting. Features built-in, adjustable temperature terminate with clamp-on defrosted sensor.

To Order: Specify model number. CE mark not available.

Note: Use Technical Equipment Discount Schedule

Model	Description	List Price	Weight lbs	(kg)
FM-11-B	Frost Master® with Enclosure; 24 Hour Clock; 115V 50/60Hz	**$1035**	**4**	**(1.18)**
FM-71-B	Frost Master® with Enclosure; 7 Day Clock; 115V 50/60Hz			
FM-01	Frost Master® with Enclosure; Remote Initiate; 115V 50/60Hz			
FM-12-B	Frost Master® with Enclosure; 24 Hour Clock; 230V 50/60Hz			
FM-72-B	Frost Master® with Enclosure; 7 Day Clock; 230V 50/60Hz			
FM-02	Frost Master® with Enclosure; Remote Initiate; 230V 50/60Hz			
FMP-11-B	Frost Master® Plus with Enclosure; 24 Hour Clock; 115V 50/60Hz	**$1306**	**4**	**(1.18)**
FMP-71-B	Frost Master® Plus with Enclosure; 7 Day; 115V 50/60Hz			
FMP-01	Frost Master® Plus with Enclosure; Remote Initiate; 115V 50/60Hz			

Remote Initiate Model FM-01

Note: In 2011, Grasslin timeclocks ("B" suffix) became standard; previously, Diehl timeclocks ("A" suffix) were used.

TS2 Temperature Sensor, **List $ 84**

OIL TEMPERATURE VALVES

Three-way valve used to control the oil temperature of screw compressors or other oil-cooling circuits. Suitable for oils operating with ammonia, halocarbons, and other compatible refrigeration systems.

To Order: Specify model number, size, connection style, and temperature setting. For other temperatures, consult factory. CE mark not available for HOTW.

Note: Use Technical Equipment Discount Schedule.

HOTV

Temperature Settings

Range A: 130°F (54°C)
Range B: Standard 120°F (49°C)
Range D: 140°F (60°C)
Range E: 115°F (46°C)
Range F: 150°F (66°C)
Range G: 170°F (77°C)
Range H: 110°F (43°C)

HOTW

Model	Size	Range							List Price	Weight	
		A	B	D	E	F	G	H		lbs	(kg)
HOTV	1" SW		✓	✓			✓	✓	**$755**	11	(5)
	1½" SW	✓	✓	✓	✓	✓	✓	✓	**$1,435**	18	(8)
	2" SW, BW	✓	✓	✓	✓	✓	✓	✓	**$1,590**	16	(7)
	2½" SW, BW	✓	✓	✓			✓		**$2,768**	48	(22)
	3" BW	✓	✓	✓			✓		**$3,607**	48	(22)
HOTW	1½" SW	✓	✓	✓	✓	✓	✓	✓	**$1,435**	18	(8)
	2" SW	✓	✓	✓	✓	✓	✓	✓	**$1,590**	16	(7)

PXV/PXVW PULSE WIDTH EXPANSION VALVE

Pulse width modulating liquid refrigerant expansion valve, with a specially designed high cycle, long life solenoid operator. Controller uses a 4-20mA input signal to monitor the liquid flow to the system. The PXVW60 body has an integral 100 mesh (150 micron) strainer screen and direct weld assembly. PXV5 and PXV15 are flange-to-flange drop-in for Sporlan type D thermostatic expansion valve.

To Order: Specify model, connection style and size, coil connection style and voltage. Unless specified, standard coil with 1/2" fitting will be supplied. Contact factory for other refrigerants and capacities.

Flanges available: **1/2" NPT Flange, Part No. 30-0164, List $32**; **1/2" SW Flange, Part No. 20-1520, List $28**.

Note: Use Technical Equipment Discount Schedule.

Model	Connections Styles and Sizes Available	Capacity Tons of Ammonia	List Price
PXV5	Less Flanges	5 (18 kW)	**$590**
PXV15	Less Flanges	15 (53 kW)	**$590**
PXVW60	1/2", 3/4" SW 1/2", 3/4", 1" BW 5/8", 7/8", 1-1/8" ODS	15 to 60 (53 to 212 kW) Adjustable	**$708**
	CONTROLLERS		
PXVC-PT	Superheat/Supercooling Controller (includes TS2 temp sensor; requires PT2 pressure transducer, not included)		**$397**
PXVC-DX	DX Controller for PXV, PXVW (HPT not included, see below)		**$313**
PXVC-T	Temperature Controller for PXV, PXVW (includes TS1 temp sensor)		**$341**
PXVC-L	Level Controller for PXV, PXVW (level sensor not included)		**$313**
PXVC-P	Pressure Controller for PXV, PXVW (transducer not included, see PT3 below)		**$313**
PXVC-CI	Control Interface Module for PXV, PXVW (4-20mA input, pulse-width output)		**$313**
	SENSORS		
HPT717	Pressure/Temperature Transducer, NH3, 3/4" NPT		**$1,085**
HPT507	Pressure/Temperature Transducer, R-507, 3/4" NPT		**$1,146**
HPT134	Pressure/Temperature Transducer, R-134a, 3/4" NPT		**$1,146**
PT2	Pressure Transducer, 15" - 85 psig, 4-20mA, 1/4" MPT		**$385**
PT3	Pressure Transducer, 15" - 285 psig, 4-20mA (for PXVC-P)		**$688**
IMW	Immersion Well for above, SS, 4" insert, 1/2" MPT		**$30**
	ACCESSORIES		
WTE3	Water tight Enclosure (NEMA4), for above controllers		**$155**
PSU2	Compact Power Supply (100-240VAC: 24VDC) for above enclosure		**$212**
RDR	Optional remote digital readout		**$655**
TR40*	AC Transformer 115/230 VAC:24VAC (40 VA), powers PXVC only **(70-0718)**		**$243**
TR92	AC Transformer 115/230VAC:24VAC (92 VA), powers PXVC +24V coil **(35-0037)**		**$189**

PXV

PXVW60

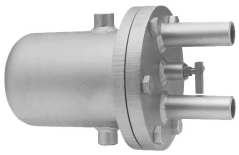
PXVC

* Use Valves & Controls Discount Schedule.

HIGH SIDE FLOATS (FLOAT DRAIN REGULATORS)

Ideal for metering high-pressure refrigerant liquid to a lower-pressure vessel without allowing refrigerant gas to pass. Self-contained, requires no pilot valve-to-main valve piping. For individual condenser drain to a single evaporator or to a controlled pressure receiver, condensate removal from heat recovery coil, liquid drain from hot gas defrost main, or defrosting evaporator liquid draining. Each valve is supplied with combination 1″ weld / ¾″ FPT. Vent/purge and oil drain connections for optional use (½″ FPT for HT100 size).

To Order: Specify model number, refrigerant, inlet temperature and pressure, outlet temperature and pressure, and flow rate in tons or lbs/minute (kW or kg/s). For other operating conditions and refrigerants, contact factory.



HT200N

Note: Use Technical Equipment Discount Schedule.

Ammonia			R22			Connections	List Price	Weight lbs (kg)	
Model	+86°F to +10°F (+30°C to –15°C)	+86°F to +50°F (+30°C to +10°C)	Model	+86°F to +10°F (+30°C to –15°C)	+86°F to +50°F (+30°C to +10°C)				
HT100N	20 Tons (70 kW)	28 Tons (98 kW)	**HT100F**	5.5 Tons (19 kW)	8 Tons (28 kW)	¾" FPT (20mm)/ 1" Weld (25mm)	**$2,107**	34	(15)
HT200N	125 Tons (439 kW)	130 Tons (457 kW)	**HT200F**	33 Tons (116 kW)	33 Tons (116 kW)	1½" Weld (40mm)	**$2,620**	71	(32)
HT300N	360 Tons (1266 kW)	400 Tons (1407 kW)	**HT300F**	100 Tons (351 kW)	100 Tons (351 kW)	2" Weld (50mm)	**$3,572**	121	(55)

DEFROST CONDENSATE LIQUID DRAINER

Designed for liquid condensate drain of an evaporator during hot gas defrost. Adjustable vent valve bypass.

To Order: Specify model number, refrigerant, inlet temperature and pressure, outlet temperature and pressure, and flow rate in tons or lbs/minute (kW or kg/s).

Note: Limited 100 psid MOPD on HD101. Use Technical Equipment Discount Schedule.

Ammonia		R22		Connections	List Price	Weight lbs (kg)	
Model	Capacity	Model	Capacity				
HD101N	42 Tons (147 kW)	**HD101F**	11 Tons (39 kW)	3/4" FPT (20mm)/ 1" Weld (25mm)	**$2349**	40	(18)

HD101

Toll: 800.426.7368 Tel: 630.325.1565 Fax: 630.325.1572 Email: sales@hantech.com Web: www.hantech.com

AUTO-PURGER® NONCONDENSIBLE GAS PURGER

(For Ammonia Only)

AUTO-PURGER® AP

Reduce condensing pressure and lower power costs by removing noncondensible gases such as air in a refrigeration system. The AUTO-PURGER® AP08 allows up to eight locations to be individually purged, AP16 allows up to 16 points, AP24 allows up to 24 points. One AUTO-PURGER® is typically sufficient for a 1500 ton (5275 kW) system [or a 750 ton (2638 kW) system operating below 0 psig (0 bar g)]; same capacity for all refrigerants. Isolation shut-off valve kits with strainers included. Automatic water bubbler flush system eliminates water bottle attention. Water conditioning cartridge is available for hard water supply. Standard electrical supply is 115V/60Hz; 230V/60Hz, 220V/50Hz and 110V/50Hz are available. Canadian CSA certification.

To Order: Specify model number, refrigerant, and voltage. Note: Use Technical Equipment Discount Schedule.

NEW!!! Welded Construction is standard ("W" Suffix)

Model	Description	List Price	Weight lbs (kg)
AP08W	AUTO-PURGER® Deluxe, 8 Points.	**$19,463**	350 (158)
AP16W	AUTO-PURGER® Deluxe, 16 Points.	**$22,221**	360 (162)
AP24W	AUTO-PURGER® Deluxe, 24 Points.	**$25,269**	370 (167)
APCW	AUTO-PURGER® for Computerized Plants.	**$16,544**	340 (153)
AP01W	AUTO-PURGER® Basic, 1 Point (See WBA and INS Options Below).	**$14,049**	330 (149)
APF	For Halocarbons, See APMF and NEAPF, Specify Refrigerant.	**N/A**	—
NEMA 4	Watertight Construction Option. List Extra to Any Above AUTO-PURGER®.	**$3,026**	—
HS8A-ST*	½" Port Purge Point Solenoid Valve with Strainer. 115V 50/60 Hz, ½" FPT or SW Each.	**$512**	6 (2.7)
	Options		
WCH	Water Conditioning Housing for WCC Below, 3/4" FPT. (Doesn't include WCC)	**$323**	—
WCC	Water Conditioning Cartridge, Replacement.	**$223**	—
WBA	Water Bubbler Flush System Option for AP01W. (Standard on AP08W, AP16W, AP24W, and APCW.)	**$1,622**	—
INS	Insulation Option for AP01W. (Standard AP08W, AP16W, AP24W, APCW.)	**$1,128**	—
H5600R*	Relief Valve, 1/2" x 3/4" 300 psig.	**$233**	—
DPS	Differential Pressurestat System to Detect Loss of Foul Gas Pressure.	**$1,021**	—
	Supplemental Kits		
APLK	Purging Log Kit	**$366**	—
APPLT	Beacon Pilot Light Kit for AP (4-Green and 2-Amber)	**$291**	—

* Use Valves & Controls Discount Schedule for HS8A-ST, and H5600R.

NON-ELECTRIC MINI AUTO-PURGER® NEAP

(For Ammonia & Halocarbons)

MINI AUTO-PURGER NEAP

The Non-Electric Mini AUTO-PURGER® (NEAP) is a simplified version of our well known purgers for packaged units or small plants featuring easy start-up and automatic operation. Suitable for Class I, Division II (Explosion Proof) applications with welded piping construction. One NEAP Purger suitable for smaller ammonia and halocarbon systems to 100 tons (350 kW).

Isolation Valve Package VPM
Optional isolation valve package (VPM) consists of three flanged welded assemblies which include the necessary shut-off valves and gauge valves for the "Foul Gas" line, Suction line and Liquid line. VPMF for halocarbons also includes filter dryers and moisture indicating sight glasses.

To Order: Specify model number, voltage, and refrigerant. Note: Use Technical Equipment Discount Schedule.

Model	Description	List Price	Weight lbs (kg)
NEAP	Mini AUTO-PURGER®, Ammonia	**$7,179**	145 (66)
VPM	Valve Package, Ammonia	**$1,036**	15 (7)
NEAPF	AUTO-PURGER®, Halocarbons	**$7,629**	145 (66)
VPMF	Valve Package, Halocarbons	**$1,684**	15 (7)

AUTO-PURGER® APM

(For Ammonia & Halocarbons)

AUTO-PURGER® APM

The AUTO-PURGER® M (APM) can purge up to a maximum of four points which makes it ideal for smaller refrigeration plants. Typically, this purger will handle up to a 200 ton (700 kW) ammonia or halocarbon system. It features welded piping construction and comes pre-assembled, pre-wired, tested, insulated, and includes an automatic water bubbler flush system. Standard voltage is 115V 50/60Hz; 230V 50/60Hz is available. CSA and CE mark available.

Isolation Valve Package VPM
Optional isolation valve package (VPM) consists of three flanged welded assemblies which include the necessary shut-off valves and gauge valves for the "Foul Gas" line, Suction line and Liquid line. VPMF for halocarbons also includes filter dryers and moisture indicating sight glasses.

To Order: Specify model number, voltage, and refrigerant.

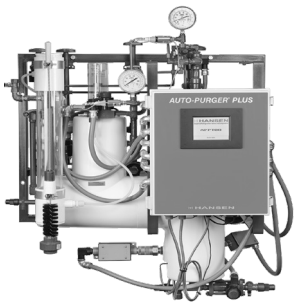
Note: Use Technical Equipment Discount Schedule.

Model	Description	List Price	Weight lbs (kg)
APM	AUTO-PURGER® APM, 4 Points, Ammonia	**$10,779**	200 (91)
VPM	Valve Package, Ammonia	**$1,036**	15 (7)
APMF	AUTO-PURGER® APMF, 4 Points, Halocarbons	**$11,395**	200 (91)
VPMF	Valve Package, Halocarbons	**$1,684**	15 (7)
H5600R*	Relief Valve, 1/2" x 3/4" 300 psig.	**$233**	4 (1.8)
RDA1*	Rupture disc, 1/2" 300 psig. Required for halocarbons system.	**$428**	1 (0.5)
APMPLT	Beacon Pilot Light Kit for APM (2-Green and 2-Amber)	**$193**	—
NEMA 4	Watertight Construction Option. List Extra to Any Above AUTO-PURGER®.	**$479**	—
HS8A-ST*	½" Port Purge Point Solenoid Valve with Strainer. 115V 50/60 Hz, ½" FPT or SW Each.	**$512**	6 (2.7)

* Use Valves & Controls Discount Schedule for HS8A-ST, H5600R and RDA1.

AUTO-PURGER® PLUS GAS (AIR) & WATER PURGER

(For Ammonia Only)



AUTO-PURGER® PLUS

AUTO-PURGER® PLUS is a totally automatic, electronically controlled non-condensible gas (air) and water purger for reducing the energy costs of operating an ammonia refrigeration system. Shipped preassembled, prewired, insulated, and includes an automatic water bubbler, a relief valve, and an isolation service valve package. One AUTO-PURGER® is typically sufficient for a 1500 ton (5275 kW) system [or a 750 ton (2638 kW) system operating below 0 psig (0 bar g). All models are suitable for ammonia only. Standard electrical supply is single phase, 20A, 115V, 50/60 Hz; 10A, 230V, 50/60 Hz is available. Canadian CSA certification.

AUTO-PURGER® PLUS Technology Package, (now Standard), includes 6˝(150mm) color touch screen display, with ethernet connection, alarm history log, with multi-lingual operating instructions. Features built-in troubleshooting guide.

To Order: Specify model number and voltage.

NEW!!! Technology Package is now "T" suffix Standard

Model	Description	List Price	Weight lbs (kg)
APPT08	AUTO-PURGER® Plus with Technology Package, 8 Points.	**$32,363**	410 (186)
APPT16	AUTO-PURGER® Plus with Technology Package, 16 Points.	**$35,747**	410 (186)
APPT24	AUTO-PURGER® Plus with Technology Package, 24 Points.	**$39,413**	410 (186)
APPTC	AUTO-PURGER® Plus with Technology Package for Computerized Plants.	**$29,680**	410 (186)
HS8A-ST*	½" Port Purge Point Solenoid Valve with Strainer. 115V 50/60 Hz, ½" FPT or SW Each.	**$512**	6 (2.7)

EXCESS AIR MONITOR: AIR-NH3

(For Ammonia Only)

PRESSURE TRANSDUCER

TEMPERATURE SENSOR

AIR-NH3

Hansen Technologies introduces a stand-alone,integrated excess air (non-condensable gas) monitor for ammonia refrigeration systems:Model AIR-NH3. This monitor consists of a water-tight controller, a pressure transducer and temperature sensor. When properly installed, it will continuosly measure refrigerant pressure and temperature at the outlet of a condenser to determine if there is any excess air. It will display this "air" reading in PSIG or BAR on the backlit LCD readout on the controller. An auxiliary alarm output is available to alert an operator when excess pressure, due to excess air, exceeds a field-specified setting.

Power Input 100-240 VAC, 50/60 HZ; 0.88A

To Order: Specify AIR-NH3, **List Price $1,078**

Note: Use Technical Equipment Discount Schedule.

Toll: 800.426.7368 Tel: 630.325.1565 Fax: 630.325.1572 Email: sales@hantech.com Web: www.hantech.com

MCV MOTORIZED CONTROL VALVES

NEW!

The All NEW, Hansen MCV is a highly reliable and rugged, direct operated Motorized Control Valve. It features the highest rated MOPD and SWP. Valve position is displayed on a forward facing, bright LED readout.

MCV

Whether controlling flow, level, temperature or pressure, the MCV Motorized Control Valve provides precise control. A wide variety of control signal options allows the customer flexibility to control the valve by utilizing their own PLC or computer..

- Plug and Play logic for quick and hassle-free installation
- Self Calibrating - Automatic calibration on power - up
- One high-torque motor fits all ¾˝ - 2˝ valves (20 to 50mm)
- MOPD and Safe Working Pressure (SWP): 800 psig weld-in line or 400 psig flanged
- Various Input Control Signal Choices: 0-20 mA, 4-20 mA, 0-5 V, 0-10 V, 1-6 V, and dry contact
- Power Input: 24V AC or DC, Loss of Power back-up available
- Front facing, bright LED Readout of valve position and 4-20mA feedback output signal
- Fine motor control: 200 steps per revolution

New!!! Now Available on MVP20-50 Multi-Valve Platform

Nominal Size		Valve Type		Flow Factor (Cv)	List Price		Add Zinc	Weight lb (kg)
inch	(mm)	Standard	Weld-in		Flanged	Weld-in		
¾"	(20)	MCR20 MCV20	MCRW20 MCVW20	2.2 6.4	**$3,001**	**$3,200**	**$15**	18 (8)
1 "	(25)	MCR25 MCV25	MCRW25 MCVW25	3.9 11.7	**$3,113**	**$3,347**		
1¼ "	(32)	MCR32 MCV32	MCRW32 MCVW32	5.5 16.4	**$3,263**	**$3,522**		
1½ "	(40)	MCRB40 MCR40 MCV40	MCRBW40 MCRW40 MCVW40	6 12 35	**$3,546**	**$3,829**	**$136**	36 (16)
2 "	(50)	MCR50 MCV50	MCRW50 MCVW50	16 47	**$3,696**	**$4,014**		

To Order: MCR / MCV: Specify valve type, nominal size, connection style and size (¾˝, 1˝, 1¼˝ FPT or SW; 1½˝, 2˝ SW), and recommended strainer (see page 7). Weld neck flange and ODS available. See controller options on page 31.

Note: Use Technical Equipment Discount Schedule

ACCESSORIES

Cat. Number	Description	List Price
MCT	Manual Control Tool	**$314**
HUPS	Power Backup System for loss of Power Close/Open (Includes Battery Backup and DC power Supply for up to 3 MCV/R's)	**$1,113**

MCT

HUPS

NOTE: USE TECHNICAL EQUIPMENT DISCOUNT SCHEDULE

POWERHEAD CONVERSION KITS (SMV to MCV)

Part Number	Description	List Price
75-1318	3/4 to 1-1/4" Conversion Kit: Motor Actuator, bonnet, bolts, cartridge, oring, gasket, grease, dongle	**$2,100**
75-1319	1-1/2" to 2" Conversion Kit: Motor Actuator, bonnet, bolts, cartridge, o-ring, gasket, grease, dongle	**$2,625**

Kit Includes all parts necessary to field-convert an existing HMMR/V, HMSV to the new style MCV/R. However, a new V-Port Kit may also be desired. For Power-Close HMMRC/HMMVC models, a HUPS will be required; see above.

Note: Use Parts Discount Schedule

SMV SEALED MOTOR VALVES

Model HMMV with VPIF

Applications including solenoid valve, pressure regulator, and motorized valve substitutions. Suitable for pressure, temperature, or level control. Drop-in replacement for same port size Hansen valve.

Model HMXV: Valve series for precise liquid metering for direct expansion or liquid feed applications.

Model HMMV: Ideal for precise temperature and pressure control, hot gas defrost, and other applications where accurate process control is required. VPIF standard.

Model HMMR: Valve series with expansion plug is for high pressure drop applications such as liquid makeup or where reduced capacities or larger line size connections are required. VPIF standard.

Model HMSV: The full ported valve series is best suited for slow open/close operations only (VPIF not available).

To Order: Specify valve type, nominal size, connection style and size (3˝ and 4˝ SW), and recommended strainer (see page 7). HMXV has integral strainer. Weld neck flange and ODS available. Also available for Weld-in, add "W" suffix. Example: HMMVW, HMMRW, HMMRCW. TR92: Optional 115/230VAC, 50/60HZ to 24VAC (92VA) transformer for HMMV/HMMR controller power (35-0037), **List Extra $189**. Valves available with Power-Close, an internal power supply with automatic close on power loss. See Controller options below. Manual opening valve tool (MOVT) **List Price $280.** Calibration Key (75-1185) **List Price $19**

Note: Use Technical Equipment Discount Schedule.

MODEL HMXV/HMMV/HMMR/HMSV

Nominal Size inch (mm)	Valve Type		Flow Factor (Cv)	List Price Flanged		List Price Weld-in		Add Zinc	Weight lb (kg)
	Standard	Power-Close		Standard	Power-Close	Standard	Power-Close		
3/16" (5)	HMXV/A	HMXVC/A	0.6	$3,003	$3,902	- -	- -	$12	22 (10)
7/32" (7)	HMXV/B	HMXVC/B	1.1	$3,003	$3,902	- -	- -		
3 " (80)	HMMR16	HMMRC16	16	$5,103	$6,002	$5,630	$6,529	$265	79 (36)
	HMMR35	HMMRC35	35						
	HMMVB	HMMVBC	66						
	HMMV	HMMVC	104						
	HMSV	HMSVC	104	$4,730	$5,629	$5,250	$6,149		
4 " (100)	HMMR27	HMMRC27	27	$6,644	$7,543	$7,211	$8,110	$418	127 (58)
	HMMR47	HMMRC47	47						
	HMMVB	HMMVBC	110						
	HMMV	HMMVC	166						
	HMSV	HMSVC	166	$6,148	$7,047	$6,833	$7,732		

VALVE CONTROLLERS FOR MOTORIZED CONTROL VALVES

Hansen stand-alone controllers are suitable for applications where computer control is either not desired or not available. Controllers require 24V AC or DC power. A separate, external 24 VDC power supply (such as PSU) may be required to power level or pressure transducers.
To Order: Specify model number. For DX Controllers and Sensors See page 27

Note: Use Technical Equipment Discount

CONTROLLERS		
PXVC-T	Temperature Controller (includes TS1 temp sensor)	**$341**
PXVC-L	Level Controller (level sensor not included)	**$313**
PXVC-P	Pressure Controller (transducer not included, see PT3 below)	**$313**
PXVC-CI	Control Interface Module (4-20mA input, pulse-width output)	**$313**
SENSORS		
PT2	Pressure Transducer, 15" - 85 psig, 4-20mA, 1/4" MPT	**$385**
PT3	Pressure Transducer, 15" - 285 psig, 4-20mA (for PXVC-P)	**$688**
IMW	Immersion Well for above, SS, 4" insert, 1/2" MPT	**$30**
ACCESSORIES		
WTE3	Water tight Enclosure (NEMA4), for above controllers	**$155**
PSU2	Compact Power Supply (100-240VAC: 24VDC) for above enclosure	**$212**
RDR	Optional remote digital readout	**$655**

PXVC

*For DX Controllers and Sensors See page 27

HPT PRESSURE/TEMPERATURE TRANSDUCER

The HPT Pressure/Temperature Transducer is designed to measure both temperature and pressure within a single connection. Electronics calculate superheat or subcooling for the specified refrigerant with a 4-20 mA Output.

HPT

Refrigerant	Catalog Number		List Price
	Standard -35ºF to +150ºF (-37ºC to +65ºC)	Low Temperature -60ºF to +150ºF (-51ºC to +65ºC)	
For Ammonia	HPT717	HPTL717	$1,085
For R-22	HPT22	HPTL22	$1,146
For R-134a	HPT134	HPTL134	
For R-404A	HPT404	HPTL404	
For R-507A	HPT507	HPTL507	
For Propane	HPT290	HPTL290	
For Carbon Dioxide	HPT744	HPTL744	

Standard model is suitable for ammonia. Also suitable for halocarbons, propane, and carbon dioxide with the appropriate refrigerant key. Standard model HPT is suitable for -35ºF to +150ºF (-37ºC to +65ºC).

Low temperature model HPTL is suitable for -60ºF to +150ºF (-51ºC to +65ºC). Low temperature models have a longer insertion length. **To Order:** Specify model number and refrigerant. Note: Use Technical Equipment Discount Schedule.

GAS DETECTION SENSORS

Sensor technologies available for Ammonia, Halocarbon, CO_2 and other Hansen approved gases.

To Order: Specify model, range and enclosure type. *Shipping weights by model lb(kg): Basic 1 (.45), Standard 2 (.91), Harsh 3 (1.36), Extreme 7 (3.18), Vent Line 3 (1.36), Explosion Proof 12 (5.44).* **Note:** Use Technical Discount Schedule.

Standard

Harsh

Extreme

Vent Line

Ammonia Sensors

Catalog No.			Sensor Type	Ranges (PPM)	List Price		
Standard to 0°F(-17°C)	Harsh to -40°F(-40°C)	Extreme to -60°F(-51°C)			Standard	Harsh	Extreme
HEC4-N100	HEC4H-N100	HEC4E-N100	Electrochemical	0-100	$1243	$1767	$2276
HEC4-N250	HEC4H-N250	HEC4E-N250	Electrochemical	0-250			
HEC4-N1K	HEC4H-N1K	HEC4E-N1K	Electrochemical	0-1,000			
HSC4-N10K	HSC4H-N10K	HSC4E-N10K	Semiconductor	0-10,000	$853	$1280	$1788

Note: For Explosion Proof, substitute X for 4 in model number (i.e. HECX-N100), Add $1,167 to Standard Model price.

Vent Line Sensor (NH3, R22, R507, R134a, R404, R410)

Catalog No.	Refrigerant	Sensor Type	Ranges (PPM)	List Price
Standard to -40°F(-40°C)				Standard
HVSC4-F5K*	Halocarbon	Semiconductor	0-5,000	$1337
HVSC4-N10K	Ammonia	Semiconductor	0-10,000	

* Specify refrigerant (R22, R507, R134a, R404, R410).

Halocarbon Sensors (R22, R507, R134a, R404, R410)*

Catalog No.			Sensor Type	Ranges (PPM)	List Price		
Basic to 32°F(0°C)	Harsh to -40°F(40°C)	Extreme to -60°F(-51°C)			Basic	Harsh	Extreme
HSC1-F3K/R22	HSC4H-F3K/R22	HSC4E-F3K/R22	Semiconductor	0-3,000	$536	$1110	$1788
HSC1-F3K/R507	HSC4H-F3K/R507	HSC4E-F3K/R507	Semiconductor	0-3,000			
HSC1-F3K/R134a	HSC4H-F3K/R134a	HSC4E-F3K/R134a	Semiconductor	0-3,000			
HSC1-F3K/R404	HSC4H-F3K/R404	HSC4E-F3K/R404	Semiconductor	0-3,000			
HSC1-F3K/R410	HSC4H-F3K/R410	HSC4E-F3K/R410	Semiconductor	0-3,000			

* Sensors available for additional refrigerants, consult factory.

CO_2 Sensors

Catalog No.			Sensor Type	Ranges (PPM)	List Price		
Basic to 32°F(0°C)	Harsh to -40°F(40°C)	Extreme to -60°F(-51°C)			Basic	Harsh	Extreme
HIR1-C10K	HIR4H-C10K	HIR4E-C10K	Infrared	0-10,000	$937	$1280	$1788

GAS DETECTION MONITORS

Model HLM2

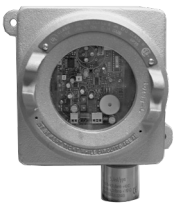
Two-Channel Gas Monitor for detection sensor unit with two alarm levels, **List Price $663.**
Shipping weight, 4 lbs.

Model HLM6

Six-Channel Gas Monitor for up to six detection sensor units with two alarm levels, **List Price $1322.**
Shipping weight, 8 lbs.

To Order: Specify model and voltage; 115V or 230V.

Note: Use Technical Discount Schedule.


Explosion Proof

HLM6

HLM2

Basic

GAS DETECTION ACCESSORIES

Gas Detection Sensor Calibration Kit

Calibration Kit includes portable carrying case with space for two 17 liter gas cylinders, valve, and hose connection to sensor. **Calibration Kit #31-1000, List Price $420.** Cylinder will calibrate approximately three sensors. Other gases available upon request. Only available in USA.

Note: Use Technical Discount Schedule. **Gas cylinders sold separately.**

Calibration Kit
(Gas Cylinder Sold Separately)

Calibration Gas Cylinders

Refrigerant Gas	Range (PPM)	Catalog No.	List Price
Ammonia	100	**31-0031**	**$181**
Ammonia	250	**31-0032**	
Ammonia	1,000	**31-0033**	
Ammonia	10,000	**31-0034**	
R22	1,000	**31-0035**	
R22	3,000	**31-0078**	
R404/R507	3,000	**31-0079**	
R134a	3,000	**31-0080**	
R401a	3,000	**31-0081**	
R402a	3,000	**31-0082**	

GAS Alert System

The GAS Alert System is equipped with a gas monitor readout, flashing LED light and an audible alarm for use with Hansen Gas Sensors. Includes a NEMA4X (IP65) enclosure for mounting indoors or outdoors; 24VAC/DC. Additional ranges available by request.

GAS Alert System

Catalog No.	Range (PPM)	List Price
GAS-100	0-100	**$1934**
GAS-250	0-250	
GAS-1K	0-1,000	
GAS-3K	0-3,000	
GAS-10K	0-10,000	

Portable Gas Detector

Portable Gas Detectors include handheld unit, battery charger, extension wand, spare filters, RS-232 cable, accessories for calibration, and sensor module keeper for four sensors in a carrying case. Sensor modules sold separately. *Electrochemical sensing units.*

Portable

Catalog No.	Description	List Price
HEP1	Portable Gas Detector, Universal 100-240V Charger	**$3088**
31-1012	Sensor Module, NH3, 0-50/500 PPM	**$917**
31-1013	Sensor Module, NH3, 0-500/2000 PPM	**$1180**

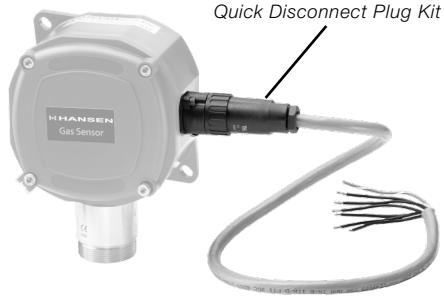
Gas Sensor Element Shield

Gas Sensor Element Shield can be attached to the end of the sensor element to help protect sensor from rain, dust, hose directed water and debris. For use with Standard, Harsh, Extreme and Explosion Proof models. **Element Shield #31-1002, List Price $38.**

Quick Disconnect Plug Kit

Quick Disconnect Plug Kit can be attached to the detection sensor unit for easy removal and replacement during recalibration. Supplied cable is 24″ in length. Available for field installation only. **Quick Disconnect Plug Kit #31-1001, List Price $192.**

Harsh Environment Model with Element Shield



Harsh Environment Model with Quick Disconnect Kit

Toll: 800.426.7368 Tel: 630.325.1565 Fax: 630.325.1572 Email: sales@hantech.com Web: www.hantech.com

HANSEN HERMETIC PUMPS

Suitable for liquid transfer, liquid pressure boost, recirculating (overfeed) liquid ammonia, R22, R134a and other approved refrigerants. No rotary shaft seals to leak. No lubricating oil, oil heater, or grease needed. Stock models listed; other sizes and stages available. CSA certification for Canada.

Hermetic Pump with Pump Guardian

Standard pumps furnished with inlet and outlet flanges, Q-max and Q-min flow control orifices for motor protection, differential pressurestat to monitor flow. CNF Series supplied with integral motor winding temperature sensors. Hansen pumps standard with Pump Guardian. Voltage: 440/3/60 is standard; 220/3/60 and 575/3/60 are available. For 50Hz applications, contact factory. Q-min (vent/bypass line) flange connection sizes: CAM 1, ½˝; CNF32, CNF40, 1˝; CNF50, 1¼˝. Standard flanges weld neck; special ODS connections available for CAM series; contact factory for pricing. Pump repair and rebuilding services available; contact factory.

To Order: Specify refrigerant, required pumping head, PSID, GPM, temperature, available NPSH, voltage and cycles. For pump pricing, contact factory. CO_2 service available. Nominal Ratings performance capacities are based on 60Hz.

Note: Use Technical Equipment Discount Schedule.

Refrigerant	Model Number (Impeller Dia)	Nom HP	Weld Neck Flanged Connections*		System Required Minimum NPSH† feet	Nominal Ratings										
						With Q-Max Orifice & Pump Guardian					With Flow Regulator					
			Inlet	Outlet		GPM	PSID	List	Weight lbs (kg)		Flow Reg Model No	GPM	PSID	List Extra	Weight lbs (kg)	
Ammonia	CAM 1/3 AGX 1.0 (80 mm)	1½	1"	¾"	2.5	7	25	CONTACT FACTORY FOR CURRENT PRICING	73	(33)	HFC14N	14	22	CONTACT FACTORY FOR CURRENT PRICING	80	(36)
	CAM 2/2 AGX 3.0 (114/130 mm)	3	1½"	1¼"	3.5	26	18		124	(56)	HFC32N	32	20		130	(59)
	CAM 2/3 AGX 3.0 (114/130 mm)	3	1½"	1¼"	3.5	27	25		133	(60)	HFC32N	32	33		140	(64)
	CAM 2/5 AGX 3.0 (114 /130mm)	3	1½"	1¼"	3.5	22	50		154	(70)	HFC32N	32	60		160	(73)
	CNF 32-160 AGX 3.0 (169 mm)	3	2"	1¼"	4.5	50	25		142	(64)	HFC60N	60	37		149	(68)
	CNF 40-160 AGX 4.5 (169 mm)	5	2½"	1½"	5.5	75	25		164	(74)	HFC98N	98	38		195	(89)
	CNF 40-200 AGX 6.5 (209 mm)	7½	2½"	1½"	5.5	75	36		205	(93)	HFC98N	98	51		236	(107)
	CNF 50-160 AGX 6.5 (158 mm)	7½	3"	2"	5.5	150	25		182	(83)	HFC185N	185	40		213	(97)
	CNF 50-200 AGX 8.5 (180 mm)	10	3"	2"	6.5	150‡	31		268	(122)	HFC185N	185‡	47		299	(136)
R22, R134a, and Other Compatible Refrigerants	CAM 1/3 AGX 1.0 (80 mm)	1½	1"	¾"	2.5	9	35		73	(33)	HFC14F	14	45		80	(36)
	CAM 2/2 AGX 3.0 (114/130 mm)	3	1½"	1¼"	3.5	22	35		124	(56)	HFC32F	32	40		130	(59)
	CAM 2/3 AGX 4.5 (114/130 mm)	5	1½"	1¼"	3.5	27	35		145	(66)	HFC32F	32	65		152	(69)
	CNF 40-160 AGX 6.5 (150 mm)	7½	2½"	1½"	5.5	70	35		170	(77)	HFC95F	95	55		201	(91)
	CNF 50-160 AGX 8.5 (130 mm)	10	3"	2"	5.5	140‡	35		214	(97)	HFR175F	175‡	40		245	(111)

† Shown in feet; includes 1.5 feet reserve for inlet piping losses.; ‡ Larger pumps available.

PUMP GUARDIAN PUMP CONTROLLER

Designed to safeguard refrigerant liquid pumps. Alerts operators of harmful operating conditions. Prevents excess-recycling and unnecessary damage. Provides protection against cavitation, low liquid level, insufficient or loss of pump pressure, and motor-overtemperature. Nonvolatile electronic memory. For use with Hansen Hermetic refrigerant pumps; requires a Pressure-Stat to monitor pressure, **Part No. 61-0418**, see Parts List Pricing.

PG1

To Order: Specify model number and voltage (115V or 230V; 50/60Hz). Note: Use Technical Equipment Discount Schedule.

Model	Description	List Price	Weight lbs (kg)
PG1	Pump Guardian	**$988**	3 (1.4)

This listing is not intended to be a complete offering of spare parts. Items not listed will be promptly quoted; please contact Hansen Customer Service at 800.426.7368 or via email at sales@hantech.com with part number and description of part.

Note: Use Parts Discount Schedule. If ordering quantity of 12 or more flange gaskets, 50% discount.

20-1131	AP 8-POINT TIMER BOARD LESS PLUG-IN CONNECTOR MXE	$1,426
20-1179	CONTROL, LEVEL MASTER 120V 1/2" NPT CONNECTION MXE	$1,578
20-1183	(WHITE) CHECK VALVE,1 PSID W/1/32" ORIFICE,FOR AP	$196
20-1184	BLUE) CHECK VALVE, 30 PSID FOR AP	$196
20-1185	(GREEN) CHECK VALVE, 225 PSID FOR AP	$201
20-1186	RATE METERING VALVE FOR AUTO-PURGER	$477
20-1196	TIMER BOARD CABLE MXE	$53
20-1197	PURGER TO TIMER CABLE MXE	$51
20-1198	METERING VALVE SEAL KIT	$34
20-1202	LED LIGHT-RED MXE	$26
20-1203	LED LIGHT-YELLOW MXE	$26
20-1204	LED LIGHT-GREEN MXE	$26
20-1205	TRANSFORMER-115/60HZ-24V/60HZ MXE	$97
20-1208	KNOB FOR AUTO-PURGER	$12
20-1212	GASKET-TOP ADAPTER	$27
20-1214	CHECK VALVE SEAL KIT	$21
20-1280	4-DIGIT COUNTER WITH RESET & BRACKET MXE	$179
20-1281	5 AMP FUSE FOR AUTO-PURGER MXE KB	$10
20-1307	(DO NOT SELL, USE 20-2596)THERMOSTAT MXE CP KB	$359
20-1311	3/4" FPT X 1/2" LIQUID DRAINER	$548
20-1441	POWER ELEMENT LEVEL CONTROL VALVE	$786
20-1460	WATER BUBBLER BRUSH	$34
20-1473	KIT,8-DIGIT COUNTER WITH RESET,230V MXE	$563
20-1498	TIME DELAY RELAY,1 HR FIX W/OFF SWITCH,120V MXE CE	$352
20-1499	PURGER CONT BRD W/PLUG-IN CONN.ALL MODELS EXCEPT A	$955
20-1500	8-PT TIMER BRD W/PLUG-IN CONN.ALL MODELS EXCEPT AP	$1,469
20-1647	LEVEL CNTRL VLV W/HEATER, 220 VOLT AUTO-PURGER	$1,346
20-1648	1/2" METERING STRAINER ASSEM.	$221
20-1694	1 AMP FUSE FOR AUTO PURGER MXE	$8
20-1698	3AMP FUSE, FAST ACTING 5MM	$10
20-1737	METERING STRAINER BASKET KIT	$101
20-1738	FLOAT BALL ASSEMBLY FOR AUTO-PURGER	$269
20-1739	POWER ELEMENT 230V LMC-DA-1	$696
20-1752	15WATT,120V HEATER FOR SPORLAN LVL CONTRL	$365
20-1753	LEVEL CONTROL VALVE HEATER 15 W, 240 VOLT	$305
20-1772	ANTI-SIPHON WATER BUBBLER KIT FOR AP, APP & APPT	$515
20-1773	AP PURG CTRL BD LESS CONNECTORS,120V/240V MXE KB	$83
20-1776	BUBBLER ASSEMBLY FOR HALOCARBON PURGERS MXE	$374
20-1836	BOARD, CONTROL, 4-POINT	$1,404
20-1837	CABLE, CONTROL BOARD FOR APM	$68
20-1845	4-POINT POWER BOARD FOR APM	$1,185
20-1857	PRESSURE TRANSDUCER KIT FOR APM	$706
20-1959	ANTI-SIPHON WATER BUBBLER KIT FOR APW & APM	$532
20-1985	WATER FLOW CONTROLLER FOR AP,APM,&APP	$75
20-1986	BALL VALVE, 1/2"	$21
20-2166	O-RING FOR NEAP FLOAT BALL SEAT	$10
20-2167	VESSEL COVER O-RING FOR NON-ELECTRICAL AUTO-PURGER	$19
20-2177	STRAINER/ORIFICE SCREEN ASSEMBLY KIT FOR APM	$75
20-2199	80 PSID CHECK VALVE ASSM TEMP VLV,FOR NEAP PURGER	$241
20-2200	TEMPERATURE VALVE ASSEMBLY KIT FOR NEAP PURGER	$165
20-2201	FLOAT BALL PLUNGER KIT FOR NEAP PURGER	$113
20-2202	KIT, FLOAT BALL SEAT, NEAP	$111
20-2203	STRAINER ORIFICE KIT FOR NEAP	$147
20-2204	225 PSI CHECK VALVE KIT FOR APM & NEAP PURGER	$120
20-2226	7-DAY TIME CLOCK FOR AUTO-PURGER, 115V 50/60HZ	$418
20-2227	7-DAY TIME CLOCK FOR AUTO-PURGER, 230V 50/60HZ	$427
20-2282	APMF AIR INDICATOR COLUMN	$454
20-2285	STRAINER/ORIFICE SCREEN ASSEMBLY KIT FOR APMF	$134
20-2300	4-POINT CONTROL BOARD ASSEMBLY FOR APM	$1,442
20-2303	TEMPERATURE SENSOR FOR THE APM AND APMF	$53
20-2369	THERMOSTATIC EXPANSION VLV 1 TON, NEAP	$832
20-2379	80 PSID CHECK VALVE ASSEMBLY FOR APM	$215
20-2390	SPORLAN GASKET	$9
20-2400	KIT, BASIC, MAINTENANCE FOR AP	$1,047
20-2401	KIT, COMPLETE, MAINTENANCE FOR AP	$1,657
20-2410	HEATER CONTACTOR MXE	$152
20-2411	LCD CONTROL CONSOLE SERIAL CABLE MXE	$104
20-2428	ELECTRIC HEATER, 115V	$284
20-2429	THERMOCOUPLE, APP PLATE	$184
20-2430	THERMOCOUPLE, APP LIQUID	$247
20-2431	THERMOCOUPLE, APP SHELL	$240
20-2477	ELECTRIC HEATER, 230V	$221
20-2489	CHECK VALVE, 1 PSID NO ORIFICE, FOR APP	$185
20-2568	KIT, POWER SUPPLY, APP/APPT	$9
20-2579	KIT,TOUCH PANEL DISPLAY,APPTC-2,PROGRAMMED	$2,113
20-2596	KIT, THERMOSTATS, W/ BUSHINGS & BRACKETS	$359
20-2620	KIT, FUSE, 2 AMP, 115V FOR APP & APPT	$9
20-2621	KIT, FUSE, 15 AMP, 115V FOR APP & APPT	$9
20-2622	KIT, FUSE, 3 AMP, 230V FOR APP & APPT	$10
20-2623	KIT, FUSE, 8 AMP, 230V FOR APP & APPT	$10
20-2626	KIT, PLC MODULE, THERMOCOUPLE INPUT, ENHANCED	$746
20-2627	KIT, PLC MODULE, CURRENT INPUT, APP & APPT	$546
20-2628	KIT, PLC MODULE, AC OUTPUT, APP & APPT	$146
20-2629	KIT, PLC MODULE, AC INPUT/OUTPUT, APP & APPT	$146
20-2631	KIT, PLC MODULE, AC INPUT, APP24-2 & APPT24-2	$144
30-0182	BONNET GASKET FOR 1"HOTV	$10
30-1103	TSTAT REPLACE KIT,1-1/2"&2",RG A 130F(54C)NOMINAL	$291
30-1104	TSTAT REPLACE KIT,1-1/2"&2",RG B 120F(49C)NOMINAL	$291
30-1105	TSTAT REPLACE KIT,1-1/2"&2",RG D 140F(60C)NOMINAL	$291
30-1106	TSTAT REPLACE KIT,2-1/2"&3",RG A 130F(54C)NOMINAL	$684
30-1109	TSTAT REPLACE KIT,2-1/2"&3",RG B 120F(49C)NOMINAL	$684
30-1111	1/2"FPT FLANGE KIT FOR SPORLAN TXV	$56
30-1112	TSTAT REPLACE KIT, 1", RG B 120F(49C) NOMINAL	$288
30-1113	TSTAT REPLACE KIT, 1", RG D 140F(60C) NOMINAL	$288
30-1115	TSTAT REPLACE KIT, 1", RG G 170F(77C) NOMINAL	$288
30-1116	TSTAT REPLACE KIT,2-1/2"&3",RG G 170F(77C)NOMINAL	$684
30-1117	TSTAT REPLACE KIT,1-1/2"&2",RG F 150F(66C)NOMINAL	$291
30-1118	TSTAT REPLACE KIT,1-1/2"&2",RG H 110F(43C)NOMINAL	$291
30-1119	TSTAT REPLACE KIT,2-1/2"&3",RG D 140F(60C)NOMINAL	$684
30-1120	TSTAT REPLACE KIT, 1", RG H 110F(43C) NOMINAL	$288
30-1121	TSTAT REPLACE KIT,1-1/2"&2",RG G 170F(77C)NOMINAL	$291
30-1122	TSTAT REPLACE KIT,1-1/2"&2",RG E 115F(46C)NOMINAL	$291
31-1003	KIT, ELEMEN,NH3, 0-1000 PPM, STANDARD,GAS SENSOR	$763
31-1004	KIT,ELEMENT,NH3,0-10,000 PPM,STANDARD,GAS SENSOR	$959
31-1005	KIT,ELEMENT,NH3,0-1,000 PPM,HARSH/EXTRM, GAS SNSR	$959
31-1006	KIT,ELEMENT,NH3,0-10000 PPM,HARSH/EXTRM,GAS SNSR	$560
31-1007	KIT,ELEMENT,NH3,0-10000 PPM,VENT LINE,GAS SENSOR	$276
31-1008	KIT, ELEMENT, HALO, 0-3000 PPM, BASIC, GAS SENSOR	$94
31-1009	KIT, ELEMENT, HALO, 0-3000 PPM, HARSH, GAS SENSOR	$384
31-1015	KIT, ELEMENT, HALOCARBON, 0-5000 PPM, VENT LINE	$276
31-1016	KIT, ELEMENT, NH3, 0-10000 PPM, EXD	$584
31-1017	KIT, ELEMENT, HALOCARBON, 0-3000 PPM, EXD	$619
31-1018	KIT, ELEMENT, NH3, 0-1000 PPM, EXD	$1,048
31-1019	KIT, ELEMENT, NH3, 0-1000 PPM, BASIC	$548
31-1020	KIT, ELEMENT, NH3, 0-10K PPM, BASIC	$82
31-1021	KIT, ELEMENT, OYXGEN, 0-25%, BASIC	$478
31-1024	KIT,ELEMENT,NH3,0-100PPM,STD GAS SENSOR(100,250)	$763
31-1025	KIT,ELEMENT,NH3,0-100PPM,HARSH,GAS SENSOR(100,250)	$941
31-1026	KIT,ELEMENT,NH3,0-250PPM,STANDARD	$769
31-1027	KIT,ELEMENT,NH3,0-250PPM,HARSH/EXTREME	$959
40-1003	KIT, BLUE INSTALL DATE TAG	$13
40-1004	KIT, GREEN INSTALL DATE TAG (R & EZB/C/E/F)	$13
40-1005	TOOL, EZB/C/LQ PROOF TEST	$139
40-1006	TOOL, EZE/F PROOF TEST	$174
40-1007	O-RING KIT, EZB/C (10 SETS)	$16
40-1008	O-RING KIT, EZE/F (10 SETS)	$23

Toll: 800.426.7368 Tel: 630.325.1565 Fax: 630.325.1572 Email: sales@hantech.com Web: www.hantech.com

50-0017	O-RING(-219)1",1-1/4"AS,GS,AT,GT,1/2"&3/4"AT,GT	$12
50-0259	BONNET GASKET FOR BLUE 1-1/2", 2" AS/GS/AW/GW SHUT	$12
50-0310	BONNET GSKT FOR 2-1/2", 3" AS/GS	$15
50-0453	O-RING,(-213)BNT 1/2"-3/4" AS/GS/AT/GT SHUT-OFF	$12
50-0537	BONNET GASKET FOR 4" SHUT-OFF VALVE	$14
50-0704	PACKING NUT, 5" AND 6" SHUTOFF	$26
50-0708	O-RING, (-360), BODY, 5" SHUTOFF	$15
50-0709	O-RING, (-365), BONNET FOR 6" GW/AW SHUT-OFF VALVE	$27
50-0750	O-RING, (-447), BODY, 8" SHUTOFF	$30
50-0805	BONNT GASKT1/2",3/4" ASB,GSB,VSB,RSB SHUTOFF VLV	$11
50-0806	BONNT GASKT 1",1-1/4" ASB,GSB,VSB,RSB SHUTOFF VLV	$11
50-0933	PACKING NUT, PLTD, FOR 3/4-1-1/4" HANSEN SOV	$10
50-1004	SEAT DISC ASSEM 1",1-1/4" AS/GS/AT/GT SHUTOFF VLV	$58
50-1005	HANDWHEEL KIT FOR 1/2" - 1-1/4" SHUT-OFF VALVE	$36
50-1012	BAR HANDLE KIT FOR 3/8" - 1-1/4" EXPANSION VALVE	$33
50-1021	BONNET ASSEMBLY FOR 1", 1-1/4" AS/GS, AT/GT SHUT-O	$134
50-1023	GASKET KIT 1-1/2",2" AS/GS RS/VS SHUT-OFF VLV	$34
50-1024	KIT,BONNET ASSY FOR 1-1/2", 2" AS/GS SOV	$272
50-1025	SEAT DISC ASSM FOR 1-1/2", 2" AS/GS SHUT-OFF VALVE	$143
50-1026	HANDWHEEL KIT FOR 1-1/2"-2" AS/GS SHUT-OFF VALVE	$59
50-1027	SEAL CAP KIT W\GASKET 1-1/2,2"AS/GS SHUTOFF VLV	$75
50-1028	BONNET ASSEMBLY FOR 1/2"& 3/4" AT,GT,AW,GW SHUT-OF	$100
50-1031	KIT,BONNET ASSY,1-1/2" RS/VS EXP REGULATOR	$335
50-1032	KIT,BONNET ASSY FOR 2" RS/VS EXP REGULATOR	$318
50-1036	KIT,SEAL CAP,BLACK,3/8"-1-1/4" AS/GS,AT/GT	$32
50-1037	HANDWHEEL KIT FOR 2-1/2" & 3" 4" SHUT-OFF VALVE	$84
50-1038	SEAL CAP KIT FOR BLUE 2-1/2", 3",4" SHUT-OFF VALVE	$125
50-1039	BAR HANDLE KIT 1-1/2",2" RS/VS,RW/VW EXPANSION REG	$46
50-1040	GASKET KIT FOR 3/8"-1-1/4" AS/GS/AT/GT SOV	$25
50-1041	BONNET ASSM FOR 3/8",1/2" 3/4"AS/GS,AT/GT S-OFF VL	$113
50-1042	SEAT DISC ASM 1/2,3/4 SW 3/8,1/2,3/4"FPT SHUTOFF V	$55
50-1043	GASKET KIT FOR 2-1/2",3", AS/GS,AW/GW SHUT-OFF VLV	$35
50-1044	BONNET ASSEMBLY FOR 2-1/2"& 3" AS/GS, AW/GW SHUT-O	$352
50-1045	SEAT DISC ASSM FOR 2-1/2" 3" AW/GW SHUT-OFF VALVE	$98
50-1046	THROTTLING PLUG ASSEM 1-1/2" RS/VS EXPANSION REG.	$179
50-1047	THROTTLING PLUG ASSM FOR 2"RS/VS EXP REGULATOR	$234
50-1048	KIT,YELLOW SEAL CAP,1-1/2" - 2" HEV	$61
50-1049	YELLOW SEAL CAP,O-RING 3/8"-1-1/4" EXPANSION REG	$34
50-1050	SEAL CAP KIT, 2-1/2" - 4" HAND EXPANSION VALVE	$58
50-1051	BAR HANDLE FOR 2-1/2", 3" EXPANSION REGULATOR	$56
50-1062	THROTTLING PLUG ASSM. 3/4"RT076,VT076 EXP.REG.	$105
50-1064	STEEL SEAL CAP KIT 3/8" - 1-1/4" SHUT-OFF VALVE	$57
50-1065	GASKET KIT FOR 4" AW401/GW401, AW402/GW402	$49
50-1066	BONNET ASSEMBLY KIT FOR AW402/GW402 SHUT-OFF VLV	$482
50-1067	SEAT DISC ASSY FOR 4" GW,AW(BLUE)SHUT-OFF VALVE	$120
50-1069	BAR HANDLE KIT FOR GAUGE VALVES	$17
50-1070	GASKET KIT FOR 1/4" GAUGE, PURGE & NEEDLE VALVES	$16
50-1071	SC KIT FOR HANSEN,GAUGE VLV,1/4"	$16
50-1075	BAR HANDLE FOR H7773, H7774, H958	$29
50-1083	GASKET KIT FOR 6" SHUT-OFF VALVE AW600/GW600	$63
50-1084	GASKET KIT FOR 8" SHUT-OFF VALVES AW800/GW800	$122
50-1085	BONNET ASSEMBLY FOR 8" SHUT-OFF VALVE AW800/GW800	$1,738
50-1086	DISC KIT FOR 5" SHUT-OFF VALVE AW500,GW500	$132
50-1087	DISC KIT FOR 6" SHUT-OFF VALVE AW600/GW600	$165
50-1088	DISC KIT FOR 8" SHUT-OFF VALVE AW800/GW800	$178
50-1089	HW KIT FOR 5" AND 6" SHUT- OFF VLV,AW500H/GW500H	$129
50-1090	HW KIT FOR 8"HANSEN AW800H/GW800H,SHUT-OFF	$240
50-1091	SC KIT FOR 5&6"HANSEN AW500C/GW500C,SHUT-OFF	$120
50-1092	SC KIT FOR THE 8"HANSEN AW800C/GW800C,SHUT-OFF	$20
50-1094	BONNET KIT FOR 1/2" AND 3/4" 4-BOLT SHUT-OFF VALVE	$134
50-1095	BONNET KIT FOR 1-1/4 BOLTED BONNET SHUT-OFF VALVE	$134
50-1104	BONNET KIT 1/2" 4BOLT EXPANSION SHUTOFF VLV	$116
50-1105	BONNET KIT 3/4" 4BOLT EXPANSION SHUT-OFF VLV	$146
50-1106	BONNET KIT FOR THE 1" 4-BOLT EXPAN SHUT-OFF VALVE	$135
50-1107	BONNET KIT 1-1/4" 4-BOLT EXPANSION SHUTOFF VLV 3.1	$15
50-1108	KIT, BONNET FOR 2-1/2" RW251, VW251	$51
50-1121	BONNET ASSEMBLY FOR 4"RW, VW EXP.VLV	$564
50-1122	KIT, GASKET 10" BW SOV	$271
50-1123	KIT, GASKET 12" BW SOV	$344
50-1124	KIT, GASKET 14" BW SOV	$401
50-1125	KIT, BONNET ASSEMBLY 10"	$3,814
50-1126	KIT, BONNET ASSEMBLY 12"	$5,543
50-1127	KIT, BONNET ASSEMBLY 14"	$7,298
50-1128	KIT, SEAT DISK FOR 10"GW1000,AW1000	$215
50-1129	KIT, DISK 12" BW SOV	$395
50-1130	KIT, DISK 14" BW SOV	$496
50-1131	KIT, HANDWHEEL 10" SOV	$260
50-1132	KIT, HANDWHEEL 12" & 14"	$664
50-1133	KIT, SEAL CAP 10" SOV	$230
50-1134	KIT, SEAL CAP 12" & 14" SOV	$340
50-1136	KIT, GASKET 1-1/2"-2" STOP-CHECK	$33
50-1138	KIT, GASKET 4" STOP-CHECK	$54
50-1148	KIT, 1-1/2"-2" DISC. ASSY, STOP/CHECK VLV	$158
50-1153	KIT, 1-1/4" GASKET, HSCK	$25
50-1172	BONNET KIT FOR 1/2" AND 3/4" EXT. NECK SOV	$155
50-1212	GREEN SEAL CAP KIT W\O-RING,3/4"-1-1/4"MVP	$33
50-1213	KIT, 4" GREEN SEAL CAP W\GASKET	$75
50-2223	O-RING, (-451), BONNET 10"	$36
61-0001	DIFFER PRES-STAT 30 SEC DELAY, MANUAL RESET	$498
61-0418	DIFFERENTIAL PRESSURE STAT, NO DELAY NEMA 4	587
65-0022	O-RING, (-356), FLOAT DRAIN REGULATOR 100 MX	$17
65-0055	O-RING, (-371), FDR 200 FACE SEAL MX	$36
65-0056	O-RING, (-378), FDR 300 FACE SEAL MX	$53
65-1001	FLOAT BALL ASSEMBLY KIT FOR HT300MF	$1,050
65-1002	GASKET KIT FOR HT100	$89
65-1003	FLOAT BALL ASSEMBLY KIT FOR HT100MN	$60
65-1004	FLOAT BALL ASSEMBLY KIT FOR HT200MF	$813
65-1014	FLOAT BALL ASSEM KIT HT100MF FOR HALO	$561
65-1018	FLOAT BALL ASSEMBLY KIT FOR HT200MN	$813
65-1019	GASKET KIT FOR HT200	$101
65-1020	GASKET KIT FOR HT300	$119
65-1021	FLOAT BALL ASSEMBLY KIT FOR HT200LN	$813
65-1022	FLOAT ASSEMBLY KIT FOR HT200HN	$813
65-1023	FLOAT BALL ASSEMBLY KIT FOR HT300MN	$1,050
65-1024	FLOAT BALL ASSEMBLY KIT FOR HT300HN	$1,050
65-1025	FLOAT BALL ASSEMBLY KIT FOR HD101N	$604
65-1026	FLOAT BALL ASSEMBLY KIT FOR HD101F	$604
65-1027	FLOAT BALL ASSEMBLY KIT FOR HT100LN	$604
65-1028	FLOAT BALL ASSEMBLY KIT FOR HT100LF	$604
65-1029	FLOAT BALL ASSEMBLY KIT FOR HT100HF	$604
65-1030	FLOAT BALL ASSEMBLY KIT FOR HT200HF	$813
65-1031	FLOAT BALL ASSEMBLY KIT FOR HT300HF	$1,050
65-1032	FLOAT BALL ASSEMBLY KIT FOR HT300LN	$1,050
67-0007	24 HOUR TIME CLOCK, 120V/230V (OLD FM/P-11/12-A)	$155
67-0009	7 DAY TIMECLOCK 120V/230V (OLD FM/P-71/72-A)	$155
67-0029	TIMESWITCH, 24HR GRASSLIN 115V(FM/P-11/12-B)	$155
67-0030	TIMESWITCH, 7-DAY GRASSLIN 115V(FM/P-71/72-B)	$155
70-0065	GASKET, 050 FLANGE AND CNTRL VLV PILOT PORT	$12
70-0132	3/4", 1", 1-1/4" FLANGE GASKET	$12
70-0579	KNOB, ENC COIL	$30
70-0592	PILOT LIGHT KNOB	$19
70-1001	BONNET CARTRIDGE KIT FOR HS8A/HS8 SOLENOID VALVE	$168
70-1002	PISTON ASSEMBLY KIT FOR HS8A/HS8W SOLENOID VALVE	$90
70-1003	STEM KIT FOR HS8 SOLENOID VALVE	$87
70-1005	GASKET KIT FOR HS8 SOLENOID VALVE	$36
70-1011	GASKET KIT FOR HS6 SOLENOID VALVE	$33
70-1017	GASKET KIT FOR HS7	$44
70-1018	BONNET-CARTRIDGE KIT HS7	$222
70-1019	KIT, PISTON ASSY, 3/4" HS7 SOLENOID VALVE	$208
70-1020	PISTON ASSY KIT FOR 1" HS7,HCK1	$208
70-1021	PISTON ASSY KIT FOR 1-1/4" HS7,HCK1	$237
70-1022	STEM KIT HS7	$45
70-1023	SEAL CAP KIT HS7	$34
70-1029	PLUNGER KIT FOR NORM OPEN SOL VALVE(LESS CARTRIDGE)	$266

70-1042	SEAL CAP KIT FOR 3/4" - 1-1/4" HA4A, HS4A	$19
70-1059	HANSEN PLUNGER KIT	$95
70-1068	REMOVEABLE SEAT/ORIFICE KIT FOR APM(SOL B OR C)	$42
70-1069	REMOVEABLE SEAT/ORIFICE KIT FOR APM(SOLENOID A)	$42
70-1072	SOLENOID TUBE/ PLUNGER KIT, FOR PXV/PXVW	$168
70-1075	SEAL CAP KIT FOR HS8A,HS6	$34
70-1109	KIT, UPPER PISTON, 3/4"-1-1/4" HS4D	$132
70-1110	KIT, UPPER PISTON, 1-1/2" - 2" HS4D	$144
70-1111	KIT, UPPER PISTON, 2-1/2"-3" HS4D	$204
70-1114	KIT, PLUNGER/TUBE ASSEMBLY	$164
70-1125	KIT, GASKET, PXVW	$36
70-1128	KIT, ADJUSTABLE STEM, PXVW	$86
70-1129	KIT, PISTON/SEAT FOR PXVW60	$116
70-1130	KIT, DIN CONNECTOR/GASKET/SCREW	$14
70-1132	KIT, PISTON/SEAT FOR HS8W	$180
70-1133	KIT, BONNET CARTRIDGE, PXVW60	$338
72-0066	O-RING, (-115), SOL TUBE AND CHECK VALVE	$9
75-0093	BOTTOM COVER/ADAPT GASKET, 2-1/2"-3" STR/CONTROL V	$17
75-0094	SEAT RING REMOVAL TOOL FOR 3" HA4A/HS4A VALVES	$167
75-0113	ADAPTER GASKET FOR 1-1/2", 2" HS/HA/HCK	$12
75-0125	FLANGE GASKET FOR 2-1/2"HA4A, HS4A	$12
75-0128	GASKET, 3-C VICTOR REINZ VR-80	$17
75-0137	FLANGE GASKET FOR 3" HA4A, HS4A	$14
75-0138	1-1/2" 2" FLANGE GASKET	$12
75-0139	STEEL SC,FOR 3/8-1-1/4" SOV,1-1/2"-3"HA4A,HS4A,LCK	$60
75-0155	BOTTOM CAP FOR 3/4" - 1-1/4" HA4A, HS4A	$40
75-0196	GASKET, 2-C VICTOR REINZ VR-80	$14
75-0231	SEAT RING FOR 4" HA4A	$284
75-0233	TOP ADAPTER GASKET FOR 4"HA4A,HS4A	$16
75-0236	PISTON SEAL ONLY FOR 4" HA4A, HS4A	$176
75-0253	FLANGE GASKET FOR 4" HA4A, HS4A	$17
75-0263	SEAT RING REMOVAL TOOL FOR 2-1/2" HA4A/HS4A VALVES	$149
75-0264	TOOL, SEAT RING REMOVAL, 1-1/2"&2" CNTRL VLV	$135
75-0265	SEAT RING REMOVAL TOOL FOR 4" HA4A/HS4A VALVES	$198
75-0292	PISTON SEAL FOR 1-1/2" & 2" HA4A, HS4A	$87
75-0293	PISTON SEAL FOR 2-1/2", 3"HA4A, HS4A	$107
75-0353	PISTON SEAL ONLY FOR 3/4" - 1-1/4" HA4A, HS4A	$38
75-0489	BONNET GASKET FOR 3/4", 1", 1-1/4" HA4A, HS4A	$12
75-0602	PISTON SEAL FOR 5" & 6" HCK2W, HS4W, HA4W	$294
75-0605	O-RING(-368)ADPTR(INNER)5",6" HA4W/HS4W/HCK2W	$34
75-0606	O-RING(-374)ADPTR(OUTER)5",6" HA4W/HS4W/HCK2W	$36
75-0613	O-RING, (-166), SEAT SEAL FOR 5",6"HA4W/HS4W	$25
75-0709	HIGH RISE CAM 45 PSI PENN/30 PSI HONEYWELL	$277
75-0710	LOW RISE CAM 90 PSI PENN/60 PSI HONEYWELL	$282
75-0759	5" & 6" SEAT RING REMOVAL TOOL	$1,287
75-0941	WEATHERPROOF KIT FOR HONEYWELL MOTOR	$82
75-1004	PISTON/SEAT KIT 2" FOR HCK2	$185
75-1005	PISTON/SEAT KIT 2-1/2" FOR HCK2	$227
75-1006	PISTON/SEAT KIT 3" FOR HCK2	$241
75-1007	GASKET KIT 1-1/2", 2" FOR HCK2 & HS9B	$34
75-1008	GASKET KIT 2-1/2" FOR HCK2 & HS9B	$36
75-1009	GASKET KIT 3" FOR HCK2 & HS9B	$44
75-1017	GASKET KIT 4" FOR HCK2 & HS9B	$53
75-1018	PISTON/SEAT KIT FOR 4" HCK2	$283
75-1019	PISTON KIT FOR 3/4" - 1-1/4" HA4A, HS4A	$132
75-1020	V-PORT/SEAT KIT FOR 3/4" HA4A,HS4A,HS4D,MVP20	$117
75-1021	V-PORT/SEAT KIT FOR 1" HA4A, HS4A, HS4D	$155
75-1022	V-PORT/SEAT KIT FOR 1-1/4" HA4A, HS4A, HS4D	$162
75-1023	GASKET KIT FOR 3/4" - 1-1/4" HA4A, HS4A	$29
75-1025	PISTON KIT FOR 1-1/2", 2" HA4A, HS4A	$219
75-1026	PISTON KIT FOR 2-1/2" HA4A, HS4A	$284
75-1027	PISTON KIT FOR 3" HA4A, HS4A	$341
75-1028	PISTON KIT FOR 4" HA4A, HS4A	$380
75-1029	V-PORT/SEAT KIT FOR 1-1/2" HA4A, HS4A	$174
75-1030	V-PORT/SEAT KIT FOR 2" HA4A, HS4A	$226
75-1031	V-PORT/SEAT KIT FOR 2-1/2" HA4A, HS4A	$249
75-1032	V-PORT/SEAT KIT FOR 3" HA4A, HS4A	$269
75-1033	V-PORT/SEAT KIT FOR 4" HA4A, HS4A	$294
75-1039	GASKET KIT FOR 1-1/2", 2" HA4A, HS4A	$36
75-1040	GASKET KIT FOR 2-1/2" HA4A, HS4A	$44
75-1041	GASKET KIT FOR 3" HA4A, HS4A	$49
75-1042	GASKET KIT FOR 4" HA4A, HS4A	$53
75-1047	3/4"-1-1/4"SINGL PORT ADAPTR KIT FOR HA4A,HS4A,MVP	$193
75-1048	3/4" - 1-1/4" 3-PORT ADAPTER KIT FOR HA4A,MVP	$328
75-1049	SINGLE PORT ADAPTR KIT FOR 1-1/2",2" HA4A,HS4A,MVP	$319
75-1050	3-PORT ADAPTER KIT FOR 1-1/2", 2" HA4A, MVP	$405
75-1051	SINGLE PORT ADAPTER KIT FOR 2-1/2"-3" HA4A, HS4A	$348
75-1052	3-PORT ADAPTER KIT FOR 2-1/2"& 3" HA4A	$504
75-1053	SINGLE PORT ADAPTER KIT FOR 4" HA4A, HS4A	$509
75-1056	GASKET KIT FOR 1-1/4" HCK2 & HS9B	$34
75-1071	PORT O-RING & GASKET	$12
75-1073	PISTON/SEAT KIT FOR 1-1/2" HCK2	$168
75-1107	DIAPHRAM KIT CONTROL MODULES(PILOTS M3,M3K,M3P/L)	$35
75-1108	DIAPHRAGM KIT, RANGE V, INLET	$35
75-1110	PISTON KIT FOR 5" & 6" HA4W, HS4W	$1,067
75-1111	GASKET KIT FOR 5" & 6" HA4W, HS4W	$100
75-1112	V-PORT/SEAT KIT FOR 5" HA4W, HS4W	$646
75-1113	V-PORT/SEAT KIT FOR 6" HA4W, HS4W	$775
75-1114	3-PORT ADAPTER KIT FOR 4" HA4A REG.	$971
75-1129	3/4" V-PORT/SEAT KIT,HA4AO/AK(5#SPR),MVP20-AK/AO	$119
75-1130	1" V-PORT/SEAT KIT FOR HA4AO/AK(5#SPR),MVP25-AK/AO	$155
75-1131	V-PORT SEAT KIT FOR 1-1/4" HA4AO/AK/MVP32-AO/AK	$167
75-1140	DIAPHRAM AND GSKT KIT FOR HA4AM CONT MODULE(PILOT)	$33
75-1148	GASKET KIT FOR 3/4",1",1-1/4" HMMV/HMMR/HMV	$15
75-1150	GASKET KIT FOR 1-1/2",2" HMMV/HMMR/HMV	$16
75-1151	GASKET KIT FOR 3"HMMV/HMMR/HMV	$107
75-1152	GASKET KIT FOR 4" HMMV/HMMR/HMV	$179
75-1154	V-PORT KIT FOR HMMV-3/4", HMMR-1-1/4",HMV-3/4"	$353
75-1155	V-PORT KIT FOR 1" HMMV/HMV	$292
75-1156	V-PORT KIT FOR 1-1/4"HMMV/HMV	$319
75-1157	V-PORT KIT FOR 1-1/2" HMMV/HMV	$413
75-1160	V-PORT KIT FOR 3/4" HMMR	$332
75-1161	V-PORT KIT FOR 1" HMMR	$353
75-1162	V-PORT KIT FOR 1-1/2"HMMR	$413
75-1163	V-PORT KIT FOR 2" HMMR	$413
75-1166	V-PORT KIT FOR 2"HMM,HMV	$413
75-1167	3/4"-1-1/4"CARTRIDGE KIT	$756
75-1168	CARTRIDGE KIT FOR 1-1/2"-2"HMMV,1-1/2 THRU 4" HMMR	$815
75-1171	POWER HEAD KIT FOR SEALED MOTOR VALVE	$2,271
75-1173	KIT, V-PORT 3/4", 25%	$126
75-1174	KIT, V-PORT 3/4", 50% RED CAP FOR HMM	$330
75-1176	KIT, NEEDLE, MXV/A	$121
75-1178	KIT, CARTRIDGE, MXV	$754
75-1179	KIT, NEEDLE B, MXV/B	$158
75-1180	KIT, GASKET, MXV	$15
75-1183	KIT, POWER-CLOSE mA POWER HEAD	$3,210
75-1184	KIT, POWER-CLOSE RELAY POWER HEAD	$2,890
75-1185	KIT, CALIBRATION MAGNET FOR HMM,SEALED MOTOR VALVE	$19
75-1187	KIT, HMSV RELAY POWER HEAD 24VAC	$1,941
75-1192	Kit, 3" Piston for HCK5	$296
75-1197	KIT, S.R. V-PORT 3" FULL	$945
75-1199	KIT, S.R. V-PORT, 4" FULL	$1,107
75-1200	KIT, S.R. CARTRIDGE 3" HMMV AND HMMVB ONLY	$796
75-1201	KIT, S.R. CARTRIDGE 4" SMV	$803
75-1209	KIT, POWER HEAD KIT FOR SMV	$2,271
75-1212	KIT, POWER-CLOSE mA POWER HEAD	$3,149
75-1223	KIT, S.R. V-PORT, 3" HMMVB/7A, REDUCED PORT Cv=66	$945
75-1224	KIT, 67% S.R. V-PORT ASSY 4" EXP	$1,214
75-1230	KIT, 1-1/2" HMMRB/4 V-PORT RED. CAP CV=6	$468
75-1231	KIT, 1-1/4" V-PORT/SEAT, 50% REDUCED FOR HA4A	$424
75-1232	KIT,1-1/2" V-PORT/SEAT,HA4A,HS4A,HS4D,MVP,50% RED	$457
75-1233	KIT, 2-1/2" V-PORT/SEAT, 50% REDUCED FOR HA4A	$523
75-1234	KIT, 3" V-PORT/SEAT, 50% REDUCED FOR HA4A	$544
75-1235	KIT, 4" V-PORT/SEAT, 50% REDUCED FOR HA4A	$899

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75-1238	KIT,1-1/2" V-PORT/SEAT,HA4A,HS4A,HS4D,MVP,25% RED	$457
75-1247	BONNET KIT, 3/4" TO 1-1/4", SCK & SCKHEV, MVP	$192
75-1248	KIT, BONNET, 3/4" HEV, MVP	$121
75-1252	BONNET KIT,1-1/2" - 2",SCK & SCKHEV,MVP	$349
75-1257	KIT, PISTON ASSY, 3/4" SCKHEV, MVP	$136
75-1258	KIT, PISTON ASSY, 1" SCKHEV, MVP	$135
75-1259	KIT, PISTON ASSY, 1-1/4" SCKHEV, MVP	$137
75-1260	KIT, PISTON ASSY, 1-1/2" SCKHEV, MVP	$278
75-1261	KIT, PISTON ASSY, 2" SCKHEV, MVP	$287
75-1262	KIT, PISTON ASSY, 3/4" SCK, MVP	$104
75-1263	KIT, PISTON ASSY, 1" SCK, MVP	$109
75-1264	KIT, PISTON ASSY, 1-1/4" SCK, MVP	$123
75-1265	KIT, PISTON ASSY, 1-1/2" SCK, MVP	$201
75-1266	KIT, PISTON ASSY, 2" SCK, MVP	$210
75-1267	V-PORT KIT 3" HMMR35	$413
75-1268	V-PORT KIT 3" HMMR16	$413
75-1270	V-PORT KIT 4" HMMR35	$405
75-1271	V-PORT KIT 4" HMMR47	$405
75-1272	KIT, GASKET, 3" HMMR W/ SPOOL	$11
75-1276	KIT, SEAT RING,3/4"-1" SOL/REGULATOR	$246
75-1277	V-PORT/SEAT KIT FOR 1" HA4W, HS4W	$261
75-1278	KIT, SEAT RING,1-1/4" SOL/REGULATOR	$371
75-1279	V-PORT/SEAT KIT,HA4A,HS4A,HS4D,MVP20,25% RED	$119
75-1280	V-PORT/SEAT KIT,HA4A,HS4A,HS4D,MVP20,50% RED	$126
75-1287	KIT,SEAT RING,1-1/2"-2" SOL/REGULATOR	$70
75-1292	4" V-PORT/SEAT KIT, FEP SEAT	$294
75-1293	3" VPORT/SEAT KIT, FEP SEAT	$269
75-1298	KIT,RETRO/SPOOL,3"HMMR35,EXP	$2,055
75-1299	KIT,RETRO/SPOOL,4"HMMR47,EXP	$2,402
75-1308	V-PORT KIT 4" HMMR27	$2,402
75-1311	KIT,RETRO/SPOOL,3" HMMR16,EXP	$2,055
75-1312	KIT,RETRO/SPOOL,4" HMMR27,EXP	$2,356
75-1318	KIT, SMV to MCV CONVERSION, 20 - 32 (3/4" - 1 1/4")	$2,100
75-1319	KIT, SMV to MCV CONVERSION, 40 - 50 (1 1/2" - 2")	$2,625
75-1321	KIT, CABLE, 6.5 FT (2 M)	$90
75-1322	KIT, GASKET, 20 - 32 (3/4" - 1 1/4"), MCV/MCR	$15
75-1323	KIT, GASKET, 40 - 50 (1 1/2" - 2"), MCV/MCR	$16
75-1325	KIT, CARTRIDGE ASSY, 20 - 32 (3/4" - 1 1/4"), MCV/MCR	$756
75-1326	KIT, CARTRIDGE ASSY, 40 - 50 (1 1/2" - 2"), MCV/MCR	$831
75-1327	KIT, POWER SUPPLY, 24VDC (60W), HUPS	$163
75-1328	KIT, BATTERY BACKUP, 24VDC (60W), HUPS	$835
75-1329	KIT, CABLE, 16.4 FT (5 M)	$111
75-1332	KIT, ACTUATOR ONLY (no cables), 20 - 32 (3/4" - 1 1/4"), MCV/MCR	$1,545
75-1333	KIT, ACTUATOR ONLY (no cables), 40 - 50 (1 1/2" - 2"), MCV/MCR	$1,545
75-2021	KIT, M3Q ACTUATOR	$2,194
75-2444	TOOL,SEAT RING REMOVAL ,3/4" THRU 1-1/4" CNTRL VLV	$129
75-2735	ASSY, TURNS OPEN TAG FOR MVP/PXVW60/HEV	$16
75-2831	SENSOR FOR PCMT, PCMTF	$549
75-2922	CAN ASSY FOR SEALED MOTOR VALVE HMXV	$221
75-3245	KIT, SPOOL, 3/4" POS 4 MVP	$71
75-3246	KIT, SPOOL, 1-1/4" POS 4 MVP	$71
75-3247	KIT, SPOOL, 1-1/2" - 2" MVP	$115
75-3517	KIT, DONGLE, SMV to MCV	$140
77-0206	#PCC-3 BUSSMAN FUSE	$19
77-0487P	RING, RETAINING, SEE-LEVEL	$54
77-0504	GASKET, NEOPRENE, SEE-LEVEL	$10
77-0505	WASHER, FIBER, SEE-LEVEL.	$10
77-0535	LEVEL SENSOR FOR APM, DRAINER AND LOW SIDE	$347
77-0794	LEVEL SENSOR FOR APMF DRAINER AND LOW SIDE	$354
77-0796	HIGH SIDE LEVEL SENSOR FOR APM & APMF	$464
77-1000	VLT TRANSMITER HOUSING ASSEM. 4-20 MA OUTPUT	$1,252
77-1002	REFLEX LENS KIT HANSEN SEE-LEVELS ONLY	$47
77-1003	FROST SHIELD KIT FOR USE W/ HANSEN SEE-LEVEL ONLY	$53
77-1005	KIT, TRANSS W/COVER & GSKT FOR SHP/SVP PRB	$582
77-1011	VLTDR TRANSMITTER HOUSING ASSEMBLY, 4-20 MA OUTPUT	$1,782
77-1022	LP TRANSMITTER ASSEMBLY KIT FOR NH3 PROBES	$482
77-1023	LP TRANSMITTER ASSY KIT FOR HALO PROBES & LP-16N	$553
777-1043	KIT, CLEAR LENS	$69
77-1044	KIT, FROST SHIELD, EXTENDED, SEE-LEVEL	$58
77-1045	KIT,RVS REPLACEMENT HEAD,25"-173",3WIRE,DIGITAL	$777
77-1048	Kit, SHA Electronic Head	$783
77-1049	Kit, Metal Cover for VLT,HPT,SPS	$28
78-0016	BOTTOM CAP GASKET FOR ST050	$12
78-0026	BOTTOM COVER GASKET FOR ST100 STRAINER	$12
78-0028	STRAINER BASKET FOR ST100	$72
78-0065	ORIFICE DISC STRAINER ASSEMBLY	$96
78-0146	O-RING FOR HEAVY DUTY STRAINER BASKET	$12
78-1001	SCREEN KIT FOR 1/2" STRAINER 100 MESH	$40
78-1003	TRAINER SCREEN KIT FOR ST(W)100(60 MESH)	$74
78-1005	STRAINER SCREEN KIT FOR 1-1/2, 2" ST200	$103
78-1006	STRAINER SCREEN KIT FOR 2-1/2" ST250	$116
78-1007	STRAINER SCREEN KIT FOR 3" ST300	$125
78-1008	STRAINER SCREEN KIT FOR 4" ST400	$188
78-1009	STRAINER SCREEN KIT FOR 5" & 6"	$696
78-1010	STRAINER KIT FOR APM OR NEAP	$45
78-1013	STRAINER SCREEN KIT FOR ST(W)100 HEAVY DTY,60 MESH	$125
78-1014	TRAINER SCREEN KIT FOR ST(W)100 HEVY DTY,100 MESH	$200
78-1015	STRAINER BAG KIT FOR ST100,MVP 20-32	$35
78-1016	STRAINER BAG KIT FOR ST200	$44
78-1017	STRAINER BAG KIT FOR ST250 & ST300	$49
78-1018	STRAINER BAG KIT FOR ST400	$53
78-1020	STRAINER SCREEN KIT,3/4"-1-1/4"MVP(60 MESH)	$89
78-1021	KIT, PERFORATED METAL STRAINER BASKET FOR ST300	$406
78-1022	KIT, 1/2" STRAINER CAP W/DRAIN CONNECTION	$40
78-1023	2-1/2" STRAINER COVER HEAVY DUTY	$439
78-1024	KIT, 2" STRAINER COVER HEAVY DUTY	$284
78-1025	SCREEN KIT, ST200, 100 MESH	$326
78-1026	SCREEN KIT, ST250 STRAINER, 100 MESH	$456
78-1027	STRAINER SCREEN KIT, 3/4"-1-1/4"MVP(100 MESH)	$218

This is a summary of safety procedures for the proper selection, installation, use and maintenance of Hansen refrigeration valves or other products hereafter all called components. Hansen components are only for refrigeration systems using ammonia, R22, R134a and other Hansen-approved refrigerants (by the factory in writing). This summary is intended to help you protect your personnel, product, and plant. However, this information must be supplemented by accepted and known industry safety practices and local code requirements.

Hansen valves and other components are designed and built to the highest standards of the refrigeration industry. Refrigerant in the system must be kept free of any foreign matter such as dirt, grit, rust, impure oil, wax, sludge, water, etc. However, for proper performance, components must be correctly chosen, properly installed, and periodically serviced.

All personnel working on valves or refrigeration components must be qualified to work on refrigeration systems. Any person intending to service a valve or component should completely read this summary and the bulletin describing the particular component and its operation before any work begins. Do not remove any part unless the interior pressure of the component is below zero. When installing or servicing valves or components, bonnets and bolts must be properly torqued. If there are any questions, contact Hansen before proceeding with the work.

Abnormal sounds and/or vibrations of piping, fans, pumps, pressure actuated pumping systems and hydraulic pipe pressure surges should be corrected.

If a component has failed under circumstances which caused, or could have caused, injury to personnel or damage to property, a replacement should not be installed until the reason for the previous failure is determined and corrected.

Where critical temperatures or products are involved, backup temperature controls and alarms are required. It is the responsibility of the installer to add devices (alarms, safety and limit controls, etc.) that protect against or warn of any operating control failure. Users and operators also must be aware that harmful refrigerant properties and pressure could damage products or injure people.

As with all electronic and mechanical components, there is a limited life expectancy. An expected maximum life of seven to ten years is typical for an electronic component. This should be understood as only a suggested replacement time period. Actual condition and performance of electronics due to ambient conditions, quality of electrical current, voltage, etc. may necessitate a different replacement schedule. Regardless, all mechanical, electrical, and electronic components should be inspected at least annually and replaced or repaired as necessary to ensure their safe and continuous service. Parts subject to wear should be replaced by factory-original components. Valves exhibiting excessive rust must be maintained, repaired or replaced as necessary.

LIQUID EXPANSION

Temperature increase in a section with trapped 100% liquid can cause extremely high pressures due to the expanding liquid and possibly rupture a gasket, pipe, or various components. When low temperature liquid lines are used, as in a liquid overfeed (recirculation) system, and the lines, valves or other components may be exposed to warm ambient conditions, particular care must be taken. Liquid expansion can occur very rapidly, even if warmed only slightly, with subsequent rupture pressure if not relieved or vented properly.

RELIEF DEVICES

Relief devices must be inspected semiannually for rust, corrosion, and other factors which may prevent valves from operating properly, and should be replaced at intervals of no longer than five years. In addition to normal pressure vessel relief requirements, atmosphere relief devices or relief methods must be used in all parts of a refrigeration system where liquid can be trapped and liquid expansion could take place. Do not use "gas service only" relief devices for liquid relief applications.

VELOCITY SHOCK

Systems must be designed and operated to avoid any velocity shock of liquid being conveyed to valves or components or other equipment. Screw compressor side port feed is very severe duty in this regard and design precautions are necessary. Delayed valve openings or closings or other methods must be utilized where shock is a potential problem.

PROBES

When removing housing (electronics) for service, do not rotate or back-out the probe itself from the pressurized level column. When removing oil from level column, follow standard pump out procedure.

SHUT-OFF VALVES

All valves that could trap liquid when closed must be marked with a warning against accidental closing. Some liquid refrigerant must be removed to be replaced by gas before the shut-off valves are closed on both sides of a control valve or any other component. Also, liquid must be removed before a shut-off valve is closed at the inlet of a solenoid valve or a regulator with a positive electric shut-off, or some outlet pressure regulators, or at the outlet of a check valve, unless these control valves are manually open. To protect personnel, product, and plant, remove the liquid from the section to be isolated before shut-off valves are closed. Make sure the control valve seat ports are open when removing the liquid. Shut-off valves leading to the atmosphere, even if it is temporary, must be plugged or capped to prevent corrosion inside of the valve, as well as leakage due to seat expansion, vibration, dirt, or improper opening; the valve seat should be left cracked open to prevent hydrostatic expansion between the valve and the plug or cap. One must take care when operating valves or regulators with threaded bonnets so that the bonnet does not turn. Bonnets must be torqued to factory specifications after field-servicing. Shut-off valves should be either wide open or closed shut in service. Shut-off valve should not be used as a throttling valve. Use hand expansion valves for throttling gas and liquid.

INSTALLATION

Installation must be done according to all applicable Safety Codes and Standards, and by personnel qualified to install refrigeration systems. Every segment of a refrigeration system, including control valves, must be field pressure tested before system is insulated and put into use. Make sure that correct high and low side pressures are used. Pressure or temperature must never exceed the limits stated in current bulletins. For most up-to-date product bulletins, go to http://www.hantech.com.

Allow proper space for installing any valves. Do not use a valve or component to “stretch” or “align” the pipe. Using flange bolts to close a large gap can distort a valve or at least stress it unduly and possibly cause it to malfunction, or the bolts may be damaged or stripped. For proper sealing, gaskets should be lightly oiled and all bolts must be tightened evenly. Make sure the flange tongues are properly aligned with the grooves in the valve or component body. Where necessary, support components by brackets or hangers to avoid overstressing.

Components must not be installed in locations where they can be damaged by material handling or other equipment. Trapped ice buildup must be avoided at or between valves and other equipment. Provide reasonable access to all components for maintenance purposes. Individual valves, control stations, pumps or other components must be provided with isolation valves and means for pumping out or safely purging the refrigerant.

PUMP OUT

For the protection of personnel, product, and plant, all refrigerant must be removed from a valve or any other component of the system before any refrigerant retaining part is loosened. Before opening a valve, make sure all refrigerant has been removed. In particular, beware of strainers and other sections of valves or piping which may trap liquid refrigerant which will require a considerable length of time to remove. Pump out as much refrigerant as possible before discharging remaining refrigerant in a properly protected manner. During pump out, it is normally advisable that control valves be opened manually whenever possible to avoid trapping refrigerant.

At times, it may be necessary to discharge some small amount of refrigerant from the isolated section. When this becomes necessary, certain precautions must be observed. Make sure control of discharge rate can be easily maintained and that a quick shut-off is available. Whenever possible, refrigerant should be discharged into and disposed of in a proper container accepted by applicable safety codes and other standards including environmental. Discharge of refrigerant to atmosphere must be avoided. Never discharge any refrigerant into an area without sufficient ventilation, or into an area where open flame or electrical spark is present. Any oil in the refrigerant may cause a mist that could cause a fire or explosion. To prevent pulling excessive air and moisture into a system, avoid opening the system when it is under noticeable vacuum.

CAUTION

Do not attempt to work on any part of a refrigeration system without help nearby and observing. Disconnect all electric power to components involved. Use "lock-out/tag-out" for electrical and fluid security. Use safety goggles or safety face mask to protect the eyes. Other parts of the body, especially the face, hands, and lungs must also be protected. Protective equipment including breathing apparatus and eye flushing equipment must be readily available, and all personnel involved must be thoroughly trained in its use. Personnel must be especially protected against falling because they may be startled by escaping refrigerant. Always make sure that there is a way out and that everyone can leave the area fast. When seal caps cover manual opening or adjusting stems, the cap must be removed with caution - liquid refrigerant could accumulate under cap. Avoid all possibility of contact with any refrigerant liquid or gas.

Toll: 800.426.7368 Tel: 630.325.1565 Fax: 630.325.1572 Email: sales@hantech.com Web: www.hantech.com

TERMS & CONDITIONS AND LIMITED WARRANTY

All quotations, products and services provided by Hansen Technologies, Inc. or Hansen Technologies Europe GmbH ("**Seller**") or its representatives to any customer, distributor, original equipment manufacturer, end-user or other purchaser ("**Buyer**") are furnished only on the terms and conditions stated herein. By ordering and accepting delivery of products and/or services from Seller, Buyer agrees to and accepts these terms and conditions and agrees that, unless modified by separate negotiated agreement as provided below, these terms and conditions, together with the item, quantity, price, and similar terms as set out in Seller's quotation, order acknowledgement and/or invoice, constitute the entire agreement of the parties, superseding all other communications and documentation. Seller hereby expressly rejects any different or additional terms, preprinted or otherwise, contained or referenced in any purchase order or other documentation furnished by Buyer, whether before or receipt thereof is acknowledged by signature or otherwise. **No** modification of these terms shall be effective unless set out in arate **negotiated agreement signed by an authorized officer of Seller.**

QUOTATIONS & PRICES. Quotations are valid only for the period stated therein, and may be changed or withdrawn at any time prior to acceptance without notice. Quotations to non-U.S. Buyers are solicitations or inquiries for offers to purchase. Clerical or typographical errors are subject to correction. Quoted prices and delivery dates are valid only for the quantities, terms and payment schedule specified. Prices do not include, and Buyer is responsible for payment of, any applicable sales, use, value added, goods and services, excise, property, customs, stamp, documentary, import/export, or other taxes, tariffs, fees, duties, withholdings or like charges, whether domestic or foreign, related to the products and/or services supplied hereunder. Any such amounts paid by Seller will be invoiced to and paid by Buyer unless Buyer provides an exemption certificate acceptable to the applicable government authority.

ORDERS & ACCEPTANCE: Orders must be presented in writing or via electronic means acceptable to Seller and will be binding upon Seller only when accepted by written or electronic acknowledgment. Seller reserves the right, at its option and without liability, to refuse any order, in whole or in part, or to specify an alternate delivery schedule if orders from all sources exceed Seller's inventory or ability to deliver. For special construction orders, Seller will provide an order acknowledgement outlining acceptance of the order and defining any necessary clarifications to terms and conditions, deliverables, pricing, and project schedule. Where orders are placed, acknowledged, and/or invoiced by electronic transmission, the data transmitted will be deemed "in writing" and "signed;" and any printout of electronic transmissions maintained in the ordinary course of business will be considered an "original" and admissible as between the parties to the same extent and under the same conditions as other business records maintained in documentary form. Seller shall be entitled to assume that persons placing orders on behalf of Buyer (electronically or otherwise) are authorized to do so and to accept the terms and conditions herein.

CHANGE AND CANCELLATION: Changes requested by Buyer after order acceptance must be submitted in writing and are subject to written acceptance by an authorized representative of Seller. Costs and/or delays resulting from such changes will be solely determined by Seller and binding on Buyer. Provided that Seller receives adequate written notice from Buyer, Buyer may cancel or suspend performance of any order for Seller-standard products for convenience, subject to payment of all reasonable charges as solely determined by Seller, which may include, without limitation, special tooling, work in process, handling and storage costs, costs associated with changes in design or specifications, and incidental and consequential damages. **Orders for special construction products, special order pumps and custom length probes are non-refundable and cannot be cancelled once in production.** Seller's performance is subject to approval of Buyer's credit and Seller, with reasonable cause, may cancel or suspend performance of any order placed by Buyer if Buyer fails to meet any of its obligations herein.

PAYMENT TERMS: Unless otherwise specified in Seller's quotation or order acknowledgement, payment terms for U.S. Buyers are net 30 days from date of invoice, subject to approved credit at the time of order invoicing. Orders from outside the U.S. or Euro Zone require advance remittance by wire transfer; alternate international payment terms are considered upon request. Deposits or down payments, if any, are non-refundable; no discount for early payment is authorized without Seller's written consent. Partial shipments are billed as made and payable on the terms above. Payment terms will not be affected by any delay in delivery, installation or acceptance. Products will remain personal property, even if installed or affixed to any realty or structure. Seller reserves the right to modify payment terms or require prior payment, letter of credit, or COD when, in the opinion of Seller, Buyer's financial condition or previous payment record so warrants. If Buyer becomes delinquent in any payment due, Seller in its discretion may take any and all actions permitted by law, including set off, and may institute credit hold procedures on all open orders. Future orders will not be confirmed until Buyer's account is brought current, including any outstanding interest charges. A service charge (not to exceed 1.5% per month) may be charged on all past due balances. If Seller deems it necessary to refer an account to an agent or attorney for collection, all costs and expenses of collection (including, without limitation, reasonable attorneys' fees) will be charged to Buyer's account, up to the maximum amount allowed by law

DELIVERY& INSPECTION: All sales are Ex-Works Factory (Incoterms 2010). Title will pass upon issuance of the carrier's bill of lading at Seller's dock (subject to Seller's rights as an unpaid creditor) and, if not previously accepted, receipt of delivery by or on behalf of Buyer will constitute acceptance of these terms and conditions. Buyer will bear all risk and expense for delivery of goods, including without limitation, shipping, loading, unloading, storage, freight, and insurance. Any shipping contracts made by Seller will be for Buyer's account and, if paid by Seller, will be invoiced to Buyer in addition to the product price. Seller will endeavor to deliver accepted orders promptly; it is understood, however, that dates indicated for delivery or performance represent Seller's best current estimates only and Seller will have no liability for failure to perform within such dates. Products will be packaged for shipment in accordance with Seller's standard commercial practice; however, Seller will not be responsible for loss or damage in transit. Buyer must inspect all items upon arrival and provide written notice to Seller, within 5 business days, of any claim for shortage or other nonconformance. If Buyer fails to give timely notice, all products will be deemed accepted. Use or resale of products in any manner following delivery (regardless of whether installation has occurred) will also constitute acceptance by Buyer. Any claim for loss or damage in transit should be made directly to the delivering carrier.

RETURN POLICY: Except in the case of valid warranty claims, no returns will be accepted after 60 days or without a Return Material Authorization (RMA) number from Seller. Products returned without an RMA number may be returned to Buyer freight collect. To ensure accurate and prompt processing of returns, the RMA number should be referenced on all shipping documents and correspondence. Returned products must be in the same condition as when they were shipped by Seller, and in their original packaging. Returned products must be sent by Buyer freight prepaid and properly boxed to prevent damage in transit. SELLER WILL NOT ACCEPT ANY C.O.D. PARCELS. Seller will inspect returned products upon receipt and issue any applicable credits based on the condition of the products and the terms of this policy. For stock items returned, a minimum restocking fee of 15% of the invoice price may be charged. For pressure relief valves (if returned within 60 days from date of shipment from the factory), a 25% restocking fee applies. Pressure relief valves more than 60 days from date of shipment, valves with non-standard pressure settings, special construction products, special order pumps, custom length probes, and end-of-life/last buy orders are non-returnable. After 60 days, all sales are final.

LIMITED WARRANTY:

Product Warranty. Products manufactured by Seller are warranted against defects in materials and workmanship under normal use in a typical operating environment (a) in the case of products other than electric motors and electronic items, for a period of one year from date of shipment from the factory, and (b) in the case of electric motors and electronic items, for a period of ninety (90) days from date of shipment except for where certain Legal Limitations may apply. This warranty extends only to the original Buyer, and shall be in force only upon payment in full for the product(s) to be warranted. Such warranty shall be effective only when products are properly installed, maintained, and serviced in accordance with good commercial practice and in compliance with all local codes and legal requirements, and used and operated in accordance with Seller's catalogs or bulletins for normal refrigeration applications, unless otherwise approved in writing. Products or components not manufactured by Seller are warranted only by the original manufacturer and only if and to the extent set forth in the original manufacturer's warranty, and Seller will have no warranty liability with respect to such third party products or failure of any such supplier to perform under its warranty.

Limited Remedy. Products returned to Seller during the applicable warranty period and found to be defective by factory inspection will be repaired or replaced with a conforming replacement product at Seller's option and without charge. The repaired or replaced product is then warranted for the remaining term of the applicable warranty or 90 days, whichever is longer. Warranty labor repairs may be performed at Seller's designated facility, with Buyer responsible for shipping (FCA Factory) or, at Seller's option, may be performed at Buyer's location, in which case any travel expenses (not to exceed the purchase price of the damaged part) will be borne by Seller, so long as Seller confirms that the defect is covered by warranty and not subject to any Exclusions below. Replaced parts shall become the property of Seller. If repair or replacement is not, in Seller's opinion, commercially feasible, or if Seller refuses or is unable to successfully perform such repair or replacement, Seller will refund an equitable portion of the purchase price paid by Buyer for the product. Seller will not be responsible for any other costs or charges, including without limitation costs of dismantling, disassembly, de-installation, removal, or reinstallation. Service

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required beyond the normal scope of warranty (see Exclusions below) or after expiration of the warranty period are billable repairs. Seller will charge Buyer its then-current prices for parts, labor, and transportation. Receipt and acceptance of a purchase order may be required before commencement of billable repairs. Buyer may also be billed for costs of testing and inspection of returned products with no trouble found Exclusions. Any warranty claim, support claim, or liability is excluded, and Buyer will be solely responsible, for any claim, damage, or liability arising out of (1) improper or faulty installation or failure to provide a suitable installation environment, (2) accident, misuse, abuse, extraordinary wear and tear, or neglect, (3) misapplication, improper use, or failure to follow Seller's operating instructions, safety precautions and bulletins, including lack of routine care or maintenance, use of non-approved refrigerants, or use of products outside of normal or specified operating or environmental conditions, (4) damage, defects, problems, malfunctions, or failures created by any non-Seller products, accessories, software, attachments, or services or their interface with Seller's products, (5) acts of God, electrical power surges, or other causes external to the products, (6) alteration, disassembly, or repair in the field, or (7) any failure to grant Seller the required time and opportunity to carry out any necessary repairs. Products disabled by dirt, debris, or other foreign substances will not be considered defective. Where critical temperature or products are involved, backup temperature controls and alarms are required. It is the responsibility of the installer to add devices (alarms, safety and limit controls, etc.) that protect against or warn of any operating control failure. Users and operators also must be aware that harmful refrigerant properties and pressure could damage products or injure people. Seller's responsibility will in all events be limited to repair or replacement of the failed or defective Seller product(s), and will not include any further liability for or arising out of any third party products with which Seller's products may be installed, combined, or used. **TO THE FULL EXTENT ALLOWED BY LAW, THE FOREGOING LIMITED WARRANTY AND REMEDIES ARE EXCLUSIVE AND EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, REPRESENTATIONS, OBLIGATIONS, OR LIABILITIES, WHETHER WRITTEN OR ORAL, EXPRESS ORIMPLIED, STATUTORY OR OTHERWISE, INCLUDING BUT NOT LIMITED TO WARRANTIES, TERMS, OR CONDITIONS OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, CORRESPONDENCE WITH DESCRIPTION, AND NON-INFRINGEMENT, ALL OF WHICH ARE HEREBY EXPRESSLY DISCLAIMED.** Certain Legal Limitations. When, under applicable law, implied warranties are not allowed to be excluded in their entirety, such warranties will be limited to the duration of the applicable written warranty. For European customers, if any warranty period specified herein is less than the minimum warranty period required by law, the warranty period will be extended to the period required by law, and any terms herein limiting Seller's liability shall not apply insofar as they conflict with mandatory statutory provisions of the Product Liability Act. No employee, agent, dealer or other person is authorized to modify, vary, or extend Seller's warranties as set out herein or to assume for Seller any other liability in connection with its products. Service & Support. To obtain warranty service or technical assistance contact Seller by phone (Toll Free: 800-426-7368 or 0049-6898-1690 385(EU), email: info@hantech.com, or web: www.hantech.com/Warranty & Returned Goods. Concerns regarding service and support may be addressed by writing to Hansen Technologies Corporation, 681 Commerce Street, Burr Ridge, IL 60527, USA or Hansen Technologies Europe GmbH, Abel Twiete 1, D-21514 Büchen Germany.

PRODUCT SPECIFICATIONS AND VALIDATION: All products, when delivered by Seller, will conform to Seller's specifications; however, Buyer is responsible for validation of each specific product application and any use of products as a component of or in conjunction with other products or attachments not supplied by Seller for such purpose, including all necessary testing and qualification, and will put in place all necessary systems and protections to ensure that any failure or defect relating to the products will not result in any other or further damage. Seller reserves the right to discontinue or change the design or specifications of any product or component at any time, and will use commercially reasonable efforts to notify Buyer of any decision to discontinue products or material changes in specifications affecting form, fit or function.

USE RESTRICTIONS & REQUIREMENTS: Buyer is responsible for compliance with all applicable laws, regulations, codes, recommendations, and requirements of government authorities and for obtaining all licenses and permits pertaining to the purchase, shipment, import, export, transfer, sale, disposition, installation, operation, and/or use of the products supplied hereunder, including any use or sale as a component of any non-Seller products, it being understood that Seller makes no warranty of any kind regarding compliance with such requirements. Buyer may not (1) modify, alter, disassemble, or make any changes to any products or items provided by Seller or permit any other party to do so without Seller's prior written consent; (2) import, export, sell, transfer, service, store, handle, distribute or use any product or item supplied hereunder in any manner prohibited by applicable laws and regulations, including all applicable export control laws, restrictions and regulations, or contrary to any written warning or instruction given by Seller herein, in the product documentation, on Seller's website, or otherwise; or (3) make any representations or warranties on behalf of Seller as to the quality, merchantability, fitness for a particular use, or other features of the products. Each party shall defend, indemnify and hold harmless the other from all liabilities, claims, losses, damages, and expenses (including without limitation reasonable attorneys' fees) arising out of any breach of these terms and conditions except as expressly limited herein.

PROPRIETARY INFORMATION: Buyer acknowledges that Seller's products are based upon and embody various confidential and/or proprietary technology, processes, methods, information, know-how, and trade secrets of Seller. Seller shall exclusively own all inventions, technology, know-how, trade secrets, and other proprietary information of any kind used or embodied in the products, documentation, drawings, specifications, software, and other items furnished by Seller, all intellectual property rights with respect thereto, and all reproductions or derivatives thereof in any form ("Proprietary Information"). Buyer shall neither acquire nor claim any right, title or interest in, and shall exercise reasonable care to maintain the confidentiality of, Seller's Proprietary Information, and shall use the same solely as required for its authorized use of Seller's products as supplied hereunder. Buyer may not directly or indirectly (1) copy, adapt, develop, disassemble, reverse engineer, recast, compile, decompile, translate, or create derivative works from any products or items provided by Seller, or permit any other person to do so, (2) remove alter, or obscure any copyright, trademark, patent, logo, government restricted rights, or other notices or legends from items provided by Seller, or (3) disclose or use Seller's Proprietary Information for commercial purposes or in a manner detrimental to Seller. Disclosures of Proprietary Information may be made only to Buyer's personnel having a specific need to know and a written obligation to protect such information no less restrictive than the restrictions herein, and Buyer will be responsible for any breach by its personnel. It is agreed that any breach of this Section may cause Seller irreparable harm for which recovery of damages would be inadequate, and that immediate injunctive or other equitable relief is appropriate and available to Seller to prevent any violation, threatened or actual, of this Section, in addition to any other remedies and without proof of actual damage.

LIMITATION OF LIABILITY: No claims, regardless of form, arising out of the products or transactions to which these terms apply may be brought by Buyer more than 2 years after the cause of action arises or performance hereunder is completed or terminated, whichever is earlier. **SELLER'S AGGREGATE LIABILITY IN DAMAGES OR OTHERWISE FOR ANY AND ALL CAUSES WHATSOEVER (INCLUDING BUT NOT LIMITED TO ANY CLAIMS FOR INDEMNIFICATION) SHALL BE LIMITED TO THE PURCHASE PRICE PAID OR PAYABLE TO SELLER FOR THE APPLICABLE PURCHASE ORDER. IN NO EVENT WILL SELLER BE LIABLE FOR ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL, PUNITIVE, EXEMPLARY, OR OTHER INDIRECT LOSSES OR DAMAGES, HOWEVER CAUSED, WHETHER FORESEEABLE OR NOT, AND EVEN IF ADVISED OF THE POSSIBILITY THEREOF. THESE LIMITATIONS WILL APPLY REGARDLESS OF THE FORM OF ACTION, WHETHER CONTRACT, TORT, STRICT LIABILITY, INDEMNIFICATION, OR OTHERWISE, NOTWITHSTANDING THE FAILURE OF THE ESSENTIAL PURPOSE OF ANY LIMITED REMEDY. FOR EUROPEAN CUSTOMERS, THE FOREGOING SHALL BE MODIFIED SOLELY AS REQUIRED UNDER THE PRODUCT LIABILITY ACT, IT BEING AGREED THAT CLAIMS OVER AND ABOVE THOSE UNDER THE PRODUCT LIABILITY ACT WILL NOT BE MADE BY BUYER AGAINST SELLER, AS MANUFACTURER, UNDER ANY THEORY OF LIABILITY, INCLUDING BY MEANS OF INDEMNIFICATION OBLIGATIONS. Buyer acknowledges that these limitations of liability are a material part of the bargain between the parties and are reflected in product pricing, which would be higher without these limitations.**

FORCE MAJEURE: Neither party will be liable for non-performance or delay in performance of any obligation (other than payment of monetary sums due) to the extent caused by events or circumstances beyond its reasonable control and without negligence on its part, provided that the affected party uses reasonable efforts to avoid or remove any causes of nonperformance and continues performance with reasonable dispatch whenever such causes are removed. For delays resulting from such causes, performance will be correspondingly extended.

GOVERNING LAW: The place of performance is exclusively the head office of the company delivering. For European customers, the courts in 21493 Schwarzenbek shall have exclusive jurisdiction for all claims, Seller may bring a claim against Buyer in its statutory jurisdiction, and German law shall apply exclusively in the way in which it applies to German partners to an Agreement. For all other customers, these Terms and Conditions, all transactions to which they may apply, and any disputes arising out of products or services supplied hereunder, shall be governed by the laws of the State of Illinois and the United States of America, excluding any conflict of law provisions thereof, and the courts of the State of Illinois or of the United States located in DuPage County, Illinois will have exclusive jurisdiction for all claims. Buyer hereby submits to the jurisdiction of the foregoing courts, as applicable, for the purpose of any such action.. The United Nations Convention on Contracts for The International Sale of Goods, the Uniform Law on the Formation of Contracts for the International Sale of Goods, and any international discovery and service of process conventions will be inapplicable.

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RMA RETURN MATERIALS & WARRANTY ITEM PROCEDURES

- Contact Customer Service at 800.426.7368 or 630.325.1565
- Request an RMA number issued to return material
- Provide Original Purchase Order #
- An RMA number must be issued and clearly marked on outside of all boxes shipped back to Hansen Manufacturing (Commerce, GA)
- RMA shipments should be returned to: Hansen Technologies
  Attn: RMA# _____
  3475 Old Maysville Road
  Commerce, GA 30529 USA

RETURNED GOODS POLICY

Products returned are normally subject to a minimum 15% restocking charge. Restocking charge is based on actual invoiced amount. To ensure accurate and prompt processing of your Return, reference your original purchase order number, invoice number and Return Material Authorization (RMA) number in all communications. Freight on all return shipments must be "PREPAID".

Special construction products, special order pumps and custom length probes are non-returnable and cannot be cancelled once in production.

Any claims by Buyer for omissions, shortages, or discrepancies in pricing shall be waived unless Seller receives notice thereof within 30 days after Buyer's receipt of the shipment.

The following restocking charges apply to new and unused items in original packaging and require no rework to restock.

Time from Invoice Date	Restocking Percent
12 months or less*	15%
Pressure Relief Valves (60 days or less)**	25%

* Higher restocking charges may be applied depending on product condition.
** Pressure relief valves shipped more than 60 days from date code stamped on valve name plate or non-standard pressure settings are non-returnable.
Emergency Service (866.244.4829) If call requires parts cost is $250.00

EXPEDITE FEE

A $50.00 processing and handling fee will be applied to all expedited orders scheduled for same day ground shipment.

EXPORT RESTRICTIONS

Buyer shall not export or re-export goods in violation of any applicable laws or regulations of the United States or the country in which Buyer obtained them.

MINIMUM BILLING AND PRICING POLICY

VISA, MASTERCARD, AMEX are accepted. Non-standard product order $200 List Extra. For products requiring CE Mark, please specify when ordering and Add Extra 10% per item. An expedite fee may apply for same day shipping. Material Test Reports (MTR) $50.00 per line item.

Prices are subject to change without notice.

TECHNICAL BULLETIN UPDATES AND CERTIFICATIONS

Hansen Technologies Corporation strives to offer products which meet and exceed current regulations worldwide. Please visit HANSEN online at **www.hantech.com** for up-to-date product technical bulletins, certifications regarding CE Mark for PED, CRN Registrations and other Statements of Compliance.

APPROVED REFRIGERANTS: The following list of refrigerants are approved by Seller and are compatible with our standard gasket material.

R-22 R-134a R-404a R-410 R-507a R-717 R-744 CO2

ANY REFRIGERANT NOT LISTED REQUIRES APPROVAL BY SELLER.

HANSEN TECHNOLOGIES

ASIA EUROPE CHINA MIDDLE EAST NORTH AMERICA SOUTH AMERICA

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