



*HS8A with Close-Coupled ST050 Strainer*

## Specifications, Applications, Service Instructions & Parts

### HS8A SOLENOID VALVE 1/2" (13mm) PORT

Flanged  
3/8" thru 3/4"  
FPT, SW, WN, ODS  
for refrigerants



## INTRODUCTION

This heavy-duty HS8A refrigeration solenoid valve is flanged, compact, and pilot-operated. It is now more dirt resistant, erosion resistant, and corrosion resistant than other similar refrigerant valves. A dirt controlling Teflon piston seal helps prevent sticking. The valve body has improved, erosion resistant flow passages. A proprietary coating on the valve body gives unmatched corrosion protection. The HS8A is used to provide on-off control of refrigerant flow. When the coil is energized, a pressure difference across the piston opens the valve seat. When the coil is de-energized, a spring closes the main Teflon seat to stop all flow.

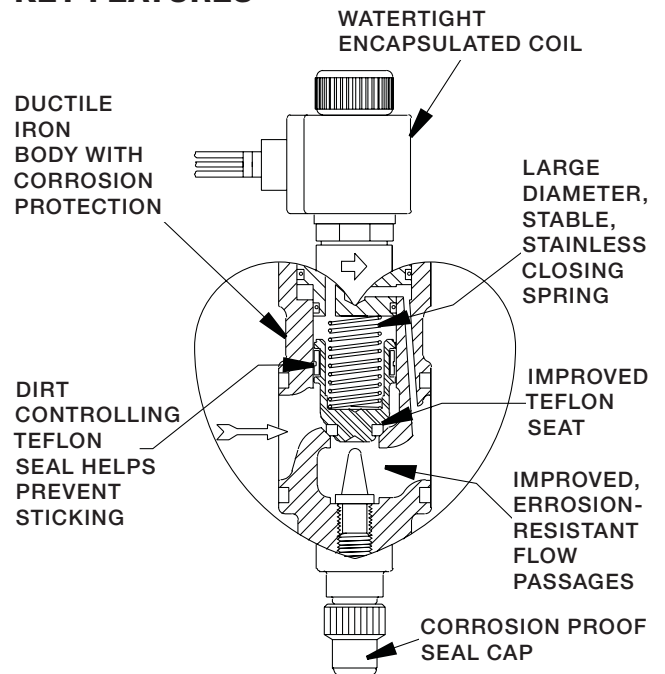
## APPLICATIONS

The HS8A is ideal as a liquid line solenoid valve. While primarily for ammonia, this valve is also suitable for R22, R134a, CO<sub>2</sub> and other compatible refrigerants. The most common use of this valve is to control flow to: expansion devices, recirculating liquid overfeed evaporators, hot gas defrost, and small capacity evaporator suction. In addition, the HS8A makes an ideal noncondensable gas (air) purge point solenoid valve, and is recommended for use with Hansen AUTO-PURGERS.

## MAXIMUM RATINGS, AMMONIA

Liquid, Receiver Pressure: 110 Tons (387 kW)  
Recirculation, 4 to 1: 36 Tons (127 kW)  
Hot Gas: 10 Tons (35 kW)  
Suction: 5.0 Tons (18 kW)  
Flow Factor: Cv = 3.3 (2.9 Kv)

## KEY FEATURES



## ADDITIONAL FEATURES

Dimensionally replaces Hansen HS8  
Low-wattage coil  
300 psi (20 bar) MOPD, 500 psi (34 bar) for CO<sub>2</sub>  
Teflon main & pilot seats  
Close-couples to ST050 (100 mesh) strainer  
Heavy-duty construction  
CSA certified status  
Wireless pilot lights (see page 4)

## MATERIAL SPECIFICATIONS

Body: Cast ductile iron, corrosion-resistant coated  
 Bonnet Cartridge: Steel, plated  
 Piston: Stainless steel, Teflon seal  
 Plunger: Stainless steel  
 Pilot Orifice: Stainless Steel  
 Seats: Teflon, pilot and main  
 MOPD: 300 psi (20 bar) AC coils only, 500 psi (34 bar) available  
 Safe Working Pressure: 400 psig (27 bar), 600 psig (41 bar) for CO2  
 Operating Temperature: -60°F to +240°F (-50°C to +115°C)

## ELECTRICAL

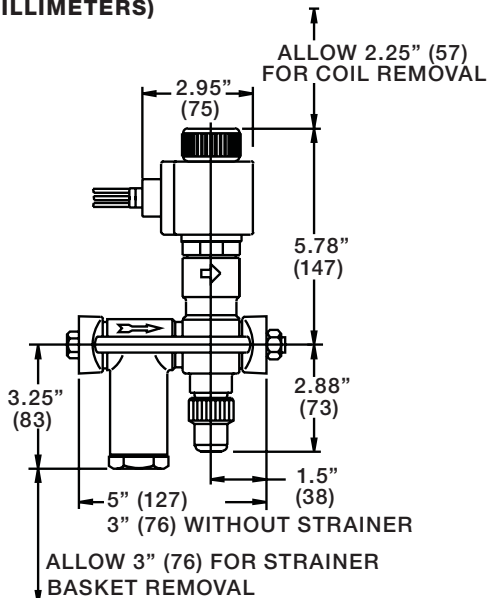
The coil draws 16 watts and will operate properly between 85% and 110% of rated voltage (24V coil draws 19 watts). Standard coil connection is a 1/2" fitting (NPSM) for conduit, with two 18" wire leads and ground wire. Coils with DIN plug or 1/2" NPSM quick disconnect plug are available. Contact the factory. All coils are totally encapsulated and meet NEMA 3R (rainproof) and NEMA 4 (splash proof, approx. IP65) requirements. The coil should only be energized while on the solenoid tube. Otherwise, immediate coil burnout may occur. To avoid bending the solenoid tube, remove the coil from valve before connecting any electrical conduit. Pilot lights are available.

## INSTALLATION

Protect the interior of the valve from dirt before and during installation. A close-coupled inlet strainer is normally installed and recommended. Allow 2.25" (57 mm) above the valve for coil removal and 3" (76 mm) below the strainer for screen removal. The arrow on the valve body must point in the direction of system flow. If a pressure reversal can occur use a check valve on the outlet side of the HS8A. The check valve can be close coupled directly to the HS8A outlet. For proper flange gasket sealing, care must be taken when threading or welding to assure flanges are parallel to each other and perpendicular to pipe. Also, gaskets should be lightly oiled and all bolts must be tightened evenly.

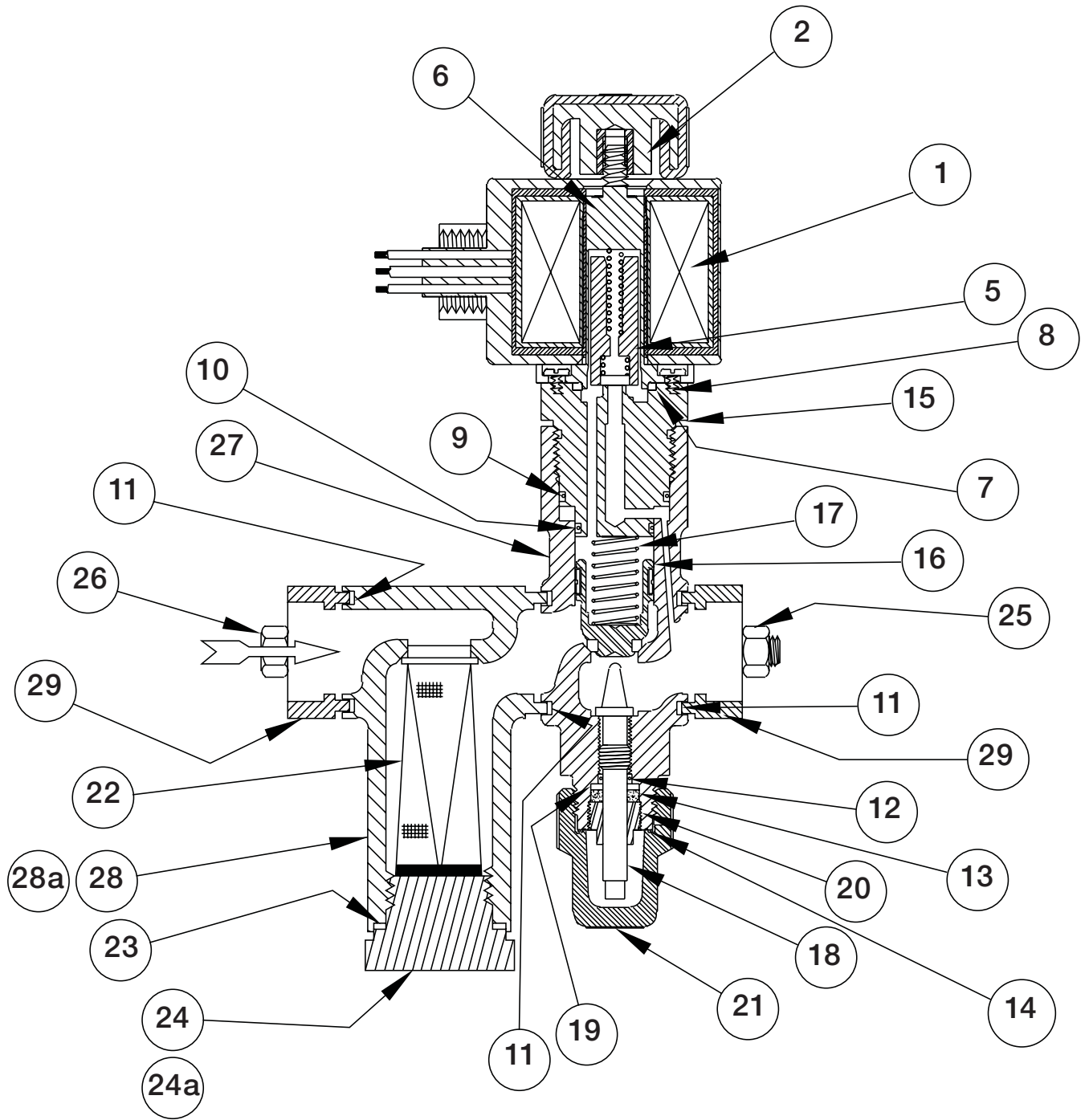
## INSTALLATION DIMENSIONS

### INCHES (MILLIMETERS)

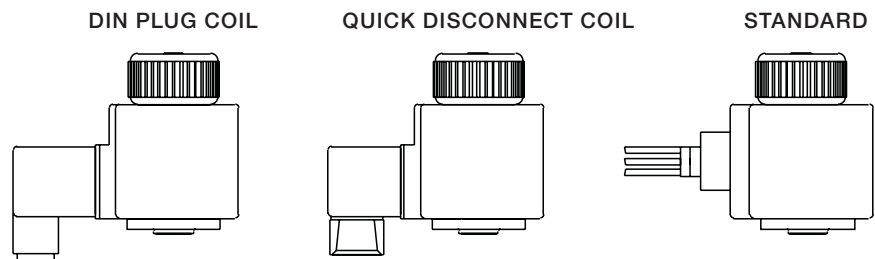


## PARTS LIST

Item	Description	Qty	Part No.
	<b>Coil Kit (115V) 1/2" Fitting w/leads</b>	1	<b>70-1085</b>
	<b>Coil Kit (208/230V) 1/2" Fitting w/leads</b>	1	<b>70-1086</b>
	<b>Coil Kit (24V) 1/2" Fitting w/leads</b>	1	<b>70-1087</b>
	<b>Coil Kit (Other Voltages)</b>	1	<b>FACTORY</b>
	<i>Above kits consist of:</i>		
1a	Bare Coil, 115V 50/60 Hz w/leads	1	70-0580
1b	Bare Coil, 208/230V 50/60Hz w/leads	1	70-0581
1c	Bare Coil, 24V 50/60Hz w/leads	1	70-0582
1d	Other Voltage Coils	1	FACTORY
2	Coil Knob	1	70-0579
	<b>Solenoid Tube/Plunger Kit</b>	1	<b>70-1059</b>
	<i>Above kit consists of:</i>		
5	Plunger	1	70-0295
6	Solenoid Tube	1	70-0298
7	Solenoid Tube Gasket	1	70-0301
8	Tube Screws	4	70-0297
2	Coil Knob	1	70-0579
	<b>Gasket Kit</b>	1	<b>70-1005</b>
	<i>Above kit consists of:</i>		
7	Solenoid Tube Gasket	1	70-0301
9	Upper Body O-Ring	1	70-0009
10	Lower Body O-Ring	1	70-0011
11	Flange Gasket	3	70-0065
12	Stem O-Ring	1	70-0010
13	Packing	1	70-0025
14	Seal Cap O-Ring	1	70-0011
19	Packing Washer	1	70-0026
20	Packing Nut	1	70-0019
	<b>Bonnet Cartridge Kit</b>	1	<b>70-1001</b>
	<i>Above kit consists of:</i>		
15	Cartridge Assembly	1	70-0144
	Gasket Kit	1	70-1005
	Solenoid Tube/Plunger Kit	1	70-1059
	<b>Piston Assembly Kit</b>	1	<b>70-1002</b>
	<i>Above kit consists of:</i>		
16	Piston Assembly	1	70-0497
17	Closing Spring	1	70-0494
	Gasket Kit	1	70-1005
	<b>Stem Kit</b>	1	<b>70-1003</b>
	<i>Above kit consists of:</i>		
18	Stem	1	70-0004
	Gasket Kit	1	70-1005
	<b>Seal Cap Kit</b>	1	<b>70-1075</b>
	<i>Above kit consists of:</i>		
21	Seal Cap	1	75-0798
14	Seal Cap O-Ring	1	70-0011
	<b>Strainer Screen Kit</b>	1	<b>78-1001</b>
	<i>Above kit consists of:</i>		
22	Screen Assembly, 100 mesh	1	78-0005
23	Strainer Cap Gasket	1	78-0016
	<b>Bolt and Nut Kit</b>		
	For HS8A less Strainer (a)		70-1006
	For HS8A with Strainer (b)		70-1007
	<i>Above kits consist of:</i>		
25	Nut, 7/16-14	2	70-0055
26a	Bolt, 7/16-14x3 3/4	2	70-0073
26b	Bolt, 7/16-14x5 1/2	2	70-0076
24	<b>Strainer Cap</b>	1	<b>78-0002</b>
24a	<b>Strainer Cap with Drain Connect</b>	1	<b>78-1022</b>
27	<b>Assembled Body Replacement Kit</b>		<b>HS8A/1</b>
	Complete Valve less Coil Kit and Flanges		
28	<b>Assembled Strainer Replacement Kit</b>	1	<b>78-1002</b>
28a	<b>Assembled Strainer Replacement Kit with Drain</b>	1	<b>78-0169</b>
29	<b>Flange Kit (FPT,SW,WN,ODS)</b>		<b>FACTORY</b>
	<i>Includes (2) Flanges only; Specify Style and Size.</i>		



STANDARD 1/2" COIL FITTING SHOWN ABOVE.  
 ADDITIONAL COIL OPTIONS ALSO AVAILABLE:



## SERVICE AND MAINTENANCE

**Failure to open:** Wrong coil voltage; low line voltage; electric controlling device is not switching; coil is burned-out; inlet/outlet pressure differential is too high; piston or solenoid coil plunger is jammed closed with dirt.

**Failure to close:** Electric controlling device is not switching; manual-opening stem is turned in; piston or solenoid coil plunger is jammed open by dirt; damage or dirt at main valve seat or pilot valve seat.

Before opening the valve for service, be sure it is isolated from the system and all refrigerant is removed. Disconnect electrical power from coil. Remove the coils by unscrewing the coil knob. To remove internal parts, use a large wrench to slowly unscrew the bonnet cartridge (15), proceeding cautiously to detect any remaining refrigerant inside the valve. Then, remove the closing spring (17) and piston (16). Check for dirt on the piston (16), Teflon piston seal, and seat. Clean and reinstall or install new parts. Check the upper (9) and lower (10) body O-rings and replace if necessary. Use refrigerant oil or grease when installing the O-rings.

To check the pilot section of the valve, first loosen the four solenoid tube screws (8). Then, break the seal between the solenoid tube (6) and bonnet cartridge (15), being careful to avoid any refrigerant which may remain. Check the face of the Teflon seat in the plunger (5), the plunger spring, and the pilot seat orifice on the bonnet cartridge (15). Clean, polish, or replace parts as necessary. The pilot seat is integral with the bonnet cartridge. Install a new solenoid tube gasket (7) and oil lightly. Reassemble the bonnet cartridge (15) to the valve body (27), using 75 ft-lbs (102 N-m) torque to tighten the secondary, metal, knife-edge seal. Carefully check the valve for leaks before restoring to service.

## CAUTION

Hansen valves are for refrigeration systems only. These instructions must be read completely and understood before selecting, using, or servicing these valves. Only knowledgeable, trained refrigeration technicians should install, operate, or service these valves. Stated temperature and pressure limits should not be exceeded. Bonnets, solenoid tubes, etc., should not be removed from valves unless the system has been evacuated to zero pressure. See also Safety Precautions in the current List Price Bulletin and the Safety Precautions sheet supplied with product. Escaping refrigerant can cause injury, especially to the eyes and lungs.

## WARRANTY

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

## ORDERING INFORMATION

Flange Connection Style & Sizes Inches (Millimeters)		
FPT, SW, WN		ODS
STD	ALSO	STD
1/2" (13)	3/4" (20) 3/8" (10)	5/8" (16)

FPT: Female Pipe Thread (American National Standard)

SW: Socket Weld to accommodate American and API pipe

WN: Weld Neck to match American pipe

ODS: Outside Diameter Sweat, for American copper tubes

Standard encapsulated solenoid coil is included for 50/60Hz 208/230, 115, or 24 volts; other voltages offered. Standard coil connection is a 1/2" fitting (NPSM). Coils with DIN plug or 1/2" NPSM quick disconnect plug are available; please specify when ordering. Pilot lights are also available.

## OPTIONAL BEACON PILOT LIGHTS

Pilot Light Kit includes Beacon pilot light, knob and o-ring. A/C Coils Only.

Beacon Pilot Light Kits	
Color	Part No.
Red	70-1100
Amber	70-1101
Green	70-1102



## TO ORDER:

Specify type, connection type and size, volts, and strainer if required. Unless otherwise specified, standard coil with 1/2" connection will be supplied.

## TYPICAL SPECIFICATIONS

"Refrigerant solenoid valves shall have encapsulated, watertight coils, Teflon seats, steel or ductile iron bodies, spring closing pilot and main valve seats, and be suitable for a safe working pressure of 400 psig (27 bar), as manufactured by Hansen Technologies Corporation or approved equal."

# HANSEN

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