

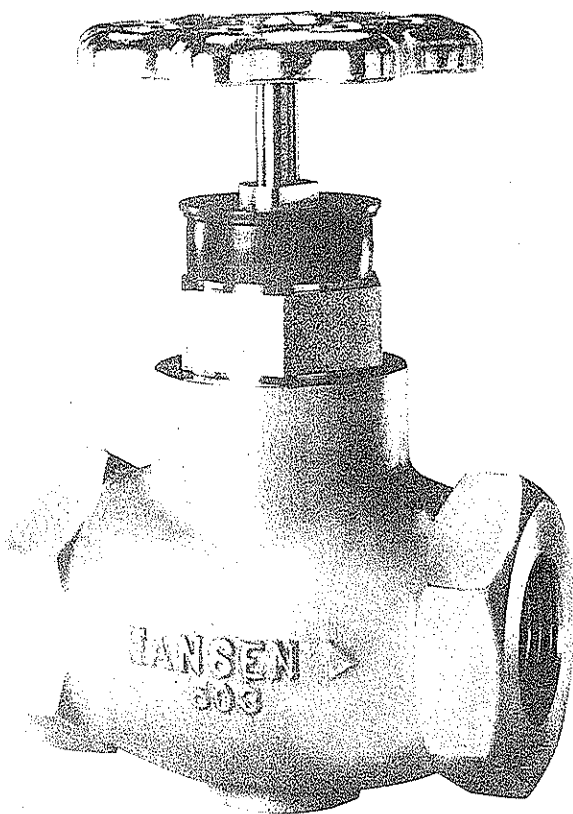
Year 1989

HANSEN TECHNOLOGIES CORPORATION

Specifications, Applications, Service Instructions & Parts

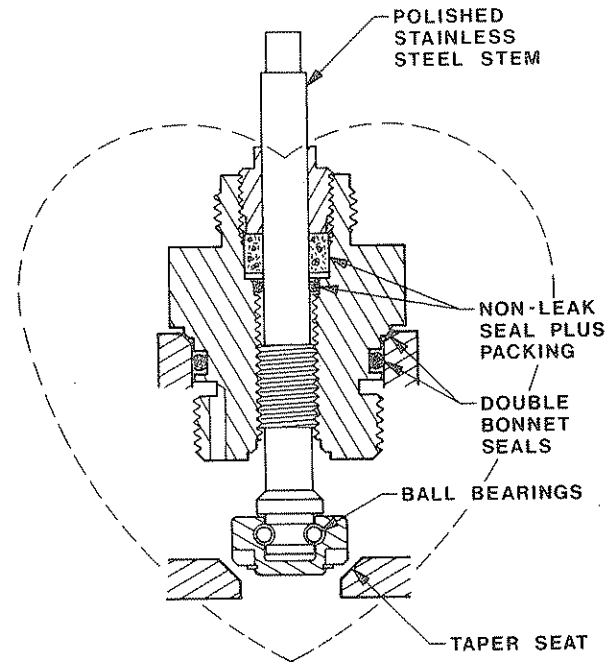
THREADED HAND SHUT-OFF VALVES

1/2" thru 1 1/4" FPT
Globe & Angle
for refrigerants



1" Globe Valve: GT100H

KEY FEATURES



INTRODUCTION

The advanced design and materials of Hansen threaded refrigerant hand shut-off valves make them far superior to commonly available products, especially in regard to non-leakage of seats, stems, and bonnets. Anyone who has experienced the failure of a hand shut-off valve at a crucial time will take care to insist upon these highly reliable valves.

APPLICATIONS

Hansen refrigeration valves are ideal for shut-off of liquid, suction, discharge, recirculating liquid, hot gas, and oil lines. When used with seal caps, these valves are also suitable for refrigerants R12, R22 and R502 in steel piping systems where threaded joints are desired. Valves can be ordered initially with seal caps or valves can be converted later by removal of handwheel and plastic bonnet thread cap and installation of seal cap with its O-ring.

ADDITIONAL FEATURES

- Perfected for ammonia refrigeration
- Interchangeable parts, 1/2" to 1 1/4"
- Removable disc on conical polished seat
- 400 PSIG working pressure
- Temperature range: -60F. to 240F.
- Back seating for packing replacement
- Globe and angle available
- Handwheel or seal cap versions
- 2" Stem extension available
- Converts to Expansion or Check Valve
- Individually packaged and labeled

MATERIAL SPECIFICATIONS

Body: ductile iron, A-536
 Bonnet: steel, zinc chromate plated
 Stem: stainless steel
 Disc holder: steel, zinc chromate plated
 Seat disc: compound PbSb
 Disc retainer: stainless steel
 Ball bearings: stainless steel
 Ball retainer ring: stainless steel
 Packing nut: steel, zinc chromate plated
 Stem packing: graphite composite plus neoprene O-ring
 Handwheel: zamak alloy, zinc chromate plated
 Seal cap: glass filled polyester, vented
 Seal cap O-ring: neoprene
 Bonnet gasket: Neoprene O-ring plus steel knife edge
 Bonnet thread cap: polyethylene
 (remove above 200 °F)

ADVANTAGES

Compared to other ammonia threaded hand shut-off valves, Hansen valves are stronger, seals and seats are tighter, construction is simpler, and pressure drop is lower. One very important standard feature is the usage of stainless steel stems as standard; this avoids packing deterioration and leakage by rust abrasion.

FLOW CAPACITIES (U.S. GPM / PSI)

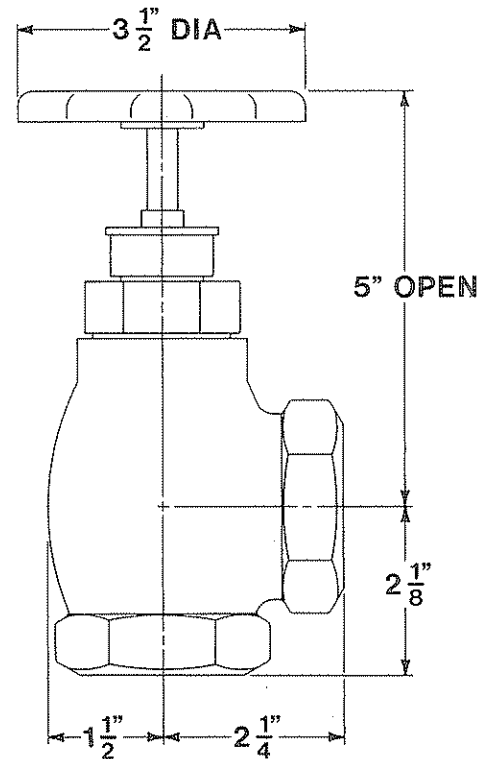
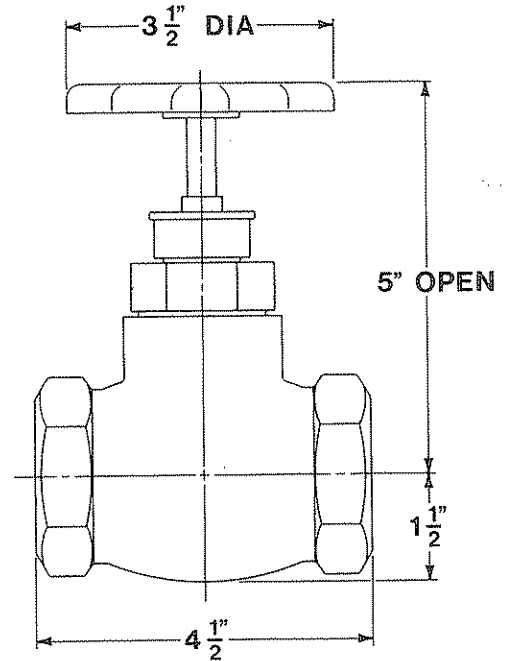
Size	ANGLE		GLOBE	
	Cv	Eq. Length Ft.	Cv	Eq. Length Ft.
½"	9	3.7	6	5.5
¾"	10	6.7	7	13.4
1"	26	3.9	18	8.1
1¼"	30	13.5	21	29.0

INSTALLATION

The most important factor other than the valve itself in achieving a leaktight and secure threaded valve installation is selection and preparation of mating piping. Pipe 1½" and smaller should be Schedule 80 Steel ASTM A106 Grade B or equal, properly cut to correct length and cleanly and properly threaded with U.S. National Tapered Male Pipe Threads. The male threads on the piping and the female threads in the valves should be cleaned and inspected. Proper pipe thread sealant is recommended. Valve and piping should be adequately tightened with two wrenches positioned as close together as possible, but not touching the pipe threads. (While "backwelding" of threaded steel pipe to the ductile iron body is possible for total elimination of thread leakage, this is not recommended in the field because special welding rod and techniques are necessary; Hansen welding valves should be used instead wherever a tight welded joint is desired). In horizontal piping of suction, overfeed gas return, or condenser drain lines, globe valve or angle valve stems should be horizontal to avoid liquid trapping of gas flow at the valve body casting seat orifice.

Before putting valves into service, all pipe connections, valve seats, bonnet seals, and stem seals should be tested for leaks at pressure levels called for in appropriate codes.

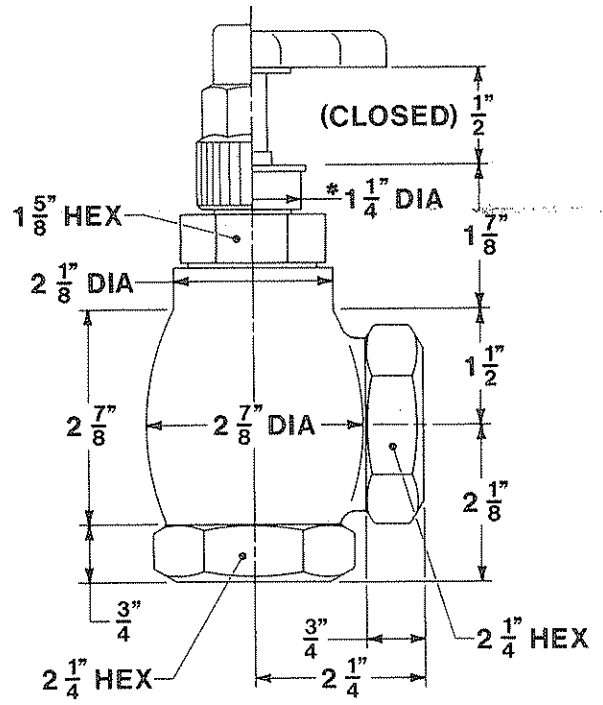
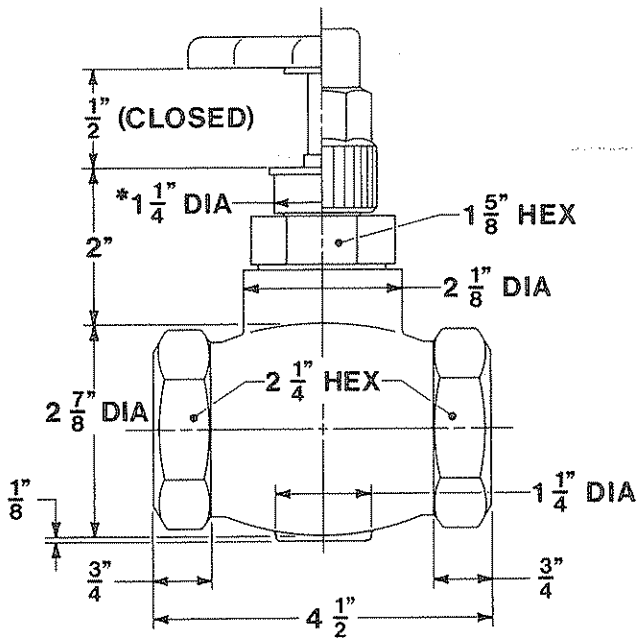
INSTALLATION DIMENSIONS (INCHES)



INSULATION

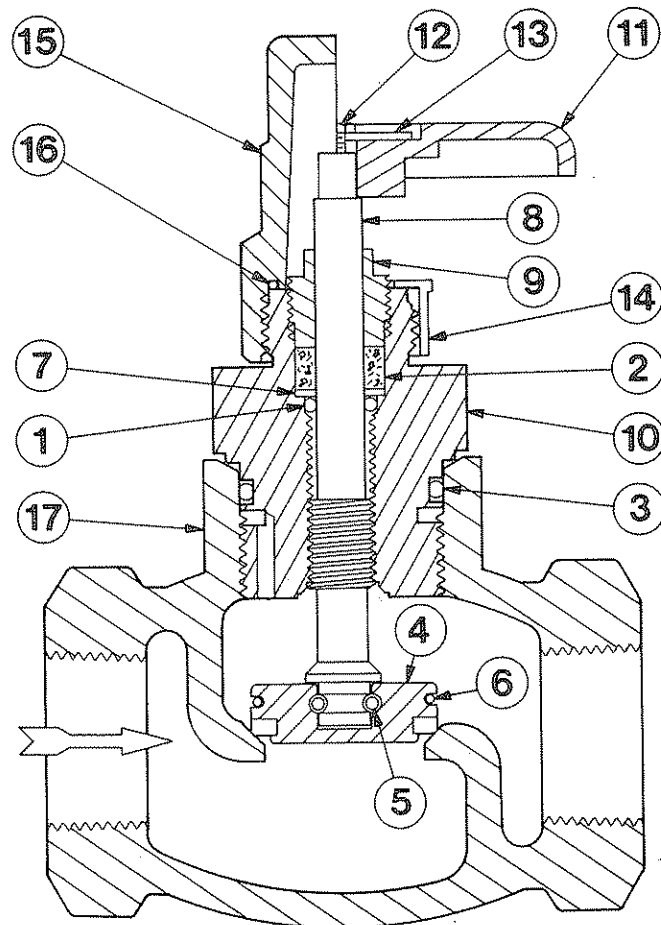
Globe Valve Bodies ½" to 1¼" can all use one size globe valve insulation form. Angle Valve Bodies ½" to 1¼" can all use one size angle valve insulation form. For heavy insulation over 1½" thick, the optional 2" stem extension is advisable for valves with handwheels. This can be field or factory installed. Exterior valve dimensions for insulation are shown on next page.

EXTERIOR VALVE DIMENSIONS FOR INSULATION



*Prior to 1988, this diameter was 1 5/8"; see note below.

PARTS LIST



†Prior to 1988, a larger, aluminum seal cap was used: (old) seal cap kit catalog number 50-1000; see note above.

ITEM	DESCRIPTION	QTY	PART NO.
	GASKET KIT consists of:		50-1020
1	Stem O-Ring	1	50-0179
2	Stem Packing	1	50-0045
3	Bonnet O-Ring	1	50-0017
7	Stem Washer	1	50-0046
16	Seal Cap O-ring	1	50-0432
	BONNET ASSEMBLY KIT 1/2", 3/4"		50-1028
	BONNET ASSEMBLY KIT 1", 1 1/4"		50-1021
	Above kits consist of:		
4a	Disc Assembly 1/2", 3/4"	1	50-0041
4b	Disc Assembly 1", 1 1/4"	1	50-0042
5	Balls	10	50-0016
6a	Ball Retainer 1/2", 3/4"	1	50-0439
6b	Ball Retainer 1", 1 1/4"	1	50-0026
8	Stem	1	50-0012
9	Packing Nut	1	50-0013
10	Bonnet	1	50-0429
	Gasket Kit	1	50-1020
	DISC ASSEMBLY KIT 1/2", 3/4"		50-1003
	DISC ASSEMBLY KIT 1", 1 1/4"		50-1004
	Above kits consist of:		
4a	Disc Assembly 1/2", 3/4"	1	50-0041
4b	Disc Assembly 1", 1 1/4"	1	50-0042
5	Balls	10	50-0016
6a	Ball Retainer 1/2", 3/4"	1	50-0022
6b	Ball Retainer 1", 1 1/4"	1	50-0026
3	Bonnet O-Ring	1	50-0017
	HANDWHEEL KIT consists of:		50-1005
11	Handwheel	1	50-0027
12	Screw	1	50-0479
13	Name Plate	1	50-0094
14	Bonnet Thread Cap	1	50-0434
	SEAL CAP KIT consists of:		50-1036†
15	Seal Cap	1	50-0423
16	Seal Cap O-ring	1	50-0432
17a	Body, Globe 1/2"	1	50-0031
17b	Body, Globe 3/4"	1	50-0032
17c	Body, Globe 1"	1	50-0035
17d	Body, Globe 1 1/4"	1	50-0036
17e	Body, Angle 1/2"	1	50-0033
17f	Body, Angle 3/4"	1	50-0034
17g	Body, Angle 1"	1	50-0037
17h	Body, Angle 1 1/4"	1	50-0038

SERVICE AND MAINTENANCE

Hansen hand shut-off valves require practically no service or maintenance. The common ailment of hand valves, stem leakage, is almost entirely eliminated by the combination of polished stainless steel stems and reliable, conventional, adjustable packing supplementing fluidtight O-ring stem seals. For optimum maintenance, occasional cleaning of the valve stem with a soft rag containing refrigerant oil is helpful. The patented O-ring stem seal design permits low torque hand operation to open and close the valve because the packing nut does not require much tightening. Do not use a wrench on these small handwheels; it is not necessary and could bend or break the handwheel.

STEM PACKING

Tightening of the packing nut is seldom necessary because the O-ring portion of stem sealing is continuous. However, if tightening is ever needed, use a 1/2" open end wrench or a 8" adjustable wrench. Extrusion of some black graphite packing material along the stem is normal. If the O-ring or the adjustable packing ever needs replacement as evidenced by refrigerant or oil leakage at the stem, open the valve stem firmly to back-seat position (this separates the O-ring and packing from the system refrigerant). Remove the packing nut carefully and then use a wire hook or a small blade screwdriver to remove the packing and O-ring. Take care not to scratch the stem or bonnet sealing surfaces. Carefully install a new O-ring and packing; tighten the packing nut only enough to give handwheel slight turning friction.

VALVE SEAT

To inspect or replace the valve seat disc, isolate the valve from the system and safely pump out refrigerant; with stem open at least one turn, remove bonnet assembly carefully. An 18" wrench is required. If conical seat surface in body is marred, remove marks with emery paper by hand or power drill. If seat disc is damaged, replace entire disc assembly by first removing ball retainer ring and ball bearings. Install new disc assembly including new balls and retainer ring. Install new stem packing, stem O-ring and bonnet O-ring if necessary. Reassemble bonnet into valve body with stem still open at least several turns and tighten bonnet to minimum torque of 75 foot pounds. This prevents seal cap or valve stem excess opening torque from unscrewing the bonnet. Tattletale vent hole in bonnet warns of interior valve pressure before bonnet can be removed. Test valve for leaks before returning to service.

SAFE OPERATION

Hansen valves are only for refrigeration systems. Read these instructions completely before selecting, using or servicing these valves. Only knowledgeable, trained refrigeration mechanics should install, operate, or service these valves. Stated temperature and pressure limits should not be exceeded. Bonnets should not be removed from valves unless system has been evacuated to zero pressure.

See also Safety Precautions in current price list bulletin.

WARRANTY

Hansen valves are guaranteed against defective materials or workmanship for one year F.O.B. our plant. No consequential damages or field labor is included.

ORDERING INFORMATION, Threaded Valves

SIZES	DESCRIPTION	CAT. NO.
1/2"	Globe, Handwheel	GT050H
	Angle, Handwheel	AT050H
	Globe, Seal Cap	GT050C
	Angle, Seal Cap	AT050C
3/4"	Globe, Handwheel	GT075H
	Angle, Handwheel	AT075H
	Globe, Seal Cap	GT075C
	Angle, Seal Cap	AT075C
1"	Globe, Handwheel	GT100H
	Angle, Handwheel	AT100H
	Globe, Seal Cap	GT100C
	Angle, Seal Cap	AT100C
1 1/4"	Globe, Handwheel	GT125H
	Angle, Handwheel	AT125H
	Globe, Seal Cap	GT125C
	Angle, Seal Cap	AT125C

TYPICAL SPECIFICATIONS

"Threaded refrigerant hand shut-off valves shall have stainless steel stems, ductile iron bodies, backseating design for packing replacement, bonnet threads for installation of stem seal caps, and suitability for a working pressure of 400 PSIG, as manufactured by Hansen Technologies Corporation or approved equal."

OTHER PRODUCTS

Threaded Shut-off Valves: 1/4" to 1 1/4"
 Welding Steel Valves: 1/4" to 14"
 Expansion Valves (Regulators): 1/4" to 6"
 Refrigerant Solenoid Valves
 Back Pressure Regulators
 Refrigerant Check Valves
 Refrigerant Float Switches
 Refrigerant Pumps
 VARI-LEVEL Controls
 AUTO-PURGERS
 FROST MASTER Defrost Controller

HANSEN TECHNOLOGIES CORPORATION

129 West 83rd Street
 Burr Ridge, Illinois 60521
 Telephone: (312) 325-1565
 Outside IL: 1-800-426-7368
 Fax: (312) 325-1572

Telex:
206851