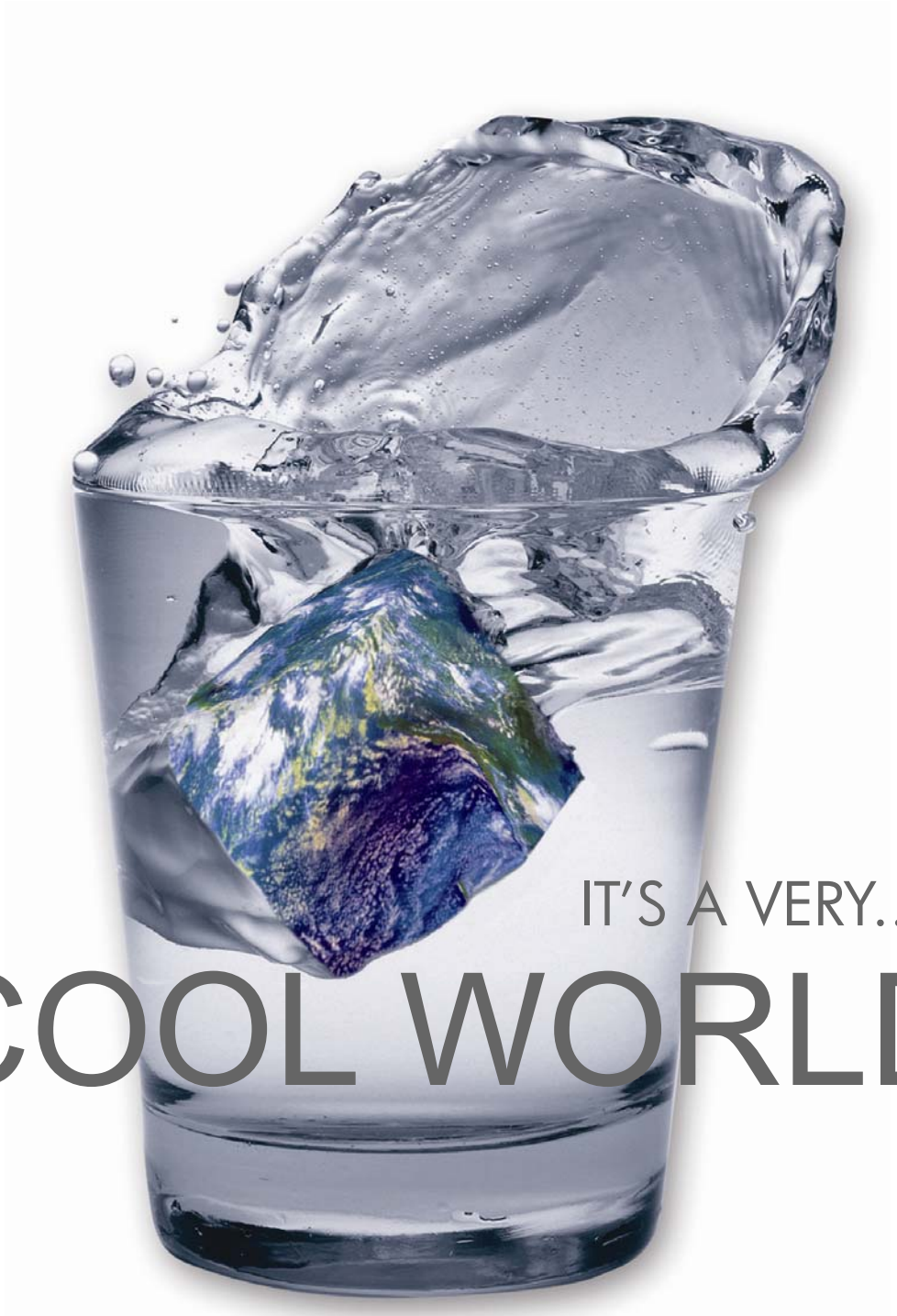
HENRY
TECHNOLOGIES

PRODUCT CATALOG 2010



IT'S A VERY...

COOL WORLD

GENERAL INFORMATION

The information contained in this catalog is correct at the time of publication.

Henry Technologies has a policy of continuous product development; we therefore reserve the right to change technical specifications without prior notice.

Extensive changes within our industry have seen products of Henry Technologies being used in a variety of new applications. We have a policy, where possible, to offer research and development assistance to our clients. We readily submit our products for assessment at the development stage, to enable our clients to ascertain product suitability for a given design application.

It remains the responsibility of the system designer to ensure all products used in the system are suitable for the application.

Date of publication: April 2010

TERMS AND CONDITIONS

HENRY TECHNOLOGIES

These terms and conditions supersede all previous terms

PAYMENT TERMS

-Where credit has been established, our terms are net (30) thirty days.
-1% discount for invoices paid with in (10) ten days.
-Invoices will be dated as of shipment.
-Until credit is established, our terms are pay in advance or C.O.D.
-All shipments F.O.B. factory.
-All prepaid freight claims are the responsibility of the buyer.
-$25.00 handling fee on all orders less than $50.00.
-Charges may be applied for additional certifications requested.
-25% Cancellation charge applicable on all orders.
-Single shipments of more than $3,500.00 net to wholesalers in the 48 contiguous states will be sent prepaid ground by Henry Technologies.
-Please remit all payments to:

Lockbox #774441
4441 Solutions Center
Chicago, IL 60677-4004

CONDITIONS

Henry will have the right to add a commodity surcharge to invoices where appropriate. Orders must be in writing and are subject to approval and confirmation upon receipt at our office. Cancellation of orders for standard items may not be made without our written consent. Orders for products made to customer's specifications may not be canceled without payment to Henry Technologies for all expenses invoiced, and then only by written permission. Prices and discounts are subject to change without notice. Orders are accepted contingent upon strikes, accidents, fires, floods, and other causes beyond our control. Orders should specify the method of shipment. If routing is not specified or cannot be complied with, shipment will be made by the most convenient method. Shipping point is F.O.B. factory with transportation charges billed in accordance with terms of our published price sheets. All claims for shortage or error must be fully detailed and presented in writing within (10) ten days after receipt of shipment.

TAXES

Prices do not include any federal, state, or municipal sales, excise or other taxes which may be imposed by law, upon or in connection with the sale, use or manufacture of the items sold.

RETURNS

Materials may not be returned for credit without our written permission. Returned material must be accompanied by a return authorization form. The following restocking charge will apply to all products returned and will be deducted from any credit issued: 0-1 year old – 25%, 1 year or older – no return allowed. **No returns allowed on Safety Relief Valves and Rupture Disc Assemblies**

LIMITED WARRANTY

Products of Henry Technologies are guaranteed against defects in material and workmanship for a period of (1) one year from date of shipment from our plant. This warranty is limited to replacing or repairing, F.O.B. factory, any material which upon our inspection on our premises we find to be defective. Any material returned to Henry Technologies for evaluation under warranty terms will be subject to a $100.00 processing fee should the warranty claim be rejected. The customer will have the option to receive this material at its own expense. Transportation charge on material returned must be prepaid. Dimensions and specifications of catalog items are standard, and we shall adhere to these standards whenever possible, reserving, however, the right to make changes without notice. Except as expressly stated above, Seller makes no warranty, expressed or implied, whether of merchantability or fitness for any particular purpose of use of otherwise on any product, or on any parts or labor furnished during the sale, delivery or servicing of any product.

LIMITATION OF LIABILITY

Seller shall not be liable to the Buyer or to any other person, firm, or corporation for any incidental or consequential loss, damage or injury arising out of any breach of warranty or any other act or default relating to Buyer's order or to product or services provided to Buyer, even if any such loss, damage, or injury is caused by Seller's negligence. The correction of defects as provided in the warranty statement above shall constitute seller's full obligation with respect to all claims and Seller's liability shall in no event exceed the unit purchase price of the production question. Any lawsuit or other action based upon breach of this contract or upon any other claim arising out of this sale (other than an action by the Seller for any amount due to Seller by Buyer) must be commenced within one year from the date of the tender of delivery by Seller or, in this case of a cause of action based upon an alleged breach of warranty, within one year from the date within the warranty period on which the defect is or should have been discovered by the Buyer. The terms and conditions set forth above are part of every sale of Henry Technologies' product(s). They may not be added to, modified, superseded, or otherwise altered, except by a written instrument signed by an Authorized representative of Henry Technologies. Please understand that by sending your purchase order or any other document for any product(s) offered for sale by Henry Technologies or by accepting delivery for such product(s), you agree to the terms and condition above. Any different or additional terms and conditions in your acceptance of this offer are herby objected to.
These terms and conditions supersede all previous terms.

TO ORDER:

Call your local Henry Technologies sales representative or our toll free customer service number 800.964.3679 (800-96- HENRY):

MAIN TELEPHONE 217.483.2406 FAX 217.483.2408
TECHNICAL SUPPORT 800.627.5148

HENRY TECHNOLOGIES

Henry Technologies, Inc. 701 South Main Street, Chatham, IL 62629

www.henrytech.com

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HENRY TECHNOLOGIES

CONTENTS

HENRY TECHNOLOGIES

SHUT-OFF VALVES

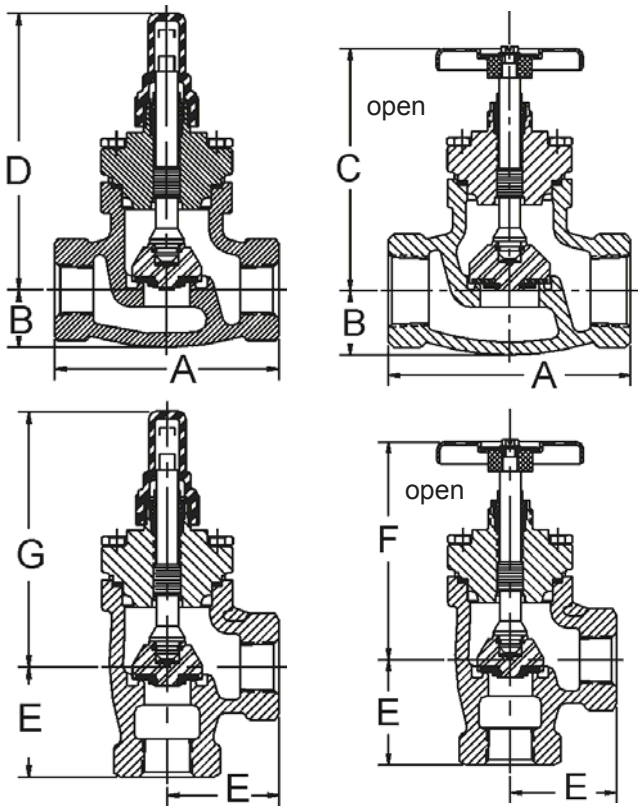
Screw-End Bare Valve

HENRY TECHNOLOGIES

Suitable for Ammonia

Features:

- **Valve Bodies:** Ductile Iron
- **Valve Bonnets:** Bolted, Ductile iron
- **Seal caps:** Molded Valox or nylon
- **Stems:** Stainless Steel, adaptable for hand-wheel mounting
- **Non-Rotating** self aligning swivel seat disc with fully retained Teflon seat ring
- **Protective painted finish**
- **Temperature Range:** -20°F(-29°C) to +325°F(+163°C)
- **Maximum cold working pressure:** 400 PSI (28.1 Kg/cm²)
- **Suitable for ammonia,** refrigerants and other industrial fluids non-corrosive to steel and ductile iron
- **Valve bonnet is threaded** and will accept a Henry seal cap to stop leakage if it develops. Seal caps may be ordered separately.



F.P.T. Connection	Catalog Numbers				Dimensions in Inches						Weight lbs.	
	Globe Seal Cap	Angle Seal Cap	Globe Hand Wheel	Angle Hand Wheel	A	B	D	E	F	G	Globe	Angle
3/8"	—	—	310G	—	3.63	.094	4.5	—	—	—	2.0	—
1/2"	C320G	C370G	320G	370G	3.63	0.94	4.50	1.88	4.12	4.12	2.5	2.0
3/4"	C330G	C380G	330G	380G	3.63	0.94	4.50	1.88	4.12	4.12	2.5	2.0
1"	C340G	C390G	340G	390G	4.13	1.13	4.62	1.88	4.25	4.25	3.5	2.5

SHUT-OFF VALVES

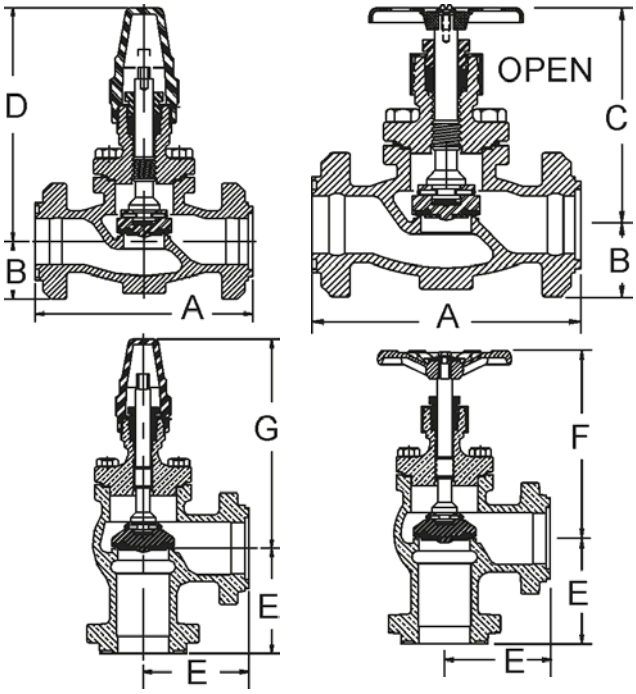
Flanged Design Bare Valve

HENRY TECHNOLOGIES

Suitable for Ammonia

Features:

- **Valve Bodies:** 1” to 3” ductile iron, 4” cast grey iron
- **Valve Bonnets:** Flange design, Ductile iron
- **Seal Caps:** 1” to 3” molded Valox, 4” CR. steel, vented
- **Stems:** Acme threaded, Stainless Steel, adaptable for handwheel mounting
- **Backseating:** Can be repacked under pressure
- **Flange type:** Square, 4 bolt
- **Non-Rotating** self aligning swivel seat disc with fully retained Teflon seat ring
- **Protective painted finish**
- **Individual nameplate**
- **Temperature Range:** -20°F(-29°C) to +325°F(+163°C)
- **Maximum cold working pressure:** 1” to 3” 400 PSI (28.1 Kg/cm²); 4” 300 PSI (21.1 Kg/cm²)
- **Suitable for ammonia,** refrigerants and other industrial fluids non-corrosive to steel and ductile iron



Nominal Size	Catalog Numbers				Dimensions in Inches						Weight lbs.	
	Globe Seal Cap	Angle Seal Cap	Globe Hand Wheel	Angle Hand Wheel	A	B	C	E	F	G	Globe	Angle
1-1/4”*	C151B	—	151B	—	7.00	1.88	7.25	—	—	—	13	—
2”**	C153B	C253B	153B	253B	8.25	2.25	8.38	4.25	8.38	18.25	21	20
2-1/2”	C154B	C254B	154B	254B	9.25	2.75	9.75	5.00	9.38	19.38	34	32
3”	C155B	C255B	155B	255B	10.25	3.00	11.88	5.75	11.88	11.13	48	46
4”	C157B	—	157B	—	12.00	3.50	14.88	6.50	13.25	13.88	82	—

* For 1” nom. Valve, use 1-1/4” nom. valve (C151B)
** For 1-1/2” nom. Valve, use 2” nom. Valves (C153B or C253B)

SHUT-OFF VALVES, Flanged

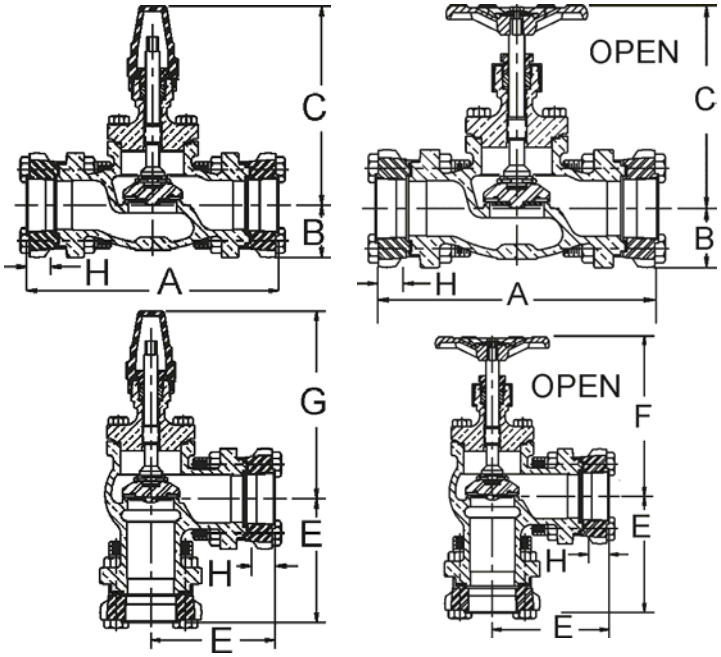
Female Pipe Thread Connect

HENRY TECHNOLOGIES

Suitable for Ammonia

Features:

- **Valve Bodies:** Ductile Iron
- **Valve Bonnets:** Flange design, Ductile iron, threaded to accept flange cap
- **Seal caps:** Molded Valox
- **Stems:** Acme threaded, stainless steel, adaptable for handwheel mounting
- **Backseating:** Can be repacked under pressure
- **Non-Rotating** self aligning swivel seat disc with fully retained Teflon seat ring
- **Protective painted finish**
- **Temperature Range:** -20°F(-29°C) to +325°F (+163°C)
- **Maximum cold working pressure:** 400 PSI (28.1 Kg/cm²)
- **Flanges:** Forged Steel
- **Suitable for ammonia,** refrigerants and other industrial fluids non-corrosive to steel and ductile iron



F.P.T. Connection	Catalog Numbers				Dimensions in Inches							Weight lbs.	
	Globe Seal Cap	Angle Seal Cap	Globe Hand Wheel	Angle Hand Wheel	A	B	C	E	F	G	H	Globe	Angle
1"	C150C-PT	—	150C-PT	—	9.13	1.88	7.25	—	—	—	.50	20	—
1-1/4"	C151B-PT	—	151B-PT	—	9.13	1.88	7.25	—	—	—	.75	20	—
1-1/2"	C152C-PT	C252C-PT	152C-PT	252C-PT	10.75	2.25	8.38	5.5	8.0	8.25	.75	31	30
2"	C153B-PT	C253B-PT	153B-PT	253B-PT	10.75	2.25	8.38	5.5	8.0	8.25	.75	31	30

SHUT-OFF VALVES, Flanged

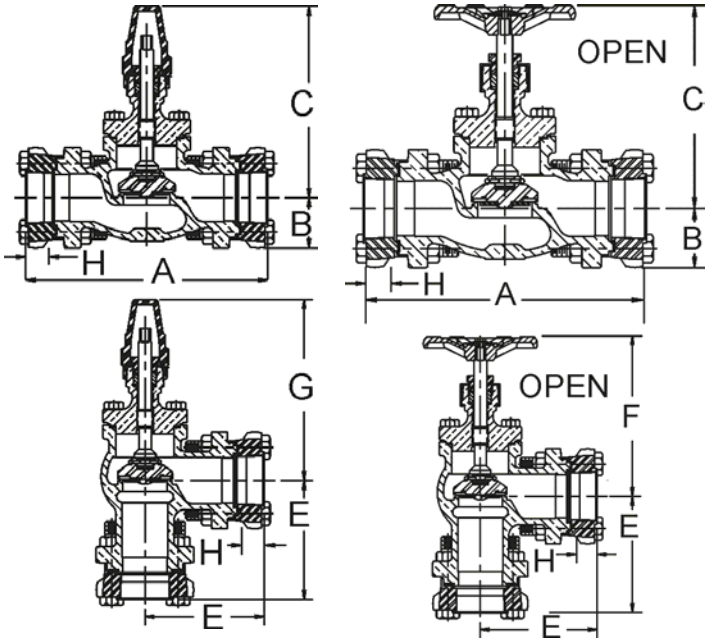
Socket Weld Connections

HENRY TECHNOLOGIES

Suitable for Ammonia

Features:

- **Valve Bodies:** 1" to 3"ductile Iron; 4" cast iron
- **Valve Bonnets:** Flange design, Ductile iron
- **Handwheels:** Malleable iron or die cast zinc
- **Stems:** Acme threaded, stainless steel
- **Backseating:** Can be repacked under pressure
- **Flange Type:** Forged Steel, Square, 4 bolt
- **Non-Rotating** self aligning swivel seat disc with fully retained Teflon seat ring
- **Protective painted finish**
- **Temperature Range:** -20°F(-29°C) to +325°F (+163°C)
- **Maximum cold working pressure:** 1" to 3" 400 PSI (28.1 Kg/cm²); 4" 300 PSI (21.1 Kg/cm²)
- **Suitable for ammonia,** refrigerants and other industrial fluids non-corrosive to steel and ductile iron



SW. Connect	Catalog Numbers				Dimensions in Inches							Weight lbs.	
	Globe Seal Cap	Angle Seal Cap	Globe Hand Wheel	Angle Hand Wheel	A	B	C	E	F	G	H	Globe	Angle
1"	C150C-SW	—	150C-SW	—	9.13	1.88	6.63	—	—	—	.50	19	—
1-1/4"	C151B-SW	—	151B-SW	—	9.13	1.88	6.63	—	—	—	.75	19	—
1-1/2"	C152C-SW	C252C-SW	152C-SW	252C-SW	10.75	2.25	8.50	5.50	8.38	8.25	.75	31	30
2"	C153B-SW	C253B-SW	153B-SW	253B-SW	10.75	2.25	8.50	5.38	8.38	8.25	.75	31	30
2-1/2"	C154B-SW	C254B-SW	154B-SW	254B-SW	12.13	2.75	9.75	6.50	9.38	9.38	1.00	51	49
3"	C155B-SW	—	155B-SW	255B-SW	13.38	3.00	12.62	7.25	11.88	11.13	1.13	67	67
4"	C157B-SW	—	157B-SW	—	14.88	3.50	14.25	8.00	13.25	13.88	1.13	115	—

SHUT-OFF VALVES, Flanged

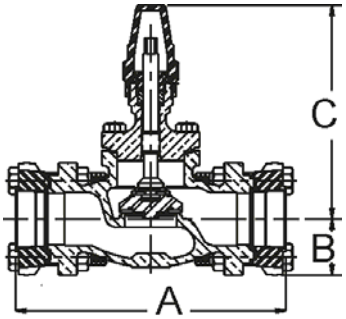
Seal Cap Type, OD Solder Flanges

HENRY TECHNOLOGIES

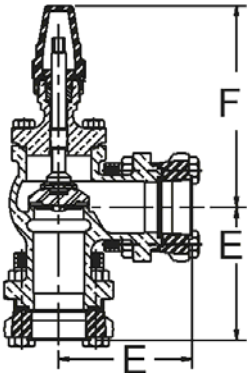
Features:

- **Valve Bodies:** Ductile Iron
- **Valve Bonnets:** Flange design, Ductile iron, bolted
- **Seal caps:** 1" to 3" Molded Valox, 4" steel, vented
- **Stems:** Acme threaded, stainless steel, adaptable for handwheel mounting
- **Backseating:** Can be repacked under pressure
- **Non-Rotating** self aligning swivel seat disc with fully retained Teflon seat ring
- **Protective painted finish**
- **Temperature Range:** -20°F(-29°C) to +325°F (+163°C)
- **Maximum cold working pressure:** 1" to 3" 400 PSI (28.1 Kg/cm²); 4" 300 PSI (21.1 Kg/cm²)
- **Flanges:** Forged Steel with copper extensions
- **Suitable for refrigerants** and other industrial fluids non-corrosive to steel and ductile iron and copper

Seal Cap
Globe Type



Seal Cap
Angle Type



O.D.S. Connection	Catalog Numbers		Dimensions in Inches					Socket Depth	Weight lbs.	
	Globe	Angle	A	B	C	E	F		Globe	Angle
1-3/8"	**C151B-1 3/8**	—	11.63	1.88	7.25	—	—	1.00"	20	—
1-5/8"	**C152C-1 5/8**	**C252C-1 5/8**	13.50	2.25	8.38	6.88	8.25	1.13"	32	31
2-1/8"	**C153B-2 1/8**	**C253B-2 1/8**	14.38	2.25	8.38	7.38	8.25	1.38"	32	31
2-5/8"	**C154B-2 5/8**	**C254B-2 5/8**	16.00	2.75	9.75	8.38	9.38	1.50"	52	50
3-1/8"	**C155B-3 1/8**	—	17.75	3.00	11.88	9.50	11.13	1.75"	70	68
4-1/8"	**C157B-4 1/8**	**C257B-4 1/8**	20.63	3.50	14.88	10.88	13.88	2.25"	117	117

EXPANSION VALVES

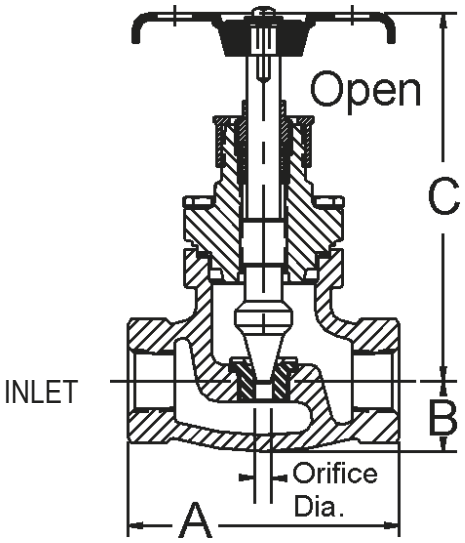
Screw-End, Hand-wheel Type

HENRY TECHNOLOGIES

Suitable for Ammonia

Features:

- **Valve Bodies:** Ductile Iron
- **Valve Bonnets:** Flange design, Ductile iron
- **Stems:** Plated Steel
- **Backseating:** Can be repacked under pressure
- **Temperature Range:** -20°F(-29°C) to +325°F(+163°C)
- **Maximum cold working pressure:** 400 PSI (28.1 Kg/cm²)
- **Individually packaged and labeled**
- **Suitable for ammonia,** refrigerants and other industrial fluids non-corrosive to steel and ductile iron



F.P.T. Connection	Catalog Numbers	Dimensions in Inches			Orifice Diameter	Weight lbs.
		A	B	C		
1/2"	**320F-E**	3.63	1.13	5.00	.25	2.5
3/4"	**330F-E**	3.63	1.13	5.00	.38	2.5
1"	**340F-E**	4.13	1.13	5.25	.50	3.5

FLANGE UNIONS

Oval and Square Type

HENRY TECHNOLOGIES

Suitable for Ammonia

*** ODS Style Flange** unions suitable for halocarbons only

Features:

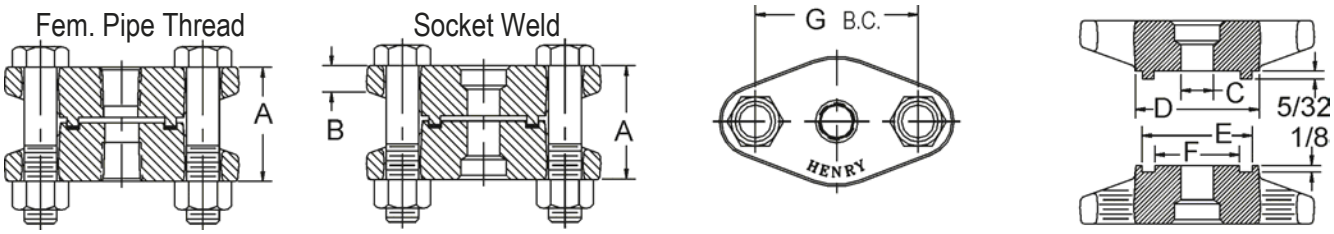
- **Flanges** are made of forged steel and conform to ASTM 105-92
- **Maximum working pressure:**
  Sizes 1/2" to 2" 1,500 PSI (105.5 Kg/cm²)
  Sizes 2-1/2" to 4" 500 PSI (35.1 Kg/cm²)
- **All flanges** having the same nominal connection size and number of bolts are interchangeable
- **All flange dimensions** of the same type and nominal size are identical to those used on Henry flanged handwheels and seal cap valves
- **When ordering** single flanges only, add the suffix letter "F" (female) or "M" (male) to the flanged union catalog number
- **When ordering** flanges for installation on valves up to 4" nominal, order the flanged union catalog number. The appropriate number of additional bolts and nuts are provided with all flanged valves up to 4" nominal size.
- **Standard Gaskets** Garlock 2930
- **Lead Gaskets Available**
  Contact Customer Support (800) 964-3679

FLANGE UNIONS

Oval and Square Type

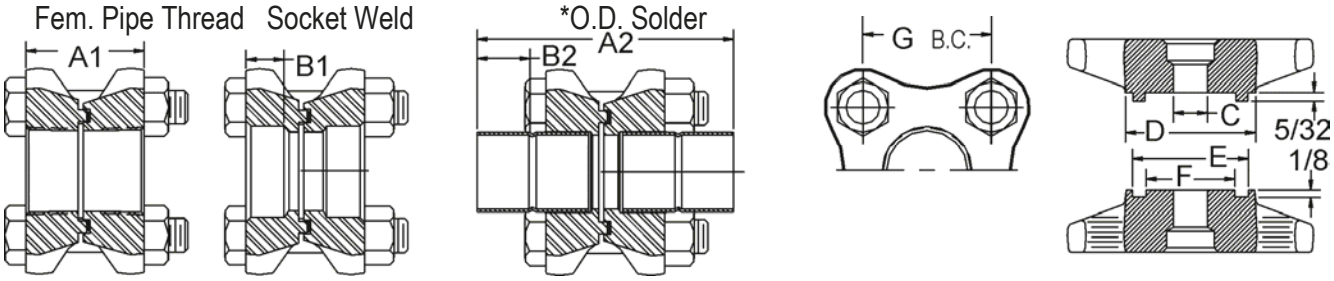
HENRY TECHNOLOGIES

Suitable for Ammonia



OVAL TYPE With Female Pipe Thread & Socket Weld Design

Size	Catalog Numbers		Dimensions in Inches							Wt. Lbs.	
	Fem. Pipe Thread	Socket Weld	A	B	C	D	E	F	G	Fem. Pipe Thread	Socket Weld
1/2"	O2PT-1x1/2	O2SW-1x1/2	2.13	.5	1.66	2.09	2.13	1.63	3.13	3.75	3.75
3/4"	O2PT-1x3/4	O2SW-1x3/4	2.13	.5	1.66	2.09	2.13	1.63	3.13	4.00	4.00
1"	O2PT-1	O2SW-1	2.13	.5	1.66	2.09	2.13	1.63	3.13	3.50	3.75



SQUARE TYPE With Female Pipe Thread & Socket Weld Design

Size	Catalog Numbers		Dimensions in Inches							Weight lbs.	
	Female Pipe Thread	Socket Weld	A1	B1	C	D	E	F	G	Female Pipe Thread	Socket Weld
1"	S2PT-1 1/4x1	S2SW-1 1/4x1	2.13	.50	1.85	2.28	2.31	1.81	2.38	5.25	5.25
1-1/4"	S2PT-1 1/4	S2SW-1 1/4	2.13	.75	1.85	2.28	2.31	1.81	2.38	5.25	5.25
1-1/2"	S2PT-2X1 1/2	S2SW-2x1 1/2	2.50	.75	2.50	3.25	3.28	2.47	3.06	9.00	8.75
2"	S2PT-2	S2SW-2	2.50	.75	2.50	3.25	3.28	2.47	3.06	7.75	7.50
2-1/2"	—	S2SW-2 1/2	2.88	1.00	3.00	3.75	3.75	2.97	4.00	—	13.25
3"	—	S2SW-3	3.13	1.13	3.63	4.38	4.41	3.59	4.13	—	15.75
4"	—	S2SW-4	3.88	1.13	4.75	5.50	5.53	4.72	5.00	—	22.00

SQUARE TYPE With O.D. Solder Design

Size	Catalog Numbers	Dimensions in Inches							Weight lbs.
	O.D. Solder	A2	B2	C	D	E	F	G	O.D. Solder
1-1/4"	S2OD– 1 3/8	4.63	1.00	1.85	2.28	2.31	1.81	2.38	5.75
1-1/2"	S2OD– 2x1 5/8	6.13	1.13	2.50	3.25	3.28	2.47	3.06	9.75
2"	S2OD– 2 1/8	6.13	1.38	2.50	3.25	3.28	2.47	3.06	8.75
2-1/2"	S2OD– 2 5/8	6.75	1.50	3.00	3.75	3.78	2.97	4.00	15.00
3"	S2OD– 3 1/8	7.50	1.75	3.63	4.38	4.41	3.59	4.13	18.50
4"	S2OD– 4 1/8	9.75	2.25	4.75	5.50	5.53	4.72	5.00	28.00

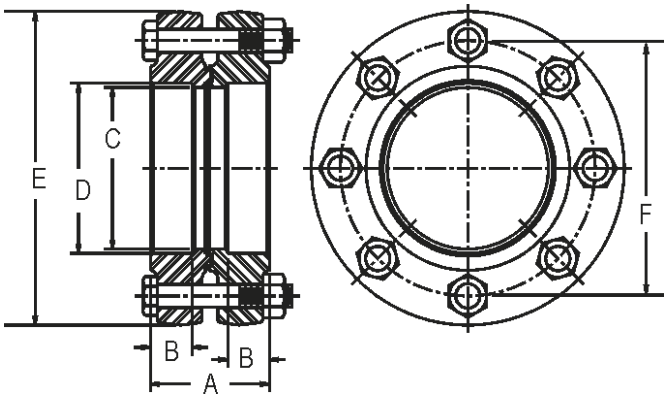
* O.D. SOLDER CONN'S suitable for HALOCARBON refrigerants only

FLANGE UNIONS

Round Type

HENRY TECHNOLOGIES

Suitable for Ammonia



Size	Catalog Numbers	Dimensions in Inches					
		A	B	C dia.	D dia.	E dia.	F dia.
5”	R2SWA-5	3.97	1.39	5.375	5.66	10.44	8.50
6”	R2SWA-6	4.06	1.38	6.438	6.72	11.69	9.75

Hardware Kits	
Flange Union	Kit (Nuts, Cap Screws, Gasket)
O2PT1 X 1/2	8-006-033
O2PT1 X 3/4	8-006-033
O2PT-1	8-006-033
O2SW-1 X 1/2	8-006-033
O2SW-1 X 3/4	8-006-033
O2SW-1	8-006-033
S2PT-1-1/4 X 1	8-006-034
S2PT-1-1/4	8-006-034
S2PT-2 X 1-1/2	8-006-035
S2PT-2	8-006-035
S2OD-1-3/8	8-006-034
S2OD-2 X 1-5/8	8-006-035
S2OD-2-1/8	8-006-035
S2OD-2-5/8	8-006-036
S2OD-3-1/8	8-006-037
S2SW-1-1/4 X 1	8-006-034
S2SW-1-1/4	8-006-034
S2SW-2 X 1-1/2	8-006-035
S2SW-2	8-006-035
S2SW-2-1/2	8-006-036
S2SW-3	8-006-037
S2SW-4	8-006-037

SHUT-OFF VALVES

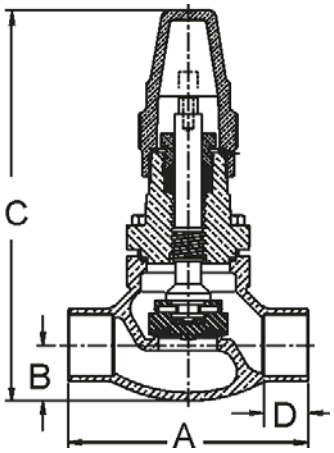
Globe Design

HENRY TECHNOLOGIES

Features:

- **Valve Bodies:** Cast bronze
- **Valve Bonnets:** Forged brass
- **Seal Caps:** Molded valox
- **Stems:** Acme threaded, plated steel or stainless steel
- **Backseating:** Can be repacked under pressure
- **Non-Rotating** self aligning swivel seat disc with fully retained Teflon seat ring
- **Valve Size:** Identification cast on valve body
- **Temperature Range:** -40°F(-40°C) to +325°F (+163°C)
- **Maximum cold working pressure:** 450 PSI (31 Kg/cm²)
- **Bonnet Threaded** to accept seal cap
- **Suitable for refrigerants** and other industrial fluids non-corrosive to steel and brass

Type 203,
Globe Type



Catalog Number	O.D.S. Connection	Dimensions in Inches				* CV Valve	Weight lbs.
		A	B	C	D		
2030-AA	7/8”	4.25	.97	5.62	.75	5.3	3.00
2030-BA	1-1/8”	4.88	1.14	5.88	.94	7.4	4.68
2031	1-3/8”	5.38	1.25	8.75	1.00	10.8	7.35
2032	1-5/8”	6.50	1.50	9.94	1.13	13.3	10.40
2033	2-1/8”	8.50	2.00	10.63	1.50	22.0	16.69
2034	2-5/8”	11.00	2.25	11.94	1.69	36.3	28.12
2035	3-1/8”	12.00	2.63	13.25	1.75	52.0	44.00

* CV Valve—GPM Water @ standard conditions and 1 psi pressure drop

SHUT-OFF VALVES

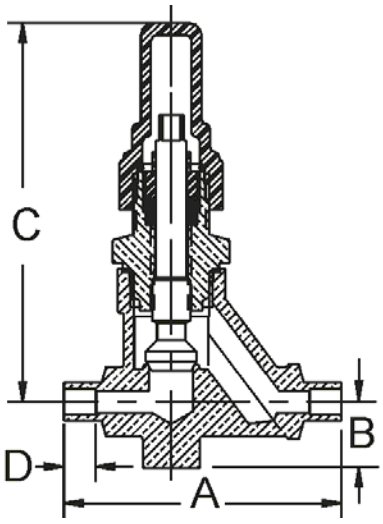
Back-Seating Design

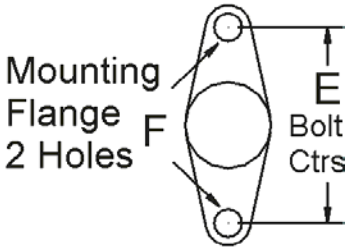
HENRY TECHNOLOGIES

Features:

- **Forged Brass Bodies**
- **Valve Bonnets:** Brass
- **Seal caps:** Molded Valox
- **Stems:** plated steel
- **Temperature Range:** -20°F(-29°C) to +300°F (+149°C)
- **Maximum cold working pressure:** 500 PSI (35 Kg/cm²)
- **Flanges:** integral mounting
- **Suitable for refrigerants** and other industrial fluids non-corrosive to steel and brass
- **Recommended** for hot gas service or other high temperature applications.

Type 926,
Back-Seating





Catalog Number	O.D.S. Connection	Dimensions in Inches						Weight lbs.
		A	B	C	D	E	F	
9261	1/4”	2.69	.66	4.35	.31	1.63	.28	.79
9263	3/8”	3.00	.66	4.35	.38	1.63	.28	.81
9264	1/2”	3.19	.66	4.35	.44	1.63	.28	.80
9265	5/8”	3.38	.66	4.35	.52	1.63	.28	.79

RECEIVER VALVES

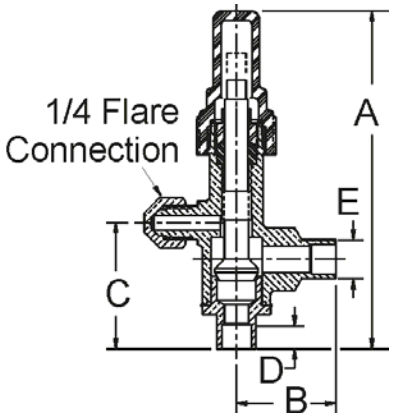
Packed, Angle Type, Back-Seating

HENRY TECHNOLOGIES

Features:

- **Forged Brass Bodies**
- **Seal caps:** Molded Valox, brass flare
- **Stems:** plated steel black oxidized
- **Temperature Range:** -20°F(-29°C) to +300°F (+149°C)
- **Maximum cold working pressure:** 500 PSI (35 Kg/cm²)
- **Suitable for refrigerants** and other industrial fluids non-corrosive to steel and brass
- **Connection:** 1/4" flare above the back seat is furnished with brass flare cap for type No. 783 valves only

Type 779-B, Type 783,
Back-Seating



Catalog Number	Size Connection		Dimensions in Inches					Weight lbs.
	Bottom	Side	A	B	C	D	E	
7792-B	1/2" M.P.T.	1/2" FL.	4.88	1.28	1.69	.38	1/2"	.62
7793-B	1/2" M.P.T.	5/8" FL.	4.88	1.53	1.69	.38	1/2"	.69
7830	3/8" O.D.S.		4.34	1.28	1.16	.31	—	.54
7831	1/2" O.D.S.		4.47	1.28	1.25	.38	—	.54
7832	5/8" O.D.S.		4.58	1.25	1.41	.50	—	.54
7833	7/8" O.D.S.		5.44	1.75	1.69	.75	—	1.06
7834	1-1/8" O.D.S.		7.10	1.75	2.00	.94	—	1.83
7835	1-3/8" O.D.S.		7.42	2.00	2.25	1.00	—	2.40
7836	1-5/8" O.D.S.		9.14	2.13	2.44	1.09	—	3.53

RECEIVER VALVES

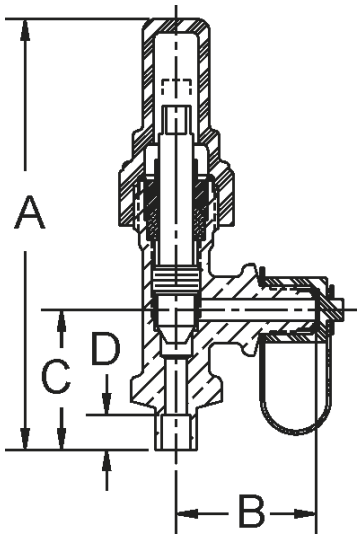
Packed Angle Type, Charging & Purging

HENRY TECHNOLOGIES

Features:

- **Forged Brass Bodies**
- **Seal Caps:** Molded valox, brass flare
- **Stems:** plated steel black oxidized
- **Temperature Range:** -20°F(-29°C) to +300°F(+149°C)
- **Maximum cold working pressure:** 500 PSI (31 Kg/cm²)
- **Suitable for refrigerants** and other industrial fluids non-corrosive to steel and brass
- **Valves furnished disassembled** to avoid excessive heating of internal parts during brazing

Type 927, Non Back-Seating



Catalog Number	Size Connection		Dimensions in Inches				Weight lbs.
	Bottom	Side	A	B	C	D	
9270	1/4" O.D.S.	1/4" FL.	3.88	1.25	1.25	.31	.40
9271	3/8" O.D.S.	1/4" FL.	3.88	1.25	1.25	.31	.40
9272	3/8" O.D.S.	3/8" FL.	3.88	1.25	1.25	.31	.46
9273	1/2" O.D.S.	1/4" FL.	3.88	1.25	1.25	.38	.40
9274	1/2" O.D.S.	3/8" FL.	3.88	1.25	1.25	.38	.46

RECEIVER VALVES

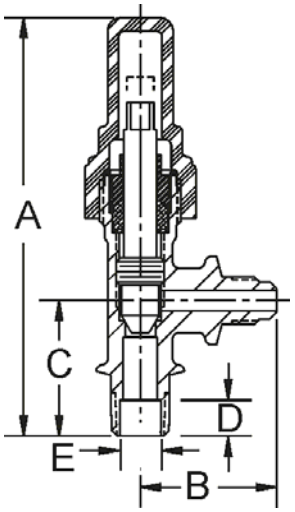
Packed Angle Type, Non Back-Seating

HENRY TECHNOLOGIES

Features:

- **Forged brass bodies**
- **Seal Caps:** Molded valox, brass flare
- **Stems:** plated steel black oxidized
- **Temperature Range:** -20°F(-29°C) to +300°F(+149°C)
- **Maximum cold working pressure:** 500 PSI (35 Kg/cm²)
- **Suitable for refrigerants** and other industrial fluids non-corrosive to steel and brass

Type 776-B,
Non Back-Seating



Catalog Number	Size Connection		Dimensions in Inches					Weight lbs.
	Bottom	Side	A	B	C	D	E	
7761-B	1/4" M.P.T.	1/4" FL.	3.80	1.25	1.25	.31	1/4" O.D.S.	.35
7771-B	1/4" M.P.T.	1/4" F.P.T.	3.80	1.25	1.25	.31	5/16" O.D.S.	.35
7763-B	1/4" M.P.T.	3/8" FL.	3.80	1.25	1.25	.31	5/16" O.D.S.	.35
7764-B	3/8" M.P.T.	1/4" FL.	3.80	1.25	1.25	.31	3/8" O.D.S.	.35
7766-B	3/8" M.P.T.	3/8" FL.	3.80	1.25	1.25	.31	3/8" O.D.S.	.35
7767-B	3/8" M.P.T.	1/2" FL.	3.80	1.25	1.25	.31	3/8" O.D.S.	.40
7768-AB	1/2" M.P.T.	3/8" FL.	3.94	1.25	1.38	.31	1/2" O.D.S.	.59
7768-B	1/2" M.P.T.	5/8" FL.	4.56	1.62	1.38	.31	1/2" O.D.S.	.91

SHUT OFF VALVES

Forged Steel

HENRY TECHNOLOGIES

Suitable for Ammonia

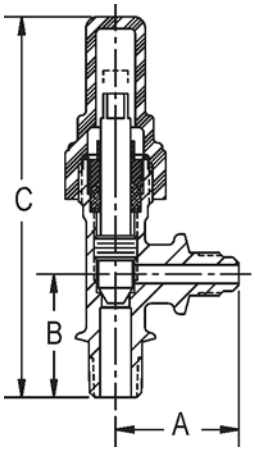
Type 7761

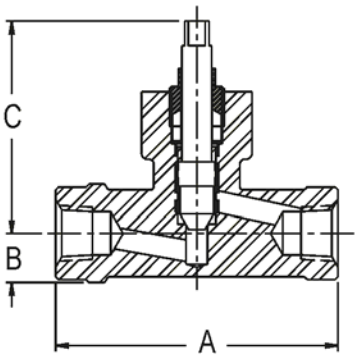
Type 957

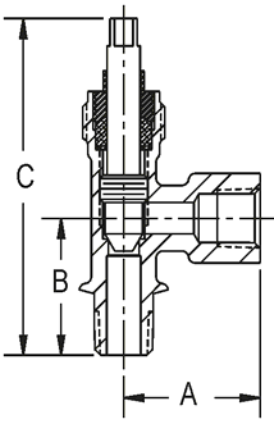
Type 965-967

Features:

- **Forged Steel Bodies**
- **Seal Caps:** Molded Valox
- **Stems:** plated steel black oxidized
- **Temperature Range:** -20°F(-29°C) to +300°F(+149°C)
- **Maximum cold working pressure:** 1000 PSI (70.3 Kg/cm²)
- **Suitable for ammonia** and other industrial fluids non-corrosive to steel







Type	Catalog Number	Size Connection	Dimensions in Inches			Weight lbs.
			A	B	C	
Seal Cap	**7761**	1/4 M.P.T. X 1/4 FL.	1.06	1.06	2.38	.50
Seal Cap	**7771**	1/4 M.P.T. X 1/4 F.P.T.	1.06	1.06	2.38	.50
Seal Cap	**7771E***	1/4 M.P.T. X 1/4 F.P.T.	1.06	5.00	2.66	.75
Seal Cap	**7772**	1/4 F.P.T.	1.06	1.06	2.38	.50
Seal Cap	**7773**	3/8 M.P.T. X 3/8 F.P.T.	1.50	1.50	2.63	.75
Seal Cap	**7774**	3/8 F.P.T.	1.50	1.50	2.63	.75
Seal Cap	**7775**	1/2 M.P.T. X 1/2 F.P.T.	1.50	1.50	2.63	.75
Globe	**957**	1/4 F.P.T.	1.75	.50	2.63	.50
Angle	**965**	1/4 M.P.T. X 1/4 F.P.T.	1.06	1.06	2.13	.50
Angle	**967**	1/4 F.P.T.	1.06	1.06	2.13	.50

* Extended inlet valve

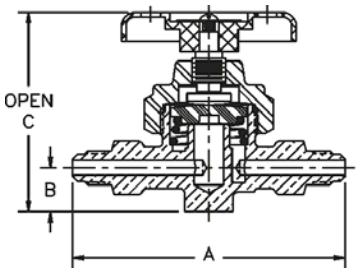
PACKLESS VALVES

Golden Bantam® Type

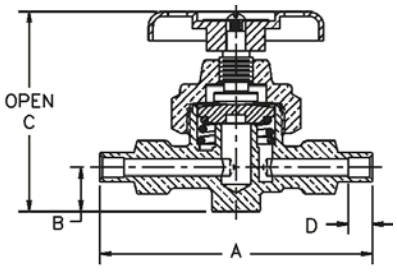
HENRY TECHNOLOGIES

Features:

- **Forged brass cored body** provides durability, maximum rigidity, strength. Integral mounting bracket on valves simplifies installation
- **Forged brass bonnet** machined to provide support for diaphragms when valve is wide open
- **Hermetic seal** between bonnet, diaphragms and body
- **Large diameter diaphragms** of dissimilar metals permit greater lift, aids flow and longer life. Phosphor bronze for longer life; stainless steel to eliminate corrosion
- **Raised seat** reduces possibility of foreign matter accumulating on valve seat
- **Stainless steel spring**, corrosion resistant for long life
- **Heat stabilized nylon seat disc** for easy positive shut-off
- **Positive backseating** with valve in wide open position
- **Recommended** for vacuum applications and service pressures up to 500 PSI (35 Kg/cm2)
- **Temperature rating:** -20°F (-29°C) to +275°F (+135°C)
- **Suitable for refrigerants** and other hazardous or expensive industrial fluids non-corrosive to brass, copper and stainless steel



Type 515



Type 516

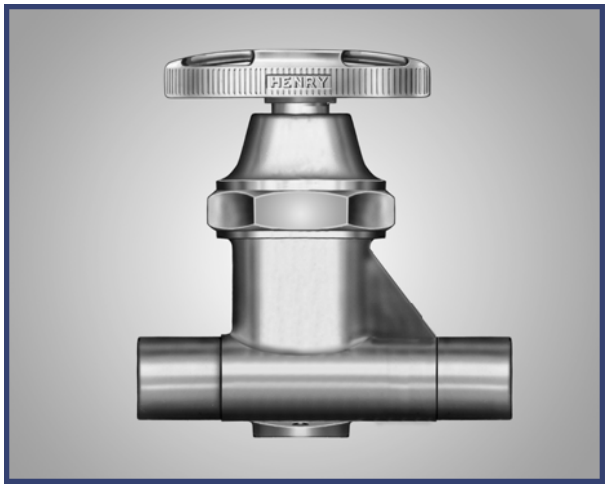
c UL us LISTED

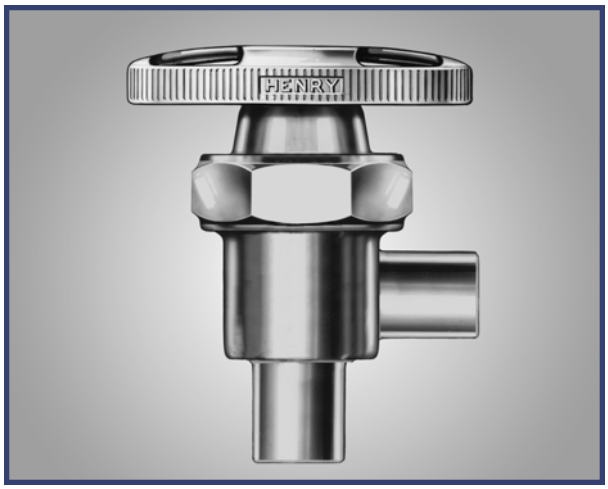
Type	Catalog Number	Size Connection	Dimensions in Inches						Weight lbs
			A	B	C	D	E	F	
515	**5151**	1/4" FL	2.63	.56	2.56	—	2.00	.28	.62
515	**5153**	3/8" FL	2.88	.56	2.56	—	2.00	.28	.74
516	**5161**	1/4" ODS	3.25	.56	2.56	.31	2.00	.28	.77
516	**5163**	3/8" ODS	3.50	.56	2.56	.38	2.00	.28	.78
516	**5164**	1/2" ODS	3.88	.63	2.94	.38	2.00	.28	1.12
516	**5165**	5/8" ODS	4.13	.75	3.00	.56	2.00	.28	1.29

PACKLESS VALVES

Standard Type

HENRY TECHNOLOGIES





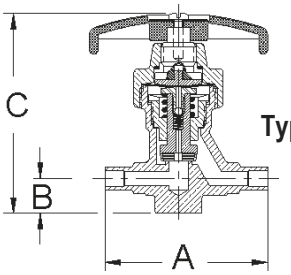
Features:

- **Forged brass cored body** provides durability, maximum rigidity, strength. Integral mounting bracket on valves simplifies installation
- **Forged brass bonnet** machined to provide support for diaphragms when valve is wide open
- **Hermetic seal** between bonnet, diaphragms and body
- **Large diameter diaphragms** of dissimilar metals permit greater lift, aids flow and longer life. Phosphor bronze for longer life; stainless steel to eliminate corrosion
- **Raised seat** reduces possibility of foreign matter accumulating on valve seat
- **Stainless steel spring**, corrosion resistant for long life
- **Heat stabilized nylon seat disc** for easy positive shut-off
- **Positive backseating** with valve in wide open position
- **Recommended** for vacuum applications and service pressures up to 500 PSI (35 Kg/cm2)
- Temperature rating: -20°F (-29°C) to +275°F (+135°C)
- Suitable for refrigerants and other hazardous or expensive industrial fluids non-corrosive to brass, copper and stainless steel
- **Balanced action**
- **Non-directional flow**
- **Backseating lower stem**
- **Diaphragms are changeable under line pressure**
- **Standard globe and angle** valves are designed in conformance with MIL-V-20064E and Military Standards MS-35880, MS-35881, and MS-35883

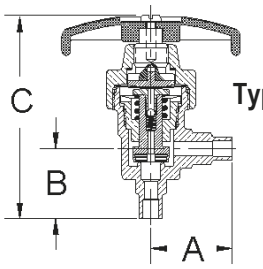
PACKLESS VALVES

Standard Type

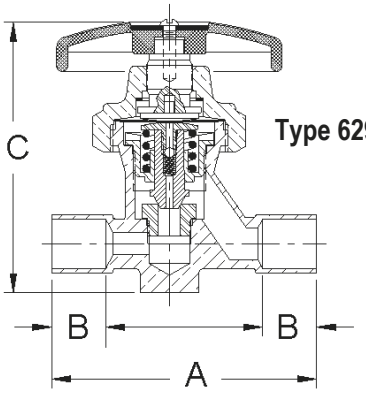
HENRY TECHNOLOGIES



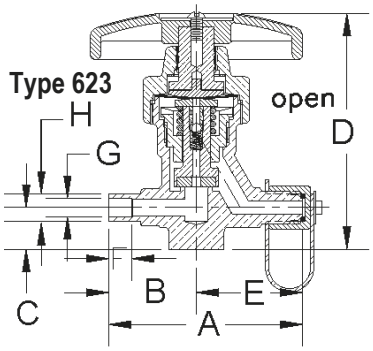
Type 626

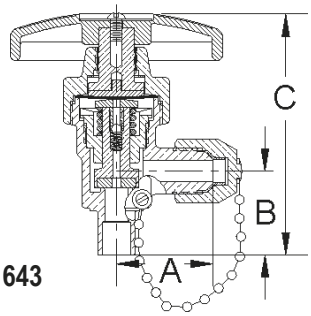


Type 647



Type 629





Type 643

Standard Globe Valves O.D. Solder

Catalog No.	Size Connection	Dimensions in Inches A	B	C	Mtg. Hole Ctr.	Weight lbs.
6261N	1/4" O.D.S.	2.63	.63	3.38	1.63	1.00
6263N	3/8" O.D.S.	2.63	.63	3.38	1.63	1.00
6264N	1/2" O.D.S.	3.13	.63	3.63	1.75	1.25
6265N	5/8" O.D.S.	3.50	.75	3.75	2.00	1.13
6266N	3/4" O.D.S.	4.38	.75	5.00	2.25	2.75
6267N	7/8" O.D.S.	4.88	.75	5.38	2.5	3.25
6268N	1-1/8" O.D.S.	6.00	1.00	6.50	3.25	5.50

Standard Angle Valves O.D. Solder

Catalog No.	Size Connection	Dimensions in Inches A	B	C	Weight lbs.
6471N	1/4" O.D.S.	1.38	1.13	3.50	.75
6473N	3/8" O.D.S.	1.38	1.13	3.50	.75
6474N	1/2" O.D.S.	1.50	1.25	3.50	1.00
6475N	5/8" O.D.S.	1.50	1.38	3.88	1.25
6476N	3/4" O.D.S.	1.88	1.50	4.88	2.25
6477N	7/8" O.D.S.	2.13	1.88	5.38	3.75
6478N	1-1/8" O.D.S.	2.50	2.25	6.50	4.25

Hand Expansion Valves Standard Type

Catalog No.	Size Connection	Dimensions in Inches Ori.Dia	A	B	C	Mtg. Hole Dia.	Weight lbs
6291N	1/4" O.D.S.	.22	2.63	.63	3.38	1.63	1.00
6293N	3/8" O.D.S.	.22	2.63	.63	3.38	1.63	1.00
6294N	1/2" O.D.S.	.22	2.63	.63	3.38	1.63	1.00
6295N	5/8" O.D.S.	.28	3.38	.63	3.50	1.75	1.25
6296N	3/4" O.D.S.	.34	3.88	.75	3.75	2.00	1.38
6297N	7/8" O.D.S.	.38	4.38	.75	5.00	2.25	2.75
6298N	1-1/8" O.D.S.	.44	4.88	.75	5.38	2.50	3.25

Standard Globe Valves O.D. Solder

Catalog No.	Size Connection	Dimensions in Inches A	B	C	Mtg. Hole Ctr.	Weight lbs.
6231N	1/4" O.D.S. x 1/4" FL.	2.63	.63	3.38	1.63	1.00
6232N	3/8" O.D.S. x 3/8" FL.	2.63	.63	3.38	1.63	1.00
6233N	1/2" O.D.S. x 1/2" FL.	3.25	.63	3.63	1.75	1.25
6234N	5/8" O.D.S. x 5/8" FL.	3.75	.75	3.75	2.00	1.38

Standard Angle Valves O.D. Solder

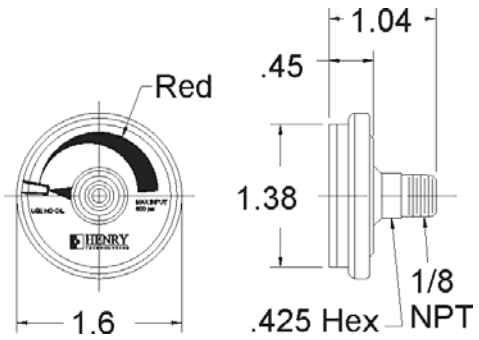
Catalog No.	Size Connection Bottom	Side	Dimensions in Inches A	B	C	Weight lbs.
6432N	3/8 O.D.S.	3/8 FL.	1.31	1.13	3.25	.78
6433N	1/2 O.D.S.	1/2 FL.	1.63	1.19	3.33	1.15
6434N	5/8 O.D.S.	5/8 FL.	1.75	1.38	3.82	1.35

PRESSURE INDICATORS

And Switches

HENRY TECHNOLOGIES

Suitable for Ammonia



G15 Pressure Indicator

Sentry Rupture Disc Assembly

The G15 Pressure Indicator can be used with our Sentry Rupture Disc Assembly, which helps prevent leakage of both Halocarbon and Ammonia refrigerants by indicating whether the relief valve has discharged.
The Sentry Rupture Disc Assembly, as required by ANSI/ASME code, provides a chamber between the rupture disc and the relief valve, and a connection to install the new Pressure Indicator. This arrangement permits a positive indication that the disc has ruptured and the relief valve has discharged.

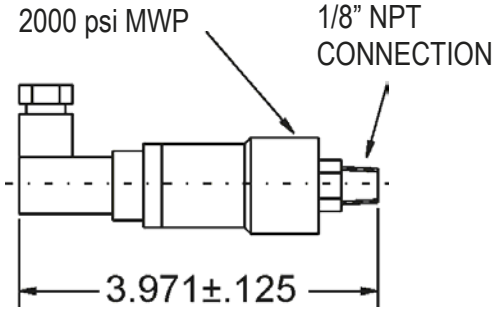
Features:

- **Dial**: 13⁄8" (35mm), white aluminum dial with red marking
- **Dial**: Maximum working pressure: 600 P.S.I.
- **Case**: AISI 304 stainless steel
- **Lens**: Plexiglas, watertight
- **Pointer**: AISI 304 stainless steel
- **Socket**: AISI 304 stainless steel
- **Ambient temperature**: -40°F / +150°F (-40°C / +65°C)

Features:

- **Type:** Direct action blade contact
- **Contacts:** Silver alloy, gold plated
- **Set Point:** Factory set and sealed
- **Pressure setting:** 5 PSI
- **Switch Burst Pressure:** 750 PSI
- **Ratings:** 4 AMP-24 VAC
- **Diaphragm:** Teflon
- **Temperature Range**: -40°F to +250°F
- **Connector:** 1⁄8-27 NPT male thread
- **Terminals:** Metri-Pack, 1⁄4" blade
- **Circuitry:** Normally opened
- **Base:** Steel
- **Cover:** Glass reinforced polyester
- **Furnished** with Metri-Pack Connector and 10 ft. of wire

Note, Label marked:
Ashcroft Pressure Switch
P/N APSRSCX3502
ELEC. 250VAC, 5A/28VDC, 3A
316 Stainless Steel Construction
2000 psi MWP



Pressure Switch SW57

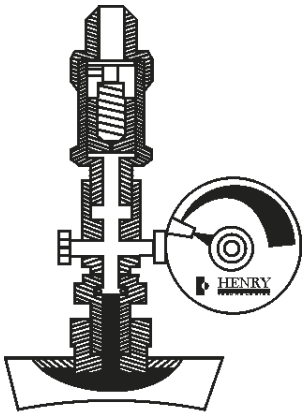
The addition of the Pressure Switch provides inexpensive means of providing an electrical signal to warn of a refrigerant release caused by a system malfunction. An extra gauge port is provided on our Sentry Rupture Disc Assembly for the Pressure Switch.

Notes:

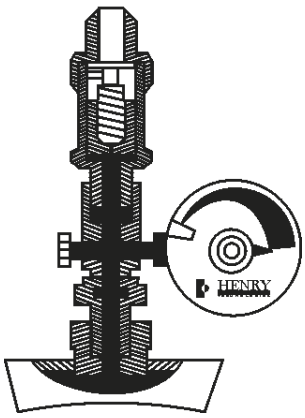
The ASME Code, Section VIII, Division I provides guidelines for the application of Rupture Disc Devices in combination with pressure relief valves. The following summary is from the ASME Code, Section VIII, Division I UG 127. A Rupture Disc Device may be installed between a Pressure Relief Valve and the Vessel provided: The combination of the spring loaded Safety Relief Valve and the Rupture Disc Device is ample in capacity to prevent the pressure in the vessel from rising more than 10% above its design pressure. Since the capacity of a Relief Device is measured at 10% above its stamped setting, the setting cannot exceed the design pressure of the Vessel. Use of a Rupture Disc Device in combination with a Safety Relief Valve shall be carefully evaluated to ensure that the media being handled and the valve operational characteristics will result in pop action of the Relief Valve coincident with the bursting of the Rupture Disc.

The stamped capacity of a spring loaded Safety Relief Valve when installed with a 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.

The space between a Rupture Disc Device and a Safety Relief Valve shall be provided with a Pressure Gauge, or suitable Telltale Indicator. This arrangement permits detection of Disc rupture or leakage. Be warned that a Rupture Disc will not burst at its design pressure if back pressure builds up in the space between the Disc and the Safety Relief Valve which will occur should leakage develop in the Rupture Disc due to corrosion or other causes.



The "SENTRY" Rupture Disc Assembly/Relief Valve Combination is shown in its Normal operating condition with System Pressure only under the Rupture Disc. (See top pressure gauge.) The "SENTRY" Rupture Disc Assembly/Relief Valve Combination is shown with the Disc ruptured by High System Pressure. Note the System Pressure in the Chamber beneath the Relief Valve. (See bottom pressure gauge.) The Relief Valve has discharged but reclosed, preventing the entire refrigerant charge from escaping into the atmosphere. Note: Relief valve, pressure gauge and pipe plug not included with "SENTRY" Rupture Disc Assembly.

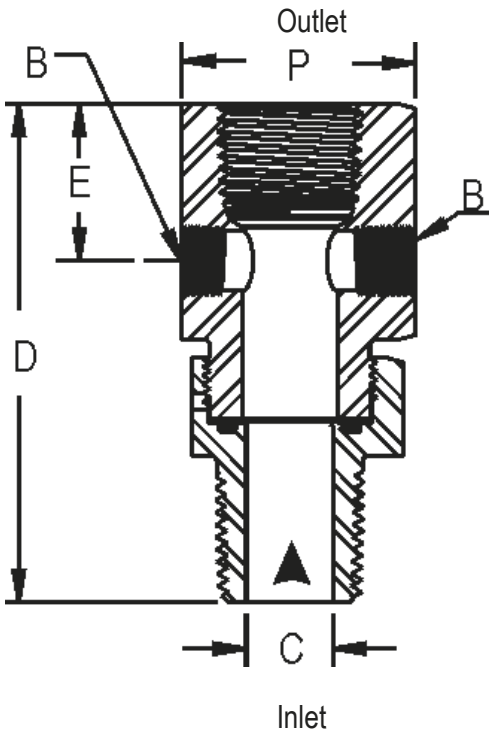


Catalog Number	Type	A Inlet M.P.T.	B Gauge M.P.T.	Dimensions in Inches			Orifice C	Pressure Range, psig	Weight lbs.
				D	E	P Hex			
5525	Brass	3/8”	1/8”	3.25	.77	1.25	.38	150-675	.69
5526	Brass	1/2”	1/8”	3.25	.90	1.25	.50	150-675	.68
5626	Steel	1/2”	1/8”	3.25	.90	1.00	.50	150-450	.62
5627	Steel	3/4”	1/8”	3.25	1.13	1.50	.75	150-450	1.44
5628	Steel	1”	1/8”	3.63	1.25	1.75	1.00	150-450	1.36
5629	Steel	1-1/4”	1/8”	3.75	1.31	2.00	1.312	150-450	1.56

Order Format: 5525-XXX-CE, where “XXX” is stamped burst pressure.

Features:

- **5525 & 5526 brass series**; 5626, 5627, 5628 & 5629 stainless steel series
- **Tested**, certified and “UD” stamped to ASME Section VIII Div I
- **Certified** to conform to the PED 97/23/EC and bears the CE mark
- **Prevents leakage or weeping** of fluids through the relief valve
- **Extra gauge port** for installation of a pressure switch to warn of a refrigerant release caused by a system malfunction
- **A non-fragmenting rupture disc**
- **Rupture disc** assembly factory sealed
- **Standard Tolerance** ± 5 % Burst Pressure



CRN 7790

NB

UD

CE 0036

PRESSURE RELIEF VALVES

Angle & Straight-Thru Types (150-675 PSIG)

HENRY TECHNOLOGIES

Type 52 Angle

Type 523 & 524

Type 560

Type 534

- **Brass construction set and sealed** at the factory; all N.P.T.F. connections are American Standard dry-seal tapered pipe threads
- **Valves are stamped** with catalog number, size, pressure setting, capacity and ASME-UV National Board symbol; CRN number and flow arrow
- **All N.P.T.F. connections** are American standard dry-seal tapered pipe threads
- **Consistent operation** at marked pressure setting
- **These relief valves** are designed with HENRY'S "Center Loading Pivot" concept allowing the piston to reseat squarely to the body seat, thus reducing the possibilities of leakage
- **Suitable** for refrigerants R22, R134a, R404a, R410a, R500, R502 and other industrial fluids non-corrosive to brass, monel, steel, Neoprene and Teflon.
- **Factory set and sealed**
- **Temperature rating:** –20°F to +160°F
- **Orders must specify** catalog number, pressure setting, and type of refrigerant or fluid with which the valve is to be used; UV/NB certified setting range varies with design, see ratings sheet; contact Henry for non-certified setting range info.

Selection of Relief Valves. Most states and municipalities which have refrigeration safety codes conform to the "American Standard Safety Code for Mechanical Refrigeration (ANSI/ASHRAE 15)." This code and ASME states a relief valve setting is not to exceed the design working pressure of the vessel on which the relief valve is installed. The discharge capacity required is based on the size of the vessel and the refrigerant used. The discharge capacity of relief valves varies with the pressure setting. The capacities of Henry Relief Valves at various pressure settings are available by calling the Engineering and Technical Assistance line 1-800-627-5148.

Whenever conditions permit it is highly advisable to have the relief valve pressure setting (which must not exceed the design working pressure of the vessel) at least 25% higher than the normal maximum operating pressure for the refrigerant used.

Standard pressure settings (brass): 150, 235, 300, 350, 400, 450 PSIG
Standard pressure settings (steel): 150, 250, 300 PSIG
Standard pressure settings (High Pressure): 500, 550, 600, 650, 675 PSIG
Important: Orders must specify pressure setting.
Certification: Available if requested on purchase order, (-C) suffix, i.e. 5600-300-C

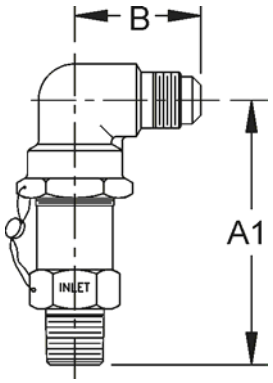
Relief Valve Capacity Ratings: (Pounds per minute) - Henry Relief valves are constructed and marked in accordance with the requirements of the ASME (Boiler and Pressure Vessel Code Section VIII, Division 1).

These valves are also approved by many local refrigeration and air conditioning codes in the USA and Canada for relief of excess pressure. In addition, these valves are stamped with the ASME UV symbol and NB to indicate National Board certification as to capacities.

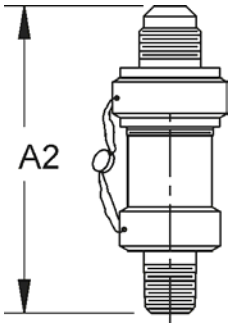
PRESSURE RELIEF VALVES

Angle & Straight-Thru Types

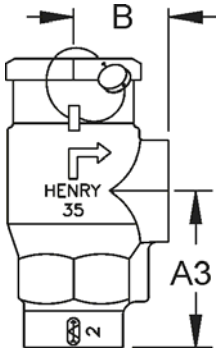
HENRY TECHNOLOGIES



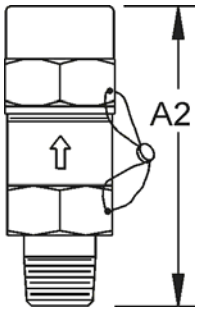
Type 52 Angle



Type 523 & 524



Type 560



Type 534

Straight-Through Relief Valves					
Catalog Number	Size Conn.		Length, In "A2"	Orifice Diam.	Weight lbs.
	Inlet	Outlet			
5230	1/4" M.P.T.	3/8" FL.	3.16	0.250	0.38
5231	3/8" M.P.T.	3/8" FL.	3.16	0.250	0.39
5232	1/2" M.P.T.	5/8" FL.	4.00	0.437	0.85
5232B	1/2" M.P.T.	1/2" F.P.T.	4.02	0.437	0.97
5240N1/2	1/2" M.P.T.	3/4" F.P.T.	3.74	0.312	0.95
5242N3/4	3/4" M.P.T.	3/4" F.P.T.	3.74	0.312	1.03
***5340N1/2**	1/2" M.P.T.	3/4" F.P.T.	3.70	0.312	0.95
***5342N3/4**	3/4" M.P.T.	3/4" F.P.T.	3.70	0.312	1.03
5244-3/4	3/4" M.P.T	1" F.P.T.	4.16	0.500	1.46
5244-1	1" M.P.T.	1" F.P.T.	4.16	0.500	1.46
***5344-3/4**	3/4" M.P.T	1" F.P.T.	4.19	0.500	1.46
***5344-1**	1" M.P.T.	1" F.P.T.	4.19	0.500	1.46
5246N1	1" M.P.T.	1-1/4" F.P.T.	6.30	0.531	2.50
5246N1-1/4	1-1/4" M.P.T.	1-1/4" F.P.T.	6.30	0.531	2.60
***5345N**	1" M.P.T.	1-1/4" F.P.T.	6.30	0.531	2.50
***5346N1-1/4**	1-1/4" M.P.T.	1-1/4" F.P.T.	6.30	0.531	2.60
5233A	3/8" M.P.T.	7/8" FL.	4.56	0.250	1.05
5234A	3/8" M.P.T.	3/4" F.P.T.	4.20	0.250	1.05
5235A	1/2" M.P.T.	3/4" F.P.T.	4.40	0.250	1.12

* Suitable for Ammonia

Features:

- **Bodies**: 5600 Series, Ductile Iron; 5300 Series, Stainless Steel; 5200 Series, Brass
- **Seat** inserts, seat discs and main guides, piston stainless steel on 5600 series
- **Seat material**: Teflon® or Neoprene
- **Connections**: (NPTF) pipe threaded
- **Other component** metal parts are steel
- **Set and sealed** at the factory and furnished with nameplates stamped with catalog no., size, pressure setting, capacity and ASME-UV National Board symbol
- **Temperature rating**: -20°F (-28°C) to +160°F (+71°C)
- **Protective lacquer** finish on 5600 series
- ***Suitable for ammonia**, HFC's and CFC's, refrigerants and other industrial fluids non-corrosive to steel and Teflon as indicated
- **Each valve** has unique serialization for tagging requirements

Angle Relief Valves							
Catalog Number	Size Connection		Dimensions in Inches			Orifice Dia.	Weight lbs.
	Inlet	Outlet	A1	A3	B		
526E	3/8" M.P.T.	3/8" FL.	2.96	—	1.41	0.250	0.40
527E	1/2" M.P.T.	5/8" FL.	3.81	—	1.72	0.437	0.85
***5600**	1/2" F.P.T.	3/4" F.P.T.	—	2.69	1.63	0.500	3.60
***5601**	1/2" F.P.T.	1" F.P.T.	—	2.69	1.63	0.500	3.44
***5602**	3/4" F.P.T.	1" F.P.T.	—	2.69	1.63	0.500	3.40
***5603**	1" F.P.T.	1-1/4" F.P.T.	—	2.88	2.00	.0500	4.75
***5604**	1-1/4" F.P.T.	1-1/2" F.P.T.	—	4.13	2.31	0.703	6.50

PRESSURE RELIEF VALVES

Angle & Straight-Thru Types

HENRY TECHNOLOGIES

Features:

Relief Valves in the types and sizes shown are constructed in accordance with the requirements of the ASME. These valves are also approved by many local refrigeration and air conditioning codes in the USA and Canada for relief of excess pressure. In addition, these valves are stamped with ASME- UV symbol and NB to indicate National Board certification of capacities between 150 P.S.I. and 450 P.S.I.

UV
ASME NB National Board Certified

Whenever conditions permit, it is advisable to have the relief valve pressure setting (which must not exceed the design working pressure of the vessel) at least 25 percent higher than the normal maximum operating pressure for the refrigerant used.

*** Suitable for Ammonia**

National Board Certified Relief Valve Capacity Ratings (pounds of air per min.)

Catalog Number	Pressure Settings—PSIG					
	150	235	300	350	400	450
5230	5.0	7.6	9.6	11.2	12.7	14.3
5231	5.0	7.6	9.6	11.2	12.7	14.3
526E	5.0	7.6	9.6	11.2	12.7	14.3
5232	12.6	19.1	24.2	28.0	31.9	35.7
5232B	12.6	19.1	24.2	28.0	31.9	35.7
527E	12.6	19.1	24.2	28.0	31.9	35.7
5240N1/2	13.1	19.9	25.1	29.2	33.2	37.2
5242N3/4	13.1	19.9	25.1	29.2	33.2	37.2
* 5340N1/2	13.1	19.9	25.1	29.2	33.2	37.2
* 5342N3/4	13.1	19.9	25.1	29.2	33.2	37.2
5244-3/4	33.2	50.5	63.8	73.9	84.1	94.3
5244-1	33.2	50.5	63.8	73.9	84.1	94.3
* 5344-3/4	33.2	50.5	63.8	73.9	84.1	94.3
* 5344-1	33.2	50.5	63.8	73.9	84.1	94.3
5246N1	44.6	67.8	85.2	99.1	112.8	126.4
5246N1-1/4	44.6	67.8	85.2	99.1	112.8	126.4
* 5345N	44.6	67.8	85.2	99.1	112.8	126.4
* 5346N1-1/4	44.6	67.8	85.2	99.1	112.8	126.4

Catalog Number	Pressure Settings—PSIG		
	150	250	300
5600	30.9	49.9	59.4
5601	35.8	57.7	68.7
5602	35.8	57.7	68.7
5603	37.5	60.4	71.9
5604	72.0	116.1	138.1

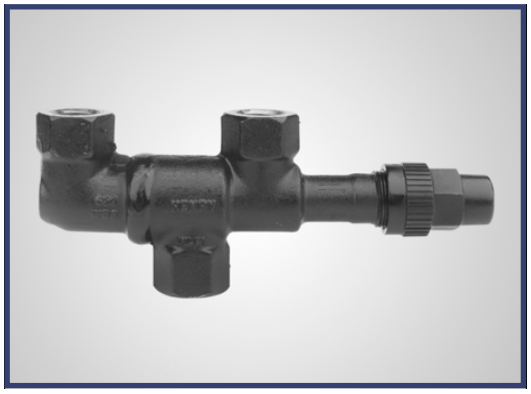
HIGH PRESSURE RELIEF VALVES UP TO 675 PSIG

Catalog Number	Pressure Settings—PSIG					
	450	500	550	600	650	675
5233A	N/A	31.2	34.2	37.2	40.3	41.8
5234A	N/A	31.2	34.2	37.2	40.3	41.8
5235A	N/A	31.2	34.2	37.2	40.3	41.8

Capacity in CFM: To convert pounds of air per minute to standard cubic feet per minute, multiply by 13.3.

3-WAY DUAL SHUT-OFF VALVES

HENRY TECHNOLOGIES

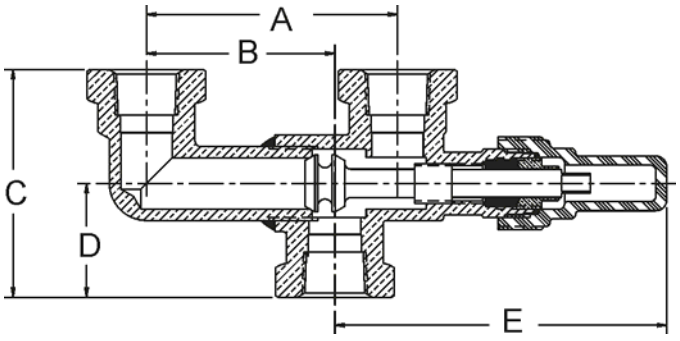


Features:

- **Bodies: 92 Series:** forged brass;
  802 series: forged steel; painted
- **Maximum working pressure:** 450 PSI (31.0 Bar) Steel
  675 PSI (46.6 Bar) Brass
- **Temperature rating:**
  Steel -20°F (-29°C) to +300°F (+149°C)
  Brass –40°F (-40°C) to +300°F (+149°C)
- **Recommended for use** with relief valve types
- **92 series is suitable for refrigerants** and other industrial fluids non-corrosive to steel and brass
- **802 Series is suitable for refrigerants** including ammonia and other industrial fluids non-corrosive to steel

On all vessels 10 ft³ and larger when relief valves are used as the over pressure protective device, a dual relief valve assembly is required. Three-Way Dual Shut-off Valve inlets are shown at the bottom of the illustration. Tight shut-off can be obtained at either extreme of stem position, closing off either the left or right outlet port. The system should not be run with the valve stem in the center position. A dual relief valve installation consists of one three-way shut-off valve and two relief valves so arranged that both relief valves cannot be shut off from the protected pressure vessel at the same time. This permits safe removal of either relief valve for repair or replacement, while the vessel is protected and under pressure. Each relief valve must have sufficient capacity to provide the necessary discharge flow when used alone.

The design of this Three-Way Valve provides full discharge area through the valve regardless of stem position, assuring maximum protection. Furthermore, this design provides for convenient parallel mounting of the two relief valves and fulfills the requirement set forth in the ANSI/ASHRAE 15.
"No stop valve shall be located between any automatic pressure relief device or fusible plug and the part or parts of the system protected thereby, except when the parallel relief devices are so arranged that only one can be rendered inoperative at a time for test or repair purposes."
Two three-way valves, installed in a drier bypass arrangement, permit installation or removal of service drier without air, dirt, or moisture entering line.

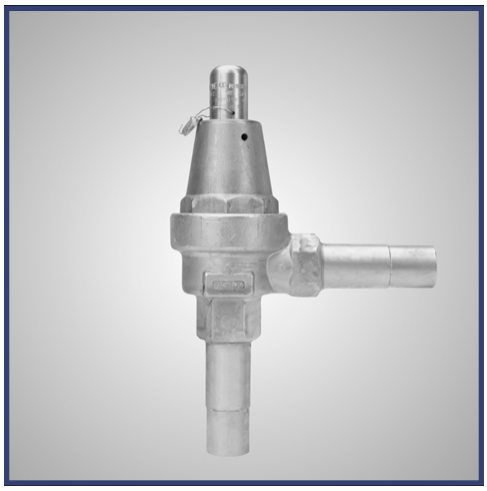


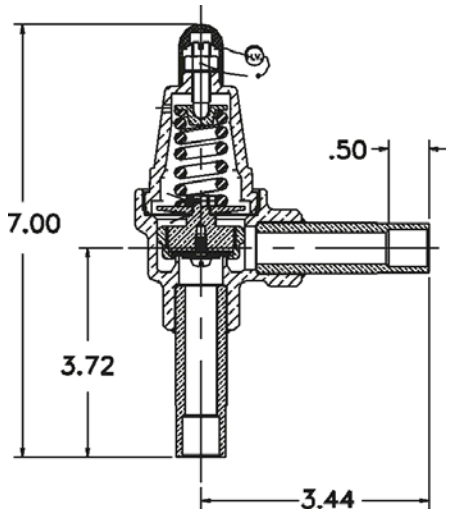
Catalog Number	Connection Size	Dimensions in Inches A	B	C	D	E	Weight lbs.	*CV Value
923	3/8" F.P.T.	2.75	2.06	2.5	1.25	3.6	1.15	3.26
925	1/2" F.P.T.	2.75	2.06	2.5	1.25	3.6	1.05	3.29
927	3/4" F.P.T.	2.75	2.06	2.81	1.4	3.88	1.67	4.05
8021A	1/2" F.P.T.	3.63	2.31	3.88	1.75	5.75	3.21	5.56
8022A	3/4" F.P.T.	3.63	2.31	3.88	1.75	5.75	3	8.84
8024	1" F.P.T.	5.81	3.68	3.88	2	7.5	7.87	11.71
8025	1 1/4" F.P.T.	5.81	3.68	3.88	2	7.5	6.92	16.70

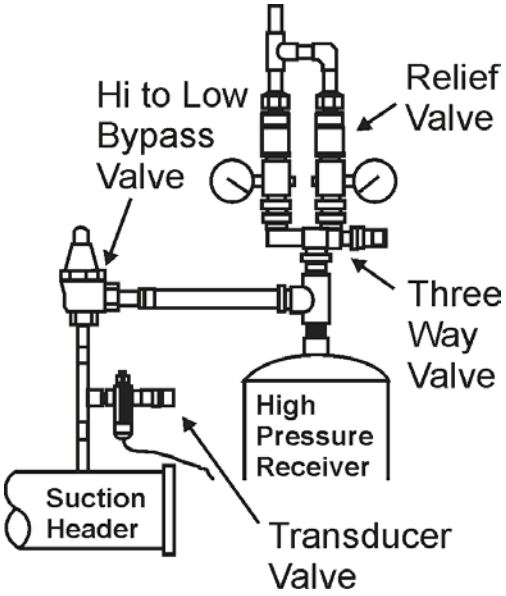
*GPM water at 1 psi pressure drop across valve

BI-PASS VALVE

HENRY TECHNOLOGIES







Features:

- Brass construction
- 5⁄8" O.D.S. extended brass connections
- Positive pressure relief
- Consistent operation
- Excellent reseating characteristics
- Suitable for refrigerants 12, 22, 500, 502, 123, 134A, and other industrial fluids non-corrosive to brass, steel and Teflon
- Factory set and sealed

Notes:

The Henry By-Pass Valve utilizes a designed to handle momentary instances of over pressure (not a fire). It by-passes excess pressure to the low side of the system thus preventing the catastrophic relief valve from discharging refrigerant into the atmosphere. If the over pressure increases then the catastrophic relief valve will be activated.

The By-Pass Valve is an indirectly spring loaded diaphragm type of valve. System pressure acts on the diaphragm causing the piston to lift from the valve seat. The valve has relatively low flow rates. It's primary function is to by-pass only enough gas so as to reduce the effects of a high pressure spike. High flow rates would adversely affect system performance.

Continued by-passing of refrigerant for extended periods of time can lead to loss of system capacity, excessively high temperatures at the compressor and possible compressor failure. We recommend a sensor be put in the discharge line from the valve to monitor if the valve is relieving from the high side to the low side. Orders must specify pressure setting in the range of 150 to 450 PSI.

Standard settings are:

5467-250 PSI (For 300 PSI, Relief Valve)
5467-290 PSI (For 350 PSI, Relief Valve)
5467-330 PSI (For 400 PSI, Relief Valve)
5467-350 PSI (For 425 PSI, Relief Valve)
5467-375 PSI (For 450 PSI, Relief Valve)

At what pressure should these devices be set? A typical installation with a pressure vessel having a maximum working pressure of 400 PSI might be:

Relief Valve: Set the design working pressure 400 PSI of the vessel or 25% higher than the maximum working pressure of the system.

High/Low Side Valve: Set at approximately 330 PSI 80-85% of the relief valve setting.

BALL VALVES

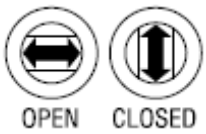
Direct Operated, Bi-Directional Flow

HENRY TECHNOLOGIES

Features:

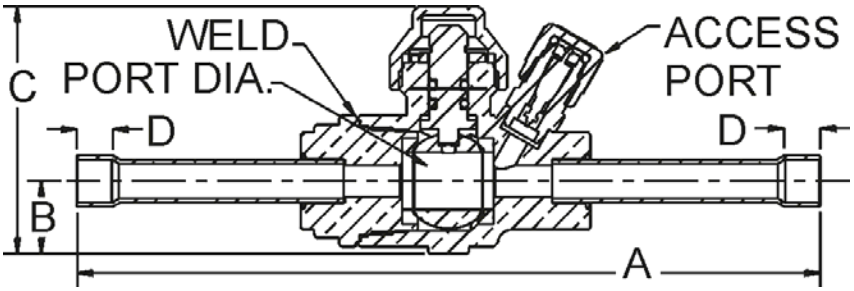
- **Maximum working pressure:** 700 psig (40 Kg/cm2) 937 Series only.
- **Temperature range:** –40°F (–40°C) to +250°F (+149°C)
- **Patented live loaded stem seal**
- **Double "O" ring** for greater seating surface
- **Full non-restricted flow except marked***
- **Body** is hermetically sealed
- **Hexagonal** hand tightened seal cap, "O" ring sealed
- **Valve position indicators:** arrow on stem points to valve outlet when ball is in the open position, arrow points across the line of flow when the ball is in the closed position; valves are non-directional as indicated by arrow on body
- **Blowout-proof stem design**; positive stops ensure precise positioning of ball in open or closed positions
- **Quick flow operation:** valves fully opened or closed with quarter turn of valve stem
- **Forged brass body**, brass cap and adapter, plated steel stem, Teflon ball seals and gasket
- **Extended copper** connections for easy brazing
- **Triple sealed stem** and cap prevent refrigerant loss
- **Specifically designed for use** with halocarbon refrigerants and industrial fluids non-corrosive to brass, steel, copper and synthetic rubber
- **Valves are helium leak tested** to a maximum of 0.1 oz./yr.
- Cap Replacement

VALVE POSITION INDICATOR



c UL US LISTED

Type 937 and 907 shown



Catalog Std. Valve	Catalog Schrader	Size Connection	Dimensions in Inches					Ball Port Diameter	907 Wt. Lbs	937 Wt. Lbs	**CV Value
			A	C Ext	C Std	D	C Schrader				
907203	937203	3/8"	6.5	2.75	2.25	0.31	1.69	0.5	0.8	0.9	2.44
907204	937204	1/2"	6.5	2.75	2.25	0.5	1.69	0.5	0.8	0.9	6.01
907205	937205	5/8"	6.5	2.75	2.25	0.5	1.69	0.5	0.8	0.9	15.1
907307	937307	7/8"	7.25	3.16	2.5	0.75	2.13	0.75	1.3	1.4	42.0
907409	937409	1-1/8"	8.5	4.25	3.75	0.91	2.50	1	2.2	2.3	82.5
907511	937511	1-3/8"	9.25	4.75	4.25	0.97	2.75	1.25	3.1	3.2	142.2
907613	937613	1-5/8"	10	5.2	4.75	1.09	3.00	1.5	4.3	4.4	220.8
907617	937617	2-1/8"	11.38	6.82	6.25	1.19	3.63	2	9.3	9.4	438.9
907721*	937721*	2-5/8"	12.88	6.82	6.25	1.53	3.63	2.5	9.6	9.7	229.5
907725*	937725*	3-1/8"	14.38	6.82	6.25	1.66	3.63	2.5	9.9	10	373.2

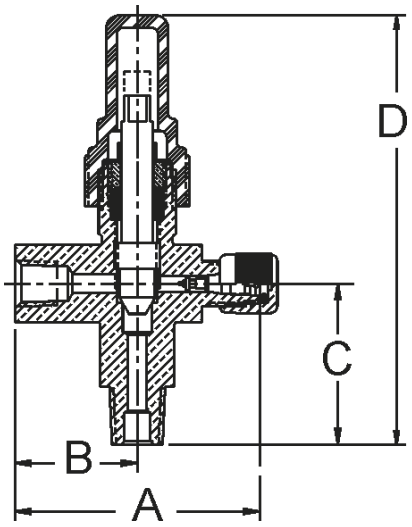
* Reduced Port

**GPM water at 1 psi pressure drop across valve

TRANSDUCER VALVE

Brass or Forged Steel Design

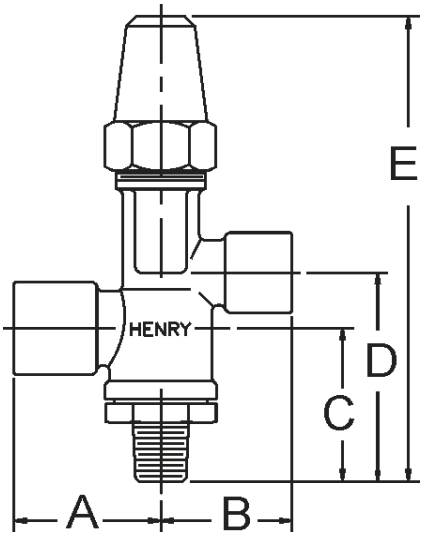
HENRY TECHNOLOGIES



Features:

- **Forged brass**
- **Temperature rating:** –20°F (–29°C) to +300°F (+149°C)
- **Maximum working pressure:** 500 PSI (35 Kg/cm2)
- **Connector:** 1⁄4" flare access with Schrader core
- **Provides access** to systems and mounting of a transducer to monitor systems performance
- **Provides valve core port** for checking transducer output with a pressure gauge
- **Provides isolation** from system for replacement of transducer
- **Suitable** for refrigerants and other industrial fluids non-corrosive to brass and steel

Catalog Number	Size Connection		Dimensions in Inches				Weight lbs.
	Side	Bottom	A	B	C	D	
9290	1/8 F.P.T.-1/4 FL.	1/4 M.P.T.	2.38	1.19	1.56	4.16	.52



Features:

- **Forged steel body**
- **Provides access** to system and mounting of a transducer to monitor system performance
- **Provides valve port for** checking transducer output with a pressure gauge
- **Provides isolation** from system for replacement of transducer
- **Maximum working pressure:** 500 P.S.I. (35.1 Kg/cm2)
- **Temperature rating:** –20°F (–29°C) to +300°F (+149°C)
- **Suitable** for ammonia and other industrial fluids non-corrosive to steel

Catalog Number	Inlet	Outlet	Dimensions in Inches					Weight lbs.
	M.P.T.	F.P.T.	A	B	C	D	E	
9490	1/4”	1/4”	1.44	1.25	1.56	2.13	4.75	.75

CHECK VALVES

Globe Design

HENRY TECHNOLOGIES

Type 205

Features:

- **General construction:** Valve body: cast bronze; bonnets: forged brass; Teflon® seat
- **Internal parts** can be easily removed to prevent damage when soldering valve into line
- **Minimum opening pressure:** 0.5 lbs.
- **All valves 7/8" through 1-3/8"** can be easily installed in any position except bonnet down; Valves 1-5/8" and larger must be bonnet up position
- **Maximum working pressure:** 500 PSI (35 Kg/cm2)
- **Temperature rating:** –20°F (–29°C) to +300°F (+149°C)
- **Suitable** for refrigerants and other industrial fluids non-corrosive to brass and steel
- **Recognized under** the component program of Underwriters' Laboratories, Inc. and Canadian Standards Association

Type 116

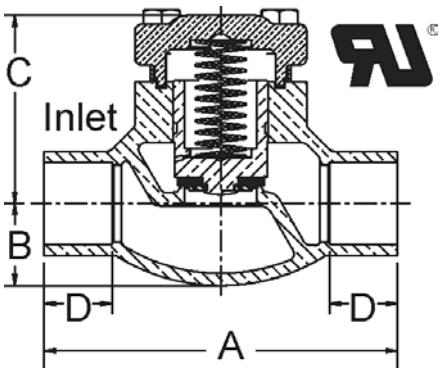
Features:

- **Brass construction** with Teflon® seat
- **Remove piston** before brazing body into line
- **Can be installed** in any position except bonnet down
- **Maximum working pressure:** 500 PSI (35 Kg/cm2)
- **Temperature rating:** –40°F (–40°C) to +300°F (+149°C)
- **Suitable** for high side or low side installation, and hot gas applications
- **Recognized** under the component program of Underwriters' Laboratories, Inc. and Canadian Standards Association
- **Minimum opening pressure** 0.5 P.S.I. with standard spring

Valve Details				R404A		
				Liquid Lines	Suction Vapor	Hot Gas
Cat. No.	Size	Style	CV	Tons R	Tons R	CFM
205-7/8	7/8 O.D.S.	Globe, Bolted Bonnet	5.2	8.4	0.5	37.0
205-1-1/8	1-1/8 O.D.S.	Globe, Bolted Bonnet	7.2	11.7	1.0	51.3
205-1-3/8	1-3/8 O.D.S.	Globe, Bolted Bonnet	10.06	16.3	2.0	71.6
205-1-5/8	1-5/8 O.D.S.	Globe, Bolted Bonnet	13	21.1	3.3	92.6
205-2-1/8	2-1/8 O.D.S.	Globe, Bolted Bonnet	21.5	34.9	9.1	153.1
205-2-5/8	2-5/8 O.D.S.	Globe, Bolted Bonnet	35.7	58.0	25.1	254.3
116003	3/8 O.D.S.	Y Type Screwed Bonnet	1.5	2.4	0.04	10.7
116004	1/2 O.D.S.	Y Type Screwed Bonnet	3.08	5.0	0.19	21.9
116005	5/8 O.D.S.	Y Type Screwed Bonnet	3.88	6.3	0.30	27.6
116007	7/8 O.D.S.	Y Type Screwed Bonnet	8.26	13.4	1.35	58.8

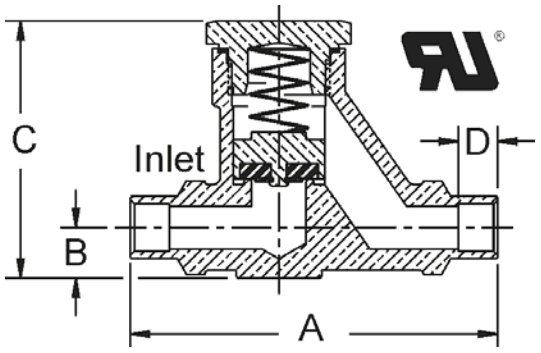
Based on 100°F Condensing and –40°F Evaporating

Type 205



Catalog Number	Size Connection	Dimensions in Inches				Weight lbs.
		A	B	C	D	
205-7/8	7/8" O.D.S.	4.25	.97	3.16	.75	2.73
205-1-1/8	1-1/8" O.D.S.	4.88	1.14	3.88	.94	4.41
205-1-3/8	1-3/8" O.D.S.	5.38	1.25	4.25	1.00	6.04
205-1-5/8	1-5/8" O.D.S.	6.50	1.50	5.06	1.13	9.32
205-2-1/8	2-1/8" O.D.S.	8.50	2.00	5.88	1.50	17.10
205-2-5/8	2-5/8" O.D.S.	11.00	2.25	6.88	1.69	27.43

Type 116

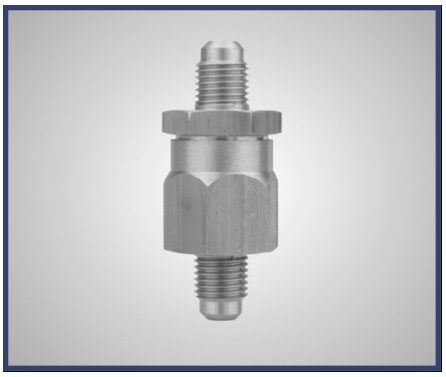


Catalog Number	Size Connection	Dimensions in Inches				Weight lbs.
		A	B	C	D	
116003	3/8" O.D.S.	2.94	.41	2.06	.31	.53
116004	1/2" O.D.S.	2.94	.14	2.06	.38	.51
116005	5/8" O.D.S.	2.94	.14	2.06	.50	.48
116007	7/8" O.D.S.	3.88	.63	2.94	.88	2.04

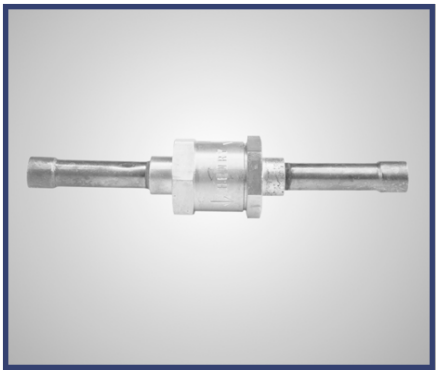
CHECK VALVES

Straight Through Design

HENRY TECHNOLOGIES



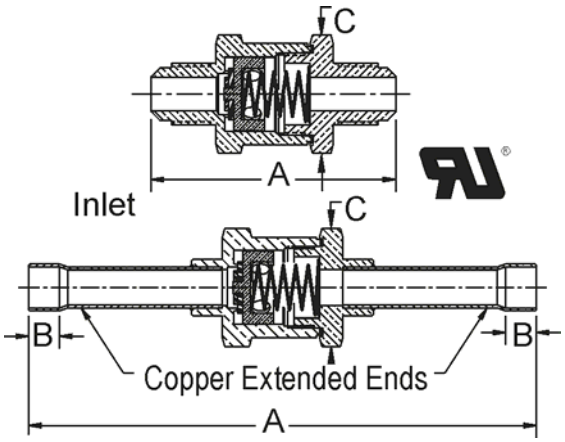
Type 119



Type 120

Features:

- **Brass construction** with synthetic rubber seat
- **Can be installed in any position**
- **Maximum working pressure**: 500 PSI (35 Kg/cm2)
- **Temperature rating**: -20°F (-29°C) to +200°F (+93°C)
- **Standard spring**: 0.5 p.s.i.
- **Synthetic rubber seat**
- **Suitable for refrigerants** and other industrial fluids non-corrosive to brass, copper and synthetic rubber



NOT SUITABLE FOR DISCHARGE LINES OF RECIPROCATING COMPRESSORS

Catalog Number	Size Connection	Dimensions in Inches			Weight lbs.	Piston Assembly	Spring	Gasket
		A	B	C				
119-1/4	1/4 FL.	2.26	—	.81	.22	8-058-017	5-041-029	5-23-101
119-3/8	3/8 FL.	2.51	—	.81	.26	8-058-017	5-041-029	5-023-101
119-1/2	1/2 FL.	3.00	—	1.25	.28	8-058-019	5-041-030	5-023-001
120-3/8	3/8 O.D.S.	5.25	.31	.81	.28	8-058-017	5-041-029	5-023-101
120-1/2	1/2 O.D.S.	6.34	.38	1.25	.57	8-058-019	5-041-030	5-023-001
120-5/8	5/8 O.D.S.	6.28	.50	1.25	.64	8-058-019	5-041-030	5-023-001
120-7/8	7/8 O.D.S.	6.44	.75	1.50	1.06	8-058-018	5-041-036	5-023-102

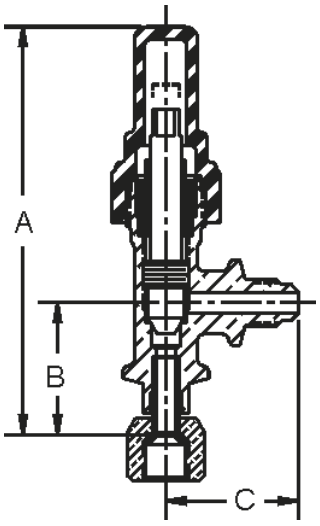
SWIVEL VALVES

Angle Type

HENRY TECHNOLOGIES

Features:

- **Forged brass body**, plated steel stem and molded valox
- seal cap, brass flare caps
- **Temperature rating:** –20°F (–29°C) to +300°F (+149°C)
- **Maximum working pressure:** 500 PSI, (34.5 Bar)
- **Suitable for refrigerants** and other industrial fluids. Non-corrosive to brass and steel



Catalog Number	Size Connection		Dimensions in Inches			Weight lbs.
	Side	Bottom	A	B	C	
9240	1/4" Male Flare	1/4" Female Flare	4.13	1.25	1.50	.30
9241	3/8" Male Flare	3/8" Female Flare	4.13	1.25	1.50	.44

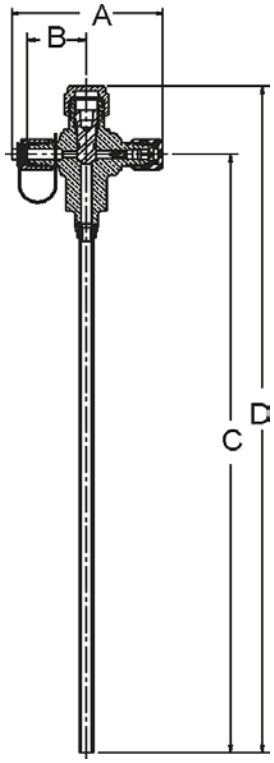
EXCHANGE VALVES

Positive Oil

HENRY TECHNOLOGIES

Features:

- **Forged brass body**, plated steel stem and molded valox seal cap, brass flare caps
- **Temperature rating:** –20°F (–29°C) to +300°F (+149°C)
- **Maximum working pressure:** 500 PSI, (34.5 Bar)
- **Suitable for refrigerants** and other industrial fluids. Non-corrosive to brass and steel
- **Type 927** valves furnished disassembled to avoid excessive heating of internal parts during brazing
- **Teflon Pick-up Tube**
- **Performs the recommended** 5 oil flushes in minutes without allowing POE oil to absorb moisture
- **Designed to remove** maximum amount of oil from crankcase
- **Reduces high cost** of oil changeovers
- **Fully ported to ensure** fast removal and charging up to 6 times faster than access port valve
- **Pressure gauge connection** provided, with Schrader valve
- **Designed to be left** in system for future service



Catalog Number	Size Connection		Dimensions in Inches				Weight lbs.
	Side	Bottom	A	B	C	D	
9297	1/4" Flare	1/8" MPT	2.79	1.32	11.06	12.36	.50
9298	1/4" Flare	1/4" MPT	2.79	1.32	11.06	13.66	.65

MOISTURE INDICATORS

HENRY TECHNOLOGIES

Features:

- **Forged brass and steel** construction with clear fused glass window indicating element protected by filter screen
- **Copper flare gasket provided** with MI-30-F
- **Listed by Underwriters' Laboratories** and the Canadian Standards Association
- **Positive color contrast**: Yellow = Wet, Green = Dry Completely reversible
- **Moisture element protected** by filter screen and pad
- **Female flare types** have mechanically retained copper gasket
- **Replacement: Moisture element**, seal parts and viewing window available; order replacement cap assembly catalog number MI-3
- **Maximum working pressure**: 500 PSI (34.5 Bar)
- **Maximum temperature rating**: +200°F (+93°C)
- **Dri-Vue color Indicators**: Safe=Green; Caution= Chartreuse; Danger=Yellow
- **Moisture Content**: Parts per million (PPM)
- **A moisture level** of 15 PPM for Refrigerant 12. 30 PPM for Refrigerant 502 and 60 PPM for Refrigerant 22 and 500 indicated in the green color range of the tables are generally considered dry and safe for most installations.

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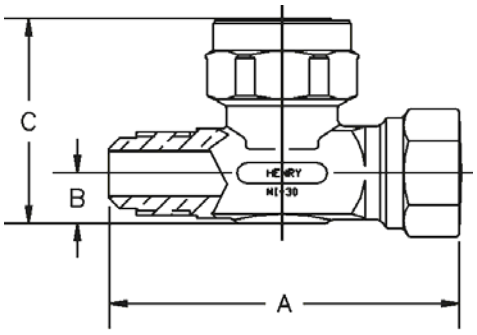
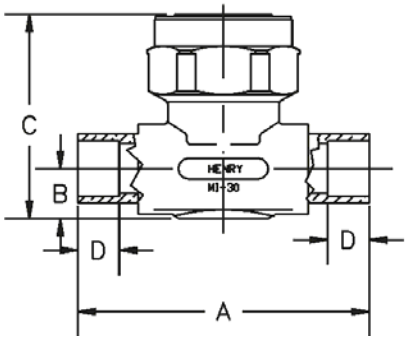
Patent #5852937

Type MI-30-F
SAE Flare, M x F



Type MI-30-S
Solder



"Dri-Vue" Moisture-Color Tables

Type	Temp.	Moisture Content - Parts per Million - Indicator Color		
		Green	Chartreuse	Yellow
Refrigerant 12	75°F	Below 5	5-15	After 15
	100°F	Below 10	10-30	After 30
	125°F	Below 15	15-45	After 45
Refrigerant * 22 & 500	75°F	Below 30	30-120	After 120
	100°F	Below 45	45-180	After 180
	125°F	Below 60	60-240	After 240
Refrigerant 502	75°F	Below 15	15-50	After 60
	100°F	Below 25	25-90	After 90
	125°F	Below 30	30-120	After 120

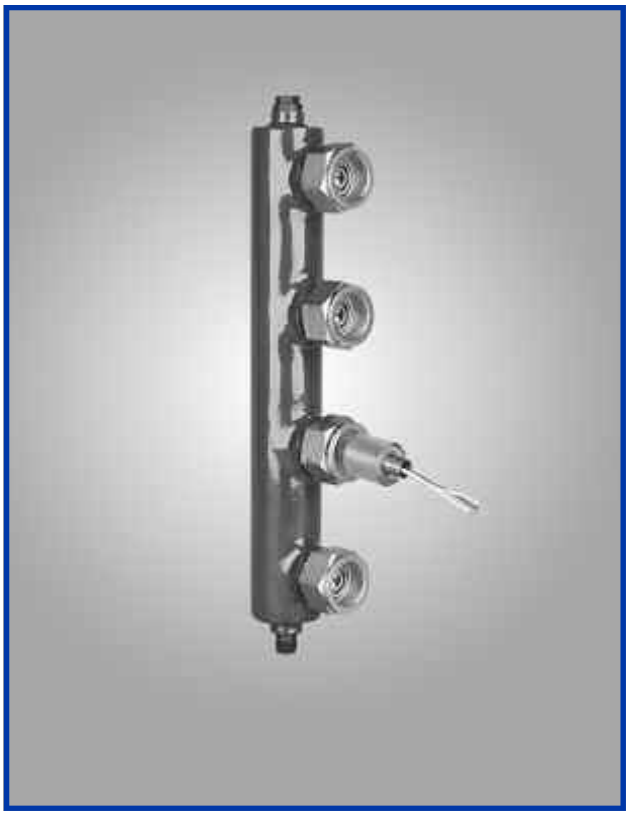
* For R134a, use R22 data.

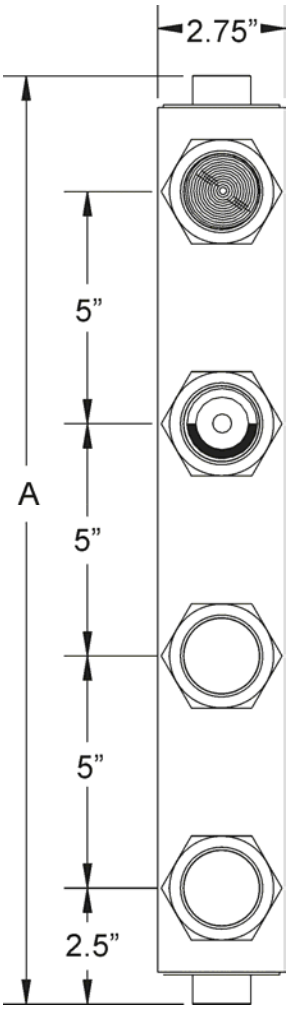
Type	Catalog Number	Size Connection	Dimensions in Inches				Weight lbs.
			A	B	C	D	
MI-30-F	**MI-30-1/4F**	1/4" Male Flare x 1/4" Female Flare	2.25	.34	1.66	—	.43
MI-30-F	**MI-30-3/8F**	3/8" Male Flare x 3/8" Female Flare	2.81	.41	1.81	—	.57
MI-30-F	**MI-30-1/2F**	1/2" Male Flare x 1/2" Female Flare	3.13	.41	1.81	—	.59
MI-30-S	**MI-30-1/4S**	1/4" O.D.S.	2.25	.34	1.66	.31	.40
MI-30-S	**MI-30-3/8S**	3/8" O.D.S.	2.38	.34	1.66	.31	.41
MI-30-S	**MI-30-1/2S**	1/2" O.D.S.	2.63	.41	1.66	.38	.41
MI-30-S	**MI-30-5/8S**	5/8" O.D.S.	2.94	.44	1.84	.50	.46

LIQUID LEVEL COLUMNS

HENRY TECHNOLOGIES

Suitable for Ammonia





LL50/SG-1504
REFLEX LENS
Looks dark with liquid present and light when liquid is absent.

EASY VIEW LENS
The unique display enables you to view the liquid level while the switch is installed.

Features:

- **All steel welded construction, high pressure design**
- **Fused glass cap assemblies**: reflex lens included
- **Maximum working pressure**: 500 PSI (34.5 Bar)
- **Temperature rating**: -40°F (-40°C), +325°F (+163°C)
- **Frost shield available**: FS-2½
- **Designed** to accept new EASY VIEW liquid level switch

Liquid Level Switch:

E-9400 series liquid level switches are for use on LCA series liquid level columns. This combination can control liquid level at any point on the column where a sight glass connection is located.
Note: The remaining sight glasses provide a visual check of liquid level in the column. Multiple E-9400 series switches can be placed on the column to control multiple set points at a significant saving over float type switches or probe type controls. To change the liquid level requirements in the vessel, simply pull the “Easy View” switch assembly from the active sight glass and insert it into any other sight glass on the column. There is no need for system pump-down, or internal access to the system.

2 3/4” Diameter Liquid Level Column		
Catalog Number	**Dimension A**	**No. Sight Glasses Included**
LCA20	20”	4
LCA40	40”	8
LCA60	60”	12

E-9400 series liquid level switches eliminate, at a fraction of the cost, the most common float switch problems: “switch burnout”, and stuck floats. They also eliminate costly multiple piping connections required by float type switches. Remember each connection can be a potential leak path. Should the need arise to change the switch, the module can easily be replaced without entering the system. See the proceeding pages for information on installation and operation of the E-9400 series liquid level switch.

GAUGE SET VALVES

HENRY TECHNOLOGIES

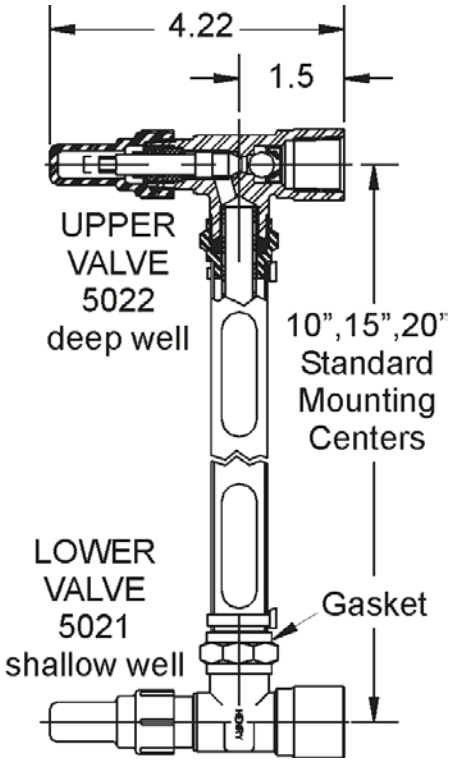
Suitable for Ammonia

Features:

- **Body**: Forged steel, zinc plated
- **Non-backseating** packed type
- **Glass** 1⁄2" diameter
- **Mounting centers**: 10"-15"-20"
- **For mounting centers greater than 20",** multiple gauge sets are recommended
- **Suitable for refrigerants** (including ammonia) and other industrial fluids non-corrosive to steel and synthetic rubber side-well packing (neoprene)
- **Temperature rating**: –20°F (–29°C) to +150°F (+65°C)
- **A complete liquid level gauge set** includes the following four components: 1 pc. upper valve ; 1 pc. lower valve; 1 pc. gauge glass; 1 pc. guard set
- **Recommended maximum working pressures for mounting centers**: 10"-20" See Table.
- **If glass tubing breaks**, loss of refrigerant is restricted by an automatic ball check at the inlet of each valve
- Glass length is always 1-11⁄16" less than mounting centers. Guard set length is always 23⁄4" less than mounting centers.

Catalog Number	Size Connection	Weight lbs.
5021 (Lower)	1/2" F.P.T.	1.0
5022 (Upper)	1/2" F.P.T.	1.0

Catalog Number	Mounting Center	Weight lbs.	MWP (psi)
PS95-10	10"	1	363
PS95-15	15"	1	330
PS95-20	20"	1	310



LIQUID LINE FILTER

Driers / Strainers / Shells

HENRY TECHNOLOGIES

Features:

- **Shell**: Steel corrosion resistant finish
- **Cover plate**: Aluminum
- **Fittings**: Wrought Copper
- **Shells and Cores**: Interchangeable with standard competitor models
- **Flange cover plate**: Plugged 1⁄4" FPT connection for Access Valve
- **Packaging**: Shells include the required number of core spacer plates and springs
- **Pressure rating**: Shells have a max. working pressure of 500 PSI (34.5 Bar)
- **Maximum temperature rating**: +275° F (+135° C)
- **Filter removal**: Dimension "F" is the minimum space required to remove the filter-drier core from the shell.

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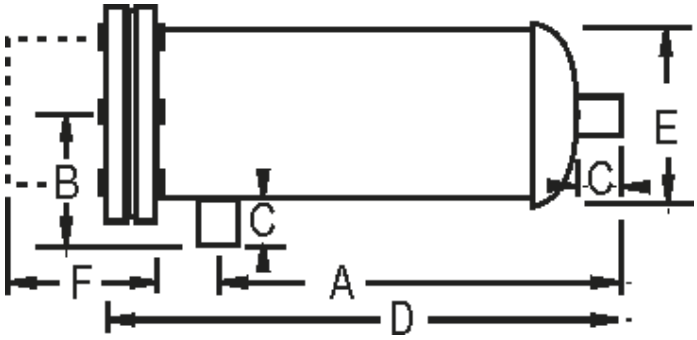
** Recommended tonnage rating, based on both drying and flow capacity, is shown in table. For Refrigerants 500 and 502, use data shown for Refrigerant R12 for Refrigerant 134A, use data shown for Refrigerant 22.
*For flow capacity of Refrigerant 502, use 90% of Refrigerant 12 flow capacities.



Shell Catalog Number	Size O.D.S. Conn	Dri-Cor® Recommended Cap. Tons** R12*	R22	Flow Cap. @ 2 psi in Tons R12	R22	Cores Qty.	Cat. No.	Core Data Vol. Cu. In.	Surface Area Sq. In.	Shell Dimensions in Inches A	B	C	D	E	F	Wt. Lbs
V8048-5/8	5/8	10	15	18	23	1		48	64	6.00	3.50	.50	9.00	4.75	6.75	12.0
V8048-7/8	7/8	15	20	38	49	1		48	64	6.13	3.75	.75	9.13	4.75	6.75	12.0
V8048-1 1/8	1 1/8	15	20	58	75	1		48	64	6.25	3.88	.94	9.25	4.75	6.75	12.0
V8048-1 3/8	1 3/8	15	20	78	101	1		48	64	6.38	4.00	1.00	9.38	4.75	6.75	12.0
V8048-1 5/8	1 5/8	15	20	97	125	1		48	64	6.50	4.00	1.13	9.50	4.75	6.75	12.0
V8096-7/8	7/8	20	30	40	52	2	848-C	96	128	11.63	3.75	.75	14.34	4.75	12.25	15.0
V8096-1 1/8	1 1/8	20	30	60	77	2		96	128	11.75	3.88	.94	14.88	4.75	12.25	15.0
V8096-1 3/8	1 3/8	30	40	80	103	2	or	96	128	11.88	4.00	1.00	15.00	4.75	12.25	15.0
V8096-1 5/8	1 5/8	30	40	101	130	2		96	128	12.00	4.00	1.13	15.00	4.75	12.25	15.0
V8096-2 1/8	2 1/8	30	40	140	180	2	848-CM	96	128	12.13	4.13	1.38	15.13	4.75	12.25	15.0
V8144-1 1/8	1 1/8	40	50	62	80	3		144	192	17.38	3.88	.94	20.38	4.75	17.75	18.0
V8144-1 3/8	1 3/8	50	60	84	108	3		144	192	17.50	4.00	1.00	20.50	4.75	17.75	18.0
V8144-1 5/8	1 5/8	50	60	105	135	3		144	192	17.63	4.00	1.13	20.63	4.75	17.75	18.0
V8192-1 5/8	1 5/8	75	90	109	141	4		192	256	23.13	4.00	1.13	26.50	4.75	23.25	21.0
V8192-2 1/8	2 1/8	75	90	149	192	4		192	256	23.25	4.13	1.38	26.63	4.75	23.25	21.0
V8300-2 1/8	2 1/8	100	125	153	197	3	810-CM	300	294	24.13	5.38	1.38	28.75	6.00	6.63	45.0
V8400-2 5/8	2 5/8	135	165	195	252	4	810-CM	400	392	31.18	5.88	1.50	35.75	6.00	6.63	52.0

FILTER DRIER SHELLS

Replaceable Core Type

HENRY TECHNOLOGIES

Features:

- **Shell**: Steel corrosion resistant finish
- **Cover plate**: Aluminum
- **Fittings**: Wrought Copper
- **Shells and Cores**: Interchangeable with standard competitor models
- **Flange cover plate**: Plugged 1⁄4" FPT connection for Access Valve
- **Packaging**: Shells include the required number of core spacer plates and springs
- **Pressure rating**: Shells have a max. working pressure of 500 PSI (34.5 Bar)
- **Maximum temperature rating**: +275º F (+135º C)
- **Filter removal**: Dimension "F" is the minimum space required to remove the filter-drier core from the shell.

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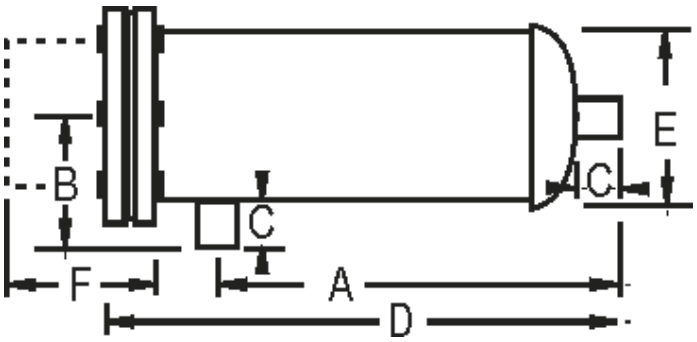


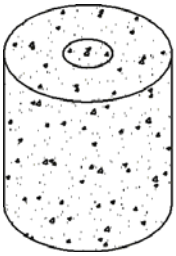
SW—Suitable for Ammonia

Socket Weld Connection	Shell Catalog Number	Core Data			Shell Dimensions in Inches						Weight. lbs
		Qty.	Volume Cu. In.	Area Sq. In.	A	B	C	D	E	F	
1	**V8048-1SW**	1	48	65	6.25	4.00	0.63	9.63	4.50	6.75	13.0
1-1/4	**V8096-1 1/4SW**	2	96	130	12.00	4.13	0.69	15.38	4.50	12.75	16.0
1-1/2	**V8144-1 1/2SW**	3	144	195	17.63	4.00	0.75	21.00	4.50	17.75	19.5
2	**V8192-2SW**	4	192	260	22.25	4.38	0.88	25.63	4.50	23.25	22.5

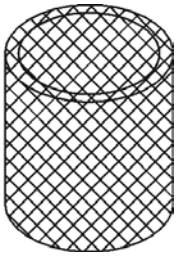
Filters and Strainer Cores

Core Cat. No.	Core Type	Volume or Area	Length Inch	Wt. Lbs.
848-C	Filter	48 Cu. In.	5.5	3.0
848-ST	Strainer	65 Sq. In.	5.5	1.5

"DRI-COR" Filter Core



Molded core provides micronic filtration



Strainer Core

Replaceable core type strainers are 100 mesh welded seam monel screen. Reinforced with inner perforated tubular steel plated shell

FILTER DRIERS

HENRY TECHNOLOGIES

Features:

- A clean block from which all organic and volatile contaminants are removed by the firing process
- Uniformly effective with permeability and absorbency throughout the molded core; micron filtration in depth will remove and retain particles as small as 10 microns
- High stability in a unit of good mechanical strength and marked superiority in resistance to acid corrosion, moisture incurred disintegration and fluid erosion; insoluble in organic liquids and moisture
- Removes dangerous acids
- Spring cushioning at inlet end protects the block from rough handling
- Steel shell, maximum working pressure: 500 PSI (34.5 Bar)
- Copper ODS connections

The drier is designed to function in both directions of flow found in the reversible liquid line of heat pumps. Internal check valves prevent release of collected contaminants when the system switches from the heating to cooling mode and back again.

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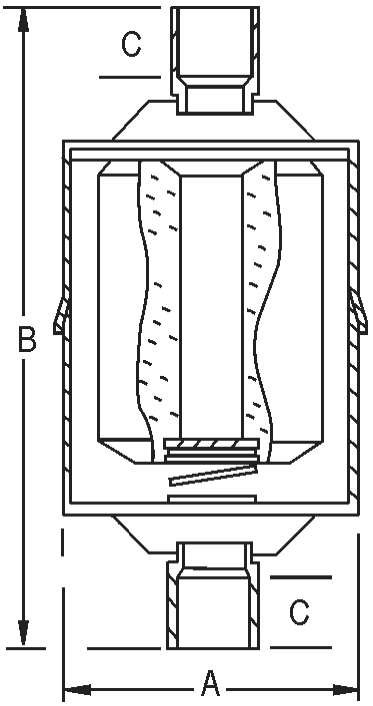


Heat Pump Filter-Drier Selection							Refrigerant R22 & R134a			
Cat. No.	Size Conn.	Area Core Filter	Dimensions in Inches			Wt. Lbs.	Recommended Tonnage	Water Cap. Drops at 60 PPM		Flow Cap @ 2 PSI
			A	B	C			75°F	125°F	
HP083-S	3/8	18	2.5	5.38	.47	1.22	1 thru 5	102	93	4.4
HP163-S	3/8	28	3.0	6.00	.17	1.76	1 thru 7	153	139	4.7
HP164-S	1/2	28	3.0	6.25	.53	1.76	1 thru 7	153	139	10.7
HP165-S	5/8	28	3.0	6.50	.66	1.84	1 thru 7	153	139	12.7

FILTER DRIERS

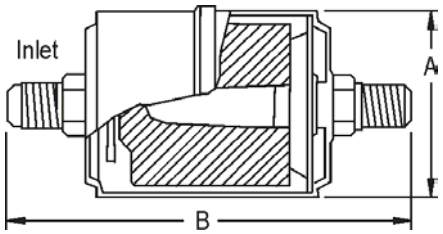
Sealed Type

HENRY TECHNOLOGIES

Features:

- **A clean block** from which all organic and volatile contaminants are removed by the firing process
- **Uniformly effective** with permeability and absorbency throughout the molded core. Micronic filtration in depth will remove and retain particles as small as 10 microns
- **High stability** in a unit of good mechanical strength and marked superiority in resistance to acid corrosion, moisture-incurred disintegration and fluid erosion. Insoluble in organic liquids and moisture
- **Removes dangerous acids**
- **Spring cushioning** at inlet end protects block from rough handling
- **Steel shell**
- **Maximum working pressure**: 500 PSI (34.5 Bar)
- **Plated steel flare connections**
- **Copper ODS connections**

SAE Flare Type



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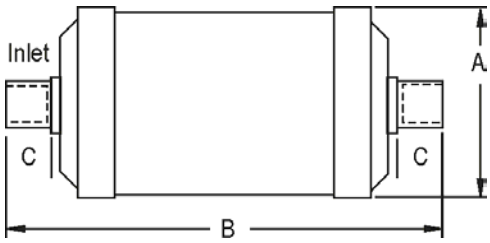
Solder Type



Filter-Drier Selection Series "H" Dri-Cor®																		
Catalog Number		Size Conn	Core Filter Area Sq.In.	Dimensions In Inches				Wt. Lbs.	Recommended Tonnage		Capacity Ratings						
											Drops of Water				Flow Capacity @ 2 psi in Tons		
											R12 (15 PPM)		R22 & R134a (60 PPM)				
				A	B		C		Refrigerants		Liquid Line Temp. °F				Refrigerants		
Flare	ODS				Flare	ODS			R12	R22	75°	125°	75°	125°	R12	R22	R502
H032	H032-S	1/4	11	1.63	4.19	3.50	.44	.43	.75	.75	46	33	31	20	2.3	3.0	2.0
H052	H052-S	1/4	17	2.50	5.00	4.31	.44	.75	1.00	1.00	92	66	62	40	2.3	3.0	2.0
H053	H053-S	3/8	17	2.50	5.31	4.44	.47	.81	1.00	1.00	92	66	62	40	4.0	5.2	3.5
H082	H082-S	1/4	24	2.50	5.31	5.31	.44	1.05	1.00	1.00	156	112	107	68	2.7	3.5	2.4
H083	H083-S	3/8	24	2.50	6.25	5.25	.74	1.06	2.00	2.00	156	112	107	68	5.3	6.8	4.7
H084	H084-S	1/2	24	2.50	6.50	5.75	.53	1.11	2.00	2.00	156	112	107	68	8.2	10.6	7.2
H163	H163-S	3/8	36	3.00	6.75	5.88	.47	1.64	3.00	3.00	282	202	192	122	5.5	7.1	4.8
H164	H164-S	1/2	36	3.00	7.13	6.25	.53	2.35	4.00	4.00	282	202	192	122	8.7	11.2	7.7
—	H165-S	5/8	36	3.00	—	6.50	.66	2.45	5.00	5.00	282	202	192	122	11.0	14.2	9.7
H303	—	3/8	57	3.00	9.69	—	.47	3.45	4.00	5.00	490	352	335	212	5.8	7.5	5.1
H304	H304-S	1/2	57	3.00	10.00	9.25	.53	3.45	7.50	7.50	490	352	335	212	11.8	15.2	10.4
H305	H305-S	5/8	57	3.00	10.25	9.50	.66	3.45	10.00	10.00	490	352	335	212	15.3	19.7	13.5
—	H307-S	7/8	57	3.00	—	9.88	.78	3.32	10.00	15.00	490	352	335	212	24.9	32.1	21.9
H414	—	1/2	71	3.50	9.94	—	.53	5.40	10.00	10.00	710	506	482	305	12.1	15.6	10.6
H415	H415-S	5/8	71	3.50	10.31	9.38	.66	5.58	10.00	15.00	710	506	482	305	16.0	20.6	14.1

FILTER DRIERS

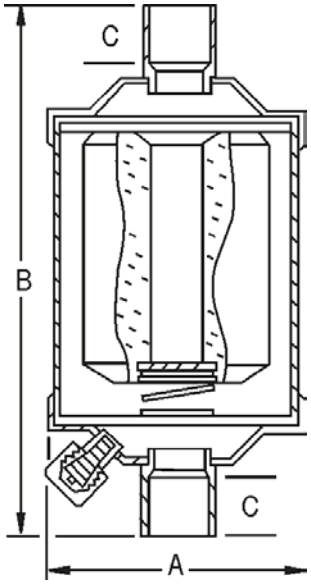
Suction Line

HENRY TECHNOLOGIES

Features:

- **Steel shell** and copper connections
- **Molded activated charcoal** core design
- **Low pressure drop**
- **Spring** cushioned block
- **Max. working pressure**: 350 PSI (24.1 Bar)
- **Max. temperature rating**: +225°F (+107°C)
- **10-micron** particle retention
- **1/4" Flare access** valve connection port for accurate pressure drop readings

The suction line filter-drier offers all of the advantages of a suction line filter plus the ability, through a blend of desiccants, to remove acids and moisture from the refrigerant vapor in the suction line along with foreign matter. Large filter area and traverse flow passageway for the refrigerant vapor permits installation in the suction line with minimum loss of refrigeration capacity due to pressure drop.



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Refrigerant R12				
Evap. Temp °F	-20°	0°	20°	40°
Pressure Drop PSI	1.0	1.5	2.0	3.0
Catalog Number	Tons Refrigerant			
HS164-S	0.4	0.75	1.0	1.5
HS165-S	0.5	1.0	1.5	2.0
HS166-S	0.75	1.5	2.0	3.0
HS167-S	0.9	1.8	2.3	3.6
HS307-S	1.0	2.0	2.5	4.0
HS419-S	1.5	2.3	3.5	5.0

Refrigerant R22 & R134A				
HS164-S	0.5	1.0	1.5	2.0
HS165-S	1.0	1.5	2.0	3.0
HS166-S	1.5	2.5	3.5	5.0
HS167-S	1.8	2.7	4.1	5.9
HS307-S	2.0	3.0	4.5	6.5
HS419-S	2.5	4.0	6.0	8.0

Catalog Number O.D.S.	Size Conn.	Core Filters Area Sq. In.	Desiccant Cu. Volume	Dimensions in Inches			Wt. Lbs.
				A	B	C	
HS164-S	1/2	33	16	3.0	6.38	.53	2.16
HS165-S	5/8	33	16	3.0	6.63	.66	2.35
HS166-S	3/4	33	16	3.0	6.63	.72	2.38
HS167-S	7/8	33	16	3.0	7.00	.78	2.50
HS307-S	7/8	53	30	3.0	9.88	.78	3.48
HS419-S	1 1/8	64	41	3.5	10.13	.91	4.66

FILTER DRIER CORES

Replaceable Type

HENRY TECHNOLOGIES

DRI-COR®
FILTER-DRIER CORE

FIL-COR®
FILTER CORE

STRAINER CORE

DRI-COR® Replacement Cores
This molded core is a composite of carefully selected desiccant materials, artfully bonded to provide very high mechanical strength, outstanding filtering capability, high moisture absorption and acid removal.
The DRI-COR block is fully activated and put into a hermetically sealed container to preserve freshness.
DRI-COR Filter-Drier Cores with activated alumina and molecular sieves desiccant provide micronic filtration. Two types available—Standard or Hi-Capacity Cores that are interchangeable with same flow capacity. Hi-Capacity cores have extra drying capacity. Cores are interchangeable (also with those in competitive rod type assemblies).
FIL-COR® Filter Core provides micronic filtration when drying is not required. The FIL-CORs are interchangeable with DRI-CORs. Strainer Cores 100-mesh welded seam stainless steel screen are reinforced with inner perforated tubular-steel shell.

Cores Not Included V8000 Shells—Order Separately

Catalog Number	Construction Type	Drier Shell Dia. In.	Volume Cubic Inches	A.R.I. Cap. Ratings Drop Water R12 (15 PPM) Liquid Line Temperature °F		R22 (60 PPM) Liquid Line Temperature °F		Core	
				75°	125°	75°	125°	Length In.	Wt. Lbs.
848-C	Standard DRI_COR®	4.75	48	670	480	460	288	5.50	2.0
824-CM	High Capacity DRY-COR® Hi-Cap. Drying	3.00	24	423	303	288	183	5.81	1.4
848-CM		4.75	48	845	605	576	365	5.50	2.5
810-CM		6.00	100	1760	1260	1200	760	6.50	5.3
848-F	FIL-COR® Filter Core Strainer	4.75	64 Sq. In. Filter Area	Use when Drying is not Required				5.50	.51
810-F		6.00	98 Sq. In. Filter Area					6.50	.71
848-ST		4.75	65 Sq. In. Filter Area					5.50	.44

For R134A: Use R22 data. Drier Cores are available packed 12 to a carton. Type 810-CM are packed 4 to a carton.

FILTER DRIER CORES

Replaceable Type

HENRY TECHNOLOGIES

Replaceable Suction Line Filters

- **Traps contaminants down to 5 microns** with no bypassing and minimum pressure drop; keeps oil refrigerant clean
- **Protects longer**: extra large diameter plus fluted core design maintains high flow capacity even after prolonged use
- **Stands punishment**: reinforcing screens protect the fluted filter surfaces, both inside and out; expanded metal inner cylinder makes it a firm, rugged

Catalog Number	Shell Diameter	Core Length In.	Filter Area Sq. In.	Wt. Lbs.
848-CF	4.75	5.50	96	.72
810-CF	6.00	6.50	150	1.10

Dries Cartridges for Discontinued Brass Drier Shells

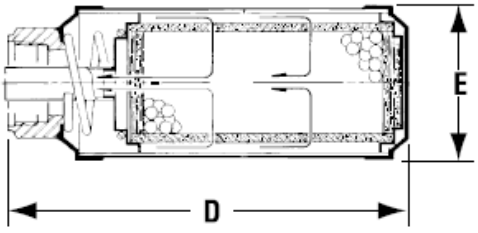
- **Thoroughly reactivated cartridges** are individually packaged in hermetically sealed, moisture-proof, key-operated metal containers; cartridges are completely self-contained, self-positioning and self-sealing for quick and easy installation or replacement.
- **DRI-COR** Filter Drier Cartridges contain a molded desiccant filter core and a blend of high-capacity granular desiccants. Activated alumina and molecular sieves.

Drier Dia. In.	Catalog Number	Cartridge Type	Vol. Cu. In.	ARI Cap. Ratings Drops of Water R12 (15 PPM) R22 (60 PPM) Liquid Line Temp. °F				Cartridge	
				75°	125°	75°	125°	In.	Lbs.
2	**872-NMS**	Dri-Cor Filter Drier Cartridges	10	170	121	117	83	5.00	.67
3	**873-NMS**		45	643	458	441	314	9.00	2.12
4 1/2	**876-NMS**		109	1560	1110	1069	760	10.5	4.81
5	**875-NMS**		50	1192	1139	1038	733	5.00	3.31

For R134A: Use R22 data.

Tee Flow Cartridge

- **Filter-drier cartridge**: steel, painted finish
- **Maximum working pressure**: 500 PSI (35 Kg/cm2)
- **Maximum temperature rating**: +200°F (+94°C)
- Used with P/N 850005



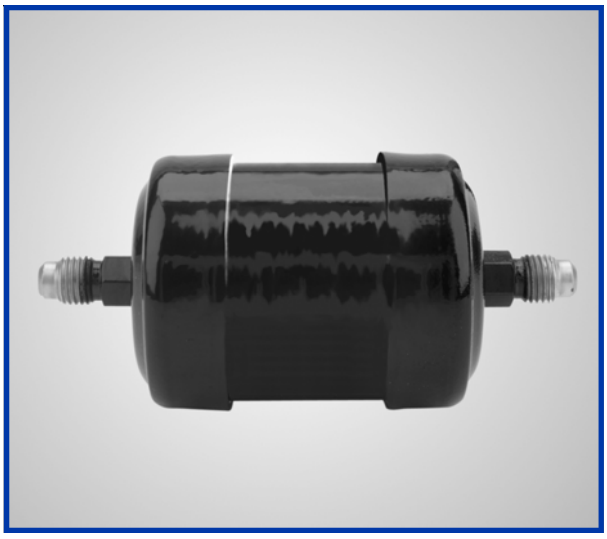
Filter-Drier-Cartridge Order Separately						Recommended Tonnage Based on Both Drying and Flow Capacity Refrigerants			Capacity Ratings According to ARI Standard 710 Drops of Water R12 / R22 & R134A / R502 Liquid Line Temperature °F						Flow Capacity @ 2 PSI in Tons		
Catalog Number	Filter Area Sq. In.	Vol. Cu. In.	Dim. In. D	Dim. In. E Dia.	Wt. Lbs.	R12	R22	R502	75°	125°	75°	125°	75°	125°	R12	R22	R502
***815030**	43	15.6	8.75	2.50	2.5	10	12.5	7.5	600	370	395	303	410	310	11.4	114.4	10.0

For R134A: Use R22 data.

STRAINERS

Straight Through

HENRY TECHNOLOGIES



Specifications:

- **Steel**
- **Stainless steel screen**
- **Maximum working pressure**: 500 PSI (35 Kg/cm2)
- **Temperature rating**: –20°F (–29°C) to +300°F (+149°C)
- **Suitable for refrigerants** and other industrial fluids non-corrosive to steel and copper

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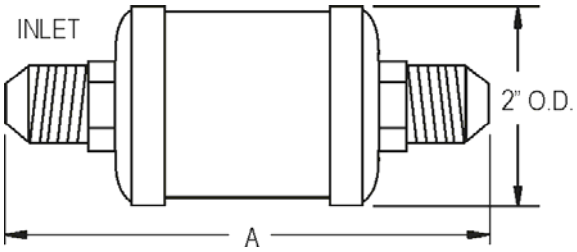
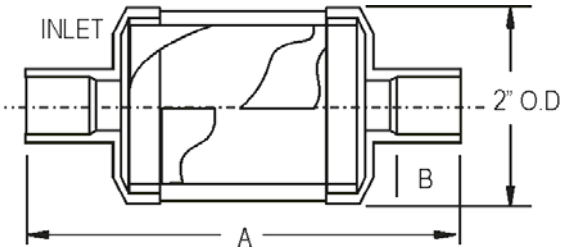


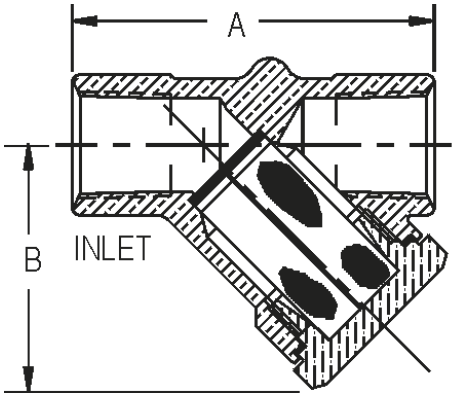


Catalog Numbers	Size Connection	Dimensions in Inches		Screen Data		Wt. Lbs.
		A	B	Area Sq. In.	Mesh	
891S-1/4	1/4" FL	4.50	—	11	100	.48
891S-3/8	3/8" FL	5.00	—	11	100	.57
891S-5/8S	5/8" ODS	4.56	.50	11	100	.72

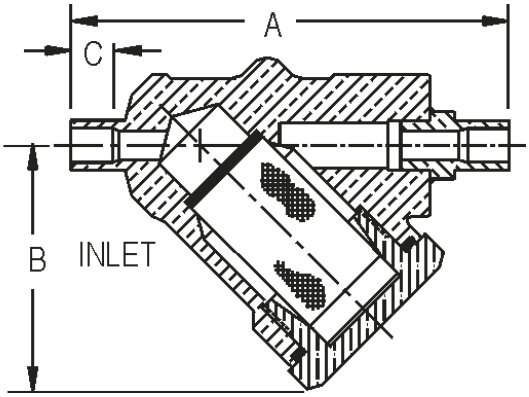
Specifications:

- **Forged brass body** and brass clean-out plug
- **Maximum working pressure**: 500 PSI (35 Kg/cm2)
- **Screen monel**
- **Temperature rating**: –20°F (–29°C) to +200° F (+93°C)
- **Suitable for refrigerants** and other industrial fluids non-corrosive to brass

Type 896-PT
Female Pipe Thread



Type 896-S
Solder



Catalog Numbers	Size Connection	Dimensions in Inches			Screen Data		Wt. Lbs.
		A	B	C	Area Sq. In.	Mesh	
896-1/4PT	1/4 NPTF	2.19	1.63	—	2	100	.55
896-3/8PT	3/8 NPTF	2.19	1.63	—	2	100	.51
896A-3/8S	3/8 ODS	3.31	1.88	.44	3	100	.84
896A-1/2S	1/2 ODS	3.38	1.88	.56	3	100	.82
896A-5/8S	5/8 ODS	3.50	1.88	.63	3	100	.80
896B-5/8S	5/8 ODS	4.44	2.56	.63	7	100	2.50

HELICAL OIL SEPARATORS

HENRY TECHNOLOGIES

Helical Oil Separators: The helical oil separator features a centrifugal flow path achieving approximately 99. x% efficiency of oil separation with low pressure drop. Testing by an independent laboratory found that only .006% oil by volume was being discharged into the system after leaving a helical oil separator.

How the Helical Oil Separator functions: Upon separator entry, refrigerant gas containing oil in aerosol form, encounters the leading edge of the helical flighting. The gas/oil mixture is centrifugally forced along the spiral path of the helix, causing heavier oil particles to spin to the perimeter, where impingement with a screen layer occurs. The screen layer serves dual functions as an oil stripping and draining medium. Separated oil flows downward along the boundary of the shell through a baffle and into the oil collection area at the bottom of the separator. The specially engineered baffle isolates the oil collection area and eliminates oil reentraintment by preventing turbulence. Virtually oil-free refrigerant gas exits through a fitting just below the lower edge of the helical flighting. A float activated oil return valve allows the captured oil to return to the crankcase or oil reservoir, thereby completing the oil circuit. Our Patented Mechanical Design offers high oil separation efficiency, plus the following advantages not found in a Coalescing Oil Separator:

- Low pressure drop throughout the entire range of velocities found in a refrigeration system.
- No clogging elements because of too much oil in the system.
- No oil blow-out at start-up from oil left in a coalescing element.
- Oil can be drained from the separator when necessary through a 1⁄8" NPT fitting at the bottom of the separator.

How the Conventional Oil Separator functions: Refrigerant gas from the compressor containing oil in aerosol form enters the separator and passes through the inlet baffling. As it passes through the inlet screen, the fine particles collide with one another and form heavier particles that impinge on the surface of the shell wall. The gas then passes through the outlet screen where there is a final separation. The oil free gas escapes through the outlet fitting and goes to the condenser. The separated oil drips to the bottom of the separator where a float operated needle valve returns the oil to the crankcase or oil reservoir in the same way as the Helical Oil Separator.
Selecting the size of an Oil Separator: Although Oil Separator catalogs show capacity in tons or horsepower, the actual tonnage or B.T.U. capacity of a system may vary widely from the horsepower size of the compressor.

The selection of an oil separator should be completed using the methodology shown on page 4. It is important this process not be ignored as it will affect the oil separation efficiency. The DCFM and tonnage ratings have been developed around internal testing to allow wide enough ranges where the oil separation efficiency is optimal and pressure drop is no greater than 0.5 psi.

HELICAL OIL SEPARATORS

HENRY TECHNOLOGIES

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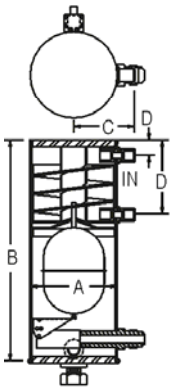


FIG. 1

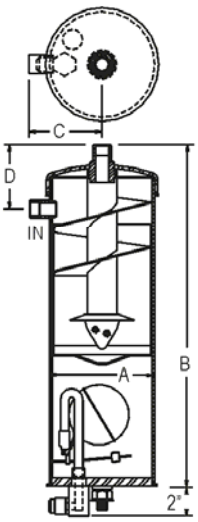


FIG. 2

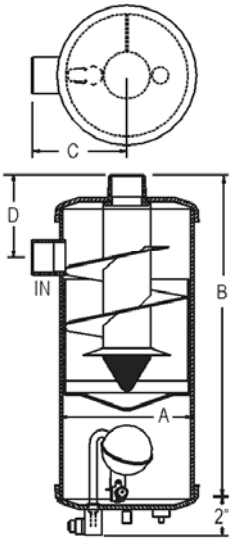


FIG. 3

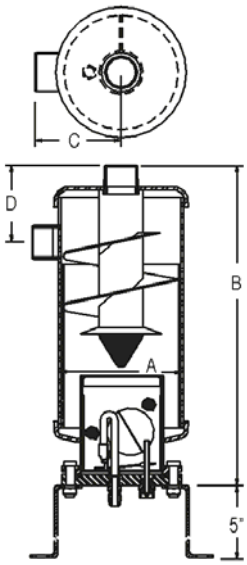


FIG. 4

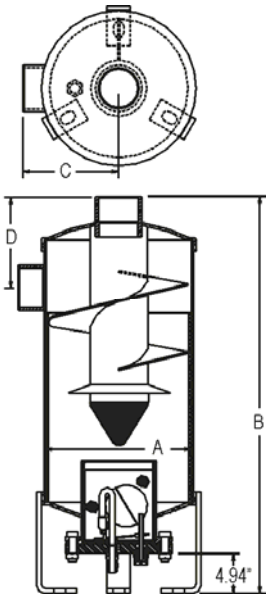


FIG. 5

Catalog Number	Fig. No.	Size Conn. ODS	Dimensions in Inches					Capacity in Tons of Ref. at Evap. Temp. (Nominal)						Nom. DCFM	Pre-Charge Oil (oz)
			A	B	C	D		R-134a		R-22		R-404a/R-507			
								-40°F	+40°F	-40°F	+40°F	-40°F	+40°F		
S-5180	1	1/4"	2.5	6.38	1.75	0.44	2.12	0.40	0.50	0.55	0.60	0.50	0.60	0.5	14
S-5181	1	3/8"	2.5	7.5	1.75	0.5	3.25	0.90	1.00	1.20	1.40	1.00	1.20	1.1	14
S-5182	2	1/2"	4	13	2.75	2.44		1.30	1.50	1.80	2.00	1.50	1.90	1.7	14
S-5185	2	5/8"	4	15	2.75	2.5		2.40	2.90	3.60	4.00	3.00	3.70	3.4	14
S-5187	2	7/8"	4	17	3	2.94		4.70	5.70	6.80	7.60	5.70	7.00	6.5	14
S-5188	2	1 1/8"	4	19	3	3.06		8.00	9.50	11.40	12.70	9.30	11.50	10.7	14
S-5190	3	1 3/8"	6	15	4.25	3.69		11.60	13.90	16.40	18.40	13.60	16.40	15.5	40
S-5192	3	1 5/8"	6	17	4.25	3.95		16.40	19.10	22.90	25.60	18.60	22.90	21.4	40
S-5194	3	2 1/8"	6	17	4.38	4.19		24.90	29.40	35.40	39.10	28.60	35.40	33.0	40
S-5290	4	1 3/8"	6	15	4.25	3.69		11.60	13.90	16.40	18.40	13.60	16.40	15.5	25
S-5292	4	1 5/8"	6	17	4.25	3.95		16.40	19.10	22.90	25.60	18.60	22.90	21.4	25
S-5294	4	2 1/8"	6	17	4.38	4.19		24.90	29.40	35.40	39.10	28.60	35.40	33.0	25
S-5202	5	2 1/8"	8	24	5.38	5.06		29.40	35.00	41.80	46.60	34.30	42.10	39.2	25
S-5203	5	2 5/8"	10	27	6.5	5.63		48.60	58.10	70.10	78.10	58.10	71.60	66.6	25
S-5204	5	3 1/8"	12	30	7.75	6.45		71.60	85.10	102.60	114.60	85.10	105.10	97.6	25

DCFM & Tonnage Ratings revised for optimal oil separation and minimal pressure drop. Replacement components on page 9.

U.S. patents #5,113,671 #5,404,730 #5,271,245; Mexico 173552; Denmark, France, Great Britain, Italy 0 487 959; Germany P69106849.6-08; Taiwan UM-74863; & other U.S. & foreign patents pending. Standard 3⁄8" flare oil return connection & 1⁄8" FPT oil drain; 3⁄8" O.D.S. oil return connection available by ordering an "X" suffix (i.e. S-5292X). All the capacities shown are based on 105°F condensing. See page 4 for sizing instructions.

GUARDIAN-SEPARATOR

Reservoir

HENRY TECHNOLOGIES

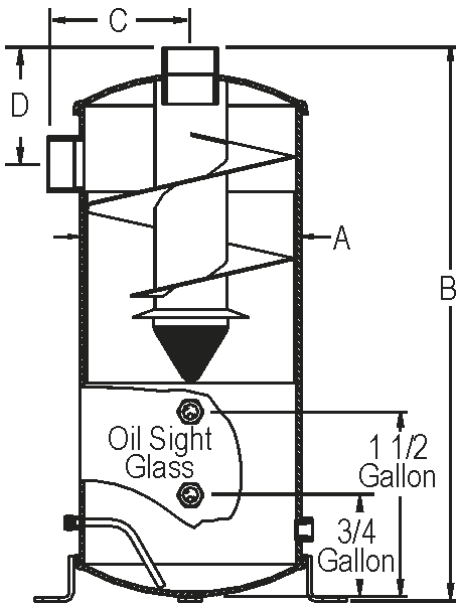
The captured oil is retained in the oil reservoir in the lower portion of the oil separator. Install the Roto Loc Valve Cat. No. 2-030-130 (which is provided) to the Roto Loc Spud on the bottom of the Oil Separator/ Reservoir. Connect the 3⁄8" return line from the valve directly to the Electro-Mech Regulators. This valve is the distribution valve to the OIL LEVEL REGULATORS (open position). To add or remove oil from the OIL RESERVOIR, close the valve and use the 1⁄4" flare connection on the side of the valve. Open the valve after service. Oil Level Regulators are activated by the lowering of the oil level in the compressor crankcase. The oil is fed from the Oil Reservoir to the Electro-Mechanical Oil Regulator and into the crankcase until the set oil level is attained.

The heart of any oil control system is a high efficiency Helical Oil Separator. For parallel compressor systems application we recommend our S-5300 Series Helical Oil Separator/Reservoir combinations.

How it Works:

The Helical Oil Separator features a centrifugal flow path achieving approximately 99% efficiency of oil separation with low pressure drop. Testing by an independent laboratory found that only .006% oil by volume was being discharged into the system after leaving a helical oil separator. Virtually oil-free refrigerant gas exists through a fitting just below the lower edge of the helical flighting.

For use with S-9030 Electro-Mechanical Regulators and Optronic Sensors



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Catalog Number	Size Conn. ODS	Dimensions in Inches				Capacity in Tons of Ref. at Evap. Temp. (Nominal)						Nom. DCFM	Pre-Charge Oil (oz)
		A	B	C	D	R-134a		R-22		R-404a/R-507			
						-40°F	+40°F	-40°F	+40°F	-40°F	+40°F		
S-5390	1 3/8"	6	33.5	4.25	3.69	11.60	13.90	16.40	18.40	13.60	16.40	15.5	2
S-5392	1 5/8"	6	33.5	4.25	3.95	16.40	19.10	22.90	25.60	18.60	22.90	21.4	2
S-5394	2 1/8"	6	33.5	4.38	4.19	24.90	29.40	35.40	39.10	28.60	35.40	33	2
S-5302	2 1/8"	8	25.5	5.38	5.06	29.40	35.00	41.80	46.60	34.30	42.10	39.2	2
S-5303	2 5/8"	10	30	6.5	5.63	48.60	58.10	70.10	78.10	58.10	71.60	66.7	2
S-5304	3 1/8"	12	30	7.75	6.45	71.60	85.10	102.60	114.60	85.10	105.10	97.6	2

U.S. patents #5,113,671 #5,404,730 #5,271,245; Mexico 173552; Denmark, France, Great Britain, Italy 0 487 959; Germany P69106849.6-08; Taiwan UM-74863; & other U.S. & foreign patents pending. Standard 3⁄8" flare oil return connection & 1⁄2" FPT low oil return connection & 1⁄2" FPT low level alarm connection. All the capacities shown are based on 105°F condensing. See page 4 for sizing instructions.

Calculating Separator DCFM

Correct oil separator sizing is essential for proper oil separation and minimal pressure drop across the separator. The following example will demonstrate how to select an oil separator based on four primary system conditions and using the DCFM charts on the following page. It is important to determine the discharge cubic feet per minute of the hot gas flow approaching the separator. The DCFM is a theoretical sizing value used to predict which model will offer the best oil separation efficiency for a set of conditions. Henry offers three different designs, helical, conventional screen, and coalescing.

Sizing Notes

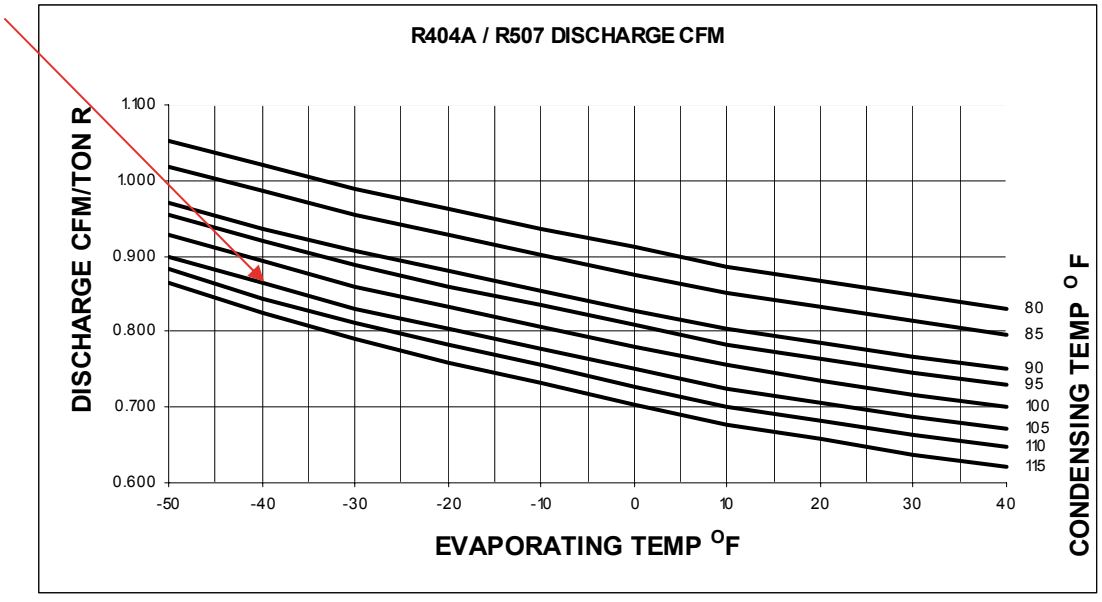
Helical Separators: This design relies on adequate gas velocities to allow for oil extraction from the hot gas so sizing according to the DCFM rating is important. Page 6 shows the min/max ratings allowed for sufficient separation and low pressure drop. When sized correctly the helical models will separate 95-99% of the oil from the hot gas.

Conventional Screen: This oil separator should not be undersized (calculated DCFM greater than 125% of nominal), which would cause higher gas velocities to pass through the inlet/outlet screens. Higher flow velocities may cause pre-mature failure of the screens.

Selection Example

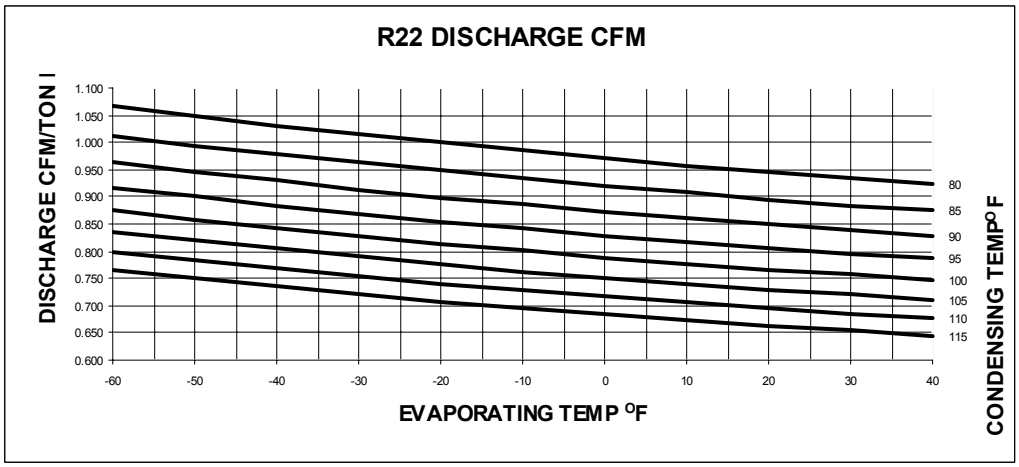
Primary Conditions

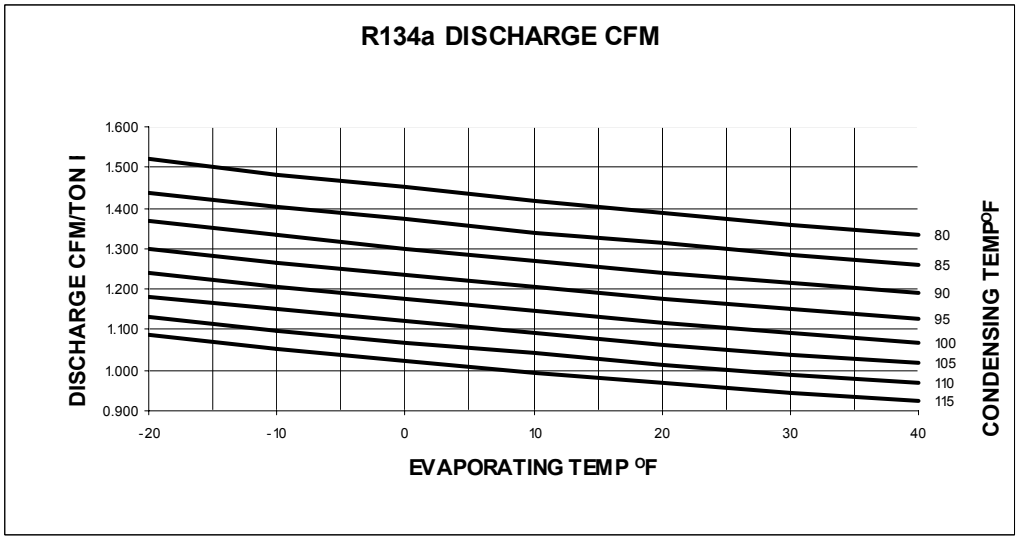
Evaporating Temperature, -40°F
Condensing Temperature, 105°F
Tons of Refrigeration or Air Conditioning, 20 Tons

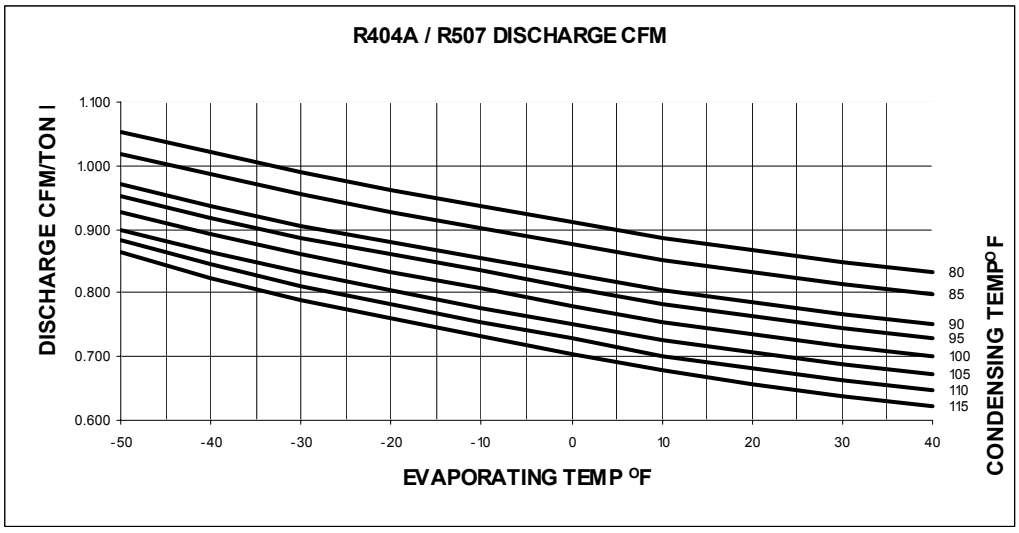


Following the 105°F condensing temp line from the right side to the vertical line at -40°F corresponds to ~0.87on the DCFM/Ton axis. This factor is multiplied by the Tons of refrigeration (0.86 x 20) to yield 17.2 DCFM.

Calculating Separator DCFM Continued







OIL SEPARATORS

Sizing Charts

HENRY TECHNOLOGIES

Min/Max DCFMs shown below for various common refrigerants at specific conditions. For other conditions and refrigerants please consult the factory.

Catalog Number	R404a, -40F Evap. 105F Cond.				R22, 40F Evap. 105F Cond.			
	MINIMUM DCFM	MAXIMUM DCFM	MINIMUM TONS	MAXIMUM TONS	MINIMUM DCFM	MAXIMUM DCFM	MINIMUM TONS	MAXIMUM TONS
S-5180	0.46	0.55	0.41	0.49	0.45	0.63	0.49	0.69
S-5181	0.60	1.58	0.54	1.41	0.61	1.84	0.66	2
S-5182	1.17	2.18	1.05	1.95	1.15	2.53	1.25	2.75
S-5185	3.0	3.6	2.7	3.2	3.0	4.2	3.3	4.5
S-5187	4.6	8.1	4.1	7.2	4.5	9.5	4.9	10.3
S-5188	6.0	14.8	5.4	13.2	6.1	17.3	6.6	18.8
S-5190	8.5	21.9	7.6	19.6	8.4	25.4	9.1	27.6
S-5192	10.7	30.9	9.6	27.6	10.7	36.4	11.6	39.6
S-5194	16.9	47.1	15.1	42.1	16.6	55.3	18.1	60.1
S-5290	8.5	21.9	7.6	19.6	8.4	25.4	9.1	27.6
S-5292	10.7	30.9	9.6	27.6	10.7	36.4	11.6	39.6
S-5294	16.9	47.1	15.1	42.1	16.6	55.3	18.1	60.1
*S-5202	21.9	54.6	19.6	48.9	22.2	63.6	24.1	69.1
*S-5203	46.0	84.0	41.1	75.1	45.2	98.5	49.1	107.1
*S-5204	70.6	119.8	63.1	107.1	70.9	139.9	77.1	152.1

Catalog Number	R134a, 40F Evap. 105F Cond.				R407c, 40F Evap. 105F Cond.			
	MINIMUM DCFM	MAXIMUM DCFM	MINIMUM TONS	MAXIMUM TONS	MINIMUM DCFM	MAXIMUM DCFM	MINIMUM TONS	MAXIMUM TONS
S-5180	0.46	0.76	0.33	0.54	0.46	0.58	0.44	0.56
S-5181	0.60	2.19	0.43	1.56	0.60	1.68	0.58	1.62
S-5182	1.19	3.01	0.85	2.15	1.14	2.34	1.1	2.25
S-5185	3.01	4.98	2.15	3.55	3.02	3.85	2.9	3.7
S-5187	4.63	11.22	3.3	8	4.58	8.63	4.4	8.3
S-5188	6.03	20.61	4.3	14.7	6.03	15.81	5.8	15.2
S-5190	8.55	30.29	6.1	21.6	8.42	22.98	8.1	22.1
S-5192	10.66	42.91	7.6	30.6	10.50	33.38	10.1	32.1
S-5194	16.97	65.35	12.1	46.6	17.26	50.80	16.6	48.85
S-5290	8.55	30.29	6.1	21.6	8.42	22.98	8.1	22.1
S-5292	10.66	42.91	7.6	30.6	10.50	33.38	10.1	32.1
S-5294	16.97	65.35	12.1	46.6	17.26	50.80	16.6	48.85
*S-5202	22.23	75.86	15.85	54.1	21.94	57.82	21.1	55.6
*S-5203	45.01	117.93	32.1	84.1	45.86	90.58	44.1	87.1
*S-5204	71.66	167.01	51.1	119.1	70.82	128.02	68.1	123.1

- *Rates also apply to Guardian Separator/Reservoir S-53** types.

- ***Minimum DCFM & tons should be met in order to ensure proper oil separation.***
- **Maximum DCFM & tons should not be exceeded due to pressure drop will become greater than 0.5 psi.**

CONVENTIONAL

Oil Separators

HENRY TECHNOLOGIES

Features:

- **Connections** are nickel plated steel
- **Oil flow rate** @ 175 PSI differential .80 gal/min.
- **3/8" flare** oil return connection
- **All capacities** shown are based on 100°F condensing
- **Brass screws** on inlet and
- **All capacities** shown are based on 100°F condensing
- **Minimum tonnage** is 33% of rated capacity
- **Working Pressure**: 450 PSI

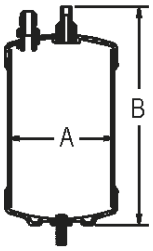


FIG. 1

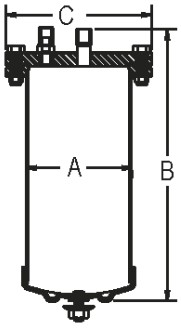


FIG. 2

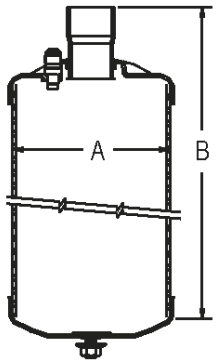


FIG. 3

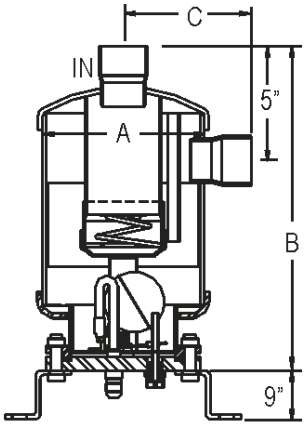


FIG. 4

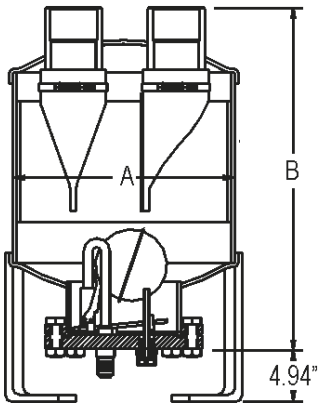


FIG. 5

Catalog Number	Size Conn. O.D.S.	Fig #	Dimensions in Inches			Capacity in Tons of Ref. at Evap. Temp. (Nominal)						Max. Discharge CFM	Pre-Charge Amount
			Dia. A	B	C	R-134a		R-22		R-404a/R-507			
						-40°F	+40°F	-40°F	+40°F	-40°F	+40°F		
S-5580	1/4"	1	4	8.25	—	0.5	0.8	0.8	1.0	0.8	1.0	0.75	12
S-5581	3/8"	1	4	8.25	—	0.8	1.0	1.0	1.5	1.0	1.5	1.0	12
S-5582	1/2"	1	4	10.25	—	1.0	1.5	1.5	2.0	1.5	2.0	1.5	12
S-5585	5/8"	1	4	14.25	—	3.0	4.0	4.5	5.5	4.0	5.5	4.0	12
S-5587	7/8"	1	4	17.75	—	4.5	5.5	7.0	8.0	6.5	8.5	6.5	12
S-5588	1 1/8"	1	4	21	—	6.0	7.5	9.0	10.5	8.5	11.0	8.0	12
S-5590	1 3/8"	1	4	21.25	—	8.0	9.5	11.5	13.5	10.5	14.0	10.0	12
S-5882	1/2"	2	4	10.25	5.50	1.0	1.5	1.5	2.0	1.5	2.0	1.5	12
S-5885	5/8"	2	4	14.25	5.50	3.0	4.0	4.5	5.5	4.0	5.5	4.0	12
S-5887	7/8"	2	4	17.75	5.50	4.5	5.5	7.0	8.0	6.5	8.5	6.0	12
S-5888	1 1/8"	2	4	21	5.50	6.0	7.5	9.0	10.5	8.5	11.0	8.0	12
S-5890	1 3/8"	2	4	12.25	5.50	8.0	9.5	11.5	13.5	10.5	14.0	10.0	12
S-5687	7/8"	3	6	11.12	—	6.0	7.0	9.0	10.0	8.0	10.0	7.5	30
S-5688	1 1/8"	3	6	15.38	—	8.0	10.0	11.0	12.0	9.0	13.0	9.0	30
S-5690	1 3/8"	3	6	15.63	—	9.0	12.0	13.0	14.0	12.0	15.0	11.0	30
S-5692	1 5/8"	3	6	18.63	—	11.0	13.0	16.0	18.0	15.0	19.0	14.0	30
S-5694	2 1/8"	3	6	19.12	—	18.0	21.0	25.0	30.0	24.0	31.0	22.5	30
S-5792	1 5/8"	4	6	20.25	4.25	11.0	13.0	16.0	18.0	15.0	19.0	14.0	20
S-5794	2 1/8"	4	6	20.31	4.50	18.0	21.0	25.0	30.0	24.0	31.0	22.5	20
S-1901	1 5/8"	5	8	21	—	14.0	17.0	20.0	24.0	19.0	25.0	18.0	20
S-1902	2 1/8"	5	8	21	—	21.0	25.0	30.0	35.0	28.0	37.0	27.0	20
S-1903	2 5/8"	5	10	21.50	—	37.0	46.0	50.0	65.0	48.0	68.0	49.0	20
S-1904	3 1/8"	5	12	25.75	—	52.0	64.0	75.0	90.0	72.0	94.0	68.0	20

S-5500, S-5800, S-5600, S-5700: Connections are nickel plated steel. S-1900: Connections are copper plated steel.
Oil flow rate @ 175 PSI differential: 0.80 gal/min.

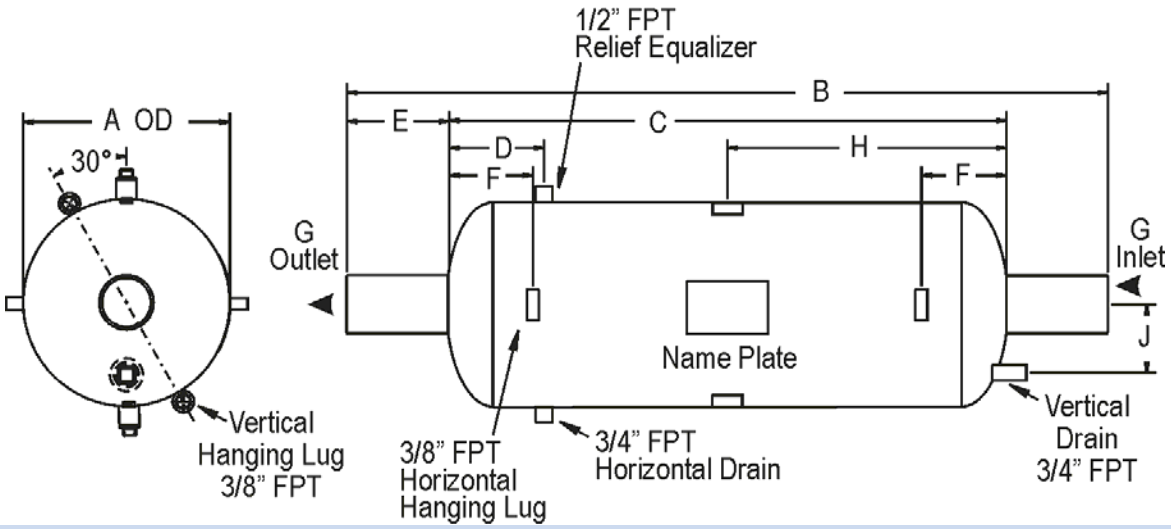
ALL-WELDED COALESING

Oil Separators

HENRY TECHNOLOGIES

Features:

- **Constructed in accordance with ASME Section VIII**
- **Assembly is all welded steel**
- **Designed specifically for all reciprocating refrigeration compressors**: Halocarbons, Ammonia and Hydrocarbons
- Provides 10 times the oil removal rate of conventional oil separators
- **5 models to choose from** covering entire range of single stage and booster compressors
- **Oil float valve assembly** with shut off valve available as optional accessory (SN-9142) See page 10.
- **Max. Allowable Working Pressure: 400 PSI**
  Note: can be mounted either horizontally or vertically



D.C.F.M. Rating (Discharge Volumetric Flow)						
Refrigerant		COS-030	COS-070	COS-140	COS-205	COS-250
Group 1	R-717 (Ammonia), Natural Gas	30	70	140	205	250
Group 2	R-290 (Propane), R744 (Carbon Dioxide)	25	65	135	200	225
Group 3	R-22, R-23, R-407C, R-410A, R508B	20	50	105	150	180
Group 4	R-134A, R-404A, R-507A, R-417A, R422D, R434A	19	45	95	140	160

* For other Halocarbon Refrigerants Contact our Sales Office

Catalog Number	Dimensions in Inches								Conn. Size & Type	Approx. Ship Wt. In Lbs.
	A	B	C	D	E	F	H	J	G	
COS-030 (F)	8.63	33	24	5	6.5	4	12	3	2" BW (2 1/8 ODS)	78
COS-070 (F)	12.75	43	34	7	6.5	5	17	4	2 1/2" BW (2 5/8 ODS)	238
COS-140 (F)	16	51	42	8	6.5	7.13	21	5	3" BW (3 1/8 ODS)	333
COS-205	18	61	52	8	6	7.63	26	5	4" BW	462
COS-250	20	65	53	9	6	8.25	26.5	6	5" BW	536

- Add suffix "F" to Catalog Number (Halocarbon):
  e.g. COS-030 has a 2 1/8 Butt Weld Connection; COS-030F has a 2 1/8 ODS Connection which can be cut back to 2" BW.

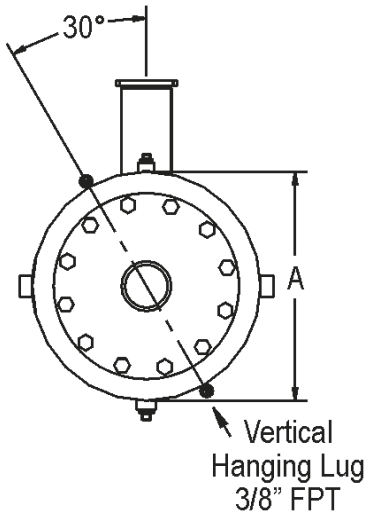
COALESCING OIL SEPARATORS

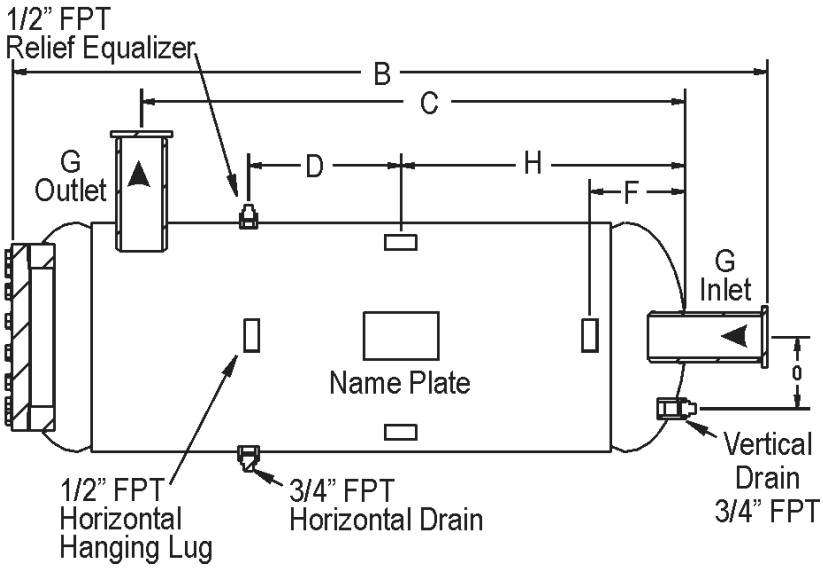
For Replaceable Cartridges

HENRY TECHNOLOGIES

Features:

- Constructed in accordance with ASME Section VIII
- Assembly allows for easy replacement of the coalescing cartridge
- Designed specifically for all reciprocating refrigeration compressors: Halocarbons, Ammonia and Hydrocarbons
- Provides 10 times the oil removal rate of conventional oil separators
- **Five models** to choose from covering entire range of single stage and booster compressors
- **Removable and replaceable cartridges.**
- **Oil float valve assembly** (SN-9142 See page 10) with shut off valve available as optional accessory
- **Max. Allowable Working Pressure: 400 PSI**





Refrigerant	D.C.F.M. Rating				
	COSM-030	COSM-070	COSM-140	COSM-205	COSM-250
R-717	30	70	140	205	250
R-22, R-502*	22	50	105	150	185

* For other Halocarbon Refrigerants Contact our Sales Office

Catalog Number	Dimensions in Inches							Connection G	Approx. Ship Wt. in Lbs.
	A	B	C	D	E	F	H		
COSM-030 (F)	8 5/8	27 1/2	22 1/2	7	6 1/2	4	12	2 1/8 ODS (2) •	138
COSM-070 (F)	12 3/4	37 1/4	31	10	6 1/2	5	17	2 5/8 ODS (2 1/2) •	379
COSM-140 (F)	16	46	3/8 1/2	13	6 1/2	7 1/8	21	3 1/8 ODS (3) •	566
COSM-205 (F)	18	58 1/2	49 1/2	18	6	7 5/8	26	4 Weld Stud	773
COSM-250 (F)	20	60 3/4	50 1/2	17 1/2	6	8 1/4	26 1/2	5 Weld Stud	896

- Add suffix "F" to Catalog Number (Halocarbon):
  e.g. COS-030 has a 2 1/8 Butt Weld Connection; COS-030F has a 2 1/8 ODS Connection which can be cut back to 2" BW.

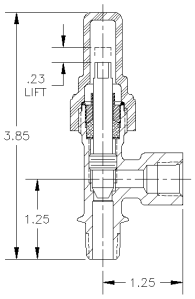
OIL SEPARATORS

HENRY TECHNOLOGIES

Features:

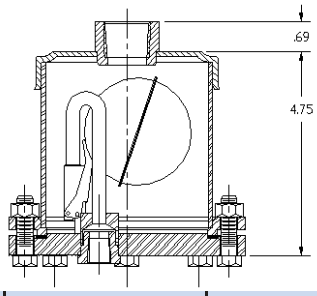
- **ODS or butt weld** connections available
- **Stainless Steel 303** screen mesh filter media.
- **Oil Float Valve Assembly** with shut-off valve (SN-9142 available as optional accessory) suitable for ammonia use.
- **All Welded Design**
- **Oil Separators** are all rated at 400 P.S.I. working pressure
- Constructed in accordance with ASME Section VIII
- **Max. Allowable Working Pressure: 400 PSI**

Shutoff Valve: 7771

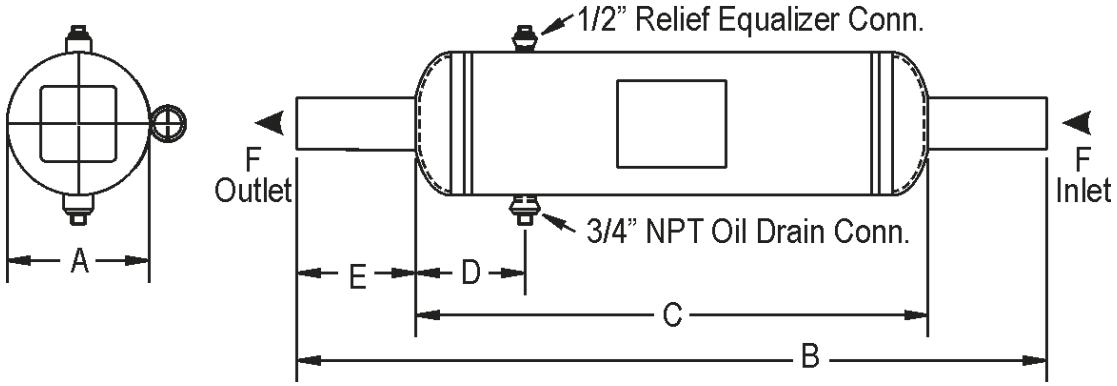


Oil Float Valve: SN-9142

Replacement Float: SN-9140-30



Catalog Number	Description	Inlet	Outlet
SN-9142	Oil Float Valve	3/4" NPT Int.	1/4" NPT Int.
7771	Shutoff Valve	1/4" NPT Ext.	1/4" NPT Int.



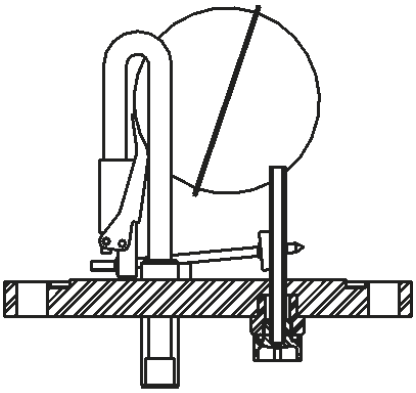
Catalog Number	Rating in CFM*		Shipping Weight lbs.	Dimensions in Inches					F	
	Max.	Min.		A	B	C	D	E	Weld Stud	O.D.S. **
0-100 (F)	100	20	38	6-5/8	32	24	5-1/2	4	2	2-1/8
0-175 (F)	175	30	45	8-5/8	32	24	5-1/2	4	2-1/2	2-5/8
0-250 (F)	250	50	76	10-3/4	32	24	5-1/2	4	2-1/2	2-5/8
0-350 (F)	350	75	120	12-3/4	40	32	9-1/2	4	3	3-1/8
0-650	650	100	172	14	40	32	9-1/2	4	4	—
0-900	900	150	251	16	52	44	15-1/2	4	4	—
0-1500	1500	250	367	20	56	44	15-1/2	6	6	—

* Compressor Displacement in cubic feet per minute. ** Weld stub connections are standard.

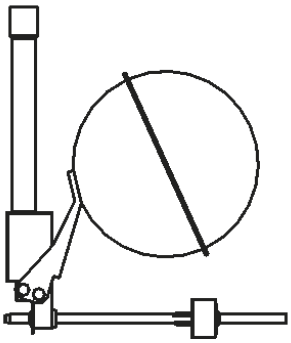
The A-1900-30 Replacement Float Assembly is used on the S-5200 & S-1900 series Oil Separators, and the A-5700-30 is used on the S-5700 series Oil Separators. Both Replacement Assemblies include the gasket which can also be ordered separately (Part Number 2-023-001). The S-5700 series screen cartridge can also be ordered as a replacement part (Part Number 3-010-301). A 3/8" ODS oil return connection is available by ordering with an "X" suffix (i.e. A-1900-30X). The A -5000-30 Replacement Float Assembly is used on the S-5800 series Oil Separators. The Replacement Assembly includes the gasket (Part Number 2-023-001).

Oil Separators

A-1900-30 A-5700-30



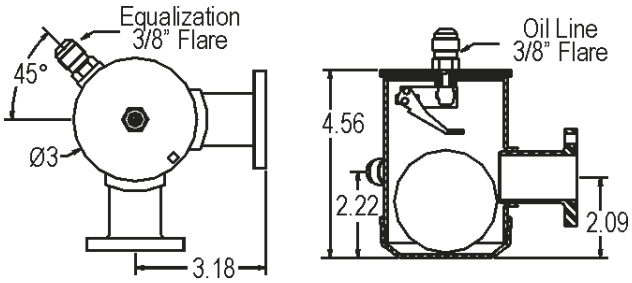
A-5000-30



CONVENTIONAL OIL

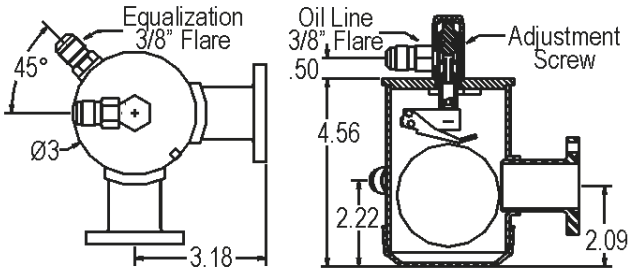
Level Regulators

HENRY TECHNOLOGIES



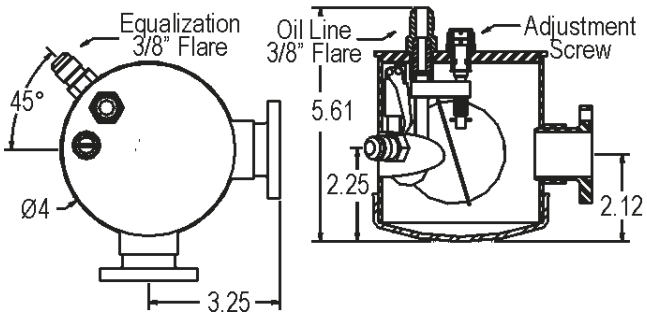
S-9010 Fixed Level Regulator:

The S-9010 regulator maintains the oil level in the compressor crankcase at 1⁄2" sight glass. The S-9010 maintains the level at any pressure differential* between 5 and 30 psi. The S-9010 oil level regulator is designed to bolt directly to the 3 bolt sight glass housing found on many compressor crankcases. Do not use on Satellite Compressor.



S-9090 Adjustable Regulator:

The S-9090 regulator allows the oil level in the compressor crankcase to be maintained at any level between 1⁄4 and 1⁄2 sight glass. The S-9090 maintains the level at any pressure differential between 5 and 90 psi. If the oil level in the crankcase is too high or too low, the level can be adjusted by turning the adjustment screw on top of the regulator. This can be done while the system is in operation. Our exclusive design eliminates the need of shutting down the system and disconnecting the oil feed lines in order to adjust the regulator.



S-9130 Adjustable Regulator:

The S-9130 regulator allows the oil level in the compressor crankcase to be maintained at any level between 1⁄4 and 1⁄2 sight glass. The S-9130 maintains the level at any pressure differential between 5 and 90 psi. If the oil level in the crankcase is too high or too low, the level can be adjusted by turning the adjustment screw on top of the regulator. This can be done while the system is in operation. Our exclusive design eliminates the need of shutting down the system and disconnecting the oil feed lines in order to adjust the regulator.

Figure 1: Parallel Compressor System

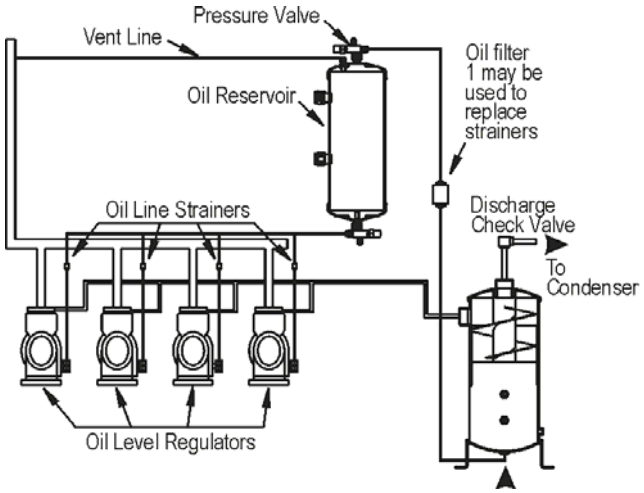
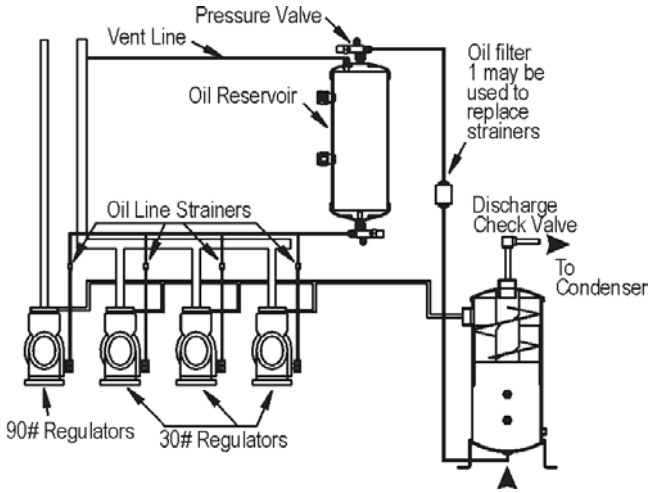


Figure 2: Parallel Compressor System with Satellite Compressor



Oil Level Regulator:

The oil level regulator controls the oil level in the compressor crankcase with a float operated valve. Oil level regulators are designed to attach directly to the sight glass housing on the compressor crankcases. All Oil Level Regulators feature a standard 3 bolt 1-7⁄8" B.C. flange, common to many Compressor Sight Glasses. Included with each regulator are the "O" rings required to attach the regulator to the 3 Bolt Compressor Sight Glass. Adapter kits are available for compressors that have a different sight glass configuration. The sight glass from the compressor or supplied with an adapter kit, bolts to the second regulator flange for visual observation of the oil level. The oil supply line from the reservoir is connected to the 3/8" flare fitting on top of the regulator. These regulators feature a 3⁄8" flare equalization connection on the side of the regulator that allows the crankcases to be interconnected. This maintains the same pressure in all of the crankcases including any compressor that is running. This prevents running compressor (s) from siphoning the oil out of the idle compressor (s). In order for 2 or more Oil Level Regulators to be equalized, the compressors must have a common suction line (same suction pressure) and be adjusted to the same oil level. The 3⁄8" flare equalization connection is at the half sight glass level. It helps prevent over filling of the regulators caused by oil returning down the suction line to an idle compressor. If a regulator fills up to a half sight glass, the oil will be picked up by the equalization connection and sent to the running compressor crankcase. The equalization connection may be sealed off, if equalization is not desired. It will not affect the function of the regulator.

Operating Pressure Differential: The difference of pressure between the oil being fed to the oil regulator and the compressor crankcase, where the regulator is controlling oil level.

Low Pressure Oil Control System:

The need for greater system flexibility, lower operating cost, and energy conservation has brought about the growing application of parallel compressor systems. This type of system uses multiple compressors with one common discharge line and common suction line (See Figures 1 and 2). Parallel systems have some potential problems, one of them being the maintenance of the correct oil level in the compressor crankcase at all operating conditions. Crankcase oil level must be controlled. Our Oil Control System provides this control as well as a method of regulating the oil level in each individual crankcase. Our Oil Level Control System eliminates the need for complex piping and valving. It does not require that the compressors be level, or be the same make or model. The Oil Control System consists of three basic components:

- Oil Separator
- Oil Reservoir
- Oil Level Regulators

Each compressor has an Oil Level Regulator attached to control the oil level in each individual compressor. The regulators are supplied oil by the common Oil Reservoir, which in turn is supplied oil by the Oil Separator. This Oil Control System is recommended by the largest manufacturer of semi-hermetic compressors in the world for field assembled parallel systems.

ELECTRO-MECHANICAL

Oil Level Regulators

HENRY TECHNOLOGIES

One oil level regulator for all applications
The S-9030* Oil Level Regulator is designed to bolt directly to the three bolt sight glass housing found on many compressor crankcases. Adapter kits are available for compressors that have a different sight glass configuration. The sight glass from the compressor or supplied with an adaptor kit, bolts to the second regulator flange for visual observation of the oil level.
*U.S. Patent #5,542,499 & other U.S. and Foreign Patents pending

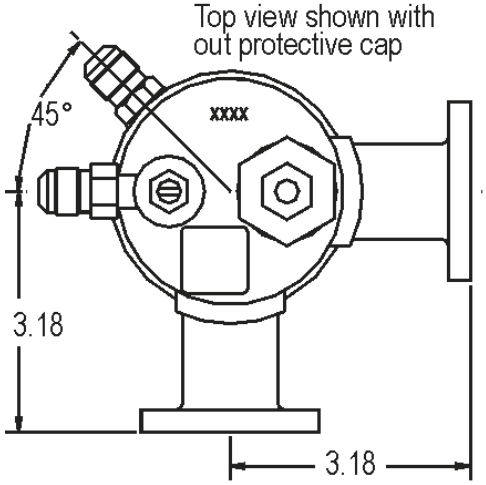
S-9030 Adjustable Regulator:

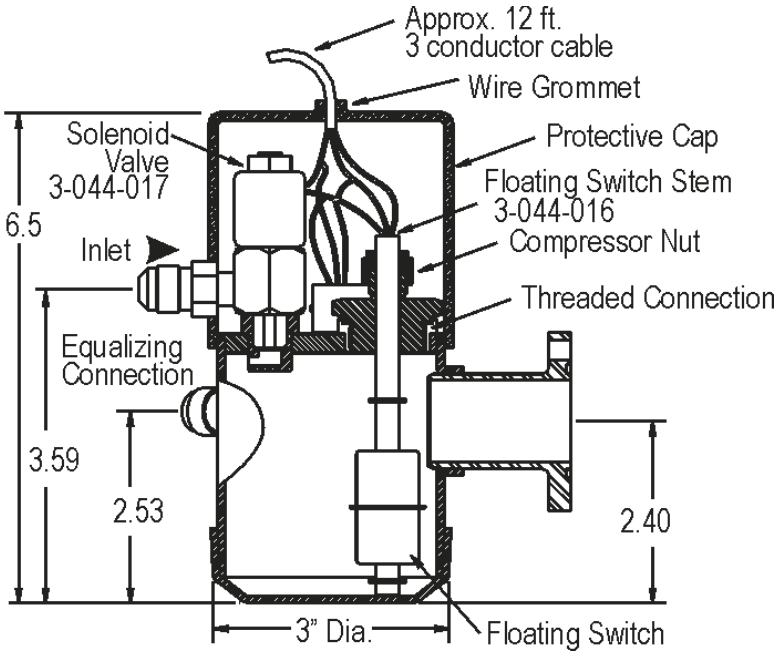
The Electro-Mechanical Oil Level Regulator S-9030 provide a simplistic means for controlling oil level for hermetic, semi-hermetic, reciprocating and scroll compressors. through the use of a float switch and solenoid valve. A magnetic reed float switch closes upon the reduction of oil level in the oil regulator body. This action energizes the solenoid valve thereby feeding oil into the regulator body.
The oil level is adjustable by loosening the compression nut and manually adjusting the position of the float switch. A low level alarm is also provided, for oil safety on hermetic and scroll compressors. If the oil level drops 1⁄8" below the set point, a second magnetic reed switch closes activating a customer supplied alarm. This alarm circuit may also be used to disconnect power from the compressor. While the regulator is in alarm the solenoid valve remains open trying to re-establish the oil level.

Features:

- Complete oil level control without variations in
- pressure drop.
- 3/8” Flare normally closed solenoid valve.
- Adjustable between 1⁄4" and 1⁄2" glass.
- Low level alarm circuit.
- 24 VA .25 amp. No UL considerations.
- Equalization connection 3⁄8" Flare.
- Operating differential 5 to 300 psig, 450 psig MAWP.
- Reliable float switch operation, 20 VA pilot duty.
- All major components replaceable.

c UL us LISTED





OIL LEVEL REGULATOR

Adaptor Kits

HENRY TECHNOLOGIES

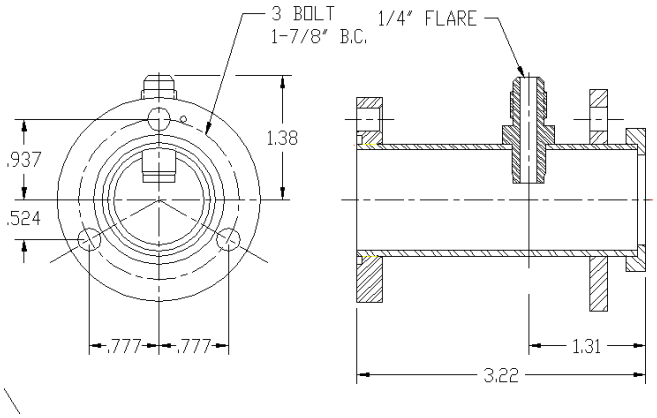
3-033-201 included with all oil level regulators from Henry Technologies. The kit consists of two o-rings, one quad ring, bolts and nuts.
Note: All adapters with sight glass pattern different from 3 bolt 1 7/8" BC, include one 3 bolt 1 7/8" BC standard adapter kit.
Where an extra length is needed to clear obstructions, use either 3-033-212 (2.59" long) or 3-033-254 (3.25" long).

+ Do not operate **ANY** regulator at 1/4 sight glass when using an adapter with an inside diameter smaller then the regulator flange port.

Compressor Manufacturer	Model Number	Recommended Oil	Sight Glass Configuration	Henry Kit Number
Bitzer	—	1/2 Glass	4 bolt 50mm BC	**3-033-253**
Bock	AM,F	1/2 Glass	4 bolt 1 31/32" BC	**3-033-244**
Bristol	—	1/2 Glass	15/16"-20 Thread	**3-033-242**
Carrier Carlyle	10 hp & under: DA,DR,5F,06D,06CC	1/4 Glass	1 1/2"-18 Thread	**3-033-204**
Carrier Carlyle	15 hp & over: EA,ER,06E,06CC	1/4 Glass	3 bolt 1 7/8" BC	**3-033-201***
Copeland	Under 5 tons: Copelametic HA,KA,EA,3A,LA,ER,3R	1/2 Glass	1 1/8"-12 Thread	**3-033-202**
Copeland	Discus,2D,3D,4D,6D,9D,4R,6R,9D,9R,MD,MR,NR	1/4 Glass	3 bolt 1 7/8" BC	**3-033-201***
Copeland	Older model	1/4 Glass	4 bolt 2 1/8" BC	**3-033-207**
Copeland	8R,8D	1/4 Glass	3 bolt 1 7/8" BC	**3-033-212**
Copeland	8DP3	1/4 Glass	3 bolt 1 7/8" BC	**3-033-254**
Copeland	Scroll	1/2 Glass	3/4" NPT	**3-033-218**
Dunham-Bush	Big 4	1/2 Glass	3 bolt 1 7/8" BC	**3-033-201***
Dunham-Bush	D	1/2 Glass	4 bolt 2 1/8" BC	**3-033-203**
Frascold	All models	1/2 Glass	3 bolt 1 7/8" BC	**3-033-201***
Grasso Thermtrol	—	1/2 Glass	1" NPT	**3-033-228**
Maneurop	All models	1/2 Glass	1 1/8"-18 Thread	**3-033-246**
Prestcold	K	1/2 Glass	1 1/8"-12 Thread	**3-033-202**
Prestcold	C,E,R,L,LG	1/2 Glass	42mm Thread	**3-033-216**
Schnacke-Grasso	—	1/2 Glass	2"-16 Thread	**3-033-205**
Schnacke-Grasso	—	1/2 Glass	1 1/4" NPT	**3-033-219**
Tecumseh	P,R,S,PA,RA,SA,CK,CM,CH,CG	1/2 Glass	1 1/8"-12 Thread	**3-033-202**
Trane	M,R	1/2 Glass	3 bolt 1 7/8 BC	**3-033-201***
Trane	—	1/2 Glass	5 bolt 2 1/2 BC	**3-033-206**
Trane	K	1/2 Glass	3/4" NPT	**3-033-218**
Vilter	—	1/2 Glass	1 1/2" NPT	**3-033-208**
Vilter	—	1/2 Glass	2" NPT	**3-033-209**
York	GC,GS,JS	1/2 Glass	3 bolt 1 7/8 BC	**3-033-201***
York	—	1/2 Glass	1" NPT	**3-033-228**
Any	1/4" Flare Equalization Extension (3.22" long)	1/2 Glass	3 bolt 1 7/8 BC	**3-033-221**
Any	3/8" Flare Equalization Extension (3.23" long)	1/2 Glass	3 bolt 1 7/8 BC	**3-033-227**
Pattern not Listed	Universal Adapter Kit	Any	1 1/4" OD Steel Tube	**3-033-217**

Equalization Adapter Kit 3-033-226

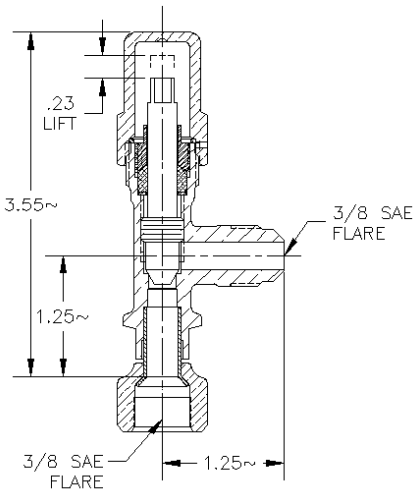
This kit, with its 1/4" male flare connection, allows non-equalized Oil Level Regulators to be interconnected (equalized) at a fraction of the costs of replacing the regulators of an existing system. The kit comes with all the necessary hardware to mount it to the oil level regulator and compressor.



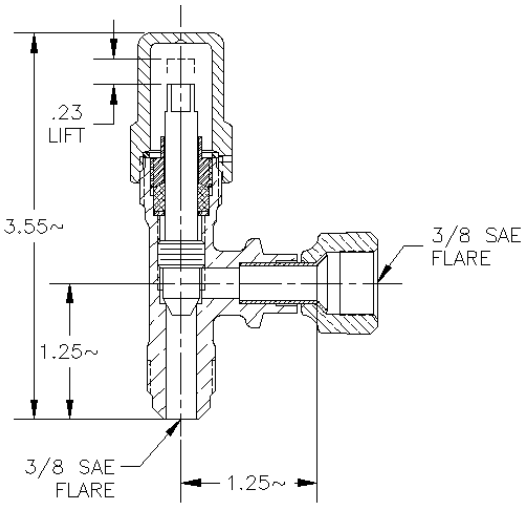
Shut-Off Brass Valves

These brass valves are designed to mount on the oil inlet connections and equalization line connections of our oil level regulators and oil separator return fittings. The valves allow each oil level regulator to be isolated if service is required on a compressor, oil level regulator, oil line filter-drier, or strainer. All models have a female swivel connection which allows 360° positioning of the male connection for most convenient mounting of oil line or equalization lines.

VERICAL TYPE, S-9106V



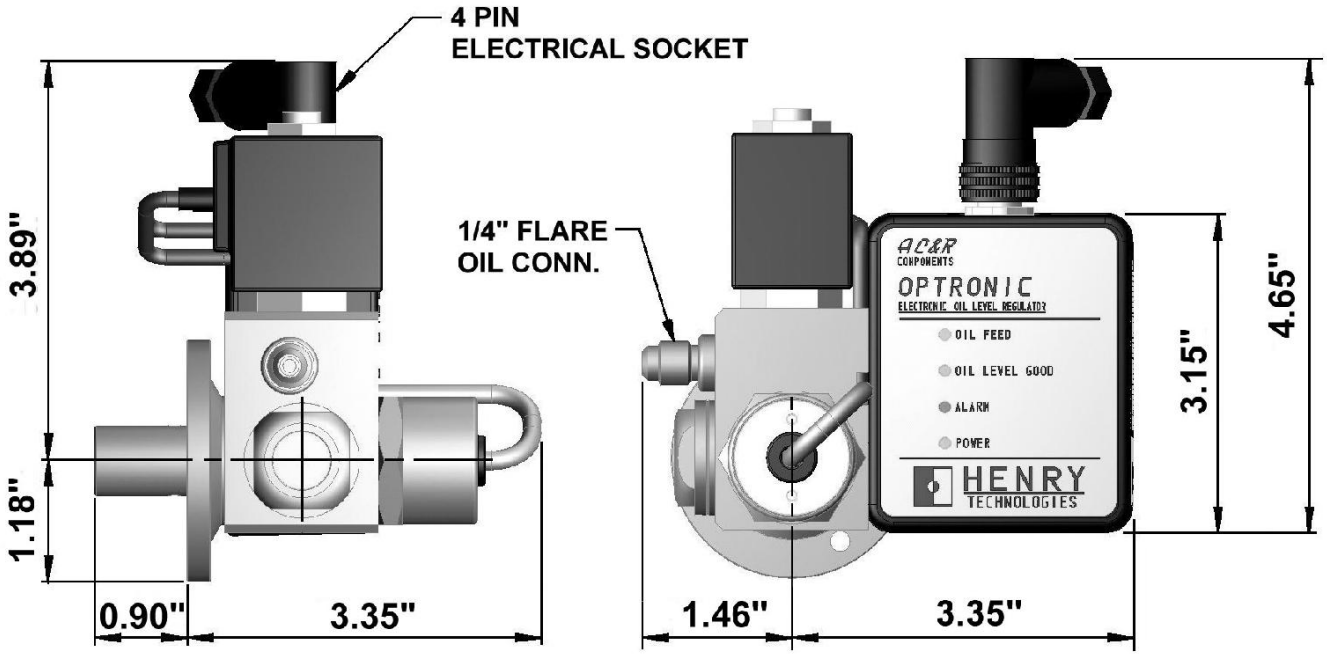
HORIZONTAL TYPE, S-9106H



ELECTRONIC OIL LEVEL

Control: Optronic OP-02

HENRY TECHNOLOGIES



The Optronic Oil Level Regulator* is designed to control the oil level in the compressor crankcase using proven optical sensor technology. The stand alone regulator is suitable for both high pressure and low pressure oil management control systems. The oil is regulated at 1/2 Sight Glass using a pulse timer. When a low oil condition is detected, there is a 15 second time delay prior to oil feed to ensure stability and prevent overfill. Oil is then pulsed into the compressor at 3 second on/off intervals. If demand is not satisfied after 2 minutes of continuous oil feed, a low level alarm is initiated by means of a fail-safe electrical contact. During the alarm condition the regulator will continue to pulse feed oil. The alarm will reset automatically if the oil returns to 1/2 glass. The alarm contact may be used to shut down the compressor in the event of a low level condition. The Optronic Regulator is fitted to the sight glass housing of the compressor and has an integral sight glass that allows visual inspection of the crankcase oil level.

*Utilizing patented technology-Patent #5,278,426.

Specifications:

Max Working Pressure: 500 PSIG
Max Differential Pressure: 350 PSIG
Max Ambient Temp: 113°F
Max Fluid Temp: 176°F
Supply Voltage (Connections 1 & 2): 24V AC 50 / 60HZ
Rated Operating Current: 0.5 Amps
Alarm contacts (Connections 3 & 4): Volt Free, N/O
Alarm Contact Rating: 24V DC@ 2A, 120 V AC@2A
Electrical connection: 4 Pin M12 Circular, IEC60947-5-2
Protection Class: IP54
Status LED's: 4
Oil supply Line: 1/4" Flare
Weight: 2.6 LBS
Approved Refrigerant/Oils: HFC/POE

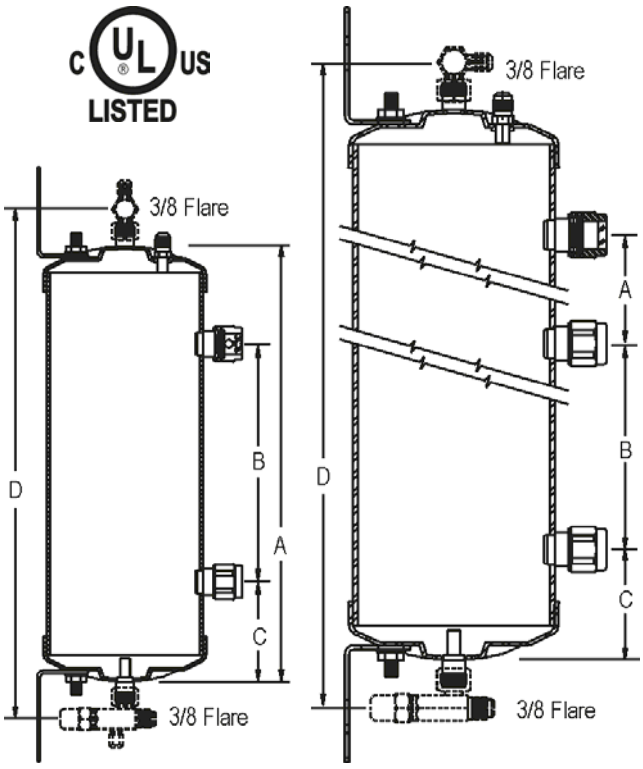
(For other Refrigerant/Oil combinations contact Henry Technologies)

The Optronic Regulator meets the requirements of UL and bears the UR symbol. The regulator is CE marked in accordance with the EMC directive.

OIL RESERVOIRS

Due to system design, loads & defrost cycles, varying amounts of oil can be returned by the oil separator. Because of this, a safety reserve of oil is required for the operation of our oil control system. The oil reservoir is the holding vessel for this stand-by oil. It has sight glass ports to observe the oil level inside the vessel. The valve on top of the Oil Reservoir receives oil from the Oil Separator, and the bottom valve distributes oil to the Oil Level Regulators. The valves are backseating and have a 1⁄4" flare connection, allowing the addition or removal of oil from the reservoir. High pressure gas returns with the oil from the Oil Separator to the Oil Reservoir. Pressure could increase in the Oil Reservoir to adversely affect the Oil Regulators. To prevent this, a vent line is installed from the top of the Oil Reservoir to the suction line. This line permits the pressure in the Oil Reservoir to be approximately the same as the suction line and the compressor crankcases.

The 4 gallon model Cat. No. S-9108 should be used on very large systems, or systems with excessive oil charges, long line runs or any case where suction oil return may be impeded.



S-9109 / S9108U S-9108

NOTE: Larger systems or compressors that discharge more oil should use a 4 gallon reservoir. It is possible to pipe two identical reservoirs in parallel to increase the holding capacity. The oil lines attach to the valves at the top and bottom should be teed together. Selecting a size depends on customer preference.

Catalog No.	No. Sight Glasses	Dimensions in inches D	Capacity in Gallons		
			A	B	C
S-9108	3	37.94”	4	2-1/2	3/4
S-9108U	2	28.94”	3	1-3/4	3/4
S-9109	2	19.94”	2	1-1/4	3/4

We recommend the use of our Reservoir Pressure Valve with our Oil Reservoir. Mount the valve on the 3⁄8" male flare suction vent on top of the Oil Reservoir.
The S-9104 maintains a 5 lb. positive pressure differential in the Oil Reservoir over the crankcase pressure. This positive pressure will insure an adequate oil supply to the Oil Level Regulators. The oil level in all the Oil Level Regulators is calibrated at this 5 lb. positive pressure. Some parallel compressor systems have a satellite compressor which maintains a higher suction pressure than the other compressors in the system. The S-9104H provides a 20 lb. positive pressure in the Oil Reservoir for this application.

For applications that have long periods of non-run time, overnight for example, the use of the S-9104H is recommended. During low usage periods the oil return line from the separator may become flattened to crankcase pressure, thus losing feed differential and oil return. the use of a 20 psi diff valve will result in less chance of the oil system flattening over time.

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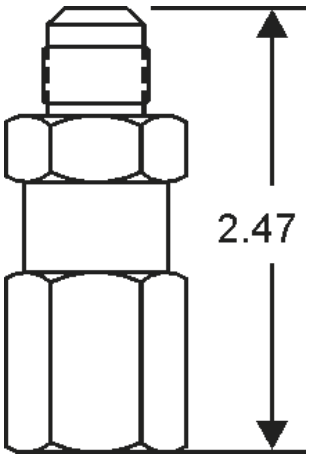


Catalog Number	Pressure Setting	Size Connection
S-9104	5 lbs.	3/8” Female Flare x 3/8” Male Flare
S-9104H	20 lbs.	3/8” Female Flare x 3/8” Male Flare

OIL FILTER DRIERS

Conventional and Polyester Oil

HENRY TECHNOLOGIES

Catalog Number S-4004

Our S-4004 Oil Filter removes foreign material from the oil as it passes through the filter. The filter easily captures any debris that may be in the system, such as dirt, metal chips, etc. (particle retention 10 micron). The S-4004 is required on all Electronic Oil Level Controllers to protect the solenoid manifold. Catalog Number S-4005 The use of Polyolester Oil (POE) is required for use with the new HFC refrigerants. However, there are some drawbacks.

- POE oil is more hygroscopic. It absorbs moisture at a much greater rate than mineral oils. Moisture in any system can produce harmful conditions.
- POE oil is a potent solvent, capable of cleaning up pipe scale, sludge, and other system contaminants.

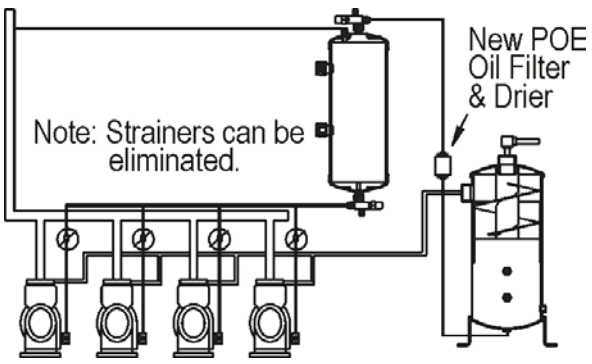
In order to trap these contaminants and moisture, frequent changing of the liquid and suction line filter driers is recommended. Because the contaminants and moisture can return with the POE oil to the compressor's crankcase, why not clean the oil at its source? We have developed the POE Oil Filter & Drier for POE oil return on systems using Oil Separators and Oil Control Systems. This is not a refrigerant Filter Drier. It is designed to operate at a very low pressure drop in a 100% oil environment. The POE Oil Filter & Drier, Catalog No. S-4005, was designed to clean and dry POE oil as it is returned to the compressor crankcase or Oil Reservoir in parallel systems. Clean and dry POE oil assures the proper operation of the float assemblies in the Oil Separator and the Oil Level Regulators.

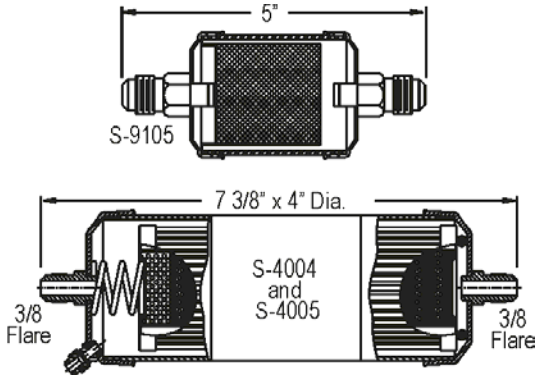
The S-4005 POE Filter Drier features:

- Extra large filter area: 325 sq. inches, to ensure clean-up of the oil.
- Filled with 8 cubic inches of XH9 desiccant, the recommended desiccant for high moisture removal from POE oil.
- High flow capacity with low pressure drop.
- Same connection size as oil return line from Oil Separator (3⁄8" male flare).
- No need to install multiple strainers to each oil level regulator.
- Also for use with Alkybenzene and Mineral Oil.
- Replace after 15 p.s.i.g. pressure drop.

Catalog Number S-9105

Our Oil Line Strainer protects the Oil Level Regulator by removing foreign matter such as dirt, metal chips, etc. so the foreign material will not plug the small orifice of the Oil Level Regulator. It will also prevent foreign material from entering the compressor. The strainer's 100 mesh screen provides adequate straining with low pressure drop.





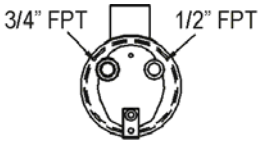
HORIZONTAL SUCTION

Line Accumulators

HENRY TECHNOLOGIES

The refrigeration compressor is designed to compress vapor only. A suction line accumulator prevents compressor damage from a sudden surge of liquid refrigerant and oil which could enter the compressor from the suction line. The suction line accumulator is a temporary reservoir for this mixture, designed to meter both the liquid refrigerant and oil back to the compressor at an acceptable rate. This prevents damage to the reed valves, pistons, rods, and crank shafts. Accumulators range in size from 4" to 123⁄4"in diameter. All vessels over 6" inside diameter are designed and manufactured in accordance with Section VIII of the ASME Code and are marked with the U or UM Code symbol. Accumulators 6" outside diameter and under are copper brazed or welded, UL listed, and equipped with copper or copper plated fittings. All our accumulators feature a rust resistant finish which meets a 500 hour salt spray test. This is important to suction line accumulators, where moisture and condensation can result in excessive corrosion. Accumulators have a metering ejector device that picks up liquid, vaporizes it, and returns it to the compressor. This prevents liquid slugging and controls oil return. Vertical accumulators protect the return orifice with a screen assembly, and also feature a fusible relief device in the S-7000 Series.

Selection of a suction line accumulator should be made on the basis of the following three capabilities. The accumulator should have an adequate liquid holding capacity, which can vary with the system. Normally this should not be less than 50% of the system charge. If possible this value should be checked based on actual tests. A second consideration should be the ability of the accumulator to perform without adding excessive pressure drop to the system. The recommended maximum tonnages shown in the following tables are based on a pressure drop equivalent to 1⁄2°F. These ratings are those of the accumulator, based on oil return through the accumulator, and will be modified by the length of the suction line and compressor displacement. Minimum tonnage is the lowest flow that will insure proper oil return. Finally an accumulator should have the capability of returning liquid at the proper rate and under a range of load conditions. Accumulators should have a Heat Element added on low temperature applications (O°F and below) such as the S-9111 or S-9112 (see page 99) to help boil off liquid refrigerant and raise the oil temperature to help facilitate oil flow. Accumulators may be insulated to prevent condensation or frost on the outside of the shell.



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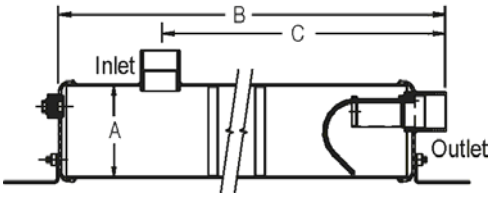


Liquid accumulators of this design should not be used when the temperature of the liquid refrigerant is less than +15°F in the accumulator. These accumulators have a 1⁄2" FPT connection for liquid injection and a 3⁄4" FPT connection for hot gas bypass. These connections can also be used for a relief device as required by UL 207.

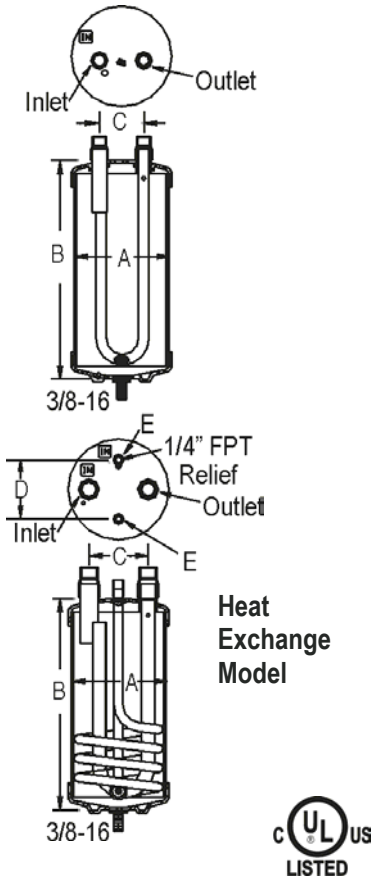
Catalog Number	Size Conn. ODS	Dimensions in Inches			Refrigerant Holding Cap. (Lbs. 0°F sat.)			Refrigerant Recommended Tons Refrigeration at Suction Evaporating Temperature (°F)								
					R-134a			R-22			R-404a / R-507					
		A	B	C	R134a	R22	R404a/R507	+40°	+20°	0°	+40°	+20°	0°	+40°	+20°	0°
S-7615	1 5/8	6	28	21.5	23.3	21.3	19.3	15	10	6.25	29	20	20	12.5	19	11.5
S-7621	2 1/8	6	36.75	31.6	31.6	29	26.2	28.6	19.5	12.5	50	30	30	25	33.2	22.9
S-7625	2 5/8	6	50	43.5	46.7	42.6	38.6	50	35	23	95	95	65	45	61.7	41.2

VERTICAL SUCTION

Line Accumulators

HENRY TECHNOLOGIES

Max Working Pressure 450 PSI



Heat Exchange Model

Catalog Number			Dimensions in Inches					
STD.	Heat Ex.	Heat Pump	ODS Conn.	Dia. A	B	C	D	ODS *E
S-7043	—	S-7043HP	5/8	4	6.38	1.88	N/A	N/A
S-7044	—	S-7044HP	1/2	4	10.38	1.88	N/A	N/A
S-7045	S-7045HE	S-7045HP	5/8	4	10.38	2.50	2.50	3/8
S-7046	S-7046HE	S-7046HP	3/4	4	10.38	2.50	2.50	3/8
S-7057	S-7057HE	S-7057HP	7/8	5	13	2.25	2.75	1/2
S-7061	S-7061HE	S-7061HP	1-1/8	6	15	3	2.88	5/8
S-7063S	—	—	1-3/8	6	20.25	3	N/A	N/A
S-7063	S-7063HE	S-7063HP	1-3/8	6	24.75	3	2.88	5/8
S-7065	S-7065HE	S-7065HP	1-5/8	6	24.75	3	2.88	3/4

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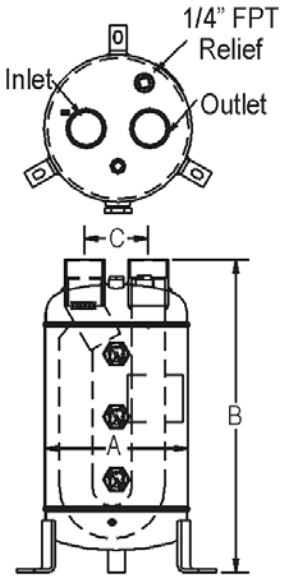
Catalog Number	Refrigerant Holding Cap. (Lbs. 0°F sat.)				Refrigerant Recommended Tons Refrigeration at Suction Evaporating Temperature (°F)														
					R-134a					R-22					R-404a / R-507				
	R134a	R22	R404a / R507		+40°	+20°	0°	-20°	-40°	+40°	+20°	0°	-20°	-40°	+40°	+20°	0°	-20°	-40°
S-7043	2.3	2.1	1.9	Max.	1.4	0.8	0.5	0.3	0.2	1.9	1.3	0.9	0.6	0.4	2.1	1.4	0.9	0.6	0.3
				Min.	0.3	0.2	0.1	0.1	0.4	0.4	0.3	0.2	0.1	0.1	0.5	0.3	0.2	0.1	0.1
S-7044	4.4	4.1	3.7	Max.	0.7	0.4	0.3	0.2	0.1	1.0	0.7	0.5	0.3	0.2	1.1	0.7	0.5	0.3	0.2
				Min.	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.3
S-7045	4.4	4.1	3.7	Max.	1.4	0.8	0.5	0.3	0.2	1.9	1.3	0.9	0.6	0.4	2.1	1.4	0.9	0.6	0.3
				Min.	0.3	0.2	0.1	0.1	0.4	0.4	0.3	0.2	0.1	0.1	0.5	0.3	0.2	0.1	0.1
S-7046	4.4	4.1	3.7	Max.	1.9	1.1	0.7	0.4	0.2	2.7	1.8	1.2	0.8	0.5	2.9	1.9	1.2	0.8	0.5
				Min.	0.4	0.2	0.2	0.1	0.5	0.6	0.4	0.3	0.2	0.1	0.6	0.4	0.3	0.2	0.1
S-7057	9.2	8.5	7.7	Max.	3.2	1.9	1.2	0.7	0.4	4.5	3.1	2.1	1.3	0.8	4.8	3.2	2.1	1.3	0.8
				Min.	0.6	0.4	0.2	0.1	0.1	0.9	0.6	0.4	0.3	0.2	0.9	0.6	0.4	0.3	0.2
S-7061	12.7	11.8	10.7	Max.	6.6	3.9	2.4	1.4	0.8	9.3	6.5	4.3	2.7	1.7	10.0	6.6	4.3	2.6	1.6
				Min.	1.0	0.6	0.4	0.2	0.1	1.5	1.0	0.7	0.4	0.3	1.6	1.0	0.7	0.4	0.2
S-7063S	17.1	15.4	14.0	Max.	11.0	6.4	4.0	2.4	1.3	15.4	10.7	7.0	4.5	2.8	16.5	10.9	7.0	4.4	2.6
				Min.	2.1	1.2	0.8	0.5	0.3	3.0	2.0	1.4	0.9	0.5	3.2	2.1	1.4	0.9	5.5
S-7063	21.8	20.1	18.2	Max.	11.0	6.4	4.0	2.4	1.3	15.4	10.7	7.0	4.5	2.8	16.5	10.9	7.0	4.4	2.6
				Min.	2.1	1.2	0.8	0.5	0.3	3.0	2.0	1.4	0.9	0.5	3.2	2.1	1.4	0.9	5.5
S-7065	21.8	20.1	18.2	Max.	19.3	11.3	7.0	4.2	2.4	27.2	18.8	12.4	7.9	4.8	29.1	19.1	12.4	7.7	4.6
				Min.	3.7	2.1	1.3	0.8	0.5	5.1	3.6	2.4	1.5	0.9	5.5	3.6	2.4	1.5	0.9

ASME VERTICAL SUCTION

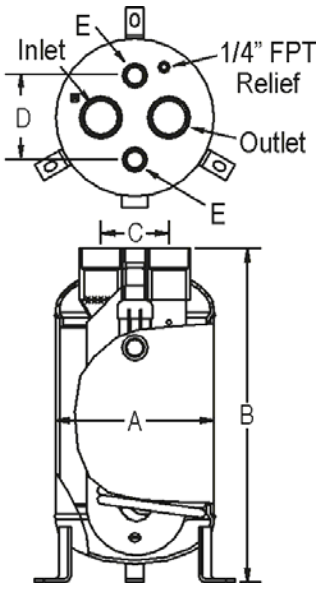
Line Accumulators

HENRY TECHNOLOGIES

Constructed to ASME U or UM PED



Max. WP 400 PSI



Heat Exchange model

* Suitable for Ammonia

Catalog Number			ODS Conn	Dimensions in Inches				
1" FPT Model	STD	Heat Exchanger		Dia. A	B	C	D	ODS E
S-7722*	S-7721*	S-7721HE	2 1/8	8 5/8	23.13	3.50	5.50	7/8
S-7726*	S-7725*	S-7725HE	2 5/8	10 3/4	22.75	4.63	5.50	1 3/8
S-7732*	S-7731*	S-7731HE	3 1/8	12 3/4	25.00	5.50	5.88	1 3/8
NA	S-7741*	S-7741HE	4 1/8	16	35.50	Contact Factory		2 5/8
NA	S-7742*	—	4 1/8	20	44.50	Contact Factory		N/A

HE: Heat Exchange models available by ordering with an HE suffix (ie. S-7721HE). Heat Exchange models feature a boil out coil to boil off liquid refrigerant in the bottom of the accumulator. The ODS connection size of the boil out coil is shown in column E.

Optional: 1" FPT connection is available on S-7700 series for installation of a S-9400-1 type Liquid Level Switch. Consult factory.

CE: To order CE version, add "-CE" suffix.

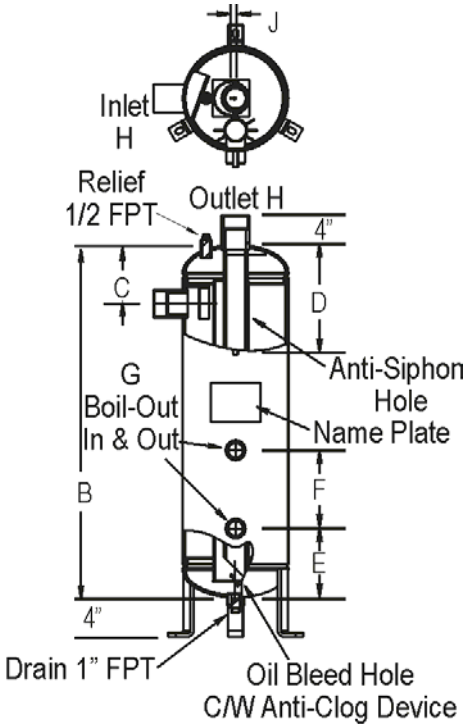
Cat. No.	Refrigerant Holding Cap. (Lbs. 0°F sat.)				Refrigerant Recommended Tons Refrigeration at Suction Evaporating Temperature (°F)															
					R-134a					R-22					R-404a / R-507					
	R134a	R22	R404a /R507		+40°	+20°	0°	-20°	-40°	+40°	+20°	0°	-20°	-40°	+40°	+20°	0°	-20°	-40°
S-7721	32.5	27	27	Max.	43.0	25.1	15.6	9.3	5.2	60.4	41.8	27.6	17.7	10.8	64.7	42.5	27.6	17.1	10.1
				Min.	7.7	4.5	2.8	1.7	0.9	10.9	7.5	5.0	3.2	1.9	11.7	7.7	5.0	3.1	1.8
S-7725	48.5	40	40	Max.	64.0	37.4	23.2	13.8	7.8	90.0	62.2	41.1	26.3	16.1	96.5	63.4	41.1	25.5	15.1
				Min.	12.8	7.5	4.6	2.8	1.6	17.9	12.4	8.2	5.3	3.2	19.2	12.6	8.2	5.1	3.0
S-7731	80	66	66	Max.	95.0	55.5	34.5	20.5	11.6	133.5	92.4	60.9	39.1	23.8	143.1	94.0	61.0	37.8	22.4
				Min.	19.1	11.1	6.9	4.1	2.3	26.8	18.6	12.2	7.9	4.8	28.8	18.9	12.3	7.6	4.5
S-7741	136	135	122	Max.	149.4	87.2	54.2	32.2	18.2	209.9	145.2	95.8	61.4	37.5	225.1	147.9	95.9	59.4	35.3
				Min.	48.2	28.1	17.5	10.4	5.9	67.7	46.9	30.9	19.8	12.1	72.6	47.7	31.0	19.2	11.4
S-7742	297	277	251	Max.	149.4	87.2	54.2	32.2	18.2	209.9	145.2	95.8	61.4	37.5	225.1	147.9	95.9	59.4	35.3
				Min.	48.2	28.1	17.5	10.4	5.9	67.7	46.9	30.9	19.8	12.1	72.6	47.7	31.0	19.2	11.4

SUCTION ACCUMULATORS

HENRY TECHNOLOGIES

Suitable for Ammonia

Oil Return is assured from the standard accumulator through the internal U-tube at full gas flow conditions. The use of compressor suction un-loaders will reduce the gas CFM flow rate and oil return will be affected if maintained over a long period. Hot gas bypass for capacity reduction will maintain constant CFM. The U-tube may not be required under conditions where oil rich refrigerant can be drained from the bottom of the accumulator through a needle valve, sight glass and solenoid valve (cycle with the compressor). The needle valve should be set to flash off the refrigerant and the oil bled by gravity into the suction line. A Boil-Out is recommended under low temperature conditions and is essential for all hot gas defrost systems. The liquid line should be routed through the boil-out coil to provide a steady heat source to evaporate off liquid trapped in the accumulator. The liquid should be evaporated before commencement of the next defrost cycle.

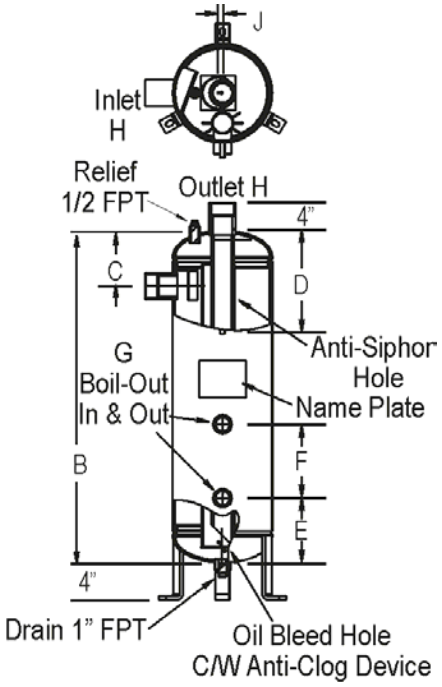


Max. CFM	Catalog No.	Max. W.P. PSI	Refrigerant Trapping Capacity** (Lbs.)			Approx. Shipping Wt. Lbs.	Dimensions in Inches								
			R12	R22	R502		A	B	C	D	E	F	G*	H*	J
40	**AF06018**	400	15	15	16	32	6 5/8	18	5 1/4	6 1/2	4 3/4	8	1 1/8	2 1/8	1 1/4
40	**AF06024**	400	24	24	25	41	6 5/8	24	5 1/4	6 1/2	4 3/4	8	1 1/8	2 1/8	1 1/4
40	**AF06030**	400	33	33	34	50	6 5/8	30	5 1/4	6 1/2	4 3/4	8	1 1/8	2 1/8	1 1/4
70	**AF08024**	250	37	37	38	57	8 5/8	24	5	6 1/2	4	8	1 1/8	2 5/8	1 9/16
70	**AF08030**	250	51	51	53	69	8 5/8	30	5	6 1/2	4	8	1 1/8	2 5/8	1 9/16
70	**AF08036**	250	66	66	69	81	8 5/8	36	5	6 1/2	4	8	1 1/8	2 5/8	1 9/16
70	**AF08042**	250	81	81	85	91	8 5/8	42	5	6 1/2	4	8	1 1/8	2 5/8	1 9/16

*G and H Connections shown are Maximum available.
**Trapping Capacity is the weight of refrigerant the suction accumulator can safely hold without the risk of carry-over into the compressor suction line.

SUCTION ACCUMULATORS

HENRY TECHNOLOGIES



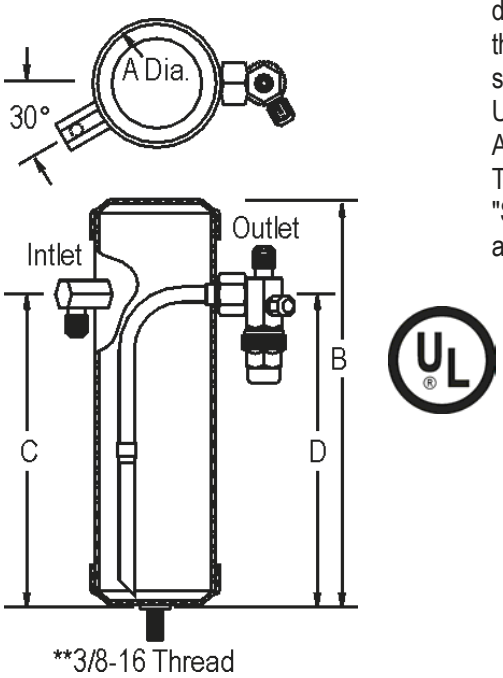
*G and H Connections shown are Maximum available.
**Trapping Capacity is the weight of refrigerant the suction accumulator can safely hold without the risk of carry-over into the compressor suction line.
+ Custom Built (Non-Stock Item)

Max CFM	Catalog Number	Max. W.P. PSI	Refrigerant Trapping Capacity** (Lbs.)			Approx Shipping Wt. Lbs.	Dimensions in Inches								
			R12	R22	R502		A	B	C	D	E	F	G*	H*	J
110	**AF10030**	250	77	77	80	100	10 3/4	30	6	7 1/2	7	8	1 5/8	2 5/8	1 9/16
110	**AF10036**	250	101	101	105	117	10 3/4	36	6	7 1/2	7	8	1 5/8	2 5/8	1 9/16
110	**AF10042**	250	124	124	129	135	10 3/4	42	6	7 1/2	7	8	1 5/8	2 5/8	1 9/16
110	**AF10048**	250	145	145	150	152	10 3/4	48	6	7 1/2	7	8	1 5/8	2 5/8	1 9/16
155	**AF12030**	250	100	99	104	132	12 3/4	30	8	9 1/4	7	8	1 5/8	3 1/8	5/16
155	**AF12036**	250	133	132	138	155	12 3/4	36	8	9 1/4	7	8	1 5/8	3 1/8	5/16
155	**AF12042**	250	166	165	172	178	12 3/4	42	8	9 1/4	7	8	1 5/8	3 1/8	5/16
155	**AF12048**	250	198	197	206	200	12 3/4	48	8	9 1/4	7	8	1 5/8	3 1/8	5/16
195	**AF14042 +**	250	177	176	184	273	14	42	9	11	8	10	2 1/8	4 1/8	3/4
195	**AF14048 +**	250	216	215	225	311	14	48	9	11	8	10	2 1/8	4 1/8	3/4
195	**AF14054 +**	250	256	254	266	346	14	54	9	11	8	10	2 1/8	4 1/8	3/4
195	**AF14060 +**	250	299	296	310	384	14	60	9	11	8	10	2 1/8	4 1/8	3/4
255	**AF16042 +**	250	195	194	207	325	16	42	10	13	9	10	2 1/8	5	3/8
255	**AF16048 +**	250	256	253	265	365	16	48	10	13	9	10	2 1/8	5	3/8
255	**AF16060 +**	250	352	350	371	448	16	60	10	13	9	10	2 1/8	5	3/8
255	**AF16072 +**	250	460	457	485	535	16	72	10	13	9	10	2 1/8	5	3/8
405	**AF20048 +**	250	335	332	350	472	20	48	11	13	10	10	2 5/8	5	2 1/4
405	**AF20060 +**	250	528	525	549	572	20	60	11	13	10	10	2 5/8	5	2 1/4
405	**AF20072 +**	250	680	676	707	672	20	72	11	13	10	10	2 5/8	5	2 1/4
405	**AF20084 +**	250	775	770	806	772	20	84	11	13	10	10	2 5/8	5	2 1/4
590	**AF24048 +**	300	530	526	550	600	24	48	13	16 1/4	10	10	2 5/8	6	2 1/4
590	**AF24060 +**	300	720	715	750	712	24	60	13	16 1/4	10	10	2 5/8	6	2 1/4
590	**AF24072 +**	300	919	913	955	836	24	72	13	16 1/4	10	10	2 5/8	6	2 1/4
590	**AF24084 +**	300	1159	1152	1205	960	24	84	13	16 1/4	10	10	2 5/8	6	2 1/4

LIQUID REFRIGERANT

Receivers

HENRY TECHNOLOGIES



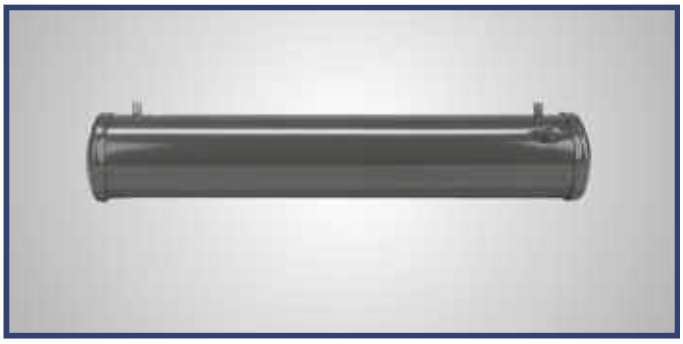
We manufacture a complete line of both Horizontal and Vertical liquid refrigerant receivers. Sizes range from 3" to 20" diameter. Receiver storage capacities are based on the liquid occupying no more than 90% of the internal volume when the temperature of the refrigerant is 90°F (32°C) per ASHRAE Standard 15-78. Receivers should be selected based on the operating charge for all system components, including the liquid lines. It is usual to add a small percentage to cover the refrigerant in long runs of suction and discharge lines, etc. It is essential that the maximum operating charge be determined, e.g., winter charge in air cooled condenser having flooded head pressure control, this being much greater than the normal summer charge. We are certified by the National Board of Boiler and Pressure Vessel Inspectors. All vessels over 6"inside diameter are designed and manufactured in accordance with Section VIII of the ASME Code and are marked with U or UM Code symbol stamps. Vessels 3" through 6" diameter are copper brazed and UL listed. We also manufacture a wide range of UL listed and ASME receivers for many original equipment manufacturers. These receivers feature special lengths and fittings. Also our "SG" series sight glasses, liquid level dial indicator connections, and mounting brackets are available on special order.

Maximum WP 450 PSI *All Pump Down Capacities are calculated @ 90% of receiver volume @ 90°F. **S-8067 & S-8068 come with mounting feet instead of 3⁄8" mounting stud.

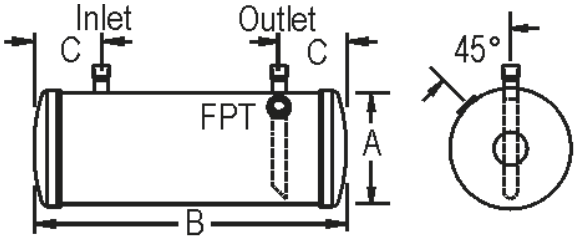
Catalog Number	* Pump Down Capacity (Lbs.)			Dimensions in Inches				Wt. Lbs.	Flare Connections	
	R134a	R22	R404a/R507	A	B	C	D		Inlet	Outlet
S-8060	2.4	2.4	2.0	3.0	10	7	7	2	1/4	1/4
S-8061	2.4	2.4	2.1	3.5	7.5	5	5	2	1/4	1/4
S-8062	3.3	3.3	2.8	3.5	10	7.63	7.63	3	1/4	1/4
S-8063	4.3	4.2	3.7	4.0	10	7.25	7.25	4	1/4	1/4
S-8064	6.7	6.6	5.7	5.0	10	6.75	6.75	6	1/4	1/4
S-8065	11.6	11.5	10.0	6.0	12	8	8	10	3/8	3/8
S-8066	17.6	17.3	15.0	6.0	18	15	15	16	3/8	1/2
S-8067	23.5	23.2	20.1	6.0	24	21.25	14.88	21	1/2	1/2
S-8068	29.4	29.1	25.2	6.0	30	21.25	14.88	26	5/8	5/8

HORIZONTAL LIQUID
Refrigerant Receivers

HENRY TECHNOLOGIES



S-8600 Series Horizontal Receiver



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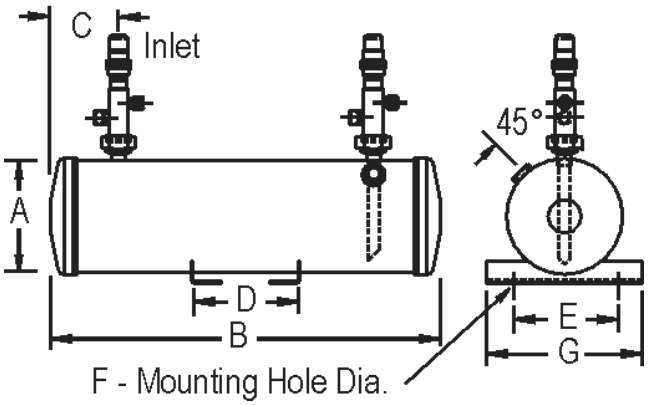
S-8600V Series Horizontal Receiver with Brackets And Valves



Catalog Number	Pump Down Capacity (lbs)			Dimensions in Inches			Ship Wt. Lbs.	Connections (ODS)		
	R134a	R22	R404a / R507	A	B	C		Inlet	Outlet	FPT
S-8600	18.8	18.6	16.2	5.00	28	3.00	19	5/8"	5/8"	3/8"
S-8610	24.3	24.0	20.9	5.00	36	3.00	25	5/8"	5/8"	3/8"
S-8620	29.2	28.8	25.0	6.00	30	3.63	24	5/8"	5/8"	3/8"
S-8630	35.0	34.6	30.1	6.00	36	3.63	28	5/8"	5/8"	3/8"

Catalog Number	Pump Down Capacity (lbs)			Dimensions in Inches							Ship Wt. Lbs	Connections (ODS)		
	R134a	R22	R404a / R507	A	B	C	D	E	F	G		Inlet	Outlet	FPT
S-8600V	18.8	18.6	16.2	5	28	3.00	14	5.5	.44	7	19	1/2"	1/2"	3/8"
S-8630V	35.0	34.6	30.1	6	36	3.63	18	5.5	.44	7	28	1/2"	1/2"	3/8"

ASME VERTICAL RECEIVERS

HENRY TECHNOLOGIES

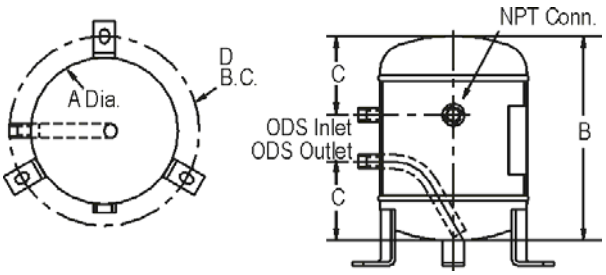


Fig. 1

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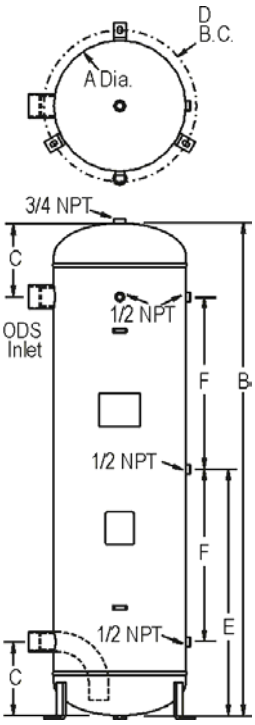

Fig. 2

Catalog Number	Fig. No.	Pump Down Cap. (lbs) R22	R134A	R404A	R407C	Dims in Inches A	B	C	D	Relief NPT	ODS Inlet	ODS Outlet	Int. Vol. (ft^3) @ 90%	Wt. lbs
S-8490	1	16.0	16.2	13.9	15.5	6.625	15	4.63	9.12	3/8	5/8	5/8	0.22	20
S-8500	1	20.9	21.2	18.1	20.3	8.625	12	4.63	11.12	3/8	5/8	5/8	0.29	29
S-8510	1	28.9	29.3	25.1	28.1	8.625	16	4.63	11.12	1/2	5/8	5/8	0.40	35
S-8520	1	49.9	50.6	43.2	48.5	10.75	18	6.50	13.25	1/2	1 1/8	7/8	0.69	60
S-8530	1	69.8	70.9	60.5	67.9	12.75	18	6.56	15.25	1/2	1 1/8	1 1/8	0.96	86
S-8540	1	78.7	79.9	68.2	76.5	12.75	20	6.75	15.25	1/2	1 1/8	1 1/8	1.09	96
S-8550	1	96.5	97.9	83.7	93.9	12.75	24	6.75	15.25	1/2	1 1/8	1 1/8	1.33	113
S-8551	1	149.9	152.1	130.0	145.8	12.75	36	6.75	15.25	1/2	1 3/8	1 3/8	2.07	163
S-8552	1	203.4	206.3	176.3	197.7	12.75	48	6.56	15.25	1/2	1 5/8	1 5/8	2.80	211

- All Pump-down Capacities are calculated @ 90% of receiver volume @ 90°F.
- To convert to other refrigerants, consult technical service 800-627-5148.
- Quotations on custom models available upon request.
  MAXIMUM WORKING PRESSURE: 450 PSIG.

Catalog	Fig.	Pump Down Cap. (lbs) R22	R134A	R404A	R407C	Dimensions in Inches A	B	C	D	E	F	Relief NPT	ODS Inlet	ODS Inlet	Int. Volume (ft^3) @ 90%	Wt. lbs
S-8561	2	241.2	244.8	209.1	234.5	14	48	9	16.5	24	11	0.75	1.625	1.625	3.3264	195
S-8562	2	304.9	309.4	264.4	296.5	14	60	9	16.5	30	21	0.75	2.125	1.625	4.2048	241
S-8571	2	374.1	379.6	324.3	363.7	16	56	9	18.5	28	21	0.75	2.625	2.125	5.1588	330
S-8572	2	402.1	408.0	348.6	391.0	16	60	9	18.5	30	21	0.75	2.625	2.125	5.5449	351
S-8573	2	458.2	464.9	397.3	445.5	16	68	9	18.5	34	21	0.75	2.625	2.125	6.3189	393
S-8582	2	501.1	508.4	434.4	487.2	18	60	9	20.5	30	21	0.75	2.625	2.125	6.9093	398

- All Pump-down Capacities are calculated @ 90% of receiver volume @ 90°F.
- To convert to other refrigerants, consult factory 800-627-5148.
- The three in-line 1⁄2" FPT fittings are available for use with the SG-04 Sight Glasses or the S-9400 series Electronic Level Switch.
- Quotations on custom models available upon request.
  MAXIMUM WORKING PRESSURE: 450 PSIG.

HIGH PRESSURE LIQUID

Refrigerant Receivers

HENRY TECHNOLOGIES

UL Listed Receivers

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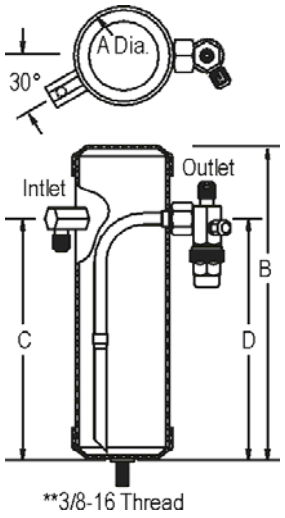
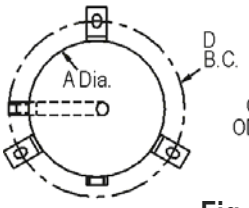


Catalog Number	Pump Down Cap. (lbs) R744 (CO_2)	Pump Down Cap. (lbs) R410a	Dimensions (in) A	B	C	D	Dry Weight (lbs)	Connections Inlet	Outlet	Int. Volume (ft^3) @ 90%
SHP-8024	1.05	1.11	2.50	8.0	7.6	7.6	3.1	1/4 FL	1/4 FL	0.017
SHP-8025	1.6	1.7	2.50	12.0	8.6	7.7	3.5	1/4 FL	1/4 FL	0.026
SHP-8029	2.3	2.4	3.00	12.0	7.6	7.6	4.7	1/4 FL	1/4 FL	0.038
SHP-8030	3.4	3.6	3.00	18.0	14.5	7.6	6.4	1/4 FL	1/4 FL	0.057
SHP-8034	3.1	3.3	3.50	12.0	7.6	7.6	4.7	1/4 FL	1/4 FL	0.052
SHP-8035	6.3	6.7	3.50	24.0	20.5	7.6	8.0	1/4 FL	1/4 FL	0.104
SHP-8039	4.0	4.3	4.00	12.0	7.8	7.8	8.3	1/4 FL	1/4 FL	0.067
*SHP-8040	10.1	10.6	4.00	30.0	26.3	7.8	18.2	1/4 FL	1/4 FL	0.167
SHP-8049	9.6	10.1	5.00	18.0	15.0	15.0	14.6	1/4 FL	1/4 FL	0.159
*SHP-8050	19.1	20.2	5.00	36.0	32.3	7.9	27.0	1/4 FL	1/4 FL	0.317
SHP-8060	8.9	9.5	6.00	12.0	8.0	8.0	18.5	3/8 FL	3/8 FL	0.148
*SHP-8160	13.4	14.2	6.00	18.0	15.0	15.0	26.3	3/8 FL	1/2 FL	0.223
*SHP-8260	17.9	18.9	6.00	24.0	19.8	15.0	34.0	1/2 FL	1/2 FL	0.297
*SHP-8360	26.8	28.4	6.00	36.0	31.8	15.0	49.2	5/8 FL	5/8 FL	0.445

- **Maximum WP 700 PSI (ASME & UL Listed Receivers).**
- All Pump Down Capacities are calculated @ 90% of receiver volume, 90F for R410a, 20F for R744.
- *Receiver comes with mounting feet instead of 3⁄8" mounting stud.



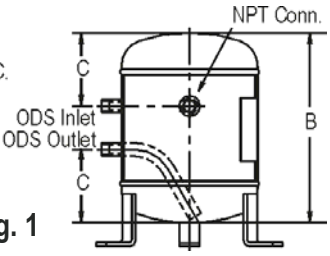


Fig. 1

ASME Code Vertical Receivers

Catalog Number	Fig. No.	Pump Down Cap. (lbs) R744 (CO_2)	Pump Down Cap. (lbs) R410a	Dimensions (in) A	B	C	D	Dry Weight (lbs)	Relief NPT	Connections Inlet	Outlet	Int. Volume (ft^3) @ 90%
S-8490-HP	1	12.6	13.3	6.63	15	4.63	9.12	25	3/8	5/8	5/8	0.21
S-8500-HP	1	16.8	17.7	8.63	12	4.63	11.1	26	3/8	5/8	5/8	0.28
S-8510-HP	1	23.2	24.5	8.63	16	4.63	11.1	34	1/2	5/8	5/8	0.38
S-8520-HP	1	38.5	40.7	10.8	18	6.50	13.3	69	1/2	1 1/8	7/8	0.64
S-8530-HP	1	53.8	56.9	12.8	18	6.50	15.3	95	1/2	1 1/8	1 1/8	0.89
S-8540-HP	1	60.9	64.4	12.8	20	6.50	15.3	103	1/2	1 1/8	1 1/8	1.01
S-8550-HP	1	74.9	79.2	12.8	24	6.50	15.3	121	1/2	1 1/8	1 1/8	1.24
S-8551-HP	1	117.0	123.8	12.8	36	6.50	15.3	175	1/2	1 1/8	1 3/8	1.94
S-8552-HP	1	159.2	168.5	12.8	48	6.50	15.3	228	1/2	1 1/8	1 3/8	2.64

Catalog Number	Fig. No.	Pump Down Cap. (lbs) R744 (CO_2)	Pump Down Cap. (lbs) R410a	Dimensions (in) A	B	C	D	E	F	Dry Weight (lbs)	Connections Inlet	Outlet	Int. Volume (ft^3) @ 90%
S-8561-HP	2	186.8	197.6	14	48	9	16.5	24	11	307	1 5/8	1 5/8	3.10
S-8562-HP	2	236.8	250.5	14	60	9	16.5	30	21	378	2 1/8	1 5/8	3.93
S-8571-HP	2	291.2	308.0	16	56	9	18.5	28	21	410	2 5/8	2 1/8	4.83
S-8572-HP	2	313.4	331.5	16	60	9	18.5	30	21	437	2 5/8	2 1/8	5.20
S-8573-HP	2	357.7	378.4	16	68	9	18.5	34	21	561	2 5/8	2 1/8	5.94

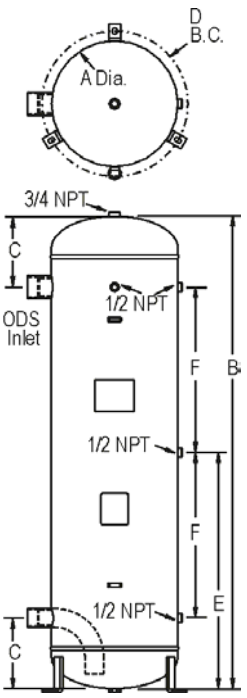


Fig. 2

- Quotations on custom models available upon request.

ASME HORIZONTAL

Liquid Receivers

HENRY TECHNOLOGIES

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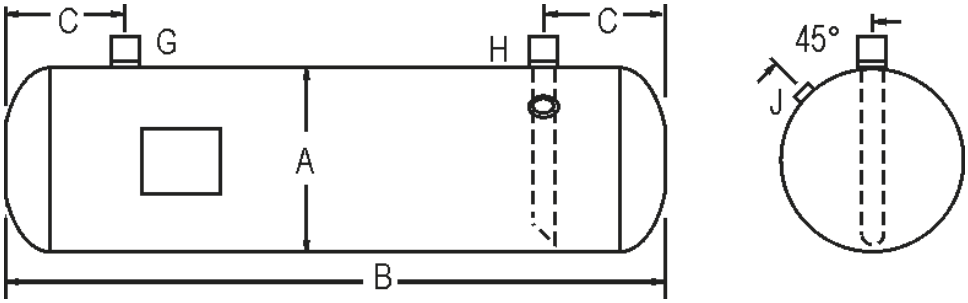

Catalog Number	Dimensions in Inches			Pump Down Cap. (lbs)				ODS Inlet (G)	ODS Outlet (H)	Relief NPT (J)	Int. Volume (ft^3) @ 90%	Wt. lbs
	A	B	C	R22	R134A	R404A	R407 C					
S-8639	6.625	36	4.63	40.3	40.9	34.9	39.2	7/8	7/8	3/8	0.56	44
S-8640	8.625	36	4.63	69.0	70.0	59.8	67.1	1 1/8	7/8	1/2	0.95	65
S-8650	8.625	42	4.63	81.1	82.2	70.3	78.8	1 1/8	7/8	1/2	1.12	71
S-8660	8.625	48	4.63	93.1	94.4	80.7	90.5	1 1/8	1 1/8	1/2	1.28	77
S-8670	8.625	60	4.63	117.1	118.8	101.5	113.8	1 1/8	1 1/8	1/2	1.61	108
S-8680	8.625	72	6.50	140.8	142.9	122.1	136.9	1 1/8	1 1/8	1/2	1.94	127
S-8690	10.75	36	6.50	105.3	106.9	91.3	102.4	1 3/8	1 3/8	1/2	1.45	115
S-8700	10.75	48	6.50	142.7	144.8	123.7	138.8	1 3/8	1 3/8	1/2	1.97	138
S-8710	10.75	60	6.50	180.1	182.8	156.2	175.1	1 3/8	1 3/8	1/2	2.48	166
S-8720	10.75	72	6.50	217.5	220.7	188.6	211.5	1 3/8	1 3/8	1/2	3.00	196
S-8730	10.75	84	6.50	254.9	258.7	221.0	247.9	1 5/8	1 3/8	1/2	3.52	255
S-8740	10.75	96	6.50	292.3	296.6	253.4	284.2	1 5/8	1 3/8	1/2	4.03	285
S-8750	12.75	48	8.00	202.4	205.4	175.5	196.8	1 5/8	1 3/8	1/2	2.79	128
S-8760	12.75	60	8.00	255.8	259.5	221.7	248.7	1 5/8	1 3/8	1/2	3.53	218
S-8770	12.75	72	8.00	309.2	313.7	268.0	300.6	2 1/8	1 3/8	1/2	4.26	260
S-8780	12.75	96	8.00	416.0	422.1	360.7	404.5	2 1/8	1 3/8	1/2	5.74	360

- All Pump-down Capacities are calculated @ 90% of receiver volume @ 90°F.
- To convert to other refrigerants, consult technical service 800-627-5148.
- Quotations on custom models available upon request.
  MAXIMUM WORKING PRESSURE: 450 PSIG.

ASME HORIZONTAL

Liquid Receivers

HENRY TECHNOLOGIES

Figure 2

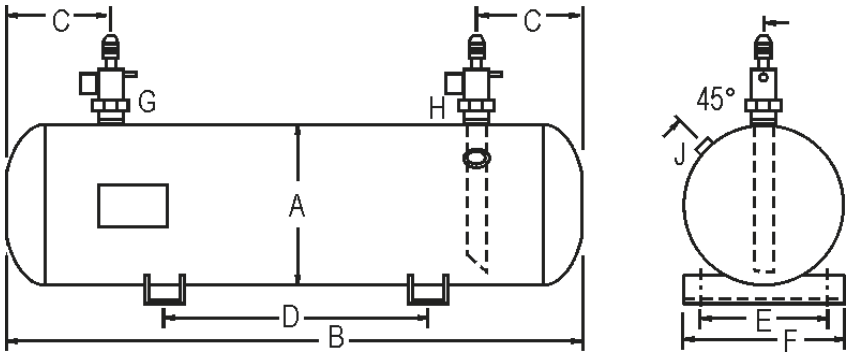

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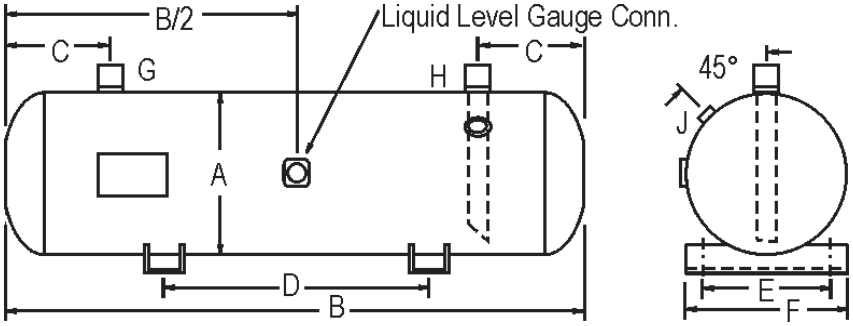
Figure 3



Catalog No. w/ Brackets	Fig. No.	Dimensions in Inches						Pump Down Cap. (lbs)				ODS Inlet (G)	ODS Outlet (H)	Relief NPT (J)	Int. Volume (ft^3) @ 90%	Wt. lbs
		A	B	C	D	E	F	R22	R134A	R404A	R407C					
S-8640V	2	8.625	36	4.63	18.00	4.63	9.00	68.7	69.7	59.5	66.8	7/8	7/8	1/2	0.95	65
S-8690V	2	10.75	36	6.50	18.00	6.50	11.00	105.3	106.9	91.3	102.4	1 1/8	1 1/8	1/2	1.45	115
S-8710V	2	10.75	60	6.50	30.00	9.00	11.00	180.1	182.8	156.2	175.1	1 1/8	1 1/8	1/2	2.48	166
S-8760V	2	12.75	60	8.00	30.00	11.00	13.00	255.8	259.5	221.7	248.7	1 3/8	1 3/8	1/2	3.53	218
S-8790	3	14	72	8.38	36.00	12.00	16.00	367.0	372.4	318.2	356.8	2 1/8	1 5/8	1/2	5.06	302
S-8810	3	16	60	8.88	30.00	14.00	18.00	400.0	405.8	346.7	388.9	2 5/8	2 1/8	1/2	5.52	366
S-8820	3	16	72	8.88	36.00	14.00	18.00	484.2	491.2	419.7	470.7	2 5/8	2 1/8	1/2	6.68	429
S-8830	3	16	84	8.88	42.00	14.00	18.00	568.3	576.6	492.7	552.5	3 1/8	2 1/8	1/2	7.84	492
S-8840	3	18	60	9.88	30.00	16.00	20.00	497.6	504.9	431.4	483.8	3 1/8	2 1/8	1/2	6.86	428
S-8850	3	18	72	9.88	36.00	16.00	20.00	603.5	612.4	523.2	586.8	3 1/8	2 1/8	1/2	8.32	499
S-8860	3	18	80	9.88	40.00	16.00	20.00	674.2	684.0	584.4	655.5	3 1/8	2 5/8	1/2	9.30	552
S-8870	3	20	72	10.50	36.00	18.00	22.00	726.4	737.1	629.8	706.3	3 1/8	2 5/8	1/2	10.02	555

- All Pump-down Capacities are calculated @ 90% of receiver volume @ 90°F.
- To convert to other refrigerants, consult technical service 800-627-5148.
- Quotations on custom models available upon request.
  MAXIMUM WORKING PRESSURE: 450 PSIG.

INDUSTRIAL HORIZONTAL

Liquid Receivers

HENRY TECHNOLOGIES

Features:

- **Max. Allowable Working Pressure: 400 psig**
- **Inlet and Outlet** Valves included
- **Relief and Drain** connections
- **Mounting Legs** for easy installation
- **Other sizes** are available as custom
- **Vertical units** are also available
- **Higher pressure designs** available upon request

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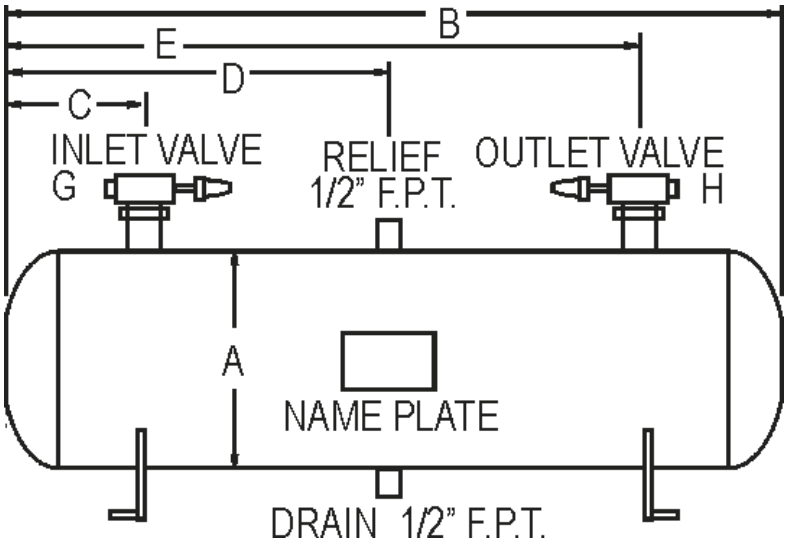
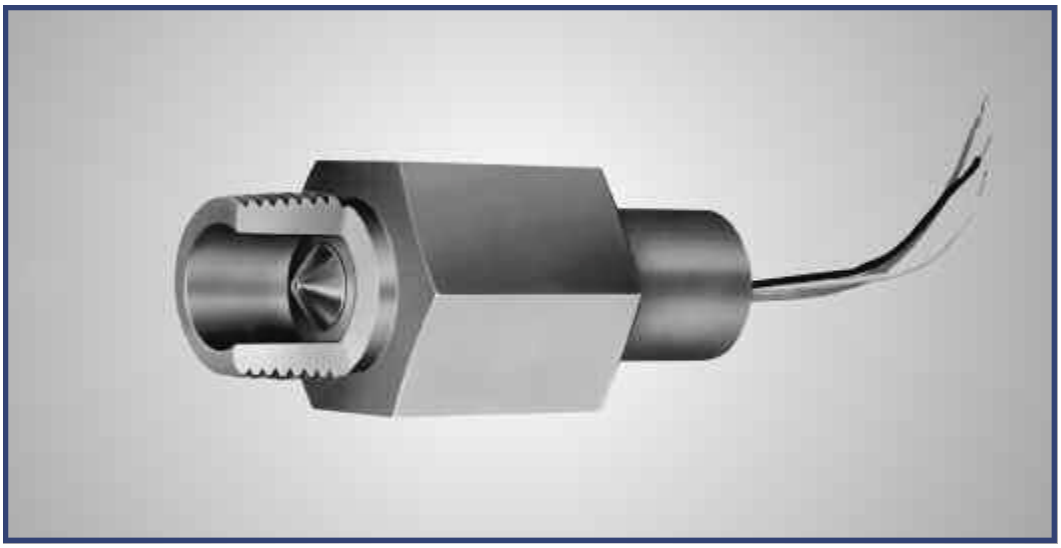


Catalog Number	Dimensions in Inches					Liquid Inlet Valve (G) O.D.	Liquid Outlet Valve (H) O.D.	R-22 Lbs 90% Full	Sealing Charge Lbs.	Ship Wt. Lbs
	A	B	C	D	E					
RF-06036	6 5/8	36	9	18	27	7/8	5/8	39	5	47
RF-06060	6 5/8	60	15	30	45	1 1/8	7/8	66	14	68
RF-08036	8 5/8	36	9	18	27	1 1/8	7/8	69	10	61
RF-08060	8 5/8	60	15	30	45	1 1/8	7/8	115	17	95
RF-10048	10 3/4	48	12	24	36	1 3/8	7/8	146	15	127
RF-10072	10 3/4	72	18	36	54	1 3/8	1 1/8	219	22	183
RF-12048	12 3/4	48	12	24	36	1 5/8	1 1/8	204	16	158
RF-12084	12 3/4	84	21	42	63	2 1/8	1 3/8	356	26	258
RF-14084	14	84	21	42	63	2 1/8	1 3/8	432	41	403

- Quotations on custom models available upon request.

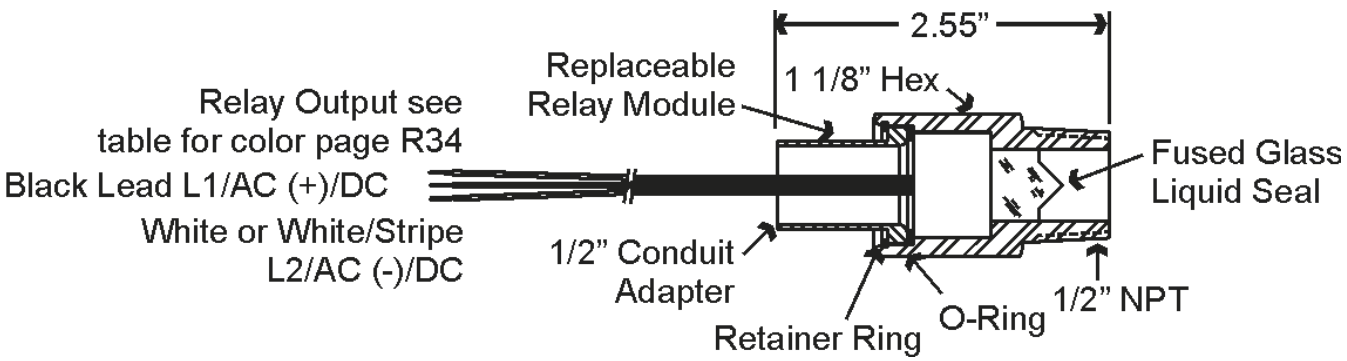


Features:

- **Solid-State Switch** for liquid sensing
- No contact level sensing
- **Serviceable** without loss of refrigerant
- **Works with oil, refrigerants**, or any non-hazardous non-corrosive fluid
- **Glass prism** in contact with fluid medium
- **Industry approved** for Nema 4 and 4X for Water tight
- **Meets UL Standard** #873 & #207 File Numbers E141577 & SA6720*
- **Mounting**: Horizontal Only
- **Switch Inductive Ratings**: 36 VA Pilot Duty Rated
- **Contacts, Power Off**: Normally Open (N.O.)
- **Contact Life**: Over 1 Million Cycles at Rated Electrical Load
- **Pressure Rating**: 1200 PSI Working, 6000 Burst
- **Power for Operation**: 3.5 mA AC, 5.5 ma DC
- **Minimum Load**: 2 ma (without bleed resistor)

*U.S. Patent #5,278,426 & other U.S. and Foreign Patents pending

S-9400 Series
with 1⁄2" NPT Connection



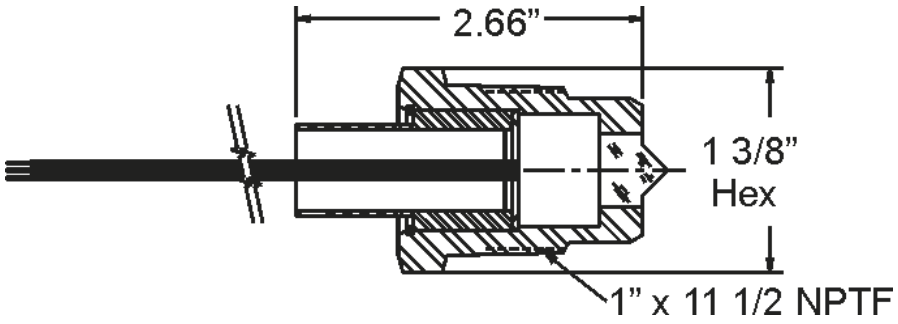
Construction: The switch consists of a sturdy nickel plated steel body with a built-in fused glass prism. This allows liquid to be optically detected by a solid state opto-electronic module. The solid state module is encapsulated in silicon. It can be easily replaced without disturbing the system. The fused glass prism provides chemical resistance to all refrigerants and high pressure ability to withstand typical burst pressure needs. The switch can be installed on any location in the refrigeration system where the temperatures do not exceed the rating in the table above. This includes Oil Separators, Oil Reservoirs, Refrigerant Receivers and compressor crankcase applications. The electrical connection end is suitable for 1⁄2" conduit.

Operation: The S-9400 Series Level Switch uses light reflecting from a conical glass prism as a means of detecting the absence of a fluid at the level of the glass cone. When no fluid covers the lower half of the cone infra-red light from the module from the mirror-like inner surface of the cone back to a light detector signaling the electronic module to switch. When fluid covers the lower half of the glass cone, the light from the module passes into the fluid. This absence of light is detected by the module which switches into the opposite direction. The module provides a .06/.10 differential distance from the cone point down.

Optional 1" NPT Connection: A 1" connection is available for the S-9400 series by ordering with a "-1" suffix (i.e. S-9424A-1). The 1" pipe thread connection allows the module to be mounted closer to the inner wall of the tank. This prevents the fitting from creating a pool of liquid next to the glass prism which, in certain applications, can be detrimental to the operation. The 1" connection is also recommended for Ammonia applications where residue can build up on the sight glass.

Replacement Sight Glass Part #: 3-020-070

S-9400-1 Series
with 1" NPT Connection



Catalog Number	Size M.P.T.	Voltage	Resistive Rating	Contacts with Liquid Present	Wire Color Code	Replacement Module No.	Min/Max Fluid Temp. *
S-9400	1/2"	120V 50/60 Hz	.5 Amp	Closed	Yellow & White	2-044-012	-40°F+210°F
S-9400-1	1"	120V 50/60 Hz	.5 Amp	Closed	Yellow & White	2-044-012	-40°F+210°F
S-9400A	1/2"	120V 50/60 Hz	.5 Amp	Open	Yellow & White/Stripe	2-044-017	-40°F+210°F
S-9400A-1	1"	120V 50/60 Hz	.5 Amp	Open	Yellow & White/Stripe	2-044-017	-40°F+210°F
S-9420	1/2"	208/240V 50/60 Hz	.25 Amp	Closed	Red & White	2-044-015	-40°F+200°F
S-9420-1	1"	208/240V 50/60 Hz	.25 Amp	Closed	Red & White	2-044-015	-40°F+200°F
S-9420A	1/2"	208/240V 50/60 Hz	.25 Amp	Open	Red & White/Stripe	2-044-018	-40°F+200°F
S-9420A-1	1"	208/240V 50/60 Hz	.25 Amp	Open	Red & White/Stripe	2-044-018	-40°F+200°F
S-9424	1/2"	24V AC/DC	.5 Amp	Closed	Orange & White	2-044-013	-40°F+210°F
S-9424-1	1"	24V AC/DC	.5 Amp	Closed	Orange & White	2-044-013	-40°F+210°F
S-9424A	1/2"	24V AC/DC	.5 Amp	Open	Orange & White/Stripe	2-044-020	-40°F+210°F
S-9424A-1	1"	24V AC/DC	.5 Amp	Open	Orange & White/Stripe	2-044-020	-40°F+210°F

* Actual fluid temperature, not tank temperature
NOTE: Load is to be wired between black and colored leads

LIQUID LEVEL SWITCHES

HENRY TECHNOLOGIES

Suitable for Ammonia

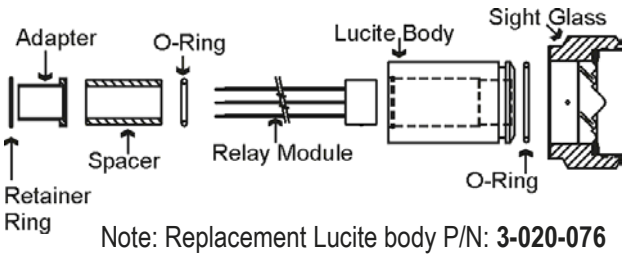
Installation:

The E-9400 series liquid level switch is intended to be mounted horizontally on the side of a liquid level column in the sight glass cap. The switch can be installed on any location on the liquid level column when the temperatures do not exceed the rating in the table on page 25. This includes oil separators, oil reservoirs and refrigerant receivers. The electrical connection end is suitable for 1⁄2" conduit. For electrical safety, liquid level switch types which use an AC power supply must be used on grounded equipment.

Specifications:

- **Mounting**: Horizontal only
- **Switch inductive ratings**: 35 va pilot duty rated
- **Contact, power off**: Normally Open (N.O.)
- **Contact life**: More than one million cycles at rated electrical load
- **Power for operation**: 3.5 ma AC, 5.5 ma DC
- **Minimum load**: 2 ma (without bleed resistor)

Liquid Level Switch Details Disassembled View



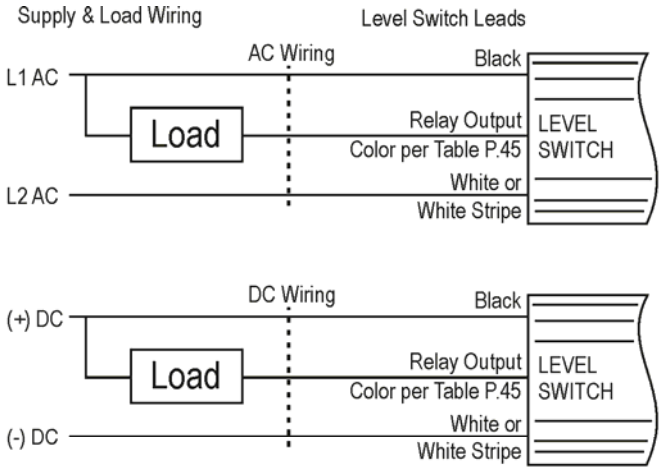
Note: Replacement Lucite body P/N: **3-020-076**

Module Replacement:

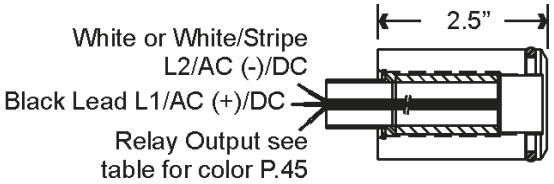
- Disconnect the power
- Remove wiring box from the retainer
- Remove the R. Ring with an IRR P-101 or equivalent retaining ring pliers
- Remove the adapter
- Pull out the module by the leads
- Install new module
- Verify the voltage rating
- Re-assemble

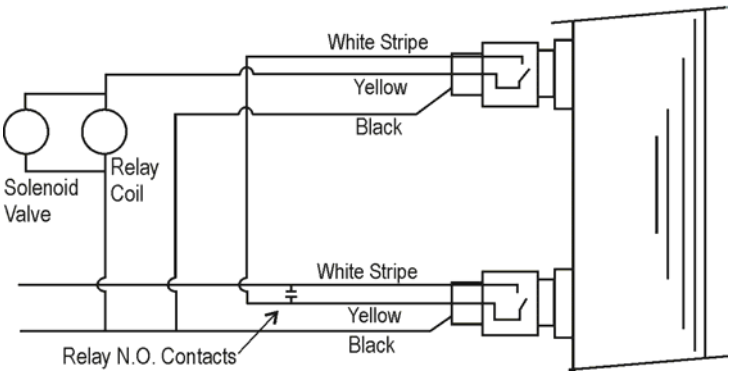
Application Wiring:

Wiring diagrams for both AC and DC applications are shown below. The 3 wire switching circuits shown can be used in a number of applications.



Liquid Level Switch Assembled View (no sight glass)





Example:
Differential control of liquid level using E-9400A liquid level switch
Operation:
1. Turn on solenoid valve when level goes below lower E-9400A
2. Turn off solenoid valve when level goes above upper E-9400A

LIQUID LEVEL SWITCHES

HENRY TECHNOLOGIES

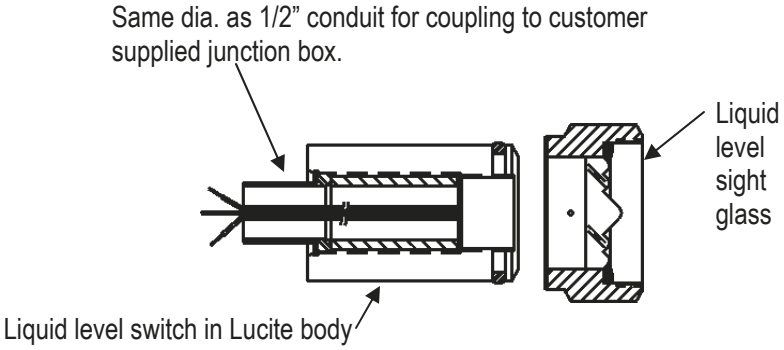
Suitable for Ammonia

Features:

- Eliminates expensive mechanical floats
- Reduces number of connections required on liquid level columns by mechanical floats
- Provides automatic control of pumps, valves, high and low alarms, and cutouts
- Can be interfaced with a computer to track and record refrigerant levels
- To change level requirements, simply move the liquid level switch assembly on the liquid level column
- Maximum working pressure: 500 PSI (35 Kg/cm2)
- Temperature rating: see table below
- Solid State Switching for liquid sensing
- No contact level sensing
- Serviceable without loss of refrigerant
- Works with oil, refrigerants, water, or any non-hazardous, non-corrosive fluid
- Only glass prism in contact with fluid medium
- Meets UL standard #873 and #207 file numbers E141577 and SA6720.
- U.S. Patent 5,278,426

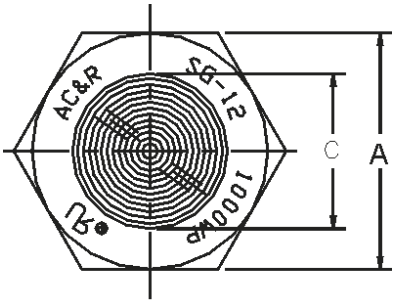
Operation:

The E-9400 series liquid level switches use infrared light reflecting from a conical glass prism molded in the sight glass as a means of detecting the absence of a fluid at the level of the glass cone. When no fluid covers the lower half of the cone, infra-red light from the module reflects from the mirror-like inner surface of the cone back to a light detector signaling the electronic module to switch. When fluid covers the lower half of the glass cone, the light from the module passes into the fluid. This absence of light is detected by the module, which switches into the opposite direction. The module provides a .06/.10 differential distance from the cone point down.

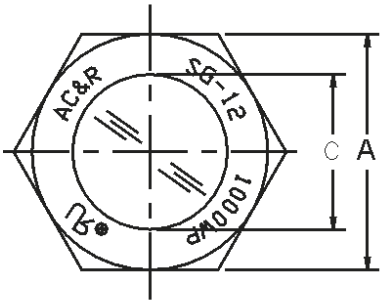


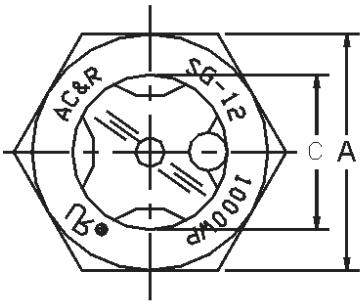
Catalog Number	Voltage	Resistive Rating	Contacts Liquid Present	Wire Color Code	Replacement Module No.	Min/Max Fluid Temp.
E-9400	120V 50/60 Hz	.5 Amp	N.C.	Yellow & White	2-044-012	-40°F+210°F
E-9400A	120V 50/60 Hz	.5 Amp	N.O.	Yellow & White/Stripe	2-044-017	-40°F+210°F
E-9420	208/240V 50/60 Hz	.25 Amp	N.C.	Red & White	2-044-015	-40°F+200°F
E-9420A	208/240V 50/60 Hz	.25 Amp	N.O.	Red & White/Stripe	2-044-018	-40°F+200°F
E-9424	24V AC/DC	.5 Amp	N.C.	Orange & White	2-044-013	-40°F+210°F
E-9424A	24V AC/DC	.5 Amp	N.O.	Orange & White/Stripe	2-044-020	-40°F+210°F

Reflect Lens

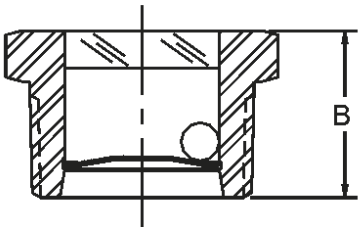


Clear Lens





Clear Lens with Floating Ball.
*Not for ammonia service



These sight glasses are available in three basic styles; Clear Lens; Reflex Lens; and Clear Lens with Floating Ball. All sight glasses feature a nickel plated steel body, hermetically sealed viewing lens, American standard tapered pipe thread, 1000 PSI maximum working pressure. These sight glasses are suitable for most standard refrigerants, and other industrial fluids non-corrosive to glass and steel (for R-11 applications, an aluminum ball is available for the SG-1200's add "C" suffix i.e. SG-1206C). The SG-1000's & SG-1100's are rated for a maximum temperature of 500°F (260°C). The SG-1200's are rated for a maximum temperature of 300°F (148°C). The SG-1100's (Reflex Lens) look dark when liquid is present and light when liquid is absent.

Catalog Number			Dimensions (Inch)			Thread Size M.P.T.
Clear	Reflex	Clear w/ Ball	Hex. A	Length B	Dia. C	
SG-1004	SG-1104	SG-1204	0.94	0.90	0.56	1/2”
SG-1006	SG-1106	SG-1206	1.12	1.06	0.75	3/4”
SG-1008	SG-1108	SG-1208	1.38	1.32	0.94	1”
SG-1010	SG-1110	SG-1210	1.75	1.25	1.19	1 1/4”
SG-1012	SG-1112	SG-1212	2.00	1.41	1.31	1 1/2”
SG-1016	SG-1116	SG-1216	2.50	1.28	1.63	2”

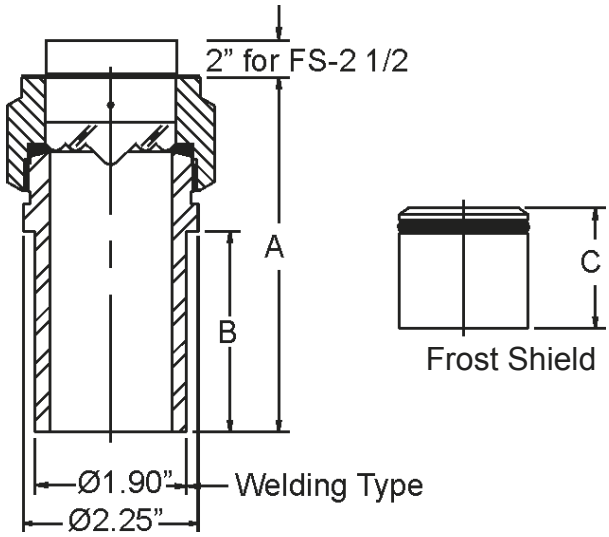
LIQUID INDICATORS, Bulls-Eye
With Reflex Lens and Frost Shield

HENRY TECHNOLOGIES

Suitable for Ammonia

Features:

- **Plated steel construction**, weld type housing ASME SA-36 (ASTM A36)
- **Maximum working pressure**: 500 P.S.I. (35.1 Kg/cm2)
- **Temperature rating**: -40°F (-40°C) to +250°F (+121° C)
- **Type LI-50 reflex glass**: Reflex lens can indicate the actual level of a liquid without requiring the installation of a second indicator for light admission. Due to the reflex lens configuration, it appears dark in the presence of a liquid, and light when liquid is absent
- **Frost shield**: FS-2-1⁄2 (Not supplied with indicator) To properly view systems internal liquid level under frosting conditions or when insulation is involved, a frost shield should be employed
- **Recommended** for use as a sight glass for oil, gas or liquid ammonia
- **Meets current edition of ASME** Boiler and Pressure Vessel Code, Section VIII, Division 1 UG-11 (a) (1)



Liquid Indicator

Item	Size & Type Connection	Catalog Number	Dimensions in Inches		Weight lbs.
			A	B	
Reflex Lens	Weld	**LI-50-2W**	2.75	0.75	1.5
Reflex Lens	Weld	**LI-50-4W**	4.50	2.50	2.0

Item	Catalog Number	Use to Temperature	Dimension C
Frost Shield	**FS-2-1/2**	Below –20°F	2.50

LIQUID INDICATORS

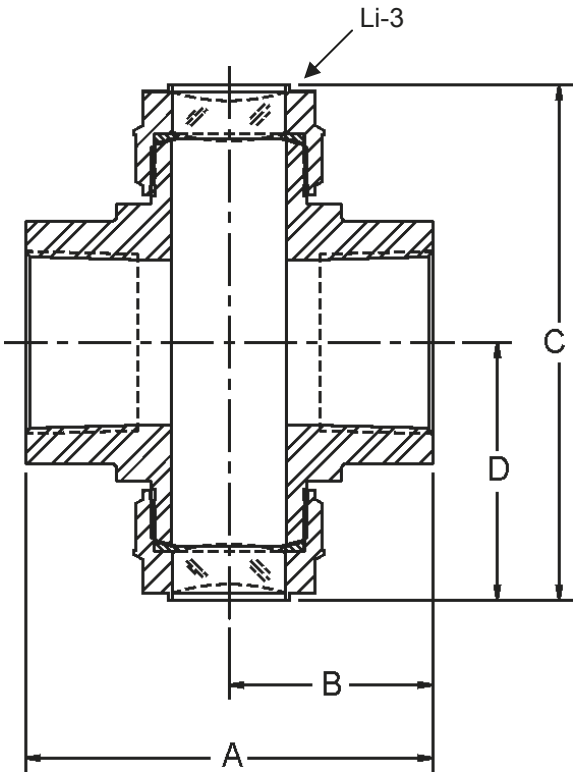
Cap Type with Double Port

HENRY TECHNOLOGIES

Suitable for Ammonia

Features:

- **Plated ductile iron and steel construction**
- **Fused glass viewing window**
- **Maximum working pressure**: 500 P.S.I. (35.1 Kg/cm2)
- **Temperature rating**: -20°F (-29°C) to +250°F (+121°C)
- **Recommended for use** as a sight glass for oil, gas or liquid ammonia
- **Replacement** viewing window and sealing parts available
- **Replacement Cap**: Li-3

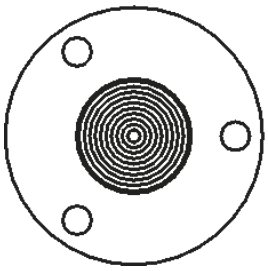


Catalog Number	Size Connections	Dimensions in Inches			
		A	B	C	D
LI48A-1/2	1/2" F.P.T.	3.00	1.50	3.75	1.88
LI48A-3/4	3/4" F.P.T.	3.00	1.50	3.75	1.88
LI48A-1	1" F.P.T.	3.00	1.50	3.75	1.88

Suitable for Ammonia

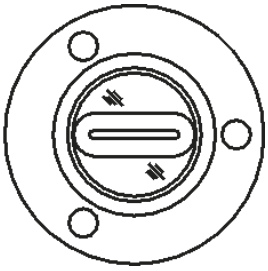
The SG-1300 sight glass kit includes the glass prism sight glass, O-Ring (Part Number 2-023-002), Quad-Ring (Part Number 2—023-003) and mounting hardware.
The SG-1300 can be used on any compressor with a 3 bolt 17⁄8" B.C. sight glass. The sight glass unites the refraction indices of glass and oil resulting in total prism disappearance during contact with oil. Under partial oil conditions, the prism level marker will appear as a bright double line of reflected light extending upward from the oil pool.

Reflex Lens Sight Glass



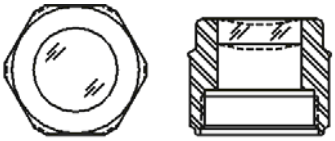
2-020-006

Glass Prism Sight Glass
U.S. Patent #334,940

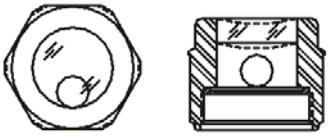


SG-1300

Sight Glasses



Part No. 3-020-052
Gasket No. 2-023-019



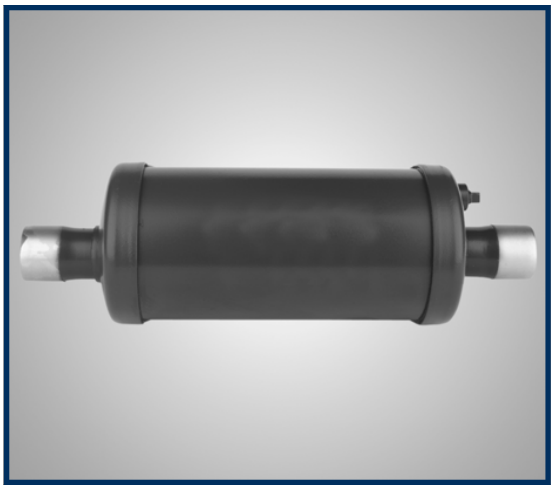
Part No. 3-020-053, NA
Gasket No. 2-023-019

Part No. 3-020-011
Gasket No. 2-023-005

Part No. 3-020-010
Gasket No. 2-023-005

DISCHARGE LINE MUFFLER

HENRY TECHNOLOGIES



Mufflers have internal baffles designed for minimum pressure drop. These baffles change the velocity of the discharge gasses passing through the muffler. This results in a dampening effect on high frequency sound waves on high speed compressors. Pulsating waves are also muffled in both low speed and high speed compressors.
Mufflers are sized to the discharge line of the compressor.

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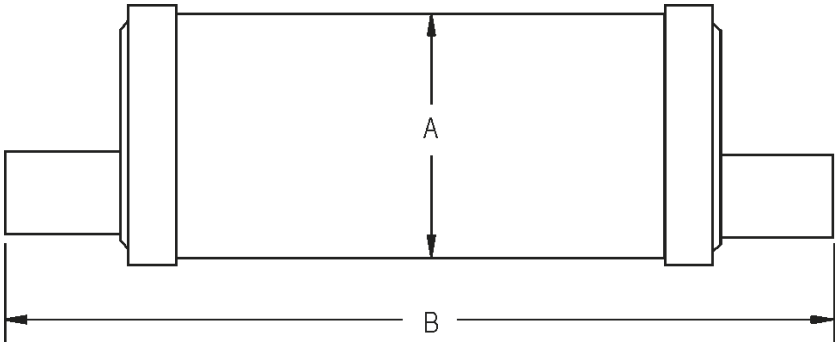
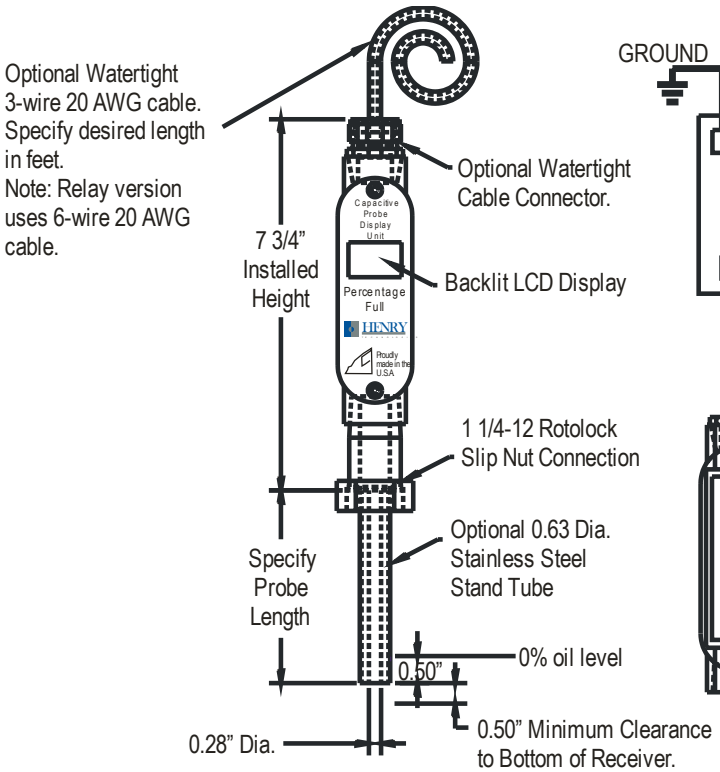


Catalog Number	Dimensions in Inches		
	Size Connection ODS	Diameter A	B
S-6304	1/2	3	7.75
S-6305	5/8	3	7.75
S-6307	7/8	3	9.69
S-6311	1 1/8	3	9.69
S-6405	5/8	4	6.75
S-6407	7/8	4	7
S-6411	1 1/8	4	12.75
S-6413	1 3/8	4	13.75
S-6415	1 5/8	6	18.25
S-6621	2 1/8	6	21
S-6625	2 5/8	6	21
S-6631	3 1/8	6	22.38

LIQUID & OIL LEVEL PROBES

HENRY TECHNOLOGIES



OPERATION:

The LLP level probe measures receiver refrigerant level by sensing a change in capacitance between the LLP probe rod and the receiver tank wall. As the liquid refrigerant changes in level it changes in output voltage between 0 and 5 volts. In other words, 2.5 volts can be scaled to indicate a 50% liquid level. 0% level is typically set as one inch from the tank bottom. 100 % level is typically set as the receiver 90% fill level.

FEATURES:

- 800 psi Working Pressure
- 10-24VDC Supply Voltage
- Optional Relay for 20% low level alarm
- Relay Ratings: 125V @ 12A Resistive
  250V @ 7A Resistive
- Output: 0V-5VDC
  1V-6VDC
  4-20mA
- Ambient Temperature: -40 to 158°F
- Refrigerant Temperature: Suitable for all available refrigerants.
- Refrigerants: R22, R134a, R404a, R507, R410a, and other compatible refrigerants.
- Continuous accurate measurement of receiver liquid level.
- Optional relay can provide a level indication to a remote alarm system to show insufficient refrigerant quantity.
- Unless otherwise indicated, probes are calibrated for R404a / R22. This standard calibration also works with R134a, R507 and R410a within 5% of receiver level.

RECALIBRATION:

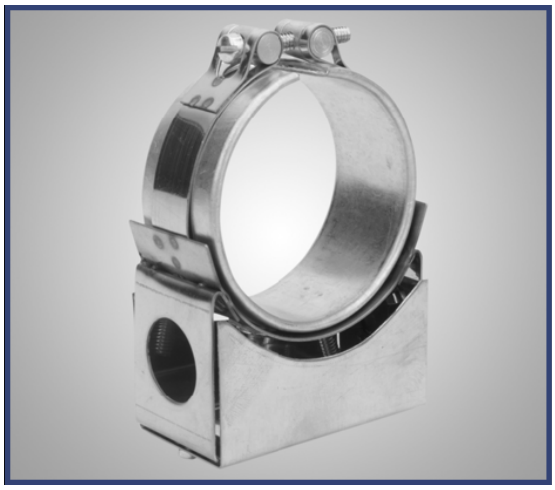
The Henry Technologies LLP Series probes are factory calibrated for a 16" diameter vertical receiver and diameters or refrigerants. To obtain maximum accuracy, the probe can be re-calibrated after the system has been in operation and conditions have stabilized.

Re-Calibration Procedure:

1. Monitor the output voltage using a voltmeter installed in parallel with the signal and common leads of the control loop. (terminals 2 & 3 on the wiring diagram)
2. Lower the refrigerant level in the receiver to a level equal to 0%. Adjust the "Zero" calibration screw for a voltmeter reading of 0.0 volts DC.
3. Raise the refrigerant level in the receiver to a level equal to 50% level. Adjust the "Span" calibration screw for a voltmeter reading of 2.5 volts DC.

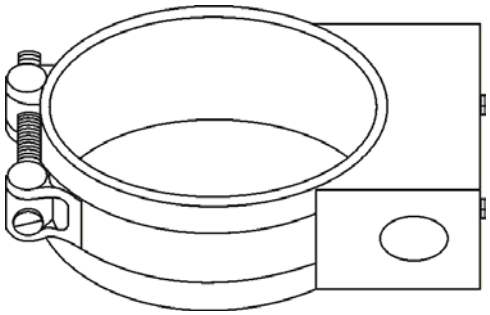
The re-calibration is complete.

For applications which require a 1-6V or 4-20mA output, consult the factory.

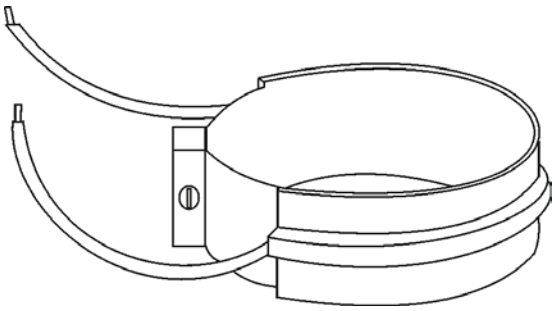


Heat elements add heat to oil separators to prevent migration of refrigerant to the vessel during off cycles of the compressor. Heat elements can also be used on suction line accumulators to warm the oil and allow oil return to the compressor on low temperature applications.

J-Series



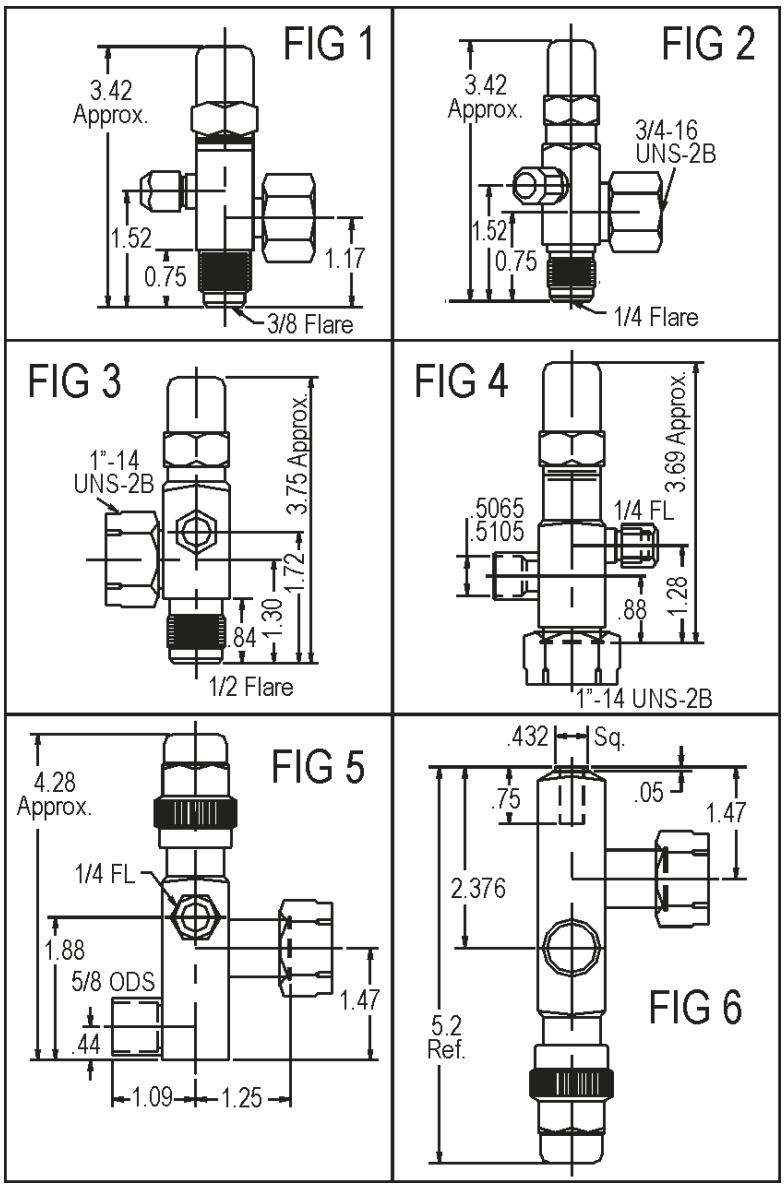
S-9101



Catalog Number	Diameter in Inches	Wattage	Volts
S-9101	4	25	110
S-9111	4	25	220
S-9112	6	50	220
S-9112J	6	50	240
S-9113J	4	25	120
S-9114J	4	25	240
S-9115J	2 1/2	25	120
S-9101	4	25	110
S-9111	4	25	220
S-9112	6	50	220

ROTALOCK VALVES

HENRY TECHNOLOGIES



ROTALOCK VALVES

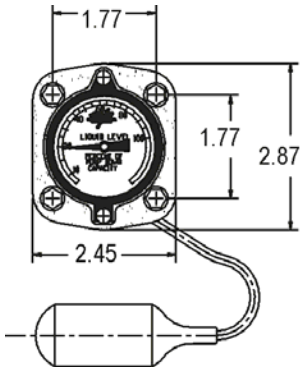
Catalog No. (W/ Gasket)	Connection Size	Rotalock Thread Size	Figure No.
3-030-131	1/4“ FL.	3/4” - 16	2
3-030-122	3/8“ FL.	3/4” - 16	1
3-030-123	3/8“ FL.	3/4” - 16	2
3-030-130	3/8“ FL.	3/4” - 16	2
3-030-139	3/8“ O.D.S.	3/4” - 16	2
3-030-108	1/2“ FL.	1” - 14	1
3-030-135	1/2“ FL.	1” - 14	3
3-030-112	5/8“ FL.	1” - 14	1
3-030-133	1/2“ O.D.S.	1” - 14	3
3-030-140	1/2“ O.D.S.	1” - 14	4
3-030-127	5/8“ O.D.S.	1” - 14	1
3-030-150	5/8“ O.D.S.	1” - 14	4
3-030-152	5/8“ O.D.S.	1” - 14	1
3-030-163	5/8“ O.D.S.	1” - 14	5
3-030-164	5/8“ O.D.S.	1” - 14	5
3-030-167	5/8“ O.D.S.	1” - 14	6
3-030-136	7/8“ O.D.S.	1 1/4” - 12	1
3-030-141	7/8“ O.D.S.	1 1/4” - 12	4
3-030-142	1 1/8“ O.D.S.	1 1/4” - 12	4
3-030-143	1 3/8“ O.D.S.	1 3/4” - 12	4
3-030-160	1 3/8“ O.D.S.	1 3/4” - 12	1
3-030-162	1 5/8“ O.D.S.	1 3/4” - 12	1

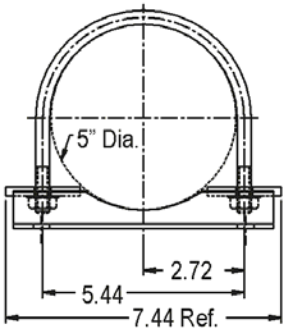
Rotalock Adapters

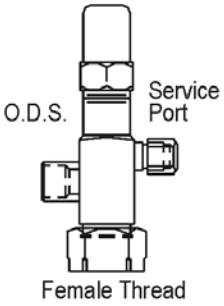
Catalog Number	Catalog No. (W/ Gasket)	Size Connection	Rotalock Thread Size	Description
2-030-153	—	3/8” O.D.S.	3/4”-16 FEMALE	STRAIGHT THRU ADAPTER
2-030-159	**3-030-001**	1”-14 MALE ROT.	3/4”-16 FEMALE	STRAIGHT THRU ADAPTER
2-030-171	**3-030-002**	3/4”-16 MALE ROT.	1”-14 FEMALE	STRAIGHT THRU ADAPTER
2-030-166	—	5/8” O.D.S.	1”-14 FEMALE	STRAIGHT THRU ADAPTER
2-030-128	—	5/8” O.D.S.	1”-14 FEMALE	ANGLE ADAPTER
2-030-137	—	7/8” O.D.S.	1 1/4”-12 FEMALE	ANGLE ADAPTER

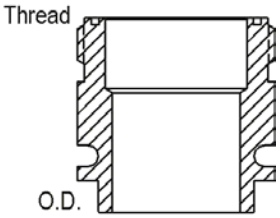
RECEIVER ACCESSORIES

HENRY TECHNOLOGIES









Catalog No.	Diameter
S-9450	8 5/8
S-9451	10 3/4
S-9452	12 3/4
S-9453	14
S-9454	16
S-9455	18
S-9456	20

NOTE: Mating flanges for level gauges not included on most receivers.
Magnetic Liquid Level Gauges: Maximum Pressure 300 PSIG [20,7 Bar]

Catalog No.	Diameter
3-019-905	5
3-019-906	6
3-019-908	8 5/8
3-019-910	10 3/4
3-019-912	12 3/4

NOTE: Designed for horizontal mounting use only.

Catalog No.	Thread	ODS
3-030-140	1”-14	1/2
3-030-150	1”-14	5/8
3-030-141	1 1/4”-12	7/8
3-030-142	1 1/4”-12	1 1/8
3-030-143	1 1/4”-12	1 3/8

Includes gasket.
See Rotalock page for full line of valves.

Catalog No.	Thread	ODS
2-009-037	1”-14	1/2
3-009-308	1 1/4”-12	7/8-1 1/8
2-009-046	1 3/4”-12	1 3/8

VIBRATION ELIMINATORS

HENRY TECHNOLOGIES

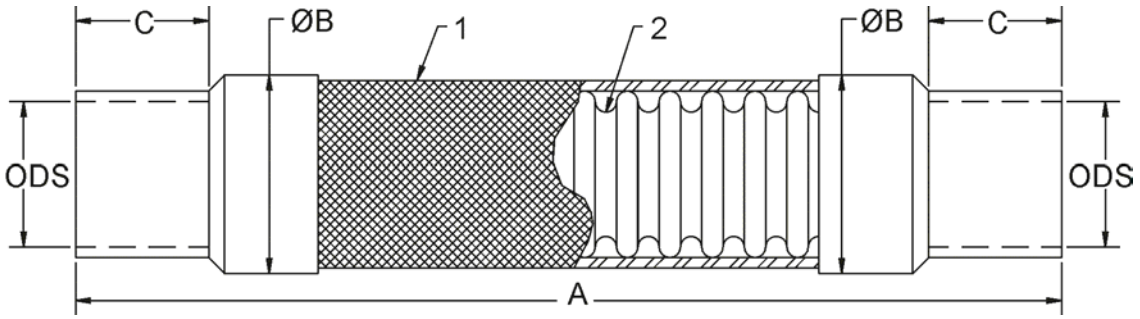
The function of the Henry Vibration Eliminator is to absorb compressor vibration. By installing a vibration eliminator, the risk of damage to system equipment and pipe-work is reduced.

Features:

- Copper ends for brazing
- Stainless Steel ferrules attach hoses to copper ends
- Helium tested
- CE and UL approved

Applications:

Henry Vibration Eliminators can be installed in both the suction and discharge lines of air-conditioning and refrigeration systems. Our vibration eliminators are suitable for HCFC and HFC refrigerants, along with their associated oils.



Catalog No.	ODS (Inch)	A	B	C	MWP (psig)	Weight (Lb)	Cat
V-1/4	1/4	8.0	0.6	0.7	500	0.15	SEP
V-3/8	3/8	8.6	0.7	.08	500	0.26	SEP
V-1/2	1/2	9.0	0.9	.08	500	0.31	SEP
V-5/8	5/8	9.9	1.0	.09	500	0.44	SEP
V-3/4	3/4	10.6	1.1	1.1	500	0.51	SEP
V-7/8	7/8	12.0	1.3	1.2	500	0.62	SEP
V-1-1/8	1-1/8	13.1	1.5	1.5	500	0.88	SEP
V-1-3/8	1-3/8	15.6	1.8	1.6	500	1.39	Cat 1
V-1-5/8	1-5/8	16.9	2.2	2.0	500	1.98	Cat 1
V-2-1/8	2-1/8	20.6	2.7	2.4	390	2.76	Cat 1
V-2-5/8	2-5/8	24.3	3.4	3.0	339	5.29	Cat 1
V-3-1/8	3-1/8	26.9	4.2	3.3	300	8.71	Cat 1
V-3-5/8	3-5/8	32.2	5.2	3.9	175	13.23	Cat 1
V-4-1/8	4-1/8	33.0	5.2	4.3	175	14.77	Cat 1

A - Overall length
B - Outside diameter of the ferrules
C - Length of copper end

1 - Stainless steel braided hose
2 - Stainless steel corrugated hose

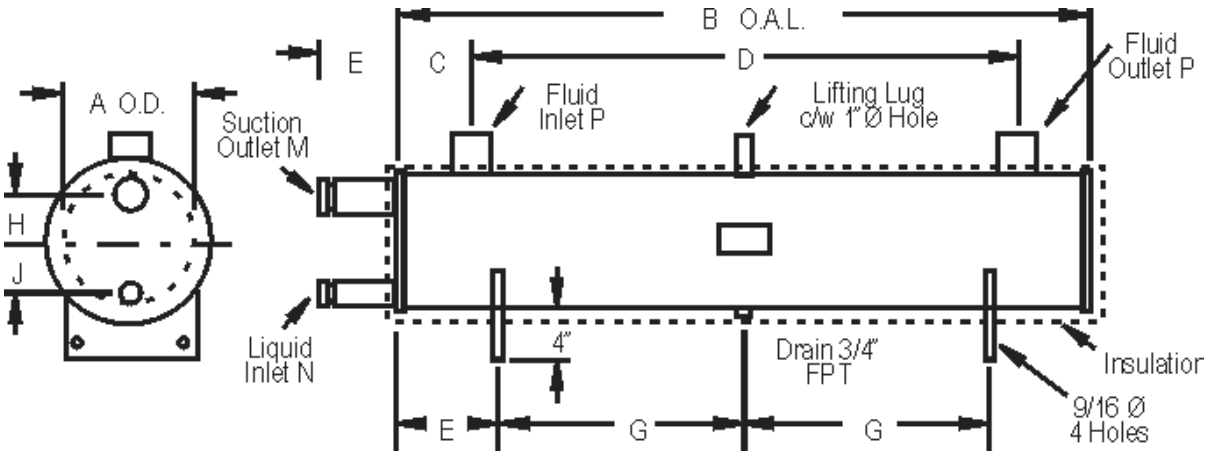
CHILLERS

Direct Expansion

HENRY TECHNOLOGIES

Features:

- **Special Microfin Tubes** for high transfer capability and more compact chiller sizes
- Available as standard in single or dual circuit
- **5-300 normal tons** refrigeration
- **Working Pressure** – 225 PSI Tube Side
  150 PSI Shell Side
- **Removable heads** for servicing on all units 35 TR or larger
- **Insulation**, mounting legs and lifting bracket included
- **Flange connections** and heat tape available
- **Duralon gasket material** to ensure virtually leak free operation and eliminate circuit to circuit leaks
- **Certified** by the National Board of Boiler and Pressure Vessel Inspectors. All vessels are designed and manufactured in accordance with Section VIII of the ASME Code and are available with U or UM code symbol stamp.

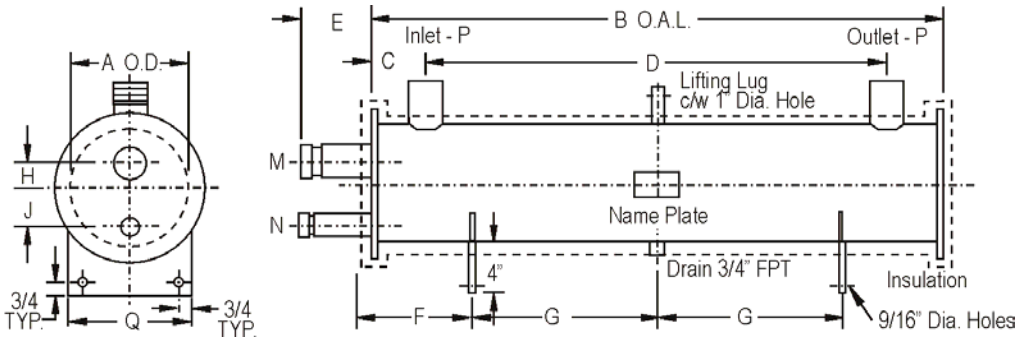


Single Circuits

Catalog Number	Nom. Tons	Dimensions in Inches										Suct. Outlet	Liq. Inlet	Fluid In/Out	Ship Wt.
		A	B	C	D	E	F	G	H	J	Q	M	N	P**	Lbs.
EM005-05060-1	5	5 9/16	61 7/8	3 5/8	51 5/8	5 3/4	8 1/2	22 1/2	1 3/4	2 1/4	5	1 1/8	5/8	1	225
EM010-06054-1	10	6 5/8	56	3 3/4	45 5/8	5 3/4	7 3/4	20 1/4	2 1/4	2 3/4	5 7/8	1 5/8	7/8	1	240
EM015-06072-1	15	6 5/8	74	4 1/2	65	5 3/4	10	27	2 1/4	2 3/4	5 7/8	1 5/8	7/8	1 1/2	265
EM020-08060-1	20	8 5/8	62 7/8	4 1/2	53 7/8	5 1/2	9	22 1/2	2 7/8	3 5/8	7 3/4	2 1/8	1 1/8	1 1/2	380
EM025-08072-1	25	8 5/8	74 7/8	4 3/4	65 1/2	5 1/2	10 1/2	27	2 7/8	3 5/8	7 3/4	2 1/8	1 1/8	2	405
EM030-08072-1	30	8 5/8	74 7/8	4 3/4	65 1/2	5 1/2	10 1/2	27	2 7/8	3 5/8	7 3/4	2 1/8	1 1/8	2	415

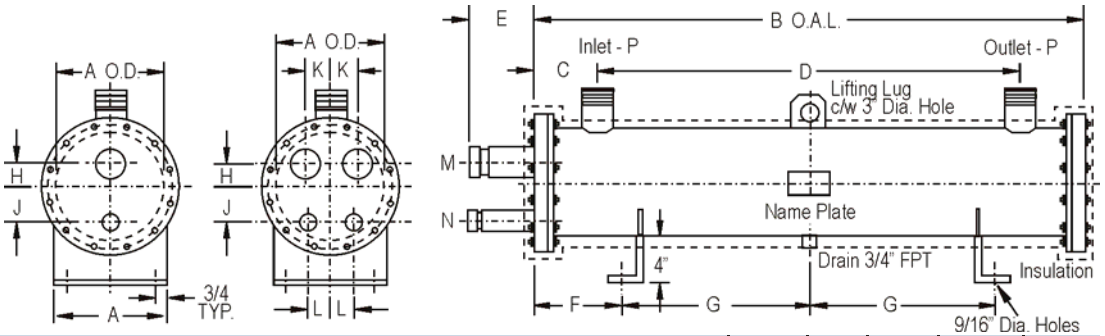
**Up to 2" I.P.S., F.P.T.; 2½" to 3" I.P.S., M.P.T.; 3½" to 8" I.P.S., Pipe Stubs

Single Circuit



Catalog Number	Dimensions in Inches										Suct. Outlet	Liq.Inlet	Fluid In/Out	Ship
	A	B	C	D	E	F	G	H	J	Q	M*	N*	P**	Wt. Lbs.
EM005-05060-1	5 9/16	61 7/8	3 5/8	51 5/8	5 3/4	8 1/2	22 1/2	1 3/4	2 1/4	5	1 1/8	5/8	1	225
EM010-06054-1	6 5/8	56	3 3/4	45 5/8	5 3/4	7 3/4	20 1/4	2 1/4	2 3/4	5 7/8	1 5/8	7/8	1	240
EM015-06072-1	6 5/8	74	4 1/2	65	5 3/4	10	27	2 1/4	2 3/4	5 7/8	1 5/8	7/8	1 1/2	265
EM020-08060-1	8 5/8	62 7/8	4 1/2	53 7/8	5 1/2	9	22 1/2	2 7/8	3 5/8	7 3/4	2 1/8	1 1/8	1 1/2	380
EM025-08072-1	8 5/8	74 7/8	4 3/4	65 1/2	5 1/2	10 1/2	27	2 7/8	3 5/8	7 3/4	2 1/8	1 1/8	2	405
EM030-08072-1	8 5/8	74 7/8	4 3/4	65 1/2	5 1/2	10 1/2	27	2 7/8	3 5/8	7 3/4	2 1/8	1 1/8	2	415

Single and Dual Circuit



Catalog Number	Dimensions in Inches											Suct. Outlet	Liq. Inlet	Fluid In/Out	Ship Wt Lbs	No. of Circ
	A	B	C	D	E	F	G	H	J	K	L	M*	N*	P**		
EM010-06054-2	6 5/8	56 1/2	3 5/8	49 1/8	5 1/2	8	20 1/4	1 7/8	2 1/4	1 1/4	1	1 1/8	5/8	1	310	
EM015-06072-2	6 5/8	74 1/2	3 7/8	66 5/8	5 1/2	10 1/4	27	1 7/8	2 1/4	1 1/4	1	1 3/8	7/8	1 1/4	345	
EM020-08060-2	8 5/8	63	4 1/2	54	5 1/2	9	22 1/2	2 3/8	3 1/4	1 3/4	1 1/8	1 5/8	7/8	1 1/2	485	2
EM025-08072-2	8 5/8	75	4 3/4	65 3/8	5 1/2	10 1/2	27	2 3/8	3 1/4	1 3/4	1 1/8	1 5/8	7/8	2	510	
EM030-08072-2	8 5/8	75	4 3/4	65 1/2	5 1/2	10 1/2	27	2 3/8	3 1/4	1 3/4	1 1/8	1 5/8	7/8	2	520	
EM035-10054-2	10 3/4	58	5 1/4	47 1/2	5 1/4	8 3/4	20 1/4	2 7/8	3 3/4	2 1/4	1 1/2	2 1/8	1 1/8	2 1/2	730	
EM050-10072-2	10 3/4	76	5 1/2	64 3/4	5 1/4	11	27	2 7/8	3 3/4	2 1/4	1 1/2	2 1/8	1 1/8	2 1/2	810	
EM060-10096-2	10 3/4	100	6 3/4	86 3/8	5 1/4	14	36	2 7/8	3 3/4	2 1/4	1 1/2	2 1/8	1 1/8	3	925	
EM075-12072-2	12 3/4	76 1/2	8	60 3/8	5 1/4	11 1/4	27	3 1/4	4 7/8	2 5/8	1 3/4	2 5/8	1 3/8	3	1075	
EM090-12096-2	12 3/4	100 1/2	9 1/2	81 3/8	5 1/4	14 1/4	36	3 1/4	4 7/8	2 5/8	1 3/4	2 5/8	1 3/8	4	1230	1
EM100-12108-2	12 3/4	112 1/2	10 1/2	91 3/8	5 1/4	15 3/4	40 1/2	3 1/4	4 7/8	2 5/8	1 3/4	2 5/8	1 3/8	4	1310	Or
EM125-14108-2	14	113	10 3/4	90 7/8	4 3/4	16	40 1/2	3 5/8	4 7/8	2 3/4	2 1/4	3 1/8	1 5/8	4	1670	2
EM150-16096-2	16	101 1/2	10 1/8	81 1/4	4 3/4	14 3/4	36	4	6	3 1/2	2	3 1/8	1 5/8	5	1995	
EM185-16108-2	16	113 1/2	12 1/8	89 1/4	4 3/4	16 1/4	40 1/2	4	6	3 1/2	2	3 5/8	2 1/8	5	2136	
EM225-16108-2	18	113 1/2	13 3/4	86	4 3/4	16 1/4	40 1/2	3	6	4 3/8	3	3 5/8	2 1/8	6	2600	
EM300-20108-2	20	114	31	88	4 1/4	16 1/2	40 1/2	3 1/2	6	4 1/2	3 1/4	4 1/8	2 1/8	8	3145	

* Connection sizes shown are for 2 circuit. For single circuit sizes contact Sales Office
** Up to 2" I.P.S., F.P.T.; 2½" to 3" I.P.S., M.P.T.; 3½" to 8" I.P.S., Pipe Stubs

CHILLERS

Direct Expansion

HENRY TECHNOLOGIES

Capacity, GPM and Pressure Drop Data for 8°F Range R22

Approach °F		7			8			9			10			11			12			Max
Cat. No.	Nom Tons	MBH	GPM	PSI	MBH	GPM	PSI	MBH	GPM	PSI	MBH	GPM	PSI	MBH	GPM	PSI	MBH	GPM	PSI	No. Circuits
EM005	5	30	7.5	0.7	45	11.2	1.2	60	14.9	2.1	72	17.9	3.0	85	21.2	4.2	99	24.7	5.6	
EM010	10	-	-	-	70	17.4	1.9	90	22.4	3.0	124	30.9	5.5	148	36.9	7.7	170	42.9	10.1	
EM015	15	125	31.1	4.4	158	39.4	7.0	187	46.6	9.6	220	54.8	13.2	-	-	-	-	-	-	Single
EM020	20	160	39.8	3.3	208	51.8	5.4	252	62.8	7.7	293	73.0	10.3	336	83.8	13.4	380	94.8	16.9	
EM025	25	203	50.5	5.8	244	60.8	8.3	290	72.2	11.5	332	82.7	14.9	-	-	-	-	-	-	
EM030	30	245	61.0	6.2	294	73.2	8.8	350	87.2	12.2	398	99.2	15.7	-	-	-	-	-	-	
EM010	10	-	-	-	70	17.4	1.9	90	22.4	3.1	121	30.2	5.4	140	34.9	7.1	155	38.7	8.6	
EM015	15	115	28.6	3.7	141	35.1	5.5	167	41.6	7.6	194	48.3	10.1	222	55.3	13.1	252	62.8	16.7	
EM020	20	152	37.8	3.0	198	49.3	4.9	245	61.0	7.3	286	71.3	9.8	327	81.5	12.7	370	92.3	16.0	Dual
EM025	25	203	50.5	5.8	244	60.8	8.3	290	72.2	11.5	332	82.7	14.9	-	-	-	-	-	-	
EM030	30	237	59.0	5.8	287	71.5	8.4	340	84.7	11.5	390	97.2	15.0	-	-	-	-	-	-	
EM035	35	230	57.3	3.2	310	77.2	5.6	385	95.9	8.4	445	110.9	11.1	505	125.9	14.0	-	-	-	
EM050	50	425	105.8	5.9	510	127.0	8.3	600	146.5	11.4	680	169.5	14.4	-	-	-	-	-	-	
EM060	60	428	106.6	4.3	550	137.0	6.9	680	169.4	10.4	799	199.1	14.2	-	-	-	-	-	-	
EM075	75	584	145.4	4.9	730	181.8	7.4	865	215.5	10.2	1004	250.2	13.6	-	-	-	-	-	-	
EM090	90	650	161.8	4.1	830	206.7	6.6	1030	256.6	10.0	1200	299.0	13.4	-	-	-	-	-	-	
EM100	100	778	193.7	4.4	994	247.6	7.1	1180	294.0	9.9	1370	341.4	13.2	-	-	-	-	-	-	Single or Dual
EM125	125	943	234.8	5.7	1188	295.9	8.8	1428	355.8	12.5	1634	407.2	16.2	-	-	-	-	-	-	
EM150	150	1084	269.9	4.7	1393	346.9	7.6	1720	428.5	11.4	2000	498.4	15.2	-	-	-	-	-	-	
EM185	185	1417	352.8	7.0	1768	440.3	10.7	2090	520.7	14.7	-	-	-	-	-	-	-	-	-	
EM225	225	1680	418.3	4.4	2130	530.5	6.9	2552	635.8	9.8	2966	739.2	13.0	3393	845.8	16.9				
EM300	300	2284	568.7	6.7	2871	715.0	10.4	3401	847.3	14.4	-	-	-	-	-	-	-	-	-	

Catalog units presented above are designed for the listed ratings. Higher capacities may be possible with different baffle spacing's. Contact Factory.

SELECTION PROCEDURE

The capacity data table above is based on R12 with water range at 8°F and approach at 7-12°F.

Sizing—To select the direct expansion chiller you must know:

1. Capacity at maximum load in thousands of BTU/HR (MBH) [Capacity BTU/HR = GPM X RANGE X 500]
2. Water cooling range °F: inlet water temperature **minus** outlet water temperature.
3. Approach temperature °F: outlet water temperature **minus** refrigerant evaporating temperature.

The final selection may depend on the water side pressure drop (psi), at the full GPM flow rate, being within acceptable limits. See example below.

Nominal Ratings in tons refrigeration (Nom Tons) are based on:
54°F entering water minus 44°F leaving water (10° range)
35°F evaporating temperature (9° approach)
100°F entering liquid refrigerant with 7°F suction superheat
0.00005 fouling factor

Limitations

Minimum evaporating temperature .....32°F

Maximum water entering temperature .....75°F

The listed water chillers are designed for the ranges and approach temperatures in the tables. Consult factory for selections at different conditions.

DUTY
Required Capacity: 5.85 T.R. x 12000 = 70.2 MBH
Entering water temperature: 52°F
Leaving water temperature: 44°F
Refrigerant evaporating temperature: 34°F
Single Circuit

SELECTION
Range: (52-44) = 8°F
Approach: (44-34) = 10°F
From above table, select EM010; maximum capacity 72 MBH, requiring 17.9 GPM water with 3.0 PSI pressure drop: Model EM005-05060-1.

Capacity, GPM and Pressure Drop Data for 10°F Range R22

Approach °F		7			8			9			10			11			12			Max
Cat. No.	Nom Tons	MBH	GPM	PSI	MBH	GPM	PSI	MBH	GPM	PSI	MBH	GPM	PSI	MBH	GPM	PSI	MBH	GPM	PSI	No. Circuits
EM005	5	28	5.6	0.3	43	8.6	0.7	60	12.0	1.4	72	14.4	2.0	85	17.0	2.7	99	19.8	3.6	
EM010	10	50	10.0	0.7	73	14.5	1.3	106	21.1	2.7	130	25.9	3.9	155	30.9	5.5	175	34.9	7.0	
EM015	15	130	25.9	3.1	165	32.9	4.9	196	39.1	6.9	228	45.5	9.2	261	52.1	11.9	290	57.9	14.6	Single
EM020	20	171	34.1	2.4	216	43.0	3.8	259	51.6	5.3	299	59.6	7.0	341	68.0	9.0	385	76.8	11.3	
EM025	25	212	42.2	4.1	253	50.4	5.8	300	59.8	8.0	340	67.8	10.1	386	77.0	12.9	435	86.8	16.2	
EM030	30	255	50.8	4.4	304	60.6	6.1	360	71.8	8.4	407	81.2	10.6	467	93.2	13.8	-	-	-	
EM010	10	50	10.0	0.7	73	14.5	1.3	103	20.5	2.6	120	23.9	3.5	139	27.7	4.6	158	31.5	5.8	
EM015	15	118	23.5	2.5	146	29.1	3.8	173	34.5	5.3	198	39.5	6.8	226	45.1	8.8	254	50.7	11.0	
EM020	20	162	32.3	2.2	206	41.1	3.4	252	50.2	5.0	292	58.2	6.7	333	66.4	8.6	375	74.8	10.7	Dual
EM025	25	212	42.2	4.1	253	50.4	5.8	300	59.8	8.0	340	67.8	10.1	386	77.0	12.9	435	86.8	16.2	
EM030	30	247	49.2	4.1	295	58.8	5.7	348	69.4	7.9	395	78.8	10.0	453	90.4	13.0	507	101.2	16.2	
EM035	35	241	48.0	2.3	324	64.6	4.0	403	80.3	6.0	460	91.7	7.7	520	103.7	9.7	585	116.7	12.1	
EM050	50	440	87.7	4.1	530	105.6	5.8	620	123.6	7.9	700	139.6	9.9	790	157.6	12.5	888	177.2	15.6	
EM060	60	459	91.5	3.2	582	116.0	5.0	721	143.7	7.6	830	165.5	9.9	943	188.1	12.7	1062	211.9	16.0	
EM075	75	620	123.5	3.5	757	150.9	5.2	905	180.4	7.3	1036	206.6	9.4	1187	236.8	12.2	1346	268.6	15.5	
EM090	90	700	139.5	3.1	880	175.4	4.8	1080	215.3	7.1	1240	247.3	9.3	1405	280.3	11.8	1590	317.3	15.0	
EM100	100	827	164.8	3.2	1032	205.7	5.0	1230	245.2	7.0	1410	281.2	9.0	1600	319.2	11.5	1796	358.4	14.4	Single or Dual
EM125	125	1006	200.4	4.2	1242	247.5	6.2	1480	295.9	8.8	1686	336.2	11.2	1913	381.6	14.3	-	-	-	
EM150	150	1175	234.1	3.6	1484	295.8	5.6	1800	358.9	8.1	2070	412.8	10.6	2360	470.8	13.6	-	-	-	
EM185	185	1516	302.1	5.2	1853	369.3	7.6	2204	439.4	10.6	2503	499.2	13.5	-	-	-	-	-	-	
EM225	225	1786	355.8	3.2	2229	444.3	4.9	2670	532.3	6.9	3046	607.5	8.9	3467	691.6	11.4	3900	778.2	14.3	
EM300	300	2439	486.0	5.0	3003	598.5	7.4	2530	703.8	10.1	4069	811.5	13.2	4618	921.2	16.8	-	-	-	

Catalog units presented above are designed for the listed ratings. Higher capacities may be possible with different baffle spacing's. Contact Factory.

SELECTION PROCEDURE

The capacity data table above is based on R12 with water range at 8°F and approach at 7-12°F.

Sizing—To select the direct expansion chiller you must know:

1. Capacity at maximum load in thousands of BTU/HR (MBH) [Capacity BTU/HR = GPM X RANGE X 500]
2. Water cooling range °F: inlet water temperature **minus** outlet water temperature.
3. Approach temperature °F: outlet water temperature **minus** refrigerant evaporating temperature.

The final selection may depend on the water side pressure drop (psi), at the full GPM flow rate, being within acceptable limits. See example below.

Nominal Ratings in tons refrigeration (Nom Tons) are based on:
54°F entering water minus 44°F leaving water (10° range)
35°F evaporating temperature (9° approach)
100°F entering liquid refrigerant with 7°F suction superheat
0.00005 fouling factor

Limitations
Minimum evaporating temperature .....32°F

Maximum water entering temperature .....75°F

The listed water chillers are designed for the ranges and approach temperatures in the tables. Consult factory for selections at different conditions.

DUTY
750 GPM water
Entering water temperature: 54°F
Leaving water temperature: 44°F
Refrigerant evaporating temperature: 32°F
Dual Circuit

SELECTION
Range: (54-44) = 10°F Approach (44-32) = 12°F
Capacity 750 GPM x 10° x 500 = 3750 MBH
From above table, select EM225; maximum capacity 3900 MBH, requiring 778.2 GPM water with 14.3 PSI pressure drop: Model EM225-18108-2.

CHILLERS

Direct Expansion

HENRY TECHNOLOGIES

Capacity, GPM and Pressure Drop Data for 12°F Range R22

Approach °F		7			8			9			10			11			12			Max
Cat. No.	Nom Tons	MBH	GPM	PSI	MBH	GPM	PSI	MBH	GPM	PSI	MBH	GPM	PSI	MBH	GPM	PSI	MBH	GPM	PSI	No. Circuits
EM005	5	30	5.0	0.3	45	7.5	0.6	60	10.0	1.0	72	12.0	1.4	85	14.1	1.9	99	16.1	2.5	
EM010	10	55	9.1	0.5	75	12.5	1.0	110	18.3	2.0	133	22.1	2.9	160	26.6	4.1	178	29.6	5.1	
EM015	15	136	22.6	2.4	168	27.9	3.6	200	33.2	5.0	232	38.6	6.7	264	43.9	8.6	294	48.9	10.5	Single
EM020	20	180	29.9	1.9	225	37.4	2.9	265	44.0	3.9	306	50.9	5.2	348	57.9	6.6	391	65.0	8.2	
EM025	25	218	36.2	3.1	260	43.2	4.3	307	51.0	5.9	346	57.5	7.4	392	65.2	9.4	439	73.0	11.6	
EM030	30	265	44.0	3.3	314	52.2	4.6	368	61.2	6.2	415	69.0	7.8	472	78.5	10.0	525	87.3	12.2	
EM010	10	55	9.1	0.6	75	12.5	1.0	105	17.4	1.9	123	20.4	2.6	143	23.8	3.4	161	26.8	4.3	
EM015	15	123	20.4	1.9	149	24.8	2.8	176	29.2	3.8	200	33.2	4.9	228	37.9	6.3	256	42.6	7.9	
EM020	20	171	28.4	1.7	215	35.7	2.6	259	43.0	3.7	298	49.5	4.9	339	56.4	6.3	381	63.4	7.8	Dual
EM025	25	218	36.2	3.1	260	43.2	4.3	307	51.0	5.9	346	57.5	7.4	392	65.2	9.4	439	73.0	11.6	
EM030	30	257	42.7	3.1	305	50.7	4.3	356	59.2	5.8	403	67.0	7.3	458	76.2	9.4	513	85.3	11.6	
EM035	35	252	41.9	1.7	337	56.0	3.0	420	69.8	4.6	475	79.0	5.8	535	89.0	7.2	600	99.8	9.0	
EM050	50	457	75.9	3.1	542	90.0	4.3	632	105.0	5.8	714	118.7	7.3	808	134.4	9.2	900	149.7	11.3	
EM060	60	493	81.9	2.6	616	102.3	3.9	739	122.8	5.6	853	141.8	7.4	970	161.3	9.4	1090	181.3	11.8	
EM075	75	654	108.6	2.8	786	130.6	3.9	930	154.6	5.4	1065	177.0	7.0	1214	201.9	9.0	1376	228.9	11.4	
EM090	90	740	122.9	2.4	924	153.5	3.7	1120	186.1	5.4	1280	212.8	7.0	1443	240.0	8.8	1620	269.5	10.9	
EM100	100	876	145.5	2.5	1074	178.4	3.8	1270	211.1	5.2	1450	241.0	6.7	1640	272.7	8.5	1835	305.2	10.6	Single or Dual
EM125	125	1067	177.2	3.3	1296	215.3	4.8	1520	252.6	6.5	1737	288.8	8.4	1965	326.8	10.6	2200	365.9	13.2	
EM150	150	1258	208.9	2.9	1565	260.0	4.4	1870	310.8	6.1	2143	356.3	8.0	2432	404.4	10.1	2726	453.4	12.6	
EM185	185	1615	268.2	4.1	1940	322.3	5.9	2296	381.6	8.1	2586	429.9	10.2	2922	485.9	12.8	3260	542.3	15.8	
EM225	225	1890	313.9	2.5	2320	385.4	3.7	2760	458.7	5.2	3133	520.8	6.6	3552	590.7	8.4	3980	662.0	10.5	
EM300	300	2594	430.8	3.9	3138	521.3	5.7	3664	608.9	7.6	4202	698.5	9.9	4750	789.9	12.5	5310	883.3	15.5	

Catalog units presented above are designed for the listed ratings. Higher capacities may be possible with different baffle spacing's. Contact Factory.

SELECTION PROCEDURE

The capacity data table above is based on R12 with water range at 8°F and approach at 7-12°F.

Sizing—To select the direct expansion chiller you must know:

1. Capacity at maximum load in thousands of BTU/HR (MBH) [Capacity BTU/HR = GPM X RANGE X 500]
2. Water cooling range °F: inlet water temperature **minus** outlet water temperature.
3. Approach temperature °F: outlet water temperature **minus** refrigerant evaporating temperature.

The final selection may depend on the water side pressure drop (psi), at the full GPM flow rate, being within acceptable limits. See example below.

Nominal Ratings in tons refrigeration (Nom Tons) are based on:
54°F entering water minus 44°F leaving water (10° range)
35°F evaporating temperature (9° approach)
100°F entering liquid refrigerant with 7°F suction superheat
0.00005 fouling factor

Limitations

Minimum evaporating temperature .....32°F

Maximum water entering temperature .....75°F

The listed water chillers are designed for the ranges and approach temperatures in the tables. Consult factory for selections at different conditions.

DUTY
2 circuits each 8.2 T.R.
Entering water temperature: 55°F
Leaving water temperature: 43°F
Refrigerant evaporating temperature: 33°F

SELECTION
Range: (55-43) = 12°F Approach (43-33) = 10°F
Capacity 8.2 x 2 x 12000 = 196.8 MBH
From above table, select EM015 (dual); maximum capacity 200 MBH, requiring 33.2 GPM water with 4.9 PSI pressure drop: Model EM015-06072-2.

Capacity, GPM and Pressure Drop Data for 15°F Range R22

Approach °F		7			8			9			10			11			12			Max
Cat. No.	Nom Tons	MBH	GPM	PSI	MBH	GPM	PSI	MBH	GPM	PSI	MBH	GPM	PSI	MBH	GPM	PSI	MBH	GPM	PSI	No. Circuits
EM005	5	31	4.1	0.2	46	6.1	0.4	60	8.0	0.6	72	9.6	0.9	85	11.3	1.2	97	12.9	1.6	
EM010	10	58	7.7	0.4	80	10.6	0.7	113	15.0	1.4	136	18.1	2.0	163	21.7	2.8	180	24.0	3.4	
EM015	15	144	19.1	1.7	171	22.7	2.4	202	26.9	3.3	234	31.1	4.4	267	35.5	5.7	300	39.9	7.1	Single
EM020	20	194	25.8	1.4	238	31.6	2.1	277	36.8	2.8	317	42.2	3.6	359	47.8	4.6	403	53.7	5.7	
EM025	25	230	30.6	2.2	270	35.9	3.0	315	41.9	4.0	356	47.4	5.1	403	53.6	6.5	448	59.6	7.9	
EM030	30	276	36.7	2.3	326	43.3	3.2	378	50.3	4.2	429	57.1	5.4	485	64.5	6.8	538	71.6	8.3	
EM010	10	58	7.7	0.4	80	10.6	0.7	107	14.2	1.3	126	16.8	1.7	146	19.4	2.3	163	21.7	2.9	
EM015	15	128	17.0	1.3	153	20.3	1.9	178	23.7	2.5	303	27.0	3.3	230	30.6	4.2	258	34.3	5.2	
EM020	20	185	24.6	1.3	229	30.5	1.9	270	35.9	2.6	309	41.1	3.4	350	46.6	4.3	392	52.2	5.4	Dual
EM025	25	230	30.6	2.2	270	35.9	3.0	315	41.9	4.0	356	47.4	5.1	403	53.6	6.5	448	59.6	7.9	
EM030	30	270	35.9	2.2	317	42.2	3.0	367	48.8	4.0	417	55.5	5.1	472	62.8	6.5	529	70.4	8.0	
EM035	35	280	37.2	1.4	360	47.9	3.2	435	57.9	3.2	490	65.2	4.0	550	73.2	5.0	614	81.7	6.1	
EM050	50	483	64.2	2.2	567	75.4	3.1	652	86.7	4.0	741	98.6	5.1	837	111.4	6.4	932	124.1	7.9	
EM060	60	541	71.9	2.0	665	88.4	3.0	782	104.0	4.0	896	119.2	5.3	1013	134.8	6.7	1133	150.8	8.3	
EM075	75	705	93.7	2.1	832	110.6	2.9	968	128.8	3.8	1110	147.7	4.9	1263	168.1	6.3	1426	189.8	8.0	
EM090	90	810	107.7	1.9	998	132.7	2.8	1164	154.8	3.8	1332	177.2	4.9	1503	200.0	6.2	1676	223.1	7.6	
EM100	100	960	127.2	2.0	1140	151.6	2.7	1325	176.2	3.7	1513	201.3	4.7	1703	226.7	5.9	1896	252.4	7.3	Single or Dual
EM125	125	1160	154.2	2.5	1378	183.2	3.5	1597	212.4	4.6	1820	242.2	5.9	2049	272.7	7.5	2282	303.8	9.2	
EM150	150	1385	184.1	2.3	1695	225.4	3.3	1973	262.4	4.4	2258	300.4	5.7	2546	338.8	7.2	2840	378.1	8.9	
EM185	185	1752	232.9	2.1	2068	275.0	4.3	2390	317.9	5.7	2717	361.5	7.3	3053	406.3	9.1	3394	451.8	11.1	
EM225	225	2047	272.1	1.9	2459	327.0	2.7	2860	380.4	3.6	3270	435.1	4.7	3689	491.0	5.9	4115	547.8	7.3	
EM300	300	2823	375.3	3.0	3342	444.4	4.2	3869	514.6	5.5	4407	586.4	7.1	4956	659.6	8.8	5518	734.6	10.8	

Catalog units presented above are designed for the listed ratings. Higher capacities may be possible with different baffle spacing's. Contact Factory.

SELECTION PROCEDURE

The capacity data table above is based on R12 with water range at 8°F and approach at 7-12°F.

Sizing—To select the direct expansion chiller you must know:

1. Capacity at maximum load in thousands of BTU/HR (MBH) [Capacity BTU/HR = GPM X RANGE X 500]
2. Water cooling range °F: inlet water temperature **minus** outlet water temperature.
3. Approach temperature °F: outlet water temperature **minus** refrigerant evaporating temperature.

The final selection may depend on the water side pressure drop (psi), at the full GPM flow rate, being within acceptable limits. See example below.

Nominal Ratings in tons refrigeration (Nom Tons) are based on:
54°F entering water minus 44°F leaving water (10° range)
35°F evaporating temperature (9° approach)
100°F entering liquid refrigerant with 7°F suction superheat
0.00005 fouling factor

Limitations
Minimum evaporating temperature .....32°F

Maximum water entering temperature .....75°F

The listed water chillers are designed for the ranges and approach temperatures in the tables. Consult factory for selections at different conditions.

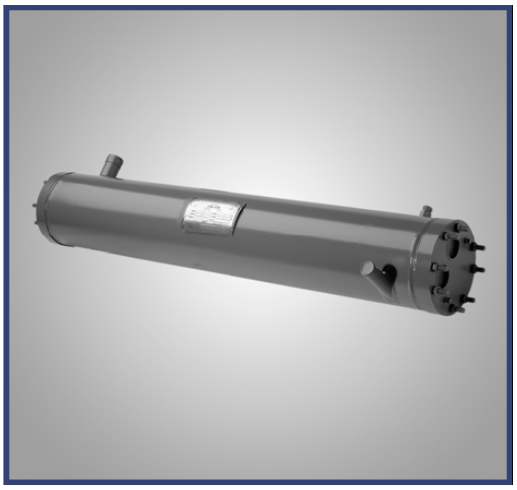
DUTY
64 GPM water
Entering water temperature: 55°F
Leaving water temperature: 40°F
Refrigerant evaporating temperature: 33°F
Single Circuit

SELECTION
Range: (55-43) = 15°F Approach (43-33) = 7°F
Capacity 64 GPM x 15° x 500 = 480 MBH
From above table, select EM050; maximum capacity 483 MBH, requiring 64.2 GPM water with 2.2 PSI pressure drop: Model EM050-10072-1.

CONDENSERS

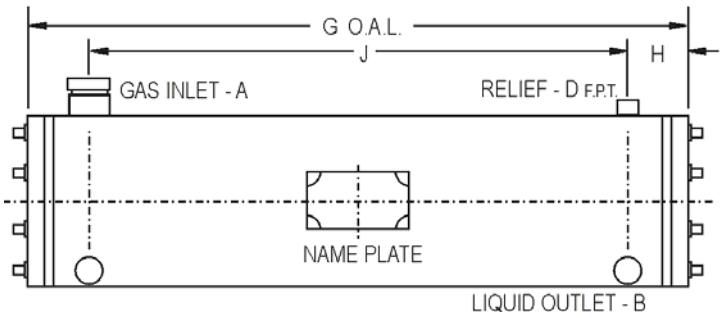
Marine Shell and Tube

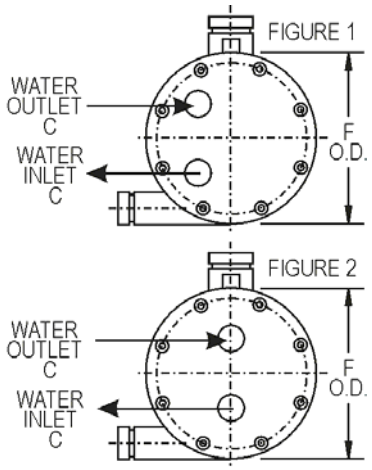
HENRY TECHNOLOGIES



Specifications:

- **Designed for seawater applications** using nonferrous materials for all waterside components
- **Incorporating spirally augmented 90/10 cupro-nickel tube surface** for maximum efficiency with highest quality. Tubes roller expanded into double grooved tube sheets
- **90/10 cupro-nickel** clad tube sheets
- **Heads to 10 inch diameter** machined from solid bronze; all heads removable for tube cleaning
- **Sizes 4 to 59 nominal tons** refrigeration
- **Working pressures**: Shell side 300 PSIG
  Shell side 125 PSIG
- **CCM Series built to order**





Catalog Number	Nom Tons	Gas Inlet	Liquid Outlet	Water In/Out		Relief Conn.	Dimensions in Inches				Pump-down Cap. Lbs	Ship Wt. Lbs.
		A	B	C (FPT)	Fig No.	D	F	G	H	J		
CCM004-06036-4	4	1 1/8	5/8	1 1/4	1	1/2	6 5/8	38 3/4	4 3/8	30	24	165
CCM006-06048-4	6	1 3/8	7/8	1 1/4	1	1/2	6 5/8	50 3/4	4 3/8	42	32	183
CCM009-08036-4	9	1 3/8	7/8	1 1/2	1	1/2	8 5/8	39 1/2	4 3/4	30	40	248
CCM013-08048-4	13	1 5/8	1 1/8	2	1	1/2	8 5/8	51 1/2	4 3/4	42	54	276
CCM016-08048-4	16	1 5/8	1 1/8	2	1	1/2	8 5/8	51 1/2	4 3/4	42	49	286
CCM020-08072-2	20	2 1/8	1 3/8	2 1/2	2	1/2	8 5/8	75 1/2	4 3/4	66	77	339
CCM025-08072-2	25	2 1/8	1 3/8	2 1/2	2	1/2	8 5/8	75 1/2	4 3/4	66	70	355
CCM032-10072-2	32	2 5/8	1 5/8	3	2	1/2	10 3/4	76 3/4	6 3/4	64	119	501
CCM040-10072-2	40	2 5/8	1 5/8	3	2	1/2	10 3/4	76 3/4	6 3/4	64	106	529
CCM047-10096-2	47	2 5/8	1 5/8	3	2	1/2	10 3/4	100 3/4	6 3/4	88	158	595
CCM059-10096-2	59	3 1/8	2 1/8	3	2	1/2	10 3/4	100 3/4	6 3/4	88	141	633

Nominal tons rated on 14,000 btu/hr at 105°F condensing temperature with water inlet 85°F and outlet 95°F.
Pump Down Capacity based on R-22 at 90°F with condenser 80% full.

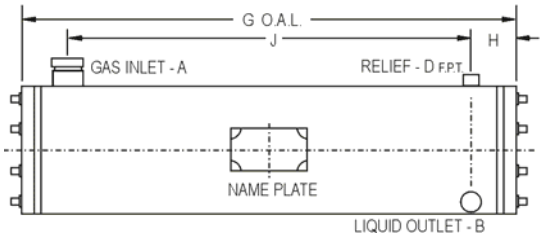
CONDENSERS

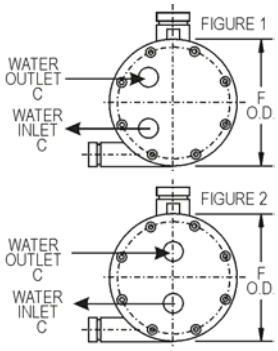
Marine Shell and Tube

HENRY TECHNOLOGIES

- **Incorporating CHIL-FLUX©** enhanced surface copper tubes for maximum heat transfer capability
- **Sizes 5 to 500** nominal tons refrigeration; **Working pressures**: Shell side 350 PSIG; Tube side 125 PSIG
- **Straight through tube** construction and **removable heads** for tube cleaning.
- **Tubes roller expanded** into double grooved tube sheets
- **Codes**: National Board of Boiler and Pressure Vessel Inspectors. Designed and manufactured in accordance with Section VIII of the ASME Code and are available with U or UM code symbol stamps.

5 TO 75 NOMINAL TONS





Nominal tons rated on 14,000 btu/hr at 105°F condensing temperature with water inlet 85°F and outlet 95°F.
Pump Down Capacity based on R-22 at 90°F with condenser 80% full.

Catalog Number	Nom Tons	Gas In A	Liq.Out B	Water In/Out C (FPT)	Water In/Out Fig No.	Relief Conn D	Dimensions in Inches F	G	H	J	Pump-down Cap. Lbs	Ship Wt. Lbs.
CC005-06036-4	5	1 1/8	5/8	1 1/4	1	1/2	6 5/8	38 3/4	4 3/8	30	24	106
CC008-06048-4	8	1 3/8	7/8	1 1/4	1	1/2	6 5/8	50 3/4	4 3/8	42	32	125
CC011-08036-4	11	1 3/8	7/8	1 1/2	1	1/2	8 5/8	39 1/2	4 3/4	30	40	176
CC017-06048-4	17	1 5/8	1 1/8	2	1	1/2	8 5/8	51 1/2	4 3/4	42	54	205
CC021-08048-4	21	1 5/8	1 3/8	2	1	1/2	8 5/8	51 1/2	4 3/4	42	49	216
CC027-08072-2	27	2 1/8	1 3/8	2 1/2	2	1/2	8 5/8	75 1/2	4 3/4	66	77	270
CC032-08072-2	32	2 1/8	1 3/8	2 1/2	2	1/2	8 5/8	75 1/2	4 3/4	66	70	290
CC040-10072-2	40	2 5/8	1 5/8	3	2	1/2	10 3/4	76 3/4	6 1/2	64	119	420
CC050-10072-2	50	2 5/8	1 5/8	3	2	1/2	10 3/4	76 3/4	6 1/2	64	106	450
CC060-10096-2	60	2 5/8	1 5/8	3	2	1/2	10 3/4	100 3/4	6 1/2	88	158	515
CC075-10096-2	75	3 1/8	2 1/8	3	2	1/2	10 3/4	100 3/4	6 1/2	88	141	555

Fluid Type: Water Refrigerant Type: R22 Fluid Inlet Temperature: 85°F Fluid Outlet Temperature: 95°F Condensing Temperature: 105°F

Standard Reference Model	Henry Equivalent	Heat Exchanged BTU/hr	Length Inches	O.D. Inches	Water In/Out Conn. In.	Refrigerant Connections Inlet	Outlet	Water Flow GPM	Water Pressure Drop, psi
HSE-5	**CC005-06024-410**	76,500	24	6.625	1 NPT	1.125 ODS	0.625 ODS	15.4	2.1
HSE-7	**CC007-06030-410**	111,000	30	6.625	1.25 NPT	1.375 ODS	0.875 ODS	22.3	4.0
HSE-10	**CC010-06030-410**	147,000	30	6.625	1.25 NPT	1.375 ODS	0.875 ODS	29.6	4.2
HSE-15	**CC015-08030-410**	222,000	30	8.625	2 NPT	1.625 ODS	1.125 ODS	44.7	1.8
HSE-20A	**CC020-08048-210**	303,000	48	8.625	2 NPT	1.625 ODS	1.125 ODS	61.0	0.9
HSE-25A	**CC025-08048-210**	346,500	48	8.625	2 NPT	2.125 ODS	1.375 ODS	69.7	0.8
HSE-30A	**CC030-10048-210**	435,000	48	10.75	2.5 NPT	2.125 ODS	1.375 ODS	87.6	0.9
HSE-40A	**CC040-10060-210**	603,000	60	10.75	3 NPT	2.125 ODS	1.375 ODS	121	1.9
HSE-50A	**CC050-10060-210**	786,000	60	10.75	3 NPT	2.625 ODS	1.625 ODS	158	1.8
HSE-60	**CC060-12060-210**	904,500	60	12.75	3 NPT	2.625 ODS	1.625 ODS	182	1.9
HSE-70	**CC070-12060-210**	1,054,500	60	12.75	4 NPT	3.125 ODS	2.125 ODS	212	1.9
HSE-80	**CC080-12060-210**	1,230,000	60	12.75	4 NPT	3.125 ODS	2.125 ODS	248	1.9
HSE-100	**CC0100-12096-110**	1,500,000	96	12.75	5 NPT	3.125 ODS	2.125 ODS	302	0.8
HSE-125	**CC0125-12096-110**	1,875,000	96	12.75	5 NPT	3.625 ODS	2.125 ODS	377	0.9

100 TO 125 NOMINAL TONS

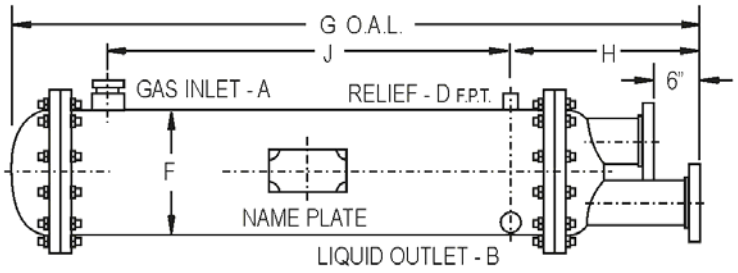
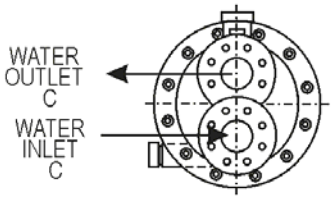


FIGURE 3



150 TO 500 NOMINAL TONS

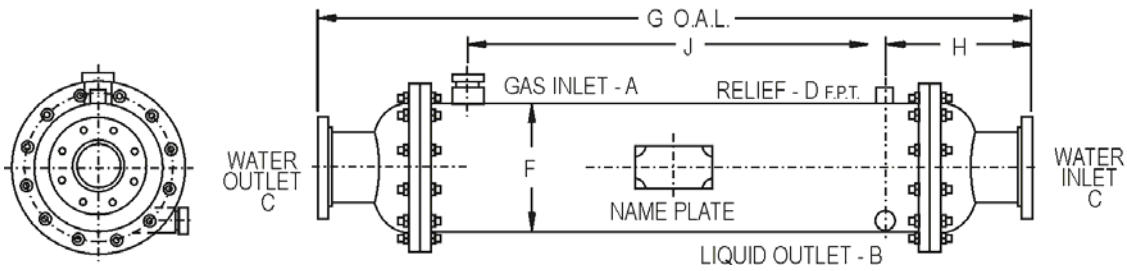
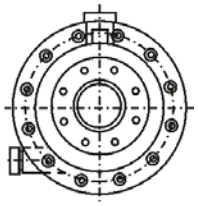


FIGURE 4

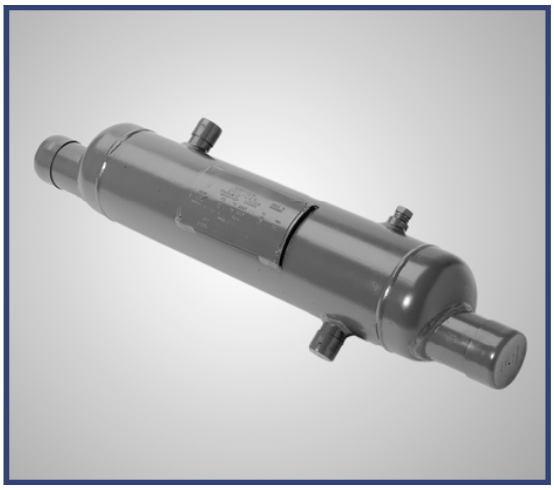


Catalog Number	Nom Tons	Gas Inlet	Liquid Outlet	Water In/Out (FPT)		Relief Conn.	Dimensions in Inches				Pump-down Cap. Lbs	Ship Wt. Lbs.
		A	B	C **	Fig No.	D	F	G	H	J		
CC100-12096-2	100	3 1/8	2 1/8	4	3	1/2	12 3/4	114	19	86	212	740
CC125-12096-2	125	3 5/8	2 5/8	4	3	1/2	12 3/4	114	19	86	185	800
CC150-12144-1	150	4 1/8	2 5/8	6	4	3/4	12 3/4	164	15 1/4	133 1/2	303	1040
CC170-12144-1	170	4 1/8	3 1/8	6	4	3/4	12 3/4	164	15 1/4	133 1/2	277	1100
CC200-14144-1	200	4 1/8	3 1/8	6	4	3/4	14	164	15 1/4	133 1/2	323	1505
CC250-16144-1	250	4 1/8	3 1/8	8	4	3/4	16	172	20 1/2	131	446	2025
CC300-16144-1	300	5 1/8	3 1/8	8	4	3/4	16	172	20 1/2	131	391	2160
CC350-18144-1	350	5 1/8	3 5/8	8	4	1	18	174 1/2	21 3/4	131	536	2560
CC400-18144-1	400	5 1/8	4 1/8	8	4	1	18	174 1/2	21 3/4	131	481	2700
CC450-20144-1	450	6 1/8	4 1/8	10	4	1	20	174 1/2	23	128 1/2	648	3120
CC500-20144-1	500	6 1/8	4 1/8	10	4	1	20	174 1/2	23	128 1/2	597	3240

Nominal tons rated on 14,000 btu/hr at 105°F condensing temperature with water inlet 85°F and outlet 95°F.
Pump Down Capacity based on R-22 at 90°F with condenser 80% full. ** Water connections are raised forced 150# ANSI flanges.
Custom units are available upon request.

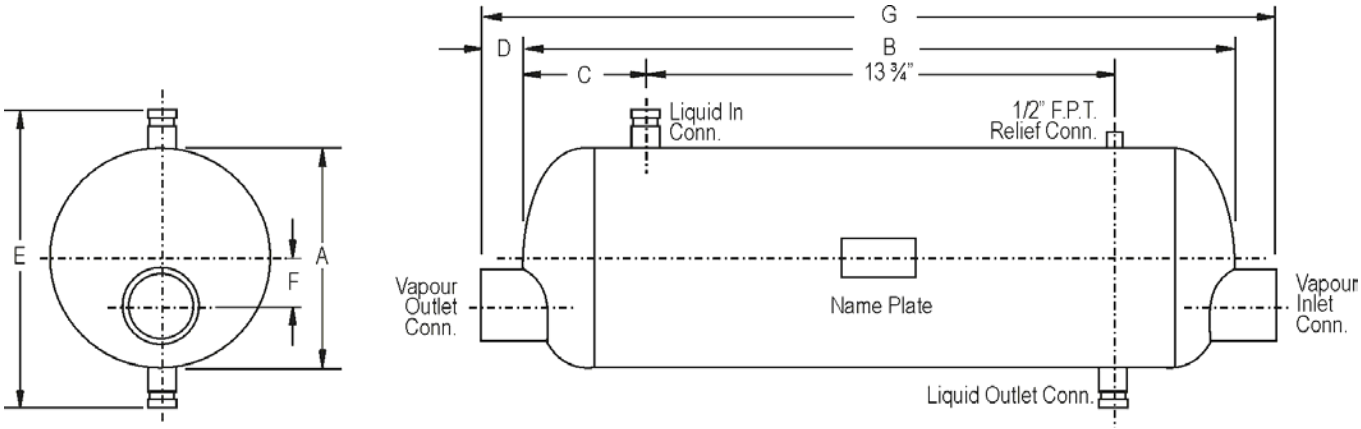
LSX EXCHANGERS

HENRY TECHNOLOGIES



Specifications:

- **Liquid/Suction Heat Exchangers** are all rated at 400 P.S.I. working pressure
- **Henry Technologies Products** are certified by the National Board of Boiler and Pressure Vessel Inspectors. All vessels are designed and manufactured in accordance with Section VIII of the ASME Code and are available with U or UM code symbol stamps



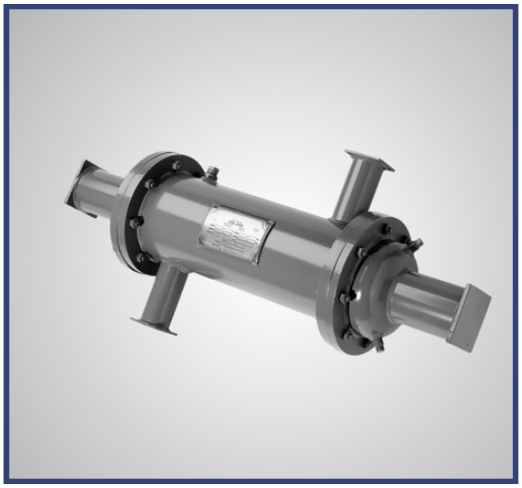
Catalog Number	Nom TR *	Max CFM	Dimensions in Inches							Vapor Conn.**	Liquid Conn.**	Ref. Charge Lbs.	Ship Wt. Lbs.
			A	B	C	D	E	F	G				
LSX 14	3.7	14	3 1/2	21 3/4	4	2 1/2	7	3/4	26 3/4	1 1/8	5/8	5	21
LSX 18	4.7	18	3 1/2	21 3/4	4	2 1/2	7	1/2	26 3/4	1 3/8	5/8	5	22
LSX 22	5.8	22	3 1/2	21 3/4	4	2 1/4	7	1/2	26 1/4	1 5/8	5/8	5	23
LSX 31	8.2	31	4 1/2	22	4 1/8	2 1/2	8 3/8	1/2	27	2 1/8	7/8	8	29
LSX 45	11.8	45	4 1/2	22	4 1/8	2 1/2	8 3/8	1/2	27	2 1/8	7/8	8	31
LSX 65	17.1	65	5 9/16	22 1/2	4 3/8	3	9 1/4	1	28 1/2	2 5/8	1 1/8	12	43
LSX 90	23.7	90	5 9/16	22 1/2	4 3/8	3	9 1/4	1	28 1/2	2 5/8	1 1/8	12	46
LSX 135	35.5	135	6 5/8	25 1/2	5 7/8	3	10	1	31 1/2	3 1/8	1 3/8	17	61
LSX 220	57.9	220	8 5/8	24 1/2	5 3/8	2 3/4	12 3/8	1 1/2	30	3 5/8	1 5/8	30	88
LSX 340	89.5	340	10 3/4	26	6 1/8	6	16	2 1/4	38	4	2 1/8	40	128
LSX 450	118	450	10 3/4	26	6 1/8	6	16	2 1/4	38	4	2 1/8	40	139
LSX 500	132	500	12 3/4	26 1/2	6 3/8	6	17 3/4	2 1/2	38 1/2	5	2 1/8	61	175
LSX 660	174	660	14	28	7 1/8	6	18 1/2	3	40	5	2 1/8	70	251

* Nominal T.R. based on R22 @ 32°F. evap. temperature, 40°F. entering gas temperature, 100°F. liquid entering temperature. LSX unit will provide 20°F. leaving gas superheat and 12°F liquid subcooling.
** Connections are ODF except 4" and 5" which are steel weld stubs.
Custom units available upon request.

SUB-FLOOR BRINE HEATERS

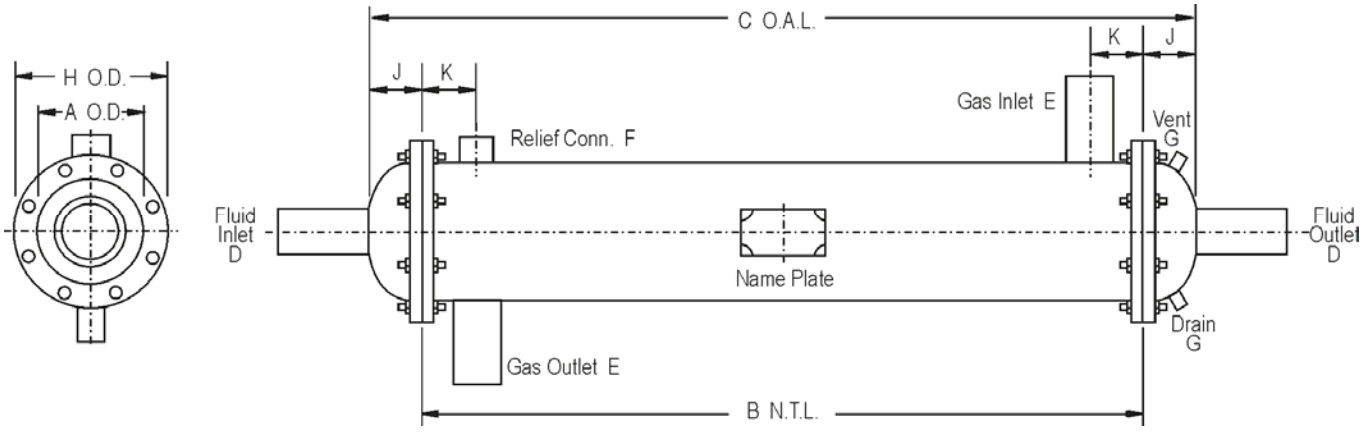
HENRY TECHNOLOGIES

Suitable for Ammonia



Specifications:

- **Straight through tube construction** with removable heads at both ends; includes gas inlet and outlet, relief connections on the shell; brine inlet and outlet; vent and drain connections on the heads
- **Construction** to Section VIII of the ASME Code and CSA B-51, B-52, and C-22.2 Codes; available with U symbol stamp (National Board approval) when required
- **Working Pressures**: Shell side is 250 P.S.I.;
  Tube side is 150 P.S.I.
- **Tubes**: 3/4 O.D. 16 gauge SA-179 seamless carbon steel
- **Seal welded tube to tube** sheet joint to eliminate failures due to thermal shock



Catalog Number	Cap. MBTU /Hr	Brine Flow GMP Max	Brine Flow GMP Min	Dimensions in Inches										Ship Wt. Lbs.
				A	B	C	D	E	F	G	H	J	K	
CBH-05024-100	66	112	42	5 9/16	24	27 1/2	2 1/2	2	3/4	3/8	9	1 3/4	3	115
CBH-05042-100	115	112	42	5 9/16	42	45 1/2	2 1/2	2	3/4	3/8	9	1 3/4	3	150
CBH-06024-100	122	208	78	6 5/8	24	31	3	2	3/4	3/8	10 1/8	3 1/2	3	145
CBH-06042-100	210	208	78	6 5/8	42	49	3	2	3/4	3/8	10 1/8	3 1/2	3	180
CBH-08024-100	198	336	126	8 5/8	24	29 1/2	4	2 1/2	3/4	3/8	12 1/8	2 3/4	4	205
CBH-08042-100	345	336	126	8 5/8	42	47 1/2	4	2 1/2	3/4	3/8	12 1/8	2 3/4	4	260

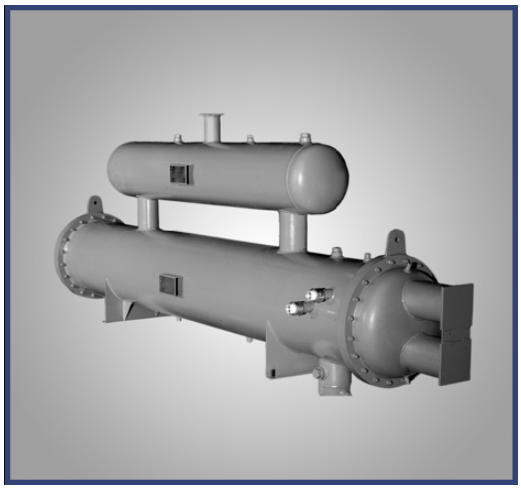
Custom units available upon request.

CHILLERS

Flooded Shell and Tube

HENRY TECHNOLOGIES

Suitable for Ammonia

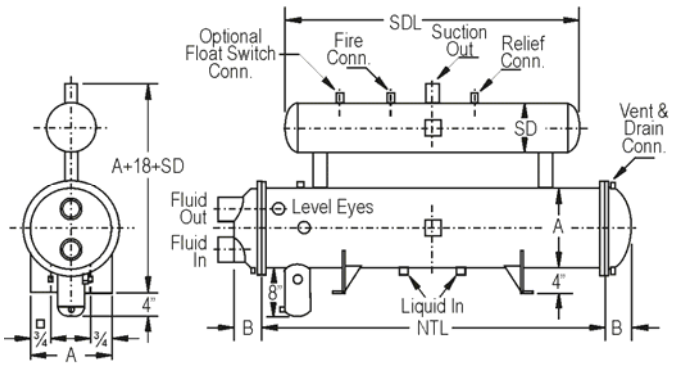


Dimensions in Inches	
"A" Nominal Dia.	"B"
8	2 3/4
10	3 1/2
12	3 3/4
14	4 3/4
16	6 1/2
18	7 3/8
20	7 1/2
24	8 1/2
30	10
36	10 1/2
42	13
48	14 1/2

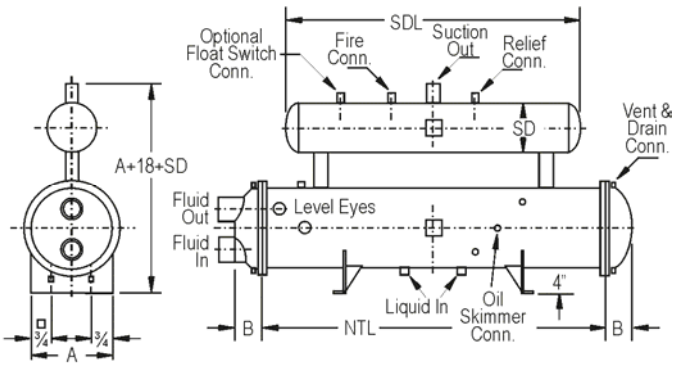
Specifications:

- **Straight-through tube construction** with removable heads at both ends; head passes with integral baffles to provide proper fluid velocity with minimum pressure drop
- **Codes**: Construction to Section VIII of the ASME Code and CSA B-51, B-52 and C-22.2 Codes; available with U symbol stamp (i.e. National Board approval) when required
- **Working Pressures**: Shell side: 250 PSI
  Tube side: 150 PSI
- **Heads**: Fabricated carbon steel with integrally welded pass divisions
- **Tubes**: 3/4" O.D. 16 gauge SA-179 seamless carbon steel
- **Tube Sheets**: Carbon steel SA 516-70 plate; tube holes are reamed and double grooved
- **Connections**: Water–3" and smaller, MPT steel pipe;
  connections 4" and larger, pipe stubs;
  Ammonia–2" and smaller, MPT; 3 and larger, pipe stubs;
  Freon–ODF as standard unless otherwise specified
- **Surge Drum**: Minimum 250 PSI working pressure, attached to liquid chiller by suction risers welded to both shells; two risers are standard; third riser supplied on larger units where required
- **Available Nominal Tube Lengths (N.T.L.)**:
  6'6", 8', 10', 12', 14', 16', 18', 20', 22', 24', 26', 28', 30'
- **Available Surge Drum Nominal Diameters (S.D.)**:
  6", 8", 10", 12", 14" 16", 20", 24", 30", 36", 42", 48"
- **All units are custom designed** according to the thermal duty and your requirements

AMMONIA UNIT



FREON UNIT



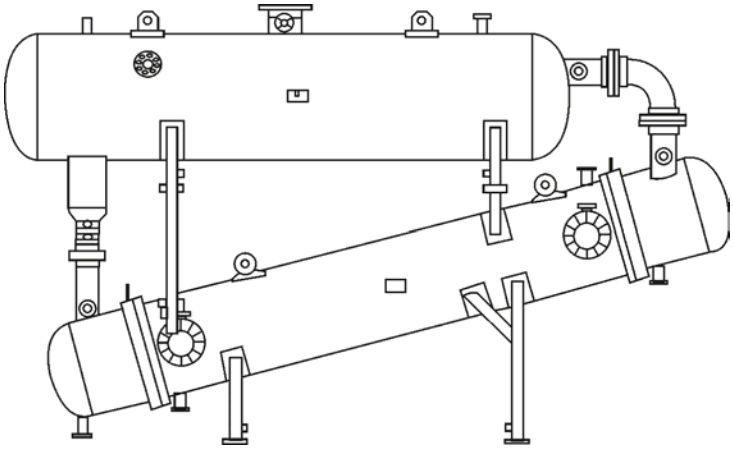
Code: SD - Surge Drum; SDL - Surge Drum Length; NTL - Nominal Tube Length

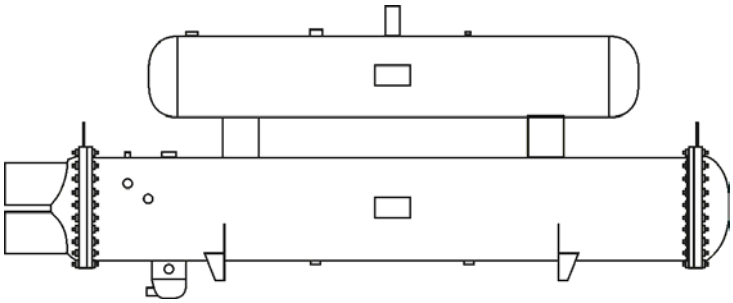
HEAT EXCHANGERS

Custom Shell and Tube

HENRY TECHNOLOGIES

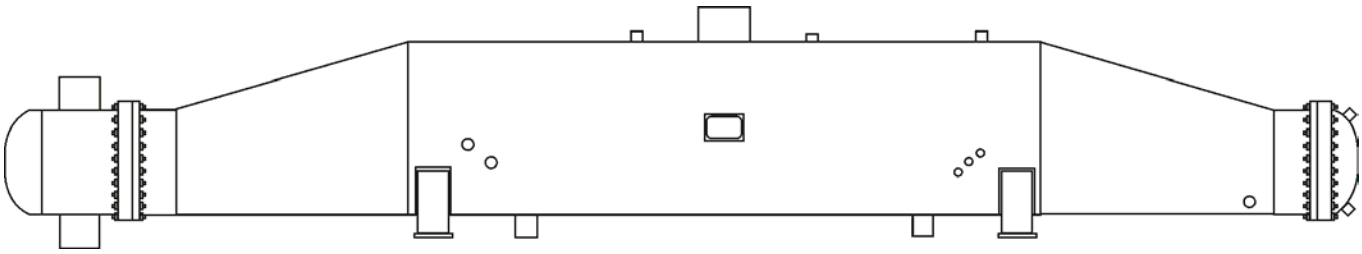
Suitable for Ammonia





Specifications:

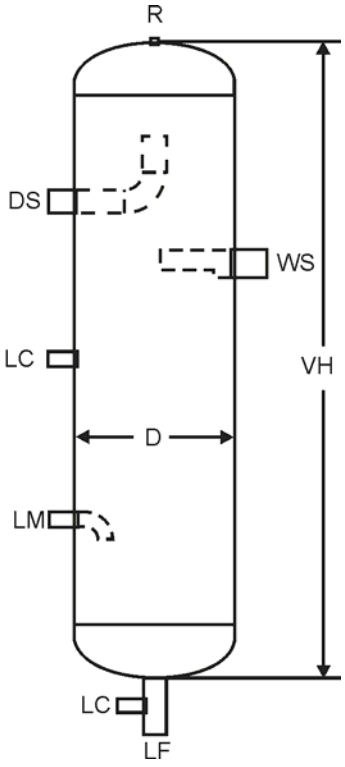
- **Straight tube or U-tube** construction with removable heads; heads designed with integral baffles to provide proper fluid velocity with minimum pressure drop
- **Codes**: Construction to Section VIII of the ASME Code, PED, TEMA C, B & R and API-660. Other International codes available
- **Working Pressures**:
  Shell side: 1000 PSI
  Tube side: 1000 PSI
- **Materials**: Carbon Steel, Stainless Steel, Titanium, Monel, Hastalloy and Cupro-Nickel
- **Heads**: TEMA Type A, B, C, S & T (Floating heads)
- **Tube Sheets**: Carbon Steel, Stainless Steel, Titanium, Monel, Hastalloy and Cupro-Nickel
- **Sizes**:
  Maximum Tube Length - 40 feet
  Maximum Overall Length - 50 feet
  Maximum Diameter - 96 inches
  Maximum Weight - 30 tons
  Maximum Height - 20 feet
- **Connections**: ANSI Weld neck or slip-on flanges, FPT or MPT threaded, ODS, Socket Weld or pipe stubs
- **Pressure Testing**: Pneumatically tested to ensure cleanliness & dryness
- **Inspection**: Radiographic, Ultrasonic, Mag Particle & Dye Penetrant
- **Units** are custom designed according to your thermal duty and your requirements



VERTICAL SURGE DRUM

HENRY TECHNOLOGIES

Suitable for Ammonia



Features:

- **Vertical Surge Drums** are designed to fit new and existing installations
- **250 PSI** Standard design pressure for Ammonia
- **C02, Halocarbon, Propane** and high-pressure models available
- **Carbon steel shell** standard stainless steel optional
- **Connections** for relief, level column, liquid make-up, wet & dry suctions and liquid feed included
- **Pneumatic** pressure testing to reduce moisture contamination
- **Valve packages** available boxed or installed

Dimensions in Inches								
Catalog Number	Vessel Dia. D	Vessel Height VH	Liquid Feed LF	Wet Suction WS	Dry Suction DS	Level Column LC	Relief R	Liquid Make-up LM
HUS-12	12.75	60	3	3	2 1/2	1 1/4	1/2	3/4
HUS-16	16	66	4	4	3	1 1/4	1/2	1
HUS-20	20	72	4	5	4	1 1/4	1/2	1
HUS-24	24	72	4	5	4	1 1/4	1/2	1 1/4
HUS-30	30	78	5	6	5	1 1/4	1/2	1 1/2
HUS-36	36	84	6	8	6	1 1/4	1/2	1 1/2
HUS-42	42	90	8	10	8	1 1/4	1/2	2
HUS-48	48	102	8	10	8	1 1/4	1/2	2

Please contact factory for "Certified Dimensions".

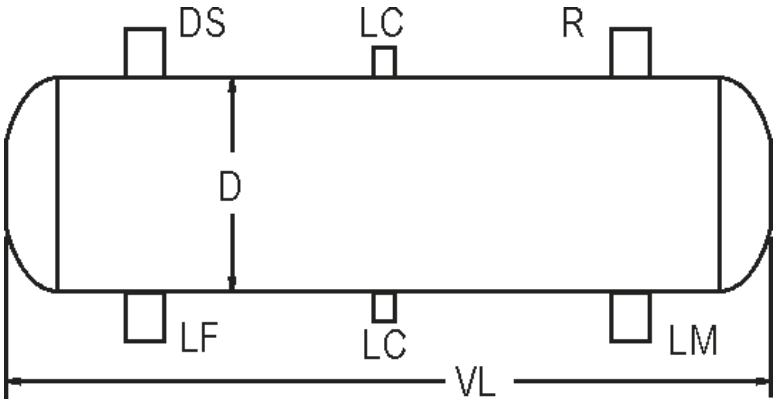
Catalog Number	Surge Volume Cu. Fl.	CAPACITY (TR) FOR AMMONIA REFRIGERANT (R-717)										
		SINGLE STAGE						TWO STAGE				
		40°F	30°F	20°F	10°F	0°F	-10°F	-10°F	-20°F	-30°F	-40°F	-50°F
HVS-12	1.3	43.2	39.2	35.4	31.8	28.4	25.2	29.5	26.0	22.7	19.8	17.1
HVS-16	2.6	69.8	63.4	57.2	51.4	45.9	40.7	47.4	42.0	36.8	32.0	27.6
HVS-20	4.4	111.3	101.0	91.2	81.9	73.1	64.9	76.1	67.1	58.8	51.0	44.0
HVS-24	6.4	162.4	147.4	133.1	119.5	106.7	94.7	111.0	98.0	85.9	74.8	64.7
HVS-30	11.2	257.0	233.4	210.7	189.2	168.9	149.9	175.7	155.1	136.0	118.4	102.4
HVS-36	17.7	391.2	355.2	320.7	288.0	257.1	228.1	255.2	225.2	197.5	172.0	148.7
HVS-42	26.2	529.2	480.5	433.9	389.6	347.8	308.6	345.3	304.7	267.2	232.7	201.2
HVS-48	41.3	695.5	631.4	570.2	512.0	457.1	405.6	453.7	400.5	351.2	305.8	264.5

Capacities based on liquid ammonia make-up feed temperatures of 95°F for single stage and 25°F for two stage.
Surge Volume is based on an Operating Level at lower head to shell seam, with the High Level a minimum of 6" below the Wet Suction Nozzle.

HORIZONTAL SURGE DRUM

HENRY TECHNOLOGIES

Suitable for Ammonia



Features:

- **Horizontal Surge Drums** are designed to fit new and existing installations
- **250 PSI** Standard design pressure for Ammonia
- **C02, Halocarbon, Propane** and high-pressure models available
- **Carbon steel shell** standard stainless steel optional
- **Connections** for relief, level column, liquid make-up, wet & dry suctions and liquid feed included
- **Pneumatic** pressure testing to reduce moisture contamination
- **Valve** packages available boxed or installed

Catalog Number	Dimensions in Inches							
	Vessel Dia. D	Vessel Height VL	Liquid Feed LF	Wet Suction WS	Dry Suction DS	Level Column LC	Relief R	Liquid Make-up LM
HHS-12	12	48	2 1/2	3	2	1 1/4	1/2	3/4
HHS-16	16	60	3	4	2 1/2	1 1/4	1/2	3/4
HHS-20	20	72	3	4	3	1 1/4	1/2	1
HHS-24	24	84	4	5	4	1 1/4	1/2	1
HHS-30	30	96	4	5	4	1 1/4	1/2	1 1/4
HHS-36	36	108	5	6	5	1 1/4	1/2	1 1/4
HHS-42	42	108	6	8	6	1 1/4	1/2	1 1/2
HHS-48	48	120	6	8	6	1 1/4	1/2	2

Please contact factory for "Certified Dimensions".

Catalog Number	Surge Volume Cu. Fl.	CAPACITY (TR) FOR AMMONIA REFRIGERANT (R-717)										
		SINGLE STAGE						TWO STAGE				
		40°F	30°F	20°F	10°F	0°F	-10°F	-10°F	-20°F	-30°F	-40°F	-50°F
HHS-12	1.3	24.4	22.1	20.0	17.9	16.0	14.2	16.6	14.7	12.9	11.2	9.7
HHS-16	2.7	38.5	35.0	31.6	28.4	25.3	22.5	26.4	23.2	20.4	17.7	15.3
HHS-20	5.2	62.7	56.9	51.4	46.1	41.2	36.5	43.0	37.9	33.2	28.9	25.0
HHS-24	8.8	91.4	83.0	74.9	67.3	60.1	53.3	62.4	55.2	48.4	42.1	36.4
HHS-30	16.1	144.7	131.4	118.6	106.5	95.1	84.4	98.9	87.2	76.5	66.6	57.6
HHS-36	26.4	210.2	190.8	172.3	154.7	138.1	122.5	143.8	126.6	111.3	96.9	83.8
HHS-42	36.9	277.7	252.0	227.6	204.5	182.5	161.9	190.0	167.7	147.0	128.0	110.6
HHS-48	53.8	366.0	332.3	300.0	269.5	240.5	213.4	250.2	220.8	193.6	168.6	146.0

Capacities based on liquid ammonia make-up feed temperatures of 95°F for single stage and 25°F for two stage.
Surge Volume is based on an Operating Level at lower head to shell seam, with the High Level a minimum of 6" below the Wet Suction Nozzle.

LIQUID RECEIVERS

Industrial, Horizontal

HENRY TECHNOLOGIES

Suitable for Ammonia

Features:

- **250 PSI**: Design pressure for Ammonia
- **CO2, Halocarbon, Propane** and high-pressure models available
- **Carbon steel shell** standard stainless-steel optional
- **Heavy-duty saddles**
- **Connections** for relief, level column, drain & equalizer included
- **Pneumatic pressure testing** to reduce moisture contamination
- **Valve packages available**

Pump down capacity is based on receiver 85% full of liquid ammonia at 90°F.

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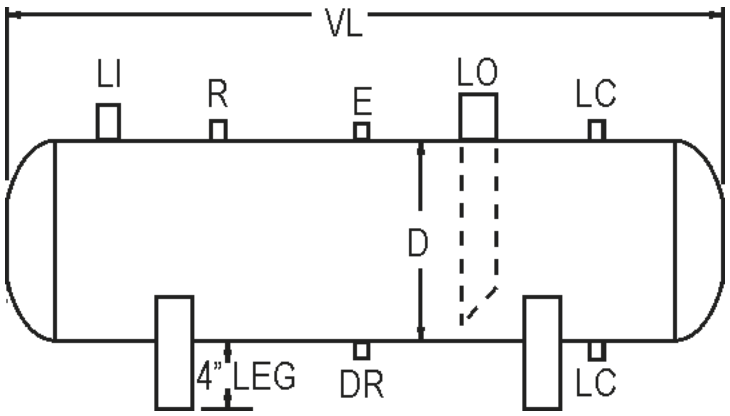

Catalog Number	Dimensions in Inches								Total Volume CU. FT.	Pump Down Cap Lbs. NH3*
	Vessel Dia. (D)	Vessel Length (VL)	Liquid Inlet (LI)	Liquid Outlet (LO)	Equalizer (E)	Relief (R)	Level Column (LC)	Drain (DR)		
HRA-16107	16	107	1 1/2	1	3/4	1/2	1 1/4	3/4	11.0	344
HRA-16131	16	131	1 1/2	1	3/4	1/2	1 1/4	3/4	12.3	387
HRA-16192	16	192	1 1/2	1	3/4	1/2	1 1/4	3/4	21.1	662
HRA-18108	18	108	2	1 1/4	3/4	1/2	1 1/4	3/4	14.1	443
HRA-18132	18	132	2	1 1/4	3/4	1/2	1 1/4	3/4	17.4	545
HRA-18204	18	204	2	1 1/4	3/4	1/2	1 1/4	3/4	27.1	850
HRA-20109	20	109	2	1 1/4	3/4	1/2	1 1/4	3/4	17.7	555
HRA-20133	20	133	2	1 1/4	3/4	1/2	1 1/4	3/4	21.7	682
HRA-20205	20	205	2	1 1/4	3/4	1/2	1 1/4	3/4	33.8	1063
HRA-24111	24	111	2 1/2	1 1/2	3/4	1/2	1 1/4	3/4	26.1	819
HRA-24135	24	135	2 1/2	1 1/2	3/4	1/2	1 1/4	3/4	32.0	1004
HRA-24207	24	207	2 1/2	1 1/2	3/4	1/2	1 1/4	3/4	49.7	1560
HRA-30114	30	114	2 1/2	1 1/2	3/4	1/2	1 1/4	3/4	42.1	1322
HRA-30138	30	138	2 1/2	1 1/2	3/4	1/2	1 1/4	3/4	51.4	1615
HRA-30210	30	210	2 1/2	1 1/2	3/4	1/2	1 1/4	3/4	79.4	2493
HRA-36117	36	117	3	2	1	1/2	1 1/4	3/4	62.0	1947
HRA-36141	36	141	3	2	1	1/2	1 1/4	3/4	75.6	2373
HRA-36213	36	213	3	2	1	1/2	1 1/4	3/4	116.2	3649
HRA-42120	42	120	4	2 1/2	1 1/4	1/2	1 1/4	1	86.9	2727
HRA-42144	42	144	4	2 1/2	1 1/4	1/2	1 1/4	1	105.4	3310
HRA-42216	42	216	4	2 1/2	1 1/4	1/2	1 1/4	1	161.1	5057
HRA-48123	48	123	4	2 1/2	1 1/4	1/2	1 1/4	1	115.0	3610
HRA-48147	48	147	4	2 1/2	1 1/4	1/2	1 1/4	1	139.1	4367
HRA-48219	48	219	4	2 1/2	1 1/4	1/2	1 1/4	1	211.3	6635

LIQUID RECEIVERS

Industrial, Horizontal

HENRY TECHNOLOGIES

Suitable for Ammonia

Features:

- **250 PSI**: Design pressure for Ammonia
- **CO2, Halocarbon, Propane** and high-pressure models available
- **Carbon steel shell** standard stainless-steel optional
- **Heavy-duty saddles**
- **Connections** for relief, level column, drain & equalizer included
- **Pneumatic pressure testing** to reduce moisture contamination
- **Valve packages available**

Pump down capacity is based on receiver 85% full of liquid ammonia at 90°F.

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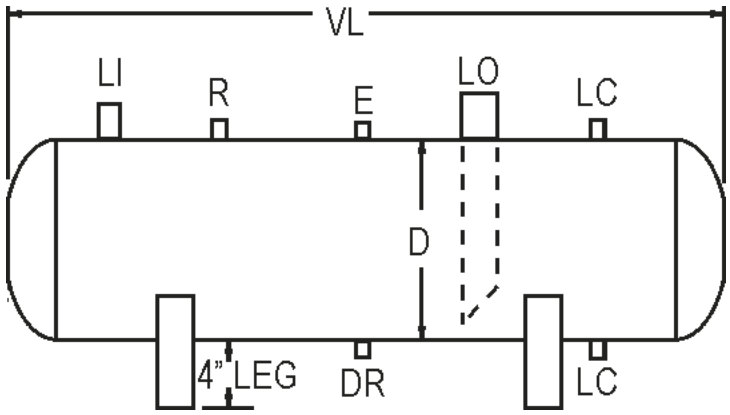
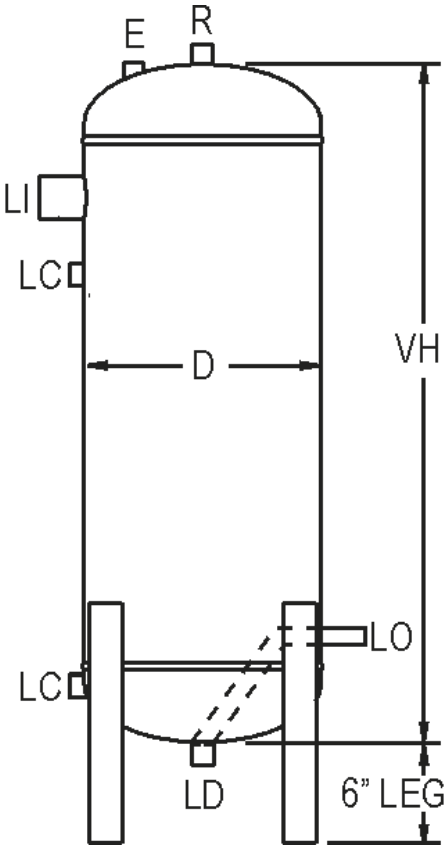


Catalog Number	Dimensions in Inches								Total Volume CU. FT.	Pump Down Cap Lbs. NH3*
	Vessel Dia. (D)	Vessel Length (VL)	Liquid Inlet (LI)	Liquid Outlet (LO)	Equalizer (E)	Relief (R)	Level Column (LC)	Drain (DR)		
HRA-54150	54	150	5	2 1/2	1 1/2	3/4	1 1/4	1	179.2	5626
HRA-54222	54	222	5	2 1/2	1 1/2	3/4	1 1/4	1	271.1	8511
HRA-54246	54	246	5	2 1/2	1 1/2	3/4	1 1/4	1	301.7	9473
HRA-60153	60	153	6	3	1 1/2	3/4	1 1/4	1	225.3	7074
HRA-60225	60	225	6	3	1 1/2	3/4	1 1/4	1	339.1	10649
HRA-60249	60	249	6	3	1 1/2	3/4	1 1/4	1	377.1	11840
HRA-60273	60	273	6	3	1 1/2	1	1 1/4	1	415.0	13032
HRA-72159	72	159	8	3	2	1	1 1/4	1	333.5	10472
HRA-72231	72	231	8	3	2	1	1 1/4	1	497.2	15613
HRA-72255	72	255	8	3	2	1	1 1/4	1	551.8	17326
HRA-72279	72	279	8	3	2	1	1 1/4	1	606.4	19040
HRA-84165	84	165	8	4	2	1	1 1/4	1	454.7	14278
HRA-84237	84	237	8	4	2	1	1 1/4	1	677.3	21266
HRA-84261	84	261	8	4	2 1/2	1	1 1/4	1	751.5	23596
HRA-84285	84	285	8	4	2 1/2	1 1/4	1 1/4	1	825.7	25926
HRA-96171	96	171	10	4	2 1/2	1	1 1/4	1	607.7	19080
HRA-96243	96	243	10	4	2 1/2	1	1 1/4	1	896.7	28154
HRA-96267	96	267	10	4	2 1/2	1 1/4	1 1/4	1	993.0	31179
HRA-96291	96	291	10	4	2 1/2	1 1/4	1 1/4	1	1089.3	34204

VERTICAL RECEIVERS

HENRY TECHNOLOGIES

Suitable for Ammonia



Features:

- **250 PSI**: Standard design pressure for Ammonia
- **CO2, Halocarbon, Propane** and high pressure models available
- **Carbon steel shell** standard stainless steel optional
- **Heavy-duty legs**
- **Connections** for relief, level column, drain & equalizer included
- **Pneumatic pressure testing** to reduce moisture contamination
- **Valve packages** available boxed or installed

U

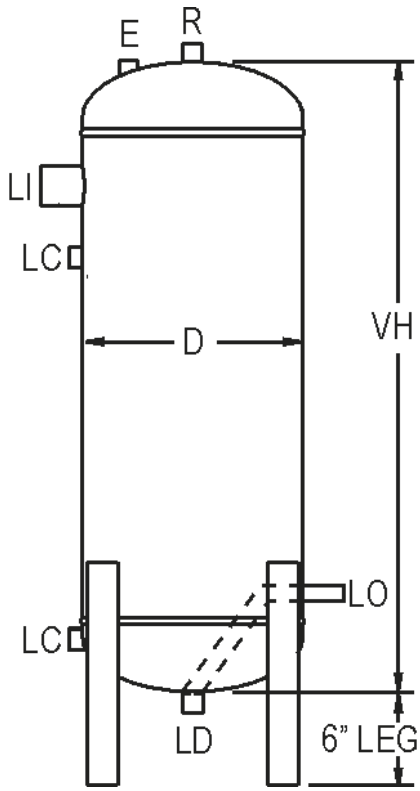
Catalog Number	Dimensions in Inches								Total Volume	Pump Down Capacity
	Vessel Diameter D	Vessel Height VH	Liquid Inlet LI	Liquid Outlet LO	Equalizer E	Relief R	Level Column LC	Drain DR	CU. FT.	Lbs. NH3*
VRA-24111	24	111	2 1/2	1 1/2	3/4	1/2	1 1/4	3/4	26.1	819
VRA-24135	24	135	2 1/2	1 1/2	3/4	1/2	1 1/4	3/4	32.0	1004
VRA-24207	24	207	2 1/2	1 1/2	3/4	1/2	1 1/4	3/4	49.7	1560
VRA-30114	30	114	2 1/2	1 1/2	3/4	1/2	1 1/4	3/4	42.1	1322
VRA-30138	30	138	2 1/2	1 1/2	3/4	1/2	1 1/4	3/4	51.4	1615
VRA-30210	30	210	2 1/2	1 1/2	3/4	1/2	1 1/4	3/4	79.4	2493
VRA-36117	36	117	3	2	1	1/2	1 1/4	3/4	62.0	1947
VRA-36141	36	141	3	2	1	1/2	1 1/4	3/4	75.6	2373
VRA-36213	36	213	3	2	1	1/2	1 1/4	3/4	116.2	3649
VRA-42120	42	120	4	2 1/2	1 1/4	1/2	1 1/4	1	86.9	2727
VRA-42144	42	144	4	2 1/2	1 1/4	1/2	1 1/4	1	105.4	3310
VRA-42216	42	216	4	2 1/2	1 1/4	1/2	1 1/4	1	161.1	5057
VRA-48123	48	123	4	2 1/2	1 1/4	1/2	1 1/4	1	115.0	3610
VRA-48147	48	147	4	2 1/2	1 1/4	1/2	1 1/4	1	139.1	4367
VRA-48219	48	219	4	2 1/2	1 1/4	1/2	1 1/4	1	211.3	6635

* Pump down capacity is based on receiver 85% full of liquid ammonia at 90°F

VERTICAL RECEIVERS

HENRY TECHNOLOGIES

Suitable for Ammonia



Features:

- **250 PSI**: Standard design pressure for Ammonia
- **CO2, Halocarbon, Propane** and high pressure models available
- **Carbon steel shell** standard stainless steel optional
- **Heavy-duty legs**
- **Connections** for relief, level column, drain & equalizer included
- **Pneumatic pressure testing** to reduce moisture contamination
- **Valve packages** available boxed or installed

U

Catalog Number	Dimensions in Inches								Total Volume	Pump Down Capacity
	Vessel Diameter	Vessel Height	Liquid Inlet	Liquid Outlet	Equalizer	Relief	Level Column	Drain		
	D	VH	LI	LO	E	R	LC	DR	CU. FT.	Lbs. NH3*
VRA-54150	54	150	5	2 1/2	1 1/2	3/4	1 1/4	1	179.2	5626
VRA-54222	54	222	5	2 1/2	1 1/2	3/4	1 1/4	1	271.1	6511
VRA-54246	54	246	5	2 1/2	1 1/2	3/4	1 1/4	1	301.7	9473
VRA-60153	60	153	6	3	1 1/2	3/4	1 1/4	1	225.3	7074
VRA-50225	60	225	6	3	1 1/2	3/4	1 1/4	1	339.1	10649
VRA-60249	60	249	6	3	1 1/2	3/4	1 1/4	1	377.1	11840
VRA-60273	60	273	6	3	1 1/2	1	1 1/4	1	415.0	13032
VRA-72159	72	159	8	3	2	1	1 1/4	1	333.5	10472
VRA-72231	72	231	8	3	2	1	1 1/4	1	497.2	15613
VRA-72255	72	255	8	3	2	1	1 1/4	1	551.8	17326
VRA-72279	72	279	8	3	2	1	1 1/4	1	606.4	19040
VRA-64165	84	165	8	4	2	1	1 1/4	1	454.7	14276
VRA-84237	84	237	8	4	2	1	1 1/4	1	677.3	21266
VRA-84261	84	261	8	4	2 1/2	1	1 1/4	1	751.5	23596
VRA-84285	84	285	8	4	2 1/2	1 1/4	1 1/4	1	825.7	25926
VRA-96171	96	171	10	4	2 1/2	1	1 1/4	1	6.7.7	19080
VRA-96243	96	243	10	4	2 1/2	1	1 1/4	1	896.7	28154
VRA-96267	96	267	10	4	2 1/2	1 1/4	1 1/4	1	993.0	31179
VRA-96291	96	291	10	4	2 1/2	1 1/4	1 1/4	1	1089.3	34204

* Pump down capacity is based on receiver 85% full of liquid ammonia at 90°F

THERMOSYPHON

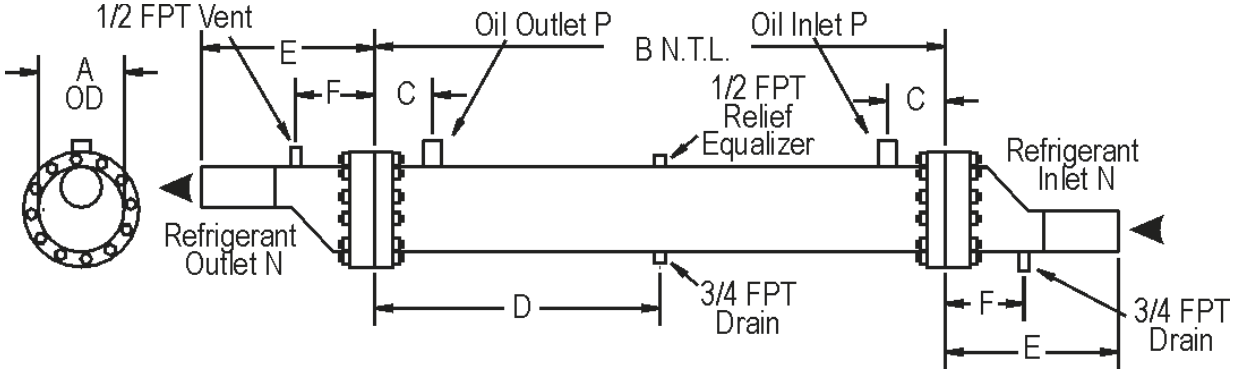
Oil Coolers

HENRY TECHNOLOGIES

Suitable for Ammonia

Features:

- **TSOC** oil coolers are available in 9 sizes
- **From 7 to 150** nominal tons refrigeration
- **Suitable for Ammonia or R-22**
- **Straight through tube** construction
- **Tubes roller expanded** into double grooved tube sheets
- **Single pass** for minimum pressure drop
- **Enhanced tubes**
- **Working pressures**: 400 PSIG Shell side (oil)
  300 PSIG Tube side (refrigerant)
- **Codes**: Certified by the National Board of Boiler and Pressure Vessel Inspectors. All vessels are designed and manufactured in accordance with Section VIII of the ASME Code and are available with U or UM code symbol stamps.



Catalog Number	Nominal Ton	Dimensions in Inches						Inlet M	Outlet N	Oil In/ Out P	Wt. Lbs.
		A	B	C	D	E	F				
TS0C-007-04060	7	4 1/2	60	2 1/8	30	12	2 3/4	1 1/2	1 1/2	1	150
TS0C-014-05060	14	5 9/16	60	2 3/4	30	12	3 3/4	1 1/2	2	1 1/4	192
TS0C-026-05084	26	5 9/16	84	3 1/4	42	12	3 3/4	2	2 1/2	1 1/2	239
TS0C-037-06084	37	6 5/8	84	3 1/2	42	12	4 1/4	2 1/2	3	2	319
TS0C-051-06108	51	6 5/8	108	2 5/8	54	12	4 1/4	3	4	2	381
TS0C-067-08084	67	8 5/8	84	3 7/8	42	12	5	3	4	2 1/2	556
TS0C-093-08108	93	8 5/8	108	5 7/8	54	12	5	4	5	2 1/2	655
TS0C-118-10084	110	10 3/4	84	4 7/8	42	12	5 3/4	4	5	3	893
TS0C-150-10108	150	10 3/4	108	4 7/8	54	12	5 3/4	5	6	3	1061

* Up to 3" I.P.S. MPT – 3½" to 6" I.P.S. Pipe Stubs Nominal Tr=12,000 BTU/hr heat rejection when cooling Custom units available upon request.

CHECK VALVES

MAGNI-CHEK™

HENRY TECHNOLOGIES

Features:

- Designed for maximum flow and minimal pressure drop
- Safe working pressure in access of 4,200 kpa (R-410a compatible) to 1-3/8" **MS-22**
- Multi-orientation while maintaining flow direction
- 30 mesh strainer
- Temperature working range –40°F to 302°F (–40°C to 150°C)
- Negligible loss in system efficiency
- Compatible with all fluorinated refrigerants and oils.
- Can be installed in any orientation
- Use in Discharge lines to prevent flow from the condenser to the compressor during the "off" cycle, or to prevent flow from an operating compressor to one that is idle.
- Use in Liquid lines to prevent reverse flow through the unused expansion device on heat pump systems, or to prevent backup into the low pressure liquid line of a recirculating system during a defrost period.

Catalog Number	Description	SWP	Kv m3/Hr	Connection Size	Valve Length	Valve Diameter
***F6306**	MS-4	5,500	0.47	1/4"	4"	7/8"
***F6307**	MS-6	5,500	0.99	3/8"	4"	7/8"
***F6308**	MS-8	5,200	2.67	1/2"	5"	1 1/8"
***F6309**	MS-10	5,200	2.98	5/8"	5"	1 1/8"
***F6310**	MS-12	4,100	5.56	3/4"	7"	1 5/8"
***F6311**	MS-14	4,100	7.58	7/8"	7"	1 5/8"
F6312	MS-18	4,100	13.19	1 1/8"	8 3/8"	2 1/8"
F6313	MS-22	4,000	16.26	1 3/8"	9 3/8"	2 5/8"
F6314	MS-26	3,000	27.78	1 5/8"	10 1/2"	3 1/8"
F6315	MS-34	3,200	48.27	2 1/8"	12"	3 5/8"
F6316	MS-42	3,000	64.76	2 5/8"	13"	4 1/8"

	Capacity						Cross Reference		
	Suction Kw			Liquid Kw					
Description	R-22	R-134A	R-404A	R-22	R-134A	R-404A	Henry	Emerson	Superior
MS-4	1.1	0.8	0.9	9.5	8.8	6.8	MS-4	AKC-4	900M-4S
MS-6	2.2	1.6	2.0	19.9	18.3	14.2	MS-6	AKC-6	900M-6S
MS-8	6.0	4.4	5.3	53.8	49.4	38.2	MS-8	AKC-8	900M-8S
MS-10	6.7	4.9	5.9	60	55.1	42.6	MS-10	AKC-10	900M-10S
MS-12	12.5	9.2	11	112.2	103.1	79.7	MS-12	AKC-12	900M-12S
MS-14	17	12.5	15	152.8	140.4	108.5	MS-14	AKC-14	900M-14S
MS-18	29.6	21.7	26.1	265.9	244.3	188.8	MS-18	AKC-18	N/A
MS-22	36.5	26.8	32.2	327.9	301.3	232.5	MS-22	AKC-22	N/A
MS-26	62.3	45.8	54.9	560.1	514.6	397.7	MS-26	AKC-26	N/A
MS-34	108.2	79.5	95.5	973.3	894.3	691.1	MS-34	AKC-34	N/A
MS-42	145.2	106.7	128.1	1,305.9	1,200	927.3	MS-42	AKC-42	N/A

The rated liquid and suction capacities are based on an evaporating temperature.
te = -10°C, liquid temp. ahead of the valve e ti = +25°C and a pressure drop across the valve. p = 15 kPa(2.18 psi)

Magni-Chek™ Check Valve & Muffler

Our Copper-Spun Check Valve/Muffler is designed to make the Bristol Bench-mark Compressor compliant to a SEER 13 rating.

Catalog Number	Product Type	O.D. Tube Size	Valve Diameter	Lay-In Length
F7676	MSM-11	1/2”	1-5/8”	7-7/8”

Solid Brass Magni-Chek™ Check Valves

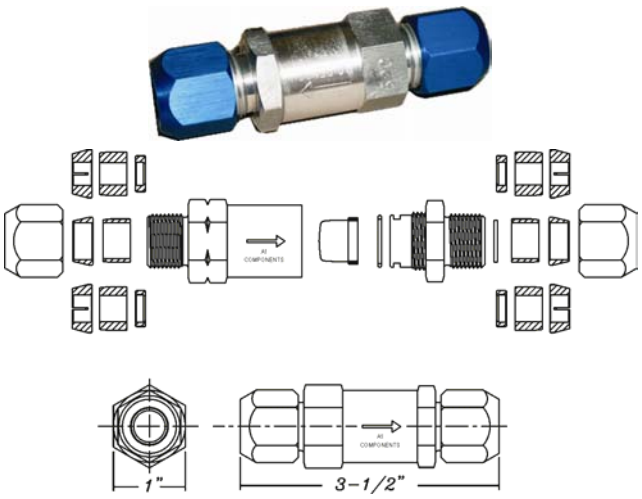
- **Leak Proof** Magnetic Checking Actions—No spring or ball to wear out
- **Mount in any position**
- **Body** is manufactured from solid brass
- **Available** in Flare, Solder or Both
- **The Choice of More OEM Manufacturers** than any other valve.

Catalog Number	Product Type	Body Size	Tube Input Size	Valve Seat Diameter	Valve Seat IN²	Opening Pressure PSI	Weight lbs
F6317	MTS-4	1” Hex	1/4”	.462”	.168”	1	.27
F6318	MTS-6	1” Hex	3/8”	.462”	.168”	1	.30
F6319	MTS-8	1” Hex	1/2”	.462”	.168”	1	.34

Universal Automotive In-Line Filter Kit

A Low Cost and Unique Method To Insure Automotive Air Conditioning System Repair Reliability.

- **Kit Includes** Anodized Aluminum Main Filter Housing.
- **Fits 5/16 , 3/8 and 1/2 Inch** Tube
- **Captures and retains damaging debris** in the A/C system
- **Cutting or re-coupling of A/C Hose not Required**



Catalog No.	Product Type	Description
F7481	AF Filter	In-Line Filter

SIGHT GLASS

Moisture Indicator: Allin Liquid Eye™

HENRY TECHNOLOGIES

For Quick Indication of Refrigerant and Moisture In A System
Features

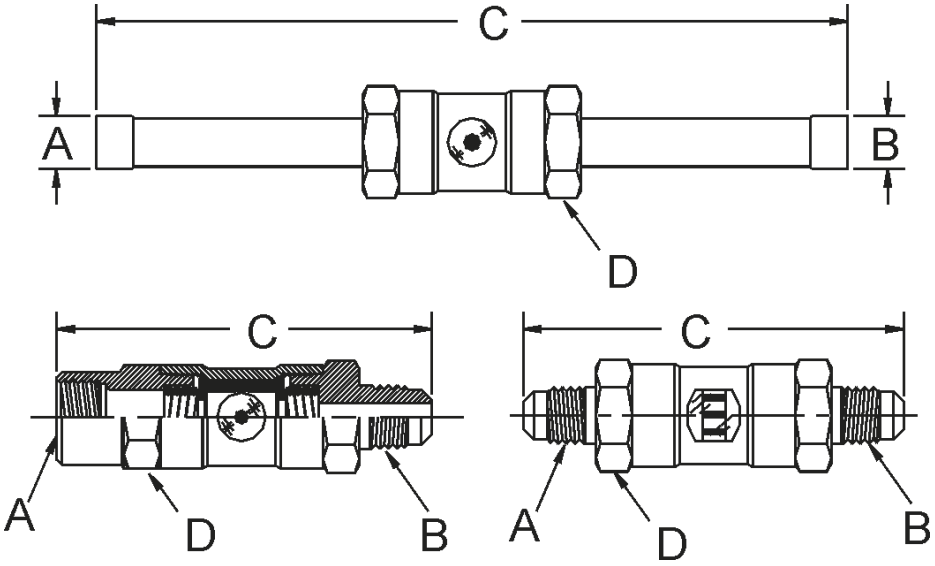
- **Solid Brass Body**
- **Shock Resistant Glass**
- **Available In Flare or Solder (Extended Ends)**
- **Color Bar Designed for HFC Refrigerants**
- **Max Working Pressure 302 psi**
- **Max Temp. 500°F**
- **Made in the USA**


SG-115


SG-209

The **Allin Liquid Eye** has a unique "See-Thru" feature that's more readable than other sight glasses. The dot on the tube is magnified when the tube is full of refrigerant to give a quick, easy indication.

The **Allin Moisture Reactor** is easier to read in minimum light. It provides a quick indication of refrigerant in the tube. as well as the pressure of moisture. When moisture is present, the color bars on the band within the tube change color. A few hours after installation, the reactor will stabilize alternating green and yellow bands to indicate moisture. All green bands indicates no moisture.

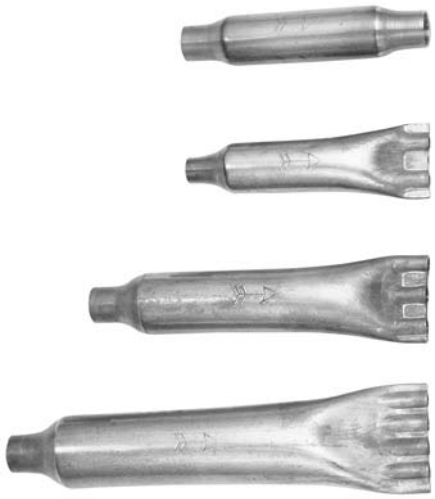


Catalog Number - Sight Glass Type		Catalog Number - Moisture Indicator Type		Hex Size D	Size Connection A	Size Connection B	Length C
F5904	SG114	**F5924**	SG114R	3/4”	1/4” Male Flare	1/4” Female Flare	3 1/16”
F5905	SG115	**F5925**	SG115R	3/4”	3/8” Male Flare	3/8” Female Flare	3 1/4”
F5916	SG206	**F5936**	SG206R	1”	1/2” Male Flare	1/2” Female Flare	3 11/16”
F5917	SG207	**F5937**	SG207R	1 1/8”	5/8” Male Flare	5/8” Female Flare	4”
F5900	SG110	**F5920**	SG110R	3/4”	1/4” Male Flare	1/4” Male Flare	3 1/8”
F5901	SG111	**F5921**	SG111R	3/4”	3/8” Male Flare	3/8” Male Flare	3 3/8”
F5914	SG204	**F5934**	SG204R	1”	1/2” ” Male Flare	1/2” ” Male Flare	3 15/16”
F5915	SG205	**F5935**	SG205R	1 1/8”	5/8” ” Male Flare	5/8” ” Male Flare	4 1/8”
F5908	SG118	**F5928**	SG118R	3/4”	1/4” Sweat	1/4” Sweat	7 1/4”
F5909	SG119	**F5929**	SG119R	3/4”	3/8” Sweat	3/8” Sweat	7 3/4”
F5918	SG208	**F5938**	SG208R	1”	1/2” Sweat	1/2” Sweat	7 3/4”
F5919	SG209	**F5939**	SG209R	1 5/8”	5/8” Sweat	5/8” Sweat	7 3/4”

S-Series Strainers

Designed to trap particulates in the refrigerant to prevent the system from clogging

- **Available in either 1, 2, 3 or 4 Outlets**
- **Inlet:** 1/4" to 3/8"
- **Screen**: Stainless Steel 100 Mesh



Catalog Number	Product Type	A Input	B Output	Figure No.	C Length
F6537	S-4	1/4"	.093"	1	2 1/8"
F6538	S-6	1/4"	1/4"	1	2 1/8"
F6540	S-8	1/4"	.093"	1	3"
F6541	S-84	1/4"	1/4"	1	3"
F6542	S-842	1/4"	1/8"	1	3"
F6504	S-86	3/8"	3/8"	1	3"
F6506	S-862	3/8"	1/8"	1	3"
F6521	S-132	3/8"	1/8"	1	4"
F6522	S-134	3/8"	1/4"	1	4"
F6523	S-136	3/8"	3/8"	1	4"
F6526	S-152	1/4"	1/8"	1	4"
F6507	S-842D	1/4"	.146"	2	3"
F6508	S-862D	3/8"	.146"	2	3"
F6509	S-942D	1/4"	.146"	2	4"
F6510	S-962D	3/8"	.146"	2	4"
F6511	S-942T	1/4"	.146"	3	4"
F6512	S-962T	3/8"	.146"	3	4"
F6513	S-942Q	1/4"	.146"	4	5"
F6514	S-962Q	3/8"	.146"	4	5"

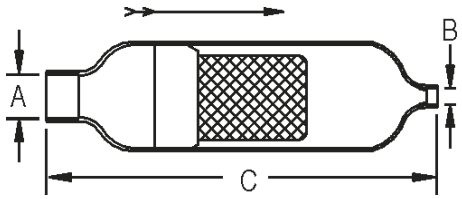


Fig. 1

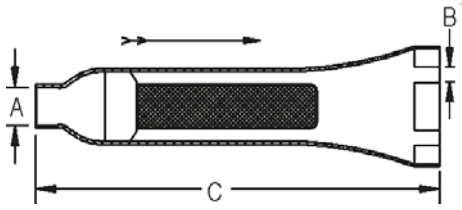


Fig. 2

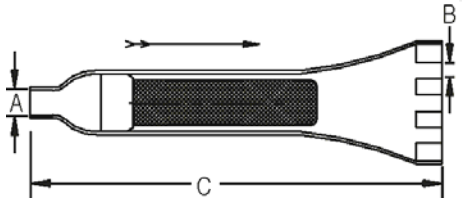


Fig. 3

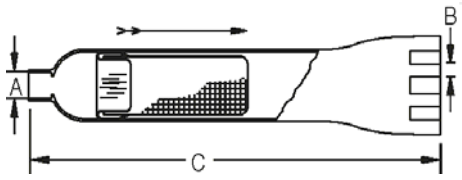


Fig. 4

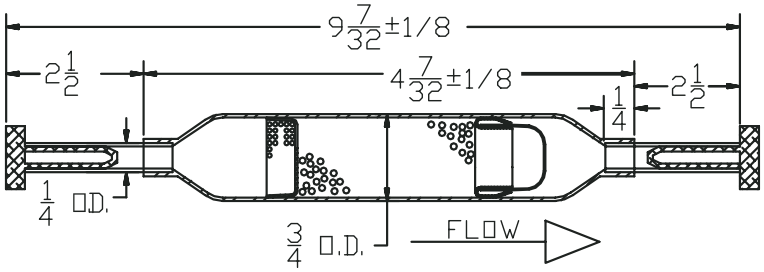
KX™ series Copper Spun Driers

Designed to remove moisture and acid from refrigerant.
Also contains S.S.
Screen to trap foreign matter in refrigerant.

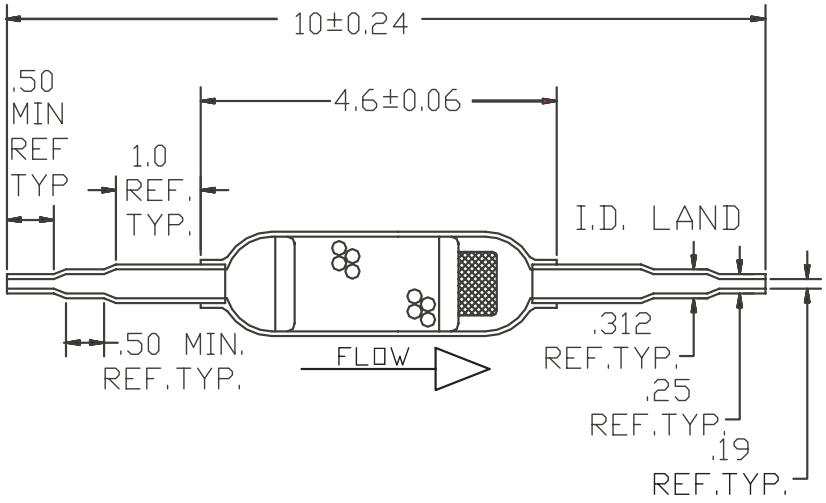
- **Uses XH-9 Desiccant**
- **KX-3 Copper Tube** May Be Bent, Swaged or Cut to Accommodate Application.
- **KXA-3 & 5** Contain Charging Tee With Access Fitting

Catalog Number	Product Type	Sweat Connection	Tons R-134a @ 75F	Tons R-22 @ 75F
F7529	KX-3	1/4" x 1/4"	1/2	1/2
F7528	KX-4	Multiple	1 1/2	1 1/2
F7535	KXA-5	1/4" x 1/4"	1	1

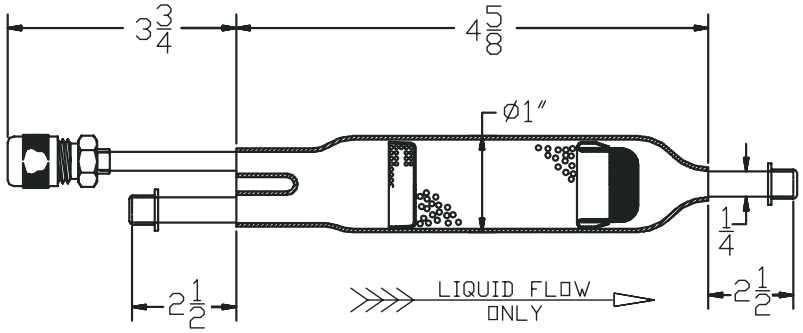
F7529



F7528



F7535



CH Series Charge Faster™

Charge Liquid Into The Low Side of The System Fast Without Heat.

- 3 Models To Choose
- Adapts To Any Manifold Set
- Expansion Of Liquid Takes Place In The Charge Faster™

Product Type	Catalog Number	Capacity
CH-100	**F6625**	Up To 3/4 Tons
CH-200	**F6626**	1 To 4 3/4 Tons
CH-300	**F6627**	5 To 10 Tons

VCRT Valve Core Remover Tool

- Install New Cores Easily Without Loss of Refrigerant
- Recover and Recharge Refrigerant Quickly
- 1/4" SAE Flare Connections
- Includes 6 Valve Cores

Product Type	Catalog Number	Product Description & Size
VCRT	**F6616**	1- Valve Core Tool

QC-4

QC-4R

AVC-6 Valve Cores Kit

Product Type	Catalog Number	Product Description & Size
AVC-6	**F6773**	10 Tubes in Pack
QC-4R	**F6013**	QC-4 Cap w/Core Remover (5)
QC-4	**F6007**	QC-4 Quick Cap (5)
QC-4	**F6300**	QC-4 Quick Cap (100)

VCT-1 Brass Valve Core Tool

- Brass Carry Case with 4 Cores
- Core Remover Cap Included
- Split Key Ring Included

Product Type	A-1 Order No.	Product Description & Size
VCT-1	**F6647**	1 Brass Valve Core Tool per Pack
AVC-1	**F6749**	Valve Core Bulk (100)

AV Series 1/4" SAE

Cat. No. (5) Pack	Product Type	Fig. No.
F6169	AV2-456	1
F6141	AV3-346	2
F6142	AV-34	3
F6143	AV-46	4

Cat. No. (100) Pack	Product Type	Fig. No.
F6294	AV2-456	1
F6290	AV3-346	2
F6296	AV-34	3
F6291	AV-46	4

Fig. 1

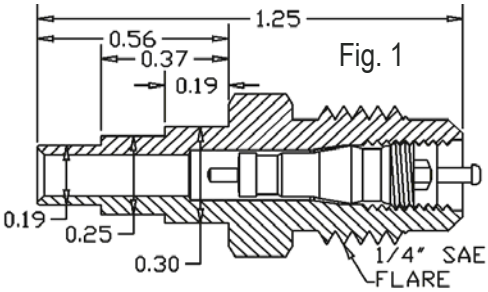


Fig. 2

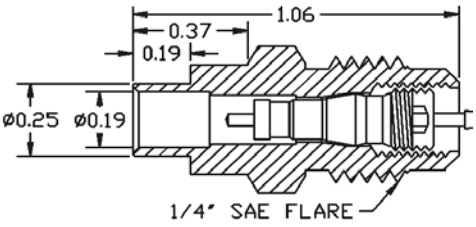


Fig. 3

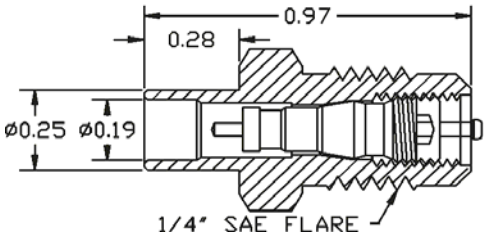
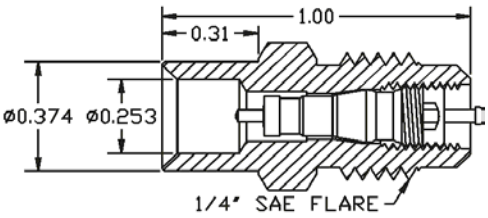


Fig. 4



AV Series

AVU-44

AVU-24

AVU-44

AVU Series 1/4" SAE

Catalog Number	Pack Qty.	Product Type	Fig. No.
F6144	(5)	AVU-24	1
F6145	(5)	AVU-45	2
F6214	(4)	AVU-4	3
F6215	(4)	AVU-44	4

Catalog Number	Pack Qty.	Product Type	Fig. No.
F6289	(100)	AVU-24	1
F6287	(100)	AVU-45	2
F6286	(100)	AVU-4	3
F6295	(100	AVU-44	4

Fig. 1

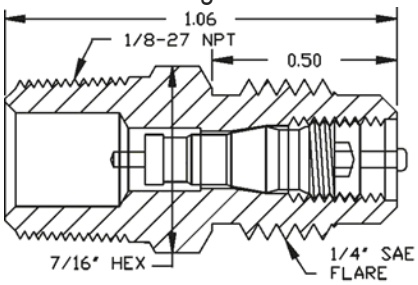


Fig. 2

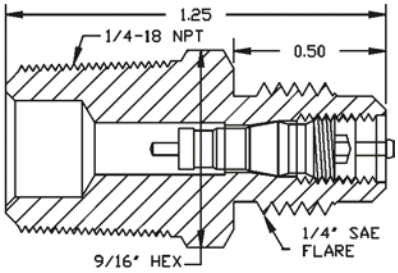


Fig. 3

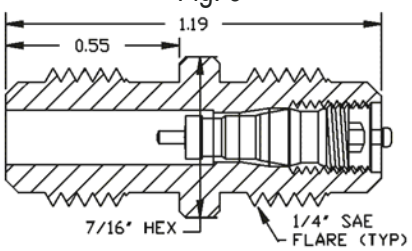
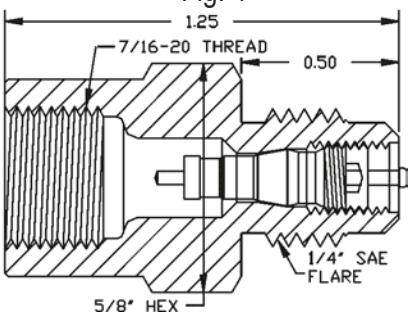


Fig. 4

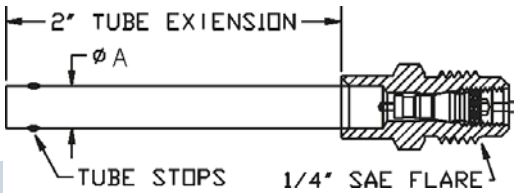


HENRY TECHNOLOGIES

AVX Series Access Fittings

- Standard 1/4" SAE Male Flare Connections
- Built in Valve Core and Brass Caps
- 2" Extended End Tube with Tube Stops To Prevent Flow Restriction

Product Type	Catalog Number (5) Pack	Catalog Number (100) Pack	Cat. No. W/Core Remover Cap (5) Pack	Cat. No. W/Core Remover Cap (100) Pack	A
AVX-2	F6146	F6297	F6248	F6302	1/8"
AVX-3	F6147	F6292	F6250	F6303	3/16"
AVX-4	F6148	F6298	F6252	F6304	1/4"
AVX-5	F6178	F6293	F6254	N/A	5/16"
AVX-6	F6216	F6299	F6256	N/A	3/8"



AVT/S Series Access Fittings

- Standard 1/4" SAE Male Flare Connections & Built in Valve Core and Brass Caps

Product Type	Catalog Number (3) Pack	Catalog Number (100) Pack	Fig. No.	Product Description & Size
AVT-34	F6225	F6221	1	1/8"MPTx1/4"MF on Run x 1/4" SAE on Branch
AVT-44	F6227	N/A	2	1/4" MF T valve w/2 Valve Cores
AVS-4	F6247	F6249	3	1/4" MF access by Swivel Nut on run
AVS-44	F6218	F6231	4	1/4"MF x Swivel Nut on Run x 1/4"MF on Branch
AVS-64	F6219	F6272	5	1/4" MF x 1/4" Access on Run x Swivel Nut on Branch

Fig. 4

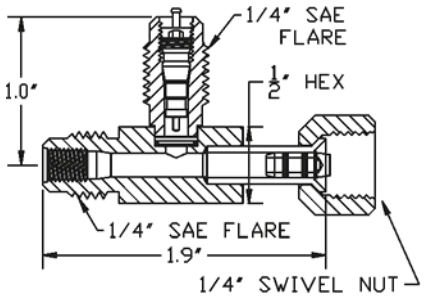


Fig. 1

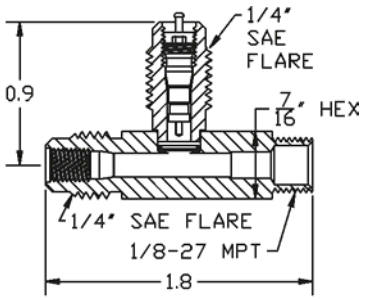


Fig. 3

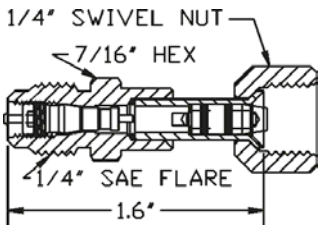


Fig. 5

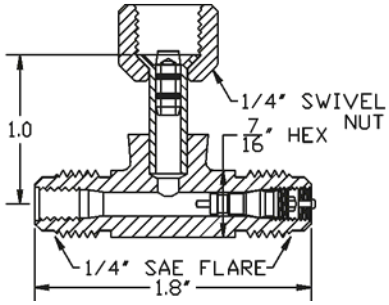
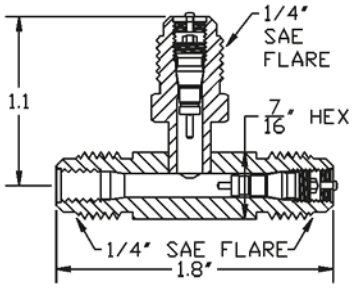
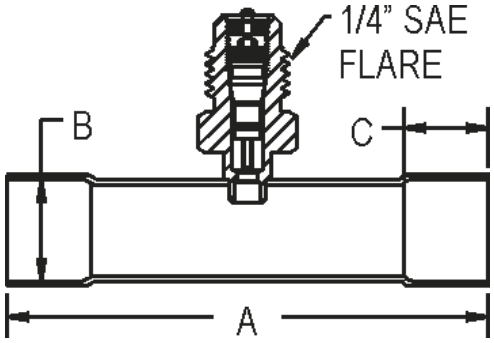


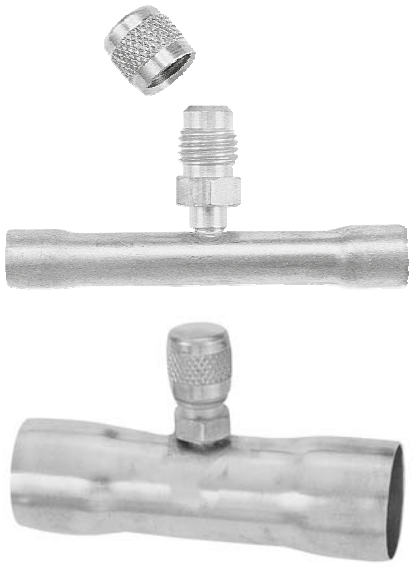
Fig. 2



AVT / AVW Series

- Standard 1/4" SAE Male Flare Connections
- Built in Valve Core and Brass Caps





Product Type	Catalog Number	Qty.	Catalog No. (100) Pack	A In Inches	B In Inches	C In Inches	Product Description & Size
AVT-4	**F6222**	(3)	**F6283**	2 3/4	1/4	N/A	1/4" OD Tube or 3/8" Solder
AVT-5	**F6223**	(3)	**N/A**	2 15/16	5/16	N/A	5/16" OD Tube or 3/8" Solder
AVT-6	**F6224**	(3)	**F6191**	3	3/8	5/16	3/8" OD Tube or 1/2" Solder
AVW-8	**F6241**	(2)	**N/A**	2 1/2	1/2	7/16	1/2" OD x tube x 1/4" MF
AVW-10	**F6244**	(2)	**N/A**	2 1/2	5/8	1/2	5/8"OD x tube x 1/4"MF
AVW-12	**F6245**	(2)	**N/A**	2 3/4	3/4	5/8	3/4"OD x tube x 1/4" MF
AVW-14	**F6246**	(1)	**N/A**	3	7/8	3/4	7/8"OD x tube x 1/4" MF

PS/PSMC Series Pressure Controls

- Used as Cycling or Safety Devices w/18 Inch Wire Leads
- 1/4" SAE Female Connection
- Hermetically Sealed

Product Type	Catalog Number	Pressure Open/Close	Reset Type	MWP
PS-LP05-20	**F5731**	5/20 PSI	Auto	250
PS-LP10-25	**F5699**	10/25 PSI	Auto	250
PS-LP25-50	**F5732**	25/50 PSI	Auto	250
PS-LP25-80	**F5677**	25/80 PSI	Auto	500
PS-LP40-80	**F5678**	40/80 PSI	Auto	500
PS-HP200-150	**F5708**	200/150 PSI	Auto	500
PS-HP250-150	**F5711**	250/150 PSI	Auto	500

Product Type	Catalog No.	Pressure Open/Close	Reset Type	MWP
PS-HP300-200	**F5733**	300/200 PSI	Auto	600
PS-HP350-250	**F5679**	350/250 PSI	Auto	600
PS-HP400-300	**F5680**	400/300 PSI	Auto	600
PS-HP400-200	**F5681**	400/200 PSI	Auto	600
PS-HP450-250	**F5682**	450/250 PSI	Auto	600
PSMF-HP410	**F5709**	—	Manual	—
PSMC-HP440	**F5710**	—	Manual	—

Soft Copper Capillary Tubing

- Precision Plug Drawn
- I.D. within +/- .002 in.
- Replaces Any Original Capillary Tubing

Product Type	Catalog No. (10 Foot Length)	Product Type	Catalog No. (100 Foot Length)	I.D. "	O.D."
110-10	**F7816**	110	**F7800**	.031	.083
111-10	**F7841**	111	**F7801**	.036	.087
112-10	**F7842**	112	**F7802**	.042	.093
113-10	**F7832**	113	**F7803**	.044	.109
114-10	**F7818**	114	**F7804**	.050	.114
115-10	**F7819**	115	**F7805**	.055	.125
116-10	**F7820**	116	**F7806**	.064	.125
117-10	**F7821**	117	**F7807**	.070	.125
118-10	**F7822**	118	**F7808**	.075	.125
119-10	**F7823**	119	**F7809**	.080	.145
120-10	**F7824**	120	**F7810**	.085	.145
121-10	**F7834**	121	**F7811**	.090	.145
122-10	**F7852**	122	**F7812**	.026	.072
123-10	**F7835**	123	**F7813**	.049	.099
124-10	**F7836**	124	**F7814**	.054	.106
125-10	**F7837**	125	**F7815**	.059	.112

Capillary Tube Data for Air Conditioning Applications
The following data is based on 130°F condensing temperature with R-22. (R134a—Add 10% to length)
To find the total length of tubing needed, multiply the indicated length times the number of circuits in the system.

System BTUH	1 Circuit	2 Circuits	3 Circuits	4 Circuits	5 Circuits	6 Circuits
4,000	43" No. 112					
5,000	72" No. 114					
6,000	48" No. 114	86" No. 112				
8,000	43" No. 115	43" No. 112				
10,000	65" No. 116	72" No. 114	72" No. 112			
12,000	68" No. 117	48" No. 114	43" No. 112			
15,000	90" No. 119	54" No. 115	72" No. 114	52" No. 112		
20,000	60" No. 120	65" No. 116	70" No. 115	72" No. 114	43" No. 112	
24,000	55" No. 121	70" No. 117	43" No. 115	48" No. 114	80" No. 114	
30,000		90" No. 119	65" No. 116	54" No. 115	48" No. 114	72" No. 114
36,000		56" No. 119	70" No. 117	85" No. 116	53" No. 115	48" No. 114
42,000		55" No. 120	45" No. 117	55" No. 116	45" No. 115	60" No. 115
54,000		35" No. 121	55" No. 119	50" No. 116	40" No. 115	85" No. 119
60,000			60" No. 120	95" No. 116	68" No. 117	65" No. 116

CAPILLARY TUBING

HENRY TECHNOLOGIES

Capillary Tube Data for Commercial Applications

Application data is based on 130°F condensing temperatures for R22, and 125°F for R12 and R502. To find the total length of tubing needed, multiply the indicated length times the number of circuits in the system. This guide is not meant to replace original manufacturer's specifications for their units. The values shown are typical and should be used only as a reference for replacement.

Low Temp. Compressor		-10° F Evaporator		0° F Evaporator	
H.P.	Ref.	BTUH	Cap Tube	BTUH	Cap Tube
0.5	12	2,700	95" #115	3,350	68" #115
0.5	502	2,700	45" #112	3,300	80" #114
0.75	12	4,100	80" #116	5,200	60" #116
0.75	502	4,050	45" #114	5,100	50" #115
1.0	12	4,900	70" #116	6,200	60" #117
1.0	502	4,800	60" #115	6,100	78" #116
1.5	12	6,900	105" #119	8,800	72" #120
1.5	502	6,800	60" #116	8,700	55" #117
2.0	12	10,700	70" #121	13,300	50" #117 (2)
2.0	502	10,600	80" #119	13,200	85" #121

FREEZERS

Med. Temp. Compressor		0° F Evaporator		+ 10° F Evaporator		+ 20° F Evaporator		+ 30° F Evaporator	
H.P.	Ref.	BTUH	Cap Tube	BTUH	Cap Tube	BTUH	Cap Tube	BTUH	Cap Tube
0.5	12	2,850	90" #115	3,600	80" #125	4,100	60" #125	4,800	68" #116
0.5	502	2,800	100" #114	3,5500	63" #114	4,050	75" #124	4,750	52" #114
0.75	12	4,260	57" #125	5,300	90" #117	6,550	55" #117	7,200	95" #119
0.75	502	4,200	48" #114	5,250	75" #125	6,500	72" #116	7,150	57" #116
1.0	12	5,300	90" #117	7,100	95" #119	8,600	62" #119	10,000	65" #116 (2)
1.0	502	5,250	48" #115	7,050	60" #116	8,550	64" #117	9,950	60" #118
1.5	12	9,500	50" #119	11,500	75" #117 (2)	14,000	102" #119 (2)	16,800	70" #119 (2)
1.5	502	9,400	45" #117	11,400	63" #119	13,900	80" #121	16,700	50" #111
2.0	12	10,000	65" #116 (2)	12,000	68" #117 (2)	15,000	90" #119 (2)	17,500	60" #119 (2)
2.0	502	9,900	40" #117	11,900	57" #119	14,900	78" #121	17,400	56" #117 (2)
3.0	12	16,000	76" #119 (2)	19,500	90" #121 (2)	24,000	52" #121 (2)	27,000	105" #121 (3)
3.0	502	16,600	50" #121	19,400	43" #117 (2)	23,800	58" #119 (2)	26,800	59" #110 (2)

REFRIGERATORS

Med. Temp. Compressor		0° F Evaporator		+ 10° F Evaporator		+ 20° F Evaporator	
H.P.	Ref.	BTUH	Cap Tube	BTUH	Cap Tube	BTUH	Cap Tube
0.5	12	3,800	70" #125	4,500	85" #116	5,300	90" #117
0.5	502	4,200	68" #124	5,030	53" #115	6,000	86" #116
0.5	22	4,200	94" #123	5,030	70" #114	6,000	48" #124
0.75	12	5,800	75" #117	6,950	105" #119	8,200	70" #119
0.75	502	6,300	76" #116	7,550	50" #116	9,000	51" #117
0.75	22	6,300	70" #124	7,550	53" #115	9,000	83" #116
1.0	12	7,400	92" #119	9,000	55" #119	10,800	70" #121
1.0	502	8,075	56" #117	9,650	67" #118	11,500	64" #119
1.0	22	8,425	98" #116	10,050	62" #116	12,000	68" #117
1.5	12	10,900	62" #121	13,600	110" #119 (2)	16,200	71" #119 (2)
1.5	502	12,300	52" #119	14,500	77" #121	17,500	44" #121
1.5	22	12,650	61" #117	15,500	60" #118 (2)	18,000	83" #116 (2)
2.0	12	16,000	75" #119	19,500	84" #121	233,200	82" #119 (3)
2.0	502	16,500	51" #121	19,700	65" #118 (2)	23,500	67" #119 (2)
2.0	22	16,850	72" #119	20,100	80" #121	24,000	55" #121
3.0	12	21,000	102" #119 (3)	25,800	63" #119 (3)	31,300	80" #119 (4)
3.0	502	24,500	75" #120 (2)	29,350	71" #121 (2)	35,000	44" #121 (2)
3.0	22	25,275	52" #117 (2)	30,200	60" #118 (2)	36,000	56" #119 (2)
4.0	12	28,700	100" #119 (4)	35,700	58" #119 (4)	43,000	62" #119 (5)
4.0	502	33,000	52" #121 (2)	39,400	65" #120 (3)	47,000	63" #121 (4)
4.0	22	33,700	50" #116 (3)	40,250	62" #116 (4)	48,000	68" #117 (4)

COOLERS

CAPILLARY TUBING

Alternate Refrigerant Reference Chart

HENRY TECHNOLOGIES

H.P	LOW	MED	HIGH	
1/8	110" #122	84" #122	48" #122	R12, R416A (Single Feed)
1/6	71" #122	96" #110	72" #110	
1/5	54" #110	36" #110	24" #110	
1/4	43" #110	90" #112	60" #112	
1/3	93" #112	72" #112	36" #112	
1/2	96" #123	48" #123	90" #116	
3/4	60" #123	92" #116	72" #116	
1	36" #123	84" #116	54" #116	
1-1/2	84" #116	60" #116	43" #116	
2	55" #116	40" #116	26" #116	
1/8	121" #122	92" #122	53" #122	R134A, R401A, R401B, R406A, R409A, R500 (One Feed)
1/6	78" #122	106" #110	79" #110	
1/5	59" #110	39" #110	26" #110	
1/4	47" #110	99" #112	66" #112	
1/3	102" #112	79" #112	39" #112	
1/2	105" #123	52" #123	99" #116	
3/4	66" #123	101" #116	79" #116	
1	39" #123	92" #116	59" #116	
1-1/2	92" #116	66" #116	47" #116	
2	61" #116	44" #116	29" #116	
1/8	132" #122	101" #122	58" #122	R22 (Single Feed)
1/6	86" #122	116" #110	86" #110	
1/5	64" #110	42" #110	28" #110	
1/4	51" #110	109" #112	72" #112	
1/3	112" #112	87" #112	43" #112	
1/2	115" #123	57" #123	109" #116	
3/4	72" #123	111" #116	87" #116	
1	42" #123	101" #116	65" #116	
1-1/2	101" #116	72" #116	51" #116	
2	67" #116	48" #116	32" #116	
1/8	144" #122	111" #122	63" #122	R402B, R403B, R404A, R407C, R708A, R502 (Single Feed)
1/6	95" #122	78" #122	95" #110	
1/5	70" #110	46" #110	31" #110	
1/4	56" #110	31" #110	79" #112	
1/3	30" #110	96" #112	47" #112	
1/2	29" #112	63" #123	32" #123	
3/4	79" #123	32" #123	96" #116	
1	46" #123	111" #116	72" #116	
1-1/2	111" #116	79" #116	56" #116	
2	74" #116	52" #116	34" #116	
1/8	N/A	122" #122	69" #122	R402A, R407A, R407B, R507 (Single Feed)
1/6	104" #122	138" #110	105" #110	
1/5	77" #110	50" #110	34" #110	
1/4	62" #110	34" #110	86" #112	
1/3	33" #110	105" #112	52" #112	
1/2	31" #112	69" #123	35" #123	
3/4	87" #123	37" #123	106" #116	
1	52" #123	30" #123	79" #116	
1-1/2	32" #123	86" #116	62" #116	
2	82" #116	58" #116	37" #116	
1/8	N/A	144" #122	81" #122	R410A (Single Feed)
1/6	123" #122	100" #122	78" #122	
1/5	90" #110	60" #110	41" #110	
1/4	73" #110	40" #110	101" #112	
1/3	38" #110	30" #110	62" #112	
1/2	37" #112	84" #123	42" #123	
3/4	104" #123	44" #123	34" #123	
1	62" #123	36" #123	94" #116	
1-1/2	38" #123	103" #116	74" #116	
2	96" #116	69" #116	45" #116	

Capillary Tube Data for One and Two Feed Tubes

Note: Add 10% to length for Static Cooled Units.

1/2	43" #110	90" #112	60" #112	R12, R416A (Two Feed)
3/4	30" #110	63" #112	42" #112	
1	96" #123	48" #123	90" #116	
1-1/2	60" #123	92" #116	72" #116	
2	36" #123	84" #116	54" #116	
2-1/2	108" #116	72" #116	49" #116	
3	84" #116	60" #116	43" #116	
3-1/2	70" #116	54" #116	35" #116	
4	55" #116	40" #116	26" #116	
1/2	47" #110	99" #112	66" #112	R134A, R401A, R401B, R406A, R409A, R500 (Two Feed)
3/4	33" #110	69" #112	46" #112	
1	105" #123	52" #123	99" #116	
1-1/2	66" #123	101" #116	79" #116	
2	40" #123	92" #116	59" #116	
2-1/2	119" #116	79" #116	53" #116	
3	92" #116	66" #116	47" #116	
3-1/2	77" #116	59" #116	38" #116	
4	60" #116	44" #116	29" #116	
1/2	52" #110	108" #112	72" #112	R22 (Two Feed)
3/4	36" #110	77" #112	50" #112	
1	115" #123	58" #123	108" #116	
1-1/2	72" #123	110" #116	86" #116	
2	43" #123	101" #116	65" #116	
2-1/2	39" #123	87" #116	58" #116	
3	101" #116	72" #116	52" #116	
3-1/2	84" #116	64" #116	41" #116	
4	66" #116	48" #116	31" #116	
1/2	56" #110	119" #112	78" #112	R402B, R403B, R404A, R407C, R708A, R502 (Two Feed)
3/4	39" #110	85" #112	55" #112	
1	28" #112	63" #123	119" #116	
1-1/2	79" #123	32" #123	94" #116	
2	47" #123	110" #116	71" #116	
2-1/2	43" #123	96" #116	64" #116	
3	111" #116	79" #116	57" #116	
3-1/2	92" #116	70" #116	46" #116	
4	73" #116	53" #116	34" #116	
1/2	52" #110	32" #110	85" #112	R402A, R407A, R407B, R507 (Two Feed)
3/4	43" #110	92" #112	60" #112	
1	31" #112	70" #123	36" #123	
1-1/2	87" #123	35" #123	103" #116	
2	52" #123	28" #123	78" #116	
2-1/2	47" #123	106" #116	70" #116	
3	32" #123	86" #116	62" #116	
3-1/2	101" #116	77" #116	50" #116	
4	80" #116	58" #116	37" #116	
1/2	72" #110	37" #110	102" #112	R410A (Two Feed)
3/4	50" #110	116" #112	70" #112	
1	37" #112	83" #123	42" #123	
1-1/2	102" #123	44" #123	34" #123	
2	62" #123	37" #123	93" #116	
2-1/2	55" #123	32" #123	81" #116	
3	38" #123	101" #116	74" #116	
3-1/2	118" #116	90" #116	55" #116	
4	92" #116	70" #116	41" #116	

A Series ™ Clamp–On Line Tap Valves

Signature Series… easy access to system refrigerant without having to evacuate the system.

Features

- Patented Depressor Valve Action
- Mounts In Any Position
- Retracting Needle for Maximum Refrigerant Flow
- Designed For Permanent Use On The System
- Hex Wrench and Adaptor Sleeves Included

A1 Series

A2 Series

A3 Series

Product Type	Tubing Size O.D.	Weight Oz.	Catalog Number
A-1	1/4”, 5/16”,3/8”	0.175	**F6100**
A-2	1/2”, 5/8”	0.244	**F6101**
A-3	3/16”, 1/4”	0.169	**F6257**

BTV Series Line Tap Valves 1/4” to 7/8”

Add an access fitting without removing refrigerant! Simply clamp the valve over tube and screw down the piercing needle with the included Hex Wrench. The valve forms a seal with an o-ring embedded in the body.

Features:

- Hex Wrench included
- Fits 7 different O.D. size tubes

Product Type	Tubing Size	Catalog Number
BTV-1	1/4”, 3/16”, 3/8”	**F6175**
BTV-2	1/2”, 5/8”	**F6285**
BTV-3	3/4”, 7/8”	**F6177**

AP Series Clamp On Line Tap Valves

Used to provide access fitting without having to remove refrigerant from the system. Valve handle control makes it easy and fast to charge, discharge and test refrigeration and A/C systems. Valves may be easily attached with 3 Phillips head screws under pressure and in any position. Highly resilient special compound seals valve.

Features

- Celcon T Handle For Secure Grip
- Two Different Sizes
- Easily Controls Refrigerant Flow

Product Type	Tubing Size O.D.	Catalog Number
AP-1	3/16”, 1/4”, 5/16”,3/8”	**F6102**
AP-2	3/8”, 1/2”, 5/8”	**F6103**

CA-1 Access Control Valves

The CA-1 Steel Access Control Valve controls the flow of all 1/4" SAE male flare depressor type valves. Valve is closed until valve handle is turned, depressing the valve core. A purging port is provided for safety allowing removal of charging hose without flash of refrigerant. This valve may be used on refrigerant cylinders with
depressor type valves as an option to the CT-4 valve.

Features

- Purging Port For Air Removal & Safety
- Steel Construction
- For use with charging hose

Product Type	Catalog Number	Description
CA-1	**F6156**	For A-1, A-2, A-3 and all access valves

LT Series Line Tap Valves with CV-Gold Seal™ Series Swivel Control Valves

The LT series valves is a quick, safe and inexpensive clamp-on tapping valve for charging, discharging and testing a line. The LT valve seals at 3 points: taper of needle, seal, and cap. The CV Gold Seal™ Swivel Control Valves control the flow for the LT valves. The CV valve can be installed in any position and removed with no tools.

CV Series

Product Type	Tubing Size	Catalog Number
LT-3G	3/16”	**F6111**
LT-4G	1/4”	**F6112**
LT-5G	5/16”	**F6113**
LT-6G	3/8”	**F6114**
LT-8G	1/2”	**F6115**
LT-10G	5/8”	**F6116**

LT Series

Product Type	Description	Cat. No.
CV-1G	Standard Valve	**F6108**
CV-2G	2-Way Valve	**F6109**
CV-3G	Deluxe Valve	**F6110**

- CV-1G features a single port for connecting charging lines or gauges.
- CV-2G has a double port for connecting a charging hose to one port and gauges to the other. A cap is furnished to seal one port when both ports are not in use.
- CV-3G features a threaded valve stem to eliminate the possibility of pistoning while under pressure. The stem is locked in place with a knurled nut coupled to the hex nut.

P & PH Series Fin Combs™

Thermostat Guards

HENRY TECHNOLOGIES

These tough, durable fin combs clean and straighten evaporator and condenser coils.

- Color Coded for Easy Selection
- Made from Nylon
- P Series For Standard Coils and PH Series for High Efficiency Coils

Pouch Set	Fins Per Inch	Cat. No.	Qty.	Description
FCS-6	Assorted	**F6614**	1	Used on standard coils
FCHS-6	Assorted	**F6615**	1	Used on High Efficiency Coils

High Efficiency Coils	Fins Per Inch	Color	Cat. No. (12)	Cat. No. (25)
PH-8	8 and 10	Orange	**F6681**	**F6587**
PH-9	9 and 15	Yellow	**F6684**	**F6588**
PH-11	11 and 13	Blue	**F6682**	**F6589**
PH-12	12 and 14	Green	**F6685**	**F6590**
PH-17	16 and 17	Lime	**F6683**	**F6591**
PH-18	18 and 20	Red	**F6686**	**F6592**

Standard Coils	Fins Per Inch	Color	Cat. No. (12)	Cat. No. (25)	Cat. No. (100)
P-8	8 and 10	Orange	**F6603**	**F6665**	**F6694**
P-9	9 and 15	Yellow	**F6604**	**F6666**	**F6693**
P-11	11 and 13	Blue	**F6605**	**F6667**	**F6692**
P-12	12 and 14	Green	**F6606**	**F6668**	**F6691**
P-17	16 and 17	Lime	**F6600**	**F6669**	**F6690**
P-18	18 and 20	Red	**F6628**	**F6670**	**F6689**

Note: 12, 25 & 100 pack fin combs do not come with a carrying pouch. These parts are supplied in bulk packaging.

TG-100

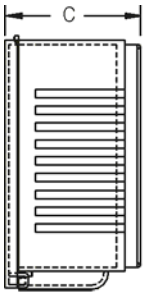
TG-200

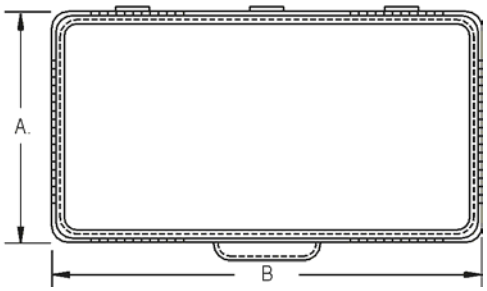
TG-300

TG Series™

Thermostat Guards

- Covers and Protects Thermostats and Sensors
- Solid & Ring Base Included
- Mount Vertically or Horizontally
- Clear Plastic





Product Type	Catalog Number	A" Dim.	B" Dim.	C" Dim.
TG-100M	**F7302**	7 3/16	6 1/4	3 11/16
TG-200	**F7304**	7 1/4	8 3/4	3 5/16
TG-300M	**F7310**	5 3/4	9 25/32	2 3/4

EAC 8002 - 3 Phase Motor Protector

Protects 3 phase motors and compressors from short cycling due to power failures and thermostat switching.

- **Short Cycle Protection**
- **Phase Loss/Reversal Protection**
- **Auto/Manual Reset**
- **Phase Unbalance Protection**
- **Under/Over Voltage Protection**
- **Adjustable Delay Make/Break Timers**

Product Type	Catalog Number	Control Voltage	Control Relay Ratings	Weight Lbs.
EAC-8002	**F6872**	18-288 VAC	10A/230 VAC	.91

EAC 805 - 3 Phase Motor Protector

Protects 3 phase motors and compressors from short cycling due to power failures and thermostat switching.

- **Low/High Voltage Protection**
- **Phase Loss/Reversal Protection**
- **Auto/Manual Reset**
- **Delay on Make Fixed 15 sec.**
- **Delay on Break Fixed 5 min.**
- **Selectable LED Mode: Normal or Memory**
- **Delay -on -Fault to confirm any fault fixed**

Product Type	Catalog Number	Control Voltage	Control Relay Ratings	Weight Lbs
EAC-805	**F6831**	18-288 VAC	10A/240 VAC	.91

EAC 400 - Single Phase Motor Protector

Protects single phase motors and compressors from short cycling due to power failures and thermostat switching.

- **Short Cycle Protection**
- **High/ Low Voltage Protection**
- **Hard Wired In To System**
- **Indicator Light**
- **Adjustable Delay**

Product Type	Catalog Number	Monitored Voltage	Control Voltage	Circuit Load Capacity N.O.	Weight Lbs
EAC-400	**F7744**	95 to 270 VAC	Universal	1A run 20A inrush	.469

PRM-1 Phase Rotation Monitor

Protects three phase motors from reverse operation when line phases are reversed

- **Solid State Output**
- **Phase Loss Protection**
- **Fast Response Time**
- **Designed for Scroll Compressors**

Product Type	Catalog Number	Monitored Voltage	Control Voltage	Circuit Load Capacity N.O.
PRM-1	**F7187**	156-600 VAC	18-288 VAC	1A run 10A inrush

PSTD Delay On/Off Timers

Increase Heating or Cooling Efficiency by keeping the blower fan on for a set time after the Thermostat has been satisfied.

- Solid State Output
- Easy to Install
- Compact, Durable Case

Product Type	Catalog Number	Control Voltage	Blower-On Time	Blower-Off Time	Weight Lbs
PSTD-000-060	**F5985**	24 VAC	Fixed 0 Seconds	Fixed 60 Seconds	0.138

EAC 426 - Delay On Break Timer

- Mounts At Any Angle
- 24 VAC
- Hard Wired In To System
- Fixed Models

Product Type	Catalog Number	Control Voltage	Delay on Break Timer	Weight Lbs
EAC-426/4-030	**F7031**	24 VAC	30 Seconds	.469
EAC-426/4-180	**F7033**	24 VAC	180 Seconds	.469
EAC-426/4-300	**F7035**	24 VAC	300 Seconds	.469

EAC 501 - Delay On Break Timer

- Mounts At Any Angle
- Input Voltage 18-288 VAC
- Hard Wired In To System
- Adjustable Models

Product Type	Catalog Number	Input Voltage	Delay on Break Timer	Weight Lbs
EAC-501-ADJ	**F5869**	18-288 VAC	6-480 Seconds	.469

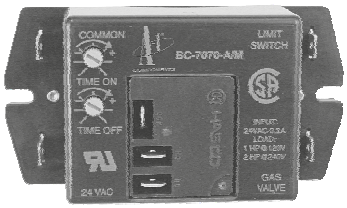
EAC 701 - Delay On Make Timer

- Mounts At Any Angle
- 24 VAC
- Hard Wired In To System
- Adjustable 10-480 Seconds

Product Type	Catalog Number	Input Voltage	Delay on Make Timer	Weight Lbs
EAC-701-ADJ	**F5879**	18-288 VAC	10-480 Seconds	.469

BC Blower Control

Increase Heating Efficiency by delaying the ON and Off Cycle of the Blower Fan.



- **Relay Output**
- **Easy to Install**
- **Adjustable On and Off Times**
- **Safety Limit Circuit**

Product Type	Catalog Number	Control Voltage	Relay Contacts	Blower On Time (Seconds)	Blower Off Time (Seconds)	Weight Lbs.
BC-7070	**F7070**	24 VAC	SPDT	0 to 240 Adjustable	0 to 240 Adjustable	0.194

CI Brown Out Delay Timers

Short Cycle and Brown Out Protection for Compressors.

- **Relay Output**
- **Easy to Install**
- **Compact, Durable Case**

Product Type	Catalog Number	Interlock Time Minutes	Under Voltage Protection	Reset Time Milliseconds
CIVA-5	**FF534**	5	Adjustable 16 to 22 VAC	30

AFC Series Attic Fan Control

Provides automatic fan operation for power attic ventilations systems

- **Adjustable Fan Off Temperature 60 To 110°F**
- **Firestat circuit shuts fan off in the event of fire**
- **SPST switching action 5.8 FLA 34.8 LRA @ 120 VAC**

Product Type	Catalog Number	Description
AFC-01T-110-204	**FF535**	Attic Fan Control

PR series Pilot Re-Igniters

Prevents Pilot Flames from extinguishing.

- **Automatic and Trouble "Free"**
- **Sparks immediately on detection of Pilot "outage"**
- **Includes Hardware, Cable and Module for Easy Installation**

Product Type	Catalog Number	Power Input	Description
PR-24/120	**FF540**	24/120 VAC	Spark Cable
PR-24/120	**FF541**	24/120 VAC	Hardware Kit
PR-24-36W	**FF543**	24 VAC	Hardware , Spark Cable & PR-24 Module
PR-24/120-36W	**FF536**	24/120 VAC	Hardware , Spark Cable & PR-24/120 Module

Thermal Cut Outs

- **One Shot Operation**
- **15 Amp Rating With Air Flow**
- **Low Resistance**
- **For In-Line and Face Plate Mounting**

Product Type	Catalog Number	Open Temp. F°	Mounting
TC-4257	**FB688**	257	In-Line
TC-4283	**FB689**	283	In-Line
TC-4300	**FB690**	300	In-Line
TC-4333	**FB691**	333	In-Line
TC-4377	**FB692**	377	In-Line
TC-4438	**FB693**	438	In-Line
TC-4468	**FB694**	468	In-Line
TC-5257	**FB695**	257	Face-Plate
TC-5300	**FB696**	300	Face-Plate
TC-5333	**FB697**	333	Face-Plate
TC-5377	**FB698**	377	Face-Plate

WSX-6

HARD START KIT

Designed to increase the starting torque of a 1/2 to 10 HP compressor up to 500 %.

- **Installs across run capacitor**
- **(2) 25 ohm PTC's**
- **250V Capacitor**
- **WSX-6A: Removable PTC Module**

c UL us

WSX-6A

Product Type	Description	Catalog Number
WSX-6	500% Multiplier 1/2 to 10 HP	**F6821**
WSX-6A	500% Multiplier 1/2 to 10 HP with Removable PTC	**F6867**

WSX-5

HARD START KIT

Designed to increase the starting torque of a 1/2 to 5 HP compressor up to 300 %.

- **Removable PTC module**
- **Installs across run capacitor**
- **22 ohm PTC**
- **250V Capacitor**
- **Replaces WSX-7**

WSX-5A

Product Type	Description	Catalog Number
WSX-5	300% Multiplier 1/2 to 5 HP	**F6820**
WSX-5A	300% Multiplier 1/2 to 5 HP with Removable PTC	**F6903**

WR SERIES FOR REFRIGERATORS AND FREEZERS

Designed to prolong the life of appliances by adding a boost to the compressor.

- **Solid sate starting relay and capacitor**
- **Inhibits low voltage starting problems**
- **Replaces current type relays**

Product Type	Description	Catalog Number
WRS-10	1/12 to 1/2 HP @ 115V	**F6824**
WRS-20	1/12 to 1/2 HP @ 230V	**F6829**
WRX-4	1/4 to 1/3 HP @ 115V	**F6827**
WRX-8	1/5 to 1/12 HP @ 115V	**F6826**

L59 Series Limit Controls

L59 series limit controls have SPDT switches and incorporate a temperature adjustment to enable the installer to match the setting of the old device being replaced. (Note: Use a #2 spanner tool to loosen the Limit Adjustment Screw.)

Pilot Duty: N.C. Contacts: 40VA @ 30, 120 and 240 VAC
N.O. Contacts: 120 VA @ 30, 120 and 240 VAC

- Use a #2 spanner tool to loosen the Limit Adjustment Screw. (8-063-097)

Product Type	Catalog Number	Length (Inches)	Fan Temperature Off (Degrees F)	Fixed Differential
L59-3B-A	**FF568**	3	120 to 250	30°F
L59-7B-A	**FF569**	7	120 to 250	30°F

Electrical Ratings		
N.C. Contacts	**120 VAC**	**240 VAC**
Full Load Amps	5.8	2.9
Locked Rotor Amps	34.8	17.4

S106 Series Time Delay Relays

Controls high current blowers, relays and contactors

- Input: 0.12 amps @ 24 VAC
- SPST or SPDT
- Delay on/off timing

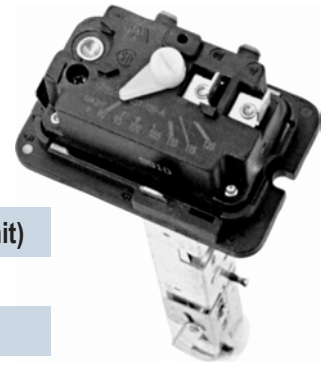
Between Terminals	Volts AC	Full Load Amps	Locked Rotor Amps
2 & 4 NO	120	13.8	82.8
2 & 4 NO	240	8.0	48.0
1 & 4 NC	120	5.8	34.8
1 & 4 NC	240	2.9	17.4

This Time Delay Relay is a device for use in controlling high current blowers, relays, and contactors at a predetermined time interval after the heater is energized. The heater timer is connected to a 24 volt circuit and this circuit may be energized remotely by a manual switch, room thermostat or some other automatic electric contacting device.

Product Type	Catalog Number	Switch Action	Time Delay On (Seconds)	Time Delay Off (Seconds)
S106-1A-45-75C	**FF582**	SPST	30 to 50	60 to 90
S106-1A-50-40C	**FF583**	SPST	45 to 55	30 to 50
S106-1A-40-100C	**FF584**	SPST	35 to 45	80 to 110
S106-1A-55-60C	**FF585**	SPST	50 to 60	45 to 75
S106-1B-65-45C	**FF586**	SPDT	60 to 70	45 to 75

"FALTS" Fan and Limit Controls W/Time Start Delay

These Combination Fan/Limit Controls include a time start fan control "Heat Assist". The time delay turns on the blower as a function of time and/or temperature after the room thermostat calls for heat and turns off the blower as a function of temperature at the indicated dial setting of the fan. The limit portion will limit the temperature of the furnace to a safe operating temperature. A limit temperature adjustment is provided to match the setting of the old device being replaced.



- Electrical Rating: "Heat Assist" - 0.08 amps @ 24 VAC
- Pilot Duty: 40 VA at 30 VAC & 120 VAC
- Use a #2 spanner tool to loosen the Limit Adjustment Screw. (8-063-097)

	Terminals 2 & 4 N.O. (Fan)		Terminals 5 & 6 N.C. (Limit)
SPST Switch	**120 VAC**	**240 VAC**	**120 VAC**
Full Load Amps	13.8	8.0	4.4
Locked Rotor Amps	82.8	48.0	26.4

Product Type	Catalog Number	Length	Fan Off Temperature	Limit Temperature	Limit Differential
FALTS 57C –05T-120-A	**FF560**	7 Inches	90 To 120°F	150 To 250°F	30°F
FALTS 57C-65T-120-A	**FF561**	7 Inches w/shield	90 To 120°F	150 To 250°F	30°F
FALTS 57C-13BT-120-A	**FF591**	7 Inches SPDT	90 To 120°F	150 To 250°F	30°F

"FAL" Fan and Limit Controls For Universal Replacement

These Combination Fan/Limit Controls are designed as universal replacements for application in all types of forced air heating furnaces. The fan portion incorporates an adjustable fan "OFF" setting and an adjustable differential to enable the installer to match the settings of the old device being replaced. The limit portion will limit the temperature of the furnace to a safe operating temperature. A limit temperature adjustment is provided to match the setting of the old device being replaced.

- Electrical Rating: Pilot Duty: 40 VA @ 30 & 120 VAC.
- Use a #2 spanner tool to loosen the Limit Adjustment Screw. (8-063-097)

	Terminals 2 & 4 N.O. (Fan)		Terminals 5 & 6 N.C. (Limit)
SPST Switch	**120 VAC**	**240 VAC**	**120 VAC**
Full Load Amps	13.8	8.0	4.4
Locked Rotor Amps	82.8	48.0	26.4

Product Type	Catalog Number	Length	Fan Off Temperature	Fan Differential	Limit Temperature	Limit Differential
FAL3C 05TD-120-A	**FF558**	3 Inches	90 To 120°F	25 To 50°F	150 To 250°F	30°F
FAL7C 05TD-120-A	**FF559**	7 Inches	90 To 120°F	25 To 50°F	150 To 250°F	30°F
FAL7C 20BT-120-AB	**FF594**	7 Inches	90 To 120°F	25 To 50°F	150 To 250°F	30°F

FA47TS Series Fan Controls W/Time Start Fan Control

(Replaces all FA47TS Series Controls) These are special fan controls with a built in "Heat Assist" time delay. The time delay turns on the blower as a function of time and/or temperature after the room thermostat calls for heat and turns off the blower as a function of temperature at the indicated dial setting of the fan.

- Electrical Rating: "Heat Assist" - 0.08 amps @ 24 VAC
- Pilot Duty: 40 VA at 30 VAC & 120 VAC
- Use a #2 spanner tool to loosen the Limit Adjustment Screw. (8-063-097)

	Terminals 2 & 4 N.O. (Fan)	
SPST Switch	**120 VAC**	**240 VAC**
Full Load Amps	13.8	8.0
Locked Rotor Amps	82.8	48.0

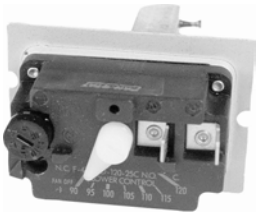
Product Type	Catalog Number	Length	Fan Off Temperature	Fan Differential	Time Delay @ 24VAC
FA47TS3-110	**FF566**	3 Inches	80 To 110 F	60°F Fixed	25 To 60 Sec.
FA47TS7-110	**FF567**	7 Inches	80 To 110 F	60°F Fixed	25 To 60 Sec.

F47 & F214 Series Fan Controls

These fan controls incorporate an adjustable temperature dial to enable the installer to match the setting of the device being replaced.

- Electrical Rating: Pilot Duty: 40 VA @ 30 & 120 VAC.

F214 Series



F47 Series

	Terminals 2 & 4 N.O. (Fan)	
SPST Switch	**120 VAC**	**240 VAC**
Full Load Amps	13.8	8.0
Locked Rotor Amps	82.8	48.0

Product Type	Catalog Number	Width (Inches)	Length (Inches)	Fan Off (°F)	Fan Differential (°F)
F214-12A-140-25C	**FF562**	1-1/16	3	60 to 140	25 to 50
F214-13A-140-25C	**FF563**	1-1/16	7	60 to 140	25 to 50
F47-3TD-120-25C	**FF564**	7/16	3	90 to 120	25 to 50
F47-7TD-120-25C	**FF565**	7/16	7	90 to 120	25 to 50

CAM-STAT to CAM-STAT
Cross Reference

HENRY TECHNOLOGIES

CAMSTAT	Replaces
AFC-01T-110-204	All AF Series
FAL3C-05TD-120-A	All SPST, FAL3 Series
FAL7C-05TD-120-A	All SPST, FAL7 Series
FAL7C-20BT-120-AB	All FAL7C-20BF and units with last letter "B"
FALTS57C-05T-120-A	All FALTS series without elements shield
FALTS57C-65T-120-A	All FALTS series with elements shield
F47-3TD-120-25C	All F47-3 (F,T,TD) Series
F47-7TD-120-25C	All F47-7 (F,T,TD) Series
F214-12A-140-25C	All F14-(10,11,12) & F214-(10,11,12) "A" Series
F214-13A-140-25C	All F14-(13,14,15) & F214-(13,14,15) "A" Series
FA47TS3-110	All F14-16A, F214-17A, F47TS(2)-3T & F47TS-3T-110C
FA47TS7-110	All F14-18A, F214-19A, F47TS(2)-7T & F47TS-7T-110C
L59-3B-A	All L59-3 (A, B) Series
L59-7B-A	All L59-7 (A, B) Series

S106-1A-45A75C Replaces
S106-(1,2)A-30(C)
S106-(1,2)A21-30(C)
S106-(1,2)A26-30(C)
S106-(1,2)A36-30(C)
S106-(1,2)A36-40(C)
S106-(1,2)A43-30(C)
S106-(1,2)A-40(C)
S106-(1,2)A-45(C)
S106-(1,2)A3-45(C)
S106-(1,2)A6-45(C)
S106-(1,2)A16-45(C)
S106-(1,2)A18-45(C)
S106-(1,2)A20-45(C)
S106-(1,2)A25-45(C)
S106-(1,2)A27-45(C)
S106-(1,2)A35-45(C)
S106-(1,2)A39-45(C)
S106-(1,2)A17-55(C)
S106-(1,2)A17-65(C)
S106-(1,2)A28-55(C)
S106-(1,2)A30-65(C)
S106-(1,2)A35-50(C)
S106-(1,2)A38-65(C)
S106-(1,2)A40-65(C)
S106-(1,2)A44-65(C)
S106-(1,2)A45-65(C)
S106-(1,2)A48-50(C)
S106-(1,2)A49-45(C)

S106-1A-55-60 Replaces
S106-(1,2)A-50(C)
S106-(1,2)A-55(C)
S106-(1,2)A-65(C)

S106-1A-55-60 Replaces
S106-(1,2)A15-50(C)
S106-(1,2)A19-65(C)
S106-(1,2)A19-65(C)
S106-(1,2)A22-65(C)
S106-(1,2)A23-55(C)
S106-(1,2)A24-55(C)
S106-(1,2)A57-65C)
S106-(1,2)A32-45(C)
S106-(1,2)A46-30(C)
S106-(1,2)A50-30(C)
S106-(1,2)A53-30(C)
S106-(1,2)A53-40(C)
S106-(1,2)A54-30(C)

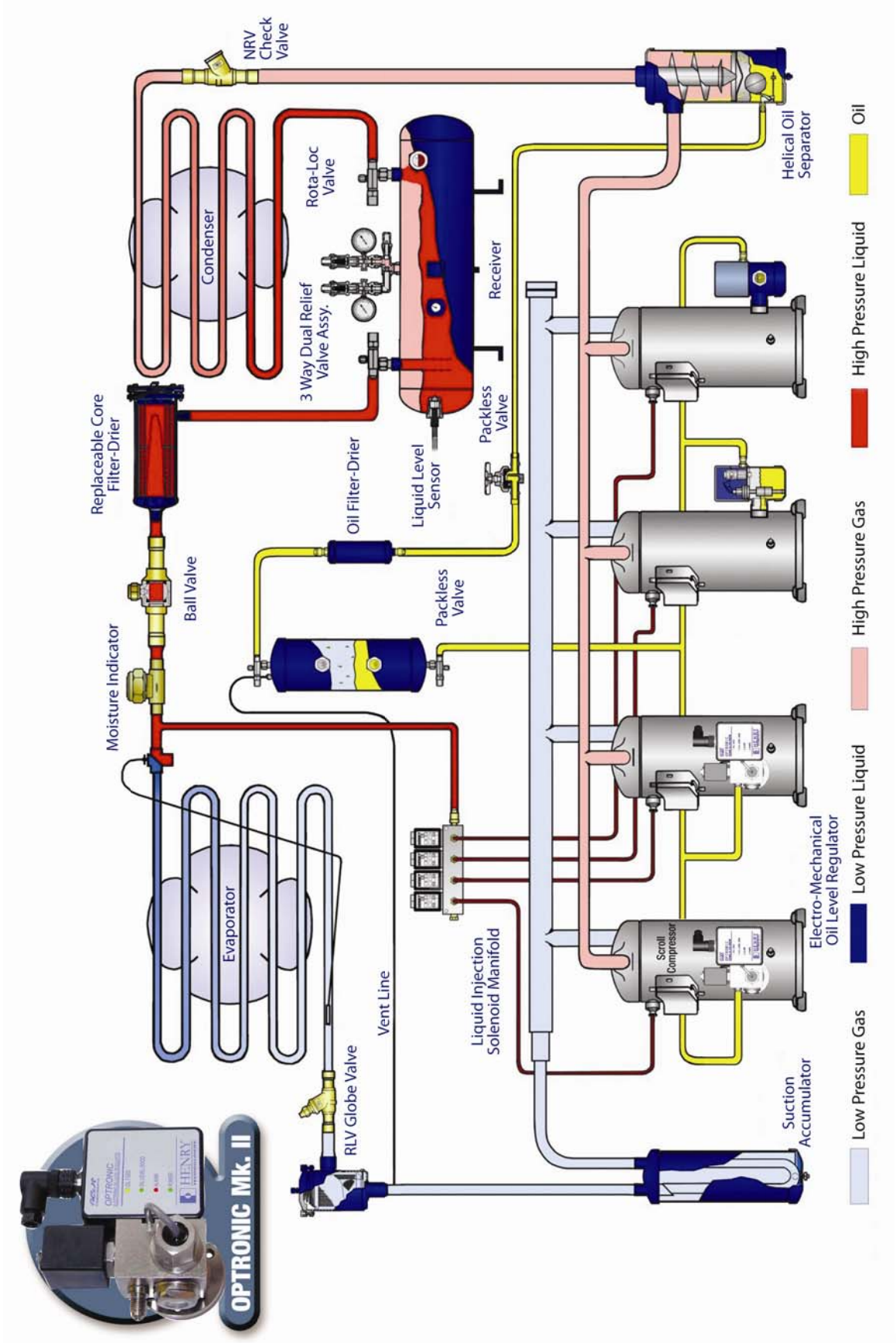
S106-1B-65-45 Replaces
S106-(1,2)B-30(C)
S106-(1,2)B-45(C)
S106-(1,2)B-65(C)
S106-(1,2)B2-45(C)
S106-(1,2)B3-30(C)
S106-(1,2)B4-65(C)
S106-(1,2)B5-65(C)
S106-(1,2)B17-65(C)
S106-(1,2)B24-55(C)
S106-(1,2)B25-65(C)
S106-(1,2)B26-45(C)
S106-(1,2)B31-45(C)
S106-(1,2)B32-30(C)
S106-(1,2)B45-40(C)
S106-(1,2)B51-65(C)
S106-(1,2)B(54,55,56)-30(C)
S106-(1,2)B57-45(C)
S106-(1,2)B58-65(C)

Notes

HENRY TECHNOLOGIES

STANDARD REFRIGERATION SYSTEM

HENRY TECHNOLOGIES



HENRY TECHNOLOGIES

CONTACTS

General Information - geninfo@henrytech.com
Quality - qc@henrytech.com
Engineering - eng@henrytech.com
Sales - sales@henrytech.com
Customer Service - cs@henrytech.com

CORPORATE OFFICE

655 3rd Street, Suite 100 Beloit, WI 53511
USA
608.361.4400

701 S. Main Street
Chatham, IL 62629
USA
800.96-HENRY

www.henrytech.com

36 Craig Street
Brantford, Ontario N3T 5T6
CANADA
800.263.0086

www.henrytech.ca

Mossland Road
Glasgow G52 4XZ
SCOTLAND, UK
44.141.882.4621

www.henrytech.co.uk

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