

FLUID CONTROL COMPONENTS



BI-DIRECTIONAL REFRIGERATION BALL VALVES

"ONE OF THE MOST ADVANCED 1/4" TO 3 1/8" ODS BALL VALVES"

FEATURES

- Valve can be mounted in either directions of flow.
- Maximum working pressure: 40 bar (580 PSIG).
- Temperature range: -40°C to +150°C (-40°F to 300°F).
- Full flow design reduces risks for leaks.
- Supplied with access valve port.
- Quick valve operation with mechanical stop: 1/4 turn of valve stem will fully open or close the valve. A special replaceable stem ring will ensure positive open and closed position.
- Supplied with sealed brass cap having the possibility to seal the cap and thus avoiding operation of the stem by non authorized people.
- Extended copper ends for easy brazing.
- All valves are individually tested for vacuum and pressure as well as helium leak tested.
- Supplied with pre-drilled threaded holes in brass feet (bracket and 2 screws optional) to allow easy mounting of the valve on a base plate.

INSTALLATION

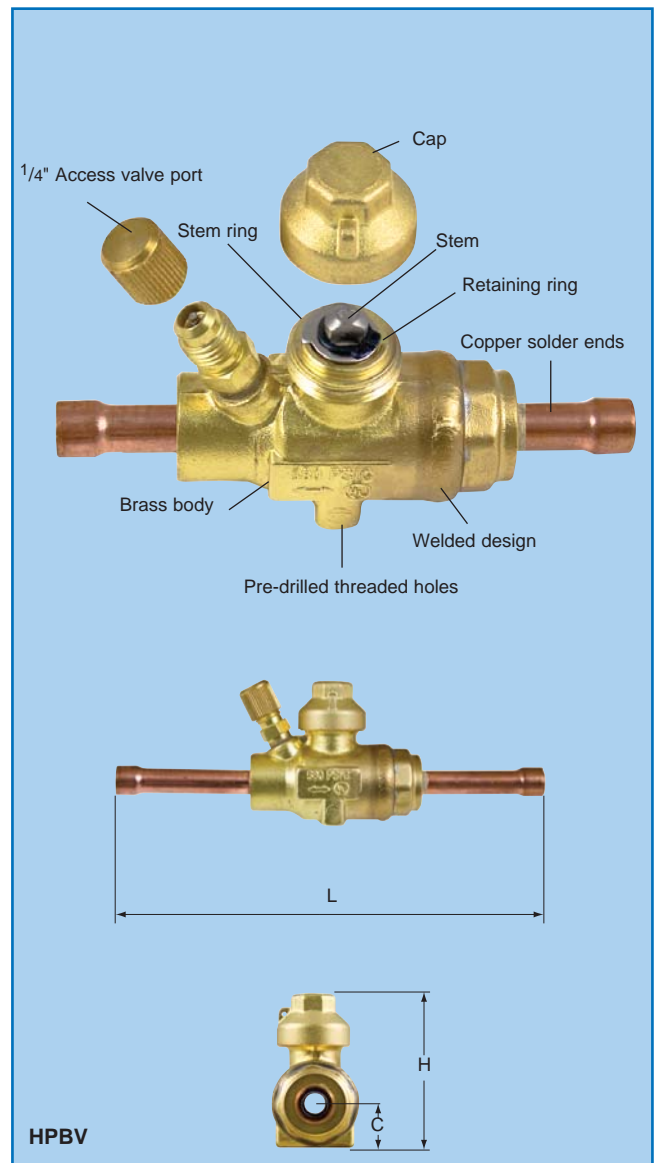
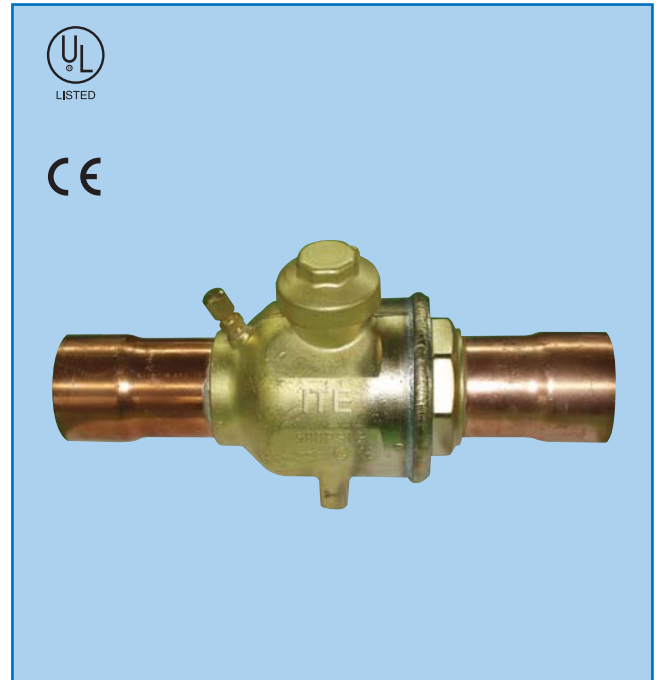
- Installation can be done in any direction horizontally or vertically
- Extended copper end solder ODS connections for installation without valve dismantling
- Easy and quick soft solder or silver brazing alloy into the line.
- Bi-directional with facility to surface mount if required.

SPECIFICATIONS

- Suitable for all standard CFC, HCFC and HFC refrigerants and oils.
- Available for R410A

MODEL NUMBER	CON. SIZE INCH	BALL PORT SIZE INCH	DIMENSIONS (mm)			Q (M ³ /h)
			L	H	C	
HPBV-04P	1/4"	1/2"	140	61	21	1.2
HPBV-06P	3/8"	1/2"	140	61	21	3.8
HPBV-08P	1/2"	1/2"	160	61	21	7.8
HPBV-10P	5/8"	1/2"	160	61	21	12
HPBV-12P	3/4"	3/4"	186	75	26	22
HPBV-14P	7/8"	3/4"	186	75	26	28
HPBV-18P	1 1/8"	1"	230	88	33	43
HPBV-22P	1 3/8"	1 1/4"	245	103	39	74
HPBV-26P	1 5/8"	1 1/2"	278	114	45	125
HPBV-34P	2 1/8"	2"	298	145	60	195
HPBV-42P	2 5/8"	2"	298	145	60	220
HPBV-50P	3 1/8"	2 1/2"	360	177	74	310

MODEL NUMBER	CON. SIZE METRIC	BALL PORT SIZE METRIC	DIMENSIONS (mm)			Q (M ³ /h)
			L	H	C	
HPBV-06MMP	6 mm	12,70 mm	140	61	21	1.2
HPBV-10MMP	10 mm	12,70 mm	140	61	21	3.8
HPBV-12MMP	12 mm	12,70 mm	160	61	21	7.8
HPBV-16MMP	16 mm	12,70 mm	160	61	21	12
HPBV-19MMP	19 mm	19,05 mm	186	75	26	22
HPBV-22MMP	22 mm	19,05 mm	186	75	26	28
HPBV-28MMP	28 mm	25,40 mm	230	88	33	43
HPBV-35MMP	35 mm	31,75 mm	245	103	39	74
HPBV-42MMP	42 mm	38,10 mm	278	114	45	125
HPBV-54MMP	54 mm	50,80 mm	298	145	60	195





PACKLESS SHUT-OFF VALVES 1/4" TO 1 1/8"

"FULL LEAK PROOF DIAPHRAGM AND POWER STEERING BRASS BALL VALVES"

1. DIAPHRAGM PACKLESS VALVES

PART NUMBER	CONNECTION (TYPE)	HEIGHT	LENGTH	MTG.HOLE	
		(mm)	(mm)	CENTRE (mm)	
PSO-2B	1/4" flare	67	67	51	
PSO-3B	3/8" flare	67	73		
PSO-4B	1/2" flare	75	98		
PSO-5B	5/8" flare	87	105		
PSO-2ES	1/4" ODS	66	153	51	
PSO-3ES	3/8" ODS (*)	67	171		
PSO-4ES	1/2" ODS (*)	75	200		
PSO-5ES	5/8" ODS (*)	87	200		
PSO-7S	7/8" ODS	129	126		
PSO-9S	1 1/8" ODS	129	126		83

(*): Extended copper connections

FEATURES

- "PSO" series packless SHUT-OFF valves are designed for a complete leak proof service in any air conditioning and refrigeration applications.
- Forged brass body for high rigidity and strength including mounting pad for easy screwed installation (if necessary). Forged brass bonnet for safe, anti-corrosion and hermetic seal diaphragms when valve is operated.
- Stay 100% back-seated and leak proof when wide open.
- Large diameter diaphragms for wide and slide face moving, greater lift as well as low pressure drop (see "FLOW CAPACITY TABLE").
- One phosphor bronze Diaphragm is used for long life. The stainless steel second one is suitable against corrosion.
- Raised seat against metallic burrs and dirt clogging.
- Stainless steel progressive shut-off spring.
- Heat stabilized and floating seat disc (non-rotating and eliminating torsional wear).
- Ergonomic hand wheel for easy grip hand operation.
- Label for quick and easy identification.

INSTALLATION

- Cut tube ends square and remove all burrs with our tools. (Look at the "TUBE WORKING TOOLS" INDEX 4).
- Carefully clean the outside and inside of the tube with brush and/or emery cloth.
- Insert and slip on the tube to full depth, then withdraw it halfway out and apply brazing flux all over. Reinsert and slip on the tube to full depth again.
- No need to dismantle ODS connection valves for brazing.
- Before brazing operation, turn the handwheel counter-clockwise until stem backseats. Then turn it back clockwise about 1/4 turn to place the teflon seat disc in floating position.
- Wrap a water-soaked cloth around the valve body before brazing (or use our BLOCK-IT quick cooling paste).
- After brazing the first joint, cool the body enough to proceed in the same way with the second brazing joint.

SPECIFICATIONS

- For R12, R22, R502, R134a, R404A, R407C, R507, other blends, etc... and all CFC, HCFC & HFC with their specific lubricants.
- Solid extended copper "ODS" connections for quick, safe and easy brazing.
- U.L. and CSA listed.
- Maximum temperature rating: 135°C (275°F).
- Maximum working pressure: 35 bar (500 Psi).

2. FLOW CAPACITY TABLE

PART NUMBER	CONNECTION (TYPE)	COEFF.	COEFF.	COEFF.
		(KV)	(K)	(LE)
PSO-2B	1/4" flare	3.3	1.2	0.3
PSO-3B	3/8" flare	4.6	4.5	1.83
PSO-4B	1/2" flare	8.2	5.4	3.35
PSO-5B	5/8" flare	11.1	6.8	5.48
PSO-2ES	1/4" ODS	3.3	1.2	0.3
PSO-3ES	3/8" ODS (*)	4.6	4.5	1.83
PSO-4ES	1/2" ODS (*)	8.2	5.4	3.35
PSO-5ES	5/8" ODS (*)	11.1	6.8	5.48
PSO-7S	7/8" ODS	27.9	4.7	6.10
PSO-9S	1 1/8" ODS	42.8	5.7	10.36

(*): Extended copper connections.

(Kv) FLOW COEFFICIENT:

Kv = litres of water per minute at 15°C through the valve at a pressure drop of 1 bar.

(K) RESISTANCE COEFFICIENT:

K = 2gh/V² where: (g = 9.80 m per second squared)
(h = pressure loss in metre of fluid flow)
(V = fluid velocity in metre per second)

(Le) EQUIVALENT LENGTH OF TUBING:

Le = length in metre of refrigeration tubing to provide a pressure drop equal to the pressure drop through the valve.

PACKED ANGLE SERVICE VALVES

"CHARGING, PURGING, TESTING"

1. BRASS ANGLE VALVES

PART NUMBER	CONNECTIONS	
	BOTTOM (1)	SIDE (2)
PAS-090 PAS-771B-US	1/4" male flare 1/4" male NPT	1/4" male NPT 1/4" female NPT
PAS-22B PAS-23B	1/4" male NPT 1/4" male NPT	1/4" male flare 3/8" male flare
PAS-32B PAS-33B	3/8" male NPT 3/8" male NPT	1/4" male flare 3/8" male flare
PAS-768-US PAS-44B PAS-45B	1/2" male NPT 1/2" male NPT 1/2" male NPT	3/8" male flare 1/2" male flare 5/8" male flare

2. STEEL ANGLE VALVES

PART NUMBER	CONNECTIONS	
	BOTTOM	SIDE
PAS-761-US	1/4" male NPT	1/4" male flare
PAS-771-US	1/4" male NPT	1/4" female NPT
PAS-771R-US	1/4" male NPT	1/8" female NPT
PAS-773-US	3/8" male NPT	3/8" female NPT

FEATURES

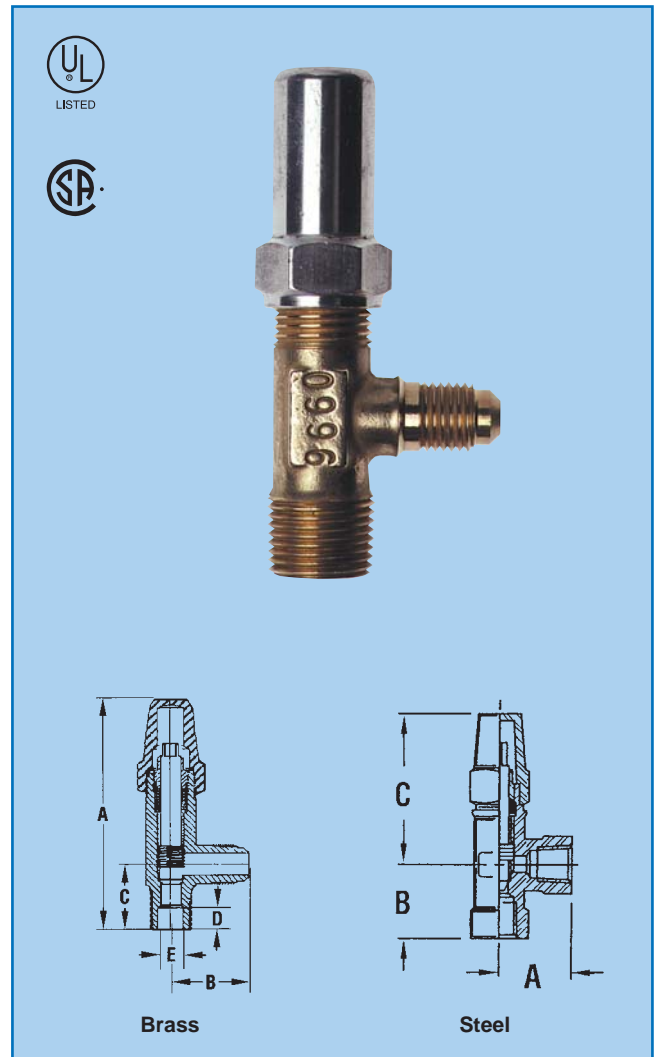
- "PAS" series **PACKED ANGLE SERVICE valves** are designed for servicing, charging, purging, gauges testing any refrigeration and air-conditioning installation.
- Forged brass (except for PAS-44 and 45) or steel body for high rigidity and strength and very low or high pressures and temperatures.
- Plated steel stem and hermetic cap with seal.

INSTALLATION

- All male flare connections are standard for refrigerant hoses, and female 45° standard flare fittings.
- All male and female NPT connections are standard for gauges (1/8" NPT and 1/4" NPT) and male / female NPT fittings. (NPT = National Pipe Thread). Also said "pipe" or "briggs".
- For any NPT fittings, see hereunder catalogue sections:
 - "BRASS 45° FLARE/PIPE FITTINGS" Index 6.
 - "STEEL FITTINGS" Index 6.
- Our "PAS" angle valves can be installed on receivers, accumulators, compressors, tubing, etc...
- For direct steel tubing installation, use "BS" female steel fittings shown on "STEEL FITTINGS" Index 6.

SPECIFICATIONS

- For R12, R22, R502, R134a, R404A, R407C, R507, other blends, etc... and all CFC, HCFC & HFC with their specific oil and lubricant.
- For R717 (ammonia) use steel angle valve version.
- **Forged brass valves:**
 - Temperature rating: **-40°C to +150°C** (-40°F/+300°F)
 - Maximum working pressure: **35 bar** (500 Psi)
- **Forged steel valves:**
 - Finish: black oxide
 - Temperature rating: **-40°C to +150°C** (-40°F/+300°F)
 - Maximum working pressure: **70 bar** (1000 Psi)



BRASS ANGLE VALVES

PART NUMBER	DIMENSIONS (mm)				
	A	B	C	D	E
PAS-090 PAS-771B-US	89 93	24 32	22 27	9.5 9.7	6.4 9.5
PAS-22B PAS-23B	89 93	24 30	22 27	9.5 9.5	6.4 8.0
PAS-32B PAS-33B PAS-34B	93 93 96.5	27 30 30	27 27 30	9.5 9.5 8.0	9.6 9.6 9.6
PAS-768-US PAS-44B PAS-45B	100 116 116	32 44 49	31 35 35	9.7 9.5 9.5	12.7 12.8 12.8

STEEL ANGLE VALVES

PART NUMBER	DIMENSIONS (mm)		
	A	B	C
PAS-761-US	26.9	26.9	60.5
PAS-771-US	26.9	26.9	60.5
PAS-771R-US	28.0	26.9	60.5
PAS-773-US	38.1	38.1	66.8
PAS-774-US	38.1	38.1	66.8

BVS-02



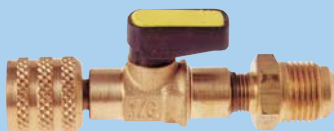
1/8" female NPT x
1/8" female NPT

BVS-04



1/4" male flare x
1/4" female flare

BVS-06



3/8" male flare x
3/8" female flare

REFRIGERATION MICRO SERVICE BRASS VALVES

AVAILABLE CONNECTIONS

- **Male Flare SAE 45°**
- **Female Flare SAE 45°**
- **MPT Male Pipe (National Pipe Thread)**
- **FPT Female Pipe (National Pipe Thread)**
- **O.D.S. (Solder Ends Connections)**

All fittings (male or female flare SAE or MPT or FPT pipe) shown on **INDEX 5** or **6** can be used with all these **MICRO SERVICE VALVES**.

The service **SHUT-OFF BALL VALVES** are used for all applications (permanent installation, high pressure or vacuum service for recovery and charging stations, manifolds, gauges, hoses, etc...)

- Suitable for all CFC, HCFC, HFC and their specific lubricants.
- Straight through flow design with no restriction.
- **1/4 TURN** fully **OPEN** or fully **CLOSED**.
- Compact. Ergonomic.

STRAIGHT BALL VALVES

BVS-02B 1/8" female NPT x 1/8" female NPT, blue
BVS-02R 1/8" female NPT x 1/8" female NPT, red
BVS-02Y 1/8" female NPT x 1/8" female NPT, yellow

BVS-04B 1/4" male flare SAE x 1/4" female flare SAE swivel, blue
BVS-04R 1/4" male flare SAE x 1/4" female flare SAE swivel, red
BVS-04Y 1/4" male flare SAE x 1/4" female flare SAE swivel, yellow

BVS-06B 3/8" male flare SAE x 3/8" female flare SAE swivel, blue
BVS-06R 3/8" male flare SAE x 3/8" female flare SAE swivel, red
BVS-06Y 3/8" male flare SAE x 3/8" female flare SAE swivel, yellow

BVS-04-06B 1/4" female flare SAE swivel x 3/8" male flare SAE, blue
BVS-04-06R 1/4" female flare SAE swivel x 3/8" male flare SAE, red
BVS-04-06Y 1/4" female flare SAE swivel x 3/8" male flare SAE, yellow

BVS-05-04B 5/16" female flare SAE swivel x 1/4" male flare SAE, blue
BVS-05-04R 5/16" female flare SAE swivel x 1/4" male flare SAE, red
BVS-05-04Y 5/16" female flare SAE swivel x 1/4" male flare SAE, yellow

BVS-1/2-ACME/R 2 x 1/2-16 ACME, M x F swivel, red

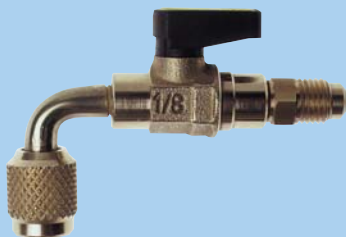
BVS-06B-M14 3/8" male flare SAE x M14 Female swivel, blue

ANGLED (90°) BALL VALVES

BVA-04B 1/4" male flare SAE x 1/4" female flare SAE swivel, blue
BVA-04R 1/4" male flare SAE x 1/4" female flare SAE swivel, red
BVA-04Y 1/4" male flare SAE x 1/4" female flare SAE swivel, yellow

BVA-06R 3/8" male flare SAE x 3/8" female flare SAE swivel, red

BVA-05-04B 5/16" female flare SAE swivel x 1/4" male flare SAE, blue
BVA-05-04R 5/16" female flare SAE swivel x 1/4" male flare SAE, red
BVA-05-04Y 5/16" female flare SAE swivel x 1/4" male flare SAE, yellow



1/4" female flare 90°
x 1/4" male flare

BVA-04

SMALL ANGLE VALVES

V-35042 1/4" male flare SAE x 1/8" MPT male

V-35040 1/4" ODS solder x 1/4" male flare SAE

BRAZED STEEL ANGLE VALVES

"BACK-SEAT, GAUGE PORT, CAP"

VALVE CONSTRUCTION

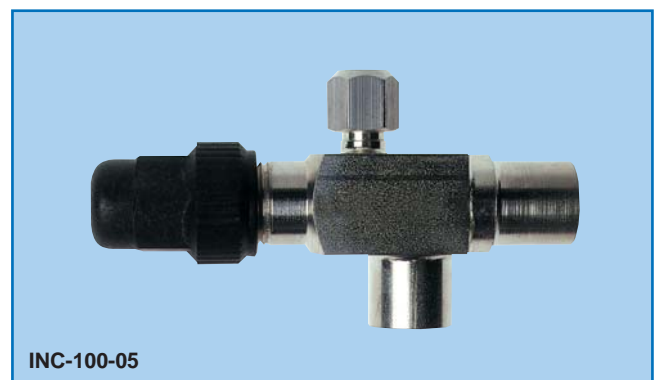
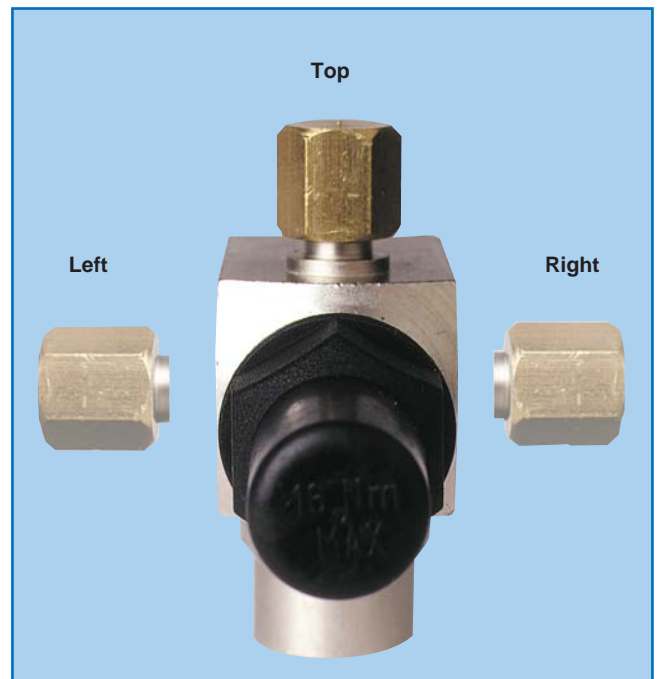
- Steel SHUT-OFF VALVES designed, manufactured and tested to be used on hermetic, semi-hermetic and automotive compressors, receivers, condensing units, piping, evaporators and all types of refrigeration, air conditioning systems and OEM's needs.
- Furnace- brazed steel body and copper plated std. finishing.
- 1/4" male flare SAE gauge port with std hex. cap on TOP (right side or left side or NO gauge port on request). (Custom design, connections, port gauges, etc... on request).
- Steel body shape and sizes offered:
 3/4" HEXAGONAL and 7/8", 1 1/8", 1 3/8", 1 5/8" SQUARE.
- Nickel plated STEM and hexagonal standard CAP.
- Steel brazed CONNECTIONS available:
 The ODS connection dimensions for brazing copper tube refer to the external diameter of the copper tube.
 - O.D.S. connections for "INCH" copper tubing (3/8" to 1 5/8")
 - O.D.S. connections for "METRIC" copper tubing (10 mm to 42 mm)
- For all CFC, HCFC, HFC and all their specific lubricants.

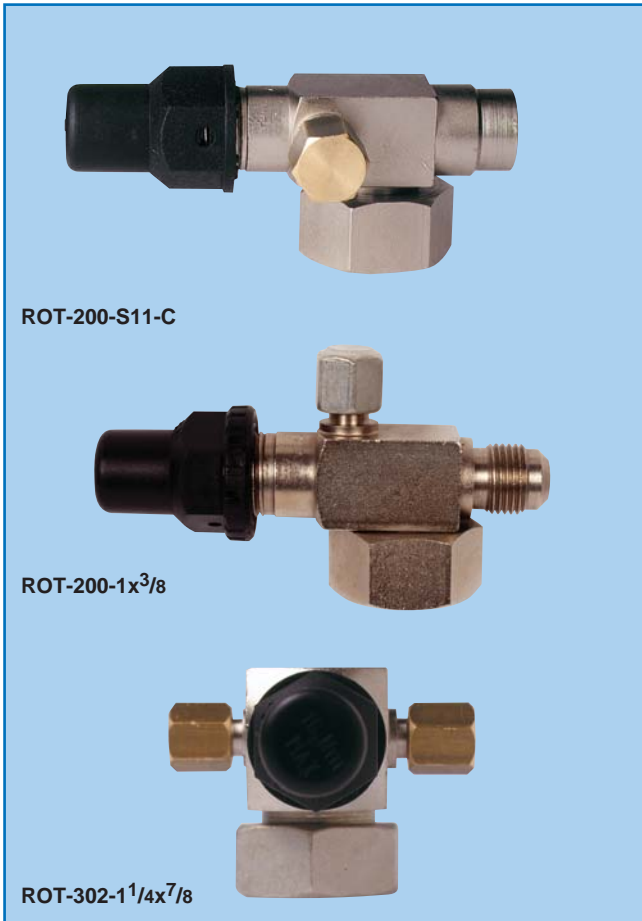
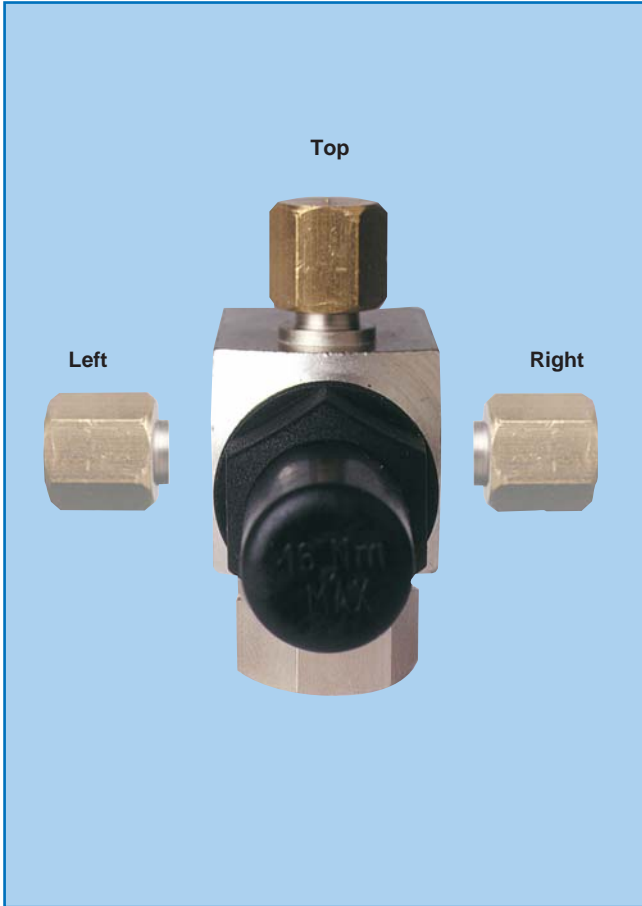
1. STEEL ANGLE VALVES WITH "ODS" SOLDER CONNECTIONS FOR "INCH" COPPER TUBING

PART NUMBER	END "ODS" CONNECTIONS	BODY SIZE
INC-100-05	3/8" ODS	3/4" HEX
INC-100-08	1/2" ODS	3/4" HEX
INC-200-11	5/8" ODS	7/8" SQUARE
INC-300-14	3/4" ODS	1 1/8" SQUARE
INC-300-17	7/8" ODS	1 1/8" SQUARE
INC-300-22	1 1/8" ODS	1 1/8" SQUARE
INC-400-27	1 3/8" ODS	1 3/8" SQUARE
INC-500-31	1 5/8" ODS	1 5/8" SQUARE

2. STEEL ANGLE VALVES WITH "ODS" SOLDER CONNECTIONS FOR "METRIC" COPPER TUBING

PART NUMBER	END "ODS" CONNECTIONS	BODY SIZE
MET-100-06	10 mm ODS	3/4" HEX
MET-100-07	12 mm ODS	3/4" HEX
MET-200-12	16 mm ODS	7/8" SQUARE
MET-300-13	18 mm ODS	1 1/8" SQUARE
MET-300-16	22 mm ODS	1 1/8" SQUARE
MET-300-21	28 mm ODS	1 1/8" SQUARE
MET-400-28	35 mm ODS	1 3/8" SQUARE
MET-500-32	42 mm ODS	1 5/8" SQUARE





"ROTALOC"® VALVES

"COMPRESSORS, RECEIVERS, ETC..."

1. ANGLE "ROTALOC"® VALVES

VALVE CONSTRUCTION

- Steel SHUT-OFF VALVES designed, manufactured and tested to be used on hermetic, semi-hermetic and automotive compressors, receivers, condensing units, piping, evaporators and all types of commercial refrigeration systems and OEM's needs.
- Furnace- brazed steel body and copper plated std. finishing.
- Custom design (connections, port gauges, etc...)on quantity request.

DESCRIPTION

BODY SHAPE & SIZES:

- 3/4" HEXAGONAL and 7/8", 1 1/8", 1 3/8", 1 5/8" SQUARE

SIDE COUPLING "ROTALOC"® CONNECTIONS:

- Hexagonal 3/4"-16, 1"-14, 1 1/4"-12 and 1 3/4"-12

END SOLDERING "ODS" CONNECTIONS:

- 1/4", 3/8", 1/2", 5/8", 3/4", 7/8", 1 1/8", 1 3/8" and 1 5/8" ODS

GAUGE PORT:

- 1/4" male Flare SAE connection with cap on "TOP LOCATION"

STEM CAP:

- Hexagonal standard type.

PART NUMBER	"ROTALOC" CONNECTION	END "ODS" CONNECTION	BODY SIZE
ROT-100-S03-C	3/4"-16	1/4" ODS	
ROT-100-S05-C	3/4"-16	3/8" ODS	3/4"
ROT-200-S08-C	1"-14	1/2" ODS	
ROT-200-S11-C	1"-14	5/8" ODS	7/8"
ROT-200-S14-C	1"-14	3/4" ODS	
ROT-300-S17-C	1 1/4"-12	7/8" ODS	1 1/8"
ROT-300-S22-C	1 1/4"-12	1 1/8" ODS	
ROT-500-S31-C	1 3/4"-12	1 5/8" ODS	1 5/8"

ROT-100-S02-C	3/4"-16	6 mm ODS	
ROT-100-S06-C	3/4"-16	10 mm ODS	3/4"
ROT-200-S07-C	1"-14	12 mm ODS	
ROT-200-S12-C	1"-14	16 mm ODS	7/8"
ROT-300-S16-C	1 1/4"-12	22 mm ODS	1 1/8"
ROT-300-S21-C	1 1/4"-12	28 mm ODS	
ROT-400-S28-C	1 3/4"-12	35 mm ODS	1 3/8"
ROT-500-S32-C	1 3/4"-12	42 mm ODS	1 5/8"

PART NUMBER	"ROTALOC" CONNECTION	MALE FLARE SAE CONNECTION	BODY SIZE
ROT-200-1x3/8	1"-14	3/8" male flare	3/4"

PART NUMBER	"ROTALOC" CONNECTION	END "ODS" CONNECTION	BODY SIZE
ROT-202-1x3/8	1"-14	3/8" ODS	3/4"
ROT-202-1x1/2	1"-14	1/2" ODS	3/4"
ROT-222-1x5/8	1"-14	5/8" ODS	7/8"
ROT-222-1 1/4x5/8	1 1/4"-12	5/8" ODS	7/8"
ROT-222-1 1/4x3/4	1 1/4"-12	3/4" ODS	7/8"
ROT-302-1 1/4x7/8	1 1/4"-12	7/8" ODS	1 1/8"
ROT-302-1 1/4x1 1/8	1 1/4"-12	1 1/8" ODS	1 1/8"
ROT-302-1 3/4x7/8	1 3/4"-12	7/8" ODS	1 1/8"
ROT-352-1 3/4x1 1/8	1 3/4"-12	1 1/8" ODS	1 3/8"
ROT-352-1 3/4x1 3/8	1 3/4"-12	1 3/8" ODS	1 3/8"

2. "ROTALOC"® GASKETS & CAPS

GRT-143	TEFLON GASKET	3/4"-16
GRT-191	TEFLON GASKET	1"-14
GRT-254	TEFLON GASKET	1 1/4"-12
GRT-318	TEFLON GASKET	1 1/2"-16
GRT-381	TEFLON GASKET	1 3/4"-12
GRT-510	TEFLON GASKET	2 1/4"-12

CAP-RT08	CAP	for 3/4" and 1"
CAP-RT10	CAP	1 1/4"
CAP-RT14	CAP	1 3/4"

DESCRIPTION

- Each "ROTALOC"® thread coupling is equipped with a proper TEFLON rubber seal (one for each 4 thread sizes).
- Also, any male thread "ROTALOC"® end can be temporarily or permanently closed with a suitable female thread cap.

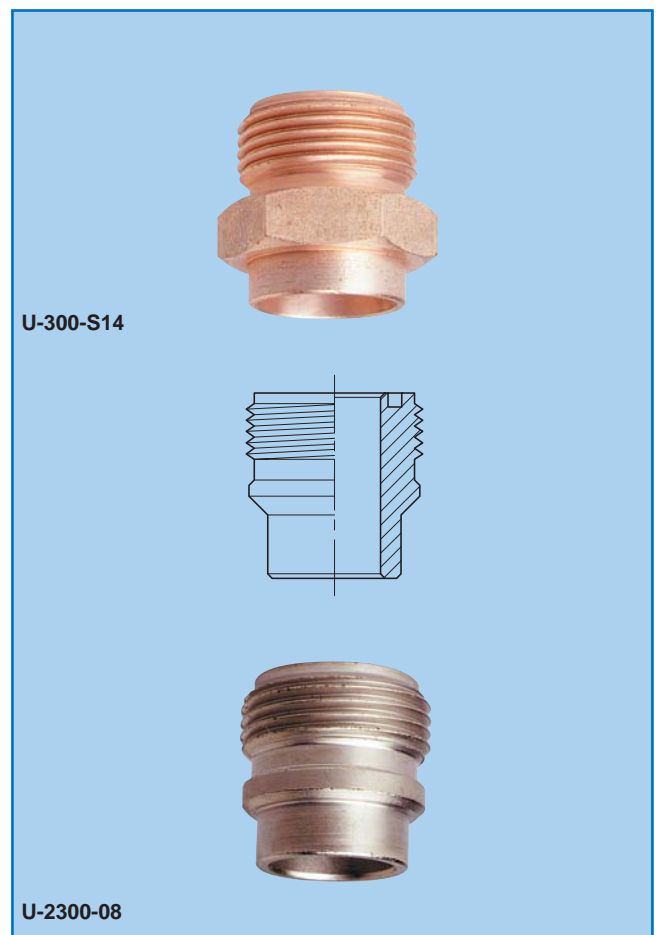


3. MALE "ROTALOC"® FITTINGS

U-200-S08	MALE FITTING	3/4"-16	x	1/2" ODS
U-300-S08	MALE FITTING	1"-14	x	1/2" ODS
U-300-S11	MALE FITTING	1"-14	x	5/8" ODS
U-300-S14	MALE FITTING	1"-14	x	3/4" ODS
U-400-S17	MALE FITTING	1 1/4"-12	x	7/8" ODS
U-500-S22	MALE FITTING	1 3/4"-12	x	1 1/8" ODS
U-500-S27	MALE FITTING	1 3/4"-12	x	1 3/8" ODS

U-200-S07	MALE FITTING	3/4"-16	x	12 mm ODS
U-300-S13	MALE FITTING	1"-14	x	18 mm ODS
U-400-S16	MALE FITTING	1 1/4"-12	x	22 mm ODS

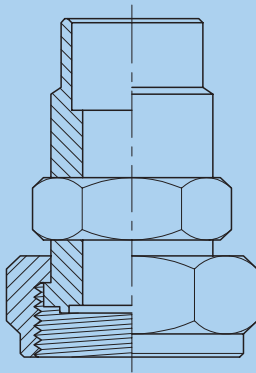
U-2300-06	COPPER STEEL PLATED GASKET	3/4"-16
U-2300-08	COPPER STEEL PLATED GASKET	1"-14
U-2300-10	COPPER STEEL PLATED GASKET	1 1/4"-12
U-2300-14	COPPER STEEL PLATED GASKET	1 3/4"-12



4. FEMALE "ROTALOC"® STRAIGHT FITTINGS

U-1100-S03	FEM. STRAIGHT FITTING	3/4"-16 x	3/4" ODS
U-1100-S05	FEM. STRAIGHT FITTING	3/4"-16 x	3/8" ODS
U-1200-S08	FEM. STRAIGHT FITTING	1"-14 x	1/2" ODS
U-1300-S14	FEM. STRAIGHT FITTING	1 1/4"-12 x	3/4" ODS
U-1300-S17	FEM. STRAIGHT FITTING	1 1/4"-12 x	7/8" ODS
U-1300-S22	FEM. STRAIGHT FITTING	1 1/4"-12 x	1 1/8" ODS
U-1400-S31	FEM. STRAIGHT FITTING	1 3/4"-12 x	1 5/8" ODS

U-1100-S06	FEM. STRAIGHT FITTING	3/4"-16 x	10 mm ODS
U-1200-S07	FEM. STRAIGHT FITTING	1"-14 x	12 mm ODS
U-1200-S12	FEM. STRAIGHT FITTING	1"-14 x	16 mm ODS
U-1300-S13	FEM. STRAIGHT FITTING	1 1/4"-12 x	18 mm ODS
U-1300-S16	FEM. STRAIGHT FITTING	1 1/4"-12 x	22 mm ODS
U-1300-S21	FEM. STRAIGHT FITTING	1 1/4"-12 x	28 mm ODS
U-1400-S28	FEM. STRAIGHT FITTING	1 3/4"-12 x	35 mm ODS
U-1400-S32	FEM. STRAIGHT FITTING	1 3/4"-12 x	42 mm ODS

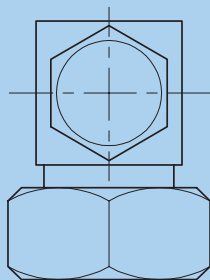


U-1100-S03

5. FEMALE "ROTALOC"® ANGLE FITTINGS

U-1500-S05	FEM. ANGLE FITTING	3/4"-16 x	3/8" ODS
U-1600-S08	FEM. ANGLE FITTING	1"-14 x	1/2" ODS
U-1600-S11	FEM. ANGLE FITTING	1"-14 x	5/8" ODS
U-1700-S14	FEM. ANGLE FITTING	1 1/4"-12 x	3/4" ODS
U-1700-S17	FEM. ANGLE FITTING	1 1/4"-12 x	7/8" ODS
U-1700-S22	FEM. ANGLE FITTING	1 1/4"-12 x	1 1/8" ODS
U-1800-S31	FEM. ANGLE FITTING	1 3/4"-12 x	1 5/8" ODS

U-1500-S06	FEM. ANGLE FITTING	3/4"-16 x	10 mm ODS
U-1700-S13	FEM. ANGLE FITTING	1 1/4"-12 x	18 mm ODS
U-1700-S16	FEM. ANGLE FITTING	1 1/4"-12 x	22 mm ODS
U-1700-S21	FEM. ANGLE FITTING	1 1/4"-12 x	28 mm ODS
U-1800-S28	FEM. ANGLE FITTING	1 3/4"-12 x	35 mm ODS
U-1800-S32	FEM. ANGLE FITTING	1 3/4"-12 x	42 mm ODS



U-1500-S05

STAINLESS "BALL" CHECK - VALVES

"ZERO PRESSURE DROP OR NORMALLY CLOSED OR NORMALLY OPEN BALL CHECK"

DESCRIPTION

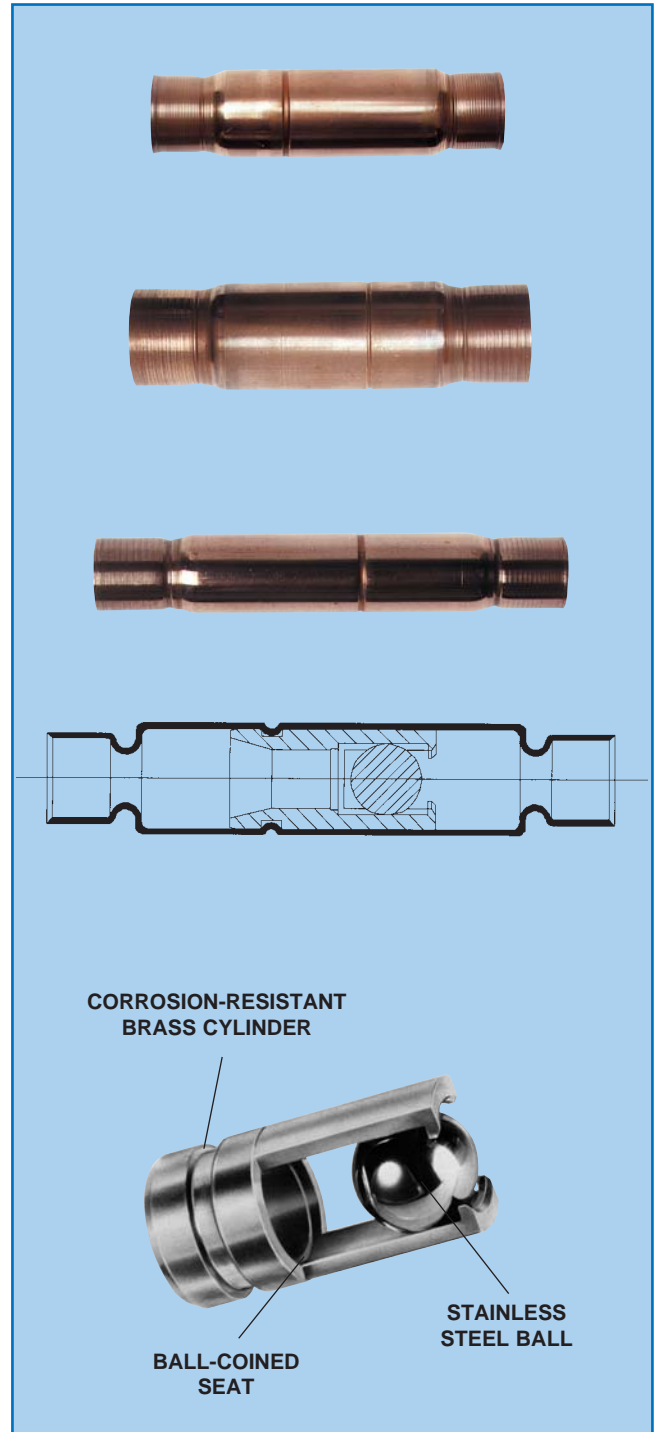
- The copper spun ball check valve has a metal to metal seating (stainless steel ball to brass seat under 65° touching angle).
- Dirt and foreign material are pushed away of the seat. The ball coins its own seat which allows for slight difference in ball diameter.
- The straight through flow around the ball yields high flow capacities for small body diameter valve bodies.
- These check valves are a one piece body constructed of copper tubing which eliminates leaks.

PURPOSES

- The all metal design allows for higher installation and operating temperatures. Compact. "in line" installation.
- Ideal for refrigeration and heat pump applications.
- Quick and easy ODS copper to copper soldering.
- **HORIZONTAL INSTALLATION:**
 - No pressure drop and floating ball
 - If possible, the outlet must be at 30° above horizontal
- **VERTICAL INSTALLATION (with the outlet pointed up):**
 - Normally close position (ball downs on the seat and we need pressure drop for opening)
 - This is the best installation
- **VERTICAL INSTALLATION (with the outlet pointed down):**
 - Normally open position (**attention:** down ball out of the seat and pressure drop needed for closing)

SPECIFICATIONS

- Corrosion-resistant (stainless steel, brass and copper).
- Suitable for all **CFC, HCFC, HFC** and their specific lubricant.
- Leak rate: **750 cc/min.** (dry fluid).
- Full flow. No pressure drop to open (see above).
- **U.L. listed** (SA-8571) and **CSA listed** (LR-87950).
- Working pressure: **35 bar** (500 Psi).

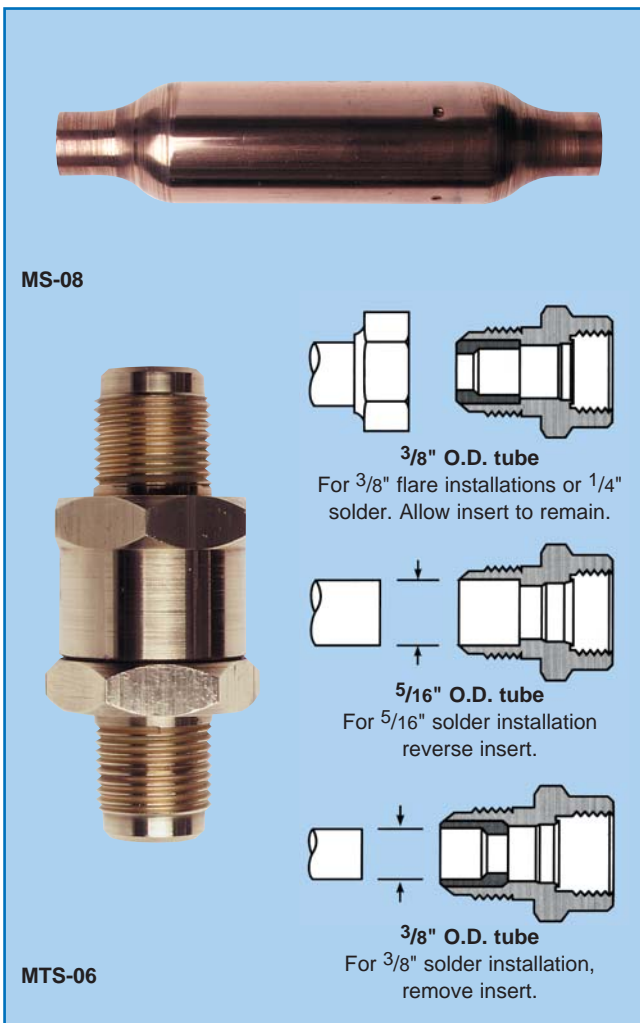


STANDARD "BALL" CHECK VALVES

CAPACITIES SHOWN IN kW (1kW = 860 kcal/h = 0.284 US TON of Refrigeration)

PART NUMBER	ODS CONNECTIONS	BODY Ø (mm)	LENGTH (mm)	SEAT Ø (mm)	FLOW (in kW/h under 0,14 bar or 2 Psi)		
					R12	R22	R502
BCV-4-4	1/4" ODS	12.7	96	6.35	13.4	17.6	11.6
BCV-4-6	3/8" ODS	12.7	96	6.35	13.4	17.6	11.6
BCV-05	1/2" ODS	15.9	96	7.95	23.9	31.6	21.1
BCV-07	5/8" ODS	22.2	115	11.90	45.0	59.8	39.7
BCV-09	7/8" ODS	28.6	115	17.50	92.5	123.0	82.6
BCV-11	1 1/8" ODS	34.9	127	20.70	243.0	323.0	217.0

NOTE: capacities rated at -30°C (86°F) liquid temperature and -15°C (5°F) evaporating temperature



"MT" & "MTS" MAGNI CHECK-VALVES

"NORMALLY CLOSED MAGNET DISC"

DESCRIPTION & SPECIFICATIONS

- These magnet seat disc CHECK-VALVES stay **NORMALLY CLOSED** due to their **magnet seat disc** (even when the pressure balance) and need a low pressure drop to open (see "MT" or "MTS" tables).
- The "**MT**" spun CHECK-VALVE has an inlet micronic built-in stainless steel strainer (**30 mesh**).
- Suitable for all **CFC, HCFC, HFC** and their specific lubricant.
- **U.L. listed** (SA-4468) and **CSA listed** (LR-96509-1)

GENERAL INSTALLATION

- All these "**MAGNI**" Check-Valves offer an "**in line**" installation.
- Take care during soldering operation to prevent overheating the disc (wet rag or cooling fixture).
- Can be installed in any position.
- The "**MT**" spun offers copper **ODS** end connections.
- The "**MTS**" brass offers **Male Flare SAE** as well as diverse **ODS** solder connections due to the use of included ODS inserts. The four basic types offer 47 combinations of male flare (inlet or outlet) x ODS (inlet or outlet) mixed connections.

TYPICAL APPLICATIONS

- **COMPRESSOR DISCHARGE LINES:**
Prevents any condensating back-flow from condenser to compressor during the "off" cycle.
Prevents flow from an operating compressor to one that is idle.
- **LIQUID LINES:**
Prevents back-flow through the unused expansion valve on heat pump systems or other reversing units.
Prevents back-up into the low pressure liquid line of a recirculating system during a defrost period. Etc...

1. "MT" SPUN "MAGNI" CHECK-VALVES WITH BUILT-IN STRAINER AND "ODS COPPER" CONNECTIONS

PART NUMBER	COPPER END CONNECTIONS (O.D.S.)	BODY LENGTH (mm)	BODY DIAMETER (mm)	OPENING PRESSURE (bar)	MAXIMUM WORKING PRESSURE (bar)
MS-04	1/4" ODS	102	22	0,0040	55
MS-06	3/8" ODS	102	22	0,0040	55
MS-08	1/2" ODS	127	29	0,0095	44
MS-10	5/8" ODS	127	29	0,0095	44
MS-12	3/4" ODS	178	41	0,0240	38
MS-14	7/8" ODS	178	41	0,0240	38
MS-18	1 1/8" ODS	213	54	0,0300	28
MS-22	1 3/8" ODS	238	67	0,0450	30
MS-26	1 5/8" ODS	267	79	0,0620	29
MS-34	2 1/8" ODS	305	92	0,1030	28

2. "MTS" BRASS "MAGNI" CHECK-VALVES WITH NO STRAINER AND "Male Flare SAE" or "ODS" CONNECTIONS

PART NUMBER	MIXED INLET CONNECTIONS OFFERED	MIXED OUTLET CONNECTIONS OFFERED	OPENING PRESSURE	
			(bar)	(Psi)
MTS-04	1/4" Flare SAE or 1/4" ODS or 3/16" ODS or 1/8" ODS	3/8" Flare SAE or 3/8" ODS or 5/16" ODS or 1/4" ODS	0,028	0.4
MTS-06			0,028	0.4

"STD", "HX" & "HP" SUCTION ACCUMULATORS

"THE COMPLETE OEM'S TESTED LINE FOR AN EXACT SELECTION"

WHY A SUCTION LINE ACCUMULATOR ?

- Air conditioning, heat pumps, truck refrigeration and many other std. or remote unit systems require intermittent operation of the compressor. The suction line may trap and hold quantities of liquid which are suddenly dumped into the compressor as it starts up. This is frequently the cause of broken valves or pistons, broken or bent connecting rods, blown gaskets and bearing washout.
- The correct installation of our *SUCTION ACCUMULATORS* in the suction line and just before the compressor, eliminates damage.
- Liquid is temporarily held in the *SUCTION ACCUMULATOR* and metered back to the compressor along with any trapped oil.

WHAT ARE THE MOST IMPORTANT FEATURES ?

- Exclusive (patented) **inlet deflector** for improved performance. deflector permits full tangential entry of fluid (not the copies).
- **O.D.S.** connections are "INLET" and "OUTLET" marked.
- All these *SUCTION ACCUMULATORS* have safety fusible plug installed (according to **U.L.**, **cU.L.** and **CSA** requirements).
- Full controlled hydrogen copper brazing and cleaning process.

HOW TO SELECT A SUCTION ACCUMULATOR ?

- Follow carefully our "*CAPACITY & SELECTION TABLE*". **maximum capacities** shown are based on a pressure drop through the *ACCUMULATOR* equivalent to **0,3°C** (0,5°F). **minimum capacities** shown are based on a full oil metered return through our *SUCTION ACCUMULATORS*.
- It is not necessary to select the same "INLET" and "OUTLET" **O.D.S.** connection as the compressor suction line size. It is more important to select the *SUCTION ACCUMULATOR*:
FIRST: Within the **PRESSURE DROP** limit of the table
SECOND: Within the **MAX CAPACITY** shown on the table for full oil metered return capacity
THIRD: For the total amount of **CHARGE** to be held
- Normally, the *SUCTION ACCUMULATOR* should not be sized for less than **50%** of the total system capacity.

HOW TO USE THE "CAPACITY & SELECTION TABLE" ?

- On the pages 218 and 219 you'll find the "*CAPACITY & SELECTION TABLE*" you must use. Please note:
 - **PART NUMBERS:** The 3 types are shown (Standard, HX and HP types)
 - **DIMENSIONS** (diametre & length): Given in inches.
 1 Inch = 25,4 mm (1 mm = 0.0394 inch).
 - **MAXIMUM REFRIGERANT HOLDING CAPACITY:**
 Shown in Lbs of holding refrigerant. See above paragraph.
 1 lbs = 0.4536 kg
 1 kg = 2.2 lbs
 - **SUCTION INLET & OUTLET O.D.S.:**
 For brazing copper tubing of the suction line entering the connections of the three *ACCUMULATOR* types. (standard, HX and HP).
 - **LIQUID INLET O.D.S.:**
 Here the liquid line connections for the "**HX**" are given *SUCTION ACCUMULATOR* types (only the "**HX**" types).
 - **EVAPORATING TEMPERATURE:** Shown in °F
 To transform °F into °C: $(°F - 32)/1,8$
 To transform °C into °F: $(°C \times 1,8) + 32$
 - **RECOMMENDED TONS OF REFRIGERANT:**
 Capacities shown in "US TONS" of refrigeration
1 US TON = 3.52 kW (= 3024 Kcal/h)
1 kW = 0.284 US TON (= 860 Kcal/h)





3816



3836

1. "STANDARD" SUCTION ACCUMULATORS

"THE MOST COMPLETE OEM'S TESTED LINE"

3816	SUCTION ACCUMULATOR vertical	1/2" ODS
3817	SUCTION ACCUMULATOR vertical	1/2" ODS
3701	SUCTION ACCUMULATOR vertical	5/8" ODS
3702	SUCTION ACCUMULATOR vertical	5/8" ODS
3703	SUCTION ACCUMULATOR vertical	3/4" ODS
3738	SUCTION ACCUMULATOR vertical	7/8" ODS
3700	SUCTION ACCUMULATOR vertical	1 1/8" ODS
3832	SUCTION ACCUMULATOR vertical	1 1/8" ODS
3706	SUCTION ACCUMULATOR vertical	1 3/8" ODS
3704	SUCTION ACCUMULATOR vertical	1 5/8" ODS

3826	SUCTION ACCUMULATOR horizontal	7/8" ODS
3831	SUCTION ACCUMULATOR horizontal	1 1/8" ODS
3836	SUCTION ACCUMULATOR horizontal	1 3/8" ODS
3810	SUCTION ACCUMULATOR horizontal	1 5/8" ODS
3838	SUCTION ACCUMULATOR horizontal	2 1/8" ODS
3839	SUCTION ACCUMULATOR horizontal	2 1/8" ODS

3639	SUCTION ACCUMULATOR vertical	2 1/8" ODS
3641	SUCTION ACCUMULATOR vertical	2 5/8" ODS
3640	SUCTION ACCUMULATOR vertical	3 1/8" ODS

3841	SUCTION ACCUMULATOR horizontal	2 5/8" ODS
3840	SUCTION ACCUMULATOR horizontal	3 1/8" ODS

DESCRIPTION

- This is the most complete *OEM's* tested line.
- **When:**
Starting your system. Running the system at a reduced capacity in winter, the oil separator is not very efficient so an intermittent poor oil separation occurs, the TXV or solenoid valves fails, you start again the cooling process after a defrost cycle, etc.... *LIQUID* or *OIL* can be pushed out of the evaporator into the suction line and damage the compressor if there is *NO* suction accumulator.
- As soon as any amount of *LIQUID* or *OIL* has been trapped into the "*STANDARD*" *SUCTION ACCUMULATOR*, it will be immediately re-evaporated (with no delay) even if the system is not running at full capacity.
- This is due to a special and perfectly safe patented expansion metering device.

CAPACITY AND SELECTION TABLE

- See "*CAPACITY & SELECTION TABLE*" on pages 218 and 219.

2. "HEAT EXCHANGER" LIQUID x SUCTION ACCUMULATORS

"MONEY SAVING, HIGH EFFICIENCY"

DESCRIPTION

- Development of the "HEAT EXCHANGER" SUCTION LINE ACCUMULATORS as a refrigeration component has resulted in new and practical design and possibilities in your system.
- Issued from the "STANDARD" ones and available on stock.
- The "HEAT EXCHANGER" and "SUCTION ACCUMULATOR" combinations bear the same **PART NUMBER** as the "STANDARD" ones except that the prefix "HX" has been added to indicate the presence of the heat exchanger coil as well as the additional two **O.D.S.** connections (inlet and outlet) for the liquid line.
- All "HEAT EXCHANGER" SUCTION ACCUMULATORS are complete with a safety leak proof fusible plug installed and complying with **U.L.**, **cU.L.** and **CSA** requirements. (Except those built to **ASME code**).

DATA's

- Same as the "STANDARD" SUCTION ACCUMULATORS shown on the previous page.

CAPACITY AND SELECTION TABLE

- Use the "CAPACITY & SELECTION TABLE" shown on pages 218 and 219.



HX-3836

PART NUMBER	CONNECT. (ODS)
HX-3702	5/8" x 3/8"
HX-3703	3/4" x 3/8"
HX-3738	7/8" x 1/2"
HX-3639	2 1/8" x 7/8"
HX-3641	2 5/8" x 1 3/8"
HX-3640	3 1/8" x 1 3/8"

PART NUMBER	CONNECT. (ODS)
HX-3836	1 3/8" x 5/8"
HX-3810	1 5/8" x 3/4"
HX-3839	2 1/8" x 7/8"
HX-3841	2 5/8" x 1 3/8"
HX-3840	3 1/8" x 1 3/8"

3. "HEAT PUMP" SPECIAL SUCTION ACCUMULATORS

"THE UNIQUE & TRUE OEM'S DESIGN FOR HEAT PUMP UNITS"

DESCRIPTION

- From our "STANDARD" SUCTION ACCUMULATOR range, modifications have been made on **7 models** for **HEAT PUMP** applications.
- The **INLET DEFLECTOR TUBE BAFFLE**, smaller **METERING ORIFICE** and **PROTECTIVE SCREEN** have been especially designed for such an application and have proven to be a value. In addition, "HEAT PUMP" SUCTION ACCUMULATORS are designed for **LESS PRESSURE DROP**.
- As for others, these **OEM's "HEAT PUMP" ACCUMULATORS** are now offered as catalogued items and available on stock.
- All of them are complete with a safety fusible plug installed to comply with **U.L.**, **cU.L.** and **CSA** requirements.

"CAPACITY AND SELECTION TABLE"

- Use the "CAPACITY & SELECTION TABLE" shown on pages 218 and 219.



HP-3700

PART NUMBER	CONNECT. (ODS)
HP-3701	5/8"
HP-3702	5/8"
HP-3703	3/4"
HP-3738	7/8"

PART NUMBER	CONNECT. (ODS)
HP-3700	1 1/8"
HP-3706	1 3/8"
HP-3704	1 5/8"



CAPACITY AND SELECTION TABLE

WHO SAYS "EQUIVALENTS"...? CAN ACCUMULATORS BE COMPARED OR CROSS-REFERENCED BY NIPPLE SIZE AND EXT. DIMENSIONS ONLY?
"SORRY, NOT AT ALL..." INTERNAL DESIGN CAN BE OF EVEN GREATER IMPORTANCE...
 DON'T TAKE A CHANCE... BE PROFESSIONAL AND ONLY USE AN "ORIGINAL SUCTION ACCUMULATOR" OF OURS.

PART NUMBER			VERT OR HORIZ	DIA (cm)	# LENGTH (cm)	UL & CSA MODEL NO.	MAXIMUM REFRIGERANT HOLDING CAPACITY (kg)								SUCTION O.D.S. CONNECT (for All)	LIQUID O.D.S. CONNECT "HX" only	
STD	HX	HP					R12	R22	R134a	R401A	R401B	R402A	R402B	R404A			R502
3680*			V	7.6	20.65	HN	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.7	1/2	
3816			V	10.2	16.51	KN	1.1	1.0	1.0	1.0	1.0	1.0	1.0	0.9	1.0		
3817			V	10.2	26.67	KH	2.1	1.9	1.9	1.9	1.9	1.8	1.8	1.7	2.0		
3815*			H	7.6	20.02	HN	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.7		
3673*			H	7.6	27.64	HN	1.1	1.0	1.0	1.0	1.0	1.0	1.0	0.9	1.0		
3684*			V	7.6	19.53	HN	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.7	5/8	3/8
3701	HX3701*	HP3701*	V	10.2	16.84	KN	1.1	1.0	1.0	1.0	1.0	1.0	1.0	0.9	1.0		
3685*			V	7.6	30.48	HN	1.4	1.2	1.2	1.2	1.2	1.2	1.2	1.1	1.3		
3702	HX3702	HP3702*	V	10.2	27.00	KN	2.0	1.9	1.9	1.9	1.9	1.8	1.8	1.6	1.9		
3820*			H	7.6	20.02	HN	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4		
3821*			H	7.6	29.54	HN	1.2	1.1	1.1	1.1	1.1	1.0	1.0	1.0	1.1	3/4	3/8
3703	HX3703	HP3703*	V	10.2	27.00	KN	2.0	1.8	1.9	1.9	1.9	1.8	1.8	1.7	1.9		
3670*			V	10.2	27.94	KN	2.0	1.8	1.8	1.8	1.8	1.8	1.8	1.6	1.9		
3738	HX3738	HP3738	V	12.7	33.02	DN	3.9	3.6	3.6	3.6	3.6	3.4	3.4	3.1	3.6		
3827*			V	15.2	33.02	MN	5.5	5.0	5.1	5.0	5.0	4.9	4.9	4.4	5.1		
3825*			H	15.2	25.40	MN	4.8	4.4	4.4	4.4	4.4	4.2	4.2	3.8	4.4		
3826			H	15.2	34.29	MN	6.6	5.9	6.0	6.0	6.0	5.8	5.8	5.3	6.1	7/8	1/2
3832			V	15.2	27.94	MN	4.2	3.9	3.9	3.9	3.9	3.7	3.7	3.4	3.9		
3700	HX3700	HP3700	V	15.2	38.10	MN	6.4	5.9	5.9	5.9	5.9	5.7	5.7	5.2	6.0		
3830*			H	15.2	34.29	MN	7.4	6.7	6.8	6.7	6.7	6.5	6.5	5.9	6.8		
3831			H	15.2	41.91	MN	8.9	8.1	8.2	8.1	8.1	8.1	7.8	7.1	8.3		
3837			V	15.2	34.29	MN	5.3	4.8	4.9	4.8	4.8	4.6	4.6	4.2	4.9	13/8	5/8
3706	HX3706	HP3706	V	15.2	51.43	MN	8.8	7.9	8.1	8.0	8.0	7.7	7.7	7.0	8.1		
3743*			V	15.2	62.87	MN	11.2	10.3	10.4	10.3	10.3	9.9	9.9	9.0	10.4		
3835*			H	15.2	34.29	MN	7.4	6.7	6.8	6.7	6.7	6.5	6.5	5.9	6.8		
3836	HX3836*		H	15.2	57.15	MN	8.5	7.8	7.8	7.8	7.8	7.5	7.5	6.8	7.9		
3698*			V	15.2	43.51	MN	7.1	6.4	6.5	6.5	6.5	6.3	6.3	5.7	6.6	15/8	3/4
3704	HX3704	HP3704*	V	15.2	62.86	MN	11.2	10.3	10.4	10.3	10.3	9.9	9.9	9.0	10.4		
3809*			H	15.2	45.72	MN	6.4	5.8	5.9	5.8	5.8	5.6	5.6	5.1	5.9		
3810*	HX3810*		H	15.2	76.20	MN	10.7	9.7	9.8	9.7	9.7	9.4	9.4	8.5	9.9		
3639	HX3639*		V	21.9	50.80	*	15.4	14.0	14.2	14.1	14.1	13.6	13.6	12.3	14.3		
3838*			H	15.2	91.44	MN	15.4	14.0	14.2	14.1	14.1	13.6	13.6	12.3	14.3	2 1/8	7/8
3839*	HX3839*		H	20.3	121.92	MN	20.6	18.7	18.7	18.8	18.8	18.1	18.2	16.5	19.1		
3641	HX3641*		V	27.3	50.80	*	25.3	23.0	23.3	23.0	23.0	22.3	22.3	20.3	23.5	2 5/8	1 3/8
3841	HX3841*		H	21.9	60.96	*	22.3	20.2	20.5	20.3	20.3	19.6	19.6	17.8	20.6		
3640	HX3640*		V	27.3	66.04	*	36.2	32.9	33.0	33.0	31.8	31.8	31.9	29.0	33.6		
3840	HX3840*		H	27.3	60.96	*	35.2	31.9	32.3	32.0	32.0	30.9	31.0	28.1	32.6	3 1/8	1 3/8
3873*	HX3873*		H	27.3	121.92	*	74.7	67.8	68.7	68.0	68.0	65.6	65.9	59.7	69.2		
3874*	HX3874*		H	27.3	152.40	*	94.4	85.8	86.9	86.0	86.0	83.0	83.3	75.5	87.6		

- SUCTION ACCUMULATORS OF 6" DIAMETER OR SMALLER ARE U.L. Listed (SA-2400) and CSA (66605) HYDROGEN COPPER BRAZED.
- SUCTION ACCUMULATORS LARGER THAN 6" DIAMETER ARE MADE TO ASME Code.
- "MAXIMUM RECOMMENDED TONS" (U.S. TON) BASED ON PRESSURE DROP THROUGH SECTION ACCUMULATOR EQUIVALENT TOP 0.3°C (0.5°F)
- "MINIMUM RECOMMENDED TONS" (U.S. TON) BASED ON FULL METERING OIL RETURN THROUGH ACCUMULATOR



SPECIFIC MUFFLERS

"NOT A MUFFLER OF ALL WORK BUT A SELECTED ONE FOR YOUR NEED"

1. "M" DISCHARGE MUFFLERS

DESCRIPTION

- Some systems are noisy due to vibration and pulsation of gas through the discharge line. To smooth out pulsations and reduce vibrations and noise, **ITE nv** offers the industry's most complete line of **"M" series DISCHARGE MUFFLERS**.
- All **MUFFLERS** may be mounted horizontally or vertically as long as instructions are followed (minimize "oil trap" risks).
- **MUFFLERS** through the **M-30** are of hydrogen copper brazed steel construction insuring maximum strength and cleanliness.
- **M-60** through **M-110 MUFFLERS** are of hydrogen copper brazed and shielded arc welded construction.
- Complete and ready to use with **+183°C (+362°F)** safety fusible plug installed on **M-30** through **M-110** models.
- **"IN"** (inlet), **"OUT"** (outlet) and **"TOP"** marking for installation.
- **MUFFLERS** comply to latest **U.L.**, **cU.L.** and **CSA** requirements.
- **MUFFLERS** are designed to eliminate pulsation in compressor discharge line running to remote condensers.
- **MUFFLERS** have internal baffles designed for minimum pressure drop. These baffles change the velocity of the discharge gas. This results in a dampening effect on high frequency sound waves in the gasses on high speed compressors. This also irons out the pulsating waves in low speed compressors.

PART NUMBER	CONNEX. (O.D.S.)	NOMINAL (U.S. TONS)	CAPACITY (kW)	EXT. DIAM.	OVERALL LENGTH	
					(mm)	(inch)
M-02	3/8"	2	7	2"	190	7 ⁷ / ₁₆
M-03	1/2"	3	10.5	3"	190	7 ⁷ / ₁₆
M-05	5/8"	4	17.5	2"	190	7 ⁷ / ₁₆
M-10	7/8"	7.5 to 10	26 to 35	3"	230	9
M-15	1 ¹ / ₈ "	10 to 15	35 to 52	3"	240	9 ¹ / ₄
M-20	1 ³ / ₈ "	15 to 25	52 to 87	3"	350	13 ³ / ₄
M-30	1 ⁵ / ₈ "	25 to 50	87 to 174	4"	410	16
M-60	2 ¹ / ₈ "	50 to 75	174 to 261	6"	670	26 ¹ / ₂
M-80	2 ⁵ / ₈ "	75 to 100	261 to 349	6"	710	28
M-110	3 ¹ / ₈ "	100 to 125	349 to 436	6"	920	36

NOTE: For the installation, respect "IN", "OUT" and "TOP" when marking



2. "AM" ADJUSTABLE MUFFLERS

DESCRIPTION

- This original **ADJUSTABLE DISCHARGE MUFFLER** development permits **"TUNING"** the muffler to the system. For the first time, it is possible to change muffler characteristics without installing a different muffler or even breaking into the system.
- The **"AM" series ADJUSTABLE MUFFLER** may be adjusted without loosing charge and while the system is running. It is provided with a stem which may be turned to **"TUNE"** the muffler to the system.
- Two identical systems do not always sound the same. One may be noisy while the other is quiet. The **ADJUSTABLE MUFFLER** that **ITE nv** offers provides a variable range of characteristics so that, the performance with a particular system can be attained.
- All **ADJUSTABLE MUFFLERS** are ready to use with their safety fusible plug installed (**+183°C**) and are **U.L.**, **cU.L.** and **CSA listed**.

PART NUMBER	CONNEX. (O.D.S.)	NOMINAL (U.S. TONS)	CAPACITY (kW)	EXT. DIAM.	OVERALL LENGTH	
					(mm)	(inch)
AM-05	5/8"	2 to 5	7 to 17	4"	250	10"
AM-10	7/8"	5 to 10	17 to 35	4"	280	11"
AM-25	1 ¹ / ₈ "	10 to 25	35 to 87	4"	360	14 ¹ / ₄ "

3. "DM" SUCTION MUFFLERS

DM-1677	MUFFLER	7/8" IDS x 7/8" ODS,	16 to 18 Kw
DM-1678	MUFFLER	1 1/8" IDS x 1 1/8" ODS,	21 to 35 Kw
DM-1679	MUFFLER	1 3/8" IDS x 1 3/8" ODS,	26 to 44 Kw
DM-1676	MUFFLER	1 1/8" IDS x 1 3/8" ODS,	26 to 35 Kw

DESCRIPTION

- As **ITE nv** is always "**MARKET**" and "**SERVICE**" oriented, we are pleased to offer you a "**NEW**" line of **SUCTION MUFFLERS**.
- These "**DM**" series **SUCTION MUFFLERS** smooth out suction pulsations resulting in reduced system noise when installed at the compressor on the suction side.
- They are of hydrogen copper brazed steel construction for maximum strength and complete cleanliness with copper nipples (one **I.D.S.** male connection at the inlet and one **O.D.S.** female connection at the outlet) for easy installation in the "line" or in the "field".
- All are **U.L.**, **cU.L.** and **CSA listed**.
- Length: **156 mm (6 1/8")**

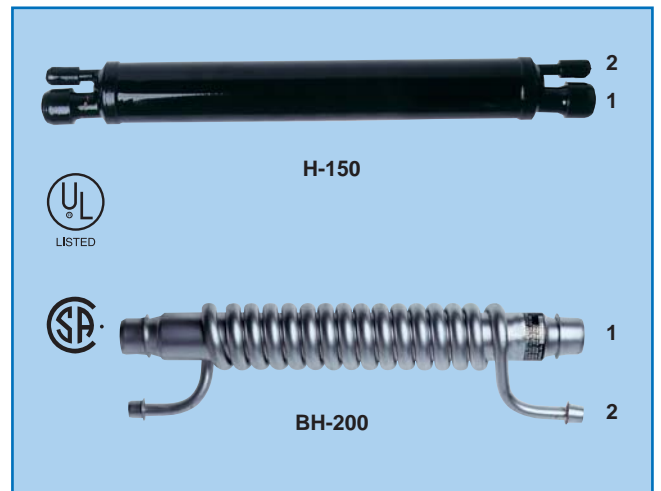


HEAT EXCHANGERS

"SUCTION COOLED APPLICATIONS" & "SUBCOOLING HEAT TRANSFERS"

DESCRIPTION

- "**BLUE RIBBON**" and "**DE LUXE**" **HEAT EXCHANGERS** are particularly suited for cooled compressor applications. They are of all copper construction and incorporate a special expansion process providing positive contact between tube and body (plus an efficient helicoidal counter flow).
- Fittings are sized for your standard units from **1/4** through **10 hp** eliminating the need for adapter fittings.
- "**BH**" series "**BLUE RIBBON**" offer quality and high efficiency at low competitive prices. All are **U.L. listed**.



1. "BLUE" HEAT EXCHANGERS

PART NUMBER	CONNECTIONS suction (1) x liquid (2)	H.P.	OVERALL LENGTH		SHELL DIAM.
			(mm)	(inch)	
BH-33	3/8" ODS x 1/4" ODS	1/3	200	8"	22 mm
BH-50	1/2" ODS x 1/4" ODS	1/2	280	11"	22 mm
BH-100	5/8" ODS x 3/8" ODS	1	380	15"	22 mm
BH-150	7/8" ODS x 3/8" ODS	1.5	280	11"	35 mm
BH-200	7/8" ODS x 3/8" ODS	2	330	13"	35 mm
BH-300	1 1/8" ODS x 1/2" ODS	3	380	15"	35 mm
BH-500	1 1/8" ODS x 1/2" ODS	5	380	15"	51 mm
BH-750	1 5/8" ODS x 5/8" ODS	7.5	380	15"	51 mm
BH-1000	1 5/8" ODS x 5/8" ODS	10	460	18"	51 mm

2. "DE LUXE" HEAT EXCHANGERS

PART NUMBER	CONNECTIONS suction (1) x liquid (2)	H.P.	OVERALL LENGTH		SHELL DIAM.
			(mm)	(inch)	
H-75	5/8" ODS x 1/4" ODS	3/4	310	12 1/8"	51 mm
H-100	5/8" ODS x 3/8" ODS	1	330	13 1/8"	51 mm
H-150	7/8" ODS x 3/8" ODS	1.5	440	17 3/8"	51 mm
H-200	7/8" ODS x 3/8" ODS	2	340	13 1/4"	77 mm
H-300	1 1/8" ODS x 3/8" ODS	3	390	15 1/4"	77 mm
H-750	1 5/8" ODS x 5/8" ODS	7.5	400	15 5/8"	130 mm

"HI" SPUN COPPER SERVICE DRIERS

"100% MOLECULAR SIEVE BEADS"

DESCRIPTION

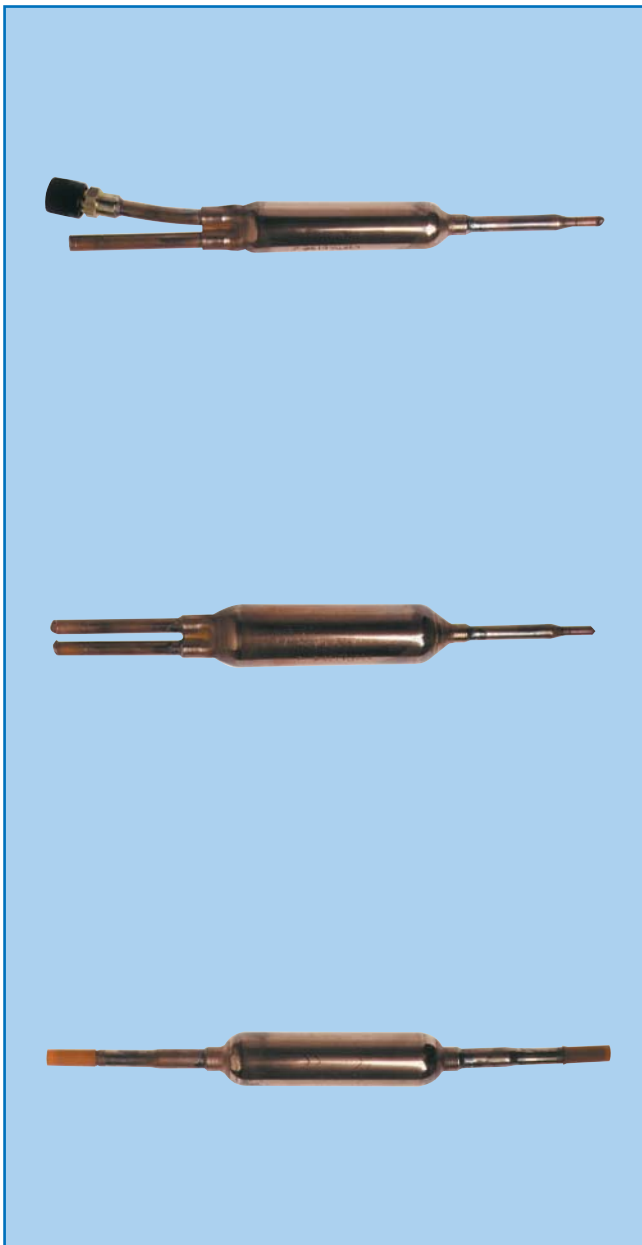
- All copper construction for corrosion resistance.
- OEM's standard tested and 100% molecular sieve beads.
- **IMPORTANT:** Make the difference... This is a real OEM's service drier with heavy duty **SCREEN (104 micron)** for maximum contaminant pick-up and full **SAFETY**.
- Available in a variety of inlet and outlet sizes.
- Tubes easily cut, swaged, flared or bend on the job.
- Grooved ends permit easy break-off to activate drier.

INSTALLATION

- Being professional and when installing a drier, position it vertically with the flow in a downward direction. If installed horizontally, angle the outlet end downward (this allows our outlet **SCREEN** to fully filter contaminants and insure a better secure liquid seal at the inlet).
- Use our capacity tables below (for each drier) to determine adequate drier capacity. This guideline will allow you to obtain a correct drier selection and make your specific system unit **COMPLETELY FREE** of moisture and freeze-up accident.

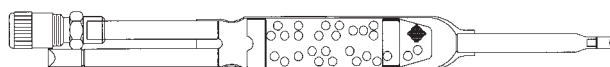
SPECIFICATIONS

- Suitable for all **CFC, HCFC, HFC** and their specific lubricant.
- **U.L. listed** (SA-8570) and **CSA listed** (LR-87950).
- We can also offer assistance for your specific OEM's requirements and quantity needs.
- Working pressure: **35 bar** (500 Psi)



1. "CHARGE-0-VALVE" DRIERS

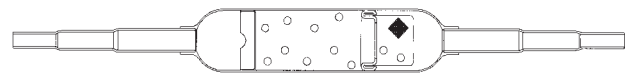
- Refrigeration capacities shown in kW (1kW = 0.284 US TON of refrigeration)
- Water absorption shown in drop (1 gram of water = 1 cm³ (cubic centimetre) = 20 drops of water)
- For evacuating and charging refrigeration systems not originally equipped with high side access valve



PART NUMBER	INLET TUBE (inch)	OUTLET TUBE CAPPILLARY (inch)	Ø (mm)	LENGTH (mm)	CAP XH-9	CAPACITY (in drops of water)						REFRIGERATION CAPACITY (kW)		
						R12		R22		R134a		R12 & R134a		R22
						24°C	52°C	24°C	52°C	24°C	52°C			
SPUN-619	1/4"OD x 3/16"ID	.089/.092	19.1	226	10 gr.	37.2	35.2	34.0	32.4	32.0	30.0	1.17	1.76	
SPUN-621	5/16"OD x 1/4"ID	.127/.130	25.4	228	20 gr.	74.4	70.4	68.0	64.8	64.0	60.0	3.52	7.03	

2. "MOISTURE MAGNET" DRIERS

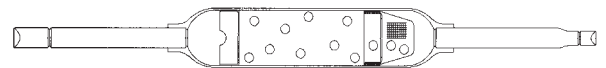
- Refrigeration capacities shown in kW (1kW = 0.284 US TON of refrigeration)
- Water absorption shown in drop (1 gram of water = 1 cm³ (cubic centimetre) = 20 drops of water)
- Special for refrigerators, freezers, small commercial units and air conditioners
- **IMPORTANT NOTE:** The MMS-80 is non directional (can be installed in either direction)



PART NUMBER	INLET TUBE (inch)	OUTLET TUBE (inch)	Ø (mm)	LENGTH (mm)	CAP XH-9	CAPACITY (in drops of water)						REFRIGERATION CAPACITY (kW)	
						R12		R22		R134a		R12 & R134a	R22
						24°C	52°C	24°C	52°C	24°C	52°C		
MMS-80	1/4"OD x 3/16"ID 1/4"OD x 3/16"ID	1/4"OD x 3/16"ID 1/4"OD x 3/16"ID	19.1	188	10 gr.	37.2	35.2	34.0	32.4	32.0	30.0	1.17	1.76
MMS-200	5/16"OD x 1/4"ID 3/8"OD x 5/16"ID	5/16"OD x 1/4"ID 3/8"OD x 5/16"ID	25.4	267	20 gr.	74.4	70.4	68.0	64.8	64.0	60.0	2.63	3.52

3. "LITTLE GIANT" DRIERS

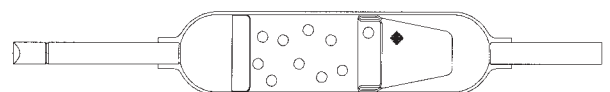
- Refrigeration capacities shown in kW (1kW = 0.284 US TON of refrigeration)
- Water absorption shown in drop (1 gram of water = 1 cm³ (cubic centimetre) = 20 drops of water)
- General purpose drier for field service work with a capillary size tube outlet



PART NUMBER	INLET TUBE (inch)	OUTLET TUBE CAPILLARY (inch)	Ø (mm)	LENGTH (mm)	CAP XH-9	CAPACITY (in drops of water)						REFRIGERATION CAPACITY (kW)	
						R12		R22		R134a		R12 & R134a	R22
						24°C	52°C	24°C	52°C	24°C	52°C		
LG-712	1/4"OD x 3/16"ID	.089 x .092	19.1	216	10 gr.	37.2	35.2	34.0	32.4	32.0	30.0	1.17	1.76

4. "HERCULES" DRIERS

- Refrigeration capacities shown in kW (1kW = 0.284 US TON of refrigeration)
- Water absorption shown in drop (1 gram of water = 1 cm³ (cubic centimetre) = 20 drops of water)
- Used for air conditioners, large freezers and food cases (39 cm² (6 sq. inch) **dual SCREEN**)



PART NUMBER	INLET TUBE (inch)	OUTLET TUBE (inch)	Ø (mm)	LENGTH (mm)	CAP XH-9	CAPACITY (in drops of water)						REFRIGERATION CAPACITY (kW)	
						R12		R22		R134a		R12 & R134a	R22
						24°C	52°C	24°C	52°C	24°C	52°C		
HER-319	5/16"OD	.127 x .130	30.2	247.7	30 gr.	111.6	105.6	102.0	97.2	96.0	91.0	3.52	7.04



LIQUID FILTER - DRIERS

"THE ORIGINAL 3 CLASSIC FUNCTIONS"

FEATURES

- The **US series** is a revolutionary design that uses a combination of a solid core, **XH-9** beaded Molecular Sieve desiccant or similar and activated aluminium. This gives a very high mechanical strength unit to provide an outstanding filtering capability, high moisture absorption and high organic and inorganic acid removal.

SPECIFICATIONS

- For **R12, R22, R502, R134a, R404A, R407C, R507**, etc... and all **CFC, HCFC & HFC** with their specific lubricants.
- System filtration down to **5 microns**.
- Nickel plated "**SAE flare**" and solid copper "**ODS**" fittings.
- Steel shell and corrosion resistant paint. Shock resistant.
- U.L. listed** (n° SA-7175) and **CSA listed** (n° LR-100624).
- Safe working pressure: **35 bar** (500 Psi).
- Minimum burst pressure: **175 bar** (2500 Psi).

LIQUID SELECTION - CAPACITY TABLE - ORDERING

CAPACITIES SHOWN IN kW (1kW = 860 Fg/h = 0.284 US TON of refrigeration)

PART NUMBER		CONN. DIAM.	FILTER SURFACE (cm ²)	DIMENSIONS (mm)			RECOMMEND. CAPACITIES (1) not overrated (in kW)		SPECIFICATIONS ACCORDING ARI-STD (not overrated)													
									WATER RETENTION (grams)				FLOW CAPACITY (in kW)									
				FLARE	O.D.S.	BODY Ø	LENGTHS		R12 R502	R134a R22	R12, R502 (15 PPM)		R22 (60 PPM)		R134a (150 PPM)		Under pressure drop of 0,14 kg/cm ² (2 Psi)					
			FLARE	O.D.S.	R12 R502	R134a R22	24°C	52°C	24°C	52°C	24°C	52°C	R12	R22	R502	R134a						
US-032	US-032-S	1/4"	66	41	110	95	2,7	3,6	2,3	1,7	1,6	1,0	1,9	1,8	8,1	10,6	7,1	10,6				
US-052	US-053-S	1/4"	104	64	124	110	3,6	3,6	4,6	3,3	3,1	2,0	4,9	4,7	8,1	10,1	7,1	10,1				
US-053		3/8"			132	115	3,6	3,6														
US-082	US-083-S	1/4"	144	64	147	133	3,6	7,1	7,8	5,6	5,4	3,4	6,3	6,0	9,5	12,3	8,5	12,3				
US-083		3/8"			155	138	7,1	7,1											18,7	24,0	16,6	23,7
US-084		1/2"			161	129	7,1	7,1														
US-162	US-163-S	3/8"	206	64	167	158	7,1	7,1	14,2	10,1	9,6	6,1	11,3	10,7	9,5	12,3	8,5	12,0				
US-163		1/2"			175	158	11,0	11,0											19,4	25,0	16,9	24,0
US-164		3/8"			181	159	15,0	15,0														
US-165		5/8"			191	166	18,0	18,0											38,7	50,0	34,1	48,1
US-303	US-304-S	1/2"	364	76	243	230	15,0	18,0	24,6	17,6	16,8	10,6	22,8	21,6	20,4	26,4	18,0	25,0				
US-304		5/8"			249	227	27,0	27,0											41,5	53,5	36,6	51,4
US-305		7/8"			259	234	36,0	36,0														
					249	36,0	53,0							87,6	113,0	75,6	108,6					
US-414	US-415-S	1/2"	446	89	252	230	36,0	36,0	35,6	25,3	24,1	15,3	33,4	31,7	42,6	54,9	37,3	52,4				
US-415		5/8"			262	237	36,0	53,0											56,3	72,5	49,6	69,3
		7/8"			252	252	53,0	71,0														
		1 1/8"			252	252	53,0	71,0											110,0	141,0	96,0	135,3

REMARKS:

- (1) The above recommended capacities reflect field replacement or installation. Lab conditions would give approx doubles values.
- For **R404A** and **R507** apply **0.70** coefficient to the **R134a** values of flow capacity (in kW).
- For **R500** and **R502** use the **R12** values of flow capacity (in kW).
- 1 gram of water** = 1 cm³ (cubic centimetre) = 20 drops of water.
- Corresponding above temperatures: **24°C = 75°F** and **52°C = 125°F**. (Also: 1cm² = 0.155 square Inch).

REVERSIBLE "HEAT-PUMP" FILTER-DRIERS

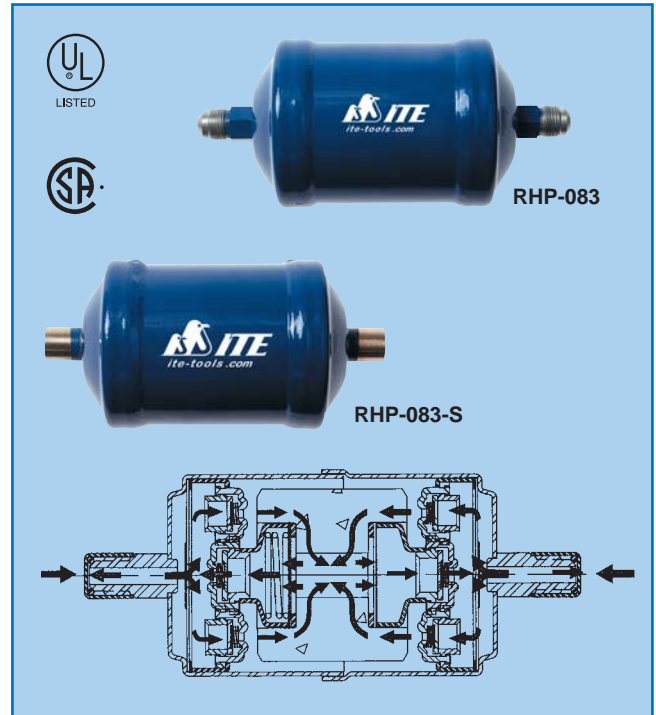
"THE BI-DIRECTIONAL FLOW SOLID CORE"

FEATURES

- For use in HEAT PUMP or REVERSIBLE cycle applications, **RPH HEAT PUMP DRIERS series** are designed to function in both directions of flow in the reversing liquid line.
- Proven nylon internal CHECK-VALVE filtering in both ways.
- Solid block desiccant core with high organic and inorganic ACID REMOVAL (activated alumina) and High MOISTURE REMOVAL (molecular sieve).
- The addition of activated charcoal to the desiccant core allows for the REMOVAL of WAX that may occur at low temperatures, giving protection to your expansion device.

SPECIFICATIONS

- For R12, R22, R502, R134a, R404A, R407C, R507, etc... and all CFC, HCFC & HFC with their specific lubricants.
- Nickel plated "SAE flare" and solid copper "ODS" fittings.
- Steel shell and corrosion resistant paint. Shock resistant.
- System filtration down to **10 microns**.
- **U.L. listed** (n° SA-7175) and **CSA listed** (n° LR-100624).
- Safe working pressure: **35 bar** (500 Psi).
- Minimum burst pressure: **175 bar** (2500 Psi).



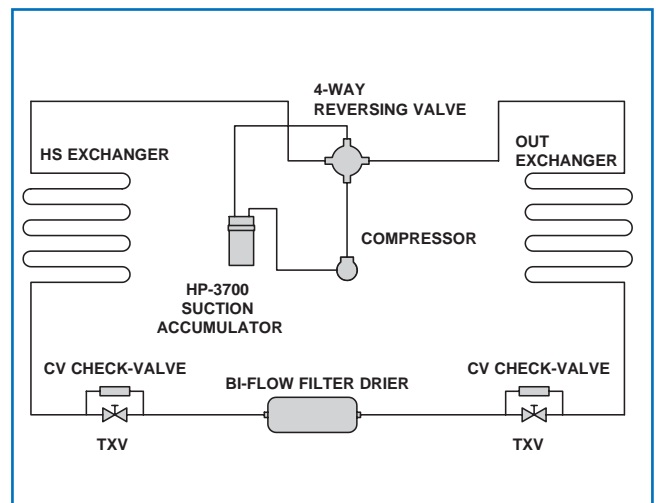
LIQUID SELECTION - CAPACITY TABLE - ORDERING

CAPACITIES SHOWN IN kW (1kW = 860 Fg/h = 0.284 US TON of refrigeration)

PART NUMBER		CONN. DIAM. (inch)	FILTER SUR-FACE (cm²)	DIMENSIONS (mm)		RECOMMEND. CAPACITIES (1) not overrated (in kW)	SPECIFICATIONS ACCORDING ARI-STD (not overrated)						
				BODY Ø	LENGTHS		WATER RETENTION (gram)				FLOW CAPACITY (in kW)		
FLARE	O.D.S.				FLARE	O.D.S.	R134a R22	R22 (60 PPM)		R134a (150 PPM)		Under pressure drop of 0,14 kg/cm² (2 Psi)	
				24°C				52°C	24°C	52°C	R22	R134a	
RHP-083	RHP-082-S	1/4"	94	67	160	138	7,5	5,4	3,4	6,3	6,0	12,3	12,3
	RHP-083-S	3/8"										24,0	23,7
	RHP-084-S	1/2"										37,3	37,0
RHP-163	RHP-163-S	3/8"	210	78	177	160	11,0	9,6	6,1	11,3	10,7	25,0	24,0
RHP-164	RHP-164-S	1/2"										39,4	37,9
RHP-165	RHP-165-S	5/8"										50,0	48,1

REMARKS

- (1) The above recommended capacities reflect field replacement or installation. Lab conditions would give approx double values.
- For R404A and R507 apply 0.70 coefficient to the R134a values.
- For R500 and R502 use the R12 values.
- 1 gram of water = 1 cm³ = 20 drops of water.
- Corresponding above temperatures: 24°C/75°F and 52°C/125°F. (Also: 1cm² = 0.155 Square Inch).
- **RPH REVERSIBLE HEAT PUMP DRIERS** may be installed in any position.
- In case of "BURN OUT" compressor (heat pump unit), do the following:
 - Remove all existing filters and driers.
 - Test a sample of oil from the compressor (see "acid test kits" procedure), page 191.
 - Clean the system if necessary and change the oil charge.
 - Install a new **RPH reversible heat pump drier**.
 - Install an **SSL suction filter-drier** in addition to the liquid line drier.
 - Check again compressor oil and the moisture indicator during the week after.





SUCTION LINE FILTER-DRIERS

"LOW PRESSURE DROP SOLID CORE"

SUCTION FILTERS AFTER A "COMPRESSOR BURNOUT"

FEATURES

- **SSL series suction line filter-driers** are designed to clean up refrigerant systems to prevent, or be used after, a **compressor burnout**.
- It removes solid **contaminants**, harmful **organic** and **inorganic acids** as well as providing **dirt filtering** after motor burn out replacements. Also, it will collect and hold any dirt and sludge that is in the suction line and the Evaporator at start up. Ideal in remote system installation with long refrigerant lines. Any "professional field built-up" system needs this kind of protection.
- The **SSL series** are equipped with an access valve on **each end** for true and accurate pressure drop readings across the drier.
- An inlet deflector spreads the gas flow even across the molded core to provide full filtration capacity and to prevent core's erosion.

INSTALLATION

- **SSL series suction line filter-driers** may be installed in any position in the suction line, as close to the compressor as possible and ahead of the suction accumulator if any.
- In low temperature applications, **SSL driers** should be installed in a vertical position (flow in a downward direction) to prevent oil accumulation.

SPECIFICATIONS

- For **R12, R22, R502, R134a, R404A, R407C, R507**, etc... and all **CFC, HCFC & HFC** with their specific lubricants.
- **Important:** Capacities rated in accordance with **ARI std 730-86**.
- Nickel plated "**SAE flare**" and solid copper "**ODS**" fittings.
- Dual Access Valves for true and accurate pressure drop readings.
- Steel shell and corrosion resistant paint. Shock resistant.
- **U.L. listed** (n° SA-7175) and **CSA listed** (n° LR-100624).
- System filtration down to **10 microns**.
- Maximum temperature rating: **107°C** (225°F).
- Safe working pressure: **35 bar** (500 Psi).
- Minimum burst pressure: **175 bar** (2500 Psi).

PART NUMBER		CONN. DIAM.	DESICCANT VOLUME (cm ³)	DIMENSIONS (in mm)		
FLARE	O.D.S.			Ø	LENGTHS	
					FLARE	O.D.S.
SSL-083		3/8"	131		155	138
SSL-084	SSL-084-S	1/2"	131		161	139
SSL-165	SSL-165-S	5/8"	262		191	166
	SSL-166-S	3/4"	262			177
	SSL-307-S	7/8"	492			249
	SSL-419-S	1 1/8"	672	89		252
	SSL-4811-S	1 3/8"	787			266
	SSL-4813-S	1 5/8"	787	114		265

NOTE: To obtain cubic Inch, divide cm³ by **16.38** coefficient divisor

EXAMPLE: 131 cm³ / **16.38** = 8 cubic inch

TABLE 1: CAPACITY SUCTION LINE SELECTION AFTER A "COMPRESSOR BURNOUT"
CAPACITIES SHOWN IN kW (1 kW = 860 Fg/h = 0,284 US TON of refrigeration)

REFRIGERANTS		R12				R22				R502				R134a				
EVAPORATING TEMPERATURE (°C)		-30°	-18°	-7°	+5°	-30°	-18°	-7°	+5°	-30°	-18°	-7°	+5°	-30°	-18°	-7°	+5°	
PRESSURE DROP in bar (Psi)		0,04	0,07	0,10	0,14	0,07	0,10	0,14	0,21	0,07	0,10	0,14	0,21	0,04	0,07	0,10	0,14	
PART NUMBER		CONN. DIAM.	(0.5)	(1.0)	(1.5)	(2.0)	(1.0)	(1.5)	(2.0)	(3.0)	(1.0)	(1.5)	(2.0)	(3.0)	(0.5)	(1.0)	(1.5)	(2.0)
FLARE	O.D.S.																	
SSL-083		3/8"	0.7	1.1	2.1	2.4	1.1	1.4	2.1	3.2	0.8	1.4	2.0	3.5	0.3	0.7	1.4	2.1
SSL-084	SSL-084-S	1/2"	1.5	2.4	3.9	4.9	2.2	3.6	5.1	8.8	1.9	3.1	3.3	7.0	1.0	2.2	3.5	5.3
SSL-165	SSL-165-S	5/8"	1.7	2.8	4.6	6.5	3.5	5.2	7.7	11	2.6	4.2	6.0	10	1.5	3.1	5.0	7.5
	SSL-166-S	3/4"	2.6	5.2	7.0	10	5.2	8.7	12	17	3.1	4.5	7.7	12	2.1	3.8	6.3	9.1
	SSL-307-S	7/8"	2.8	4.9	7.7	12	6.0	9.1	14	21	4.5	7.3	10	17	2.8	5.6	8.8	13
	SSL-419-S	1 1/8"	2.8	4.2	13	16	8.4	13	19	30	6.6	10	15	24	4.2	7.7	12	19
	SSL-4811-S	1 3/8"	4.9	9.8	15	23	12	18	27	42	9.1	14	22	34	5.6	10	18	26
	SSL-4813-S	1 5/8"	6.0	10	16	26	13	20	30	46	9.8	16	24	37	6.3	12	19	30

- REMARKS:**
- The above recommended capacities fairly reflect field replacement or installation.
 - Lab conditions would give approximate double values.
 - Rating in accordance with **ARI standard 730-86**.
 - Above corresponding evaporating temperatures: (-30°C = -20°F) (-18°C = 0°F) (-7°C = +20°F) (+5°C = +40°F).
 - Above corresponding press. drop: (0,04 bar = 0.5 Psi) (0,07 bar = 1 Psi) (0,10 bar = 1.5 Psi) (0,14 bar = 2 Psi)(0,21 bar = 3 Psi).

COMPACT SUCTION LINE FILTER-DRIERS

"LOW PRESSURE DROP SOLID CORE"

FEATURES

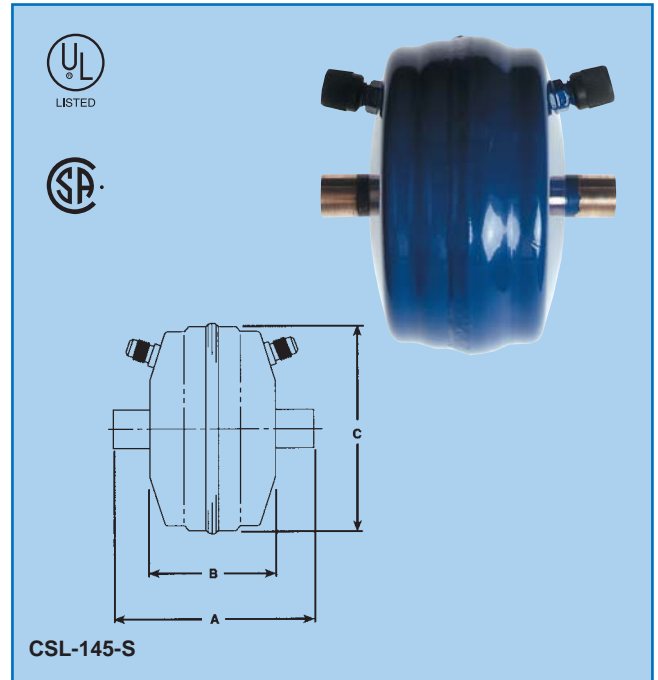
- **CSL series suction line filter-driers** are designed to clean up your refrigerant system to prevent, or be used after, a compressor burnout.
- It removes solid contaminants and harmful organic and inorganic acids as well as providing a full dirt filtering and motor burnout applications. Ideal in remote system installation with long refrigerant lines. Any field built-up system needs this kind of protection.
- The **CSL series** are equipped with an access valve on each end for accurate pressure drop readings across the drier.
- An inlet deflector spreads the refrigerant flow evenly across the molded core to provide full filtration capacity and to prevent erosion of the core. It is compact and ideal for limited room installation. Placed between the reversing valve (heat pump unit) and the compressor, it is also ideal to protect the reversible system.

INSTALLATION

- The **CSL series suction line filter-driers** may be installed in any position in the suction line, as close to the compressor as possible and ahead of the suction line accumulator if any.
- In low temperature applications, the **CSL** drier should be installed in a vertical position with the flow in a downward direction to prevent oil accumulation.

SPECIFICATIONS

- For R12, R22, R502, R134a, R404A, R407C, R507, etc... and all **CFC, HCFC & HFC** with their specific lubricants.
- Solid copper "ODS" fittings. Shock resistant.
- Steel shell and corrosion resistant paint (5 years).
- Dual access valve for pressure drop reading.
- **U.L. listed** (n° SA-7175) and **CSA listed** (n° LR-100624).
- System filtration down to **10 microns**.
- Maximum temperature rating: **107°C (225°F)**.
- Safe working pressure: **35 bar (500 Psi)**.
- Minimum burst pressure: **175 bar (2500 Psi)**.



PART NUMBER (O.D.S. CONNECTIONS)	CONN. DIAM.	DIMENSIONS (in mm)		
		(A)	(B)	(C)
CSL-144-S	1/2"	116	69	107
CSL-145-S	5/8"	116	69	114
CSL-146-S	3/4"	116	69	111
CSL-147-S	7/8"	116	69	116
CSL-149-S	1 1/8"	116	69	123

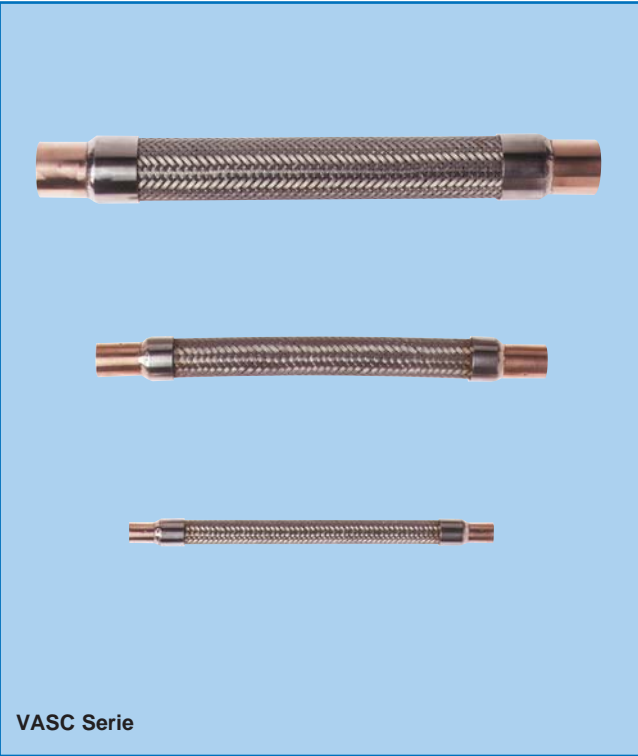
SUCTION LINE SELECTION - CAPACITY TABLE - ORDERING

CAPACITIES SHOWN IN kW (1 kW = 860 Fg/h = 0,284 US TON of refrigeration)

REFRIGERANTS	R12				R22				R502				
EVAPORATING TEMPERATURE (°C)	-30°	-18°	-7°	+5°	-30°	-18°	-7°	+5°	-40°	-30°	-18°	-7°	
PRESSURE DROP in bar (Psi)	0,04	0,07	0,10	0,14	0,07	0,10	0,14	0,21	0,04	0,07	0,10	0,14	
PART NUMBER O.D.S. CONNECTIONS	CONN. DIAM.	(0,5)	(1,0)	(1,5)	(2,0)	(1,0)	(1,5)	(2,0)	(3,0)	(0,5)	(1,0)	(1,5)	(2,0)
CSL-144-S	1/2"	0.70	1.41	2.46	3.86	2.11	3.16	4.57	7.03	0.70	1.41	2.46	3.52
CSL-145-S	5/8"	1.76	2.46	4.57	7.03	3.62	5.63	8.44	12.7	1.41	2.81	4.57	6.58
CSL-146-S	3/4"	2.11	3.52	6.83	9.49	4.92	7.74	11.3	17.8	2.11	3.87	5.98	9.14
CSL-147-S	7/8"	2.46	4.21	7.03	10.8	5.87	8.08	12.0	18.3	2.11	3.87	6.68	9.85
CSL-149-S	1 1/8"	2.81	5.63	9.14	13.7	7.03	10.9	16.2	24.6	2.81	5.87	8.79	13.0

REFRIGERANTS	R134a				R407C				R404A & R507				
EVAPORATING TEMPERATURE (°C)	-30°	-18°	-7°	+5°	-30°	-18°	-7°	+5°	-40°	-30°	-18°	-7°	
PRESSURE DROP in bar (Psi)	0,04	0,07	0,10	0,14	0,07	0,10	0,14	0,21	0,04	0,07	0,10	0,14	
PART NUMBER O.D.S. CONNECTIONS	CONN. DIAM.	(0,5)	(1,0)	(1,5)	(2,0)	(1,0)	(1,5)	(2,0)	(3,0)	(0,5)	(1,0)	(1,5)	(2,0)
CSL-144-S	1/2"	1.05	1.76	3.16	4.57	1.76	2.81	4.23	6.68	0.70	1.05	1.76	2.81
CSL-145-S	5/8"	1.76	3.16	5.87	8.09	3.16	4.92	7.74	12.0	1.05	2.46	3.87	5.98
CSL-146-S	3/4"	2.46	4.57	7.38	10.9	4.21	7.03	10.6	16.5	1.76	3.16	5.87	8.09
CSL-147-S	7/8"	2.46	4.92	7.74	11.6	4.57	7.38	10.9	17.8	1.76	3.16	5.87	8.09
CSL-149-S	1 1/8"	3.52	6.33	10.6	15.8	5.98	9.85	14.8	23.2	2.46	4.57	7.03	10.9

- REMARKS:**
- The above recommended capacities reflect field replacement or installation. Lab conditions would give approximately double values.
 - Rating in accordance with **ARI standard 730-86**.
 - Above corresponding evaporating temperatures: (-40°C = -40°F) (-30°C = -20°F) (-18°C = 0°F) (-7°C = +20°F) (+5°C = +40°F).
 - Above corresponding press. drop: (0,04 bar = 0.5 Psi) (0,07 bar = 1 Psi) (0,10 bar = 1.5 Psi) (0,14 bar = 2 Psi) (0,21 bar = 3 Psi).
 - Also: 1cm² = 0.155 square inch).



VIBRATION SHOCK MOUNT ABSORBERS

INSIDE CORRUGATED TUBE
STAINLESS STEEL type SUS 304.

WIRE BRAID
STAINLESS STEEL type SUS 304.

FERRULE
STAINLESS STEEL type SUS 304.

REFRIGERANTS

- All blended and CFC, HCFC, HFC and their lubricants.

TESTS

- PED 97/23/EC

ATTENTION

- A vibration absorber *IS NOT* a hose or a flexible compensator.
- Do not bend it before installation or at any time. Install it **"in line"**. It does not eliminate any kind of unchecked vibrations but can damp residual vibrations uncontrolled first.

WHY A VIBRATION ABSORBER ?

Vibration absorbers are designed for installation in the suction and discharge line of air conditioning & refrigeration systems to dampen the transmission of compressor-induced vibration (if not properly or totally eliminated first), through system piping.

WHERE AND HOW IT SHOULD BE INSTALLED ?

The vibration absorber functions best when installed as close to the compressor as possible, and perpendicular to the major vibration direction as shown in illustration (horizontal and/or vertical motion). Two units could be eventually necessary.

DO NOT FORGET CORRECT ANCHOR INSTALLATION:

For optimum vibration absorption and safety, the refrigeration line should be anchored at the end of the unit furthest from the vibration source (see drawing). Care should be taken to allow sufficient space avoiding static compression and/or tension after soldering.

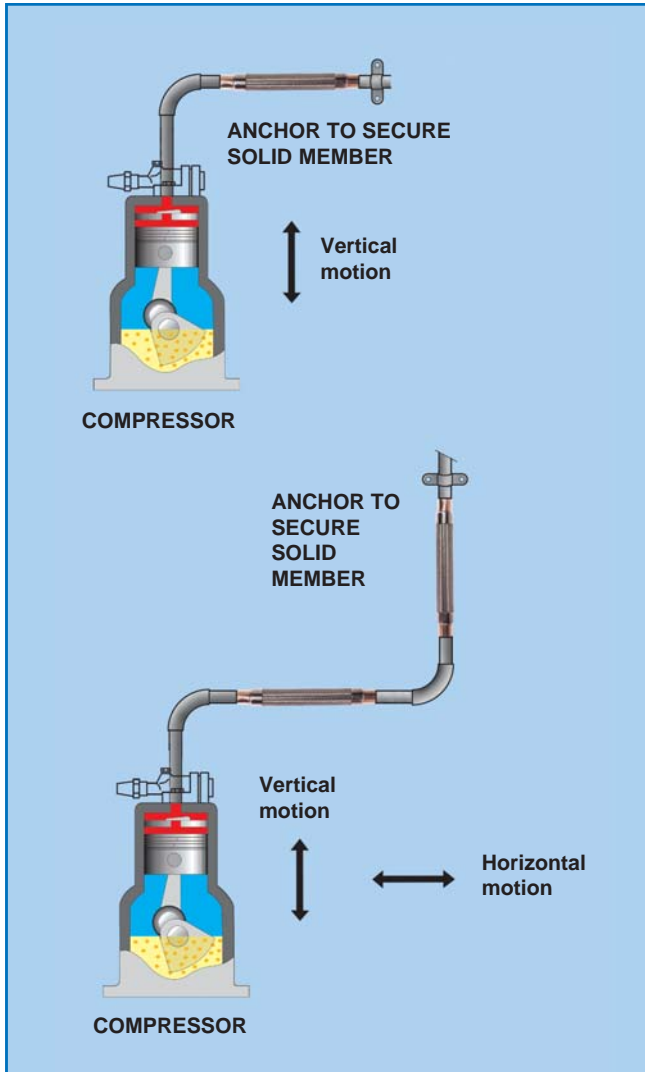
"IN LINE INSTALLATION":

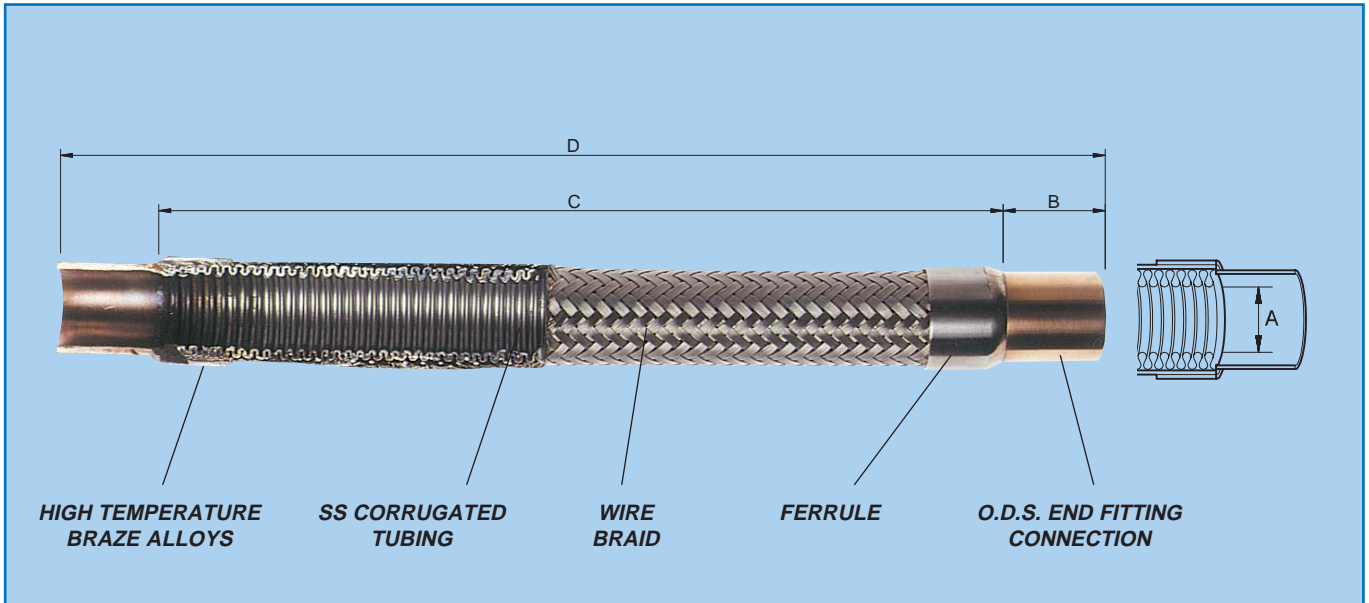
Unit should be installed in a straight line as **they are not intended to compensate for offset piping!**

NOTE: The torch soldering flame should always be directed away from the ferrules of the vibration absorber.

SPECIFICATIONS

- Vibration absorbers are manufactured of deep pitch corrugated tubing (see next page drawing) for vibration absorption covered by high tensile wire braid for superior strength. Tubing and braid are reinforced by ferrules at each end and are proof connected to female copper ODS fitting connections by high temperature electric oven braze alloys. The units are designed for making sweat, quick and easy connections to refrigerant piping.





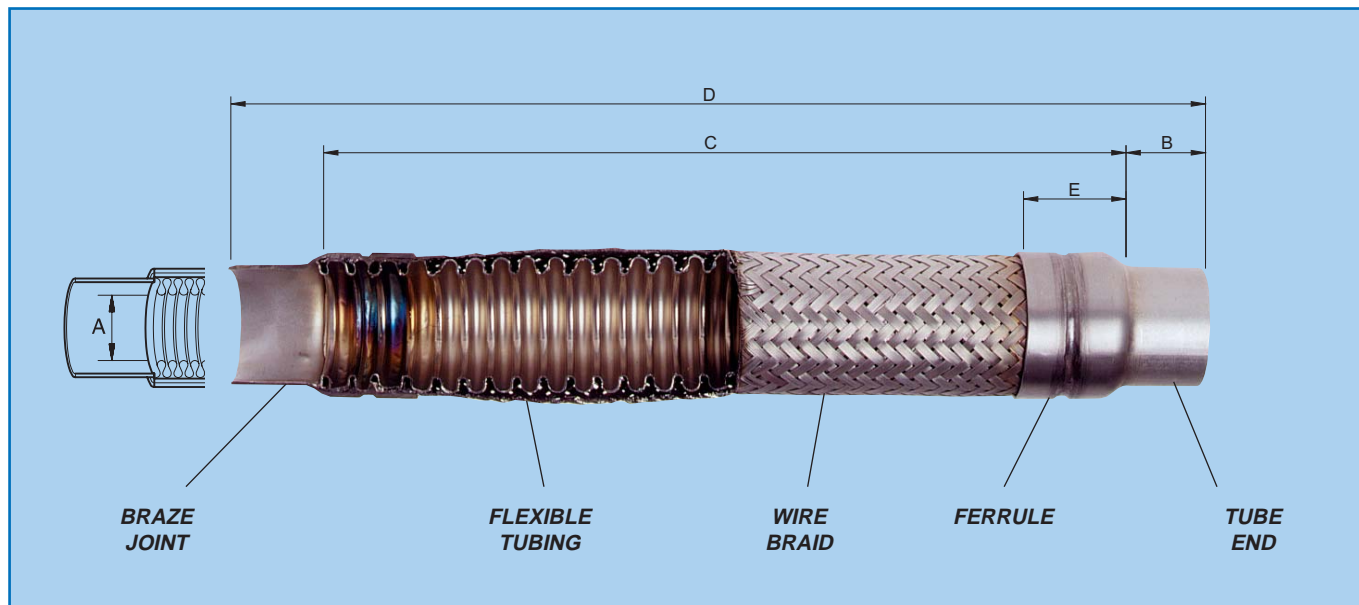
1. COPPER ENDS VERSION

PART NUMBER	END O.D.S. CONNECT (inch)	DIMENSIONS (mm)				Maximum working pressure (bar)
		A	B	C	D	
VASC-01	1/4"	6,50	15,90	146,00	177,80	35
VASC-02	1/4"	6,50	15,85	158,80	190,50	35
VASC-03	3/8"	9,62	15,87	177,80	209,60	35
VASC-04	1/2"	12,80	19,05	190,50	228,60	35
VASC-05	5/8"	16,20	22,22	203,20	247,60	35
VASC-06	3/4"	19,20	28,58	196,90	254,00	35
VASC-07	3/4"	19,20	28,57	228,60	285,70	35
VASC-08	7/8"	22,50	30,17	231,80	292,10	35
VASC-09	1 1/8"	28,80	33,35	263,50	330,20	35
VASC-10	1 3/8"	35,30	36,50	301,60	374,60	35
VASC-11	1 5/8"	41,70	47,63	336,60	431,80	35
VASC-82	2 1/8"	54,50	60,33	387,40	508,00	27
VASC-83	2 5/8"	67,00	76,20	457,20	609,60	24
VASC-84	3 1/8"	79,60	88,90	508,00	685,80	21
VASC-85	3 5/8"	92,50	101,60	482,60	685,80	12
VASC-86	4 1/8"	104,90	114,30	609,60	838,20	12

NOTE: 1 bar = 14,5 Psi

PART NUMBER	END O.D.S. CONNECT (mm)	DIMENSIONS (mm)				Maximum working pressure (bar)
		A	B	C	D	
VASC-10 mm	10	10	6,0	178,0	210,0	35
VASC-12 mm	12	12	19,0	191,0	229,0	35
VASC-16 mm	16	16	22,5	203,0	248,0	35
VASC-18 mm	18	18	28,5	229,0	286,0	35
VASC-22 mm	22	22	30,0	232,0	292,0	35
VASC-28 mm	28	28	33,0	264,0	330,0	35
VASC-35 mm	35	35	36,5	302,0	375,0	35
VASC-42 mm	42	42	47,5	337,0	432,0	35
VASC-54 mm	54	54	60,5	387,0	508,0	27

NOTE: 1 bar = 14,5 Psi



2. COMPLETE "ITE" STAINLESS STEEL VERSION

- TÜV approved upon request
- ASME approved

PART NUMBER	END O.D.S. CONNECT (inch)	DIMENSIONS (mm)					PRESSURES (bar)
		A	B	C	D	E	Maximum working
VAS-01	1/4"	6,20	8	140	170	17	35
VAS-03	3/8"	10,40	20	150	180	20	35
VAS-04	1/2"	12,40	20	160	200	23	35
VAS-05	5/8"	12,40	20	190	240	23	35
VAS-06	3/4"	15,40	20	210	260	25	35
VAS-08	7/8"	20,30	20	220	270	25	35
VAS-09	1 1/8"	25,40	22	215	275	28	35
VAS-10	1 3/8"	32,30	25	255	310	30	35
VAS-11	1 5/8"	40,20	26	280	350	30	35
VAS-82	2 1/8"	50,00	42	330	440	35	35
VAS-83	2 5/8"	64,90	50	405	540	40	30
VAS-84	3 1/8"	79,80	57	465	620	46	24
VAS-86	4 1/8"	99,50	67	540	720	53	20

PART NUMBER	END O.D.S. CONNECT (mm)	DIMENSIONS (mm)					PRESSURES (bar)
		A	B	C	D	E	Maximum working
VAS-10mm	10	10,40	20	150	180	20	35
VAS-12mm	12	12,40	20	160	200	23	35
VAS-16mm	16	12,40	20	190	240	23	35
VAS-18mm	18	15,40	20	210	260	25	35
VAS-22mm	22	20,30	20	220	270	25	35
VAS-28mm	28	25,40	22	215	275	28	35
VAS-35mm	35	32,30	25	255	310	30	35
VAS-42mm	42	40,20	26	280	350	30	35
VAS-54mm	54	50,00	42	330	440	35	35
VAS-70mm	70	64,90	50	405	540	40	30

LIQUID (or SUCTION) 3 FUNCTION SHELLS

"UNIVERSAL FILTER-DRIER SHELLS"

DESCRIPTION

- For **R12, R22, R502, R134a, R404A, R407C, R507** and other blends with their specific oil and lubricant.
- For **R717 (NH₃ ammonia)**: steel connections only.
- These drier shells offer a complete protection and receive all our cores as well as other existing cores in the market.
- **NOTE: Steel corrosion** resistant finish for shells.
- **NOTE: 3 function cores** not furnished with shells (see page 233)
- **NOTE: Copper fittings AND steel fittings** connections.
- **NOTE:** Also, drier shells can be supplied nickel plated finished (20 pieces minimum) to replace brass shell applications (supermarkets, breweries, chemical plants, etc...)
- **NOTE:** All our shells (or others) can be fitted in minutes with the unique **QUICK-CAP COVER**. See below.
- Std. flange cover is made with allied aluminium and bolted with steel bolts (std liquid line) or stainless steel bolts (for suction).
- Cover receives all std. 1/4" male flare SAE fittings or valves.

LIQUID or SUCTION LINE SELECTION & INSTALLATION

- For **LIQUID LINE**: Shells may be installed in any position. Best if installed as close as possible to any expansion device. Best if installed upstream solenoid valves (for protection) and moisture indicator (for permanent readings of cores efficiency).
- For **SUCTION LINE**: Best if installed as close as possible to the compressor but upstream of the accumulator, if any.
- For **EASY CORE REPLACING**: Allow a minimum of 25 cm (10 inch) free space above the flange cover. Screw in a suitable 1/4" male flare "schrader valve" and surround or by-pass the shell with proper hand-valves (see page 110).

SPECIFICATIONS

- Our drier shells receive **824, 848** and **810** cores (24, 48 and 100 **std cubic inch cores**). (So, 24, 48 and 100 cu inch replaceable core shells are only shown in this catalogue but 42 cu inch shells can also be supplied on 20 mixed pieces request).
- **U.L. listed** (file SA-7175) . **CSA listed** (file LR-100624)
- Maximum working pressure: **35 bar** (500 Psi).
- Burst pressure: **175 bar** (2500 Psi).
- Maximum temperature rating: **135°C** (275°F).



KIT	SPARE PART DESIGNATION KITS
BLT-024 BLT-048 BLT-100	SET of 8 std. bolts for 3" shells SET of 8 std. bolts for 4 ³ / ₄ " shells SET of 8 std. bolts for 6" shells
SBLT-024 SBLT-048 SBLT-100	SET of 8 stainless steel bolts for 3" shells SET of 8 stainless steel bolts for 4 ³ / ₄ " shells SET of 8 stainless steel bolts for 6" shells
GSK-024 GSK-048 GSK-100	Heavy duty gasket only for 3" shell cover Heavy duty gasket only for 4 ³ / ₄ " shell cover Heavy duty gasket only for 6" shell cover
COV-024 COV-048 COV-100	Molded aluminum cover for 3" shells Molded aluminum cover for 4 ³ / ₄ " shells Molded aluminum cover for 6" shells
INT-024 INT-300 INT-400	Internal part KIT for US-245 through US-249 Internal part KIT for US-30013 through US-30021 Internal part KIT for US-40017 through US-40025

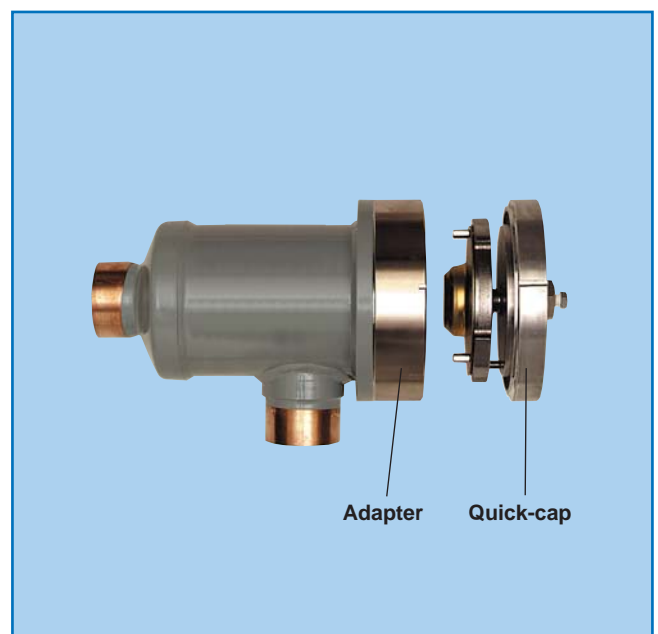
QUICK-CAP ADAPTER

"REPLACES ALL FLANGE COVERS"

DESCRIPTION

- Now, our **NEW UNIVERSAL QUICK-CAP** can be adapted on all existing shells by using their existing flange bolt threaded holes. Then, the new **QUICK-CAP** will permit you to open and close the shell in a few seconds by turning the one quarter turn centre bolt.
- To close it: Place cover on the shell and rotate until alignment marks meet. Turn the centre bolt to hand tight then, tighten one full turn (**3.5 to 4 kg-m** or 25 to 30 ft-lbs if torque wrench used)
- Patented and leakproof "that's all that is to it" device. Dramatically save your service time and be "professional".

PART NUMBER	QUICK-CAP USAGES	SHELL DIAM. (inches)	CORE TYPES (Cubic inches)
QC-48-3/4	Standard 4 ³ / ₄ "	4 ³ / ₄ "	48 cu inch



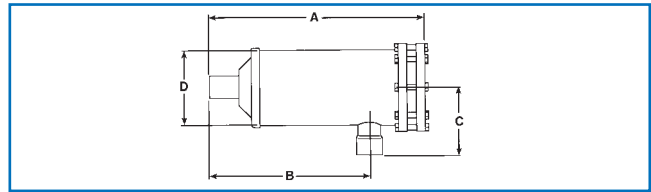


TABLE 1: CAPACITY LIQUID LINE SELECTION & ORDERING
 CAPACITIES SHOWN IN kW (1 kW = 860 Fg/h = 0.284 US TON of refrigeration)

PART NUMBER	CONNECT. O.D.S. (SW:STEEL)	RECOMMENDED CAPACITY (kW)		FLOW CAPACITY (kW)		QTY	CORES (REF. & DATA)			DIMENSIONS (cm)			
		R12 R502	R22 R134a	R12 R502	R22 R134a		PART NR. 24,48,100 cubic inch	VOLUME cm ³ (cu. in)	SURFACE cm ² (sq. in)	A	B	C	D
US-485	5/8"	35	50	60	80	1	US-848-C	786 (48)	413 (64)	23	16	8	12
US-487	7/8"	35	50	130	170	1	or	786 (48)	413 (64)	24	16	9	12
US-489	1 1/8"	50	55	200	260	1	US-848-CM or US-848-CC	786 (48)	413 (64)	24	16	9	12
US-9613	1 5/8"	105	140	355	455	2	or	1571 (96)	826 (128)	38	30	10	12
US-14413	1 5/8"	175	210	365	475	3	US-848-F	2357 (144)	1239 (192)	53	45	10	12
US-14417	2 1/8"	175	210	505	650	3	or	2357 (144)	1239 (192)	53	45	10	12
US-30013	1 5/8"	350	430	390	500	3	US-810-CM or US-810-CC	4910 (300)	1897 (294)	70	60	13	16
US-30021	2 5/8"	350	430	685	885	3	or	4910 (300)	1897 (294)	72	63	16	16
US-40017	2 1/8"	475	580	550	710	4	US-810-CC or US-810-F	6457 (400)	2529 (392)	86	77	13	16
US-40021	2 5/8"	475	580	685	885	4	or	6457 (400)	2529 (392)	89	79	16	16
US-40025	3 1/8"	475	580	820	1000	4	or	6457 (400)	2529 (392)	89	89	80	16
US-488-SW	1" SW	50	60	90	110	1	Steel Connection Shells (For steel tubings)			25	16	10	12
US-9610-SW	1 1/4" SW	105	140	280	360	2				39	30	10	12
US-14412-SW	1 1/2" SW	175	210	360	470	3				53	43	10	12
US-19216-SW	2" SW	260	310	400	520	4	See DATA above (same)			65	57	11	12
US-40016-SW	2" SW	475	580	720	800	4				88	76	12	16

NOTE:

- RECOMMENDED CAPACITIES are based on field replacement or installation for maximum drying efficiency. Lab conditions would give approx double values. Ratings in accordance with **ARI standard 730-86**.
- For **R404A & R507** use 95% of the R12 capacities
- Our flow capacities are based on **0,14 bar** (2 Psi) pressure drop through the shell (cores are attending to be clogged and should be replaced above such a value).
- IMPORTANT:** The surface filtration of our corrugated "C" and "CM" are increased by **50%** regarding the above table values and have less pressure drop.
- See our core DATA's page 233 in connection with page 234 for field efficient readings and analysis maintenance.

TABLE 2: CAPACITY SUCTION LINE SELECTION
 CAPACITIES SHOWN IN kW (1 kW = 860 Fg/h = 0.284 US TON of refrigeration)

EVAPOR. TEMP.	MAXIMUM CAPACITY RATING IN kW													
	-40°C		-30°C			-18°C			-7°C			+5°C		
REFRIGERANTS	22/134	502	22	134	502	22	134	502	22	134	502	22	134	502
ODS CONNECTION TO BE TAKEN	PRESSURE DROP in bar and (Psi)													
	.04 (.5)	.04 (.5)	.07 (1)	.07 (1)	.07 (1)	.10 (1.5)	.10 (1.5)	.10 (1.5)	.14 (2)	.14 (2)	.14 (2)	.21 (3)	.21 (3)	.21 (3)
5/8"	2.1	1.7	3.8	3.8	3.1	5.9	5.9	5.2	8.7	8.7	7.0	11	11	8.5
7/8"	4.9	3.8	8.7	8.7	7.0	13	13	11	18	18	14	28	28	25
1 1/8"	7.3	5.9	13	13	10	20	20	17	24	24	20	44	44	38
1 3/8"	10	8.0	18	18	14	28	28	24	41	41	33	61	61	53
1 5/8"	9.4	10	24	24	19	37	37	32	53	53	42	78	78	68
2 1/8"	18	14	33	33	26	50	50	43	77	77	61	107	107	93
2 5/8"	28	22	52	52	41	79	79	68	121	121	90	168	168	146

INTERCHANGEABLE AND REPLACEABLE ACTIVATED CORES

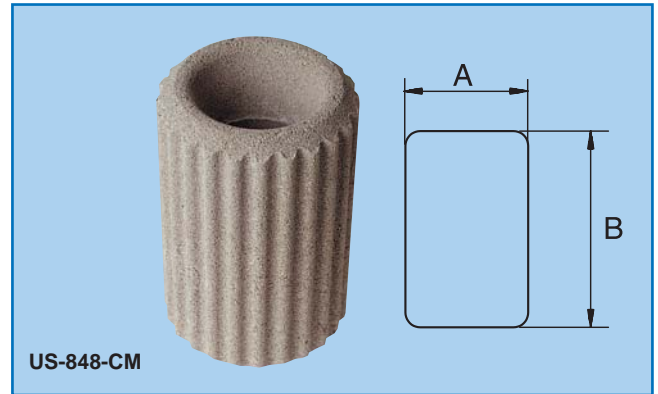
"THE TRUE AND ORIGINAL RANGE"

SPECIFICATIONS

- These cores are carefully molded using selected desiccants for **HIGH MOISTURE** absorption and **ACIDS** and **WAX** removal.
- Bonded for very high mechanical strength and **MICRONIC FILTRATION** capability.
- Fully activated in high temperature oven and hermetically sealed in leak proof container including an universal **KIT** of **REPLACEMENT GASKETS** for our shells as well as other existing shells.
- Our **CORRUGATED** type cores offer **+55%** of surface filtration and are slow glogged than other existing types.
- These replaceable cores are **INTERCHANGEABLE** with all types existing in the market.

REFRIGERANTS

- **R12, R22, R502, R134a, R404A, R407C, R507** and other blends and their specific lubricants.
- **R717** (NH₃ ammonia) with US-824-CM, 848-CM and 810-CM.








DIMENSIONAL DATA OF CORES		
MODEL	DIMENSIONS (mm)	
	A	B
All "US-824-CM", "CC" and "F"	61	146
All "US-848-C", "CM", "CC", "CF" and "F"	93	131
All "US-810-CM", "CC", "CF" and "F"	122	156

1. THREE TYPES: "24", "48" and "100" cubic inch

24 CUBIC INCH CORES:
US-824-CM, US-824-CC and US-824-F (standard) All are for our 3" diameter shells (all US-24 shells). All are for other 3" diameter standard existing shells
48 CUBIC INCH CORES:
US-848-C, US-848-CM, US-848-CC, US-848-CF and US-848-F (standard) All are for our 4 ^{3/4} " diameter shells (all US-48, US-96, US-144 and US-192 shells). All are for other 4 ^{3/4} " diameter standard existing shells.
100 CUBIC INCH CORES:
US-810-CM, US-810-CC, US-810-CF and US-810-F (standard) All are for our 6" diameter shells (all US-300 and 400 shells) All are for other 6" diameter standard existing shells.



2. FIVE MODELS: "C", "CM", "CC", "CF", "F"

STANDARD	HIGH CAPACITY	CHARCOAL	NYLON	MICRONIC FELT
				
US-848-C	US-824-CM US-848-CM US-810-CM	US-824-CC US-848-CC US-810-CC	US-848-CF US-810-CF	US-824-F US-848-F US-810-F
Standard core for micronic filtration of 10 micron at pressure Differential of 0.14 bar (2 Psi)	Same as standard US-848-C cores however with a high water retention	Same as high water retention "CM" however with additional activated charcoal to remove wax	Micronic filtration equal or less than 5 micron at pressure differential of 0,035 bar	Reduced pressure drop for permanent suction micronic filtration No water absorption No acids removal

3. SPECIFIC PURPOSE AND ORDERING

"824" and "848" models are packed 12 in a carton.

"810" model is packed 4 in a carton.

US-848-C:	Standard original core used for general clean up in all <i>LIQUID</i> or <i>SUCTION</i> line applications. CORRUGATED surface and high mechanical strength for MICRONIC FILTRATION (10µ minimum) under LOW PRESSURE DROP (0,14 bar maximum). Ideal for best expansion device protection. Remove <i>SLUDGE</i> , <i>VARNISHES</i> , <i>MOISTURE</i> and <i>ACIDS</i> .
------------------	--

US-824-CM: US-848-CM US-810-CM	Standard high capacity core similar to and used as the above "C" model but with as <i>HIGH DRYING CAPACITY</i> . Ideal for perfect clean up at starting or where high moisture is suspected (system being exposed to the atmosphere, ruptured water condenser, low side exchanger and other tubing).
---	---



US-824-CC: US-848-CM US-810-CC	Standard high activated charcoal core combines all above "CM" specifications with a <i>HIGH ACTIVATED CHARCOAL</i> blend for <i>HIGHWAX</i> and <i>VARNISH</i> removal. Ideal (liquid and/ or suction lines) where a motor burnout is occurred.
---	--

US-848-CF: US-810-CF	Standard micronic filtration nylon core Used in the suction line with Micronic Suction Filter Shells, see page 235, with the <i>LOWEST</i> possible <i>PRESSURE DROP</i> (down to 0,035 bar according data's and where drying and acid removal are not required anymore). Nylon core filters down to 5µ and should always be used after the system has been cleaned using drier cores shown above.
---------------------------------------	--

US-824-F: US-848-F US-810-F	Standard micronic filtration felt core. Used permanently in the suction line with the <i>LOWEST</i> possible <i>PRESSURE DROP</i> (down to 0,035 bar according data's and where drying and acid removal are not required anymore). Felt core filters down to 10µ and should always be used after the system has been cleaned using drier cores shown above.
--	---

4. MOISTURE DATA & SELECTION TABLE

PART NUMBER	DESCRIPTION	WATER CAPACITY - DROPS												
		R134a		R12		R22		R407C		R502		R404A / R507		
		DROPS @ 60 PPM		DROPS @ 15 PPM		DROPS @ 60 PPM		DROPS @ 50 PPM		DROPS @ 30 PPM		DROPS @ 50 PPM		
		24°C (75°F)	52°C (125°F)	24°C (75°F)	52°C (125°F)	24°C (75°F)	52°C (125°F)	24°C (75°F)	52°C (125°F)	24°C (75°F)	52°C (125°F)	7°C (45°F)	24°C (75°F)	52°C (125°F)
US-824-CM	HIGH CAPACITY	311	218	556	334	311	218	-	-	345	255	-	-	-
US-824-CC	ACT. CHARCOAL	116	108	331	193	166	108	-	-	192	133	-	-	-
US-824-F	SUCTION FELT	<i>MICRONIC FILTRATION ONLY</i>												
US-848-C	STANDARD	308	160	790	427	308	160	225	95	387	228	-	457	343
US-848-CM	HIGH CAPACITY	588	412	1050	630	588	412	445	285	651	482	-	721	535
US-848-CC	ACT. CHARCOAL	345	224	690	402	345	224	290	165	400	277	-	417	289
US-848-CF	NYLON	<i>MICRONIC FILTRATION ONLY</i>												
US-848-F	SUCTION FELT	<i>MICRONIC FILTRATION ONLY</i>												
US-810-CM	HIGH CAPACITY	1219	853	2173	1304	1219	853	-	-	1347	996	-	1199	839
US-810-CC	ACT. CHARCOAL	702	456	1400	816	702	456	-	-	812	562	-	756	448
US-810-CF	NYLON	<i>MICRONIC FILTRATION ONLY</i>												
US-810-F	SUCTION FELT	<i>MICRONIC FILTRATION ONLY</i>												

- Moisture holding capacity is based on an evaporating pressure drop and:
 - 60 PPM** for R134a and R22
 - 15 PPM** for R12
 - 30 PPM** for R502
 - 50 PPM** for R404A, R407C and R507
- According to **ARI standard 730-86** for R22, R12, R502, R134a
- No ARI publication at this time for R404A, R407C and R507
- 20 drops of water** = 1 gram = 1 cubic centimetre (cm³)
- The above values are for "field applications". Lab conditions would give substantial higher values.

MICRONIC SUCTION FILTER SHELLS

"THE BEST & CHEAPEST CORE SHELL TO PROTECT COMPRESSORS"

SPECIFIC PURPOSE

- Compact shell (only one core from 1³/₈" up to 3¹/₈" ODS connections) providing a permanent **VERY HIGH MICRONIC FILTRATION** (down to **5 microns**) under a **VERY LOW PRESSURE DROP** (down to **0,035 bar** or 0.5 Psi).
- Keeps oil and refrigerant permanently clean.
- Prevents all foreign burrs, dirt and sludge to damage the highly machined & polished internal working part of the compressor.

DESIGN FEATURES

- Steel shell and cover. Copper fitting connections. Stainless steel cap screws. One ("CF" type) fluted bi-directional core.
- Full flow filter with a corrugated filter core area at low P.D.
- Expanded metal cylinder offers a rugged unit for speed flow.
- Access valve (1/4" male flare SAE) with "schrader" core and cap for easy & accurate pressure drop readings.

INSTALLATION

- Can be installed in any position. It is **BI-DIRECTIONAL**.
- The shell receives the specific replaceable "CF" micronic filter core. Also, it gives the benefit to temporarily receive all other standard **ceramic core models** shown page 233.
- This **TEMPORARY CLEAN UP METHOD** (say between 2 to 4 hours long) gives you a temporary drier shell to obtain a moisture and acid removal at start up, High drying action after any incidental opening, breaking or leaking pipes, Regeneration and safety after any "burnout", etc...).
- **NOTE:** In such a way (with **ceramic core** and **KIT "RK"**) the inlet fluid flow should be planned at the side connection.

1. TO ORDER SHELL & CORE

SHELL PART NUMBER	O.D.S. CONNECT	MICRONIC FILTER CORE	KIT FOR CERAMIC CORE	DIMENSIONS (cm)			BODY SHELL Ø
				A	B	C	
US-83711	1 ³ / ₈ "	US-824-CF	24-RK	27.8	21.1	8.6	8 cm
US-83713	1 ⁵ / ₈ "	US-824-CF	24-RK	28.0	21.3	8.8	(3")
US-85713	1 ⁵ / ₈ "	US-848-CF	48-RK	24.3	16.5	10.0	12 cm
US-85721	2 ⁵ / ₈ "	US-848-CF	48-RK	26.4	16.7	14.5	
US-86725	3 ¹ / ₈ "	US-810-CF	10-RK	42.7	30.5	16.7	(6")

- The **3 references** you need:
 - One suction replaceable core shell.
 - One permanent "CF" filtering core.
 - One temporary "RK" Kit for using other ceramic cores.

• 1 cm = .394 inch • 1 inch = 2,54 cm

2. CAPACITY TABLE SELECTION (For "CF" filter core use)

Capacities given in kW/h (1 kW/h = 860 Fg/h = 0.284 US tons)

EVAPORATING TEMPERATURE		-40°C (-40°F)		-30°C (-20°F)			-18°C (0°F)			-7°C (20°F)			+5°C (40°F)		
REFRIGERANTS		R12	R22	R12	R22	R502	R12	R22	R502	R12	R22	R502	R12	R22	R502
SHELL PART NUMBER	CONN. DIAM.	PRESSURE DROP in bar and (Psi)													
		0.04 (0.5)	0.04 (0.5)	0.04 (0.5)	0.07 (1)	0.07 (1)	0.07 (1)	0.1 (1.5)	0.1 (1.5)	0.1 (1.5)	0.14 (2)	0.14 (2)	0.14 (2)	0.21 (3)	0.21 (3)
US-83711	1 ³ / ₈ "	10	8	9	19	15	17	30	24	26	45	36	38	68	56
US-83713	1 ⁵ / ₈ "	14	11	12	26	21	23	42	33	35	62	50	53	95	78
US-85713	1 ⁵ / ₈ "	19	15	17	36	28	31	56	45	48	83	67	70	127	104
US-85721	2 ⁵ / ₈ "	35	27	30	65	51	56	104	83	89	153	123	130	234	92
US-86725	3 ¹ / ₈ "	55	42	48	104	81	89	164	131	141	242	195	206	369	304

- For **R134a** use R22 data



SPECIFICATIONS:

- For **R12, R22, R502, R134a, R404A, R407C, R507** and other blends with their specific lubricants.
- Working pressure: **35 bar** (500 Psi)
- **U.L. & CSA listed.**
- Bursting pressure: **175 bar** (2500 Psi).

SOLENOID VALVES

"LIQUID, SUCTION AND DISCHARGE"
 "**ON* LUMINOUS DIN CONNECTOR"

1. 2041 SERIES "flare SAE" & "ODS"

DESCRIPTION

- Forged brass body. "teflon" seat and diaphragm.
- Capsulated coils **DIN 43650** connection and **IP65** protection.
- **Luminous DIN** connector (you can see "ON"/"OFF" valve)
- **Flare "SAE"** connections or "**ODS**" brazing ends (ODS copper tube extension does not require the valve to be disassembled).
- Minimum pressure differential for opening: **0.07 bar** (1 Psi) and **0.00 bar** (0 Psi) for 1/4" type.
- Maximum opening pressure differential:
 - 21 bar** (300 Psi) for alternative currents
 - 10 bar** for direct currents
- Working temperature range: **-40°C** to **+115°C** (-40°F to 230°F)
- Maximum working pressure: **35 bar**.

VALVE ORDERING (with coil 230V/50Hz)

NOTE: See standard coil ordering page 238.

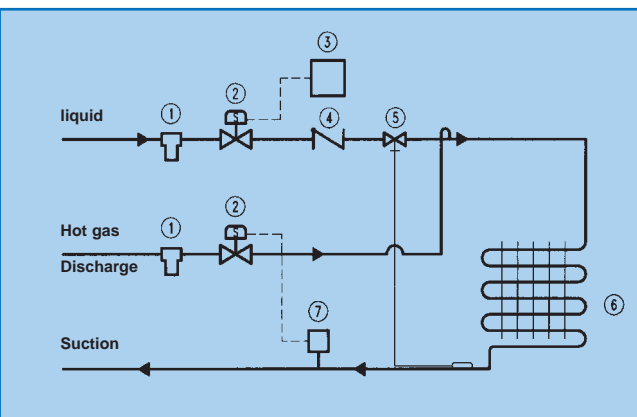
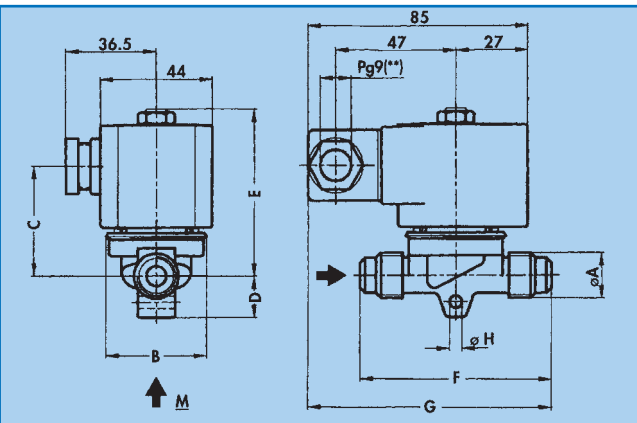
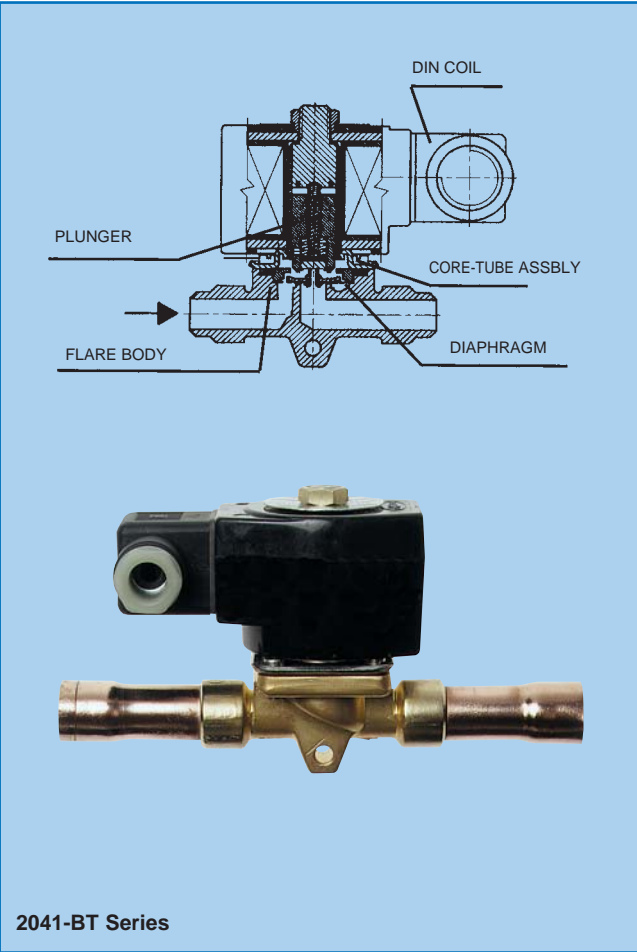
PART NUMBER	CONNECTIONS (flare or ODS)	"KV" COEFFICIENT	REPAIR KIT number
2041-BT-2	1/4" male flare	0.16	K41-T1
2041-BT-3	3/8" male flare	1.20	K041-T1
2041-BT-4	1/2" male flare	1.40	K041-T1
2041-BT-5	5/8" male flare	2.50	K41-T3
2041-BT-2S2	1/4" ODS	0.16	K41-T1
2041-BT-3S3	3/8" ODS	1.20	K041-T1
2041-BT-4S4	1/2" ODS	1.40	K041-T1
2041-BT-4S5	5/8" ODS	1.40	K041-BT1
2041-BT-5S5	5/8" ODS	2.50	K41-T3
2041-BT-5S6	3/4" ODS	2.70	K41-T3
2041-BT-5S7	7/8" ODS	2.70	K41-T3

DIMENSIONS

CONNECTIONS (flare or ODS)	DIMENSIONS (mm)								
	A	B	C	D	E	F	G	H	
2041-BT-2	1/4" male flare	-	30	53	8	64	59	87	-
2041-BT-3	3/8" male flare	-	41	67	18	65	77	96	-
2041-BT-4	1/2" male flare	-	41	67	18	65	77	96	-
2041-BT-5	5/8" male flare	-	55	98	19	76	102	109	7
2041-BT-2S2	1/4" ODS	7	30	53	8	65	115	116	-
2041-BT-3S3	3/8" ODS	10	41	67	18	65	150	133	5
2041-BT-4S4	1/2" ODS	13	41	67	18	65	150	133	5
2041-BT-4S5	5/8" ODS	16	41	67	18	65	150	133	5
2041-BT-5S5	5/8" ODS	16	55	98	19	76	170	143	7
2041-BT-5S6	3/4" ODS	19	55	98	19	76	170	143	7
2041-BT-5S7	7/8" ODS	24	55	98	19	76	170	143	7

TYPICAL APPLICATION

(AT chamber regulation w / relative humidity control)



- 1: Strainer
- 2: Solenoid valve
- 3: Thermostat
- 4: Check-valve
- 5: Thermostatic exp. vlv.
- 6: Evaporator
- 7: Pressure switch (other)



2. 1342 SERIES "ODS"

DESCRIPTION

- Forged brass body. "brass" piston and "teflon" seat.
- Capsulated coils **DIN 43650** connection and **IP65** protection.
- **Luminous DIN** connector (you can see "ON"/"OFF" valve)
- "ODS" brazing connections (ODS copper tube extension).
- Minimum pressure differential for opening: **0.20 bar** (3 Psi).
- Maximum opening pressure differential:
 - 21 bar** (245 Psi) for alternative currents
 - 13 bar** for direct currents
- Working temperature range: **-40°C to +115°C** (-40°F to 230°F).
- Maximum working pressure: **35 bar**.

ORDERING OPTIONS

- **MO**: To be added to the solenoid valve reference when you need a valve with a **MANUAL OPENING STEM**.
- **NO**: To be added to the solenoid valve reference when you need **NORMALLY OPEN VALVE**.

VALVE ORDERING (with coil 230V/50Hz)

NOTE: see standard coil ordering page 238

PART NUMBER	CONNECTIONS	"KV" COEFFICIENT	REPAIR KIT number
1342-BT-06S06	3/4" ODS	5.0	K42-T1-S
1342-BT-06S07	7/8" ODS		
1342-BT-06S09	1 1/8" ODS		
1342-BT-08S09	1 1/8" ODS	11	K42-T2-S
1342-BT-08S11	1 3/8" ODS		
1342-BT-12S13	1 5/8" ODS	25	K42-T3-S
1342-BT-12S17	2 1/8" ODS		
1342-BT-16S17	2 1/8" ODS	40	K42-T4-S
1342-BT-16S21	2 5/8" ODS		

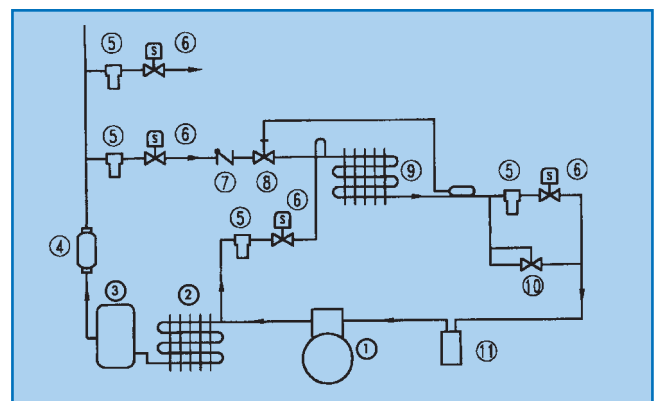
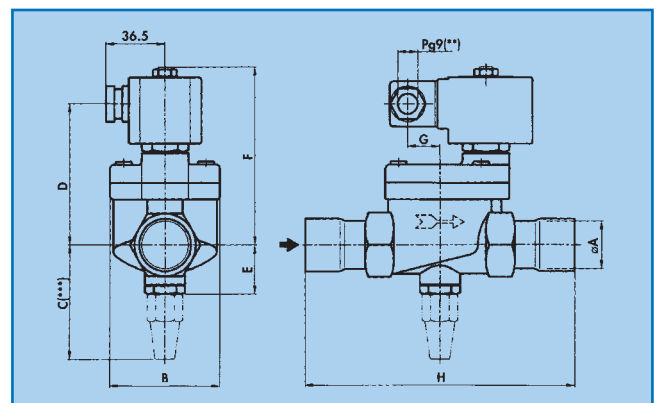
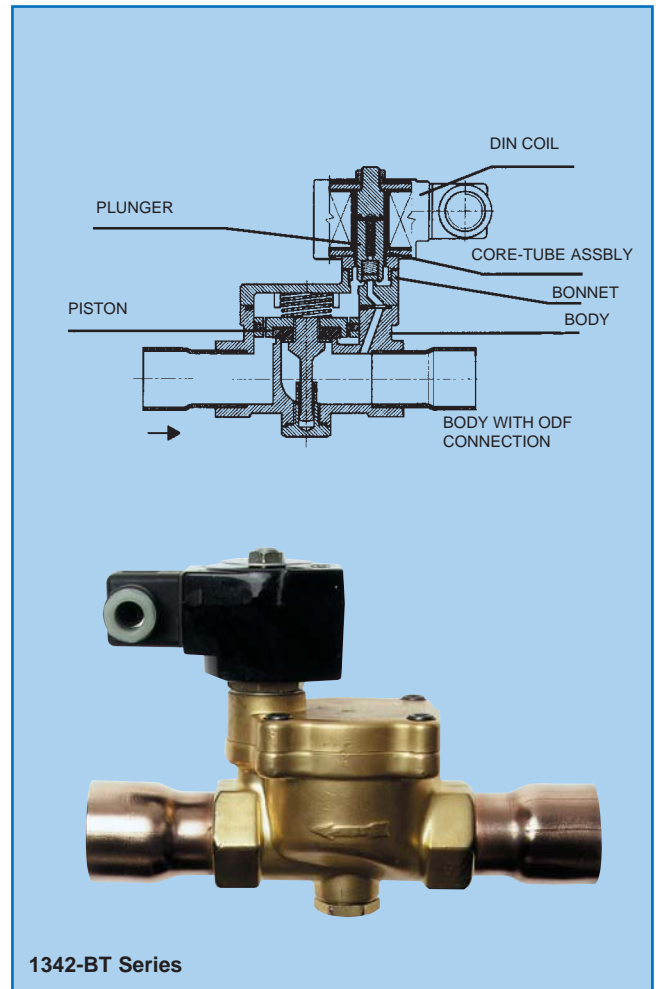
DIMENSIONS

	CONNECTIONS	DIMENSIONS (mm)							
		A	B	C	D	E	F	G	H
1342-BT-06S06	3/4" ODS	23	53	69	84	27	105	24	127
1342-BT-06S07	7/8" ODS								
1342-BT-06S09	1 1/8" ODS	27	67	72	88	30	109	16	170
1342-BT-08S09	1 1/8" ODS								
1342-BT-08S11	1 3/8" ODS	35							
1342-BT-12S13	1 5/8" ODS	42	82	80	99	38	120	7	250
1342-BT-12S17	2 1/8" ODS	54							
1342-BT-16S17	2 1/8" ODS	54	8	86	105	44	126	-	280
1342-BT-16S21	2 5/8" ODS	67							

TYPICAL APPLICATION

(Multi-evapos with hot gas defrost system)

- 1: Compressor
- 2: Condenser
- 3: Receiver
- 4: Core filter drier
- 5: Strainer
- 6: Solenoid valve
- 7: Check-valve
- 8: Thermostatic exp. vl.
- 9: Evaporator
- 10: Back pressure regulator
- 11: Liquid suction accumulator



"DIN" STANDARD SOLENOID COILS

+ "LUMINOUS DIN CONNECTOR"

STANDARD COIL ORDERING FOR ALL SOLENOID VALVES

MF-1150C-024U*	COIL	24V	50Hz	11W
MF-1150C-048U*	COIL	48V	50Hz	11W
MF-1150C-230U*	COIL	230V	50Hz	11W
MF-1360C-110U*	COIL	110V	60Hz	13W
MF-1900C-024U*	COIL	24V	(DC)	19W

(*) Add "4" to the coil part number for LUMINOUS GASKET
Add "7" to the coil part number for PG9 DIN CONNECTOR

DESCRIPTION

- **Only one standard coil** for all solenoid valves.
- Capsuled, humidity and weather proof. Continuous use.
- **DIN 43650 (ISO 4400)** connectors for PG9, PG11 or 1/2" NPT conduit (**PG9** is the standard *DIN connector* normally supplied and available on stock).
- **IP65** protection (explosion proof version upon request).
- **Luminous gasket** or **luminous DIN connector** incorporated to light up when the coil is energized (upon request).
- All solenoid valves are **U.L. listed**, **CSA** Canadian standard and **BVQI-ISO 9001** approved.
- The thermal isolation is **+155°C, Class "F"**.

ELECTRICAL INSTALLATION

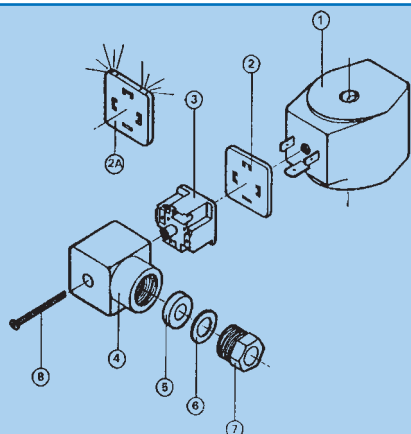
- All the coils are for continuous use or high frequency of operation and they are protected against humidity by the encapsulation or by weather proof housings.
- Verify that the coil supplied with the valve is of the correct tension and current required. If not, replace it with the adequate coil without changing the valve.
- The tension variation that is permitted without affecting the performance of the valve is of -15% to +10% of the nominal tension.
- The rest of the models described in this manual are provided normally with capsulated coils with DIN 43650 (ISO 4400) connections.

MECHANICAL INSTALLATION

- Verify that the working conditions are within the range of differential pressure and temperature indicated on the name plate of the valve.
- That a strainer is fitted immediately upstream of the valve with the adequate capacity and a mesh of no greater than a 100 microns.
- The most favorable mounting position: on a horizontal pipe line with the coil in the upright position.
- Pipe lines upstream of the valve must be carefully and exhaustively cleaned even before a strainer, by purges with compressed air or any other system which ensure the elimination of all solid elements as well as welding bits, mud, dirt, and this happens particularly in new installations.
- Do not forget to look at the arrow indicating the flow in the body. For that, the pressure at the inlet must always be greater or equal to the outlet.

INSTRUCTIONS FOR THE ELECTRICAL CONNECTION OF THE COIL WITH STRAIN RELIEF CONNECTOR

1. Unscrew the screw (8) to be able to get to the block (3) where the terminals are. The design is prepared to use standard cables or 3-wire armored cables "PG9". Carry out the wiring as per diagram.
2. Insert the terminal block into the connector (4) according to the entrance angle desired, within the four possible positions: Left, right, above, below.
3. Insert into the terminal block the spades of the coil. Secure it with the fixing screw (8).
4. Lastly, but very important: tighten the strain relief (7) to ensure it is hermetic. Otherwise humidity ingresses and can cause a short-circuit between the terminals or reach the coil and short-circuit the windings, damaging the coil.



- 1 COIL
- 2 GASKET
- 2a GASKET. With luminous indicator when coil is energised code Nr. 4180-8 (upon request)
- 3 BLOCK WITH ELECTRICAL TERMINALS. maximum section of wiring AWG14 (1,6 mm)
- 4 CONNECTOR WITH OPENING FOR ARMORED CABLE Strain relief "PG9" outside diameter of covered cable from 6 to 8 mm. Upon request luminous connector.
- 5 STRAIN RELIEF GASKET
- 6 WASHER
- 7 STRAIN RELIEF
- 8 FIXING SCREW



MF-1150C-230U



SOLENOID VALVE OPERATING CONTROLLER




- VOC-10** VALVE OPERATING CONTROLLER with 10 mm diameter bore size
- VOC-15** VALVE OPERATING CONTROLLER with 15 mm diameter bore size
- VOC-18** VALVE OPERATING CONTROLLER with 18 mm diameter bore size

- The quickest and easiest way to convert electrically operated solenoid valves into hand operated valves. To allow testing of valve operation and to undertake repairs.
- 3 models with 3 different stem sizes fit all models of solenoid valves on the market
- Pocket size, easy to use, the ideal addition to every service engineers tool kit
- Do not use the magnet when the solenoid valve is electrically operated.

SOLENOID VALVES CAPACITY TABLES

1. LIQUID CAPACITY TABLE in kW (1 kW = 860 Fg/h)



	PART NUMBER	CONNECTION	ΔP KPa	REFRIGERANTS			
				R22	R134a	R404A	R507
 	2041-BT-2 2041-BT-2S2	1/4" male flare	15	3.23	2.99	2.20	2.17
		1/4" ODS	20	3.73	3.46	2.54	2.50
			30	4.56	4.23	3.11	3.06
			50	5.89	5.46	4.01	3.96
			100	8.33	7.73	5.67	5.59
	2041-BT-3 2041-BT-3S3	3/8" male flare	15	24	22	16	16
		3/8" ODS	20	28	26	19	19
			30	34	32	23	23
			50	44	41	30	30
			100	62	58	43	42
	2041-BT-4 2041-BT-4S4 2041-BT-4S5	1/2" male flare	15	28	26	19	19
		1/2" ODS	20	33	30	22	22
		3/8" ODS	30	40	37	27	27
		5/8" ODS	50	52	48	35	35
			100	73	68	50	49
	2041-BT-5 2041-BT-5S5 2041-BT-5S6 2041-BT-5S7	5/8" male flare	15	54	50	37	37
5/8" ODS		20	63	58	43	42	
3/4" ODS		30	77	71	52	52	
7/8" ODS		50	99	92	68	67	
		100	141	130	96	94	
	1342-BT-06S06 1342-BT-06S07 1342-BT-06S09	3/4" ODS	20	116	108	79	78
		7/8" ODS	30	143	132	97	96
		1 1/8" ODS	50	184	171	125	124
			100	260	241	177	175
	1342-BT-08S09 1342-BT-08S11	1 1/8" ODS	20	256	238	174	172
		1 3/8" ODS	30	314	291	214	211
			50	405	376	276	272
			100	573	531	390	385
	1342-BT-12S13 1342-BT-12S17	1 5/8" ODS	20	582	540	396	391
		2 1/8" ODS	30	713	661	486	479
			50	921	854	627	618
			100	1312	1207	887	874
	1342-BT-16S17 1342-BT-16S21	2 1/8" ODS	20	932	864	634	625
		2 5/8" ODS	30	1141	1058	777	766
			50	1473	1366	1003	989
			100	2083	1932	1418	1398

All capacities are calculated with an upstream temperature of +25°C and an evaporation temperature of -10°C.

CORRECTION FACTORS



For capacities in other condensing or evaporating temperatures, use the correction factor:

CONDEN. TEMP.	REFRIGERANTS			
	R22	R134a	R404A	R507
+20°C	1.04	1.05	1.08	1.07
+25°C	1.00	1.00	1.00	1.00
+30°C	0.95	0.95	0.92	0.93
+35°C	0.91	0.89	0.84	0.86
+40°C	0.86	0.84	0.76	0.78



EVAPOR. TEMP.	REFRIGERANTS			
	R22	R134a	R404A	R507
+10°C	1.04	1.07	1.09	1.09
+5°C	1.03	1.06	1.07	1.07
0°C	1.02	1.04	1.05	1.04
-5°C	1.01	1.02	1.02	1.02
-10°C	1.00	1.00	1.00	1.00
-20°C	0.98	0.96	0.95	0.95
-30°C	0.95	0.92	0.90	0.91
-40°C	0.92	0.88	0.85	

2. SUCTION (vapour) CAPACITY TABLES

R22 SUCTION (vapour) CAPACITY TABLE

	PART NUMBER	CONNECTION	ΔP KPa	EVAPORATION TEMPERATURE IN °C							
				10	5	0	-5	-10	-20	-30	-40
	2041-BT-2 2041-BT-2S2	1/4" male flare	10	0.42	0.39	0.37	0.32	0.29	0.24	0.19	0.15
		1/4" ODS	20	0.59	0.55	0.55	1.45	0.41	0.33	0.26	0.20
			30	0.72	0.66	0.63	0.55	0.50	0.40	0.31	0.23
			40	0.83	0.76	0.69	0.63	0.56	0.45	0.34	0.25
	2041-BT-3 2041-BT-3S3	3/8" male flare	10	3.2	2.9	2.8	2.4	2.2	1.8	1.4	1.1
		1/4" ODS	20	4.5	4.1	4.1	3.4	3.1	2.5	2.0	1.5
			30	5.4	5.0	4.7	4.1	3.7	3.0	2.3	1.7
			40	6.2	5.7	5.2	4.7	4.2	3.4	2.6	1.9
	2041-BT-4 2041-BT-4S4 2041-BT-4S5	1/2" male flare	10	3.7	3.4	3.3	2.8	2.6	2.1	1.7	1.3
		1/2" ODS	20	5.2	4.8	4.8	4.0	3.8	2.9	2.3	1.7
		5/8" ODS	30	6.3	5.8	5.5	4.8	4.3	3.5	2.7	2.0
			40	7.2	6.6	6.0	5.5	4.9	3.9	3.0	2.2
2041-BT-5 2041-BT-5S5 2041-BT-5S6 2041-BT-5S7	5/8" male flare	10	7.1	6.6	6.3	5.5	5.0	4.0	3.2	2.5	
	5/8" ODS	20	10.0	9.2	9.3	7.6	6.9	5.6	4.4	3.4	
	3/4" ODS	30	12.2	11.2	10.7	9.2	8.4	6.7	5.2	3.9	
	7/8" ODS	40	14.0	12.8	11.6	10.6	9.5	7.6	5.8	4.2	
	1342-BT-06S06 1342-BT-06S07 1342-BT-06S09	3/4" ODS	20	18.6	17.0	17.2	14.2	12.8	10.4	8.2	6.2
		7/8" ODS	30	22.6	20.7	19.8	17.1	15.5	12.4	9.7	7.1
		1 1/8" ODS	40	25.9	23.7	21.6	19.5	17.6	14.0	10.8	7.8
	1342-BT-08S09 1342-BT-08S11	1 1/8" ODS	20	41	37	38	31	28	23	18	14
		1 3/8" ODS	30	50	45	44	38	34	27	21	16
			40	57	52	47	43	39	31	24	17
	1342-BT-12S13 1342-BT-12S17	1 5/8" ODS	20	93	85	86	71	64	52	41	31
		2 1/8" ODS	30	113	103	99	86	77	62	48	36
			40	129	118	108	98	88	70	54	39
	1342-BT-16S17 1342-BT-16S21	2 1/8" ODS	20	149	136	138	113	103	83	66	50
		2 5/8" ODS	30	181	165	158	137	124	99	77	57
			40	207	189	173	156	141	112	86	62

R134a SUCTION (vapour) CAPACITY TABLE

	PART NUMBER	CONNECTION	ΔP KPa	EVAPORATION TEMPERATURE IN °C							
				10	5	0	-5	-10	-20	-30	-40
	2041-BT-2 2041-BT-2S2	1/4" male flare	10	0.34	0.30	0.27	0.24	0.22	0.17	0.13	0.09
		1/4" ODS	20	0.47	0.42	0.38	0.34	0.30	0.23	0.17	0.12
			30	0.57	0.51	0.46	0.41	0.36	0.27	0.19	
			40	0.65	0.58	0.52	0.46	0.40	0.30	0.20	
	2041-BT-3 2041-BT-3S3	3/8" male flare	10	2.5	2.3	2.0	1.8	1.6	1.3	1.0	0.7
		3/8" ODS	20	3.5	3.2	2.9	2.5	2.3	1.7	1.3	0.9
			30	4.3	3.8	3.4	3.0	2.7	2.0	1.4	
			40	4.9	4.4	3.9	3.4	3.0	2.2	1.5	
	2041-BT-4 2041-BT-4S4 2041-BT-4S5	1/2" male flare	10	2.9	2.7	2.4	2.1	1.9	1.5	1.1	0.8
		1/2" ODS	20	4.1	3.7	3.3	3.0	2.6	2.0	1.5	1.0
		5/8" ODS	30	5.0	4.5	4.0	3.5	3.1	2.4	1.6	
			40	5.7	5.1	4.5	4.0	3.5	2.6	1.7	
2041-BT-5 2041-BT-5S5 2041-BT-5S6 2041-BT-5S7	5/8" male flare	10	5.7	5.1	4.6	4.1	3.7	2.9	2.2	1.5	
	5/8" ODS	20	7.9	7.2	6.4	5.7	5.1	3.9	2.9	2.0	
	3/4" ODS	30	9.6	8.6	7.7	6.8	6.0	4.5	3.2		
	7/8" ODS	40	10.9	9.8	8.7	7.7	6.8	5.0	3.4		
	1342-BT-06S06 1342-BT-06S07 1342-BT-06S09	3/4" ODS	20	14.7	13.2	11.9	10.6	9.4	7.2	5.3	3.6
		7/8" ODS	30	17.8	16.0	14.3	12.7	11.2	8.4	5.9	
		1 1/8" ODS	40	20.2	18.2	16.2	14.3	12.5	9.3	6.2	
	1342-BT-08S09 1342-BT-08S11	1 1/8" ODS	20	32	29	26	23	21	16	12	8
		1 3/8" ODS	30	39	35	31	28	25	19	13	
			40	45	40	36	31	28	20	14	
	1342-BT-12S13 1342-BT-12S17	1 5/8" ODS	20	73	66	59	53	47	36	27	18
		2 1/8" ODS	30	89	60	71	63	56	42	29	
			40	101	91	81	71	63	46	31	
	1342-BT-16S17 1342-BT-16S21	2 1/8" ODS	20	118	106	95	85	75	58	43	29
		2 5/8" ODS	30	142	128	114	101	89	67	47	
			40	162	145	129	114	100	74	50	




All capacities are calculated with an upstream temperature of +25°C and an evaporation temperature of -10°C.

CORRECTION FACTORS




For capacities in other temperatures use the following correction factor:

R22	CONDENSING TEMPERATURE	15	20	25	30	35	40
	CORRECTION FACTOR	1.07	1.04	1.00	0.96	0.93	0.89
R134a	CONDENSING TEMPERATURE	15	20	25	30	35	40
	CORRECTION FACTOR	1.08	1.04	1.00	0.96	0.91	0.87

R404A SUCTION (vapour) CAPACITY TABLE

	PART NUMBER	CONNECTION	ΔP KPa	EVAPORATION TEMPERATURE IN °C							
				10	5	0	-5	-10	-20	-30	-40
 	2041-BT-2 2041-BT-2S2	1/4" male flare	10	0.38	0.35	0.32	0.28	0.26	0.20	0.16	0.12
		1/4" ODS	20	0.54	0.49	0.44	0.40	0.36	0.28	0.22	0.18
			30	0.66	0.59	0.54	0.46	0.43	0.34	0.26	0.19
			40	0.75	0.68	0.61	0.55	0.49	0.38	0.29	0.21
	2041-BT-3 2041-BT-3S3	3/8" male flare	10	2.9	2.6	2.4	2.1	1.9	1.5	1.2	0.9
		3/8" ODS	20	4.0	3.7	3.3	3.0	2.7	2.1	1.6	1.2
			30	4.9	4.5	4.0	3.6	3.2	2.5	1.9	1.4
			40	5.6	5.1	4.6	4.1	3.7	2.9	2.2	1.5
	2041-BT-4 2041-BT-4S4 2041-BT-4S5	1/2" male flare	10	3.4	3.0	2.8	2.5	2.2	1.8	1.4	1.0
		1/2" ODS	20	4.7	4.3	3.9	3.5	3.1	2.5	1.9	1.4
		5/8" ODS	30	5.7	5.2	4.7	4.2	3.8	3.0	2.3	1.6
			40	6.6	6.0	5.4	4.8	4.3	3.4	2.6	1.8
2041-BT-5 2041-BT-5S5 2041-BT-5S6 2041-BT-5S7	5/8" male flare	10	6.5	5.9	5.3	4.8	4.3	3.4	2.7	2.0	
	5/8" ODS	20	9.1	8.2	7.5	6.7	6.0	4.8	3.7	2.7	
	3/4" ODS	30	11.1	10.0	9.1	8.1	7.3	5.7	4.4	3.1	
	7/8" ODS	40	12.7	11.5	10.4	9.3	8.3	6.5	4.9	3.5	
	1342-BT-06S06 1342-BT-06S07 1342-BT-06S09	3/4" ODS	20	16.8	15.3	13.8	12.4	11.1	8.8	6.8	5.0
		7/8" ODS	30	20.5	18.6	16.8	15.1	13.5	10.6	8.1	5.8
		1 1/8" ODS	40	23.5	21.3	19.2	17.2	15.4	12.0	9.1	6.4
	1342-BT-08S09 1342-BT-08S11	1 1/8" ODS	20	37.0	34.0	30	27	25	19	15	11
		1 3/8" ODS	30	45.0	41.0	37	33	30	23	18	13
			40	52.0	47.0	42	38	34	26	20	14
	1342-BT-12S13 1342-BT-12S17	1 5/8" ODS	20	84	76	69	62	56	44	34	25
		2 1/8" ODS	30	102	93	84	75	67	53	41	29
			40	118	106	96	86	77	60	46	32
	1342-BT-16S17 1342-BT-16S21	2 1/8" ODS	20	135	122	110	100	89	71	55	40
		2 5/8" ODS	30	164	148	134	121	108	85	65	47
			40	188	170	154	138	123	96	73	51

R507 SUCTION (vapour) CAPACITY TABLE

	PART NUMBER	CONNECTION	ΔP KPa	EVAPORATION TEMPERATURE IN °C						
				10	5	0	-5	-10	-20	-30
 	2041-BT-2 2041-BT-2S2	1/4" male flare	10	0.39	0.35	0.32	0.29	0.26	0.21	0.16
		1/4" ODS	20	0.55	0.50	0.45	0.41	0.37	0.29	0.23
			30	0.67	0.61	0.55	0.50	0.45	0.36	0.26
			40	0.77	0.70	0.64	0.58	0.52	0.41	0.32
	2041-BT-3 2041-BT-3S3	3/8" male flare	10	2.9	2.7	2.4	2.2	2.0	1.6	1.2
		3/8" ODS	20	4.1	3.7	3.4	3.1	2.7	2.2	1.7
			30	5.0	4.6	4.1	3.7	3.4	2.7	2.1
			40	5.8	5.3	4.8	4.3	3.9	3.1	2.4
	2041-BT-4 2041-BT-4S4 2041-BT-4S5	1/2" male flare	10	3.4	3.1	2.8	2.5	2.3	1.8	1.4
		1/2" ODS	20	4.8	4.4	3.9	3.6	3.2	2.5	2.0
		5/8" ODS	30	5.9	5.3	4.8	4.4	3.9	3.1	2.4
			40	6.8	6.2	5.6	5.0	4.5	3.6	2.6
2041-BT-5 2041-BT-5S5 2041-BT-5S6 2041-BT-5S7	5/8" male flare	10	6.6	6.0	5.4	4.9	4.4	3.5	2.6	
	5/8" ODS	20	9.2	8.4	7.6	6.9	6.2	4.9	3.6	
	3/4" ODS	30	11.3	10.3	9.3	8.4	7.6	6.0	4.7	
	7/8" ODS	40	13.1	11.9	10.8	9.7	8.7	6.9	5.4	
	1342-BT-06S06 1342-BT-06S07 1342-BT-06S09	3/4" ODS	20	17.1	15.6	14.1	12.7	11.4	9.1	7.0
		7/8" ODS	30	21.0	19.1	17.3	15.6	14.0	11.1	8.6
		1 1/8" ODS	40	24.2	22.0	19.9	18.0	16.1	12.9	10.0
	1342-BT-08S09 1342-BT-08S11	1 1/8" ODS	20	37.7	34.3	31.0	28.0	25.1	20.0	15.5
		1 3/8" ODS	30	46.1	42.0	38.0	34.3	30.8	24.5	19.0
			40	53.3	48.5	43.9	39.6	35.5	28.3	21.9
	1342-BT-12S13 1342-BT-12S17	1 5/8" ODS	20	86	78	71	64	57	45	35
		2 1/8" ODS	30	105	95	86	78	70	56	43
			40	121	110	100	90	81	64	50
	1342-BT-16S17 1342-BT-16S21	2 1/8" ODS	20	137	125	113	102	91	73	58
		2 5/8" ODS	30	168	153	138	125	112	89	69
			40	194	176	160	144	129	103	80

All capacities are calculated with an upstream temperature of +25°C and an evaporation temperature of -10°C.




CORRECTION FACTORS

For capacities in other temperatures use the following correction factor:

R404A	CONDENSING TEMPERATURE	15	20	25	30	35	40
	CORRECTION FACTOR	1.13	1.06	1.00	0.94	0.86	0.81
R507	CONDENSING TEMPERATURE	15	20	25	30	35	40
	CORRECTION FACTOR	1.08	1.04	1.00	0.96	0.91	0.87

3. HOT GAS CAPACITY TABLES

R22 HOT GAS CAPACITY TABLE




	PART NUMBER	CONNECTION	T. cond. °C	PRESSURE DIFFERENTIAL IN KPa						
				10	20	40	80	160	320	640
 	2041-BT-2 2041-BT-2S2	1/4" male flare 1/4" ODS	25	0.476	0.670	0.941	1.310	1.792	2.347	2.652
			30	0.490	0.690	0.969	1.352	1.859	2.463	2.922
			35	0.501	0.707	0.994	1.389	1.916	2.563	3.144
			40	0.512	0.722	1.016	1.422	1.968	2.654	3.337
	2041-BT-3 2041-BT-3S3	3/8" male flare 3/8" ODS	25	3.57	5.03	7.06	9.83	13.44	17.60	19.89
			30	3.67	5.18	7.27	10.14	13.94	18.48	21.91
			35	3.76	5.30	7.45	10.42	14.37	19.22	23.58
			40	3.84	5.42	7.62	10.67	14.76	19.91	25.03
	2041-BT-4 2041-BT-4S4 2041-BT-4S5	1/2" male flare 1/2" ODS 5/8" ODS	25	4.16	5.87	8.23	11.46	15.68	20.54	23.20
			30	4.28	6.04	8.48	11.83	16.26	21.56	25.57
			35	4.39	6.18	8.69	12.15	16.76	22.43	27.51
			40	4.48	6.32	8.89	12.45	17.22	23.22	29.20
	2041-BT-5 2041-BT-5S5 2041-BT-5S6 2041-BT-5S7	5/8" male flare 5/8" ODS 3/4" ODS 7/8" ODS	25	8.0	11.3	15.9	22.1	30.2	39.6	44.7
			30	8.3	11.6	16.4	22.8	31.4	41.6	49.3
			35	8.5	11.9	16.8	23.4	32.3	43.3	53.1
			40	8.6	12.2	17.2	24.0	33.2	44.8	56.3
	1342-BT-06S06 1342-BT-06S07 1342-BT-06S09	3/4" ODS 7/8" ODS 1 1/8" ODS	25	21.0	29.4	40.9	56	73	83	
			30	21.6	30.3	42.3	58	77	91	
			35	22.1	31.1	43.4	60	80	98	
			40	22.6	31.8	44.5	62	83	104	
	1342-BT-08S09 1342-BT-08S11	1 1/8" ODS 1 3/8" ODS	25	46.1	65	90	123	161	182	
			30	47.4	67	93	128	169	201	
			35	48.6	68	95	132	176	216	
			40	49.7	70	98	135	182	229	
	1342-BT-12S13 1342-BT-12S17	1 5/8" ODS 2 1/8" ODS	25	105	147	205	280	367	414	
			30	108	151	211	290	385	457	
			35	110	155	217	299	401	491	
			40	113	159	222	308	415	521	
	1342-BT-16S17 1342-BT-16S21	2 1/8" ODS 2 5/8" ODS	25	168	235	328	448	587	663	
			30	173	242	338	465	616	730	
			35	177	248	347	479	641	786	
			40	181	254	356	492	664	834	

All capacities are calculated with a temperature before the valve, corresponding to the temperature of condensation. A superheat of +25°C and an evaporation temperature of -10°C.

For capacities in other temperatures, use the following correction factor:

EVAPORATING TEMPERATURE	10	0	-10	-20	-30	-40
CORRECTION FACTOR	1.05	1.02	1.00	0.97	0.95	0.92

R134a HOT GAS CAPACITY TABLE




	PART NUMBER	CONNECTION	T. cond. °C	PRESSURE DIFFERENTIAL IN KPa						
				10	20	40	80	160	320	640
 	2041-BT-2 2041-BT-2S2	1/4" male flare 1/4" ODS	25	0.380	0.534	0.745	1.023	1.355	1.617	1.617
			30	0.387	0.544	0.760	1.048	1.403	1.733	1.733
			35	0.395	0.556	0.778	1.077	1.453	1.840	1.839
			40	0.401	0.564	0.791	1.097	1.491	1.924	1.923
	2041-BT-3 2041-BT-3S3	3/8" male flare 3/8" ODS	25	2.85	4.01	5.59	7.67	10.16	12.13	12.13
			30	2.90	4.08	5.70	7.86	10.52	12.99	13.00
			35	2.96	4.17	5.83	8.07	10.90	13.80	13.80
			40	3.01	4.23	5.93	8.23	11.19	14.43	14.43
	2041-BT-4 2041-BT-4S4 2041-BT-4S5	1/2" male flare 1/2" ODS 5/8" ODS	25	3.33	4.67	6.52	8.95	11.85	14.15	14.15
			30	3.39	4.76	6.65	9.17	12.28	15.16	15.17
			35	3.46	4.86	6.81	9.42	12.72	16.10	16.09
			40	3.51	4.94	6.92	9.60	13.05	16.83	16.83
	2041-BT-5 2041-BT-5S5 2041-BT-5S6 2041-BT-5S7	5/8" male flare 5/8" ODS 3/4" ODS 7/8" ODS	25	6.4	9.0	12.6	17.3	22.9	27.3	27.3
			30	6.5	9.2	12.8	17.7	23.7	29.2	29.3
			35	6.7	9.4	13.1	18.2	24.5	31.0	31.0
			40	6.8	9.5	13.3	18.5	25.2	32.5	32.5
	1342-BT-06S06 1342-BT-06S07 1342-BT-06S09	3/4" ODS 7/8" ODS 1 1/8" ODS	25	17	23	32	42	51	51	
			30	17	24	33	44	54	54	
			35	17	24	34	45	57	57	
			40	18	25	34	47	60	60	
	1342-BT-08S09 1342-BT-08S11	1 1/8" ODS 1 3/8" ODS	25	37	51	70	93	111	111	
			30	37	52	72	96	119	119	
			35	38	53	74	100	126	126	
			40	39	54	75	103	132	132	
	1342-BT-12S13 1342-BT-12S17	1 5/8" ODS 2 1/8" ODS	25	83	116	160	212	253	253	
			30	85	119	164	219	271	271	
			35	87	122	168	227	287	287	
			40	88	124	171	233	301	301	
	1342-BT-16S17 1342-BT-16S21	2 1/8" ODS 2 5/8" ODS	25	134	186	256	339	404	404	
			30	136	190	262	351	433	433	
			35	139	194	269	363	460	460	
			40	141	198	274	373	481	481	

All capacities are calculated with a temperature before the valve, corresponding to the temperature of condensation. A superheat of +25°C and an evaporation temperature of -10°C.

For capacities in other temperatures, use the following correction factor:

EVAPORATING TEMPERATURE	10	0	-10	-20	-30	-40
CORRECTION FACTOR	1.08	1.04	1	0.96	0.92	0.87

R404A HOT GAS CAPACITY TABLE




	PART NUMBER	CONNECTION	T. cond. °C	PRESSURE DIFFERENTIAL IN KPa						
				10	20	40	80	160	320	640
 	2041-BT-2 2041-BT-2S2	1/4" male flare	25	0.412	0.581	0.815	1.14	1.56	2.05	1.75
		1/4" ODS	30	0.410	0.578	0.812	1.13	1.56	2.08	1.83
			35	0.406	0.572	0.805	1.13	1.55	2.09	1.89
			40	0.395	0.557	0.784	1.10	1.52	2.06	2.61
	2041-BT-3 2041-BT-3S3	3/8" male flare	25	3.09	4.35	6.11	8.52	11.67	15.38	13.09
		3/8" ODS	30	3.08	4.34	6.09	8.50	11.70	15.58	13.73
			35	3.04	4.29	6.04	8.44	11.65	15.65	14.14
			40	2.96	4.18	5.88	8.23	11.40	15.41	19.60
	2041-BT4 2041-BT-4S4 2041-BT-4S5	1/2" male flare	25	3.60	5.08	7.13	9.94	13.62	17.94	15.28
		1/2" ODS	30	3.59	5.06	7.11	9.92	13.65	18.18	16.02
		5/8" ODS	35	3.55	5.01	7.04	9.84	13.59	18.25	16.50
			40	3.46	4.87	6.86	9.60	13.30	17.98	22.86
	2041-BT-5 2041-BT-5S5 2041-BT-5S6 2041-BT-5S7	5/8" male flare	25	7.0	9.8	13.8	19.2	26.3	34.6	29.5
		5/8" ODS	30	7.0	9.8	13.7	19.1	26.3	35.1	30.9
		3/4" ODS	35	7.0	9.7	13.6	19.0	26.2	35.2	31.8
		7/8" ODS	40	7.0	9.4	13.2	18.5	25.7	34.7	44.1
	1342-BT-06S06 1342-BT-06S07 1342-BT-06S09	3/4" ODS	25		18.1	25.5	35.5	48.6	64.1	54.6
		7/8" ODS	30		18.1	25.4	35.4	48.8	64.9	57.2
		1 1/8" ODS	35		17.9	25.1	35.2	48.5	65.2	58.9
			40		17.4	24.5	34.3	47.5	64.2	81.7
	1342-BT-08S09 1342-BT-08S11	1 1/8" ODS	25		39.9	56.0	78	107	141	120
		1 3/8" ODS	30		39.7	55.8	78	107	143	126
			35		39.3	55.3	77	107	143	130
			40		38.3	53.9	75	105	141	180
	1342-BT-12S13 1342-BT-12S17	1 5/8" ODS	25		91	127	177	243	320	273
		2 1/8" ODS	30		90	127	177	244	325	286
			35		89	126	176	243	326	295
			40		87	122	171	238	321	408
	1342-BT-16S17 1342-BT-16S21	2 1/8" ODS	25		145	204	284	389	513	436
		2 5/8" ODS	30		145	203	283	390	519	458
			35		143	201	281	388	522	471
			40		139	196	274	380	514	653

All capacities are calculated with a temperature before the valve, corresponding to the temperature of condensation. A superheat of +25°C and an evaporation temperature of -10°C.

For capacities in other temperatures, use the following correction factor:

EVAPORATING TEMPERATURE	10	0	-10	-20	-30	-40
CORRECTION FACTOR	1.10	1.05	1	0.95	0.89	0.83

R507 HOT GAS CAPACITY TABLE

	PART NUMBER	CONNECTION	T. cond. °C	PRESSURE DIFFERENTIAL IN KPa						
				10	20	40	80	160	320	640
 	2041-BT-2 2041-BT-2S2	1/4" male flare	25	0.414	0.584	0.820	1.143	1.568	2.071	1.717
		1/4" ODS	30	0.438	0.618	0.868	1.213	1.670	2.229	1.908
			35	0.445	0.628	0.883	1.235	1.707	2.297	2.017
			40	0.411	0.580	0.816	1.143	1.584	2.145	2.739
	2041-BT-3 2041-BT-3S3	3/8" male flare	25	3.11	4.38	6.15	8.57	11.76	15.53	12.88
		3/8" ODS	30	3.29	4.63	6.51	9.10	12.53	16.72	14.31
			35	3.34	4.71	6.62	9.27	12.81	17.23	15.13
			40	3.08	4.35	6.12	8.57	11.88	16.08	20.54
	2041-BT-4 2041-BT-4S4 2041-BT-4S5	1/2" male flare	25	3.62	5.11	7.17	10.00	13.72	18.12	15.02
		1/2" ODS	30	3.83	5.41	7.60	10.61	14.62	19.50	16.69
		5/8" ODS	35	3.90	5.50	7.73	10.81	14.94	20.10	17.65
			40	3.60	5.07	7.14	10.00	13.86	18.77	23.96
	2041-BT-5 2041-BT-5S5 2041-BT-5S6 2041-BT-5S7	5/8" male flare	25	7.0	9.9	13.8	19.3	26.5	35.0	29.0
		5/8" ODS	30	7.4	10.4	14.7	20.5	28.2	37.6	32.2
		3/4" ODS	35	7.5	10.6	14.9	20.8	28.8	38.8	34.0
		7/8" ODS	40	6.9	9.8	13.8	19.3	26.7	36.2	46.2
	1342-BT-06S06 1342-BT-06S07 1342-BT-06S09	3/4" ODS	25		18.2	25.6	35.7	49.0	64.7	53.6
		7/8" ODS	30		19.3	27.1	37.9	52.2	69.7	59.6
		1 1/8" ODS	35		19.6	27.6	38.6	53.4	71.8	63.0
			40		18.1	25.5	35.7	49.5	67.0	85.6
	1342-BT-08S09 1342-BT-08S11	1 1/8" ODS	25		40.1	56.4	79	108	142	118
		1 3/8" ODS	30		42.5	59.7	83	115	153	131
			35		43.2	60.7	85	117	158	139
			40		39.9	56.1	79	109	147	188
	1342-BT-12S13 1342-BT-12S17	1 5/8" ODS	25		91	128	179	245	324	268
		2 1/8" ODS	30		97	136	189	261	348	298
			35		98	138	193	267	359	315
			40		91	127	179	247	335	428
	1342-BT-16S17 1342-BT-16S21	2 1/8" ODS	25		146	205	286	392	518	429
		2 5/8" ODS	30		154	217	303	418	557	477
			35		157	221	309	427	574	504
			40		145	204	286	396	536	685

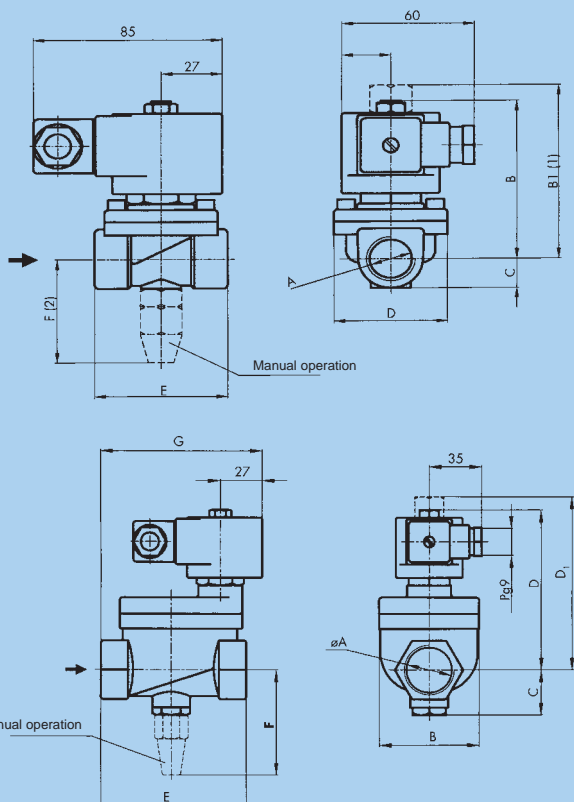
All capacities are calculated with a temperature before the valve, corresponding to the temperature of condensation. A superheat of +25°C and an evaporation temperature of -10°C.

For capacities in other temperatures, use the following correction factor:

EVAPORATING TEMPERATURE	10	0	-10	-20	-30
CORRECTION FACTOR	1.10	1.05	1	0.96	0.90



1335-B Series



GLYCOL - WATER SOLENOID VALVES

"*0N* LUMINOUS DIN CONNECTOR"

1. GLYCOL-WATER VALVES with "BSP" CONNECTIONS

DESCRIPTION

- Forged brass and stainless steel body.
- Suitable for **WATER**, **GLYCOL WATER** and **HYCOOL®**.
- "Acrylo nitrile" core diaphragm and seat.
- Encapsulated plug-in coils **DIN 43650** connection
- Protection: **IP65** and **NEMA 4**.
- Normally closed valves with **female "BSP"** connections
- Minimum opening pressure differential:
 - 0.100 bar** (1.45 Psi) for 3/8" and 1/2" connections
 - 0.200 bar** (3.00 Psi) for 3/4" and 3" connections
- Maximum opening pressure differential:
 - 10 bar** (145 Psi) for 3/8" and 1/2" connections
 - 15 bar** (220 Psi) for 3/4" and 3" connections
- Maximum working temperature range:
 - For BA series: **-20° to +80°C** (-4°F to +180°F)
 - For BT series: **-40° to +115°C** (-40°F to +240°F)
- Maximum working pressure: **35 bar**.

OPTIONS

Many constructions (diverse fluids industrial automation) and options available upon request such as:

- Energized coil indicator light (see coils page 238)
- Manual opening stem (Add suffix "**M**")
- Female "**NPT**" connections (add suffix "**T**")
- Explosion proof coil and housing (add suffix "**Z**", etc. ...)

WATER - GLYCOL WATER VALVE ORDERING -20°C to +80°C (with coil 230V/50Hz)

NOTE: see standard coil ordering page 238

1335-BA-03	SOLENOID VALVE	3/8" BSP	2.35 KV
1335-BA-04	SOLENOID VALVE	1/2" BSP	2.65 KV
1335-BA-06	SOLENOID VALVE	3/4" BSP	4.3 KV
1342-BA-06	SOLENOID VALVE	3/4" BSP	5 KV
1342-BA-08	SOLENOID VALVE	1" BSP	11 KV
1342-BA-12	SOLENOID VALVE	1 1/2" BSP	25 KV
1342-BA-16	SOLENOID VALVE	2" BSP	40 KV
1342-BA-20	SOLENOID VALVE	2 1/2" BSP	66 KV
1342-BA-24	SOLENOID VALVE	3" BSP	85 KV

DIMENSIONS

	BSP	DIMENSIONS (mm)							
		B	B1	C	D	D1	E	F	G
1335-BA/BT-03	3/8"	80	88	15	51	-	60	53	-
1335-BA/BT-04	1/2"	80	88	15	51	-	60	53	-
1335-BA/BT-06	3/4"	82	92	17	58	-	72	55	-
1342-BA/BT-06	3/4"	52	-	26	104	114	71	68	84
1342-BA/BT-08	1"	67	-	30	108	118	96	72	104
1342-BA/BT-12	1 1/2"	81	-	36	119	129	114	79	122
1342-BA/BT-16	2"	97	-	44	125	135	128	85	138
1342-BA/BT-20	2 1/2"	163	-	89	214	224	224	170	134
1342-BA/BT-24	3"	163	-	89	214	224	224	170	134

WATER - GLYCOL WATER - HYCOOL® VALVE ORDERING

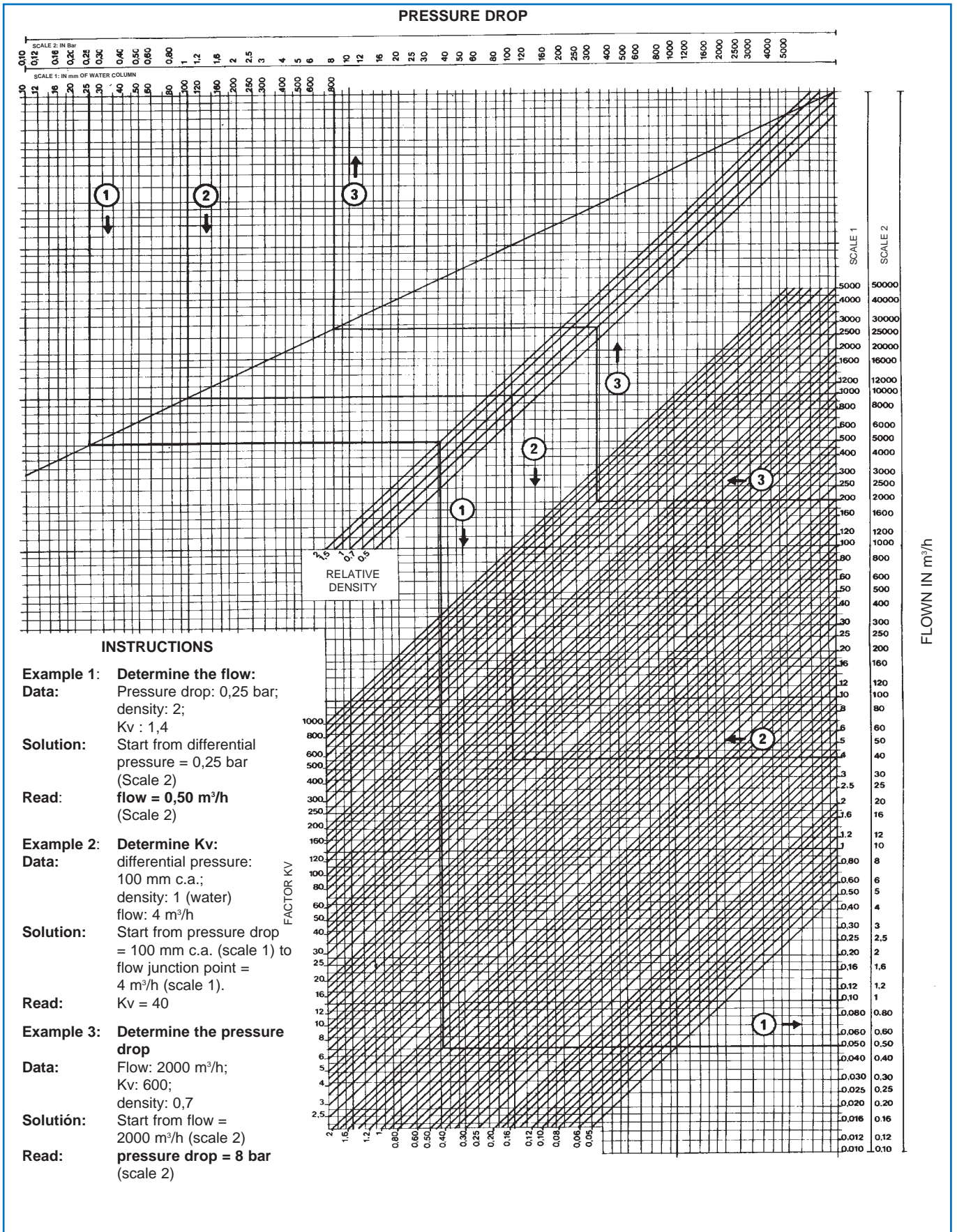
-40°C to +115°C (with coil 230V/50Hz)

NOTE: see standard coil ordering page 238

1342-BT-06	SOLENOID VALVE	3/4" BSP	5 KV
1342-BT-08	SOLENOID VALVE	1" BSP	11 KV
1342-BT-12	SOLENOID VALVE	1 1/2" BSP	25 KV
1342-BT-16	SOLENOID VALVE	2" BSP	40 KV
1342-BT-20	SOLENOID VALVE	2 1/2" BSP	66 KV
1342-BT-24	SOLENOID VALVE	3" BSP	85 KV

Note: see page 236 for our SOLENOID VALVE OPERATING CONTROLLERS

LIQUID FLOW CHART CAPACITY TABLE FOR INDUSTRIAL VALVES



WATER & GLYCOLED WATER STRAINERS

"OTHER GENERAL PURPOSE STRAINERS"

1. GLYCOLED-WATER STRAINERS with "BSP" CONNECTIONS

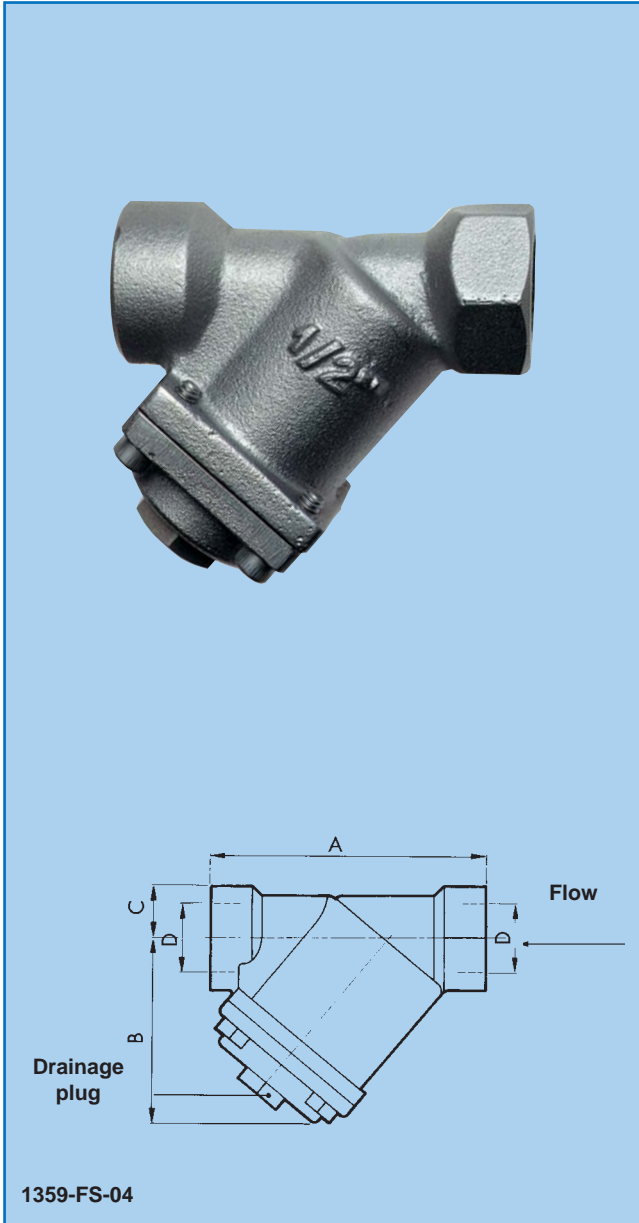
1359-FS-04	STRAINER	1/2" BSP	6 KV
1359-FS-06	STRAINER	3/4" BSP	12 KV
1359-FS-08	STRAINER	1" BSP	19 KV
1359-FS-10	STRAINER	1 1/4" BSP	40 KV
1359-FS-12	STRAINER	1 1/2" BSP	40 KV
1359-FS-16	STRAINER	2" BSP	65 KV

DESCRIPTION

- General purpose gray cast body and basket type filtering element with stainless steel **double MESH**. Available from stock.
- Particle retention capacity from **100 microns** (its design feature guarantees **100%** filtration to the fluid).
- Suitable for **WATER** and **GLYCOL WATER** (and other fluids non corrosive for monel, steel and ductile iron).
- Other special bronze, carbon steel or stainless steel connections upon request.
- Flanged cover with drainage plug and threaded access.
- Connections: **female "BSP"** straight threaded connections
- Female **"NPT"** connections upon request (add suffix **"T"**)
- Maximum working pressure: **10 bar** (145 Psi)
- Maximum working temperature: **180°C** (356°F)

DIMENSIONS AND REPAIRATION KITS

	A (mm)	B (mm)	C (mm)	D	REPAIRATION KIT
1359-FS-04	80	60	16	R1/2"	K59-S1
1359-FS-06	100	78	18	R3/4"	K59-S2
1359-FS-08	120	95	21	R1"	K59-S3
1359-FS-10	150	121	32	R1 1/2"	K59-S4
1359-FS-12	150	121	32	R1 1/2"	K59-S4
1359-FS-16	180	165	39	R2"	K59-S5



MOISTURE LIQUID INDICATORS

"MULTI-POSITIVE DIAGNOSIS"

FEATURES

- Heavy forged brass body. Brass or copper fittings.
- Clear fused glass window. Color scale for multi-positive *LIQUID* and *MOISTURE READINGS* of the refrigerant condition in air-conditioning or refrigeration systems.

SPECIFICATIONS

- For **R12, R22, R502, R134a, R404A, R407C, R507** and other blends with their specific oil and lubricant.
- Safe working pressure: **35 bar** (500 Psi).
- Minimum burst pressure: **175 bar** (2500 Psi).
- Maximum temperature rating: **+93°C** (+200°F).
- **U.L. listed:** SA-9566 and **CSA listed:** LR-100624.

INSTALLATION & RECOMMENDATIONS

- When installed, the moisture Indicator element will be *PINK*, indicating moisture in the ambient atmosphere. Always, install it at the *OUTLET* of any drier and let the system operate at least **12 hours**. After such a delay, if the moisture element remains *PINK* or *LIGHT VIOLET*, install a new drier and continue to run the system until the element becomes *BLUE*.
- For moisture Indicators equipped with a replaceable cap assembly (**MI-CAP**), remove it before brazing. To replace any cap assembly **MI-CAP**, wrench tighten $\frac{1}{2}$ turn beyond handtight position or use a proper sealing torque of **34,3 N.m** approx or **3,5 kgm** or **25 ft.lbs**.

MOISTURE INDICATIONS

- Because of the different solubility limits expressed in **PPM of water** (Part Per Million), the color change will not occur at the same level for all refrigerants. Also, because the temperature of the refrigerant liquid will affect this solubility level, the color change will occur at a different level, according to the liquid temperature. Of course, the moisture color change does not occur until the moisture value stays under the solubility level.

NO MOISTURE

The solubility level is generally given (in PPM) by the manufacturer for each of its refrigerants. Under such a level, PPM's are completely solubilized and can not be detected. In such a state, refrigerants are considered perfectly dry and safe.

MOISTURE DIAGNOSIS

See our **1. MOISTURE COLOR TABLE** for a positive PPM moisture diagnosis of your system.

REVERSIBILITY

The color changes of our moisture Indicators are fully **REVERSIBLE** in the liquid line, offering a positive and permanent moisture reading.

COLOR INDICATIONS

BLUE: Safe (no dangerous PPM of water in the line. (The refrigerant is dry and safe).

LIGHT VIOLET: Caution (you must change the drier now. The moisture reaches the solubility level).

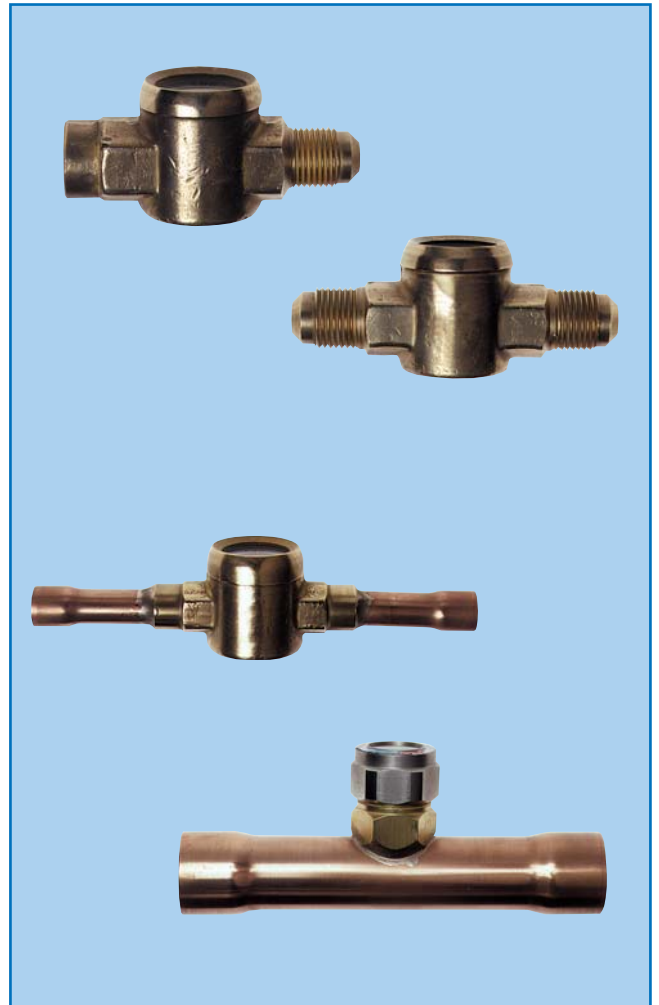
PINK: Danger (dangerous moisture in the system).

OTHER INDICATIONS

DISCOLORED: Danger (system with excessive amount of water or containing liquid dehydrating agents or liquid leak detectors).

DARK GRAY/BLACK: Danger (oil separation problems).

BUBBLES: Danger (high pressure drop: clogged drier or solid cores, Loss of refrigerant, etc...).



REFRIG. TYPE	PPM MOISTURE CONTENT (Part Per Million)			
	TEMP. (°C/°F)	COLOR INDICATIONS		
		BLUE	LIGHT VIOLET	PINK
R12	24° / 75°	< 5	5 through 15	>15
	38° / 100°	<10	10 through 30	>30
	52° / 125°	<15	15 through 45	>45
	24° / 75°	<30	30 through 120	>120
R22	38° / 100°	<45	45 through 180	>180
R500	24° / 75°	<15	15 through 60	>60
	52° / 125°	<60	60 through 240	>240
R502	24° / 75°	<15	15 through 60	>60
	38° / 100°	<25	25 through 90	>90
	52° / 125°	<30	30 through 120	>120
R134a	24° / 75°	<15	15 through 80	>80
	38° / 100°	<35	35 through 120	>120
	52° / 125°	<50	50 through 150	>150
R404A	38° / 100°	<25	25 through 110	>110
	52° / 125°	<45	45 through 140	>140

NOTE:

- **BLUE** column indicates the maximum PPM solubility level under which any refrigerant is considered as dry and safe (*PPM means Part Per Million*). This is the maximum amount of water (*in PPM*) completely solubilized in the refrigerant involved.
- See right "**COLOR INDICATIONS**" explanations. Compare these *PPM* values with water retention capacities given (under their specific *PPM* level) for all *LIQUID FILTER DRIERS, SHELLS* and *CORES*, shown before.
- Above (<) means equal or below the *PPM* value.
- Above (>) means equal or above the *PPM* value.

2. SELECTION & ORDERING

MOISTURE INDICATORS

(MALE FLARE x MALE FLARE SAE)

US-1/4-MM INDICATOR 1/4" m. flare x 1/4" m. flare 66 x 29 mm

MOISTURE INDICATORS

(MALE FLARE x FEMALE SAE)

US-1/4-MF INDICATOR 1/4" m. flare x 1/4" f. flare 65 x 33 mm

MOISTURE INDICATORS

(O.D.S. SOLDER x O.D.S. SOLDER)

US-3/8-SS INDICATOR 3/8" O.D.S. x 3/8" O.D.S. 120 x 28 mm

US-1/2-SS INDICATOR 1/2" O.D.S. x 1/2" O.D.S. 124 x 33 mm

US-5/8-SS INDICATOR 5/8" O.D.S. x 5/8" O.D.S. 124 x 35 mm

MOISTURE INDICATORS with "MI-CAP" REPLACEABLE HEAD

(O.D.S. SOLDER x O.D.S. SOLDER)

US-1 1/8-SS-RC INDICATOR 1 1/8" O.D.S. x 1 1/8" O.D.S. 160 x 63 mm

MOISTURE INDICATORS WITH REPLACEABLE DOUBLE HEADS

(O.D.S. SOLDER x O.D.S. SOLDER)

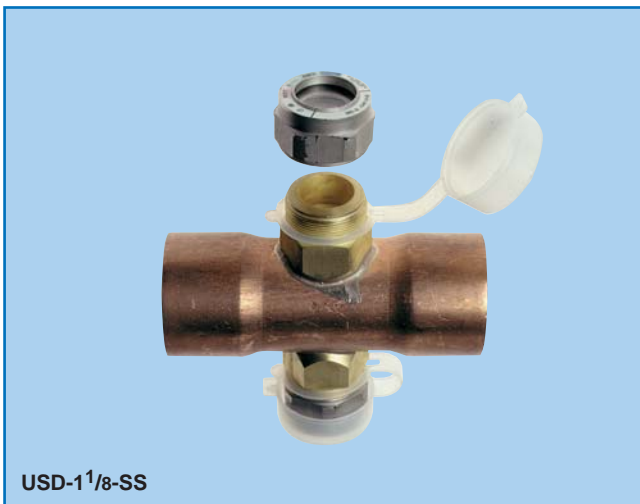
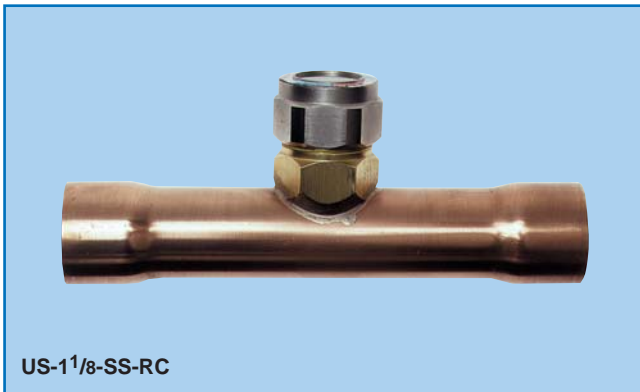
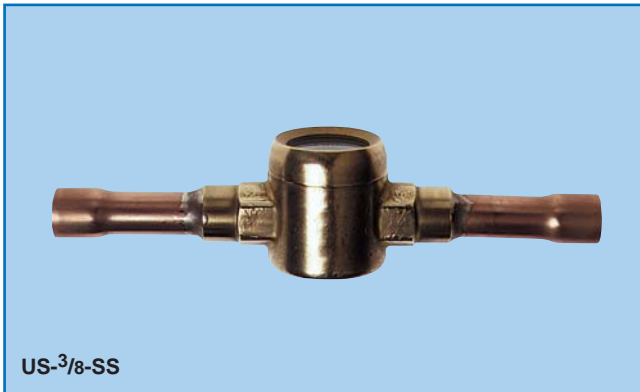
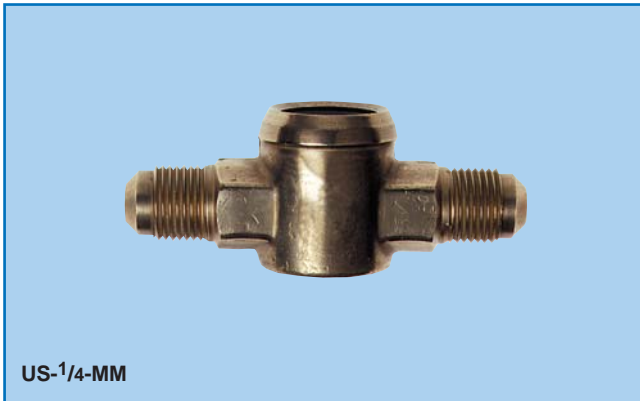
USD-1 1/8-SS INDICATOR 1 1/8" O.D.S. x 1 1/8" O.D.S. 160 x 63 mm

USD-1 3/8-SS INDICATOR 1 3/8" O.D.S. x 1 3/8" O.D.S. 181 x 68 mm

USD-1 5/8-SS INDICATOR 1 5/8" O.D.S. x 1 5/8" O.D.S. 200 x 74 mm

USD-2 1/8-SS INDICATOR 2 1/8" O.D.S. x 2 1/8" O.D.S. 220 x 87 mm

USD-2 5/8-SS INDICATOR 2 5/8" O.D.S. x 2 5/8" O.D.S. 240 x 96 mm

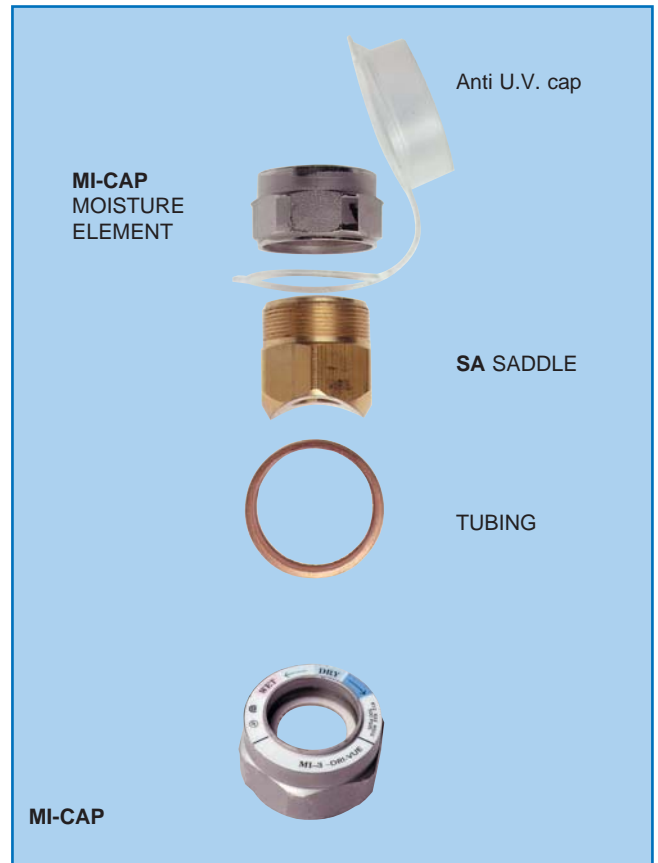


SADDLE TYPE BRASS BODIES
 (DIRECT SOLDERING ON TUBING WITHOUT CUTTINGS)
 (SADDLE GROOVE CONNECTIONS)

SA-1¹/₈	To be soldered on any 1¹/₈" Ø tubing
SA-1³/₈	To be soldered on any 1³/₈" Ø tubing
SA-1⁵/₈	To be soldered on any 1⁵/₈" Ø tubing
SA-2¹/₈	To be soldered on any 2¹/₈" Ø tubing

REPLACEABLE STD CAP MOISTURE ELEMENT
 (FOR ALL ABOVE SADDLES and MI-SS INDICATORS)

MI-CAP	Standard replaceable element ready to be screwed on all above saddles and MI-SS (Tightening torque 3,5 kgm or 25 ft.lbs)
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LIQUID SIGHT GLASSES WITH FLOATING BALL

"SUITABLE FOR ALL REFRIGERANTS, STEEL PLATED"

BSG-104	SERVICE LIQUID SIGHT GLASS 1/2" MPT (NPT male pipe)
BSG-106	SERVICE LIQUID SIGHT GLASS 3/4" MPT (NPT male pipe)
BSG-108	SERVICE LIQUID SIGHT GLASS 1" MPT (NPT male pipe)
BSG-110	SERVICE LIQUID SIGHT GLASS 1 1/4" MPT (NPT male pipe)
BSG-112	SERVICE LIQUID SIGHT GLASS 1 1/2" MPT (NPT male pipe)
BSG-116	SERVICE LIQUID SIGHT GLASS 2" MPT (NPT male pipe)

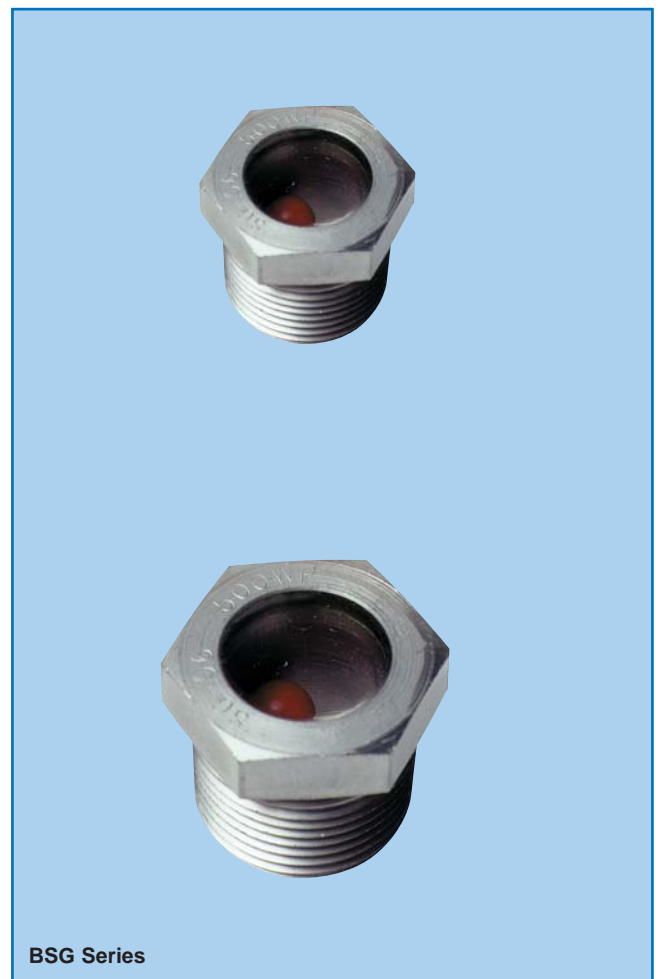
BSG-M2615	OEM LIQUID SIGHT GLASS M26 x 1,5
BSG-M3615	OEM LIQUID SIGHT GLASS M36 x 1,5
BSG-M522	OEM LIQUID SIGHT GLASS M52 x 2

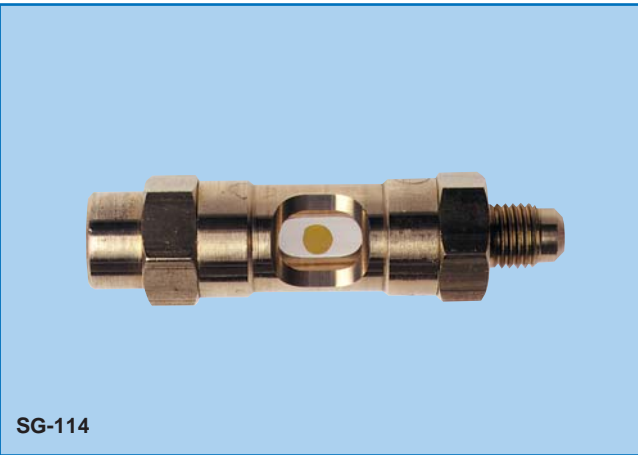
DESCRIPTION

- Screw type sight glass with floating ball.
- Can be used for liquid level control in receivers.
- Floating ball allows to see exact level.
- Maximum service pressure: **40 bar** (580 Psi).
- Maximum service temperature: **-40°C to +100°C** (-40°F to +212°F).
- For all CFC, HCFC and HFC refrigerants, oils and NH₃.

INSTALLATION

- NPT male pipe thread or male metric thread.
- NPT type sight glasses also fit in our saddle mountings FPT "BS" on page 146.
- Very easy to install on tubes, receivers etc.
- It is possible to install 2 sight glasses opposite to each other.





EYE SIGHT GLASSES

"IF YOU WANT TO KNOW FOR SURE"

1. LIQUID EYE SIGHT GLASSES

SG-110	SIGHT GLASS 1/4" male fl. x 1/4" male fl.	L = 80 mm
SG-111	SIGHT GLASS 3/8" male fl. x 3/8" male fl.	L = 86 mm
SG-204	SIGHT GLASS 1/2" male fl. x 1/2" male fl.	L = 100 mm
SG-205	SIGHT GLASS 5/8" male fl. x 5/8" male fl.	L = 105 mm
SG-114	SIGHT GLASS 1/4" male fl. x 1/4" fem. fl.	L = 78 mm
SG-115	SIGHT GLASS 3/8" male fl. x 3/8" fem. fl.	L = 83 mm
SG-206	SIGHT GLASS 1/2" male fl. x 1/2" fem. fl.	L = 94 mm
SG-207	SIGHT GLASS 5/8" male fl. x 5/8" fem. fl.	L = 102 mm
SG-118	SIGHT GLASS 1/4" O.D.S. x 1/4" O.D.S.	L = 185 mm
SG-119	SIGHT GLASS 3/8" O.D.S. x 3/8" O.D.S.	L = 197 mm
SG-208	SIGHT GLASS 1/2" O.D.S. x 1/2" O.D.S.	L = 197 mm
SG-209	SIGHT GLASS 5/8" O.D.S. x 5/8" O.D.S.	L = 197 mm

FEATURES

- The brass body "see-through" feature that is more readable than other sight glasses. No restriction (full flow).
- The dot on the tube is magnified when, the tube is full of liquid to give you a quick and positive indication.
- The "in line" PYREX glass is shock resistant and expansion compensated.
- U.L. listed (n° SA-5506)
- MWP 20,80 Bar (302 Psi)

INSTALLATION

- Male flare x male flare SAE or male flare x female flare SAE
- O.D.S. x O.D.S. solder type. Vertical or horizontal installation.

2. MOISTURE SIGHT GLASSES

SG-110R	SIGHT GLASS 1/4" male fl. x 1/4" male fl.	L = 80 mm
SG-111R	SIGHT GLASS 3/8" male fl. x 3/8" male fl.	L = 86 mm
SG-204R	SIGHT GLASS 1/2" male fl. x 1/2" male fl.	L = 100 mm
SG-205R	SIGHT GLASS 5/8" male fl. x 5/8" male fl.	L = 105 mm
SG-114R	SIGHT GLASS 1/4" male fl. x 1/4" fem. fl.	L = 78 mm
SG-115R	SIGHT GLASS 3/8" male fl. x 3/8" fem. fl.	L = 83 mm
SG-206R	SIGHT GLASS 1/2" male fl. x 1/2" fem. fl.	L = 94 mm
SG-207R	SIGHT GLASS 5/8" male fl. x 5/8" fem. fl.	L = 102 mm
SG-118R	SIGHT GLASS 1/4" O.D.S. x 1/4" O.D.S.	L = 185 mm
SG-119R	SIGHT GLASS 3/8" O.D.S. x 3/8" O.D.S.	L = 197 mm
SG-208R	SIGHT GLASS 1/2" O.D.S. x 1/2" O.D.S.	L = 197 mm
SG-209R	SIGHT GLASS 5/8" O.D.S. x 5/8" O.D.S.	L = 197 mm

FEATURES

- The brass body "see-through" feature provides an easy and quick indication of moisture in all refrigerants.
- **MOISTURE:** A few hours after installation, the "reactor" will stabilize, alternating GREEN and YELLOW bands.
- **NO MOISTURE:** You will see permanent GREEN bands.
- No restriction (full flow).
- The "in line" PYREX glass is shock resistant and expansion compensated.
- U.L. listed (n° SA-5506).
- MWP 20,80 Bar (302 Psi)

INSTALLATION

- Male flare x male flare SAE or male flare x female flare SAE.
- O.D.S. x O.D.S. solder types. Vertical or horizontal installation.

OIL SEPARATORS

"ADVANCED OEM'S TECHNOLOGY"

SPECIFICATIONS

- Suitable for R12, R22, R505, R134a, R404A, R507 as well as all CFC, HCFC and HFC and their specific lubricants.
- MAXIMUM WORKING PRESSURE: **31 bar** (450 Psi).
- BURST PRESSURE: **175 bar** (2500 Psi).
- MAX. WORKING PRESSURE FOR STAINLESS STEEL OIL FLOAT: **62 bar** (880 Psi).
- MAX WORKING PRESSURE FOR RETURN OIL FLOAT MECANISM: **28 bar** (400 Psi).
- CONNECTIONS: "**ODS**" for copper tubing.
 "**FPT**" for female national pipe thread.
- OIL RETURN CONNECTION: **3/8" flare male SAE** (on top).
- Ferrous metals and other particles present in the refrigerant/oil mixture are trapped by copper fine mesh screens at inlet and outlet and a magnetic pin inside the separator itself.
- A special baffle-plate prevents oil being carried over with the leaving refrigerant.
- **U.L. listed** (N° SA-7175) & **CSA listed** (N° LR-100624).

WHY ?

- A properly sized oil separator will efficiently separate all oil from the refrigerant vapour (high pressure side) and return this oil back to the compressor unit (low pressure side).
- As a result, the following advantages will be achieved:
 - A constant oil level in the compressor crankcase.
 - An extended compressor life time.
 - A clean and well balanced refrigerant circuit with an effective heat transfer in the evaporator and condenser.

HOW ?

- The refrigerant vapour will always contain oil vapour/liquid and therefore, the "**ITE**" OIL SEPARATORS are designed to operate:
 - A positive tornado change in the direction of the vapour mixture results in an initial separation of heavier oil particles.
 - The initial high velocity reduction of the oil vapour/liquid results in an oil condensation against the separator innerwall.
 - The oil returns through a float mechanism, back to the compressor crankcase.
 - Only clean refrigerant vapour continues towards the condenser under its original velocity.

SELECTION

- The OIL SEPARATOR should be positioned in the discharge line between Compressor and condenser and be securely mounted in a vertical position (refer to instruction sheet **801-GB**).

1-CONNECTIONS:

Inlet and outlet connections must be the same size (or larger) than the discharge line (not under).

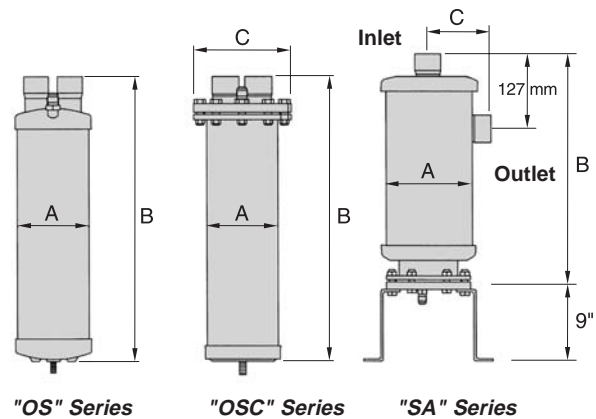
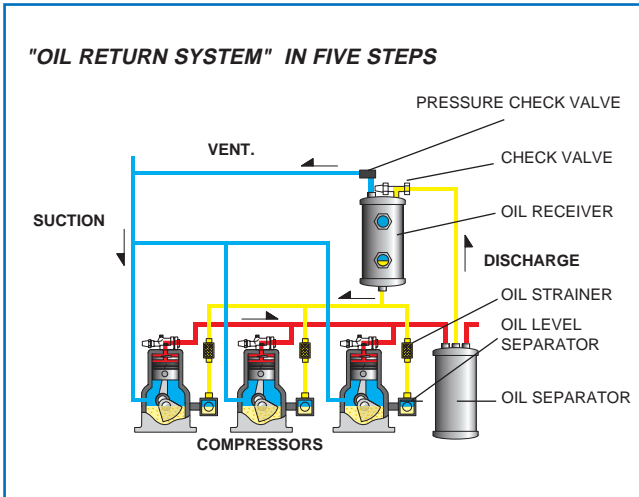
2-NOMINAL CAPACITY/VOLUME:

The efficiency of separation depends very much on the nominal capacity/volume ratio of the separator (see the capacity table). Therefore in multi-compressor unit running at full output, a single separator might do properly the job. However, in case of power reduction (one or more compressors being switched off) the separator will be oversized and less efficient during that time. In such a case, more than one separator should be considered and selected in accordance with the various requirements of the power reduction situation.

3-OIL PRE-CHARGE:

After installation and before starting, do not forget the oil pre-charging. Fill the separator with the suitable oil pre-charge (see the table).





SELECTION - CAPACITY TABLE - ORDERING

- **NOMINAL CAPACITIES ACCORDING TO EVAPORATING TEMPERATURES**
- **CAPACITIES SHOWN IN kW (1 kW = 860 Fg/h = 0,284 US TON OF REFRIGERATION)**

"OS" COMPACT SERIES

PART NR.	END CONN.	DIMENSIONS (mm)			R22		R502		R134a		R404A R507		Maxi Flow (m ³ /h)	Initial Charge (cl)	Weight (kg)
		A	B	C	-40°C	+5°C	-40°C	+5°C	-40°C	+5°C	-40°C	+5°C			
OS-81	3/8"	102	210	-	3,5	5,3	3,5	5,3	2,6	3,5	3,5	5,3	1,7	34	2,3
OS-82	1/2"	102	261	-	5,3	7,1	5,3	7,1	3,5	5,3	5,3	7,0	2,5	34	2,7
OS-85	5/8"	102	362	-	15,8	19,3	16,7	20,2	10,5	14,1	14,1	19,3	6,8	34	3,2
OS-87	7/8"	102	451	-	24,6	28,1	26,4	29,9	15,8	19,3	22,8	29,9	11,0	34	4,1
OS-88	1 1/8"	102	534	-	31,6	36,9	33,4	40,4	21,1	26,4	28,9	38,7	13,6	34	4,6
OS-90	1 3/8"	102	540	-	40,4	47,5	41,2	51,0	28,2	33,4	36,9	49,2	17,0	34	4,6

"OSC" CLEANABLE SERIES

OSC-85	5/8"	102	362	139,7	15,8	19,3	16,7	20,2	10,5	14,1	14,1	19,3	6,8	34	5,0
OSC-87	7/8"	102	451	139,7	24,6	28,1	26,4	29,9	15,8	19,3	22,8	29,9	10,2	34	6,0
OSC-88	1 1/8"	102	534	139,7	31,6	36,9	33,4	40,4	21,1	26,4	28,9	38,7	13,6	34	6,4
OSC-90	1 3/8"	102	540	139,7	40,4	47,5	42,2	51,0	28,2	33,4	36,9	49,2	17,0	34	6,4
OSC-92	1 5/8"	102	553	139,7	42,2	49,2	45,7	52,7	38,7	45,8	53,0	67,0	23,8	34	6,4

"SA" HIGH CAPACITY CLEANABLE SERIES

SA-507	2 1/8"	152	486	-	87,9	105,4	105,4	123,0	63,3	74,0	84,4	109,0	38,3	85	9,0
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REMARKS:

- Before the Oil Separator is installed, an initial charge of oil (same oil that is in the compressor) should be added to it to supply the amount that is held over in the sump of this Separator. See this amount in the Capacity Table expressed in Centilitres (**34 Cl = 0,3 Quart** & **85 Cl = 0,75 Quart**).
- Also note: **1 m³/h = 0.59 CFM** and **1 Kg = 2.2 Lbs**
- ALL Capacities shown are based on **+38°C (+100°F)** Condensing Temperature and **+18°C (+65°F)** Suction Gas Temperature and on connection size being same as Compressor discharge Valve.
- If necessary, contact "ITE" - *nv* for "Selection" and/or "Oil Return System" arrangement in 5 Steps.

" ITE " OIL LEVEL CONTROLS

OIL LEVEL CONTROLS

- These oil level controls maintain the oil level in the compressor crankcase at 1/2 or 1/4 glass.
- Designed to attach directly to the sight glass place on compressor crankcases.
- The sight glass from the compressor must be bolted to the second oil level control flange.
- The oil supply line from the oil receiver must be connected directly to the 3/8" male flare SAE or better thru the angle service valve 3/8" female swivel x 3/8" male flare (OAV-06FS).
- If the crankcase compressor housing is different than the oil level control flange, use the adaptor kit.
- Each oil level control is equipped with a complete gasket kit and bolts necessary to the fitting.

STANDARD OIL LEVEL CONTROL

OLC-12 OIL LEVEL CONTROL, oil level 1/2 glass,
Pressure differential: 0,35 to 2,1 bar

- Fixing flange: 3 bolts
- Bolts axe diameter: 47,6 mm

SPECIAL OIL LEVEL CONTROL FOR BITZER COMPRESSOR ONLY

OLC-B12 OIL LEVEL CONTROL, oil level 1/2 glass,
Pressure differential: 0,35 to 2,1 bar

- Fixing flange: 4 bolts
- Bolts axe diameter: 50,6 mm

OIL RECEIVERS - VERTICAL

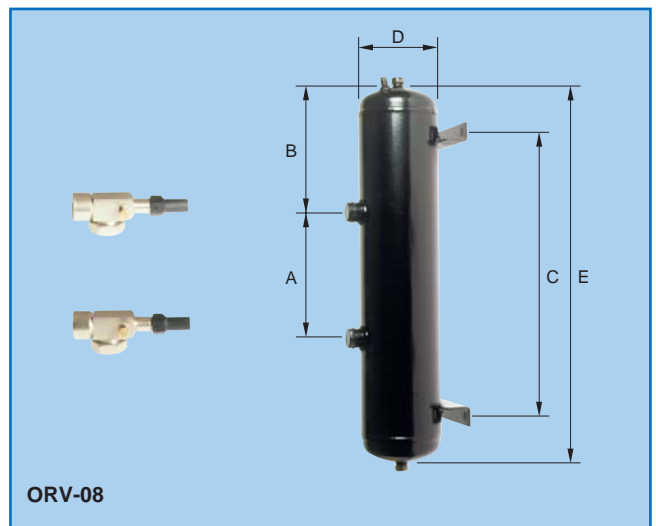
- It is recommended to keep an oil reserve to avoid any oil foaming in the compressor crankcases.
- Oil remains in the receiver enabling the oil level control to operate properly and ensure a correct oil distribution towards each compressor crankcase.
- Supplied with 2 rotaloc valves with backseating that fit the top and bottom receiver connections. Each rotaloc valve provides a regular 3/8" male flare SAE connection and an extra 1/4" male flare SAE port (with cap) to allow filling or emptying of oil from the receiver
- Oil receivers have 2 sight glasses with incorporated ball
- Extra 3/8" male flare SAE connection on top for check-valve connection

PART NUMBER	LITRES	A	B	C	D	E
ORV-08	8	160	160	360	152	480
ORV-12	12	236	236	532	152	710
ORV-15	15	300	300	575	152	900

STRAINERS

- These strainers stop the migration of all small dirt particles to the oil level control or compressor, filtration 150 microns.
- Allow a very good straining with a low pressure drop.
- It is recommended to use one strainer for each oil level control. If not, please use **OST-2270**, same as **OST-700** but with a bigger filtration surface.
- Strainer **OFD-553** is specially built for POE oil filtration.
- Offers a very big filtration surface (227 cm²) and is filled with 131 cm³ XH-9 desiccant for high moisture removal.
- This strainer also offers a very high capacity with a low pressure drop.
- 3/8" male flare SAE connection (same as oil line).

PART NUMBER	CONNECTIONS	SURFACE OF FILTRATION (cm ²)	FILTRATION CAPACITY (µ)
OST-700	3/8" male flare	70	150
OST-2270	3/8" male flare	227	150
OFD-553	3/8" male flare	227	30





PRESSURE CONTROL VALVE

OPCV-1400 PRESSURE CONTROL VALVE, Δp : 1,40

- This control valve is installed between the oil receiver and the suction line. It must be installed on the $\frac{3}{8}$ " male flare connection of the oil receiver.
- Ensures a pressure differential of 1,4 bar between the oil receiver and the suction line and allows a correct oil supply for the oil level controls.
- Connection Inlet: $\frac{3}{8}$ " female flare
Outlet: $\frac{3}{8}$ " male flare

SERVICE ANGLE VALVE

OAV-06FS ANGLE VALVE
 $\frac{3}{8}$ " female swivel x $\frac{3}{8}$ " male flare

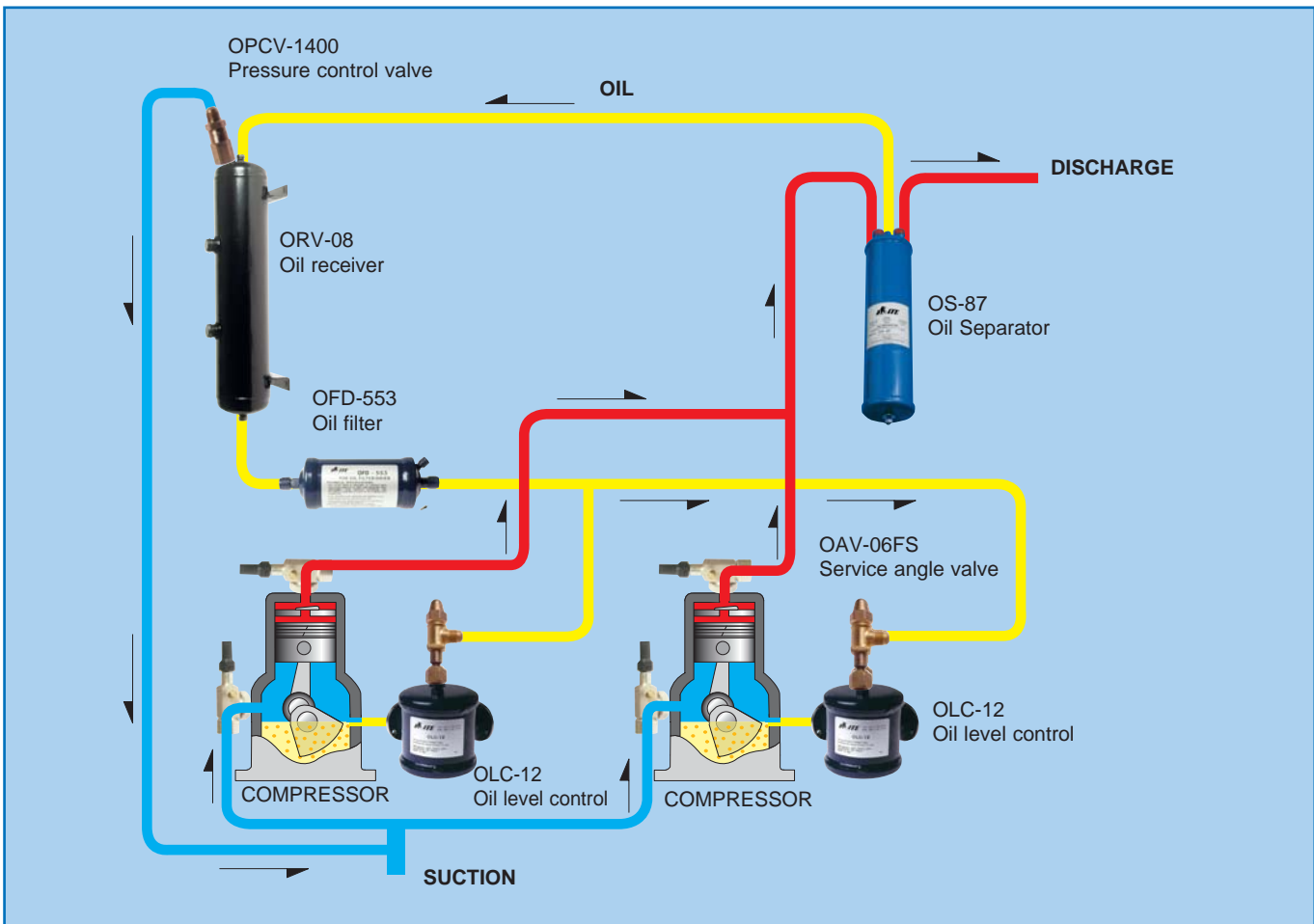
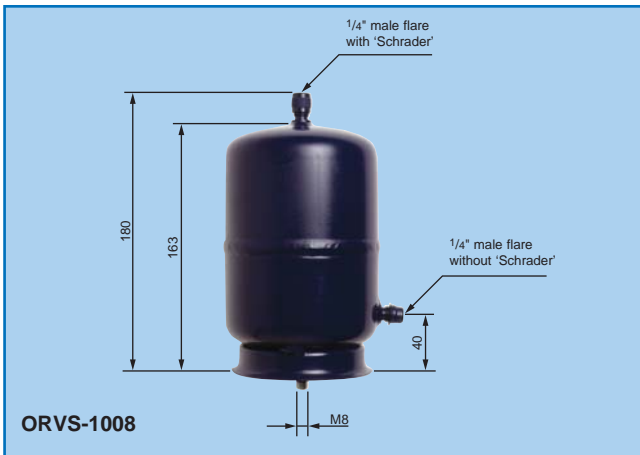
- This service angle valve can be mounted on inlet connection (or others) of oil level controls.
- Oil line can be isolated when servicing compressor, strainer, oil level control etc.
- This strongly built valve is equipped with a $\frac{3}{8}$ " female flare connection swivel allowing a 360° positioning of the valve.

OIL RECEIVER - VERTICAL

ORVS-1008 VERTICAL OIL RECEIVER 0,8 l

- Suitable for all **CFC**, **HFC** and **HCFC** refrigerants
- Working temperature: **-10°C** to **+100°C**
- Maximum working pressure: **32 bar**
- Also available with sight glass and safety relief valve upon request
- **PED** and **CE** certified
- Diameter: 101 mm
- Equipped with $\frac{1}{4}$ " male flare top connection with schrader valve and $\frac{1}{4}$ " male flare side connection without schrader valve

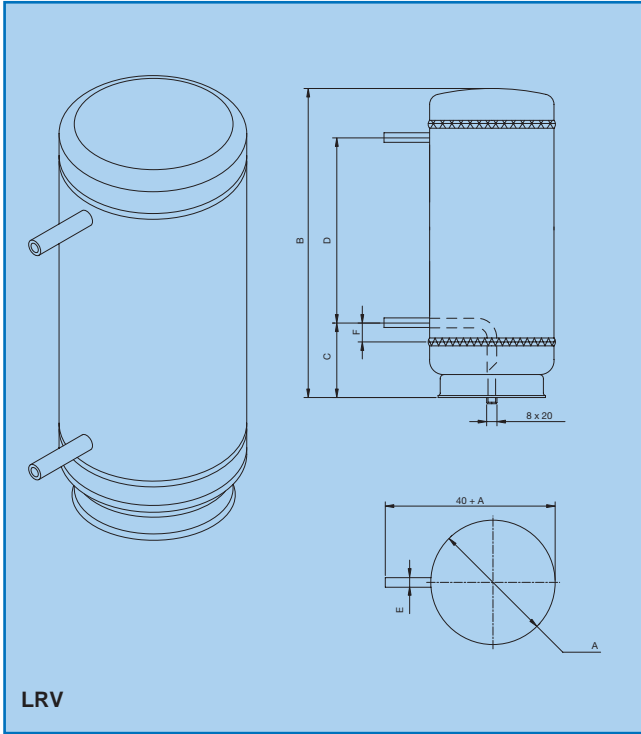
Other receivers available upon request.





COMPRESSOR ADAPTER KITS

COMPRESSOR KIT	COMPRESSOR MANUFACTURER	COMPRESSOR MODEL	SIGHT GLASS VERSION
ACK-001 ACK-008	BITZER BITZER	2, 4, 6 new version	Flange, 4 bolts Ø 50 mm 1 ¹ / ₈ " - 18 (thread)
ACK-003 ACK-004	CARRIER CARRIER	DA, DR, 5F, 5H, O6D EA, ER, OBE, OBCC	1 ¹ / ₂ " - 18 (thread) Flange, 3 bolts Ø 47,6 mm
ACK-007 ACK-004 ACK-005	Copeland DWM Copeland DWM Copeland	ZR 90 K to ZR 19 M, ZF, ZS, scroll D2, D3, D9, D4, D6 except D6C D8, 8CC	3/4" NPT (thread) Flange, 3 bolts Ø 47,6 mm Flange, 3 bolts Ø 47,6 mm
ACK-004	Dunham-Bosh	B4	Flange, 3 bolts Ø 47,6 mm
ACK-004	Frascold	All versions	Flange, 3 bolts Ø 47,6 mm
ACK-008	Maneurop	MT, LT ...	1 ¹ / ₈ " - 18 (thread)
ACK-004 ACK-005	Prestcold Prestcold	P2, P3, PR, P4, P6 P8	Flange, 3 bolts Ø 47,6 mm Flange, 3 bolts Ø 47,6 mm
ACK-007	Royce	All versions	3/4" NPT (thread)
ACK-004 ACK-007	Trane Trane	M, R, K	Flange, 3 bolts Ø 47,6 mm 3/4" NPT (thread)
ACK-004	York	GC, GS, JS	Flange, 3 bolts Ø 47,6 mm



LIQUID RECEIVERS

LRV-1018	VERTICAL LIQUID RECEIVER 1,8l
LRV-1039	VERTICAL LIQUID RECEIVER 3,9l
LRV-1092	VERTICAL LIQUID RECEIVER 9,2l

SPECIFICATIONS

- Suitable for all **CFC, HFC** and **HCFC** refrigerants
- Working temperature: **-10°C to +100°C**
- Maximum working pressure: **32 bar**
- Also available with connection for sight glass and safety relief valve upon request
- **PED - CE certified**

DIMENSIONS

Part Number	A	B	C	D	E	F
LRV-1018	101	252	66	140	∅ 8 x 1	25
LRV-1039	121	420	77	276	∅ 10 x 1	24
LRV-1092	168	487	92	295	∅ 12 x 1	35

CONVERSION TABLES

TEMPERATURE

$^{\circ}\text{F} = ^{\circ}\text{C} \times 1,8 + 32$
 $^{\circ}\text{C} = (^{\circ}\text{F} - 32) / 1,8$

COMMON THREADS

Thread UNF	US Spec. SAE	O.D. (max.size) mm	Core dia. (min size) mm	Pitch nr. per inch	Pitch mm
7/16" - 20 UNF	1/4" SAE	11,079	9,738	20	1,270
1/2" - 20 UNF	5/16" SAE	12,667	11,328	20	1,270
5/8" - 18 UNF	3/8" SAE	15,839	14,348	18	1,411
3/4" - 16 UNF	1/2" SAE	19,012	17,330	16	1,588
7/8" - 14 UNF	5/8" SAE	22,184	20,262	14	1,814
1 1/16" - 14 UNF	3/4" SAE	26,947	25,024	14	1,814
1 1/8" - 12 UNF	-	28,529	26,284	12	2,117
1 1/4" - 12 UNF	7/8" SAE	31,704	29,459	12	2,117
1 3/8" - 12 UNF	1" SAE	34,877	32,634	12	2,117
1 1/2" - 12 UNF	-	38,052	35,809	12	2,117

POWER

	kW	Watt	Kcal/h	BTU/h
1 kW	-	1000,000	860,000	3412,00
1 Watt	0,001000	-	0,860	3,41
1 Kcal/h	0,001163	1,163	-	3,95
1 BTU/h	0,000293	0,293	0,250	-

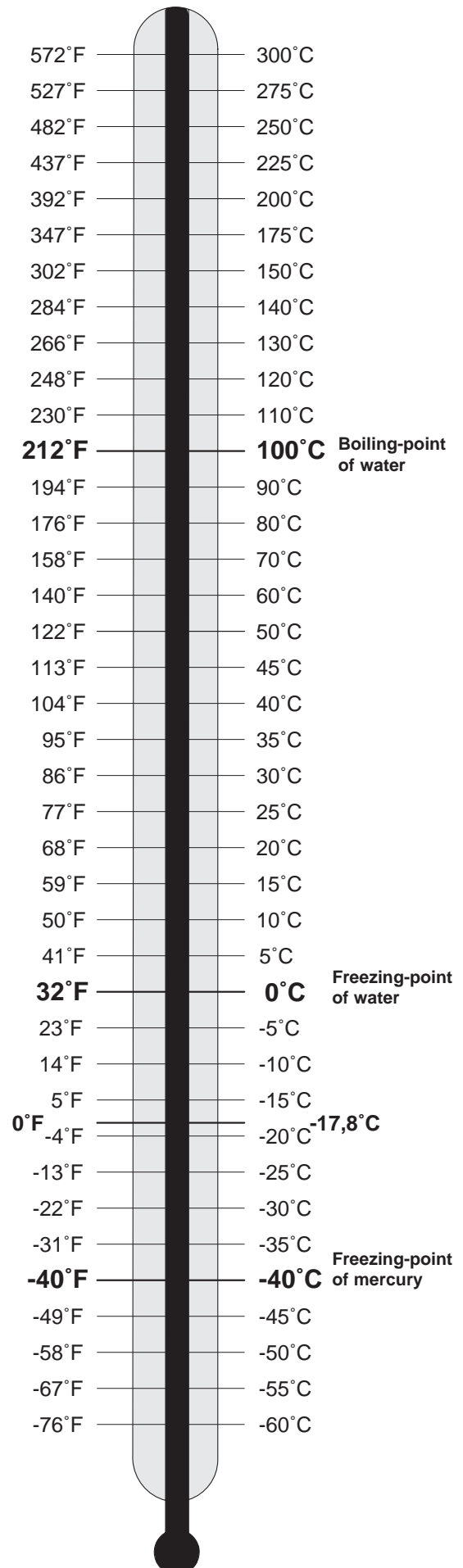
1 kW = 0,284 US tons of refrigeration

MEASURES

Linear measures					
mm	x	0,039370	= inches	x	25,400000 = mm
cm	x	0,393700	= inches	x	2,5400000 = cm
m	x	39,370000	= inches	x	0,0254000 = m
m	x	3,281000	= feet	x	0,3048000 = m
m	x	1,093600	= yards	x	0,9144000 = m
Km	x	3280,800000	= feet	x	0,0003048 = Km
Km	x	1093,600000	= yards	x	0,0009144 = Km
Km	x	0,621337	= miles	x	1,6094320 = Km

Square measures					
mm ²	x	0,001550	= sq inches	x	645,2000000 = mm ²
cm ²	x	0,155000	= sq inches	x	6,4520000 = cm ²
m ²	x	10,764000	= sq feet	x	0,0929000 = m ²
m ²	x	1,196000	= sq yards	x	0,8361000 = m ²
Km ²	x	0,386100	= sq miles	x	2,5900000 = Km ²
ha	x	2,471000	= acres	x	0,4047000 = ha

Capacity					
cm ³	x	0,061023	= cu inches	x	16,3870000 = cm ³
cm ³	x	0,033810	= fl ounces	x	29,5700000 = cm ³
l	x	61,023000	= cu inches	x	0,0163870 = l
l	x	0,035310	= cu feet	x	28,3170000 = l
l	x	0,264200	= U.S. gal	x	3,7850000 = l
l	x	0,220000	= Imperial gal	x	4,5440000 = l
m ³	x	35,314000	= cu feet	x	0,0283200 = m ³



Weights

g	x	15,432000	= grains	x	0,06480	= g
g	x	0,035300	= oz	x	28,35000	= g
Kg	x	35,270000	= oz	x	0,02835	= Kg
Kg	x	2,204600	= lbs	x	0,45360	= Kg
Kg	x	0,001102	= U.S. tons (short)	x	907,20000	= Kg
Kg	x	0,000984	= long tons	x	1016,04800	= Kg

Flow

l/min	x	0,264200	= U.S. gallon/min	x	3,78500	= l/min
l/min	x	0,035310	= cfm	x	28,31700	= l/min
l/hr	x	0,004400	= U.S. gallon/min	x	227,10000	= l/hr
m ³ /hr	x	0,588600	= cfm	x	1,69920	= m ³ /hr
m ³ /hr	x	4,402800	= U.S. gallon/min	x	0,22710	= m ³ /hr
m ³ /hr	x	16,670000	= l/min	x	0,06000	= m ³ /hr

VACUUM

Boiling temperatures of water at converted pressures	Microns	Torr (mmHg)	mbar	Absolute pressure inches Hg ("HgA)	psia	% Vacuum
100°C	760000	760,000	1013,00000	29,92100	14,69600	0,0000
	750000	750,000	999,67000	29,52700	14,50300	1,3200
	700000	700,000	933,03000	27,55900	13,53600	7,8900
	600000	600,000	799,74000	23,62200	11,60200	21,0500
96,1°C	535000	535,000	713,01000	21,06000	10,35000	29,6000
	400000	400,000	533,18000	15,74800	7,73500	47,3700
80°C	355092	355,100	473,45600	13,98000	6,87000	53,2800
	300000	300,000	399,87000	11,81100	5,80100	60,5300
70°C	233680	233,680	311,57400	9,20000	4,52000	69,2600
60°C	149352	149,350	199,13400	5,88000	2,89000	80,3500
	100000	100,000	133,29000	3,93700	1,93400	86,8400
50°C	92456	92,460	123,28000	3,64000	1,79000	87,8300
	80000	80,000	106,63000	3,15000	1,54700	89,4700
	70000	70,000	93,30000	2,75600	1,35400	90,7900
	60000	60,000	79,97000	2,36200	1,16000	92,1100
40°C	55118	55,120	73,49400	2,17000	1,06615	92,7500
	40000	40,000	53,32000	1,57500	0,77300	94,7400
30°C	31750	31,750	42,33400	1,25000	0,61410	95,8200
	25400	25,400	33,86000	1,00000	0,49100	96,6600
	20000	20,000	26,66000	0,78740	0,38700	97,3700
15°C	12700	12,700	16,93400	0,50000	0,24560	98,3300
7,2°C	7620	7,620	10,16000	0,30000	0,14740	99,0000
-6,1°C	2540	2,540	3,38600	0,10000	0,04910	99,6600
	750	0,750	0,99970	0,02950	0,01450	99,9000
-31,1°C	254	0,254	0,33860	0,01000	0,00491	99,9665
-37,2°C	127	0,127	0,16930	0,00500	0,00246	99,9830
	10	0,010	0,01330	0,00039	0,00019	99,9987
	0	0,000	0,00000	0,00000	0,00000	100,0000

Conversion formulas

Torr (mmHg) = "HgA x 25,4
 = psia x 51,7
 = mbar x 0,75

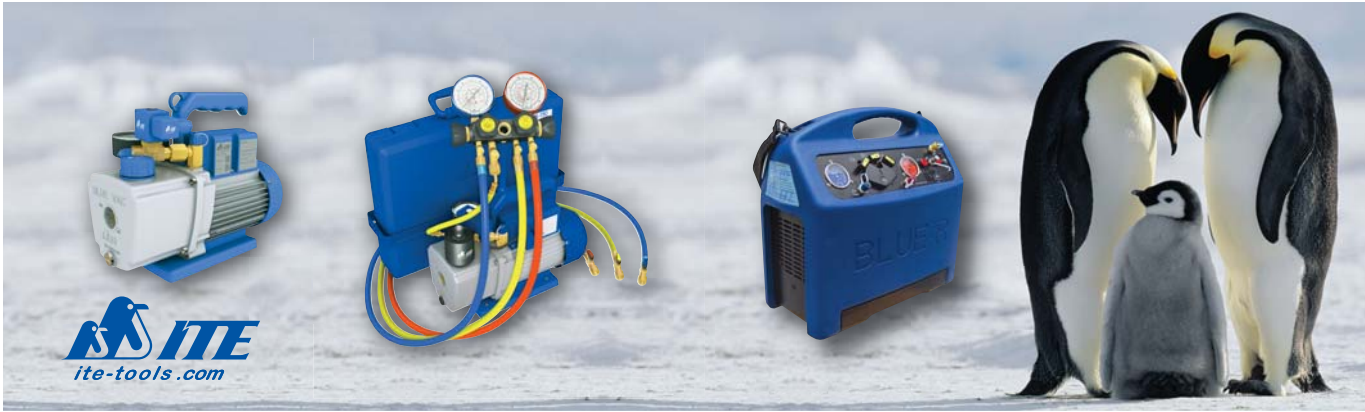
HgAbsolute = mmHg/25,4
 = psia x 2
 = mbar x 0,0295

PRESSURE

	psi	kPa	kg/cm ²	inches of Hg	mm of Hg	ounces per square inch	bar	mbar
1 psi	-	6,895	0,07031	2,0360	51,715	16,000	0,0689	68,948
1 kPa	0,1450	-	0,01020	0,2953	7,501	2,321	0,0100	10,000
1 kg/cm ²	14,2233	98,067	-	28,9590	735,559	227,573	0,9807	1013,250
1 inch of Hg	0,4912	3,386	0,03453	-	25,400	7,858	0,0339	33,864
1 mm of Hg	0,0193	0,133	0,00136	0,0394	-	0,309	0,0013	1,333
1 ounce per square inch	0,0625	0,431	0,00439	0,1273	3,232	-	0,0043	4,309
1 bar	14,5038	100,000	1,01972	29,5300	750,063	232,061	-	1000,000
1 mbar	0,0145	0,100	0,00102	0,0295	0,750	0,232	0,0010	-

Supplier of Material and Training in several International Tenders organized by Official Associations such as UNIDO, UNDP, UNEP, CIPPI Prospect within the Framework of Phasing Out Ozone Depleting Substances Consumption.





TERMS AND CONDITIONS OF SALE

1. All contracts and orders entered into and accepted by the Sellers are subject to the present conditions. Any conditions of purchase stipulated by the Purchasers which could be in conflict with the present conditions will be inapplicable, unless Sellers accept in writing such conditions. The present conditions will enter into force in any event upon the silent acceptance of our order acknowledgement or invoice by the Purchasers.
 2. Sellers quotations are without engagement. All orders, contracts or other understandings are valid only if they have been confirmed in writing by a duly authorized corporate officer of the Sellers.
 3. Without prejudice to Sellers' legal rights in the event of breach of contract by Purchasers, Sellers reserves the right to suspend deliveries or at their option cancel unfulfilled part of contract in whole or part if Purchasers fail to fulfill any obligation there under or if by reason of Act of God, war, force majeure, governmental control, storm, fire, tempest, strikes, lockouts, inevitable accident or any other unforeseen circumstances outside their control, Sellers are prevented in whole or in part from performing their obligations under the contract. Partial deliveries by Sellers are permitted.
 4. Delivery dates are approximate only and without engagement but every endeavor will be made to carry out Purchasers' requirements provided that all necessary information is given to Sellers at the time the order is placed.
 5. Each delivery shall be considered as a separate contract and a failure of any delivery shall not vitiate the contract as to others. (Additionally the standard package quantities, shown in all price lists, should strictly be observed.) Sellers will automatically ship standard package as the smallest saleable unit.
 6. Property in goods shall pass to Purchaser upon payment.
 7. Unless Sellers or their principals agree to work to Purchasers' drawings and specifications, Seller's or their principal's normal tolerances and material specifications will apply.
 8. Performance figures as given by Sellers are based upon manufacturers' experience but are not guaranteed.
 9. Inspection and acceptance tests, if any, shall be carried out at the manufacturers premises. If the Purchaser fails to have the agreed inspection carried out and/or to be represented at the agreed acceptance tests, the goods shall be deemed to have been delivered in accordance with the specifications in the contract. If the agreement does not provide for inspection tests the goods will be deemed in conformity with the contract and accepted by the Purchasers, unless Purchasers notify Sellers in writing of deterioration of the products within 3 months following delivery of the products. If goods alleged to be apparently defective are returned to Sellers, carriage paid for examination with full statement of allegation within one month of delivery or such other period as Sellers may agree in writing or if Sellers agree that return of such goods is impracticable and are given the opportunity of examining them in situ Sellers will repair or at their option replace free of charge such goods as they recognize to be defective owing to faulty material or workmanship and refund carriage on them. Subject only as stated in these conditions no warranty, condition or representation whatsoever is given or to be implied in connection with goods supplied under the contract. In the case of "hidden" defects such claims must be made within three months. In case of damage or loss caused by transportation Purchasers exclusive remedy shall be as provided for in article 22.
 10. Sellers accept no responsibility for any loss, damage or injury howsoever caused arising out of or in connection with goods supplied under the contract nor for any consequential loss.
 11. Payment terms are strictly 45 days net from invoice date unless otherwise stated. Payment at due date is a condition precedent to subsequent delivery and time of payment is of the essence of the contract. Payment of Sellers' invoices will be made in U.S. Dollars or according to the currency in which our prevailing price lists are published unless otherwise agreed in writing. Transfer charges occurring at Purchasers' bank in his country are for Purchasers' account. The invoices shall bear interest as of their due date at a rate of interest which shall be 10% above the interest rate of the European Central Bank.

The overdue amount shall further be increased with a lump indemnity equal to 10% of such overdue amount with a minimum of 50,00 EURO." Furthermore Sellers reserve the right to take lien on goods supplied in the event of accounts becoming overdue, notwithstanding other normal legal rights.
 12. All drawings and specifications submitted to Purchasers remain Sellers property and must not be copied, disclosed to any third party or otherwise used without Sellers' written permission.
 13. Unless otherwise specified, all packing cases and other containers are nonrefundable and packing is provided in accordance with Sellers' standard practice.
 14. Sellers accept no responsibility where patterns, jigs, fixtures, drawings, specifications or other particulars supplied by Purchasers are inaccurate or in defective condition, and Purchasers shall indemnify Sellers against any loss suffered by Sellers by reason of such inaccuracy or defective condition.
 15. Purchasers shall indemnify Sellers against all claims, demands, damages, penalties, costs and expenses to which Seller may become liable by reason of any infringement or alleged infringement of Letters Patent or registered design arising out of performance of a contract in accordance with Purchasers' specifications.
 16. Delivery terms
 - A. All shipments will be made Ex-Warehouse, St-Niklaas, Belgium.
 - B. Minimum order amount to be accepted and processed without additional charges is 500 EURO net. For orders below 500 EURO, extra charges will be added.
 17. When ordering state both article number and stock number.
 18. Documents included:
 - packing list, 2 copies
 - invoice, 1 original and 1 copy
 - additional documents issued by ITE will be charged at 70 EURO per document. All other documents will be subject to quotation.
 19. Sellers reserve the right to adjust prices. Thirty days after written notice has been issued, any such changes will become effective on shipments on orders received after date of price change. Possible clerical or typographical errors will be corrected without notice. Notice of price changes shall be deemed to have been served on the date of dispatch by E-mail, mail or fax or other means to Purchasers' last known address.
 20. Cancellation charges:
 - On orders for immediate delivery, 15% cancellation charges are applicable if cancellation is received after the date of order reception.
 - On scheduled orders, 15% cancellation charges are applicable if cancellation is received in the last 8 weeks before the scheduled delivery.
 21. All returns of material should be authorized first by Sellers in writing. The return will be evaluated according to Sellers return goods policy (copies available on application).
 22. Waiver by the Sellers of a breach of any terms and conditions of this contract by the Purchasers shall not constitute a waiver of any other breach of the same or other term.
 23. All commercial transactions to which these terms and conditions apply or which arise from the same are concluded or deemed concluded in Antwerp and are governed by Belgian law and the Antwerp practice of the trade insofar as they are not contrary to these terms and conditions. All controversies arising there from will be settled by the Courts of Antwerp. Sellers reserve the right at their sole option to bring any dispute before any Belgian or foreign Court which may have jurisdiction on the basis of the general principles concerning competence.
- Copies of these conditions of sale are available in French, Dutch, German, Italian and Spanish.
Ces conditions de vente sont également disponibles en langue Française.
Diese Bedingungen sind ebenfalls verfügbar auf Deutsch.
Deze verkoopsvoorwaarden zijn ook beschikbaar in het Nederlands.
Condizione di vendita sono anche disponibile in lingua Italiana.
Estas condiciones de ventas son disponibles también en Español.

Part. nr.	Pdf file
RED-MF-S-0168	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
RED-MF-S-1210	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
RED-MF-S-1610	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
RED-MF-S-1612	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
RED-MF-S-2016	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
RFM-20	see Refrigeration accessories
RFM-60	see Refrigeration accessories
RHP-082-S	see Fluid control components
RHP-083	see Fluid control components
RHP-083-S	see Fluid control components
RHP-084-S	see Fluid control components
RHP-163	see Fluid control components
RHP-163-S	see Fluid control components
RHP-164	see Fluid control components
RHP-164-S	see Fluid control components
RHP-165	see Fluid control components
RHP-165-S	see Fluid control components
RIO-208	see Service manifolds, gauges and charging hoses
RIO-208	see Service manifolds, gauges and charging hoses
RIO-208	see Service manifolds, gauges and charging hoses
RIO-208	see Service manifolds, gauges and charging hoses
RO-208	see Tube working tools
RK-800B	see Service manifolds, gauges and charging hoses
RK-800R	see Service manifolds, gauges and charging hoses
RO-41	see Refrigeration accessories
RO-42	see Refrigeration accessories
RO-62	see Refrigeration accessories
RO-82	see Refrigeration accessories
ROT-100-S02-C	see Fluid control components
ROT-100-S03-C	see Fluid control components
ROT-100-S05-C	see Fluid control components
ROT-100-S06-C	see Fluid control components
ROT-200-1x3/8	see Fluid control components
ROT-200-S07-C	see Fluid control components
ROT-200-S08-C	see Fluid control components
ROT-200-S11-C	see Fluid control components
ROT-200-S12-C	see Fluid control components
ROT-200-S14-C	see Fluid control components
ROT-202-1x1/2	see Fluid control components
ROT-202-1x3/8	see Fluid control components
ROT-222-11/4x3/4	see Fluid control components
ROT-222-11/4x5/8	see Fluid control components
ROT-222-1x5/8	see Fluid control components
ROT-300-S16-C	see Fluid control components
ROT-300-S17-C	see Fluid control components
ROT-300-S21-C	see Fluid control components
ROT-300-S22-C	see Fluid control components
ROT-302-11/4x11/8	see Fluid control components
ROT-302-11/4x7/8	see Fluid control components
ROT-302-13/4x7/8	see Fluid control components
ROT-352-13/4x11/8	see Fluid control components
ROT-352-13/4x13/8	see Fluid control components
ROT-400-S28-C	see Fluid control components
ROT-500-S31-C	see Fluid control components
ROT-500-S32-C	see Fluid control components
RS-09	see Refrigeration accessories
RS-128C	see Electronic measurement and control instruments
RS-128R	see Electronic measurement and control instruments
RS-15	see Refrigeration accessories
RS-20	see Refrigeration accessories
RS-31	see Refrigeration accessories
RSC-20	see Refrigeration accessories
RSD-175	see Tube working tools
RSS-62	see Tube working tools
RT-700K	see Refrigeration accessories
RT-750A	see Refrigeration accessories
RT-751M	see Refrigeration accessories
RT-752C	see Refrigeration accessories
RTC-127	see Tube working tools
RTC-127-A	see Tube working tools
RTC-127-B	see Tube working tools
RTC-274	see Tube working tools
RTC-274-A	see Tube working tools
RTC-274-B	see Tube working tools
RV-220	see Evacuating and charging equipment
RW-0608/1012	see Tube working tools
RW-0910/1112	see Tube working tools
RW-1012/1314	see Tube working tools
RW-124	see Tube working tools
RW-127	see Service manifolds, gauges and charging hoses
RW-127	see Service manifolds, gauges and charging hoses
RW-127	see Tube working tools
RW-1314/1719	see Tube working tools
SA-11/8	see Fluid control components
SA-13/8	see Fluid control components
SA-15/8	see Fluid control components
SA-21/8	see Fluid control components
SA-507	see Fluid control components
SACV2-04	see Automatic access valves & fittings
SACV3-04	see Automatic access valves & fittings
SACV3-06	see Automatic access valves & fittings
SACV3-08	see Automatic access valves & fittings
SACV3-10	see Automatic access valves & fittings
SACV3-12	see Automatic access valves & fittings
SB-002	see Refrigeration accessories
SB-003	see Refrigeration accessories

Part. nr.	Pdf file
SB-007	see Refrigeration accessories
SB-049	see Refrigeration accessories
SB-101	see Refrigeration accessories
SB-103	see Refrigeration accessories
SB-110	see Refrigeration accessories
SB-113	see Refrigeration accessories
SBLT-024	see Fluid control components
SBLT-048	see Fluid control components
SBLT-100	see Fluid control components
SBS-1483	see Refrigeration accessories
SBS-1907	see Refrigeration accessories
SBS-2754	see Refrigeration accessories
SBS-3178	see Refrigeration accessories
SBS-3672	see Refrigeration accessories
SCK-6D08M	see Tube working tools
SCK-6D10M	see Tube working tools
SCK-6D12M	see Tube working tools
SF-28-154	see Refrigeration accessories
SF-28-172	see Refrigeration accessories
SF-28-200	see Refrigeration accessories
SF-28-230	see Refrigeration accessories
SF-28-254	see Refrigeration accessories
SF-28-300	see Refrigeration accessories
SG-110	see Fluid control components
SG-110R	see Fluid control components
SG-111	see Fluid control components
SG-111R	see Fluid control components
SG-114	see Fluid control components
SG-114R	see Fluid control components
SG-115	see Fluid control components
SG-115R	see Fluid control components
SG-118	see Fluid control components
SG-118R	see Fluid control components
SG-119	see Fluid control components
SG-119R	see Fluid control components
SG-204	see Fluid control components
SG-204R	see Fluid control components
SG-205	see Fluid control components
SG-205R	see Fluid control components
SG-206	see Fluid control components
SG-206R	see Fluid control components
SG-207	see Fluid control components
SG-207R	see Fluid control components
SG-208	see Fluid control components
SG-208R	see Fluid control components
SG-209	see Fluid control components
SG-209R	see Fluid control components
SH-1075	see Electronic measurement and control instruments
SH-1075	see Electronic measurement and control instruments
SH-2010	see Electronic measurement and control instruments
SH-2010	see Electronic measurement and control instruments
SH-4011	see Electronic measurement and control instruments
SH-4011	see Electronic measurement and control instruments
SH-4040	see Electronic measurement and control instruments
SH-4040	see Electronic measurement and control instruments
SH-5005	see Electronic measurement and control instruments
SH-5005	see Electronic measurement and control instruments
SH-66-AC	see Electronic measurement and control instruments
SH-88A	see Electronic measurement and control instruments
SH-9010	see Electronic measurement and control instruments
SH-9010	see Electronic measurement and control instruments
SH-9015	see Electronic measurement and control instruments
SH-9015	see Electronic measurement and control instruments
SK-11	see Service manifolds, gauges and charging hoses
SK-21	see Service manifolds, gauges and charging hoses
SK-21A	see Service manifolds, gauges and charging hoses
SK-21E	see Service manifolds, gauges and charging hoses
SK-61nch	see Service manifolds, gauges and charging hoses
SK-61	see Service manifolds, gauges and charging hoses
SLM-8050	see Electronic measurement and control instruments
SOLDER-118	see Refrigeration accessories
SP-120	see Electronic measurement and control instruments
SPUN-619	see Fluid control components
SPUN-621	see Fluid control components
SRH-77A	see Electronic measurement and control instruments
SRP-08	see Tube working tools
SSL-083	see Fluid control components
SSL-084	see Fluid control components
SSL-084-S	see Fluid control components
SSL-165	see Fluid control components
SSL-165-S	see Fluid control components
SSL-166-S	see Fluid control components
SSL-307-S	see Fluid control components
SSL-419-S	see Fluid control components
SSL-4811-S	see Fluid control components
SSL-4813-S	see Fluid control components
STB-7000	see Service manifolds, gauges and charging hoses
STB-7000	see Tube working tools
STT-796	see Refrigeration accessories
STT-800	see Refrigeration accessories
STT-891	see Refrigeration accessories
SUNISO-3,5GS-04	see Refrigeration accessories
SUNISO-3GS-04	see Refrigeration accessories
SUNISO-3GS-20	see Refrigeration accessories
SUNISO-4GS-04	see Refrigeration accessories

Part. nr.	Pdf file
SUNISO-4GS-20	see Refrigeration accessories
SUNISO-5G-04	see Refrigeration accessories
SUNISO-SL32-04	see Refrigeration accessories
SUPER-3790	see Refrigeration accessories
SUPER-947	see Refrigeration accessories
SV2W-38/110	see Evacuating and charging equipment
SV2W-38/220	see Evacuating and charging equipment
SV2W-38/627-VRP-110	see Evacuating and charging equipment
SV2W-38/627-VRP-220	see Evacuating and charging equipment
SWM-4D-41	see Tube working tools
T1-04A	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T1-04B	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T1-04C	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T1-06B	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T1-06C	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T1-08C	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T1-08D	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T1-10C	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T1-10D	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T2-04	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T2-05	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T2-06	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T2-08	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T2-10	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T2-12	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T3-04A	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T3-04B	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T3-06B	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T3-08D	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T3-10D	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T3-12E	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T3F-02	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T3F-03	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T3F-04	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T3F-06	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T3F-08	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T3F-10	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T3F-12	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T3F-16	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T3F-S-02	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T3F-S-03	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T3F-S-04	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T3F-S-06	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T3F-S-08	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T3F-S-10	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T3F-S-12	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T3F-S-16	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T3F-S-20	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T3F-S-24	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
T6-4	see Forged brass & steel fittings "NPT" & "NPT 45" SAE"
TAHL-5	see Electronic measurement and control instruments
TB-03	see Tube working tools
TB-06	see Tube working tools
TB-06	see Service manifolds, gauges and charging hoses
TB-16	see Tube working tools
TB-16	see Service manifolds, gauges and charging hoses
TB-364-04	see Tube working tools
TB-364-05/8mm	see Tube working tools
TB-364-05/8mm	see Tube working tools
TB-364-06	see Tube working tools
TB-364-06mm	see Tube working tools
TB-364-08	see Tube working tools
TB-364-10	see Tube working tools
TB-364-10mm	see Tube working tools
TB-364-12	see Tube working tools
TB-364-12H	see Tube working tools
TB-364-12mm	see Tube working tools
TB-364-15mm	see Tube working tools
TB-364-16mm	see Tube working tools
TC-0316	see Tube working tools
TC-0316-H	see Tube working tools
TC-0328	see Tube working tools
TC-0328-H	see Tube working tools
TC-0432-ZR	see Tube working tools
TC-0432-ZRH	see Tube working tools
TC-0638-R	see Tube working tools
TC-0638-RH	see Tube working tools
TC-1000	see Tube working tools
TC-1000-SP	see Tube working tools
TC-10168-Z	see Tube working tools
TC-10168-ZC	see Tube working tools
TC-1020	see Tube working tools
TC-1050	see Tube working tools
TC-1050-SP	see Tube working tools
TC-127	see Service manifolds, gauges and charging hoses
TC-127	see Tube working tools
TC-2050	see Tube working tools
TC-206	see Tube working tools
TC-274	see Service manifolds, gauges and charging hoses
TC-274	see Service manifolds, gauges and charging hoses
TC-274	see Tube working tools
TC-274	see Service manifolds, gauges and charging hoses
TC-274	see Tube working tools
TC-274	see Service manifolds, gauges and charging hoses
TC-307	see Service manifolds, gauges and charging hoses
TC-307	see Tube working tools
TC-312	see Tube working tools

