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Ball valves



Ball valves

IGLOO ball valves are bi-directional shut-off valves for refrigerants, manually operated, suitable for liquid, suction and hot-gas line in refrigeration and air-conditioning systems.

All the valves are equipped with one-piece wire seal cap and a rear mounting bracket.

Optionally for all the models is available an external access port.

Direct flow gives maximum through-flow with minimum pressure drop across valve.

The combination of welded valve body, ball seat/seal made of Teflon, double spindle o-ring seal and cap seal gives absolutely minimum leakage: final tests done on all the pieces produced guarantee leakrate lower than 1 gram/year of refrigerant.

Features

- Broad range of temperature: from -40°C (-40°F) to +150°C (+300°F)
- 1/4 turn from fully open to fully closed position
  - Mechanical stop to rotation
  - Open/close status indication on the valve body
- All sizes are full port
  - Higher flow rate, lower pressure drop
- Bi-directional flow
  - Can be mounted in any position
- Available external access port for service to the system
- One-piece wire seal cap as per required by European Safety and Environmental Directive EN 378
- Hermetic welded design
- All the valves manufactured are singly leak tested and pressure tested
  - Pressure test at 70bar
  - Leak test with helium in a high vacuum chambre according to EN 1779.B6
- Balls have a pressure equalization hole
  - Prevents trapped pressure in valve body cavity
- Burst-proof spindle mounted from the inside
- Supplied with mounting brackets for panel fixing as standard
- Selected technical rubbers and Teflon compounds for intenal sealing elements

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Approvals

CE (PED, RoHS, REACH)

Technical data

Suitable for HCFC, HFC, HC and R744 (CO_2) refrigerants. Not suitable for ammonia.
Guaranteed leakrate of IGLOO ball valves is less than 1 gram/year of refrigerant.

Standard valves:

BSS series	without access port	-40 ÷ +150 °C	45bar
BSA series	with access port	-40 ÷ +300 °F	650psig

Reinforced valves:

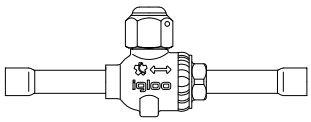
BV series	without access port	-40 ÷ +150 °C	48bar
BVA series	with access port	-40 ÷ +300 °F	700psig

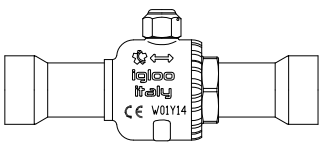
Supply

IGLOO ball valves have holes for panel mounting and mounting brackets into each box.
The valves are singly packaged into carton boxes, with annex fitting instructions and CE certificate of conformity.

Ordering

BSS series without access port, PS 45bar (650psi)

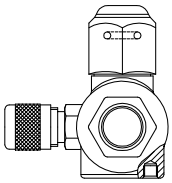


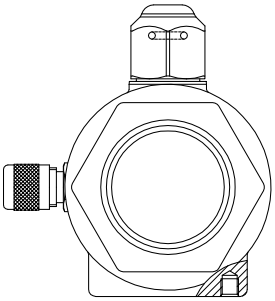


Part number	ODF Connections (aka ODS)		Orifice	Kv (m3/h)	PED 97/23/EC
	mm	inch	Ø S (mm)	UNI 9182:2010	Risk Category
BSS-M6	O.D. 6mm	-	10	1,2	
BSS-4	-	O.D. 1/4"	10	1,2	
BSS-5	O.D. 8mm	O.D. 5/16"	10	1,2	
BSS-6	-	O.D. 3/8"	10	3,5	
BSS-M10	O.D. 10mm	-	10	3,5	
BSS-M12	O.D. 12mm	-	10	6,6	
BSS-8	-	O.D. 1/2"	10	6,6	
BSS-M15	O.D. 15mm	-	13	15	**Art.3 Par.3**
BSS-10	O.D. 16mm	O.D. 5/8"	13	15	
BSS-M18	O.D. 18mm	-	16	20	
BSS-12	O.D. 19mm	O.D. 3/4"	16	20	
BSS-14	O.D. 22mm	O.D. 7/8"	19	24	
BSS-M28	O.D. 28mm	-	25	42	
BSS-18	-	O.D. 1.1/8"	25	42	
BSS-22	O.D. 35mm	O.D. 1.3/8"	32	65	
BSS-26	-	O.D. 1.5/8"	40	110	
BSS-M42	O.D. 42mm	-	40	110	
BSS-34	O.D. 54mm	O.D. 2.1/8"	50	190	
BSS-M64	O.D. 64mm	-	65	300	**I**
BSS-42	-	O.D. 2.5/8"	65	300	
BSS-48	O.D. 76mm	O.D. 3"	65	300	
BSS-50	O.D. 80mm	O.D. 3.1/8"	65	300	

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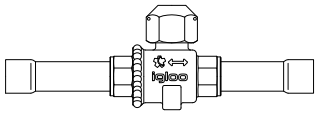
BSA series with access port, PS 45bar (650psi)





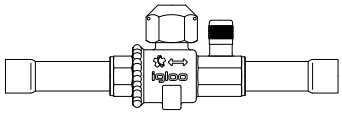
Part number	ODF Connections (aka ODS)		Orifice	Kv (m3/h)	PED 97/23/EC
	mm	inch	Ø S (mm)	UNI 9182:2010	Risk Category
BSA-M6	O.D. 6mm	-	10	1,2	Art.3 Par.3
BSA-4	-	O.D. 1/4"	10	1,2	
BSA-5	O.D. 8mm	O.D. 5/16"	10	1,2	
BSA-6	-	O.D. 3/8"	10	3,5	
BSA-M10	O.D. 10mm	-	10	3,5	
BSA-M12	O.D. 12mm	-	10	6,6	
BSA-8	-	O.D. 1/2"	10	6,6	
BSA-M15	O.D. 15mm	-	13	15	
BSA-10	O.D. 16mm	O.D. 5/8"	13	15	
BSA-M18	O.D. 18mm	-	16	20	
BSA-12	O.D. 19mm	O.D. 3/4"	16	20	
BSA-14	O.D. 22mm	O.D. 7/8"	19	24	
BSA-M28	O.D. 28mm	-	25	42	
BSA-18	-	O.D. 1.1/8"	25	42	
BSA-22	O.D. 35mm	O.D. 1.3/8"	32	65	
BSA-26	-	O.D. 1.5/8"	40	110	I
BSA-M42	O.D. 42mm	-	40	110	
BSA-34	O.D. 54mm	O.D. 2.1/8"	50	190	
BSA-M64	O.D. 64mm	-	65	300	
BSA-42	-	O.D. 2.5/8"	65	300	
BSA-48	O.D. 76mm	O.D. 3"	65	300	
BSA-50	O.D. 80mm	O.D. 3.1/8"	65	300	

BV series without access port, PS 48bar (700psi)



Part number	ODF Connections (aka ODS)		Orifice	Kv (m3/h)	PED 97/23/EC
	mm	inch	Ø S (mm)	UNI 9182:2010	Risk Category
BV-M6	O.D. 6mm	-	12	1,2	Art.3 Par.3
BV-4	-	O.D. 1/4"	12	1,2	
BV-6	-	O.D. 3/8"	12	3,5	
BV-M10	O.D. 10mm	-	12	3,5	
BV-M12	O.D. 12mm	-	12	6,6	
BV-8	-	O.D. 1/2"	12	6,6	
BV-10	O.D. 16mm	O.D. 5/8"	12	15	
BV-M18	O.D. 18mm	-	20	20	
BV-12	O.D. 19mm	O.D. 3/4"	20	20	
BV-14	O.D. 22mm	O.D. 7/8"	20	24	

BVA series with integrated access port, PS 48bar (700psi)



Part number	ODF Connections (aka ODS)		Orifice	Kv (m3/h)	PED 97/23/EC
	mm	inch	Ø S (mm)	UNI 9182:2010	Risk Category
BVA-M6	O.D. 6mm	-	12	1,2	Art.3 Par.3
BVA-4	-	O.D. 1/4"	12	1,2	
BVA-6	-	O.D. 3/8"	12	3,5	
BVA-M10	O.D. 10mm	-	12	3,5	
BVA-M12	O.D. 12mm	-	12	6,6	
BVA-8	-	O.D. 1/2"	12	6,6	
BVA-10	O.D. 16mm	O.D. 5/8"	12	15	
BVA-M18	O.D. 18mm	-	20	20	
BVA-12	O.D. 19mm	O.D. 3/4"	20	20	
BVA-14	O.D. 22mm	O.D. 7/8"	20	24	

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Ball valves
electrically servo-actuated

IGLOO servo-actuated ball valves are bi-directional shut-off valves for refrigerants, electrically remote-operated. Optionally for all the models is available an external schrader access port, with proportional electro-actuator and back-up device for normally open (NO) / normally closed (NC) functions.

Features

- Fluid temprature: from -40°C (-40°F) to +150°C (+300°F)
- Ambient temperature: from -30°C (-22°F) to +55°C (+130°F)
- Maximum working pressure: 45 bar (650 psig)
- Suitable for all refrigerants CFC, HCFC, HFC and oils
- Full shut-off capability
- Gradual open/close to avoid hammer effect
- Remote operating capability
- Removable actuator for easy replacement and service
- Valve position indicator
- Manual override
- Electronic overload protection

Approvals

CE (PED, RoHS, REACH)

Technical data

Suitable for HCFC, HFC, HC and R744 (CO_2) refrigerants. Not suitable for ammonia.
Guaranteed leakrate of IGLOO ball valves is less than 1 gram/year of refrigerant.

Servo-actuated valves without access port:

Mod. BKS	without access port	-40 ÷ +150 °C -40 ÷ +300 °F	45bar 650 psig

Servo-actuated valves with access port:

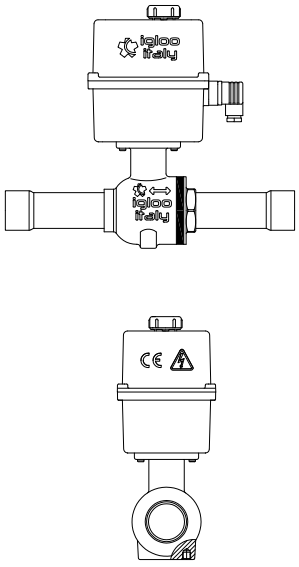
Mod. BKA	with access port	-40 ÷ +150 °C -40 ÷ +300 °F	45bar 650 psig

Supply

IGLOO servo-actuated ball valves have holes for panel mounting and mounting brackets into each box. The valves are supplied already assembled from the factory and singly packaged into carton boxes, with annex fitting instructions and CE certificate of conformity.

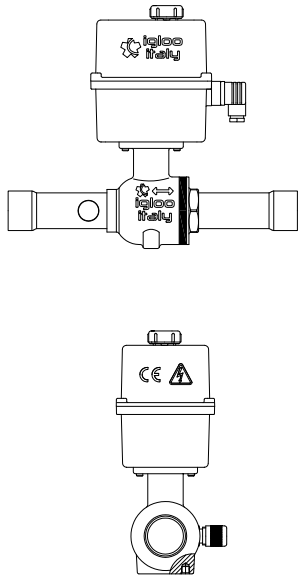
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BKS series. Servo-actuated ball valves without schrader access port



Part number	ODF Connections (aka ODS)		Orifice	Kv (m3/h)	PED 97/23/EC
	mm	inch	Ø S (mm)	UNI 9182:2010	Risk Category
BKS-M6	O.D. 6mm	-	10	1,2	
BKS-4	-	O.D. 1/4"	10	1,2	
BKS-5	O.D. 8mm	O.D. 5/16"	10	1,2	
BKS-6	-	O.D. 3/8"	10	3,5	
BKS-M10	O.D. 10mm	-	10	3,5	
BKS-M12	O.D. 12mm	-	10	6,6	
BKS-8	-	O.D. 1/2"	10	6,6	
BKS-M15	O.D. 15mm	-	13	15	Art.3 Par.3
BKS-10	O.D. 16mm	O.D. 5/8"	13	15	
BKS-M18	O.D. 18mm	-	16	20	
BKS-12	O.D. 19mm	O.D. 3/4"	16	20	
BKS-14	O.D. 22mm	O.D. 7/8"	19	24	
BKS-M28	O.D. 28mm	-	25	42	
BKS-18	-	O.D. 1.1/8"	25	42	
BKS-22	O.D. 35mm	O.D. 1.3/8"	32	65	
BKS-26	-	O.D. 1.5/8"	40	110	
BKS-M42	O.D. 42mm	-	40	110	
BKS-34	O.D. 54mm	O.D. 2.1/8"	50	190	
BKS-M64	O.D. 64mm	-	65	300	I
BKS-42	-	O.D. 2.5/8"	65	300	
BKS-48	O.D. 76mm	O.D. 3"	65	300	
BKS-50	O.D. 80mm	O.D. 3.1/8"	65	300	

BKA series. Servo-actuated ball valves with schrader access port



Part number	ODF Connections (aka ODS)		Orifice	Kv (m3/h)	PED 97/23/EC
	mm	inch	Ø S (mm)	UNI 9182:2010	Risk Category
BKA-M6	O.D. 6mm	-	10	1,2	
BKA-4	-	O.D. 1/4"	10	1,2	
BKA-5	O.D. 8mm	O.D. 5/16"	10	1,2	
BKA-6	-	O.D. 3/8"	10	3,5	
BKA-M10	O.D. 10mm	-	10	3,5	
BKA-M12	O.D. 12mm	-	10	6,6	
BKA-8	-	O.D. 1/2"	10	6,6	
BKA-M15	O.D. 15mm	-	13	15	Art.3 Par.3
BKA-10	O.D. 16mm	O.D. 5/8"	13	15	
BKA-M18	O.D. 18mm	-	16	20	
BKA-12	O.D. 19mm	O.D. 3/4"	16	20	
BKA-14	O.D. 22mm	O.D. 7/8"	19	24	
BKA-M28	O.D. 28mm	-	25	42	
BKA-18	-	O.D. 1.1/8"	25	42	
BKA-22	O.D. 35mm	O.D. 1.3/8"	32	65	
BKA-26	-	O.D. 1.5/8"	40	110	
BKA-M42	O.D. 42mm	-	40	110	
BKA-34	O.D. 54mm	O.D. 2.1/8"	50	190	
BKA-M64	O.D. 64mm	-	65	300	I
BKA-42	-	O.D. 2.5/8"	65	300	
BKA-48	O.D. 76mm	O.D. 3"	65	300	
BKA-50	O.D. 80mm	O.D. 3.1/8"	65	300	

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Sight glasses



Sight glasses

IGLOO sight glasses helps to formulate a proper diagnosis of refrigeration and air-conditioning systems.

IGLOO sight glasses can be mounted inline and they are used to indicate:

- The moisture content in refrigerant
- Lack of sub-cooling
- Refrigerant deficiency
- In liquid line, the condition of refrigerant
- In return line from the oil separator, the flow of oil

MIM, MIF, MIS and MIT sight glasses are equipped with sensitive indicators that reflect a colour, depending on the moisture content in the refrigerant, changing from green (dry) to yellow (wet).

Features

- Broad range of temperature: from -30°C (-22°F) to +80 °C (176°F)
- Provides fast and easy indication of:
  - High system moisture content
  - Lack of subcooling or low system charge
- High purity tempered crystal
  - Easy viewing
  - Eliminates risk of explosion
- The same indicator can be used for all refrigerants
  - Suitable for HCFC, HFC, HC and R744 (CO_2) refrigerants
  - Big size, annular indictor ring
  - Proven dirt resistance
- Hermetic sealed design
  - Not dismountable
  - Explosion proof
- All the sight glasses are singly leak tested and pressure tested
  - Pressure test at 70bar
  - Leak test with helium in a high vacuum chambre according to EN 1779.B6
- Available in both flare and solder versions for inline assembly
- Selected Teflon compound for the sealing element

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Approvals CE (PED, RoHS, REACH)

Moisture levels

The moisture indicator of IGLOO sight glasses has been developed to operate with all the refrigerants.

Be aware that hermetic compressors only tolerate very low moisture content, while semi-hermetic and other compressors normally tolerate higher moisture contents in the refrigerant. Also, polyester oil for HFC refrigerants (R134a, R404A, R407C) reacts with water in a hydrolysis generating acid and alcohol. For this reason normally acceptable moisture concentration with HFC refrigerants is sensibly lower than with HCFC refrigerants (R22).

The colour on the indicator reflects the moisture content of the refrigerant: values under "green/dry" are to be considered as perfect condition meaning full protection against harmful effects from moisture. In other words, the filter drier is working properly.

When the green colour starts to fade, the colour change has begun and the indicator should therefore be watched more carefully because when the colour changes to yellow it is a clear signal that the capacity of the filter drier is exceeded and should be replaced as soon as possible.

After about 24 hours from the replacing of the filter drier the sight glass should be controlled again to verify that green colour has been resetted, meaning that the replacing of the filter drier has been properly done.

		Moisture content into refrigerant (ppm)					
		R22	R134a	R404A	R407C	R410A	R507
Safe	Green / Dry	<60	<75	<30	<30	<30	<30
Attention	Chartreuse	60	75	30	30	30	30
Danger	Yellow / Wet	>60	>75	>30	>30	>30	>30

For moisture values of other refrigerants, please contact IGLOO

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Technical data

Suitable for HCFC, HFC, HC and R744 (CO_2) refrigerants. Not suitable for ammonia.
Guaranteed leakrate is less than 1 gram/year of refrigerant.

Sight glasses, moisture and liquid indicators

MIF series	external-internal threads (male-female threads) acc. to SAE J513 (Flare 45°)	-30 ÷ +80 °C -22 ÷ +176 °F	48bar 700psig
MIM series	external-external threads (male-male threads) acc. to SAE J513 (Flare 45°)		
MIS series	solder connections ODF/ODF mm and inch sizes		
MIT series	"saddle type" solder connection		

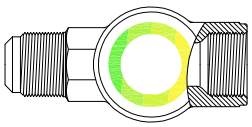
Sight glasses, liquid indicators *without moisture sensitive element*

LIF series	external-internal threads (male-female threads) acc. to SAE J513 (Flare 45°)	-30 ÷ +80 °C -22 ÷ +176 °F	48bar 700psig
LIM series	external-external threads (male-male threads) acc. to SAE J513 (Flare 45°)		
LIS series	solder connections ODF/ODF mm and inch sizes		

Standard supplies

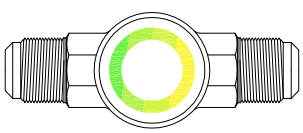
Packaged into single carton boxes, with annex fitting instructions and CE certificate.
Optionally, can be packed into sealed plastic bags, for OEM supplies.

MIF moisture indicators flare mount, male-female



Part number	Threads *ANSI/ASME B1.1*		Flare Connections SAE J513	PED 97/23/EC
	ext thread (male)	int thread (female)		Risk Category
MIF-4	7/16" - 20 UNF	7/16" - 20 UNF	**1/4"**	**Art.3 Par.3**
MIF-6	5/8" - 18 UNF	5/8" - 18 UNF	**3/8"**	
MIF-8	3/4" - 16 UNF	3/4" - 16 UNF	**1/2"**	
MIF-10	7/8" - 14 UNF	7/8" - 14 UNF	**5/8"**	
MIF-12	1.1/16" - 14 UNS	1.1/16" - 14 UNS	**3/4"**	

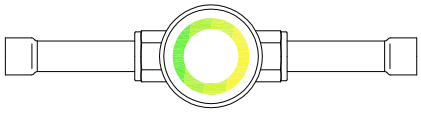
MIM moisture indicators flare mount, male-male



Part number	Threads *ANSI/ASME B1.1*		Flare Connections SAE J513	PED 97/23/EC
	ext thread (male)	ext thread (male)		Risk Category
MIM-4	7/16" - 20 UNF	7/16" - 20 UNF	**1/4"**	**Art.3 Par.3**
MIM-6	5/8" - 18 UNF	5/8" - 18 UNF	**3/8"**	
MIM-8	3/4" - 16 UNF	3/4" - 16 UNF	**1/2"**	
MIM-10	7/8" - 14 UNF	7/8" - 14 UNF	**5/8"**	
MIM-12	1.1/16" - 14 UNS	1.1/16" - 14 UNS	**3/4"**	

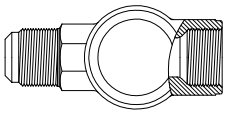
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MIS moisture indicators solder mount, ODF/ODF



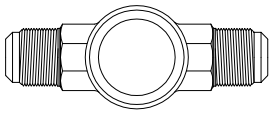
Part number	ODF Connections (aka ODS)		PED 97/23/EC
	mm	inch	Risk Category
MIS-M6	O.D. 6mm	-	Art.3 Par.3
MIS-4	-	O.D. 1/4"	
MIS-6	-	O.D. 3/8"	
MIS-M10	O.D. 10mm	-	
MIS-M12	O.D. 12mm	-	
MIS-8	-	O.D. 1/2"	
MIS-10	O.D. 16mm	O.D. 5/8"	
MIS-M18	O.D. 18mm	-	
MIS-12	O.D. 19mm	O.D. 3/4"	
MIS-14	O.D. 22mm	O.D. 7/8"	

LIF liquid indicators flare mount, male-female



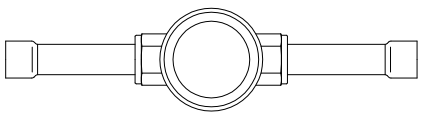
Part number	Threads *ANSI/ASME B1.1*		Flare Connections SAE J513	PED 97/23/EC
	ext thread (male)	int thread (female)		Risk Category
LIF-4	7/16" - 20 UNF	7/16" - 20 UNF	1/4"	Art.3 Par.3
LIF-6	5/8" - 18 UNF	5/8" - 18 UNF	3/8"	
LIF-8	3/4" - 16 UNF	3/4" - 16 UNF	1/2"	
LIF-10	7/8" - 14 UNF	7/8" - 14 UNF	5/8"	
LIF-12	1.1/16" - 14 UNS	1.1/16" - 14 UNS	3/4"	

LIM liquid indicators flare mount, male-male



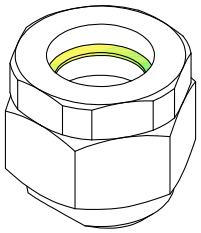
Part number	Threads *ANSI/ASME B1.1*		Flare Connections SAE J513	PED 97/23/EC
	ext thread (male)	ext thread (male)		Risk Category
LIM-4	7/16" - 20 UNF	7/16" - 20 UNF	1/4"	Art.3 Par.3
LIM-6	5/8" - 18 UNF	5/8" - 18 UNF	3/8"	
LIM-8	3/4" - 16 UNF	3/4" - 16 UNF	1/2"	
LIM-10	7/8" - 14 UNF	7/8" - 14 UNF	5/8"	
LIM-12	1.1/16" - 14 UNS	1.1/16" - 14 UNS	3/4"	

LIS liquid indicators solder mount, ODF/ODF



Part number	ODF Connections (aka ODS)		PED 97/23/EC
	mm	inch	Risk Category
LIS-M6	O.D. 6mm	-	Art.3 Par.3
LIS-4	-	O.D. 1/4"	
LIS-6	-	O.D. 3/8"	
LIS-M10	O.D. 10mm	-	
LIS-M12	O.D. 12mm	-	
LIS-8	-	O.D. 1/2"	
LIS-10	O.D. 16mm	O.D. 5/8"	
LIS-M18	O.D. 18mm	-	
LIS-12	O.D. 19mm	O.D. 3/4"	
LIS-14	O.D. 22mm	O.D. 7/8"	

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Part number	Saddle connections		PED 97/23/EC
	mm	inch	Risk Category
MIT-18	28mm	1.1/8”	Excluded
MIT-22	35mm	1.3/8”	
MIT-36	57mm	2.1/4”	

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Brass fittings and access valves



Brass fittings and access valves



IGLOO brass fittings for refrigeration and air-conditioning systems comply to DIN 8912 standard, SAE J513 standard, U.S. Military Standards MS-35867 through MS35873 inclusive, MS-35919, MS-24815 and MS-16993.

Features

- Recommended maximum working pressure (PS): 48 bar (700 psig)
- Manufactured from brass forgings (compliant to standards EN 12420 and EN 12165) or drawn brass rod (compliant to standard EN 12164) eliminating the possibility of seepage by porosity
- Accurately machined and fully protected against damage during shipping, handling and storage to assure tight leakproof joints
- Smooth interior finish provides unrestricted flow and reduced pressure drop
- Smooth sealing surfaces finish and tight tollerances to eliminate the risk of leakage
- Risk category as per Art. 3 Par. 3 of Directive PED 97/23/EC

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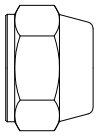
Approvals CE (PED, RoHS, REACH)

Technical data Suitable for HCFC, HFC, HC and R744 (CO_2) refrigerants. Not suitable for ammonia.
Guaranteed leakrate for IGLOO brass fittings is less than 0,1 gram/year of refrigerant.

Standard supplies Standard packaging of fittings is plastic bags into carton boxes.
Each plastic bag and each carton box has a label showing a bilingual description (italian/english), barcode, part number and q.ty of pieces contained.

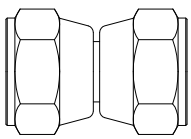
Ordering

Forged nuts



Part number	Thread ANSI/ASME B1.1	Flare connection SAE J513	Tube diameter		Tightening torque
	int thread (female)		mm	inch	Nm (lbf·ft)
NS4-4	7/16" - 20 UNF	1/4"	6	1/4"	11÷14 (8÷10)
NS4-5	1/2" - 20 UNF	5/16"	8	5/16"	11÷14 (8÷10)
NRS4-64	5/8" - 18 UNF	3/8"	6	1/4"	20÷25 (15÷18.5)
NRS4-65	5/8" - 18 UNF	3/8"	8	5/16"	20÷25 (15÷18.5)
NS4-6	5/8" - 18 UNF	3/8"	-	3/8"	20÷25 (15÷18.5)
NS4-6M10	5/8" - 18 UNF	3/8"	10	-	20÷25 (15÷18.5)
NRS4-86	3/4" - 16 UNF	1/2"	-	3/8"	34÷47 (25÷34.5)
NS4-8M10	3/4" - 16 UNF	1/2"	10	-	34÷47 (25÷34.5)
NS4-8M12	3/4" - 16 UNF	1/2"	12	-	34÷47 (25÷34.5)
NS4-8	3/4" - 16 UNF	1/2"	-	1/2"	34÷47 (25÷34.5)
NS4-10M12	7/8" - 14 UNF	5/8"	12	-	54÷75 (40÷55)
NRS4-108	7/8" - 14 UNF	5/8"	-	1/2"	54÷75 (40÷55)
NS4-10M14	7/8" - 14 UNF	5/8"	14	-	54÷75 (40÷55)
NS4-10	7/8" - 14 UNF	5/8"	16	5/8"	54÷75 (40÷55)
NS4-12M14	1.1/16" - 14 UNS	3/4"	14	-	68÷71 (50÷52)
NRS4-1210	1.1/16" - 14 UNS	3/4"	16	5/8"	68÷71 (50÷52)
NS4-12M18	1.1/16" - 14 UNS	3/4"	18	-	68÷71 (50÷52)
NS4-12	1.1/16" - 14 UNS	3/4"	19	3/4"	68÷71 (50÷52)
NS4-14	1.1/4" - 12 UNF	7/8"	22	7/8"	90÷120 (66÷98)
NRS4-1614	1.3/8" - 12 UNF	1"	22	7/8"	120÷150 (98÷110)
NS4-16	1.3/8" - 12 UNF	1"	-	1"	120÷150 (98÷110)

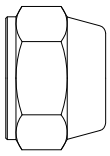
Swivel nuts



Part number	Thread ANSI/ASME B1.1	Flare Connection SAE J513	Tightening torque
	int thread (female)		Nm (lbf·ft)
US4-4	7/16" - 20 UNF	1/4"	11÷14 (8÷10)
US4-6	5/8" - 18 UNF	3/8"	20÷25 (15÷18.5)
US4-8	3/4" - 16 UNF	1/2"	34÷47 (25÷34.5)
US4-10	7/8" - 14 UNF	5/8"	54÷75 (40÷55)

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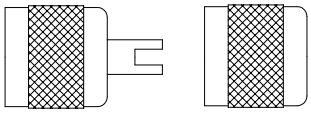
Forged cap nuts



Part number	Thread ANSI/ASME B1.1 int thread (female)	Flare Connection SAE J513	Tightening torque Nm (lbf·ft)
N5-4	7/16" - 20 UNF	1/4"	11÷14 (8÷10)
N5-5	1/2" - 20 UNF	5/16"	8.5÷11.5 (6÷8.5)
N5-6	5/8" - 18 UNF	3/8"	20÷25 (15÷18.5)
N5-8	3/4" - 16 UNF	1/2"	34÷47 (25÷34.5)

Brass caps for access valves

CAP-02 CAP-03

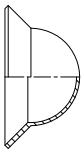


Part number	Thread ANSI/ASME B1.1 int thread (female)	Tightening torque	Notes
CAP-02	7/16" - 20 UNF	Hand tight	With wrench for internal mechanism.
CAP-03	7/16" - 20 UNF	Hand tight	Without wrench for internal mechanism.

Note: Caps are made in nickel-plated brass and are supplied with an internally pre-assembled gasket (not o-ring).

Copper gaskets

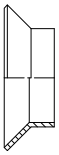
B1



B2



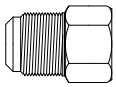
B3



Part number	Flare Connection SAE J513	Maximum Working Pressure PS bar (psi)
B1-4	1/4"	30 (430)
B1-6	3/8"	30 (430)
B1-8	1/2"	30 (430)
B1-10	5/8"	30 (430)
B1-12	3/4"	30 (430)
B2-4	1/4"	30 (430)
B2-6	3/8"	30 (430)
B2-8	1/2"	30 (430)
B2-10	5/8"	30 (430)
B2-12	3/4"	30 (430)
B3-4	1/4"	30 (430)
B3-6	3/8"	30 (430)
B3-8	1/2"	30 (430)
B3-10	5/8"	30 (430)
B3-12	3/4"	30 (430)

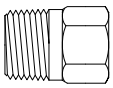
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Flared plugs



Part number	Thread ANSI/ASME B1.1 Flare connection SAE J513	
	ext thread (male)	ext flare (male)
P2-4	7/16" - 20 UNF	1/4"
P2-6	5/8" - 18 UNF	3/8"
P2-8	3/4" - 16 UNF	1/2"

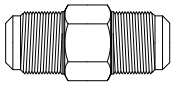
NPT plugs

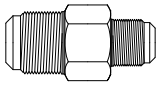


Part number	NPT Connection Thread ANSI B1.20.1
	ext thread (male)
P1-A	NPT 1/8"
P1-B	NPT 1/4"
P1-C	NPT 3/8"
P1-D	NPT 1/2"

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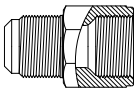
Straight unions, male-male Flare

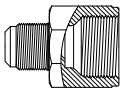




Part number	Thread ANSI/ASME B1.1		Flare Connection SAE J513	
	ext thread (male)	ext thread (male)	ext flare (male)	ext flare (male)
U2-4	7/16" - 20 UNF	7/16" - 20 UNF	1/4"	1/4"
UR2-64	5/8" - 18 UNF	7/16" - 20 UNF	3/8"	1/4"
U2-6	5/8" - 18 UNF	5/8" - 18 UNF	3/8"	3/8"
UR2-84	3/4" - 16 UNF	7/16" - 20 UNF	1/2"	1/4"
UR2-86	3/4" - 16 UNF	5/8" - 18 UNF	1/2"	3/8"
U2-8	3/4" - 16 UNF	3/4" - 16 UNF	1/2"	1/2"
UR2-104	7/8" - 14 UNF	7/16" - 20 UNF	5/8"	1/4"
UR2-106	7/8" - 14 UNF	5/8" - 18 UNF	5/8"	3/8"
UR2-108	7/8" - 14 UNF	3/4" - 16 UNF	5/8"	1/2"
U2-10	7/8" - 14 UNF	7/8" - 14 UNF	5/8"	5/8"
UR2-128	1.1/16" - 14 UNS	3/4" - 16 UNF	3/4"	1/2"
UR2-1210	1.1/16" - 14 UNS	7/8" - 14 UNF	3/4"	5/8"
U2-12	1.1/16" - 14 UNS	1.1/16" - 14 UNS	3/4"	3/4"

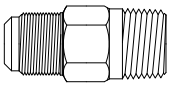
Straight unions, male-female Flare





Part number	Thread ANSI/ASME B1.1		Flare Connection SAE J513	
	int thread (female)	ext thread (male)	int flare (female)	ext flare (male)
UP3-4	7/16" - 20 UNF	7/16" - 20 UNF	1/4"	1/4"
UR3-46	7/16" – 20 UNF	5/8" - 18 UNF	1/4"	3/8"
UR3-64	5/8" - 18 UNF	7/16" – 20 UNF	3/8"	1/4"
UP3-6	5/8" - 18 UNF	5/8" - 18 UNF	3/8"	3/8"
UR3-68	5/8" - 18 UNF	3/4" - 16 UNF	3/8"	1/2"
UR3-84	3/4" - 16 UNF	7/16" - 20 UNF	1/2"	1/4"
UR3-86	3/4" - 16 UNF	5/8" - 18 UNF	1/2"	3/8"
UP3-8	3/4" – 16 UNF	3/4" – 16 UNF	1/2"	1/2"
UR3-810	3/4" – 16 UNF	7/8" – 14 UNF	1/2"	5/8"
UR3-812	3/4" – 16 UNF	1.1/16" - 14 UNS	1/2"	3/4"
UR3-108	7/8" – 14 UNF	3/4" – 16 UNF	5/8"	1/2"
UR3-1012	7/8" – 14 UNF	1.1/16" - 14 UNS	5/8"	3/4"
UR3-128	1.1/16" - 14 UNS	3/4" – 16 UNF	3/4"	1/2"
UR3-1210	1.1/16" - 14 UNS	7/8" – 14 UNF	3/4"	5/8"

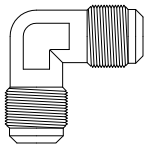
Flare-to-NPT straight unions



Part number	Flare Connection SAE J513 Thread ANSI/ASME B1.1		NPT Connection Thread ANSI B1.20.1
	ext thread (male)	ext flare (male)	ext thread (male)
U1-4A	7/16" - 20 UNF	1/4"	NPT 1/8"
U1-4B	7/16" - 20 UNF	1/4"	NPT 1/4"
U1-6B	5/8" - 18 UNF	3/8"	NPT 1/4"
U1-6C	5/8" - 18 UNF	3/8"	NPT 3/8"
U1-8C	3/4" – 16 UNF	1/2"	NPT 3/8"
U1-8D	3/4" – 16 UNF	1/2"	NPT 1/2"
U1-10D	7/8" – 14 UNF	5/8"	NPT 1/2"
U1-12F	1.1/16" - 14 UNS	3/4"	NPT 3/4"
			int thread (female)
U3-4A	7/16" - 20 UNF	1/4"	NPT 1/8"

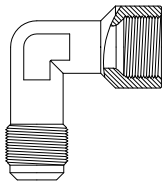
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Elbow fittings, male-male Flare



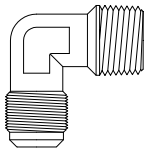
Part number	Thread ANSI/ASME B1.1		Flare Connection SAE J513	
	ext thread (male)	ext thread (male)	ext flare (male)	ext flare (male)
E2-4	7/16" - 20 UNF	7/16" - 20 UNF	1/4"	1/4"
E2-6	5/8" - 18 UNF	5/8" - 18 UNF	3/8"	3/8"
E2-8	3/4" - 16 UNF	3/4" - 16 UNF	1/2"	1/2"
E2-10	7/8" - 14 UNF	7/8" - 14 UNF	5/8"	5/8"
E2-12	1.1/16" - 14 UNS	1.1/16" - 14 UNS	3/4"	3/4"

Elbow fittings, male-female Flare



Part number	Thread ANSI/ASME B1.1		Flare Connection SAE J513	
	int thread (female)	ext thread (male)	int flare (female)	ext flare (male)
E3-4	7/16" - 20 UNF	7/16" - 20 UNF	1/4"	1/4"
E3-6	5/8" - 18 UNF	5/8" - 18 UNF	3/8"	3/8"
E3-8	3/4" - 16 UNF	3/4" - 16 UNF	1/2"	1/2"

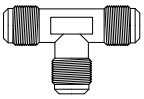
Flare-to-NPT elbow fittings

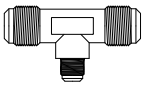


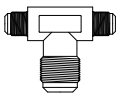
Part number	Flare Connection SAE J513 Thread ANSI/ASME B1.1		NPT Connection Thread ANSI B1.20.1
	ext thread (male)	ext flare (male)	ext thread (male)
E1-4A	7/16" - 20 UNF	1/4"	NPT 1/8"
E1-4B	7/16" - 20 UNF	1/4"	NPT 1/4"
E1-6B	5/8" - 18 UNF	3/8"	NPT 1/4"
E1-6C	5/8" - 18 UNF	3/8"	NPT 3/8"
E1-8C	3/4" – 16 UNF	1/2"	NPT 3/8"
E1-8D	3/4" – 16 UNF	1/2"	NPT 1/2"
E1-10D	7/8" – 14 UNF	5/8"	NPT 1/2"
E1-12F	1.1/16" - 14 UNS	3/4"	NPT 3/4"

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Tee fittings, male-male-male Flare

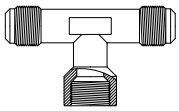






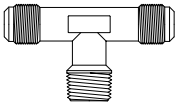
Part number	Thread ANSI/ASME B1.1						Flare Connection SAE J513
	1	ext thread (male)	2	ext thread (male)	3	ext thread (male)	ext-ext-ext flare (male-male-male)
T2-4	7/16" - 20 UNF		7/16" - 20 UNF		7/16" - 20 UNF		1/4"-1/4"-1/4"
TR2-46	7/16" - 20 UNF		5/8" - 18 UNF		7/16" - 20 UNF		1/4"-3/8"-1/4"
TR2-64	5/8" - 18 UNF		7/16" - 20 UNF		5/8" - 18 UNF		3/8"-1/4"-3/8"
T2-6	5/8" - 18 UNF		5/8" - 18 UNF		5/8" - 18 UNF		3/8"-3/8"-3/8"
TR2-68	5/8" - 18 UNF		3/4" - 16 UNF		5/8" - 18 UNF		3/8"-1/2"-3/8"
TR2-86	3/4" - 16 UNF		5/8" - 18 UNF		3/4" - 16 UNF		1/2"-3/8"-1/2"
T2-8	3/4" - 16 UNF		3/4" - 16 UNF		3/4" - 16 UNF		1/2"-1/2"-1/2"
TR2-810	3/4" - 16 UNF		7/8" - 14 UNF		3/4" - 16 UNF		1/2"-5/8"-1/2"
TR2-108	7/8" - 14 UNF		3/4" - 16 UNF		7/8" - 14 UNF		5/8"-1/2"-5/8"
T2-10	7/8" - 14 UNF		7/8" - 14 UNF		7/8" - 14 UNF		5/8"-5/8"-5/8"
TR2-1012	7/8" - 14 UNF		1.1/16" - 14 UNS		7/8" - 14 UNF		5/8"-3/4"-5/8"
TR2-1210	1.1/16" - 14 UNS		7/8" - 14 UNF		1.1/16" - 14 UNS		3/4"-5/8"-3/4"
T2-12	1.1/16" - 14 UNS		1.1/16" - 14 UNS		1.1/16" - 14 UNS		3/4"-3/4"-3/4"

Tee fittings, male-female-male Flare

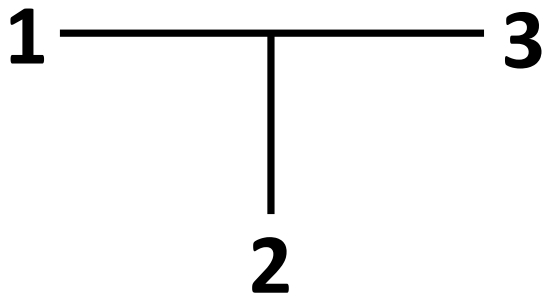


Part number	Thread ANSI/ASME B1.1						Flare Connection SAE J513
	1	ext thread (male)	2	int thread (female)	3	ext thread (male)	ext-int-ext flare (male-female-male)
T6-4	7/16" - 20 UNF		7/16" - 20 UNF		7/16" - 20 UNF		1/4"-1/4"-1/4"

Flare-to-NPT Tee fittings

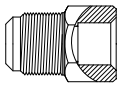


Part number	Thread ANSI/ASME B1.1 Flare SAE J513		NPT Thread ANSI/ASME B1.20.1		Thread ANSI/ASME B1.1 Flare SAE J513	
	1	ext thread (male)	2	int thread (female)	3	ext thread (male)
T1-4A	7/16" - 20 UNF SAE Flare 1/4"		NPT 1/8"		7/16" - 20 UNF SAE Flare 1/4"	
T1-4B	7/16" - 20 UNF SAE Flare 1/4"		NPT 1/4"		7/16" - 20 UNF SAE Flare 1/4"	



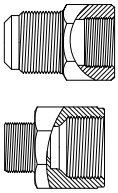
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Flare-to-solder straight unions



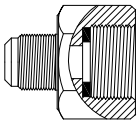
Part number	Flare Connection SAE J513 Thread ANSI/ASME B1.1		ODF Connection	
	ext thread (male)	ext flare (male)	mm	inch
US3-44	7/16" - 20 UNF	1/4"	-	1/4"
US3-4M8	7/16" - 20 UNF	1/4"	8	-
US3-66	5/8" - 18 UNF	3/8"		3/8"
US3-6M10	5/8" - 18 UNF	3/8"	10	-
US3-8M12	3/4" - 16 UNF	1/2"	12	-
US3-88	3/4" - 16 UNF	1/2"	-	1/2"
US3-1010	7/8" - 14 UNF	5/8"	16	5/8"
US3-12M18	1.1/16" - 14 UNS	3/4"	18	-

Flare-to-BSP / Flare-to-GAS straight unions



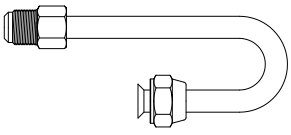
Part number	Flare Connection SAE J513 Thread ANSI/ASME B1.1		BSP Connection Thread GAS ISO 228	
	ext thread (male) ext flare (male)	int thread (female) int flare (female)	ext thread (male)	int thread (female)
UP3-4G4F	7/16" - 20 UNF external Flare 1/4"	-	-	GAS f-1/4"
UP3-4G4M	-	7/16" - 20 UNF internal Flare 1/4"	GAS m-1/4"	-

Bottle adaptors: SAE Flare-to-BSW / SAE Flare-to-Withworth



Part number	Flare Connection SAE J513 Thread ANSI/ASME B1.1	BSW Connection Thread Withworth BS 84	Notes
	ext thread (male) ext flare (male)	int thread (female)	
U3-4DX	7/16" - 20 UNF Flare 1/4"	W21,8-14 (dx)	Without Teflon gasket.
U3X-4DX			With Teflon gasket inside.
U3-4SX	7/16" - 20 UNF Flare 1/4"	W20-14 (sx)	Without Teflon gasket.
U3X-4SX			With Teflon gasket inside.

Inversion fittings for internal split units: bend connections with swivel nut



Part number	Flare Connection SAE J513 - Thread ANSI/ASME B1.1			
	Fixed male fitting		Swivel female nut	
	ext thread (male)	ext flare (male)	int thread (female)	int flare (female)
RI-44	7/16" - 20 UNF	1/4"	7/16" - 20 UNF	1/4"
RI-66	5/8" - 18 UNF	3/8"	5/8" - 18 UNF	3/8"
RI-88	3/4" - 16 UNF	1/2"	3/4" - 16 UNF	1/2"
RI-1010	7/8" - 14 UNF	5/8"	7/8" - 14 UNF	5/8"

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Internal mechanisms



Part number	Temperature range	Maximum working pressure, PS	Tightening torque
	°C (°F)	bar (psi)	Nm (lbf·ft)
MC-02	-40 ÷ +100 (-40 ÷ +212) Pick 30sec: +130 (+266)	Static: 140 (2 030) Operating: 60 (870)	0,4 ÷ 0,5 (3.5 ÷ 4.4)
MC-04	-40 ÷ +150 (-40 ÷ +300)	Static: 140 (2 030) Operating: 60 (870)	0,4 ÷ 0,5 (3.5 ÷ 4.4)
MC-05	-40 ÷ +100 (-40 ÷ +212) Pick 30sec: +130 (+266)	Static: 40 (580) Operating: 28 (406)	0,4 ÷ 0,5 (3.5 ÷ 4.4)
MC-06	-35 ÷ +100 (-31 ÷ +212) Pick 30sec: +125 (257)	Static: 40 (580) Operating: 28 (406)	0,3 ÷ 0,35 (2.6 ÷ 3.1)

Note: Schrader mechanisms can be supplied pre-assembled into valves and access fittings, upon request.









Recommended fitting conditions

To avoid overheating issues, remove the internal mechanism before brazing.

Pressure resistance

Operating pressure is the maximum pressure under which the core plunger can be operated without being deteriorated during the opening-closing movement.

Static pressure is the maximum pressure under which the machanism can safely still in the closed position during its life. It may be called also *Working pressure*.

Refrigerants compatibility

All IGLOO internal mechanisms are suitable for refrigerants HCFC, HFC, HC and R744 (CO_2). Mechanisms MC-02 and MC-04 are suitable also for applications up to 140bar (2 030psi).

Lubricants compatibilità

All IGLOO internal mechanisms are suitable for lubricants PAG, POE and MO (mineral oil).

Typical applications

MC-02 is the latest design, highly recommanded for all the most typical applications due to its quality/price ratio.
MC-04 is recommanded for automotive A/C (due to its chemical resistance to fluids commonly used into cars) and for appications where high-temperature resistance is a key factor.
MC-05 and **MC-06** are the cheapest and the most commonly used mechanisms for a number of applications in commercial refrigeration and air-conditioning:
- **MC-05** has an external spring offering the advantage to let the valve reach the 90% of the flow with just the 10% of the stroke of the pin during the opening operation;
- **MC-06** has an internal spring offering the advantage to be more protected, especially if operated by inexpert personnel.

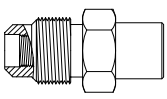
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Straight access fittings

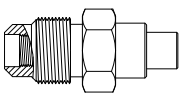
Part number	Flare conn. SAE J513 Thread ANSI/ASME B1.1 with mechanism seat		IDS Connections size of the internal diameter of the copper tube to be brazed		ODF Connections (aka ODS) size of the external diameter of the copper tube to be brazed		Threaded Connection withouth mechanism seat
	ext thread (male)	ext flare (male)	mm	inch	mm	inch	
UC-01	7/16" - 20 UNF	1/4"	-	3/8" (9,52mm)	6mm	-	-
UC-02	7/16" - 20 UNF	1/4"	-	-	-	-	7/16" - 20 UNF ext Flare 1/4" (male)
UC-03	7/16" - 20 UNF	1/4"	8mm 10mm	-	6mm	-	-
UC-4A	7/16" - 20 UNF	1/4"	-	-	-	-	NPT 1/8" ext (male)
UC-4B	7/16" - 20 UNF	1/4"	-	-	-	-	NPT 1/4" ext (male)
UC-4C	7/16" - 20 UNF	1/4"	-	-	-	-	NPT 3/8" ext (male)
UC-05	7/16" - 20 UNF	1/4"	8mm	1/4" (6,35mm) 3/8" (9,52mm)	5mm	-	-
UC-06	7/16" - 20 UNF	1/4"	6mm	-	-	-	-
UC-07	1/2" - 20 UNF	5/16"	7mm	3/8" (9,52mm)	-	-	-
UC-08	1/2" - 20 UNF	5/16"	6mm	3/8" (9,52mm)	-	-	-
UC-09	7/16" - 20 UNF	1/4"	-	3/8" (9,52mm)	-	1/4" (6,35mm)	-
UC-10	7/16" - 20 UNF	1/4"	-	-	-	-	7/16" - 20 UNF int Flare 1/4" (female)

Part number	Flare conn. SAE J513 Thread ANSI/ASME B1.1 with mechanism seat	Copper tube	
	ext thread (male) ext flare (male)	External diameter	Lenghts
UC-01X50	7/16" - 20 UNF ext flare 1/4" (male)	6mm	Tube lenght 50mm (2") Total lenght 76mm (3")
UC-01X100	7/16" - 20 UNF ext flare 1/4" (male)	6mm	Tube lenght 100mm (4") Total lenght 126mm (5")

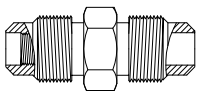
Note: All the access fittings can be supplied with a brazed copper tube of any lenght, internal mechanism and/or cap pre-assembled.



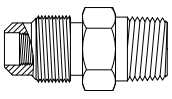
UC-01
UC-06
UC-09



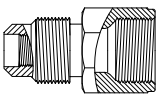
UC-03
UC-05
UC-07
UC-08



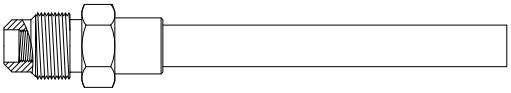
UC-02



UC-4A
UC-4B
UC-4C



UC-10



UC-01X50
UC-01X100

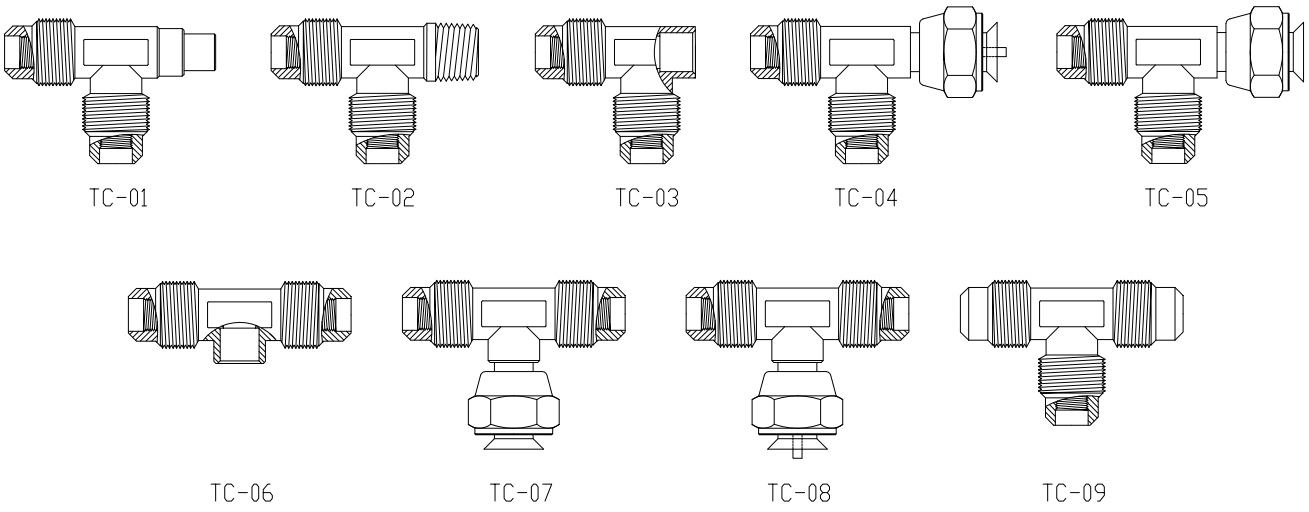
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Tee access fittings

Part number	2x Flare conn. SAE J513 Thread ANSI/ASME B1.1 with mechanism seat		IDS Connections size of the internal diameter of the copper tube to be brazed		ODF Connections (aka ODS) size of the external diameter of the copper tube to be brazed		Threaded Connection withouth mechanism seat
	ext thread (male)	ext flare (male)	mm	inch	mm	inch	
TC-01	7/16" - 20 UNF	1/4"	6	3/8" (9,52mm)	-	-	-
TC-02	7/16" - 20 UNF	1/4"	-	-	-	-	NPT 1/8" ext (male)
TC-03	7/16" - 20 UNF	1/4"	-	-	6	-	-
TC-04	7/16" - 20 UNF	1/4"	-	-	-	-	Swivel nut 1/4" with percussor
TC-05	7/16" - 20 UNF	1/4"	-	-	-	-	Swivel nut 1/4" without percussor
TC-06	7/16" - 20 UNF	1/4"	-	-	6	-	-
TC-07	7/16" - 20 UNF	1/4"	-	-	-	-	Swivel nut 1/4" without percussor
TC-08	7/16" - 20 UNF	1/4"	-	-	-	-	Swivel nut 1/4" with percussor

Part number	1x Flare conn. SAE J513 Thread ANSI/ASME B1.1 with mechanism seat		2x Flare conn. SAE J513 Thread ANSI/ASME B1.1 without mechanism seat
	male thread	male flare	
TC-09	7/16" - 20 UNF	1/4"	7/16" - 20 UNF Ext Flare 1/4" (male)

Note: All the access fittings can be supplied with a brazed copper tube of any lenght, internal mechanism and/or cap pre-assembled.

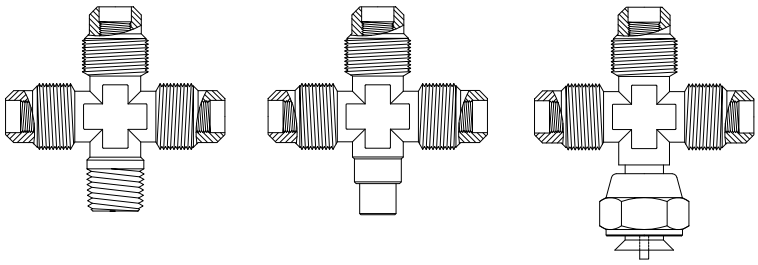


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Cross access fittings

Mod.	3x	Flare conn. SAE J513 Thread ANSI/ASME B1.1 with mechanism seat	IDS Connections size of the internal diameter of the copper tube to be brazed		Flare conn. SAE J513 Thread ANSI/ASME B1.1 without mechanism seat
	male thread	male flare	mm	inch	
CC-01	7/16" - 20 UNF	1/4"	-	-	NPT 1/8" ext (male)
CC-02	7/16" - 20 UNF	1/4"	-	-	NPT 1/4" ext (male)
CC-03	7/16" - 20 UNF	1/4"	6	-	-
CC-04	7/16" - 20 UNF	1/4"	-	-	Swivel nut 1/4"

Note: All the access fittings can be supplied with a brazed copper tube of any lenght, internal mechanism and/or cap pre-assembled.



CC-01
CC-02

CC-03

CC-04

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