Access valves

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Internal mechanisms

Drawing type 1:

MC-01
MC-03
MC-06

Drawing type 2:

MC-02
MC-04
MC-05

Mod.	Color	Drawing	Temperature range (°C)	Maximum working pressure PS (bar)	Tightening torque (Nm)	Fatigue strenght	Refrigerants	Cost
MC-01		Tipo 1	-35 ÷ +125	60 bar	0,3 ÷ 0,35	High	HFC HFO HC CO_2	Medium
MC-02		Tipo 2	-35 ÷ +125	140 bar	0,4 ÷ 0,5	High		High
MC-03		Tipo 1	-40 ÷ 150	200 bar	0,3 ÷ 0,35	Medium		High
MC-04		Tipo 2	-40 ÷ +150	120 bar	0,4 ÷ 0,5	High		High
MC-05		Tipo 2	-40 ÷ +150	60 bar	0,4 ÷ 0,5	Medium		Medium
MC-06		Tipo 1	-40 ÷ +150	140 bar	0,3 ÷ 0,35	Medium		Low

Nota: Upon request, internal mechanisms can also be supplied already mounted on valves and charging fittings.

Selection

The MC-06 internal mechanism is suitable for most applications and offers an excellent performance-to-cost ratio. For specific requirements or to select the most suitable alternative, please consult our technical department.

Fatigue resistance

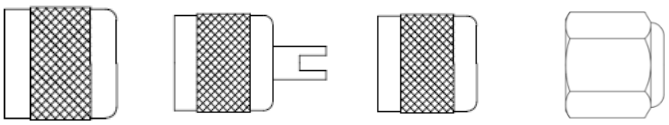
Some mechanisms use compounds with high fatigue strength and better withstand vibrations, tending to maintain their performance unchanged even when used for long periods in high-vibration environments.

Connection recommendations

Remove the mechanism before brazing to avoid problems due to overheating.

Brass caps for access valves

CAP-01: **CAP-02:** **CAP-03:** **CAP-04:**



Mod.	Thread ANSI/ASME B1.1 int thread (female)	Tightening torque	Notes
CAP-01	1/2" - 20 UNF	Hand tightened (about 0,25 Nm)	Without depressor for internal mechanism. With pre-assembled flat rubber gasket (no o-ring).
CAP-02	7/16" - 20 UNF	Hand tightened (about 0,25 Nm)	With depressor for internal mechanism. With pre-assembled flat rubber gasket (no o-ring).
CAP-03	7/16" - 20 UNF	Hand tightened (about 0,25 Nm)	Without depressor for internal mechanism. With pre-assembled flat rubber gasket (no o-ring).
CAP-04	7/16" - 20 UNF	11÷14 Nm	Hexagonal cap with pre-assembled copper gasket.

Available models

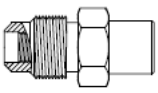
(continued)

Straight access valves

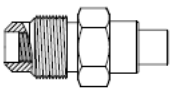
Mod.	Flare connection SAE J513 Thread ANSI/ASME B1.1 with mechanism seat		IDS Connections size of the hole made in the copper tube to be brazed into		ODF Connections (aka ODS) size of the external diameter of the copper tube to be brazed		Threaded connection without mechanism seat
	ext thread (male)	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)

Mod.	Flare connection 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")

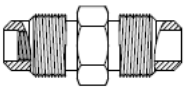
Note: All the access fittings can be supplied with a brazed copper tube of any lenght, internal mechanism and/or cap pre-assembled.



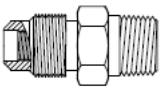
UC-01
UC-06
UC-09



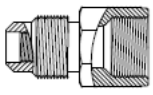
UC-03
UC-05
UC-07
UC-08



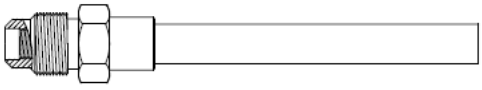
UC-02



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



UC-10



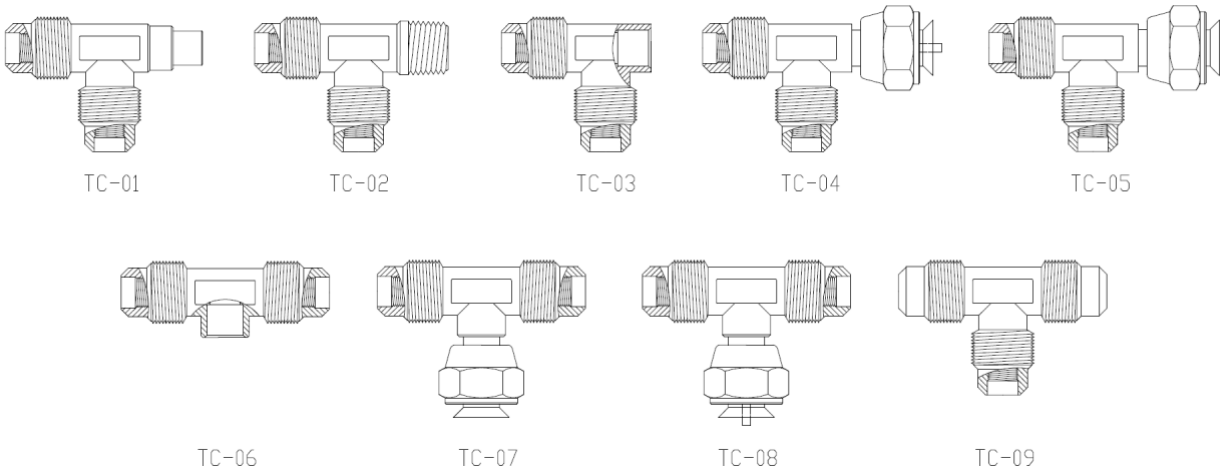
UC-01X50
UC-01X100

Tee access fittings

Mod.	2x Flare connection SAE J513 Trhead ANSI/ASME B1.1 with mechanism seat		IDS Connections size of the hole made in the copper tube to be brazed into		ODF Connections (aka ODS) size of the external diameter of the copper tube to be brazed		Threaded connection without 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" withour percussor
TC-06	7/16" - 20 UNF	1/4"	-	-	6	-	-
TC-07	7/16" - 20 UNF	1/4"	-	-	-	-	Swivel nut 1/4" withour percussor
TC-08	7/16" - 20 UNF	1/4"	-	-	-	-	Swivel nut 1/4" with percussor

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

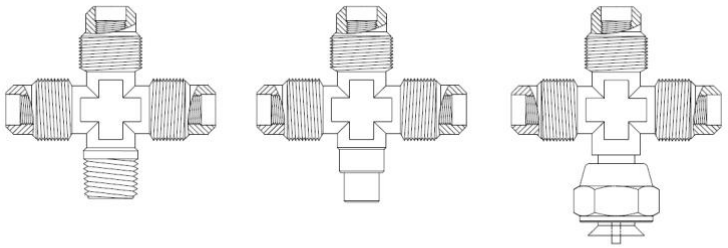
Note: All the access fittings can be supplied with internal mechanism and/or cap pre-assembled.



Cross access fittings

Mod.	3x	Flare conn. SAE J513 Thread ANSI/ASME B1.1 with mechanism seat	IDS Connections size of the hole made in the copper tube to be brazed into		Threaded connection 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" with percussor

Note: All the access fittings can be supplied with internal mechanism and/or cap pre-assembled.



CC-01
CC-02

CC-03

CC-04

Access valve IGLOO® CORE

Permanent mechanical connection without brazing

Introduction

IGLOO® CORE service ports are access valves with permanent mechanical connection that can be installed at room temperature, without the need for brazing.

Application field

IGLOO® CORE service ports are used in:
- Air treatment systems (Air conditioners, heat pumps and dehumidifiers)
- Catering refrigeration equipment (Display counters, continuous flow chillers, portable cooling systems, refrigerated counters)
- Domestic refrigeration appliances (Refrigerators, freezers, wine cellars)
- Ready-to-use refrigeration equipment (Refrigerated cabinets, bar counters, lockers, chillers, ice makers, ice cream machines)

Components and installation tools

IGLOO® CORE SERVICE PORT (1)
Compliant with ISO 14903 and supplied complete with internal mechanism (2), metal sealing cap (3) and ring (4) **pre-assembled at the factory.**

IGLOO® SEAL ANAEROBIC SEALANT (5)
Compensates for surface irregularities of the tube (scratches, marks) and polymerizes within seconds after installation ensuring perfect hermetic sealing.

IGLOO® PRESS TOOL (6)
Installation tool specifically developed for quick and safe installation of IGLOO® CORE.

Working principle

IGLOO® CORE is a quick-connect refrigerant service valve for copper tubes, installable without welding or flame tools. The pre-assembled metal sealing copper cap and internal mechanism ensure immediate installation and long-term reliability.

It has passed all tests required by ISO 14903 for A2, A2L, A3 refrigerants. It is compatible with all HC, HFC, HFO refrigerants (and their blends) and CO_2 R744. Not suitable for NH3.

The system uses a compression ring and a tubular body that receives the tube end. During installation, the tube is inserted up to the internal stop, then the ring is pushed axially with the dedicated IGLOO® PRESS tool. The internal conical profile of the ring reduces the body diameter, creating controlled plastic deformation and hermetic metallic contact between tube and body.

The resulting permanent elastic preload ensures lifetime sealing with performance equivalent to traditional brazing.

The metal-type seal is permanent, but the use of IGLOO® SEAL anaerobic sealant is recommended to compensate for any irregularities on the tube surface. The sealant polymerizes instantly and allows filling any scratches and axial grooves that may have been created during normal tube processing or handling.

Anaerobic sealant IGLOO® SEAL

Metal tubes often present more or less visible superficial longitudinal grooves due to their manufacturing process. These production defects are compensated by applying IGLOO® SEAL on the tube ends before assembly, which by capillary action penetrates and completely fills even microscopic cavities.

IGLOO® SEAL is an anaerobic sealant - not an adhesive - that polymerizes in the absence of oxygen in contact with free metallic ions, such as those on the tube and fitting surfaces. It maintains permanent elasticity from -50°C to 150°C (from -58°F to 302°F) excellently compensating thermal expansions and vibrations. Containing no solvents there is no need to wait for it to dry and it is ready to be pressurized immediately after assembly.

Application of IGLOO® SEAL

Check the expiration date before applying IGLOO® SEAL. Always ensure that the entire circumference of the tube is covered with IGLOO® SEAL.

STEP 1: Apply IGLOO® SEAL on the clean metal tube.

STEP 2: Rotate IGLOO® CORE 360° around the tube end to distribute the sealant.

Curing time

Always ensure that IGLOO® SEAL is completely cured before exerting any force on the IGLOO® CORE service port by moving, rotating or bending the tube.

Technical specifications and certifications

Maximum working pressure: 140 bar (2030 psi) - Comply with the allowable working pressure of the tube used.
Allowed refrigerants: Suitable for all HC, HFC, HFO refrigerants (and their blends) and CO_2 R744. Not suitable for NH3.
Temperature range: from -50°C to 150°C (from -58°F to 302°F)
Cu tube diameter: 6 mm and 1/4"
Minimum Cu tube wall thickness: 0.7 mm (0.028")
Reference standards: EN 378-2 and ISO 14903

Available models

Access valves IGLOO® CORE

Mod.	Thread ANSI/ASME B1.1 ext thread (male)	Flare connection SAE J513	Tube diameter		Pre-assembled internal mechanism	Pre-assembled cap
			mm	inch		
CRX-A-01	7/16" - 20 UNF	1/4"	6	1/4"	MC-06	CAP-04

Assembly tool IGLOO® PRESS

Mod.	Type	Suitable for IGLOO®CORE
CTX-A	Manual	CRX-A-**

Anaerobic sealant IGLOO® SEAL

Mod.	Capacity of 1 bottle	Tube material	Environmental temperature	Achievable joints (approx.)
CSX-L	50 ml	Copper	Below or equal 30°C	500 (0,1 ml/each)
CSX-H	50 ml	Copper	Above 30°C	500 (0,1 ml/each)

Instructions

STEP 1: Completely deburr the tube end with the deburring tool

STEP 2: Clean the end with rotary movements using abrasive paper. Avoid movements in longitudinal direction

STEP 3: Insert the service port up to the internal stop and mark the depth on the tube

STEP 4: Apply the appropriate sealant for material and ambient temperature all around the sealing area checking the sealant polymerization times

STEP 5: Reinsert the service port up to the internal stop

STEP 6: Position the jaws against the ring and the service port. Press until the ring is in contact with the fitting shoulder

STEP 7: Check the marking position to verify that the tube depth has not changed during pressing

STEP 8: Wait for complete sealant polymerization before stressing the connection by moving, rotating or bending the tube