



HANDBOOK

FITTINGS FOR REFRIGERATING SYSTEMS



INDEX

Vibration absorbers	07
Threaded brass fittings	10
Access fittings & valve cores	19

FROM QUALITY OUR NATURAL DEVELOPMENT

Achieved the goal of fifty years working in the industry of Refrigeration and Air Conditioning, Castel Quality Range of Products is well known and highly appreciated all over the world. Quality is the main issue of our Company and it has a special priority, in every step, all along the production cycle. UNI EN ISO 9001:2008, issued by ICIM, certifies the Quality System of the Factory. Moreover Castel Products count a number of certifications in conformity with EEC Directives and with European and American Quality Approval. We produce on high tech machinery and updated automatic production lines, operating in conformity with the safety and environment standards currently enforced. Castel offers to the Refrigeration and Air Conditioning Market and to the Manufacturers fully tested products suitable with HCFC and HFC Refrigerants currently used in the Refrigeration & Air Conditioning Industry.

FITTINGS FOR REFRIGERATING SYSTEMS



External leakage

Allowable external leakage, for the products illustrated in this Handbook, agrees to the definition given in Par. 9.4 of EN 12284 : 2003 Standard:

“During the test, no bubbles shall form over a period of at least one minute when the specimen is immersed in water with low surface tension...”

Pressure containment

All the products illustrated in this Handbook, if submitted to hydrostatic test, guarantee a pressure strength at least equal to 1,43 x PS in compliance with the Directive 97/23/EC.

All the products illustrated in this Handbook, if submitted to burst test, guarantee a pressure strength at least equal to 3 x PS according to EN 378-2 : 2008 Standard.

Weights

The weights of the items listed in this Handbook include packaging.

Guarantee

All Castel products are covered by a 12 – months warranty. This warranty covers all products or parts thereof that turn out to be defective within the warranty period. In this case, at his own expenses, the customer shall return the defective item with a detailed description of the claimed defects. The warranty doesn't apply if the defect of Castel products are due to mistakes either by customer or by third parties such wrong installations, use contrary to Castel indications, tampering. In case of defects of its own products, Castel will only replace the defective goods and will not refund damages of any kind.

The technical data shown on this catalogue are indicative. Castel reserves the right to modify the same at any time without any previous notice.

The products listed in this handbook are protected according to the law.

CONSTRUCTION MATERIALS

The main welding between various parts, including the copper/stainless steel connections are TIG welded (figure 1). This solution makes the Castel Vibration Absorbers particularly resistant to the overheating during brazing to the tubing. The parts of Castel Vibration Absorbers are manufactured with the following materials:

- Copper tube EN 12735-1 – Cu-DHP for copper end
- Stainless steel EN 10088-1 – 1.4305/1.4301 for fitting
- Stainless steel EN 10028-7 – 1.4541/1.4404 for corrugated flexible
- Stainless steel EN 10028-7 – 1.4301 for net holder
- Stainless steel EN 10088-3 – 1.4301 for wire “braid”

INSTALLATION

A vibration absorbers can be installed both on suction and discharge lines of a refrigerating system, as close as possible to the compressor. The vibration absorbers are not designed to compensate possible piping misalignment. Vibration absorbers should be installed perpendicularly to the direction of vibrations. When vibrations exist on two planes, two vibrations absorbers should be used, as shown on fig 2 and 3. For the maximum absorption of vibrations, the refrigerant line should be anchored at the end of the vibration absorber, as shown on fig 2 and 3.

Castel vibration absorbers can be installed vertically too, because they are designed to avoid the retention of condensing water in the wavy zone near to the connections. So there are no problems to install them with temperatures lower than 0°C.

Vibration absorbers are not designed to absorb axial or torsion stress. Care should be taken to allow sufficient space for the vibration to avoid static compression or tension, after brazing on place.

High speed of the refrigerant fluid can produce vibration and noise phenomena. In this case it's advisable to install a larger size of Vibration Absorber.

The connection of the vibration absorbers to the piping is normally performed by a brazing process. The specific design and construction of vibration absorbers allows welding without particular protections to prevent overheating.

WARNING! Ensure a gap corresponding to the 2% of the total length of the vibration absorber device to compensate for possible thermal expansion.



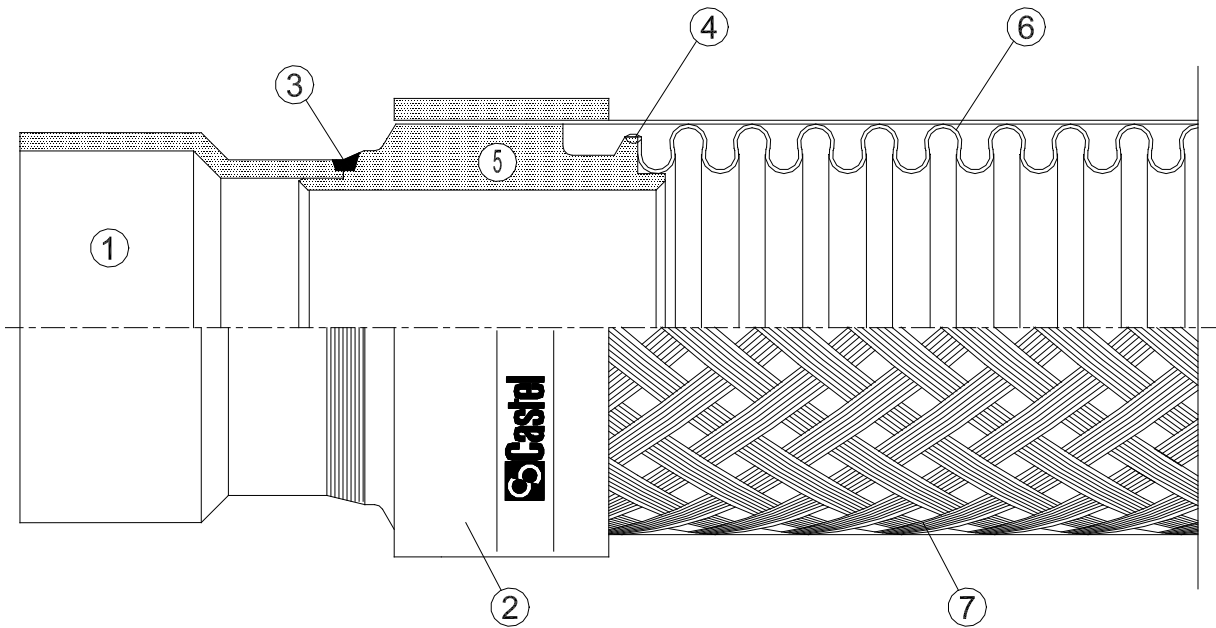
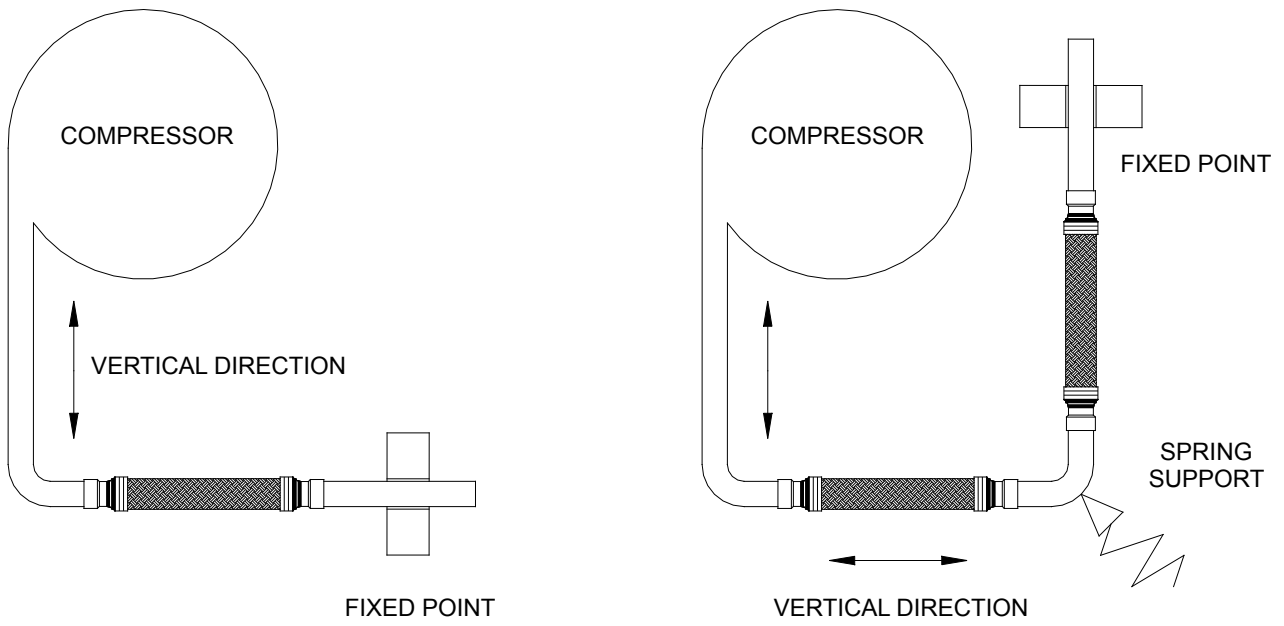
APPLICATIONS

The vibration absorbers are designed for installation on commercial refrigerating systems and on civil and industrial air conditioning plants. The function of this item is to avoid the transmission of compressor's vibrations to the refrigerating system pipes, reducing the risk of damage and the noise level. The vibration absorbers can also compensate small thermal expansion of the piping.

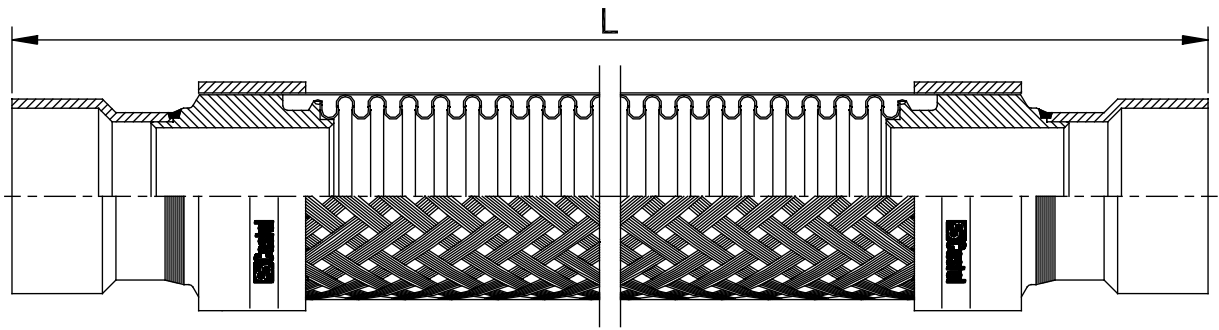
The vibration absorbers are classified “Pressure vessels” according Article 1, Section 2.1.4 of the Directive 97/23/EC and are subject to Article 3, Section 1.3 of the same Directive.

They are designed for installation systems, which use the following refrigerant fluids: R22 , R134a , R404A , R407C , R410A ; R507 proper to the Group II (as defined in Article 9, Section 2.2 of Directive 97/23/EC and referred to in Directive 67/548/EEC).

For specific applications with refrigerant fluids not listed above, always proper to the Group II, please contact Castel Technical Department.



- 1 - Copper connection
- 2 - Net holder
- 3 - Copper ends welding
- 4 - Corrugated flexible welding
- 5 - Fitting
- 6 - Corrugated flexible
- 7 - Stainless steel wire braid



Catalogue Nr.	Connections		Length [mm]	Weight [g]	Working pressure (PS), depending on temperature [bar]			Risk Category according to PED
	ODS				-80 / +100 °C	+ 120 °C	+ 140 °C	
	[mm]	[inch]						
7690/3	-	3/8	230	91	45	44	43,5	Art. 3.3
7690/M10	10	-		98				
7690/M12	12	-		122				
7690/4	-	1/2		120				
7690/M15	15	-	255	190				
7690/5	16	5/8		200				
7690/M18	18	-		180				
7690/6	-	3/4		180				
7690/7	22	7/8	290	317				
7690/M28	28	-	330	380				
7690/9	-	1.1/8		416				
7690/11	35	1.3/8	375	846				
7690/13	-	1.5/8	430	1088				
7690/M42	42	-		1200				
7690/17	54	2.1/8	510	2060	40	39	38,5	
7690/M64	64	-	690	3312	35	34,5	34	I
7690/21	67	2.5/8		3500				
7690/24	76	3		3610				
7690/25	80	3.1/8	710	3660	25	24,5	24	
7690/28	89	3.1/2		4550				
7690/34	108	4.1/4		4770				

THREADED BRASS FITTINGS



The sealing system between the end of a male connection and a Flare-ODS adapter allows avoiding the flaring process on copper tube end (national laws of some European countries don't accept this operation) because the tube end is brazed into the solder connection of the adapter. We wish to remember to our customers that they may assure no leakage of the male connection/adapter system only interposing the copper gasket 7580, supplied with the same adapter.

Flange joints 7630 consist of two brass bushes for brazing to the copper tubes. When the four flange screws are tightened, a gasket, put between the two bushes, assures the seal of flanged joints.

CONSTRUCTION

All nuts, from series 7010 to series 7050, and all the elbows, TEE and cross fittings, from series 7210 to series 7410, are manufactured with hot forged brass EN 12420 – CW 617N.

All straight fittings, from series 7110 to series 7170, and all the plug, from series 7510 to series 7520, are machined by brass bar EN 12164 – CW 614N.

Seal caps series 7560 and gaskets series 7580 are made with copper Cu – ETP UNI 5649.

The main parts of the flanges joints are made with the following materials:

- Hot forged brass EN 12420 – CW 617N for bushes and flanges
- Aramidic fibers for seal gasket of the flanges

APPLICATIONS

All the fittings, shown in this chapter, are excluded from the scope of Directive 97/23/EC, as specified in the Guidelines 1/8 and 1/9, because they are piping components.

They are designed for installation on commercial refrigerating systems and on civil and industrial conditioning plants, which use the following refrigerant fluids: R22 , R134a , R404A , R407C, R410A, R507 proper to the Group II (as defined in Article 9, Section 2.2 of Directive 97/23/EC and referred to in Directive 67/548/EEC).

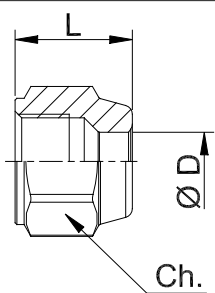
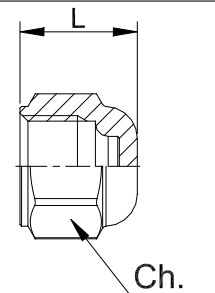
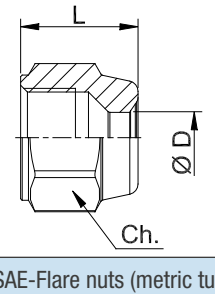
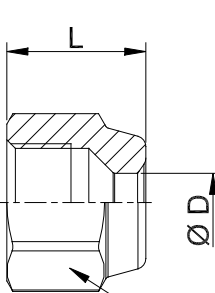
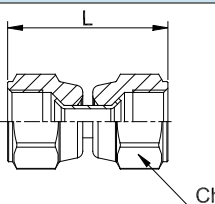
For specific applications with refrigerant fluids not listed above, always proper to the Group2, please contact Castel technical Department.

OPERATION

The sealing system between the end of a male connection and a nut series 7010 , 7020 and 7030 requires a special flaring of the end of copper tube, the so-called flared connection.



TABLE 1: General Characteristics

	Catalogue Number	International Reference	SAE Flare	Copper pipe		PS [bar]	Dimensions [mm]			Wrench torque min / max [Nm]	Weight [g]						
				Ø [in.]	Ø [mm]		Ø D	L	Ch								
SAE-Flare nuts (inch tubing)																	
	7010/22	NS4-4	1/4"	1/4"	6	45	6,5	15,5	17	11 / 14	19						
	7010/33	NS4-6	3/8"	3/8"	-		9,7	19,5	22	20 / 25	36						
	7010/44	NS4-8	1/2"	1/2"	-		13	22,5	25	34 / 47	50						
	7010/55	NS4-10	5/8"	5/8"	16		16,2	25	28	54 / 75	66						
	7010/66	NS4-12	3/4"	3/4"	-		19,4	29,5	33	68 / 71	99						
	7010/77	NS4-14	7/8"	7/8"	22		22,5	36,5	41	90 / 120	194						
	7010/88	NS4-16	1"	1"	-		25,6			120 / 150	150						
SAE-Flare cap nuts																	
	7020/20	N5-4 NUT	CAP	1/4"	blind	blind	45	-	15	16	8,5 / 11,5	16					
	7020/X02	N5-5 NUT	CAP	5/16"								14					
SAE-Flare reducing nuts (inch tubing)																	
	7020/32	NRS4-64	3/8"	1/4"	6	45	6,5	19,5	22	20 / 25	38						
	7020/43	NRS4-86	1/2"	3/8"	-		9,7	22,5	25	34 / 47	52						
	7020/54	NRS4-108	5/8"	1/2"	-		13	25	28	54 / 75	71						
	7020/65	NRS4-1210	3/4"	5/8"	16		16,2	29,5	33	68 / 71	104						
	7020/87	NRS4-1614	1"	7/8"	22		22,5	36,5	41	120 / 150	160						
SAE-Flare nuts (metric tubing)																	
	7030/2M5	-	1/4"	-	-	45	5,2	15,5	17	11 / 14	19	5					
	7030/3M8											8	8,2	19,5	22	20 / 25	35
	7030/3M10											10	10,2				
	7030/4M10		10				22,5	25	34 / 47	52							
	7030/4M12		12								12,2	51					
	7030/X04 (1)		12				12,5	19,5	25	34 / 47	46						
	7030/4M14		14				14,2	22,5				48					
	7030/5M12		12				25	28	54 / 75	71							
	7030/5M14		14								14,2	69					
	7030/6M14		14				29,5	33	68 / 71	107							
	7030/6M18		18								18,2	102					
	SAE-Flare twin nuts																
			7050/2				US4-4	1/4"	-	-	45	-	-	32	17	11 / 14	39
7050/3		US4-6	3/8"	40	22	20 / 25	75										
7050/4		US4-8	1/2"	46	25	34 / 47	105										
7050/5		US4-10	5/8"	51	28	54 / 75	140										

(1) : shortened

TABLE 2: General Characteristics

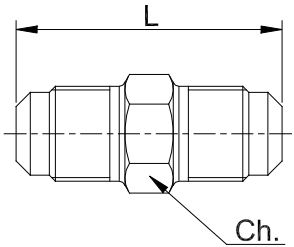
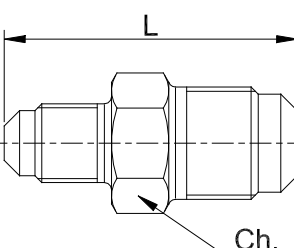
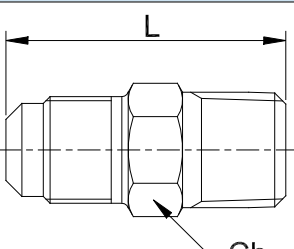
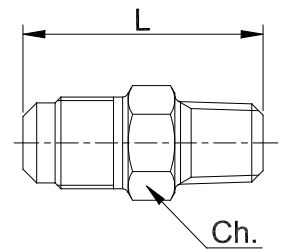
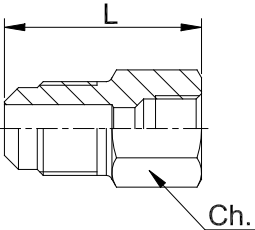
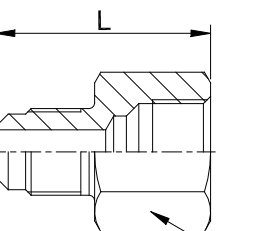
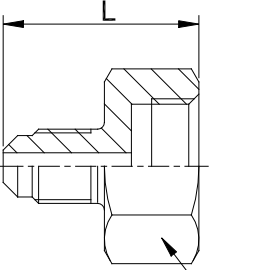
	Catalogue Number	International Reference	Connections		PS [bar]	Dimensions [mm]		Weight [g]
			SAE Flare	NPT		L	Ch	
SAE-Flare unions								
	7110/2	U2-4	1/4"	-	45	38	12	23
	7110/3	U2-6	3/8"			44	17	46
	7110/4	U2-8	1/2"			50	20	73
	7110/5	U2-10	5/8"			58	23	113
	7110/6	U2-12	3/4"			63	27	164
	7110/8	U2-16	1"			72	36	304
Reducing SAE-Flare unions								
	7120/23	UR2-64	1/4" x 3/8"	-	45	42	17	38
	7120/24	UR2-84	1/4" x 1/2"			45		58
	7120/34	UR2-86	3/8" x 1/2"			48	20	66
	7120/35	UR2-106	3/8" x 5/8"			52	23	89
	7120/45	UR2-108	1/2" x 5/8"			54	23	98
	7120/46	UR2-128	1/2" x 3/4"			57,5	27	136
	7120/56	UR2-1210	5/8" x 3/4"			61,5	27	150
SAE Flare / NPT unions								
	7130/2	U1-4B	1/4"	1/4"	45	38,1	14	32
	7130/3	U1-6C	3/8"	3/8"		41,2	17	48
	7130/4	U1-8D	1/2"	1/2"		49,8	22	92
	7130/6	U1-12F	3/4"	3/4"		57,6	27	152
	7130/8	U1-16H	1"	1"		68	36	277
SAE Flare / NPT reducing unions								
	7140/21	U1-4A	1/4"	1/8"	45	32,9	12	20
	7140/32	U1-6B	3/8"	1/4"		41,1	17	39
	7140/34	U1-6D	3/8"	1/2"		45,8	22	77
	7140/43	U1-8C	1/2"	3/8"		45,2	20	63
	7140/54	U1-10D	5/8"	1/2"		53,8	23	102

TABLE 3: General Characteristics

	Catalogue Number	International Reference	Connections						PS [bar]	Dimensions [mm]		Weight [g]
			SAE Flare		NPT	GAS	ODS			L	Ch	
			m	f			∅ [in.]	∅ [mm]				
Male/female reducing unions (reduced female)												
	7150/21	U3-4A	1/4"	-	1/8" f					29	14	21
	7150/32	UR3-46	3/8"	1/4"						33	17	38
	7150/42	UR3-48	1/2"	1/4"						35	22	75
	7150/43	UR3-68	1/2"	3/8"	-	-	-	-	45	38	22	66
	7150/54	UR3-810	5/8"	1/2"						45	25	99
	7150/64	UR3-812	3/4"	1/2"						46,5	27	132
	7150/65	UR3-1012	3/4"	5/8"						49,5	30	157
Male/female reducing unions (reduced male)												
	7150/X29	-	-	1/4"	1/8"					24	17	24
	7150/X27	-	-	1/4"	1/4"					30	17	35
	7150/23	UR3-64	1/4"	3/8"						33	22	49
	7150/24	UR3-84	1/4"	1/2"						36	25	66
	7150/34	UR3-86	3/8"	1/2"	-	-	-	-	45	39		74
	7150/45	UR3-108	1/2"	5/8"						44	30	125
	7150/46	UR3-128	1/2"	3/4"						45	34	142
	7150/56	UR3-1210	5/8"	3/4"						49	34	157
Cylinder adaptors												
	7154/2		1/4"	20 - 14 left thread, female						25	46	
	7156/2	-	1/4"	W 21,8 - 14 right thread, female				45	29	27	52	

Be continued

TABLE 3: General Characteristics

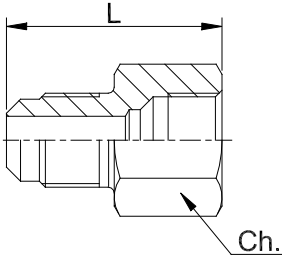
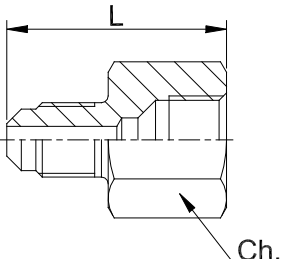
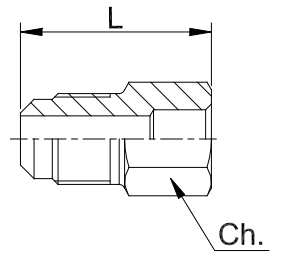
	Catalogue Number	International Reference	Connections						PS [bar]	Dimensions [mm]		Weight [g]	
			SAE Flare		NPT	GAS	ODS			L	Ch		
			m	f			Ø [in.]	Ø [mm]					
Male/female unions													
	7160/2	-	1/4"	1/4"	-	-	-	-	45	30,5	17	31	
	7160/3		3/8"	3/8"						36	22	57	
	7160/4		1/2"	1/2"						41	25	84	
Unions SAE-Flare to BSP													
	7164/2	-	1/4"	-	-	-	-	-	45	32,5	20	45	
	7166/2		-	1/4"						G1/4" m	32	17	25
Male SAE-Flare/solder unions													
	7170/22	US3-44	1/4"	-	-	-	-	-	45	26,5	12	17	
	7170/2M8	-											1/4"
	7170/33	US3-66	3/8"							3/8"	3/8"	-	8
	7170/3M8	-								3/8"	3/8"	10	
	7170/3M10	-								3/8"	3/8"	12	
	7170/34	US3-68	1/2"							1/2"	1/2"	-	12
	7170/44	US3-88								1/2"	1/2"	16	
	7170/4M12	-	5/8"							5/8"	5/8"	16	18
	7170/55	US3-1010								5/8"	5/8"	18	
	7170/6M18	-	3/4"							3/4"	3/4"	-	18
	7170/65	US3-1210								3/4"	3/4"	27	
	7170/67	US3-1214								3/4"	3/4"	36	

TABLE 4: General Characteristics

	Catalogue Number	Item Position	Connections			PS [bar]	Dimensions [mm]					Wrench torque min / max [Nm]	Weight [g]
			SAE Flare	ODS			L ₁	L ₂	L ₃	L ₄	Ch		
				Ø [in.]	Ø [mm]								
Flare / ODS adapters													
	9901/X11	1	1/4"	-	6	45	-	-	16	12,5	17	11 / 14	274
		2					21	3,5	-	-	-	-	
		3					-						
	9901/X12	1	3/8"	-	10		-	-	18,5	14,7	22	20 / 25	393
		2					23,5	4	-	-	-	-	
		3					-						
	9901/X13	1	1/2"	-	12		-	-	21	17	27	34 / 47	672
		2					26	4,5	-	-	-	-	
		3					-						
	9901/X14	1	5/8"	5/8"	16		-	-	22,5	18	30	54 / 75	511
		2					27,5	5	-	-	-	-	
		3					-						
	9901/X15	1	3/4"	-	18		-	-	25	20	36	68 / 71	806
		2					30	5	-	-	-	-	
		3					-						
	9901/X16	1	1/4"	1/4"	-		-	-	16	12,5	17	11 / 14	274
		2					21	3,5	-	-	-	-	
		3					-						
	9901/X17	1	3/8"	3/8"	-		-	-	18,5	14,7	22	20 / 25	383
2		23,5				4	-	-	-	-			
3		-											
9901/X18	1	1/2"	1/2"	-	-	-	21	17	27	34 / 47	672		
	2				26	4,5	-	-	-	-			
	3				-								
9901/X19	1	3/4"	3/4"	-	-	-	25	20	36	68 / 71	806		
	2				30	5	-	-	-	-			
	3				-								

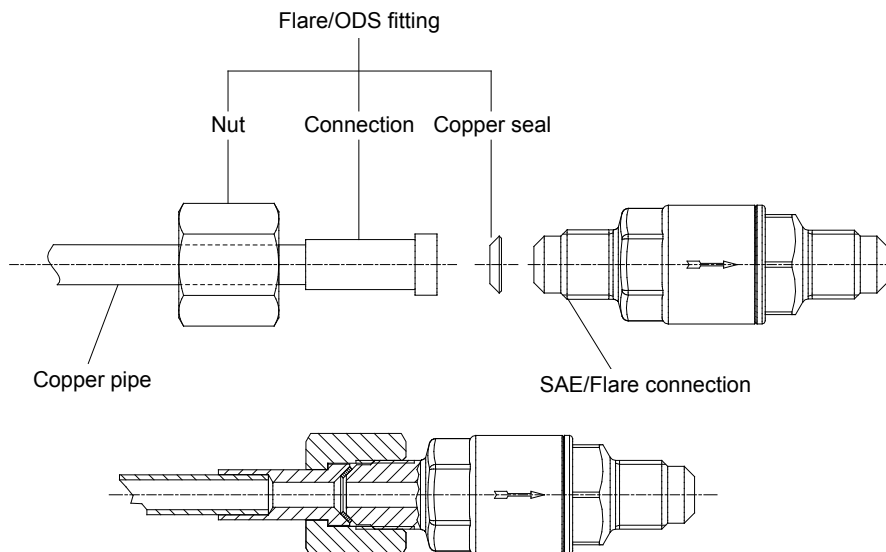


TABLE 5: General Characteristics

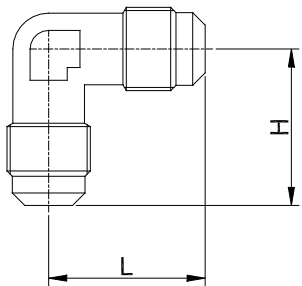
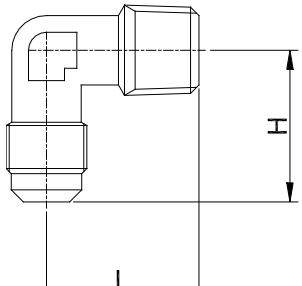
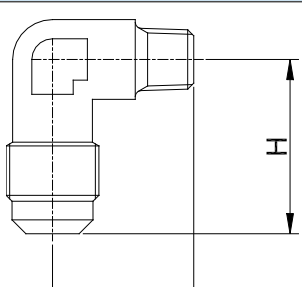
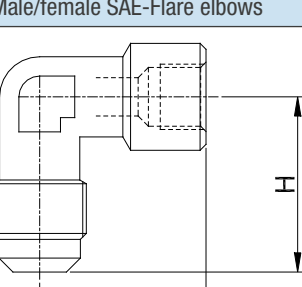
	Catalogue Number	International Reference	Connections			PS [bar]	Dimensions [mm]		Weight [g]
			SAE Flare		NPT		H	L	
			m	f					
SAE-Flare elbows									
	7210/2	E2-4	1/4"			45	24,5	24,5	24
	7210/3	E2-6	3/8"				29,5	29,5	60
	7210/4	E2-8	1/2"	-	-		32,5	32,5	80
	7210/5	E2-10	5/8"				36	36	116
	7210/6	E2-12	3/4"				42,5	42,5	192
SAE-Flare / NPT elbows									
	7220/2	E1-4B	1/4"		1/4"	45	26	24	33
	7220/3	E1-6C	3/8"		3/8"		29,5	28,5	54
	7220/4	E1-8D	1/2"		1/2"		32,5	32	91
	7220/6	E1-12F	3/4"		3/4"		42,5	39,5	183
SAE-Flare / reduced NPT elbows									
	7230/21	E1-4A	1/4"		1/8"	45	24,5	23,5	25
	7230/32	E1-6B	3/8"		1/4"		29,5	29,5	46
	7230/43	E1-8C	1/2"		3/8"		32,5	31	97
	7230/54	E1-10D	5/8"		1/2"		36	35	112
Male/female SAE-Flare elbows									
	7240/2		1/4"	1/4"		45	28,5	28	56
	7240/3	-	3/8"	3/8"	-		32	31	80
	7240/4		1/2"	1/2"			39,5	38	200

TABLE 6: General Characteristics

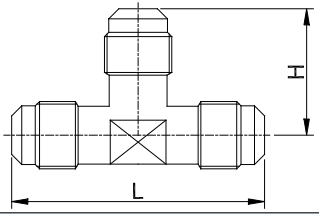
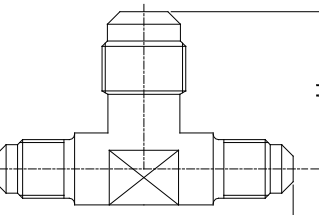
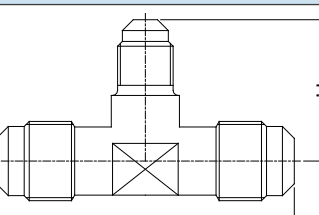
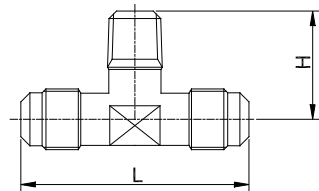
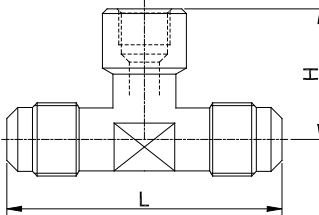
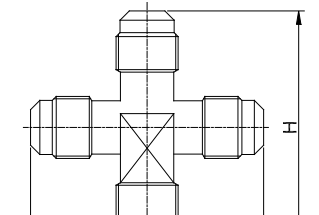
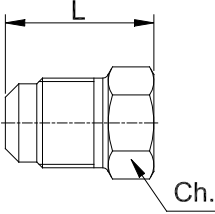
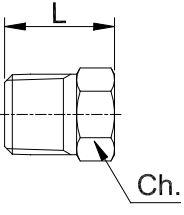
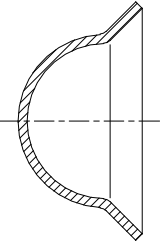

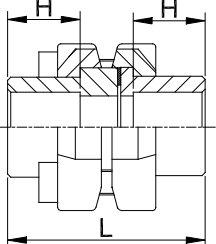
	Catalogue Number	International Reference	Connections					PS [bar]	Dimensions [mm]		Weight [g]
			SAE Flare				NPT (3)		L	Ch	
			(1)	(2)	(3)	(4)					
SAE-Flare TEE											
	7310/2	T2-4	1/4"	1/4"	1/4"	-	-	45	23,5	47	35
	7310/3	T2-6	3/8"	3/8"	3/8"				29	58	70
	7310/4	T2-8	1/2"	1/2"	1/2"				31,5	63	98
	7310/5	T2-10	5/8"	5/8"	5/8"				36	72	150
	7310/6	T2-12	3/4"	3/4"	3/4"				41,5	83	235
SAE-Flare reducing TEE (reduced side connections)											
	7320/223	TR2-46	1/4"	1/4"	3/8"	-	-	45	29	56	77
	7320/334	TR2-68	3/8"	3/8"	1/2"				32,5	63	95
	7320/445	TR2-810	1/2"	1/2"	5/8"				38	72	153
	7320/556	TR2-1012	5/8"	5/8"	3/4"				41,5	83	228
SAE-Flare reducing TEE (reduced central connection)											
	7320/332	TR2-64	3/8"	3/8"	1/4"	-	-	45	28	58	77
	7320/443	TR2-86	1/2"	1/2"	3/8"				32,5	63	101
	7320/554	TR2-108	5/8"	5/8"	1/2"				38	72	149
	7320/665	TR2-1210	3/4"	3/4"	5/8"				41,5	83	232
SAE-Flare / NPT TEE (taper central connection)											
	7330/221	T1-4A	1/4"	1/4"	-	-	1/8"	45	21	47	33
	7330/222	T1-4B	1/4"	1/4"			1/4"		24	51	45
	7330/332	T1-6B	3/8"	3/8"			1/4"		28	58	65
Male/female SAE-Flare TEE (female central connection)											
	7340/222	T6-4	1/4"	1/4"	1/4"	-	-	45	27,5	56	73
SAE-Flare cross											
	7410/2	C1-4	1/4"	1/4"	1/4"	1/4"	-	45	52	52	72

TABLE 7: General Characteristics

	Catalogue Number	International Reference	Connections				PS [bar]	Dimensions [mm]			Wrench torque [Nm]	Weight [g]	
			SAE Flare	NPT	ODS			H	L	Ch			
					Ø [in.]	Ø [mm]							
SAE-Flare plugs													
	7510/2	P2-4	1/4"	-	-	-	45	-	23	12	11 / 14	19	
	7510/3	P2-6	3/8"	-	-	-		-	26	17	20 / 25	40	
	7510/4	P2-8	1/2"	-	-	-		-	30	20	34 / 47	67	
NPT plugs													
	7520/1	121-B-02	-	1/8"	-	-	45	-	15,9	12	10 / 13	12	
	7520/2	121-B-04	-	1/4"	-	-		-	23,1	14	15 / 20	27	
	7520/3	121-B-06	-	3/8"	-	-		-	23,2	17	17 / 22	43	
	7520/4	121-B-08	-	1/2"	-	-		-	29,8	22	25 / 35	87	
	7520/6	121-B-12	-	3/4"	-	-		-	32,1	27	30 / 40	149	
	7520/8	121-B-16	-	1"	-	-		-	39	34	60 / 80	279	
Copper seal caps													
	7560/2	B1-4	1/4"	-	-	-	45	-	-	-	-	0,5	
	7560/3	B1-6	3/8"	-	-	-		-	-	-	-	-	1,1
	7560/4	B1-8	1/2"	-	-	-		-	-	-	-	-	2,5
	7560/5	B1-10	5/8"	-	-	-		-	-	-	-	-	2,6
	7560/6	B1-12	3/4"	-	-	-		-	-	-	-	-	3,7
	7560/7	B1-14	7/8"	-	-	-		-	-	-	-	-	5,3
Copper gaskets													
	7580/2	B2-4	1/4"	-	-	-	45	-	-	-	-	0,2	
	7580/3	B2-6	3/8"	-	-	-		-	-	-	-	-	0,5
	7580/4	B2-8	1/2"	-	-	-		-	-	-	-	-	0,7
	7580/5	B2-10	5/8"	-	-	-		-	-	-	-	-	1,1
	7580/6	B2-12	3/4"	-	-	-		-	-	-	-	-	1,2
Flange joints													
	7630/7	-	-	-	7/8"	-	45	22	63	-	20 / 24	612	
	7630/9	-	-	-	1.1/8"	-		23				490	
	7630/11	-	-	-	1.3/8"	35		24				67	1100
	7630/13	-	-	-	1.5/8"	-		24	67	42 / 50	1412		
	7630/M42	-	-	-	-	42		25	71	68 / 80	2020		
	7630/17	-	-	-	2.1/8"	54		25	71				



APPLICATIONS

All the access fittings and valve cores, shown in this chapter, are excluded from the scope of Directive 97/23/EC, as specified in the Guidelines 1/8 and 1/9, because they are piping components.

They are designed for installation on commercial refrigerating systems and on civil and industrial conditioning plants, which use the following refrigerant fluids: R22 , R134a , R404A , R407C , R410A ; R507

proper to the Group II (as defined in Article 9, Section 2.2 of Directive 97/23/EC and referred to in Directive 67/548/EEC). For specific applications with refrigerant fluids not listed above, always proper to the Group II, please contact Castel Technical Department.

The access fittings allow creating a loading or draining point

rapidly and with a minimum expense.

After completion of the loading or draining operations, the cap with gasket (code 8392/A or code 8391/A) prevents any leakage.

For particular customer's requirements, the 7020/20 flare blind nut may replace the 8392/A cap.

This solution requires to screw the nut with a torque wrench at $8,5 \div 11,5$ Nm.

For system using R410A refrigerant, Castel has developed three specific access fittings with 5/16" SAE-Flare connection (codes 8350/X09 , 8351/X05 and 8351/X07) that have to be used with the following parts:

- valve core, code 8395/A1
- flare blind nut, code 7020/X02

Also this solution requires to screw the nut with a torque wrench at $8,5 \div 11,5$ Nm.

OPERATION

The valve consists of a body that can have different shapes and sizes, according to the different requirements of the customers. Inside the valve, the valve core seat is manufactured according to the ARI STANDARD 720:1997. When the internal valve core has been inserted through the fitting, by the mounting tool (code 8390/A), the fluid flows just acting on the valve needle.

CONSTRUCTION

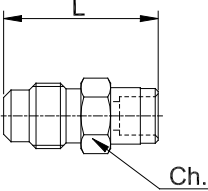
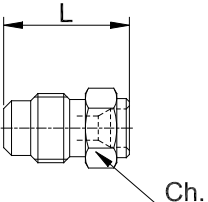
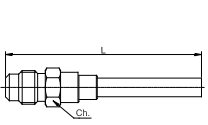
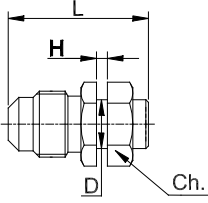
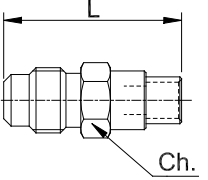
The straight fittings are machined by hexagonal brass bar EN 12164 – CW 614N.

The TEE and cross fittings are manufactured with hot forged brass EN 12420 – CW 617N.

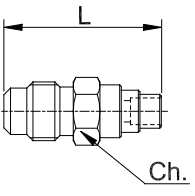
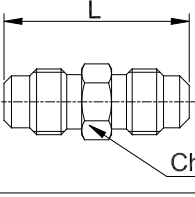
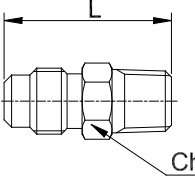
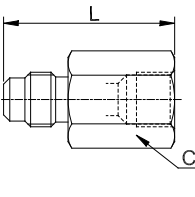
The cap 8391/A is molded by nylon.

The caps 8392/A and 8392/B are machined by hexagonal brass bar EN 12164 – CW 614N.

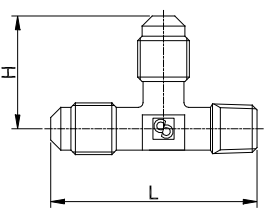
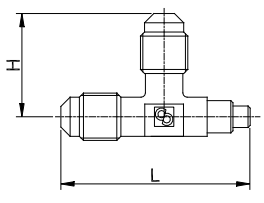
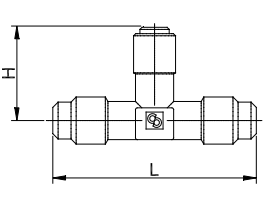
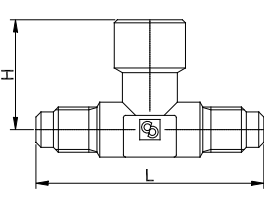
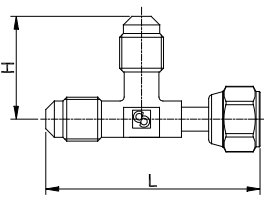
Valve core 8395/A1 is equipped with gaskets of chloroprene rubber (CR) and it may be used with all the refrigerant fluids listed in the first paragraph of this chapter. Valve core 8395/A3 is equipped with gaskets of hydrogenate nitrile rubber (HNBR) and it may be used with the refrigerant fluids listed in the first paragraph of this chapter, except R22

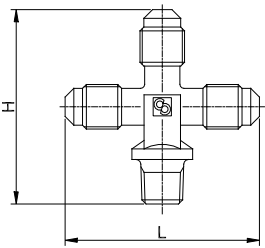
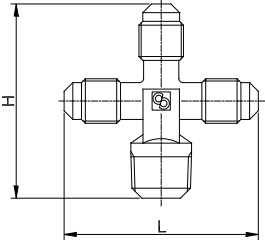
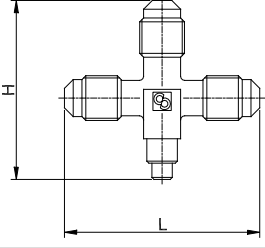
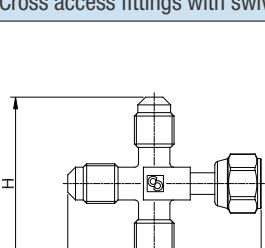
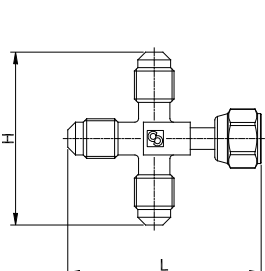
	Part number	Connections								PS [bar]	Dimensions [mm]				Weight [g]
		SAE Flare			NPT	ODS		IDS			L	Ch	D	H	
		Valve core	m	f		∅ [in.]	∅ [mm]	∅ [in.]	∅ [mm]						
Straight access fittings															
	8350/22	1/4"	-	-	-	1/4"	-	3/8"	-	45	26	11	-	-	12
	8350/X10	1/4"	-	-	-	1/4"	-	-	10		26	11	-	-	12
	8350/X01	1/4"	-	-	-	-	6	-	-	45	20	11	-	-	10
	8350/X03	1/4"	-	-	-	-	-	-	6	45	90	11	-	-	23
	8350/X06	1/4"	-	-	-	-	-	1/4"	-		126	11	-	-	28
	8350/X07	1/4"	-	-	-	-	-	1/4"	-		326	11	-	-	58
	8350/X12	1/4"	-	-	-	-	-	-	6		180	11	-	-	
	8350/X09	5/16"	-	-	-	1/4"	-	-	-	45	27	14	9,4	2,1	19
	8351/2	1/4"	-	-	-	-	6	-	8 - 10	45	30	11	-	-	13
	8351/X04	1/4"	-	-	-	-	-	-	6		26	11	-	-	11
	8351/X05	5/16"	-	-	-	-	-	3/8"	7		27	14	-	-	18
	8351/X07	5/16"	-	-	-	-	-	3/8"	6		27	14	-	-	19

Be continued

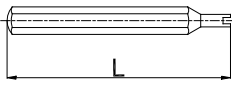
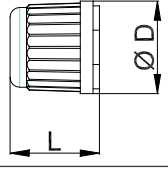
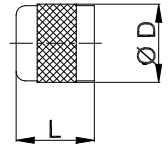
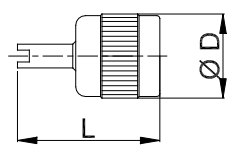
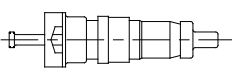
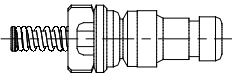

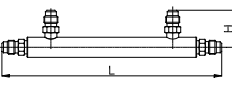
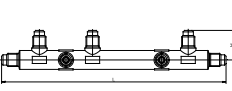
	Part number	Connections								PS [bar]	Dimensions [mm]				Weight [g]
		SAE Flare			NPT	ODS		IDS			L	Ch	D	H	
		Valve core	m	f		Ø [in.]	Ø [mm]	Ø [in.]	Ø [mm]						
Straight access fittings															
	8351/X01	1/4"	-	-	-	-	1/8"	-	6	45	36	11	-	-	13
	8351/X02	1/4"	-	-	-	-	5	1/4" 5/16" 3/8"	-		26	11	-	-	11
	8351/X06	1/4"	-	-	-	-	-	-	6 8 10		-	28	11	-	-
	8352/22	1/4"	1/4"	-	-	-	-	-	-	45	31	11	-	-	15
	8354/21	1/4"	-	-	1/8"	-	-	-	-	45	28	11	-	-	13
	8354/22	1/4"	-	-	1/4"	-	-	-	-		33	14	-	-	25
	8354/23	1/4"	-	-	3/8"	-	-	-	-		38	17	-	-	41
	8362/22	1/4"	-	1/4"	-	-	-	-	-	45	35	17	-	-	42



	Part number	Connections					PS [bar]	Dimensions [mm]			Wrench torque min / max [Nm]	Weight [g]	Note
		SAE Flare		NPT	IDS			L	Ch	H			
		m	f		Ø [in.]	Ø [mm]							
TEE access fittings													
	8380/122	1/4"	-	1/8"	-	-	45	45	-	24	-	31	The valve core may be installed on each of the two 1/4" SAE Flare male connections
	8380/222	1/4"	-	1/4"	-	-		49,5	-	25,5	-	44	
	8380/X01	1/4"	-	-	-	6	45	43	-	24	-	28	
	8380/X02	1/4"	-	-	-	7	45	48	-	22	-	33	
	8380/X09	1/4"	1/4"	-	-	-	45	56	-	27	-	70	
TEE access fittings with swivel nuts													
	8380/X06	1/4"	1/4"	-	-	-	45	50	-	24	11/14	47	With valve-core opening device on female connection. The valve core may be installed on each of the two 1/4" SAE Flare connections
	8380/X08	1/4"	1/4"	-	-	-	45	49	17	24	11/14	49	The valve core may be installed on each of the two 1/4" SAE Flare male connections

	Part number	Connections					PS [bar]	Dimensions [mm]			Wrench torque min / max [Nm]	Weight [g]	Note
		SAE Flare		NPT	IDS			L	Ch	H			
		m	f		Ø [in.]	Ø [mm]							
Cross access fittings													
	8382/1222	1/4"	-	1/8"	-	-	45	48	-	50	-	49	The valve core may be installed on each of the three 1/4" SAE Flare male connections
	8382/X02	1/4"	-	1/4"	-	-	45	48	-	50	-	53	
	8382/X01	1/4"	-	-	-	7-10	45	48	-	47	-	47	
	8382/X03	1/4"	-	-	-	6		48	-	44	-	42	
Cross access fittings with swivel nut													
	8382/X04	1/4"	1/4"	-	-	-	45	50	17	46	11/14	35	With valve-core opening device on female connection. The valve core may be installed on each of the three 1/4" SAE Flare connections



	Part number	Connections		Static Pressure [bar]	Working Pressure [bar]	PS [bar]	TS [°C]		Dimensions [mm]			Wrench torque min / max [Nm]	Weight [g]	Note
		SAE Flare					min	max	L	D	H			
		m	f											
Core remover (for all types)														
	8390/A	-	-	-	-	-	-	-	75	-	-	-	28	
Caps with gasket														
	8391/A	-	1/4"	-	-	35	-20	+100	14	14	-	-	1	
	8392/A	-	1/4"	-	-	45	-20	+100	13	13	-	-	7	
	8392/B (1)	-	1/4"	-	-	45	-20	+100	22	13	-	-	7	
Spare valve cores														
	8394/B (2)	-	-	40	28	-	-30	+90	-	-	-	0,30/0,35 Nm	1	
	8395/A1 (3)	-	-	140	60	-	-32	+100	-	-	-	0,4/0,5 Nm	0,7	
	8395/A3 (3) (4)	-	-	140	60	-	-25	+130 (5)	-	-	-	0,4/0,5 Nm	0,7	
Manifolds with access fittings														
	9900/X87	1/4"	-	-	-	45	-	-	162	-	30	-	36	N° 3 access fittings
	9900/X47	1/4"	-	-	-	45	-	-	175	-	30	-	216	N° 4 access fittings
	9900/X81	1/4"	-	-	-	45	-	-	190	-	25	-	343	N° 7 access fittings

Note:

- (1) The key needs to remove the valve core
- (2) Inside spring
- (3) Outside spring
- (4) No use with R22
- (5) Temperature peaks of 150 °C are allowed

www.castel.it



ed. 001-AT-ENG

Castel can accept no responsibility for any errors or changes in the catalogues, handbooks, brochures and other printed material. Castel reserves the right to make changes and improvements to its products without notice. All trademarks mentioned are the property of their respective owners. The name and Castel logotype are registered trademarks of Castel Srl. All rights reserved.

Castel Srl - Via Provinciale 2-4 - 20060 Pessano con Bornago - MI