EN

PRODUCT CATALOGUE

Castel®
Italian technology

PRODUCT CATALOGUE 2022

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CASTEL

THE COMPANY AND THE PRODUCTS

Castel, a leading supplier of refrigeration and air conditioning components, is a 100% Italian-owned family-run company which has grown and established a name for itself since 1961, thanks to its outstanding pursuit of innovation and unwavering desire to conquer markets not only in Italy, but also abroad.

Mission
Supporting an increase in our customer base with reliable, durable, high quality and technologically-advanced products, manufactured with respect for the environment, and supported and improved upon by levels of service that exceed industry standards, in order to consolidate the Castel brand's presence in its existing markets, and make the brand known in emerging ones.

Castel is now present in more than 100 countries on 5 continents. In 2010, Castel opened an associated company in China, "Castel Refrigeration (Shanghai) Co., Ltd", to support development in these countries, creating a logistics and commercial development platform for the entire Asian continent and the Pacific. Recently, an associated company in the United States, "Castel USA, Inc.", was established to support commercial and logistic development in the Americas.

Castel was one of the first Italian companies in the sector to obtain Business Quality System Certification issued by TÜV SÜD according to EN ISO 9001:2015 standard before subsequently receiving certification also for its Environmental Management System from TÜV SÜD according to EN ISO 14001:2015 standard. The company has also obtained several product certifications in conformity with European Directives and Certification Marks (e.g. VDE) and extra-European (e.g "UL", "EAC") Quality Approvals.

Castel has dedicated constant attention for years to the evolution of the refrigerant market in adapting to international protocols aimed at reducing harmful emissions and global warming. The implementation in the European Union of the so-called F-Gas Regulation and similar legislation in important extra-European nations is leading to a progressive reduction and abandonment of many traditional refrigerants in favor of alternative synthetic or natural refrigerants. In response to these developments in the market, in recent years Castel has progressively restructured its offer and is now proud to offer its clients this catalog with the following lines of product:

- **GOGREEN:** Products developed specifically for refrigerant R744 within the A1 security group according to ASHRAE STANDARD 34-2019
- **POLYHEDRA:** New products compatible with the widest possible range of refrigerants classified A1, A2L and A3 according to ASHRAE STANDARD 34-2019
- **CLASSIC:** Traditional products featured in previous catalogs compatible with refrigerants classified A1 according to ASHRAE STANDARD 34-2019

GENERAL SALES CONDITIONS

Orders
Orders require full acceptance by the customer of Castel conditions of sale listed below and Castel is not bound to the buyer's purchase conditions, without prejudice to the existence in force of special conditions stipulated and signed between Castel and the Customer.

Shipping
The goods delivery is EX WORKS - EXW " Magazzino Castel di Vimercate (MB)" Incoterms® 2020 for goods shipped in the EU, otherwise FREE CARRIER - FCA "Magazzino Castel di Vimercate (MB)" Incoterms® 2020, for goods shipped outside of the EU.

Packaging
Packaging is invoiced at cost price and is not accepted for return.
Deliveries: Delivery terms are not binding on Castel: therefore no liability charges or penalties for delivery delays are accepted. Any delays do not give the right to terminate the contract.

Payments
Late payments give Castel the right to suspend supplies and terminate current contracts.

Complaints
Generally, only complaints sent to Castel office within ten days of receiving the materials are valid. Any obvious manufacturing defects that are revealed during use and after the expiration of ten days will be considered according to the terms of the "warranty" paragraph. No warranty of good functioning is given unless through a special clause in writing.

Warranty
All Castel products are guaranteed for a period of 12 months starting from the date of the transport document. The warranty covers all those products or parts thereof that are defective and have manufacturing or other defects within the warranty period. Defects must be reported within the terms established by Italian law. In this case, the customer will have to return the materials together with a detailed description of the defects found at his own expense, subject to recognition of the cost in the event of an ascertained defect. The guarantee is not recognized when the defects of Castel products are due to errors of the customer or third parties such as: incorrect installation, uses contrary to the indications provided by Castel, tampering. For any defects or faults in its products, Castel undertakes to replace them pure and simple without recognizing, in any case, the right to reimbursement of damages of any kind. Any corrective interventions, replacements and repairs carried out by third parties for the customer's instructions must be previously authorized by Castel. Castel reserves the right to make changes or modifications to its products without notice and at any time.

Returns of non-defective products
Castel does not accept returns of goods that have not been explicitly authorized by us and that do not reach us in Castel at the customer's expense - CPT "Castel Pessano con Bornago (MI) plant" Incoterms® 2020.

Prices
These are always intended for EX WORKS-EXW " Magazzino Castel di Vimercate (MB)" Incoterms® 2020 goods and can be changed at any time depending on costs.

Disputes
The Court of Milan is competent for any dispute. Italian law applies, with the exclusion of the UN Vienna Convention on international sales.

IMPLEMENTATION OF EUROPEAN PARLIAMENT AND EUROPEAN COUNCIL DIRECTIVE 2014/68/EU DATED 15 MAY 2014, CONCERNING PRESSURE EQUIPMENT TO CASTEL REFRIGERATION PRODUCTS

Directive 2014/68/EU (PED Recast) applies to the design, manufacture and conformity assessment of pressure equipment and assemblies with a maximum allowable pressure "PS" greater than 0,5 bar excluding the cases listed in Article 1, Section 2 of the Directive.
The revised PED Recast Directive repeals previous Directive 97/23/EC. More specifically:
- Article 13 of the PED Recast Directive, regarding the classification of pressure equipment, came into force as of 1 June 2015 and repeals Article 9 of the previous PED Directive
- All other articles of the PED Recast Directive are in force as of 19 July 2016, repealing all articles of the previous PED Directive. As of this date, in the Member States of European Community, it is possible to place on the market only pressure equipments CE marked according to PED Recast.

The definitions below shall apply for the purposes of Article 2 of Directive PED Recast:
- **Pressure equipment:** vessels, piping, safety accessories, and pressure accessories
- **Vessel:** a container designed and built to keep fluids under pressure.
- **Piping:** piping components intended for the transport of fluids, when connected together to form a pressure system.
- **Safety accessories:** devices designed to protect pressure equipment from exceeding the admissible limits.
- **Pressure accessories:** devices with an operational function and including pressure-bearing containers. For example: solenoid valves, valves, indicators.
- **Assemblies:** several pieces of pressure equipment assembled by a manufacturer to constitute an integrated and functional set.
- **Maximum admissible pressure (PS):** the maximum pressure the equipment is designed for, as specified by the manufacturer.
- **Maximum/minimum allowable temperature (TS):** the maximum/minimum temperatures the equipment is designed for, as specified by the manufacturer.
- **Volume (V):** the internal volume of a chamber, including the volume of nozzles to the first connection or weld and excluding the volume of permanent inner parts.
- **Nominal size (DN):** numerical designation of size, which is common to all components in a piping system.
- **Fluids:** gases, liquids and vapours in pure form as well as mixes thereof.

Pressure equipments referred to in Article 4 and subsequent Annex II to Directive PED Recast are classified by categories according to ascending level of hazard, on the basis of:
- State of the fluid
- Hazard classification of the fluid
- Type of equipment
- Dimensions and energetic potential; V, DN, PS, PS x V, PS x DN

and must comply with the Essential Safety Requirements as set out in Annex I of PED Recast Directive.
Pressure equipment whose characteristics are below or equal to the limits in Article 4, points 1.a, 1.b and 1.c and section 2 of Directive PED Recast must not comply with the Essential Safety Requirements as set out in Annex I, but must be designed and manufactured in accordance with the sound engineering practice in a Member State in order to guarantee safe use; these products needn't bear EC marking (Article 4, Paragraph 3).
In Article 13 of Directive PED Recast, fluids are classified, according to level of their hazard, in two groups:
- **Group 1** includes substances and mixtures, as defined in points 7 and 8 of Article 2 of EC Regulation No 1272/2008, that are classified as hazardous in accordance with physical or health hazard classes as laid down in Parts 2 and 3 of Annex I to that Regulation. A list of 18 classes of hazardous fluids is included in point 1.a of Article 13 (explosive, flammable, oxidizing, toxic).
- **Group 2** includes substances and mixtures not listed on point 1.a

The products of the CASTEL POLYHEDRA series are suitable for using with refrigerant fluids proper to the Groups 1 and 2, classified A1, A2L and A3 in Annex E of standard EN 378-1:2016.
The products of the CASTEL CLASSIC series are suitable for using with refrigerant fluids proper to the Group 2 , classified A1 in Annex E of standard EN 378-1:2016.
The products of the CASTEL GOGREEN series are suitable for using only with refrigerant fluid R744, proper to the Group 2 and classified A1 in Annex E of standard EN 378-1:2016.

APPLICATION OF DIRECTIVE 2011/65/UE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL, OF 8 JULY 2011, ON THE RESTRICTION OF THE USE OF CERTAIN HAZARDOUS SUBSTANCES IN ELECTRICAL AND ELECTRONIC EQUIPMENT TOWARDS CASTEL REFRIGERATION PRODUCTS

The purpose of Directive 2011/65/EU, the so called RoHS 2 or RoHS Recast Directive, is to prevent or restrict the use of hazardous substances in electrical and electronic equipment and to contribute to the environmentally sound recovery and disposal of waste electrical and electronic equipment.
Directive 2011/65/EU, and subsequent amendments made by Directive 2015/863/EU, replaces the previous Directive 2002/95/EC that is repealed with the effect from 3 January 2013.
RoHS 2 Directive shall apply to EEE (Electrical and Electronic Equipment) falling under the categories 1, 2, 3, 4, 5, 6, 7, 10, 11 set out in Annex 1 of the same Directive.
The equipment proper to the first category -**"Large household appliances"**, and to the 10th category-**"Automatic dispensers"**, are set out in Annex 2 of Directive 2012/19/EU, WEEE-Recast Directive (Waste electrical and electronic equipment) that replaces the previous Directive 2002/96/EC, repealed from 15 February 2014. The list of Annex 2 shows these products:
- Large cooling appliance
- Refrigerators
- Freezers
- Other large appliances used for refrigeration, conservation and storage of food
- Air conditioner appliances
- Other fanning, exhaust ventilation and conditioning equipment
- Automatic dispenser for hot or cold bottles and cans

Article 4 of RoHS 2 Directive establishes that EEE placed on the market, including cable and spare parts for its repair, its reuse, updating of its functionalities or upgrading of its capacities, do not contain the following substances listed in Annex 2, as amended by Directive 2015/863/EU:

- Lead – (0,1%)
- Mercury – (0,1%)
- Cadmium – (0,001%)
- Hexavalent chromium – (0,1%)
- Polybrominated biphenyls (PBB) – (0,1%)
- Polybrominated diphenyl ethers (PBDE) – (0,1%)
- Bis(2-ethylhexyl) phthalate (DEHP) (0,1 %)
- Butyl benzyl phthalate (BBP) (0,1 %)
- Dibutyl phthalate (DBP) (0,1 %)
- Diisobutyl phthalate (DIBP) (0,1 %)

Annex 3 provides several exemptions on the restrictions on use indicated in Article 4 and Annex 2. Among the various exemptions provided, the following are of particular interest for the refrigeration / air conditioning sector:

- Lead as an alloying element in steel containing up to 0.35% lead by weight (exemption 6a of Annex 3, extended until 21 July 2021 by EU Directive 2018/739 of 1 March 2018)
- Lead as an alloying element in aluminum alloys containing up to 0.4% lead by weight (exemption 6b of Annex 3, extended until 21 July 2021 by EU Directive 2018/740 of 1 March 2018)
- Lead as an alloying element in copper alloys containing up to 4% lead by weight (exemption 6c of Annex 3, extended until 21 July 2021 by EU Directive 2018/741 of 1 March 2018)

For a long time, before year 2005, Castel Company has started a careful inquiry, together with its suppliers, to identify the presence or not of the above-mentioned hazardous substances, either in its own products or in its own production processes, and to remove them progressively.

At the end of this wide examination and continuously monitoring its products and processes, Castel Company may declare that all the products supplied to its customers are compliant to the Restriction on Hazardous Substances, as defined in the Directive 2011/65/EU.
Specially Castel products:

1. Do not contain mercury, cadmium, hexavalent chromium, (PBB), (PBDE), (DEHP), (BBP), (DBP), (DIBP)
2. Contain lead as an alloying element in steel, aluminium and copper alloys within the accepted limits according to the Annex 3 of RoHS 2 Directive and subsequent amendments.

Castel also declares that all the products supplied to its customers, since **components / spare parts** used in EEE do not have:

- to be CE marked, as requested in article 15 of Directive 2011/65/EU
- a Declaration of Conformity, written according to Annex 6 of the same directive.

as specified in Chap. 7 – par. Q7.3 and in Chap. 8 par. Q8.5 of the RoHS 2 FAQ Guidance published by European Commission, dated 12/12/2012.

APPLICATION OF REGULATION 1907/2006/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL, OF 18 DECEMBER 2006, ON THE REGISTRATION, EVALUATION, AUTHORISATION AND RESTRICTION OF CHEMICALS (REACH) TOWARDS CASTEL REFRIGERATION PRODUCTS

The European Regulation 1907/2006/EC concerning the Registration, Evaluation, Authorization and Restrictions of Chemicals, the so called REACH Regulation, was published on GUCE L136 dated 29 May 2007 and came into force in the European Union on the 1st June 2007. This Regulation requires to pre-register and register chemical substances produced or imported into Europe at the European Agency for Chemicals (ECHA).
Castel investigates for a long time about the contents and the aims of this new law. The purpose of our company is to define its rules in the supply chain and the possible obligations we have to fulfil to, according to the REACH Regulation.

Castel is not a “manufacturer” or an “importer” of substances and so the company has not the obligation to pre-register and/or register.

Castel is not a “manufacturer” or an “importer” of preparations and so the company has not to give to its customers either information about registrations of the contained substances or information about safety.

Castel is not a “manufacturer” or an “importer” of articles that have substances intended to be realised during normal and reasonable foreseeable conditions of use (Art. 7.1 of REACH) and so the company has not the obligation to pre-register and/or register these substances.

For its suppliers, Castel is a “downstream users” of substances, preparations and articles, used in its own manufacturing processes and in its own products. For a long time our Company has started, together with its suppliers of substances/preparations and articles, a careful inquiry to verify that:

- They well know the contents and the aims of REACH Regulation
- They are working to fulfil the obligations pertaining to them, foreseen by the Regulation
- They guarantee us smooth continuity of their supplies also in the future

For its customers, Castel is a “manufacturer” of articles and in this rule our company is constantly engaged to verify that in its products:

- The restricted substances listed in Annex XVII are not used in a manner not conform to restrictions, in compliance with to Art. 67 of REACH
- The SVHC, Substances of Very High Concern, listed in the Candidate List and in the Authorisation List of Annex XIV; are not present in the articles we supply you in more than 0,1% mass/mass. (the 0,1% threshold relates to the total weight of the articles) and simultaneously satisfied all the conditions listed in Art. 7.2 of REACH. If this case happens our company binds itself to communicate it in time to its own customers, ensuring sufficient information to safety use, according to Art. 33 of REACH. To obtain further information about the new SVHC Candidate List, please visit the following web site http://echa.europa.eu/chem_data/candidate_list_table_en.asp of ECHA European Agency.

IMPLEMENTATION OF EUROPEAN PARLIAMENT AND EUROPEAN COUNCIL DIRECTIVE EU N° 517/2014 DATED 16 APRIL 2014 ON FLUORINATED GREENHOUSE GASES (F-GAS) TO CASTEL REFRIGERATION PRODUCTS

European Regulation EU No. 517/2014 on fluorinated greenhouse gases, the so called F-Gas Regulation, was published in the Official Gazette of the Economic Community L150 dated 20 May 2014 and became into force in the European Union on the 1st January 2015, repealing previous Regulation EC No 842/2006.
The new regulation is divided into three main topics and includes the following chapters.

- Chapter II: Containment
- Chapter III: Release onto the market and control of use
- Chapter IV: Reduction of the quantity of hydrofluorocarbons released onto the market

Containment
Article 4 states that the operators of equipments that contain fluorinated greenhouse gases in quantities not smaller than 5 tonnes of CO_2 equivalent must assure that the equipment is checked for leaks. The conditioning and refrigerating equipment to be checked is as follows: stationary refrigeration equipment, stationary air-conditioning equipment, stationary heat pumps, refrigeration units of trucks and trailers. Hermetically sealed equipment that contains fluorinated greenhouse gases in quantities smaller than 10 tonnes of CO_2 equivalent, shall not be subject to leak checks, provided that they are labelled as hermetically sealed.

Release onto the market and control of use
Restriction on the release onto the market: Article 11 states that the release onto the market of products and equipment listed in Annex III, shall be prohibited from the date specified here below. Refrigeration and air-conditioning equipment subject to the prohibition are:

Product Description	Date of prohibition
Domestic refrigerators and freezers that contain HFCs with GWP ≥ 150	01/01/2015
Refrigerators and freezers for commercial use (hermetically sealed equipment) that contain HFCs with GWP ≥ 2500	01/01/2020
Refrigerators and freezers for commercial use (hermetically sealed equipment) that contain HFCs with GWP ≥ 150	01/01/2022
Stationary refrigeration equipment that contains HFCs with GWP ≥ 2500, except equipment designed to work at T < -50 °C	01/01/2020
Multipack centralised refrigeration systems for commercial use with rated capacity ≥ 40 kW that contain HFCs with ≥ 150, except primary circuit of cascade systems where HFCs with GWP < 1500 may be used.	01/01/2022
Movable air-conditioning equipment equipment (hermetically sealed equipment) that contain HFCs with GWP ≥ 150	01/01/2020

Single split air-conditioning systems containing less than 3 Kg of HFCs with GWP ≥ 750 01/01/2025

Control of use: Article 13 states that the use of HFCs with GWP ≥ 2500 to service or maintain refrigeration equipment with a refrigerant load ≥ 40 tonnes of CO_2 equivalent, shall be prohibited from 1 January 2020. This prohibition shall not apply to equipments designed to work at T < -50 °C. The ban is postponed to 1 January 2030 for regenerated HCFs with GWP ≥ 2500, labelled in accordance with Article 12, and for recycled HCFs with GWP ≥ 2500, drained from the same equipment under maintenance.

Reduction of the quantity of hydrofluorocarbons released on the market
Article 15 provides that the quantity of HFCs that manufacturers and importers are entitled to release onto the market in the European Union each year must not exceed the maximum quantity indicated in Annex V. If 100% is the maximum quantity admitted in 2015, Annex V foresees a gradual reduction of the maximum marketable quantity up to 21% in 2030. From 1 January 2017 also refrigeration, air-conditioning and heat pump equipment preloaded with HFCs can only be released onto the market if they fall into the maximum quantities provided for by Annex V. Article 16 provides that the European Commission assigns every year to the manufacturers that comply with the Regulation, HFCs quotas that can be released onto the market, within the maximum quantity defined for that year.

We believe that the F-Gas Regulation will soon lead to great changes in refrigeration and, to a lesser extent, also in air-conditioning. The use of two refrigerants that are considered as primary in the refrigeration industry, R404A (GWP = 3922 according to AR4) and R507 (GWP = 3985 according to AR4), is expected to fall sharply within a few years until it disappears completely. The use of R134a (GWP = 1430 according to AR4) is also set to drop because of the current changes in domestic refrigeration and automotive air-conditioning. The use of the two traditionally refrigerants for air conditioning, R407C (GWP = 1774 according to AR4) and R410A (GWP = 2088 according to AR4) is expected to shrink considering the equipments mentioned in Annex III of the Regulation.
Castel took immediate steps to understand the contents and purposes of the new legislation in order to check the compatibility of its products with the new fluid refrigerants that are offered by most manufacturers as alternatives to traditional HFCs that are going to be banned.
In the last two years Castle has already presented two specific product lines for use with natural refrigerants: a product line for CO_2, with different operating pressures, a product line for hydrocarbons (R290, R600, R600a)
At the same time from the year 2015 onwards, Castel conducted a test campaign to verify / validate the compatibility:
- of its standard products, normally used with traditional HFC refrigerants
- of the new POLYHEDRA series products, to be placed on the market

with most of the new refrigerants, alternative to the traditional ones, proposed by the major manufacturers.

CONNECTIONS OF CASTEL PRODUCTS

Castel products can be supplied with different connections. In particular Castel products are produced either with threaded connections or solder connections.
Table 1 shows the equivalence between Castel codes and dimensions in inches. These codes are commonly used in the international market.
Table 2 shows the equivalence between Castel codes and dimensions in millimetres.

DESCRIPTION OF CONNECTIONS THAT ARE CURRENTLY USED FOR CASTEL PRODUCTS

1) THREADED CONNECTIONS
They can be of three different types:

FLARE
Straight threaded connection (according to SAE J513-92; ASME B1.1-89) for junction to a copper pipe with a suitable flared end, using a right nut (see Table 3).

NPT
Taper threaded connection (according to ASME B1.20.1-92) to joint fittings, valves, safety valves to vessel or steel pipes.

FPT
Straight female threaded connection (according to UNI ISO 228/1) used in the hydraulic system to joint fittings or valves to vessel or steel pipes (see table 4).

2) SOLDER CONNECTIONS
They can be of four different types and can fit pipes with diameter both in inches and in millimetres:

ODS (or ODF)
Female solder connection for copper tubes. The indicated size corresponds to the outer diameter of the copper tube which to joint.
F.e.: 1/2” ODS solder connection suitable to receive inside a copper pipe with a 1/2” outer diameter

ODM
Male solder connection for copper tubes. The indicated size corresponds to the outer diameter of the copper tube which to joint.
F.e.: 16 ODM solder connection suitable to joint a copper pipe with a 16 mm outer diameter, by means of an M16 female/female copper sleeve.

IDS
Male solder connection for copper tube. The indicated size corresponds to the inner diameter of the copper tube which to joint.
F.e.: 10 IDS solder connection suitable to receive outside a copper pipe with an 10 mm inner diameter)

W
Solder connection for steel pipes. The indicated size corresponds to the external diameter of the steel pipe which to joint.
F.e.: 76,1 W solder connection suitable to connect a steel pipe with a 76,1 mm external diameter, by means of butt welding.

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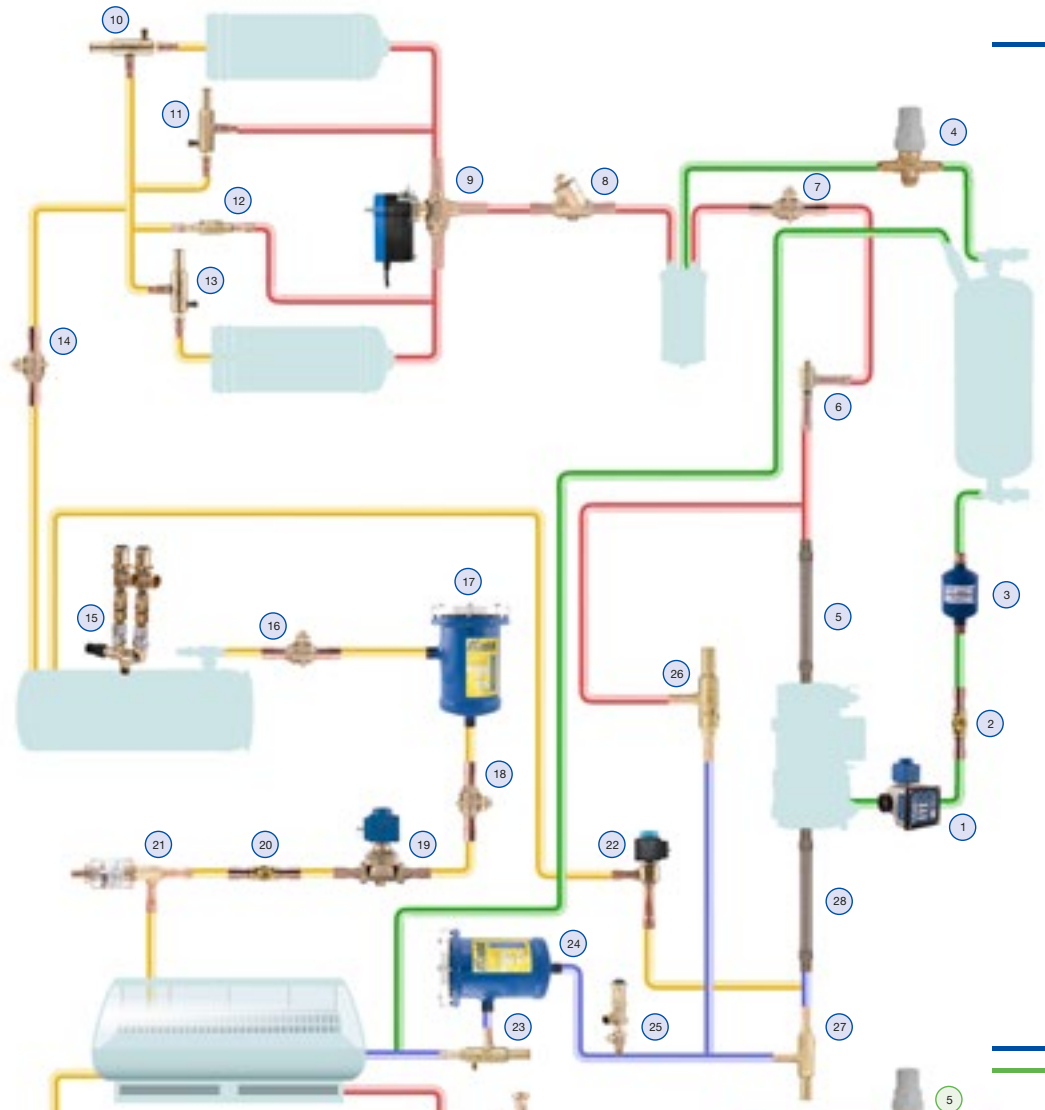
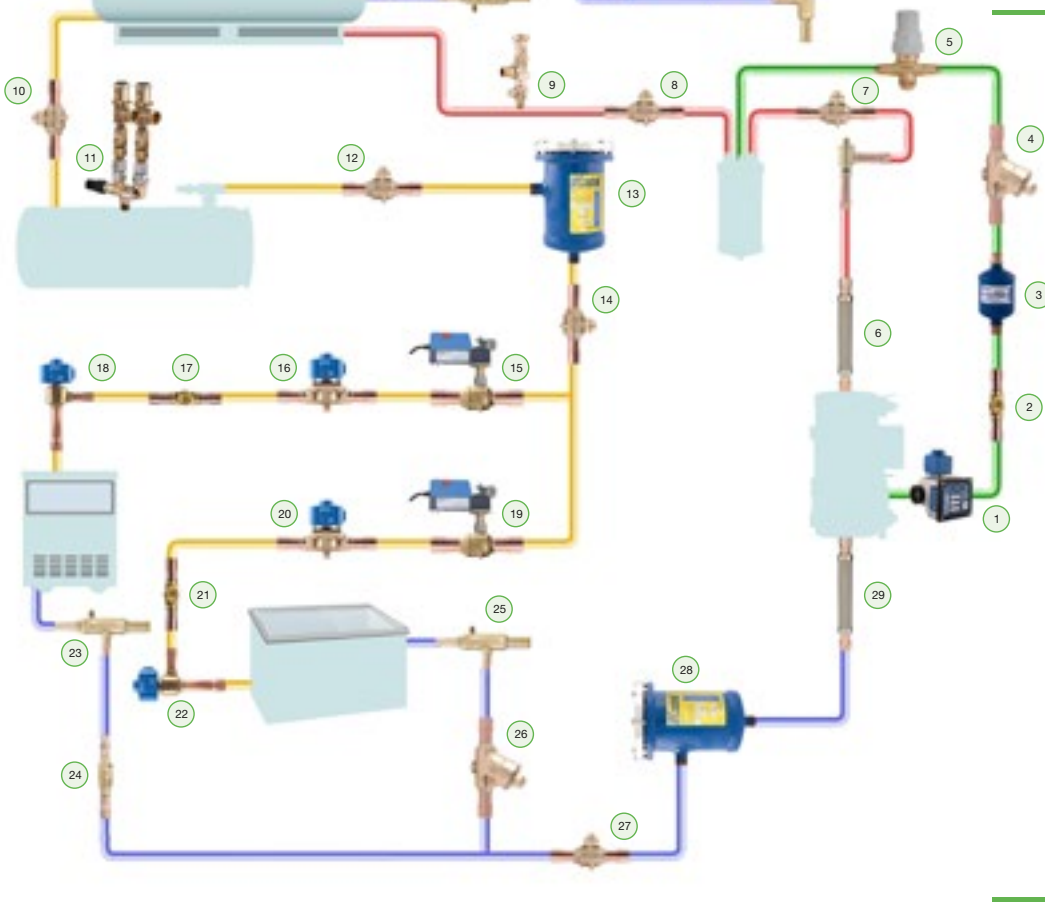


POLYHEDRA



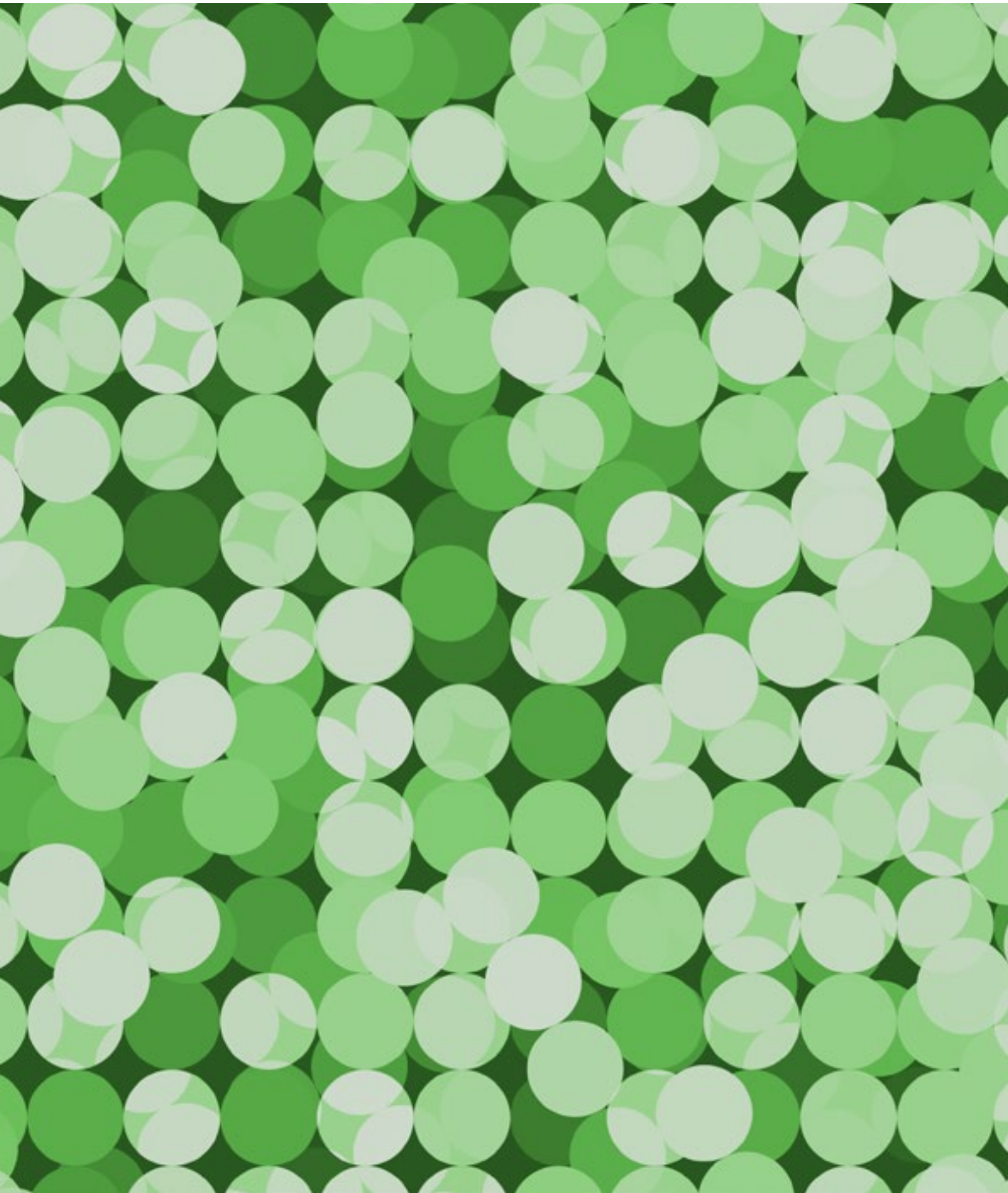
GOGREEN

R744 • NATURAL REFRIGERANT

CIRCUIT SCHEME

1 Electronic oil level regulator code 5650 series
2 Oil/liquid indicator 3840 series
3 Strainer filter 4520 series
4 Manual valves 6110N/series
5 Vibration adsorber 7690N series
6 Angle check valve 3184W series
7 Ball valves 6570N series
8 Straight check valve 3144NW series
9 Three way ball valve 6690N series
10 Condensing pressure regulator 3340N series
11 Receiver pressure regulator series 3350N series
12 Differential check valve 3136W series
13 Condensing pressure regulator 3340N series
14 Ball valves 6570N series
15 Changeover valves 3032N series
15 bis Safety valves 3065 series
16 Ball valves 6570N series
17 Drier filter 441x series
18 Ball valves 6570N series
19 Solenoid valve serie 10xxN series
20 Humidity indicator 3940-3910-3950 series
21 Motorized expansion valve 27xxx series
22 Solenoid expansion valve 2028N series
23 Evaporating pressure regulator 3330N series
24 Mechanical filters with strainer core 4411xx/..CF series
25 Ball shut off valve 3064N series
25 bis Safety valves 3061 series
26 Capacity pressure regulator 3310N series
27 Cranckcase pressure regulator 3320N series
28 Vibration adsorber 7690N series

1 Electronic oil level regulator code 565xE series
2 Oil/liquid indicator 3740E series
3 Strainer filter 4520E series
4 Straight check valve 314xE series
5 Manual valves 6110N/series
6 Vibration adsorber 7690 series
7 Ball valves 657xE series
8 Ball valves 657xE series
9 Ball shut off valve 3064E series
9 bis Safety valves 3061E series
10 Ball valves 657xE series
11 Changeover valves 3032E series
11 bis Safety valve 3030E series
12 Ball valves 657xE series
13 Drier filter 441xE series
14 Ball valves 657xE series
15 Motorized Ball valves 657xE + 97xx series
16 Solenoid valve serie 10xxEL series
17 Humidity indicator 3940E - 374xE series
18 Solenoid expansion valve 2028E series
19 Motorized Ball valves 657xE + 97xx series
20 Solenoid valve serie 10xxEL series
21 Humidity indicator 3940E - 374xE series
22 Solenoid expansion valve 2028E series
23 Evaporating pressure regulator 3335EL series
24 Straight check valve 313xEW series
25 Evaporating pressure regulator 3335EL series
26 Straight check valve 314xEW series
27 Ball valves 657xE series
28 Mechanical filters with strainer core 4411xxE/..CF series
29 Vibration adsorber 7690 series



GO GREEN

R744 • NATURAL REFRIGERANT

CO_2 REFRIGERANT (R744)

Castel®
Italian technology

SOLENOID EXPANSION VALVES WITH INTERCHANGEABLE ORIFICE

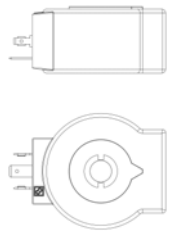
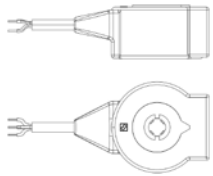
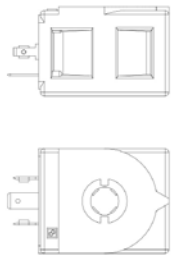
Drawing	Part number	Orifice type	Connections In Ø [in.]	Connections In Ø [mm]	Connections Out Ø [in.]	Connections Out Ø [mm]	Kv [m³/h]	PS [bar]	TS [°C] min.	TS [°C] max.	Package Pcs.
	2028E/3S00	00	3/8"	-	1/2"	-	0,0027	90	-50	+100	17
	2028E/M10S00		-	10	-	12					
	2028E/3S01	01	3/8"	-	1/2"	-	0,01				
	2028E/M10S01		-	10	-	12					
	2028E/3S02	02	3/8"	-	1/2"	-	0,017				
	2028E/M10S02		-	10	-	12					
	2028E/3S03	03	3/8"	-	1/2"	-	0,023				
	2028E/M10S03		-	10	-	12					
	2028E/3S04	04	3/8"	-	1/2"	-	0,043				
	2028E/M10S04		-	10	-	12					
	2028E/3S05	05	3/8"	-	1/2"	-	0,065				
	2028E/M10S05		-	10	-	12					
	2028E/3S06	06	3/8"	-	1/2"	-	0,113				
	2028E/M10S06		-	10	-	12					
	2028E/4S07	07	1/2"	-	5/8"	-	0,2				
	2028E/M12S07		-	12	-	16					
	2028E/4S08	08	1/2"	-	5/8"	-	0,23				
	2028E/M12S08		-	12	-	16					
	2028E/4S09	09	1/2"	-	5/8"	-	0,25				
	2028E/M12S09		-	12	-	16					

ORIFICE ASSEMBLIES

Drawing	Part number	Orifice type	Rated capacity (1) [kW] R744	Package pcs.
	9151E/R61	00	0,58	10
	9150E/R63	01	2,09	
	9150E/R64	02	4,16	
	9150E/R65	03	4,93	
	9150E/R66	04	7,98	
	9150E/R67	05	13,65	
	9150E/R68	06	18,93	
	9150E/R69	07	29,85	
	9150E/R78	08	35,98	
	9150E/R79	09	39,90	

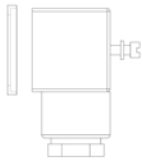
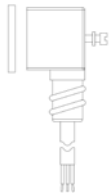
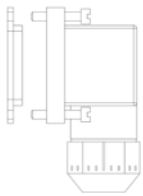
(1) Rated capacities are based on:
- Evaporating temperature Tevap = -25 °C
- Condensing temperature Tcond = +0 °C
- Refrigerant liquid temperature ahead of valve Tliq = -4 °C

COILS

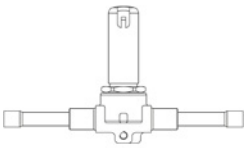
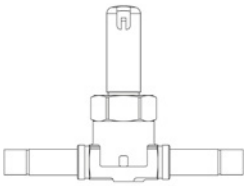
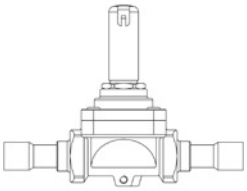
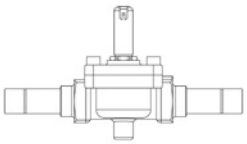
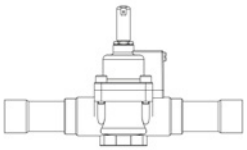
Drawing	Coil Type	Part number	Voltage [V]	Frequency [Hz]	Power [W]	Connectors Degree of protection IP 65	Connectors Degree of protection IP 68	Cable length [m]	Package Pcs.
	HM3 (1)	9120/RA6	220/230	50/60	12	9150/R02 9900/X66	-	-	24
		9120/RD1	12 D.C.	-	20				
		9120/RD2	24 D.C.						
	CM3 (1)	9121/RA6	220/230	50/60	12	-		7	1
	HM4 (1)	9160/RA2	24		8	9150/R02 9900/X66	9155/R01 9155/R02	-	90
		9160/RA4	110/120						
		9160/RA6	220/230						
		9160/RA7	240						
		9160/RD1	12 D.C.	-	17				
		9160/RD2	24 D.C.		15,5				

(1): coil with spare part G9150/R97 (yellow nut + black screw + OR)

CONNECTORS

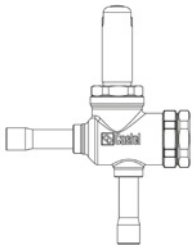
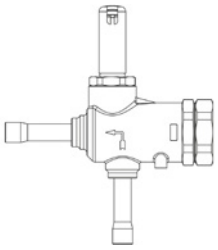
Drawing	Part number	Degree of protection	Cable length [m]	Package Pcs
	9150/R02	IP 65	-	240
	9900/X66		1	50
	9155/R01	IP 65 / IP 68	-	120
	9155/R02		1	1

SOLENOID VALVES, COPPER ODS CONNECTIONS, WITHOUT COILS

Operating principle	Drawing	Part Number	Coil Type	Connections ODS Ø		Kv [m³/h]	PS [bar]	TS [°C]		Package Pcs.
			(1)	[in.]	[mm]			min.	max.	
Direct acting		1028EL/2S	HF3 (HM3)	1/4"	-	0,15	60	-40	+130	24
		1028EL/2S.E				0,23				
		1028EL/3S		3/8"						
		1028EL/M10S		-	10					
Piston pilot operated		1038EL/3S		3/8"	-	1				
		1038EL/M10S		-	10					
		1038EL/M12S			12					
		1038EL/4S		1/2"	-					
		1048EL/M12S		-	12	2,4				14
		1048EL/4S		1/2"	-					
		1048EL/5S		5/8"	16	3				
		1058EL/5S				3,8				
		1058EL/6S		3/4"	-	4,8				
		1058EL/7S		7/8"	22	5,7				
		1098EL/9S		1.1/8"	-	10				1
		1078EL/11S		1.3/8"	35	16				
		1078EL/13S		1.5/8"	-	25				

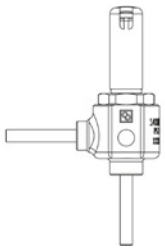
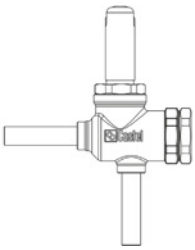
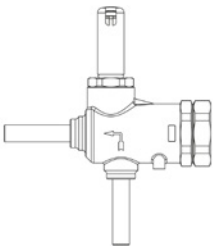
(1) : coils that can be fit on the valves

HIGH PRESSURE SOLENOID VALVES FOR HOT GAS AND OIL WITH K65 COPPER ALLOY ODS CONNECTIONS, WITHOUT COILS

Operating principle	Drawing	Part Number		Coil Type	Connections ODS Ø		Kv [m³/h]	PS [bar]	TS [°C]		Package Pcs.
				(1)	[in.]	[mm]			min.	max.	
Direct acting		1417E/2S05		HF3	1/4"	-	0,065	130	-40 (2)	+130 (2)	17
		1417E/3S05			3/8"						
Piston pilot operated		1427E/2S020			1/4"		0,15				14
		1427E/2S030					0,32				
		1427E/3S020			3/8"		0,15				
		1427E/3S030					0,32				
		1437E/3S050	(3)				0,8		-40	+130	
		1437E/3S070					1,1				
		1437E/4S050			1/2"		0,8				
		1437E/4S070					1,1				

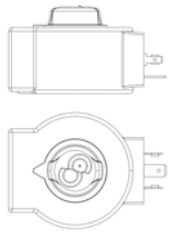
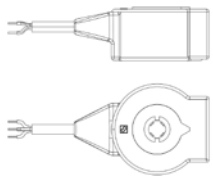
(1) : coils that can be fit on the valves
(2) : for use on the oil line TS = -10 /+70 °C
(3) : for use on the oil line please contact CASTEL

HIGH PRESSURE SOLENOID VALVES FOR HOT GAS AND OIL WITH STAINLESS STEEL CONNECTIONS, WITHOUT COILS

Operating principle	Drawing	Part Number		Coil Type	Connections ODS Ø		Kv [m³/h]	PS [bar]	TS [°C]		Package Pcs.
				(1)	[in.]	[mm]			min.	max.	
Direct acting		1418E/M10S05		HF3	-	10	0,065	140	-40 (2)	+130 (2)	17
		1418E/M6S05				6					
Piston pilot operated		1428E/M10S020				10	0,15				14
		1428E/M10S030					0,32				
		1428E/M6S020				6	0,15				
		1428E/M6S030					0,32				
		1438E/M10S050	(3)			10	0,8		-40	+130	
		1438E/M10S070					1,1				
		1438E/M12S050				12	0,8				
		1438E/M12S070					1,1				

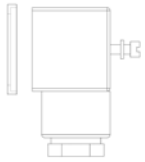
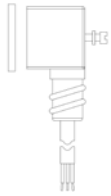
(1) : coils that can be fit on the valves
(2) : for use on the oil line TS = -10 /+70 °C
(3) : for use on the oil line please contact CASTEL

COILS

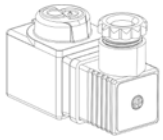
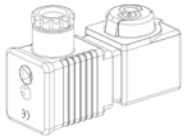
Drawing	Coil Type	Part number	Voltage [V]	Frequency [Hz]	Power [W]	Cable lenght [m]	Package Pcs.
	HF3	9320/RA6	220/230	50/60	12	-	18
		9320/RD1	12 D.C.	-	20		
		9320/RD2	24 D.C.				
	CM3 (1)	9121/RA6	220/230	50/60	12	7	1

(1): coil with spare part G9150/R97 (yellow nut + black screw + OR)

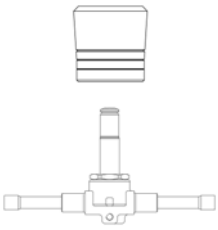
CONNECTORS

Drawing	Part number	Degree of protection	Cable lenght [m]	Package Pcs
	9150/R02	IP 65	-	240
	9900/X66		1	50

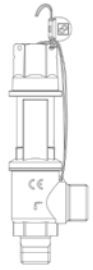
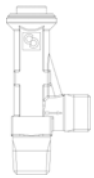
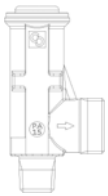
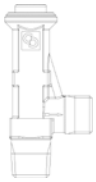
SMART CONNECTOR SYSTEM

Drawing	Part number	Voltage [V]	Frequency [Hz]	T boost [msec]	Power working [W]	Power start [W]	Package Pcs.
	9910/RD1	12 D.C.	-	130	3	50	12
	9910/RD2	24 D.C.			5		
	9910/RA2	24	50/60	200	7		
	9910/RA6	220					
	9910/RA7	240					

PERMANENT MAGNET

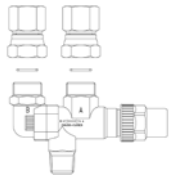
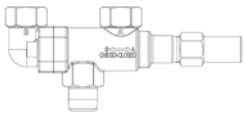
Drawing	Part number	Package Pcs
	9900/X91	1

SAFETY VALVES

Drawing	Part number		Connections IN	Connections OUT	Orifice section [mm²]	Discharge coefficient Kd	Set pressure range [bar]	PS [bar]	TS [°C] min.	TS [°C] max.	Package Pcs
	3030/88C		1" NPT	1.1/4" G	298	0,83	8 - 50	55	-50	+150	8
	3030/66C		3/4" NPT	3/4" G	113	0,9					15
	3030/44C		1/2" NPT								
	3030/44G	(1)	1/2" G								
	3060/46C		1/2" NPT		78,5	0,93	9 - 50			+120	45
	3060/36C		3/8" NPT			0,92					
	3060/45C		1/2" NPT	5/8" SAE	70,9	0,45					
	3060/34C		3/8" NPT	1/2" SAE	38,5	0,69					
	3060/33C			3/8" SAE		0,63					
	3060/24C		1/4" NPT	1/2" SAE		0,69					
	3060/23C			3/8" SAE		0,63					
	3061/2C			3/8" G	44,2	0,89	11 - 60	70		+150	18
	3061/3C		3/8" NPT	1/2" G							
	3061/4C		1/2" NPT								
	3065/4C			1" G	132,7	0,87					24
	3065/6C		3/4" NPT								
	3061E/2C		1/4" NPT	3/8" G	15,9	0,9	60 - 150	165			18
	3061E/3C		3/8" NPT	1/2" G							
	3061E/4C		1/2" NPT								
	3030E/36C		3/8" NPT	3/4" G	38,5	0,97					15
	3030E/46C		1/2" NPT								
	3030E/410C			1.1/4" G	95	0,91					8
	3030E/610C		3/4" NPT								

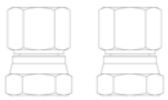
(1) Product on request.

CHANGEOVER VALVES

Drawing	Part number		Supplied connections	Connections IN	Connections OUT	Kv [m³/h]	PS [bar]	TS [°C] min.	TS [°C] max.	Package Pcs
	3032E/33		3039/3	3/8" NPT	3/8" NPT	2,5	150	-40	+150	14
	3032E/44		3039/4	1/2" NPT	1/2" NPT	3,3				
	3032E/64		-	3/4" NPT		9				6
	3032E/66				3/4" NPT					
	3032E/64L	(1)			1/2" NPT					
	3032E/66L	(2)			3/4" NPT					
	3032E/88			1" NPT	1" NPT	14,5	120			1
	3032E/108			1.1/4" NPT		20				

(1) use with 3030E/410C valve
(2) use with 3030E/610C valve

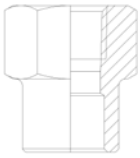
COUPLE OF CONNECTIONS FOR CHANGEOVER VALVES

Drawing	Part number	Connection	Materials	Package Pcs.
	3039/3	3/8" NPT-F	Zinc plated steel	20
	3039/4	1/2" NPT-F		
	3039/30T	3/8" NPT-F	Stainless steel/brass	
	3039/40T	1/2" NPT-F		

BALL SHUT OFF VALVES

Drawing	Part number	Connections	Kv [m³/h]	PS [bar]	TS [°C]		Package Pcs
		NPT			min.	max.	
	3064E/22	1/4”	2,5	150	-40	+150	20
	3064E/33	3/8”	5				
	3064E/44	1/2”	10				24
	3064E/88	1”	20	80			14

UNIONS

Drawing	Part number	Connections		PS [bar]	Package Pcs
		NPT	ODS Ø [mm]		
	3035/2	1/4”	12	150	100
	3035/3	3/8”	18		
	3035/4	1/2”	22		60
	3035/6	3/4”	28		30
	3035/8	1”	35	120	20
	3035/10	1.1/4”	42		6

STRAIGHT CHECK VALVES WITH REINFORCED COPPER ODS CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			Kv [m³/h]	Differential pressure	PS [bar]	MWP [psi] (1)	TS [°C]		Package Pcs
		ODS		W		(2)					
		Ø [in.]	Ø [mm]	Ø [mm]		[bar]			min.	max.	
	3132EW/2	1/4"	-	-	0,5	0,04	80	1160	-40	+150	25
	3132EW/3	3/8"			1,5						
	3132EW/M10	-	10								
	3132EW/M12		12		1,8						16
	3132EW/4	1/2"	-								
	3132EW/5	5/8"	16		3,3						
	3132EW/M18	-	18		5						21
	3132EW/6	3/4"	-								
	3132EW/7	7/8"	22								
	3133EW/2	1/4"	-		0,5	0,3					25
	3133EW/3	3/8"			1,5						
	3133EW/M10	-	10								
	3133EW/M12		12		1,8						16
	3133EW/4	1/2"	-								
	3133EW/5	5/8"	16		3,3						
	3133EW/M18	-	18		5						21
	3133EW/6	3/4"	-								
	3133EW/7	7/8"	22								

(1): according to UL approval
(2): minimum pressure at which the valve is completely open.

STRAIGHT CHECK VALVES WITH K65 COPPER ALLOY ODS CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			Kv [m³/h]	Differential pressure	PS [bar]	MWP [psi] (1)	TS [°C]		Package Pcs
		ODS		W		(2)					
		Ø [in.]	Ø [mm]	Ø [mm]		[bar]			min.	max.	
	3137EW/2	1/4"	-	-	0,5	0,3	130	1740	-40	+150	25
	3137EW/3	3/8"			1,5						
	3137EW/4	1/2"			1,8						16
	3137EW/5	5/8"	16		3,3						
	3137EW/6	3/4"	-		5						21

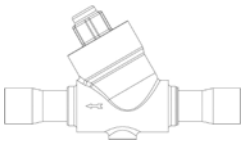
(1): according to UL approval
(2): minimum pressure at which the valve is completely open.

STRAIGHT CHECK VALVES WITH STAINLESS STEEL CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			Kv [m³/h]	Differential pressure	PS [bar]	MWP [psi] (1)	TS [°C]		Package Pcs
		ODS		W		(2)					
		Ø [in.]	Ø [mm]	Ø [mm]		[bar]			min.	max.	
	3138EW/M10	-	-	10	1,5	0,3	140	2030	-40	+150	25
	3138EW/M12			12	1,8						16
	3138EW/M16			16	3,3						

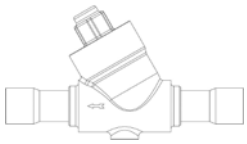
(1): according to UL approval
(2): minimum pressure at which the valve is completely open.

STRAIGHT CHECK VALVES WITH REINFORCED COPPER ODS CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			Kv [m³/h]	Differential pressure	PS [bar]	MWP [psi] (1)	TS [°C]		Package Pcs
		ODS		W		(2)					
		Ø [in.]	Ø [mm]	Ø [mm]		[bar]			min.	max.	
	3145EW/7	7/8"	22	-	8,1	0,3	80	1160	-40	+150	15
	3145EW/M28	-	28		10,4						8
	3145EW/9	1.1/8"	-								
	3145EW/11	1.3/8"	35		15,6						5
	3145EW/13	1.5/8"	-		27						1
	3145EW/M42	-	42								
	3145EW/17	2.1/8"	54		39						

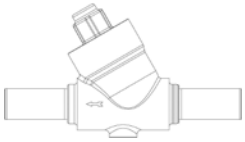
(1): according to UL approval
(2): minimum pressure at which the valve is completely open.

STRAIGHT CHECK VALVES WITH K65 COPPER ALLOY ODS CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			Kv [m³/h]	Differential pressure	PS [bar]	MWP [psi] (1)	TS [°C]		Package Pcs
		ODS		W		(2)					
		Ø [in.]	Ø [mm]	Ø [mm]		[bar]			min.	max.	
	3147EW/7	7/8"	22	-	8,1	0,3	130	1740	-40	+150	15
	3147EW/9	1.1/8"	-		10,4						8
	3147EW/11	1.3/8"	35		15,6						5
	3147EW/13	1.5/8"	-		27						1
	3147EW/17	2.1/8"	54		39						

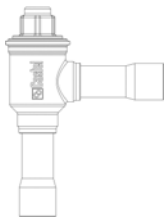
(1): according to UL approval
(2): minimum pressure at which the valve is completely open.

STRAIGHT CHECK VALVES WITH STAINLESS STEEL CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			Kv [m³/h]	Differential pressure	PS [bar]	MWP [psi] (1)	TS [°C]		Package Pcs
		ODS		W		(2)					
		Ø [in.]	Ø [mm]	Ø [mm]		[bar]			min.	max.	
	3148EW/M22	-	-	22	8,1	0,3	140	2030	-40	+150	15
	3148EW/M28			28	10,4						8
	3148EW/M35			35	15,6						5
	3148EW/M42			42	27						1

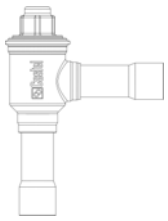
(1): according to UL approval
(2): minimum pressure at which the valve is completely open.

RIGHT-ANGLE CHECK VALVES WITH REINFORCED COPPER ODS CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			Kv [m³/h]	Differential pressure	PS [bar]	MWP [psi] (1)	TS [°C]		Package Pcs
		ODS		W		(2)					
		Ø [in.]	Ø [mm]	Ø [mm]		[bar]			min.	max.	
	3185EW/7	7/8"	22	–	9	0,3	80	1160	-40	+150	14
	3185EW/M28	–	28		19						1
	3185EW/9	1.1/8"	–								
	3185EW/11	1.3/8"	35		29						

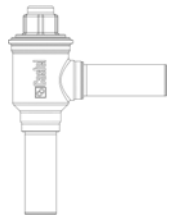
(1): according to UL approval
(2): minimum pressure at which the valve is completely open

RIGHT-ANGLE CHECK VALVES WITH K65 COPPER ALLOY ODS CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			Kv [m³/h]	Differential pressure	PS [bar]	MWP [psi] (1)	TS [°C]		Package Pcs
		ODS		W		(2)					
		Ø [in.]	Ø [mm]	Ø [mm]		[bar]			min.	max.	
	3187EW/7	7/8"	22	–	9	0,3	130	1740	-40	+150	14
	3187EW/9	1.1/8"	–		19						1
	3187EW/11	1.3/8"	35		29						

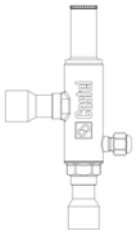
(1): according to UL approval
(2): minimum pressure at which the valve is completely open

RIGHT-ANGLE CHECK VALVES WITH STAINLESS STEEL CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			Kv [m³/h]	Differential pressure	PS [bar]	MWP [psi] (1)	TS [°C]		Package Pcs
		ODS		W		(2)					
		Ø [in.]	Ø [mm]	Ø [mm]		[bar]			min.	max.	
	3188EW/M22	–	–	22	9	0,3	140	2030	-40	+150	14
	3188EW/M28			28	19						1
	3188EW/M35			35	29						

(1): according to UL approval
(2): minimum pressure at which the valve is completely open

EVAPORATING PRESSURE REGULATORS

Drawing	Part number	Connections			Regulation range	Kv [m³/h]	PS [bar]	TS [°C]		Package Pcs
		SAE Flare	Ø ODS [in.]	Ø ODS [mm]	[bar]			min.	max.	
	3335EL/M12S	-	-	12	12 - 35	2,7	60	- 40	+ 130	15
	3335EL/4S		1/2"	-						
	3335EL/5S		5/8"	16						
	3335EL/7S		7/8"	22						8

MOISTURE INDICATORS WITH COPPER ODS CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			PS [bar]	MWP [psi] (1)	TS [°C]		Package Pcs
		ODS		W					
		Ø [in.]	Ø [mm]	Ø [mm]			min.	max.	
	3940EL/M6	-	6	-	60	600	-40	+120	25
	3940EL/2	1/4"	-						
	3940EL/3	3/8"							
	3940EL/M10	-	10						
	3940EL/M12		12						
	3940EL/4	1/2"	-						
	3940EL/5	5/8"	16						16
	3940EL/M18	-	18						
	3940EL/6	3/4"	-						
	3940EL/7	7/8"	22						21
	3940EL/M28	-	28						16
	3940EL/9	1.1/8"	-						

(1): according to UL approval

MOISTURE INDICATORS WITH REINFORCED COPPER ODS CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			PS [bar]	MWP [psi] (1)	TS [°C]		Package Pcs
		ODS		W					
		Ø [in.]	Ø [mm]	Ø [mm]			min.	max.	
	3740E/M6	-	6	-	80	1160	-40	+120	25
	3740E/2	1/4"	-						
	3740E/3	3/8"							
	3740E/M10	-	10						
	3740E/M12		12						
	3740E/4	1/2"	-						
	3740E/5	5/8"	16						16
	3740E/M18	-	18						
	3740E/6	3/4"	-						
	3740E/7	7/8"	22						21
	3740E/M28	-	28						16
	3740E/9	1.1/8"	-						

(1): according to UL approva

MOISTURE INDICATORS WITH K65 COPPER ALLOY ODS CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			PS [bar]	MWP [psi] (1)	TS [°C]		Package Pcs
		ODS		W					
		Ø [in.]	Ø [mm]	Ø [mm]			min.	max.	
	3747E/2	1/4"	-	-	130	1885	-40	+120	25
	3747E/3	3/8"							
	3747E/4	1/2"							
	3747E/5	5/8"	16						16
	3747E/6	3/4"	-						
	3747E/7	7/8"	22						21
	3747E/9	1.1/8"	-						16
	3777E/11	1.3/8"	35			(2)			21

(1): according to UL approval
(2): not UL approved

MOISTURE INDICATORS WITH STAINLESS STEEL CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

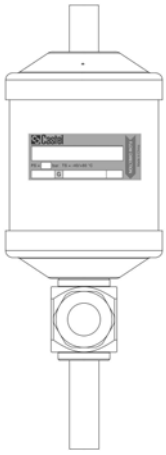
Drawing	Part number	Connections			PS [bar]	MWP [psi] (1)	TS [°C]		Package Pcs
		ODS		W					
		Ø [in.]	Ø [mm]	Ø [mm]			min.	max.	
	3748E/M6	-	-	6	130	1885	-40	+120	25
	3748E/M10			10					
	3748E/M12			12					
	3748E/M16			16					16
	3748E/M18			18					
	3748E/M22			22					21
	3748E/M28			28					16

(1): according to UL approval

SOLID CORE FILTER DRIERS 100% MOLECULAR SIEVES

Drawing	Part number	International code	Connections ODS Ø [in.]	Connections ODS Ø [mm]	Nominal volume [cm³]	PS [bar]	TS [°C] min.	TS [°C] max.	Package Pcs
	DF303E/2S	032S	1/4”	–	50	80	– 40	+ 80	25
	DF303E/3S	033S	3/8”						
	DF305E/2S	052S	1/4”		80				
	DF305E/3S	053S	3/8”						
	DF305E/M10S	–	–	10					
	DF308E/2S	082S	1/4”	–	130				
	DF308E/3S	083S	3/8”						
	DF308E/M10S	–	–	10					
	DF308E/M12S			12					
	DF308E/4S	084S	1/2”	–					
	DF316E/3S	163S	3/8”		250				15
	DF316E/M10S	–	–	10					
	DF316E/M12S			12					
	DF316E/4S	164S	1/2”	–					
	DF316E/5S	165S	5/8”	16					
	DF330E/3S	303S	3/8”	–	500				10
	DF330E/4S	304S	1/2”						
	DF330E/5S	305S	5/8”	16					
	DF341E/4S	414S	1/2”	–	670				6
	DF341E/5S	415S	5/8”	16					

SOLID CORE FILTER DRIERS 100% MOLECULAR SIEVES, WITH MOISTURE INDICATOR - SOLDER CONNECTIONS

Drawing	Part number	International code	Connections ODS Ø [in.]	Connections ODS Ø [mm]	Nominal volume [cm³]	PS [bar]	TS [°C] min.	TS [°C] max.	Package Pcs
	DI305E/2S	052S	1/4"	-	80	80	-40	+80	15
	DI305E/3S	053S	3/8"						
	DI305E/M10S	-	-	10					
	DI308E/2S	082S	1/4"	-	130				
	DI308E/3S	083S	3/8"						
	DI308E/M10S	-	-	10					
	DI308E/M12S			12					
	DI308E/4S	084S	1/2"	-					
	DI316E/3S	163S	3/8"		250				
	DI316E/M10S	-	-	10					
	DI316E/M12S			12					
	DI316E/4S	164S	1/2"	-					
	DI316E/5S	165S	5/8"	16					
	DI330E/3S	303S	3/8"	–	500				6
	DI330E/4S	304S	1/2"						
	DI330E/5S	305S	5/8"	16					
	DI341E/4S	414S	1/2"	–	670				1
	DI341E/5S	415S	5/8"	16					

FILTER DRIERS WITH REPLACEABLE SOLID CORE WITH THREADED COVER - STEEL CONNECTIONS - SUBCRITICAL SYSTEMS

Drawing	Part number	Connections			Cores type	N° of cores	Nominal volume	PS [bar]	MWP [psi]	TS [°C]		Package Pcs
		ODS		W			[cm³]					
		Ø [in.]	Ø [mm]	Ø [mm]						min.	max.	
	4411E/5AF	5/8"	16	21,3	4490/B 4490/AB 4490/BB 4490/E	1	800	62	ND	-40	+80	1
	4411E/7AF	7/8"	22	26,9								
	4411E/9AF	1.1/8"	-	33,7								
	4411E/11AF	1.3/8"	35	42,4								
	4411E/13AF	1.5/8"	-	48,3								
	4411E/M42AF	-	42									
	4411E/17AF	2.1/8"	54	60,3								
	4412E/7AF	7/8"	22	26,9		2	1600					
	4412E/9AF	1.1/8"	-	33,7								
	4412E/11AF	1.3/8"	35	42,4								
	4412E/13AF	1.5/8"	-	48,3								
	4412E/M42AF	-	42									
	4412E/17AF	2.1/8"	54	60,3								

FILTER DRIERS WITH REPLACEABLE SOLID CORE WITH BLIND COVER - STEEL CONNECTIONS - SUBCRITICAL SYSTEMS

Drawing	Part number	Connections			Cores type	N° of cores	Nominal volume	PS [bar]	MWP [psi]	TS [°C]		Package Pcs
		ODS		W			[cm³]					
		Ø [in.]	Ø [mm]	Ø [mm]						min.	max.	
	4411E/5BF	5/8"	16	21,3	4490/B 4490/AB 4490/BB 4490/E	1	800	62	ND	-40	+80	1
	4411E/7BF	7/8"	22	26,9								
	4411E/9BF	1.1/8"	-	33,7								
	4411E/11BF	1.3/8"	35	42,4								
	4411E/13BF	1.5/8"	-	48,3								
	4411E/M42BF	-	42									
	4411E/17BF	2.1/8"	54	60,3								
	4412E/7BF	7/8"	22	26,9		2	1600					
	4412E/9BF	1.1/8"	-	33,7								
	4412E/11BF	1.3/8"	35	42,4								
	4412E/13BF	1.5/8"	-	48,3								
	4412E/M42BF	-	42									
	4412E/17BF	2.1/8"	54	60,3								

FILTER DRIERS WITH REPLACEABLE SOLID CORE WITH THREADED COVER - STEEL CONNECTIONS - TRANSCRITICAL SYSTEM

Drawing	Part number			Connections			Cores type	N° of cores	Nominal volume	PS [bar]	MWP [psi] (1)	TS [°C]		Package Pcs
				ODS		W								
				Ø [in.]	Ø [mm]	Ø [mm]			[cm³]			min.	max.	
	4431E/5AF	(2)	NEW	5/8"	16	21.3	4490/B 4490/AB 4490/BB 4490/E	1	800	90	1300	-40	+80	1
	4431E/7AF		NEW	7/8"	22	26,9								
	4431E/9AF		NEW	1.1/8"	-	33,7								
	4431E/11AF		NEW	1.3/8"	35	42,4								
	4431E/13AF		NEW	1.5/8"	-	48,3								
	4431E/M42AF		NEW	-	42									
	4431E/17AF		NEW	2.1/8"	54	60,3								
	4432E/7AF		NEW	7/8"	22	26,9		2	1600					
	4432E/9AF		NEW	1.1/8"	-	33,7								
	4432E/11AF		NEW	1.3/8"	35	42,4								
	4432E/13AF		NEW	1.5/8"	-	48,3								
	4432E/M42AF		NEW	-	42									
	4432E/17AF		NEW	2.1/8"	54	60,3								

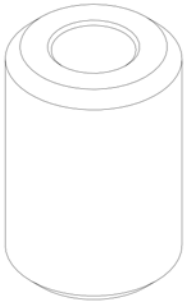
(1): UL approval ongoing
(2): availability to be agreed with Castel sales office

FILTER DRIERS WITH REPLACEABLE SOLID CORE WITH BLIND COVER - STEEL CONNECTIONS - TRANSCRITICAL SYSTEM

Drawing	Part number			Connections			Cores type	N° of cores	Nominal volume	PS [bar]	MWP [psi] (1)	TS [°C]		Package Pcs
				ODS		W			[cm³]					
				Ø [in.]	Ø [mm]	Ø [mm]						min.	max.	
	4431E/5BF	(2)	NEW	5/8"	16	21,3	4490/B 4490/AB 4490/BB 4490/E	1	800	90	1300	-40	+80	1
	4431E/7BF		NEW	7/8"	22	26,9								
	4431E/9BF		NEW	1.1/8"	-	33,7								
	4431E/11BF		NEW	1.3/8"	35	42,4								
	4431E/13BF		NEW	1.5/8"	-	48,3								
	4431E/M42BF		NEW	-	42									
	4431E/17BF		NEW	2.1/8"	54	60,3								
	4432E/7BF		NEW	7/8	22	26,9		2	1600					
	4432E/9BF		NEW	1.1/8"	-	33,7								
	4432E/11BF		NEW	1.3/8"	35	42,4								
	4432E/13BF		NEW	1.5/8"	-	48,3								
	4432E/M42BF		NEW	-	42									
	4432E/17BF		NEW	2.1/8"	54	60,3								

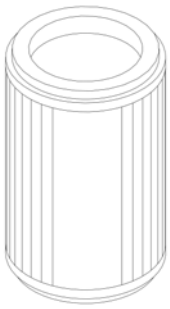
(1): UL approval ongoing
(2): availability to be agreed with Castel sales office

CARTRIDGES

Drawing	Part number			Dehydrating charge	Use	Nominal volume [cm³]	Suitable for filter	Package Pcs
	4490/B	(2)		100% Molecular sieve	High capacity core	800	(3)	15
	4490/AB	(2)		80% Molecular sieve + 20% activated alumina	Anti- acid core			
	4490/BB	(2)	NEW	25% Molecular sieve + 75% activated alumina	Motor burnout core			
	4490/E	(1)	NEW	100% Molecular sieve	High capacity core		(4)	

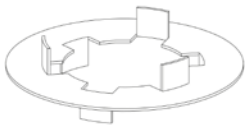
(1) Supplied with cover gasket as spare part
(2) Supplied without cover gasket
(3) 4411E, 4412E, 4431E, 4432E
(4) 4411E, 4412E

MECHANICAL BLOCKS

Drawing	Part number	Filtering surface [cm]	Suitable for filter	Package Pcs
	4495/E	820	4411E (1) 4412E 4431E (2) 4432E	15

(1) replace internal components with spare part 9151/R02 (top + bottom for mechanical block)
(2) replace internal components with spare part 9151/R62 (top + bottom for mechanical block)

ACCESSORIES

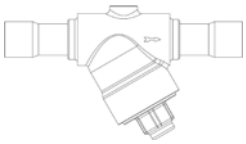
Drawing	Part number	Parts	Suitable for filter	Package Pcs.
	9900/X74	Centering disc for two blocks	4412E (1) 4432E (2)	1
	111135	Cover gasket	4411E 4412E	20 (3)
	114933		4431E 4432E	

(1) replace internal components with spare part 9151/R02 (top + bottom for mechanical block)
(2) replace internal components with spare part 9151/R62 (top + bottom for mechanical block)
(3) minimum order quantity

STRAINERS

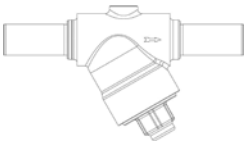
Drawing	Part number	Connections				Filtering surface	Mesh-opening	Kv [m³/h]	PS [bar]	TS [°C]		Package Pcs
		ODS		ODM		[cm²]	[mm]			min.	max.	
		Ø [in.]	Ø [mm]	Ø [in.]	Ø [mm]							
	4520E/M10	-	10	-	12	58	0,166	2,4	60	-40	+80	34
	4520E/M12		12		14			3,4				
	4520E/4	1/2"	-	5/8"	16							
	4520E/5	5/8"	16	3/4"	-							

STRAINERS WITH K65 COPPER ALLOY ODS CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections ODS Ø [in.]	Filtering surface [cm²]	Mesh-opening [mm]	Kv [m³/h]	PS [bar]	MWP [psi] (1)	TS [°C] min.	TS [°C] max.	Package Pcs
	4727E/3	3/8"	13	0,1	2	130	1740	-40	+140	15
	4727E/4	1/2"			2,5					
	4727E/5	5/8"			3					
	4727E/6	3/4"	18	0,2	6	120				
	4727E/7	7/8"								
	4727E/9	1.1/8"								8
	4727E/11	1.3/8"	31		7					
	4727E/13	1.5/8"	46		10					1
	4727E/17	2.1/8"	60		15					

(1): according to UL approval

STRAINERS WITH STAINLESS STEEL CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections ODS W [mm]	Filtering surface [cm²]	Mesh-opening [mm]	Kv [m³/h]	PS [bar]	MWP [psi] (1)	TS [°C] min.	TS [°C] max.	Package Pcs
	4728E/M10	10	13	0,1	2	140	2030	-40	+140	15
	4728E/M12	12			2,5					
	4728E/M16	16			3					
	4728E/M18	18	18	0,2	6	120	1740			
	4728E/M22	22								
	4728E/M28	28								8
	4728E/M35	35	31		7					
	4728E/M42	42	46		10					1

(1): according to UL approval

STRAINER BLOCKS FOR FILTERS SERIES 47

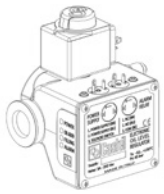
Drawing	Part number	Filtering surface [cm²]	Mesh-opening [mm]	Suitable for filter		Package pcs
	9151E/R54	13	0,05	4727E/3 4727E/4	4728E/M10 4728E/M12	1
	9151E/R55			4727E/5	4728E/M16	
	9151E/R50	18		4727E/6 4727E/7	4728E/M18 4728E/M22	
	9151E/R51			4727E/9	4728E/M28	
	9151E/R52	31		4727E/11	4728E/M35	
	9151E/R53	46		4727E/13	4728E/M42	
	9151/R15	13	0,1	4727E/3 4727E/4	4728E/M10 4728E/M12	
	9151/R16			4727E/5	4728E/M16	
	9151/R17	18	0,2	4727E/6 4727E/7	4728E/M18 4728E/M22	
	9151/R18			4727E/9	4728E/M28	
	9151/R19	31		4727E/11	4728E/M35	
	9151/R24	46		4727E/13	4728E/M42	
	9151/R25	60		4727E/17	-	

OIL RESERVOIR PRESSURE VALVES

Drawing	Part number	connections SAE FLARE IN	connections SAE FLARE OUT	Kv [m³/h]	differential pressure [bar]	PS [bar]	TS [°C] min.	TS [°C] max.	Package Pcs
	3150W/X04	3/8" - F	3/8" - M	1,6	7	140	-40	+150	16
	3150W/X05				9				
	3150W/X06				12				

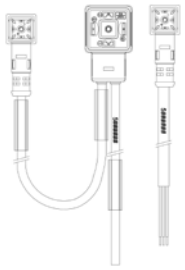
ELECTRONIC OIL LEVEL REGULATORS

iCastel

Drawing	Part number		Connections: Compressor crankcase adapters (1)	Connections: Oil level inspection	Connections: Oil inlet SAE FLARE	Version	Voltage [V]	Frequency [Hz]	Degree of protection	Cables kit (1)	PS [bar]	TS [°C] min.	TS [°C] max.	Package Pcs
	5650E/11RA2	NEW	5690/X11 5690/X12 5690/X13 5690/X14 5690/X15 5690/X17 5690E/X01	1 sight glass	3/8"	Right	24 AC	50/60	IP 65	9901/X26	90	-30	+130	1
	5650E/11RA6	NEW					220 AC							
	5650E/11LA2	NEW				Left	24 AC							
	5650E/11LA6	NEW					220 AC							
	5658E/07RA2	NEW				Right	24 AC				140			
	5658E/07RA6	NEW					220 AC							
	5658E/07LA2	NEW				Left	24 AC							
	5658E/07LA6	NEW					220 AC							

(1) To be ordered separately

CABLES KIT

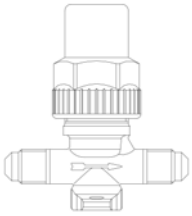
Drawing	Part number		Use	Degree of protection	Cable lenght [m]	Package Pcs
	9901/X26	NEW	Power supply cable - Alarms cable	IP 65	3	1

OIL LEVEL REGULATORS ADAPTERS

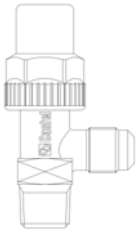
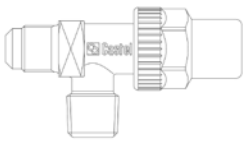
Drawing	Part number		Compressor crankcase connections (1)	Package Pcs
	5690/X11	NEW	Flanged with 3 holes on dia 1.7/8" and 4 holes on dia 50 mm L = 83 mm	1
	5690/X12	NEW	1.1/8" - 12 UNF thread	
	5690/X13	NEW	1.1/8" - 18 UNEF thread	
	5690/X14	NEW	3/4" NPT thread	
	5690/X15	NEW	Flanged with 3 holes on dia 1.7/8" and 4 holes on dia 50 mm L = 53 mm	
	5690/X17	NEW	Rotalock 1.1/4" - 12 UNF	
	5690E/X01	NEW	Flanged with 6 holes on dia 1.7/8" and 4 holes on dia 50 mm L = 53 mm	

(1) including screws for fixing the adapter to the oil level regulator

VALVES FOR HERMETIC SYSTEMS

Drawing	Part number	Connections				Kv [m³/h]	PS [bar]	TS [°C]		Package Pcs
		SAE Flare		ODS				min.	max.	
				Ø [in.]						
	6010E/2	1/4"	1/4"	-	-	0,27	140	-40	+130	45
	6012E/22		-	1/4"						72

RECEIVER VALVES

Drawing	Part number		Connections				Kv [m³/h]	PS [bar]	TS [°C]		Package Pcs
			SAE Flare		NPT				min.	max.	
	6110E/22		-	1/4"	1/4"	-	0,44	140	-40	+130	90
	6110E/X02	(1)	.	-		1/4" F					
	6110E/X11		1/4"	1/4"	-	-					48
	6110E/X15		1/4" F								90
	6110E/33		-	3/8"	3/8"		1,35				
	6110E/X13		3/8" F		-						
	6110E/44		-	1/2"	1/2"		3,4				
	6120E/22			1/4"	1/4"		0,44				
	6120E/33			3/8"	3/8"		1,35				
	6120E/44			1/2"	1/2"		3,4				

(1): including a conical gasket 7580/2

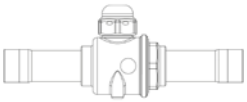
CAPPED VALVES

Drawing	Part number	Connections			Kv [m³/h]	PS [bar]	TS [°C]		Package Pcs
		SAE Flare	ODS				min.	max.	
			Ø [in.]	Ø [mm]					
	6420E/2	-	1/4"	-	0,4	120	-40	+130	45
	6420E/3		3/8"		1				
	6420E/3S3	3/8" - OUT	3/8" - IN						
	6420E/4	-	1/2"		1,45				

BALL VALVES WITH COPPER ODS CONNECTIONS

Drawing	Part number	Connections ODS Ø [in.]	Connections ODS Ø [mm]	Ball port Ø [mm]	Kv [m³/h]	PS [bar]	TS [°C] min.	TS [°C] max.	Package Pcs
	6570EL/M6	–	6	10	0,8	60	-40	+150	25
	6570EL/2	1/4"	–						
	6570EL/3	3/8"			3				
	6570EL/M10	–	10						
	6570EL/M12		12		5				
	6570EL/4	1/2"	–						
	6570EL/5	5/8"	16	15	17				16
	6570EL/M18	–	18						
	6570EL/6	3/4"	–						
	6570EL/7	7/8"	22	19	29				21
	6570EL/M28	–	28	25	51				16
	6570EL/9	1.1/8"	–						
	6570EL/11	1.3/8"	35	32	86				6
	6570EL/13	1.5/8"	–	40	117				
	6570EL/M42	–	42						
	6570EL/17	2.1/8"	54	50	214				1

BALL VALVES WITH REINFORCED COPPER ODS CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections ODS Ø [in.]	Connections ODS Ø [mm]	Ball port Ø [mm]	Kv [m³/h]	PS [bar]	MWP [psi] (1)	TS [°C] min.	TS [°C] max.	Package Pcs
	6570E/M6	–	6	10	0,8	80	1160	-40	+150	25
	6570E/2	1/4"	–							
	6570E/3	3/8"			3					
	6570E/M10	–	10							
	6570E/M12		12		5					
	6570E/4	1/2"	–							
	6570E/5	5/8"	16	15	17					16
	6570E/M18	–	18							
	6570E/6	3/4"	–							
	6570E/7	7/8"	22	19	29					21
	6570E/M28	–	28	25	51					16
	6570E/9	1.1/8"	–							
	6570E/11	1.3/8"	35	32	86					6
	6570E/13	1.5/8"	–	40	117					
	6570E/M42	–	42							
	6570E/17	2.1/8"	54	50	214					1

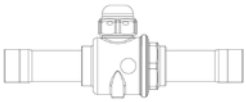
(1): according to UL approval

BALL VALVES WITH REINFORCED COPPER ODS CONNECTIONS, WITH ACCESS FITTING - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections ODS Ø [in.]	Connections ODS Ø [mm]	Ball port Ø [mm]	Kv [m³/h]	PS [bar]	MWP [psi] (1)	TS [°C] min.	TS [°C] max.	Package Pcs
	6570E/M6A	–	6	10	0,8	80	1160	-40	+150	25
	6570E/2A	1/4"	–							
	6570E/3A	3/8"			3					
	6570E/M10A	–	10							
	6570E/M12A		12		5					
	6570E/4A	1/2"	–							
	6570E/5A	5/8"	16	15	17					16
	6570E/M18A	–	18							
	6570E/6A	3/4"	–							
	6570E/7A	7/8"	22	19	29					21
	6570E/M28A	–	28	25	51					16
	6570E/9A	1.1/8"	–							
	6570E/11A	1.3/8"	35	32	86					6
	6570E/13A	1.5/8"	–	40	117					
	6570E/M42A	–	42							
	6570E/17A	2.1/8"	54	50	214					1

(1): according to UL approval

BALL VALVES WITH K65 COPPER ALLOY ODS CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections ODS Ø [in.]	Connections ODS Ø [mm]	Ball port Ø [mm]	Kv [m³/h]	PS [bar]	MWP [psi] (1)	TS [°C] min.	TS [°C] max.	Package Pcs
	6577E/2	1/4"	–	10	0,8	130	1885	-40	+150	25
	6577E/3	3/8"			3					
	6577E/4	1/2"			5					
	6577E/5	5/8"	16	15	17					16
	6577E/6	3/4"	–							
	6577E/7	7/8"	22	19	29					15
	6577E/9	1.1/8"	–	25	51					8
	6577E/11	1.3/8"	35	32	86					6
	6577E/13	1.5/8"	–	40	117		1740			
	6577E/17	2.1/8"	54	50	214	120	(2)			1

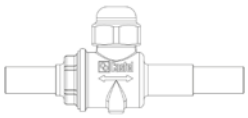
(1): according to UL approval
(2): not UL approved

BALL VALVES WITH STAINLESS STEEL CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections W Ø [mm]	Ball port Ø [mm]	Kv [m³/h]	PS [bar]	MWP [psi] (1)	TS [°C] min.	TS [°C] max.	Package Pcs
	6578E/M6	6	10	0,8	140	2030	-40	+150	25
	6578E/M10	10		3					
	6578E/M12	12		5					
	6578E/M16	16	15	17					16
	6578E/M18	18							
	6578E/M22	22	19	29					15
	6578E/M28	28	25	51					8
	6578E/M35	35	32	86					6
	6578E/M42	42	40	117					
	6578E/M48	48,3				1740			
	6578E/M60	60,3	50	214	120	(2)			1
	6578E/M73	73	60	380					

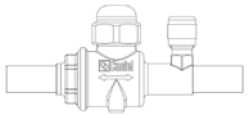
(1): according to UL approval
(2): not UL approved

STAINLESS STEEL BALL VALVES - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number			Connections W Ø [mm]	Ball port Ø [mm]	Kv [m³/h]	PS [bar]	MWP [psi] (1)	TS [°C] min.	TS [°C] max.	Package Pcs
	6588E/M10	(2)	NEW	10	10	3	150	2176	-40	+150	25
	6588E/M12		NEW	12		5					
	6588E/M16		NEW	16	15	17					16
	6588E/M18		NEW	18							
	6588E/M22		NEW	22	19	29					15
	6588E/M28		NEW	28	25	51					8
	6588E/M35		NEW	35	32	86					6
	6588E/M42		NEW	42	40	117					
	6588E/M48		NEW	48,3							1
	6588E/M60		NEW	60,3	50	214					

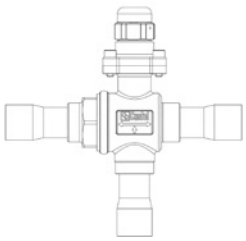
(1): according to UL approval
(2) Availability to be agreed with CASTEL sales office

STAINLESS STEEL BALL VALVES, WITH ACCESS FITTING - APPROVED BY UNDERWRITERS LABORATORIES INC.

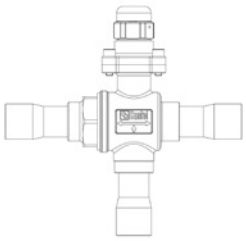
Drawing	Part number			Connections W Ø [mm]	Ball port Ø [mm]	Kv [m³/h]	PS [bar]	MWP [psi] (1)	TS [°C] min.	TS [°C] max.	Package Pcs
	6588E/M10A	(2)	NEW	10	10	3	150	2176	-40	+150	25
	6588E/M12A		NEW	12		5					16
	6588E/M16A		NEW	16	15	17					
	6588E/M18A		NEW	18							
	6588E/M22A		NEW	22	19	29					15
	6588E/M28A		NEW	28	25	51					8
	6588E/M35A		NEW	35	32	86					6
	6588E/M42A		NEW	42	40	117					
	6588E/M48A		NEW	48,3							1
	6588E/M60A		NEW	60,3	50	214					

(1): according to UL approval
(2) Availability to be agreed with CASTEL sales office

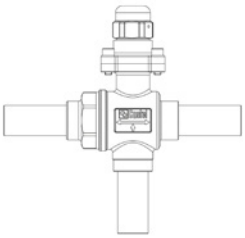
3-WAYS MANUAL BALL VALVES WITH REINFORCED COPPER ODS CONNECTIONS

Drawing	Part number		Connections			Ball port Ø	Kv [m³/h]	PS [bar]	TS [°C]		Package Pcs
			ODS		W				min.	max.	
			Ø [in.]	Ø [mm]	Ø [mm]	[mm]					
	6690E/3	NEW	3/8"	-	-	13,5	4,6	80	-40	+150	1
	6690E/M10	NEW	-	10							
	6690E/M12	NEW		12							
	6690E/4	NEW	1/2"	-							
	6690E/5	NEW	5/8"	16							
	6690E/M18	NEW	-	18							
	6690E/6	NEW	3/4"	-							
	6690E/7		7/8"	22	–	19	10,7				
	6690E/M28		–	28		24	15,9				
	6690E/9		1.1/8"	–							
	6690E/11		1.3/8"	35		28	20,3				
	6690E/13		1.5/8"	–		37	38,5				
	6690E/M42		–	42							

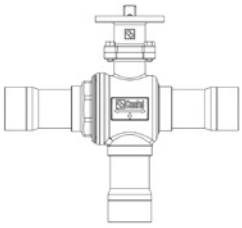
3-WAYS MANUAL BALL VALVES WITH K65 COPPER ALLOY ODS CONNECTIONS

Drawing	Part number		Connections			Ball port Ø	Kv [m³/h]	PS [bar]	TS [°C]		Package Pcs
			ODS		W				min.	max.	
			Ø [in.]	Ø [mm]	Ø [mm]	[mm]					
	6697E/3	NEW	3/8"	-	-	13,5	4,6	130	-40	+150	1
	6697E/4	NEW	1/2"								
	6697E/5	NEW	5/8"	16							
	6697E/6	NEW	3/4"	-							
	6697E/7		7/8"	22	–	19	10,7				
	6697E/9		1.1/8"	–		24	15,9				
	6697E/11		1.3/8"	35		28	20,3				
	6697E/13		1.5/8"	–		37	38,5				

3-WAYS MANUAL BALL VALVES WITH STAINLESS STEEL CONNECTIONS

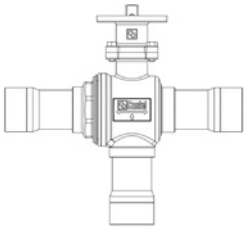
Drawing	Part number		Connections			Ball port Ø	Kv [m³/h]	PS [bar]	TS [°C]		Package Pcs
			ODS		W				min.	max.	
			Ø [in.]	Ø [mm]	Ø [mm]	[mm]					
	6698E/M10	NEW	-	-	10	13,5	4,6	140	-40	+150	1
	6698E/M12	NEW			12						
	6698E/M16	NEW			16						
	6698E/M18	NEW			18						
	6698E/M22		–	–	22	19	10,7				
	6698E/M28				28	24	15,9				
	6698E/M35				35	28	20,3				
	6698E/M42				42	37	38,5				

3-WAYS VALVES TO BE MOTORIZED WITH REINFORCED COPPER ODS CONNECTIONS

Drawing	Part number		Connections			Ball port Ø	Kv [m³/h]	PS [bar]	TS [°C]		Package Pcs
	(1)		ODS		W				min.	max.	
			Ø [in.]	Ø [mm]	Ø [mm]	[mm]					
	6690EB/3	NEW	3/8”	-	-	13,5	4,6	80	-40	+150	1
	6690EB/M10	NEW	-	10							
	6690EB/M12	NEW		12							
	6690EB/4	NEW	1/2”	-							
	6690EB/5	NEW	5/8”	16							
	6690EB/M18	NEW	-	18							
	6690EB/6	NEW	3/4”	-							
	6690EB/7		7/8”	22	–	19	10,7				
	6690EB/M28		–	28		24	15,9				
	6690EB/9		1.1/8”	–							
	6690EB/11		1.3/8”	35		28	20,3				
	6690EB/13		1.5/8”	–		37	38,5				
	6690EB/M42		–	42							

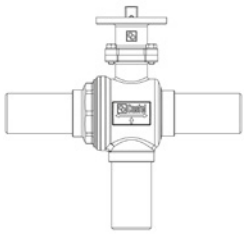
(1): with adapter for servomotors with ISO mounting flange

3-WAYS VALVES TO BE MOTORIZED WITH K65 COPPER ALLOY ODS CONNECTIONS

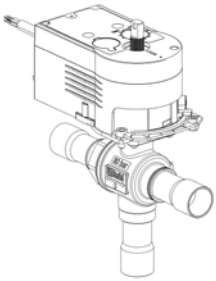
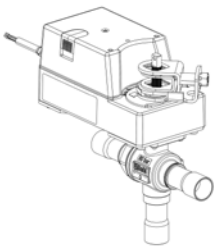
Drawing	Part number (1)		Connections ODS Ø [in.]	Connections ODS Ø [mm]	Connections W Ø [mm]	Ball port Ø [mm]	Kv [m³/h]	PS [bar]	TS [°C] min.	TS [°C] max.	Package Pcs
	6697EB/3	NEW	3/8"	-	-	13,5	4,6	130	-40	+150	1
	6697EB/4	NEW	1/2"								
	6697EB/5	NEW	5/8"	16							
	6697EB/6	NEW	3/4"	-	--						
	6697EB/7		7/8"	22	–	19	10,7				
	6697EB/9		1.1/8"	–		24	15,9				
	6697EB/11		1.3/8"	35		28	20,3				
	6697EB/13		1.5/8"	–		37	38,5				

(1): with adapter for servomotors with ISO mounting flange

3-WAYS VALVES TO BE MOTORIZED WITH STAINLESS STEEL CONNECTIONS

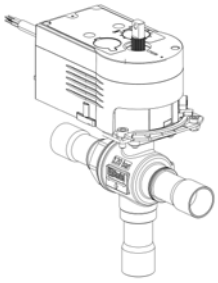
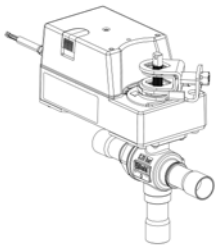
Drawing	Part number (1)		Connections ODS Ø [in.]	Connections ODS Ø [mm]	Connections W Ø [mm]	Ball port Ø [mm]	Kv [m³/h]	PS [bar]	TS [°C] min.	TS [°C] max.	Package Pcs
	6698EB/M10	NEW	-	-	10	13,5	4,6	140	-40	+150	1
	6698EB/M12	NEW			12						
	6698EB/M16	NEW			16						
	6698EB/M18	NEW			18						
	6698EB/M22		–	–	22	19	10,7				
	6698EB/M28				28	24	15,9				
	6698EB/M35				35	28	20,3				
	6698EB/M42				42	37	38,5				

(1): with adapter for servomotors with ISO mounting flange

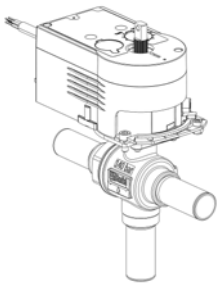
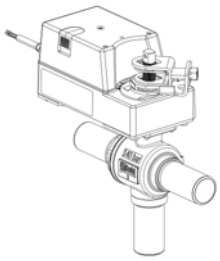
Drawing	Part number -1		Connections ODS Ø [in.]	Connections ODS Ø [mm]	Connections W Ø [mm]	P/N Servomotor	Torque [Nm]	Ball port Ø [mm]	Kv [m³/h]	PS [bar]	TS [°C] min.	TS [°C] max.	Package pcs
	6690EM/3A2	NEW	3/8"	-	-	9700/RA2	10	13,5	4,6	80	-40	+150	1
	6690EM/3A6	NEW				9700/RA6							
	6690EM/M10A2	NEW	-	10		9700/RA2							
	6690EM/M10A6	NEW				9700/RA6							
	6690EM/M12A2	NEW		12		9700/RA2							
	6690EM/M12A6	NEW				9700/RA6							
	6690EM/4A2	NEW	1/2"	-		9700/RA2							
	6690EM/4A6	NEW				9700/RA6							
	6690EM/5A2	NEW	5/8"	16		9700/RA2							
	6690EM/5A6	NEW				9700/RA6							
	6690EM/M18A2	NEW	-	18		9700/RA2							
	6690EM/M18A6	NEW				9700/RA6							
	6690EM/6A2	NEW	3/4"	-		9700/RA2							
	6690EM/6A6	NEW				9700/RA6							
	6690EM/7A2		7/8"	22		9700/RA2		19	10,7				
	6690EM/7A6					9700/RA6							
	6690EM/M28A2		–	28		9700/RA2		24	15,9				
	6690EM/M28A6					9700/RA6							
	6690EM/9A2		1.1/8"	–		9700/RA2							
	6690EM/9A6					9700/RA6							
	6690EM/11A2		1.3/8"	35		9720/RA2	30	28	20,3				
	6690EM/11A6					9720/RA6							
	6690EM/13A2		1.5/8"	–		9720/RA2		37	38,5				
	6690EM/13A6					9720/RA6							
	6690EM/M42A2		–	42		9720/RA2							
	6690EM/M42A6					9720/RA6							

(1): with servomotor and mounting plate

3-WAYS MOTORIZED BALL VALVES WITH K65 COPPER ALLOY ODS CONNECTIONS

Drawing	Part number -1		Connections ODS Ø [in.]	Connections ODS Ø [mm]	Connections W Ø [mm]	P/N Servomotor	Torque [Nm]	Ball port Ø [mm]	Kv [m³/h]	PS [bar]	TS [°C] min.	TS [°C] max.	Package pcs
	6697EM/3A2	NEW	3/8"	-	-	9700/RA2	10	13,5	4,6	130	-40	+150	1
	6697EM/3A6	NEW				9700/RA6							
	6697EM/4A2	NEW	1/2"			9700/RA2							
	6697EM/4A6	NEW				9700/RA6							
	6697EM/5A2	NEW	5/8"	16		9700/RA2							
	6697EM/5A6	NEW				9700/RA6							
	6697EM/6A2	NEW	3/4"	-		9700/RA2							
	6697EM/6A6	NEW				9700/RA6							
	6697EM/7A2		7/8"	22		9700/RA2		19	10,7				
	6697EM/7A6					9700/RA6							
	6697EM/9A2		1.1/8"	–		9700/RA2		24	15,9				
	6697EM/9A6					9700/RA6							
	6697EM/11A2		1.3/8"	35		9720/RA2	30	28	20,3				
	6697EM/11A6					9720/RA6							
	6697EM/13A2		1.5/8"	–		9720/RA2		37	38,5				
	6697EM/13A6					9720/RA6							

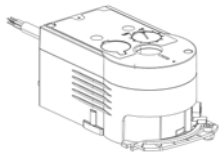
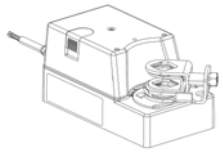
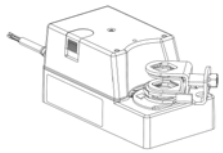
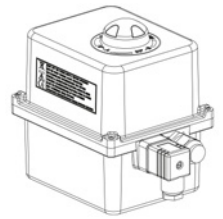
(1): with servomotor and mounting plate

Drawing	Part number (1)		Connections ODS Ø [in.]	Connections ODS Ø [mm]	Connections W Ø [mm]	P/N Servomotor	Torque [Nm]	Ball port Ø [mm]	Kv [m³/h]	PS [bar]	TS [°C] min.	TS [°C] max.	Package Pcs
	6698EM/M10A2	NEW	-	-	10	9700/RA2	10	13,5	4,6	140	-40	+150	1
	6698EM/M10A6	NEW				9700/RA6							
	6698EM/M12A2	NEW			12	9700/RA2							
	6698EM/M12A6	NEW				9700/RA6							
	6698EM/M16A2	NEW			16	9700/RA2							
	6698EM/M16A6	NEW				9700/RA6							
	6698EM/M18A2	NEW			18	9700/RA2							
	6698EM/M18A6	NEW				9700/RA6							
	6698EM/M22A2				22	9700/RA2		19	10,7				
	6698EM/M22A6					9700/RA6							
	6698EM/M28A2				28	9700/RA2		24	15,9				
	6698EM/M28A6					9700/RA6							
	6698EM/M35A2				35	9720/RA2	30	28	20,3				
	6698EM/M35A6					9720/RA6							
	6698EM/M42A2				42	9720/RA2		37	38,5				
	6698EM/M42A6					9720/RA6							

(1): with servomotor and mounting plate

SERVOMOTOR

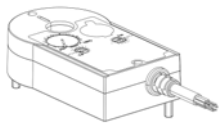
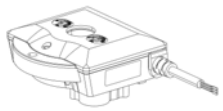
iCastel

Drawing	Part number		Voltage [V]	Frequency [Hz]	Power [W]	Degree of protection	Rotation angle	Torque [Nm]	Running time [sec]	Ambient temperature [°C] min.	Ambient temperature [°C] max.	Suitable for ball valve	Package Pcs.
	9700/RA2	(1)	24	50/60	4,8	IP 54	90°	10	60	-20	+50	see the couplings indicated in the COUPLING SCHEME table	1
	9700/RA6	(2)	230		2,9	IP 43							
	9720/RA2	(1)	24		2,4	IP 54		30	120				
	9720/RA6	(2)	230		3,7	IP 43							
	9730/RA2	(3)	24		9	IP 54		60	150	-30			
	9730/RA6	(2)	230										
	9740/RA2	(3)	24		45	IP 66		100	120	-10	+55		
	9740/RA6	(2)	230										

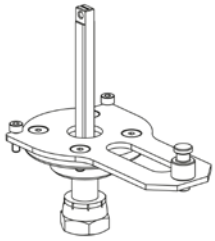
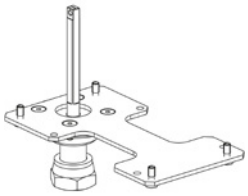
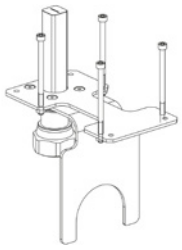
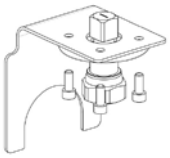
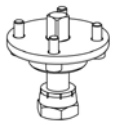
(1) Wiring connections : switching output 2 points (open/close) or continous output (0 ÷ 10V)
(2) Wiring connections : switching output 2 points (open/close)
(3) Wiring connections : continous output (0 ÷ 10V)

AUXILIARY SWITCH UNITS

iCastel

Drawing	Part number	Suitable for servomotor	Contact type	Max loading [A]	Ambient temperature [°C] min.	Ambient temperature [°C] max.	Degree of protection	Package Pcs.
	9750/X01	9700/RA2	Double	5	-20	+55	IP 40	1
	9750/X02	9700/RA6 9720/RA2 9720/RA6						

BALL VALVES MOTORIZATION - ADAPTERS

Drawing	Part number	Package Pcs.
	9901/X58	
	9901/X60	
	9901/X73	
	9901/X57	
	9901/X74	
	9901/X75	
	9901/X76	1
	9901/X72	
	9901/X45	
	9901/X46	
	9901/X68	
	9901/X69	
	9901/X80	

see the couplings indicated in the COUPLING SCHEME table

BALL VALVES WITH COPPER ODS CONNECTIONS W/O ACCESS FITTING - MOTORIZATION COUPLING SCHEME

Part number	CASTEL			BELIMO			CASTEL	WATERGATES		CASTEL
	Part number			Part number			Part number	Part number		Part number
	servomotor	Adapter	switch	servomotor	Shaped handle	switch	Adapter	servomotor	switch	Adapter
6570EL/M6	9700/RA2	9901/X58	9750/X01	SR24A-R SR230A-R	ZSV-11	S1A S2A	9901/X45	NA032100 NA034100	(1)	9901/X45
6570EL/2										
6570EL/3										
6570EL/M10										
6570EL/M12										
6570EL/4										
6570EL/5										
6570EL/M18										
6570EL/6										
6570EL/7	9700/RA2 --- 9700/RA6	9901/X60 --- 9901/X57	9750/X01 --- 9750/X02				9901/X46			9901/X46
6570EL/M28										
6570EL/9										
6570EL/11	9720/RA2 9720/RA6	9901/X75	9901/X02				9901/X68			9901/X68
6570EL/13										
6570EL/M42										
6570EL/17	9730/RA2 9730/RA6	9901/X76	(1)	GR24A-R GR230A-R	ZGV-14		9901/X69	NA0052100 NA0054100		9901/X69

(1) internal

BALL VALVES WITH REINFORCED COPPER ODS CONNECTIONS W/O ACCESS FITTING - MOTORIZATION COUPLING SCHEME

Part number (2)	CASTEL			BELIMO			CASTEL	WATERGATES		CASTEL
	Part number			Part number			Part number	Part number		Part number
	servomotor	Adapter	switch	servomotor	Shaped handle	switch	Adapter	servomotor	switch	Adapter
6570E/M6	9700/RA2	9901/X58	9750/X01	SR24A-R SR230A-R	ZSV-11	S1A S2A	9901/X45	NA032100 NA034100	(1)	9901/X45
6570E/2										
6570E/3										
6570E/M10										
6570E/M12										
6570E/4										
6570E/5										
6570E/M18										
6570E/6										
6570E/7	9700/RA2 --- 9700/RA6	9901/X60 --- 9901/X57	9750/X01 --- 9750/X02				9901/X46			9901/X46
6570E/M28										
6570E/9										
6570E/11	9720/RA2 9720/RA6	9901/X75	9750/X02				9901/X68			9901/X68
6570E/13										
6570E/M42										
6570E/17	9730/RA2 9730/RA6	9901/X76	(1)	GR24A-R GR230A-R	ZGV-14		9901/X69	NA0052100 NA0054100		9901/X69

(1) internal
(2) coupling scheme valid also for ball valves with access fitting, where available

BALL VALVES WITH K65 ODS CONNECTIONS W/O ACCESS FITTING - MOTORIZATION COUPLING SCHEME

<table>
<tr><th rowspan="3">Part number</th><th colspan="3">CASTEL</th><th colspan="3">BELIMO</th><th>CASTEL</th><th colspan="2">WATERGATES</th><th>CASTEL</th></tr>
<tr><th colspan="3">Part number</th><th colspan="3">Part number</th><th>Part number</th><th colspan="2">Part number</th><th>Part number</th></tr>
<tr><th>servomotor</th><th>Adapter</th><th>switch</th><th>servomotor</th><th>Shaped handle</th><th>switch</th><th>Adapter</th><th>servomotor</th><th>switch</th><th>Adapter</th></tr>
<tr><td>6577E/2</td><td rowspan="5">9700/RA2</td><td rowspan="5">9901/X58</td><td rowspan="5">9750/X01</td><td rowspan="9">SR24A-R
SR230A-R</td><td rowspan="9">ZSV-11</td><td rowspan="10">S1A
S2A</td><td rowspan="5">9901/X45</td><td rowspan="9">NA032100
NA034100</td><td rowspan="10">(1)</td><td rowspan="5">9901/X45</td></tr>
<tr><td>6577E/3</td></tr>
<tr><td>6577E/4</td></tr>
<tr><td>6577E/5</td></tr>
<tr><td>6577E/6</td></tr>
<tr><td>6577E/7</td><td>9700/RA2

9700/RA6</td><td>9901/X73

9901/X74</td><td>9750/X01

9750/X02</td><td rowspan="2">9901/X80</td><td rowspan="2">9901/X80</td></tr>
<tr><td>6577E/9</td><td rowspan="3">9720/RA2
9720/RA6</td><td>9901/X74</td><td rowspan="3">9750/X02</td></tr>
<tr><td>6577E/11</td><td rowspan="2">9901/X75</td><td rowspan="2">9901/X68</td><td rowspan="2">9901/X68</td></tr>
<tr><td>6577E/13</td></tr>
<tr><td>6577E/17</td><td>9730/RA2
9730/RA6</td><td>9901/X76</td><td>(1)</td><td>GR24A-R
GR230A-R</td><td>ZGV-14</td><td>9901/X69</td><td>NA0052100
NA0054100</td><td>9901/X69</td></tr>
</table>

(1) internal

BALL VALVES WITH STAINLESS STEEL CONNECTIONS W/O ACCESS FITTING - MOTORIZATION COUPLING SCHEME

<table>
<tr><th rowspan="3">Part number</th><th colspan="3">CASTEL</th><th colspan="3">BELIMO</th><th>CASTEL</th><th colspan="2">WATERGATES</th><th>CASTEL</th></tr>
<tr><th colspan="3">Part number</th><th colspan="3">Part number</th><th>Part number</th><th colspan="2">Part number</th><th>Part number</th></tr>
<tr><th>servomotor</th><th>Adapter</th><th>switch</th><th>servomotor</th><th>Shaped handle</th><th>switch</th><th>Adapter</th><th>servomotor</th><th>switch</th><th>Adapter</th></tr>
<tr><td>6578E/M6</td><td rowspan="5">9700/RA2</td><td rowspan="5">9901/X58</td><td rowspan="5">9750/X01</td><td rowspan="11">SR24A-R
SR230A-R</td><td rowspan="11">ZSV-11</td><td rowspan="12">S1A
S2A</td><td rowspan="5">9901/X45</td><td rowspan="11">NA032100
NA034100</td><td rowspan="12">(1)</td><td rowspan="5">9901/X45</td></tr>
<tr><td>6578E/M10</td></tr>
<tr><td>6578E/M12</td></tr>
<tr><td>6578E/M16</td></tr>
<tr><td>6578E/M18</td></tr>
<tr><td>6578E/M22</td><td>9700/RA2

9700/RA6</td><td>9901/X73

9901/X74</td><td>9750/X01

9750/X02</td><td rowspan="2">9901/X80</td><td rowspan="2">9901/X80</td></tr>
<tr><td>6578E/M28</td><td rowspan="5">9720/RA2
9720/RA6</td><td>9901/X74</td><td rowspan="5">9750/X02</td></tr>
<tr><td>6578E/M35</td><td rowspan="3">9901/X75</td><td rowspan="3">9901/X68</td><td rowspan="3">9901/X68</td></tr>
<tr><td>6578E/M42</td></tr>
<tr><td>6578E/M48</td></tr>
<tr><td>6578E/M60</td><td>9730/RA2
9730/RA6</td><td>9901/X76</td><td rowspan="2">(1)</td><td>GR24A-R
GR230A-R</td><td>ZGV-14</td><td>9901/X69</td><td>NA0052100
NA0054100</td><td>9901/X69</td></tr>
<tr><td>6578E/M73</td><td>9740/RA2
9740/RA6</td><td>9901/X72</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr>
</table>

(1) internal

STAINLESS STEEL BALL VALVES W/O ACCESS FITTING - MOTORIZATION COUPLING SCHEME

<table>
<tr><th rowspan="3">Part number (2)</th><th colspan="3">CASTEL</th><th colspan="3">BELIMO</th><th>CASTEL</th><th colspan="2">WATERGATES</th><th>CASTEL</th></tr>
<tr><th colspan="3">Part number</th><th colspan="3">Part number</th><th>Part number</th><th colspan="2">Part number</th><th>Part number</th></tr>
<tr><th>servomotor</th><th>Adapter</th><th>switch</th><th>servomotor</th><th>Shaped handle</th><th>switch</th><th>Adapter</th><th>servomotor</th><th>switch</th><th>Adapter</th></tr>
<tr><td>6588E/M10</td><td rowspan="4">9700/RA2</td><td rowspan="4">9901/X58</td><td rowspan="4">9750/X01</td><td rowspan="9">SR24A-R
SR230A-R</td><td rowspan="9">ZSV-11</td><td rowspan="10">S1A
S2A</td><td rowspan="4">9901/X45</td><td rowspan="9">NA032100
NA034100</td><td rowspan="10">(1)</td><td rowspan="4">9901/X45</td></tr>
<tr><td>6588E/M12</td></tr>
<tr><td>6588E/M16</td></tr>
<tr><td>6588E/M18</td></tr>
<tr><td>6588E/M22</td><td>9700/RA2

9700/RA6</td><td>9901/X73

9901/X74</td><td>9750/X01

9750/X02</td><td rowspan="2">9901/X46</td><td rowspan="2">9901/X46</td></tr>
<tr><td>6588E/M28</td><td rowspan="5">9720/RA2
9720/RA6</td><td>9901/X74</td><td rowspan="5">9750/X02</td></tr>
<tr><td>6588E/M35</td><td rowspan="3">9901/X75</td><td rowspan="3">9901/X68</td><td rowspan="3">9901/X68</td></tr>
<tr><td>6588E/M42</td></tr>
<tr><td>6588E/M48</td></tr>
<tr><td>6588E/M60</td><td>9730/RA2
9730/RA6</td><td>9901/X76</td><td>(1)</td><td>GR24A-R
GR230A-R</td><td>ZGV-14</td><td>9901/X69</td><td>NA0052100
NA0054100</td><td>9901/X69</td></tr>
</table>

(1) internal
(2) coupling scheme valid also for ball valves with access fitting, where available

VIBRATION ABSORBERS, STAINLESS STEEL CONNECTIONS

Drawing	Part number	Connections		PS [bar]			Package Pcs
		ODS		TS [°C] -80 / +100	TS [°C] +120	TS [°C] +150	
		Ø [in.]	Ø [mm]				
	7690N/3	3/8"	-	50	49	48	100
	7690N/M10	-	10				
	7690N/M12		12				
	7690N/4	1/2"	-				
	7690N/M15	-	15				50
	7690N/5	5/8"	16				
	7690N/M18	-	18				
	7690N/6	3/4"	-				
	7690N/7	7/8"	22				25
	7690N/M28	-	28				
	7690N/9	1.1/8"	-				
	7690N/11	1.3/8"	35				10
	7690N/13	1.5/8"	-				
	7690N/M42	-	42				
	7690N/17	2.1/8"	54				5

(#)
For specific applications with refrigerant fluids not listed above, please contact Castel Technical Department

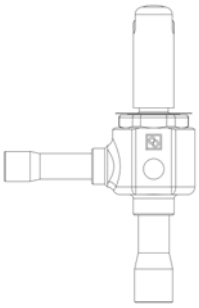
POLYHEDRA

A1 - A2L - A3 REFRIGERANTS, ASHRAE STANDARD 34-2019(#)

HFC (R134A, R32, R404A, R407C, R410A, R507)
HFO (R1234YF, R1234ZE)
HFO + HFC (R448A, R449A, R450A, R452A, R452B, R454A, R454B, R454C, R455A, R513A, R515A, R515B)
HC (R290, R600, R600A, R1270)

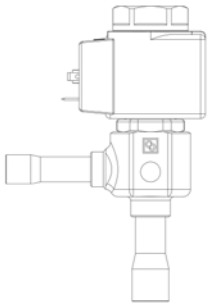
Castel®
Italian technology

SOLENOID EXPANSION VALVES WITH INTERCHANGEABLE ORIFICE

Drawing	Part number	Orifice type	Connections				Kv [m³/h]	PS [bar]	TS [°C]		Package pcs.
			In		Out				min.	max.	
			Ø [in.]	Ø [mm]	Ø [in.]	Ø [mm]					
	2028N/3S00	00	3/8"	-	1/2"	-	0,0027	50	-40	+100	17
	2028N/M10S00		-	10	-	12					
	2028N/3S01	01	3/8"	-	1/2"	-	0,01				
	2028N/M10S01		-	10	-	12					
	2028N/3S02	02	3/8"	-	1/2"	-	0,017				
	2028N/M10S02		-	10	-	12					
	2028N/3S03	03	3/8"	-	1/2"	-	0,023				
	2028N/M10S03		-	10	-	12					
	2028N/3S04	04	3/8"	-	1/2"	-	0,043				
	2028N/M10S04		-	10	-	12					
	2028N/3S05	05	3/8"	-	1/2"	-	0,065				
	2028N/M10S05		-	10	-	12					
	2028N/3S06	06	3/8"	-	1/2"	-	0,113				
	2028N/M10S06		-	10	-	12					
	2028N/4S07	07	1/2"	-	5/8"	-	0,2				
	2028N/M12S07		-	12	-	16					
	2028N/4S08	08	1/2"	-	5/8"	-	0,23				
	2028N/M12S08		-	12	-	16					
	2028N/4S09	09	1/2"	-	5/8"	-	0,25				
	2028N/M12S09		-	12	-	16					

for rated capacities see table of the orifice assemblies

SOLENOID EXPANSION VALVES WITH INTERCHANGEABLE ORIFICE WITH COILS 220/230 VAC (A6) - ATEX CONFORMITY FOR USE IN EX ZONE 2

Drawing	Part number	Orifice type	Connections				Kv [m³/h]	PS [bar]	TS [°C]		Package pcs.
			In		Out				min.	max.	
			Ø [in.]	Ø [mm]	Ø [in.]	Ø [mm]					
	2028EX/3A600	00	3/8"	-	1/2"	-	0,0027	50	-40	+100	15
	2028EX/M10A600		-	10	-	12					
	2028EX/3A601	01	3/8"	-	1/2"	-	0,01				
	2028EX/M10A601		-	10	-	12					
	2028EX/3A602	02	3/8"	-	1/2"	-	0,017				
	2028EX/M10A602		-	10	-	12					
	2028EX/3A603	03	3/8"	-	1/2"	-	0,023				
	2028EX/M10A603		-	10	-	12					
	2028EX/3A604	04	3/8"	-	1/2"	-	0,043				
	2028EX/M10A604		-	10	-	12					
	2028EX/3A605	05	3/8"	-	1/2"	-	0,065				
	2028EX/M10A605		-	10	-	12					
	2028EX/3A606	06	3/8"	-	1/2"	-	0,113				
	2028EX/M10A606		-	10	-	12					
	2028EX/4A607	07	1/2"	-	5/8"	-	0,2				
	2028EX/M12A607		-	12	-	16					
	2028EX/4A608	08	1/2"	-	5/8"	-	0,23				
	2028EX/M12A608		-	12	-	16					
	2028EX/4A609	09	1/2"	-	5/8"	-	0,25				
	2028EX/M12A609		-	12	-	16					

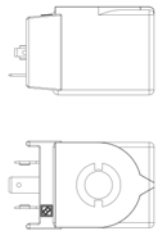
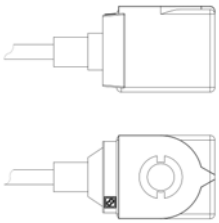
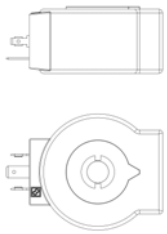
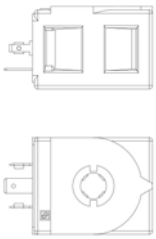
for rated capacities see table of the orifice assemblies

ORIFICE ASSEMBLIES

Drawing	Part number	Orifice type	Rated capacity (1) [kW]												Package pcs.
			R134a	R32	R404A	R507	R407C	R410A	R1234ze	R1234yf	R448A	R449A	R450A	R452A	
	9151N/R61	00	0,22	0,49	0,21	0,21	0,29	0,34	0,17	0,16	0,27	0,27	0,19	0,21	10
	9150N/R63	01	0,79	1,75	0,74	0,74	1,03	1,21	0,62	0,58	0,98	0,97	0,69	0,76	
	9150N/R64	02	1,57	3,48	1,46	1,46	2,04	2,40	1,23	1,16	1,96	1,92	1,38	1,52	
	9150N/R65	03	1,86	4,13	1,74	1,74	2,42	2,84	1,46	1,37	2,32	2,27	1,63	1,80	
	9150N/R66	04	3,01	6,68	2,81	2,81	3,92	4,60	2,36	2,22	3,75	3,68	2,64	2,91	
	9150N/R67	05	5,15	11,43	4,80	4,80	6,71	7,88	4,05	3,80	6,42	6,30	4,52	4,98	
	9150N/R68	06	7,14	15,84	6,66	6,66	9,30	10,92	5,61	5,26	8,90	4,73	6,27	6,90	
	9150N/R69	07	11,26	24,98	10,51	10,51	14,66	17,22	8,84	8,30	14,03	13,77	9,88	10,88	
	9150N/R78	08	13,57	30,11	12,66	12,66	17,77	20,75	10,66	10,00	16,91	16,60	11,91	13,11	
	9150N/R79	09	15,05	33,39	14,04	14,04	19,60	23,02	11,82	11,09	18,78	18,40	13,21	14,54	
			R452B	R454A	R454B	R454C	R513A	R515A	R515B	R290	R600	R600a	R1270		
	9151N/R61	00	0,38	0,28	0,38	0,24	0,19	0,17	0,17	0,30	0,19	0,19	0,33		10
	9150N/R63	01	1,36	1,00	1,38	0,85	0,67	0,60	0,59	1,06	0,68	0,70	1,19		
	9150N/R64	02	2,71	1,98	2,73	1,69	1,33	1,19	1,18	2,11	1,34	1,39	2,37		
	9150N/R65	03	3,21	2,35	3,24	2,00	1,58	1,41	1,40	2,51	1,59	1,64	2,80		
	9150N/R66	04	5,19	3,80	5,24	3,24	2,55	2,27	2,26	4,05	2,57	2,66	4,54		
	9150N/R67	05	8,88	6,50	8,97	5,55	4,37	3,89	3,88	6,94	4,40	4,55	7,76		
	9150N/R68	06	12,31	9,01	12,44	7,69	6,06	5,39	5,37	9,62	6,11	6,31	10,76		
	9150N/R69	07	19,42	14,21	19,61	12,13	9,55	8,51	8,47	15,17	9,63	9,95	16,98		
	9150N/R78	08	23,40	17,12	23,64	14,62	11,51	10,25	10,21	18,28	11,60	12,00	20,46		
	9150N/R79	09	25,95	18,99	26,21	16,21	12,76	11,37	11,32	20,27	12,87	13,31	22,69		

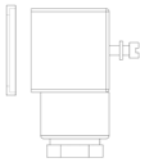
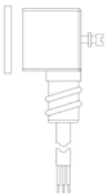
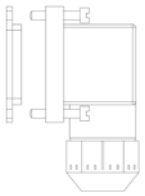
(1) Rated capacities are based on:
- Evaporating temperature Tevap = + 5 °C
- Condensing temperature Tcond = + 32 °C
- Refrigerant liquid temperature ahead of valve Tliq = + 28 °C

COILS

Drawing	Coil Type	Part number	Voltage [V]	Frequency [Hz]	Power [W]	Connections: Degree of protection IP 65	Connections: Degree of protection IP 68	Note	Cable length [m]	Package Pcs.
	HM2	9100EX/RA2	24	50/60	8	9150EX/R02	-	ATEX approval for use in EX Zone 2 - spare part G9151/R14 (light blue nut + black screw + OR) included	-	90
		9100EX/RA4	110							
		9100EX/RA6	220/230							
		9100EX/RA7	240							
	CM2	9110EX/RA2	24			-			1	8
		9110EX/RA4	110							
		9110EX/RA6	220/230							
		9110EX/RA7	240							
	HM3 (1)	9120/RA6	220/230		12	9150/R02 9900/X66			-	24
		9120/RD1	12 D.C.	-	20					
		9120/RD2	24 D.C.							
	HM4 (1)	9160/RA2	24	50/60	8		9155/R01 9155/R02			90
		9160/RA4	110/120							
		9160/RA6	220/230							
		9160/RA7	240							
		9160/RD1	12 D.C.	-	17					
		9160/RD2	24 D.C.		15,5					

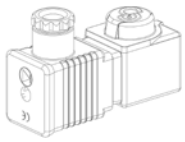
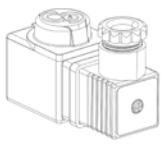
(1): coil with spare part G9150/R97 (yellow nut + black screw + OR)

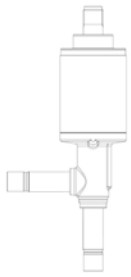
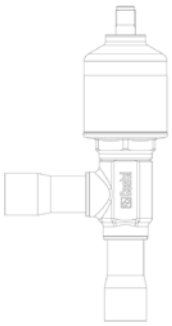
CONNECTORS

Drawing	Part number	Degree of protection	Cable length [m]	Note	Package pcs
	9150EX/R02	IP 65	-	ATEX approval for use in EX Zone 2	240
	9150/R02				
	9900/X66		1		50
	9155/R01	IP 65 / IP 68	-		120
	9155/R02		1		1

SMART CONNECTOR SYSTEM

iCastel

Drawing	Part number	Voltage [V]	Frequency [Hz]	T boost [msec]	Power working [W]	Power start [W]	Package pcs.
	9910/RA2	24	50/60	200	7	50	12
	9910/RA6	220					
	9910/RA7	240					
	9910/RD1	12 D.C.	-	130	3		
	9910/RD2	24 D.C.			5		

Drawing	Part number		Connections In Ø [in.]	Connections In Ø [mm]	Connections Out Ø [in.]	Connections Out Ø [mm]	PS [bar]	TS [°C] min.	TS [°C] max.	Voltage [V]	Power [W]	Steps	Degree of protection	Package pcs.
	27115/3	NEW	3/8"	3/8"	-	-	50	-40	+60	6	2,4	415	IP65	1
	27115/M10	NEW	-	-	10	10								
	27115/M12	NEW			12	12								
	27115/4	NEW	1/2"	1/2"	-	-								
	27120/3	NEW	3/8"	3/8"										
	27120/M10	NEW	-	-	10	10								
	27120/M12	NEW			12	12								
	27120/4	NEW	1/2"	1/2"	-	-								
	27127/3	NEW	3/8"	3/8"										
	27127/M10	NEW	-	-	10	10								
	27127/M12	NEW			12	12								
	27127/4	NEW	1/2"	1/2"	-	-								
	27232/M12	NEW	-	-	12	12				9	5,4			
	27232/4	NEW	1/2"	1/2"	-	-								
	27232/5	NEW	5/8"	5/8"	16	16								
	27232/7	NEW	7/8"	7/8"	22	22								
	27236/M12	NEW	-	-	12	12								
	27236/4	NEW	1/2"	1/2"	-	-								
	27236/5	NEW	5/8"	5/8"	16	16								
	27236/7	NEW	7/8"	7/8"	22	22								
	27340/7	NEW												
	27340/9	NEW	1.1/8"	1.1/8"	-	-								
	27344/7	NEW	7/8"	7/8"	22	22								
	27344/9	NEW	1.1/8"	1.1/8"	-	-								

Bipolar stepper motor with permanent magnets

RATED CAPACITIES

Part number	(1) [kW]											
	R134a	R32	R404A	R407C	R410A	R507	R1234yf	R1234ze	R448A	R449A	R450A	R452A
27115/3	15,3	33,94	14,37	19,92	23,4	14,02	11,28	12,02	19,07	18,71	13,43	14,78
27115/M10												
27115/M12												
27115/4												
27120/3	20,4	45,26	19,16	26,56	31,2	18,7	15,04	16,02	25,42	24,95	17,9	19,71
27120/M10												
27120/M12												
27120/4												
27127/3	25,2	55,91	23,67	32,81	38,54	23,09	18,57	19,79	31,41	30,82	22,11	24,35
27127/M10												
27127/M12												
27127/4												
27232/M12	32,2	71,44	30,24	41,92	49,24	29,51	23,73	25,29	40,13	39,38	28,26	31,11
27232/4												
27232/5												
27232/7												
27236/M12	44,1	97,84	41,42	57,42	67,44	40,42	32,51	34,64	54,96	53,93	38,7	42,61
27236/4												
27236/5												
27236/7												
27340/7	51	113,15	47,9	66,4	78	46,74	37,59	40	63,56	62,37	44,75	49,28
27340/9												
27344/7	59,32	131,6	55,71	77,24	90,72	54,36	43,72	46,59	73,93	72,54	52,05	57,32
27344/9												

	R452B	R454A	R454B	R454C	R513A	R515A	R515B	R290	R600	R600a	R1270
27115/3	26,38	19,30	26,65	16,48	12,98	11,56	11,51	20,61	13,08	13,53	23,07
27115/M10											
27115/M12											
27115/4											
27120/3	35,18	25,74	35,53	21,98	17,3	15,41	15,35	27,48	17,44	18,03	30,75
27120/M10											
27120/M12											
27120/4											
27127/3	43,45	31,80	43,89	27,15	21,37	19,04	18,96	33,94	21,55	22,28	37,99
27127/M10											
27127/M12											
27127/4											
27232/M12	55,52	40,63	56,09	34,69	27,31	24,32	24,23	43,37	27,53	28,47	48,54
27232/4											
27232/5											
27232/7											
27236/M12	76,04	55,64	76,81	47,51	37,4	33,31	33,18	59,4	37,71	39	66,48
27236/4											
27236/5											
27236/7											
27340/7	87,94	64,35	88,83	54,94	43,25	38,53	38,37	68,69	43,61	45,09	76,89
27340/9											
27344/7	102,29	70,84	103,32	63,90	50,31	44,81	44,64	79,89	50,72	52,44	89,43
27344/9											

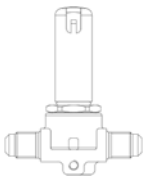
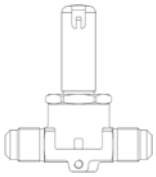
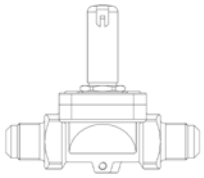
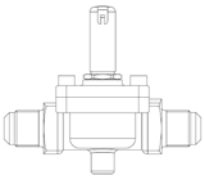
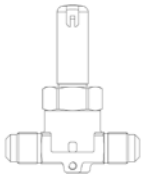
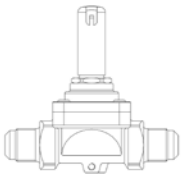
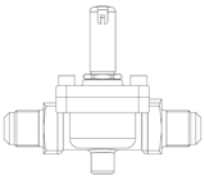
(1): Rated capacity with fully open valve and liquid flow from radial to axial connection
Rated capacities are based on:
- Evaporating temperature Tevap = + 5 °C
- Condensing temperature Tcond = + 32 °C
- Refrigerant liquid temperature ahead of valve Tliq = + 28 °C

Valves operating range from 10% up to 95% of declared nominal capacities

CONNECTORS

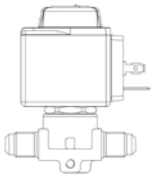
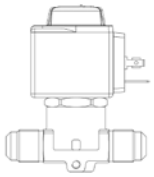
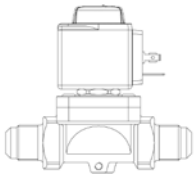
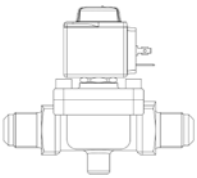
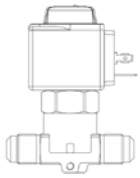
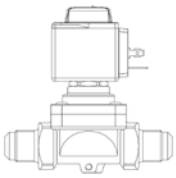
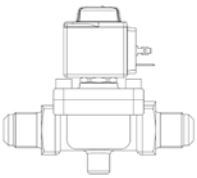
Drawing	Part number		Degree of protection	Cable length [m]	Note	Package pcs
	9901/X08	NEW	IP 65	3	M12 circular connector	1
	9901/X20	NEW		15		

N.C. SOLENOID VALVES SAE FLARE CONNECTIONS WITHOUT COILS

Operating principle	Drawing	Part Number	Coil Type (1)	Connections SAE Flare	Kv [m³/h]	PS [bar]	TS [°C] min.	TS [°C] max.	Package pcs.
Direct acting		1020N/2S	HF2 HF3 HF4 HM2 HM3 HM4 CM2	1/4"	0,175	50	-40	+130	18
		1020N/3S		3/8"	0,23				
Diaphragm pilot operated		1064N/3S			0,8			+120	
		1064N/4S		1/2"					
		1070N/4S			2,2				24
		1070N/5S		5/8"	2,61				
		1090N/5S			3,8				14
		1090N/6S		3/4"	4,8				
Piston pilot operated		1034N/3S		3/8"	1			+130	18
		1034N/4S		1/2"					
		1040N/4S			2,4				24
		1040N/5S		5/8"	3				
		1050N/5S			3,8				14
		1050N/6S		3/4"	4,8				

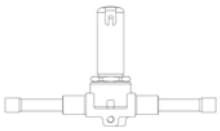
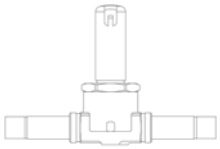
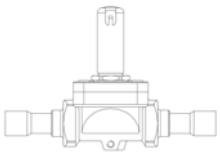
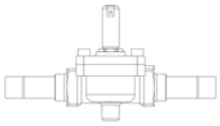
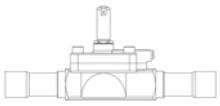
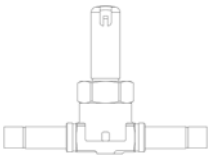
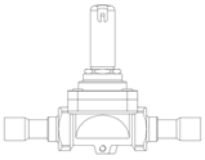
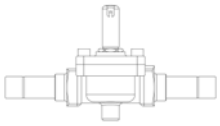
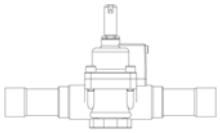
(1) : coils that can be mounted on the valves

N.C. SOLENOID VALVES SAE FLARE CONNECTIONS WITH COILS 220/230 VAC (A6)

Operating principle	Drawing	Part Number	Coil Type (1)	Connections SAE Flare	Kv [m³/h]	PS [bar]	TS [°C] min.	TS [°C] max.	Package pcs.
Direct acting		1020N/2A6	HF2	1/4"	0,175	50	-40	+130	18
		1020N/3A6		3/8"	0,23				
Diaphragm pilot operated		1064N/3A6			0,8			+120	
		1064N/4A6		1/2"					
		1070N/4A6			2,2				24
		1070N/5A6		5/8"	2,61				
		1090N/5A6			3,8				14
		1090N/6A6		3/4"	4,8				
Piston pilot operated		1034N/3A6		3/8"	1			+130	18
		1034N/4A6		1/2"					
		1040N/4A6			2,4				24
		1040N/5A6		5/8"	3				
		1050N/5A6			3,8				14
		1050N/6A6		3/4"	4,8				

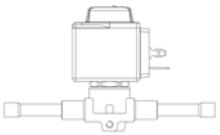
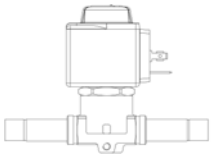
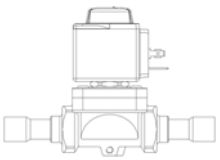
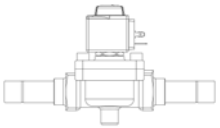
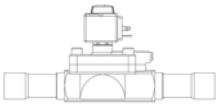
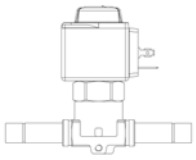
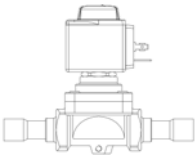
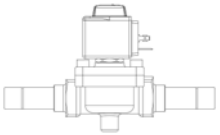
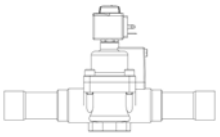
(1) : coils mounted on the valves

N.C. SOLENOID VALVES ODS CONNECTIONS WITHOUT COILS

Operating principle	Drawing	Part Number	Coil Type	Connections ODS Ø		Kv [m³/h]	PS [bar]	TS [°C]		Package pcs.
			(1)	[in.]	[mm]			min.	max.	
Direct acting		1028N/2S	HF2 HF3 HF4 HM2 HM3 HM4 CM2	1/4"	-	0,15	50	-40	+130	24
		1028N/2S.E				0,23				
		1028N/3S		3/8"						
		1028N/M10S		-	10					
Diaphragm pilot operated		1068N/3S		3/8"	-	0,8			+120	
		1068N/M10S		-	10					
		1068N/M12S			12					
		1068N/4S		1/2"	-					
		1078N/M12S		-	12	2,2				17
		1078N/4S		1/2"	-					
		1078N/5S		5/8"	16	2,61				
		1079N/7S		7/8"	22					
		1098N/5S		5/8"	16	3,8				14
		1098N/6S		3/4"	-	4,8				
		1098N/7S		7/8"	22	5,7				
		1099N/9S		1.1/8"	-					
		1078N/9S				10				1
		1079N/11S		1.3/8"	35					
Piston pilot operated		1038N/3S		3/8"	-	1			+130	24
		1038N/M10S		-	10					
		1038N/M12S			12					
		1038N/4S		1/2"	-					
		1048N/M12S		-	12	2,4				14
		1048N/4S		1/2"	-					
		1048N/5S		5/8"	16	3				
		1049N/7S		7/8"	22					
		1058N/5S		5/8"	16	3,8				
		1058N/6S		3/4"	-	4,8				
		1058N/7S		7/8"	22	5,7				
		1059N/9S		1.1/8"	-					
		1098N/9S				10				1
		1099N/11S		1.3/8"	35					
		1078NW/11S				16				
		1079NW/13S		1.5/8"	-					
		1079NW/M42S		-	42					
		1078NW/13S		1.5/8"	-	25				
		1078NW/M42S		-	42					
		1079NW/17S		2.1/8"	54					

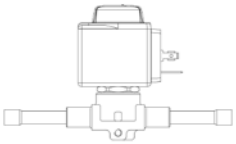
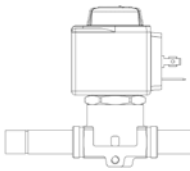
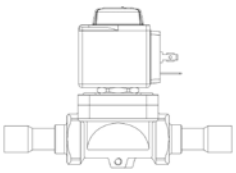
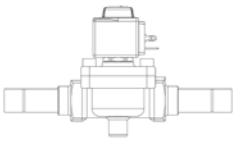
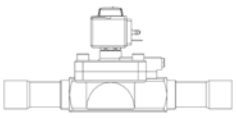
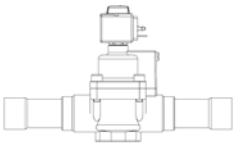
(1) : coils that can be mounted on the valves

N.C. SOLENOID VALVES ODS CONNECTIONS WITH COIL 220/230 VAC (A6)

Operating principle	Drawing	Part Number	Coil Type	Connections ODS Ø		Kv [m³/h]	PS [bar]	TS [°C]		Package pcs.
			(1)	[in.]	[mm]			min.	max.	
Direct acting		1028N/2A6	HF2	1/4”	-	0,15	50	-40	+130	24
		1028N/2A6.E				0,23				
		1028N/3A6		3/8”						
		1028N/M10A6		-	10					
Diaphragm pilot operated		1068N/3A6		3/8”	-	0,8			+120	
		1068N/M10A6		-	10					
		1068N/M12A6			12					
		1068N/4A6		1/2”	-					
		1078N/M12A6		-	12	2,2				17
		1078N/4A6		1/2”	-					
		1078N/5A6		5/8”	16	2,61				
		1079N/7A6		7/8”	22					
		1098N/5A6		5/8”	16	3,8				14
		1098N/6A6		3/4”	-	4,8				
		1098N/7A6		7/8”	22	5,7				
		1099N/9A6		1.1/8”	-					
		1078N/9A6				10				1
		1079N/11A6		1.3/8”	35					
Piston pilot operated		1038N/3A6		3/8”	-	1			+130	24
		1038N/M10A6		-	10					
		1038N/M12A6			12					17
		1038N/4A6		1/2”	-					
		1048N/M12A6		-	12	2,4				14
		1048N/4A6		1/2”	-					
		1048N/5A6		5/8”	16	3				
		1049N/7A6		7/8”	22					
		1058N/5A6		5/8”	16	3,8				
		1058N/6A6		3/4”	-	4,8				
		1058N/7A6		7/8”	22	5,7				
		1059N/9A6		1.1/8”	-					
		1098N/9A6				10				1
		1099N/11A6		1.3/8”	35					
		1078NW/11A6				16				
		1079NW/13A6		1.5/8”	-					
		1079NW/M42A6		-	42					
		1078NW/13A6		1.5/8”	-	25				
		1078NW/M42A6		-	42					
		1079NW/17A6		2.1/8”	54					

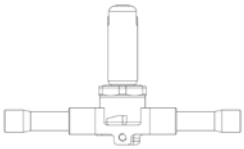
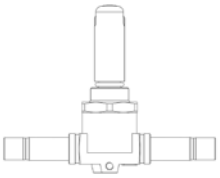
(1) : coils mounted on the valves

N.C. SOLENOID VALVES ODS CONNECTIONS WITH COILS 220/230 VAC - ATEX CONFORMITY FOR USE IN EX ZONE 2

Operating principle	Drawing	Part Number	Coil Type	Connections ODS Ø		Kv [m³/h]	PS [bar]	TS [°C]		Package pcs.
			(1)	[in.]	[mm]			min.	max.	
Direct acting		1028EX/2A6	HM2(EX)	1/4"	-	0,15	50	-40	+130	24
		1028EX/2A6.E				0,23				
		1028EX/3A6		3/8"						
		1028EX/M10A6		-	10					
Diaphragm pilot operated		1068EX/3A6		3/8"	-	0,8			+120	
		1068EX/M10A6		-	10					
		1068EX/M12A6			12					
		1068EX/4A6		1/2"	-					
		1078EX/M12A6		-	12	2,2				17
		1078EX/4A6		1/2"	-					
		1078EX/5A6		5/8"	16	2,61				
		1079EX/7A6		7/8"	22					
		1098EX/7A6				5,7				14
		1099EX/9A6		1.1/8"	-					
		1078EX/9A6				10				1
		1079EX/11A6		1.3/8"	35					
Piston pilot operated		1098EX/9A6		1.1/8"	-				+130	
		1099EX/11A6		1.3/8"	35					

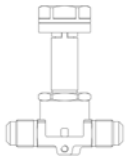
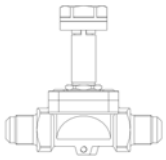
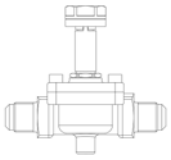
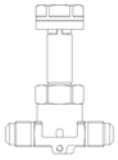
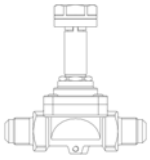
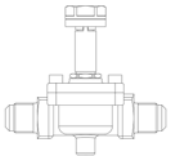
(1) : coils mounted on the valves

PULSE SOLENOID VALVES (#)

Operating principle	Drawing	Part Number	Coil Type	Connections ODS Ø		Kv [m³/h]	PS [bar]	TS [°C] (2)		Package pcs.
			(1)	[in.]	[mm]			min.	max.	
Direct acting		1328N/2S020	HF2 HF3 HF4 HM2 HM3 HM4 CM2	1/4”	-	0,15	50	-40	+150	24
		1328N/2S030				0,23				
		1328N/3S020		3/8”		0,15				
		1328N/3S030				0,23				
		1328N/M10S020		-	10	0,15				
		1328N/M10S030				0,23				
Piston pilot operated		1338N/3S065		3/8”	-	1				
		1338N/M10S065		-	10					
		1338N/M12S065			12					
		1338N/4S065		1/2”	-					
		1348N/M12S125		-	12	2,4				14
		1348N/4S125		1/2”	-					
		1348N/5S125		5/8”	16	3				
		1358N/5S165				3,8				
		1358N/6S165		3/4”	-	4,8				
		1358N/7S165		7/8”	22	5,7				

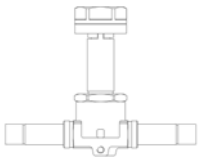
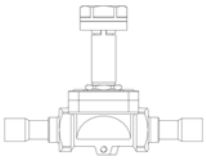
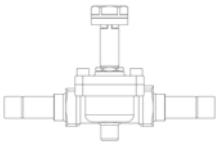
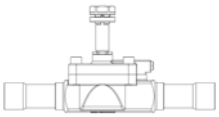
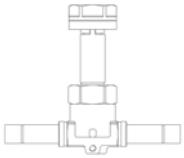
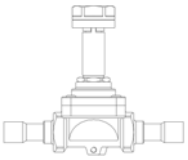
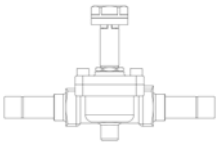
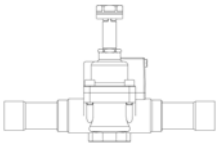
(#): for hot gas by-pass, liquid injection, oil line
(1) : coils that can be mounted on the valves
(2) : for use on the oil line TS = -10 /+70 °C

N.O. SOLENOID VALVES SAE FLARE CONNECTIONS WITHOUT COILS

Operating principle	Drawing	Part Number	Coil Type (1)	Connections SAE Flare	Kv [m³/h]	PS [bar]	TS [°C] min.	TS [°C] max.	Package pcs.
Diaphragm pilot operated		1164N/3S	HM3	3/8”	0,8	50	-40	+120	18
		1170N/4S		1/2”	2,2				24
		1170N/5S		5/8”	2,61				
		1190N/5S			3,8				14
		1190N/6S		3/4”	4,8				
Piston pilot operated		1134N/3S		3/8”	1			+130	24
		1140N/4S		1/2”	2,4				14
		1140N/5S		5/8”	3				
		1150N/5S			3,8				
		1150N/6S		3/4”	4,8				

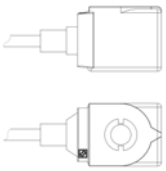
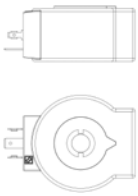
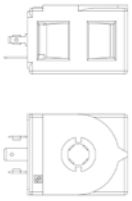
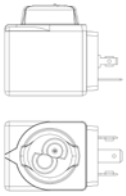
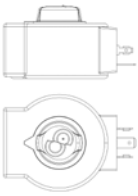
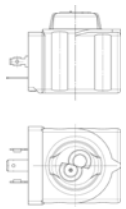
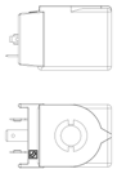
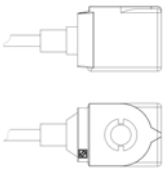
The N.O. valves have been designed to work only with direct current coil.
To use them with an alternate current supply it’s necessary to mate the N.O. valve with the 9120/RD6 coil and the connector 9150/R45
(1) : coils that can be mounted on the valves

N.O. SOLENOID VALVES ODS CONNECTIONS WITHOUT COILS

Operating principle	Drawing	Part Number	Coil Type	Connections ODS Ø		Kv [m³/h]	PS [bar]	TS [°C]		Package pcs.
			(1)	[in.]	[mm]			min.	max.	
Diaphragm pilot operated		1168N/3S	HM3	3/8"	-	0,8	50	-40	+120	24
		1168N/M10S		-	10					
		1178N/M12S			12	2,2				14
		1178N/4S		1/2"	-					
		1178N/5S		5/8"	16	2,61				17
		1198N/5S				3,8				14
		1198N/6S		3/4"	-	4,8				
		1198N/7S		7/8"	22	5,7				
		1178N/9S		1.1/8"	-	10				1
Piston pilot operated		1138N/3S		3/8"		1			+130	24
		1138N/M10S		-	10					
		1148N/M12S			12	2,4				14
		1148N/4S		1/2"	-					
		1148N/5S		5/8"	16	3				
		1158N/5S				3,8				
		1158N/6S		3/4"	-	4,8				
		1158N/7S		7/8"	22	5,7				
		1198N/9S		1.1/8"	-	10				1
		1178NW/11S		1.3/8"	35	16				
		1178NW/13S		1.5/8"	-	25				
		1178NW/M42S		-	42					

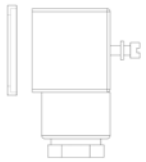
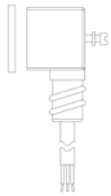
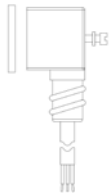
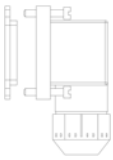
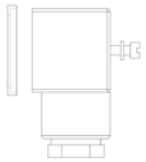
The N.O. valves have been designed to work only with direct current coil.
To use them with an alternate current supply it's necessary to mate the N.O. valve with the 9120/RD6 coil and the connector 9150/R45
(1) : coils that can be mounted on the valves

COILS

Drawing	Coil Type	Part number		Voltage [V]	Frequency [Hz]	Power [W]	Note	Cable length [m]	Package Pcs.
	CM2 (1)	9110/RA2		24	50/60	8		1	8
		9110/RA4		110					
		9110/RA6		220/230					
		9110/RA7		240					
	HM3 (1)	9120/RD1		12 D.C.	-	20		-	24
		9120/RD2		24 D.C.					
		9120/RD3		27 D.C.					
		9120/RD4		48 D.C.		22			
		9120/RD6	(2)	220 RAC	18	-			
	HM4 (1)	9160/RA2		24	50/60	8			90
		9160/RA4		110/120					
		9160/RA6		220/230					
		9160/RA7		240					
		9160/RD1		12 D.C.	-	17			
		9160/RD2		24 D.C.		15,5			
	HF2	9300/RA2		24	50/60	8			30
		9300/RA4		110/120					
		9300/RA6		220/230					
		9300/RA7		240					
		9300/RA8		380					
	HF3	9320/RA6		220/230		12			18
		9320/RD1		12 D.C.	-	20			
		9320/RD2		24 D.C.					
		9320/RD3		27 D.C.					
		9320/RD4		48 D.C.		22			
	HF4	9360/RA2		24	50/60	8			
		9360/RA4		110/120					
		9360/RA6		220/230					
		9360/RA7		240					
		9360/RD1		12 D.C.	-	17			
		9360/RD2		24 D.C.		15,5			
	HM2	9100EX/RA2		24	50/60	8	ATEX approval for use in EX Zone 2 - spare part G9151/R14 (light blue nut + black screw + OR) included	-	90
		9100EX/RA4		110					
		9100EX/RA6		220/230					
		9100EX/RA7		240					
	CM2	9110EX/RA2		24				1	8
		9110EX/RA4		110					
		9110EX/RA6		220/230					
		9110EX/RA7		240					

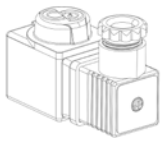
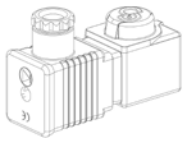
(1) Coil with spare part G9150/R97 (yellow nut + black screw + OR)
(2) Use only with 9150/R45 connector / rectifier

CONNECTORS

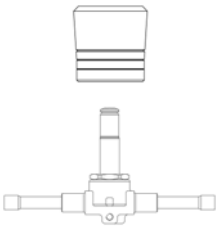
Drawing	Part number		Degree of protection	Cable length [m]	Note	Package pcs
	9150/R02	-	IP 65	-		240
	9150/R45	(1)				1
	9150/R90	(1)		2		
	9900/X66	-		1		50
	9900/X84			1,5		
	9900/X73			2		30
	9900/X55			3		25
	9900/X54			5		
	9900/X93			10		15
	9901/X41			15		
	9155/R01	-	IP 65 / IP 68	-		120
	9155/R02	-		1		1
	9150EX/R02		IP 65	-	ATEX approval for use in EX Zone 2	240

(1) Connector/Rectifier: supply voltage 220/230V AC

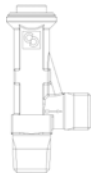
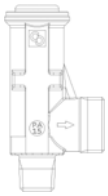
SMART CONNECTOR SYSTEM

Drawing	Part number	Voltage [V]	Frequency [Hz]	T boost [msec]	Power working [W]	Power start [W]	Package pcs.
	9910/RD1	12 D.C.	-	130	3	50	12
	9910/RD2	24 D.C.			5		
	9910/RA2	24	50/60	200	7		
	9910/RA6	220					
	9910/RA7	240					

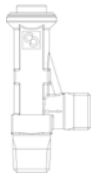
PERMANENT MAGNET

Drawing	Part number	Package pcs
	9900/X91	1

SAFETY VALVES

Drawing	Part number	Connections		Orifice section	Discharge coefficient Kd	Set pressure range	PS [bar]	TS [°C]		Package pcs
		IN	OUT	[mm²]		[bar]		min.	max.	
	3061/2C	1/4" NPT	3/8" G	44,2	0,89	11 - 60	70	-50	+150	18
	3061/3C	3/8" NPT	1/2" G							
	3061/4C	1/2" NPT								
	3065/4C		1" G	132,7	0,87					24
	3065/6C	3/4" NPT								

SAFETY VALVES APPROVED ACCORDING TO CHINESE STANDARD TSG ZF001-2006

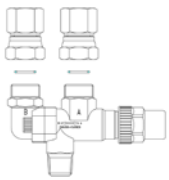
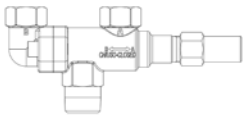
Drawing	Part number	Connections		Orifice section	Discharge coefficient Kd	Set pressure range	PS [bar]	TS [°C]		Package pcs
		IN	OUT	[mm²]		[bar]		min.	max.	
	3061/2TS	1/4" NPT	3/8" G	44,2	0,783-G	11 - 60	70	-50	+120	18
	3061/3TS	3/8" NPT	1/2" G							
	3061/4TS	1/2" NPT								

CASTEL license number to manufacture safety valves: TSF700F77-2022

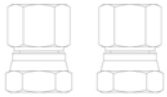
BURSTING DISC SAFETY DEVICES

Drawing	Part number	Connections			Orifice section	Bursting pressure Pb	Max operating pressure	PS [bar]	TS [°C]		Package pcs
		male IN	female OUT	service	[mm²]	[bar]			min.	max.	
	3070/44C140	1/2" NPT	1/2" NPT	2 x 1/8" NPT	113	14	75 % Pb	55	-50	+150	20
	3070/44C150					15					
	3070/44C160					16					
	3070/44C190					19					
	3070/44C210					21					
	3070/44C230					23					
	3070/44C240					24					
	3070/44C248					24,8					
	3070/44C250					25					
	3070/44C270					27					
	3070/44C275					27,5					
	3070/44C280					28					
	3070/44C370					37					
	3070/44C440					44					
	3070/44C470					47					
	3070/44C520					52					

CHANGEOVER VALVES

Drawing	Part number	Supplied connections	Connections		Kv [m³/h]	PS [bar]	TS[°C]		Package pcs
			IN	OUT			min.	max.	
	3032N/32	3039/2	3/8" NPT	1/4" NPT	2,5	80	-40	+150	14
	3032N/33	3039/3		3/8" NPT					
	3032N/44	3039/4	1/2" NPT	1/2" NPT	3,3				
	3032N/64	-	3/4" NPT		9				6
	3032N/66			3/4" NPT					
	3032N/88		1" NPT	1" NPT	14,5				1
	3032N/108		1.1/4" NPT		20				

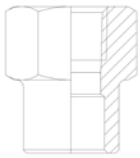
COUPLE OF CONNECTIONS FOR CHANGEOVER VALVES

Drawing	Part number	Connection	Materials	Package pcs.
	3039/2	1/4" NPT-F	Zinc plated steel	20
	3039/3	3/8" NPT-F		
	3039/4	1/2" NPT-F		
	3039/30T	3/8" NPT-F	Stainless steel/brass	
	3039/40T	1/2" NPT-F		

BALL SHUT OFF VALVES

Drawing	Part number	Connections	Kv [m³/h]	PS [bar]	TS [°C]		Package pcs
		NPT			min.	max.	
	3064N/22	1/4"	2,5	80	-40	+150	20
	3064N/33	3/8"	5				
	3064N/44	1/2"	10				24
	3064N/88	1"	20				14

UNIONS

Drawing	Part number	Connections		PS [bar]	Package pcs
		NPT	ODS Ø [mm]		
	3035/2	1/4"	12	150	100
	3035/3	3/8"	18		
	3035/4	1/2"	22		60
	3035/6	3/4"	28		30
	3035/8	1"	35	120	20
	3035/10	1.1/4"	42		6

HERMETIC CHECK VALVES, STRAIGHT WITH SAE FLARE CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			Kv [m³/h]	Differential pressure	PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
		SAE Flare	ODS			(2)			min.	max.	
			Ø [in.]	Ø [mm]		[bar]					
	3112W/2	1/4”	-	-	0,5	0,04	50	600	-40	+150	20
	3112W/3	3/8”			1,5						
	3112W/4	1/2”			1,8						
	3112W/5	5/8”			3,3						
	3112W/6	3/4”			5						16
	3113W/2	1/4”			0,5	0,3					20
	3113W/3	3/8”			1,5						
	3113W/4	1/2”			1,8						
	3113W/5	5/8”			3,3						
	3113W/6	3/4”			5						16

(1): according to UL approval
(2): minimum pressure at which the valve is completely open

HERMETIC CHECK VALVES, STRAIGHT WITH COPPER ODS CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			Kv [m³/h]	Differential pressure (2) [bar]	PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
		SAE Flare	ODS						min.	max.	
			Ø [in.]	Ø [mm]							
	3132W/2	-	1/4"	-	0,5	0,04	50	600	-40	+150	25
	3132W/3		3/8"		1,5						
	3132W/M10		-	10							
	3132W/M12			12	1,8						16
	3132W/4		1/2"	-							
	3132W/5		5/8"	16	3,3						
	3132W/M18		-	18	5						21
	3132W/6		3/4"	-							
	3132W/7		7/8"	22							
	3133W/2		1/4"	-	0,5	0,3					25
	3133W/3		3/8"		1,5						
	3133W/M10		-	10							
	3133W/M12			12	1,8						16
	3133W/4		1/2"	-							
	3133W/5		5/8"	16	3,3						
	3133W/M18		-	18	5						21
	3133W/6		3/4"	-							
	3133W/7		7/8"	22							

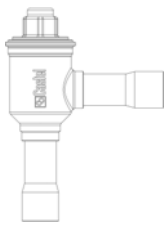
(1): according to UL approval
(2): minimum pressure at which the valve is completely open

HERMETIC CHECK VALVES, STRAIGHT WITH COPPER ODS CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections ODS Ø [in.]	Connections ODS Ø [mm]	Kv [m³/h]	Differential pressure (2) [bar]	PS [bar]	MWP [psi] (1)	TS [°C] Min	TS [°C] Max	Package pcs
	3144W/7	-	7/8"	8,1	0,04	50	650	-40	+150	15
	3144W/M28		-	10,4						8
	3144W/9		1.1/8"							
	3144NW/11	1.3/8"	35	15,6						5
	3144NW/13	1.5/8"	-	27						1
	3144NW/M42	-	42							
	3144NW/17	2.1/8"	54	39						
	3145W/7	-	7/8"	8,1	0,3					15
	3145W/M28		28	10,4						8
	3145W/9		1.1/8"							
	3145NW/11	1.3/8"	35	15,6						5
	3145NW/13	1.5/8"	-	27						1
	3145NW/M42	-	42							
	3145NW/17	2.1/8"	54	39						

(1): according to UL approval
(2): minimum pressure at which the valve is completely open

HERMETIC CHECK VALVES, RIGHT ANGLE WITH COPPER ODS CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections ODS Ø [in.]	Connections ODS Ø [mm]	Kv [m³/h]	Differential pressure (2) [bar]	PS [bar]	MWP [psi] (1)	TS [°C] Min	TS [°C] Max	Package pcs
	3184W/7	-	7/8"	9	0,04	50	600	-40	+150	14
	3184W/M28		-	19						1
	3184W/9		1.1/8"							
	3185W/7		7/8"	9	0,3					14
	3185W/M28		-	19						1
	3185W/9		1.1/8"							

(1): according to UL approval
(2): minimum pressure at which the valve is completely open

CHECK VALVES, STRAIGHT WITH BRASS ODS CONNECTIONS

Drawing	Part number	Connections				Kv [m³/h]	differential pressure	PS [bar]	TS [°C]		Package pcs
		ODS		ODM			(1)		min.	max.	
		Ø [in.]	Ø [mm]	Ø [in.]	Ø [mm]		[bar]				
	3124N/M22	-	22	-	28	8,1	0,04	50	-40	+150	14
	3124N/7	7/8"	-	1.1/8"	-						
	3124N/M28	-	28	1.3/8"	35	10,4					
	3124N/9	1.1/8"	-								
	3124N/11	1.3/8"	35	1.5/8"	-	15,6					
	3124N/13	1.5/8"	-	2"		27					1
	3124N/M42	-	42								
	3124N/17	2.1/8"	54	-		39					
	3125N/M22	-	22		28	8,1	0,3				14
	3125N/7	7/8"	-	1.1/8"	-						
	3125N/M28	-	28	1.3/8"	35	10,4					
	3125N/9	1.1/8"	-								
	3125N/11	1.3/8"	35	1.5/8"	-	15,6					
	3125N/13	1.5/8"	-	2"		27					1
	3125N/M42	-	42								
	3125N/17	2.1/8"	54	-		39					

(1) Minimum pressure at which the valve is completely open

HOT GAS BYPASS CAPACITY REGULATORS

Drawing	Part number	Connections			Regulation range	Kv [m³/h]	PS[bar]	TS[°C]		Package pcs
		SAE Flare	Ø ODS [in.]	Ø ODS [mm]	[bar]			min.	max.	
	3315N/M12S	-	-	12	2 - 7	0,7	45	- 40	+ 130	15
	3315N/4S		1/2"	-						
	3315N/5S		5/8"	16		1,26				
	3315N/7S		7/8"	22		1,84				8

EVAPORATING PRESSURE REGULATORS

Drawing	Part number	Connections			Regulation range	Kv [m³/h]	PS[bar]	TS[°C]		Package pcs
		SAE Flare	Ø ODS [in.]	Ø ODS [mm]	[bar]			min.	max.	
	3335N/M12S	-	-	12	3 - 20	2,7	45	- 40	+ 130	15
	3335N/4S		1/2"	-						
	3335N/5S		5/8"	16						
	3335N/7S		7/8"	22						8

CONDENSING PRESSURE REGULATORS

Drawing	Part number	Connections			Regulation range	Kv [m³/h]	P [bar]	TS [°C]		Package pcs
		SAE Flare	ODS [in.]	ODS [mm]	[bar]			Min	Max	
	3345N/M12S	-	-	12	12-35	2,7	45	- 40	+ 130	15
	3345N/4S		1/2"	-						
	3345N/5S		5/8"	16						
	3345N/7S		7/8"	22						8

DIFFERENTIAL VALVES

Drawing	Part number	Connections			Opening differential pressure	Kv [m³/h]	PS [bar]	TS [°C]		Package pcs
		SAE Flare	ODS [in.]	ODS [mm]	[bar]			Min	Max	
	3136W/M12	-	-	12	1,4 - 3	1,5	45	- 40	+ 130	16
	3136W/4		1/2"	-						

LIQUID INDICATORS WITH SAE FLARE MALE - MALE CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
		SAE Flare	Ø ODS [in.]	Ø ODS [mm]			Min	Max	
	3810/22	1/4"	-	-	50	500	-40	+120	20
	3810/33	3/8"							
	3810/44	1/2"							
	3810/55	5/8"							
	3810/66	3/4"							

(1): according to UL approval

LIQUID INDICATORS WITH SAE FLARE MALE - FEMALE CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
		SAE Flare	Ø ODS [in.]	Ø ODS [mm]			Min	Max	
	3850/22	1/4"	-	-	50	500	-40	+120	20
	3850/33	3/8"							
	3850/44	1/2"							
	3850/55	5/8"							
	3850/66	3/4"							16

(1): according to UL approval

LIQUID INDICATORS WITH COPPER BRAZE CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
		SAE Flare	Ø ODS [in.]	Ø ODS [mm]			Min	Max	
	3840/2	-	1/4"	-	50	500	-40	+120	25
	3840/3		3/8"						
	3840/M10		-	10					
	3840/M12			12					
	3840/4		1/2"	-					
	3840/5		5/8"	16					16
	3840/M18		-	18					
	3840/6		3/4"	-					
	3840/7		7/8"	22					21
	3840/9		1.1/8"	-					16

(1): according to UL approval

MOISTURE INDICATORS WITH SAE FLARE MALE - MALE CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
		SAE Flare	Ø ODS [in.]	Ø ODS [mm]			Min	Max	
	3910/22	1/4"	-	-	50	500	-40	+120	20
	3910/33	3/8"							
	3910/44	1/2"							
	3910/55	5/8"							
	3910/66	3/4"							

(1): according to UL approval

MOISTURE INDICATORS WITH SAE FLARE MALE - FEMALE CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
		SAE Flare	Ø ODS [in.]	Ø ODS [mm]			Min	Max	
	3950/22	1/4"	-	-	50	500	-40	+120	20
	3950/33	3/8"							
	3950/44	1/2"							
	3950/55	5/8"							
	3950/66	3/4"							16

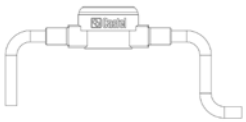
(1): according to UL approval

MOISTURE INDICATORS WITH COPPER BRAZE CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
		SAE Flare	Ø ODS [in.]	Ø ODS [mm]			Min	Max	
	3940/2	-	1/4"	-	50	500	-40	+120	25
	3940/3		3/8"						
	3940/M10		-	10					
	3940/M12			12					
	3940/4		1/2"	-					
	3940/5		5/8"	16					16
	3940/M18		-	18					
	3940/6		3/4"	-					
	3940/7		7/8"	22					21
	3940/9		1.1/8"	-					16

(1): according to UL approval

MOISTURE INDICATORS WITH COPPER BRAZE CONNECTIONS

Drawing	Part number	For pipe		PS [bar]	TS [°C]		Package pcs
		Ø [in.]	Ø [mm]		Min	Max	
	3940/X01	-	6	50	-40	+120	120
	3940/X02						48

LIQUID INDICATORS SADDLETYPE WITH LEVEL INDICATOR

Drawing	Part number	For pipe		PS [bar]	TS [°C]		Package pcs
		Ø [in.]	Ø [mm]		Min	Max	
	3680/7	7/8"	22	50	-40	+120	225
	3680/9	1.1/8"	28				
	3680/11	1.3/8"	35				

MOISTURE INDICATORS SADDLE TYPE

Drawing	Part number	For pipe		PS [bar]	TS [°C]		Package pcs
		Ø [in.]	Ø [mm]		Min	Max	
	3780N/5	5/8"	16	50	-40	+120	225
	3780N/M18	-	18				
	3780N/7	7/8"	22				
	3780N/9	1.1/8"	28				
	3780N/11	1.3/8"	35				

SOLID CORE FILTER DRIERS 100% MOLECULAR SIEVES - SAE FLARE CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	International code	Connections	Nominal volume	PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
			SAE Flare	[cm³]			min.	max.	
	DF303/2	032	1/4”	50	50	680	-40	+80	25
	DF303/3	033	3/8”						
	DF305/2	052	1/4”	80					
	DF305/3	053	3/8”						
	DF308/2	082	1/4”	130					
	DF308/3	083	3/8”						
	DF308/4	084	1/2”						
	DF316/2	162	1/4”	250					15
	DF316/3	163	3/8”						
	DF316/4	164	1/2”						
	DF316/5	165	5/8”						
	DF330/3	303	3/8”	500					10
	DF330/4	304	1/2”						
	DF330/5	305	5/8”						
	DF330/6	306	3/4”						
	DF341/4	414	1/2”	670					6
	DF341/5	415	5/8”						
	DF341/6	416	3/4”						
	DF303/2F	-	1/4”	50					25
	DF305/2F			80					
	DF308/2F			130					
	DF308/3F		3/8”						
	DF316/3F			250					15

(1): according to UL approval

SOLID CORE FILTER DRIERS 100% MOLECULAR SIEVES - SOLDER CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	International code	Connections ODS Ø [in.]	Connections ODS Ø [mm]	Nominal volume [cm³]	PS [bar]	MWP [psi] (1)	TS [°C] Min	TS [°C] Max	Package pcs
	DF303/2S	032S	1/4"	-	50	50	680	-40	+80	25
	DF303/3S	033S	3/8"							
	DF305/2S	052S	1/4"		80					
	DF305/3S	053S	3/8"							
	DF305/M10S	-	-	10						
	DF308/2S	082S	1/4"	-	130					
	DF308/3S	083S	3/8"							
	DF308/M10S	-	-	10						
	DF308/M12S			12						
	DF308/4S	084S	1/2"	-						
	DF316/3S	163S	3/8"		250					15
	DF316/M10S	-	-	10						
	DF316/M12S			12						
	DF316/4S	164S	1/2"	-						
	DF316/5S	165S	5/8"	16						
	DF316/7S	167S	7/8"	-						
	DF330/3S	303S	3/8"		500					10
	DF330/4S	304S	1/2"							
	DF330/5S	305S	5/8"	16						
	DF330/6S	306S	3/4"	-						
	DF330/7S	307S	7/8"							
	DF341/4S	414S	1/2"		670					6
	DF341/5S	415S	5/8"	16						
	DF341/6S	416S	3/4"	-						
	DF341/7S	417S	7/8"							
	4375N/4S	754S	1/2"		1340		(2)			1
	4375N/5S	755S	5/8"	16						
	4375N/6S	756S	3/4"	-						
	4375N/7S	757S	7/8"							
	4375N/9S	759S	1.1/8"							

(1): according to UL approval
(2): not UL approved

DEHYDRATOR FILTERS WITH SOLID CORE 80% MOLECULAR SIEVE, 20% ALUMINA - SAE FLARE CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	International code	Connections	Nominal volume	PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
			SAE Flare	[cm³]			min.	max.	
	DF203/2	032	1/4"	50	50	680	-40	+80	25
	DF203/3	033	3/8"						
	DF205/2	052	1/4"	80					
	DF205/3	053	3/8"						
	DF208/2	082	1/4"	130					
	DF208/3	083	3/8"						
	DF208/4	084	1/2"						
	DF216/2	162	1/4"	250					15
	DF216/3	163	3/8"						
	DF216/4	164	1/2"						
	DF216/5	165	5/8"						
	DF230/3	303	3/8"	500					10
	DF230/4	304	1/2"						
	DF230/5	305	5/8"						
	DF241/5	415		670					6
	DF241/6	416	3/4"						

(1): according to UL approval

DEHYDRATOR FILTERS WITH SOLID CORE 80% MOLECULAR SIEVE, 20% ALUMINA - SOLDER CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	International code	Connections ODS Ø [in.]	Connections ODS Ø [mm]	Nominal volume [cm³]	PS [bar]	MWP [psi] (1)	TS [°C] Min	TS [°C] Max	Package pcs
	DF203/2S	032S	1/4"	-	50	50	680	-40	+80	25
	DF203/3S	033S	3/8"							
	DF205/2S	052S	1/4"		80					
	DF205/3S	053S	3/8"							
	DF205/M10S	-	-	10						
	DF208/2S	082S	1/4"	-	130					
	DF208/3S	083S	3/8"							
	DF208/M10S	-	-	10						
	DF208/M12S			12						
	DF208/4S	084S	1/2"	-						
	DF216/3S	163S	3/8"		250					15
	DF216/M10S	-	-	10						
	DF216/M12S			12						
	DF216/4S	164S	1/2"	-						
	DF216/5S	165S	5/8"	16						
	DF216/7S	167S	7/8"	-						
	DF230/3S	303S	3/8"		500					10
	DF230/4S	304S	1/2"							
	DF230/5S	305S	5/8"	16						
	DF230/7S	307S	7/8"	-						
	DF241/5S	415S	5/8"	16	670					6
	DF241/6S	416S	3/4"	-						
	DF241/7S	417S	7/8"							
	4275N/4S	754S	1/2"		1340		(2)			1
	4275N/5S	755S	5/8"	16						
	4275N/6S	756S	3/4"	-						
	4275N/7S	757S	7/8"							
	4275N/9S	759S	1.1/8"							

(1): according to UL approval
(2): not UL approved

SOLID CORE FILTER DRIERS 100% MOLECULAR SIEVES - ATEX CONFORMITY FOR USE IN EX ZONE 2

Drawing	Part number		International code	Connections				Nominal volume	PS [bar]	TS [°C]		Package pcs
				ODS		ODM				min.	max.	
				Ø [in.]	Ø [mm]	Ø [in.]	Ø [mm]	[cm³]				
	DF303EX/2S	NEW	032S	1/4"	-	3/8"	-	50	47	-40	+80	25
	DF305EX/3S	NEW	053S	3/8"		1/2"		80				
	DF305EX/M10S	NEW	-	-	10	-	1/2"					
	DF308EX/3S	NEW	083S	3/8"	-	1/2"	-	130				
	DF308EX/M10S	NEW	-	-	12	-	14					
	DF308EX/M12S	NEW										
	DF308EX/4S	NEW	084S	1/2"	-	5/8"	16					
	DF316EX/3S	NEW	163S"	3/8"		1/2"	-	250				15
	DF316EX/M10S	NEW	-	-	10	-	12					
	DF316EX/M12S	NEW			12		14					
	DF316EX/4S	NEW	164S	1/2"	-	5/8"	16					
	DF316EX/5S	NEW	5/8"	16	3/4"	-	250					
	DF330EX/4S	NEW	304S	1/2"	-	5/8"	16	500				10
	DF330EX/5S	NEW	305S	5/8"	16	3/4"	-					
	DF330EX/7S	NEW	307S	7/8"	-	1.1/8"		800				
	DF330EX/9S	NEW	309S	1.1/8"		1.3/8"		500				
	DF341EX/4S	NEW	414S	1/2"		5/8"	16	670				6
	DF341EX/5S	NEW	415S	5/8"	16	3/4"	-					
	DF341EX/6S	NEW	416S	3/4"	-	7/8"						
	DF341EX/7S	NEW	417S	7/8"		1.1/8"						
	DF375EX/7S	NEW	757S					1340	27			1
	DF375EX/9S	NEW	759S	1.1/8"		1.3/8"						

SOLID CORE FILTER DRIERS 100% MOLECULAR SIEVES, WITH MOISTURE INDICATOR
SAE FLARE CONNECTIONS APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	International code	Connections	Nominal volume	PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
			SAE Flare	[cm³]			min.	max.	
	DI305N/2	052	1/4"	80	50	680	-40	+80	15
	DI305N/3	053	3/8"						
	DI308N/2	082	1/4"	130					
	DI308N/3	083	3/8"						
	DI308N/4	084	1/2"						
	DI316N/2	162	1/4"	250					
	DI316N/3	163	3/8"						
	DI316N/4	164	1/2"						
	DI316N/5	165	5/8"						
	DI330N/3	303	3/8"	500					6
	DI330N/4	304	1/2"						
	DI330N/5	305	5/8"						
	DI330N/6	306	3/4"						
	DI341N/5	415	5/8"	670					
	DI341N/6	416	3/4"						

(1): according to UL approval

SOLID CORE FILTER DRIERS 100% MOLECULAR SIEVES, WITH MOISTURE INDICATOR
SOLDER CONNECTIONS APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	International code	Connections		Nominal volume	PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
			ODS					min.	max.	
			Ø [in.]	Ø [mm]	[cm³]					
	DI305N/2S	052S	1/4"	-	80	50	680	-40	+80	15
	DI305N/3S	053S	3/8"							
	DI305N/M10S	-	-	10						
	DI308N/2S	082S	1/4"	-	130					
	DI308N/3S	083S	3/8"							
	DI308N/M10S	-	-	10						
	DI308N/M12S			12						
	DI308N/4S	084S	1/2"	-						
	DI316N/3S	163S	3/8"		250					
	DI316N/M10S	-	-	10						
	DI316N/M12S			12						
	DI316N/4S	164S	1/2"	-						
	DI316N/5S	165S	5/8"	16						
	DI316N/7S	167S	7/8"	-						
	DI330N/3S	303S	3/8"		500					6
	DI330N/4S	304S	1/2"							
	DI330N/5S	305S	5/8"	16						
	DI330N/6S	306S	3/4"	-						
	DI330N/7S	307S	7/8"							
	DI341N/4S	414S	1/2"		670					
	DI341N/5S	415S	5/8"	16						
	DI341N/6S	416S	3/4"	-						
	DI341N/7S	417S	7/8"							

(1): according to UL approval

SOLID CORE BI-FLOW FILTER DRIERS 100% MOLECULAR SIEVES - SAE FLARE CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	International code	Connections	Nominal volume	PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
			SAE Flare	[cm³]			min.	max.	
	DB305/2	052	1/4"	80	50	680	-40	+80	25
	DB308/3	083	3/8"	130					
	DB308/4	084	1/2"						
	DB316/3	163	3/8"	250					15
	DB316/4	164	1/2"						
	DB316/5	165	5/8"						
	DB330/5	305		500					10

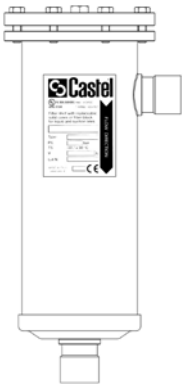
(1): according to UL approval

SOLID CORE BI-FLOW FILTER DRIERS 100% MOLECULAR SIEVES - SOLDER CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	International code	Connections		Nominal volume	PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
			ODS					min.	max.	
			Ø [in.]	Ø [mm]	[cm³]					
	DB305/2S	052S	1/4"	-	80	50	680	-40	+80	25
	DB308/3S	083S	3/8"		130					
	DB308/4S	084S	1/2"							
	DB316/3S	163S	3/8"		250					15
	DB316/4S	164S	1/2"							
	DB316/5S	165S	5/8"	16						
	DB316/7S	167S	7/8"	-						
	DB330/5S	305S	5/8"	16	500					10
	DB330/7S	307S	7/8"	-						
	DB330/9S	309S	1.1/8"							

(1): according to UL approval

FILTER DRIERS WITH REPLACEABLE SOLID CORE - STEEL CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

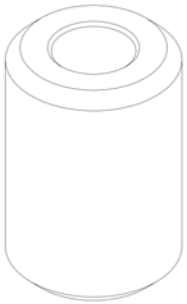
Drawing	Part number	Connections			Cores type	N° of cores	Nominal volume	PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
	Threaded cover	ODS		W			[cm³]					
		Ø [in.]	Ø [mm]	Ø [mm]						min.	max.	
	4411/5AF	5/8"	16	21,3	4490/A 4490/B 4490/AA 4490/AB 4490/BA 4490/BB	1	800	50	470	-40	+80	1
	4411/7AF	7/8"	22	26,9								
	4411/9AF	1.1/8"	-	33,7								
	4411/11AF	1.3/8"	35	42,4								
	4411/13AF	1.5/8"	-	48,3								
	4411/M42AF	-	42									
	4411/17AF	2.1/8"	54	60,3								
	4412/7AF	7/8"	22	26,9		2	1600					
	4412/9AF	1.1/8"	-	33,7								
	4412/11AF	1.3/8"	35	42,4								
	4412/13AF	1.5/8"	-	48,3								
	4412/M42AF	-	42									
	4412/17AF	2.1/8"	54	60,3								

(1): according to UL approval

ACCESSORIES FOR 44 FILTER DRIES

Drawing	Part number	Parts	Package pcs.
	7521/2	NPT plugs - Plugs 7520/.. running out of stock	25
	G9150/R05	Access fitting + valve core + cap	1

CARTRIDGES

Drawing	Part number			Dehydrating charge	Use	Nominal volume [cm³]	Suitable for filter	Package pcs
	4490/A	(1)		100% Molecular sieve	High capacity core	800	(3)	15
	4490/B	(2)						
	4490/AA	(1)		80% Molecular sieve + 20% activated alumina	Anti- acid core			
	4490/AB	(2)						
	4490/BA	(1)	NEW	25% Molecular sieve + 75% activated alumina	Motor burnout core			
	4490/BB	(2)	NEW					

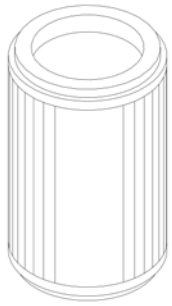
(1) Supplied with cover gasket as spare part, either for Castel filters or for competitors ones
(2) Supplied without cover gasket as spare part
(3) 4411/AF, 4412/AF

MECHANICAL FILTERS WITH REPLACEABLE FILTERING BLOCK - STEEL CONNECTIONS AND THREADED COVER - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			Cartridge type	Filtering surface	PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
		ODS		W					min.	max.	
		Ø [in.]	Ø [mm]	Ø [mm]		[cm²]					
	4411/5CF	5/8"	16	21,3	4495/C	820	50	470	-40	+80	1
	4411/7CF	7/8"	22	26,9							
	4411/9CF	1.1/8"	-	33,7							
	4411/11CF	1.3/8"	35	42,4							
	4411/13CF	1.5/8"	-	48,3							
	4411/M42CF	-	42								
	4411/17CF	2.1/8"	54	60,3							

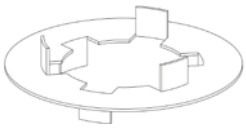
(1): according to UL approval

BLOCKS

Drawing	N° catalogo	Filtering surface	Suitable for filter	Package pcs
		[cm²]		
	4495/C	820	(1)	15

(1) 4411 /_CF - 4412/_AF

ACCESSORIES

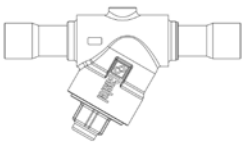
Drawing	Part number	Parts	Suitable for filter	Package pcs.
	9900/X74	Centering disc for two blocks	4412 (1)	1
	110968	Cover gasket	4411 4412	20 (2)

(1) replace internal components with spare part 9151/R02 (top + bottom for mechanical block)
(2) Minimum order quantity

STRAINERS

Drawing	Part number	Connections					Filtering surface	Kv [m³/h]	PS[bar]	TS[°C]		Package pcs
		SAE Flare	ODS		ODM					min.	max.	
			Ø [in.]	Ø [mm]	Ø [in.]	Ø [mm]	[cm²]					
	4510/3	3/8"	-	-	-	-	58	2,4	45	-40	+80	34
	4510/4	1/2"					142	3,2				28
	4520/2	-	1/4"		3/8"		58	2,4				34
	4520/3		3/8"		1/2"							
	4520/M10		-	10	-	12						
	4520/M12			12		14		3,4				
	4520/4		1/2"	-	5/8"	16						
	4520/5		5/8"	16	3/4"	-						
	4520/M18		-	18	-	22	142	8				28

STRAINERS

Drawing	Part number	Connections ODS Ø [in.]	Connections ODS Ø [mm]	Filtering surface [cm²]	Mesh-opening [mm]	Kv [m³/h]	PS[bar]	TS[°C] min.	TS[°C] max.	Package pcs
	4720N/3	3/8"	-	13	0,1	2	50	-40	+150	15
	4720N/M10	-	10							
	4720N/M12		12			2,5				
	4720N/4	1/2"	-							
	4720N/5	5/8"	16			3				
	4720N/M18	-	18	18	0,2	6				
	4720N/6	3/4"	-							
	4720N/7	7/8"	22							
	4720N/M28	-	28							8
	4720N/9	1.1/8"	-							
	4720N/11	1.3/8"	35	31		7				
	4720N/13	1.5/8"	-	46		10				1
	4720N/M42	-	42							
	4720N/17	2.1/8"	54	60		15				

STRAINER BLOCKS

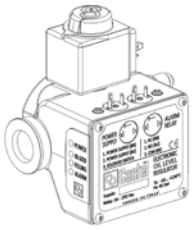
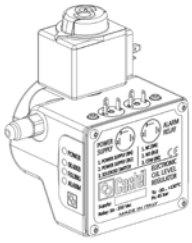
Drawing	Part number	Filtering surface [cm]	Mesh-opening	Suitable for filter
	9151/R15	13	0,1	4720N/3 4720N/M10 4720N/M12 4720N/4
	9151/R16			4720N/5
	9151/R17	18	0,2	4720N/M18 4720N/6 4720N/7
	9151/R18			4720N/M28 4720N/9
	9151/R19	31		4720N/11
	9151/R24	46		4720N/13 4720N/M42
	9151/R25	60		4720N/17

OIL RESERVOIR PRESSURE VALVES

Drawing	Part number	connections SAE FLARE IN	connections SAE FLARE OUT	Kv [m³/h]	differential pressure [bar]	PS [bar]	TS [°C] min.	TS [°C] max.	Package pcs
	3150W/X01	3/8" - F	3/8" - M	1,6	0,35	50	-40	+150	20
	3150W/X02				1,4	80			
	3150W/X03				3				

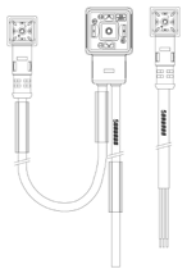
ELECTRONIC OIL LEVEL REGULATORS

iCastel

Drawing	Part number	Connections: Compressor crankcase adapters (1)	Connections: Oil level inspection	Connections: Oil inlet SAE FLARE	Version	Voltage [V]	Frequency [Hz]	Degree of protection	Cables kit (1)	PS[bar]	TS [°C] min.	TS [°C] max.	Package pcs
	5650/RA2	5690/X11 5690/X12 5690/X13 5690/X14 5690/X15 5690/X17	1 sight glass	3/8"	Right	24 AC	50/60	IP 65	9901/X26	50	-30	+130	1
	5650/RA6					220 AC							
	5650/LA2				Left	24 AC							
	5650/LA6					220 AC							

(1) To be ordered separately

CABLES KIT

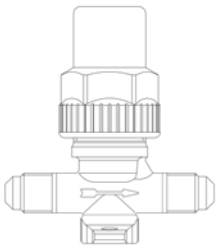
Drawing	Part number	Use	Degree of protection	Cable lenght [m]	Package pcs
	9901/X26	Power supply cable - Alarms cable	IP 65	3	1

OIL LEVEL REGULATORS ADAPTERS

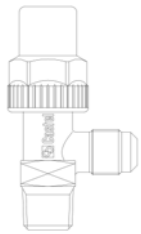
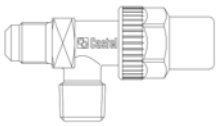
Drawing	Part number		Compressor crankcase connections (1)	Package pcs
	5690/X11	NEW	Flanged with 3 holes on dia 1.7/8" and 4 holes on dia 50 mm L = 83 mm	1
	5690/X12	NEW	1.1/8" - 12 UNF thread	
	5690/X13	NEW	1.1/8" - 18 UNEF thread	
	5690/X14	NEW	3/4" NPT thread	
	5690/X15	NEW	Flanged with 3 holes on dia 1.7/8" and 4 holes on dia 50 mm L = 53 mm	
	5690/X17	NEW	Rotalock 1.1/4" - 12 UNF	

(1) including screws for fixing the adapter to the oil level regulator

VALVES FOR HERMETIC SYSTEMS

Drawing	Part number	Acces fitting	Connections				Kv [m³/h]	PS [bar]	TS [°C]		Package pcs
		SAE Flare	SAE Flare	SAE Flare	ODS				min.	max.	
					Ø [in.]	Ø [mm]					
	6010N/2	-	1/4"	1/4"	-	-	0,27	50	-40	+150	45
	6012N/22			-	1/4"						72

RECEIVER VALVES

Drawing	Part number	Access fitting	Connections		Kv [m³/h]	PS[bar]	TS[°C]		Package pcs
		SAE Flare	SAE Flare	NPT			min.	max.	
	6110N/22	-	1/4"	1/4"	0,44	50	-40	+150	90
	6110N/X15	1/4" f		-					
	6110N/23	-		3/8"	0,45				
	6110N/32		3/8"	1/4"	1,35				
	6110N/33			3/8"					
	6110N/X13	3/8" f		-					
	6110N/43	-	1/2"	3/8"	2,4				
	6110N/44			1/2"	3,4				
	6120N/22		1/4"	1/4"	0,44				
	6120N/23			3/8"	0,45				
	6120N/32		3/8"	1/4"	1,35				
	6120N/33			3/8"					
	6120N/43		1/2"		2,4				
	6120N/44			1/2"	3,4				

CAPPED VALVES

Drawing	Part number	Connections			Kv [m³/h]	PS [bar]	TS [°C]		Package pcs
		SAE Flare	ODS				min.	max.	
			Ø [in.]	Ø [mm]					
	6420N/2	-	1/4"	-	0,4	50	-40	+130	45
	6420N/3		3/8"		1				
	6420N/3S3	3/8" - OUT	3/8" - IN						
	6420N/4	-	1/2"		1,45				

FULL BORE BALL VALVES - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections		Ball port Ø	Kv [m³/h]	PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
		ODS						min.	max.	
		Ø [in.]	Ø [mm]	[mm]						
	6570N/M6	–	6	10	0,8	50	726	-40	+150	25
	6570N/2	1/4"	–							
	6570N/3	3/8"			3					
	6570N/M10	–	10							
	6570N/M12		12		5					
	6570N/4	1/2"	–							
	6570N/M15	–	15	15	17					16
	6570N/5	5/8"	16							
	6570N/M18	–	18							
	6570N/6	3/4"	–							
	6570N/7	7/8"	22	19	29					21
	6570N/M28	–	28	25	51					16
	6570N/9	1.1/8"	–							
	6570N/11	1.3/8"	35	32	86					6
	6570N/13	1.5/8"	–	40	117					
	6570N/M42	–	42							
	6570N/17	2.1/8"	54	50	214					1
	6570N/M64	–	64	60	380					

(1): according to UL approval

REDUCED BORE BALL VALVES

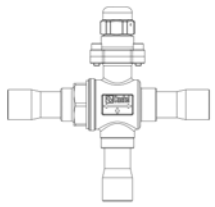
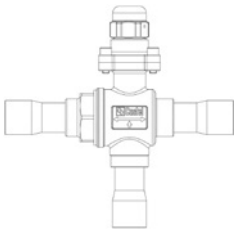
Drawing	Part number	Connections ODS Ø [in.]	Connections ODS Ø [mm]	Ball port Ø [mm]	Kv [m³/h]	PS[bar]		TS[°C] min.	TS[°C] max.	Package pcs
	6571N/5	5/8"	16	10	5	50	-	-40	+150	16
	6571N/7	7/8"	22	15	17					21
	6571N/M28	–	28	19	29					16
	6571N/9	1.1/8"	–							
	6571N/11	1.3/8"	35	25	51					14

FULL BORE BALL VALVES WITH ACCESS FITTING - APPROVED BY UNDERWRITERS LABORATORIES INC.

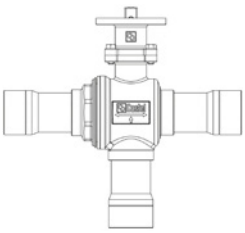
Drawing	Part number	Connections ODS Ø [in.]	Connections ODS Ø [mm]	Ball port Ø [mm]	Kv [m³/h]	PS [bar]	MWP [psi] (1)	TS [°C] min.	TS [°C] max.	Package pcs
	6570N/M6A	–	6	10	0,8	50	726	-40	+150	25
	6570N/2A	1/4"	–							
	6570N/3A	3/8"			3					
	6570N/M10A	–	10							
	6570N/M12A		12		5					
	6570N/4A	1/2"	–							
	6570N/M15A	–	15	15	17					16
	6570N/5A	5/8"	16							
	6570N/M18A	–	18							
	6570N/6A	3/4"	–							
	6570N/7A	7/8"	22	19	29					21
	6570N/M28A	–	28	25	51					16
	6570N/9A	1.1/8"	–							
	6570N/11A	1.3/8"	35	32	86					6
	6570N/13A	1.5/8"	–	40	117					
	6570N/M42A	–	42							
	6570N/17A	2.1/8"	54	50	214					1
	6570N/M64A	–	64	60	380					
	6570N/21A	2.5/8"	–							
	6570N/24A	3"	76	73	550					
	6570N/25A	3.1/8"	80							
	6570N/28A	3.1/2"	89	82	710	35	508			
	6570N/29A	3.5/8"	92							

(1): according to UL approval

3-WAYS MANUAL VALVES

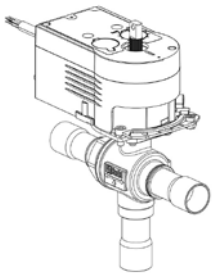
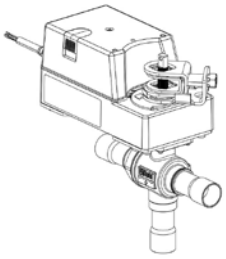
Drawing	Part number		Connections ODS Ø [in.]	Connections ODS Ø [mm]	Ball port Ø [mm]	Kv [m³/h]	PS [bar]	TS [°C] min.	TS [°C] max.	Package pcs
	6690N/3	NEW	3/8"	-	13,5	4,6	50	-40	+150	1
	6690N/M10	NEW	-	10						
	6690N/M12	NEW		12						
	6690N/4	NEW	1/2"	-						
	6690N/5	NEW	5/8"	16						
	6690N/M18	NEW	-	18						
	6690N/6	NEW	3/4"	-						
	6690N/7		7/8"	22	19	10,7				
	6690N/M28		–	28	24	15,9				
	6690N/9		1.1/8"	–						
	6690N/11		1.3/8"	35	28	20,3				
	6690N/13		1.5/8"	–	37	38,5				
	6690N/M42		–	42						

3-WAYS VALVES TO BE MOTORIZED

Drawing	Part number (1)		Connections ODS Ø [in.]	Connections ODS Ø [mm]	Ball port Ø [mm]	Kv [m³/h]	PS [bar]	TS [°C] min.	TS [°C] max.	Package pcs
	6690NB/3	NEW	3/8"	-	13,5	4,6	50	-40	+150	1
	6690NB/M10	NEW	-	10						
	6690NB/M12	NEW		12						
	6690NB/4	NEW	1/2"	-						
	6690NB/5	NEW	5/8"	16						
	6690NB/M18	NEW	-	18						
	6690NB/6	NEW	3/4"	-						
	6690NB/7		7/8"	22	19	10,7				
	6690NB/M28		–	28	24	15,9				
	6690NB/9		1.1/8"	–						
	6690NB/11		1.3/8"	35	28	20,3				
	6690NB/13		1.5/8"	–	37	38,5				
	6690NB/M42		–	42						

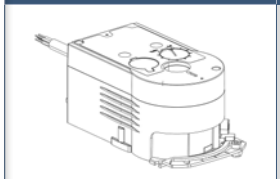
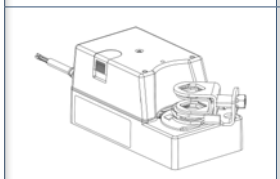
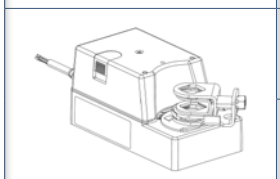
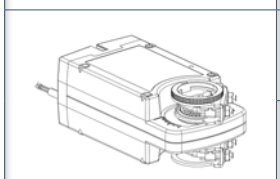
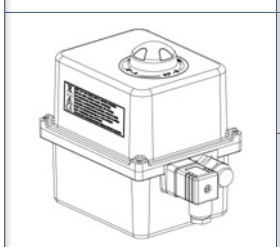
(1): with adapter for servomotors with ISO mounting flange

3-WAYS MOTORIZED BALL VALVES

Drawing	Part number (1)		Connections ODS Ø [in.]	Connections ODS Ø [mm]	Connections W Ø [mm]	P/N Servomotor	Torque [Nm]	Ball port Ø [mm]	Kv [m³/h]	PS [bar]	TS [°C] min.	TS [°C] max.	Package pcs
	6690NM/3A2	NEW	3/8"	-	-	9700/RA2	10	13,5	4,6	50	-40	+150	1
	6690NM/3A6	NEW				9700/RA6							
	6690NM/M10A2	NEW	-	10		9700/RA2							
	6690NM/M10A6	NEW				9700/RA6							
	6690NM/M12A2	NEW		12		9700/RA2							
	6690NM/M12A6	NEW				9700/RA6							
	6690NM/4A2	NEW	1/2"	-		9700/RA2							
	6690NM/4A6	NEW				9700/RA6							
	6690NM/5A2	NEW	5/8"	16		9700/RA2							
	6690NM/5A6	NEW				9700/RA6							
	6690NM/M18A2	NEW	-	18		9700/RA2							
	6690NM/M18A6	NEW				9700/RA6							
	6690NM/6A2	NEW	3/4"	-		9700/RA2							
	6690NM/6A6	NEW				9700/RA6							
	6690NM/7A2		7/8"	22		9700/RA2		19	10,7				
	6690NM/7A6					9700/RA6							
	6690NM/M28A2		–	28		9700/RA2		24	15,9				
	6690NM/M28A6					9700/RA6							
	6690NM/9A2		1.1/8"	–		9700/RA2							
	6690NM/9A6					9700/RA6							
	6690NM/11A2		1.3/8"	35		9720/RA2	30	28	20,3				
	6690NM/11A6					9720/RA6							
	6690NM/13A2		1.5/8"	–		9720/RA2		37	38,5				
	6690NM/13A6					9720/RA6							
	6690NM/M42A2		–	42		9720/RA2							
	6690NM/M42A6					9720/RA6							

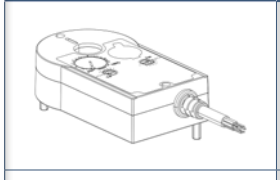
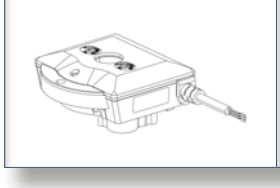
(1): with servomotor and mounting plate

SERVOMOTOR

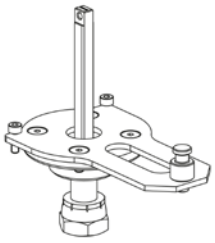
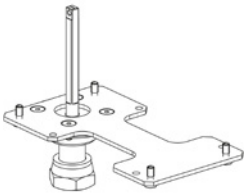
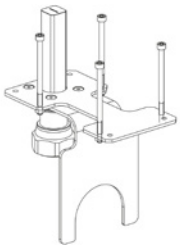
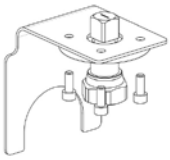
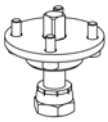
Drawing	Part number		Voltage [V]	Frequency [Hz]	Power [W]	Degree of protection	Rotation angle	Torque [Nm]	Running time [sec]	Ambient temperature [°C] min.	Ambient temperature [°C] max.	Suitable for ball valve	Package pcs.
	9700/RA2	(1)	24	50/60	4,8	IP 54	90°	10	60	-20	+50	see the couplings indicated in the COUPLING SCHEME table	1
	9700/RA6	(2)	230		2,9	IP 43							
	9720/RA2	(1)	24		2,4	IP 54		30	120				
	9720/RA6	(2)	230		3,7	IP 43							
	9730/RA2	(3)	24		9	IP 54		60	150	-30			
	9730/RA6	(2)	230										
	9740/RA2	(3)	24		45	IP 66		100	120	-10	+55		
	9740/RA6	(2)	230										

(1) Wiring connections : switching output 2 points (open/close) or continous output (0 ÷ 10V)
(2) Wiring connections : switching output 2 points (open/close)
(3) Wiring connections : continous output (0 ÷ 10V)

AUXILIARY SWITCH UNITS

Drawing	Part number	Suitable for servomotor	Contact type	Max loading [A]	Ambient temperature [°C] min.	Ambient temperature [°C] max.	Degree of protection	Package pcs.
	9750/X01	9700/RA2	Double	5	-20	+55	IP 40	1
	9750/X02	9700/RA6 9720/RA2 9720/RA6						

BALL VALVES MOTORIZATION - ADAPTERS

Drawing	Part number	Package pcs.
	9901/X58	
	9901/X60	
	9901/X57	
	9901/X75	
	9901/X76	1
	9901/X70	
	9901/X71	
	9901/X72	
	9901/X45	
	9901/X46	
	9901/X68	
	9901/X69	

see the couplings indicated in the COUPLING SCHEME table

BALL VALVES W/O ACCESS FITTING - MOTORIZATION COUPLING SCHEME

<table>
<tr><th rowspan="3">Part number</th><th colspan="3">CASTEL</th><th colspan="3">BELIMO</th><th>CASTEL</th><th colspan="2">WATERGATES</th><th>CASTEL</th></tr>
<tr><th colspan="3">Part number</th><th colspan="3">Part number</th><th>Part number</th><th colspan="2">Part number</th><th>Part number</th></tr>
<tr><th>servomotor</th><th>Adapter</th><th>switch</th><th>servomotor</th><th>Shaped handle</th><th>switch</th><th>Adapter</th><th>servomotor</th><th>switch</th><th>Adapter</th></tr>
<tr><td>6570N/M6</td><td rowspan="12">9700/RA2</td><td rowspan="12">9901/X58</td><td rowspan="12">9750/X01</td><td rowspan="18">SR24A-R
SR230A-R</td><td rowspan="18">ZSV-11</td><td rowspan="19">S1A
S2A</td><td rowspan="12">9901/X45</td><td rowspan="18">NA032100
NA034100</td><td rowspan="19">(1)</td><td rowspan="12">9901/X45</td></tr>
<tr><td>6570N/2</td></tr>
<tr><td>6570N/3</td></tr>
<tr><td>6570N/M10</td></tr>
<tr><td>6570N/M12</td></tr>
<tr><td>6570N/4</td></tr>
<tr><td>6571N/5</td></tr>
<tr><td>6570N/M15</td></tr>
<tr><td>6570N/5</td></tr>
<tr><td>6570N/M18</td></tr>
<tr><td>6570N/6</td></tr>
<tr><td>6571N/7</td></tr>
<tr><td>6570N/7</td><td rowspan="6">9700/RA2

9700/RA6</td><td rowspan="6">9901/X60

9901/X57</td><td rowspan="6">9750/X01

9750/X02</td><td rowspan="6">9901/X46</td><td rowspan="6">9901/X46</td></tr>
<tr><td>6571N/M28</td></tr>
<tr><td>6571N/9</td></tr>
<tr><td>6570N/M28</td></tr>
<tr><td>6570N/9</td></tr>
<tr><td>6571N/11</td></tr>
<tr><td>6570N/11</td><td rowspan="3">9720/RA2
9720/RA6</td><td rowspan="3">9901/X75</td><td rowspan="3">9750/X02</td><td rowspan="3">9901/X68</td><td rowspan="3">9901/X68</td></tr>
<tr><td>6570N/13</td></tr>
<tr><td>6570N/M42</td></tr>
<tr><td>6570N/17</td><td>9730/RA2
9730/RA6</td><td>9901/X76</td><td rowspan="2">(1)</td><td>GR24A-R
GR230A-R</td><td>ZGV-14</td><td>9901/X69</td><td>NA0052100
NA0054100</td><td>9901/X69</td></tr>
<tr><td>6570N/M64</td><td>9740/RA2
9740/RA6</td><td>9901/X70</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr>
</table>

(1) internal

BALL VALVES WITH ACCESS FITTING - MOTORIZATION COUPLING SCHEME

Part number	CASTEL			BELIMO			CASTEL	WATERGATES		CASTEL
	Part number			Part number			Part number	Part number		Part number
	servomotor	Adapter	switch	servomotor	Shaped handle	switch	Adapter	servomotor	switch	Adapter
6570N/M6A	9700/RA2	9901/X58	9750/X01	SR24A-R SR230A-R	ZSV-11	S1A S2A	9901/X45	NA032100 NA034100	(1)	9901/X45
6570N/2A										
6570N/3A										
6570N/M10A										
6570N/M12A										
6570N/4A										
6570N/M15A										
6570N/5A										
6570N/M18A										
6570N/6A										
6570N/7A	9700/RA2 --- 9700/RA6	9901/X60 --- 9901/X57	9750/X01 --- 9750/X02				9901/X46			9901/X46
6570N/M28A										
6570N/9A										
6570N/11A	9720/RA2 9720/RA6	9901/X75	9750/X02				9901/X68			9901/X68
6570N/13A										
6570N/M42A										
6570N/17A	9730/RA2 9730/RA6	9901/X76	(1)	GR24A-R GR230A-R	ZGV-14		9901/X69	NA0052100 NA0054100		9901/X69
6570N/M64A	9740/RA2 9740/RA6	9901/X70		-	-	-	-	-	-	-
6570N/21A										
6570N/24A		9901/X71								
6570N/25A										
6570N/28A		9901/X72								
6570N/29A										

(1) internal

VIBRATION ABSORBERS, STAINLESS STEEL CONNECTIONS

Drawing	Part number	Connections		PS[bar]			Package pcs
		ODS		TS [°C]-80 / +100	TS [°C]+120	TS [°C]+150	
		Ø [in.]	Ø [mm]				
	7690N/3	3/8"	-	50	49	48	100
	7690N/M10	-	10				
	7690N/M12		12				
	7690N/4	1/2"	-				
	7690N/M15	-	15				50
	7690N/5	5/8"	16				
	7690N/M18	-	18				
	7690N/6	3/4"	-				
	7690N/7	7/8"	22				25
	7690N/M28	-	28				
	7690N/9	1.1/8"	-				
	7690N/11	1.3/8"	35				10
	7690N/13	1.5/8"	-				
	7690N/M42	-	42				
	7690N/17	2.1/8"	54				5

(#)
For specific applications with refrigerant fluids not listed above, please contact Castel Technical Department

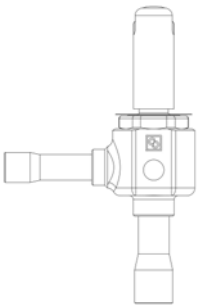
CLASSIC

REFRIGERANTI A1, ASHRAE STANDARD 34-2019(#)

HCFC (R22)
HFC (R134a, R404A, R407C, R410A, R507)
HFO (R1234ze)
HFO + HFC (R448A, R449A, R450A, R452A, R513A, R515A, R515B)

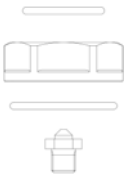
Castel
Italian technology

SOLENOID EXPANSION VALVES WITH INTERCHANGEABLE ORIFICE

Drawing	Part number	Orifice type	Connections				Kv [m³/h]	PS [bar]	TS [°C]		Package pcs.
			In		Out				min.	max.	
			Ø [in.]	Ø [mm]	Ø [in.]	Ø [mm]					
	2028/3S00	00	3/8"	-	1/2"-	-	0,0027	45	-40	+100	17
	2028/M10S00		-	10	-	12					
	2028/3S01	01	3/8"	-	1/2"	-	0,01				
	2028/M10S01		-	10	-	12					
	2028/3S02	02	3/8"	-	1/2"	-	0,017				
	2028/M10S02		-	10	-	12					
	2028/3S03	03	3/8"	-	1/2"	-	0,023				
	2028/M10S03		-	10	-	12					
	2028/3S04	04	3/8"	-	1/2"	-	0,043				
	2028/M10S04		-	10	-	12					
	2028/3S05	05	3/8"	-	1/2"	-	0,065				
	2028/M10S05		-	10	-	12					
	2028/3S06	06	3/8"	-	1/2"	-	0,113				
	2028/M10S06		-	10	-	12					
	2028/4S07	07	1/2"	-	5/8"	-	0,2				
	2028/M12S07		-	12	-	16					
	2028/4S08	08	1/2"	-	5/8"	-	0,23				
	2028/M12S08		-	12	-	16					
	2028/4S09	09	1/2"	-	5/8"	-	0,25				
	2028/M12S09		-	12	-	16					

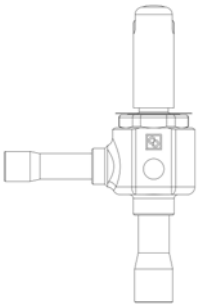
for rated capacities see table of the orifice assemblies

ORIFICE ASSEMBLIES

Drawing	Part number	Orifice type	Rated capacity (1) [kW]														Package pcs.
			R134a	R22	R404A	R507	R407C	R410A	R1234ze	R448A	R449A	R450A	R452A	R513A	R515A	R515B	
	9151/R61	00	0,22	0,29	0,21	0,21	0,29	0,34	0,17	0,27	0,27	0,19	0,21	0,19	0,17	0,17	10
	9150/R63	01	0,79	1,01	0,74	0,74	1,03	1,21	0,62	0,98	0,97	0,69	0,76	0,67	0,60	0,59	
	9150/R64	02	1,57	2,00	1,46	1,46	2,04	2,40	1,23	1,96	1,92	1,38	1,52	1,33	1,19	1,18	
	9150/R65	03	1,86	2,37	1,74	1,74	2,42	2,84	1,46	2,32	2,27	1,63	1,80	1,58	1,41	1,40	
	9150/R66	04	3,01	3,83	2,81	2,81	3,92	4,60	2,36	3,75	3,68	2,64	2,91	2,55	2,27	2,26	
	9150/R67	05	5,15	6,56	4,80	4,80	6,71	7,88	4,05	6,42	6,30	4,52	4,98	4,37	3,89	3,88	
	9150/R68	06	7,14	9,10	6,66	6,66	9,30	10,92	5,61	8,90	8,73	6,27	6,90	6,06	5,39	5,37	
	9150/R69	07	11,26	14,35	10,51	10,51	14,66	17,22	8,84	14,03	13,77	9,88	10,88	9,55	8,51	8,47	
	9150/R78	08	13,57	17,29	12,66	12,66	17,67	20,75	10,66	16,91	16,60	11,91	13,11	11,51	10,25	10,21	
	9150/R79	09	15,05	19,17	14,04	14,04	19,60	23,02	11,82	18,76	18,40	13,21	14,54	12,76	11,37	11,32	

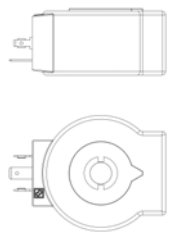
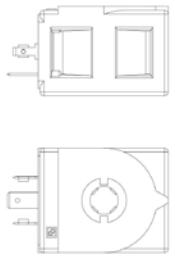
(1) Rated capacities are based on:
- Evaporating temperature Tevap = + 5 °C
- Condensing temperature Tcond = + 32 °C
- Refrigerant liquid temperature ahead of valve Tliq = + 28 °C

SOLENOID EXPANSION VALVES WITH INTERCHANGEABLE ORIFICE FOR VERY LOW TEMPERATURE

Drawing	Part number	Orifice type	Connections				Kv [m³/h]	Rated capacity R23 (1) [kW]	PS [bar]	TS [°C]		Package pcs.
			In		Out					min.	max.	
			Ø [in.]	Ø [mm]	Ø [in.]	Ø [mm]						
	2028R/3S01	01	3/8"	-	1/2"	-	0,01	1,5	45	-80	+60	17
	2028R/M10S01		-	10	-	12						
	2028R/3S02	02	3/8"	-	1/2"	-	0,017	3				
	2028R/M10S02		-	10	-	12						
	2028R/3S03	03	3/8"	-	1/2"	-	0,023	3,5				
	2028R/M10S03		-	10	-	12						
	2028R/3S04	04	3/8"	-	1/2"	-	0,043	5,7				
	2028R/M10S04		-	10	-	12						
	2028R/3S05	05	3/8"	-	1/2"	-	0,065	9,8				
	2028R/M10S05		-	10	-	12						
	2028R/3S06	06	3/8"	-	1/2"	-	0,113	13,5				
	2028R/M10S06		-	10	-	12						
	2028R/4S07	07	1/2"	-	5/8"	-	0,2	21,4				
	2028R/M12S07		-	12	-	16						
	2028R/4S08	08	1/2"	-	5/8"	-	0,23	25,8				
	2028R/M12S08		-	12	-	16						
	2028R/4S09	09	1/2"	-	5/8"	-	0,25	28,6				
	2028R/M12S09		-	12	-	16						

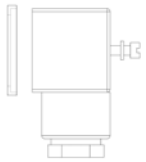
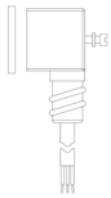
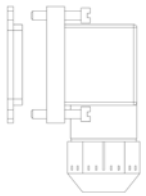
(1) Rated capacities are based on:
- Evaporating temperature Tevap = - 30 °C
- Condensing temperature Tcond= - 4 °C
- Refrigerant liquid temperature ahead of valve Tliq = - 8 °C

COILS

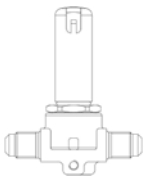
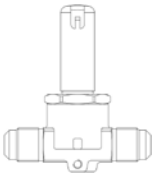
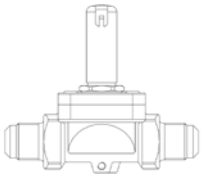
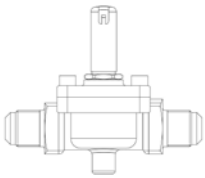
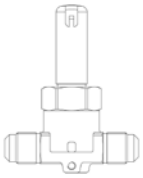
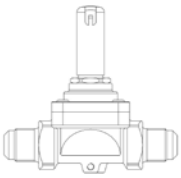
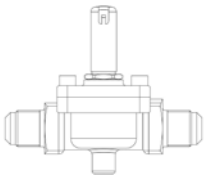
Drawing	Coil Type	Part number	Voltage	Frequency	Power	Connectors		Package pcs.
						Degree of protection		
			[V]	[Hz]	[W]	IP 65	IP 68	
	HM3 (1)	9120/RA6	220/230	50/60	12	9150/R02 9900/X66	-	24
		9120/RD1	12 D.C.	-	20			
		9120/RD2	24 D.C.					
	HM4 (1)	9160/RA2	24	50/60	8		9155/R01 9155/R02	90
		9160/RA4	110/120					
		9160/RA6	220/230					
		9160/RA7	240					
		9160/RD1	12 D.C.	-	17			
		9160/RD2	24 D.C.		15,5			

(1): coil with spare part G9150/R97 (yellow nut + black screw + OR)

CONNECTORS

Drawing	Part number	Degree of protection	Cable length	Note	Package pcs
			[m]		
	9150/R02	IP 65	-	-	240
	9900/X66		1		50
	9155/R01	IP 65 / IP 68	-		120
	9155/R02		1		1

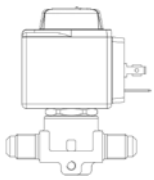
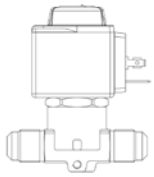
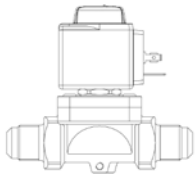
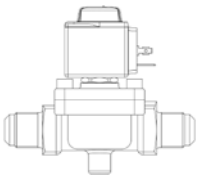
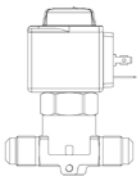
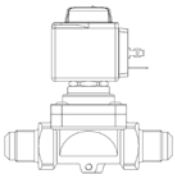
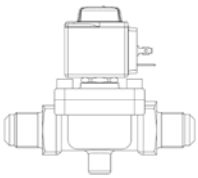
N.C. SOLENOID VALVES SAE FLARE CONNECTIONS WITHOUT COILS

Operating principle	Drawing	Part Number	Coil Type (1)	Connections SAE Flare	Kv [m³/h]	PS [bar]	TS [°C] min.	TS [°C] max.	Package pcs.
Direct acting		1020/2S	HF2 HF3 HF4 HM2 HM3 HM4 CM2	1/4"	0,175	45	-35	+110	18
		1020/3S		3/8"	0,23				
Diaphragm pilot operated		1064/3S			0,8			+105	
		1064/4S		1/2"					
		1070/4S			2,2				24
		1070/5S		5/8"	2,61				
		1090/5S			3,8				14
		1090/6S		3/4"	4,8				
Piston pilot operated		1034/3S		3/8"	1			+110	18
		1034/4S		1/2"					
		1040/4S			2,4				24
		1040/5S		5/8"	3				
		1050/5S			3,8				14
		1050/6S		3/4"	4,8				

(1) : coils that can be mounted on the valves

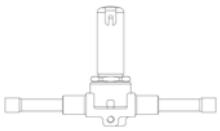
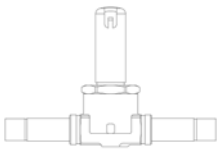
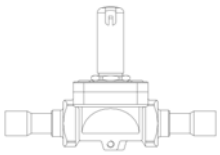
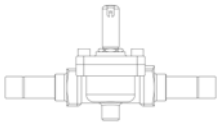
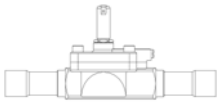
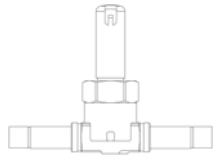
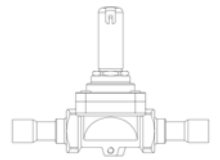
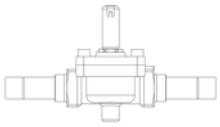
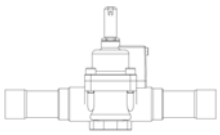
CLASSIC

N.C. SOLENOID VALVES SAE FLARE CONNECTIONS WITH COILS 220/230 VAC (A6)

Operating principle	Drawing	Part Number	Coil Type (1)	Connections SAE Flare	Kv [m³/h]	PS [bar]	TS [°C] min.	TS [°C] max.	Package pcs.
Direct acting		1020/2A6	HF2	1/4"	0,175	45	-35	+110	18
		1020/3A6		3/8"	0,23				
Diaphragm pilot operated		1064/3A6			0,8			+105	
		1064/4A6		1/2"					
		1070/4A6			2,2				24
		1070/5A6		5/8"	2,61				
		1090/5A6			3,8				14
		1090/6A6		3/4"	4,8				
Piston pilot operated		1034/3A6		3/8"	1			+110	18
		1034/4A6		1/2"					
		1040/4A6			2,4				24
		1040/5A6		5/8"	3				
		1050/5A6			3,8				14
		1050/6A6		3/4"	4,8				

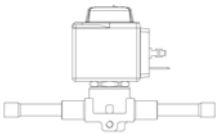
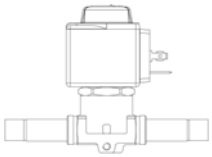
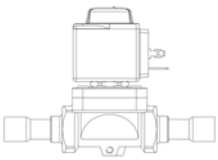
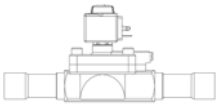
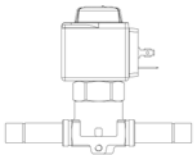
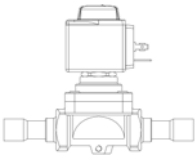
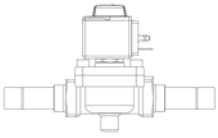
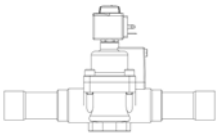
(1) : coils mounted on the valves

N.C. SOLENOID VALVES ODS CONNECTIONS WITHOUT COILS

Operating principle	Drawing	Part Number	Coil Type	Connections ODS Ø		Kv [m³/h]	PS [bar]	TS [°C]		Package pcs.
			(1)	[in.]	[mm]			min.	max.	
Direct acting		1028/2S	HF2 HF3 HF4 HM2 HM3 HM4 CM2	1/4"	-	0,15	45	-35	+110	24
		1028/2S.E				0,23				
		1028/3S		3/8"						
		1028/M10S		-	10					
Diaphragm pilot operated		1068/3S		3/8"	-	0,8			+105	
		1068/M10S		-	10					
		1068/M12S			12					
		1068/4S		1/2"	-					
		1078/M12S		-	12	2,2				17
		1078/4S		1/2"	-					
		1078/5S		5/8"	16	2,61				
		1079/7S		7/8"	22					
		1098/5S		5/8"	16	3,8				14
		1098/6S		3/4"	-	4,8				
		1098/7S		7/8"	22	5,7				
		1099/9S		1.1/8"	-					
		1078/9S				10				1
		1079/11S		1.3/8"	35					
Piston pilot operated		1038/3S		3/8"	-	1			+110	24
		1038/M10S		-	10					
		1038/M12S			12					
		1038/4S		1/2"	-					
		1048/M12S		-	12	2,4				14
		1048/4S		1/2"	-					
		1048/5S		5/8"	16	3				
		1049/7S		7/8"	22					
		1058/5S		5/8"	16	3,8				
		1058/6S		3/4"	-	4,8				
		1058/7S		7/8"	22	5,7				
		1059/9S		1.1/8"	-					
		1098/9S				10				1
		1099/11S		1.3/8"	35					
		1078/11S				16				
		1079/13S		1.5/8"	-					
		1079/M42S		-	42					
		1078/13S		1.5/8"	-	25				
		1078/M42S		-	42					
		1079/17S		2.1/8"	54					

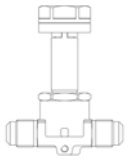
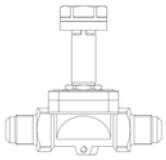
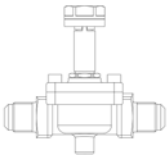
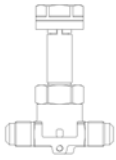
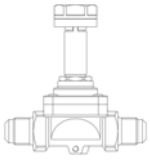
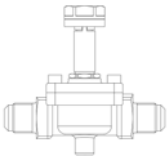
(1) : coils that can be mounted on the valves

N.C. SOLENOID VALVES ODS CONNECTIONS WITH COIL 220/230 VAC (A6)

Operating principle	Drawing	Part Number	Coil Type	Connections ODS Ø		Kv [m³/h]	PS [bar]	TS [°C]		Package pcs.
			(1)	[in.]	[mm]			min.	max.	
Direct acting		1028/2A6	HF2	1/4"	-	0,15	45	-35	+110	24
		1028/2A6.E				0,23				
		1028/3A6		3/8"						
		1028/M10A6		-	10					
Diaphragm pilot operated		1068/3A6		3/8"	-	0,8			+105	
		1068/M10A6		-	10					
		1068/M12A6			12					
		1068/4A6		1/2"	-					
		1078/M12A6		-	12	2,2				17
		1078/4A6		1/2"	-					
		1078/5A6		5/8"	16	2,61				
		1079/7A6		7/8"	22					
		1098/5A6		5/8"	16	3,8				14
		1098/6A6		3/4"	-	4,8				
		1098/7A6		7/8"	22	5,7				
		1099/9A6		1.1/8"	-					
		1078/9A6				10				1
		1079/11A6		1.3/8"	35					
Piston pilot operated		1038/3A6		3/8"	-	1			+110	24
		1038/M10A6		-	10					
		1038/M12A6			12					17
		1038/4A6		1/2"	-					
		1048/M12A6		-	12	2,4				14
		1048/4A6		1/2"	-					
		1048/5A6		5/8"	16	3				
		1049/7A6		7/8"	22					
		1058/5A6		5/8"	16	3,8				
		1058/6A6		3/4"	-	4,8				
		1058/7A6		7/8"	22	5,7				
		1059/9A6		1.1/8"	-					
		1098/9A6				10				1
		1099/11A6		1.3/8"	35					
		1078/11A6				16				
		1079/13A6		1.5/8"	-					
		1079/M42A6		-	42					
		1078/13A6		1.5/8"	-	25				
		1078/M42A6		-	42					
		1079/17A6		2.1/8"	54					

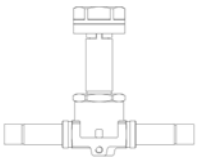
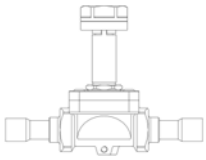
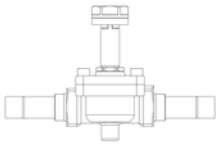
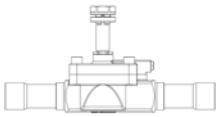
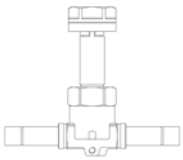
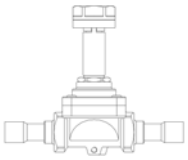
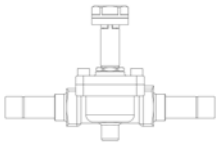
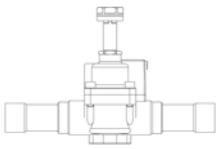
(1) : coils mounted on the valves

N.O. SOLENOID VALVES SAE FLARE CONNECTIONS WITHOUT COILS

Operating principle	Drawing	Part Number	Coil Type (1)	Connections SAE Flare	Kv [m³/h]	PS [bar]	TS [°C] min.	TS [°C] max.	Package pcs.
Diaphragm pilot operated		1164/3S	HM3	3/8"	0,8	45	-35	+105	18
		1170/4S		1/2"	2,2				24
		1170/5S		5/8"	2,61				
		1190/5S			3,8				14
		1190/6S		3/4"	4,8				
Piston pilot operated		1134/3S		3/8"	1			+110	24
		1140/4S		1/2"	2,4				14
		1140/5S		5/8"	3				
		1150/5S			3,8				
		1150/6S		3/4"	4,8				

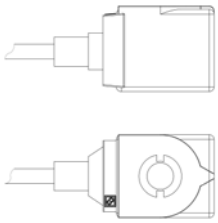
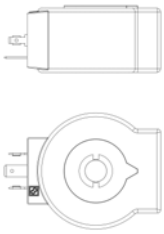
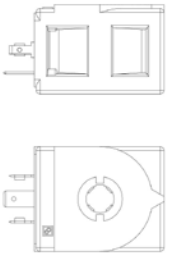
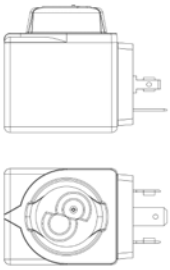
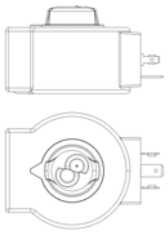
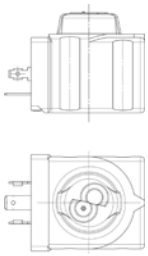
The N.O. valves have been designed to work only with direct current coil.
To use them with an alternate current supply it's necessary to mate the N.O. valve with the 9120/RD6 coil and the connector 9150/R45
(1) : coils that can be mounted on the valves

N.O. SOLENOID VALVES ODS CONNECTIONS WITHOUT COILS

Operating principle	Drawing	Part Number	Coil Type	Connections ODS Ø		Kv [m³/h]	PS [bar]	TS [°C]		Package pcs.
			(1)	[in.]	[mm]			min.	max.	
Diaphragm pilot operated		1168/3S	HM3	3/8"	-	0,8	45	-35	+105	24
		1168/M10S		-	10					
		1178/M12S			12	2,2				14
		1178/4S		1/2"	-					
		1178/5S		5/8"	16	2,61				17
		1198/5S				3,8				14
		1198/6S		3/4"	-	4,8				
		1198/7S		7/8"	22	5,7				
		1178/9S		1.1/8"	-	10				1
Piston pilot operated		1138/3S		3/8"		1			+110	24
		1138/M10S		-	10					
		1148/M12S			12	2,4				14
		1148/4S		1/2"	-					
		1148/5S		5/8"	16	3				
		1158/5S				3,8				
		1158/6S		3/4"	-	4,8				
		1158/7S		7/8"	22	5,7				
		1198/9S		1.1/8"	-	10				1
		1178/11S		1.3/8"	35	16				
		1178/13S		1.5/8"	-	25				
		1178/M42S		-	42					

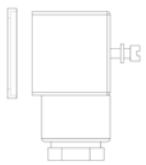
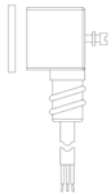
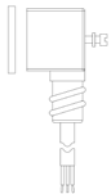
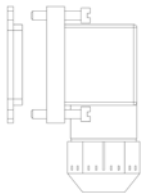
The N.O. valves have been designed to work only with direct current coil.
To use them with an alternate current supply it's necessary to mate the N.O. valve with the 9120/RD6 coil and the connector 9150/R45
(1) : coils that can be mounted on the valves

COILS

Drawing	Coil Type	Part number		Voltage [V]	Frequency [Hz]	Power [W]	Cable length [m]	Package pcs.
	CM2 (1)	9110/RA2		24	50/60	8	1	8
		9110/RA4		110				
		9110/RA6		220/230				
		9110/RA7		240				
	HM3 (1)	9120/RD1		12 D.C.	-	20	-	24
		9120/RD2		24 D.C.				
		9120/RD3		27 D.C.				
		9120/RD4		48 D.C.		22		
		9120/RD6	(2)	220 RAC	18	-		
	HM4 (1)	9160/RA2		24	50/60	8		90
		9160/RA4		110/120				
		9160/RA6		220/230				
		9160/RA7		240				
		9160/RD1		12 D.C.	-	17		
		9160/RD2		24 D.C.		15,5		
	HF2	9300/RA2		24	50/60	8	-	30
		9300/RA4		110/120				
		9300/RA6		220/230				
		9300/RA7		240				
		9300/RA8		380				
	HF3	9320/RA6		220/230		12		18
		9320/RD1		12 D.C.	-	20		
		9320/RD2		24 D.C.				
		9320/RD3		27 D.C.				
		9320/RD4		48 D.C.		22		
	HF4	9360/RA2		24	50/60	8		
		9360/RA4		110/120				
		9360/RA6		220/230				
		9360/RA7		240				
		9360/RD1		12 D.C.	-	17		
		9360/RD2		24 D.C.		15,5		

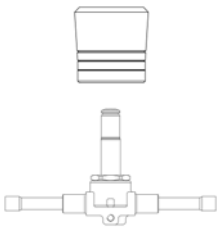
(1): coil with spare part G9150/R97 (yellow nut + black screw + OR)
(2) Use only with 9150/R45 connector / rectifier

CONNECTORS

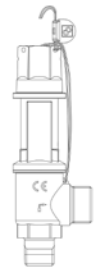
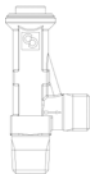
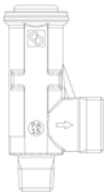
Drawing	Part number		Degree of protection	Cable length [m]	Package pcs
	9150/R02	-	IP 65	-	240
	9150/R45	(1)			1
	9150/R90			2	
	9900/X66	-		1	50
	9900/X84			1,5	
	9900/X73			2	30
	9900/X55			3	25
	9900/X54			5	
	9900/X93			10	15
	9901/X41			15	
	9155/R01	-	IP 65 / IP 68	-	120
	9155/R02			1	1

(1) Connector/Rectifier: supply voltage 220/230V AC

PERMANENT MAGNET

Drawing	Part number	Package pcs
	9900/X91	1

SAFETY VALVES

Drawing	Part number		Connections IN	Connections OUT	Orifice section [mm²]	Discharge coefficient Kd	Set pressure range [bar]	PS [bar]	TS [°C] min	TS [°C] max	Package pcs
	3030/88C		1" NPT	1.1/4" G	298	0,83	8 - 50	55	-50	+150	8
	3030/66C		3/4" NPT	3/4" G	113	0,9					15
	3030/44C		1/2" NPT								
	3030/44G	(1)	1/2" G								
	3060/46C		1/2" NPT		78,5	0,93	9 - 50			+120	45
	3060/36C		3/8" NPT			0,92					
	3060/45C		1/2" NPT	5/8" SAE	70,9	0,45					
	3060/34C		3/8" NPT	1/2" SAE	38,5	0,69					
	3060/33C			3/8" SAE		0,63					
	3060/24C		1/4" NPT	1/2" SAE		0,69					
	3060/23C			3/8" SAE		0,63					
	3061/2C			3/8" G	44,2	0,89	11 - 60	70		+150	18
	3061/3C		3/8" NPT	1/2" G							
	3061/4C		1/2" NPT								
	3065/4C			1" G	132,7	0,87					24
	3065/6C		3/4" NPT								

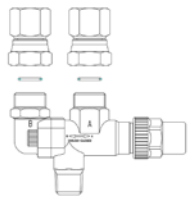
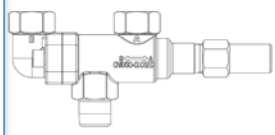
(1) Product on request.

CLASSIC

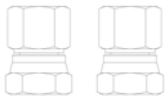
BURSTING DISC SAFETY DEVICES

Drawing	Part number	Connections			Orifice section	Bursting pressure Pb	Max operating pressure	PS [bar]	TS [°C]		Package pcs
		male IN	female OUT	service	[mm²]	[bar]			min.	max.	
	3070/44C140	1/2" NPT	1/2" NPT	2 x 1/8" NPT	113	14	75 % Pb	55	-50	+150	20
	3070/44C150					15					
	3070/44C160					16					
	3070/44C190					19					
	3070/44C210					21					
	3070/44C230					23					
	3070/44C240					24					
	3070/44C248					24,8					
	3070/44C250					25					
	3070/44C270					27					
	3070/44C275					27,5					
	3070/44C280					28					
	3070/44C370					37					
	3070/44C440					44					
	3070/44C470					47					
	3070/44C520					52					

CHANGEOVER VALVES

Drawing	Part number	Supplied connections	Connections		Kv [m³/h]	PS [bar]	TS[°C]		Package pcs
			IN	OUT			min.	max.	
	3032/33	3039/3	3/8" NPT	3/8" NPT	2,5	80	-40	+120	14
	3032/44	3039/4	1/2" NPT	1/2" NPT	3,3				
	3032/64	-	3/4" NPT		9			+150	6
	3032/66			3/4" NPT					
	3032/88		1" NPT	1" NPT	14,5				1
	3032/108		1.1/4" NPT		20				

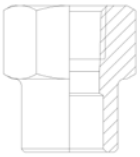
COUPLE OF CONNECTIONS FOR CHANGEOVER VALVES

Drawing	Part number	Connection	Materials	Package pcs.
	3039/3	3/8" NPT-F	Zinc plated steel	20
	3039/4	1/2" NPT-F		
	3039/3OT	3/8" NPT-F	Stainless steel/brass	
	3039/4OT	1/2" NPT-F		

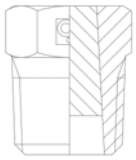
BALL SHUT OFF VALVES

Drawing	Part number	Connections	Kv [m³/h]	PS [bar]	TS [°C]		Package pcs
		NPT			min.	max.	
	3064/22	1/4"	2,5	80	-40	+150	20
	3064/33	3/8"	5				
	3064/44	1/2"	10				24
	3064/88	1"	20				14

UNIONS

Drawing	Part number	Connections		PS [bar]	Package pcs
		NPT	ODS Ø [mm]		
	3035/2	1/4"	12	150	100
	3035/3	3/8"	18		
	3035/4	1/2"	22		60
	3035/6	3/4"	28		30
	3035/8	1"	35	120	20
	3035/10	1.1/4"	42		6

FUSIBLE PLUGS

Drawing	Part number	Connections NPT	Flow section [mm²]	Kd	PS [bar]	Melting point [°C]	Max operating temperature [°C]	Package pcs
	3080/1C	1/8"	18,8	0,91	42	79	68	10
	3080/2C	1/4"	25,5					
	3080/3C	3/8"	56,7					
	3080/4C	1/2"	67,9					
	3082/1C	1/8"	18,8		30	138	127	
	3082/2C	1/4"	25,5					
	3082/3C	3/8"	56,7					
	3082/4C	1/2"	67,9					

HERMETIC STRAIGHT CHECK VALVES WITH SAE FLARE CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			Kv [m³/h]	Differential pressure	PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
		SAE Flare	ODS			(2)			Min	Max	
			Ø [in.]	Ø [mm]		[bar]					
	3112W/2	1/4"	-	-	0,5	0,04	50	600	-40	+150	20
	3112W/3	3/8"			1,5						
	3112W/4	1/2"			1,8						
	3112W/5	5/8"			3,3						
	3112W/6	3/4"			5						16
	3113W/2	1/4"			0,5	0,3					20
	3113W/3	3/8"			1,5						
	3113W/4	1/2"			1,8						
	3113W/5	5/8"			3,3						
	3113W/6	3/4"			5						16

(1): according to UL approval
(2): minimum pressure at which the valve is completely open.

HERMETIC STRAIGHT CHECK VALVES WITH COPPER ODS CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			Kv [m³/h]	Differential pressure	PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
		SAE Flare	ODS			(2)			Min	Max	
			Ø [in.]	Ø [mm]		[bar]					
	3132W/2	-	1/4"	-	0,5	0,04	50	600	-40	+150	25
	3132W/3		3/8"		1,5						
	3132W/M10		-	10							
	3132W/M12			12	1,8						16
	3132W/4		1/2"	-							
	3132W/5		5/8"	16	3,3						
	3132W/M18		-	18	5						21
	3132W/6		3/4"	-							
	3132W/7		7/8"	22							
	3133W/2		1/4"	-	0,5	0,3					25
	3133W/3		3/8"		1,5						
	3133W/M10		-	10							
	3133W/M12			12	1,8						16
	3133W/4		1/2"	-							
	3133W/5		5/8"	16	3,3						
	3133W/M18		-	18	5						21
	3133W/6		3/4"	-							
	3133W/7		7/8"	22							

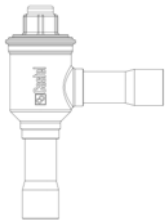
(1): according to UL approval
(2): minimum pressure at which the valve is completely open.

HERMETIC STRAIGHT CHECK VALVES WITH COPPER ODS CONNECTIONS- APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			Kv [m³/h]	Differential pressure	PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
		SAE Flare	ODS			(3)			Min	Max	
			Ø [in.]	Ø [mm]		[bar]					
	3144W/7	-	7/8"	22	8,1	0,04	50	650	-40	+150	15
	3144W/M28		-	28	10,4						8
	3144W/9		1.1/8"	-							
	3144W/11		1.3/8"	35	15,6		45				5
	3144W/13		1.5/8"	-	27						1
	3144W/M42		-	42							
	3144W/17		2.1/8"	54	39						
	3144W/21		2.5/8"	-				(2)			
	3144W/25		3.1/8"								
	3145W/7		7/8"	22	8,1	0,3	50	650			15
	3145W/M28		28	0,3	10,4						8
	3145W/9		1.1/8"	-							
	3145W/11		1.3/8"	35	15,6		45				5
	3145W/13		1.5/8"	-	27						1
	3145W/M42		-	42							
	3145W/17		2.1/8"	54	39						
	3145W/21		2.5/8"	-				(2)			
	3145W/25		3.1/8"								

(1): according to UL approval
(2): not UL approved
(3): minimum pressure at which the valve is completely open.

HERMETIC RIGHT ANGLE CHECK VALVES WITH COPPER ODS CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			Kv [m³/h]	Differential pressure	PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
		SAE Flare	ODS			(2)			Min	Max	
			Ø [in.]	Ø [mm]		[bar]					
	3184W/7	-	7/8"	22	9	0,04	50	600	-40	+150	14
	3184W/M28		-	28	19						1
	3184W/9		1.1/8"	-							
	3184W/11		1.3/8"	35	29		45				
	3185W/7		7/8"	22	9	0,3	50				14
	3185W/M28		-	28	19						1
	3185W/9		1.1/8"	-							
	3185W/11		1.3/8"	35	29		45				

(1): according to UL approval
(3): minimum pressure at which the valve is completely open.

HOT GAS BYPASS CAPACITY REGULATORS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			Regulation range	Kv [m³/h]	PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
		SAE Flare	Ø ODS [in.]	Ø ODS [mm]	[bar]				min.	max.	
	3310/4	1/2"	-	-	0,2 - 6	0,7	28	405	- 40	+ 110	15
	3310/5	5/8"				1,26					
	3310/M12S	-		12		0,7					
	3310/4S		1/2"	-							
	3310/5S		5/8"	16		1,26					
	3310/7S		7/8"	22		1,84					8

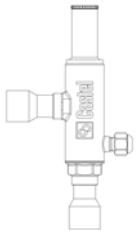
(1): according to UL approval

CRANKCASE PRESSURE REGULATORS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			Regulation range	Kv [m³/h]	PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
		SAE Flare	Ø ODS [in.]	Ø ODS [mm]	[bar]				min.	max.	
	3320/4	1/2"	-	-	0,2 - 6	3,3	28	405	- 40	+ 110	15
	3320/5	5/8"									
	3320/M12S	-		12							
	3320/4S		1/2"	-							
	3320/5S		5/8"	16							
	3320/7S		7/8"	22							8
	3320/9S		1.1/8"	-		8					1
	3320/M28S		-	28							
	3320/11S		1.3/8"	35							

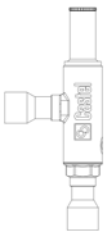
(1): according to UL approval

EVAPORATING PRESSURE REGULATORS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			Regulation range	Kv [m³/h]	PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
		SAE Flare	Ø ODS [in.]	Ø ODS [mm]	[bar]				min.	max.	
	3330/4	1/2"	-	-	0,2 - 5,5	2,7	28	405	- 40	+ 110	15
	3330/5	5/8"									
	3330/M12S	-		12							
	3330/4S		1/2"	-							
	3330/5S		5/8"	16							
	3330/7S		7/8"	22							8
	3330/9S		1.1/8"	-		8,4					1
	3330/M28S		-	28							
	3330/11S		1.3/8"	35							

(1): according to UL approval

CONDENSING PRESSURE REGULATORS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			Regulation range	Kv [m³/h]	PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
		SAE Flare	Ø ODS [in.]	Ø ODS [mm]	[bar]				min.	max.	
	3340/4	1/2"	-	-	3 - 20	2,7	28	405	- 40	+ 110	15
	3340/5	5/8"									
	3340/M12S	-		12							
	3340/4S		1/2"	-							
	3340/5S		5/8"	16							
	3340/7S		7/8"	22							8
	3340/9S		1.1/8"	-		8,4					1
	3340/M28S		-	28							
	3340/11S		1.3/8"	35							

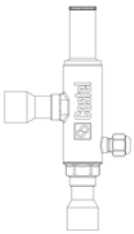
(1): according to UL approval

DIFFERENTIAL VALVES- APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			Regulation range	Kv [m³/h]	PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
		SAE Flare	Ø ODS [in.]	Ø ODS [mm]	[bar]				min.	max.	
	3136W/M12	-	-	12	1,4 - 3	1,5	45	600	- 40	+ 130	16
	3136W/4		1/2"	-							

(1): according to UL approval

RECEIVER PRESSURE REGULATORS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			Regulation range	Kv [m³/h]	PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
		SAE Flare	Ø ODS [in.]	Ø ODS [mm]	[bar]				min.	max.	
	3350/4	1/2"	-	-	3 - 20	1,8	28	405	- 40	+ 110	15
	3350/5	5/8"									
	3350/M12S	-		12							
	3350/4S		1/2"	-							
	3350/5S		5/8"	16							

(1): according to UL approval

LIQUID INDICATORS WITH SAE FLARE MALE - MALE CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
		SAE Flare	Ø ODS [in.]	Ø ODS [mm]			min.	max.	
	3810/22	1/4"	-	-	50	500	-40	+120	20
	3810/33	3/8"							
	3810/44	1/2"							
	3810/55	5/8"							
	3810/66	3/4"							

(1): according to UL approval

LIQUID INDICATORS WITH SAE FLARE MALE - FEMALE CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
		SAE Flare	Ø ODS [in.]	Ø ODS [mm]			min.	max.	
	3850/22	1/4"	-	-	50	500	-40	+120	20
	3850/33	3/8"							
	3850/44	1/2"							
	3850/55	5/8"							
	3850/66	3/4"							16

(1): according to UL approval

LIQUID INDICATORS WITH COPPER BRAZE CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
		SAE Flare	Ø ODS [in.]	Ø ODS [mm]			min.	max.	
	3840/2	-	1/4"	-	50	500	-40	+120	25
	3840/3		3/8"						
	3840/M10		-	10					
	3840/M12			12					
	3840/4		1/2"	-					
	3840/5		5/8"	16					16
	3840/M18		-	18					
	3840/6		3/4"	-					
	3840/7		7/8"	22					21
	3840/9		1.1/8"	-					16

(1): according to UL approval

MOISTURE INDICATORS WITH SAE FLARE MALE - MALE CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
		SAE Flare	Ø ODS [in.]	Ø ODS [mm]			min.	max.	
	3910/22	1/4"	-	-	50	500	-40	+120	20
	3910/33	3/8"							
	3910/44	1/2"							
	3910/55	5/8"							
	3910/66	3/4"							

(1): according to UL approval

MOISTURE INDICATORS WITH SAE FLARE MALE - MALE CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
		SAE Flare	Ø ODS [in.]	Ø ODS [mm]			min.	max.	
	3950/22	1/4"	-	-	50	500	-40	+120	20
	3950/33	3/8"							
	3950/44	1/2"							
	3950/55	5/8"							
	3950/66	3/4"							16

(1): according to UL approval

MOISTURE INDICATORS WITH COPPER BRAZE CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections			PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
		SAE Flare	Ø ODS [in.]	Ø ODS [mm]			min.	max.	
	3940/2	-	1/4"	-	50	500	-40	+120	25
	3940/3		3/8"						
	3940/M10		-	10					
	3940/M12			12					
	3940/4		1/2"	-					
	3940/5		5/8"	16					16
	3940/M18		-	18					
	3940/6		3/4"	-					
	3940/7		7/8"	22					21
	3940/9		1.1/8"	-					16

(1): according to UL approval

MOISTURE INDICATORS WITH COPPER BRAZE CONNECTIONS

Drawing	Part number	Connections							PS [bar]	TS[°C]		Package pcs
		ODS		ODM		For pipe						
		Ø [in.]	Ø [mm]	Ø [in.]	Ø [mm]	Ø [in.]	Ø [mm]	Hole Ø [mm]		min.	max.	
	3770/M28	-	-	-	28	-	-	-	45	-30	+110	21
	3770/11			1.3/8"	35							
	3770/13			1.5/8"	-							
	3770/M42		42	-								
	3771/11	1.3/8"	35									
	3771/M42	-	42									
	3771/17	2.1/8"	-									15

MOISTURE INDICATORS SADDLE TYPE

Drawing	Part number	Connections							PS [bar]	TS[°C]		Package pcs
		ODS		ODM		For pipe						
		Ø [in.]	Ø [mm]	Ø [in.]	Ø [mm]	Ø [in.]	Ø [mm]	Hole Ø [mm]		min.	max.	
	3780/5	-	-	-	-	5/8"	16	-	45	-30	+110	225
	3780/M18					-	18					
	3780/7					7/8"	22					
	3780/9					1.1/8"	28					
	3780/11					1.3/8"	35					

SOLID CORE FILTER DRIERS 100% MOLECULAR SIEVES - SAE FLARE CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	International code	Connections	Nominal volume	PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
			SAE Flare	[cm³]			min.	max.	
	DF303/2	032	1/4"	50	50	680	-40	+80	25
	DF303/3	033	3/8"						
	DF305/2	052	1/4"	80					
	DF305/3	053	3/8"						
	DF308/2	082	1/4"	130					
	DF308/3	083	3/8"						
	DF308/4	084	1/2"						
	DF316/2	162	1/4"	250					15
	DF316/3	163	3/8"						
	DF316/4	164	1/2"						
	DF316/5	165	5/8"						
	DF330/3	303	3/8"	500					10
	DF330/4	304	1/2"						
	DF330/5	305	5/8"						
	DF330/6	306	3/4"						
	DF341/4	414	1/2"	670					6
	DF341/5	415	5/8"						
	DF341/6	416	3/4"						
	DF303/2F	-	1/4"	50					25
	DF305/2F			80					
	DF308/2F			130					
	DF308/3F		3/8"						
	DF316/3F			250					15

(1): according to UL approval

SOLID CORE FILTER DRIERS 100% MOLECULAR SIEVES - SOLDER CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	International code	Connections ODS Ø [in.]	Connections ODS Ø [mm]	Nominal volume [cm³]	PS [bar]	MWP [psi] (1)	TS [°C] min.	TS [°C] max.	Package pcs
	DF303/2S	032S	1/4"	-	50	50	680	-40	+80	25
	DF303/3S	033S	3/8"							
	DF305/2S	052S	1/4"		80					
	DF305/3S	053S	3/8"							
	DF305/M10S	-	-	10						
	DF308/2S	082S	1/4"	-	130					
	DF308/3S	083S	3/8"							
	DF308/M10S	-	-	10						
	DF308/M12S			12						
	DF308/4S	084S	1/2"	-						
	DF316/3S	163S	3/8"		250					15
	DF316/M10S	-	-	10						
	DF316/M12S			12						
	DF316/4S	164S	1/2"	-						
	DF316/5S	165S	5/8"	16						
	DF316/7S	167S	7/8"	-						
	DF330/3S	303S	3/8"		500					10
	DF330/4S	304S	1/2"							
	DF330/5S	305S	5/8"	16						
	DF330/6S	306S	3/4"	-						
	DF330/7S	307S	7/8"							
	DF341/4S	414S	1/2"		670					6
	DF341/5S	415S	5/8"	16						
	DF341/6S	416S	3/4"	-						
	DF341/7S	417S	7/8"							
	DF375/4S	754S	1/2"		1340					1
	DF375/5S	755S	5/8"	16						
	DF375/6S	756S	3/4"	-						
	DF375/7S	757S	7/8"							
	DF375/9S	759S	1.1/8"							

(1): according to UL approval

DEHYDRATOR FILTERS WITH SOLID CORE 80% MOLECULAR SIEVE, 20% ALUMINA - SAE FLARE CONNECTIONS APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	International code	Connections	Nominal volume	PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
			SAE Flare	[cm³]			min.	max.	
	DF203/2	032	1/4”	50	50	680	-40	+80	25
	DF203/3	033	3/8”						
	DF205/2	052	1/4”	80					
	DF205/3	053	3/8”						
	DF208/2	082	1/4”	130					
	DF208/3	083	3/8”						
	DF208/4	084	1/2”						
	DF216/2	162	1/4”	250					15
	DF216/3	163	3/8”						
	DF216/4	164	1/2”						
	DF216/5	165	5/8”						
	DF230/3	303	3/8”	500					10
	DF230/4	304	1/2”						
	DF230/5	305	5/8”						
	DF241/5	415		670					6
	DF241/6	416	3/4”						

(1): according to UL approval

DEHYDRATOR FILTERS WITH SOLID CORE 80% MOLECULAR SIEVE, 20% ALUMINA - SOLDER CONNECTIONS APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	International code	Connections ODS Ø [in.]	Connections ODS Ø [mm]	Nominal volume [cm³]	PS [bar]	MWP [psi] (1)	TS [°C] min.	TS [°C] max.	Package pcs
	DF203/2S	032S	1/4"	-	50	50	680	-40	+80	25
	DF203/3S	033S	3/8"							
	DF205/2S	052S	1/4"		80					
	DF205/3S	053S	3/8"							
	DF205/M10S	-	-	10						
	DF208/2S	082S	1/4"	-	130					
	DF208/3S	083S	3/8"							
	DF208/M10S	-	-	10						
	DF208/M12S			12						
	DF208/4S	084S	1/2"	-						
	DF216/3S	163S	3/8"		250					15
	DF216/M10S	-	-	10						
	DF216/M12S			12						
	DF216/4S	164S	1/2"	-						
	DF216/5S	165S	5/8"	16						
	DF216/7S	167S	7/8"	-						
	DF230/3S	303S	3/8"		500					10
	DF230/4S	304S	1/2"							
	DF230/5S	305S	5/8"	16						
	DF230/7S	307S	7/8"	-						
	DF241/5S	415S	5/8"	16	670					6
	DF241/6S	416S	3/4"	-						
	DF241/7S	417S	7/8"							
	DF275/4S	754S	1/2"		1340					1
	DF275/5S	755S	5/8"	16						
	DF275/6S	756S	3/4"	-						
	DF275/7S	757S	7/8"							
	DF275/9S	759S	1.1/8"							

(1): according to UL approval

SOLID CORE BI-FLOW FILTER DRIERS 100% MOLECULAR SIEVES - SAE FLARE CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	International code	Connections	Nominal volume	PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
			SAE Flare	[cm³]			min.	max.	
	DB305/2	052	1/4"	80	50	680	-40	+80	25
	DB308/3	083	3/8"	130					
	DB308/4	084	1/2"						
	DB316/3	163	3/8"	250					15
	DB316/4	164	1/2"						
	DB316/5	165	5/8"						
	DB330/5	305		500					10

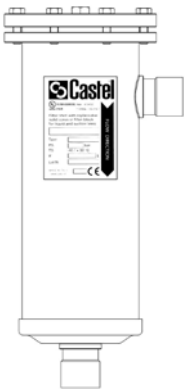
(1): according to UL approval

SOLID CORE BI-FLOW FILTER DRIERS 100% MOLECULAR SIEVES - SOLDER CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	International code	Connections		Nominal volume	PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
			ODS					min.	max.	
			Ø [in.]	Ø [mm]	[cm³]					
	DB305/2S	052S	1/4"	-	80	50	680	-40	+80	25
	DB308/3S	083S	3/8"		130					
	DB308/4S	084S	1/2"							
	DB316/3S	163S	3/8"		250					15
	DB316/4S	164S	1/2"							
	DB316/5S	165S	5/8"	16						
	DB316/7S	167S	7/8"	-						
	DB330/5S	305S	5/8"	16	500					10
	DB330/7S	307S	7/8"	-						
	DB330/9S	309S	1.1/8"							

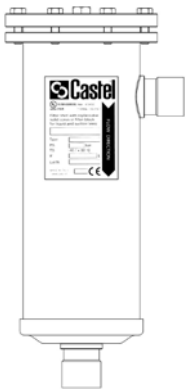
(1): according to UL approval

FILTER DRIERS WITH REPLACEABLE SOLID CORE WITH THREADED COVER - COPPER CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections ODS Ø [in.]	Connections ODS Ø [mm]	Cores type	N° of cores	Nominal volume [cm³]	PS [bar]	MWP [psi] (1)	TS [°C] min.	TS [°C] max.	Package pcs
	SF411/5A	5/8"	16	4490/A 4490/B 4490/AA 4490/AB 4490/BA 4490/BB	1	800	47	600	-40	+80	1
	SF411/7A	7/8"	22								
	SF411/M28A	-	28								
	SF411/9A	1.1/8"	-								
	SF411/11A	1.3/8"	35								
	SF411/13A	1.5/8"	-								
	SF411/M42A	-	42								
	SF411/17A	2.1/8"	54								
	SF411/21A	2.5/8"	-								
	SF412/5A	5/8"	16		2	1600					
	SF412/7A	7/8"	22								
	SF412/M28A	-	28								
	SF412/9A	1.1/8"	-								
	SF412/11A	1.3/8"	35								
	SF412/13A	1.5/8"	-								
	SF412/M42A	-	42								
	SF412/17A	2.1/8"	54								
	SF412/21A	2.5/8"	-								
	SF413/7A	7/8"	22		3	2400	41				
	SF413/M28A	-	28								
	SF413/9A	1.1/8"	-								
	SF413/11A	1.3/8"	35								
	SF413/13A	1.5/8"	-								
	SF413/M42A	-	42								
	SF413/17A	2.1/8"	54								
	SF414/11A	1.3/8"	35		4	3200	31	450			
	SF414/13A	1.5/8"	-								
	SF414/M42A	-	42								
	SF414/17A	2.1/8"	54								

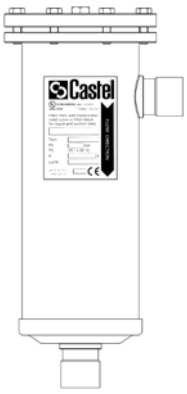
(1): according to UL approval

FILTER DRIERS WITH REPLACEABLE SOLID CORE WITH BLIND COVER - COPPER CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections ODS Ø [in.]	Connections ODS Ø [mm]	Cores type	N° of cores	Nominal volume [cm³]	PS [bar]	MWP [psi] (1)	TS [°C] min.	TS [°C] max.	Package pcs
	SF411/5B	5/8"	16	4490/A 4490/B 4490/AA 4490/AB 4490/BA 4490/BB	1	800	47	600	-40	+80	1
	SF411/7B	7/8"	22								
	SF411/M28B	-	28								
	SF411/9B	1.1/8"	-								
	SF411/11B	1.3/8"	35								
	SF411/13B	1.5/8"	-								
	SF411/M42B	-	42								
	SF411/17B	2.1/8"	54								
	SF411/21B	2.5/8"	-								
	SF412/5B	5/8"	16		2	1600					
	SF412/7B	7/8"	22								
	SF412/M28B	-	28								
	SF412/9B	1.1/8"	-								
	SF412/11B	1.3/8"	35								
	SF412/13B	1.5/8"	-								
	SF412/M42B	-	42								
	SF412/17B	2.1/8"	54								
	SF412/21B	2.5/8"	-								
	SF413/7B	7/8"	22		3	2400					
	SF413/M28B	-	28								
	SF413/9B	1.1/8"	-								
	SF413/11B	1.3/8"	35								
	SF413/13B	1.5/8"	-								
	SF413/M42B	-	42								
	SF413/17B	2.1/8"	54								
	SF414/11B	1.3/8"	35		4	3200	31	450			
	SF414/13B	1.5/8"	-								
	SF414/M42B	-	42								
	SF414/17B	2.1/8"	54								

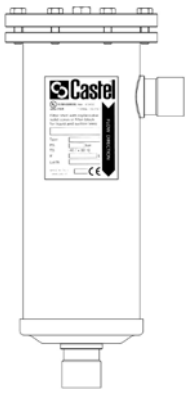
(1): according to UL approval

FILTER DRIERS WITH REPLACEABLE SOLID CORE WITH THREADED COVER - COPPER CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections ODS Ø [in.]	Connections ODS Ø [mm]	Cores type	N° of cores	Nominal volume [cm³]	PS [bar]	MWP [psi] (1)	TS [°C] min.	TS [°C] max.	Package pcs
	4411/5A	5/8"	16	4490/A 4490/B 4490/AA 4490/AB 4490/BA 4490/BB	1	800	45	470	-40	+80	1
	4411/7A	7/8"	22								
	4411/M28A	-	28								
	4411/9A	1.1/8"	-								
	4411/11A	1.3/8"	35								
	4411/13A	1.5/8"	-								
	4411/M42A	-	42								
	4411/17A	2.1/8"	54								
	4411/21A	2.5/8"	-								
	4412/7A	7/8"	22		2	1600					
	4412/M28A	-	28								
	4412/9A	1.1/8"	-								
	4412/11A	1.3/8"	35								
	4412/13A	1.5/8"	-								
	4412/M42A	-	42								
	4412/17A	2.1/8"	54								
	4413/7A	7/8"	22		3	2400					
	4413/9A	1.1/8"	-								
	4413/11A	1.3/8"	35								
	4413/13A	1.5/8"	-								
	4413/M42A	-	42								
	4414/11A	1.3/8"	35		4	3200	35				
	4414/13A	1.5/8"	-								
	4414/M42A	-	42								
	4414/17A	2.1/8"	54								

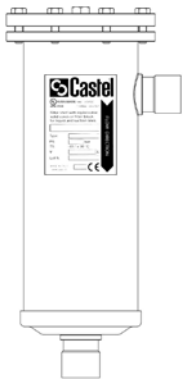
(1): according to UL approval

FILTER DRIERS WITH REPLACEABLE SOLID CORE WITH BLIND COVER - COPPER CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections ODS Ø [in.]	Connections ODS Ø [mm]	Cores type	N° of cores	Nominal volume [cm³]	PS [bar]	MWP [psi] (1)	TS [°C] min.	TS [°C] max.	Package pcs
	4411/5B	5/8"	16	4490/A 4490/B 4490/AA 4490/AB 4490/BA 4490/BB	1	800	45	470	-40	+80	1
	4411/7B	7/8"	22								
	4411/M28B	-	28								
	4411/9B	1.1/8"	-								
	4411/11B	1.3/8"	35								
	4411/13B	1.5/8"	-								
	4411/M42B	-	42								
	4411/17B	2.1/8"	54								
	4411/21B	2.5/8"	-								
	4412/7B	7/8"	22		2	1600					
	4412/M28B	-	28								
	4412/9B	1.1/8"	-								
	4412/11B	1.3/8"	35								
	4412/13B	1.5/8"	-								
	4412/M42B	-	42								
	4412/17B	2.1/8"	54								
	4413/7B	7/8"	22		3	2400					
	4413/9B	1.1/8"	-								
	4413/11B	1.3/8"	35								
	4413/13B	1.5/8"	-								
	4413/M42B	-	42								
	4414/11B	1.3/8"	35		4	3200	35				
	4414/13B	1.5/8"	-								
	4414/M42B	-	42								
	4414/17B	2.1/8"	54								

(1): according to UL approval

FILTER DRIERS WITH REPLACEABLE SOLID CORE - STEEL CONNECTIONS - APPROVED BY UNDERWRITERS LABORATORIES INC.

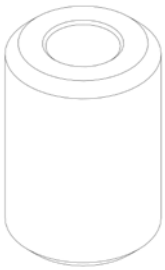
Drawing	Part number	Connections			Cores type	N° of cores	Nominal volume	PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
	Threaded cover	ODS		W			[cm³]					
		Ø [in.]	Ø [mm]	Ø [mm]						min.	max.	
	4411/5AF	5/8"	16	21,3	4490/A 4490/B 4490/AA 4490/AB 4490/BA 4490/BB	1	800	50	470	-40	+80	1
	4411/7AF	7/8"	22	26,9								
	4411/9AF	1.1/8"	-	33,7								
	4411/11AF	1.3/8"	35	42,4								
	4411/13AF	1.5/8"	-	48,3								
	4411/M42AF	-	42									
	4411/17AF	2.1/8"	54	60,3								
	4412/7AF	7/8"	22	26,9		2	1600					
	4412/9AF	1.1/8"	-	33,7								
	4412/11AF	1.3/8"	35	42,4								
	4412/13AF	1.5/8"	-	48,3								
	4412/M42AF	-	42									
	4412/17AF	2.1/8"	54	60,3								
	4413/7AF	7/8"	22	26,9		3	2400	45				
	4413/9AF	1.1/8"	-	33,7								
	4413/11AF	1.3/8"	35	42,4								
	4413/13AF	1.5/8"	-	48,3								
	4413/M42AF	-	42									
	4414/11AF	1.3/8"	35	42,4		4	3200	35				
	4414/13AF	1.5/8"	-	48,3								
	4414/M42AF	-	42									
	4414/17AF	2.1/8"	54	60,3								
	4423/17A				4491/A 4491/AA	3	4800	32				
	4423/21A	2.5/8"	67	76,1								
	4423/25A	3.1/8"	80	88,9								
	4424/25A					4	6400					
	4424/34A	4.1/4"	108	114,3								

(1): according to UL approval

ACCESSORIES FOR 44 AND SF4 FILTER DRIES

Drawing	Part number	Parts	Package pcs.
	7520/2	NPT plugs	25
	G9150/R05	Access fitting + valve core + cap	1

CARTRIDGES

Drawing	Part number			Dehydrating charge	Use	Nominal volume [cm³]	Suitable for filter	Package pcs
	4490/A	(1)		100% Molecular sieve	High capacity core	800	(3)	15
	4490/B	(2)						
	4490/AA	(1)		80% Molecular sieve + 20% activated alumina	Anti- acid core			
	4490/AB	(2)						
	4490/BA	(1)	NEW	25% Molecular sieve + 75% activated alumina	Motor burnout core			
	4490/BB	(2)	NEW					
	4491/A	(4)		100% Molecular sieve	High capacity core	1600	(5)	8
	4491/AA	(4)		80% Molecular sieve + 20% activated alumina	Anti- acid core			

(1) Supplied with cover gasket as spare part, either for Castel filters or for competitors ones
(2) Supplied without cover gasket as spare part
(3) 4411, 4412, 4413, 4414, SF411, SF412, SF413, SF414
(4) Supplied with cover gasket as spare part for Castel filters
(5) 4423, 4424

MECHANICAL FILTERS WITH REPLACEABLE FILTERING BLOCK - COPPER CONNECTIONS AND THREADED COVER APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections		Cartridge type	Filtering surface	PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
		ODS								
		Ø [in.]	Ø [mm]		[cm²]			min.	max.	
	SF411/5C	5/8"	16	4495/C	820	47	600	-40	+80	1
	SF411/7C	7/8"	22							
	SF411/M28C	-	28							
	SF411/9C	1.1/8"	-							
	SF411/11C	1.3/8"	35							
	SF411/13C	1.5/8"	-							
	SF411/M42C	-	42							
	SF411/17C	2.1/8"	54							
	SF411/21C	2.5/8"	-							

(1): according to UL approval

MECHANICAL FILTERS WITH REPLACEABLE FILTERING BLOCK - COPPER CONNECTIONS AND THREADED COVER APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections		Cartridge type	Filtering surface	PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
		ODS								
		Ø [in.]	Ø [mm]		[cm²]			min.	max.	
	4411/5C	5/8"	16	4495/C	820	45	470	-40	+80	1
	4411/7C	7/8"	22							
	4411/M28C	-	28							
	4411/9C	1.1/8"	-							
	4411/11C	1.3/8"	35							
	4411/13C	1.5/8"	-							
	4411/M42C	-	42							
	4411/17C	2.1/8"	54							
	4411/21C	2.5/8"	-							

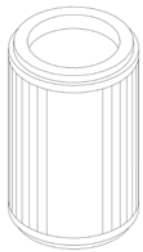
(1): according to UL approval

MECHANICAL FILTERS WITH REPLACEABLE FILTERING BLOCK - STEEL CONNECTIONS AND THREADED COVER APPROVED BY UNDERWRITERS LABORATORIES INC.

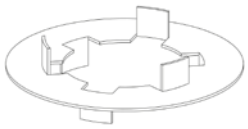
Drawing	Part number	Connections			Cartridge type	Filtering surface	PS [bar]	MWP [psi] (1)	TS [°C]		Package pcs
		ODS		W					min.	max.	
		Ø [in.]	Ø [mm]	Ø [mm]		[cm²]					
	4411/5CF	5/8"	16	21,3	4495/C	820	50	470	-40	+80	1
	4411/7CF	7/8"	22	26,9							
	4411/9CF	1.1/8"	-	33,7							
	4411/11CF	1.3/8"	35	42,4							
	4411/13CF	1.5/8"	-	48,3							
	4411/M42CF	-	42								
	4411/17CF	2.1/8"	54	60,3							
	4411/21CF	2.5/8"	-	76,1			45				
	4411/25CF	3.1/8"	80	88,9							
	4421/21C	2.5/8"	67	76,1	4496/C	1850	32				
	4421/25C	3.1/8"	80	88,9							
	4421/34C	4.1/4"	108	114,3							

(1): according to UL approval

BLOCKS

Drawing	N° catalogo	Filtering surface	Suitable for filter	Package pcs
		[cm²]		
	4495/C	820	4411 /C	15
	4496/C	1850	4421 /C	8

ACCESSORIES

Drawing	Part number	Parts	Suitable for filter	Package pcs.
	9900/X74	Centering disc for two blocks	4412 (1)	1
	110968	Cover gasket	4411 4412 4413 4414	20 (2)
	111018		4421 4423 4424	
	114872		SF411 SF412 SF413 SF414	

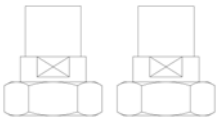
(1) replace internal components with spare part 9151/R02 (top + bottom for mechanical block)
(2) Minimum order quantity

OIL SEPARATORS - HOMOLOGATED BY UNDERWRITERS LABORATORIES INC.

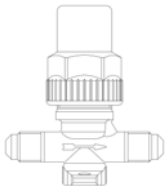
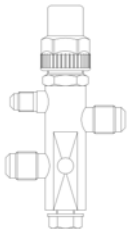
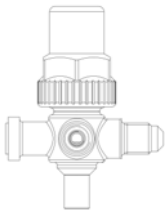
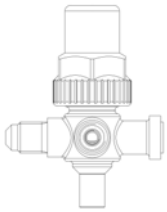
Drawing	Part number	Solder connections				Part number couple of solder connections (1)	PS [bar]	MWP [psi] (2)	TS[°C]		Package pcs
		ODS		ODM					Min	Max	
		Ø [in.]	Ø [mm]	Ø [in.]	Ø [mm]						
	OS540/4R	1/2"	-	5/8"	16	-	45	600	-10	+130	1
	OS540/4										
	OS540/5	5/8"	16	3/4"	-						
	OS540/7	7/8"	-	1"							
	OS540/9	1.1/8"		1.3/8"	35						
	OS540/11	1.3/8"	35	1.5/8"	-						
	5540/13	1.5/8"	-	-			32	(3)			
	5540/M42	-	42								
	5540/17	2.1/8"	54								
	5520/C	-	-			5590/5 - 5590/7	45				
	5520/D					5590/9 - 5590/11					
	5520/E					5590/13 - 5590/M42					

(1) To be ordered separately
(2) According to UL approval
(3) Not UL approved

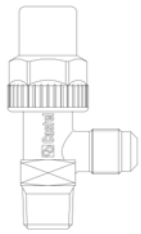
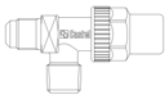
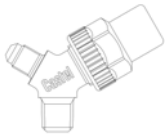
COUPLE OF CONNECTIONS FOR OIL SEPARATORS 5520

Drawing	Part number	Solder connections		Gasket	PS[bar]	TS[°C]		Package pcs
		ODS		(1)		min.	max.	
		Ø [in.]	Ø [mm]					
	5590/5	5/8"	16	003879	45	-10	+130	1
	5590/7	7/8"	-					
	5590/9	1.1/8"		003870				
	5590/11	1.3/8"	35					
	5590/13	1.5/8"	-	003322				
	5590/M42	-	42					

(1) To be ordered separately

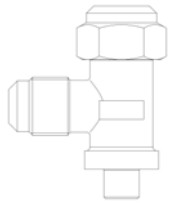
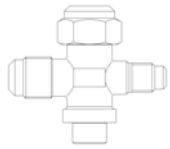
Drawing	Part number	Acces fitting	Connections				Kv [m³/h]	PS [bar]	TS [°C]		Package pcs
		SAE Flare	SAE Flare		ODS				Min	Max	
					Ø [in.]	Ø [mm]					
	6010/2	-	1/4"	1/4"	-	-	0,27	45	-40	+130	45
	6012/22			-	1/4"						72
	6020/222	1/4"		1/4"	-		0,39			+110	40
	6020/233		3/8"	3/8"			1,2				
	6020/244		1/2"	1/2"			2,2				
	6020/255		5/8"	5/8"			2,8				
	6062/22M6		1/4"	-		6	0,46				48
	6062/23M10		3/8"			10	1,38				
	6072/22M6		1/4"			6	0,46				
	6072/23M8		3/8"			8	1,29				
	6072/23M10					10	1,38				
	6072/24M12		1/2"			12	2,55				36
	6072/25M16		5/8"			16	3,4				

RECEIVER VALVES

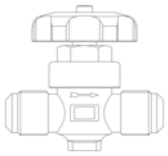
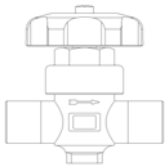
Drawing	Part number	Access fitting	Connections		Kv [m³/h]	PS[bar]	TS[°C]		Package pcs
		SAE Flare	SAE Flare	NPT			min.	max.	
	6110/21	-	1/4"	1/8"	0,44	45	-40	+130	90
	6110/22			1/4"					
	6110/X11		-	1/4" M/F					48
	6110/X15	1/4" f	1/4"	-					90
	6110/23	-		3/8"	0,45				
	6110/32		3/8"	1/4"	1,35				
	6110/33			3/8"					
	6110/X13	3/8" f		-					
	6110/43	-	1/2"	3/8"	2,4				
	6110/44			1/2"	3,4				
	6110/54		5/8"						
	6110/66		3/4"	3/4"	6				24
	6120/22		1/4"	1/4"	0,44				90
	6120/23			3/8"	0,45				
	6120/32		3/8"	1/4"	1,35				
	6120/33			3/8"					
	6120/43		1/2"		2,4				
	6120/44			1/2"	3,4				
	6120/54		5/8"						
	6120/66		3/4"	3/4"	6				24
	6132/22	1/4"	1/4"	1/4"	0,45			+110	90
	6132/33		3/8"	3/8"	1,2				
	6132/44		1/2"	1/2"	2,2				40
	6132/54		5/8"		3,85				
	6140/22	-	1/4"	1/4"	0,36			+130	90
	6140/23			3/8"					

CLASSIC

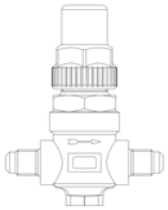
STOP VALVES FOR SPLIT CONDITIONING SYSTEMS

Drawing	Part number	Acces fitting	Connections			Kv [m³/h]	PS[bar]	TS[°C]		Package pcs
		SAE Flare	SAE Flare	ODS				min.	max.	
				Ø [in.]	Ø [mm]					
	6165/22	-	1/4”	1/4”	-	0,68	45	-20	+110	24
	6165/33		3/8”	3/8”		1,7				
	6175/33	1/4”								18
	6175/44		1/2”	1/2”		3,4				
	6175/55		5/8”	5/8”	16	4,6				
	6170/66		3/4”	3/4”	-	9				14
	6170/77		7/8”	7/8”		10,8				
	6176/44	5/16”	1/2”	1/2”		3,4				18
	6176/55		5/8”	5/8”	16	4,6				
	6176/66		3/4”	3/4”	-	7,5				

DIAPHRAGM VALVES

Drawing	Part number	Connections			Kv [m³/h]	PS[bar]	TS[°C]		Package pcs
		SAE Flare	ODS				min.	max.	
			Ø [in.]	Ø [mm]					
	6210/2	1/4"	-	-	0,28	28	-35	+90	45
	6210/3	3/8"			1				
	6210/4	1/2"			1,3				
	6210/5	5/8"			1,8				
	6210/6	3/4"			3,65				14
	6220/M6	-		6	0,28				45
	6220/2		1/4"	-					
	6220/3		3/8"		1				
	6220/M10		-	10					
	6220/4		1/2"	-	1,3				
	6220/5		5/8"	16	1,8				
	6220/6		3/4"	-	3,65				14
	6220/7		7/8"						

CAPPED VALVES

Drawing	Part number	Connections			Kv [m³/h]	PS[bar]	TS[°C]		Package pcs
		SAE Flare	ODS				min.	max.	
			Ø [in.]	Ø [mm]					
	6410/2	1/4"	-	-	0,4	45	-40	+110	45
	6410/3	3/8"			1				
	6410/4	1/2"			1,45				
	6410/5	5/8"			1,7				
	6410/6	3/4"			3,5				14
	6420/2	-	1/4"		0,4				45
	6420/3		3/8"		1				
	6420/3S3	3/8" - OUT	3/8" - IN						
	6420/M10	-	-	10					
	6420/M12			12	1,45				
	6420/4		1/2"	-					
	6420/5		5/8"	16	1,7				
	6420/M18		-	18	3,5				14
	6420/6		3/4"	-					
	6420/M22		-	22					
	6420/7		7/8"	-					

FULL BORE BALL VALVES - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections ODS Ø [in.]	Connections ODS Ø [mm]	Ball port Ø [mm]	Kv [m³/h]	PS [bar]	MWP [psi] (1)	TS [°C] min.	TS [°C] max.	Package pcs
	6570/M6	–	6	10	0,8	45	600	-40	+150	25
	6570/2	1/4"	–							
	6570/3	3/8"			3					
	6570/M10	–	10							
	6570/M12		12		5					
	6570/4	1/2"	–							
	6570/M15	–	15	15	17					16
	6570/5	5/8"	16							
	6570/M18	–	18							
	6570/6	3/4"	–							
	6570/7	7/8"	22	19	29					21
	6570/M28	–	28	25	51					16
	6570/9	1.1/8"	–							
	6570/11	1.3/8"	35	32	86					6
	6570/13	1.5/8"	–	40	117					
	6570/M42	–	42							
	6570/17	2.1/8"	54	50	214					1
	6570/M64	–	64	60	380					

(1): according to UL approval

REDUCED BORE BALL VALVES - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections ODS Ø [in.]	Connections ODS Ø [mm]	Ball port Ø [mm]	Kv [m³/h]	PS [bar]	MWP [psi] (1)	TS [°C] min.	TS [°C] max.	Package pcs
	6571/5	5/8"	16	10	5	45	435	-40	+150	16
	6571/7	7/8"	22	15	17					21
	6571/M28	–	28	19	29					16
	6571/9	1.1/8"	–							
	6571/11	1.3/8"	35	25	51					14
	6571/13	1.5/8"	–	32	86					6
	6571/M42	–	42							
	6571/17	2.1/8"	54	40	117					
	6571/M64	–	64	50	214					1
	6571/21	2.5/8"	–							

(1): according to UL approval

FULL BORE BALL VALVES, WITH ACCESS FITTING - APPROVED BY UNDERWRITERS LABORATORIES INC.

Drawing	Part number	Connections ODS Ø [in.]	Connections ODS Ø [mm]	Ball port Ø [mm]				min.	max.	Package pcs
	6570/M6A	–	6	10	0,8	45	600	-40	+150	25
	6570/2A	1/4"	–							
	6570/3A	3/8"			3					
	6570/M10A	–	10							
	6570/M12A		12		5					
	6570/4A	1/2"	–							
	6570/M15A	–	15	15	17					16
	6570/5A	5/8"	16							
	6570/M18A	–	18							
	6570/6A	3/4"	–							
	6570/7A	7/8"	22	19	29					21
	6570/M28A	–	28	25	51					16
	6570/9A	1.1/8"	–							
	6570/11A	1.3/8"	35	32	86					6
	6570/13A	1.5/8"	–	40	117					
	6570/M42A	–	42							
	6570/17A	2.1/8"	54	50	214					1
	6570/M64A	–	64	60	380					
	6570/21A	2.5/8"	–							
	6570/24A	3"	76	73	550					
	6570/25A	3.1/8"	80							
	6570/28A	3.1/2"	89	82	710					
	6570/29A	3.5/8"	92							

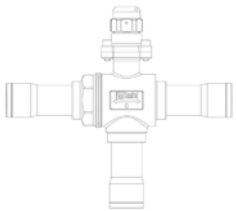
(1): according to UL approval

REDUCED BORE BALL VALVES, WITH ACCESS FITTING - APPROVED BY UNDERWRITERS LABORATORIES INC.

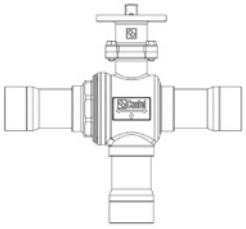
Drawing	Part number	Connections ODS Ø [in.]	Connections ODS Ø [mm]	Ball port Ø [mm]	Kv [m³/h]	PS [bar]	MWP [psi] (1)	TS [°C] min.	TS [°C] max.	Package pcs
	6571/M64A	–	64	50	214	45	435	-40	+150	1
	6571/21A	2.5/8"	–							
	6571/24A	3"	76	60	380					
	6571/25A	3.1/8"	80							
	6571/28A	3.1/2"	89	73	550					
	6571/29A	3.5/8"	92							
	6571/33A	4.1/8"	105	82	660					
	6571/34A	4.1/4"	108							

(1): according to UL approval

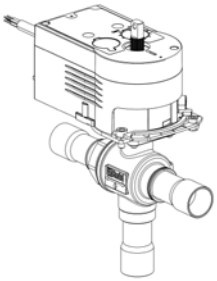
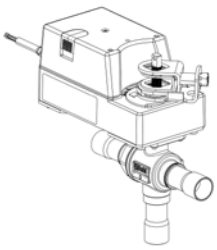
3-WAYS MANUAL VALVES

Drawing	Part number		Connections ODS Ø [in.]	Connections ODS Ø [mm]	Ball port Ø [mm]	Kv [m³/h]	PS [bar]	TS [°C] min.	TS [°C] max.	Package pcs
	6690/3	NEW	3/8"	-	13,5	4,6	45	-40	+150	1
	6690/M10	NEW	-	10						
	6690/M12	NEW		12						
	6690/4	NEW	1/2"	-						
	6690/5	NEW	5/8"	16						
	6690/M18	NEW	-	18						
	6690/6	NEW	3/4"	-						
	6690/7		7/8"	22	19	10,7				
	6690/M28		–	28	24	15,9				
	6690/9		1.1/8"	–						
	6690/11		1.3/8"	35	28	20,3				
	6690/13		1.5/8"	–	37	38,5				
	6690/M42		–	42						

3-WAYS VALVES TO BE MOTORIZED

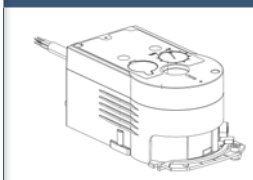
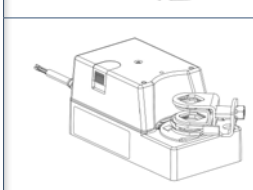
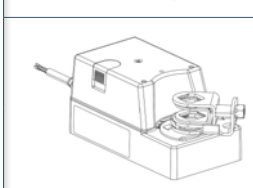
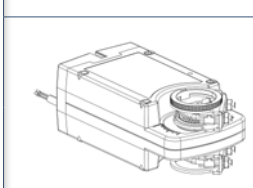
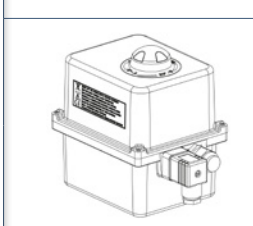
Drawing	Part number (1)		Connections ODS Ø [in.]	Connections ODS Ø [mm]	Ball port Ø [mm]	Kv [m³/h]	PS [bar]	TS [°C] min.	TS [°C] max.	Package pcs
	6690B/3	NEW	3/8"	-	13,5	4,6	45	-40	+150	1
	6690B/M10	NEW	-	10						
	6690B/M12	NEW		12						
	6690B/4	NEW	1/2"	-						
	6690B/5	NEW	5/8"	16						
	6690B/M18	NEW	-	18						
	6690B/6	NEW	3/4"	-						
	6690B/7		7/8"	22	19	10,7				
	6690B/M28		–	28	24	15,9				
	6690B/9		1.1/8"	–						
	6690B/11		1.3/8"	35	28	20,3				
	6690B/13		1.5/8"	–	37	38,5				
	6690B/M42		–	42						

(1): with adapter for servomotors with ISO mounting flange

Drawing	Part number (1)		Connections ODS Ø [in.]	Connections ODS Ø [mm]	Connections W Ø [mm]	P/N Servomotor	Torque [Nm]	Ball port Ø [mm]	Kv [m³/h]	PS [bar]	TS [°C] min.	TS [°C] max.	Package pcs
	6690M/3A2	NEW	3/8"	-	-	9700/RA2	10	13,5	4,6	45	-40	+150	1
	6690M/3A6	NEW	3/8"	-	-	9700/RA6	10	13,5	4,6	45	-40	+150	1
	6690M/M10A2	NEW	-	10	-	9700/RA2	10	13,5	4,6	45	-40	+150	1
	6690M/M10A6	NEW	-	10	-	9700/RA6	10	13,5	4,6	45	-40	+150	1
	6690M/M12A2	NEW	-	12	-	9700/RA2	10	13,5	4,6	45	-40	+150	1
	6690M/M12A6	NEW	-	12	-	9700/RA6	10	13,5	4,6	45	-40	+150	1
	6690M/4A2	NEW	1/2"	-	-	9700/RA2	10	13,5	4,6	45	-40	+150	1
	6690M/4A6	NEW	1/2"	-	-	9700/RA6	10	13,5	4,6	45	-40	+150	1
	6690M/5A2	NEW	5/8"	16	-	9700/RA2	10	13,5	4,6	45	-40	+150	1
	6690M/5A6	NEW	5/8"	16	-	9700/RA6	10	13,5	4,6	45	-40	+150	1
	6690M/M18A2	NEW	-	18	-	9700/RA2	10	13,5	4,6	45	-40	+150	1
	6690M/M18A6	NEW	-	18	-	9700/RA6	10	13,5	4,6	45	-40	+150	1
	6690M/6A2	NEW	3/4"	-	-	9700/RA2	10	13,5	4,6	45	-40	+150	1
	6690M/6A6	NEW	3/4"	-	-	9700/RA6	10	13,5	4,6	45	-40	+150	1
	6690M/7A2		7/8"	22	-	9700/RA2	10	19	10,7	45	-40	+150	1
	6690M/7A6		7/8"	22	-	9700/RA6	10	19	10,7	45	-40	+150	1
	6690M/M28A2		–	28	-	9700/RA2	10	24	15,9	45	-40	+150	1
	6690M/M28A6		–	28	-	9700/RA6	10	24	15,9	45	-40	+150	1
	6690M/9A2		1.1/8"	–	-	9700/RA2	10	24	15,9	45	-40	+150	1
	6690M/9A6		1.1/8"	–	-	9700/RA6	10	24	15,9	45	-40	+150	1
	6690M/11A2		1.3/8"	35	-	9720/RA2	30	28	20,3	45	-40	+150	1
	6690M/11A6		1.3/8"	35	-	9720/RA6	30	28	20,3	45	-40	+150	1
	6690M/13A2		1.5/8"	–	-	9720/RA2	30	37	38,5	45	-40	+150	1
	6690M/13A6		1.5/8"	–	-	9720/RA6	30	37	38,5	45	-40	+150	1
	6690M/M42A2		–	42	-	9720/RA2	30	37	38,5	45	-40	+150	1
	6690M/M42A6		–	42	-	9720/RA6	30	37	38,5	45	-40	+150	1

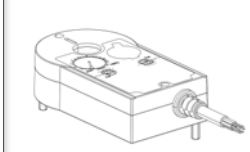
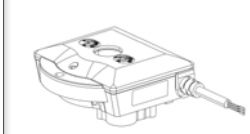
(1): with servomotor and mounting plate

SERVOMOTOR

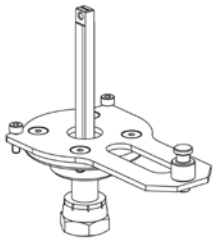
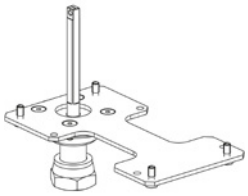
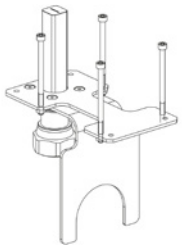
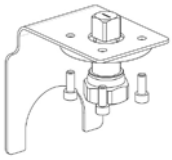
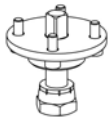
Drawing	Part number		Voltage [V]	Frequency [Hz]	Power [W]	Degree of protection	Rotation angle	Torque [Nm]	Running time [sec]	Ambient temperature [°C] min.	Ambient temperature [°C] max.	Suitable for ball valve	Package pcs.
	9700/RA2	(1)	24	50/60	4,8	IP 54	90°	10	60	-20	+50	see the couplings indicated in the COUPLING SCHEME table	1
	9700/RA6	(2)	230		2,9	IP 43							
	9720/RA2	(1)	24		2,4	IP 54		30	120				
	9720/RA6	(2)	230		3,7	IP 43							
	9730/RA2	(3)	24		9	IP 54		60	150	-30			
	9730/RA6	(2)	230										
	9740/RA2	(3)	24		45	IP 66		100	120	-10	+55		
	9740/RA6	(2)	230										

(1) Wiring connections : switching output 2 points (open/close) or continous output (0 ÷ 10V)
(2) Wiring connections : switching output 2 points (open/close)
(3) Wiring connections : continous output (0 ÷ 10V)

AUXILIARY SWITCH UNITS

Drawing	Part number	Suitable for servomotor	Contact type	Max loading [A]	Ambient temperature [°C] min.	Ambient temperature [°C] max.	Degree of protection	Package pcs.
	9750/X01	9700/RA2	Double	5	-20	+55	IP 40	1
	9750/X02	9700/RA6 9720/RA2 9720/RA6						

BALL VALVES MOTORIZATION - ADAPTERS

Drawing	Part number	Package pcs.
	9901/X58	
	9901/X60	
	9901/X57	
	9901/X75	
	9901/X76	1
	9901/X70	
	9901/X71	
	9901/X72	
	9901/X45	
	9901/X46	
	9901/X68	
	9901/X69	

see the couplings indicated in the COUPLING SCHEME table

BALL VALVES W/O ACCESS FITTING - MOTORIZATION COUPLING SCHEME

Part number	CASTEL			BELIMO			CASTEL	WATERGATES		CASTEL
	Part number			Part number			Part number	Part number		Part number
	servomotor	Adapter	switch	servomotor	Shaped handle	switch	Adapter	servomotor	switch	Adapter
6570/M6	9700/RA2	9901/X58	9750/X01	SR24A-R SR230A-R	ZSV-11	S1A S2A	9901/X45	NA032100 NA034100	(1)	9901/X45
6570/2										
6570/3										
6570/M10										
6570/M12										
6570/4										
6571/5										
6570/M15										
6570/5										
6570/M18										
6570/6										
6571/7										
6570/7	9700/RA2 --- 9700/RA6	9901/X60 --- 9901/X57	9750/X01 --- 9750/X02				9901/X46			9901/X46
6571/M28										
6571/9										
6570/M28										
6570/9										
6571/11										
6570/11	9720/RA2 9720/RA6	9901/X75	9750/X02				9901/X68			9901/X68
6571/13										
6571/M42										
6570/13										
6570/M42										
6571/17										
6570/17	9730/RA2 9730/RA6	9901/X76	(1)	GR24A-R GR230A-R	ZGV-14		9901/X69	NA0052100 NA0054100		9901/X69
6571/M64										
6571/21										
6570/M64	9740/RA2 9740/RA6	9901/X70		-	-	-	-	-	-	-

(1) internal

CLASSIC

BALL VALVES WITH ACCESS FITTING - MOTORIZATION COUPLING SCHEME

Part number	CASTEL			BELIMO			CASTEL	WATERGATES		CASTEL
	Part number			Part number			Part number	Part number		Part number
	servomotor	Adapter	switch	servomotor	Shaped handle	switch	Adapter	servomotor	switch	Adapter
6570/M6A	9700/RA2	9901/X58	9570/X01	SR24A-R SR230A-R	ZSV-11	S1A S2A	9901/X45	NA032100 NA034100	(1)	9901/X45
6570/2A										
6570/3A										
6570/M10A										
6570/M12A										
6570/4A										
6570/M15A										
6570/5A										
6570/M18A										
6570/6A										
6570/7A	9700/RA2 --- 9700/RA6	9901/X60 --- 9901/X57	9570/X01 --- 9570/X02				9901/X46			9901/X46
6570/M28A										
6570/9A										
6570/11A	9720/RA2 9720/RA6	9901/X75	9570/X02				9901/X68			9901/X68
6570/13A										
6570/M42A										
6570/17A	9730/RA2 9730/RA6	9901/X76	(1)	GR24A-R GR230A-R	ZGV-14		9901/X69	NA0052100 NA0054100		9901/X69
6571/M64A										
6571/21A										
6570/M64A	9740/RA2 9740/RA6	9901/X70		-	-	-	-	-	-	-
6570/21A										
6571/24A										
6571/25A										
6570/24A		9901/X71								
6570/25A										
6571/28A										
6571/29A										
6570/28A		9901/X72								
6570/29A										
6571/33A										
6571/34A										

(1) internal

VIBRATION ABSORBERS, COPPER CONNECTIONS

Drawing	Part number	Connections		PS[bar]			Package pcs
		ODS		TS [°C]-80 / +100	TS [°C]+120	TS [°C]+140	
		Ø [in.]	Ø [mm]				
	7690/3	3/8"	-	45	44	43,5	100
	7690/M10	-	10				
	7690/M12		12				
	7690/4	1/2"	-				
	7690/M15	-	15				50
	7690/5	5/8"	16				
	7690/M18	-	18				
	7690/6	3/4"	-				
	7690/7	7/8"	22				25
	7690/M28	-	28				
	7690/9	1.1/8"	-				
	7690/11	1.3/8"	35				10
	7690/13	1.5/8"	-				
	7690/M42	-	42				
	7690/17	2.1/8"	54	40	39	38,5	5
	7690/M64	-	-	35	34,5	34	1
	7690/21	2.5/8"	67				
	7690/24	3"	76				
	7690/25	3.1/8"	80				
	7690/28	3.1/2"	89	25	24,5	24	
	7690/34	4.1/4"	108				

(#)
For specific applications with refrigerant fluids not listed above, please contact Castel Technical Department

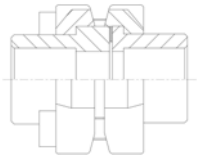
FITTINGS

A1 - A2L - A3 REFRIGERANTS, ASHRAE STANDARD 34-2019(#)

HCFC (R22)
HFC (R134a, R32, R404A, R407C, R410A, R507)
HFO (R1234yf, R1234ze)
HFO + HFC (R448A, R449A, R450A, R452A, R452B, R454A, R454B, R454C, R455A, R513A, R515A, R515B)
HC (R290, R600 , R600a, R1270)
R744

Castel®
Italian technology

FLANGE JOINTS

Drawing	Part number	Connections		PS [bar]	Package pcs
		ODS			
		Ø [in.]	Ø [mm]		
	7630/7	7/8"	–	45	18
	7630/9	1.1/8"			
	7630/11	1.3/8"	35		14
	7630/13	1.5/8"	–		
	7630/M42	–	42		
	7630/17	2.1/8"	54		6

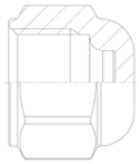
GASKETS FOR FLANGE JOINTS

Drawing	Part number	x Flange joint	Package pcs.
	000581	7630/7 ; 7630/9	10
	000618	7630/11	
	000624	7630/13 ; 7630/M42	
	000630	7630/17	

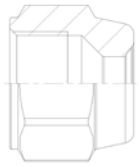
SAE FLARE NUTS FOR INCH TUBING

Drawing	Part number	Inernational code	SAE Flare	Copper Pipe		PS [bar]	Package pcs
				Ø [in.]	Ø [mm]		
	7010/22	NS4-4	1/4"	1/4"	6	50	100
	7010/33	NS4-6	3/8"	3/8"	–		50
	7010/44	NS4-8	1/2"	1/2"			
	7010/55	NS4-10	5/8"	5/8"	16		25
	7010/66	NS4-12	3/4"	3/4"	–		
	7010/77	NS4-14	7/8"	7/8"	22		10
	7010/88	NS4-16	1"	1"	–		1

SAE FLARE CAP NUTS

Drawing	Part number	Inernational code	SAE Flare	Copper Pipe		PS [bar]	Package pcs
				Ø [in.]	Ø [mm]		
	7020/20	N5-4 CAP NUT	1/4"	–	–	140	100
	7020/X02	N5-5 CAP NUT	5/16"				
	7020/30	N5-6 CAP NUT	3/8"				50
	7020/40	N5-8 CAP NUT	1/2"				

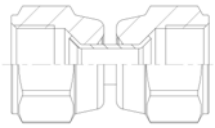
SAE FLARE REDUCING NUTS FOR INCH TUBING

Drawing	Part number	Inernational code	SAE Flare	Copper Pipe		PS [bar]	Package pcs
				Ø [in.]	Ø [mm]		
	7020/32	NRS4-64	3/8"	1/4"	6	50	50
	7020/43	NRS4-86	1/2"	3/8"	–		
	7020/54	NRS4-108	5/8"	1/2"			25
	7020/65	NRS4-1210	3/4"	5/8"	16		
	7020/87	NRS4-1614	1"	7/8"	22		10

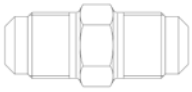
SAE FLARE NUTS FOR METRIC TUBING

Drawing	Part number		Inernational code	SAE Flare	Copper Pipe		PS [bar]	Package pcs
					Ø [in.]	Ø [mm]		
	7030/2M5		–	1/4"	–	5	50	100
	7030/3M8			3/8"		8		50
	7030/3M10					10		
	7030/4M10			1/2"				
	7030/4M12					12		
	7030/X04	(1)						
	7030/4M14					14		
	7030/5M12			5/8"		12		25
	7030/5M14					14		
	7030/6M14			3/4"				
	7030/6M18					18		

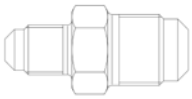
SAE FLARE TWIN NUTS

Drawing	Part number	Inernational code	SAE Flare	Copper Pipe		PS [bar]	Package pcs
				Ø [in.]	Ø [mm]		
	7050/2	US4-4	1/4"	–	–	140	50
	7050/3	US4-6	3/8"				
	7050/4	US4-8	1/2"				
	7050/5	US4-10	5/8"				25

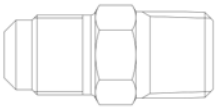
SAE FLARE UNIONS

Drawing	Part number	International code	Connections		PS[bar]	Package pcs
			SAE Flare	NPT		
	7110/2	U2-4	1/4"	–	140	100
	7110/3	U2-6	3/8"			
	7110/4	U2-8	1/2"			50
	7110/5	U2-10	5/8"			25
	7110/6	U2-12	3/4"			10
	7110/8	U2-16	1"			

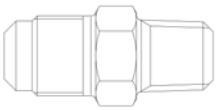
REDUCING SAE FLARE UNIONS

Drawing	Part number	International code	Connections		PS[bar]	Package pcs
			SAE Flare	NPT		
	7120/23	UR2-64	1/4" x 3/8"	–	140	25
	7120/24	UR2-84	1/4" x 1/2"			
	7120/34	UR2-86	3/8" x 1/2"			
	7120/35	UR2-106	3/8" x 5/8"			
	7120/45	UR2-108	1/2" x 5/8"			
	7120/46	UR2-128	1/2" x 3/4"			10
	7120/56	UR2-1210	5/8" x 3/4"			

SAE FLARE / NPT UNIONS

Drawing	Part number	International code	Connections		PS [bar]	Package pcs
			SAE Flare	NPT		
	7130/2	U1-4B	1/4”	1/4”	120	100
	7130/3	U1-6C	3/8”	3/8”		
	7130/4	U1-8D	1/2”	1/2”		50
	7130/6	U1-12F	3/4”	3/4”		10
	7130/8	U1-16H	1”	1”		

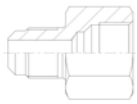
SAE FLARE / NPT REDUCING UNIONS

Drawing	Part number	International code	Connections		PS [bar]	Package pcs
			SAE Flare	NPT		
	7140/21	U1-4A	1/4”	1/8”	120	100
	7140/32	U1-6B	3/8”	1/4”		
	7140/34	U1-6D		1/2”		50
	7140/43	U1-8C	1/2”	3/8”		
	7140/54	U1-10D	5/8”	1/2”		25

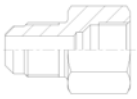
MALE / FEMALE REDUCING UNIONS (REDUCED FEMALE)

Drawing	Part number	International code	Connections						PS[bar]	Package pcs
			SAE Flare		NPT	GAS	ODS			
			M	F			Ø [in.]	Ø [mm]		
	7150/21	U3-4A	1/4"	–	1/8" f	–	–	–	140	50
	7150/32	UR3-46	3/8"	1/4"	–					25
	7150/42	UR3-48	1/2"							50
	7150/43	UR3-68		3/8"						25
	7150/54	UR3-810	5/8"	1/2"						
	7150/64	UR3-812	3/4"							10
	7150/65	UR3-1012		5/8"						

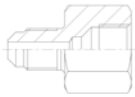
MALE / FEMALE REDUCING UNIONS (REDUCED MALE)

Drawing	Part number	International code	Connections						PS[bar]	Package pcs
			SAE Flare		NPT	GAS	ODS			
			M	F			Ø [in.]	Ø [mm]		
	7150/X29	–	–	1/4"	1/8"	–	–	–	140	25
	7150/X27				1/4"					
	7150/23	UR3-64	1/4"	3/8"	–					
	7150/24	UR3-84		1/2"						
	7150/34	UR3-86	3/8"							
	7150/45	UR3-108	1/2"	5/8"						
	7150/46	UR3-128		3/4"						10
	7150/56	UR3-1210	5/8"							

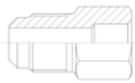
MALE / FEMALE UNIONS

Drawing	Part number	International code	Connections						PS[bar]	Package pcs
			SAE Flare		NPT	GAS	ODS			
			M	F			Ø [in.]	Ø [mm]		
	7160/2	–	1/4"	1/4"	–	–	–	–	140	10
	7160/3		3/8"	3/8"						
	7160/4		1/2"	1/2"						

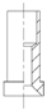
UNIONS SAE FLARE TO BSP

Drawing	Part number	International code	Connections						PS [bar]	Package pcs
			SAE Flare		NPT	GAS	ODS			
			M	F			Ø [in.]	Ø [mm]		
	7164/2	–	1/4"	–	–	G1/4" f	–	–	140	100
	7166/2		–	1/4"		G1/4"m				25

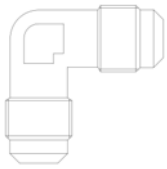
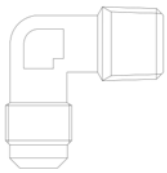
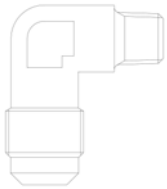
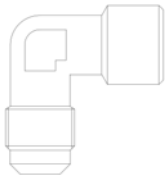
MALE SAE FLARE /SOLDER UNIONS

Drawing	Part number	International code	Connections						PS [bar]	Package pcs
			SAE Flare		NPT	GAS	ODS			
			M	F			Ø [in.]	Ø [mm]		
	7170/22	US3-44	1/4"	–	–	–	1/4"	–	140	250
	7170/2M8	–					–	8		
	7170/33	US3-66	3/8"				3/8"	–		100
	7170/3M8	–					–	8		25
	7170/3M10							10		50
	7170/34						1/2"	–		100
	7170/44	US3-88	1/2"							
	7170/4M12	–					–	12		50
	7170/55	US3-1010	5/8"				5/8"	16		
	7170/6M18	–	3/4"				–	18		10
	7170/65						5/8"	16		
	7170/67						7/8"	22		

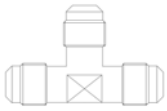
THREADED BRASS FITTINGS WITH FLARE - ODS ADAPTERS

Drawing	Part number	Item position	Connections			PS [bar]	Package pcs
			SAE Flare	ODS			
				Ø [in.]	Ø [mm]		
POS.1 POS.2  POS.3	9901/X11	1 + 2 + 3	1/4”	–	6	140	20
	9901/X12		3/8”		10		15
	9901/X13		1/2”		12		10
	9901/X14		5/8”	5/8”	16		
	9901/X15		3/4”	–	18		5
	9901/X16		1/4”	1/4”	–		20
	9901/X17		3/8”	3/8”			15
	9901/X18		1/2”	1/2”			10
	9901/X19		3/4”	3/4”			5
	9900/X58	1	1/4”	–			100
	9900/X59		3/8”				
	9900/X60		1/2”				50
	9900/X61		5/8”				25
	9900/X68		3/4”				

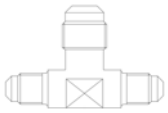
ELBOWS

Drawing	Part number	International code	Connections			PS [bar]	Package pcs	Info
			SAE Flare		NPT			
			M	F				
	7210/2	E2-4	1/4”	–	–	140	100	SAE flare elbows
	7210/3	E2-6	3/8”				50	
	7210/4	E2-8	1/2”					
	7210/5	E2-10	5/8”				25	
	7210/6	E2-12	3/4”				10	
	7220/2	E1-4B	1/4”		1/4”	120	100	SAE flare / NPT elbows
	7220/3	E1-6C	3/8”		3/8”		50	
	7220/4	E1-8D	1/2”		1/2”		25	
	7220/6	E1-12F	3/4”		3/4”		10	
	7230/21	E1-4A	1/4”		1/8”		100	SAE flare / reduced NPT elbows
	7230/32	E1-6B	3/8”		1/4”		50	
	7230/43	E1-8C	1/2”		3/8”			
	7230/54	E1-10D	5/8”		1/2”		25	
	7240/2	–	1/4”	1/4”	–	140	50	Male / female SAE flare elbows
	7240/3		3/8”	3/8”			25	
	7240/4		1/2”	1/2”			10	

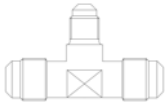
SAE FLARE TEE

Drawing	Part number	International code	Connections					PS [bar]	Package pcs
			SAE Flare				NPT		
			(1)	(2)	(3)	(4)	(3)		
	7310/2	T2-4	1/4”	1/4”	1/4”	–	–	140	50
	7310/3	T2-6	3/8”	3/8”	3/8”				
	7310/4	T2-8	1/2”	1/2”	1/2”				25
	7310/5	T2-10	5/8”	5/8”	5/8”				10
	7310/6	T2-12	3/4”	3/4”	3/4”				

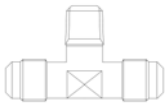
SAE FLARE REDUCING TEE (REDUCED SIDE CONNECTIONS)

Drawing	Part number	International code	Connections					PS [bar]	Package pcs
			SAE Flare				NPT		
			(1)	(2)	(3)	(4)	(3)		
	7320/223	TR2-46	1/4”	1/4”	3/8”	–	–	140	25
	7320/334	TR2-68	3/8”	3/8”	1/2”				
	7320/445	TR2-810	1/2”	1/2”	5/8”				
	7320/556	TR2-1012	5/8”	5/8”	3/4”				10

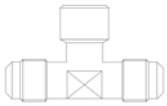
SAE FLARE REDUCING TEE (REDUCED CENTRAL CONNECTION)

Drawing	Part number	International code	Connections					PS [bar]	Package pcs
			SAE Flare				NPT		
			(1)	(2)	(3)	(4)	(3)		
	7320/332	TR2-64	3/8”	3/8”	1/4”	–	–	140	25
	7320/443	TR2-86	1/2”	1/2”	3/8”				
	7320/554	TR2-108	5/8”	5/8”	1/2”				10
	7320/665	TR2-1210	3/4”	3/4”	5/8”				

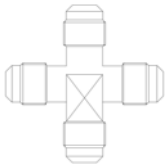
SAE FLARE / NPT TEE (TAPER CENTRAL CONNECTION)

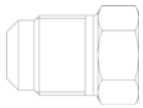
Drawing	Part number	International code	Connections					PS [bar]	Package pcs
			SAE Flare				NPT		
			(1)	(2)	(3)	(4)	(3)		
	7330/221	T1-4A	1/4”	1/4”	–	–	1/8”	120	50
	7330/222	T1-4B					1/4”		25
	7330/332	T1-6B	3/8”	3/8”					100

MALE / FEMALE SAE FLARE TEE (FEMALE CENTRAL CONNECTION)

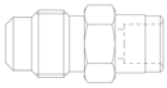
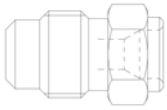
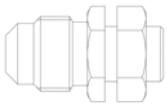
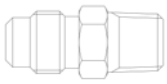
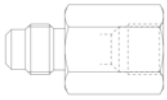
Drawing	Part number	International code	Connections					PS [bar]	Package pcs
			SAE Flare				NPT		
			(1)	(2)	(3)	(4)	(3)		
	7340/222	T6-4	1/4"	1/4"	1/4"	–	–	140	50

SAE FLARE CROSS

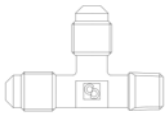
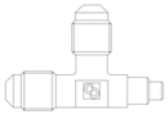
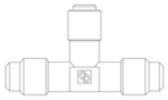
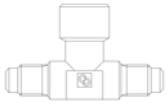
Drawing	Part number	International code	Connections					PS [bar]	Package pcs
			SAE Flare				NPT		
			(1)	(2)	(3)	(4)	(3)		
	7410/2	C1-4	1/4"	1/4"	1/4"	1/4"	–	140	50

Drawing	Part number		International code	Connections				PS [bar]	Package pcs	Info
				SAE Flare	NPT	ODS				
						Ø [in.]	Ø [mm]			
	7510/2		P2-4	1/4”	–	–	–	140	25	SAE flare plugs
	7510/3		P2-6	3/8”						
	7510/4		P2-8	1/2”					10	
	7521/1		121-B-02	–	1/8”			120	50	NPT plugs (#)
	7521/2		121-B-04		1/4”				25	
	7521/3		121-B-06		3/8”					
	7521/4		121-B-08		1/2”				10	
	7521/6		121-B-12		3/4”					
	7521/8		121-B-16		1”				5	
	7560/2		B1-4	1/4”	–			45	100	Copper seal caps
	7560/3		B1-6	3/8”						
	7560/4		B1-8	1/2”						
	7560/5		B1-10	5/8”						
	7560/6		B1-12	3/4”						
	7560/7		B1-14	7/8”						
	7580/2		B2-4	1/4”				140		Copper gaskets
	7580/3		B2-6	3/8”						
	7580/4	(1)	B2-8	1/2”						
	7580/5		B2-10	5/8”						
	7580/6		B2-12	3/4”						
	7581/2		B2-4	1/4”						
	7581/3		B2-6	3/8”						
	7581/4	(2)	B2-8	1/2”						
	7581/5		B2-10	5/8”						
	7581/6		B2-12	3/4”						

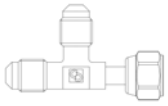
(#): Plugs 7520/.. running out of stock
(1): nominal thickness 1 mm
(2): nominal thickness 0,5 mm

Drawing	Part number	Connections									PS [bar]	Package pcs
		SAE Flare			NPT	ODS		IDS				
		Valve core	M	F		Ø [in.]	Ø [mm]	Ø [in.]	Ø [mm]	L [mm]		
	8350/22	1/4"	–	–	–	1/4"	–	3/8"	–	–	140	100
	8350/X10							–	10			
	8350/X01					–	6		–			
	8350/X03						–		6	90	120	
	8350/X06							1/4"	–	126		
	8350/X07									326		200
	8350/X11							–	6	130		100
	8350/X12									180		
	8350/X09	5/16"				1/4"			–	–	45	
	8351/2	1/4"				–	6		8 - 10	–	140	
	8351/X04						–		6			
	8351/X05	5/16"						3/8"	7			
	8351/X07								6			
	8351/X01	1/4"					1/8"	–				
	8351/X02						5	1/4" - 5/16" - 3/8"	–			
	8351/X06						–	–	6 - 8 - 10			
	8352/22		1/4"						–			
	8354/21		–		1/8"							
	8354/22				1/4"							
	8354/23				3/8"							
	8362/22			1/4"	–							10

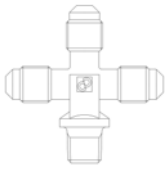
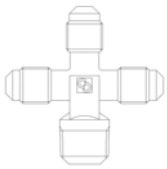
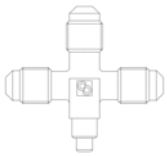
TEE ACCESS FITTINGS

Drawing	Part number	Connections					PS [bar]	Package pcs
		SAE Flare		NPT	IDS			
		Valve core			Ø [in.]	Ø [mm]		
	8380/122	1/4”	–	1/8”	–	–	120	100
	8380/222			1/4”				
	8380/X01			–		6	140	
	8380/X02					7		
	8380/X09		1/4”			–		25

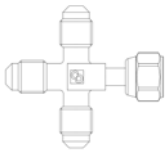
TEE ACCESS FITTINGS WITH SWIVEL NUTS

Drawing	Part number	Connections					PS [bar]	Package pcs
		SAE Flare		NPT	IDS			
		Valve core			Ø [in.]	Ø [mm]		
	8380/X06	1/4”	1/4”	–	–	–	45	10
	8380/X08							

CROSS ACCESS FITTINGS

Drawing	Part number	Connections					PS [bar]	Package pcs
		SAE Flare		NPT	IDS			
		Valve core			Ø [in.]	Ø [mm]		
	8382/1222	1/4"	–	1/8"	–	–	120	50
	8382/X02			1/4"				
	8382/X01			–		7-10	140	100
	8382/X03					6		

CROSS ACCESS FITTINGS WITH SWIVEL NUT

Drawing	Part number	Connections					PS [bar]	Package pcs
		SAE Flare		NPT	IDS			
		Valve core			Ø [in.]	Ø [mm]		
	8382/X04	1/4"	1/4"	–	–	–	45	10

COPPER GASKETS WITH NECK

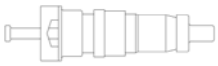
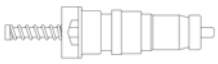
Drawing	Part number	Connections					PS [bar]	Package pcs
		SAE Flare		NPT	IDS			
		Valve core			Ø [in.]	Ø [mm]		
	8580/2	1/4"	–	–	–	–	140	100

CAPS WITH GASKET

Drawing	Part number		Connections SAE Flare M	Connections SAE Flare F	Static pressure [bar]	Working pressure [bar]	PS [bar]	TS [°C] min.	TS [°C] max.	Use	Package pcs
	8391/A		-	1/4"	-	-	35	-20	+100	-	100
	8392/A						80				
	8392/B	(1)									
	8393/A			5/16"							

(1) The key is required to remove the valve core

SPARE VALVE CORES

Drawing	Part number		Connections SAE Flare M	Connections SAE Flare F	Static pressure [bar]	Working pressure [bar]	PS [bar]	TS [°C] min.	TS [°C] max.	Use	Package pcs
	8394/B	(1)	-	-	35	30	-	-35	+100	R22 HFC	100
	8394/B1				60	55		-25	+150	HFC HFO HC	
	8395/A1	(2)			90	50		-32	+100	R22 HFC	
	8395/A3	(2) (3)						-25	+130	HFC HFO HC	
	8395/A4	(2)			140	80		-35	+120	R744	
	8395/A5	(2) (3)				60		-45	+130	HFC HFO HC	

(1) Inside spring
(2) Outside spring
(3) NB: No use with R22

MANIFOLDS WITH ACCESS FITTINGS

Drawing	Part number	Connections		Static pressure	Working pressure	PS [bar]	TS [°C]		Use	Package pcs
		SAE Flare					min.	max.		
		M	F	[bar]	[bar]					
	9900/X47	1/4”	-	-	-	45	-	-	-	25
	9900/X87									
	9900/X81									18
	9901/X43					140				20
	9901/X44									15

CORE REMOVER (FOR ALL TYPES)

Drawing	Part number	Connections		Static pressure	Working pressure	PS [bar]	TS [°C]		Use	Package pcs
		SAE Flare					min.	max.		
		M	F	[bar]	[bar]					
	8390/A	-	-	-	-	-	-	-	-	10

NOTES

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