


TESEO®

ALUMINIUM PIPEWORK FLUID POWER DISTRIBUTION SYSTEMS



Square thinking
outside
the box

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LEGEND

A	mm	Height, dimension
B	mm	Width, dimension
C	mm	Distance
D - d	mm	Diameter
E	mm	Hexagon, wrench
F	Kg - Nm	Force
G	"	Gas thread (BSPP/BSPT or NPT)
I - i	mm	Distance between slots
J x	cm ⁴	Moment of inertia along x
J y	cm ⁴	Moment of inertia along y
L	mm	Length
N°	_	Code number
n°	_	Quantity number
P	g	Weight
R	mm	Radius
S	mm	Thickness
T	-	Threaded hole
V	dm ³	Inside volume
α°	°	Angle
	Only on request - check availability
	Technical data required for the development of the offer

HBS Hollow bar system	Swinging arm bracket SAB
AP Aluminium pipework	Modular air trolley MAT
POW Powered aluminium pipework	Workbench for assembly WBA
ATS Air track supply	All systems SYS

IMPORTANT

The drawings contained in the catalogue are typical and not binding. Teseo Srl are continuously improving products and features and reserves the right to modify design and dimensions at any time.

WARNING!

For the correct application of all Teseo products carefully read the technical data in this catalogue and on our website www.teseoair.com. Thoroughly read the instruction manual before carrying out the installation.

TESEO HISTORY

Teseo SRL was founded in 1988 and initially worked within the textile industry as an industrial supplier and engineering consultants.

During this period they discovered several problems linked to many factory's compressed air distribution systems. The traditional pipework distribution systems, such as Black and Galvanised steel, had many limitations and restrictions for the distribution of Compressed Air such as low flow rates, high pressure drop, corrosion, fluid contamination and major difficulties in modifying the installations.

As a solution to solve these problems, Teseo began to design and develop a modular aluminium pipework system for the distribution of compressed air. In the early 90's Teseo were the first company to successfully develop and bring to market a Modular Aluminium Pipework System specifically designed for the distribution of Compressed Air and other fluids.

Combining the features of a structural profile together with the full flow of a pipe, Teseo achieved one of the most innovative systems for fluid power distribution.

Modern high tech designs, easy to use and flexible were the main features to claim everyone's attention. Afterwards energy efficiency, thanks to the low friction coefficient of the inner surface of the pipes, became an additional advantage compared to the traditional piping systems.

Teseo were pioneers in this new market sector, modular aluminium systems for the distribution of inert gases. There was immediately an excellent feedback from en-



gineering consultants, installers and end users thanks to the wide range of the diameters (from 1/2" up to 4" - 12mm to 110mm internal diameter!) and ease of installation, Teseo soon became the worldwide reference for Compressed Air modular aluminium pipework systems.

Today Teseo is a modern and dynamic company with an active and motivated sales and management team. Our Technical department have a passion for continuously improving and developing our existing range of products, forward thinking and striving to develop new ranges to meet our customers' future needs and requirements.



WHY BUY A TESEO SYSTEM

The choice of a Teseo modern modular piping system in aluminium eliminates the hidden costs of a compressed air system. Such costs are constantly increasing during the entire lifetime of your distribution system. Typical hidden costs eliminated or reduced by Teseo aluminium piping are:

- **Costs for air leaks.** The patented clamping and sealing concept of our piping system eliminates leaks, a major problem in many compressed air systems, Teseo pipework systems saves energy normally wasted in such systems.
- **Costs of air treatment,** in-line Filters, maintenance, repairing machines and tools. Aluminium is not affected by rusting or corrosion, so inside Teseo piping air is always as clean as after the treatment done at the source. This guarantees a longer life to the equipment connected.
- **Costs for downtime and labour for each modification.** A Teseo pipework network is easy to modify and to extend. As a compressed air system inside the factory, adding a new branch line or point of use drop takes few minutes to be operative. These can also be added live using our hot tap.
- **Costs for the low flow rate and high pressure drop.** High precision aluminium extruded profiles of Teseo piping have a smooth inner surface. The friction of air flowing through the tubing is considerably lower than in a conventional rough steel or black steel pipe. Such a feature can be easily translated into less pressure drop and extra flow with the same electric power supply consumption. Contact our sales representative or website to get more information.



- Hidden costs (Air quality, modifications, low efficiency and air leaks)
- Labour costs
- Material costs

HIGH TECH DESIGN

LIGHT WEIGHT

HEAVY DUTY PROFILES AND ACCESSORIES

100% METAL PIPES & FITTING

100% RECYCLABLE ALUMINIUM

ENERGY SAVING

SAFE AND RELIABLE



SALES NET

Today compressed air is widely used in many different industrial fields, applications range from textile to precision engineering, to automotive and pharmaceutical industry. Through complete plants or simple manifolds, the distribution of compressed air is used in every kind of production activity as service or machine. Aluminium is now the preferred choice for the inert gas distribution among the out dated technology of galvanised steel or welded steel. Due to the growing interest in aluminium solutions, Teseo has developed its own commercial network.

Teseo is managing its products through a national and international network of distributors and qualified installers providing them with a technical and commercial quality support.



ENGINEERING OFFICES AND CONSULTING

Constantly involved in new projects, engineering consultants and engineering offices are working with Teseo to specify and promote fluid power distribution with modular aluminium systems through sizing and technical specifications of complete industrial plants.

BRANCHES AND DISTRIBUTORS

Teseo are constantly improving its own commercial network through branches and distributors to grant the best products and services to suit the needs of our customers (installers, resellers, end users).

Our worldwide net of Teseo contacts is all directed to the customer's satisfaction offering technical assistance and fast delivery from their warehouse.

SOCIAL

LINKEDIN



FACEBOOK



TWITTER



www.teseoair.com

FLUID POWER IN THE FACTORY AND ON MACHINERY

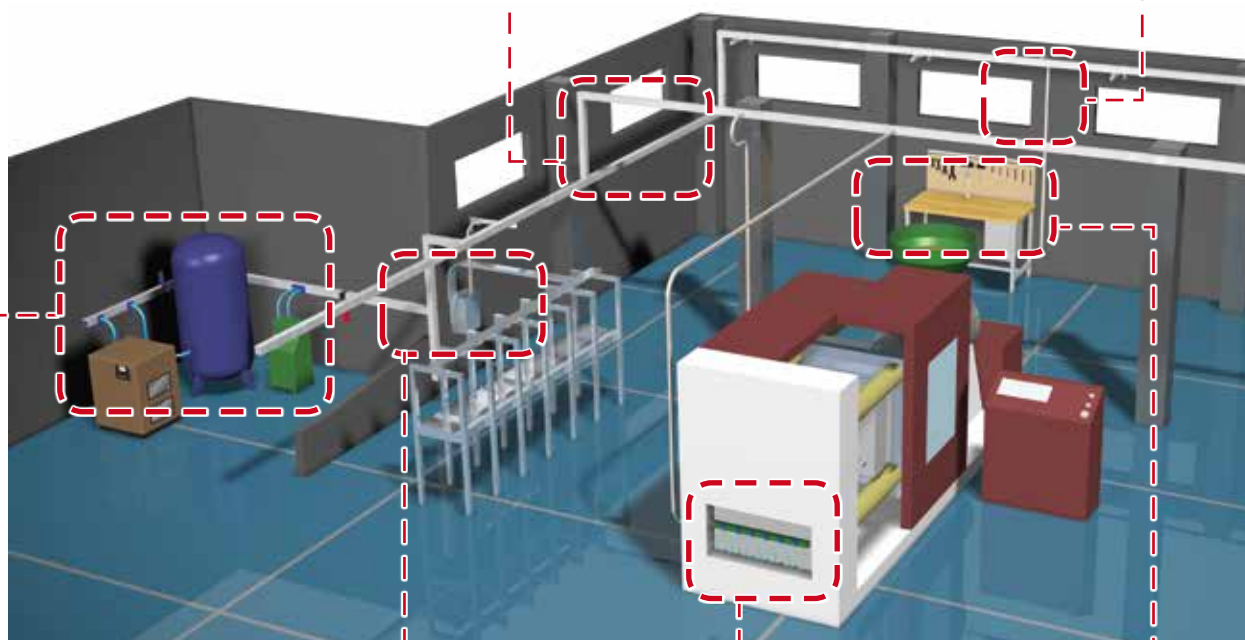
Bypass and manifolds for the assembly and installation of compressed air equipment.



Distribution pipework in aluminium for compressed air, nitrogen, vacuum and other inert gases, from 12mm to 110 mm internal diameter.



Drops to the point of use, fast and easy to install or modify.



Distribution manifolds integrated on pneumatic control panels for automation.



Modular distribution manifolds on machines or automatic lines.



Feeding lines for pneumatic tools along walls or work benches.

ERGONOMIC SOLUTIONS FOR PNEUMATIC TOOLS

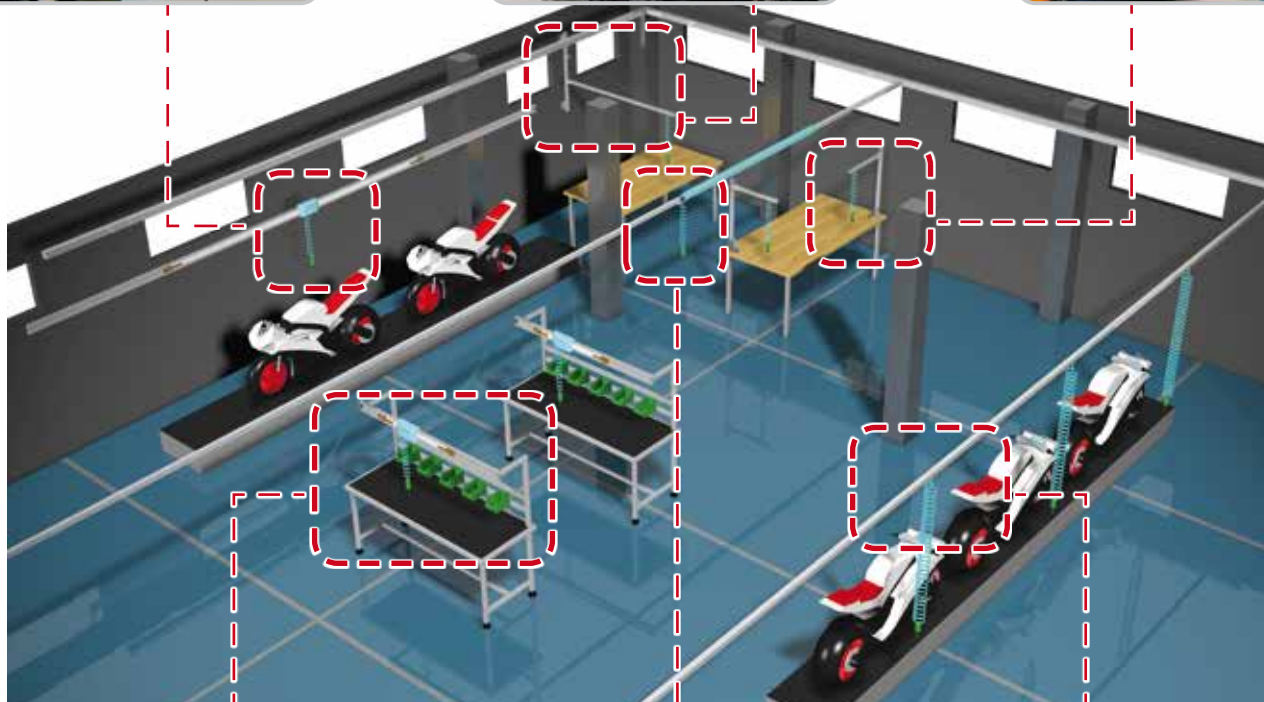
Modular track and trolleys on ATS aluminium rail for compressed air and electrical distribution.



Pressurized SAB pivoting arms in aluminium for feeding tools, covering a wide working radius.



Swinging SAB arms on benches, to support and feed pneumatic tools.



Workbenches for assembly, operated with pneumatic and electrical tools.



MAT Trolley running overhead on the aluminium pipework supporting and feeding pneumatic tools



Assembly and production lines built in Teseo aluminium profiles and glider pads



NATIONAL AND INTERNATIONAL TRADE FAIRS

Trade fairs remain the main means to release new technological trends and news developed by the manufacturers.

As the pioneer of the first modular aluminium piping for fluid power distribution, Teseo has attended many of the most relevant worldwide trade shows achieving worldwide recognition.

During the main fluid power shows, Teseo has received many awards and certificates for innovation, benefits and features of its fluid power distribution system.



PRESS RELEASE

Since the beginning Teseo has invested in communication on technical reviews dedicated to pneumatic and to technical trade magazines, either with advertisements or with press release about applications.

Thanks to the job done in the past, the Teseo brand is now clearly and strongly identified with the concepts of quality, reliability and modularity. With coverage and presence in the most prestigious and well-known worldwide publications.













www.teseoair.com

SOME ON-LINE SERVICES

- @ Area dedicated to products, where you can run advanced searches for components or check their correct coding, and technical data and view explanatory drawings.
- @ Area dedicated to our virtual press office: editorials on our brand and products promotions, like trade fairs reports and publications on specific magazines all over the world.
- @ Area dedicated to case histories and different applications of our products.
- @ Area dedicated to product news, past, present and future significant events.
- @ Dedicated on-line forms are available, fill in to ask for customized products, ask for a quote, place an order or to assemble simple components with more complex ones.
- @ Register on-line and communicate with all of the Teseo departments.
- @ Free design software is available on line in order to size your own plant with Teseo's Aluminium pipework system.
- @ Simple on line software is available to order Teseo parts and fittings, by using a simple and intuitive form.
- @ A complete converter of units of measurement is also available on line.

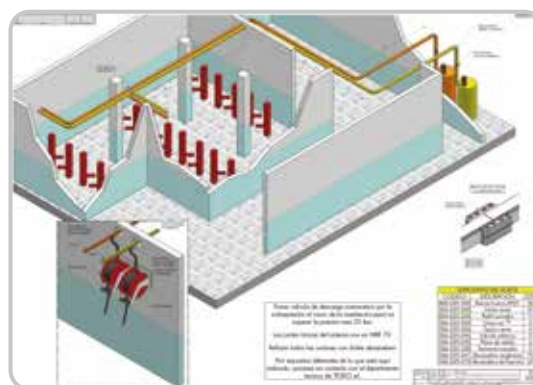
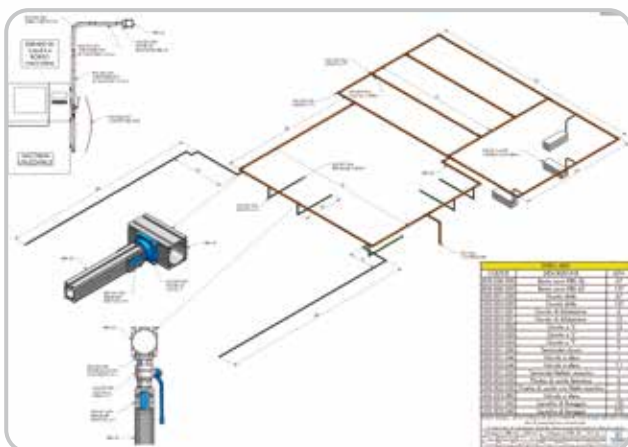
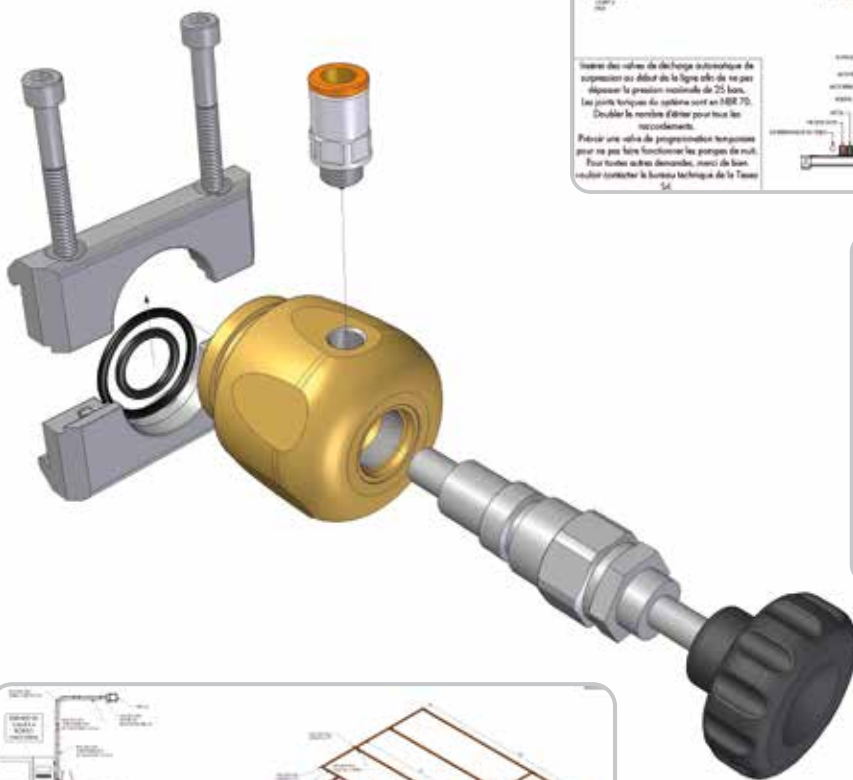
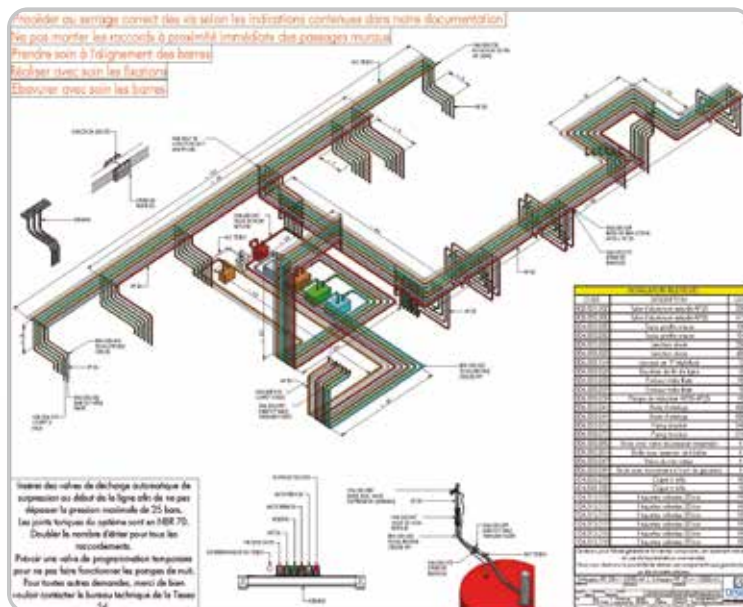
It is possible to download this Catalogue and many other documents in Acrobat ® PDF format.

AWARDS

 <p>WINNER 2007</p>	 <p>FINALIST 2006</p>	 <p>FINALIST 2006</p>	 <p>FINALIST 2006</p>	 <p>WINNER 2006</p>
 <p>WINNER 2001</p>	 <p>WINNER 2000</p>	 <p>WINNER 1999</p>	 <p>WINNER 1996</p>	 <p>WINNER 1992</p>

FROM DESIGN TO THE INSTALLATION

Teseo supports its own partners and customers through the designing and sizing of air lines, the development of customized solutions for machines and production lines. Consulting on standards, information and technical training for installers, assistance during the installation and testing of the system.



ITALIAN DESIGN AS A VALUE

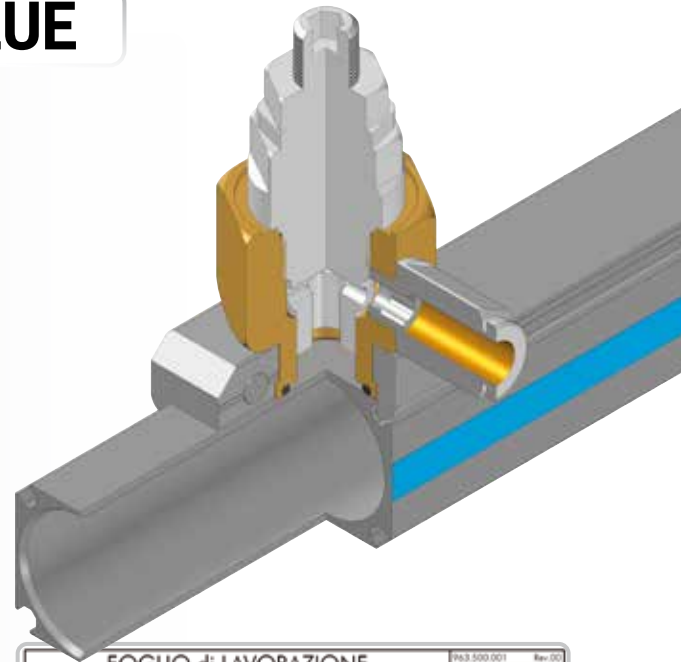
At Teseo we design and project using the most modern three-dimensional CAD system combined with flexible and expedient methods.

We face each project searching for innovation, considering the environmental and ergonomic impacts. Moreover, we try to make the most of the DESIGN, by optimizing the production process and by assuring quality and functionality.

We co-operate with external offices, with university departments but most of all with our customers. They help us and drive our innovation by discussing their necessities and experiences.

Each patent requires a lot of technical work, for the carrying out of the technical patented drawings, for the evaluation of the precedence, for the compilation of our technical requests from the reference institute, and afterwards for the maintenance and the legal protection of our rights and our customers.

The Certification and the homologation of our products are essential for us, the engagement in collaborating with certification institutes is constant as we prefer, even if we are sure about quality and safety of our production, to get approvals in a serious and open way. Teseo designs according to the standards UNI ISO for planning as UNI 4820, UNI 5456 and others.



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DATA:							
SITUAZIONE							
TEMPO TECNICO 1 FZ							
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TEMPO IMPIEGATO							
ADDETTO MONTAGGIO							
RESPONSABILE							
FORNITORE							
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122	PISTOLA A PNEUMATO 1/4"	2	PISTOLA A PNEUMATO	5,00 €			
123	PISTOLA A PNEUMATO 1/8"	2	PISTOLA A PNEUMATO	2,50 €			
124	PISTOLA A PNEUMATO 1/4"	2	PISTOLA A PNEUMATO	5,00 €			
125	PISTOLA A PNEUMATO 1/8"	2	PISTOLA A PNEUMATO	2,50 €			
126	PISTOLA A PNEUMATO 1/4"	2	PISTOLA A PNEUMATO	5,00 €			
127	PISTOLA A PNEUMATO 1/8"	2	PISTOLA A PNEUMATO	2,50 €			
128	PISTOLA A PNEUMATO 1/4"	2	PISTOLA A PNEUMATO	5,00 €			
129	PISTOLA A PNEUMATO 1/8"	2	PISTOLA A PNEUMATO	2,50 €			
130	PISTOLA A PNEUMATO 1/4"	2	PISTOLA A PNEUMATO	5,00 €			
131	PISTOLA A PNEUMATO 1/8"	2	PISTOLA A PNEUMATO	2,50 €			
132	PISTOLA A PNEUMATO 1/4"	2	PISTOLA A PNEUMATO	5,00 €			
133	PISTOLA A PNEUMATO 1/8"	2	PISTOLA A PNEUMATO	2,50 €			
134	PISTOLA A PNEUMATO 1/4"	2	PISTOLA A PNEUMATO	5,00 €			
135	PISTOLA A PNEUMATO 1/8"	2	PISTOLA A PNEUMATO	2,50 €			
136	PISTOLA A PNEUMATO 1/4"	2	PISTOLA A PNEUMATO	5,00 €			
137	PISTOLA A PNEUMATO 1/8"	2	PISTOLA A PNEUMATO	2,50 €			
138	PISTOLA A PNEUMATO 1/4"	2	PISTOLA A PNEUMATO	5,00 €			
139	PISTOLA A PNEUMATO 1/8"	2	PISTOLA A PNEUMATO	2,50 €			
140	PISTOLA A PNEUMATO 1/4"	2	PISTOLA A PNEUMATO	5,00 €			
141	PISTOLA A PNEUMATO 1/8"	2	PISTOLA A PNEUMATO	2,50 €			
142	PISTOLA A PNEUMATO 1/4"	2	PISTOLA A PNEUMATO	5,00 €			
143	PISTOLA A PNEUMATO 1/8"	2	PISTOLA A PNEUMATO	2,50 €			
144	PISTOLA A PNEUMATO 1/4"	2	PISTOLA A PNEUMATO	5,00 €			
145	PISTOLA A PNEUMATO 1/8"	2	PISTOLA A PNEUMATO	2,50 €			
146	PISTOLA A PNEUMATO 1/4"	2	PISTOLA A PNEUMATO	5,00 €			
147	PISTOLA A PNEUMATO 1/8"	2	PISTOLA A PNEUMATO	2,50 €			
148	PISTOLA A PNEUMATO 1/4"	2	PISTOLA A PNEUMATO	5,00 €			
149	PISTOLA A PNEUMATO 1/8"	2	PISTOLA A PNEUMATO	2,50 €			
150	PISTOLA A PNEUMATO 1/4"	2	PISTOLA A PNEUMATO	5,00 €			
151	PISTOLA A PNEUMATO 1/8"	2	PISTOLA A PNEUMATO	2,50 €			
152	PISTOLA A PNEUMATO 1/4"	2	PISTOLA A PNEUMATO	5,00 €			
153	PISTOLA A PNEUMATO 1/8"	2	PISTOLA A PNEUMATO	2,50 €			
154	PISTOLA A PNEUMATO 1/4"	2	PISTOLA A PNEUMATO	5,00 €			
155	PISTOLA A PNEUMATO 1/8"	2	PISTOLA A PNEUMATO	2,50 €			

PATENTS

A patent is at the origin of Teseo design philosophy and we are constantly searching for new patented solutions.

Our patents are issued to protect the creativeness of our technical staff and the reliance of our distribution network together with all our customers who are looking for innovation and quality of the products purchased.

At Teseo we consider that the patents are vitally important, and are the only distinguishing marks of the innovative inventors and manufacturers.

Today our R & D Technical office, are managing various patents registered in different countries and developing new patented products also for Design. To make our philosophy more clearly identified and original, Teseo has registered its own trade mark Worldwide.



CERTIFICATION

The Design, production and Quality management is certified according to the standard UNI EN ISO 9001. SGS, the most famous certification institute, analyses and approves our management system, with an annual audit for the checking of the level and its improvement.

Teseo components are tested in our internal test department and also through external certified structures SIT, ISPEL, UNI or institutes such as SGS, TUV, TSSA and others.

Our quality management department collaborates with external qualified and experienced consultants in our industrial field.

Teseo components are manufactured with quality raw materials according to standard ISO: UNI EN 755-2, UNI EN 755-3, UNI EN 515, UNI EN 573-3, UNI EN 1706, UNI 5931, UNI EN 1461, UNI EN 3601 and others.

Teseo components are tested according to various procedures; The TUV institute checked an assembly of the HBS, testing it to cyclical pressurization; The AQM society tested the principal components of the AP range up to 120 bars with a range of temperature from -20°C to +130°C; the SGS institute certified that the AP system succeeded with the failure test pressure at 160 bars.

The University of Torino independently tests and measures the flow rates of our piping while the Brescia university is co-operating with specific technical consultants.

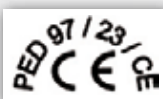
The calibration tools used in Teseo are regularly tested and certified by MG.

Teseo pipework systems are in compliance with the US standards ANSI B31.3 and B31.9. Approved by the Certification Bodies of the different provinces of Canada

Teseo pipework systems are designed, manufactured and tested according to the safety requirements of the European Standard 2014/68/UE (PED).

Kiwa has determined that the quality management system of Teseo Srl meets the requirements of Annex III, E1 of the Pressure Equipment Directive 2014/68/UE.

Classification of reaction to fire in accordance with EN 13501-1:2007 +A1 2009.



QUALITY

Teseo carries out inspection of all aspects of production to guarantee the suitability of its products. All parts are checked, not only at the manufacturing process but also during all the different assembly processes.

Each item is clearly identified by a product sheet with all the checks to be done according to the critical features of the products and its sizing using a plan sampling according to the standard UNI ISO 2859 that enables us to define a LQA chosen through 1.5, 2.5 and 6.5.



We carry out the quality check of the material by using the sampling frame in accordance with UNI ISO 2859. For each drawing there is a specific check sheet.

In each item sheet there is a list with the checks to be done, according to the criticality of the dimension we settle check coefficient "LQA" (acceptable quality limit). To be chosen among 1.5, 2.5 and 6.5.



Teseo's pipework system undergoes 10 functional, dimensional and aesthetical checks during all the production and packaging processes.

Teseo works with a product traceability process, where specified. This procedure allows Teseo to verify all the documentation in case of a non conformity and to point out the possible faults in the production process. Such procedure enables us to follow up the quality of our products with suppliers.

Further, we have planned preventive checks and settings of our measurement instruments. Written procedures were defined in order to regulate the setting's modalities and their frequency. Such procedures have been set for all those instruments and devices which can affect the safety and the quality of our production.



100% MADE IN ITALY

Teseo co-operates with the main Italian societies, always dedicated in any situation, to the highest levels of quality standards to get the best quality product in each step of its manufacturing process.

Teseo provides to the selection and the follow-up of each supplier based upon the certifications of the manufacturers, a study about relation price/quality, the importance of the supplier on the market, the control declaration sheet about the product, the availability and the modularity, the availability to supply in emergency conditions.

The calibrated pipework is extruded by highly efficient Italian extrusion companies. During the past years, they have succeeded in granting high precision production levels reducing non conformity reports close to zero.

Furthermore, Teseo have succeeded in strengthening business relations with the most Technically advanced manufacturing factories in Italy, they have invested in purchasing machine tools which are in the forefront to manufacture components increasing quality and reliability.

Teseo has a production department for the assembly of the components, where highly qualified staff is used to deal with several components, and are constantly up-dated on a technical and quality basis.

This department is managed according to the same quality management system Teseo uses for all our external suppliers.



AP MODULAR PIPING SYSTEM

This product patented by Teseo is the result of years of research and experience in installing thousands of distribution systems made up of aluminium profiles all over the world. AP is suitable for compressed air distribution lines or for main line drops.

The following advantages stand out:

- Easy and quick to assemble, no special tools required, it can be assembled without special skills.
- Its simple section is symmetric and can be used on all the sides. Easy to cut and bend.
- Equipped with numerous accessories which are designed of simple modular elements compatible both with the present HBS system and steel pipes with "Gas" BSPP/BSPT or NPT threads.
- A very competitive price, thanks to the quick mounting, AP is more convenient than a traditional piping system.

EASY TO ASSEMBLE

DEBURRING



MOUNTING



ASSEMBLING



TIGHTENING



BLUE DESIGN

The new generation of "blue" in **TESEO** is the result of the modification and the improvement of all the Teseo systems. Our continuous research into **Energy Saving** together with a high regard for the **Design** ruled our technical choices. We studied the internal passages and the thicknesses to increase the flow rate.

Double seats for the O-rings and high quality NBR **Blue O-Rings**, manufactured for Teseo, are applied to all the connections for a better sealing.

Ergonomics of the complete system has been improved thanks to optimization of the shapes and weights. Precision manufacturing carried out on many components improves the outer finishing and removes the die-casting defects.

Outlet plates have been re designed with new moulds, to improve quality and accuracy. The blocking parts have been analyzed and improved.

The implementation of accessories and components is continuous.

Teseo are sourcing **New certifications** and international confirmation.



Indicative diagram for the choice of the AP diameter according to compressor installed max power

Compressor power	AP	Indicative flow rate (L 30m - 6 bar - Δp 3%)
kW		l/min
11	22	1.650
19	28	2.900
36	36	5.400
67	45	10.000
110	54	16.400
195	68	29.200

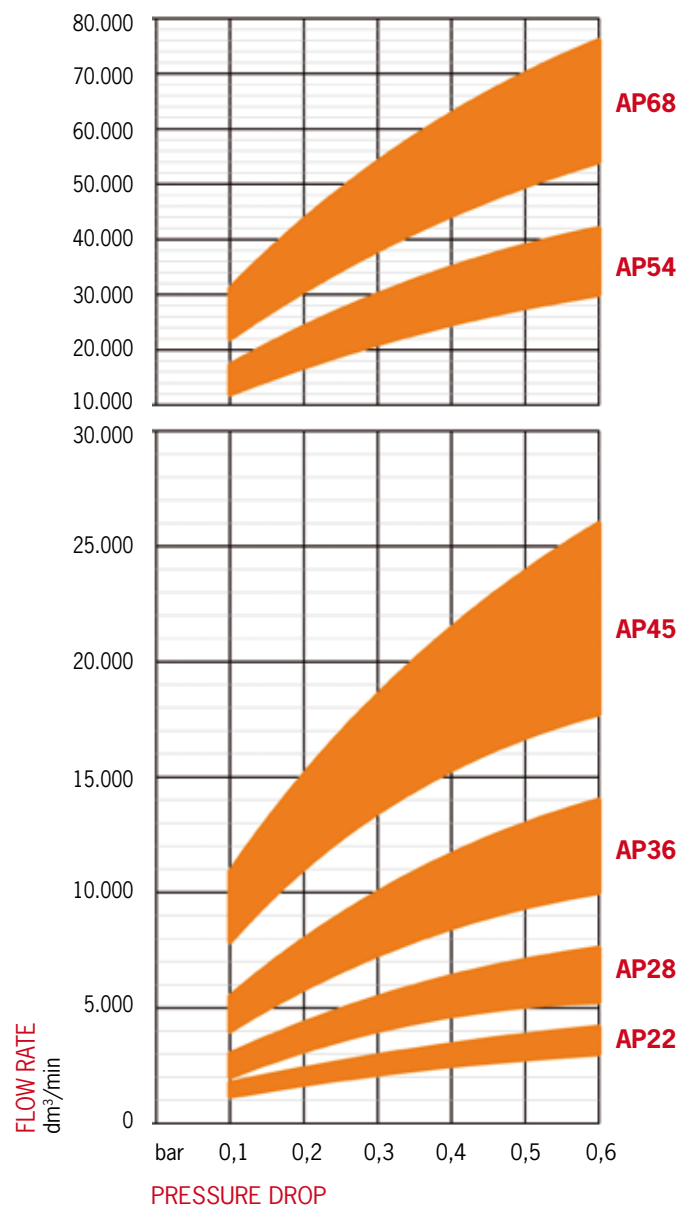


Dipartimento
di Meccanica
Politecnico di Torino



Indicative diagrams of compressed air flow rates and related pressure drops in a line 30 m long (20°C - 1013 mbar). The data used has been provided by the POLYTECHNIC INSTITUTE OF TURIN.

See online software (page 9)



AIR PRESSURE: 6 → 12 bar
0,6 → 1,2 MPa
87 → 174 psi

TECHNICAL CHARACTERISTICS

Extruded Aluminium.....	Alloy EN AW 6060 UNI EN 573-3:1996
International designations.....	ANSI 6060 - DIN 1748/1: AlMgSi 0,5 BS 6060
Chemical composition.....	Si: 0,45% - Mg: 0,45% - Fe: 0,3%
Heat treatment.....	Aging T5 o T6
Surface treatment (upon request)	Chemical silver anodization
Specific weight, density	Kg/dm³ 2,71
Electrical conductivity	% IACS 53
Thermal Conductivity	W/m.K 200
Specific heat.....	J/Kg.K 96
Coefficient of expansion.....	mm/m °C 0,024
Tensile strength.....	Kg/mm² 24
Yield strength.....	Kg/mm² 20
Modulus of elasticity	Kg/mm² 6.700
Brinell hardness	HB 70÷80
Melting range	°C 600-650
O-ring material	NBR 70
Operating temperature	°C -20/+120
Screw material	Steel Class 8.8
M5 Screw driving torque	10 N·m (90 Inch·Lbs) ± 10%
M6 Screw driving torque	14 N·m (120 Inch·Lbs) ± 10%
Outlet thread.....	BSPP/BSPT or NPT
Terminal thread	BSPP/BSPT or NPT
Max operating pressure	15 bar - 1,5 MPa - 217 psi
Powering multfluid, max operating pressure.....	25 bar - 2,5 MPa - 362 psi
Failure test pressure.....	80 bar - 8 MPa - 1160 psi

Compatibility with fluids

Compressed air, Vacuum, Argon, Nitrogen, Carbon dioxide, Mineral oil*, Synthetic oil*, Other fluids*

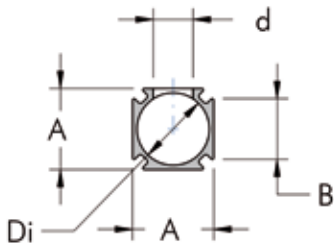
WARNING!

Teseo components are intended only to uses for which they have been specifically designed by the manufacturer and patent holder. This does not absolve the professional user to refrain from checking technical compatibility and current project of your application. Our technical department is at your disposal for evaluations, analysis of special use, to design and eventually implement specific components and assemblies. Teseo company is not responsible for any damage caused by improper, erroneous, unreasonable and product incompatibilities with applications not specified by the catalog.

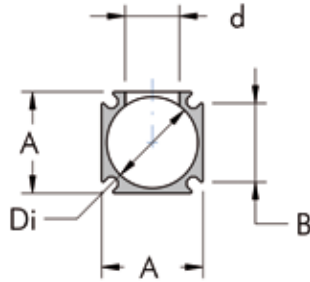
*For further information, please apply to Teseo Srl Technical Office.

PROFILES SECTION OVER VIEW

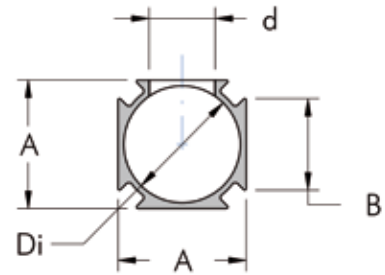
AP22



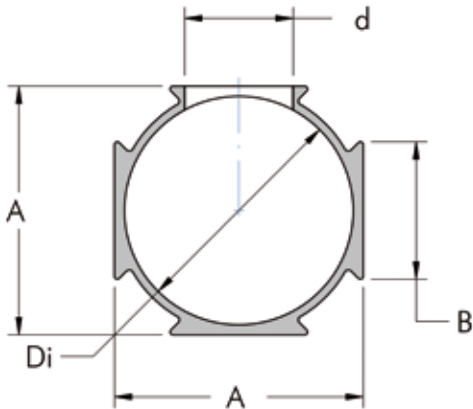
AP28



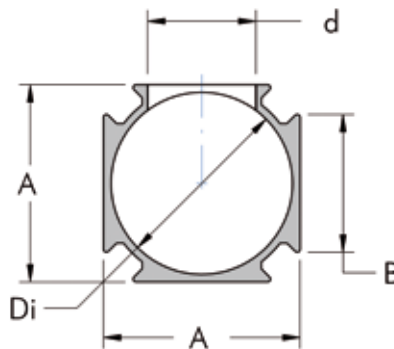
AP36



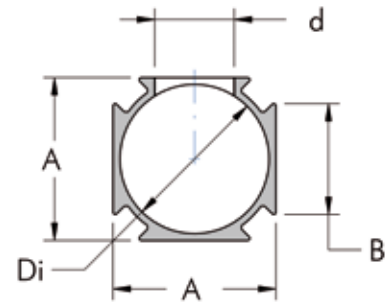
AP68



AP54



AP45

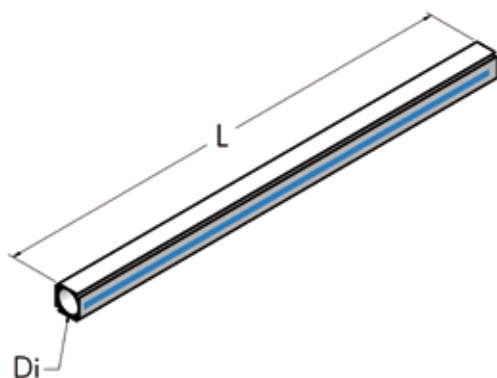


SIZE DIMENSIONS

Name	Dimensions			Max hole	Weight	Moment of inertia		Inner volume
	Di mm	A mm	B mm	d mm	P g/m	Jx cm ⁴	Jy cm ⁴	V l/m
AP22	20	22,4	16,4	11	370	0,90	0,90	0,32
AP28	25	28	21,5	15	590	2,20	2,20	0,5
AP36	32	36	25	18	780	4,60	4,60	0,8
AP45	40	45	31	22	1170	11,00	11,00	1,3
AP54	50	55	38	30	1690	23,70	23,70	2
AP68	63	69	38	30	2080	44,10	44,10	3,1

NATURAL ALUMINIUM EXTRUDED PIPE

POW

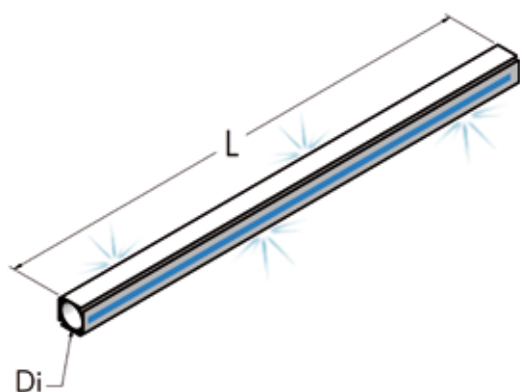


Di mm	L m	Part. no.	P kg	n°	
20	5	800 020 500	1,9	100	
25	5	800 025 500	3	64	
32	5	800 032 500	3,9	36	
40	5	800 040 500	5,8	36	
50	5	800 050 500	8,4	16	
63	5	800 063 500	10,4	16	

Di mm	L m	Part. no.	P kg	n°	
20	2,5	800 020 250	0,95	100	
25	2,5	800 025 250	1,5	64	
32	2,5	800 032 250	1,95	36	
40	2,5	800 040 250	2,9	36	
50	2,5	800 050 250	4,2	16	
63	2,5	800 063 250	5,2	16	

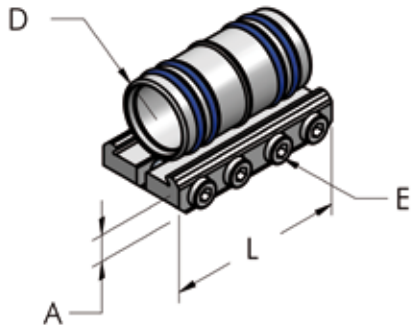
ANODIZED ALUMINIUM EXTRUDED PIPE


POW

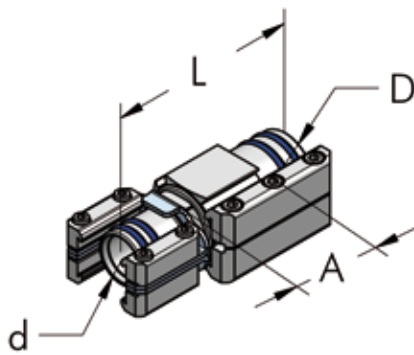







Di mm	L m	Part. no.	P kg	n°	
20	5	801 020 500	1,9	100	
25	5	801 025 500	3	64	
32	5	801 032 500	3,9	36	
40	5	801 040 500	5,8	36	
50	5	801 050 500	8,4	16	
63	5	801 063 500	10,4	16	

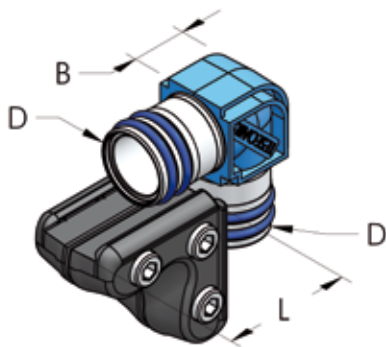
Di mm	L m	Part. no.	P kg	n°	
20	2,5	801 020 250	0,95	100	
25	2,5	801 025 250	1,5	64	
32	2,5	801 032 250	1,95	36	
40	2,5	801 040 250	2,9	36	
50	2,5	801 050 250	4,2	16	
63	2,5	801 063 250	5,2	16	

POW**STRAIGHT JOINT, COMPLETE**

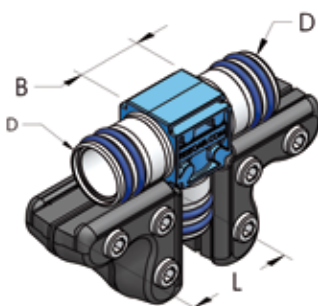
D mm	L mm	A mm	E mm	Part. no.	P g	n°	
20	46	9	4	006 020 020	39	10	
25	60	10	4	006 025 020	86	10	
32	95	11	4	006 032 020	170	10	
40	80	12	5	006 040 020	200	10	
50	150	12	5	006 050 020	395	10	
63	150	12	5	006 063 020	480	10	

REDUCTION STRAIGHT JOINT, COMPLETE

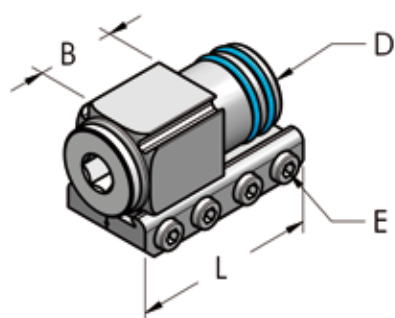
D mm	d mm	A mm	L mm	Part. no.	P g	n°	
25	20	55	100	006 025 051	170	5	
32	25	33	90	006 032 051	295	5	
40	32	55	120	006 040 051	495	5	
50	40	45	115	006 050 051	880	5	
63	50	15	90	006 063 051	1030	5	

L JOINT, COMPLETE

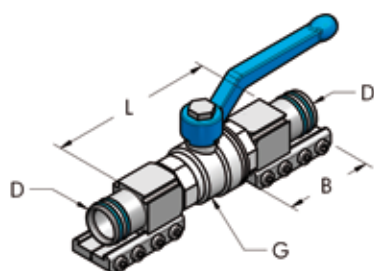
D mm	L mm	B mm	Part. no.	P g	n°	
20	40	22	006 020 022	90	10	
25	50	30	006 025 022	135	10	
32	45	42	006 032 022	260	10	
40	75	50	006 040 022	430	10	
50	100	57	006 050 022	780	10	
63	100	72	006 063 022	910	10	

T JOINT, COMPLETE

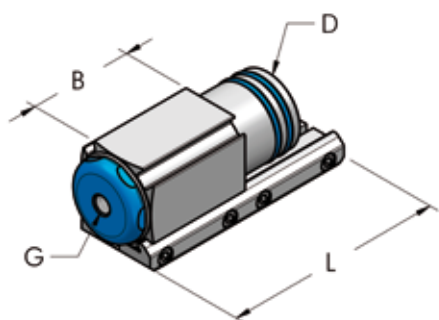
D mm	L mm	B mm	Part. no.	P g	n°	
20	40	24	006 020 024	150	10	
25	50	30	006 025 024	240	10	
32	45	50	006 032 024	430	10	
40	75	53	006 040 024	730	10	
50	100	60	006 050 024	1325	10	
63	100	76	006 063 024	1530	10	

CLOSED TERMINAL, COMPLETE**POW**

D mm	L mm	E mm	B mm	Part. no.	P g	n°	
20	46	4	24	006 020 026	70	10	
25	60	4	28	006 025 026	125	10	
32	46	4	30	006 032 026	220	10	
40	80	5	35	006 040 026	300	10	
50	150	5	75	006 050 026	710	10	
63	90	5	-	006 063 026	700	10	

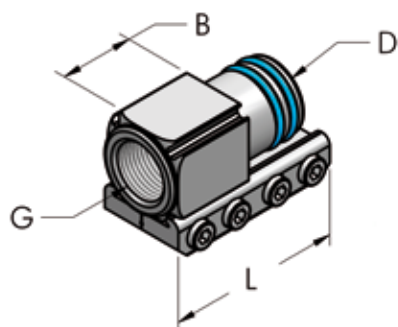
**BALL VALVE, COMPLETE**



D mm	G	L mm	B mm	Part. no.	P g	n°	
20	1/2" - BSPP	100	46	006 020 046	290	10	
25	3/4" - BSPP	118	56	006 025 046	500	10	
32	1" - BSPP	90	46	006 032 046	830	10	
40	1 1/4" - BSPP	150	70	006 040 046	1250	10	
50	1 1/2" - BSPP	245	150	006 050 046	2450	10	
63	2" - BSPP	150	90	006 063 046	3300	10	

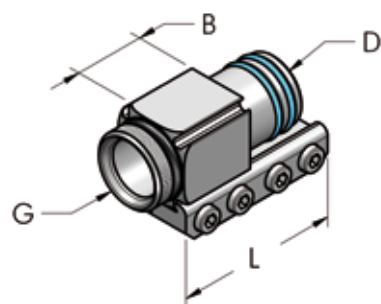
**TERMINAL WITH THREADED HOLE, COMPLETE****POW**





D mm	G	L mm	B mm	Part. no.	P g	n°	
32	1/4" - BSPP	46	30	006 032 025	200	10	
32	1/2" - BSPP	46	30	006 032 031	200	10	
40	1/8" - BSPP	80	35	006 040 015	295	10	
40	1/4" - BSPP	80	35	006 040 025	260	10	
40	3/8" - BSPP	80	35	006 040 016	290	10	
40	1/2" - BSPP	80	35	006 040 017	280	10	
40	3/4" - BSPP	80	35	006 040 018	270	10	
50	1/8" - BSPP	150	75	006 050 015	705	10	
50	1/4" - BSPP	150	75	006 050 025	700	10	
50	1/2" - BSPP	150	75	006 050 017	690	10	
50	3/4" - BSPP	150	75	006 050 018	670	10	
50	1" - BSPP	150	75	006 050 019	655	10	
63	1/4" - BSPP	90	-	006 063 025	660	10	

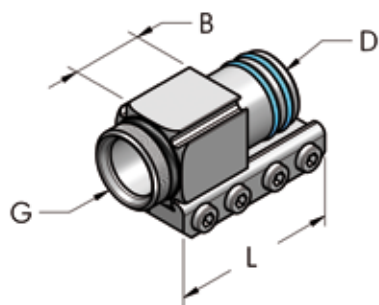





TERMINAL THREADED FEMALE, COMPLETE**POW**

D mm	G	L mm	B mm	Part. no.	P g	n°	
20	3/8" - BSPP	46	24	006 020 028	54	10	
25	1/2" - BSPP	60	28	006 025 028	105	10	
32	1" - BSPP	46	23	006 032 027	205	10	
40	1" - BSPP	80	35	006 040 027	260	10	
50	1 1/4" - BSPP	150	75	006 050 027	615	10	
50	1 1/2" - BSPP	150	75	006 050 028	565	10	
63	1 1/2" - BSPP	90	20	006 063 028	430	10	

TERMINAL THREADED MALE, COMPLETE**POW**

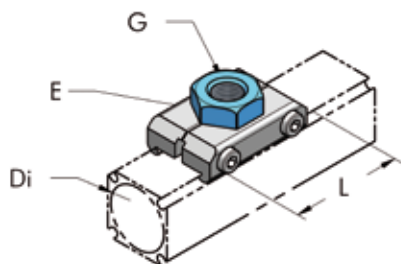
D mm	G	L mm	B mm	Part. no.	P g	n°	
20	1/2" - BSPP	46	24	006 020 030	57	10	
25	3/4" - BSPP	60	28	006 025 030	110	10	
32	1" - BSPP	46	11	006 032 030	200	10	
32	1 1/4" - BSPP	46	13	006 032 029	255	10	
40	1 1/4" - BSPP	80	35	006 040 029	245	10	
50	1 1/2" - BSPP	150	75	006 050 029	655	10	
63	2" - BSPT	90	12	006 063 030	390	10	
63	2 1/2" - BSPT	90	13	006 063 031	450	10	

TERMINAL THREADED MALE SHORT, COMPLETE**POW**

D mm	G	L mm	B mm	Part. no.	P g	n°	
40	1 1/4" - BSPP	80	40	006 040 129	235	10	
50	1 1/2" - BSPP	150	75	006 050 129	645	10	
63	2" - BSPP	90	12	006 063 130	380	10	

FEMALE OUTLET PLATE, COMPLETE

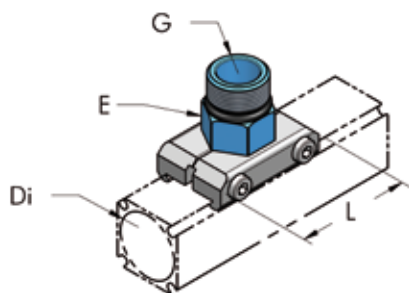
POW



Di mm	G	L mm	E mm	Part. no.	P g	n°	
20	1/4" - BSPP	46	22	006 020 033	36	10	
20	3/8" - BSPP	46	22	006 020 034	40	10	
25	1/4" - BSPP	46	22	006 025 033	37	10	
25	3/8" - BSPP	46	22	006 025 034	46	10	
25	1/2" - BSPP	46	30	006 025 035	55	10	
32	1/4" - BSPP	50	30	006 032 033	70	10	
32	3/8" - BSPP	50	30	006 032 034	65	10	
32	1/2" - BSPP	50	30	006 032 035	70	10	
40	1/8" - BSPP	70	36	006 040 032	148	10	
40	1/4" - BSPP	70	36	006 040 033	140	10	
40	3/8" - BSPP	70	36	006 040 034	135	10	
40	1/2" - BSPP	70	36	006 040 035	130	10	
40	3/4" - BSPP	70	36	006 040 036	120	10	
50/63	1/4" - BSPP	74	50	006 050 033	195	10	
50/63	1/2" - BSPP	74	50	006 050 034	190	10	
50/63	3/4" - BSPP	74	50	006 050 035	215	10	
50/63	1" - BSPP	74	50	006 050 036	195	10	

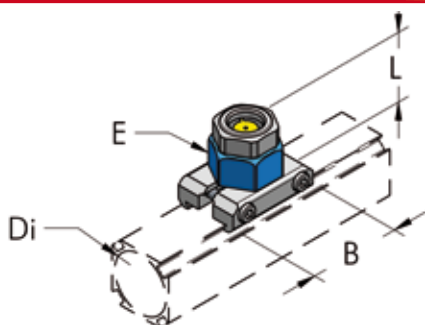
MALE OUTLET PLATE, COMPLETE

POW



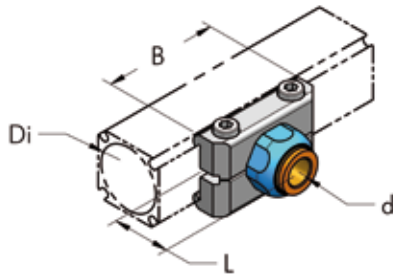
Di mm	G	L mm	E mm	Part. no.	P g	n°	
20	3/8" - BSPP	46	22	006 020 063	36	10	
25	1/2" - BSPP	46	22	006 025 064	49	10	
32	1/4" - BSPP	50	30	006 032 064	75	10	
32	3/8" - BSPP	50	30	006 032 065	75	10	
32	1/2" - BSPP	50	30	006 032 066	74	10	
32	3/4" - BSPP	50	30	006 032 067	72	10	
40	1/2" - BSPP	70	36	006 040 062	135	10	
40	3/4" - BSPP	70	36	006 040 063	140	10	
40	1" - BSPP	70	36	006 040 064	140	10	
50/63	3/4" - BSPP	74	50	006 050 063	190	10	
50/63	1" - BSPP	74	50	006 050 064	185	10	
50/63	1 1/4" - BSPP	74	50	006 050 065	190	10	
50/63	1 1/2" - BSPP	74	50	006 050 066	195	10	

CONDENSATE LEVEL SPY HOLE, COMPLETE



Di mm	L mm	B mm	E mm	Part. no.	P g	n°	
32	38	50	30	006 032 044	105	5	

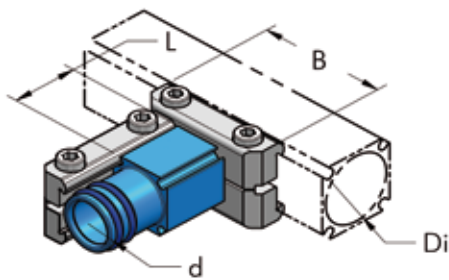
OUTLET PLATE WITH QUICKFIT, COMPLETE



Di mm	d mm	B mm	L mm	Part. no.	P g	n°	
20	8	46	23	006 020 084	112	10	
20	10	46	26	006 020 085	190	10	
25	8	46	23	006 025 084	235	10	
25	10	46	23	006 025 085	246	10	
32	8	50	30	006 032 084	80	10	
32	10	50	30	006 032 085	80	10	
32	12	50	30	006 032 086	80	10	
40	10	70	23	006 040 085	318	10	
40	12	70	26	006 040 086	370	10	

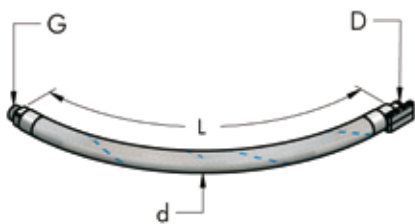
REDUCTION PLATE, COMPLETE

POW



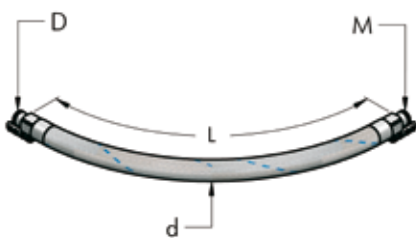
Di mm	d mm	B mm	L mm	Part. no.	P g	n°	
25	20	46	24	006 020 039	112	10	
32	20	50	50	006 032 061	140	10	
32	25	50	42	006 032 062	155	10	
40	20	70	24	006 040 037	190	10	
40	25	70	28	006 040 038	235	10	
40	32	70	28	006 032 039	300	10	
50/63	20	74	35	006 050 038	318	10	
50/63	25	74	60	006 050 039	370	10	
50/63	32	74	28	006 032 060	370	10	
50/63	40	74	35	006 040 039	370	10	

FLEXIBLE PIPE FOR CONNECTION TO COMPRESSOR FOR COMPRESSED AIR (15 BAR)



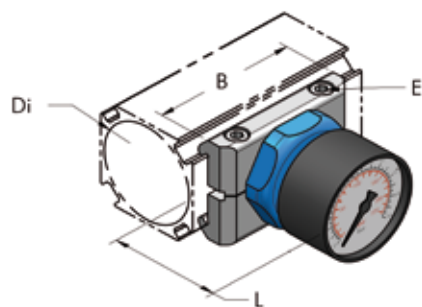
D mm	G	L mm	d mm	Part. no.	P g	n°	
20	1/2" - BSPT	700	30	006 020 058	500	1	
25	3/4" - BSPT	700	35	006 025 058	750	1	
32	1" 1/4 - BSPT	1000	44	006 032 058	2000	1	
40	1" 1/4 - BSPT	1000	50	006 040 058	3000	1	
50	2" - BSPT	1000	65	006 050 058	4075	1	
63	2" 1/2 - BSPT	1300	77	006 063 058	4700	1	

FLEXIBLE JOINT FOR AP-AP CONNECTION FOR COMPRESSED AIR (15 BAR)



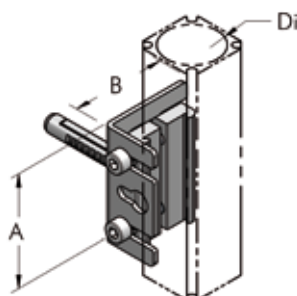
D mm	M mm	L mm	d mm	Part. no.	P g	n°	
20	20	700	30	006 020 059	510	1	
25	25	700	35	006 025 059	830	1	
32	32	1000	44	006 032 059	2260	1	
40	40	1000	50	006 040 059	3050	1	
50	50	1000	65	006 050 059	4300	1	
63	63	1300	77	006 063 059	5000	1	

MANOMETER, COMPLETE



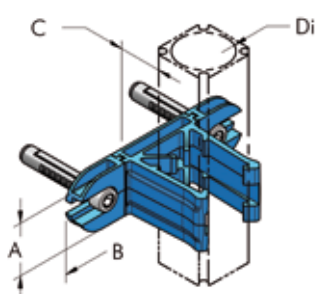
Di mm	L mm	B mm	E mm	Part. no.	P g	n°	
20	58	46	4	006 020 048	70	10	
25	52	56	4	006 025 048	75	10	
32	54	50	4	006 032 048	145	10	
40	58	70	5	006 040 048	174	10	
50/63	58	74	5	006 050 048	230	10	

L PLATE, COMPLETE



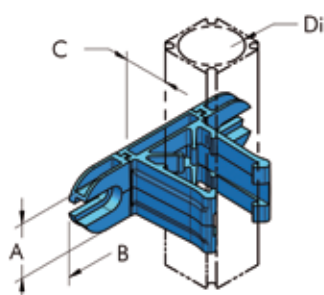
Di mm	d mm	A mm	B mm	Part. no.	P g	n°	
20	8	50	40	006 020 040	70	10	
25	8	50	40	006 025 040	75	10	
32	8	80	60	006 032 040	127	10	
40	8	80	60	006 040 040	140	10	
50/63	8	80	60	006 050 040	160	10	

SNAP CLAMP, COMPLETE



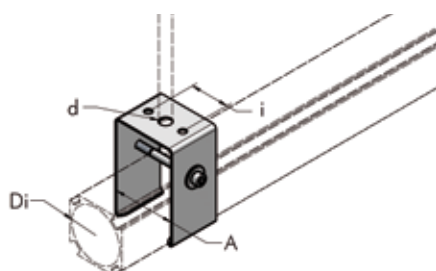
Di mm	A mm	B mm	C mm	Part. no.	P g	n°	
20	20	70	20	006 020 041	17	10	
25	25	88	17	006 025 041	25	10	
40	40	135	43	006 040 041	175	10	
50	50	150	40	006 050 041	213	10	

SNAP CLAMP

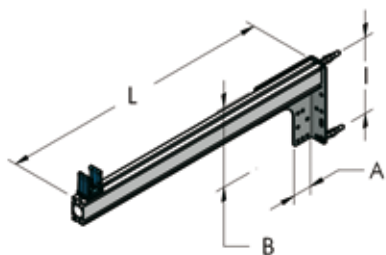








Di mm	A mm	B mm	C mm	Part. no.	P g	n°	
20	20	70	20	006 020 042	17	10	
25	25	88	17	006 025 042	25	10	
40	40	135	43	006 040 042	140	10	
50	50	150	40	006 050 042	174	10	

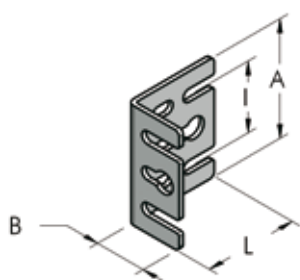
HANGING BRACKET




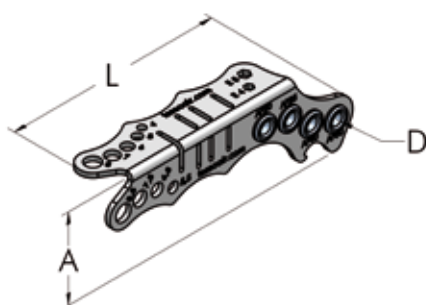
Di mm	A mm	d mm	i mm	Part. no.	P g	n°	
32	36	11	24	006 032 073	100	10	
40	45	11	30	006 040 073	274	10	
50	55	11	36	006 050 073	302	10	
63	69	11	36	006 063 073	323	10	


SUPPORT BRACKET, COMPLETE**POW**

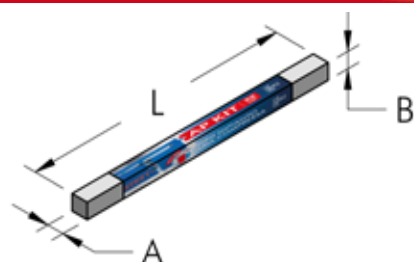
A mm	B mm	L mm	I mm	Part. no.	P g	 n°	
136	174	600	140	006 020 070	1300	10	
136	174	600	140	006 025 070	1300	10	
136	174	600	140	006 040 070	1400	10	
136	174	600	140	006 050 070	1450	10	
136	174	600	140	006 063 070	1400	10	



L PLATE IN GALVANIZED STEEL**POW**

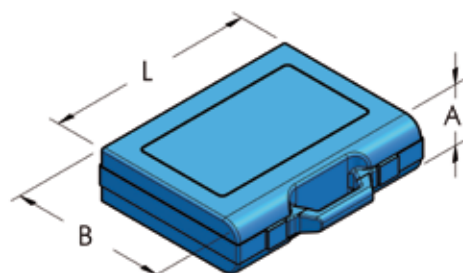
A mm	B mm	I mm	L mm	Part. no.	P g	 n°	
50	25	30	40	732 020 050	37	10	
66	35	50	47	732 066 080	60	10	



DRILLING JIG FOR AP22-AP28-AP45-AP54**POW**

A mm	D mm	L mm	Part. no.	P g	 n°	
45	6	136	911 020 050	90	1	

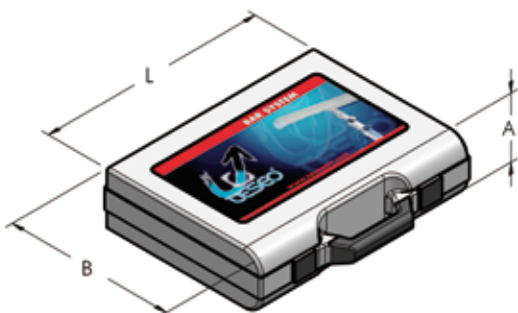
MINI COMPRESSED AIR SYSTEM AP22 - 10m

A mm	B mm	L m	Part. no.	P kg	 n°	
125	125	2	006 022 102	5,6	1	

BASIC TOOLS BOX

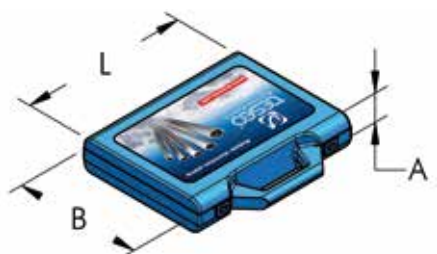
A mm	B mm	L mm	Part. no.	P g	 n°	
50	190	240	006 020 092	600	1	

DEMO SUIT-CASE



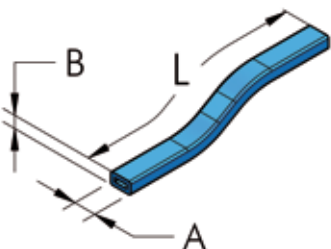
A mm	B mm	L mm	Part. no.	P g	n°	
80	340	440	006 020 090	3700	1	

MINI-DEMO SUIT CASE



A mm	B mm	L mm	Part. no.	P g	n°	
50	190	240	006 020 091	550	1	

BLUE PVC STRIP



AP	L m	A mm	B mm	Part. no.	P g	n°	
45/54	1	10	5,8	874 010 100	58	100	
68	1	21	4,6	874 021 100	116	100	

VASELINE GREASE

POW



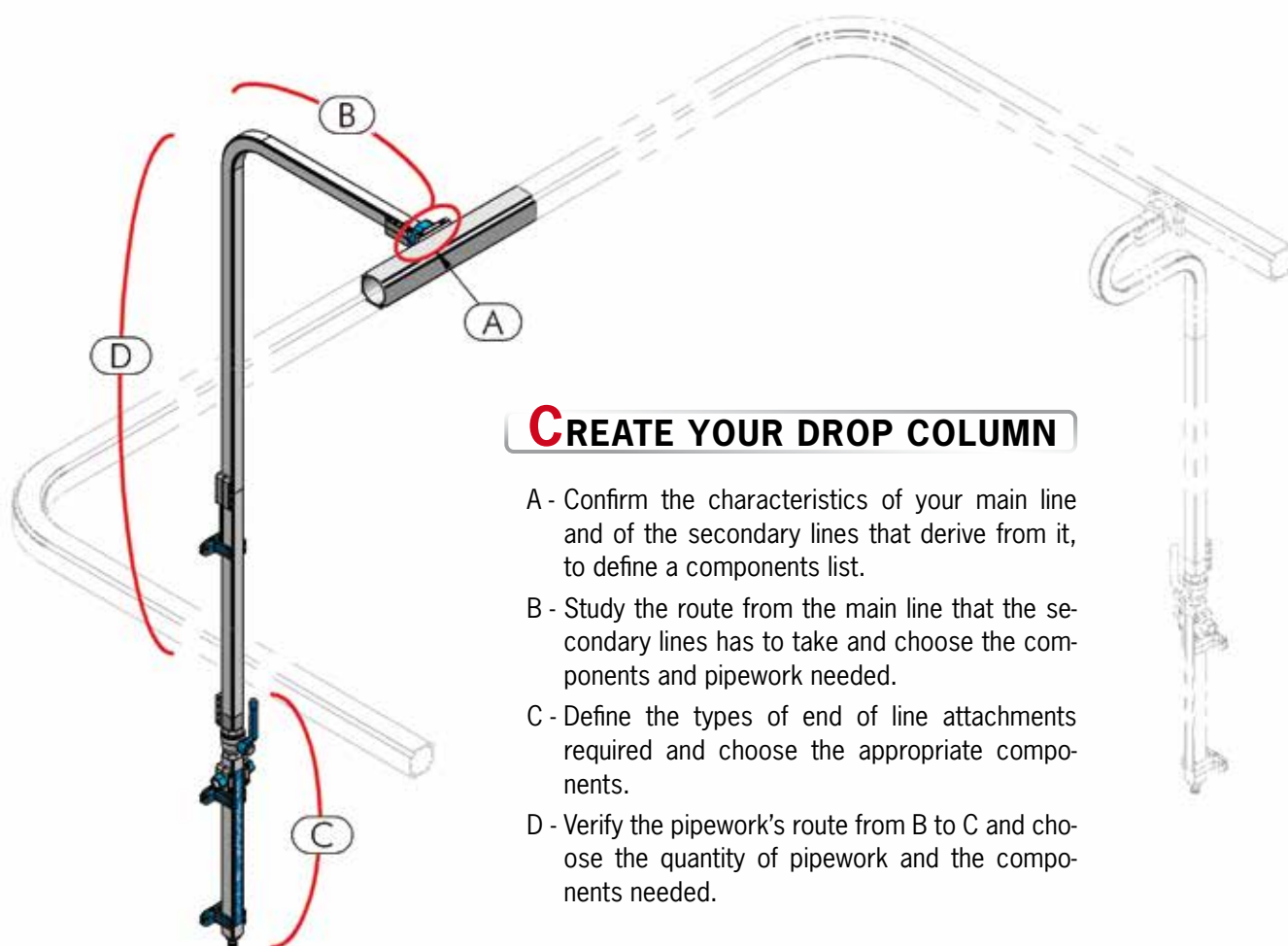
Part. no.	P g	n°	
111 003 100	850	20	
111 003 010	100	20	

PTFE BLUE GREASE

POW



Part. no.	P g	n°	
114 003 005	50	20	



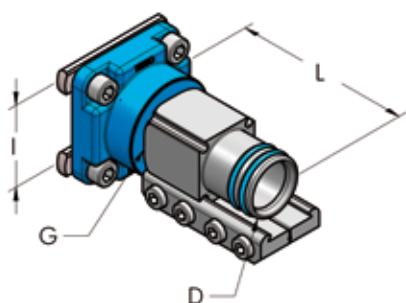
CREATE YOUR DROP COLUMN

- A - Confirm the characteristics of your main line and of the secondary lines that derive from it, to define a components list.
- B - Study the route from the main line that the secondary lines has to take and choose the components and pipework needed.
- C - Define the types of end of line attachments required and choose the appropriate components.
- D - Verify the pipework's route from B to C and choose the quantity of pipework and the components needed.

A	pages 47-48-49-55
B	pages 44-45-49-55-56
C	pages 44-45-46-47-48-50-55
D	pages 44-45

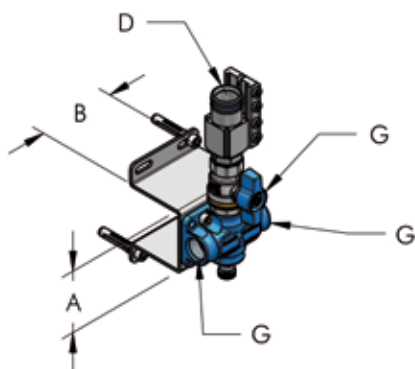
REDUCTION PLATE HBS - AP, COMPLETE

HBS



D mm	G	I mm	L mm	Part. no.	P g	n°	
20	1/2" - BSPP	36	49	006 020 037	180	1	
20	1/2" - BSPP	60	54	006 020 038	190	1	
25	3/4" - BSPP	36	49	006 025 037	310	1	
25	3/4" - BSPP	60	54	006 025 038	340	1	
32	1" - BSPP	36	37	006 032 037	305	1	
32	1" - BSPP	60	42	006 032 038	435	1	
40	1 1/4" - BSPP	60	70	006 040 060	750	1	
50	1 1/2" - BSPP	60	105	006 050 037	820	1	
63	-	60	72	006 063 037	800	1	

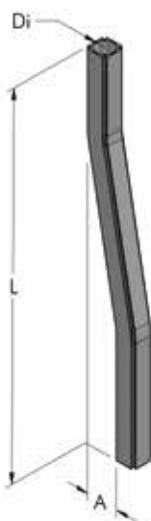
2 OUTLETS BLOCK FOR AP DROP COLUMN



D mm	G	A mm	B mm	Part. no.	P g	n°	
20	1/2" - BSPP	60	75	006 020 068	783	10	
20	1/2" - NPT	60	75	006 020 468*	783	10	
25	1/2" - BSPP	60	75	006 025 068	865	10	
25	1/2" - NPT	60	75	006 025 468*	865	10	

*G 1/4" - NPT, without condensate drain

BENT PIPE FOR AP DROP COLUMN



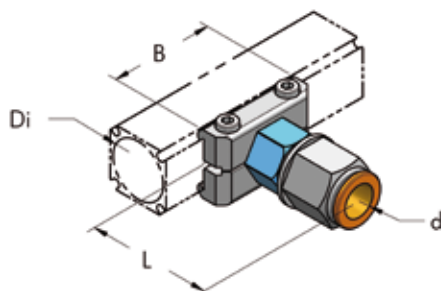
Di mm	A mm	L mm	Part. no.	P g	n°	
20	40	500	804 020 040	257	10	
25	42	500	804 025 040	412	10	


2 OUTLETS BLOCK FOR AP DROP COLUMN WITH BENT PIPE

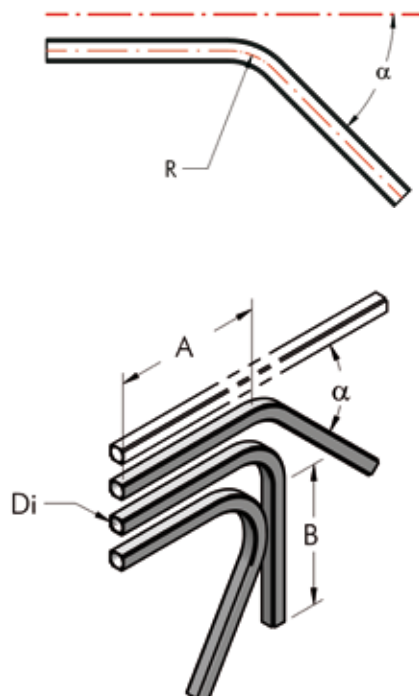


























Di mm	G	A mm	B mm	L mm	Part. no.	P kg	n°	
20	1/2" - BSPP	60	75	635	006 020 069	1,12	10	
20	1/2" - NPT	60	75	635	006 020 469*	1,12	10	
25	1/2" - BSPP	60	75	635	006 025 069	1,36	10	
25	1/2" - NPT	60	75	635	006 025 469*	1,36	10	

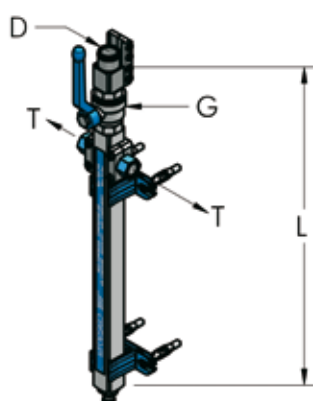
*G 1/4" - NPT, without condensate drain

OUTLET PLATE WITH D14 QUICKFIT, COMPLETE

Di mm	d mm	B mm	L mm	Part. no.	P g	n°	
20	14	46	51	006 020 134	95	20	
25	14	56	52	006 025 134	100	20	
32	14	50	44	006 032 134	120	20	
40	14	70	50	006 040 134	190	20	
50/63	14	74	50	006 050 134	240	20	

SPECIAL ANGLE CURVED PIPE**POW**

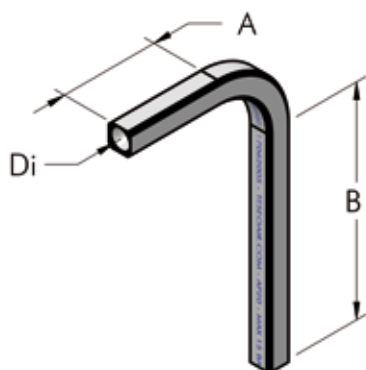
Di mm	A mm	B mm	R mm	α°	Part. no.	P Kg	n°	
20	220	240	77	30	804 020 047	0,2	5	
20	220	220	77	45	804 020 048	0,2	5	
20	220	200	77	60	804 020 049	0,2	5	
20	160	180	77	120	804 020 057	0,2	5	
20	160	160	77	135	804 020 058	0,2	5	
20	160	140	77	150	804 020 059	0,2	5	
25	220	240	77	30	804 025 047	0,3	5	
25	220	220	77	45	804 025 048	0,3	5	
25	220	200	77	60	804 025 049	0,3	5	
25	160	180	77	120	804 025 057	0,3	5	
25	160	160	77	135	804 025 058	0,3	5	
25	160	140	77	150	804 025 059	0,3	5	
32	160	260	150	30	804 032 047	0,6	5	
32	160	220	150	45	804 032 048	0,6	5	
32	160	180	150	60	804 032 049	0,6	5	
40	190	230	150	30	804 040 047	0,7	5	
40	190	190	150	45	804 040 048	0,7	5	
40	190	150	150	60	804 040 049	0,7	5	
50	160	260	150	30	804 050 047	1	5	
50	160	220	150	45	804 050 048	1	5	
50	160	180	150	60	804 050 049	1	5	
63	250	450	250	30	804 063 047	1,3	2	
63	250	385	250	45	804 063 048	1,3	2	
63	250	320	250	60	804 063 049	1,3	2	

DROP COLUMN MANIFOLD COMPLETE WITH ACCESSORIES

D mm	L mm	G	T	Part. no.	P g	n°	
20	440	1/2" - BSPP	3/8" - BSPP	006 020 055	680	1	
25	440	3/4" - BSPP	3/8" - BSPP	006 025 055	1060	1	

90° CURVED PIPE

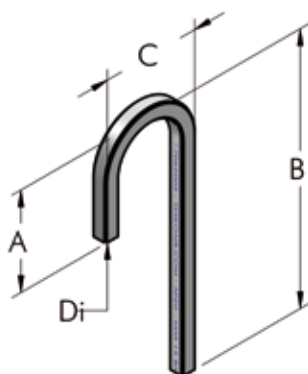
POW



Di mm	A mm	B mm	R mm	Part. no.	P Kg	n°	
20	80	300	77	804 020 050	0,2	5	
20	310	570	77	804 020 100	0,4	5	
20	370	2010	77	804 020 250	0,9	5	
25	115	250	77	804 025 050	0,3	5	
25	310	570	77	804 025 100	0,6	5	
25	370	2010	77	804 025 250	1,5	5	
32	135	255	150	804 032 050	0,8	5	
40	135	255	150	804 040 050	1	5	
50	160	230	150	804 050 050	1,05	5	
63	250	360	250	804 063 050	1,3	5	

180° CURVED PIPE

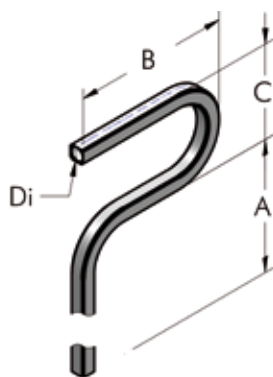
POW



Di mm	A mm	B mm	C mm	Part. no.	P Kg	n°	
20	190	496	176	804 020 060	0,25	5	
20	180	1255	176	804 020 149	0,55	5	
25	240	450	182	804 025 060	0,4	5	
25	200	1240	182	804 025 149	0,9	5	

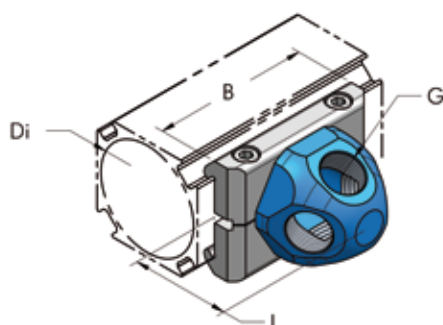
180°-90° CURVED PIPE

POW

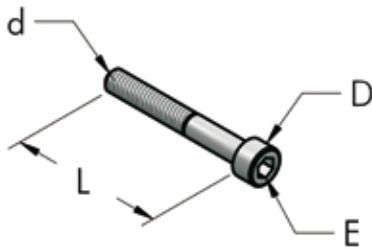


Di mm	A mm	B mm	C mm	R mm	Part. no.	P Kg	n°	
20	1375	296	176	77	804 020 148	0,95	5	
25	1370	302	182	77	804 025 148	1,5	5	

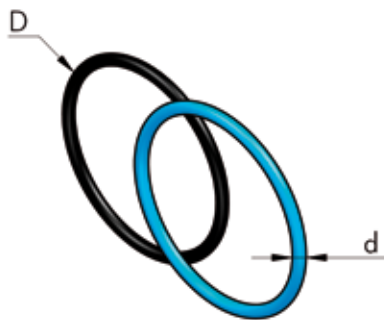
4 HOLES FEMALE OUTLET PLATE, COMPLETE



Di mm	B mm	L mm	G	Part. no.	P g	n°	
50/63	74	47	3/8" - BSPP	006 050 053	200	10	
50/63	74	47	1/2" - BSPP	006 050 054	190	10	

ALLEN SCREW, IN GALVANIZED STEEL


d mm	L mm	D mm	E mm	Part. no.	P g	n°	
M5	20	8,5	4	212 005 020	4	20	
M5	25	8,5	4	212 005 025	5	20	
M5	30	8,5	4	212 005 030	5,5	20	
M6	35	10	5	212 006 035	9	20	
M6	45	10	5	212 006 045	14	20	
M6	55	10	5	212 006 055	14	20	

O-RING SEAL IN NBR70


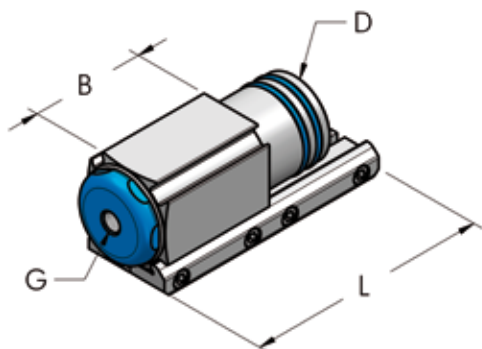
D mm	d mm	Code AS/BS NORM	Part. no.	P g	n°	
16	1,78	2050-014	271 012 002	0,1	10	
16	2	0120-02	271 013 002	0,2	100	
20	1,78	2062-014	271 016 002	0,15	10	
20	2	0160-02	271 017 002	0,2	100	
25	1,78	2081-019	271 020 002	0,22	10	
25	2	0210-02	271 021 002	0,8	100	
25	2,62	3087-118	271 022 003	0,5	100	
36	3	0300-03	271 031 003	0,9	100	
40	3	0350-03	271 035 003	1,1	10	
50	2,62	3175-132	271 044 003	1	10	
50	3	0440-03	271 043 003	1,3	100	

15 BAR ADHESIVE COLOUR STICKERS

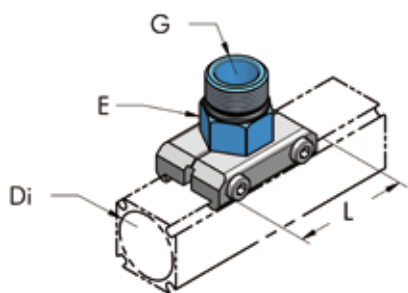
HBS



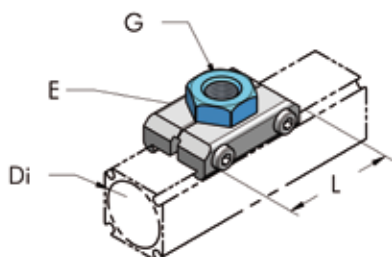
L mm	B mm	Colour	Part. no.	P g	n°	
310	15	Blue RAL 5015	104 015 310	29	11	
310	15	Green RAL 6029	104 015 315	29	11	
310	15	Brown RAL 8003	104 015 316	29	11	
310	15	Grey RAL 7000	104 015 317	29	11	
310	15	Red RAL 3020	104 015 318	29	11	
310	15	Yellow RAL 1028	104 015 319	29	11	
310	28	Blue RAL 5015	104 025 150	29	11	
310	28	Green RAL 6029	104 028 315	29	11	
310	28	Brown RAL 8003	104 028 316	29	11	
310	28	Grey RAL 7000	104 028 317	29	11	
310	28	Red RAL 3020	104 028 318	29	11	
310	28	Yellow RAL 1028	104 028 319	29	11	

TERMINAL WITH NPT THREADED HOLE, COMPLETE**POW**

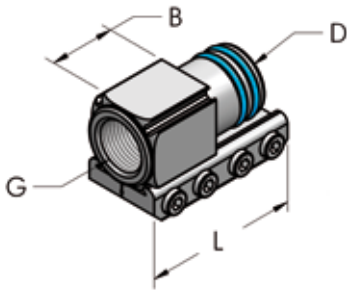
D mm	G	L mm	B mm	Part. no.	P g	n°	
32	1/4" - NPT	46	30	006 032 425	200	10	
32	1/2" - NPT	46	30	006 032 431	195	10	
40	1/8" - NPT	80	35	006 040 415	295	10	
40	1/4" - NPT	80	35	006 040 425	260	10	
40	3/8" - NPT	80	35	006 040 416	290	10	
40	1/2" - NPT	80	35	006 040 417	280	10	
40	3/4" - NPT	80	35	006 040 418	270	10	
50	1/8" - NPT	150	75	006 050 415	705	10	
50	1/4" - NPT	150	75	006 050 425	700	10	
50	1/2" - NPT	150	75	006 050 417	690	10	
50	3/4" - NPT	150	75	006 050 418	670	10	
50	1" - NPT	150	75	006 050 419	655	10	
63	1/4" - NPT	90	-	006 063 425	660	10	

NPT MALE OUTLET PLATE, COMPLETE**POW**

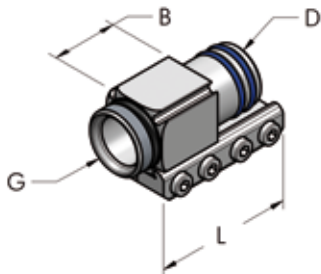
Di mm	G	L mm	E mm	Part. no.	P g	n°	
20	3/8" - NPT	46	22	006 020 463	36	10	
25	1/2" - NPT	46	22	006 025 464	49	10	
32	1/4" - NPT	30	50	006 032 464	75	10	
32	3/8" - NPT	30	50	006 032 465	75	10	
32	1/2" - NPT	30	50	006 032 466	74	10	
32	3/4" - NPT	30	50	006 032 467	72	10	
40	1/2" - NPT	70	36	006 040 462	135	10	
40	3/4" - NPT	70	36	006 040 463	140	10	
40	1" - NPT	70	36	006 040 464	140	10	
50/63	3/4" - NPT	74	50	006 050 463	190	10	
50/63	1" - NPT	74	50	006 050 464	185	10	
50/63	1 1/4" - NPT	74	50	006 050 465	190	10	
50/63	1 1/2" - NPT	74	50	006 050 466	195	10	

NPT FEMALE OUTLET PLATE, COMPLETE**POW**

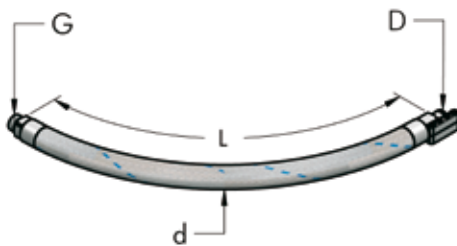
Di mm	G	L mm	E mm	Part. no.	P g	n°	
20	1/4" - NPT	46	22	006 020 433	36	10	
20	3/8" - NPT	46	22	006 020 434	40	10	
25	1/4" - NPT	46	22	006 025 433	37	10	
25	3/8" - NPT	46	22	006 025 434	46	10	
25	1/2" - NPT	46	30	006 025 435	55	10	
32	1/4" - NPT	50	30	006 032 433	70	10	
32	3/8" - NPT	50	30	006 032 434	65	10	
32	1/2" - NPT	50	30	006 032 435	70	10	
40	1/8" - NPT	70	36	006 040 432	148	10	
40	1/4" - NPT	70	36	006 040 433	140	10	
40	3/8" - NPT	70	36	006 040 434	135	10	
40	1/2" - NPT	70	36	006 040 435	130	10	
40	3/4" - NPT	70	36	006 040 436	120	10	
50/63	1/4" - NPT	74	50	006 050 433	195	10	
50/63	1/2" - NPT	74	50	006 050 434	190	10	
50/63	3/4" - NPT	74	50	006 050 435	215	10	
50/63	1" - NPT	74	50	006 050 436	195	10	

NPT FEMALE THREADED TERMINAL, COMPLETE**POW**

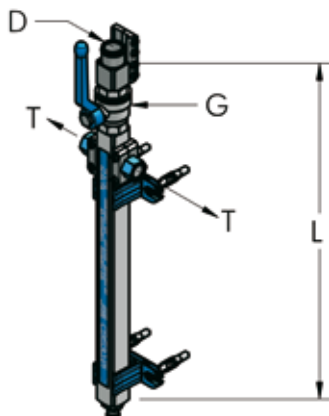
D mm	G	L mm	B mm	Part. no.	P g	n°	
20	3/8" - NPT	46	24	006 020 428	54	10	
25	1/2" - NPT	60	28	006 025 428	105	10	
32	1" - NPT	46	23	006 032 427	205	10	
40	1" - NPT	80	35	006 040 427	260	10	
50	1 1/4" - NPT	150	75	006 050 427	615	10	
50	1 1/2" - NPT	150	75	006 050 428	565	10	
63	1 1/2" - NPT	90	20	006 063 428	430	10	

NPT MALE THREADED TERMINAL, COMPLETE**POW**

D mm	G	L mm	B mm	Part. no.	P g	n°	
20	1/2" - NPT	46	24	006 020 430	57	10	
25	3/4" - NPT	60	28	006 025 430	110	10	
32	1" - NPT	46	11	006 032 430	200	10	
32	1 1/4" - NPT	46	13	006 032 429	255	10	
40	1 1/4" - NPT	80	35	006 040 429	245	10	
50	1 1/2" - NPT	150	75	006 050 429	655	10	
63	2" - NPT	90	12	006 063 430	390	10	
63	2 1/2" - NPT	90	13	006 063 431	450	10	

FLEXIBLE PIPE WITH THREADED TERMINAL FOR CONNECTION TO COMPRESSOR FOR COMPRESSED AIR (15 BAR)

D mm	G	L mm	d mm	Part. no.	P g	n°	
20	1/2" - NPT	700	30	006 020 458	500	1	
25	3/4" - NPT	700	35	006 025 458	750	1	
32	1 1/4" - NPT	1000	44	006 032 458	2000	1	
40	1 1/4" - NPT	1000	50	006 040 458	3000	1	
50	2" - NPT	1000	65	006 050 458	4075	1	
63	2 1/2" - NPT	1300	77	006 063 458	4700	1	

DROP COLUMN MANIFOLD WITH NPT FEMALE THREADED OUTLETS

D mm	L mm	G	T	Part. no.	P g	n°	
20	440	1/2" - BSP	3/8" - NPT	006 020 455	680	1	
25	440	3/4" - BSP	3/8" - NPT	006 025 455	1060	1	

AP

NPT COMPONENTS

MULTIFLUID 25 BAR

AP

USE OF AP MULTIFLUID AT 25 BARS (360 PSI)

The patented AP system is suitable for inert gases and fluids.

By doubling the clamping brackets of every single joint and terminal of the system, the product can be used at a working pressure of up to 25 bar (360 psi).

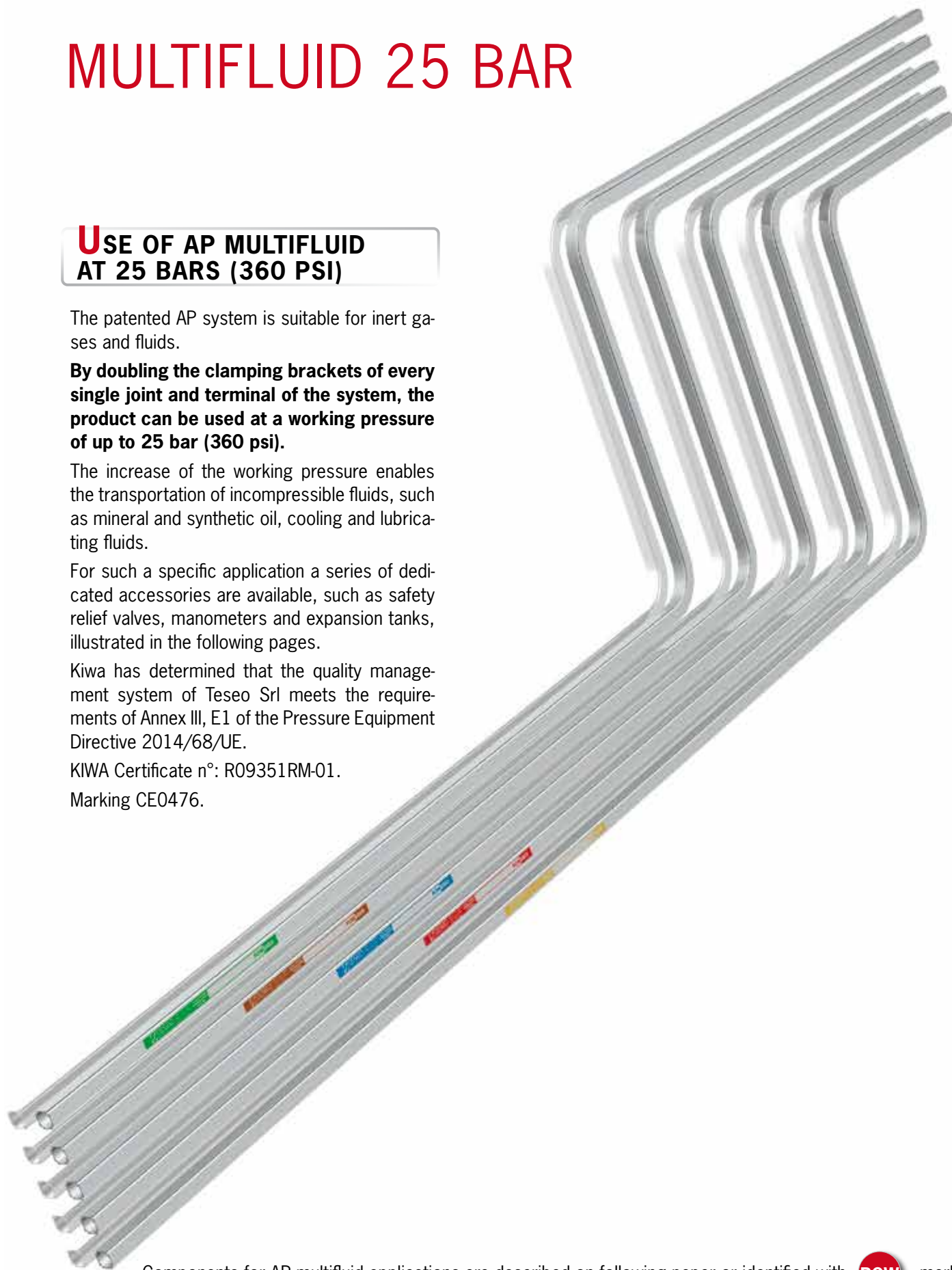
The increase of the working pressure enables the transportation of incompressible fluids, such as mineral and synthetic oil, cooling and lubricating fluids.

For such a specific application a series of dedicated accessories are available, such as safety relief valves, manometers and expansion tanks, illustrated in the following pages.

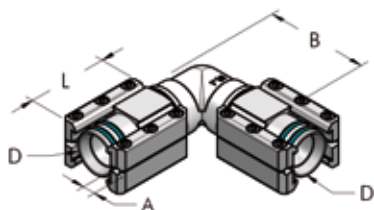
Kiwa has determined that the quality management system of Teseo Srl meets the requirements of Annex III, E1 of the Pressure Equipment Directive 2014/68/UE.







KIWA Certificate n°: R09351RM-01.

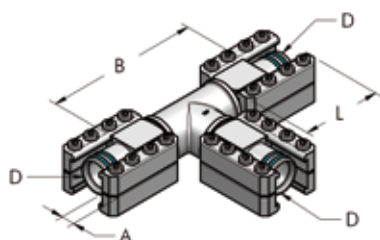
Marking CE0476.









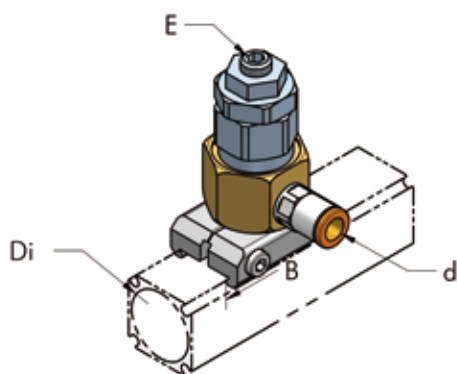
Components for AP multifluid applications are described on following paper or identified with  mark







MULTIFLUID L JOINT, COMPLETE

D mm	L mm	A mm	B mm	Part. no.	P g	 n°	
20	46	9	50	006 020 122	214	10	
25	60	10	65	006 025 122	330	10	
32	46	11	88	006 032 122	824	10	
40	80	12	100	006 040 122	640	10	
50	150	12	150	006 050 122	1500	10	

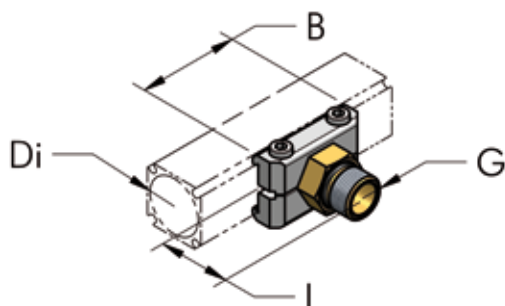
MULTIFLUID T JOINT, COMPLETE

D mm	L mm	A mm	B mm	Part. no.	P g	 n°	
20	46	9	100	006 020 124	270	10	
25	60	10	130	006 025 124	425	10	
32	46	11	120	006 032 124	1130	10	
40	80	12	160	006 040 124	890	10	
50	150	12	245	006 050 124	2100	10	

OUTLET PLATE WITH PRESSURE VALVE, COMPLETE

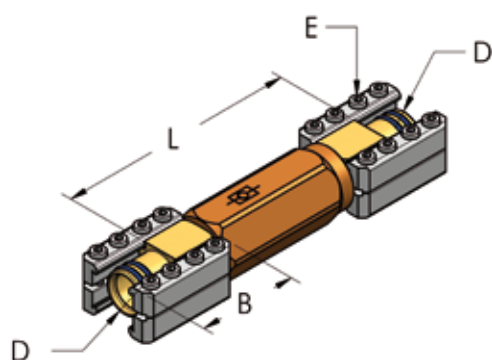
Di mm	d mm	B mm	E mm	Part. no.	P g	 n°	
20	8	46	5	006 020 080	48	10	
25	8	56	5	006 025 080	50	10	
32	8	50	5	006 032 080	310	10	
40	8	70	5	006 040 080	220	10	
50	8	74	5	006 050 080	300	10	

OUTLET PLATE FOR EXPANSION TANK, COMPLETE



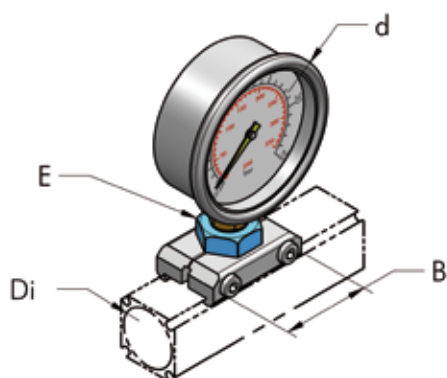
Di mm	G	L mm	B mm	Part. no.	P g	n°	
20	M18x1,5	32	46	006 020 081	45	10	
25	M18x1,5	33	46	006 025 081	71	10	
32	M18x1,5	32	50	006 032 081	70	10	
40	M18x1,5	36	70	006 040 081	136	10	
50/63	M18x1,5	36	74	006 050 081	197	10	

NON-RETURN VALVE, COMPLETE



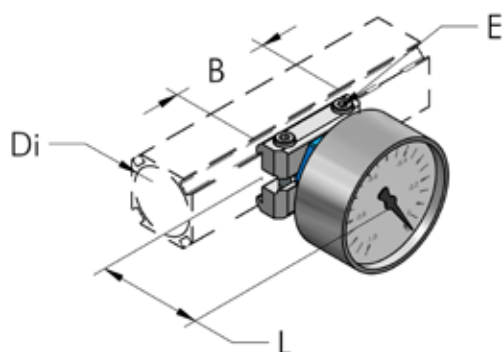
D mm	L mm	B mm	E mm	Part. no.	P Kg	n°	
20	130	46	4	006 020 047	0,35	1	
25	145	60	4	006 025 047	0,82	1	
32	172	46	4	006 032 047	1	1	
40	210	80	5	006 040 047	2,2	1	
50	300	150	5	006 050 047	3,4	1	

GLYCERYNE MANOMETER, COMPLETE



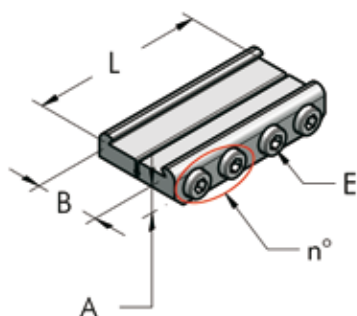
Di mm	d mm	B mm	E mm	Part. no.	P g	n°	
20	70	46	22	006 020 049	240	10	
25	70	56	22	006 025 049	250	10	
32	70	50	30	006 032 049	275	10	
40	70	70	36	006 040 049	345	10	
50	70	74	50	006 050 049	400	10	

VACUUM MANOMETER, COMPLETE



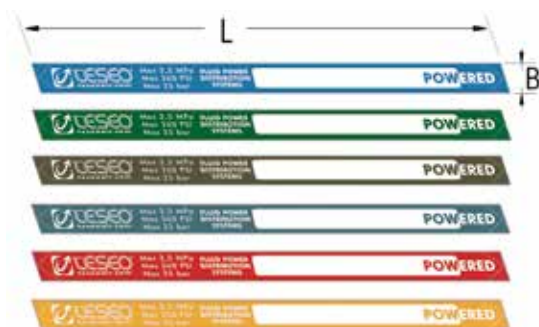
Di mm	L mm	E mm	B mm	Part. no.	P g	n°	
20	60	4	46	006 020 348	70	10	
25	60	4	56	006 025 348	75	10	
32	60	4	50	006 032 348	210	10	
40	60	5	70	006 040 348	174	10	
50/63	60	5	74	006 050 348	230	10	

CONNECTION CLAMP, COMPLETE



A mm	B mm	E mm	L mm	n°	Part. no.	P g	n°	
9	20	4	46	2	006 020 072	32	10	
10	25	4	64	4	006 025 072	60	10	
11	32	4	95	3	006 032 130	130	10	
12	40	5	80	3	006 040 072	120	10	
12	50/63	5	150	4	006 050 072	285	10	

25 BAR ADHESIVE COLOUR STICKERS



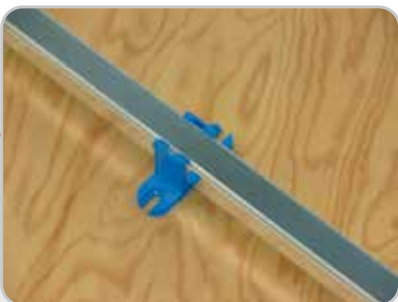
L mm	B mm	Colour	Part. no.	P g	n°	
310	15	Blue RAL 5015	104 515 310	29	11	
310	15	Green RAL 6029	104 515 315	29	11	
310	15	Brown RAL 8003	104 515 316	29	11	
310	15	Grey RAL 7000	104 515 317	29	11	
310	15	Red RAL 3020	104 515 318	29	11	
310	15	Yellow RAL 1028	104 515 319	29	11	
310	28	Blue RAL 5015	104 525 150	29	11	
310	28	Green RAL 6029	104 528 315	29	11	
310	28	Brown RAL 8003	104 528 316	29	11	
310	28	Grey RAL 7000	104 528 317	29	11	
310	28	Red RAL 3020	104 528 318	29	11	
310	28	Yellow RAL 1028	104 528 319	29	11	

COMPRESSED AIR AND FLUIDS PIPING SYSTEMS



MODULAR MANIFOLDS INTEGRATED ON MACHINES





TESEO PIPING SYSTEMS APPROXIMATE FLOW RATES

Based upon independent data provided by the university of Torino (I), mechanical Department, research Contract n° 1089/97.

PRESSURE DROP			FLOW RATE in l/min								
Working pressure (bar)	$\Delta p = P_i - P_u$ about 3%	L (m)	Ø 14	AP22	AP28 and HBS25	AP36 and HBS32	AP45	AP54 and HBS50	AP68 and HBS63	HBS80	HBS110
2	0,07	30	160	600	1.000	1.900	3.600	5.900	10.500	19.000	42.300
4	0,12	30	300	1.100	2.000	3.600	6.650	10.900	19.500	35.400	78.500
6	0,18	30	460	1.650	2.900	5.400	10.000	16.400	29.200	53.000	117.500
8	0,25	30	628	2.300	4.000	7.300	13.500	22.700	39.700	72.200	160.000
10	0,30	30	650	2.700	4.800	9.000	16.800	27.200	48.500	88.000	195.000

Flow rates in this char are calculated with 3% pressure drop from inlet pressure. Lenght of pipe is 30 metres.

WE EAT THEM ALL!



Comparing nominal diameters with the competitors, the flow rate of our piping is physically larger. The blue lines are small, they fit in ours. **MAKE THE RIGHT CHOICE!**

APPROXIMATE CHART FOR CHOOSING TESEO PIPING DIAMETER - HBS SYSTEM

Flow rate			LENGTH (in meters)									
m ³ /h	l/min	cfm	20	50	100	200	300	400	500	1000	1500	2000
21	350	12	25	25	25	25	25	25	25	25	25	25
30	500	18	25	25	25	25	25	25	25	25	25	25
42	700	25	25	25	25	25	25	25	25	25	25	32
54	900	32	25	25	25	25	25	25	25	25	32	32
66	1100	39	25	25	25	25	25	25	25	32	32	32
90	1500	53	25	25	25	25	25	25	32	32	50	50
120	2000	71	25	25	25	25	32	32	32	50	50	50
150	2500	88	25	25	25	32	32	32	50	50	50	50
216	3600	127	25	25	32	32	50	50	50	50	50	63
360	6000	212	25	32	50	50	50	50	50	63	63	63
540	9000	318	32	50	50	50	50	63	63	80	80	80
690	11500	406	32	50	50	50	63	63	63	80	80	80
780	13000	459	50	50	50	63	63	63	80	80	80	110
900	15000	530	50	50	50	63	63	80	80	80	110	110
1260	21000	742	50	50	63	80	80	80	80	110	110	110
1620	27000	954	50	63	63	80	80	110	110	110	110	#110
2000	33300	1177	50	63	80	80	110	110	110	110	#110	#110
3000	50000	1766	63	80	80	110	110	110	110	#110	#110	#110
3360	56000	1978	63	80	110	110	110	110	#110	#110	#110	#110
3720	62000	2190	80	80	110	110	110	#110	#110	#110	#110	#110
4800	80000	2825	80	110	110	110	#110	#110	#110	#110	#110	#110
5880	98000	3461	80	110	110	#110	#110	#110	#110	#110	#110	#110
6720	112000	3955	80	110	#110	#110	#110	#110	#110	#110	#110	#110
9600	160000	5650	110	110	#110	#110	#110	#110	#110	#110	#110	#110
12000	200000	7063	110	#110	#110	#110	#110	#110	#110	#110	#110	#110
15000	250000	8829	110	#110	#110	#110	#110	#110	#110	#110	#110	#110

This chart indicates Teseo piping diameters calculated at 8 bars pressure and 5% pressure drop from inlet pressure.
 #110 = indicates pressure drop over 5%

APPROXIMATE CHART FOR CHOOSING TESEO PIPING DIAMETER - AP SYSTEM

Flow rate			LENGTH (in meters)									
m ³ /h	l/min	cfm	20	50	100	200	300	400	500	1000	1500	2000
21	350	12	22	22	22	22	22	22	22	22	22	28
30	500	18	22	22	22	22	22	22	22	28	28	28
42	700	25	22	22	22	22	22	22	28	28	28	36
54	900	32	22	22	22	22	22	28	28	36	36	36
66	1100	39	22	22	22	22	28	28	28	36	36	36
90	1500	53	22	22	22	28	28	36	36	36	45	45
120	2000	71	22	22	28	36	36	36	36	45	45	45
150	2500	88	22	28	28	36	36	36	45	45	54	54
216	3600	127	28	28	36	45	45	45	45	54	54	68
360	6000	212	28	36	45	45	54	54	54	68	68	68
540	9000	318	36	45	45	54	54	68	68	#68	#68	#68
690	11500	406	45	45	54	54	68	68	68	#68	#68	#68
780	13000	459	45	45	54	68	68	68	#68	#68	#68	#68
900	15000	530	45	54	54	68	68	#68	#68	#68	#68	#68
1260	21000	742	45	54	68	#68	#68	#68	#68	#68	#68	#68
1620	27000	954	54	68	68	#68	#68	#68	#68	#68	#68	#68
2000	33300	1177	54	68	#68	#68	#68	#68	#68	#68	#68	#68
3000	50000	1766	68	#68	#68	#68	#68	#68	#68	#68	#68	#68
3360	56000	1978	68	#68	#68	#68	#68	#68	#68	#68	#68	#68
3720	62000	2190	#68	#68	#68	#68	#68	#68	#68	#68	#68	#68

This chart indicates Teseo piping diameters calculated at 8 bars pressure and 5% pressure drop from inlet pressure.
 #68 = indicates pressure drop over 5%

RESISTANCE TO CHEMICAL AGENTS

MATERIAL	ALUMINIUM (Al)	O-RING SEALS	NYLON	NICKEL- PLATED BRASS	2014/68/UE
GAS					
Compressed air	A	A	A	A	K
Vacuum	A	A	A	A	K
Nitrogen	A	A	A	A	K
Carbon dioxide	A	A	A	A	K
Argon	A	A	A	A	K
Argon - Nitrogen Mixture	A	A	A	A	K
Argon-Carbon Dioxide Mixture	A	A	A	A	K
Oxygen	D	C	A	A	
Dry Chlorine	A	D	D	C	
Sulphidric Acid	A	D	A	C	
Dry Sulphur Dioxide	A	D	C	A	
ORGANIC AND CHEMICAL COMPOUNDS					
Mineral engine oil	A	A	B	A	K
Synthetic motor oil	A	A	B	A	K
Exhausted engine oil	A	A	B	A	K
Oil emulsion 3% for metalworking	A	A	A	A	K
Oil emulsion 8% for metalworking	A	A	A	A	K
Glycol	A	A	B	A	K
Glycol and water mixture	A	A	A	A	K
Windscreen washing fluid	B	D	B	D	
Ammonia solution	A	B	B	C	
Methyl alcohol	B	B	B	C	
Vinilic glue	A	A	A	A	
Ethanol	A	A	B	A	K
Formalin	A	A	B	A	K
Acetone	A	D	A	A	K
Aniline	C	D	C	A	
Potassium bicarbonate	D	B	B	A	
Potassium permanganate	A	B	D	A	
Benzene	A	D	B	A	
Gasoline	A	B	B	A	K
Diesel fuel	A	A	B	A	K
ACIDS					
Citric acid	B	A	B	C	
Boric acid	B	A	B	C	
Acetic acid	B	C	D	C	
Cloridric acid	C	D	D	D	
Oleic acid	B	C	B	D	
Nitric acid	C	D	D	C	
Tartaric acid	A	A	B	C	K
Phosphoric acid	D	D	D	D	
Sulfuric acid	D	D	D	D	

Legend: A = Very good; B = Good; C = Low; D = Poor; K= KIWA PED

Attention: the content of this table is based upon customer's inquiries forwarded by customers during past 20 years. It is always recommended to evaluate the PED 2014/68/UE directive and consider norms and laws applicable.

PED = 2014/68/UE, annexe III, E1 compliant - CE 0476 - KIWA.

In the eventually of any doubt, please contact Teseco's Technical Office.

CONDITIONS FOR THE TRANSPORTATION OF WATER IN THE HBS SYSTEM

The HBS product by Teseco is suitable to carry water provided that the following conditions are respected.

1. Softened water is to be avoided because of its richness in sodium ions.
2. The acidity must range between pH5 and pH8.
3. The maximum content of chlorine ions must not exceed 2000 mg/L.
4. Iron (Fe), Nickel (Ni), Lead (Pb) and Tin (Sn) must not be present.
5. The maximum Copper (Cu) content should be not exceed 0,05 mg/L; the maximum Mercury (Hg) content should not exceed 0,005 mg/L.
6. Aluminium must not be in direct contact with iron or Copper. Aluminium and iron must be insulated by galvanization while aluminium and Copper must be insulated with plastic or inert organic matter.
7. Oxygen, Carbon Dioxide and ammonia ions, dissolved in water do not cause corrosive effects.
8. Water with solution of emulsion oil for the cooling of machinery does not cause any problems.
9. We recommend electrical earth bonding of our pipework systems in order to avoid any stray currents.
10. We recommend the use of ANODIZED bars.

In the event of any doubt, please contact Teseco's Technical office.

Source: AQM, technical services
SINAL Accredited
(UNI CEI EN 45001).

HBS-AP ASSEMBLING INSTRUCTIONS

1. INTRODUCTION

- 1.1. This manual is very easy to consult and we recommend reading it before starting work, bearing in mind the regulations in your country.
- 1.2. Pay attention to the instructions identified by the mark **ATTENTION**.
- 1.3. The HBS and AP ranges of products from TESEO are suitable for the distribution of compressed air, nitrogen, vacuum and inert gases.
- 1.4. For any application with **water** distribution, please check our sheet on page 96. For other **fluids** it is necessary to know their exact composition and to check if they are compatible with the HBS and AP system; in case of any doubt, please contact the technical department of TESEO.
- 1.5. **ATTENTION: TESEO is not responsible for problems due to failure to follow the instructions contained in within this manual.**

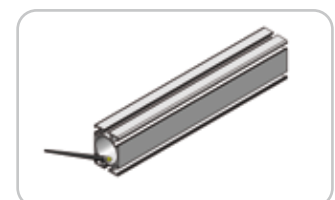
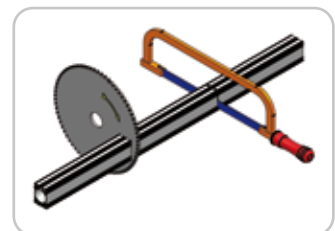
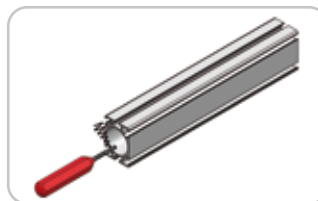
2. TOOLS AND FIXTURES

- 2.1. The **tools required** to install even a small system are: one Allen wrench for 4 and 5 mm slots, one de-burring tool or one scraper, neutral grease, one drill bit and one drilling machine, one hacksaw, some small tubes for placing the small plates, one tape measure.
- 2.2. The **tools suggested** for fast and safe work are: one pair of adjustable pliers, one battery screwdriver, one drilling jig, one chop saw with metal circular blade, one stepped cone cutter or cone cutter, one PTFE tape or sealing band, one torque wrench, one level or one plumb line, one bench on wheels.
- 2.3. Close attention should be paid to safety. To this purpose, scaffolding, helmets, harnesses, gloves and protective glasses must be used by all personnel.
- 2.4. **ATTENTION: follow the regulations concerning safety at work presentlv in force in your country.**

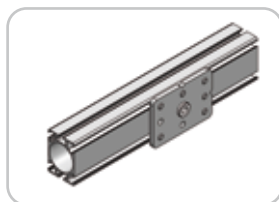


3. PREPARATION

- 3.1. **Cutting:** this can be done by hand, using a hacksaw provided that the blade has been lubricated with vaseline or other oils, as aluminium is a material which could clog the tool. When making many cuts, we suggest using a circular chop saw with metal cutting blade.
- 3.2. **Deburring:** after cutting the pipe, it is necessary to remove the sharp edges using a de-burring tool. This operation is required to avoid any damage to the o-ring and to make easier the connection.
- 3.3. **Lubrication:** in order to make it easier to insert joint, lubricate the inner surface of the hollow bar with neutral grease (ref. page 35), in order to avoid any damage to the O ring.



- 3.4. **Drilling:** during the drilling operation, it is required to have the pilot hole in the centre of the pipe. Please use a drilling jig.



The maximum diameter of the smoothed hole must not exceed the recommended diameter. Please see the table.

HBS25	HBS32	HBS50	HBS63	HBS80	HBS110
<p>Ø 18 Max</p>	<p>Ø 20 Max</p>	<p>Ø 20 Max</p>	<p>Ø 20 Max Ø 30 Max</p>	<p>Ø 42 Max</p>	<p>Ø 43 Max</p>
AP22	AP28	AP36	AP45	AP54	AP68
<p>Ø 11 Max</p>	<p>Ø 15 Max</p>	<p>Ø 18 Max</p>	<p>Ø 20 Max</p>	<p>Ø 30 Max</p>	<p>Ø 30 Max</p>

The following tools can be used: a drill, a coned drill, a counter bore, a hole saw.

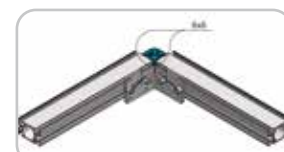
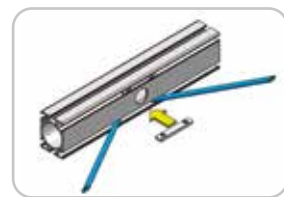
- 3.5. **Hole de-burring:** on outlet plates we recommend de-burring a maximum 1mm around the hole in order not to damage the o ring seal.

- 3.6. **ATTENTION: Wear protective glasses and gloves during cutting and drilling. Flying chips could cause injury to eyes and hands.**



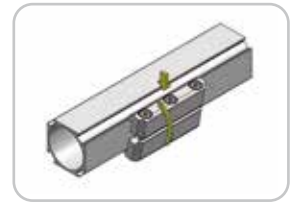
4. HBS SYSTEM ASSEMBLY OPERATIONS

- 4.1. **Insertion of small plates:** the small plates can be inserted into the slot in the bar at any point. Straighten and secure them by means of sharpened small tubes.
- 4.2. **Joint insertion:** to make it easier, first insert the plates and the small plates with loose screws into the slots, then insert the joint and connect the second bar. Now position the plates half-way on each side and tighten the screws.
- 4.3. **How to tighten the screws:** The screws must be tightened but be careful not to tear the thread. The torque of the m6 screws should be between a minimum of 10 N·m (91 inch-lbs) and a maximum of 13.5 N·m (120 inch-lbs).
- 4.4. **“L” and “T” Joint** have to be fixed using specific fixing plates. They allow you to fix pipes on two sides. Should you need to connect HBS 25 piping, using an “L” joint on the narrow side, it is required to cut 6 mm on each corner.
- 4.5. **Expansion of the line:** for lines with a straight section longer than 50 meters, we suggest mounting a sliding joint every 30 to 40 meters. This will make any future dismantling easier. The two fixing plates have to be assembled in the middle of the available space.
- 4.6. **ATTENTION: check that all the screws are tightened at the end of each pipe connection and when securing them be careful not to tear the thread.**



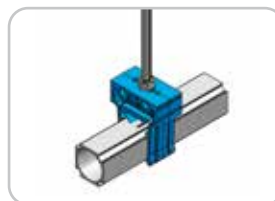
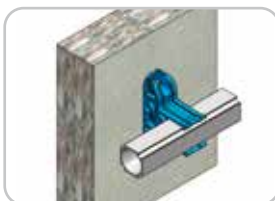
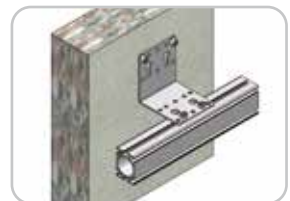
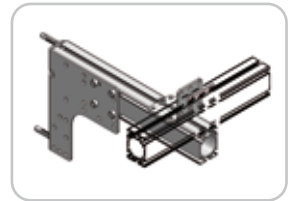
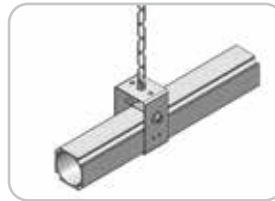
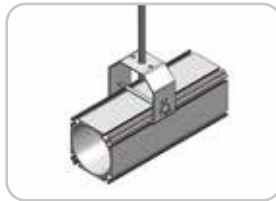
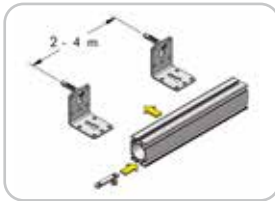
5. AP SYSTEM ASSEMBLY OPERATIONS

- 5.1. **Clamping brackets installation:** insert one side of the clamping bracket in the groove of the profile, push both clamping brackets to touch the profiles and tighten the screws.
- 5.2. **Joints:** introduce the joint into one pipe, then connect the second pipe, position the clamping bracket equally so that it is clamping both pipes or fitting and half the other and finally tighten the screws.
- 5.3. **Screws tightening:** Screws must be tightened properly but not excessively, to avoid stripping the threads. The recommended tightening torque for M5 screws is between 9 N·m and 11 N·m maximum. For M6 screws the minimum is 13 N·m and the maximum 15 N·m.
- 5.4. **ATTENTION:** once completed the assembly of every joint, double check the screws correct blockage and be sure that no threads are damaged for excessive tightening.

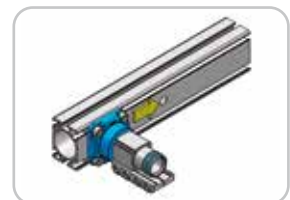


6. INSTALLATION

- 6.1. **How to trace the distribution line:** trace a horizontal line at the chosen height by means of a stretched plumb line. With the TESEO system you do not need to give the inclination to collect the condensate as the up-column and the down-column are already equipped at the bottom with a collection and a drain valve.
- 6.2. **How to secure the pipework:** The pipework can be supported by several types of ceiling or wall mounted fixing plates and brackets. The recommended distance between these fixing brackets is 2 to 4 meters, depending on the weight of the distributed fluid.



- 6.3. **Isolation valves:** ball valves must be mounted both at the beginning of the line and at the beginning of the branches of the main line. Mount a pressure gauge at the beginning of the main line and a safety valve on the air receiver.
- 6.4. **Take-offs: for the down tubes:** to prevent any impurities fouling the bottom of the hollow bar, we recommend fitting the outlet plates on the sides of the hollow bar.
- 6.5. **Flexible pipe:** its use is recommended in order to isolate the installation from the vibrations of the compressor.
- 6.6. **Earthing:** it is recommended in case of stray electrical currents.
- 6.7. **ATTENTION:** wear a safety helmet, harnesses and use scaffolding in compliance with the law before tracing and installing the line, as these operations are usually carried out at a dangerous height.



7. GENERAL TEST AND INSPECTION

- 7.1. **Inspect** every part of the system and check that no screw is loose, that all joints are properly in place and all brackets are properly secured.
- 7.2. Check that the **service valve** placed between the compressor room and the line is closed.
- 7.3. Start the compressor and fill the tank up to the maximum pressure. If a compressor is not available, use nitrogen tanks and/or small portable compressors.
- 7.4. Open the valve and fill the system up to 1 bar approx. (15 psi); close the valve and check that no leaks are detected in the system.
- 7.5. **Increase the pressure** of the system slowly until you reach the maximum pressure. Keep this pressure for about 1 hour. Test the system when the pressure is 1.5 times higher than the working pressure.
- 7.6. Inspect the system again and check that no leaks or other unusual deformations are visible in the joints.
- 7.7. **Empty** the system.
- 7.8. **ATTENTION: testing and inspection must be carried out only when no one is present in the working area. Wear a safety helmet and protective glasses when inspecting the system. Please follow all safety precautions.**

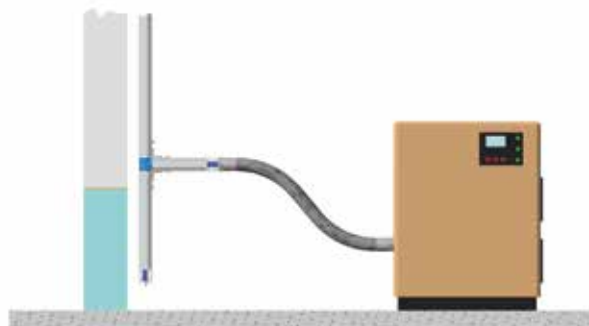
8. REPAIRS AND MODIFICATIONS

- 8.1. Modifications to the system are quick and easy. We suggest preparing all tools in advance, next to the area where modifications are to be made. By doing so, the downtime of the line is minimized.
- 8.2. If a leak is detected in the system, consult the following table where the most common causes and corresponding remedies are described.
- 8.3. In the case of faulty pieces manufactured by TESEO, please contact our technical department.
- 8.4. **ATTENTION: release pressure from the area of the system to be modified before carrying out repairs, maintenance or modifications. Isolate the area and inform people about maintenance operations.**

CAUSE OF THE LEAK	CORRECTIVE ACTION (REMEDIAL)
O ring seal damage due to incorrect installation, or defective.	Replace the O ring seal.
Fitting or outlet plate threads damaged.	Seal with a Teflon band or replace the faulty piece.
The drilled hole on the bar is too big or misaligned.	Replace the faulty section of the hollow bar.
Extrusion blowholes into the hollow bar.	Replace the defective part.
Misaligned mounting of the joint in the corresponding bar seats.	Disassemble the joint and realign the bars.
Defects in the seat of o ring of "I" and "T" joints.	Replace faulty joint.

INSTALLATION OF FLEXIBLE PIPES

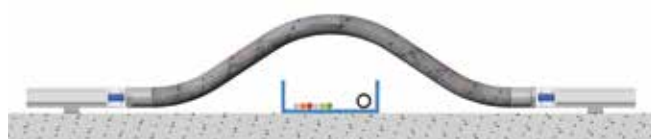
1. CONNECTION TO MACHINE



We recommend that the compressor is connected with a flexible pipe to absorb the vibrations due to the machine on every installation.

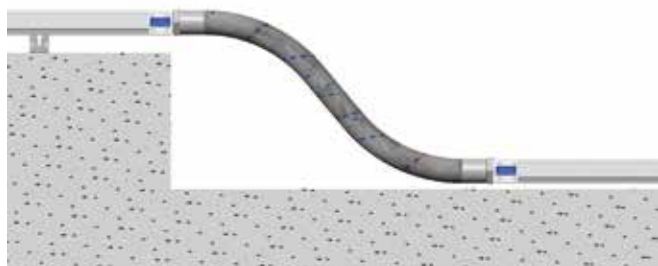
2. OBSTACLES

We remind you that to avoid any distortion, the bend radiuses of the flexible rubber pipes must not be too sharp to avoid damage it, the flexible pipe mustn't be forced against the obstacle.



3. CHANGES IN HEIGHT

Hoses can be useful when the changing of level is lower or equal than the encumbrance of two L Joints; However it is recommended when the vertical side of the line can't be fixed.

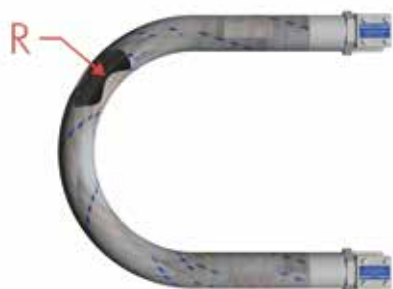


4. SPECIAL ANGLES

It is useful too when the horizontal angle of the line can't be achieved with others components from our catalogue; however it remains possible to use terminals threaded together from steel components (not recommended) from retail trade.



5. CURVING AT 180°



Flex Pipe	HBS25	HBS32	HBS50	HBS63	HBS80
Min Radius mm	100	130	200	270	340

Flex Pipe	AP22	AP28	AP36	AP45	AP54	AP68
Min Radius mm	90	100	130	150	200	270

Material	EPDM
Temperature	-30°C ÷ +70°C
Available for special request	

COMPRESSED AIR IS EXPENSIVE: DON'T WASTE IT!

Good tips for new investment

MAKE THE RIGHT CHOICE

You may change your compressor or dryer in future, but your compressed air piping is a fixed utility in your plant.

USE QUALITY PRODUCTS

Original quality piping system will assure reliable performance and expected safety standards in your factory.

CHOOSE THE RIGHT SIZE

The right engineering & sizing of the system is fundamental to save energy, potentially more than any other practice.

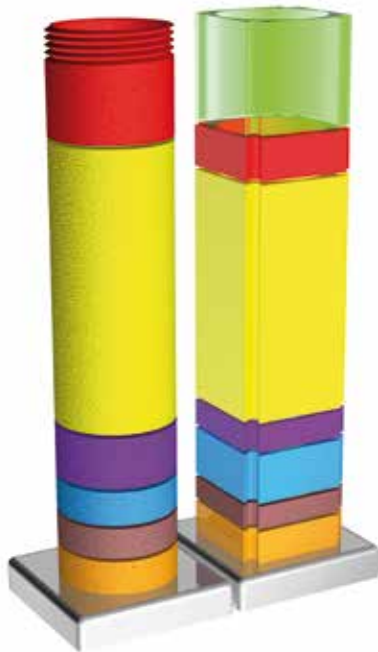
INSTALL A LEAK FREE SYSTEM

Modular systems with positive seals will perform better than any threatened conventional tubing.

DON'T FOCUS ON INITIAL COST

The cost of components is only a small part of the total investment. Choose systems with the lowest cost of ownership!

COMPRESSED AIR LIFETIME COSTS



- **MONEY SAVED:** saving due to correct sizing and engineering, optimised working pressure and choice of high quality product.
- **LEAKAGE:** cost of air leaks and inappropriate use of compressed air during the lifetime of the system.
- **ELECTRICITY:** cost of electricity to feed the air compressor.
- **INSTALLATION:** cost of labour for installing the system, for extensions and modifications, for ordinary maintenance.
- **MATERIAL:** cost of pipes and fittings for assembling the system.
- **MAINTENANCE:** cost for running ordinary maintenance of the machines generating compressed air.
- **GENERATION:** cost of machines for generating compressed air (including compressor, receiver, dryer, filters).

Some good general practices...

Prevent and reduce leaks

In a conventional piping system leaks may waste 20-40% of your compressed air. Routinely check your system for leaks.

Reduce air pressure

Reducing the pressure in your system of 1 bar (15 psi) will lead to 7% saving on your annual energy consumption.

Feed compressors with cool air

With 3°C cooler intake air, compressor will save 1% energy to reach the desired working pressure.

Avoid inappropriate use

Check the efficiency of compressed air used for cooling, agitating, mixing or inflating in your factory.

**Contact our technical department for a first quick check-up of your system.
We will help you to focus on the analysis and intervention by giving an assessment of costs and waste.**

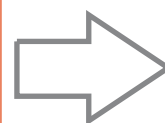
DATA FOR PLANT

Agent: Installer:
 Retailer: End user:

Fill in at least 4 fields below to develop the new project:

units Flow rate
 units Teseo diameter
 units Maximum pressure drop
 units Absolute starting pressure
 units Length of the considered network

For complex multi-diameter do sketch on the next page by adding all the notes you want



Refine your project:

Compressor/s Power

c1 Units c2 Units c3 Units c4 Units c5 Units

Area consumption

z1 Units z2 Units z3 Units z4 Units z5 Units

units Coincidence factor

Type of thread:

BSP

NPT

Drop column*

Diameter:..... Quantity:.....
 Diameter:..... Quantity:.....
 Diameter:..... Quantity:.....

Already have an installation? With these few data we tell you how much it costs!
 And on the purchase of a new plant Teseo calculate the payback!

Product installed:
 Age of the installation:
 Daily working hours:
 Labor cost:

Total development:
 Ø Pipe:
 % Losses hypothesized:
 Cost of electricity

In what language do you wish the project to be developed:

Italian

English

German

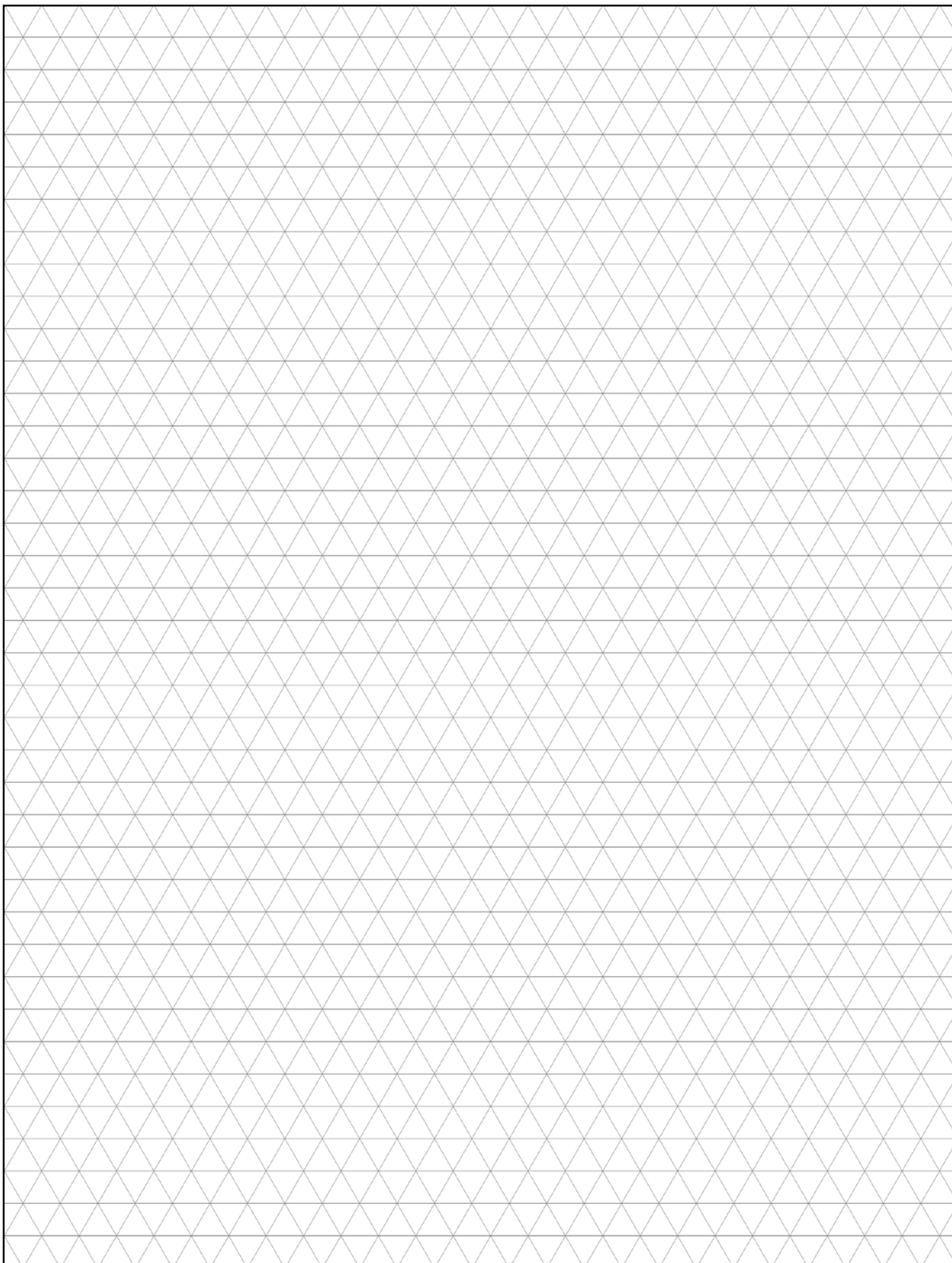
Spanish

When you want the project:

If you have additional information, you can write them on the next page,
 more information allow us to better develop your project.

* Or create your drop column using the instructions on page 30 (HBS system) and page 53 (AP system).

For any special product that you have to realize contact the technical department Teseo Italy.

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