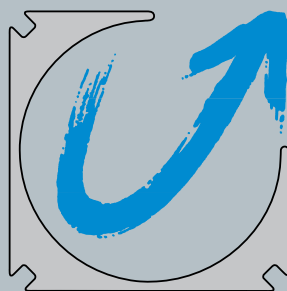
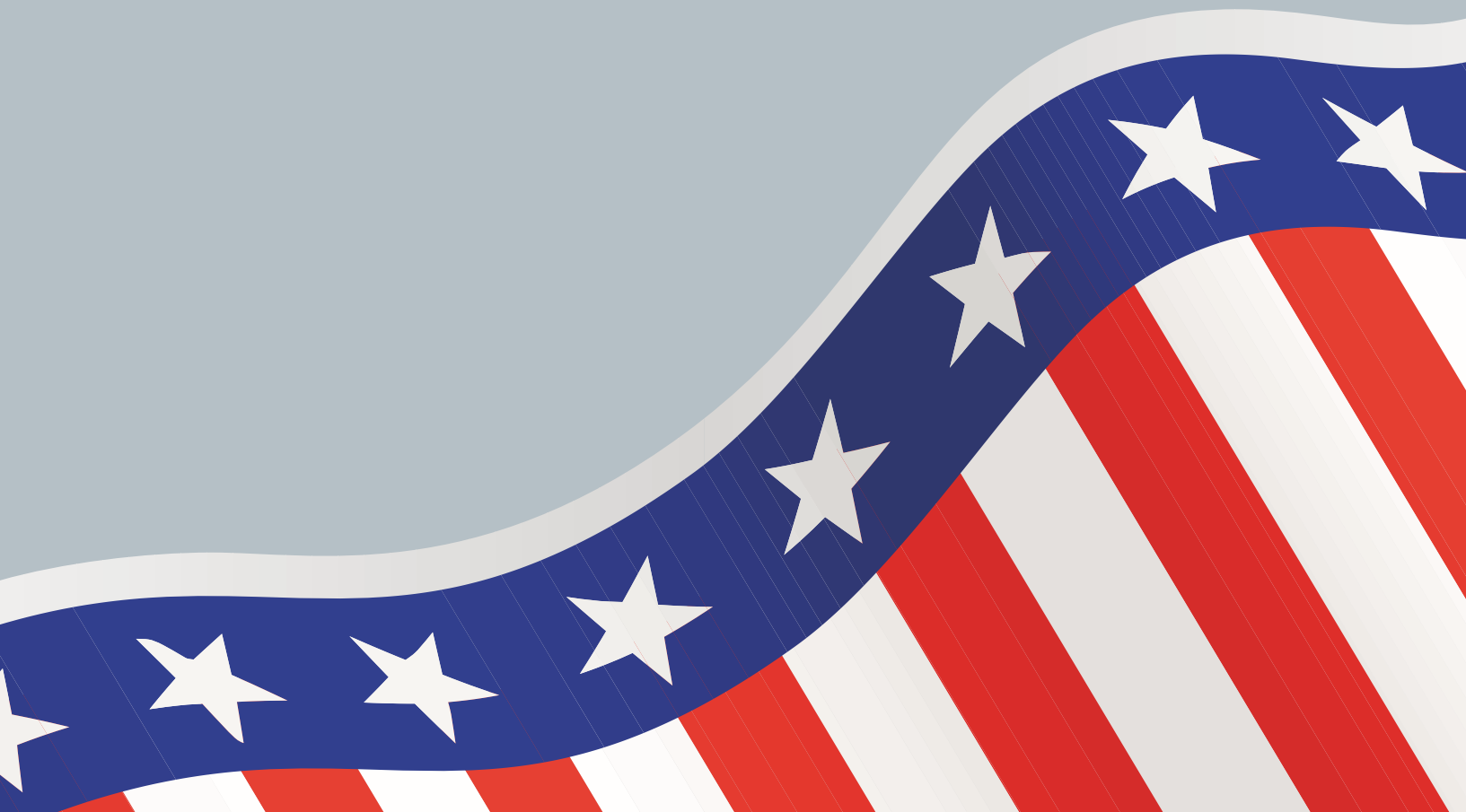





ALUMINUM PIPEWORK FLUID POWER DISTRIBUTION SYSTEMS



TESEO®






Square thinking  
outside  
the box

# INDEX

<b>COMPANY PROFILE.....</b>	<b>Page</b>	<b>3</b>
Teseo Distribution Network .....	Page	5
<b>HBS - Hollow Bar System .....</b>	<b>Page</b>	<b>16</b>
Hollow Bar .....	Page	20
Accessories .....	Page	21
<b>AP - Aluminum Pipework.....</b>	<b>Page</b>	<b>36</b>
Hollow Bar .....	Page	40
Accessories .....	Page	41
<b>AP - Multifluid 360 psi.....</b>	<b>Page</b>	<b>52</b>
<b>ATS - Air Track Supply .....</b>	<b>Page</b>	<b>58</b>
Accessories .....	<b>Page</b>	61
<b>SAB - Swinging Arm Bracket.....</b>	<b>Page</b>	<b>66</b>
Accessories .....	Page	68
<b>WBA - Workbench for Assembly.....</b>	<b>Page</b>	<b>70</b>
Accessories .....	Page	72
<b>MAT - Modular Air Trolley.....</b>	<b>Page</b>	<b>75</b>
<b>AM - Aluminum Manifold .....</b>	<b>Page</b>	<b>77</b>
<b>DT - Drilling Tool.....</b>	<b>Page</b>	<b>78</b>
<b>CA - Commercial Accessories .....</b>	<b>Page</b>	<b>80</b>
<b>Technical Sheet.....</b>	<b>Page</b>	<b>85</b>
<b>HBS-AP Assembling Instructions.....</b>	<b>Page</b>	<b>87</b>

## LEGEND

<b>A</b>	in. ....	Height, dimension
<b>B</b>	in. ....	Width, dimension
<b>C</b>	in. ....	Distance
<b>D - d</b>	in. ....	Diameter
<b>E</b>	in. ....	Hexagon, wrench
<b>F</b>	lbs .....	Force
<b>G</b>	" .....	Gas thread (BSP or NPT)
<b>I - i</b>	in. ....	Distance between slots
<b>J x</b>	in <sup>4</sup> .....	Moment of inertia along x
<b>J y</b>	in <sup>4</sup> .....	Moment of inertia along y
<b>L</b>	in. ....	Length
<b>N°</b>	_ .....	Code number
<b>n°</b>	_ .....	Quantity number
<b>P</b>	oz .....	Weight
<b>R</b>	in. ....	Radius
<b>S</b>	in. ....	Thickness
<b>T</b>	- .....	Threaded hole
<b>V</b>	in <sup>3</sup> .....	Inside volume
<b>α°</b>	° .....	Angle
	.....	Only on request - check availability

<b>HBS</b> Hollow Bar System	Swinging Arm Bracket <b>SAB</b>
<b>AP</b> Aluminum Pipework	Modular Air Trolley <b>MAT</b>
<b>POW</b> Powered Aluminum Pipework	Workbench for Assembly <b>WBA</b>
<b>ATS</b> Air Track Supply	All Systems <b>SYS</b>

### IMPORTANT

The drawings contained in the catalog are typical and not binding. Teseo srl continuously improves products and features and reserves the rights to modify design and dimensions at any time without prior notice.

### WARNING!

For the correct application of TESEO piping products, please read the technical data in this catalog and on our website @ [www.teseo.us.com](http://www.teseo.us.com) thoroughly. Prior to installation, please read the instruction manual carefully to ensure years of trouble-free performance.



# TESEO HISTORY

Founded in 1988, TESEO started out as a major supplier to the textile industry where they discovered several problems linked to compressed air distribution systems. Traditional distribution systems were characterized by high pressure drop, excessive leakage, corrosion and fluid contamination and difficulties in modification or expansion.

As a solution to these problems, Teseo developed and introduced the first modular Aluminum Pipework system for the distribution of compressed air.

Combining the features of a high strength structural profile together with the full flow capabilities of seamless smooth pipe, Teseo perfected the most innovative system for fluid power transmission. A modern, high tech design, coupled with an easy to assemble and flexible system were what initially captured the attention of system designers. Eventually, a greater appreciation for the energy efficiency of the Teseo system, due to the low pressure drop and inherent leak-free design, became the primary driver for today's clear preference for Teseo in the marketplace.

Teseo has greatly expanded its products and capabilities and now provides systems for other non-hazardous compressed gases, such as Nitrogen & Argon, and vacuum applications.

Teseo's growth has also been hastened through the expansion of its HBS line through 110 mm (4.33") and the addition of its AP Multifluid product, an ergonomic line for pneumatic tools and the integration of modular piping as manifolds on machines and automation equipment.



Today, Teseo is a modern and dynamic company with an active and motivated management team. Its passion for continuous improvement in production, quality and innovation will mean that Teseo will continue to lead the field in the development of modular aluminum distribution systems for the foreseeable future.



## WHY BUY A TESEO SYSTEM

The choice of a TESEO modern modular aluminum piping system eliminates the hidden costs of a compressed air system. In a conventional piping system these costs increase throughout the entire life of the distribution system costing tens or hundreds of thousands of dollars in added energy consumption, system inefficiency and downtime.

Typical hidden costs eliminated or reduced by TESEO aluminum piping include:

- **Air Leaks.** A normal distribution system can lose 25% of the compressed air or gas to leaks. TESEO's patented joint clamping and sealing system, however, virtually eliminates these leaks.
- **Contamination.** A normal distribution system is subject to corrosion and pipe scale that can cause damage to downstream tools and processes. TESEO's non-fouling aluminum surfaces ensure clean, trouble-free equipment operation and lower system maintenance requirements.
- **Downtime.** In a normal distribution system piping modifications or additions cause excessive system downtime & expense. A TESEO modular piping system allows for easy modification and expansion. A new machine or other point of use device takes only a few minutes to be installed and operational.
- **Pressure Drop.** TESEO's high precision extruded profiles provide a smooth inner surface which significantly reduces friction and resultant air flow resistance. This results in a piping system with much lower pressure drop than in a conventional steel or galvanized piping system. Less pressure drop translates directly into lower power consumption and lower energy costs.

HIGH TECH DESIGN

LIGHT WEIGHT

HEAVY DUTY PROFILES AND ACCESSORIES

100% METAL PIPING & FITTINGS

100% RECYCLABLE ALUMINUM

ENERGY SAVING

PROVEN AND DURABLE



**TESEO  
Systems**

**TRADITIONAL  
Systems**

- Hidden costs (Pressure drop, Air leaks, Air quality, Downtime)
- Labor costs
- Material costs



For more information please contact our local sales representative or visit our website at [www.teseo.us.com](http://www.teseo.us.com)

## SALES & SERVICE

Today, compressed air is widely used in industrial operations ranging from textiles to precision mechanics to automotive, electronics and pharmaceutical. From plant-wide systems to simple point of use applications, the effective distribution of compressed air is crucial to virtually every type of production or process activity.

In more and more applications aluminum is becoming the preferred choice for non-hazardous gas distribution over the older, leak-prone and labor-intensive threaded, welded or solder-joint technologies.

Due to this growing interest in aluminum piping solutions, TESEO has developed a high quality, international network of distributors and qualified installers to provide the highest degree of application assistance, service and fast delivery from local warehouses.

For more information please contact our local sales representative or visit our website at [www.teseo.us.com](http://www.teseo.us.com).



## ENGINEERING AND CONSULTING SERVICES

TESEO's offering is not limited solely to piping, fittings and accessories. On the contrary TESEO offers a comprehensive suite of additional services including:

- System Design & Engineering
- Material Sizing & Selection
- Complete Bill of Material Development
- CAD Layouts & Piping Detail Drawings

TESEO's level of involvement can extend from the initial specification development through to implementation. Due to this wide range of services, many large architectural and engineering firms are now collaborating with TESEO to promote the idea of high quality fluid power distribution with modular aluminum systems to industries around the world.

### ITALY:

#### TESEO SRL

VIA DEGLI OLEANDRI, 1  
25015 DESENZANO DEL GARDA  
BRESCIA  
Tel. +39 030 9150411  
Fax +39 030 9150419

### SPAIN:

#### TESEO IBERICA AP, S.L.

POL.IND.SEGLE XX C/GALICIA,114  
08223 TERRASSA - BARCELONA  
Tel. +34 93 7834730  
Fax +34 93 7834538

### GERMANY:

#### TESEO DEUTSCHLAND GMBH

MAXIMILIANSTR. 29  
80539 MÜNCHEN  
Tel. +49 2626 923225  
Fax +49 2626 349255

### NETHERLANDS:

#### TESEO NEDERLAND B.V.

GEERDINKSERF, 19  
7722 AZ DALFSEN  
Tel. +31 529 435983  
Fax +31 529 435984

### UNITED KINGDOM:

#### TESEO UK

BELLCROFT, EASTWAYS  
WITHAM, ESSEX CM8 3WU - UK  
Tel. +44 08701 672150  
Fax +44 08701 672151

### CANADA:

#### TESEO CANADA

4420, BOULEVARD INDUSTRIEL  
J1L 2S8 SHERBROOKE, QUÉBEC  
CANADA



## FLUID POWER IN THE FACTORY AND ON MACHINERY

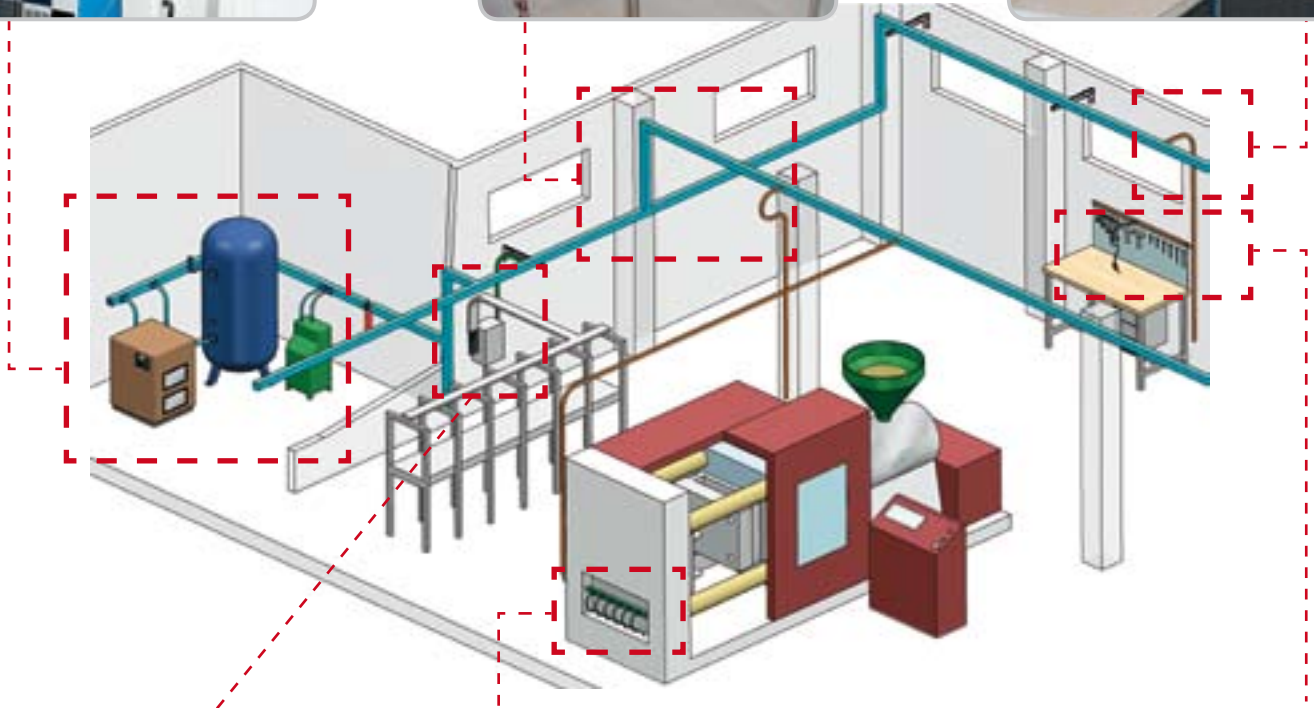
Bypass and manifold assemblies for compressor and air treatment equipment installations.



Distribution piping for compressed air, vacuum and other non-hazardous gases ranging from 20mm (.788") to 110mm ID (4.334").



Drop columns for point of use are fast and easy to assemble or modify.



Distribution manifolds integrated into pneumatic control panels for automation.



Modular distribution manifolds on machines or automatic conveying lines.



Feed lines for pneumatic tools along walls or on work benches.

## ERGONOMIC SOLUTIONS FOR PNEUMATIC TOOLS

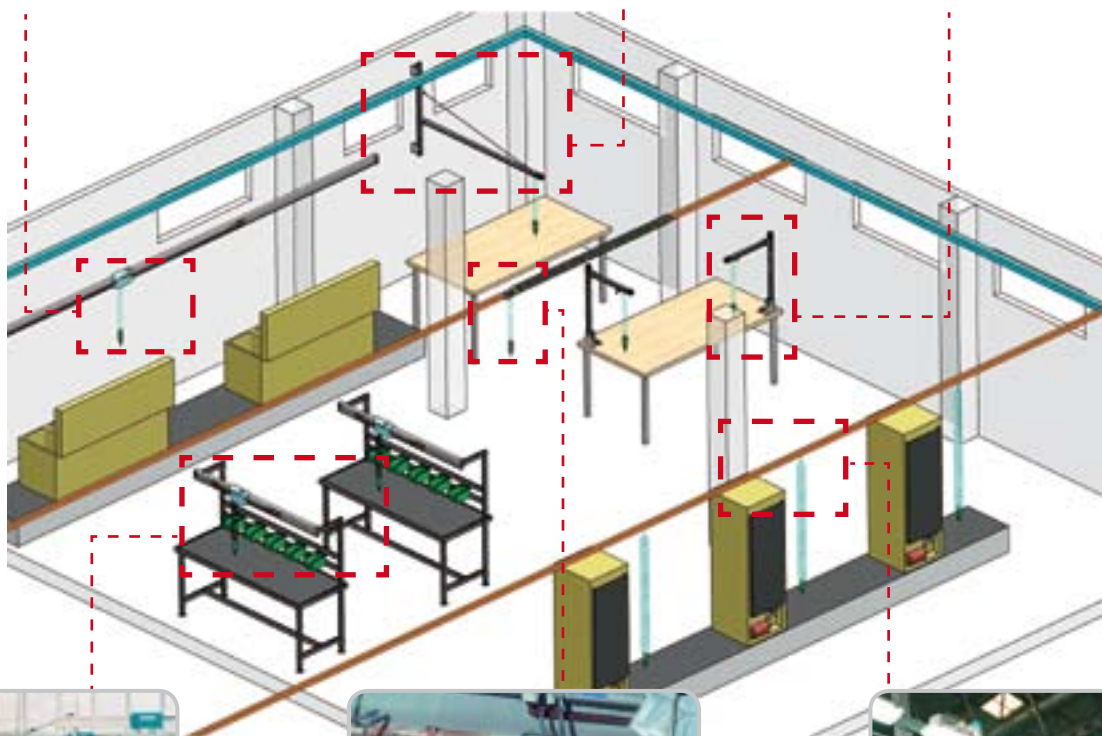
Modular air tracks and trolleys for compressed air and electrical distribution.



Pressurized pivoting arms for feeding air tools over a wide radius.



Swinging arms on benches to support and supply pneumatic tools.



Assembly Workbenches complete with pneumatic and electrical feeds.



Overhead Trolleys to support and provide air supply to pneumatic tools.



Assembly and production lines combining aluminum profiles and glider pads.



## NATIONAL AND INTERNATIONAL TRADE FAIRS

As the pioneer of modular aluminum piping, TESEO has sought to increase its reach and innovation by attending tradeshow throughout the world. Its attendance at these shows has allowed it to highlight its products but more importantly it has ensured that TESEO remains on the cutting edge of technology and its application in solving customer problems. This spirit of innovation and continuous improvement has lead to significant enhancements and additions to TESEO's products and services

TESEO is very grateful to have been the recipient of numerous awards and certificates that honor this innovative spirit.



## PRESS RELEASE

From the beginning, TESEO has delivered technical reviews dedicated to pneumatic and technical issues. Thanks to these efforts, the TESEO brand is now strongly identified worldwide with the concepts of innovation, quality and reliability in fluid power distribution systems.



[www.teseoair.com](http://www.teseoair.com)

## ON-LINE SERVICES

TESEO remains dedicated to finding new ways to deliver valuable information to its distributors and end customers. To that end TESEO continues to invest in its website design to provide areas where you can:

- @ Access product information including nomenclature, technical data and representative drawings.
- @ Link to our virtual news office for the latest in brand editorials and product promotional materials including trade show reports and magazine ads and articles.
- @ View case histories and product applications.
- @ Access news on the latest in product developments.
- @ Access contact forms including those to request additional product information, place an order or for local distributor support.
- @ Communicate with specific departments within TESEO.
- @ Access free software to design a TESEO piping system for your plant.
- @ Access software to develop a Teseo specification, by using a simple and intuitive form.
- @ Access complete conversion tool for various units of measurement.

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

## AWARDS



WINNER 2007



FINALIST 2006



FINALIST 2006



FINALIST 2006



WINNER 2006



WINNER 2001



WINNER 2000



WINNER 1999



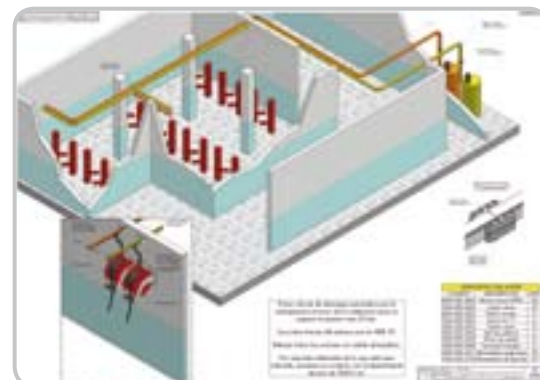
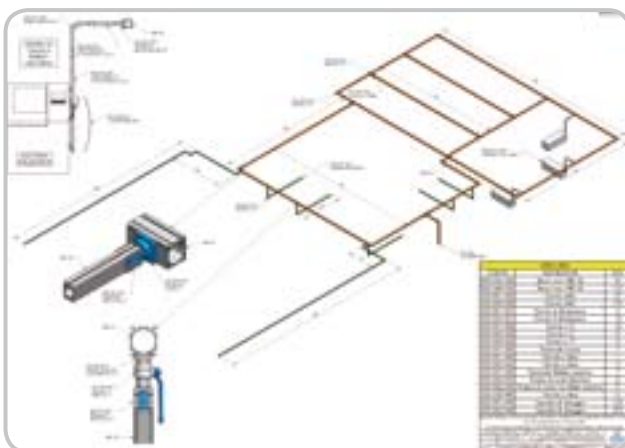
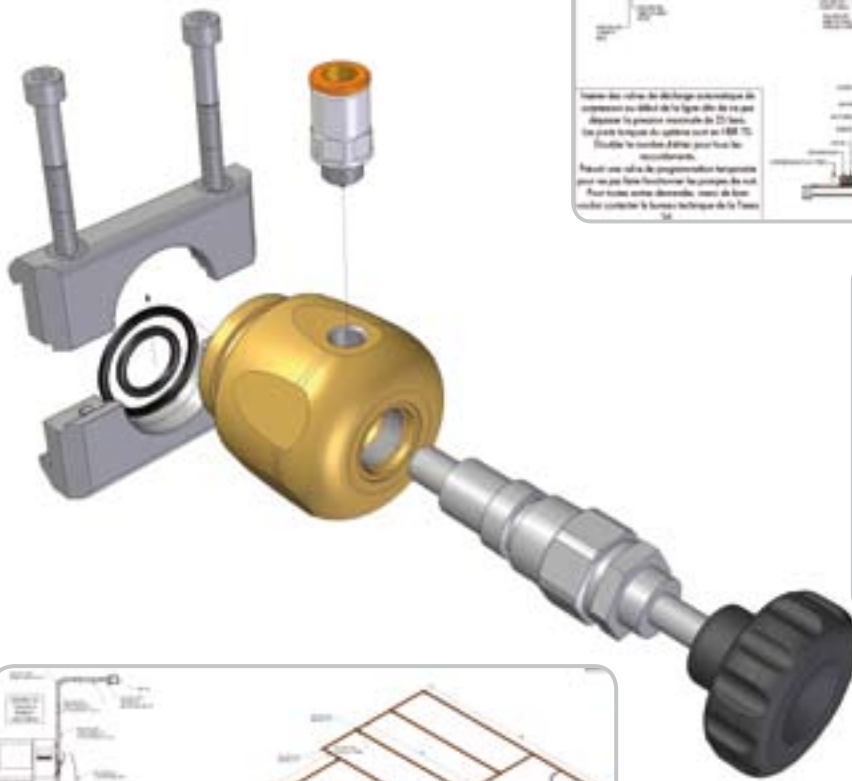
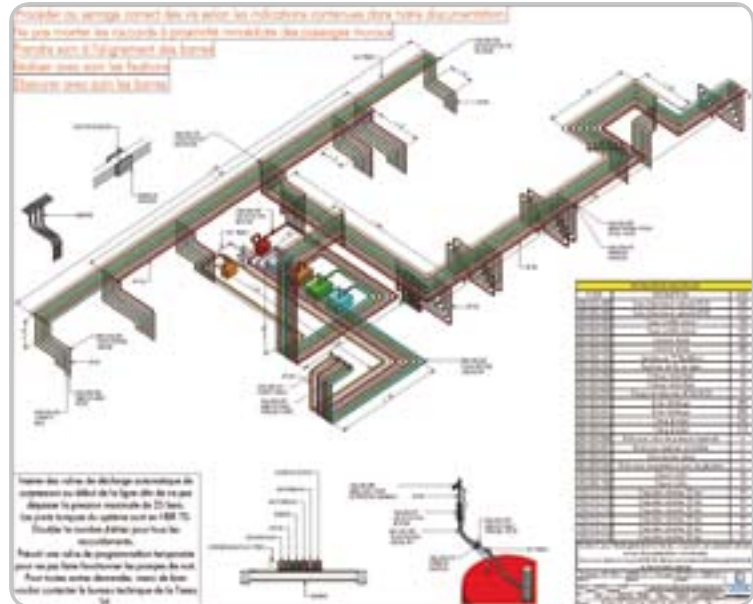
WINNER 1996



WINNER 1992

# FROM DESIGN TO INSTALLATION

TESEO supports its partners and customers through the design and selection of air lines, the development of customized solutions for machines and production lines, the consultation on standards information and technical training for installers, and the supervision of system installation and testing.





# DESIGN AS AN ADDED VALUE

TESEO designs each project using the most modern 3D CAD system with a flexible and expedient approach.

We consider each project as an opportunity for innovation; an opportunity for us to re-create the industrial environment with an eye toward efficiency, functionality and ergonomic impact.

Moreover, we try to make the most of the DESIGN, by optimizing the production process and by assuring superior quality and fitness for purpose of each system component.

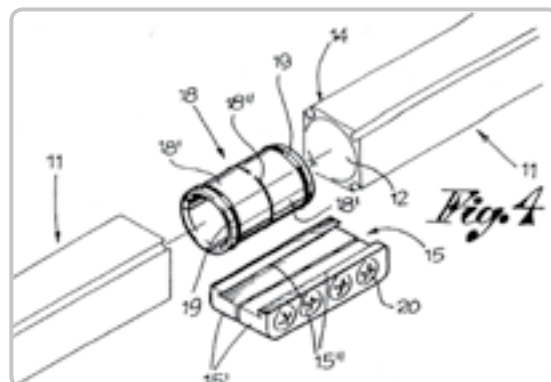
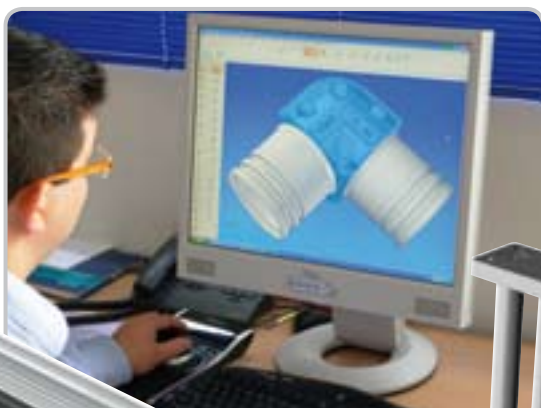
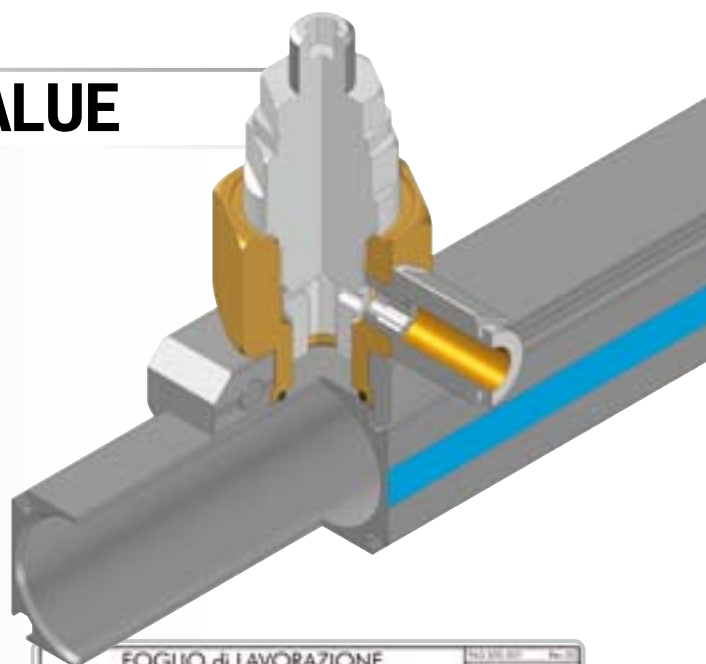
We cooperate with external engineering and design firms, with university departments but most of all with our customers. They help us and drive our innovation by relating their needs, challenges and experiences.

The design, certification and acceptance of our products in the marketplace are essential to us.

Our collaboration with certifying institutes is a continuous process as we seek to ensure the optimal quality and safety of our products.

We will continue this process as the cost is far outweighed by the safety and success of our products for our customers.

TESEO designs in accordance to the standards of UNI ISO for planning as UNI 4820, UNI 5456 and others.



# PATENTS

TESEO takes pride in the fact that most of our designs hold patents. It is the patent process that has helped improve and refine our design work. TESEO will continue to search for new and innovative patented solutions to our customer's problems.

Our patents are duly issued to protect the creativeness of our technical staff and to provide assurance to our customers that our continuous search for innovation will enhance the solutions that we provide and the quality of products that we design and manufacture.

TESEO believes that such patents and the continuous pursuit of additional patentable ideas add value and are the only distinguishing marks for truly innovative inventors and manufacturers.

Today, our R & D managers are managing various patents registered in many different countries and are in the process of developing new patented products for our future markets and applications. To make our philosophy more clearly identified and original, the name TESEO is a registered brand.



# CERTIFICATION

The Design, Production and Quality Management is certified according to the standard UNI EN ISO 9001.

SGS, the most prestigious certification institute, has analyzed and confirmed our management system. They perform yearly audits to provide a continuous check of the level of quality management and its on-going improvement.

TESEO components are tested both by our own internal test department and also through external certified testing agencies including SIT, ISPEL, UNI or institutes such as SGS, TUV, TSSA and others.

TESEO's Quality Manager collaborates with external qualified and experienced consultants in our industrial field for incorporation of their best practices.

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

TESEO components are tested in accordance with various procedures; The TUV institute checked an HBS assembly by testing it through cyclical pressurization and depressurization; The AQM society tested the principal components of the AP range up to 120 bars (1740 psi) with a range of temperature from -20°C (-4°F) to +130°C (+266°F); the SGS institute certified that the AP system achieved a failure test pressure of 160 bars (2320 psi).

The Politecnico from Torino has cooperated with Teseo in the testing of flow rates versus pressure drop through our piping while the Brescia University is working with TESEO's specific technical consultants.

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

TESEO piping is designed and manufactured in compliance with the standards US ANSI B31.3 and B31.9.

TESEO piping is also designed, manufactured and tested according to the safety requirements of the European Standard 97/23/CE (PED).

Kiwa has determined that the quality management system of Teseo Srl meets the requirements of Annex III, E1 of the Pressure Equipment Directive 97/23/CE.





## QUALITY

TESEO carries out thorough inspections of all aspects of the production process to guarantee the suitability of its products. All items are checked not only at the raw material stage but throughout the assembly processes as well.

Each item is clearly identified by a product inspection sheet with all the checks to be evaluated including critical product features and their dimensions. This is done using a plan sampling in accordance with the UNI ISO 2859 standard that enables us to define a LQA chosen through 1.5, 2.5 and 6.5.



The quality check of the material is performed by using the sampling frame in accordance with UNI ISO 2859.

For each drawing there is a specific check sheet. On each item sheet there is a comprehensive list with the proof to be performed. According to the criticality of the dimension, we settle check coefficient "AQL" (acceptable quality limit) to be chosen among 1.5, 2.5 and 6.5.



TESEO's piping undergoes 10 functional, dimensional and aesthetic checks during the production and packaging process.

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 expose possible faulty points in the production process.

Such procedures enable TESEO to trace the quality of products from its various 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 production.



## QUALITY-MADE IN ITALY

TESEO is dedicated to achieving the highest levels of quality in each step of its manufacturing process.

TESEO selects each supplier based upon a set criteria including its certifications of manufacturing performance, an in-depth study of the relation between price and quality, the reputation of the supplier in the market, the control declaration sheet about the product, the availability and the modularity, and the ability to supply in emergency conditions.

The piping is made by only the most efficient and highest quality aluminum extrusion companies in the market. These companies have succeeded in reaching high production levels while reducing product defects to virtually zero.

Further, TESEO has succeeded in developing strong business relationships with the most developed machining companies who have invested in high quality machines tools that have allowed them to produce components of increasing quality, reliability and uniformity.

TESEO has an fully integrated production department for the final assembly of the piping components where highly qualified & vigorously trained personnel apply the finishing touches. This department is managed according to the same rules as for any external supplier; in particular, all assembled items are thoroughly checked to ensure the complete integrity of our quality processes.





## HBS HOLLOW BAR SYSTEM

The key innovation of this system lies in its adaptability in adding, moving or expanding distributions systems for compressed air, gas and other pressurized fluids. This flexible system makes for quick system changes with minimal associated downtime.

The system includes a hollow bar that integrates a high strength rectangular outer profile with a high flow, low resistance round inner profile and creates the perfect balance between adaptability, durability & performance. The external rectangular section incorporates tee slots that allow for easy slip-on assembly of fittings, valves and support brackets. This fast and easy method of installation results in a total system costs that compares favorably with any other piping system on the market.

TESEO's wide selection of fittings and outlet plates allow for an almost infinite array of possible piping system configurations. This coupled with its virtually leak-proof double O'ring sealing method provides the most flexible, durable and energy-efficient piping system available.

### TESEO HBS Advantages:

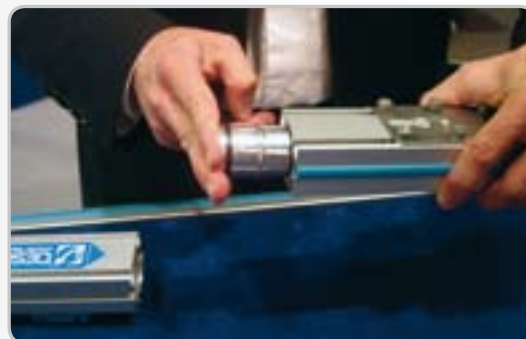
- Fast installation.
- Quick positioning of additional outlets.
- Easy changes and new branches
- Clean and smooth inner and outer surfaces.
- Integrated modular system.

## EASY TO ASSEMBLE

### DEBURRING



### MOUNTING



### ASSEMBLING



### TIGHTENING



## BLUE DESIGN

The newest generation of TESEO fittings incorporates the latest advancement in sealing technology. The new blue O'ring design is the result of our continuous research into Energy Saving alternatives.

To increase the already impressive sealing characteristics, we evaluated every aspect of our sealing surfaces including the machining of our components, the composition and hardness of our O'ring material as well as the compression of the O'ring and determined that a couple of minor adjustments would enhance the energy-saving characteristics of our systems.

The high tech Blue O'rings are the most visible indication of our design work and means that the spirit of continuous improvement and innovation for which TESEO is known remains a primary driving throughout our organization and distribution network.



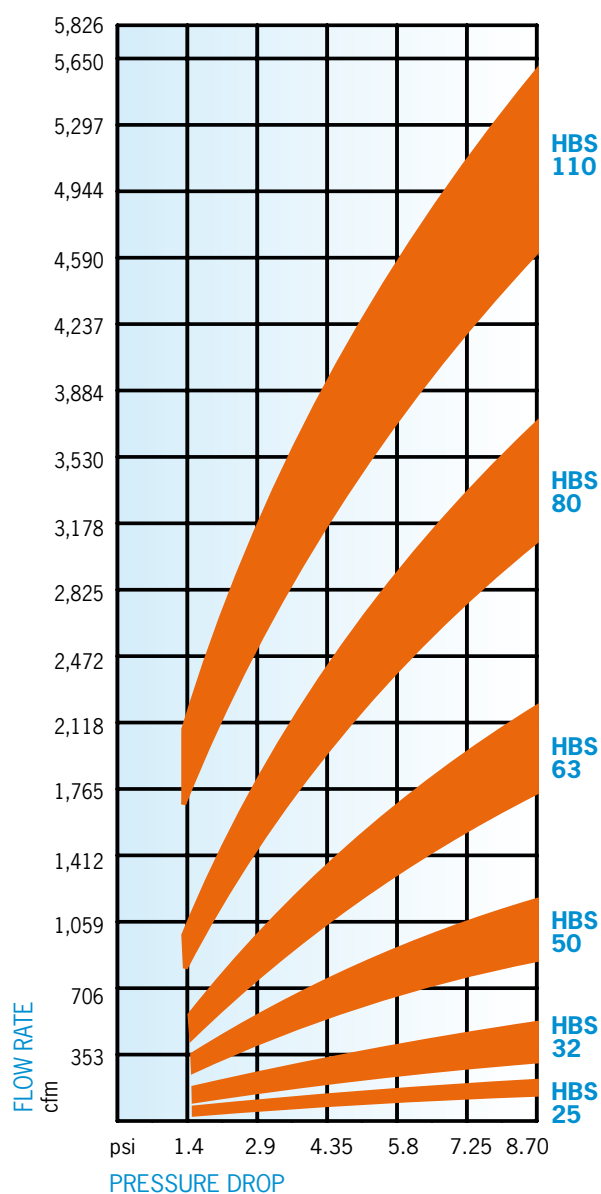
**Selection diagram for HBS diameter by compressor power consumption.**

Compressor power hp	HBS diameter D	US D (inch)	Indicative flow rate (L 98.4 ft - 87 psi - $\Delta p$ 3%) cfm
20	25	1"	70.6
43	32	1-1/4"	141.3
94	50	2"	423.8
188	63	2-1/2"	706.5
295	80	3"	1,413
740	110	4"	2,648.6



HBS performance diagram of flow rates and related pressure drops for a 30m (97.50 ft) length of pipe with ambient conditions of +20°C (94°F) & 1013 mbar (14.7 PSIA). Data provided by the POLYTECHNICINSTITUTE OF TURIN.

See online software (page 9)



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

## TECHNICAL CHARACTERISTICS

Extruded Aluminum.....	<b>Alloy EN AW-6060 UNI EN 573-3:1996</b>
International designations .....	<b>ANSI 6060 - DIN1748/1: AlMgSi 0,5 BS 6060</b>
Chemical composition .....	<b>Si: 0.45 - Mg: 0.45 - Fe: 0.3</b>
Heat treatment .....	<b>T5 or T6</b>
Surface treatment (upon request) .....	<b>Chemical silver anodization</b>
Specific weight, density .....	<b>lb/in.<sup>3</sup> 0.099</b>
Electrical conductivity .....	<b>% IACS 53</b>
Thermal conductivity .....	<b>W/m·K 200</b>
Specific heat.....	<b>J/Kg·K 96</b>
Coefficient of expansion.....	<b>in./ft °F 5.2·10<sup>-4</sup></b>
Tensile strength.....	<b>lb/in.<sup>2</sup> 34080</b>
Yield strength.....	<b>lb/in.<sup>2</sup> 28400</b>
Modulus of elasticity .....	<b>lb/in.<sup>2</sup> 9514000</b>
Brinell hardness .....	<b>HB 70-80</b>
Melting range.....	<b>°F 1112-1202</b>
O-ring material .....	<b>NBR 70</b>
Operating temperature.....	<b>°F -4/+248</b>
Screw material .....	<b>Steel 8.8</b>
Screw driving torque .....	<b>90-120 inch lbs</b>
Outlet thread .....	<b>NPT</b>
Terminal thread .....	<b>NPT</b>
Max operating pressure .....	<b>220 psi</b>
Joint failure test pressure .....	<b>813 psi</b>

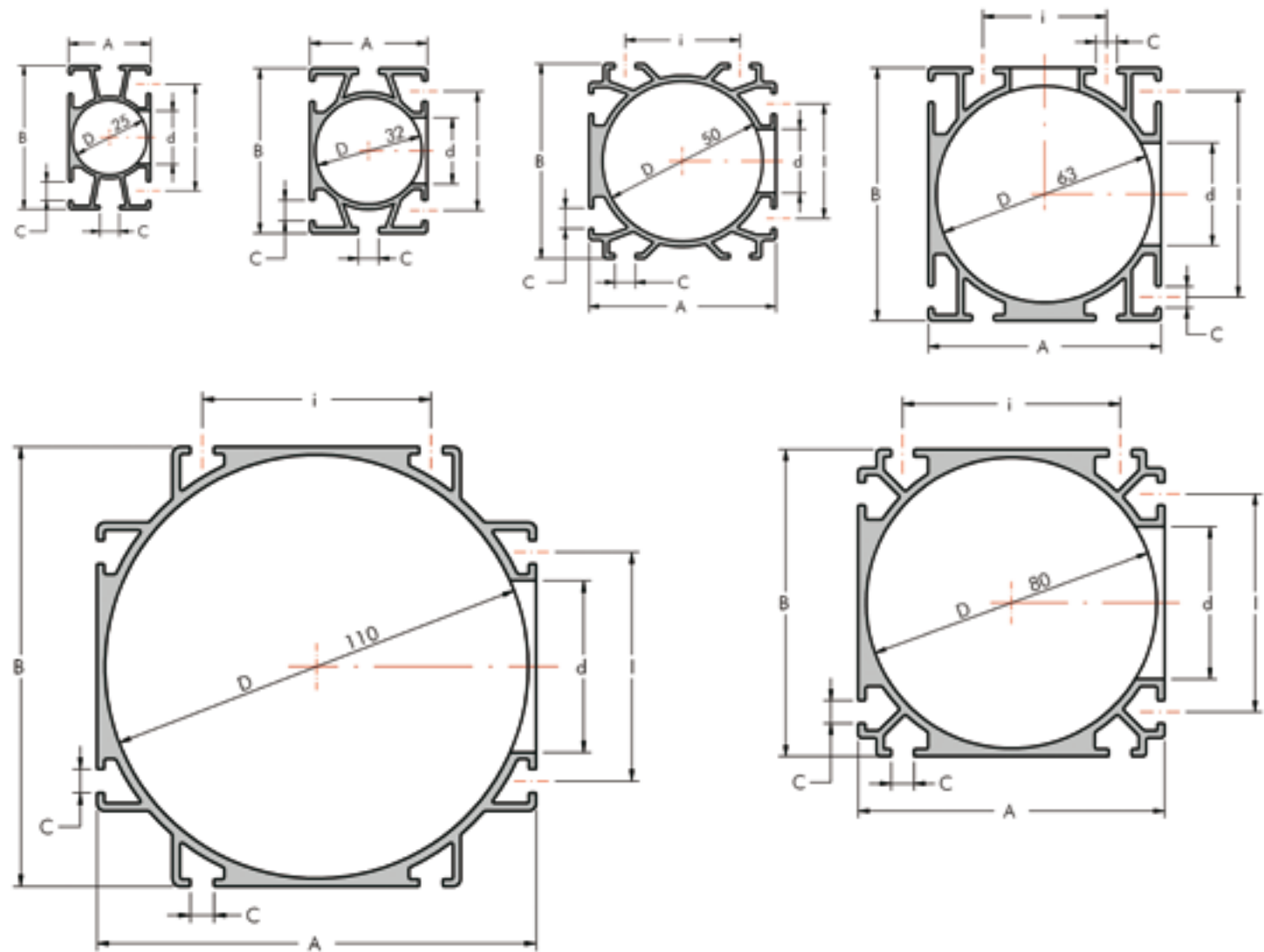
### Compatible Fluids

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

\*For further information, please contact TESEO or your local representative.



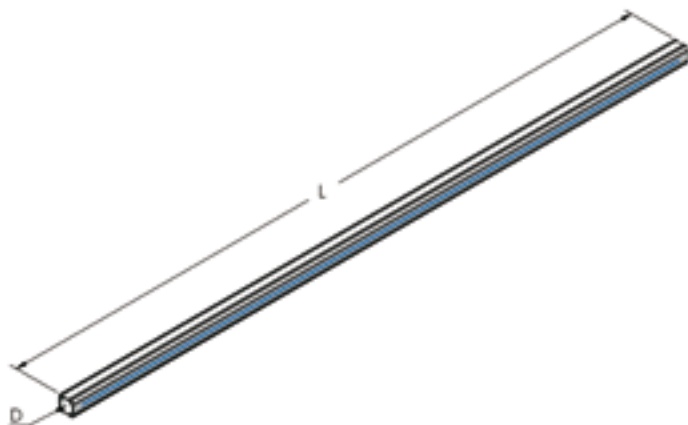
PROFILES SECTION OVER VIEW



SIZE DIMENSIONS

HBS	US	Dimensions						Max hole	Inner volume	Weight	Moment of inertia		Section Area
D	D in.	A in.	B in.	I in.	i in.	C in.	d in.	V gal/ft.	P oz./ft.	Jx in. <sup>4</sup>	Jy in. <sup>4</sup>	in. <sup>2</sup>	
25	1"	1.10	1.93	1.42	-	0.24	0.71	0.04	7.90	0.17	0.06	0.76	
32	1-1/4"	1.42	1.96	1.42	-	0.24	0.79	0.07	14.00	0.29	0.16	1.24	
50	2"	2.36	2.36	1.42	1.42	0.24	0.79	0.16	20.4	0.76	0.80	3.04	
63	2-1/2"	2.68	2.91	2.36	1.42	0.24	1.18	0.25	31.6	1.78	1.41	4.82	
80	3"	3.35	3.35	2.36	2.36	0.24	1.65	0.40	35.5	2.89	2.89	7.80	
110	4"	4.53	4.53	2.36	2.36	0.24	1.69	0.75	45.2	5.73	5.73	14.70	

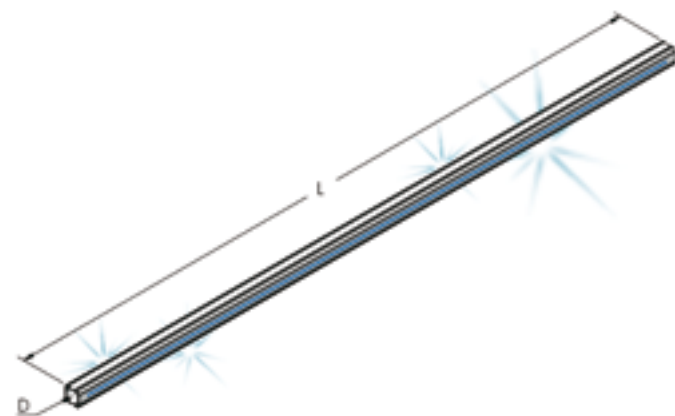
## NATURAL ALUMINUM EXTRUDED PIPE



D	L ft	Part. no.	P lbs.	n°	
25	16.4	800 028 500	8.82	32	
32	16.4	800 036 500	12.57	24	
50	16.4	800 060 500	19.84	16	
63	16.4	800 068 500	30.42	12	
80	16.4	800 085 500	36.82	8	
110	16.4	800 114 500	46.30	4	

D	L ft	Part. no.	P lbs.	n°	
25	8.2	800 028 250	4.40	32	
32	8.2	800 036 250	6.39	24	
50	8.2	800 060 250	9.92	16	
63	8.2	800 068 250	15.21	12	
80	8.2	800 085 250	18.29	8	
110	8.2	800 114 250	23.15	4	

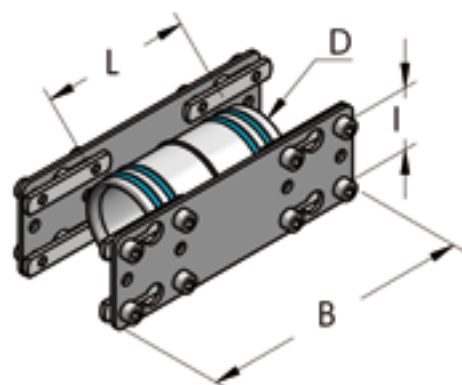
## ANODIZED ALUMINUM EXTRUDED PIPE



D	L ft	Part. no.	P lbs.	n°	
25	16.4	801 028 500	8.82	32	
32	16.4	801 036 500	13.89	24	
50	16.4	801 060 500	20.94	16	
63	16.4	801 068 500	30.86	12	
80	16.4	801 085 500	37.48	8	
110	16.4	801 114 500	46.96	4	

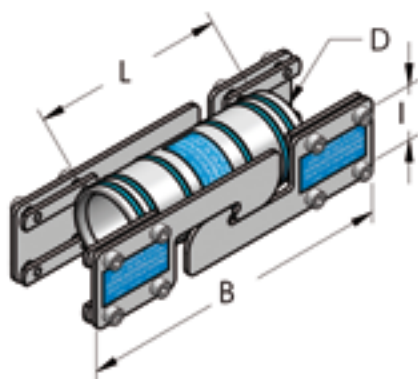
D	L ft	Part. no.	P lbs.	n°	
25	8.2	801 028 250	4.41	32	
32	8.2	801 036 250	6.83	24	
50	8.2	801 060 250	10.36	16	
63	8.2	801 068 250	15.43	12	
80	8.2	801 085 250	18.74	8	
110	8.2	801 114 250	23.37	4	

## STRAIGHT JOINT, COMPLETE



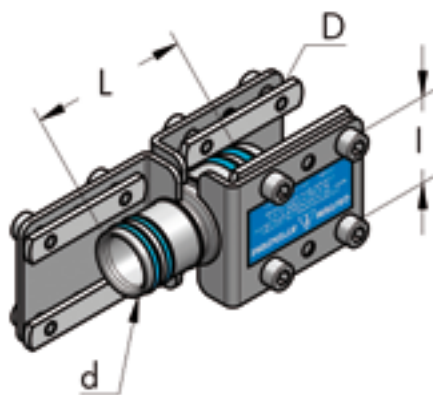
D	I in.	L in.	B in.	Part. no.	P oz.	n°	
25	1.42	1.57	4.72	003 000 020	6.32	20	
32	1.42	1.97	4.72	003 001 020	7.02	20	
50	1.42	3.54	6.30	003 002 020	20.11	10	
63	1.42/2.36	4.17	6.30	003 003 020	27.16	10	
80	2.36	5.12	6.30	003 004 020	33.51	10	
110	2.36	7.09	9.06	003 005 020	70.55	5	

## SLIDING JOINT, COMPLETE



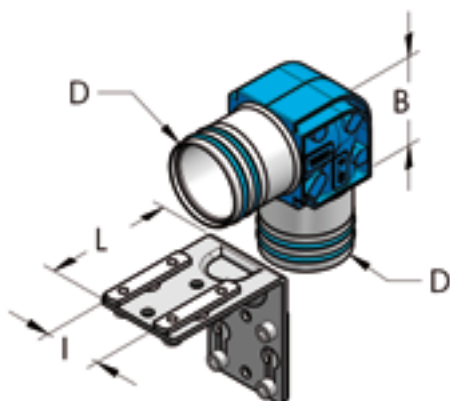
D	I in.	L in.	B in.	Part. no.	P oz.	n°	
25	1.42	2.56	7.87	003 000 021	14.82	10	
32	1.42	3.15	7.87	003 001 021	15.87	10	
50	1.42	5.12	7.87	003 002 021	27.51	10	
63	2.36	5.91	7.87	003 003 021	35.27	5	
80	2.36	7.09	7.87	003 004 021	49.38	5	
110	2.36	11.02	11.02	003 005 021	88.18	5	

## REDUCTION JOINT STRAIGHT, COMPLETE



D	d	L in.	I in.	Part. no.	P oz.	n°	
32	25	2.36	1.42	003 001 049	9.52	10	
50	32	3.15	1.42	003 002 049	21.90	10	
63	50	4.13	1.42	003 003 049	27.40	5	
80	63	4.92	2.36	003 004 049	51.85	5	
110	80	11.02	2.36	003 005 049	105.82	2	

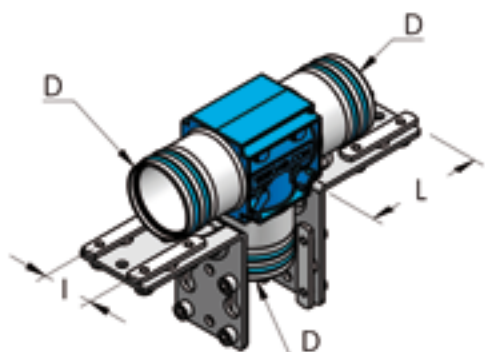
## L JOINT, COMPLETE



D	I in.	L in.	B in.	Part. no.	P oz.	n°	
25	1.42	2.36	1.18	003 000 022	8.46	20	
32	1.42	2.36	1.65	003 001 022	9.88	20	
50	1.42	3.15	2.36	003 002 022	18.70	10	
63	1.42/2.36	3.15	2.95	003 003 022	49.38	10	
80	2.36	3.15	3.35	003 004 022	91.78	10	
110	2.36	4.33	6.50	003 005 022	105.82	5	



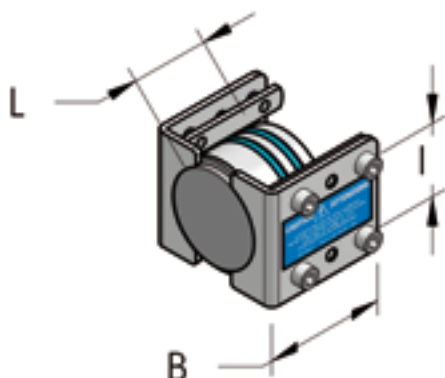
## T JOINT, COMPLETE



D	I in.	L in.	B in.	Part. no.	P oz.	n°	
25	1.42	2.36	1.18	003 000 024	14.11	10	
32	1.42	2.36	1.97	003 001 024	15.17	10	
50	1.42	3.15	2.36	003 002 024	28.92	10	
63	1.42-2.36	3.15	2.95	003 003 024	74.07	10	
80	2.36	3.15	3.35	003 004 024	123.46	5	
110/80	2.36	4.33	9.06	003 005 023	137.57	2	
110	2.36	4.33	9.06	003 005 024	141.09	2	

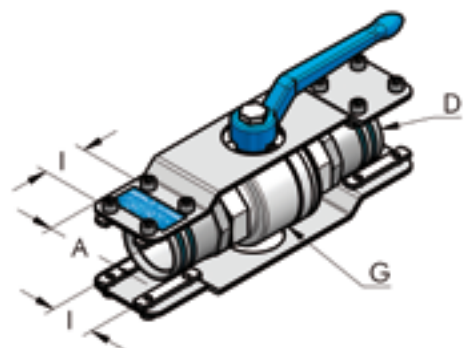


## CLOSED TERMINAL, COMPLETE

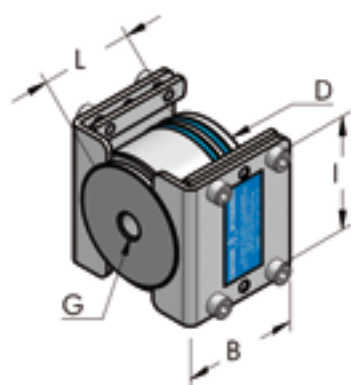


D	I in.	L in.	B in.	Part. no.	P oz.	n°	
25	1.42	0.79	2.36	003 000 026	4.23	20	
32	1.42	0.98	2.36	003 001 026	4.23	20	
50	1.42	1.58	2.36	003 002 026	15.17	10	
63	2.36	1.97	2.36	003 003 026	24.69	10	
80	2.36	2.60	2.36	003 004 026	47.62	5	
110	2.36	7.99	4.33	003 005 026	70.55	2	

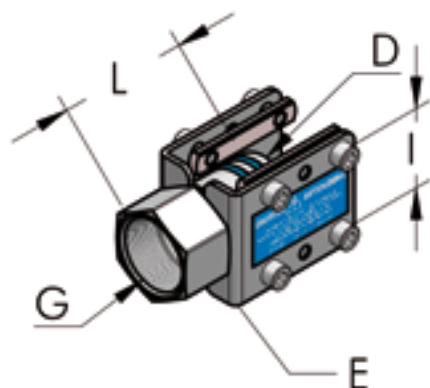


**BALL VALVE, COMPLETE**

D	G	I in.	A in.	Part. no.	P oz.	n°	
25	3/4" - BSP	1.42	1.97	003 000 046	22.22	10	
32	1" - BSP	1.42	1.97	003 001 046	39.51	10	
50	1-1/2" - BSP	1.42	2.36	003 002 046	79.31	10	
63	2" - BSP	1.42	2.36	003 003 046	118.52	10	
80	2-1/2" - BSP	2.36	2.83	003 004 046	186.95	5	
110	4" - BSP	2.36	3.07	003 005 046	444.45	2	

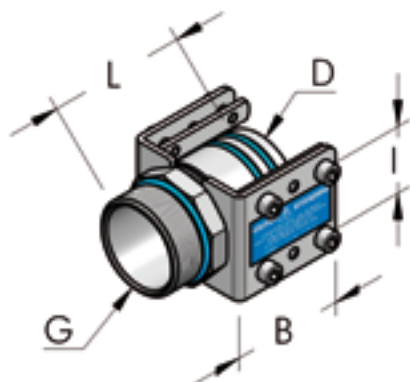
**TERMINAL WITH THREADED HOLE, COMPLETE**

D	G	L in.	B in.	I in.	Part. no.	P oz.	n°	
25	1/4" - NPT	0.87	2.36	1.42	003 000 425	4.02	20	
32	1/4" - NPT	0.98	2.36	1.42	003 001 425	4.59	20	
32	1/2" - NPT	0.98	2.36	1.42	003 001 431	4.51	20	
50	1/4" - NPT	1.57	2.36	1.42	003 002 425	15.52	20	
50	1/2" - NPT	1.57	2.36	1.42	003 002 429	15.17	20	
63	1/4" - NPT	1.97	2.36	2.36	003 003 425	23.14	20	
80	1/4" - NPT	2.60	3.15	2.36	003 004 425	45.86	20	
80	1/2" - NPT	2.60	3.15	2.36	003 004 429	45.86	20	
110	3/8" - NPT	7.99	4.33	2.36	003 005 425	70.55	20	

**FEMALE THREADED TERMINAL, COMPLETE**

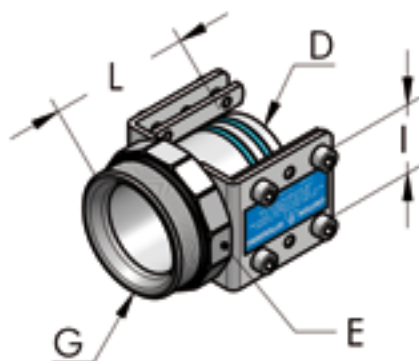
D	G	E in.	L in.	I in.	Part. no.	P oz.	n°	
25	3/4" - NPT	1.18	1.57	1.42	003 000 427	4.23	20	
32	1" - NPT	1.42	1.97	1.42	003 001 427	4.94	20	
50	1-1/2" - NPT	2.05	2.76	1.42	003 002 428	11.99	20	
63	1-1/2" - NPT	2.56	2.95	2.36	003 003 428	15.52	10	
80	1" - NPT	-	2.60	2.36	003 004 427	32.45	20	
80	2" - NPT	3.23	3.74	2.36	003 004 428	32.45	10	
110	2-1/2" - NPT	4.53	5.91	2.36	003 005 428	70.55	20	

## MALE THREADED TERMINAL, COMPLETE



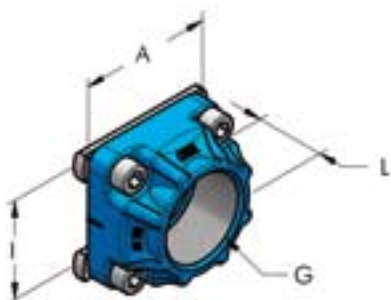
D	G	L in.	B in.	I in.	Part. no.	P oz.	n°	
25	3/4" - NPT	1.42	2.36	1.42	003 000 429	3.88	20	
32	1" - NPT	1.73	2.36	1.42	003 001 430	8.11	20	
50	1-1/2" - NPT	2.95	2.36	1.42	003 002 430	11.64	20	
63	2" - NPT	3.15	2.36	2.36	003 003 430	15.17	10	
80	2-1/2" - NPT	4.02	3.15	2.36	003 004 430	22.93	10	

## MALE THREADED TERMINAL, COMPLETE



D	G	L in.	E in.	I in.	Part. no.	P oz.	n°	
25	1" - NPT	1.57	1.42	1.42	003 000 430	4.59	20	
32	1-1/4" - NPT	2.05	1.97	1.42	003 001 429	6.70	20	
50	2" - NPT	2.95	2.56	1.42	003 002 431	15.52	20	
63	2-1/2" - NPT	3.54	3.23	2.36	003 003 431	23.28	10	
80	3" - NPT	4.72	3.54	2.36	003 004 431	29.28	10	
110	4" - NPT	5.91	4.53	2.36	003 005 431	52.91	20	

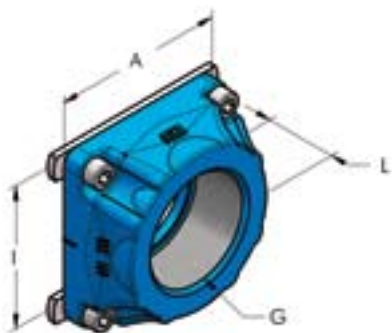
## FEMALE OUTLET PLATE, COMPLETE



I in.	G	A in.	L in.	Part. no.	P oz.	n°	
1.42	1/8" - NPT	1.89	0.39	003 001 432	2.82	20	
1.42	1/4" - NPT	1.89	0.39	003 001 433	2.82	20	
1.42	3/8" - NPT	1.89	0.39	003 001 434	2.82	20	
1.42	1/2" - NPT	1.97	0.98	003 002 433	3.88	20	
1.42	3/4" - NPT	1.97	0.98	003 002 434	3.70	20	
1.42	1" - NPT	1.97	0.98	003 002 435	3.17	20	

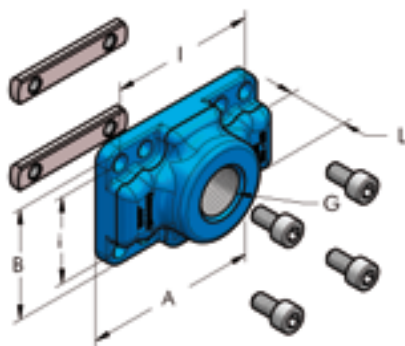


## FEMALE OUTLET PLATE, COMPLETE



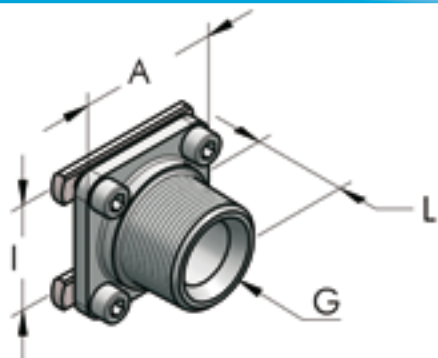
I in.	G	A in.	L in.	Part. no.	P oz.	n°	
2.36	1/2" - NPT	2.83	1.18	003 003 433	8.82	10	
2.36	3/4" - NPT	2.83	1.18	003 003 434	7.76	20	
2.36	1" - NPT	2.83	1.18	003 003 435	7.05	10	
2.36	1-1/2" - NPT	2.83	1.18	003 003 436	5.30	10	
2.36	1-1/4" - NPT	2.83	1.18	003 003 438	6.17	10	

## MODULAR OUTLET PLATE



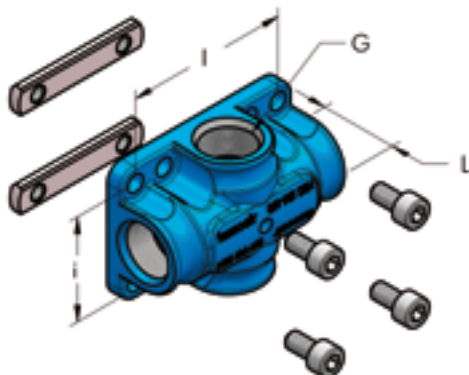
I in.	i in.	G	A in.	B in.	L in.	Part. no.	P oz.	n°	
2.36	1.42	1/8" - NPT	2.83	1.89	0.98	003 360 430	4.94	10	
2.36	1.42	1/4" - NPT	2.83	1.89	0.98	003 360 431	4.83	10	
2.36	1.42	3/8" - NPT	2.83	1.89	0.98	003 360 432	4.69	10	
2.36	1.42	1/2" - NPT	2.83	1.89	0.98	003 360 433	4.55	10	
2.36	1.42	3/4" - NPT	2.83	1.89	0.98	003 360 434	4.41	10	
2.36	1.42	1" - NPT	2.83	1.89	0.98	003 360 435	4.23	10	

## MALE OUTLET PLATE, COMPLETE



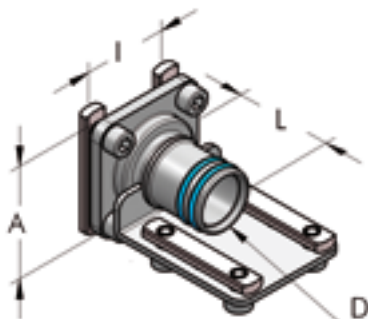
I in.	G	A in.	L in.	Part. no.	P oz.	n°	
1.42	1" - NPT	1.89	1.42	003 002 436	4.23	20	
2.36	2" - NPT	2.76	1.93	003 004 436	21.16	10	

## FEMALE MULTIPLE OUTLET PLATE, COMPLETE



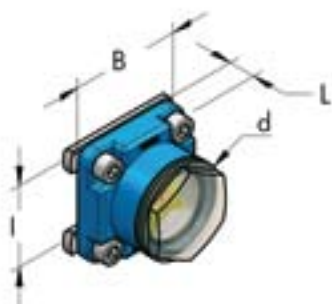
I in.	i in.	Holes	G	L in.	Part. no.	P oz.	n°	
1.42	1.42	2	1/4" - NPT	0.94	003 001 436	4.23	20	
1.42	1.42	2	3/8" - NPT	0.94	003 001 437	4.06	20	
1.42	1.42	4	1/4" - NPT	0.94	003 001 438	3.88	20	
1.42	1.42	4	3/8" - NPT	0.94	003 001 439	3.53	20	
2.36	1.42	4	1/4" - NPT	1.18	003 360 454	6.70	10	
2.36	1.42	4	3/8" - NPT	1.18	003 360 456	6.17	10	
2.36	1.42	4	1/2" - NPT	1.18	003 360 458	5.29	10	
2.36	1.42	2	1/2" - NPT	1.18	003 360 459	5.64	10	

## REDUCTION PLATE, COMPLETE



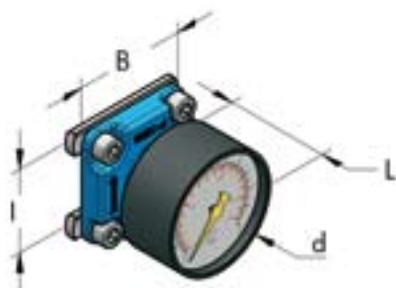
D	I in.	A in.	L in.	Part. no.	P oz.	n°	
25	1.42	1.89	1.57	003 000 037	6.70	20	
32	1.42	1.89	1.73	003 002 037	7.05	20	
50	2.36	2.76	2.36	003 003 037	18.70	10	
63	2.36	2.76	2.83	003 004 037	21.52	10	

## CONDENSATE LEVEL SITE GLASS



I in.	d in.	L in.	B in.	Part. no.	P oz.	n°	
1.42	1.57	0.39	1.89	003 001 044	3.53	20	
2.36	1.57	0.47	2.83	003 003 044	6.35	10	

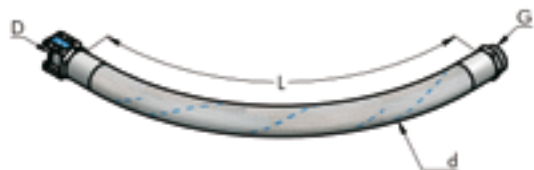
## PRESSURE GAUGE, COMPLETE



I in.	d in.	L in.	B in.	Part. no.	P oz.	n°	
1.42	1.98	1.77	1.39	003 001 048	5.08	10	
2.36	1.98	2.17	2.83	003 003 048	7.23	10	

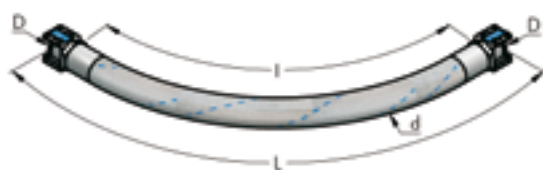


## FLEXIBLE PIPE FOR CONNECTION TO COMPRESSOR



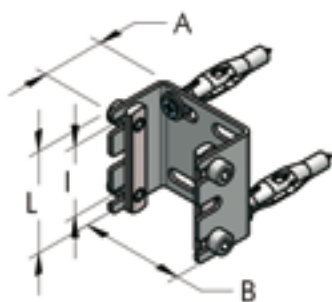
D	G	L in.	d in.	Part. no.	P oz.	n°	
25	1" - NPT	39,37	1,46	003 000 458	59,97	20	
32	1"1/4 - NPT	39,37	1,73	003 001 458	77,60	20	
50	2" - NPT	39,37	2,56	003 002 458	141,10	20	
63	2"1/2 - NPT	51,18	3,03	003 003 458	165,79	20	
80	3" - NPT	62,99	3,54	003 004 458	204,59	20	

## FLEXIBLE JOINT FOR HBS TO HBS CONNECTION



D	d in.	L in.	I in.	Part. no.	P oz.	n°	
25	1.46	39.37	41.34	003 000 059	67.02	10	
32	1.73	39.37	42.52	003 001 059	84.66	10	
50	2.53	39.37	43.30	003 002 059	151.68	10	
63	3.03	51.18	57.09	003 003 059	176.37	10	
80	3.54	63.00	70.87	003 004 059	224.23	10	

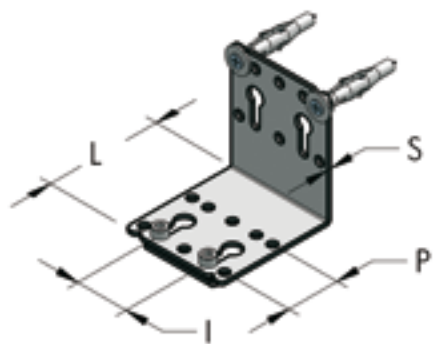
## U BRACKET, COMPLETE



I in.	B in.	L in.	A in.	Part. no.	P oz.	n°	
1.42	1.97	2.05	1.18	003 000 040	4.94	20	

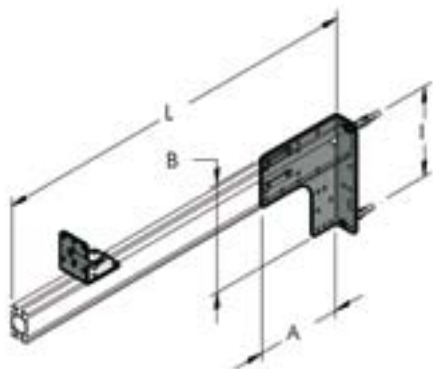
For HBS 25 Only

## L PLATE, COMPLETE



I in.	P in.	L in.	S in.	Part. no.	P oz.	n°	
1.42	1.42	2.36	0.08	003 001 040	3.53	20	
1.42-2.36	1.42	3.15	0.12	003 003 040	9.17	20	
1.42-2.36	1.42-2.36	5.51	0.14	003 004 040	15.17	20	

## SUPPORT BRACKET, COMPLETE



A in.	B in.	I in.	L in.	Part. no.	P oz.	n°	
5.12	6.69	5.51	23.62	003 001 070	45.86	10	
5.12	6.69	5.51	*	003 001 071	12.70	10	

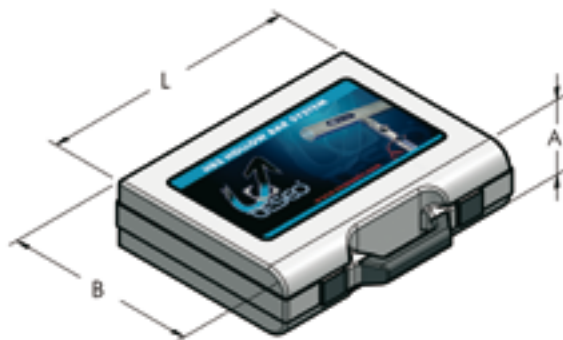
\*without bar

## ADHESIVE COLOR STICKERS

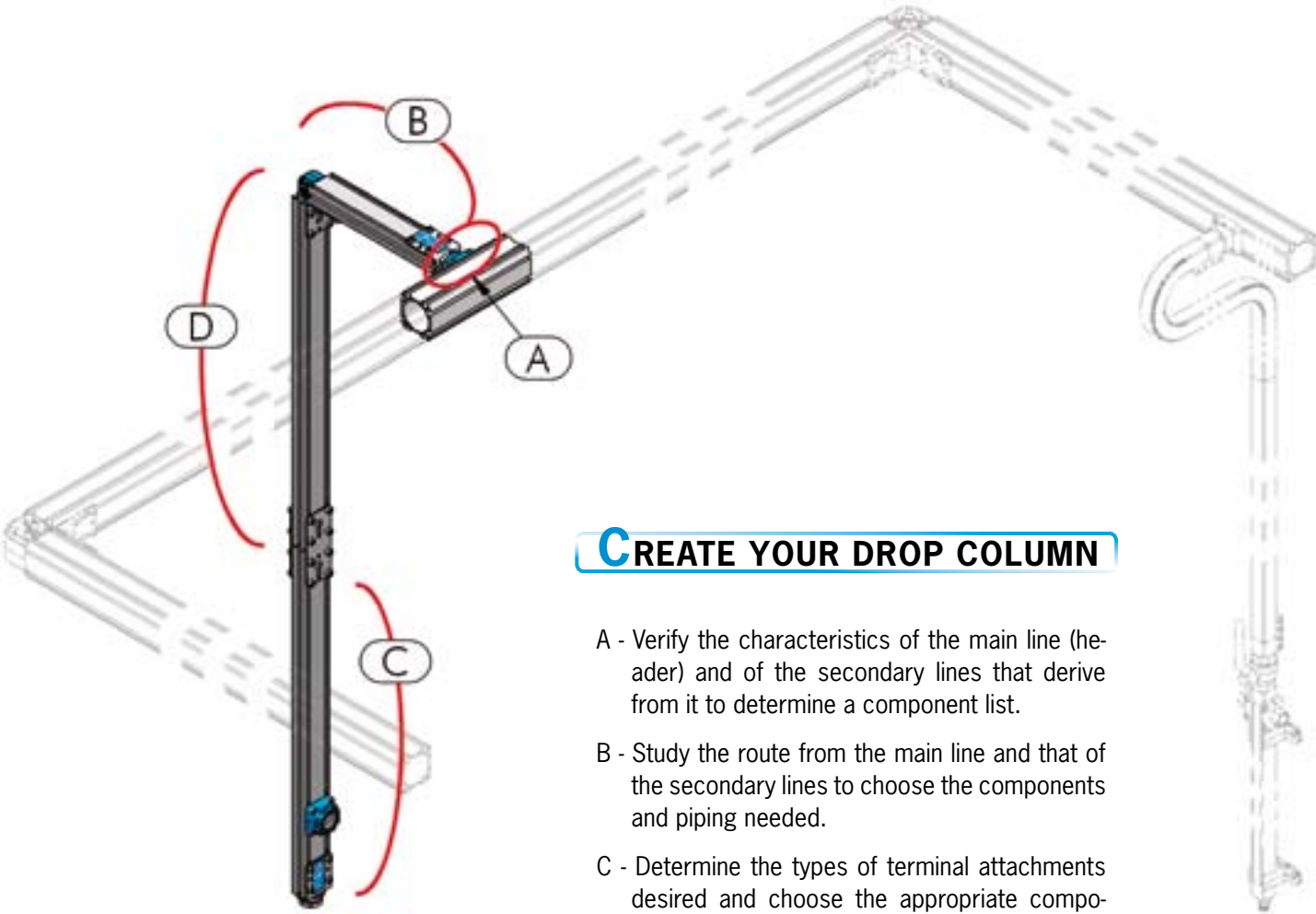


L in.	Color	Part. no.	P oz.	n°	
12.20	Blue RAL 5015	104 025 150	1.02	11	
12.20	Brown RAL 8003	104 028 316	1.02	11	
12.20	Grey RAL 7000	104 028 317	1.02	11	
12.20	Red RAL 3020	104 028 318	1.02	11	
12.20	Yellow RAL 1028	104 028 319	1.02	11	
12.20	Green RAL 6029	104 028 315	1.02	11	

## DEMO SUIT-CASE



A in.	B in.	L in.	Configuration	Part. no.	P oz.	n°	
5.12	14.96	19.29	22 HBS parts	003 001 090	158.73	1	

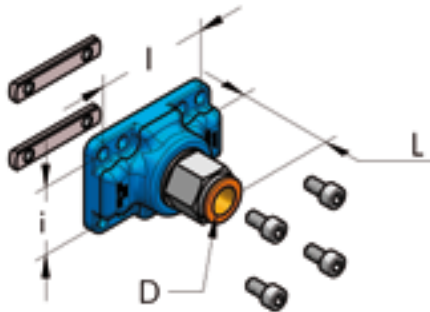


CREATE YOUR DROP COLUMN

- A - Verify the characteristics of the main line (header) and of the secondary lines that derive from it to determine a component list.
- B - Study the route from the main line and that of the secondary lines to choose the components and piping needed.
- C - Determine the types of terminal attachments desired and choose the appropriate components.
- D - Verify the piping route from B to C and choose the quantity of pipe and components needed.

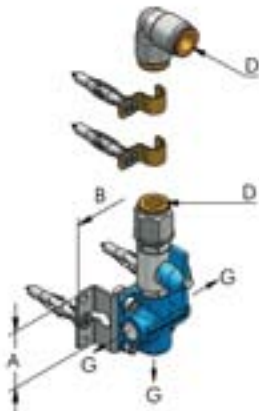
A	HBS pages 24-25-26-30
	AP page 48
B	HBS pages 20-22-27
	AP pages 40-41-44-49-50
C	HBS pages 20-21-22-23-24-25-26-27-30
	AP pages 41-42-43-44-45-49
D	HBS pages 20-21-30
	AP pages 40-41

### REDUCTION PLATE FOR D14 COLUMN, COMPLETE



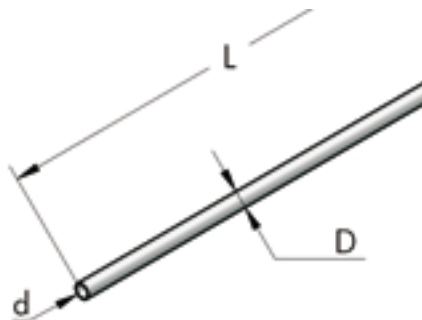
I in.	i in.	D in.	L in.	Part. no.	P oz.	n°	
1.42	1.42	0.55	1.97	003 001 134	5.64	20	
2.36	2.36	0.55	2.17	003 003 134	10.58	20	
2.36	1.42	0.55	2.17	003 360 134	6.00	20	

### 3 OUTLET BLOCK FOR COLUMN DROP D14, COMPLETE



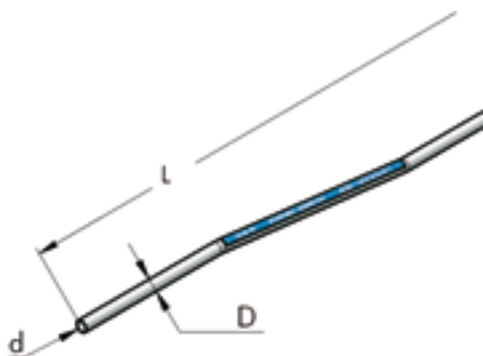
D in.	G in.	A in.	B in.	Part. no.	P oz.	n°	
0.55	3/8" - NPT	1.89	3.35	003 001 068	17.64	20	
0.55	1/2" - NPT	1.89	3.35	003 002 068	18.34	20	

### STRAIGHT PIPE FOR COLUMN DROP D14



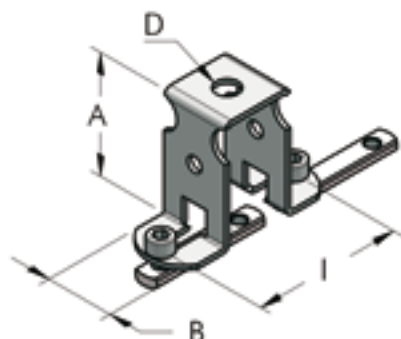
D in.	d in.	L ft.	Part. no.	P oz.	n°	
0.55	0.47	3.28	425 014 100	3.74	20	
0.55	0.47	16.40	425 014 500	18.70	20	

### BENT PIPE FOR COLUMN DROP D14



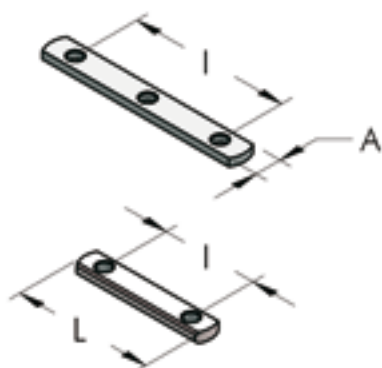
D in.	d in.	L ft.	Offset in.	Part. no.	P oz.	n°	
0.55	0.47	16.40	1.18	804 014 500	18.87	20	

## HANGING BRACKET, COMPLETE



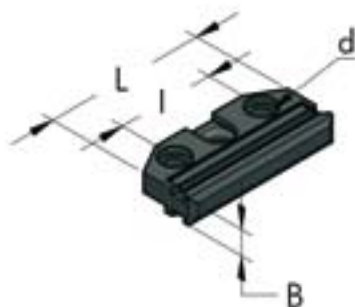
I in.	A in.	B in.	D in.	Part. no.	P oz.	n°	
1.42-2.36	1.97	1.10	0.39	003 001 074	3.53	20	

## SMALL PLATE WITH M6 HOLES



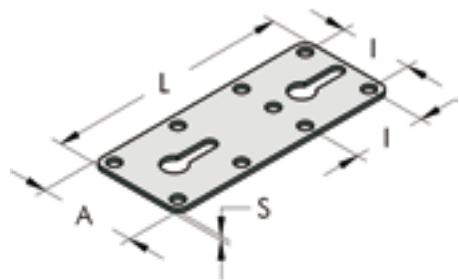
I in.	A in.	L in.	Holes no.	Part. no.	P oz.	n°	
1.42	0.39	2.05	2	725 010 052	0.42	100	
2.36	0.39	3.15	2	725 010 080	0.81	50	
2.36	0.39	3.07	3	725 010 081	0.78	50	

## INSULATING BLOCK



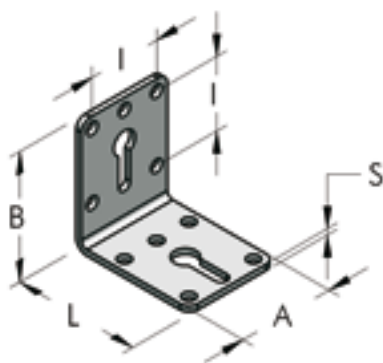
d in.	L in.	I in.	B in.	Part. no.	P oz.	n°	
0.24	2.36	1.42	0.39	003 001 075	0.92	20	

## STRAIGHT PLATE, IN GALVANIZED STEEL



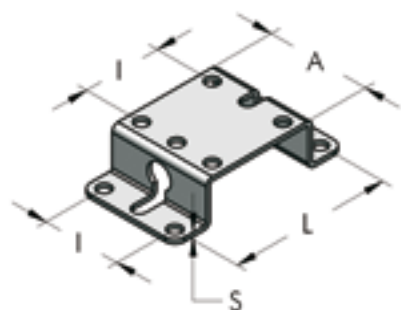
A in.	L in.	I in.	S in.	Part. no.	P oz.	n°	
1.89	4.72	1.42	0.08	711 048 120	2.82	20	
2.13	6.30	1.42	0.10	711 056 160	5.15	20	
2.83	6.30	1.42-2.36	0.10	711 072 160	7.09	20	
3.07	9.45	1.42-2.36	0.14	711 078 230	14.89	20	

## L PLATE, IN GALVANIZED STEEL



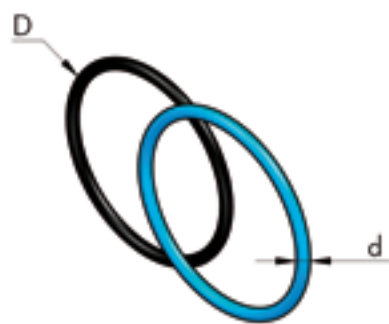
A in.	B in.	L in.	I in.	S in.	Part. no.	P oz.	n°	
1.89	2.36	2.36	1.42	0.08	721 048 060	2.72	20	
2.13	3.15	3.15	1.42	0.10	732 056 080	5.22	20	
2.83	3.15	3.15	1.42-2.36	0.12	732 072 090	8.64	20	
3.07	3.70	5.51	1.42-2.36	0.14	732 078 140	14.81	20	

## FIXING BRACKET, IN GALVANIZED STEEL



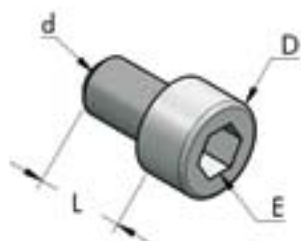
A in.	L in.	I in.	S in.	Part. no.	P oz.	n°	
1.89	2.83	1.42	0.08	735 048 120	2.75	20	

## O-RING SEAL IN NBR70



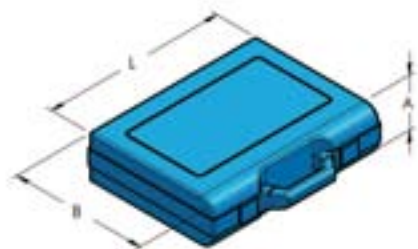
D in.	d in.	Cod. AS-BS	Part. no.	P oz.	n°	
0.98	0.07	019	271 020 002	0.01	100	
0.98	0.08	0210-02	271 021 002	0.02	100	
1.26	0.10	121	271 027 003	0.02	100	
1.26	0.12	0260-03	271 026 003	0.03	100	
1.97	0.10	132	271 044 003	0.04	100	
1.97	0.12	0440-03	271 043 003	0.05	100	
2.48	0.10	140	271 057 003	0.04	100	
2.48	0.12	0560-03	271 056 003	0.05	100	
3.15	0.10	150	271 073 003	0.05	100	
4.33	0.14	241	271 101 004	0.14	100	

## ALLEN SCREW, IN GALVANIZED STEEL



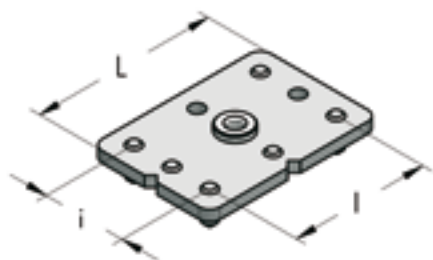
d in.	L in.	D in.	E in.	Part. no.	P oz.	n°	
M6	0.31	0.39	0.20	212 006 008	0.15	100	
M6	0.39	0.39	0.20	212 006 010	0.16	100	
M6	0.47	0.39	0.20	212 006 012	0.17	100	
M6	0.55	0.39	0.20	212 006 014	0.18	100	
M6	0.71	0.39	0.20	212 006 018	0.20	100	

## BASIC TOOLS BOX



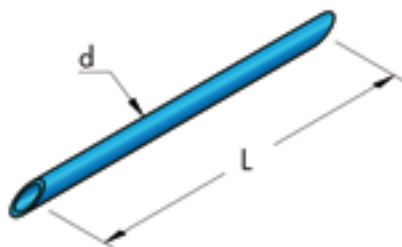
A in.	B in.	L in.	Part. no.	P oz.	n°	
1.97	7.48	9.45	003 001 092	24.69	1	

## DRILLING JIG



l in.	i in.	L in.	Part. no.	P oz.	n°	
2.36	1.42	3.15	911 036 060	6.70	1	

## TUBES TO HOLD SMALL PLATE IN POSITION



d. in.	L in.	Mat	Part. no.	P oz.	n°	
0.03	5.90	PVC	421 006 015	0.18	10	

## VASELINE GREASE



Part. no.	P oz.	n°	
111 003 100	35.27	20	
111 003 010	3.52	20	

## PTFE BLUE GREASE



Part. no.	P oz.	n°	
114 003 005	1.76	20	



## COMPRESSED AIR, GAS AND FLUIDS PIPING SYSTEMS



## MODULAR MANIFOLDS INTEGRATED ON MACHINES



## ASSEMBLY AND PRODUCTION LINES







# AP MODULAR PIPING SYSTEM

This patented piping system is the result of years of research and our extensive installation experience encompassing literally thousands of aluminum distribution systems all over the world.

The AP system is suitable for compressed air main lines (headers), branch distribution lines or for point of use air drops.

## TESEO AP Advantages:

- Fast & Easy to assemble: no special tools or skills are required
- Its simple profile is symmetric and can be used in any orientation.
- Available with a wide range of accessories which are composed of simple modular elements compatible both with the present HBS system and steel pipes with "Gas" BSP or NPT threads.
- Simpler, easy to work with profile means that AP is more convenient than a traditional piping system.

## EASY TO ASSEMBLE

### DEBURRING



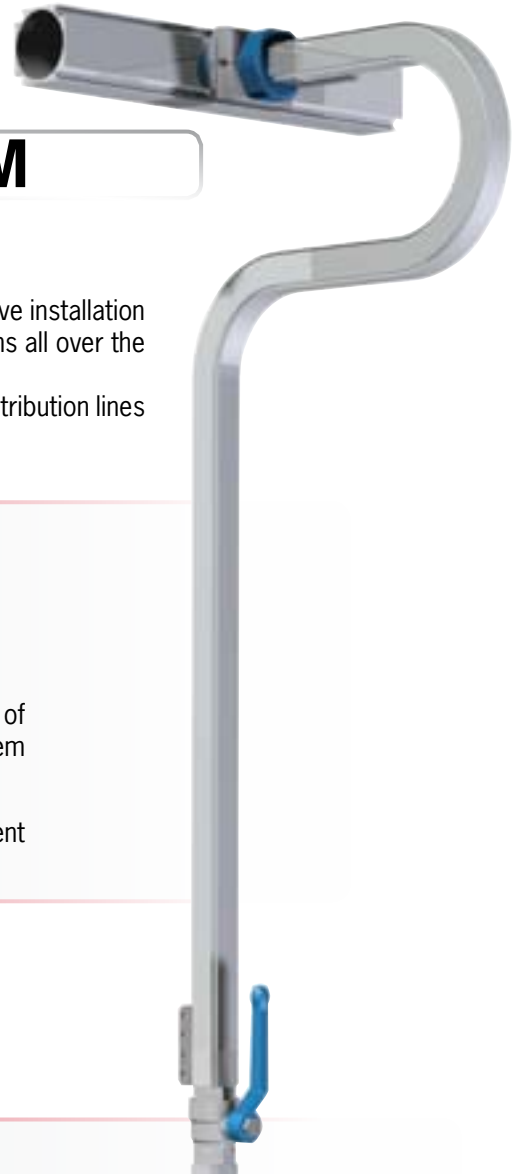
### MOUNTING



### ASSEMBLING



### TIGHTENING



## BLUE DESIGN

The newest generation of TESEO fittings incorporates the latest advancement in sealing technology. The new blue O'ring design is the result of our continuous research into Energy Saving alternatives.

To increase the already impressive sealing characteristics, we evaluated every aspect of our sealing surfaces including the machining of our components, the composition and hardness of our O'ring material as well as the compression of the O'ring and determined that a couple of minor adjustments would enhance the energy-saving characteristics of our systems.

The high tech Blue O'rings are the most visible indication of our design work and mean that the spirit of continuous improvement and innovation for which TESEO is known remains a primary driving throughout our organization and distribution network.

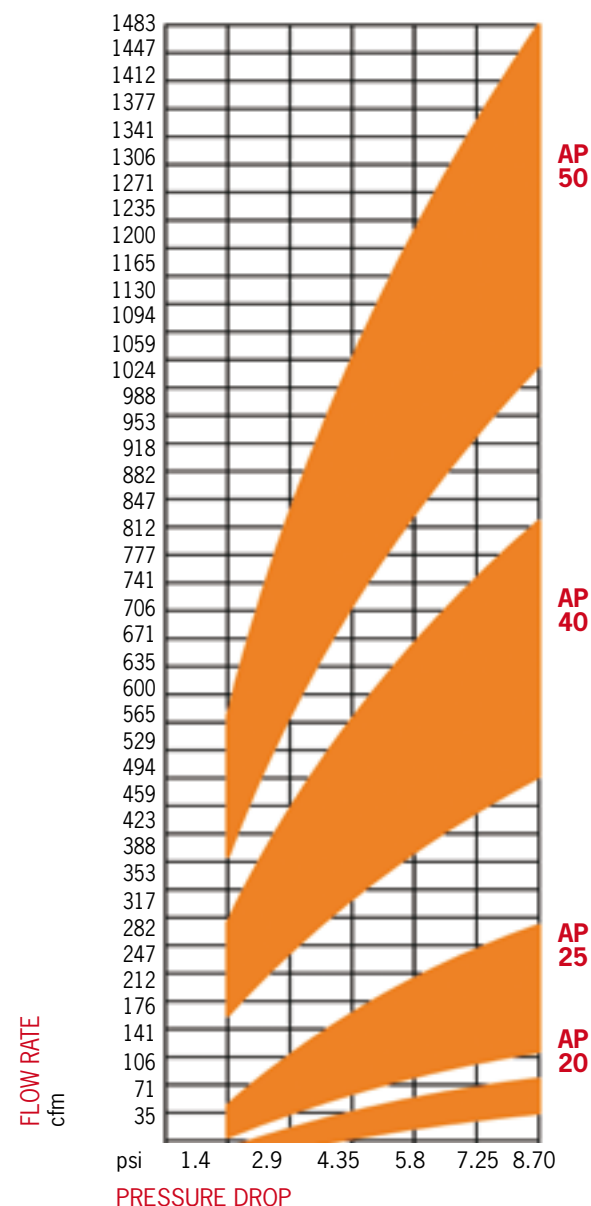


**Selection diagram for AP diameter by compressor power consumption**

Compressor power	AP diameter	US	Indicative flow rate
hp	D	D (inch)	cfm
10	20	3/4"	53
20	25	1"	71
60	40	1-1/2"	265
85	50	2"	424



performance diagram of flow rates and related pressure drops for a 30m (97.50 ft) length of pipe with ambient conditions of +20°C (94°F) & 1013 mbar (14.7 PSIA).  
Data provided by the POLYTECHNICINSTITUTE OF TURIN.  
See online software (page 9).



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

## TECHNICAL CHARACTERISTICS

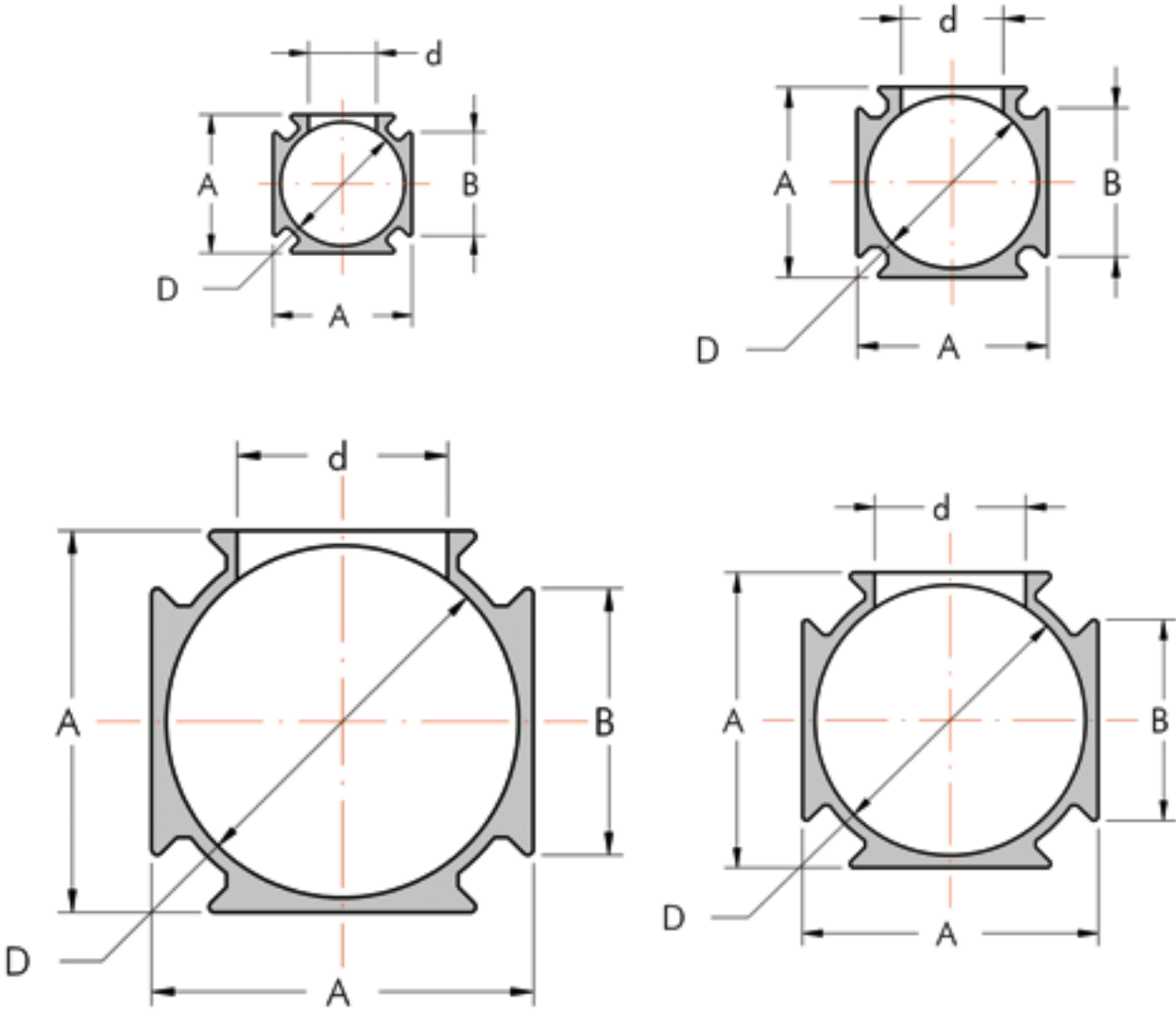
Extruded Aluminum.....	<b>Alloy EN AW 6060 UNI EN 573-3:1996</b>
International designations.....	<b>ANSI 6060 - DIN 1748/1: AlMnSi 0,5 BS 6060</b>
Chemical composition.....	<b>Si: 0.45% - Mg: 0.45% - Fe: 0.3%</b>
Heat treatment.....	<b>T5 or T6</b>
Surface treatment (upon request) .....	<b>Chemical silver anodization</b>
Specific weight, density .....	<b>lb/in<sup>3</sup> 0.099</b>
Electric conductivity .....	<b>% IACS 53</b>
Thermal conductivity.....	<b>W/m·K 200</b>
Specific heat.....	<b>J/Kg·K 96</b>
Coefficient of expansion.....	<b>in./ft ·°F 5.2·10<sup>-4</sup></b>
Tensile strength.....	<b>lb/in.<sup>2</sup> 34080</b>
Yield strength.....	<b>lb/in.<sup>2</sup> 28400</b>
Modulus of elasticity.....	<b>lb/in.<sup>2</sup> 9514000</b>
Brinell hardness .....	<b>HB 70-80</b>
Melting range .....	<b>°F 1112-1202</b>
O-ring material .....	<b>NBR 70</b>
Operating temperature .....	<b>°F -68/+248</b>
Screw material .....	<b>Steel 8.8</b>
Screw driving torque.....	<b>90-120 Inch-Lbs</b>
M6 Screw driving torque.....	<b>14 N·m (120 Inch-Lbs) ± 10%</b>
Outlet thread.....	<b>NPT</b>
Terminal thread .....	<b>NPT</b>
Max operating pressure .....	<b>220 psi</b>
Joint failure test pressure.....	<b>1160 psi</b>

### Compatible Fluids

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

\*For further information, please contact TESEO or your local representative.

PROFILES SECTION OVER VIEW



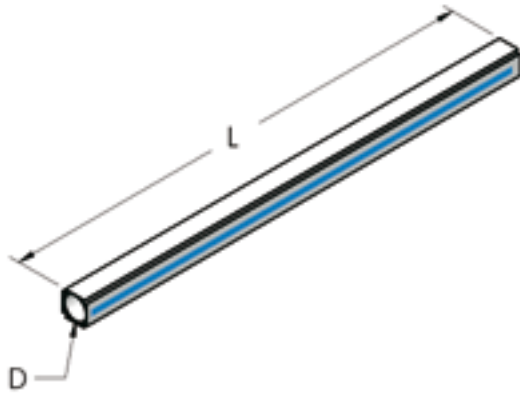
AP

SIZE DIMENSIONS

AP	US	Dimensions			Max hole	Weight	Moment of inertia		Inner volume
D	D in.	A in.	B in.	d in.	P oz./ft.	Jx in. <sup>4</sup>	Jy in. <sup>4</sup>	V gal/ft.	
20	3/4"	0.88	0.65	0.43	39.11	0.02	0.02	0.025	
25	1"	1.10	0.85	0.59	64.10	0.05	0.05	0.04	
40	1-1/2"	1.77	1.22	0.87	127.11	0.26	0.26	0.11	
50	2"	2.17	1.50	1.18	183.61	0.57	0.57	0.16	

POW

## NATURAL ALUMINUM EXTRUDED PIPE



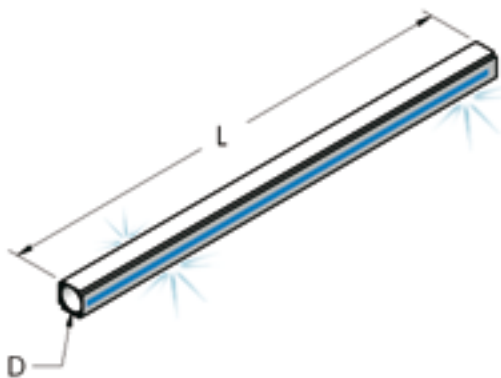
D	L ft.	Part. no.	P oz.	n°	
20	16.4	800 020 500	67.02	100	
25	16.4	800 025 500	105.82	64	
40	16.4	800 040 500	204.58	36	
50	16.4	800 050 500	296	16	



D	L ft.	Part. no.	P oz.	n°	
20	8.2	800 020 250	33.51	100	
25	8.2	800 025 250	52.91	64	
40	8.2	800 040 250	102	36	
50	8.2	800 050 250	148	16	

POW

## ANODIZED ALUMINUM EXTRUDED PIPE



D	L ft.	Part. no.	P oz.	n°	
20	16.4	801 020 500	67.02	100	
25	16.4	801 025 500	105.82	64	
40	16.4	801 040 500	204.58	36	
50	16.4	801 050 500	296	16	

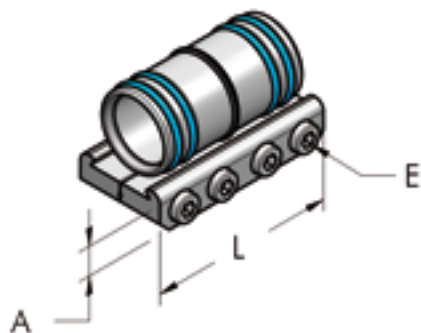


D	L ft.	Part. no.	P oz.	n°	
20	8.2	801 020 250	33.51	100	
25	8.2	801 025 250	52.91	64	
40	8.2	801 040 250	102	36	
50	8.2	801 050 250	148	16	



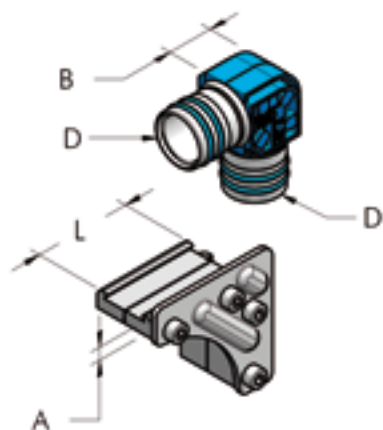
## STRAIGHT JOINT, COMPLETE

POW



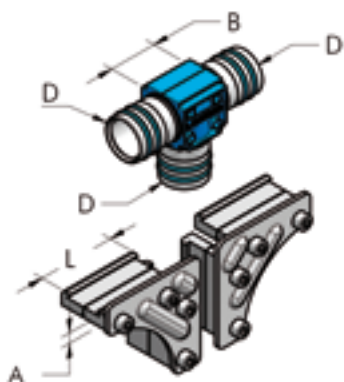
D	L in.	A in.	E in.	Part. no.	P oz.	n°	
20	1.81	0.35	0.16	006 020 020	1.37	10	
25	2.36	0.39	0.16	006 025 020	3.03	10	
40	3.15	0.47	0.2	006 040 020	7.05	10	
50	5.90	0.47	0.2	006 050 020	13.93	10	

## L JOINT, COMPLETE



D	L in.	A in.	B in.	Part. no.	P oz.	n°	
20	1.81	0.35	0.86	006 020 022	3.98	10	
25	1.81	0.39	1.18	006 025 022	5.99	10	
40	3.15	0.47	3.93	006 040 022	28.21	10	
50	5.90	0.47	5.90	006 050 022	56.43	10	

## T JOINT, COMPLETE

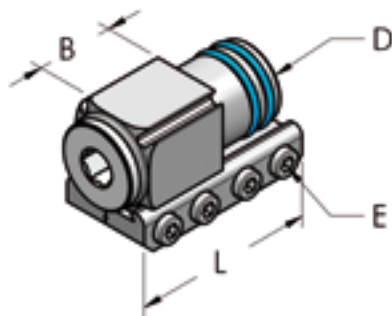


D	L in.	A in.	B in.	Part. no.	P oz.	n°	
20	1.81	0.35	0.94	006 020 024	7.26	10	
25	1.81	0.39	1.18	006 025 024	11.64	10	
40	3.15	0.47	6.3	006 040 024	38.09	10	
50	5.90	0.47	9.6	006 050 024	84.65	10	



**CLOSED TERMINAL, COMPLETE**

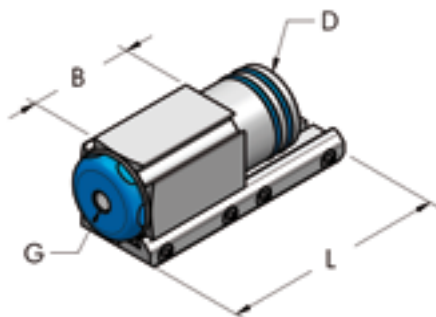
POW



D	L in.	E in.	B in.	Part. no.	P oz.	n°	
20	1.81	0.16	0.94	006 020 026	2.47	10	
25	2.36	0.16	1.10	006 025 026	4.41	10	
40	3.15	0.2	1.37	006 040 026	10.58	10	
50	5.90	0.2	2.95	006 050 026	25.04	10	

**TERMINAL WITH THREADED HOLE, COMPLETE**

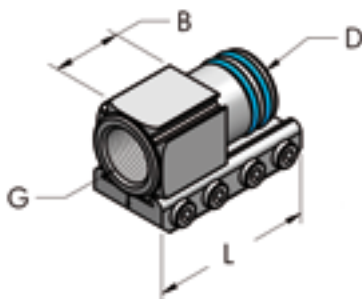
POW



D	G	L in.	B in.	Part. no.	P oz.	n°	
40	1/8" - NPT	3.15	1.38	006 040 415	10.41	10	
40	3/8" - NPT	3.15	1.38	006 040 416	10.23	10	
40	1/2" - NPT	3.15	1.38	006 040 417	9.88	10	
40	3/4" - NPT	3.15	1.38	006 040 418	9.52	10	
40	1/4" - NPT	3.15	1.38	006 040 425	9.17	10	
50	1/8" - NPT	5.91	2.95	006 050 415	24.87	10	
50	1/2" - NPT	5.91	2.95	006 050 417	24.34	10	
50	3/4" - NPT	5.91	2.95	006 050 418	23.63	10	
50	1" - NPT	5.91	2.95	006 050 419	23.10	10	
50	1/4" - NPT	5.91	2.95	006 050 425	24.69	10	

**FEMALE THREADED TERMINAL, COMPLETE**

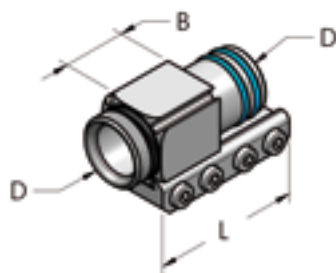
POW



D	G	L in.	B in.	Part. no.	P oz.	n°	
20	3/8" - NPT	1.81	0.94	006 020 428	1.90	10	
25	1/2" - NPT	2.36	1.10	006 025 428	3.70	10	
40	1" - NPT	3.15	1.38	006 040 427	9.17	10	
50	1-1/4" - NPT	5.91	2.95	006 050 427	21.69	10	
50	1-1/2" - NPT	5.91	2.95	006 050 428	19.93	10	

**MALE THREADED TERMINAL, COMPLETE**

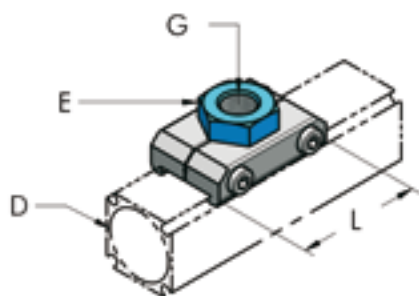
POW



D	G	L in.	B in.	Part. no.	P oz.	n°	
20	1/2" - NPT	1,81	0,94	006 020 430	2,01	10	
25	3/4" - NPT	2,36	1,10	006 025 430	3,88	10	
40	1-1/4" - NPT	3,15	1,38	006 040 429	8,64	10	
50	1-1/2" - NPT	5,91	2,95	006 050 429	23,10	10	

**FEMALE OUTLET PLATE, COMPLETE**

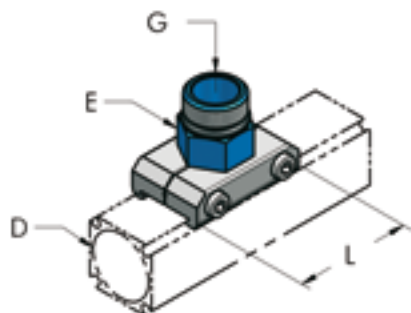
POW



D	G	L in.	E in.	Part. no.	P oz.	n°	
20	1/4" - NPT	1.81	0.87	006 020 433	1.27	10	
20	3/8" - NPT	1.81	0.87	006 020 434	1.41	10	
25	1/4" - NPT	1.81	0.87	006 025 433	1.31	10	
25	3/8" - NPT	1.81	0.87	006 025 434	1.62	10	
25	1/2" - NPT	1.81	1.18	006 025 435	1.94	10	
40	1/8" - NPT	2.76	1.42	006 040 432	5.22	10	
40	1/4" - NPT	2.76	1.42	006 040 433	4.94	10	
40	3/8" - NPT	2.76	1.42	006 040 434	4.76	10	
40	1/2" - NPT	2.76	1.42	006 040 435	4.59	10	
40	3/4" - NPT	2.76	1.42	006 040 436	4.23	10	
50	1/4" - NPT	2.91	1.97	006 050 433	6.88	10	
50	1/2" - NPT	2.91	1.97	006 050 434	6.70	10	
50	3/4" - NPT	2.91	1.97	006 050 435	7.58	10	
50	1" - NPT	2.91	1.97	006 050 436	6.88	10	

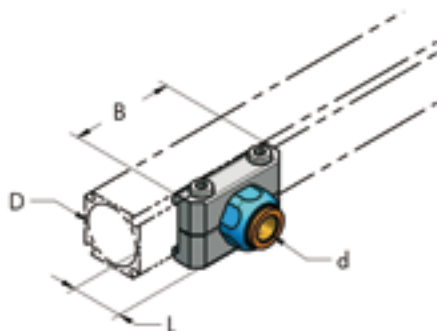
**MALE OUTLET PLATE, COMPLETE**

POW



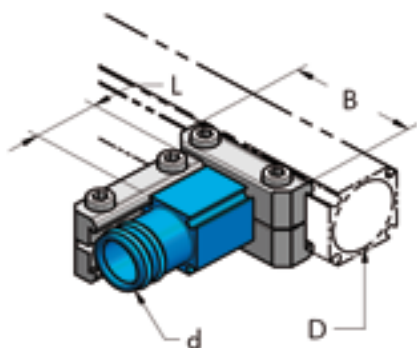
D	G	L in.	E in.	Part. no.	P oz.	n°	
20	3/8" - NPT	1.81	0.87	006 020 463	1.27	10	
25	1/2" - NPT	1.81	0.87	006 025 464	1.73	10	
40	1/2" - NPT	2.76	1.42	006 040 462	4.76	10	
40	3/4" - NPT	2.76	1.42	006 040 463	4.94	10	
40	1" - NPT	2.76	1.42	006 040 464	4.94	10	
50	3/4" - NPT	2.91	1.97	006 050 463	6.70	10	
50	1" - NPT	2.91	1.97	006 050 464	6.53	10	
50	1-1/4" - NPT	2.91	1.97	006 050 465	6.70	10	
50	1-1/2" - NPT	2.91	1.97	006 050 466	6.80	10	

## OUTLET PLATE WITH QUICKFIT, COMPLETE



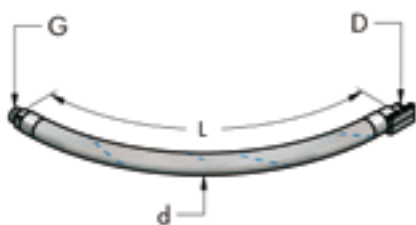
D	d. in.	B in.	L in.	Part. no.	P oz.	n°	
20	0.31	1.81	0.91	006 020 084	3.95	10	
20	0.39	1.81	1.02	006 020 085	6.70	10	
25	0.31	1.81	0.91	006 025 084	8.29	10	
25	0.39	1.81	0.91	006 025 085	8.68	10	
40	0.39	2.76	0.91	006 040 085	11.22	10	
40	0.47	2.76	1.02	006 040 086	13.05	10	

## REDUCTION PLATE, COMPLETE



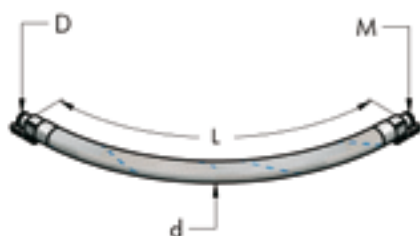
D	D	B in.	L in.	Part. no.	P oz.	n°	
25	20	1.81	0.94	006 020 039	3.95	10	
40	20	2.76	0.94	006 040 037	6.70	10	
40	25	2.76	1.10	006 040 038	8.29	10	
50	40	2.91	1.38	006 040 039	13.5	10	
50	20	2.91	1.38	006 050 038	11.22	10	
50	25	2.91	2.36	006 050 039	13.05	10	

## FLEXIBLE PIPE FOR CONNECTION TO COMPRESSOR FOR COMPRESSED AIR (220 PSI)

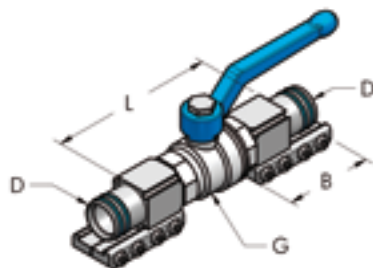


D	G	L in.	d in.	Part. no.	P oz.	n°	
20	1/2" - NPT	27.56	1.18	006 020 458	17.64	1	
25	3/4" - NPT	27.56	1.38	006 025 458	26.46	1	
40	1-1/4" - NPT	39.37	1.97	006 040 458	105.82	1	
50	2" - NPT	39.37	2.56	006 050 458	143.74	1	

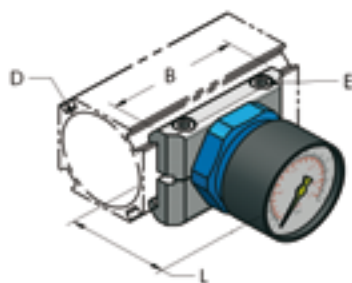
## FLEXIBLE JOINT FOR AP TO AP CONNECTION FOR COMPRESSED AIR (220 PSI)



D	M	L in.	d in.	Part. no.	P oz.	n°	
20	20	27.56	1.18	006 020 059	17.99	1	
25	25	27.56	1.38	006 025 059	29.28	1	
40	40	39.37	1.97	006 040 059	107.59	1	
50	50	39.37	2.56	006 050 059	151.68	1	

**BALL VALVE, COMPLETE**

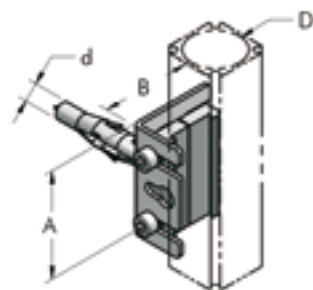
D	G	L in.	B in.	Part. no.	P oz.	n°	
20	1/2"	3.94	1.81	006 020 046	10.23	10	
25	3/4"	4.65	2.20	006 025 046	17.64	10	
40	1-1/4"	5.91	2.76	006 040 046	44.09	10	
50	1-1/2"	9.65	5.91	006 050 046	86.42	10	

**PRESSURE GAUGE, COMPLETE**

D	L in.	B in.	E in.	Part. no.	P oz.	n°	
20	2.28	1.81	0.16	006 020 048	2.47	10	
25	2.05	2.20	0.16	006 025 048	2.65	10	
40	2.28	2.76	0.20	006 040 048	6.14	10	
50	2.28	2.91	0.20	006 050 048	8.11	10	

**L PLATE, COMPLETE**

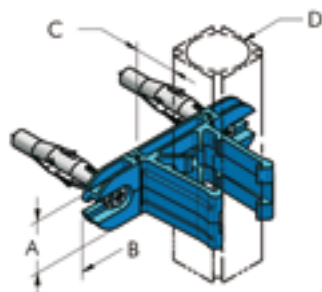
POW



D	d in.	A in.	B in.	Part. no.	P oz.	n°	
20	0.28	1.97	1.57	006 020 040	2.47	10	
25	0.28	1.97	1.57	006 025 040	2.65	10	
40	0.28	3.15	2.36	006 040 040	4.94	10	
50	0.28	3.15	2.36	006 050 040	5.64	10	

**SNAP CLAMP, COMPLETE**

POW

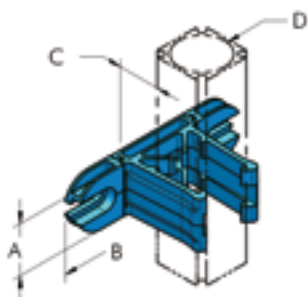


D	A in.	B in.	C in.	Part. no.	P oz.	n°	
20	0.79	2.76	0.79	006 020 041	0.60	10	
25	0.98	3.46	0.67	006 025 041	0.88	10	
40	1.57	5.31	1.69	006 040 041	6.17	10	
50	1.97	5.91	1.57	006 050 041	7.51	10	



## SNAP CLAMP

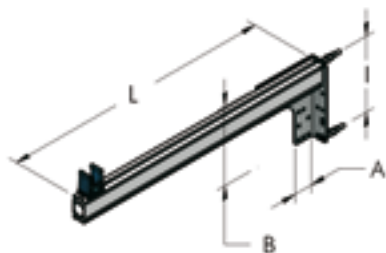
POW



D	A in.	B in.	C in.	Part. no.	P oz.	n°	
20	0.79	2.76	0.79	006 020 042	0.60	10	
25	0.98	3.46	0.67	006 025 042	0.88	10	
40	1.57	5.31	1.69	006 040 042	4.94	10	
50	1.97	5.91	1.57	006 050 042	6.14	10	

## SUPPORT BRACKET, COMPLETE

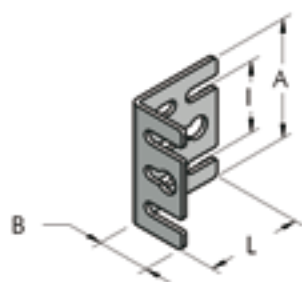
POW



A in.	B in.	L in.	I in.	Part. no.	P oz.	n°	
5.35	6.85	23.62	5.58	006 020 070	45.86	10	
5.35	6.85	23.62	5.58	006 025 070	45.86	10	
5.35	6.85	23.62	5.58	006 040 070	49.38	10	
5.35	6.85	23.62	5.58	006 050 070	51.15	10	

## L PLATE IN GALVANIZED STEEL

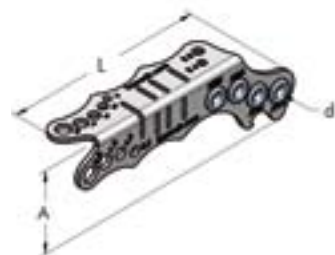
POW



A in.	B in.	I in.	L in.	Part. no.	P oz.	n°	
1.97	0.98	1.18	1.57	732 020 050	1.31	10	
2.60	1.38	1.97	1.85	732 066 080	2.12	10	

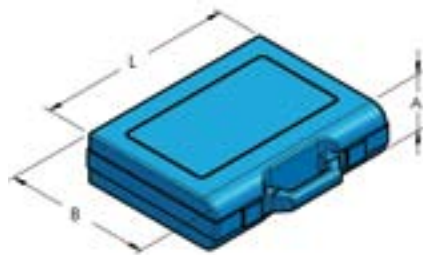
## DRILLING JIG AP

POW



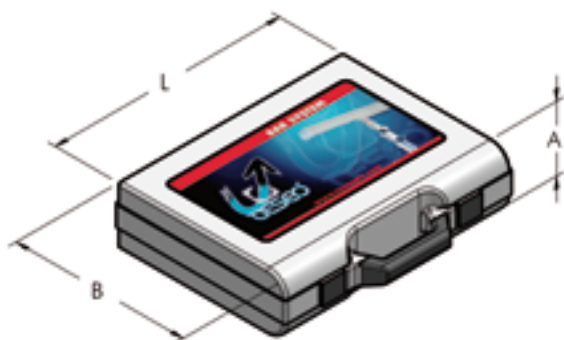
A in.	d in.	L in.	Part. no.	P oz.	n°	
1.77	0.24	5.35	911 020 050	3.17	1	

## BASIC TOOLS BOX



A in.	B in.	L in.	Part. no.	P oz.	n°	
1.97	7.48	9.45	006 020 092	21.16	1	

## DEMO SUIT-CASE



A in.	B in.	L in.	Part. no.	P oz.	n°	
3.15	13.39	17.32	006 020 090	130.51	1	

## VASELINE GREASE

POW



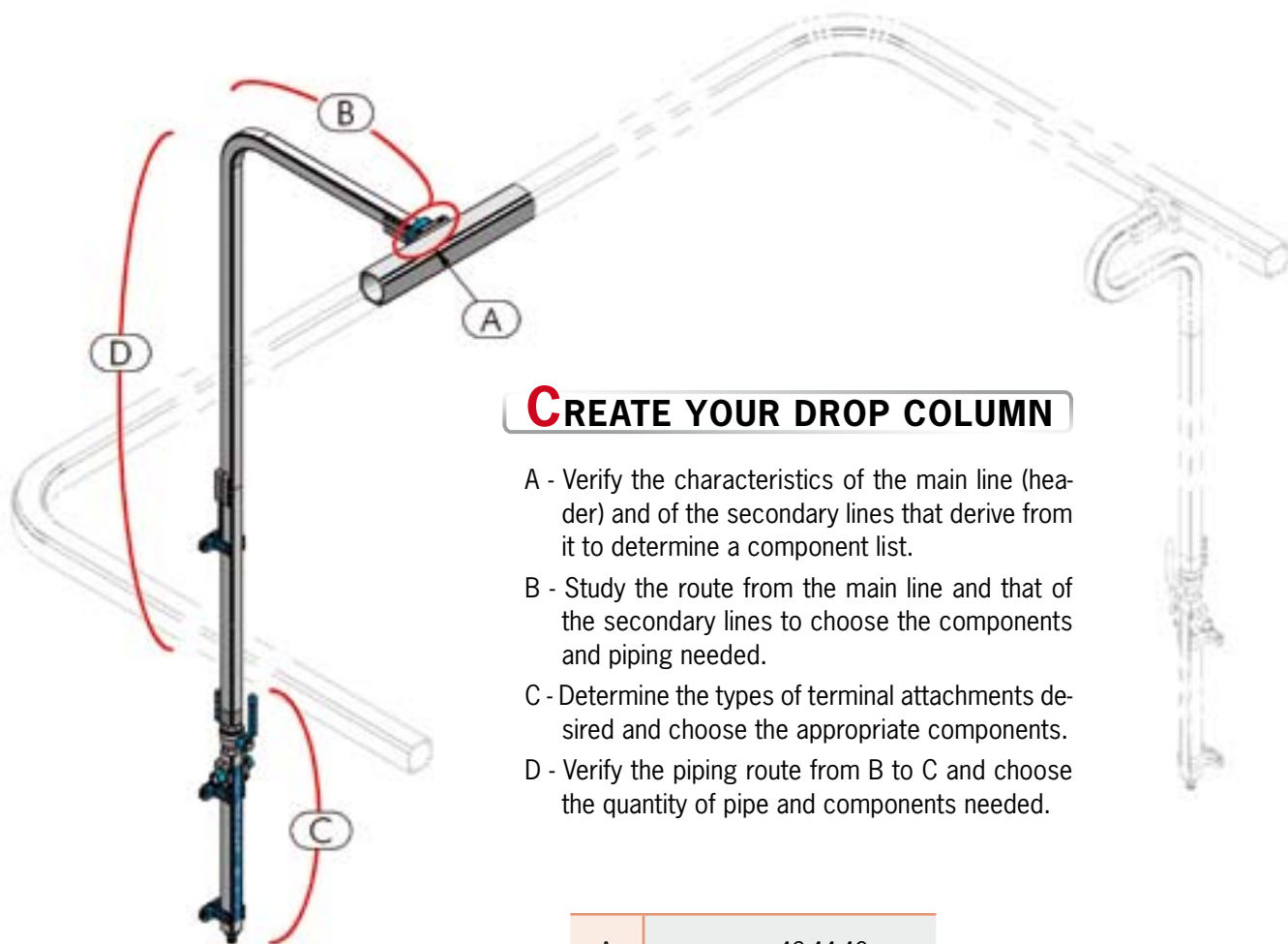
Part. no.	P oz.	n°	
111 003 100	35.27	20	
111 003 010	3.53	20	

## PTFE BLUE GREASE

POW



Part. no.	P oz.	n°	
114 003 005	1.76	20	



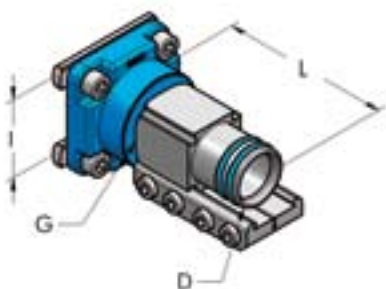
## CREATE YOUR DROP COLUMN

- A - Verify the characteristics of the main line (header) and of the secondary lines that derive from it to determine a component list.
- B - Study the route from the main line and that of the secondary lines to choose the components and piping needed.
- C - Determine the types of terminal attachments desired and choose the appropriate components.
- D - Verify the piping route from B to C and choose the quantity of pipe and components needed.

A	pages 43-44-49
B	pages 40-41-44-49-50
C	pages 40-41-42-43-45-49
D	pages 40-41

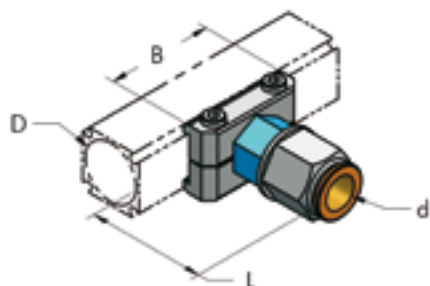
## REDUCTION PLATE HBS - AP, COMPLETE

HBS



D	G	I in.	L in.	Part. no.	P oz.	n°	
20	1/2"	1.42	1.93	006 020 037	6.35	1	
20	1/2"	2.36	2.13	006 020 038	6.70	1	
25	3/4"	1.42	1.93	006 025 037	10.93	1	
25	3/4"	2.36	2.13	006 025 038	11.99	1	
40	1-1/4 "	2.36	2.76	006 040 060	26.46	1	
50	1-1/2 "	2.36	4.13	006 050 037	28.92	1	

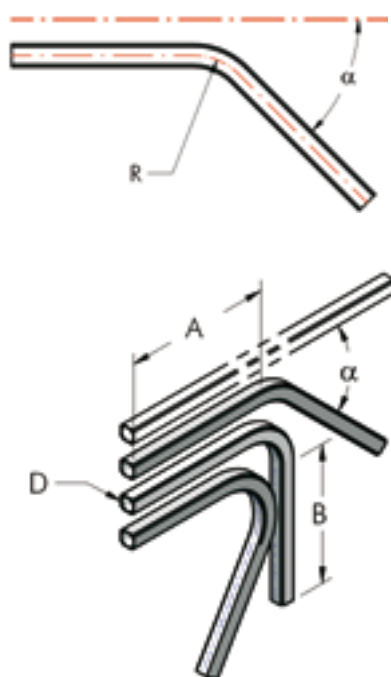
## OUTLET PLATE WITH D14 QUICKFIT, COMPLETE



D	d in.	B in.	L in.	Part. no.	P oz.	n°	
20	0.55	1.81	2.01	006 020 134	3.35	20	
25	0.55	2.20	2.05	006 025 134	3.53	20	
40	0.55	2.76	1.97	006 040 134	6.70	20	
50	0.55	2.91	1.97	006 050 134	8.47	20	

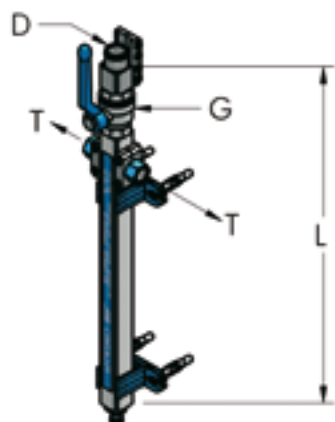
## SPECIAL ANGLE CURVED PIPE

POW



D	A in.	B in.	R in.	$\alpha^\circ$	Part. no.	P lbs.	n°	
20	8.66	9.84	7.03	30	804 020 047	0.44	5	
20	8.66	9.06	7.03	45	804 020 048	0.44	5	
20	8.66	8.27	7.03	60	804 020 049	0.44	5	
20	6.30	7.87	7.03	120	804 020 057	0.44	5	
20	6.30	7.09	7.03	135	804 020 058	0.44	5	
20	6.30	6.30	7.03	150	804 020 059	0.44	5	
25	8.66	9.45	7.03	30	804 025 047	0.66	5	
25	8.66	8.66	7.03	45	804 025 048	0.66	5	
25	8.66	7.87	7.03	60	804 025 049	0.66	5	
25	6.30	7.09	7.03	120	804 025 057	0.66	5	
25	6.30	6.30	7.03	135	804 025 058	0.66	5	
25	6.30	5.51	7.03	150	804 025 059	0.66	5	
40	7.48	8.66	5.91	30	804 040 047	1.54	5	
40	7.48	7.48	5.91	45	804 040 048	1.54	5	
40	7.48	6.30	5.91	60	804 040 049	1.54	5	
50	7.48	8.66	5.91	30	804 050 047	2.20	5	
50	7.48	7.48	5.91	45	804 050 048	2.20	5	
50	7.48	6.30	5.91	60	804 050 049	2.20	5	

## DROP COLUMN MANIFOLD COMPLETE WITH ACCESSORIES

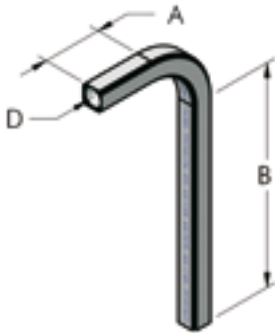


D	L in.	G	T	Part. no.	P oz.	n°	
20	17.32	1/2"	3/8" - NPT	006 020 455	23.99	1	
25	17.32	3/4"	3/8" - NPT	006 025 455	37.39	1	



## 90° CURVED PIPE

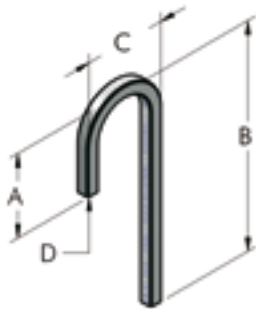
POW



D	A in.	B in.	R in.	Part. no.	P lbs.	n°	
20	3.15	12.60	3.03	804 020 050	0.44	5	
20	12.20	22.83	3.03	804 020 100	0.88	5	
20	14.57	79.53	3.03	804 020 250	1.98	5	
25	2.76	11.81	3.03	804 025 050	0.66	5	
25	12.20	22.44	3.03	804 025 100	1.32	5	
25	14.57	79.13	3.03	804 025 250	3.31	5	
40	5.31	9.45	5.91	804 040 050	2.20	5	
50	5.31	9.45	5.91	804 050 050	2.31	5	

## 180° CURVED PIPE

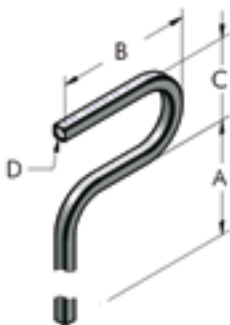
POW



D	A in.	B in.	C in.	Part. no.	P lbs.	n°	
20	3.15	12.20	6.93	804 020 060	0.55	5	
20	3.54	47.64	6.93	804 020 149	1.21	5	
25	3.94	10.24	7.16	804 025 060	0.88	5	
25	4.33	45.67	7.16	804 025 149	1.98	5	

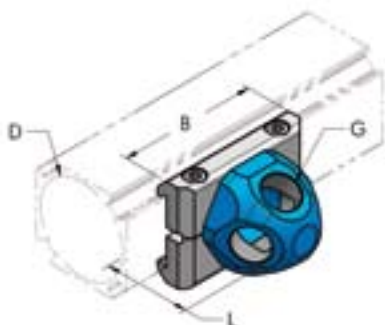
## 180°-90° CURVED PIPE

POW



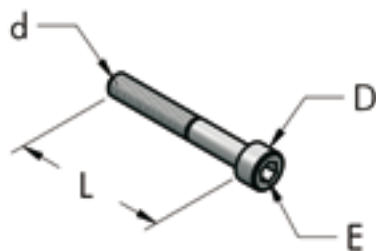
D	A in.	B in.	C in.	R in.	Part. no.	P lbs.	n°	
20	42.86	11.65	6.93	3.03	804 020 148	2.09	5	
25	39.37	11.89	7.16	3.03	804 025 148	3.31	5	

## FEMALE MULTIPLE OUTLET PLATE, 4-HOLE, COMPLETE



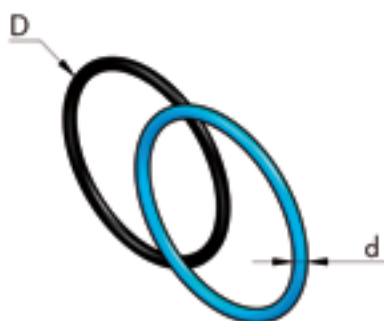
D	B in.	L in.	G	Part. no.	P oz.	n°	
50	2.91	1.85	3/8" - NPT	006 050 453	7.05	10	
50	2.91	1.85	1/2" - NPT	006 050 454	6.70	10	

## ALLEN SCREW, IN GALVANIZED STEEL



d in.	L in.	D	E in.	Part. no.	P oz.	n°	
M5	0.79	0.33	0.16	212 005 020	0.14	20	
M5	0.98	0.33	0.16	212 005 025	0.18	20	
M6	1.38	0.39	0.20	212 006 035	0.35	20	
M6	1.77	0.39	0.20	212 006 045	0.49	20	

## O-RING SEAL IN NBR70



D	D	Code AS/BS NORM	Part. no.	P oz.	n°	
0.63	0.07	2050 - 014	271 012 002	0.004	10	
0.79	0.07	2062 - 014	271 016 002	0.005	10	
0.79	0.08	0160 - 02	271 017 002	0.007	100	
0.98	0.07	2081 - 019	271 020 002	0.008	10	
0.98	0.08	0210 - 02	271 021 002	0.028	100	
1.57	0.12	0350 - 03	271 035 003	0.038	10	
1.97	0.10	3175 - 132	271 044 003	0.035	10	
1.97	0.12	0440 - 03	271 043 003	0.046	100	

## 220 PSI ADHESIVE COLOR STICKERS

HBS



L in.	B in.	Color	Part. no.	P oz.	n°	
12.2	0.59	Blue RAL 5015	104 015 310	1.02	11	
12.2	0.59	Green RAL 6029	104 015 315	1.02	11	
12.2	0.59	Brown RAL 8003	104 015 316	1.02	11	
12.2	0.59	Grey RAL 7000	104 015 317	1.02	11	
12.2	0.59	Red RAL 3020	104 015 318	1.02	11	
12.2	0.59	Yellow RAL 1028	104 015 319	1.02	11	
12.2	1.10	Blue RAL 5015	104 025 150	1.02	11	
12.2	1.10	Green RAL 6029	104 028 315	1.02	11	
12.2	1.10	Brown RAL 8003	104 028 316	1.02	11	
12.2	1.10	Grey RAL 7000	104 028 317	1.02	11	
12.2	1.10	Red RAL 3020	104 028 318	1.02	11	
12.2	1.10	Yellow RAL 1028	104 028 319	1.02	11	

# MULTIFLUID 360 PSI

## USE OF AP MULTIFLUID AT 25 BARS (360 PSI)

This patented AP system is suitable for non-hazardous gases and fluids.

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

The increase in the working pressure permits the transport and distribution of incompressible fluids, such as mineral or synthetic oils, and cooling or lubricating fluids.

For such applications a series of dedicated accessories is available, such as safety relief valves, gauges and expansion tanks all illustrated in the following pages.


Aggiungiamo in fondo al testo:

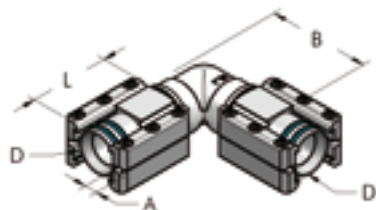
Kiwa has determined that the quality management system of Teseo Srl meets the requirements of Annex III, E1 of the Pressure Equipment Directive 97/23/CE.

KIWA Certificate n°: R09351RM-01. Marking CE0620

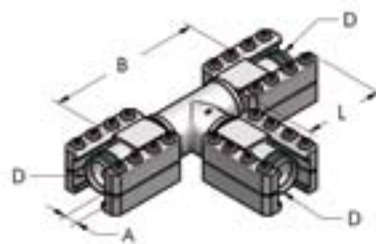
NOTICE: For proper selection and application please contact TESEO or your local representative.



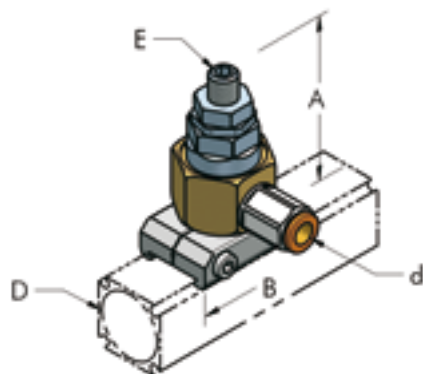
Components for AP multifluid applications are described on following pages or identified with  mark

**MULTIFLUID L JOINT, COMPLETE**

D	L in.	A in.	B in.	Part. no.	P oz.	n°	
20	0.79	1.81	1.97	006 020 122	7.55	10	
25	0.98	2.36	2.56	006 025 122	11.64	10	
40	1.57	3.15	3.94	006 040 122	22.58	10	
50	1.97	5.91	5.91	006 050 122	52.91	10	

**MULTIFLUID T JOINT, COMPLETE**

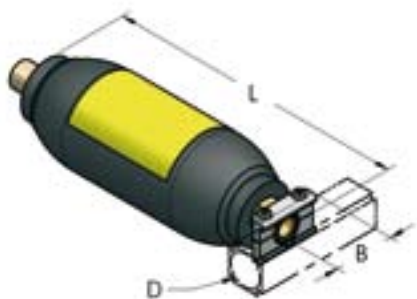
D	L in.	A in.	B in.	Part. no.	P oz.	n°	
20	0.79	1.81	3.94	006 020 124	9.52	10	
25	0.98	2.36	5.12	006 025 124	14.99	10	
40	1.57	3.15	6.30	006 040 124	31.39	10	
50	1.97	5.91	9.65	006 050 124	74.08	10	

**OUTLET PLATE WITH PRESSURE RELIEF VALVE, COMPLETE**

D	d in.	B in.	E in.	A in.	Part. no.	P oz.	n°	
20	0.31	1.81	0.20	65	006 020 080	1.62	10	
25	0.31	2.20	0.20	65	006 025 080	1.76	10	
40	0.31	2.76	0.20	65	006 040 080	7.76	10	
50	0.31	2.91	0.20	65	006 050 080	10.6	10	

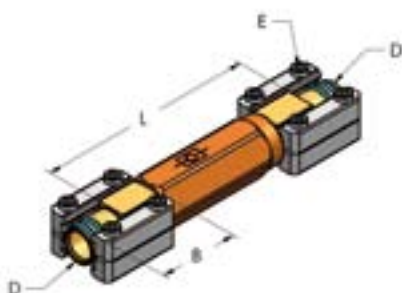


## OUTLET PLATE WITH EXPANSION TANK, COMPLETE



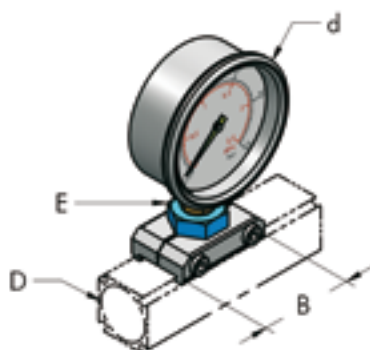
D	L in.	B in.	V in. <sup>3</sup>	Part. no.	P oz.	n°	
20	8.66	1.81	21.35	006 020 081	3.84	1	
25	8.66	2.20	21.35	006 025 081	3.86	1	
40	9.06	2.76	21.35	006 040 081	3.97	1	
50	9.06	2.91	21.35	006 050 081	4.19	1	

## CHECK VALVE, COMPLETE



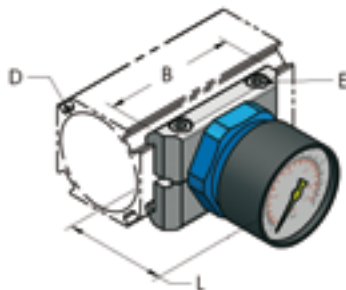
D	L in.	B in.	E in.	Part. no.	P oz.	n°	
20	5.12	1.81	0.16	006 020 047	0.77	1	
25	5.71	2.36	0.16	006 025 047	1.81	1	
40	8.27	3.15	0.20	006 040 047	4.85	1	
50	11.81	5.91	0.20	006 050 047	7.50	1	

## PRESSURE GAUGE, GLYCERINE FILLED, COMPLETE



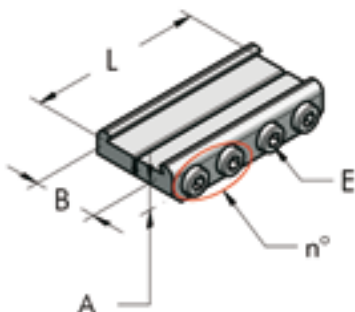
D	d in.	B in.	E in.	Part. no.	P oz.	n°	
20	2.76	1.81	0.87	006 020 049	8.47	10	
25	2.76	2.20	0.87	006 025 049	8.82	10	
40	2.76	2.76	1.42	006 040 049	12.17	10	
50	2.76	2.91	1.97	006 050 049	14.11	10	

## VACUUM GAUGE, COMPLETE



D	L in.	E in.	B in.	Part. no.	P oz.	n°	
20	2.36	0.16	1.81	006 020 348	2.47	10	
25	2.36	0.16	2.20	006 025 348	2.65	10	
40	2.36	0.20	2.76	006 040 348	6.14	10	
50	2.36	0.20	2.91	006 050 348	8.11	10	

## CONNECTION CLAMP, COMPLETE



A in.	B	E in.	L in.	n°	Part. no.	P oz.	n°	
0.35	20	0.16	1.81	2	006 020 072	1.13	10	
0.39	25	0.16	2.36	4	006 025 072	2.12	10	
0.47	40	0.20	3.15	3	006 040 072	4.23	10	
0.47	50	0.20	5.91	4	006 050 072	10.05	10	

## 360 PSI ADHESIVE COLOR STICKERS



L in.	B in.	Color	Part. no.	P oz.	n°	
12.2	0.59	Blue RAL 5015	104 515 310	1.02	11	
12.2	0.59	Green RAL 6029	104 515 315	1.02	11	
12.2	0.59	Brown RAL 8003	104 515 316	1.02	11	
12.2	0.59	Grey RAL 7000	104 515 317	1.02	11	
12.2	0.59	Red RAL 3020	104 515 318	1.02	11	
12.2	0.59	Yellow RAL 1028	104 515 319	1.02	11	
12.2	1.10	Blue RAL 5015	104 525 150	1.02	11	
12.2	1.10	Green RAL 6029	104 528 315	1.02	11	
12.2	1.10	Brown RAL 8003	104 528 316	1.02	11	
12.2	1.10	Grey RAL 7000	104 528 317	1.02	11	
12.2	1.10	Red RAL 3020	104 528 318	1.02	11	
12.2	1.10	Yellow RAL 1028	104 528 319	1.02	11	

## COMPRESSED AIR AND FLUIDS PIPING SYSTEMS



## MODULAR MANIFOLDS INTEGRATED ON MACHINES







## ATS AIR TRACK SUPPLY

This unique track and trolley system has been designed to support air and electric tools and to provide compressed air, fluids and electrical power to any point along the track.

ATS is manufactured from a modular extruded aluminum track which can be secured to a wall or any suitable structure. The trolley runs along the track with only minimal effort and provides ready movement of air and electric tools to the point of use.

Additional options can be supplied on the trolley. Please contact TESEO or your local representative for complete details.

### TESEO ATS Benefits:

- Eliminates trailing hoses that can impair operator movement.
- Trolley allows total flexibility of use anywhere along the track
- Supported tools reduce operator fatigue and improve productivity.



### Technical specifications

- Extruded anodized aluminum rail.
- Trolley runs on roller bearings.
- Supply tube: 1/4".
- Operating pressure: 117 psi.
- Electric current: 220V single phase..
- Approximate load on trolley: 110 lbs.
- Cable: 3G-2,5 in.<sup>2</sup> C/47

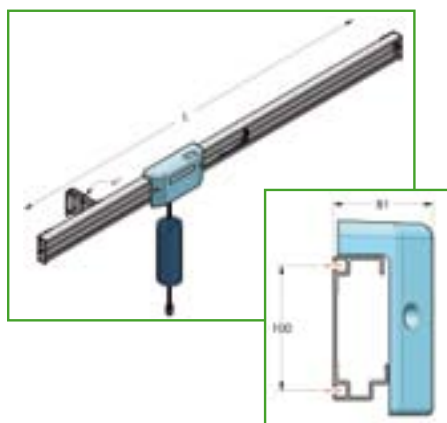








ATS systems are delivered in a preassembled kit along with the fixing brackets and instructions and packed in a durable cardboard box 3 m long (10 ft. approx.). The trolley comes equipped with one 1/4" outlet and one tool hook.

The following parts can be ordered separately:

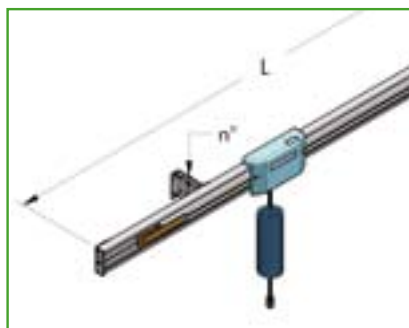
- Accessories, special supports: see page 65;
- Assembling tools;
- Transport and installation at the customer's factory.
















### PNEUMATIC ATS, WITH CHAIN



L ft.	Part. no.	Brackets n°	P lbs.	 n°	
4.9	001 003 401	2	22	1	
6.5	001 003 402	2	25	1	
8.2	001 003 481	2	26	1	
9.8	001 003 403	2	29	1	
13.1	001 003 404	4	33	1	

### PNEUMATIC ATS, WITH PULLEY

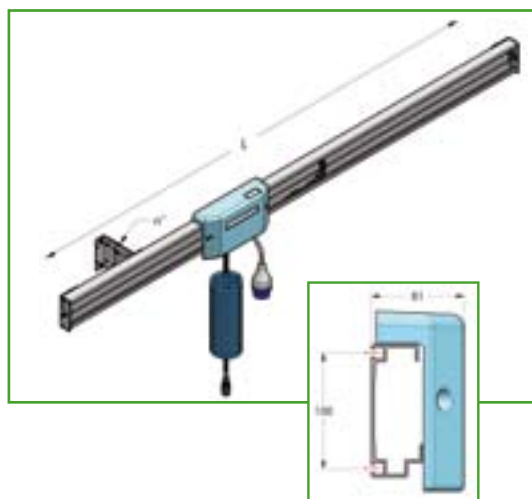


L ft	Part. no.	Brackets n°	P lbs.	 n°	
16.40	001 003 405	4	40	1	
19.70	001 003 406	4	50	1	
23	001 003 407	4	55	1	
26.25	001 003 408	4	60	1	
29.3	001 003 409	6	66	1	
32.80	001 003 410	6	73	1	
36	001 003 411	6	77	1	
39.3	001 003 412	6	81	1	
42.7	001 003 413	8	88	1	
46.0	001 003 414	8	93	1	
49.2	001 003 415	8	97	1	
52.5	001 003 416	8	103	1	
55.6	001 003 417	10	108	1	
59.0	001 003 418	10	113	1	

## ATS WITH ELECTRIC FEED

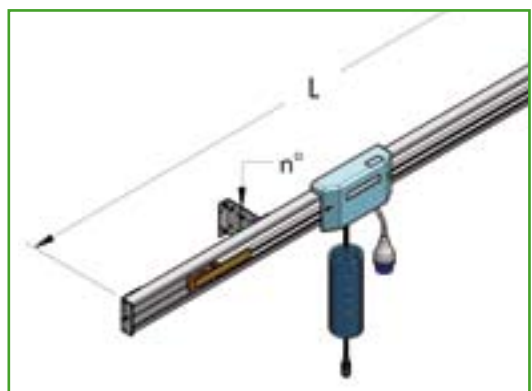
This system comes equipped with the normal compressed air feed as well as a single phase electric feed. The trolley is provided with a three-pole terminal board output and an input on one side of the rail with a junction box and safety clamp. The other features are the same as the standard model.

### PNEUMATIC AND ELECTRIC ATS, WITH CHAIN



L ft.	Part. no.	Brackets n°	P lbs.	n°	
4.92	001 004 401	2	29	1	
6.56	001 004 402	2	30	1	
8.20	001 004 481	2	33	1	
9.84	001 004 403	2	35	1	
13.12	001 004 404	4	39	1	

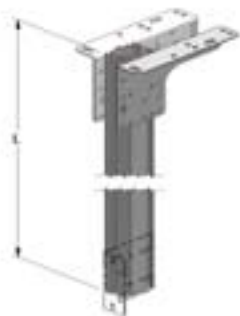
### PNEUMATIC AND ELECTRIC ATS, WITH PULLEY




L ft.	Part. no.	Brackets n°	P lbs.	n°	
16.40	001 004 405	4	53	1	
19.70	001 004 406	4	62	1	
22.96	001 004 407	4	68	1	
26.25	001 004 408	4	75	1	
29.33	001 004 409	6	79	1	
32.80	001 004 410	6	90	1	
36.09	001 004 411	6	97	1	
39.37	001 004 412	6	101	1	

WALL OR CEILING SUPPORT


MAT



L ft.	Part. no.	P Kg	 n°	
1.65	001 003 060	3.5	10	
3.3	001 003 061	5.5	10	
6.6	001 003 062	8.4	10	


ADDITIONAL OUTLET BLOCK



G	Part. no.	P oz.	 n°	
1/4" - NPT	001 003 468	5.29	10	

3 ATTACHMENT TOOLING SUPPORT




L in.	Part. no.	P oz.	 n°	
15.7	001 003 069	10.2	1	

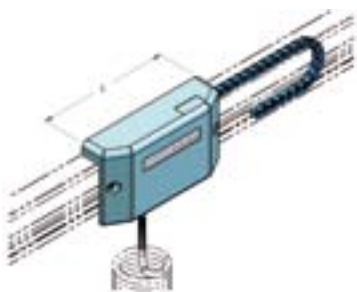
SPECIAL FIXING BRACKET


MAT



A in.	Part. no.	P oz.	 n°	
6.3	001 005 036	14.10	20	

ADDITIONAL TROLLEY\*




L in.	Part. no.	P lbs.	 n°	
10.63	001 003 067	3.74	1	

\* Only on standard A.T.S. of 6.56 - 9.84 - 13.12 ft.


## PLASTIC CHAIN



L ft.	Part. no.	P oz.	 n°	
3.31	336 011 100	2.5	1	


## HOSE



L ft.	Part. no.	P oz.	 n°	
3.31	421 008 100	1.41	1	

## HOSE-CHAIN SET




L* ft.	Part. no.	P oz.	 n°	
5-13	001 002 040	-	1	

\*Specify ATS lenght when ordering


## ROPE-HOSE SET




L* ft.	Part. no.	P oz.	 n°	
16-59	001 002 024	-	1	

\*Specify ATS lenght when ordering


**ANODIZED RAIL**

L ft.	Part. no.	P lbs.	 n°	
3.3	801 115 100	4	1	
5	801 115 150	5.7	1	
6.6	801 115 200	7.7	1	
8.3	801 115 250	9.7	1	
10	801 115 300	11.7	1	


**PUNCHED RAIL**

L ft.	Part. no.	P lbs.	 n°	
5	802 115 150	5.7	1	
6.6	802 115 200	8.15	1	
8.3	802 115 250	9.7	1	
10	802 115 300	11.7	1	

**STANDARD TROLLEY SET**

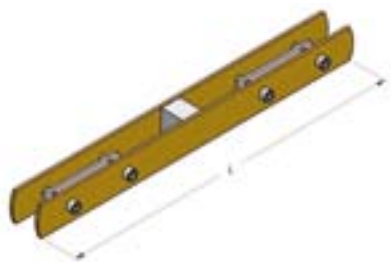
L in.	G	Part. no.	P oz.	 n°	
10.6	1/4" - NPT	001 003 420	51	1	

**STANDARD ATS PLASTIC COVER SET**

L in.	Part. no.	P oz.	 n°	
10.6	001 003 022	6.5	1	



### ATS TRACK JOINT SET



L in.	Part. no.	P oz.	n°	
8.6	001 002 028	19	1	

### PULLEY SET



L in.	Part. no.	P oz.	n°	
9.8	001 002 026	56	2	

### ATS TRACK TERMINAL SET



A in.	B in.	Part. no.	P oz.	n°	
4.52	3.14	001 002 034	20	1	

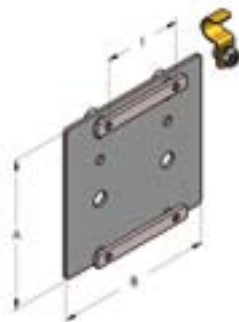
### STANDARD FIXING BRACKET SET

MAT



L in.	Part. no.	P oz.	n°	
5-5.3	001 003 036	20	1	

### DOUBLE JOINING PLATE SET (2)



B in.	A in.	I in.	Part. no.	P oz.	n°	
4.7	4.5	2.3	001 003 030	23	1	



ATS

## SAB SWINGING ARM BRACKET

The Swinging Arm Bracket provides both the compressed air feed and the support mechanism for the pneumatic tool. It consists of a horizontal bar fixed on a hollow pin that rotates on self-lubricating bearings and is equipped with gaskets for the compressed air seal.

The pin is supported by two brackets attached to the wall with expansion dowels.

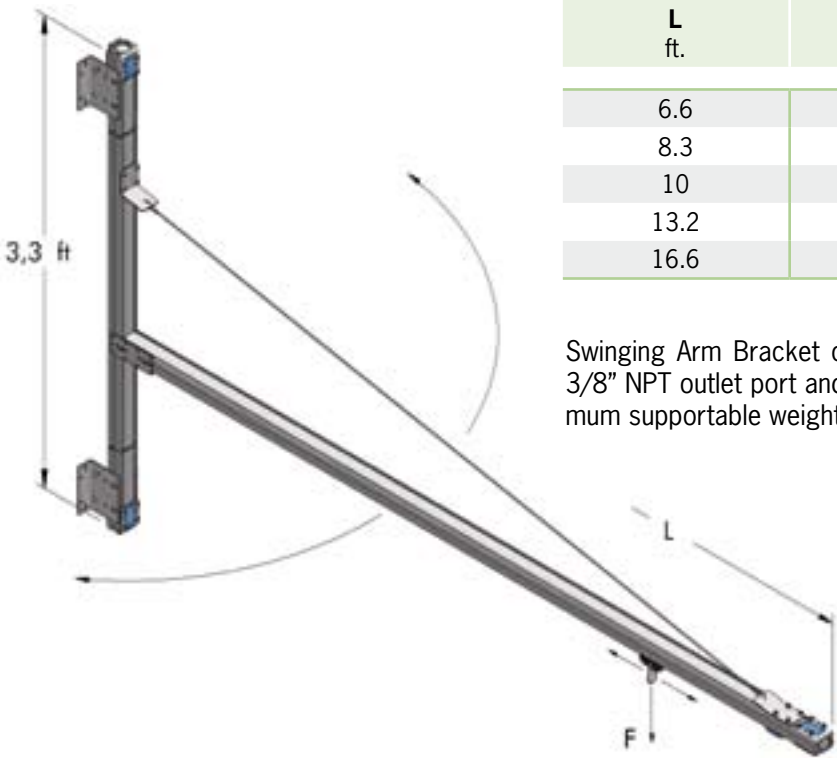
For extra movement along the length of the SAB, an ATS system can be attached. The sketch below shows an integrated solution obtained fixing a 9.84 ft. ATS on a 9.84 ft. SAB.









Picture above shows a 9.84 ft. ATS combined with 9.84 ft. SAB



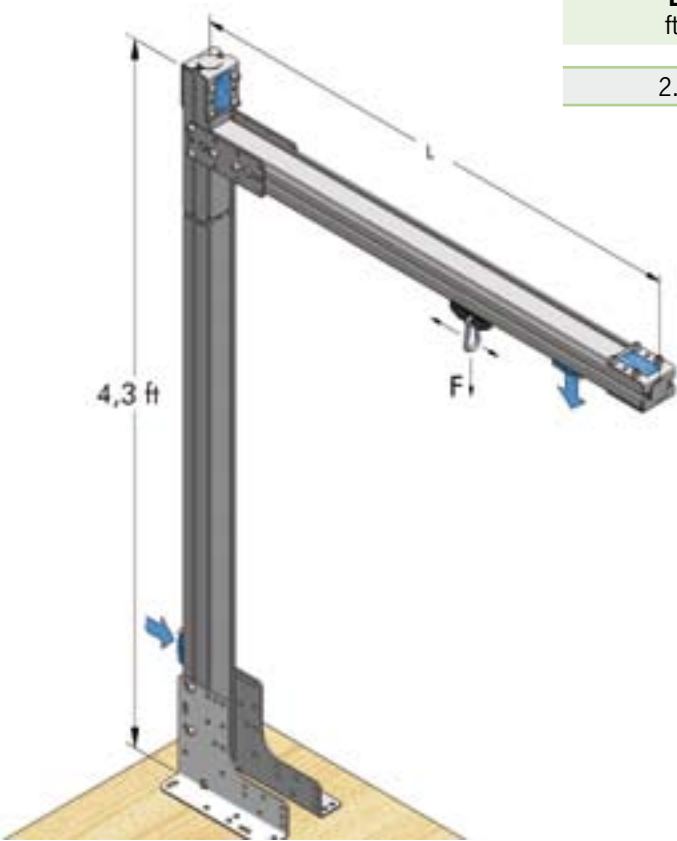
SAB - WALL VERSION





L ft.	Part. no.	P lbs.		n°	
6.6	002 001 201	24	1	1	
8.3	002 001 251	25	1	1	
10	002 001 301	26	1	1	
13.2	002 001 401	28	1	1	
16.6	002 001 501	32	1	1	

Swinging Arm Bracket comes complete with wall-mount fixing dowels, 3/8" NPT outlet port and glider pad for tool balancer attachment. Maximum supportable weight is 20 kg (44 lbs).

SAB - BENCH VERSION



L ft.	Part. no.	P lbs.		n°	
2.3	002 002 071	12	1	1	

Swinging Arm Bracket for attachment to a workbench comes complete with fixing screws, 3/8" outlet port and glider pad for tool attachment.

## ADDITIONAL GLIDER PAD

HBS MAT



L in.	Part. no.	P oz.	n°	
2.36	002 001 040	0.7	20	



## ADDITIONAL OUTLET PLATE

HBS MAT

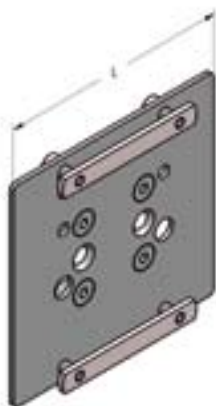


G	I in.	Part. no.	P oz.	n°	
3/8" - NPT	1.42	003 001 434	2.82	20	



## PLATES FOR FIXING ATS ON SAB

HBS ATS

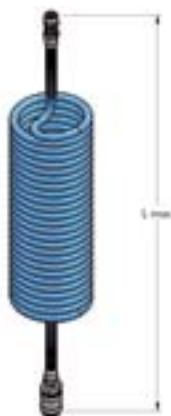


L in.	Part. no.	P oz.	n°	
4.72	002 001 042	12.3	20	



## COILED HOSE WITH QUICK FITTINGS

SYS



L ft.	Part. no.	P oz.	n°	
16.4	001 003 065	14.1	10	





# SAB ASSEMBLING



SAB

## WBA WORKBENCH FOR ASSEMBLY

The WBA is specially equipped for assembly work that utilizes pneumatic tools. It is constructed from a rugged extruded aluminum frame which supports the ATS system.

The ATS system consists of a rail on which a trolley runs freely from one end of the bench to the other. The trolley is equipped with an air outlet and a spring catch.

One of the two upright supports of the bench frame is pressurized and acts as both an air reservoir and the delivery system.

To complete the system we supply height adjustable feet and cross bars with shelves to which parts bins can be hooked. The whole frame is supplied, partially assembled, in a rigid cardboard box.

The supply of the simple bench frame represents a solid alternative to the complete bench. It must be fixed to a customer's existing workbench by means of proper feed lines.



### Technical Characteristics:

- Anodized aluminum frame
- Table dimensions: 2.5'x5' or 6.5'
- Height from ground: 2.8'-3.1'
- Height of trolley from ground: 7.2'
- Compressed air outlet: 1/4"
- Compressed air inlet: 3/8"



WBA - WORKBENCH FOR ASSEMBLY

Complete assembly bench with ATS brackets and adjustable feet.  
Accessories and packaging not included.



L ft.	Part. no.	P lbs.	n°	
5	004 001 151	170	1	
6.5	004 001 201	190	1	

WITH ELECTRIC FEED

As above, adding electrical cable on trolley

L ft.	Part. no.	P lbs.	n°	
5	004 003 151	170	1	
6.5	004 003 201	190	1	

WBA - FRAME FOR BENCH

Complete frame for installation on an existing workbench



L ft.	Part. no.	P lbs.	n°	
5	004 011 151	53	1	
6.5	004 011 201	57	1	

WITH ELECTRIC FEED

As above, adding electrical cable on trolley

L ft.	Part. no.	P lbs.	n°	
5	004 013 151	55	1	
6.5	004 013 201	60	1	

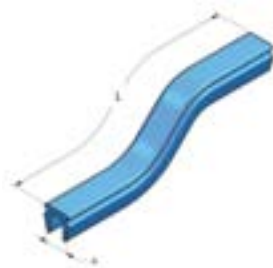
## NEON LAMP SYSTEM COMPLETE



B in.	L ft.	Part. no.	P oz.	n°	
5	4.3	004 001 472	0.12	1	

## BLUE PVC STRIP

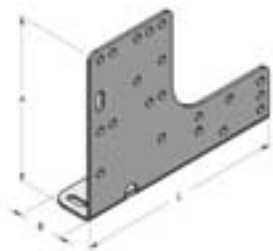
HBS MAT



A in.	L ft.	Part. no.	P oz.	n°	
0.24	3.28	874 006 100	1.12	100	

## RIGHT "L" PLATE

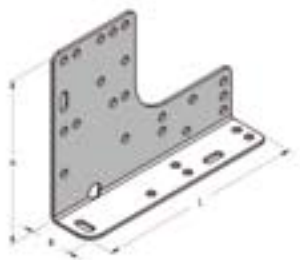
SYS



A in.	B in.	L in.	Part. no.	P oz.	n°	
5.12	1.41	6.85	732 174 130	14	20	

## LEFT "L" PLATE

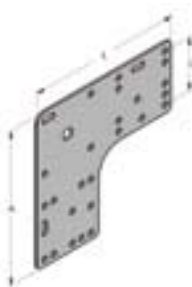
SYS



A in.	B in.	L in.	Part. no.	P oz.	n°	
5.12	1.41	6.85	732 174 131	14	20	

## SMOOTHED PLATE

SYS

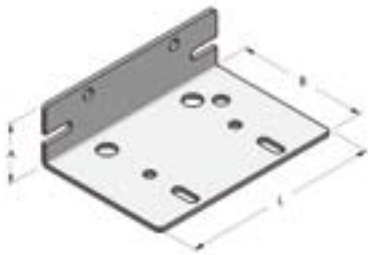



A in.	I in.	L in.	Part. no.	P oz.	n°	
6.85	1.42-2.36	6.85	711 174 174	14	20	

BRACKET

HBS

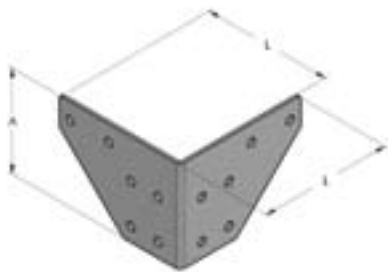
MAT




A in.	B in.	L in.	Part. no.	P oz.	 n°	
1.41	3.14	4.72	732 120 115	9.17	20	

BENCH "L" PLATE


HBS



A in.	L in.	Part. no.	P oz.	 n°	
3.34	4.33	732 085 220	10	20	


FOOT, COMPLETE



D in.	A in.	G in.	d in.	Part. no.	P oz.	 n°	
3.15	3.66	0.5	1.25	004 001 070	11.30	10	


PLUG FOR FOOT



d in.	A in.	G in.	Part. no.	P oz.	 n°	
1.25	1.18	0.5	512 032 030	4	20	

PVC PLASTIC COVER FOR BENCHES



S in.	B ft.	Part. no.	P oz./ft. <sup>2</sup>	 n°	
0.08	6.5	151 002 200	6.5	2	



**SERVICE BENCH COMPLETE (IN CARDBOARD BOX, TO BE ASSEMBLED)**

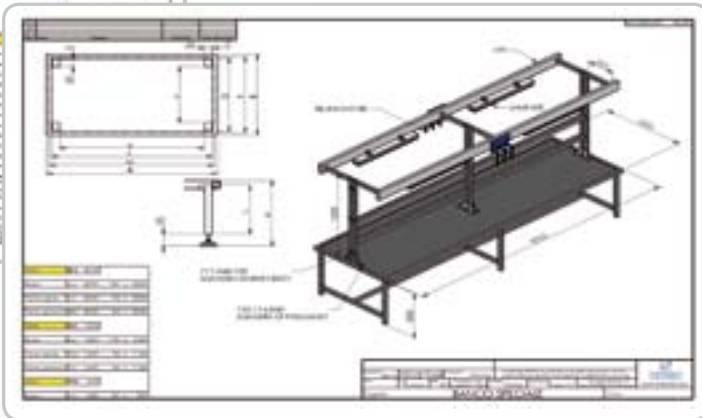
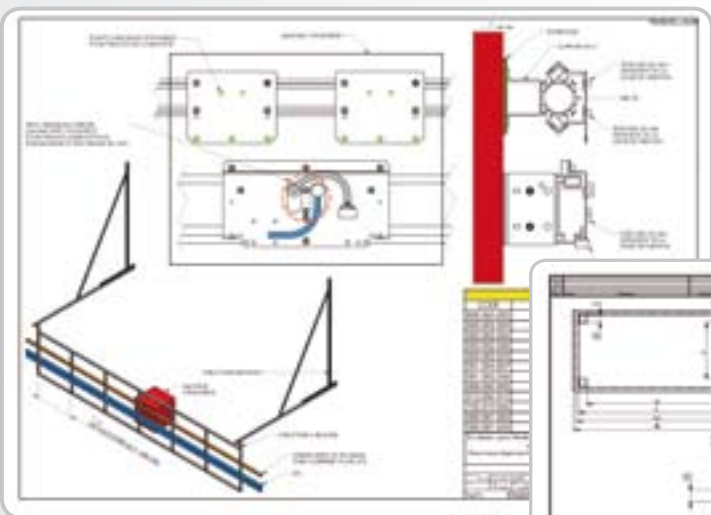
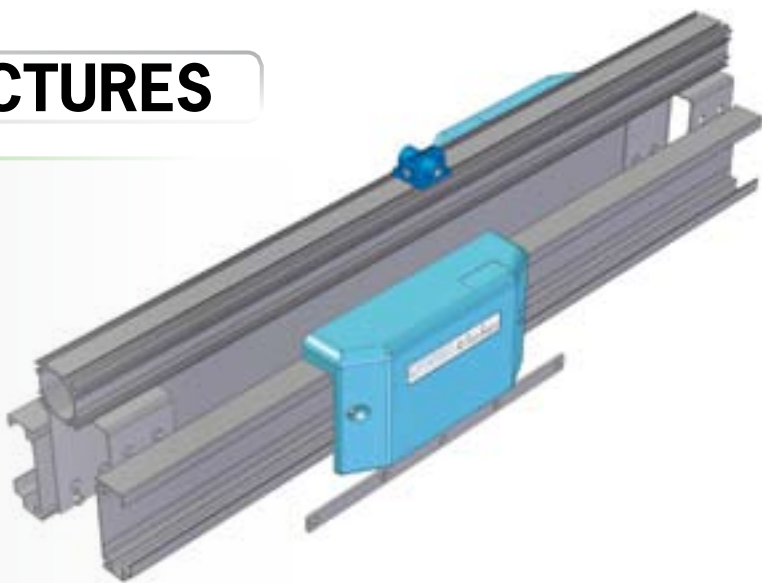


A ft.	B ft.	L ft.	Part. no.	P lbs.	n°	
3	2.5	5	004 021 150	66	1	↙
3	2.5	6.5	004 021 200	68	1	↙

## CUSTOMIZED STRUCTURES

TESEO's technical department is able to design, quote and produce structures and work benches able to match a customer's exacting requirements.

Besides supplying tailor-made solutions, TESEO offers the quality and know-how of its complete product line.



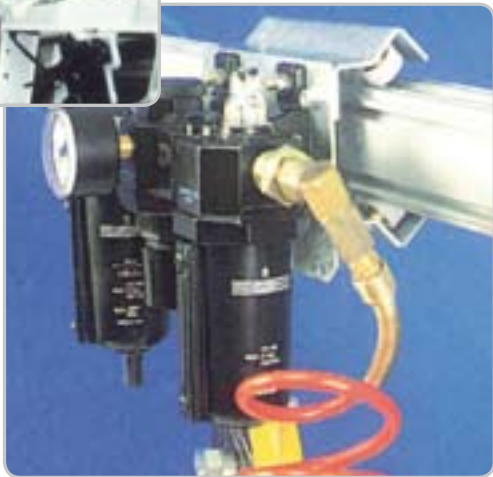
# MAT MODULAR AIR TROLLEY


This simple trolley system includes 6 ball bearing wheels running on our HBS50 profile.

The hollow bar has a double function: track for the trolley and conduit for compressed air.

This trolley is recommended for high flow and heavy loads (max 88 lbs).

Typical application at automotive assembly plant.

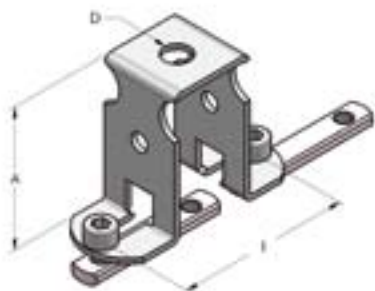


	D in.	L in.	Part. no.	P oz.	 n°	
Trolley	3/8"	6	005 001 020	50	1	
Hose	1/2"	15	005 001 065	35	1	
Hollow bar	2"	164	801 060 500	335	1	
Glider pad	1"	2.4	002 001 040	0.7	1	

MAT

## HANGING BRACKET, COMPLETE

HBS



A in.	I in.	D in.	Part. no.	P oz.	n°	
2	1.42-2.36	0.4	003 001 074	3.5	10	



## HANGING SUPPORT PLATE

HBS

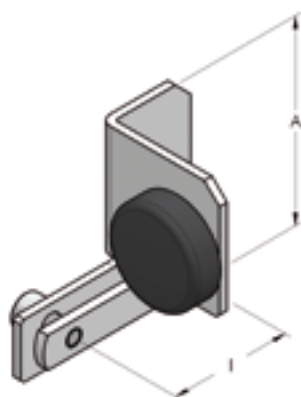
ATS



A in.	L in.	Part. no.	P oz.	n°	
3.7	5.5	732 078 140	14.80	20	



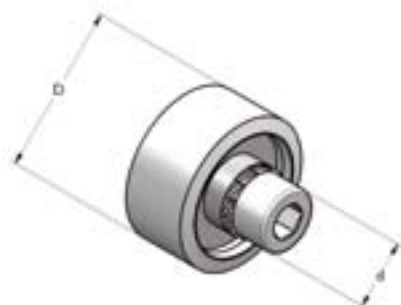
## STROKE END STOP



A in.	I in.	Part. no.	P oz.	n°	
2.36	1.41	005 001 035	2.82	20	



## BALL BEARING WHEEL



D in.	d in.	Part. no.	P oz.	n°	
0.94	0.23	005 001 043	0.77	20	



# AM ALUMINUM MANIFOLD

AM is a revolutionary manifold for the distribution of compressed air and other fluids under pressure (drinking water, oil, inert gases and vacuum  $\Delta$ ).

AM is particularly well-suited for use on automatic machines requiring an air supply for pneumatic valves, actuators and other servomechanisms or to supply injection or die-casting presses to cool molds.

AM is assembled with TESEO's HBS components and piping.

The following drawings are examples of an assembled manifold.

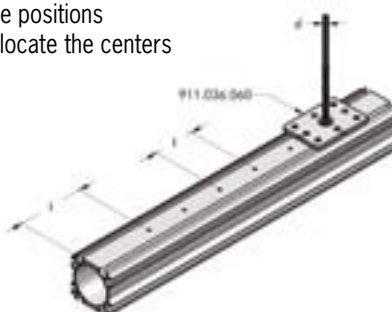
1

Choose the hollow bar diameter and cut to size



2

Trace positions and locate the centers



3

Make holes in the bar



4

Choose necessary outlet plates



5

Choose necessary terminals



6

Choose the appropriate fixing brackets

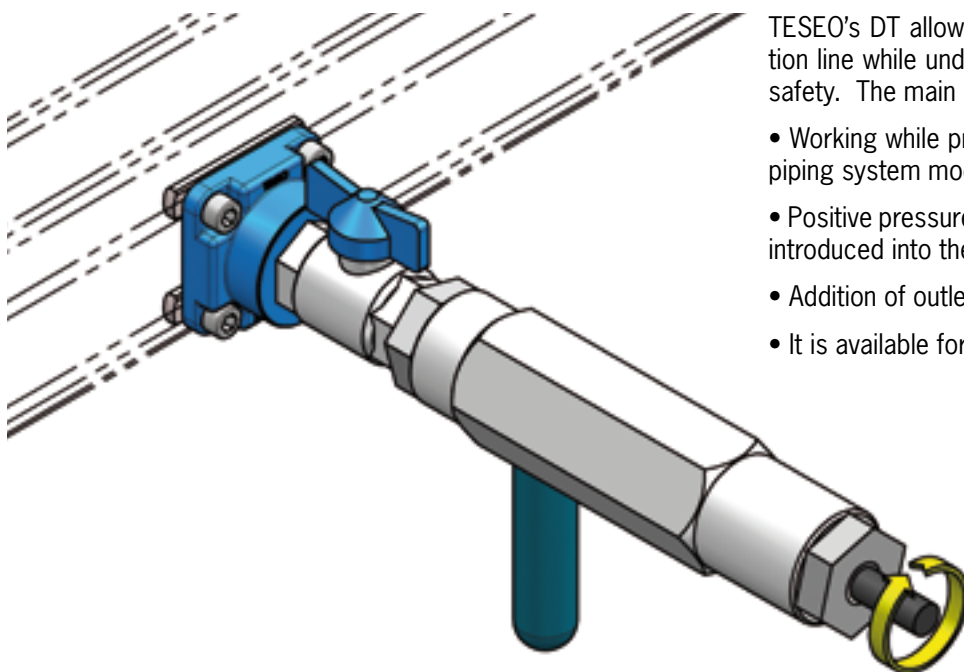


For chemical compatibility and further details contact TESEO or you local representative.

## PROPOSAL

The technical office of TESEO srl can design unique and specialized solutions to suit the precise needs of a customer and supply them as completed assemblies ready for installation. Manifold systems can be made available incorporating either HBS or AP profiles.

## DT DRILLING TOOL

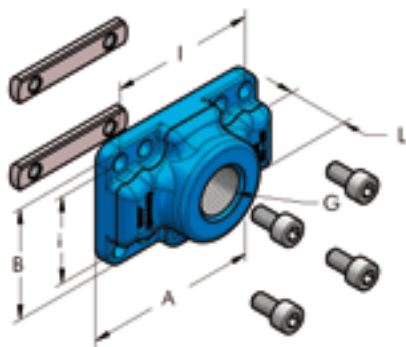


TESEO's DT allows for drilling into the compressed air distribution line while under pressure with ease and complete operator safety. The main advantages include:

- Working while pressurized means no production downtime for piping system modifications.
- Positive pressure means no aluminum chips or other debris are introduced into the system.
- Addition of outlet ports is fast, easy and safe.
- It is available for ALL TESEO HBS & AP profiles.

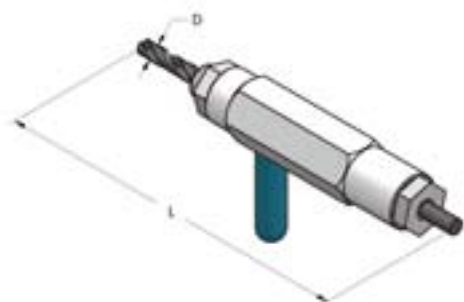
### OUTLET PLATE

HBS



I in.	i in.	G	A in.	B in.	L in.	Part. no.	P oz.	n°	
1.42	1.42	1/2" - NPT	1.89	1.89	0.98	003 002 433	3.88	20	
1.42	1.42	3/4" - NPT	1.89	1.89	0.98	003 002 434	3.70	20	
2.36	2.36	1/2" - NPT	2.83	2.83	1.18	003 003 433	8.82	20	
2.36	2.36	3/4" - NPT	2.83	2.82	1.18	003 003 434	7.76	20	
2.36	1.42	1/2" - NPT	2.83	1.89	0.98	003 360 433	4.55	10	
2.36	1.42	3/4" - NPT	2.83	1.89	0.98	003 360 434	4.41	10	

### DRILLING TOOL



D	G	L in.	Part. no.	P oz.	n°	
13	1/2" - NPT	12.50	005 004 421	750	1	
19	3/4" - NPT	13.50	005 004 426	840	1	



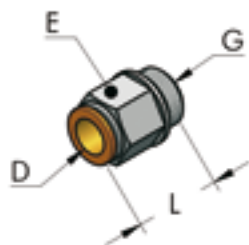
# APPLICATIONS



## THREADED STRAIGHT PUSH FITTING

HBS

AP

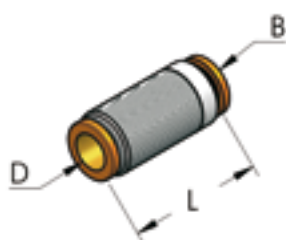


D in.	G	L in.	E in.	Part. no.	P oz.	n°	
0.55	3/8" - NPT	1.42	0.87	413 016 036	1.62	20	
0.55	1/2" - NPT	1.34	0.87	413 020 034	1.68	20	



## STRAIGHT PUSH FITTING

HBS



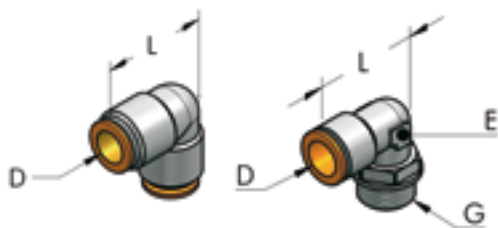
D in.	B in.	L in.	Part. no.	P oz.	n°	
0.55	0.79	1.89	413 014 048	2.19	20	



## L PUSH FITTING

HBS

AP

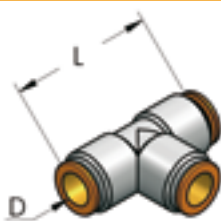


D in.	G	L in.	E in.	Part. no.	P oz.	n°	
0.55	-	1.38	-	414 014 035	3.72	20	
0.55	1/2" - NPT	1.38	0.71	414 020 035	3.10	20	



## T PUSH FITTING

HBS

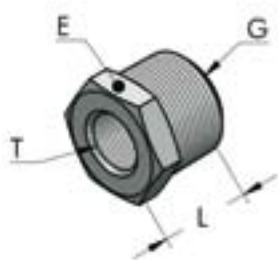


D in.	L in.	Part. no.	P oz.	n°	
0.55	2.76	414 014 070	3.89	20	



## M/F NIPPLE WITH TAPERED THREAD

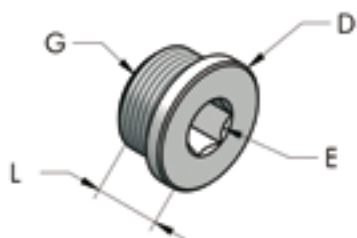
SYS



G	T	L in.	E in.	Part. no.	P oz.	n°	
1/2" - NPT	1/4" - NPT	0.63	0.94	417 020 016	1.09	20	

## THREADED PLUG, WITH SEAL

SYS



G	D in.	L in.	E in.	Part. no.	P oz.	n°	
1/4" - NPT	0.71	0.43	0.24	418 013 011	0.35	20	
3/8" - NPT	0.83	0.51	0.31	418 016 013	0.71	20	
1/2" - NPT	1.02	0.59	0.39	418 020 015	1.13	20	

## FEMALE FLANGE EN 1092-100

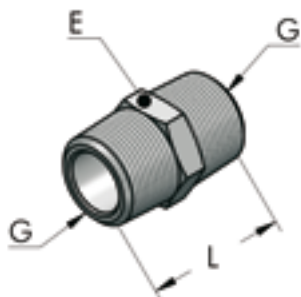
HBS



D in.	G	holes	Part. no.	P oz.	n°	
7.87	3" - NPT	8	436 084 035	134.04	10	
8.66	4" - NPT	8	436 113 040	176.37	10	

## M/M THREADED NIPPLE

SYS



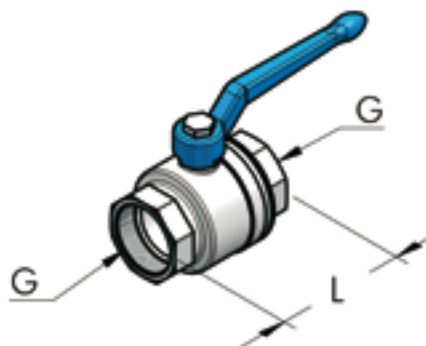
G	L in.	E in.	Part. no.	P oz.	n°	
3/8" - NPT	1.10	0.67	417 016 028	0.92	20	
1/2" - NPT	1.38	0.87	417 020 033	1.55	20	
3/4" - NPT	1.57	1.06	417 025 040	2.75	20	
1" - NPT	1.34	1.34	417 032 034	2.82	20	
1-1/2" - NPT	2.36	2.16	417 047 060	10.23	20	

## F/F BALL VALVE

HBS

AP

POW



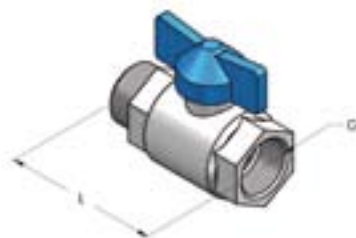
G	L in.	Part. no.	P oz.	n°	
1/2" - NPT	1.97	434 020 050	6.00	10	
3/4" - NPT	2.68	434 025 070	10.58	10	
1" - NPT	3.15	434 032 080	14.81	10	
1-1/4" - NPT	3.17	434 041 080	23.63	10	
1-1/2" - NPT	3.94	434 047 100	34.92	10	
2" - NPT	4.53	434 059 120	56.44	10	
2-1/2" - NPT	5.99	434 074 150	125.22	10	

## M/F BALL VALVE

HBS

AP

POW



L in.	G	Part. no.	P oz.	n°	
2.16	3/8" - NPT	434 009 055	5.3	10	
2.63	1/2" - NPT	434 020 067	7.4	10	
3.22	3/4" - NPT	434 025 075	12.7	10	

## BALANCER FOR TOOL ATTACHMENT

ATS

WBA

SAB

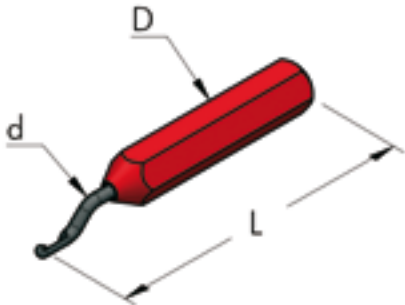
HBS



F lbs.	Part. no.	P lbs.	n°	
0.88-2.2	001 003 072	1.1	1	
2.2-4.4	001 003 073	1.1	1	

DEBURRING TOOL

SYS



d in.	D in.	L in.	Part. no.	P oz.	n°	
0.12	0.55	5.91	909 012 130	1.94	10	
0.12	Spare blade		909 003 047	0.11	10	

ALLEN WRENCH

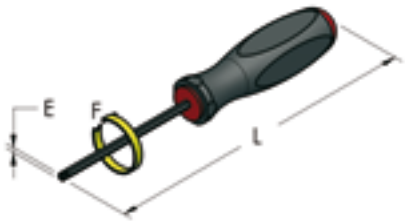
SYS



E in.	A in.	L in.	Part. no.	P oz.	n°	
0.20	1.34	5.51	901 130 005	1.06	10	

ALLEN SCREW DRIVER

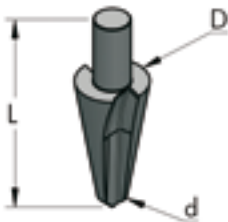
AP POW



E in.	L in.	F lbs.·ft.	Part. no.	P oz.	n°	
0.16	7.87	4.4-7.4	901 170 004	1.41	1	

DRILL BIT

SYS

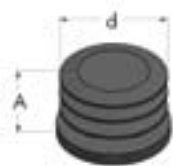


D in.	d in.	L in.	Part. no.	P oz.	n°	
0.79	0.31	2.44	922 020 062	1.62	1	



## SMALL PLASTIC FOOT

HBS



d in.	A in.	Part. no.	P oz.	n°	
25	0.78	293 025 022	0.28	20	
32	1	293 032 025	0.35	20	



## SMALL WHEEL

WBA

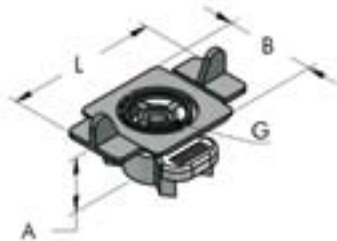


A in.	d in.	G in.	Part. no.	P oz.	n°	
4.33	3.14	0.5	381 080 104	13.40	10	



## HEXAGONAL NUT M6 FOR HILTI SYSTEM

SYS



L in.	B in.	A in.	G	Part. no.	P oz.	n°	
1.97	1.18	0.59	M6	233 006 034	0.78	50	



## HEXAGONAL NUT

SYS



D	A in.	Part. no.	P oz.	n°	
M6	0.2	230 006 005	0.08	20	



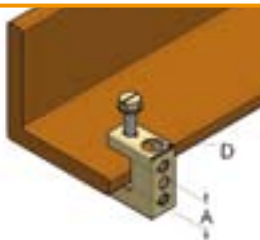
## HANGING TIE ROD

D	L ft.	Part. no.	P oz.	n°	
M6	3.3	226 006 100	7.05	10	



## BUCKLE

SYS



D in.	A in.	Part. no.	P oz.	n°	
0.4	0.7	294 010 018	0.88	20	



### APPROXIMATE FLOW RATE CAPACITIES FOR TESEO PIPING SYSTEMS

Based upon data provided by Polytechnic of Torino (I), Mechanical Department, Research Contract n°1089/97

PRESSURE DROP			FLOW RATE Q IN CFM								
Working pressure (psi)	$\Delta p = P_i - P_u$ about 3%	L (ft)	Ø 14	AP 20	AP and HBS 25	HBS32	AP40	AP and HBS50	HBS63	HBS80	HBS110
29	0.87	98.4	5.7	21.2	35.3	67.1	127.1	208.4	370.8	671	1,493.8
58	1.74	98.4	10.6	38.8	70.6	127.1	234.8	384.9	688.6	1,250.1	2,772.2
87	2.61	98.4	16.2	58.3	102.4	190.7	353.1	579.2	1,031.2	1,871.7	4,149.5
116	3.48	98.4	22.2	81.2	141.3	257.8	476.7	801.6	1,402.2	2,549.7	5,650.3
145	4.35	98.4	23	95.3	169.5	317.8	593.3	960.6	1,712.8	3,107.7	6,886.4

Flow rates in this chart are calculated with 3% pressure drop from inlet pressure. Length of pipe is 98.4 feet.

### APPROXIMATE CHART FOR CHOOSING TESEO PIPING DIAMETER

Flow rate in			LENGTH (feet)									
m³/h	l/min	cfm	66	164	328	656	984	1,312	1,640	3,280	4,921	6,561
21	350	12	20	20	20	20	20	20	20	20	20	20
30	500	18	20	20	20	20	20	20	20	20	25	25
42	700	25	20	20	20	20	20	20	20	25	25	32
54	900	32	20	20	20	20	20	25	25	25	32	32
66	1100	39	20	20	20	20	25	25	25	32	32	32
90	1500	53	20	20	20	25	25	25	32	32	40	40
120	2000	71	20	20	25	25	32	32	32	40	40	40
150	2500	88	20	25	25	32	32	32	40	40	40	50
216	3600	127	25	25	32	32	40	40	40	50	50	50
360	6000	212	25	32	40	40	40	50	50	50	50	63
540	9000	318	32	40	40	50	50	63	63	63	80	80
690	11500	406	32	40	50	50	63	63	63	80	80	80
780	13000	459	40	40	50	63	63	63	80	80	80	110
900	15000	530	40	50	50	63	63	80	80	80	110	110
1260	21000	742	40	50	63	80	80	80	80	110	110	110
1620	27000	954	50	63	63	80	80	110	110	110	110	#110
2100	35000	1236	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	63	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 117 psi pressure and 5% pressure drop from inlet pressure - #110 = pressure drop over 5%

# RESISTANCE TO CHEMICAL AGENTS

MATERIAL	ALUMINIUM (AL)	O-RING SEALS	NYLON	NICKEL- PLATED BRASS	97/23/CE
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	A	B	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	A	B	A	K
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	A	A	A	K
Aniline	A	D	C	A	
Potassium bicarbonate	A	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	B	D	C	
Cloridric acid	C	D	D	D	
Oleic acid	B	B	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 inquiries during the past 20 years. It is always our recommendation that customers evaluate the PED 97/23 directive and consider any norms or laws applicable. PED = 97/23/CE, annexe III, E1 compliant - CE 0620 - KIWA.

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

## CONDITIONS FOR THE TRANSPORTATION OF WATER IN THE HBS SYSTEM

The HBS product by Teseo is suitable to carry water provided that the following conditions are met:

1. Softened water is to be avoided because of its high sodium ions content.
2. The acidity must range between pH5 and pH8.
3. The maximum content of chlorine ions must not exceed 0.27 oz/gal.
4. Iron (Fe), Nickel (Ni), Lead (Pb) and Tin (Sn) must not be present.
5. The maximum Copper (Cu) content should not exceed  $6.68 \cdot 10^{-6}$  oz/gal; the maximum Mercury (Hg) content should not exceed  $6.67 \cdot 10^{-7}$  oz/gal.
6. Aluminum must not be in direct contact with Iron or Copper. Aluminum and Iron must be insulated by galvanization while aluminum and Copper must be insulated with plastic or inert organic matter.
7. Oxygen, Carbon Dioxide and Ammonia ions, dissolved in water do not cause erosive 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 that any doubt exists, please contact Teseo's Technical Office.

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

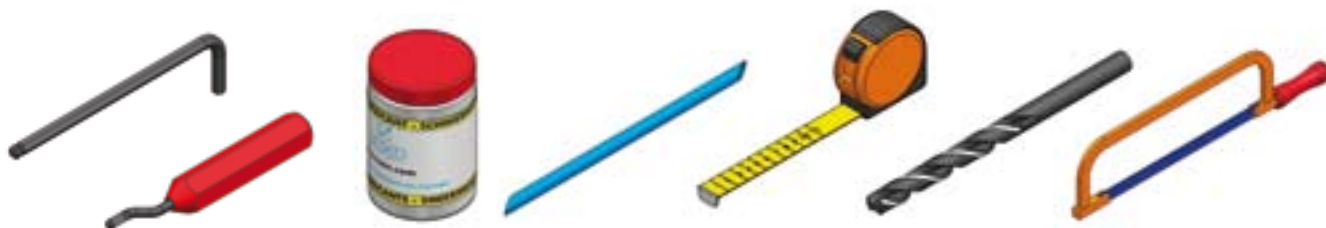
# HBS-AP ASSEMBLING INSTRUCTIONS

## 1. INTRODUCTION

- 1.1. Please read these instructions thoroughly before starting work, bearing in mind any pertinent regulations in force in your country, state or municipality.
- 1.2. Please pay close attention to any instructions identified by **ATTENTION**.
- 1.3. The HBS and AP series of products are suitable for the distribution of compressed air, vacuum and other non-hazardous gases.
- 1.4. For any application with **water** distribution, please check our sheet on page 86.  
For other **fluids** it is necessary to identify their exact composition and to check if they are compatible with the HBS and AP systems; in case of any doubt, please contact the technical department of TESEO or your local representative.
- 1.5. **ATTENTION: TESEO is not responsible for problems resulting from the failure to follow the instructions contained in this manual.**

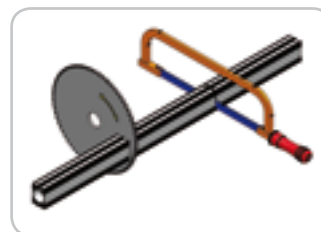
## 2. TOOLS AND FIXTURES

- 2.1. The **tools required** to install even a small system include one Allen wrench for 4 and 5 mm heads, one deburring tool, a tube of neutral grease, one electric or cordless drill, one hacksaw, and one tape measure.
- 2.2. The **tools suggested** for fast and safe work include one pair of adjustable pliers, one drilling jig, one chop saw with a non-ferrous metal-cutting saw blade, one unibit or hole saw, one roll of PTFE tape, one torque wrench and one level or one plumb line,
- 2.3. Close attention should be paid to safety. For this purpose, scaffolding, helmets, harnesses, gloves and protective glasses must be used by all personnel.
- 2.4. **ATTENTION: follow the regulations concerning work safety presently 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 aluminum 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 deburr it using a deburring tool. This operation is required to avoid damaging the O-Rings and to make for easier assembly. It is also important to deburr any holes that are drilled for the purpose of attaching an outlet plate. We recommend deburring to a maximum of 1mm around the hole in order to prevent damage to the O'Ring seal.



3.3. **Lubrication:** in order to make it easier to insert joint, apply a small amount of grease to the inner surface of the hollow bar, in order to avoid any damage to the O'rings.



3.4. **Drilling:** During the drilling operation, it is important to locate the hole in the center of the pipe. Please use the appropriate HBS or AP drilling jig.



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

HBS						
AP						

#### 4. HBS SYSTEM ASSEMBLING 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:** First insert the support plates (brackets) 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:** Be careful. 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 90 Inch-Lbs and a maximum of 120 Inch-Lbs.
- 4.4. **“L” and “T” Joint** have to be secured through specific fixing plate. They allow the pipes to be fixed on two sides. Should you need to connect HBS25 piping, using an “L” joint on the narrow side, a small angle notch of 6mm must be cut to allow the two pipes to fit snugly together.
- 4.5. **Expansion of the line:** For straight pipe sections longer than 150 feet, we recommend mounting a sliding joint every 80 to 100 feet. This will make any future dismantling easier. For the sliding joint 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 ASSEMBLING OPERATIONS

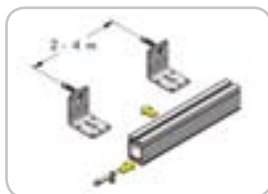
- 5.1. **Clamping brackets installation:** insert one side of the clamping bracket in the groove of the profile, push both clamping brackets together until they make full contact with the pipe profile then tighten the screws securely.
- 5.2. **Joints:** introduce the joint into one pipe, then connect the second pipe, position the clamping brackets so that half is grabbing one pipe and half the other and then tighten the screws securely.
- 5.3. **Screws tightening:** This is a very important operation. Screws must be tightened properly to avoid stripping the threads. The recommended tightening torque for M5 screws is between 90 inch-lbs and 120 inch-lbs maximum. For M6 screws the minimum is 110 inch-lbs and the maximum 130 inch-lbs.



**5.4. ATTENTION:** once the assembly of every joint is completed, double check that the screws have been properly secured and be sure that no threads are damaged due to excessive tightening.

## 6. INSTALLATION

- 6.1. **Tracing 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 provide any inclination in the system for the purpose of collecting the condensate. The vertical drop columns are already equipped at the bottom with a collection pipe and a manual drain valve.
- 6.2. **Securing the hollow bars:** The hollow bars can be supported by several types of ceiling or wall mounted plates and brackets. The recommended distance between these fastening devices is 6.6 to 13.1 feet, depending on the weight of the distributed fluid.



- 6.3. **Isolation valves:** For proper system design ball valves should be mounted both at the beginning of the line and at the beginning of the branches from 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 drop columns:** To prevent all the impurities from fouling the bottom of the hollow bar, we suggest 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. **Grounding:** it is recommended that any piping system be connected to ground in case of stray electrical currents.
- 6.7. **ATTENTION:** wear a safety helmet, harnesses and use scaffolding in compliance with all local, state and federal laws 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 that 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 bottles and/or small boosters.
- 7.4. Open the valve and fill the system up to 15 psi approx.; 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 or your local representative.
- 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.**

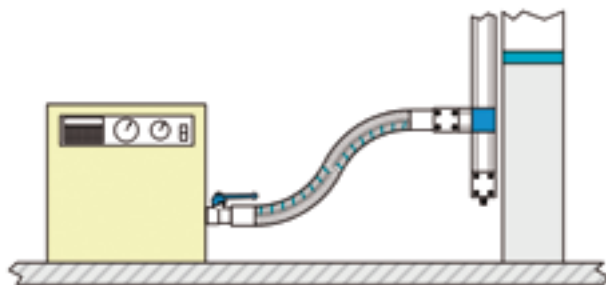
### CAUSE OF THE LEAK

### REMEDIES

O'Ring gasket damaged due to improper mounting or component defective	Replace the O'Ring gasket
Fitting or outlet plate threads damaged.	Seal with a Teflon band or replace the faulty piece.
The drill-hole on the bar is too big or misaligned.	Replace faulty section of the hollow bar
Extrusion defects in 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 "L" and "T" joints	Replace faulty joint.

# INSTALLATION OF FLEXIBLE PIPES

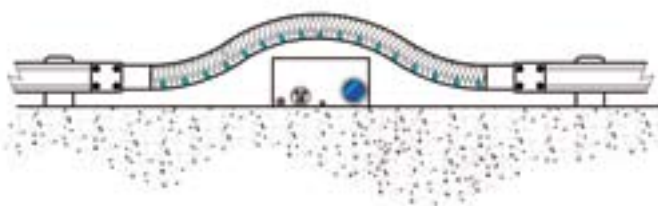
## 1. CONNECTION TO MACHINE



It is recommended that the compressor in every kind of application be installed with a flexible pipe to absorb any vibrations and pulsations that may be present.

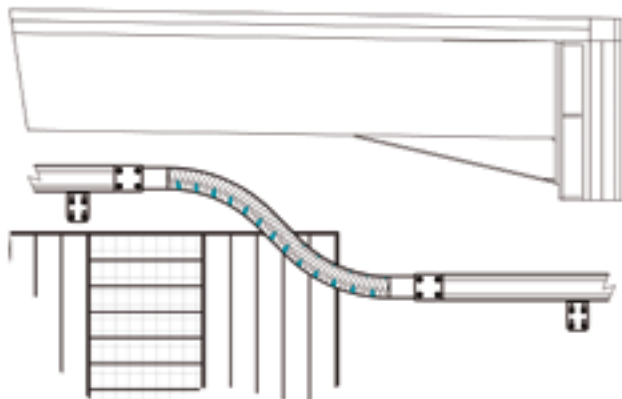
## 2. TURNING OF AN OBSTACLE

We remind you that to avoid any deflection, the bend radius of the flexible pipe mustn't be too tight or damage may occur. The flexible pipe mustn't be forced against the obstacle.



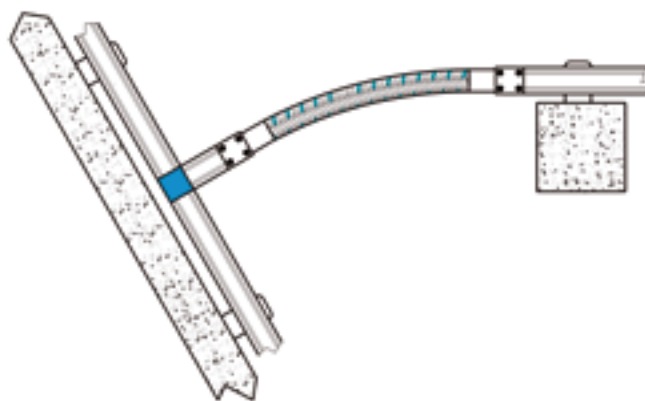
## 3. CHANGING IN LEVEL

It is very useful when a change of level is required that is too tight to be accommodated by two L-Joints. However it is not recommended when the vertical side of the line can't be fixed.

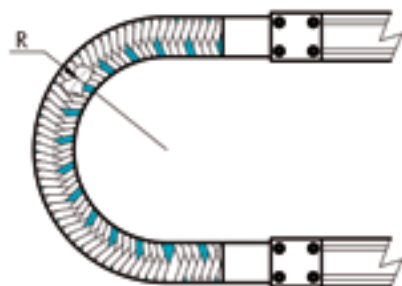


## 4. SPECIAL ANGLES

It is useful too when the horizontal angle of the line can't be achieved with other components from the TESEO system; in such cases it is possible to use male or female terminals used in conjunction with readily available threaded pipe fittings.



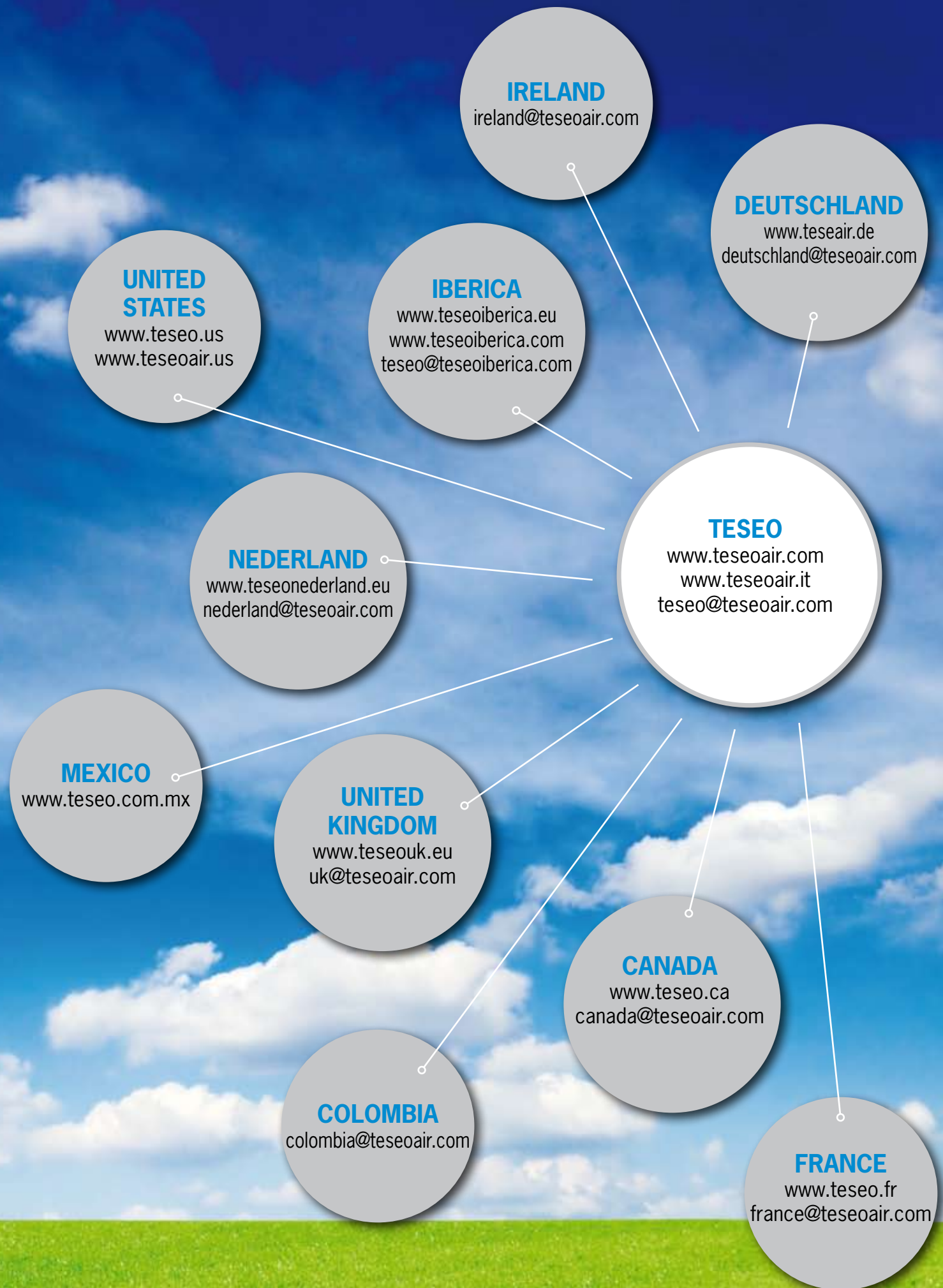
## 5. CURVING AT 180°



Flex Pipe	HBS 25	HBS 32	HBS 50	HBS 63	HBS 80
Min Radius in.	3.94	5.12	7.87	10.63	13.39
Flex Pipe	AP 20	AP 25	AP 40	AP 50	
Min Radius in.	3.54	3.94	5.94	7.87	

# UPDATES

Lined area for updates.







Teseo srl - Via degli oleandri, 1  
25015 Desenzano del Garda (BS) - Italy  
Tel. +39 030 9150411 - Fax +39 030 9150419  
[www.teseoair.com](http://www.teseoair.com) - [teseo@teseoair.com](mailto:teseo@teseoair.com)