

Air Handling Piping System

Air-Pro[®]

Compressed Air Piping System



Piping • Fittings • Valves • Welding Equipment

Another
Corrosion
Problem
Solved.[™]


ASAHI/AMERICA[®]
Your Experts in Plastics[™]

www.asahi-america.com

Air-Pro® Compressed Air Piping System



Developed in 1992, Air-Pro® piping system has been installed with confidence for over 20 years in industries as vast as airplane manufacturing, hospitals and railroad yards. Air-Pro® revolutionized the use of thermoplastics for air transport. Unlike PVC systems, Air-Pro® meets the requirements set by California OSHA Unfired Pressure Vessel Safety Order 462 (m) (3).

Engineers and designers continue to exclusively specify Air-Pro® due to its reliability, large size range, ease of installation and low cost of ownership. Air-Pro® includes all necessary adapters to transition from existing, failing metal or ABS systems.

Your Experts in Plastics™



Asahi/America pioneered the market for thermoplastic valves in the United States and Latin America during a time when there was no viable alternative to metal for piping systems.

Asahi/America began by promoting valves from a company known as ASAHI YUKIZAI CORPORATION and piping through AGRU GmbH in Austria. Through distributor and end-user education and acceptance, the use of thermoplastics has grown. Asahi/America now manufactures and distributes thermoplastic products including valves, actuators, single and double wall piping systems and components throughout the United States, Latin America and Australia.

Custom Fabrication

Asahi/America's team of craftsmen in our Lawrence, MA and Gramercy, LA facilities are positioned to create custom pipe spools, fittings and accessories in a wide range of corrosion resistant thermoplastic materials.

Supported by our application engineers and CAD design professionals our experienced staff is able to create custom pieces to meet your application's requirements.

From concept to completion, we can meet your needs.



Supply Range

Pipe and Fittings

- 20-110mm (1/2" - 4") SDR7, 230psi
- 160-315mm (6" - 12") SDR11, 150psi

Valves

- Ball Valves
- Tapping Saddles

Seals and O-rings

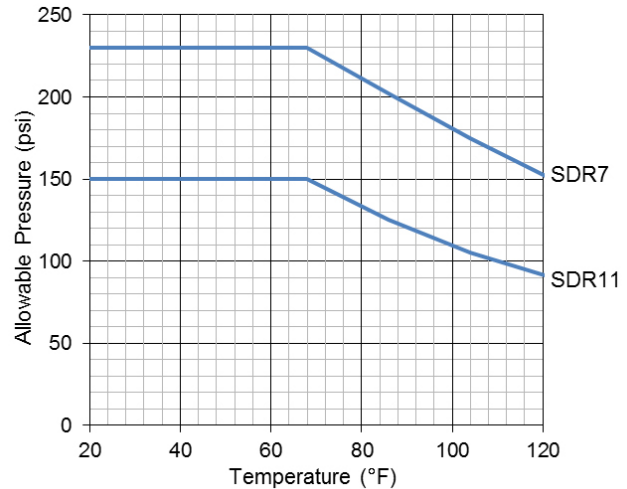
- FKM

Welding Methods



Pressure Rating

50 Year Life



System Benefits

- Increased compressor efficiency due to low friction.
- Thermal fusion is more reliable than compression fittings on aluminum systems.
- Lightweight materials reduce transportation costs.
- Wide temperature range (14° F to 140° F).
- Excellent chemical resistance.
- High pressure load resistance (230psi at 68°F).
- Rodent and bacteria resistant.
- Acceptable for high pressure water use (320psi at 68°F)



Resin & Manufacturing



The specially formulated polyethylene (PE) resin is resistant to synthetic and mineral oils found in compressor lubricants that tend to corrode metals and attack solvent cements used to join ABS piping.

The chemical resistance of Air-Pro® has proven reliability in acids, alkalis and hydrocarbons. In addition to chemical resistance, humidity that often forms in a compressed air system, which can cause considerable problems in metallic piping, has no negative impact on Air-Pro®.

Short Specification

Material:	Minimum cell classification of PE445574E (PE100 Blue) Cal/OSHA requirements for transport of compressed air. Resin shall comply with FDA Code of Federal Regulators (CFR), Title 21, Chapter 1: Section 177.1520 determining suitability for contact with foodstuff.
Pipe Production:	Dimensions and tolerances shall exceed ISO 15494 requirement.
Fitting Production:	Dimensions and tolerances shall exceed ISO 15494 requirement.
Pressure Rating:	<p>Pipe shall be pressure rated in accordance with ASTM D2837 and DIN 8077 for hydrostatic design basis. Pipe shall be manufactured to standard dimensional ratio (SDR) 7 and 11.</p> <p>Based on continuous service life of 50 years at 68°F (20°C).</p> <p>SDR7: 230psi (PN16)</p> <p>SDR11: 150psi (PN10)</p> <p>PN = Nominal pressure in bar.</p>
Joining:	<p>Available methods shall be according to the schedule below:</p> <p>DVS 2208-1 Socket: 20mm through 110mm (1/2" - 4").</p> <p>DVS 2207-1 Contact Butt: 160mm (6") through max product size.</p>

Please visit our website: www.asahi-america.com for a full detailed sample specification.

System Comparison

Air-Pro® is the air handling product of choice for national automotive, airplane and railroad manufacturers because it can be installed throughout a plant allowing for future branches and expansions with no system downtime.

At a fraction of the cost of stainless steel, Air-Pro® can be installed in minutes, not hours.

Air-Pro® has a lower environmental impact than heavy metals such as steel or iron. Its shipping costs and carbon footprint are drastically reduced from conventional systems and Air-Pro® can be completely recycled.

Because of a better surface finish, Air-Pro® reduces operating costs by increasing compressor efficiencies.

Unlike aluminum systems, Air-Pro® can be buried underground.

PVC is not allowed in most states to be used for compressed air due to the dangerous and catastrophic failure modes of such systems. Air-Pro® meets Cal/OSHA requirements for transport of compressed air.

ABS and glue used to join the ABS systems are not resistant to many lubricants and some manufacturers have discontinued their ABS products for air use. Asahi/America offers a transition fitting that can adapt from failing

ABS systems to Air-Pro®.

System Comparison

System	Pressure	Weight	Material Cost	Install Cost	Changes	Corrosion
Air-Pro®	*	*	*	*	*	*
ABS	*	*	*	*	*	-
PVC	-	-	-	-	-	-
Aluminum	-	*	*	*	*	-
Copper	*	-	-	-	-	-
Black Iron	*	-	*	*	-	-
Galvanized	-	-	-	-	-	-
Steel and Stainless Steel	-	-	-	-	-	-

Resistance to Corrosion and Lubricants

Moisture in the air will eventually cause corrosion and scaling on all metal systems, regardless of coatings or pretreatment. Even galvanized steel eventually loses its protective coating and then rusts.

Trace amounts of compressor lubricants are present in all compressed air systems that use lubricated compressors. Air-Pro® is the only plastic system designed to be resistant to all compressor lubricants including:

- Synthetic blends
- Polyalpha-olefin (POA)
- Polyol-ester (POE)
- Diesters

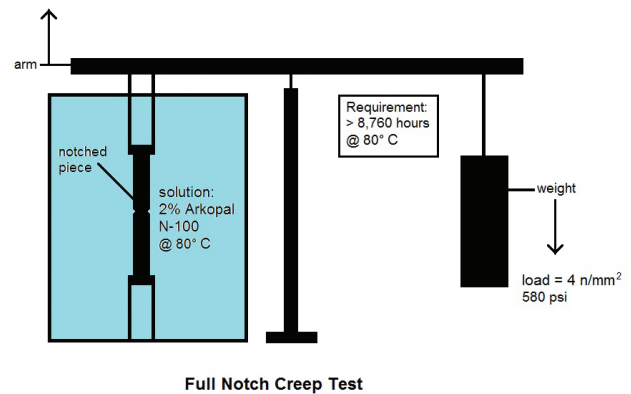
Air-Pro® is rodent, microorganism and bacteria resistant.



Full Notch Creep Test (FNCT)

PE Class	Minimum Standard FNCT
PE 63	30 Hours
PE 80	100 Hours
PE 100	300 Hours
PE 100-RC	8,760 Hours (1 year)

PE Class	Average Results FNCT Rupture time in hours
PE 63	75 Hours
PE 80	114 Hours
PE 100 (Air-Pro®)	533 Hours
PE 100-RC	14,648 Hours

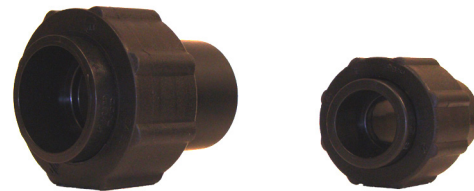


ABS X PE 100 Adapter Couplings

Asahi/America has made transitioning from ABS to our Air-Pro® compressed air line simpler and quicker with the development of this adapter coupling.

Instead of replacing a complete line because of system maintenance or failure from damage to an ABS line, this adapter allows you to replace just the compromised section without taking down the entire line.

See page 20 for dimensional data and part numbers.



Specifications

Material: PE 100

Size Range: 1/2" to 2"

Pressure Rating: SDR11 at 150psi

Media: Compressed Air

Color: Black

System Design and Installation

Installation of thermoplastic systems has considerable differences when compared to metal and should be performed by properly trained personnel.

- Blue Air-Pro® is not UV resistant and must be installed with sufficient protection if exposed to direct sunlight.
- Do not install when the ambient temperature is below 40°F (5°C), or when wind or rain are present.
- Allow 24-48 hours for ambient temperature acclimation before welding.
- All piping systems should be pressure tested according to applicable standards.
- Maximum test pressure is 72.5psi over the maximum allowable operating pressure.

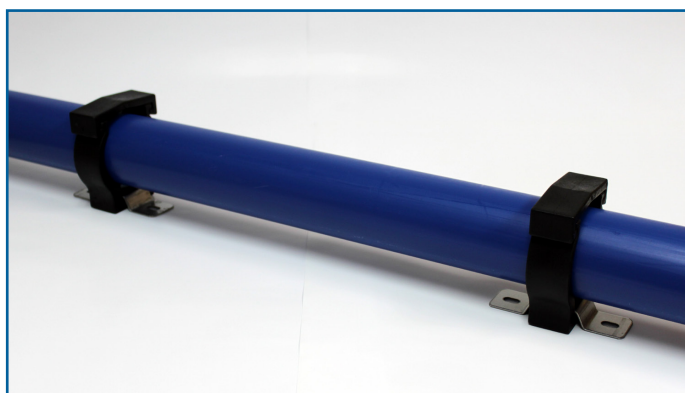
Support Spacing

Thermoplastics must be supported more frequently than rigid metal piping to avoid excessive bending. Asahi/America recommends utilizing pipe clips designed for plastic piping, which fully support the circumference and do not create point loads on the pipe wall. Support distances shown in the table below have been calculated using compressed air with a density of 1.3 kg/m³ (water density = 1,000 kg/m³).

Support Spacing (inches)

Size		68°F (20°C)	86°F (30°C)	104°F (40°C)	122°F (50°C)	140°F (60°C)
mm	inch					
20	1/2	33	31	28	26	25
25	3/4	38	36	33	30	29
32	1	45	39	37	35	34
40	1-1/4	52	49	45	41	39
50	1-1/2	60	57	53	48	46
63	2	70	67	62	56	54
75	2-1/2	79	75	70	63	61
90	3	89	85	78	71	68
110	4	102	97	89	81	78
160	6	107	102	97	92	84
200	8	121	115	110	105	100
250	10	136	131	126	121	110
315	12	152	147	142	134	123

Continuous supports or V-troughs may be used to increase the support spacing of Air-Pro®.



Supported by pipe clips

System Design and Installation

Change of Length Due to Thermal Expansion:

Change in length due to thermal expansion must be considered if the temperatures during installation and operation are different.

Plastic has the property of expanding under heat.

The calculation of the change in length of

Air-Pro® pipe is based on the following formula:

$$\Delta L = \alpha \cdot \Delta T \cdot L$$

ΔL = change in length due to the temp. change [mm]

α = linear expansion coefficient [mm/m/K]

ΔT = difference in temperature [K]

L = pipe length [m]

The length change results from the difference between the installation temperature and the maximum and minimum pipe wall temperature (installation, operation, shut-down).

Calculation of minimum straight length (following DVS 2210, part 1)

Changes in length are caused by a changing operating temperature.

Axial movement compensation should be provided outside of the installed pipes.

In many cases, changes in the direction of the pipe layout can be used to compensate changes in the length.

Prestressing method – Installation

For this method, it is required to enter $\Delta L/2$ to calculate the minimum straight length as part of the change in length as compensated by prestressing by $\Delta L/2$.

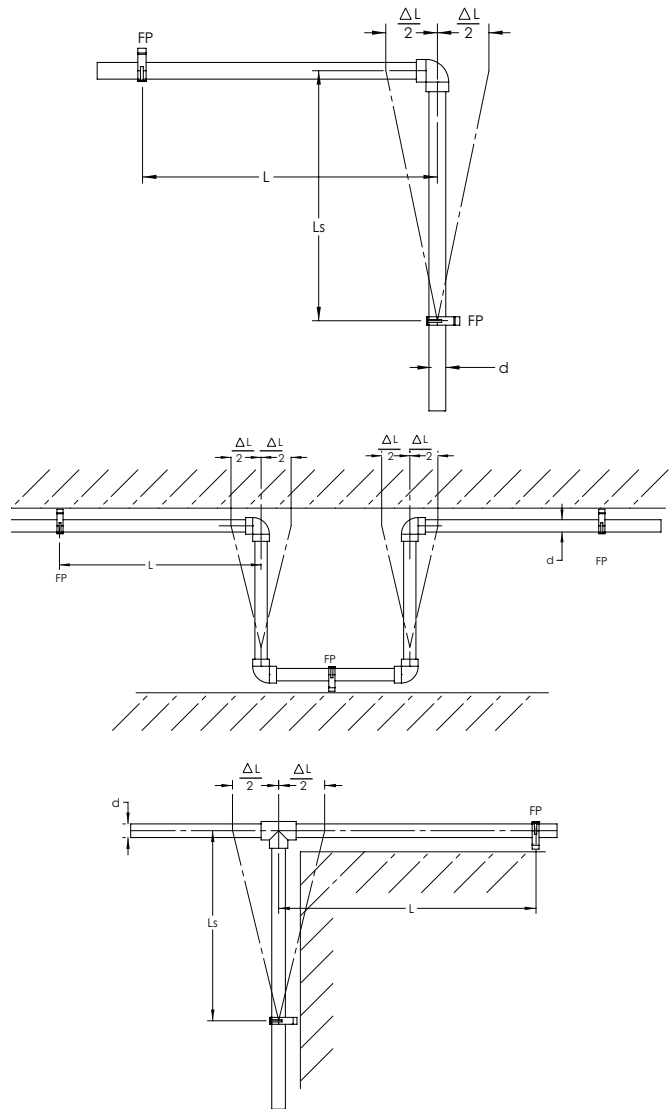
This means that, in practice, the bent side is already prestressed by half of the change in the length $\Delta L/2$.

Advantages of the prestressing method:

- The minimum straight length can be reduced.
- Perfect installation during operation, as the expansion is hardly visible.

Try the expansion calculator on our website

<https://www.asahi-america.com/resource-center/online-tools/expansion-calculator>



The minimum straight length is based on the following:

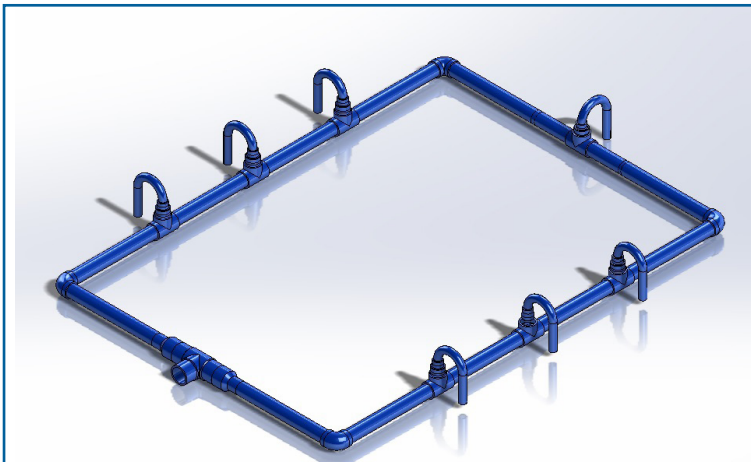
$$L_s = C \sqrt{d_a \Delta L}$$

- L_s = minimum straight length [mm]
 C = material coefficient $C=20$ (PE)
 d_a = pipe outside diameter [mm]
 ΔL = change in length [mm]

System Design and Installation

Condensate Drains

- Goosenecks are designed to prevent condensate, which forms due to pressure and temperature changes, from reaching the point of use.



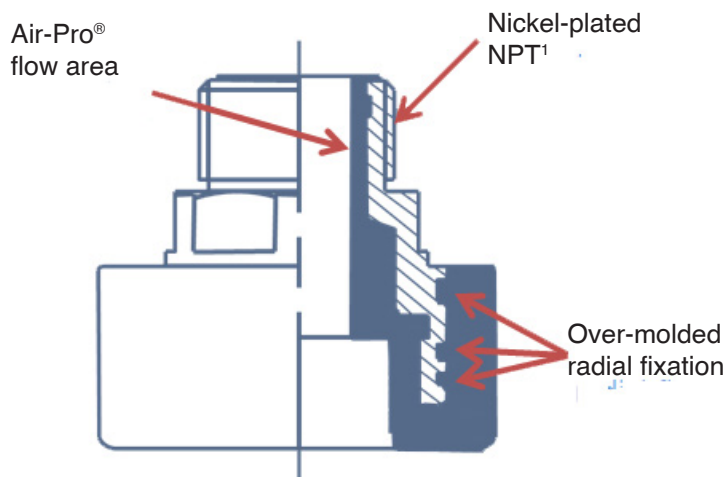
Examples of a gooseneck design

- Water drains offer maximum protection from damaging downstream instruments. Drains can be incorporated into Air-Pro® using one of the following mechanical connections.

Threaded Connections

- Air-Pro® threaded joints have a nickel-plated brass core for corrosion resistance and full pressure rating.
- It is recommended to lightly coat threads with molybdenum sulfide to prolong life.
- Always use PTFE tape to ensure a leak-proof connection. Torque must not exceed 29.5 ft-lbs.

Threaded Adapters



1) To use PTFE tape, lightly wipe thread surface with fine emery cloth.

System Design and Installation

Approximation formula for calculating the pipe inside diameter

The pipe inside diameter is normally calculated by means of an approximation formula assuming that the compressed air temperature is equivalent to the intake temperature.

A suitable approximation can be achieved by the following equation:

$$Di = \sqrt[5]{\frac{450LV^{1.85}}{\Delta pP}}$$

Di=	pipe inside diameter	[mm]
L=	nominal length of piping system	[M]
V=	flow rate	[l/s]
Δp=	pressure drop	[bar]
p=	operating pressure	[bar]



System Design and Installation

Nomogram

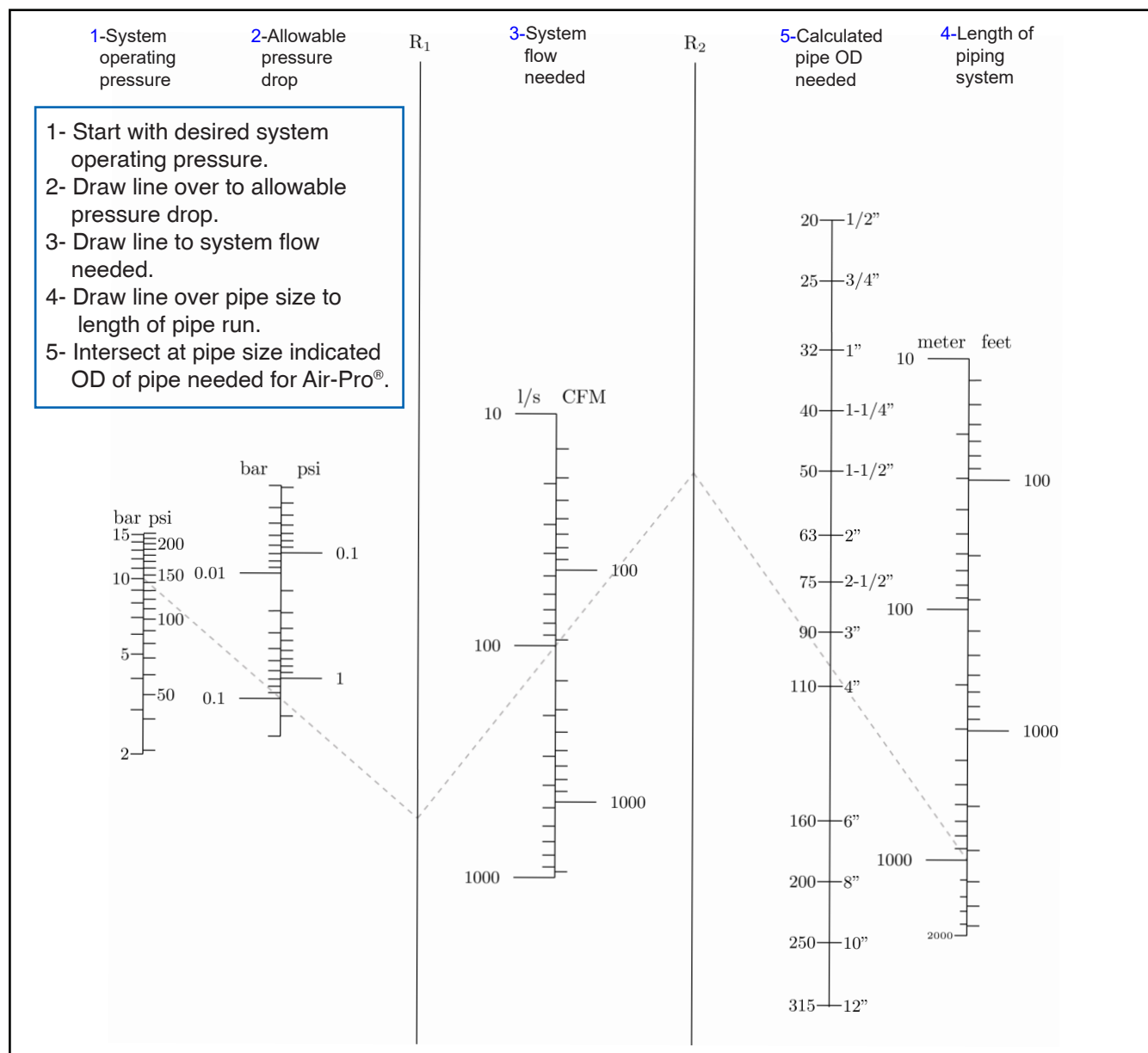
Nomogram for calculating the pipe outside diameter

A second method for calculating the pipe outside diameter is a nomogram based on the approximation formula.

The nomogram shown below is specially adapted to Air-Pro® pipes and relates directly to results in the required outside diameter.

The outside diameter can be calculated by entering the known parameters such as pressure drop, operating pressure, flow rate and length of piping system through its created intersections.

Another advantage of the nomogram is the fact that when four parameters are known, the fifth can easily be calculated.

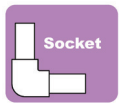


System Design and Installation

Thermofusion

Properly trained installers are critical to overall system performance. Asahi/America recommends plastic pipe contractors maintain certifications according to DVS thermofusion guidelines. Asahi/America is proud to offer job site training according to DVS guidelines.

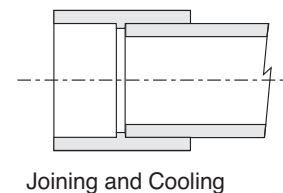
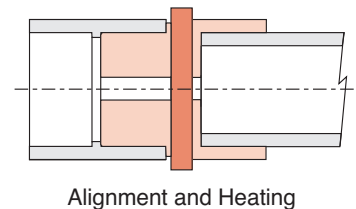
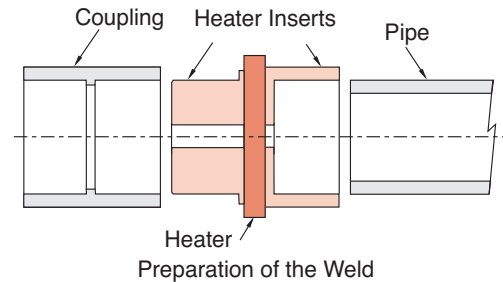
Training should be conducted by authorized Asahi/America personnel a maximum of one week prior to beginning the installation.



Socket Fusion

The illustration to the right shows socket fusion steps:

- **Melting the Pipe and Fitting:** After peeling the end of the pipe, insert the pipe and the fitting onto the heater bushings simultaneously and hold for the heating time.
- **Making the Joint:** After the heating time, pull the pipe and fitting off the heater bushings and immediately insert the pipe into the socket of the fitting up to the socket depth.
- **Curing:** After ensuring the pipe has been inserted properly, allow the new fitted joint to cool for the specified time before moving the joint.



Welding Equipment



Hand Held Socket

- 20-63mm (1/2" - 2")



Bench Socket

- 20-110mm (1/2" - 4")

System Design and Installation

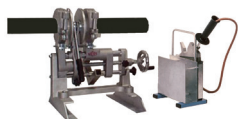


Butt Fusion

Butt fusion thermally bonds pipe and components by heating the face of the components. Once elevated to the material-specific melting temperatures, the component faces are pressed against each other.

Bench top welding tools are capable of welding up to the maximum size available in the piping system. Welding equipment up to 160mm (6") can often be used in hard-to-reach areas like pipe rafters.

Welding Equipment



Miniplast®

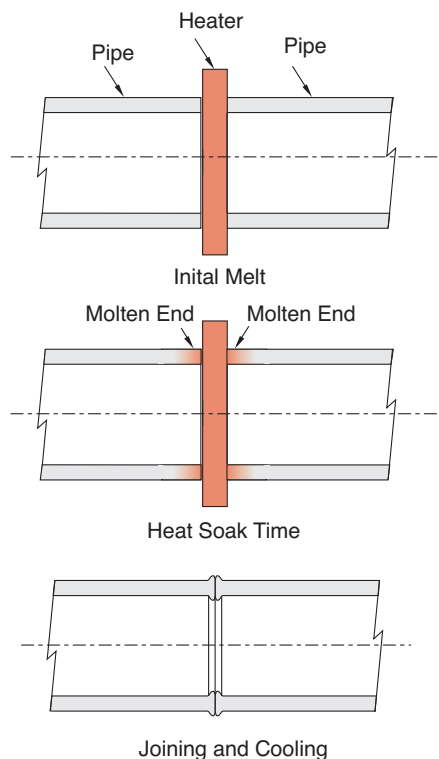
- 20-110mm (1/2" - 4")



Maxiplast®

- 50-160mm (1-1/2" - 6")

For 6" and larger material use the Field 6, 10 or 12
Consult website for details.



Electrofusion

Electrofusion thermally bonds pipe components by heating a section of the component and the electrofusion coupling.

Electrofusion uses electricity to heat an imbedded copper wire through resistance. Air-Pro®'s imbedded wire is never exposed to media being transported.

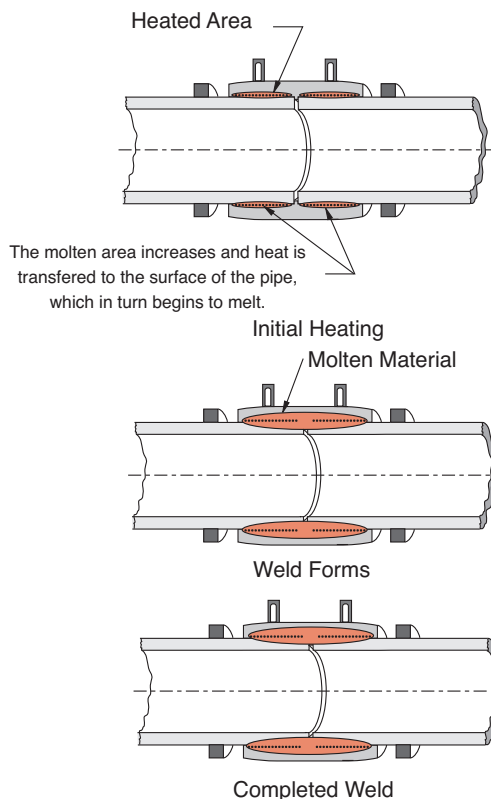
Fittings are available up to 315mm (12") and require the use of an electrical control device, which regulates voltage and current.

Welding Equipment



Polymatic

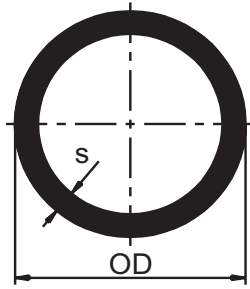
- All sizes



Dimensional Data

Socket Fittings

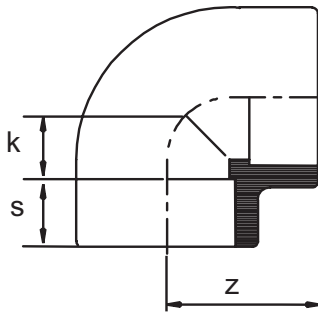
Air-Pro® Pipe (sold in 16.4 ft lengths)



Size (mm)	Size (inch)	OD (inch)	s (inch)	Weight (lb/ft)	Part #
20	1/2	0.79	0.110	0.10	5802005
25	3/4	0.98	0.138	0.16	5802007
32	1	1.26	0.173	0.26	5802010
40	1-1/4	1.57	0.217	0.40	5802012
50	1-1/2	1.97	0.272	0.63	5802015
63	2	2.48	0.339	0.99	5802020
90	3	3.54	0.484	2.01	5802030
110	4	4.33	0.594	3.01	5802040
Butt Fusion Only					
160	6	6.30	0.575	4.48	5803060
200	8	7.87	0.717	6.99	5803080
250	10	9.84	0.894	10.89	5803010
315	12	12.40	1.126	17.21	5803120

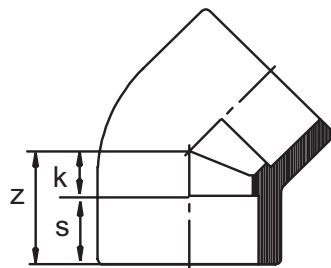
Air-Pro® systems 20-110mm are blue. SDR 7.4 and rated at 230psi.
 Air-Pro® pipe systems 160-315mm are black, SDR 11 and rated at 150psi.
 Blue Air-Pro® pipe available upon request, fittings remain black 160-315mm.

Socket 90



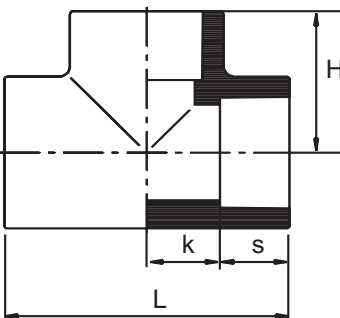
Size (mm)	Size (inch)	Z (inch)	s (inch)	k (inch)	Part #
20	1/2	1.177	0.626	0.551	5805005
25	3/4	1.378	0.709	0.669	5805007
32	1	1.547	0.760	0.787	5805010
40	1-1/4	1.815	0.831	0.984	5805012
50	1-1/2	2.055	0.953	1.102	5805015
63	2	2.421	1.043	1.378	5805020
90	3	3.311	1.382	1.929	5805030
110	4	3.937	1.693	2.244	5805040

Socket 45



Size (mm)	Size (inch)	Z (inch)	s (inch)	k (inch)	Part #
20	1/2	1.063	0.630	0.433	5808005
25	3/4	1.240	0.689	0.551	5808007
32	1	1.468	0.799	0.669	5808010
40	1-1/4	1.673	0.846	0.827	5808012
50	1-1/2	1.984	0.961	1.024	5808015
63	2	2.402	1.102	1.299	5808020
90	3	3.256	1.445	1.811	5808030
110	4	3.886	1.681	2.205	5808040

Socket Tee



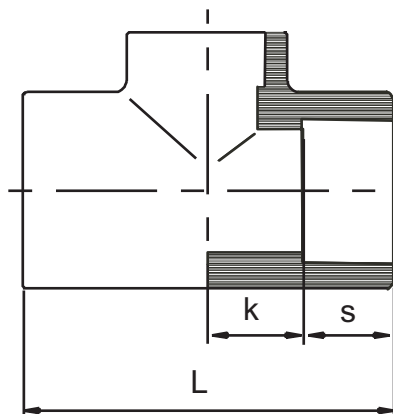
Size (mm)	Size (inch)	L (inch)	H (inch)	s (inch)	k (inch)	Part #
20	1/2	2.362	1.177	0.626	0.551	5820005
25	3/4	2.756	1.378	0.748	0.630	5820007
32	1	3.126	1.547	0.760	0.787	5820010
40	1-1/4	3.701	1.831	0.846	0.984	5820012
50	1-1/2	4.252	2.134	0.972	1.161	5820015
63	2	4.933	2.461	1.142	1.319	5820020
90	3	7.268	3.594	1.488	2.106	5820030
110	4	8.150	4.075	1.654	2.421	5820040

Note: Dimensions may change, please use our BIM/CAD resource page for the latest dimensions and CAD file downloads. <http://cad.asahi-america.com/category/air-pro>

Dimensional Data

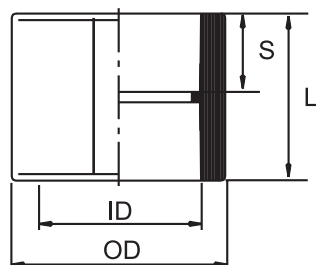
Socket Fittings

Socket Reducing Tee



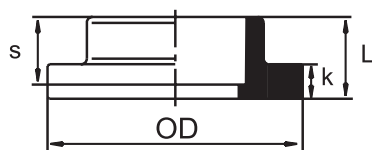
	Size (mm) (inch)	L (inch)	H (inch)	s1	s2	k (inch)	Part #
25/20	3/4 x 1/2	2.657	1.240	0.720	0.618	0.608	5824101
32/20	1 x 1/2	3.094	1.551	0.776	0.610	0.772	5824130
32/25	1 x 3/4	3.094	1.535	0.776	0.689	0.772	5824131
40/20	1-1/4 x 1/2	3.504	1.772	0.843	0.618	0.909	5824166
40/25	1-1/4 x 3/4	3.476	1.724	0.858	0.717	0.880	5824167
40/32	1-1/4 x 1	3.583	1.772	0.846	0.748	0.945	5824168
50/20	1-1/2 x 1/2	4.213	1.949	1.012	0.622	1.094	5824208
50/25	1-1/2 x 3/4	4.213	1.996	0.992	0.705	1.114	5824210
50/32	1-1/2 x 1	4.213	2.067	0.945	0.748	1.161	5824211
50/40	1-1/2 x 1-1/4	4.213	2.067	0.965	0.827	1.142	5824212
63/25	2 x 3/4	5.079	2.559	1.126	0.709	1.413	5824248
63/32	2 x 1	5.059	2.559	1.126	0.748	1.404	5824249
63/40	2 x 1-1/4	5.059	2.539	1.126	0.846	1.404	5824250
63/50	2 x 1-1/2	5.059	2.539	1.126	0.945	1.404	5824251

Socket Coupling



	Size (mm) (inch)	L (inch)	OD (inch)	ID (inch)	S (inch)	Part #
20	1/2	1.378	1.181	0.787	0.634	5816005
25	3/4	1.535	1.374	0.984	0.709	5816007
32	1	1.677	1.681	1.260	0.787	5816010
40	1-1/4	1.811	2.035	1.575	0.866	5816012
50	1-1/2	2.024	2.520	1.968	0.965	5816015
63	2	2.335	3.169	2.480	1.110	5816020
90	3	3.059	4.496	3.543	1.378	5816030
110	4	3.543	5.244	4.331	1.681	5816040

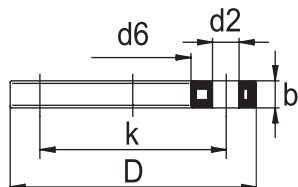
Socket Stub End*



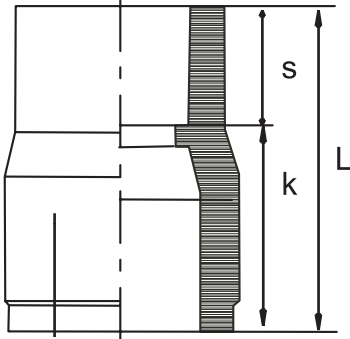
	Size (mm) (inch)	L (inch)	OD (inch)	s (inch)	k (inch)	Part #
20	1/2	0.827	1.772	0.630	0.382	5833005
25	3/4	0.906	2.283	0.669	0.374	5833007
32	1	0.984	2.677	0.748	0.382	5833010
40	1-1/4	1.043	3.071	0.866	0.433	5833012
50	1-1/2	1.181	3.465	0.941	0.472	5833015
63	2	1.319	4.016	1.083	0.543	5833020
90	3	1.654	5.433	1.358	0.630	5833030
110	4	1.890	6.220	1.614	0.736	5833040

*Backing ring required (below)

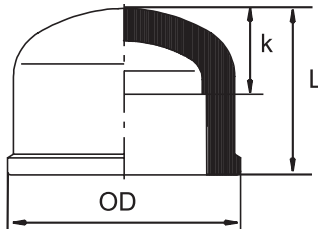
Backing Ring



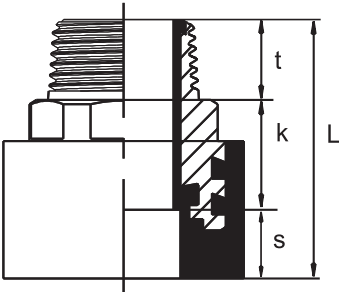
	Size (mm) (inch)	D (inch)	k (inch)	d2 (inch)	d6 (inch)	b (inch)	# Holes	PP-Grey Part #	PP-Black Part #
20	1/2	3.740	2.380	0.630	1.102	0.472	4	5046005	5146005
25	3/4	4.016	2.750	0.630	1.339	0.472	4	5046007	5146007
32	1	4.488	3.120	0.630	1.654	0.630	4	5046010	5146010
40	1-1/4	5.118	3.500	0.630	2.008	0.630	4	5046012	5146012
50	1-1/2	5.236	3.880	0.630	2.441	0.709	4	5046015	5146015
63	2	6.378	4.750	0.787	3.071	0.709	4	5046020	5146020
90	3	7.638	6.000	0.787	4.370	0.709	8	5046030	5146030
110	4	9.016	7.500	0.787	5.236	0.709	8	5046040	5146040

Dimensional Data**Socket Fittings****Spigot x Socket
Reducing Bushing**

Size		L	s	k	Part #
(mm)	(inch)	(inch)	(inch)	(inch)	
25/20	3/4 x 1/2	1.496	0.618	0.878	5829101
32/20	1 x 1/2	1.732	0.614	1.118	5829130
32/25	1 x 3/4	1.732	0.697	1.035	5829131
40/20	1-1/4 x 1/2	1.949	0.61	1.339	5829166
40/25	1-1/4 x 3/4	1.949	0.689	1.260	5829167
40/32	1-1/4 x 1	1.968	0.78	1.189	5829168
50/20	1-1/2 x 1/2	2.165	0.646	1.52	5829208
50/25	1-1/2 x 3/4	2.138	0.697	1.441	5829210
50/32	1-1/2 x 1	2.146	0.701	1.445	5829211
50/40	1-1/2 x 1-1/4	2.126	1.004	1.122	5829212
63/25	2 x 3/4	2.520	0.709	1.811	5829248
63/32	2 x 1	2.520	0.787	1.732	5829249
63/40	2 x 1-1/4	2.500	0.827	1.673	5829250
63/50	2 x 1-1/2	2.520	0.965	1.555	5829251
90/63	3 x 2	3.366	1.1902	2.264	5829338
110/63	4 x 2	3.465	1.122	2.343	5829420
110/90	4 x 3	3.445	1.476	1.968	5829422

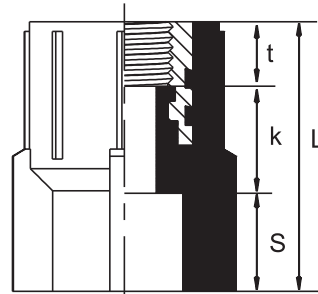
Socket Cap

Size		OD	L	k	Part #
(mm)	(inch)	(inch)	(inch)	(inch)	
20	1/2	1.280	1.063	0.445	5812005
25	3/4	1.484	1.201	0.587	5812007
32	1	1.831	1.358	0.661	5812010
40	1-1/4	2.283	1.496	0.886	5812012
50	1-1/2	2.756	1.850	1.161	5812015
63	2	3.406	2.362	1.583	5812020
90	3	4.685	3.150	2.504	5812030
110	4	5.512	3.701	3.004	5812040

Socket MNPT Adapter

Size		L	s	k	t	Part #
(mm)	(inch)	(inch)	(inch)	(inch)	(inch)	
20	1/2	2.244	0.591	1.043	0.610	5859005
25	3/4	2.402	0.669	1.102	0.669	5859007
32	1	2.598	0.709	1.181	0.709	5859010
40	1-1/4	2.795	0.827	1.142	0.827	5859012
50	1-1/2	3.031	0.945	1.142	0.945	5859015
63	2	3.268	1.083	1.102	1.083	5859020

- Nickel-plated brass threads
- 230psi rated

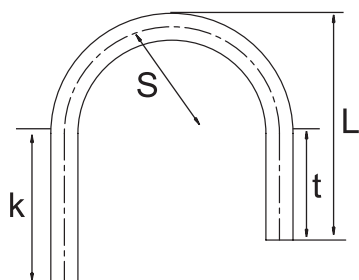
Socket FNPT Adapter

Size		L	S	k	t	Part #
(mm)	(inch)	(inch)	(inch)	(inch)	(inch)	
20	1/2	1.598	0.62	0.386	0.591	5853005
25	3/4	1.606	0.62	0.386	0.709	5853007
32	1	1.850	0.71	0.386	0.787	5853010
40	1-1/4	1.949	0.79	0.386	0.827	5853012
50	1-1/2	2.268	0.91	0.386	1.004	5853015
63	2	2.567	1.04	0.386	1.142	5853020

- Nickel-plated brass threads
- 230psi rated

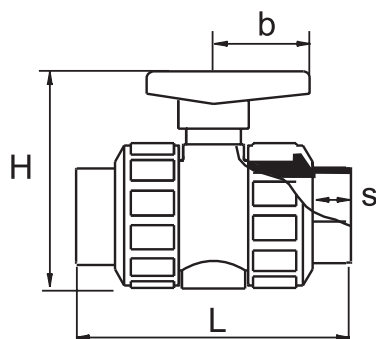
Note: Dimensions may change, please use our BIM/CAD resource page for the latest dimensions and CAD file downloads. <http://cad.asahi-america.com/category/air-pro>

Spigot Gooseneck



Size		L	S	k	t	Part #
(mm)	(inch)	(inch)	(inch)	(inch)	(inch)	
20	1/2	10	5	7	5	5835005
25	3/4	9	5	7	4	5835007
32	1	10	5	7	5	5835010

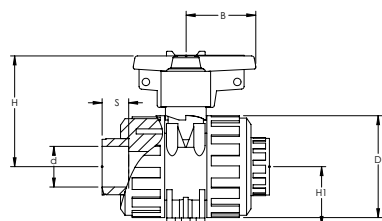
Socket Ball Valve



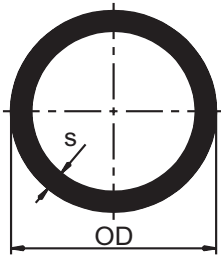
Size		L	H	b	S	Part #
(mm)	(inch)	(inch)	(inch)	(inch)	(inch)	
25	3/4	4.370	2.126	2.165	0.630	5801007
40	1-1/4	5.433	3.031	2.559	0.807	5801012
90	3	11.181	6.220	5.315	1.398	5801030

Air-Pro® ball valves sizes 20-63mm are rated 230psi.
Air-Pro® ball valve size 90mm are rated 150psi.

Air Pro® Ball Valve

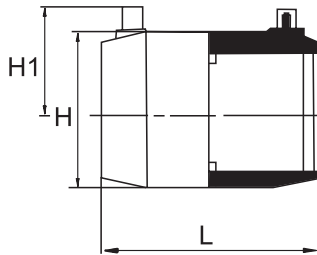


Size		Dimensions				SDR 7 / PN 16 / 230 PSI
(mm)	(inch)	L (inch)	b (inch)	H (inch)	H1 (inch)	Part #
20	1/2	3.88	1.57	2.93	1.30	580117005
25	3/4	4.45	2.03	3.27	1.57	580117007
32	1	4.84	2.03	3.37	1.71	580117010
40	1-1/4	5.55	2.52	4.11	2.01	580117012
50	1-1/2	6.50	2.87	4.45	2.22	580117015
63	2	7.66	3.34	4.78	2.54	580117020

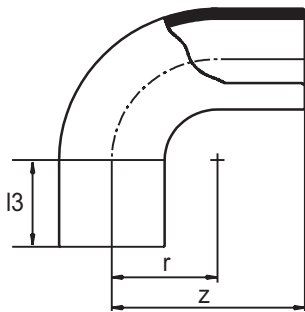
Dimensional Data**Electrofusion and Butt Fittings****Air-Pro® Pipe**
(sold in 16.4 ft lengths)

Size (mm)	Size (inch)	OD (inch)	s (inch)	Weight (lb/ft)	Part #
160	6	6.30	0.575	4.48	5803060
200	8	7.87	0.717	6.99	5803080
250	10	9.84	0.894	10.89	5803010
315	12	12.40	1.126	17.21	5803120

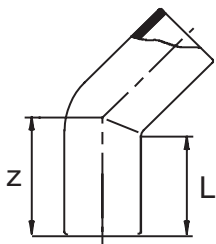
Air-Pro® pipe systems 160-315mm are black, SDR 11 and rated at 150psi.
Blue Air-Pro® pipe available upon request; fittings remain black 160-315mm.

Electrofusion Coupling

Size (mm)	Size (inch)	L (inch)	H (inch)	H1 (inch)	Part #
20	1/2	2.953	1.181	1.437	5817005
25	3/4	3.189	1.378	1.457	5817007
32	1	3.504	1.654	1.693	5817010
40	1-1/4	3.898	2.087	1.929	5817012
50	1-1/2	4.370	2.638	2.087	5817015
63	2	5.000	3.268	2.205	5817020
90	3	5.591	4.528	2.913	5817030
110	4	5.984	5.512	3.268	5817040
160	6	7.165	7.874	4.252	5817060
200	8	8.543	9.646	5.079	5817080
250	10	9.449	12.205	6.260	5817100
315	12	10.236	15.354	7.835	5817120

Elongated 90

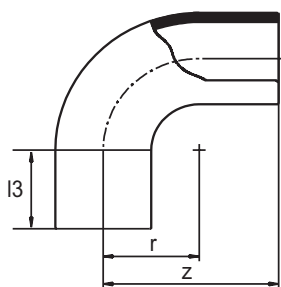
Size (mm)	Size (inch)	z (inch)	r (inch)	I3 (inch)	Part #
160	6	12.638	6.535	6.102	5811060
200	8	14.882	8.189	6.693	5811080
250	10	17.323	10.039	7.677	5811010
315	12	21.260	12.480	8.661	5811120

Elongated 45

Size (mm)	Size (inch)	z (inch)	L (inch)	Part #
160	6	6.161	4.587	5809060
200	8	6.772	4.803	5809080
250	10	8.543	6.220	5809100
315	12	9.882	6.968	5809120

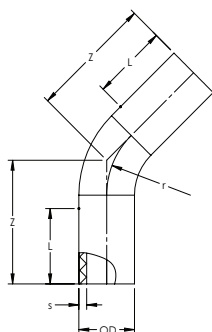
Note: Dimensions may change, please use our BIM/CAD resource page for the latest dimensions and CAD file downloads. <http://cad.asahi-america.com/category/air-pro>

90 Degree Sweep Elbow



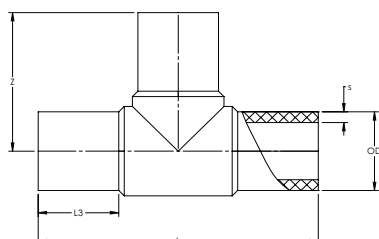
Size		Dimensions			SDR 7.4 / PN 16 / 230 PSI
(mm)	(inch)	s (inch)	Z (inch)	L3 (inch)	Part #
63	2	0.34	4.29	2.99	580501020
90	3	0.48	4.96	3.25	580501030
110	4	0.59	5.73	3.46	580501040

45 Degree Sweep Elbow - Butt



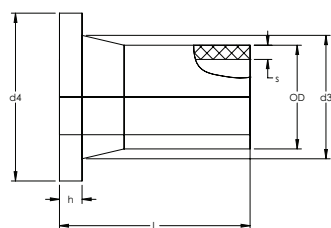
Size		Dimensions				SDR 7.4 / PN 16 / 230 PSI
(mm)	(inch)	s (inch)	z (inch)	r (inch)	L (inch)	Part #
63	2	0.34	6.69	3.74	3.94	580801020
90	3	0.48	8.66	5.31	5.91	580801030
110	4	0.59	9.45	6.50	5.91	580801040

Tee - Butt



Size		Dimensions				SDR 7.4 / PN 16 / 230 PSI
(mm)	(inch)	s (inch)	z (inch)	L (inch)	L3 (inch)	Part #
63	2	0.34	4.37	8.62	2.48	582001020
90	3	0.48	5.55	11.18	3.11	582001030
110	4	0.59	6.22	12.40	3.23	582001040

Stub End* (Flange Adapter) - Butt



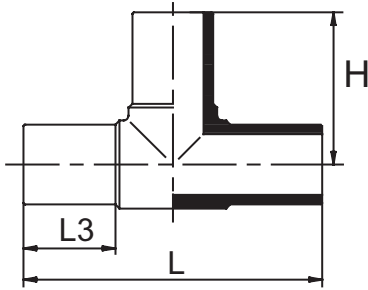
Size		Dimensions					SDR 7.4 / PN 16 / 230 PSI
(mm)	(inch)	s (inch)	L (inch)	d3 (inch)	d4 (inch)	h (inch)	Part #
63	2	0.34	4.65	2.95	4.02	0.55	583301020
90	3	0.48	5.51	4.13	5.43	0.67	583301030
110	4	0.59	5.51	4.92	6.22	0.71	583301040

*Backing ring required. See page 20.

Dimensional Data

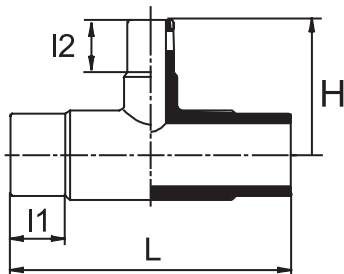
Butt Fittings

Elongated Tee



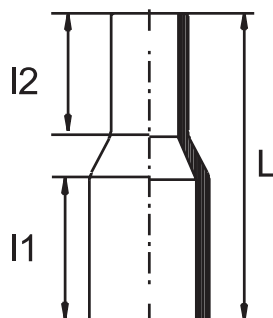
Size		L	H	L3	Part #
(mm)	(inch)	(inch)	(inch)	(inch)	
160	6	16.063	7.972	3.937	5823060
200	8	21.653	10.827	5.315	5823080
250	10	24.488	12.205	5.827	5823100
315	12	29.646	14.764	6.693	5823120

Elongated Reducing Tee



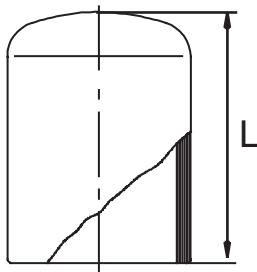
Size		L	H	I1	I2	Part #
(mm)	(inch)	(inch)	(inch)	(inch)	(inch)	
160/110	6 x 4	11.417	7.618	3.858	3.268	5825532
200/110	8 x 4	21.653	9.449	5.276	4.055	5825585
200/160	8 x 6	21.653	10.433	5.276	4.488	5825627
315/110	12 x 4	21.496	11.417	6.693	3.937	5825628
315/200	12 x 8	22.638	12.205	6.693	4.724	5825660
315/250	12 x 10	26.378	13.110	6.693	5.905	5825673

Elongated Conc. Reducer



Size		L	I1	I2	Part #
(mm)	(inch)	(inch)	(inch)	(inch)	
160/110	6 x 4	8.740	3.858	3.465	5831532
200/160	8 x 6	9.921	4.409	4.016	5831585
250/160	10 x 6	12.362	6.102	4.449	5831627
250/200	10 x 8	12.362	6.102	4.921	5831628
315/200	12 x 8	14.764	7.047	5.236	5831660
315/250	12 x 10	14.764	6.693	6.102	5831673

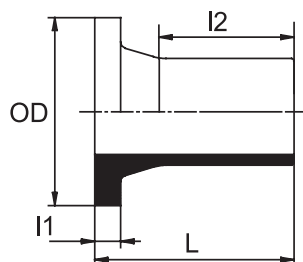
Elongated Cap



Size		L	Part #
(mm)	(inch)	(inch)	
160	6	6.594	5813060
200	8	7.146	5813080
250	10	9.055	5813010
315	12	10.315	5813120

Note: Dimensions may change, please use our BIM/CAD resource page for the latest dimensions and CAD file downloads. <http://cad.asahi-america.com/category/air-pro>

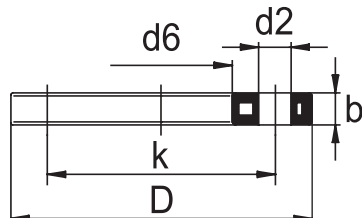
Elongated Stub End*



Size (mm)	Size (inch)	OD (inch)	L (inch)	I1 (inch)	I2 (inch)	Part #
160	6	8.346	7.146	0.984	4.980	5832060
200	8	10.551	7.146	1.260	4.626	5832080
250	10	12.598	10.827	1.378	7.953	5832010
315	12	14.567	15.039	1.378	11.890	5832120

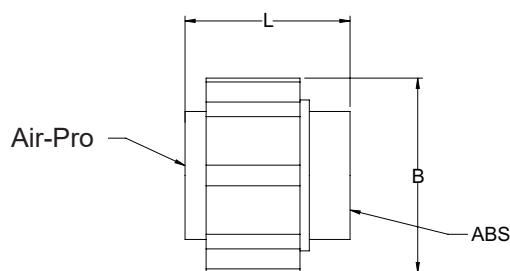
*Backing ring required (below)

Backing Ring

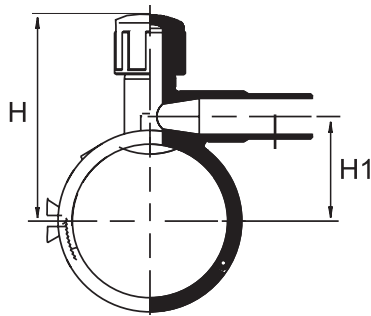


Size (mm)	Size (inch)	D (inch)	k (inch)	d2 (inch)	d6 (inch)	b (inch)	# Holes	PP Grey Part #	PP Black Part #
63	2	6.378	4.750	0.787	3.071	0.709	4	5046020	5146020
90	3	7.638	6.000	0.787	4.370	0.709	8	5046030	5146030
110	4	9.016	7.500	0.787	5.236	0.709	8	5046040	5146040
160	6	11.142	9.500	0.866	7.008	0.945	8	5046060	5146060
200	8	13.583	11.750	0.866	9.291	0.945	8	5046080	5146080
250	10	16.220	14.250	0.984	11.339	1.063	12	5046100	5146100
315	12	19.173	17.000	0.984	13.307	1.260	12	5046120	5146120

ABS X PE 100 Adapter Coupling

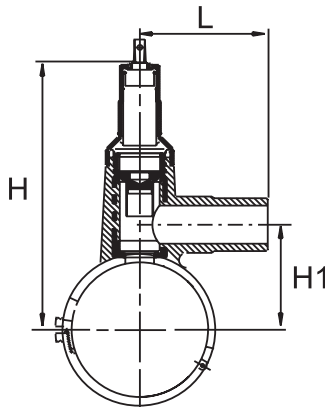


Size (mm)	Size (inch)	L (inch)	B (inch)	Part #
20	1/2	2.25	1.75	5827005
25	3/4	2.40	2.15	5827007
32	1	2.50	2.50	5827010
40	1-1/4	3.00	3.00	5827012
50	1-1/2	3.50	3.40	5827015
63	2	3.65	4.00	5827020

Dimensional Data**Electrofusion and Butt Fittings****Reducing Electrofusion Tapping Saddle**

Size (mm)	Size (inch)	H (inch)	H1 (inch)	Part #
63/32	2 x 1	5.039	2.165	5839249
90/32	3 x 1	5.433	2.559	5839336
90/50	3 x 1-1/2	6.142	2.559	5839337
90/63	3 x 2	6.142	2.559	5839338
110/32	4 x 1	6.024	3.150	5839401
110/50	4 x 1-1/2	6.732	3.150	5838415
110/63	4 x 2	6.732	3.150	5839420
160/25	6 x 3/4	7.717	4.134	5839514
160/32	6 x 1	7.717	4.134	5839516
160/50	6 x 1-1/2	7.717	4.134	5839523
160/63	6 x 2	7.717	4.134	5839530

Air-Pro® pipe electrofusion saddles are rated at 150psi.

Reducing Electrofusion Tapping Saddle w/Valve

Size (mm)	Size (inch)	L (inch)	H (inch)	H1 (inch)	Part #
63 x 32	2 x 1	5.157	6.417	2.571	5838249
63 x 40	2 x 1-1/4	5.512	6.417	2.571	5838250
63 x 50	2 x 1-1/2	6.319	6.417	2.571	5838251
63 x 63	2 x 2	7.362	6.417	2.571	5838020
90 x 32	3 x 1	5.315	7.992	3.110	5838336
90 x 40	3 x 1-1/4	5.709	7.992	3.110	5838335
90 x 50	3 x 1-1/2	6.339	7.992	3.110	5838337
90 x 63	3 x 2	7.559	7.992	3.110	5838338
110 x 32	4 x 1	5.394	7.953	3.425	5838401
110 x 40	4 x 1-1/4	5.787	7.992	3.425	5838412
110 x 50	4 x 1-1/2	6.299	7.992	3.425	5838415
110 x 63	4 x 2	7.583	7.992	3.425	5838420
160 x 32	6 x 1	5.394	7.992	4.071	5838516
160 x 40	6 x 1-1/4	5.787	7.992	4.457	5838519
160 x 50	6 x 1-1/2	6.339	7.992	4.457	5838523
160 x 63	6 x 2	7.441	7.992	4.457	5838530
200 x 32	8 x 1	5.394	7.992	5.276	5838571
200 x 40	8 x 1-1/4	5.748	7.992	5.276	5838565
200 x 50	8 x 1-1/2	6.260	7.992	5.276	5838580
200 x 63	8 x 2	7.520	7.992	5.276	5838581
250 x 63	10 x 2	8.839	7.992	6.677	5838624
315 x 63	12 x 2	7.559	7.992	8.016	5838656

Air-Pro® pipe electrofusion saddles are rated at 150psi.

Note: Dimensions may change, please use our BIM/CAD resource page for the latest dimensions and CAD file downloads. <http://cad.asahi-america.com/category/air-pro>

Industrial Piping Systems



Material

- Advanced PE

Pipe and Fittings

- 20-315mm (1/2" - 12")
SDR 11, 150psi

Valves

- Type-21 ball valves: 20-110mm (1/2" - 4")
- Type-57P butterfly valves: 50-315mm (1-1/2" - 12")
- Type-14 diaphragm valves: 20-250mm (1/2" - 10")
- Ball check valves: 20-110mm (1/2" - 4")

Welding

- Butt, socket, electrofusion

NSF 61-G Approved



Proline®



Material

- PP

Pipe and Fittings

- 20-500mm (1/2" - 20") SDR 11, 150psi
 - 110-1200mm (4" - 48") SDR 33, 45psi
- (Other sizes and SDRs available up to 1400mm (55"))

Valves

- Type-21 ball valves: 20-110mm (1/2" - 4")
- Type-57P butterfly valves: 50-1400mm (1-1/2" - 55")
- Type-14/15/G diaphragm valves: 20-200mm (1/2" - 10")
- Ball check valves: 20-110mm (1/2" - 4")
- Frank series regulating valves: 20- 110mm (1/2" - 4")

Welding

- Butt, socket, electrofusion

NSF 61-G Approved



Super Proline®



Material

- PVDF (chemical grade)

Pipe and Fittings

- 20-315mm (1/2" - 12")
SDR 21, 230psi
- 90-400mm (3" - 16")
SDR 33, 150psi

Valves

- Type-21 ball valves: 20-110mm (1/2" - 4")
- Type-57P butterfly valves: 50-315mm (1-1/2" - 12")
- Type-14 diaphragm valves: 20-63mm (1/2" - 4")
- Ball check valves: 20-110mm (1/2" - 4")
- Frank series regulating valves: 20-75mm (1/2" - 2-1/2")

Welding

- Butt, socket

Ultra Proline®



Material

- ECTFE (Halar®)

Pipe and Fittings

- 20-110mm (1/2" - 4")
SDR 21, 150psi

Valves

- Ball valves: 20-32mm (1/2" - 1")
- T-342 diaphragm valves: 20-63mm (1/2" - 2")
- Frank series regulating valves: 20-63mm (1/2" - 2")

Welding

- Butt

Commercial Piping Systems



Plumbing & HVAC Piping Systems



Material

- PP-RCT

Pipe and Fittings

- Socket fusion 20-125mm (1/2" - 4-1/2")
- Molded butt fusion 160-630mm (6" - 24")

Valves

- Type-21AT ball valve: 20-110mm (1/2" - 4")
Materials: PP/EPDM body with PP-RCT end connectors
- Type-57AT butterfly valve: 50-500mm (1-1/2" - 16")
Materials: PP/EPDM

Welding

- Butt, socket, electrofusion

Pro-Vent® Duct System



Material

- PP 63mm-1200mm (2" - 48")
- PPs 63mm-1200mm (2" - 48")
- PPs-el 90mm-400mm (3" - 16")
- PE 90mm-1200mm (3" - 48")
- PVDF 63mm-400mm (2" - 16")

Welding

- Hot air or extrusion welding

Double Containment Piping Systems

Poly-Flo®



Materials

- Proline® PP-R, Chem Proline® Advanced PE

Pipe and Fittings

- 1"x1-1/2" (32mmx50mm), 2"x3" (63mmx90mm) and 4"x6" (110mmx160mm)

Welding

- Simultaneous butt fusion

Duo-Pro®



Materials

- Proline® PP-R, Super Proline® chem grade PVDF, Ultra Proline® ECTFE

Pipe and Fittings

- 1"x3" through 16"x20"

Welding

- Simultaneous or staggered butt fusion

Another Corrosion Problem Solved.TM



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