

ASAHI/AMERICA Air-Pro® Compressed Air Piping System

Specially Formulated PE Piping System



AIR-PRO®
Thermoplastic Compressed Air Piping System
by ASAHI/AMERICA

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Thermoplastic Compressed Air Piping System
by **ASAHI/AMERICA**

Air-Pro® is a thermoplastic compressed air piping system made from a specially formulated polyethylene (PE) material. Since its introduction to the US market in 1992, there have been over 5,000 successful installations of the product currently still in operation. Applications range from aboveground and below ground, indoors and outdoors, harsh, corrosive chemicals, marine salt-air environments, and a variety of manufacturing plants and workshops.

Safety is a primary concern with compressed air and gas applications. Stored energy that is inherent in these types of systems can be harmful or fatal to personnel or destructive to equipment if the piping system is not manufactured, designed, installed, tested, operated, and maintained properly. Air-Pro® is specifically formulated to provide safe transport of compressed air with a minimum expected useful life of 50 years.

Air-Pro® compressed air piping system is currently backed by a 10 year warranty. For full details on warranty information, please visit our website at <https://www.asahi-america.com/support/warranty-policy>.



VERSATILITY OF THE AIR-PRO® PIPING SYSTEM



Air-Pro® at a bleach plant without corrosion.



Air-Pro® in a buried application.



Air-Pro® at a fertilizer manufacturing facility covered in chemical dust.

System Overview



PIPE, FITTINGS & VALVES

Pipe and Fittings

- 20 - 110mm (1/2" - 4") SDR 7.4, 230psi
- 160 - 315mm (6" - 12") SDR 11, 150psi

Valves

- True union ball valves (1/2" - 2")
- Tapping saddles

Valve Seats and O-rings

- Seats - PTFE
- Seals - FKM

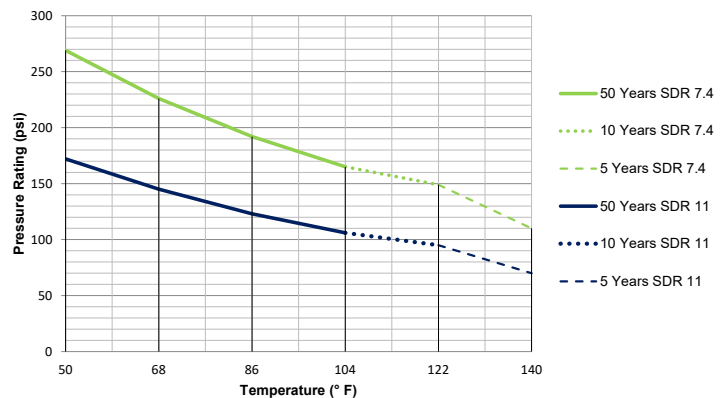
Welding Methods



SYSTEM BENEFITS

- Corrosion resistant: no rusting, scaling, or pitting, clean air delivery
- Smooth inner wall: low pressure drop, efficient air movement
- Designed for a minimum 50-year life expectancy
- Pressure rating based on 2 to 1 safety factor
- Lightweight piping system: easy to install

PRESSURE RATING



For pressure ratings, please visit the Air-Pro® data sheet found online at www.asahi-america.com

- Fusion joining system: joints require no maintenance
- 100% recyclable material
- High pressure capacity: up to 230psi at 68° F (20° C)
- Suitable for aboveground and direct burial applications
- Resistant to synthetic and mineral compressor lubricants
- Meets CAL/OSHA requirements for compressed air

CAL/OSHA APPROVAL

Compressed air piping systems contain high amounts of stored energy, which can be dangerous if released suddenly. Most plastic pipe systems are not suited for this application. OSHA has issued rulings regarding the use of thermoplastic piping materials for these applications. If thermoplastic piping materials are used for compressed air or gas applications, “the pipes must either be constructed of or be encased in shatter resistant materials” (OSHA Standard Interpretation dated February 28, 1991).

Air-Pro® has passed CAL/OSHA’s test requirements for use as compressed air piping. The markings on Air-Pro® pipe (for compressed air) and the joining methods meet the requirements of safety order 462 (m) (3). The blue color is the ANSI/OSHA schematic color for compressed air pipelines.



ASSOCIATION OF AMERICAN RAILROAD APPROVAL

Approval to use Air-Pro® for brake lines on rail cars was received from the Association of American Railroads in 1998. Air-Pro® has been installed in rail yards across the US.

SYSTEM SAFETY

Air-Pro® is constructed of shatter-resistant material and is designed for safe transport of compressed air. If Air-Pro® were to fail, it would simply open an orifice keeping the pipe material intact. No hazardous projectiles would come off the piping. Air-Pro® is safe to use in cold environments; recommended lower applicable temperature limit for pressurized service is 14° F (-10° C).



Air-Pro® over-pressurized ductile failure during burst test (pressure > 800psi)

Note: please refer to the Air-Pro® Product Guide & Installation Manual at www.asahi-america.com for a comprehensive discussion of the Air-Pro® product line.

System Overview

RESIN & MANUFACTURING

Air-Pro® is made of a carefully-selected PE pipe and fitting grade resin, which is designed specially for conveyance of compressed air and inert gases. As a crucial part of the resin manufacturing process, additives and stabilizers are used to aid in pellet and finished product processing, material stability and addressing oxidative effects.

Air-Pro® resins are produced with proprietary stabilizers. General-grade PE pipe and fitting resins that are not formulated for compressed air must be severely derated and will have a limited life expectancy.

SHORT SPECIFICATION

MANUFACTURERS

Subject to compliance with requirements, products which may be incorporated in the work include: Air-Pro® piping system as supplied by Asahi/America, Inc., of Lawrence, Massachusetts, 800-343-3618. No equal.

MATERIAL

Air-Pro® is made of a specially formulated polyethylene (PE100) material compounded with antioxidants for compressed air service. Air-Pro® is manufactured and tested to all applicable International Organization Standardization (ISO) standards.

System shall be tested and accepted to meet the State of California's Unfired Pressure Vessel Safety Order Appendix C. The joining methods, marking of pipes and fittings also meet the requirements of the Unfired Pressure Vessel Safety Order 462 (m) (3).

Polyethylene (PE) pipe PE100 resin ISO15494 supplement B [Minimum Required Strength of MRS 10] ASTM D3350 a minimum cell class PE445476E, (1/2"- 4" blue) or cell class PE445476C, (6"- 12" black) polyethylene resin. The testing certification for pipe and fittings are per EN 10204 standard per ISO test specifications.



PRESSURE RATING

Components shall be pressure rated in accordance with ISO9080 for hydrostatic design basis. This pipe is to be utilized for compressed air and other inert gases. The pressure ratings are based on an overall safety factor of 2. Consult long form Air-Pro® specification or page 9 of this catalog for pressure ratings with a different service life or temperature.

PE100 SDR 7.4 pressure rated to a minimum of 226psi at 68° F (20° C) for gas (air) at service life of 50 years for all diameter sizes 1/2" - 4" (20mm - 110mm).

PE100 SDR 11 pressure rated to a minimum of 145psi at 68° F (20° C) for gas (air) at service life of 50 years for all diameter sizes 6" - 12" (160mm - 315mm).

INSTALLATION

Welder certificates verify that welders have been trained by the manufacturer for the piping system and comply with the installation procedures as outlined by ASME NM.1 and/or ASTM D2657 and/or AWS B2.4 and/or DVS 2207. All required training should be scheduled and completed at job start-up.

RESISTANCE TO COMPRESSOR LUBRICANTS

Air compressor manufacturers recommend a wide variety of lubricants for proper operation of their equipment. Some compressors are designed to be oil-free, while others require either synthetic or mineral based lubricants. There is always a chance, in the presence of lubricants, that some trace amounts may be entrained in the compressed air and transferred to the air piping. Air-Pro® material is formulated to be resistant to compressed air with trace amounts of compressor lubricants including mineral oils, synthetic blends, polyalphaolefin (POA), polyol-ester (POE), and diesters.



RESISTANCE WATER VAPOR & CORROSIVE ENVIRONMENTS

Water vapor is often present in compressed air systems. The presence of moisture can be corrosive to metal pipes and lower the efficiency and cleanliness of the system as a result. Particles can dislodge and travel into processes where air is used. For most manufacturing processes, this is unacceptable because it affects the quality of the products and increases quality control rejection rates. Air-Pro® is inherently immune to issues relating to moisture because it cannot rust, scale, pit, or corrode.

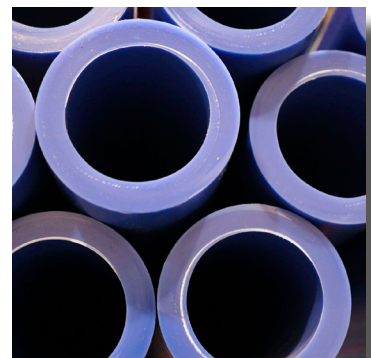
Air-Pro® can handle a pH range from 1 to 14. It performs well in environments where corrosive fumes may be present as well as marine/salt air locations.

RESISTANCE TO UV SUNLIGHT

Air-Pro® material is UV stabilized and can be installed aboveground, either indoors or outdoors. In outdoor applications, Air-Pro® that is exposed to direct sunlight is subject to inconsequential oxidation on the surface of the pipe. This can be avoided by providing a covering for the pipe and fittings (either a wrap or paint), or it can be ignored. If left alone, the oxidized surface provides a built-in UV blocker, which does not affect long-term performance of the system, including weldability.



ID of corroded pipe sample



ID of Air-Pro® pipe sample

CFM Piping System Design

The primary determining factors for proper Air-Pro® pipe sizing are:

- Total required flow for the system (CFM)
- Operating supply pressures at points-of-use
- Length of pipe runs
- Number and types of fittings
- Future expansion

The following CFM chart may be used for quick reference to determine the proper size of Air-Pro® pipe for given applications:

CFM Chart - Air-Pro®												
Pressure (psi)	1/2" - 4" SDR 7.4 Pipe								6" - 12" SDR 11 Pipe			
	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	3"	4"	6"	8"	10"	12"
40	5	9	19	34	62	117	306	525	1998	3649	6685	12492
50	7	12	24	43	79	149	389	669	2543	4644	8508	15901
60	8	14	29	52	96	181	474	814	3096	5656	10362	19365
70	10	17	34	62	114	214	560	962	3658	6682	12241	22876
80	11	20	39	71	131	247	647	1112	4226	7719	14142	26429
90	13	22	45	81	149	281	735	1263	4800	8768	16063	30018
100	14	25	50	90	167	315	824	1415	5379	9825	18001	33669
110	16	28	56	100	185	349	913	1568	5963	10892	19954	37290
120	17	30	61	110	204	383	1003	1723	6551	11966	21923	40969
130	19	33	67	120	222	418	1094	1879	7143	13048	23904	44672
140	20	36	72	130	241	453	1185	2036	7739	14136	25898	48398
150	22	38	78	140	259	488	1277	2193	8338	15231	27904	52146
160	23	41	84	150	278	523	1369	2352	-	-	-	-
170	25	44	89	161	297	559	1462	2511	-	-	-	-
180	26	47	95	171	316	594	1555	2671	-	-	-	-
190	28	50	101	181	335	630	1649	2832	-	-	-	-
200	30	53	106	191	354	666	1743	2993	-	-	-	-

Calculations are based on a 1.5% pressure drop for 100 feet of Air-Pro® pipe

VACUUM APPLICATIONS

Theoretical full internal vacuum at sea level is 29.92” Hg or -14.7psi, but this is rarely seen in practice due to limitations of vacuum pumps and related equipment. In practice, most vacuum systems can achieve up to about 98% of full vacuum. In general, Air-Pro®’s external or negative pressure rating is much higher than theoretical full vacuum. This is important because there may be other variables besides internal vacuum that could contribute to negative pressure on the hoop stress of the pipes. As with all unreinforced thermoplastic pipe systems, both positive and negative pressure ratings decrease as temperatures rise. When designing vacuum systems with Air-Pro®, the highest possible temperature the pipes will be exposed to along with desired useful service life should be considered.

Temperature ° F (° C)	Expected Useful Life (Years)	Air-Pro® Permissible External (Negative) Pressure (-psi)	
		SDR 7.4	SDR 11
68 (20)	1	180	34
	10	133	23
	25	120	19
86 (30)	1	153	28
	10	113	18
	25	106	16
104 (40)	1	120	19
	10	100	14
	25	93	13
122 (50)	1	100	14
	10	86	11

EXPECTED USEFUL LIFE

Permissible operating pressure for Air-Pro® piping system is based on years of operation and temperature. This table is for compressed air with a combined safety factor of 2.0.

Operating Temperature ° F (° C)	Service Time (Years)	Permissible Working Pressure (psi)	
		SDR 7.4	SDR 11
14 (-10)	50	224	144
50 (10)	50	269	172
68 (20)	50	226	145
86 (30)	50	192	123
104 (40)	50	165	106
122 (50)	10	149	95
140 (60)	5	110	70

NOTE: Temperatures below 50° F (10° C) and above 68° F (20° C) decrease pressure rating

Supports and Spacing Design

SUPPORT SPACING

When choosing support spacing for Air-Pro®, the temperatures the piping system will be subjected to should be considered. The chart below lists support spacing at various temperatures that the pipe will experience. The highest temperature that pipes will be exposed to should always be considered. The chart below represents deflection less than or equal to 0.20", which is most often adopted because there appears to be no visible sag between supports at or below this deflection.

AIR-PRO® SUPPORT SPACING (INCH)

Size		68° F (20° C)	86° F (30° C)	104° F (40° C)	122° F (50° C)	140° F (60° C)
OD (inch)	OD (mm)					
1/2	20	31	31	28	23	20
3/4	25	36	33	31	31	28
1	32	41	41	36	36	31
1-1/4	40	48	46	41	41	36
1-1/2	50	56	56	48	46	41
2	63	66	64	59	56	48
2-1/2	75	74	71	66	61	56
3	90	84	79	74	69	64
4	110	92	89	84	79	71
6	160	115	107	102	97	90
8	200	128	123	118	113	105
10	250	146	141	133	128	118
12	315	161	156	151	143	131

MAXIMUM AND MINIMUM DEPTH OF COVER REQUIRING NO CALCULATIONS

Air-Pro® SDR	Minimum Depth of Cover - With H-20 Load (Feet)	Minimum Depth of Cover - Without H-20 Load (Feet)	Maximum Depth of Cover (Feet)
7.4	3	2	25
11	3	2	25

AWWA M-55 Design Window - PPI PE Handbook "Design of PE Piping Systems" Chapter 6, page 193, table 3.1

PE100 MULTIPLICATION FACTOR BENDING RADIUS

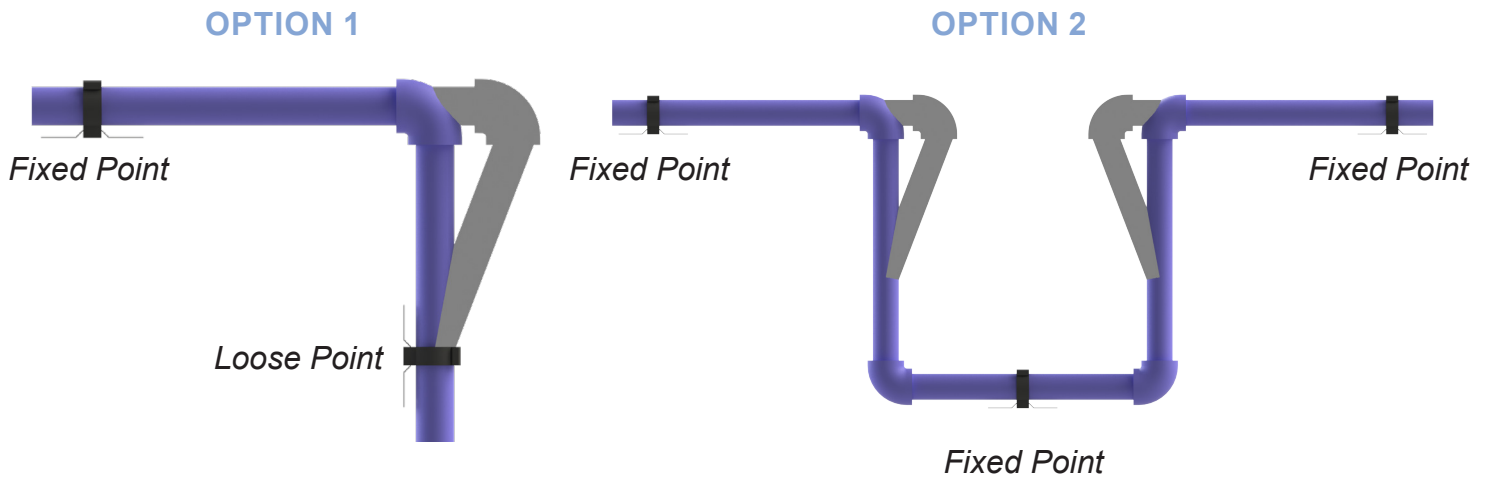
Air-Pro® may be installed to effect a change of direction without use of fittings:

Installation Temperature ° F (° C)	PE100 SDR 7.4 - 17
86 (30)	20
68 (20)	20
50 (10)	35
32 (0)	50

If fittings or flanges are installed in the bending area, a minimum bending radius of $da \times 100$ must not be exceeded

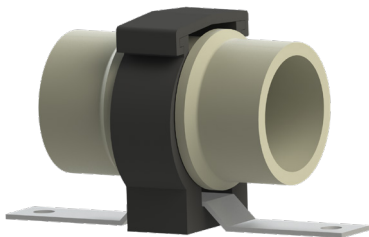
PIPE EXPANSION/CONTRACTION CALCULATOR

To assist in calculation and design for expansion and contraction, Asahi/America has an expansion calculator tool available on its website (www.asahi-america.com). This tool allows you to input all necessary information and automatically calculates the expansion/contraction, and illustrates configuration of an offset and loop with dimensions. Proper placement and use of supports (loose points) and restraints (fixed points) are also shown.



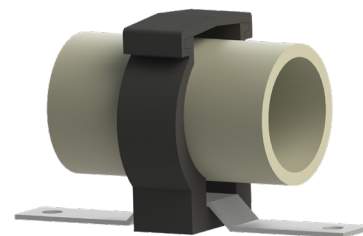
Air-Pro® offers a pipe clip system. Asahi/America pipe clips are made of reinforced plastic and are designed to hold pipe circumferentially, but still allow it to move without damaging surface. Metal hardware should not be attached directly to Air-Pro® pipe or fittings.

The exterior surface of pipe should never be clamped so tight that the pipe cannot slide through the support. Hard clamping puts undo stress on the pipe wall and, in time, could lead to failures. Restraint fittings are designed to prevent movement of pipe without needing to clamp down hard on the fitting. Restraint fittings have two shoulders extending off the OD of the pipe 360 degrees. A pipe clip is attached between the two shoulders. When pipe expands or contracts, the shoulders contact the side of the pipe clip so that movement is stopped at that point. Properly anchored pipe clips are designed to handle horizontal stresses when used with restraint fittings.



FP = Fixed Point

Restraint fittings secure pipe to structure creating a rigid point



LP = Loose Point

Allows expansion and contraction while guiding and supporting

Joining Methods

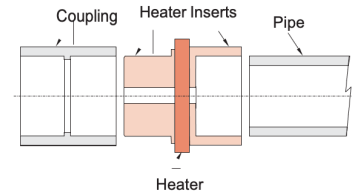
Properly trained installers are critical to overall system performance. Asahi/America recommends plastic pipe contractors maintain certifications according to DVS thermofusion guidelines. Asahi/America is proud to offer job site training according to DVS guidelines.

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

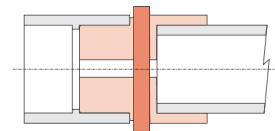
SOCKET FUSION

The illustration to the right shows socket fusion steps:

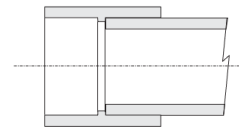
- **Melting the pipe and fitting:** After peeling the end of the pipe, insert the pipe and the fitting onto the heater bushings simultaneously and hold for the heating time.
- **Making the joint:** After the heating time, pull the pipe and fitting off the heater bushings and immediately insert the pipe 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.



Preparation of the Weld



Alignment and Heating



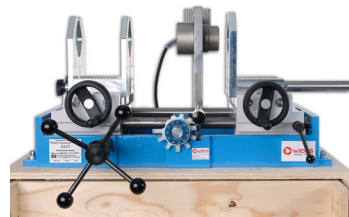
Joining and Cooling

SOCKET FUSION WELDING EQUIPMENT



Hand Socket 2 Tool

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



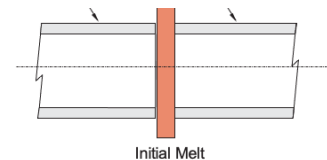
Bench Socket Tool

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

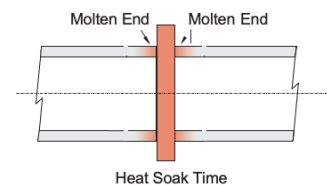
BUTT FUSION

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.

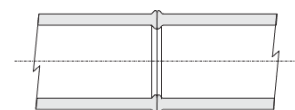
Bench top welding tools are capable of welding up to the maximum size available in the piping system. Welding equipment up to 160mm (6") can often be used in hard-to-reach areas, like pipe rafters.



Initial Melt



Heat Soak Time



Joining and Cooling

BUTT WELDING EQUIPMENT



Miniplast®

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



Maxiplast®

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

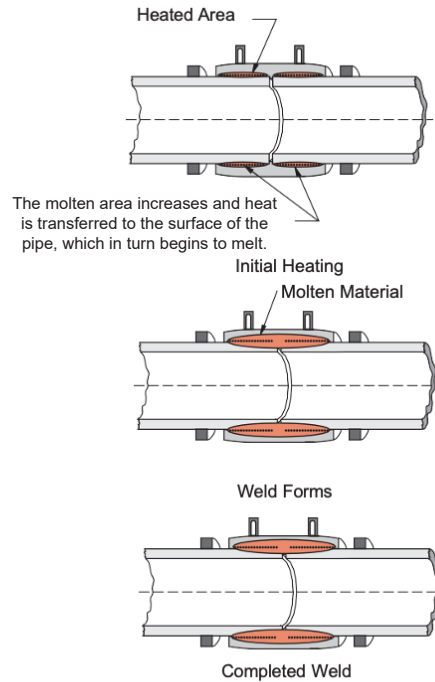
For 6" and larger material, use the Field 6, 10, or 12 tool. Consult www.asahi-america.com for details.

ELECTROFUSION WELDING

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.

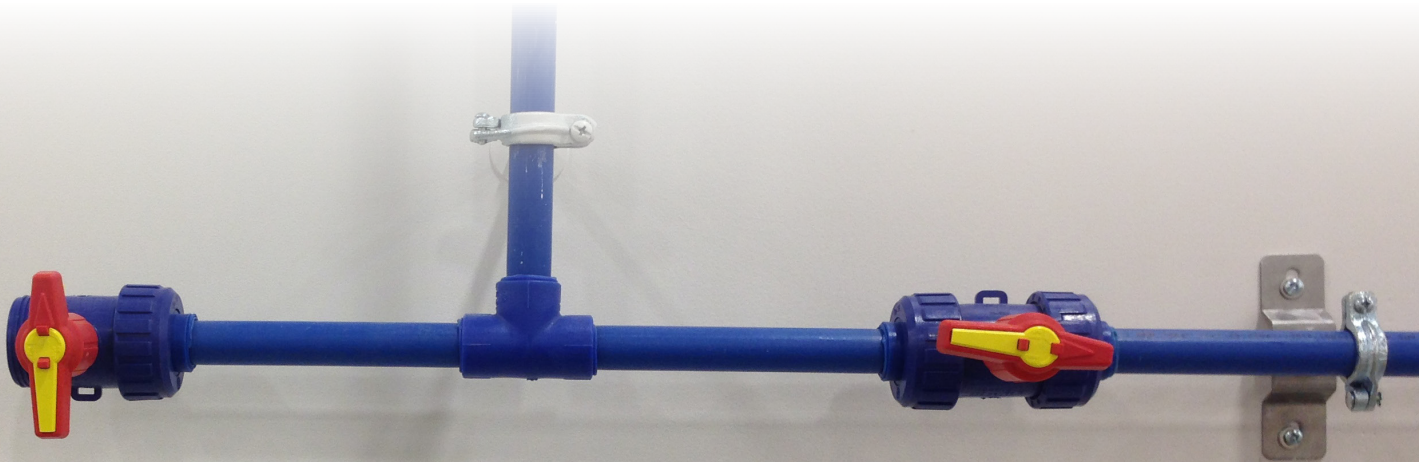


ELECTROFUSION WELDING EQUIPMENT



Polymatic

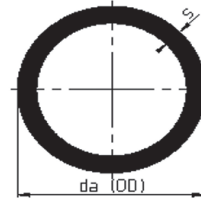
- All sizes



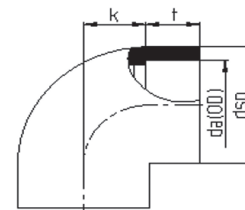
Dimensional Guide

Note: Dimensions may change at any time. Please use our BIM/CAD resource page for the latest dimensions and CAD file downloads found at <https://cad.asahi-america.com/category/air-pro>.

AIR-PRO® PIPE (SOLD IN 16.4 FOOT LENGTHS)



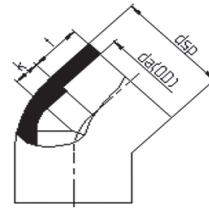
Size		Part Number	OD (in)	SDR	s (in)	Weight (lbs/ft)
inch	mm					
1/2	20	5802005	0.79	7.4	0.11	0.10
3/4	25	5802007	0.98	7.4	0.14	0.16
1	32	5802010	1.26	7.4	0.17	0.26
1-1/4	40	5802012	1.57	7.4	0.22	0.41
1-1/2	50	5802015	1.97	7.4	0.27	0.64
2	63	5802020	2.48	7.4	0.34	1.00
3	90	5802030	3.54	7.4	0.48	2.04
4	110	5802040	4.33	7.4	0.59	3.05
6	160	5803060	6.30	11	0.57	4.53
8	200	5803080	7.87	11	0.72	7.06
10	250	5803100	9.84	11	0.89	10.95
12	315	5803120	12.40	11	1.13	17.40



SOCKET 90

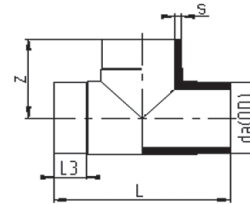
Size		Part Number	da (OD) (in)	dsp (in)	t (in)	k (in)	Weight (lbs)
inch	mm						
1/2	20	5805005	0.79	1.15	0.63	0.55	0.05
3/4	25	5805007	0.98	1.38	0.71	0.67	0.07
1	32	5805010	1.26	1.70	0.77	0.79	0.11
1-1/4	40	5805012	1.57	2.10	0.85	0.98	0.19
1-1/2	50	5805015	1.97	2.56	0.98	1.10	0.31
2	63	5805020	2.48	3.21	1.20	1.38	0.59
3	90	5805030	3.54	4.33	1.44	1.81	1.12
4	110	5805040	4.33	5.24	1.69	2.24	1.80

<https://cad.asahi-america.com/category/air-pro>



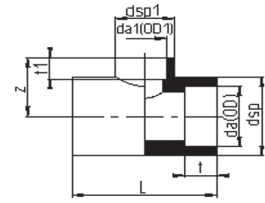
SOCKET 45

Size		Part Number	da (OD) (in)	dsp (in)	t (in)	k (in)	Weight (lbs)
inch	mm						
1/2	20	5808005	0.79	1.14	0.65	0.31	0.04
3/4	25	5808007	0.98	1.38	0.71	0.37	0.06
1	32	5808010	1.26	1.69	0.79	0.41	0.09
1-1/4	40	5808012	1.57	2.09	0.87	0.49	0.15
1-1/2	50	5808015	1.97	2.56	0.94	0.59	0.24
2	63	5808020	2.48	3.19	1.14	0.73	0.42
3	90	5808030	3.54	4.45	1.44	0.93	1.00
4	110	5808040	4.33	5.31	1.69	1.10	1.46



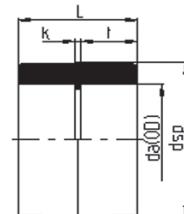
SOCKET TEE

Size		Part Number	da (OD) (in)	L (in)	dsp (in)	t (in)	z (in)	Weight (lbs)
inch	mm							
1/2	20	5820005	0.79	2.36	1.15	0.63	1.18	0.06
3/4	25	5820007	0.98	2.76	1.39	0.71	1.38	0.10
1	32	5820010	1.26	3.13	1.69	0.77	1.57	0.15
1-1/4	40	5820012	1.57	3.62	2.09	0.87	1.81	0.24
1-1/2	50	5820015	1.97	4.23	2.56	0.96	2.13	0.39
2	63	5820020	2.48	5.06	3.19	1.14	2.50	0.65
3	90	5820030	3.54	7.20	4.49	1.44	3.46	1.76
4	110	5820040	4.33	8.11	5.30	1.69	4.00	2.47



SOCKET REDUCING TEE

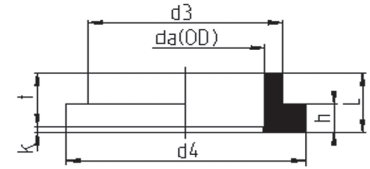
Size		Part Number	da (OD) (in)	da (OD1) (in)	z (in)	L (in)	dsp (in)	dsp1 (in)	t (in)	t1 (in)	Weight (lbs)
inch	mm										
3/4 x 1/2	25 x 20	5824101	0.98	0.79	1.40	2.76	1.37	1.38	0.71	0.63	0.11
1 x 1/2	32 x 20	5824130	1.26	0.79	1.57	3.14	1.69	1.18	0.77	0.63	0.15
1 x 3/4	32 x 25	5824131	1.26	0.98	1.57	3.11	1.69	1.38	0.77	0.71	0.14
1-1/4 x 1/2	40 x 20	5824166	1.57	0.79	1.81	3.58	2.09	1.18	0.87	0.59	0.23
1-1/4 x 3/4	40 x 25	5824167	1.57	0.98	1.84	3.62	2.09	1.39	0.87	0.65	0.23
1-1/4 x 1	40 x 32	5824168	1.57	1.26	1.77	3.58	2.09	1.69	0.87	0.77	0.23
1-1/2 x 1/2	50 x 20	5824208	1.97	0.79	1.97	4.23	2.56	1.18	0.94	0.59	0.36
1-1/2 x 3/4	50 x 25	5824210	1.97	0.98	2.01	4.23	2.56	1.40	0.94	0.65	0.34
1-1/2 x 1	50 x 32	5824211	1.97	1.26	2.13	4.23	2.56	1.69	0.94	0.75	0.37
1-1/2 x 1-1/4	50 x 40	5824212	1.97	1.57	2.07	4.23	2.56	2.09	0.94	0.87	0.38
2 x 3/4	63 x 25	5824248	2.48	0.98	2.56	5.06	3.15	1.42	1.14	0.71	0.62
2 x 1	63 x 32	5824249	2.48	1.26	2.56	5.10	3.19	1.71	1.14	0.79	0.66
2 x 1-1/4	63 x 40	5824250	2.48	1.57	2.56	5.10	3.19	2.09	1.14	0.87	0.64
2 x 1-1/2	63 x 50	5824251	2.48	1.97	2.56	5.10	3.19	2.60	1.14	0.94	0.66



SOCKET COUPLING

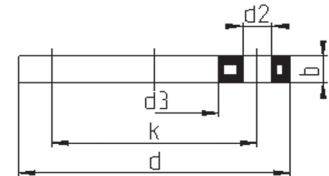
Size		Part Number	da (OD) (in)	L (in)	dsp (in)	t (in)	k (in)	Weight (lbs)
inch	mm							
1/2	20	5816005	0.79	1.38	1.16	0.63	0.12	0.03
3/4	25	5816007	0.98	1.54	1.38	0.71	0.12	0.04
1	32	5816010	1.26	1.69	1.70	0.79	0.12	0.06
1-1/4	40	5816012	1.57	1.89	2.01	0.83	0.26	0.09
1-1/2	50	5816015	1.97	2.07	2.54	0.94	0.18	0.14
2	63	5816020	2.48	2.38	3.19	1.10	0.18	0.24
3	90	5816030	3.54	3.07	4.53	1.42	0.24	0.65
4	110	5816040	4.33	3.54	5.26	1.69	0.24	0.84

SOCKET STUB END*



Size		Part Number	da (OD) (in)	da (in)	L (in)	d3 (in)	d4 (in)	h (in)	t (in)	k (in)	Weight (lbs)
inch	mm										
1/2	20	5833005	0.79	0.02	0.83	1.06	1.75	0.39	0.61	0.22	0.03
3/4	25	5833007	0.98	0.03	0.91	1.30	2.13	0.39	0.71	0.20	0.05
1	32	5833010	1.26	0.04	0.93	1.61	2.50	0.39	0.75	0.19	0.07
1-1/4	40	5833012	1.57	0.05	1.02	1.97	2.81	0.41	0.85	0.18	0.11
1-1/2	50	5833015	1.97	0.06	1.14	2.40	3.25	0.51	0.94	0.20	0.13
2	63	5833020	2.48	0.08	1.28	2.99	3.95	0.55	1.10	0.18	0.19
3	90	5833030	3.54	0.12	1.65	4.25	5.21	0.67	1.46	0.20	0.44
4	110	5833040	4.33	0.16	1.85	5.16	6.22	0.71	1.65	0.20	0.64

*Backing ring required (see below)

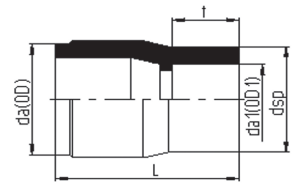


BACKING RING

Size		Part Number (Grey)	Part Number (Black)	da (OD) (in)	da (in)	d (in)	d2 (in)	d3 (in)	b (in)	k (in)	# of Holes	Weight (lbs)
inch	mm											
1/2	20	5046005	5146005	0.79	0.02	3.74	0.63	1.10	0.47	2.38	4	0.46
3/4	25	5046007	5146007	0.98	0.03	4.02	0.63	1.34	0.47	2.75	4	0.50
1	32	5046010	5146010	1.26	0.04	4.49	0.63	1.65	0.63	3.12	4	0.81
1-1/4	40	5046012	5146012	1.57	0.05	5.12	0.63	2.01	0.63	3.50	4	1.26
1-1/2	50	5046015	5146015	1.97	0.06	5.24	0.63	2.44	0.71	3.88	4	1.19
2	63	5046020	5146020	2.48	0.08	6.38	0.79	3.07	0.71	4.75	4	1.79
3	90	5046030	5146030	3.54	0.12	7.64	0.79	4.37	0.71	6.00	4	2.37
4	110	5046040	5146040	4.33	0.16	9.02	0.79	5.24	0.71	7.50	8	3.45
6	160	5046060	5146060	6.30	0.24	11.14	0.87	7.01	0.94	9.50	8	5.18
8	200	5046080	5146080	7.87	0.31	13.58	0.87	9.29	0.94	11.75	8	7.47
10	250	5046100	5146100	9.84	0.39	16.22	0.98	11.34	1.02	14.25	12	13.67
12	315	5046120	5146120	12.40	0.47	19.17	0.98	13.31	1.26	17.00	12	27.78

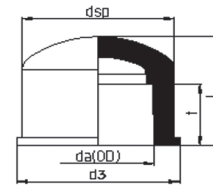
<https://cad.asahi-america.com/category/air-pro>

Dimensional Guide



SPIGOT X SOCKET REDUCING BUSHING

Size		Size		Part Number	da (OD) (in)	da (OD1) (in)	L (in)	dsp (in)	t (in)	Weight (lbs)
inch	mm	inch	mm							
3/4 x 1/2	25 x 20	3/4 x 1/2	25 x 20	5829101	0.98	0.79	1.54	1.16	0.63	0.02
1 x 1/2	32 x 20	1 x 1/2	32 x 20	5829130	1.26	0.79	1.75	1.14	0.63	0.04
1 x 3/4	32 x 25	1 x 3/4	32 x 25	5829131	1.26	0.98	1.77	1.36	0.67	0.04
1-1/4 x 1/2	40 x 20	1-1/4 x 1/2	40 x 20	5829166	1.57	0.79	1.97	1.16	0.59	0.05
1-1/4 x 3/4	40 x 25	1-1/4 x 3/4	40 x 25	5829167	1.57	0.98	1.97	1.36	0.67	0.06
1-1/4 x 1	40 x 32	1-1/4 x 1	40 x 32	5829168	1.57	1.26	1.97	1.69	0.75	0.06
1-1/2 x 1/2	50 x 20	1-1/2 x 1/2	50 x 20	5829208	1.97	0.79	2.19	1.16	0.63	0.07
1-1/2 x 3/4	50 x 25	1-1/2 x 3/4	50 x 25	5829210	1.97	0.98	2.17	1.37	0.71	0.07
1-1/2 x 1	50 x 32	1-1/2 x 1	50 x 32	5829211	1.97	1.26	2.17	1.67	0.71	0.08
1-1/2 x 1-1/4	50 x 40	1-1/2 x 1-1/4	50 x 40	5829212	1.97	1.57	2.15	2.08	1.02	0.10
2 x 3/4	63 x 25	2 x 3/4	63 x 25	5829248	2.48	0.98	2.52	1.37	0.71	0.13
2 x 1	63 x 32	2 x 1	63 x 32	5829249	2.48	1.26	2.56	1.69	0.73	0.13
2 x 1-1/4	63 x 40	2 x 1-1/4	63 x 40	5829250	2.48	1.57	2.52	2.08	0.85	0.15
2 x 1-1/2	63 x 50	2 x 1-1/2	63 x 50	5829251	2.48	1.97	2.56	2.55	0.98	0.17
3 x 2	90 x 63	3 x 2	90 x 63	5829338	3.54	2.48	3.41	3.18	1.14	0.40
4 x 2	110 x 63	4 x 2	110 x 63	5829420	4.33	2.48	3.54	3.20	1.14	0.59
4 x 3	110 x 90	4 x 3	110 x 90	5829422	4.33	3.54	3.46	4.45	1.46	0.68

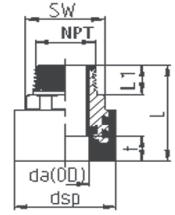


SOCKET CAP

Size		Part Number	da (OD) (in)	L (in)	d3 (in)	dsp (in)	t (in)	Weight (lbs)
inch	mm							
1/2	20	5812005	0.79	1.02	1.26	1.14	0.63	0.02
3/4	25	5812007	0.98	1.12	1.50	1.38	0.71	0.03
1	32	5812010	1.26	1.38	1.81	1.69	0.79	0.05
1-1/4	40	5812012	1.57	1.54	2.28	2.07	0.87	0.08
1-1/2	50	5812015	1.97	1.91	2.76	2.54	0.96	0.14
2	63	5812020	2.48	2.32	3.41	3.19	1.14	0.29
3	90	5812030	3.54	3.03	4.69	4.45	1.46	0.65
4	110	5812040	4.33	3.60	5.51	5.24	1.67	0.97

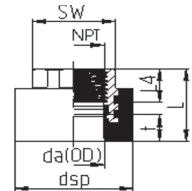
<https://cad.asahi-america.com/category/air-pro>

SOCKET MNPT ADAPTER



Size		Part Number	da (OD) (in)	da (in)	L (in)	L1 (in)	SW (in)	NPT (in)	dsp (in)	t (in)	Weight (lbs)
inch	mm										
1/2	20	5859005	0.79	0.02	2.24	0.61	1.26	0.02	1.65	0.63	0.35
3/4	25	5859007	0.98	0.03	2.40	0.77	1.42	0.03	1.81	0.71	0.46
1	32	5859010	1.26	0.04	2.50	0.87	1.54	0.04	2.09	0.73	0.57
1-1/4	40	5859012	1.57	0.05	2.80	0.94	1.97	0.05	2.58	0.83	1.06
1-1/2	50	5859015	1.97	0.06	3.03	1.06	2.36	0.06	2.99	0.94	1.44
2	63	5859020	2.48	0.08	3.27	1.14	2.76	0.08	3.52	1.12	2.08

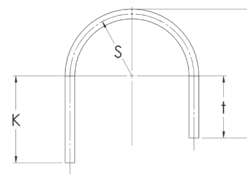
- Nickel-plated brass threads
- 230psi rated



SOCKET FNPT ADAPTER

Size		Part Number	da (OD) (in)	da (in)	L (in)	L4 (in)	SW (in)	NPT (in)	dsp (in)	t (in)	Weight (lbs)
inch	mm										
1/2	20	5853005	0.79	0.02	1.61	0.55	1.26	0.50	1.65	0.57	0.31
3/4	25	5853007	0.98	0.03	1.61	0.71	1.42	0.75	1.81	0.63	0.35
1	32	5853010	1.26	0.04	1.81	0.79	1.54	1.00	2.09	0.73	0.46
1-1/4	40	5853012	1.57	0.05	2.01	0.83	1.97	1.25	2.58	0.83	0.76
1-1/2	50	5853015	1.97	0.06	2.28	1.00	2.36	1.50	3.05	0.94	1.28
2	63	5853020	2.48	0.08	2.56	1.14	2.76	2.00	3.56	1.14	1.70

- Nickel-plated brass threads
- 230psi rated

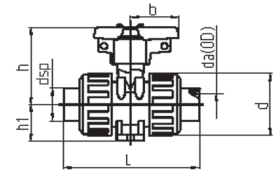


GOOSENECK (DROPPER BEND)

Size		Part Number	L (in)	S (in)	K (in)	t (in)
inch	mm					
1/2	20	5835005	10.00	5.00	7.00	5.00
3/4	25	5835007	9.00	5.00	7.00	4.00
1	32	5835010	10.00	5.00	7.00	5.00

<https://cad.asahi-america.com/category/air-pro>

Dimensional Guide

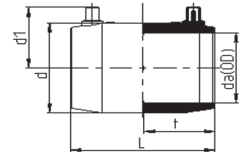


SOCKET BALL VALVE

Size		Part Number	da (OD) (in)	L (in)	d (in)	h (in)	b (in)	h1 (in)	dsp (in)	t (in)	Weight (lbs)
inch	mm										
1/2	20	580117005	0.79	3.88	2.28	2.93	1.57	1.30	1.07	0.63	0.39
3/4	25	580117007	0.98	4.45	2.70	3.27	2.03	1.57	1.41	0.67	0.60
1.00	32	580117010	1.26	4.84	2.97	3.37	2.03	1.71	1.63	0.77	0.66
1-1/4	40	580117012	1.57	5.55	3.62	4.11	2.52	2.01	2.08	0.87	1.10
1-1/2	50	580117015	1.97	6.50	4.25	4.45	2.87	2.22	2.31	0.98	1.83
2	63	580117020	2.48	7.66	5.02	4.78	3.35	2.54	2.90	1.14	2.77

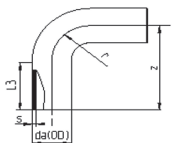
ELECTROFUSION COUPLING

Size		Part Number	da (OD) (in)	L (in)	d (in)	d1 (in)	t (in)	Weight (lbs)
inch	mm							
1/2	20	5817005	0.79	2.89	1.18	1.46	1.42	0.08
3/4	25	5817007	0.98	3.13	1.38	1.54	1.56	0.10
1	32	5817010	1.26	3.41	1.65	1.69	1.69	0.13
1-1/4	40	5817012	1.57	3.84	2.09	1.85	1.89	0.19
1-1/2	50	5817015	1.97	4.27	2.62	2.09	2.13	0.33
2	63	5817020	2.48	4.90	3.27	2.32	2.44	0.55
3	90	5817030	3.54	5.45	4.41	2.83	2.68	0.97
4	110	5817040	4.33	5.87	5.35	3.27	2.87	1.52
6	160	5817060	6.30	7.09	7.76	4.29	3.46	3.79
8	200	5817080	7.87	8.48	9.65	5.00	4.13	6.84
10	250	5817100	9.84	9.37	12.20	6.10	4.59	11.42
12	315	5817120	12.40	10.20	15.20	7.36	5.02	18.68



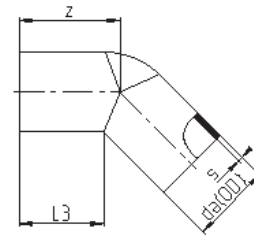
ELONGATED 90

Size		Part Number	da (OD) (in)	S (in)	z (in)	r (in)	L3 (in)	Weight (lbs)
inch	mm							
6	160	5811060	6.30	0.57	10.24	6.30	3.96	7.32
8	200	5811080	7.87	0.72	12.54	7.87	4.67	13.62
10	250	5811100	9.84	0.89	15.31	9.84	5.24	23.81
12	315	5811120	12.40	1.13	18.70	12.40	6.22	46.34



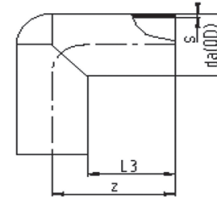
ELONGATED 45

Size		Part Number	da (OD) (in)	s (in)	z (in)	L3 (in)	Weight (lbs)
inch	mm						
6	160	5809060	6.30	0.57	5.91	4.59	4.48
8	200	5809080	7.87	0.72	6.81	5.10	8.07
10	250	5809100	9.84	0.89	8.54	6.22	15.79
12	315	5809120	12.40	1.13	9.76	6.93	28.44



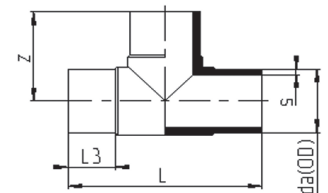
90 DEGREE SWEEP ELBOW

Size		Part Number	da (OD) (in)	s (in)	z (in)	L3 (in)	Weight (lbs)
inch	mm						
2	63	580501020	2.48	0.34	4.29	2.99	0.68
3	90	580501030	3.54	0.48	4.96	3.25	1.66
4	110	580501040	4.33	0.59	5.73	3.46	2.78



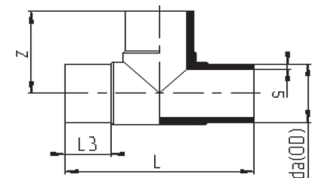
TEE - BUTT

Size		Part Number	da (OD) (in)	s (in)	z (in)	L (in)	L3 (in)	Weight (lbs)
inch	mm							
2	63	582001020	2.48	0.34	4.37	8.62	2.48	1.08
3	90	582001030	3.54	0.48	5.55	11.18	3.11	2.81
4	110	582001040	4.33	0.59	6.22	12.40	3.23	4.59

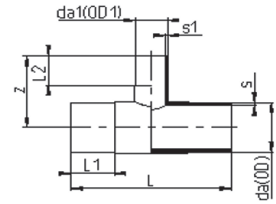


ELONGATED TEE

Size		Part Number	da (OD) (in)	s (in)	z (in)	L (in)	L3 (in)	Weight (lbs)
inch	mm							
6	160	5823060	6.30	0.57	7.97	15.94	3.90	8.91
8	200	5823080	7.87	0.72	9.65	19.29	4.41	17.46
10	250	5823100	9.84	0.89	12.20	24.21	5.79	33.29
12	315	5823120	12.40	1.13	14.76	29.61	6.61	62.74

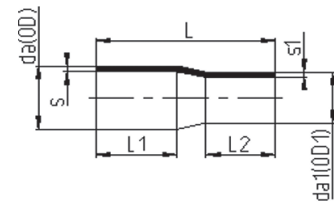


Dimensional Guide



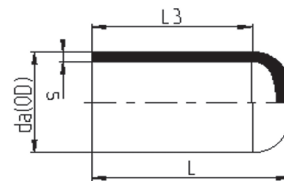
ELONGATED REDUCING TEE

Size		Part Number	da (OD) (in)	da (OD1) (in)	s (in)	z (in)	L (in)	L1 (in)	L2 (in)	s1 (in)	Weight (lbs)
inch	mm										
6 x 4	160 x 110	5825532	6.30	4.33	0.57	7.72	15.43	3.86	3.33	0.39	7.19
8 x 4	200 x 110	5825583	7.87	4.33	0.72	9.53	21.65	5.28	4.06	0.39	16.20
8 x 6	200 x 160	5825585	7.87	6.30	0.72	10.63	21.65	5.28	4.49	0.57	18.96
12 x 4	315 x 110	5825658	12.40	4.33	1.13	11.42	21.50	6.69	3.94	0.39	35.05
12 x 8	315 x 200	5825660	12.40	7.87	1.13	12.83	25.20	6.69	4.96	0.72	46.30
12 x 10	315 x 250	5825673	12.40	9.84	1.13	13.11	26.38	6.69	5.91	0.89	50.35



ELONGATED CONCENTRIC REDUCER

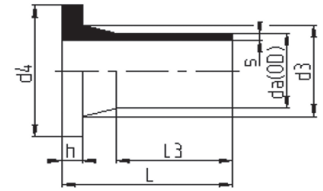
Size		Part Number	da (OD) (in)	da (OD1) (in)	s (in)	L (in)	L1 (in)	L2 (in)	s1 (in)	Weight (lbs)
inch	mm									
6 x 4	160 x 110	5831532	6.30	4.33	0.57	8.74	3.86	3.46	0.39	2.49
8 x 6	200 x 160	5831585	7.87	6.30	0.72	9.92	4.41	3.88	0.57	4.96
10 x 6	250 x 160	5831627	9.84	6.30	0.89	12.36	6.04	4.39	0.57	8.77
10 x 8	250 x 200	5831628	9.84	7.87	0.89	12.36	6.04	4.86	0.72	9.79
12 x 8	315 x 200	5831660	12.40	7.87	1.13	14.76	6.99	5.18	0.72	16.84
12 x 10	315 x 250	5831673	12.40	9.84	1.13	14.76	6.83	6.04	0.89	18.34



ELONGATED CAP

Size		Part Number	da (OD) (in)	s (in)	L (in)	L3 (in)	Weight (lbs)
inch	mm						
6	160	5813060	6.30	0.57	6.50	4.86	2.64
8	200	5813080	7.87	0.72	7.15	4.61	4.32
10	250	5813100	9.84	0.89	8.78	6.30	8.51
12	315	5813120	12.40	1.13	10.59	6.57	15.65

<https://cad.asahi-america.com/category/air-pro>

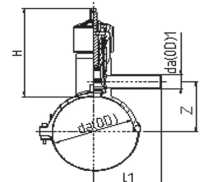


ELONGATED STUB END

Size		Part Number	da (OD) (in)	s (in)	L (in)	L3 (in)	d3 (in)	d4 (in)	h (in)	Weight (lbs)
inch	mm									
63	2	583301020	2.480	0.34	4.80	3.07	2.95	4.02	0.55	0.59
90	3	583301030	3.543	0.48	5.51	3.98	4.13	5.43	0.67	1.270
110	4	583301040	4.331	0.59	6.26	4.53	4.92	6.22	0.71	2.04
6	160	5832060	6.30	0.57	7.87	5.83	6.89	8.35	0.98	3.88
8	200	5832080	7.87	0.72	8.27	5.51	9.13	10.55	1.26	7.10
10	250	5832100	9.84	0.89	8.03	5.20	11.22	12.60	1.38	10.36
12	315	5832120	12.40	1.13	9.37	6.06	13.19	14.57	1.38	16.71

REDUCING ELECTROFUSION TAPPING SADDLE W/ VALVE

Size		Part Number	da (OD) (in)	L1 (in)	h (in)	z (in)	da1 (OD) (in)	Weight (lbs)
inch	mm							
2 x 1	63 x 32	5838249	2.48	5.16	6.42	2.57	1.26	3.53
2 x 1-1/4	63 x 40	5838250	2.48	5.51	6.42	2.57	1.57	3.48
2 x 1-1/2	63 x 50	5838251	2.48	6.32	6.42	2.57	1.97	3.63
2 x 2	63 x 63	5838020	2.48	7.36	6.42	2.57	2.48	3.77
3 x 1	90 x 32	5838336	3.54	5.31	7.99	3.11	1.26	5.25
3 x 1-1/4	90 x 40	5838335	3.54	5.71	7.99	3.11	1.57	5.31
3 x 1-1/2	90 x 50	5838337	3.54	6.34	7.99	3.11	1.97	5.38
3 x 2	90 x 63	5838338	3.54	7.56	7.99	3.11	2.48	5.47
4 x 1	110 x 32	5838401	4.33	5.39	7.99	3.43	1.26	5.42
4 x 1-1/4	110 x 40	5838412	4.33	5.79	7.99	3.43	1.57	5.51
4 x 1-1/2	110 x 50	5838415	4.33	6.30	7.99	3.43	1.97	5.50
4 x 2	110 x 63	5838420	4.33	7.58	7.99	3.43	2.48	5.64
6 x 1	160 x 32	5838516	6.30	5.39	7.99	4.07	1.26	5.62
6 x 1-1/4	160 x 40	5838519	6.30	5.79	7.99	4.46	1.57	5.64
6 x 1-1/2	160 x 50	5838523	6.30	6.34	7.99	4.46	1.97	5.73
6 x 2	160 x 63	5838530	6.30	7.44	7.99	4.46	2.48	5.91
8 x 1	200 x 32	5838571	7.87	5.39	7.99	5.28	1.26	5.52
8 x 1-1/4	200 x 40	5838565	7.87	5.75	7.99	5.28	1.57	5.51
8 x 1-1/2	200 x 50	5838580	7.87	6.26	7.99	5.28	1.97	5.62
8 x 2	200 x 63	5838581	7.87	7.52	7.99	5.28	2.48	5.78
10 x 2	250 x 63	5838624	9.84	8.84	7.99	6.68	2.48	5.50
12 x 2	315 x 63	5838656	12.40	7.56	7.99	8.02	2.48	6.17





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