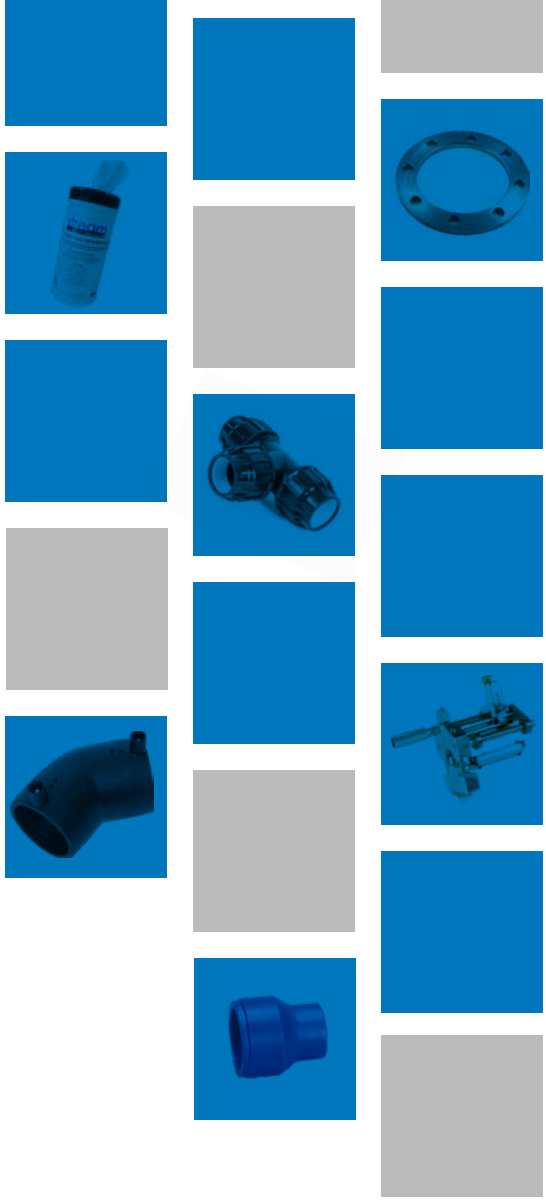
maXair

AIR PIPE SYSTEMS



PRODUCT CATALOGUE

OUR COMPANY

UPG Pipe Systems is a division of the Satius Group* and has over 20 years of experience in supplying New Zealand with fluid and gas transfer pipeline systems.

Our market leading brands; Stream, Dynatherm, and Maxair, are used widely throughout Australia, New Zealand and the South Pacific.

At UPG, the key to our success lies in a commitment to provide you the highest quality service and support. We are a team of highly motivated and experienced individuals. We place the utmost importance in meeting your needs, constantly evolving our extensive product portfolio to meet the ever-changing demands of the markets we deal with. With these goals at our centre, we are proud to say to our partners, customers, and competitors that "we do it better".

We also place particular emphasis on comprehensive training in the use of our products, to ensure that every installation is trouble free.

*The Satius Group is located in Wellington, New Zealand and provides administration and marketing support to three Wellington-based companies including UPG Pipe Systems, Ultibend and ES3.

upg PIPE SYSTEMS

Satius We do it better.

MARKET ORIENTATED

OUR VISION

To be first preference pipeline supplier to our customers.

OUR CULTURE

- **Care**
- **Commitment**
- **Ownership**
- **Integrity**
- **Attitude**
- **Teamwork**
- **Respect**
- **Growth**
- **Balance**

OUR PRODUCTS

Our products find a broad range of applications in the Industrial, Mining, HVAC, Plumbing and Utilities markets. The utilities of water and gas distribution are sectors that require high integrity products, the maintenance of water quality and the safe transport of gaseous fuels are of paramount importance. Industrial applications include compressed air, water and other fluid installations in the dairy, food, beverage and wine industries, and water reticulation systems. UPG products are widely used in pipeline installation, repair and maintenance. Lifetimes of our products are 50 years plus.

OUR BRANDS

Fusion

COES COMPANY

Caldervale Technology GROUP OF COMPANIES

B:R

WORLDPOLY

PRODUCT RANGE

Maxair utilises PE100, a product of advanced materials technology which outperforms other airline pipework for pressure, flow, corrosion resistance, compatibility with compressor oils & ease of installation and alteration.

Compressed gasses have inherent dangers, so an uncompromising standard of quality, conservative pressure ratings and the highest safety factors of any polymer piping system as set out in AS/NZS Standards all belong to Maxair.

The Maxair system by UPG offers the follow advantages:

- 50 year warranty
- Simple & fast to install
- Easy to alter or adapt
- Lightweight
- Strong, robust, safe
- Low friction, smooth bore
- Broad chemical resistance
- No corrosion
- No metallic contamination
- Food grade materials
- Suitable for breathing air
- Good thermal properties
- Suitable for use underground
- Option of a fully welded system

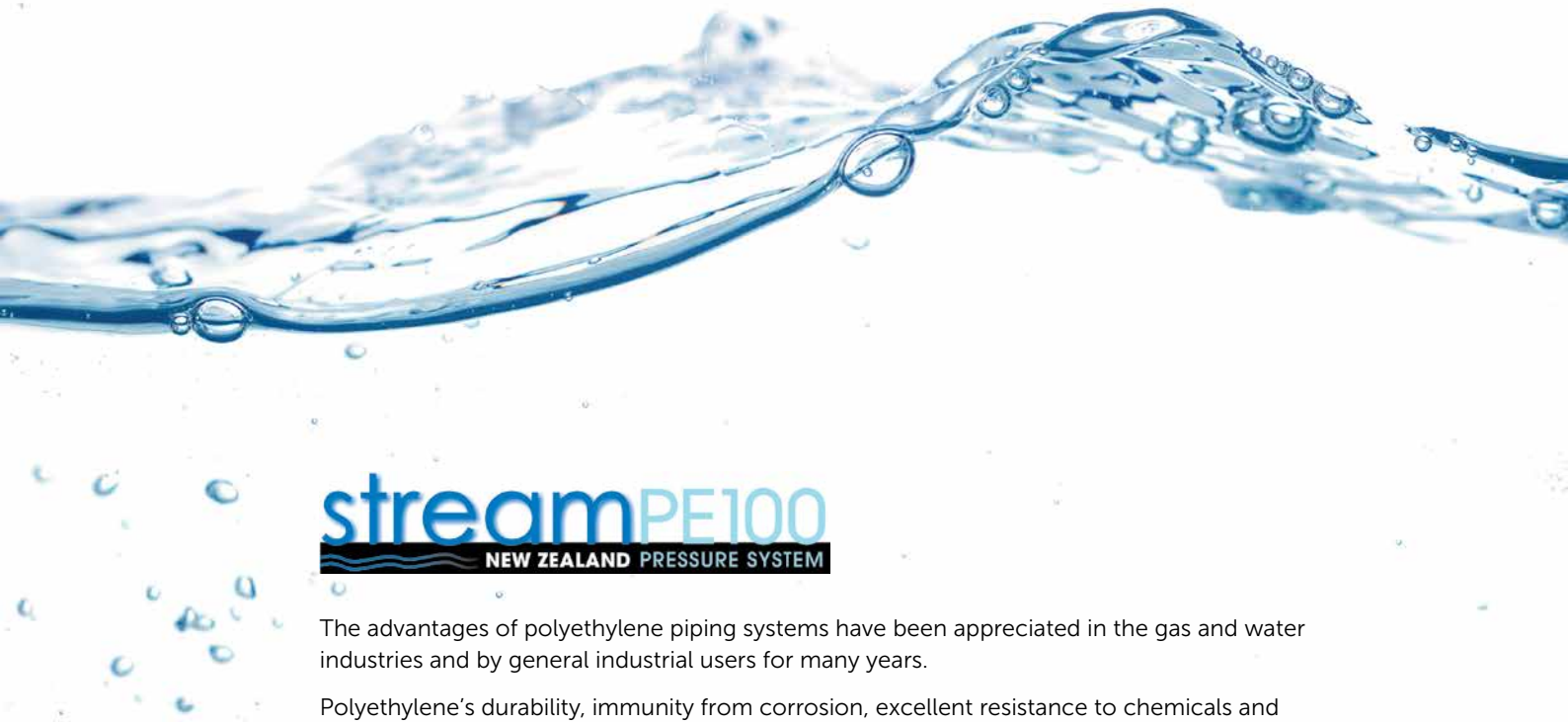
dynatherm® PP-RCT PIPE SYSTEMS

Our Dynatherm range (by Bänninger in Germany) offers a full range of PP-RCT, Faser and Stabi Polypropylene pipe systems. Dynatherm PP-RCT is suited to both cold and hot water applications and any installation where expansion/contraction is an issue. The Dynatherm PP-RCT (Polypropylene - Random Copolymer Temperature enhanced) raw material is a higher density polymer than the standard PP-R80 giving you higher efficiency at highest demands.

The Dynatherm PP-RCT pipe system is the ideal solution for potable water systems and heating & cooling systems in commercial buildings.

The advantages of PP-RCT over PP-R:

- Stability at higher temperatures
- Higher flow rates, and lower weight, due to reduced wall thickness of PP-RCT
- Higher temperature rating and longer life
- More rigid but less brittle
- Higher pressure load/rated
- Fully Guaranteed



streamPE100
NEW ZEALAND PRESSURE SYSTEM

The advantages of polyethylene piping systems have been appreciated in the gas and water industries and by general industrial users for many years.

Polyethylene's durability, immunity from corrosion, excellent resistance to chemicals and light weight have contributed to its continued appeal for use in situations where cost-effective and reliable systems are required. Stream PE100 Pressure pipes and fittings from UPG offer the following advantages:

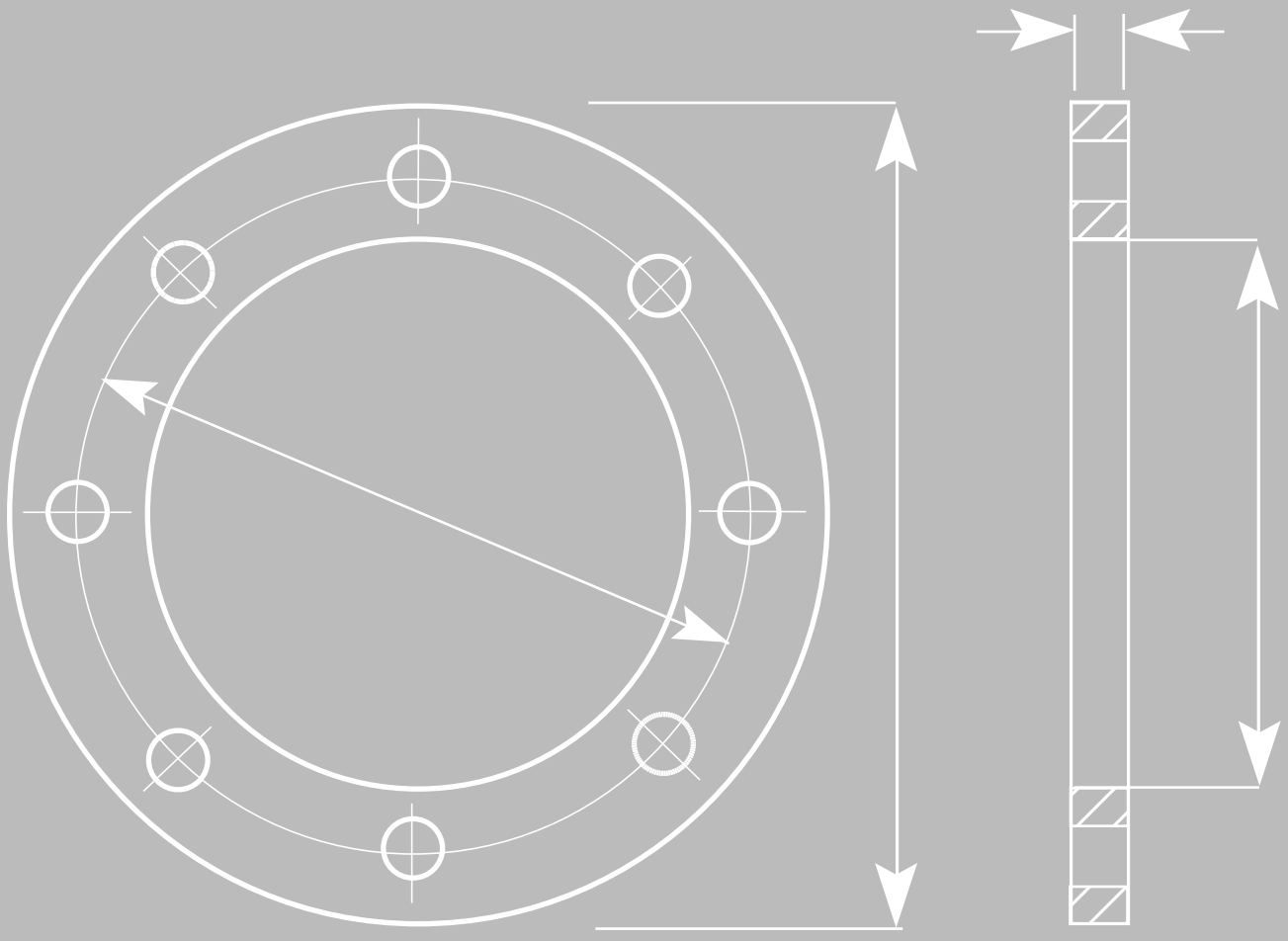
- High quality approved products designed and manufactured to exacting International and AS/NZ Standards.
- Four jointing methods - Electrofusion, Butt-fusion, Socket-fusion and Mechanical Fittings.
- Up to 1600kPa rated at 20ºC when carrying water and certain other liquids.
- Up to 1000kPa rated at 20ºC when carrying natural gas.
- No anchor or thrust blocks needed (most systems are fully end load restrained).
- Ease of installation, maintenance and repair.

streamHDPE
NEW ZEALAND DRAINAGE SYSTEM

Stream HDPE Drainage products find a broad range of applications in the Plumbing and Industrial markets, such as greasy, sanitary, chemical and trade waste lines, laboratory situations and siphonic roof drainage.

HDPE pipes and fittings from UPG offer the following advantages:

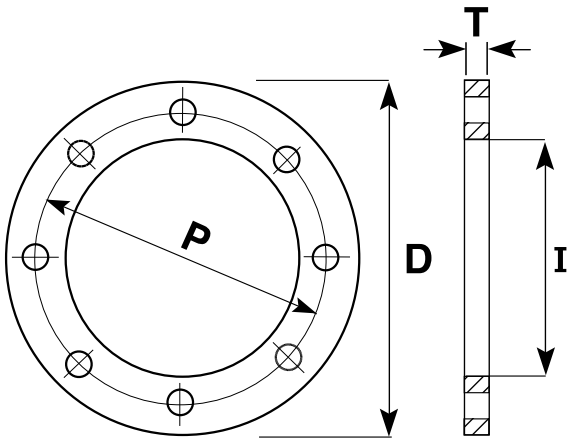
- A complete product range from 50mm to 315mm. Larger sizes can be made to order.
- High quality approved products which are designed and manufactured to exacting International and Australasian standards.
- High resistance to chemicals, as well as organic and inorganic solvents.
- Temperature resistance: HDPE can resist temperatures from -40°c to +95°c.
- Resistant to mechanical stress due to high elasticity, flexibility and impact resistance. This makes HDPE particularly suitable for installation in unstable ground.
- Fully corrosion resistant. HDPE is also resistant to build up or scaling due to its smooth inner surface and chemical properties.
- Ease of installation, maintenance and repair.



INDUSTRY DATA

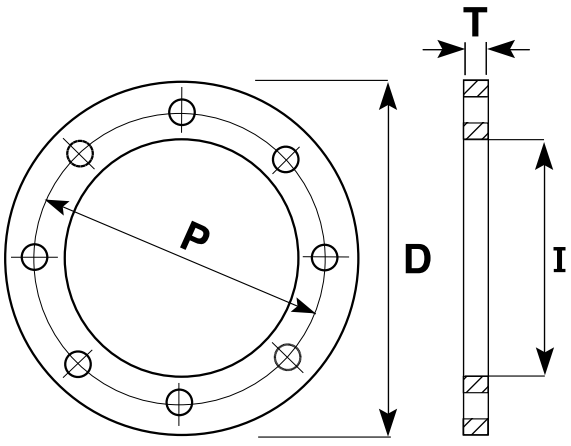
AS 2129 TABLE E FLANGE PATTERN

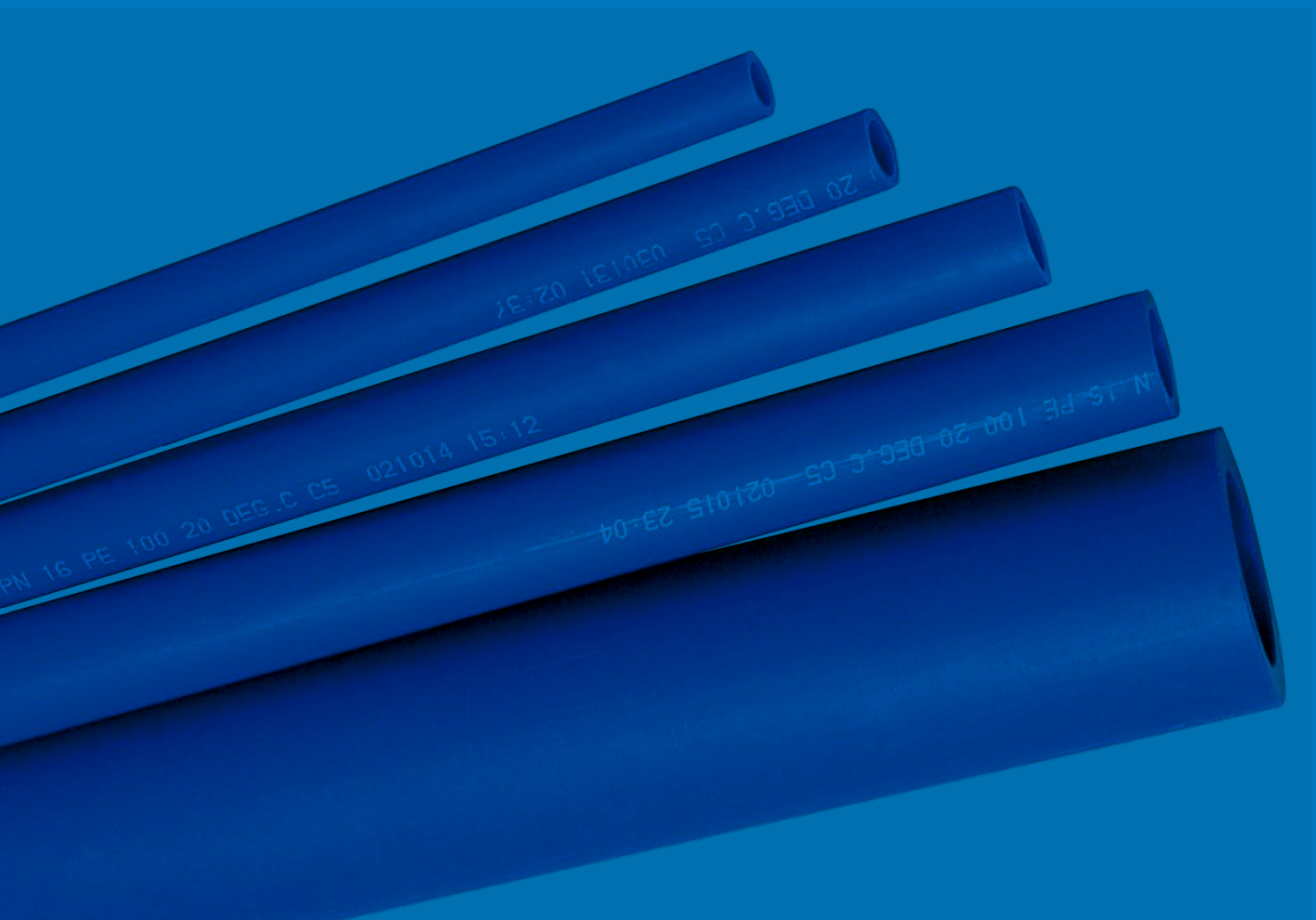
SIZE	NOMINAL	INCH	P	I	D	T	BOLT HOLES	
(MM)	FLANGE SIZE	SIZE	(MM)	(MM)	(MM)	(MM)	NO X DIA	BOLT
20	15	1/2"	67	32	95	6	4x14	M12
25	20	3/4"	73	37	100	6	4x14	M12
32	25	1"	83	44	115	7	4x14	M12
40	32	1 1/4"	87	52	120	8	4x14	M12
50	40	1 1/2"	98	62	135	9	4x14	M12
63	50	2"	114	74	150	10	4x18	M16
75	65	2 1/2"	127	87	165	10	4x18	M16
90	80	3"	146	108	185	12	4x18	M16
110	100	4"	178	125	215	13	8x18	M16
125	100	4"	178	140	215	14	8x18	M16
125	125	5"	210	140	255	14	8x18	M16
140	125	5"	210	158	255	14	8x18	M16
160	150	6"	235	175	280	17	8x22	M20
180	150	6"	235	185	280	17	8x22	M20
200	200	8"	292	230	335	19	8x22	M20
225	200	8"	292	240	335	19	8x22	M20
250	250	10"	356	290	405	22	12x22	M20
280	250	10"	356	300	405	22	12x22	M20
315	300	12"	406	345	455	25	12x26	M24
355	350	14"	470	373	525	29	12x26	M24
400	400	16"	521	425	580	32	12x26	M24
450	450	18"	584	480	640	32	16x26	M24
500	500	20"	641	533	705	38	16x26	M24
560	-	22"	699	590	760	44	16x30	M27
630	600	24"	756	660	825	48	16x33	M30
710	700	28"	845	745	910	51	20x33	M30
800	800	32"	984	835	1060	54	20x36	M33



PN16 BS EN 1092 FLANGE PATTERN

SIZE	NOMINAL	INCH	P	I	D	T	BOLT HOLES	
(MM)	FLANGE SIZE	SIZE	(MM)	(MM)	(MM)	(MM)	NO X DIA	BOLT
20	15	1/2"	65	32	95	16	4x14	M12
25	20	3/4"	75	37	105	18	4x14	M12
32	25	1"	85	44	115	18	4x14	M12
40	32	1 1/4"	100	52	140	18	4x18	M16
50	40	1 1/2"	110	62	150	18	4x18	M16
63	50	2"	125	74	165	18	4x18	M16
75	65	2 1/2"	145	87	185	18	4x18	M16
90	80	3"	160	103	200	20	8x18	M16
110	100	4"	180	125	220	20	8x18	M16
125	100	4"	180	140	220	20	8x18	M16
125	125	5"	210	140	250	22	8x18	M16
140	125	5"	210	158	250	22	8x18	M16
160	150	6"	240	175	285	22	8x22	M20
180	150	6"	240	185	285	22	8x22	M20
200	200	8"	295	230	340	24	12x22	M20
225	200	8"	295	240	340	24	12x22	M20
250	250	10"	355	290	405	26	12x26	M24
280	250	10"	355	300	405	26	12x26	M24
315	300	12"	410	345	460	28	12x26	M24
355	350	14"	470	373	520	30	16x26	M24
400	400	16"	525	425	580	32	16x30	M27
450	450	18"	585	480	640	40	20x30	M27
500	500	20"	650	533	715	44	20x33	M30
630	600	24"	770	660	840	54	20x36	M33




PN 16 PE 100 20 DEG.C C5 021014 15:12

CONTENTS

AIR PIPE SYSTEMS

Maxair® is the original and market leader in compressed air pipe systems since 1995. This Maxair® Technical Manual is designed to give you access to a superior system for your compressed air reticulation requirements. Maxair® pipe is extruded from PE100, an advanced material technology - the highest grade commercially available. Maxair® outperforms other pipes for pressure, flow, corrosion resistance, compatibility with compressor oils & ease of installation or alteration.

Complementing this outstanding and proven development in clean robust pipework is a comprehensive range of quality components to help you select the best solution for your individual requirements. This range is a result of ongoing research, experience and continual improvement within a broad cross-section of industrial applications.

Compressed gasses have inherent dangers, so an uncompromising standard of quality, conservative pressure ratings and the highest safety factors of any polymer piping system as set out in New Zealand Standards is here available.

- 50 YEAR WARRANTY
- SIMPLE & FAST TO INSTALL
- EASY TO ALTER OR ADAPT
- LIGHTWEIGHT
- STRONG, ROBUST, SAFE
- NO CORROSION
- FOOD GRADE MATERIALS
- LOW FRICTION, SMOOTH BORE
- BROAD CHEMICAL RESISTANCE
- NO METALLIC CONTAMINATION
- WIDE RANGE OF PIPE SIZES 20MM TO 160MM
- SUITABLE FOR BREATHING AIR
- DISTINCTIVE BLUE COLOUR
- GOOD THERMAL PROPERTIES
- SUITABLE UNDERGROUND

CONFORMANCE TO RELATIVE NEW ZEALAND STANDARDS

Maxair® conforms to AS/NZS 4020 (requirements are of a higher level than European standards BS 6920) for contact with drinking water. Our product is manufactured from food grade material and will not taint purified air, or support micro-organisms. Maxair® is safe for breathing air applications where air supply has been filtered in the correct manner, provided appropriate cleaning and sterilisation occurs.

Maxair® pipes are manufactured in accordance with AS/NZS 4131 and are suitable for long term use when correctly handled, installed, and operated.

AS/NZS 4130, PE pipes for pressure applications, requires that PE pressure pipes be manufactured from compounds conforming with AS/NZS 4131.

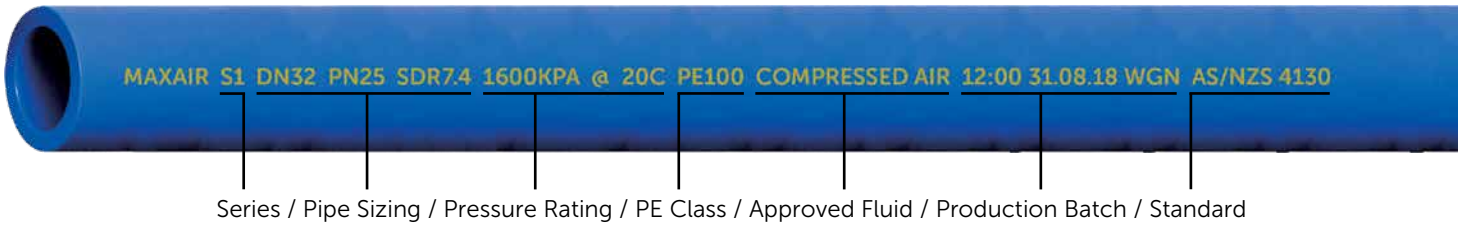
In AS/NZS 4131, the basis of stress rating is the 50 year figure on long term stress regression. This figure is used as a design basis only, and actual life is expected to be much longer, provided recommended design, installation, and operational practices are adopted.

As established from long term testing, Maxair® pipe may be operated continuously under pressure for up to 200 years at 20°C. With AS/NZS 4131, non-conformance is not specifically limited by time.

Warranties that may be offered by other manufacturers often limit the user's rights in setting time limits and often do not quantify the warranty conditions that may also limit the user's rights.

Maxair® PE 100 is the highest grade of PE in New Zealand Standard AS/NZS 4131. Blue colour to assist in identification and colour coding without painting (standards require marking/colour coding).

PIPE MARKINGS AS PER AS/NZS 4130



Series / Pipe Sizing / Pressure Rating / PE Class / Approved Fluid / Production Batch / Standard

QUALITY 50 YEAR GUARANTEE

Meets Australian and NZ Standards AS/NZS4130 & AS/NZS4131 and made in Australia under strict ISO 9002 Certified Quality Systems. Maxair PE100 is the highest grade of PE in pipe standard AS/NZS 4131. Blue colour to assist in identification and colour coding without painting. (Australian and New Zealand Standards require marking/colour coding).

GUARANTEE

Maxair PE100 pipe is manufactured in accordance with AS/NZS4130 and ASNZS4131 and is accordingly guaranteed for 50 years provided recommended design, installation and operation practices are adopted. As established from long term testing, PE100 may be operated continuously under pressure for up to 200 years at 20°C.

ECONOMIC ADVANTAGES OF MAXAIR AIR PIPE SYSTEMS

- Elimination of costly air leaks. This is now possible with fusion welded fittings and/or proven O-Ring fittings.
- Common problems with traditional materials such as maintaining air pressure and recurring air leaks, prove costly in both wastage of valuable compressed air and downtime/maintenance costs to rectify leaks.
- Energy savings through reduced friction. Ultra smooth bore and low friction material.
- Savings in labour costs in installation & modification.
- Low capital costs.
- Low maintenance. Along with low initial costs, the true economy of the Maxair® PE 100 pipe system is realised in long term efficiency, reliability, versatility and minimisation of maintenance.

DESIGN FLEXIBILITY

The three extensive ranges of Maxair® fittings - Socket Fusion, Electro Fusion or Compression, all using the same pipe, offer the Designer/Engineer maximum design flexibility.

The value to Industry of a total package which is readily altered at any stage is inestimable. This system is ideally suited to today's requirement for rapid installation schedules.

ELIMINATION OF PIPE CORROSION

A major disadvantage with traditional galvanised iron air pipe has been corrosion of pipe with consequent problems: Contamination of air supply, damaging tools & pneumatics, increased friction giving energy losses, reduced bore and eventual need for replacement Maxair® eliminates this corrosion giving cleaner air and long lasting smooth bore.

Even copper develops green corrosion and can contaminate the airstream.

The smooth bore of Maxair® resists attachment and build-up of impurities.

REDUCE NOISE AND VIBRATION TRANSMISSION

One of the inherent qualities of PE100 compared to any metal pipe system is its ability to absorb and dampen transmission of noise and vibration making a quieter working environment. Transmitted vibrations can cause problems with pneumatic valves and equipment.

Maxair® is also Electrically non-conductive, so can be installed on cable trays along with cables etc.

QUICK, CLEAN, SIMPLE INSTALLATION

No tedious threading of pipe, flaring or gluing.

Installation can be 2-5 times quicker than with traditional materials. Simple to modify.

New branches, extensions or take-offs can be added with a minimum of disruption & cost. The typical inflexibility of traditional systems is overcome. An extensive range of fittings provides further design versatility.

CHEMICAL RESISTANCE

Maxair® has broad chemical compatibility and provides a solution for harsh corrosive environments. Fusion welded fittings provide a high degree of safety in these areas.

Welded PE 100 is the ultimate Polyethylene system due to its fused jointing, minimum entrapment and high safety factor.

PE pipe is suitable for use with compressor oils, whereas some other thermoplastics have limited or poor resistance. Some synthetic oils including aromatic, polyester, and di-ester types may not be suitable.

Please refer to Technical Department for specific applications.

FOOD CONTACT GRADE MATERIALS

Maxair® PE100 pipe and fittings conform with AS2070.1 "Plastic material for food contact use", providing system approval for use within a food plant.

Maxair® PE100 does not support micro-organisms or bacterial growth. Maxair® Compression fittings conform to AS4129, BS6920.

Maxair® Heavy Duty B.S.P threaded fittings conform with AS3855.3.

SUPERIOR STRENGTH

Maxair® has set the standard in the industry for high strength, and a conservative safety factor of 2:1 in compressed air pipe. By comparison a safety factor of 1:1.25 is approved for water. Maxair® has excellent pressure/ temperature capabilities with minimum 50 year design life.

Manufactured to PN25 providing a compressed air rating in accordance with New Zealand Standard AS4130 of 16 bar or 235 P.S.I. @ 20°C with a 2:1 safety factor.

Extremely robust. Impact resistant - is ductile in nature so will not shatter like PVC (PVC is not safe for compressed air). Excellent for underground applications.

Thermally stable and suitable for -20°C to +60°C continuous, with peaks of up to 95°C.

Meets New Zealand Standards AS4130 & AS4131 and made in New Zealand under strict ISO 9002 Certified Quality Systems.

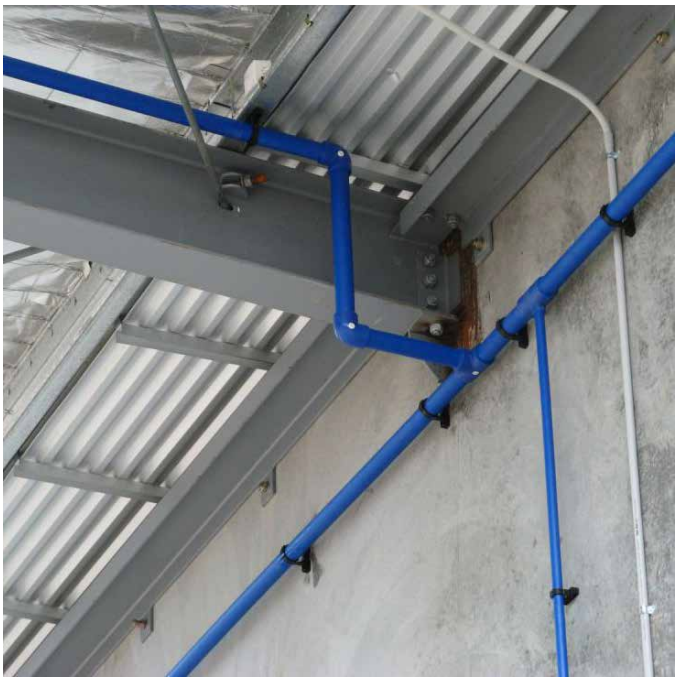
STORAGE AND TRANSPORT

Pipe should be stored and transported straight and true. The storage area must be free from sharp objects (e.g. stones, metal components). The pipes should be uniformly supported to prevent any distortion of the pipes prior to installation. Care should be exercised to prevent scuffing or scoring the pipes by rough handling.

BREATHING AND MEDICAL APPLICATIONS

Maxair® is suitable for breathing air and medical applications, provided Technical Department recommendations are adopted.

It is the user's responsibility to provide and maintain supply air at a suitable level of purity for these applications.



JOINTING

It is especially important that installation be carried out by qualified and experienced operators under controlled conditions. All jointing should be conducted in accordance with the manufacturer's recommendations. There are three approved jointing methods, each with their own distinct benefits. Fabricated fittings should not be used for compressed gases.

CHOOSING YOUR MAXAIR SYSTEM

STEP ONE: SELECTION OF PIPE SIZE.

Five factors need to be considered when selecting pipe sizes for compressed air reticulation -

- Flow
- Pressure
- Distance
- Number of fittings
- Future Expansion

A pipe size should be selected using the compressor's output Free Air Delivery (F.A.D.) at the required operating pressure, and allow for length of pipe and future growth or expansion.

PRESSURE / FLOW

PRESSURE		20mm		25mm		32mm		40mm		50mm		63mm		90mm		110mm	
Bar	psi	l/sec	cfm	l/sec	cfm	l/sec	cfm	l/sec	cfm	l/sec	cfm	l/sec	cfm	l/sec	cfm	l/sec	cfm
3	43.5	7	15	14	30	28	59	48	101	88	186	475	370	475	1006	781	1654
4	58	10	21	20	42	39	83	67	141	122	259	661	515	661	1401	1087	2303
5	72.5	13	28	26	55	50	107	86	182	158	335	855	665	855	1811	1405	2977
6	87	16	34	32	68	62	132	106	225	195	413	1054	820	1054	2233	1732	3671
7	102	19	41	38	81	74	157	127	268	233	494	1258	980	1258	2667	2068	4383
7.5	109	21	44	41	87	80	170	137	291	252	534	1362	1060	1362	2887	2239	4745
8	116	22	47	44	94	87	184	148	313	272	576	1467	1142	1467	3109	2412	5111
10	145	29	61	57	122	112	237	191	405	351	744	1896	1476	1896	4019	3117	6606
13	189	39	83	78	164	151	321	258	547	475	1006	2564	1996	2564	5434	4215	8933

The flow values allow for a pressure drop of 4% of applied pressure over 30 metres of pipe. If a maximum pressure drop of 2% is desired, figures listed above should be de-rated by approximately 20%-30%.

The above table is calculated using values derived from Mueller's formula for gaseous flows.

PIPE EQUIVALENTS OF FITTINGS (IN METRES)

	20mm	25mm	32mm	40mm	50mm	63mm	90mm	110mm
45° Elbow	0.2	0.3	0.3	0.4	0.5	0.7	1	1.2
90° Elbow	0.8	1	1.3	1.6	2	2.6	3.7	4.5
Tee in line	0.3	0.3	0.4	0.5	0.6	0.8	1.1	14
Tee branch	0.9	1.2	1.5	1.9	2.4	3	4.2	5.2
Reducer	0	0	0	0.1	0.1	0.1	0.1	0.2
Ball Valve	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5

Approximate compressor output calculation: 1 kw x 1.35 = HP x 4 =CFM for Screw compressors.

For Piston compressors some manufacturers quote displacement which needs to be derated by 0.75 to calculate F.A.D. (Free Air Delivery).

STEP TWO: SELECTION OF FITTINGS.

Select the fitting style most suitable to your requirements. Three ranges are presented. Note that a combination is often used.

SOCKET FUSION (SEE PAGES 19-22)

Pipe and fittings are welded by means of socket fusion according to AS2033-1980. Fittings comply with DIN16963. These specially engineered fittings, in dimensions and tolerances to co-ordinate with pipe, are heated simultaneously with pipe then joined to give an extremely strong weld of high pressure capability, fusing pipe and fitting into one integral piece. Made in Europe from PE100 expressly for compressed air pipe systems, the fittings are joined quickly and easily using a welding tool and results in a fully fused joint of highest integrity which is leak free, tamper proof and visually pleasing.

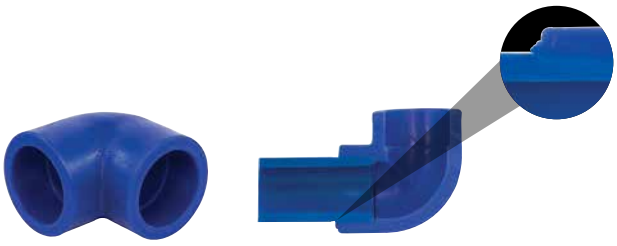


Photo of cutaway weld shows the homogenous weld joint of the pipe and fitting.

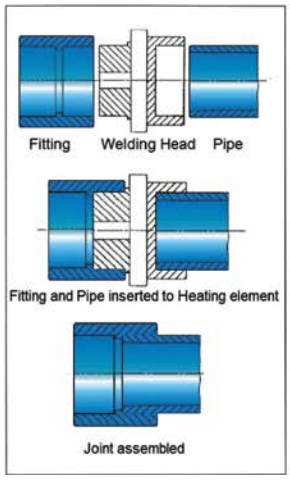
The fittings are very compact, and being the same raw material as the pipe, form a homogenous whole. Designed for sizes 20 mm to 110mm, however they excel in the sizes 20mm to 50mm.

The fusion process is achieved by heating the spigot and socket jointing surfaces above the crystalline melt point temperature of PE by insertion into a heated element tool. The heated joint sections are then assembled, and held until cooling to ambient temperature takes place.

The heater elements are PTFE coated, and at all times must be kept clean and free from contamination.

The heater tools need to be set and calibrated to maintain a surface temperature range of 260°C +1- 5°C. All jointing must be performed in a protected area to prevent contamination of the joints by dirt, moisture or cold wind.

SOCKET FUSION WELDING



ELECTROFUSION WELD FITTINGS (SEE PAGES 23-25)

Electrofusion Fittings are positioned on the pipework by hand and then an electric current is applied via an Electrfusion Welder. These fittings enable one or more joints to be assembled and aligned or adjusted prior to welding. This makes the installation of large bore pipework extremely quick and simple plus giving the advantage of a fully welded system.

Also included in this range are "Under pressure air saddles" which are designed for installation under pressure thus eliminating the need to shut down plant and equipment for new connections. They are particularly useful in large plants with 24 hour operations.

COMPRESSION "O" RING FITTINGS (SEE PAGES 30-34)

Compression fittings are joined easily by hand and offer the advantage of being removable and reusable.

In order for PP mechanical compression fittings to comply with the requirements of AS/NZS 4129, it is normally considered necessary to provide reinforcement to female threads larger than 25mm. This reinforcement should also be corrosion resistant and is normally provided in the form of a stainless steel ring. Threaded outlets larger than 50mm should be avoided. The use of PTFE (Teflon) tape is solely recommended for all fittings with plastics threads.

STEP THREE: SELECTION OF OUTLET REQUIREMENTS

Select the outlet that suits your requirements (pages 42-43) from our ready-to-use outlet options.

MAXAIR PE100 COMPRESSED AIR PIPE

MANUFACTURED TO AS/NZS4130 STANDARD.

QUALITY 50 YEAR GUARANTEE

PRODUCT CODE	WALL THICKNESS	IMPERIAL EQUIVALENT	SIZE (MM)	LENGTH Metres
1241-020-2	2.8mm	5/8"	20mm	6m
1241-025-2	3.5mm	3/4"	25mm	6m
1241-032-2	4.4mm	1"	32mm	6m
1241-040-2	5.5mm	1 1/4"	40mm	6m
1241-050-2	6.9mm	1 1/2"	50mm	6m
1241-063-2	8.6mm	2"	63mm	6m
1241-090-2	12.5mm	3"	90mm	6m
1241-110-2	15.2mm	4"	110mm	6m

Coils for underground application and larger sizes are available on request

PIPE CLIPS

PIPE SIZE (MM)	CODE LIGHT DUTY PLASTIC CLIP
20	CL20
25	CL25
32	CL32
40	CL40
50	CL50
63	CL63

PIPE SIZE (MM)	CODE HEAVY DUTY PLASTIC CLIP
63	HDCL63
90	HDCL90
110	HDCL110
160	HDCL160

PIPE SIZE (MM)	CODE ZINC/RUBBER SLEEVE
20	D430-020
25	D430-025
32	D430-032
40	D430-040
50	D430-050
63	D430-063
90	D430-090
110	D430-110

MAXAIR BLUE PE100 COMPRESSED AIR FITTINGS TO DIN 16963

COUPLINGS

PIPE x PIPE	CODE
20 x 20	WC20
25 x 25	WC25
32 x 32	WC32
40 x 40	WC40
50 x 50	WC50
63 x 63	WC63

REDUCING COUPLINGS

FITTING x PIPE	CODE
25 x 20	WRC2520
32 x 20	WRC3220
32 x 25	WRC3225
40 x 20	WRC4020
40 x 25	WRC4025
40 x 32	WRC4032
50 x 20	WRC5020
50 x 25	WRC5025
50 x 32	WRC5032
50 x 40	WRC5040
63 x 25	WRC6325
63 x 32	WRC6332
63 x 40	WRC6340
63 x 50	WRC6350

90 DEG ELBOW

PIPE x PIPE	CODE
20 x 20	WE20
25 x 25	WE25
32 x 32	WE32
40 x 40	WE40
50 x 50	WE50
63 x 63	WE63

45 DEG ELBOW

PIPE x PIPE	CODE
20 x 20	W45E20
25 x 25	W45E25
32 x 32	W45E32
40 x 40	W45E40
50 x 50	W45E50
63 x 63	W45E63

90 DEG TEE

PIPE x PIPE x PIPE	CODE
20 x 20 x 20	WT20
25 x 25 x 25	WT25
32 x 32 x 32	WT32
40 x 40 x 40	WT40
50 x 50 x 50	WT50
63 x 63 x 63	WT63

REDUCING 90 DEG TEE

PIPE x PIPE x PIPE	CODE
25 x 20 x 25	WRT2520
32 x 20 x 32	WRT3220
32 x 25 x 32	WRT3225
40 x 20 x 40	WRT4020
40 x 25 x 40	WRT4025
40 x 32 x 40	WRT4032
50 x 20 x 50	WRT5020
50 x 25 x 50	WRT5025
50 x 32 x 50	WRT5032
50 x 40 x 50	WRT5040
63 x 25 x 63	WRT6325
63 x 32 x 63	WRT6332
63 x 40 x 63	WRT6340
63 x 50 x 63	WRT6350

THREADED 90 DEG TEE

PIPE x THREAD	CODE
20 x 1/2"	WTF2015
25 x 1/2"	WTF2515
32 x 1/2"	WTF3215
40 x 1/2"	WTF4015

END CAPS

PIPE	CODE
20	WEC20
25	WEC25
32	WEC32
40	WEC40
50	WEC50
63	WEC63

BACKING RING & GASKETS

SIZE	TABLE E RING	GASKET
20	5451-0020	9644-0020
25	5451-0025	9644-0025
32	5451-0032	9644-0032
40	5451-0040	9644-0040
50	5451-0050	9644-0050
63	5451-0063	9644-0063
90	5451-0090	9644-0090
110	5451-0110	9644-0110

Other flange patterns are available

STUB FLANGE

PIPE	CODE
20	WF20
25	WF25
32	WF32
40	WF40
50	WF50
63	WF63

FLANGE KITS TYPE A

PIPE x PIPE	CODE
20 x 20	FKA20
25 x 25	FKA25
32 x 32	FKA32
40 x 40	FKA40
50 x 50	FKA50
63 x 63	FKA63

CONSISTS OF: 2 x BACKING RING, 2 x STUB FLANGE, 1 x GASKET, BOLTS, WASHERS & NUTS

FLANGE KITS TYPE B

PIPE x THREAD	CODE
20 x 1/2"	FKB20
25 x 3/4"	FKB25
32 x 1"	FKB32
40 x 1 1/4"	FKB40
50 x 1 1/2''	FKB50
63 x 2"	FKB63

CONSISTS OF: 1 x BACKING RING, 1 x THREADED FLANGE, 1 x STUB FLANGE, 1 x GASKET, BOLTS, WASHERS & NUTS

THREADED FLANGE TABLE D

FLANGE x THREAD	CODE
20 x 1/2"	FT20
25 x 3/4"	FT25
32 x 1"	FT32
40 x 1 1/4"	FT40
50 x 1 1/2"	FT50
63 x 2"	FT63

THREADED 90 DEGREE ELBOWS

PIPE x THREAD	CODE
20 x 1/2"	WEF2015 Lugged (Right)
25 x 3/4"	WEF2520 No lug (Left)

FEMALE ADAPTOR

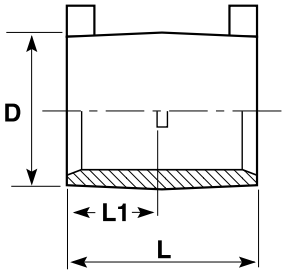
PIPE x THREAD	CODE
20 x 1/2"	WFA2015
25 x 3/4"	WFA2520
32 x 1"	WFA3225
40 x 1 1/4"	WFA4032
50 x 1 1/2"	WFA5040
63 x 2"	WFA6350

MALE ADAPTOR

PIPE x THREAD	CODE
20 x 1/2"	WMA2015
25 x 3/4"	WMA2520
32 x 1"	WMA3225
40 x 1 1/4"	WMA4032
50 x 1 1/2"	WMA5040
63 x 2"	WMA6350

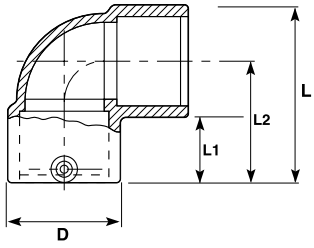
ELECTROFUSION COUPLER

SIZE (MM)	CODE SDR11-21	L (MM)	L1 (MM)	D (MM)
20	2014-0020	77	38	29
25	2014-0025	77	38	34
32	2014-0032	77	38	43
40	2014-0040	90	44	52
50	2014-0050	91	44	62
63	2014-0063	102	49	77
90	2014-0090	122	60	110
110	2014-0110	144	70	133



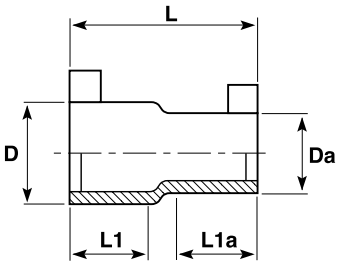
ELECTROFUSION 90° ELBOW

SIZE (MM)	CODE	L (MM)	L1 (MM)	L2 (MM)	D (MM)
20	2054-0020	83	40	63	43
25	2054-0025	76	41	60	35
32	2054-0032	84	40	62	44
40	2054-0040	91	42	65	52
50	2054-0050	103	45	72	63
63	2054-0063	123	50	84	81
90	2054-0090	165	60	109	113
110	2054-0110	204	73	135	137



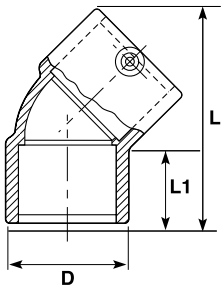
ELECTROFUSION REDUCER

SIZE (MM)	CODE	L (MM)	L1 (MM)	D (MM)	L1A (MM)	DA (MM)
25 x 20	2034-2520	77	39	34	37	29
32 x 20	2034-3220	77	39	43	37	29
32 x 25	2034-3225	77	39	43	37	34
40 x 32	2034-4032	91	46	52	43	44
50 x 32	2034-5032	91	47	62	41	44
50 x 40	2034-5040	91	46	62	43	52
63 x 32	2034-6332	102	52	78	44	44
63 x 40	2034-6340	102	52	78	45	52
63 x 50	2034-6350	102	52	78	48	62
90 x 63	2034-9063	123	61	110	55	79
110 x 63	2034-1163	137	75	140	54	98
110 x 90	2034-1190	137	68	134	62	112



ELECTROFUSION 45° ELBOW

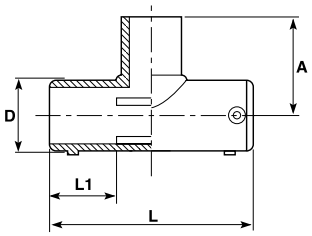
SIZE (MM)	CODE	L (MM)	L1 (MM)	D (MM)
25	2104-0025	77	38	35
32	2104-0032	99	40	44
40	2104-0040	108	42	53
50	2104-0050	124	45	63
63	2104-0063	137	50	79
90	2104-0090	177	60	117
110	2104-0110	213	75	137



ELECTROFUSION EQUAL TEE

SIZE (MM)	CODE	L (MM)	L1 (MM)	D (MM)	A (MM)
20	2154-0020	98	35	44	90
25	2154-0025	98	35	44	90
32	2154-0032	98	35	44	90
40	2154-0040	131	44	52	91
50	2154-0050	141	43	63	104
63	2154-0063	156	50	82	114
90	2154-0090	206	64	115	143
110	2154-0110	239	73	139	157

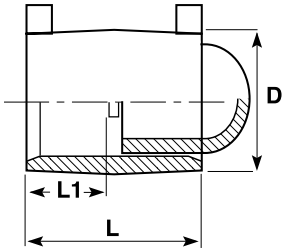
Note: Branch off tee is a spigot fitting. A coupler is required.



ELECTROFUSION END CAP

SIZE (MM)	CODE	L (MM)	L1 (MM)	D (MM)
20	2274-0020	82	38	29
25	2274-0025	82	38	34
32	2274-0032	84	38	46
40	2274-0040	97	44	52
50	2274-0050	101	44	62
63	2274-0063	115	49	77
90	2274-0090	138	60	110
110	2274-0110	164	70	133

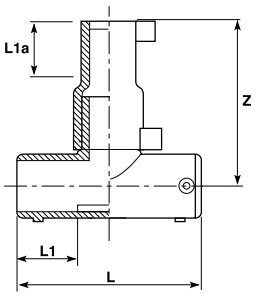
Note: This item is supplied in two parts.



ELECTROFUSION REDUCING TEE

SIZE (MM)	CODE	L (MM)	L1 (MM)	L1A (MM)	Z (MM)
25 x 20	2164-2520	98	35	37	138
32 x 20	2164-3220	98	35	37	138
32 x 25	2164-3225	210	65	37	116
40 x 32	2164-4032	144	49	41	145
50 x 32	2164-5032	144	49	40	178
63 x 32	2164-6332	174	61	40	205
63 x 40	2164-6340	174	61	44	206
63 x 50	2164-6350	174	61	44	205
90 x 63	2164-9063	210	65	61	277
110 x 63	2164-1163	265	88	58	330
110 x 90	2164-1190	265	88	62	316

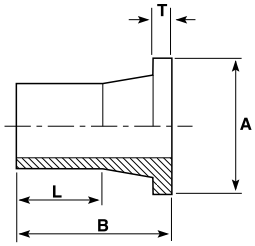
Note: Fitting supplied as two parts.



SPIGOT STUB FLANGE

SIZE (MM)	CODE SDR11	A (MM)	B (MM)	L (MM)	T (MM)
20	3414-0020	45	76	41	7
25	3414-0025	58	81	41	9
32	3414-0032	68	85	44	10
40	3414-0040	73	88	49	11
50	3414-0050	84	92	55	12
63	3414-0063	95	100	63	14
75	3414-0075	122	120	70	16
90	3414-0090	128	132	79	17
110	3414-0110	158	157	82	18
110	3414-0110V	158	157	82	18

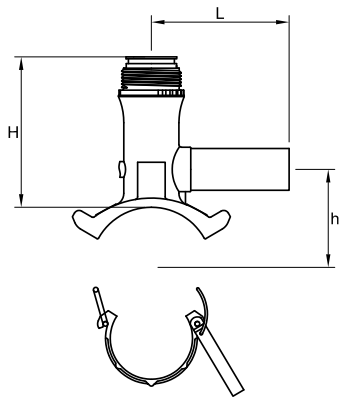
- Please specify if stub is to suit butterfly valves (add "V" to code).
- See page 21 for backing rings to suit



ELECTROFUSION LIVE TAPPING SADDLE

SIZE (MM)	CODE	L (MM)	H (MM)	h (MM)	W (MM)
40 x 25	2214-4025	105	110	50	120
40 x 32	2214-4032	105	110	50	120
50 x 25	2214-5025	105	110	50	120
50 x 32	2214-5032	105	110	50	120
63 x 25	2214-6325	105	119	62	120
63 x 32	2214-6332	105	119	62	120
63 x 40	2214-6340	165	155	59.5	146
63 x 50	2214-6350	165	155	59.5	146
63 x 63	2214-6363	165	155	59.5	146
90 x 25	2214-9025	105	110	77	120
90 x 32	2214-9032	105	110	77	120
90 x 40	2214-9040	165	152	57	146
90 x 50	2214-9050	165	152	57	146
90 x 63	2214-9063	165	152	57	146
110 x 25	2214-1125	105	117	87	120
110 x 32	2214-1132	105	117	87	120
110 x 40	2214-1140	165	176	105	146
110 x 50	2214-1150	165	176	105	146
110 x 63	2214-1163	165	176	105	146

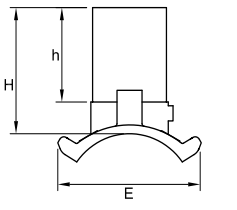
- Larger sizes and a range of other offtake sizes are available
- Some saddles have electrofusion reducers to achieve correct offtake (2 piece).
- Some saddles are top load saddles, as indicated by "TL" in the code.
- Tapping keys are stocked to suit saddles

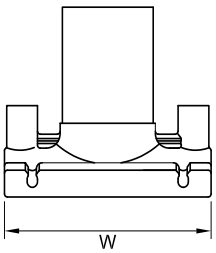


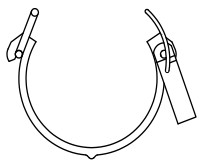
ELECTROFUSION BRANCH SADDLE

SIZE (MM)	CODE	H (MM)	h (MM)	W (MM)	E (MM)
40 x 25	2224-4025	90	52	103	83
40 x 32	2224-4032	90	57	103	83
63 x 25	2224-6325	106	59	122	105
63 x 32	2224-6332	106	59	122	105
63 x 40	2224-6340	106	59	122	105
63 x 50	2224-6350	106	59	122	105
63 x 63	2224-6363	106	59	122	105
90 x 25	2224-9025	91	51	136	133
90 x 32	2224-9032	91	51	136	133
90 x 40	2224-9040	105	69	136	133
90 x 50	2224-9050	105	82	136	133
90 x 63	2224-9063	105	88	136	133
110 x 25	2224-1125	118	75	147	122
110 x 32	2224-1132	118	75	147	122
110 x 40	2224-1140	118	75	147	122
110 x 50	2224-1150	118	75	147	122
110 x 63	2224-1163	118	75	147	122
110 x 90	2224-1190	121	84	165	180

- Range of offtake sizes and larger sizes available on request
- Some saddles are top load saddles, as indicated by "TL" in the code.
- Some saddles may be two part with electrofusion reducer to achieve correct offtake



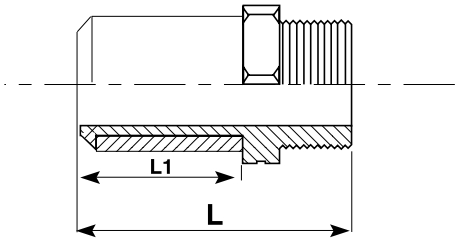




BRASS MALE TRANSITION INSERT

PE100 • SDR11 • PN16 WATER • 1000KPA GAS

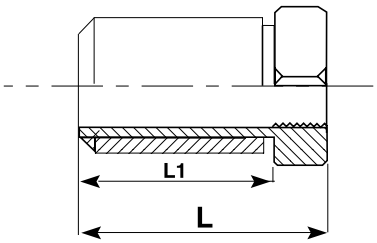
SIZE (MM)		BSP THREAD SIZE INCH	BSP THREAD SIZE (MM)	CODE	L (MM)	L1 (MM)
20	x	1/2"	15	2334-2015	95	38
25	x	3/4"	20	2334-2520	95	38
32	x	1"	25	2334-3225	108	38
40	x	1 1/4"	32	2334-4032	122	44
50	x	1 1/2"	40	2334-5040	125	44
63	x	2"	50	2334-6350	143	49
75	x	2 1/2"	65	2334-7565	159	61
90	x	3"	75	2334-9080	178	60
110	x	4"	100	2334-1110	203	70
125	x	4"	100	2334-1210	225	78



BRASS FEMALE TRANSITION INSERT

PE100 • SDR11 • PN16 WATER • 1000KPA GAS

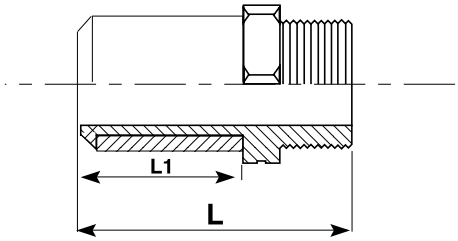
SIZE (MM)		BSP THREAD SIZE INCH	BSP THREAD SIZE (MM)	CODE	L (MM)	L1 (MM)
20	x	1/2"	15	2344-2015	80	38
25	x	3/4"	20	2344-2520	80	38
32	x	1"	25	2344-3225	90	38
40	x	1 1/4"	32	2344-4032	100	44
50	x	1 1/2"	40	2344-5040	103	44
63	x	2"	50	2344-6350	121	49
75	x	2 1/2"	65	2344-7565	136	61
90	x	3"	80	2344-9080	149	60
110	x	4"	100	2344-1110	166	70
125	x	4"	100	2344-1210	184	78



STAINLESS STEEL MALE TRANSITION INSERT

PE100 • SDR11 • PN16 WATER • 1000KPA GAS

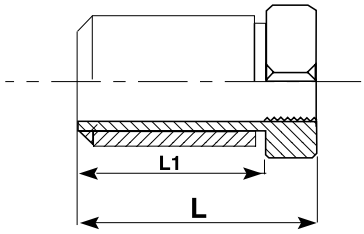
SIZE (MM)		BSP THREAD SIZE INCH	BSP THREAD SIZE (MM)	CODE	L (MM)	L1 (MM)
25	x	3/4"	20	2394-2520	99	40
32	x	1"	25	2394-3225	110	44
40	x	1 1/4"	32	2394-4032	121	49
50	x	1 1/2"	40	2394-5040	134	54
63	x	2"	50	2394-6350	150	63



STAINLESS STEEL FEMALE TRANSITION INSERT

PE100 • SDR11 • PN16 WATER • 1000KPA GAS

SIZE (MM)		BSP THREAD SIZE INCH	BSP THREAD SIZE (MM)	CODE	L (MM)	L1 (MM)
25	x	3/4"	20	2404-2520	91	40
32	x	1"	25	2404-3225	100	44
40	x	1 1/4"	32	2404-4032	109	49
50	x	1 1/2"	40	2404-5040	124	54
63	x	2"	50	2404-6350	141	63



MAXAIR COMPRESSION FITTINGS FOR COMPRESSED AIR AS1460

COUPLING

PIPE x PIPE	CODE
20 x 20	7014-0020
25 x 25	7014-0025
32 x 32	7014-0032
40 x 40	7014-0040
50 x 50	7014-0050
63 x 63	7014-0063
90 x 90	7014-0090
110 x 110	7014-0110

REDUCING COUPLING

PIPE x PIPE	CODE
25 x 20	7034-2520
32 x 25	7034-3225
40 x 32	7034-4032
50 x 40	7034-5040
63 x 50	7034-6350

MALE ADAPTOR

PIPE x THREAD	CODE
20 x 1/2"	7294-2015
25 x 1/2"	7294-2515
25 x 3/4"	7294-2520
32 x 1"	7294-3225
40 x 1 1/4"	7294-4032
50 x 1 1/2"	7294-5040
63 x 2"	7294-6350
90 x 3"	7294-9075
110 x 4"	7294-1110

FEMALE ADAPTOR

PIPE x THREAD	CODE
20 x 1/2"	7304-2015
25 x 3/4"	7304-2520
32 x 1"	7304-3225
40 x 1 1/4"	7304-4032
50 x 1 1/2"	7304-5040
63 x 2"	7304-6350
90 x 3"	7304-9075
110 x 4"	7304-1110

90 DEG ELBOW

PIPE x PIPE	CODE
20 x 20	7054-0020
25 x 25	7054-0025
32 x 32	7054-0032
40 x 40	7054-0040
50 x 50	7054-0050
63 x 63	7054-0063
90 x 90	7054-0090
110 x 110	7054-0110

90 DEG ELBOW WITH THREADED FEMALE OFFTAKE

PIPE x PIPE	CODE
20 x 1/2"	7064-2015
25 x 3/4"	7064-2520
32 x 1"	7064-3225
40 x 1 1/4"	7064-4032
50 x 1 1/2"	7064-5040
63 x 2"	7064-6350

90 DEG ELBOW WITH THREADED MALE OFFTAKE

PIPE x THREAD	CODE
20 x 1/2"	7074-2015
25 x 3/4"	7074-2520
32 x 1"	7074-3225
40 x 1 1/4"	7074-4032
50 x 1 1/2"	7074-5040
63 x 2"	7074-6350

ELBOW FEMALE (LUGGED)

PIPE x THREAD	CODE
20 x 1/2"	7084-2015
25 x 3/4"	7084-2520

90 DEG TEE

PIPE x PIPE x PIPE	CODE
20 x 20 x 20	7154-0020
25 x 25 x 25	7154-0025
32 x 32 x 32	7154-0032
40 x 40 x 40	7154-0040
50 x 50 x 50	7154-0050
63 x 63 x 63	7154-0063
90 x 90 x 90	7154-0090
110 x 110 x 110	7154-0110

REDUCING 90 DEG TEE

PIPE x PIPE x PIPE	CODE
25 x 20 x 25	7164-2520
32 x 25 x 32	7164-3225
40 x 25 x 40	7164-4025
40 x 32 x 40	7164-4032
50 x 25 x 50	7164-5025
50 x 40 x 50	7164-5040
63 x 50 x 63	7164-6350

90 DEG TEE WITH THREADED FEMALE OFFTAKE

PIPE x THREAD x PIPE	CODE
20 x 1/2" x 20	7174-2015
25 x 3/4" x 25	7174-2520
32 x 1" x 32	7174-3225
40 x 1 1/4" x 40	7174-4032
50 x 1 1/2" x 50	7174-5040
63 x 2" x 63	7174-6350
90 x 3" x 90	7174-9075

END CAPS

PIPE	CODE
20	7274-0020
25	7274-0025
32	7274-0032
40	7274-0040
50	7274-0050
63	7274-0063
90	7274-0090
110	7274-0110

BLANKING PLUG

PIPE	CODE
20mm	8264-0020
25mm	8264-0025
32mm	8264-0032
40mm	8264-0040
50mm	8264-0050
63mm	8264-0063

UNIVERSAL ADAPTOR

PIPE x METAL PIPE	CODE
25 x 15-22mm	7394-2515
25 x 20-27mm	7394-2520
25 x 27-35mm	7394-2527
32 x 27-35mm	7394-3227
50 x 35-50mm	7394-5035

REDUCING SET

FITTING x PIPE	CODE
25 x 20	8904-2520
32 x 20	8904-3220
32 x 25	8904-3225
40 x 25	8904-4025
40 x 32	8904-4032
50 x 25	8904-5025
50 x 32	8904-5032
50 x 40	8904-5040
63 x 25	8904-6325
63 x 32	8904-6332
63 x 40	8904-6340
63 x 50	8904-6350

COMPRESSION VALVE

PIPE	CODE
20	0804-0020
25	0804-0025
32	0804-0032

MECHANICAL TAPPING BAND

FEMALE THREADED OFF-TAKE • SDR11 - 21 • WATER PN16

SIZE (MM)		OFF-TAKE SIZE INCH	OFF-TAKE SIZE (MM)	CODE
20	x	1/2"	15	7234-2015
25	x	1/2"	15	7234-2515
25	x	3/4"	20	7234-2520
32	x	1/2"	15	7234-3215
32	x	3/4"	20	7234-3220
40	x	1/2"	15	7234-4015
40	x	3/4"	20	7234-4020
40	x	1"	25	7234-4025
50	x	1/2"	15	7234-5015
50	x	3/4"	20	7234-5020
50	x	1"	25	7234-5025
63	x	1/2"	15	7234-6315
63	x	3/4"	20	7234-6320
63	x	1"	25	7234-6325

75	x	3/4"	20	7234-7520
75	x	1"	25	7234-7525
75	x	1 1/2"	40	7234-7540
75	x	2"	50	7234-7550
90	x	3/4"	20	7234-9020
90	x	1"	25	7234-9025
90	x	1 1/2"	40	7234-9040
90	x	2"	50	7234-9050

110	x	3/4"	20	7234-1120
110	x	1"	25	7234-1125
110	x	1 1/4"	32	7234-1132
110	x	1 1/2"	40	7234-1140
110	x	2"	50	7234-1150
125	x	3/4"	20	7234-1220
125	x	1"	25	7234-1225
125	x	1 1/4"	32	7234-1232
125	x	1 1/2"	40	7234-1240
125	x	2"	50	7234-1250
160	x	3/4"	20	7234-1620
160	x	1"	25	7234-1625
160	x	1 1/4"	32	7234-1632
160	x	1 1/2"	40	7234-1640
160	x	2"	50	7234-1650
180	x	3/4"	20	7234-1820
180	x	1"	25	7234-1825
180	x	1 1/4"	40	7234-1832
180	x	1 1/2"	40	7234-1840
180	x	2"	50	7234-1850
225	x	2"	50	7234-2250

MAXAIR BSP THREADED FITTINGS

Heavy duty fittings made from highest quality engineering grade materials. Maximum material temperature range with load is 100°C. Pressure ratings at 20°C. Up to 50mm 16bar/235psi. 65mm 12 bar/175psi. 80 and 100mm 10 bar/145 psi.
Most fittings listed are available in brass. When ordering in brass, substitute "P" with "B".

REDUCING HEX BUSH

NYLON	CODE
1/2" x 1/4"	PRB1508
1/2" x 3/8"	PRB1510
3/4" x 1/4"	PRB2008
3/4" x 3/8"	PRB2010
3/4" x 1/2"	PRB2015
1" x 1/2"	PRB2515
1" x 3/4"	PRB2520
1 1/4" x 3/4"	PRB3220
1 1/4" x 1"	PRB3225
1 1/2" x 3/4"	PRB4020
1 1/2" x 1"	PRB4025
1 1/2" x 1 1/4"	PRB4032
2" x 3/4"	PRB5020
2" x 1"	PRB5025
2" x 1 1/4"	PRB5032
2" x 1 1/2"	PRB5040
2 1/2" x 2"	PRB6550
3" x 1 1/2"	PRB8040
3" x 2"	PRB8050
3" x 2 1/2"	PRB8065
4" x 2"	PRB10050
4" x 2 1/2"	PRB10065
4" x 3"	PRB10080
BRASS	**CODE**
1/4" x 1/8"	BRB0806
3/8" x 1/4"	BRB1008
1/2" x 1/4"	BRB1508
1/2" x 3/8"	BRB1510
3/4" x 1/4"	BRB2008
3/4" x 1/2"	BRB2015

ELBOW M & F

NYLON	CODE
1/2"	PMFE15
3/4"	PMFE20
1"	PMFE25
1 1/4"	PMFE32
1 1/2"	PMFE40
2"	PMFE50
BRASS	**CODE**
1/8"	BMFE06
1/4"	BMFE08
3/8"	BMFE10
1/2"	BMFE15

ELBOW F & F

NYLON	CODE
1/2"	PE15
3/4"	PE20
1"	PE25
1 1/4"	PE32
1 1/2"	PE40
2"	PE50
BRASS	**CODE**
1/8"	BE06
1/4"	BE08
3/8"	BE10
1/2"	BE15

BRASS LUGGED ELBOW

SIZE	CODE
1/2"	BLE15
3/4"	BLE20

HEX NIPPLE

NYLON	CODE
1/4"	PHN08
3/8"	PHN10
1/2"	PHN15
3/4"	PHN20
1"	PHN25
1 1/4"	PHN32
1 1/2"	PHN40
2"	PHN50
2 1/2"	PHN65
3"	PHN80
4"	PHN100
BRASS	**CODE**
1/8"	BHN06
1/4"	BNH08
3/8"	BNH10
1/2"	BHN15

REDUCING HEX NIPPLE

NYLON	CODE
1/2" x 1/8"	PRHN1506
1/2" x 1/4"	PRHN1508
1/2" x 3/8"	PRHN1510
3/4" x 3/8"	PRHN2010
3/4" x 1/2"	PRHN2015
1" x 1/2"	PRHN2515
1" x 3/4"	PRHN2520
1 1/4" x 3/4"	PRHN3220
1 1/4" x 1"	PRHN3225
1 1/2" x 3/4"	PRHN4020
1 1/2" x 1"	PRHN4025
1 1/2" x 1 1/4"	PRHN4032
2" x 3/4"	PRHN5020
2" x 1"	PRHN5025
2" x 1 1/4"	PRHN5032
2" x 1 1/2"	PRHN5040
2 1/2" x 2"	PRHN6550
3" x 1 1/2"	PRHN8040
3" x 2"	PRHN8050
3" x 2 1/2"	PRHN8065
4" x 2"	PRHN10050
4" x 2 1/2"	PRHN10065
4" x 3"	PRHN10080
BRASS	**CODE**
1/4" x 1/8"	BRHN0806
3/8" x 1/4"	BRHN1008
1/2" x 1/4"	BRHN1508
1/2" x 3/8"	BRHN1510
3/4" x 1/4"	BRHN2008

TEE

NYLON	CODE
1/2"	PT15
3/4"	PT20
1"	PT25
1 1/4"	PT32
1 1/2"	PT40
2"	PT50
BRASS	**CODE**
1/8"	BT06
1/4"	BT08
3/8"	BT10
1/2"	BT15

SOCKET

NYLON	CODE
1/2"	PS15
3/4"	PS20
1"	PS25
1 1/4"	PS32
1 l/2"	PS40
2"	PS50
2 1/2"	PS65
3"	PS80
4"	PS100
BRASS	
1/8"	BS06
1/4"	BS08
3/8"	BS10
1/2"	BS15

REDUCING SOCKET

NYLON	CODE
3/4" x 1/2"	PRS2015
1" x 1/2"	PRS2515
1" x 3/4"	PRS2520
1 1/4" x 3/4"	PRS3220
1 1/4" x l"	PRS3225
1 1/2" x 3/4"	PRS4020
1 1/2" x 1"	PRS4025
1 1/2" x 1 1/4"	PRS4032
2" x 3/4"	PRS5020
2" x 1"	PRS5025
2" x 1 1/4"	PRS5032
2" x 1 1/2"	PRS5040
2 1/2" x 1 1/2"	PRS6540
2 1/2" x 2"	PRS6550

PLUG

NYLON	CODE
1/2"	PP15
3/4"	PP20
1"	PP25
1 1/4"	PP32
1 1/2''	PP40
2"	PP50
2 1/2''	PP65
3''	PP80
4''	PP100
BRASS	
1/8"	BP06
1/4"	BP08
3/8"	BP10
1/2"	BP15

Codes for all outlets and drains are formulated as follows:
Identifier / Incoming Pipe Size / Qty of Outlets / Size of Outlet

32mm outlets are able to be fabricated also

MOUNTING BRACKETS

SIZE	CODE
1/2"	TFWM 15
3/4"	TFWM 20
1"	TFWM 25

TFWM Bracket in use

COMPRESSION SYSTEM OUTLETS

CODE
CSO/20/1/¼
CSO/20/2/¼
CSO/20/3/¼
CSO/20/1/⅜ *
CSO/20/2/⅜
CSO/25/1/¼
CSO/25/2/¼
CSO/25/3/¼
CSO/25/1/⅜
CSO/25/2/⅜

COMPRESSION SYSTEM DRAIN OUTLETS

CODE
CSD/20/1/¼
CSD/20/2/¼
CSD/20/3/¼
CSD/20/1/⅜
CSD/20/2/⅜
CSD/25/1/¼
CSD/25/2/¼
CSD/25/3/¼
CSD/25/1/⅜
CSD/25/2/⅜ *

COMPRESSION SYSTEM DRIP LEG DRAIN OUTLETS

CODE
DLD/20/1/¼
DLD/20/2/¼
DLD/20/3/¼
DLD/20/1/⅜
DLD/20/2/⅜
DLD/25/1/¼
DLD/25/2/¼
DLD/25/3/¼
DLD/25/1/⅜
DLD/25/2/⅜ *

* As pictured.

AUTOMATIC DRAIN FILTER OUTLETS

CODE
ADF/20/1/¼
ADF/20/2/¼
ADF/20/3/¼
ADF/20/1/⅜
ADF/20/2/⅜ *
ADF/20/3/⅜
ADF/25/1/¼
ADF/25/2/¼
ADF/25/3/¼
ADF/25/1/⅜
ADF/25/2/⅜
ADF/25/3/⅜

AIR SUPPLY TEE WITH DRAIN

Mains air dump/drain. Install between compressor and factory mains.

CODE
AST 20 *
AST 25
AST 32
AST 40

WELDED SYSTEM DRAIN OUTLETS

CODE
WDLD/20/1/¼
WDLD/20/2/¼
WDLD/20/3/¼
WDLD/20/1/⅜
WDLD/20/2/⅜
WDLD/25/1/¼
WDLD/25/2/¼ *
WDLD/25/3/¼
WDLD/25/1/⅜
WDLD/25/2/⅜

WELDED SYSTEM DRAIN OUTLETS

CODE
WSO/20/1/¼
WSO/20/2/¼
WSO/20/3/¼
WSO/20/1/⅜ *
WSO/20/2/⅜

DOUBLE OULET - BRASS FEMALE INLET

SIZE	CODE
1/4" x 1/4"	BDO08
3/8" x 3/8"	BDO10
1/2" x 1/2"	BDO15

DOUBLE OULET - BRASS MALE INLET

SIZE	CODE
1/4" x 1/4"	BDOMF08
3/8" x 3/8"	BDOMF10
1/2" x 1/2"	BDOMF15

STRAIGHT MANIFOLD - 1/2" INLET

SIZE	CODE
2x 1/4" Outlet	AMT-2
3x 1/4" Outlet	AMT-3
4x 1/4" Outlet	AMT-4
5x 1/4" Outlet	AMT-5

STRAIGHT MANIFOLD - 1/4" INLET

SIZE	CODE
2x 1/4" Outlet	AN 2
3x 1/4" Outlet	AN 3
4x 1/4" Outlet	AN 4
5x 1/4" Outlet	AN 5

A210 COUPLER OUTLET - 1/4" INLET

SIZE	CODE
Double Outlet	ATO2-A210
Triple Outlet	ATO3-A210

A380 COUPLER OUTLET - 3/8" INLET

SIZE	CODE
Triple Outlet	ATO3-A380

BALL VALVES FEMALE/FEMALE

SIZE	CODE
1/2"	BV15
3/4"	BV20
1"	BV25
1 1/4"	BV32
1 1/2"	BV40
2"	BV50

BALL VALVES MALE/FEMALE

SIZE	CODE
1/4"	VMF08

BUTTERFLY VALVES - LEVER OPERATED

TYPE	CODE
50mm WAFER	BVFW50
50mm LUGGED	BVFL50
80mm WAFER	BVFW80
80mm LUGGED	BVFL80
100mm WAFER	BVFW100
100mm LUGGED	BVFL100
Lugged Valves are Table D/E.	

PURLIN HANGER

CODE	DESCRIPTION
HS 1 (left)	Used to hang wire or rod
HS 1A (right)	Used to mount CL pipe clips

BEAM CLAMPS

CODE	DESCRIPTION
HS 2U (left)	For up to 16mm beams (For hanging 10mm threaded rod, mounting CL pipe clips etc)
HS 2A	For 3mm-7mm beams
HS 2B	For 8mm-13mm beams (pictured page 39)
HS 2C (right)	For 14mm-20mm beams (For hanging HS4 rod, mounting CL pipe clips/cable ties etc)

BEAM CLAMP PIPE HANGER

CODE	DESCRIPTION	BEAM SIZE
HS 2A H1	For pipe up to 32mm	3mm-7mm
HS 2B H1	For pipe up to 32mm	8mm-13mm
HS 2C H1	For pipe up to 32mm	14mm-20mm
HS 2A H2	For pipe up to 50mm	3mm-7mm
HS 2B H2	For pipe up to 50mm	8mm-13mm
HS 2C H2	For pipe up to 50mm	14mm-20mm

ROD PURLIN HANGER

CODE	DESCRIPTION
HSP 10	Light duty suits M10 rod
HSPH 10	Heavy duty suits M10 rod
HSPH 12	Heavy duty suits M12 rod

PIPE SUPPORT SUGGESTIONS (SEE PAGE 18 FOR PIPE CLIPS)

Installation of the CL clip onto M10 threaded rod.

Use the combination of the HS 2 clamp and CL clip to mount onto metal beams.

210 SERIES COUPLINGS

CODE	DESCRIPTION
A210-F	Coupler - ¼" BSPF (a)
A210-14M	Coupler - ¼" BSPM (b)
A210-38M	Coupler - ⅜" BSPM (c)
A210-12M	Coupler - ½" BSPM

(a)

(b)

(c)

To suit:

380 SERIES COUPLINGS

CODE	DESCRIPTION
A380	Coupler - ⅜" BSPF (a)
A380-14M	Coupler - ¼" BSPM (b)

(a)

(b)

To suit:

400 SERIES COUPLINGS

CODE	DESCRIPTION
A400	Coupler - ½" BSPF (a)

(a)

To suit:

DRESS SETS GALVANISED (DS) STAINLESS (SSDS)

We stock parts for various different dressing sets. Use the following diagrams and tables to work out which bolts you require in your set. Included will be a single EPDM gasket to suit.

Note: the following tables are for standard flange connections.

DRESS SET CODE

Our dress set codes have four basic parts:

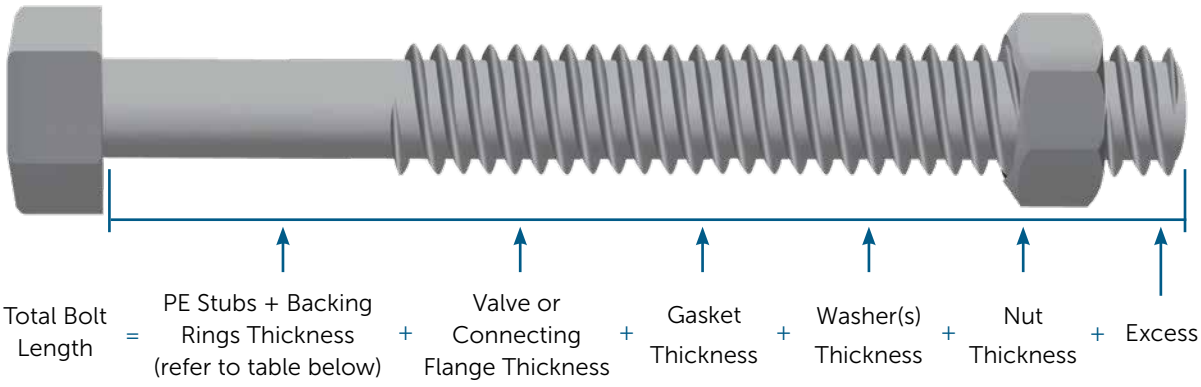
1. Begin with "DS" for galvanised or "SSDS" for stainless steel bolts/washers/nut
2. Followed by the nominal flange size (e.g. 4" would be 100). Refer to pages 8-9 for nominal sizes
3. Then you need to determine the required bolt length. Refer to the opposite page to calculate this.
4. The final value is the flange pattern (e.g. AS2129 Table E would be "TE"). This also determines the bolt size supplied

For example, the code for a dress set for 110mm-4" AS2129 Table E with 90mm long M16 galvanised bolts:
DS 100/90 TE

STANDARD FLANGES: BOLT QUANTITY AND SIZE

PIPE SIZE (MM)	FLANGE SIZE (INCH)		FLANGE PATTERN			
			AS2129 Table E	AS4087 PN16	BS 4504 PN16	ANSI 150
32	1"	Bolt Quantity and Size	4 x M12	-	4 x M12	4 x 1/2"
40	1 1/4"		4 x M12	-	4 x M16	4 x 1/2"
50	1 1/2"		4 x M12	-	4 x M16	4 x 1/2"
63	2"		4 x M16	4 x M16	4 x M16	4 x 5/8"
75	2 1/2"		4 x M16	4 x M16	4 x M16	4 x 5/8"
90	3"		4 x M16	4 x M16	8 x M16	4 x 5/8"
110	3 1/2"		4 x M16	-	8 x M16	4 x 5/8"
110	4"		8 x M16	4 x M16	8 x M16	8 x 5/8"
125	4"		8 x M16	4 x M16	8 x M16	8 x 5/8"
125	5"		8 x M16	-	8 x M16	8 x 3/4"
140	5"		8 x M16	-	8 x M16	8 x 3/4"
160	5"		8 x M16	-	8 x M16	8 x 3/4"
160	6"		8 x M20	8 x M16	8 x M20	8 x 3/4"
180	6"		8 x M20	8 x M16	8 x M20	8 x 3/4"
200	8"		8 x M20	8 x M16	12 x M20	8 x 3/4"
225	8"		8 x M20	8 x M16	12 x M20	8 x 3/4"
250	10"		12 x M20	8 x M20	12 x M24	12 x 7/8"
280	10"		12 x M20	8 x M20	12 x M24	12 x 7/8"
315	12"		12 x M24	12 x M20	12 x M24	12 x 7/8"
355	14"		12 x M24	12 x M24	16 x M26	12 x 1"
400	16"		12 x M24	12 x M24	16 x M26	16 x 1"
450	18"		16 x M24	12 x M24	20 x M27	16 x 1 1/8"
500	20"		16 x M24	16 x M24	20 x M30	20 x 1 1/8"
560	22"		16 x M27	-	-	-
630	24"		16 x M30	16 x M27	20 x M33	20 x 1 1/4"

DETERMINE THE REQUIRED LENGTH OF BOLTS



STANDARD FLANGES: COMBINED THICKNESS OF PE STUB FLANGE & BACKING RING

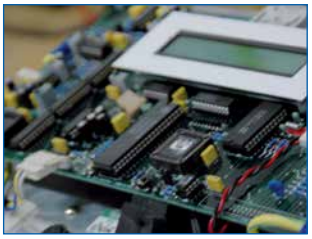
PIPE SIZE (MM)	FLANGE SIZE (INCH)		SDR11				SDR17			
			AS2129 Table E	AS4087 PN16	BS 4504 PN16	ANSI 150	AS2129 Table E	AS4087 PN16	BS 4504 PN16	ANSI 150
32	1"	PE Stub Flange + Backing Ring Thickness (mm)	17	-	24	16	-	-	-	-
40	1 1/4"		19	-	25	17	-	-	-	-
50	1 1/2"		21	-	30	20	21		30	20
63	2"		25	26	33	23	24	25	33	22
75	2 1/2"		27	28	35	25	28	29	35	26
90	3"		30	29	36	28	30	29	36	28
110	3 1/2"		31	31	-	-	30	30	-	-
110	4"		32	32	37	29	31	31	37	28
125	4"		40	39	44	36	32	31	44	28
125	5"		40	-	48	39	32	-	48	31
140	5"		39	-	47	38	32	-	47	31
160	5"		39	-	47	38	32	-	47	31
160	6"		42	38	47	38	35	31	47	31
180	6"		48	44	53	44	37	33	53	33
200	8"		51	51	54	45	43	43	54	37
225	8"		52	52	55	46	43	43	55	37
250	10"		57	54	57	48	47	44	57	38
280	10"		57	54	57	48	47	44	57	38
315	12"		65	63	62	56	50	48	62	41
355	14"		70	70	66	59	60	60	66	49
400	16"		77	75	75	67	65	63	75	55
450	18"		95	90	-	82	80	75	-	67
500	20"		98	98	-	85	98	98	-	85
560	22"		104	-	-		104	-	-	-
630	24"		113	113	-	94	108	108	-	89

CLEANING

CODE	DESCRIPTION	
9991-0001	**Isopropyl alcohol - 1 Litre** Sold in packs of 6 100% IPA for use in electrofusion welding	
9991-0100	**Disposable welding wipes** Prevent contamination of the weld zone by using these convenient & safe disposable wiping cloths (tub of 100). Wipes are >98% isopropyl alcohol for NZ conditions that leave no residue. .	

REPAIR AND CALIBRATION SERVICES

Our technical department offers repair and calibration services for most types of PE welding equipment. Contact us to discuss. We also stock a range of spare/replacement parts.



CalderSafe® ELECTROFUSION WELD SOFTWARE

CalderSafe Mobile® is the technology enabling the easy acquisition of weld data from any job site. Data is automatically transferred to the app on your mobile device using Bluetooth then can be sent to pre-configured email addresses of your choice, along with images of the prepared and clamped fitting. Great for project managers!

The weld data can be read using the CalderSafe Weld Analyser software from any global location. This provides quality assurance and verification for completed welds before any reinstatement works are carried out, reducing risks of failed welds and unnecessary reworks.

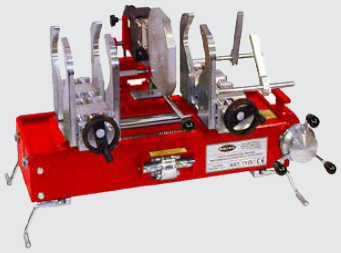
Features:
- GPS location of fused fittings
- Up to 4 images can be taken
- Print individual or summary of weld records
- CalderSafe Mobile® App is available free on Google Play.
- Send weld data to 4 email addresses
- Provides 124 point graph of the weld

ELECTROFUSION WELDERS

CODE	DESCRIPTION	
PEGASUS-CS	**Pegasus EF Welder with Scanner & Caldersafe** The Pegasus has been designed to meet the needs of today's market place with barcode, manual and fusamatic welding data entry with a 2000 welding joint recording capacity which are downloadable by supplied USB flash drive. Caldersafe software is pre-installed and can be activated or deactivated as required. The unit is constructed of ABS plastic incorporated within a rugged protection frame with integrated cable storage facility. Welder is supplied within a steel case for extra protection when not in use. Features: • Operating modes: Manual, Barcode Automatic, and Fusamatic • Data recording of 2000 welds downloadable by USB or Caldersafe Mobile App • 3.0m output lead with terminals to 4.7mm • 4.7mm male to 4mm female adaptors • Fitting size range of 16-630mm • Capable of welding 8-48V couplers	
GRIFFON-CS	**Griffon EF Welder with Scanner & Caldersafe** At only 10kg and supplied in a tough fabric case with an over-shoulder strap, the Griffon is the ideal machine for contractors who do a lot of EF welding under 200mm. Caldersafe software is pre-installed and can be activated or deactivated as required. Features: • Operating modes: Manual, Barcode Automatic, and Fusamatic • Data recording of 2000 welds downloadable by USB or Caldersafe Mobile App • Fan cooled electronics • 4.0m output lead with terminals to 4.7mm • 4.7mm male to 4mm female adaptors • Fitting size range of 16-200mm	
01-01-101	Terminal Adaptor Pins 4.7mm Male x 4.0mm Female (Pair)	
01-01-116	Terminal Adaptor Pins 4.0mm Male x 4.7mm Female (Pair)	
01-01-179	Right Angle Terminal Adaptor 4.0-4.0mm (Pair)	

Note: Welders capable of welding up to 1200mm and right angle adaptors are available - please enquire. We stock a range of replacement parts and offer full calibration and service of all Caldertech Electrofusion welders and tooling.

SOCKET FUSION WELDERS

CODE	DESCRIPTION	
1045/TFA	**Socket Fusion Welder Kit 20-63mm** Suitable for socket fusion welding of PP-R, PP-RCT & PE pipe from 20-63mm. Comes complete with mandrels, steel carry case, and stand.	
7125	**Bench Socket Fusion Welder** Suitable for socket fusion welding 16mm – 125mm PP-R & PE. Comes complete with steel case/mounting bench, 75mm-125mm mandrel set, and required tools.	
10125/TF	**Socket Fusion Welder Paddle to suit 16mm-125mm** Manual polywelder for socket welding of pipes and fittings in PP, PE and other thermoplastic materials. Mandrels not included.	
1042/TF	**Socket Fusion Welder Paddle (as above) with Mandrels** Manual polywelder for socket welding of pipes and fittings in PP, PE and other thermoplastic materials. Comes with 20mm-110mm mandrel set, and steel box.	
7125/LI	**In Situ Socket Fusion Welder** Suitable for socket fusion welding 50mm-110mm PP-R & PE. Comes complete with paddle welder, clamps, stand, and mandrel set.	

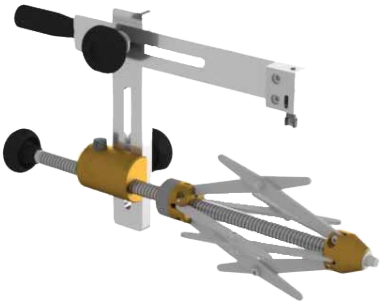
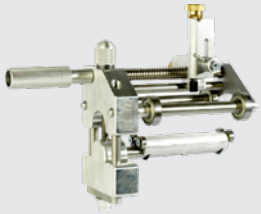
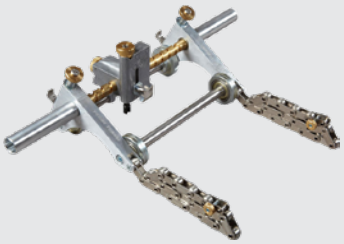
CODE	DESCRIPTION
M20-A	20mm Type A Mandrel
M25-A	25mm Type A Mandrel
M32-A	32mm Type A Mandrel
M40-A	40mm Type A Mandrel
M50-A	50mm Type A Mandrel
M63-A	63mm Type A Mandrel
M75-A	75mm Type A Mandrel
M90-A	90mm Type A Mandrel
M110-A	110mm Type A Mandrel
M125-A	125mm Type A Mandrel
M160-A	160mm Type A Mandrel

D940-4022	40mm x 20/25mm Saddle Weld In Mandrel
D940-5022	50mm x 20/25mm Saddle Weld In Mandrel
D940-5032	50mm x 32mm Saddle Weld In Mandrel
D940-6322	63mm x 20/25mm Saddle Weld In Mandrel
D940-6332	63mm x 32mm Saddle Weld In Mandrel
D940-7522	75mm x 20/25mm Saddle Weld In Mandrel
D940-7532	75mm x 32mm Saddle Weld In Mandrel
D940-7540	75mm x 40mm Saddle Weld In Mandrel
D940-9022	90mm x 20/25mm Saddle Weld In Mandrel
D940-9032	90mm x 32mm Saddle Weld In Mandrel
D940-9040	90mm x 40mm Saddle Weld In Mandrel
D940-9050	90mm x 50mm Saddle Weld In Mandrel
D940-1122	110mm x 20/25mm Saddle Weld In Mandrel
D940-1132	110mm x 32mm Saddle Weld In Mandrel
D940-1140	110mm x 40mm Saddle Weld In Mandrel
D940-1150	110mm x 50mm Saddle Weld In Mandrel
D940-1163	110mm x 63mm Saddle Weld In Mandrel
D940-1220	125mm x 20/25/32mm Saddle Weld In Mandrel
D940-1240	125mm x 40mm Saddle Weld In Mandrel
D940-1250	125mm x 50mm Saddle Weld In Mandrel
D940-1622	160mm x 20/25/32mm Saddle Weld In Mandrel
D940-1640	160mm x 40mm Saddle Weld In Mandrel
D940-1650	160mm x 50mm Saddle Weld In Mandrel
D940-1663	160mm x 63mm Saddle Weld In Mandrel

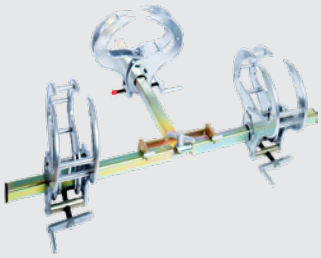
D954-0025	25mm Drill Bit for Weld In Saddles
D954-0032	32mm Drill Bit for Weld In Saddles
D954-0040	40mm Drill Bit for Weld In Saddles
D954-0050	50mm Drill Bit for Weld In Saddles
D954-0063	63mm Drill Bit for Weld In Saddles

CUTTERS & SCRAPERS

CODE	DESCRIPTION	
PC 40	20mm-40mm Pipe Cutter	
PC 63	20mm-63mm Pipe Cutter	
QRC63	6-64mm Quick Release Wheel Pipe Cutter	
QRC110	50-140mm Quick Release Wheel Pipe Cutter	
QRC160	110-160mm Quick Release PE Pipe Cutter	
	Note: Guillotines, electric saws and rotary cutters for larger pipe are available on request.	
CHAM 2063	**20mm-63mm Chamfering Tool** Puts chamfer on end of pipe for ease of installation when using compression fittings. Suitable for 20mm-63mm pipe.	
HS50	**Linbide 50mm Hand Scraper**	
01-07-370	Calderprep Plus Scraper SDR7.4 Complete Kit 25-63mm with case	
01-07-338	Calderprep Plus Scraper SDR11 Complete Kit 20-63mm with case	
01-07-368 AU	Calderprep Aluminium Power Drive Adaptor	

CODE	DESCRIPTION	
REC-180	**Rotary REC Scraper Tool 75-180mm w black case** Scrape Length: 170mm Cut Depth: 0.2mm	
REC-315	**Rotary REC Scraper Tool 75-315mm w black case** Scrape Length: 170mm Cut Depth: 0.2mm	
S1700001	REC Replacement Blade	
01-05-002	**Uniprep 4 Rotary Scraper 63mm-250mm with steel case** Scrape Length: 130mm Cut Depth: 0.25mm	
01-02-023	Uniprep universal spare blade four sided	
	Patch Scraping Tool	
01-18-001	200x150mm Patch Scraping Tool with case (no chains)	
01-18-002	200x150mm & 250x280mm Double Patch Saddle Scraping Tool with case (no chains)	
01-18-005	Chain Set (2pcs) 300mm length	
01-18-006	Chain Set (2pcs) 650mm length for 75-180mm pipe	
01-18-007	Chain Set (2pcs) 1000mm length for 75-315mm pipe	

PIPE CLAMPS

CODE	DESCRIPTION	
01-08-117	Superclamp Universal 20-63mm Mk2	
01-17-001	Magiclamp Positioner 20-63mm 2 way with angle maker	
01-17-002	Magiclamp Positioner 20-63mm 3 way with angle maker (pictured)	
01-09-007	**Joint-master clamp 3 way 63mm-180mm with angle base + bag** Does not require shells or liners, limited re-rounding capability. 3 way configuration with 750mm angle maker & branch leg.	
01-09-004	**Joint-master clamp 2 way 63mm-180mm with angle base + bag** Does not require shells or liners, limited re-rounding capability. 2 way configuration with angle maker	
SC200-2-K-4	**40-200mm Double Strap Clamp with angle maker** Lightweight, fast set up, alignment clamp for use on 40-200mm pipe. A centrally located adjustment knuckle allows it to be used for 22.5°, 45° and 90° elbows.	
SC200T	**40-200mm Mini Titan Double Clamp (KX4)** Lightweight, fast set up, alignment clamp for use on 40mm-200mm pipe. Used on couplers only. Pulls pipe into position with minimal effort using a rack and pinion system.	
	Will hold HDPE pipe securely during the weld process while also providing excellent re-rounding abilities for coiled pipe. Made from lightweight die cast aluminium & steel, the mains clamp is quick to install and easy to use.	
01-15-001	**Mains Restraining Clamp with 63/90/125/180mm Liners** Also available with 3 way or angle maker base 22.5° increments. Comes with carry bag and liners for 63/90/125/180mm. Other liners sold separate.	
01-15-101	**Mains Restraining Clamp 200mm - straight base** Also available with 3 way or angle maker base 22.5° increments. Reducing liners sold separate.	

ACCESSORIES

CODE	DESCRIPTION	
01-13-003	Top Loading Clamp Strap Type 63-630mm For Tapping Saddles	
01-12-021	Top Loading Clamp Adaptor Foot for 63/90/125mm Branch Saddle Offtakes	
CUTKEY-12	12mm Tapping Key for Fusion EF Tapping Saddle	
CS0007	Tapping Tee Key / Cutting Lever for GF Gas	
	Holesaws suitable for cutting the pipe after installing electrofusion branch saddles. Enquire for other sizes or extended hole saws.	
HS-48	48mm Saddle Bi-Metal Hole Saw	
HS-70	70mm Saddle Bi-Metal Hole Saw	
HS-86	86mm Saddle Bi-Metal Hole Saw	
HS-98	98mm Saddle Bi-Metal Hole Saw	
HS-98-EXT	98mm Saddle Bi-Metal Hole Saw for wastewater saddles	
HS-111	111mm Saddle Bi-Metal Hole Saw	
HS-127	127mm Saddle Bi-Metal Hole Saw	
HS-ARBOR-A10E	Arbor to suit Saddle Hole Saws 32-210mm	
HS-ARBOR-EXT	Hole Saw Arbor Extension 300mm	

COMPRESSED AIR SYSTEMS CONTAINS SUBSTANTIAL STORED ENERGY, WHICH, IF RELEASED SUDDENLY, COULD CAUSE INJURY. IT IS RECOMMENDED THAT PIPE SYSTEM DESIGN, INSTALLATION AND MAINTENANCE BE CONDUCTED BY THOSE WITH APPROPRIATE KNOWLEDGE AND EXPERIENCE.

CONDENSATE DRAINAGE

Ideally, condensate should be removed as soon as possible in the system. A suitably sized compressed air dryer after the Air Receiver is the recommended method for removing condensate from the air supply. If high, short term peaks of dry air are required, then the dryer would be better installed prior to the Receiver. The good thermal characteristics of Maxair® are a further advantage.

The system should be designed to minimise or eliminate harmful condensate from being discharged into air tools and equipment when dryers are not fitted. Various methods are suitable for this purpose.

- Sloping of horizontal pipe at a slight gradient to strategically positioned drainlegs.
- Outlet droppers to come off the top of the pipework to avoid precipitated condensate being discharged in the airstream.
- In most instances however the recommended method is to install the dropper from the bottom of the branch or mainline with a short extra length of pipe extending below the outlet with a drain valve.

UNDERGROUND PIPEWORK

Maxair® pipe is ideal for underground installation with its high strength characteristics and ability to absorb ground movement.

It is recommended to lay pipework in sand and grade to avoid low points. A drain valve with a purge line should be installed in strategic positions to trap and purge any condensate that may accumulate.

When passing through foundations, it's recommended to sleeve the pipe as pictured.

HAZARDOUS AREAS

A. Corrosive Chemicals - Maxair® has excellent resistance to a broad range of chemicals and is ideal for use in many areas where corrosive liquids or atmosphere may contact the pipe. Compression fittings come standard in polypropylene construction with O-Rings of nitrile rubber and Split Grip Rings in Polyacetal. The Nitrile gives excellent resistance to oils in the compressed air.

Fusion welded fittings provide a further degree of safety in these areas. User should verify compatibility of components with their application. Extensive compatibility charts are available. Resistance to specific chemicals should be checked with Technical Department.

B. Explosive or ignitable atmosphere. Compressed air can carry static charges which may accumulate. The user/customer/purchaser is responsible to identify any potential hazardous areas and to take necessary measures or precautions for complete safety. Information on protective measures is available with advice on your specific application.

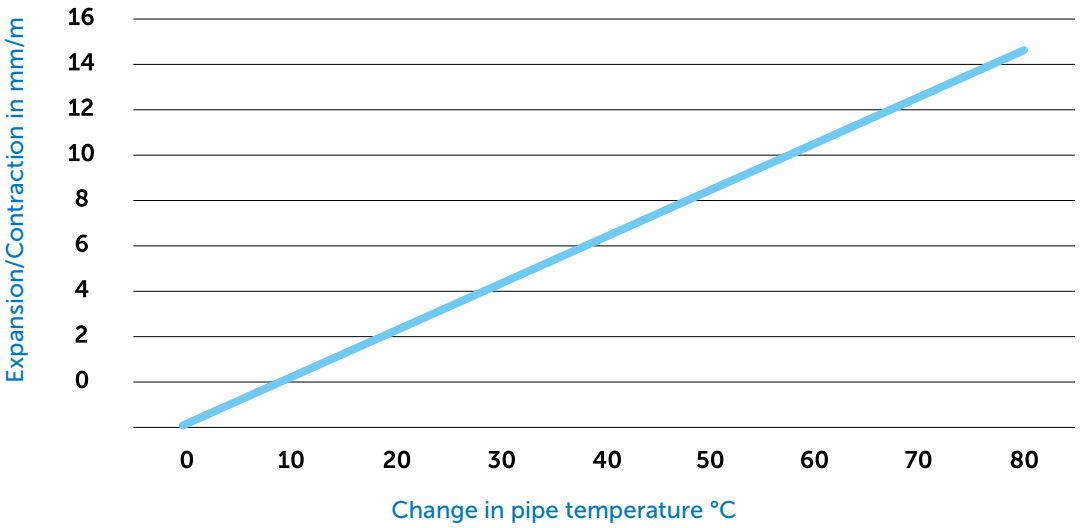
HEAT SOURCES AND EXTERIOR PIPEWORK

Care is needed to avoid unplanned overheating of the system. Air compressors will produce air which may be considerably above ambient temperature. For air-cooled compressors without dryers, conveyed air averages 15°C above ambient temperatures.

Industry best practice of shielding equipment and pipework from direct heat sources should be adopted to prevent excessive heat buildup. In the event that pipe is exposed to direct sunlight a surface layer forms overtime, creating a barrier which impedes further effects. As with all plastic pipe systems exposed to direct UV there may be some reduction of impact resistance over time; however longevity and pressure rating of the pipe system are not affected by UV rays.

In addition, compounds used in the manufacture of Maxair® pipes and fittings meet the UV exposure requirements of AS/NZS 4131 and ISO Standards applicable to gas and water pipes. These requirements, whilst having only temporary exposure in mind, ensure that UV protection is optimised for Maxair® pipes and fittings.

THERMAL EXPANSION AND CONTRACTION



The coefficient of the thermal expansion and contraction of Maxair® pipe may be taken as 0.18 mm per metre per °C.

If pipework is to be subjected to thermal temperature change, expansion and contraction needs to be considered during installation. Generally movement can be absorbed on changes of direction, elbows, etc. but on longer lengths the recommended installation principles as set out on the following page should be adhered to.

This movement is virtually eliminated in constant temperature areas.

Operating Temperature °C	Design life years	Permissible Working Pressure		
		Bar	kpa	psi
-20° to 20°	50	16	1600	235
30°	50	14.1	1410	205
40°	50	12	1200	175
50°	50	10.2	1020	150
60°	50	8.8	880	130
Above ratings are at safety factor of 2:1				
Fluid at 20°	50	25	2500	360
For fluids other than compressed gases, the safety factor is 1.25:1				

SHORT TERM TEMPERATURE RISES

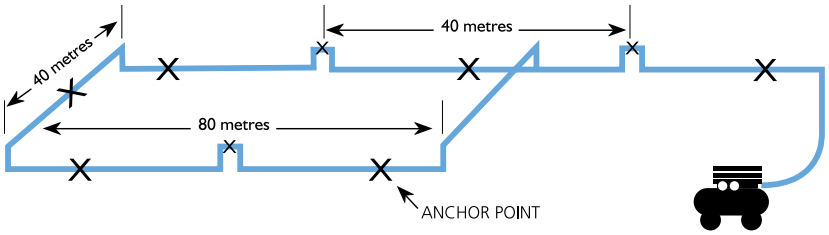
Temperatures quoted relate to constant temperature over a period of 50 years, rather than short term peak temperatures. Maxair® can safely handle short term peaks in compressed air temperature up to 95°C.

Circumstances vary and each high temperature application should be checked with the Technical Department.

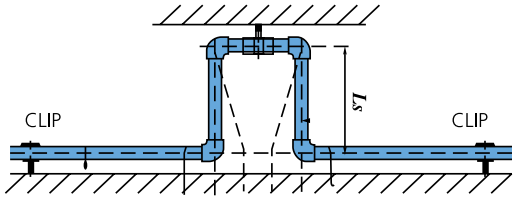
EXPANSION LOOPS

Expansion loops are recommended at intervals of approx. 30-40m on long runs. Suggested leg lengths are as per table.

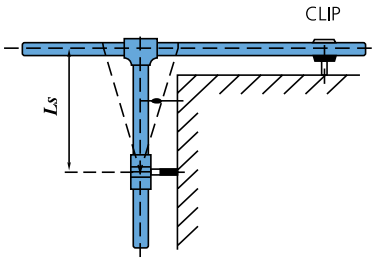
It is general practice for loops up to 63mm to span between purlins. Space constraints may also need to be considered. Please contact our technical department for accurate sizing if required.



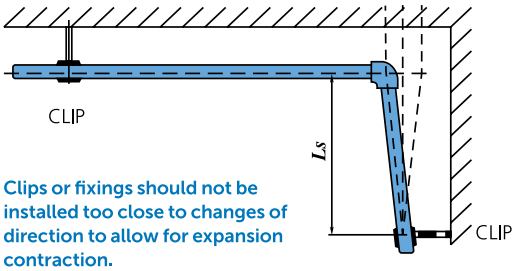
Pipe Diameter	Min Leg *Ls* (metres)
20	0.5
32	0.6
32	0.7
40	0.9
50	1.0
63	1.2
90	1.8
110	2.0



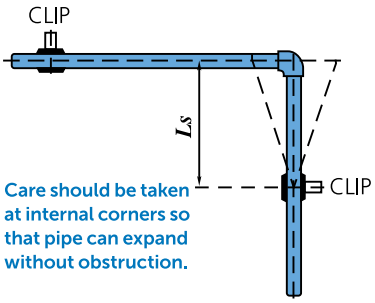
Typical expansion joint. Note fixed anchor point at centre of loop. No clips or fixings on legs. Clips on long run to allow for longitudinal expansion/contraction.



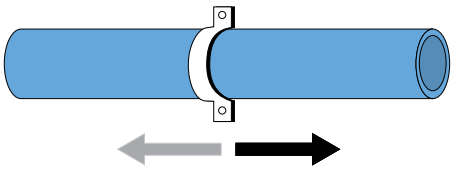
Clip placement for external corner



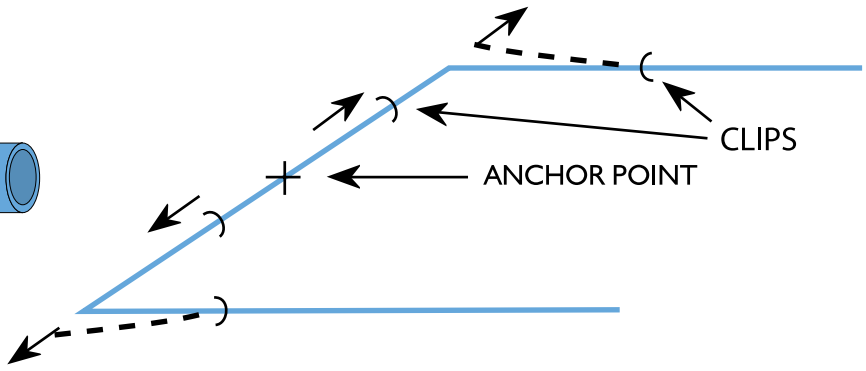
Clips or fixings should not be installed too close to changes of direction to allow for expansion contraction.



Care should be taken at internal corners so that pipe can expand without obstruction.



Free axial movement of pipework should be allowed with any form of support. Pipework should be able to move longitudinally without conflicting with elbows, tees, etc.



Anchor points are clips which don't allow free axial movement. Anchor points can be used as shown to evenly spread the effects of expansion and contraction.

ASSEMBLY OF COMPRESSION FITTINGS

SIZES 20 UP TO 63MM

Cut pipe to length with pipe cutters for a clean swarf free finish.

Use chamfer tool to remove sharp edge off the pipe and facilitate insertion through the O-Ring.

Witness mark the insertion depth.

Lubricate the pipe if needed with water or siliconespray.*

Undo the nut up to the last thread, do not remove the nut from the body. Insert the pipe through the nut into the fitting until it meets the stop.

Firmly hand tighten the nut. Check witness mark.

For sizes 40-63, use a nut wrench to tighten the nut a further half turn.

SIZES 75 UP TO 110MM

Cut pipe to length with pipe cutters for a clean swarf free finish.

Use chamfer tool to remove sharp edge off the pipe and facilitate insertion through the O-Ring.

Loosen the nut and grip ring off the fitting and assemble onto the pipe a distance about 2x the pipe diameter.

Assembly is easier if the pipe and inside of fitting is lubricated with water or silicone spray.*

Insert the pipe through the O-Ring until it meets the stop.

Slide the grip ring and nut forward until they touch the fitting, then hand tighten.

For sizes 75 -110mm use two nut wrenches to tighten the nut. Nut should be firmly tightened, but does not need to actually meet the external stop.

*Lubrication with water, soapy water or silicone spray will assist inserting the pipe through the O-Ring.
Do not use silicone spray if intended use is for powder coating, spray painting or breathing air.
Do NOT use fluids such as WD40, 5-56, Penetrene, etc.

WELDING GUIDELINES

SOCKET FUSION WELDING 20MM TO 63MM

- Heating element Socket Fusion to welding guidelines AS/NZS 2033-2008.
- Weld surfaces must be clean and dry.
- Welding tool must be up to temperature 260°C before commencing.
- Protect against cold and windy conditions.
- Do not realign joint after adjusting time
- Do not over scrape pipe - interference fit must be retained.
- Do not twist pipe into fitting when fusing.

Pipe O.D. (mm)	Pre-heating (sec)	Adjusting (sec)	Cooling (min)
20	5	4	2
25	7	4	2
32	8	6	4
40	12	6	4
50	18	6	4
63	24	8	6
90	40	8	6
110	50	10	8

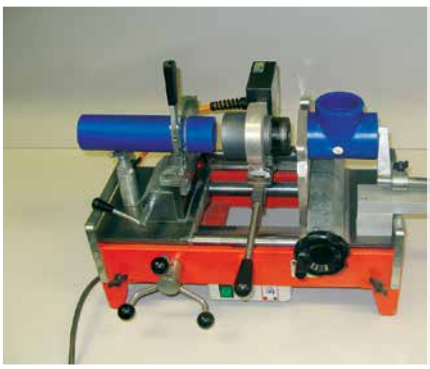
1.Turn on welder. Do not attempt welding unless tool is up to temperature (250°C). The indicator LED will cycle on/off with thermostat control when temp is correct. Cut pipe to length with approved cutters for a square swarf-free finish.

4. Remove pipe and fitting from heating element, immediately insert pipe into fitting without twisting.

2. Use scraper to remove oxide layer from pipe and ensure correct tolerance. Use welding wipes to clean surfaces if needed.

5. Check alignment within 'adjusting seconds' as per table. During 'cooling' avoid mechanical strain or movement on welded joint.

3. Simultaneously insert pipe and fitting onto socket and spigot to full depth without twisting Hold for 'pre-heat' time as per table.



The bench mounted socket fusion welder is recommended for 90mm and 110mm, but is great for 63mm and smaller sizes. It provides mechanical advantage and consistency for the larger sizes.

ELECTROFUSION WELDING

Recommended for 63mm and larger. Available for smaller sizes.

- We recommend being trained by UPG prior to undertaking electrofusion welding
- Fittings for electrofusion comply with AS/NZS 4129.
- Automatic control box tool reads inbuilt resistor and sets and welds the correct time. Fittings are also labelled for manual setting times.
- Weld surfaces must be clean and dry.
- Do not over scrape pipe. Use correct scrapers. Do not use emery or metal files.
- Ensure uninterrupted electricity supply during weld cycle.
- IMPORTANT: Do not allow movement in the joint until cooling period (marked on fitting) has been completed. In some cases, clamps may be required.

1. Cut pipe to length with approved cutters for a square swarf-free finish.

2. Use scraper to remove oxide layer approx. 0.3mm from pipe and ensure correct tolerance.

3. Use welding wipes to clean pipe and fitting surfaces. Allow cleaner to evaporate

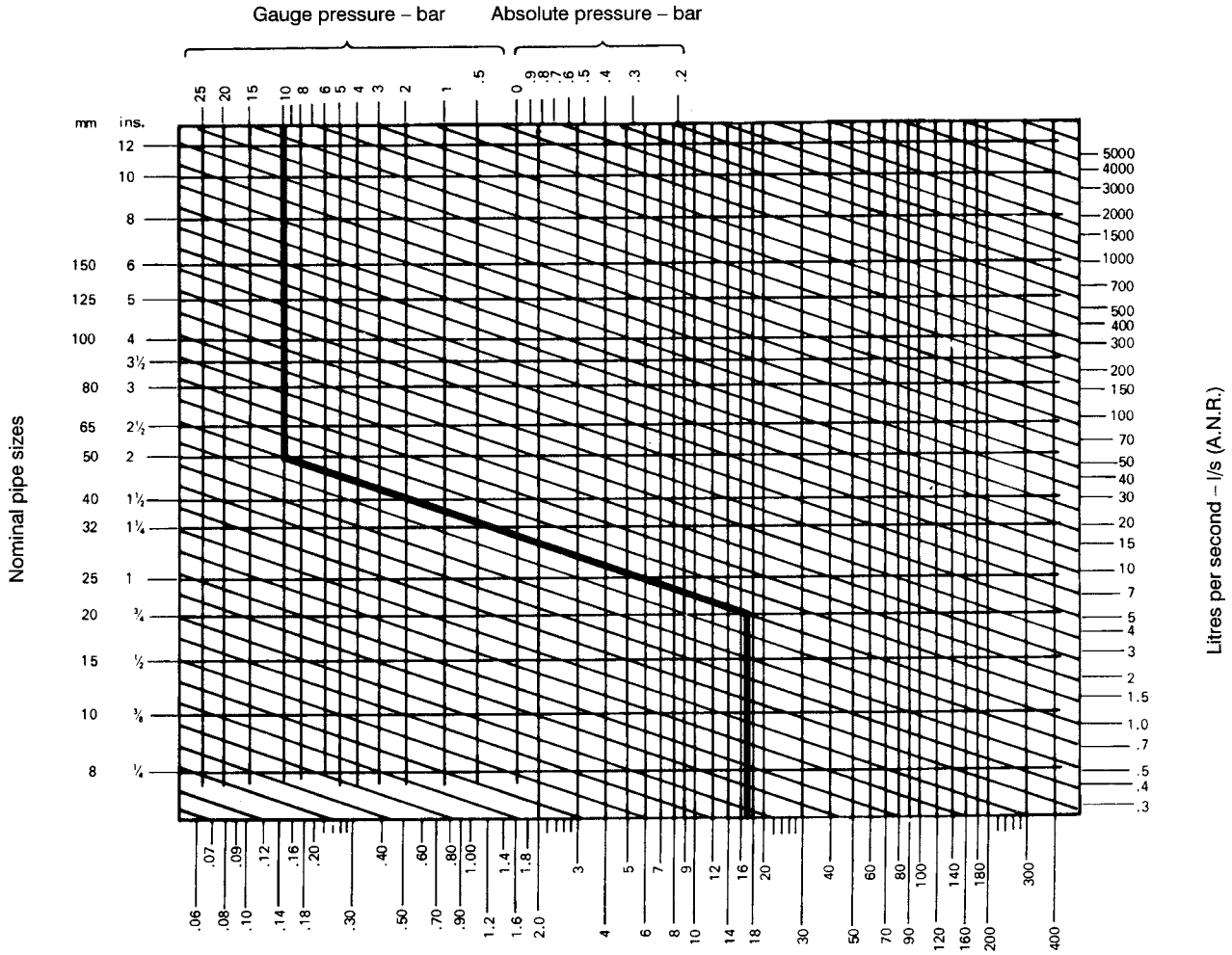
4. Witness mark correct insertion depth.

5. Assemble pipe and fitting making sure pipe is fully inserted, check witness mark. Clamps can be used to stabilise joint during welding.

6. Connect welder leads onto fitting terminals (non specific). If using manual setting follow weld time as per label on fitting. Press start to commence weld cycle. Rising melt indicators confirm successful completion of weld. Remove leads and allow to cool without movement or strain on joint.

HOW TO USE THE COMPRESSED AIR FLOW CHART

Four quantities are involved in the use of this chart, these being air pressure, rate of flow, pipe size and pressure drop. Any one of these can be determined providing the remaining three are known.



PROBLEM 1:

Air initially at 10 bar is being transmitted at a rate of 60 l/s free air through 20mm pipe. What will be the pressure drop due to friction through 30 metres of pipe?

SOLUTION:

(This example is plotted on the chart) From the point representing 10 bar at the top of the chart proceed down vertically to intersect with the horizontal line representing 60 l/s on the right hand scale.

Proceed diagonally downwards, parallel to the guide lines to intersect the horizontal line representing 20mm on the left hand side scale.

From this point proceed vertically to the pressure drop scale on the bottom of the chart and take the reading.

The pressure drop is found to be approximately 17 mbar per metre of pipe or 510 mbar (0.5 bar) per 30 metres of pipe.

PROBLEM 2:

10 l/s of free air is required at a pressure of 4 bar with a maximum allowable pressure drop of 140 mbar per 30 metres of pipe. What would be the recommended pipe size for this application?

SOLUTION:

From the point representing 4 bar on the top axis of the chart proceed down vertically to intersect the horizontal line representing 10 l/s on the right hand scale.

Proceed diagonally, parallel to the guide lines to intersect the vertical line from the bottom scale representing the allowable pressure drop of 140 mbar per 30 metres of pipe (Read 140/30 = 4.5).

From this intersection point proceed horizontally to the left hand side of the chart. The point falls between 10mm and 1 5mm pipe sizes. The correct selection herefore, is 1 5mm pipe.

SUPPORT SPACING

Horizontal support spacing in mm

Size	Up to 25°C	Up to 50°C
20	700	600
25	900	750
32	1200	900
40	1400	1100
50	1700	1300
63	2000	1550
90	2300	1800
110	2600	2000

OTHER USES

Products in this section are also suitable for High pressure Fluid to 25 bar, Inert Gasses, Chemical Piping, Vacuum Piping.

Please refer to Technical Department for details.

TECHNICAL SPECIFICATIONS FOR MAXAIR®

1.1 The Compressed Air Reticulation Pipe shall be of non-metallic, blue in colour, corrosion free, High Density Polyethylene (HDPE) PE100 conforming to AS/NZS 4130/4131 and be made to PN 25 under an accredited AS 3902 Quality Control System and commercially known as Maxair®.

1.2 The pipe shall be PN 25 rated at 16 Bar / 20degC / 50 year design life and 8.8 Bar / 60degC / 50 year with applied safety factor of 2:1.

2.1 All fittings shall be Socket Fusion, Electrofusion or Compression style fittings which comply with Australian Standards as listed below and commercially known as Maxair®.

2.2 Socket Fusion fittings shall be Blue PE100 type made to DIN 16963 which shall be welded to AS 2033.

2.3 Electrofusion fittings shall comply with AS/NZS 4129 and carry a Standards Mark Licence under Quality Assurance System in accordance with ISO 9002.

2.4 Compression fittings shall be either 'O' Ring or tapered seal to comply with AS/NZS 4129 and carry a Standards Mark Licence No. 26038 in accordance with ISO 9002.

3.1 Fixing of pipe shall be of a type and spacing approved for use on HDPE PE100 as per Maxair® Technical Manual.

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