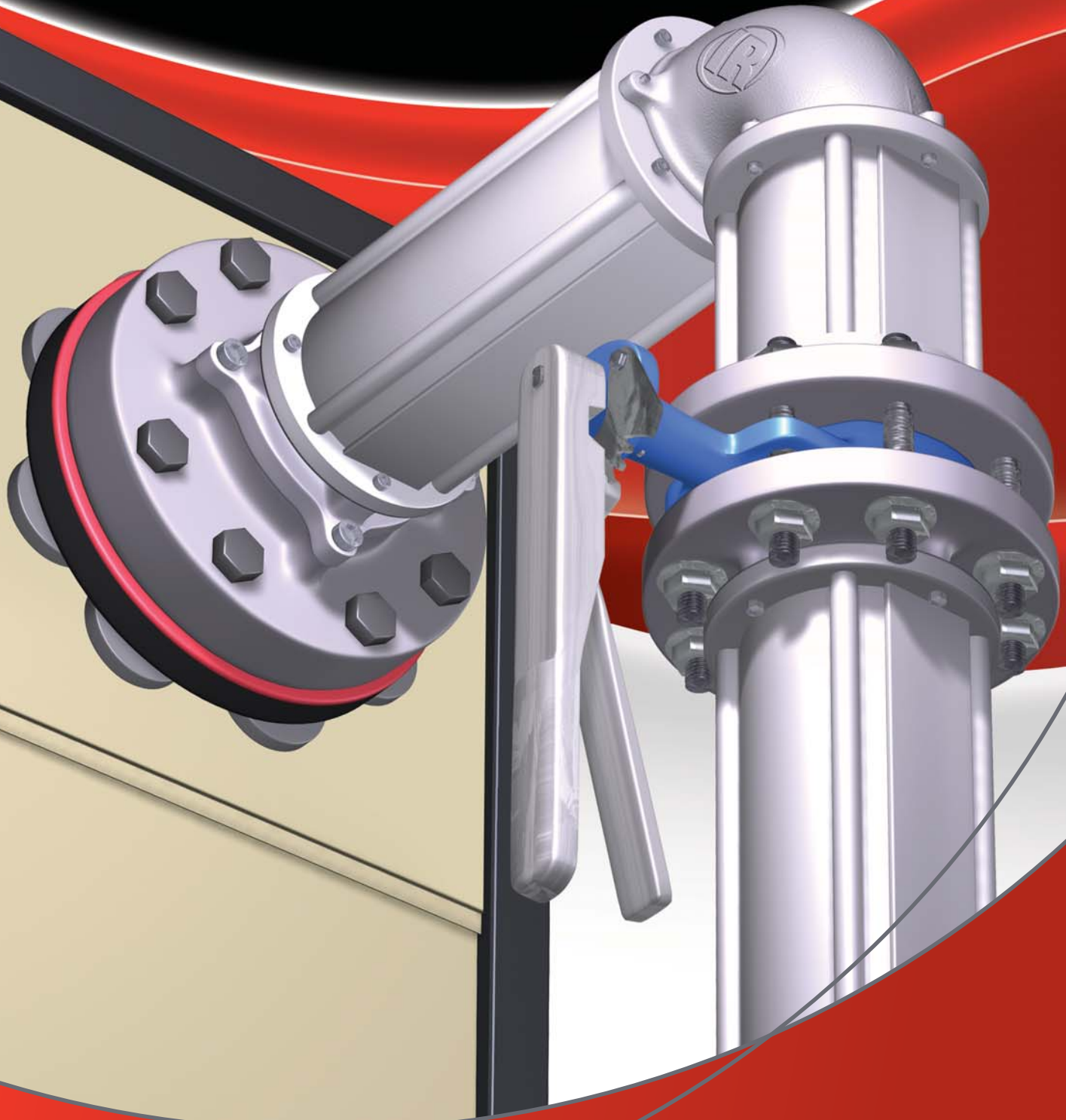


SimplAir Evolution

Compressed Air Piping System



Piping System Accessories and Tools

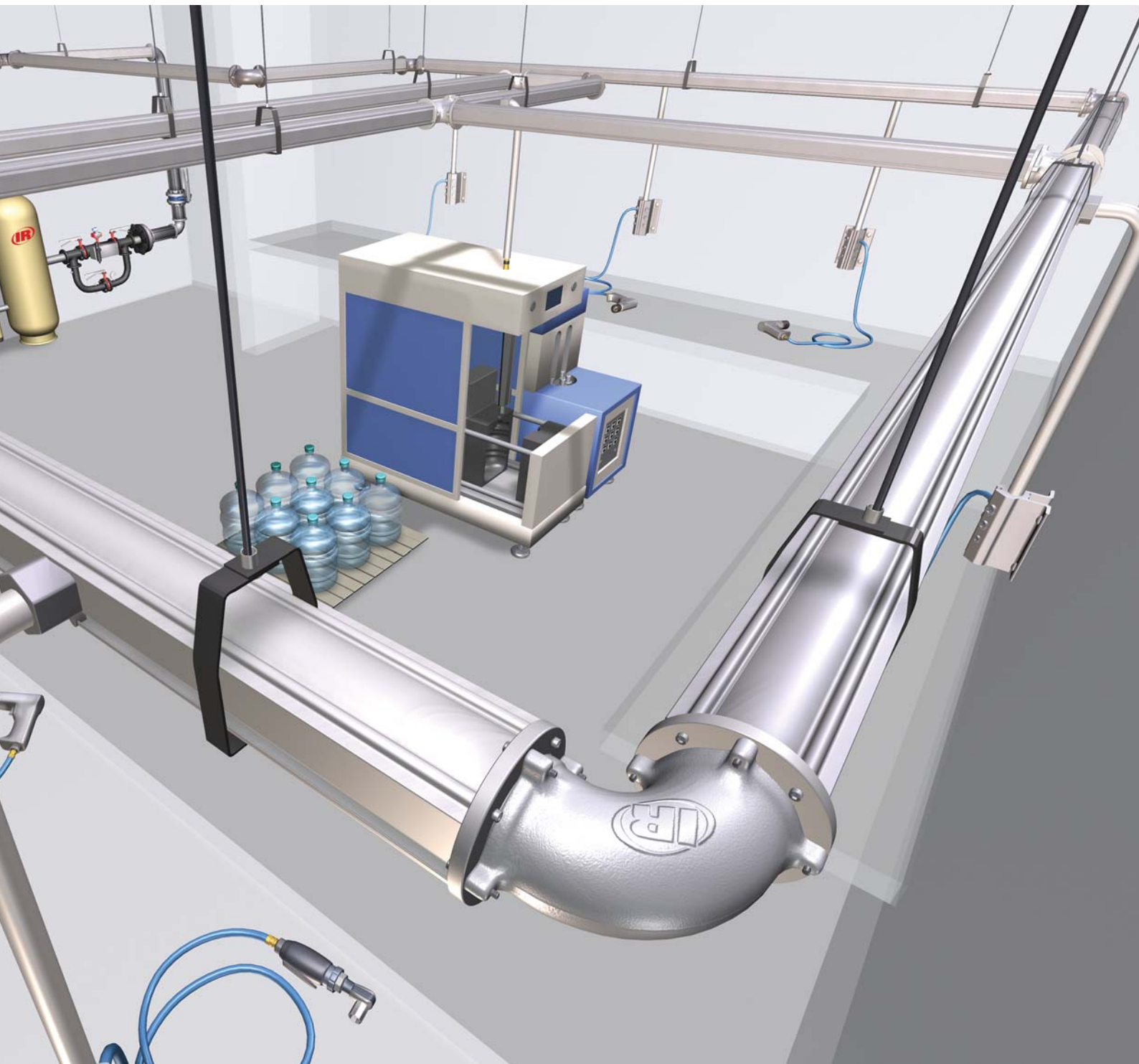
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Simplair Evolution – Simplicity, Versatility, and Performance in one integrated piping system.

- Easy to install
- Flow rates up to 11119 cfm (315 m³/min)
- Lightweight
- Leak-free
- High structural strength
- Low pressure drop
- Simple connections
- Non-corrosive





Features and Benefits

Introducing A New Evolution In Piping . . .

Simplair Evolution. Simplicity, Versatility, Performance In One Integrated System

In the past, compressed air users have been burdened by the limitations of traditional piping systems - difficult installation and modification, poor air quality and high pressure losses are all common problems. Now, Simplair solves these problems with a 40-50-63-80mm and its unique 110mm and 150mm Evolution System that makes installation fast, simple and economical.

Thanks to a revolutionary design, Simplair Evolution means big benefits for your business.

- Low operation costs
- Fast installation
- Simple connections
- High flow performance
- Low pressure drop
- Outstanding structural strength
- Lightweight components
- Non-corrosive

Constructed of anodized aluminium extrusion, Evolution is a modular piping system which is ideal for compressed air installations of any size. Even though it is quick and easy to assemble, Evolution offers unexpected flow rates of up to 315 M3/Min (11119 cfm) for compressor room applications and even higher for most factory loop systems.

With Simplair Evolution, you gain advantages formerly unheard of in integrated piping systems.

Advantages	
Flexible Design	Evolution's modular design means quick, easy installation. Even system modifications can be completed in seconds, minimizing downtime.
Superior Performance	The smooth bore of Evolution tubing prevents high-pressure losses, and allows higher flow rates than traditional piping systems.
Easy Expansion	Because outlets and connections can be made in seconds, expansion is simple with minimum cost and production disruptions.
High Air Quality	Each Evolution tube is anodized to prevent corrosion from forming inside pipes, affording contaminant-free air throughout the system.
Leak-Free Seals	Our positive "O" ring seal ensures that leaks will not occur at any stage of the system's life.
Lightweight Material	Evolution offers the same structural strength of traditional piping, but with less than a quarter of the weight, making it the perfect choice for roof structures, walls or machinery.
Sleek Appearance	Ergonomically designed to fit the demands of modern production facilities, Evolution can enhance any working environment.

Compressed Air Piping System



Description	Length	Bore Size	CPN
Simplair-Evolution Pipe	6.1 m	40mm	22189229
Simplair-Evolution Pipe	6.1 m	50mm	22194328
Simplair-Evolution Pipe	6.1 m	63mm	22194336
Simplair-Evolution Pipe	6.1 m	80mm	22189237
Simplair-Evolution Pipe	6.1 m	110mm	22194344
Simplair-Evolution Pipe	6.1 m	150mm	22194351



Description	Bore Size	CPN
Straight Joint	40mm	22412662
Straight Joint	50mm	22412803
Straight Joint	63mm	22412902
Straight Joint	80mm	22412985
Straight Joint	110mm	22342596
Straight Joint	150mm	22342604



Description	Bore Size	CPN
Elbow Joint	40mm	22412688
Elbow Joint	50mm	22412829
Elbow Joint	63mm	22412928
Elbow Joint	80mm	22413009
Elbow Joint	110mm	22342638
Elbow Joint	150mm	22342646

Compressed Air Piping System



Description	Bore Size	CPN
Tee Joint	40mm	22412670
Tee Joint	50mm	22412811
Tee Joint	63mm	22412910
Tee Joint	80mm	22412993
Tee Joint	110mm	22342612
Tee Joint	150mm	22342620



Description	Bore Size	CPN
Endcap	40mm	22457675
Endcap	50mm	22457683
Endcap	63mm	22457691
Endcap	80mm	22457709
Endcap	110mm	22457717
Endcap	150mm	22457725



Description	Bore Size	CPN
1/2" BSPT Male Thread Adaptor	40mm	22412761
1" BSPT Male Thread Adaptor	40mm	22412787
1 1/2" BSPT Male Thread Adaptor	40mm	22412746
1" BSPT Male Thread Adaptor	50mm	22412886
2" BSPT Male Thread Adaptor	50mm	22412860
2" BSPT Male Thread Adaptor	63mm	22412969
2" BSPT Male Thread Adaptor	80mm	22413041
3" BSPT Male Thread Adaptor	80mm	22413025

Compressed Air Piping System



	Description	Bore Size	CPN
1/2"	BSPT Female Outlet Plate	40mm	22412712
1"	BSPT Female Outlet Plate	40mm	22412720
1/2"	BSPT Female Outlet Plate	50mm	22412936
1"	BSPT Female Outlet Plate	50mm	22412944
1/2"	BSPT Female Outlet Plate	63mm	22412936
1"	BSPT Female Outlet Plate	63mm	22412944
1/2"	BSPT Female Outlet Plate	80mm	22342489
1"	BSPT Female Outlet Plate	80mm	22342505
2"	BSPT Female Outlet Plate	80mm	22342521
1/2"	BSPT Female Outlet Plate	110mm	22342489
1"	BSPT Female Outlet Plate	110mm	22342505
2"	BSPT Female Outlet Plate	110mm	22342521
1/2"	BSPT Female Outlet Plate	150mm	22342489
1"	BSPT Female Outlet Plate	150mm	22342505
2"	BSPT Female Outlet Plate	150mm	22342521



	Description	Bore Size	CPN
	DN100-PN10 Adaptor	110mm	22342547
	DN150-PN10 Adaptor	150mm	22342562



	Description	Bore Size	CPN
	Step Down Adaptor	110mm-80mm	22487748
	Step Down Adaptor	150mm-110mm	22487730

Piping System Accessories and Tools



Description	Bore Size	CPN
Cut-Off Fixture	110mm	22448906
Cut-Off Fixture	150mm	22404651



Description	CPN
Deburring Tool	88162474
Blades	89238133



Description	Bore Size	CPN
Drill Jig	40mm	22487672
Drill Jig	50, 63mm	22487680
Drill Jig	80, 110, 150mm	22455356

Piping System Accessories and Tools



Description	Bore Size	CPN
Pilot Drill Bit 1/4"	40, 150mm	22604557



Description	Bore Size	CPN
Tap	40, 50, 63mm	22598593
Tap	80, 110mm	22598601
Tap	150mm	22598619



Description	Bore Size	CPN
Step Drill	40, 150mm	88162441



Description	Bore Size	CPN
M6 Tap Socket Adaptor 1/4" Drive*	40, 50, 63mm	22604532
M6 Tap Socket Adaptor 3/8" Drive*	40, 50, 63mm	22604540
M8 Tap Socket 3/8" Drive	80, 110mm	22604516
M12 Tap Socket 3/8" Drive	150mm	22604524

* Both items needed when using 3/8" drive impact gun

Piping System Accessories and Tools



Description	Bore Size	CPN
Allen Key	40, 150mm	22604565



Description	Bore Size	CPN
5mm Ball Nose Allen Key (3/8" Drive)	40, 63mm	22604300
6mm Ball Nose Allen Key (3/8" Drive)	80, 110mm	22604292
10mm Ball Nose Allen Key (3/8" Drive)	150mm	22545040
5mm Ball Nose Allen Key (Hex L Type)	40, 63mm	22605133
6mm Ball Nose Allen Key (Hex L Type)	80, 110mm	22605125
10mm Ball Nose Allen Key (Hex L Type)	150mm	22545073



Description	Bore Size	CPN
Hanging Bracket	40mm	22487698
Hanging Bracket	50mm	22487706
Hanging Bracket	63mm	22487706
Hanging Bracket	80mm	22487706
Hanging Bracket	100mm	22487714
Hanging Bracket	150mm	22487722

Piping System Accessories and Tools



Description	Bore Size	CPN
40mm Toggle Hanger (Cable)	1m	88305131
40mm Toggle Hanger (Cable)	3m	88305149
40mm Toggle Hanger (Cable)	5m	88305156
40mm Toggle Hanger (Cable)	10m	88305164
50mm Toggle Hanger (Cable)	1m	88305131
50mm Toggle Hanger (Cable)	3m	88305149
50mm Toggle Hanger (Cable)	5m	88305156
50mm Toggle Hanger (Cable)	10m	88305164
63mm Toggle Hanger (Cable)	1m	88305131
63mm Toggle Hanger (Cable)	3m	88305149
63mm Toggle Hanger (Cable)	5m	88305156
63mm Toggle Hanger (Cable)	10m	88305164
80mm Toggle Hanger (Cable)	1m	88305131
80mm Toggle Hanger (Cable)	3m	88305149
80mm Toggle Hanger (Cable)	5m	88305156
80mm Toggle Hanger (Cable)	10m	88305164
100mm Toggle Hanger (Cable)	1m	88305255
100mm Toggle Hanger (Cable)	3m	88305263
100mm Toggle Hanger (Cable)	5m	88305271
100mm Toggle Hanger (Cable)	10m	88305289*
150mm Toggle Hanger (Cable)	1m	88305255
150mm Toggle Hanger (Cable)	3m	88305263
150mm Toggle Hanger (Cable)	5m	88305271
150mm Toggle Hanger (Cable)	10m	88305289*

No. 2 cable size

Packaged 10 lengths per pack

* Packaged 5 lengths per pack

Flow Rates Through Tubing

Pressure – Bar (PSIG)

Diameter		7 (103)			8 (118)			10 (147)			12 (176)			14 (203)		
mm	in	L/sec	M3/Min	SCFM	L/sec	M3/Min	SCFM	L/sec	M3/Min	SCFM	L/sec	M3/Min	SCFM	L/sec	M3/Min	SCFM
40	1.5	112.8	6.7	239	125	7.52	265	138.7	8.32	294	151	9.05	320	162.8	9.76	345
50	2	227	13.64	482	260	15.6	551	326	19.56	691	392	23.55	832	473	28.4	1003
63	2.5	444	26.64	941	491	29.39	1038	634	38.28	1345	781	47.03	1661	912	54.7	1932
80	3	848	50.9	1798	906	54.39	1921	1021	61.27	2164	1132	67.9	2398	1273	76.36	2697
110	4	1675	100	3550	1801	108	3817	2007	120	4254	2178	130	4615	2342	140	4963
150	6	3770	226	7990	4008	240	8493	4490	269	9513	4887	293	10356	5247	315	11119

Flows are based on 1 psig pressure drop per 30 meters (100ft). Tested to OSP 2944.
Measured at standard atmospheric conditions – 1013 mbar (14.7 psi) at 20°C (68°F).

Technical Specifications

Desc.	Interior Diameter		Exterior Diameter		Standard Pipe Length		Weight		Max. Working Pressure		Tested Pressure		Max. Temp.		Min. Temp.	
	mm	in	mm	in	meters	ft	Kg/Mtr	lbs/ft	bar	psig	bar	psig	C°	F°	C°	F°
Evolution 40	40	1.5	71.07	2.798031496	6.1	20	1.539	1.03	14	203	**	**	130	266	-30	-22
Evolution 50	50	2	83.48	3.286614173	6.1	20	1.93651	1.3	14	203	**	**	130	266	-30	-22
Evolution 63	63	2.5	95.19	3.747637795	6.1	20	2.50508	1.68334	14	203	**	**	130	266	-30	-22
Evolution 80	80	3	122.33	4.816141732	6.1	20	3.40475	2.28789	13.79	200	**	**	130	266	-30	-22
Evolution 110	110	4	149.57	5.888582677	6.1	20	5.36842	3.60741	13.79	200	**	**	130	266	-30	-22
Evolution 150	150	6	185.4	7.299212598	6.1	20	7.34875	4.93813	11.72	170	**	**	130	266	-30	-22

** 4 X MAWP with a 0.8 casting factor

Example 1: Casting Proof Test Pressure for 170 psig MAWP is 170 x 4/.8= 850 psig proof test pressure

Example 2: Non-casting Proof Test Pressure for 170 psig MAWP is 170 x 4= 680 psig proof test pressure

Flow Rates Through Tubing

Aluminium Extrusion – Material Specification

Simplair extrusions are manufactured to EAA 6063 series.

Mechanical Properties		
Temper	T6	T6
Ultimate Tensile Strength	195 N/mm ²	30 KSI (min)
Proof Stress 0.2%	160 N/mm ²	25 KSI (min)
(%) Elongation (50mm)	7	7
Modules of Elasticity	69x10 ³ mPa	10.0x10 ³ KSI

Physical Properties		
Density	2.70x10 ⁻⁶ kg/mm ³	0.0975 lb/in ³
Melting Range	615-655°C	1140-1210°F
Specific Heat between 0°-100°C	879 J/kgK	22x10 ⁴ BTU/lb°F
Coefficient of Linear Expansion between 20°-100°C	23x10 ⁻⁶ /K	13.0x10 ⁻⁶ /°F
Electrical Resistivity at 20°C	0.033uΩm	0.033uΩm

Nominal Chemical Properties	% of Weight
Copper	0.10 max.
Iron	0.35 max.
Magnesium	0.46
Manganese	0.10 max.
Silicon	0.40
Titanium	0.10 max.
Zinc	0.15 max.
Chromium	0.10 max.
Others, each	0.05 max.
Others, total	0.15 max.
Aluminium	Remainder

Aluminium is a corrosion-resistant metal due to a film of aluminium oxide that occurs naturally on its surface. Anodizing is an applied finish by an electrochemical process. It thickens the natural oxide film on the aluminium and imparts to the metal surface the extreme hardness, corrosion and wear resistance of the oxide. Simplair is anodized to AA10 which signifies a 10 micron depth of anodizing.

All HBS Products meet the requirements of ANSI B31.1

Piping and Distribution Accessories

Point-of-Use Provider Manifold

The outlet manifold provides a simple, cost-effective solution to the untidy array of tees and elbows normally used to create outlets. The manifold is made of lightweight, durable anodized aluminum and features the following outlets:

(2) 1-inch NPT (top and bottom), (2) 1/2" NPT, (2) 3/8" NPT and (2) 1/4" NPT. Plugs are provided for each outlet and have O-rings so that pipe sealant is not required.



CPN	Model
54742721	Point-of-Use Provider Manifold



CPN	Model
88326178	3/4" BSP Manifold

Ball Valves

Ball Valves

Ingersoll Rand forged body ball valves provide extended service life and resist failure caused by severe temperature applications. Full-flow design ensures maximum system efficiency. Highly inert PTFE seats provide resistance to chemical corrosion. Two Viton O-rings at the stem provide maximum safety with no maintenance. The blow-out proof stem, chrome-plated brass ball and specifically designed handle enable increased turning leverage for ease of opening and closing. Ingersoll Rand ball valves can be readily identified, ensuring high-quality engineering and reliability. These economical ball valves are available in female pipe sizes.



Size BSP	CPN
0.5"	88326673
1.0"	88326681
1.5"	88326699
2.0"	88326707
3.0"	88326715

Please be aware that ball valves are intended for use in the fully open or closed positions. Depending on application conditions, throttling of the valve may result in premature seal failure and/or inability to turn the valve handle.

Wafer style Butterfly Valves- energy saving throttling capability

Our new line of Ingersoll Rand butterfly valves is designed for energy saving operation, the result of excellent throttling performance and the ability to provide a bubble tight seal. These butterfly valves are compatible with the 110 mm and 150 mm Simplair Evolution DIN flange adaptors and contain the CE mark.



Nominal Diameter	CPN	Max. Pressure	Working Temp.	Tested Pressure (hydro)
110mm	88327440	12 bar	-12°C to 82°C	51 bar*
150mm	88327457	12 bar	-12°C to 82°C	51 bar*

* Pressure tested per ISO procedures



This sector provides products, services and solutions to enhance the efficiency and productivity of our commercial, industrial and process customers. Our Ingersoll Rand brand products including tools, pumps, material and fluid handling systems, microturbines, air compressors and air system components.

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