REFRIGERATION PRESS FITTINGS

Product information and installation instructions

CONTENTS

Refrigeration press fittings

ALTECH REFRIGERATION PRESS FITTINGS

Altech Copper press fitting system for use in refrigeration and air conditioning systems.

- Weld-free installation eliminates hot work and associated fire risk
- Mechanical coupling eliminates the need for nitrogen purging during pressing
- Quick, easy installation saves time and money
- Easy to use – no gas cylinders required
- Reliable, permanent and durable connections every time
- Three pressure points provide a permanent and secure joint
- High-quality HNBR O-ring provides a reliable leak-free joint after pressing
- Press fitting design protects the O-ring from damage and movement.
- Press fittings have a pink marking indicating suitability for high-pressure applications in refrigeration and air conditioning systems.
- UL certified
- 5-year product warranty

Altech refrigeration press fittings can be used with hard, semi-hard or soft annealed copper piping manufactured in accordance with EN 12735-1 or ASTM-B280 standards. Altech refrigeration press fittings provide a reliable, permanent and leak-tight connection suitable for refrigeration and air conditioning systems.

Material
Altech refrigeration press fittings are made of UNS C12200 copper with a purity of at least 99.9% and an HNBR O-ring.

Pipe standard
The press fitting system can be used with hard, semi-hard or soft annealed copper pipes manufactured in accordance with standard EN 12735-1 or ASTM-B280.

Application
For installation in refrigeration and air conditioning systems.

Maximum operating pressure
48 bar, 4800 kPa, 700 psig.

Burst pressure
Over 3 x maximum operating pressure and abnormal pressure in accordance with EN 378-2: >144 bar / >14,400 kPa / >2,100 psig.

Operating temperature
Press fitting: -40–121 °C
O-ring: -40–140 °C

Standards and approvals
UL 207
UL 109-7 Pull test
UL 109-8 Vibration test
UL 1963-79 Tests of gaskets and seals used in refrigerant systems
ISO 5149-2, EN 378-2
EN 14276-2 Burst pressure test
EN 16084 Tightness test
ISO 14903, EN 16084 Tightness test
ISO 14903, EN 16084 Temperature, pressure cycle and vibration tests
ISO 14903, EN 16084 Thermal cycling test
ASTM G85 Salt spray (fog) test

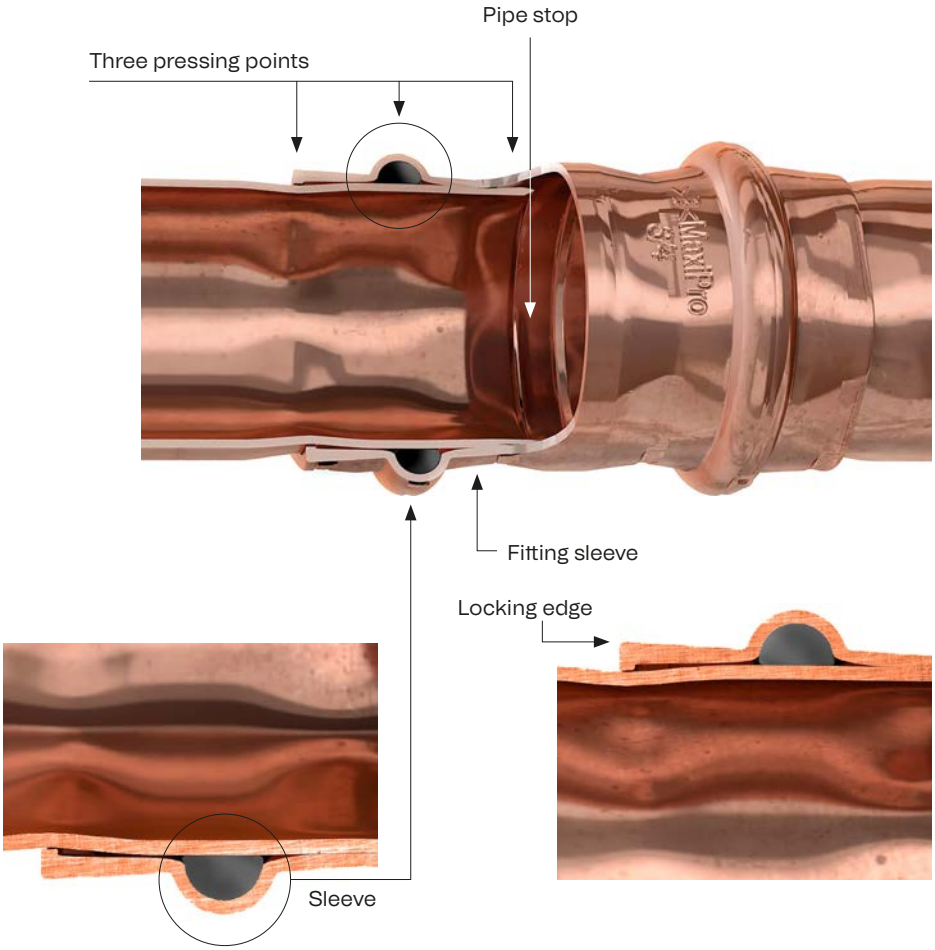
Storage
The press fittings are stored in their sealed bag that protects them from dirt and dust. However, it is important to take simple precautions to protect the O-ring. The O-ring must be protected from light, especially direct sunlight or intense artificial light with a high ultraviolet fraction.

Because ozone has an especially destructive effect on rubber, ensure that the storage area is free from equipment that can generate ozone, such as mercury vapour lamps or high-voltage equipment that can emit electrical sparks or silent electrical discharges.

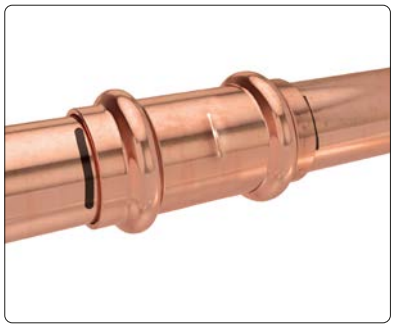
There shall be no gas fuels or organic vapours in the storage area, as these can generate ozone through photochemical processes. Care must also be taken to protect stored products from all types of ionizing radiation.

Three-point press technology

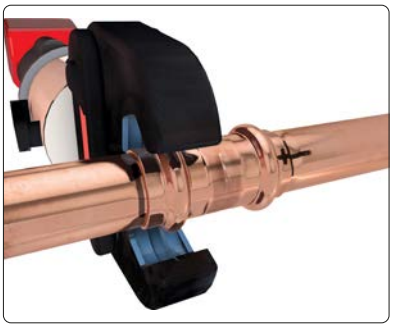
Altech refrigeration press fittings use three pressing points, one to each side of the sleeve and one to clamp the O-ring. This ensures a permanent and secure connection.



Fittings of 1/2" and larger have a locking edge that ensures performance is maintained on use under high pressure.



Unpressed



Pressing

Pressed

APPROVED PRESS MACHINES AND PRESS JAWS

Approved press machines and press jaws 19/22 kN – inch sizes

Approved >B< MaxiPro 19 kN press machines and press jaws – inch sizes						
Press tool manufacturer	Press tool	ROTHENBERGER	NOVIPRO	Novopress	REMS	Roller
		MaxiPro press jaw >B<	BMP press jaw	BMP press jaw	BMP press jaw	BMP press jaw
NOVIPRO	ACO103		✓	✓		
	Compact TT	✓	✓	✓		
	Compact	✓	✓	✓		
ROTHENBERGER	ROMAX® Compact TT (Europe)	✓	✓	✓		
	ROMAX® Compact	✓	✓	✓		
Novopress	ACO102		✓	✓		
	ACO103		✓	✓		
Hilti	NPR 19-A	✓	✓	✓		
Klauke	MAP219	✓	✓	✓		
REMS (22 kN)	Mini Press 22v ACC				✓	✓
Ridgid	RP 219	✓	✓	✓		
Roller (22 kN)	Multi-Press Mini 22V ACC				✓	✓

A 19 kN press tool is used for couplings/pipes up to 1 1/8". A 32 kN press tool is required for couplings/pipes with dimensions over 1 1/8". Press tools and press jaws must be maintained in accordance with manufacturer recommendations. Warranty claims may require that approved press tools and/or press jaws have been used during assembly.

Approved press machines and press jaws 19 kN – mm sizes

Approved >B< MaxiPro 19 kN press machines and press jaws – mm sizes		
Press tool manufacturer	Press tool	Press jaw and adapter manufacturers
		Novopress / Conex Bänninger
NOVIPRO	ACO103	✓
	Compact TT	✓
	Compact	✓
ROTHENBERGER	ROMAX® Compact TT (Europe)	✓
	ROMAX® Compact	✓
Novopress	ACO102	✓
	ACO103	✓
Conel	PM1	✓

A 19 kN press tool is used for couplings/pipes up to 28 mm. A 32 kN press tool is required for couplings/pipes with dimensions over 28 mm. Only Conex Bänninger adapters may be used for >B<MaxiPro. Press tools and press jaws must be maintained in accordance with manufacturer recommendations. Warranty claims may require that approved press tools and/or press jaws have been used during assembly.

Approved press machines and press jaws 24 kN – inch sizes

Approved >B< MaxiPro 24 kN press machines and press jaws – inch sizes			
Press tool manufacturer	Press tool	Press jaw manufacturer	
		ROTHENBERGER	Novopress
		Press jaw >B< MaxiPro	Press jaw BMP
Milwaukee	M12	✓	✓
Ridgid	RP 200-B	✓	✓
	RP 210-B	✓	✓
	RP 240	✓	✓
	RP 241	✓	✓
ROTHENBERGER	ROMAX TT US	✓	✓

A 24 kN press tool is used for couplings/pipes up to 1 1/8". A 32 kN press tool is required for couplings/pipes with dimensions over 1 1/8". Press tools and press jaws must be maintained in accordance with manufacturer recommendations. Warranty claims may require that approved press tools and/or press jaws have been used during assembly.

Approved press machines and press jaws 32 kN - inch sizes

Approved >B< MaxiPro 19 kN press machines and press jaws – inch sizes						
Press tool manufacturer	Press tool	Press jaw manufacturer				
		ROTHENBERGER	NOVIPRO	Novopress	REMS	Roller
		Press jaw >B< MaxiPro	Press jaw BMP	Press jaw BMP	Press jaw BMP	Press jaw BMP
Conel	PM2	✓	✓	✓	✓	✓
Dewalt	DCE200	✓	✓	✓	✓	✓
Hilti	NPR 032 IE-A22	✓	✓	✓	✓	✓
Klauke	UAP2/3/4	✓	✓	✓	✓	✓
	UAP332	✓	✓	✓	✓	✓
	UAP432	✓	✓	✓	✓	✓
Milwaukee	M18 Force Logic	✓	✓	✓	✓	✓
Nibco	PC-100	✓	✓	✓	✓	✓
	PC-280	✓	✓	✓	✓	✓
NOVIPRO	ACO203	✓	✓	✓	✓	✓
Novopress	ACO202	✓	✓	✓	✓	✓
	ECO203	✓	✓	✓	✓	✓
	ACO203	✓	✓	✓	✓	✓
REMS	Akku-Press	✓	✓	✓	✓	✓
	Power-Press	✓	✓	✓	✓	✓
Ridgid	RP 320	✓	✓	✓	✓	✓
	RP 330/B/C	✓	✓	✓	✓	✓
	RP 340	✓	✓	✓	✓	✓
	RP 350	✓	✓	✓	✓	✓
	RP351	✓	✓	✓	✓	✓
ROTHENBERGER	ROMAX 3000/AC	✓	✓	✓	✓	✓
	ROMAX 4000	✓	✓	✓	✓	✓
Uponor	UP110	✓	✓	✓	✓	✓
Virax	Viper P25+	✓	✓	✓	✓	✓
	Viper P30+	✓	✓	✓	✓	✓
Roller	Multi-Press	✓	✓	✓	✓	✓
	Akku-Press	✓	✓	✓	✓	✓

Press tools and press jaws must be maintained in accordance with manufacturer recommendations. Warranty claims may require that approved press tools and/or press jaws have been used during assembly.

NOVIPRO Press tool

Press tool
NOVIPRO ACO103
NOVIPRO ACO203

Press jaws	
Item No.	Dimension NOVIPRO Press jaw (MaxiPro)
K5710032	1/4"
K5710033	3/8"
K5710034	1/2"
K5710035	5/8"
K5710036	3/4"
K5710037	7/8"
K5710038	1"
K5710039	1 1/8"

PRODUCT RANGE

Dimensions	1/4"–1 3/8"
Material	Copper, UNS C12200
O-ring	HNBR
Press jaw	MaxiPro
Operating temperature	-40–121 °C
Max. operating pressure	48 bar

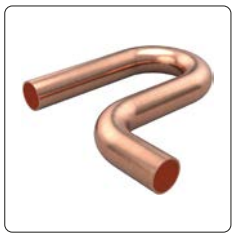












Elbow 90° 2 sleeves

Item No.	Dimension
1189540	1/4"
1189541	3/8"
1189542	1/2"
1189543	5/8"
1189544	3/4"
1189545	7/8"
1189547	1 1/8"
1189642	1 3/8"

Elbow 90° 1 sleeve

Item No.	Dimension
1189548	3/8"
1189549	1/2"
1189550	5/8"
1199551	3/4"
1189552	7/8"
1189554	1 1/8"
1189641	1 3/8"

Elbow 45° 2 sleeves

Item No.	Dimension
1189555	1/4"
1189556	3/8"
1189557	1/2"
1189558	5/8"
1189559	3/4"
1189560	7/8"
1189562	1 1/8"
1189643	1 3/8"

Tee

Item No.	Dimension
1185672	1/4"
1185673	3/8"
1185674	1/2"
1185675	5/8"
1185676	3/4"
1185677	7/8"
1185679	1 1/8"
1185720	1 3/8"

Double sleeve

Item No.	Dimension
1182892	1/4"
1182893	3/8"
1182894	1/2"
1182895	5/8"
1182896	3/4"
1182897	7/8"
1182899	1 1/8"
1182960	1 3/8"

Reducer 2 sleeves

Item No.	Dimension
1760462	3/8" x 1/4"
1760463	1/2" x 1/4"
1752675	1/2" x 3/8"
1752712	5/8" x 3/8"
1752713	5/8" x 1/2"
1752714	3/4" x 3/8"
1752715	3/4" x 1/2"
1752716	3/4" x 5/8"
1752717	7/8" x 1/2"
1752718	7/8" x 5/8"
1752719	7/8" x 3/4"
1752720	1 1/8" x 5/8"
1752721	1 1/8" x 3/4"
1752722	1 1/8" x 7/8"
1752789	1 3/8" x 7/8"
1752791	1 3/8" x 1 1/8"

Reducer 1 sleeve

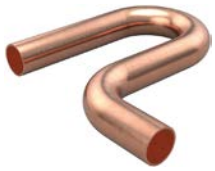
Item No.	Dimension
1752723	3/8" x 1/4"
1752724	1/2" x 3/8"
1752725	5/8" x 3/8"
1752726	5/8" x 1/2"
1752727	3/4" x 1/2"
1752728	3/4" x 5/8"
1752729	7/8" x 1/2"
1752730	7/8" x 5/8"
1752731	7/8" x 3/4"
1752732	1 1/8" x 1/2"
1752733	1 1/8" x 5/8"
1752734	1 1/8" x 3/4"
1752735	1 1/8" x 7/8"
1752792	1 3/8" x 7/8"
1752794	1 3/8" x 1 1/8"

Cap

Item No.	Dimension
1757797	1/4"
1757798	3/8"
1757799	1/2"
1757800	5/8"
1757801	3/4"
1757802	7/8"
1757804	1 1/8"
1757820	1 3/8"

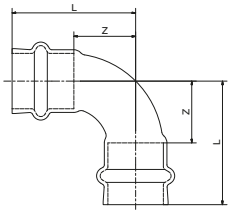
Flare	
Item No.	Dimension
1855424	1/4"
1855425	3/8"
1855426	1/2"
1855427	5/8"
1855429	3/4"

P-Trap	
Item No.	Dimension
1753442	5/8"
1753443	3/4"
1753444	7/8"
1753445	1 1/8"



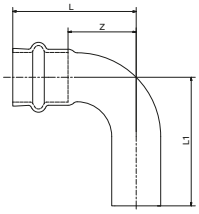
Repair coupling	
Item No.	Dimension
1182921	1/4"
1182922	3/8"
1182923	1/2"
1182924	5/8"
1182925	3/4"
1182926	7/8"
1182927	1 1/8"

DIMENSIONS



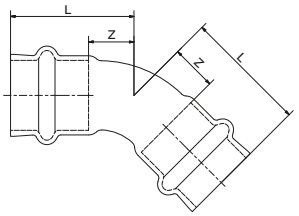
Elbow 90° 2 sleeves

Item No.	Dimension	L	Z
1189540	1/4"	32,5	14,5
1189541	3/8"	33,0	15,0
1189542	1/2"	31,5	14,0
1189543	5/8"	39,0	18,0
1189544	3/4"	42,5	20,5
1189545	7/8"	50,0	26,0
1189547	1 1/8"	57,0	31,5
1189642	1 3/8"	69,0	35,0



Elbow 90° 1 sleeve

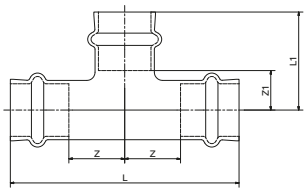
Item No.	Dimension	L	L1	Z
1189548	3/8"	33,0	34,5	15,0
1189549	1/2"	31,5	34,5	14,0
1189550	5/8"	39,0	45,0	18,0
1199551	3/4"	42,5	48,0	20,5
1189552	7/8"	50,0	53,0	26,0
1189554	1 1/8"	57,0	61,5	31,5
1189641	1 3/8"	69,0	82,0	35,0



Elbow 45° 2 sleeves

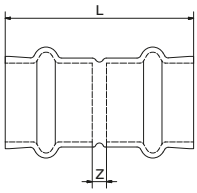
Item No.	Dimension	L	Z
1189555	1/4"	23,5	5,5
1189556	3/8"	26,0	8,0
1189557	1/2"	24,0	6,5
1189558	5/8"	28,0	7,0
1189559	3/4"	31,5	9,5
1189560	7/8"	34,0	10,0
1189562	1 1/8"	39,5	14,0
1189643	1 3/8"	52,0	18,0

Tee



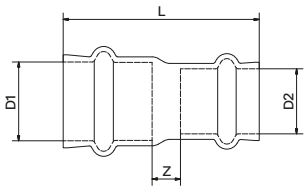
Item No.	Dimension	L	Z	L1	Z1
1185672	1/4"	54,0	9,0	27,0	9,0
1185673	3/8"	63,0	13,5	31,0	13,0
1185674	1/2"	66,0	15,5	28,0	10,5
1185675	5/8"	76,0	17,0	32,0	11,0
1185676	3/4"	84,0	20,0	36,0	14,0
1185677	7/8"	89,0	20,5	38,5	14,5
1185679	1 1/8"	95,0	22,0	43,0	17,5
1185720	1 3/8"	112,0	22,0	56,0	22,0

Double sleeve



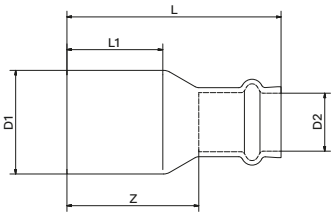
Item No.	Dimension	L	Z
1182892	1/4"	39,0	3,0
1182893	3/8"	39,0	3,0
1182894	1/2"	40,0	5,0
1182895	5/8"	45,0	3,0
1182896	3/4"	45,5	1,5
1182897	7/8"	56,5	8,5
1182899	1 1/8"	57,0	6,0
1182960	1 3/8"	71,0	3,0

Reducer 2 sleeves



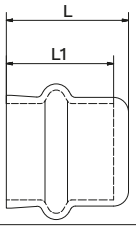
Item No.	Dimension	L	Z	D1	D2
1760462	3/8" x 1/4"	44	6,0	3/8"	1/4"
1760463	1/2" x 1/4"	44	8,5	1/2"	1/4"
1752675	1/2 x 3/8"	42,5	7,0	1/2"	3/8"
1752712	5/8" x 3/8"	47,5	8,5	5/8"	3/8"
1752713	5/8" x 1/2"	45,5	7,0	5/8"	1/2"
1752714	3/4" x 3/8"	51,0	11,0	3/4"	3/8"
1752715	3/4" x 1/2"	46,0	6,5	3/4"	1/2"
1752716	3/4" x 5/8"	52,5	9,5	3/4"	5/8"
1752717	7/8" x 1/2"	52,5	11,0	7/8"	1/2"
1752718	7/8" x 5/8"	52,5	7,5	7/8"	5/8"
1752719	7/8" x 3/4"	52,5	6,5	7/8"	3/4"
1752720	1 1/8" x 5/8"	55,0	8,5	1 1/8"	5/8"
1752721	1 1/8" x 3/4"	57,5	10,0	1 1/8"	3/4"
1752722	1 1/8" x 7/8"	58,0	8,5	1 1/8"	7/8"
1752789	1 3/8" x 7/8"	67,0	13,0	1 3/8"	7/8"
1752791	1 3/8" x 1 1/8"	72,0	12,5	1 3/8"	1 1/8"

Reducer 1 sleeve



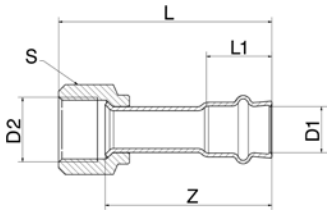
Item No.	Dimension	L	L1 Min	Z	D1	D2
1752723	3/8" x 1/4"	44,0	21,0	26,0	3/8"	1/4"
1752724	1/2" x 3/8"	45,0	20,5	27,0	1/2"	3/8"
1752725	5/8" x 3/8"	47,5	24,0	29,5	5/8"	3/8"
1752726	5/8" x 1/2"	46,0	24,0	28,5	5/8"	1/2"
1752727	3/4" x 1/2"	53,0	25,0	35,5	3/4"	1/2"
1752728	3/4" x 5/8"	53,5	25,0	32,5	3/4"	5/8"
1752729	7/8" x 1/2"	54,0	27,0	36,5	7/8"	1/2"
1752730	7/8" x 5/8"	54,5	27,0	33,5	7/8"	5/8"
1752731	7/8" x 3/4"	53,0	27,0	31,0	7/8"	3/4"
1752732	1 1/8" x 1/2"	61,0	28,5	43,5	1 1/8"	1/2"
1752733	1 1/8" x 5/8"	63,5	28,5	42,5	1 1/8"	5/8"
1752734	1 1/8" x 3/4"	60,0	28,5	38,0	1 1/8"	3/4"
1752735	1 1/8" x 7/8"	59,5	28,5	35,5	1 1/8"	7/8"
1752792	1 3/8" x 7/8"	74,5	37,5	50,5	1 3/8"	7/8"
1752794	1 3/8" x 1 1/8"	74,5	37,5	49,0	1 3/8"	1 1/8"

Cap



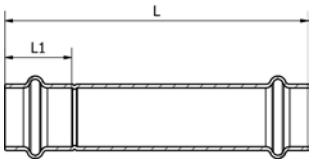
Item No.	Dimension	L	L1
1757797	1/4"	19,5	18,0
1757798	3/8"	19,5	18,0
1757799	1/2"	19,0	17,5
1757800	5/8"	22,5	21,0
1757801	3/4"	23,5	22,0
1757802	7/8"	26,0	24,0
1757804	1 1/8"	27,5	25,5
1757820	1 3/8"	37,5	34,0

Flare



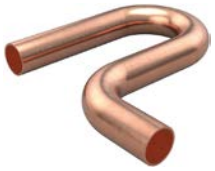
Item No.	Dimension	D1	D2	L	L1	Z	S	D2
1855424	1/4"	1/4"	1/4"	54,0	18,0	46,0	17,0	1/4"
1855425	3/8"	3/8"	3/8"	61,0	18,0	50,5	22,0	3/8"
1855426	1/2"	1/2"	1/2"	63,5	17,5	53,0	24,0	3/8"
1855427	3/8"	3/8"	3/8"	74,0	21,0	59,0	27,0	1/2"
1855429	3/4"	3/4"	3/4"	81,5	22,0	63,0	34,0	1/2"

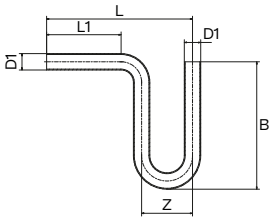
Repair coupling



Item No.	Dimension	L	L1
1182921	1/4"	91,0	18,0
1182922	3/8"	90,0	18,0
1182923	1/2"	91,0	17,5
1182924	5/8"	101,0	21,0
1182925	3/4"	101,0	22,0
1182926	7/8"	105,0	24,0
1182927	1 1/8"	106,0	25,5

P-Trap





Item No.	Dimension	D1	L	L1	B	Z
1753442	5/8"	5/8"	171,0	103,5	151,5	45,0
1753443	3/4"	3/4"	172,0	91,0	158,5	54,0
1753444	7/8"	7/8"	171,0	72,0	170,0	66,0
1753445	11/8"	11/8"	170,0	44,0	173,5	84,0

MARKING AND REQUIREMENTS

Marking and cleanliness requirements

The press fittings are supplied cleaned, packaged in bags and marked in compliance with the cleanliness requirements of EN 12735-1 and ASTM-B280. Ensure that the reclosable bag is kept closed to protect the fitting from contamination. Each coupling is marked with >B< MaxiPro, the size and 48 bar (on a pink background).

Requirements for piping design

All pipes used in refrigeration systems must be designed with the minimum number of connections. The piping must be designed in accordance with the standards listed below and must comply with local regulations, recognized practice and statutes governing installation. All health and safety procedures must be followed:

EN 378-2:2008+A2:2012 Refrigerating systems and heat pumps. Safety and environmental requirements. Design, construction, testing, marking and documentation.

EN 16084:2011 Refrigerating systems and heat pumps. Qualification of tightness of components and joints.

EN 14276-2:2007+A1:2011 Pressure equipment for refrigerating systems and heat pumps. Piping. General requirements.

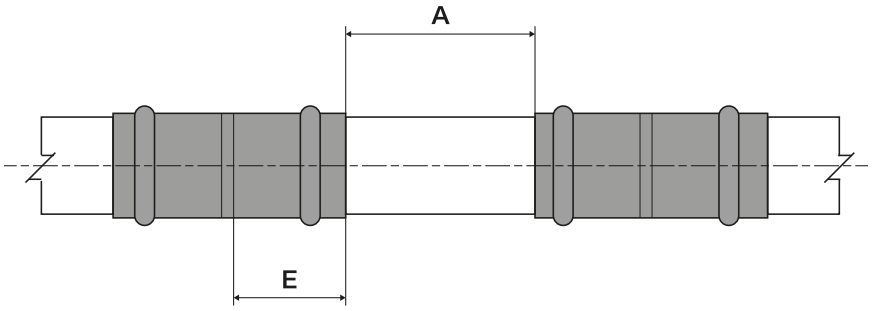
Pipe supports

All pipes must be supported with suitable clamps, brackets or supports. Local regulations and statutes governing this type of installation must also be observed, as must local recognized practice. Pipe supports must be placed close to the fittings where possible. Additional supports may be required when using soft copper pipes or in installations affected by vibrations. See also:

EN 378-2:2008+A2:2012 Refrigerating systems and heat pumps. Safety and environmental requirements. Design, construction, testing, marking and documentation.

Installation depth and minimum distance between pressed fittings

As clamping modifies the pipe profile, a minimum distance between each fitting is recommended.



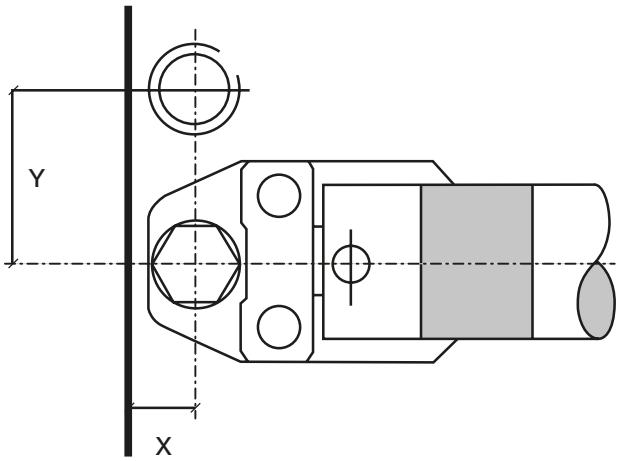
Installation depth and minimum distance between pressed fittings

Nominal pipe diameter, DN	Minimum distance A	Installation depth E
inches	mm	mm
1/4"	10	18,0
3/8"	10	18,0
1/2"	15	19,0
5/8"	15	22,0
3/4"	20	23,0
7/8"	20	25,0
1"	25	24,0
1 1/8"	25	26,5
1 3/8"	35	35,0

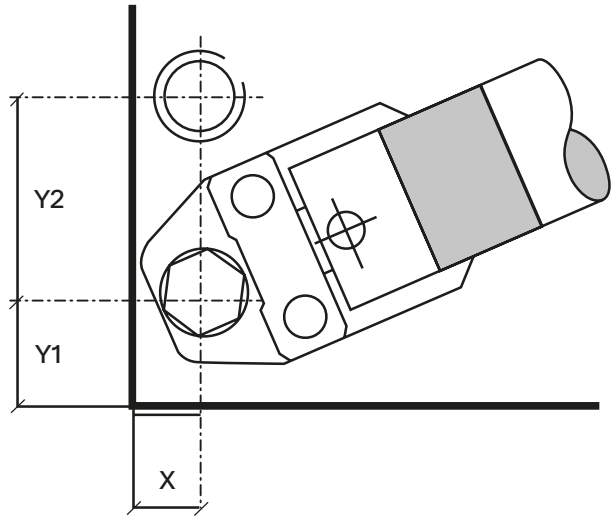
Installation depth and minimum distance between pressed fittings

Nominal pipe diameter, DN	Minimum distance A	Installation depth E
inches	mm	mm
6	10	19,0
8	10	19,0
10	10	19,0
12	15	19,0
15	15	22,0
16	20	22,0
18	20	23,0
22	20	23,0
28	25	25,0

Space requirements for pressing



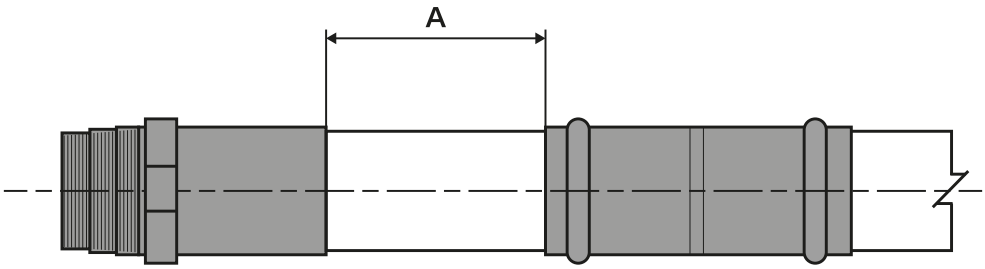
Space required between pipe and wall for pressing		
Nominal pipe diameter, DN	X	Y
inches	mm	mm
1/4"	30	60
3/8"	30	60
1/2"	30	60
5/8"	30	60
3/4"	30	60
7/8"	35	60
1 1/8"	35	60
1 3/8"	35	60



Space required between pipe and corner for pressing			
Nominal pipe diameter, DN	X	Y1	Y2
inches	mm	mm	mm
1/4"	50	50	100
3/8"	50	50	105
1/2"	50	50	110
5/8"	50	50	110
3/4"	50	50	110
7/8"	60	60	120
1 1/8"	60	60	120
1 3/8"	60	60	120

Minimum distance between a press fitting and existing brazed joint

To ensure a sufficiently leak-tight connection between a brazed joint and an Altech refrigeration press fitting, ensure that the minimum distance between the two connections is maintained in accordance with the table below.



Minimum distance from a brazed joint	
Nominal pipe diameter, DN	Minimum distance
inches	mm
1/4"	10
3/8"	10
1/2"	15
5/8"	15
3/4"	20
7/8"	20
1 1/8"	25
1 3/8"	35

Minimum distance from a brazed joint	
Nominal pipe diameter, DN	Minimum distance
mm	mm
6	10
8	10
10	10
12	15
15	15
16	15
18	20
22	20
28	25

Note: It is important that there be no residual brazing material or other contamination on the pipe to be inserted into the press fitting. The pipe surface where the press joint is to be placed must be clean and free of particles and must comply with EN 12735-1 and ASTM-B280.

Minimum distance to an existing press fitting for brazing

Important – avoid brazing near joints, as heat transfer can compromise the seal. The table below shows the minimum distance from the press joint that must be maintained to permit brazing. If this distance cannot be maintained, requisite measures must be taken to prevent heat transfer to the press fitting during brazing, such as making the brazed joint before assembling it with the press fittings, wrapping the section in a wet cloth or applying cooling spray, cooling gel or cooling paste.

Minimum distance for brazing	
Nominal pipe diameter, DN	Minimum distance A (between fitting ends)
inches	mm
1/4"	250
3/8"	300
1/2"	350
5/8"	450
3/4"	500
7/8"	600
1 1/8"	700
1 3/8"	900

Pipe compatibility table

	Nominal pipe diameter DN	EN 12735-1 – AS/ NZS 1571 – ASTM B280 – ASTM B88													
		Pipe wall thickness													
Dimension	inches	inches	0,025	0,028	0,030	0,031 0,032	0,035 0,036	0,039 0,040	0,042	0,045	0,048	0,049 0,050	0,055	0,064 0,065	0,072
		mm	0,64	0,71	0,76	0,80 0,81	0,89 0,91	1,00 1,02	1,07	1,14	1,22	1,24 1,25 1,27	1,40	1,63 1,65	1,83
1/4"	0,250"	6,35	●	○●	○	○●	○●								
3/8"	0,375"	9,53			○●	○●	○●								
1/2"	0,500"	12,70				○●	○●	○●			●	○●			
5/8"	0,625"	15,87				○●	○●	○●		○	●	○●			
3/4"	0,750"	19,05					○●	○●	○●	○●	○●	○●			
7/8"	0,875"	22,23					●	○●		○●	●		●	○●	
1 1/8"	1,125"	28,58					●	●			●	●		●	●
1 3/8"	1,375"	34,93											●	●	

○ = Soft annealed pipe in coil
● = Semi-hard/hard straight pipes

Note! The designer is responsible for ensuring that the selected pipes are compatible with Altech refrigeration press fittings and that they can withstand the pressure requirements of the system.

Protecting pipes

Pipes and pipe fittings must be protected to the extent possible against environmental exposure and other external influences. Ref: EN 378-2:2008+A2:2012 Refrigerating systems and heat pumps. Safety and environmental requirements. Design, construction, testing, marking and documentation. Local regulations and statutes governing this type of installation must also be observed, as must local recognized practice.

Ground connection

Altech refrigeration press fittings do not require any additional grounding cables.

Identifying and insulating pipes

All piping must be installed in accordance with: EN 378-2:2008+A2:2012 Refrigerating systems and heat pumps. Safety and environmental requirements. Design, construction, testing, marking and documentation. Local regulations and statutes governing this type of installation must also be observed, as must local recognized practice.

INSTALLATION INSTRUCTIONS

Before installing Altech refrigeration press fittings

General

Altech refrigeration press fittings must be installed by an installer who is trained and qualified to work with air conditioning and refrigeration installations and who has been certified after having completed a course in Altech refrigeration press fittings. All installations must be made in accordance with local regulations and statutes governing installation and applicable health and safety procedures.

Warning

Exercise caution when using the press tool to prevent pinching injuries to hands or fingers. Always wear safety goggles and hearing protection.

Caution

Select the correct size of pipes, couplings and press jaws. Ensure that couplings and pipes are kept free of dust and dirt and that the O-ring is not damaged. Ensure that the pressing faces of the press jaws are clean and free from dirt and dust.
It is important that the pipe ends not be forced together when making the joints. Joints shall only be made in pipes that are installed free of loads.

Please observe

- The joint is ready for use following a complete pressing cycle with the press tool.
- The press fitting may only be pressed once.
- The pipes must be fully fitted before pressing.
- Do not rotate the joints after pressing.

Maximum operating pressure:
48 bar, 4800 kPa, 700 psig

Operating temperature:
-40–121 °C

Compatible refrigerants
R-1234yf*, R-1234ze*, R-134a, R290*, R-32*, R-404A, R-407A, R-407C, R-407F, R-410A, R-417A, R-422D, R-427A, R-438A, R-448A, R-449A, R-450A, R-507, R-513A, R600A* och R-718.

*The installer (refrigeration technician) is responsible for ensuring compliance with all applicable standards, local regulations, local practices and local statutes when using refrigerants classified as A2/A2L (flammable) or A3 (highly flammable).

Warning

Not for use with ammonia (R-717).

Compatible oils
POE, PAO, PVE, AB and mineral oils.

Leak-tightness
Helium ≤ 7.5 x 10-7 Pa.m³/s vid +20 °C, 10 bar.

Vacuum
300 micrometers.

Procedure

Cut pipe.

1. Cut pipe at 90° to correct length. Use a rotating pipe cutter.
2. Check to ensure that the pipe has retained its shape and has not been damaged.

Deburr and smooth sharp outside edges.

1. If possible, angle the pipe downward to prevent chips from entering the pipe.
2. Use a deburring tool to deburr outside edges.

Deburr and smooth sharp inside edges and check.

1. If possible, angle the pipe downward to prevent chips from entering the pipe.
2. Use a pen-style deburring tool to deburr inside edges of pipe.
3. Check that inside and outside surfaces of pipe ends are smooth, free of burrs and with no sharp edges.

Clean pipe end.

1. Use a cleaning cloth and rub the pipe end with a rotating motion.
2. Check to ensure that the pipe ends are free from scratches, oxidation, dirt and particles.

Checking pipe.

1. Check to ensure that the pipe is undamaged.
2. For visible deep scratches: cut away the scratched part of the pipe for a clean and undamaged section.

Check fitting.

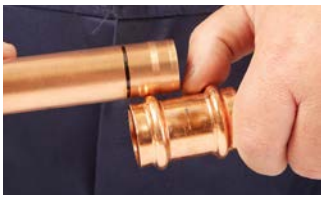
1. Check the fitting for the following:

1.1. Fitting dimensions are correct for the pipe on which it is to be installed.

1.2. O-ring is correctly seated.

Mark installation depth.

1. Lubricant (silicone oil) can be used to facilitate pipe assembly.
2. Insert pipe up to pipe stop. If possible, rotate pipe when inserting into fitting to reduce the risk of the O-ring coming loose. The pipe must be fully inserted in the coupling so that it reaches the pipe stop.
3. Mark installation depth on pipe.



Check pipe and depth marking.

1. Check to ensure that the pipe has no deep scratches above the fitting depth mark.

1.1. For visible deep scratches: cut away the scratched part of the pipe for a clean and undamaged section.

Position fitting on pipe.

1. Insert pipe up to pipe stop. If possible, rotate pipe when inserting into fitting to reduce the risk of the O-ring coming loose. The pipe must be fully inserted in the coupling so that it reaches the pipe stop.
2. Use the mark as a guide to check that the pipe is positioned correctly in the fitting and has not moved before pressing.

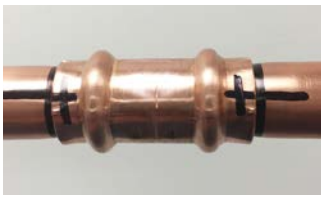
Before pressing.

1. Ensure that the pipes are correctly oriented and in line.
2. Fit correct size press jaw on press tool.
3. Place press jaw perpendicular to the joint and on the positioning guide on the sleeve.
4. Align the positioning guide on the sleeve centred on the press jaw.

Pressing joint.

1. Depress button on press tool and hold down until the pressing cycle is complete. The pressing cycle is complete when the press jaw is fully closed and the piston retracts.
2. Disconnect press jaw from pressed fitting.

The pressing cycle shall only be performed once – do not repeat pressing.



Marking finished joint.

1. Mark the finished joint after pressing. This simplifies inspection before pipe testing and insulation.

Testing and commissioning air conditioning and refrigeration systems

Air conditioning and refrigeration systems must be tested and commissioned in accordance with the requirements specified in the following standards:

EN 378-2:2008+A2:2012 Refrigerating systems and heat pumps. Safety and environmental requirements. Design, construction, testing, marking and documentation. Regulation (EU) No. 517/2014 on fluorinated greenhouse gases. Local regulations and statutes governing this type of installation must also be observed, as must local recognized practice.

Pressure and integrity testing

Oxygen-free nitrogen (OFN) must be used for pressure and integrity testing because it is an inert gas. Do not use oxygen for pressure testing, as it reacts violently with hydrocarbons (oil and grease) under pressure, resulting in explosion and fire.

The installer is responsible for determining the maximum pressure during pressure testing. This can be calculated based on the system pressure and test parameters.

To ensure that the press fittings are tested in a safe manner, pressure for integrity and leak-tightness testing must be gradually increased up to the desired system pressure specified by the installer.

Measure system pressure and ambient temperature at the start and end of leak testing. If this is not done, a leak may be undetected if the ambient temperature rises. A temperature change of 5 °C will cause a pressure change of approx. 0.7 bar.

Ensure that the press fitting is not located so close to the fluid filling point that the temperature in the joint drops below -40 °C when filling the system with fluid and thereby breaking the vacuum.

Evacuation troubleshooting

Evacuation removes air, moisture and non-condensable gases before the system is filled.

Possible reasons for failure to establish a vacuum:
- Leak or moisture in the system (see below).
- Vacuum pump not working properly.
- Vacuum pump capacity is insufficient.

If vacuum cannot be maintained:
- There may be a possible leak in the system or in the connections to the system – find and seal leaks. Leaks in a vacuum system can be detected with an ultrasonic detector.
- Moisture or refrigerant may remain in the system – continue evacuating.
- Do not attempt to fix potential problems by means such as cutting connections from the system before proper troubleshooting has been completed.

FAQ

Where are the products manufactured?

The products are manufactured in Europe.

Do Altech refrigeration press fittings work for both hard and soft copper pipes?

Yes, the press fitting system can be used with hard, semi-hard or soft annealed copper pipes in accordance with EN 12735-1 or ASTM-B280.

Can Altech refrigeration press fittings be used for pressing aluminium, steel or stainless steel?

No, the refrigeration press fittings are specifically designed for copper-to-copper connections. If Altech refrigeration press fittings are used with other metals, corrosion problems may occur and cause system failure.

What warranties apply for Altech refrigeration press fittings?

The product has a 5-year warranty from the first date of purchase.

What is the O-ring material?

The O-ring is made of hydrated acrylonitrile-butadiene rubber (HNBR).

How long can the O-ring in the system be expected to last?

The O-ring is fabricated by Germany's leading O-ring manufacturer. The anticipated service life of the O-ring is at least 25 years if used at the pressure and temperature indicated in the product specification. The product has a 5-year warranty from the first date of purchase.

Are there any restrictions on storage, such as the fitting storage location if temperature is too high or too low e.g. in vehicles?

No, the product will not deteriorate under normal storage conditions, provided that it is stored in its original packaging and is not exposed to direct sunlight for extended periods of time.

Which refrigerants are approved for use with MaxiPro?

The refrigeration press fittings are approved for use with R-1234yf*, R-1234ze*, R-134a, R290*, R-32*, R-404A, R-407A, R-407C, R-407F, R-410A, R-417A, R-422D, R-427A, R-438A, R-448A, R-449A, R-450A, R-507, R-513A, R600A* and R-718.
*The installer (refrigeration technician) is responsible for ensuring compliance with all applicable standards, local regulations, local practices and local statutes when using refrigerants classified as A2/A2L (flammable) or A3 (highly flammable).

Which oils are approved for use with the refrigeration press fittings?

POE, PAO, PVE, AB and mineral oil are approved for use with Altech refrigeration press fittings. Although the O-ring has been successfully tested with PAG oil, PAG oil shall not be used on copper, as this may cause corrosion on copper.

If a fitting is leaking in an installation, can it be brazed instead of cutting the joint and replacing the pipe?

No, if a press fitting leaks, it must be cut off and replaced. The fitting shall not be brazed, as this may cause the material in the O-ring to melt, which could lead to contaminants entering the system and causing other problems.

Could there be a problem with ice forming and then thawing under the fitting when it is installed horizontally or vertically?

No, Altech refrigeration press fittings have been thoroughly tested to withstand freezing/thawing. Approved in accordance with ISO 14903, EN 16084 - thermal cycling test.

Can corrosion problems occur in installations in coastal areas or on contact with cleaning agents?

No, Altech refrigeration press fittings have been tested with acid salt spray in accordance with ASTM G85. As with all copper installations, contact with ammonia must be avoided.

How can I know when the press tool needs servicing?

Always follow the manufacturer's recommendations regarding servicing the press tool.

What approvals apply for Altech refrigeration press fittings?

The refrigeration press fittings are UL certified
Approved in accordance with UL 109-7, Pull test
Approved in accordance with UL 109-8, Vibration test
Approved in accordance with UL 1963-79, Tests of gaskets and seals used in refrigerant systems
Approved in accordance with ISO 5149-2, EN 378-2
Approved in accordance with EN 14276-2, Burst pressure test
Approved in accordance with ISO 14903, EN 16084, Tightness test
Approved in accordance with ISO 14903, EN 16084, Temperature/pressure cycle and vibration test
Approved in accordance with ISO 14903, EN 16084, Temperature cycle test
Approved in accordance with ASTM G85, Salt spray (fog) test

Which pipe should be used with Altech refrigeration press fittings?

The Altech press fitting system can be used with hard, semi-hard or soft annealed copper pipes in accordance with EN 12735-1 or ASTM-B280. Refer to the table for pipe compatibility.

Does the O-ring compensate for any imperfections in the pipe so that the seal remains leak-tight?

Yes, the O-ring compensates for minor scratches and unevenness on the pipe surface. However, imperfections such as scratches and grooves close to the press area as well as pipes that are not completely round must be avoided.

Which refrigerants are approved for use with MaxiPro?

The refrigeration press fittings are approved for use with R-1234yf*, R-1234ze*, R-134a, R290*, R-32*, R-404A, R-407A, R-407C, R-407F, R-410A, R-417A, R-422D, R-427A, R-438A, R-448A, R-449A, R-450A, R-507, R-513A, R600A* och R-718.
*The installer (refrigeration technician) is responsible for ensuring compliance with all applicable standards, local regulations, local practices and local statutes when using refrigerants classified as A2/A2L (flammable) or A3 (highly flammable).

According to the product specifications, system temperature should be between -40 and 121 °C. What happens if these limits are exceeded?

The refrigeration press fittings are suitable for use at temperatures between -40 and 121 °C. They can also withstand short-term peak temperatures of up to 140 °C. Use outside this temperature range may result in system failure.

Can the O-ring be damaged if acid forms in the cooling system?

Good installation practices, the use of nitrogen gas extraction during brazing, evacuation and correct installation and use of filter dryers with modern and effective desiccants with molecular filters prevent many system faults, including acid formation in the system. When selecting the most suitable desiccant for a particular application, the following important properties of the desiccant should be taken into account: its water absorption capacity, compatibility with refrigerants and lubricants, physical stability and acid resistance.

How clean are Altech refrigeration press fittings?

The refrigeration press fittings comply with the cleanliness requirements for copper pipes in standards EN 12735-1 and ASTM-B280. Ensure that the reclosable bag is kept closed to protect the fitting from contamination.

How well do the fittings withstand system vibrations?

It is well known that vibrations cause leaks. The system must therefore be designed and installed to meet all requirements for minimizing vibrations in accordance with local practices and regulations. The refrigeration press fittings have been thoroughly tested to ensure that the joints will not leak due to vibrations in the system and that they meet the requirements of the following standards:

- ISO 14903, Temperature/pressure cycle and vibration test.
- UL 109 - 8, Vibration test.
- UL 207 Fatigue test.

When pressing smaller fittings, especially angle fittings, some rotational movement of the joint may occur. Can this affect joint integrity?

No, some rotational movement is acceptable. The joint will not leak or fail under pressure or during system operation. Some joint movement is actually beneficial as it enables the pipe system to withstand a certain degree of expansion and contraction.

Can refrigeration press fittings be used for medical gas?

No, they cannot be used for medical gas.

Can a joint be pressed more than once?

No, the refrigeration press fittings can only be pressed once.

Are refrigeration press fittings approved for use in drinking water systems?

No, they are not approved for use in drinking water systems.

Can refrigeration press fittings be used in hot water systems?

No, they are only approved for use in air conditioning and refrigeration systems.

Does the O-ring compensate for any imperfections in the pipe so that the seal remains leak-tight?

Yes, the O-ring compensates for minor scratches and unevenness on the pipe surface. However, imperfections such as scratches and grooves close to the press area as well as pipes that are not completely round must be avoided.

What should I do if a vacuum cannot be established or maintained in the system?

Possible reasons for failure to establish a vacuum:

- Leak or moisture in the system (see below).
- Vacuum pump not working properly.
- Vacuum pump capacity is insufficient.

If vacuum cannot be maintained:

- There may be a possible leak in the system or in the connections to the system – find and seal leaks. Leaks in a vacuum system can be detected with an ultrasonic detector.
- Moisture or refrigerant may remain in the system – continue evacuating
- Do not attempt to fix potential problems by means such as cutting connections from the system before proper troubleshooting has been completed.

Is the use of support sleeves necessary for soft-annealed or semi-hard copper pipes?

No, a support sleeve is not necessary for use with Altech refrigeration press fittings.

Altech

Distributed by:
Saint-Gobain Distribution Sweden AB
For technical support, please contact us at
020-55 11 00 or tks@altech.nu

AH-102-2026_Version date: 2026-02-06