ACR COPPER PRESS FITTINGS FOR HVAC AND VRF APPLICATIONS

JOB NAME	**CONTRACTOR**
JOB LOCATION	**WHOLESALER**
ENGINEER	**STREAMLINE® REP**

PRODUCT DESCRIPTION:

Streamline® ACR Copper Press Fittings for use in HVAC and VRF applications. Available sizes ranging from 1/4" to 1-1/8" in outside diameter. Product is designed to join ASTM B280 and ASTM B88 hard-drawn copper tube (Types ACR, K, L) from 1/4" to 1-1/8" as well as ASTM B280 and ASTM B1003 soft (annealed) copper tube up to 7/8".

Streamline® ACR Press Fittings are compatible with the Milwaukee® Streamline® ACR Press Jaws and full-sized press tools.

10–Year Limited Warranty

MATERIAL:

Streamline® ACR Press Fittings are comprised of a mechanical press copper fitting (UNS C12200 Min 99.9% pure copper for the body) and engineered HNBR sealing rings.

KEY SPECIFICATIONS:

Streamline® ACR Press Fittings shall conform to material requirements of ASME B16.22 and B16.51. Streamline® ACR Press Fittings shall conform to certain aspects of UL 207, 109, 1963, and ISO 14903. Engineered HNBR sealing rings for press fittings shall be HNBR and factory installed. Product is rated for a maximum operating pressure of 700 PSI.

INSTALLATION:

Streamline® ACR Press Fittings shall be installed by trained professionals. Installers of Streamline® ACR Press Fittings shall use manufacturer approved tools, jaws, and equipment. Streamline® ACR Press Fittings shall be installed in compliance with the latest applicable building codes for the local jurisdiction and manufacturer instructions. Per International Mechanical Code (IMC) and Uniform Mechanical Code (UMC), mechanical joints shall not be used on annealed copper tube in sizes larger than 7/8" OD.

APPROVALS & CERTIFICATIONS:

UL 207	Standard for Refrigerant-Containing Components and Accessories
	UL Listed Refrigerant Fitting SA44401 - United States and Canada
	Approved use for field and factory installations
UL 1963	Standard for Refrigerant Recovery/Recycling Equipment
UL 109	7 Pull Test
	8 Vibration Test
ISO 5149-2	5.3.2.2.3 Strength Pressure Test
ISO 14903	Maximum Helium Leak Rate of 0.1 oz. Per Year
	7.4 Tightness Test
	7.6 Pressure Temperature Vibration Tests (PTV)
	7.8 Freezing Test

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APPROVALS & CERTIFICATIONS CONTINUED:

IMC	International Mechanical Code certified, ICC-ES, PMG-1625 2021, 2018, 2015, 2012, 2009, and 2006
IRC	International Residential Code certified, ICC-ES, PMG-1625 2021, 2018, 2015, 2012, 2009 and 2006
UMC	Uniform Mechanical Code certified, ICC-ES, PMG-1625 2021, 2018, 2015, 2012, 2009, and 2006
ASHRAE 15	Safety Standard for Refrigeration Systems
ASME B31.5	Refrigeration Piping and Heat Transfer Components
CSA C22.2	No. 140.3-15 Standard for Refrigerant-Containing Components for Use in Electrical Equipment

REFERENCES:

UNS C12200	99.9% Pure Copper
HNBR	Hydrogenated Acrylonitrile Butadiene Rubber
ASTM B88	Seamless Copper Water and Gas Tube (Types K and L)
ASTM B280	Seamless Copper Tube for Air Conditioning and Refrigeration
ASTM B1003	Seamless Copper Tube for Linesets

APPROVED APPLICATIONS:

Air Conditioning
Heat Pump
VRF and VRV
Light Commercial
Refrigeration
Non-Potable Water
Ethylene Glycol

OPERATING PARAMETERS:

Continuous Operating Pressure:	700 PSI / 48 BAR Max
Continuous Operating Temperature:	-40°F / -40°C to 250°F / 121°C
Sealing Ring Temperature Rating:	-40°F / -40°C to 300°F / 149°C

BURST PRESSURE:

>3x MAX OPERATING PRESSURE, 2100 PSI / 14400kPa / 144 BAR

VACUUM CAPABILITY:

200 microns

LEAK TIGHTNESS:

Helium ≤ 7.5 $x10^{-7}$ Pa · m^3/s at 20°C and 10 BAR

APPROVED REFRIGERANTS:

R-125, R-134a, R-32, R-404A, R-407A, R-407C, R-407F, R-407H, R-410A, R-417A, R-421A, R-422B, R-422D, R-427A, R-438A, R-444A, R-447A, R-447B, R-448A, R-449A, R-450A, R-452A, R-452B, R-452C, R-454A, R-454B, R-454C, R-457A, R-459A, R-507A, R-513A, R-513B, R-718, R-32, R-1234ze, R-1234yf, R-290, R-600A

APPROVED OILS:

Mineral Oil, POE, PVE, PAO, PAG, and AB

TOOLS & INSTALLATION GUIDELINES

TOOL & JAW COMPATIBILITY

Streamline® ACR Press Fittings are compatible with the Milwaukee® Streamline® ACR Press Jaws and full-sized press tools such as Milwaukee® M18™ Force Logic™ Press Tools for 1/4" to 1-1/8" OD.

DISTANCE BETWEEN JOINTS PRESSING NEAR AN EXISTING PRESS CONNECTION

TUBE DIAMETER	MINIMUM DISTANCE REQUIRED	
OD INCH	INCH	MM
1/4"	1/4"	7
3/8"	1/4"	7
1/2"	1/4"	7
5/8"	1/4"	7
3/4"	1/4"	7
7/8"	1/4"	7
1-1/8"	1/4"	7

SOLDERING OR BRAZING NEAR AN EXISTING PRESS CONNECTION

Brazing near Streamline® ACR Press Fittings should be avoided. The installer should take precautions to keep the press connection cool. These methods may include:

1. Wrapping the press connection with a cold wet cloth.
2. Fabricating solder connections prior to installing the press fitting.
3. Applying heat barrier spray, gels, or putty to avoid heat transfer to the press fitting.

TUBE DIAMETER	SOLDERING	BRAZING	
	MINIMUM DISTANCE	MINIMUM DISTANCE WET WRAPPED	MINIMUM DISTANCE UNPROTECTED
OD INCH	INCH	INCH	INCH
1/4"	1-1/2"	5"	10"
3/8"	1-1/2"	5"	10"
1/2"	1-1/2"	5"	10"
5/8"	1-1/2"	6"	12"
3/4"	2-1/4"	7"	14"
7/8"	3"	8"	16"
1-1/8"	4"	11"	22"

PRESSING NEAR AN EXISTING SOLDERED OR BRAZED CONNECTION

It is important that there is no foreign debris or residual brazing on the tubing to be inserted into the Streamline® ACR Press fitting. The surface condition on the area of press joint should be clean and free from debris and comply with ASTM-B280 or ASTM-B88 type K or L. The area of the braze joint shall be cooled down before insertion.

TUBE DIAMETER	MINIMUM DISTANCE REQUIRED	
OD INCH	INCH	MM
1/4"	3"	25.4
3/8"	3"	25.4
1/2"	3"	25.4
5/8"	3"	25.4
3/4"	3"	25.4
7/8"	3"	25.4
1-1/8"	3"	25.4

ELECTRICAL CONTINUITY

Streamline® ACR Press Fittings maintain ground continuity without the need for additional ground continuity straps. The fittings must not be used as a source of electrical ground.

FLARE ADAPTER TIGHTENING TORQUE

TUBE DIAMETER	FLARE TIGHTENING TORQUE (DO NOT OVERTIGHTEN)	
OD INCH	TORQUE FT-LBS	TORQUE N-M
1/4"	10-13	14-18
3/8"	25-30	34-42
1/2"	35-44	49-61
5/8"	49-59	68-82
3/4"	67-81	90-110

For best results, apply a small amount of refrigerant oil to the flare face during installation.

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TESTING INSTRUCTIONS FOR STREAMLINE® ACR PRESS FITTINGS:

After installing Streamline® ACR Press fittings, the system shall be tested for leaks. This can be done by pressurizing the system with dry nitrogen to a minimum of 50% of the system maximum operating pressure, up to 700 PSI. If holding pressure for extended periods (up to 24 hours), then temperature impacts may need to be taken into account. System leaks can be detected by using a soapy water spray or by utilizing a tracer gas and electronic leak detector.

Any leaks that are identified will need to be cut out and replaced. When replacing a fitting, installers should carefully inspect the surface of that tube before using another fitting to ensure a longitudinal scratch or other surface defect will not result in another leak. It is not allowable to braze the end of a leaking fitting. Always conduct a subsequent pressure test after any repairs are made. Federal, state, and local codes and regulations governing installation and testing must always be followed.

SPECIFICATION LANGUAGE:

Mechanical ACR Press Fitting: Shall conform to material requirements of ASME B16.22 and be listed to UL 207. Primary and secondary sealing rings for press fittings shall be HNBR and factory installed.

a. Continuous Operating Pressure: 700 PSI / 48 BAR Max
b. Continuous Operating Temperature: -40°F / -40°C to 250°F / 121°C
c. Factory Installed HNBR Engineered Sealing Ring
d. Sealing Ring Temperature Rating: -40°F / -40°C to 300°F / 149°C

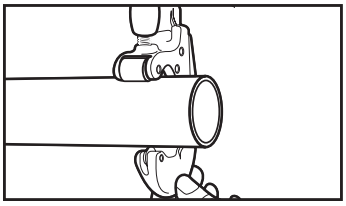
-OR-

Mechanical ACR pressed copper shall conform to the approved jointing manufacturers listed below.

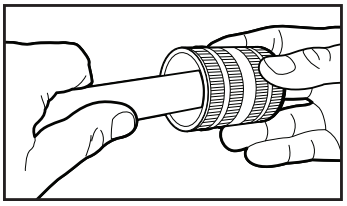
1. Mueller Streamline® ACR Copper Press Fittings

Streamline®

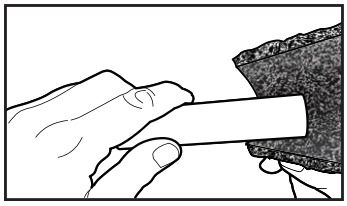
Installation Instructions (1/4" - 1-1/8")



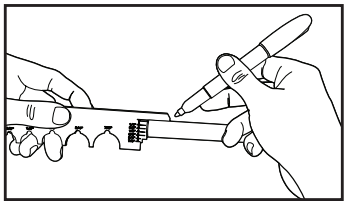
1 Cut tube square using a tube cutter or fine tooth saw.



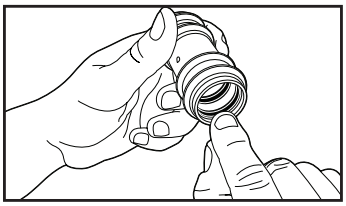
2 Deburr tube ID & OD using a deburring tool. Ensure tube ends are free of any burrs or sharp edges.



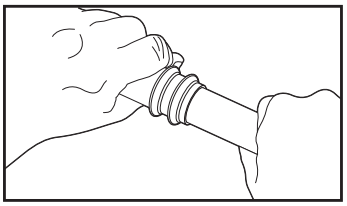
3 Clean and smooth tube surface using abrasive pad. Tube surface should be free of indentation, scratches and deformations.



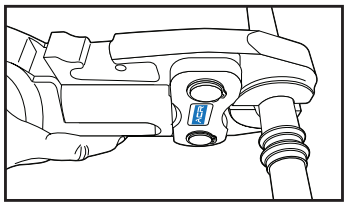
4 Mark tube to proper fitting insertion depth with the Streamline® ACR Press Gauge or use the insertion depth chart below.



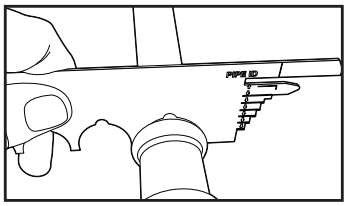
5 Check both fitting beads to ensure two seals per cup are present.



6 Slightly rotate the fitting while sliding it onto tube. Slide all the way to insertion mark & make contact with stop.



7 Place press jaw over both beads at a right angle to the tube. Start the pressing process. See tool manufacturer for tool instruction.



8 Verify connection is secure using the Streamline® ACR Press Gauge between o-ring beads. Rotate gauge to avoid interference with flashing.

Streamline® ACR Press Fitting Insertion Depth Chart (1/4" - 1-1/8")							
Tube Size (OD)	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"	1-1/8"
Insertion Depth	1"	1-1/16"	1-3/16"	1-5/16"	1-3/8"	1-7/16"	1-1/2"

Failure to follow all instructions could affect joint/system integrity and may lead to property damage. Call Customer Service at 1-800-FITTING if you have any questions or need assistance.

Eye and hand protection must be worn.

⚠ WARNING

With approved press tool & jaws, such as the Milwaukee® Streamline® ACR Press Jaws. Failure to use correct jaws will affect joint/system integrity & may lead to property damage. Please see specific tool manufacturer for tool instruction.

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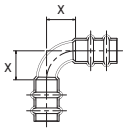
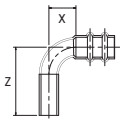
90° ELBOW
P x P



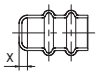
Item No.	Diameter OD	X	Wgt.	Inner
RP02715	1/4"	0.51	0.02	5
RP02716	3/8"	0.75	0.03	5
RP02717	1/2"	0.75	0.05	5
RP02722	5/8"	0.87	0.08	3
RP02728	3/4"	1.08	0.10	3
RP02734	7/8"	1.08	0.12	3
RP02747	1-1/8"	1.30	0.18	2

90° ELBOW • STREET
FTG x P



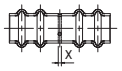
Item No.	Diameter OD	X	Z	Wgt.	Inner
RP02808	1/4"	0.51	1.56	0.01	5
RP02809	3/8"	0.75	1.87	0.03	5
RP02817	1/2"	0.75	1.93	0.05	5
RP02822	5/8"	0.87	2.19	0.07	3
RP02828	3/4"	1.08	2.42	0.09	3
RP02834	7/8"	1.08	2.52	0.12	3
RP02847	1-1/8"	1.30	2.83	0.17	2

CAP
P



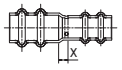
Item No.	Diameter OD	X	Wgt.	Inner
RP07002	1/4"	0.10	0.01	5
RP07004	3/8"	0.16	0.01	5
RP07006	1/2"	0.18	0.02	5
RP07007	5/8"	0.22	0.03	2
RP07008	3/4"	0.18	0.04	2
RP07009	7/8"	0.18	0.05	2
RP07011	1-1/8"	0.18	0.07	1

COUPLING • STAKED STOP
P x P



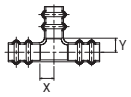
Item No.	Diameter OD	X	Wgt.	Inner
RP10141	1/4"	0.08	0.01	5
RP10143	3/8"	0.08	0.02	5
RP10144	1/2"	0.08	0.04	5
RP10145	5/8"	0.08	0.06	5
RP10157	3/4"	0.08	0.07	2
RP10146	7/8"	0.08	0.09	2
RP10147	1-1/8"	0.08	0.12	2

COUPLING • REDUCING
P x P



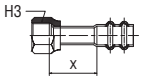
Item No.	Diameter OD	X	Wgt.	Inner
RP01011	3/8" x 1/4"	0.24	0.03	5
RP01019	1/2" x 3/8"	0.24	0.03	5
RP01023	5/8" x 1/2"	0.24	0.05	2
RP01029	3/4" x 5/8"	0.24	0.06	2
RP01035	7/8" x 3/4"	0.24	0.08	2
RP01049	1 1/8" x 7/8"	0.31	0.12	1

TEE
P x P x P



Item No.	Diameter OD	X	Y	Wgt.	Inner
RP04000	3/8"	0.39	0.39	0.09	5
RP04001	1/2"	0.47	0.47	0.16	5
RP04006	5/8"	0.55	0.55	0.21	2
RP04017	3/4"	0.59	0.59	0.25	2
RP04031	7/8"	0.67	0.67	0.32	2
RP04048	1-1/8"	0.79	0.79	0.41	1

FLARE
P x FLR SAE



Item No.	Diameter OD	X	H3	Wgt.	Inner
RP15725	1/4"	1.46	7/16"-20	0.18	5
RP15726	3/8"	1.50	5/8"-18	0.26	5
RP15727	1/2"	1.50	3/4"-16	0.38	5
RP15728	5/8"	1.61	7/8"-14	0.55	2
RP15729	3/4"	1.95	1-1/16"-14	0.78	2