

## 2.1 -A -1 - FITTINGS



aerospace  
climate control  
electromechanical  
filtration  
fluid & gas handling  
hydraulics  
pneumatics  
process control  
sealing & shielding



# ZoomLock® MAX

## Press-to-Connect Refrigerant Fittings

Catalog K-3, Engineering Submittal, June 2021



ENGINEERING YOUR SUCCESS.

## PARKER SAFETY GUIDE FOR SELECTING AND USING ZOOMLOCK MAX FITTINGS AND RELATED ACCESSORIES

### **WARNING**

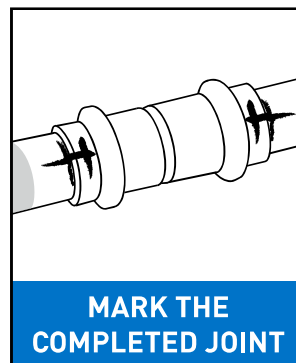
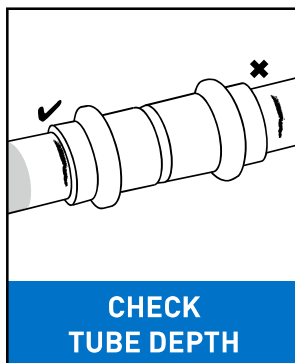
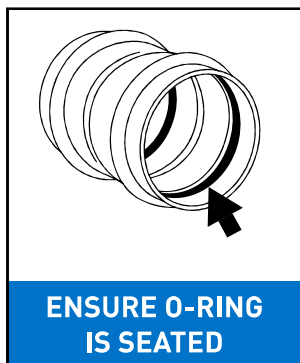
**FAILURE TO FOLLOW INSTALLATION INSTRUCTIONS, IMPROPER SELECTION OR IMPROPER USE OF ZOOMLOCK MAX FITTINGS AND RELATED ACCESSORIES (“PRODUCTS”) CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE. POSSIBLE CONSEQUENCES OF FAILURE, IMPROPER SELECTION OR IMPROPER USE OF THESE PRODUCTS INCLUDE BUT ARE NOT LIMITED TO:**

- Fittings thrown off at high speed.
- High velocity fluid discharge.
- Explosion or burning of the conveyed fluid.
- Electrocution from high voltage electric power lines.
- Contact with suddenly moving or falling objects that are controlled by the conveyed fluid.
- Injections by high-pressure fluid discharge.
- Dangerously whipping copper line.
- Contact with conveyed fluids that may be hot, cold, toxic or otherwise injurious.
- Sparking or explosion caused by static electricity buildup or other sources of electricity.
- Sparking or explosion from flammable liquids.

**ZOOMLOCK MAX FITTINGS CAN ONLY BE CONNECTED WITH JAWS/TOOLS DESIGNED FOR USE WITH ZOOMLOCK MAX PRODUCTS. BEFORE SELECTING OR USING ANY OF THESE PRODUCTS, IT IS IMPORTANT THAT YOU READ AND FOLLOW THE INSTALLATION INSTRUCTIONS.**

## KEY STEPS FOR SAFETY

**ZoomLock MAX fittings are intended to be installed by HVAC/R professionals that have been trained specifically on ZoomLock MAX products. For product training visit [www.zoomlocktraining.com](http://www.zoomlocktraining.com).**



### **WARNING – USER RESPONSIBILITY**

**Failure or improper selection or improper use of the products described herein or related items can cause death, personal injury and property damage.**

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.

The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.

To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

For safety information see the Safety Guide at [www.parker.com/safety](http://www.parker.com/safety) or call 1-800-CParker.

### **OFFER OF SALE**

The items described in this document are hereby offered for sale by Parker Hannifin Corporation, its subsidiaries or its authorized distributors. This offer and its acceptance are governed by the provisions stated in the detailed “Offer of Sale” elsewhere in this document or available at [www.parker.com](http://www.parker.com).

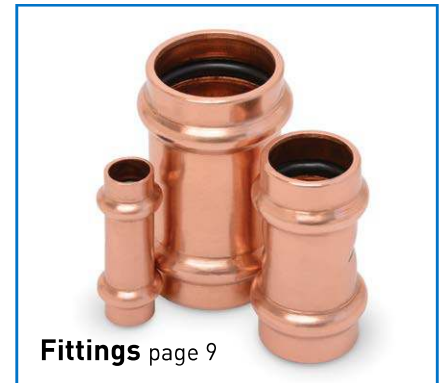
Catalog K-3, June 2021 supersedes Catalog K-3, May 2021 and all prior publications.

# ZoomLock MAX

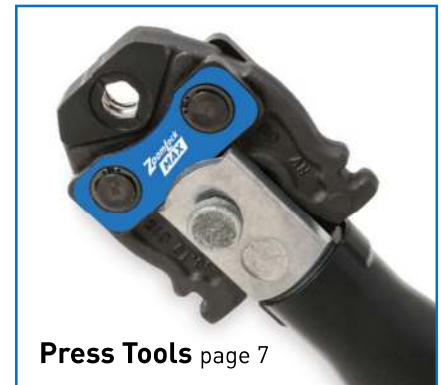
## Press-to-Connect Refrigerant Fittings

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### Compatible Components

To make a system convenient to install, ODM x ODM ZoomLock compatible components are available including:

- Ball Valves
- Moisture and Liquid Indicators
- Solenoid Valves
- Filter-Driers



### ATTENTION!

WARRANTY COULD BE VOID IF ZOOMLOCK MAX IS NOT APPLIED PER INSTRUCTIONS! CAREFULLY READ ALL INSTALLATION INSTRUCTIONS (SEE PAGES 20-22) AND WATCH VIDEOS.



ZoomLockMAX.com



*Connect Copper in Seconds,  
Improves Profitability for HVACR Companies*

**ZoomLock<sup>®</sup>**  
**MAX**

Rated up to  
**700 psi**  
**48 bar**

## **PRESS-TO-CONNECT REFRIGERANT FITTINGS**

ZoomLock<sup>®</sup> MAX fittings, designed for the air conditioning and refrigeration markets, allow contractors to make secure leak-free connections in seconds. It means less time on the job and more money in the contractor's pocket.

ZoomLock MAX fittings provide clean, leak-proof connections for refrigerant lines up to 700 psi. By eliminating concerns about gas and flames, ZoomLock MAX fittings offer more flexibility in where and when you can work, plus there's no need to nitrogen-purge the lines.



### **The ZoomLock MAX Advantage**

- Hermetically sealed packaging for debris-free fittings
- Hard, robust copper fittings made from refrigerant grade copper
- Proven three-point press technology providing a leak-free and secure joint
- No more crimp gauge needed—connect the fitting with one complete cycle
- Jaws available for most professional crimping tool brands, both large and compact



**HELPING YOUR BUSINESS WIN MORE BUSINESS™**

# ZoomLock MAX

## Press-to-Connect Refrigerant Fittings

### FEATURES AND BENEFITS

- **Flame-free:**  
Flame-free installation avoids the need for a fire permit and the risk of fire on site.
- **No Nitrogen Purge:**  
ZoomLock MAX is a mechanical joint, thus eliminating the need for nitrogen purge during the jointing process.
- **Lower Installed Cost:**  
A professional fitting which is quick and simple to install, saving time and money.
- **Higher Productivity, Improved Flexibility:**  
Work may be completed during working hours / public access, by a single employee.
- **Site Access:**  
Easy access to work sites, no gas bottles required.
- **Quality Designed In:**  
Reliable, repeatable, permanent, tamper-proof connections every time.
- **3-Point Press:**  
Three press points, one each side of the bead, and one press compressing the O-ring. This provides a secure joint.
- **High Quality O-ring:**  
High quality HNBR O-ring forms a secure leak-free joint when pressed.
- **Protected O-ring:**  
Lead-in edge design aids tube insertion and helps protect the O-ring from damage or displacement.
- **Electrical Continuity:**  
Maintains ground continuity without the need for additional ground continuity straps.
- **Field Proven:**  
Press fit technology, field proven over two decades and millions of installed fittings worldwide.
- **Compact Tooling:**  
Light compact tooling provides easy access to tightly spaced tube runs.
- **Tooling Concept:**  
Only specially designed ROTHENBERGER jaws are approved for use with ZoomLock MAX fittings.
- **Certification:**  
ZoomLock MAX is UL listed, refrigerant fitting SA7511.  
ZoomLock MAX is UL listed, approved use for field and factory installations.
- **Support:**  
Backed by ZoomLock's experienced technical support and customer service teams.



### Applications

ZoomLock MAX fittings are designed for the following applications:

- Refrigeration
- Air Conditioning
- Heat Pump (Refrigeration side)
- VRF and VRV



# ZoomLock MAX

## Press-to-Connect Refrigerant Fittings

### TECHNICAL DATA

#### Product Parameters

- **Applications:**
  - Refrigeration
  - Air Conditioning
  - Heat Pump (Refrigeration side)
  - VRF and VRV
- **Continuous Operating Temperature:**  
-40°F to 250°F / -40°C to 121°C
- **O-ring Temperature Range:**  
-40°F to 284°F / -40°C to 140°C
- **Maximum Rated Operating and Abnormal Pressure:**  
700 psi / 48 bar / 4800 kPa
- **Burst Pressure:**  
>3X Maximum operating and abnormal pressure  
>2,100 psig / >14400 kPa / >144 bar
- **Vacuum Pressure Capability:**  
200 Microns
- **Leak Tightness:**  
Helium  $\leq 7.5 \times 10^{-7}$  Pa.m<sup>3</sup>/s at +20°C, 10 bar
- **Size Availability (Inches):**  
1/4, 3/8, 1/2, 5/8, 3/4, 7/8, 1-1/8, 1-3/8

#### Fitting Materials

- **Fitting Body:**  
Refrigerant Grade Copper  
(UNS C12200 min 99.9% pure)
- **O-Ring:**  
HNBR

#### Fitting Warranty

- 10-year warranty. Refer to page 26 for more details.

#### Compatibility

- **Approved Lubricants:** POE, PAO, PVE, AB and MO
- **Approved Connections:**  
Copper to Copper
- **Approved Tube:**  
Copper tube conforming to\* ASTM B280, ASTM B88, or ASTM B743
- **Approved Copper Tubing:**  
Hard Copper (Drawn)  
- Type ACR, L, K  
Soft Copper (Annealed)  
- Type ACR, L, K

#### Approved Refrigerants

32**	422D	454A**
125	427A	454B**
134a	438A	454C**
290**	444A**	457A**
404A	447A**	459A**
407A	447B**	507A
407C	448A	513A
407F	449A	513B
407H	450A	600A**
410A	452A	718
417A	452B**	1234yf**
421A	452C	1234ze**
422B	HYCOOL 20	

\* Please refer to ZoomLock MAX Tube Compatibility Table, page 18.

\*\* When using refrigerants classified A2L (lower flammability), A2 (flammable) and A3 (higher flammability) additional/ specific standards, local rules and regulations, codes of practice and by-laws may be applicable.

ZoomLock MAX fittings are NOT suitable for R-717, R-723, R-764, R-744 refrigerants. Refer to ZoomLockMAX.com for the latest approved refrigerants list.

#### Agency Approvals and Certifications

- UL Listed Refrigerant fitting SA7511
- UL Listed: Approved use for field and factory installations
- UL 109 - 7 Pull test, compliant
- UL 109 - 8 Vibration test, compliant
- UL 1963 - 79 Tests of gaskets and seals used in refrigerant systems, compliant
- ISO 5149-2:2014, Refrigerating systems and heat pumps - Safety and environmental requirements - Part 2: Design, construction, testing, marking and documentation compliant
- ISO 5149-2, 5.3.2.2.3 Strength pressure test, compliant
- ISO 14903 - 7.4 Tightness test, compliant
- ISO 14903 - 7.6 Pressure temperature vibration tests (PTV), compliant
- ISO 14903 - 7.8 Freezing test, compliant
- ASTM G85 salt spray (fog) compliant
- ASHRAE 15 - 2016 Safety Standard for Refrigeration Systems, compliant
- ASME B31.5 - 2016 Refrigeration Piping and Heat Transfer Components, compliant
- 2018, 2015, 2012, 2009 and 2006 International Mechanical Code (IMC), certified, ICC-ES, PMG-1440
- 2018, 2015, 2012, 2009 and 2006 International Residential Code (IRC), certified, ICC-ES, PMG-1440
- 2018, 2015, 2012, 2009 and 2006 Uniform Mechanical Code (UMC), certified, ICC-ES, PMG-1440

Mechanical joints shall not be used on annealed temper copper tube in sizes larger than 7/8 inch (22.2 mm) OD size per International Mechanical Code (IMC) and 3/4 inch nominal size per Uniform Mechanical Code (UMC).

## ZoomLock MAX



#### Quality Assurance

ZoomLock MAX is manufactured in an ISO 9001 certified facility committed to providing quality products and support.

# ZoomLock MAX

## Press-to-Connect Refrigerant Fittings

### PRESS TOOLS AND JAWS

Parker Hannifin recommends the use of ROTHENBERGER press tools in combination with ZoomLock MAX ROTHENBERGER jaws. However other press tools may be used in combination with ZoomLock MAX ROTHENBERGER jaws. See table below for tool compatibility.

#### Press Tools

##### ROTHENBERGER ROMAX 4000

Includes the ROTHENBERGER ROMAX® 32 kN press tool, 2 batteries and battery charger.

- **Description:** MZK-TK-R4000
- **Part Number:** 871441

##### ROTHENBERGER Twin Turbo US

Includes the ROTHENBERGER Twin Turbo US 24 kN press tool, 2 batteries and battery charger.

- **Description:** MZK-TK-RCTT
- **Part Number:** 871439



**ROTHENBERGER  
ROMAX 4000  
32 kN**



**ROTHENBERGER  
Twin Turbo US  
24 kN**

COMPATIBLE PRESS TOOLS		32 kN	24 kN	19 kN
ROTHENBERGER	ROMAX® 3000	✓	—	—
	ROMAX® 3000 AC	✓	—	—
	ROMAX® 4000	✓	—	—
	ROMAX® AC ECO	✓	—	—
	Twin Turbo US (TT US)	—	✓	—
	ROMAX® Compact TT	—	—	✓
	ROMAX® Compact	—	—	✓
DEWALT	DCE200	✓	—	—
KLAUKE	UAP2/UNP2	✓	—	—
	UAP3L/UAP4L	✓	—	—
	UP2EL14	✓	—	—
	MAP2L19	—	—	✓
	MAP219	—	—	✓
MILWAUKEE	M12 Force Logic	—	✓	—
	M18 Force Logic	✓	—	—
HILTI	NPR 019	—	—	✓
NIBCO	PC-100	✓	—	—
	PC-280	✓	—	—
REMS	Power-Press	✓	—	—
	Akku-Press	✓	—	—
RIDGID	320-E	✓	—	—
	CT400	✓	—	—
	RP 241	—	✓	—
	RP 240	—	✓	—
	RP 210-B	—	✓	—
	RP 200-B	—	✓	—
	RP 330-B	✓	—	—
	RP 330-C	✓	—	—
	RP 340	✓	—	—
	RP 350	✓	—	—
VIRAX	Viper® P25+	✓	—	—
	Viper® P25+	✓	—	—

ZoomLock MAX fittings can only be connected with jaws designed for use with ZoomLock MAX products as shown on page 8.



# ZoomLock MAX

## Press-to-Connect Refrigerant Fittings

### PRESS TOOLS AND JAWS (Continued)

#### Jaws



**32 kN  
ROTHENBERGER  
Jaw Set**



**24 kN  
ROTHENBERGER  
Jaw Set**



**19 kN  
ROTHENBERGER  
Jaw Set**

#### JAW SETS / PART NUMBERS

Jaw Sets 7 Piece 1/4, 3/8, 1/2, 5/8, 3/4, 7/8, 1-1/8	MZK-32KN JAW KIT (7 PIECE) 871408	MZK-24KN JAW KIT (7 PIECE) 871409	MZK-19KN JAW KIT (7 PIECE) 871410
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#### INDIVIDUAL JAWS / PART NUMBERS

<b>1/4"</b>	MZK-32KN JAW-1/4" 871428	MZK-24KN JAW-1/4" 871419	MZK-19KN JAW-1/4" 871411
<b>3/8"</b>	MZK-32KN JAW-3/8" 871429	MZK-24KN JAW-3/8" 871420	MZK-19KN JAW-3/8" 871412
<b>1/2"</b>	MZK-32KN JAW-1/2" 871430	MZK-24KN JAW-1/2" 871421	MZK-19KN JAW-1/2" 871413
<b>5/8"</b>	MZK-32KN JAW-5/8" 871431	MZK-24KN JAW-5/8" 871422	MZK-19KN JAW-5/8" 871414
<b>3/4"</b>	MZK-32KN JAW-3/4" 871432	MZK-24KN JAW-3/4" 871423	MZK-19KN JAW-3/4" 871415
<b>7/8"</b>	MZK-32KN JAW-7/8" 871433	MZK-24KN JAW-7/8" 871424	MZK-19KN JAW-7/8" 871416
<b>1-1/8"</b>	MZK-32KN JAW-1 1/8" 871435	MZK-24KN JAW-1 1/8" 871426	MZK-19KN JAW-1 1/8" 871418
<b>1-3/8"*</b>	MZK-32KN JAW-1 3/8" 871436	—	—

\*Depth gauge (P/N 870517) is included with the 1-3/8" jaw.



**WARNING: ZoomLock MAX fittings can only be connected with jaws/tools designed for use with ZoomLock MAX products.**