Imagine Life Without Brazing

Parker

2015 DEALER DESIGN AWARDS
the NEWS | GOLD

AHR EXPO
INNOVATION AWARDS
2016
WINNER

ZoomLock™

Braze-Free HVAC/R Fittings

SMART Solutions.
Speed and Precision for the Modern Technician

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Imagine Life Without Brazing

Less Time
Less Work
Less Equipment
Less Skill Needed

FOR HVAC/R
RATED UP TO 700 PSI

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Resolve Productivity Needs

- **Significant Time Savings**
- **No Braze Permits**
- **No Nitrogen Purge**
- **No Special Training Required**
- **More Flexible Access To Jobsite**
- **More Repeatable Than Brazing**
- **Reduced Call Backs Due To Leaks**
- **No Fire Spotters**
- **No False Smoke Alarms**
- **Improved System Cleanliness**

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Competitive Assessment

Rating Criteria	Reflok	Lokring	Parker ZoomLock
Target Industry	High Pressure HVAC	High Pressure HVAC	High Pressure HVAC
Part Count	6	4-6	1
Installation Complexity (Tools and Prep)	Medium	Medium	Low
Application Parameters-Temp	-50°F - 300°F	-50°F - 300°F	-40°F - 300°F
Application Parameters- Max Op. Pressure (psi)	750	750	700
Application Parameters- Max Burst Pressure (psi)	3000	3000	3000
Application Parameters-Size Availablity	1/4" - 2 1/8"	1/4" - 1 3/8"	1/4" - 1 1/8"*
Cost/Price	$$	$$	$
* Currently Available up to 1 1/8" but plans to expand up to 3"			

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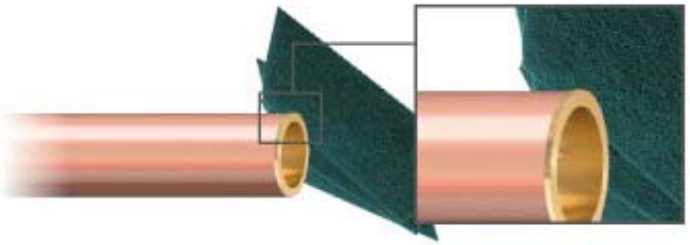
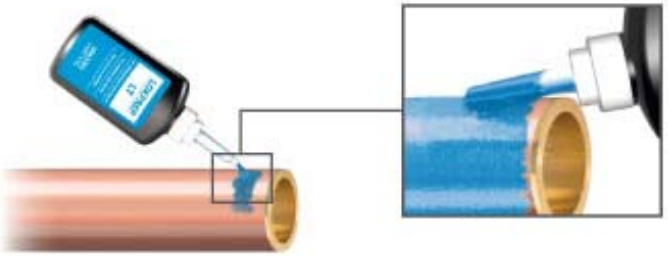
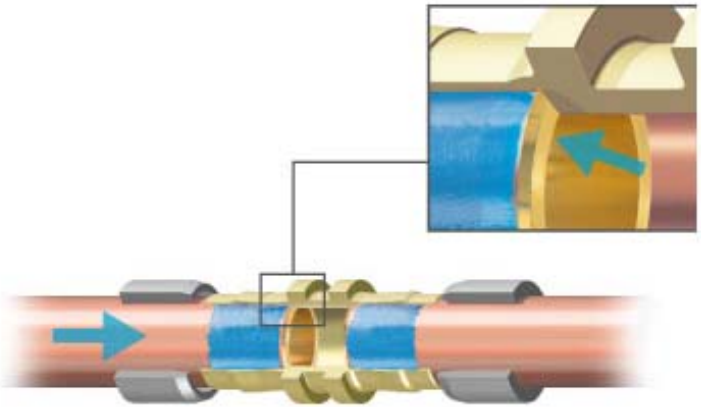
Installation Assessment Lokring



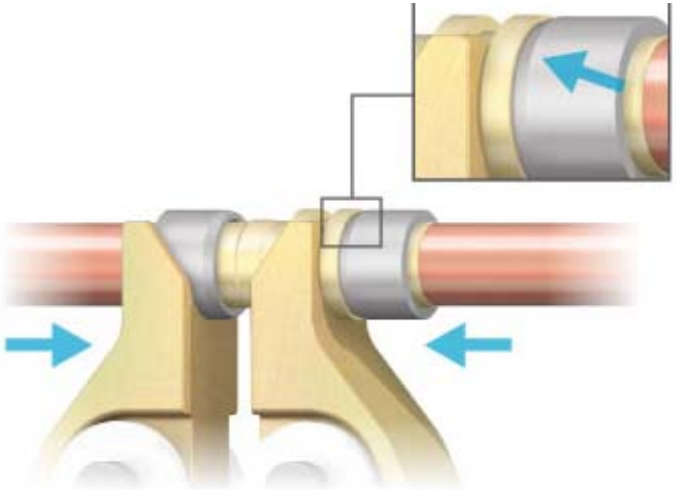
STEP 1 I TREAT THE TUBE ENDS AND USE INSERTS



STEP 2 I APPLY LOKPREP



STEP 3 I INSERT TUBES



STEP 4 I PRESS

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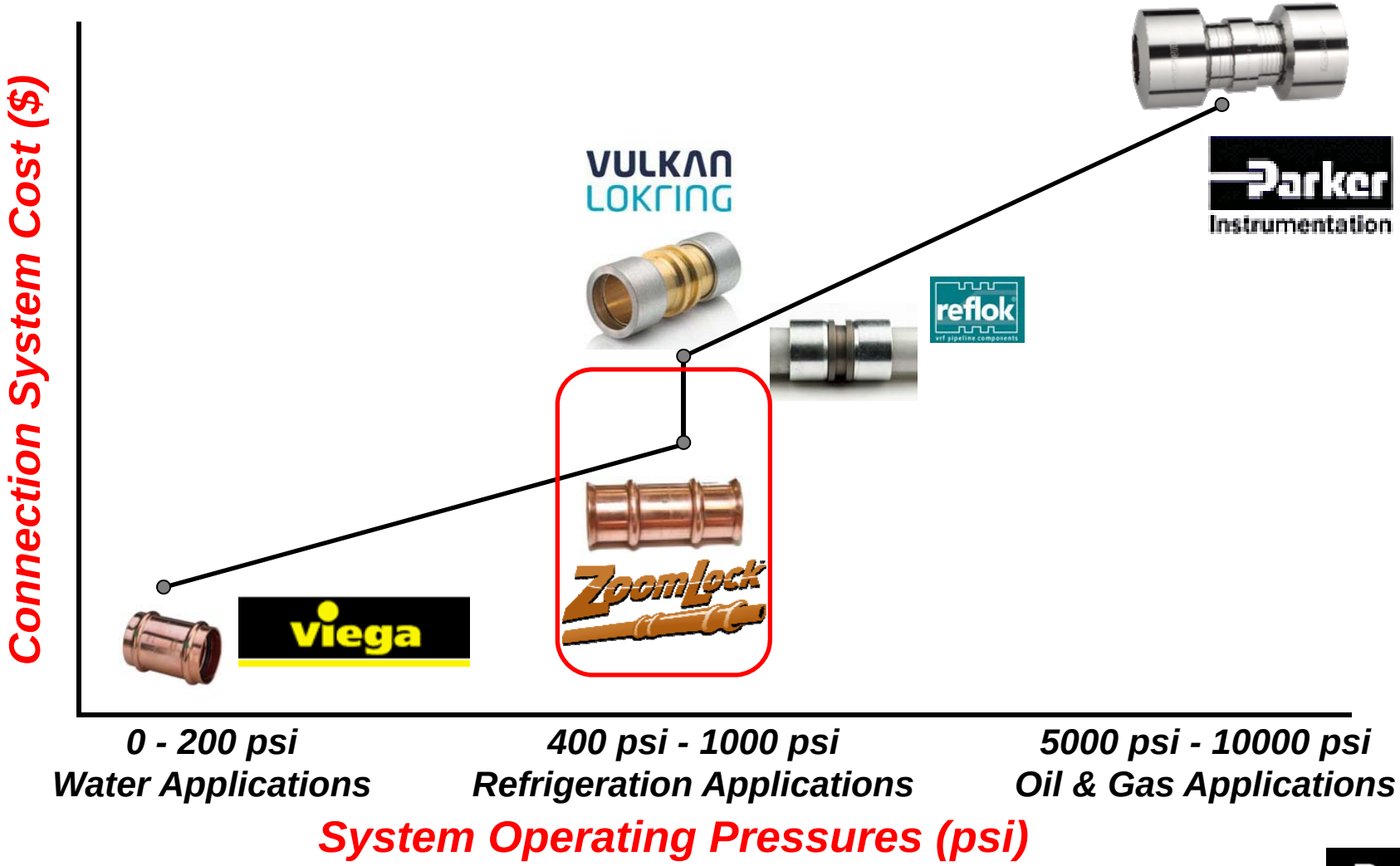
Connection System Technology Cost Comparison



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Equipment Comparison

Brazing

- ***Torch Kit with Gas Regulators***
- ***Gas Tanks (3)***
  - ***Nitrogen, Acetylene, Oxygen***
- ***Tube Cutter***
- ***De-burring Tool***
- ***Degreaser***
- ***Scotch-Bright™***
- ***Cooling Rag***
- ***Access To Water***
- ***Soldier and Flux***
- ***Fire Extinguisher***
- ***Fire Safety Equipment***
- ***Burn Permit***
- ***Fire Spotter***
- ***Respirator***
- ***Goggles***
- ***Gloves***
- ***Pliers***

VS

Braze-free

- ***RLS Crimping Set***
- ***Tube Cutter***
- ***De-burring Tool***
- ***Scotch-Bright™***
- ***Rag***

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Current Applications

- **VRF and Mini-Split**
- **Residential Split System**
- **Commercial Rooftops**
- **Display Cases**
- **Walk-In Coolers**
- **Reach-In Merchandisers**

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Fitting Development

3rd Party Testing

- **Accelerated Durability Testing – Creative Thermal Solutions**
  - Accelerated Frost/Defrost Simulation
  - Accelerated Thermal Cycling
  - Vibration Durability Testing
- **Corrosion Testing – Touchstone Research Laboratory**
- **Helium Leak Testing – Edison Welding Institute**
- **Time Study of Installation – JB Engineering and Code Consulting**
- **Pressure Fatigue and Burst – UL**
- **Refrigerant Compatibility Testing on HNBR O-Ring Material**
- **Simulated Compressor Burnout- Acid Test**

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Fitting Development

In-House Testing

- **Axial Load Testing**
- **Vertical Freeze/Thaw**
- **Vacuum Pressure Testing**
- **Pressure Drop Testing**
- **Temperature Cycling (-25ºF to 300ºF)**
- **Temperature Cycling (-40ºF to 250ºF)**
- **Tube Imperfections and How it Affects Sealing Capability**
- **Dissimilar Metals-Corrosion Testing**
  - **Copper to Aluminum**
  - **Copper To SS**

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Helium Leak Test Results

Test Report by:

EWI®
THE MATERIALS JOINING EXPERTS

Figure 1. Test Set-up

Approximately 1900 times tighter than the industry accepted specification!

Industry leak specification: .106 oz./yr.

ZoomLock fittings have been 3rd party certified to have a maximum leak rate of 1 X 10^-8 Std.cc/sec which is equivalent to 5.556 X 10^-5 oz./yr.

Results: The maximum leak rate of all connections is summarized in Table 2. The maximum leak rate detected was 5.40E-09 std.cc/sec.

Table 2. Maximum Leak Rate per Tube O.D.

Tube O.D. (in)	Maximum Helium Leak std.cc/sec
0.250	4.00E-10
0.313	6.10E-10
0.375	1.30E-09
0.750	5.20E-09
0.875	5.40E-09
1.125	3.00E-10

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Time Study

Time Required To Install ACR Copper Elbow vs. RLS

42% - 64% Reduction in Labor Cost

Elbow Size (In)	Means Time (Hr)			PHCC National Labor Calculator		
	Brazed Fitting	RLS™ High Pressure Flame-free Fittings	Percent Labor of Brazed Fitting	Brazed Fitting	RLS™ High Pressure Flame-free Fittings	Percent Labor of Brazed Fitting
5/8	0.484	0.281	58%	0.65	0.267	41%
7/8	0.575	0.333	58%	0.78	0.280	36%
1-1/8	0.613	0.355	58%	0.91	0.333	37%

JB ENGINEERING AND CODE CONSULTING, P.C.
1661 Cardinal Drive • Munster, IN 46321
Phone: 219-922-6171 Fax: 219-922-6172
E-Mail: JBEngineer@aol.com

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Time Study

Conducted by:
Jay Peters, Principal Advisor, Codes and Standards International

Methodology:

A time study was conducted in a controlled environment, with two stations set up for joining refrigeration tube: one by brazing and one by making RLS™ press connections. Two different installers were used, one very experienced in making brazed connections and one very experienced in using the RLS™ press tool.

The two installers were timed independently making connections using various sized copper tube and fittings. Before timing began, tube was cut to length and the ends were prepared for connection (as these procedures are the same for both connection methods). Three connections were timed for each size of tube/fitting for each installer, and the three times were averaged. The results are shown in the table below.

LABOR TIME FOR INSTALLING A COPPER COUPLING

Fitting Size	1/4"	5/8"	1-1/8"
Brazed Connection	35 sec	42 sec	1:51 min
RLS™ Connection	24 sec	24 sec	25 sec
% Time Savings	31%	43%	77%

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Field Test Sites

Residential and Commercial Installs

RLS Inc:

- **AC Units (Office): Installed 2 years ago on units above main office building**
- **AC Units (R&D): Installed 3 years ago on lines outside R&D area**

Parker Test Facilities: Installed 2 years ago

- **Refrigeration Test Lab- Compressor Rack Room**
- **Refrigeration Test Lab- Reach-In Cooler**
- **AC Test Lab- Residential HP**

Private Residential AC units (2 separate trials): Installed 3 years ago. Running with no reported issues. Units were monitored twice each year

National Sales Co: Samsung VRF Install. Installed 6 Months ago. No Issues.

OEM's:

Price Castle: Total testing time approx. 2.5 years. Upwards on 8k-10k fittings in field.

IMI Cornelius: Testing time 12 months. Applied on some of their chiller units

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ZoomLock Installs

Application: (2) R-407C VRF Units
Contractor: C.E. Jarrell, Earth City, MO
Objective: Data Center Cooling

Application: (18) Trane 5 Ton R-410A Split Residential Type Units
Contractor: Mechanical Air
Objective: Storage Climate Control

Application: (70) R-410A Samsung VRF Units (114 Tons)
Contractor: Lee Mechanical, Park Hills, MO
Objective: Comfort Control

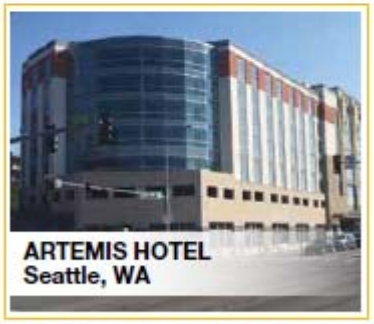
Application: Standalone Ice Machine
Contractor: Laconia Refrigeration, Laconia, NH
Objective: Refrigeration

Application: Supermarket Display Cases and Refrigeration Equipment
Contractor: Steve Eshenburg, Callicoon, NY
Objective: Cutting Room Refrigeration

Application: (2) R-410A VRF Units
Contractor: C&R Mechanical Co., St. Louis, MO
Objective: Comfort Control

Application: R-410A Carrier VRF, $5,000 worth of fittings
Contractor: Scalise Industries (Emcor), Lawrence, PA
Objective: Comfort Control

Application: Daikin R-410A Liquid Line Leak - no flame allowed
Contractor: Davis Mechanical, Syracuse, NY



Application: 35 Mitsubishi City Multi Units, 5 Mitsubishi Mini Splits, 1 Roof top package unit
Contractor: Apollo Heating and Cooling, Kennewick, WA
Objective: Comfort Control

Application: R-404A Walk-In Coolers, Refrigerated Glass Cases, Walk-In Freezer
Contractor: Joy's HVAC and Refrigeration, Farmington, NH
Objective: Refrigeration

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ZoomLock

Companies Buying-In To ZoomLock

Museum of Fine Arts Boston

Disney

BOEING (Facilities)

Disney's Hollywood Studios

Universal Orlando Resort

at&t

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Part Nomenclature

PZK - R1814 - HNBR

Parker ZoomLocK

Fitting Type
- C-Coupling
- E-Elbow
  - -E90 (90º)
  - -E45 (45º)
- R-Reducer
- T- Tee
- RC- Repair Coupling
- F- SAE Flare

Fitting Size

Numbers in 1/16”
1#- Inlet and Outlet the same
Ie.. C18 = Coupling 1 1/8” inlet and Outlet
2#s’- Inlet and Outlet Different
ie.. R1814 = Reducer 1 1/8” to 7/8”

O-Ring Material
- -HNBR
- -CR

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Available Tool Kits

Zero Jaw Tool Kit
PZK-TK0 (Item # 770000)

All Kits Include:

- Crimping Tool
- Battery Charger
- 2 Lithium-Ion Rechargeable Batteries
- Deburring Tool
- Tubing Cutter
- RLS Crimp Gauge

3-Jaw Tool Kit
PZK-TK3 (Item # 770001)

Also Includes:

- 3/8” Jaw
- 1/2” Jaw
- 7/8” Jaw

5-Jaw Tool Kit
PZK-TK5 (Item # 770002)

Also Includes:

- 3/8” Jaw
- 1/2” Jaw
- 5/8” Jaw
- 7/8” Jaw
- 1 1/8” Jaw

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Jaw Availability

June Availability

Pressing Jaws

Pressing jaws, ranging in sizes from 1/4" through 1-3/8", may be purchased individually.

Size (Inches)	Klauke Compatible Jaw		RIDGID Compatible Jaw*	
	Part Number	Description	Part Number	Description
1/4	770200	PZK-J4	770210	PZK-RJ4
5/16	770201	PZK-J5	770211	PZK-RJ5
3/8	770202	PZK-J6	770212	PZK-RJ6
1/2	770203	PZK-J8	770213	PZK-RJ8
5/8	770204	PZK-J10	770214	PZK-RJ10
3/4	770205	PZK-J12	770215	PZK-RJ12
7/8	770206	PZK-J14	770216	PZK-RJ14
1-1/8	770207	PZK-J18	770217	PZK-RJ18
1-3/8	—	—	770218	PZK-RJ22

KLAUKE COMPATIBLE JAW KIT

(Item# 770208)

Availability:

- 8-Piece Jaw Kit
  - Includes 1/4" thru 1 1/8" Jaws
  - Carry case

RIDGID COMPATIBLE JAW KIT

(Item# 770219)

Tool/Jaw Compatibility

Tools	ZoomLock-Klauke Compatible Jaws	ZoomLock-RIDGID Compatible Jaws
Klauke ® (MAP1L, MAP2L)	X	
Nibco® Mini-Press Tool (PC-20M)	X	
Rothenberger® (16001 ROPress)	X	
HeatLink® (Model 11500)	X	
Uponor® (D6261632)	X	
RIDGID® (RP 210-B, RP200-B, RP100-B)		X

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Product Availability

Available NOW!

Couplings -

- 1/4” Item # 770500
- 5/16” Item # 770501
- 3/8” Item # 770502
- 1/2” Item # 770503
- 5/8” Item # 770504
- 3/4” Item # 770505
- 7/8” Item # 770506
- 1 1/8” Item # 770507

Long Radius Elbows -

- 1/4” Item # 770600
- 5/16” Item # 770601
- 3/8” Item # 770602
- 1/2” Item # 770603
- 5/8” Item # 770604
- 3/4” Item # 770605
- 7/8” Item # 770606
- 1 1/8” Item # 770607

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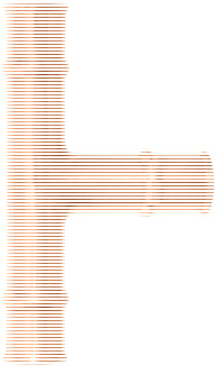
Product Availability

Slip Couplings:

- 1/4” Item # 770550 -Available NOW
- 5/16” Item # 770551 -Available NOW
- 3/8” Item # 770552 -Available NOW
- 1/2” Item # 770553 -Available NOW
- 5/8” Item # 770554 -Available NOW
- 3/4” Item # 770555 -Available NOW
- 7/8” Item # 770556 -Available NOW
- 1 1/8” Item # 770557 -Available NOW



Tees:

- 3/8” Item # 770702 - TBD
- 1/2” Item # 770703 - TBD
- 5/8” Item # 770704 April 14th
- 3/4” Item # 770705 April 14th
- 7/8” Item # 770706 April 14th
- 1 1/8” Item # 770707 April 14th

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Product Availability

Reducing Couplings -

- 3/8” to 1/4” Item #770800 - TBD
- 1/2” to 1/4” Item #770808 - TBD
- 1/2” to 3/8” Item #770801 - March 31st
- 5/8” to 1/4” Item #770809 - TBD
- 5/8” to 3/8” Item #770810 - March 31st
- 5/8” to 1/2” Item #770802 - April 14th
- 3/4” to 1/2” Item #770811 -Available NOW
- 3/4” to 5/8” Item #770803 -Available NOW
- 7/8” to 1/2” Item #770812 - TBD
- 7/8” to 5/8” Item #770804 - Available NOW
- 7/8” to 3/4” Item #770805 - Available NOW
- 1 1/8” to 1/2” Item #770813 - TBD
- 1 1/8” to 5/8” Item #770814 -Available NOW
- 1 1/8” to 3/4” Item #770806 - TBD
- 1 1/8” to 7/8” Item #770807 -Available NOW

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Product Availability

End Caps -

- **1/4” Item # 770900 -TBD**
- **5/16” Item # 770901 -TBD**
- **3/8” Item # 770902 -April 14th**
- **1/2” Item # 770903 -TBD**
- **5/8” Item # 770904 -March 31st**
- **3/4” Item # 770905 -Available NOW**
- **7/8” Item # 770906 -Available NOW**
- **1 1/8” Item # 770907 -April 7th**

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Product Availability

SAE Flares-

- **1/4” Item # 771000 -TBD**
- **3/8” Item # 771002 -TBD**
- **1/2” Item # 771003 -TBD**
- **5/8” Item # 771004 -TBD**
- **3/4” Item # 771005 -TBD**

Estimated Launch April 2016

Couplings - Available :

- 1 3/8” Item # 770508 -May

Long Radius Elbows - Available NOW:

- 1 3/8”” Item # 770608 - May

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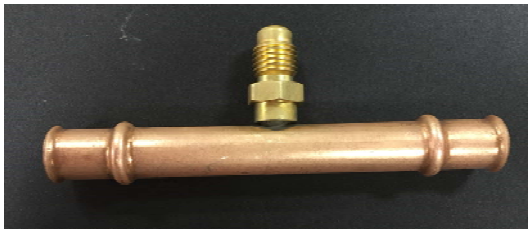
Fittings

- *45º Elbows*
- *Street Elbows*
- *Coupling w/Schrader Valve*

Q1 FY17



- *Reducing Tees*

Reducing Adapters ODM x ZoomLock

- *1 3/8"and Larger* → **Q2 FY17**

Accessories **Now**

- *Depth Gauge*

Components with ZoomLock

- *Catch-All Filter Dryers*
- *See-All Sight Glasses* **Q4 FY16**
- *Ball Valves*

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Product Specifications

Tube Compatibility

- Hard Copper (Drawn)
  - 1/4”- 1 1/8” –Type ACR, M, L
  - Type K only up to 7/8”
- Soft Copper (Annealed)
  - 1/4”- 1 1/8” –Type ACR, L
  - Type K only up to 7/8”

Now Approved for:

- ***Non-Potable Water (R718)***
- ***Glycol***

HVAC/R Qualified Refrigerants

- R1234yf, R1234ze, R125, R 32, R134a, R143a, R404A, R407A/C/F, R410A, R417A, R422D,R438A, R447A, R448A,R449A, R450A, R452A, R507, R513A

Operation Temperature Range

- (-40°F) to 300°F

Continuous Operating Temperature (COT)

- 250°F

Maximum Rated Pressure(MRP)

- 700 psi

Vibration Resistance (Conforms to UL109)

Ultimate Burst Pressure (psi)

- ¼” – 6330
- $^{5}/_{16}$” – 5611
- $^{3}/_{8}$” – 4735
- ½” – 3666
- $^{5}/_{8}$” – 3823
- ¾” – 3931
- $^{7}/_{8}$” – 3250+
- $1^{1}/_{8}$” – 3000+

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Certifications & Code Compliance

Underwriters Laboratories (UL) Listed

- **UL 207 Listed**
- **For use in high-pressure refrigeration piping systems to 700 psi**
- **All size fittings and connections in ancillary refrigeration products are approved**

International Code Council ES PMG Listed

Code and Industry Standard Compliant

The International Code Council Evaluation Service has found fittings to be in compliant with the following mechanical codes, residential building codes and industry standards:

- **2015 International Mechanical Code (IMC)**
- **2015 International Residential Building Code (IRC)**
- **2012 Uniform Mechanical Code (UMC)**

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OEM Approvals

MITSUBISHI ELECTRIC

Cooling and Heating Solutions

Application Note 2026:
Guidelines for Alternative Piping Materials & Piping Components

2. Copper Piping

Mitsubishi Electric recommends the use traditional annealed / ACR copper refrigerant piping whenever possible. This position is in line with the proven reliability that copper piping has been applied to over a very wide spectrum of refrigeration and air conditioning applications.

Mitsubishi Electric does, however, recognize that some circumstances require the use of alternative piping or connection approaches such as aluminum piping or other industry approved piping connections/techniques such as compression type fittings (ex: Reflok, LokRing, ZoomLock, or other similar compression type fittings).

6. Warranty

The use of alternative piping materials and piping compression type fittings will not void the warranty for CITY MULTI, provided all the guidelines in this Application Note are followed.

TRANE

DUCTLESS PRODUCT SUPPORT

General VRF Application Bulletin

Alternative VRF Refrigerant Pipe and/or Assembly Methods

March 18, 2015

From: Trane Ductless Product Support

As of the date of this Application Bulletin, ACR brazed copper is the most commonly used material for refrigerant pipe. For this reason, the Trane VRF installation manuals, and VRF Installers Training Course, discuss the proper installation of ACR brazed copper in great detail. The use of ACR brazed copper does not create any warranty advantage. Nor, does it change or reduce the liability of the installing contractor.

It is often asked, "Can the installer use alternative pipe products or assembly methods *other* than ACR brazed copper, and is this acceptable for Trane VRF installations?" In reviewing national standards such as "*ASHRAE 15 Safety Standard for Refrigeration Systems*," it is apparent there are multiple options for refrigerant pipe material. ASHRAE 15 also discusses multiple methods for refrigerant pipe assembly. For this reason, Trane does not express a preference for any refrigerant pipe manufacturer or assembly method.

The use of alternative refrigerant pipe materials or assembly methods will not void a Trane VRF warranty provided that each of the following criteria is met:

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Klauke Tool

Tool Service Interval

- Every 10,000 to 12,000 Crimps

How Do You Know that Your Tool Needs Servicing?

- Red LED on the Tool
  - **Blinks - for 20 seconds – Needs Service**
  - **Stays On- for 20 seconds– Battery Needs Recharge**

Jaw Service Life

- 10,000 to 12,000 Crimps

Battery Life

- 100- 150 crimps per charge

Service Turnaround

- ~2 Weeks

Warranty

- 24 Months from Time of Delivery

Continuous Operation

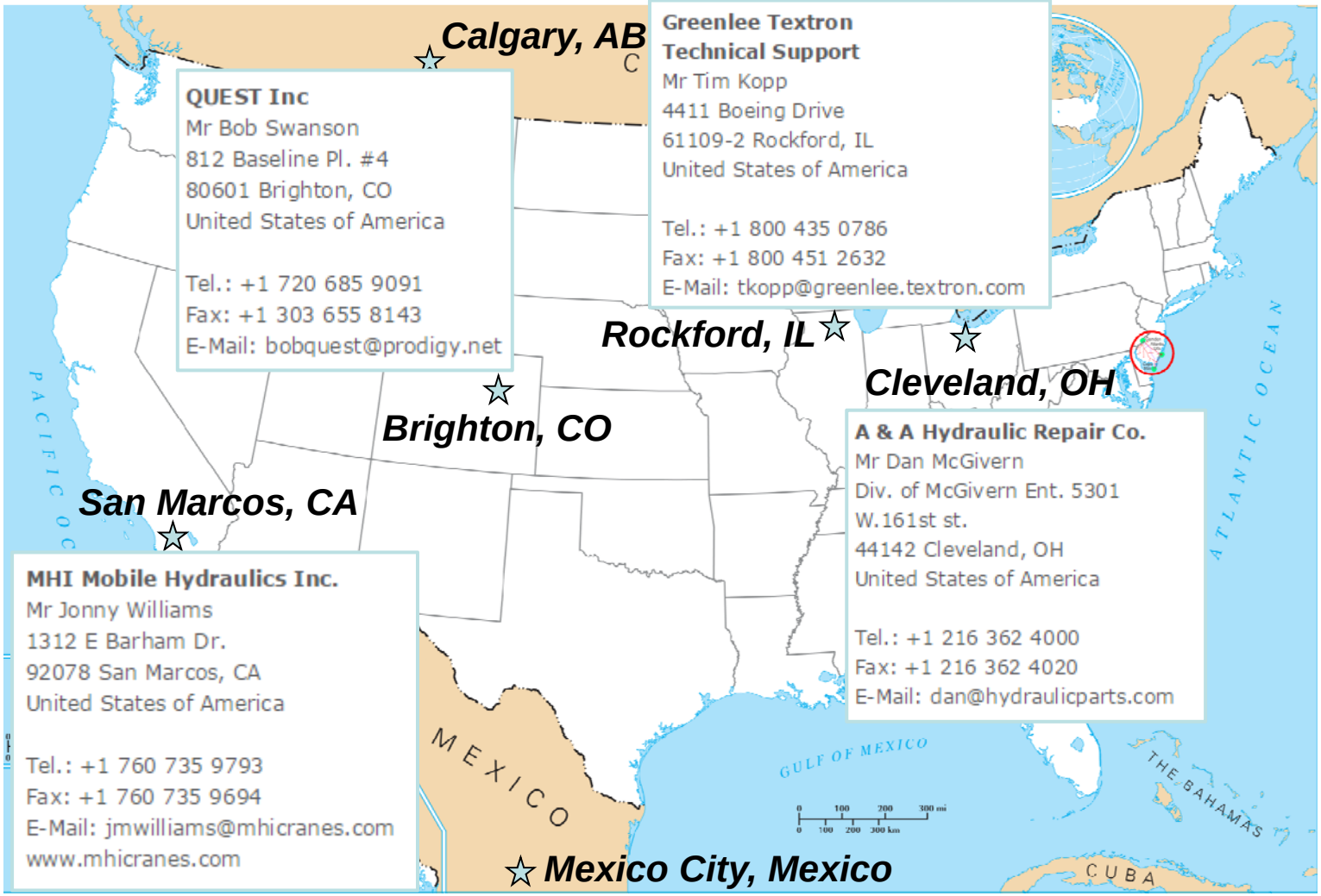
- Let cool for 15 minutes after 50 continuous completed compressions

Trouble Shooting Guide

Tab. 1

			When	Why
20 sec			after working cycle	
2 x			after inserting the battery	Self check
20 sec/2Hz			after working cycle	SERVICE Klauke ASC Authorised Service Center
20 sec/5Hz			while exceeding the temp. limit	Unit too hot
20 sec 20 sec/2Hz			after working cycle	SERVICE Klauke ASC Authorised Service Center
1 x	1 x		after working cycle	Error: the required pressure has not been reached. The operator has interrupted the pressing cycle manually while the motor was not running.
3 x	3 x		after working cycle	Serious Error: The pressure has not been reached while the motor was running.

Klauke-US Authorized Service Centers (ACS)



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Klauke-Europe Authorized Service Centers (ACS)

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Klauke Tool

1. ***Pressing Head***
2. ***Manual Release Of Jaw***
3. ***Red LED***
4. ***Battery Lock***
5. ***Battery***
6. ***White LED***
7. ***Trigger***
8. ***Jaws***
9. ***Locking Pin***

Bild/pic./fig. 1

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Klauke Tool

			Wann/When	Warum/Why
20 sec			nach Arbeitsvorgang after working cycle	
2 x			nach Einsetzen des Akkus after inserting the battery	Selbsttest Self check
20 sec/2Hz			nach Arbeitsvorgang after working cycle	SERVICE Klauke ASC Authorised Service Center
20 sec/5Hz			während der Übertemperatur while exceeding the temp. limit	Werkzeug zu heiß Unit too hot
20 sec 20 sec/2Hz			nach Arbeitsvorgang after working cycle	SERVICE Klauke ASC Authorised Service Center +
1 x		1 x	nach Arbeitsvorgang after working cycle	Fehler: der notwendige Pressdruck wurde nicht erreicht. Es handelt sich um eine manuelle Unterbrechung der Pressung bei stehendem Motor. Error: the required pressure has not been reached. The operator has interrupted the pressing cycle manually while the motor was not running.
3 x	3 x	3 x	nach Arbeitsvorgang after working cycle	Schwerwiegender Fehler: Pressdruck wurde bei laufendem Motor nicht erreicht. Serious Error: The pressure has not been reached while the motor was running.

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Diagnostics

DETAILED WORK HISTORY

- Download, print, and store work information such as operating pressure, number of crimps/cuts, and battery information.

ACCOUNTABILITY

- Prove that the job was done correctly with operation and project specific documentation.

DIAGNOSTICS

- Set and view maintenance intervals and add user identifiable information to manage your inventory.

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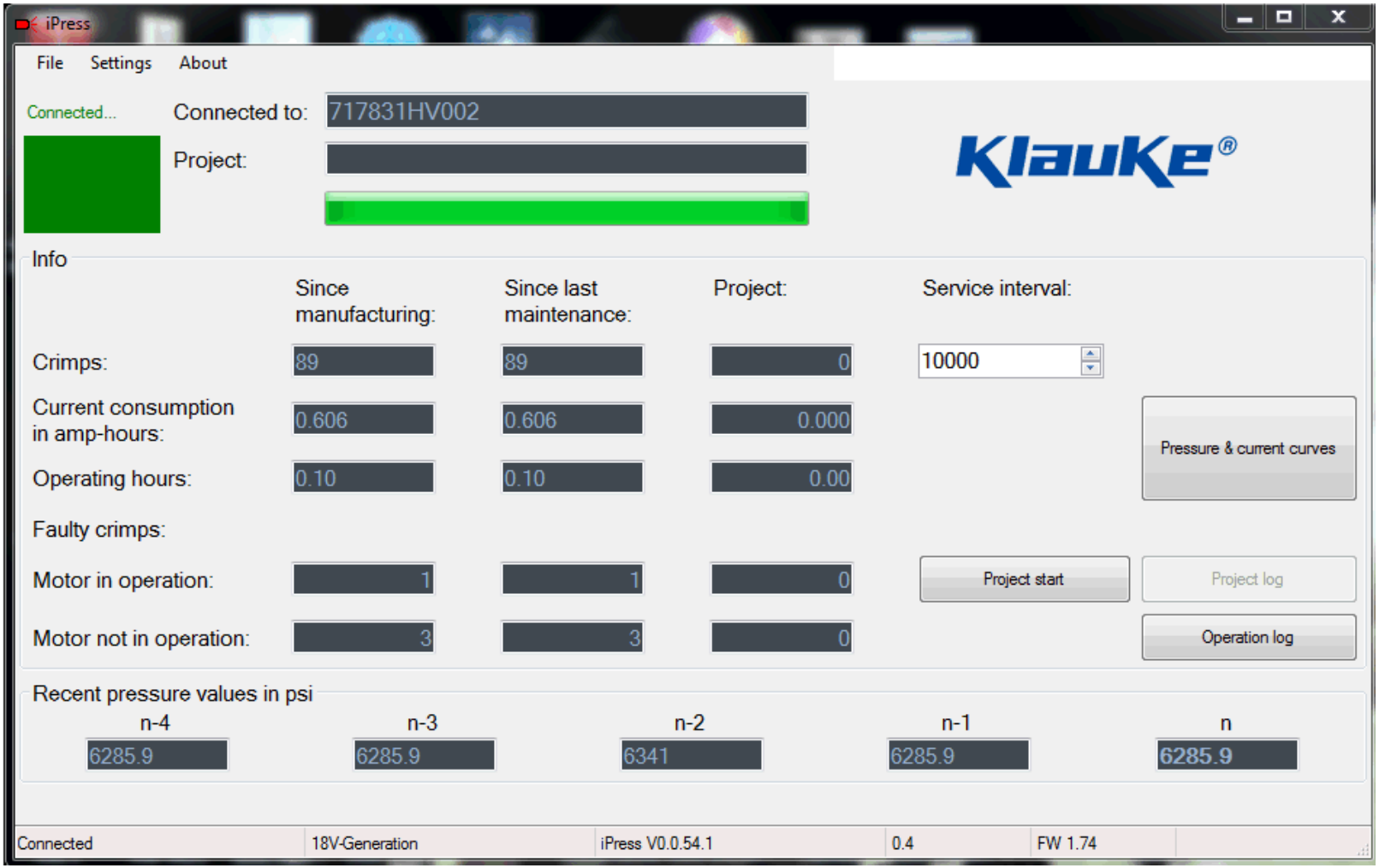
Diagnostics



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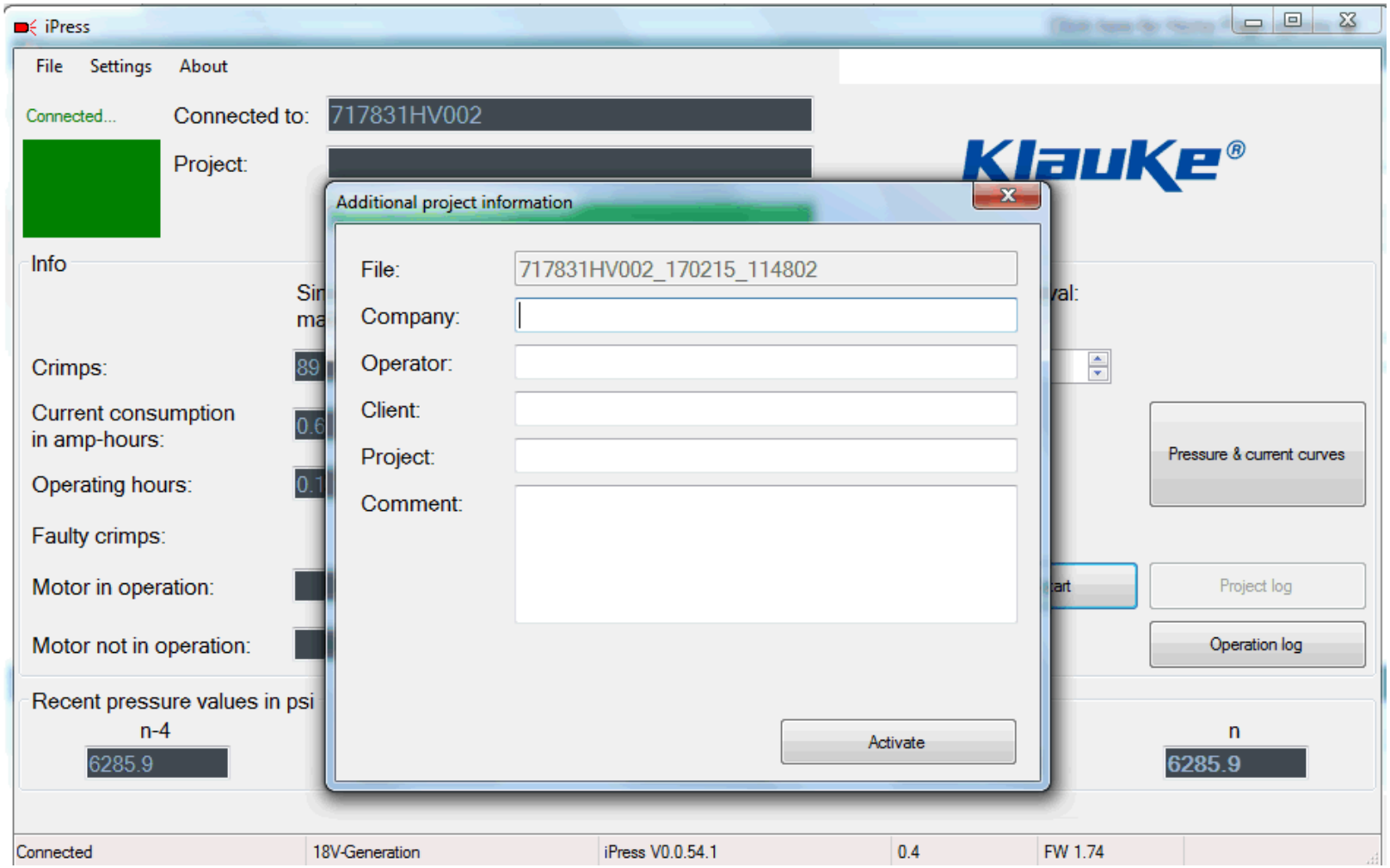
Diagnostics



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Installation Instructions

ATTENTION!

WARRANTY COULD BE VOID IF ZOOMLOCK IS NOT APPLIED PER USER INSTRUCTIONS!

Please read user instructions enclosed. It is recommended that you also watch the videos.

http://mailserver.parker.com/zoomvid

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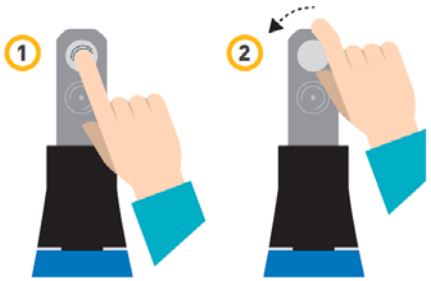
Installation Instructions

STEP 1

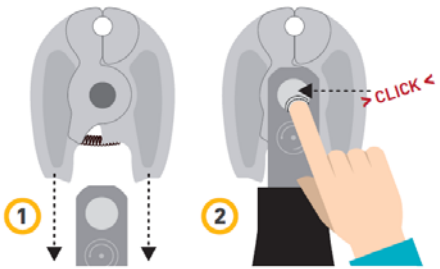
Slide battery into charger. Plug charger into a power source. Check to see that the charging light is on. When red light turns off and green light turns on, battery is fully charged ~ 20 minutes.

STEP 2



Press the locking pin, then rotate 45° to release.

STEP 3



Slide jaws over Crimping Tool head, then depress locking pin until it clicks.

STEP 4

Slide charged battery into base of Crimping Tool.

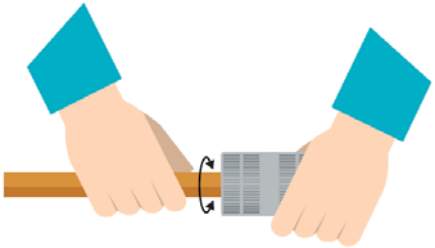
STEP 5

Press and hold the trigger on Crimping Tool to calibrate. **Calibration is recommended daily, prior to use.**

STEP 6

Cut the copper tube using the **supplied** tube cutter. Do **NOT** use a hacksaw or reciprocating saw as this creates a rough surface that may damage the o-ring.

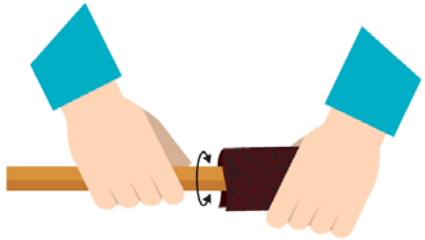
STEP 7



WARNING: COPPER TUBE ENDS SHOULD BE INSPECTED AND ANY SHARP EDGES SHOULD BE ADDRESSED. SHARP EDGES MAY CAUSE DAMAGE TO THE O-RING.

Use the **supplied** deburring tool to remove any residual burrs from the outside and inside of the copper tube.

STEP 8



Use a heavy duty scouring pad to clean the ends of the copper tubes to be joined. Tube ends should be free and clear of oxidation, dirt or debris.

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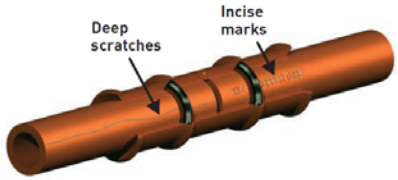
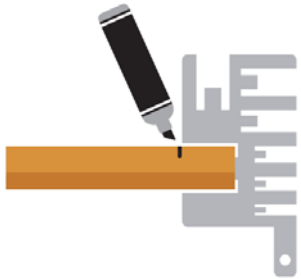
Installation Instructions

STEP 9



Inspect the copper tube for imperfections such as: deep surface scratches and incise marks (a required permanent mark of the tube manufacturer's name or logo), within the o-ring sealing area that may provide a leak path for refrigerant. If scratches are present, cut off the affected area or sand thoroughly to remove.

STEP 10



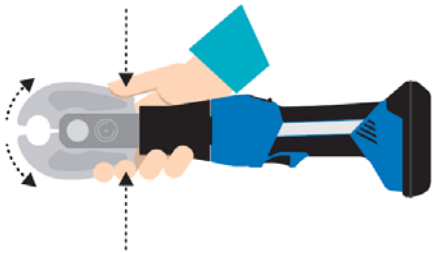
Use the depth gauge provided or the chart at right to determine the proper insertion depth. Mark the tubing with a permanent marker to indicate proper insertion depth on every tube.

MINIMUM INSERTION DEPTH		
FITTING SIZE	INCHES	MILLIMETERS
1/4	15/16	23.8
5/16	15/16	23.8
3/8	15/16	23.8
1/2	1-1/4	31.8
5/8	1-1/4	31.8
3/4	1-1/4	31.8
7/8	1-1/4	31.8
1-1/8	1-1/4	31.8

STEP 11

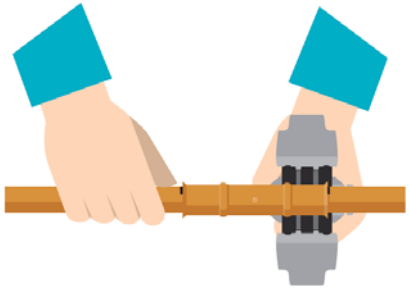
Push the fitting onto the tube. Use the mark to assure insertion depth and secure fit.

STEP 12

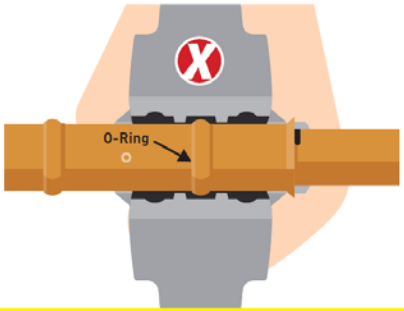


Open the jaws of the ZoomLock Crimping Tool.

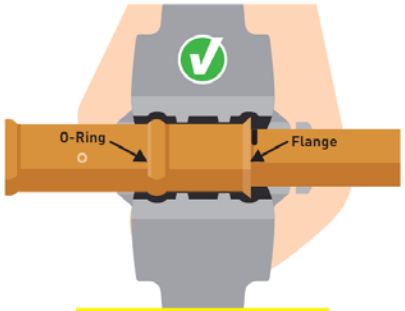
STEP 13



Properly place the crimping jaws onto the fitting. Grooves in the jaws make it easy to align. See illustration at right for proper crimping alignment.



WARNING: ZOOMLOCK IS DIFFERENT THAN OTHER INDUSTRY CRIMP TECHNOLOGY. DO NOT CRIMP WITH JAW CENTERED ON O-RING.



JAW MUST ALIGN BETWEEN O-RING AND OUTER FLANGE.

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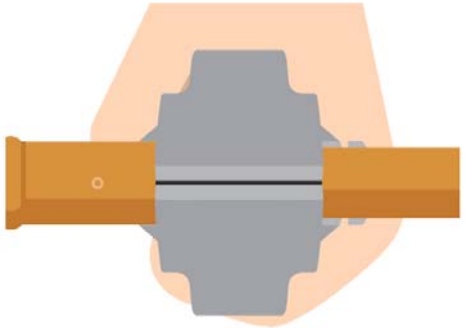
Installation Instructions

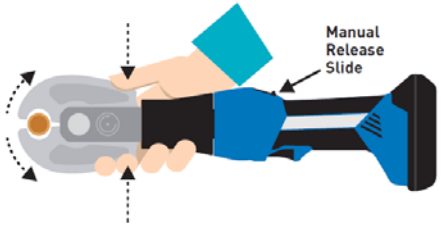
STEP 14

Press and hold the trigger on the ZoomLock Crimping Tool to begin the crimping process.



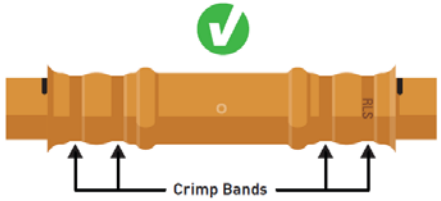
Continue to hold the trigger until the ZoomLock Crimping Tool completes its cycle.

STEP 15



Open the jaws of the ZoomLock Crimping Tool and remove from the fitting. If the jaws do not open, the crimping cycle was not completed. For manual override, slide the manual release button down to open the jaw in case of emergency.

STEP 16



A special "RLS" mark will be displayed on the tube to let you know the connection is crimped properly.

STEP 17

The supplied RLS Crimp Gauge will confirm the measurement of the finished crimp band diameter. See crimp band locations noted in Step 16. It may be necessary to rotate the gauge in order to not interfere with the copper tube flashing left from the crimping process.

WARNINGS:

- Use only with approved refrigerants. Review product specifications for more details.
- Periodically check to ensure the ZoomLock jaws are meeting and aligned.
- Wear proper eye protection during installation.
- Keep hands and fingers away from the jaws during use.
- Use supplied brush to ensure ZoomLock jaws are debris free.
- If brazing or soldering nearby, ensure proper sealing of the ZoomLock fitting by maintaining a minimum braze distance from connections. Refer to the table at right for minimum distance from a ZoomLock fitting to a braze joint per tube size. The installer should take the conventional precautions to keep the fitting cool by providing a heat sink (wet ragging, heat block, etc). This will ensure that the o-ring is not damaged during the brazing process.

MINIMUM DISTANCE FROM ZOOMLOCK FITTING TO BRAZE DISTANCIA MÍNIMA DEL CONECTOR ZOOMLOCK A LA SOLDADURA DISTANCE MINIMALE ENTRE LE RACCORD ZOOMLOCK ET LE RASAGE		
TUBE DIAMETER DIÁMETRO DEL TUBO DIAMÈTRE DU TUYAU	INCHES PULGADAS POUCES	MILLIMETERS MILÍMETROS MILLIMETRES
1/4, 5/16, 3/8, 1/2	5.00	127.0
5/8	6.25	158.8
3/4	7.50	190.5
7/8	8.75	222.3
1-1/8	13.75	349.3

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Quick Tips

- **Having trouble Crimping 1 1/8” Fittings?**
  - **Spray some WD-40 onto the jaws or the outside of the fitting. This reduces friction and helps extend the tool & battery life and allows the crimping process to be more efficient.**
- **Having trouble pushing the Tube past the O-ring?**
  - **Add some POE oil or the OEM recommended System Refrigerant oil to the O-ring or around the end of the tube**

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Quick Tips

- **Having trouble cleaning the tubing when there are deep scratches or incise marks?**
  - **Use 240 grit Emory Cloth to remove the deep scratches and polish smooth with the Scotch Brite® abrasive pad or 400 grit Emory cloth**

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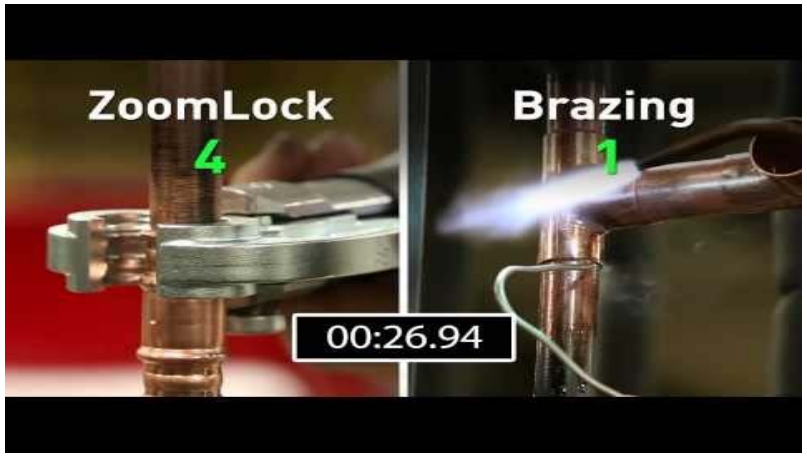
ZoomLock Quick Tips Video



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Thanks for your time.
Questions?

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