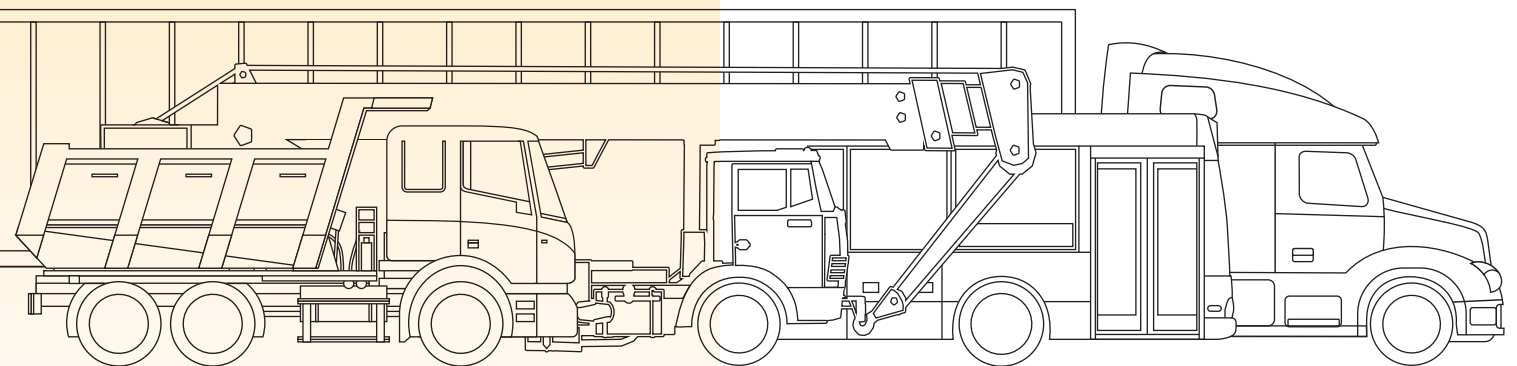


# Hose Assembly Instructions

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ENGINEERING YOUR SUCCESS.

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# www.parker.com/crimpsource

Crimpsource is the industry's most complete resource for crimper technical information. It contains all of the crimp specifications approved for Parker's rubber, industrial and thermoplastic hose:

- Crimp specs
- PDFs of technical manuals for easy downloading
- Parts lists
- Troubleshooting advice
- PDFs of crimper decals for immediate printing

Crimpsource provides easy access to all the specifications necessary to correctly fabricate a factory quality hose assembly.

A series of dropdown menus enables users to find what they need quickly and easily.

Choose your crimper, and then select the hose, fittings and current specifications needed to make hose assemblies.

You can also print a simple-to-follow data specification sheet or crimper decal.

## Crimpsource Spec Page

Monday, January 19, 2009

Hose Style: 422 Coupling Style: 43 Crimper: Karrykrimp 2 Hose: ISO 1436-1 Type 15N Description: BAE 100R1 Type AT

Hose	Coupling	Die	Die Ring	Crimp Diameter	Crimp Length	Hose Insertion	Reference Drawing
422-4	M3-4	BDC-A04 Red	RSC-R01 Silver	0.645 / 0.665	PULL	12/16	107
422-5	M3-5	BDC-A05 Purple	RSC-R01 Silver	0.710 / 0.730	PULL	12/16	107
422-6	M3-6	BDC-A06 Yellow	RSC-R01 Silver	0.835 / 0.845	PULL	12/16	107
422-8	M3-8	BDC-A08 Blue	RSC-R01 Silver	0.945 / 0.965	PULL	15/16	107
422-10	M3-10	BDC-A10 Orange	RSC-R01 Silver	1.065 / 1.080	PULL	15/16	107
422-12	M3-12	BDC-A12 Green	RSC-R01 Silver	1.245 / 1.265	PULL	1 1/2	107
422-16	M3-16	BDC-A16 Black	RSC-R01 Silver	1.590 / 1.610	PULL	1 3/4	107
422-20	M3-20	BDC-A20 White	RSC-R01 Silver	1.970 / 1.990	PULL	1 7/8	107

Reference Drawing 107

**Print your own crimp decals whenever you need to**

**Crimpsource Home Page**

Home Products Division | Brand Literature Where To Buy Careers About Us

Enter keyword Enter part number Search

**Parker Crimpsource**

**Karrykrimp 2**

Crimpsource Online is your source for all information on Parker crimpers. Begin by selecting your crimp machine below. To see crimp specifications, click the "Crimp Spec" button at left.

See the Parker Safety Guide and the Offer of Sale for crimping and safety information.

Buttons: Crimp Spec, Manual, Part List, Dies, Calibration, Troubleshooting, Crimp Decal

**⚠ WARNING**

Selection of the proper die set for your particular crimp machine is imperative for proper operation of the machine and safety of the final assembly. Please refer to the die chart that came with your machine for the proper die selection, or use Crimpsource online to determine the needed components.

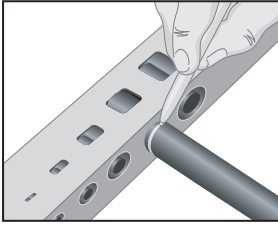
Dimensions and pressures are for reference only and are subject to change.



# Crimping using Minikrimp, Karrykrimp, and Karrykrimp 2

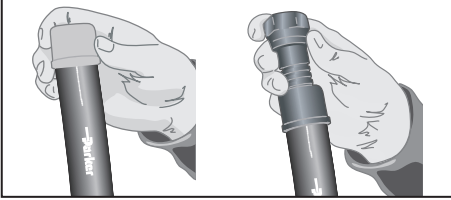
Parkrimp Fittings Series 25, 26, 43, 70, 71, 73, 78, S6, 81, HY

## 1 Mark insertion depth and push on fitting



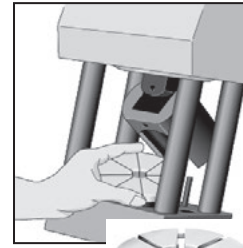
Mark the hose insertion depth and push hose into fitting until the mark on the hose is even with the end of the shell. Lubricate hose if necessary, however, **DO NOT lubricate if using spiral hose.** See Hose Insertion Depth table below.

### For 81 Series Shells with 88 Series Fittings



Place shell onto end of hose and make sure the end of the shell lines up with the Insertion Depth mark. Push hose onto the 88 Series fitting until the shell bottoms against the fitting's stop ring or hex. Lubricate hose if necessary.

## 2 Insert unitized die train



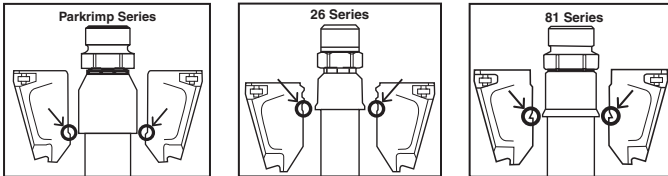
Pull pin at the top of pusher to swing it back. Place unitized die-train into base plate. See decal on crimper for proper die set.

**Note: Parkrimp 1 does not have a pin at the top of the pusher.**

**Important:** Lubricate the crimper's die bowl using a premium quality lithium-base grease.

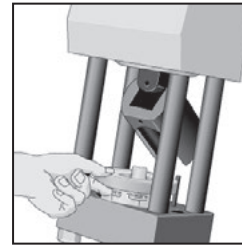
Color-Coded Unitized Die-Train

## 3 Position the fitting

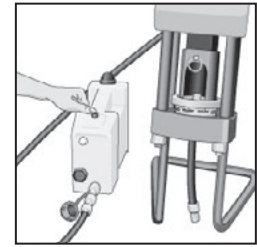


Position the hose and fitting in dies from below. Rest bottom of coupling on die step using the PARKALIGN® feature.

## 4 Place die ring and crimp



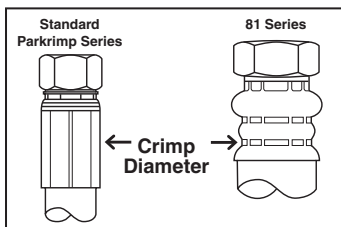
Place correct die ring on top of the dies. See decal on crimper for proper die ring.



Position pusher by replacing the pin and operate pump until the die ring bottoms out. Release pressure within the pump — remove finished assembly.

**Note:** Minikrimp, Karrykrimp & Karrykrimp 2 have several types of power sources, all of which are separate units from the crimping machine.

## 5 Measure crimp diameter



Measure crimp diameter on the flat surfaces of the crimped shell, referenced in the illustration to the left. Reference decal on crimper for crimp diameters. Never use hose assemblies with incorrect crimp diameters.

**Important:** Hose assemblies must be inspected for cleanliness and free of all foreign particles.

## Hose insertion depths

Fitting Size	Fitting Series																		
	26		43		70		71		73		78		79		81		HY		
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	
-4	13/16	21	13/16	21	—	—	—	—	—	—	—	—	—	—	—	—	—	1-7/16	37
-5	13/16	21	15/16	24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
-6	13/16	21	1-1/8	29	1-1/16	27	1-1/16	27	—	—	—	—	—	—	—	—	—	1-1/2	40
-8	13/16	21	1-5/16	33	1-5/16	33	1-1/4	32	—	—	—	—	—	—	—	—	—	1-9/16	40
-10	7/8	22	1-9/16	40	1-3/8	35	1-5/16	33	—	—	1-7/8	47	—	—	—	—	—	1-9/16	40
-12	7/8	22	1-1/2	38	1-1/2	38	1-7/16	37	1-7/8	48	1-7/8	48	2-3/16	56	1-1/8	29	1-5/8	40	40
-16	1	25	1-3/4	44	1-13/16	46	1-3/4	44	2	51	2	51	2-5/16	59	1-1/4	32	1-3/4	43	43
-20	1	25	1-7/8	48	1-3/4	44	1-13/16	46	2-1/2	64	2-1/2	64	2-13/16	71	1-5/16	33	—	—	—
-24	1-1/16	27	1-7/16	37	—	—	2-5/16	59	2-7/16	62	2-7/16	62	—	—	1-5/16	33	—	—	—
-32	1-1/4	32	1-13/16	46	—	—	2-7/16	62	2-13/16	71	2-7/8	73	—	—	1-11/16	43	—	—	—

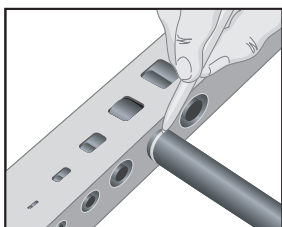
For specific information on crimping, visit CrimpSource™ online at [www.parkerhose.com](http://www.parkerhose.com).

Dimensions and pressures are for reference only and are subject to change.

# Crimping using Parkrimp 2

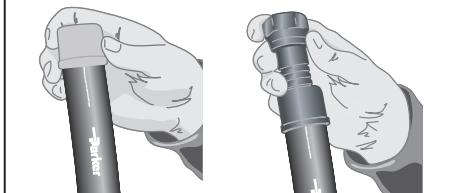
Parkrimp Fittings Series 25, 26, 43, 70, 71, 73, 78, S6, 81, HY

## 1 Mark insertion depth and push on fitting



Mark the hose insertion depth and push hose into fitting until the mark on the hose is even with the end of the shell. Lubricate hose if necessary, however, **DO NOT lubricate if using spiral hose**. See Hose Insertion Depth table on previous page.

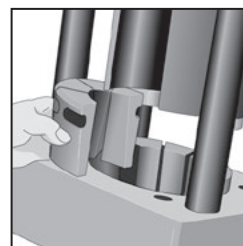
### For 81 Series Shells with 88 Series Fittings



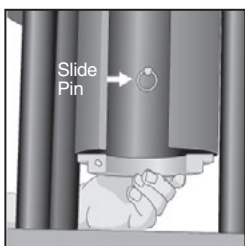
Place 81 Series Shell onto end of hose and make sure the end of the shell lines up with the Insertion Depth mark. Push hose onto the 88 Series fitting until the shell bottoms against the fitting's stop ring or hex. Lubricate hose if necessary.

## 2a If using large two-piece dies

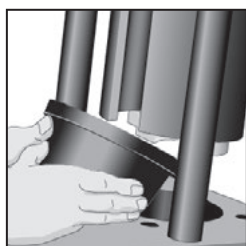
Insert the proper die set into the die bowl. (The die sets are in two halves of four dies each. Place one half in the back and one half in the front to accommodate bent tube fittings.) Reference decal on crimper for proper tool selection.



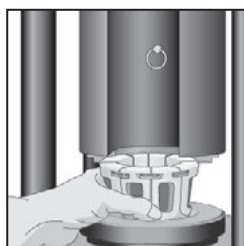
## 2b If using small unitized dies



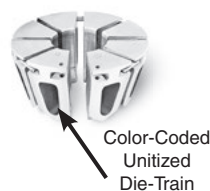
With the pusher in the full up position, lift the back half of the split die ring. Lock it in the up position by pushing the slide pin in. (The slide pin is located inside the pusher at the back.)



Lubricate die bowl using a premium quality lithium-base grease. Carefully insert the adapter bowl, 83C-OCB, into the base bowl. The adapter bowl must be tilted toward the back of the crimper during insertion.



Lubricate die bowl using a premium quality lithium-base grease. Place unitized die-train into the adapter bowl. Select die and die ring by hose size and type. See decal on crimper for proper die set.



Color-Coded Unitized Die-Train

**Note:** Die sets have color-coded cavities indicating size and have the fitting series and dash size stamped on the top.

## 3 Place spacer ring

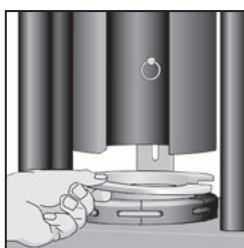


If required, place spacer ring on locating step of adapter bowl. Reference decal on crimper for tool selection.

## 4 Position the split die ring

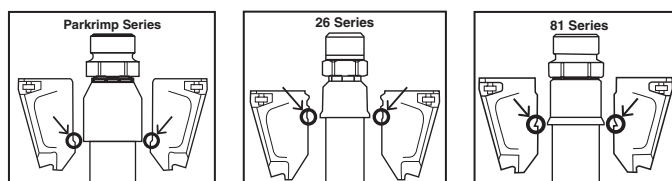


Lower the back half of the split die ring onto the dies by pulling the slide pin forward.



Insert the front half of the split die ring aligning the pins in the back half with the hole in the front half.

## 5 Position the fitting



Position the hose and fitting in dies from below. Rest bottom of coupling on die step using the PARKALIGN® feature.

## 6 Crimp hose

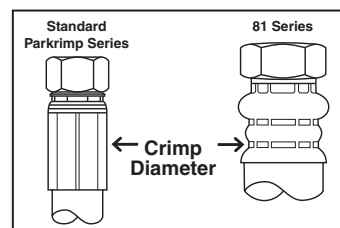
Turn on the pump by pressing the "ON" switch. Pull the valve handle forward to bring the pusher down for crimping. When the split die ring contacts the base plate, the crimp is complete. Push the valve handle back to lift the pusher, open the dies, and release the finished assembly.

**Note:** You do not have to remove any tooling to insert or remove straight fittings. The front half of the split die ring and the front die train must be removed to insert and remove bent tube fittings.



## 7 Measure crimp diameter

Measure crimp diameter on the flat surfaces of the crimped shell, referenced in the illustration to the right. Reference decal on crimper for crimp diameters. Never use hose assemblies with incorrect crimp diameters.

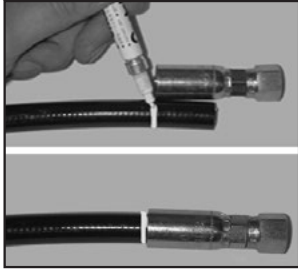


**Important:** Hose assemblies must be inspected for cleanliness and free of all foreign particles.



## MiniKrimp Fitting Assembly Procedures

### 1 Assemble hose



Place the hose next to the fitting and align it with the knurl marks in the fitting shell. Mark the length onto the hose. Push hose into the fitting until the mark on the hose is even with the end of the fitting shell (lubricate hose, if necessary).

### 2 Assemble hose



Select proper MiniKrimp die set. For Parflex hoses, see [www.Parker.com](http://www.Parker.com) for Parflex Hose Swage & Crimp Selection Chart.

### 3 Assemble hose



Place unitized die set into base plate.

### 4 Assemble hose



Place proper die ring on top of the selected die. See Parker PFD Catalog 4660 for proper die ring selection.

### 5 Assemble hose



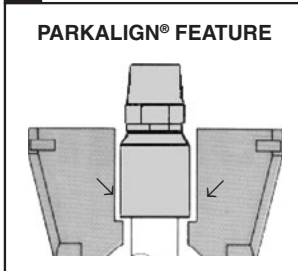
Slide pusher into place onto shoulder bolt.

### 6 Assemble hose



Position the hose and fitting in dies from below.

### 7 Assemble hose



Rest bottom of coupling on die step using PARKALIGN® feature.

### 8 Assemble hose



While holding hose and fitting into position on die step, begin pumping hand pump until die ring contacts base plate.

### 9 Assemble hose



Release pressure, remove finished assembly. Check crimp diameter. See Parker PFD Catalog 4660 for correct crimp diameter measurements.

### 10 Assemble hose



Measure crimp diameter of each fitting at the top, middle and bottom of the shell. Take measurements at a minimum of three places around the shell circumference. Verify crimp diameter is within tolerances. (See [www.Parker.com](http://www.Parker.com) for Parflex Hose Swage & Crimp Selection Chart.)

Dimensions and pressures are for reference only and are subject to change.

**NOTE:**

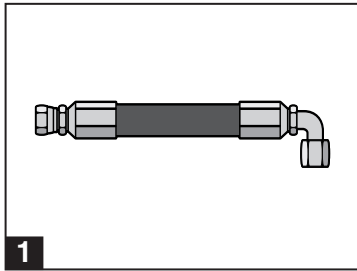
Hose assemblies must be inspected for cleanliness and should be free of all foreign particles.

**NOTE:**

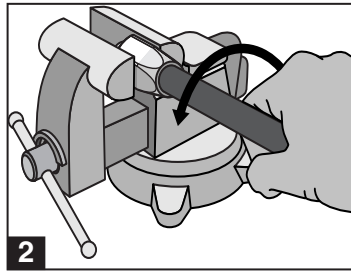
Parker Hannifin will not accept responsibility for the operation of, or provide warranty coverage for, a crimper that is operated by a power unit other than equipment supplied by Parker Hannifin for the express purpose of operating that crimper.

## 20 and 21 Series Hose Assembly Instructions

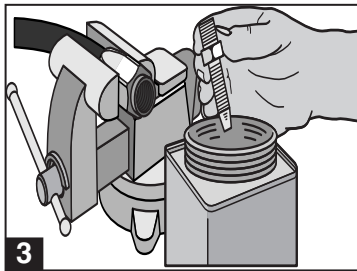
Use with [201](#), [206](#), [213](#), [266](#), [221FR](#), [285](#), [293](#) and [SS25UL](#) Hoses



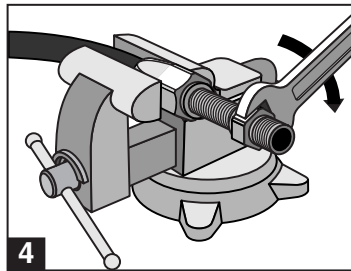
1. Identify overall length (OAL) of hose assembly and the cut off allowance (COA) length of fitting(s) on hose ends by use of the fitting data table. Properly measure, mark and cut hose to desired length using fine tooth hacksaw or a cutoff machine. Care should be taken to ensure a square, clean cut is obtained.



2. Air or solvent flush cut end of hose as necessary to produce a clean hose ID prior to assembly. Place socket in vice and screw in hose counter clockwise until hose bottoms. Back hose out 1/2 turn.



3. Oil inside of hose and nipple threads liberally with Hoze-Oil. (See Section M). Do not oil hose cover.



4. Screw nipple assembly into socket using a wrench on the nipple hex until the nipple hex shoulders against the socket. A 1/32" to 1/16" gap between the nipple hex and socket is allowed for displacement angle adjustment when elbow fittings are used.

**Inspection:** Examine hose assembly internally for cut or bulged tube, obstructions and cleanliness. Clean ID of hose as necessary. Swivel nuts should turn freely. Check the layline of the hose to be sure the assembly is not twisted. Cap the ends of the assembly to keep clean.

**Special Instructions for Stainless Steel Fittings:** When assembling fittings made with 316 stainless steel, lubricate the threads of both the socket and nipple with metal assembly lubricant (See Section M).

**Note:** Disassemble in reverse order.

If you have questions concerning the products or application of the products contained in this catalog, please contact Parker Hose Products Division – Technical Services Department:

Phone: 440 / 943-5700

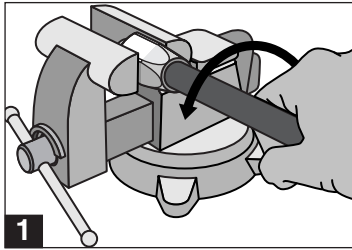
Fax: 440 / 943-3129

[www.parkerhose.com](http://www.parkerhose.com)

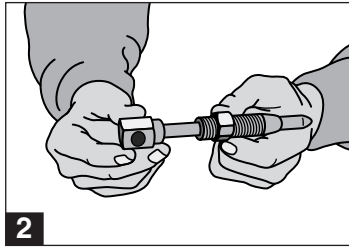
Dimensions and pressures are for reference only and are subject to change.

## 22 and 23 Series Mandrel Assembly Instructions

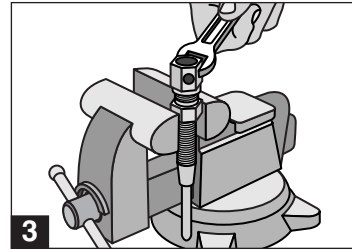
Use with [201](#), [206](#), [213](#), [221FR](#), [266](#), [285](#), [293](#) and [SS25UL](#) hoses



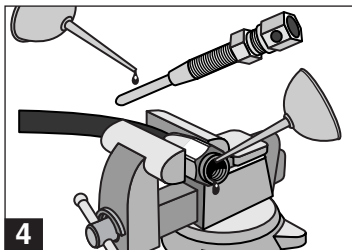
1. Identify over all length (OAL) of hose assembly and the cut off allowance (COA) length of fitting(s) on hose ends by use of the fitting data table. Properly measure, mark and cut hose to desired length using fine tooth hacksaw or a cutoff machine. Care should be taken to ensure a square, clean cut is obtained. Air or solvent flush cut end of hose as necessary to produce a clean hose ID prior to assembly. Place socket in vice and screw in hose counter clockwise until hose bottoms. Back hose out 1/2 turn.



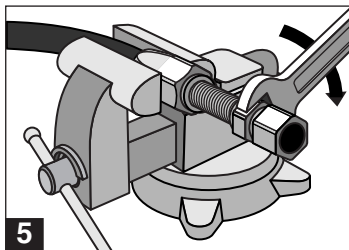
2. When assembling male pipe ends, slide nipple onto mandrel.



3. When assembling swivel ends, slide swivel nut over nipple. Slide nut and nipple onto mandrel. Screw mandrel threads into nipple and wrench tighten.



4. Oil inside of hose and nipple threads liberally with Hoze-Oil. (See [Section M](#)). Do not oil hose cover.



5. Push nipple into socket.

- Male ends: Thread nipple in until it bottoms against socket.
- Swivel ends: Thread nipple into socket using hex on assembly mandrel. Leave clearance of approximately 1/32" (.784mm) between nut and socket to allow nut to swivel. Remove mandrel.

**Note:** Disassemble in reverse order.

**Caution:** Do not attempt to assemble these fittings to the hose without using a mandrel.

**Inspection:** Examine hose assembly internally for cut or bulged tube, obstructions and cleanliness. Clean ID of hose as necessary. Swivel nuts should turn freely. Check the layline of the hose to be sure the assembly is not twisted. Cap the ends of the assembly to keep clean.

**Special Instructions for Refrigerant Hose:** Oil inside of hose and nipple threads liberally with the same oil used in refrigeration system. Do not oil hose cover. Do not allow hose to contact any petroleum base fluids.

If you have questions concerning the products or application of the products contained in this catalog, please contact Parker Hose Products Division – Technical Services Department:

Phone: 440 / 943-5700

Fax: 440 / 943-3129

[www.parkerhose.com](http://www.parkerhose.com)

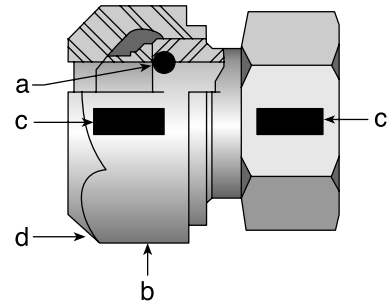
Dimensions and pressures are for reference only and are subject to change.



## 1T126 Fitting Installation Instructions

Use with [201](#), [206](#), [213](#), [221FR](#), [244](#), [266](#), [285](#), [293](#), [SS23CG](#) hoses.

1. Cut the tube off squarely next to the hose fitting. At least 7/8" straight length is required and the outside diameter of the tube should be smooth and free from deep lengthwise scratches.
2. To prevent cutting the inside of the O-Ring, smoothly chamfer the outside diameter of the cut end 15° to 30°. Deburr the inside diameter.
3. Remove the nut, compression sleeve, and O-Ring from the fitting and lubricate the O-Ring with a lubricant that is compatible with the refrigerant used in the system.
4. Place the lubricated O-Ring in the counterbore of the fitting.
5. Slip the compression sleeve, small end, into the nut and assemble the nut on the fitting fingertight. Make sure the compression sleeve is not cocked in the nut. Back the nut off 1/6 to 1/3 turn (one to two hex flats).
6. Insert the chamfered tube end through the nut into the fitting. If high resistance is felt when the end of the tube contacts the O-Ring, remove the tube. The end of the tube may require a large chamfer and/or the O-Ring may require more lubrication on the inside diameter. Repeat the previous steps.
7. (a) Make sure the tube is bottomed in the fitting  
(b) Tighten the nut finger tight  
(c) Mark the fitting and nut hex indicating the starting point (see illustration) and  
(d) Wrench tighten the nut 1 to 1-1/6 turns (6 to 7 hex flats).
8. Later, if it is ever necessary to loosen the connection, re-assemble the nut 1/6 turn (one hex flat) after finger tight.



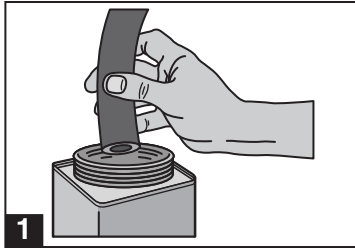
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Phone: 440 / 943-5700

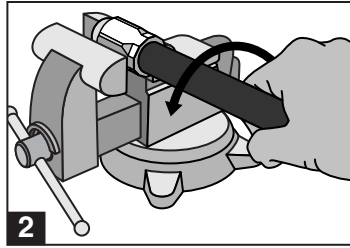
Fax: 440 / 943-3129

[www.parkerhose.com](http://www.parkerhose.com)

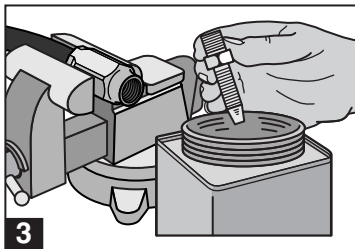
## 30 Series Hose Assembly Instructions



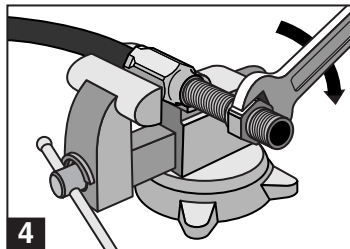
1. Identify over all length (OAL) of hose assembly and the cut off allowance (COA) length of fitting(s) on hose ends by use of the fitting data table. Properly measure, mark and cut hose to desired length using fine tooth hacksaw or a cutoff machine. Dip hose end into Hoze-Oil (see Section M) or heavy oil.



2. Place socket in vice and screw in hose counter-clockwise until hose bottoms. Back hose out 1/2 turn.



3. Dip hose end of nipple into Hoze-Oil or other heavy oil up to the hex. When assembling fittings of 316 stainless steel lubricate the threads of both the socket and nipple with Down Corning Molykote G-n or equivalent metal assembly lubricant.



4. Screw nipple assembly into socket using wrench on nipple hex until nipple hex shoulders against socket.

**Note:** Disassemble in reverse order.

If you have questions concerning the products or application of the products contained in this catalog, please contact Parker Hose Products Division – Technical Services Department:

Phone: 440 / 943-5700

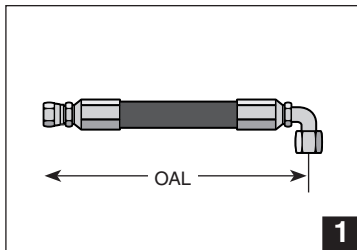
Fax: 440 / 943-3129

[www.parkerhose.com](http://www.parkerhose.com)

Dimensions and pressures are for reference only and are subject to change.

## 82 Series Assembly and Disassembly Instructions

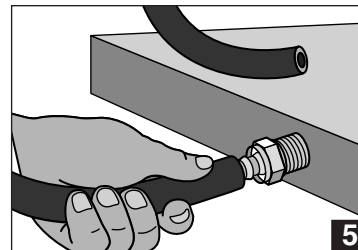
### Assembly Instructions



OAL : Straight to 90° Elbow

1. Identify over all length (OAL) of hose assembly and the cut off allowance (COA) length of fitting(s) on hose ends by use of the fitting data table.

2. Properly measure and mark hose. Cut hose squarely with a Parker Push-Lok cut-off tool or a sharp knife.
3. Lubricate the Push-Lok fitting, hose I.D., or both with light oil or soapy water only - DO NOT USE HEAVY OIL OR GREASE.
4. Insert fitting into hose until first barb is in the hose.

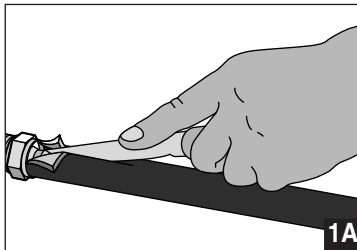


5. Place end fitting against a flat object such as a work bench or wall. Grip hose approximately one inch from end and push with a steady force until the end of the hose is covered by the yellow plastic cap.

**Caution:** Insert the Push-Lok fitting all the way into the Push-Lok hose until the cut end is concealed by the yellow plastic cap.

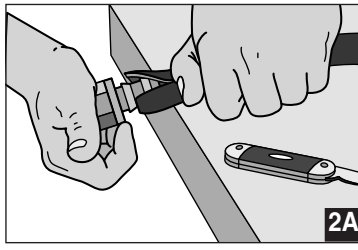
**Caution:** Sealing integrity may be damaged by use of exterior clamps.

### Disassembly Instructions



1A. Leave fitting in place, and cut hose approximately one inch lengthwise from the yellow plastic cap.

**IMPORTANT:** Be careful not to nick barbs when cutting hose.



2A. Grip hose firmly and give it a sharp downward tug away from the fitting for disassembly.

If you have questions concerning the products or application of the products contained in this catalog, please contact Parker Hose Products Division – Technical Services Department:

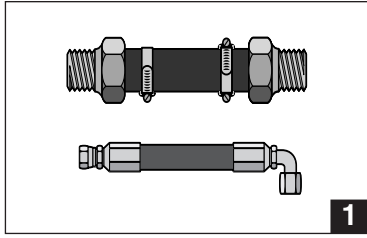
Phone: 440 / 943-5700

Fax: 440 / 943-3129

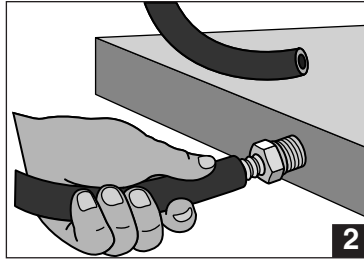
[www.parkerhose.com](http://www.parkerhose.com)

## 88 Series Hose Assembly Instructions

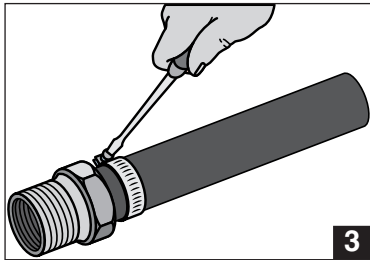
Use with 811, 811HT, 881 hoses.



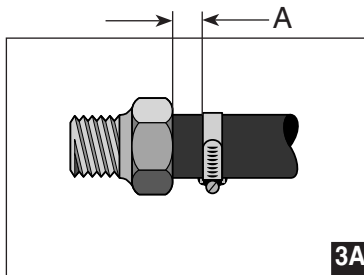
1. Identify Overall Length (OAL) of hose assembly and the Cut Off Allowance (COA) length of fitting(s) by use of the fitting data table. Properly measure and mark hose. Cut hose cleanly and squarely to length. Trim any exposed wire reinforcement to prevent injury in service.



2. Slide clamp(s) onto hose and lubricate hose. Push hose onto fitting until hose bottoms against stop ring or hex.



3. Position hose clamp(s) as shown and secure with a screwdriver or wrench. Maintain "A" dimensions as shown below for proper clamp positioning of both HC clamps and HC-H clamps.



- 3A. Evenly attach double bolt clamps for maximum grip.

Hose ID inch	A	
	inch	mm
-12	1/4	6.35
-16	3/8	9.53
-20	3/8	9.53
-24	1/2	12.70
-32	1/2	12.70

**Note:** For permanent installation of 88 Series Fittings, an 81 Series Crimp Shell must be added. See assembly and crimping instructions.

If you have questions concerning the products or application of the products contained in this catalog, please contact Parker Hose Products Division – Technical Services Department:

Phone: 440 / 943-5700

Fax: 440 / 943-3129

[www.parkerhose.com](http://www.parkerhose.com)

Dimensions and pressures are for reference only and are subject to change.

## Ferrul-Fix Installation Instructions

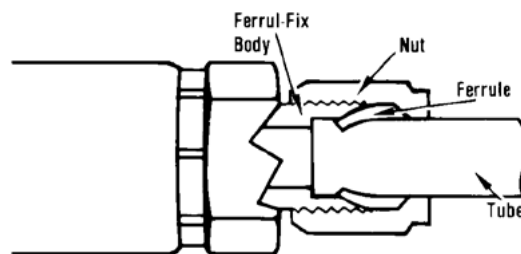
### Fast, on-the-job repair for ruptured bent tube hose assemblies and power steering lines.

The life of the combination tube-hose assembly is often limited to the service life of the hose alone. A replacement assembly may not be available, since equipment dealers are unable to stock all of the many odd tube configurations.

Parker Ferrul-Fix hose end fitting now makes it possible to salvage the bent tube section of the original assembly for replacement. Most importantly, it gets you back into operation FAST!

#### Features

- Gets you back in operation fast – No costly delays while replacement assemblies are rushed from the factory.
- Lets you reuse expensive bent tube ends – You can replace the hose at a fraction of the cost of complete assembly.
- Eliminates need for emergency brazing or welding in the field – Ferrul-Fix can be assembled without special tools or equipment.
- 3-Piece Design – Body, nut, ferrule. Wedging action of ferrule, when drawn down by nut, forms seal between body and ferrule, while cutting edge of ferrule bites into tube wall forming another positive seal.
- Visible Bite – Extent of bite at cutting edge of ferrule is completely visible when fitting is disassembled, an important safety feature. Self-centering action assures an even bite around circumference of tube.
- Parkerized Finish – Ferrul-Fix fittings have the Parkerized black finish, providing built-in torque in make-up.



#### Assembly

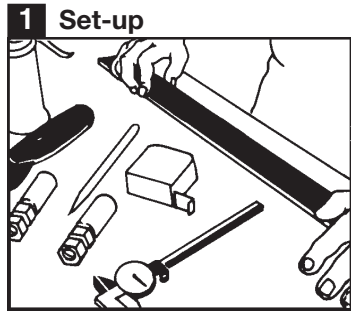
1. **Cut** the formed tube off squarely next to the permanent hose fitting. Lightly **deburr** the end of the tube internally and externally.
2. **Disassemble** the Ferrul-Fix fitting, and **lubricate** threads and both ends of the ferrule with Parker Ferulube.
3. **Slide** nut and ferrule onto tubing with the long, straight end of the ferrule pointing toward the tube end.
4. **Insert** tube end into the Ferrul-Fix body until it bottoms against the shoulder. **Slide** ferrule inside body, and screw nut down finger tight.
5. **Wrench** nut down 1-3/4 turns to preset the ferrule.
6. **Disconnect** nut and **inspect** lead edge of ferrule to make certain that the biting edge has turned up a shoulder to a height of at least 50% of the ferrule and completely around the tube.
7. **Assemble** Ferrul-Fix fitting to hose. **Refer** to assembly instructions listed in appropriate fittings section. Do not assemble to hose before steps 1-6.
8. **Reassemble** tubing into Ferrul-Fix end and **turn** nut down easily until a sudden increase in force is evident. **Turn** bent tube to proper position if required. Using two wrenches, one on the fitting nipple hex and the other on the nut, **tighten** nut an additional 1/6 turn (one wrench flat).

Ferrule-Fix is Manufactured by the Tube Fittings Division. Refer to Catalog 4300 for Ferulok® instructions.

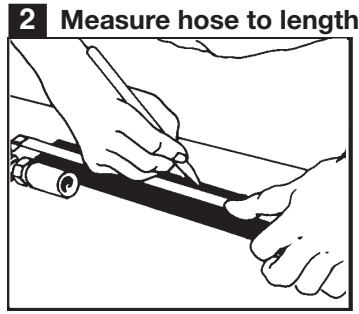


## Parflex Twin / Multi-Line Separation

Factory-built assemblies are available using twin/multi-line hoses. When field-built assemblies are preferred, the following steps must be taken.

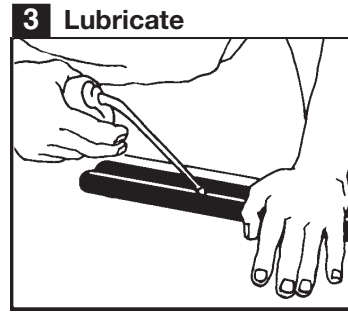


Position twinned or multi-line hose assembly so that it lies flat on work surface without tendency to twist or turn.

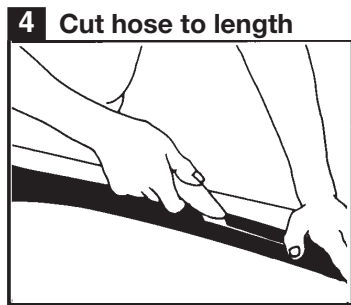


Measure and mark the length that the hoses are to be separated (commonly referred to as Split-back Length).

**NOTE:** If length of separation is specified from the threaded or swivel nut end of coupling, deduct the cutoff allowance dimension for the specific style of coupling used. The cutoff allowance is obtainable from the hose fitting tables or can be calculated by subtracting the insertion depth of the shell from the overall coupling length.

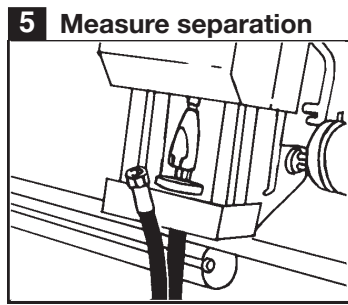


Lightly lubricate the web area between the hoses. Distribute the lubricant uniformly along the web of the assembly to be separated. Parker Hoze-Oil or any lightweight oil will suffice (SAE 10 or 20). The function of the oil is to reduce the friction of the knife blade so that it naturally seeks the center of the valley formed by the hoses. This eliminates the need for the operator to steer the knife.

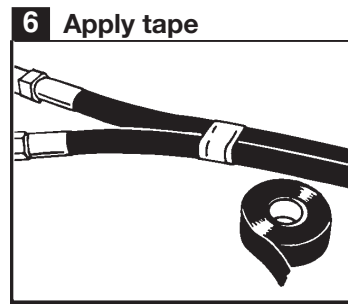


Press the multi-line hose assembly firmly and flat against the work surface with your free hand so that it does not move. Using a sharp utility knife, carefully draw the knife toward you with constant light to moderate pressure, and a smooth stroke. Multiple strokes will be necessary to separate the hoses.

**NOTE:** It is important that the knife blade be perpendicular to the hose during this procedure so that the blade cuts only the center line of the web. Extreme care must be taken to avoid cutting through the cover of the hoses and thereby exposing the hose reinforcement. If this occurs, the hose assembly must be discarded. (See sketch A.) If the separation length is greater than that which can be accomplished with one continuous, smooth stroke, then the procedure should be repeated over shorter distances always cutting toward the free end of the hoses.



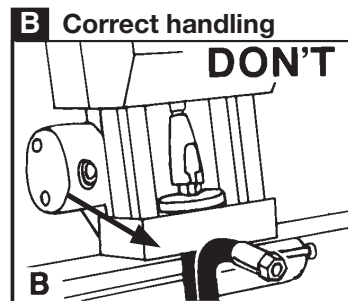
It is suggested that the separation length be sufficiently long so that the swaging or crimping operation can be accomplished without risk of kinking the hoses or tearing the web which could result in exposure of the hose reinforcement. (See sketch B)



At the option of the assembler as dictated by the installation, it is suggested that a nylon lashing strap or tape be applied at the termination of the separated length to provide protection against tearing of the web or hose covers.



Extreme care must be taken to avoid cutting through the cover of the hoses and thereby exposing the hose reinforcement. If this occurs, the hose assembly must be discarded.



The separation length must allow for the swaging or crimping operation without damaging the hose.

Dimensions and pressures are for reference only and are subject to change.

# Parflex Hose Assembly and Crimping

Thermoplastic Hoses

## 1 Measure and cut hose



Verify the type and size hose printed on layline match work order.

**Note:** When calculating hose length, take into consideration the change in hose length (expansion/contraction) that may occur during pressurization.

Using a flexible or rigid measuring tape, measure the length of hose required as follows:

- a. Verify required length of hose assembly with fittings.
- b. Subtract "Cutoff Allowance" of each fitting from hose assembly length. (Refer to Hose Fittings Tables in Catalog 4660 for proper cutoff allowances)

### Example:

Hose assembly length with fittings = 12"  
 Fitting Cutoff Allowance (125HBL-6-6) 3/4"  
 Fitting Cutoff Allowance (125HBL-6-6) 3/4"  
 Total Cutoff Allowance 1-7/16"  
 12" - 1-7/16" = 10-9/16"  
 Length of hose required = 10-9/16"

## 2 Measure and cut hose



Secure hose in some type of fixture to ensure straightness.



Measure and mark hose.



Tape hose securely so mark is in center of tape and mark tape. 919U hoses can not be taped.

**Caution:** Do not use abrasive wheels to cut hose. Abrasive wheels will damage core tube.

## 3 Measure and cut hose



Using a cutoff tool, cut hose squarely to correct length.



Using a Parker Model 332-T-115V Hose Cutoff Machine or fine-toothed hacksaw, cut hose squarely to length.

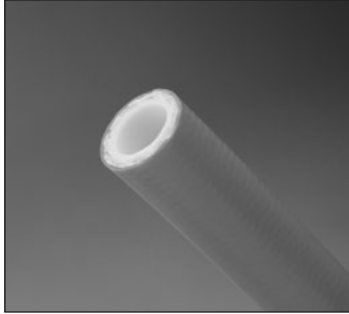
A power hose cutoff saw should always be used on PTFE and wire reinforced thermoplastic and hybrid hoses.

Hose Assembly Instructions: Assembly Instructions

## Parflex Hose Assembly and Crimping, Continued

### 4 Inspect Hose

Hybrid & Thermoplastic Hoses



Visually inspect both ends of hose for squareness. Remove any burrs on core tube with a sharp knife.

### 5 Inspect Fittings



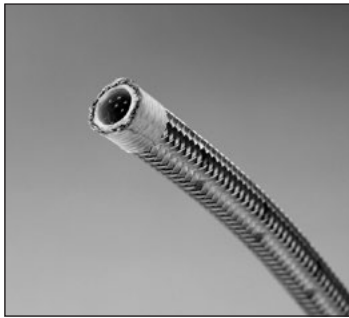
Verify fitting part number(s) match work order.  
Visually inspect fitting(s) for a through-hole, threads and damage.

### 6 Assemble Hose



Mark hose end with proper insertion depth line as follows:  
Place fitting next to hose and align annular crosshatched ring on fitting with end of hose.

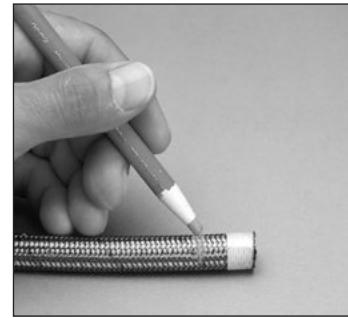
PTFE Hoses



Visually inspect both ends of hose for squareness, loose wires and burrs on core tube. Trim any loose wires flush with tube and remove any burrs on tube with a sharp knife.



Verify fitting part number(s) match work order.  
Visually inspect fitting(s) for a through-hole, threads and damage.



Mark hose end with proper insertion depth line. For 919 hoses, use a sharp knife and light pressure to cut back the urethane cover at least the length of the insertion depth of the fitting.

#### Hydraulic Field Attachables:

To complete the Hydraulic Field Attachable assembly, please skip to [page N20](#) for steps 6 - 14.

#### SQ Swager Assembly:

For swaged Predator Hose assemblies using the SQ-101 swager, please go to [page N25](#).

#### 90 Series PTFE Field Attachables:

To complete the 90 Series PTFE Field Attachable assembly, please skip to [page N22](#) for steps 6 - 25.

**Warning:** Do not use lubricating oil when installing fittings on hose used in oxygen service. When installing fittings on hose used in oxygen service lubricate with a non-oil based soap solution. Failure to do so may result in an explosion and personal injury when hose is used.

## Parflex Hose Assembly and Crimping, Continued

Hybrid & Thermoplastic Hoses

### 7 Assemble Hose



Using an SAE 20 weight lubricating oil, lightly lubricate inside of hose end.

### 8 Assemble Hose



Push hose into fitting all the way to depth insertion mark. (If fitting does not readily slide onto hose, perform the next step.)

### 9 Assemble Hose



Tap fitting onto hose as follows: Using Parker VBS or VBL vise blocks, place hose with fitting into proper hole of vise block and place in bench vise.

**Caution:** Ensure hose extends from vise blocks only enough to clear depth insertion mark. Failure to do this may result in harmful kinking of hose.

PTFE Hoses



Push fitting onto hose slightly and then remove tape. Continue pushing fitting onto hose until fitting reaches depth insertion mark. (If fitting does not readily slide onto hose, perform the next step.)

**PTFE:**  
To complete the PTFE assembly, please skip to step 11.

Hybrid & Thermoplastic Hoses

### 10 Assemble Hose



Using a rubber mallet, tap fitting onto hose until bottom of fitting shell is aligned with depth insertion mark. Repeat Steps 7-10 for other end of hose if required.

Thermoplastic Hoses

### 11 Assemble Hose



Select proper Parkrimp die set. (Refer to Assembly Tool Selection Chart in Catalog 4660 for proper Parkrimp die part number.)

### 12 Assemble Hose

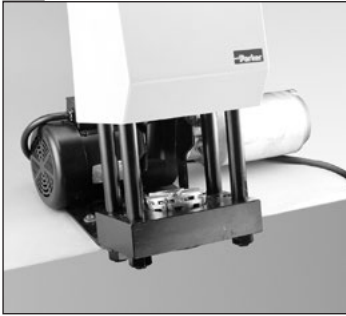


Grease frequently using a premium, quality, lithium-base grease. Apply a thin layer of grease on bowl of crimper base plate.

Dimensions and pressures are for reference only and are subject to change.

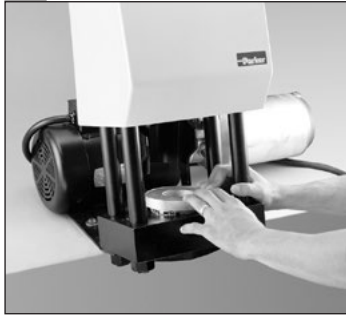
## Parflex Hose Assembly and Crimping, Continued

**13 Assemble Hose**



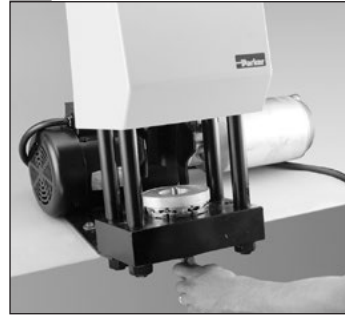
Place die set into bowl.

**14 Assemble Hose**



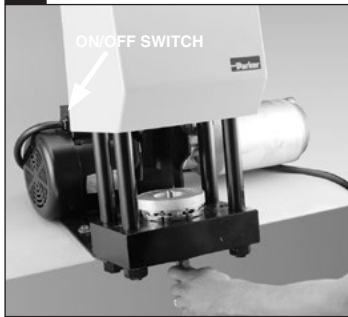
Place applicable die ring on top of die. Position ring so it is centered on die.

**15 Assemble Hose**



Insert hose and fitting from bottom of crimper and up through die set. Position fitting so bottom of fitting skirt rests on die step (PARKALIGN® feature).

**16 Assemble Hose**



Turn on crimper.

**17 Assemble Hose**



While holding hose and fitting in position on die step, pull down on handle to activate crimper.

**18 Assemble Hose**

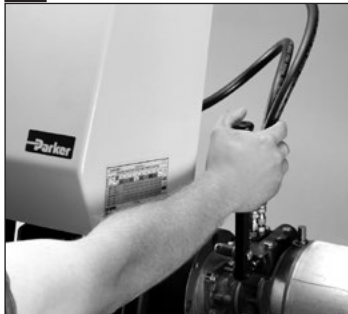


Crimp fitting onto hose until die ring contacts base plate.

**Note:** Pump on crimper must not exceed the rated pressure of the crimper being used. Parker Hannifin will not accept responsibility for the operation of or provide warranty coverage for a crimper that is operated by a power unit other than equipment supplied by Parker Hannifin for the express purpose of operating the crimper.

**Warning:** Keep fingers and hands away from die-pusher area. Failure to do so may result in personal injury.

**19 Assemble Hose**



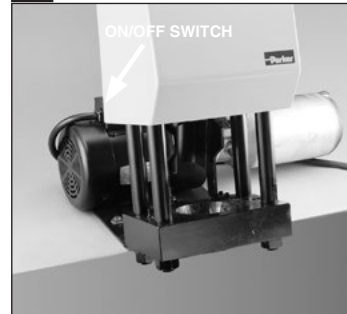
Push handle to retract pusher.

**20 Assemble Hose**



Remove hose assembly and die set.

**21 Assemble Hose**



Repeat Steps 13-20 for the other end of hose if required.  
Turn off Crimper.

Dimensions and pressures are for reference only and are subject to change.



## Parflex Hose Assembly and Crimping, Continued

Thermoplastic Hoses

### 22 Measure & Inspect



Measure and verify hose assembly length matches work order.

### 23 Measure & Inspect



Inspect insertion depth mark at fitting ends. Insertion mark must be visible but not exceed 1/8" from end of crimped fitting shell.

### 24 Measure & Inspect



Measure crimp diameter of each fitting at top, middle and bottom of shell. Take measurements at a minimum of three places around shell circumference. Verify crimp diameter is within tolerances. (Refer to Crimp Specification & Tool Selection Chart for proper crimp diameters.)  
Pressure test hose assembly if required.

Hose Assembly Instructions: Assembly Instructions

# Hydraulic Field Attachable Fitting Assembly

Continued from Step 5 on [page N16](#)

Hdy. Field Attachable

## 6 Inspect Fittings



Visually inspect fitting(s) as follows: Inspect socket for threads in shoulder, threads in shell and damage.

## 7 Inspect Fittings



Inspect nipple for a through-hole, threads, hex and damage. Ensure swivel nut is properly crimped, has threads and turns freely.

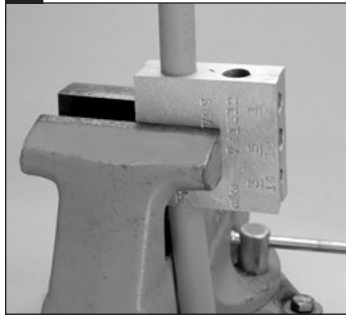
## 8 Assemble Hose



Using Parker Hoze-Oil or an SAE 20 lubricating oil, lightly lubricate inside and outside of hose end.

**Caution:** Ensure hose is installed in correct size hole of vise block. Clamping hose in a smaller hole will crush hose.

## 9 Assemble Hose



Using a Parker VBS or VBL vise block, place hose in proper hole of vise block and place in bench vise. Ensure enough hose extends from vise block to install socket.

**Caution:** Socket should be firm when tightened but not difficult to turn. If socket is difficult to install, check hose for proper lubrication. Re-apply lubricating oil as necessary. Installation of socket without proper lubrication may damage hose.

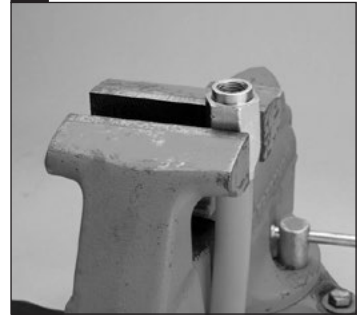
## 10 Assemble Hose



Using a wrench, screw socket onto hose counterclockwise until it bottoms. Ensure end of hose is against inside shoulder. Back off socket 1/4 turn clockwise.

**Caution:** When tightening socket in vise, do not over tighten vise jaws. Over tightening vise jaws will distort internal threads of socket and hamper installation of nipple.

## 11 Assemble Hose



Remove vise block and hose from vise.

Place hex portion of socket into vise and tighten vise. Ensure socket extends past vise jaws enough to allow for installation of nipple.

## Hydraulic Field Attachable Fitting Assembly, Continued

Hdy. Field Attachable

### 12 Assemble Hose

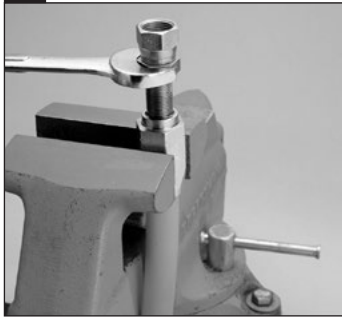


Using Parker Hoze-Oil or an SAE 20 lubricating oil, generously lubricate nipple threads and hose I.D.

**Caution:** Nipple should be firm when tightened but not difficult to turn. If nipple is difficult to install, check hose for proper lubrication. Re-apply lubricating oil as necessary. Installation of nipple without proper lubrication will damage core tube.

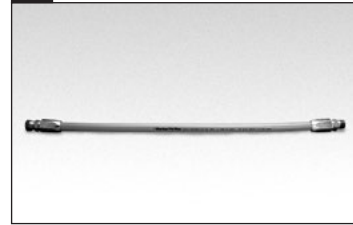
Using a wrench on the nipple hex, screw nipple into socket clockwise until nipple bottoms against socket shoulder.

### 13 Assemble Hose



Measure and verify hose assembly length matches work order.

### 14 Measure & Inspect



Pressure test hose assembly if required.

Hose Assembly Instructions: Assembly Instructions

## 90 Series PTFE Field Attachable Fitting Assembly

Continued from Step 5 on [page N16](#)

90 Series PTFE

### 6 Inspect Fittings



Verify fitting part number(s) match work order.

### 7 Inspect Fittings



Visually inspect fitting(s) as follows: Inspect socket for a through-hole, threads in shell and damage.

### 8 Inspect Fittings



Inspect nipple for a through-hole, threads, hex and damage. Ensure swivel nut is properly crimped, has threads and turns freely.

### 9 Inspect Fittings



Inspect sleeve for scratches and damage.

**Note:** When installing sockets on hose, check hose ends to determine if wire braid “necks down” (bends inward). If one end “necks down” use this end to slide sockets onto hose.

### 10 Assemble Hose



Slide two sockets over end of hose with bottom of sockets back to back.

### 11 Assemble Hose



Position sockets at each end of hose.

### 12 Assemble Hose



Mount nipple hex in vise. Ensure nipple end extends beyond vise jaws sufficiently to allow installation of hose.

### 13 Assemble Hose



Push hose bore onto nipple to size tube and to aid in separating braid before fitting sleeve.

### 14 Assemble Hose



Remove hose from nipple.

Dimensions and pressures are for reference only and are subject to change.

## 90 Series PTFE Field Attachable Fitting Assembly, Continued

90 Series PTFE

### 15 Assemble Hose



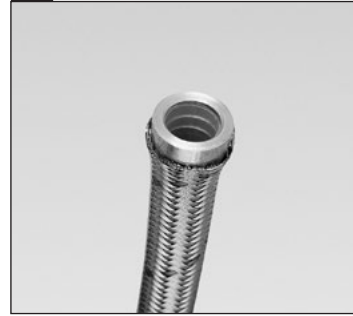
By hand, push sleeve over end of PTFE core tube and under wire braid.

### 16 Assemble Hose



To complete positioning of sleeve, push hose end with sleeve, against a solid flat surface.

### 17 Assemble Hose



Verify tube butts against inside shoulder of ferrule.

### 18 Assemble Hose



Using a tapered punch, push punch into end of sleeve and tube to set sleeve barbs into tube.

**⚠ WARNING:** Do not use lubricating oil when installing fittings on hose used in oxygen service. When installing fittings on hose used in oxygen service lubricate with a non-oil based soap solution. Failure to do so may result in an explosion and personal injury when hose is used.

### 19 Assemble Hose



Using SAE 20 weight lubricating oil, lubricate nipple and socket threads. For stainless steel fittings use Parker ThreadMate™ or a molybdenum type lubricant. For hose used in oxygen service lubricate using a non-oil based soap solution.

### 20 Assemble Hose



Using a twisting motion, push hose over nipple until hose is seated against nipple chamfer.

Hose Assembly Instructions: Assembly Instructions



# Hose Assembly Instructions: Assembly Instructions

## 90 Series PTFE Field Attachable Fitting Assembly, Continued

90 Series PTFE

### 21 Assemble Hose



Push socket forward and hand-start threading of socket to nipple.

**Caution:** When tightening socket in vise, do not over tighten vise jaws. Over tightening vise jaws will distort internal threads of socket.

### 22 Assemble Hose



Remove assembly from vise and reposition with socket in vise jaws. Ensure socket extends beyond vise jaws far enough to allow nipple to be completely tightened.

### 23 Assemble Hose



Wrench tighten nipple hex until clearance between hex and socket hex is 1/32" or less.

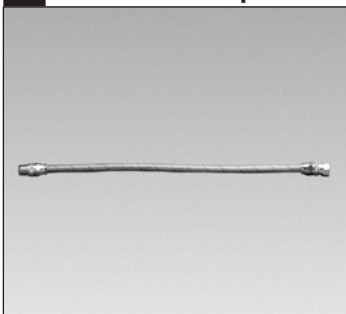
### 24 Assemble Hose



Tighten further to align corners of nipple and socket hexes if necessary.

**Repeat Steps 12-24 for other end of hose.**

### 25 Measure & Inspect



Measure and verify hose assembly length matches work order. Pressure test hose assembly if required.

Dimensions and pressures are for reference only and are subject to change.

# SQ-Swage Instructions

Continued from Step 4 on [page N16](#)

Sewer Hose

## 5 Inspect Fittings



Verify fitting part number matches work order.  
Visually inspect fitting for properly crimped shells, internal barbs, a through-hole and damage.

## 6 Assemble Hose



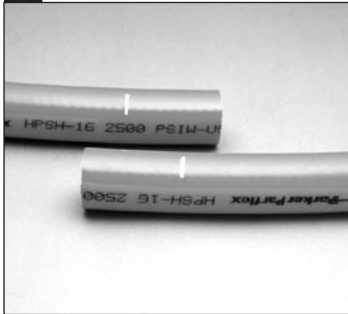
Mark each hose end with proper insertion depth line as follows:  
Place fitting next to hose and align annular crosshatched ring on fitting with end of hose.

## 7 Assemble Hose



Mark hose at bottom of fitting shell. (Mark indicates the full length in which hose will be inserted into fitting.)

## 8 Inspect Fittings



Repeat Steps 4a and 4b for other hose.

## 9 Assemble Hose



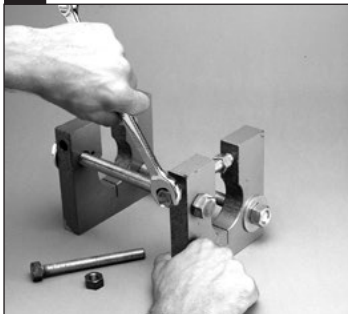
Using Parker Hoze-Oil or an SAE 20 lubricating oil, lightly lubricate inside of both hose ends.

## 10 Assemble Hose



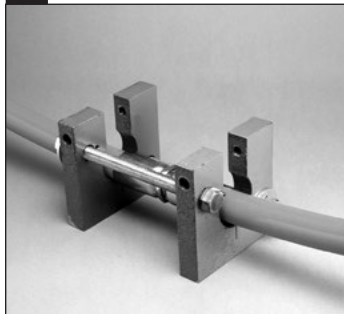
Push each hose end into fitting all the way to depth insertion mark.  
**Note:** The following steps are performed using the PSH-Swager.  
**Note:** You must use two complete dies for each size.  
**Caution:** Make sure both die halves are the same size and their serial numbers match. Failure to do so will result in an improperly crimped fitting.

## 11 Assemble Hose



Remove both die securing bolts and nuts.

## 12 Assemble Hose



Place hose and fitting assembly into position on swager.

## 13 Assemble Hose



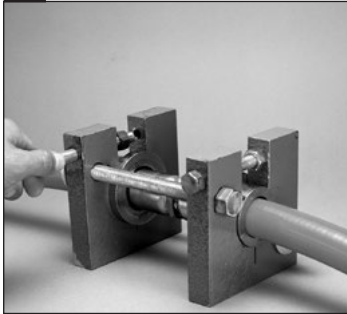
Insert both die halves around hose in each end of swager.

Dimensions and pressures are for reference only and are subject to change.

## SQ-Swage Instructions, Continued

Sewer Hose

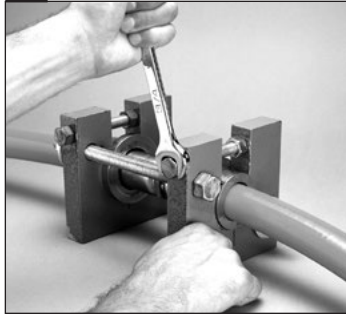
### 14 Assemble Hose



Install both die securing bolts with nuts positioned in opening of swager plates.

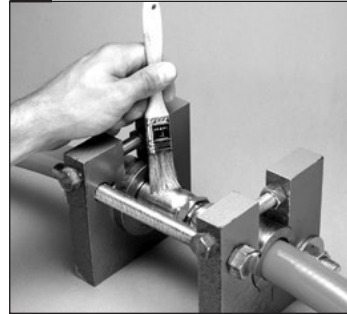
**Caution:** When swaging stainless steel fittings, lubricate through-hole of dies with Parker 702 Oil. Failure to do so may result in damage to fittings.

### 15 Assemble Hose



Tighten die securing bolts 1/4 turn past finger tight.

### 16 Assemble Hose

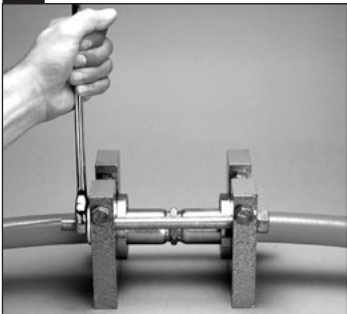


Using Parker Hoze-Oil or an SAE 20 lubricating oil, generously lubricate fitting surface and I.D. of dies. (For stainless steel fittings, use Parker 702 Oil.)

**Caution:** Ensure swager plates remain in parallel when tightening swager bolts. Failure to do so will result in an improperly swaged fitting.

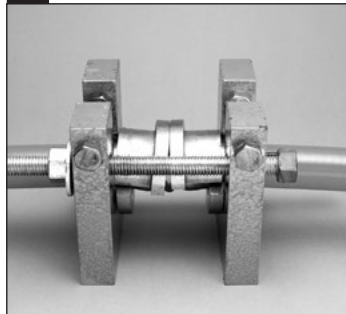
Generously lubricate swaging bolts. Failure to do so may result in an improperly swaged fitting.

### 17 Assemble Hose



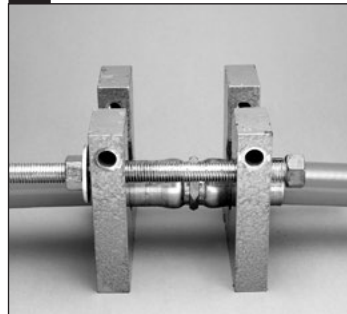
Align swager plates in parallel and tighten nuts on swaging bolts uniformly until dies touch.

### 18 Assemble Hose



Loosen swaging bolts to release pressure on dies.

### 19 Assemble Hose

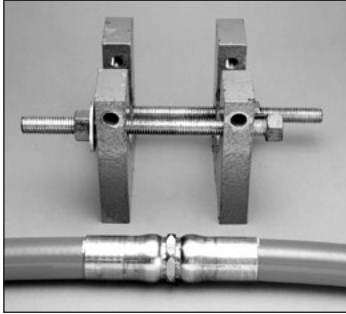


Remove die securing bolts and nuts, and remove dies.

## SQ-Swage Instructions, Continued

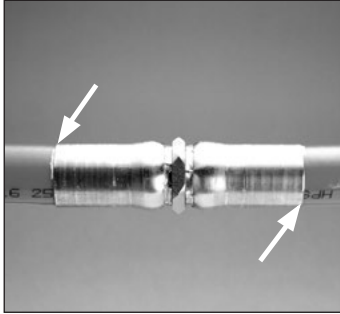
Sewer Hose

### 20 Assemble Hose



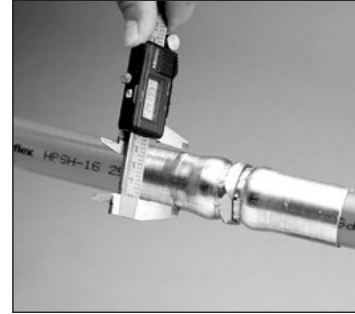
Lift out hose assembly.

### 21 Measure & Inspect



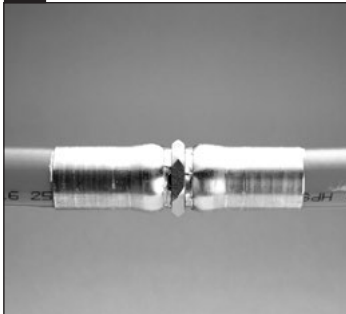
Inspect depth insertion mark at fitting ends. Insertion mark must be visible and within 1/8" of bottom of fitting shell.

### 22 Measure & Inspect



Measure swage diameter of each end of fitting at top, middle and bottom of shell. Take measurements at a minimum of three places around shell circumference. Verify swage diameter is within tolerances. (Refer to Swage Specification & Tool Selection Chart for proper swage diameters.)

### 23 Measure & Inspect



Pressure test hose if required.

### Swager Tooling

Part Number	Description
SQ-101-SW	Swager / Mender
SQ-101-12S6/S9	Size S612/S912 die
SQ-101-16S6	Size S616 die
SQ-101-16S9	Size S916 die
SQ-101-12P	Size 12 pusher
SQ-101-16P	Size 16 pusher

Hose Assembly Instructions: Assembly Instructions

