

Band Clamp



The Right Connection™

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General Safety

- Use Dixon couplings, retention devices and accessory products ***only*** for their intended service.
- All recommendations of the Hose Manufacturer, and the Coupling Manufacturer, must be employed with regards to **Size, Temperature, Application, Media, and Pressure** when selecting the components for a hose assembly.
- All finished hose assemblies should be tested in accordance with the **Rubber Manufacturers Association** recommendations.
- All hose assemblies should be thoroughly inspected prior to each use to insure they are undamaged, and properly coupled.
- Use safety clips on couplings, and King Safety Cables on assemblies where required by the manufacturer, as well as State and Federal regulations. (see OSHA references below)
- Call Dixon (1-800-355-1991) for advice on couplings, retention devices, and accessories for your application.

Safety Recommendations

The use of band style clamps has proven to be an effective means of retaining hose couplings in industrial hose.

To achieve proper retention and sealing of the hose coupling in the hose, it is imperative that these clamps be installed correctly. Please follow the manufacturer's recommendations as to the proper selection and installation of band clamps.

When installing multiple clamps, the buckles must be offset around the hose, (reference page 8), eliminating the possibility of a straight line leak under the buckle area.



Improper installation of band clamps

Clamps installed with buckles in-line.



Proper installation of band clamps

Clamps installed with buckles equally rotated.

The first clamp should be installed just inside the mark on the hose furthest from the hose end (reference page 9).

Leaving excess band material turned back over the buckle does not improve the performance of the clamp. In fact, a safety hazard develops from this practice by leaving sharp edged material exposed.

F and FO series clamps

Material availability:

- Stainless steel -
bands are 300 series and
the buckles are 302 series
- Galvanized steel

Installation tools:

- Center punch tools -
F1, F38, F40, F100
(other manufacturer's punch style tools may be used)



- *Double-wrapped*
- *Triple-punched*
- *Holds permanently*

The F series double-wrapped metal band clamp is formed to a given diameter with a tailpiece through the buckle.



style F
(pre-formed)

I.D. Size	302 Stainless Steel Part #	Galvanized Steel Part #	Pkg Qty
3/8" Wide / .020 Thick		3/8" Wide / .025 Thick	
13/16"	FS3	F3	100
1-3/8"	FS311	F311	100
5/8" Wide / .022 Thick		5/8" Wide / .025 Thick	
1"	FS4	F4	100
1-1/4"	FS5	F5	100
5/8" Wide / .022 Thick		5/8" Wide / .031 Thick	
1-1/2"	FS6	F6	100
1-3/4"	FS7	F7	100
2"	FS8	F8	100
2-1/4"	FS9	F9	100
2-1/2"	FS10	F10	50
2-3/4"	FS11	F11	50
3"	FS12	F12	50
3-1/2"	FS14	F14	50
4"	FS16	F16	25
4-1/2"	FS18	F18	25
5"	FS20	F20	25
6"	FS24	F24	25
7"	FS28	F28	25
8"	FS32	F32	25

The FO clamp is open-ended and may be applied easily without sliding the clamp over the hose end.



style FO
(open end)

I.D. Size	302 Stainless Steel Part #	Galvanized Steel Part #	Pkg Qty
3/8" Wide / .020 Thick		3/8" Wide / .025 Thick	
13/16"	FOS3	FO3	100
1-3/8"	FOS311	FO311	100
2"	FOS316	FO316	100
3-1/8"	FOS325	FO325	100
5/8" Wide / .022 Thick		5/8" Wide / .025 Thick	
2"	FOS8	FO8	100
2-1/2"	FOS10	FO10	50
5/8" Wide / .022 Thick		5/8" Wide / .031 Thick	
3"	FOS12	FO12	50
3-1/2"	FOS14	FO14	50
4"	FOS16	FO16	50
4-1/2"	FOS18	FO18	50
5"	FOS20	FO20	25
6"	FOS24	FO24	25
7"	FOS28	FO28	25
8"	FOS32	FO32	25
9"	---	FO36	25
10"	---	FO40	25
12"	---	FO48	25
14"	---	FO56	10

K series clamps

Material availability:

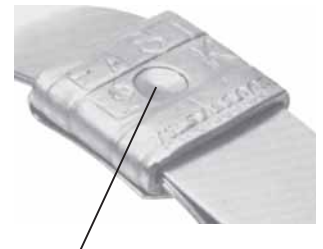
- Stainless steel -
bands are 300 series and
the buckles are 302 series
- Galvanized steel

Installation tools:

- Center punch tools -
F1, F40, F100
- Roll over tools -
51960 with 51970 adapter
(other manufacturer's tools may be used)



The uniquely designed K clamp can be locked by a wide variety of manufacturer's tools. K clamps are designed to be slipped over the hose end before the fitting is inserted.



*Punch indentation
for ease of center punching*

Note: 3/4" K Clamp must be applied with F-175 hand tool.

I.D. Size	Stainless Steel Part #	Galvanized Steel Part #	Pkg Qty
3/8" Wide / .025 Thick		3/8" Wide / .025 Thick	
13/16"	KS3	K3	100
1-3/8"	KS311	K311	100
5/8" Wide / .031 Thick		5/8" Wide / .030 Thick	
1"	KS4	K4	100
1-1/4"	KS5	K5	100
1-1/2"	KS6	K6	100
1-3/4"	KS7	K7	100
2"	KS8	K8	100
2-1/4"	KS9	K9	100
2-1/2"	KS10	K10	50
2-3/4"	KS11	K11	50
3"	KS12	K12	50
3-1/2"	KS14	K14	50
4"	KS16	K16	25
4-1/2"	KS18	K18	25
5"	KS20	K20	25
6"	KS24	K24	25
7"	KS28	K28	25
8"	KS32	K32	25

I.D. Size	Stainless Steel Part #	Pkg Qty
3/4" Wide / .030 Thick		
2"	KS87501	100
2-1/4"	KS97501	100
2-1/2"	KS107501	50
2-3/4"	KS117501	50
3"	KS127501	50
3-1/2"	KS147501	50
4"	KS167501	25
4-1/2"	KS187501	25
5"	KS207501	25
6"	KS247501	25
7"	KS287501	25
8"	KS327501	25

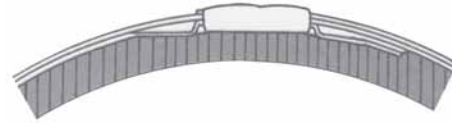
Smooth I.D. clamps

Material availability:

- 201 stainless steel
- Galvanized steel

Installation tools:

- Roll over tools -
51960 with 51970 adapter
(other manufacturer's tools may be used)



The smooth inside diameter produces a uniform clamping surface to prevent leak paths.

As industrial hose made of stiffer, thinner, thermoplastics replaces soft, spongy thick-walled rubber, a new generation of hose clamps has been developed to prevent leak problems.



I.D. Size	201 Stainless Steel	Galvanized Carbon Steel	Pkg Qty
	Part #	Part #	
	3/8" Wide / .025 Thick	3/8" Wide / .025 Thick	
13/16"	JS201	JS301	100
1"	JS243	JS343	100
1-3/8"	JS202	JS302	100
2"	JS245	JS345	100
3"	JS246	---	---
3-1/2"	JS255	---	---
	1/2" Wide / .030 Thick	1/2" Wide / .030 Thick	
1"	JS203	JS303	100
1-1/4"	JS204	JS304	100
1-3/4"	JS236	JS336	100
2-3/4"	JS230	JS330	100

I.D. Size	201 Stainless Steel	Galvanized Carbon Steel	Pkg Qty
	Part #	Part #	
	5/8" Wide / .030 Thick	5/8" Wide / .030 Thick	
1-1/2"	JS205	JS305	100
1-3/4"	JS206	JS306	100
2"	JS207	JS307	100
2-1/4"	JS208	JS308	100
2-1/2"	JS209	JS309	100
	3/4" Wide / .030 Thick	3/4" Wide / .030 Thick	
2"	JS227	JS327	100
2-3/4"	JS210	JS310	50
3"	JS211	JS311	50
3-1/2"	JS212	JS312	50
4"	JS213	JS313	25
4-1/2"	JS214	JS314	25
5"	JS215	JS315	25
6"	JS216	JS316	25
7"	JS218	JS318	25
8"	JS219	JS319	25

Band and Buckle

Material availability:

- Stainless steel
- Galvanized steel

Installation tools:

- Roll over tools -
C2, 51960
(other manufacturer's tools may be used)



The band and buckle system is an economical method of securing fittings to large diameter rubber hose (2" and above).

Note: Do not use strapping and buckles made of different metals.

Example: Stainless steel strapping must be used with stainless steel buckles.



Strapping - 100 ft. per Box

Width	Thick	Material	Part #
3/8"	.025	stainless	SS375
1/2"	.031	stainless	SS500
5/8"	.031	stainless	SS625
3/4"	.031	stainless	SS750
3/8"	.025	galvanized	SG375
1/2"	.031	galvanized	SG500
5/8"	.031	galvanized	SG625
3/4"	.031	galvanized	SG750



Buckles

Width	Material	Part #	Box Qty
3/8"	stainless	CS375	100
1/2"	stainless	CS500	100
5/8"	stainless	CS625	100
3/4"	stainless	CS750	50
3/8"	galvanized	CG375	100
1/2"	galvanized	CG500	100
5/8"	galvanized	CG625	100
3/4"	galvanized	CG750	50

SAFETY
ALERT **Caution!**

Strapping edges can be extremely sharp!

All necessary precautions should be taken to prevent installer's hands from being cut during the assembly process.

Clamp Selection

Pre-Formed Band Clamps

1. Measure the hose Outside Diameter (O.D.) with a diameter tape.
2. Select the clamp having an Inside Diameter (I.D.) as close to the measured hose O.D. but not less than 1/4".
This is so that the clamps can be slid onto the hose before the couplings are inserted.

Example: Hose O.D. is 2-11/16" Use 3" I.D. clamp
 Hose O.D. is 2-7/8" Use 3-1/2" I.D. clamp

Band and Buckle

Caution!

Strapping edges can be extremely sharp! All necessary precautions should be taken to prevent installer's hands from being cut during the assembly process.

1. Measure the hose Outside Diameter (O.D.) with a diameter tape.
2. Cut the proper length of strapping needed. This is the hose O.D. multiplied by two plus six inches.

Example:

Hose O.D.	13
Multiplied by two	<u>x 2</u>
Equals	26
Plus six inches	<u>+6</u>
Total length of strap	32"

3. Slide one end of the strap through the loop of the buckle. Make sure that the ears of the buckle are pointing up and are closest to the end of the strap.
4. Slide the buckle 2" - 3" down the strap. Using pliers, create a loop at the end of the strap. Bend down and under approximately 1/2" of strap.
5. Slide the buckle into the loop. Using pliers, crimp the strap to the buckle by squeezing tightly the end of the loop. Do not squeeze on the buckle loop.
6. Loop the strap around the hose and bring the strap end through the loop on the buckle. Loop the strap around the hose again and bring the strap end through the loop on the buckle.
7. Using pliers, pull the strap tail as tight as possible, then bend the strap tail up and slightly over the buckle. This will prevent the strap tail from sliding out from under the buckle.

Note: Do not use strapping and buckles made of different metals.
Example: Stainless steel strapping must be used with stainless steel buckles.

Notes:

1. Proper tension is achieved when the outside diameter of the band clamp is even with or slightly below the diameter of the hose. This is a rule of thumb measurement of proper clamp tension and can vary from one stem/hose combination to another. The installer's experience with a particular stem/hose combination will tell them when the clamp is properly tensioned.
2. Bend excessive clamp tail away from tool handles to avoid being cut by sharp edges.
3. When multiple clamps are used, clamp buckles must be offset to prevent a leak path.
2 Clamps - Buckles at 180°. 3 Clamps - Buckles at 120°. 4 Clamps - Buckles at 90°.

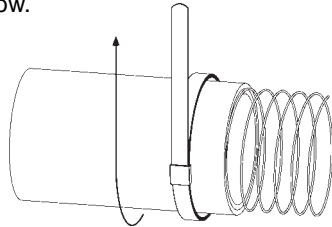
Preparing the hose for assembly

Cut Hose to Length.

Cut Ends Square. (Lack of a square cut on the hose end can reduce coupling retention.)

For hoses having a helical wire:

1. Determine the direction the helical wire is pointing in. This is necessary as proper installation of pre-formed band clamps and bands and buckles rely upon proper orientation of the clamp tail with the helical wire. See illustration below.



2. If helical wire is not used for static grounding, trim the wire back into the carcass of the hose. This is to prevent injury during use of the assembly.

Clean Hose I.D.

Mark the hose for proper clamp placement.

All styles of band clamps (both pre-formed and bands & buckles) require proper placement to achieve maximum retention. Place marks on hose for proper clamp placement as follows:

1. Determine shank serration style
 - a. Symmetrical (all serrations the same size).
Example: Combination nipples, suction couplings, etc.
 - b. Pronounced (some serrations are higher than the other serrations).
Example: Cam and groove, King round nipples, etc.
2. Symmetrical Shanks
 - a. Determine number of clamps required. Reference Dixon's Pressure Chart for correct number of clamps to install based on coupling style and size.
 - b. Place the shank next to the hose to simulate the shank being fully inserted.
 - c. Place a mark on the hose that corresponds with the point of the last serration.
 - d. When multiple clamps are required, place corresponding number of marks equally spaced from one another and the hose end.
 - e. Do not place a clamp directly on the hose end. Leave 1/4" to 3/8" space between the hose end and the last clamp installed.
3. Pronounced shanks
 - a. Place the shank next to the hose to simulate the shank being fully inserted.
 - b. Place a mark on the hose that corresponds with the point of each pronounced serration.
 - c. The correct number of clamps to install will be equal to the number of marks placed on the hose.

Static Grounding.

When required, proper static grounding is essential. Typically, this is accomplished by bending the built-in static wire or the helical wire (or wires) inside the hose I.D. so that it contacts the metal coupling. Caution should be taken to bend in no more wire than necessary. Usually 1/2" of wire bent in is sufficient. Other methods of static grounding are available and may be required due to hose type, hose manufacturer or style of coupling to be installed. Always contact the hose manufacturer for proper static grounding techniques for that particular hose. Improper static grounding can lead to fire, explosions, reduced assembly life, damage to property and injury or death to personnel.

Seal the Hose Ends.

At each end of the hose, the reinforcement is exposed to the outside elements. This exposure can lead to premature assembly failure especially if the end of the assembly is laying in a puddle of water or puddle of product. If the assembly is to be subjected to these conditions, the hose ends must be sealed. Typically, rubber cement or shellac is used. Contact the hose manufacturer for recommendations. Wire reinforced hoses can corrode to the point of failure near the clamp. Textile or fabric reinforced hoses can wick water or product to anywhere in the length of the hose and exit the cover at the weakest spot.

Coupling Lubricant.

The coupling shank and the hose I.D. are to be lubricated prior to coupling insertion. Dixon recommends using Dixon Coupling Lubricant (DCL10 pint, DCL80 gallon). Do not use hand soap, oil, grease, WD 40, Silicone spray, or other substances that may attack the tube material and / or reduce coupling retention.

Installation Tools

Clamp Cutter

- Material: malleable iron with rubber covered handles
- Weight: 2.11 lbs.
- Length: 14"



Part #

F550

Mallet

- Material: ductile iron head, wooden handle
- Weight: 2.25 lbs.
- Length: 12"



Part #

F225

51960 Installation Tool

Screw-action type tool for installing band and buckles.

- Material: plated steel
- Weight: 4.00 lbs.
- Length: 12"



Part #

51960

51970 Roll-Over Attachment

Adapter for 51960 for installing preformed clamps. For vise applications *only*.

- Material: plated steel
- Weight: 1.15 lbs.
- Length: 10-1/2"



Part #

51970

Operating Instructions for the 51960 Installation Tool

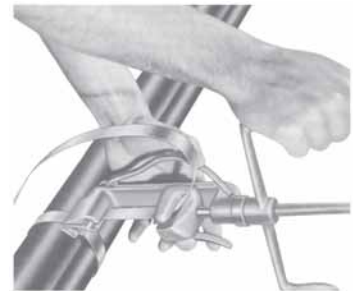
1

Hold the tool in the left hand so that the cutter bail is on the bottom and the pulling dog lever is on top. Slide the strap tail through the slot on the right side of the tool.



2

Press down on pulling-dog lever and rotate handle to begin tightening. Tighten strap to desired tension. Simultaneously relieve some tension while pushing the tool away as far as possible.



3

Pull the cutter bail to cut the strap tail. Tap the buckle ears down to hold the cut strap tail in place.



Operating Instructions for the 51960 with 51970 Roll-Over Attachment

- 1) Slide the 51970 Roll - over attachment on to the head of the 51960 Screw - action tool.
- 2) With handle of 51970 facing installer, place 51960 in a vise and tighten.
- 3) Slide the clamp tail through the slot on the 51970.
- 4) Press down on pulling-dog lever and rotate handle to begin tightening.
- 5) Tighten clamp to desired tension.
- 6) Simultaneously relieve some tension while rolling hose towards cutter.
- 7) When clamp buckle engages cutter, pull handle.

Part Identification for the C2 Installation Tool

This lightweight, side and front entry, jack-type clamping tool is specially designed to provide easy installation of the band and buckle system. Tool adjusts tension and locks buckle in place.

- Material: steel
- Weight: 3.30 lbs.
- Length: 14"



Part #

C2

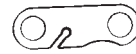
For applying 3/8" and 5/8" band clamps

Illustrations are not in correct proportion to one another.

Qty Per Tool	Part Description	Part #
1	Holding dog	C-207
2	Puller links	FX-211A
2	Puller links	FX-211B
1	Puller link pin	C-212
1	Pulling dog	FX-214
1	Pulling dog spring	FA-217
1	Pulling dog pin	F-233
1	Ball handle assembly	FA-220
1	Pusher puller assembly	CA-231
3	Retaining rings	F-242
1	Cutter	EXP-201
1	Crescent ring	F-232
1	Cutter handle	C-200
1	Holding dog pin	F-233
1	Holding dog spring	F-217
1	1/8" x 3/8" roll pin	C-243
2	3/16" x 5/8" roll pin	C-236



C-207



FX-211A



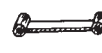
FX-211B



C-212



FX-214



FA-217



F-233



FA-220



CA-231



F-242



EXP-201



F-232



C-200



F-233



F-217



C-243



C-236

Sliding Jack Replacement Kit

F205K

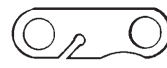
(Kit fits the F100, F175 and C2 Tools)



FX-214



FA-217



FX-211A

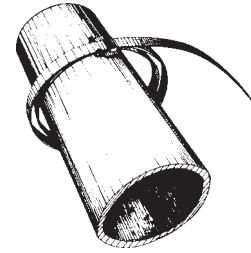


FX-211B

Operating Instructions for the C2 Installation Tool

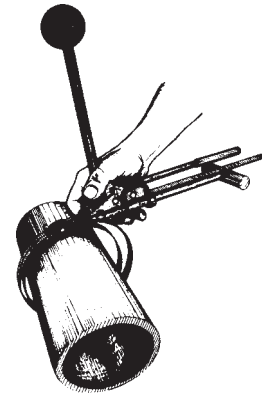
1

Pull strapping from carton and cut off. Slide clamp on strap and bend end under at ear side of clamp. Bring opposite end of strap around object twice, each time passing under clamp bridge.



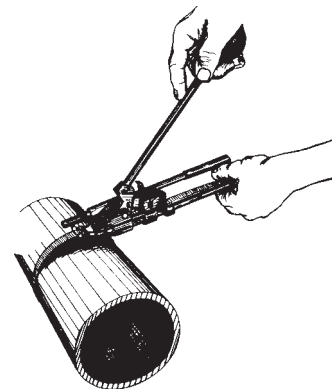
2

Raise ball handle to forward position and insert strapping. Slide tool forward.



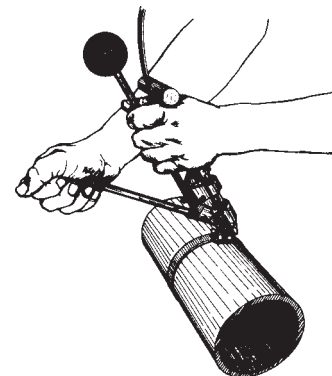
3

Slide cutter handle forward for alignment. Jack ball handle to reach desired tension.



4

Retract cutter handle and raise to 90-110°. To cut strapping, rotate cutter handle. Increase locking bend by rotating tool forward. Apply thumb pressure on tab as you remove tool. Bend ears with hammer.



Part Identification for the F1 Installation Tool

For applying 5/8" band clamps

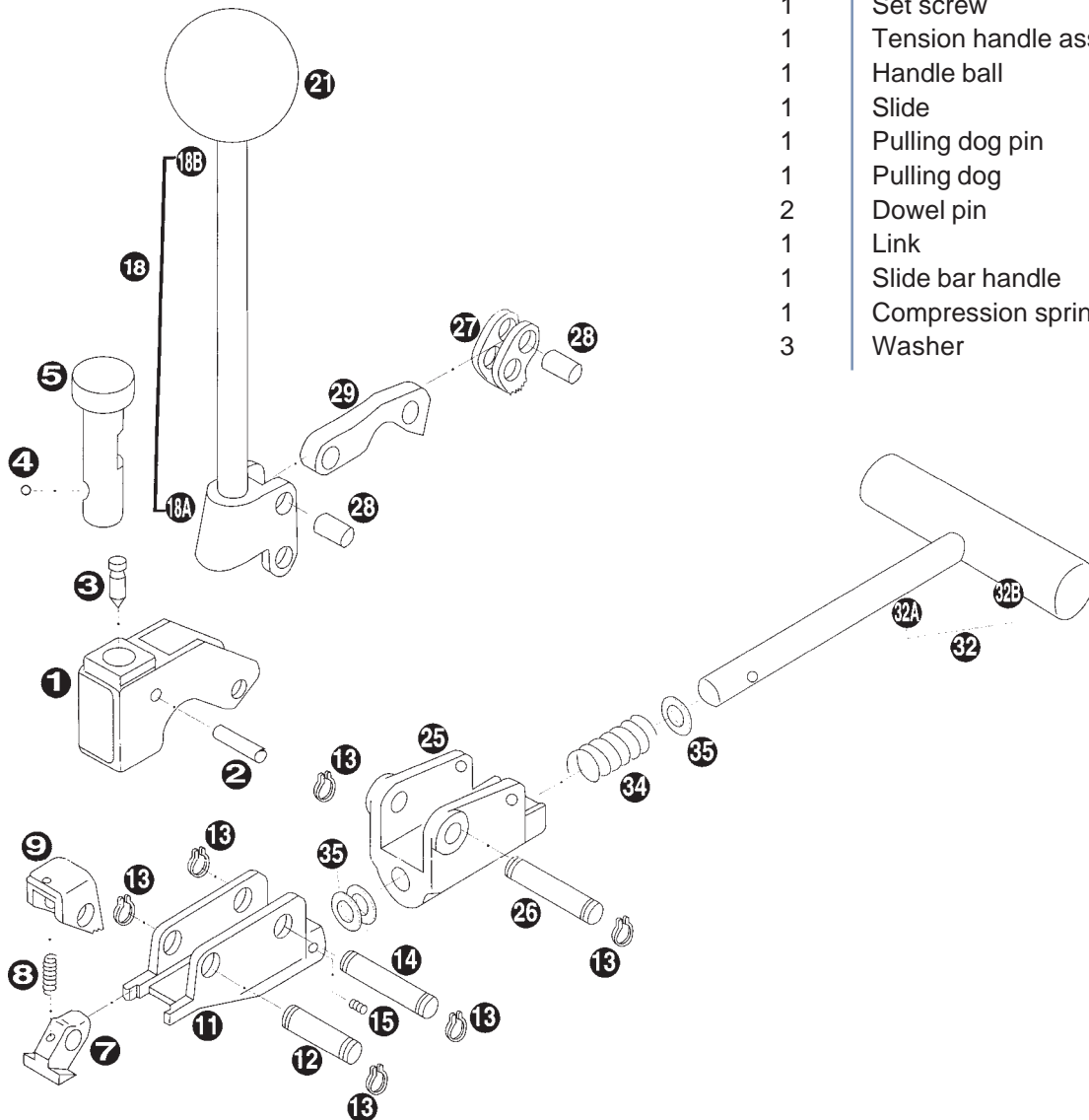


- Material: steel
- Weight: 3.27 lbs.
- Length: 12"

Part #

F1

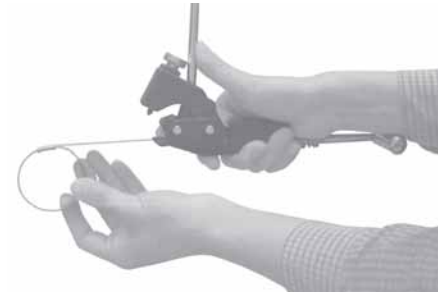
Qty Per Tool	Part Description	Part #
1	Head	1
1	Spring pin	2
1	Punch	3
1	Retaining ball	4
1	Punch holder	5
1	Pusher nose	7
1	Spring	8
1	Holding dog	9
1	Nose	11
1	Holding dog pin	12
6	Retaining ring	13
1	Head pivot pin	14
1	Set screw	15
1	Tension handle assembly	18
1	Handle ball	21
1	Slide	25
1	Pulling dog pin	26
1	Pulling dog	27
2	Dowel pin	28
1	Link	29
1	Slide bar handle	32
1	Compression spring	34
3	Washer	35



Operating Instruction for the F1 Installation Tool

1

Push tension handle all the way forward. Insert the clamp tail and push all the way into tool.



2

Tighten the clamp with short downward strokes. Tension handle should be in down position at completion of tightening clamp.

If clamp tension needs to be released before locking, move slide back against spring. This raises the pulling dog.



3

Holding tension handle down, lock clamp by hitting punch at least twice with mallet.



4

Hold hose and raise the tool back and forth to break off clamp tail. Remove from tool by operating tension handle. When tail has moved through holding dog, raise tension handle and pull tail free.



Part Identification for the F100 Installation Tool

- Material: steel
- Weight: 2.50 lbs.
- Length: 13"



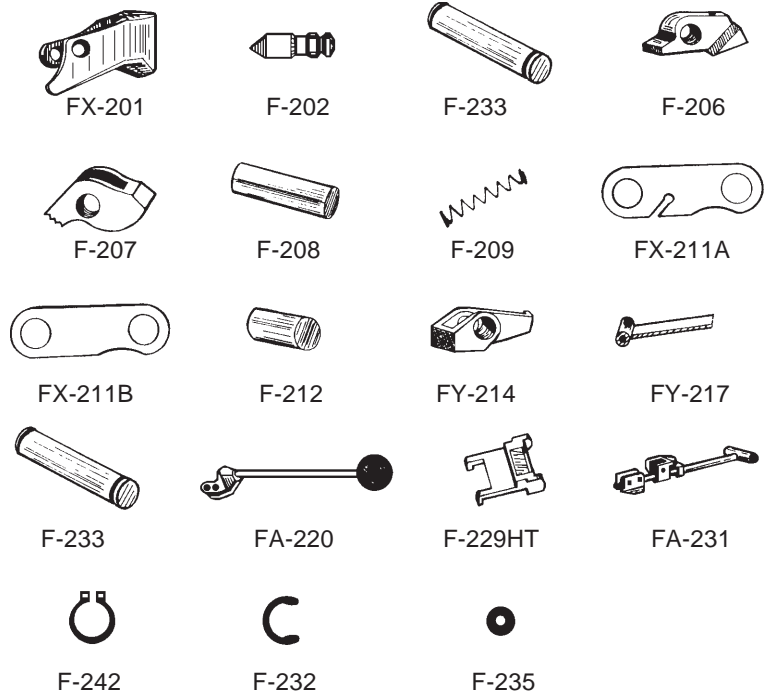
Part #

F100

For applying 3/8" and 5/8" band clamps

Illustrations are not in correct proportion to one another.

Qty Per Tool	Part Description	Part #
1	Punch head	FX-201
1	Punch	F-202
1	Punch head pin	F-233
1	Pusher nose	F-206
1	Holding dog	F-207
1	Pusher nose pin	F-208
1	Holding dog spring	F-209
2	Puller links	FX-211A
2	Puller links	FX-211B
1	Puller link pin	F-212
1	Pulling dog	FY-214
1	Pulling dog spring	FY-217
1	Pulling dog pin	F-233
1	Ball handle assembly	FA-220
1	3/8" clamp adapter	F-229HT
1	Pusher puller assembly	FA-231
3	Retaining rings	F-242
1	Crescent ring	F-232
1	Punch retainer ring	F-235



Sliding Jack Replacement Kit

FY205K

(Kit fits the F100 and C2 Tools)



FY-214



FY-217



FX-211A

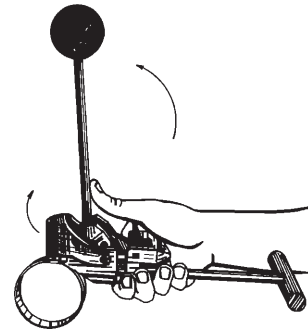


FX-211B

Operating Instructions for the F100 Installation Tool

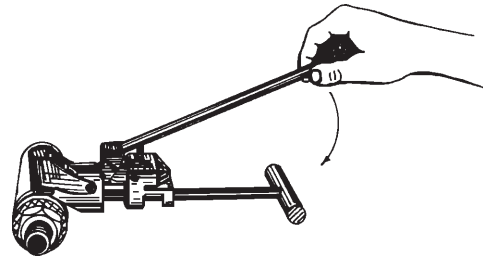
1

Hold tool as shown with ball handle all the way forward. Insert clamp and push the end entirely into the tool until the lock is held in pusher housing jaws.



2

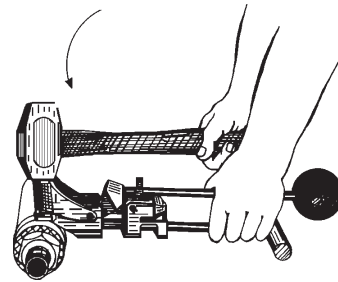
Slip the hose with nipple inserted into the clamp and locate clamp directly over groove - (position of groove can be laid out on hose with chalk), tighten the clamp with downward strokes of ball handle, using short strokes after initial slack is out so that ball handle finishes in down position.



3

Hold the tool with clamp resting on Vee block, vise or other solid surface. Swing punch head down against lock and strike hard with mallet; this locks the clamp. Raise punch head to free punch. Hold hose to keep from turning and raise both handles of tool up together which will break off band at lock.

(optional) Peen corners of the lock down smooth. To remove cut off end from tool, operate ball handle to work it through holding dog. Then press release lever and pull strip out toward rear of tool.

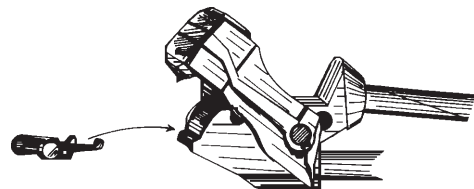


Instructions for using adapter to apply 3/8" width clamps

4

The F100 tool described above, as shipped, is ready for use in applying all sizes of 5/8" standard and heavy duty hose clamps. To apply the 3/8" wide clamps use the adapter (F-229).

To insert the adapter, hold the tool with the punch head (FX-201) raised as shown and place the adapter under the pusher nose with the bent ends up and push back until the shoulder rests against the front of the pusher nose. The F-229 clamp adapter under the pusher nose (F-206) centers the narrower clamp in the tool.



Part Identification for the F175 Installation Tool

- Material: steel
- Weight: 3.35 lbs.
- Length: 13"



Part #

F175

For applying 3/4" band clamps - K series

Illustrations are not in correct proportion to one another.

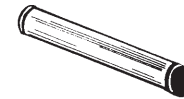
Qty Per Tool	Part Description	Part #
1	Punch head	F-201750
1	Punch	F-202
1	Punch head pin	F-204
1	Pusher nose	F-206
1	Holding dog	F-207
1	Pusher nose pin	F-208
1	Holding dog spring	F-209
2	Puller links	FX-211A
2	Puller links	FX-211B
1	Puller link pin	F-212
1	Pulling dog	FX-214
1	Pulling dog spring	FA-217
1	Pulling dog pin	F-233
1	Ball handle assembly	FA-220
1	Pusher puller assembly	FA-231750
4	Retaining rings	F-242
1	Wrench	F-224



F-201750



F-202



F-204



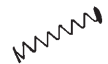
F-206



F-207



F-208



F-209



FX-211A



FX-211B



F-212



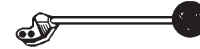
FX-214



FA-217



F-233



FA-220



FA-231750



F-242



F-232

Sliding Jack Replacement Kit F205K

(Kit fits the F100, F175 and C2 Tools)



FX-214



FA-217



FX-211A

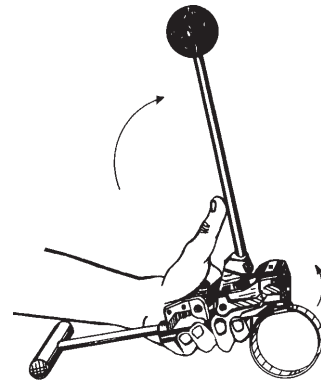


FX-211B

Operating Instructions for the F175 Installation Tool

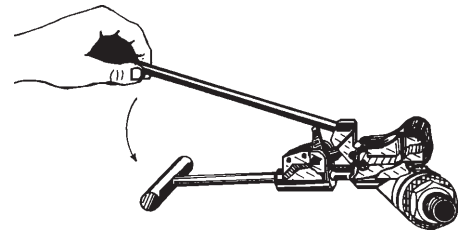
1

Hold tool as shown with ball handle all the way forward. Insert clamp and push the end entirely into the tool until the lock is held in pusher housing jaws.



2

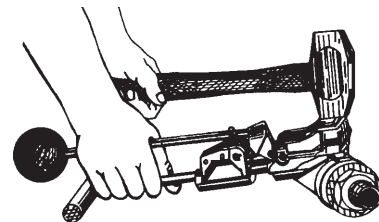
Slip the hose with nipple inserted into the clamp and locate clamp directly over groove - (position of groove can be laid out on hose with chalk), tighten the clamp with downward strokes of ball handle, using short strokes after initial slack is out so that ball handle finishes in down position.



3

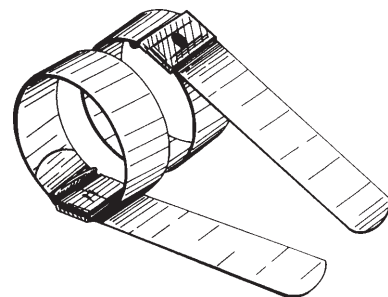
Hold the tool with clamp resting on Vee block, vise or other solid surface. Swing punch head down against lock and strike hard with mallet; this locks the clamp. Raise punch head to free punch. Hold hose to keep from turning and raise both handles of tool up together which will break off band at lock.

(optional) Peen corners of the lock down smooth. To remove cut off end from tool, operate ball handle to work it through holding dog. Then press release lever and pull strip out toward rear of tool.



4

The F175 tool is to be used for applying 3/4" wide preformed K clamps.



Part Identification for the F38 Installation Tool

Small portable hand tool.

- Material: steel
- Weight: 0.84 lbs.
- Length: 10"



Part #

F38

For applying 3/8" and 5/8" band clamps F series

Qty Per Tool	Part Description	Part #
1	Frame	FA-285
1	Punch and holder	FA-289
1	Winder	FF-290
2	Retaining ring	F-292
1	Ratchet wrench	FA-298

Illustrations are not in correct proportion to one another.



FA-285



FA-289



FF-290



FA-298

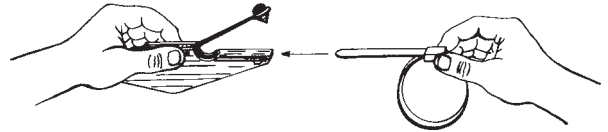


F-292

Operating Instructions for the F38 Installation Tool

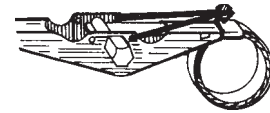
1

Push end of clamp completely into slotted end of clamp tool. For 3/8" width clamp use narrow slotted end.



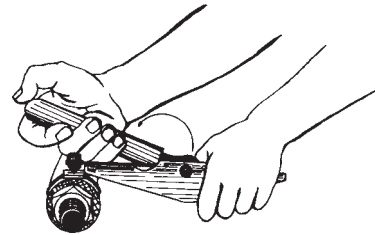
2

Push winder into frame with slot engaging clamp end. Ratchet wrench attached to winder.



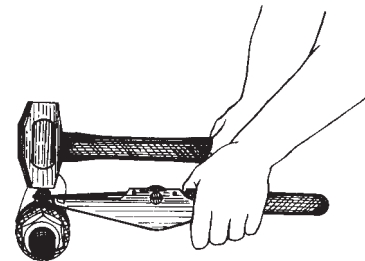
3

Push forward with sufficient strokes until desired tension is obtained.



4

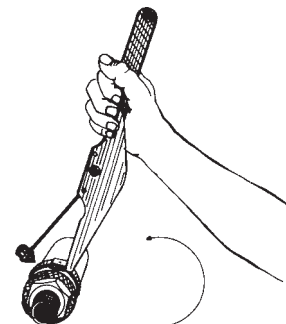
Push punch down on lock and while holding tension with wrench, strike firm blow with hammer, thus locking the clamp.



5

Raise punch and while holding tension with wrench, swing frame forward and up against edge of lock, breaking off tail piece.

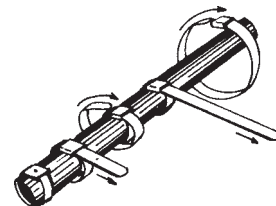
(optional) Peen corners of the lock smooth. Twist up tail and when it is free, pull out of winder. To move punch from one end to other end, squeeze legs of punch holder and reengage in holes at opposite end.



6

To use open end clamps, wrap and lace the clamp twice around, threading each wrap through the lock, apply clamp-tool and use as above.

Note: On applications such as glass, radiator spud or objects where punching would be injurious, pull tension - raise clamp tool to bend strip at right angle - remove winder - clip off 1/4" above the bend - fold end, close over lock.



Part Identification for the F40 Installation Tool

Intermediate size tool with anti-backlash ratchet.

- Material: steel
- Weight: 1.17 lbs.
- Length: 11"



Part #

F40

For applying 3/8" and 5/8" band clamps

Qty Per Tool	Part Description	Part #
1	Frame	F-240
1	Punch and holder	FCA-289
1	Winder	FF-290
2	Retaining ring	F-292
1	Ratchet wrench	FA-298
1	Lever	E-293
1	3/8" clamp adapter	FC-229
1	Spring	641104F1
1	Ball	E-295

Illustrations are not in correct proportion to one another.



F-240



FCA-289



FF-290



F-292



FA-298



E-293



FC-229



641104

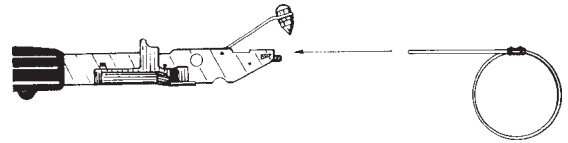


E-295

Operating Instructions for the F40 Installation Tool

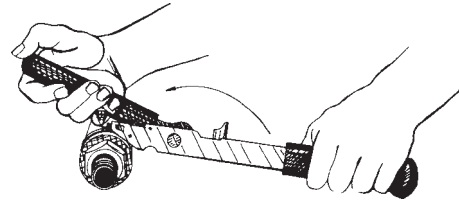
1

Push end of clamp into slotted end of clamp tool. Rotate ratchet wrench to engage clamp end in slot in winder.



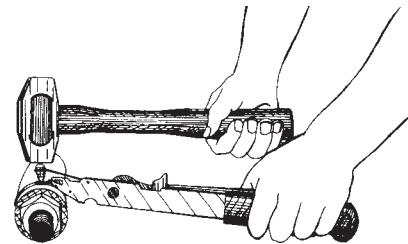
2

Push ratchet wrench forward with sufficient strokes until desired tension is obtained.



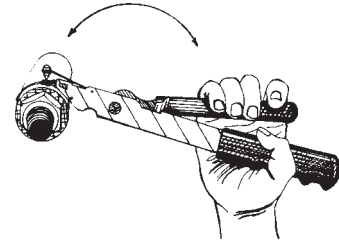
3

Grip ratchet wrench and tool together. Push punch down on lock and strike firm blow with hammer, thus locking the clamp tension.



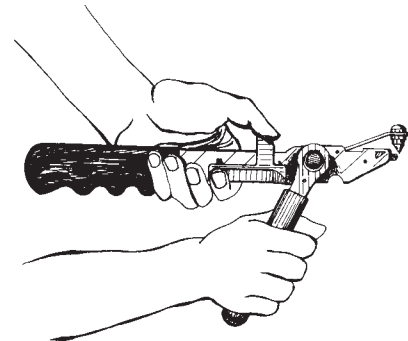
4

Raise punch and while holding wrench and tool together, rotate tool forward and up against edge of the lock, breaking off tail piece.



5

To remove tail piece, rotate wrench until tail is free from slot in tool. With thumb, slide lever and remove winder and wrench from tool.



6

For application of 3/8" wide clamps, swing 3/8" adapter to forward position and follow steps 1 through 5.



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