



MODEL 3710 PORTABLE BUBBLE STYLE HOSE CRIMPER FEATURING **QUICK CHANGE DIES**



FEATURES

- ❑ Engineered and designed specifically for use with ATCO beadlock fittings
- ❑ Portable, hand operation
- ❑ OE style triple bubble crimp
- ❑ **Quick-change dies**, no tools required to change sizes
- ❑ Heavy duty construction for use with air impact wrench
- ❑ Light weight for easy handling, less than 6 lbs.
- ❑ Capable of crimping under-hood applications
- ❑ **Six die sets** included to crimp all four sizes of **BOTH** 2-braid and reduced barrier hose
- ❑ Also, 3/4" (19mm) ID hose crimp dies available by special order
- ❑ Removable die holder accommodates complicated shapes
- ❑ Color coded, urethane encased dies
- ❑ Unit can be bench mounted
- ❑ Shipped in a custom carrying case with instructions
- ❑ No electrical requirements
- ❑ US Patent no. 5,257,525
- ❑ Made in U.S.A.

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MODEL 3710 BUBBLE STYLE HOSE CRIMPER

DISCLAIMER

WARNING! Keep hands clear of the crimp jaws. This machine develops up to 7000 pounds of force and can inflict serious personal injury if not used properly.

WARNING! Always wear eye protection when operating this crimper.

ATCO Products, Inc. shall not be held liable for any injuries incurred when using this equipment. ATCO Products, Inc. shall not be held responsible for any loss of materials or property due to misapplication or misuse of this equipment.

WARRANTY

ATCO Products, Inc. shall warrant this crimper to the original user against defects in materials or workmanship under normal use for a period of one (1) year after date of delivery. Any part, which is determined to be defective in material or workmanship, will be repaired or replaced at ATCO's option, as the sole remedy.

EXCEPT AS PROVIDED ABOVE, NO WARRANTY, EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, IS MADE OR AUTHORIZED BY ATCO PRODUCTS, INC.

GENERAL

The Model 3710 Crimper is a hand operated hose end-crimping unit specifically designed for use with **ATCO Beadlock** fittings. It is intended for use with SAE J51 A2 two-braid all rubber and SAE J2064 two braid and reduced diameter nylon barrier hose using the standard crimp dies provided in the kit.

The longer ATCO ferrule and triple bubble crimp of the Model 3710 insures a superior interface between the hose and the end fittings. In addition, the removable die holder allows for easy access in confined under-hood areas as well as for complicated end shapes.

CAUTION! To insure high quality crimped hoses, use only genuine **ATCO Beadlock** fittings with this crimper.

The dies are housed in replaceable, flexible, color coded polyurethane carriers (see crimp die set parts list for part numbers, Pg. 7) for easy identification of crimp sizes:

The crimper can be operated with a 1/2" drive air impact wrench, ratchet or breaker bar. It takes approximately 100 foot pounds of torque to fully close the jaws and achieve a satisfactory crimp. The crimper can be bench mounted using the flange and pipe nipple provided or it can be mounted in a bench vise to stabilize the unit. If the unit is used on the vehicle, it will be necessary to use a 12" minimum long extension to the pipe nipple to counteract the torque while closing the dies. This extension is not provided in the kit.

DESCRIPTION OF TERMS

1. **BENCH MOUNT**-Bolt the floor flange to a bench top. Screw the pipe nipple and crimper to the floor flange.
2. **IMPACT WRENCH-1/2" DRIVE @ 100 PSIG MAX**-Use a 1" impact socket to drive the movable die holder.
CAUTION! Do not exceed 100 PSIG air pressure on the impact wrench as damage to the wrench and the crimper may result.
CAUTION! Do not continue impacting the crimper after the dies are closed. This can cause damage to the crimper.
CAUTION! Care should be taken when reversing the impact so that the die holder does not slam into the crimper body actuator bar, (Item 2, Pg. 7). Bumpers are provided to minimize damage.
3. **RATCHET OR BREAKER BAR**-Use a 1" socket to drive the movable die holder. It will take approximately 100 foot pounds of torque to achieve a full crimp.
4. **REMOVABLE DIE HOLDER**-The bottom of the crimper can be removed to accommodate special shapes or under-hood crimping. Push the latch plate (Item 18, Pg. 7) open while holding the removable die holder. Pull the holder off the strain rods.
5. **DIE CHANGE**-Remove the bottom die holder from the crimper to expose the die halves. Simply squeeze the outer segments of each die half to remove it from the pins located on the die holder. (Refer to Fig. 1 & 2, Pg. 6)
6. **DIE CARRIER**-The die carriers will become worn and produce unacceptable crimps with time, therefore, replacement is necessary. To replace the color coded die carriers, simply push the die segment out of the back of the carrier. Reverse the process to assemble die segments in the new carrier.
8. **LOCATOR FLAG**-There is a locator flag on the crimper. It is spring loaded and movable to locate the end of the ferrule for proper crimp location. Swivel the flag to a position so that when the fitting is inserted into the crimper, the ferrule will stop in the proper location for crimping. (Refer to Fig. 6, Pg. 6)
9. **CRIMP DIAMETER MEASUREMENT**-The crimp diameter can be measured by using a set of point micrometers or calipers with a point accessory kit installed. Standard measuring instruments will not reach to the crimp impression because of the pinch of the crimp. When measuring the crimp diameter, take three measurements around the center crimp ring, add the measurements and divide by three to get the average. The average should be the target crimp diameter (+/- .012) See CRIMP DIAMETER AND WALL THICKNESS CHART. Example: The #6 reduced size is .556" target crimp diameter. The crimp should measure between .568" and .544" (Refer to Fig. 3, Pg. 6).
10. **HOSE WALL THICKNESS**-The hose wall thickness for hose is listed below. It is important to check the hose wall thickness to make sure that the crimp will be leak free.

CRIMP DIAMETER AND HOSE WALL CHART

HOSE SIZE	CRIMP DIAMETER	HOSE WALL THICKNESS
#06-5/16" I.D. Reduced Diameter	.556" ±.012"	.128" ±.018"
#06-5/16" I.D. 2-Braid Diameter	.655" ±.012"	.214" ±.023"
#08-13/32" I.D. Reduced Diameter	.655" ±.012"	.128" ±.018"
#08-13/32" I.D. 2-Braid Diameter	.830" ±.012"	.244" ±.025"
#10-1/2" I.D. Reduced Diameter	.742" ±.012"	.128" ±.020"
#10-1/2" I.D. 2-Braid Diameter	.897" ±.012"	.243" ±.028"
#12-5/8" I.D. Reduced Diameter	.897" ±.012"	.148" ±.020"
#12-5/8" I.D. 2-Braid Diameter	1.015" ±.012"	.246" ±.025"

OPERATION

WARNING! Always wear eye protection when operating this crimper.

1. Mount the crimper as described previously unless it is necessary to crimp on the vehicle.
2. Select the proper size dies. Check all segments to make sure that all of the segments have the same numbers on the back. Each segment will be marked identifying the hose size and crimp diameter. Example: 5/16 ID hose with a .556 diameter crimp will be marked "6R 556" (Refer to Fig. 4, Pg. 6).
3. Lubricate all parts indicated on page 7 with the Teflon grease provided (Item "A", Pg. 7) or equivalent.
4. Refer to DIE CHANGE for proper assembly of the dies into the crimper.
5. Insert the hose into the fitting making sure that the hose appears in the small inspection hole on the side or end of the ferrule.

CAUTION! If the hose does not appear in the inspection hole, a poor crimp may result.

6. Position the flag (Item 7, Pg. 7) so the ferrule of the fitting bumps it when inserted into the crimper (Refer to Fig. 6, Pg. 6).

CAUTION! Do not locate from the bead on the fitting. This will result in the wrong crimp location.

WARNING! Keep hands clear of the crimp jaws. This machine develops up to 7000 pounds of force and can inflict serious personal injury if not used properly.

7. Place the assembly into the crimper and hold it against the flag locator. **Only the ferrule should touch the flag (Refer to Fig. 6, Pg 6).** Operate the actuator screw (Item 1, Pg. 7) to close the dies to the full closed position. This will provide the proper compression to achieve a leak free crimp. When the crimp dies are bottomed out, there will be a slight gap between the two die holders (Items 5 & 14, Pg. 7). This insures that the dies are fully closed before the holders bottom out (Refer to Fig. 5, Pg. 6).
8. Reverse the actuator screw (Item 1, Pg. 7) to release the crimper from the hose assembly. Take care not to drive the die holder (Item 5, Pg. 7) against the actuator bar (Item 2, Pg. 7) as damage to the crimper may result. The bumpers (Item 3, Pg. 7) are provided as a cushion to help prevent this from occurring.
9. If the crimp is performed under-hood or the fitting is a complicated shape that requires disassembly of the crimper, open the latch plate (Item 18, Pg. 7) and remove the die holder assembly.
10. Inspect the first crimp to make sure that the correct dies were used, the crimp location is correct, the crimp is uniform and there is no internal deformation of the fitting.

NOTE: Some hose materials trap air in the hose layers during manufacture. When leak testing a newly pressurized hose using soap bubbles or water submersion, the air in the hose will bleed out at the fitting and hose interface indicating a false leaking condition. Leave the hose pressurized for one hour and retest. The residual air should completely bleed out and no leak will be visible.

CRIMPER MAINTENANCE

1. Clean and lubricate all moving parts. Use Teflon grease (Item A, Pg. 7) or equivalent as needed when lubricating.
2. Inspect the strain rods and latch plate for wear around the contact points.
3. Make sure that Actuator Screw turns freely. Lubricate as noted above.
4. Check for worn or torn die carriers. Replace when crimp appears to go out of round.

TROUBLESHOOTING

PROBLEM	CAUSE	ACTION
1. Oblong or irregular crimp	<ul style="list-style-type: none"> * Worn carriers * One or more die segment in the set is the wrong size 	<ul style="list-style-type: none"> * Replace carriers * Check all segments for correct size on back of die
2. Crimp diameter too large	<ul style="list-style-type: none"> * Crimper not fully closed-refer to instructions * Incorrect size dies 	<ul style="list-style-type: none"> * Re-crimp until dies fully close * Replace with correct size
3. Crimp diameter too small	<ul style="list-style-type: none"> * Incorrect size dies 	<ul style="list-style-type: none"> * Replace with correct size
4. Crimp location too close to closed end of ferrule	<ul style="list-style-type: none"> * Ferrule not inserted far enough into crimper 	<ul style="list-style-type: none"> * Use locator flag to properly locate ferrule position
5. Crimp location too close to hose	<ul style="list-style-type: none"> * Ferrule inserted too far into crimper (past locator flag) 	<ul style="list-style-type: none"> * Use locator flag to properly locate ferrule position
6. Crimped fitting leaks when tested with soap bubbles	<ul style="list-style-type: none"> * Air trapped in the hose during manufacture * Insufficient crimp * Fitting is defective 	<ul style="list-style-type: none"> * Recheck after system has been charged for one hour - air will bleed out of the hose * Check crimp diameter * Replace fitting/re-crimp
7. Crimped fitting leaks when tested with electronic leak detector	<ul style="list-style-type: none"> * Insufficient crimp * Fitting defective 	<ul style="list-style-type: none"> * Check crimp diameter * Replace fitting/re-crimp

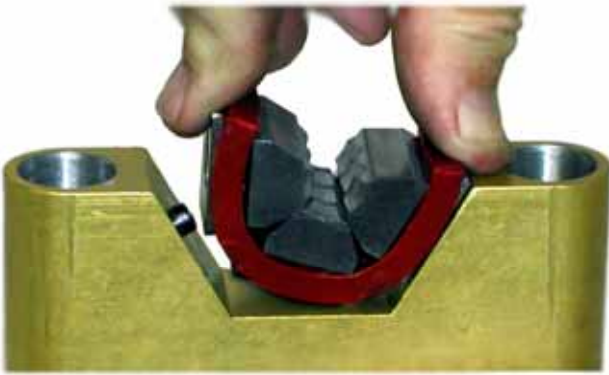


Figure 1
Insert one side of die as shown.

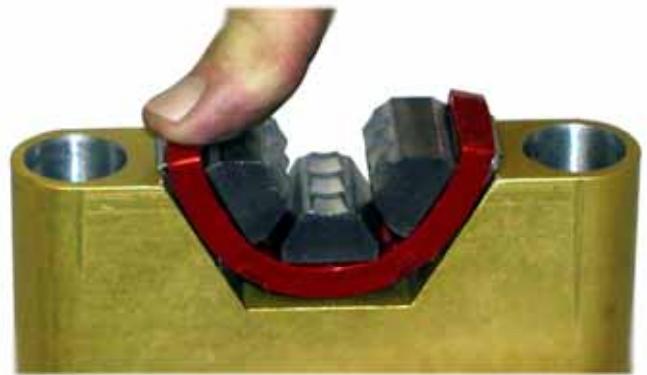


Figure 2
Push opposite side into place.



Figure 3
Measuring the crimp with a micrometer.



Figure 4
Identification of die sizes.

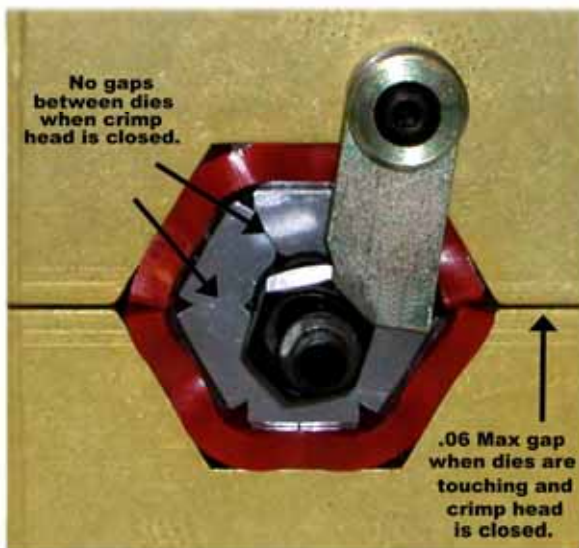


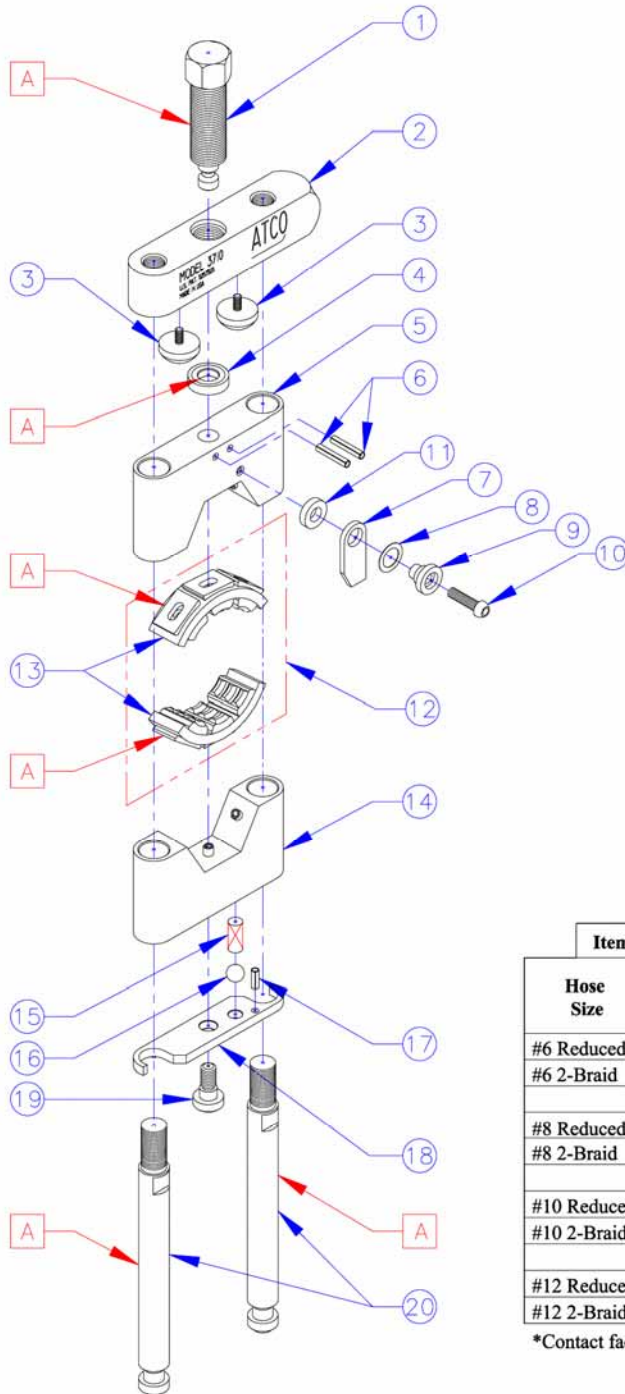
Figure 5
The crimp head completely closed.



Figure 6
The proper method of using the locator flag.



MODEL 3710 CRIMPER PARTS LIST



Parts List

Item	Part #	Description	Qty.
1	75013	Actuator Screw	1
2	75177	Actuator Bar	1
3	75012	Rubber Bumper	2
4	75149	Thrust Bushing	1
5	75175	Movable Die Holder	1
6	75010	3/16 x 1 Roll Pin	2
7	75086-Y	Locator Flag	1
	75088	Curved Disc Spring	1
9	75087-Y	Locator Bushing	1
10	75113	1/4-20 x 1 Button Head Screw	1
11	75176	Spacer Bushing	1
12	See Crimp Die Parts List		
13	See Crimp Die Parts List		
14	75174	Removable Die Holder	1
15	75076	Spring - Compression	1
16	75077	7/16 Dia. Ball	1
17	75009	3/16 x 1/2 Roll Pin	1
18	75074	Latch Plate	1
19	75008	Lock Screw	1
20	75020	Strain Rod	2

Items Not Shown

A	75015	Teflon Grease (.75 oz. tube)	1
B	75016	3/8 x 4 Pipe Nipple	1
C	90607	3/8 Floor Flange	1
D	75178	Carrying Case	1
E	3710-1	Crimper Only (No Dies)	1

A = Lubricate using item A above

Crimp Die Parts List

		Item Number →	12	N/A	13	N/A	N/A
Hose Size	Die Marking	Crimp Die Number	Color	Die Carrier	Crimp Dia.	Fitting Type	
#6 Reduced	6R 556	3711	Red	75140	.556"	SR & RB	
#6 2-Braid	6-8R 655	3712	Black	71688	.655"	BL & SB	
#8 Reduced	6-8R 655	3712	Black	71688	.655"	SR & RB	
#8 2-Braid	8 830	3713	Blue	71689	.830"	BL & SB	
#10 Reduced	10R 742	3714	Almond	75136	.742"	SR & RB	
#10 2-Braid	10-12R 897	3715	Green	71690	.897"	BL & SB	
#12 Reduced	10-12R 897	3715	Green	71690	.897"	SR & RB	
#12 2-Braid	12 1015	3716	Clear	71691	1.015"	BL & SB	

*Contact factory for crimp dies to crimp 3/4" (19mm) I.D. hose.