

C12-HTR / 12-HTR REMOTE HYDRAULIC CRIMPING TOOL

INTRODUCTION




The 12-HTR compression head was designed for installing tubular compression connectors on electrical conductors.

The 12-HTR remote compressor is a light weight, remote powered, hydraulic tool that can be operated in any position. The single acting cylinder develops twelve tons of thrust at 10,000 psi (68.9 MPa). Any pump capable of this pressure, with a safety valve setting between 9,600 psi (66.2 MPa) and 10,400 psi (71.7 MPa) may be used.

The 0.92 inch (23.4 mm) open C-head permits the compressor to be hooked over the conductor or accessory, and the die locking devices allow it to be moved along without accidentally dislodging the die halves.

WARNING

 THE 12 HTR AND C12-HTR TOOL IS NOT TO BE USED FOR "HOT LINE" WORK.

SPECIFICATIONS

TOOL SECTION:

1.81 (4.60 CM) DIA.RAM, .96 (2.44 CM) STROKE WITH DIES.
CRIMPING FORCE, 13.1 U.S. TONS AT10,000 PSI (11.9 METRIC TONS
AT 70,000 kPa (700 BAR)
OIL TYPE USED, AMOCO RYKON MV.

OVERALL DIMENSIONS:

2.75 x 4.87 x 10.25 INCHES LONG (6.98 x 12.37 x 26.03 CM LONG)
TOTAL WEIGHT, 10.3 LBS. WITH OIL (4.7 kg WITH OIL)

CRIMPING CAPACITY:

NO.8 THRU 500 MCM CU GROUNDING TERMINALS AND SPLICES
NO.8 THRU 250 MCM CU GROUNDING TAPS AND 3/4 INCH GROUND ROD
NO.8 THRU 750 MCM CU INSULATED AND UNINSULATED TERMINALS
NO.8 THRU 750 MCM CU ALUMINUM TERMINALS
NO.8 THRU 350 MCM CU ALUMINUM SPLICES
NO.6 THRU 556.5 26/7 ACSR STRANDING

COUPLERS:

MALE COUPLER ASSEMBLY (Power Team Part No. 25599)

IMPORTANT SAFETY INFORMATION



This is the safety alert symbol.

It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death



DANGER

Denotes an imminently hazardous situation which, if not avoided, will result in death or serious injury.



WARNING

Denotes a potentially hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION

Denotes a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

CAUTION

Caution used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

IMPORTANT

Denotes an operating or service procedure or condition considered essential for expedient and efficient operation and service.



WARNING To help prevent personal injury,



- Always wear eye protection whenever operating hydraulic equipment.



- Always wear hearing protection as required.

- Operation, repair, or maintenance of hydraulic equipment should be performed by a qualified person who understands the proper function of hydraulic equipment per local directives and standards.
- Hydraulic equipment must be assembled correctly and then checked for proper function before use. Use hydraulic components of the same hydraulic pressure ratings. An appropriate hydraulic pressure gauge is recommended to monitor pressure.



- Never place your hands or other body parts near a hydraulic fluid leak.
- Never use your hands or other body parts to check for a possible leak.

High pressure fluid can be injected under your skin causing serious injury and/or infection.



- Exercise caution to avoid the risk of fire. An incomplete crimp can cause a fire. Use proper die, connector and cable. Improper combinations can result in an incomplete crimp.



- DO NOT USE FOR HOT LINE WORK
- This tool is not insulated. When using this unit near energized electrical lines, use proper personal protective equipment.



WARNING



It is the operators responsibility to read and understand the following safety statements,

- Only qualified operators should install, operate, adjust, maintain, clean, repair, or transport this machinery.
- Inspect tool before use. Replace any worn or damaged parts. Failure to observe these warnings can result in severe injury or death.



WARNING



Keep hands away from the crimping tool head when crimping.



CAUTION

- This tool is intended for two-handed operation. Maintain a firm grip on both handles during operation. Using this tool in any other manner can result in injury or equipment damage.
- Do not advance Ram without Dies inserted.

IMPORTANT

- Properly dispose of all fluids, components, and assemblies at the end of their useful life.
- Hydraulic fluid should be compatible with all hydraulic components.

OPERATING INSTRUCTIONS**WARNING DO NOT OPERATE THE COMPRESSOR WITHOUT DIES.**

Select the proper dies for use on the accessory to be compressed. Push the die release button on the C-head and slide one of the identical die-halves into position. The die retainer pin locks the die in place.

The connection of the compressor and the hydraulic hose is quickly and easily made by the use of a quick coupler, the female half being part of the compressor and the male half located on one end of the hydraulic hose. With this connection properly made, the ball check valves in both female and male halves of the quick coupler are open to permit free oil flow.

Connect compressor and hose to any suitable hydraulic pump that has a pressure output of 10,000 psi. The mating half of quick coupler supplied with compressor is Power Team No. 25599. Pump should be equipped with a 2 or 3-way valve. Put the valve in the retract position and retract compressor piston fully.

Place the compressor in position over the accessory to be compressed. If the accessory is larger in diameter than the throat opening of the C-head, put the compressor over the conductor and then slide it over the accessory in the correct position for the first compression.

Place valve in advance position and advance piston with pump. When the dies touch on the frame side, compression is complete.

Release the pressure at the pump and the lower die-half will retract. When compressing connectors, overlap each bite of the dies just enough to make a smooth continuous compressed section.

**WARNING Do not use the compressor for any purpose other than that for which it was designed. This tool has been manufactured to precision tolerances. It should be used with the same care and attention as any other fine piece of equipment.****REPLACING HYDRAULIC SEALS**

Maintenance and repair of this tool should be provided with the same reasonable care given other fine equipment. Service should be performed by adequately trained personnel in repair shops under clean conditions. For those owners having adequately staffed repair facilities, a hydraulic seal replacement kit No. 4-1075 containing O-rings, gaskets, etc., needed for one complete replacement of hydraulic seals in the compressor. Include compressor serial number when ordering all parts.

To replace the seals it is necessary to separate the C-head and piston assemblies from the cylinder. Remove both die halves. Removing the quick coupler drains the oil and aids in dis-assembly. Remove screw and washer to unlock cylinder.

Unscrew the C-head and the piston will also rotate. After nine complete turns the piston spring rod is unthreaded from within the cylinder and the piston guide arrangement should be removed. Further rotation will separate the C-head from the cylinder. Pull the piston from the cylinder. All seals and rings are now accessible.

Reassemble with clean parts lubricated with the same grade of oil used in the remote pump.

The steel piston washer and leather wiper are installed on the outside of the piston with the steel washer next to the shoulder on the piston.

Insert piston into cylinder, rotate assembly until hand tight. Backoff one-half turn to permit the piston wipers to center themselves in the C-head bore. Thread the C-head onto the cylinder until the bottom of the die groove in piston is flush at a corresponding point on the C-head. Continue rotation until the key slots align. At this attitude, top of piston should not have entered C-head opening and a die-half can be inserted in piston groove.

Reassemble the piston guide arrangement with Loctite on screw threads.

Sheet No. 2 of 5

Rev 1 Date: 13 June 2005

SERVICING INSTRUCTIONS

REPLACING HYDRAULIC SEALS (continued)

Invert the tool and fill the cylinder with oil. Bleed air from cylinder by rocking tool back and forth. Assemble 3/8 inch female quick coupler.

It is important that the compressor be full of oil and free of air. The simplest way to fill and bleed the compressor is to install a set of dies and invert the tool. Attach a pump placing it in position above the compressor. Advance and retract the piston several times.

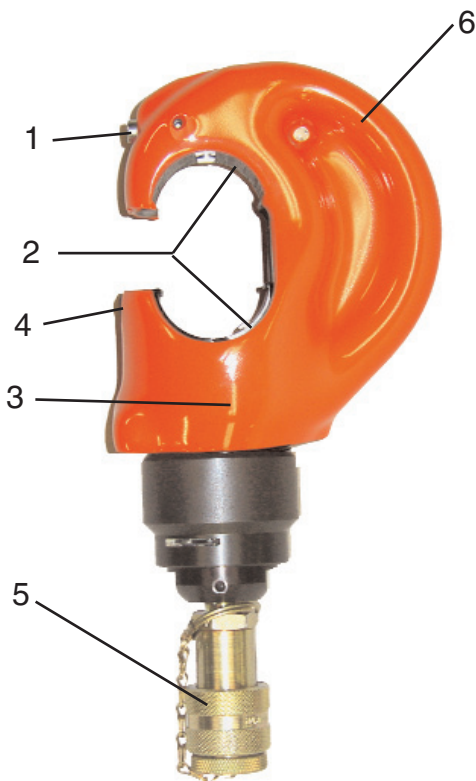
! WARNING DO NOT USE BRAKE FLUID OF ANY KIND.

PREVENTIVE MAINTENANCE

The majority of service troubles are caused by dirt collecting about the tool or in the oil system. Keep the tool clean and prevent foreign matter from entering the compressor while filling the remote pump reservoir. Refer to the "Specifications" for the proper oil when replenishing or replacing the fluid.

Wiper clean both sections of the quick coupler before connection and replace dust caps after disconnection. Lubricate all moving parts and keep the piston guide screw tight.

! WARNING DO NOT OPERATE COMPRESSORS WITHOUT DIES.



Illustration

- | | |
|---------------------------|-----------------------------|
| 1. Top Die Release Button | 4. Lower Die Release Button |
| 2. Die half | 5. Female Coupler |
| 3. Piston | 6. C-Head |

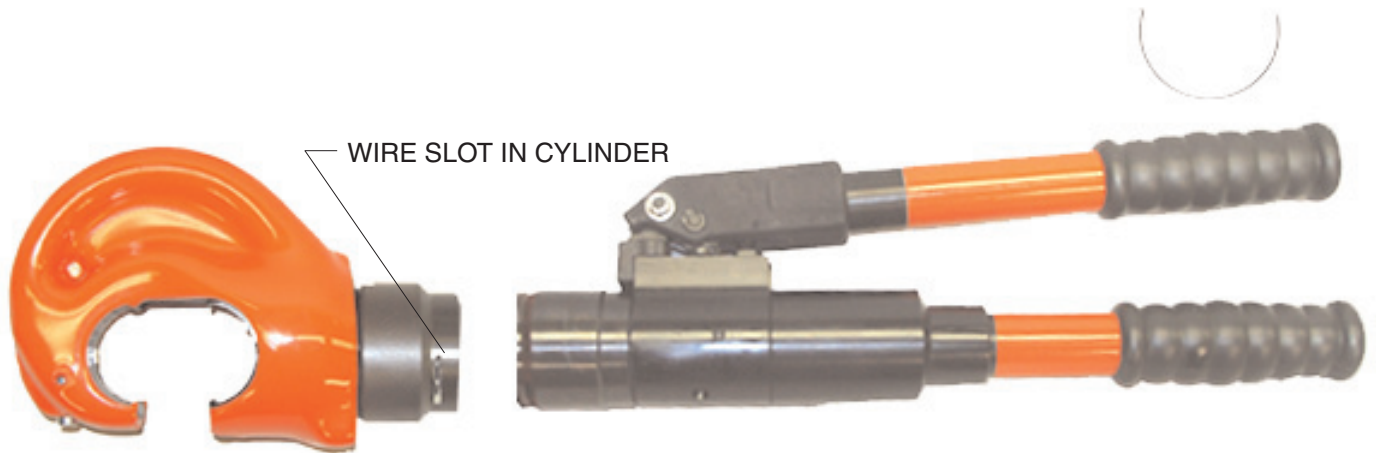
INSTRUCTIONS FOR CONVERSION TO C12-HHT



CONVERSION ASSEMBLY
(PART NUMBER 4-0766)

- 1-RETAINING WIRE
- 1-WRAP AROUND DECAL

12-HTR TOOL



C HEAD SUB-ASSEMBLY
(PART NUMBER 3000084 coated
or 4-0644 uncoated)

PUMP MECHANISM SUB ASSEMBLY
(PART NUMBER 3000089)

1. Fully retract tool ram and make sure all pressure has dissipated. Disconnect tool from hose to pump.
2. Place tool in a vise with handles pointing upward. Remove adhesive label covering slot in cylinder.
3. Pry hooked end of retaining wire out of slot in cylinder.
4. Holding hooked end of wire with pliers, rotate cylinder to force retaining wire out of groove and through slot. Discard wire.
5. Carefully separate end cap assembly from cylinder assembly, holding discharge spring in place.
6. Apply lubricant to groove in pump block and to retaining wire.
7. Insert pump block assembly into back end of cylinder assembly. Rotate cylinder assembly until hole in pump block appears in slot in cylinder.
8. Place hooked end of new wire from conversion kit into hole in pump block. Align free length of wire along slot in cylinder. Rotate cylinder assembly in opposite direction to feed wire through slot and into groove.
9. When wire is fully engaged, hooked end will snap out of hole in pump block to permit full head rotation. Seal slot with new adhesive label.
10. Purge air from tool using normal fill and bleed procedures.

TROUBLE SHOOTING

If the ram will not extend completely, it will generally be found that there is an insufficient amount of oil in the crimper's hydraulic system.

If the dies will not close and pumping is difficult, check the die number to make certain the proper size die is being used on the accessory. If the dies will not close and pumping becomes easier, usually additional oil is needed in the hydraulic system.

If the ram will not retract completely, it will generally be found that there is too much oil in the hydraulic system. Drain enough to permit complete retraction. If the ram will not retract and the oil reservoir is not full, the ram is likely being held by a deformed washer.

A small amount of leakage is desirable around the ram to lubricate this parts. If enough leakage occurs to cause the oil to run, the packing should be replaced.

If the dies do not lock in position, the action of the retaining pins is probably restricted by dirt. Clean and oil these parts.

If it is difficult to unlock the die-halves, the die release buttons should be lubricated. The die retaining pin set screw in the C-head above the die release button is staked in position. To further tighten this screw will make it difficult or impossible to release the die.

COMPATIBLE HYDRAULIC FLUIDS:

The use of Amoco Rykon MV oil is recommended. Compatible fluids include:

Mobil DTE 13 Mobil ATF 220 Shell Tellus 32 Arco Dexron III Citgo AW32 Citgo Dexron III

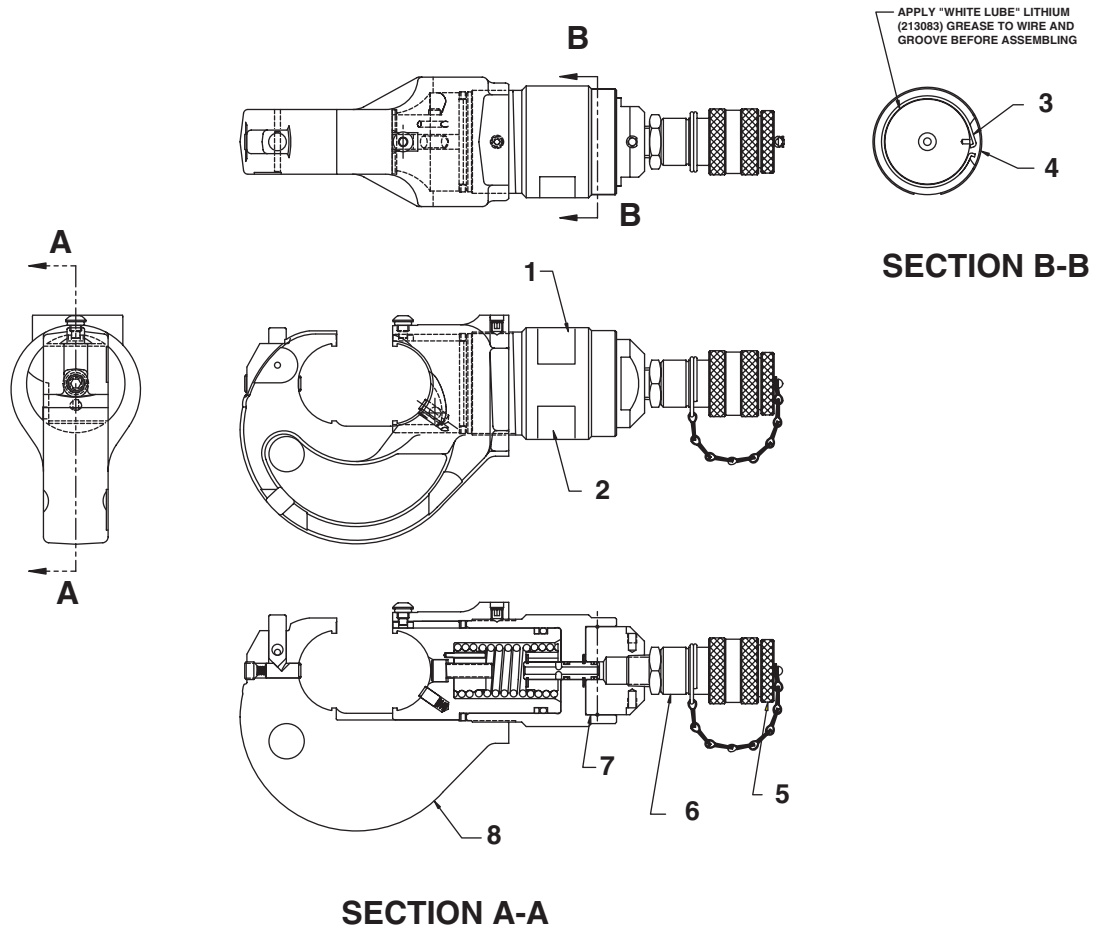
Other fluids also may be used if they meet or exceed the following specifications:

Viscosity: 181 SSU at 100 degree F.

Flash Point: 350 degree F

Pour Point: -50 degree F:

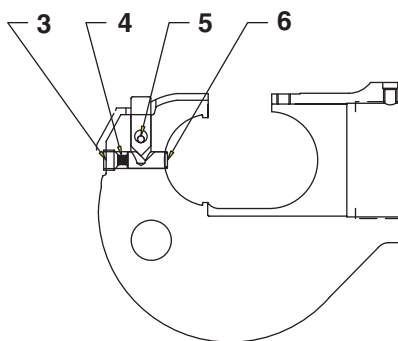
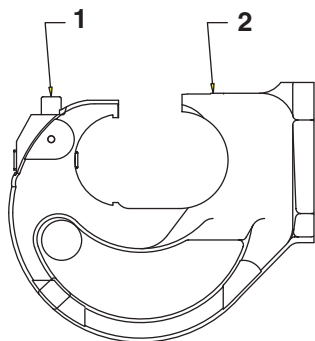
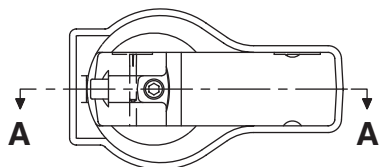
PARTS LIST



C12-HTR / 12-HTR

Item No.	Part No.	No. Req'd	Description	Item No.	Part No.	No. Req'd	Description
1	1000055	1	Decal (Warning & Caution)	8	3000084	1	C-Head / Ram / Cylinder Assembly (PVC-coated)
2	420691	1	Decal (Product Blank)	8	4-0644	1	C-Head / Ram / Cylinder Assembly (Non PVC-coated)
3	3-9678	1	Wire, Retaining	ITEMS NOT SHOWN:			
4	1000053	1	Decal, (Tradename Power Team)				
5	9797	1	Plug, Dust				
6	9796	1	Coupler Female (3/8" NPTF)	3-1294-OR9	1	Case, 12-HTR Orange Carrying	
7	3-9990	1	Cap, End				

PARTS LIST



SECTION A-A

C-HEAD ASSEMBLY 3000083 (PVC coated C-Head)

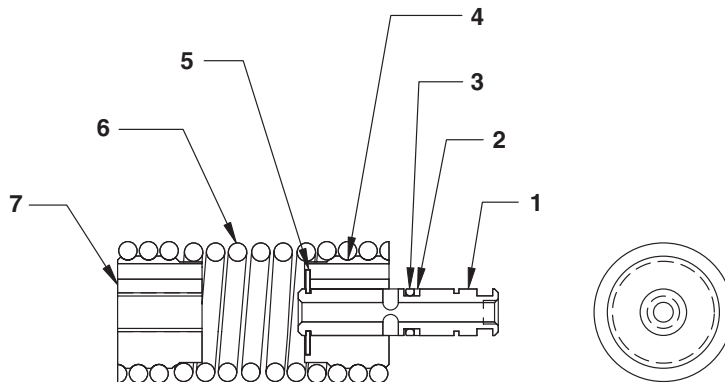
Item No.	Part No.	No. Req'd	Description
1	3-1237	1	Shaft
2	2000155	1	C-Head (PVC coated)
3	5-0662	1	Screw, Set

Item No.	Part No.	No. Req'd	Description
4	3-1239	1	Spring, Compression
5	5-1265	1	Pin, Drive
6	3-1238	1	Pin, Retainer

C-HEAD ASSEMBLY 4-0646 (Non PVC coated C-Head)

Item No.	Part No.	No. Req'd	Description
1	3-1237	1	Shaft
2	4-0647	1	C-Head (Non PVC coated)
3	5-0662	1	Screw, Set

Item No.	Part No.	No. Req'd	Description
4	3-1239	1	Spring, Compression
5	5-1265	1	Pin, Drive
6	3-1238	1	Pin, Retainer

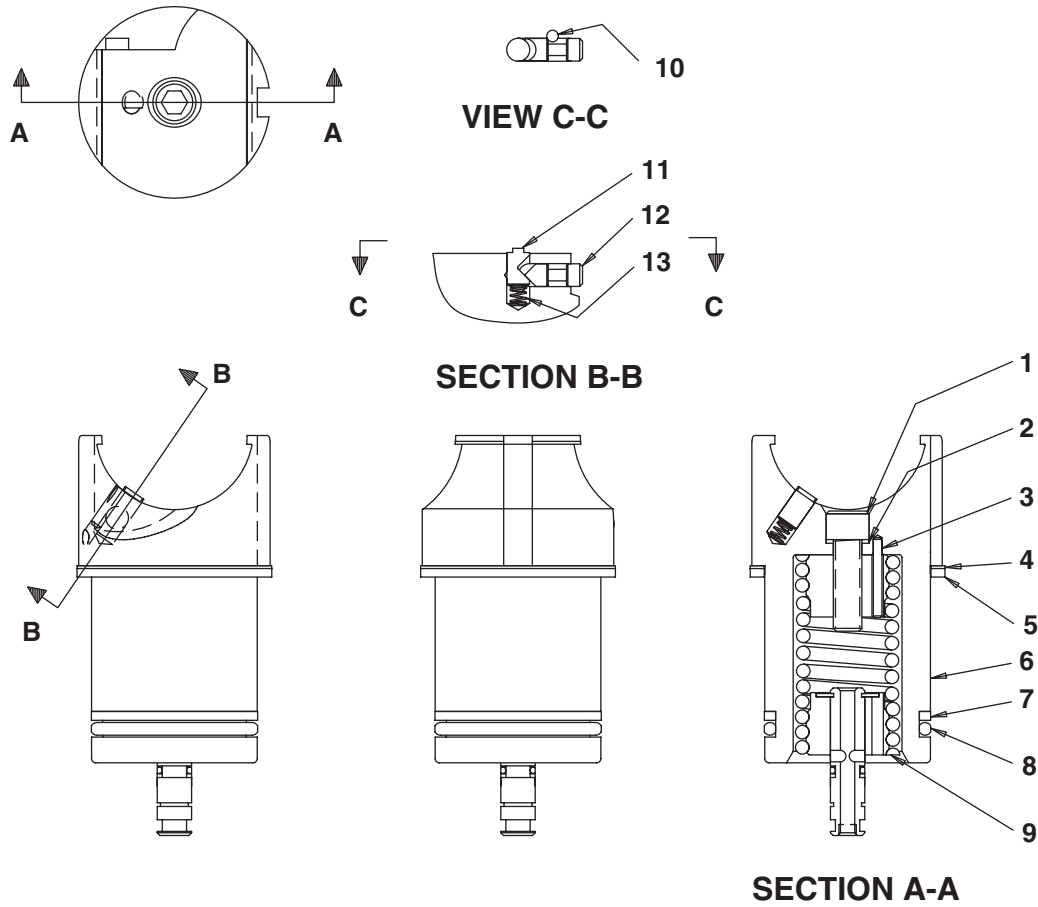


SPRING ASSEMBLY - 4-1324

Item No.	Part No.	No. Req'd	Description
1	4-1322	1	Tube, Transfer
2	5-3245	1	Ring, Back-Up
3	10266	1	O-Ring
4	3-9683	1	Retaining, Swivel

Item No.	Part No.	No. Req'd	Description
5	11032	1	Ring, Retaining
6	3-9681	1	Spring, Tension
7	3-9682	1	Retainer, Threaded

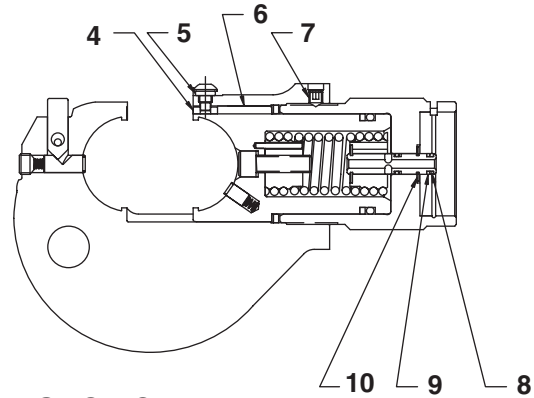
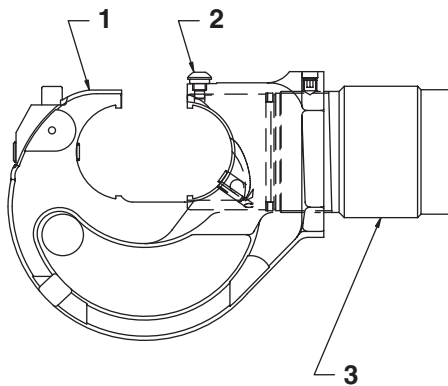
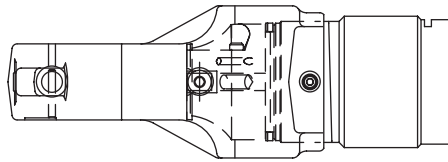
PARTS LIST



RAM ASSEMBLY - 4-0648

Item No.	Part No.	No. Req'd	Description	Item No.	Part No.	No. Req'd	Description
1	5-0007	1	Screw	8	5-1263	1	O-Ring
2	3-4145	1	Washer, Seal	9	4-1324	1	Spring Assembly
3	5-1996	1	Pin, Locater	10	5-1269	1	Pin, Drive
4	3-1205	1	Washer	11	3-1241	1	Pin
5	3-1211	1	Wiper	12	3-1242	1	Shaft
6	4-0649	1	Body, Ram	13	3-1239	1	Spring
7	3-1214	1	Ring, Backup				

PARTS LIST



SECTION VIEW

C-HEAD/RAM CYLINDER ASSEMBLY 3000084 (PVC coated C-Head)

Item No.	Part No.	No. Req'd	Description
1	3000083	1	C-Head Assembly
2	3-1203	1	Screw
3	4-0645	1	Cylinder
4	3-1204	1	Key
5	5-1258	1	Lock Washer

Item No.	Part No.	No. Req'd	Description
6	4-0648	1	Ram Sub-Assembly
7	5-0152	1	Screw, Socket Set
8	10266	1	O-Ring
9	5-3245	1	O-Ring
10	11032	1	Ring, Retaining

C-HEAD/RAM CYLINDER ASSEMBLY 4-0644 (Non PVC coated C-Head)

Item No.	Part No.	No. Req'd	Description
1	4-0646	1	C-Head Assembly
2	3-1203	1	Screw
3	4-0645	1	Cylinder
4	3-1204	1	Key
5	5-1258	1	Lock Washer

Item No.	Part No.	No. Req'd	Description
6	4-0648	1	Ram Sub-Assembly
7	5-0152	1	Screw, Socket Set
8	10266	1	O-Ring
9	5-3245	1	O-Ring
10	11032	1	Ring, Retaining