

15-UVR UNIVERSAL COMPRESSION TOOL

INTRODUCTION



The 15-UVR Universal compression tool is a lightweight, compact and extremely durable crimper specially developed for use with a wide range of the most popular dies. This single-acting hydraulic tool is engineered for installing compression connectors on electrical conductors with 15.7 tons of force at 10,000 psi.

The 15-UVR tool can be operated with any pump capable of pressure output of 10,000 psi.



WARNING



THE 15-UVR IS NOT TO BE USED FOR "HOT LINE" WORK

SPECIFICATIONS

CRIMPING CAPACITY:

Tool Equipped with 12-Ton "U" Die Holders: 500 MCM (253 mm²) copper splices, 750 MCM (379.5 mm²) copper terminals; 350 (177.1 mm²) MCM aluminum splices, 750 (379.5 mm²) MCM aluminum terminals

Tool Equipped with PH2 Die Holders/PH14 Dies: 477 26/7 ACSR tension fittings, terminals thru 1033 MCM (522.7mm²) stranded with PH2 dies and 1027 MCM (519.7 mm²) 48/7 ACSR fittings with PH14 dies

Tool Equipped with TBM15 Die Holders: 1000 MCM (506 mm²) copper and aluminum fittings

Tool Equipped with Y46 Die Holders: 1250 MCM (632.5 mm²) aluminum and 1500 MCM (759 mm²) copper fittings

QUICK-COUPERS:

Power Team Part No. 25599

OVERALL DIMENSIONS:

Weight (including oil): 14.5 lbs. (6.58 kg)
Size: 3.00 x 4.46 x 14.50 inches long (7.62 x 11.33 x 36.83 cm long)

TOOL SECTION:

Required Pump Valve Setting:
10,400 - 10,000 PSI (72,800 - 70,000 kPA)

Piston Diameter: 2.00 inches (5.08 cm)

Stroke: 2.25 inches (5.72 cm) without dies

Crimping Force: 15.7 U.S. tons at 10,000 PSI (14.25 metric tons at 70,000 kPA)

Oil Type: Amoco Rykon MV
Oil Required: 8 cu. in. (.13 liter)

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.



CAUTION

- 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.



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



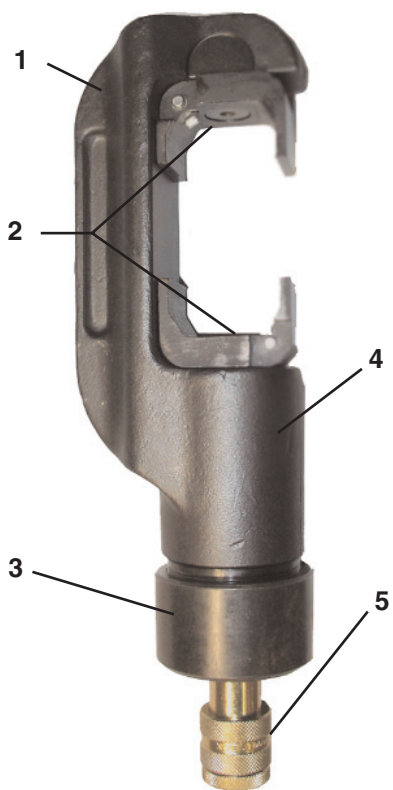
Keep hands away from the crimping tool head when crimping.

OPERATING INSTRUCTIONS

CAUTION DO NOT OPERATE THE COMPRESSOR WITHOUT DIES.

Installing Die Set

1. Attach the upper die holder assembly to the c-head with die bolt, tightening securely enough to remove end play between holder and c-head.
2. Attach the lower die holder assembly to the c-head with die bolt, tightening securely enough to remove end play between holder and c-head.
3. Select the proper dies that corresponds to the size and type of connector to be crimped.
4. Slide dies into die holders while depressing die release shafts. Release die release shaft when die snaps into place.
5. Insert conductor with fitting into die cavity following fitting manufacturer's recommendations for crimping.
6. Connect tool and hose to a hydraulic pump equipped with a manual control valve. Securely tighten all couplers. The mating half of quick coupler supplied with compressor is Power Team Part No. 25599.
7. See additional information under "Procedure for Using 12 Ton "U" Dies, TBM-15 Dies, PH2 Dies, PH14 Dies and Y-46 Dies."



Illustration

- | | |
|-------------------------|-------------------|
| 1. C-Head Assembly | 4. Ram Assembly |
| 2. Dies Holder location | 5. Female Coupler |
| 3. End Cap | |

Making Crimping

1. Prepare the cable by stripping off the appropriate amount of insulation.
2. Using pump, advance lower die to contact fitting. Observe location of dies on fitting and re-position if needed
5. Continue advancing ram and crimp completely..
6. Retract ram and remove tool from crimped fitting.

GENERAL INFORMATION FOR USE OF TOOL

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 reservoir.

The 15-UVR tool is designed to operate at 10,500/10,000 PSI (724/689 BAR) Lower operating pressure will fail to develop the full tonnage required. Higher operating pressure could cause structural failure and injury to users.

DO NOT USE BRAKE FLUID OF ANY KIND.

PERIODIC MAINTENANCE: Occasionally lubricate release button assemblies. Use of a molybdenum disulfide grease is recommended.

OIL LEAKAGE: A small amount of weepage from the piston and pump seals is normal and required to keep moving parts lubricated. Excessive leakages indicate a need for seal replacements and should be done only by an authorized service center. For those owners having adequately staffed repair facilities, a hydraulic seal replacement kit No. 4-0289 containing O-rings, gaskets, etc., needed for one complete replacement of hydraulic seals in the compressor. Include compressor serial number when ordering all parts.

PROCEDURE FOR USING PH2 DIES

1. Install 4-0433 spacer assembly into hole in top of c-head. Lock into place with 5-3584 set screw.
2. Install 4-0256 holder assembly into hole in spacer assembly. Lock in place with 5-0085 screw.
3. Install lower 4-0256 holder assembly in hole in end of piston. Lock into place with 5-3584 set screw.
4. Select proper die set for fitting to be crimped.
5. Slide die into place in top die holder tight against shoulder. 5-3640 detent screw will snap into groove of die. Lock in place with 5-0085 screw. Repeat operation for lower die.
6. Insert conductor with fitting into die cavity following fitting manufacturer's recommendations for crimping.
7. Advance ram, crimp completely, retract ram and remove work from tool.

PROCEDURE FOR USING PH14 DIES

1. No die holders are required, dies fit directly into tool.
- 2.. Select proper die set for fitting to be crimped.
- 3 Install upper die into hole in top of c-head. Lock in place with 5-3584 screw.
4. Install lower die in hole in end of piston. Lock into place with 5-3584 set screw.
5. Insert conductor with fitting into die cavity following fitting manufacturer's recommendations for crimping.
6. Advance ram, crimp completely, retract ram and remove work from tool.

TROUBLESHOOTING

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 part. 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: 180 SSU at 100 degree F.

Flash Point: 350 degree F

Pour Point: -50 degree F:

INSTALLING 12T DIE HOLDERS FROM 4-1870 SERVICE KIT

Prior to dismantling tool to accept new holders, disconnect tool from hose and pump after fully retracting piston.

Disassemble as follows:

1. Loosen 5-3852 set screw in side wall of end cap. Back screw out far enough for point to clear threads of c-head.
2. Place tool in a vise with backbone of c-head between jaws. With use of a strap wrench, loosen and remove end-cap.
3. Loosen setscrews locking old die holders in place and remove holders.
4. Grasping end of quick-coupler, pull seal housing, piston and quick-coupler completely out of bore in c-head. Some resistance will be felt due to drag on seals but assembly should slide out. If it sticks, tap lightly on the inner small end of the piston to break it free.
5. After this assembly is out of the c-head, remove the socket head cap screw locking inner end of return spring assembly to the piston. (requires a 1/4" hex key). Remove piston and set aside.
6. Clean spring assembly and seal housing with standard solvent or de-greaser. Insert seals on seal housing. If damaged and need to be replaced, use Power Team number 10294 O-ring, and number 19145 back-up washer, installing in same position as before.
7. Re-assemble seal housing, spring assembly and quick-coupler to new piston from kit. Install 3-4145 washer from kit on 5-3996 screw from kit, sliding washer on against shoulder of head. Insert and engage threads of spring retainer. Using a 5/32" hex key, tighten screw firmly into hole with enough torque to squeeze washer but do not over-tighten.
8. Clean out bore in c-head to remove any dirt and contaminant's. Apply a light coating of hydraulic oil to bore surface.
9. Apply a light coating of hydraulic oil or molyube grease to outside surfaces of seals on the piston and seal housing. Slide this assembly into the c-head bore, aligning side hole in piston approximately with the slot on the side of the c-head. Push assembly in until the should of the seal housing bottoms against the end of the c-head
10. Re-assemble the end cap to the c-head. With a strap wrench, tighten snugly. Re-tighten the setscrew to lock end cap in place.
11. Install new die holder assembly to piston. Apply Loctite grade 242 threadlocker to threads on 4-1864 lower die holder bolt. Using a 1/4" hex key, tighten bolt to attach holder assembly to end of piston. Tighten securely.
12. Install new die holder assembly to c-head. Apply Loctite grade 242 threadlocker to threads on 4-1867 upper die bolt. Using a 1/4" hex key, tighten bolt to attach holder assembly to c-head. Tighten securely.
13. Fill and bleed tool. Attach tool to hose and pump. Lay tool on floor with quick-coupler pointing up. Place pump on a bench or place above tool. Run pump to advance tool and allow it to retract five or six times or enough to purge out all air. Tool is now ready to use..

PROCEDURE FOR USING 12 TON "U" DIES

1. Attach the upper 4-0253 die holder assembly to the c-head with 4-1864 die bolt, tightening securely enough to remove end play between holder and c-head.
2. Attach the lower 4-0253 die holder assembly to the c-head with 4-1864 die bolt, tightening securely enough to remove end play between holder and c-head.
3. Select proper die set for fitting to be crimped.
4. Slide dies into die holders while depressing die release shafts. Release die release shaft when die snaps into place.
5. Insert conductor with fitting into die cavity following fitting manufacturer's recommendations for crimping.
6. Advance ram, crimp completely, retract ram and remove work from tool.

Sheet No. 3 of 6

Rev Date: 15 Mar 2004

INSTALLING TBM-15 DIE HOLDERS FROM 4-1865 SERVICE KIT

Prior to dismantling tool to accept new holders, disconnect tool from hose and pump after fully retracting piston.

Disassemble as follows:

1. Loosen 5-3852 setscrew in side wall of end cap. Back screw out far enough for point to clear threads of c-head.
2. Place tool in a vise with "backbone" of c-head between jaws. With use of a strap wrench, loosen and remove end-cap.
3. Loosen setscrews locking old die holders in place and remove holders.
4. Grasping end of quick-coupler, pull seal housing, piston and quick-coupler completely out of bore in c-head. Some resistance will be felt due to drag on seals. However, assembly should slide out. If it sticks, tap lightly on the inner small end of the piston to break it free.
5. After this assembly is out of the c-head, remove the socket head cap screw locking inner end of return spring assembly to the piston. (requires a 1/4" hex key). Remove piston and set aside.
6. Clean spring assembly and seal housing with standard solvent or de-greaser. Insert seals on seal housing. If damaged and need to be replaced, use Power Team number 10294 O-ring and number 19145 back-up washer, installing in same position as before.
7. Re-assemble seal housing, spring assembly and quick-coupler to new piston from kit. Install 3-4145 washer from kit on 5-3996 screw from kit, sliding washer on against shoulder of head. Insert and engage threads of spring retainer. Using a 5/32" hex key, tighten screw firmly into hole with enough torque to squeeze washer but do not over-tighten.
8. Clean out bore in c-head to remove any dirt and contaminant's. Apply a light coating of hydraulic oil to bore surface.
9. Apply a light coating of hydraulic oil or molybdeum grease to outside surfaces of seals on the piston and seal housing. Slide this assembly into the c-head bore, aligning side hole in piston approximately with the slot on the side of the c-head. Push assembly in until the shoulder of the seal housing bottoms against the end of the c-head.
10. Reassemble the end cap to the c-head. With a strap wrench, tighten snugly. Re-tighten the setscrew to lock end cap in place.
11. Install new die holder assembly to piston. Apply Loctite grade 242 threadlocker to threads on 4-1864 lower die holder bolt. Using a 1/4" hex key, tighten bolt to attach holder assembly to end of piston. Tighten securely.
12. Install new die holder assembly to c-head. Apply Loctite grade 242 threadlocker to threads on 4-1867 upper die bolt. Using a 1/4" hex key, tighten bolt to attach holder assembly to c-head. Tighten securely.
13. Fill and bleed tool. Attach tool to hose and pump. Lay tool on floor with quick-coupler pointing up. Place pump on a bench or place above tool. Run pump to advance tool and allow it to retract five or six times or enough to purge out all air. Tool is now ready to use.

PROCEDURE FOR USING TBM-15 DIES

1. Attach the upper 4-0250 die holder assembly to the c-head with 4-1864 die bolt, tightening securely enough to remove end play between holder and c-head.
2. Attach the lower 4-0250 die holder assembly to the c-head with 4-1864 die bolt, tightening securely enough to remove end play between holder and c-head.
3. Select proper die set for fitting to be crimped.
4. Slide dies into die holders while depressing die release shafts. Release die release shaft when die snaps into place.
5. Insert conductor with fitting into die cavity following fitting manufacturer's recommendations for crimping.
6. Advance ram, crimp completely, retract ram and remove work from tool.

INSTALLING Y46 DIE HOLDERS FROM 4-1874 SERVICE KIT

Prior to dismantling tool to accept new holders, disconnect tool from hose and pump after fully retracting piston.

Disassemble as follows:

1. Loosen 5-3852 set screw in side wall of end cap. Back screw out far enough for point to clear threads of c-head.
2. Place tool in a vise with "backbone" of c-head between jaws. With use of a strap wrench, loosen and remove end-cap.
3. Loosen setscrews locking old die holders in place and remove holders.
4. Grasping end of quick-coupler, pull seal housing, piston and quick-coupler completely out of bore in c-head. Some resistance will be felt due to drag on seals but assembly should slide out. If it sticks, tap lightly on the inner small end of the piston to break it free.
5. After this assembly is out of the c-head, remove the socket head cap screw locking inner end of return spring assembly to the piston. (requires a 1/4" hex key). Remove piston and set aside.
6. Clean spring assembly and seal housing with standard solvent or de-greaser. Insert seals on seal housing. If damaged and need to be replaced, use Power Team number 10294 O-ring and number 19145 back-up ring, installing in same position as before.
7. Re-assemble seal housing, spring assembly and quick-coupler to new piston from kit. Install 3-4145 washer from kit on 5-3996 screw from kit, sliding washer on against shoulder of head. Insert and engage threads of spring retainer. Using a 5/32" hex key, tighten screw firmly into hole with enough torque to squeeze washer but do not over-tighten.
8. Clean out bore in c-head to remove any dirt and contaminant's. Apply a light coating of hydraulic oil to bore surface.
9. Apply a light coating of hydraulic oil or molyube grease to outside surfaces of seals on the piston and seal housing. Slide this assembly into the c-head bore, aligning side hole in piston approximately with the slot on the side of the c-head. Push assembly in until the shoulder of the seal housing bottoms against the end of the c-head.
10. Re-assemble the end cap to the c-head. With a strap wrench, tighten snugly. Re-tighten the setscrew to lock end cap in place.
11. Install new die holder assembly to piston. Apply Loctite grade 242 threadlocker to threads on 4-1864 lower die holder bolt. Using a 1/4" hex key, tighten bolt to attach holder assembly to end of piston. Tighten securely.
12. Install new die holder assembly to c-head. Apply Loctite grade 242 threadlocker to threads on 4-1867 upper die bolt. Using a 1/4" hex key, tighten bolt to attach holder assembly to c-head. Tighten securely.
13. Fill and bleed tool. Attach tool to hose and pump. Lay tool on floor with quick-coupler pointing up. Place pump on a bench or place above tool. Run pump to advance tool and allow it to retract five or six times or enough to purge out all air. Tool is now ready to use.

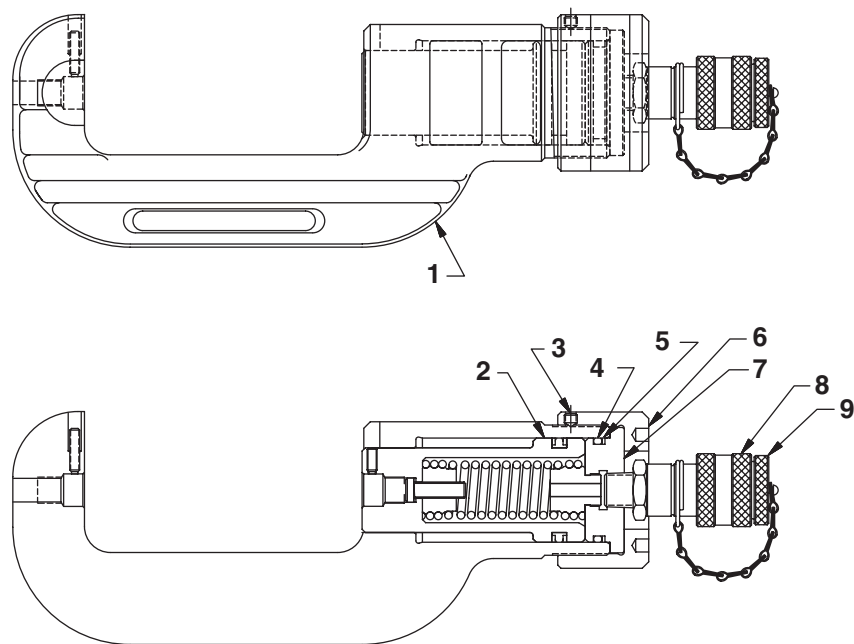
PROCEDURE FOR USING Y-46 DIES

1. Attach the upper 4-0245 die holder assembly to the c-head with 4-1864 die bolt, tightening securely enough to remove end play between holder and c-head.
2. Attach the lower 4-0245 die holder assembly to the c-head with 4-1864 die bolt, tightening securely enough to remove end play between holder and c-head.
3. Select proper die set for fitting to be crimped.
4. Slide dies into die holders while depressing die release shafts. Release die release shaft when die snaps into place.
5. Insert conductor with fitting into die cavity following fitting manufacturer's recommendations for crimping.
6. Advance ram, crimp completely, retract ram and remove work from tool.

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Rev Date: 15 Mar 2004

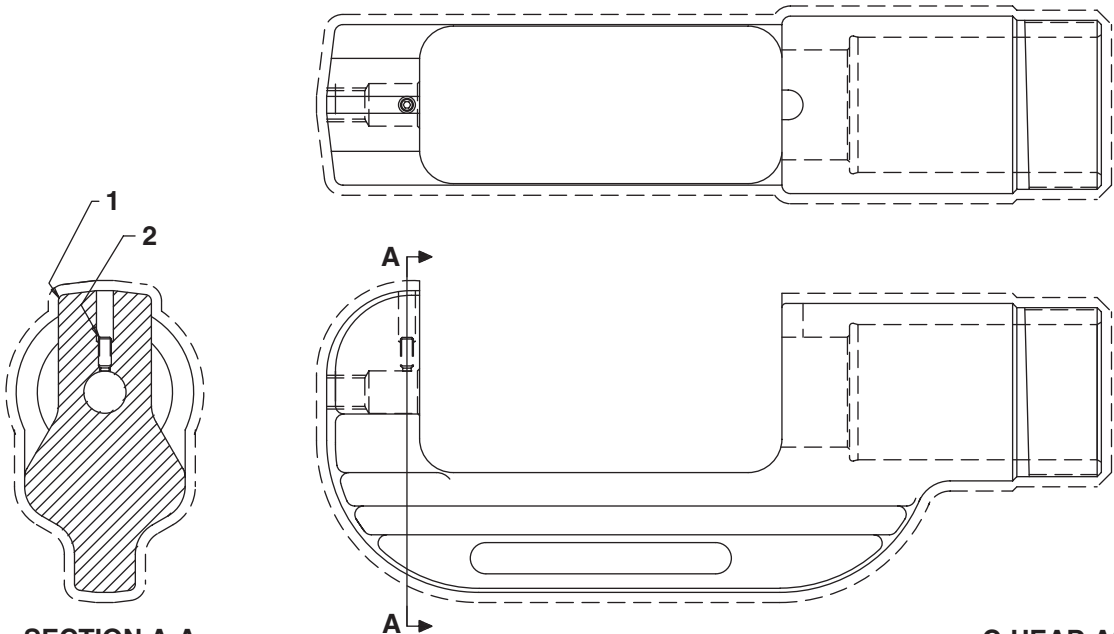
PARTS LIST



SECTION VIEW

15 UVR

Item No.	Part No.	No. Req'd	Description	Item No.	Part No.	No. Req'd	Description
1	4-0293	1	Uncoated C-Head Assembly	5	19145	1	Washer, Backup 2.00 x 1.75
	4-1443	1	Coated C-Head	6	4-0241	1	End Cap, 15 Ton
2	4-0294	1	Ram Assembly	7	4-0242	1	15 Ton Seal Housing
3	5-3852	1	Screw, Set #10-32 x .5	8	25600-1	1	Coupler
4	10294	1	O-Ring	9	9797	1	Dust Plug

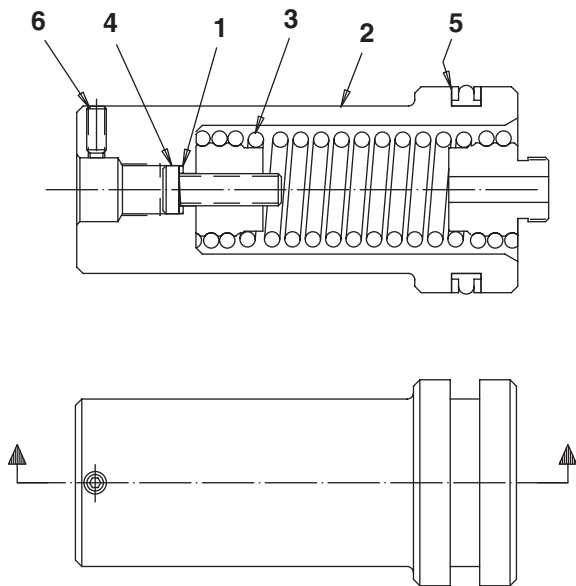


SECTION A-A

C-HEAD ASSEMBLY 4-0293

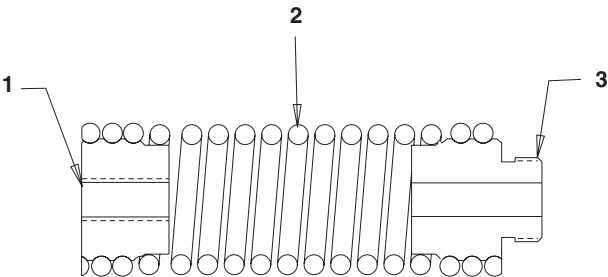
Item No.	Part No.	No. Req'd	Description	Item No.	Part No.	No. Req'd	Description
1	4-0238	1	C-Head, 15 Ton	2	5-3584	1	Screw, Set #10-32 x .5

PARTS LIST



Ram Assembly 4-0294

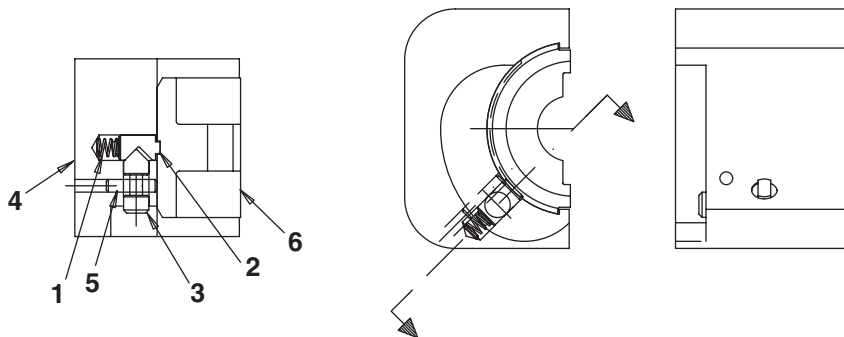
Item No.	Part No.	No. Req'd	Description	Item No.	Part No.	No. Req'd	Description
1	3-4145	1	Washer, Nylon	4	5-3996	1	Screw, SHC
2	4-0240	1	Ram	5	5-2238	1	Seal Set
3	4-0243	1	Spring Assembly, Return	6	5-3584	1	Set Screw



Return Spring Assembly 4-0243

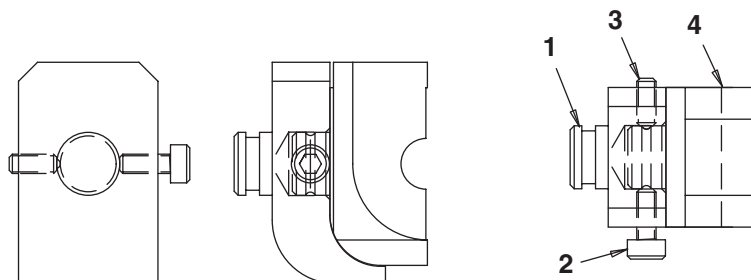
Item No.	Part No.	No. Req'd	Description	Item No.	Part No.	No. Req'd	Description
1	3-4143	1	Retainer, Inner	3	4-0244	1	Retainer, Outer
2	3-4144	1	Tension Spring				

PARTS LIST



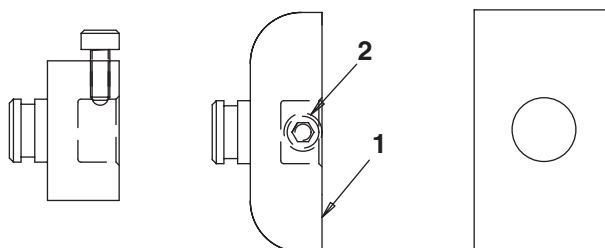
12T Die Holder Assembly 4-0253

Item No.	Part No.	No. Req'd	Description	Item No.	Part No.	No. Req'd	Description
1	3-1239	1	Spring, Comp.	4	4-0254	1	Holder, 12T Die
2	3-1241	1	Pin, Retaining	5	5-2234	1	Pin, Drive
3	3-1242	1	Shaft, Release	6		1	Typical 12T Die



PH-2 Die Holder Assembly 4-0256

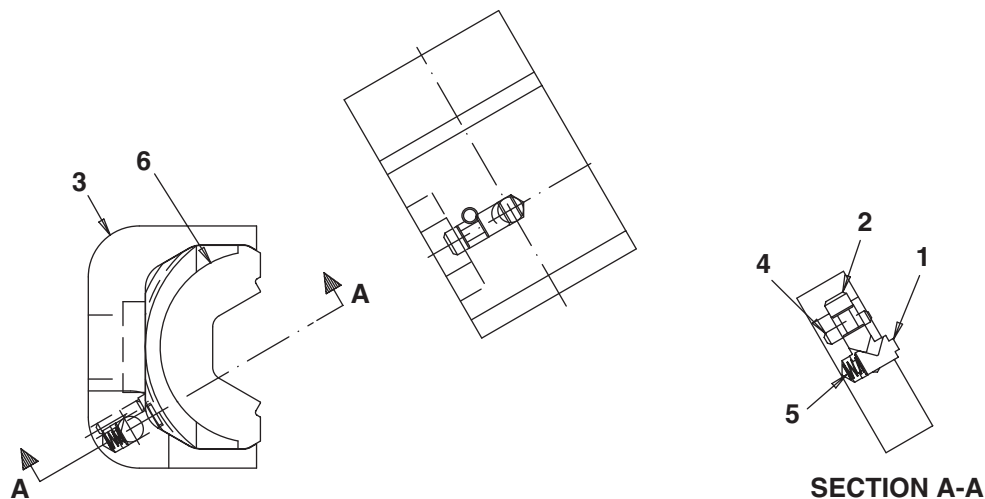
Item No.	Part No.	No. Req'd	Description	Item No.	Part No.	No. Req'd	Description
1	4-0257	1	Holder, PH2 Die	3	5-3640	1	Screw, Detent
2	5-0085	1	Screw, SHC	4		1	Typical PH2 Die



PH-2 Spacer Assembly 4-0433

Item No.	Part No.	No. Req'd	Description	Item No.	Part No.	No. Req'd	Description
1	4-0259	1	Spacer, Top Die	2	5-0085	1	Screw, SHC

PARTS LIST

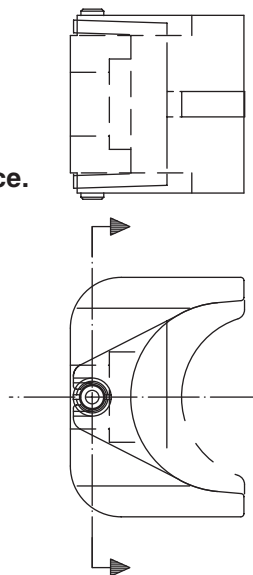
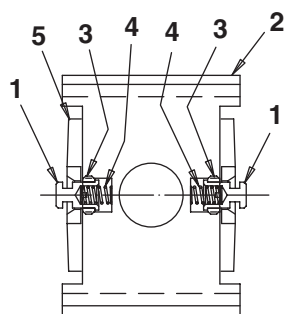


TBM-15 Die Holder Assembly 4-0250

Item No.	Part No.	No. Req'd	Description
1	3-1241	1	Pin, Retaining
2	3-1242	1	Shaft, Release
3	4-0251	1	Holder, Die

Item No.	Part No.	No. Req'd	Description
4	11587	1	Pin, Drive
5	5-3758	1	Spring, Compression
6			Typical TBM15 Die

Adjust key 3 screw to be flush to
.015 below surfaces and stake in place.



Y-46 Die Holder Assembly 4-0245

Item No.	Part No.	No. Req'd	Description
1	3-9338	2	Button, Release
2	4-0249	1	Holder, Lower Y46 Die
3	4-0445	2	Screw, Hollow Lock

Item No.	Part No.	No. Req'd	Description
4	5-3810	2	Spring, Compression
5			Typical Y46 Die