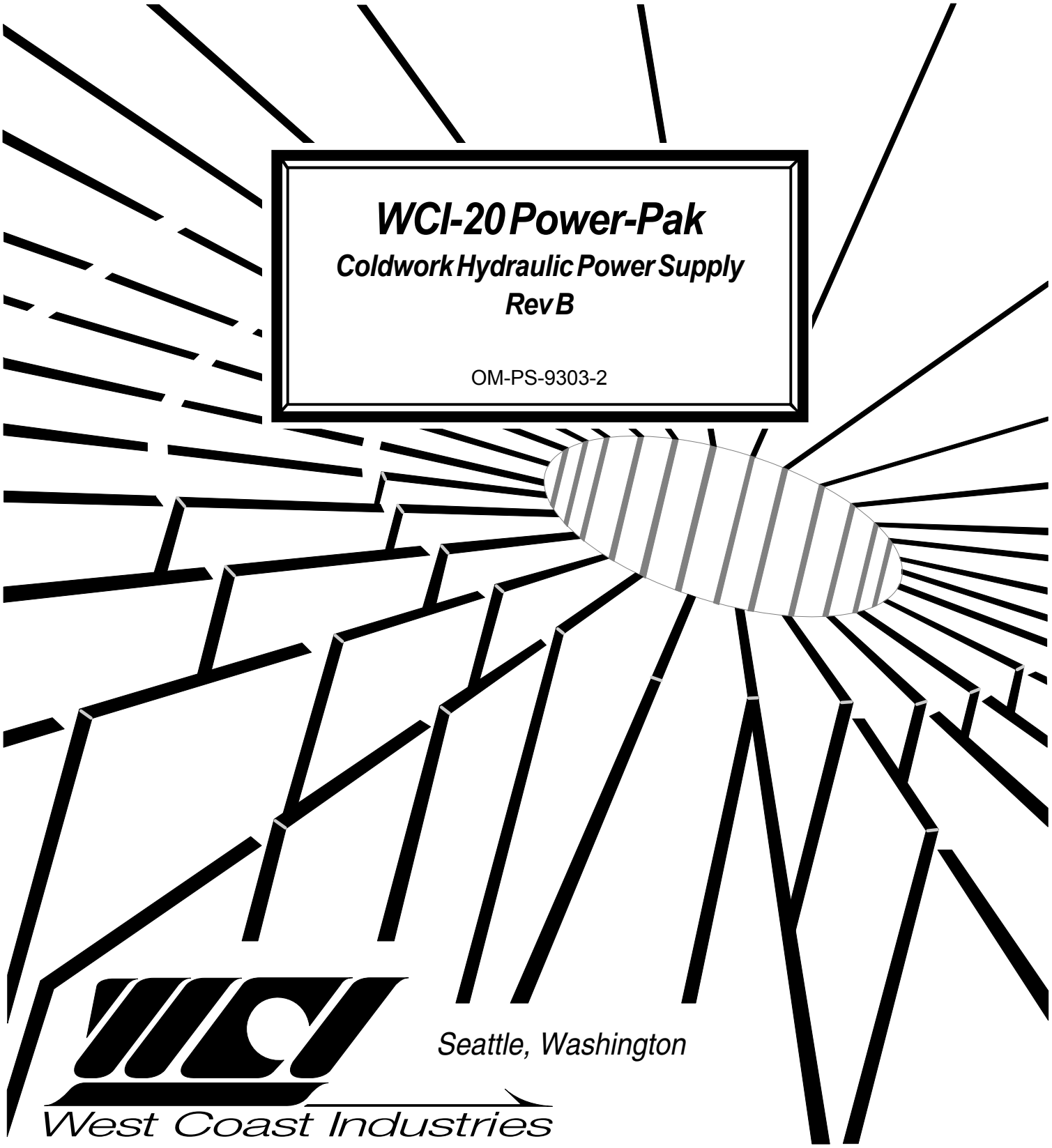

WCI-20 Power-Pak

Coldwork Hydraulic Power Supply

Rev B

OM-PS-9303-2

Seattle, Washington

West Coast Industries

WCI-20 Power Pak Manual

Table of Contents

Section 1–Introduction

1.1 Introduction 1
1.2 Safety Precautions 1

Section 2–Preparation and Setup

2.1.1 Air Supply Hookup 2
2.1.2 Hydraulic Connection 2
2.1.3 Venting the Reservior 2
2.1.4 Priming the Pump Unit 2

Section 3–Preventative Maintenance

3.1.1 Lubrication 3
3.1.2 Bleeding Air From the System 3
3.1.3 Inspecting the Fluid Level 3
3.1.4 Draining and Flushing 3
3.1.5 Refilling the Reservior 3
3.1.6 Periodic Cleaning 3

Section 4–Troubleshooting

Table 4-01 WCI-20 Parts List 4
Figure 4-01 Assembly View, WCI-20 5
Figure 4-02 Assembly View, WCI-20, Upper Half 6

Section 5–Appendix

A.1 Retrofitting a Boelube Lubricator onto an existing Hydraulic Power Supply 7
Figure A-1 Boelube Pump Illustration 8

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WCI-20 Air/Hydraulic Power Pak

1.1 Introduction

The West Coast Industries WCI-20 is a lightweight Air/Hydraulic power supply designed to power coldworking puller guns. Operating with a 1/3 HP air motor, and requiring 90 psi clean, dry shop air, the WCI-20 produces 10,000 psi hydraulic pressure. These instructions should be read and carefully followed. Most problems with new equipment are caused by improper operations or installation.

1.2 Safety Precautions: General Operation

Note

ALL WARNING statements must be carefully observed to help prevent personal injury.

1.2.1 Before operating the pump, make sure all hose connections are tightened with proper tools. Do not overtighten. Connections need only be tightened securely and leak-free. Overtightening may cause premature thread failure or may cause high pressure fittings to split at pressures lower than their rated capacities.

1.2.2 Should a hydraulic hose ever rupture, burst, or need to be disconnected, immediately shut off the pump to release all pressure. Never attempt to grasp a leaking hose under pressure with your hands. The force of escaping hydraulic fluid could cause serious injury.

1.2.3 Do not subject the hose to potential hazard such as fire, extreme heat or cold, sharp surfaces, or heavy impact. Do not allow the hose to kink, twist, curl, or bend so tightly that the oil flow within the hose is blocked or reduced. Periodically inspect the hose for wear because any of these conditions can damage the hose and possibly result in personal injury.

1.2.4 Hose material and coupler seals must be compatible with the hydraulic fluid used. Hoses also must not come in contact with corrosive materials such as creosote-impregnated objects and some paints. Consult the manufacturer before painting a hose. Never paint the couplers. Hose deterioration due to corrosive materials may result in possible personal injury.

1.2.5 Pump

1.2.5.1 Do not exceed the PSI hydraulic pressure rating noted on the pump name plate or tamper with the internal high pressure relief valve. Creating pressure beyond rated capacities may result in personal injury.

1.2.5.2 Before replenishing the oil level, retract the system to prevent overfilling the pump reservoir. An overfill may cause personal injury due to excess reservoir pressure created when cylinders are retracted.

1.2.6 Air Supply

1.2.6.1 Shut off and disconnect the air supply when the pump is not in use or before breaking any connection in the system.

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2.1. Preparation and Setup

2.1.1 Air Supply Hookup

2.1.1.1 Select and install the thread fittings which are compatible with your air supply fittings. The air supply should be 20 CFM and 100 PSI to obtain the rated hydraulic output. Air pressure should be regulated to a maximum of 125 PSI. Secure your pump fittng to the air supply.

2.1.2 Hydraulic Connection

2.1.2.1 Clean all the areas around the oil ports of the pump and the puller equipment. Inspect all threads and fittings for signs of wear or damage and replace as needed. Clean all hose ends, couplers and union ends. Remove the thread protectors from the hydraulic oil outlets. Connect the hose assembly to the hydraulic oil outlet and couple the hose to the puller equipment.

IMPORTANT:

Seal all external pipe connections with a high quality, nonhardening pipe sealant. Teflon tape may also be used to seal hydraulic connections, provided only one layer of tape is used. Apply the tape carefully to prevent it from being “pinched” by the coupler and broken off inside the system. Any loose pieces of tape could travel through the system and obstruct the flow of oil or cause jamming of precision-fit parts.

2.1.3 Venting the Reservior

2.1.3.1 To improve oil delivery and increase useable oil capacity, vent the reservoir by removing the shipping plug from the reservior and install the vent plug (on the opposite end of the rubber strap).

2.1.4 Priming the Pump Unit

2.1.4.1 If the pump unit must be primed, perform the following procedure:

2.1.4.2 Remove the hydraulic hose from the pump. Leave the remaining hoses connected to the puller equipment.

2.1.4.3 Place a small container under the female fitting on the pump unit to catch any hydraulic fluid which will be bled off during the next step.

2.1.4.4 Use a blunt object (i.e., steel rod, allen wrench, etc.) and depress the ball check inside the female part of the fitting on the pump unit.

Warning

Do not operate the pump unit without first depressing the ball check. High hydraulic pressure is present when the unit is turned on.

Eye protection is required during this procedure to prevent operator injury

2.1.4.5 Cycle the pump unit using the puller equipment.

2.1.4.6 When hydraulic fluid runs out of the female fitting the pump unit is primed.

2.1.4.7 If the pump does not respond, repeat the above procedure, repeatedly jogging the ball check in the female fitting while cycling the puller equipment.

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3.1 Preventative Maintenance

IMPORTANT

Any repair or servicing which requires dismantling the pump must be performed in a dirt-free environment by a qualified technician.

3.1.1 Lubrication

3.1.1.1 If the pump is operated on a continuous duty cycle for extended periods, the manufacturer recommends an automatic air line oiler be installed in the air inlet line as close to the pumping unit as possible. Set the unit to feed approximately 1 drop of oil per minute into the system. Use SAE No. 10 oil.

3.1.2 Bleeding Air From the System

3.1.2.1 During the initial moments of activation or after prolonged use, a significant amount of air may accumulate within the hydraulic system. This entrapped air may cause the puller equipment to respond slowly or behave in an unstable manner. To remove the air, run the system through several cycles free of any load. The puller equipment must be at a lower level than the pump to allow air to be released through the pump reservoir.

3.1.3 Inspecting the Fluid Level

3.1.3.1 Check the oil level in the reservoir after every 10 hours of use. The oil level should come to within 1/2" of the filler plug with the puller equipment in the start position. Drain and replenish the reservoir with an approved, high-grade hydraulic oil after every 300 hours of use.

3.1.4 Draining and Flushing

IMPORTANT

Wipe the pump exterior completely clean before attempting this procedure!

3.1.4.1 Loosen and remove the six screws which fasten the pump assembly to the reservoir. Remove the pump assembly from the reservoir. Take special care to not damage the gasket, filter or safety valve.

3.1.4.2 Clean the inside of the reservoir and refill with a suitable, nonflammable flushing oil. Rinse the filter clean.

3.1.4.3 Place the pump assembly back onto the reservoir and secure with two of the six machine screws. For best results, assemble the screws in opposite corners of the housing.

3.1.4.4 Run the unit for several minutes. Use the same method described in section 5.5.4, entitled *"Priming the Pump Unit"*.

3.1.4.5 Drain and clean the reservoir once more.

3.1.4.6 Refill the reservoir with an approved, clean hydraulic oil, and replace the pump assembly (with gasket) on the reservoir and assemble the six machine screws. Torque to 25 to 30 in. lbs.

IMPORTANT

Drain and clean the other hydraulic system components (hoses, puller gun, etc.) before reconnecting them to the pump. This will prevent contaminated oil form re-entering the pump.

3.1.5 Refilling the Reservior

3.1.5.1 If additional oil must be added to the reservoir, use only ISO 32 high-grade hydraulic oil, (215 SUS @ 100 DEG.) Examples include Shell Tellus 32, and Chevron AW. Clean the entire area around the filler plug before adding oil to the reservoir. Then remove the filler plug and insert a clean funnel with filter. The mandrel on the puller gun must be fully extended and the air supply disconnected when adding the oil to the reservoir.

3.1.6 Periodic Cleaning

3.1.6.1 All unused couplers should be sealed with thread protectors. All hose connections must be free of grit and grime. Any equipment hooked up to the pump should also be kept clean. Use only an approved, clean hydraulic oil in this unit and change as recommended (every 300 hours).

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Table 4-01 – WCI-20 Parts List

Item No.	Part No.	Qty	Description
201	WCI-20-201	1	PUMP ASSY
202	WCI-20-202	1	COVER
203	WCI-20-203	1	PLATE
204	WCI-20-204	1	CYL MOUNT
205	WCI-20-205	1	FTG
206	WCI-20-206	1	PWR SUPPLY MANIFOLD
207	WCI-20-207	2	CYL BRACKET
208	WCI-20-208	2	SOC HD CAP
209	WCI-20-209	5	FITTING
210	WCI-20-210	2	VALVE
211	WCI-20-211	1	PILOT
212	WCI-20-212	1	FTG
213	WCI-20-213	2	SCREW
215	WCI-20-215	1	HANDLE
216	WCI-20-216	10	SCREW
217	WCI-20-217	1	FOOT
218	WCI-20-218	1	PUMP, 10,000 PSI
219	WCI-20-219	1	Q/C FITTING
220	WCI-20-220	1	Q/C FITTING
221	WCI-20-221	2	NUT
222	WCI-20-222	1	Q/C FITTING
223	WCI-20-223	2	CYLINDER
227	WCI-20-227	1	Q/C FITTING
228	WCI-20-228	1	TUBING
229	WCI-20-229	4	SCREW
230	WCI-20-230	2	DECAL
233	WCI-20-233	2	VENT PLUG
234	WCI-20-234	4	SCREW
235	WCI-20-235	4	NUT
236	WCI-20-236	4	LOCKWASHER
237	WCI-20-237	1	FOOT
238	WCI-20-238	1	OPP - 204
239	WCI-20-239	1	TUBING
240	WCI-20-240	1	VALVE HOUSING
241	WCI-20-241	1	FITTING

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Figure 4-01 – WCI-20

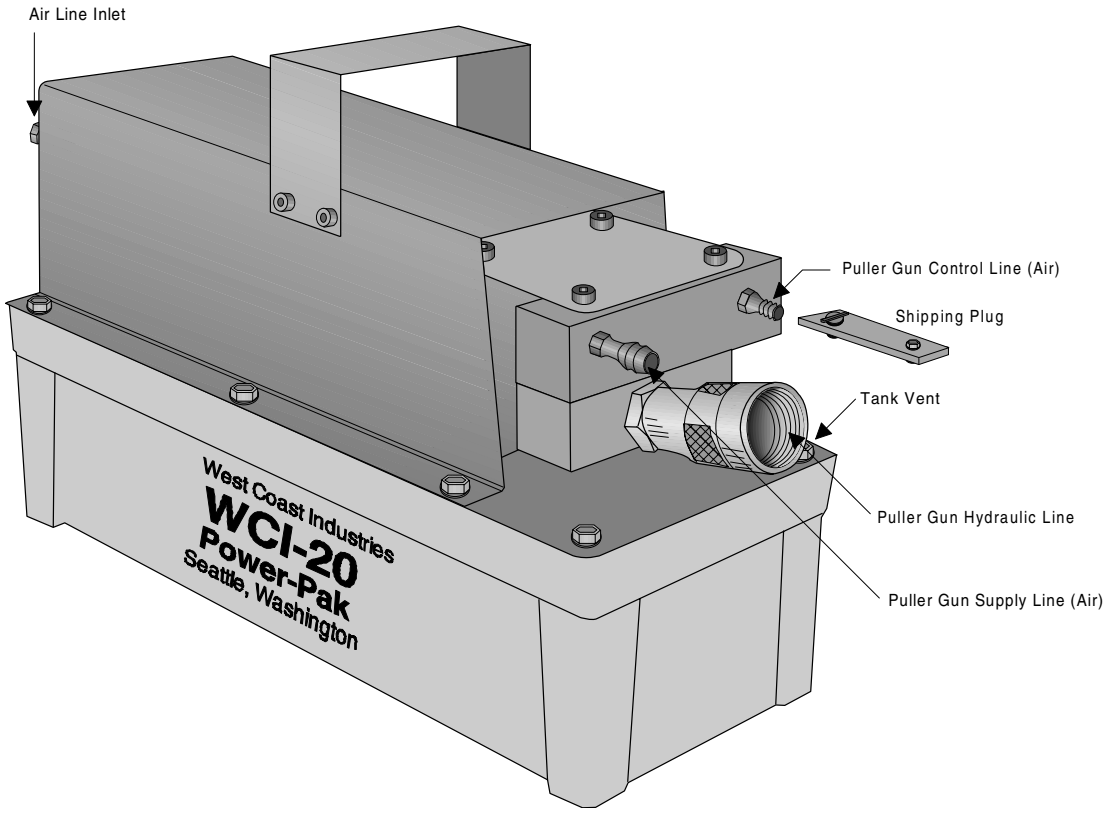

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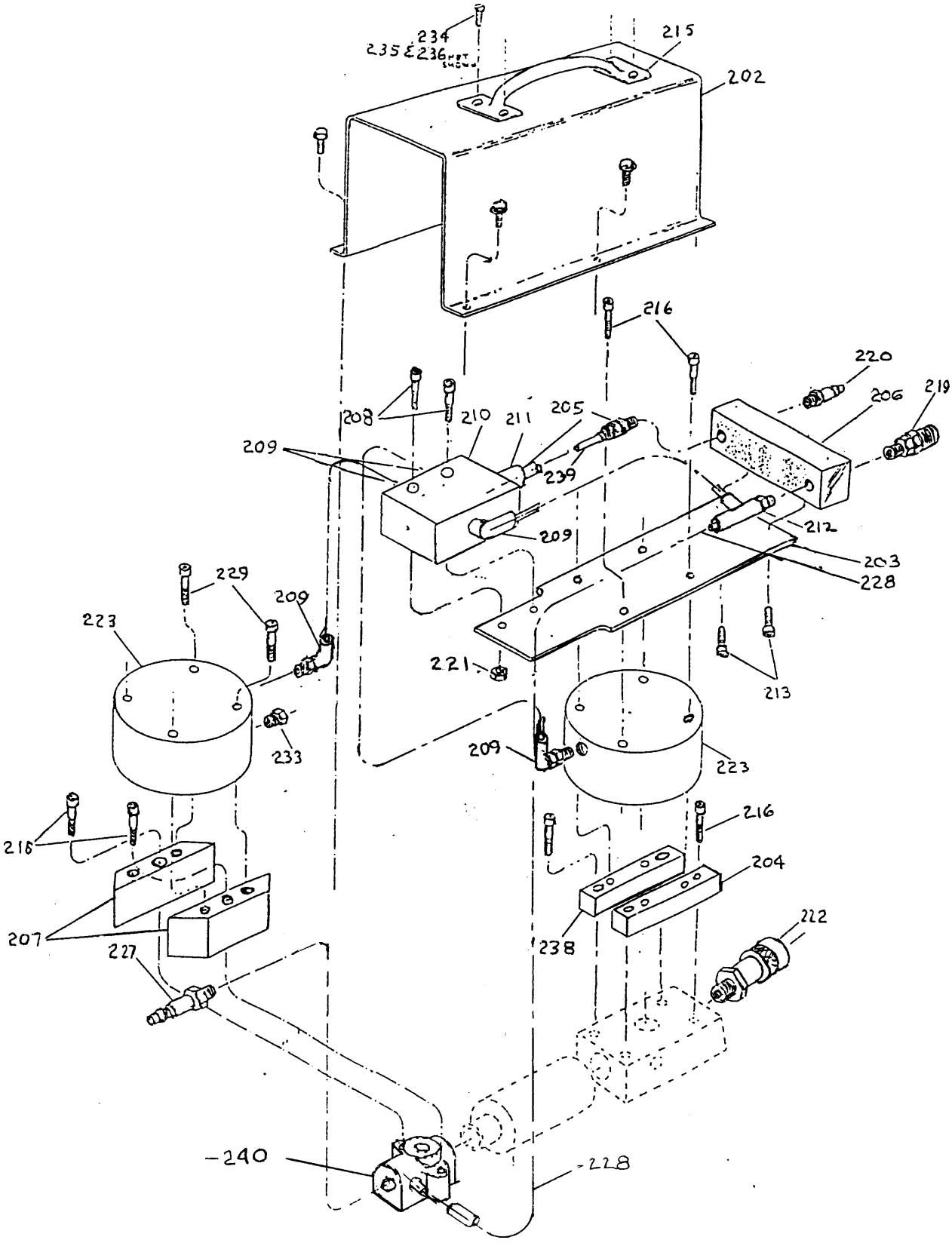
Figure 4-02 – Upper Assembly



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Appendix

A.1 Retrofitting a Boelube Lubricator onto an existing Hydraulic Power Supply

A.1.1 Reference figure A-1 of the Boelube pump assembly.

A.1.2 On the top of the unit are three ports marked “S”, “L”, and “C”. These letters identify the purpose of the ports, i.e., S = Supply air inlet, L = Lubrication outlet, C = Control signal from the Puller Gun.

A.1.3 A 90 degree fitting is threaded into each port of Boelube pump assembly. The S and C ports are connected, using the “T” fittings provided, in the appropriate supply and control lines of the Power Supply unit. The L port on the Boelube pump assembly connects directly to the “L” port on the manifold (See Schematic). The fittings provided do not require any wrenches for tubing installation. These are compression type fittings, just push the end of the hose or plastic tubing into the end of the fitting until it is seated.

A.1.4 Mount the manifold in a location to allow convenient connection of the puller gun hose fittings.

A.2 Boelube Unit Operation

A.2.1 Remove the threaded plug in the top of the reservoir.

A.2.2 Fill to the upper line with Boelube lubricant.

A.2.3 Install the threaded plug in the top of the reservoir.

A.2.4 Connect the puller gun hose assembly to the manifold.

A.2.5 Adjust the Reservoir Pressure Adjustment knob clockwise until the needle indicates 20 psi.

A.2.6 Press the System Prime button.

A.2.7 When lubricant can be seen in the clear plastic tubing release the System Prime button. The Boelube pump in now ready for operation.

NOTE: The Lube Flow Adjustment is set at the factory to deliver a maximum of one drop of lubricant for each cycle of the puller gun. If adjustment is necessary to reduce the amount of lubricant, do the following:

A.2.8 Loosen the set screw in the knurled knob.

A.2.9 Turn the knurled knob clockwise to decrease the amount of lubricant per cycle.

A.2.10 Disconnect the lubrication line at the nose cap of the puller gun.

A.2.11 Cycle the puller gun and observe the amount of lubricant flowing from the end of the tubing.

A.2.12 When the correct amount of lubricant has been determined, tighten the set screw in the knurled knob.

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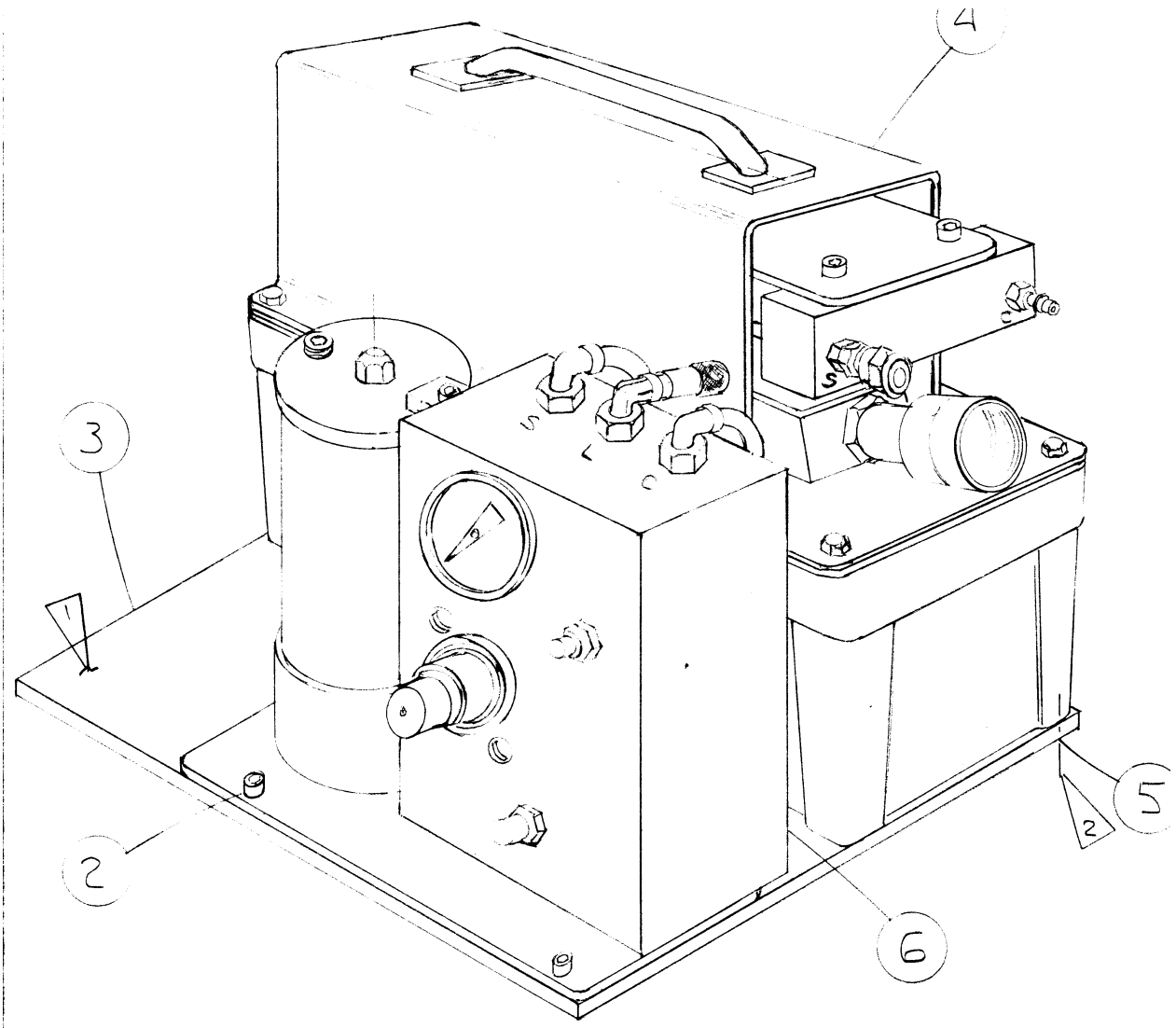
Figure A-1 – WCI-20 with Boelube Pump



1 PUMP ASSY

DET	QTY	NAME	MAT'L
6	1	LUBE PUMP	WCI-LP
5	4	FLT HD CAP SCREW	1/4-20 x 1/2
4	1	PUMP	WCI-20
3	1	BASE	SEE SHT 2
2	2	SOC HD CAP SCREW	1/4-20 x 3/8
1	1	PUMP ASSY	

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