CPN 51994291

RM6113
Revision 2

MAINTENANCE AND REPAIR MANUAL

For

"PROMAXX™" Jackhamer

Models: JX35 & JX35S

INGERSOLL-RAND®

Designed and Built by Ingersoll–Rand Company
Roanoke, Va. 24019–5198 U.S.A.

Certified ISO–9001 (ANSI/ASQC Q91)
Certification No. QSR–80

Refer All Communications To The Nearest Address Listed On The Back Cover.

TABLE OF CONTENTS

Alphabetical Index

1. INTRODUCTION.

This maintenance and repair manual contains information for maintenance, service and troubleshooting for the "PROMAXX™" Jackhamer Models JX35 & JX35S, hereafter referred to as jackhamer.

2. REFERENCE MATERIAL.

The reference material required to operate and/or maintain the jackhamer is listed in Table 1.

Table 1. Reference Material

Manual No.	Title of Manual
PL6113	Parts List for "PROMAXX™" Jackhamer Models JX35 & JX35S.
IM6097	Instruction Manual for Jackhamers.

NOTICE

SAVE THESE INSTRUCTIONS. DO NOT DESTROY.

NOTICE

All information, illustrations, and specifications in this manual are based on the latest information available at the time of publication.

Product improvement is a continuing goal at Ingersoll–Rand®. Design and specifications are subject to change without notice or obligation.

The use of repair parts other than those included within the Ingersoll-Rand® approved parts list may create hazardous conditions over which Ingersoll-Rand® Company has no control. Therefore Ingersoll-Rand® Company cannot be held responsible for equipment in which non-approved repair parts are installed.

When the life of the tool has expired, it is recommended that the tool be disassembled, degreased and parts be separated by material so that they can be recycled.

Alphabetical Index

1. INTRODUCTION.

This section contains important safety information for "PROMAXX™" Jackhamer Models JX35 & JX35S, hereafter referred to as jackhamer.

2. SAFETY FIRST.

SAFETY FIRST is the primary concern for the protection of both, personnel and the jackhamer during any phase of operation. All personnel must thoroughly understand all safety precautions before operating or doing any maintenance work on the jackhamer.

3. SAFETY ALERT SYMBOL AND SIGNAL WORDS.

⚠ – This is the Safety Alert Symbol. When you see this symbol in this maintenance manual, be alert to the presence of a hazard.

All personnel must understand the **DANGER, WARNING, CAUTION,** and **NOTICE** used throughout the text of this instruction manual. The **DANGER, WARNING, CAUTION,** and **NOTICE** are defined as follows:

⚠ DANGER

DANGER IS USED TO INDICATE THE PRESENCE OF A HAZARD WHICH WILL CAUSE SEVERE PERSONAL INJURY OR DEATH IF THE WARNING IS IGNORED.

⚠WARNING

WARNING IS USED TO INDICATE THE PRESENCE OF A HAZARD WHICH CAN CAUSE SEVERE INJURY OR DEATH IF THE WARNING IS IGNORED.

⚠CAUTION

CAUTION IS USED TO INDICATE THE PRESENCE OF A HAZARD WHICH **WILL** OR **CAN** CAUSE PERSONAL INJURY, OR PROPERTY DAMAGE IF THE WARNING IS IGNORED.

NOTICE

Notice is used to notify people of installation, operation, or maintenance information which is important but not hazard related.

By understanding what **DANGER, WARNING, CAUTION,** and **NOTICE** mean; and using good judgment and common sense; all personnel can avoid injuring themselves and/or damaging the jackhamer.

Alphabetical Index

1. INTRODUCTION.

This section provides information on maintenance and performance testing of the "PROMAXX™"Jackhamer Models JX35 & JX35S, hereafter referred to as jackhamer.

2. MAINTENANCE.

To ensure maximum life and top performance of the equipment, it is necessary that the maintenance be made before serious damage occurs. It is important to be cautious when performing any service work. A general knowledge of the system and/or components is important before the removal or disassembly of any components. The following is a list of basic precautions that must always be observed:

a. Never attempt major maintenance of the jackhamer on the job; always send the jackhamer to a repair shop.

b. Clean the exterior of the jackhamer before disassembly.

c. Provide a clean work area for disassembling the jackhamer.

d. Handle parts carefully. Hardened parts might chip or break if dropped on a hard surface.

e. Place small parts in a clean box to prevent loss.

f. Keep your hands and the jackhamer clean and free of dirt, while assembling.

g. Wipe a film of clean oil over the working parts as they are assembled.

h. Do not allow dirt or chips from soft drifts and hammers to enter the jackhamer.

i. With the exception of pressed–in parts, all the parts should fit together easily. If excessive force is required, the part is probably cocked and should be removed and realigned.

j. If necessary, use a rubber mallet to loosen the fronthead and backhead.

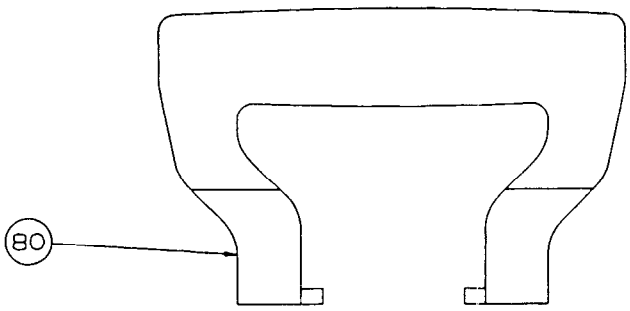
3. DISASSEMBLY. (Figure 1)

a. If equipped with a muffler, remove plug (32), and oil fill stud. The muffler will then snap off of the jackhamer housing (28).

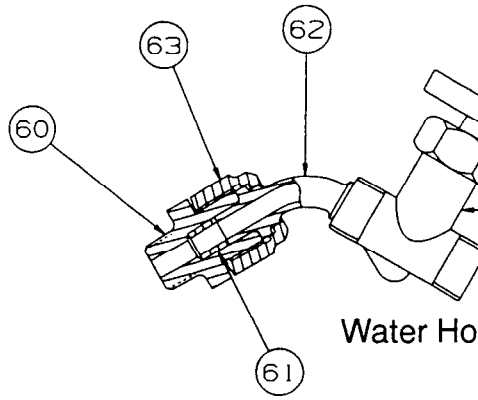
b. Secure the jackhamer in a vise horizontally.

⚠CAUTION

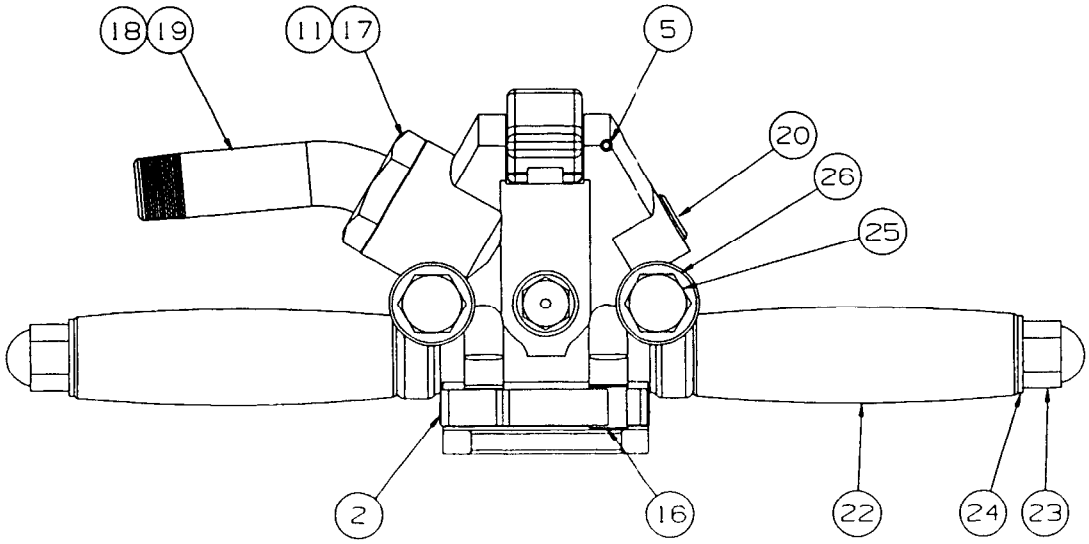
CLAMP THE JACKHAMER HOUSING IN THE AREA OF THE EXHAUST. CLAMP IT FIRMLY, BUT CAREFULLY. THE HOUSING CAN BE CRACKED IF THE VISE IS OVER TIGHTENED.

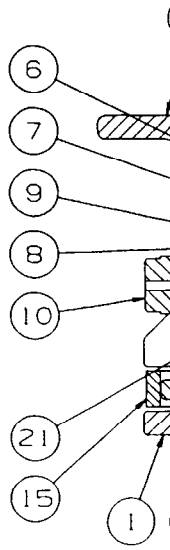


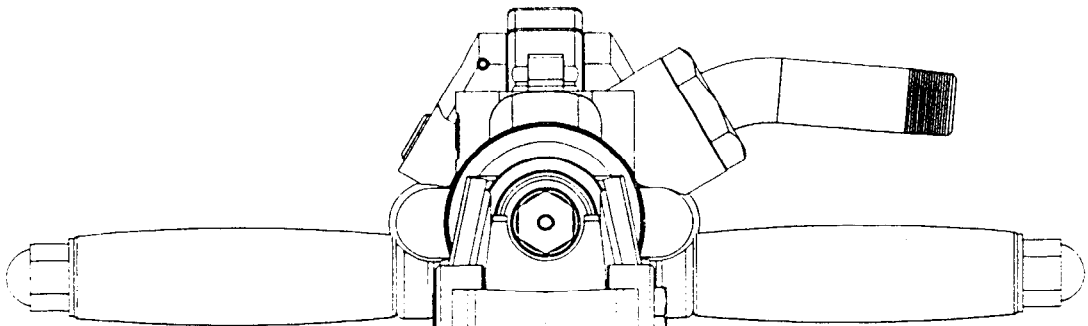
Open Center Grip Handle

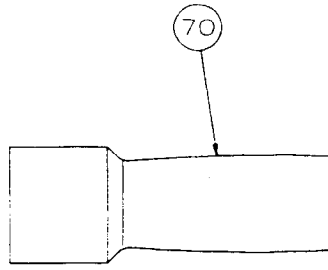


Water Ho

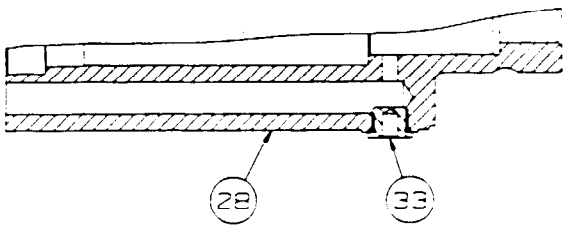








Optional Flex Hand



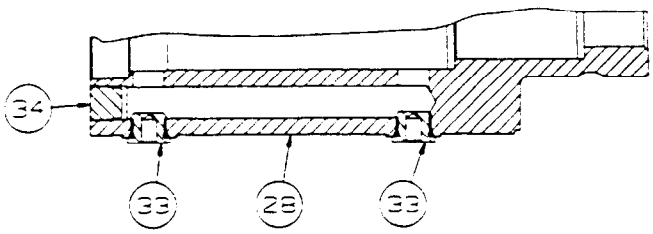
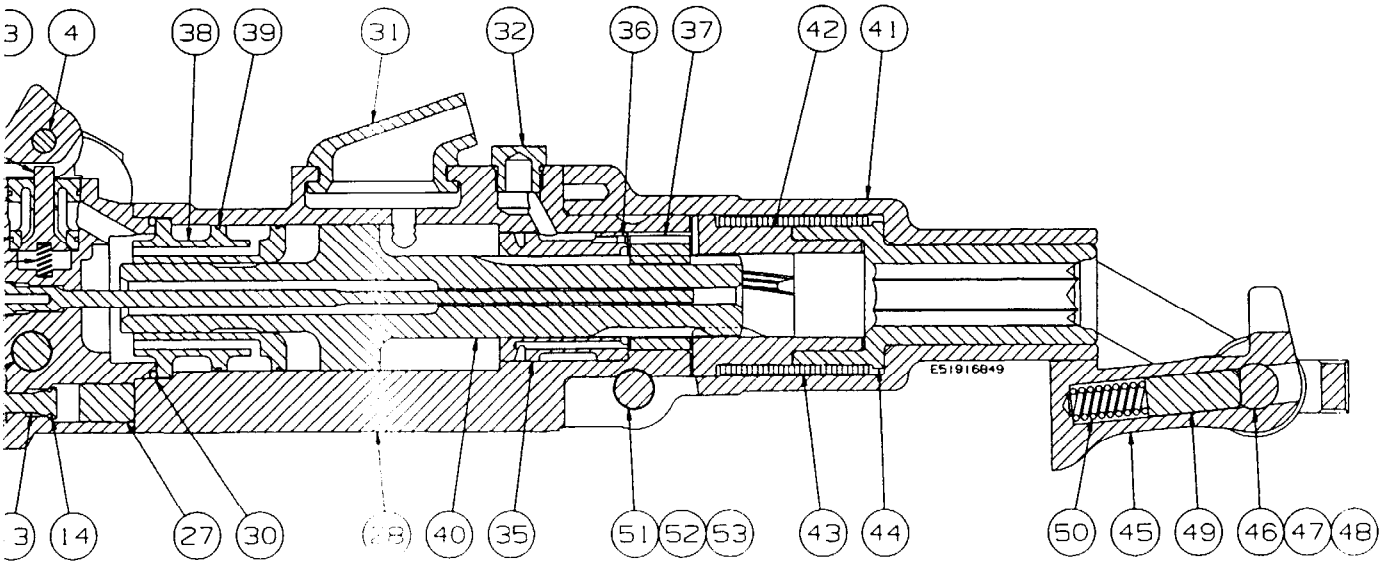


Figure 1

64

e Connection



e

"PROMAXX™" Jackhamer Models JX35 & JX35S – Sectional Illustration

c. Remove the blower tube (10) from the backhead (1).

d. Remove the capscrews (25), washers (26) and backhead (1) from the housing (28).

e. Remove the o–ring (30) from the backhead (1).

f. If the throttle valve (6), located in the backhead (1), requires replacement, do so by first removing the dowel pin (4) and throttle lever (3) from the backhead.

g. To remove the throttle valve body (7) from the backhead (1), pull the throttle valve body stem out of the backhead (1). The throttle valve (6) and the throttle valve body (7) will come out of the backhead together.

h. Remove the o–rings (9) from the throttle body (7).

i. Remove the throttle valve spring (8) from the backhead.

NOTICE

The blow air valve (13) cannot be removed from the backhead (1) without first removing the backhead from the housing (28).

j. If the blow air valve requires removal, first remove the pin (16) which retains the blow air lever (15).

k. Using a rubber mallet, carefully drive the blow air valve (13) and backhead plug (27) out the housing end of the backhead.

l. Remove the o–ring (14) from the blow air valve (13).

m. If the handle grips (22) require replacement, remove handle bolt nut (23) and washer (24) from the handle bolt (21). Slide the handle grip (22) off of the handle bolt (21).

n. If it becomes necessary to remove any of the air connection parts, unscrew the cap (17) from the backhead (1) and remove the o–ring (19) and swivel nipple (18).

o. Remove the air distributor (38) by sliding it out of the backhead end of the jackhamer. Check and replace the air distributor o–rings (39) if required.

p. Slide the piston (40) out the backhead end of the housing (28) being careful not to drop the piston while removing it from the housing.

q. Remove the piston stem bearing (35) from the housing (28).

r. If required, on the non–muffled jackhamer, remove the exhaust deflector (31). Squeeze the rubber exhaust deflector, insert a screwdriver under the rubber lib and pry the exhaust deflector out of the housing (28).

s. Remove capscrew (51), nut (53) and washer (52) which retain the fronthead to the housing.

NOTICE

The fronthead assembly is a tight fit in the housing bore. It may be necessary to drive a wedge into the housing slot to open the housing bore enough to allow the fronthead assembly to be easily removed.

⚠CAUTION

WHEN REMOVING THE FRONTHEAD FROM THE HOUSING, BE CAREFULLY THAT THE SPLINE NUT, RIFLE NUT AND CLUTCH SPRING DO NOT FALL OUT OF THE FRONTHEAD.

t. Remove the fronthead (41) from the housing (28).

u. The spline nut (37), spline nut pins, rifle nut (42), chuck (44) and clutch spring (43) may stay in the fronthead end of the housing (1) or may come out with the fronthead assembly (41). Be careful not to let the parts fall from the jackhamer.

NOTICE

Be careful when removing the latch. The latch (45), pin (49) and spring (50) will fall out when the latch pin (46) is removed.

v. If it becomes necessary to remove the latch (45), remove the roll pin (48).

w. Using a soft drift and mallet, drive the latch pin (46) out of the fronthead (41). Check the o–rings (47) on the latch pin and replace if necessary.

4. INSPECTION AND REPAIR. (Figure 1)

⚠DANGER

WHEN USING ANY SOLVENT TO CLEAN PARTS, MAKE SURE THAT IT MEETS CURRENT SAFETY AND HEALTH STANDARDS, AND THAT IT IS USED IN AN AREA THAT IS ADEQUATELY VENTILATED.

a. Clean the parts in a suitable solvent.

b. All ports in the backhead, piston, air distributor and piston bearing stem must be examined and all dust or dirt particles removed.

c. **Air Distributor/Piston Fit –** Check the clearance between the tail stem and the I.D. bore of the air distributor. Clearances in excess of .005 to .006 in. (.127 to .152mm) will begin to deteriorate the performance of the jackhamer. This effect will most dramatically be observed in the loss of penetration rate. In most cases, replacement of the air distributor is all that is required if this type of clearance is detected.

d. **Housing Bore/Piston Fit –** Check the clearance between the piston head and the housing bore. Clearances in excess of .006 in. (.152mm) will result in loss of power and improper operation of the jackhamer. Typically, the piston will wear at a rate of 4 times that of the housing bore, usually requiring replacement of the piston when extreme wear is detected.

e. **Piston Stem Bearing/Piston Fit –** Check the clearance between the piston stem bearing and the piston. Clearance in excess of .006 in. (.152mm) will weaken the front over travel cushion of the jackhamer. Weak over travel cushion encourages mechanical contact of the head of the piston the seat geometry resulting in premature failure of components. Any time the piston is replaced in the jackhamer, it is strongly recommend that this clearance be checked and parts be replaced as needed. The seat is intended to be the perishable item and should require replacement first.

f. **Spline Nut/Piston Fit –** Check the fit between the tooth of the spline nut and the piston. Wear in excess of .050 in. (1.27mm) will cause improper indexing characteristics of the clutch mechanism. The spline nut is designed to be replaced prior to replacement of the piston if this problem is encountered. Check spline nut for any evidence of heat which will appear in the form of a fibrous texture attached to the ends of the teeth. This may result from improper lubrication or continuous operation of the clutch mechanism in a slipping mode.

g. **Rifle Nut/Piston Fit** – Check the fit between the tooth of the rifle nut and the piston. Wear in excess of .050 in. (1.27mm) will cause improper indexing characteristics of the clutch mechanism and should be replaced.

h. **Piston Face Cupping** – Check for cupping of the piston face. Cupping is a result of improper operating procedures or improper steel shank geometry. Pistons with severe cupping should be replaced. Mild cupping can be repaired with a very careful grind operation. No more material should be removed than necessary. Do not exceed material removal of more that .040 in. (1.02mm). No warranty will be permitted on re–ground pistons.

i. **Clutch Spring/Rifle Nut/Chuck Fits** – Assemble the rifle nut and chuck together without the clutch spring. The point of contact between the rifle nut and the chuck is known as the *bridge*. The clutch spring I. D. should not be worn in this bridge area. If the clutch spring is worn in this area, it should be replaced.
Anytime the rifle nut or the chuck is replaced, the clutch spring should also be replaced.

j. **Throttle Valve/Throttle Valve Body/ Throttle Lever Fit** – The throttle components are made of durable non–metallic materials. The presence of air–born rock dust will ultimately wear a cradle between the throttle lever and the throttle body. Wear of the throttle body and the throttle valve in excess of .060 in. (1.5mm) total will not allow full actuation of the throttle valve. This may result in low air flow and low power. Replace parts as necessary.

k. **Lubricator Filter** – Check the functionality of the lubricator filter by:

1. Position the housing so that the lube fill plug (32) is in the vertical position.
2. Remove the spline nut to allow visual inspection of the filter (36) which is pressed into the piston stem bearing.
3. Fill oil reservoir completely full of oil.
4. Place a shop towel over the fronthead end of the casing. Insert plug (32) and tighten.
5. If the filter is plugged, the hydraulic pressure developed while tightening the plug will push the filter out of the piston stem bearing.
6. Replace filter if necessary.

5. REASSEMBLY. (Figure 1)

⚠CAUTION

CLAMP THE FRONTHEAD FIRMLY BUT CAREFULLY IN A VISE.

a. If a latch (45) was removed, reassemble as follows:

1. Insert the spring (50) then the pin (49) into the latch (45).
2. If removed or damaged, install an o–ring (47) into each of the grooves in pin (46).
3. Install pin (46) through one end of the fronthead (41) yoke, making sure that the flat on pin (46) is facing towards pin (49).

NOTICE

Make sure to line up the hole in the pin (46) with the hole in the fronthead yoke (41) when assembling the latch (45).

4. Press pin (46) through the backhead yoke and into the latch (45) until contact with pin (49).

5. Using a screwdriver, press against pin (49) until pin (46) can pass through the latch (45) and into the other end of the yoke.

6. Make sure the hole in the pin (46) lines up with the hole in the fronthead yoke. Install roll pin (48).

b. If the blow air, throttle valve parts or air connection were removed, reassemble as follows:

1. Check the backhead (1) bores to make sure they are clean. If necessary, take a clean rag and wipe out any dirt or chips.

2. Install an o–ring (14) on the blow air valve(13).

3. Install the blow air valve (13) into the blow air bore in the backhead (1).

4. Using a rubber mallet, drive the backhead plug (27) into the backhead (1) until the pin is flush with the backhead face.

5. Install the blow air lever (15) using pin (16) to retain it in the backhead (1).

6. Install new o–rings (9) in the grooves of the throttle valve body (7).

7. Insert the stem of the throttle valve (6) up through the large bore of the throttle valve body (7).

8. Install the throttle valve spring (8) into the counterbore of the throttle valve bore in the backhead (1) and throttle valve (7).

9. Insert the throttle valve body, with the stem of the throttle valve up, in the backhead bore. Push the throttle valve body into the bore until it is flush with the face of the backhead (1) and throttle valve (7).

10. Install the throttle lever (3). Line up the hole in the throttle lever with the holes in the backhead ears. Drive dowel pin (4) thru the ears and the throttle lever.

11. If removed, replace the handle assembly.

12. Install the handle bolt (21) thru the thru hole in the backhead (1).

13. Slide a handle grip (22) onto the handle bolt (21), a washer (24) and nut (23).

14. Do the same to the other end of the handle bolt. Tighten both nuts with a wrench.

c. Install the piston stem bearing (35) into the housing (28). Visually align the three holes in the bearing with the three holes in the housing (28). This will allow proper operation of the blow air system.

d. Insert the piston (40), spline end first, into the housing bore.

e. Install new o–rings (39) on the air distributor (38).

f. Install the air distributor (38), small outside diameter end in first, into the housing bore until it bottoms out.

g. Place backhead o–ring (30) on the backhead (1).

NOTICE

The housing is machined with two unique slots to allow passage of the fronthead bolt in two orientations. The fronthead can be oriented with the latch facing the rear (side opposite the air inlet) or it can be rotated to the front (same side as the air inlet).

h. Install the backhead (1) into the housing bore, making sure to line up the holes in the backhead with the holes in the housing (28).

i. Insert washer (26) and capscrew (25) in each of the holes and tighten. Torque the capscrew to 125 lb–ft. (169 Nm).

j. Replace the o–ring (19) on the swivel nipple (18). Install the swivel nipple (18)

thru the cap (17). Install o–ring (11) on cap (17) and screw the cap into the backhead (1).

k. Insert the blow tube (10) thru the backhead (1) and tighten.

l. From the fronthead end of the housing (28), slide the spline nut (37) onto the piston stem (40). Install the three spline nut pins into the slots on the O.D. of the spline nut.

NOTICE

Install the clutch spring (43) to the chuck (44) first. Installation will be simpler if the clutch spring is rotated in a manner which tends to unwind the spring.

m. Assemble the rifle nut (42), clutch spring (43) and chuck (44) together and install the assembly into the fronthead (41).

n. With the bolt hole in the fronthead (41) to the preferred orientation on the housing (28), slide the fronthead assembly onto the front end of the housing until the fronthead is flush with the face of the housing.

o. Install capscrew (51), washer (52) and nut (53). Torque the capscrew to 175 lb–ft (237 Nm).

p. If removed, replace the muffler and stud.

6. PERFORMANCE TESTING.

A reconditioned jackhamer should be tested before it is sent back to the job. Before connecting the air hose, check to see that the lubricator used with the jackhamer is filled with proper lubricating oil. Refer to IM6097 Instruction Manual for Jackhamers, Section 4, Paragraph 16.

Pour a small amount (2 to 3 oz. [.06 to .09 L]) of rock drill oil into the jackhamer inlet, for initial lubrication. With the jackhamer against the work surface, the jackhamer should start with less than 20 psi (1.4 bar) air pressure and with the piston reciprocating smoothly. Let the jackhamer run in slowly at reduced pressure long enough to see that it is in good working order. If the jackhamer stalls, turn off the air immediately. Stalling indicates binding caused by tight fits. After a short period of operation, a definite rhythm should develop and an even exhaust note will be heard. The jackhamer may become warm, but should not overheat. If erratic operation continues or stalling persists, dismantle the jackhamer and check for binding of parts.

After an initial period of low pressure operation, check the performance of a reconditioned jackhamer with that of a new one by comparing both under similar conditions and with normal air pressure. Once testing is completed, place plastic caps or plugs in all parts to keep out dirt until the jackhamer is put back into service.

Alphabetical Index

1. INTRODUCTION.

This section contains detailed information for troubleshooting the "PROMAXX™" Jackhamer Models JX35 & JX35S, hereafter referred to as jackhamer.

2. TROUBLESHOOTING.

Troubleshooting will be accomplished by using the appropriate illustration provided in this instruction manual and the step by step trouble and remedies. Using both of these together will solve most common problems.

Table 1. Troubleshooting

TROUBLE	PROBABLE CAUSE	REMEDY
Jackhamer will not start.	1. Plugged exhaust port or air passages caused by dirt or hose particles.	1. Dismantle jackhamer, clean out all ports and air passages. Keep the air hose in good condition; never use a soft deteriorated hose.
	2. Stuck valve due to gummy oil or incorrect assembly.	2. Remove backhead parts from the jackhamer. Clean parts. Never use dirty oil or oil that does not conform to the recommended specifications.
	3. Frozen piston due to improper lubrication.	3. Dismantle jackhamer to remove piston. Repair piston by placing in a high speed lathe and dressing with fine emery cloth. Never run jackhamer without the proper lubricating oil in the lubricating oil reservoir.
Freezing at exhaust ports.	1. Excessive moisture in the air supply line.	1. Install moisture traps in the air supply line or add anti–freeze lubricant directly through the air inlet. Use "KILFROST" anti–freeze lubricant or equivalent.

(Continued)

Table 1. Troubleshooting (con't.)

TROUBLE	PROBABLE CAUSE	REMEDY
Jackhamer loses power rapidly.	1. Restriction in air supply line.	1. Never allow the air supply to kink or make sharp bends.
	2. Air supply line too long.	2. As a general rule keep the air supply line under 50 ft. (15m).
	3. Diameter of air supply line too small.	3. A 3/4 in. (19.1 mm) diameter air supply is recommended for the jackhamer.
Jackhamer lacks power.	1. Low air supply pressure.	1. The air supply pressure at the inlet should be 90 to 100 psi (6.2 to 6.9 bar).
	2. Running on fronthead cushion.	2. Keep shank fed–up to the work. Always maintain a constant pressure when operating the jackhamer.
	3. Plugged air passages.	3. Dismantle the jackhamer and clean out all ports and passages.
	4. Lack of lubricating oil.	4. Maintain the proper oil level in the air line lubricator. Steel shank must show a film of oil.
	5. Sticking valve.	5. Remove backhead parts from the jackhamer. Clean parts. Never use dirty oil or oil that does not conform to the recommended specifications.
	6. Worn components.	6. Check and replace parts which show wear.
Overheating of the piston stem bearing on a new machine.	1. Jackhamer not properly broken in.	1. Stop operating the jackhamer and perform initial servicing (Refer to Section 3, Paragraph 6). Never run a new jackhamer at full throttle until a proper break–in period has been completed.

(Continued)

Table 1. Troubleshooting (con't.)

TROUBLE	PROBABLE CAUSE	REMEDY
Fogging.	1. Excessive moisture in the air supply line.	1. Blow out air lines. If moisture traps are installed in the air supply line, drain the moisture.
	2. Over lubrication.	2. Clean lubricating oil reservoir and adjust for proper rate of feed.
Overheating of jackhamer after break–in period.	1. Running on fronthead cushion.	1. Keep shank fed–up to work. Always maintain constant pressure when operating the jackhamer .
	2. Piston not hitting the shank because of short shank.	2. Remove shank piece from jackhamer.
	3. Pulling steel at full throttle.	3. When pulling steels, always use minimum throttle.
	4. Lack of lubrication or improper lubricating oil.	4. Before operating the jackhamer make sure the in line lubricator is full of proper lubricant.
Erratic or sluggish operation.	1. Lubricating oil too heavy.	1. Use only the recommended lubricating oil.
	2. Gummed oil or dirt in operating parts.	2. Dismantle jackhamer and clean out dirt and gummy residue. Service the jackhamer with clean oil. Protect the tool from dirt when idle.
Stuck steel.	1. Driving steel after bit is dull or has lost its gauge.	1. Sharpen or replace with new bit.
	2. Crowding bit in soft formations.	2. Use down pressure cautiously in soft formations; be certain steel is rotating freely.
	3. Cuttings not being blown from hole.	3. Use blow air frequently.
	4. Misalignment of steel with hole causing binding.	4. Keep jackhamer, steel and hole in alignment at all times.

(Continued)

Table 4. Troubleshooting Chart (con't.)

TROUBLE	PROBABLE CAUSE	REMEDY
Broken or battered water tube.	1. Water tube breaking in drill steel shank.	1. Check hole in drill steel shank to be certain that hole is large enough and deep enough to accept tube.
	2. Worn chuck, which permits misalignment, chafing or bending of tube.	2. Replace worn chuck.
Slow drilling speed.	1. Dull bit.	1. Replace bit.
	2. Cuttings not being removed from hole.	2. Use blow air more frequently to keep bit working on fresh rock.
	3. Plugged drill steel or blower tube.	3. Remove tube and drill steel; clean out air passages.
	4. Jackhamer and steel not aligned in hole; steel or bit binding in hole.	4. Check alignment while drilling to prevent binding and to avoid stuck steel.
	5. Insufficient down pressure.	5. Increase down pressure.
No steel rotation or rotation is weak.	1. Steel binding in hole.	1. Apply correct amount of down pressure and keep drill steel and hole in alignment. Replace worn bits.
	2. Worn rotation parts.	2. Disassemble jackhamer and replace worn parts.

MAINTENANCE RECORDS AND NOTES

Date	Run Time (Hours)	Work Performed	Qty	Work By

Date	Run Time (Hours)	Work Performed	Qty	Work By

Date	Run Time (Hours)	Work Performed	Qty	Work By

NOTES

INDEX

Worldwide Ingersoll–Rand sales offices

U.S.A.

U.S. C&M OFFICES

Bethlehem, PA 18017–2293
1495 Valley Center Pkwy.
215/882–8800

Boston, MA 02125
33 Locust Street
617/288–8988

Casper, WY 82601
3273 N. I–25 Frontage Road
307/237–4259

Denver, CO 80207
5805 East 39th Ave.
303/399–1580

East Hanover, NJ 07936
98 Route #10
201/887–1212

Elkridge, MD 21227
5681 Main Street
410/796–3200

Gray, TN 37615
Suncrest Drive
615/477–3114

Houston, TX 77001
2210 McAllister
713/681–9221

Knoxville, TN 37922 (C&M)
112 Glenleigh Court
Suite #1
615/966–8800

Knoxville, TN 37912 (IRES)
4726 Clinton Hwy.
615/525–0404

Milwaukee, WI 53225
12311 West Silver Springs Dr.
414/461–7810

Nashville, TN 37229
310 S. Second St.
615/254–1811

New Castle, DE 19702
91 Christiana Road
302/324–9040

New Cumberland, PA 17070
Exit 15 on Rt. 83
4 miles south of Harrisburg
717/938–1441

New England
300 Turnpike Rd. –Route 9
Southboro, MA 01772
508/481–1350

Philadelphia
Route 309
Montgomeryville, PA 18936
215/855–9990

Phoenix, AZ 85007
820 N. 17th Ave.
602/258–6493

Pico Rivera, CA 90660
5211 Paramount Blvd.
310/948–3801

Portland, OR 97214
240 South East Clay Street
503/232–0151

Sacrameto, CA 95836
1851 Bell Avenue
916/641–1994

San Leandro, CA 94577
1944 Marina Blvd.
510/357–9131

Scranton, PA 18505
605 Davis St.
717/346–3885

Seattle, WA 98168
11222 E. Marginal Way, S.
206/762–7400

U.S. C&M FACTORIES

ROCK DRILLS

Rotary blasthole deephole, monitoring rigs
Ingersoll–Rand Co.
Rotary Drill Division
2100 N. First St.
Garland, TX 75040
214/495–8181

Downhole Drills and Bits; Pneumatic and Hydraulic Crawler Drills; Anchor Drills; Breakers and Jackhamers™.
Ingersoll–Rand Co.
Rock Drill Division
7500 Shadwell Drive
Roanoke, VA 24019–5198
703/362–3321

COMPACTORS, PAVING MILLERS, ASPHALT PAVERS AND FORKLIFTS

Ingersoll–Rand Co.
Road Machinery Division
Ingersoll Drive
Shippensburg, PA 17257
717/532–9181

UNDERGROUND EQUIPMENT
Roadheaders; drill jumbos, diesel–powered production and utility equipment (scoops, haul dumps, ets.)
Contact Rock Drill Division
Roanoke, VA

Split Set rock stabilizers
Simmons • Rand Co.
Split Set Division
Suite 300
100 Thanet Circle
Princeton, NJ 08540–3662
609/921–8688

AIR COMPRESSORS

Portable compressors, Generator Sets and Light Plants
Ingersoll–Rand Co.
Portable Compressor Division
P.O. Box 868
501 Sanford Ave.
Mocksville, NC 27028
704/634–3561

Small Compressor Plant
Ingersoll–Rand Co.
101 Industrial Drive
Campbellsville, KY 42718
502/465–3511

Centrifugal compressors (Centac)
Ingersoll–Rand Co.
Centrifugal Compressor Division
Route 45
Mayfield, KY 42066
502/247–8640

Reciprocating and rotary–screw compressors
Ingersoll–Rand Co.
Air Compressor Group
P.O. Box 1600
800A Beaty St.
Davidson, NC 28036
704/892–7100

PUMPS

Engineered centrifugal pumps
Ingersoll–Rand Co.
P.O. Box 486
Phillipsburg, NJ 08865
201/859–7000

Reciprocating pumps and standard centrifugal pumps
Ingersoll–Rand Co.
P.O. Box 656
Allentown, PA 18105
215/433–6411

Vertical turbine pumps
Ingersoll–Rand Co.
Vertical Turbine Pump Division
Hastings, NE 68901
402/463–1306

TOOLS, WINCHES

Ingersoll–Rand Co.
Power Tool Division
P.O. Box 1776
Liberty Corner, NJ 07938
201/647–6000

LIQUID/SOLID SEPARATORS

Ingersoll–Rand Co.
Impco Division
150 Burke St.
Nashua, NH 03061
603/882–2711

CANADA

Surface and underground equipment
Tools and industrial equipment

Ingersoll–Rand Canada Inc.
2360 Millrace Court
Mississauga, Ontario L5N1W2
(1)416'858–8480

Ingersoll–Rand Canada, Inc.
2250 Hymus Blvd
Dorval, Quebec H9P1J9
(1) 514'683–9157

MEXICO

All equipment
Ingersoll–Rand, S.A. de C.V.
Boulevard Centro
Industrial #11
Fracc. Industrial
Puente de Vigas
Tlalnepantla,
54090 Edo. de Mexico
Mexico
52 (5) 390–40–21
52 (5) 390–24–11

SOUTH AMERICA

USA, Miami, Florida
1 (305) 599–0500

Chile – Santiago
56 (2) 41–198

Colombia – Bogota
57 (1) 219–1406'1460

Venezuela – Caracas
58 (2) 239–9369

EUROPE

Austria – Vienna
43 (222) 83–05–250

Belgium – Brussels
32 (02) 216–99–95

France – Trappes
33 (3) 050–61–10

Germany – Ratingen
49 (2102) 48090

*Italy – Milano
39 (02) 950561

Netherlands – Zoeterwoude
31 (071) 452200

Norway – Oslo
47 (02) 39–15–26

Spain – Madrid
34 (9) 1–671–07–00

Sweden – Spanga
46 (08) 750–59–20

United Kingdom – London
44 (01) 584–5070

*Also for Bulgaria, Czechoslovakia, Hungary, Poland, Rumania, USSR, Yugoslavia.

AFRICA–MIDDLE EAST

Egypt – Cairo
(02)341–5190

South Africa – Alrode
27 (011) 864–3930

ASIA–PACIFIC

Australia–Melbourne
61–(3) 794–1611

Hong Kong
852 (5) 270183

India–Bombay
91 (22) 4936765

Japan – Tokyo
81 (3) 403–0841/7

Korea – Seoul
82 (2) 776–2541

New Zealand – Auckland
64 (9) 885096

Philippines – Manila
63 (2) 89–85–06/08

Singapore
(65) 8611555

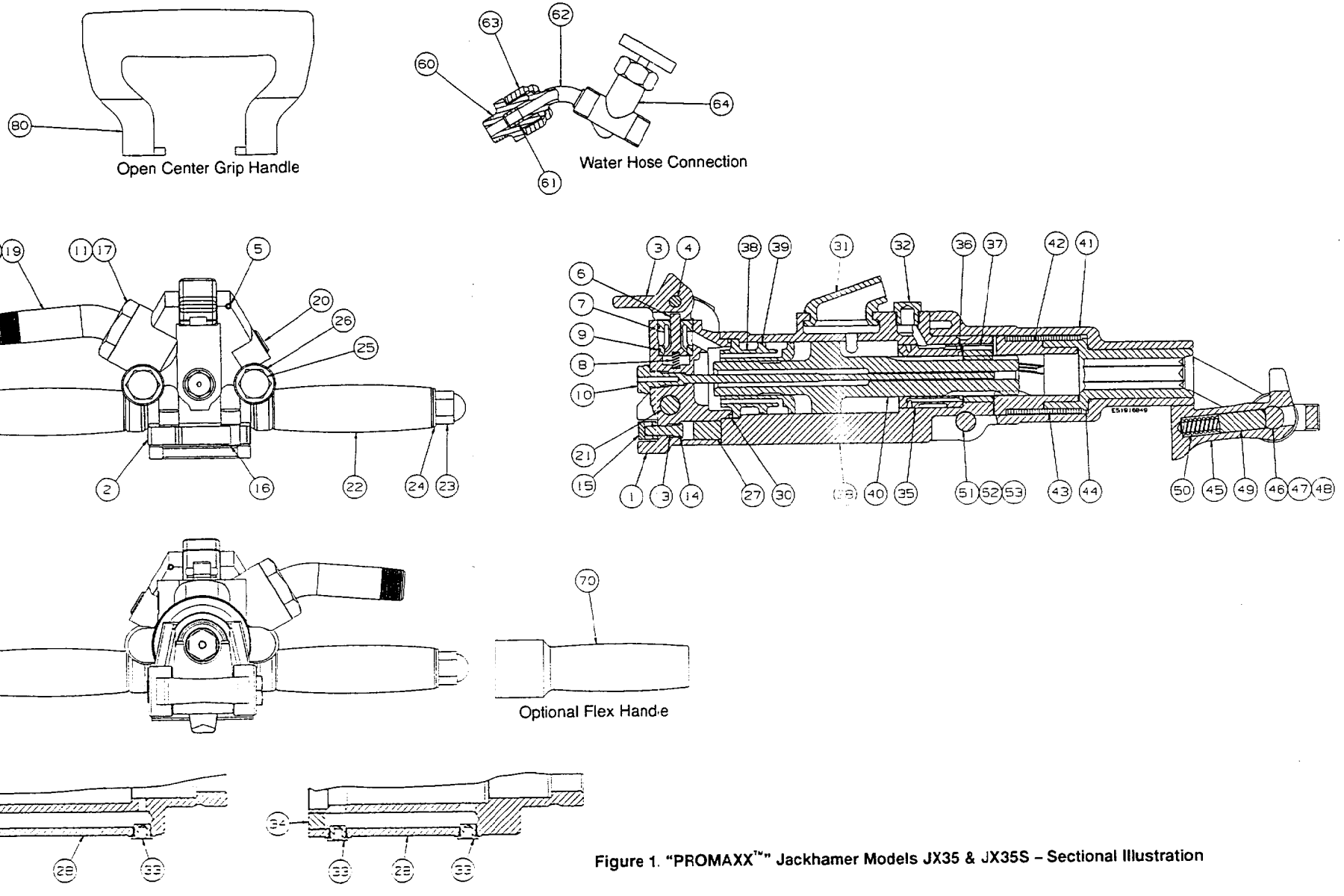


Figure 1. "PROMAXX™" Jackhamer Models JX35 & JX35S – Sectional Illustration