

KENTUCKY IMPLEMENTS

WILDCAT DRIVER

OPERATOR'S MANUAL

- **TO AVOID INJURY OR DEATH! READ AND UNDERSTAND THIS ENTIRE MANUAL BEFORE INSTALLING, OPERATING OR SERVICING THIS EQUIPMENT! DO NOT ATTEMPT TO ALTER THIS EQUIPMENT IN ANY WAY WITHOUT THE WRITTEN CONSENT OF KENTUCKY IMPLEMENT.**

You have invested in a quality piece of equipment, backed by people with years of experience. Only through proper installation, operation, and maintenance can you expect to receive the dependable performance and long life for which the WILDCAT Driver was designed.

This manual contains important information regarding the installation, operation, safe use, care and maintenance of your WILDCAT Hydraulic Driver-Breaker. Please be sure that all operators study this manual carefully and keep it on file for future reference. Don't forget to send in your owner's registration form.

After reading this manual, if you have any questions about your WILDCAT Hydraulic Driver- Breaker, please contact us immediately as follows:

Call: 859-380-3514

Web: www.kentuckyimplement.com

E-mail: kentuckyimplement@gmail.com

Kentucky Implement strives to provide superior products and the highest level of customer service. If you have any suggestions on how we can improve for the future, we would appreciate hearing from you.

Thank you for putting your trust in Kentucky Implement.

Kentucky Implement, LLC.

10200 Locust Pike, Ryland Heights KY 41015

WILDCAT DRIVER- BREAKER WARRANTY POLICY

Model #: _____

Serial #: _____

WILDCAT guarantees its Driver-Breaker to be free from defects in material or workmanship for a warranty period of 12 months. The warranty period begins on the date of purchase by the original purchaser.

WARRANTY PERFORMANCE:

To make a claim under this warranty, contact the dealer purchased from, who will then obtain written return authorization from Kentucky Implement. All warranty returns must be accompanied by a Kentucky Implement Return Authorization.

REMEDY:

During the applicable warranty period, Kentucky Implement, at its option, will repair or replace, free of charge, any product determined to be defective. Such repair or replacement shall take place at a location designated by Kentucky Implement.

EXCLUSIONS FROM WARRANTY COVERAGE:

1. To qualify for warranty performance the complete unit must be available for Kentucky Implement's inspection in its original "failed" condition.
2. There is no warranty against failures caused by or related to alterations or modifications made without the express written consent of Kentucky Implement.
3. This warranty does not cover damage from pressure spikes due to improper hydraulic system application.
4. This warranty does not cover disassembly of components, which voids component warranty.
5. Under no circumstances shall Kentucky Implement be responsible for the cost of labor for field replacement or repair, nor for damage caused by accident, misapplication, abuse, misuse, operator error, or environmental elements.
6. This warranty does not apply to parts subject to normal wear, nor to damage caused by the failure to perform recommended maintenance or to replace worn parts.

7. Under no circumstances shall Kentucky Implement be obligated for the cost of any repair or replacement by anyone other than Kentucky Implement, without its express written consent.

LIMITATIONS AND EXCLUSIONS:

This warranty is in lieu of all other warranties written or oral, express or implied, statutory or otherwise arising by operation of law, including any warranty of merchantability or fitness for purpose.

The liability of Kentucky Implement arising out of the supplying of any product covered by this warranty contract, negligence or otherwise shall not in any case exceed the cost of parts or labor required to rebuild or replace such defective product, together with the transportation costs attributed thereto. Upon the expiration of the applicable warranty period herein specified, all such liability shall terminate.

This warranty constitutes the entire warranty for Kentucky Implement, and no oral representations, warranties or guarantees by any agent of Kentucky Implement or the seller shall be binding on Kentucky Implement, and no part of this warranty may be modified or extended except upon the express written consent of Kentucky Implement.

IMPROVEMENTS:

Kentucky implement continually strives to improve our products. Kentucky Implement reserves the right to make changes or additions to any product without incurring any obligation whatsoever to make such changes or additions to products previously sold.

WILDCAT WARRANTY REGISTRATION:

DATE PURCHASED: _____

MODEL NO. _____ **SERIAL #:** _____

OWNER INFORMATION:

OWNER'S NAME: _____ **PHONE:** _____

COMPANY NAME: _____

ADDRESS: _____

CITY: _____ **STATE/PROVIDENCE:** _____

DEALER INFORMATION:

DEALER SALESMAN: _____ PHONE: _____

DEALER NAME: _____

ADDRESS: _____

CITY: _____ STATE/PROVIDENCE: _____

ZIP CODE: _____ COUNTRY: _____

INSTALLATION AND APPLICATION INFORMATION

This **WILDCAT** Hydraulic Driver-Breaker will be mounted on:

SKID STEER MAKE/BRAND: _____ MODEL: _____

*This **WILDCAT** Hydraulic Driver- Breaker has been accepted in good condition and I have been instructed by the dealer to read and understand the entire Operator's Manual for proper installation, proper and safe operation, preventative maintenance, service, warranty, and all other information covered in the Operator's Manual. I also understand that all operators must read and understand the entire Operator's Manual.*

OWNER SIGNATURE: _____ DATE: _____

THIS PAGE MUST BE RETURNED WITHIN 10 DAYS OF PURCHASE TO VALIDATE WARRANTY.

MAIL TO: KENTUCKY IMPLEMENT 10200 Locust Pike, Ryland Heights KY 41015

ITEM SPECIFICATIONS:

WILDCAT Hydraulic Driver- Breaker: This product is excellent for post driving jobs and is ideal for almost all conditions.

ENERGY CLASS(FT/LBS): 1,100FT-LBS

FLOW RATE(GAL/MIN): 13-25GAL

OIL RELIEF PRESSURE: 375LBS

DRIVING CUP DIAMETER(IN): 4-10"

HOSE DIAMETER: ½"

BACK HEAD PRESSURE: 16-BAR

IMPACT RATE: 400-800

MINIMUM MACHINE OPERATING CAPACITY(LBS): 2000

BASE MODEL WEIGHT WITH MOUNT(LBS): 1,350

REQUIRED EXCAVATOR OPERATING WEIGHT(LBS): 9,900

SHAFT DIAMETER(IN): 75mm or 2.99"

AVAILABLE MOUNTS: Skid Steer Mounts, Excavator Mounts

KENTUCKY IMPLEMENT SAFETY INFORMATION

TO THE OPERATOR:

It is the responsibility of all operators to read and understand this entire manual before installing, operating or servicing the WILDCAT Hydraulic Driver- Breaker. Pay particular attention to cautions, warnings, and safe operating procedures. Be a safe and qualified operator. Operate with good judgement and see that it is properly maintained.

SAFETY DECALS:

Please remember to read, understand, and follow safety signs on the attachment. Clean or replace all safety signs if they can't be clearly read. They are there for your safety and the safety of others. **WORN, DAMAGED, OR ILLEGAL SAFETY DECALS MUST BE REPLACED!** New safety decals can be ordered from Kentucky Implement.

SAFETY INSTRUCTIONS:

- Keep bystanders out of the work area. Don't operate with another person in contact with the driver-breaker.
- All operators must read and understand this entire manual, paying particular attention to safety messages and operation instructions.
- All things with moving parts are potentially hazardous. There is no substitute for a cautious operator who recognizes potential hazards and follows reasonable safety practices.
- Personal protection equipment including hard hat, safety glasses, safety shoes, gloves, and ear plugs are recommended during assembly, installation, operation, maintenance, service, removal, or movement of the attachment.
- Never check the pressurized system for leaks with your bare hand. Wear proper hand and eye protection and use wood or cardboard when searching for leaks. Oil escaping from pinhole leaks under pressure can penetrate skin and create a serious medical emergency. If any fluid is injected into the skin, obtain medical care at once.
- Always use two people to handle heavy, unwieldy components during assembly, installation, maintenance, service, removal, or movement of the attachment.
- Only properly trained individuals should operate this equipment. Don't allow anyone who isn't trained or has read the manual to use this attachment.
- Never allow children to operate the driver- breaker.
- Do not allow riders on the equipment at any time.
- Never use drugs or alcoholic beverages while operating this equipment. Consult your doctor about operating this equipment while taking prescription or over-the-counter medications.
- Safe operation of equipment requires the operator's full attention. Avoid distractions such as headphones, cell phones, etc. while operating.

- Contact with underground gas lines or electrical cables may result in serious injury or death from explosion or electrical shock. Before operating, be sure of the location of any underground utilities.
- Stay away from power lines when transporting, raising, or operating the attachment. Electrocutation may occur without direct contact.
- The attachment must be securely latched to the vehicle, or it may fall without warning.
- Keep feet, hair, clothing, and jewelry away from moving or rotating parts.
- Never place yourself between the vehicle and the attachment.
- Never allow anyone under the attachment at any time. Even supported by hydraulics with the engine shut off, equipment can suddenly drop if controls are actuated or if hydraulic lines burst.
- Keep clear of the driver-breaker while in action. Never position, align, or support post by hand or with any tool when the attachment is in operation.
- Carry the load low. A heavy load can cause instability for the vehicle. Slow down on turns and watch out for bumps. Use all safety devices as recommended in the vehicle operators manual.
- Do not operate the driver-breaker on steep hillsides. When operating the driver-breaker on uneven/hilly terrain, position the vehicle with the attachment uphill. With the attachment downhill, the vehicle could tip when attempting to raise the attachment. Consult your vehicle operator's manual for maximum incline allowable.
- Always shut off the vehicle engine, remove the key, lower vehicle arms, and relieve all hydraulic pressure before dismounting the vehicle. Never leave equipment unattended with the vehicle running.
- Never attempt adjustments, service or repairs while the equipment is in operation.
- Before servicing or adjusting attachment, relieve all stored energy.
- Before disconnecting hydraulic lines or fittings, be sure to relieve all pressure by cycling all hydraulic controls after shutdown. Remember hydraulic systems are under pressure whenever the engine is running and may hold pressure after shutdown.
- Store the attachment on a flat, level surface where children do not play. Securely block and support the attachment.
- Do not modify the attachment. Modifications may weaken the integrity of the attachment and may impair the safety, function, life, and performance of the driver-breaker.
- When making repairs or servicing, use only parts that meet the original equipment manufacturer's standards and requirements.
- Always use care when operating the Driver-Breaker. Most incidents occur due to neglect/carelessness.

OPERATING INSTRUCTIONS:

TO THE OPERATOR: Safety is a primary concern in the design, manufacture, sale, and use of a WILDCAT Hydraulic Driver-Breaker. Kentucky Implement confirms this to you, our customer, our concern for safety. Improper operation of this equipment can cause serious personal injury or death. Operation of this attachment should only be done by a competent adult acting in compliance with the vehicle and attachment Operator's Manuals. Since the operation of this Hydraulic Driver-Breaker is beyond our control, we disclaim all liability for any damages, injuries, or death which may result.

DRIVER:

1. Using the driver requires a second person to position the post. This person will set the post at the desired location and grasp the post securely, making sure their hands are at least 30 inches from the top of the post. When using a second person, do not activate the auxiliary hydraulics until the second person is clear from the work area.
2. After the post is in position, move the vehicle with the arms raised, and position the Driver directly over top of the post. **Never allow anyone under the attachment.**
3. Lower the driver onto the top of the post, ensuring the post is inside of the bottom portion of the Driver. Continue lowering the Driver until the weight of the driver is supported by the post. After the post is in position, **the second person must move away from the Driver and vehicle.**
4. **After the second person has cleared the area, place the loader arms in the float position.** If the vehicle is not equipped with a loader function, the loader arms should be lowered, applying force to the post.
5. Move vehicle slowly left, right, forward, or backward as needed until the post is vertical to the ground.
6. The driver can now be activated by turning the auxiliary hydraulics to the forward position. If you are not using the loader float position, the loader arms should be lowered as the post is driven into the ground.
7. Drive the post to the desired depth and deactivate the auxiliary hydraulics. Raise the driver until the post is cleared and move on to the next post.

BREAKER:

- 1) **During the striking operation, apply appropriate disruptive force with the breaker to guarantee effective breaking. If the disruptive force is insufficient, the hammering energy of the piston cannot effectively break the rocks. The reactive force of such hammering force would be transmitted to the Breaker body, the boom and arm of the excavator, etc. And damage such parts. If the disruptive force is excessively high, and the breaking operation is made, the machine would be tilted at the moment of breaking the rock. The severe impact of the breaking hammer against the rock would damage the Breaker. In addition, striking under such conditions would also transmit the vibrations in a way that could damage the excavator tracks.**
- 2) **The disruption point should be properly selected during the breaking operation to guarantee stable striking of the steel rod. Operate the Breaker's steel rod in the vertical position as much as possible. If the hammering direction is tilted, the steel**

rod could escape from the driver during the striking operation, causing breakage or jamming of the steel rod and piston.

3) **The following precautions should be followed by thy operator during the operation of the Breaker:**

- **The operation should be stopped under strenuous vibration of the hose.** Excessive vibration of the hoses can lead to failure of the accumulator or oil leakage at hose joints. Stay vigilant during operation, and mitigate these issues.
- **Stop hammering immediately after the rocks are crushed.** The operation should be suspended to avoid excessive empty striking. Continuous empty striking could damage the accumulator, break bolts, flat pins and front head, harm the steel rod, and even adversely affect the excavator.
- **Do not use the Breaker to roll or push the rocks.** Using the steel rod or the sides of the bracket to move rocks could damage the boom and/or arm of the excavator. Using the Breaker in this way could also fracture the bolts of the Breaker, damage the bracket, and fracture or scratch the steel rod. It should be particularly noted that, if the steel rod is inserted into the rock, do not make the excavator travel.
- **Do not use the steel rod as a pry bar.** If the steel rod is used as a pry bar during the breaking operation, the bolts and the steel rod could be fractured.
- **Do not operate the Breaker under continuous striking for longer than one minute.** Long time striking would rise the oil temperature and further damage the accumulator or cause excessive abrasion of the steel rod. Where hard rocks are to be crushed, change to another location for striking after one minute.
- **For relatively long, hard, or large rocks, it is recommended to start crushing at the cracks or rear end and breaking the rock in multiple locations until completion.**
- **The Breaker should be operated under the appropriate engine speed.** Engine speed exceeding the operation requirements would not increase the striking force. Instead, it would increase the oil temperature and further damage the equipment.
- **Do not operate the Breaker in water or mud.** This driver is not intended to be submerged in water or mud. Such action would result in the piston or similar parts becoming permanently damaged by corrosion.
- **Do not vertically fall the Breaker to crush rocks.** If the Breaker directly falls onto the rocks to be crushed, the Breaker or the excavator would bear excessive forces, which would easily damage the excavator parts.
- **Do not make the striking operation when the oil cylinder on the excavator boom reaches its greatest travel distance.** When the oil cylinder rod of the excavator reaches its greatest travel distance (the oil cylinder is fully extended or withdrawn), the breaking operation could cause damage to the oil cylinder and different parts of the excavator.
- **Do not use ropes, chains, etc. To suspend objects under the Breaker.** In addition to being quite dangerous, suspending objects under the attachment could easily damage the Breaker.
- In cold weather the engine should be preheated before operation according to the operation and maintenance instructions of the excavator (15-20 minutes). **Low temperature breaking operation without preheating the engine could easily damage the parts of the breaker such as the piston and seal.**

12.A REPAIR AND MAINTENANCE:

It is the responsibility of all operators to read and understand this entire manual before installing, operating or servicing the WILDCAT Hydraulic

Driver-Breaker. Only through proper installation, operation, and maintenance can you expect to receive the dependable performance and long life for which the attachment was designed. Operate your equipment with care and good judgement and see that it is properly maintained.

12.B GENERAL CHECKLIST:

- Check all hydraulic oil for contamination. If contamination is present, determine the source as soon as possible. Clean hydraulic oil is essential. Most hydraulic component failures are due to contamination of the hydraulic oil. Always keep all dirt and other contaminants from entering the hydraulic system. Always use dust caps and plugs on all quick disconnects when not in use. Tightly cap all hydraulic openings to hold oil in and other contaminants from entering the hydraulic systems.
- Inspect all hydraulic hose assemblies for cracked and brittle covers caused by excessive heat. Reduced viscosity of hydraulic oil occurs at higher operating temperatures and causes a breakdown of fluid additives such as wear inhibitors. Excessive heat may cause internal leakage in the drive unit motor, which could cause it to become brittle and crack. Replacement of hoses before failure will prevent loss of hydraulic oil, hydraulic oil contamination, and component damage caused by cavitation. This will also reduce the chance of personal injury caused by hydraulic fluid.
- Visually inspect the attachment for any damage, worn parts, or cracked welds.
- Check all the fasteners. Ensure that they are fully tightened and secure.
- Check for any worn, damaged, or missing safety decals. Clean or replace all safety signs if they cannot be clearly read and understood. New safety decals can be ordered from Kentucky Implement.
- Check for any abnormal chisel or driver head damage, breakage, etc. If wearing or damage is found, the part should be immediately replaced or repaired. Do not continue to use a chisel or driver head with excessive wear.
- The Driver-Breaker should be lubricated before operation and every **2-3 hours during continuous operation**. There is an injection port for lubrication on the front head of the attachment.

DISASSEMBLY AND ASSEMBLY OF DRIVER HEAD/BREAKER CHISEL:

13.A ASSEMBLY:

1. Clean and lubricate the driver head/breaker chisel
2. Place the driver head/breaker chisel into position

3. Place the tool pin in position.
4. Secure the tool pin by hitting the stop pin back into position
5. Apply down pressure to chisel head, then inject grease through fitting

13.B DISASSEMBLY:

1. Use a skid steer to place the Driver-Breaker on its backside. Ensure that supports are in place to securely balance the attachment in this position.
2. Carefully disconnect the skid steer from the Driver-Breaker.
3. Use the push bar tool and a hammer to push the stop pin past the tool pin
4. The tool pin should freely fall out of the attachment, allowing the driver head/breaker chisel to be removed.

DRIVER-BREAKER MOUNT CONVERSION:

The Combo Breaker-Driver configuration has the flexibility to become a concrete breaker as well as a post driver. With additional mounting locations, the mounting bracket can be moved to the top to allow this unit to be used as a concrete breaker. Follow the steps below to convert your Combo Unit from a Post Driver to a Concrete Breaker.

1. Secure a flat pad of solid concrete for the work area
2. Support the Driver-Breaker approximately 12" off the ground
3. Either disconnect the hose holder from the mount plate or disconnect both hoses from the Driver-Breaker
4. Remove the large, silver-handled pins to detach the mount plate from the Driver-Breaker
5. Use the skid steer to raise the mount plate off the main assembly, and reposition the skid steer on the other end of the Driver-Breaker
6. Carefully align the pin holes in the mount plate with the bushing holes non the top end of the Driver-Breaker
7. Insert the silver-handled pins into the mount plate and through the side plate bushing holes on top of the Driver-Breaker
8. Reconnect the hose holder or hoses (whichever was disconnected in step 3).
9. Replace the post driver pad with a chisel to complete the conversion.

INFLATION AND DISCHARGING OF NITROGEN IN THE BACK HEAD:

INFLATION:

1. Remove the inflation cap from the back head
2. Connect the end of the pressure gauge adapter to the inflation valve on the back head

3. Remove the end cap to uncover the pipe fitting for the hose
4. Connect the hose from the pipe fitting to your nitrogen tank
5. Ensure that the pressure relief valve is tightened
6. Press and hold the pressure release pin to begin inflating the back head with nitrogen.
Never add more than 25 bar.
7. When the appropriate pressure is reached (20 bar) stop pressing the pressure release pin.
8. Disconnect the hose and reattach the end cap
9. Disconnect the end of the pressure gauge adapter and securely reattach the inflation valve cap to the back head

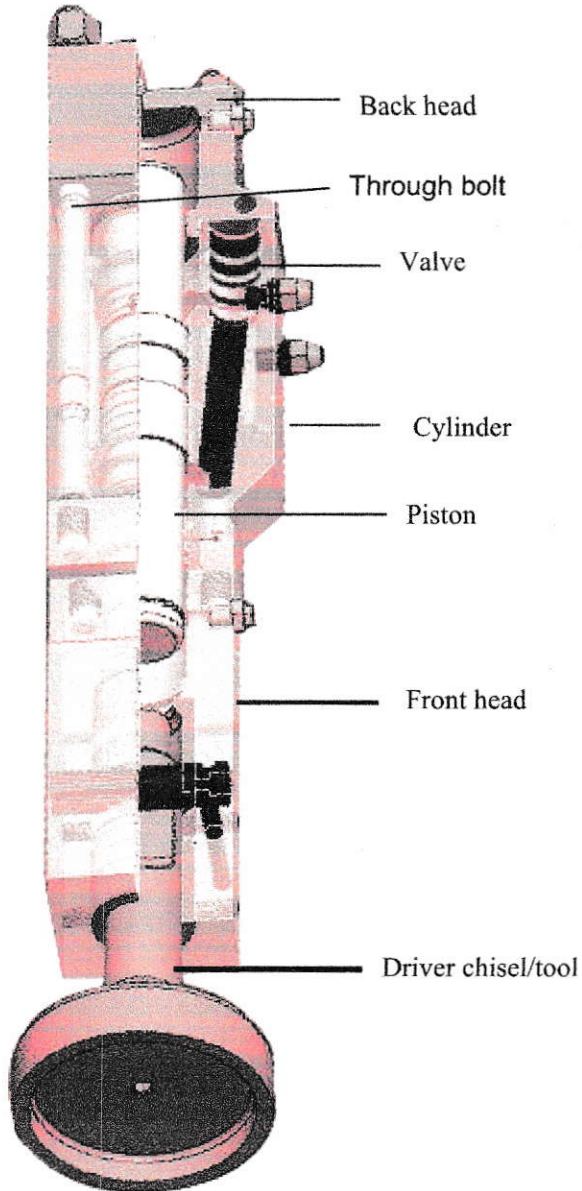
DISCHARGING:

We do not recommend trying to assemble or disassemble the back head, but if such action is taken, the nitrogen must be fully discharged first. If the through bolts atop the back head are loosened before discharging the Nitrogen, an explosion could occur.

1. Remove the inflation valve cap from the back head
2. Connect the end of the pressure gauge adapter to the inflation valve on the back head
3. Loosen the pressure release valve
4. Press and hold the pressure release pin to begin discharging Nitrogen from the back head
5. When all of the Nitrogen has been discharged, stop pressing the pressure release pin
6. Disconnect the end of the pressure gauge adapter and securely reattach the inflation valve cap to the back head.

Construction & Main Parts

Inner Valve Type



◆ Through bolt

Front head, cylinder and back head of Post driver hammer body are tightly fixed with four through bolts.

◆ Back head

This contains the cushion chamber charged with nitrogen(N₂) gas that compresses during upward strokes of the piston, and serves to provide maximum absorption of piston recoil, efficiency storing this energy for the next blow.

◆ Valve

Cylinder control valve is built in the valve housing and controls piston reciprocation.

◆ Cylinder

The cylinder is the heart of the Post driver hammer containing hydraulic circuit for piston reciprocation

◆ Piston

Kinetic energy of the piston is converted into hammering energy after hitting the tool. The hammering energy transmitted to the tool breaks rocks

◆ Front head

The front head supports the whole Post driver hammer. Upper bushing prevents shock from the tool

◆ Driver chisel/tool

This transfers piston impact power to the objects.

Greasing

1) Manual Greasing System



WARNING

- Insufficient greasing may cause abnormal wear of front cover and tool, and tool breakage

Apply grease to grease nipple on front head every 3 hours.

Adapt grease interval and amounts to tool wear rates and working conditions.

NOTICE

Tool shank must be well lubricated before installed in front head.

While greasing, hydraulic breaker must be upright against the tool.

To ensure that grease will penetrate between tool and inner bush.

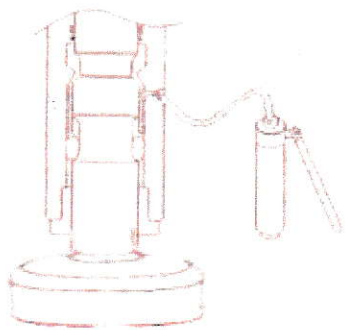
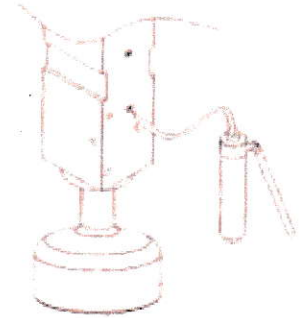
Recommended Lubricant Greases

MAKER	GREASE
Esso	Beacon Q2
Shell	Retinax AM
Mobil 1	Mobil 1 Grease special

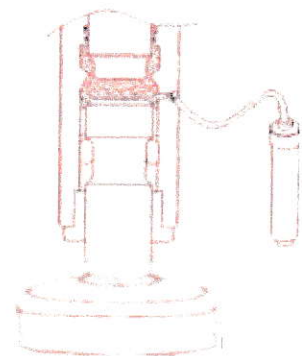
- 1) The Post driver hammer must be in a vertical position to grease, with enough down-pressure to push the tool up inside the housing.
- 2) Grease until clean grease oozes out around the tool and retainer pins.
- 3) Grease the Post driver hammer after every two hours of continuous use, or when the tool appears shiny where it rides inside the front head.

▲ CAUTION!

Grease often. Failure to lubricate regularly reduces the life of the tool, bushings, and front head. If the tool becomes dry and shiny during the shift, apply additional grease.



○
STANDING UP



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DOWN

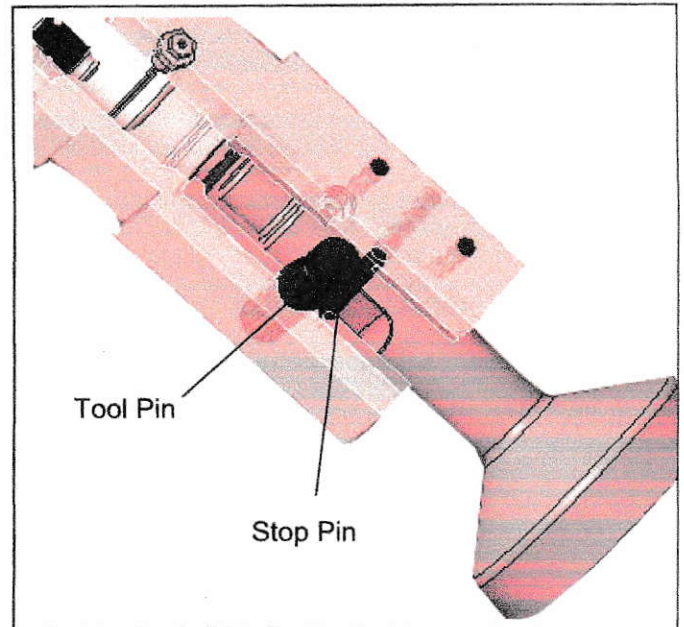
Post driver Tools

Tool Replacement

- 1) Remove the stop pin and the tool pin with a 330mm-long steel bar.

When reassembling, align the groove in the tool and the tool pin hole and insert the tool pins.

- 2) Reverse disassembly procedures to install a replacement too.
 - Before installing a new tool, check each part for wear, breakage, scores, etc.
 - Remove burrs and swellings on each tool pin, apply a coat of grease to the movable areas of the tool pin and the tool and finally install the tool.
 - Excessively deformed the tool pins will make replacement of the tool difficult. The tool pins must be checked every 100 to 150 hours of operation.



- If the replacement tool is not a genuine part, we do not guarantee the performance of other parts of the Post driverhammer.

Ensure that the tool shank is well lubricated before inserting it into the tool holder.

Keep tools well-greased and sheltered from the weather when not in use.

A rusty tool is more likely to suffer fatigue failure.

The standard inner diameter of the bottom portion of the driver chisel is 200mm.

TROUBLESHOOTING GUIDE

Problems in operation

If the Post driver hammer does not work or blow frequency and blow get worse, check following troubleshooting.
And then inspect according to the following order.

Symptom	Cause	Required action
No blow out	<ol style="list-style-type: none"> 1.Excessive back head gas pressure 2.Stop valve (s) closed 3.Lack of hydraulic oil 4. Wrong adjustment of pressure reducing valve 5. Faulty hydraulic hose connection 6.Oil back head infection 	<ol style="list-style-type: none"> 1.Re-adjust nitrogen gas pressure 2.Open Stop Valve 3.Fill hydraulic oil 4. Re-adjustment valve 5.Tighten or replace 6.Replace back head O-Ring, Or cylinder bush stop seal
Low impact power	<ol style="list-style-type: none"> 1.Line leakage or blockage 2.Clogged tank return line filter 3.Lack of hydraulic oil 4. Hydraulic oil contamination, or heat deterioration 5. Poor main pump performance 6.Back head nitrogen gas low 7.Low flow rate by mis-adjustment of flow control pressure reduction valve 8.Tool out of range for blowing position 	<ol style="list-style-type: none"> 1. check lines 2. Wash fitter, or replace 3. Fill hydraulic oil 4. Replace hydraulic oil, rinse tand and release oil inside lines 5.Contact authorized service shop 6.Refill nitrogen gas 7.Re-adjust reduction valve 8.Rush down tool by excavator
Irregular impact	<ol style="list-style-type: none"> 1. Low accumulator gas pressure, of bad accumulator 2. Bad piston or valve sliding surface 3.Piston moves down/up to blank blow hammer chamber 	<ol style="list-style-type: none"> 1. Refill nitrogen gas 2. Call an authorized service man. 3.Rush down tool by excavator operation
Bad tool movement	<ol style="list-style-type: none"> 1. Tool diameter incorrect 2. Tool and pin jammed from tool retainer 3.Jammed lower bush and tool 4.Deformed tool and piston contact area 	<ol style="list-style-type: none"> 1. Replace tool with genuine replacement parts 2. Smoothen rough surface of tool 3.Smoothen rough surface of lower bush interior 4.Replace tool
Oil leakage between front head and tool	<ol style="list-style-type: none"> 1.Cylinder seal worn 	<ol style="list-style-type: none"> 1.Replace seal
Gas leakage	<ol style="list-style-type: none"> 1.O-ring damage in related parts 	<ol style="list-style-type: none"> 1.Replace relevant o-ring

PERFORMANCE TROUBLESHOOTING

DRIVER-BREAKER

PROBLEM	POSSIBLE CAUSE	SOLUTION
The driver-breaker fails to strike	The driver head/breaking chisel is jammed	Inspect and replace worn parts
	Insufficient hydraulic oil	Supplement the hydraulic oil
	Oil temperature is too low	The oil temperature should be at least 30 degrees Celsius
	Improper main valve operation	Inspect the operation of the breaking button in the driving cab
	The internal pressure of the back head is too low	Inspect the Nitrogen pressure
	There is hydraulic oil leakage in the cap chamber of the back head	Replace the sealing elements
	Poor working performance of the hydraulic oil	Immediately contact the excavator manufacturer
The striking frequency is normal at first, but becomes irregular with use	Oil temperature rise, caused by oil shortage	Supplement the hydraulic oil
	Excessively high pressure in the back head	Inspect the gas pressure
	The lowering pressure of the attachment is insufficient	Inspect the boom and arm of the excavator
	The driver head/breaking chisel is excessively worn	Remove the part and make inspections, replacing if necessary
	The hydraulic oil pump is in poor performance	Have the oil pipeline inspected by the excavator manufacturer
Weak striking force	The gas pressure in the back head is relatively low	Inspect the gas pressure
Low striking frequency	The gas pressure is too high	Inspect the gas pressure
	The lowering pressure of the attachment is insufficient	Inspect the boom and arm of the excavator
	The working pressure is too high	Inspect the set pressure
	Poor working performance of the hydraulic oil	Have the oil pipeline inspected by the excavator manufacturer
The oil temperature rises too fast	The heat dispersion of the excavator is not good; the hydraulic pump is under premature abrasion and the pipeline is blocked	Change the settings of the attachment; inspect or replace the hydraulic pump
The hydraulic oil is emulsified	The oil is mixed with water	Replace the hydraulic oil immediately
The engine speed is reduced sharply	The output power of the engine is insufficient	Lower the pressure in the back head
	The engine performance is downgraded	Lower the position of the throttle; require the excavator manufacturer to make an inspection
	The oil temperature is too low	Preheat before operation

Daily Post driver hammer inspection

Before starting operation, be sure to inspect the Post driver hammer referring to the following table.

Inspection Item	Inspection Point	Remedy
Looseness, missing and damage bolts and nuts	Through bolts. Bracket mounting bolts.	Check looseness. Retighten securely.
Loose of hose fittings, visible damage to hose and oil leakage	Hydraulic hoses for the post driver. Oil hoses.	Retighten securely. Replace seriously damaged parts.
Abnormal oil leakage	Connections of Back head and cylinder. Clearance between front head & Tool.	Consult with local service station for further inspection.
Abnormal wear and cracks on tool	Tool	Deformed, burred and worn out tool should be repaired. Excessively worn tool needs to be replaced.
Greasing	Grease at start and every 2 or 3hours using the head grease pump. Pumping: 5~10 times (Greasing position and method shown at left)	Grease the front head
Level and contamination of hydraulic oil	Conditions of the hydraulic oil	Contamination of hydraulic oil varies with operating conditions, but oil color tells the level of contamination criteria for judging contamination is specifically set by post driver
Missing the rubber plugs and the snap rings	Rubber Plugs Snap Rings	A seriously damaged one must be replaced.

Regular Post driver hammer inspection & Maintenance

Regular inspection is essential for keeping the post driver hammer operating in the best condition.

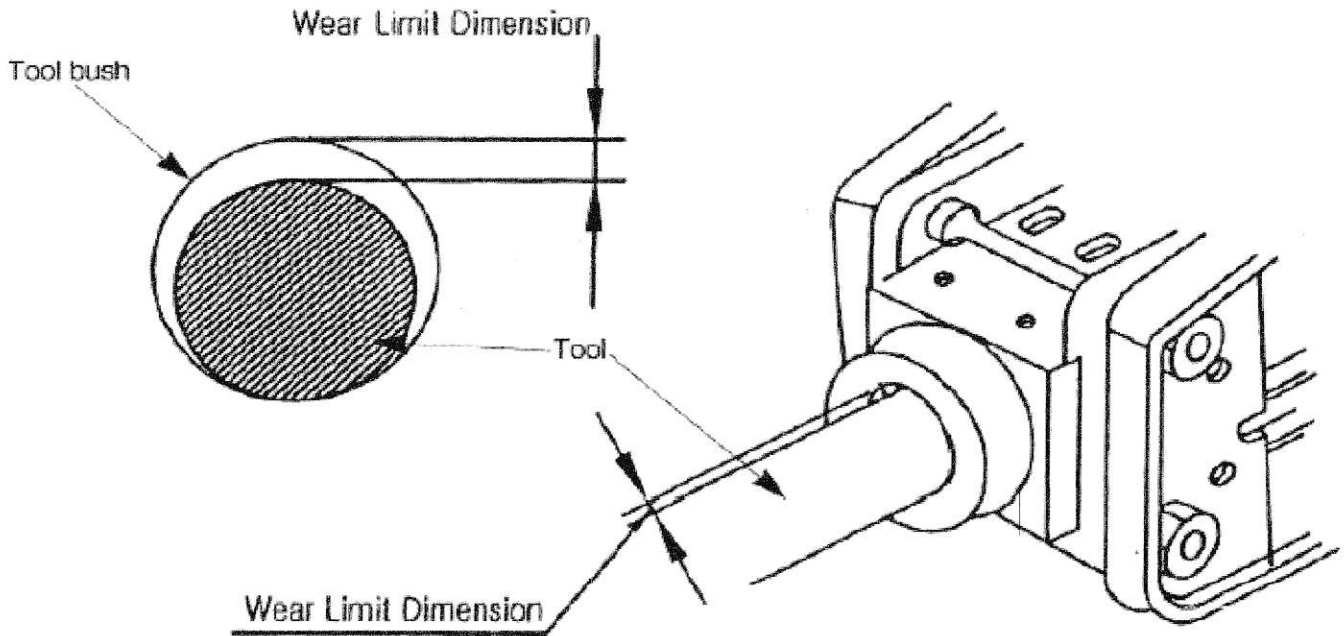
Consult with the service station for regular inspection and maintenance.

Customers are recommended to contact the local dealer for inspection within six months after delivery.

Replacement of the Driver Tool

The Tool is deformed by burrs occurring after long-term use. When a Tool tip is worn out,

The Tool is liable to slip. Then, sharpen the Tool tip. Grinding the Tool tip many times to sharpen the edge, but it will make the heat-treated hardened with a new Tool. If the gap between the Tool and the Tool bush becomes large, the piston will fail exactly to hit the upper part of the Tool, resulting in damage. When the gap is found to be over 9mm, replace the Tool bush together with the Tool.



Change Timing of the Tool Bush (mm)

Model	Wear Limit(mm)
TMG-PD700S	4

Inspection and Charging

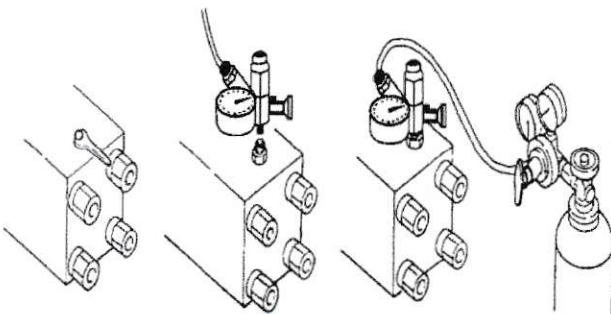
Nitrogen (N₂) Gas at the Back-Head

WARNING

- CHARGING GAS PRESSURE CHANGES ACCORDING TO THE TOOL CONDITION. LAY DOWN THE BREAKER AND LET THE TOOL EXTEND FULLY.
- STAY CLEAR OF THE TOOL WHILE CHARGING THE BREAKER WITH GAS. THE TOOL MAY BE IMPACTED BY THE PISTON AND FORCED OUT ABRUPTLY.
- WHEN THE THROUGH BOLTS ARE CHANGED THE N₂ GAS MUST BE DISCHARGED WITH THE BACK HEAD, AS IT IS HIGHLY PRESSURIZED.
- USE NITROGEN GAS ONLY.
- SEE " CONVERSION TABLE FOR CHARGING N₂ GAS PRESSURE TO THE BACK HEAD "

CHARGING OF N₂ GAS INTO BACK HEAD

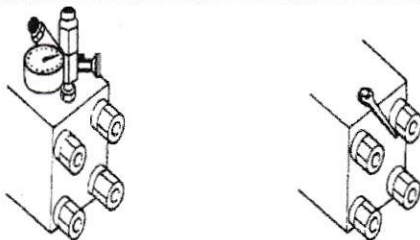
(1) Remove gas valve plug	(2) Insert 3-way valve with pressure gauge assembled (Note. 1)	(3) If gas is insufficient, adjust to specified valve as shown in the previous page (Note. 2)
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NOTE

1. Insert 3-way valve after its handle is fully turned counterclockwise.
2. Turn the 3-way valve handle clockwise slowly. Stop turning it when the needle of the gauge starts to move.
If it is turned clockwise too tightly, the valve may easily be damaged.
Pay special attention to ensure that the nitrogen gas is not charged excessively.

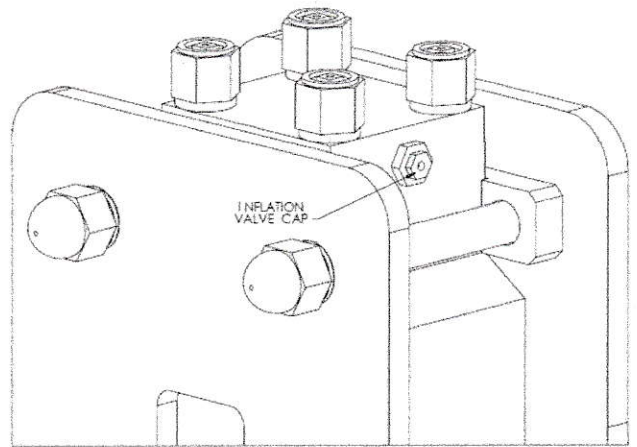
(4) Adjust the pressure slowly decreasing by using the pressure gauge if gas is sufficient	(5) Tighten gas valve plug (Do not cut O-ring)
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INFLATION AND DISCHARGING OF NITROGEN IN THE BACK HEAD

INFLATION

1. Remove the inflation valve cap from the the back head.
2. Connect the end of the pressure gauge adapter (1) to the inflation valve on the back head.
3. Remove the end cap (4) to uncover the pipe fitting for the hose.
4. Connect the hose from the pipe fitting to your Nitrogen tank.
5. Ensure that the pressure relief valve (3) is tightened.
6. Press and hold the pressure release pin (2) to begin inflating the back head with Nitrogen.
7. When the appropriate pressure is reached, stop pressing the pressure release pin (2).
8. Disconnect the hose and reattach the end cap (4).
9. Disconnect the end of the pressure gauge adapter (1) and securely reattach the inflation valve cap to the back head.

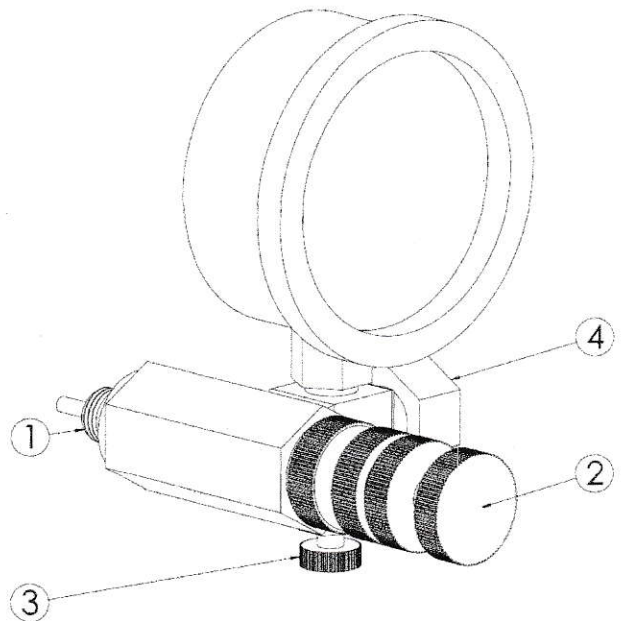


DISCHARGING



We do not recommend trying to disassemble or assemble the back head, but if such action is taken, the Nitrogen must be fully discharged first. If the through bolts atop the back head are loosened before discharging the Nitrogen, an explosion could occur.

1. Remove the inflation valve cap from the back head.
2. Connect the end of the pressure gauge adapter (1) to the inflation valve on the back head.
3. Loosen the pressure relief valve (3).
4. Press and hold the pressure release pin (2) to begin discharging Nitrogen from the back head.
5. When all of the Nitrogen has been discharged, stop pressing the pressure release pin (2).
6. Disconnect the end of the pressure gauge adapter (1) and securely reattach the inflation valve cap to the back head.



Inspection of N2-Gas in the Back-Head

- 1) Make sure that the cap and the valve of the gas charging kit are fully tightened. Screw the gas charging kit into the charging valve of the Back-Head after removing the plug.
- 2) At this time the handle must be short to prevent the gas from coming out.
- 3) Push the handle into the charging valve fully, so the gas pressure inside the Back-Head is indicated on the pressure gauge.
- 4) If the gas pressure is normal, unscrew the gas charging kit after discharging gas inside the gas charging kit. Reinsert the plug to the Post driver hammer.
- 5) If the gas pressure is higher or lower, charge it as described below.

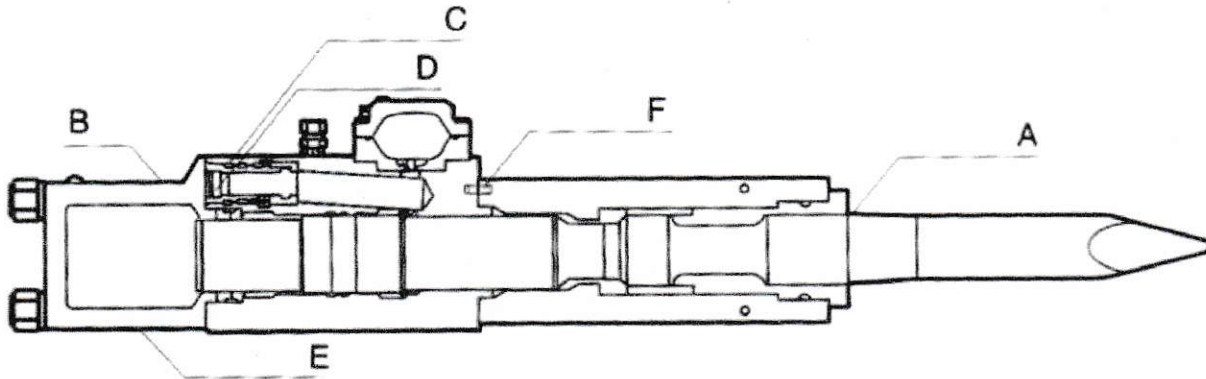
■ Charging of N2-Gas into the Back-Head

- 1) Connect the charging hose to N2-gas cylinder after screwing the bomb adapter onto adapter nut and installing than to the N2-gas cylinder.
- 2) Connect the gas charging kit to the charging hose after unscrewing the cap on the gas charging kit.
- 3) Install the gas charging kit to the charging valve of the Back-Head. At this time the handle of the gas charging kit must be up position to prevent the gas from coming out.
- 4) Push the handle of the gas charging kit fully and turn the handle of the N2-gas cylinder counter clockwise gradually to charge the Back-Head.
- 5) When the gas pressure exceeds 10% higher than the specified pressure, close the N2-gas cylinder by turning the handle clockwise.
- 6) Leave the handle of gas charging kit up. Generated pressure makes, it return back to original position naturally.
- 7) Remove the charging hose from the N2-gas cylinder and the gas charging kit(⑤), and the screw the cap onto the gas charging kit.
- 8) Push the handle of the gas charging kit fully, and the gas pressure inside the Back-Head is indicated on the pressure gauge. When the pressure is higher, discharge a small amount of gas from the Back-Head repeatedly opening and closing the valve and then gas pressure falls to the specified pressure.
- 9) When the gas pressure reaches to the specified pressure, close the valve and release the handle.
- 10) Open the valve completely and discharge gas inside the gas charging kit. Remove the gas charging kit from the charging valve of the Back-Head and install the plug to the charging valve.

Oil Leakage

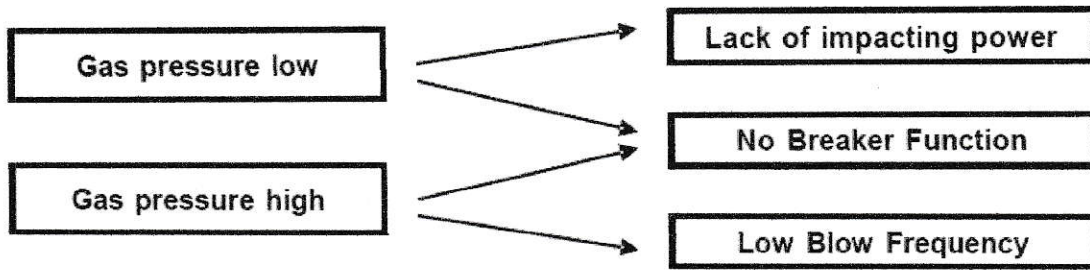
Even if oil is leaking, there is no use to replacing parts at all times check the following points listed in the chart below.

The user can check the (☞) marked points before calling dealer.



	Area of oil leakage	Condition	Causes & Remedies
A	Between the tool and lower bush	<ul style="list-style-type: none"> • A large amount of oil is leaking • Check if it is coming from oil or grease 	Seals can aged REPLACE
B	Surface of breaker	<ul style="list-style-type: none"> • Oil leaking from the hose & flange adapter portion 	☞ Loose breaker hoses and bolts RETIGHTEN
C	Valve housing bolts & cap bolts	<ul style="list-style-type: none"> • Oil leaking from reassembly of valve after overhaul 	NORMAL : During assembly from lubrication oil & anti-rust oil applied
D	Between main valve & surface of cylinder	<ul style="list-style-type: none"> • Oil leaking from reassembly of valve after overhaul 	NORMAL : - Clean oil - Check that seal is damaged - Loosen bolts - Replace with new seal
E	Between cylinder and back head	<ul style="list-style-type: none"> • Oil leakage 	☞ Loose tie rod nuts RETIGHTEN
		<ul style="list-style-type: none"> • Oil leaks again 	REPLACE Damaged o-ring
F	Between cylinder and front head	<ul style="list-style-type: none"> • Oil leaking 	Loose plugs assembled on the surface of cylinder RETIGHTEN Replace damaged seals

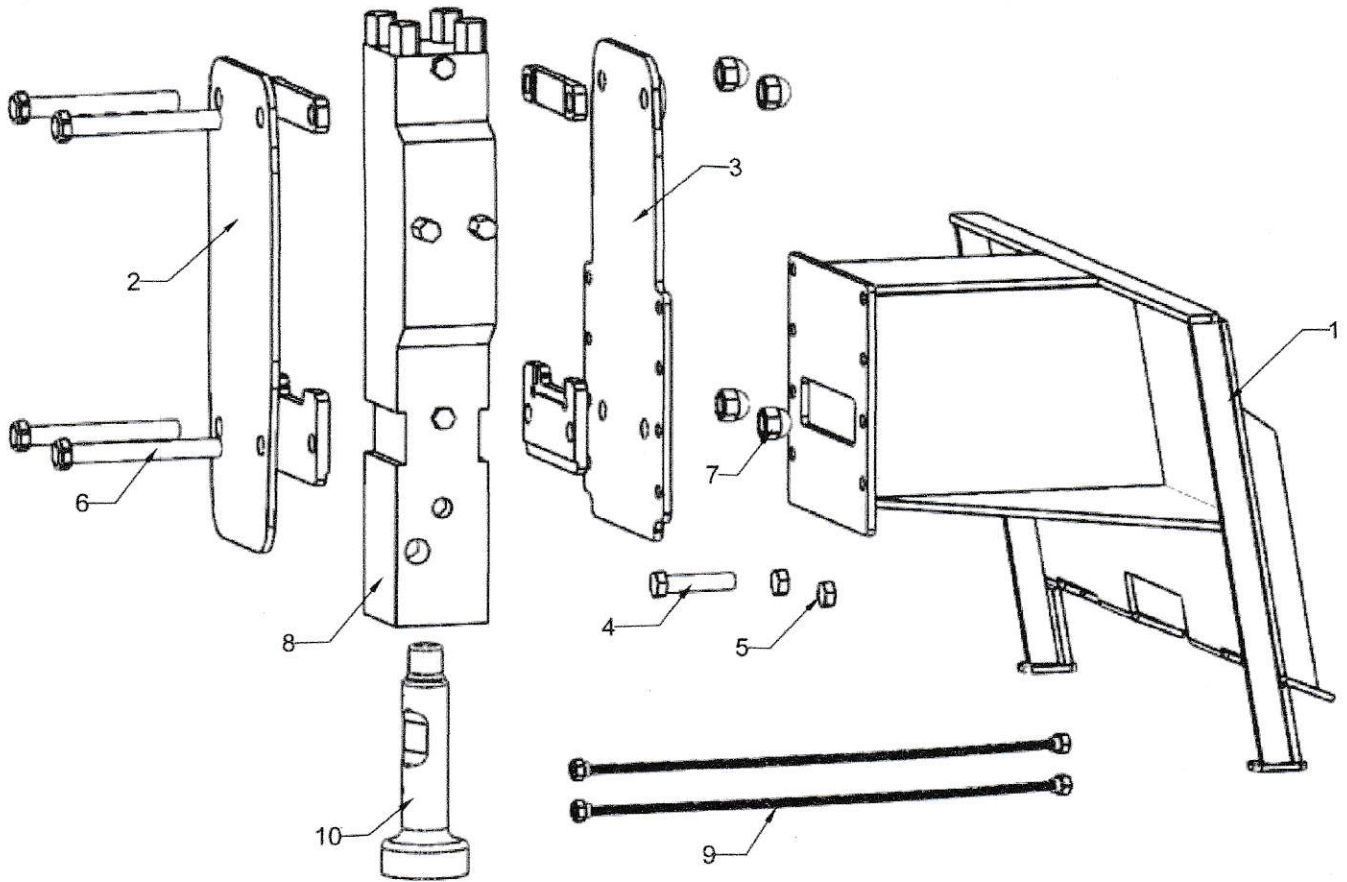
RELATION OF GAS PRESSURE, IMPACT ENERGY AND FREQUENCY



Gas Leakage

Trouble	Cause	Remedy
Gas leakage from the top of charging valve	<ul style="list-style-type: none"> • Defective o-ring in charging valve • Defective or damaged in charging valve 	<ul style="list-style-type: none"> • Replace • Repair or replace charging valve
Gas leakage between charging valve and back head	<ul style="list-style-type: none"> • Defective o-ring in charging valve • Defective valve loose in back head 	<ul style="list-style-type: none"> • Replace • Re-tighten
Gas leakage between Cylinder and back head	<ul style="list-style-type: none"> • Defective o-ring in back head 	<ul style="list-style-type: none"> • Replace
Gas leakage from drain Plug hole	<ul style="list-style-type: none"> • Defective gas seal in seal housing • Defective step seal in seal housing • Defective of piston and seal housing 	<ul style="list-style-type: none"> • Replace • Replace • Repair or replace seal housing and piston (When repaired replace packing)

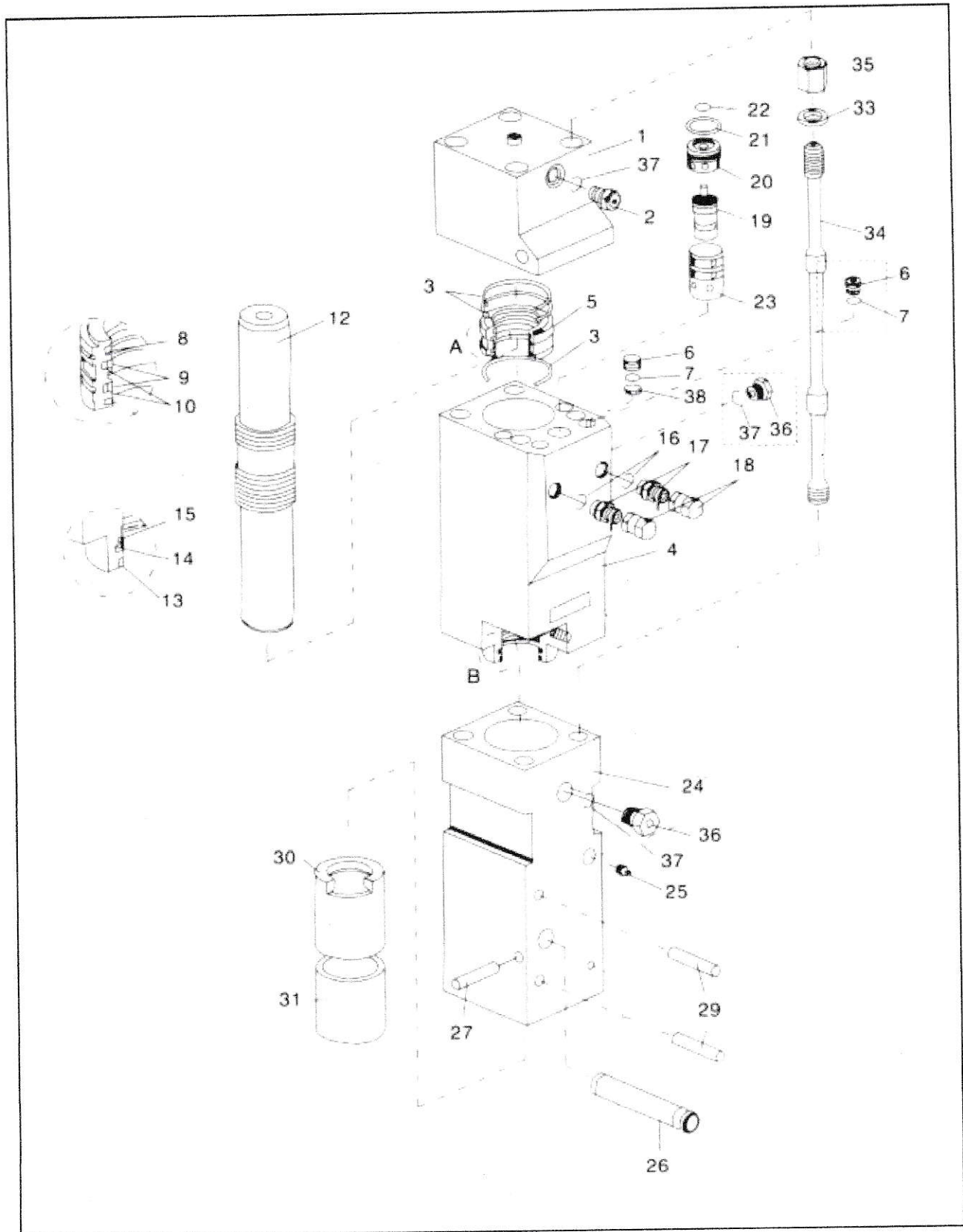
MAIN EXPLODED DRAWINGS



Main Parts List

Ref#	Description	Qty	Ref#	Description	Qty
1	Quick connect	1	6	Side bolt M27*230	4
2	Bracket welder(FR)	1	7	Nuts 41MM	4
3	Bracket welder(RR)	1	8	Hydraulic power unit	1
4	Stopper Hex.Bolt M20*55	8	9	Hoses 1/2inch,2.4m	2
5	Stopper Hex.Nut	8	10	Post driver chisel	1

HYDRAULIC POWER UNIT EXPLODED DRAWINGS



Hydraulic Power Unit Parts List

Ref#	Description	Qty	Ref#	Description	Qty
1	Back head	1	20	Valve plug	1
2	Charging valve assembly	1	21	O-ring	1
3	O-ring	3	22	O-ring	1
4	Cylinder	1	23	Valve sleeve	1
5	Seal retainer	1	24	Front Head	1
6	O-ring	3	25	Grease nipple	1
7	Plug	3	26	Tool pin	1
8	Gas seal $\Phi 68$	1	27	Stop pin	1
9	U-packing(Step seal) SPNS 68	2	29	Stop pin (bush)	2
10	O-ring	2	30	Ring bush	1
12	Piston	1	31	Outer bush	1
13	Dust seal LBI 70*80*6*8	1	33	Washer	4
14	U-packing ISI 70*80*6	1	34	Through bolt M27*570	4
15	U-packing ISI 70*80*6	1	35	Through nut 41mm	4
16	O-ring	2	36	Air check valve	1
17	Adapter	2	37	O-ring	2
18	Union cap	2			
19	Valve	1			