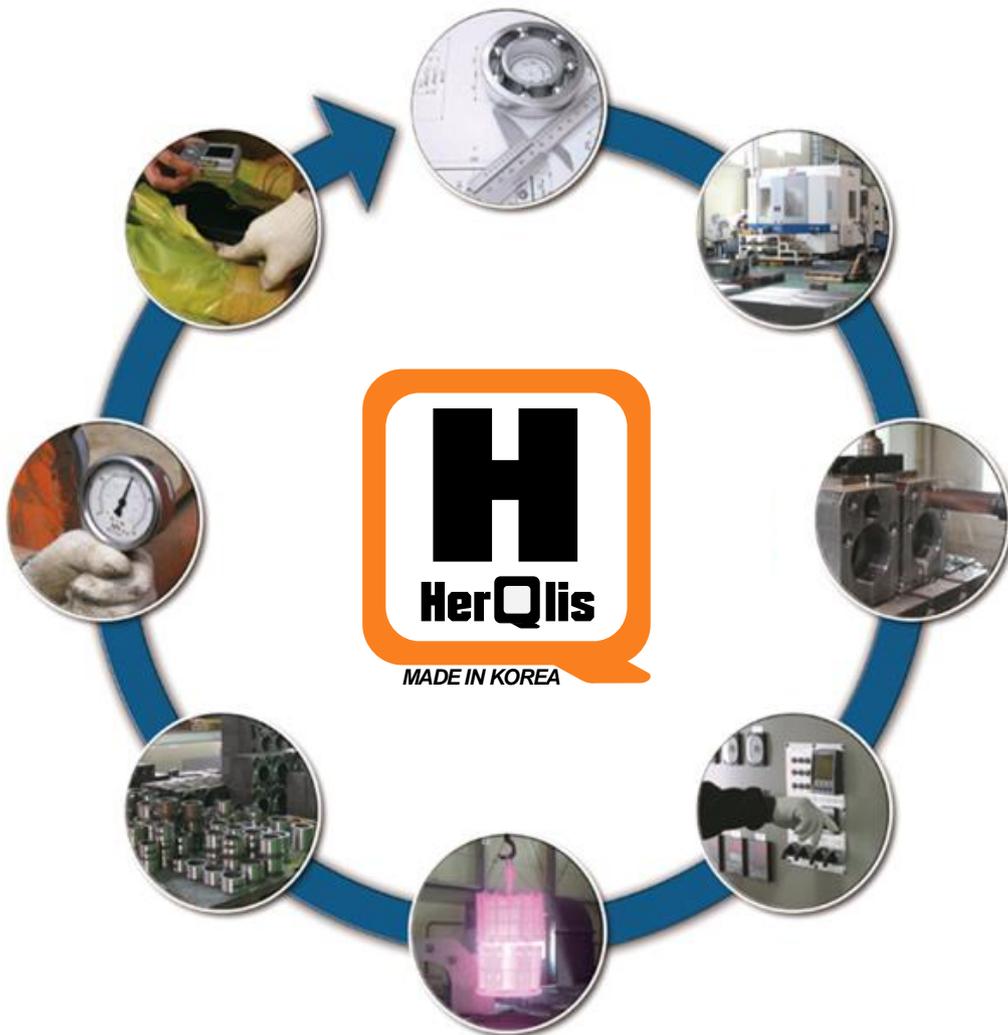


HERQLIS HYDRAULIC BREAKER

OPERATION MANUAL & PARTS LIST

HQ50 / HQ80 / HQ140 / HQ220 / HQ340 / HQ450



Preface

This manual and parts list will explain the appropriate use, maintenance and inspection of the Hydraulic Breakers to keep your breaker at the best performance and efficiency under field conditions.

To ensure its best operation, we encourage you to carefully read this manual prior to its installation and to observe the necessary maintenance and inspections. The faithful compliance to the instructions in this manual will contribute to the best operational condition and longer life of your breaker.

We would like to remind you that we are not responsible for problems and damages caused by failure to follow our guidelines and/or to use genuine parts.

HERQLIS is dedicated to providing satisfying support for as long as you own your HERQLIS Hydraulic Breaker. We appreciate your doing business with HERQLIS Hydraulic Breakers.

WARNING

- ✓ **The operator should read and fully understand this manual before installing, repairing or operating this hydraulic breaker.**
- ✓ **Serious injury or death could result from the improper repair or service of this breaker.**
- ✓ **Repairs and / or service to this breaker must only be done by an authorized a certified dealer.**

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1. Safety Information

■ Before Operation

Many accidents are caused by disregarding the base rule of installation, operation and repair, or by neglecting the inspection before operation.

Before operation or repairing this breaker, be sure to read and fully understand the preventive methods and warnings described on the breaker or in this manual.

Safety labels and messages are classified as below so that the user may understand the warnings on the breaker or in this manual.

DANGER

- ✓ Indicates a seriously dangerous situation, which, if not avoided, will result in death or serious injury.
- ✓ This signal is to be limited to the most extreme situation.

WARNING

- ✓ Indicates a potentially dangerous situation which, if not avoided, could result in death or serious injury

CAUTION

- ✓ Indicates a potentially dangerous situation which, if not avoided, may result in minor injury.

NOTICE

- ✓ Signs used to indicate a statement of company policy directly or indirectly related to the safety of personnel or protection of property.

■ Specified Works

This hydraulic breaker can be used for breaking, demolishing and drilling in mines, stone breaking or building engineering work.

WARNING

- ✓ Do not use this hydraulic breaker for other works except the specified works

2. Safety Precautions

WARNING

- ✓ **Keep the cautions and take a preventive measure for safety**

■ **Observance of safety rules in work place**

- Observe all the rules, cautions and procedures for safety when the breaker is operated or repaired.
- Fulfill the work according to the signals already decided when cooperative work or work by guide is done.

■ **Wear the protective tools for safety**

- Wear the clothes fit to your body not to be caught by the projection of the base machine or the any lever.
- Wear the helmet, safety shoes, earplugs, etc, if necessary; wear a dustproof mask, protective glasses and gloves.
- Usually clean the machine and keep a clear environment for working

■ **Inspection for safety devices**

- When the work is stopped or finished, be sure to set safety lock of the operation switch of the breaker.
- When the operator gets out from the base machine, be sure to put the breaker on the ground and stop the engine of base machine.

■ **Be careful from the oil pressure-input line**

- Just after the operation is stopped, the temperature of hydraulic oil is very high, be careful of burning the skin.
- When you want to check the hydraulic system, stop the engine of base machine. And discharging the high pressure of input line.

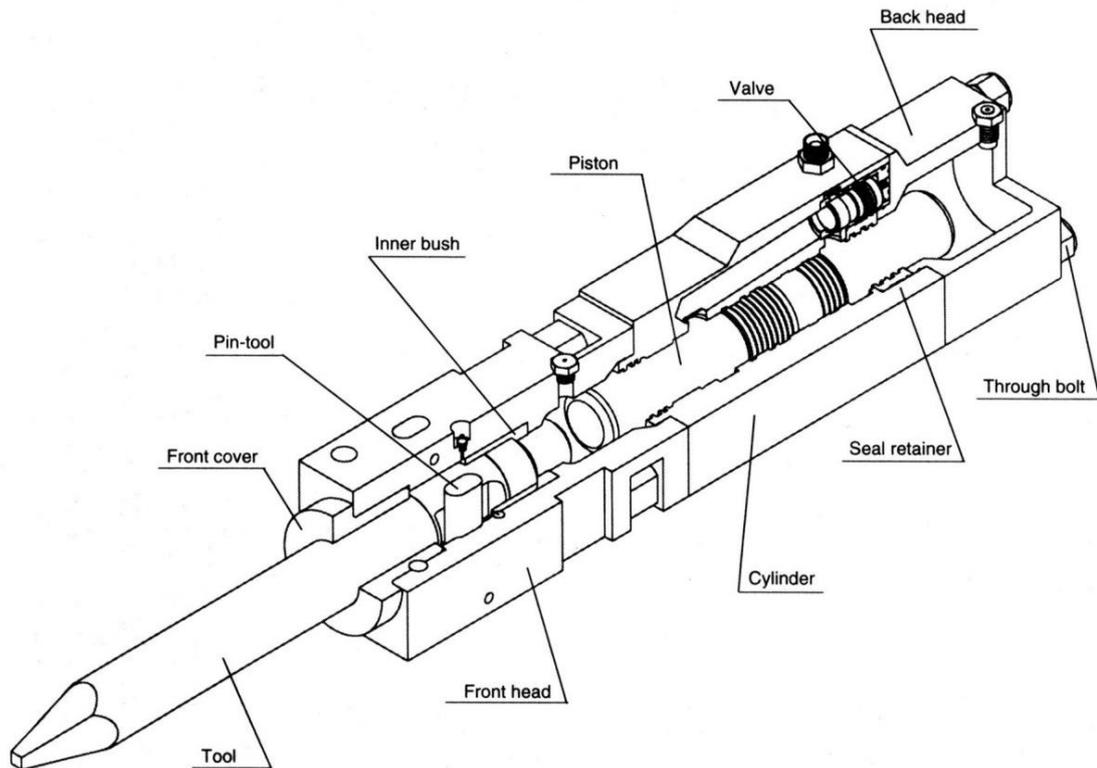
3. Technical Specification

Description	Model	HQ50	HQ80	HQ140	HQ220	HQ340	HQ450
Suitable Carrier	ton	4~7	6~9	11~16	20~26	28~35	40~45
	lbs	8,820~ 15,430	13,228~ 19,842	24,251~ 35,274	44,092~ 57,320	61,729~ 77,162	66139~ 88185
Tool Diameter	mm	68	75	100	140	155	160
	inch	2.7	3.0	3.9	5.5	6.1	6.3
Working Weight(Box)	kg	295	350	890	1,860	2,400	3200
	lbs	650	772	1,962	4,101	5,291	7055
Impact Rate	bpm	500~900	400~800	350~700	350~500	300~450	300~450
Required Oil Flow	lpm	40~70	50~90	80~110	120~180	180~240	190~245
	gpm	10.5~18.5	13~24	21~29	32~48	48~63	50~60
Operating Oil Pressure	bar	110~140	120~150	150~170	160~180	160~180	160~190
	psi	1,595~ 2,031	1,740~ 2,176	2,176~ 2,466	2,321~ 2,611	2,321~ 2,611	2321~ 2756

4. Structures and Working Principle

Model: HQ50 / HQ80 / HQ140 / HQ220 / HQ340 / HQ450

* For HQ-220 model has NO accumulator



<Fig.5-2>

- Cylinder

This contains the moving piston, which strikes the chisel. The seals for both ends of the piston are also located in the cylinder. The seals for the upper end of the piston are located in a removable seal retainer while the seals for the lower end of the piston such as dust seal and u-packing are located in grooves directly into the cylinder.

- Piston

The piston transfers impact power to the chisel, generated by hydraulic power.

- Seal Retainer

The seal retainer has oil seals to seal Nitrogen (N₂) gas in back head and to prevent hydraulic oil leakage.

- Control Valve

The valve controls piston reciprocation with hydraulic fluid distribution.

- Cylinder Adjuster

Turn the setting screw clockwise to decrease blows rate of hydraulic breaker, counterclockwise to increase number of blows.

- Front Head Assembly

This retains the chisel using the chisel pin (rod pin). By removing these pins, the tool can be replaced.

- Ring Bush

This guides the chisel, ring bush limits the upper position of the tool. This is consumable part, which should be checked for wear limit to replace with new one.

- Chisel (Working Tool or Rod)

This transfers piston impact power to the objects. The type of chisel generally divided into 4 kinds; H-Wedge, V-Wedge, Moil Point, Blunt.

- Rod Pin (Tool Pin)

This is installed on the front head and prevents the chisel from coming off.

- Back Head Assembly

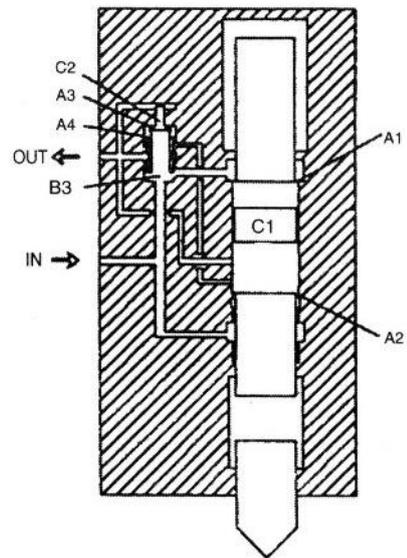
This contains the cushion chamber charged with nitrogen (N₂) gas that compresses during upward strokes of the piston and serves to provide maximum absorption of piston recoil, efficiency storing this energy for the next blow.

- Through Bolts (Tension Bolts or Tie Rods)

These are used to assemble the front head, the cylinder and the back head. They have to be constantly tightened to specified torque. Inspect the bolts for loosening, and re-tighten them weekly.

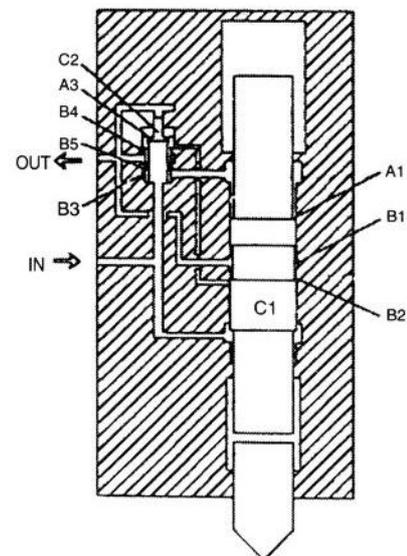
1) Set Up

The relation between the area (A1) affecting the pressure from the upper chamber of the piston and the (A2) affecting the pressure from the lower chamber of the piston is $A1 > A2$ and high pressure always applies to A2. When A1 change from high to low pressure or vice versa, Piston C1 reciprocates. Inside of back head is change with the high pressure gas and gas energy stored in the up stroke of the C1 effectively acts on the piston C1 during the impact.



2) Piston Conversion

When piston C1 reaches top dead center, high pressure oil from valve high-pressure port B3 applies to upper chamber of the piston A1 to change the piston stroke from upstroke to impact. At this time the relation between the area(A3) affecting the pressure from valve high pressure changes and the area(A4) of the valve change chamber is $A4 > A3$. The high pressure always applies to A4 and valve C2 remains in the upper position.

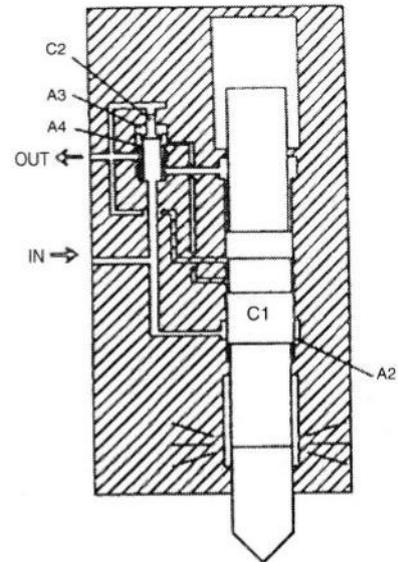


3) Valve Conversion

When cylinder low pressure port B1 is connected to cylinder change port B2, the pressure in valve change port B4 lowers. As force acting port C2 is the only pressure in valve high pressure chamber A3, valve C2 starts lowering. During the valve lowering stroke, valve high pressure port B3 is closed and valve low pressure port B5 is opened to the lower the pressure in the upper chamber of the piston A1.

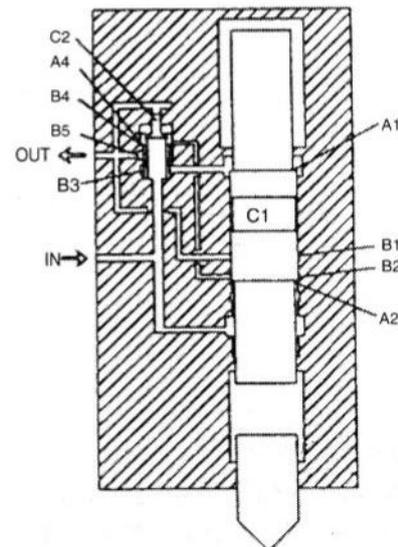
4) Impact

When piston C1 reaches impact point, kinetic energy obtained by piston C1 during the impact stroke is transmitted to the tool for the impact energy required to hydraulic breaker . At this time, as high pressure applies only to the lower chamber of the piston A2, piston C1 starts reversing. Further, as high pressure applies only to the valve high pressure chamber A3, valve C2 is remaining in the lower position.



5) Piston Raise

When cylinder change port B2 is connected to cylinder lower pressure port B1, high pressure oil applies to low pressure outlet Port valve C2 time valve low pressure port A1 this time valve low pressure port B5 is closed and valve high pressure B3 is opened the upper chamber of the piston A1 to rise the pressure in the lower chamber of the piston A1.



A1: Piston upper chamber

A2: Piston lower chamber

A3: Valve high pressure chamber

A4: Valve conversion chamber

B1: Cylinder low pressure port

B2: Cylinder conversion port

B3: Valve high pressure port

B4: Valve conversion port

B5: Valve low pressure port

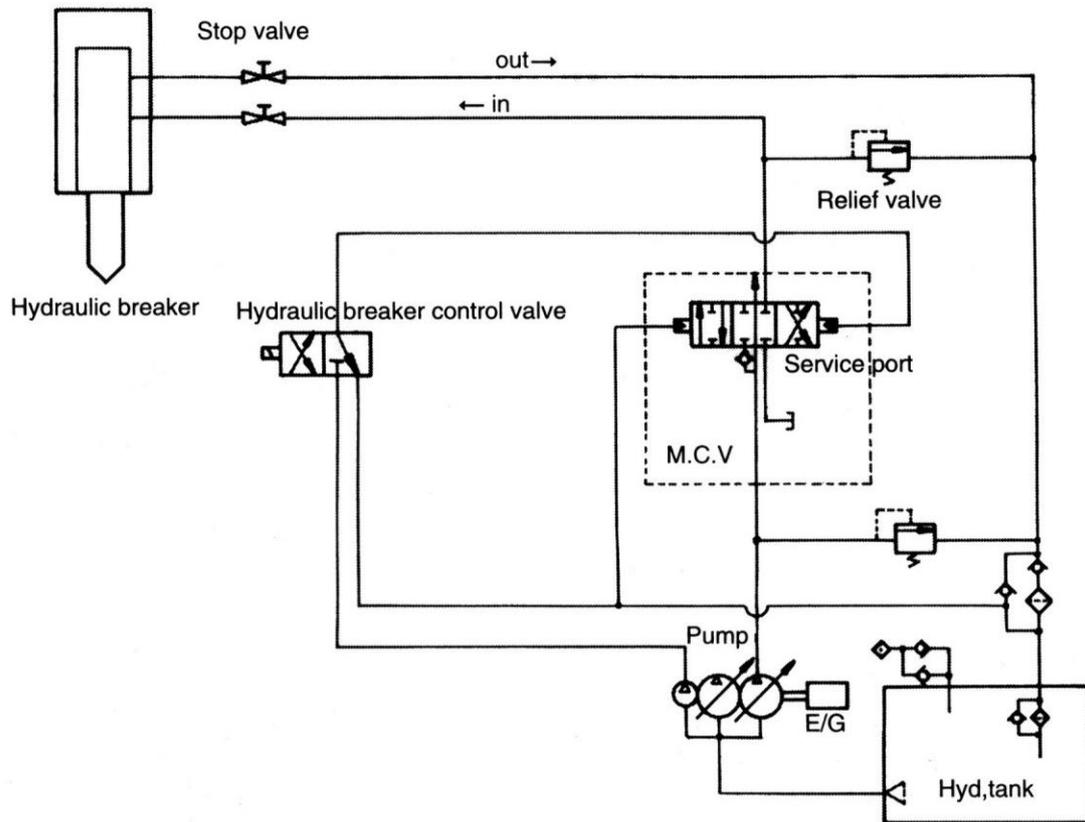
C1: Piston

C2: Valve

5. Installations and Removal

5-1. Fundamental Circuit for Hydraulic Breaker

For piping installation on base machine, it is important to know the fundamental circuit to which the piping belongs. Then piping can be connected correctly, properly and quickly.



<Fig. 5-1>

<Fig. 5-1> is shown one of the simplest hydraulic circuit in case of installing a service port into the main control valve of base machine.

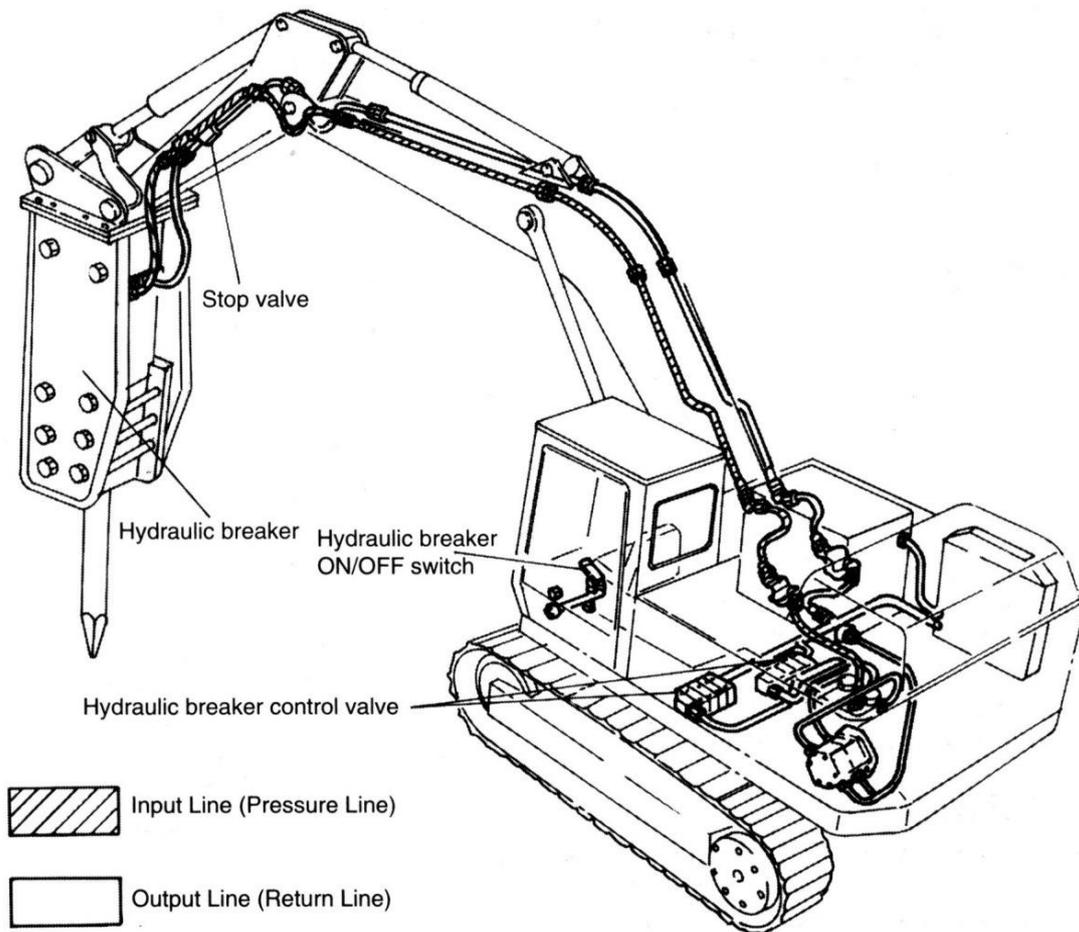
NOTICE

- ✓ If the piping method is different with Fig. 5-1, consult attachment manufacturer or us.

5-2.General View of Breaker Installed on Base Machine

NOTICE

- ✓ Check the pipe lines for correctness of pressure, flows or pressure loss, if the hydraulic pipe once is installed in the base machine.
- ✓ A relief valve has to be installed, if there is no relief valve on the main control valve of the base machine.



<Fig. 5-2>

5-3. Installation

CAUTION

- ✓ Never insert your hand or fingers into the pin hole.

WARNING

- ✓ While aligning the arm hole, or moving the bucket, make sure that there are no persons in the vicinity of arm or bucket of base machine.
- ✓ It is dangerous to move the base machine suddenly during installation.
- ✓ Wear the safety shoes to protect feet.

NOTICE

- ✓ Be careful so that dust may not enter the hydraulic breaker and base machine.
- ✓ Select a level ground where it is free from mud and dust or dirt.

- 1) Set the hydraulic breaker on horizontal ground.
- 2) Remove the bucket form the base machine after disassembling the two pins.

NOTICE

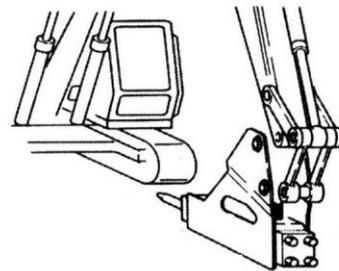
- ✓ If the bucket cylinder is retracted, the installation will be easier.

- 3) Move the base machine in the vicinity of Hydraulic breaker, and align the pin hole of arm with the pin hole of hydraulic breaker, and then, inert the pins.
- 4) After the arm pin is inserted, lift the boom and set the hydraulic breaker on the wood blocks like <Fig.6-3-3>. Extend the bucket cylinder, fit to the bucket link's hole and insert the pins.
- 5) Install the stop rings, align the bolt holes and insert the bolts. Mutually lock double nut.

NOTICE

- ✓ If the stop rings are secured with on nut only, the service life of the bolt may be shortened or the bolt may be loosened out very quickly.

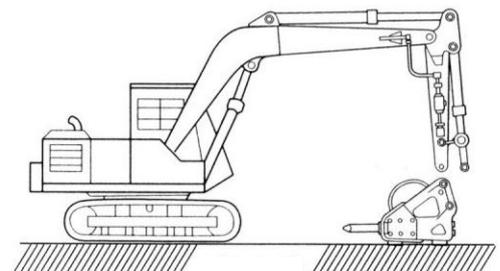
- 6) Stop the engine of the base machine turn off the main switch and discharge the air pressure in the hydraulic oil tank.
- 7) Remove the union caps from the hydraulic breaker pipe of the arm end, and connect the hoses after disassembling the hose plug.



<Fig. 5-3-1>



<Fig. 5-3-2>

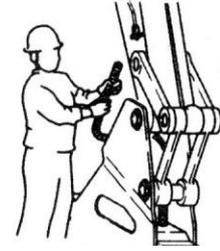


<Fig. 5-3-3>

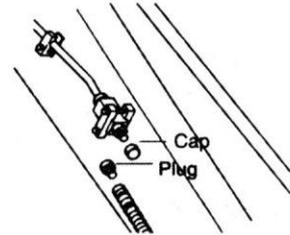
NOTICE

- ✓ Do not allow the oil to drop onto the ground.
- ✓ Store the removed union cap and hose plug in the toolbox.
- ✓ When installing or removing the oil hose and union cap, clean them fully to prevent the dust and mud from entering the hydraulic breaker or the base machine.

- 8) Connect the hoses to stop valves at both sides of arm.
- 9) Turn on the engine of the base machine, lift the boom, operate the bucket cylinder and check the hose of hydraulic breaker is connected correctly.
- 10) Starts warm up the base machine.



<Fig. 5-3-4>



<Fig. 5-3-5>

* Hydraulic Hose Specification

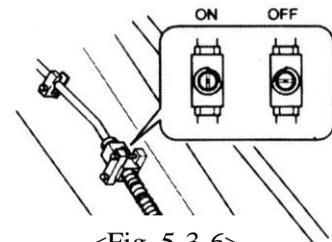
Model	Hose Diameter	Length (mm)	Pressure	Adapter Type
HQ50, HQ80	1/2"	1500	R2	#5/#5
HQ140	3/4"	2000	4S	#5/#5
HQ220	1"	2500	4S	#5/#5
HQ340, HQ450	1 1/4"	2800	4S	#3/#5

*R2:MAX245K / 4S (R12):MAX280K

NOTICE

- ✓ Warm up the base machine by idling for 5 minutes after starting the engine.
- ✓ Move the boom and arm for approx. 5 minutes after warm up operation to raise the hydraulic oil temperature of the base machine.

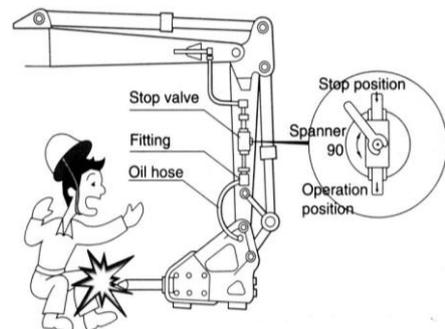
- 11) Turn the stop valves to "ON" position.



<Fig. 5-3-6>

NOTICE

- ✓ The tool may come out under oil pressure in the pipe line. Do not stand near of hydraulic breaker.



<Fig. 5-3-7>

5-4. Removal

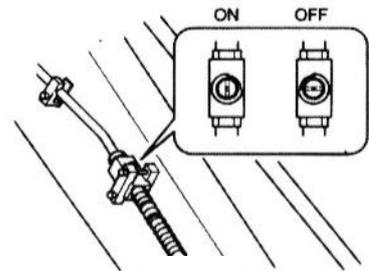
CAUTION

- ✓ Personal injury can result from dropping pins during removal

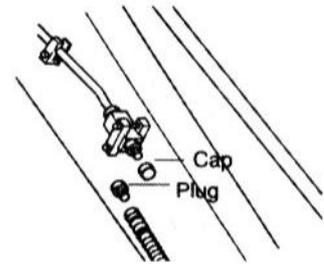
WARNING

- ✓ Wear safety shoes to protect feet.

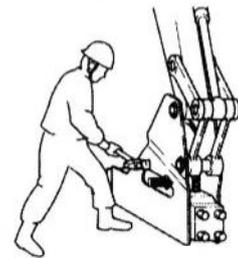
- 1) Set the hydraulic breaker on clean and horizontal Ground. Lock the packing brake of the base machine.
- 2) Stop the engine.
- 3) Turn stop valve to "OFF" position.
- 4) Disconnect hoses from stop valves. Ensure no Leakage occurs from hoses and stop valves
- 5) Apply union cap and plug to hose ends fittings to Prevent oil releases.
- 6) Remove pins fixing fasteners.
- 7) Remove pins.
- 8) When pins have been withdrawn, move operating Joystick slightly to take weight off remaining link pin.
- 9) Lift arm away from hydraulic breaker so that Hydraulic breaker can be carried away, or another Attachment mounted on the base machine.



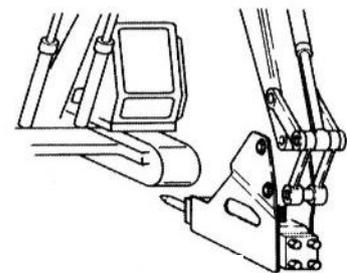
<Fig. 5-4-1>



<Fig. 5-4-2>



<Fig. 5-4-3>



<Fig. 5-4-4>

NOTICE

- ✓ Cover the hydraulic breaker already removed with sheet, and then store it in doors.

6. Installations and Removal of Chisel (Working Tool)

6-1. Installation

CAUTION

- ✓ Personal injury can result from dropping the tool during replacement.
- ✓ Be sure to use a crane when handing the tool and such heavy parts.

WARNING

- ✓ Wear the safety shoes to protect feet.

- 1) Set the hydraulic breaker horizontally on wood blocks so that the accumulator may be upper side.
- 2) Remove the rubber plug or spring pin ① and the stop pin ② into front head from opposite side by using a Hydraulic Breaker and a press pin (Press pin ins stored in tool box)

NOTICE

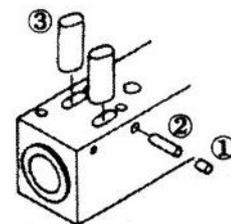
- ✓ Before tapping the stop pin, make sure that there is no person where they come out.
- ✓ After the rubber plug ① removed and installed 2 or 3 times, the rubber plug ① by new one.

- 3) Lift up the Rod pins ③ after insert the press pin into the hole of tool pin from bottom side, and remove the tool pins from front head.
- 4) Insert the chisel into front head.

NOTICE

- ✓ Apply the grease on the surface of shank area and impact area of tool.

- 5) Insert tool pins, and then assemble the stop Pin and rubber plug or spring pin in front head.
- 6) Using a Hydraulic Breaker and a press pin, Fasten the rubber plug or spring pin into front head.



<Fig. 6-1-2>

6-2. Removal

The removal of tool is in reverse order of installation.

7. Operation

Before starting the base machine which the hydraulic breaker is mounted, check to use the machine safely and to prevent any trouble.

WARNING

- ✓ **When you operate the base machine, which is mounted, hydraulic breaker, read and understand fully this manual beforehand.**

7-1. Precautions for Safety Operation

7-1-1. Precautions for Safety Operation

CAUTION

- ✓ **Injury or death can result from improper operation or poor maintenance.**
- ✓ **Make sure of the safety from any trouble or any accident around the base machine before starting.**

Inspection

Check the base machine and the hydraulic breaker to use safely and to prevent any trouble before operation.

Warming up the machine

Especially in winter, warm up the base machine at first before the breaker operation.
→If the breaking is done at low oil temperature without warming up the engine, the piston and seals of breaker may be damaged.

Safety maintenance

Before starting the work, examine the geological and geographical feature of work site and be careful of the ground crack or the building collapse.

7-1-2. Cautions when driving or stopping of base machine

Driving

Carry out driving while the hydraulic breaker is kept horizontally with ground and is 40 to 50 cm above ground.

Cautions on slope driving

When driving down on the slope, decrease the engine rpm and keep the angles with boom and arm 90° to 110°

Stopping

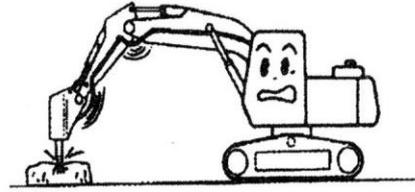
When the machine is stopped, the hydraulic breaker stands vertically and set the chisel end on the ground.

7-2 Safety Operation

Stop the operation, if hydraulic hoses vibrate excessively.

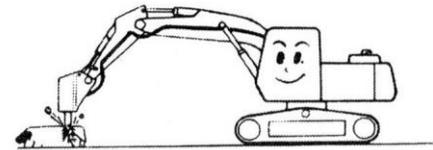
→Check to see if the high and low pressure hoses of the breaker vibrate excessively. If so, the accumulator may be defective and need to repair.

→Check to see if any oil leakages from the hose fitting, if so, retighten them.

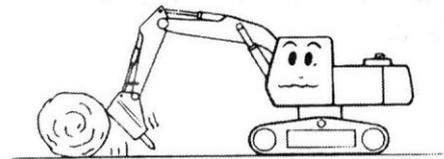


Avoid blank firing to the utmost; stop the hydraulic breaker operation as soon as the object is broken. If operation continued, idle blows could result in excessive wear of major components or parts damage such as ring bush, piston, through bolt. Etc.

→While the blank firing (Idle blow), the hammering sounds change.

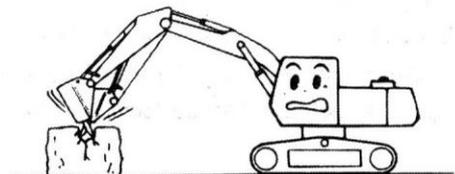


Do not move rocks with end of chisel or with hydraulic breaker body.

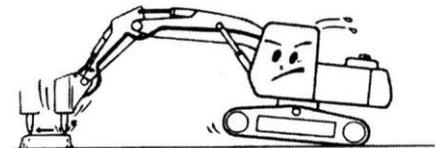


Do not use tool as a lever.

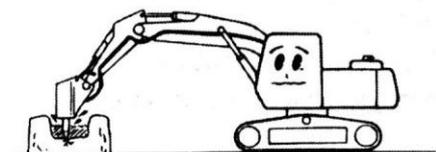
Hydraulic breaker could be damaged at through bolt, chisel, front head, ring bush and front cover.



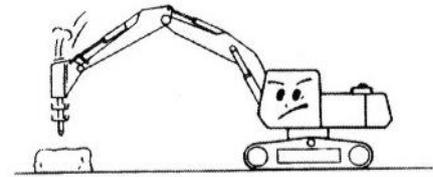
Move impact point of object, if the object does not break within 30 seconds.



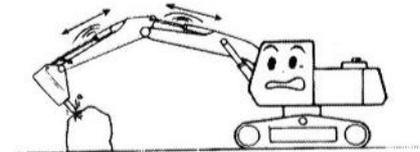
Do not use hydraulic breaker in water. Corrosion of hydraulic breaker or non-lubrication could result in further damage of the hydraulic components. (Under water kit must be installed when hydraulic breaker for working in water. Please contact our dealer, if you need.)



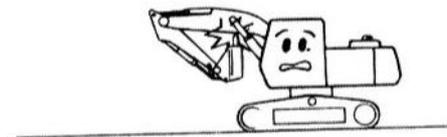
Do not use hydraulic breaker as hammering. Because of hydraulic breaker is much heavier than excavator bucket, such usage could result in damage of the front head or swing mechanism of the base machine.



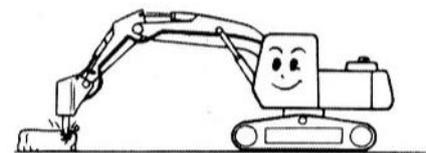
Do not operate hydraulic breaker with boom or arm cylinders fully extended (bottomed out). This may result in hydraulic breaker shock and damage to the base machine. Maintain at least 100mm cylinder stroke of base machine.



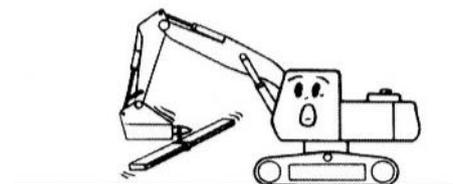
Do not curl the chisel tip into arm or boom of base machine when traveling or parking carrier.



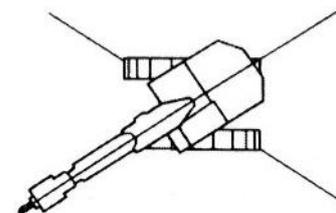
Do not strike in one spot for more than 30 seconds. If object does not break, stop breaking and then change the spot of object. Working too long in one spot will create excessive stone dust under chisel. Dust dampens impact effect, and can damage piston seal.



Do not sling an object with the breaker. The breaker and chisel may be damaged and very dangerous to the adjacent workers or machines.



Operate the hydraulic breaker only to the front and rear of base machine. Do not use hydraulic breaker at either side of base machine. This may result in excavator overturning or damage in the swing device of base machine.



7-3. Storage after Operation

7-3-1 When operation is Interrupted or after operation

When operation is interrupted or finished, move the base machine on level ground. Remove mud from the breaker and set the breaker on wood blocks.

CAUTION

- ✓ **Do not touch the chisel just after working is finished, the chisel is very hot.**

- Check whether oil leaks from hydraulic system and whether chisel is damaged.
- If the breaker is operated in river, dry breaker body and apply the grease to the front head.

7-3-2 When the breaker is not used for a long time-more than 3 weeks

CAUTION

- ✓ **If the following procedures are neglected, the rust is generated in the main body to cause serious troubles.**

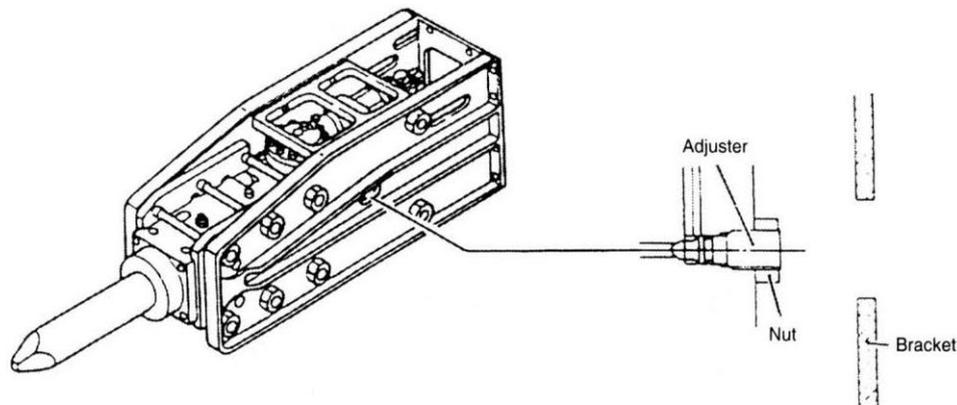
◇ **When the breaker is not used for a long time, clean the outside of the breaker and carry out the follow.**

- Remove the nitrogen gas in the back head and accumulator, and then push the piston into the cylinder.
- Assemble the chisel into front head and store the breaker indoors after applying the grease to every part.

7-4. Function of Cylinder Adjuster and Control Valve Adjuster

7-4-1 Cylinder adjuster

HERQLIS breaker has a model that is equipped with the adjuster in which bpm (blows per minute) can be adjusted by changing the piston stroke. However when the bpm is increased, the impact force will decrease. Therefore the bpm must be adjusted in accordance with job condition.



<Fig. 7-4-1>

The cylinder adjuster is installed to the right side of the cylinder.

NOTICE

- ✓ **The cylinder adjuster is fully tightened when the breaker is delivered.**

When the cylinder adjuster is tightened fully, the piston stroke become maximum and the impact blow (bpm) becomes the minimum.

The other way, when the adjuster is loosened about two turns, the piston stroke becomes the minimum and the impact blows (bpm) becomes the maximum.

NOTICE

- ✓ **Even in case the adjuster is loosened more than two turns, the impact blows will not increase**

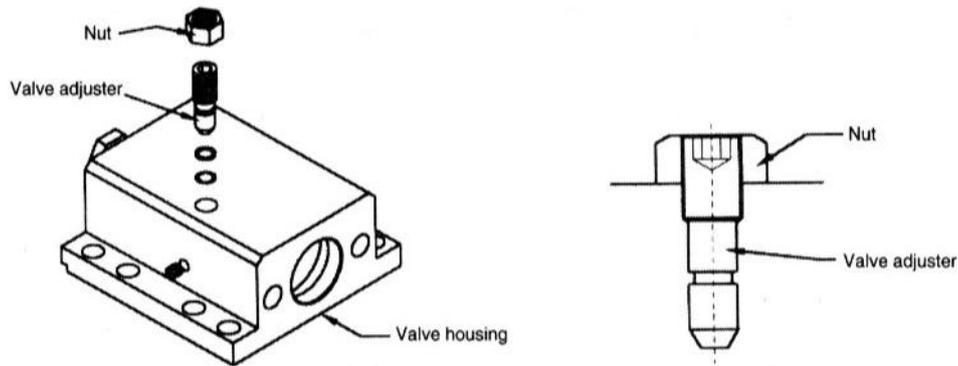
7-4-2 Valve Adjuster

The valve adjuster is installed on the valve housing. The impact blows and the oil consumption increase when the adjuster is opened and when it is closed, the impact blows and the oil consumption decrease.

When the oil flow from base machine is lower or when the hydraulic breaker has been installed on large base machine, the valve adjuster can control amount of oil flow artificially.

NOTICE

- ✓ The hydraulic breaker does not operate if the valve adjuster is fully closed.



<Fig. 7-4-2>

Adjusting Items	At delivery	Procedure	Oil Flow Rate	BPM	Operating Pressure	Impact Power
Cylinder Adjuster	Fully Closed	Open	No Change	Increase	No Change	Decrease
		Closed	No Change	Decrease	No Change	Increase
Valve Adjuster	2 1/2 Turn out	Open	Increase	Increase	Decrease	Decrease
		Closed	Decrease	Decrease	Increase	Increase
Charging Pressure in Back Head	Specified	Increase	Decrease	Decrease	Increase	Increase
		Decrease	Increase	Increase	Decrease	Decrease

8. Maintenance

8-1. Information for Name Plate and Warning Labels

8-1-1. Serial numbering system

The unit serial number is showed on the bracket left side by steel name plate. This is very important for management of repairing or spare parts ordering.

An example of the structure of serial number is as follows

M1/M2/Y/M3/R/S , where

- M1** **Model Line of hydraulic breaker**
- M2** **Model Name of hydraulic breaker**
- Y** **Manufacture Year**
- M3** **Manufacture Month (Jan : A, Feb : B,....Dec: L)**
- R/S** **Region and Serial No.**

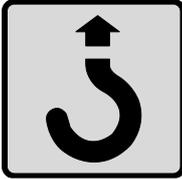
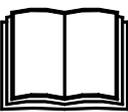
Example: HQ220-18AIN01

This is the hydraulic breaker model, HERQLIS HQ-220 (Top), which is made on January, 2018 manufactured in SOUTH KOREA for Indian Customers.

			
Model	HerQlis	HQ-220	
Serial No.			
Year of Manufacturing	2018		
Operating Weight	1860 kg		
Required Oil Flow	120 - 180	L/min	
Operating Pressure	2321 - 2611	kg/cm ²	
Date of Installation	/	/	2018



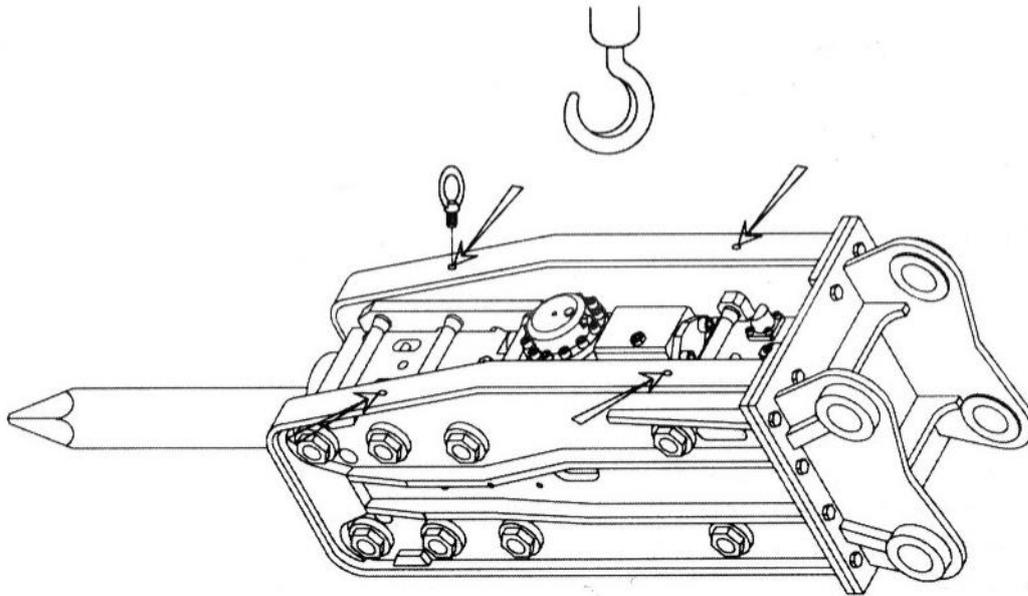
8-1-2. Information for warning labels

	<div style="text-align: center; background-color: black; color: white; padding: 2px;">⚠ DANGER</div> <p>DO NOT OPERATE THE BREAKER UNLESS THE FOLLOWING SAFETY INSTRUCTIONS HAVE BEEN THOROUGHLY READ AND UNDERSTOOD ! READ THIS MANNUAL BEFORE INSTALLING, OPERATING OR MAINTAINING THIS EQUIPMENT!</p> <ul style="list-style-type: none"> · Flying debris from the breaker, breaker rod, rock or other material may cause serious or fatal injury to the operator. Personal protection equipment must be used. · Flying debris from the breaker, breaker rod, rock or other material may cause serious or fatal injury to bystanders. Never operate the breaker when bystanders are in the work area. · On some machines/carriers, the breaker can enter the operator's compartment if it breaker loose and swings toward the operator. Make sure that suitable impact shields are used when operating the breaker with this type of equipment. · Do not operate the breaker unless all safety decals described in this manual are in place. The decals must be inspected periodically to ensure that all wording is legible. The decals must be replaced if illegible. Replacement decals can be obtained from your authorized General Breakers Distributor. · When operating the breaker ear, eye and breathing protection must be used at all times. · The breaker will become very hot during operation. Allow time for breaker to cool down before touching breaker parts.
<p>1) Greasing label (P/No.: HERQLIS -)</p>	<p>2) General danger label (P/No.: HERQLIS -)</p>
	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <div style="background-color: black; color: white; padding: 2px; font-size: 8px;">⚠ WARNING</div>  <div style="font-size: 8px;">Ear protection must be worn</div> </div> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <div style="background-color: black; color: white; padding: 2px; font-size: 8px;">⚠ WARNING</div>  <div style="font-size: 8px;">Read and understand operator's manual before using this machine</div> </div> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <div style="background-color: black; color: white; padding: 2px; font-size: 12px;">⚠ WARNING</div>  <div style="display: flex; align-items: center; justify-content: center; gap: 5px;"> <div style="text-align: center;">20m</div> <div style="font-size: 24px;">↔</div> <div style="text-align: center;">65feet</div> </div> </div> </div>
<p>3) Lifting point label (P/No. HERQLIS -)</p>	<p>4) High noise level & Consult manual, Keep away warning label (P/No.: HERQLIS -)</p>
<div style="border: 2px solid black; padding: 10px; text-align: center;"> <div style="background-color: black; color: white; padding: 2px; font-size: 12px;">⚠ CAUTION</div> <p>PRESSURIZED CONTAINER! DISCHARGE PRIOR TO DISASSEMBLY DO NOT OPEN WITHOUT READING THE OPERATION MANUAL OR CONSULTING THE AUTHORIZED SERVICE PERSONNEL!</p> </div>	<div style="border: 2px solid black; padding: 10px; text-align: center;"> <div style="font-size: 24px; margin-bottom: 5px;">↑</div> <p>ONLY FILL WITH N₂ GAS! GAS CHARGE PRESSURE : 16.3kg/cm² (231psi), AT 20°C(68°F) CAUTION - THIS VESSEL CONTAINS HIGH PRESSURE GAS. REMOVE REMAINING GAS COMPLETELY BEFORE DISASSEMBLY.</p> </div>
<p>7) Accumulator high pressure warning label (P/No.: HERQLIS -)</p>	<p>8) Back head not charged warning label (P/No.: HERQLIS -)</p>

8-2. Moving and Lifting

⚠ WARNING

Always use eye-bolts when lifting & moving the hydraulic breaker, after fasten up to bracket. Fasten the ropes to the shackles (four pieces) and lift the hydraulic breaker up. Remove the eye-bolts before hydraulic breaker operation.



<Fig. 8-2>

Model	Eye bolt size (mm)	Wire rope size (Ø)
HQ50	M12	Ø 6
HQ80	M16	Ø 8
HQ100	M20	Ø 12
HQ220	M24	Ø 16
HQ340, HQ450	M30	Ø 20

8-3. Hydraulic oil

■ Recommended hydraulic oil

Normally, any hydraulic oil originally intended for base machine can be used in the hydraulic breaker. However, since working with hydraulic breaker will heat the oil much more than in normal excavation works. Therefore, oil viscosity must be checked.

When hydraulic breaker is used continuously, the oil temperature normalizes at certain levels, depending on conditions and carrier. At such temperatures, hydraulic oil viscosity should be 20-40 CST.

NOTICE

- ✓ Usually, the hydraulic oil temperature of hydraulic breaker and base machine must be controlled between 40°C and 60°C.
- ✓ When you have operated the hydraulic breaker while the oil temperature exceeds 80°C, you must check the seals.

Maker	Hydraulic oil	
	ISO VG 68	ISO VG 46
Esso	Nuto H68	Univis N 46
Shell	Tellus oil 68	Tellus oil 46
Mobile	DTE 16	DTE 15
Gulf	Harmony 68	Harmony 46
	For hot weather use	For cold weather use

■ Replacement of hydraulic oil & oil filter

Contamination of hydraulic oil may result in part damage, not only in hydraulic breaker, but also in carrier main components. We recommend hydraulic oil filters replacement as shown in the following table, which is based on 100% hydraulic breaker operation.

Hydraulic oil	First 250 hours Every 600 hours	Based on 100% hydraulic breaker operation
Oil filters	First 50 hours Every 100 hours	

8-4. Greasing

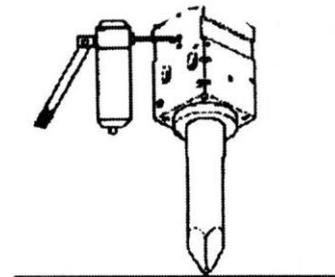
NOTICE

- ✓ 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 according to chisel wear and working conditions.

NOTICE

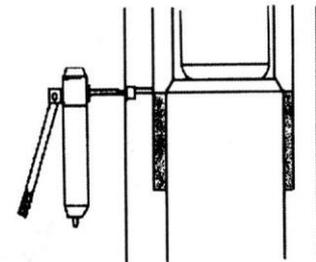
- ✓ Chisel shank must be well lubricated before installed in front head.
- ✓ Greasing label



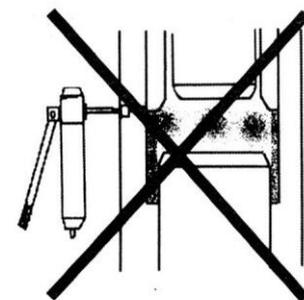
<Fig. 8-4-1>

NOTICE

- ✓ While greasing, hydraulic breaker must be upright against the chisel, to ensure that grease will penetrate between chisel and ring bush.



<Fig. 8-4-2>



<Fig. 8-4-3>

Maker	Grease
Esso	Beacon Q2
Shell	Retinax AM
Mobile	Mobile Grease special

8-5. Maintenance Interval

NOTICE

- ✓ Before hydraulic breaker operation, be sure to check the following points.

Maintenance Interval	Objects
Every 3 hours	<ul style="list-style-type: none"> ✓ Apply the grease in front head. ✓ Check hydraulic oil temperature, piping and hose connections, and working condition. ✓ Check tightness of fasteners.
Every 10 hours or Daily	<ul style="list-style-type: none"> ✓ If rough skin on the chisel and rod pins is found, it must be removed ✓ Check the nitrogen gas pressure in back head. ✓ Retighten the bracket bolts.
Every 50 hours or Weekly	<ul style="list-style-type: none"> ✓ Check the clearance between chisel and front cover. ✓ Check hydraulic hoses. ✓ Retighten the through bolts.
Every 1000 hours or 6 months	<ul style="list-style-type: none"> ✓ Recommend factory inspection by authorized service personnel. ✓ Check all hydraulic pipe and hose connections. ✓ Check Hose interference from carrier movement. ✓ Check the conditions of oil filter, accumulator diaphragm, through bolts and rod pins.
Every 2,000 hours or Annually	<ul style="list-style-type: none"> ✓ Check all hydraulic pipe and hose connections. ✓ Check hose interference with excavator boom. ✓ Check the conditions of oil filter, accumulator diaphragm and through bolts. ✓ Check all seals. ✓ Check the conditions of piston, front cover and ring bush.

9. Inspection

9-1. Inspection and Charging of Nitrogen (N2) Gas

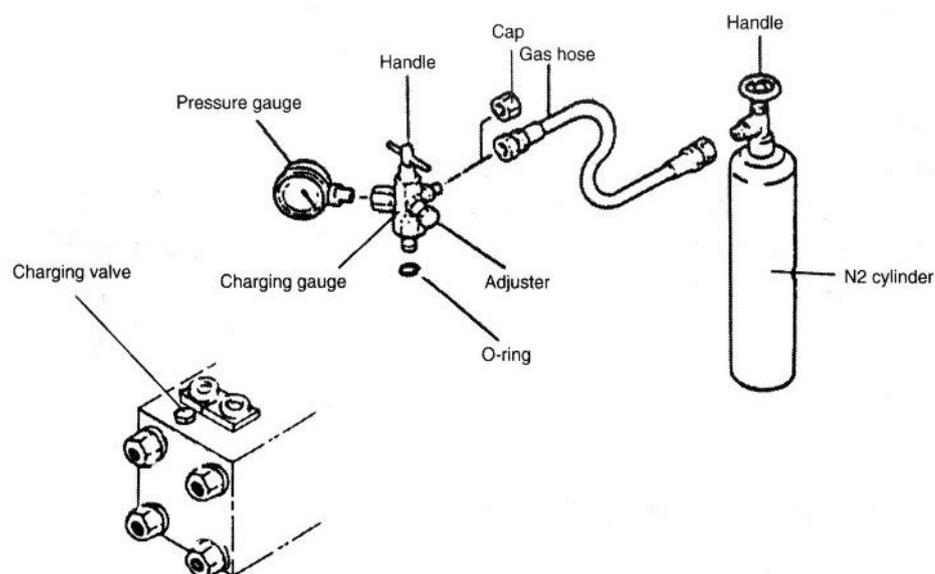
CAUTION

- ✓ Do not stand in front of the chisel while nitrogen gas is being charged in back head.
- ✓ The nitrogen gas in back head must be discharged completely when a through bolt is being replaced or a main body is being disassembled.

WARNING

- ✓ Use nitrogen gas only.
- ✓ The temperature of the hydraulic breaker main body must be normal when inspection or charging of nitrogen gas in back head.

9-1-1. Back head charging pressure



<Fig. 9-1-1>

- 1) Connect gas hose to N2 gas cylinder.
- 2) Turn the handle of charging gauge counterclockwise before installing the charging gauge.
- 3) Install charging gauge to charging valve.
- 4) Connect other end of gas hose to charging gauge.
(Make sure that O-rings are installed on charging gauge)
- 5) Slowly turn the handle of charging gauge clockwise to set charging pressure and turn handle of N2 gas cylinder clockwise.
- 6) Turn the handle of charging gauge counterclockwise, and then turn the handle of N2 gas cylinder counterclockwise to close.
- 7) Close the cap of charging gauge after gas hose is relieved from charging gauge.
- 8) Recheck charging pressure in back head as turning the handle of charging gauge clockwise.

NOTICE

- ✓ **When nitrogen gas is charged in back head completely by the above procedures 1) through 8),**
- ✓ **Disconnect charging gauge from charging valve of back head after turning the handle of charging gauge counterclockwise. But, if need to adjust the pressure of charging gas in back head by the procedures 9) to 13) mentioned below.**

- 9) Disconnect the gas hose from charging gauge.
 - 10) Install charging gauge on charging valve of back head completely.
 - 11) When turn the handle of charging gauge clockwise, gas pressure in back head is indicated on pressure gauge.
 - 12) If gas pressure is low, again perform operations 1) through 8). Repeat until gas pressure rises to specified pressure.
 - 13) If gas pressure is excessive, slowly turn the adjuster of charging gauge counterclockwise, and then gas pressure leaks from back head. When correct amount of gas pressure is shown, close the adjuster clockwise. When gas pressure is excessively high, breaker will not operate.
- Ensure that gas pressure is at specified pressure and o-ring in charging gauge is installed.

Model	Charging Pressure(bar)
HQ50	16~17
HQ80	16~17
HQ140	16~17
HQ220	16~17
HQ340	16~17
HQ450	16~17

9-1-2. Accumulator charging pressure

CAUTION

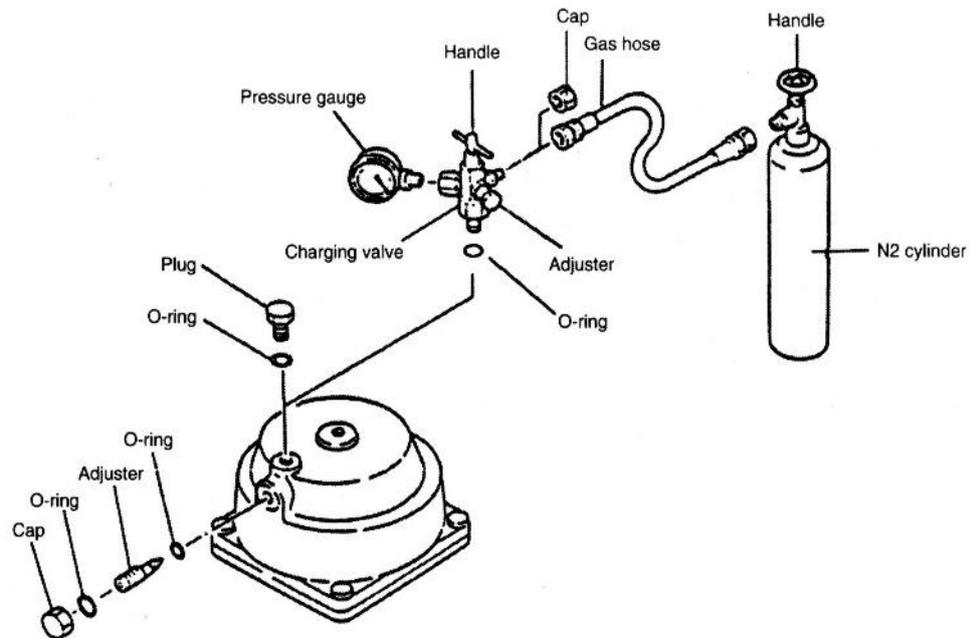
- ✓ Must be tightened the accumulator body and accumulator cover before charging the nitrogen gas in accumulator assembly.

WARNING

- ✓ Use nitrogen gas only
- ✓ The temperature of the hydraulic breaker main body must be normal when inspection or charging of nitrogen gas accumulator.

NOTICE

- ✓ Be sure to use charging gauge for charging the nitrogen gas.
(If the nitrogen gas is charged from gas cylinder without charging gauge, the diaphragm may be damaged)



<Fig. 9-1-2>

A) Inspection of charging pressure

- 1) Turn the handle of charging gauge counterclockwise.
- 2) Remove the plug on the accumulator and tighten charging gauge completely.
- 3) Remove the cap of adjuster from accumulator.
- 4) Turn the adjuster counterclockwise slowly to indicate accumulator charging pressure.
- 5) Remove charging gauge and tighten plug and cap.
(Ensure O-rings must be installed in plug and cap.)

B) Charging accumulator with nitrogen gas

- 1) Perform the same inspection of charging pressure.
- 2) Connect gas hose to charging gauge and N2 gas cylinder.
- 3) Turn the adjuster counterclockwise after removal of the cap from adjuster.
- 4) Slowly turn handle of N2 gas cylinder counterclockwise to charge accumulator with N2 gas.
- 5) When accumulator is charged with N2 gas completely, close the adjuster fully.
- 6) Turn the handle of N2 gas cylinder clockwise to close.
- 7) Loosen adjuster of charging gauge to discharge N2 gas remaining in gas hose.
- 8) Remove the gas hose from charging gauge to N2 gas cylinder.
- 9) After removing gas hose, adjust the pressure referring A) Inspection of charging pressure
- 10) After charged accumulator with N2 gas, check gas leakage from adjuster, plug hole of accumulator.

9-2. Pressure Setting

The pressure setting for hydraulic breaker must be lower than the base machine pressure setting in order to protect the main pump of base machine.

Normally, set the pressure for hydraulic breaker about 5-10kg/cm² lower than base machine pressure setting, when the main pressure of base machine is lower than below table.

If hydraulic breaker setting pressure is higher than below table:

→The durability of main pump and service life of seal & chisel in hydraulic breaker will be shorten.

If hydraulic breaker setting pressure is lower than below table:

→Hydraulic breaker performance will decrease.

Recommended setting pressure for hydraulic breaker(bar)	
HQ50, HQ80, HQ140	160~180
HQ220	180~200
HQ340, HQ450	200~210

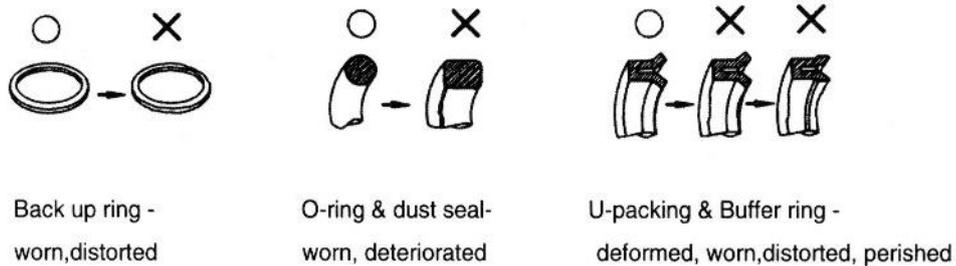
9-3. Seal Inspection

⚠ WARNING

✓ **Replace seals every 2000 hours of actual operation.**

9- - . 1. If any hydraulic oil leakage from hydraulic breaker is discovered, faulty seals should be replaced.

To figure out if seals are bad, refer to following drawing:



<Fig. 9-3>

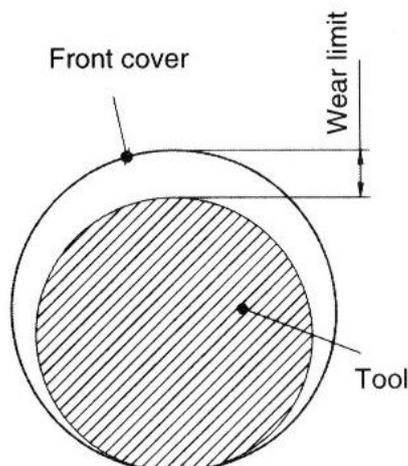
- 2) When bad seal is found, the cause of the damage must be determined and rectified. When seal is changed, apply grease to seal and seal seat, and hold seal firmly with thumb, index and middle fingers. Be careful not to break seal through excessive deformation.

9-4. Wear Inspection

9-4-1. Front Cover

If the clearance between tool and front cover is too big, this could cause damage or breakage of chisel through piston irregular contact.

The following table is shown the wear limit of hydraulic breaker chisel and front cover for reference.



Model	Wear Limit (mm)
HQ50, HQ80, HQ140	4
HQ220, HQ340, HQ450	6

<Fig. 9-4-1>

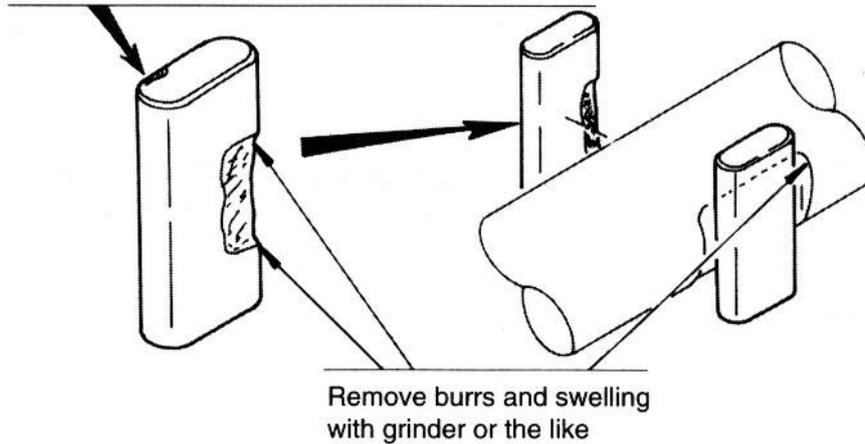
9-4-2. Rod Pin (Tool Pin)

NOTICE

- ✓ Change the face of rod pins every 100 to 150 hours of actual operation.
- ✓ Replace rod pins every 500 hours of actual operation

- A) When each rod pin is excessively deformed, it is difficult to replace the chisel, therefore, after operating the hydraulic breaker every 100 to 150 hours, change the face of each pin which comes in contact with the chisel (The faces of each pin can be used)
- B) When replacing each rod pin, check each part for wear, breakage, scores, etc., especially, remove burrs and swelling on rod pins.
- C) Replace tool after grinding the worn parts of front cover and rod pins. Insert a new rod pin after grinding the scuffed parts of the front head in use.

When changing tool pins direction, place tool pins by opposite side.



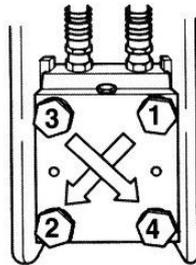
<Fig. 9-4-2>

9-5. Inspection and Replacement of Through Bolt

CAUTION

- ✓ Discharge N2 gas in back head completely before loosening through bolts.

- 1) Discharge nitrogen (N2) gas in back head completely prior to loosening through bolts.
- 2) Remove all through bolts, and inspect for presence of any cracks and damages on through bolts.
- 3) When through bolts are assembled, tighten bolts on turn at a time in diagonal sequence; not to try turn each bolt completely at once.
- 4) Use torque wrench of specified range.(Refer to torque table)



<Fig. 9-5>

9-6. Torque Table

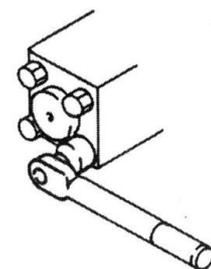
(1) Before starting the hydraulic breaker operation, check all kinds of bolts and nuts for tightness including the through bolts, socket bolts for accumulator, valve housing socket bolts, valve cover socket bolts and bracket bolts. Also be sure to tighten again any loose bolts and nuts to the specified torque. Using the hydraulic breaker with loose bolts and nuts will cause not only oil leakage but also damages to the screw threads and breakage to the bolts. These can also lead to defective operation.

(2) After first 10 hours of operation, retighten the bolts and nuts of all components and sections.

(3) At first, lightly tighten the bolts and nuts by referring to the following torque force. The bolts and nuts should be screwed down alternately and diagonally until the bolts and nuts are tightened to the uniform torque.

■ Through Bolt

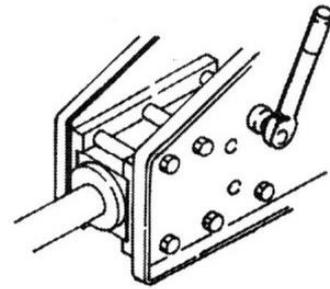
Model	Torque (Kg-m)
HQ50	30
HQ80	40
HQ140	100
HQ220	150
HQ340	270
HQ450	300



<Fig. 9-6-1>

■ **Bracket Bolt**

Model	Torque (Kg-m)
HQ50	80
HQ80	100
HQ140	145
HQ220	200
HQ340	250
HQ450	350



<Fig. 9-6-2>

10. Trouble-Shooting

This trouble-shooting guide has been prepared to aid the operator to locate the probable cause and then remedy when trouble occurs. If trouble has been caused, obtain details as following checkpoints indicate and contact your **nearest local service person or distributor workshop of HERQLIS**

NOTICE

- ✓ **Check below mentioned items and contact service shop to check and repair any item which operator cannot remedy.**

■ **Oil leakage**

	Leakage area	Condition	Cause & Remedy
A	Between the chisel and front cover(front head)	A large amount of oil is Leaking. Check if it comes from oil or grease	Seals are damaged replace
B	Surface of breaker	Oil leaking from the valve housing and hose adapter	Loosen breaker hoses and bolts retighten
C	Valve housing and cap bolts	Oil leakage from reassembly of control valve overhaul	Normal Condition; during assembly from lubrication
D	Between control valve and surface of cylinder	Oil leakage from reassembly of breaker after overhaul	Clean oil and check if seal is damaged or any loosen bolts
E	Between cylinder and head cap	Oil leakage Oil leakage	<u>Replace damaged o-ring</u>
F	Between cylinder and front head	Oil is leaking	Loosen plugs of assembled on the surface of cylinder <u>Retighten the plug</u> <u>Replace the damaged seals</u>

■ Trouble Shooting Guide

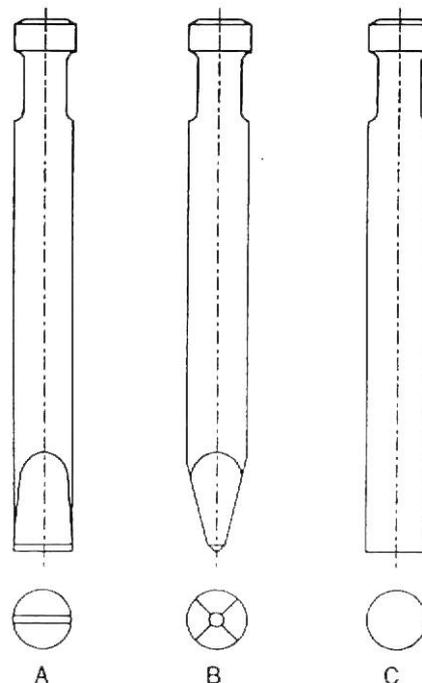
Symptom	Cause	Required action
No blow out	<ol style="list-style-type: none"> 1.Excessive nitrogen gas press of back head 2.Stop valve(s) closed 3.Lack of hydraulic oil 4.Wrong pressure adjustment from relief valve 5.Faulty hydraulic hose connection 6.Hydraulic oil in back head infection 	<ol style="list-style-type: none"> 1.Re-adjust nitrogen gas pressure in back head. 2.Open stop valve 3.Fill hydraulic oil 4.Re adjust setting pressure 5.Tighten or replace 6.Replace back head o-ring, or seal retainer seals
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 lower 7.Low flow rate by miss-adjustment of flow control pressure reduction valve 8.Chisel out of range for blowing position 	<ol style="list-style-type: none"> 1.Check lines 2.Wash filter, or replace 3.Fill hydraulic oil 4.Replace hydraulic oil, rinse tank and replace hydraulic oil inside lines 5.Call an authorized service man 6.Refill nitrogen gas 7.Re-adjust reduction valve 8.Rush down chisel by excavator operation
Irregular impact	<ol style="list-style-type: none"> 1.Low nitrogen gas pressure in accumulator 2.Bad piston or valve sliding surface 3.Piston moves down/up to blank blow Hydraulic Breaker chamber. 	<ol style="list-style-type: none"> 1. Refill nitrogen gas and check accumulator. (Replace diaphragm if need) 2.Call an authorized service man 3.Push down chisel by excavator operation
Bad chisel movement	<ol style="list-style-type: none"> 1.Chisel diameter incorrect 2.Chisel and pin jammed from chisel pin wear 3.Jammed front bush and chisel 4.Deformed chisel and piston contact area 	<ol style="list-style-type: none"> 1.Replace chisel with genuine replacement parts 2.Smoothen rough surface of chisel 3.Smoothen rough surface of front bush interior 4.Replace tool by new
Sudden reduction power and pressure line vibration	Accumulator gas leakage	Replace o-ring, or refill nitrogen gas
	Diaphragm damage	Replace diaphragm
Gas leakage	1.O-ring damage in related parts	1.Replace relevant o-ring

11. Tool Selection

111. Guide to Tool Choice

⚠ WARNING

- ✓ The correct choice of the most suitable tool for a certain job is crucial not only in increasing hydraulic breaker productivity, but also for the life of the tool itself.



<Fig. 11-1>

A: Chisel (Wedge)

- Suitable for all kinds of digging or narrow trenching on soft/medium stratified rocks.

B: Moil Point

- Suitable for fine / medium concrete demolition or for soft, non-stratified rocks.
- Second mining of soft/medium hard blocks.

C: Blunt (Flat end)

- Suitable for breaking blocks of up to medium hardness or to reduce the size of small blocks.

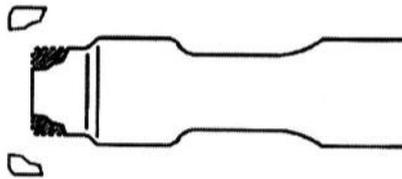
11-2. Tool Claim Judgment

To help users use our product correctly, and ensure long operating life, these claim judgment criteria present defect examples that may occur during operation, and the disposition standards applicable in each case.

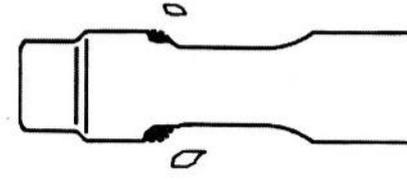
■ Breakage of piston impact area or rod pins contact corners

Breakage of piston impacting point or of rod pins contact corners is extremely rare. This phenomenon occurs or when striking force is being concentrated on the chisel corners due to unsatisfactory flatness of piston and chisel impacting point.

If such defect occurs, affected chisels may not be accepted by the supplier's warranty policy.



<Fig. 11-2-1>



<Fig. 11-2-2>

■ Plastic deformation of piston impact area

The possibility of tool tip plastic deformation occurring due to piston is extremely slim. Such defects may occur due to material strength deficiency, or brittleness, resulting from unsatisfactory heat-treatment.

If such defect occurs, affected products may be accepted by the supplier's warranty policy.



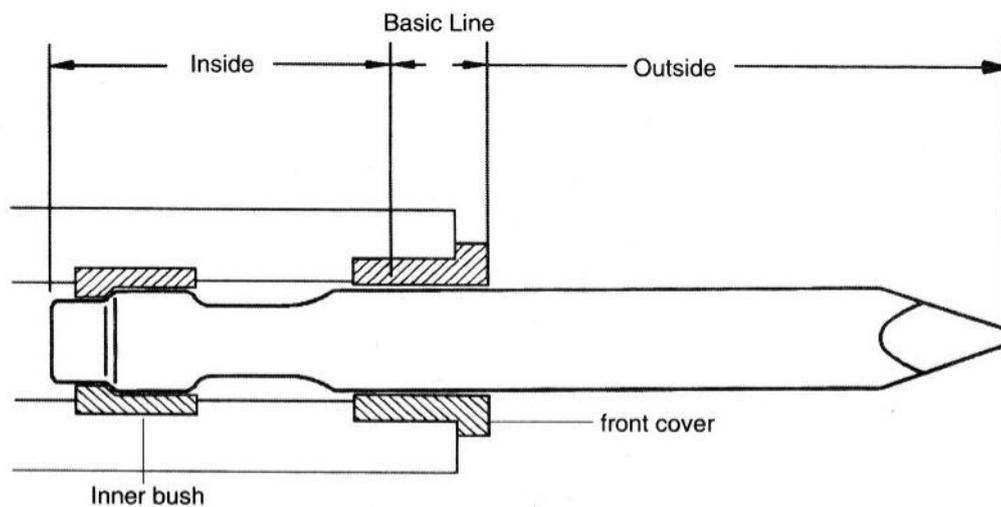
<Fig. 11-2-3>

■ Breakage inside basic line

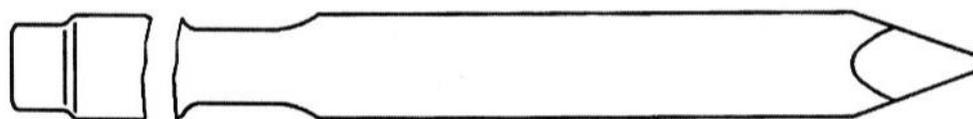
Should product breakage occur in any direction at a point inside the front cover, as shown below figures, this may be due to defective material, defective heat-treatment; chisel deformation, or unsatisfactory shaping of chisel neck.

If such defect occurs, affected products may be accepted under warranty.

In addition to the causes described above, product breakage inside the basic line may also occur if the interval between the front cover and tool widens due to excessive wear of front cover, coupled with excessive bending load being applied to hydraulic breaker. If any trace of seizure, caused by friction between the front cover and tool, is observed on the surface of the tool body, and if it is clear that product breakage is centered on the area of such seizure, affected products may be rejected under warranty.



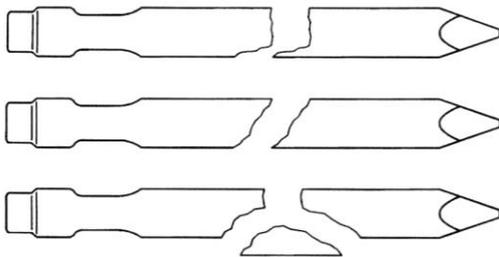
<Fig.11-2-4>



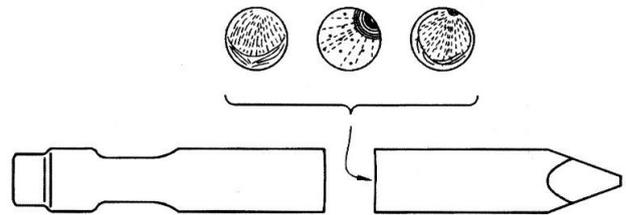
<Fig.11-2-5>

■ Breakage outside basic line

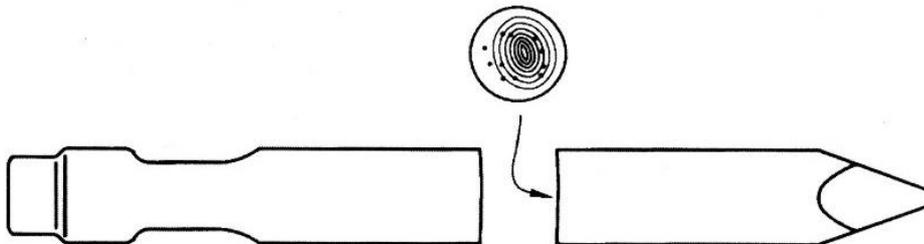
Should product breakage occur at a point outside the front cover, as shown in <Fig.11-2-6>, from the basic line shown in <Fig. 11-2-4>, this may be due to excessive bending load being applied to the chisel. Such bending load occurs when, after chisel has been inserted into material, the chisel is pulled or pushed, or when the chisel is struck and pushed when it is not perfectly perpendicular to the surface of the material being worked on. Fractures, in general, are of the form shown in <Fig. 11-2-7>. Fatigue breakage, of clamshell form, develops in the areas near breakage start points, caused by stress concentration resulting from bending loads, and then quickly radiates outward. Such type of breakage may also occur due to scarring of the chisel body during use. As breakage occurring outside the basic line is caused by improper working habits, as explained above, products incurring such defects shall not be accepted under warranty. However, if a fatigue fracture start point occurs within the chisel body, instead of on the surface of chisel as shown in <Fig.11-2-8>, affected products will be accepted under warranty, as such breakage indicates material defect.



<Fig. 11-2-6>



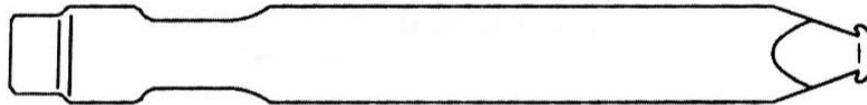
<Fig. 11-2-7>



<Fig. 11-2-8>

■ Crushing of chisel tip

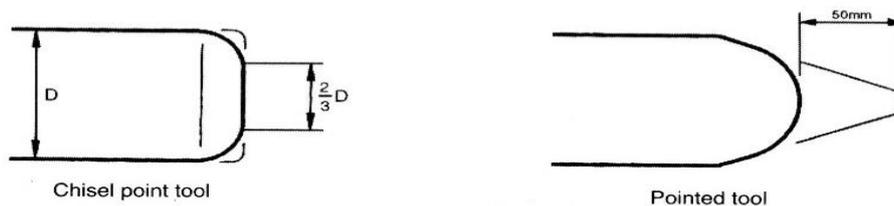
Breaker chisels are heat-treated to exhibit high breakage-and wear-resistance; and defects such as crushing of the chisel tip <Fig.11-2-9> are not to be expected under normal operation conditions. However if a chisel is hammering continuously for a long period of time without crushing or puncturing the material being worked on, the temperature of the tip rises extremely high, inducing annealing of the heat-treated material, and bringing on plastic deformation (crushing), rather than wear. As explained above, improper working methods causes crushing of the chisel tip, and, therefore, affected products will be rejected under warranty.



<Fig.11-2-9>

■ Chisel tip wear

The rates and types of chisel tip wear vary with work material and work method. If the diameter of the worn tip of a chisel is less than $\frac{2}{3}$ of the chisel body diameter, as shown in <Fig.11-2-10> and if the tip of a new pointed chisel is worn down in excess of 50mm lengthwise from the tip, this is considered normal tool wear. Hence, chisels exhibiting such normal wear, as shown in <Fig.11-2-10>, will be rejected warranty claim.

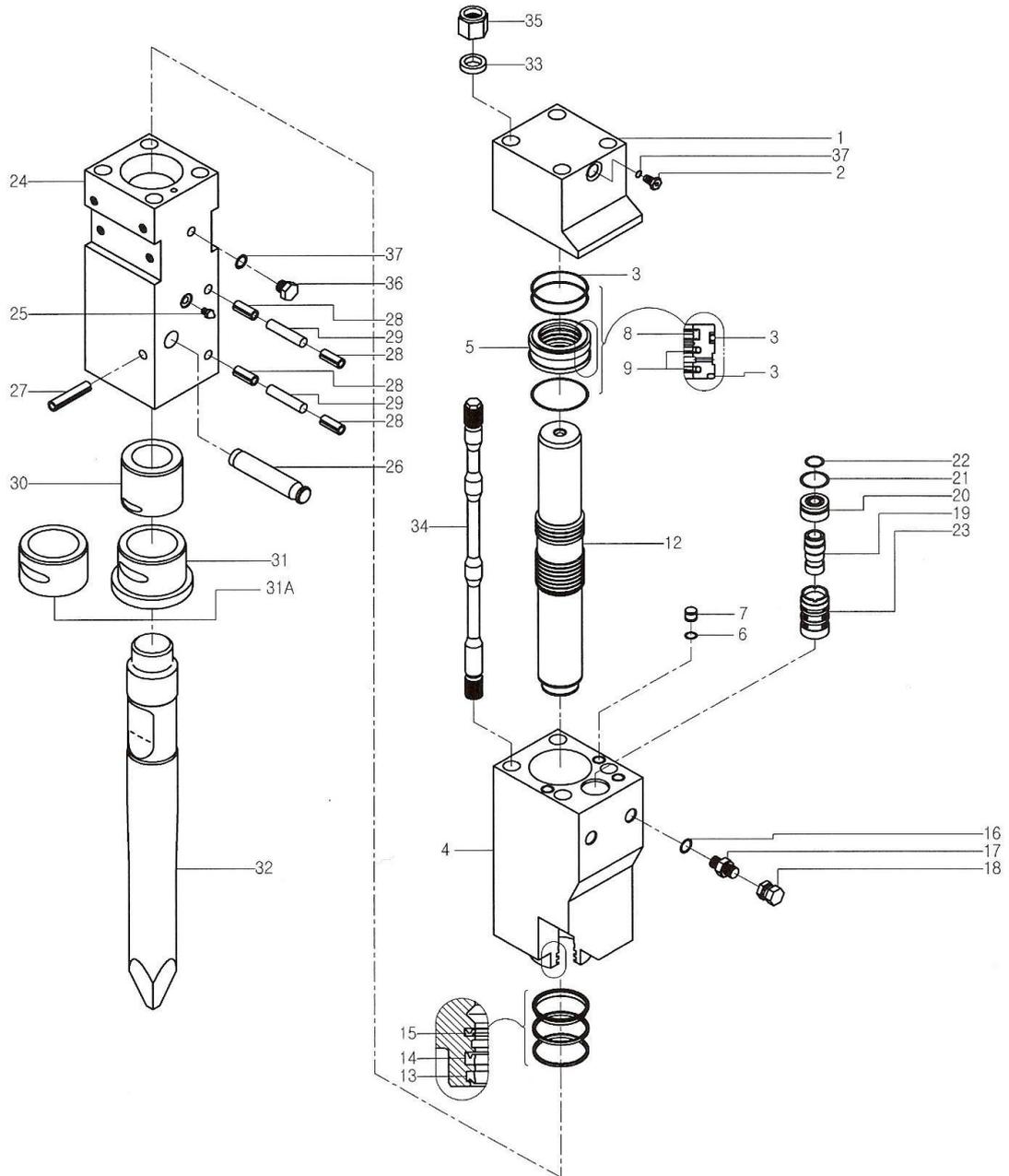


<Fig.11-2-10>

Parts List

- *HQ 50*
- *HQ 80*
- *HQ 140*
- *HQ 220*
- *HQ 340*
- *HQ 450*
- *Bracket (Open / Side)*

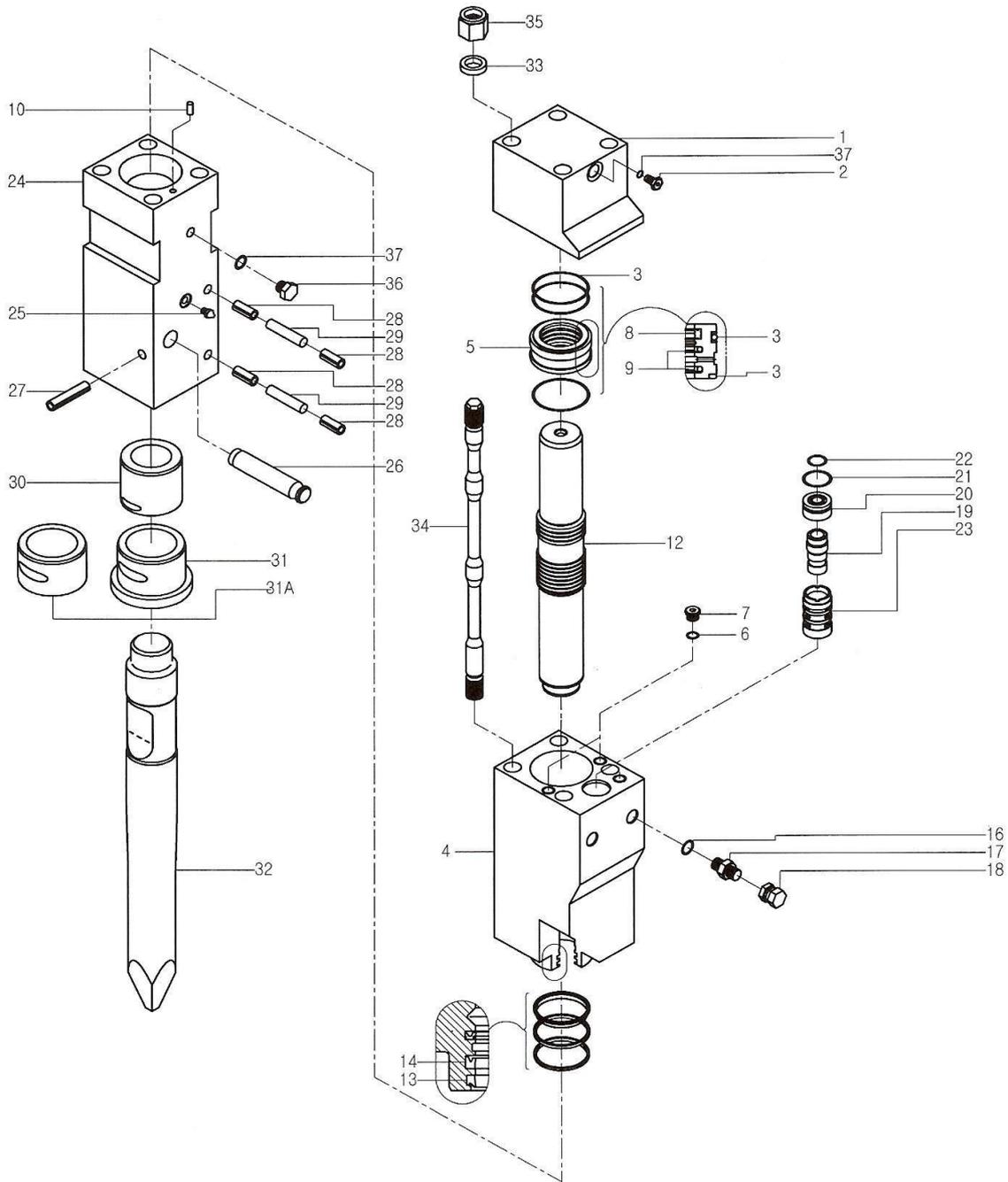
Exploded View of HQ50



HERQLIS HQ SERIES_HQ50-Main Body

No.	Part No.	Part Name	Q'ty	Remark
	K030MB	Main Body Assembly		
	K030BH	Back Head Assembly		
	K030CY	Cylinder Assembly		
	K030FH	Front Head Assembly		
	K030TB	Through Bolt Assembly		
1	K03001	Back Head	1	
2	K01502	Back Head Charging Valve Assembly	1	
3	K03003	O-Ring	3	
4	K03004	Cylinder	1	
5	K03005	Seal Retainer	1	
6	K01506	O-Ring	3	
7	K01507	Teflon Plug	3	
8	K03008	Gas Seal	1	
9	K03009	U-Packing	2	
10	K03010			
11	K03011			
12	K03012	Piston	1	
13	K03013	Dust Seal	1	
14	K03014	U-Packing	1	
15	K03015	Buffer Seal	1	
16	K01516	O-Ring	2	
17	K01517	Adapter	2	
18	K01518	Union Cap	2	
19	K03019	Valve	1	
20	K03020	Valve Cap	1	
21	K03021	O-Ring	1	
22	K01522	O-Ring	1	
23	K03023	Valve Sleeve	1	
24	K03024	Front Head	1	
25	K01525	Grease Nipple	1	
26	K03026	Rod Pin	1	
27	K01527	Spring Pin	1	
28	K01528	Spring Pin	4	
29	K03029	Stop Pin	2	
30	K03030	Ring Bush	1	
31	K03031	Front Cover	1	
32	K03032	Chisel : H-Wedge, V-Wedge, Moil, Blunt	1	
33	K03033	Through Bolt Washer	4	
34	K03034	Through Bolt	4	
35	K03035	Through Bolt Hex. Nut	4	
36	K01536	Air Check Valve	1	
37	K01537	O-Ring	2	

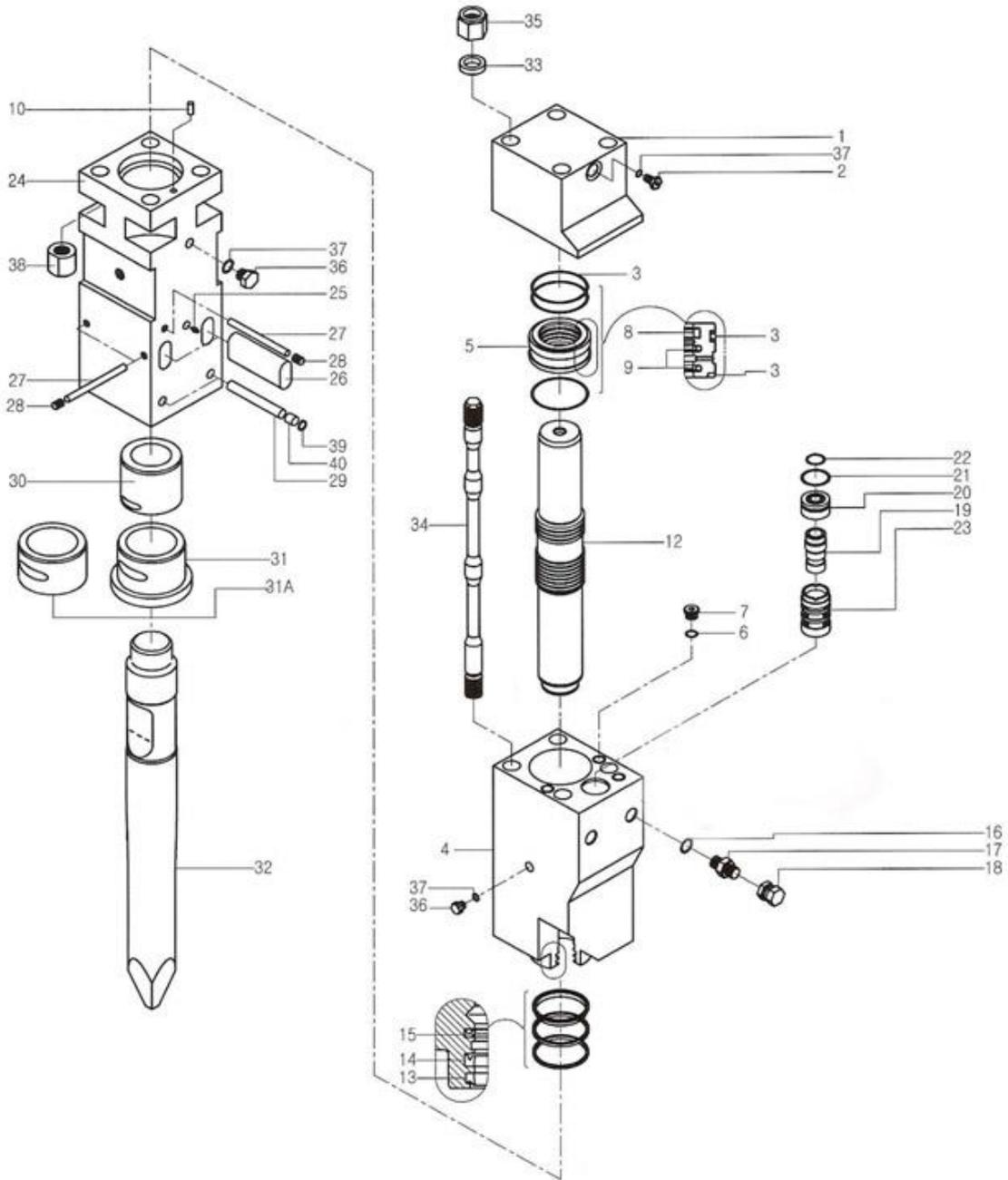
Exploded View of HQ80



HERQLIS HQ SERIES_HQ80-Main Body

No.	Part No.	Part Name	Q'ty	Remark
	K070MB	Main Body Assembly		
	K070BH	Back Head Assembly		
	K070CY	Cylinder Assembly		
	K070FH	Front Head Assembly		
	K070TB	Through Bolt Assembly		
1	K07001	Back Head	1	
2	K01502	Back Head Charging Valve Assembly	1	
3	K07003	O-Ring	3	
4	K07004	Cylinder	1	
5	K06005	Seal Retainer	1	
6	K06006	O-Ring	3	
7	K06007	Socket Plug	3	
8	K06008	Gas Seal	1	
9	K06009	Step Seal	2	
10	K07010	Lock Pin	1	
11	K07011			
12	K07012	Piston	1	
13	K06013	Dust Seal	1	
14	K06014	U-Packing	1	
15	K07015			
16	K01516	O-Ring	2	
17	K01517	Adapter	2	
18	K01518	Union Cap	2	
19	K07019	Valve	1	
20	K07020	Valve Cap	1	
21	K07021	O-Ring	1	
22	K01522	O-Ring	1	
23	K07023	Valve Sleeve	1	
24	K07024	Front Head	1	
25	K01525	Grease Nipple	1	
26	K07026	Rod Pin	2	
27	K06027	Spring Pin	1	
28	K06028	Spring Pin	4	
29	K07029	Stop Pin	2	
30	K07030	Ring Bush	1	
31	K07031	Front Cover	1	
32	K07032	Chisel : H-Wedge, V-Wedge, Moil, Blunt	1	
33	K07033	Through Bolt Washer	4	
34	K07034	Through Bolt	4	
35	K07035	Through Bolt Hex. Nut	4	
36	K01536	Air Check Valve	1	
37	K01537	O-Ring	2	

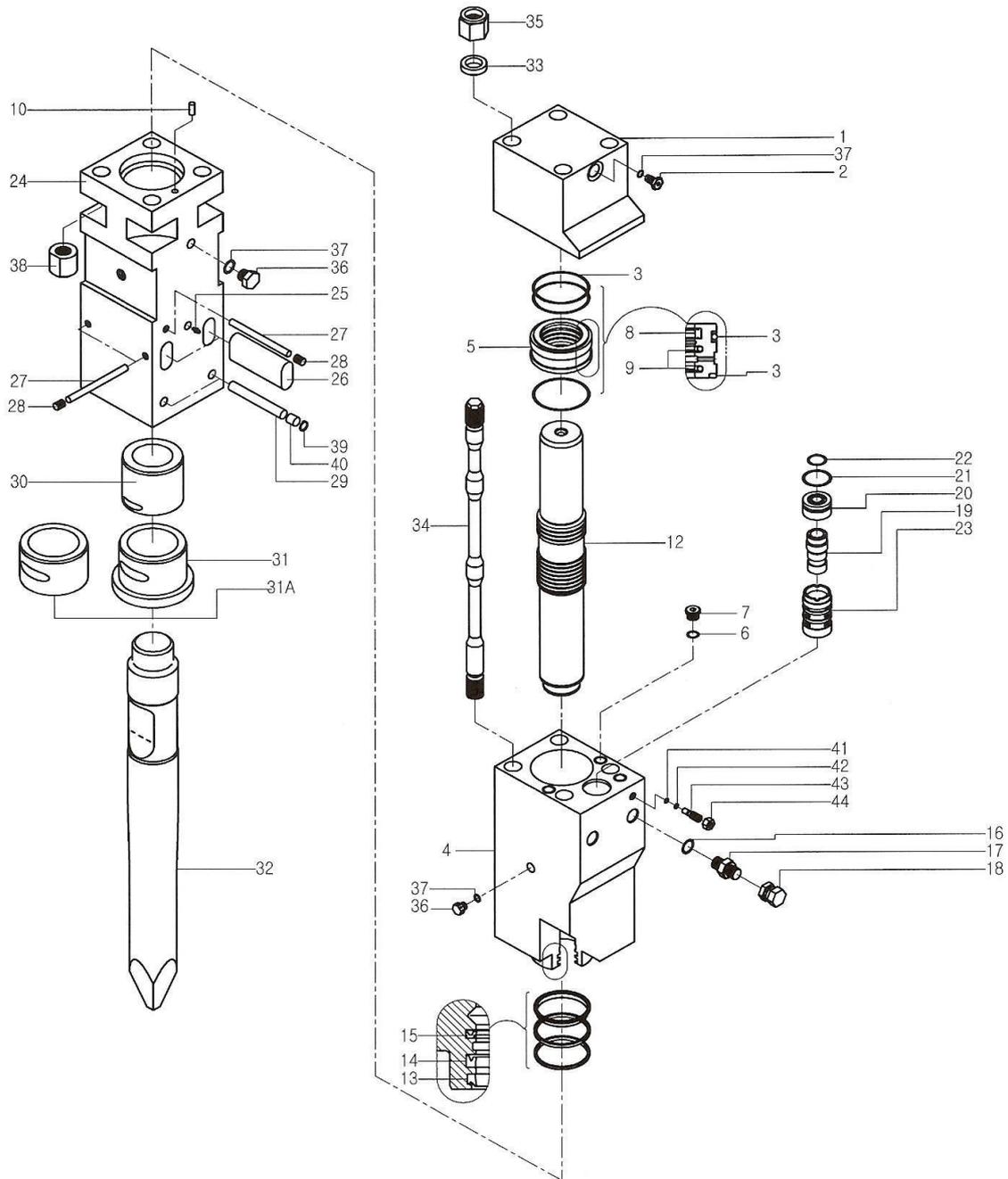
Exploded View of HQ140



HERQLIS HQ SERIES_HQ140-Main Body

No.	Part No.	Part Name	Q'ty	Remark
	K140MB	Main Body Assembly		
	K140BH	Back Head Assembly		
	K140CY	Cylinder Assembly		
	K140FH	Front Head Assembly		
	K140TB	Through Bolt Assembly		
1	K14001	Back Head	1	
2	K01502	Back Head Charging Valve Assembly	1	
3	K14003	O-Ring	3	
4	K14004	Cylinder	1	
5	K14005	Seal Retainer	1	
6	K14006	O-Ring	3	
7	K14007	Socket Plug	3	
8	K14008	Gas Seal	1	
9	K14009	U-Packing	2	
10	K14010	Lock Pin	1	
11	K14011			
12	K14012	Piston	1	
13	K14013	Dust Seal	1	
14	K14014	U-Packing	1	
15	K14015	Buffer Seal	1	
16	K10016	O-Ring	2	
17	K10017	Adapter	2	
18	K10018	Union Cap	2	
19	K14019	Valve	1	
20	K14020	Valve Cap	1	
21	K14021	O-Ring	1	
22	K14022	O-Ring	1	
23	K14023	Valve Sleeve	1	
24	K14024	Front Head	1	
25	K01525	Grease Nipple	1	
26	K14026	Rod Pin	2	
27	K14027	Stop Pin	3	
28	K10028	Rubber Plug	3	
29	K14029	Front Head Pin	2	
30	K14030	Ring Bush	1	
31	K14031	Front Cover	1	
32	K14032	Chisel : H-Wedge, V-Wedge, Moil, Blunt	1	
33	K14033	Through Bolt Washer	4	
34	K14034	Through Bolt	4	
35	K14035	Through Bolt Hex. Nut	4	
36	K01536	Air Check Valve	1	
37	K01537	O-Ring	3	
38	K14038	Through Bolt Round Nut	4	
39	K14039	Snap Ring	2	
40	K14040	Rubber Plug	2	

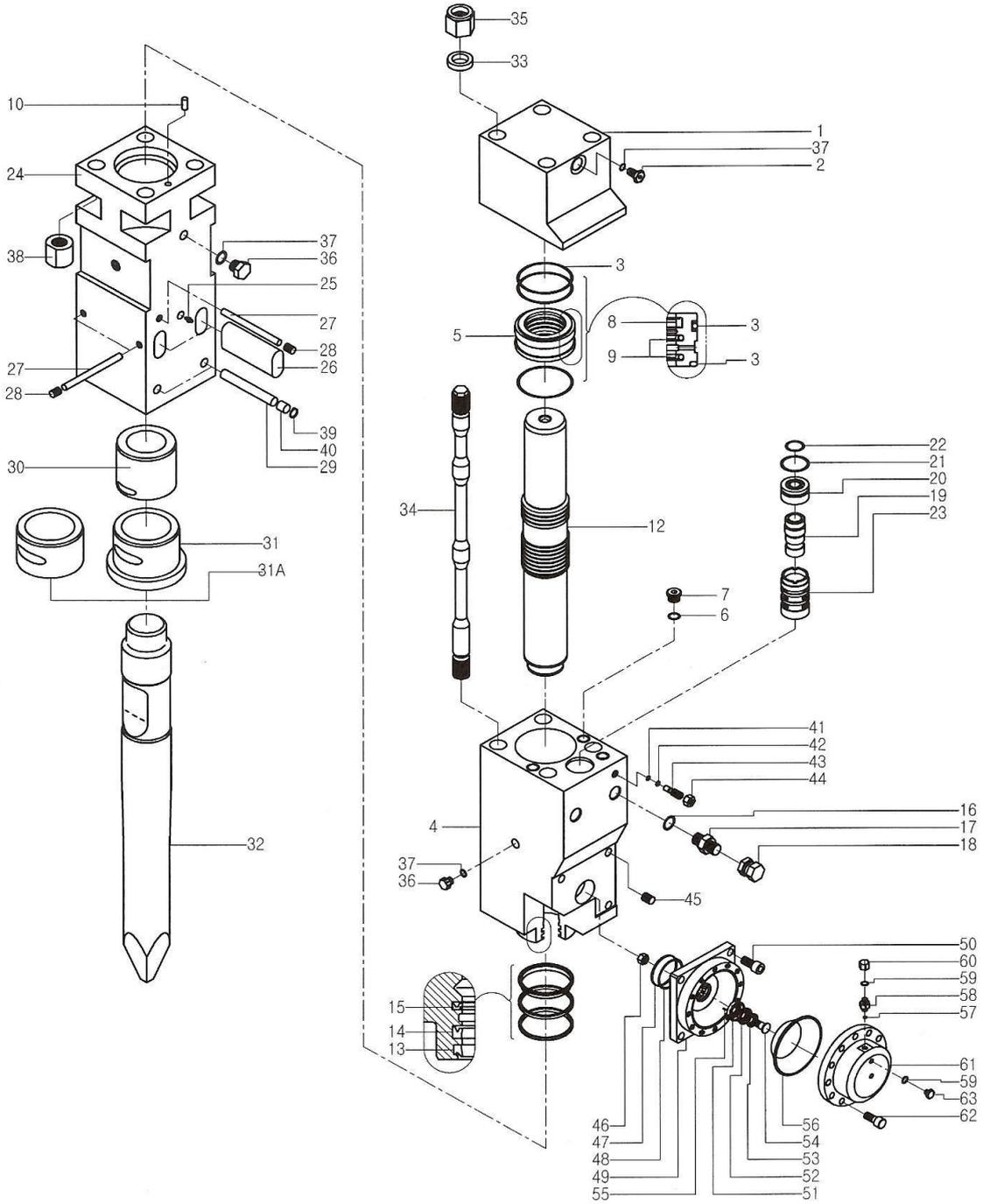
Exploded View of HQ220



HERQLIS HQ SERIES_HQ220-Main Body

No.	Part No.	Part Name	Q'ty	Remark
	K220MB	Main Body Assembly		
	K220BH	Back Head Assembly		
	K220CY	Cylinder Assembly		
	K220FH	Front Head Assembly		
	K220TB	Through Bolt Assembly		
1	K22001	Back Head	1	
2	K01502	Back Head Charging Valve Assembly	1	
3	K19003	O-Ring	3	
4	K22004	Cylinder	1	
5	K22005	Seal Retainer	1	
6	K22006	O-Ring	3	
7	K22007	Socket Plug	3	
8	K19008	Gas Seal	1	
9	K19009	Step Seal	2	
10	K22010	Lock Pin	1	
11	K22011			
12	K22012	Piston	1	
13	T19013	Dust Seal	1	
14	T19014	U-Packing	1	
15	T19015	Buffer Seal	1	
16	K22016	O-Ring	2	
17	K17017	Adapter	2	
18	K17018	Union Cap	2	
19	K22019	Valve	1	
20	K22020	Valve Cap	1	
21	K19021	O-Ring	1	
22	K22022	O-Ring	1	
23	K22023	Valve Sleeve	1	
24	K22024	Front Head	1	
25	K01525	Grease Nipple	1	
26	K22026	Rod Pin	2	
27	G02127	Stop Pin	3	
28	K22028	Rubber Plug	3	
29	K22029	Front Head Pin	2	
30	K22030	Ring Bush	1	
31	K22031	Front Cover	1	
32	K22032	Chisel : H-Wedge, V-Wedge, Moil, Blunt	1	
33	K22033	Through Bolt Washer	4	
34	K22034	Through Bolt	4	
35	K22035	Through Bolt Hex. Nut	4	
36	K01536	Air Check Valve	1	
37	K01537	O-Ring	3	
38	K22038	Through Bolt Round Nut	4	
39	K19039	Snap Ring	2	
40	K19040	Rubber Plug	2	
41	K19041	O-Ring	1	
42	K19042	Back-up Ring	2	
43	K19043	Valve Adjuster	1	
44	K19044	Valve Adjuster Nut	1	

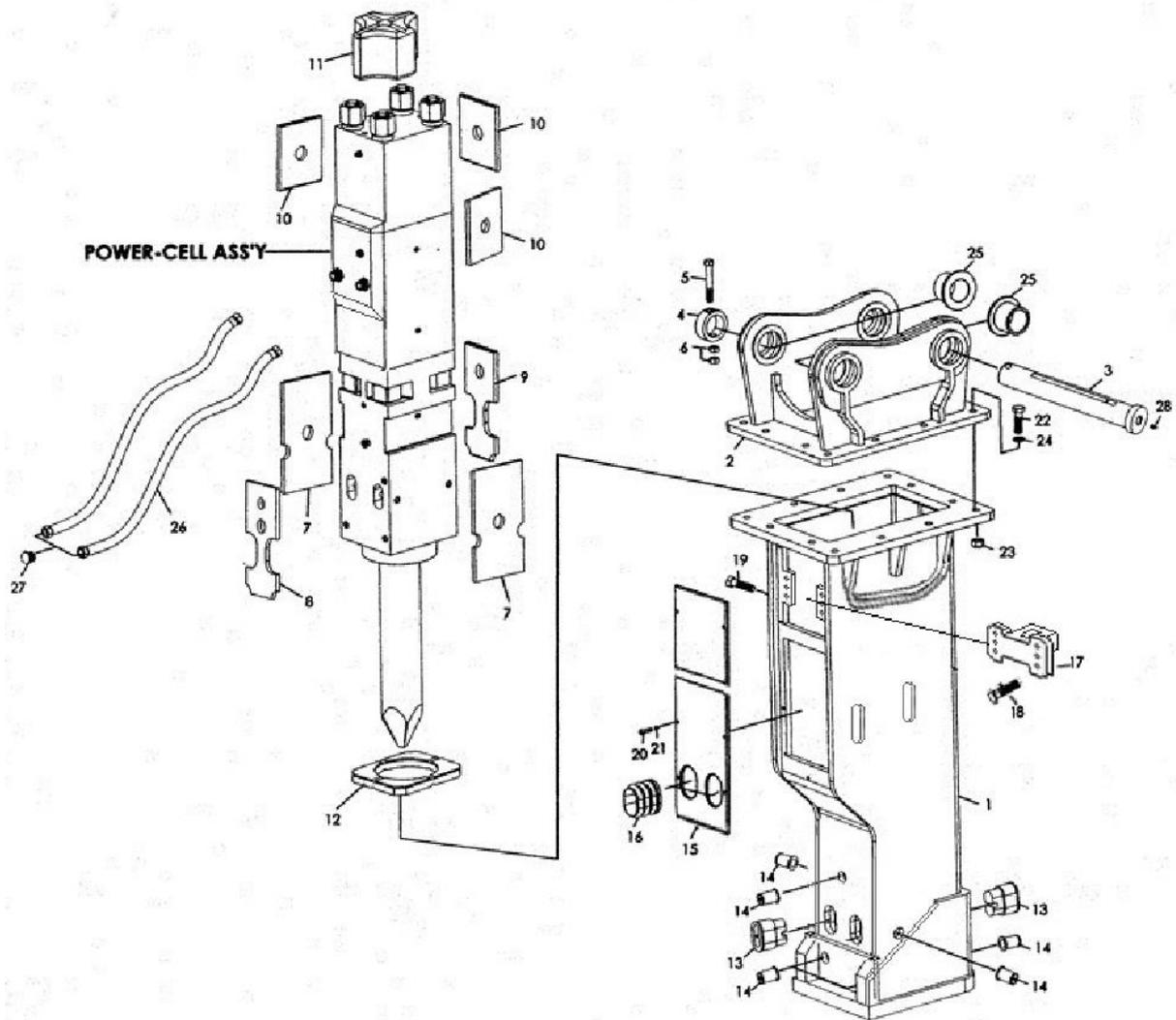
Exploded View of HQ340



HERQLIS HQ SERIES_HQ340-Main Body

No	Part No.	Part Name	Q'ty	Remark	No	Part No.	Part Name	Q'ty
	K300MB	Main Body Assembly			43	K30043	Valve Adjuster	1
	K300BH	Back Head Assembly			44	K30044	Valve Adjuster Nut	1
	K300CY	Cylinder Assembly			45	K27045	Heli-Sert Coil	4
	K300FH	Front Head Assembly			46	K27046	Acc. Holder Nut	1
	K300TB	Through Bolt Assembly			47	K27047	O-Ring	1
	K300AC	Accumulator Assembly			48	K27048	Back-up Ring	1
1	K30001	Back Head	1		49	K30049	Acc. Body	1
2	K01502	Back Head Charging Valve Assembly	1		50	K27050	Socket Bolt	4
3	K30003	O-Ring	4		51	K27051	Acc. Holder (A)	1
4	K30004	Cylinder	1		52	K27052	Acc. Holder (B)	1
5	K30005	Seal Retainer	1		53	K27053	Acc. Holder (C)	1
6	K30006	O-Ring	3		54	K27054	Acc. Holder Body Bolt	1
7	K30007	Socket Plug	3		55	K27055	Acc. Holder Pin	1
8	K30008	Gas Seal	1		56	K30056	Diaphragm	1
9	K30009	Step Seal	2		57	K27057	O-Ring	1
10	K30010	Lock Pin	1		58	G02258	Acc. Charging Valve	1
11	K30011				59	K27059	O-Ring	2
12	K30012	Piston	1		60	G02260	Acc. Charging Valve Cap	1
13	K30013	Dust Seal	1		61	K30061	Acc. Cover	1
14	K30014	U-Packing	1		62	K27062	Socket Bolt	12
15	K30015	Buffer Seal	1		63	K27063	Acc. Hex Plug	1
16	K30016	O-Ring	2					
17	K30017	Adapter	2					
18	K30018	Union Cap	2					
19	K30019	Valve	1					
20	K30020	Valve Cap	1					
21	K30021	O-Ring	1					
22	K22022	O-Ring	1					
23	K30023	Valve Sleeve	1					
24	K30024	Front Head	1					
25	K01525	Grease Nipple	1					
26	K30026	Rod Pin	2					
27	K30027	Stop Pin	3					
28	K10028	Rubber Plug	3					
29	K30029	Front Head Pin	2					
30	K30030	Ring Bush	1					
31	K30031	Front Cover	1	31A is for box frame				
32	K30032	Chisel : H-Wedge, V-Wedge, Moil, Blunt	1					
33	K30033	Through Bolt Washer	4					
34	K30034	Through Bolt	4					
35	K30035	Through Bolt Hex. Nut	4					
36	K01536	Air Check Valve	1					
37	K01537	O-Ring	3					
38	K30038	Through Bolt Round Nut	4					
39	K14039	Snap Ring	2					
40	K14040	Rubber Plug	2					
41	K19041	O-Ring	1					
42	K19042	Back-up Ring	2					

Bracket (Box Type)

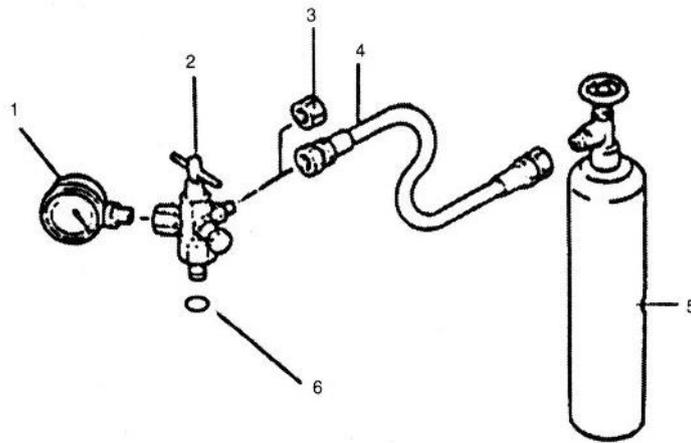


Bracket_Box Type

No.	Part No.	Part Name	Q'ty	Remark
1	BB001	Frame	1	
2	BB002	Mount Cap	1	
3	BB003	Bracket Pin	2	
4	BB004	Stop Ring	2	
5	BB005	Hex Head Bolt	2	
6	BB006	Hex Nut	4	
7	BB007	Front Side Plate	2	
8	BB008	Front Top Plate	1	
9	BB009	Front Bottom Plate	1	
10	BB010	Back Head Plate	3	
11	BB011	Upper Cushion	1	
12	BB012	Lower Cushion	1	
13	BB013	Tool Pin Plug	4	
14	BB014	Stop Pin Plug	7	
15	BB015	Cover Plate	1	
16	BB016	Hose Guide	2	
17	BB017	Back Head Holder	1	
18	BB018	Socket Bolt	6	
19	BB019	Washer	2	
20	BB020	Socket Bolt	9	
21	BB021	Washer	9	
22	BB022	Hex Head Bolt	12	
23	BB023	Hex Nut	24	
24	BB024	Spring Washer	12	
25	BB025	T-Bush	4	
26	BB026	Hose	2	
27	BB027	Hose Plug	2	
28	BB028	Grease Nipple	2	

Options

1) Nitrogen gas charging kit



No.	Part Name	Part No.	Quantity
1	Pressure Gauge	HQ 203200	1
2	Charging Gauge	HQ 10320A	1
3	Cap	HQ 103202	1
4	Gas Hose	HQ 403200	1
5 6	N2 Gas Cylinder	HQ 303200 HQ 303100	1
7	O-ring	HQ 513212	1

Service Report

- **Delivery Report**
- **Service Report**

Delivery & Installation Service Report

Ref. No : _____

Distributor:	
_____	_____
City	Province / State
Customer: _____	
Name	
_____	_____
City	Province / State

Base Machine		Hydraulic Breaker	
Maker		Model Name	
Model		Serial No.	
Operating Weight (ton)		Date of Arrival to the port	

Warranty Start _____ **Expiry Date:** _____

I hereby acknowledge that the subject was delivered in satisfactory condition and operates properly, and that I receive operation manual & parts list as to its proper operation, preventive maintenance, and that all aspect of the standard warranty has been fully explained to me.

Delivered by _____ **Date** _____

Installed by _____ **Date** _____

Signature _____ **Distributor** _____

Customer



How to use Delivery Report

- **This Report is to check if breaker is correctly delivered and equipped on base machine.**
- **Distributor should correctly draw up this report because this will be a major date in case warranty claim arise in the future. Without this report delivered to Distributor, the warranty date shall be regarded as and begins with the arrival date of the carrying vessel.**
- **This report must be written within 1 week after the date of delivery of breaker unit to the customer, and also be forwarded to HERQLIS Co., Ltd. by fax or email, otherwise warranty claims shall not carry out accordingly.**

Service Report

Ref. No: _____
Date of Service: _____
Date of Installation: _____

Base Machine		Hydraulic Breaker	
Maker		Model	
Model		Serial No.	
Operating Days		Working days	
Location		Daily average working hours	
Operator's comments			

No.	Parts No.	Parts Name	Q'ty	Photo No.	Type of service

Inspector's Comment

<p>Claimed by</p> <p>_____</p> <p style="text-align: center;">Customer</p>	<p>Received by</p> <p>_____</p> <p style="text-align: center;">Distributor</p>
---	---



Photo Information in details			
Base Machine		Parts Name	
Breaker Model		Parts Number	
Serial No. of Chisel		Frame Type	
Photo No.(file Name)		Kinds of Rock	
Location of Job site		Type of Hose	

Attach Photo Here!

Inspector's Comment

HERQLIS HYDRAULLIC BREAKER

Visit Us: www.herqlis.com



Model	
Serial No.	
Date Purchased	
Dealer Address	
Notes	

