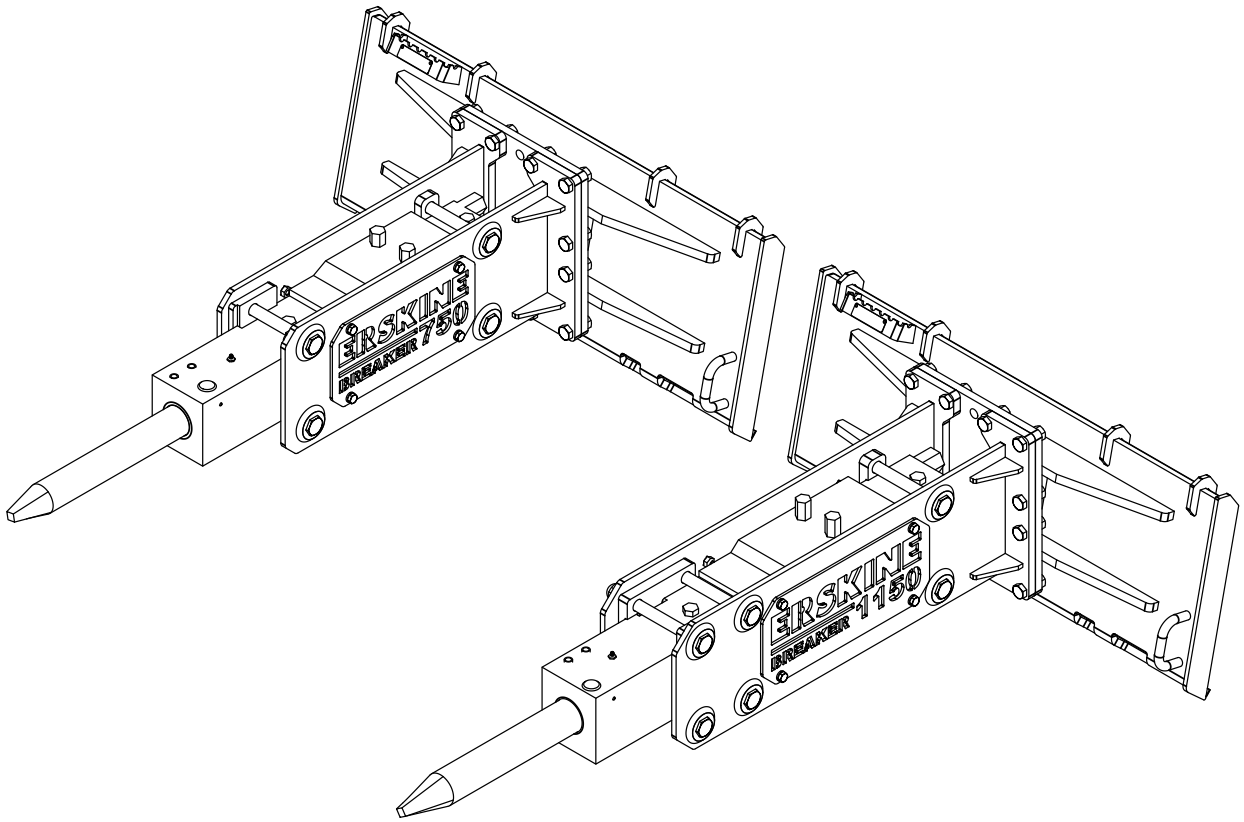
ERSKINE®

ATTACHMENTS



HYDRAULIC BREAKER

MODELS 750 & 1150

Operator's Manual

Maintenance & Parts Information

Read this Manual Before Use

TABLE OF CONTENTS

NOTE: Write your serial number for your attachment in the spaces below. Always refer to this serial number when calling for services parts.

_____

Serial Number

_____

Attachment Dealer

_____

Address

_____

Phone Number

_____

Contact

NOTE: Erskine Attachments LLC reserves the right to make improvements in design or changes in specifications at any time without notice and without incurring any obligations to install them on units previously sold.

SAFETY

This manual contains safety, operation, and routine maintenance instructions. It doesn't contain service disassembly and service assembly instructions. If needed, complete service disassembly and service assembly instructions are contained in manual which can be ordered from your certified dealer.

Please read the following warning.

Serious injury or death could result from the improper repair or service of this breaker. Repairs or service to this breaker must only be done by an authorized and certified dealer.

Most of the accidents are caused by disregarding the basic rules of operation inspection or repair, or by neglecting the inspection before operation. Many accidents can often be avoided by recognizing potentially hazardous situations before an accident occurs. Before operating, inspecting, or repairing this machine, be sure to read and fully understand the preventive methods and warnings described on the machine or in this manual. If not, never operate, inspect, or repair this machine.

Safety labels and messages are classified as follows so that the users can understand the warnings on the machine or in this manual.

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
This signal word is to be limited to the most extreme situations

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury,
It may also be used to alert against unsafe practices.

NOTICE

Signs used to indicate a statement of company policy directly or indirectly related to the safety of personal or protection of property

The safety messages including the preventive measures to avoid danger.
For safety, common items are described in “SAFETY PRECAUTIONS", and others are mentioned in the succeeding pages.

SAFETY

Erskine Attachments cannot anticipate every possible circumstance that might involve a potential hazard on operation, inspection, or repair. Therefore, the warnings in this manual are not all inclusive. If an operation, inspection, or repair not described in this manual is used, you must take measures for safety by yourself.

⚠ DANGER

Observe the cautions and take a preventive measure for safety

The Hydraulic Breaker will provide safe and dependable service if operated in accordance with the instructions given in this manual. Read and understand this manual, any decals and tags attached to the breaker before operation. Failure to do so could result in personal injury or equipment damage

- Operate the breaker in accordance with all laws and regulations which affect you, your equipment, and the worksite.
- Do not operate the breaker until you have read this manual and thoroughly understood all safety, operation, and maintenance instructions.
- Do not operate the breaker until you have read the carrier equipment manual and thoroughly understood skid steer or excavator, or similar equipment used to operate the breaker. The word "carrier", as used in this manual, means a skid steer or excavator or similar equipment used to operate the breaker.
- Ensure that all maintenance procedures recommended in this manual are completed before using the equipment.
- The operator must not operate the breaker or carrier if any people are within the area where they may be injured by flying debris or movement of the equipment.
- Know the limits of your equipment.
- Before starting a work, Check the prohibitions, cautions and working processes in a working site with the field overseer, Observe all of them strictly.
- Wear such protective tools as a helmet, safety shoes, etc. to perform a work. Make use of the protective glasses, earplugs, gloves, and other protective tools if necessary.
- Establish a training program for all operators to ensure safe operation. Do not operate the breaker unless thoroughly trained or under the supervision of an instructor. Become familiar with the carrier controls before operating carrier and breaker. While learning operate the breaker and carrier, do so at a slow pace. If necessary, set the carrier to the slow position.
- Make sure all controls (levers and pedals) are in the neutral position before starting the carrier. Before leaving the carrier, always lower the boom and ensure the carrier is stable. Never leave the machine with the engine running. Always engage the parking brake.
- Stop the engine before attempting to make any repairs, adjustments, or servicing to either the carrier or the breaker.
- Do not operate the breaker at oil temperature above 175°F /80°C. Operation at higher temperature can damage the internal components of the breaker and carrier and will result in reduced breaker performance.
- Do not operate a damaged, leaking, improperly adjusted, or incompletely assembled breaker.
- Do not modify this breaker in any manner.
- Use only breaker parts provided by a certified dealer. Usage of breaker rod produced by another manufacturer may damage the breaker and will void the warranty.

SAFETY

- To avoid personal injury or equipment damage, all breaker repair, maintenance, and service must only be performed by authorized and properly trained personnel.
- If you do not understand how to operate safely your breaker, contact an authorized Erskine Attachments Dealer for assistance.
- Keep this manual with the breaker.
- Do not operate this equipment if you are taking medication which may affect your mental judgment or physical performance.
- Do not operate this equipment if you are under the influence of drug or alcohol.
- Remove breaker form carrier during transportation.

Checking before installation instructions

CHECK THE "SPECIFICATIONS" SECTION OF THIS MANUAL TO DETERMINE CORRECT EXCAVATOR SIZES AND HYDRAULIC PRESSURE, HYDRAULIC FLOW IF HYDRAULIC PRESSURE, HYDRAULIC FLOW ARE EXCEEDED, THE HYDRAULIC BREAKER WARRANTY IS VOID.

⚠ CAUTION

BE SURE THE FLUID IN THE HYDRAULIC SYSTEM IS CLEAN. CHECK THE HYDRAULIC FILTER, REPLACE THE FILTER IF DIRTY OR DETERIORATED. CHECK THE GAS PRESSURE ACCUMULATOR AND BACK HEAD.
SEE INSPECTION AND CHARGING OF NITROGEN GAS AT BACK HEAD, ACCUMULATOR HOSE AND PIPING FLEXING.

⚠ CAUTION

THE CONTAMINATED PART MUST BE CLEANED WITH NO DELAY. HYDRAULIC OIL OR LIGHT OIL IS HIGHLY RECOMMENDABLE.

⚠ CAUTION

THE CIRCUIT RELIEF SETTING PRESSURE IS NOT FIXED. BUT IT WILL BE ADJUSTED BY PUMP CAPACITY.

⚠ CAUTION

Model	SB40	SB43
Relief Setting Pressure (lbs./in.^{2})	2420	2560
Back Pressure (lbs./in.^{2})	230	230

HYDRAULIC INFORMATION

Hydraulic pipelines for exclusive use

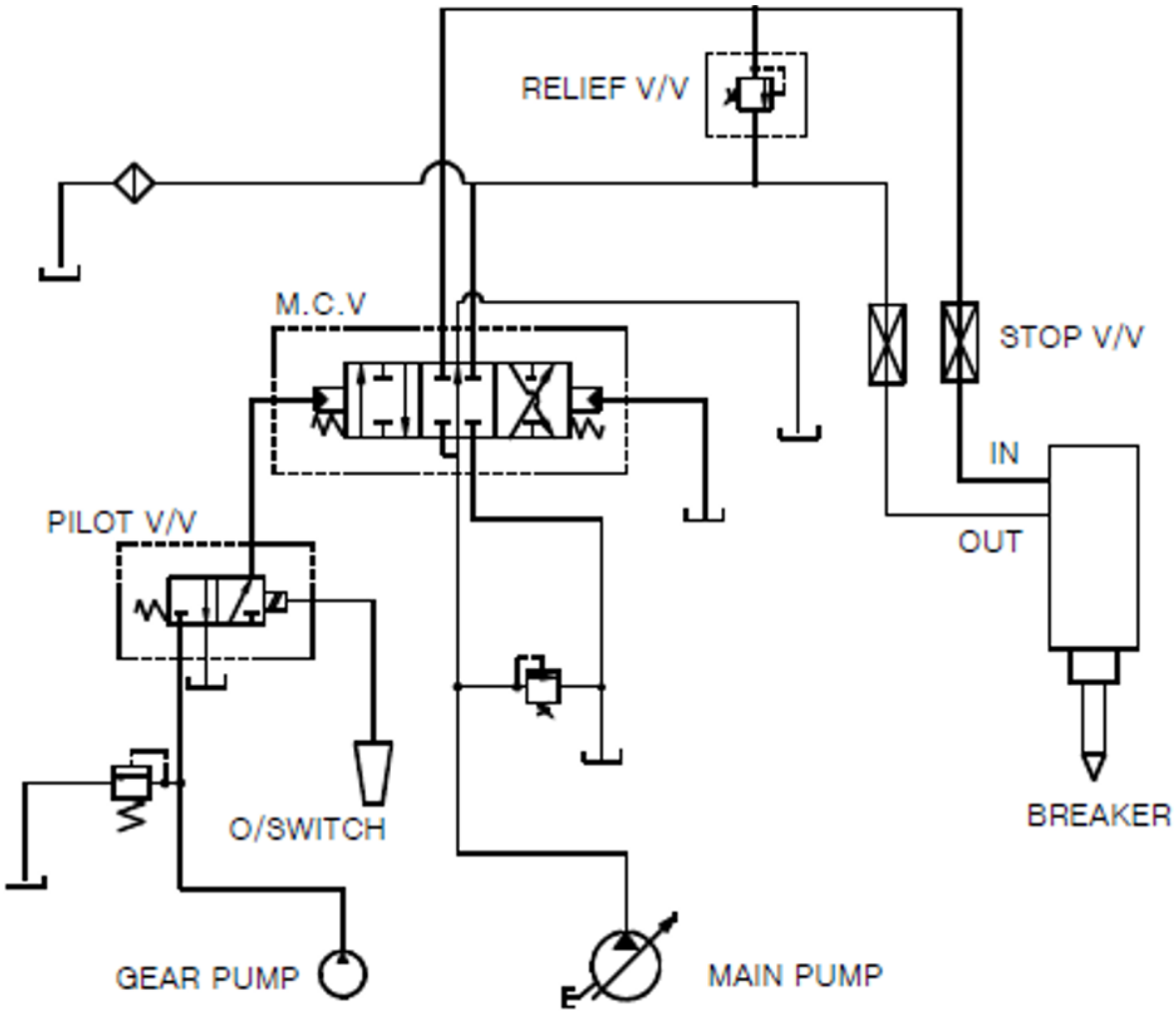
Operation of the hydraulic breaker requires installation of hydraulic pipelines for exclusive use of the hydraulic breaker. As hydraulic pipelines vary depending on base machines, our service engineer must first check hydraulic pressure, oil capacity, pressure loss and other conditions of the base machine before installing hydraulic pipelines. Use only genuine parts in case of replacement because hydraulic pipelines (hoses, pipes, and fittings) are made of materials carefully selected in consideration of durability.

⚠ WARNING

THE HYDRAULIC SYSTEM TO THE BASE MACHINE MUST BE CHECKED BY AN AUTHORIZED SOOSAN SERVICE ENGINEER BEFORE FIRST USE AND AFTER ANY MODIFICATIONS.

⚠ WARNING

MAKE SURE THAT THE HYDRAULIC BREAKER VALVE OF HYDRAULIC SYSTEM IS PROPERLY SET.



HYDRAULIC INFORMATION

- **Warm-up of machine prior to operation**
  - Do not operate the machine right after starting the engine. Idle the machine for warm-up. Warm the hydraulic oil sufficiently especially in winter or in the cold place.
  - Especially in winter, the carrier's engine should be warmed up for 5 to 10 minutes 30~40°C (86~105°F) before breaker operation.
  - When operating the hydraulic breaker, idle the engine and operate the hydraulic breaker with a light load.

- **Stop operation when hoses are vibrating abnormally.**
  - Check the hoses on the high pressure and low-pressure sides of the breaker for abnormal vibration. If they are vibrating abnormally, contact the nearest certified dealer.

- **Avoid blank hammering.**
  - Blank hammering accelerates wear and tear on breaker and carrier components and may result in failure of one or more components. Excessive blank hammering may be considered equipment abuse and may result in voiding warranties. In case of blank hammering, hammering sound changes.

- **Operate the breaker at proper engine speed.**
  - Break rocks at the specified engine speed. Raising engine speed more than necessary does not strengthen hammering force but increase oil temperature to the detriment of piston and valve.

MAINTENANCE

Regular Hydraulic breaker Inspection and Maintenance

⚠ CAUTION

Regular inspection is essential for keeping hydraulic breaker operating in the best condition consult with the Erskine Attachments service station for regular inspection and maintenance. Customers are recommended to contact the service station for inspection within six months after delivery.

• Maintenance of Hydraulic Breaker

Ordinary check items before and after operating the breaker.	Confirm the state of setting breaker and carrier • Damage and assembled state of bracket pin • Fastened state of pin assembled bolts • State of quick clamp setting, and bolts/pins assembled • State of cap mounting bolt (TOP Type)
	Assembling state of breaker and bracket • State of side-bolt and all kinds of bolt • Whether all kinds fixing part and anti-shock parts (cushion & wear plate) are damaged • State of bracket-crack, breakage, welded area
	• Fastening state of breaker main-body parts • Fastened through bolt state • Front head pin and Rubber plugs • Stop pin and Rubber plugs • Air check valve • Back head charging valve • Valve adjuster • Accumulator mounting bolt • Accumulator cover fastening bolt • Accumulator charging valve • Hose adapter • Hex Head Plug
	Damage of safety/warning sticker
	Loss or fastening state of bracket assembled parts • Sound plug (Silenced type) • Window cover (Silenced type) • Hose cover (Silenced type)
	Leakage, interference and assembling state of carrier hoses and pipes • Interference and assembling state of hoses and pipes • Fixing state of control valve • Welding state of clamps • Leakage and fastening state of pipes/hoses connected • Whether hose are twisted/damaged/aged

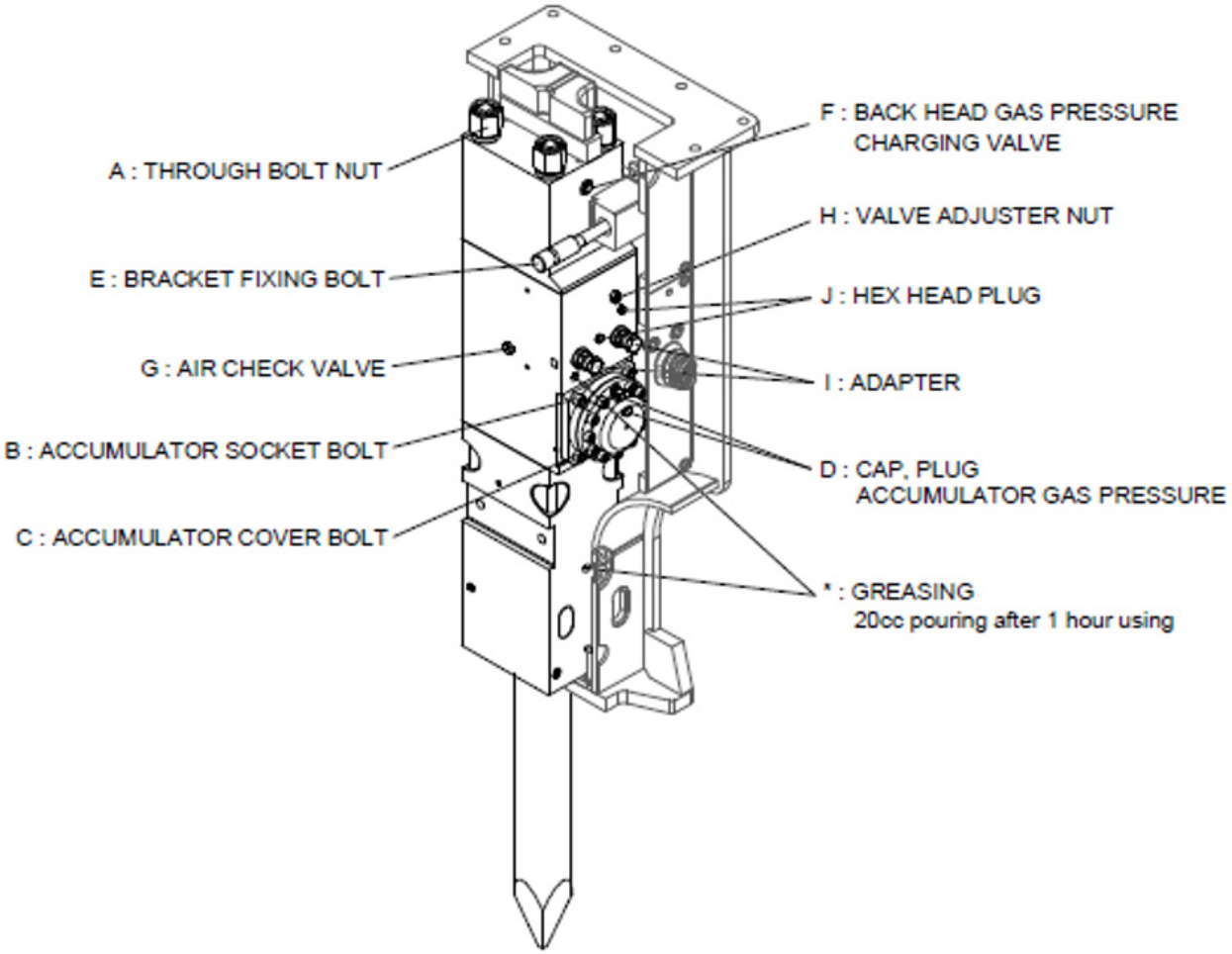
MAINTENANCE

Ordinary check items before and after operating breaker.	Oil tank and working fluid quality • Quantity of working fluid • Contamination of working fluid
	Breaker on/off switch and electric wire
	Examine worsen state of consumable parts • Inside diameter of front cover • Worsen state of rod
Any time check items during operating breaker	Temperature of working fluid (below 80°C/176°F)
	Loss and damage of parts
	Leakage of breaker hoses A little leakage could be run on rod (As much as it does not affect operating, performance, and efficiency)
	Efficiency and abnormal working of breaker • Irregular blowing is occurred • Abnormal blowing sound is occurred • Pipes and hoses are shaken extremely
After 1Hr operating	Grease pumping (about 20cc after 1hr operating) - About 5~10 times pumping with grease gun • Rod friction area: Ring bush, Front cover, Rod pin
Every week (Every 50 hr Operating)	Quantity and contamination degree of working fluid (Refill or replace) • Contamination limit: 20~40cst
	Examining wear of consumable parts (Grind the area deformed if necessary) • Rod pin • Ring bush • Front cover
	Remove strange material inside of front head
	Check the gas pressure and refill • Back head • Accumulator
Every week (Every 50 hr Operating)	Whether all kinds of bolts are fastened by regulated torque
Every month (Every 200 hr Operating)	Operating pressure of breaker
	Relief setting pressure of hydraulic circuit
	Supply flow
	Replace oil filter of carrier

MAINTENANCE

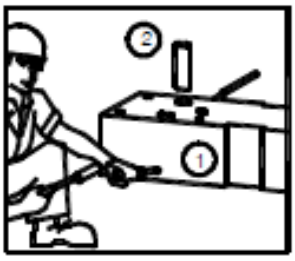
• Daily Inspection Before Operating

Inspection Item	Inspection Point	Remedy
Looseness, missing and damage to bolts and nuts	• Through bolts • Bracket mounting bolt	• Tighten to correct torque
Looseness of hose fittings, visible damage to hoses and oil leaks	• Hydraulic piping for breaker • Oil hose	• Tighten • Replaced when damaged
Abnormal oil leaks	• Connection of back head and cylinder • Gap between front head and rod (small leak normal)	• Consult with Dealer for further inspection
Abnormal wear and cracks to rod	• Rod	• If rod is deformed and burred, be repaired • If the rod is worn out, be replaced • If the rod is cracked, be replaced

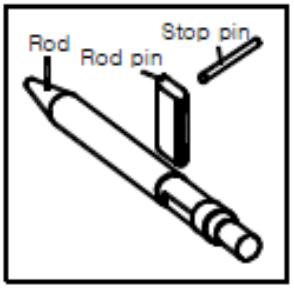


MAINTENANCE

- **Replacement & Breakage of Rod**
  - Rod is deformed of burrs produced in a long-term use.
  - If the rod tip is worn out, rod is liable to slip. Grind the rod tip to sharpen the edge.
  - If the rod tip is sharpened many times, the hardened surface layer will disappear, and the rod will be worn out rapidly. In this case, replace with a new rod.
  - If the gap between rod and front cover is large, the piston fails to fit in rod to cause damage to the piston or the rod.

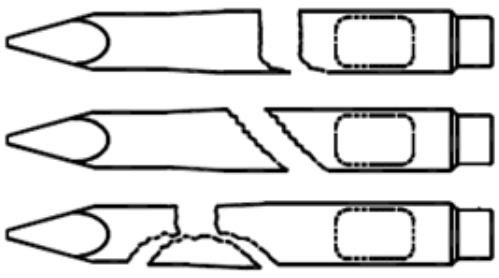


- **Replacement**
  - Put the breaker horizontally on the timber.
  - Remove the spring pin (SB43 below) using a pin bar.
  - Set round bar on the opposite side and push the stop pin with a hammer.
  - Remove the rod pin. In removing the rod pin, be careful falling of rod and rod pin.
  - Wind rope or nylon sling around the rod and remove from the main body.
  - Before installing a new rod, check wear, breakage, and score.
  - Remove burrs and swelling from the disassembled rod pin with a grinder.
  - Excessively deformed rod pin will make replacement of rod difficult. Rod pin is required to be checked every 100 to 150 hours of operation
  - Grease sufficiently to inserting part of front head.

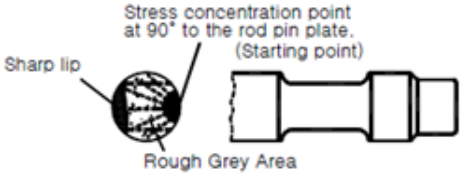


- **Breakage of Rod**

The service life of the rods depends on the manner of handling them. The rod can sufficiently withstand the vertically acting load but is weak to the perpendicularly acting load. Especially, the rod is affected by the negative conditions such as force by craning operation, tilted blowing, wrenching and idle strokes etc. There are several ways of breakage of the rod. Each cause of the breakage can be inferred by observing the breakage section. Further, the breakage case which is not caused by low quality materials or insufficient heat-treatment but by wrong way of handling which the manufacturer is not responsible for the breakage. The breakage section has the origin on the outer surface, the narrow area of fatigue breakage and the wide area of rough grey area, and final breakage part has the share-lip form. Such as undulation on the breakage section and its inclination to the right and left witness that the breakage is caused by excessive force which excessive force which exceeds the toughness of the rod. Such the breakage is supposed to occur owing to careless handling of the rod. To avoid such the breakage more carefulness and attention is required in handling the breaker.



Typical fractures caused by excessive bending of the rod. Warranty claims rejected.



Typical fractures caused by levering tool while buried in the burden. Warranty claims rejected.

Flat type rod worn more than 45mm or moil type and wedge,universal type rods worn back more than 75mm of working end classed as reasonable life. Warranty claims rejected.

MAINTENANCE

Inspection and Charging of N_2 Gas at Back head

WARNING

Charging gas pressure changes according to the rod condition.
Lay down the hammer and let the rod extend fully to charge gas.
Stay clear of the rod while charging the breaker with gas.
The rod may be impacted by the piston and forced out abruptly, when the through bolts are changed or the breaker body is disassembled. Discharge N2 gas before work.
Take special care to handle and store the N2 gas cylinder as it is high pressurized container.
Use nitrogen gas only.
Back head gas pressure 6kg/cm^2 (85.5psi) on the back head surface temperature at 20°C (68°F)
See "CONVERSION TABLE FOR CHARGING N2 GAS PRESSURE TO BACK HEAD"

- **Inspection of N2 Gas Back Head**

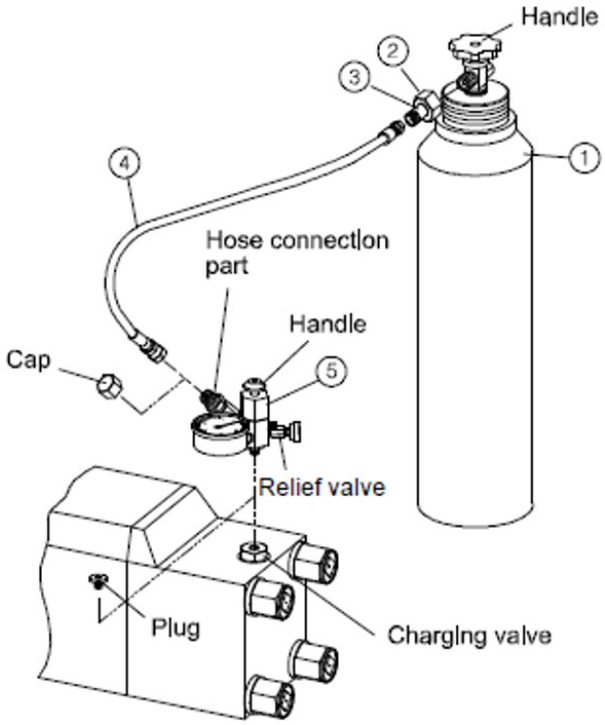
1. Make sure if the cap and valve of the 3-way valve assembly (5) are fully tightened. Screw the 3-way valve assembly (5) into the charging valve of the back head after removing the plug.
2. At this time the handle must stand up to prevent the gas from coming out.
3. Push the handle into the charging valve fully, so the gas pressure inside the back head is indicated on the pressure gauge.
4. When the gas pressure is normal, unscrew the 3-way valve assembly after discharging gas inside the 3-way valve assembly.
5. When the gas pressure is higher or lower, charge it as described below.

- **Charging of N2 gas into Back Head**

1. Connect the charging hose (4) to N2 gas cylinder (1) after screwing the bombe adapter (3) onto adapter nut (2) and installing them to the N2 gas cylinder.
2. Connect the 3-way valve assembly (5) to the charging hose (4) after unscrewing the cap on the 3-way valve.
3. Install the 3-way valve assembly (5) to the charging valve of the Back Head. Currently the handle of the 3-way valve assembly must be up position to prevent the gas from coming out.
4. Push the handle of the 3-way valve assembly fully and turn the handle of the N2 gas cylinder counterclockwise gradually to charge gas.
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 3-way valve assembly up. Generated pressure makes it return to original position naturally.
7. In order to discharge N2 gas in the charging hose (4) and the 3-way valve assembly turn the relief valve counterclockwise.
8. Remove the charging hose (4) from the N2 gas cylinder (1) and the 3-way valve assembly (5), and screw the cap into the 3-way valve assembly.
9. Push the handle of the 3-way valve assembly 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 by repeatedly opening and closing the valve and then gas pressure falls to the specified pressure.
10. When the gas pressure reaches to the specified pressure, close the valve, and release the handle.

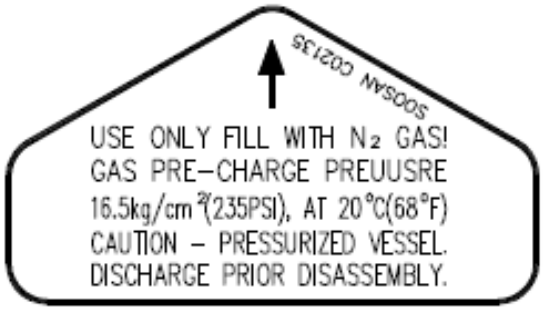
MAINTENANCE

11. Open the valve completely and discharge gas inside the 3-way valve assembly.
12. Remove the 3-way valve assembly from the charging valve of Back Head and install the plug to the charging valve. Currently prevent contamination from entering the breaker.



Back Head Surface Temperature (°C / °F)	0 / 32	10 / 50	20 / 68	30 / 86	40 / 104
Back Head Gas Pressure (bar /PSI)	15.5 / 220	16 / 228	16.5 / 235	17 / 242	17.5 / 249

Back Head Sticker
(Appears on the Back Head charging valve)



MAINTENANCE

Inspection and Charging of N_2 gas in Accumulator

WARNING

Take special care to handle and store the N2 gas cylinder as it is high pressurized
Use nitrogen gas only.
When disassemble the accumulator, must discharge N2 gas before working.
Do not touch on the accumulator surface when working.
Be sure to use the 3-way valve assembly for charging the N2 gas if charging gas leaks directly from the cylinder, diaphragm may be broken off.
If charging for handling N2 gas to only the accumulator, make sure that the accumulator body and cover are tightened fully.
Standard accumulator gas pressure 55kg/cm (783psi) on the accumulator surface temperature at 20°C (68°F)
See "CONVERSION TABLE FOR CHARGING N2 GAS PRESSURE TO BACK HEAD"

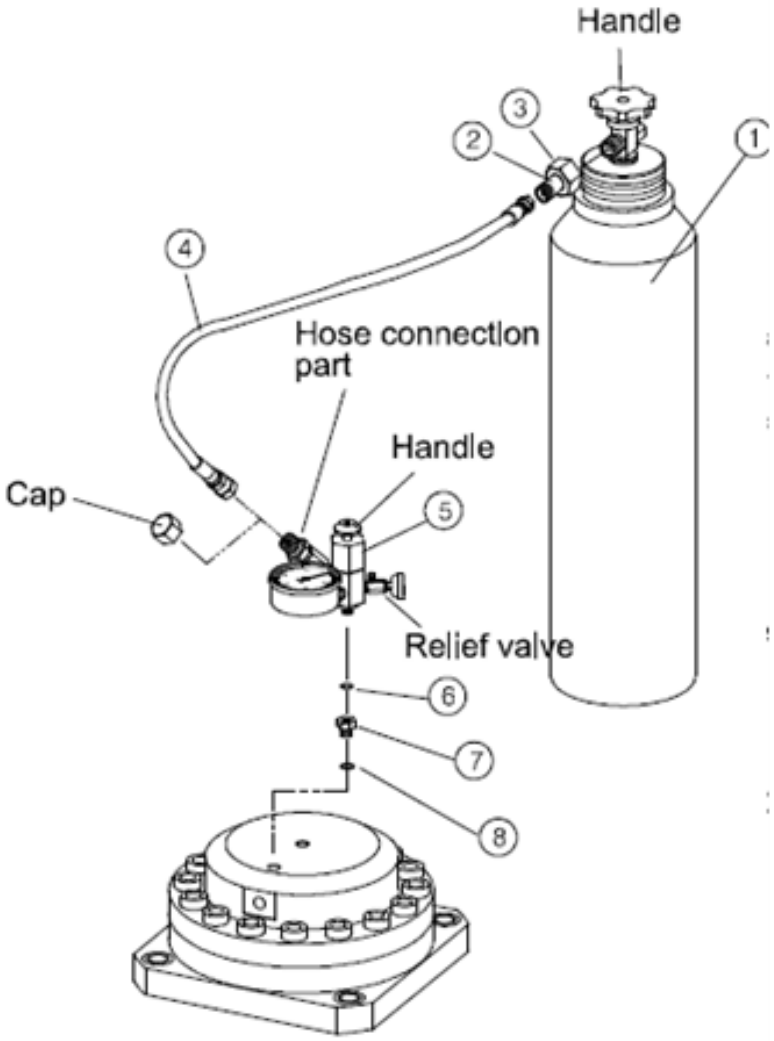
- **Inspection of N2 gas Accumulator.**

1. Make sure if the cap and valve of the 3-way valve assembly (5) are fully tightened.
2. Remove the cap (11) from the accumulator and tighten the charging valve (12) fully.
3. Check if O-rings (6)(8) are installed to the bushing (7). Remove the plug (9) and screw the bushing.
4. Install the bushing (7) to the 3-way valve assembly (5).
5. Loosen the charging valve (12) gradually. The charging pressure is indicated on the pressure gauge.
6. Close the valve clockwise when the gas pressure is normal. If the gas pressure is higher, repeat loosening and tightening the relief valve of 3-way valve assembly. The pressure is lowered gradually.
7. Loosen the relief valve of the 3-way valve assembly to discharge the N2 gas in the 3-way valve assembly (5).
8. Remove the 3-way valve assembly (5) and tighten the plug (9) and cap (11).

- **Charging of N2 gas into Accumulator**

1. Connect the charging hose (4) to N2 gas cylinder (1) after screwing the bombe adapter (3) onto adapter, nut (2) and installing to the N2 gas cylinder.
2. Connect the 3-way valve assembly (5) to the charging hose (4) after unscrewing the cap on the 3-way valve assembly.
3. Remove the cap (11) form the accumulator and tighten the charging valve (12) fully.
4. Check if O-rings (6)(8) are installed to the bushing (7). Remove the plug (9) and screw the bushing.
5. Loosen the accumulator charging valve (12) after checking if bushing (7) is installed to the 3-way valve assembly.
6. Turn the handle of the N2 gas cylinder counterclockwise slowly to charge gas.
7. Charge gas in accordance with the conversion table for charging N2 gas pressure to accumulator.
8. Turn the handle of the N2 gas cylinder clockwise to close the cock.

9. Close the accumulator charging valve (12).
10. Loosen the relief valve of the 3-way valve assembly to discharge the N2 gas remaining in the charging hose.
11. Remove the charging hose, 3-way valve assembly and bushing and tighten the plug (9) and cap (11).



Back Head Surface Temperature (°C / °F)	0 / 32	10 / 50	20 / 68	30 / 86	40 / 104
Back Head Gas Pressure (bar /PSI)	15.5 / 220	16 / 228	16.5 / 235	17 / 242	17.5 / 249

TROUBLESHOOTING

The trouble-shooting chart is prepared to help operators find out causes and remedies instantly when troubles occur. When a trouble is found, have a good grip of the problem, and contact our service station. When diagnosing faults in operation of the breaker, always check that hydraulic power source is supplying the correct hydraulic flow and pressure to the breaker as listed in the table.
Check the flow with the hydraulic oil temperature at least 176°F / 80°C.

1. Breaker fails to hammer • Sufficient high-pressure oil does not flow to breaker inlet. • Sufficient high pressure oil flows to breaker inlet.	• Defective hose or pipes· • Clogged or damaged piping • Defective control valve and related parts • Insufficient hydraulic oil • Internal breaker defects	• Check, clean and repair piping or replace with new one. • Check and repair valve and its related parts or replace with new one. • Refill oil tank. • Consult with our service station.
2. Breaker hammers with hammering force reduced. • Sufficient high-pressure oil does not flow to breaker inlet. • Sufficient high-pressure oil flows to breaker inlet.	• Defective hose or pipes Clogged piping, Oil leakage • Defective control valve and related parts • Deformed pedal • Deformed control valve • Stuck control valve • Insufficient control valve stroke due to lose screws • Clogged filter in return line of base machine tank • Insufficient hydraulic oil • Contaminated or deteriorated hydraulic oil • Defective pump • Internal breaker defects • Low N2-gas pressure of back head	• Check, clean and repair piping or replace with new one. • Check control valve and related parts or replace with new one. • Clean or replace. • Refill. • After flushing tank, change oil entirely. • Ask service station for base machine service. • Consult with our service station. • Adjust the gas pressure
3. Hammering force weakens suddenly, and high-pressure hose vibrates excessively during operation.	• Defective Back Head Gas leakage	• Ask our service station for repair.
4. Excessive oil leakage from Front Head or Rod.	• Worn cylinder seals	• Ask our service station for repair.
5. Piston works but does not hammer.	• Stuck in rod	• Remove front parts and pull out rod. • Repair with a grindstone.

LUBRICANTS

Hydraulic Oil

Selection of hydraulic oil determines the efficiency of the hydraulic breaker performance.
Please consult with our service station under following conditions.
(1) When used in special regions where climate is severe (extremely cold or hot weather)
(2) When recommended brands of hydraulic oil are not available
(3) When hydraulic oil supplied for the base machine differ from the recommended one.

- **Hydraulic Oil and Grease**
  Recommended for Hydraulic Grab by Erskine Attachments

<table>
<tr><th rowspan="3">LUBE & SPEC
Manufacturer</th><th colspan="3">HYDRAULIC OIL</th><th rowspan="2">GREASE
(MOS2)</th></tr>
<tr><th>SUMMER</th><th>WINTER</th><th>ALL SEASON</th></tr>
<tr><th>ISO VG 46</th><th>ISO VG 32</th><th>ISO VG 46</th><th>NLGI No2</th></tr>
<tr><td rowspan="3">MOBIL</td><td>MOBIL DTE 25</td><td>MOBIL DTE 24</td><td>MOBIL DTE 15M</td><td>MOBIL GREASE SPECIAL</td></tr>
<tr><td colspan="3">MOBIL SHC 525 *</td><td rowspan="2">MOBILITH SHC 220 *</td></tr>
<tr><td colspan="3">MOBIL EAL SYNDRAULIC 46 **</td></tr>
<tr><td>LG-CALTEX</td><td>RANDOHD 46</td><td>RANDO HD 32</td><td>NEW RANDO
HDCZ</td><td>MOLYTEX EP2</td></tr>
<tr><td>BP</td><td>ENERGOL HP46</td><td>ENERGOL HP32</td><td>ENERGOL HP46</td><td>-</td></tr>
<tr><td>SHELL</td><td>TELLUS 46</td><td>TELLUS 32</td><td>TELLUS T 46</td><td>RETINAX
HDX-2</td></tr>
</table>

- **Oil Contamination**

Contaminated oil results in malfunctions of the breaker as well as the base machine and causes damage to parts. Pay special attention to oil contamination.
Contaminated oil should be changed without delay. When changing oil, thoroughly wash oil tank, cylinder, and pipes. Cleaning or replacing oil filter also requires check for oil contamination.

- Replacement of filter: after first 50 hours and every 100 hours thereafter
- Replacement of hydraulic oil: every 500 hours

⚠ WARNING

Hydraulic oil Temperature and viscosity
Do operate the hydraulic breaker at oil temperatures from 20°C / 68°F to 80°C / 176°F. Operation at higher temperatures can damage the internal components of the breaker and carrier there will result in reduced breaker performance.

BOLT TORQUE INFORMATION

Torque-Tension Relationships for SAE J429 Grade Bolts

Nominal Thread Size	SAE J429 Grade 2			SAE J429 Grade 5			SAE J429 Grade 8		
	Clamp Load (lbs)	Tightening Torque		Clamp Load (lbs)	Tightening Torque		Clamp Load (lbs)	Tightening Torque	
		K = .15	K = .20		K = .15	K = .20		K = .15	K = .20
Unified Coarse Thread Series									
1/4-20	1,300	49 in-lbs	65 in-lbs	2,000	75 in-lbs	100 in-lbs	2,850	107 in-lbs	143 in-lbs
5/16-18	2,150	101	134	3,350	157	210	4700	220	305
3/8-16	3,200	15 ft-lbs	20 ft-lbs	4,950	23 ft-lbs	31 ft-lbs	6,950	32.5 ft-lbs	44 ft-lbs
7/16-14	4,400	24	30	6,800	37	50	9,600	53	70
1/2-13	5,850	36.5	49	9,050	57	75	12,800	80	107
9/16-12	7,500	53	70	11,600	82	109	16,400	115	154
5/8-11	9,300	73	97	14,500	113	151	20,300	159	211
3/4-10	13,800	129	173	21,300	200	266	30,100	282	376
7/8-9	11,425	125	166	29,435	321	430	41,550	454	606
1-8	15,000	187.5	250	38,600	482.5	640	54,540	680	900
Unified Fine Thread Series									
1/4-28	1,500	55 in-lbs	75 in-lbs	2,300	85 in-lbs	115 in-lbs	3,250	120 in-lbs	163 in-lbs
5/16-24	2,400	112	150	3,700	173	230	5,200	245	325
3/8-24	3,600	17 ft-lbs	22.5 ft-lbs	5,600	26 ft-lbs	35 ft-lbs	7,900	37 ft-lbs	50 ft-lbs
7/16-20	4,900	27	36	7,550	42	55	10,700	59	78
1/2-20	6,600	41	55	10,200	64	85	14,400	90	120
9/16-18	8,400	59	79	13,000	92	122	18,300	129	172
5/8-18	10,600	83	110	16,300	128	170	23,000	180	240
3/4-16	15,400	144	193	23,800	223	298	33,600	315	420
7/8-14	12,610	138	184	32,480	355	473	45,855	500	668
1-12	16,410	205	273	42,270	528	704	59,670	745	995

Clamp load estimated as 75% of proof load for specified bolts.

Torque values for ¼ and 5/16 inch series are in inch-pounds. All other torque values are in foot-pounds.

Torque values calculated from formula T = KDF

where: K=0.15 for “lubricated” conditions

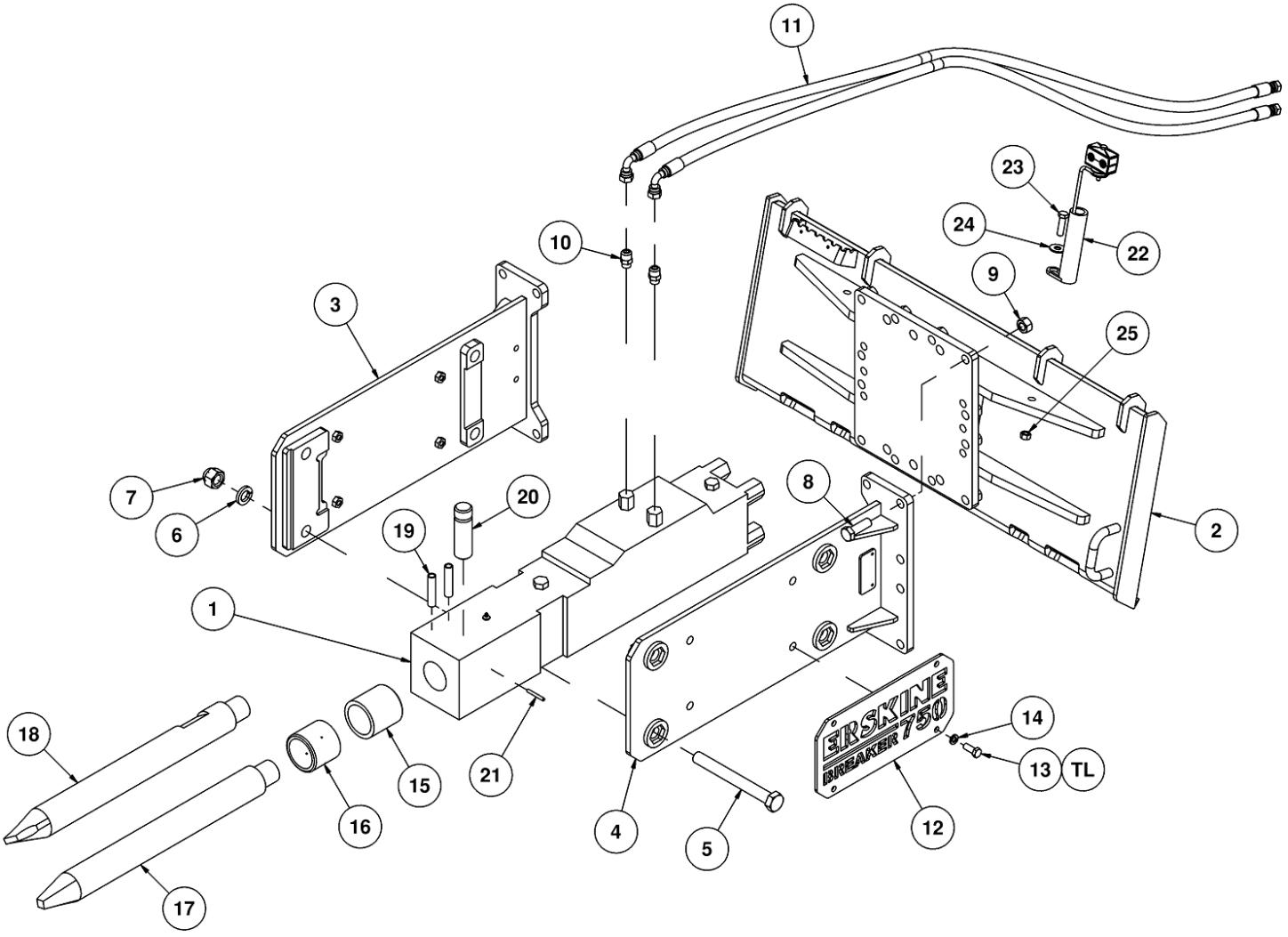
K=0.20 for “dry” conditions

PARTS INFORMATION - 750

ITEM	QTY	PART NO.	DESCRIPTION	NOTES
1	1	331812	BREAKER GUTS 750 POWER UNIT	
2	1	331803	MOUNT 750/1150 BREAKER W/A	
3	1	331882	MOUNT RH BREAKER 750 EA W/A	
4	1	331883	MOUNT LH BREAKER 750 EA W/A	
5	4	15481	BOLT HEX 1 X 9 NC GR8 YZ	
6	4	33636	WASHER SPLIT LOCK 1	
7	4	37716	NUT CROWN ACORN 1 NC GR9	
8	12	15362	BOLT HEX 3/4 X 2-1/4 NC GR8 YZ	
9	12	38067	NUT TOP LOCK 3/4 NC GR9 YZ	
10	2	311877	ADPT STR 10MJ-8BSPP	
11	2	331865	HOSE 1/2 X 102" 8FJX-10FJX90	
12	2	331885	PLATE MODEL BREAKER 750 ERSKINE	
13	8	13207	BOLT HEX 1/2 X 1-1/4 NC GR5	APPLY THREAD LOCKER
14	8	33626	WASHER SPLIT LOCK 1/2	
15	1	321398	BUSHING THRUST 750	
16	1	321396	BUSHING RING 750	
17	1	321409	TOOL BIT MOIL PT 750 (SB40)	
18	1	321411	TOOL BIT CHISEL (WEDGE) 750 (SB40)	
19	2	321402	PIN STOP 750 (10 X 90mm)	
20	1	321400	PIN ROD 750 (38 X 155mm)	
21	1	321404	PIN SPRING 750/1150	
22	1	312565	SPRING HOSE HOLDER W/A CLAMP	
23	1	13210	BOLT HEX 1/2 X 1-3/4 NC GR5	
24	1	33012	WASHER FLAT USS 1/2	
25	1	37214	NUT REV LOCK 1/2 NC GR A Z	

SERVICE PARTS NOT PICTURED			
QTY	**PART NO.**	**DESCRIPTION**	**NOTES**
1	331873	ADPT G5/8 X CGA580 (NITROGEN KIT)	
1	321640	ZERK GREASE 1/4-28 PTF-SAE MALE	
1	321406	SEAL KIT BREAKER O-RINGS 750	

PARTS INFORMATION - 750

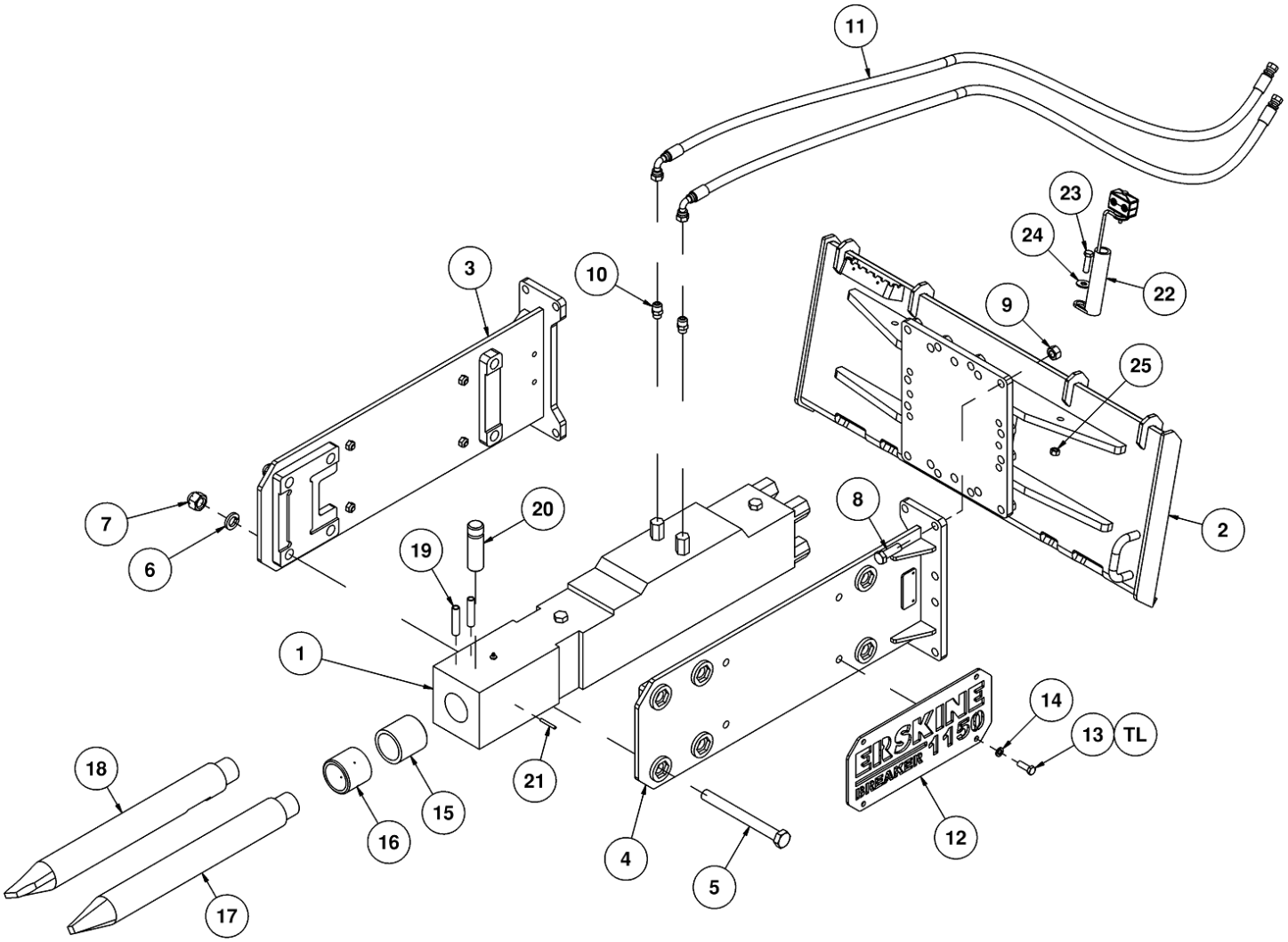


PARTS INFORMATION - 1150

ITEM	QTY	PART NO.	DESCRIPTION	NOTES
1	1	331811	BREAKER GUTS 1150 POWER UNIT	
2	1	331803	MOUNT 750/1150 BREAKER W/A	
3	1	331886	MOUNT RH BREAKER 1150 EA W/A	
4	1	331887	MOUNT LH BREAKER 1150 EA W/A	
5	6	15483	BOLT HEX 1 X 10 NC GR8 YZ	
6	6	33636	WASHER SPLIT LOCK 1	
7	6	37716	NUT CROWN ACORN 1 NC GR9	
8	12	15362	BOLT HEX 3/4 X 2-1/4 NC GR8 YZ	
9	12	38067	NUT TOP LOCK 3/4 NC GR9 YZ	
10	2	311877	ADPT STR 10MJ-8BSPP	
11	1	331865	HOSE 1/2 X 102" 8FJX-10FJX90	
12	2	331889	PLATE MODEL BREAKER 1150 ERSKINE	
13	8	13209	BOLT HEX 1/2 X 1-1/2 NC GR5	APPLY THREAD LOCKER
14	8	33626	WASHER SPLIT LOCK 1/2	
15	1	321399	BUSHING THRUST 1150	
16	1	321397	BUSHING RING 1150	
17	1	321410	TOOL BIT MOIL PT 1150 (SB43)	
18	1	321412	TOOL BIT CHISEL (WEDGE) 1150 (SB43)	
19	2	321403	PIN STOP 1150 (10 X 90mm)	
20	1	321401	PIN ROD 1150 (38 X 165mm)	
21	1	321404	PIN SPRING 750/1150	
22	1	312565	SPRING HOSE HOLDER W/A CLAMP	
23	1	13210	BOLT HEX 1/2 X 1-3/4 NC GR5	
24	1	33012	WASHER FLAT USS 1/2	
25	1	37214	NUT REV LOCK 1/2 NC GR A Z	

SERVICE PARTS NOT PICTURED			
QTY	**PART NO.**	**DESCRIPTION**	**NOTES**
1	331873	ADPT G5/8 X CGA580 (NITROGEN KIT)	
1	321640	ZERK GREASE 1/4-28 PTF-SAE MALE	
1	321407	SEAL KIT BREAKER O-RINGS 1150	

PARTS INFORMATION - 1150



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ERSKINE®
ATTACHMENTS LLC

LIMITED WARRANTY

Erskine Attachments, LLC warrants each new machine manufactured by us to be free from defects in material and workmanship for a period of twenty-four (24) months from date of delivery to the original purchaser.

Our obligation under this warranty is to replace free of charge, at our factory or authorized dealership, any part proven defective within the stated warranty time limit.

All parts must be returned freight prepaid and adequately packaged to prevent damage in transit.

This warranty does not cover:

1. New products which have been operated in excess of rated capacities or negligence
2. Misuse, abuse, accidents or damage due to improperly routed hoses
3. Machines which have been altered, modified or repaired in any manner not authorized by our company
4. Previously owned equipment
5. Any ground engaging tools in which natural wear is involved, i.e. tooth tips, cutting teeth, etc
6. Normal maintenance
7. Fork tines
8. Hydraulic motors that have been disassembled in any manner

In no event will the Sales Representative, Dealership, Erskine Attachments, LLC, or any other company affiliated with it or them be liable for incidental or consequential damages or injuries, including but not limited to the loss of profit, rental or substitute equipment or other commercial loss. Purchaser's sole and exclusive remedy being as provided here in above.

Erskine Attachments, LLC must receive immediate notification of defect and no allowance will be made for repairs without our consent or approval.

This warranty is in lieu of all other warranties, express or implied by law or otherwise, and there is no warranty of merchantability or fitness purpose.

No agent, employee, or representative of Erskine Attachments, LLC has any authority to bind Erskine Attachments, LLC to any warranty except as specifically set forth herein. Any of these limitations excluded by local law shall be deemed deleted from this warranty; all other terms apply.

This warranty may not be enlarged or modified in any manner except in writing signed by an executive officer of Erskine Attachments, LLC to improve its products whenever it is possible and practical to do so. Erskine Attachments, LLC reserves the right to make changes and or add improvements at any time without incurring any obligation to make such changes or add such improvements to products previously sold.

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