MB20EXS

through

MB100EXS

Hydraulic Mounted Breakers

Safety, Operation and Maintenance

Service Manual

⚠ WARNING

SERIOUS INJURY OR DEATH COULD RESULT FROM THE IMPROPER REPAIR OR SERVICE OF THIS TOOL.

REPAIRS AND / OR SERVICE TO THIS TOOL MUST ONLY BE DONE BY AN AUTHORIZED AND CERTIFIED DEALER.

Read The Manual | Wear Breathing Protection | Wear Hearing Protection | Wear Eye Protection

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STANLEY®

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Read Manual | Wear Breathing Protection | Wear Hearing Protection | Wear Eye Protection

WARNING

Do not operate the breaker unless the following safety instructions have been thoroughly read and understood! Read this manual before installing, operating or maintaining this equipment!

- A flying projectile from the breaker, breaker tool, rock or other material may enter the operator's compartment and cause serious or fatal injury to the operator. Personal protection equipment must be used.

- A flying projectile from the breaker, breaker tool, 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 breaks 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 Stanley Distributor.

- When operating the breaker you must use ear protection, eye protection, and breathing protection.

Contents

SERVICING HYDRAULIC TOOLS: This manual contains safety, operation, and detailed maintenance instructions. Servicing of hydraulic tools, other than routine maintenance, must be performed by an authorized and certified dealer.

WARNING

SERIOUS INJURY OR DEATH COULD RESULT FROM THE IMPROPER REPAIR OR SERVICE OF THIS TOOL.

REPAIRS AND / OR SERVICE TO THIS TOOL MUST ONLY BE DONE BY AN AUTHORIZED AND CERTIFIED DEALER.

Safety and Operation

Tool operators and maintenance personnel must always comply with the safety precautions given in this manual and on the decals and tags attached to the tool and hose.

These safety precautions are given for your safety. Review them carefully before operating the tool and before performing general maintenance or repairs.

Supervising personnel or the owner operator should develop additional precautions relating to the specific work area and local safety regulations. Place the added precautions in the space provided on page 4.

GENERAL SAFETY PRECAUTIONS

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 and 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 understand all safety, operation and maintenance instructions.
- The operator must be familiar with all prohibited work areas such as excessive slopes and dangerous terrain conditions.
- Do not operate the breaker until you have read the carrier equipment manual and thoroughly understand all safety, operation and maintenance instructions. The word "carrier", as used in this manual, means a backhoe or excavator or similiar 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.
- Establish a training program for all operators to ensure safe operation.
- Do not operate the tool unless thoroughly trained or under the supervision of an instructor.
- Become familiar with the carrier controls before operating the carrier and the breaker.
- When operating the breaker you must use ear protection, eye protection, and breathing protection.
- While learning to operate the breaker and carrier, do so at a slow pace. If necessary, set the carrier mode selector to the slow position.
- Make sure all controls (levers and pedals) are in the NEUTRAL position before starting the carrier.
- While operating the breaker and carrier, keep hands and feet on the controls at all times.
- Before leaving the carrier, always lower the boom and insure 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

- Do not operate the tool at oil temperatures above 190°F/88°C. Operation at higher temperatures 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 the breaker in any manner.
- Use only tool bits supplied by Stanley Hydraulic Tools. Use of tool bits supplied by another manufacturer may damage the breaker and will void the warranty.
- 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 safely operate your breaker, contact an authorized Stanley Dealer for assistance.
- Keep this manual with the breaker.
- Do not operate this equipment if you are taking medication which may affect your mental judgement or physical performance.
- Do not operate this equipment if you are under the influence of drugs or alcohol.

Safety Symbols

Safety symbols and signal words, as shown below, are used to emphasize all operator, maintenance and repair actions which, if not strictly followed, could result in a life-threatening situation, bodily injury or damage to equipment.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER

This safety alert and signal word indicate an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

This safety alert and signal word indicate a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

This safety alert and signal word indicate a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

NOTICE

This signal word indicates a potentially hazardous situation which, if not avoided, may result in property damage or damage to the equipment.

IMPORTANT

This signal word indicates a situation which, if not avoided, may result in damage to the equipment.

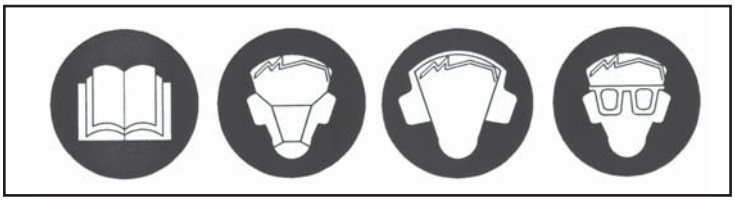
Always observe safety symbols. They are included for your safety and for the protection of the tool.

Local Safety Regulations

Enter any local safety regulations here. Keep these instructions in an area accessible to the operator and maintenance personnel.

Tool Decals and Stickers

Shown below and on the next page are decals and stickers found on the equipment that provide important information. Replace decals and stickers when they are no longer legible. See the parts illustration(s) in this manual for specific location of decals and stickers.



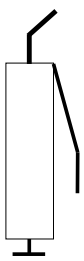
WARNING DECAL - P/N 29346
(Shown smaller than actual size)
Signifies:

Read The Manual Before Use
Use Breathing Protection
Use Hearing Protection
Use Eye Protection

NITROGEN ONLY
230 PSI

ACCUMULATOR PRESSURE SPEC STICKER - P/N 32243
(Shown actual size)

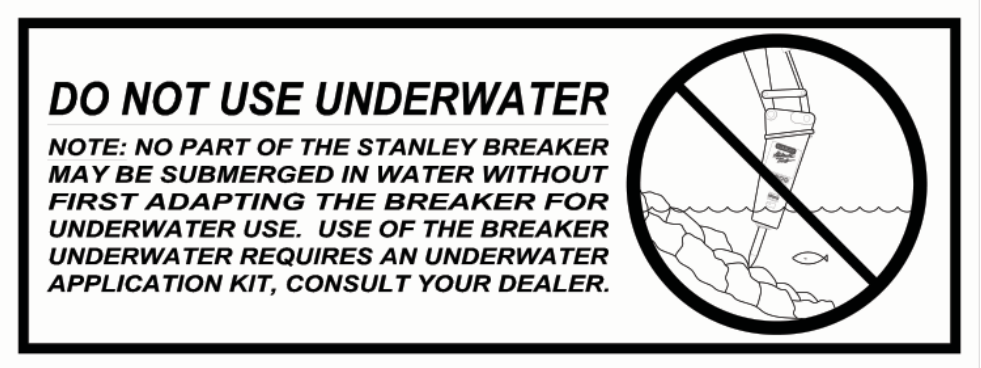
SERVICE INSTRUCTIONS - GREASING



1. WITH BREAKER MOUNTED ON CARRIER, APPLY DOWN PRESSURE ON TOOL BIT.
2. FILL CAVITY WITH RECOMMENDED GREASE THROUGH THE GREASE FITTING.
3. GREASE WHENEVER TOOL BIT LOOKS DRY.
4. WHEN INSTALLING A NEW TOOL BIT, LIBERALLY COAT THE UPPER 1/3 OF BIT WITH GREASE BEFORE INSERTING.
   FAILURE TO COMPLY WITH THESE INSTRUCTIONS CAN RESULT IN DAMAGE TO THE BREAKER AND WILL VOID THE WARRANTY.

P/N 26068

GREASE DECAL - P/N 26068
(Shown smaller than actual size)



P/N 31445 "UNDERWATER" DECAL

P/N 41083 "LIFT" DECAL

CE

STANLEY

MANUFACTURED BY: Stanley Hydraulic Tools
Division of The Stanley Works
3810 S.E. NAEF ROAD
Milwaukie, Oregon 97267

MODEL NO. MBXXEXS

SERIAL NO. XXXXXX

OPERATING WEIGHT XXX Kg / XXXX lb

INPUT FLOW XX lpm / XX gpm

CIRCUIT RELIEF PRESSURE XXX bar / XXXX psi

Preparation For Operation

Pre-installation Instructions

Excavator Size

See the "SPECIFICATIONS" section of this manual to determine correct excavator sizes and hydraulic flow and pressure requirements.

NOTICE

If hydraulic pressure, hydraulic back-pressure, hydraulic flow, or excavator weight class are exceeded, the tool warranty is void.

Existing Equipment Hydraulics vs Application Attaching Kits

Using existing equipment hydraulic auxilliary systems for operating hydraulic tools could cause problems for the hydraulic tool and the hydraulic system if not set up properly. Simply plugging into the hydraulic system without confirming pressure and flow to the hydraulic tool is not a good practice. Spare spool valves, dipper circuits, etc., are just a few examples of easily accessable hydraulic circuits which could prove to cause problems for hydraulic tool usage.

ATTACHING KITS adapt to existing hydraulic systems of many popular backhoes and excavators. If your equipment does not contain an attaching kit, ask your Stanley dealer for information, installation, and pricing on a kit which matches your equipment needs.

Test The Hydraulic System

1. Have your Stanley dealer test the excavator hydraulic system to make sure the system is operating at the manufacturers specified capacity and pressure ratings.

2. Be sure the fluid in the hydraulic system is clean.

3. Check the hydraulic filter. Replace the filter if dirty or deteriorated.

4. Have your Stanley dealer test the circuit to which the breaker will be connected to make sure that the circuit is supplying the specified flow and pressure rating for the breaker. SEE THE "SPECIFICATIONS" SECTION OF THIS MANUAL.

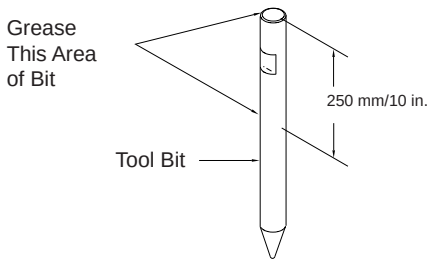
Preparation for Operation

Nitrogen Charge

The breaker has been properly charged with nitrogen at the factory and is ready to use.

Tool Bit Lubrication

Grease the top 250 mm/10 inches of the breaker tool bit before installing. During operation, the tool can be greased through the grease fitting. Grease as required. **Make sure the tool bit is against the tool stop by placing the tool bit against the ground and then putting down pressure on the breaker. SEE THE ILLUSTRATION BELOW AND ON THE FOLLOWING PAGE.**

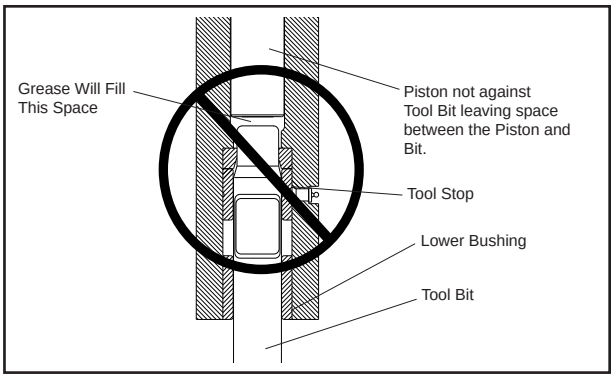


Greasing the Tool Bit Before Installation

NOTICE

Greasing the tool bit without down pressure on the tool will result in grease filling the space between the piston and the tool bit.

When the breaker is next activated, the piston will strike the grease at a speed that will cause the grease to apply great force against the seals and grease zerk resulting in damage to these components.



Securing the tool

1. Lay the breaker in a horizontal position to install the tool bit. Remove the retainer plate (58) and the sound plugs (12) if present (see fig. 1).

   Note that retainer plugs (28) on early models are threaded and have a hex socket head. Plugs (28A) on later models are of a special design and require the use of special pliers (P/N 60737) to remove or install them (see fig. 2). See the parts illustration for serial number and detail information for each model. The two types of plugs are not interchangeable.

2. Remove the plug (28) or (28A) and then drive out the retainer pin (27) using a punch and hammer.

   Remove the cover plate (58) is one is present.

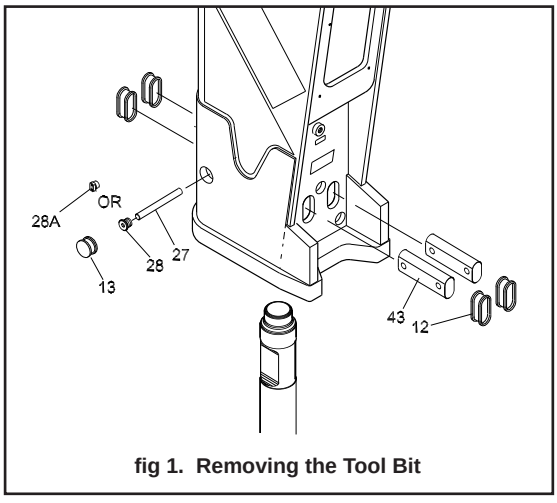


fig 1. Removing the Tool Bit

NOTE: Do not attempt to drive out plug 28A with a punch and hammer. Always use the special pliers shown in figure 2.

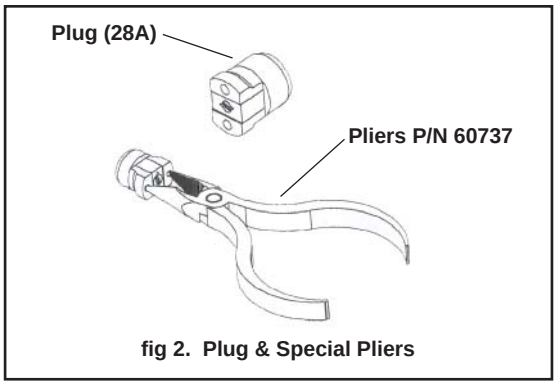


fig 2. Plug & Special Pliers

3. Using a punch and hammer, drive out the rod pins (43).

4. Install the tool bit and secure with the rod pins.

5. Replace the retainer pin, plug and sound plugs.

WARNING

Flying debris may be caused by striking the rod pins with a punch or hammer.

Wear eye protection when installing or removing the rod pins.

Failure to wear eye protection may result in eye injury.

6. Grease the top area of the tool bit as shown in the illustration.

7. Install the tool bit making sure the notches are aligned with the lower body rod pin holes.

8. Install the retainer pins and plugs, sound plugs, and retainer plate if applicable.

Low-temperature Warm-up Procedure

1. After starting the excavator, warm-up the hydraulic system at engine idle until hydraulic lines are warm to the touch.

2. With the excavator at idle and the breaker suspended in the air or with minimal down pressure, turn on the breaker to gradually warm up its internal components.

3. When the hydraulic system and breaker are warm, proceed with operation. SEE THE "OPERATION" SECTION OF THIS MANUAL.

Long Term Storage

1. Remove the tool bit, clean the tool stop and the lower bushing. Thoroughly coat the surfaces of the tool stop and the lower bushing with grease.

2. If hoses are attached to the breaker, install plugs on the hose ends. If hoses are removed from the breaker, install plugs on the hose ends and install plugs in the breaker "IN" and "OUT" ports.

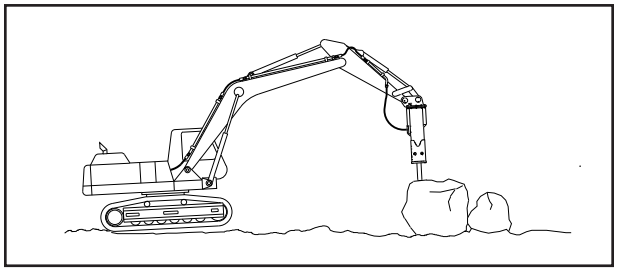
3. Store the breaker in a vertical position. Do not store the breaker horizontally for extended periods.

Operation

Preparation For Use

Read the section in this manual titled "PREPARATION FOR USE" before operating a breaker. Failure to follow the preparation instructions can result in severe damage to the breaker and excavator and void the warranties of both.

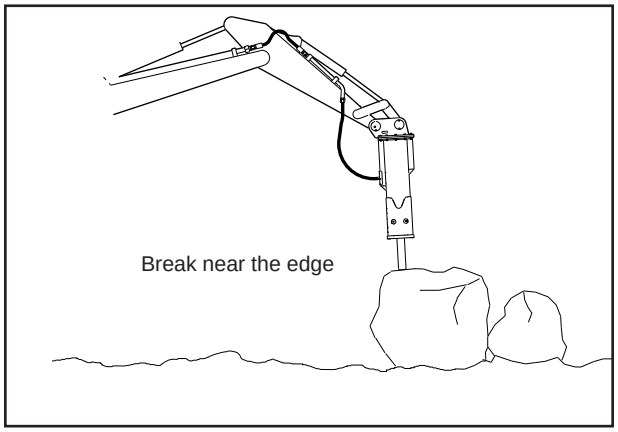
Positioning the Excavator



With the breaker tool in place on the material to be worked, position the excavator so the dipper is at approximately 45° and the breaker is almost vertical. The tracks of the excavator should be in line with booms and the breaker.

Positioning The Breaker Tool On The Work Material

Position the tool bit near the edge of the work material, not in the center or far from the edge. Position the tool 6-18 inches (depending on the material) from the edge. Breaking off smaller pieces of rock or concrete usually accomplishes more than trying to break larger pieces.

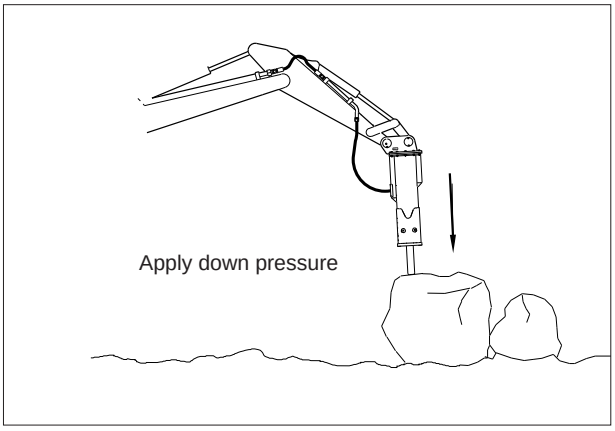


On flat material or rock, the breaker should be vertical or “curled” back slightly to direct the impact force downward and toward the backhoe. This directs the force back toward the edge of the work material. If the tool is positioned in the center of the work, or too far from the edge, the energy will be absorbed into the material without cracking it. Do not run the breaker longer than 15-20 seconds. If breakout does not occur within this time, move the breaker to another position.

On flat material such as concrete runways, starting to break in the middle of the material may cause vibrations to be tramsmitted throughout the breaker and excavator because the material has no place to break to. Always try to start at a point which will permit the material to break out.

Maintain Down Pressure

Maintaining hard contact with the surface of the material to be broken in addition to maintaining adequate "down force" is very important. Always keep "down pressure" or "down force" on the point of the breaker by lifting the wheels, tracks, or stabilizers slightly above the ground. This method takes the "slack" out of the bracket and boom pivots, and reduces the impact on the pivots in the boom.



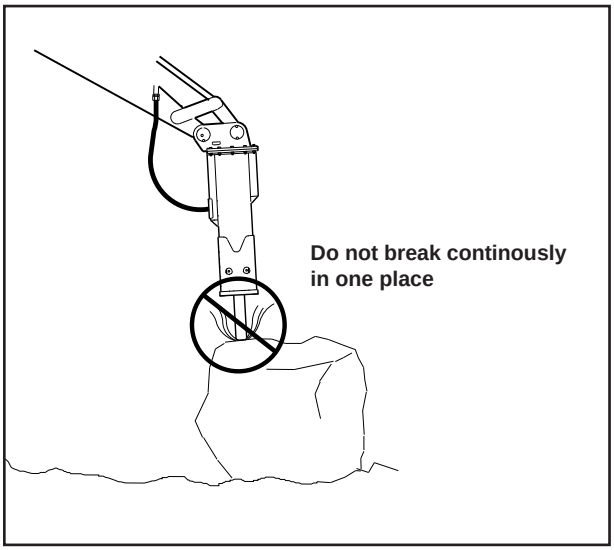
The operator needs to be constantly aware of the amount of down pressure being applied and be able to adjust it if necessary. Not enough down pressure results in low production and accelerates wear and tear on the equipment. Too much down pressure may cause the breaker housing to violently crash into the broken material when "breakthrough" occurs.

In any breaking job, the operator should make every effort to **“follow”** the breaker with “down-pressure” as the machine breaks farther into the material. The breaker should be stopped as soon as “break-thru” occurs or if it is apparent that good solid blows are not occuring.

Breaking

The operator should note the sound of the blow when the breaker is running. With experience, the operator will be able to tell the difference between a good solid blow and a hollow sounding blow. A hollow blow means that solid blows are not occuring and the breaker should be repositioned.

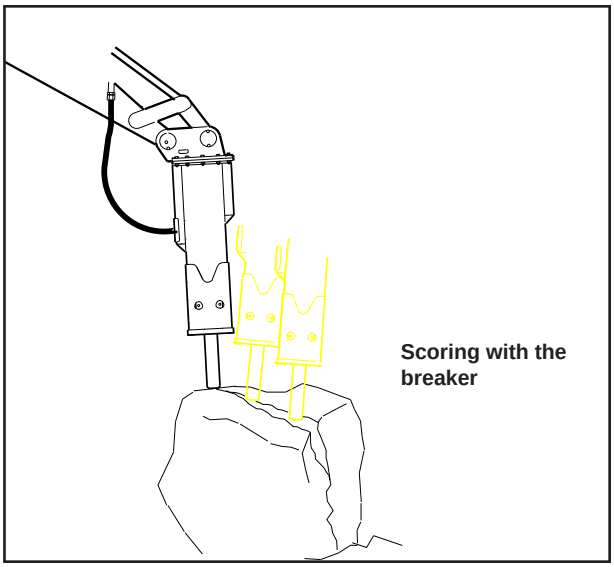
Continuous tool penetration usually does not do much good. If the material does not break with 3 to 4 inches of tool penetration, it usually won't break with full penetration. The time used for additional penetration could be better used to strike blows in another place.



NOTICE

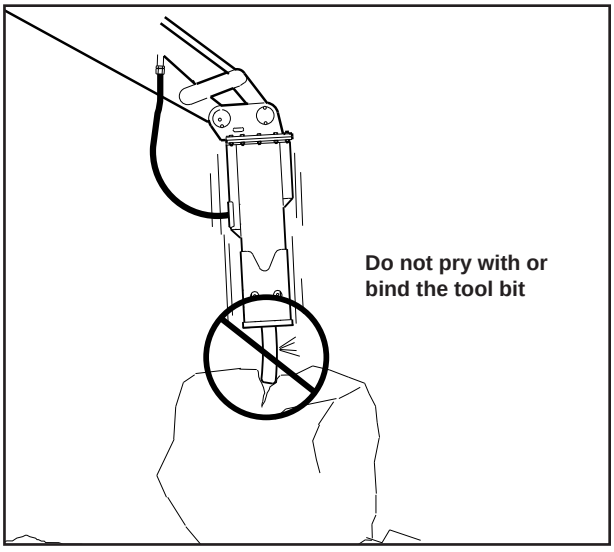
Continuous breaking in the same area for lengthly periods will create excessive temperatures at the tip of the tool bit resulting in loss of temper (hardness) of the bit and causing mushrooming of the tip of the bit, and may lead to failure of the bit.

Many materials do not respond well to continued hammering in one place. The breaker tool should be repositioned on the work each time the tool penetrates but does not crack the material.



Use a "scoring" method of breaking when cracking the material becomes difficult. This technique involves striking the rock or concrete at several places along a line where you want the crack to occur. Most materials break sooner when struck several places along a line than when struck repeatedly in one location. On each line, the breaker tool should be continually repositioned. Practice determines the best length of time to stay in one spot (15-20 seconds) and how far to move the breaker tool.

Breaker tool binding can cause erratic breaker operation and premature wear on the tool shank. Breaker tool binding is caused by failure to direct the down force in the direction of the tool bit.



Excessive side force cocks the tool in its bore, prevents proper movement and causes premature tool

shank and bushing wear. Since the breaker tool bit must be pushed up into the breaker to operate, a binding tool prevents the breaker from operating correctly. Binding also causes the tool bit and tool bushings to seize and often results in breakage of one or more breaker components. Always direct the down pressure force in a line toward the point of tool contact with the work.

NOTICE

DO NOT pry with the tool bit and breaker.

Prying will damage the tool bit and associated breaker components.

Moving rocks with the tool bit is another method of binding the tool bit. This practice should be avoided as it may cause tool bit failure.

Rebar reinforced concrete introduces the problem of concrete chunks being held together by the rebar after the concrete has been broken. The best approach to this problem is to use a chisel point tool which permits cutting the rebar with the breaker. Another method is to periodically cut the rebar with an oxy-acetalene torch.

"Blank Firing"

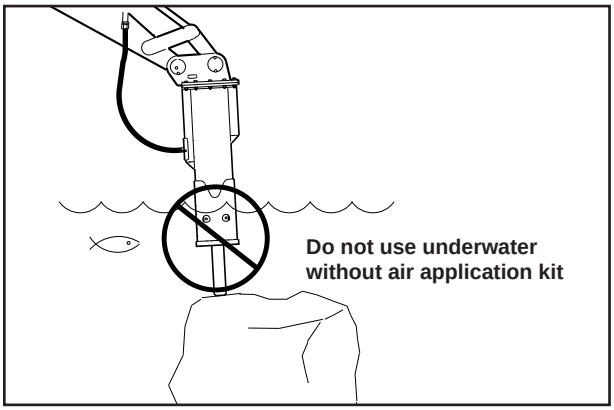
To understand "Blank Firing", the operator needs to be aware that if the tool bit is not pressed against the work suface the tool bit will drop down in the lower body cavity far enough so that the piston cannot strike it. "Blank Firing" occurs whenever the breaker is operating and the piston is not able to strike the tool bit solidly or not strike the tool bit at all. "Blank Firing" accelerates wear and tear on breaker and excavator components and may result in failure of one or more components. Excessive "Blank Firing" may be considered equipment abuse and may result in voiding warranties.

Break-through or difficult surface contact results in "Blank Firing" when the material being broken fractures and the tool bit is no longer in "hard contact" with the material but is still pushed high enough in the lower body cavity so that the piston can stike it. In this condition, the piston strikes the tool bit and the tool bit, in turn, is driven against the retaining pins because it is not in sufficient contact with the material to be broken. The energy is absorbed by the retaining pins, other breaker components, and the excavator boom components. "Blank Firing" of this type can be experienced in trench work where obtaining striking contact with the work surface is difficult or the wrong tool bit is used, or in flat rock work where the operator fails to stop operation of the breaker when slippage, fracturing or material break-through occurs.

"Blank Firing" as a result of operator error occurs when the tool bit is not in contact with the work surface to be broken and is allowed to drop down in the lower body cavity so that the piston is not able to strike it. Instead, the downward movement of the piston will be stopped by an internal oil cushion located at the bottom of the piston's stroke and the energy of the piston will be absorbed by breaker components and excavator boom components. "Blank Firing" of this type can be experienced when the operator fails to stop operation of the breaker when the material fractures or material break-through occurs, or during re-positioning of the breaker.

While "blank firing" cannot always be avoided, it can be kept to a minimum by avoiding the above conditions as much as possible.

Underwater Use



NOTICE

UNDERWATER USE

No part of the breaker may be submerged in water. Underwater usage of the breaker will cause internal damage to the breaker. Consult Stanley for modifications if you have an underwater requirement.

Daily Maintenance Checks

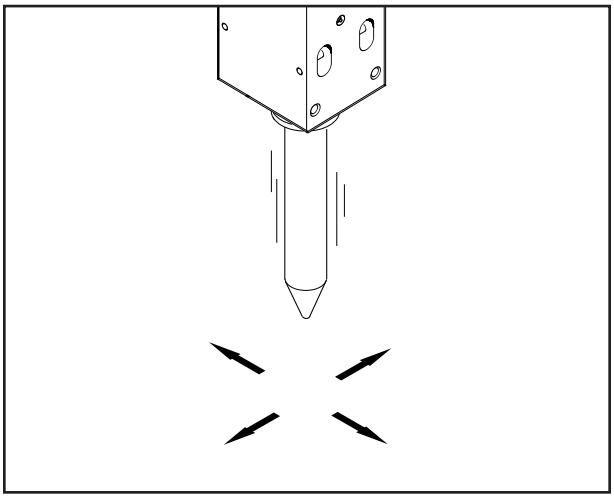
Each Day

- Check for loose or missing fasteners. Tighten or replace as needed.
- Inspect tool retaining pins and pockets for wear.
- Check for hydraulic leaks at all fittings and hoses. Replace any defective hoses.
- Apply grease to the grease fitting in the lower body each morning. Grease as needed throughout the work day.
- Inspect the lower bushing, tool retainer, tool retainer pins. Reseat or replace if necessary.

Thrust Bushing & Lower Bushing

Inspect the thrust bushing, and lower bushing for excessive galling and metal pickup on the tool bit. Also check for cracks. If cracks are present, the parts must be replaced.

The extent of wear of the thrust bushing and lower bushing and the tool bit can be checked by moving the tool bit back and forth and measuring the gap between the tool bit and the lower bushing. If the gap is more than 0.354 in./9 mm the thrust bushing, lower bushing, and the tool bit should be replaced. A gap in excess of 0.354 in./9 mm will cause damage to the piston. Do not just replace the tool bit or the lower bushing individually as this will result in premature wear of the replaced component. It is recommended to replace **all** worn components.



MOVE THE TOOL BIT BACK & FORTH & MEASURE THE GAP BETWEEN TOOL BIT & LOWER BUSHING

Periodic Maintenance Checks

- Periodically check wear pad clearance by moving the power cell back and forth. Set the breaker on the bit and then use the excavator to move it from side to side. If the deflection exceeds 1.5 inches, replace the wear pads.

Proper Use and Care of Tool Bits

Tool bits are made and heat treated to specification.

Tool bits, however well made, are wear parts, and are used in the most destructive applications. Even when the hydraulic breaker is used properly, and the operator is an experienced one, a tool bit may become damaged. When a tool bit has been damaged, it is useful to determine the cause immediately in order to prevent the damage from occurring again.

All Stanley tool bits are machined and hardened for maximum performance. Care must be taken to maintain the tools original condition for optimum productivity and life expectancy. It is not uncommon for an operator who is unfamiliar with using a hammer to break a point. This is part of the learning experience.

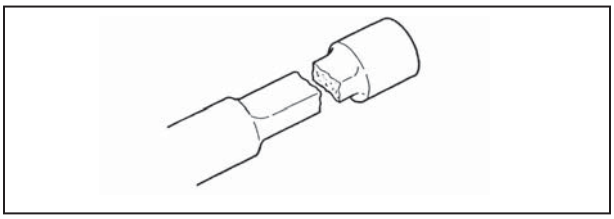
Listed below are several methods to determine tool failure and will quickly aid in warranty determination.

Tool Failure Not Covered Under Warranty

Blank Firing or Free Running

This occurs when the tool is not in proper contact with the work, thus causing the energy produced by the hammer to be concentrated on the tool retainer(s) and the retainer slot(s) on the tool itself. Caution should be used to prevent the hammer from sliding off slanted surfaces or when breaking through thin material.

The illustration below is typical of the kind of breakage that occurs from excessive blank firing.



Worn-out Front Bushing(s) or Retainer pin(s)

Worn-out front bushing(s) will cause the tool to become misaligned inside the hammer. This misalignment will cause uneven contact between the piston and tool, thus causing stress to concentrate on one particular area of the tool. This can also cause the tool to bind inside the hammer. Call your dealer for acceptable wear allowances.

Worn-out retainer pin(s) will cause uneven loading on the pin(s) themselves, causing failure of the tool or retainer pin(s). This will also cause excessive wear to the front bushing(s).

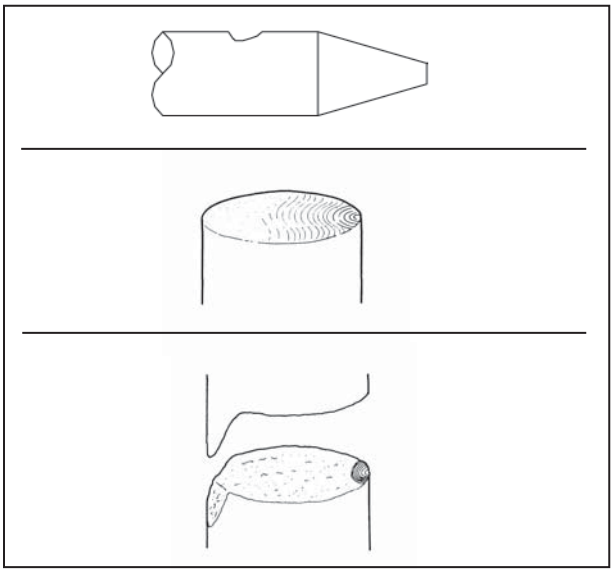
Metal-to-Metal Contact

Extreme caution should be used to avoid scratches or gouges on the surface of the tool. These areas create a stress concentration Metal-to-Metal Contact point, thus weakening the tool.

Another form of metal-to-metal contact is galling, which usually occurs from the lack of lubrication. Special care should be taken to keep the tool shank lubricated ever two (2) to three (3) hours.

Steel failures that were caused by surface damage take two main forms. The simplest form is caused by deep scratches on working steel surface. The broken surface has a shell pattern around the starting point of failure, similar to the one in the fatigue failure. The other parts of the broken surface are brittle. These failures work slowly through the steel until it suddenly parts completely.

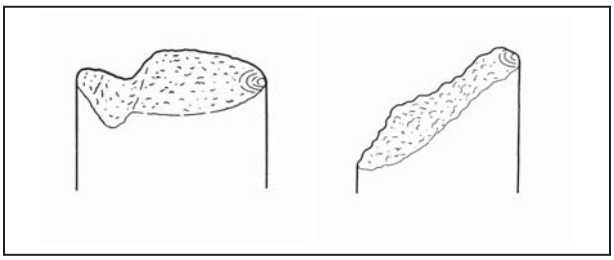
The second form of failure caused by surface damage occurs when there are deep scratches on working steel surface and there was also excessive bending stress. The broken surface also shows the shell pattern, but the other parts of the broken surface are brittle and usually have a “lip” like that in a stress failure.



Proper Use and Care of Tool Bits

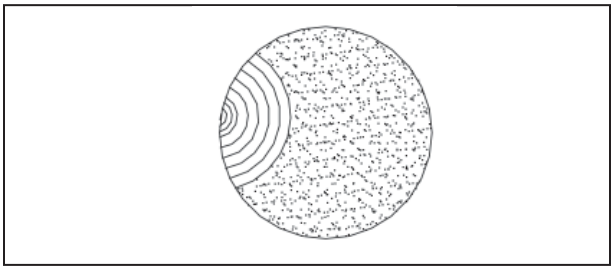
In its most extreme forms, the combination of surface damage and severe bending can quickly break even the best working steels.

The illustrations below show examples of severe stress breaks.

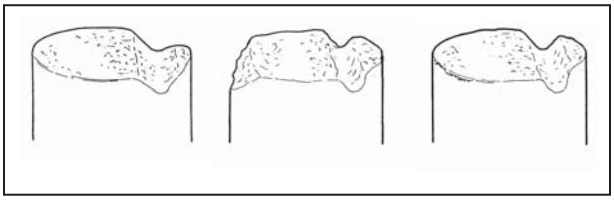


Prying

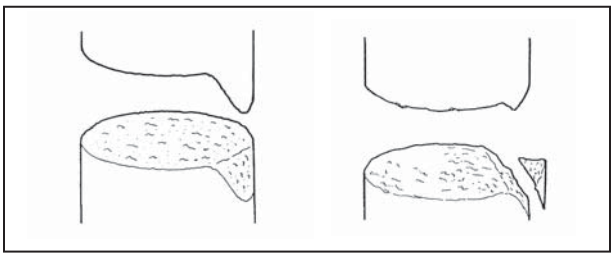
This is the most common cause of tool failure. Even when there is no surface damage, the stress from prying can easily break a working steel. This kind of failure generally results from any type of side pressure such as an incorrect breaking angle or from using the tool to reposition material. The tool should not be used as a pivot point when repositioning the carrier. The power generated by the carrier will far exceed the strength of the tool.



Similar failures can also occur when the steel is used with extreme down pressure, and the steel repeatedly slips off the work at an angle, or the material, itself moves from under the working steel.



As the illustration below shows, fatigue failures take many forms, but they all exhibit similar features. Generally, the broken surface is brittle and has a “lip” like that in the bending failure, even though, in some cases, the lip has been broken.



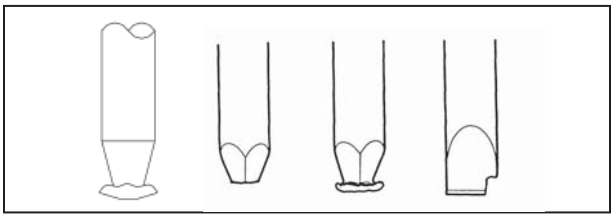
Corrosion

Tools should be greased and stored out of the weather. Corrosion tends to accelerate the fatigue fractures of the tool.

Mushrooming

Driving the tool into a hard material for a long period of time
generates an intense heat, indicated by a blue tone just above the point. This will soften the steel and cause the point to fold over or mushroom the end of the tool. Avoid hammering in one location for too long. If material does not break after a short period (approximately 15 to 20 seconds), reposition the tool.

If the overheated steel is suddenly cooled by being dipped in standing water, for example, the metal will harden and become brittle. These are some examples of failure caused by temper changes occurring on the job.



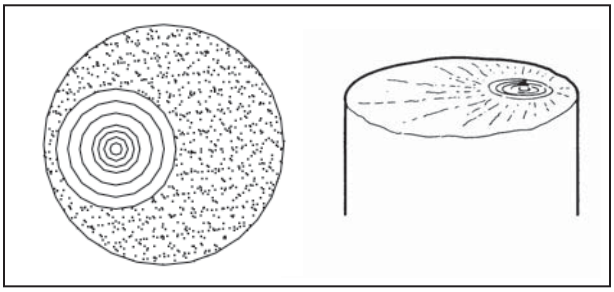
TOOL FAILURE COVERED UNDER WARRANTY

Internal Material Flaw

This failure occurs when a foreign material is rolled into the steel during the manufacturing process, causing an imperfection in the internal material flaw grain. The result is an inherent weakness in the tool shank and eventual breakage.

The fatigue failure is started by the defects within the tool bit. The broken surface exhibits a shell pattern around the starting point of failure, like that in the fatigue failure. The other parts of the broken surface are brittle.

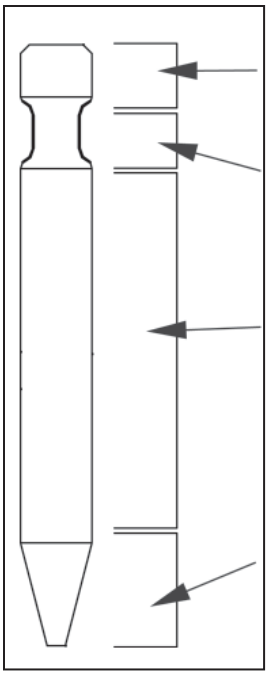
This is the only kind of tool bit failure that is always covered under warranty.



As a rule, working steel failures can be diagnosed by looking at the break itself, and at the place on the steel where the break occurred. Discoloration, like “rainbow” effects or blue bands, is the result of extreme heat.

Look for surface cracks, galling, or gouge marks. Breaks that start as surface damage have a “sea shell” pattern, with the damaged spot at the center. A large “sea shell” indicates a slow growing break; a small one indicates one compounded by side stress.

Stress failures start small, and spread into the center of the steel. In a stress failure, the coarser the grain, the greater the stress was, and the more rapid was the failure.



• Failures in this area are usually the result of blank firing, worn bushing(s), worn retainer pin(s) or the lack of lubrication.

• Failures in this area are usually the result of worn retainer pin(s) or blank firing.

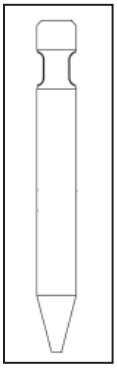
• Failures in this area are usually the result of prying, metal-to-metal contact or corrosion. Prying failures often exhibit a shell-like formation near the edge of the steel diameter where the break began, and a “tail” opposite that where the remaining steel bent and tore.

• Failures in this area are usually the result of heat build-up, mushrooming, or improper contact with the work.

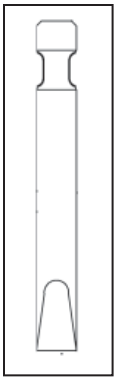
Proper Use and Care of Tool Bits

Stanley Breakers are available with several different types of tool bits. The most common are the moil, chisel and the blunt. Each of these working steels has its own purpose as described below:

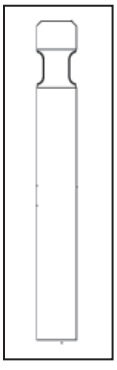
To obtain the maximum production from the breaker, it is important to select the proper working steel. Consult your Stanley representative for assistance in selecting the proper working steel for your application.



MOIL
This is by far the most popular working steel. It is a general purpose point used to break anything from concrete to hard rock. Its pencil-type point is used to fracture the material. The tool is best where
penetration speed is important.



CHISEL
This style of point is used generally used for trench work, where a controlled break is required, and for rock breaking on materials with a definite line of
cleavage. A chisel bit also works well in softer concretes where a moil might penetrate quickly, but not cause a fracture line.



BLUNT
This flat type of point is used to break softer material such as coal or shale. A moil or chisel will tend to punch holes in this type of material, where a flat blunt will shatter the material. It is also useful when breaking irregularly shaped material where its broad tip makes it easier to position.

Troubleshooting

If symptoms of poor performance develop, the following chart can be used as a guide to correct the problem.

When diagnosing faults in operation of the breaker, always check that the hydraulic power source is supplying the correct hydraulic flow and pressure to the breaker as listed in the table. Use a flowmeter known to be accurate. Check the flow with the hydraulic oil temperature at least 180°F/82°C. An approved test procedure is available in the complete service manual, P/N 41893.

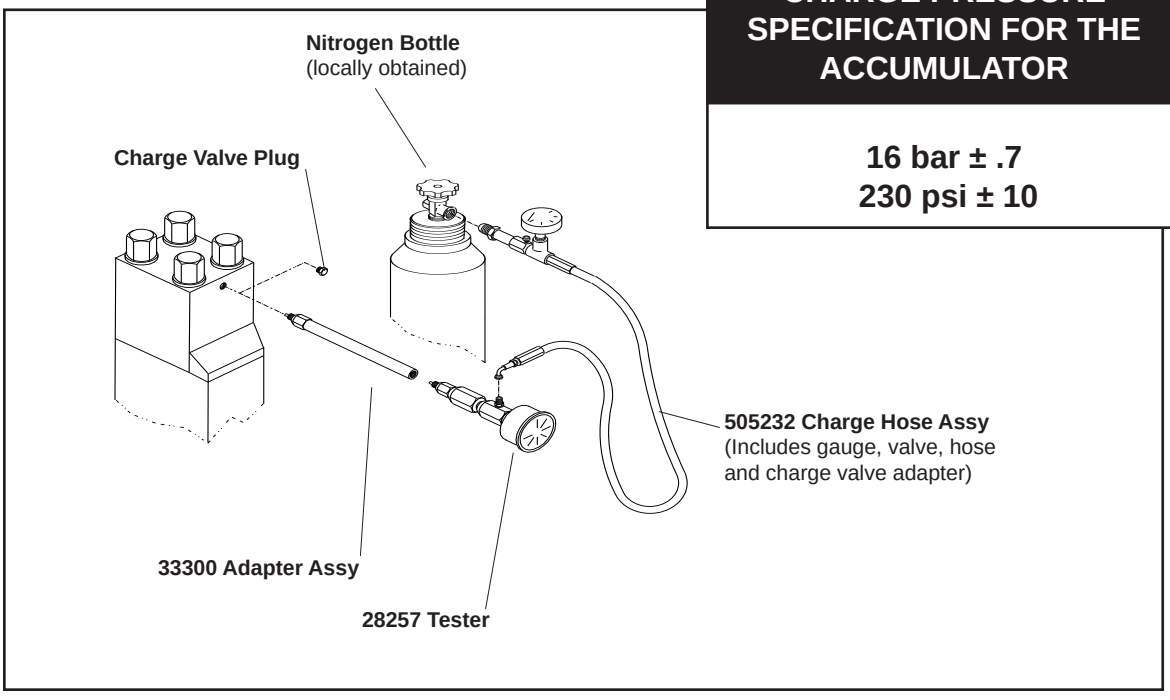
SYMPTOM	CAUSE	CORRECTION
Breaker will not fire.	Low hydraulic oil level.	Fill reservoir.
	No flow to breaker.	Have hydraulic circuit tested by authorized dealer/distributor per approved procedure.
	Main relief set too low.	
	Internal damage.	Have unit serviced by authorized dealer/distributor.
Breaker runs slowly.	Low hydraulic flow.	Have hydraulic circuit tested by authorized dealer/distributor per approved procedure
	Excessive heat build up.	
	Excessive nitrogen pressure.	Have unit serviced by authorized dealer/distributor.
	Internal leakage.	
Breaker runs erratically.	Low or excessive back pressure.	Have carrier serviced by authorized dealer/distributor.
	Damaged switch or connection.	
	Main relief set too low.	
	Internal damage.	Have unit serviced by authorized dealer/distributor.
	Tool binding.	Add grease to tool shank. Do not pry while operating.
	Low hydraulic oil level.	Fill reservoir.
Breaker runs but at reduced power.	Low accumulator charge.	Have unit serviced by authorized dealer/distributor.
	Excessive back pressure.	
	Main relief set too low.	
Breaker leaks oil around tool bit and tool bushing.	Lower seals failed.	Have unit serviced by authorized dealer/distributor.
Hydraulic system overheats.	Main relief set too low.	Have carrier serviced by authorized dealer/distributor.
	Insufficient cooling capability in hydraulic circuit.	
	Line/hose size too small.	
	Excessive back pressure.	

Nitrogen Charging the Main Accumulator

The tools required to charge the breaker are shown below. The 33464 adapter and 33300 adapter assembly can be obtained individually or in a kit (p/n 33465). Note that the adapter and adapter assembly are designed to be used with the 505232 charge hose assy and the 28257 accumulator tester which are used with other Stanley model breakers. When charging the breaker, make sure the tools and charge valve are clean. Dirt can contaminate the charge valve and cause leakage.

1. Remove the protective plug from the accumulator charge valve.
2. Screw the adapter assembly (p/n 33300) onto the tester (p/n 28257) and tighten it.
3. Hold the chuck end of the tester and turn the gauge fully counter clockwise to ensure the plunger inside the chuck is completely retracted.
4. Screw the tester into the breaker charge valve by turning the chuck. Do not use the gauge for turning as this will advance the plunger in the chuck. Tighten the chuck lightly against the breaker charge valve.
5. Turn the gauge clockwise to advance the plunger until a pressure is indicated on the gauge. Do not overtighten.
6. If the pressure is correct, unscrew the gauge to retract the plunger. Then, loosen and remove the tester from the charge valve. If the pressure is not correct, proceed to step 7. NOTE: When disengaging the tester a "POP" of nitrogen is normal.
7. Connect the charge hose assembly to the charging valve on the tester. Make sure the valve on the charge hose assembly is closed. Open the valve on the nitrogen bottle.
8. Very slowly open the valve on the charge hose assembly and slowly meter the nitrogen into the breaker charge valve until the tester reads the correct charge pressure.
9. When the correct pressure is obtained, close the valve on the charge hose assembly and on the nitrogen bottle. Unscrew the gauge to retract the plunger. Loosen and remove the tester from the charge valve. Before replacing the protective plug, inspect the plug o-ring. If damaged or deformed, replace the plug. Apply Loctite™ 242 to plug and cap.

CHARGE PRESSURE SPECIFICATION FOR THE ACCUMULATOR
16 bar ± .7 **230 psi ± 10**



Nitrogen Charging the Side Accumulator

The tools required to charge the breaker are shown below. The 33464 adapter and 33300 adapter assembly can be obtained individually or in a kit (p/n 33465). Note that the adapter and adapter assembly are designed to be used with the 505232 charge hose assy and the 28257 accumulator tester which are used with other Stanley model breakers. When charging the breaker, make sure the tools and charge valve are clean. Dirt can contaminate the charge valve and cause leakage.

1. Remove the protective plug (58) from the accumulator cover (51).

2. Screw the adapter assembly (p/n 33464) onto the tester (p/n 28257) and tighten it.

3. Hold the chuck end of the tester and turn the gauge fully clockwise until the gauge stops turning. Do not tighten.

4. Screw the tester into the threaded hole, in place of the removed protective plug (58), by turning the chuck. Do not use the gauge for turning. Tighten the chuck lightly to ensure a good seal.

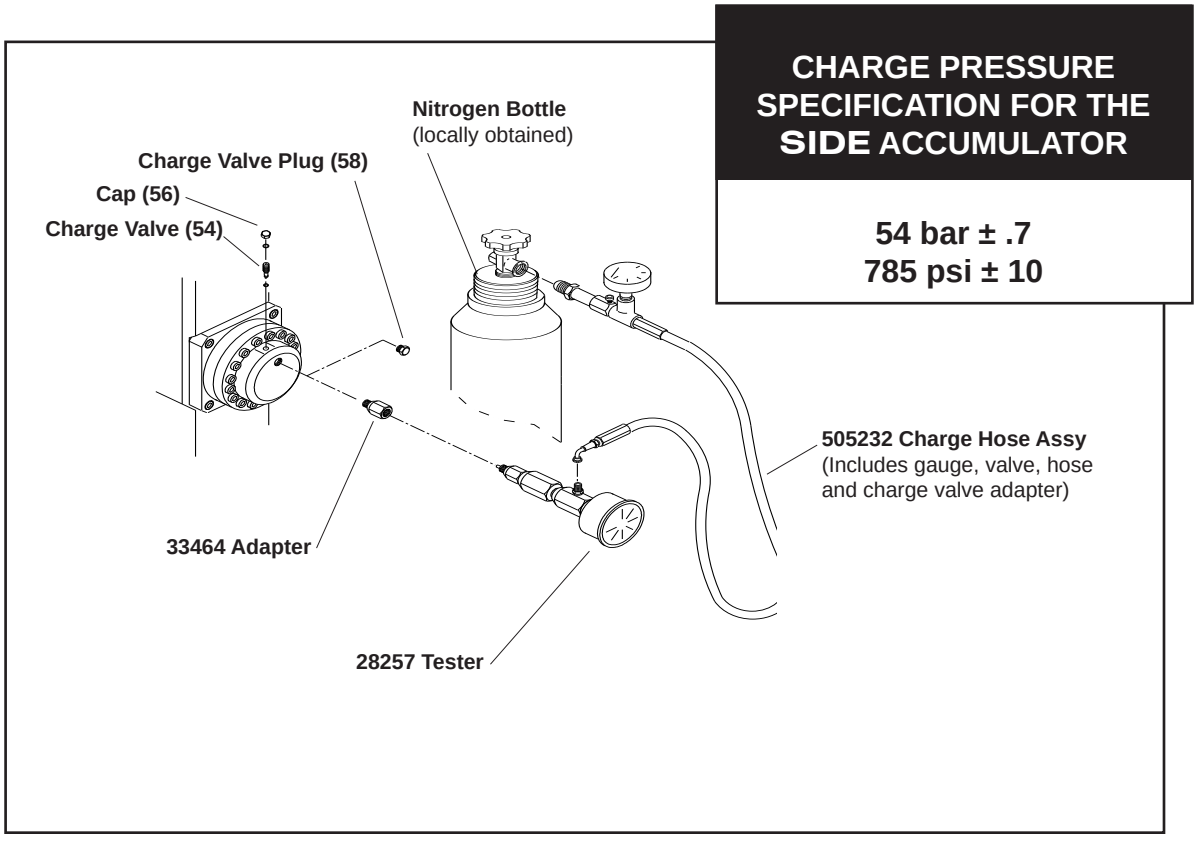
5. Remove the cap (56) and then turn the charge valve (54) 1 to 2 turns counter clockwise until a pressure is indicated on the gauge.

6. If the pressure is correct, turn the charge valve (54) clockwise until it stops and then tighten slightly. Unscrew the tester and reinstall the plug (58) and cap (56). If the pressure is not correct, proceed to step 7.

7. Connect the charge hose assembly to the charging valve on the tester. Make sure the valve on the charge hose assembly is closed. Open the valve on the nitrogen bottle.

8. Very slowly open the valve on the charge hose assembly and slowly meter the nitrogen into the breaker charge valve until the tester reads the correct charge pressure.

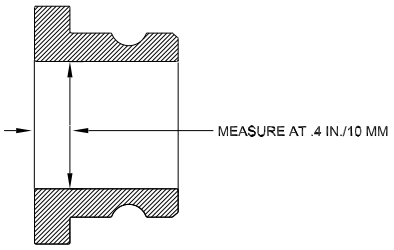
9. When the correct pressure is obtained, close the valve on the charge hose assembly and on the nitrogen bottle. Turn the charge valve (54) clockwise until it stops and then tighten slightly. Unscrew and remove the charge hose assembly. Unscrew and remove the tester. Apply Loctite™ 242 and reinstall the plug (58) and cap (56).



Wear Tolerances

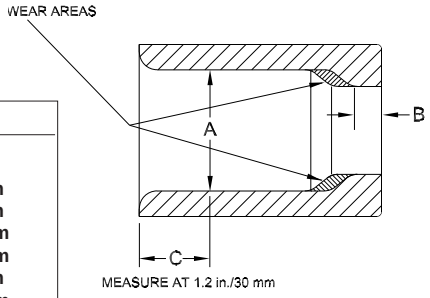
LOWER BUSHING

	NEW Inside Dia.	REJECT Inside Dia.
MB20EXS	**3.4 in./85 mm**	**3.56 in./89 mm**
MB30EXS	**4 in./100 mm**	**4.2 in./105 mm**
MB40EXS	**5 in./125 mm**	**5.2 in./130 mm**
MB50EXS	**5.6 in./140 mm**	**5.84 in./146 mm**
MB60EXS	**6 in./150 mm**	**6.24 in./156 mm**
MB70EXS	**6.2 in./155 mm**	**6.44 in./161 mm**
MB80EXS	**6.6 in./165 mm**	**6.84 in./171 mm**
MB100EXS	**7 in./175 mm**	**7.24 in./181 mm**



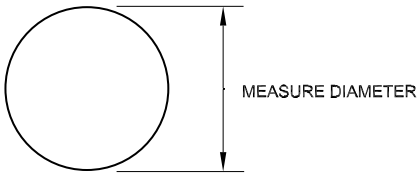
UPPER BUSHING

	NEW (**A**) Inside Dia.	REJECT (**A**) Inside Dia.	NEW (**B**) Depth	REJECT (**B**) Depth
MB20EXS	**3.4 in./85 mm**	**3.56 in./89 mm**	**.96 in./24 mm**	**.84 in./21 mm**
MB30EXS	**4 in./100mm**	**4.2 in./105 mm**	**.68 in./17 mm**	**.56 in./14 mm**
MB40EXS	**5 in./125 mm**	**5.2 in./130 mm**	**1.24 in./31 mm**	**1.12 in./28 mm**
MB50EXS	**5.6 in./140 mm**	**5.84 in./146 mm**	**1.6 in./40 mm**	**1.48 in./37 mm**
MB60EXS	**6 in./150 mm**	**6.24 in./156 mm**	**1.52 in./38 mm**	**1.4 in./35 mm**
MB70EXS	**6.2 in./155 mm**	**6.44 in./161 mm**	**1.84 in./46 mm**	**1.72 in./43 mm**
MB80EXS	**6.6 in./165 mm**	**6.84 in./171 mm**	**1.64 in./41 mm**	**1.52 in./38 mm**
MB100EXS	**7 in./175 mm**	**7.24 in./181 mm**	**2.14 in./53.5 mm**	**2.02 in./50.5 mm**



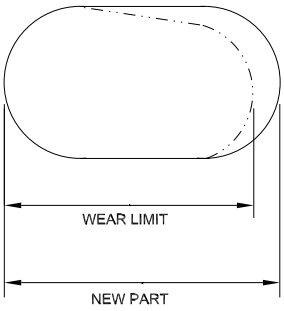
STOP PIN (for upper bushing & tool retainer pin)

	NEW Outside Dia.	REJECT Outside Dia.
MB20EXS	**.7 in./17.5 mm**	**.62 in./15.5 mm**
MB30EXS	**.7 in./17.5 mm**	**.62 in./15.5 mm**
MB40EXS	**.7 in./17.5 mm**	**.62 in./15.5 mm**
MB50EXS	**.8 in./20 mm**	**.72 in./18 mm**
MB60EXS	**.7 in./17.5 mm**	**.62 in./15.5 mm**
MB70EXS	**.7 in./17.5 mm**	**.62 in./15.5 mm**
MB80EXS	**.7 in./17.5 mm**	**.62 in./15.5 mm**
MB100EXS	**1.04 in./26 mm**	**.96 in./24 mm**



TOOL RETAINER PIN

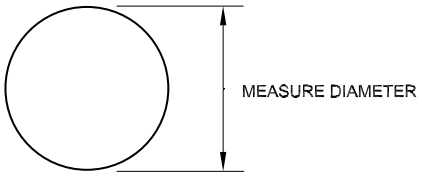
	NEW Length	REJECT Length
MB20EXS	**2.16 in./54 mm**	**2.04 in./51 mm**
MB30EXS	**2.4 in./60 mm**	**2.28 in./57 mm**
MB40EXS	**3 in./75 mm**	**2.88 in./72 mm**
MB50EXS	**3.54 in./88.5 mm**	**3.42 in./85.5 mm**
MB60EXS	**3.76 in./94 mm**	**3.64 in./91 mm**
MB70EXS	**3.84 in./96 mm**	**3.72 in./93 mm**
MB80EXS	**3.84 in./96 mm**	**3.72 in./93 mm**
MB100EXS	**3.96 in./99 mm**	**3.8 in./95 mm**



Wear Tolerances Continued . . .

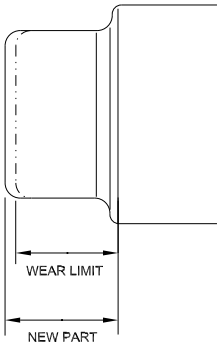
RETAINER PIN (for lower bushing)

	NEW Outside Dia.	REJECT Outside Dia.
MB20EXS	**.8 in./20 mm**	**.72 in./18 mm**
MB30EXS	**1.04 in./26 mm**	**.96 in./24 mm**
MB40EXS	**1.04 in./26 mm**	**.96 in./24 mm**
MB50EXS	**1.2 in./30 mm**	**1.12 in./28 mm**
MB60EXS	**1.04 in./26 mm**	**.96 in./24 mm**
MB70EXS	**1.04 in./26 mm**	**.96 in./24 mm**
MB80EXS	**1.04 in./26 mm**	**.96 in./24 mm**
MB100EXS	**1.44 in./36 mm**	**1.36 in./34 mm**



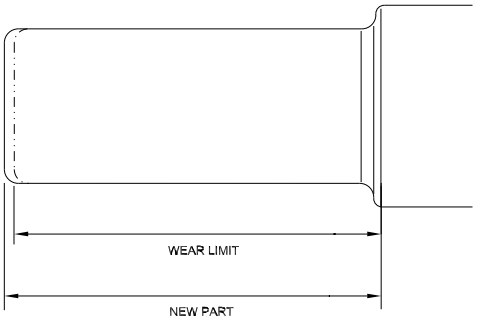
PISTON (MB20EXS thru MB100EXS older style)

	NEW Depth	REJECT Depth
MB20EXS	1.88 in./47 mm	1.84 in./46 mm
MB30EXS	see "newer style"	see "newer style"
MB40EXS	3.64 in./91 mm	3.6 in./90 mm
MB50EXS	1.68 in./42 mm	1.64 in./41 mm
MB60EXS	2.04 in./51 mm	1.96 in./49 mm
MB70EXS	2.16 in./54 mm	2.1 in./52.5 mm
MB80EXS	2.2 in./55 mm	2.14 in./53.5 mm
MB100EXS	3.92 in./98 mm	3.86 in./96.5 mm



PISTON (MB20EXS thru 100EXS new style)

	NEW Depth	REJECT Depth
MB20EXS	11.40 in./285 mm	11.36 in./284 mm
MB30EXS	11 in./275 mm	10.96 in./274 mm
MB40EXS	13.60/340 mm	13.52 in./338 mm
MB50EXS	12.96 in./324 mm	12.88 in./322 mm
MB60EXS	14.28 in./357 mm	14.20 in./355 mm
MB70EXS	15.40 in./385 mm	15.32 in./383 mm
MB80EXS	16.52 in./413 mm	16.44 in./411 mm
MB100EXS	20.72 in./518 mm	20.64 in./516 mm



Item #	Illustration	Description	Apply	ft. lbs. / Nm							
				MB20EXS	MB30EXS	MB40EXS	MB50EXS	MB60EXS	MB70EXS	MB80EXS	MB100EXS
3	Power Cell	Charge Valve	Loctite™ 242	75 / 101	75 / 101	75 / 101	75 / 101	75 / 101	75 / 101	75 / 101	75 / 101
8	Power Cell	O-ring Plug	Loctite™ 242	130 / 176	130 / 176	130 / 176	130 / 176	130 / 176	130 / 176	130 / 176	130 / 176
25	Housing	Capscrew									
28	Power Cell	O-ring Plug	Loctite™ 680	270/366	270/366	270/366	270/366	270/366	270/366	270/366	270/366
28	Housing	Capscrew									
31	Housing	Nut		405/550	405/550	752/1020	752/1020	752/1020	2000/2700	2000/2700	2000/2700
33	Housing	Capscrew		405/550	405/550	752/1020	752/1020	752/1020	2000/2700	2000/2700	2000/2700
35	Power Cell	O-ring Plug	Loctite™ 680	270/366	270/366	270/366	270/366	270/366	270/366	270/366	270/366
39	Power Cell	Tie Rod Nut[1]	Kopr Kote™	723 / 980	1100 / 1491	1500 / 2034	2200 / 2983	3300 / 4474	3300 / 4474	3300 / 4474	3500 / 4745
40	Power Cell	Tie Rod[2]	Kopr-Kote™	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
42	Power Cell	Nut[3]	Kopr-Kote™	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
45	Power Cell	Plug[4]	Loctite™ 242	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
49	Power Cell	Capscrew	Loctite™ 242	N/A	N/A	N/A	470 / 637	470/637	470 / 637	470 / 637	687 / 931
52	Power Cell	Capscrew		N/A	N/A	N/A	325 / 440	325/440	253 / 343	253 / 343	470 / 637
56	Power Cell	O-ring Cap		N/A	N/A	N/A	108 / 146	108 / 146	108 / 146	108 / 146	108 / 146
58	Power Cell	O-ring Cap		N/A	N/A	N/A	108 / 146	108 / 146	108 / 146	108 / 146	108 / 146
75	Power Cell	O-ring Plug	Loctite™ 680	30 / 41	30 / 41	30 / 41	30 / 41	30 / 41	30 / 41	30 / 41	30 / 41
79	Power Cell	Plug		20 / 27	20 / 27	20 / 27	20 / 27	20 / 27	20 / 27	20 / 27	20 / 27

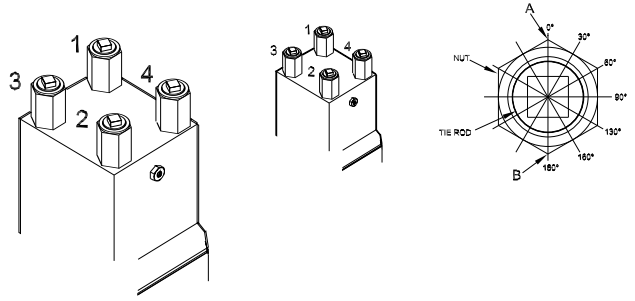
[1] Tighten in a cross pattern

[2] Thread tie rod into nut by hand until it bottoms out in nut.

[3] Pre-torque to 360 ft. lb./488 Nm

[4] Use Loctite™ to prevent plug from falling out. If plug falls out, the housing will fill with grease. The power cell must be removed to repair.

Alternate Tie Rod Torque Procedure



MB15/20EXS 170 - 190 deg

MB30-50EXS 140 - 160 deg

MB60-100EXS 170 - 190 deg

Figure A

In the event a torque multiplier is not available, tie rods may be tightened to the specified torque using the following procedure.

1. Follow the tie rod assembly instructions in this manual.
2. Pre-torque the tie rod nuts (39) to 360 ft. lb. / 488 Nm using a cross pattern as shown in the illustration.
3. Using the illustration as a guide, mark a line on each nut (39) and designate it as (A).
4. Using the illustration as a guide, measure the degrees indicated in the chart, for the specific model breaker, from point (A) to point (B) and make a mark near the nut. For example: If working with an MB50EXS, the degrees listed in figure A for turning the nut to achieve the final torque are listed as 140-160. Make a mark on one point of the nut (39) and designate that point as (A). Measure 140-160 degrees clockwise of point (A) and make a mark next to the nut. Designate that point as (B). Turn the nut clockwise until point (A) and point (B) line up.
5. Continue this procedure in a cross pattern on all 4 nuts.

Item	Unit	Models							
		MB20EXS	MB30EXS	MB40EXS	MB50EXS	MB60EXS	MB70EXS	MB80EXS	MB100EXS
Weight (with tool)	kg	571	861	1297	1798	2071	2632	2833	3991
	lbs	1259	1898	2859	3964	4566	5803	6246	8799
Length (with tool)	mm	1802	1962	2264	2451	2656	2783	2962	3241
	in	71	77	89	96	105	110	117	128
Tool Working Length	mm	466	531	616	732	824	883	923	890
	in	18.3	20.9	24.3	28.8	32.4	34.8	36.3	35
Tool Diameter	mm	84	100	127	140	150	155	163	171
	in	3.3	3.9	5	5.5	5.9	6.1	6.4	6.7
Hydraulic Pressure	bar	172	172	172	186	186	186	186	186
(working)	psi	2500	2500	2500	2700	2700	2700	2700	2700
Flow Range min	lpm	56	76	90	120	140	170	190	208
	gpm	15	20	24	32	37	45	51	55
max	lpm	95	114	130	180	210	240	260	302
	gpm	25	30	35	48	55	63	69	80
System Relief	bar	207	207	207	214	214	214	214	214
(min. cracking)	psi	3000	3000	3000	3100	3100	3100	3100	3100
Sound Power Level (LW)	dBA	112	113.5	115	118	120	123	124	125
Blows Per Minute	min.	360	350	400	400	300	300	280	230
	max.	800	700	600	500	450	400	370	320
Impact Energy Class	J	2034	2712	4068	6780	8136	10170	11526	16272
	ft-lb	1500	2000	3000	5000	6000	7500	8500	12000

Accessories

TOOL BITS

	MB20EXS	MB30EXS	MB40EXS	MB50EXS	MB60EXS	MB70EXS	MB80EXS	MB100EXS
Conical Point	66661	67034	67039	67044	67049	67054	67059	67064
Chisel, Cross Cut	66662	67035	67040	67045	67050	67055	67060	67065
Chisel, Line Cut	66663	67036	67041	67046	67051	67056	67061	67066
Blunt	66664	67037	67042	67047	67052	67057	67062	67067
Moil Point	66665	67038	67043	67048	67053	67058	67063	67068

MISCELLANEOUS

Attaching Kits.....Consult Dealer
Charge Hose Assy (Valve, Hose, for nitrogen tank & charge valve connections).....505232
Adapter Assy (Required to charge main accumulator).....33300
Charge Adapter Kit (Includes 33300 & 33464).....33465
Charge Kit Assembly (Includes 505232 hose, 28257 Tester, and 372047 Box).....34892
Accumulator Tester.....28257
Eyebolt, M12.....32606
Eyebolt, M16.....32607
Eyebolt, M20.....32608
Eyebolt, M24.....52729
Eyebolt, M30.....28547
Operation Manual.....41892
Service Manual.....41893

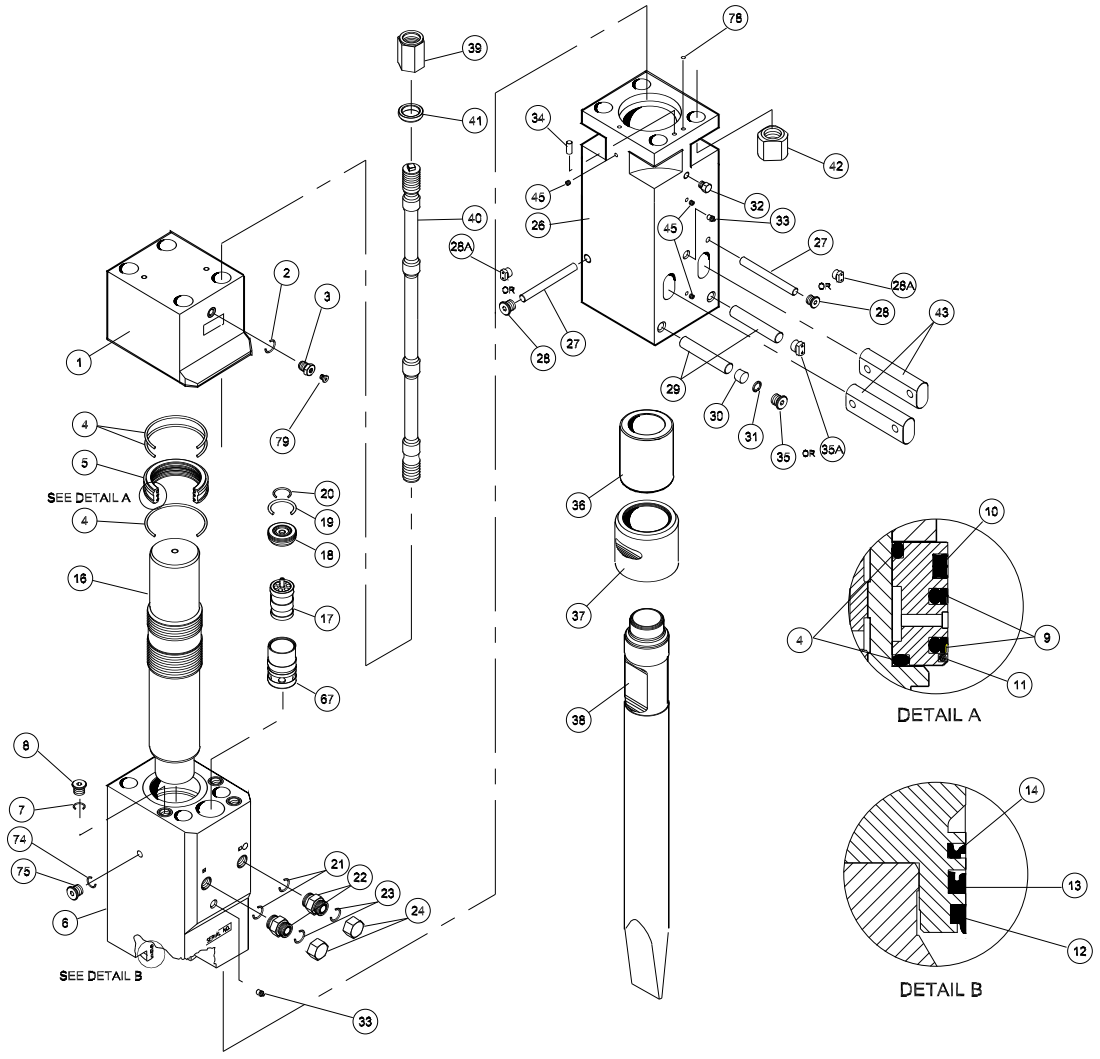
PIN RETAINER KITS

These kits provide for a plate to be installed over the tool bit retainers. These kits are furnished as an accessory for older models MB50EXS thru MB100EXS that do not contain this type of plate retention system. Pin retainer systems are now standard on all MB20EXS thru MB100EXS models as of February 1, 2007.

Each kit contains taps and drills, bushings, plugs, capscrews and washers, a holding strap, a lifting ring, a cover plate, instructions and parts list.

MB50EXS Retention Kit 66998
MB60EXS Retention Kit 66991
MB70EXS Retention Kit 66966
MB80EXS Retention Kit 66966
MB100EXS Retention Kit 66922

NOTE: Weights, dimensions and operating specifications listed on this sheet are subject to change without notice. Where specifications are critical to your application, please consult the factory.



ITEM	P/N	QTY	DESCRIPTION
	41630	**1**	**Complete Power Cell Assy**
1	32830	1	Main Accumulator
2	32562	1	O-ring •
3	34898	1	Charge Valve
4	32586	3	O-ring •
5	32824	1	Seal Retainer
6	32827	1	Cylinder
7	32562	1	O-ring •
8	32829	1	Plug
9	43629	2	Step Seal •
10	32841	1	Gas Seal •
11	-----	-	NOT USED
12	32541	1	Rod Wiper •
13	43630	1	U-packing •
14	-----	-	NOT USED
15	-----	-	NO ITEM
16	32828	1	Piston
17	32833	1	Valve
18	32831	1	Valve Plug
19	32580	1	O-ring •
20	32577	1	O-ring •
21	32569	2	O-ring •

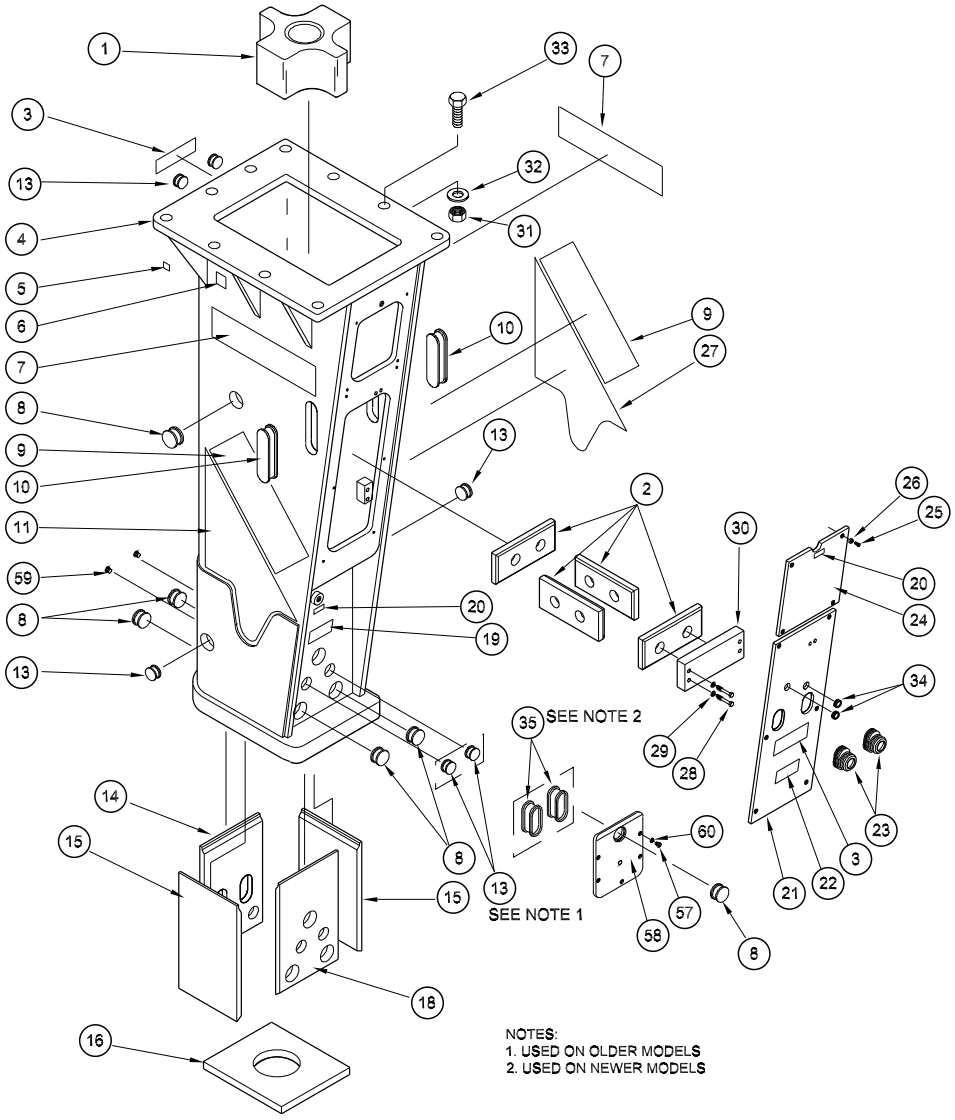
ITEM	P/N	QTY	DESCRIPTION
22	32526	2	Adapter
23	-----	-	NOT USED
24	32528	2	Union Cap
25	-----	-	NO ITEM
26	37182	1	Lower Body
27	32839	1	Stop Pin
28	38382	2	Threaded Plug (older models only)
28A	60732	2	Rubber Plug (newer models only)
29	32838	2	Front Head Pin
30	32857	2	Rubber Plug (older models only)
31	32618	2	Retaining Ring (older models only)
32	32524	1	Plug
33	32523	2	Grease Zerk
34	67217	1	Dowel Pin
35	40387	2	Threaded Plug (older models only)
35A	60733	2	Rubber Plug (newer models only-does not use 30, 31 & 35)
36	36015	1	Thrust Bushing
37	51195	1	Lower Bushing
38	66662	1	Chisel Bit

ITEM	P/N	QTY	DESCRIPTION
	65996	**1**	**TIE ROD KIT (Incld item 39, 40, & 42)**
39	65997	4	Upper Tie Rod Nut (Contains rolled threads. Can be used with all tie rods containing rolled threads. Not inter-changeable with tie rods containing cut threads.) (**Upper and lower tie rod nuts and tie rods containing cut threads are no longer available**.)
40	65998	4	Tie Rod (Contains rolled threads. Can be used with all serial numbers. Must be used with nuts containing rolled threads.) (**Upper and Lower Tie Rod Nuts and Tie Rods containing cut threads are no longer available.**)
41	32835	4	Washer
42	65999	4	Lower Tie Rod Nut, Triangle Style (Not inter-changeable with tie rods containing cut threads.) (**Upper and lower tie rod nuts and tie rods containing cut threads are no longer available.**)
43	37188	2	Rod Pin
44	-----	-	NO ITEM
45	32525	3	Plug
46	-----	-	NO ITEM
47	-----	-	NO ITEM
48	-----	-	NO ITEM
49	-----	-	NO ITEM
50	-----	-	NO ITEM
51	-----	-	NO ITEM
52	-----	-	NO ITEM
53	-----	-	NO ITEM
54	-----	-	NO ITEM
55	-----	-	NO ITEM
56	-----	-	NO ITEM
57	-----	-	NO ITEM
58	-----	-	NO ITEM
59	-----	-	NO ITEM
60	-----	-	NO ITEM
61	-----	-	NO ITEM
62	-----	-	NO ITEM
63	-----	-	NO ITEM
64	-----	-	NO ITEM
65	-----	-	NO ITEM
66	-----	-	NO ITEM
67	32832	1	Valve Sleeve
68	-----	-	NO ITEM
69	-----	-	NO ITEM
70	-----	-	NO ITEM
71	-----	-	NO ITEM
72	-----	-	NO ITEM
73	-----	-	NOT USED
74	32562	1	O-ring •
75	32880	1	Check Valve
76	-----	-	NO ITEM
77	-----	-	NO ITEM
78	60849	1	O-ring •
79	51279	1	Hex Plug (not used on some models)

• Included in seal kit

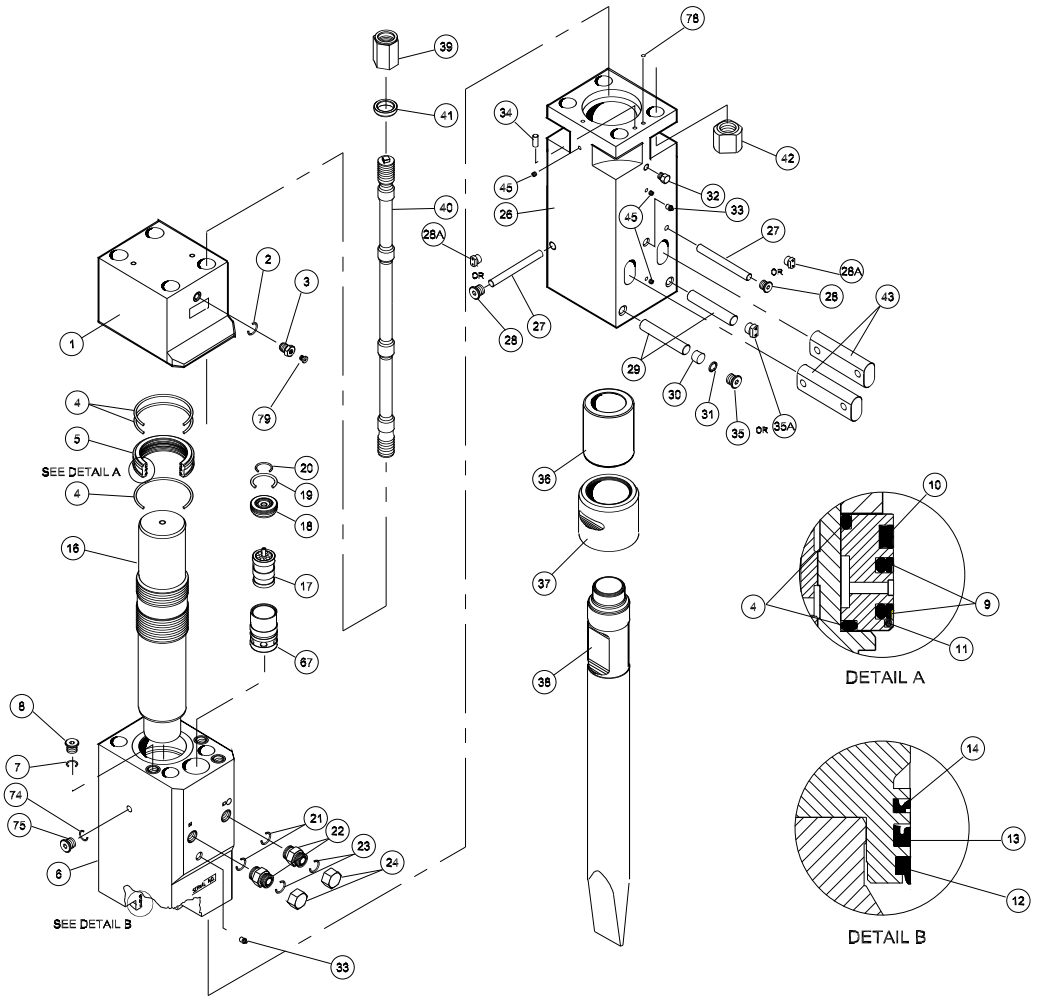
SEAL KIT

33092



ITEM	P/N	QTY	DESCRIPTION
	62273	**1**	**Complete Hsg Assy (incld 2 thru 34)**
1	41885	1	Upper Cushion
2	41872	4	Wear Plate
3	29346	1	Sticker, Composite
4	43627	1	Housing Assy
5	43567	1	Sticker, CIMA
6	41724	1	Name Plate, CE
7	43635	2	Decal, STANLEY
8	41879	5	Sound Plug
9	43636	2	Decal, Model No.
10	67785	2	Sound Plug
11	43637	1	Decal, Stealth, LH
12	41873	2	Sound Plug
13	41878	6	Sound Plug (see note 1)
14	41875	1	Wear Plate
15	41877	2	Wear Plate
16	41874	1	Down Cushion
17	-----	-	NO ITEM
18	41876	1	Wear Plate
19	26068	1	Sticker, Grease
20	41083	2	Sticker, Lift Point

ITEM	P/N	QTY	DESCRIPTION
21	41883	1	Window Cover
22	31445	1	Sticker, Underwater
23	41882	2	Hose Cover
24	41884	1	Window Cover
25	41881	10	Capscrew
26	41880	10	Washer
27	43638	1	Decal, Stealth, RH
28	41870	4	Capscrew
29	41869	4	Washer
30	41871	1	Wear Plate Guide
31	49142	20	Nut
32	49143	20	Washer
33	49144	10	Capscrew
34	41868	2	Plug
35	41873	2	Sound Plug (see note 2) (4 ea used on SN 1206 and lower)
57	67698	5	Capscrew (SN 1207 & higher)
58	67672	1	Plate (SN 1207 & higher)
59	67681	2	Threaded Plug (SN 1207 & higher)
60	67699	5	Washer (SN 1207 & higher)



ITEM	P/N	QTY	DESCRIPTION
	32868	**1**	**Complete Power Cell Assy**
1	32682	1	Main Accumulator
2	32562	1	O-ring •
3	34898	1	Charge Valve
4	32587	3	O-ring •
5	32681	1	Seal Retainer
6	32678	1	Cylinder
7	32563	1	O-ring •
8	32683	1	Plug
9	32534	2	Step Seal •
10	32553	1	Gas Seal •
11	-----	-	NOT USED
12	32542	1	Rod Wiper •
13	32535	1	U-packing •
14	-----	-	NOT USED
15	-----	-	NO ITEM
16	32680	1	Piston
17	32685	1	Valve
18	38011	1	Valve Plug
19	32574	1	O-ring •
20	32578	1	O-ring •
21	32569	2	O-ring •

ITEM	P/N	QTY	DESCRIPTION
22	32526	2	Adapter
23	-----	-	NOT USED
24	32528	2	Union Cap
25	-----	-	NO ITEM
26	37183	1	Lower Body
27	32693	1	Stop Pin
28	38382	2	Threaded Plug (SN 4392 and lower)
28A	60732	2	Rubber Plug (SN 4393 and higher)
29	32690	2	Front Head Pin
30	32699	2	Rubber Plug (SN 4392 and lower)
31	32620	2	Retaining Ring older models only)
32	32524	1	Plug
33	32523	2	Grease Zerk
34	67217	1	Dowel Pin
35	40257	2	Threaded Plug (older models only)
35A	60734	2	Rubber Plug (newer models only-does not use 30, 31 & 35)
36	36016	1	Thrust Bushing
37	38710	1	Lower Bushing
38	67035	1	Chisel Bit

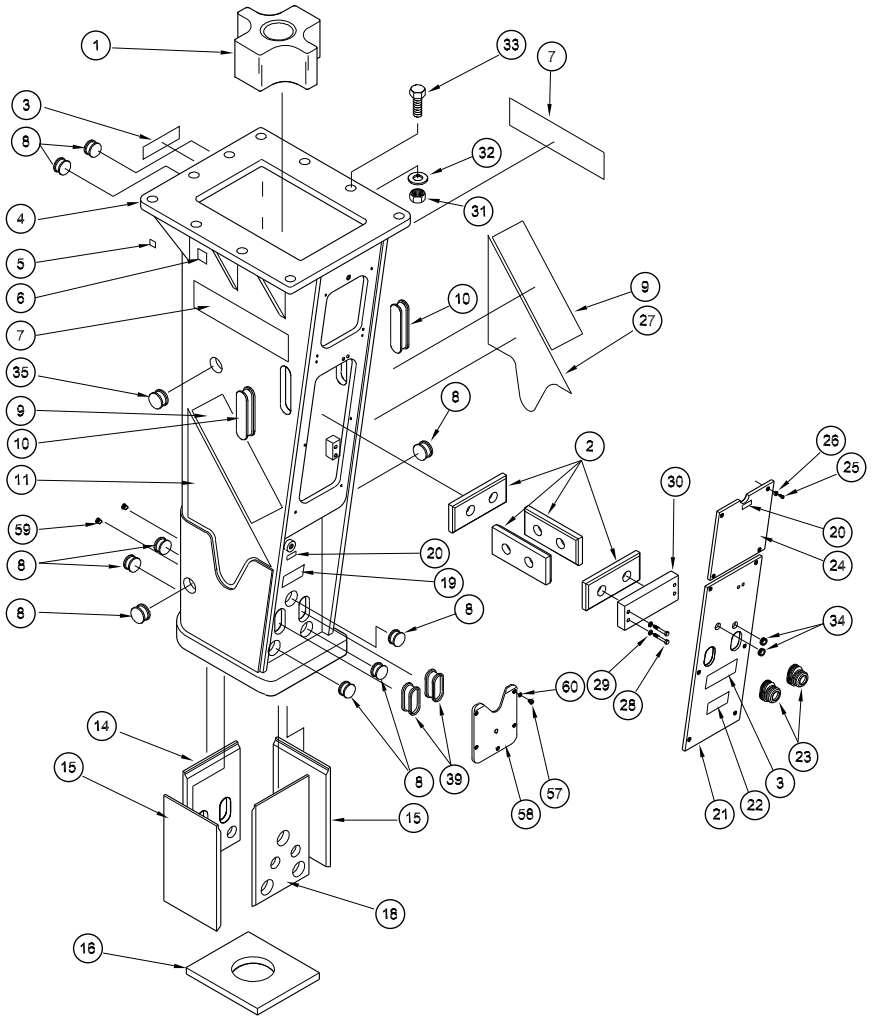
ITEM	P/N	QTY	DESCRIPTION
	66000	**1**	**TIE ROD KIT (Incld item 39, 40, & 42)**
39	66001	4	Upper Tie Rod Nut (Contains rolled threads. Can be used with all tie rods containing rolled threads. Not interchangeable with tie rods containing cut threads. Upper and lower tie rod nuts and tie rods containing cut threads are no longer available.)
40	66002	4	Tie Rod (Contains rolled threads. Can be used with all serial numbers. Must be used with nuts containing rolled threads. Upper and Lower Tie Rod Nuts and Tie Rods containing cut threads are no longer available.)
41	32695	4	Washer
42	66003	4	Lower Tie Rod Nut, Triangle Style (Not interchangeable with tie rods containing cut threads. Upper and lower tie rod nuts and tie rods containing cut threads are no longer available.)
43	37189	2	Rod Pin
44	-----	-	NO ITEM
45	32525	3	Plug
46	-----	-	NO ITEM
47	-----	-	NO ITEM
48	-----	-	NO ITEM
49	-----	-	NO ITEM
50	-----	-	NO ITEM
51	-----	-	NO ITEM
52	-----	-	NO ITEM
53	-----	-	NO ITEM
54	-----	-	NO ITEM
55	-----	-	NO ITEM
56	-----	-	NO ITEM
57	-----	-	NO ITEM
58	-----	-	NO ITEM
59	-----	-	NO ITEM
60	-----	-	NO ITEM
61	-----	-	NO ITEM
62	-----	-	NO ITEM
63	-----	-	NO ITEM
64	-----	-	NO ITEM
65	-----	-	NO ITEM
66	-----	-	NO ITEM
67	38010	1	Valve Sleeve
68	-----	-	NO ITEM
69	-----	-	NO ITEM
70	-----	-	NO ITEM
71	-----	-	NO ITEM
72	-----	-	NO ITEM
73	-----	-	NO ITEM
74	32562	1	O-ring •
75	32880	1	Check Valve
76	-----	-	NOT USED
77	-----	-	NOT USED
78	60849	1	O-ring •
79	51279	1	Hex Plug

• Included in seal kit

SEAL KIT

33095

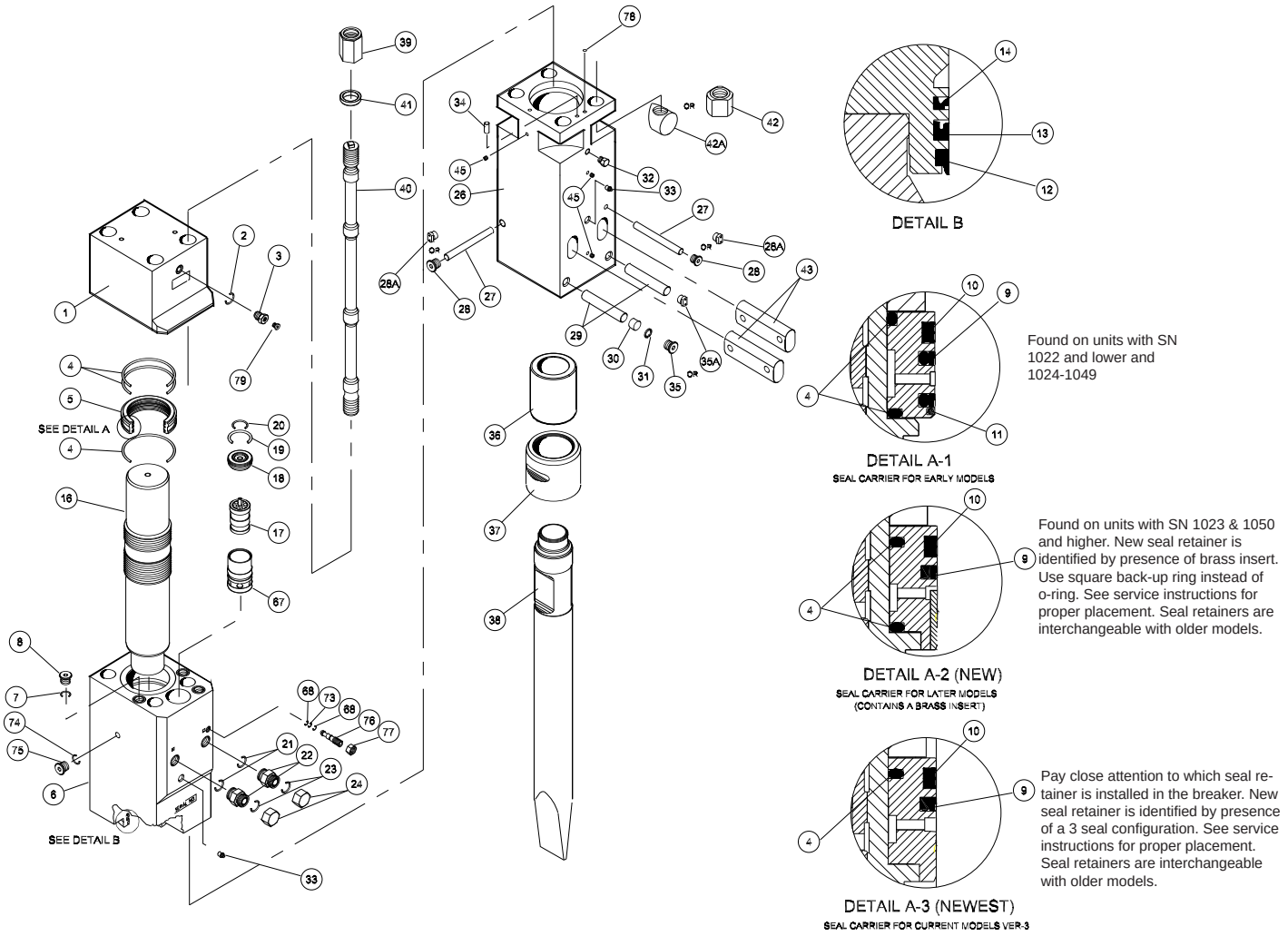
MB30EXS Housing Parts



ITEM	P/N	QTY	DESCRIPTION
	40069	**1**	**Complete Hsg Assy (incl 2 thru 38)**
1	41902	1	Upper Cushion
2	41872	4	Wear Plate
3	29346	1	Sticker, Composite
4	43634	1	Housing Assy
5	43567	1	Sticker, CIMA
6	41725	1	Name Plate, CE
7	43641	2	Decal, STANLEY
8	41879	9	Sound Plug
9	43642	2	Decal, Model No.
10	67785	2	Hose Plug
11	43643	1	Decal, Stealth, LH
12	41899	4	Sound Plug
13	-----	-	NO ITEM
14	41896	1	Wear Plate
15	41898	2	Wear Plate
16	41895	1	Down Cushion
17	-----	-	NO ITEM
18	41897	1	Wear Plate
19	26068	1	Sticker, Grease
20	41083	2	Sticker, Lift Point
21	41900	1	Window Cover

ITEM	P/N	QTY	DESCRIPTION
22	31445	1	Sticker, Underwater
23	41882	2	Hose Cover
24	41901	1	Window Cover
25	41881	10	Capscrew
26	41880	10	Washer
27	43644	1	Decal, Stealth, RH
28	41870	4	Capscrew
29	41869	4	Washer
30	41894	1	Wear Plate Guide
31	49142	20	Nut
32	49143	20	Washer
33	49144	10	Capscrew
34	41868	2	Plug
35	41904	1	Sound Plug
39	41899	2	Sound Plug (4 ea used on SN 6696 & lower)
57	67698	5	Capscrew (SN 6697 & higher except 6701)
58	67673	1	Plate (SN 6697 & higher except 6701)
59	67681	2	Threaded Plug (SN 6697 & higher except 6701)
60	67699	5	Washer (SN 6697 & higher except 6701)

MB40EXS Power Cell Parts



ITEM	P/N	QTY	DESCRIPTION
	33089	**1**	**Complete Power Cell Assy**
1	32709	1	Main Accumulator
2	32562	1	O-ring •
3	34898	1	Charge Valve
4	32588	3	O-ring •
5	32712	1	Seal Retainer (See changes in illustration)
6	32710	1	Cylinder
7	32564	1	O-ring •
8	32714	1	Plug
9	67837	2	Step Seal Set •
10	32554	1	Gas Seal •
11	-----	-	NOT USED
12	32543	1	Rod Wiper •
13	32531	1	U-packing •
14	-----	-	NOT USED
15	-----	-	NO ITEM
16	32713	1	Piston
17	32716	1	Valve
18	32715	1	Valve Plug

ITEM	P/N	QTY	DESCRIPTION
19	32583	1	O-ring •
20	32580	1	O-ring •
21	32569	2	O-ring •
22	32728	2	Adapter
23	32575	2	O-ring •
24	32529	2	Union Cap
25	-----	-	NO ITEM
26	66366	1	Lower Body (SN 851 and higher. Designed for round style tie rod nuts. Replaces lower bodies designed for triangle style tie rod nuts but cannot be used with triangle style tie rod nuts. Lower bodies built prior to SN 851 were designed for triangle style tie rod nuts and are no longer available. See item numbers 39, 40, and 42.)
27	32723	1	Stop Pin
28	38382	2	Threaded Plug (SN 679 and lower)
28A	60732	2	Plug (SN 680, 691 and higher)

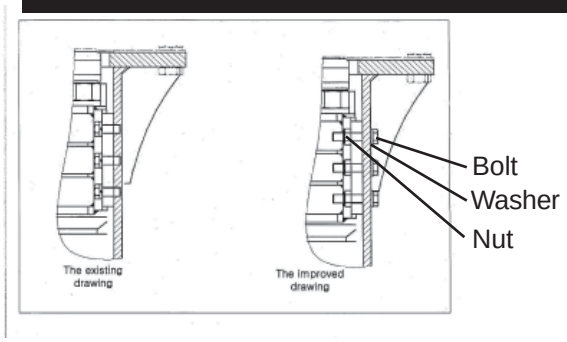
ITEM	P/N	QTY	DESCRIPTION
30	32699	2	Rubber Plug (SN 679 and lower and SN 681 thru 690)
31	32620	2	Retaining Ring (SN 679 and lower and SN 681 thru 690)
32	32524	1	Plug
33	32523	2	Grease Zerk
34	67217	1	Dowel Pin
35	40257	2	Threaded Plug (SN 679 and lower and SN 681 thru 690)
35A	60732	2	Rubber Plug (SN 680, 691 and higher-does not use 30, 31 & 35)
36	36016	1	Thrust Bushing
37	38711	1	Lower Bushing
38	67040	1	Chisel Bit
	65965	**1**	**TIE ROD KIT (THIS KIT INCLUDES ITEM 39 (65966 Upper Tie Rod Nut) ITEM 40 (65967 Tie Rod) & ITEM 42 (65968 Lower Tie Rod Nut-Triangle Style). USED ON SN-850 AND LOWER.**
39	65966	4	Upper Tie Rod Nut (Contains rolled threads. Can be used with all tie rods containing rolled threads. Not interchangeable with tie rods containing cut threads. **Upper and lower tie rod nuts and tie rods containing cut threads are no longer available**.)
40	65967	4	Tie Rod (Contains rolled threads. Can be used with all serial numbers. Must be used with nuts containing rolled threads. **Upper and Lower Tie Rod Nuts and Tie Rods containing cut threads are no longer available**.)
41	32726	4	Washer
42	65968	4	Lower Tie Rod Nut, **Triangle Style** (Contains rolled threads). (SN-850 and lower). Use this nut if replacing a triangle style nut with rolled threads. **Upper and lower tie rod nuts and tie rods containing cut threads are no longer available**.)
42A	66365	4	Lower Tie Rod Nut, **Round Style** (Contains rolled threads (SN 851 and higher. This nut is not included in tie rod kit 65965. Not interchangeable with tie rods containing cut threads.)
43	37190	2	Rod Pin
44	-----	-	NO ITEM
45	32525	3	Plug
46	-----	-	NO ITEM
47	-----	-	NO ITEM
48	-----	-	NO ITEM
49	-----	-	NO ITEM
50	-----	-	NO ITEM
51	-----	-	NO ITEM
52	-----	-	NO ITEM
53	-----	-	NO ITEM
54	-----	-	NO ITEM
55	-----	-	NO ITEM
56	-----	-	NO ITEM
57	-----	-	NO ITEM
58	-----	-	NO ITEM
59	-----	-	NO ITEM
60	-----	-	NO ITEM
61	-----	-	NO ITEM

ITEM	P/N	QTY	DESCRIPTION
62	-----	-	NO ITEM
63	-----	-	NO ITEM
64	-----	-	NO ITEM
65	-----	-	NO ITEM
66	-----	-	NOT USED
67	38010	1	Valve Sleeve
68	37211	2	Backup Ring •
69	-----	-	NO ITEM
70	-----	-	NO ITEM
71	-----	-	NO ITEM
72	-----	-	NO ITEM
73	37209	1	O-ring
74	32562	1	O-ring •
75	32880	1	Check Valve
76	37213	1	Valve Adjuster
77	37215	1	Nut
78	60849	1	O-ring •
79	51279	1	Hex Plug (Not used on some models)

SEAL KIT

- Included in seal kit **33096**

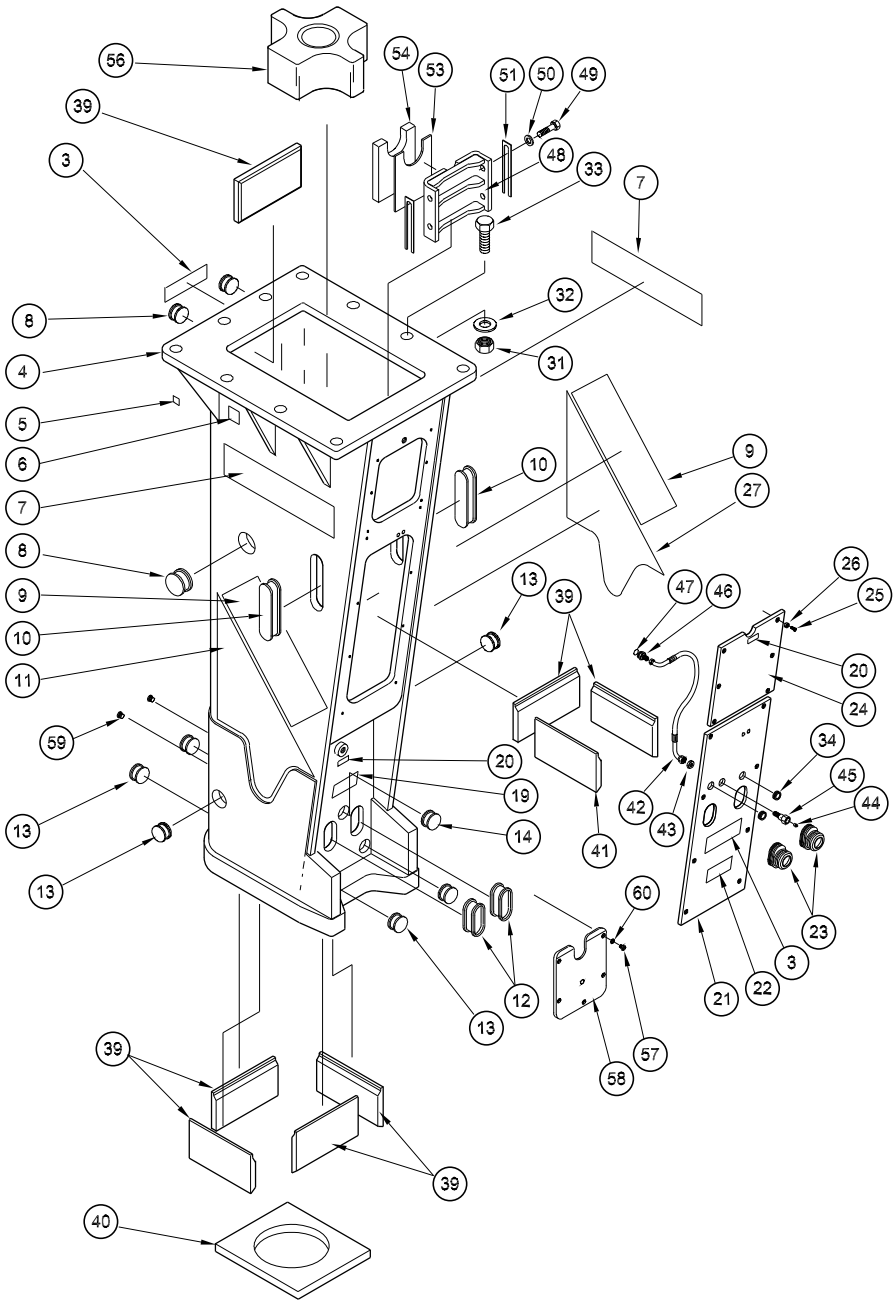
UPPER WEAR PLATE GUIDE BOLTS



Bolt	69714
Washer	69716
Nut	69718

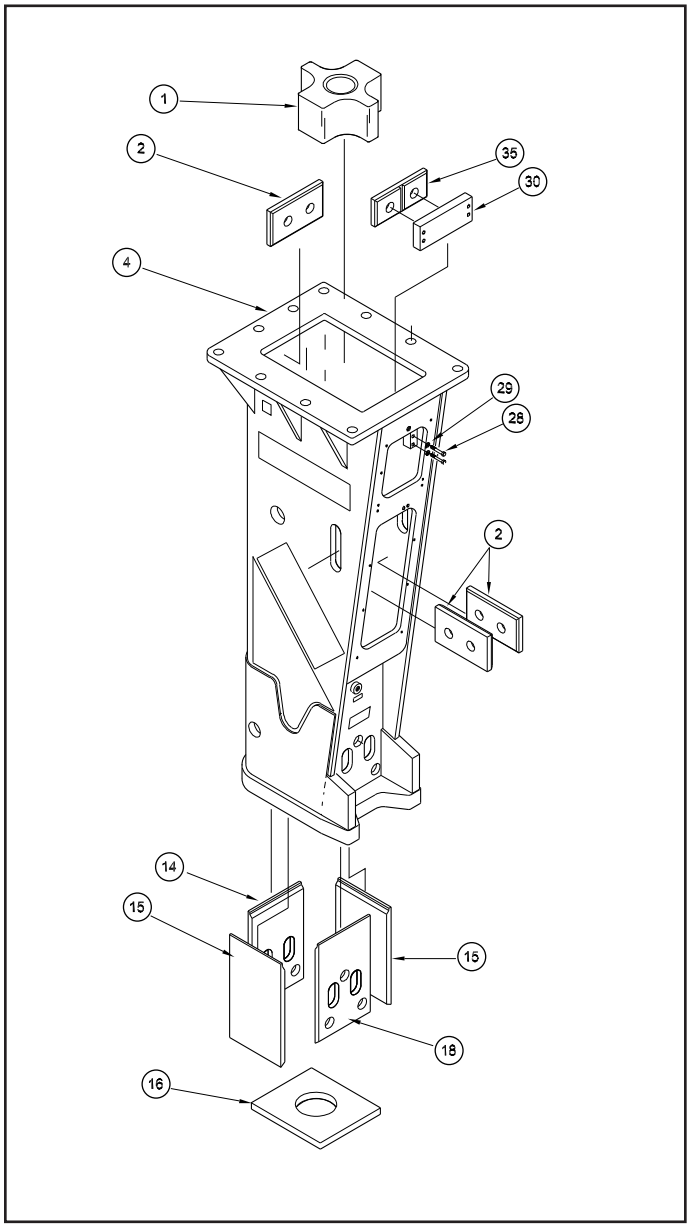
MB40EXS Housing Parts

ITEM	P/N	QTY	DESCRIPTION
	40070	**1**	**Complete Hsg Assy (incl 2 thru 56)**
1	43392	1	Upper Cushion
2	41872	3	Wear Plate (Two used on newer models. Three used on older models. See illustration)
3	29346	1	Sticker, Composite
4	67399	1	Housing
5	43567	1	Sticker, CIMA
6	41726	1	Name Plate, CE
7	43653	2	Decal, STANLEY
8	41904	3	Sound Plug
9	43654	2	Decal, Model No.
10	43394	2	Sound Plug
11	43655	1	Decal, Stealth, LH
12	43388	2	Sound Plug (4 ea used on SN 1170 and lower)
13	41879	6	Sound Plug
14	41879	1	Sound Plug
15	-----	-	NO ITEM
16	-----	-	NO ITEM
17	-----	-	NO ITEM
18	-----	-	NO ITEM
19	26068	1	Sticker, Grease
20	41083	2	Sticker, Lift Point
21	67406	1	Window Cover (SN 1030 & higher)
	43390	1	Window Cover (SN 1029 & lower)
22	31445	1	Sticker, Underwater
23	43389	2	Hose Cover
24	67412	1	Window Cover (SN 1030 & higher)
	43391	1	Window Cover (SN 1029 & lower)
25	41881	10	Capscrew
26	41880	10	Washer
27	43656	1	Decal, Stealth, RH
28	-----	-	NO ITEM
29	-----	-	NO ITEM
30	-----	-	NO ITEM
31	49146	20	Nut
32	49149	10	Split Washer
33	49145	10	Capscrew
34	41868	2	Plug
35	-----	-	NO ITEM
36	-----	-	NO ITEM
37	-----	-	NO ITEM
38	-----	-	NO ITEM
39	67418	7	Wear Plate
40	41909	1	Lower Bumper
41	67420	1	Wear Plate
42	67440	1	Hose Assy
43	67439	1	Nut
44	32523	1	Grease Nipple
45	67459	1	Grease Adapter
46	67442	1	Adapter
47	67460	1	O-ring
48	67424	1	Wear Plate Guide (SN 1030 & higher-not interchangeable with older models)
49	65640	4	Capscrew
50	65644	4	Washer
51	67427	2	Guide Shim



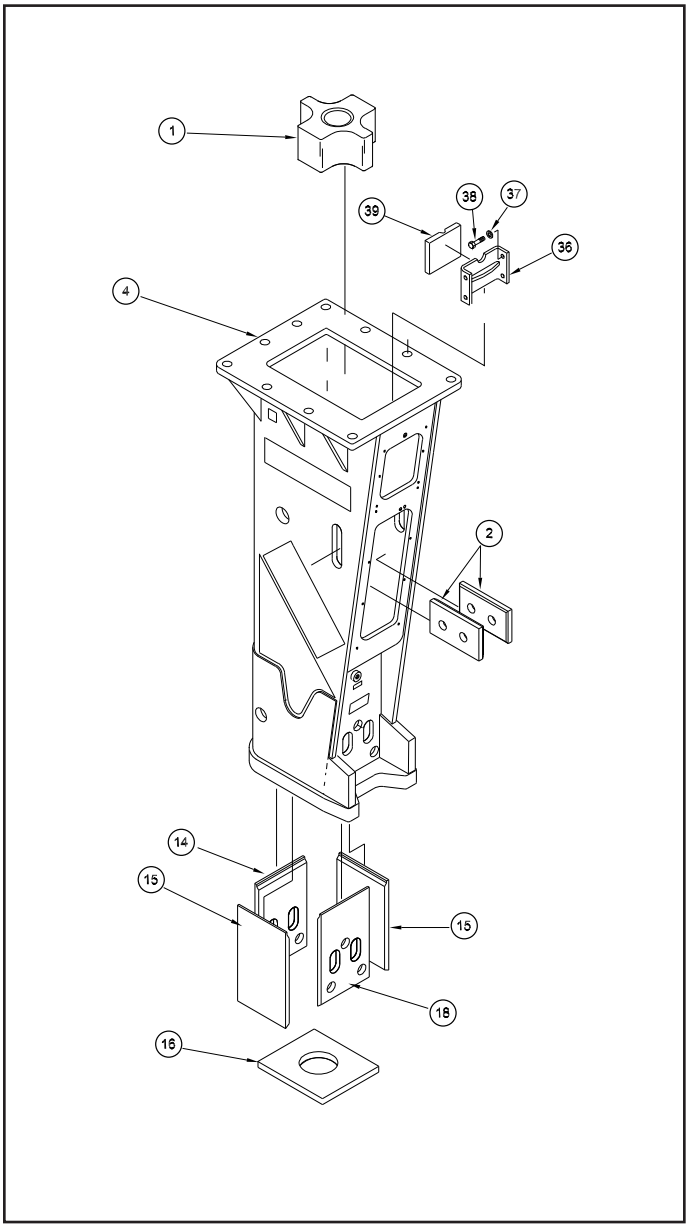
ITEM	P/N	QTY	DESCRIPTION
52	-----	-	NO ITEM
53	67435	1	Wear Plate Shim
54	67433	1	Wear Plate
55	-----	-	NO ITEM
56	66560	1	Upper Bumper
57	67680	5	Capscrew (SN 1171 and higher)
58	67674	1	Plate (SN 1171 and higher)
59	67681	2	Threaded Plug (SN 1171 and higher)
60	67697	5	Washer (SN 1171 and higher)

Early Model Housing & Wear Plate Design

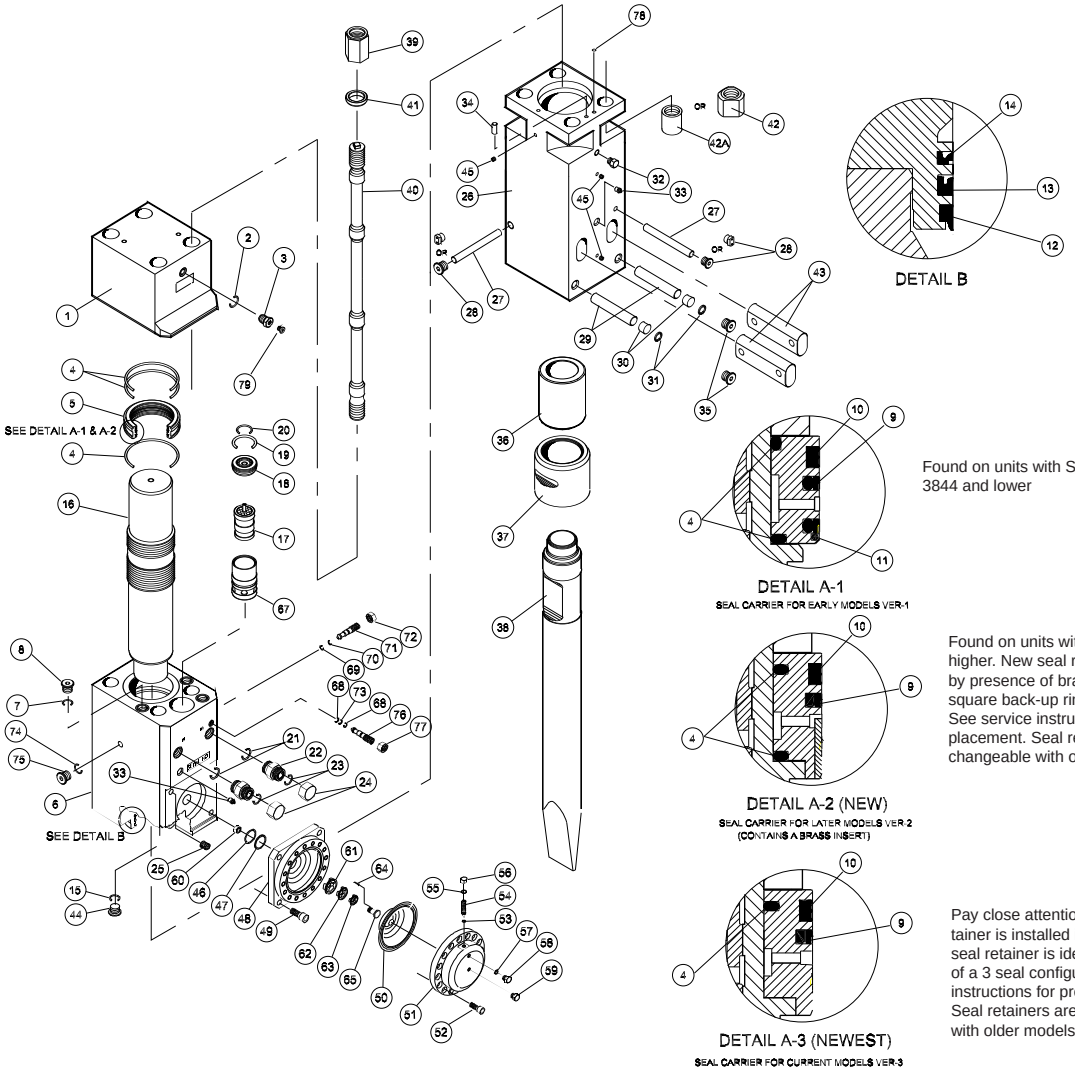


ITEM	P/N	QTY	DESCRIPTION
1	43392	1	Upper Bumper
2	41872	3	Wear Plate
4	-----	1	Housing (no longer available-use 40070)
14	42036	1	Wear Plate
15	43387	2	Wear Plate
16	41909	1	Lower Bumper
18	43386	1	Wear Plate
28	41906	4	Capscrew
29	41905	4	Washer
30	41907	1	Wear Plate Guide
35	41908	1	Wear Plate

Late Model Housing & Wear Plate Design



ITEM	P/N	QTY	DESCRIPTION
1	43392	1	Upper Bumper
2	41872	2	Wear Plate
4	-----	1	Housing (no longer available-use 40070)
14	42036	1	Wear Plate
15	43387	2	Wear Plate
16	41909	1	Lower Bumper
18	43386	1	Wear Plate
36	65635	1	Wear Plate Guide (SN 1015 & lower)
37	65644	4	Washer
38	65640	4	Bolt
39	65629	1	Wear Plate



ITEM	P/N	QTY	DESCRIPTION
	32870	**1**	**Complete Power Cell Assy**
1	32739	1	Main Accumulator
2	32562	1	O-ring •
3	34898	1	Charge Valve
4	32589	3	O-ring •
5	32740	1	Seal Retainer (See changes in illustration)
6	32876	1	Cylinder
7	32566	1	O-ring •
8	32742	1	Plug
9	67838	2	Step Seal Set •
10	32551	1	Gas Seal •
11	40307	1	Buffer Seal •
12	32546	1	Rod Wiper •
13	32536	1	U-packing •
14	32548	1	Buffer Seal •
15	43483	1	O-ring •

ITEM	P/N	QTY	DESCRIPTION
16	34610	1	Piston
17	32756	1	Valve
18	32757	1	Valve Plug
19	32583	1	O-ring •
20	32581	1	O-ring •
21	32571	2	O-ring •
22	32741	2	Adapter
23	32569	2	O-ring •
24	32529	2	Union Cap
25	32852	4	Helicoil
26	66368	1	Lower Body (SN 2993 and higher. Designed for round style tie rod nuts. Replaces lower bodies designed for triangle style tie rod nuts but cannot be used with triangle style tie rod nuts. Lower bodies built prior to SN 2993 were designed for triangle style tie rod nuts and are no longer available. See item numbers 39, 40, & 42.

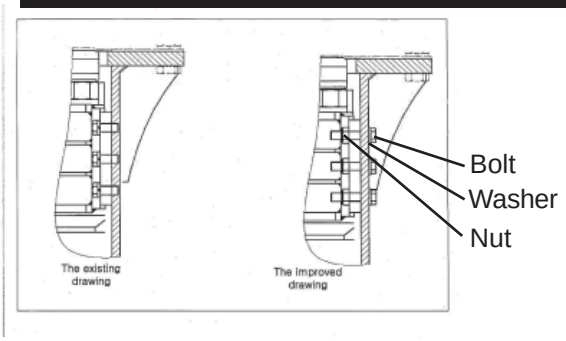
ITEM	P/N	QTY	DESCRIPTION
27	32745	1	Stop Pin
28	38383	2	Threaded Plug (SN 2262 and lower)
28A	60733	2	Rubber Plug (SN 2263 and higher)
29	32744	2	Front Head Pin
30	32858	2	Rubber Plug (SN 2262 and lower)
31	32621	2	Retaining Ring (SN 2262 and lower)
32	32524	1	Plug
33	32523	2	Grease Zerk
34	67217	1	Dowel Pin
35	40256	2	Threaded Plug (SN 2262 and lower)
35A	60735	2	Rubber Plug (SN 2263 and higher-does not use 30, 31 & 35)
36	36018	1	Thrust Bushing
37	38712	1	Lower Bushing
38	67045	1	Chisel Bit
	65969	**1**	**TIE ROD KIT (THIS KIT INCLUDES ITEM 39 (65970 Upper Tie Rod Nut) ITEM 40 (65971 Tie Rod) & ITEM 42 (65972 Lower Tie Rod Nut-Triangle Style). SN-2457 and Lower.**
39	65970	4	Upper Tie Rod Nut (Contains rolled threads. Can be used with all tie rods containing rolled threads. Not interchangeable with tie rods containing cut threads. **Upper and lower tie rod nuts and tie rods containing cut threads are no longer available.**)
40	65971	4	Tie Rod (Contains rolled threads. Can be used with all serial numbers. Must be used with nuts containing rolled threads. **Upper and Lower Tie Rod Nuts and Tie Rods containing cut threads are no longer available**.)
41	32748	4	Washer
42	65972	4	Lower Tie Rod Nut, **Triangle Style** (Contains rolled threads). (SN-2457 and Lower). Use this nut if replacing a triangle style nut with rolled threads. **Upper and lower tie rod nuts and tie rods containing cut threads are no longer available**.)
42A	66367	4	Lower Tie Rod Nut, **Round Style** (Contains rolled threads). (SN-2458 and higher). This nut is not included in tie rod kit 65969. Not interchangeable with tie rods containing cut threads.
43	37191	2	Rod Pin
44	-----	-	NOT USED
45	32525	3	Plug
46	32574	1	O-ring •
47	32557	1	Backup Ring •
48	32878	1	Acc. Body
49	32605	4	Capscrew
50	32875	1	Diaphragm
51	32877	1	Acc. Cover
52	32883	16	Capscrew
53	32558	1	O-ring •
54	32851	1	Acc. Charge Valve
55	32560	1	O-ring •
56	32853	1	O-ring Cap
57	34097	1	O-ring •
58	32854	1	O-ring Plug
59	32855	1	PVC Plug
60	32611	1	Hex Nut
61	32785	1	Holder
62	32786	1	Holder
63	32787	1	Holder
64	32789	1	Center Pin
65	32788	1	Holder Pin
66	-----	1	NOT USED
67	32758	1	Valve Sleeve
68	43484	2	Backup Ring •
69	32560	1	O-ring •
70	32555	1	Backup Ring •
71	32754	1	Cylinder Adjuster
72	32609	1	Nut
73	43483	1	O-ring •
74	32562	1	O-ring •
75	32880	1	Check Valve
76	51278	1	Valve Adjuster
77	68007	1	Nut
78	43450	1	O-ring •
79	51279	1	Hex Plug

• Included in seal kit

SEAL KIT

33093

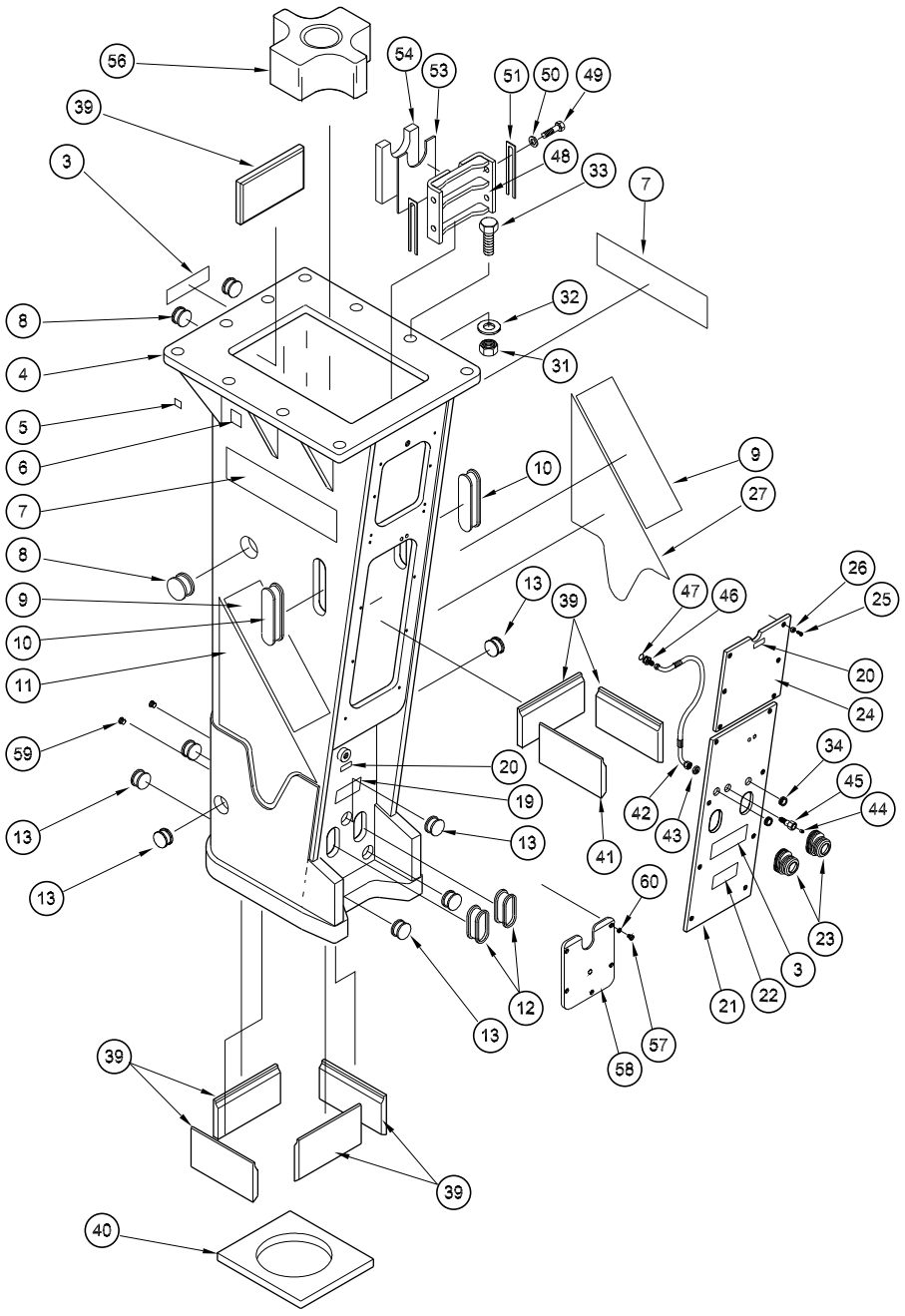
UPPER WEAR PLATE GUIDE BOLTS



Bolt	69714
Washer	69716
Nut	69718

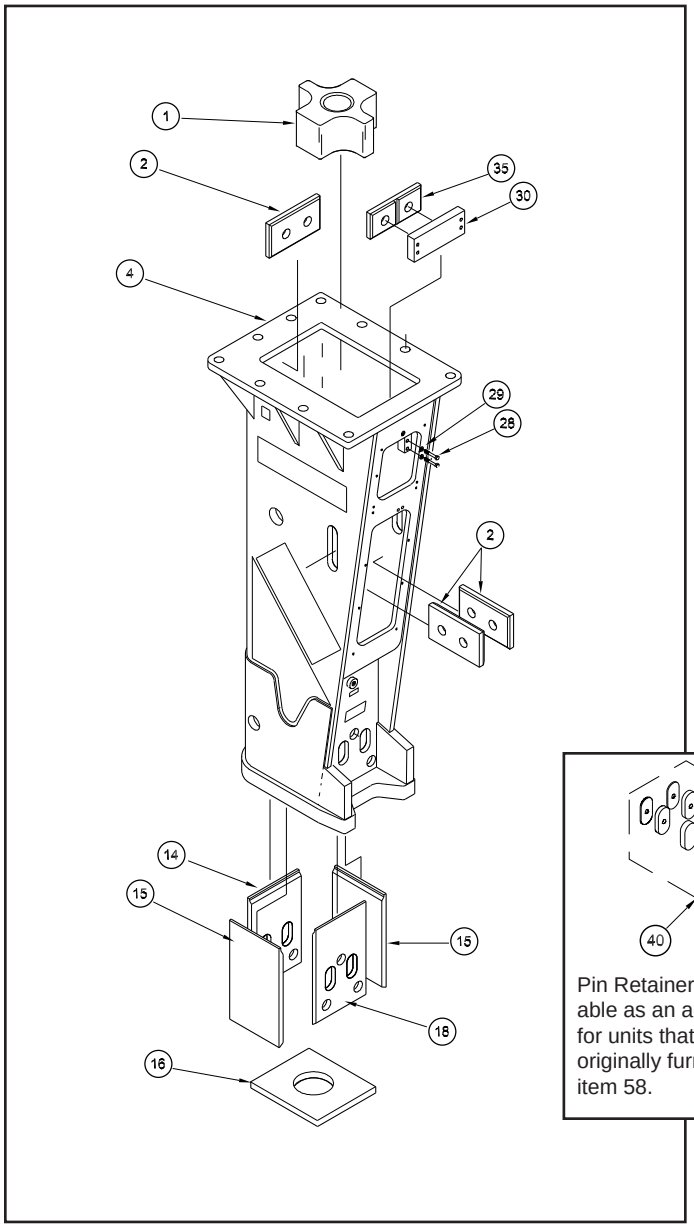
MB50EXS Housing Parts

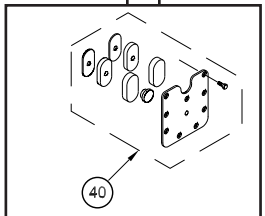
ITEM	P/N	QTY	DESCRIPTION
	40071	**1**	**Complete Hsg Assy**
1	-----	-	NO ITEM
2	-----	-	NO ITEM
3	29346	1	Sticker, Composite
4	67400	1	Housing
5	43567	1	Sticker, CIMA
6	41727	1	Name Plate, CE
7	43451	2	Decal, STANLEY
8	41904	3	Sound Plug
9	43455	2	Decal, Model No.
10	43394	2	Sound Plug (SN 3733 & higher)
	43485	2	Sound Plug (SN 3732 & lower)
11	43486	1	Decal, Stealth, LH
12	43402	2	Sound Plug (4 ea used on SN 4456 and lower)
13	41879	7	Sound Plug
14	-----	-	NO ITEM
15	-----	-	NO ITEM
16	-----	-	NO ITEM
17	-----	-	NO ITEM
18	-----	-	NO ITEM
19	26068	1	Sticker, Grease
20	41083	2	Sticker, Lift Point
21	67407	1	Window Cover (SN 3733 & higher)
	43403	1	Window Cover (SN 3732 & lower)
22	31445	1	Sticker, Underwater
23	43389	2	Hose Cover
24	67413	1	Window Cover (SN 3733 & higher)
	43404	1	Window Cover (SN 3732 & lower)
25	41881	10	Capscrew
26	41880	10	Washer
27	43560	1	Decal, Stealth, RH
28	-----	-	NO ITEM
29	-----	-	NO ITEM
30	-----	-	NO ITEM
31	49146	20	Nut
32	49149	10	Split Washer
33	49150	10	Capscrew
34	41868	2	Plug
35	-----	-	NO ITEM
36	-----	-	NO ITEM
37	-----	-	NO ITEM
38	-----	-	NO ITEM
39	67418	7	Wear Plate
40	43397	1	Lower Bumper
41	67420	1	Wear Plate
42	67440	1	Hose Assy
43	67439	1	Nut
44	32523	1	Grease Nipple
45	67459	1	Grease Adapter
46	67442	1	Adapter
47	67460	1	O-ring
48	67546	1	Wear Plate Guide (SN 3733 & higher - is interchangeable with older models)
49	65640	4	Capscrew
50	65644	4	Washer
51	67428	2	Guide Shim
52	-----	-	NO ITEM
53	67436	1	Wear Plate Shim
54	65630	1	Wear Plate
55	-----	-	NO ITEM



ITEM	P/N	QTY	DESCRIPTION
56	43405	1	Upper Bumper
57	67680	5	Capscrew (SN 4457 and higher)
58	67675	1	Plate (SN 4457 and higher)
59	67681	2	Threaded Plug (SN 4457 and higher)
60	67697	5	Washer (SN 4457 and higher)

Early Model Housing & Wear Plate Design

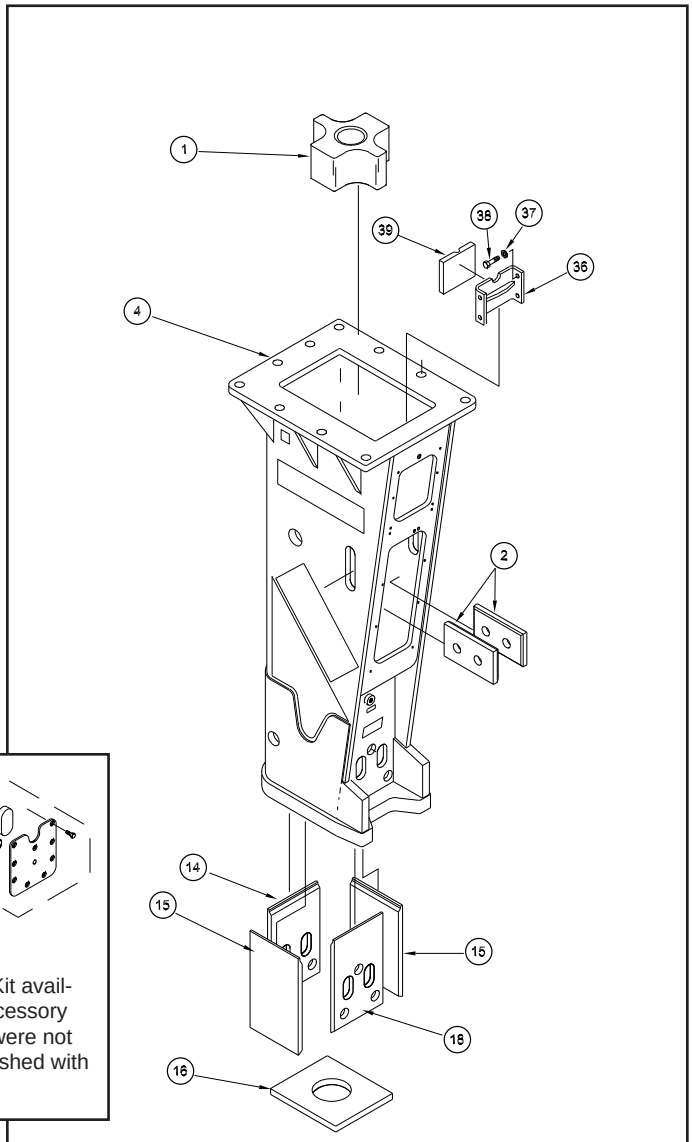




Pin Retainer Kit available as an accessory for units that were not originally furnished with item 58.

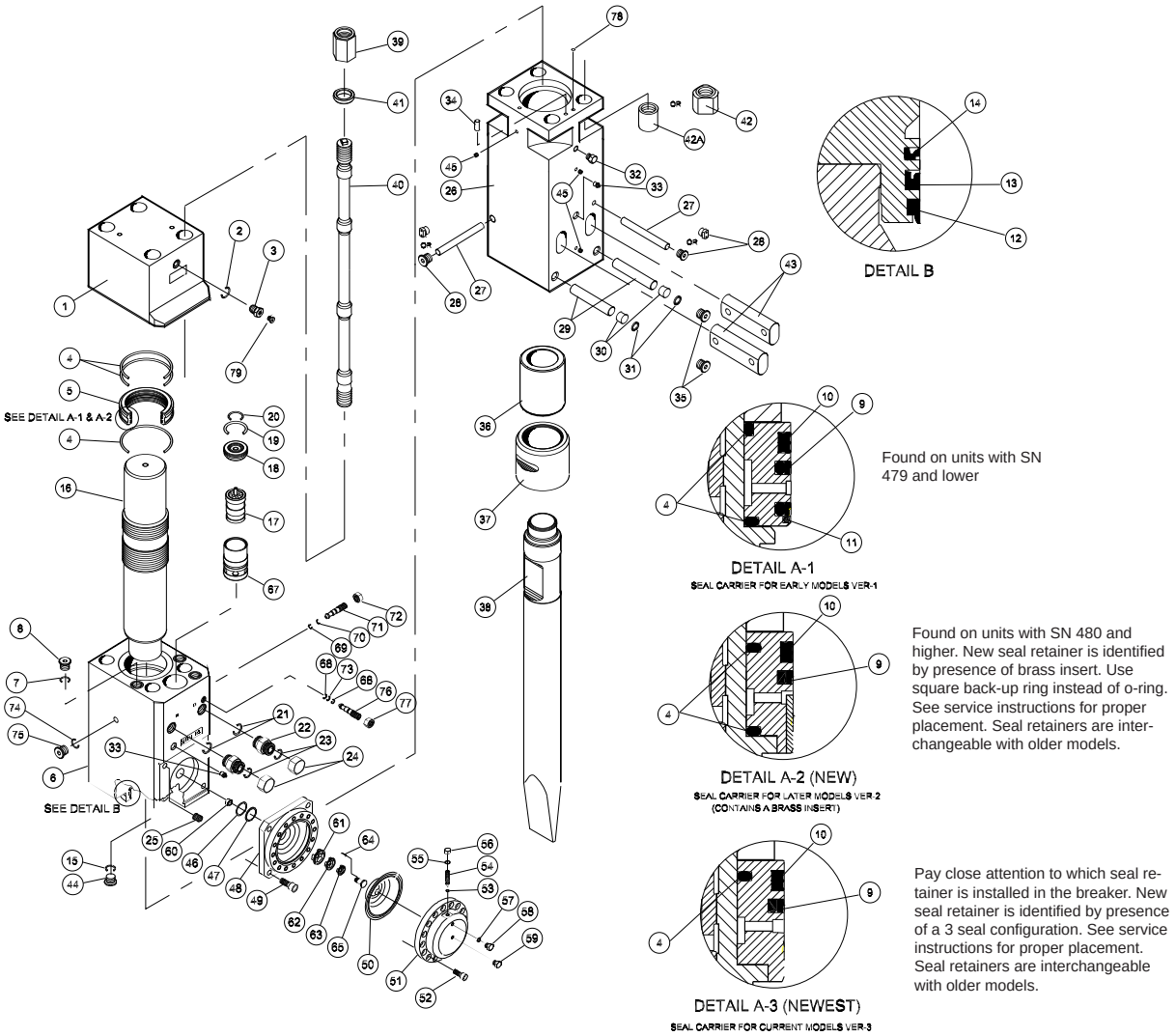
ITEM	P/N	QTY	DESCRIPTION
1	43405	1	Upper Bumper
2	43398	3	Wear Plate
4	-----	1	Housing (no longer available-use 40071)
14	43399	1	Wear Plate
15	43401	2	Wear Plate
16	43397	1	Lower Bumper
18	43400	1	Wear Plate
28	43395	4	Capscrew
29	41905	4	Washer
30	43396	1	Wear Plate Guide
35	41908	1	Wear Plate

Late Model Housing & Wear Plate Design



ITEM	P/N	QTY	DESCRIPTION
1	43405	1	Upper Bumper
2	43398	2	Wear Plate
4	-----	1	Housing (no longer available-use 40071)
14	43399	1	Wear Plate
15	43401	2	Wear Plate
16	43397	1	Lower Bumper
18	43400	1	Wear Plate
36	-----	-	Wear Plate Guide (No longer available. Use new wear plate guide and related parts shown in housing illustration for SN 3733 and higher)
37	65644	4	Washer
38	65641	4	Bolt
39	65630	1	Wear Plate
40	66998	1	Pin Retainer Kit (See Accessory Section for details)

MB60EXS Power Cell Parts



ITEM	P/N	QTY	DESCRIPTION
	65656	**1**	**Complete Power Cell Assy**
1	43418	1	Main Accumulator
2	32562	1	O-ring •
3	34898	1	Charge Valve
4	43419	3	O-ring •
5	43421	1	Seal Retainer (See changes in illustration)
6	43420	1	Cylinder
7	32566	1	O-ring •
8	32742	1	Plug
9	67839	2	Step Seal Set •
10	43422	1	Gas Seal •
11	43424	1	Buffer Seal •
12	43426	1	Rod Wiper •
13	43427	1	U-packing •
14	43428	1	Buffer Seal •
15	43483	1	O-ring •
16	43425	1	Piston
17	43429	1	Valve

ITEM	P/N	QTY	DESCRIPTION
18	43430	1	Valve Plug
19	32583	1	O-ring •
20	32581	1	O-ring •
21	32571	2	O-ring •
22	32741	2	Adapter
23	32569	2	O-ring •
24	32529	2	Union Cap
25	32852	4	Helicoil
26	66370	1	Lower Body (SN 261 and higher. Designed for round style tie rod nuts. Replaces lower bodies designed for triangle style tie rod nuts but cannot be used with triangle style tie rod nuts. Lower bodies built prior to SN 261 were designed for triangle style tie rod nuts and are no longer available. See item numbers 39, 40, and 42.)
27	43434	1	Stop Pin
28	38382	2	Threaded Plug (older models only)

ITEM	P/N	QTY	DESCRIPTION
28A	60732	2	Rubber Plug (newer models only)
29	43436	2	Front Head Pin
30	32699	2	Rubber Plug (older models only)
31	32620	2	Retaining Ring (older models only)
32	32524	1	Plug
33	32523	2	Grease Zerk
34	67217	1	Dowel Pin
35	40257	2	Threaded Plug (older models only)
35A	60734	2	Rubber Plug (newer models only--does not use 30, 31 & 35)
36	43437	1	Thrust Bushing
37	43438	1	Lower Bushing
38	67050	1	Chisel Bit
	65973	**1**	**TIE ROD KIT (THIS KIT INCLUDES ITEM 39 (65974 Upper Tie Rod Nut) ITEM 40 (65975 Tie Rod) & ITEM 42 (65976 Lower Tie Rod Nut-Triangle Style). SN-260 and Lower.**
39	65974	4	Upper Tie Rod Nut (Contains rolled threads. Can be used with all tie rods containing rolled threads. Not interchangeable with tie rods containing cut threads. **Upper and lower tie rod nuts and tie rods containing cut threads are no longer available.**)
40	65975	4	Tie Rod (Contains rolled threads. Can be used with all serial numbers. Must be used with nuts containing rolled threads. **Upper and Lower Tie Rod Nuts and Tie Rods containing cut threads are no longer available**.)
41	32797	4	Washer
42	65976	4	Lower Tie Rod Nut, **Triangle Style** (Contains rolled threads). (SN-260 and Lower). Use this nut if replacing a triangle style nut with rolled threads. **Upper and lower tie rod nuts and tie rods containing cut threads are no longer available**.)
42A	66369	4	Lower Tie Rod Nut, **Round Style** (Contains rolled threads). (SN-261 and higher). This nut is not included in tie rod kit 65973. Not interchangeable with tie rods containing cut threads.
43	43433	2	Rod Pin
44	-----	-	NOT USED
45	32525	3	Plug
46	32574	1	O-ring •
47	32557	1	Backup Ring •
48	32878	1	Acc. Body
49	32605	4	Capscrew
50	32875	1	Diaphragm
51	32877	1	Acc. Cover
52	32883	16	Capscrew
53	32558	1	O-ring •
54	32851	1	Acc. Charge Valve
55	32560	1	O-ring •
56	32853	1	O-ring Cap
57	34097	1	O-ring •
58	32854	1	O-ring Plug
59	32855	1	PVC Plug
60	32882	1	Hex Nut
61	32785	1	Holder
62	32786	1	Holder
63	32787	1	Holder

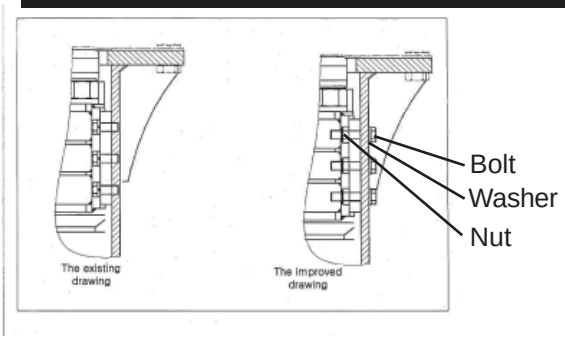
ITEM	P/N	QTY	DESCRIPTION
64	32789	1	Center Pin
65	32788	1	Holder Pin
66	-----	-	NO ITEM
67	43431	1	Valve Sleeve
68	43484	2	Backup Ring •
69	32911	1	O-ring •
70	32555	1	Backup Ring •
71	32948	1	Cylinder Adjuster
72	32609	1	Nut
73	43483	1	O-ring •
74	32562	1	O-ring •
75	32880	1	Check Valve
76	51278	1	Valve Adjuster
77	68007	1	Nut
78	43450	1	O-ring •

• Included in seal kit

SEAL KIT

47355

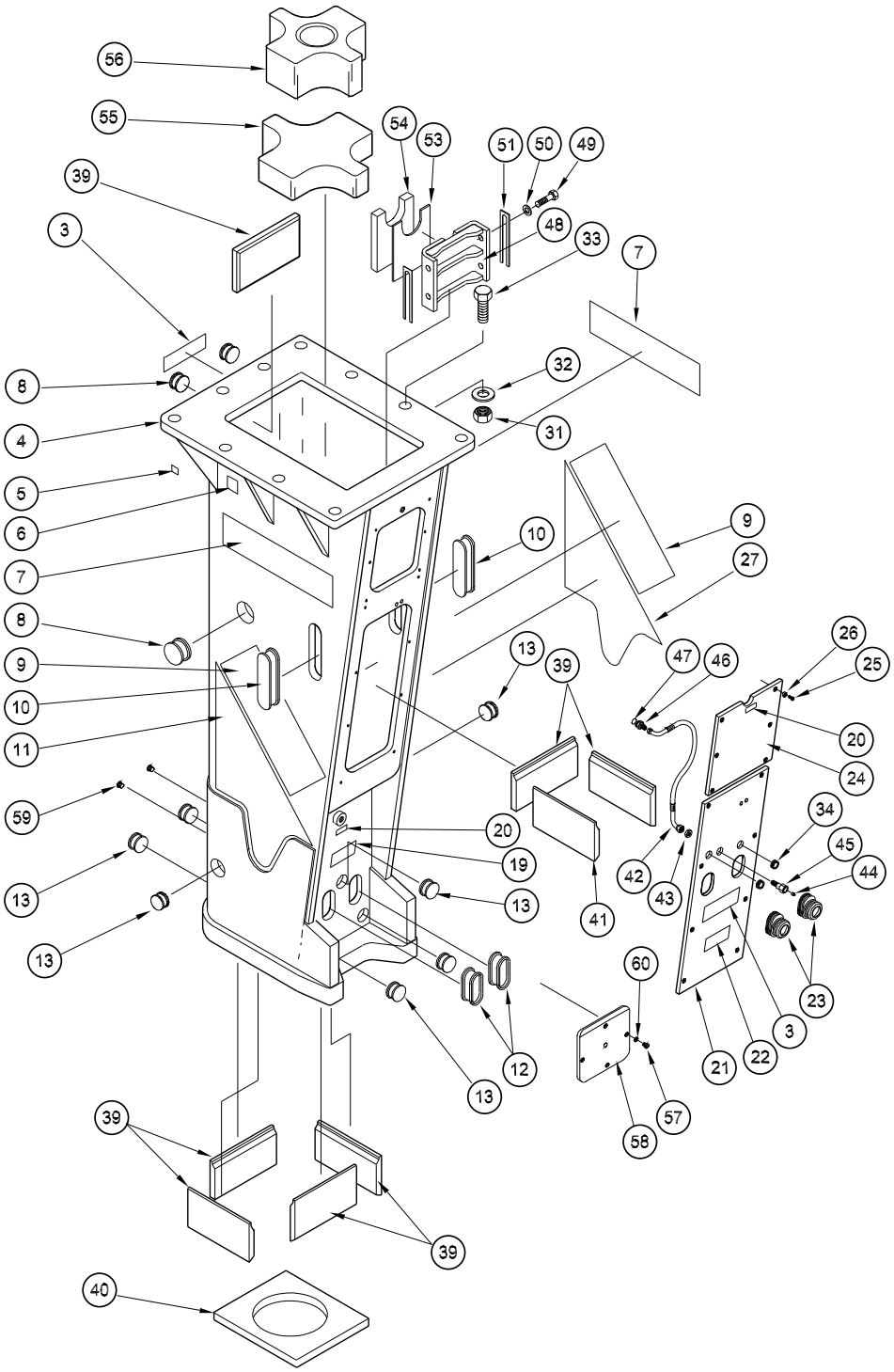
UPPER WEAR PLATE GUIDE BOLTS



Bolt	69714
Washer	69716
Nut	69718

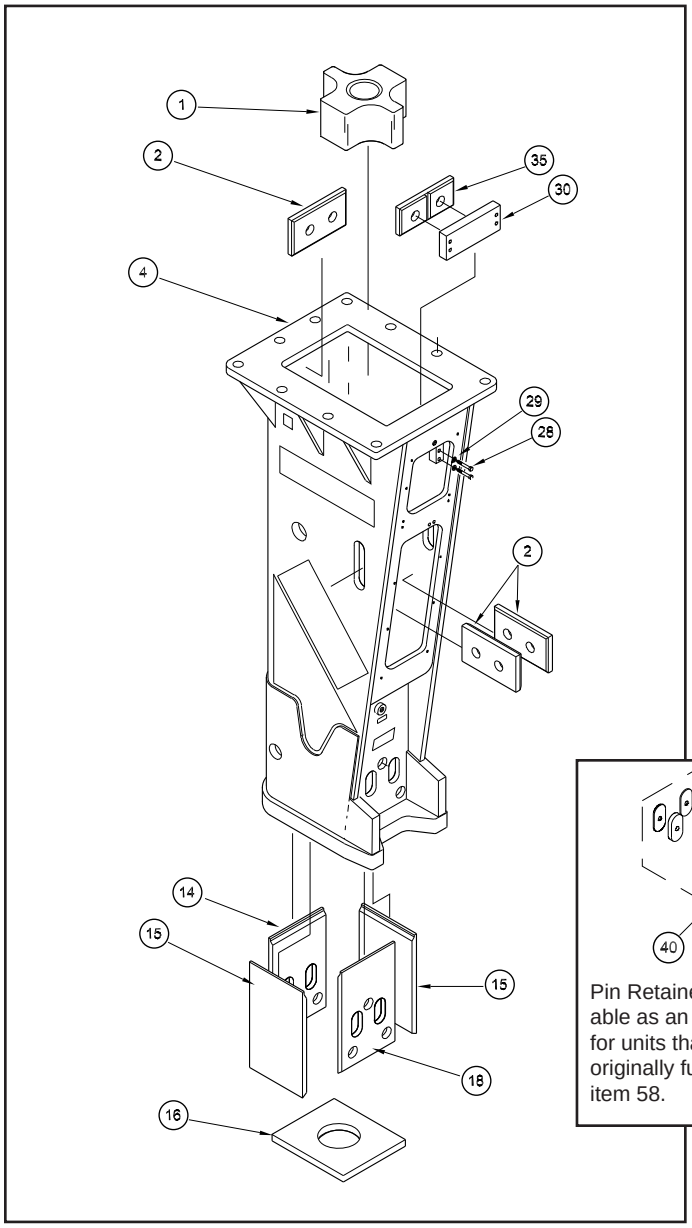
MB60EXS Housing Parts

ITEM	P/N	QTY	DESCRIPTION
1	-----	-	NO ITEM
2	-----	-	NO ITEM
3	29346	1	Sticker, Composite*
4	67401	1	Housing
5	43567	1	Sticker, CIMA
6	41728	1	Name Plate, CE
7	43600	2	Decal, STANLEY
8	41904	3	Sound Plug
9	43601	2	Decal, Model No.
10	43394	2	Sound Plug
11	43602	1	Decal, Stealth, LH
12	43412	2	Sound Plug (4 ea used on SN 594 and lower)
13	41879	7	Sound Plug
14	-----	-	NO ITEM
15	-----	-	NO ITEM
16	-----	-	NO ITEM
17	-----	-	NO ITEM
18	-----	-	NO ITEM
19	26068	1	Sticker, Grease
20	41083	2	Sticker, Lift Point
21	67408	1	Window Cover (SN 429 & higher)
	43413	1	Window Cover (SN 428 & lower)
22	31445	1	Sticker, Underwater
23	43389	2	Hose Cover
24	67414	1	Window Cover (SN 429 & higher)
	43414	1	Window Cover (SN 428 & lower)
25	41881	10	Capscrew
26	41880	10	Washer
27	43603	1	Decal, Stealth, RH
28	-----	-	NO ITEM
29	-----	-	NO ITEM
30	-----	-	NO ITEM
31	49146	20	Nut
32	49149	10	Split Washer
33	49150	10	Capscrew
34	41868	2	Plug
35	-----	-	NO ITEM
36	-----	-	NO ITEM
37	-----	-	NO ITEM
38	-----	-	NO ITEM
39	67418	7	Wear Plate
40	43409	1	Lower Bumper
41	67420	1	Wear Plate
42	67440	1	Hose Assy
43	67439	1	Nut
44	32523	1	Grease Nipple
45	67459	1	Grease Adapter
46	67442	1	Adapter
47	67460	1	O-ring
48	65636	1	Wear Plate Guide (SN 429 and higher-is not interchangeable with older models)
49	67431	4	Capscrew
50	65644	4	Washer
51	67428	2	Guide Shim
52	-----	-	NO ITEM
53	67436	1	Wear Plate Shim
54	65630	1	Wear Plate
55	66561	1	Upper Bumper Guide
56	66560	1	Upper Bumper

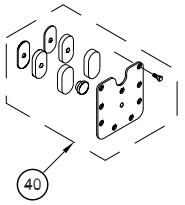


ITEM	P/N	QTY	DESCRIPTION
57	67680	5	Capscrew (SN 595 and higher)
58	67676	1	Plate (SN 595 and higher)
59	67681	2	Threaded Plug (SN 595 and higher)
60	67697	5	Washer (SN 595 and higher)

Early Model Housing & Wear Plate Design

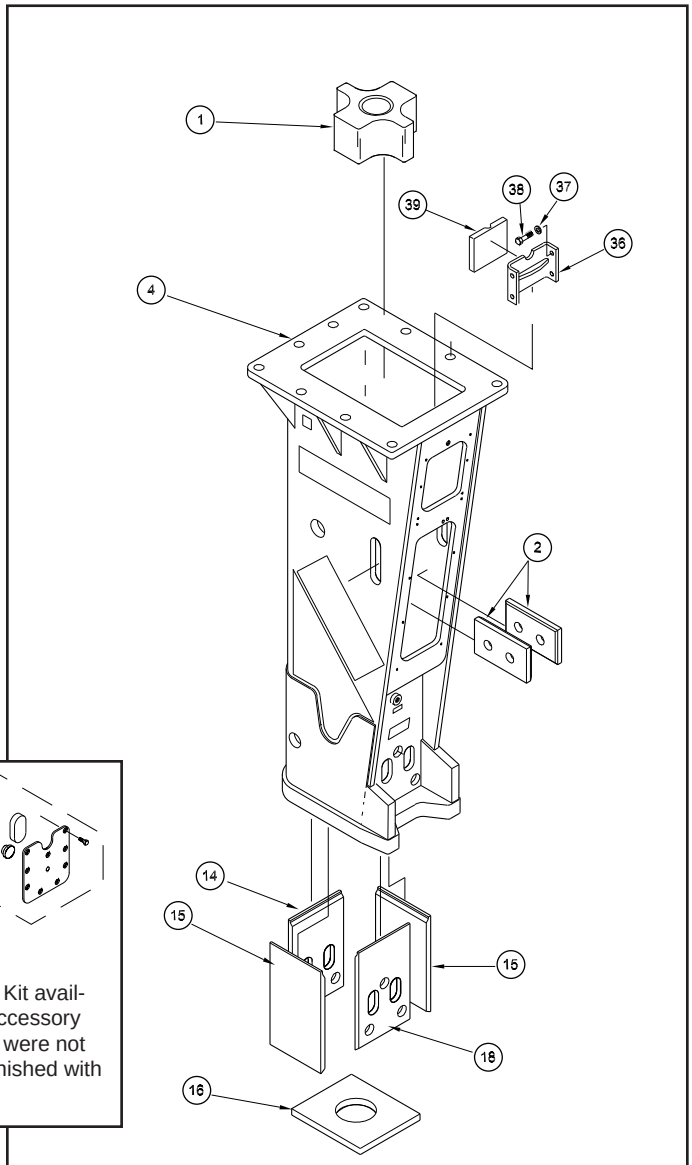


ITEM	P/N	QTY	DESCRIPTION
1	43415	1	Upper Bumper (obsolete - subs to 66560 Upper Bumper & 66561 Upper Bumper Guide)
2	43398	3	Wear Plate
4	------	1	Housing (no longer available)
14	43410	1	Wear Plate
15	43401	2	Wear Plate
16	43409	1	Lower Bumper
18	43411	1	Wear Plate
28	43395	4	Capscrew
29	41905	4	Washer
30	43407	1	Wear Plate Guide
35	43408	1	Wear Plate



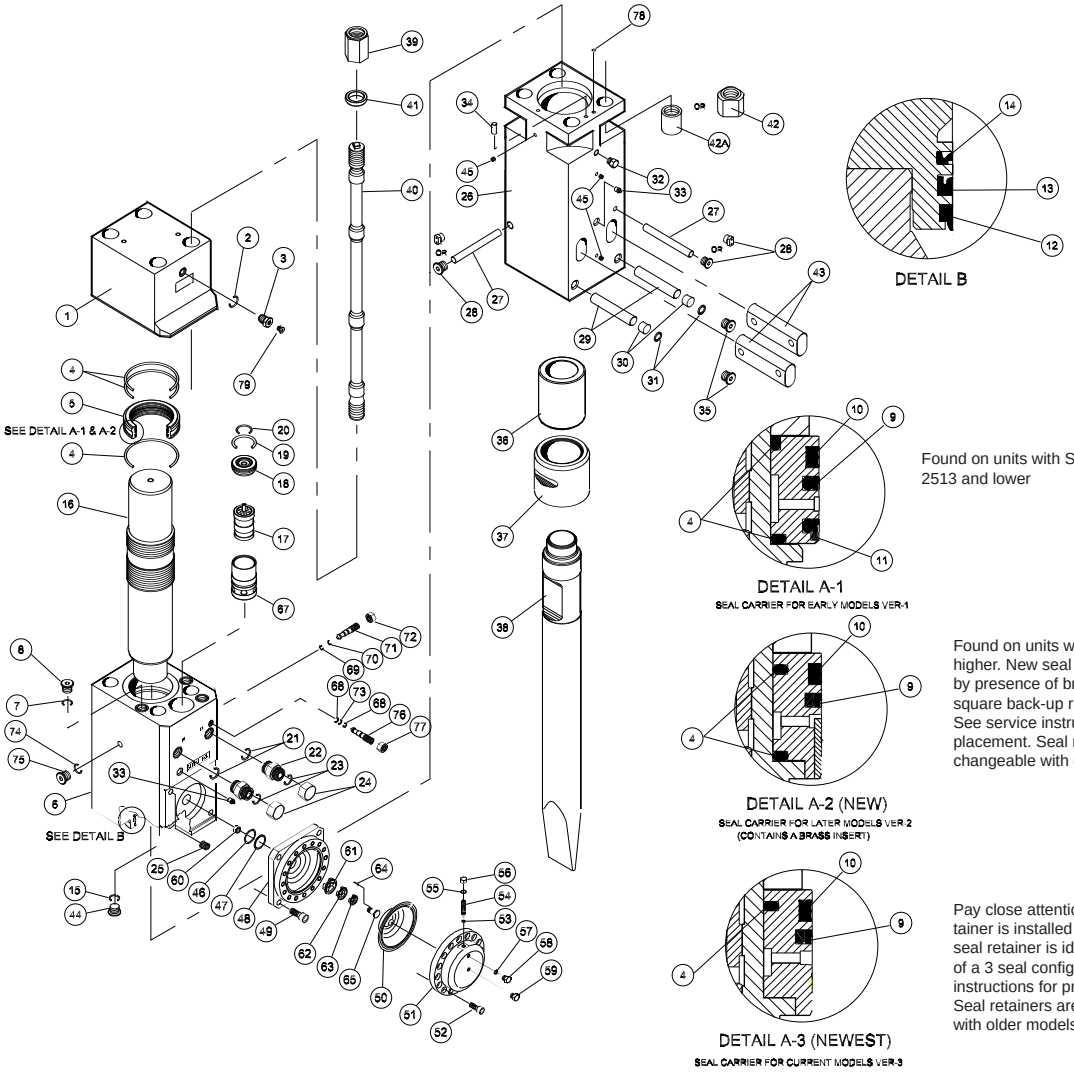
Pin Retainer Kit available as an accessory for units that were not originally furnished with item 58.

Late Model Housing & Wear Plate Design



ITEM	P/N	QTY	DESCRIPTION
1	43415	1	Upper Bumper (obsolete - subs to 66560 Upper Bumper & 66561 Upper Bumper Guide)
2	43398	2	Wear Plate
4	-----	1	Housing (no longer available)
14	43410	1	Wear Plate
15	43401	2	Wear Plate
16	43409	1	Lower Bumper
18	43411	1	Wear Plate
36	65636	1	Wear Plate Guide (SN 428 & lower)
37	65644	4	Washer
38	65641	4	Bolt
39	65630	1	Wear Plate
40	66991	1	Pin Retainer Kit (See Accessory Section for details)

MB70EXS Power Cell Parts



ITEM	P/N	QTY	DESCRIPTION
	33081	**1**	**Complete Power Cell Assy**
1	32780	1	Main Accumulator
2	32562	1	O-ring •
3	34898	1	Charge Valve
4	32590	3	O-ring •
5	32781	1	Seal Retainer (See changes to illustration)
6	51218	1	Cylinder
7	32567	1	O-ring •
8	32790	1	Plug
9	67840	2	Step Seal •
10	32552	1	Gas Seal •
11	40309	1	Buffer Seal •
12	32544	1	Rod Wiper •
13	32537	1	U-packing •
14	32549	1	Buffer Seal •
15	43483	1	O-ring •
16	34612	1	Piston

ITEM	P/N	QTY	DESCRIPTION
17	32777	1	Valve
18	32775	1	Valve Plug
19	32585	1	O-ring •
20	32581	1	O-ring •
21	32573	2	O-ring •
22	32791	2	Adapter
23	32570	2	O-ring •
24	32530	2	Union Cap
25	32852	4	Helicoil
26	66372	1	Lower Body (SN 2321 and higher. Designed for round style tie rod nuts. Replaces lower bodies designed for triangle style tie rod nuts but cannot be used with triangle style tie rod nuts. Lower bodies built prior to SN 2321 were designed for triangle style tie rod nuts and are no longer available. See item numbers 39, 40, and 42.)

ITEM	P/N	QTY	DESCRIPTION
27	32794	1	Stop Pin
28	38382	2	Threaded Plug (SN 2181 and lower)
28A	60732	2	Rubber Plug (SN 2182 and higher)
29	32793	2	Front Head Pin
30	32699	2	Rubber Plug (SN 2181 and lower)
31	32620	2	Retaining Ring (SN 2181 and lower)
32	32524	1	Plug
33	32523	2	Grease Zerk
34	67217	1	Dowel Pin
35	43442	2	Threaded Plug (SN 2181 and lower)
35A	60734	2	Rubber Plug (SN 2182 and higher - does not use 30, 31 & 35)
36	36019	1	Thrust Bushing
37	38854	1	Lower Bushing
38	67055	1	Chisel Bit
	65977	**1**	**TIE ROD KIT (THIS KIT INCLUDES ITEM 39 (65974 Upper Tie Rod Nut) ITEM 40 (65978 Tie Rod) & ITEM 42 (65976 Lower Tie Rod Nut-Triangle Style). SN-2320 and Lower.**
39	65974	4	Upper Tie Rod Nut (Contains rolled threads. Can be used with all tie rods containing rolled threads. Not interchangeable with tie rods containing cut threads. **Upper and lower tie rod nuts and tie rods containing cut threads are no longer available.**)
40	65978	4	Tie Rod (Contains rolled threads. Can be used with all serial numbers. Must be used with nuts containing rolled threads. **Upper and Lower Tie Rod Nuts and Tie Rods containing cut threads are no longer available**.)
41	32797	4	Washer
42	65976	4	Lower Tie Rod Nut, **Triangle Style** (Contains rolled threads). (SN-2320 and Lower). Use this nut if replacing a triangle style nut with rolled threads. **Upper and lower tie rod nuts and tie rods containing cut threads are no longer available**.)
42A	66369	4	Lower Tie Rod Nut, **Round Style** (Contains rolled threads). (SN-2321 and higher). This nut is not included in tie rod kit 65977. Not interchangeable with tie rods containing cut threads.
43	37192	2	Rod Pin
44	-----	-	NOT USED
45	32525	3	Plug
46	32574	1	O-ring •
47	32557	1	Backup Ring •
48	32782	1	Acc. Body
49	32605	4	Capscrew
50	32783	1	Diaphragm
51	32784	1	Acc. Cover
52	51270	16	Capscrew
53	32558	1	O-ring •
54	32851	1	Acc. Charge Valve
55	32560	1	O-ring •
56	32853	1	O-ring Cap
57	34097	1	O-ring •
58	32854	1	O-ring Plug

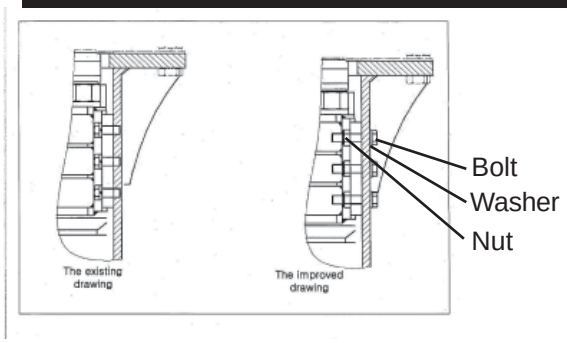
ITEM	P/N	QTY	DESCRIPTION
59	32855	1	PVC Plug
60	32611	1	Hex Nut
61	32785	1	Holder
62	32786	1	Holder
63	32787	1	Holder
64	32789	1	Center Pin
65	32788	1	Holder Pin
66	-----	-	NO ITEM
67	32776	1	Valve Sleeve
68	32556	2	Backup Ring •
69	32560	1	O-ring •
70	32555	1	Backup Ring •
71	32774	1	Cylinder Adjuster
72	32609	1	Nut
73	32560	1	O-ring •
74	32562	1	O-ring •
75	32880	1	Check Valve
76	51277	1	Valve Adjuster
77	32609	1	Nut
78	43450	1	O-ring •
79	51279	1	Plug

• Included in seal kit

SEAL KIT

33094

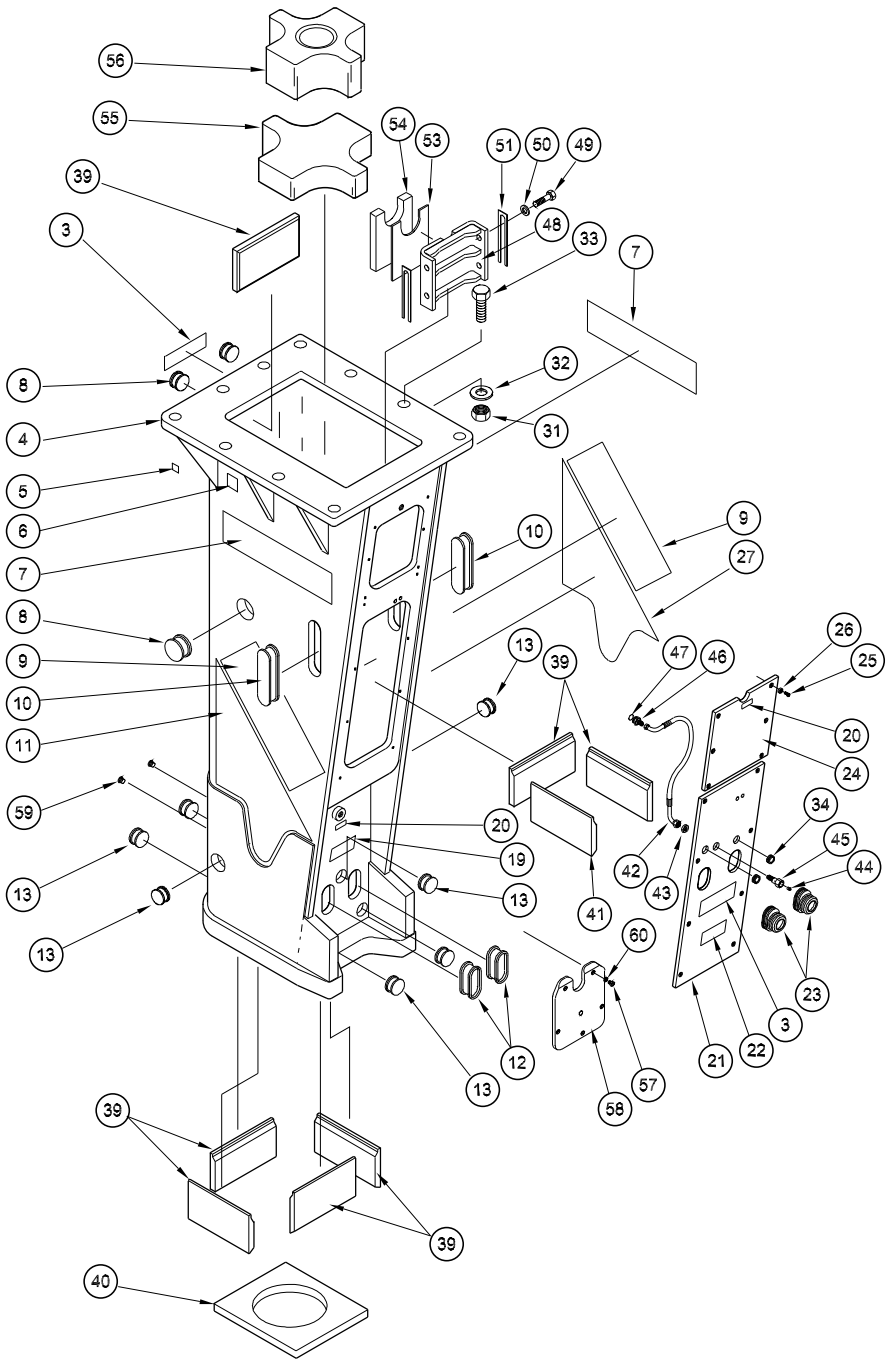
UPPER WEAR PLATE GUIDE BOLTS



Bolt	69714
Washer	69716
Nut	69718

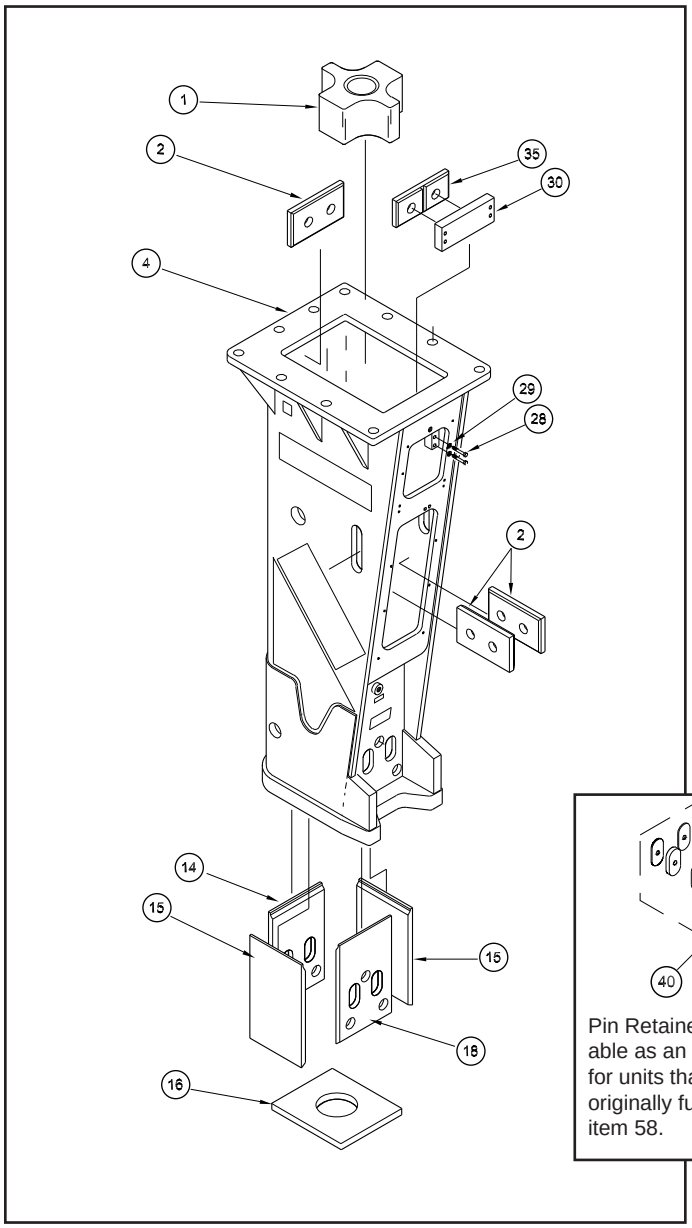
MB70EXS Housing Parts

ITEM	P/N.	QTY	DESCRIPTION
	40072	**1**	**Complete Housing Assy**
1	-----	-	NO ITEM
2	-----	-	NO ITEM
3	29346	1	Sticker, Composite*
4	67402	1	Housing
5	43567	1	Sticker, CIMA
6	41725	1	Name Plate, CE
7	43608	2	Decal, STANLEY
8	41904	3	Sound Plug
9	43609	2	Decal, Model No.
10	43485	2	Sound Plug
11	43610	1	Decal, Stealth, LH
12	41899	2	Sound Plug (4 ea used on SN 2597 and lower)
13	41879	7	Sound Plug
14	-----	-	NO ITEM
15	-----	-	NO ITEM
16	-----	-	NO ITEM
17	-----	-	NO ITEM
18	-----	-	NO ITEM
19	26068	1	Sticker, Grease
20	41083	2	Sticker, Lift Point
21	67409	1	Window Cover (SN 2550 & higher)
	43496	1	Window Cover (SN 2549 & lower)
22	31445	1	Sticker, Underwater
23	43494	2	Hose Cover
24	67415	1	Window Cover (SN 2550 & higher)
	43457	1	Window Cover (SN 2549 & lower)
25	41881	10	Capscrew
26	41880	10	Washer
27	43611	1	Decal, Stealth, RH
28	-----	-	NO ITEM
29	-----	-	NO ITEM
30	-----	-	NO ITEM
31	49154	20	Nut
32	49155	10	Split Washer
33	49151	10	Capscrew
34	41868	2	Plug
35	-----	-	NO ITEM
36	-----	-	NO ITEM
37	-----	-	NO ITEM
38	-----	-	NO ITEM
39	67419	7	Wear Plate
40	43489	1	Lower Bumper
41	67421	1	Wear Plate
42	67441	1	Hose Assy
43	67439	1	Nut
44	32523	1	Grease Nipple
45	67459	1	Grease Adapter
46	67442	1	Adapter
47	67460	1	O-ring
48	67425	1	Wear Plate Guide (SN 2550 and higher - is interchangeable with older models)
49	67431	4	Capscrew
50	65644	4	Washer
51	67429	2	Guide Shim
52	-----	-	NO ITEM
53	67437	1	Wear Plate Shim
54	65631	1	Wear Plate
55	66562	1	Upper Bumper Guide

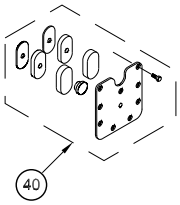


ITEM	P/N.	QTY	DESCRIPTION
56	66560	1	Upper Bumper
57	67680	5	Capscrew (SN 2532 and 2598 and higher)
58	67677	1	Plate (SN 2532 and 2598 and higher)
59	67681	2	Threaded Plug (SN 2532 and 2598 and higher)
60	67697	5	Washer (SN 2532 and 2598 and higher)

Early Model Housing & Wear Plate Design

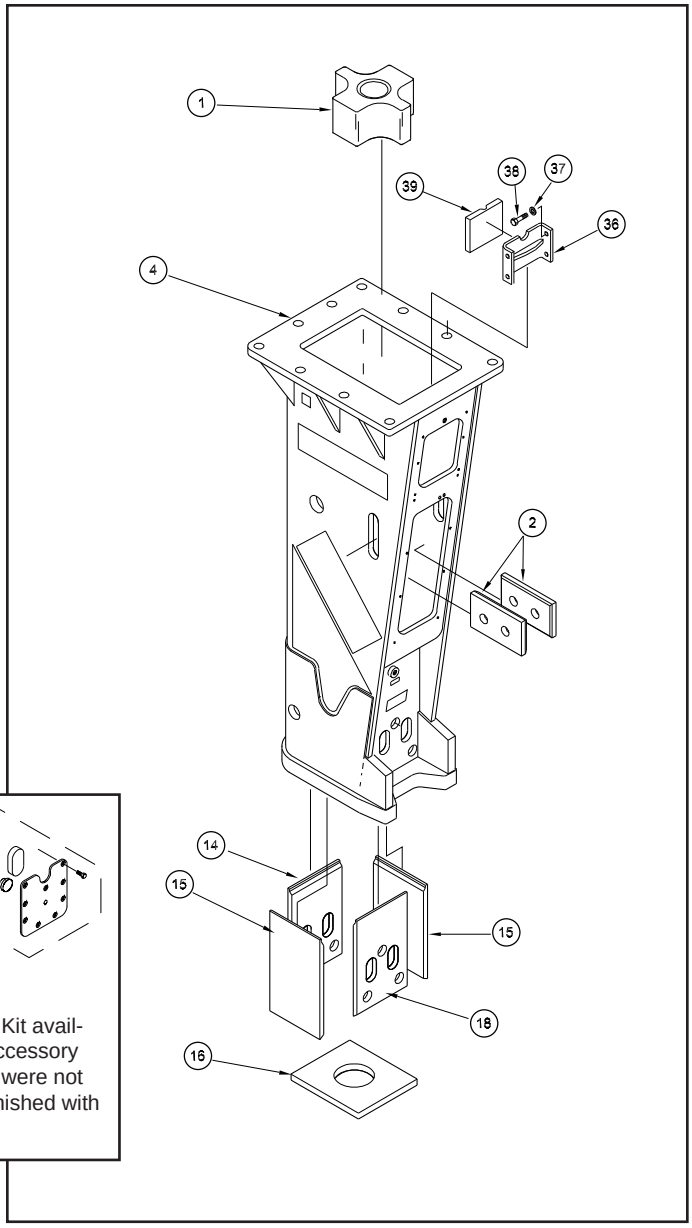


ITEM	P/N	QTY	DESCRIPTION
1	43415	1	Upper Bumper (obsolete - subs to 66560 Upper Bumper & 66562 Upper Bumper Guide)
2	43398	3	Wear Plate
4	-----	1	Housing (no longer available-use 40072)
14	43490	1	Wear Plate
15	43492	2	Wear Plate
16	43489	1	Lower Bumper
18	43491	1	Wear Plate
28	43503	4	Capscrew
29	41905	4	Washer
30	43487	1	Wear Plate Guide
35	43488	1	Wear Plate



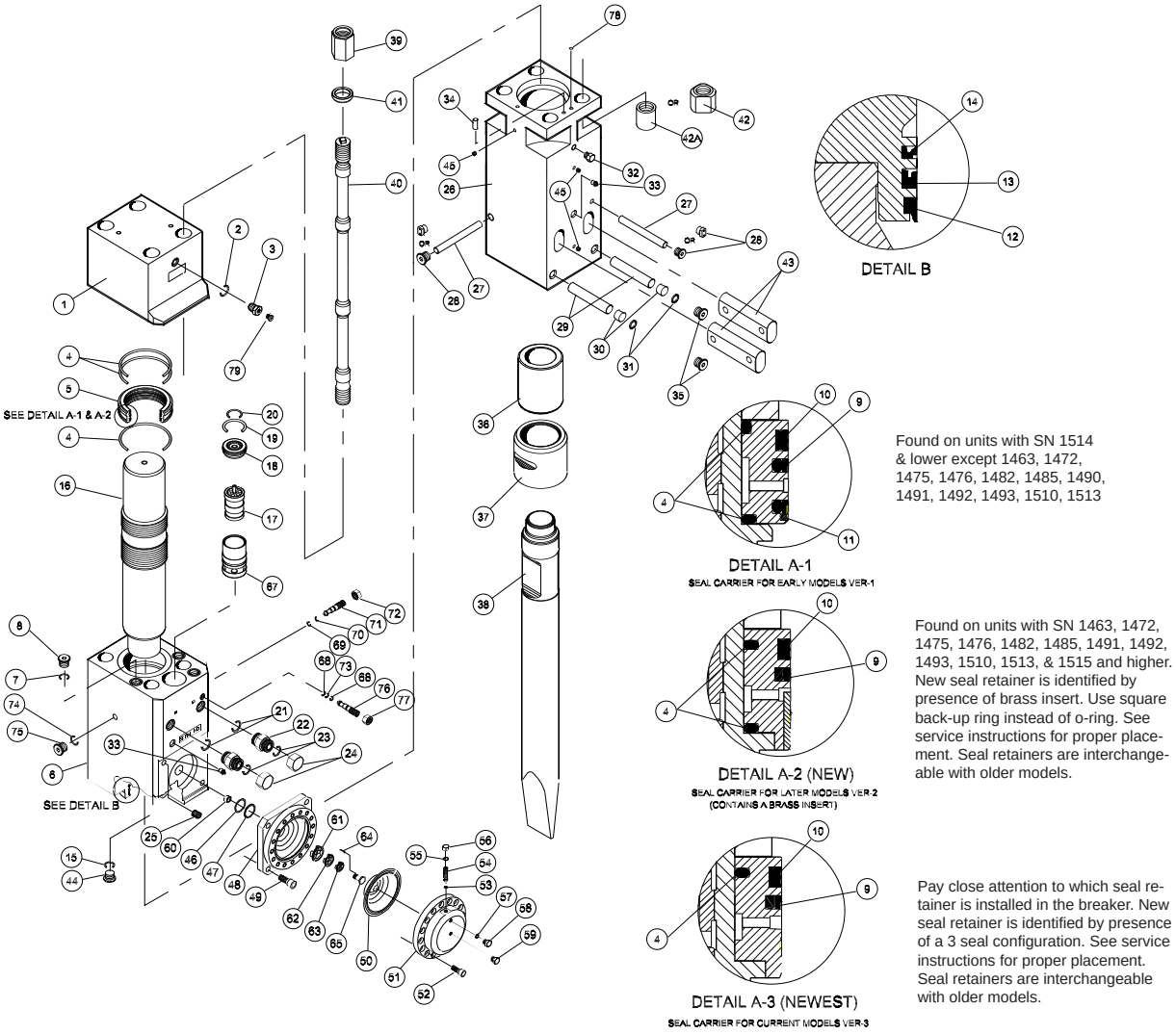
Pin Retainer Kit available as an accessory for units that were not originally furnished with item 58.

Late Model Housing & Wear Plate Design



ITEM	P/N	QTY	DESCRIPTION
1	43415	1	Upper Bumper (obsolete - subs to 66560 Upper Bumper & 66562 Upper Bumper Guide)
2	43398	2	Wear Plate
4	-----	1	Housing (no longer available-use 40072)
14	43490	1	Wear Plate
15	43492	2	Wear Plate
16	43489	1	Lower Bumper
18	43491	1	Wear Plate
36	-----	-	Wear Plate Guide (No longer available. Use new wear plate guide and related parts shown in housing illustration for SN 2550 and higher)
37	65644	4	Washer
38	65642	4	Bolt
39	65631	1	Wear Plate
40	66966	1	Pin Retainer Kit (See Accessory Section for details)

MB80EXS Power Cell Parts



Found on units with SN 1514 & lower except 1463, 1472, 1475, 1476, 1482, 1485, 1490, 1491, 1492, 1493, 1510, 1513

Found on units with SN 1463, 1472, 1475, 1476, 1482, 1485, 1491, 1492, 1493, 1510, 1513, & 1515 and higher. New seal retainer is identified by presence of brass insert. Use square back-up ring instead of o-ring. See service instructions for proper placement. Seal retainers are interchangeable with older models.

Pay close attention to which seal retainer is installed in the breaker. New seal retainer is identified by presence of a 3 seal configuration. See service instructions for proper placement. Seal retainers are interchangeable with older models.

ITEM	P/N	QTY	DESCRIPTION
	65657	**1**	**Complete Power Cell Assy**
1	43461	1	Main Accumulator
2	32562	1	O-ring •
3	34898	1	Charge Valve
4	32914	3	O-ring •
5	43464	1	Seal Retainer (See changes to illustration)
6	43463	1	Cylinder
7	32567	1	O-ring •
8	32790	1	Plug
9	67841	2	Step Seal Set •
10	43465	1	Gas Seal •
11	43467	1	Buffer Seal •
12	43469	1	Rod Wiper •
13	43470	1	U-packing •
14	43471	1	Buffer Seal •
15	43483	1	O-ring •
16	43468	1	Piston

ITEM	P/N	QTY	DESCRIPTION
17	43472	1	Valve
18	43473	1	Valve Plug
19	43474	1	O-ring •
20	32581	1	O-ring •
21	32573	2	O-ring •
22	32791	2	Adapter
23	32570	2	O-ring •
24	32530	2	Union Cap
25	32852	4	Helicoil
26	66374	1	Lower Body (SN 1385 and higher. Designed for round style tie rod nuts. Replaces lower bodies designed for triangle style tie rod nuts but cannot be used with triangle style tie rod nuts. Lower bodies built prior to SN 1385 were designed for triangle style tie rod nuts and are no longer available. See item numbers 39, 40, and 42.)

ITEM	P/N	QTY	DESCRIPTION
27	32794	1	Stop Pin
28	38384	2	Threaded Plug (SN 965 and lower)
28A	60732	2	Rubber Plug (SN 966 and higher)
29	32793	2	Front Head Pin
30	32699	2	Rubber Plug (SN 965 and lower)
31	32620	2	Retaining Ring (SN 965 and lower)
32	32524	1	Plug
33	32523	2	Grease Zerk
34	67217	1	Dowel Pin
35	40257	2	Threaded Plug (SN 965 and lower)
35A	60734	2	Rubber Plug (SN 966 and higher) (Does not use 30, 31, & 35)
36	43478	1	Thrust Bushing
37	43479	1	Lower Bushing
38	67060	1	Chisel Bit
	65979	**1**	**TIE ROD KIT (THIS KIT INCLUDES ITEM 39 (65974 Upper Tie Rod Nut) ITEM 40 (65980 Tie Rod) & ITEM 42 (65976 Lower Tie Rod Nut-Triangle Style). SN-1384 and Lower.**
39	65974	4	Upper Tie Rod Nut (Contains rolled threads. Can be used with all tie rods containing rolled threads. Not interchangeable with tie rods containing cut threads. **Upper and lower tie rod nuts and tie rods containing cut threads are no longer available.**)
40	65980	4	Tie Rod (Contains rolled threads. Can be used with all serial numbers. Must be used with nuts containing rolled threads. **Upper and Lower Tie Rod Nuts and Tie Rods containing cut threads are no longer available**.)
41	32797	4	Washer
42	65976	4	Lower Tie Rod Nut, **Triangle Style** (Contains rolled threads). (SN-1384 and Lower). Use this nut if replacing a triangle style nut with rolled threads. **Upper and lower tie rod nuts and tie rods containing cut threads are no longer available**.)
42A	66369	4	Lower Tie Rod Nut, **Round Style** (Contains rolled threads). (SN-1385 and higher). This nut is not included in tie rod kit 65979. Not interchangeable with tie rods containing cut threads.
43	37192	2	Rod Pin
44	-----	-	NOT USED
45	32525	3	Plug
46	32574	1	O-ring •
47	32557	1	Backup Ring •
48	32782	1	Acc. Body
49	32605	4	Capscrew
50	32783	1	Diaphragm
51	32784	1	Acc. Cover
52	51270	16	Capscrew
53	32558	1	O-ring •
54	32851	1	Acc. Charge Valve
55	32560	1	O-ring •
56	32853	1	O-ring Cap
57	34097	1	O-ring •
58	32854	1	O-ring Plug
59	32855	1	PVC Plug
60	32882	1	Hex Nut

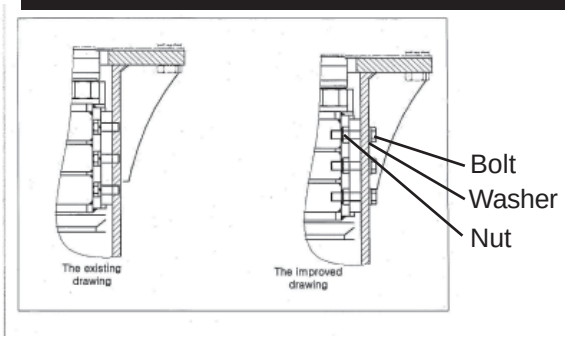
ITEM	P/N.	QTY	DESCRIPTION
61	32785	1	Holder
62	32786	1	Holder
63	32787	1	Holder
64	32789	1	Center Pin
65	32788	1	Holder Pin
66	-----	-	NO ITEM
67	43476	1	Valve Sleeve
68	32556	2	Backup Ring •
69	32911	1	O-ring •
70	32555	1	Backup Ring •
71	32948	1	Cylinder Adjuster
72	32609	1	Nut
73	34904	1	O-ring •
74	32562	1	O-ring •
75	32880	1	Check Valve
76	51277	1	Valve Adjuster
77	32609	1	Nut
78	43450	1	O-ring •
79	51279	1	Plug

• Included in seal kit

SEAL KIT

43514

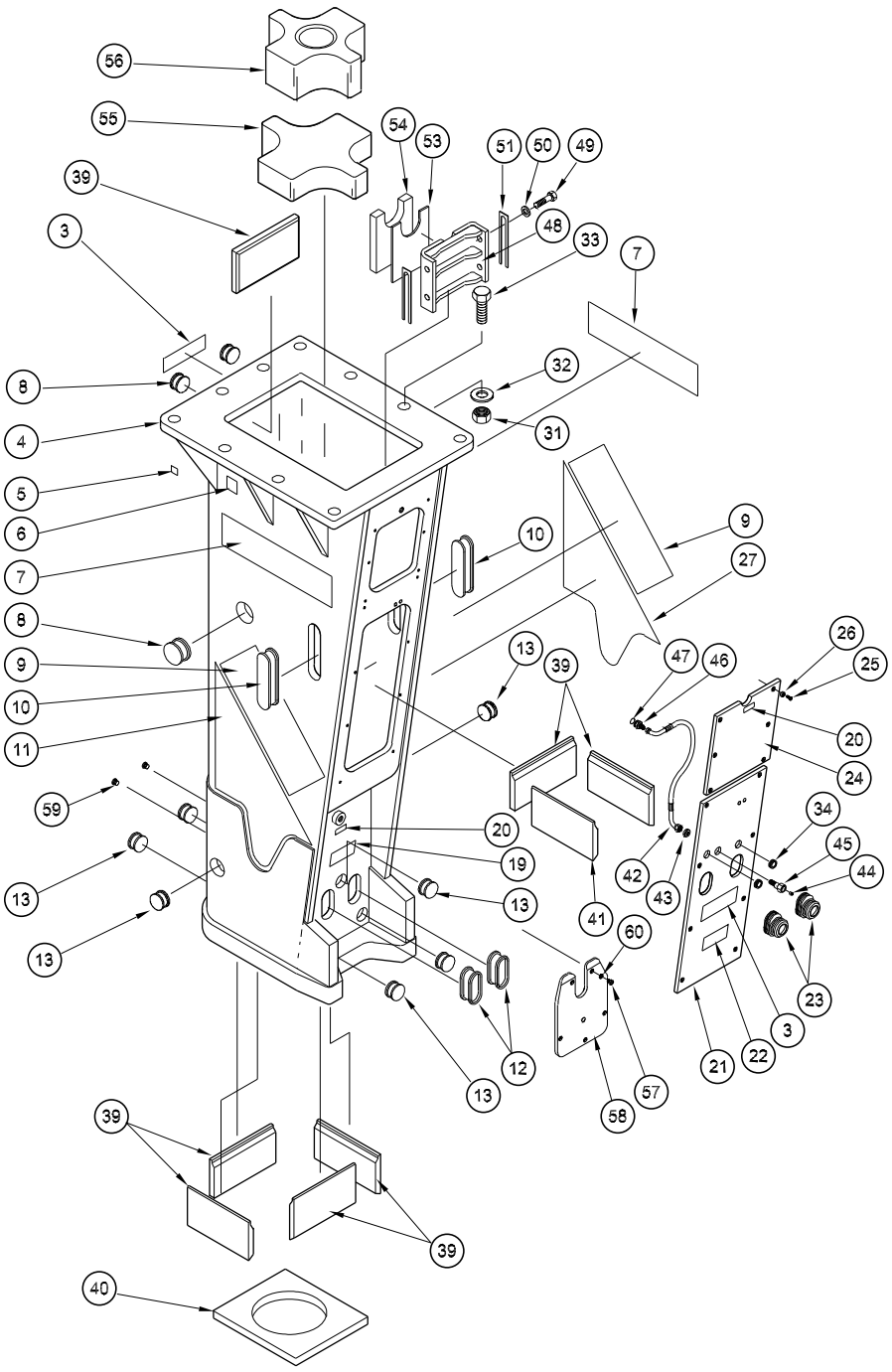
UPPER WEAR PLATE GUIDE BOLTS



Bolt	69715
Washer	69717
Nut	69719

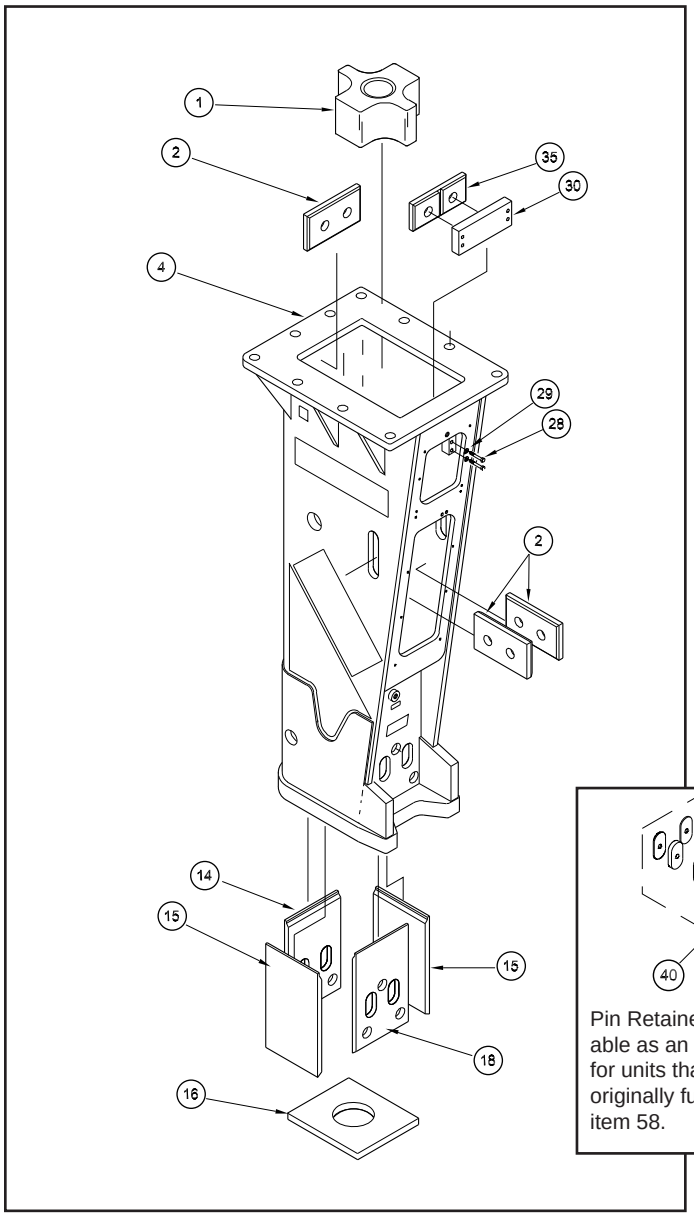
MB80EXS Housing Parts

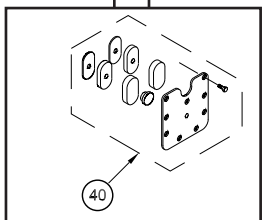
ITEM	P/N	QTY	DESCRIPTION
1	-----	-	NO ITEM
2	-----	-	NO ITEM
3	29346	1	Sticker, Composite*
4	67403	1	Housing
5	43567	1	Sticker, CIMA
6	41730	1	Name Plate, CE
7	43615	2	Decal, STANLEY
8	41904	3	Sound Plug
9	43616	2	Decal, Model No.
10	43485	2	Sound Plug (SN 1518 & higher)
	43502	2	Sound Plug (SN 1517 & lower)
11	43617	1	Decal, Stealth, LH
12	43412	2	Sound Plug (4 ea used on SN 1555 and lower)
13	41879	7	Sound Plug
14	-----	-	NO ITEM
15	-----	-	NO ITEM
16	-----	-	NO ITEM
17	-----	-	NO ITEM
18	-----	-	NO ITEM
19	26068	1	Sticker, Grease
20	41083	2	Sticker, Lift Point
21	67410	1	Window Cover (SN 1518 & higher)
	43456	1	Window Cover (SN 1517 & lower)
22	31445	1	Sticker, Underwater
23	43494	2	Hose Cover
24	67416	1	Window Cover (SN 1518 & higher)
	43457	1	Window Cover (SN 1517 & lower)
25	41881	10	Capscrew
26	41880	10	Washer
27	43618	1	Decal, Stealth, RH
28	-----	-	NO ITEM
29	-----	-	NO ITEM
30	-----	-	NO ITEM
31	49154	20	Nut
32	49155	10	Spit Washer
33	49151	10	Capscrew
34	41868	2	Plug
35	-----	-	NO ITEM
36	-----	-	NO ITEM
37	-----	-	NO ITEM
38	-----	-	NO ITEM
39	67419	7	Wear Plate
40	43452	1	Lower Bumper
41	67422	1	Wear Plate
42	67441	1	Hose Assy
43	67439	1	Nut
44	32523	1	Grease Nipple
45	67459	1	Grease Adapter
46	67442	1	Adapter
47	67460	1	O-ring
48	67547	1	Wear Plate Guide (SN 1518, 1522 & higher - is inter changeable with older models)
49	67432	6	Capscrew
50	65645	6	Washer
51	67429	2	Guide Shim
52	-----	-	NO ITEM
53	67437	1	Wear Plate Shim
54	65631	1	Wear Plate
55	66564	1	Upper Bumper Guide
56	66563	1	Upper Bumper



ITEM	P/N	QTY	DESCRIPTION
57	67680	5	Capscrew (SN 1556 and higher except 1559)
58	67678	1	Plate (SN 1556 and higher except 1559)
59	67681	2	Threaded Plug (SN 1556 and higher except 1559)
60	67697	5	Washer (SN 1556 and higher except 1559)

Early Model Housing & Wear Plate Design

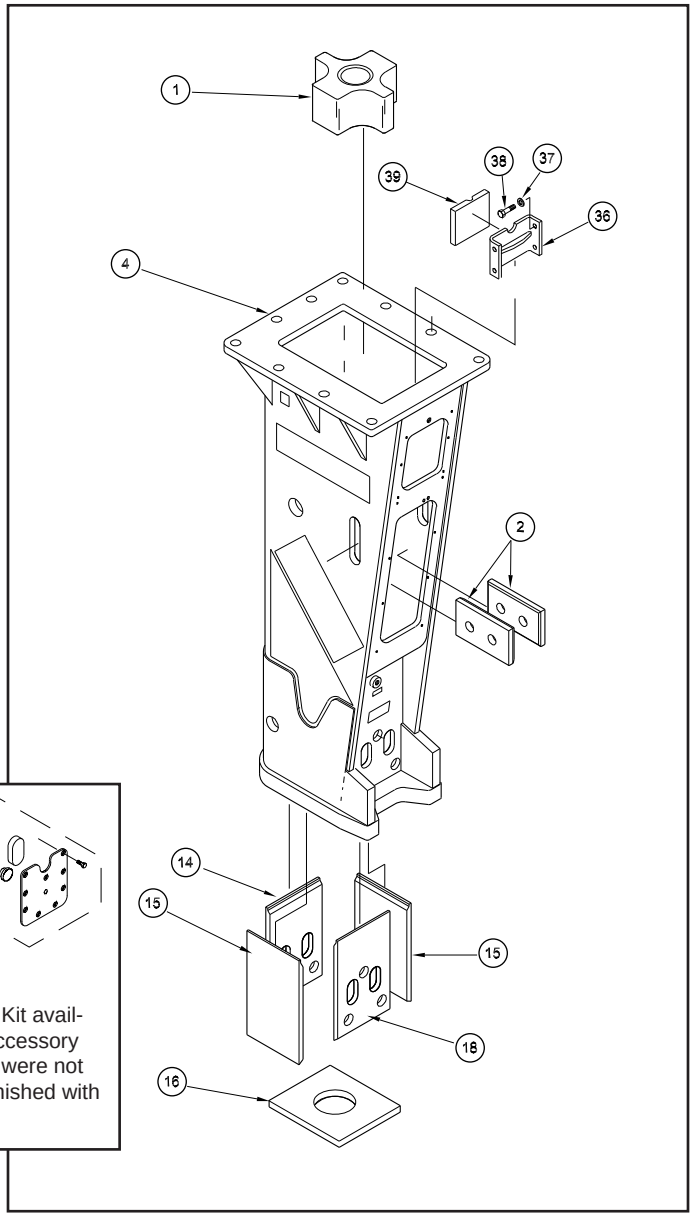




Pin Retainer Kit available as an accessory for units that were not originally furnished with item 58.

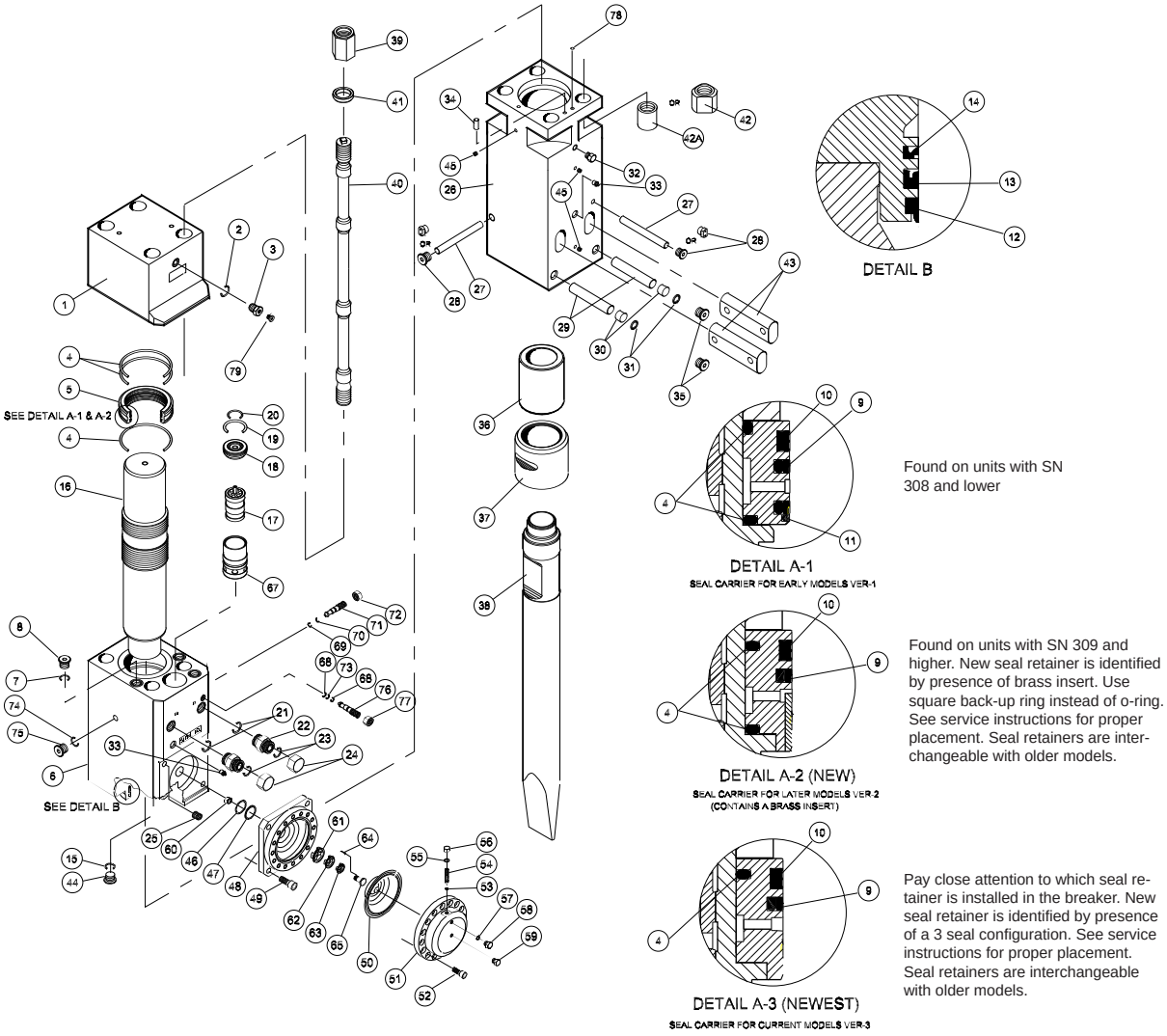
ITEM	P/N	QTY	DESCRIPTION
1	43458	1	Upper Bumper (obsolete - subs to 66563 Upper Bumper & 66564 Upper Bumper Guide)
2	43398	3	Wear Plate
4	-----	1	Housing (no longer available)
14	43453	1	Wear Plate
15	43492	2	Wear Plate
16	43452	1	Lower Bumper
18	43454	1	Wear Plate
28	43486	4	Capscrew
29	41905	4	Washer
30	43487	1	Wear Plate Guide
35	43488	1	Wear Plate

Late Model Housing & Wear Plate Design



ITEM	P/N	QTY	DESCRIPTION
1	43458	1	Upper Bumper (obsolete - subs to 66563 Upper Bumper & 66564 Upper Bumper Guide)
2	43398	2	Wear Plate
4	-----	1	Housing (no longer available)
14	43453	1	Wear Plate
15	43492	2	Wear Plate
16	43452	1	Lower Bumper
18	43454	1	Wear Plate
36	-----	-	Wear Plate Guide (No longer available. Use new wear plate guide and related parts shown in housing illustration for SN 1518 and higher)
37	65645	4	Washer
38	65643	4	Bolt
39	65631	1	Wear Plate
40	66966	1	Pin Retainer Kit (See Accessory Section for details)

MB100EXS Power Cell Parts



Found on units with SN 308 and lower

Found on units with SN 309 and higher. New seal retainer is identified by presence of brass insert. Use square back-up ring instead of o-ring. See service instructions for proper placement. Seal retainers are interchangeable with older models.

Pay close attention to which seal retainer is installed in the breaker. New seal retainer is identified by presence of a 3 seal configuration. See service instructions for proper placement. Seal retainers are interchangeable with older models.

ITEM	P/N	QTY	DESCRIPTION
	33111	**1**	**Complete Power Cell Assy**
1	32923	1	Main Accumulator
2	32562	1	O-ring •
3	34898	1	Charge Valve
4	32914	3	O-ring •
5	32928	1	Seal Retainer See changes to illustration)
6	34899	1	Cylinder
7	34834	1	O-ring •
8	32939	1	Plug
9	67842	2	Step Seal Set •
10	32907	1	Gas Seal •
11	40311	1	Buffer Seal •
12	32905	1	Rod Wiper •
13	32903	1	U-packing •
14	32906	1	Buffer Seal •
15	43483	1	O-ring •
16	34900	1	Piston

ITEM	P/N	QTY	DESCRIPTION
17	67456	1	Valve (must also order item 18 & 67 for SN 308 and lower)
18	67457	1	Valve Plug (must also order item 17 & 67 for SN 308 and lower)
19	32913	1	O-ring •
20	32912	1	O-ring •
21	32573	2	O-ring •
22	32791	2	Adapter
23	32570	2	O-ring •
24	32530	2	Union Cap
25	32918	4	Helicoil
26	66376	1	Lower Body (SN 236 and higher. Designed for round style tie rod nuts. Replaces lower bodies designed for triangle style tie rod nuts but cannot be used with triangle style tie rod nuts. Lower bodies built prior to SN 236 were designed for triangle style tie rod nuts and are no longer available. See item and are no longer available. See item numbers 39, 40, and 42.)

ITEM	P/N	QTY	DESCRIPTION
27	34835	1	Stop Pin
28	38384	1	Threaded Plug (SN 169 and lower)
28A	60734	2	Rubber Plug 26mm (SN 170 and higher)
29	32938	2	Front Head Pin
30	32951	2	Rubber Plug (SN 169 and lower)
31	32919	2	Retaining Ring (SN 169 and lower)
32	32524	1	Plug
33	32523	2	Grease Zerk
34	67217	1	Dowel Pin
35	40258	2	Threaded Plug (SN 169 and lower)
35A	60736	2	Rubber Plug (SN 170 and higher-does not use 30, 31 & 35)
36	36020	1	Thrust Bushing
37	38855	1	Lower Bushing
38	67065	1	Chisel Bit
	65981	**1**	**TIE ROD KIT (THIS KIT INCLUDES ITEM 39 (65982 Upper Tie Rod Nut) ITEM 40 (65983 Tie Rod) & ITEM 42 (65984 Lower Tie Rod Nut-Triangle Style). SN-235 and Lower.**
39	65982	4	Upper Tie Rod Nut (Contains rolled threads. Can be used with all tie rods containing rolled threads. Not interchangeable with tie rods containing cut threads. **Upper and lower tie rod nuts and tie rods containing cut threads are no longer available.**)
40	65983	4	Tie Rod (Contains rolled threads. Can be used with all serial numbers. Must be used with nuts containing rolled threads. **Upper and Lower Tie Rod Nuts and Tie Rods containing cut threads are no longer available**.)
41	32946	4	Washer
42	65984	4	Lower Tie Rod Nut, **Triangle Style** (Contains rolled threads). (SN-235 and Lower). Use this nut if replacing a triangle style nut with rolled threads. **Upper and lower tie rod nuts and tie rods containing cut threads are no longer available**.)
42A	66375	4	Lower Tie Rod Nut, **Round Style** (Contains rolled threads). (SN-236 and higher). This nut is not included in tie rod kit 65981. Not interchangeable with tie rods containing cut threads.
43	37193	2	Rod Pin
44	-----	-	NOT USED
45	32525	3	Plug
46	32912	1	O-ring •
47	34903	1	Backup Ring •
48	32929	1	Acc. Body
49	32916	4	Capscrew
50	32931	1	Diaphragm
51	32930	1	Acc. Cover
52	32605	16	Capscrew
53	32558	1	O-ring •
54	32851	1	Acc. Charge Valve
55	34097	1	O-ring •
56	32853	1	O-ring Cap
57	34097	1	O-ring •

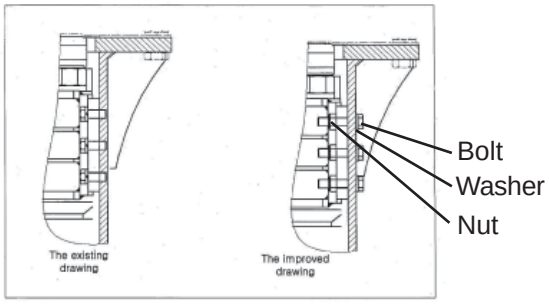
ITEM	P/N	QTY	DESCRIPTION
58	32854	1	O-ring Plug
59	32855	1	PVC Plug
60	32882	1	Hex Nut
61	32933	1	Holder
62	32934	1	Holder
63	32935	1	Holder
64	32932	1	Center Pin
65	32936	1	Holder Pin
66	-----	-	NO ITEM
67	67458	1	Valve Sleeve (must also order item 17 & 18 for SN 308 and lower)
68	32913	2	Backup Ring •
69	32911	1	O-ring •
70	32555	1	Backup Ring •
71	32948	1	Cylinder Adjuster
72	32609	1	Nut
73	34904	1	O-ring •
74	32562	1	O-ring •
75	32880	1	Check Valve
76	34905	1	Valve Adjuster
77	34906	1	Nut
78	43450	1	O-ring •
79	51279	1	Plug

• Included in seal kit

SEAL KIT

35147

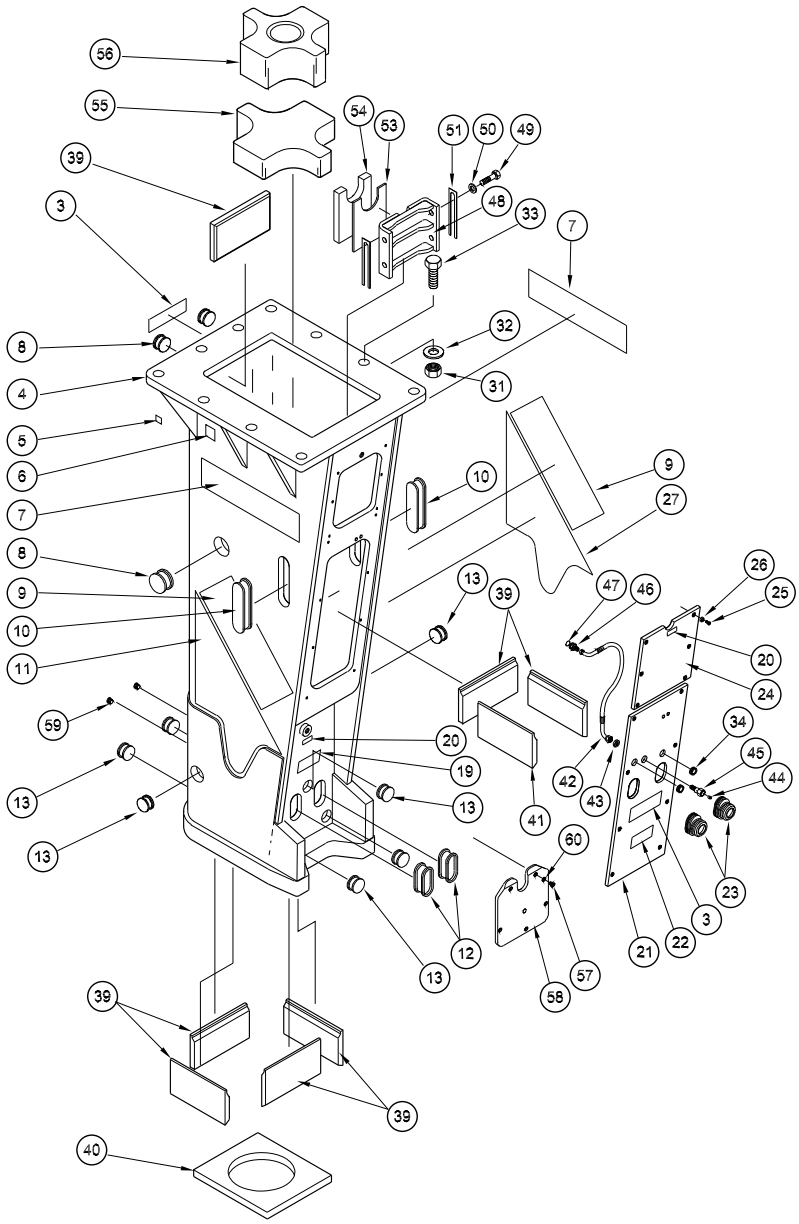
UPPER WEAR PLATE GUIDE BOLTS



Bolt	69715
Washer	69717
Nut	69719

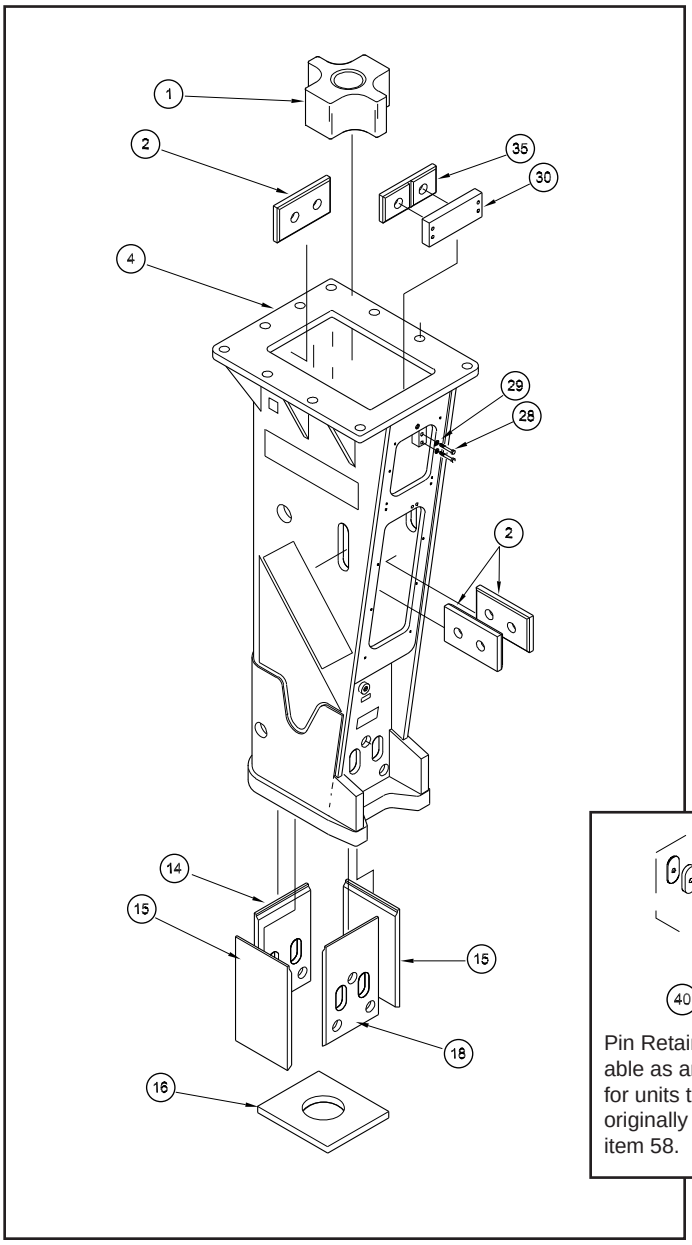
MB100EXS Housing Parts

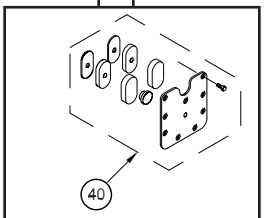
ITEM	P/N	QTY	DESCRIPTION
	40073	**1**	**Complete Housing Assy**
1	-----	-	NO ITEM
2	-----	-	NO ITEM
3	29346	1	Sticker, Composite*
4	67404	1	Housing
5	43567	1	Sticker, CIMA
6	41731	1	Name Plate, CE
7	43623	2	Decal, STANLEY
8	41904	3	Sound Plug
9	43624	2	Decal, Model No.
10	43502	2	Sound Plug
11	43625	1	Decal, Stealth, LH
12	43412	2	Sound Plug (4 ea used for SN 399 and lower)
13	41879	6	Sound Plug
14	-----	-	NO ITEM
15	-----	-	NO ITEM
16	-----	-	NO ITEM
17	-----	-	NO ITEM
18	-----	-	NO ITEM
19	26068	1	Sticker, Grease
20	41083	2	Sticker, Lift Point
21	67411	1	Window Cover (SN 357 & higher)
	43510	1	Window Cover (SN 356 & lower)
22	31445	1	Sticker, Underwater
23	43494	2	Hose Cover
24	67417	1	Window Cover (SN 357 & higher)
	43509	1	Window Cover (SN 356 & lower)
25	41881	14	Capscrew
26	41880	14	Washer
27	43626	1	Decal, Stealth, RH
28	-----	-	NO ITEM
29	-----	-	NO ITEM
30	-----	-	NO ITEM
31	49154	20	Nut
32	49155	10	Split Washer
33	49151	10	Capscrew
34	41868	2	Plug
35	-----	-	NO ITEM
36	-----	-	NO ITEM
37	-----	-	NO ITEM
38	-----	-	NO ITEM
39	67419	7	Wear Plate
40	43505	1	Lower Bumper
41	67423	1	Wear Plate
42	67441	1	Hose Assy
43	67439	1	Nut
44	32523	1	Grease Nipple
45	67459	1	Grease Adapter
46	67442	1	Adapter
47	67460	1	O-ring
48	67426	1	Wear Plate Guide (SN 357 & higher-is interchangeable with older models)
49	67432	6	Capscrew
50	65645	6	Washer 30mm
51	67430	2	Guide Shim
52	-----	-	NO ITEM
53	67438	1	Wear Plate Shim
54	67434	1	Wear Plate
55	67405	1	Upper Bumper Guide
56	66565	1	Upper Bumper



ITEM	P/N	QTY	DESCRIPTION
57	67680	5	Capscrew (SN 400 and higher)
58	67679	1	Plate (SN 400 and higher)
59	67681	2	Threaded Plug (SN 400 and higher)
60	67697	5	Washer (SN 400 and higher)

Early Model Housing & Wear Plate Design

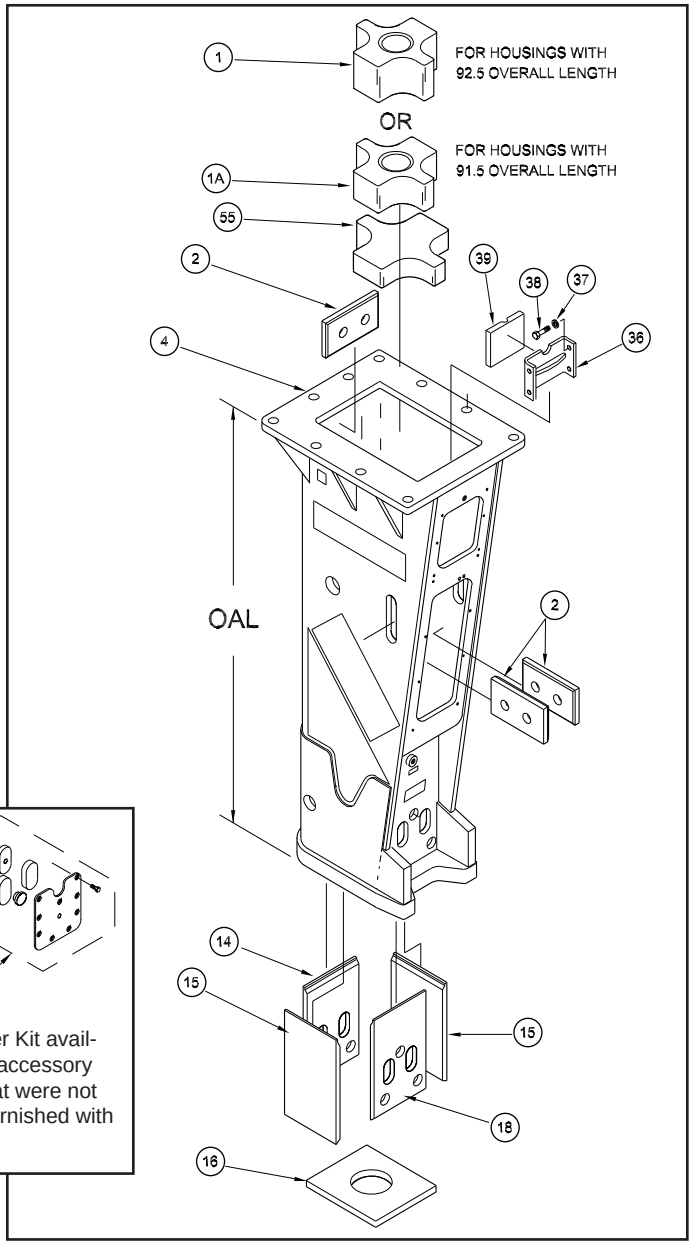




Pin Retainer Kit available as an accessory for units that were not originally furnished with item 58.

ITEM	P/N	QTY	DESCRIPTION
1	43511	1	Upper Bumper
2	43398	3	Wear Plate
4	-----	1	Housing (no longer available-use 40073)
14	43506	1	Wear Plate
15	43508	2	Wear Plate
16	43505	1	Lower Bumper
18	43507	1	Wear Plate
28	43486	4	Capscrew
29	41905	4	Washer
30	43504	1	Wear Plate Guide
35	43488	1	Wear Plate

Late Model Housing & Wear Plate Design



ITEM	P/N	QTY	DESCRIPTION
1	43511	1	Upper Bumper (for housings with 92.5 OAL)
1A	65985	1	Upper Bumper (for housings with 91.5 OAL) NOTE: 65985 is now substituted with 66566 Upper Guide and 66565 Upper Bumper
2	43398	3	Wear Plate
4	-----	1	Housing (no longer available-use 40073)
14	43506	1	Wear Plate
15	43508	2	Wear Plate
16	43505	1	Lower Bumper
18	43507	1	Wear Plate
36	-----	-	Wear Plate Guide (No longer available. Use new wear plate guide and related parts shown in housing illustration for SN 357 and higher)
37	65645	4	Washer
38	65643	4	Bolt
39	65632	1	Wear Plate
40	66922	1	Pin Retainer Kit (See Accessory Section for details)
55	66566	1	Upper Bumper Guide

DISASSEMBLY

Refer to the parts illustrations for correct orientation of parts.

Removing the Housing

1. Lay the breaker in a horizontal position to remove the tool bit.

Note newer models may have a retainer plate (reference item 58 in the parts illustration).

Remove the retainer plate (58) if applicable. Older models that do not have a retainer plate will have sound plugs (12 & 13). See figure 1. Remove these plugs prior to proceeding to the next step.

Note that retainer plugs (28) on early models are threaded and have a hex socket head. Plugs (28A) on later models are of a special design and require the use of special pliers (P/N 60737) to remove or install them (see fig. 2). See the parts illustration for serial number and detail information for each model. The two types of plugs are not interchangeable.

2. Remove the plug (28) or (28A) and then drive out the retainer pin (27) using a punch and hammer.

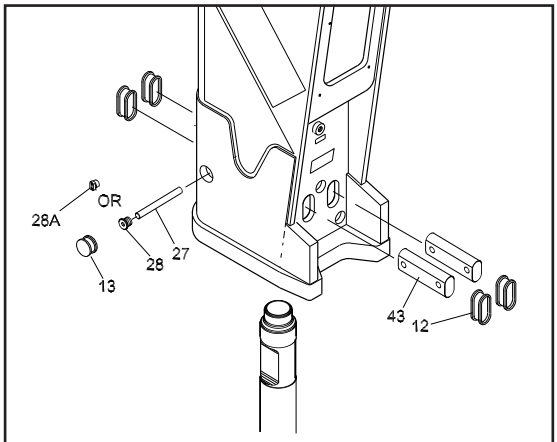


fig 1. Removing the Tool Bit

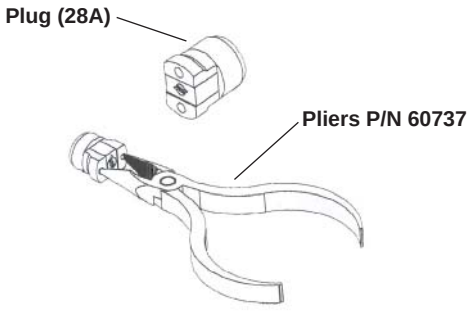


fig 2. Plug & Special Pliers

3. Using a punch and hammer, drive out the rod pins (43) and then remove the tool bit.

4. Remove the sound plugs (13) covering the front head pins (29).

Note that retainer plugs (28) securing front head pins on early models are threaded and have a hex socket head. Behind this style plug are retaining rings (31) and rubber plugs (30).

Plugs (28A) on later models are of a special design and require the use of special pliers (P/N 60737) to remove or install them (see fig. 2). **NOTE**: **Do not attempt to drive this style of plug out with a punch and hammer. Always use the special pliers.** The retaining ring (31) and rubber plug (30) are not used with plug type (28A). See the parts illustration for serial number and detail information for each model. The two types of plugs are not interchangeable.

5. Remove the plug (28) or (28A). If present, remove the retaining ring (31) (see fig. 3).

6. Using a punch and hammer, tap out the retaining pins (29) and, if present, the rubber plugs (30). Remove the lower bushing (37).

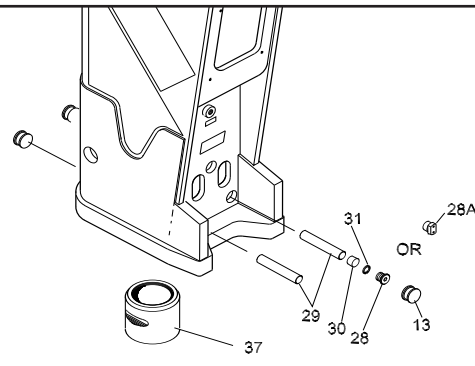


fig 3. Removing the Lower Bushing

7. Stand the breaker up in a vertical position.

8. Remove the window covers (21 & 24) by first removing the capscrews (25) and washers (26). Note that a grease hose (42) is connected to an adapter (45) behind the window (21).

9. Disconnect the hose assembly (42) from the adapters (45) and (46).

10. Remove the sound plugs (10) from each side of the housing (*some models do not have these plugs*). Unscrew the hoses and fittings and remove them. Install plugs in the open ports. Install plugs or caps on the hoses.

NOTICE

Do not attempt to lift the power cell out of the housing with fittings installed in the IN and OUT ports.

The fittings will interfere with removal of the housing.

11. Remove the excavator mounting bracket if one is present..

12. Remove the upper cushion. Item (56) for cur rent models; item (1) for older models (see parts illustrations).

13. The wear plate guide and wear plate must be removed prior to lifting the power cell out of the housing. There are 3 different wear plate designs that have been used since introduction of the EXS model breakers. The 3 designs are shown in detail in the parts illustrations in this manual along with the serial number reflecting the application of the design

    Pay particular attention to the information in the parts list pertaining to wear plate guides and wear plates as none of the 3 designs are interchangeable.

14. Install a lifting eye into each of the threaded holes located in the top of the main accumulator (1). Using slings and a hoist, lift the breaker out of the housing and set it on a flat surface in a vertical position. Keep the slings attached. (See figure 4)

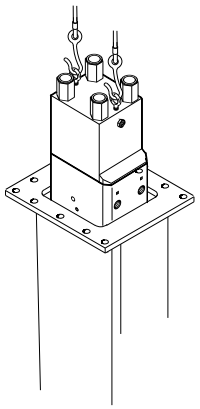


fig 4. Lifting the Power Cell

Power Cell Disassembly

NOTICE

Do not disassemble the poser cell while it is laying on its side.

This may result in damage to internal components.

Accumulators

All of the EXS models contain an accumulator (nitrogen gas chamber) which assists in producing the impact energy. This accumulator or chamber is located in the top of the breaker power cell and is typically charged with nitrogen gas to 230 psi.

Some of the EXS models also contain an accumulator located at the mid-section of the breaker power cell. The purpose of this accumulator is to dampen the recoil shock produced during operation of the breaker. This accumulator is typically charged with to 785 psi of nitrogen gas.

⚠WARNING

Disassembly of the power cell or parts of the power cell without first releasing nitrogen gas stored in accumulators may result in unexpected movement of parts or oil at high velocity.

Discharge the accumulators before disassembling the power cell.

Failure to heed to this warning may result in serious bodily injury.

Discharging The Top Accumulator

1. Remove the protective plug (79) from the charge valve (3). Release the nitrogen charge by depressing the charge valve poppet with a #2 Phillips screwdriver or other blunt tool.

2. After discharging the accumulator, the charge valve may be removed if necessary.

Discharging The Side Accumulator

1. Remove the 2 O-ring plugs (56 & 58).

2. Turn the charge valve (54) counter-clockwise (1 to 2 turns) until gas begins to release from port (58).

3. After discharging the accumulator, the charge valve may be removed if necessary.

Main Accumulator, Seal Retainer and Piston, Cylinder

1. Unscrew and remove the 4 nuts (39). Do not use an impact wrench. Remove the 4 washers (41).

2. Unscrew and remove the 4 tie rods (40). Do not use an impact wrench. Keep the tie rods and tie rod nuts (42) together in matched sets. Lift off the main accumulator using lifting eyes, slings, and a hoist. (See figure 5)

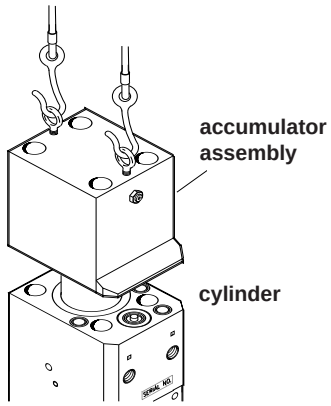


fig 5. Removing the Main Accumulator

3. Install a lifting eye into the top of the piston (16). Using a hoist, lift the piston and seal retainer (5) out of the cylinder (6). Remove the seal retainer off of the piston by tapping it with a rubber hammer. Remove and discard the seals.

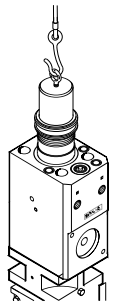


fig 6. Removing the Piston

4. Install a lifting eye into each side of the cylinder. Using a hoist, lift the cylinder (6) off of the lower body (26).

Side Accumulator Disassembly

NOTE: The side accumulator may be serviced without complete disassembly of the power cell and may also be serviced without removing the power cell from the housing. ENSURE THE ACCUMULATOR HAS BEEN DISCHARGED OF NITROGEN BEFORE ATTEMPTING DISASSEMBLY.

The side accumulator may be removed from the power cell in its entirety by removing 4 capscrews (49). (See figure 7)

1. Loosen and remove the capscrews (52) that secure the accumulator cover (51) to the accumulator body (48).

2. Lift off the accumulator cover and then pick out the diaphragm (50).

3. Loosen and remove the nut (60) securing the holder pin (65) and the 3 holders (61, 62, & 63). Pick out the holder pin, the center pin (64), and the 3 holders.

4. Remove and discard the seals (46 & 47).

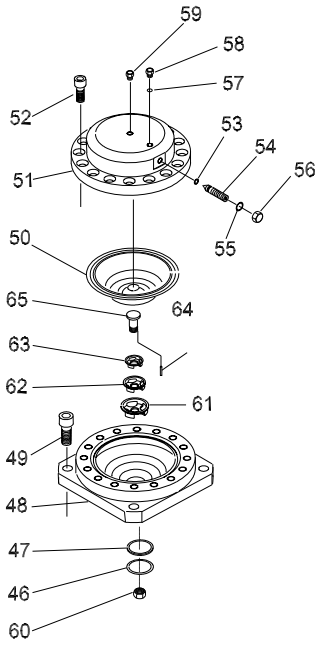


fig 7. Side Accumulator Disassembly

Valve Disassembly

1. Pick out the seals (19 & 20) located on top of the valve plug (18) and discard them.

2. Install a lifting eye into the top of the valve plug. Using a pry bar and scrap metal material to protect the cylinder face, remove the valve plug. (See figure 8)

3. Lift out the valve (17) and valve sleeve (67).

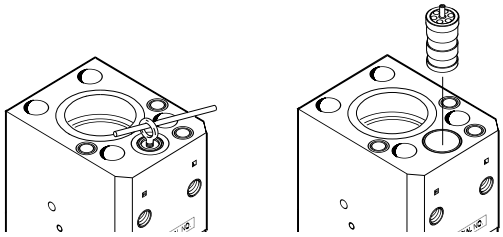


fig 8. Removing the Valve Plug & Valve

Thrust Bushing Disassembly

1. If the lower bushing (37) has not been removed, follow the instructions earlier in this section for removal of the lower bushing.

   Note that retainer plugs (28) on early models are threaded and have a hex socket head. Plugs (28A) on later models are of a special design and require the use of special pliers (P/N 60737) to remove or install them (see fig. 2 earlier in this section). See the parts illustration for serial number and detail information for each model. The two types of plugs are not interchangeable.

2. Remove the plug (28) using an allen wrench or special pliers if plug (28A).

3. Using a punch and hammer, drive out the retainer pin (27).

4. Slide the thrust bushing (36) out through the bottom of the lower body.

   NOTE: The thrust bushing should slide out through the bottom of the lower body without difficulty. If the thrust bushing will not slide out, it will be necessary to obtain a piece of aluminum or brass round stock that has a diameter larger than the inside diameter of the thrust bushing. Place it on top of the thrust bushing and hammer the bushing out using a rod or large punch and hammer. (See figure 9)

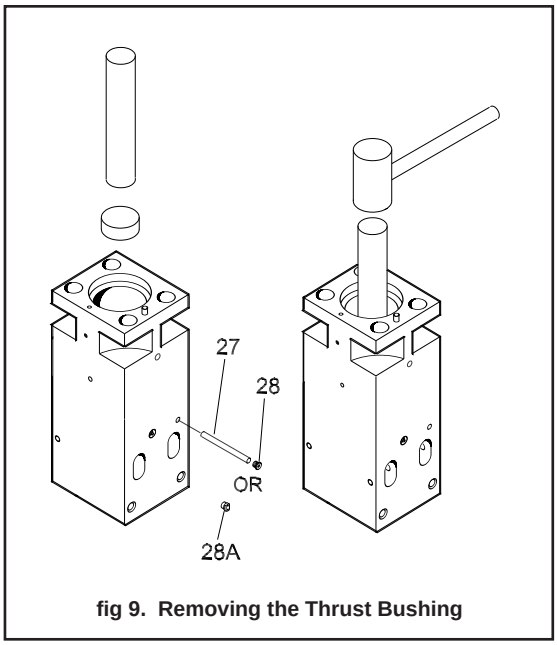


fig 9. Removing the Thrust Bushing

INSPECTION OF PARTS

NOTE: In addition to the instructions and guidelines below, also see the pages titled "WEAR TOLERANCES" at the end of the "SERVICE INSTRUCTIONS" section.

Seal Retainer, Piston, and Cylinder

Inspect the surfaces of the bore of the seal carrier and cylinder and the surface of the piston for wear, galling, and cracks. A light scuffing or burnishing of surfaces is normal. Check especially for freedom of movement of the parts and that the piston does not stick or bind as it is moved in the seal carrier and cylinder. Coat the parts with hydraulic oil for this test.

If small burrs are found, remove them with 220 grit emery cloth.

If galling is present, consult the manufacturer to see if the part may be reworked.

If cracks are present, the part must be replaced.

Valve Sleeve, Valve, and Valve Plug

Inspect the surface of the bore of the valve sleeve and the surface of the valve and valve plug for wear, galling, and cracks. A light scuffing or burnishing of surfaces is normal. Check especially for freedom of movement of the valve in the valve sleeve.

If small burrs are found, remove them with 220 grit emery cloth. Do not break the sharp edges of the valve sleeve or valve spool as this will cause the valve to malfunction.

If galling is present, the part must be replaced.

If cracks are present, the part **must** be replaced.

Thrust Bushing and Lower Bushing

Inspect the thrust bushing and lower bushing for excessive galling and metal pickup on the tool bit. Also check for cracks. If cracks are present, the parts must be replaced.

The extent of wear of the upper and lower bushings and the tool bit can be checked by moving the tool bit back and forth and measuring the gap between the tool bit and the lower bushing. If the gap is more than 0.354 in./9 mm the upper bushing, lower bushing, and the tool bit should be replaced. A gap in excess of 0.354 in./9 mm will cause damage to the piston. Do not just replace the tool bit or the lower bushing individually as this will result in premature wear of the replaced component. It is recommended to replace **all** worn components.

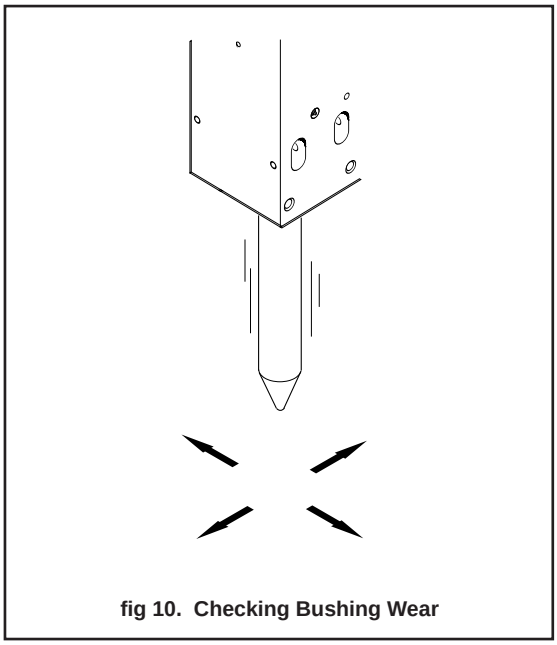


fig 10. Checking Bushing Wear

Tie Rods and Tie Rod Nuts

Inspect the tie rods and nuts for wear and cracks.

When clean and coated with anti-sieze, the tie rods should thread into the nuts without any effort. If some resistance is encountered, check all threads for dirt particles or damage.

NOTE: If a tie rod is found to be broken, all 4 tie rods must be replaced.

Retaining Pins and Rod Pins

Inspect all retaining pins and tool retainers for excessive wear, cracks, and chipping. Replace if cracks or chipping is noted.

Replace any rubber plug that was removed.

Housing

Inspect the housing for cracks on the outside and on the inside. If cracks are present, have a certified welder perform repairs. After repairs, the housing must be stress relieved.

Make sure all decals and stickers are legible.

Inspect the upper and lower bumpers for distress. If the material is crushed, cracked, or has chunks missing, replacement is necessary.

Inspect all wear plates for excessive wear and looseness. Replace parts as necessary.

ASSEMBLY

Before assembly, thoroughly clean all components with a degreasing solution and then blow dry with compressed air to thoroughly clean oil passage ways.

⚠WARNING

Exercise care when using compressed air and degreasing solutions. Always use protective eye wear and breathing protection. If flammable solvents are used, make sure they are used in an area where there will be no presence of open flame, static electricity or sparks from electrical equipment such as electric motors.

When assembling internal metal parts, always coat them thoroughly with hydraulic fluid.

Seals and O-rings should be lubricated with clean hydraulic oil if they will be exposed to the hydraulic fluid. Otherwise, they should be lubricated with grease.

Handle machined parts carefully to ensure they are not damaged during the assembly process. Do not force parts together. If difficulty is encountered in assembling parts, inspect each part for burrs, nicks, or galling before proceeding any further.

Thrust Bushing, and Lower Bushing Assembly

1. Turn the lower body so that the tool bit end is facing up.

2. Place the thrust bushing into the bore of the lower body so that the bevel on the inside diameter faces toward the tool bit end of the lower body.

3. Obtain a piece of aluminum or brass round stock that has a diameter larger than the inside diameter of the thrust bushing. Place the round stock on top of the upper bushing. Using a rod or large punch against the piece of stock, tap the thrust bushing into place. Periodically check the position of the thrust bushing as the tapping progresses. See figure 11.

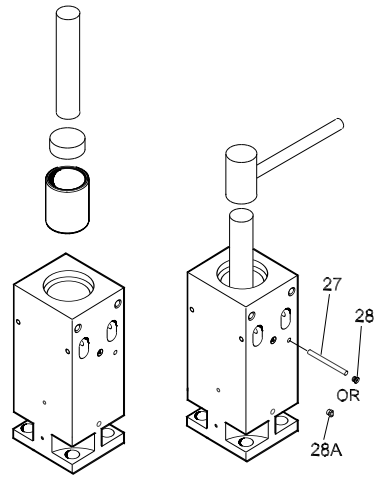


fig 11. Installing the Thrust Bushing

4. Using a punch, tap the retainer pin (27) until it seats. Install the hex socket plug (28 or rubber plug (28A).

Note that retainer plugs (28) on early models are threaded and have a hex socket head. Plugs

(28A) on later models are of a special design and require the use of special pliers (P/N 60737) to remove or install them (see fig. 2 earlier in this section). See the parts illustration for serial number and detail information for each model. The two types of plugs are not interchangeable.

5. Install the lower bushing (37). Align the grooves in the bushing with the retainer pin holes. Install the retainer pins (29), new rubber plugs (30), retaining rings (31) and hex socket plugs (35) or rubber plug (35A).

   Note that retainer plugs (35) on early models are threaded and have a hex socket head. Plugs (35A) on later models are of a special design and require the use of special pliers (P/N 60737) to remove or install them (see fig. 2 earlier in this section). Plug style (35A) is not used with (30) and (31). See the parts illustration for serial number and detail information for each model. The two types of plugs are not interchangeable.

6. Position the lower body so that the lower bushing is resting on the floor or work surface.

Cylinder Assembly

1. Apply clean hydraulic fluid and install the seals (12, 13 & 14) to the underside of the cylinder (6) as shown in figure 12.

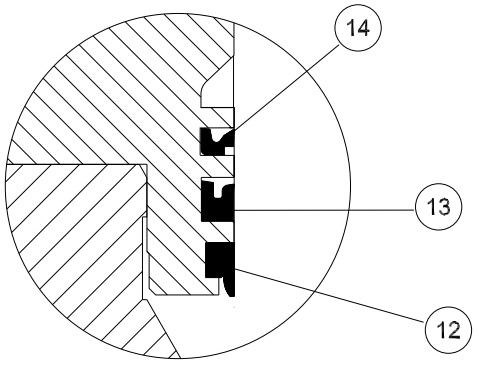


fig 12. Cylinder Seal Detail

2. Position the cylinder on top of the lower body as shown in the parts illustration.

Valve and Valve Seals Installation

⚠ CAUTION

Do not hammer the spool or sleeve into the bore in the main body.

Hammering the spool or sleeve into the bore will damage the spool stem.

1. Lubricate the valve sleeve (67) with hydraulic fluid and then install it into the cylinder.

2. Lubricate the valve (17) with hydraulic fluid and then install the valve into the valve sleeve.

3. Apply clean hydraulic fluid and install the O-rings (19 & 20) onto the valve plug (18). Install the valve plug.

Piston Installation

1. First make sure the interior of the cylinder and the exterior of the piston (16) are coated with hydraulic fluid.

2. Install a lifting eye into the top of the piston. Using a hoist, lift the piston and insert it into the cylinder. Lower the piston slowly, being careful not to damage it or the interior of the cylinder.

Seal Retainer Assembly and Installation

NOTE: On MB40EXS through MB100EXS models two seal retainer designs have been used and each have different seal combinations. The most recent design contains a brass insert. The older design does not contain this brass insert. See the parts illustration for serial number and detail information for each model. These seal retainers are interchangeable.

1. Select one of the figures (13 or 14) below that best corresponds with the seal retainer design you are working with.

2. Apply grease to the gas seal (10) and install it in the area shown in the figure selected.

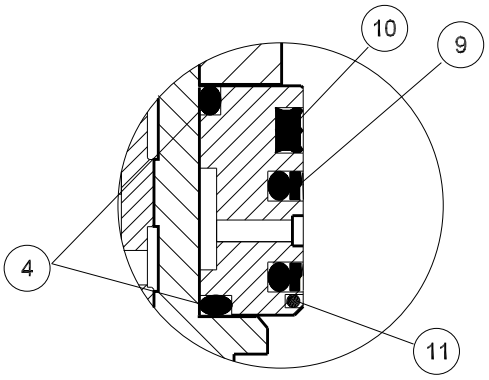


fig 13. Seal Retainer Seals (OLD DESIGN)

3. Apply clean hydraulic fluid to the seals (4, 9, and 11 in fig 13) or (4 & 9 in fig 14) and install them as shown.

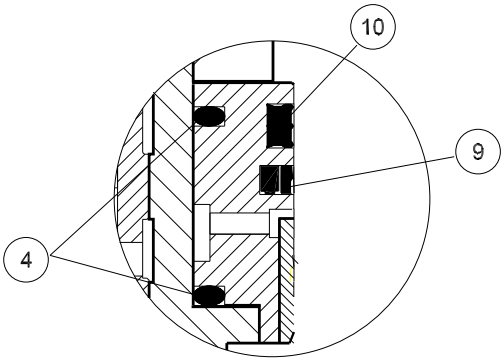


fig 14. Seal Retainer Seals (NEW DESIGN with BRASS INSERT)

3. Place the seal retainer onto the piston. Make sure the seal carrier is positioned as shown in the figures above. Slide the seal retainer down the piston and press it into the cylinder.

Main Accumulator Assembly

1. Apply grease and install an O-ring (4) into the groove located at the bottom of the main accumulator (1).

2. Install lifting eyes into the top of the main accumulator. Using a hoist, set the main accumulator on top of the cylinder as shown in figure 15.

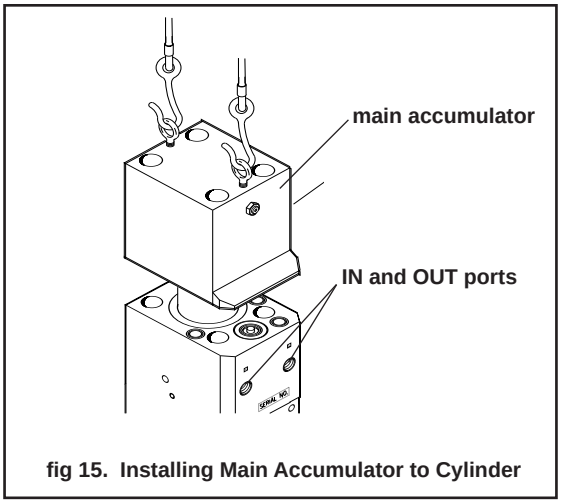


fig 15. Installing Main Accumulator to Cylinder

Tie Rod Assembly

Changes to tie rod and nut design have occurred since inception of the EXS model breakers. The first design applied was a tie rod (40) containing *cut* threads. It was used with a triangular shaped nut (42). The combination using *cut* threads are no longer available.
In later years, the *cut* threads were changed to *rolled* threads which remain available.

The most recent design is a change to a round nut with *rolled* threads that is used exclusively with a new lower body design.

See the parts illustration for serial number and detail information for each model.

1. Apply Kopr-Kote™ anti-sieze to the threads of each tie rod (40) and the threads of the nut (42).

2. Install one tie rod at a time and check it and the nut for proper thread engagement. If difficulty is encountered while turning the tie rod by hand, inspect the threads of the tie rod and nut for burrs or dirt.

4. With successful thread engagement, screw the tie rods into the nuts.

5. Apply Kopr-Kote™ anti-sieze to both sides of the washers (41) and the threads of the nuts (39). Install the washers and nuts onto the tie rods and tighten by hand.

6. Tighten the nuts in a cross pattern in three torque increments to the torque specified in the torque chart in this manual. **DO NOT USE AN IMPACT WRENCH.**

Valve Adjuster (not used on all models)

1. Apply grease and install a new O-ring (73) and back-up rings (68) onto the valve adjuster as shown in the illustration below. NOTE: Some models do not use the back-up rings.

2. Install the valve adjuster by hand until it bottoms out in the bore and stops turning. If an allen wrench is used, do not force the valve adjuster beyond the bottom-out point as this will damage the valve. Then turn the valve adjuster 2-1/2 turns counter clockwise.

3. Using a felt pen, place a mark on top of the valve adjuster and a corresponding mark on the face of the cylinder. See figure 16.

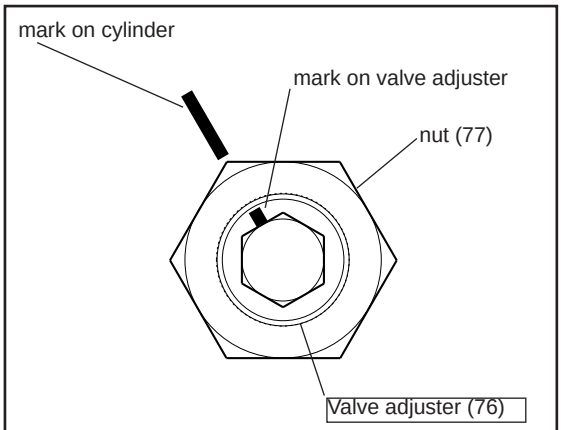


fig 16. Setting the Valve Adjuster

4. Apply Loctite™ 680 to the threads of the nut (77) and then install the nut onto the valve adjuster. DO NOT LET THE VALVE ADJUSTER TURN - IT MUST REMAIN AT THE MARKS. Use an allen wrench to prevent the valve adjuster from turning and then tighten the nut. Final tighten the nut to 100 ft. lb./136 Nm. Make sure the valve adjuster does not turn during the nut tightening process and that the mark on the valve adjuster and the cylinder face correspond.

Side Accumulator (not used on all models)

1. If the holders (61, 62, & 63) were disassembled, reassemble them to the accumulator body (48). Make sure the center pin (64) is positioned correctly as shown in figure 17.

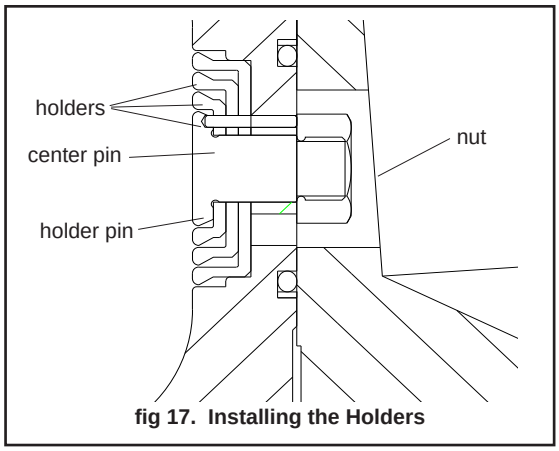


fig 17. Installing the Holders

2. Tighten the nut (60) securely.

3. Install a new diaphragm (50) to the accumulator body (48) and then install the accumulator cover (51) as shown in figure 18.

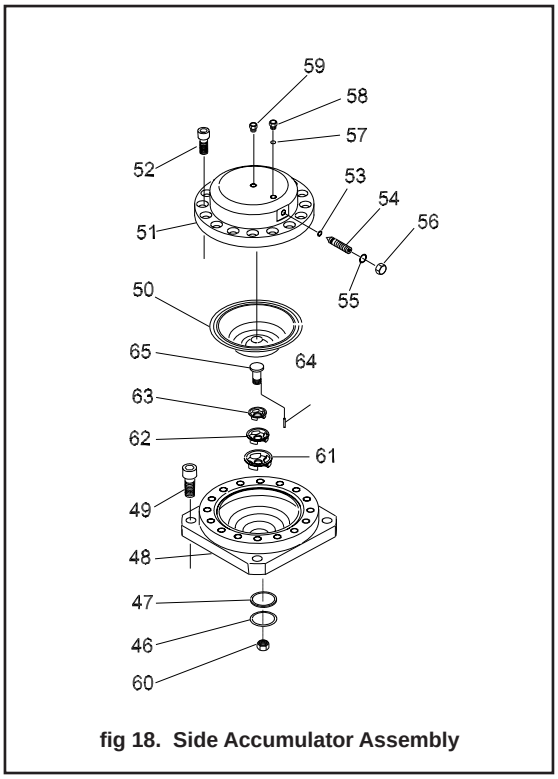


fig 18. Side Accumulator Assembly

4. Apply Loctite™ 242 and install the capscrews (52) and tighten. Final torque is accomplished later.

5. Install the accumulator charge valve (54) into the accumulator cover. Do not tighten it down at this time. Loosely install the cap (56).

6. Install the plugs (58 and 59).

7. Install the O-ring (46) and back-up ring (47).

8. Install the side accumulator assembly to the cylinder using 4 capscrews (49). Final tighten to the torque specified in the torque table.

9. Final tighten the capscrews (52) to the torque specified in the torque table.

Accumulator Charging

Charge each accumulator as specified on the page titled "NITROGEN CHARGING THE ACCUMULATORS" found earlier in this manual.

Housing Installation

NOTE: If maintenance is performed on a breaker to the extent that the power cell is removed from the housing, it is always recommended to take advantage of this opportunity to replace the upper and lower bumpers and wear plates even if they appear only slightly used.

1. Install a lifting eye into each of the threaded holes in the top of the main accumulator assembly. Attach slings and a hoist.

2. Lift the power cell and lower it into the housing. Make sure the oil ports are positioned with the window opening in the housing. Lower the power cell into the housing until it rests against the lower bumper (40).

3. Install the upper most wear plate guide with a new wear plate. Secure in place with capscrews and washers. Refer to the parts illustrations to determine the correct wear plate guide and wear plate design.

4. Install the upper bumper guide and upper bumper. Refer to the parts illustrations to determine the correct upper bumper and, if applicable, upper bumper guide.

5. Install the mounting bracket.

6. Install the hose fittings.

7. Install the grease hose assembly (42), if applicable, to the port in the power cell. Attach the other end of the hose to the adapter (45) in the window cover (21) and then install the window cover to the housing.

8. Connect the "breaker to carrier" hoses to the power cell by routing them through the hose covers (23) and window cover (21).

9. Install the window cover (24).

Tool Bit Installation

1. Grease the top 250 mm/10 inches of the tool bit with high temperature grease and insert the tool bit into the lower body. Align the notches of the bit with the rod pin (43) holes in the lower body and then install the rod pins.

2. Install the stop pin (27) followed by the hex socket plug (28) or rubber plug (28A), whichever is applicable.

3. Install the sound plugs (12 & 13) and the retainer plate (58) if applicable.

Sound Plugs and Stickers

As a final check, ensure all sound plugs are in place and that all safety and instructional stickers are in place and legible.

Testing for Operation and Performance

1. Connect the breaker to an excavator. The excavator should have a known good hydraulic circuit which is set to produce the gallons per minute/liters per minute for this model breaker. See the specifications chart. Make sure the system relief setting is set as specified in the specifications chart. Use Stanley's recommended test procedures to verify flow and pressure settings.

2. Continue testing until the hydraulic fluid temperature reaches its normal operating range (not to exceed 88° C/190° F). **NOTE: Hydraulic oil temperature must never exceed 88° C/190° F.** If the breaker does not perform correctly, refer to the trouble shooting section of this manual.

3. If the breaker is going to be stored, ensure it is stored in an upright position. Refer to the storage section of this manual.

Flow Test Procedure

The correct performance of this procedure will verify if the auxiliary circuit of the carrier is adequate to properly operate a Stanley attachment.

This procedure is generic in form. It is the end users responsibility to ensure that this procedure will work with his specific type of equipment.

If an adequate flow meter is not available, contact your Stanley Hydraulic Distriibutor for assistance.

TEST PROCEDURE:

1) With the auxiliary circuit (or kit) completely installed connect the flow meter between the tool inlet and outlet hoses.

   (NOTE) Always use the hoses that are supplied for the attachment and make sure the machine hydraulic oil is between 90 to 120 degrees. This will assure correct readings and adjustments.

2) With the machine setting at the mode that's going to be used to operate the attachment record the GPM _____.

   Locate the correct flow for the attachment in the manual under the specification section. Adjust the machine to the correct GPM.

   (NOTE) If possible, always set the machine to the highest gpm output mode. This will prevent the operator from over flowing the attachment.

3) Once the correct GPM flow is achieved fully open the restrictor on the flow meter.

4) With the machine in the attachment mode set in step 2 record the back pressure. At this point the pressure reading on the pressure gauge is the back pressure in the circuit. This pressure must not exceed 200 psi/13.5bar. Excessive back-pressure will slow the attachments operation and lead to premature seal failures and over heating . **RECORD THE BACK PRESSURE _____ (PSI)**

5) Close the restrictor valve on the flow meter until the attachment relief starts to crack or open. The relief valve opens when the flow rate (GPM), indicated on the flow meter begins to decline rapidly. Locate the tools operating system relief pressure in the specification section in the manual. Adjust attachment relief to specification.

   (NOTE) The relief valve pressure must be greater than the operating pressure of the attachment and three times the back-pressure. Never use the relief valve to control the flow rate in the circuit. Cracking pressure means the loss of 4 or more gpm.

   RECORD THE RELIEF CRACKING PRESSURE _____(PSI)

   Example: Operation pressure of a breaker is 2700 psi. Back pressure is 150 psi. A good rule to follow when setting the relief, multiply the back pressure by 3 then add this number to the operation pressure of the attachment.

Operating pressure.	2700 psi.
Back pressure.	450 psi.
Operating pressure of the tool.	3150 psi.

   The relief valve setting must be greater then the estimated operating pressure of the tool. If the setting is lower, damage to the circuit may occur, excess heat will be generated in the circuit which will damage the attachment and carrier.

HEAT LOAD TEST

With the installation kit properly installed and adjusted per the above procedure conduct the heat load test.

1) Connect the flow meter as mentioned above.

2) With the carrier set in the attachment mode, restrict the flow meter until a pressure of 1000 psi is achieved. This pressure must be maintained throughout the heat test; closing of the restictor may be required as the temperature increases. Monitor the oil temperature from the flow meter until no change is noted (reading stabilized). Record the time required for oil to stabilize. Record the surrounding temperature (ambient temperature).

RECORD TIME REQUIRED TO STABILIZE _____ min.

RECORD THE STABILIZED OIL TEMPERATURE _____ F

Flow Test Procedure

RECORD THE AMBIENT TEMPERATURE
_____ F

The “heat rise” is calculated as the stabilized temperature minus the ambient temperature.

Example: Stabilized temperature 160 degrees
Ambient temperature - 80 degrees
Heat rise 80 degrees

The normal operating temperature range of this circuit will be the typical ambient temperature range for the geographical area plus the heat rise calculated above. Ensure that the operating temperature range is lower then 180 degrees for optimum operation of the attachment.

TROUBLE SHOOTING:

If adequate pump flow is available from the carrier pump(s), but is not getting to the attachment consult your service representative and review the following.

a) Attachment valve(s) are not actuating. Review all electrical connections that are part of the attachment kit.

b) Ensure proper voltage to the valve(s).

c) Ensure the REG port of the valve is not blocked.

d) Check to make sure the carriers main relief is set to the manufacturers recommendation, and that this value is greater then or equal to the attachment circuit relief.

e) If the valve will not turn off, check the drain (tank) line of the valve to ensure that the pressure is 50 psi or less.

Definition of Terms

Tool	The hydraulic attachment which the auxiliary circuit is intended to power. These may include hydraulic breakers, compactors, shears, etc...
Operating Pressure	That pressure at which the tool will naturally operate without influence of outside pressure relief mechanisms. This pressure is an operating characteristic of the tool and cannot be altered by the end user without changing the tool design.
Relief Pressure	The relief pressure is that pressure at which the circuit will dump fluid in order to protect itself from damage.
Back Pressure(BP)	The pressure at the tool's connection to the return circuit of the carrier.
Flow Meter	Instrument for testing the operating characteristics of a hydraulic circuit. The data usually available from this device are pressure (psi/bar), flow (gpm/lpm), and temperature (deg F/deg C).
Restrictor Valve	A valve on the flow meter which allows the user to simulate an operating tool by adding a pressure load (through restriction) to the circuit. This feature is used to evaluate relief settings and flow ratings at pressure.
V60/V65/V100 Valve	A priority flow control valve manufactured by Stanley Hydraulic Tools. Allows for Optimum operation of any attachment by providing the proper amount of flow for operation of the tool. The "priority" aspect allows the attachment to function properly if another control function is activated.
Inlet Flow	The hydraulic oil supplied to the IN port of the tool or valve.
Regulated Flow	The flow of oil supplied to the tool by the V60/V100 valve.
By-Pass Flow	The oil flow that is supplied by the carriers pump, but not used in the operation of the attachment. By-pass flow equals Inlet flow (to the valve) minus the Regulated flow.
Pressure Line	The hydraulic line(s) which supply pressurized oil, from the pump, to the valve or tool.
Return Line	The hydraulic line which connects the OUT port of the tool to the tank circuit of the carrier.
Cracking Pressure	The pressure at which the relief valve starts to open. Can be seen by a drop in the flow rate as shown by the flow meter.
Full open Pressure	The pressure at which the relief valve is completely open dumping all system flow to tank.
Ambient air temperature	The temperature of the outside air.
Stabilized Temperature	The temperature at which the carrier hydraulic system temperature will stop rising during testing or operation.

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