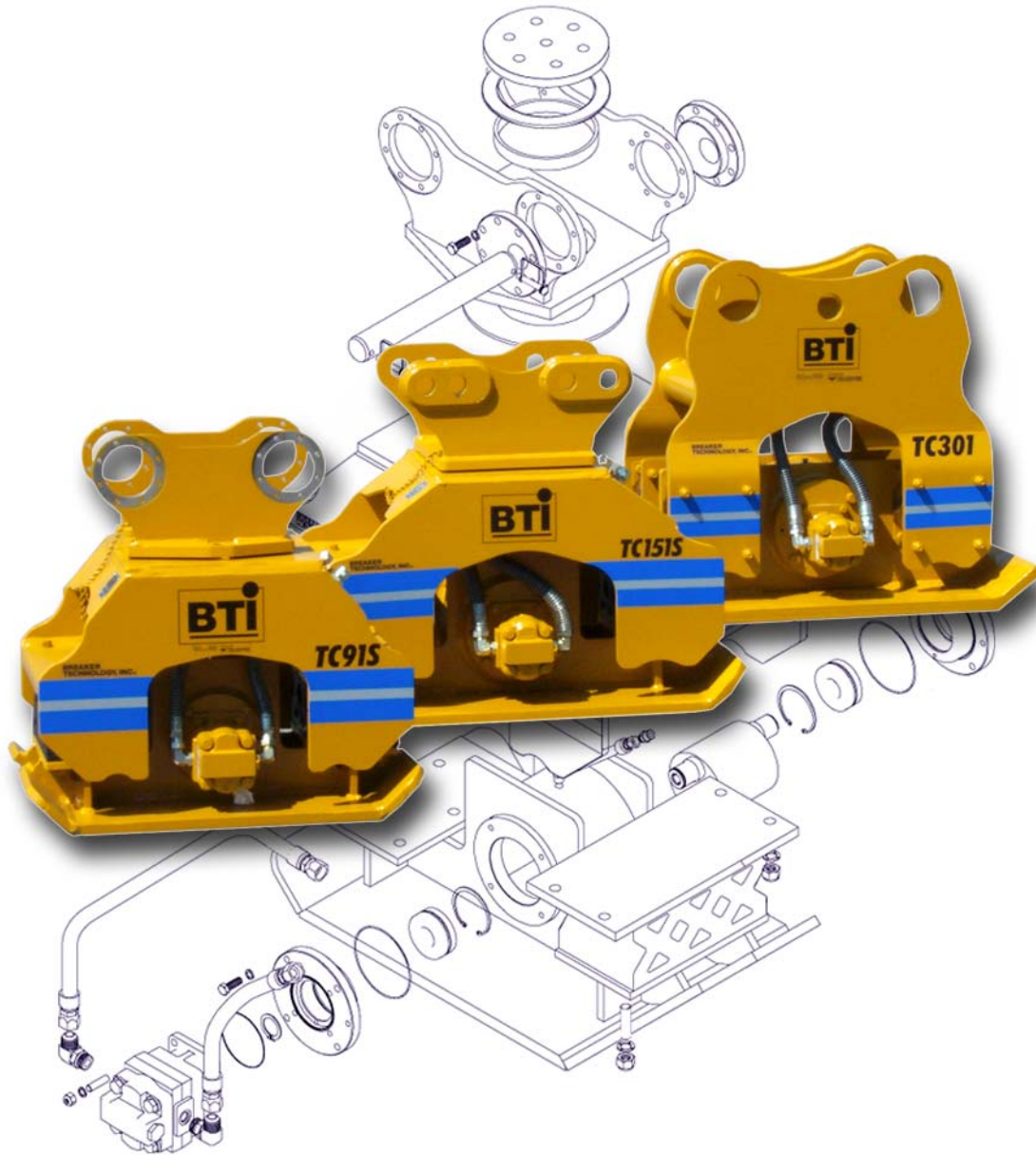


# OWNER'S MANUAL

## TC SERIES HYDRAULIC COMPACTORS



**For Models :  
TC51, TC71, TC80, TC91, TC151 & TC301**



**BREAKER  
TECHNOLOGY,  
INC.**

an Astec company



**BREAKER TECHNOLOGY**

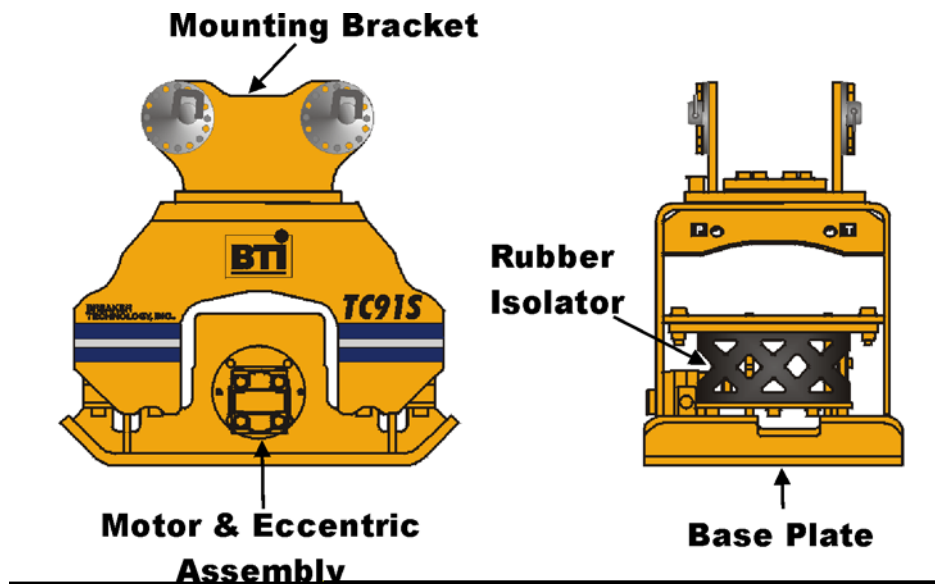


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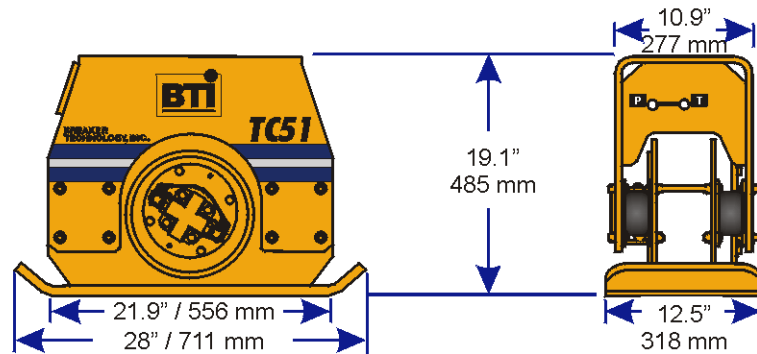
BTI compactors are designed to mount on mini-excavators, backhoes and excavators. BTI compactors combine impulse force, down pressure, and vibration to work as soil compactors or pile/sheet drivers.

The compactor has 3 basic components:

- Mounting Bracket: attaches the compactor to the carrier boom and is complete with adjustable mounting pins.
- Rubber Isolators: act as suspension between the base and the mount & isolate the compactor forces from the carrier.
- Base: includes a hydraulic motor coupled to an eccentric, encased in a steel housing with the base plate attached.

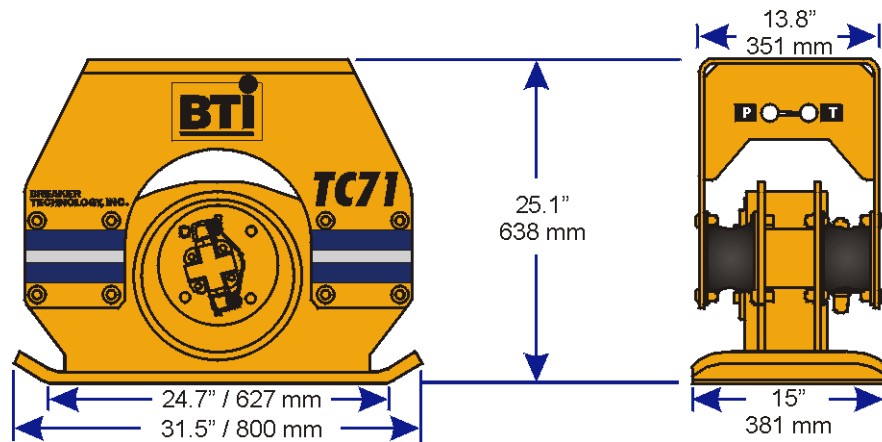


	<b>TC51L/FC</b>	<b>TC51H/FC</b>
<b>Impulse Force:</b>	2,250 - 3,000 lb 1,020 - 1,360 kg	2,250 - 3,000 lb 1,020 - 1,360 kg
<b>Oil Flow Req'd:</b>	8 - 12 US gpm 30 - 45 l/min	12 - 18 USgpm 44 - 68 l/min
<b>Cycles/Minute:</b>	1,940 - 2,200	1,940 - 2,200
<b>Hydraulic Connections:</b>	#8 JIC Male	#8 JIC Male
<b>Minimum Tube I.D.:</b>	1/2"	1/2"
<b>Operating Pressure:</b>	1,500 - 2,200 psi 102 - 150 bar	1,500 - 2,200 psi 102 - 150 bar
<b>Base Plate Dimension:</b>	12.5 x 22" 317.5 x 558.5 mm	12.5 x 22" 317.5 x 558.5 mm
<b>Compaction Area:</b>	1.91 sq ft 0.177 sq M	1.91 sq ft 0.177 sq M
<b>Weight:</b>	295 lb 158 kg	295 lb 158 kg
<b>Swivel Rotation:</b>	N/A	N/A
<b>Locking Positions:</b>	N/A	N/A
<b>Carrier Weight:</b>	2,000 - 10,000 lb 907 - 4, 536 kg	2,000 - 10,000 lb 907 - 4, 536 kg

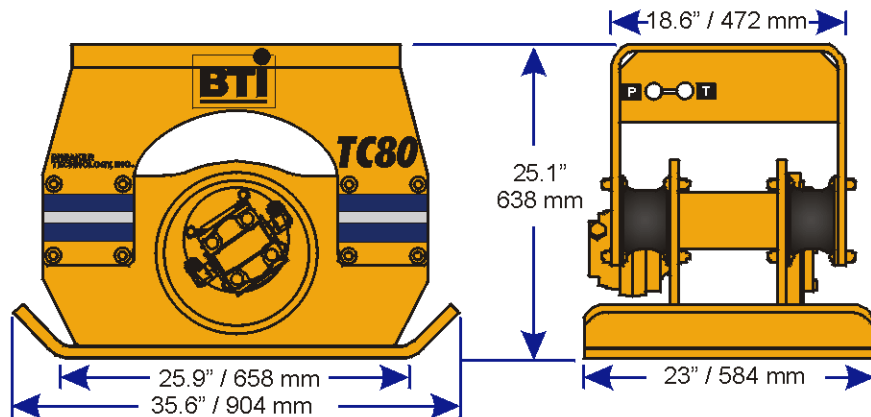


# TC71S SPECIFICATIONS

	<b>TC71S</b>	<b>TC71FC</b>
<b>Impulse Force:</b>	3,300 - 5,000 lb 1,497 - 2,268 kg	3,300 - 5,000 lb 1,497 - 2,268 kg
<b>Oil Flow Req'd:</b>	13 - 17 US gpm 49 - 63 l/min	13 - 22 USgpm 50 - 83 l/min
<b>Cycles/Minute:</b>	2,020 - 2,500	2,020 - 2,500
<b>Hydraulic Connections:</b>	#12 JIC Male	#12 JIC Male
<b>Minimum Tube I.D.:</b>	3/4"	3/4"
<b>Operating Pressure:</b>	1,200 - 2,000 psi 81 - 136 bar	1,200 - 2,000 psi 81 - 136 bar
<b>Base Plate Dimension:</b>	15 x 26" 381 x 660 mm	15 x 26" 381 x 660 mm
<b>Compaction Area:</b>	2.71 sq ft 0.252 sq M	2.71 sq ft 0.252 sq M
<b>Weight:</b>	610 lb 277 kg	610 lb 277 kg
<b>Swivel Rotation:</b>	N/A	N/A
<b>Locking Positions:</b>	N/A	N/A
<b>Carrier Weight:</b>	5,500 - 15,500 lb 2,492 - 7,030 kg	5,500 - 15,500 lb 2,492 - 7,030 kg

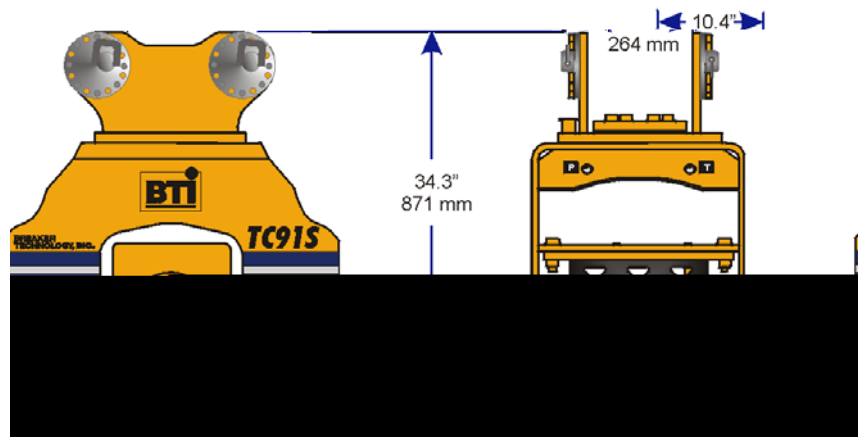


<b>Impulse Force:</b>	5,000 - 8,200 lb 2,270 - 3,727 kg
<b>Oil Flow Req'd:</b>	20 - 26 US gpm 75 - 97 l/min
<b>Cycles/Minute:</b>	1,659 - 2,200
<b>Hydraulic Connections:</b>	#12 JIC Male
<b>Minimum Tube I.D.:</b>	3/4"
<b>Operating Pressure:</b>	1,300 - 2,000 psi 88 - 136 bar
<b>Base Plate Dimension:</b>	23 x 26" 584 x 660 mm
<b>Compaction Area:</b>	4.15 sq ft 0.39 sq M
<b>Weight:</b>	969 lb 441 kg
<b>Swivel Rotation:</b>	Floating (Optional)
<b>Locking Positions:</b>	90°, 0°, 90°
<b>Carrier Weight:</b>	7,700 - 25,300 lb 3,500 - 11,500 kg



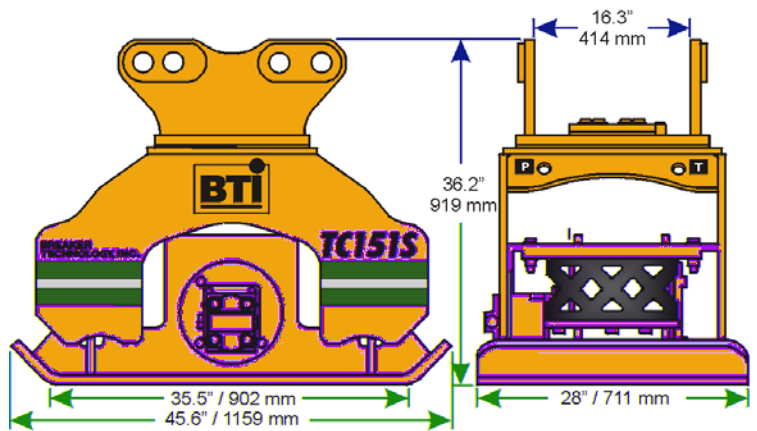
## TC91S SPECIFICATIONS

<b>Impulse Force:</b>	5,000 - 8,200 lb 2,270 - 3,727 kg
<b>Oil Flow Req'd:</b>	20 - 26 US gpm 75 - 97 l/min
<b>Cycles/Minute:</b>	1,659 - 2,200
<b>Hydraulic Connections:</b>	#12 JIC Male
<b>Minimum Tube I.D.:</b>	3/4"
<b>Operating Pressure:</b>	1,300 - 2,000 psi 88 - 136 bar
<b>Base Plate Dimension:</b>	23 x 27" 584 x 686 mm
<b>Compaction Area:</b>	4.3 sq ft 0.40 sq M
<b>Weight:</b>	1,130 lb 514 kg
<b>Swivel Rotation:</b>	180°
<b>Locking Positions:</b>	90°, 45°, 0°, 45°, 90°
<b>Carrier Weight:</b>	7,700 - 25,300 lb 3,500 - 11,500 kg



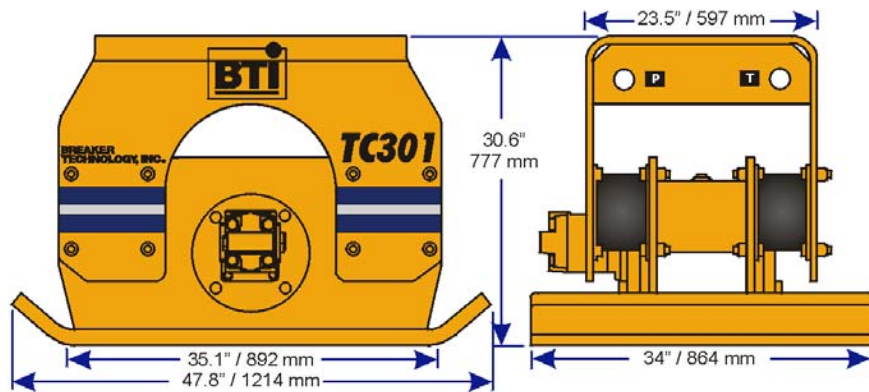


	<b>TC151S</b>	<b>TC151SH</b>
<b>Impulse Force:</b>	11,120 - 16,610 lb 5,055 - 7,550 kg	11,120 - 16,610 lb 5,055 - 7,550 kg
<b>Oil Flow Req'd:</b>	25 - 31 US gpm 95 - 117 l/min	35 - 43 US gpm 132 - 163 l/min
<b>Cycles/Minute:</b>	1,800 - 2,200	1,800 - 2,200
<b>Hydraulic Connections:</b>	#16 JIC Male	#16 JIC Male
<b>Minimum Tube I.D.:</b>	1"	1"
<b>Operating Pressure:</b>	1,500 - 2,000 psi 102 - 136 bar	1,100 - 1,600 psi 75 - 109 bar
<b>Base Plate Dimension:</b>	28 x 36.5" 711 x 927mm	28 x 36.5" 711 x 927mm
<b>Compaction Area:</b>	7.1 sq ft 0.66 sq M	7.1 sq ft 0.66 sq M
<b>Weight:</b>	1,825 lb 830 kg	1,830 lb 832 kg
<b>Swivel Rotation:</b>	180°	180°
<b>Locking Positions:</b>	90°,45°,0°,45°,90°	90°,45°,0°,45°,90°
<b>Carrier Weight:</b>	15,400 - 48,400 lb 7,000 - 22,000 kg	15,400 - 48,400 lb 7,000 - 22,000 kg



## TC301 / TC301H SPECIFICATIONS

	<b>TC301</b>	<b>TC301H</b>
<b>Impulse Force:</b>	16,300 - 24,300 lb 7,409 - 11,000 kg	16,300 - 24,300 lb 7,409 - 11,000 kg
<b>Oil Flow Req'd:</b>	35 - 43 US gpm 132 - 163 l/min	50 - 61 gpm 189 - 231 l/min
<b>Cycles/Minute:</b>	1,800 - 2,200	1,800 - 2,200
<b>Hydraulic Connections:</b>	#16 JIC Male	#20 JIC Male
<b>Minimum Tube I.D.:</b>	1"	1 <sup>1/4</sup> "
<b>Operating Pressure:</b>	1,500 - 2,000 psi 102 - 136 bar	1100 - 1600 psi 75 - 109 bar
<b>Base Plate Dimension:</b>	34 x 37" 864 x 940 mm	34 x 37" 864 x 940 mm
<b>Compaction Area:</b>	8.74 sq ft 0.812 sq M	8.74 sq ft 0.812 sq M
<b>Weight:</b>	2,150 lb 978 kg	2,155 lb 980 kg
<b>Carrier Weight:</b>	31,900 - 105,600 lb 14,500 - 48,000 kg	31,900 - 105,600 lb 14,500 - 48,000 kg



Danger, Warning, and Caution are hazard alerts used in this manual and on the compactor decals to identify hazards on or near the carrier and compactor.

** DANGER**

**Danger** - Immediate hazards, which WILL result in severe personal injury or death if the proper precautions are not taken.

** WARNING**

**Warning** - Hazards or unsafe practices, which COULD result in personal injury or death if the proper precautions are not taken.

** CAUTION**

**Caution** - Hazards or unsafe practices, which COULD result in product or property damage if the proper precautions are not taken.

BTI cannot anticipate every possible circumstance that might involve a hazard. The hazard alerts in this publication and on the product are therefore not all inclusive. If a tool, procedure, work method or operating technique not specifically recommended by BTI is used, you must satisfy yourself that it is safe for you and others. You should also ensure that the compactor and carrier will not be damaged or made unsafe by the operation, maintenance or repair procedures you choose.

### **⚠️WARNING**

Do not operate the compactor with personnel in the immediate area of the carrier and compactor.

### **⚠️WARNING**

Note and avoid all hazards and obstructions such as overhangs, ledges, slide areas, electrical lines, underground cables, water mains, gas lines, etc. When operating close to electrical lines, underground cables, water mains or gas lines, contact the responsible authority and request assistance.

### **⚠️WARNING**

Do not operate this machine unless you have read and understood the instructions and warnings in the Compactor Owner's Manual. Failure to follow the instructions or heed the warnings could result in injury or death. Proper care is your responsibility. Contact your distributor or BTI for replacement manuals or decals.

** WARNING**

Hydraulic fluids are under high pressure. Fluid escaping under pressure can penetrate the skin causing serious injury. Relieve all pressure before disconnecting hoses. Do not use your hand to check for hydraulic leaks. If any fluid is injected into the skin, a doctor must surgically remove it within a few hours or gangrene may set in.

** WARNING**

Do not attempt to repair or modify the compactor unless you are a qualified service technician. Read and understand your owner's manuals. Failure to follow the instructions or heed the warnings could result in severe personal injury or death. Proper care is your responsibility. Contact your distributor or BTI for replacement parts.

** CAUTION**

Some compactor components are heavy or awkward, plan carefully how you will handle them when installing, removing, or disassembling.



Head  
Protection



Foot  
Protection



Eye  
Protection



Hearing  
Protection

Do not operate or service the compactor unless you are qualified.

Avoid loose fitting clothing, loose or uncovered long hair, jewelry and loose personal articles. These can get caught in moving parts. Jewelry may also ground a live circuit.

Know and use the protective equipment that is to be worn when operating or servicing the carrier. Hard hats, protective glasses, protective shoes, gloves, reflector type vests and ear protection are types of equipment that may be required.

Never drive or operate any carrier while you are under the influence of alcohol or drugs.

Consult your supervisor if you do not understand the Compactor Owner's Manual.

The compactor must be sized properly for both the carrier on which it will be mounted and the work to be done.

**Sizing the Compactor based on the Type of Work**

Most applications require the soil under a road or load bearing surface to be compacted to 95% or greater than the density of the original material removed. This can be achieved with a compactor, provided the soil is the correct type and moisture.

Uniform materials like clay and sand are difficult to compact. Virgin dirt, pit run gravel, or soil with non-uniform particle size is preferred. The moisture content in most material should be less than ten percent for best results.

A typical production rate to compact soils to over 95% their original density;

**Typical  
Production Rate**

<b>TC51:</b> 14- 22 cu yds /hr	(11 - 17 cu M/hr)
<b>TC71:</b> 18- 27 cu yds /hr	(14 - 21 cu M/hr)
<b>TC80:</b> 23- 32 cu yds /hr	(18 - 25 cu M/hr)
<b>TC91S:</b> 25- 35 cu yds /hr	(19 - 27 cu M/hr)
<b>TC151S:</b> 65- 75 cu yds/hr	(50 - 57 cu M/hr)
<b>TC151SH:</b> 65- 75 cu yds/hr	(50 - 57 cu M/hr)
<b>TC301:</b> 110- 130 cu yds/hr	(84 - 99 cu M/hr)
<b>TC301H:</b> 110- 130 cu yds/hr	(84 - 99 cu M/hr)

**Lift Sizes**

For proper compaction we recommend the following lift size;

<b>TC51:</b> .5- 1 foot	(0.15 - 0.3 M)
<b>TC71:</b> .5- 1 foot	(0.15 - 0.3 M)
<b>TC80:</b> 1- 2 foot	(0.3 - 0.6 M)
<b>TC91S:</b> 1- 2 foot	(0.3 - 0.6 M)
<b>TC151S:</b> 2- 3 foot	(0.6 - 0.9 M)
<b>TC151SH:</b> 2- 3 foot	(0.6 - 0.9 M)
<b>TC301:</b> 2- 4 foot	(0.6 - 1.2 M)
<b>TC301H:</b> 2- 4 foot	(0.6 - 1.2 M)

Using a higher depth of material may result in less than 95% compaction.

Always use a compactor sized to the carrier. A compactor that is too small for the carrier will damage the compactor, while a compactor too big will damage the carrier. Ensure you have the proper installation kit for attaching the compactor and that the carrier's hydraulic system meets the compactor flow and pressure requirements.

The carrier that is selected to operate the compactor must have sufficient reach to compact the deepest area of the trench or excavation. Therefore, **sizing the compactor based on the carrier size becomes the most important factor** in choosing the correct sized compactor.

BTI has assigned a 'Recommended Carrier Weight' range to each compactor. If the operating weight of the carrier falls within this range, the carrier will safely handle this model. If the desired compactor falls outside of the recommended carrier weight range, the carrier's lifting capacity and oil flow will need to be verified to ensure a proper fit.

Provided the weight of the compactor does not exceed the maximum lifting capacity of the carrier at any position, the carrier is assumed to be stable. On most loader backhoes and excavators, the maximum lifting capacity is lowest when the boom is at full reach. This is the value that must be compared to the operating weight of the compactor.

A required oil flow range is specified for each compactor, oil flow to the compactor within this range is adequate for operation. However, for maximum productivity the carrier should be capable of providing the maximum required flow. Compare the maximum oil flow requirement of the compactor with the oil flow capacity of the carrier. Remember the compactor will be operating at 1100-2100-psi (75-136 bar), therefore, oil flow should be evaluated at the operating pressure.

Below is the Carrier Sizing Chart, outlining the recommended carrier weight range for the compactor models.

**Carrier  
Lifting Capacity**

**Carrier  
Oil Flow**



To run, a compactor needs hydraulic flow in one direction within a working pressure range. When installing the compactor the carrier hydraulic circuit must have the following:

- The carrier must have a hydraulic circuit which will provide the correct flow
- A switch to activate the compactor
- A circuit relief valve

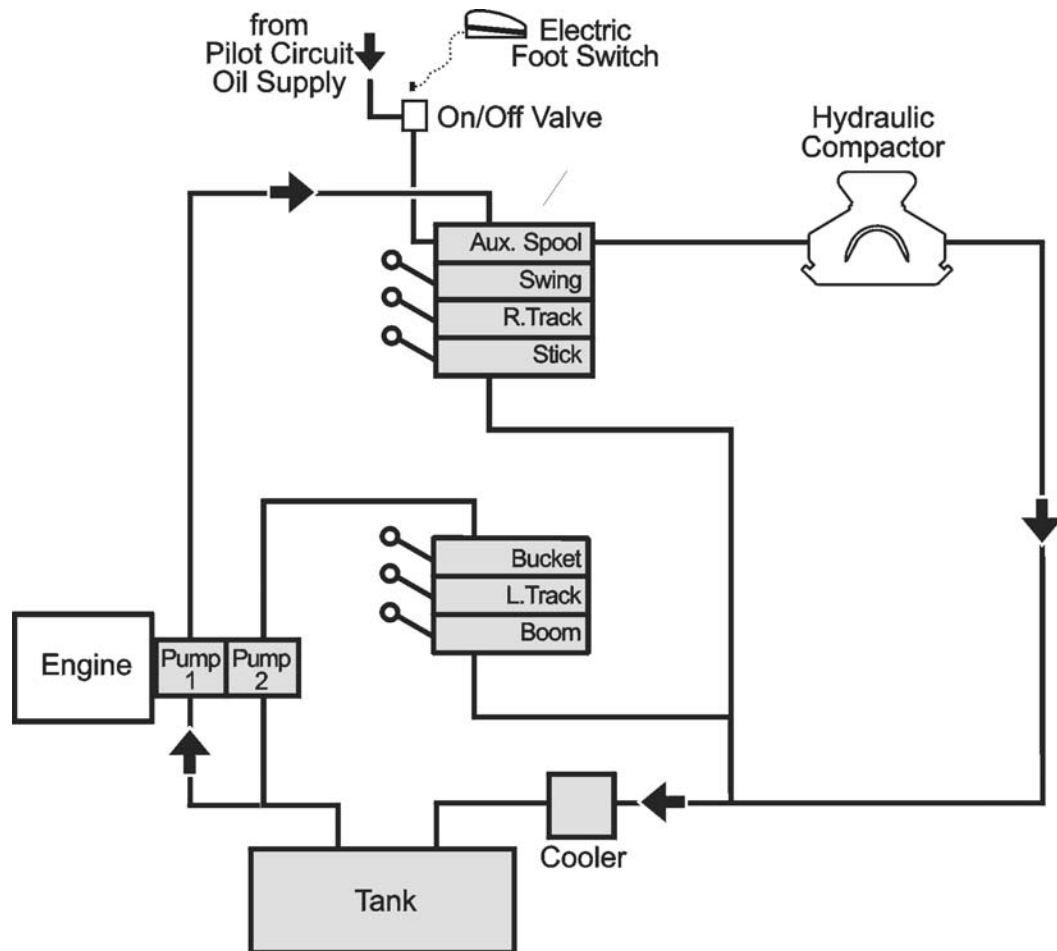
**Carrier with Auxiliary Circuit**

Often a carrier is equipped with an auxiliary control valve (see Figure 1), this valve can be adjusted to provide the correct amount of oil flow to the compactor. A pressure relief cartridge can also be installed to protect the hydraulic components.

Make sure that oil is not routed back through the return port of this auxiliary valve. Instead, send the oil directly back to the tank, via the cooler and filter.

If the circuit is plumbed using both ports on the auxiliary valve, the return line should have a bleed line connected to tank, to prevent damaging pressure spikes from the returning oil.

*Figure 1, Carrier with Auxiliary Circuit*

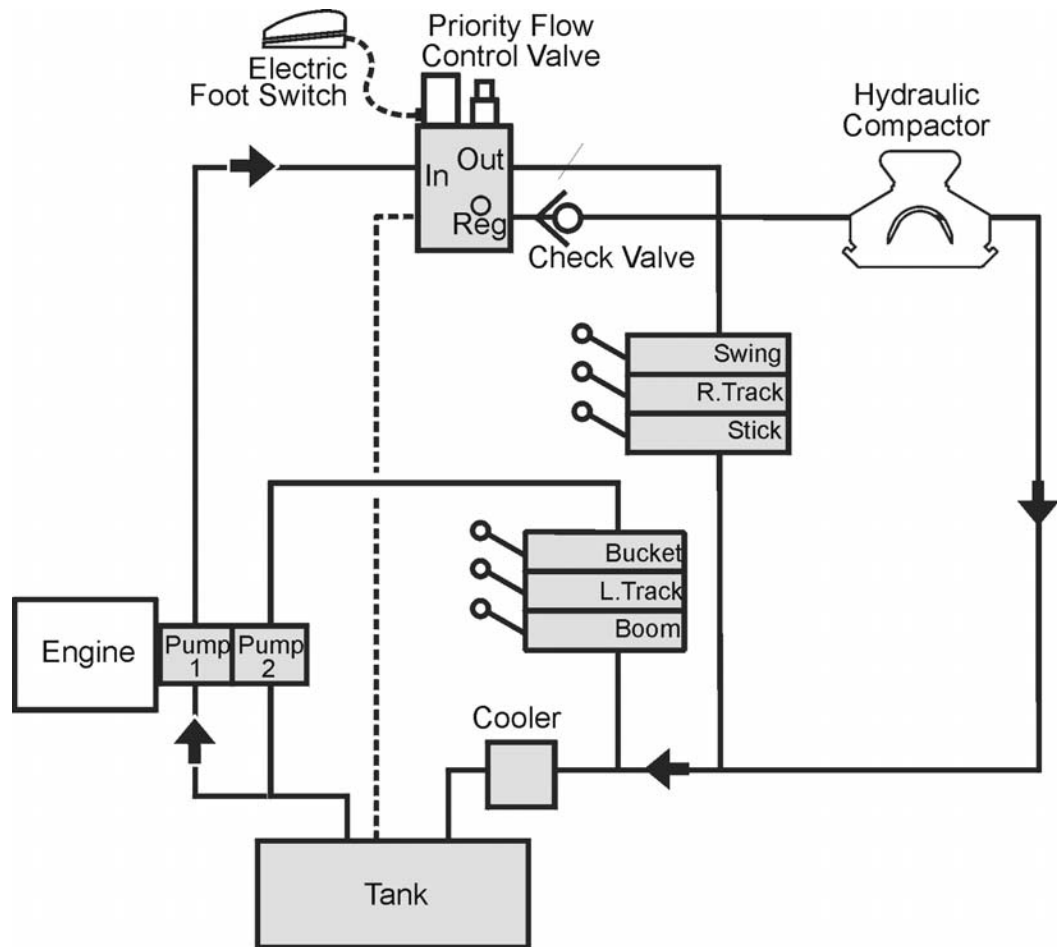


**Carrier without Auxiliary Circuit**

If the carrier does not have an auxiliary control valve (see Figure 2), a priority flow control valve must be installed to direct oil flow from the normal circuit to the compactor. The priority flow control valve is usually equipped with a flow adjustment and pressure relief.

These auxiliary control valves often need a check valve on the regulated port to completely close the flow. If too much flow is divided, excess heat is generated in which case the oil needs to be cooled.

*Figure 2, Carrier without Auxiliary Circuit*



There is no separate pressure adjustment on the compactor.

The compactor's supply oil should be directed out the left side of the boom and the return line back on the boom's right side. A combination of hoses and steel tubing is recommended to keep the installation neat and cost effective.

Hoses and tubes should be secured to the carrier boom with steel clamps. Attaching mounting clamps or bulkhead fittings to the ends of the tubes will prevent the tubes from sliding. Check the hoses to ensure they are not being rubbed or pinched by other components.

BTI recommends the use of high-pressure ball valves at the outer end of the stick where the hydraulic lines are disconnected to attach the compactor. This allows the line to be disconnected without losing too much oil. BTI does not recommend hydraulic quick disconnects. However, if they are installed, ensure the flush face style is used and then only on the TC91S or smaller models.

### **Mounting the Compactor**

Compactors are easily mounted by doing the following:

Orient the compactor with its hose connections pointed towards the carrier.

Remove the pins and bushings from the compactor top mount bracket (Note: the compactor mounting pins and bushings are custom made to match the carrier stick).

Insert the bushings into the boom and link of the carrier. (If Required).

Place the carrier boom into the compactor top mount bracket.

Push the pins through the bracket and boom (do not force the pins, if they do not enter easily, try realigning).

Insert the pin retainers.

If the carrier is equipped with a Quick Attach system, ensure the device is securely locking in position before operation.

For a compactor to operate properly it requires a specific oil flow and sufficient oil pressure.

**Oil Flow & Oil Pressure**

- TC51L/FC:** 1500-2200 psi @ 8-12 USgpm  
(102-150 bar) @ (30-45 l/min)
- TC51H/FC:** 1500-2200 psi @ 12-18 USgpm  
(102-150 bar) @ (44-68 l/min)
- TC71:** 1200-2000 psi @ 13-17 USgpm  
(81-136 bar) @ (49-63 l/min)
- TC71FC:** 1200-2000 psi @ 13-22 USgpm  
(81-136 bar) @ (50-83 l/min)
- TC80 :** 1300-2000 psi @ 20-26 USgpm  
(88-136 bar) @ (75-97 l/min)
- TC91S:** 1300-2000 psi @ 20-26 USgpm  
(88-136 bar) @ (75-97 l/min)
- TC151S:** 1500-2000 psi @ 25-31 USgpm  
(102-136 bar) @ (98-121 l/min)
- TC151SH:** 1100-1600 psi @ 35-43 USgpm  
(75-109 bar) @ (132-163 l/min)
- TC301:** 1500-2000 psi @ 35-43 USgpm  
(102-136 bar) @ (125-163 l/min)
- TC301H:** 1100-1600 psi @ 50-61 USgpm  
(75-109 bar) @ (189-231 l/min)

**Working Pressure Range**

To begin, connect a flow meter into the circuit in place of the compactor. Measure the 'no-load' flow by pressing the compactor fire, which activates the control valve and simulates the compactor working. While still activating the 'compactor' fire, adjust the flow meter putting a load on the circuit. Adjust the flow meter pressure until it falls within the working pressure range:

**Carrier Oil Flow**

- TC51L/FC:** 1500-2200 psi (102-150 bar) **TC51H/FC:** 1500-2200 psi (102-150 bar)
- TC71:** 1200-2000 psi (81-136 bar) **TC71FC:** 1200-2000 psi (81-136 bar)
- TC80:** 1300-2000 psi (88-136 bar)
- TC91S:** 1300-2000 psi (88-136 bar)
- TC151S:** 1500-2000 psi (102-136 bar) **TC151SH:** 1100-1600 psi (75-109 bar)
- TC301:** 1500-2000 psi (102-136 bar) **TC301H:** 1100-1600 psi (75-109 bar)

Now adjust the oil flow on the carrier, so the flow meter reading equals:

**TC51L/FC:** 8-12 USgpm (30-45 l/min) **TC51H/FC:** 12-18 gpm (44-68 l/min)

**TC71:** 13-17 USgpm (49-63 l/min) **TC71FC:** 13-22 gpm (49-83 l/min)

**TC80:** 20-26 USgpm (75-97 l/min)

**TC91S:** 18-24 USgpm (68-91 l/min)

**TC151S:** 25-31 USgpm (95-117 l/min) **TC151SH:** 35-43 gpm (132-163 l/min)

**TC301:** 35-43 USgpm (132-163 l/min) **TC301H:** 50-61 gpm (189-231 l/min)

To ensure the carrier's pressure relief valve does not activate while the compactor is working, the pressure relief must be set at least 350 psi above the maximum working pressure of the compactor. Continue to load the circuit pressure by adjusting the flow meter. Eventually the carrier's relief valve will activate and the oil flow will drop to zero. The pressure at which the oil goes over relief will be displayed on the flow meter. If this pressure setting is at least 350 psi or greater than the maximum working pressure of the compactor, your machine is ready. If not, you need to adjust the carrier's pressure relief setting.

**Adjust Carrier's  
Pressure Relief**

**TC51** 2200 + 350 psi = 2550 psi (176 + 24 = 200 bar) relief

**TC71** 2000 + 350 psi = 2350 psi (136 + 24 = 160 bar) relief

**TC80** 2000 + 350 psi = 2350 psi (136 + 24 = 160 bar) relief

**TC91S** 2000 + 350 psi = 2350 psi (136 + 24 = 160 bar) relief

**TC151S:** 2000 + 350 psi = 2350 psi (136 + 24 = 160 bar) relief

**TC151SH:** 1600 + 350 psi = 1950 psi (109 + 24 = 133 bar) relief

**TC301:** 2000 + 350 psi = 2350 psi (136 + 24 = 160 bar) relief

**TC301H:** 1600 + 350 psi = 1950 psi (109 + 24 = 133 bar) relief

If more than one attachment with different flow requirements is to be connected to this carrier, you will need to measure the flow and note the adjustments of each. Mark these two locations directly on the flow control valve.

Record the oil flow and relief pressure settings when filling out the BTI Compactor Installation Notice form.

If you are unable to obtain the proper flow when installing or adjusting the hydraulic circuit, contact your BTI dealer for technical support.

**BTI  
Service Centers**

Thornbury, Ontario . . . (800) 567-8267

Riverside, California . . (909) 369-0878

Solon, Ohio . . . . . (440) 248-7168

Carrier oil should be clean and in accordance with the manufacturer's recommendations.

After mounting the compactor on the boom and connecting the lines, bleed all air from the hydraulic system.

Initially pump grease to the pins in the bracket until it oozes out around the pins. Then grease with 10-15 shots daily.

Check torque of bolts and fasteners at installation and again after the first 10 hours of operation.

Operate all boom functions to ensure clearances are good and they allow the compactor to swivel.

**Compaction of Materials**

BTI compactors achieve material compaction by using impulse force and vibration to displace air and water pockets in the material. Compaction performance depends on 3 items:

- Type and size of material being compacted
- Moisture content of the material
- Depths of lifts being compacted

**Test the Compactor First**

Use a short trial of the compactor to determine the optimum depth of lift and speed of boom travel to achieve the required density. This value will vary depending on the material's composition and size. For example, marbles being a uniform shape do not pack as well as gravel, which has uneven shapes allowing the stones to interlock with each other.

You can reach nearly 100% of the maximum material density with a BTI compactor by using smaller lifts, and increasing the holding time in each spot. Typical hourly production rates to compact soil to over 95% its original density are;

**Hourly Production Rates**

**TC51L/FC / TC51H/FC:** 14-22 cu yds (11-17 cu M) per hour

**TC71 / TC71FC:** 18-27 cu yds (14-21 cu M) per hour

**TC80:** 23-32 cu yds (18-25 cu M) per hour

**TC91S:** 25-35 cu yds (19-27 cu M) per hour

**TC151S / TC151SH:** 65-75 cu yds (50-57 cu M) per hour

**TC301 / TC301H:** 110-130 cu yds (84-99 cu M) per hour

**Operate Carrier at Minimum Speed**

Always operate the carrier engine at the minimum speed required to achieve the desired result. This allows the hydraulic system to run cooler. Excess flow beyond recommended levels can damage the compactor motor.

**Compactor Base Must Contact Soil**

Ensure the compactor base plate is in contact with the soil before operating.

**Use Proper Boom Down-Force**

When using a BTI compactor it is the amplitude (up and down motion) of the plate, which does the compaction and not the compactor weight or the carrier boom down-force. As you apply down-force to the compactor, the carrier will lift slightly giving you an indication that the compactor is properly pressed onto the material. Too much boom down-force inhibits the up and down motion, reducing the compactor's impact force. (Improper operation of the compactor can result in premature failure of the rubber isolators.)



Shut off the compactor and lift it into the air to a new position, or using minimum boom down-force slide the compactor along the ground. Avoid dragging the compactor's plate across the material surface ('ironing') while the motor is running. Forces exerted on the compactor by 'ironing' can cause premature failure.

**Working in Wet Soil or Tight Trench**

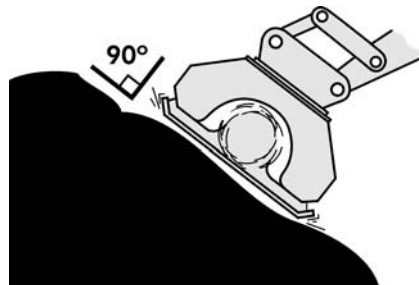
Another cause of premature mount failure occurs when working in very wet soil and/or a very tight trench. Suction or drag when the compactor is lifted can cause the mounts to tear. In these situations fasten a chain between the compactor's upper and lower sections to relieve the lifting strain on the rubber isolators.

**Do Not Grade with Compactor**

Never grade the trench or level backfill with the compactor. Extreme side forces can damage the rubber isolators.

**Keep Compactor Parallel with Material**

Always keep the plate of the compactor parallel with the material being compacted. Compactors can operate on an angle if you keep the carrier boom down-force at 90° to the compactor base.



**Initial Compacting**

Start by operating the compactor in one position. Release the down force and lift the unit to a new spot. Re-apply down-force and start compacting. Two passes are usually required. During the initial pass the compactor should be held in each position for 8-10 seconds or as long as compaction is apparent. The second-pass should be with greater boom down-force, focusing on areas missed during the first pass.

**Lift Depths**

Compact in lift depths of:

- TC51:** .5-1 ft (0.15-0.3 M)
- TC71:** .5-1 ft (0.15-0.3 M)
- TC80:** 1-2 ft (0.3-0.6 M)
- TC91S:** 1-2 ft (0.3-0.6 M)
- TC151S / TC151SH:** 2-3 ft (0.6-0.9 M)
- TC301 / TC301H:** 2-4 ft (0.6-1.2 M)

Note: using a higher material lift depth may give less than 95% soil compaction. Materials with 5% moisture give better compaction. Narrow excavations can use higher lifts.

**Shut-off Compactor Before Lifting**

When compaction is complete, shut off compactor before lifting it from the ground.

Do not pound the ground with the compactor.

Do not start in the middle of an un-compacted area. Always start at the edge, near a solid wall, bank, or a previously compacted area.

**Compacting Clay Materials**

Clay type materials have a different composition and will not transmit vibration as well as granular materials; therefore, it is necessary to decrease the lift height and hold the compactor position for 15 seconds in each spot. Two passes are usually sufficient.

**Sheet or Pile Driving**

Compactors are effective in driving timber sheeting, steel sheet piles, 'H' or 'I' beams, and they drive into most soils including fine sand and rocky material. Best results are achieved by keeping the compactor base 90° to the pile and use down-force and vibration to hammer the material. If you come across excessive resistance, lift the compactor slightly and let it 'bounce' on the pile for a hammering effect. Do not use the compactor to extract pilings.

**Cold Weather Operation**

Oils for use in cold weather operation should have a viscosity not exceeding 7500 SSU at the minimum start up temperature. And the ambient temperature should be at least 20° F above the pour point of the oil. Start with a gradual warm-up until the oil reaches a reasonably fluid state.

**Daily Inspection**

At the end of each shift check the following:

Check rubber isolators for cracks. Replace as necessary.

Check the mounting pins and bushings for proper fit to the carrier. Check that the pin locks are in place and secure.

Check that all hose connections are tight and there are no leaks.

If your compactor is equipped with a swivel mount, grease this connection with 5 shots dependent on the amount of compactor use.

Always use standard EP2 grease.

Check that all bolts are tight. If necessary, remove the bolt and install using Loctite and tighten to the specified torque.

- Red Loctite: motor and eccentric housing bolts
- Blue Loctite: rubber isolator bolts and all others

**Bolt Loctite Requirements**

### **Maintenance- Every 40 Hours of Operation**

Check hoses for wear and leaks, replace and tighten as required.

The eccentric housing is filled with gear oil. This oil must be changed after the initial 50 hours. Then change oil every year. Use 80W90 gear oil.

#### **⚠ CAUTION**

**Do not overfill the oil reservoir.**

Check the rubber isolators for cracks or fatigue. Clean away any soil and material that has built up in this area.

Check that mounting pins and bushings are receiving lubrication.

### **Removal and Storage**

Disconnect the pressure and return lines. Cap the lines on the machine and on the compactor to prevent dirt from entering.

Remove pins to disconnect compactor from boom. Spread grease on pins and bushings after removal to prevent corrosion.

1. BREAKER TECHNOLOGY Company (hereinafter referred to as BTI) warrants this product against defects in materials and workmanship for a period of twelve (12) months from the date of installation. This warranty does not cover o-rings, seals, fittings, hoses, or other items considered normal wear items. These are covered by the Limited Warranty period of thirty (30) days. Warranty for propriety items such as valves, filters, installation kits, and componentry that are not manufactured by BTI, will be governed by the warranty terms of their manufacturer. This warranty is void if BTI's standard installation specifications and procedures are not adhered to.

2. BTI's Customer Service Department will authorize return of any defective components or sufficient evidence of such defect to a BTI warehouse. Such components or such evidence must clearly show that the defect was caused by faulty material or poor workmanship. Warranty claim will be accepted only if it is submitted on a proper claims form with proof of purchase and received within sixty (60) days from the date of discovery of the defect. Warranty claims will be considered only if the "Installation Notice" has been duly filled in and returned to BTI's Customer Service Department within thirty (30) days from the date of installation.

3. BTI will at it's option, repair or refurbish the defective part(s) without charge to the initial user or may elect to issue full or partial credit toward the purchase of a new part(s). The extent of credit issued, which will be in the form of a "Credit Memo", will be determined by pro-rating against the normal life of the part(s) in question.

4. BTI is not responsible for mileage, travel time, travel expenses, overtime labor, and any freight expenses required to facilitate the repair.

5. This warranty does not apply if the product has been damaged by accident, abuse, misuse, misapplication or neglect, or as a result of service, disassembly or modification, without BTI's express authorization.

6. BTI assumes no liability beyond the replacement of defective parts or materials and/or the correction of such defective parts or materials.

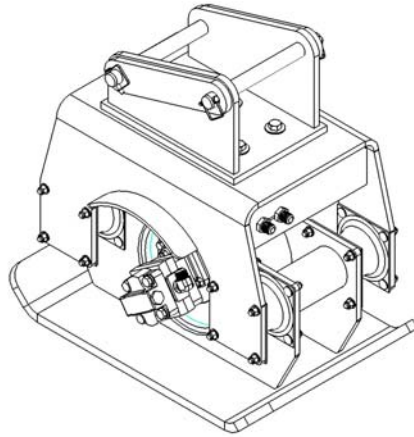
7. BTI neither assumes nor authorizes any other person to assume for it any liability in connection with the sale of it's products other than that specifically stated herein.

8. THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY AND ALL OTHER WARRANTIES.

EXCEPT AS EXPRESSLY SET FORTH HEREIN, BTI MAKES NO REPRESENTATION OR

WARRANTY, STATUTORY, EXPRESS OR IMPLIED, WITH RESPECT TO THE PRODUCTS

MANUFACTURED AND/OR SUPPLIED BY BTI, WHETHER AS TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER MATTER. IN NO EVENT, INCLUDING IN THE CASE OF A CLAIM OF NEGLIGENCE, SHALL BTI BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

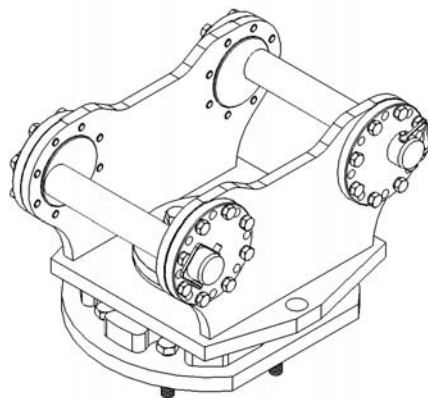
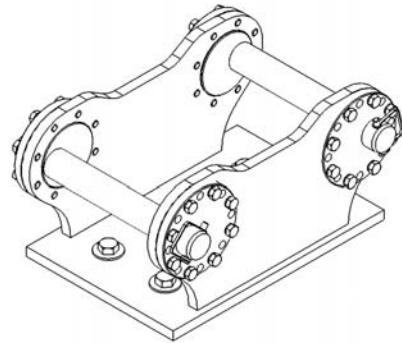


**Bolt-On Rigid Top Mount:**

(Shown on TC80)  
Standard equipment on TC51,  
TC71, TC80 & TC301

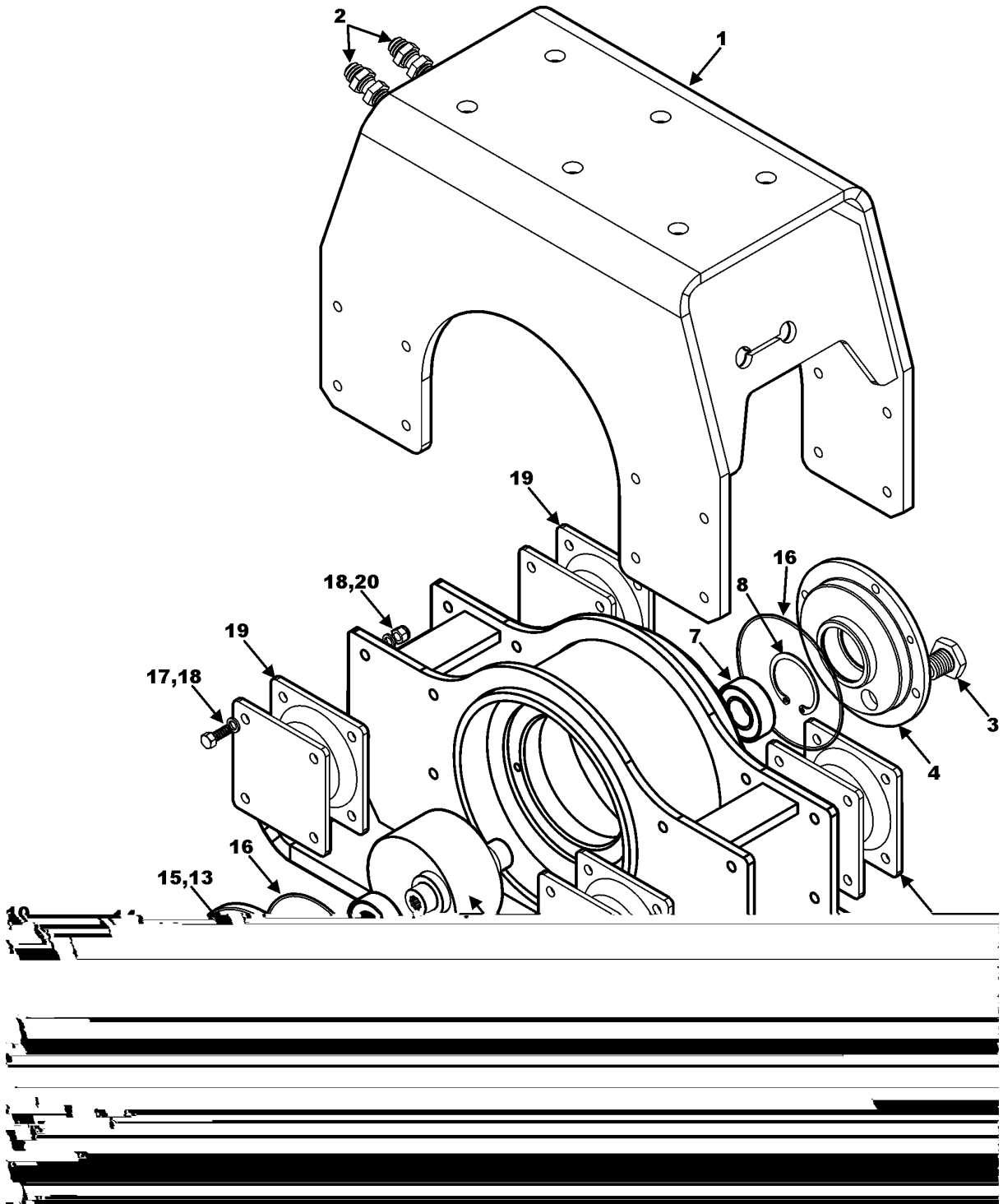
**Bolt-On QA Non-Swivel  
Top Mount:**

Available as an option on the  
TC71 & TC80



**QA Swivel Top Mount:**

Standard equipment on TC91S &  
TC151S. Optional Bolt-On on the  
TC71 and TC80.



**TC51**

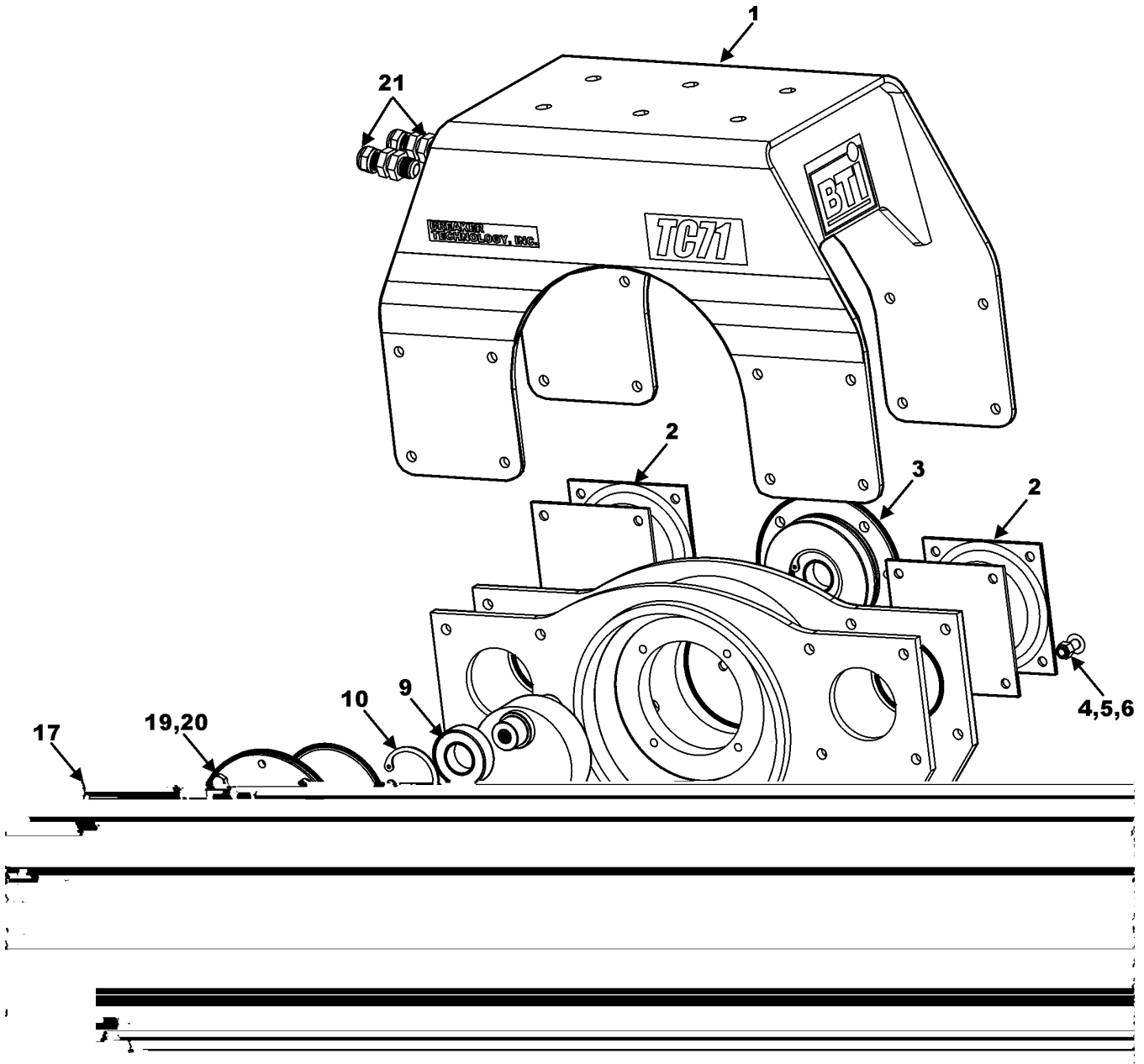
When ordering give Part Number, Part Name, Model and Serial #.

<b>Item</b>	<b>Part Number</b>	<b>Description</b>	<b>Qty.</b>
1	350-0007	Upper Weldment	1
2	1800424*	Cap	2
3	9006862	Fill/Drain	1
4	650-8780	Bearing Housing	1
5	350-0002	Lower Weldment	1
6	650-8795	Eccentric Assembly	1
7	1008414	Bearing	2
8	1008453	Retaining Ring	2
9	650-8796	Bearing Housing	1
10	1800288	Fitting	2
11	1009488	Hydraulic Motor	1
12	1912007	Bolt - Grade 8	2
13	1001856	Nordlock Washer Set	2
14	1008798	Gasket	1
15	1911113	Bolt - Grade 5	8
16	1001856	Nordlock Washer Set	8
17	1912270	Button Head Cap Screw	32
18	1941002	Flat Washer	64
19	1009487	Isolator	4
20	1932008	Locknut	32
21	H05-KKK-023*	Hose Assembly	2
	350-0110*	Motor Repair Kit	REF
	350-1002	Low Flow Kit (L/FC) - 9.0 gpm	
	350-0103	High Flow Kit (H/FC) - 13.5 gpm	

**NOTE:**

**For Mounting  
Bracket options and  
parts information  
contact BTI.**

\* Not Shown



**TC71**

When ordering give Part Number, Part Name, Model and Serial #.

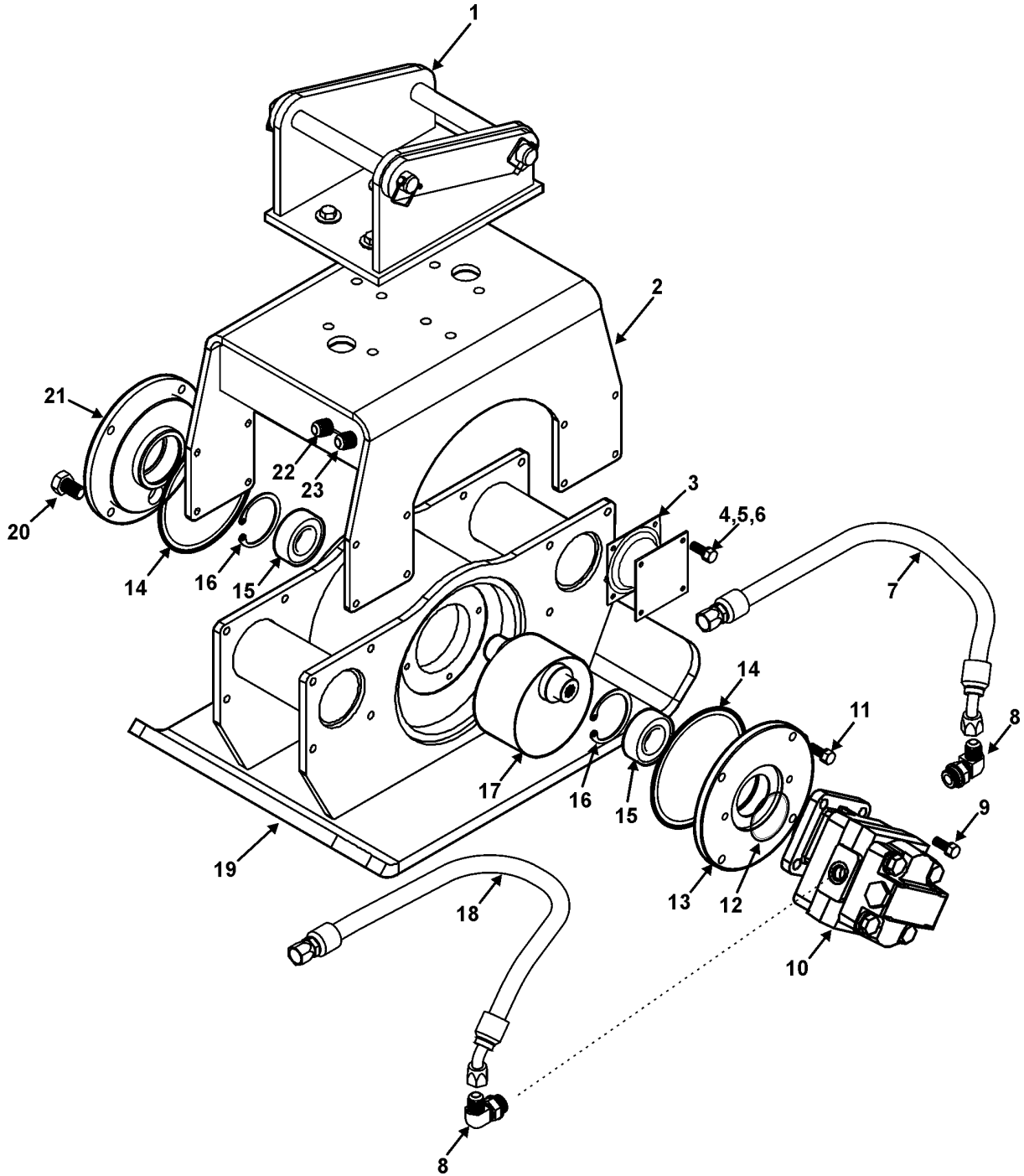


<b>Item</b>	<b>Part Number</b>	<b>Description</b>	<b>Qty.</b>
1	360-0002	Upper Body	1
2	1008925	Isolator	4
3	220-2708	Bearing Housing	1
4	1912271	Bolt - Grade 8	32
5	1932014	Locknut	32
6	1941004	Flat Washer	34
7	360-0003	Lower Housing	1
8	220-2713	Eccentric Assembly	1
9	1008936	Bearing	2
10	1008935	Retaining Ring	2
11	1800849	O-Ring	2
12	220-2707	Bearing Housing - Motor Side	1
13	1912009	Bolt - Grade 8	2
14	1001856	Nordlock Washer Set	2
15	1008798	Gasket	1
16	1801470	Plug	1
17	1800288	Fitting	2
18	1009505	Hydraulic Motor	1
19	1912128	Bolt - Grade 8	4
20	1001857	Nordlock Washer Set	4
21	1800255	Fitting	2
22	1800418*	Fitting - Not Shown	2
23	H409-KKK-025*	Hose Assembly	1
24	H412-KKK-030*	Hose Assembly	1
25	360-0110	Motor Repair Kit	REF
	360-0101	Flow Control Kit	

**NOTE:**

**For Mounting  
Bracket options and  
parts information  
contact BTI.**

\* Included in Hydraulic Kit  
P/N 360-0100.



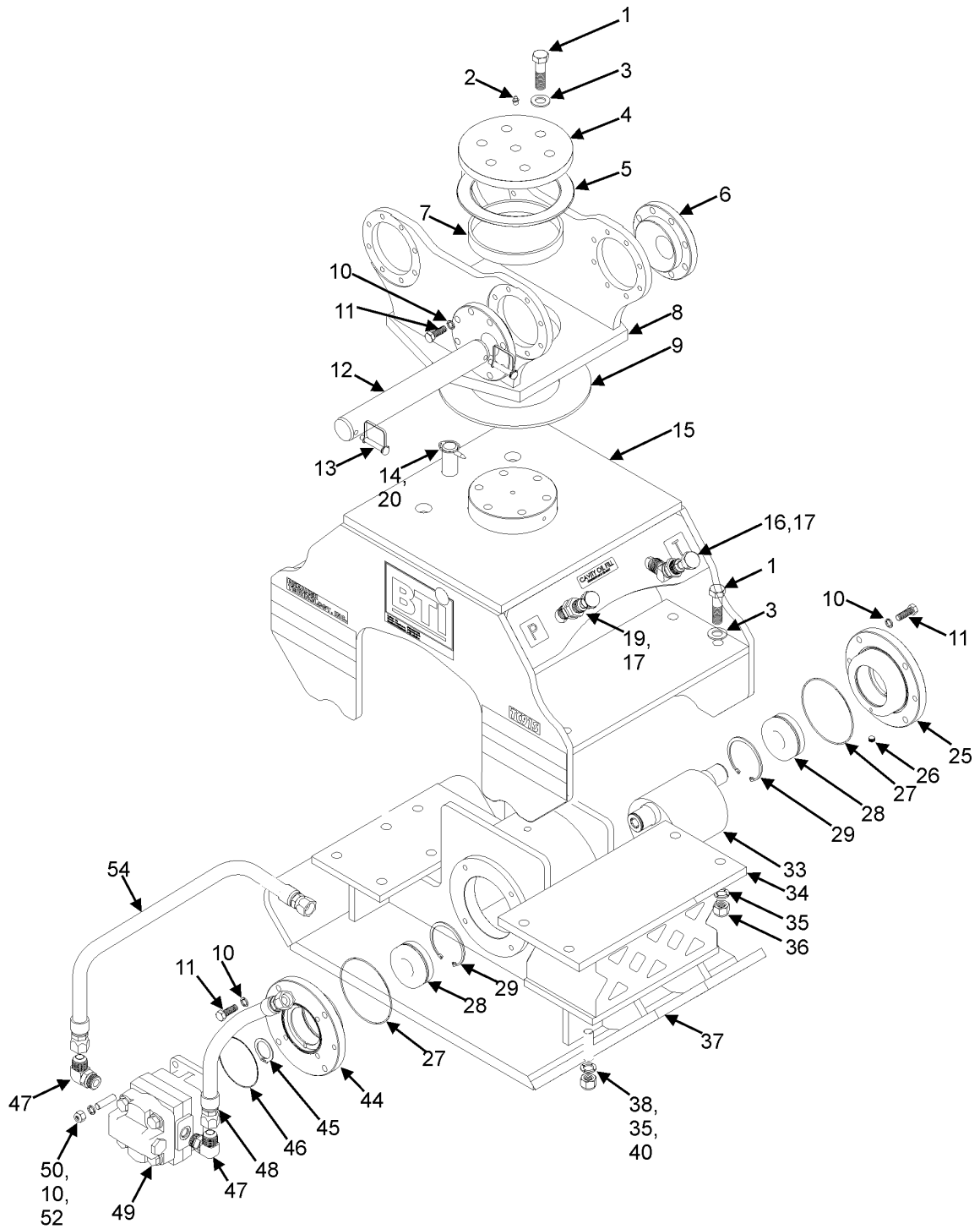
**TC80**

When ordering give Part Number, Part Name, Model and Serial #.

<b>Item</b>	<b>Part Number</b>	<b>Description</b>	<b>Qty.</b>
1		Top Mount	REF
2	370-0007	Top Frame Weldment	1
3	1008925	Isolator	4
4	1912261	Bolt	32
5	1941004	Washer	64
6	1932014	Locknut	32
7	H409-KKK-021	Hose Assembly	1
8	1800289	Fitting	2
9	650-8641	Stud	4
10	1009833	Motor	1
11	1912020	Hex Head Bolt	8
12	1801983	O-Ring	1
13	650-8619	Bearing Housing	1
14	1801982	O-Ring	2
15	1001531	Bearing	2
16	1007793	Retaining Ring	2
17	650-8618	Eccentric Assembly	1
18	H409-KKK-029	Hose Assembly	1
19	370-0005	Drum Weldment	1
20	1801470	Plug	1
21	650-8620	Bearing Housing	1
22	1800255	Fitting	1
23	1800418	Fitting	1
	370-0110	Motor Repair Kit	REF

**NOTE:**

**For Mounting  
Bracket options and  
parts information  
contact BTI.**

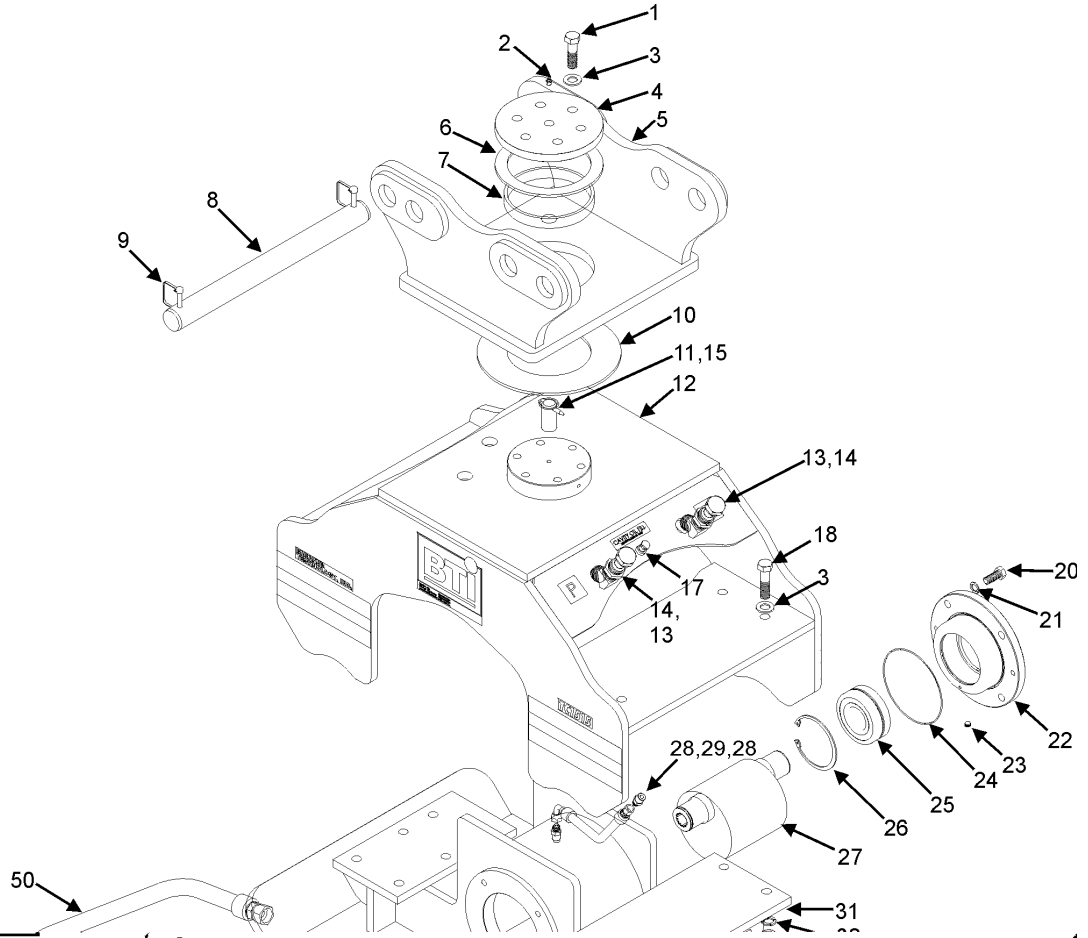


When ordering give Part Number, Part Name, Model and Serial #.

<b>Item</b>	<b>Part Number</b>	<b>Description</b>	<b>Qty.</b>
1	1912048	Bolt	14
2	1801016	Grease Fitting 1/8" NPT	1
3	1941015	Flatwasher	14
4	650-5569	Cap Flange	1
5	1001534	Top Bearing Washer	1
6		Bushing - Contact BTI for Part #	REF
7	1001535	Bushing	1
8	650-8501	Top Mount Weldment	1
9	1001536	Bottom Bearing Washer	1
10	1001857	Nordlock Washer Set M12	44
11	1912020	Bolt 1/2" -13UNC x 1 1/2" LG GR8	40
12		Pin - Contact BTI for Part #	REF
13	1002184	Quick Pin c/w Chain	4
14	650-8296	Clevis Pin	1
15	650-8617	Frame Weldment	1
16	1800261	Fitting	1
17	1800418	Cap	2
19	1800255	Fitting	1
20	1001529	Quick Pin	1
25	650-8620	Bearing Housing	2
26	1801020	Pipe Plug	2
27	1801982	O-Ring	2
28	1001531	Bearing	2
29	1007793	Retaining Ring	2
33	650-8618	Eccentric Assembly	1
34	650-8710	Lattice Mount (includes 35, 38, 40)	2
35	1001858	Nordlock Washer Set M20	20
36	1932020	Locknut 3/4" NC	8
37	650-8616	Base Plate Weldment	1
38	650-8676	Stud	12
40	1931013	Hex Nut 3/4" NF	12
44	650-8619	Bearing Housing	1
45	1007794	External Retaining Ring	1
46	1801983	O-Ring	1
47	1800289	Fitting	2
48	H405-KKK-014	Hose Assembly	1
49	1009833	Hydraulic Motor	1
50	650-8641	Stud	4
52	1932015	Locknut 1/2" -20UNF	4
54	H405-KKK-022	Hose Assembly	1
	650-8622	Decal Kit	REF
	370-0110	Motor Repair Kit	REF

**NOTE:**

**For Mounting  
Bracket options and  
parts information  
contact BTI.**



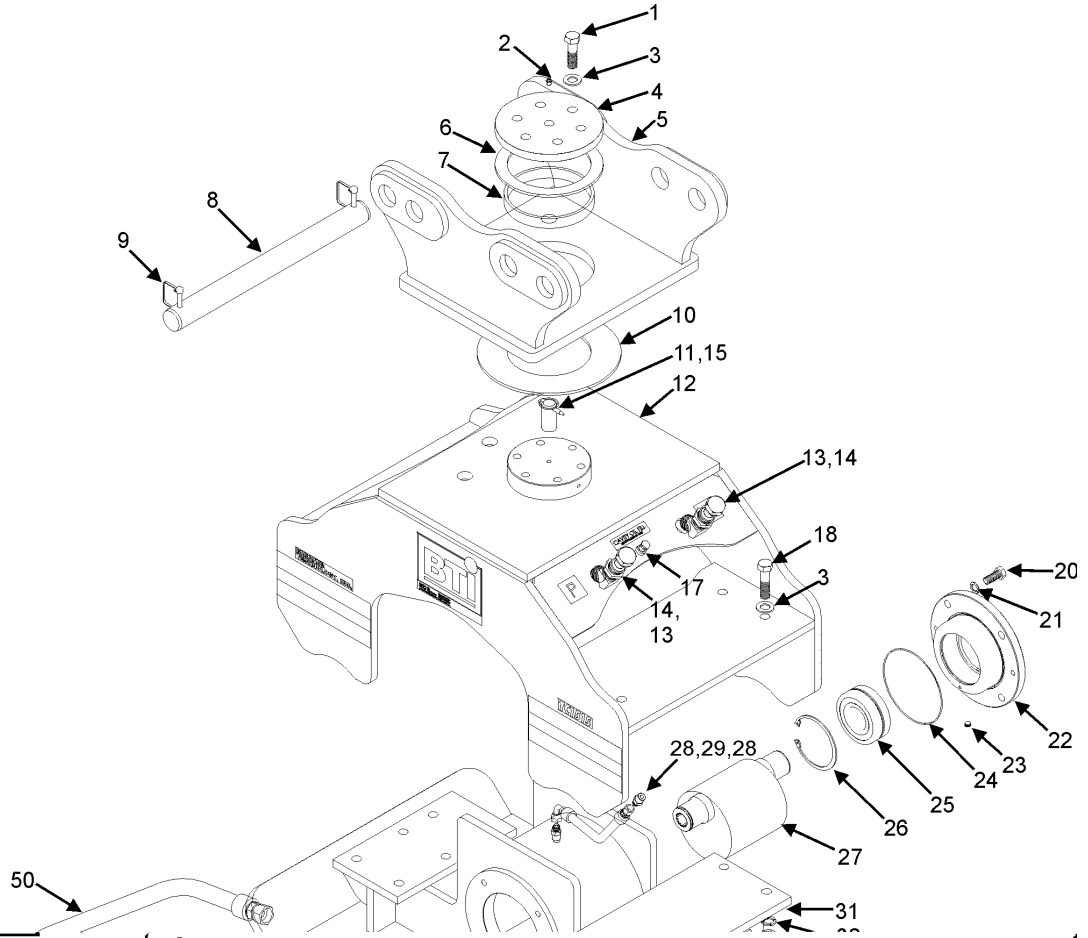
**TC151S**

When ordering give Part Number, Part Name, Model and Serial #.

Item	Part Number	Description	Qty.
1	1912048	Bolt	6
2	1801016	Grease Fitting 1/8" NPT	1
3	1941015	Flatwasher	14
4	650-5569	Cap Flange	1
5		Mounting Bracket - Contact BTI	1
6	1001534	Top Bearing Washer	1
7	1001535	Bushing	1
8	700-0225	Pin	2
9	1002184	Quick Pin c/w Chain	4
10	1001536	Bottom Bearing Washer	1
11	650-8296	Clevis Pin	1
12	650-8587	Frame Weldment	1
13	1800419	Fitting	2
14	1800262	Fitting	2
15	1001529	Quick Pin	1
17	1801223	Fitting	2
18	1912086	Bolt 3/4" NC x 3" LG GR.8	8
20	1912138	Bolt 5/8" NC x 1 1/2" GR.8	8
21	1001768	Nordlock Washer Set	8
22	650-8592	Bearing Housing	1
23	1801020	Pipe Plug	2
24	1801980	O-Ring	2
25	1002182	Bearing	2
26	1007783	Retaining Ring Internal	2
27	650-8589	Eccentric Assembly	1
28	1800102	Fitting	2
29	H06-GGG-010	Hose Assembly	1
31	650-8710	Lattice Mount (Includes 32,36,38)	2
32	1001858	Nordlock Washer Set M20	20
33	1932020	Locknut 3/4" NC	8
34	650-8586	Base Plate	1
36	650-8676	Stud	12
38	1931013	Hex Nut 3/4" NF	12
42	H408-LLL-026	Hose Assembly	1
43	1800943	Fitting	2
44	1800947	O-Ring	1
45	1009834	Hydraulic Motor	1
46	1912097	Bolt 1/2" NF x 1/4" GR.8	4
47	1001857	Nordlock Washer Set M12	4
50	H405-LLL-026	Hose Assembly	1
51	1007784	Retaining Ring	1
54	650-8593	Bearing Housing Motor Side	1
	650-8591	Decal Kit	REF
	380-0110	Motor Repair Kit	REF

**NOTE:**

**For Mounting  
Bracket options and  
parts information  
contact BTI.**



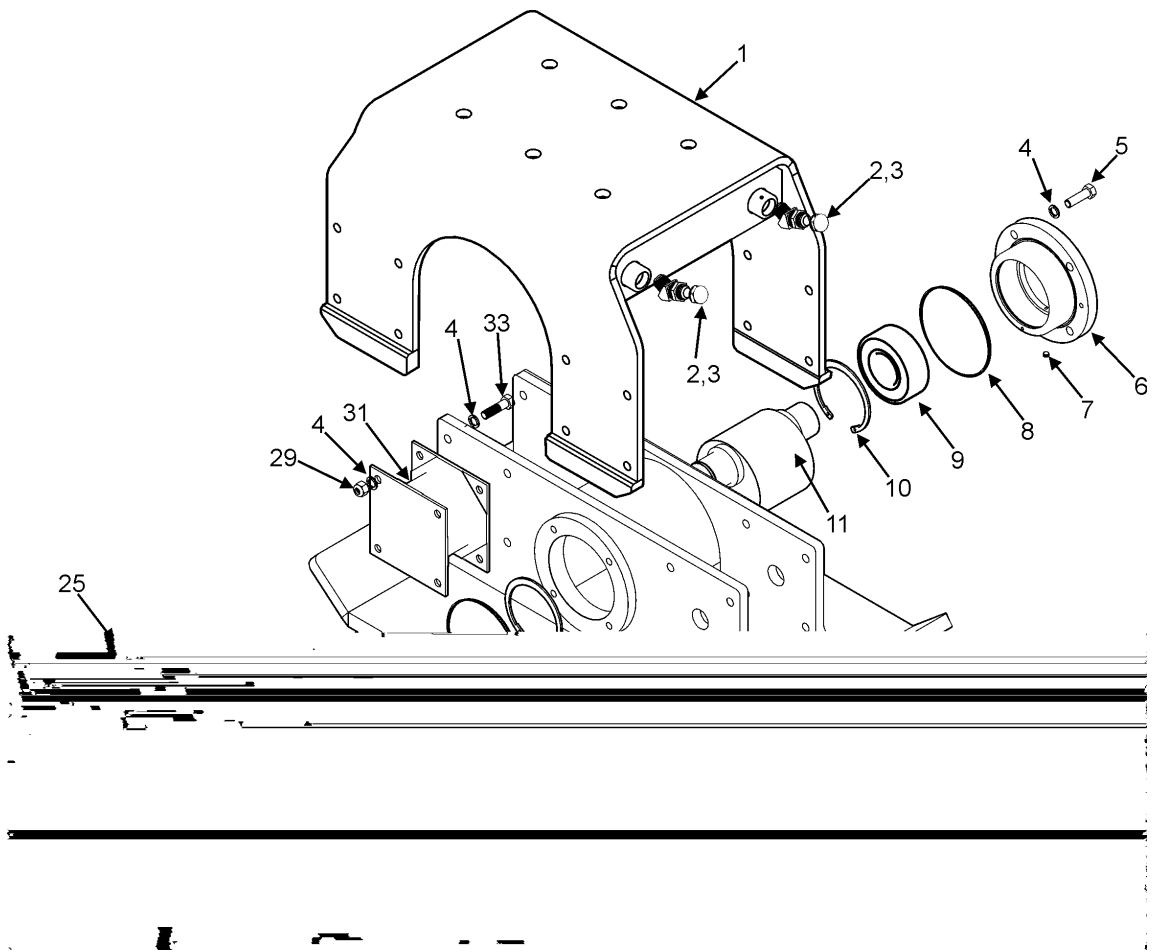
**TC151SH**



<b>Item</b>	<b>Part Number</b>	<b>Description</b>	<b>Qty.</b>
1	1912048	Bolt	6
2	1801016	Grease Fitting 1/8" NPT	1
3	1941015	Flatwasher	14
4	650-5569	Cap Flange	1
5		Mounting Bracket - Contact BTI	1
6	1001534	Top Bearing Washer	1
7	1001535	Bushing	1
8	700-0225	Pin	2
9	1002184	Quick Pin c/w Chain	4
10	1001536	Bottom Bearing Washer	1
11	650-8296	Clevis Pin	1
12	650-8587	Frame Weldment	1
13	1800419	Fitting	2
14	1800262	Fitting	2
15	1001529	Quick Pin	1
17	1801223	Fitting	2
18	1912086	Bolt 3/4" NC x 3" LG GR.8	8
20	1912138	Bolt 5/8" NC x 1 1/2" GR.8	8
21	1001768	Nordlock Washer Set	8
22	650-8592	Bearing Housing	1
23	1801020	Pipe Plug	2
24	1801980	O-Ring	2
25	1002182	Bearing	2
26	1007783	Retaining Ring Internal	2
27	650-8589	Eccentric Assembly	1
28	1800102	Fitting	2
29	H06-GGG-010	Hose Assembly	1
31	650-8710	Lattice Mount (Includes 32,36,38)	2
32	1001858	Nordlock Washer Set M20	20
33	1932020	Locknut 3/4" NC	8
34	650-8586	Base Plate	1
36	650-8676	Stud	12
38	1931013	Hex Nut 3/4" NF	12
42	H408-LLL-026	Hose Assembly	1
43	1800292	Fitting	2
44	1800947	O-Ring	1
45	1009835	Hydraulic Motor	1
46	1912097	Bolt 1/2" NF x 1/4" GR.8	4
47	1001857	Nordlock Washer Set M12	4
50	H405-LLL-026	Hose Assembly	1
51	1007784	Retaining Ring	1
54	650-8593	Bearing Housing Motor Side	1
	650-8591	Decal Kit	REF
	380-0110	Motor Repair Kit	REF

**NOTE:**

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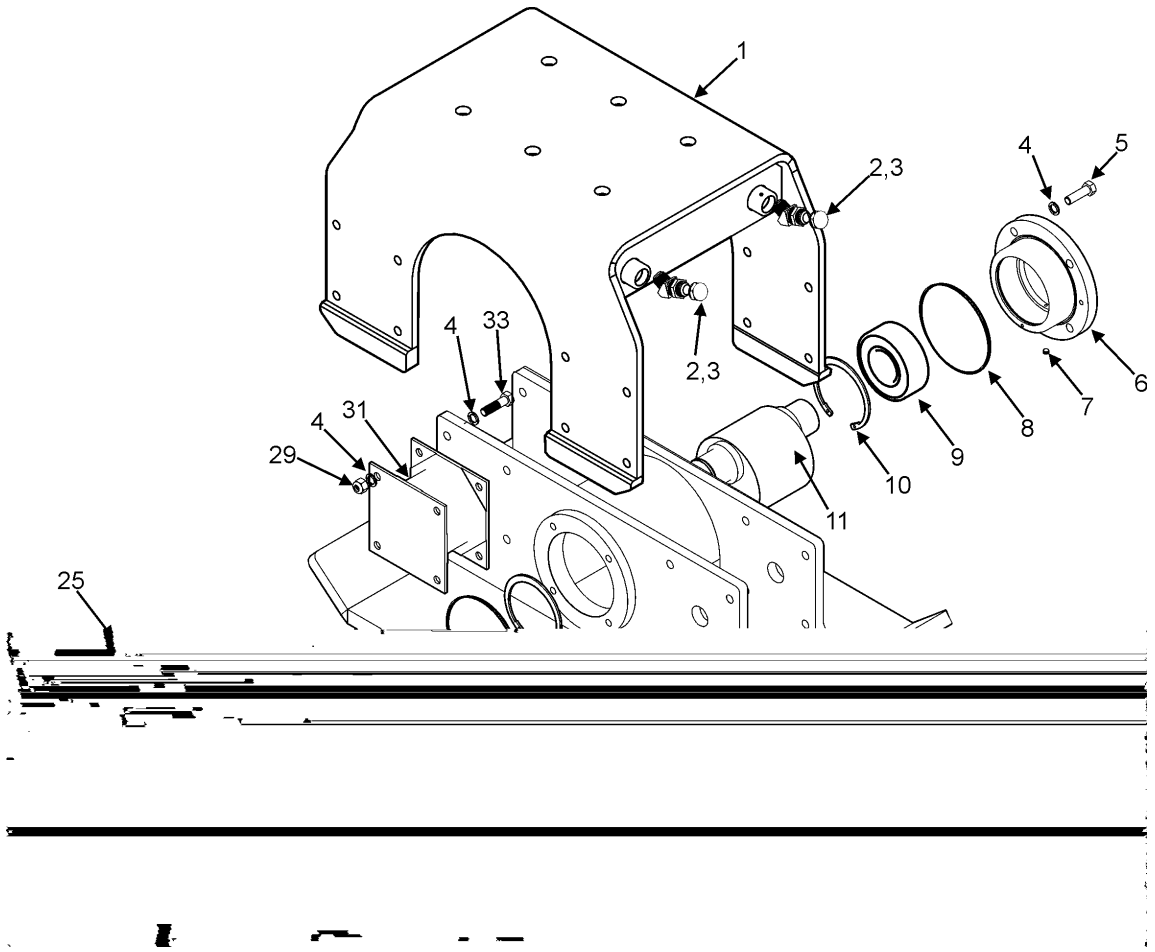
**TC301**

When ordering give Part Number, Part Name, Model and Serial #.

<b>Item</b>	<b>Part Number</b>	<b>Description</b>	<b>Qty.</b>
1	390-0002	Top Weldment	1
2	1800262	Fitting	2
3	1800419	Fitting	2
4	1001858	Nordlock Washer Set M20	72
5	1912046	Bolt 3/4" -10UNC x 2 1/2" GR.8	8
6	650-8526	Bearing Housing	1
7	1801020	Pipe Plug	2
8	1801855	O-Ring	2
9	1006886	Spherical Roller Bearing	2
10	1006919	Retaining Ring	2
11	650-8527	Eccentric Assembly	1
12	650-8679	Base Weldment	1
13	1801223	Fitting	2
17	650-8525	Bearing Housing	1
19	1006920	Retaining Ring	1
22	1009835	Hydraulic Motor	1
24	1800292	Fitting	2
25	H405-LLL-033	Hose Assembly	2
26	1800947	O-Ring	1
29	1932052	Locknut	32
31	1007828	Rubber Mount	4
33	1911185	Bolt 3/4" NC x 2 3/4" GR.5	32
34	1912097	Bolt 1/2" -20 UNF x 1 1/2" GR.5	4
35	1001857	Nordlock Washer Set M12	4
	650-8683	Decal Kit	REF
	380-0110	Motor Repair Kit	REF

**NOTE:**

**For Mounting  
Bracket options and  
parts information  
contact BTI.**



**TC301H**

<b>Item</b>	<b>Part Number</b>	<b>Description</b>	<b>Qty.</b>
1	650-8680	Top Weldment	1
2	1801591	Fitting	2
3	1800420	Fitting	2
4	1001858	Nordlock Washer Set M20	72
5	1912046	Bolt 3/4" -10UNC x 2 1/2" GR.8	8
6	650-8526	Bearing Housing	1
7	1801020	Pipe Plug	2
8	1801855	O-Ring	2
9	1006886	Spherical Roller Bearing	2
10	1006919	Retaining Ring	2
11	650-8527	Eccentric Assembly	1
12	650-8679	Base Weldment	1
13	1801223	Fitting	2
17	650-8525	Bearing Housing	1
19	1006920	Retaining Ring	1
22	1009836	Hydraulic Motor	1
24	1800294	Fitting	2
25	H405-MMM-033	Hose Assembly	2
26	1800947	O-Ring	1
29	1932052	Locknut	32
31	1007828	Rubber Mount	4
33	1911185	Bolt 3/4" NC x 2 3/4" GR.5	32
34	1912097	Bolt 1/2" -20 UNF x 1 1/2" GR.5	4
35	1001857	Nordlock Washer Set M12	4
	650-8683	Decal Kit	REF
	390-0110	Motor Repair Kit	REF

**NOTE:**

**For Mounting  
Bracket options and  
parts information  
contact BTI.**







**BREAKER  
TECHNOLOGY,  
INC.**

an Astec company

**SOLON FACILITY**  
30625 Solon Industrial Drive,  
SOLON OHIO,  
44139 U.S.A.  
PH. 440-542-3720  
FAX. 440-542-3721

**RIVERSIDE FACILITY**  
3464 DURAHART ST.  
RIVERSIDE, CALIF.  
92507 U.S.A.  
PH. 909-369-0878  
FAX. 909-369-8281

**THORNBURY FACILITY**  
35 ELGIN ST.,  
THORNBURY, ONT.  
N0H 2P0 CANADA  
PH. 519-599-2015  
FAX. 519-599-6803

