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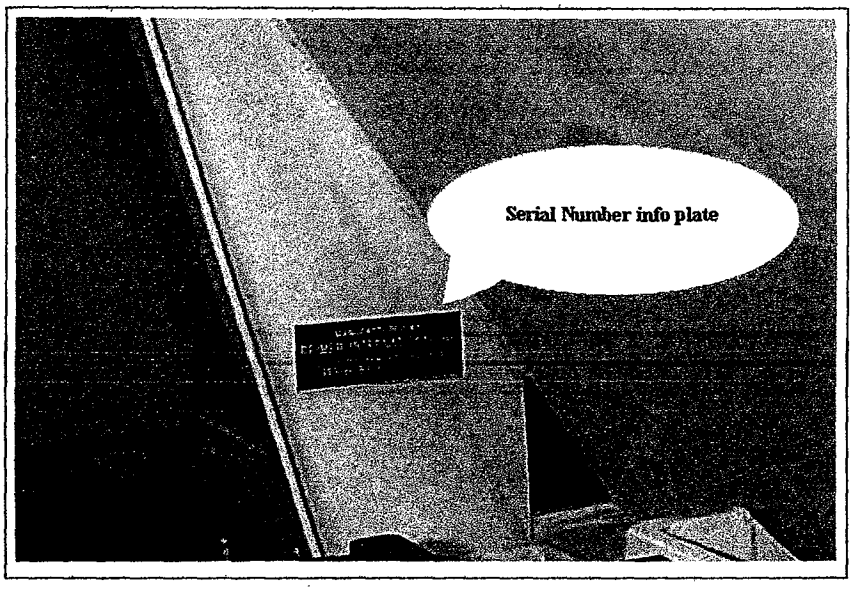
Note - This manual relates specifically to mixers with serial numbers R-09-149-99 and up. It can be used for previously built machines however minor changes will be noted.

1.0 INTRODUCTION

We at Reimer International Inc. are pleased that you have chosen the Reimer Mobile Mixer to meet your concrete production requirements. Reimer International represents over 30 years of experience in mobile, volumetric, continuous batching both as a concrete supplier and as a mixer manufacturer. Our years of experience have helped us to develop and engineer a mobile mixer that will give years of dependable service.

This manual provides operating and maintenance procedures that are critical to the profitable and successful operation of your Reimer Mobile Mixer. Operation and maintenance of your new mixer in accordance with this manual will assure you of long and trouble free service.

The serial number of your mobile mixer is located on the front support web of the main aggregate bin, sand side. Please refer to this serial number when contacting Reimer International or its representatives, who are committed to providing prompt and efficient service.



2.0 PRINCIPLE OF OPERATION

The Reimer Mobile Mixer is uniquely designed to allow for the supply of freshly mixed concrete, regardless of delivery times, the elimination of wasted product, and flexibility of delivery that is not available with conventional transit mix operations. All the components of concrete; stone, sand, cement and water are transported to the site in separate compartments on one truck mounted unit. As they are being discharged, dry ingredients are accurately proportioned and delivered to the mixing auger. A controlled flow of water is added and the concrete is then blended as it is being discharged from a special mixing auger at the rear of the unit.

The mixing action is continuous and may proceed until the bins are empty or indefinitely if the bins are being charged as the unit is producing concrete. On the other hand, the mixing action (and delivery of concrete through the chute) may be stopped and then started again by the operator to facilitate the loading of wheelbarrows or any application where small amounts of product are required. The discharge rate is infinitely variable from maximum, 60+ yards per hour down to zero.

2.1 HOW CONCRETE IS ACCURATELY BATCHED WITH THE REIMER MOBILE MIXER

Ingredient proportioning is based on the known dry weight of each ingredient and the requirements for each as specified in the mix design. The calibration procedure translates these weights into volume settings.

Cement is fed into the mix at a constant rate that is proportional to the movement of the conveyor belt. The control gates allow the operator to change the proportional flow of both sand and coarse aggregate in relation to the movement of the conveyor belt and therefore, to the flow of cement. Because the cement and aggregate feeders are mechanically synchronized, the proportions of each of the dry ingredients are constant, once the proportioning controls are set and locked.

An electronic counter allows the operator to determine the accumulated amount of cement discharged and, based on the calibration, the amount of concrete produced.

2.2 CALIBRATION

The calibration procedure will provide the operator with a chart indicating the control gate settings for the each type of concrete mix as well as the digital counter readout required to determine the volume of concrete poured.

A basic overview of the calibration procedure is as follows:
As has been previously explained, the cement discharge is proportional to the movement of the conveyor belt and to the digital counter. The first step in the procedure, then, is to determine the rate of cement discharge in pounds (or kg) per count. Once this is determined, the mix design is used to calculate the number of counts required to produce one cubic yard (meter) of concrete.

> example - It is determined, by weighing the cement discharged in a known number of counts, that the cement is delivered at a rate of 4.5 pounds per count. The mix design indicates that 450 pounds of cement is required per cubic yard of concrete. This means that the digital counter must read 100 (450 divided by 4.5) for sufficient cement to be discharged to produce one cubic yard.

The final steps of the calibration procedure, then, determine the control gate settings which will allow the proper volume of aggregate flows to pass through so that one cubic yard of concrete is produced when the digital counter reads 100.

Because the cement discharge is always proportional to the movement of the conveyor, the design of the mix will remain constant, even if the discharge rate is changed, until the operator changes the control gate settings.

Attached is a detailed calibration procedure as well as a sheet on which to record data gathered during calibration. Proper calibration and setup of the Reimer Mobile Mixer is central to it's successful operation. Ensure that the operator has a good understanding of the concept of volumetric, continuous batching as explained in this manual.

3.0 OPERATION

The key to a successful and profitable business as a mobile concrete producer is the proper operation of your Reimer Mobile Mixer. The operator must be chosen with care as he is responsible for the proper set up of the proportioning controls as well as the general delivery of a quality concrete product.

3.1 LOADING THE MIXER

Cement, sand and course aggregate are carried separate, divided bins. Sand is carried in the left (driver's) side of the large divided bin and course aggregate on the right (passenger) side. Cement is carried in a separate bin mounted at the rear of the large divided aggregate bin and is covered. When loading aggregates it is important that one aggregate not be allowed to spill over into the other's bin, especially when that bin is

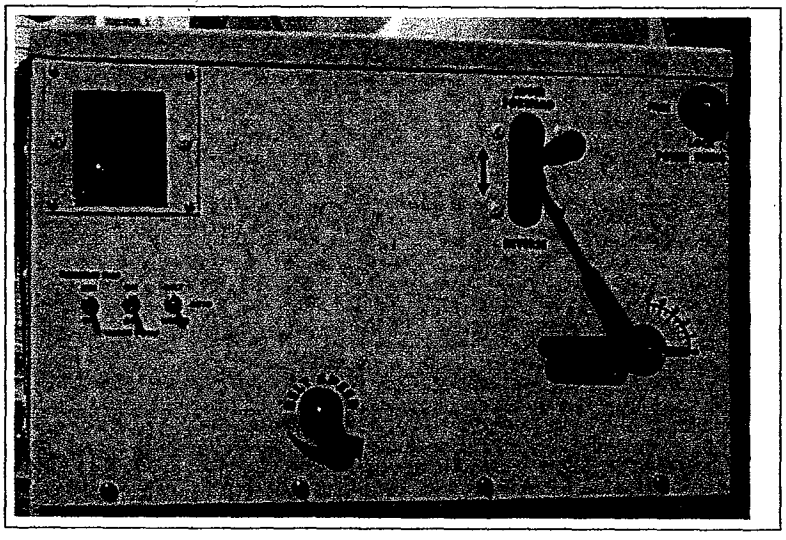
empty. This will adversely effect the quality of the initial part of the load. Care must also be taken to ensure that no stone, water, or other foreign material enters the cement bin. A Serious malfunction of the cement feeding system may result. Materials loaded into the aggregate bins must be free of any foreign matter that may affect the quality of the concrete being produced or cause a partial or complete blockage in the control gates.

3.2 CONTROLS

Locate and become familiar with the operating controls of the Reimer Mobile Mixer.

- Master electrical switch - located on truck dash
- "In cab" mixer control box - Provides for operation of all on/off and directional control functions of the Reimer Mobile Mixer from the operators seat.
- "T" handle control box - Provides for operation of all on/off and directional control functions from discharge area.
- Belt and mix auger speed controls
- Aggregate control gate adjustment hand wheels, dials and pointers
- Digital counter and reset button
- Water pump activation switch
- "Belt / Auto / Water" switch for water and belt functions
- Water proportioning valve
- Water system blow-down valve - if installed for cold weather applications
- Master air supply valve
- rear sand vibrator disable valve
- flexible cement discharge extension
- Emergency "E-Stop switch"

Rear control panel



3.3 SETTING UP TO POUR

Upon arrival at the pour site, confirm the specifications of the concrete to be poured. Using this information and with reference to the calibration chart, set and lock the control gates. Using the following sequence, set up the mixer in preparation for pouring.

1. Set operating controls; Master electrical switch - ON
   Auger speed control - Fully open
   Belt speed control - Set
   Water pump switch - ON
   Belt/Auto/Water switch - Auto (center) position
   Mix water control - Set (operator must become familiar with initial settings required for proper slump using small trial batches)
   Digital counter - reset
2. Lower mix auger using "boom" switch on control panel. The transport lock will automatically disengage. While the best angle of delivery is 30 degrees, job variations will require different positions. Do not allow the angle to become to low, as this will limit the ability of the auger to mix thoroughly.
3. Attach chute extensions, if required. The operator will adjust both the mix auger angle and the chute angle to provide for the best delivery of the product. The short transition chute can be removed to provide for discharge into a concrete pump hopper or for washdown.
4. Set power swing selector to desired function.
5. Apply any release agent at this time, if desired.

3.4 POURING

As with any machine, the operator of the Reimer Mobile Mixer must understand and become confident in the operating procedures through training and experience. The following details the steps to be taken to deliver a quality product to the customer.

1. Activate high idle function using the "RPM" switch. Engine should be turning at no less than 1500 RPM.
2. Activate conveyor belt switch.

   note - When the conveyor belt is engaged, mix water flow is immediately activated. If the conveyor belt is not fully charged with materials to the discharge point, water will accumulate in the mix auger before the aggregate flow begins. This will cause a very wet slump in the initial flow of concrete. To prevent this, the belt/auto/water switch on the control panel allows the operator to run the conveyor belt independently

of the flow of water until it is charged with aggregate to the point of discharge into the mixing bowl. The "water" position of this switch causes water to flow into the mix auger independently of belt operation. This function can be used during wash down or any other time that separate water flow is desired. During mixing operations this switch must be in the center "auto" position.

3.

note - The conveyor and mix auger switches may be activated simultaneously or separately at the judgment of the operator.

4. Immediately adjust mix water feed to obtain the desired concrete slump.
   note - The operator must guard against "chasing" the slump by over adjustment of the mix water control valve. It takes several seconds for any changes in water flow to be noticed at the discharge end of the mix auger.
5. Vibrate bins to ensure initial flow of sand and cement to conveyor belt.
   note - the frequency and duration of vibrating depends upon the distance traveled while loaded, road conditions, and the condition of the sand. The operator must judge, based on experience, the amount of vibration required. Insufficient vibration may allow the sand or cement to bridge in certain conditions, thereby affecting the quality and consistency of the concrete produced.
6. Make frequent visual checks of aggregate flows as well as the flow of concrete to ensure that the customer is receiving a concrete product that is true to the desired specifications.

3.5 WASH DOWN AND PREPARATION FOR TRANSPORT

When the pour is complete or the mixer is empty it is important that the mix auger be properly washed out to prevent excessive concrete buildup which could interfere with the operation of the mixer on subsequent loads. The operator should take this opportunity to inspect the wear plates and make a general visual check of the mix auger and other components which may require maintenance or repair.

The following steps act as a guideline for washing out the mix auger and preparing the mobile mixer for road transport.

- ✓ Using a scraper, remove any excess material from the discharge end of the conveyor belt.
- ✓ Run the mix auger until it is empty.
- ✓ Adjust the mix auger speed control to reduce auger speed as required.
- ✓ Wash out swivel ring and area directly around discharge end of conveyor belt.

- ✓ With mix auger still elevated, ensure that back plate and sides of the auger trough are free of build up. If desired, a rapid flow of water can be added to the mix auger by activating the "water" switch located on the control panel.
- ✓ Open the mix auger cover and lower as far as possible.
- ✓ Wash out until the mix auger and trough are free of any cement or aggregate build up.
- ✓ Switch mix auger control to "off".
- ✓ Elevate mix auger to transport position. The retaining lock will automatically engage. Ensure of proper alignment as the mix auger is being elevated.
- ✓ Deactivate the water pump.

  note - Do not allow the water pump to operate with out water supply. Seal damage will result!
- ✓ If operating in freezing weather, blow down water lines and pump.
- ✓ De-energize electrical system with master switch in cab.

3.6 Variable Cement Control Instructions

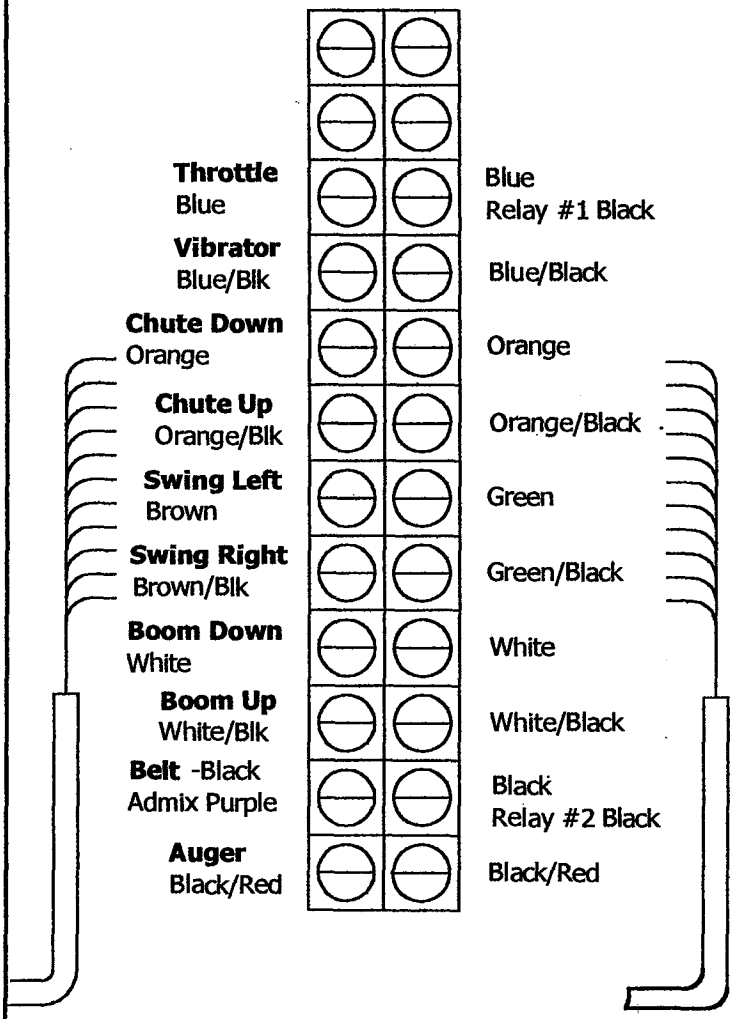
When the cement drive speed control is set to 10 on the scale (full discharge rate) the cement flow is proportional to changes in the belt speed and the discharge rate changes can be made without causing changes to the mix proportions. During operation where the cement discharge rate is being controlled, however, the belt speed must not be adjusted.

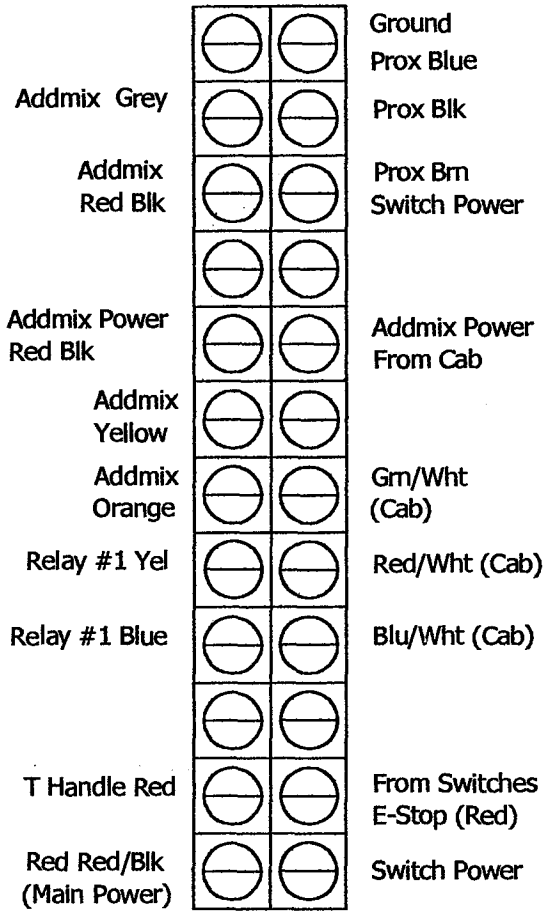
Note the belt speed setting when calibrating the reduced cement flow and use that belt speed whenever the "reduced cement flow function" is used. Slowing the belt speed during operation with reduced cement flow (1-9 on the control scale), will increase the amount of cement being added because the cement feeder will not slow down at the same rate as the belt.

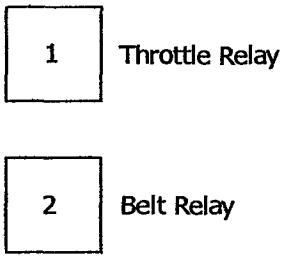
3.7 Color Feeder Control Instructions

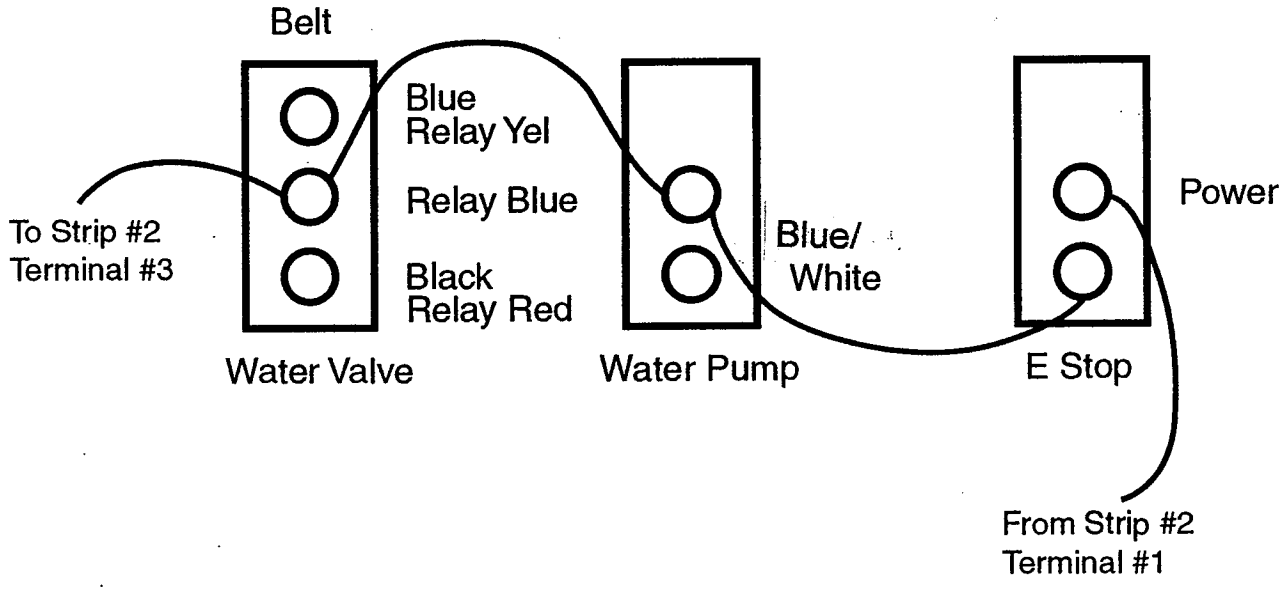
Color feeder discharge rate does not change proportionally to changes in belt speed. Note belt speed setting when calibrating the color feeder and use that belt speed whenever the color feeder is used. Slowing the belt speed during operation with the color feeder in use will increase the amount of color being added because the color feeder will not slow down at the same rate as the belt.

Electrical Box Wiring



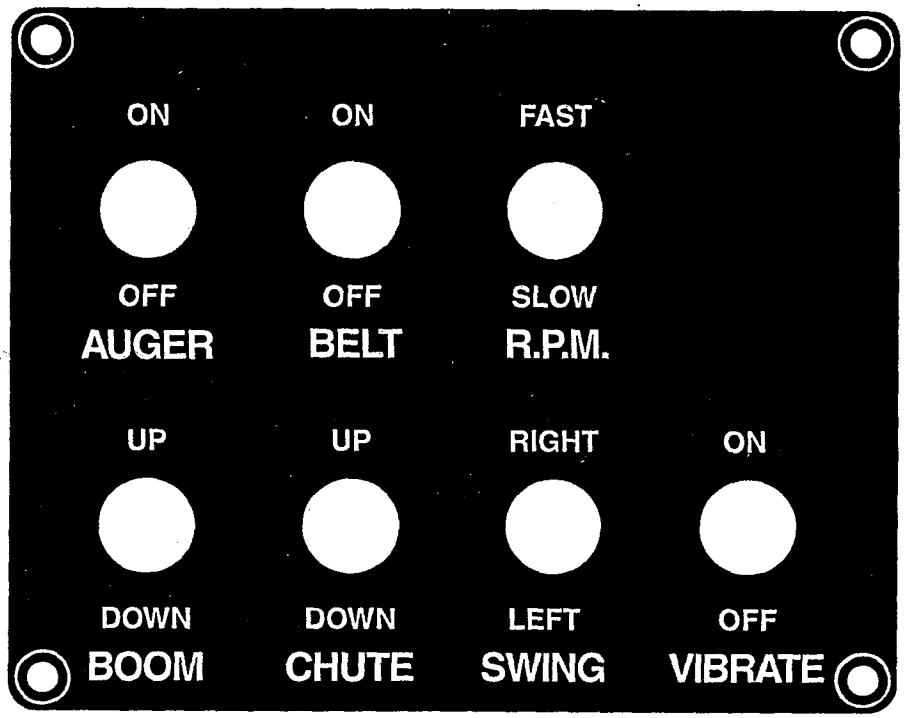


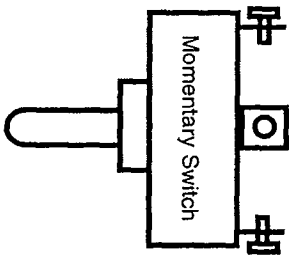


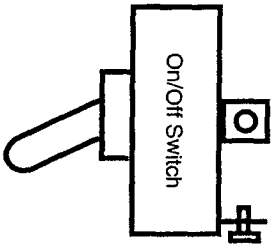


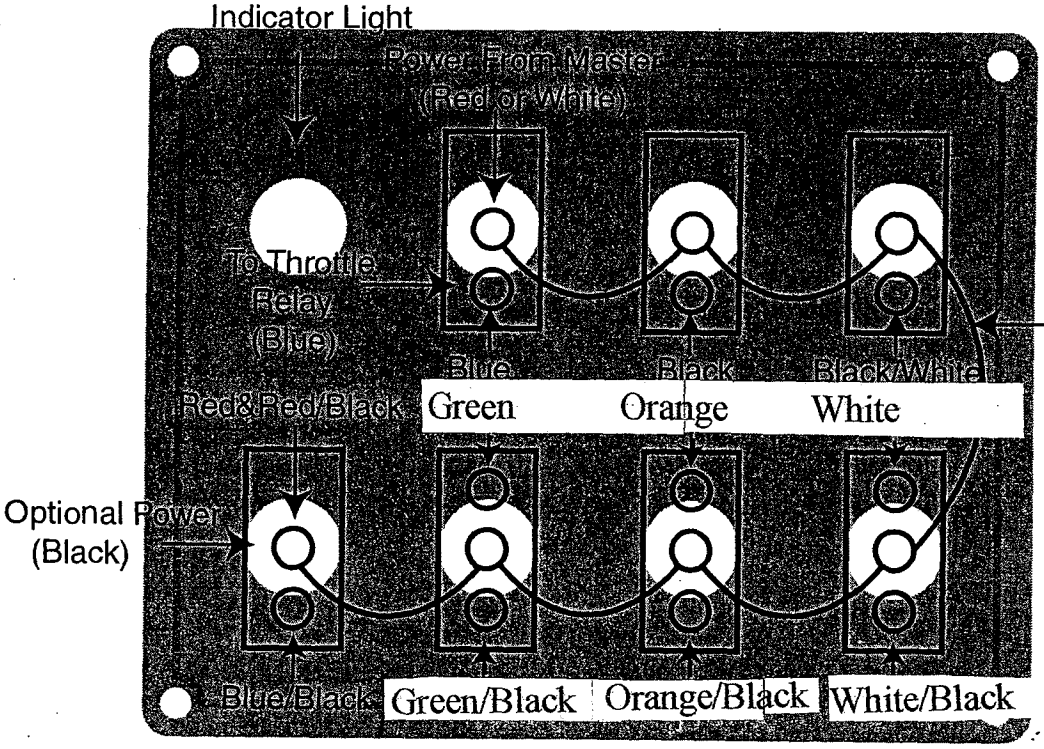
1
Throttle
Relay

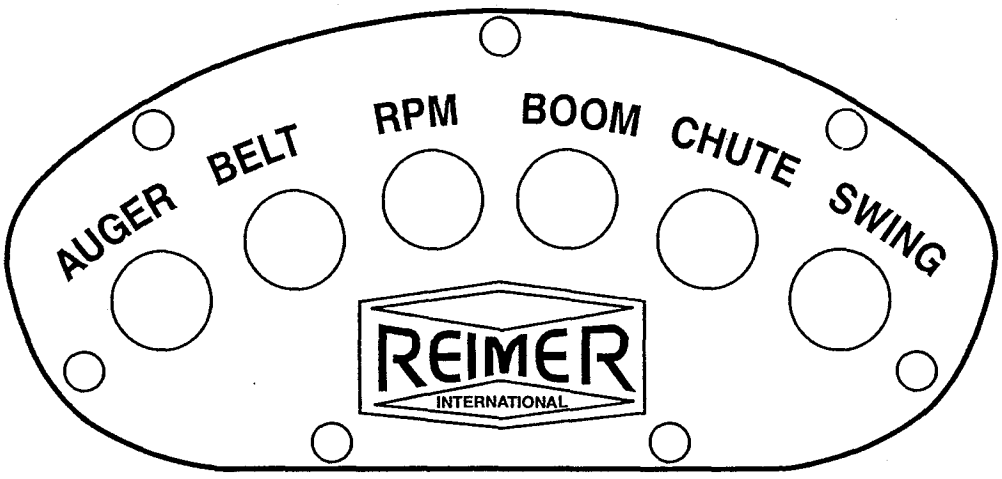
2
Belt
Relay

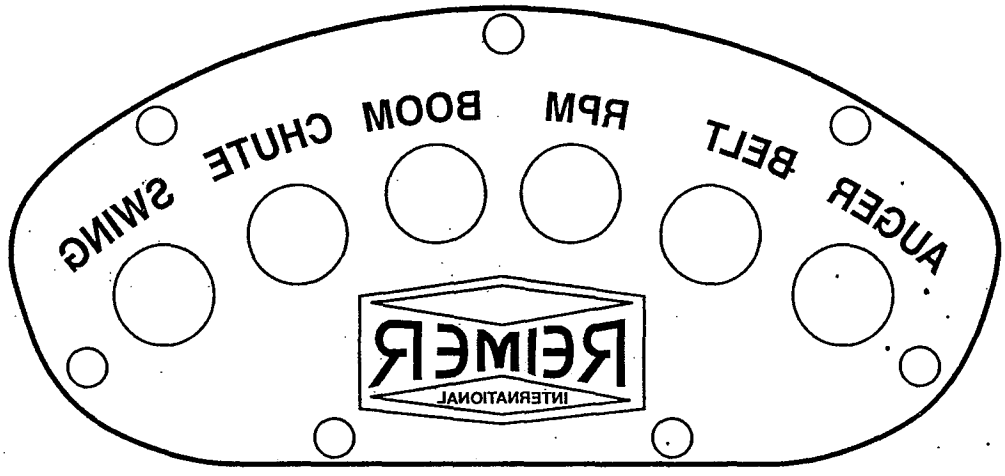

ON
ON
FAST
OFF
AUGER
OFF
BELT
SLOW
R.P.M.
UP
DOWN
BOOM
UP
DOWN
CHUTE
RIGHT
LEFT
SWING
ON
OFF
VIBRATE

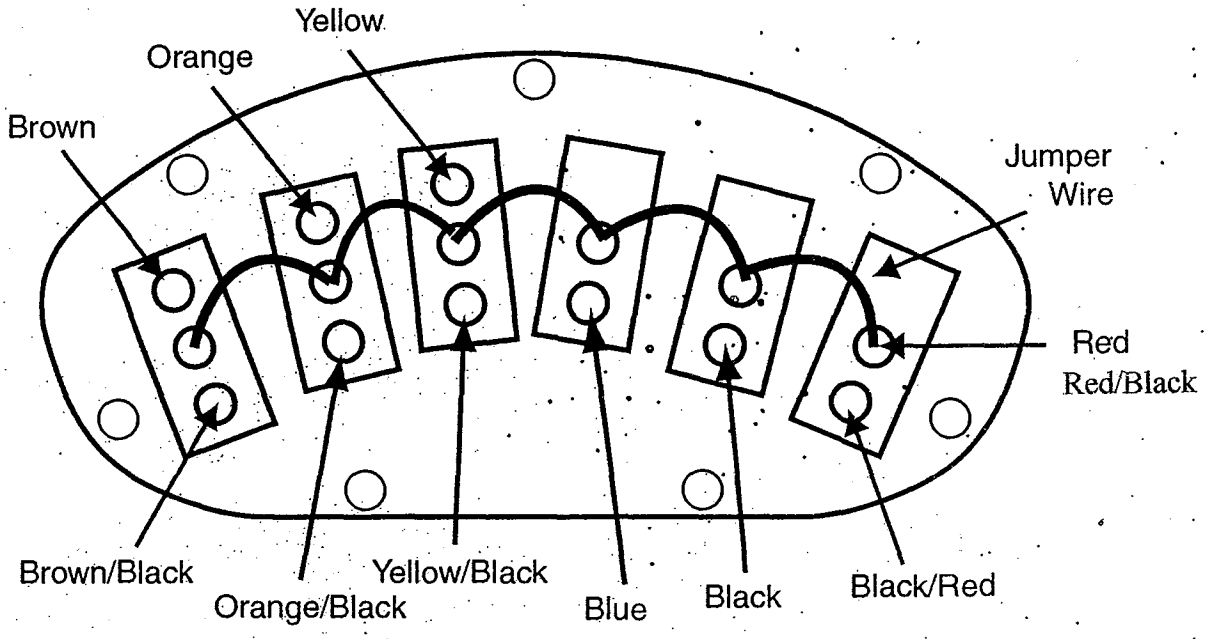

Momentary Switch


On/Off Switch


Indicator Light
Power From Master
(Red or White)
To Throttle
Relay
(Blue)
Blue
Black
Black/White
Red&Red/Black
Green
Orange
White
Optional Power
(Black)
Blue/Black
Green/Black
Orange/Black
White/Black
Jumper Wire
(Not Required with
Optional Power Wire)

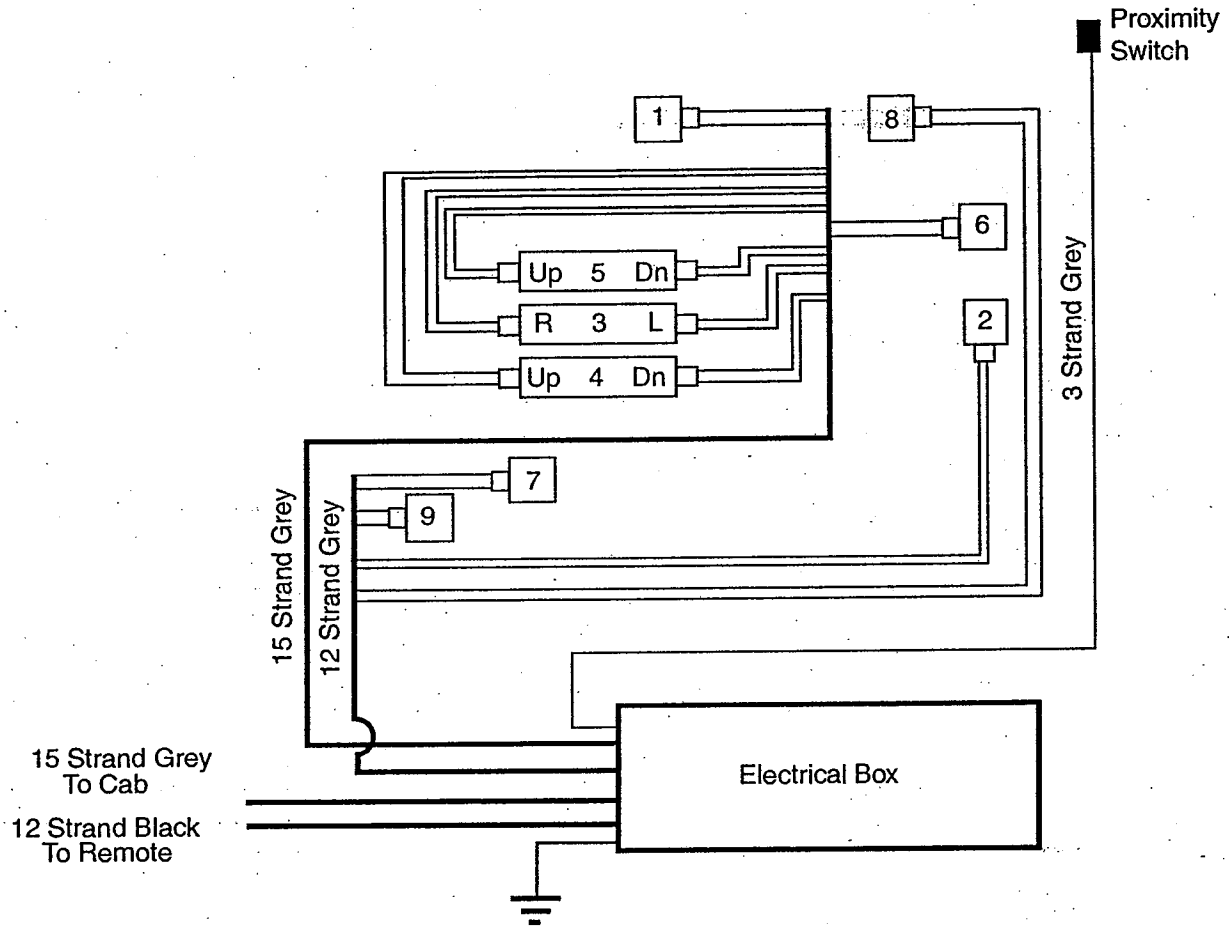






Jumper to Vibrator Switch
Orange/Red Spare
Blue/Red Spare

Valve Wire Harness



1 Vibrator Valve
2 Belt Valve
3 Swing Valve
4 Chute Valve
5 Boom Valve
6 Auger Valve
7 Water Pump Valve
8 Water Valve
9 E-Stop

Reimer Mobile Mixer

Calibration procedure:

The calibration of the mixer is the process which determines the control gate settings and the meter count required to produce concrete of a certain specification. The predetermined "mix design" is used as the guide for the calibration procedure.

STEP 1 - - - Determine the cement output per meter count.

- Procedure:
  - Make sure there is no material in sand and stone bins.
  - Ensure that the cement bin is no less that 1/3 filled.
  - Discharge an adequate amount of cement to ensure that the cement metering system is fully charged.
  - Empty wheelbarrow and determine the tare weight.
  - Zero the counter and place wheelbarrow under the discharge ring.
  - Discharge the maximum amount of cement allowed by the wheelbarrow or other container being used.
    - ✓ Notes:
      1. The higher the count used, the lower the error factor will be.
      2. When calibrating earlier model mixers, (S/N 09-181-00 and previous) it is important to stop the movement of the conveyor at a consistent point relative to the position of the counter trigger device. It may be necessary to remove the access cover on the belt motor mounting box so that the position of the conveyor drive shaft can be visually checked.
  - Determine the weight of cement powder discharged.
  - Divide the weight into the number of counts to calculate the cement output per count.

- Data

☑ Sample #1 - Kg. or (pounds) _____ divided by meter count _____

Kg. or (pounds) per count _____

☑ Sample #2 - Kg. or (pounds) _____ divided by meter count _____

Kg. or (pounds) per count _____

☑ Sample #3 - Kg. or (pounds) _____ divided by meter count _____

Kg. or (pounds) per count _____

☑ Sample #4 - Kg. or (pounds) _____ divided by meter count _____

Kg. or (pounds) per count _____

Cement output per count - - - _____

Step 2 - - - Determine the number of counts required to deliver the specified amount of cement per cubic meter (or yard) of concrete.

- Data:
  - Kg. per meter (pounds per yard) of cement required - from mix design -

    = _____

  - divided by "Cement Output per count" (step 1)

    = _____ **counts required**.

STEP 3 - - - Determine the mass of Rock that must be released per count.

- Procedure:
  - From the mix design, establish the required amount of rock that must be released to produce one cubic meter (yard) of concrete.
  - Divide the mix requirement into the number of counts per meter (step 2)

- Data:
  - Mix design requirement _____ Kg (pounds) per meter (yard)

    divided by counts per yard (step 2) _____

    equals **required mass of rock per count** = _____Kg (pounds)

STEP 4 - - - Adjust the control gate to release the amount of Rock established in step 3.

- Procedure
  - Fill rock bin at least ¼ full to ensure that the control gate flows full.
  - Set control gate to setting taken from the "Sample data chart" in at the end of this section.
  - Place wheel barrow under the discharge point and run conveyor until it is fully charged.
  - Empty wheel barrow and record it's tare weight.
  - Zero the counter and place wheel barrow under the discharge ring
  - Run conveyor until wheel barrow is full, ensuring that all the rock being discharged is captured.
  - Weigh and calculate the amount of rock per count that has been discharged.
  - Adjust gate and re-sample until the mass of rock released per count is equal to the amount established in step 3.
    - ✓ Note:
      1. After the control gate has been reset, the conveyor must be run until the adjusted material flow is past the discharge point. Capture and discard the material released during this operation.

➢ Data:

☑ Required mass of rock per count (from step 3) - _____

☑ Sample #1 - control gate setting _____

Kg. (pounds) of rock per count: _____

☑ Sample #2 - control gate setting _____

Kg. (pounds) of rock per count: _____

☑ Sample #3 - control gate setting _____

Kg. (pounds) of rock per count: _____

☑ Sample #4 - control gate setting _____

Kg. (pounds) of rock per count: _____

☑ Sample #5 - control gate setting _____

Kg. (pounds) of rock per count: _____

☑ Sample #6 - control gate setting _____

Kg. (pounds) of rock per count: _____

**** Rock control gate setting _____**

STEP 5 - - - Determine the mass of Sand that must be released per meter count.

➢ Procedure:

- From the mix design, establish the required amount of sand that must be released to produce one cubic meter (yard) of concrete.
- Divide the mix requirement into the number of counts per meter (step 2)

➢ Data:

- Mix design requirement _____ Kg (pounds) per meter (yard)

  divided by counts per yard (step 2) _____

  equals **required mass of sand per count** - _____

STEP 6 - - - Adjust the control gate to release the amount of sand established in step 3.

➢ Procedure

- Empty the rock bin completely and fill sand bin at least ¼ full.
- Using the same procedure as outlined in step 4, determine the control gate setting.

- Data:
  - ☑ Required mass of sand per count (from step 3) - _____
  - ☑ Sample #1 - control gate setting _____

    Kg. (pounds) of sand per count: _____
  - ☑ Sample #2 - control gate setting _____

    Kg. (pounds) of sand per count: _____
  - ☑ Sample #3 - control gate setting _____

    Kg. (pounds) of sand per count: _____
  - ☑ Sample #4 - control gate setting _____

    Kg. (pounds) of sand per count: _____
  - ☑ Sample #5 - control gate setting _____

    Kg. (pounds) of sand per count: _____
  - ☑ Sample #6 - control gate setting _____

    Kg. (pounds) of sand per count: _____

**** Sand control gate setting _____**

SUMMARY:

Mix # _____ (Operator's reference)

Strength required - _____

Counts per cubic meter (yard) - _____

Stone gate setting - _____

Sand gate setting - _____

The mixer must be calibrated for each mix design used and the data should be recorded on a chart for use by the operator.

Sample data chart - use as starting point only. Each machine must be calibrated as above.

Strength	Meter count / unit	Rock setting	Sand setting
20 mpa (3000 psi)	129/meter (99/yd)	10.2	8.9
25 mpa (3500 psi)	154 /meter (118/yd)	8.5	7.3
27.5 mpa (4000 psi)	173 /meter (132/yd)	7.5	6.1
30 mpa (4500 psi)	185 /meter (141/yd)	6.5	5.8

Make copies of the following sheets to record your working data.

Calibration Data Summary

Step 1 - - --Determine cement output per count

- Data

  ☑ Sample #1 - Kg. or (pounds) _____ divided by meter count _____
  Kg. or (pounds) per count _____

  ☑ Sample #2 - Kg. or (pounds) _____ divided by meter count _____

  Kg. or (pounds) per count _____

  ☑ Sample #3 - Kg. or (pounds) _____ divided by meter count _____

  Kg. or (pounds) per count _____

  Cement output per count - - - _____

Step 2 - - - Determine the number of counts required to deliver the specified amount of cement per cubic meter (or yard) of concrete.

- Data:
  - Kg. per meter (pounds per yard) of cement required - from mix design -

    = _____

  - divided by "Cement Output per count" (step 1)

    = _____ **counts required**.

STEP 3 - - - Determine the mass of Rock that must be released per meter count

- Data:
  - Mix design requirement _____ Kg (pounds) per meter (yard)

    divided by counts per yard (step 2) _____

    equals **required mass of rock per count** = _____Kg (pounds)

STEP 4 - - - Adjust the control gate to release the amount of Rock established in step 3.

- Data:

  ☑ Required mass of rock per count (from step 3) - _____

  ☑ Sample #1 - control gate setting _____

  Kg. (pounds) of rock per count: _____

  ☑ Sample #2 - control gate setting _____

  Kg. (pounds) of rock per count: _____

  ☑ Sample #3 - control gate setting _____

  Kg. (pounds) of rock per count: _____

TROUBLESHOOTING

PUMP WILL NOT PUMP LIQUID

There are several operating conditions which must be met before a hydraulic motor driven centrifugal pump can pump liquid. If the shaft is not turning, check the first and second step. If the shaft is turning, go to the third step.

First, the impeller, shaft, and gears must turn freely. The hydraulic motor is a low torque motor and will not overcome a bound up shaft. Corrosion can form between the impeller and the volute or in the seal area. Reach inside the suction port of the volute with your fingers and see if the impeller can easily be turned by hand.

Second, hydraulic oil must flow across the gears in the motor. Check the needle valve (feature B in Motor Features, page 2) to make sure it is set according the instructions on pages 4 and 5. If the needle valve is backed out, oil will by-pass the gears and fail to turn the shaft.

Trapped pressure in the hydraulic couplers can also prevent flow across the hydraulic motor. Reverse the hydraulic control lever to momentarily pressurize the return hose. This action will open the quick coupler valve and relieve the trapped pressure.

Third, the pump must be primed. The pump will not operate unless the volute cavity is completely full of liquid when started. Remove the top pipe plug on the volute to verify that only liquid comes out. Refer to PUMP MOUNTING section on page 3.

PUMP WILL NOT DEVELOP PRESSURE

There are several factors which contribute to a pump's ability to develop pressure. They are: 1) insufficient shaft speed; 2) restrictions in the plumbing; 3) internal leakage in the pump.

First, check the SHUT-OFF PRESSURE according to the instructions on page 4. If the Shut-off Pressure is per the specifications, then the pressure drop is due to restrictions in the plumbing. If the shut-off pressure is below the specifications, it could be due to insufficient shaft speed or internal leakage in the pump.

Restrictions in the plumbing: For every length of hose, valve, strainer, and fitting between the pump and the boom, there is a loss of pressure. Check for clogged strainers, collapsed hoses, standard port valves, and undersized plumbing.

Insufficient shaft speed: The pressure created by a centrifugal pump is a function of the pump shaft speed. The shaft speed is determined by the flow rate of hydraulic oil going across the gears. A tractor dealership can use a hydraulic flow meter to verify the GPM of oil flow going to the orbit motor. For instructions on how to adjust the shaft speed, refer to the section on pages 4 and 5 titled: REGULATING HYDRAULIC FLOW TO THE SPRAYER PUMP.

Internal leakage in pump: In centrifugal pumps there is a close fit where the eye of the impeller fits into the inlet port of the volute. This close fit seals the low pressure suction liquid from the high pressure liquid inside the pump. If either the impeller or volute are worn, then the pump will not develop pressure because liquid pressure leaks through this area. Replace the impeller and/or volute if there is significant play when the eye of the impeller fits into the inlet port of the volute.

MECHANICAL SEALS

Mechanical seals have two polished faces which run against one another forming a barrier preventing pump solution from leaking. A small quantity of liquid crosses the faces and is necessary to lubricate and remove heat from the seal faces.

The two most common causes of seal failure are: 1) the carbon seal face is scratched and loses its polish by harder material crossing the face; and 2) thermal shock caused by cool liquid suddenly hitting a seal that has been running dry.

Damage to the seal face by harder materials can be a function of 1) abrasive solution materials, 2) rust or corrosion forming around the seal, 3) precipitates which come out of solution when heated, and 4) residue between the seal faces when a pump is shut off and not flushed out. This type of seal failure can be minimized by flushing the pump with water after use and storing the pump filled with antifreeze or oil to prevent corrosion.

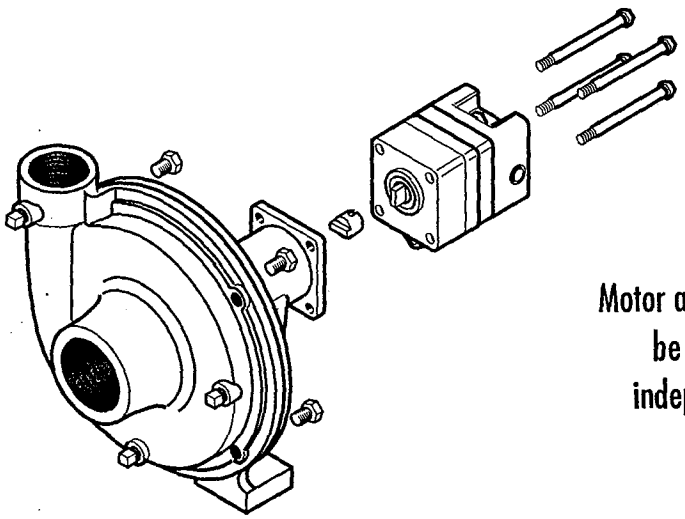
The thermal shock creates radial cracks in the white ceramic face. When the pump is running dry, there is no liquid to lubricate or remove heat from the seal faces. The seal heats up rapidly to a temperature that can cause damage to the seal components.

Note: In tough applications where the standard carbon seal face is readily scratched or

Ace water pump information:

DISASSEMBLY INSTRUCTIONS

1. Remove four 5/16" hex head cap screws from rear of motor.
2. Remove motor and coupler.
3. Remove rear internal bearing snap ring.
4. Remove four 3/8" X 3/4"" hex head cap screws from mounting frame.
5. Remove volute.
6. Remove 3/8" lock nut from shaft. Insert a flat file into impeller vane to hold stationary.
   Caution: Excess torque may cause damage to plastic impellers.
7. Press shaft out of impeller using one 5/16" hex head cap screw from step #1.
8. Remove impeller, key, and rotating seal member.
9. Press shaft/bearing assembly out of frame.
10. Remove stationary seal member by prying out with a screwdriver or pressing out from motor end of pump housing.
11. Remove O-ring from shaft groove.
    Note: If you are only replacing the pump seal: 1) press the shaft/bearing assembly into the frame, 2) reinstall the rear internal bearing snap ring, and 3) skip to Assembly Step #8.
12. Press bearings off of shaft.
13. Remove forward internal bearing snap ring.



Motor and pump can be serviced independently.

DISASSEMBLY STEPS 1 - 5

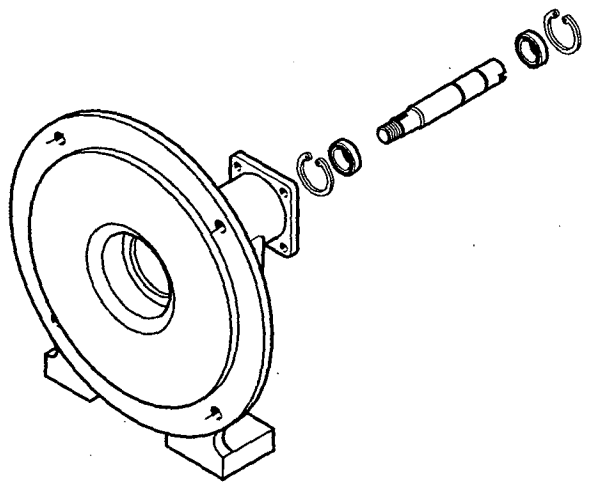
PUMP REPAIR KITS

Ace hydraulic pump repair kits include the mechanical seal, volute gasket, and volute O-ring. Pumps manufactured after January 1996 use the O-ring and have a chamfer or groove machined in the volute. Older pumps require the gasket volute seal. **Note:** Do not use both the O-ring and gasket.

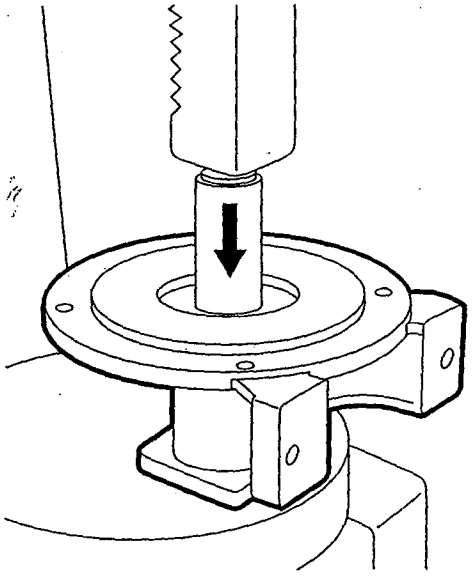
Pump Models	Part #	EDP #
FMC-HYD-204/210/310	RK-FMC	052700
FMC-150-HYD-206	RK-FMC-150	052710
FMC-200-HYD-210/304/310	RK-FMC	052700

ASSEMBLY INSTRUCTIONS

1. Install forward internal bearing snap ring in mounting frame.
2. Press in forward bearing from rear side of mounting frame to snap ring.
3. Install two external shaft retainer rings with spacer between on shaft.
4. Press shaft assembly through forward bearing until forward shaft snap ring rests against inner face of forward bearing.
5. Press rear bearing over shaft.
6. Insert rear internal bearing snap ring.
7. Slide rubber slinger over shaft and push back to front bearing.
8. Clean old sealant from mounting frame seal bore.
9. Install O-ring in shaft groove.
10. Apply non-hardening Type 2 Permatex or similar under stationary seal flange.
11. Place stationary portion of seal over shaft and press into seal bore cavity. Use a 1-3/8" ID pipe or PTO adapter to press seal flange evenly on all sides.
12. Install rotating portion of seal over shaft and O-ring by hand. The two polished seal faces should face each other. Avoid contacting the polished seal faces.
13. Insert key in keyway and install impeller on shaft.
14. Place lock washer and 3/8" lock nut on shaft and tighten nut.
15. Replace volute O-ring or gasket, volute, and four 3/8" x 3/4" cap screws.
16. Position coupler in pump shaft slot and fill cavity surrounding coupler with grease.
17. Install motor by aligning motor tang and coupler slot. Rotate motor until nameplate faces up.
18. Install four 5/16" cap screws.



ASSEMBLY STEPS 1 - 6



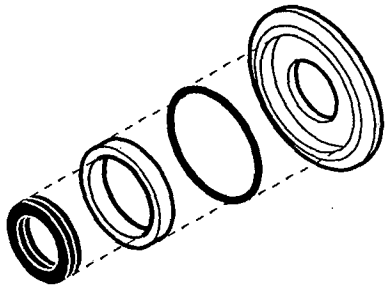
ASSEMBLY STEP 11

MAINTENANCE

1. Ace pumps are equipped with factory lubricated bearings and require no further lubrication.
2. If danger of freezing exists, drain the pump by removing the bottom volute pipe plug.
3. Neutralize chemicals and flush pump after each use to prevent corrosion.
4. Pump storage:
   - A. Flush out pump with clean water.
   - B. Fill pump with oil or antifreeze to protect from corrosion and freezing.
   - C. Insert plugs in the motor hydraulic ports to retain some hydraulic fluid and prevent rusting.

MOTOR REPAIR KIT INSTALLATION

1. Remove four 5/16" hex head cap screws from rear of motor.
2. Remove drive plate snap ring.
3. Remove two 1/4" cap screws.
4. Pull motor casing apart. (end plate, drive plate, housing)
5. Remove idler gear/shaft assembly, drive gear, and drive shaft dowel pin.
6. Slide drive shaft/bearing assembly, and seal components out of drive plate.
7. Remove and discard old O-rings and quad ring seal.
8. Replace drive shaft/bearing assembly in drive plate.
9. Insert wire ring bearing spacer.
10. Insert steel backup washer.
11. Insert 1-1/8" O-ring against backup washer.
12. Steel seal retainer assembly:
    A. Insert 7/8" O-ring into the steel seal retainer.
    B. Insert the quad ring collar inside the 7/8" O-ring.
    C. Insert the quad ring shaft seal inside the collar.
    NOTE: Quad ring appears oversized but conforms to shaft diameter when inserted into collar.
13. Slide seal retainer assembly over shaft with beveled side facing bearing.
14. Install shaft seal retaining ring.
15. Lightly grease large O-rings and insert in drive and end plate grooves.
16. Replace dowel pin and drive gear on drive shaft.
17. Replace idler gear/shaft assembly in drive plate bushing.
18. Reassemble the drive, center, and end plates.
19. Install two 1/4" cap screws. **Caution:** Do not over tighten.
20. Remove needle valve.
21. Replace needle valve thread seal (metal washer with rubber insert) and reinstall.
22. Remove seal check cap from drive plate with 5/32" allen wrench.
23. Replace seal check cap O-ring and reinstall.
24. Position coupler in pump shaft slot and fill cavity surrounding coupler with grease.
25. Install motor by aligning motor tang and coupler slot. Rotate motor until nameplate faces up.



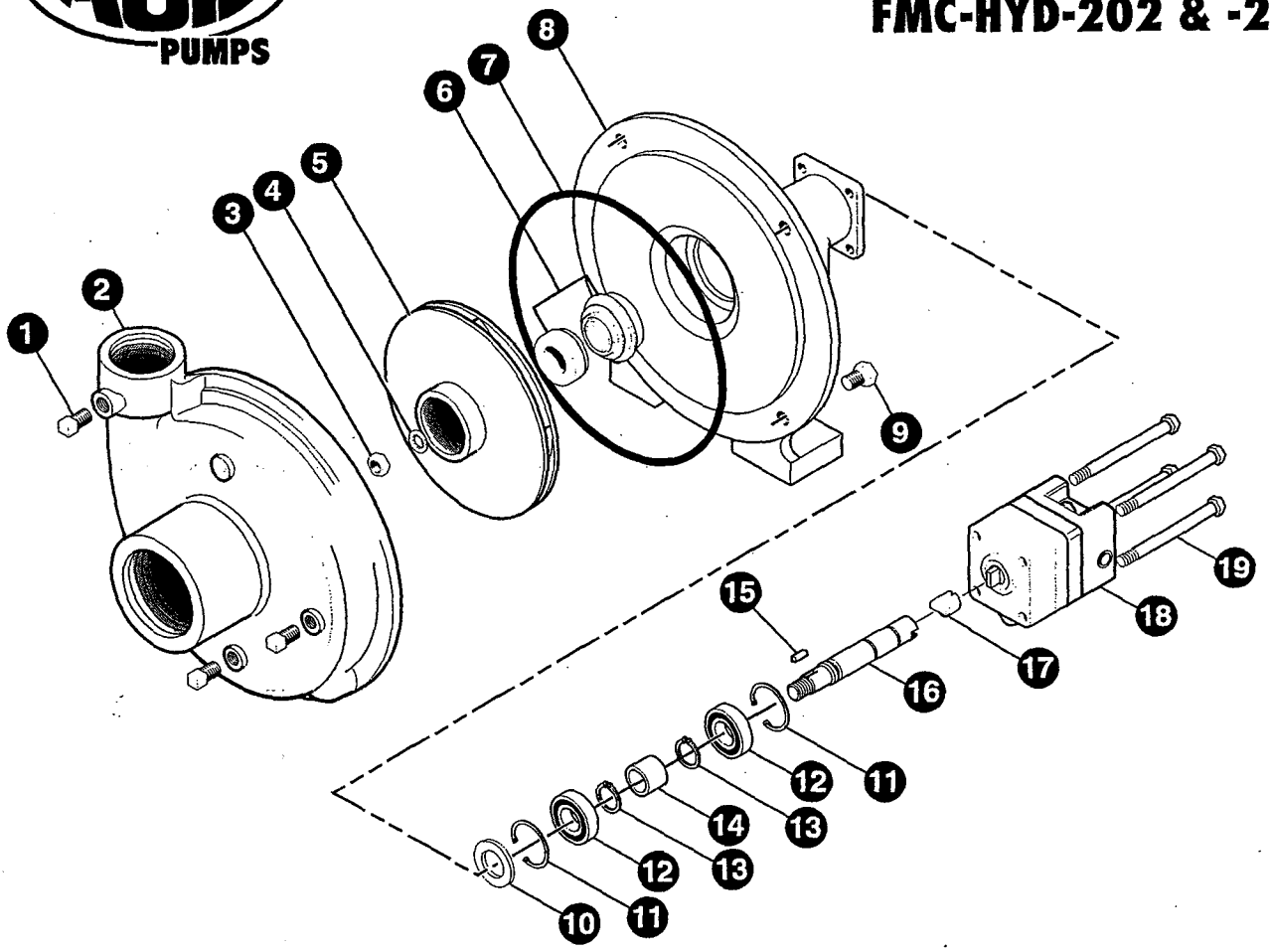
SEAL RETAINER ASSEMBLY - STEP 12

HYDRAULIC MOTOR REPAIR KITS

Ace hydraulic motor repair kits include all O-rings and seals necessary to rebuild the motor.
Note: The quad ring shaft seal is oversized but will conform to the shaft's diameter when inserted into the seal collar.

Motor Model	Repair Kit Part #	Ace EDP#
BAC-75-HYD-200 Series	RK-BAC-75-HYD	041371
BAC-75-HYD-304	RK-BAC-75-HYD-304	041361
BAC-75-HYD-310	RK-BAC-75-HYD-310	041379

FMC-HYD-202 & -203



Ref.#	PART NO.	EDP NO.	DESCRIPTION	REQ.
1	41110	41110	Pipe plug	3
1	41120	41120	Pipe plug, stainless steel (optional)	3
2	BAC-12	40250	Volute, 1 1/4" x 1"	1
*3	BAC-23-A	40391	Nut, 3/8" NF, cad plated	1
*4	BAC-24-HYD-SS	40400	Washer, 3/8" star, stainless steel	1
*5	BAC-26-HYD-VALOX	40440	Impeller Valox, keyway	1
5	BAC-26-HYD-CI	40442	Impeller, cast iron, keyway (optional)	1
*6	BAC-7V	40151	Seal, mechanical, Viton (includes 40160 "O" Ring)	1
6	BAC-7SC	40152	Seal, mechanical, Silicon Carbide (includes 40160 "O" Ring) (optional)	1
*7	BAC-4	40010	Gasket, 4 hole, (obsolete 1996)	1
*7	BAC-4A	40005	O-ring, body seal	1
8	BAC-14-HYD	40300	Mounting frame (for 200 series hydraulic motors)	1
9	40950	40950	Cap screw, 3/8" NC x 3/4" hex head	4
9	40930	40930	Cap screw, 3/8" NC x 3/4" hex head, stainless steel (optional)	4
10	BAC-54	41130	Slinger	1
11	BAC-33	40810	Snap ring, internal, BAC-14 mounting frame	2
12	BAC-37	40870	Ball bearing, sealed, BAC-6 shaft	2
13	BAC-32	40790	Snap ring, external, BAC-6 shaft	2
14	BAC-32-S	40795	Spacer for BAC-6 shaft	1
15	BACH-25	40420	Key, 1/8" x 1/8" x 1/2"	1
16	BAC-6-HYD	40060	Shaft, 5/8" diameter, keyway and tang slot	1
16	BAC-6-HYD-SS	40061	Shaft, 5/8" diameter, keyway and tang slot, stainless steel (optional)	1
17	BAC-76-HYD	41380	Coupling for hydraulic motor	1
18	BAC-75-HYD-202	41368	Hydraulic motor, 2 GPM	1
18	BAC-75-HYD-203	41367	Hydraulic motor, 3 GPM	1
19	41256	41256	Cap screw, 5/16" NC x 3 1/2" hex head (for 204 and 203 motor)	4
19	41250	41250	Cap screw, 5/16" NC x 3 1/4" hex head (for 202 motor)	4
#	RK-FMC	052700	Repair kit for FMC series pump	1
#	RK-BAC-75-HYD	041371	Repair kit for 202, 203, 204, 206, and 210 motor	1

* Items included in pump repair kit.

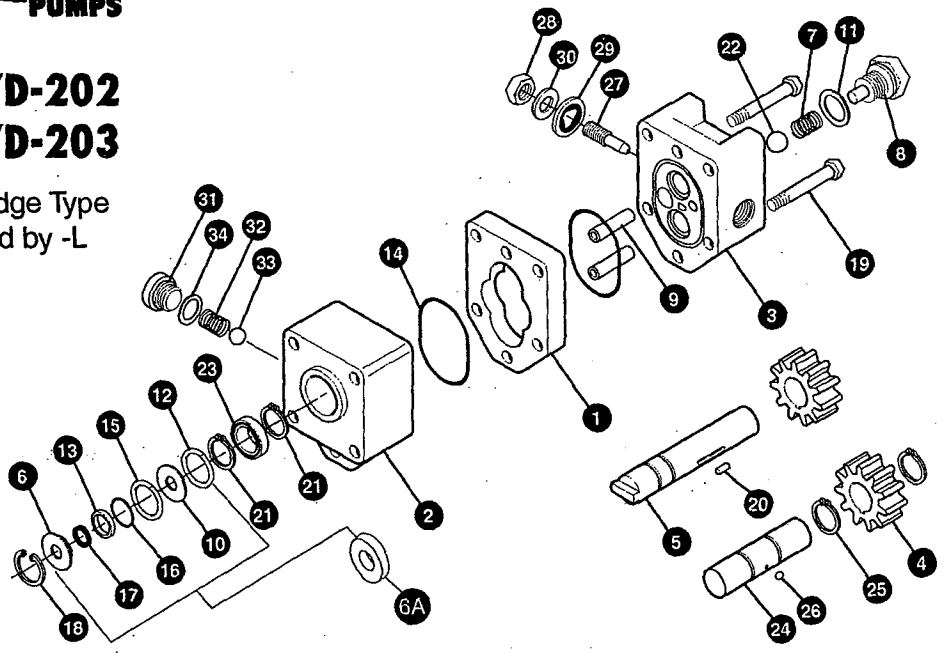
Ace Pump Corporation • P.O. Box 13187 - 1650 Channel Ave. • Memphis, Tennessee 38113
Phone: 901-948-8514 Fax: 901-774-6147

ACE PUMPS

HYDRAULIC MOTOR PARTS LIST

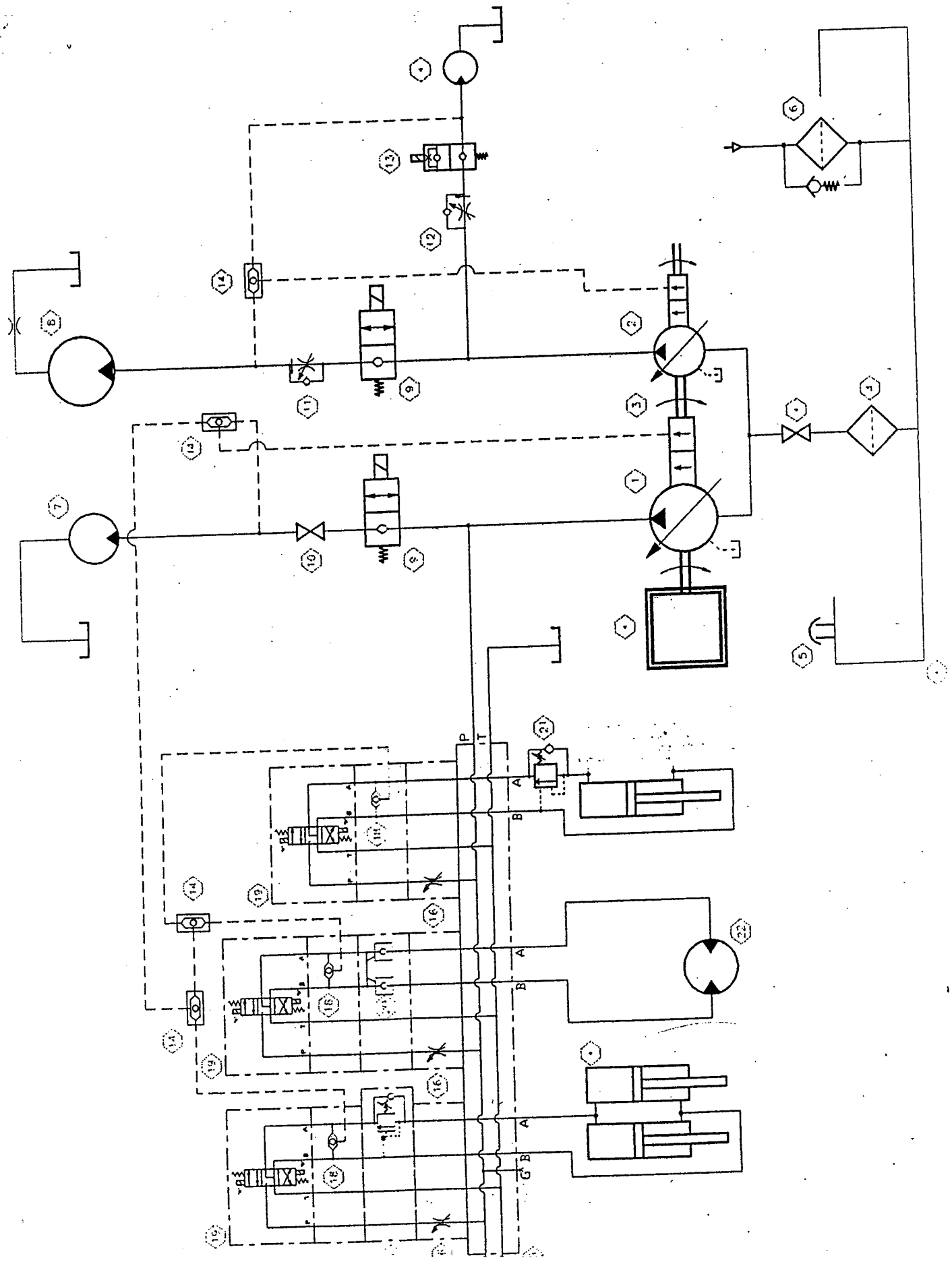
BAC-75-HYD-202
BAC-75-HYD-203

Including Cartridge Type Seal (designated by -L on nameplate)



REF. #	MODEL 202	MODEL 203	DESCRIPTION	REQUIRED
1	41718	41719	Gear housing	1
2	41731	41731	Drive plate	1
3	41740	41740	End plate	1
4	41748	41749	Gear	2
5	41758	41759	Drive shaft	1
6	41770	41770	Steel seal retainer	1
6A②	40153	40153	Seal cartridge (replaces REF# 6,10,12,13,15,16,17)	1
7	41780	41780	Spring, reverse flow check	1
8	41790	41790	Valve cap, reverse flow check	1
9	41799	41799	Dowel pin, housing	2
10	41810	41810	Steel backup washer	1
11	41820	41820	Nylon washer	1
12	41830	41830	Wire ring bearing spacer	1
13	41840	41840	Collar, quad ring shaft seal	1
14①②	41850	41850	"O" Ring, housing seal	2
15①	41860	41860	"O" Ring, seal retainer	1
16①	41870	41870	"O" Ring, seal collar	1
17①	41880	41880	Quad ring shaft seal	1
18	41890	41890	Retaining ring, shaft seal	1
19	41899	41899	Cap screw,1/4" N.C. hex head	2
20	41918	41919	Dowel pin, drive shaft	1
21	41941	41941	Snap ring, bearing	2
22	41950	41950	Ball, reverse flow check	1
23	41961	41961	Ball bearing 7/16" I.D.	1
24	41968	41969	Idler shaft	1
25	41980	41980	Retaining ring, idler gear	2
26	41990	41990	Ball, idler shaft	1
27	42010	42010	Adjusting screw, needle valve	1
28	40960	40960	3/8" N.C. jam nut, needle valve	1
29①②	42030	42030	3/8" Thread seal, needle valve	1
30	42040	42040	Flat steel backup washer, needle valve	1
31	42041	42041	Valve cap, coasting check	1
32	42042	42042	Spring, coasting check	1
33	42043	42043	Ball, coasting check	1
34①②	42044	42044	"O" Ring, coasting check	1
①	041371	041371	Repair Kit, RK-BAC-75-HYD	--
②	041372	041372	Repair Kit, RK-BAC-75-HYD-L	--

Hydraulic System Schematic



BILL OF MATERIAL

ITEM	QTY	DESCRIPTION	MFG
1	1	70553-RAZ RH Load Sense Pump	EATON
2	1	70423-RBT RH Load Sense Pump	EATON
3	1	03-32-C0028 13T Drive Coupling	HYPOWER
4	1	P50-100-2-RV3 Suction Strainer	FLOW EZY
5	1	ABGP-1000-3-HN-CHAIN Breather	FLOW EZY
6	1	HL151C343NBC05 In Tank Filter	VICKER'S
7	1	104-1034 Hydraulic Motor	CHARLYNN
8	1	119-1031 Hydraulic Motor	CHARLYNN
9	2	SV1-16C-12T-12DP NC Solenoid Valve	VICKER'S
10	1	BKH-34-NPT High Pressure Ball Valve	PCI
11	1	EPC541 PC Flow Control	DELTROL
12	1	EPC521 PC Flow Control	DELTROL
13	1	SV1-10C-6T-12DP NC Solenoid Valve	VICKER'S
14	4	DSV3-8B-A6T Shuttle Valve	VICKER'S
15	1	A-D03-P-3-2S 3 Station Manifold	DAMAN
16	3	DGMFN-3-Z-F2W-41 Flow Control	VICKER'S
17	1	CBCA-LHN-EBA Counterbalance Valve	SUN
18	3	CSAA-EXN-GBS Shuttle Valve	SUN
19	3	DG4V-3S-6C-HMU1G760EN490 Valve	VICKER'S
20	1	DGMPC-3-ABK-BAK-41 Dual PO Check	VICKER'S
21	1	CBCA-LHN-EJB Counterbalance Valve	SUN
22	1	104-1228 Hydraulic Motor	CHARLYNN
*		*'d items supplied by customer	

7.0 Warranty

1. **NEW EQUIPMENT WARRANTY** - Subject to the limitations and exclusions set out below, Reimer International Inc. warrants that if any component or part of a mixer manufactured by Reimer proves to be defective in material or workmanship within (6) six months from the original delivery date, Reimer will either repair or replace the defective part of the mixer.
2. **LIMITATIONS AND EXCLUSIONS**

   This warranty by Reimer does not extend to or include:

   i. Trucks - see the warranty information included with the truck manufacturer's information pack.

   ii. Damage resulting from accident, misuse, abuse, neglect or from other than normal and ordinary use of the mixer.

   iii. Damage resulting from failure to operate or maintain the mixer as specified in the operator's manual.
3. **IMPROVEMENTS OR CHANGES** - Reimer International Inc. reserves the right to make improvements or changes in design and specifications at any time without incurring any obligation to owners of mixers previously sold.
4. **REIMER INTERNATIONAL INC. IS NOT RESPONSIBLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.**

Reimer International Inc.

Replacement Parts

	Item #	Item Name
		AIR
AIR	AI004	Skinner12 Volt Coil Assembly
	AI017	Din Connector
	AI025	Skinner Valve w/o Coil 1/4"
	AI05	Vibrator (Skinner) Valve w/o Coil 1/2"
	AI100	Skinner Valve w/o Coil 1"
	AI174	Air Lubricator
		ADMIX SYSTEM
ADMIX SYSTEM	AM001	Poppett Valves
	AM002A	Bellows 1"
	AM002B	Bellows 1 1/2"
	AM002C	Bellows 2"
	AM004	90 Degree Valve Housing
	AM005	3-Way Valve
	AM006	12 Gal. Plastic Tank
	AM007	Triplex Pumps
	AM008	Admix Tank Frame (no straps)
	AM009	M10000-P201352 flow meter
	AM010	M10000-B203352 flow meter
	AM011	Connecting Rod & Cam Assembly
	AM012	Anti-Siphon Spring
	AM013	Tank Strap, each
	AM014	Add Mix Tank Lid
	AM015	Plastic Top
	AM016	Electric Pump
		AUGER
	AU001A	Mix Auger Assembly Complete
	AU001B	Complete Mix Auger Trough
AUGER	AU001C	12" Mix Auger Assembly Complete
	AU002	A.R. plate 6"
	AU003	A.R. plate 10"
	AU004A	Complete Auger
	AU004B	Auger w/o wear plates-punched
	AU005A	Auger Cover/Top
	AU006	Auger Motor -Spline shaft
AUGER	AU007A	Auger Mat (Standard) 24X92.5"
	AU007B	Auger Mat -Heavy 29X92.5"
	AU008	Auger Bearing
	AU009	Auger Curved Wear Plates
	AU010	Auger Straight Wear Plates
	AU011M	Auger Motor (Drive)Coupler
AUGER	AU011-4	Auger Splined Coupler- 4000 Series
	AU011-6	Auger Splined Coupler- 6000 Series
	AU012	Auger Motor Seal Kits (2000 Series)
	AU013	Bottom (Rear) Auger Seal
	AU013A	Bottom Auger Seal Retainer
	AU013B	Seal ONLY
AUGER	AU014	Top Auger Seal
	AU015	Bowl Skirt/ Ring Rubber
	AU016A	Mix Auger Stub Shaft-Top
	AU016B	Mix Auger Stub Shaft- Bottom
	AU017	Auger Bearing Support Bracket

		AUGER (CONT'D)
	AU020	Bolt Kit
	AU021	AugerMotorSplashGuard#NEO-4
	AU022	AugerBearingSplashGuard#NEO-4
	AU023	AugerTroughExtention#Chute50-6
	AU024	ChuteExtentionTop#Chute50-6
	AU025	AugerMat#BELT(3ply)
	AU026	Swing Motor Spacer-UHMW
	AU027A	Swing Bracket Idler Sprocket
AUGER	AU027B	Swing Motor Drive Sprocket
	AU028	Power Swing Chain
	AU029	Power Swing Motor Bracket
	AU030	Lower Seal Shell
	AU031	Upper Seal Shell
	AU032	Lower Seal Core
	AU033	Upper Seal Core
	AU034	Auger Pipe, Mix Auger
		CHUTE
CHUTE	CH001	1st Chute
	CH002	2nd Chute
	CH003	3rd Chute
	CH004	Chute Cylinders (Old Style)
	CH004A,B	Chute Cylinder Seal Kits -A(Old) B(New)
	CH005	Small Chute Cylinders
	CH006	New 4' Chute Extentions (each of 3)
	CH007	Transition Chute
		CONVEYOR
	CO001	Complete Conveyor
	CO001A	Chain ONLY
	CO002	Sprocket with Keyway
CONVEYOR	CO003	Front Shaft
	CO004	Rear Shaft
	CO005	Belt Motor
	CO006A	Seal Kit 10,000 Series #6406
	CO006B	Seal Kit 10,000 Series #6405
	CO008	Hinge Kit-Belt Lacing
	CO009	Elevator Bolts/100 (Bolts Only)
	CO010	Color Feeder
	CO011	Fiber Feeder
	CO012	Skirt Board Rubbers
	CO013	Conveyor Belt/Running Foot
	CO014	Planetary Reducer
	CO015	Sun Gear Adaptor
	CO018	Bearingless Belt Motor
	CO016	Chain Lubricator Oil Tank
	CO017	Chain Lubricator
		CYLINDER
CYLIND	CY001	Complete Auger Lift Cylinder Assembly
	CY002	Lift Cylinder Hydraulic Supply Pipe
	CY003	Boom (Lift) Cylinder Rod
	CY004	Boom Cylinder Seal Kit
	CY005	Lift Cylinder Piston
	CY008	Lift Cylinder Head
	CY008	CB Valve

Reimer International Inc.

Page 2

Replacement Parts

	Item #	Item Name
		ELECTRICAL
ELECT	EL001	Junction Box
	EL002	Terminal Strip
	EL003	Din Connector
	EL004	Bel/Water Relay
	EL005	Throttle Relay
		FENDERS
FEND	FE001	Steel Fenders
	FE002	Plastic Fender Kit (1 Fender-3 section kit)
	FE003	Fender Brackets (Set-3 Br. & Lev. Angle)
	FE004	Mud Flap
		HYDRAULIC OIL COOLER
HYDRAULIC	HYAD001	Reducing T
	HYCO001	Oil Cooler/Heat Exchanger
	HYCO002	End Cap for Oil Cooler
	HYCO003	Gasket for Oil Cooler
	HYC004	Electric Oil Cooler
		HYDRAULIC MOTORS
	AU006	Auger Motor -Spline shaft
	HYMO001	Hydraulic Filter
	HYMO002	Belt Motor
	HYMO003	Power Swing Motor
	HYMO003	Cement Drive Motor
	HYMO004	Bearingless Belt Motor
	HYMO005	Cement Bin Cross Auger Motor
	HYMO006	Motor Seal Kit 2000 Series (61258-000)
		HYDRAULIC PUMPS
SYSTEM	HYPU001	Drive Coupling-Pump
	HYPU002	2" Flange (Check Auger bearing)
	HYPU003	1" Flange
	HYPU004	Auger, Auxilary Pump
	HYPU005	Belt,Water Pump
	HYPU006	B' Pad Gasket
	HYPU007	Gear Pump
		HYDRAULIC RESERVOIR
HYDRES	HYRE001	SuctionStrainer
	HYRE002	In Tank Filter Housing
	HYRE003	In Tank Filter Element
	HYRE004	Indicator
	HYRE005	Breather Reservoir
	HYRE006	Filter Assembly- Complete
	HYRE007	Sight Glass/Level Indicator/Guage 5" level
		MODULAR VALVES
HYDRAULIC	HYVA002	(M/C) Solenoid Coil
	HYVA003	SV1-10 Body (Solenoid Water Pump)
	HYVA004	Name Plate
	HYVA005	Shuttle Valve
	HYVA006	Solenoid Water Pump
	HYVA007	Auger/(Shut-off)Belt Solenoid Cartridge
	HYVA07A	Auger/Belt Solenoid(SV-16) Body

		MODULAR VALVES, Continued
	HYVA012	Counterbalance Cartridge-Boom Cylinder
	HYVA014	Count. V.Body for CBV7 Boom Cylinder
		MANIFOLD VALVE STACK
	HYVA001	3 Station Manifold
	HYVA008	Flow Control Manifold
VALVES	HYVA009	Pilot Check Manifold (Power Swing LockValve)
	HYVA010	Solenoid Valve Manifold
	HYVA011	Shuttle Valve Manifold
	HYVA012	Counterbalance Cartridge-Manifold
	HYVA013	Count. Valve Body for CBV7 Manifold
	HYVA015	Stud Rods-Manifold
	HYVA016	Nuts-Manifold
	HYVA017	Din Connector
HYDRAULIC		**CONTROL VALVES**
	HYVA019	Flow Control Auger
	HYVA020	**MRV3** (Power Swing Lock) **Body**
	HYVA021	(Free Wheel)Power Swing Lock Cartridge
	HYVA023	Selector Valve
	HYVA024	2 Bank Valve
	HYVA025	Flow Control Water Pump
	HYVA026	Flow Control Belt (Pressure Comp.)
	HYVA027	Reversing Valve
VALVES	HYVA028	Reversing Valve Handle
	HYVA029	Needle Valve -Belt(Not Pres. Comp)
	HYVA030	Friction Detent Kit
	HYVA031	Load Sense Dump Valve
	HYVA032	MRV3/SV1-10-3 Load Sense Body
	HYVA033	Check Valve (Sense Line)
	HYVA034	CFQ-A-50 Gresen Cement Valve
		METER
METER	ME001	Complete Meter (Old)
	ME002	Meter Box (No Prox Switch)
	ME003	Proximity Switch
	ME004	Omron Meter
	ME005	Sealing Cover for Counter
	ME006	Hawk Printer Kit
	ME007	Hawk III Display/Admix system
		MISCELLANEOUS & MISC RUBBER
MISCELLANEOUS	MSC001	High Idle Governor
	MSC002	Cement motor drive sprocket
	MSC003	Cement Hopper Grate
	MSC004	Cement Hopper (Bin) Lid
	MSC005	Iberville Strain Relief 3/4"
	MSC006	Iberville Strain Relief 1/2"
	MSC007	Double Paddle Drive Sprocket
	MSC008	Cement Motor Mount
	MSC009	Face Plate for Counter or T Handle
	MSRU001	Cement Sleeve(EPDM-wasPureGum)
	MSRU001A	Silo Sleeve (Sock)
	MSRU002	Return Belt Scraper
	MSRU003	Rear Belt Seal -12"
	MSRU004	Rear Belt Seal -16"

Reimer International Inc.

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Replacement Parts

	Item #	Item Name
		REMOTE
	RE001A	Switches-Weatherproof -3 Position
R	RE001B	Switches-Weatherproof -2 Position
E	RE001C	SwitchesWeatherprf-3 Pos.Momentary
M	RE002A	Switches Cab - 2 Position
O	RE002B	Switches Cab -3 Position Momentary
T	RE003	Remote(T Handle) Box- No Switches
E	RE004	T Handle Remote w.switches & face plate
	RE004A	T Handle Remote Box Complete with Cord
	RE005	Control Cord **Price PER FT** /(18 ft)
	RE006	Vibrator Valve
	RE007	Cab Control Box
		TANK
T	TA001A	Plastic Tank(360 Imp/450 U.S. gal.)
A	TA001B	Plastic Tank(570 Imp/700 U.S. gal.)
N	TA002A	Water Tank Frame,Top, 4 Clamps (2')
K	TA002B	Water Tank Frame,Top, 4 Clamps (3')
	TA003	Water Tank Ladder
T	TA004	Plastic Tank Lids
A	TA005	Steel Water Tank Fill Lids (4")
N	TA006	1 1/4" DT PP Bulkhead Fitting
K	TA007	3/4" DT PP Bulkhead Fitting
	TA008	1/2" Bulkhead Fitting
	TA009	1 1/2" PP DT Bulkhead Fitting
		VIBRATORS
V	VI001	Sand Vibrator
I	VI002	Cement Vibrator
B	VI003	New Vibrator (Sand or Cement)
R	VI004	Color Feeder Vibrator
		WATER SYSTEM
	WA001A	CompleteWater Pump (Hypro)
W	WA001C	CompleteWater Pump 1. 25" X 1" (Ace)
A	WA001D	CompleteWater Pump 2" (Ace)
T	WA002A	Hypro Water Pump Seal
E	WA002B	Ace Water Pump Seal
R	WA002C	Delevan Water Pump Seal
	WA003	Water Valve Diaphragm Die #1003
	WA004A	Hypro Water Pump Motor
P	WA004B	Water Pump Motor ACE #203
U	WA005	Water Pump Housing
M	WA006	Water Valve
P	WA008A	Hypro Water Pump Impeller
	WA008B	Ace Water Pump Impeller
	WA009	Ace Hydraulic Motor Repair Kit
	WA010	Hypro Hydraulic Motor Repair Kit
	WA011	Screen for 1 1/4 & 1 1/2 " Strainer
	WA012	Screen for 2" Strainer

		WINCH
	WI001	Morse/Browning Gear Box
W	WI001A	Grove Gear Box
I	WI001B	Hub City Gear Box
N	WI001C	Boston Gear Box
C	WI001D	Dodge Gear Box
H	WI002	Base Kit (Bracket)
	WI003	Replacement Gear
W	WI004	Winch Motor (Old)
I	WI005	Seal Kit H Series
N	WI006	Cable Sheave 4"
C	WI007	Cable Sheave 5"
H	WI008	End Bracket & Bearing
	WI009	Cable Spool