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Congratulations,

You now own a piece of equipment that incorporates the latest in carpet, tile and grout cleaning technology. Your foresight in purchasing an RX-20 shows that you care enough to give your customer the maximum cleaning process available. You have invested in not only a cleaning tool, but a marketing tool that will enhance your professional image in every way.

The RX-20’s features will almost certainly increase your productivity while decreasing the fatigue factor that may have prevented you from going after some of the larger cleaning jobs that are available to carpet cleaners and maintenance professionals today.

Your new RX-20 is a powerful Rotary Jet Extractor that has been precision engineered to bring you to the state-of-the-art in carpet, tile and grout cleaning. The RX-20’s weight distribution and rotary motion enable the operator to maneuver the unit easily with less fatigue and without back strain.

The RX-20’s electric motor drives its precision transmission which, in turn, rotates the head, or star, assembly.

Cleaning solution is injected through the center of the gear box shaft directly to the three spray jets.

Soiled solution is then extracted from the carpet by five stainless steel cleaning heads and drawn through the aluminum exhaust manifold to your cleaning system’s recovery tank.

**NOTICE**

The RX-20 is available in either the 120 V 60 Hz version or the 230 V 50Hz/60Hz versions. Photos and illustrations throughout this manual show only the RX-20 120 V version due to space limitations.
CONTACT INFORMATION
If you have any questions regarding the operation, maintenance or repair of this machine, refer to the following information and contact the appropriate HydraMaster department.

<table>
<thead>
<tr>
<th>Hours</th>
<th>Telephone Numbers</th>
<th>E-mail Addresses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday-Friday</td>
<td>(425) 775-7275 Support</td>
<td>Tech Support: <a href="mailto:techsupport@hydramaster.com">techsupport@hydramaster.com</a></td>
</tr>
<tr>
<td>7:00 a.m. to 5:00 p.m.</td>
<td>(425) 775-7276 Parts</td>
<td>Parts Support: <a href="mailto:parts@hydramaster.com">parts@hydramaster.com</a></td>
</tr>
<tr>
<td>Pacific Time</td>
<td>FAX (425) 771-7156 - Parts (800) 426-4225 - Support</td>
<td></td>
</tr>
</tbody>
</table>

When calling your distributor, be sure to reference the serial number and date of purchase.

FOR YOUR REFERENCE:

Serial No.____________________________________________________
Date of Purchase:_____________________________________________
Purchased From (Distributor): ________________________________
WARNINGS, CAUTIONS AND NOTICES

**WARNING**

HydraMaster uses this WARNING symbol throughout the manual to warn of possible injury or death.

**CAUTION**

This CAUTION symbol is used to warn of possible equipment damage.

**NOTICE**

This NOTICE symbol indicates that federal or state regulatory laws may apply, and also emphasizes supplemental information.
RX-20

This page intentionally left blank.
2- Machine Specifications

<table>
<thead>
<tr>
<th></th>
<th>RX-20 - 120 V</th>
<th>RX-20 - 230 V</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Length</strong></td>
<td>23”</td>
<td>23”</td>
</tr>
<tr>
<td><strong>Base Width</strong></td>
<td>16”</td>
<td>16”</td>
</tr>
<tr>
<td><strong>Height - Standard</strong></td>
<td>Up to 43”</td>
<td>Up to 43”</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>70 lbs</td>
<td>70 lbs</td>
</tr>
<tr>
<td><strong>Motor</strong></td>
<td>1/2 HP Totally Enclosed Fan-Cooled</td>
<td>1/2 HP Totally Enclosed, Fan-Cooled</td>
</tr>
<tr>
<td><strong>Voltage</strong></td>
<td>120 V, 60 Hz</td>
<td>230 V, 50 Hz or 60 Hz</td>
</tr>
</tbody>
</table>

**Gear Box**
- 1,725 rpm Input
- 130 rpm Output
- Permanently Lubricated
- Helical Gear Drive

**Oil Capacity**
- 12 oz

**Star Head Plate**
- Replaceable, Spring Steel Arms

**Cleaning Heads**
- Five Cast Aluminum

**Solution Jets**
- Three Stainless Steel, 80015 Veejet 80

**Solution Strainer**
- Mesh, Stainless

**Solution Valve**
- Stainless Steel, High Pressure

**Cleaning Rate**
- Five Heads Rotating at 130 rpm = 650 Cleaning Passes/Minute

**230 V, 50 Hz**
- 1,450 rpm Input
- 109 rpm Output
- Permanently Lubricated
- Helical Gear Drive

**230 V, 60 Hz**
- 1,725 rpm Input
- 130 rpm Output
- Permanently Lubricated
- Helical Gear Drive
The base, exhaust manifolds, handle, gear box housing and cleaning heads are all cast aluminum. Other parts are either metal or high impact plastic.

**NOTICE**

The operating temperature and pressure of the cleaning solution as well as the vacuum power depend entirely on the type of cleaning system you use.

**CONFIGURATIONS**

When selecting your high efficiency rotary extractor machine, you have these models from which to choose:

<table>
<thead>
<tr>
<th>If you want this configuration:</th>
<th>Order this P/N:</th>
</tr>
</thead>
<tbody>
<tr>
<td>RX-20 - 120 V</td>
<td>700-041-006</td>
</tr>
<tr>
<td>RX-20 - 230 V</td>
<td>700-041-007</td>
</tr>
</tbody>
</table>

See  for detailed parts lists for all configurations.
### OPTIONAL EQUIPMENT
To better meet your business needs, HydraMaster offers these options that you can add to your basic rotary extractor system:

<table>
<thead>
<tr>
<th>If you want this option:</th>
<th>Order this P/N:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pad and Bonnet Driver</td>
<td>190-041-020</td>
</tr>
<tr>
<td></td>
<td>(Top Photo, Figure 2-1)</td>
</tr>
<tr>
<td>Hard Floor Attachment (LD)</td>
<td>190-041-024</td>
</tr>
<tr>
<td></td>
<td>(Middle Photo, Figure 2-1)</td>
</tr>
<tr>
<td>Hard Floor Attachment (MD)</td>
<td>190-041-026</td>
</tr>
<tr>
<td></td>
<td>(Middle Photo, Figure 2-1)</td>
</tr>
<tr>
<td>Hard Floor Attachment (HD)</td>
<td>190-041-025</td>
</tr>
<tr>
<td></td>
<td>(Middle Photo, Figure 2-1)</td>
</tr>
<tr>
<td>Mounting Bracket</td>
<td>000-163-018</td>
</tr>
<tr>
<td></td>
<td>(Bottom Photo, Figure 2-1)</td>
</tr>
</tbody>
</table>

**RX-20 Pad and Bonnet Driver**
Allows the RX-20 to quickly convert to drive either carpet cleaning bonnets or standard hard floor pads
*Item#190-041-020*

**RX-20 Hard Floor Attachment - LD**
Suitable for Light Duty (LD) to medium duty cleaning of stone, slate, terrazzo, ceramic tile, grout and sealed concrete floors
*Item#190-041-024*

**RX-20 Hard Floor Attachment - MD**
Suitable for Medium Duty (MD) to aggressive scrubbing of resilient floors, terrazzo, quarry tile, ceramic tile, grout and concrete floors
*Item#190-041-026*

**RX-20 Hard Floor Attachment - HD**
Designed for Heavy Duty (HD) to most aggressive scrubbing of resilient floors, terrazzo, quarry tile and concrete floors.
*Item#190-041-025*

**RX Mounting Bracket**
Keep your RX-20 High Efficiency Model secured in your van with our custom mounting brackets. Simply set the wheels of the extractor in the bracket and your machine will stay in place. No thinking about it rolling around in your van or wasting valuable space by laying it on its side.
*Item#163-018*

---

[Figure 2-1. RX-20 Optional Equipment](#)
RX-20

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3 - Assembly Instructions

To prepare your RX-20 for use, follow these instructions:

1. Remove the machine from the packaging. Inspect the machine carefully for any damage that may have occurred during shipping.
2. Remove the solid shipping plug from the top of the gear box (see Figure 3-1).
3. Check the gear box lubricant level (see page 6-4 of this Owner’s Manual).
4. Insert the vented plug (provided) into the gear box in place of the solid shipping plug. The solid shipping plug may be discarded.
5. Remove the protective wrapping material from the wheels.
6. Attach the cleaning head, or star, assembly to the base of the RX-20 (see Figure 3-1).
   a. Lean the machine back and rest it on the handle.
   b. Thread the star assembly (cleaning head) onto the exposed shaft in a counterclockwise direction.

**CAUTION**

Be sure to remove the solid shipping plug from the top of the gear box and replace it with the vented plug (P/N 000-106-014), provided, before operating the machine (see Figure 3-1). Failure to follow these directions may result in damage to the gear box and seal.

Your RX-20 is now ready to operate.
4 - Operating Instructions

PREPARATION

NOTICE
Operating instructions presented in this section apply to both the 120 V and 230 V versions of the RX-20. However, photos and illustrations show only the 120 V version due to space limitations.

Handle Adjustment
Pull or push on the adjustment lever to adjust the height of the handles (see Figure 4-1). Several adjustments may be needed before a desirable operating position is found.

NOTICE
Most operators have better control and experience less fatigue when the handle is in a lower position, at the operator’s hip line. For each person, there is an ideal position which ensures the RX-20 does the work instead of the individual.

Solution and Vacuum Hose Connections
Your RX-20 is equipped with a 440 male quick connect for the solution hose connection and a 2” O.D. vacuum hose inlet (see Figure 4-1). The vacuum inlet requires a 2” I.D. vacuum hose for proper air flow with a truckmounted system.

NOTICE
The vacuum hose must be in good condition to ensure maximum airflow.

A solution hose with a 440 female quick connect is also required. If you do not have a 440 female quick connect, please call your distributor to order the part.
**RX-20**

**Electrical Cord Connection**
The 50 ft electrical cord on your RX-20 (120 V/60 Hz configuration) is a permanently attached, three-prong grounded line requiring a three-prong, 15 Amp receptacle.

A three-prong to two-prong adapter may be used if its ground wire is properly attached to a grounded terminal.

**WARNING**
Do not, under any circumstances, remove the ground prong from your RX-20 power cord. Serious injury or death may result.

For best results, vacuum the carpet thoroughly prior to using the carpet cleaning system.

**OPERATION**

**Control Functions**
Control triggers are located on each side of the handle under the rubber hand grips (see Figure 4-2).

1. To operate the RX-20, squeeze the **motor trigger** on your right-hand side to control the electric motor which drives the cleaning heads (see Figure 4-2).

![Figure 4-2. Location of Control Triggers and Momentary Switch as Viewed from Front of Machine (Opposite of Operator’s Position)](image)

Operating Instructions: 4-2
2. To fully engage the motor as you are cleaning, you also need to hold down the momentary switch, or button, at the same time as you squeeze the motor trigger (see Figure 4-2). The momentary switch is an integrated safety feature on the RX-20 which cuts power to the machine if the operator’s hands leave the machine for any reason.

3. On the left-hand side, squeeze the solution trigger to control the high pressure solution spray (see Figure 4-2).

Notice that the air flows constantly while the RX-20 is in operation.

**CAUTION**

Do not operate your RX-20 on dry carpets The friction generated by the revolving cleaning heads may damage fibers in the carpet.

**Maneuvering Your RX-20**

Your RX-20 maneuvers like a rotary floor machine.

1. To move the RX-20 to the right, lift the handle slightly (see Figure 4-3). The more you lift or lower the handle, the faster the RX-20 will move.

![Figure 4-3. Lift or Lower Handle to Maneuver; Illustration to the Right Shows Incorrect Maneuver](image-url)
2. To move forward and backward, position the handle so that the unit remains stationary, then push forward or pull back. To familiarize yourself with your RX-20, practice on an open area. Depress both the solution trigger and motor trigger and move the RX-20 slowly in a 3 to 5-ft arc, as shown in Figure 4-4.

![Figure 4-4. Correct Cleaning Patterns](image)

After you have become familiar with the speed and movement of the machine, practice making it hover in one spot. (The hovering maneuver is useful for removing stubborn stains, as well as removing furniture indentions.)

**CAUTION**

Do not tilt RX-20 sideways while moving forward and backward. A loss of control may result in damage to the unit or cleaning area.

**NOTICE**

To view an online demo, access this website:
http://www.youtube.com/watch?v=wY236ahDl0w&feature

To access the online demo with your smartphone or other smart device, scan the QR code to the right.
CLEANING PATTERNS
For regular carpet cleaning use an overlapping arc pattern three times over the same area (two passes with solution and one pass for drying). When cleaning carpets, first clean in circular pattern, then use the overlapping arc pattern to dry the area.

NOTICE
Dirtiest areas may require two or more cleaning passes. Using either pattern shown in Figure 4-4, you should develop a comfortable rhythm. To obtain maximum performance from your RX-20, move it slowly and deliberately with a 50% overlap, giving it time to clean and extract. A steady pace rather than a frenzied one will increase efficiency and production, and decrease fatigue.

CAUTION
The following cautions should be observed while cleaning:

1. DO NOT operate your RX-20 over metal floor moldings. Damage to both the molding and the cleaning head will result.

2. DO NOT operate your RX-20 on hardwood floors.

3. DO NOT operate your RX-20 over loose or unraveled carpet seams. The cleaning head may catch and cause further damage.

4. DO NOT operate your RX-20 on concrete floors. It will develop sharp edges on the extraction heads that will damage carpet fibers.

5. DO NOT clean over the edge of a loose carpet. Instead, clean only up to the edge. Damage may occur if the extraction heads catch the loose carpet.
**SPECIAL INFORMATION**

When you clean some plush carpets, you may notice a “pilling” effect. (Pilling occurs when fluffy particles appear on carpet surfaces; it is caused by fibers that loosen because of a weak twist or snags.)

With an RX-20, loose yarns form balls and are kicked aside as the cleaning heads revolve. This is normal when aggressive cleaning or even normal vacuuming takes place, as evidenced by a number of dead, loose yarns in the vacuum cleaner bag. These loose yarns, in most cases, are short staple yarns or filler yarns used to give the carpet a denser appearance.

Because your RX-20 weighs approximately 70 lbs and rests on five 4” cleaning heads, the yarns are not sucked up into the vacuum heads as they are with a vacuum cleaner or old-style cleaning wand.

**CAUTION**

On older, rubber backed, glued down carpets that may be delaminating with age, the RX-20 may cause further delamination. When in doubt, DO NOT use your RX-20 on such carpets.

**CLEANING HINTS**

1. Most cleaners customarily clean their way out of an area or room. With the RX-20, you can clean into an area or room, as shown in the Figure 5-1, so that the hoses are dragged behind you during the cleaning process rather than kicked out of the way as you back out of an area. The “cleaning into” method works especially well in hallways or confined areas.

2. The RX-20 is a very aggressive carpet cleaning power head and will leave the carpet with a freshly cleaned appearance. The carpet should be brushed or groomed after the cleaning process to remove any swirl marks left behind.

3. The RX-20 has been very successful in restoring badly matted traffic lanes in front of doorways and sofas. Even pivot areas can be brought back to life again, in most cases. “Cornrowing” in hallways can also be eliminated with minimal effort.
Good care and regular maintenance of your RX-20 will result in a long, dependable life for the unit. Keep in mind that your RX-20 will be in full view of your customer. An RX-20 that is dirty and unkempt in appearance can cause your business or professional image to suffer. You are offering your customer the latest in cleaning technology. Therefore, it is important that your company image reflect your desire to give your customer the best.

The surface finish on your RX-20 is a durable, powder coating and is easily cleaned with a damp cloth. To further protect the finish, a light coat of good silicon base polish should be applied periodically.

Lubrication and maintenance play a key role in the life of your RX-20. Hence, the following daily and periodic maintenance steps must be followed. Train yourself to maintain your unit on a regular schedule until it becomes habitual.

**DAILY MAINTENANCE**

1. Disconnect the RX-20 from the power source and inspect its power cord for cuts, breaks and abrasions. Repair or replace as needed.
2. Inspect the vacuum hoses for breaks or tears. Repair or replace as necessary.
3. Visually inspect your RX-20 for water leaks, wear damage to the cleaning heads, and so forth. Repair or replace as necessary.
4. Remove the inline solution filter screen by unfastening the nut showing through the cut out on the back panel using a 15/16” wrench. Remove the nut which houses the inline filter (see Figure 6-1).
5. Rinse it under water to remove debris. If necessary, use a toothbrush to remove stubborn particles.
6. Before re-inserting the nut/inline filter, check the O-ring on the inside of the nut/inline filter. If the O-ring is cracked or damaged, replace the O-ring.

![Figure 6-1. Remove Nut/Inline Filter](image)
7. Check the spray on the jets for even flow. An uneven spray will cause improper flow of the cleaning solution (see Figure 6-2).

**WARNING**

Do NOT spray the high pressure solution in your face or eyes. Bodily injury can result.

8. Loosen the cleaning head (star assembly). It unscrews in the same direction it turns during operation (or clockwise when looking at it from the underside) - see Figure 6-3.

9. After you have loosened the head assembly, spin it off with your hands. If the cleaning head is difficult to remove, you may use a 3/4” socket wrench on the exposed center nut. To prevent the gear box from turning, insert a 5/8” wrench just below the rotary union (see Figure 6-4).

10. Wash the cleaning heads and shroud assembly with a garden hose, being careful not to wet the electric motor assembly.

11. Clean any lint built up on the cleaning heads and vacuum hoses (lint buildup will restrict proper airflow and prolong drying time).
12. Clean off any debris that may have accumulated on the gear box shaft or the inside threaded bore of the hub (see Figure 6-5).

13. Lubricate the felt vacuum seal on top of the hub with a quality, 30 weight SAE motor oil. Also, put a few drops into the hub threads (see Figure 6-6).

14. Coat the shaft with TKX® All-Purpose Lube (HydraMaster P/N 000-087-006) or a similar lubricant. Re-install the vacuum head assembly onto the shaft by rotating it counter-clockwise (Figure 6-7).

**CAUTION**

An accumulation of debris in the gear box, if not removed, may damage the gear box oil seal. This will result in loss of oil in the gear box. If the gear box is operated without oil, severe damage may occur.

**CAUTION**

While rotating the vacuum head assembly in the counter-clockwise position, make sure that it spins freely all the way down. If it begins to require the slightest finger tip pressure, unscrew it and brush off the threads.

The smallest grain of dirt or sand will obstruct the threads. If you turn too far onto a grain of dirt, the hub may become locked onto the shaft of the gear box.
PERIODIC MAINTENANCE
Check the oil level in the gear box on a monthly basis. This is a permanently lubricated gear box. You do not need to change the oil. However, maintaining the proper oil level is important.

To check the oil level, remove the vent plug and look into the gear box. Turn the star until you can see the inspection hole in the gear. When the RX-20 is sitting flat on a table or the floor, the oil level should be up to, but not above, the middle of the gear. If oil needs to be added, use a quality 80-90 weight gear oil.

**NOTICE**

When checking the oil level in the gear box, you can use a toothpick as a dip stick. The oil level should read 3/8" deep.

**Locking Mechanism**
If the locking mechanism becomes loose and fails to hold the handle in position, tighten it by following these simple steps:

1. Remove the retaining clip from one wheel, using a flat-bladed screwdriver (see Figure 6-8).
2. Remove the wheel from one side of the unit.
3. Ensure that the clamp is set to the locking position.
4. Tighten the setscrew as shown in Figure 6-9 to achieve the desired clamping force.
5. Re-install the wheel and retain with the original clip.
6. If the locking mechanism becomes loose again in the future, remove the wheel on the other side of the unit and tighten the other setscrew, in order to even up the wear on the clamping pins.

Figure 6-8. Remove Retaining Clip with Screwdriver

Figure 6-9. Tighten Setscrew
TRANSPORT AND/OR STORAGE
Whenever your RX-20 is transported or stored, HydraMaster recommends that you remove the star assembly (cleaning head). The machine will then sit flat on the floor and remain more stable, especially during transport.

FREEZE WARNING AND PROTECTION
Your RX-20 can suffer damage from freezing, as can any equipment that functions with the use of water. Care must be taken to protect this machine from freezing just as you do your other equipment.

To protect it from freezing, simply blow air from an air hose through the solution quick connect with the valve open. This eliminates water from the valve, solution line, rotary union and jet assembly.

Open and close the valve several times to ensure that all water is removed.
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Figure 7-1. Wiring Diagram - 120 V, 60 Hz

- Momentary Switch
- Relay
- Wire Nut
- 3 prong plug to motor

14 GA (BLK), 16 GA (WH), 16 GA (BLK)

Note: All grounds must be secured with individual nuts and star washers.
Figure 7-2. Wiring Diagram - 230 V, 50 Hz
4503 Rev. A

Relay

Momentary Switch N/O

Micro Switch

Wire Nut

IEC 320 Receptacle w/Internal Fuse
These are the available RX-20 configurations.

<table>
<thead>
<tr>
<th>Top Level Part No.</th>
<th>Top Level Description</th>
<th>Includes:</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>700-041-006</td>
<td>20 120 V (60Hz) HE Head</td>
<td>000-057-047 Gasket, Felt Hub</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>000-081-001 Label, Machine 3 Pc Set</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>604-999-100 Assembly, Final</td>
<td>1</td>
</tr>
<tr>
<td>700-041-007</td>
<td>RX-20 230 V (50Hz) HE Head</td>
<td>000-057-047 Gasket, Felt Hub</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>000-081-001 Label, Machine 3 Pc Set</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>604-999-202 Assembly, Final</td>
<td>1</td>
</tr>
<tr>
<td>700-041-014</td>
<td>RX-20 230 V (60Hz) HE Head</td>
<td>000-057-047 Gasket, Felt Hub</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>000-081-001 Label, Machine 3 Pc Set</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>604-999-201 Assembly, Final</td>
<td>1</td>
</tr>
<tr>
<td>700-041-316</td>
<td>RX-20 120 V (60Hz) O/S Head</td>
<td>000-057-047 Gasket, Felt Hub</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>000-081-001 Label, Machine 3 Pc Set</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>604-999-101 Assembly, Final</td>
<td>1</td>
</tr>
<tr>
<td>700-041-318</td>
<td>RX-20 230 V (50Hz) O/S Head</td>
<td>000-057-047 Gasket, Felt Hub</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>000-081-001 Label, Machine 3 Pc Set</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>604-999-204 Assembly, Final</td>
<td>1</td>
</tr>
<tr>
<td>700-041-322</td>
<td>RX-20 230 V (60Hz) O/S Head</td>
<td>000-057-047 Gasket, Felt Hub</td>
<td>2</td>
</tr>
<tr>
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<td></td>
<td>000-081-001 Label, Machine 3 Pc Set</td>
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<tr>
<td></td>
<td></td>
<td>604-999-203 Assembly, Final</td>
<td>1</td>
</tr>
</tbody>
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RX-20

The following major assemblies are detailed in this section:

- Final Assembly Parts List (120 V)
- Final Assembly Parts List (120 V - OS)
- Final Assembly Parts List (230 V - 60Hz)
- Final Assembly Parts List (230 V - 50Hz)
- Final Assembly OS Parts List (230 V - 60Hz)
- Final Assembly OS Parts List (230 V - 50Hz)
- Base and Drive Train Assembly Parts List (120 V)
- Base and Drive Train Assembly Parts List (230 V)
- Upper and Lower Handle Assembly Parts List (120 V)
- Upper and Lower Handle Assembly Parts List (230 V - 50Hz)
- Upper and Lower Handle Assembly Parts List (230 V - 60Hz)
- Vacuum Head Assembly Parts List
- Vacuum Head Assembly OS Parts List
- Handle Locking Linkage Assembly Parts List
- Gear Box Assembly Parts List
- Vacuum Shoe and Skid Assembly Parts List
- Vacuum Shoe and Skid Assembly OS Parts List
- Solution Valve Assembly Parts List
- Valve Stem Assembly Parts List
Some of the illustrations in this section reference sealants, thread lockers, adhesive, primer, anti-seize and lubricant specifications that are used in the construction of HydraMaster equipment.

Refer to Figure 8-1 to identify those substances such as A1, A2 and so forth. Equivalent products are acceptable if they meet or exceed current specifications and are approved by HydraMaster.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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<tbody>
<tr>
<td>A1</td>
<td>A2</td>
<td>A3</td>
<td>A4</td>
<td>E1</td>
</tr>
<tr>
<td>Silicone RTV</td>
<td>Loctite 567</td>
<td>Loctite 545</td>
<td>Teflon Tape</td>
<td>Loctite 51252 Grease</td>
</tr>
<tr>
<td>B1</td>
<td>B2</td>
<td>B3</td>
<td>C1</td>
<td>D1</td>
</tr>
<tr>
<td>Loctite 242</td>
<td>Loctite 262</td>
<td>Loctite 266</td>
<td>Gapper</td>
<td>Loctite 7649</td>
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<td>E2</td>
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<td>Molykote Anti-Seize</td>
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</tr>
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Figure 8-1. Adhesive and Sealant Material Reference
Figure 8-2. Final Assembly (120 V)
604-999-100 Rev. E
## Final Assembly Parts List (120 V)

<table>
<thead>
<tr>
<th>Item</th>
<th>Part Number</th>
<th>Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>604-054-100</td>
<td>Assembly, Base and Drive Train</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>604-051-100</td>
<td>Assembly, Upper and Lower Handle</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>604-053-100</td>
<td>Assembly, Vacuum Head</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>000-033-010</td>
<td>Clamp, Size #32 Hose</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>000-052-001</td>
<td>Fitting, Swivel (2M2-2 UFS)</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>000-068-040</td>
<td>Hose, 2&quot; Vacuum - Base to Manifold</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>000-068-176</td>
<td>Hose, 3/16&quot; X 47&quot; w/ Inserts</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>000-143-096</td>
<td>Screw, 3/8&quot;-16UNC X 1.00&quot; Lg. Hex Head</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>000-052-294</td>
<td>Union, Rotary</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>000-174-057</td>
<td>Washer, 3/8&quot; Lock</td>
<td>3</td>
</tr>
</tbody>
</table>
Figure 8-3. Final Assembly (120 V - OS)
604-999-101 Rev. A
# Final Assembly Parts List (120 V - OS)

<table>
<thead>
<tr>
<th>Item</th>
<th>Part Number</th>
<th>Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>604-054-100</td>
<td>Assembly, Base and Drive Train 120 V/230 V - 60Hz</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>604-051-100</td>
<td>Assembly, Upper and Lower Handle</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>604-053-101</td>
<td>Assembly, Vacuum Head - Original Style</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>000-033-010</td>
<td>Clamp, Size #32 Hose</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>000-052-001</td>
<td>Fitting, Swivel (2M2-2 UFS)</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>000-068-040</td>
<td>Hose, 2” Vacuum - Base to Manifold</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>000-068-176</td>
<td>Hose, 3/16&quot; X 47&quot; w/ Inserts</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>000-143-096</td>
<td>Screw, 3/8&quot;-16UNC X 1.00” Lg. Hex Head</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>000-052-294</td>
<td>Union, Rotary</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>000-174-057</td>
<td>Washer, 3/8” Lock</td>
<td>3</td>
</tr>
</tbody>
</table>
RX-20

Figure 8-4. Final Assembly (230 V - 60 Hz)
604-999-201 Rev. B
### Final Assembly Parts List (230 V - 60Hz)

<table>
<thead>
<tr>
<th>Item</th>
<th>Part Number</th>
<th>Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>604-054-100</td>
<td>Assembly, Base and Drive Train - 60Hz</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>604-051-202</td>
<td>Assembly, Upper and Lower Handle 230 V- 60Hz</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>604-053-100</td>
<td>Assembly, Vacuum Head</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>000-033-010</td>
<td>Clamp, Size #32 Hose</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>000-052-001</td>
<td>Fitting, Swivel (2M2-2 UFS)</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>000-068-040</td>
<td>Hose, 2&quot; Vacuum - Base to Manifold</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>000-068-176</td>
<td>Hose, 3/16&quot; X 47&quot; w/ Inserts</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>000-143-096</td>
<td>Screw, 3/8&quot;-16UNC X 1.00&quot; Lg. Hex Head</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>000-052-294</td>
<td>Union, Rotary</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>000-174-057</td>
<td>Washer, 3/8&quot; Lock</td>
<td>3</td>
</tr>
</tbody>
</table>
RX-20

Figure 8-5. Final Assembly (230 V - 50 Hz)
604-999-202 Rev. A
<table>
<thead>
<tr>
<th>Item</th>
<th>Part Number</th>
<th>Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>604-054-202</td>
<td>Assembly, Base and Drive Train - 230 V / 50Hz</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>604-051-201</td>
<td>Assembly, Upper and Lower Handle 230 V 50Hz</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>604-053-100</td>
<td>Assembly, Vacuum Head</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>000-033-010</td>
<td>Clamp, Size #32 Hose</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>000-052-001</td>
<td>Fitting, Swivel (2M2-2 UFS)</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>000-068-040</td>
<td>Hose, 2&quot; Vacuum - Base to Manifold</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>000-068-176</td>
<td>Hose, 3/16&quot; X 47&quot; w/ Inserts</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>000-143-096</td>
<td>Screw, 3/8&quot;-16UNC X 1.00&quot; Lg. Hex Head</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>000-052-294</td>
<td>Union, Rotary</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>000-174-057</td>
<td>Washer, 3/8&quot; Lock</td>
<td>3</td>
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RX-20

Figure 8-6. Final Assembly OS (230 V)- 60Hz
604-999-203 Rev. B
## Final Assembly OS Parts List (230 V - 60Hz)

<table>
<thead>
<tr>
<th>Item</th>
<th>Part Number</th>
<th>Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>604-054-100</td>
<td>Assembly, Base and Drive Train 120 V/230 V - 60Hz</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>604-051-202</td>
<td>Assembly, Upper and Lower Handle 230 V - 60Hz</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>604-053-101</td>
<td>Assembly, Vacuum Head - Original Style</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>000-033-010</td>
<td>Clamp, Size #32 Hose</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>000-052-001</td>
<td>Fitting, Swivel (2M2-2 UFS)</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>000-068-040</td>
<td>Hose, 2” Vacuum - Base to Manifold</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>000-068-176</td>
<td>Hose, 3/16” X 47” w/ Inserts</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>000-143-096</td>
<td>Screw, 3/8”-16UNC X 1.00” Lg. Hex Head</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>000-052-294</td>
<td>Union, Rotary</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>000-174-057</td>
<td>Washer, 3/8” Lock</td>
<td>3</td>
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Figure 8-7. Final Assembly OS (230 V) - 50 Hz
604-999-204 Rev. A - 50 Hz
## Final Assembly OS Parts List (230 V - 50Hz)

<table>
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<th>Item</th>
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<th>Qty</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>604-054-202</td>
<td>Assembly, Base and Drive Train - 230 V / 50Hz</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>604-051-201</td>
<td>Assembly, Upper and Lower Handle 230 V 50Hz</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>604-053-101</td>
<td>Assembly, Vacuum Head - Original Style</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>000-033-010</td>
<td>Clamp, Size #32 Hose</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>000-052-001</td>
<td>Fitting, Swivel (2M2-2 UFS)</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>000-068-040</td>
<td>Hose, 2&quot; Vacuum - Base to Manifold</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>000-068-176</td>
<td>Hose, 3/16&quot; X 47&quot; w/ Inserts</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>000-143-096</td>
<td>Screw, 3/8&quot;-16UNC X 1.00&quot; Lg. Hex Head</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>000-052-294</td>
<td>Union, Rotary</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>000-174-057</td>
<td>Washer, 3/8&quot; Lock</td>
<td>3</td>
</tr>
</tbody>
</table>
Figure 8-8. Base and Drive Train Assembly (120 V) - View 1 of 2
604-054-100 Rev. F
**Figure 8-9. Base and Drive Train Assembly (120 V) - View 2 of 2**

**604-054-100 Rev. F**

**Base and Drive Train Assembly Parts List (120 V)**

<table>
<thead>
<tr>
<th>Item</th>
<th>Part Number</th>
<th>Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>000-006-009</td>
<td>Base w/ Handle - Coated</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>000-052-059</td>
<td>Bushing, 1/4&quot; MPT X 1/8&quot; FPT</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>000-131-014</td>
<td>Gasket, Ro to Shroud</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>000-059-001</td>
<td>Gear Box - Complete</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>000-077-012</td>
<td>Key, 3/16&quot; X 2.5&quot; Lg. Class 2 Fit</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>000-091-015</td>
<td>Motor, 1/2Hp TEFC-H/S</td>
<td>1</td>
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<tr>
<td>7</td>
<td>000-105-008</td>
<td>Plate, Seal</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>000-106-001</td>
<td>Plug, 1/8&quot; NPT</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>000-140-003</td>
<td>Rivet, 1/8&quot; X 5/16&quot; Lg. (Grip Range 0.251&quot; - 0.312&quot;)</td>
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</tr>
<tr>
<td>10</td>
<td>000-143-166</td>
<td>Screw, #10-24UNC X 0.375&quot; Lg. Hex Head</td>
<td>2</td>
</tr>
<tr>
<td>11</td>
<td>000-143-075</td>
<td>Screw, 1/4&quot;-20UNC X 1.50&quot; Lg. Socket Head</td>
<td>4</td>
</tr>
<tr>
<td>12</td>
<td>000-143-096</td>
<td>Screw, 3/8&quot;-16UNC X 1.00&quot; Lg. Hex Head</td>
<td>3</td>
</tr>
<tr>
<td>13</td>
<td>000-174-057</td>
<td>Washer, 3/8&quot; Lock</td>
<td>3</td>
</tr>
<tr>
<td>14</td>
<td>000-174-055</td>
<td>Washer, Flr Tech Latch Pivot</td>
<td>3</td>
</tr>
</tbody>
</table>

**NOTICE**

* Use clear silicon to attach Item 4 to Item 1.

** When ordering a replacement motor cover, specify one of the following:
  1. For Leeson Motor P/N 117555, order HM P/N 000-041-679
  2. For Baldor Motor P/N 35Q351R175G1, order HM P/N 000-041-680
  3. For Leeson Motor P/N 113747, order HM P/N 000-041-682

*** Prior to operating the machine, replace the shipping plug (P/N 000-106-001) with the vented plug (P/N 000-106-014). See page 3-1 in this manual for more information.
Figure 8-10. Base and Drive Train Assembly (230 V) - View 1 of 2
604-054-202 Rev. A
Figure 8-11. Base and Drive Train Assembly (230 V) - View 2 of 2
604-054-202 Rev. A

<table>
<thead>
<tr>
<th>Item</th>
<th>Part Number</th>
<th>Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>000-006-009</td>
<td>Base w/Handle - Coated</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>000-052-059</td>
<td>Bushing, 1/4&quot; MPT X 1/8&quot; FPT</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>000-131-014</td>
<td>Gasket, Ro to Shroud</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>000-059-001</td>
<td>Gear Box</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>000-077-012</td>
<td>Key, 3/16&quot; X 2.5&quot; Lg. Class 2 Fit</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>000-091-016</td>
<td>Motor, 1/2Hp TEFC 230 V / (50Hz)</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>000-105-008</td>
<td>Plate, Seal</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>000-106-001</td>
<td>Plug, 1/8&quot; NPT</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>000-140-003</td>
<td>Rivet, 1/8&quot; X 5/16&quot; Lg.</td>
<td>8</td>
</tr>
<tr>
<td>10</td>
<td>000-143-166</td>
<td>Screw, #10-24UNC X 0.375&quot; Lg. Hex Head</td>
<td>2</td>
</tr>
<tr>
<td>11</td>
<td>000-143-075</td>
<td>Screw, 1/4&quot;-20UNC X 1.50&quot; Lg. Socket Head</td>
<td>4</td>
</tr>
<tr>
<td>12</td>
<td>000-143-096</td>
<td>Screw, 3/8&quot;-16UNC X 1.00&quot; Lg. Hex Head</td>
<td>3</td>
</tr>
<tr>
<td>13</td>
<td>000-174-057</td>
<td>Washer, 3/8&quot; Lock</td>
<td>3</td>
</tr>
<tr>
<td>14</td>
<td>000-174-055</td>
<td>Washer, Flr Tech Latch Pivot</td>
<td>3</td>
</tr>
</tbody>
</table>

**NOTICE**

* Use clear silicon to attach Item 4 to Item 1.

** When ordering a replacement motor cover, specify one of the following:
1. For Leeson Motor P/N 117555, order HM P/N 000-041-679
2. For Baldor Motor P/N 35Q351R175G1, order HM P/N 000-041-680
3. For Leeson Motor P/N 113747, order HM P/N 000-041-682

*** Prior to operating the machine, replace the shipping plug (P/N 000-106-001) with the vented plug (P/N 000-106-014). See page 3-1 in this manual for more information.
RX-20

Figure 8-12. Upper and Lower Handle Assembly (120 V) - View 1 of 2
604-051-100 Rev. I

Assembly Drawings and Parts Lists: 8-20
Figure 8-13. Upper and Lower Handle Assembly (120 V) - View 2 of 2
604-051-100 Rev. I

Close Up of Solution Valve and Mounting Hardware
### Upper and Lower Handle Assembly Parts List (120 V)

<table>
<thead>
<tr>
<th>Item</th>
<th>Part Number</th>
<th>Description</th>
<th>Qty</th>
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<td>Adjusting Rod Assembly</td>
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<tr>
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<td>604-051-002</td>
<td>Assembly, Handle Locking Linkage</td>
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<tr>
<td>3</td>
<td>000-169-058</td>
<td>Assembly, Valve, Solution - Standard</td>
<td>1</td>
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<tr>
<td>4</td>
<td>000-141-004</td>
<td>Axle, Wheel</td>
<td>1</td>
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<td>5</td>
<td>000-015-190</td>
<td>Bracket, AC Relay - Fabricated</td>
<td>1</td>
</tr>
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<td>6</td>
<td>000-015-1207</td>
<td>Bracket, Head Stabilizer, Coated</td>
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<td>7</td>
<td>000-015-139</td>
<td>Bracket, Hi Speed Handle to Base - Coated</td>
<td>1</td>
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<tr>
<td>8</td>
<td>000-015-552</td>
<td>Bracket, Linkage Clamp Cover - Coated</td>
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<td>9</td>
<td>000-052-059</td>
<td>Bushing, 1/4&quot; MPT X 1/8&quot; FPT</td>
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<td>000-033-114</td>
<td>Clamp, Linkage - Modified</td>
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<td>000-178-004</td>
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<td>14</td>
<td>000-052-085</td>
<td>Elbow, 1/4&quot; NPT Street</td>
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<td>15</td>
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<td>Handle, &quot;T&quot;</td>
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<td>Nut, #10-24UNC Nylock</td>
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<td>000-139-010</td>
<td>Ring, Snap Ring (E-Clip) X 5/16&quot;</td>
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<td>Trigger, Handle - RH</td>
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<td>Wheel, 8&quot;</td>
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Figure 8-14. Upper and Lower Handle Assembly (230 V - 50HZ) - View 1 of 2
604-051-201 Rev. C
Figure 8-15. Upper and Lower Handle Assembly (230 V - 50Hz) - View 2 of 2
604-051-201 Rev. C
## Upper and Lower Handle Assembly Parts List (230 V - 50Hz)

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<td>Assembly, Handle Locking Linkage</td>
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<td>3</td>
<td>000-169-058</td>
<td>Assembly, Valve, Solution - Standard</td>
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<td>000-141-004</td>
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<td>000-015-190</td>
<td>Bracket, AC Relay - Fabricated</td>
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<td>Bracket, Head Stabilizer, Coated</td>
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<tr>
<td>7</td>
<td>000-015-139</td>
<td>Bracket, Hi Speed Handle to Base - Coated</td>
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<td>8</td>
<td>000-015-552</td>
<td>Bracket, Linkage Clamp Cover - Coated</td>
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<td>9</td>
<td>000-052-059</td>
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<td>10</td>
<td>000-033-114</td>
<td>Clamp, Linkage - Modified</td>
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<td>000-049-033</td>
<td>Filter, In-Line, “Y”</td>
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<td>000-056-009</td>
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<td>17</td>
<td>000-061-004</td>
<td>Grip, Foam - Handle</td>
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<td>Handle, ‘T Handle</td>
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<td>Nut, #10-24UNC Nylock</td>
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<td>000-106-109</td>
<td>Plug, 230 V IEC w/Fuse - Receptacle</td>
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Figure 8-16. Upper and Lower Handle Assembly (230 V - 60Hz) - View 1 of 2
604-051-202 Rev. C
Figure 8-17. Upper and Lower Handle Assembly (230 V - 60Hz) - View 2 of 2
604-051-202 Rev. C
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<td>000-106-109</td>
<td>Plug, 230 V IEC w/Fuse - Receptacle</td>
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<td>Assembly, Valve, Solution - Standard</td>
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<td>Bracket, AC Relay - Fabricated</td>
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<td>000-139-010</td>
<td>Ring, Snap Ring (E-Clip) X 5/16”</td>
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<td>Rivet, 1/8” X 5/16” Lg. (Grip Range 0.251” - 0.312”)</td>
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<td>Rod, Handle Arc</td>
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<td>Shield, Micro Switch</td>
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<td>000-094-009</td>
<td>Nut, 1/4”-20UNC Nylock</td>
<td>1</td>
<td>52</td>
<td>000-174-006</td>
<td>Washer, 7/16” Flat</td>
<td>2</td>
</tr>
<tr>
<td>25</td>
<td>000-094-063</td>
<td>Nut, #6-32UNC Nylock</td>
<td>2</td>
<td>53</td>
<td>000-174-001</td>
<td>Washer, #10 Flat</td>
<td>1</td>
</tr>
<tr>
<td>26</td>
<td>000-094-034</td>
<td>Nut, #10-24UNC Nylock</td>
<td>7</td>
<td>54</td>
<td>000-177-001</td>
<td>Wheel, 8”</td>
<td>2</td>
</tr>
<tr>
<td>27</td>
<td>000-041-013</td>
<td>Plate, Back - Handle - Coated</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>000-105-018</td>
<td>Plate, Serial I.D.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Figure 8-18. Vacuum Head Assembly
604-053-100 Rev. C
**RX-20**

**Vacuum Head Assembly Parts List**

<table>
<thead>
<tr>
<th>Item</th>
<th>Part Number</th>
<th>Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>000-064-012</td>
<td>Assembly, Vacuum Shoe and Skid</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>000-052-427</td>
<td>Bushing, 1/8&quot; NPT X 1/8&quot; FPT</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>000-052-078</td>
<td>Elbow, 1/8&quot; NPT X 45 Degree Street</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>000-052-440</td>
<td>Fitting, 1/8&quot; NPT Brass Coupling - Machined</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>000-057-047</td>
<td>Gasket, Felt</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>000-068-174</td>
<td>Hose, 1&quot; Vacuum - Gray</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>000-107-020*</td>
<td>Hub, Vacuum, Brass, 5 Ports, Dual Lead Thread</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>000-076-076</td>
<td>Jet, Full Cone 1/8&quot;</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>000-052-515</td>
<td>Nipple, 1/8&quot; NPT X 4&quot; Lg.</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>000-094-019</td>
<td>Nut, 1/2&quot;-13UNC Hex</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>000-094-009</td>
<td>Nut, 1/4&quot;-20UNC Nylock</td>
<td>5</td>
</tr>
<tr>
<td>12</td>
<td>000-106-001</td>
<td>Plug, 1/8&quot; NPT</td>
<td>2</td>
</tr>
<tr>
<td>13</td>
<td>000-139-001</td>
<td>Ring Plastic 2007</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>000-143-045</td>
<td>Screw, 1/2&quot; Modified Star Removal Bolt</td>
<td>1</td>
</tr>
<tr>
<td>15</td>
<td>000-143-162</td>
<td>Screw, 5/16&quot; X 1&quot; Lg. Stripper - 1/4&quot;-20UNC</td>
<td>5</td>
</tr>
<tr>
<td>16</td>
<td>000-143-012</td>
<td>Screw, 5/16&quot;-18UNC X 3/4&quot; Lg.</td>
<td>5</td>
</tr>
<tr>
<td>17</td>
<td>000-107-089</td>
<td>Star, Assembly</td>
<td>1</td>
</tr>
<tr>
<td>18</td>
<td>000-174-003</td>
<td>Washer, 1/4&quot; Flat</td>
<td>5</td>
</tr>
<tr>
<td>19</td>
<td>000-174-049</td>
<td>Washer, 5/16&quot; Flat</td>
<td>20</td>
</tr>
<tr>
<td>20</td>
<td>000-174-006</td>
<td>Washer, 7/16&quot; Flat</td>
<td>1</td>
</tr>
</tbody>
</table>

*When replacing 000-107-020 Hub, order 000-107-0201 which includes the 000-139-001 Ring already inserted in to 000-107-020.*

---

**NOTICE**

*When replacing 000-107-020 Hub, order 000-107-0201 which includes the 000-139-001 Ring already inserted in to 000-107-020.*

---

Assembly Drawings and Parts Lists: 8-30
Figure 8-19. Vacuum Head Assembly OS
604-053-101 Rev. A
<table>
<thead>
<tr>
<th>Item</th>
<th>Part Number</th>
<th>Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>000-064-012-OS</td>
<td>Assembly, Vacuum Shoe and Skid OS</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>000-052-427</td>
<td>Bushing, 1/8&quot; NPT X 1/8&quot; FPT</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>000-052-089</td>
<td>Elbow, 1/8&quot; NPT Female</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>000-057-047</td>
<td>Gasket, Felt</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>000-068-174</td>
<td>Hose, 1&quot; Vacuum - Gray</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>000-107-020*</td>
<td>Hub, Vacuum, Brass, 5 Ports, Dual Lead Thread</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>000-076-037</td>
<td>Jet H1/8VV 80015 S/S</td>
<td>5</td>
</tr>
<tr>
<td>8</td>
<td>000-052-080</td>
<td>Nipple, 1/8&quot; NPT X 4&quot; Lg.</td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td>000-094-019</td>
<td>Nut, 1/2&quot;-13UNC Hex</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>000-094-009</td>
<td>Nut, 1/4&quot;-20UNC Nylock</td>
<td>5</td>
</tr>
<tr>
<td>11</td>
<td>000-139-001</td>
<td>Ring Plastic *</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>000-143-045</td>
<td>Screw, 1/2&quot; Modified Star Removal Bolt</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>000-143-162</td>
<td>Screw, 5/16&quot; X 1&quot; Lg. Stripper - 1/4&quot;-20UNC</td>
<td>5</td>
</tr>
<tr>
<td>14</td>
<td>000-143-012</td>
<td>Screw, 5/16&quot;-18UNC X 3/4&quot; Lg.</td>
<td>5</td>
</tr>
<tr>
<td>15</td>
<td>000-107-089</td>
<td>Assembly, Star</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>000-174-003</td>
<td>Washer, 1/4&quot; Flat</td>
<td>5</td>
</tr>
<tr>
<td>17</td>
<td>000-174-049</td>
<td>Washer, 5/16&quot; Flat</td>
<td>20</td>
</tr>
<tr>
<td>18</td>
<td>000-174-006</td>
<td>Washer, 7/16&quot; Flat</td>
<td>1</td>
</tr>
</tbody>
</table>

**NOTICE**

*When replacing 000-107-020 Hub, order 000-107-0201 which includes the 000-139-001 Ring already inserted in to 000-107-020.
**Figure 8-20. Handle Locking Linkage Assembly**

604-051-002 Rev. B

---

**Handle Locking Linkage Assembly Parts List**

<table>
<thead>
<tr>
<th>Item</th>
<th>Part Number</th>
<th>Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>000-107-097</td>
<td>Link</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>000-094-030-07</td>
<td>Nut, Adjusting, Linkage - Handle Locking</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>000-103-012</td>
<td>Pin, 1/4&quot; X 7/8&quot; - Clevis</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>000-103-013</td>
<td>Pin, Cotter</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>000-107-256</td>
<td>Plunger, Handle Latching</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>000-139-006</td>
<td>Ring, 5/8&quot; Snap</td>
<td>2</td>
</tr>
</tbody>
</table>
**RX-20**

**Figure 8-21. Gear Box**

000-059-001 Rev. C

**Gear Box Assembly Parts List**

<table>
<thead>
<tr>
<th>Item</th>
<th>Part Number</th>
<th>Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>000-042-007</td>
<td>Body, Gear Box</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>000-041-078</td>
<td>Cover, Gear Box</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>000-059-004</td>
<td>Gear, Spur - Gear Box Driven Gear</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>000-150-002</td>
<td>Output Shaft, Spur, Double Lead Thread</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>000-059-006</td>
<td>Gear/Input Shaft Assembly</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>000-008-007</td>
<td>Bearing, Spur - Gear Box</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>000-008-008</td>
<td>Bearing, Spur, Race - Gear Box</td>
<td>2</td>
</tr>
<tr>
<td>8</td>
<td>000-008-009</td>
<td>Bearing, Spur - Gear Box</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>000-008-012</td>
<td>Bearing, Spur - Gear Box</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>000-008-041</td>
<td>Bearing, Spur - Gear Box</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>000-097-009</td>
<td>O-Ring, Cast Gear Box</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>000-103-023</td>
<td>Pin, Dowel - 3/16&quot; X 3/4&quot;</td>
<td>2</td>
</tr>
<tr>
<td>13</td>
<td>000-147-018</td>
<td>Seal, Spur Gear Box</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>000-147-019</td>
<td>Seal, Spur Gear Box</td>
<td>1</td>
</tr>
<tr>
<td>15</td>
<td>000-147-015</td>
<td>Seal, Thread Shaft</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>000-143-157</td>
<td>Screw, #10-24UNC X 1.00&quot; Lg. Flat Head</td>
<td>1</td>
</tr>
<tr>
<td>17</td>
<td>000-143-114</td>
<td>Screw, #10-24UNC X 0.50&quot; Lg. Flat Head Phillips</td>
<td>5</td>
</tr>
</tbody>
</table>
Figure 8-22. Vacuum Shoe and Skid Assembly
000-064-012 Rev. B

**Vacuum Shoe and Skid Assembly Parts List**

<table>
<thead>
<tr>
<th>Item</th>
<th>Part Number</th>
<th>Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>000-057-048</td>
<td>Gasket, Vacuum Head</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>000-064-030</td>
<td>Head, Shoe, 4” Cast, One Piece</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>000-094-058</td>
<td>Nut, #10-32UNF Nylock</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>000-107-245</td>
<td>Skid, Cast</td>
<td>1</td>
</tr>
</tbody>
</table>
Figure 8-23. Vacuum Shoe and Skid Assembly OS
000-064-012-OS Rev. B

Vacuum Shoe and Skid Assembly OS Parts List

<table>
<thead>
<tr>
<th>Item</th>
<th>Part Number</th>
<th>Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>000-057-048</td>
<td>Gasket, Vacuum Head</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>000-064-030</td>
<td>Head, Shoe, 4” Cast, One Piece</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>000-094-058</td>
<td>Nut, #10-32UNF Nylock</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>000-107-095</td>
<td>Skid, Wire Frame</td>
<td>1</td>
</tr>
</tbody>
</table>
Figure 8-24. Solution Valve Assembly
000-169-058 Rev. C

Solution Valve Assembly Parts List

<table>
<thead>
<tr>
<th>Item</th>
<th>Part Number</th>
<th>Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>000-027-001</td>
<td>Cap, Solution Valve - Brass</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>000-097-011</td>
<td>O-Ring, 5/8” X 1/16”</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>000-155-003</td>
<td>Spring, Solution Valve</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>600-012-002</td>
<td>Assembly, Valve Stem - Standard</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>600-012-001</td>
<td>Valve, Body - Welded</td>
<td>1</td>
</tr>
</tbody>
</table>
RX-20

Figure 8-25. Valve Stem Assembly
600-012-002 Rev. A

Valve Stem Assembly Parts List

<table>
<thead>
<tr>
<th>Item</th>
<th>Part Number</th>
<th>Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>000-097-022</td>
<td>O-Ring, 3/32&quot;X1/16&quot; W</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>000-097-010</td>
<td>O-Ring, Valve Plunger- Large</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>000-107-129</td>
<td>Plunger, Solution Valve</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>000-139-003</td>
<td>Ring, Solution Valve Keeper - Brass</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>000-139-004</td>
<td>Ring, Solution Valve Stem - Snap Ring - S/S</td>
<td>1</td>
</tr>
</tbody>
</table>
FELT VACUUM SEAL

The felt vacuum seal plays an important part in the optimum performance of your RX-20. If it is worn or unlubricated, it will not form a proper seal. Lack of a proper seal will impair the vacuuming capabilities of the unit and therefore leave behind more water in the carpet than is desirable.

To replace the vacuum seal:

1. First, remove the vacuum head assembly as previously described.
2. Using a pocket knife or similar tool, carefully pry the seal up and lift it out. If the seal appears worn or glazed so that it will not lubricate well, turn it over (see Figure 9-1). If that does not work, or if it is damaged, replace it with a new seal.
3. HydraMaster recommends changing the felt seal after 10 hours of use. Replace it with a seal that has been pre-soaked in a quality 30 weight SAE motor oil.
4. Press the seal in place and saturate it with the motor oil. If a flattened seal will be re-used, place the used seal in an oil bath to rejuvenate it.

Notice

For the seal’s oil bath, use a small receptacle the size and shape of a tuna fish can.
HIGH PRESSURE VALVE ASSEMBLY
In the event that the valve assembly needs to be replaced, follow this procedure:

1. Remove the 440 male quick connect with a wrench.
2. Remove the five hex head screws in the back plate on the handle and lift the back plate off.
3. Disconnect the stainless steel hose from the bottom of the valve assembly (see Figure 9-2).
4. Remove the bolt holding the trigger (see Figure 9-2).
5. Remove the two bolts holding the valve assembly in the handle (see Figure 9-2).
6. The valve may now be rebuilt or replaced.

CAUTION
If the valve has been frozen, inspect it for leakage before re-installing the back plate.

Figure 9-2. Quick Connect, Back Plate and Stainless Steel Hose Removed from Upper Handle Assembly
## 10 - Troubleshooting

### 1.0 Low Vacuum Flow at the Cleaning Heads

<table>
<thead>
<tr>
<th>Possible Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Hub not sealing properly.</td>
<td>Replace felt seal with a lubricated one.</td>
</tr>
<tr>
<td>1.2 Restricted air flow.</td>
<td>Remove hoses from the vacuum shoe and skid assembly, and clear them of debris.</td>
</tr>
<tr>
<td>1.3 Low vacuum flow from power.</td>
<td>Refer to Troubleshooting section of source equipment manual.</td>
</tr>
</tbody>
</table>

### 2.0 Low Water Flow at Cleaning Heads (indicated by irregular Water Temperature)

<table>
<thead>
<tr>
<th>Possible Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 Restricted jets.</td>
<td>Remove jets and clear them of debris.</td>
</tr>
<tr>
<td>2.2 Clogged water strainer.</td>
<td>Remove water strainer and clean.</td>
</tr>
<tr>
<td>2.3 Kinked or clogged solution hose.</td>
<td>Remove hose. Repair or replace.</td>
</tr>
<tr>
<td>2.4 Cleaning hub not properly threaded.</td>
<td>Remove cleaning hub from shaft to shaft. Clean and rethread onto shaft.</td>
</tr>
</tbody>
</table>

### 3.0 Water Leak at Rotary Union

<table>
<thead>
<tr>
<th>Possible Cause</th>
<th>Solution</th>
</tr>
</thead>
</table>

### 4.0 Water Leak at Valve

<table>
<thead>
<tr>
<th>Possible Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1 Ruptured plunger or valve O-ring.</td>
<td>Repair or replace damaged plunger, O-ring, seal. Check for freeze damage.</td>
</tr>
<tr>
<td>4.2 Ruptured plunger or valve O-ring.</td>
<td>Repair or replace damaged plunger, O-ring, seal. Check for freeze damage.</td>
</tr>
</tbody>
</table>
RX-20

5.0 Loss of Oil from Gearbox

<table>
<thead>
<tr>
<th>Possible Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1 Loose or ruptured oil seal.</td>
<td>Replace damaged oil seal. Refill gearbox with oil.</td>
</tr>
</tbody>
</table>

6.0 No Power

<table>
<thead>
<tr>
<th>Possible Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1 RX-20 wiring or power</td>
<td>Have an electrician inspect unit for possible wiring or motor</td>
</tr>
<tr>
<td>source.</td>
<td>problems.</td>
</tr>
<tr>
<td>6.2 Overload power source.</td>
<td>Locate an unused power source.</td>
</tr>
<tr>
<td>6.3 Gearbox.</td>
<td>Repair or replace gearbox.</td>
</tr>
</tbody>
</table>

7.0 Head during Operation

<table>
<thead>
<tr>
<th>Possible Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1 One leg of star bent.</td>
<td>Straighten star.</td>
</tr>
</tbody>
</table>
HydraMaster warrants Rotary Extractor machines of its manufacture to be free from defects in material and workmanship if properly installed, maintained, and operated under normal conditions with competent supervision. No person, agent, representative or dealer is authorized to give any warranties on behalf of HydraMaster, nor to assume for HydraMaster any other liability in connection with any HydraMaster products. This warranty shall extend to the original purchaser of said equipment for the periods listed below from date of installation. If repairs or replacements are made by the Purchaser without HydraMaster’s written consent, HydraMaster’s warranty shall cease to be in effect.

Machinery, equipment and accessories furnished by HydraMaster, but manufactured by others, are warranted only to the extent of the original manufacturer’s warranty to HydraMaster unless otherwise specified in the listing below.

HydraMaster agrees, at its option, to repair at the point of shipment, or to replace without charge, any parts or parts of products of HydraMaster’s manufacture, which within the specified warranty period shall be proved to HydraMaster’s satisfaction to have been defective when shipped, provided the purchaser promptly notifies HydraMaster, in writing, of such alleged defect. HydraMaster will pay all freight and transportation charges within the United States, via normal ground shipping means, for replacement of parts covered under this warranty.

This warranty covers parts, as specified, and does not cover labor which may be necessary in completing repairs. HydraMaster’s liability to Purchaser, whether in contract or in tort arising out of warranties, representation, instructions, or defects from any cause shall be limited to repairing or replacing the defective part or parts. To qualify for warranty coverage, defective parts must be returned to HydraMaster within 30 days. No warranty liability whatsoever shall attach to HydraMaster unless and until HydraMaster has received payment in full for the warranted machine or part.

Except as stated in this section and in the proceeding section and except as to title, there are no guarantees or warranties of merchantability, fitness, performance or otherwise, express, implied or statutory, and HydraMaster shall have no liability for consequential, incidental or other damages howsoever caused.

All components not specifically referenced in the schedule below are covered under this warranty for a period of one (1) year, excepting those parts which are considered, by HydraMaster, to be expendable in normal use, including but not limited to paint, labels and other cosmetic parts or features.
Freeze-related damage of any RX-20 component will VOID all warranties on water- or chemical-related components, internal or external.

Hard water deposits and buildup in the RX-20 will VOID all warranties on affected components.

All recommended maintenance must be performed by competent service personnel.

Records of periodic maintenance must be kept and copies may be required to be furnished to HydraMaster before this warranty is honored.

Coverage Schedule

<table>
<thead>
<tr>
<th>Component</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame, Handle, Body</td>
<td>3 years</td>
</tr>
<tr>
<td>Gear Box</td>
<td>1 year</td>
</tr>
<tr>
<td>Motor</td>
<td>1 year</td>
</tr>
<tr>
<td>Valves, Filters, Hoses</td>
<td>1 year</td>
</tr>
</tbody>
</table>