INSTRUCTION SHEET

PIONEERPUMP

EN English

HWR Series Wear-Resistant Pumps

This Instruction Sheet, in addition to the Pioneer Standard Centrifugal Pump Owner's Manual (4001) and the Pioneer Pump Service Manual (8001), contains important recommendations necessary for correct and economical operation of HWR pump models. Refer to the appropriate manufacturer's manual for engine or electric motor operation and maintenance.

Read and follow instructions carefully to avoid injury and property damage. Do not disassemble or repair unit unless described in these manuals.

This equipment should be installed and serviced by technically qualified personnel. Failure to comply with all national and local codes and within Pioneer Pump recommendations may result in personal injury, unsatisfactory performance, or equipment failure.

The pump nameplate indicates the model number and the serial number. It is important to provide this information when requesting repairs or support and for requesting spare parts.

This product is covered by a Limited Warranty for a period of 24 months from the date of original purchase by the consumer. For complete warranty information, refer to www.pioneerpump.com; or, call Technical Support for a printed copy.

PRODUCT INFORMATION

Pioneer HWR Wear-Resistant pumps are specifically designed for applications requiring high resistance to destructive abrasives by using a high chrome white iron construction that prolongs the life of the pump in severe environments.

Application

Permitted Use – The pump is suitable for applications requiring high resistance against destructive abrasives. For example:

- Light Slurry
- Manure Slurry
- Fly Ash
- Mine Dewatering

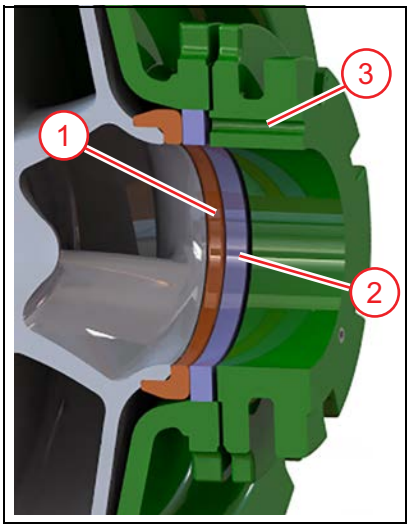
Prohibited Use – The pump is not suitable for:

- Pumping liquids not compatible with the product construction materials
- Pumping hazardous liquids (for example toxic, explosive, inflammable or corrosive liquids)
- Pumping food grade liquids other than water (for example wine or milk)
- Working outside of the rated capacity

Specifications

Model	Size	Maximum Flow	Maximum Head	Solids Capacity
SC64S17L9-HWR	6 x 4 Inches 150 x 100 mm	3125 GPM 720 m3/hr	500 ft 150 m	3 Inches 76 mm
SC86S20L9-HWR	8 x 6 Inches 200 x 150 mm	4875 GPM 1120 m3/hr	625 ft 190 m	3 Inches 76 mm

Key Differences from Standard Pioneer Centrifugal Pumps



Durable materials of construction - Wetted areas of the pump are manufactured with high-chrome white iron to maximize wear resistance against destructive abrasives.

Simplified Serviceability - Axial-style wear ring design allows for external adjustment, eliminating downtime associated with removing or replacing liners.

1. Impeller wear ring
2. Suction wear ring
3. Tapped holes for adjustment screws

INSTALLATION

Pioneer HWR pumps are available in trailer mounted, skid mounted or conventional channel base mounted configurations. In each case, it is critical that the pump be level while operating.

Be sure to remove all shipping protection prior to mounting the pump, and ensure that all foreign material has been removed from the pump and system piping. Be sure that the pump is mounted perfectly level, and that the pump and its driver are aligned. Failure to align the pump driver and coupling will cause pump vibration and premature failure of the shaft, bearing, mechanical seal, and couplings. Your Pioneer pump distributor will be able to help you with pump alignment.

Suction Piping General Guidelines:

- Suction Pipe should be selected with wall thicknesses sufficient to avoid collapse, when the pump is operated.
- If a rubber suction line is used, used reinforced material sufficient to avoid collapsing when the pump is operated.
- For best performance the suction piping should be at least as large as the pump flange, never smaller.
- If an eccentric reducer at the suction flange is required, install it with the straight side up, to avoid air pockets.
- All piping must be supported, braced, and lined up square before connecting it to the pump. Installing a flexible fitting between the pump and the pipe is recommended on both the suction and discharge lines. However, these flexible fittings must be restrained so that they do not transmit a load to the pump flanges during expansion.
- The use of a foot valve or other flow-retarding fittings in the suction line is to be avoided. If these fittings are used, they should never be placed closer to the pump suction than four (4) times the pipe diameter.
- When the source of the liquid being pumped is below the level of the pump, the pump should be at the highest point of the suction piping.

For more information, refer to the Pioneer Standard Centrifugal Pump Owner's Manual (4001).

Risk of severe injury, death, property damage, or malfunction.

- For electric motor driven pumps, to reduce risk of electrical shock, disconnect power before working on or around the system. More than one disconnect switch may be required to de-energize the equipment before servicing
- Use lifting and moving equipment in good repair and with adequate capacity to prevent injuries to personnel or damage to equipment.
- Any lifting equipment should be adequately rated for the weight of the item being lifted. Use only established methods when lifting or moving any heavy components.
- Do not operate the pump without guards in place over the rotating parts. Exposed rotating parts can catch clothing, fingers or tools, causing severe injury to personnel.

OPERATION

Risk of severe injury, death, property damage, or malfunction.

- Do not use to pump flammable or explosive fluids such as gasoline, fuel oil, kerosene, etc.
- Do not use in explosive atmospheres or hazardous locations as classified by the NEC, ANSI/NFPA70.
- If this pump is used to handle any hazardous materials that can cause illness, either directly or indirectly, take precautions by wearing approved protective clothing and use appropriate safety equipment.
- Do not operate the pump without guards in place over the rotating parts. Exposed rotating parts can catch clothing, fingers or tools, causing severe injury to personnel.

Pump Rotation

Before the pump is started, correct rotation must be confirmed. Correct pump rotation direction is clockwise, when viewed from the drive input end of the pump. For a three phase electric motor, it is possible that the phases may not be wired correctly. Incorrect wiring will cause the motor to rotate opposite to designed rotation direction. If the rotation direction is not correct, then reverse any two of the power leads.

Pre-Start Checklist and Starting the Pump

- Check fittings and oil levels.
- Check all hardware, pipe and fittings. Check to see that all pipes are correctly supported and secure.
- Check priming pump drive belt tension.
- Pump Priming Chamber Ball Valve leading to Vacuum Pump should be open.
- Priming Pump water drain – should be closed.

Refer to the appropriate manufacturer's manual for engine or electric motor pre-start procedures.

For more information, refer to the Pioneer Standard Centrifugal Pump Owner's Manual (4001).

MAINTENANCE

Risk of severe injury, death, property damage, or malfunction.

- Shut Down and lock out electrical supply for electrical motors and disable any auto start features .
- If the pump components are hot, allow adequate time for them to cool down before doing any work on them. Disregarding this precaution can lead to serious burns, personal injury, and even death.
- Close Suction and Discharge Valves.
- Vent the Pump Slowly and drain it completely.
- Be aware that the pump may have been pumping hazardous liquids. Take adequate precautions.
- Do not operate the pump against a closed discharge valve for long periods of time. If the pump is operated against a closed discharge valve, the liquid inside the pump will become heated, build steam pressure, and possibly cause the pump casing to rupture or explode.
- If the pump is overheated, do not remove plates, covers, gauges, pipe plugs, or fittings from the pump. Vapor pressure from within the pump can cause the removed parts to be ejected with great force. Allow the pump to cool before servicing.

Preventative Maintenance Guide

Maintain a record of pump performance as a guide to when routine maintenance should be performed and to establish pump performance trends as an aid to troubleshooting and rectifying pump problems.

DAILY

- Check all piping connections, pipe supports, and equipment fasteners for tightness.
- Verify that the driver (engine or electric motor) is aligned correctly and that all guards are in place.
- Check all oil levels. If seen to be contaminated, oils should be replaced immediately.
- Follow the instructions on all tags, labels and decals attached to the equipment.

EVERY 6 MONTHS OR 1000 HOURS

- Ask your Pioneer Pump Distributor to check the wear rings for excessive wear.
- The Vacuum Pump belt should only be tight enough to eliminate slack. Adjustment is made by adding or removing shims between the vacuum pump crankcase and support table.

EVERY 12 MONTH OR 2000 HOURS

- Change all lubricating oils. Oil should be changed in the bearing housing (if applicable), mechanical seal, and priming pump.

Lubrication and Capacities

Compartment	Lube Specification	Capacity
Priming Pump	SAE 30 ND	27 fl oz (798 ml)
Bearing Frame (8.5 and 12.5)	ISO 32 Turbine Oil	68 fl oz (2 liters)
Run-Dry Seal Gland and Reservoir	ISO 32 Turbine Oil	34 fl oz (1 liter)

For more information, refer to the Pioneer Standard Centrifugal Pump Owner's Manual (4001).

Wear Ring Adjustment

Insert a .015" feeler gauge through the suction spool and into the gap between the two wear rings (1). Adjust each of the three screws (2) in the suction spool a little at a time to set clearance. Each quarter turn will adjust the ring ~0.019." Make sure the suction wear ring is parallel with the impeller wear ring and there is no rubbing between the two. The use of multiple feeler gauges may make this process easier.