

# DELAVAN

# RollerPRO

Roller Pumps

## 8900 Series Roller Pump



### Installation • Operation • Repair • Parts

Delavan Fluid Power RollerPRO pumps are the #1 field proven sprayer pumps in the industry capable of accepting a variety of liquids for different applications. Delavan designs, engineers and manufactures a wide variety of roller pumps to meet the widest range of needs our customers demand. To ensure the best performance for your investment, we incorporate such features as "Ultra" rollers, heavy-duty sealed bearings, Viton seal rings, stainless steel shafts and rotors, and close tolerance machining. All standard. All Delavan RollerPRO pumps are 100% field serviceable saving you precious time and money when needing to replace rollers.

#### 8900 Series Specifications

**8900C** - 8 ROLLERS, 24 GPM, CAST IRON, 15/16" SOLID SHAFT, 1" NPT, CLOCKWISE ROTATION, 150PSI

**8900C-R** - 8 ROLLERS, 24 GPM, CAST IRON, 15/16" SOLID SHAFT, 1" NPT, COUNTER CLOCKWISE ROTATION, 150PSI

**8901C** - 8 ROLLERS, 24 GPM, CAST IRON, 15/16" HOLLOW SHAFT, 1" NPT, CLOCKWISE ROTATION, 150PSI

**8900DSS** - 8 ROLLERS, 24 GPM, DIAMOND STAINLESS STEEL, 15/16" SOLID SHAFT, 1" NPT, CLOCKWISE ROTATION, 150PSI

**8900DSS-R** - 8 ROLLERS, 24 GPM, DIAMOND STAINLESS STEEL, 15/16" SOLID SHAFT, 1" NPT, COUNTER CLOCKWISE ROTATION, 150PSI

**DPK-8900C** - ROLLER PRO 8900C PUMP WITH QUICK COUPLER (90300) & TORQUE BAR AND CHAIN

**DPK-8900DSS** - ROLLER PRO 8900DSS PUMP WITH QUICK COUPLER (90300) & TORQUE BAR AND CHAIN

#### Materials of Construction

**Housing:** Cast Iron with Blue Epoxy Corrosion Resistant Paint or Diamond Stainless Steel

**Rollers:** Eight 3/4" Ultra Rollers

**Shaft Seals:** Viton Cartridge type lip seals

**Fasteners:** Stainless Steel

**Weight:** 11 lbs

**Dimensions (W x D x H):** 6.5" x 5.5" x 4.5"

**Shaft:** 8900C, 8900C-R & 8901C, 15/16" extra fine finish 404 SST  
8900DSS & 8900DSS-R, 15/16" extra fine finish 416 SST

**Bearings:** Permanently-lubricated, heavy duty sealed bearings.

#### 8900 Series Performance Chart

Note that the numbers in table are approximates. Pumps may be ran at different RPM's than specified in table, but doing so will change performance of pump. All values in chart are Gallons Per Minute (GPM).

PSI	540 RPM	850 RPM	1000 RPM
0	13.0	20.2	24.0
20	12.4	19.8	23.2
40	11.6	19.1	22.4
80	10.7	17.9	21.1
100	10.0	17.4	20.7
150	8.5	16.0	19.3

### Installation • Operation • Repair • Parts

**If you are having any issues with your Delavan Fluid Power Product please call 1-866-DELAVAN and speak to our technical support team before returning to store. We are happy to help with any troubleshooting or product issues.**

#### TRACTOR PTO INSTALLATION:

Secure the PTO coupling to the pump shaft by sliding the coupling as far forward as possible without touching the bearing shield and tightening the set screws down on the key of the pump shaft. Slide coupling onto the PTO shaft and secure by pulling collar back on PTO quick coupler, sliding onto PTO shaft and locking into place.

Check pump rotation. An arrow on the pump indicates proper rotation direction.

To keep the pump from rotating with the shaft, set a torque arm and short length of chain. Bolt one end of the chain to the torque arm and secure the other to a stationary part of the tractor. Be sure the chain is at a point directly above or below the torque arm. Fastening the torque chain to point forward or backward from pump center will create a bending force on the pump causing shaft to break. Do not fasten rigidly to the tractor.

With the pump in position, connect the inlet hose to the "IN" port and the discharge hose to the "OUT" port. Make sure both hose connections are tight. A loose connection will permit air to be drawn in and the pump will not prime. Use at least a 1" diameter hose on the inlet line.

The 4900 Series RollerPRO is the only pump that can not be directly connected to a tractor PTO shaft. If you wish to use it on a PTO, a gearbox is required to increase the speed to 1800-2600RPM.

#### ENGINE INSTALLATION:

The pump base can be mounted on a frame and aligned for either direct-drive or belt and pulley drive. When mounting for direct-drive, be sure pump and engine shafts are in alignment. A flexible drive coupling will compensate for fractional misalignment. When mounting for pulley drive, be sure the engine and pump shaft are parallel. Align pulleys and keep them as close to shaft bearing as possible. Please review pump maximum RPM Specification.

#### SPRAYER SET-UP:

Selecting the correct size and category of hose is vital you running your system at optimal performance. Ensure all hoses and accessories are air tight. Delavan recommends using a thread sealant to ensure a water tight connection. Failure to have a watertight system could result in pressure and flow loss.

Inspect all hoses, fittings, valves and accessories for pressure ratings to ensure parts are rated for maximum pressure of the pump. Roller Pumps will not work if direction of flow is in wrong direction. Roller pump castings will have "IN" and "OUT" stamped on the inlet and outlet.

To prevent damage to pump a strainer must be installed in the suction line of system. Sediment or granular can get lodged in the pump, sprayer hoses or nozzle tips causing damage. Clean strainer often to avoid clogging.

Ensure a bypass line is installed and operational before starting and adjust accordingly.

Keeping all hoses to a minimum length will ensure your system works at optimal performance. Avoid any looped sections of hose to prevent trapping air.

Before starting for first time and after extended periods without use, a few squirts of light oil in the pumps inlet and outlet ports will help lubricate and start the Roller Pump.

### Installation • Operation • Repair • Parts

#### WARNING:

Pumping corrosive or abrasive liquids will lead to deterioration of parts including rollers, rotors, seals, shaft and other essential components. Ensure the pump is only used with compatible liquids. Never run pump dry. Running pump dry can overheat the pump causing the seal failure and in extreme cases melting rollers and damaging other internal parts. Never close the discharge side of pump while pump is running unless a bypass/return to tank is installed. Failure to follow these warnings could result in voiding the product warranty.

MAXIMUM RECOMMENDED OPERATING TEMPERATURE: 140°F (60°C)

#### PRIMING YOUR PUMP:

Delavan RollerPRO pumps must be gravity fed for priming. Failure to do so will cause the pump to run dry. Keep the inlet/suction hose as short as possible and avoid any kinks, bends, elbows or any other orientation that would restrict the flow into the pump.

#### MAINTENANCE:

Delavan RollerPRO pumps are equipped with permanently lubricated bearings. They do not require further lubrication.

#### WINTERIZING OR EXTENDED STORAGE:

Thoroughly flush the pump of all chemical residue. A solution of approximately one cup of ammonia will in 10 gallons of water will dissolve most residue remaining in pump. Drain all remaining fluid from pump. Pour RV Antifreeze into the pump and rotate by hand. Squirt light oil in the pump and rotate to cover the inner surfaces with a protective film.

#### SERVICING AND REPAIR:

Exclusive, patent pending Delavan RollerPRO pumps are the only field serviceable pump on the market. The only tool required to service a RollerPRO pump is a wrench. The pump remains mounted on drive shaft - no plumbing disassembly is required. Pump servicing takes about 3 minutes.

- Loosen and remove four bolts on the end plate of pump and slide off.
- Replace rollers (or other parts from the RollerPRO repair kit as necessary)
- Slide on end plate, tighten bolts and go!

#### TROUBLESHOOTING AND FAQ'S:

**Why does my pump have low pressure?**

- Check inlet line is fully immersed in water
- Pump was not primed properly, disconnect inlet hose and re-attach ensuring there is liquid in your pump before starting.
- Check and clean inlet strainer.
- Inlet line air leaks. Check all connections for leaks, reseal with sealant of Teflon Tape.
- Check all hoses for blockage, kinks, trapped air or hose collapse.
- Check pump is turning in correct direction. (A reverse rotation pump will not work on PTO.)
- Check if fittings are partially blocked or too small.
- Check rollers for wear. Replace if needed.

#### How do you prime a roller pump?

- All roller pumps must be gravity fed during priming. Roller pumps need liquid in the pump while priming or the heat due to friction can cause rollers and seals to melt. Never run a roller pump dry.

## TROUBLESHOOTING

### Why is my pump is unusually loud or has excessive vibration?

- Check for loose coupler.
- Check for bent or damaged shaft.
- Check PTO for excessive speed.
- Check for any leaks around the pump seals.
- Check for worn rollers. Replace if necessary.

### Can all RollerPRO Pumps be directly connected to a PTO?

The 4900 Series RollerPRO is the only pump that can not be directly connected to a tractor PTO shaft. If you wish to use it on a PTO, a gearbox is required to increase the speed to 1800-2600RPM.

### Do the needle bearings need to be greased?

Delavan RollerPRO pumps are equipped with permanently lubricated bearings. They do not require further lubrication.

### Can I use Roundup in my roller pumps?

Delavan recommends using our Diamond Stainless Steel Line of roller pumps with Roundup. Diamond Stainless Steel (DSS) Pumps are more resistant to corrosion associated with Roundup and other harsh chemicals.

### Which direction do the replacement rollers in repair kit RK-8900 need to be placed?

You can place the rollers in any orientation inside the rotors.

### What should I check if my pump does not flow?

First, try priming the pump by pouring water into the inlet of the pump. Check the rollers for damage. If they are damaged, purchase a repair kit RK-8900.

### What should I check if my pump does not turn?

Check internals for rust and oil. Check for any obstructions inside the pump. If it still does not turn, purchase new bearings and repair kit.

### What is a Torque Bar and Chain?

All roller pumps must be secured to keep the pump from turning with the PTO shaft. The Torque Bar and Chain is an easy way to anchor any PTO-mounted pump and keep it from turning with the PTO shaft. Our Torque Bar and Chain (P/N 33680) fits all Delavan RollerPRO pumps.

### What size coupling do I need to run my pump?

Please use the chart below to determine the right size coupling for your pump and PTO.

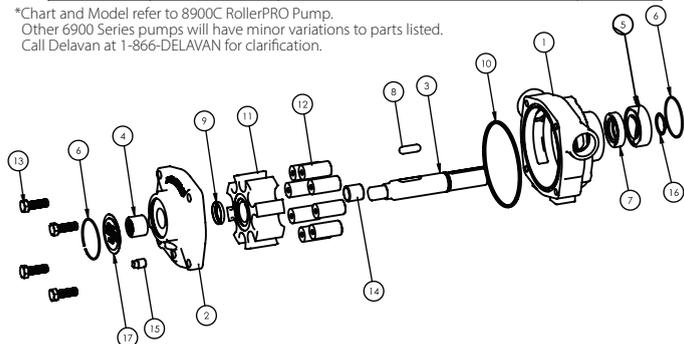
Coupler Part Number	Description	Delavan Models
90000	1-3/8" PTO Quick Coupler, 9 Tooth Dual Speed, 5/8" Shaft, Steel	4900 & 6900 Series
90100	1-3/8" PTO Quick Coupler, 9 Tooth, Dual Speed, 15/16" Shaft, Steel	7900 & 8900 Series
90200	1-3/8" PTO Quick Coupler, 9 Tooth, Dual Speed, 5/8" Shaft, Aluminum	4900 & 6900 Series
90300	1-3/8" PTO Quick Coupler, 9 Tooth Dual Speed, 15/16" Shaft, Aluminum	7900 & 8900 Series
90400	1-3/8" PTO Quick Coupler, 21 Tooth, 1000RPM, 5/8" Shaft	4900 & 6900 Series
90500	1-3/8" PTO Quick Coupler, 21 Tooth, 1000RPM, 15/16" Shaft	7900, 8900 & T90 Series
90600	1-3/8" PTO Quick Coupler, 6 Tooth, 540RPM, 5/8" Shaft	4900 & 6900 Series
90700	1-3/8" PTO Quick Coupler, 6 Tooth, 540RPM, 15/16" Shaft	7900, 8900 & T90 Series
90800	1-3/4" PTO Quick Coupler, 20 Tooth, 1000RPM, 15/16" Shaft	7900, 8900 & T90 Series

Toll Free: 1-866-DELAVAN (335-2826) [Delavanfluidpower.com](http://Delavanfluidpower.com) 1226 Linden Ave. Minneapolis, MN, 55403

## Replacement Parts

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	33801	BODY MACHINED .8R.CI.CCW.FORWARD.1" PORTS	1
2	34804	END PLATE MACHINED .8R.CI.CCW.FORWARD	1
3	31810	SHAFT 410SS.7/8". ROLLER PRO	1
4	38801	NEEDLE BEARING, END PLATE	1
5	16228	BEARING,RADIAL BALL.52MM,RUBBER SEALS	1
6	15334	SNAP RING, LARGE	2
7	47927	LIP SEAL, VITON	1
8	31811	PILL KEY,SHAFT.410SS.34S".SOFT	1
9	37801	OIL SEAL, END PLATE SHAFT	1
10	24829	SEAL RING, 7R & 8R	1
11	36851	ROTOR, OVERMOLD, .8R., GRILAMID LV-30	1
12	35801	ULTRA ROLLER, 3/4", GRILAMID	8
13	15341	CAPSCREW, 3/8-16 X 1-1/8 HX. GR. 5 ZP	4
14	38802	RING ON PRO SHAFT	1
15	25785	PIPE PLUG, 1/8 NPT SQUARE, ZP	1
16	26547	RETAINING RING, .63/.64 SH	1
17	40810-1	NAMEPLATE.8R.CI.ROLLER PRO.8900C	1

\*Chart and Model refer to 8900C RollerPRO Pump. Other 6900 Series pumps will have minor variations to parts listed. Call Delavan at 1-866-DELAVAN for clarification.



## Delavan Fluid Power offers the following repair kits for our RollerPRO 8900 Series Pump

RK-8900 - Eight Roller Repair Kit PRO		
QTY	Part Number	Description
8	35801	ULTRA ROLLER
1	47927	Lip Seal, Viton
1	37801	Oil Seal, End Plate
1	24829	Seal Ring
1	31811	Pill Key, Shaft
1	38801	Needle Bearing

Universal Repair Kits fit Delavan Roller Pumps made before 2015 and most competitor brands in the market. Repair Kit includes Rollers, Shaft Seal, O-Ring (2), & Face Seal.

RK-31810-RT - SHAFT AND ROTOR REPAIR KIT		
QTY	Part Number	Description
1	31810	SHAFT, 410SS
1	16228	BEARING, RADIAL BALL
1	47927	LIP SEAL, VITON
1	31811	PILL KEY, SHAFT
1	37801	OIL SEAL END PLATE
1	36851	ROTOR, OVERMOLDED
1	38802	RING FOR PRO SHAFT
1	26547	RETAINING RING .63/.64

UNIVERSAL REPAIR KIT 4 ROLLER	44-4000RK
UNIVERSAL REPAIR KIT 6 ROLLER	66-6500RK
UNIVERSAL REPAIR KIT 7 ROLLER	70-7700RK
UNIVERSAL REPAIR KIT 8 ROLLER	88-7560RK

## Warnings

Please read and follow operators manual before using and installing Delavan Fluid Power products.

- Do not use pump outside the parameters listed on the label.
- Never use the pump above 100 PSI at anytime.
- NEVER pump gasoline or other flammable liquids. Pump head materials are designed for use with water based products only. NEVER use with Petroleum based products.
- Do not use in an explosive environment. Arcing from the motor brushes, switch, or excessive heat from an improperly cycled motor may cause an explosion.
- Do not assume fluid compatibility. If the fluid is improperly matched to the pump, internal damage may occur.
- Always consider electrical shock hazard when working with and handling electrical equipment. If uncertain, consult an Electrician. Electrical wiring should only be done by a qualified electrician per Local and State Electrical Codes.
- Pump to be run between 32°F (0°C) and 115°F (46°C) environmental conditions. Maximum fluid temperature run through pump is 140°F (60°C).
- To prevent electrical shock, disconnect power before initiating any work. In the case of a pump failure, the motor housing and/or pump fluid may carry high voltages to components normally considered safe. Therefore, always consider electrical shock hazard when working with and handling electric equipment. If uncertain consult an electrician. Electrical wiring should only be done by a qualified electrician per local state electrical codes.
- Do not locate the pump motor near low temperature plastics or combustible material. The surface temperature of the motor may exceed 250°F.
- The installation of a 50 mesh strainer is recommended to prevent debris or other foreign material from entering the pump and causing pump failure.
- Delavan Diaphragm Pumps are designed for intermittent duty, but may run continuously if the motor temperature does not exceed the recommended limit. Delavan RollerPRO pump can run continuously provided it is not run dry.
- Always inspect pump before each use as directed. Do not use pump if damaged and not in working condition.
- Always assess work area for any hazards before using pump.
- Always understand the hazards of any chemicals used in you pump. Proper personal protective equipment should be worn and Safety Data Sheet read.



## DELAVAN STANDARD WARRANTY

Delavan AG Pumps warrants its products for a period of two (2) years for consumers and 90 days for commercial users. The warranty period begins on the date of manufacture or the purchase date (with proof of purchase). The warranty period is not extended if Delavan repairs or replaces the equipment.

This Delavan AG Pumps warranty will not apply to any subsequent owner or other transferee of the Equipment. Delavan AG Pumps warrants that any new Equipment will be free from defects in workmanship or materials under normal use, maintenance and service (rental use excluded). The Warranty Period is not extended if Delavan AG Pumps repairs or replaces the Equipment. This Limited Warranty does not apply to equipment that has been altered, changed, repaired or treated since its delivery, used equipment, damaged or depreciation due to normal wear and tear. This limited warranty does not apply to defects or damage due to failure to follow Delavan AG Pump's operator's manual, specifications or other written instructions, improper storage, operation, maintenance, application or installation of parts, defects or damage due to misuse, accident or neglect, "acts of God" or other events beyond Delavan AG Pump's reasonable control. Delavan AG Pump's warranty does not apply when damaged by accessories, attachments, tools or parts that were not manufactured by Delavan AG Pumps. If the returned product is found not to be defective under the conditions of this warranty, a charge will be made for repair or replacement. If the returned product is found not to be non-defective under the conditions of this warranty, customer is responsible for cost of labor and goods returned. Delavan AG Pumps reserves the right to charge \$90/hour labor on non-defective good.

The sole and exclusive obligation of Delavan AG Pumps under this or any implied warranty shall be to replace or, at its option, to repair, without charge, any product which is determined by Delavan AG Pumps to be defective in workmanship or materials after the product is returned to the Delavan AG Pumps factory, shipping costs prepaid. No credit shall be given for warrantable items. In no event shall Delavan AG Pumps be liable to any person for indirect or consequential damages or for injury or commercial loss resulting from any use or inability to use any Delavan AG Pumps product. Delavan AG Pumps expressly negates any other warranty, express or implied, including any warranty of merchantability or fitness for a particular purpose, or arising from any course of dealing or custom or usage of trade. No person, including any dealer or representative of Delavan AG Pumps, is authorized to make any representation or warranty on behalf of Delavan AG Pumps in addition to or inconsistent with these provisions. Purchasers to whom these provisions apply agree to hold Delavan AG Pumps harmless from claims by their customers in excess of the obligations of Delavan AG Pumps expressly set forth herein.

### Return Policy

For the safety of our employees and handlers, all pumps must be flushed with fresh water for 90 seconds prior to shipping. Delavan AG Pumps reserves the right to request (MSDS) for all chemicals used within. Delavan AG Pumps reserves the right to dispose as scrap any product returned with unknown fluids. Delavan AG Pumps reserves the right to charge returnee for any costs incurred for chemical testing and disposal of unknowns. Please Include complete description of operation problem, such as how pump was used, symptoms of malfunction, etc. to help pinpoint the reason of breakdown.

- Find more helpful troubleshooting tips on our website at [delavanfluidpower.com/FAQ](http://delavanfluidpower.com/FAQ)
- If you are still having trouble with your pump, speak to a technician Toll-Free 1-866-DELAVAN (335-2826)
- Check out our Youtube Channel at [youtube.com](http://youtube.com) and search Delavan Fluid Power.
- Follow us on Facebook to stay up to date on whats happening at [Facebook.com/DelavanFluidPower](http://Facebook.com/DelavanFluidPower)

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