

How To:

Service a Cat 310 Pump

Tools you will need: Socket Seal Case Tool (part# PU33004)
 Reverse Pliers (part# PU30696)
 M8 Allen Wrench Tool
 Regular Screwdrivers
 Socket Set & Pliers



1 Remove the hexbolts on each side of the manifold.



2 Remove the hex Valve Plugs (top discharge, bottom inlet)



3 Examine the O-Ring under the Valve Plug for cuts or distortion and replace if worn. Lubricate the new O-Rings before installing on the manifold.



4 Grasp Spring Retainer by tab at the top with pliers and remove from valve chamber.



5 Examine the Valve O-Ring for cuts or distortion and replace if worn. Lubricate the new O-Rings before installing on the manifold.



6 Separate Manifold Head from crankcase by turning the shaft, insert 2 screwdrivers in gap and pry Manifold Head forward until it comes off.



7 Place Manifold Head on work surface with **crankcase side up**. Remove Lo-pressure Seal On 5PFR & 7PFR plunger pumps prior to May 1989, remove Snap Ring & Lo-Pressure Seal from each Seal Case. Discard Snap Rings. On 5PFR & 7PFR plunger pumps after May 1989, remove Lo-Pressure Seal from each Seal Case.



8 Remove Seal Case from each seal chamber. Remove O-Ring from outside diameter of Seal Case.



9 Hi-Pressure Seal is easily removed from the manifold without any tools. If extremely worn a reverse pliers may be used.



10 Correct Seal arrangement



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Groove Side Down

Carefully square Hi-Pressure Seal into position by hand with the **grooved side down**.



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Examine Seal Case O-Ring and replace if worn. Lubricate new O-Ring before installing.



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Garter Spring Side Down

Lo-Pressure Seal must be installed with **Garter Spring side down**. The down direction is facing the front of the manifold.



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Install Lo-Pressure Seal into each seal case with **Garter Spring down**.



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Remove oil pan and seal retainer with wick.



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Using an M12 hex tool on the 5 & 7 pumps, loosen the plunger retainer about three to four turns.



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Inspect O-Ring and Back-Up Ring for wear & replace if needed. Examine Ceramic Plunger for scoring, scale build-up, chips or cracks and replace if needed.



18

Install new Gasket, then O-Ring, then Back-Up onto each Plunger Retainer.



19

Install the Seal Retainer with new Wick onto each plunger rod **with tab down and wick out**. Replace two Lockwashers, two Socket Head Screws for four Flange Nuts and torque.



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Rotate Crankshaft by hand so the two outside plungers are extended equally.

Lightly lubricate the Ceramic Plungers, then carefully slide the Manifold Head over the Ceramic Plungers supporting it from the underside to avoid damage to the Ceramic Plungers or Seals. On the high pressure V-Packing models or larger manifolds it may be necessary to gently tap with a soft mallet until the manifold is flush with the Crankcase. Replace (2) Lockwashers, (2) Socket Head Screws and torque per chart.



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