

# DOWNLOAD PDF 6-3 USE OF THE CENTRIFUGAL PUMP TO CLEAN HEAT EXCHANGERS 125

## Chapter 1 : Alfa Laval LKH-SP Self Priming Pump

*Diesel Engine Maintenance Training Manual. Use of the centrifugal pump to clean heat exchangers Use of hand pumps and plungers to clean heat.*

Turbine wheel with damaged blade 14 Roots type blowers 16 Roots type blower for G. Checking backlash of rotor gears 18 Scored blower lobes 18 Checking clearances of Roots type blower lobes 19 Shaft oil seals 20 Failed serrated shaft 21 Hamilton-Whitfield blower 21 Air intake manifold 22 Schematic drawing of an oil separator 23 Effect of a worn bearing on oil leakage 24 Flame primer as used on the G. Cross section of manifold metal 27 Formation of scale in water jacket 28 Improper installation of wet type muffler 29 Use of pipe bend to prevent backflow of water 29 Use of three-way proportioning valve to regulate water flow to muffler 30 Use of throttling valve to control flow of water to muffler 30 Dry type muffler 31 Force produced in exhaust piping by thermal expansion 32 Use of flexible expansion joint to absorb thermal expansion 32 Illustration of pressure drop in exhaust piping and muffler 33 Types of bends used in exhaust lines 33 Water trapped due to sagging of elbow 34 Exhaust stack showing evidence of corrosion 34 3- Revision of stack design to eliminate corrosion 34 4- 1. Schutte and Koerting gear pump 37 Tuthill reversible fuel pump 38 Packing clamps improperly tightened, cocked 39 Cover plate of pump shown in Figure , showing uneven wear of bushing 39 Vane type fuel oil pumps 40 Worn and damaged seal on G. Bosch fuel supply pumps with hand prime feature. Excello fuel transfer pump 41 Schematic diagram of Bosch supply pumps 41 Sectional views of Bosch type pumps: Pumping principle, one-plunger stroke 44 Metering principle 44 Types of plungers 44 5. Plunger rotating mechanism 45 Good and bad plungers 45 APF pump sight window 48 Typical Bosch spray nozzle 51 Sectional views of nozzles 51 Nozzle and nozzle holder 52 American Bosch nozzle tester in operation 53 Variations in nozzle holder connections and adjustments 54 Throttling type pintle nozzle 56 Good spray from throttling nozzles 56 Spray patterns from standard pintle nozzles 56 Types of General Motors injectors 59 Injection and metering principle 60 Injector test stand 60 Sealing surfaces 62 Type A Excello fuel injection pump 67 Excello fuel pump drive unit, hydraulic unit, and safety filter 68 Excello fuel injection nozzle 71 Exploded view of nozzle tip 72 Use of special tools to assemble and disassemble nozzle 73 Cummins fuel system 74 Cummins fuel injector 75 Worn and scored distributor disk and cover 76 4 Worn and eroded injector cup tip 79 New injector cup tip 79 Pressure regulating valve 79 Atlas fuel system 80 Spray valve and actuating mechanism 81 Cutaway view of fuel oil pump 84 Lapping the plunger and barrel 86 4 Lapping the discharge valve and seat 86 Square lapping the relief valve seat 86 Fuel injector 87 Cutaway view of fuel injector 88 Lapping the lower valve seat and stem 89 Sectional view of fuel injection nozzle 90 Recommended methods for elimination of pipe breakage at root of threads 91 Duplex system standard practice 93 Duplex fuel filter 93 Plugging filter for washing 94 Schematic drawing of a fuel system 95 Strainer elements 96 4- Tank sampling device for diesel fuel 97 5- 1. Elementary governor mechanisms 99 Governor control mechanism Pierce mechanical governor Operating principle of hydraulic governor Marquette hydraulic governor Woodward type SI governor 5- 8. Simple overspeed trip mechanism 6- 1 Use of the centrifugal pump to clean heat exchangers Use of hand pumps and plungers to clean heat exchangers Repairing a strut tube leak. Both ends of tube require scaling Zinc electrode, before and after use Line valves Distortion of valve seat due to excess threads on pipe. Damaged gate valve, caused by throttling Tubing splice Simplex lube oil strainer 6- Michiana lube oil filter 7- 1. Heat exchangers

## Chapter 2 : Cooling Tower Water Filters “ 24 up to GPM - AmeriWater

*Pumps for hygienic use are the hallmarks of our hygienic pumps, heat exchangers, valves centrifugal pump for standard duties up to GPM.*