

Three Phase Duplex Automatic Pump Sets can be provided with some or all of the following...

- Two Pump and Motor assemblies
- Duplex Automatic Panel with Automatic Switch Over
- One Hand-Off-Auto switch
- One Lead Lag Pump Switch
- Two “Pump On” indicator lights
- Duplex panel Test Button
- Alarm with Indicator Light
- One Reset Circuit Breaker
- Two Magnetic Motor Starters with Overload Protection
- One Compound Gauge on discharge block
- One Discharge connection
- One Inlet connection
- One Relief Valve on common discharge manifold
- Inlet Compound Gauges
- Two Inlet Strainers
- Containment Basin with leak sensor and fork lift access
- Inlet Isolation Valves
- Internal Low Voltage Relay connection for intermittent operation
- Leak Detection Float Level Switch

Items highlighted in blue are standard items. Items in black are available upon request.

DUPLEX PANEL OPERATION FEATURES

The SPM duplex models consist of two pump/motor assemblies with a pre-piped, common discharge manifold. One pump/motor unit operates continuously, with the second providing backup service if the main pump fails. Either automatic (SPM-DA models) or manual (SPM-DM models) controls are available.

The duplex automatic series are designed specifically for buildings where a constant supply of oil must be assured ... hospitals, apartment buildings, schools and other commercial/ industrial buildings.

The DA Series is equipped with a pressure sensing device which detects a loss in pressure of the primary pump. If the standby pump is brought into service, an alarm sounds which indicates a malfunction in the primary pump.

The electric control circuit on the duplex automatic pump set is equipped with a lead-lag switch to permit manual alternation of pump to provide even wear on each pump.

The manually operated duplex pump sets offer the same protection as an automatic except the standby pump must be turned on manually which requires that maintenance personnel always be available.

SPECIFICATIONS

SPM Duplex Automatic units consist of two SPM Series Pump/Motor assemblies and an electrical control panel. They are designed for use in maintained pressure supply systems *only*. If system pressure falls below a preset level, the control automatically switches from the primary pump/motor unit to the secondary unit. If the backup pump/motor unit also fails to reach or maintain preset system pressure, the control also shuts off the backup unit.

TANK TO PUMP CONNECTIONS

Units should be set for two pipe operation. Preferred installation calls for a separate suction line from tank to pump for each pump/motor unit. If system failure occurs because of a gross leak in the suction line of the primary unit, the second unit can still provide backup service.

AUTOMATIC CONTROL ACTION

Selector Switch:

The selector switch on the control panel can start either *Pump One* or *Pump Two* as the lead pump. *Pump One* is on the left side, *Pump Two* on the right side of the duplex unit, as viewed from the front.

Initial Startup:

The lead pump must build operating pressure in approximately 15 seconds after startup, or the loss of pressure control sequence will occur, as described below. When purging long lines, the supply pump may have to run at zero pressure for some time before oil reaches the burner pumps. Automatic switching and shutdown can be prevented by adjusting the Pressuretrol main scale indicator to 0 as described in *Setting Pump Pressures*, page 14.

Loss of Supply Pressure:

A drop in pressure below a preset level causes the lead pump to shut down, the lag pump to start, and an alarm buzzer to sound. If the lag pump does not build pressure in approximately 15 seconds, it also shuts down and the alarm continues to sound. If the lag pump does build pressure, the alarm will continue to indicate a malfunction.

To Shut Off Alarm and Reset Unit:

With buzzer on and both pumps shut down: Move selector switch to *off* for approximately 15 seconds (allow timers to reset). To restart, move selector switch to desired pump. With buzzer on, lag pump running and maintaining pressure: Move selector

switch to *off* momentarily, then to lag pump position. Buzzer will shut off, lag pump will continue running. Note: Moving selector switch from lead to lag position before lag pump has built pressure results in lead pump restarting.

Test Button:

The action of the control panel can be tested while the system is at normal operating pressure, by depressing the test button on the panel. This causes the lead pump to shut down, the lag pump to start, and the alarm to sound.

To shut off alarm and return to lead pump, move selector switch to *off*, then back to lead pump position. If the test button is held down for approximately 15 seconds, the lag pump will also shut down. To shut off alarm and return to lead pump, move selector switch to *off* for approximately 15 seconds to allow timers to reset, then back to lead pump position.



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