



### **Air/Oil Systems:**

A lubrication system in which small measured quantities of oil are introduced into an air/oil mixing device which is connected to a lube line that terminates at a bearing, or other lubrication point. The air velocity transports the oil along the interior walls of the lube line to the point of application. These systems provide positive air pressure within the bearing housing to prevent the ingress of contaminants, provide cooling air flow to the bearing, and perform the lubrication function with a continuous flow of minute amounts of oil.

### **Balancing Valve:**

A pressure balanced, adjustable relief valve that is recommended for installation in the low pressure outlet(s) of a series progressive divider valve where the individual divider valve outlets have a pressure difference of 1000 PSI or greater. The purpose of the valve is to balance all output pressures which ensures accurate dispensing of the lubricant volume.

### **Bypass Section:**

A modular divider section that will continue the porting sequence, but which contains no measuring piston. It is used in a divider assembly having a minimum of 3 working sections (sections with measuring pistons). The purpose of a bypass section is to provide for future lube point additions when replaced with a working section. It can also be used when lube points are deleted as long as there are at least three remaining working sections.

### **Centralized Lubrication System:**

A system of lubricant dispensing devices (oil or grease) connected by piping to a central pumping unit that is operated automatically or manually.

### **Circulating Header System:**

A lubrication system having isolated lube zones wherein the lube pump runs continuously and circulates oil through the header, a return filter and back to tank during the idle period. When lubrication is required, a normal open solenoid valve in the return loop is actuated, allowing pump pressure to build. The zone valves are then sequentially opened to provide lubricant to the individual zones. Oil dispensed to the friction points is not reused, therefore, the system is a terminating type.

**Circulating Oil:**

A lubrication system wherein the oil pump runs continuously and circulates oil to the friction points on a continuous basis. The oil is drained back to tank, filtered, cooled as required and reused.

**Controller:**

An electrical, or electronic device that includes the functions of a timer or counter and a monitor.

**Crossport:**

To combine the outputs of adjacent divider sections which result in an output volume that is larger than available from one divider section. Crossporting is also used to reduce the number of active outlets in a divider valve assembly.

**Crossport Bar:**

A steel bar having a drilled passageway that is used with two hollow bolts threaded into the indicator ports (alternate outlets) of two adjacent MJ, or MX series divider sections. This arrangement combines (crossports) the output flow of the two divider sections.

**Crossport Plate:**

A plate having the necessary porting to combine (crossport) output flow from one divider section to the one below it. It is sandwiched between the divider working section and its sub base and is used on the MSP, MHP and MXP series dividers.

**Cycle Indicator:**

A pin fixed to and/or extended by the measuring piston in a divider valve, dual-line valve or injector that gives visual indication of piston movement.

**Cycle Switch:**

A switch that is attached to and actuated by the cycle indicator and gives electrical indication of piston movement.

**Divider Valve:**

A positive displacement lubricant (oil, or grease) measuring valve that both divides and proportions input flow. The internal pistons (3 minimum) are actuated by flow and sequentially dispense lubricant to the connected points. It may be used in either terminating or circulating type systems of the "Series Progressive Type".

### **Dual-Line System:**

A positive displacement terminating (oil, or grease) lubrication system that employs two main lines supplied from a pump connected to a 4-way (reverser) valve. Pressure in one main line (while the other is open to tank) causes the measuring piston(s) in the dual-line valve(s) to stroke in one direction dispensing lubricant to one group of lube points. Switching the 4-way (reverser) valve directs pump flow to the second main line and opens the first main line to tank. This allows pressure to build in the second main line causing the dual-line valve(s) measuring piston(s) to stroke back to their original position dispensing lubricant to a second group of lube points. The system is a parallel type and each dual-line valves operates independently of any other in the system.

### **Injector:**

A positive displacement (oil, or grease) lubricant measuring valve that dispenses lubricant when main line pressure rises and resets/primes when its compressed return spring forces the measuring piston back to its rest position when the main line pressure is vented.

### **Post Fire Injector:**

Types prime under rising mainline pressure and dispense lubricant when the mainline pressure is vented. Injector internal moving parts use some metal to metal seals and injector systems are referred to as a "Single Line Parallel Type" (each injector operates independently of any other in the system).

### **Intermittent System:**

A system that supplies lubricant on a regular, but intermittent basis which is usually scheduled by a timer or counter.

### **LCD (Liquid Crystal Display):**

An electronic display panel employed on some solid state timers, monitors and controllers to display the programmed values, operating status and various fault conditions.

### **Lube Cycle/Lube Interval/Lube Period:**

Terms used interchangeably to describe the time period from one lubrication event to the start of the next.

**Lube Fault:**

An incomplete, or extended lube cycle that is signaled by failure of the cycle switch, or pressure switch to provide a timely signal to the system monitor, or controller.

**Lube Pump Ratio:**

The area of the power piston (hydraulic or air) divided by the area of the lube piston. This ratio establishes the maximum lubricant discharge pressure for any given input pressure (hydraulic or air).

**Mill-Gard:**

Registered trade name for Air/Oil systems and components intended for use in heavy industry such as steel mills, aluminum mills, paper mills etc. (See Air/Oil Systems)

**Modular Zero Leak Valve:**

An optional valve section for the MSP series divider valve that incorporates a 2-way, normally closed, bubble tight (Zero Leak) shut-off valve. The valve section mounts on a special sub base adjacent a modular filter section and can be removed and replaced by removing two cap screws as is the case with a standard MSP working section. It is used in header systems to isolate the zones into small sub-systems and is suitable for use with oil only.

**Monitor:**

An electrical or electronic device that compares (monitors) a lubrication systems operation to a user selected time frame, or delivery rate.

**Monitor Time:**

The time period established by the lubrication system designer, or user during which the lubricating system must successfully complete its cycle as signaled by the cycle switch, or pressure switch. This time period starts when pumping activity is initiated and stops when the cycle completion signal is received. It is typically established at two times the normal pump running time required to satisfy the system volume requirements.

**NLGI (National Lubricating Grease Institute):**

An organization of grease manufacturers that works with the ASTM (American Society for Testing Materials) to develop technical standards.

**NLGI Grade Number:**

Numbers assigned by the NLGI to classify greases according to their hardness as measured by a cone penetration test. The numbers range from 000 (very fluid) to #6 (solid). Only the 000 thru #2 grade are considered useable in centralized lubrication systems.

**Orifice System:**

A single line system in which the resistance to flow created by different size orifices proportions the flow to the lube points. These systems are not positive displacement and are limited to the use of oil as a lubricant.

**Parallel Systems:**

Lubricating systems where the dispensing devices are connected to the main line(s) in parallel. Each dispensing device operates independently of any other in the system.

**Performance Indicator:**

Visual devices used with divider valves that mount in a port common with the lube outlet and give visual indication of abnormal high downstream pressure. The devices can be of a relieving, or non-relieving type.

**Piston Distributor:**

A positive displacement lubricant measuring valve that displaces lubricant under rising main line pressure and resets/primes when its compressed return spring forces the measuring piston back to the rest position when the main line pressure is vented.

**Post Fire Piston Distributor:**

Types prime under rising main line pressure and dispense lubricant when the main line pressure is vented. All internal sealing and valving is accomplished with elastomeric seals and the system is a "Single Line Parallel Type" (each piston distributor operates independently of any other in the system).

**Proximity Cycle Switch:**

A totally enclosed, magnetically actuated, switch that mounts in the piston enclosure port of a divider valve and operates when its magnet is attracted to the measuring piston as it approaches the nose of the switch housing.

### **Parallel Systems:**

Lubrication systems where the dispensing devices are connected to the main line in parallel. Each dispensing device operates independent of any other in the system.

### **Series Progressive System:**

A lubrication system (oil, or grease) that uses positive displacement divider valves that are hydraulically in series with one another and operate in a progressive manner where each measuring piston must complete its lubricant dispensing stroke before the next piston in the sequence begins to stroke.

### **Shunt/Shut-Off Inlet:**

An optional inlet for the MSP series divider valve that incorporates a 3-way valve that can be actuated by an electric solenoid, or by a pneumatic operator. The valve can be configured for normally open (divider valve operates with no power and bypass is closed ), or normally closed (bypass is open with no power and divider valve cannot operate). The bypass port can also be plugged and the valve used as a 2-way shut-off for oil, or fluid grease.

### **Singling:**

An internal drilled passage, ported plate, or jumper bar that communicates the left and right outputs of a divider valve, or dual-line valve. The unwanted output port is plugged and both measured lubricant shots are delivered from a single outlet port.

### **Single Cycle Pump:**

An air, or hydraulic powered pump that requires an external device such as a solenoid valve to alternately supply and exhaust the actuating power to the pump in order to produce repeated pump strokes.

### **Soft Seal Check Valve:**

A check valve that uses an elastomeric ball, or seal to stop flow in one direction. This type of check valve is typically used in systems where air or a gas might displace lubricant in the lines.

### **Spindl-Gard:**

Registered trade name for Air/Oil systems and components that are primarily used to lubricate metal cutting spindles on machine tools. (See Air/Oil Systems)

**Stroke Counter:**

An electrical or electronic device that schedules lubrication frequency based on machine usage as signaled by a switch, or relay activated by motion of the machine being lubricated.

**Stroke Switch:**

The switch, or relay that provides an electrical indication of machine activity to the stroke counter, or controller for the purpose of scheduling the lubricating cycle frequency.

**Working Section:**

The part of a modular divider valve that contains the lubricant measuring piston.

**Zero Leak Inlet:**

An optional inlet for the MSP series divider valve that incorporates a 2-way, normally closed, bubble tight (Zero Leak) shut-off valve. The Zero Leak Inlet is used in zoned header systems to isolate the zones into small sub-systems. It is suitable for use with oil only.