

# General Design Features

## Features/Benefits

- Compact Design for Centralized Flow Monitoring
- Redundant Flow Indication
- High Strength Polysulfone Flow Tubes
- High Visibility Spinner / Indicator
- Precise Piston Indicator
- Easy to Read Numerical Flow Scale
- Simple Thumb Wheel Flow Adjustment

In today's tough, competitive business climate, machines are being pushed to run at faster and faster speeds, under heavier loads, and at higher operating temperatures.

Stretching capacity creates greater demands on the machine's lubrication system to provide a more reliable flow of oil to all lubrication points on the machine. This not only minimizes friction, but also dissipates heat away from the bearings as efficiently as possible.

Simply switching to a better lubricant, and installing or upgrading filter elements is not enough to assure a reliable lube system. A growing number of companies recognize the next critical step is to install a reliable flow monitoring system to assure a constant flow of lubrication oil to each bearing on the machine.

The LUBE-VIEW® Flow Monitoring System has been specifically designed to provide that critical function.

### Quick, Convenient Multiple Lube Line Monitoring From a Centralized Location

Offered in compact manifold sizes to monitor from 1 to 24 lube lines, the standard LUBE-VIEW® combines the reliability of redundant flow measurement of individual lube lines with simple thumb wheel flow adjustments.



### Reliability of Redundant Flow Indication

Each lube line is monitored by a separate flow meter, featuring two independent flow indicators for double assurance of operational reliability

**Primary** measurement of **flow rate** is provided by the piston-type variable area flow indicator, located in the main viewing section of the transparent vertical flow tube, by simply "reading" the piston's position against the numerical flow scale, affixed externally to the high-strength polysulfone flow tube body.

This is supplemented by a **secondary, spinner-type indicator**, located in the upper inlet of the flow tube. This spinner provides a highly visible indication of flow for quick, visual reference.

In addition to providing greater operator convenience, this double flow indication feature also assures greater safeguard of operational reliability.

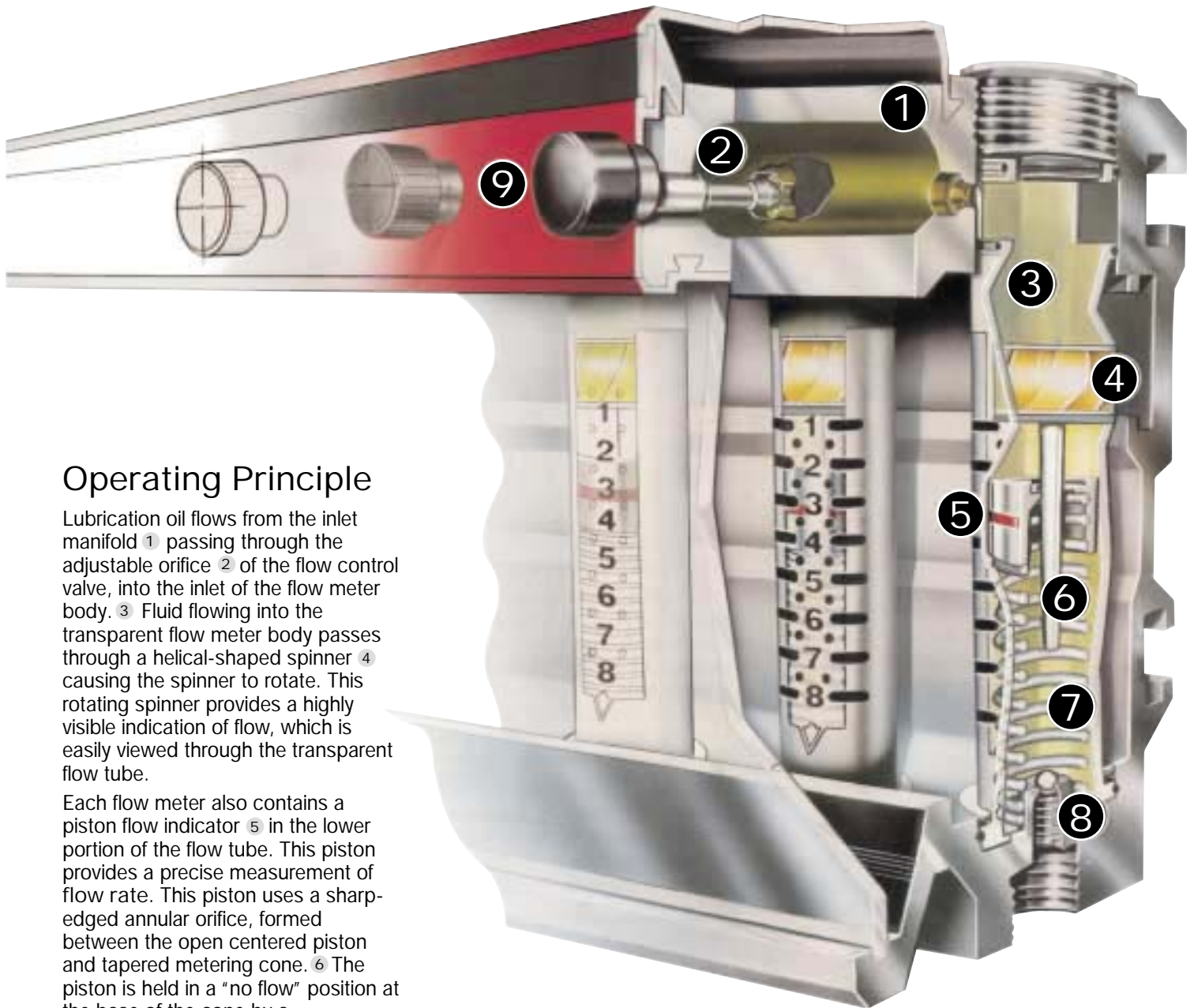
### Precise Flow Control With Quick, Easy Adjustment

Quick, accurate adjustment of oil flow rates is critical to efficient, high speed paper production.

At startup, production machine rollers run at slower speeds and operate at cooler temperatures. Therefore, the lube oil should circulate at lower flow rate to prevent "messy" oil spills due to over-flooding bearings and other lubrication points.

At normal "full production" speed, the demand for precisely controlled lubrication oil flow becomes critical. For example, the circulating lubrication oil is also the primary **heat-transfer** media to dissipate heat away from the bearing area. Inadequate oil flow to the bearing can result in a sudden rise in operating temperature, causing rapid deterioration in oil lubricity. This compact design offers individual flow control valves with large diameter, easy-to-use thumbwheel adjustment to provide quick, accurate response to changing conditions.

# General Design Features



## Operating Principle

Lubrication oil flows from the inlet manifold **1** passing through the adjustable orifice **2** of the flow control valve, into the inlet of the flow meter body. **3** Fluid flowing into the transparent flow meter body passes through a helical-shaped spinner **4** causing the spinner to rotate. This rotating spinner provides a highly visible indication of flow, which is easily viewed through the transparent flow tube.

Each flow meter also contains a piston flow indicator **5** in the lower portion of the flow tube. This piston provides a precise measurement of flow rate. This piston uses a sharp-edged annular orifice, formed between the open centered piston and tapered metering cone. **6** The piston is held in a "no flow" position at the base of the cone by a precalibrated retention spring. **7**

Lubrication oil flowing through the flow tube creates differential pressure across the piston orifice, moving the piston against the spring. Piston movement is proportional to the rate of flow. The greater the rate of flow, the further the piston moves down along the length of the tapered metering cone.

The indicated flow rate is established by viewing the position of the bright red indicator line on the piston relative to the precalibrated

numerical flow scale affixed to the external surface of the transparent flow tube. Flow scales are available in pints per minute (PPM), liters per minute (LPM), and gallons per minute (GPM).

The LUBE VIEW is a unidirectional flow metering system, with individual spring-loaded ball-type check valves **8** located in each flow tube outlet port to prevent reverse flow of oil back into the manifold during routine maintenance.

The individually adjustable manifold-mounted flow control valves **9** allow each lube line to be quickly and conveniently "fine tuned" to fit changing operating conditions (ie: slow "start-up" speed to "full production" capacity), supplying the appropriate volume of lubricant to each bearing to maintain maximum operational performance.