

Vocabulary (Glossary)

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- A -

ABSOLUTE VISCOSITY - the ratio of shear stress to shear rate. It is a fluid's internal resistance to flow.

ABSORPTION - the integration of one material into another.

ACCUMULATOR - a container in which fluid is stored under pressure as a source of fluid power.

ADDITIVE - chemical substance added to a petroleum product to improve certain properties.

AIR, COMPRESSED - air at any pressure greater than atmospheric pressure.

ANTI-FOAM AGENT - one of two types of additives used to reduce foaming in petroleum products.

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- B -

BLEEDER, AIR - a device for the removal of air from an oil system.

BOUNDARY LUBRICATION - form of lubrication between two rubbing surfaces without development of a full fluid lubricating film.

BREATHER, AIR - a device permitting air movement between the atmosphere and the component in which it is installed while preventing contaminants from entering the component.

BULK MODULUS - the measure of a fluid's resistance to compressibility.

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- C -

CAP, BLIND END - a cylinder end closure that completely covers the bore area.

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CAP, ROD END - the cylinder end enclosure that covers the differential area between the bore area and the piston rod area.

CAVITATION - a localized gaseous condition within a liquid stream that occurs where the pressure is reduced to the vapor pressure.

CLEVIS - a "U" shaped mounting device that contains a common pin hole at right angle or normal to the axis of symmetry.

through each extension.

COMPRESSIBILITY - the change in volume of a unit of volume of a fluid when subjected to a unit change of pressure.

CORROSION INHIBITOR - additive for protection of wetted metal surfaces from chemical attack by water or other contaminants.

CYCLE - a single complete operation consisting of progressive phases starting and ending at the neutral position.

CUSHION - a device that provides controlled resistance to motion.

CUSHION, CYLINDER - a cushion built into the cylinder to restrict flow at the outlet port thereby arresting the motion of the piston rod.

CYLINDER - a device that converts fluid power into linear mechanical force and motion.

CYLINDER, ADJUSTABLE STROKE - a cylinder equipped with adjustable stops at one end to limit piston travel.

CYLINDER, DOUBLE ACTING - a cylinder in which fluid force can be applied to the moveable element in either direction.

CYLINDER, NON-ROTATING - a cylinder in which the relative rotation of the cylinder housing and the piston and piston rod, plunger, or ram, is fixed.

CYLINDER, SINGLE ACTING - a cylinder in which the fluid force can be applied to the moveable element in only one direction.

CYLINDER, TANDEM - two or more cylinders with interconnected piston assemblies.

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- D -

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DEMULSIBILITY - ability of an oil to separate from water.

DEWAXING - removal of paraffin wax from lubricating oils to improve low temperature properties.

DUROMETER HARDNESS - a measure of elastomer hardness by use of a durometer.

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- E -

EMULSIFIER - an additive that promotes the formation of a stable mixture, or emulsion, of oil and water.

EMULSION - intimate mixture of oil and water, generally of a milky or cloudy appearance.

EP ADDITIVE - lubricant additive that prevent sliding metal surfaces from seizing under conditions of extreme pressure (EP).

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- F -

FILTER - a device whose primary function is the retention by porous media of insoluble contaminants from a liquid.

FITTING - a connector or closure for fluid power lines and passages.

FIRE-RESISTANT FLUID - hydraulic oil used especially in high temperature or hazardous applications.

FLOW, LAMINAR - a flow situation in which fluid moves in parallel laminar or layers.

FLOW RATE - the volume, mass, or weight of a fluid passing through any conductor per unit of time.

FLOW, TURBULENT - a flow situation in which fluid particles move in a random matter.

FLUID FRICTION - friction due to the viscosity of fluids.

FLUID STABILITY - resistance of a fluid to permanent changes in properties.

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- G -

GAUGE - an instrument or device for measuring, indicating, or comparing a physical characteristic, such as pressure or volume.

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- H -

HYDRAULIC FLUID - fluid serving as the power transmission medium in a hydraulic system.

HYDRAULIC PUMP - a device that converts mechanical force and motion into fluid power.

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- I -

INHIBITOR - an additive that improves the performance of a petroleum product through the control of undesirable chemical reactions.

INTENSIFIER - a device that converts low-pressure fluid power into high-pressure fluid power; also called a booster.

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- K -

KINEMATIC VISCOSITY - absolute viscosity of a fluid divided by its density at the same temperature of measurement.

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- L -

LUBRICATOR - a device that adds controlled or entered amounts of lubricant into an air system.

LUBRICITY - ability of an oil or grease to lubricate.

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- M -

MANIFOLD - a conductor that provides multiple connection ports.

MUFFLER - a device for reducing gas flow noise.

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- O -

OXIDATION INHIBITOR - substance added in small quantities to petroleum products to increase its oxidation resistance.

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- P -

PACKING - a sealing device consisting of bulk deformable material or one or more mating deformable elements, reshaped by manually adjustable compression to obtain and maintain effectiveness. It usually used axial compression to obtain radial sealing.

PORT - an internal or external terminus of a passage in a component.

PORT BLEED - a port that provides a passage for the purging of gas from a system or component.

PORT, CYLINDER - a port that provides a passage to or from an actuator.

PORT, EXHAUST - a port that provides a passage to the atmosphere.

POUR POINT - lowest temperature at which an oil or distillate fuel is observed to flow.

PRESSURE - force per unit area, usually expressed in pounds per square inch.

PRESSURE, BURST - the pressure that creates loss of fluid through the component envelope, resulting from failure.

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PRESSURE, CRACKING - the pressure at which a pressure operated valve begins to pass fluid.

PRESSURE, OPERATING - the pressure at which a system is operated.

PRESSURE, PEAK - the maximum pressure encountered in the operation of a component.

PRESSURE, RATED - the qualified operating pressure which the manufacturer recommends for a component or a system.

PRESSURE, SHOCK - the pressure existing in a wave moving at sonic velocity.

PRESSURE, STATIC - the pressure in a fluid at rest.

PRESSURE, SURGE - the pressure existing from surge conditions.

PRESSURE, WORKING - the pressure at which the working device normally operates.

PRESSURE VESSEL - a container that holds fluid under pressure.

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- R -

RESERVOIR - a container for the storage of liquid in a fluid power system.

RESTRICTOR - a device that reduces the cross-sectional flow area.

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- S -

SERVOVALVE - a valve that modulates output as a function of an input command.

SHEAR STRESS - frictional force overcome by sliding one layer of fluid along another, as in any fluid flow.

SILENCER - a device for reducing gas flow noise. Noise is decreased by tuned resonant control of gas expansion.

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SUBPLATE - an auxiliary ported plate for mounting components.

SURGE - a transient rise of pressure or flow.

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- T -

TUBE - a line whose size is its outside diameter. Tube is available in varied wall thicknesses.

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- U -

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- V -

VALVE - a device that controls fluid flow direction, pressure or flow rate.

VALVE, DIRECTIONAL CONTROL - a valve whose primary function is to direct or prevent flow through selected passages.

VALVE, FLOW CONTROL - a valve whose primary function is to control flow rate.

VALVE, SEQUENCE - a valve whose primary function is to direct flow in a predetermined sequence.

VALVE POSITION, DETENT - a predetermined position maintained by a holding device acting on the flow-directing elements of a directional control valve.

VALVE POSITION, NORMAL - the valve position when signal or actuating force is not being applied.

VISCOSITY - a measure of internal friction or the resistance of a fluid flow.

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