Accumulator — A container in which fluid is stored under pressure as a source of fluid power.

Accumulator, hydropneumatic bladder — A hydropneumatic accumulator in which the liquid and gas are separated by an elastic bag or bladder.

Actuator, pneumatic/hydraulic — A device in which power is transferred from one pressurized medium (pneumatic) to another (hydraulic) without intensification.

Additive — A chemical added to a fluid to impart new properties or to enhance those which already exist.

Aftercooler — A device which cools a gas after it has been compressed.

Afterfilter — A filter which follows the compressed air dryer and usually for the protection of downstream equipment from desiccant dust.

Air — A gas mixture consisting of nitrogen, oxygen, argon, carbon dioxide, hydrogen, small quantities of neon, helium and other inert gases.

Air, compressed (pressure) — Air at any pressure greater than atmospheric pressure.

Air, dried — Air with moisture content lower than the maximum allowable for a given application.

Air, free — Air at ambient temperature, pressure, relative humidity, and density.

Air, saturated — Air at 100 percent relative humidity, with a dew point equal to temperature.

Air, standard — Air at a temperature of 68° F, a pressure of 14.70 pounds per square inch absolute, and a relative humidity of 36% (0.0750 pounds per cubic foot). In gas industries the temperature of "standard air" is usually given as 60° F.

Air bleeder — A device for removal of air.

Air breather — A device permitting air movement between atmosphere and the component in which it is installed.

Air motor — A device which converts pneumatic fluid power into mechanical force and motion. It usually provides rotary mechanical motion.

Amplification — The ratio between the output signal variations and the control signal variations (for analog devices only).

Amplification, power — The ratio between the output power variation and the corresponding input (control) power variation (for analog devices only).

Amplification, pressure — Ratio between the outlet pressure and the inlet (control) pressure.

Analog — Of or pertaining to the general class of fluidic devices or circuits whose output varies as a continuous function of its input.

AND Device — A control device which has its output in the logical 1 state if and only if all the control signals assume the logical 1 state.

Aniline point — The lowest temperature at which a liquid is completely miscible with an equal volume of freshly distilled aniline (ASTM Designation D611-64).

Bernoulli's Law — If no work is done on or by a flowing frictionless liquid its energy due to pressure and velocity remains constant at all points along the streamline.

Boyle's Law — The absolute pressure of a fixed mass of gas varies inversely as the volume, provided the temperature remains constant.

Breathing capacity — A measure of flow rate through an air breather.

Bulk modulus — The measure of resistance to compressibility of a fluid. It is the reciprocal of compressibility.

Cavitation — A localized gaseous condition within a liquid stream which occurs where the pressure is reduced to the vapor pressure.

Charles' Law — The volume of a fixed mass of gas varies directly with absolute temperature, provided the pressure remains constant.

Circuit — An arrangement of interconnected components and parts.

Circuit, meter-in — A speed control circuit in which the control is achieved by regulating the supply flow to the actuator.

Circuit, meter-out — A speed control circuit in which the control is achieved by regulating the exhaust flow from the actuator.

Circuit, open — A circuit in which return fluid is directed to the reservoir before reciprocation.

Circuit, regenerative — A circuit in which pressurized fluid discharged from a component is returned to the system to reduce power input requirements.

Circuit, sequence — A circuit which establishes the order in which two or more phases of a circuit occur.

Compatibility, seal — Ability of an elastomer to resist the action of a fluid on its dimensional and mechanical properties.

Compressibility — The change in volume of a unit volume of a fluid when subjected to a unit change in pressure.

Compressor — A device which converts mechanical force and motion into pneumatic fluid power.

Condensation — The process of changing a vapor into a liquid condensate by the extraction of heat.

Conditioner, air — An assembly comprising a filter, a pressure reducing valve with gage, and a lubricator, intended to deliver fluid in suitable condition.

Conductor — A component whose primary function is to contain and direct fluid.

Contaminant — Any material or substance which is unwanted or adversely affects the fluid power system or components, or both.

Control — A device used to regulate the function of a component or system.

Controller — A device which senses a change of fluid state and automatically makes adjustments to maintain the state of the fluid between predetermined limits, e.g., pressures, temperatures, etc.

Cushion — A device which provides controlled resistance to motion.

Cylinder — A device which converts fluid power into linear mechanical force and motion. It usually consists of a movable element such as a piston and piston rod, plunger or ram, operating within a cylindrical bore.

Cylinder, adjustable stroke — A cylinder equipped with adjustable stops at one or both ends to limit piston travel.

Cylinder, area, piston rod — Cross-sectional area of the piston rod.

Cylinder, area, piston, effective — Area upon which fluid pressure acts to provide a mechanical force.

Cylinder, bore — The internal diameter of the cylinder body.

Cylinder cap — A cylinder end closure which completely covers the bore area.

Cylinder capacity — The volume of a theoretically incompressible fluid that would be displaced by the piston during a complete stroke. (For double acting cylinders it must be given for both directions of stroke.)

Cylinder capacity, extending — Volume required for one full extension of a cylinder.

Cylinder capacity, retracting — Volume (annular) absorbed by one full retraction of the cylinder.

Cylinder, cushioned — A cylinder with a piston-assembly deceleration device at one or both ends of the stroke.

Cylinder, differential — A double acting cylinder in which the ratio of the area of the bore to the annular area between the bore and the piston rod is significant in circuit function.

Cylinder, double acting — A cylinder in which fluid force can be applied to the movable element in either direction.

Cylinder, double rod — A cylinder with a single piston and a piston rod extending from each end.

Cylinder, dual stroke — A cylinder combination which provides two working strokes.

Cylinder, duplex — A unit comprised of two cylinders with independent control, mechanically connected on a common axis to provide three or four positions depending on the method of application.

Cylinder force, theoretical — The pressure multiplied by the effective piston area, ignoring friction. For double acting cylinders the value must be given for both directions of stroke.

Cylinder, piston type — A cylinder in which the piston has a greater cross-sectional area than the piston rod.

Cylinder, plunger (ram) — A cylinder in which the piston has the same cross-sectional area as the piston rod.

Cylinder, rotary actuator — A cylinder which translates piston reciprocation into oscillation of an output shaft.

Cylinder, rotating — A cylinder in which the piston and piston rod, plunger or ram, is permitted to rotate with reference to the cylinder housing.

Cylinder, single acting — A cylinder in which

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the fluid force can be applied to the moveable element in only one direction.

Cylinder, tandem — Arrangement of at least two pistons on the same rod moving in separate chambers on the same cylinder body allowing the compounding of force on the piston rod.

Cylinder, telescoping — Cylinder with two or more stages or extensions, achieved by hollow piston rods sliding one within the other (may be single or double acting).

Cylinder, tie rod — A cylinder with head and cap end closures that are secured by tie rods.

Darcy's Formula — A formula used to determine the pressure drop due to flow friction through a conduit.

Deliquescent — Moisture is separated by using the absorptive properties of special hygroscopic compounds.

Desiccant — Material that tends to remove moisture from compressed air.

Dew point — The temperature at which vapors in a gas condense. For practical purposes, it must be referred to a stated pressure.

Digital — Of or pertaining to the general class of fluidic devices or circuits whose output varies in discrete steps (i.e., pulses or "on-off" characteristics).

Displacement, volumetric — Volume absorbed or displaced per stroke of a cylinder or per cycle of a pump or motor .

Dissolved air — Air which is dispersed at a molecular level in hydraulic fluid to form a single phase.

Dissolved water — Water which is dispersed at a molecular level in hydraulic fluid to form a single phase.

Dither — A low amplitude, relatively high frequency periodic electrical signal, sometimes superimposed on the servovalve input to improve system resolution. Dither is expressed by the dither frequency (Hz) and the peak-to-peak dither current amplitude.

Droop — The deviation between no flow secondary pressure and secondary pressure at a given flow.

Dryer, compressed air — A device for reducing the moisture content of the working medium.

Efficiency — Ratio of output to the corresponding input.

Emulsion — A homogeneous dispersion of two immiscible liquids.

Emulsion, oil in water — A dispersion of oil in a continuous phase of water.

Emulsion, water in oil — A dispersion of water in a continuous phase of oil.

Entrained air — A mechanical mixture of air bubbles having a tendency to separate from the liquid phase.

Expectancy, life — The predicted working period during which a component or system will maintain a specified level of performance under specified conditions. Sometimes expressed in statistical terms as a probability.

Filter — A device whose primary function is the removal by porous media of insoluble contaminants from a liquid or a gas.

Filter, by-pass (reserve) — A filter which provides an alternate unfiltered flow path around the filter element when a preset differential pressure is reached.

Filter, spin-on — A filter with an element sealed in its own pressure housing for independent mounting to the filter, spin-on.

Filter (strainer) — A coarse hydraulic filter usually of woven wire construction. This may be in the form of a complete filter or just an element.

Filtration ratio ($\beta\mu$) — The ratio of the number of particles greater than a given size (μ) in the influent fluid to the number of particles greater than the same size (μ) in the effluent fluid.

Fitting — A connector or closure for fluid power lines and passages.

Fitting, compression — A fitting which seals and grips by manual adjutable deformation.

Fitting, flange — A fitting which utilizes a radially extending collar for sealing and connection.

Fitting, flared — A fitting which seals and grips by a pre-formed flare at the end of the tube.

Fitting, flareless — A fitting which seals and grips by means other than a flare.

Flash point — The temperature to which a liquid must be heated under specified conditions of the test method to give off sufficient vapor to form a mixture with air that can be ignited momentarily by a flame.

Flip flop — A digital component or circuit with two stable states and sufficient hysteresis so that it has "memory." Its state is changed with a control pulse; a continuous control signal is not necessary for it to remain in a given state.

Flow — Movement of fluid generated by pressure differences.

Flow characteristic curve — The change in regulated (secondary) pressure occuring as a result of a change in the rate of air flow over the operating range of the regulator.

Flow, laminar (streamline) — A flow situation in which fluid moves in parallel lamina or layers.

Flow, output — Flow rate discharged at the outlet port.

Flow, turbulent — A flow situation in which the fluid particles move in a random fluctuating manner.

Flow rate — The volume, mass or weight of a fluid passing through any conductor per unit of time.

Fluid — A liquid, gas or combination thereof.

Fluid, anti-corrosive — A fluid containing metal corrosion inhibitors.

Fluid, aqueous — A fluid which contains water as a major constituent besides the organic material. The fire resistance properties are derived from the water content.

Fluid, fire resistant — A fluid difficult to ignite which shows little tendency to propagate flame.

Fluid, hydraulic — A fluid suitable for use in a hydraulic system.

Fluid, Newtonian — Fluid having a viscosity that is always independent of the rate of shear.

Fluid, pneumatic — A fluid suitable for use in a pneumatic system

Fluid, rust protection — Capacity of a fluid to prevent the formation of rust under specified conditions.

Fluid capacity — The liquid volume coincident with the "high" mark of the level indicator.

Fluid friction — Friction due to the viscosity of fluids.

Fluid logic — A branch of fluid power associated with digital signal sensing and information processing, using components with or without moving parts.

Fluid miscibility — Capacity of fluids to be mixed in any ratio without separation into phases.

Fluid power — Energy transmitted and controlled through use of a pressurized fluid.

Fluid power system — A system that transmits and controls power through use of a pressurized fluid within an enclosed circuit.

Fluid stability — Resistance of a fluid to permanent changes in properties.

Fluid stability, oxidation — Resistance of a fluid to permanent changes caused by chemical reaction with oxygen.

Force motor — A type of electromechanical transducer having linear motion used in the input stages of servovalves.

Free air — Any compressible gas, air or vapor trapped within a hydrauic system that does not condense or dissolve to form a part of the system fluid.

Free water — Water droplets or globules in the system fluid that tend to accumulate at the bottom or top of the system fluid depending on the fluid's specific gravity.

Frequency response — The changes, under steady-state conditions, in the output variable which are caused by a sinusoidal input variable.

Gage, bourdon tube — A pressure gage in which the sensing element is a curved tube that tends to straighten out when subjected to internal fluid pressure.

Gage, diaphragm — A gage in which the sensing element is relatively thin and its inner portion is free to deflect with respect to its periphery.

Gage, (instrument) — An instrument or device for measuring, indicating, or comparing a physical characteristic.

Gage, pressure — A gage which indicates the pressure in the system to which it is connected.

Gage damper (snubber) — A device employing a fixed or variable restrictor inserted in the pipeline to a pressure gage, to prevent damage to the gage mechanism caused by rapid fluctuations of fluid pressure.

Gage protector — A device inserted in the pipeline to a pressure gage and arranged to isolate the pressure gage from the fluid pressure if this exceeds a predetermined limit. The device can usually be adjusted to suit the range of the pressure gage.

Head — The height of a column or body of fluid above a given point expressed in linear units. Head is often used to indicate gage pressure. Pressure is equal to the height times the density of the fluid.

Head, cylinder — The cylinder end closure which covers the differential area between the bore area and the piston rod area.

Head, friction — The head required to overcome the friction at the interior surface of a conductor and between fluid particles in motion. It varies with flow, size, type and condition of conductors and fittings, and the fluid characteristics.

Head, pressure — The pressure due to the height of a column or body of fluid. (It is usually expressed in inches [mm]).

Head, static — The height of a column or body of fluid above a given point.

Heat exchanger — A device which transfers heat through a conducting wall from one fluid to another.

Heater — A device which transfers heat through a conducting wall from one fluid to another.

Hose — A flexible line or conductor whose nominal size is its inside diameter.

Hose, wire braided — Hose consisting of a flexible material reinforced with woven wire braid.

Hydraulic amplifier — A fluid device which enables one or more inputs to control a source of fluid power and thus is capable of delivering at its output an enlarged reproduction of the essential characteristics of the input. Hydraulic amplifiers may utilize sliding spools, nozzle-flappers, jet pipes, etc.

Hydraulic motor — A device which converts hydraulic fluid power into mechanical force and motion. It usually provides rotary mechanical motion.

Hydraulic motor efficiency, hydromechanical

— Ratio of the effective torque to the derived torque.

Hydraulic motor efficiency, overall — Ratio of the output power to the effective hydraulic power.

Hydraulic motor efficiency, volumetric — Ratio of the derived input flow to the effective input flow.

Hydraulic motor, fixed displacement — A hydraulic motor in which the displacement per unit of output motion cannot be varied.

Hydraulic motor, flow, input — Flow rate crossing the transverse plane of the inlet port.

Hydraulic motor, gear — A motor in which two or more gears act in arrangement as working members.

Hydraulic motor, gear, external — A motor having two or more external gears.

Hydraulic motor, gear, internal — A motor with an internal gear in engagement with one or more external gears.

Hydraulic motor, vane — A motor in which the fluid under pressure acting on a set of radial vanes causes rotation of an internal member.

Hydraulic steeping motor — A hydraulic motor which follows the commands of a stepped input signal to achieve positional accuracy.

Hydraulics — Engineering science pertaining to liquid pressure and flow.

Hydrodynamics — The engineering science which governs the movement of liquids and the forces opposing that movement.

Hydrokinetics — Engineering science pertaining to the energy of liquid flow and pressure.

Hydropneumatics — Pertaining to the combination of hydraulic and pneumatic fluid power.

Hydrostatic transmission — Combination of one or more hydraulic pumps and motors forming a unit.

Hydrostatics — Engineering science pertaining to the energy of liquids at rest.

Indicator, differential pressure — An indicator which signals a difference in pressure between two points which span the filter element.

Inhibitor — Any substance which, when present in very small proportions, slows, prevents or modifies chemical reactions such as corrosion or oxidation.

Intensification, ratio of — The ratio of the secondary pressure to the primary pressure or of the primary flow rate to the secondary flow rate.

Intensifier — A device which converts low pressure fluid power into higher pressure fluid power.

Intensifier, double acting — A unit which intensifies the secondary fluid pressure whatever the direction of flow of the primary fluid.

Intensifier, single acting — A unit which only intensifies the fluid pressure in one direction of flow of the primary fluid.

Intensifier, single shot — An intensifier in which the continuous application of primary fluid at the inlet port can only give a limited volume of secondary fluid.

Joint — A line positioning connector.

Joint, rotary — A joint connecting lines which have relative operational rotation.

Line — A tube, pipe, or hose for conducting fluid.

Line, return — A pipe (conductor) to return the working fluid to the reservoir.

Line, working — A line which conducts fluid power.

Lubricator — A device which adds controlled or metered amounts of lubricant into a fluid power system.

Magnetic plug — A plug which attracts and holds ferromagnetic particles.

Manifold — A conductor which provides multiple connection ports.

Maximum inlet pressure — The maximum rated gage pressure applied to the inlet port of the regulator.

Moving parts logic — The technology of achieving logic control by means of fluid devices having moving parts.

Muffler — A device for reducing gas flow noise. Noise is decreased by back pressure control of gas expansion.

Newt — A unit of kinematic viscosity in the English system. It is expressed in square inches per second (see Stokes).

NOR device — A control device which has its output in the logical 1 state if and only if all the control signals assume the logical 0 state.

NOT device — A control device which has its output in the logical 1 state if and only if the control signal assumes the logical 0 state. The NOT device is a single input NOR device.

OR device — A control device which has its output in the logical 0 state if and only if all the control signals assume the logical 0 state.

Output stage — The final stage of hydraulic amplification used in a servovalve.

Packing — A sealing device consisting of bulk deformable material of one or more mating deformable elements, reshaped by manually adjustable compression to obtain and maintain effectiveness. It usually uses axial compression to obtain radial sealing.

Pascal's Law — A pressure applied to a confined fluid at rest is transmitted with equal intensity throughout the fluid.

Petroleum fluid — A fluid composed of petroleum oil which may contain additives and/or inhibitors.

Pipe — A conductor whose outside diameter is standardized for threading. Pipe is available in Standard, Extra Strong, Double Extra Strong or Schedule wall thickness.

Piston rod — The element transmitting mechanical force and motion from the piston.

Pneumatics — Engineering science pertaining to gaseous pressure and flow.

Poise — The standard unit of dynamic viscosity in the c.g.s. (centimeter-gram-second) system. It is the ratio of the shearing stress to the shear rate of fluid and is expressed in millipascal sec. (= 1 centipoise).

Port — A terminus of a passage in a component to which conductors can be connected.

Port, differential pressure — A port(s) which provides a passage to the upstream and downstream sides of a component.

Pour point — The lowest temperature at which a liquid will flow under specified conditions (ASTM Designation D97-66).

Power unit — A combination of pump, pump drive, reservoir, controls and conditioning components which may be required for its application.

Pressure — Force per unit area, usually expressed in pounds per square inch (bar).

Pressure, absolute — The pressure above zero absolute, i.e., the sum of atmospheric and gage pressure. In vacuum related work it is usually expressed in millimetres of mercury (mm Hg).

Pressure, atmospheric — Pressure exerted by the atmosphere at any specific location. (Sea level pressure is approximately 14.7 pounds per square inch absolute, 1 bar = 14.5 psi).

Pressure, back — The pressure encountered on the return side of a system.

Pressure, breakloose (breakout) — The minimum pressure which initiates movement.

Pressure, burst — The pressure which causes failure of and consequential loss of fluid through the product envelope.

Pressure, charge — The pressure at which replenishing fluid is forced into a fluid power system

Pressure, control range — The permissible limits between which system pressure may be set.

Pressure, cracking — The pressure at which a pressure operated valve begins to pass fluid.

Pressure, differential (pressure drop) — The difference in pressure between any two points of a system or a component.

Pressure, gage — Pressure differential above or below ambient atmospheric pressure.

Pressure, induced — Pressure generated by an externally applied force.

Pressure, inlet — The pressure at the apparatus inlet port.

Pressure, intensified — In a fluid power cylinder, the outlet pressure required to slow the piston rod extending under regulated pressure introduced at the cap end.

Pressure, maximum inlet — The maximum rated gage pressure applied to the inlet.

Pressure, nominal — A pressure value assigned to a component or system for the purpose of convenient designation.

Pressure, outlet — Pressure at the apparatus outlet port.

Pressure, override — The difference between the cracking pressure of a valve and the pressure reached when the valve is passing its rated flow.

Pressure, peak — The maximum pressure encountered in the operation of a component.

Pressure, pilot — The pressure in the pilot circuit.

Pressure, precharge — The pressure of compressed gas in an accumulator prior to the admission of a liquid.

Pressure, proof — The non-destructive test pressure, in excess of the maximum rated operating pressure, which causes no permanent deformation, excessive external leakage, or other resulting malfunction.

Pressure, rated — The qualified operating pressure which is recommended for a component or a system by the manufacturer.

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 resulting from surge conditions.

Pressure, system — The pressure which overcomes the total resistances in a system. It includes all losses as well as useful work.

Pump — A device which converts mechanical force and motion into hydraulic fluid power.

Pump, fixed displacement — A hydraulic pump in which the volume displaced per cycle cannot be varied.

Pump, gear — Pump in which two or more gears act in engagement as pumping members.

Pump, gear, external — Pump with two or more external gears.

Pump, gear, internal — Pump with an internal gear in engagement with one or more external gears.

Pump, hydraulic — A device which converts mechanical force and motion into hydraulic fluid power.

Pump, multiple stage — Two or more hydraulic pumps in series.

Pump, piston — Pump in which the fluid volume is displaced by one or more reciprocating pistons.

Pump, piston, axial — Pump having several pistons with mutually parallel axes which are arranged around and parallel to a common axis.

Pump, piston, inline — Pump having several pistons with mutually parallel axes arranged on

a common plane.

Pump, piston, radial — Pump having several pistons arranged to operate radially.

Pump, screw — A hydraulic pump having one or more screws rotating in a housing.

Pump, vane — A hydraulic pump having multiple radial vanes within a supporting rotor.

Pump, vane, balanced — Pump in which the transverse forces on the rotor are balanced.

Pump, vane, unbalanced — Pump in which the transverse forces on the rotor are not balanced.

Pump, variable displacement — A hydraulic pump in which the volume displaced per cycle can be varied.

Pump-motor — Unit which functions either as a pump or as a rotary motor.

Quick disconnect coupling — A component which can quickly join or separate a fluid line without the use of tools or special devices.

Regenerative — The capacity of the dryer to separate moisture can be restored without replacing the drying compound.

Regulator, air line pressure — A regulator which transforms a fluctuating air pressure supply to provide a constant lower pressure output.

Refrigerated — Moisture is separated by lowering the air temperature by means of a refrigeration compressor and heat exchanger.

Reservoir (tank) — A container for storage of liquid in a fluid power system.

Reservoir, hydraulic — A reservoir for storing and conditioning a liquid in a hydraulic system.

Reservoir, pressure sealed — A sealed reservoir for storage of fluids under pressure.

Reynolds Number — A numberical ratio of the dynamic forces of mass flow to the shear stress due to viscosity. Flow usually changes from laminar to turbulent between Reynolds Numbers 2,000 and 4,000.

Reyn — The standard unit of absolute viscosity in the English system. It is expressed in pound-seconds per square inch.

Ring, piston — A piston sealing ring. It is usually one of a series and is often split to facilitate expansion or contraction.

Ring, scraper — A ring which removes material by a scraping action.

Ring, O — A ring which has a round cross-section.

Rotation — The direction of rotation is always quoted as viewed looking at the shaft end. In dubious cases, provide a sketch.

Seal, cup — A sealing device with a radial base integral with an axial cylindrical projection at its outer diameter.

Seal, dynamic — A sealing device used between parts that have relative motion.

Seal, elastomer — A material having rubber-like properties; i.e., having the capacity for large deformation and rapid and substantially complete recovery on release from the deforming force.

Seal, rod (shaft) — A sealing device which seals the periphery of a piston rod.

Seal, static (gasket) — A sealing device used between parts that have no relative motion.

Sensor — A device which detects and transmits changes in external conditions.

Separator — A device whose primary function is to isolate contaminants by physical properties other than size. (Separators remove gas from liquid medium or remove liquid from gaseous medium).

Servovalve — A valve which modulates output as a function of an input command.

Servovalve, electrohydraulic — A servovalve which is capable of continuously controlling hydraulic output as a function of an electrical input.

Servovalve, electrohydraulic, flow control — An electrohydraulic servovalve whose primary function is control of output flow.

Servovalve hysteresis — The difference in the servovalve input currents required to produce the same output during a single cycle of valve input current when cycled at a rate below that at which dynamic effects are important.

Servovalve null leakage — Total internal leakage from the valve in the null position.

Servovalve, pressure control — A hydraulic servovalve whose primary function is the control of output pressure.

Silencer — A device for reducing gas flow noise. Noise is decreased by tuned resonant control of gas expansion.

Solenoid, digital — Electrically energized device which generates on-off signals.*

Solenoid, proportional — An electrical device that reacts proportionally to strength of electrical signal.*

Specific gravity, liquid — The ratio of the weight of a given volume of liquid to the weight of an equal volume of water.

Stage — A hydraulic amplifier used in a servovalve. Servovalves may be single stage, two stage, three stage, etc.

Standard — A document, or an object for physical comparison, for defining product characteristics, products, or processes: prepared by a consensus of a properly constituted group of those substantially affected and having the qualifications to prepare the standard for voluntary use.

Stokes — The standard unit kinematic viscosity in the c.g.s. (centimetre-gram-second) system. It is expressed in square centimetres per second; 1 centistokes equals .01 stokes.

Surface tension — The surface force of a liquid in contact with a fluid by which it tends to assume a spherical form and to present the least possible surface. It is expressed in pounds per foot or dynes per centimetre.

Surge — A transient rise of pressure or flow.

Switch, float — An electric switch which is responsive to liquid level.

Switch, flow — An electric switch operated by fluid flow.

Switch, pressure — An electric switch operated by fluid pressure.

Switch, pressure differential — An electric switch operated by a difference in pressure.

Synthetic fluid — Fluid other than mineral oil which has been artificially compounded for use in a fluid power system.

Synthetic fluid, silicate ester — A fluid compound of organic silicates. It may contain additives.

Temperature, ambient — The temperature of the environment in which an apparatus is working.

Tie rod — An axial external cylinder element which traverses the length of the cylinder. It is prestressed at assembly to hold the ends of the cylinder against the tubing. Tie rod extensions can be a mounting device.

Torque — Rotary force transmitted by the driving shaft of the pump.

Torque motor — A type of electromechanical transducer having rotary motion used in the input stages of servovalves.

Torr — A unit of pressure equal to 1/760 of an atmosphere and very nearly equal to 1mm Hg @0°C.

Torricelli's Theorem — The liquid velocity at an outlet discharging into the free atmosphere is proportional to the square root of the head.

Transducer, flow — A device which converts fluid flow to an electrical signal.

Transducer, pressure — A device which converts fluid pressure to an electrical signal.

Trunnion — A mounting device consisting of a pair of opposite projecting cylindrical pivots. The cylindrical pivot pins are at right angle or normal to the piston rod centerline to permit the cylinder to swing in a plane.

Tube — A conductor whose size is its outside diameter. Tube is available in varied wall thickness and materials.

Vacuum — Pressure less than ambient atmospheric pressure.

Vacuum pump — A device which uses mechanical force and motion to evacuate gas from a connected chamber to create subatmospheric pressure.

Valve — A device which controls fluid flow direction, pressure, or flow rate.

Valve actuator — The valve part(s) through which force is applied to move or position flow-directing elements.

Valve, air — A valve for controlling air.

Valve, cartridge — A valve with working parts contained in a cylindrical body. The cylindrical body must be inserted into a housing for use. Ports through the body cooperate with ports in the containing housing.

Valve, directional control — A valve whose primary function is to direct or prevent flow through selected passages.

Valve, directional control, check — A directional control valve which permits flow of fluid in only one direction.

Valve, directional control, 4-way — A directional control valve whose primary function is to pressurize and exhaust two ports.

Valve, directional control, 3-way — A directional control valve whose primary function is to pressurize and exhaust a port.

Valve, directly operated — A valve in which the controlling forces acting on the element directly influence the movement of the control elements.

Valve, electrohydraulic, proportional — A valve which responds proportionally to input signals.*

Valve, flow control, bypass — A pressure compensated flow control valve which regulates the working flow diverting surplus fluid to reservoir or to a second service.

Valve, flow control, deceleration — A flow control valve which gradually reduces flow rate to provide deceleration.

Valve, flow control (flow metering) — A valve whose primary function is to control flow rate.

Valve, flow control, pressure compensated — A flow control valve which controls the rate of flow independent of system pressure.

Valve, flow dividing — A valve which divides the flow from a single source into two or more branches.

Valve, flow dividing, pressure compensated — A flow dividing valve which divides the flow at constant ratio regardless of the difference in the resistances of the branches.

Valve, hydraulic — A valve for controlling liquid.

Valve, needle — A flow control valve in which the adjutable control element is a tapered needle. Its usual purpose is the accurate control of the rate of volume of flow.

Valve, pilot — A valve applied to operate another valve or control.

Valve, pilot operated (indirect) — A valve in which a relatively small flow through an integral vent line relief (pilot) controls the movement of the main element.

**Not part of NFPA Standard T2.1.1R1.*