



Industrial



Mobile



Marine



for all your hydraulic needs...



AL ZERWA TRADING CO. LLC

Basis Formulas

Formula For:	Word Formula:	Letter Formula:
FLUID PRESSURE In Pounds/Square Inch	Pressure = $\frac{\text{Force (Pounds)}}{\text{Unit Area (Square Inches)}}$	P = F/A or psi = F/A
FLUID FLOW RATE In Gallons/Minute	Flow Rate = $\frac{\text{Volume (Gallons)}}{\text{Unit Time (Minute)}}$	Q = V/T
FLUID POWER In Horsepower	Horsepower = $\frac{\text{Pressure (psi) x Flow (GPM)}}{1714}$	hp = PQ/1714

Actuator Formulas

Formula For:	Word Formula:	Letter Formula:
CYLINDER AREA In Square Inches	Area = $\pi \times \text{Radius}^2$ (Inches)	A = πr^2
	Area = (P/4) x Diameter ² (Inches)	A = (πD^2)/4 or A = .785D ²
CYLINDER FORCE In Pounds, Push or Pull	Area = Pressure (psi) x Net Area (sq in.)	F = psi x A or F = PA
CYLINDER VELOCITY or SPEED In Feet/Second	Velocity = $\frac{231 \times \text{Flow Rate (GPM)}}{12 \times 60 \times \text{Net Area (sq in.)}}$	v = 231Q/720A or v = .3208Q/A
CYLINDER VOLUME CAPACITY In Gallons of Fluid	Volume = $\frac{\pi \times \text{Radius}^2 \text{ (in.)} \times \text{Stroke (in.)}}{231}$	V = ($\pi r^2 L$)/231
	Volume = $\frac{\text{Net Area (sq. in.)} \times \text{Stroke (in.)}}{231}$	V= (A L)/231
CYLINDER FLOW RATE In Gallons/Minute	Flow Rate = $\frac{12 \times 60 \times \text{Velocity (Ft/Sec)} \times \text{Net Area (sq. in.)}}{231}$	Q = (720vA)231 or Q = 3.117vA
FLUID MOTOR TORQUE In Inch Pounds	Torque = $\frac{\text{Pressure (psi)} \times \text{F.M. Displacement (Cu. In./Rev.)}}{2\pi}$	T = psi d/2 π or T = Pd/2 π
	Torque = $\frac{\text{Horsepower} \times 63025}{\text{rpm}}$	T = 63025 hp/n
	Torque = $\frac{\text{Flow Rate (GPM)} \times \text{Pressure (psi)} \times 36.77}{\text{rpm}}$	T = 36.77QP/n or T = 36.77Qpsi/n
FLUID MOTOR TORQUE/100 psi In Inch Pounds	$\frac{\text{Torque}}{100} = \frac{\text{F.M. Displacement (Cu. In./Rev.)}}{.0628}$	T _{100psi} = d/.0628
FLUID MOTOR SPEED In Revolutions/Minute	Speed = $\frac{231 \text{ Flow Rate (GPM)}}{\text{F.M. Displacement (Cu. In./Rev.)}}$	n = 231 Q/d
FLUID MOTOR POWER In Horsepower Output	Horsepower = $\frac{\text{Torque Output (Inch Pounds)} \times \text{rpm}}{63025}$	hp = Tn/63025

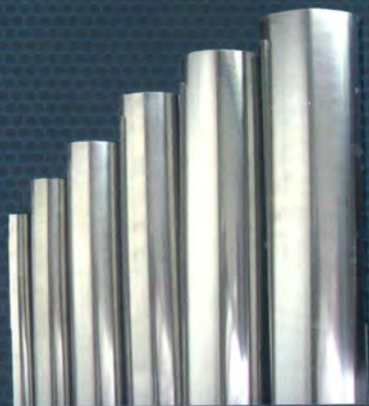
Volume and Capacity Equivalents

	Cubic Inches	Cubic Feet	Cubic Centimeters	Liters	U.S. Gallons	Imperial Gallons	Water at Max Density	
							Pounds of Water	Kilograms of Water
Cubic Inches	1	0.0005787	16.384	0.016384	0.004329	0.0036065	0.361275	0.0163872
Cubic Feet	1728	1	0.037037	28.317	7.48052	6.23210	62.4283	28.3170
Cubic Centimeters	0.0610	0.0000353	1	0.001	0.000264	0.000220	0.002205	0.0001
Liters	61.0234	0.0353145	0.001308	1	0.264170	0.220083	2.20462	1
U.S. Gallons	231	0.133681	0.004951	3.78543	1	0.833111	8.34545	3.78543
Imperial Gallons	277.274	0.160459	0.0059429	4.54374	1.20032	1	10.0172	4.54373
Pounds of Water	27.6798	0.0160184	0.0005929	0.453592	0.119825	0.0998281	1	0.453593



Honed tube

Honed tube for hydraulic cylinders are obtained from high quality cold drawn tubes, available in a wide dimensional range, ranging from 40 mm ID to 250 mm ID of Steel grade E355 / ST52-3.



Chrome Rod

We are the largest stockist in the GCC for Hard Chromed Bars. Our bars are of European origin with sizes ranging from $\varnothing$ 12 to $\varnothing$ 200 mm. Our chrome bar possesses the following properties. Steel grade: CK45 EN 10083 C45E Din:17200



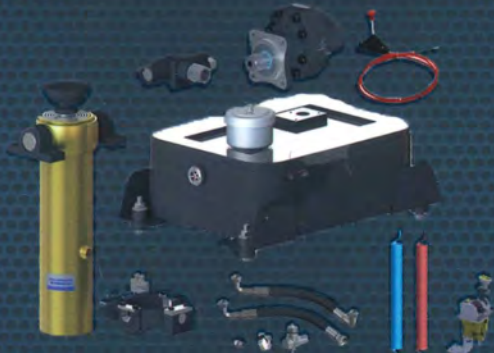
Cylinder Components

We stock a wide range of ready-made cylinder components which consist of gland nuts, pistons, end caps, ports, bearings etc which range from 40 mm to 250 mm bore cylinder. These components assist in a swift assembly of cylinders and reduce manufacturing cost.



Telescopic Cylinders

We supply hydraulically operated single and double acting multi-stage telescopic cylinders and single stage welded rod cylinders which have been proven and are being used in a wide range of applications



Wet Kits

We are a premier supplier of Hidromas wet kits, we also supply spares and accessories. This is a complete package for vehicles and are very convenient for swift assembly of hydraulic systems. We provide many sizes and power categories.



Hydraulic Seals

We manufacture more than 170 profiles of 15 different materials of any size of seals up to 2500 mm in Diameter. We also manufacture dynamic and flash free O-rings in various diameters.



Hydraulic Hoses

The products we supply are carefully chosen for quality and performance. You can count on us as your local supplier for hydraulic hoses. We stock hoses which are made in Italy.



Hose Fittings

We Import hose fittings of the highest quality. Our range includes BSP, NPT, JIC and ORFS Threads in Straight, 90 degrees and 45 degrees.



SAE Flanges

We offer a variety of SAE Flanges, including one-piece (Captive/Bride) Mono flanges, and split flange (Semi-Bride) clamps for use with flanged hose ends or inserts.



Seamless Tube

We hold a large stock of cold drawn seamless steel tubes for Fuel injection and hydraulic instrumentation. We stock tubes varying from 6 mm OD to 60 mm OD and 1 mm to 4 mm.



Hydraulic Tube Fittings

We have a premium collection of GEM tube fittings in BSP, NPT and JIC. We even have Pipe bending facilities at our workshop.



DC Power Pack

The Mini power packs include a choice of DC motors from 500 Watt to 3 Kw. Designed specifically to drive hydraulic pumps these motors have a high performance.



Tube Clamps

For Vibration-dampening we offer pipe clamps in different series for use in various applications. Our core ranges are single, double and twin pipe clamps.



Electric Winch

We offer trail tough, field proven electric planetary winches for the consumer off roading and self recovery markets. In size ranging from 2500 lbs to 18000 lbs with power rating of 12 V and 24 V DC



Hydraulic Filters

Our product line ranges from high, medium to low pressure hydraulic filters and filtration systems. We stock various filters such as return line filters, suction filters, various breathers, oil level indicator, diffusers, magnetic cleaners and clogging indicators.



Hand Pump

Precision Engineering features high pressure hydraulic hand pump, designed for portability, durability and easy for use. Working Pressure of 700 bar (10,000 psi).



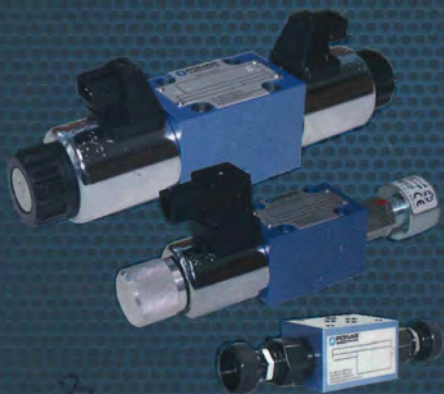
Pressure Gauge

Our prime dealing are with WIKA known to be a market leader in pressure, temperature and level measurement instrumentation. We also stock testing hoses for swift pressure measurement while on jobs.



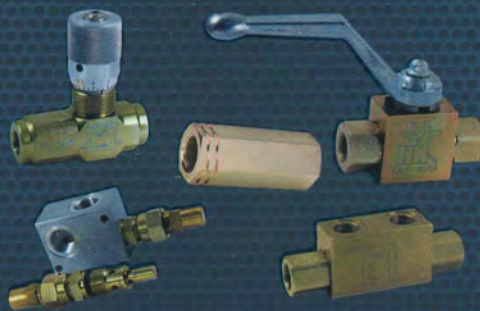
Hydraulic Winches

We deliver fast, powerful planetary winching pull after pull. With working capabilities of 8,000 to 130,000 lbs. Our winches range across applications such as hoisting, pulling, recovering etc.



Solenoid valves

We offer solenoid valves and modular valves that improve the functioning of industrial and mobile hydraulic machinery. We stock all kind of solenoid valves such as Directional control valves, check valve, Relief valve etc.



Line mounted valves

One of our core products are hydraulic valves. We stock a large variety of hydraulic valves which include check valves, over center valves, ball valves, flow regulators, pressure control valves etc.



Manual Control Valves

We offer a wide range of hydraulic control valves for mobile applications. Our ranges of hydraulic control valves ranges from 15 to 250 l/min. Both mono block and sectional directional valves.



PTO Pump

We stock a wide variety of hydraulic piston and gear pumps. Piston pump: flow ranging from 12 cc to 108 cc with the maximum working pressure of 400 bar. Gear pump: Flow ranging from 3 cc to 116 cc with a maximum working pressure of 250 bar.



Manifold Blocks

We offer manifold for hydraulic valves and hydraulic controls in aluminum and ductile Iron in all standard sizes. Which can be side or bottom ported, in SAE and BSPP porting with flanges for larger size such as sub-plates, cover-plates, adapter plates, sandwich plates etc.

Power Take-off

With a very precise purpose, We offer Power Take-off mechanism and devices to a variety of hydraulic systems for industrial, heavy vehicles. We stock a wide range of PTO for different gear boxes of Mitsubishi, Isuzu, Hino, Toyota, Nissan, Man, Mercedes, Volvo, Scania, Iveco etc



Hydraulic Oil Tanks

We provide Moulded Hydraulic Oil Tanks from Stock. We have fully kitted out hydraulic oil tanks with all of their accessories in stock. We can convert your drawing into a tank quickly and cost effectively.



Flow indicators

Flow indicators are designed for continuous monitoring or intermittent use commissioning. They can be used on mobile and industrial hydraulic circuits. Also lubrication and coolant system using oil/water.



Hydraulic Motor

We supply and repair hydraulic motors of Eaton, Vickers, Sauer-Danfoss, Denison, Hydropack, Etc. We Have an in-house Testing facility for testing the Pressure, Speed and Torque of the hydraulic motor.



Modular valve

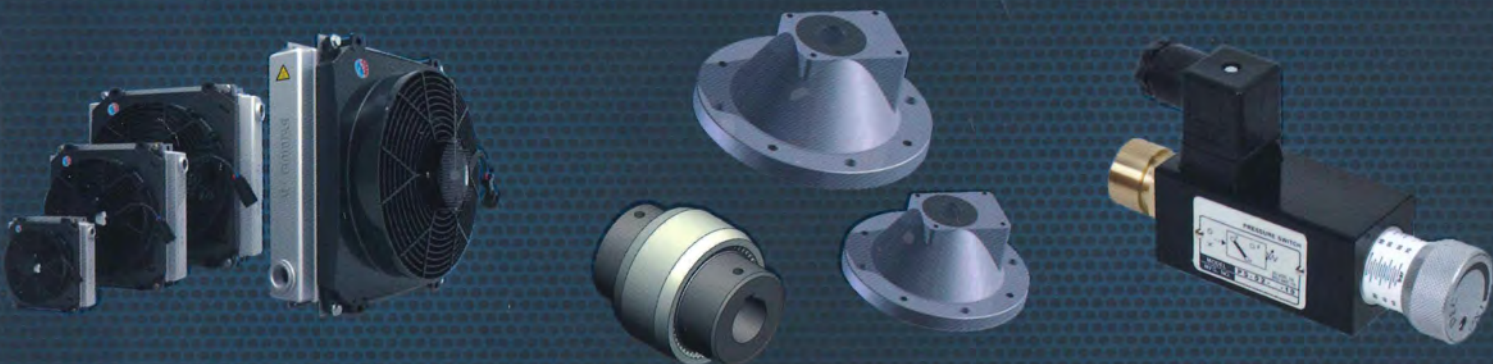
Proportional directional valves are used to control the direction and speed of a user movement. The output flow is proportional to electrical input signal.

Logic Valve

2/2 way cartridge valve can be used to build hydraulic systems as a pilot operated check valve or by combination several elements as a multiple directional control block

Accumulators

Hydraulic accumulators are used in hydraulic systems as an additional power source, an element compensating pressure or as a hydraulic fluid storage tank terminating the hydrostatic process in case of a pump failure.



Heat Exchangers

We offer water-oil and air-oil coolers in a variety of sizes and capacities. Our product range includes autonomous cooling systems, with a pump, and also thermostats, temperature controls and thermostatic valves. Oil-air coolers are available for different power sources: DC (12 V and 24 V), AC (230 V), and also powered by a hydraulic motor.

BellHousing & Coupling

These belhousing along with resilient shaft coupling provide desired Shafts alignment and help reducing undue load on the pump and motor bearings, Vibration and noice.

Pressure Switch

A pressure switch is a form of switch that closes an electrical contact when a certain set pressure has been reached on its input. The switch may be designed to make contact either on pressure rise or on pressure fall.



Industrial Pumps

built in three pieces with an extruded body in high resistance aluminium alloy. The wide choice of shafts, flanges and ports, in compliance with all international standards (SAE, DIN and EUROPEAN) allow for their use in an infinite variety of applications.

Remote Control

Radio controls primarily for industrial lifting and mobile applications. Our radio remote controls can be combined and adapted to the specific application and the specific environment. They meet safety requirements, are now seen in modern industry.

Cylinder Mountings

We Stock Cylinder mountings of standard sizes for assembly of cylinders. Male and female clevis, welded and threaded for both tube and rod end of cylinder. weldable trunions are also available. Sizes from 15-120 bearing sizes are available.



Welded Cylinder



Tie-rod Cylinder



Flanged Cylinder



Pneumatic Cylinder

Hydraulic Cylinders Manufacturing range includes:

Single acting Cylinders
Double acting Cylinders

Type of Cylinders:

Welded Cylinders
Tie-rod Cylinders
Flange Type Cylinders
Pneumatic Cylinders

Technical Specifications:

Tube Bore 40 mm to 140 mm
Rod Dia-16 mm to 160 mm
Strokes up to 8000 mm
Working pressure up to 450 Bar
With various mounting options

Apart from this we also offer special application cylinders for

Automobile Industry
Cement Industry
Stone and Block Factories
Steel and Aluminium Industries
Paper and Printing Industries
Marine Industry

We also make cylinders for Garbage compactors, Car Carriers, Tipping, Recovery Vehicles, Low bed trailers, Tail Gate Trucks, Earth-moving & Construction Equipment etc..



AC Compact Power packs

Specifications:

Tank: 1 to 55 liters
Pump: 0.25 cc to 9.8 cc
Motor : Single and Three phase
up to 5.5 Kw
Valves: Pressure, flow and
Direction control valves
Pressure rating: up to 250 bar.

Application:

Dock lever
Electrical stacker
Car Carrier
Car Lifts
Scissor lift
Emergency lowering
Low Beds
Recovery Vehicles
Table Lift
Truck mounted Cranes
Dumpers
Ariel Platforms
and all customized applications.



AC Industrial Power packs

Specifications:

Tank: 50 to 1000 liters
Pump: 5 cc to 250 cc
Motor : 3 phase up to 40 Kw-50.Hz
Valves: Pressure, flow and
Direction control valves
Pressure rating: up to 450 bar.

Application:

High pressure press Machines
Extrusions
Heavy Lifts
Conveyor systems
Shearing machines
Cutting machines
Crimping
and all customized applications.



Diesel Engine Power packs

Specifications:

Tank: 50 to 1000 liters
Pump: 5 cc to 250 cc
Engine : 3.4 Kw to 168 Kw
Valves: Pressure, flow and
Direction control valves
Pressure rating: up to 450 bar.

Application:

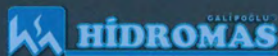
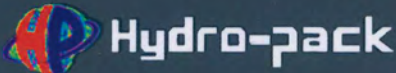
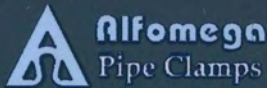
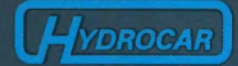
Marine application
Pilling machine
Excavation machines
Brush guards
and all customized applications.



Hot Oil Flushing / Pressure Testing

We have oil flushing units with the desired range of reservoir capacities, pump output, pressure and delivery suitable for all pipeline dimensions and configurations, oil types and viscosity. It can be used for all new systems as part of preventive maintenance or after the modification/repair of existing systems. This specialized technique prevents system break downs and extend the overall lifespan of the components. Hot oil flushing service removes moisture and residual contamination found in equipments.

Our Brands



Power Pack



Cylinders



Instrumentation

Products we deal in

Al Zerwa Trading Co. LLC specializes in design, installation, commissioning, trouble-shooting, overhauling, testing and supply of all hydraulic systems. Our in house engineering capabilities combined with a huge stock of products like pumps, valves, PTO, filters, pre-honed tubes, chromed shafts, seamless tubes, hydraulic seals, hose and pipe fittings, gauges, hydraulic winches enables us to respond swiftly to customers' demand and meet their complete hydraulic requirements. This makes us the most responsive, reliable and economical service provider in this competitive market.



sales_hydraulics@alzerwa.com



www.hydraulics.alzerwa.com