

## Formulae

### Cylinders

Force	Newtons			
Pressure	MPa	Force = P*A	Area = F/P	Pressure = F/A
Area	mm <sup>2</sup>			
Volume	cm <sup>3</sup>		Stroke =	Area =
Area	mm <sup>2</sup>	Volume = (A*ST)/1000	(V*1000)/A	(v*1000)/ST
Stroke	Meters			
Time	Seconds			
Area	mm <sup>2</sup>		Area =	ST =
Flow	l/s	Time = (A*ST)/(Q/1000)	(1000*Q*T)/ST	(1000*Q*T)/A
Stroke	meters			Q = (A*St/1000)/T
Velocity	mm/s(speed)			
Area	mm <sup>2</sup>	Velocity = (Q*16667)/A	Area =	Q = (A*V)/16667
Flow	Q l/m		(Q*16667)/V	

### Pumps

Input Power	kW			
Flow (Q)	L/Min	Power = (Q(l/m)*P(bar)) / 600	Power = $\frac{Q*P}{600}$	Q = IP/Bar*600
Pressure	Bar			Bar = IP(kW)/Q*600
Flow (Q)	L/Min		Disp. =	Rpm =
Displacement	cc/Rev	Q = Disp.*Rpm/1000	Q/Rpm*1000	Q/Disp.*1000

### Motor

Torque	Nm			
Displacement of motor	cc/Rev	Torque = (Bar*cc)/ 62.83	Bar = (Nm*62.83)/ Disp.	Disp. = (Nm*62.83)/ Bar
Pressure	Bar			
Power	kW		T =	RPM =
		kW = (Nm*RPM)/9550	(kW*9550)/RPM	(kW*9550)/Nm
Rpm				
Displacement of motor	Litres	Rpm = Q (l/min)/Disp. (l)	Q (l/min) = Rpm*Disp. (l)	Disp. (l) = Q (l/min)/Rpm