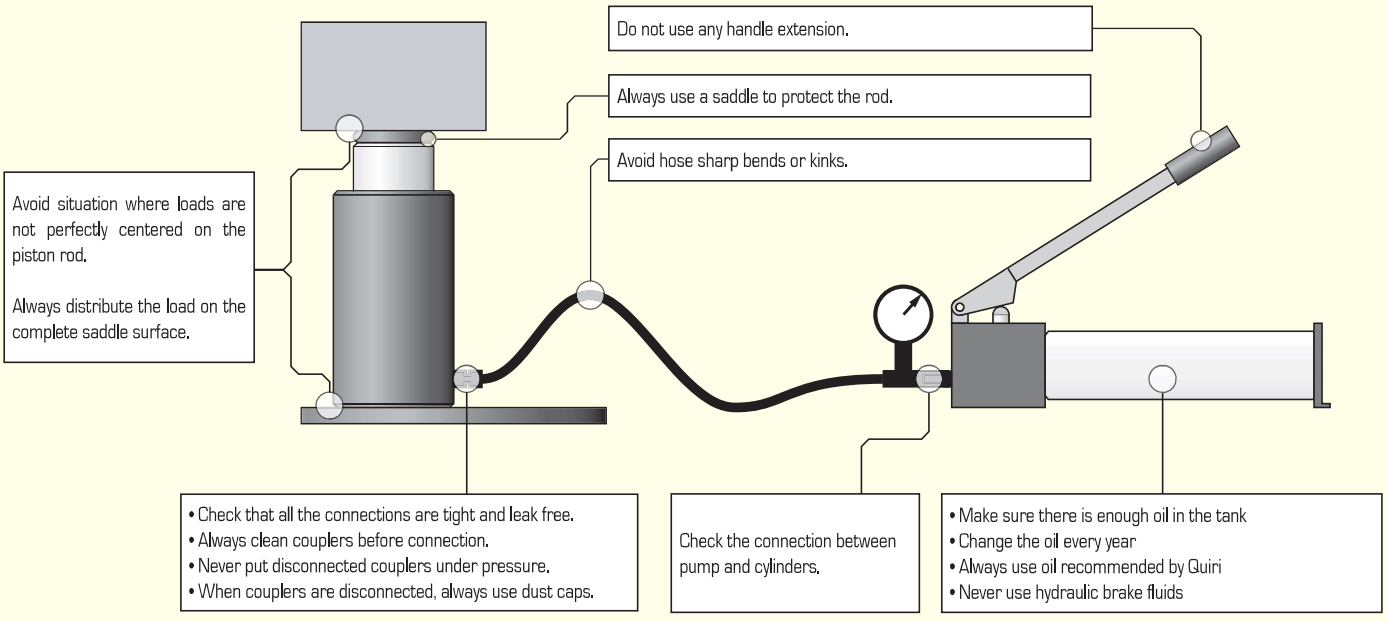
How to choose your hydraulic equipment :

For higher security, efficiency and reliability, we recommend keeping a reserve of 20% or 30% when you choose your force, stroke, and tank oil capacity.

Hydraulic equipment maintenance recommendation :

- Maintain regularly your hydraulic equipment. Keep it away from dust and corrosive or dry atmosphere.
- The equipment is warranted 6 months. Abusive or unsuitable use, modified equipment and use of improper oil are not covered by the warranty.
- Hydraulic equipments must be only repaired by a qualified hydraulic technician.
- Our after sales service is at your disposal for any technical advise or equipment maintenance. Please don't hesitate to contact us. (vist our web site : **www.quiri.com** or contact our after sales department : **+33 (0)3 88 04 84 60**)

Security and use advises



BASICS HYDRAULIC FORMULAS

Definitions - Formulas - Units

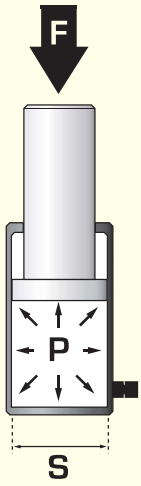
Force :

The force developed by a cylinder corresponds to hydraulic pressure times its effective area.

$$F[T] = \frac{P \times S}{1000}$$

$$F[kN] = \frac{P \times S}{100}$$

Units :
F : Force in kN or in Ton
P : Pressure in bar (kg/cm²)
S : Effective area in cm²



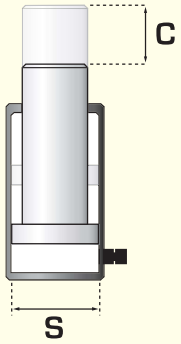
Cylinder oil capacity :

The volume required by a cylinder corresponds to its effective area times its stroke.

$$Vu = S \times C$$

Units :
Vu : Cylinder oil capacity in cm³
S : Effective area in cm²
C : Stroke in cm

If your equipment is composed by several cylinders, you have to add oil capacity of each cylinder to get the equipment total oil capacity.



Oil flow :

The oil flow is generated by the hydraulic pump. It is the oil volume that gives the pump in a certain period.

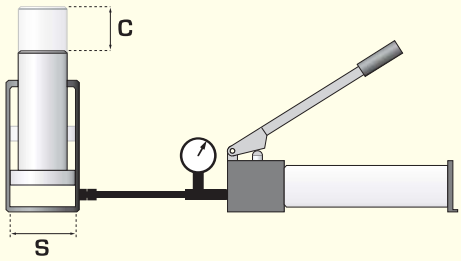
Units : **l/mn (litres/minute)** : Electric, gasoline, air powered hydraulic pump
cm³/stroke : Hand pumps (about 40 stroke / min)

Travel of a cylinder driven by a hand pump :

The rod moves by a certain stroke (C) at each hand pump action.
This stroke depends on hand pump oil flow (Q in **cm³/pump stroke**) and the cylinder effective area (S).

$$C = \frac{Q \times 10}{S}$$

Units :
C : Stroke in mm
Q : Flow in cm³/stroke
S : Effective area in cm²

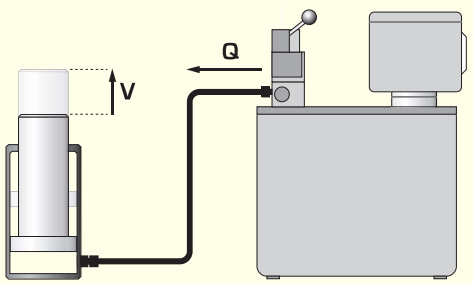


Cylinder travel speed :

The cylinder travel speed depends on pump oil flow (l/min) and cylinder effective area (S).

$$V = \frac{Q \times 166}{S}$$

Units :
V : Speed in mm/s
Q : Flow in l/mm
S : Effective area in cm²



CONVERSION TABLES

Units of measurements - Threadings

Conversion formulas

Pressure :

1 bar = 10^5 Pa = 14.5 psi
1 Pa (Pascal) = 1 N/m^2
1 psi = 0.069 bar

Force :

1 kgf (kg force) = 9.81 Newton
1 N (Newton) = 0.1019 kgf
1 kN = 1000 N = 101.9 kgf

Length :

1 mm = 0.039 in (inch)
1 in = 25.4 mm

Inch	mm
1/16	1.59
1/8	3.18
3/16	4.76
1/4	6.35
5/16	7.94
3/8	9.53
7/16	11.11
1/2	12.7
9/16	14.29
5/8	15.88
11/16	17.46
3/4	19.05
13/16	20.64
7/8	22.23
15/16	23.81
1	25.4

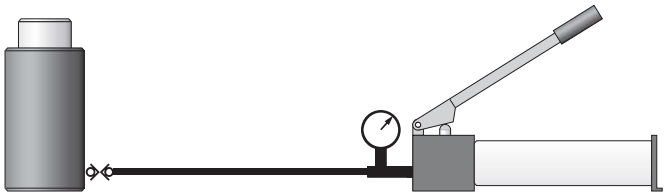
Threading equivalence :

US Threading		Metric equivalent	
		Diameter	Thread pitch
1/4 - 20	UNC	6.350	1.270
5/16 - 18	UNC	7.937	1.411
3/8 - 16	UNC	9.525	1.588
1/2 - 13	UNC	12.700	1.954
3/4 - 16	UNF	19.050	1.588
1 - 8	UNC	25.400	3.175
1 -12	UNF	25.400	2.117
1 1/4 - 7	UNC	31.750	3.629
1 1/2 - 16	UN	38.100	1.588
1 5/8 - 5 1/2	UNS	41.275	4.618
1 3/4 - 12	UN	44.450	2.117
2 1/4 - 14	UNS	57.150	1.814
2 3/4 - 16	UN	69.850	1.588
3 5/16 - 12	UNS	84.138	2.117
5 - 12	UN	127.000	2.117
6 7/8 - 12	UN	174.625	2.117

BASIC HYDRAULIC CONFIGURATIONS

QUIRI 700 Range - Steel

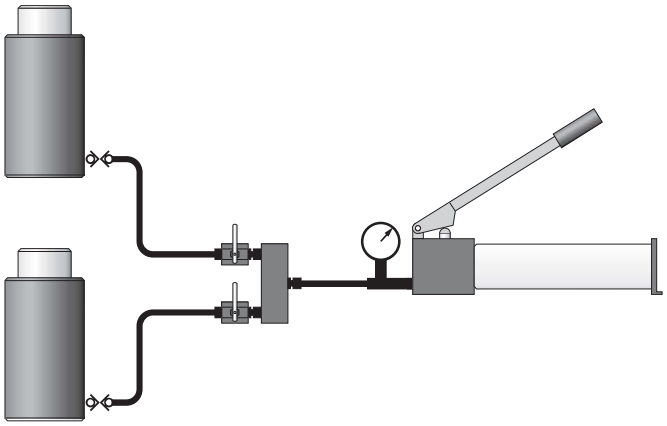
One single acting cylinder basic configuration.



Comprising :

- 1 hand pump : **PMS710**
- 1 pressure gauge adaptor : **AM135**
- 1 pressure gauge : **MG700**
- 1 2m long hose : **FC032**
- 1 single acting cylinder : **SEG545**

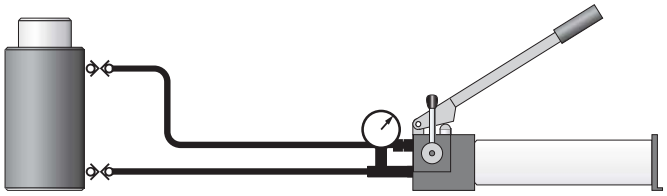
Two single acting cylinders basic configuration.



Comprising :

- 1 hand pump : **PMS733**
- 1 pressure gauge adaptor : **AM135**
- 1 pressure gauge : **MG700**
- 1 0.5m long hose : **F030**
- 1 manifold block : **MF12**
- 2 fitting : **A31038**
- 2 shut-off valves : **VM38**
- 2 2m long hoses: **FC032**
- 2 single acting cylinders : **SER2325**

One double acting cylinders basic configuration.



Comprising :

- 1 hand pump : **PMD733**
- 1 pressure gauge adaptor : **AM 135**
- 1 pressure gauge : **MG700**
- 2 2m long hoses : **FC032**
- 1 double acting cylinder : **DE5425**