1UAG series

HYDRAULIC POWERPACK FOR BOLLARDS

1. Data sheet:

Work pressure range: 10-100 bar

Work flow range: 10-70 L/min

Total bollard actuator weight: 98 Kg

Oil capacity: 10 L

Recommended oil: ISO 6743 (HM, HV, HG)

Electric motor: monophasic 230V 50Hz 3000rpm 2.24kW

- Pump displacement: 3,3cm^3/rev.
- Temperature Range: -20 +80ºC

Auxiliary Temperature sensor:

- Open on rise, 85ºC

Main relief valve L1: 140 bar

Auxiliary relief valve L2: 250 bar

Pressure sensor setting (accumulator charge):

- Activation pressure: 80 bar
- Stop pressure: 120 bar

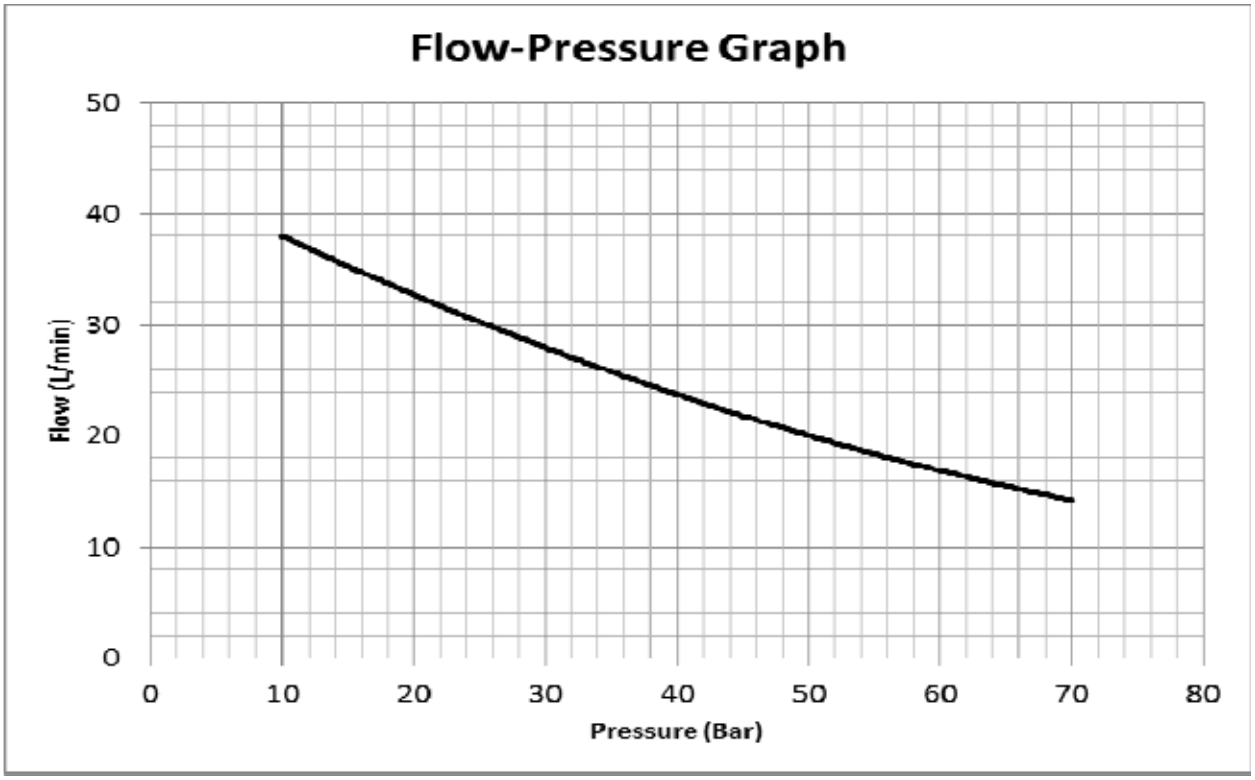
Operation time lift/lower:

- Depends on bollard weight, cylinder diameter and cylinder stroke.

Accumulator volume: 5 L

Without pump working, actuator can lift and lower one time.

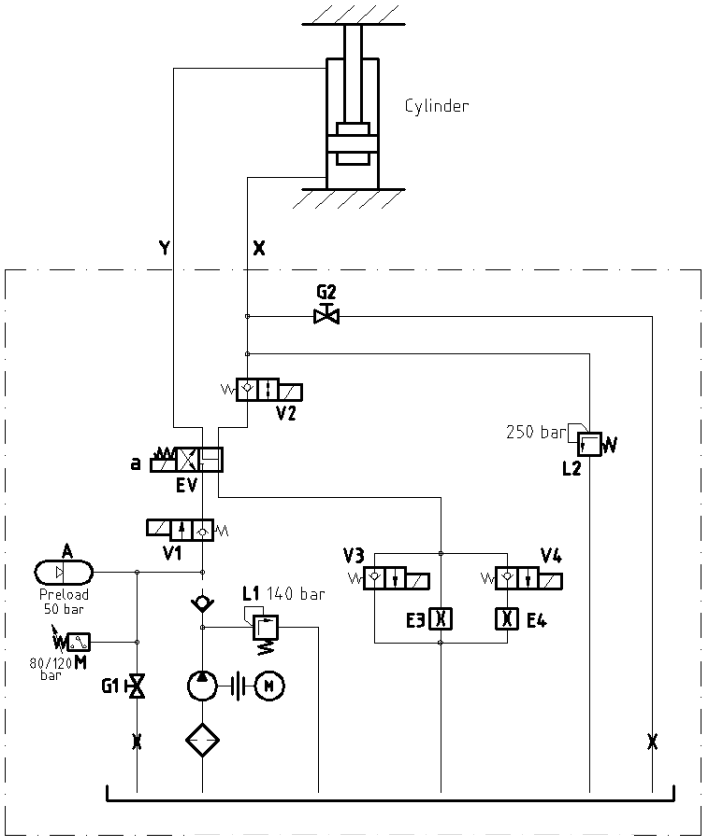
1.1 3D Actuator bollard view



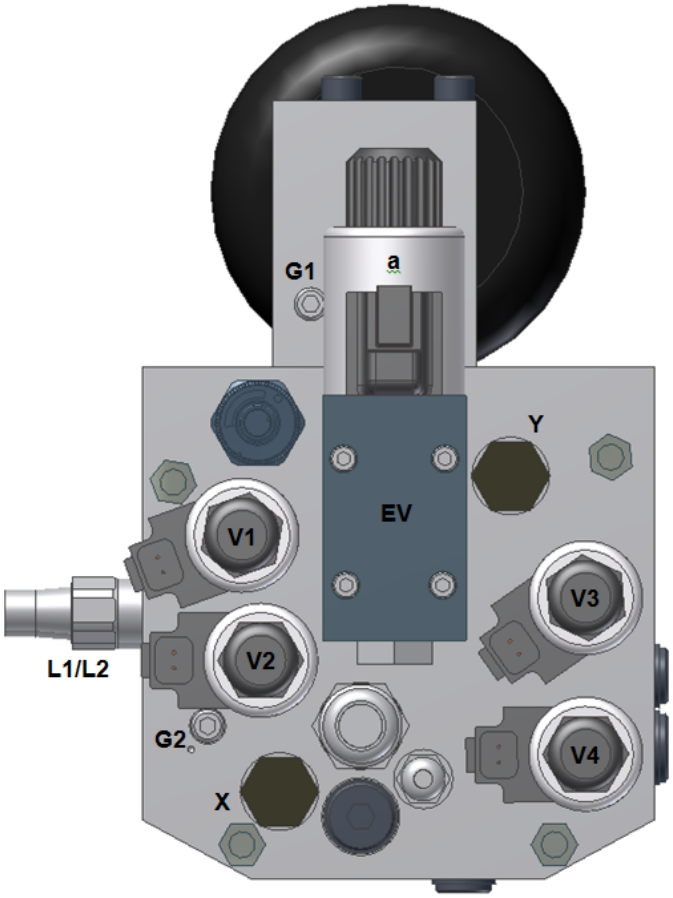
1.2 Working graph. Flow-Pressure **Accumulator not offers a perfect constant flow. All data are taken from a 1.4L displacement volume.*

2. Hydraulic scheme and components:

- Aspiration filter 125µm
- Pump 3.3 cm^3/rev
- Electric monophasic motor 2.24 kW
- M: Pressure sensor (setting 80-120 bar)
- A: Pressure Accumulator 5 liter
- V1, V3, V4: Electrical check valve 24 Vdc normally closed
- V2: Bidirectional electrical check valve 24 Vdc normally closed
- E3: Compensate flow valve (restriction depends on bollard weight)
- E4: Compensate flow valve (restriction depends on bollard weight)
- G1: Accumulator drain valve
- G2: Emergency manual lower valve
- L1: Relief valve. Setting pressure 140 bar
- L2: Relief valve. Setting pressure 250 bar
- EV: Solenoid directional valve three ways 24 Vdc

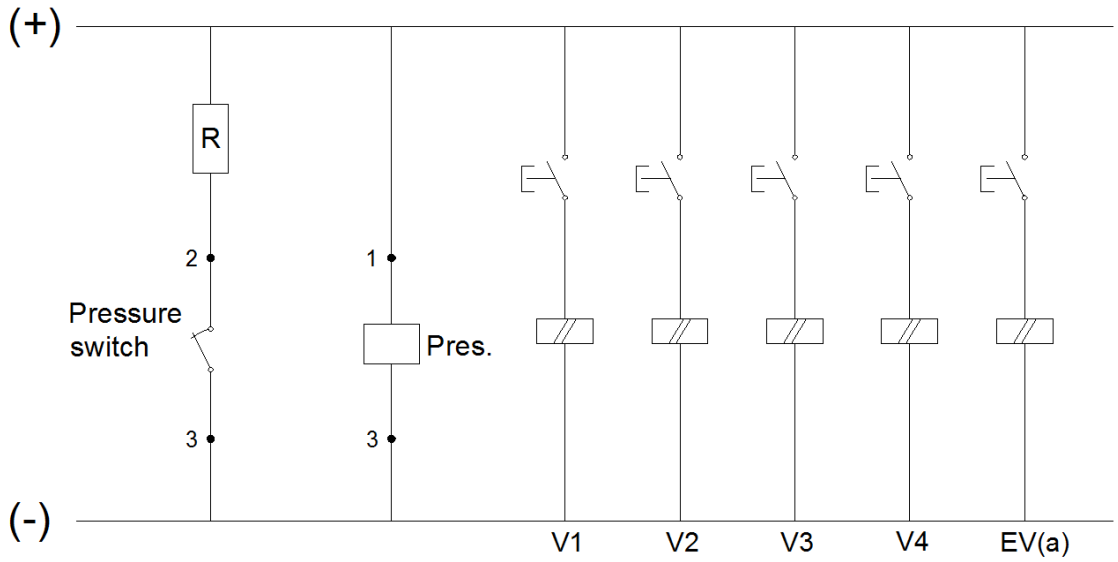


2.1 Hydraulic scheme

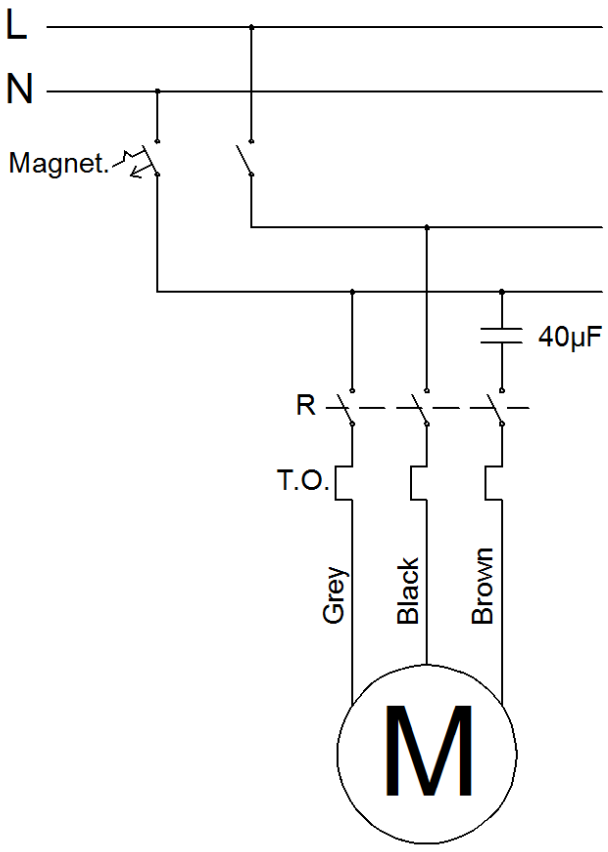


2.2 Components identification

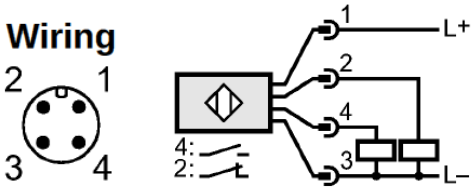
3. Electric schemes:



3.1 Electric connections



3.2 Motor connections

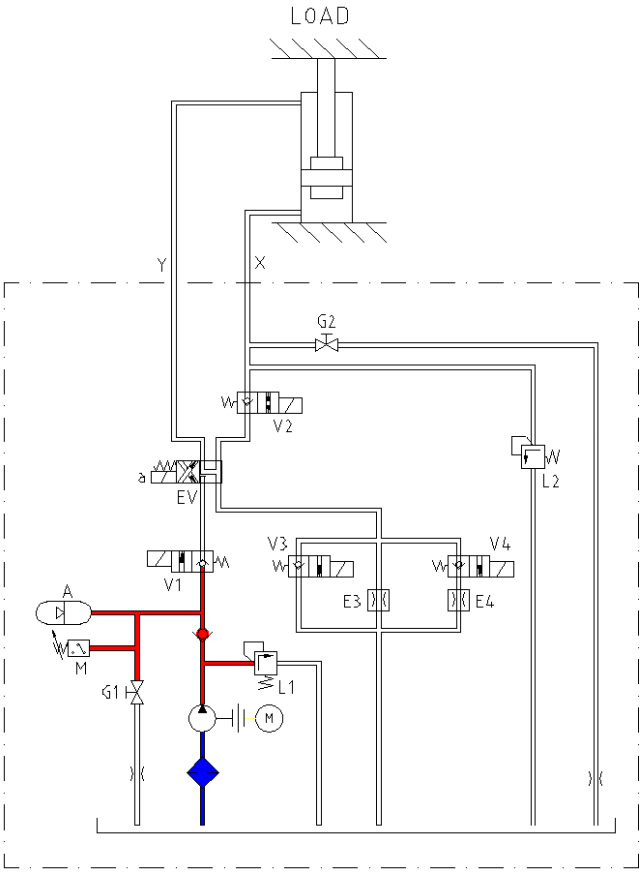


3.3 Pressure sensor connections

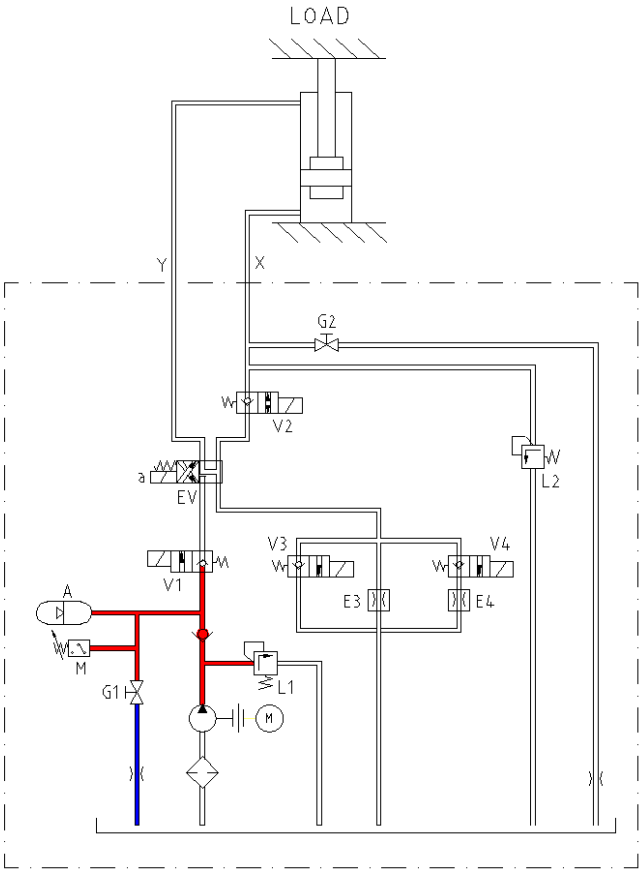
4. Hydraulic function schemes:

Hydraulic Sequences	EV a	V1	V2	V3	V4	Shut-off valve
1. Bollard stopped filling accumulator	---	OFF	---	---	---	
2. Manual accumulator drain	---	OFF	---	---	---	G1
3. Bollard extended without movement	---	OFF	OFF	---	---	
4. Emergency manual lower movement	OFF	OFF	OFF	OFF	OFF	G2
5. Rise movement (high speed)	ON	ON	ON	ON	ON	
6. Rise movement (low speed)	ON	ON	ON	OFF	ON	
7. Drop movement (low speed)	OFF	OFF	ON	OFF	OFF	

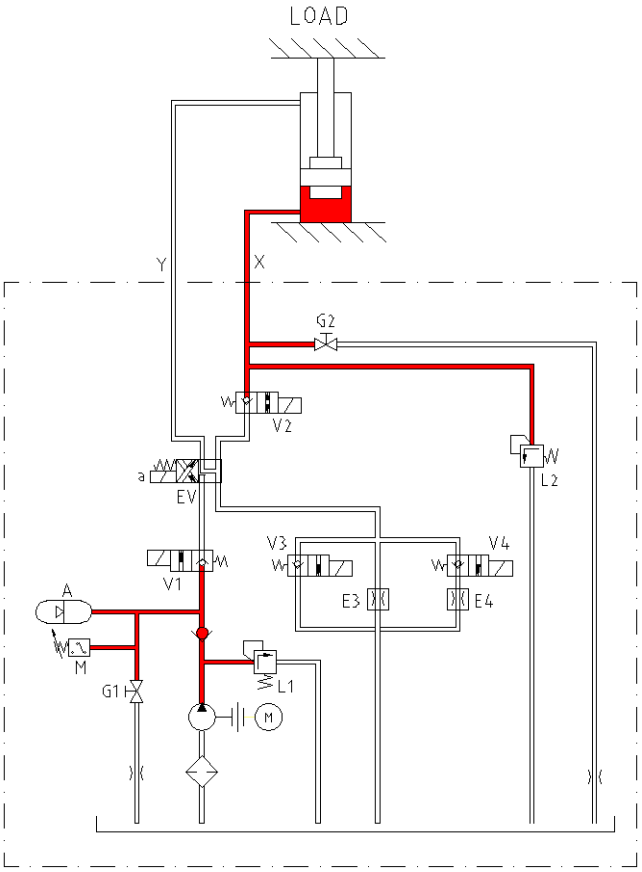
Pressure line
Return line
Pressure at flow compensated line



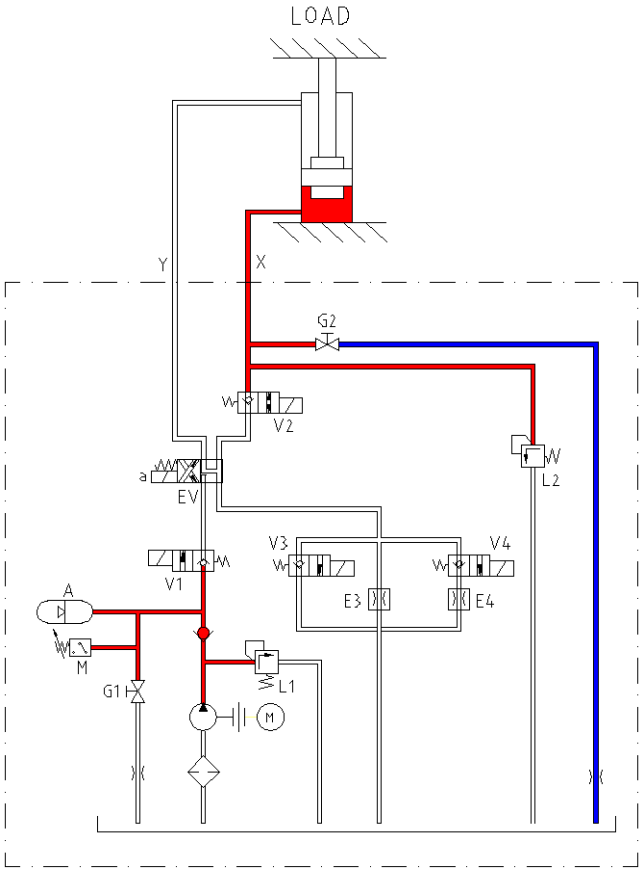
4.1 Bollard stopped filling accumulator



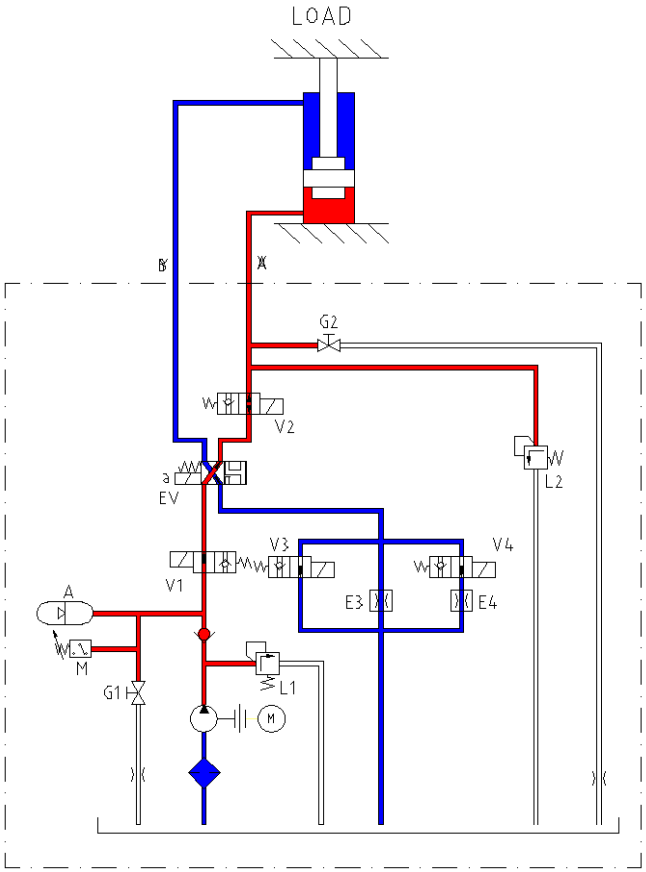
4.2 Manual accumulator drain



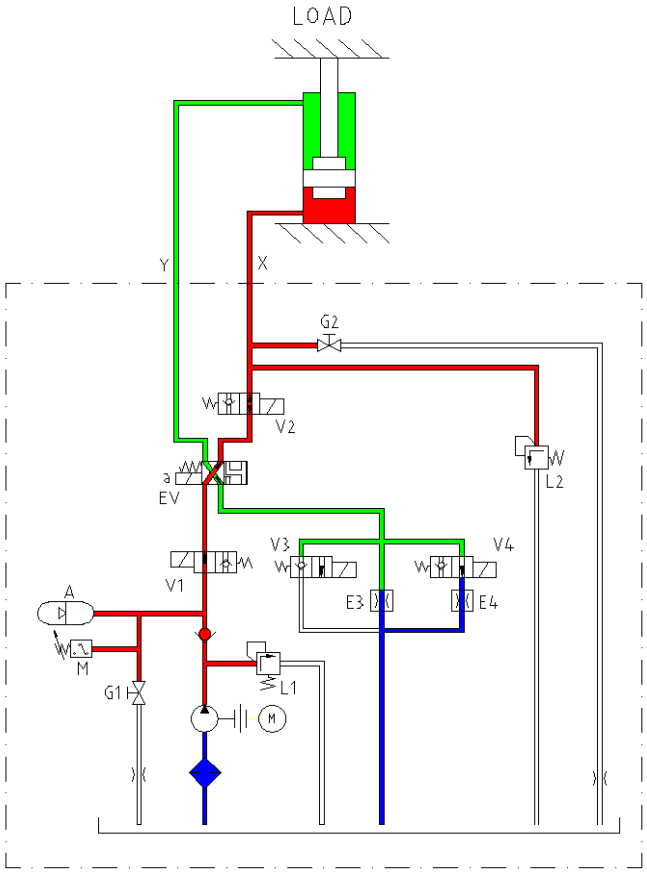
4.3 Bollard extended without movement



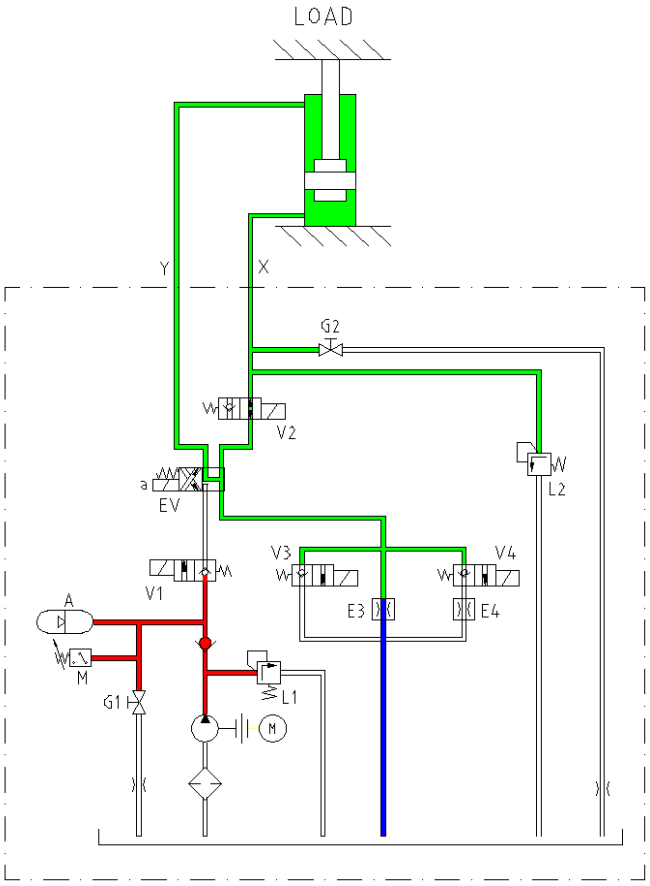
4.4 Emergency manual drop movement



4.5 Rise movement (high speed)



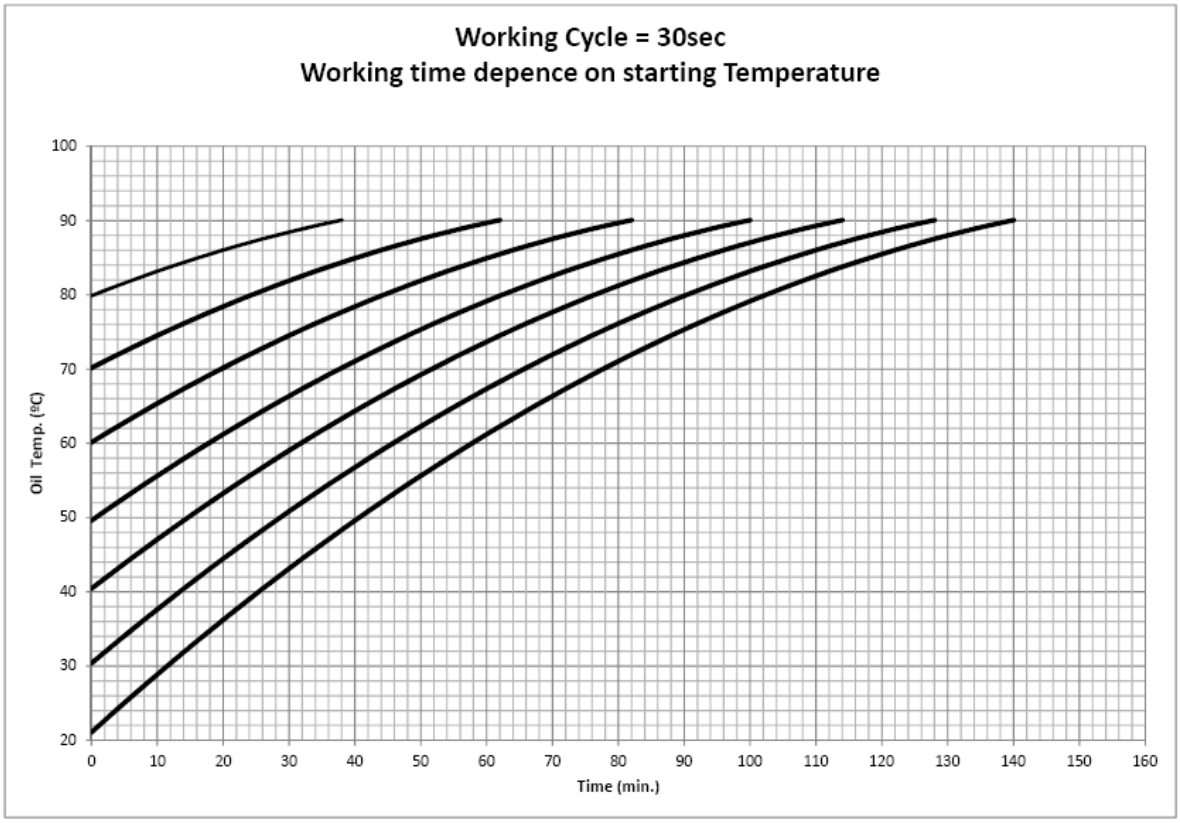
4.6 Rise movement (low speed)



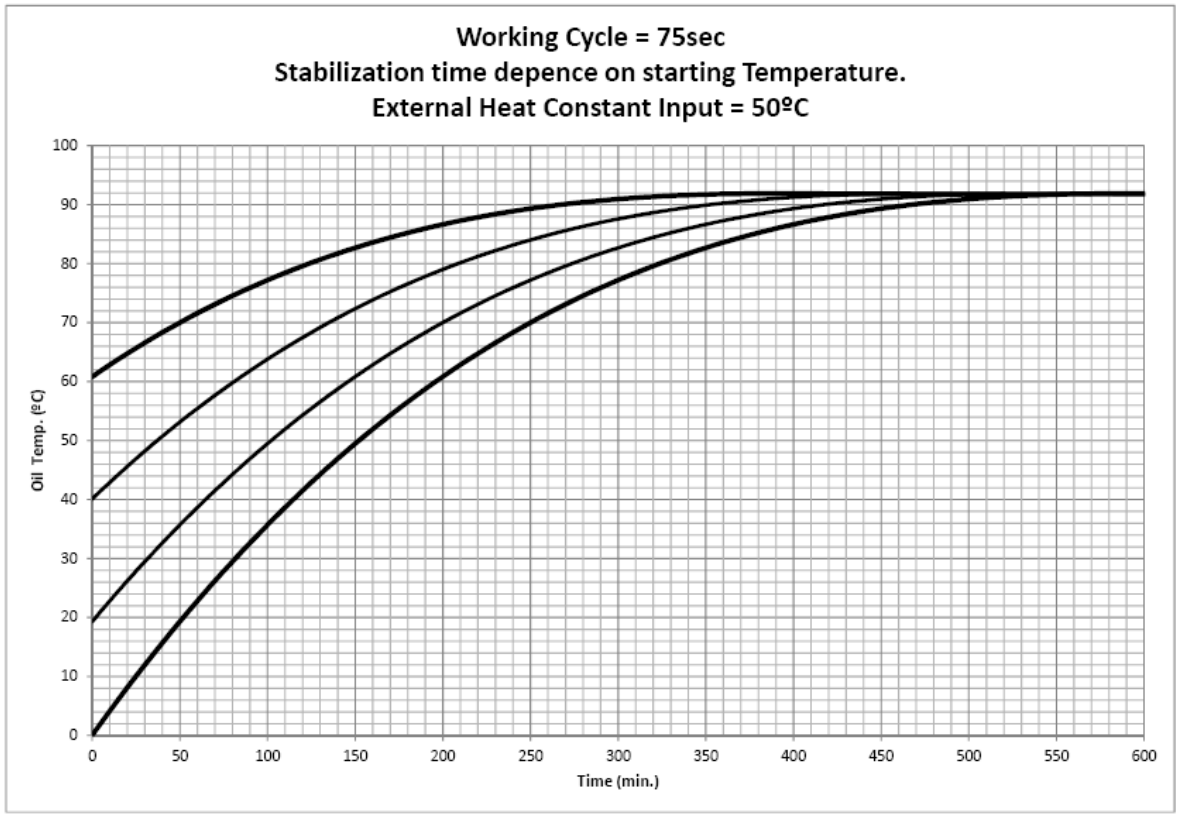
4.7 Drop movement (low speed)

5. Working Graphs (Time-Temperature):

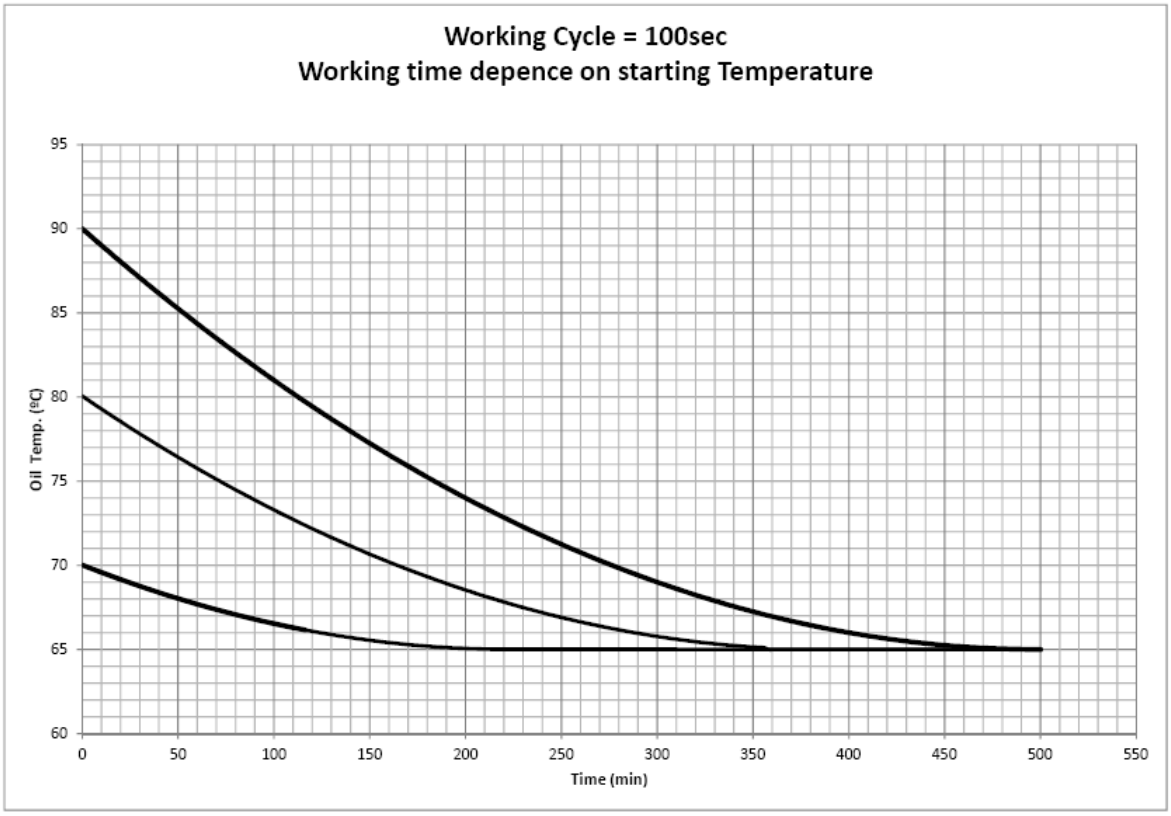
**All data are taken from a test cylinder working at 60bar with displacement volume of 1.55 liters. During the test, the hydraulic powerpack has been assembled inside an enclosed bollard of Ø300mm.*



8.1 Working Cycle 30sec (Time-Temperature)



8.2 Working Cycle 75sec (Time-Temperature)



8.3 Working Cycle 100sec (Time-Temperature)