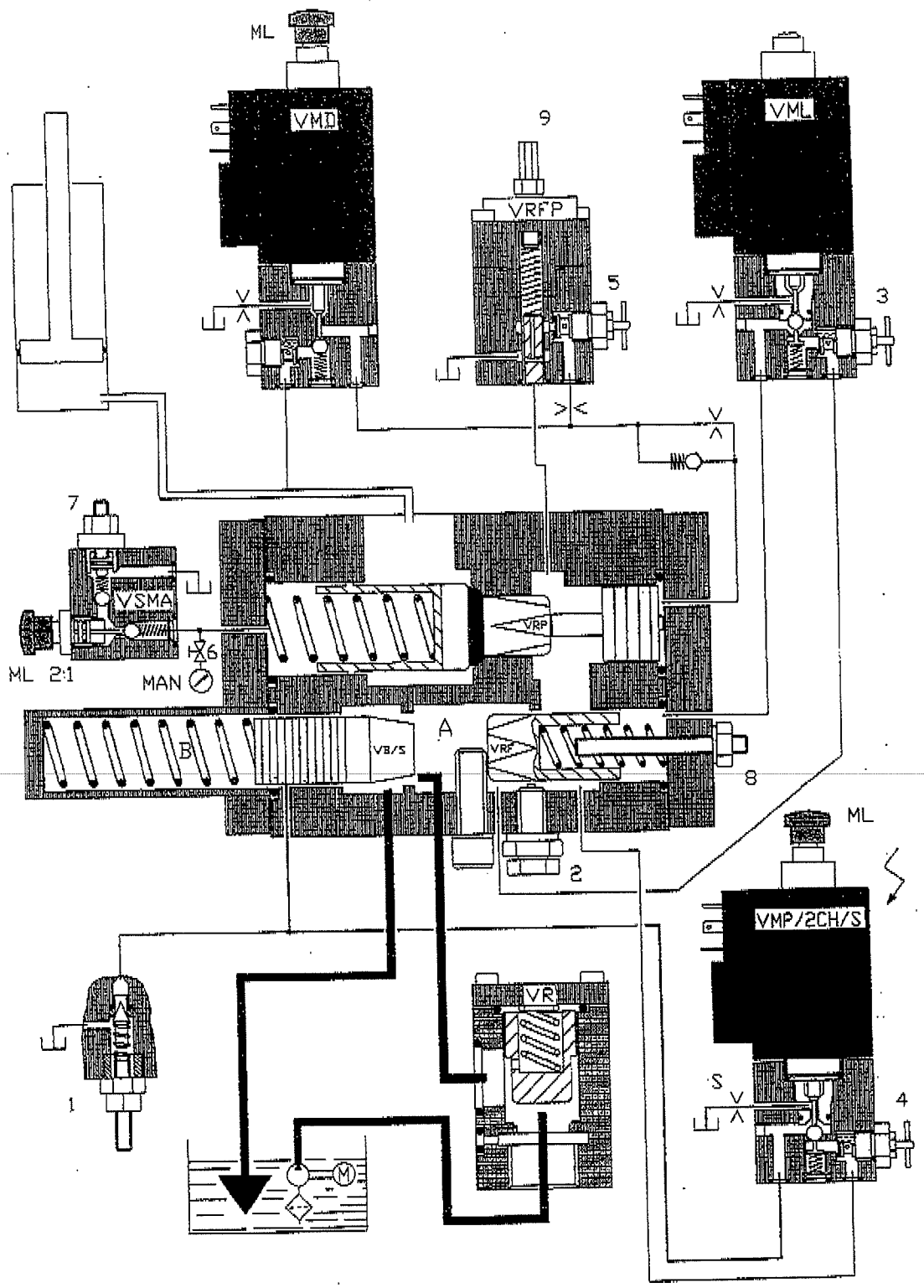


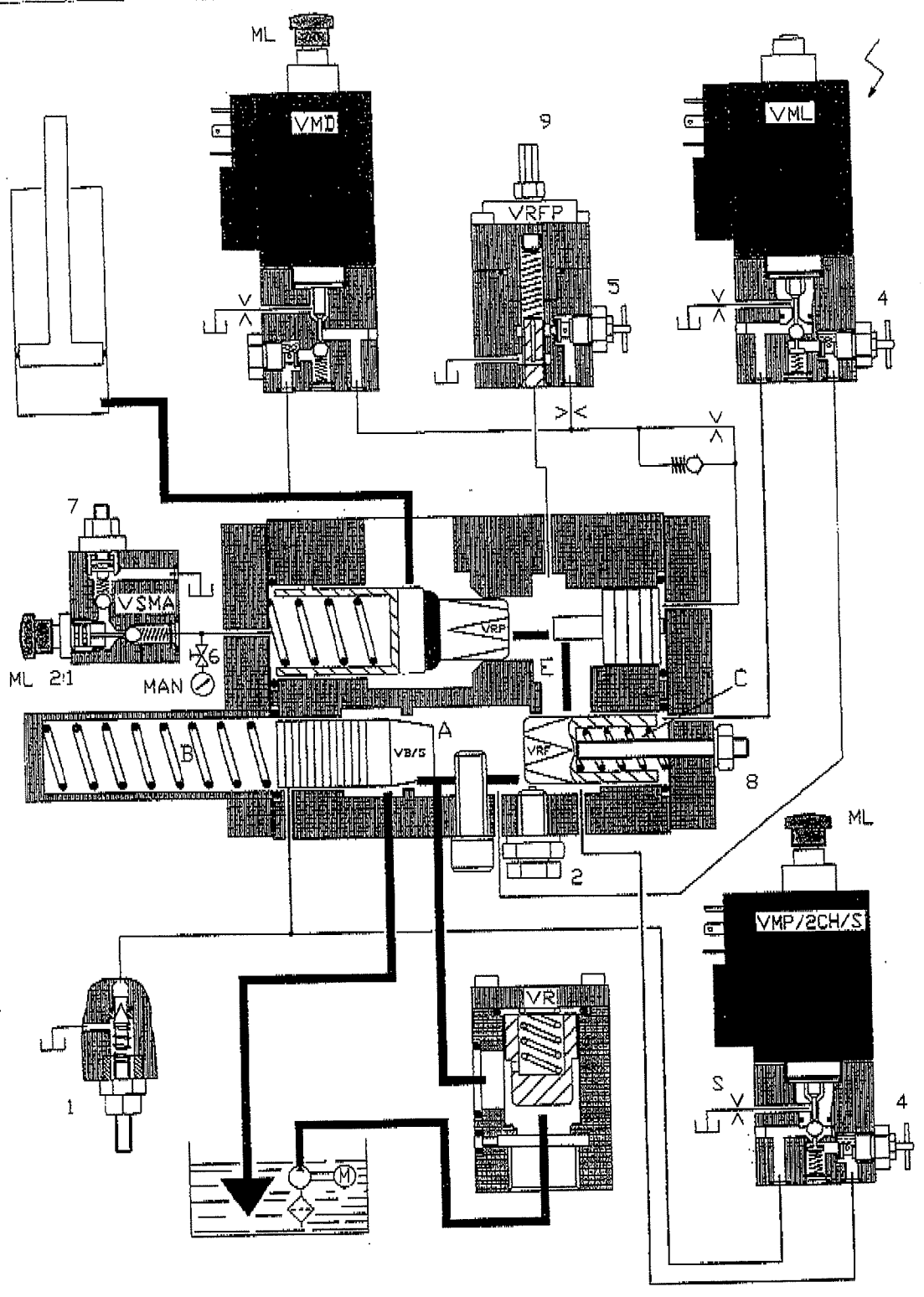
- 1 = Pressure relief valve
- 2 = Levelling speed adjustment
- 3 = Deceleration adjustment
- 4 = Up acceleration adjustment
- 5 = Shut off valve for rupture valve test
- 6 = Manometer shut off valve
- 7 = Ram pressure adjustment  
(for 2:1 indirect acting jacks only)

- 8 = Full speed adjustment
- 9 = Down speed compensation adjustment
- S = Soft-stop adjustment  
(1 1/2" and 2" only)
- ML = Manual lowering button
- ML 2:1 = Manual lowering button for 2:1  
indirect acting jacks



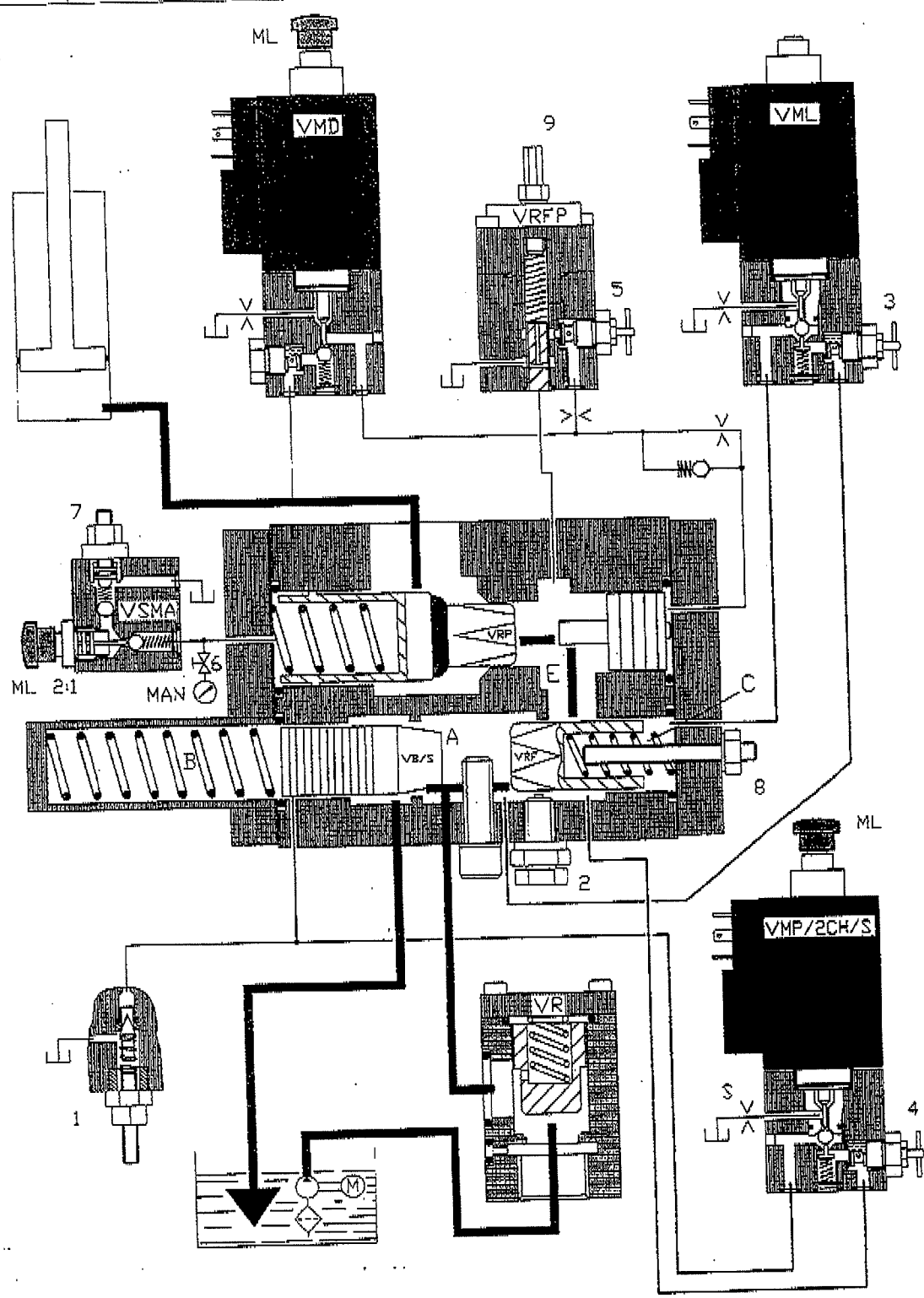
**UP TRAVEL (BY-PASS)**

- Motor on and VMP/2CH/S energized:  
 Pump scuds oil from the tank to the valve. The fluid in chamber B passes to the reservoir via valve VMP/2CH/S. This allows the fluid in chamber A to open the VB/S spool sending the pump flow back to the reservoir.



**UP TRAVEL (ACCELERATION AND FULL SPEED)**

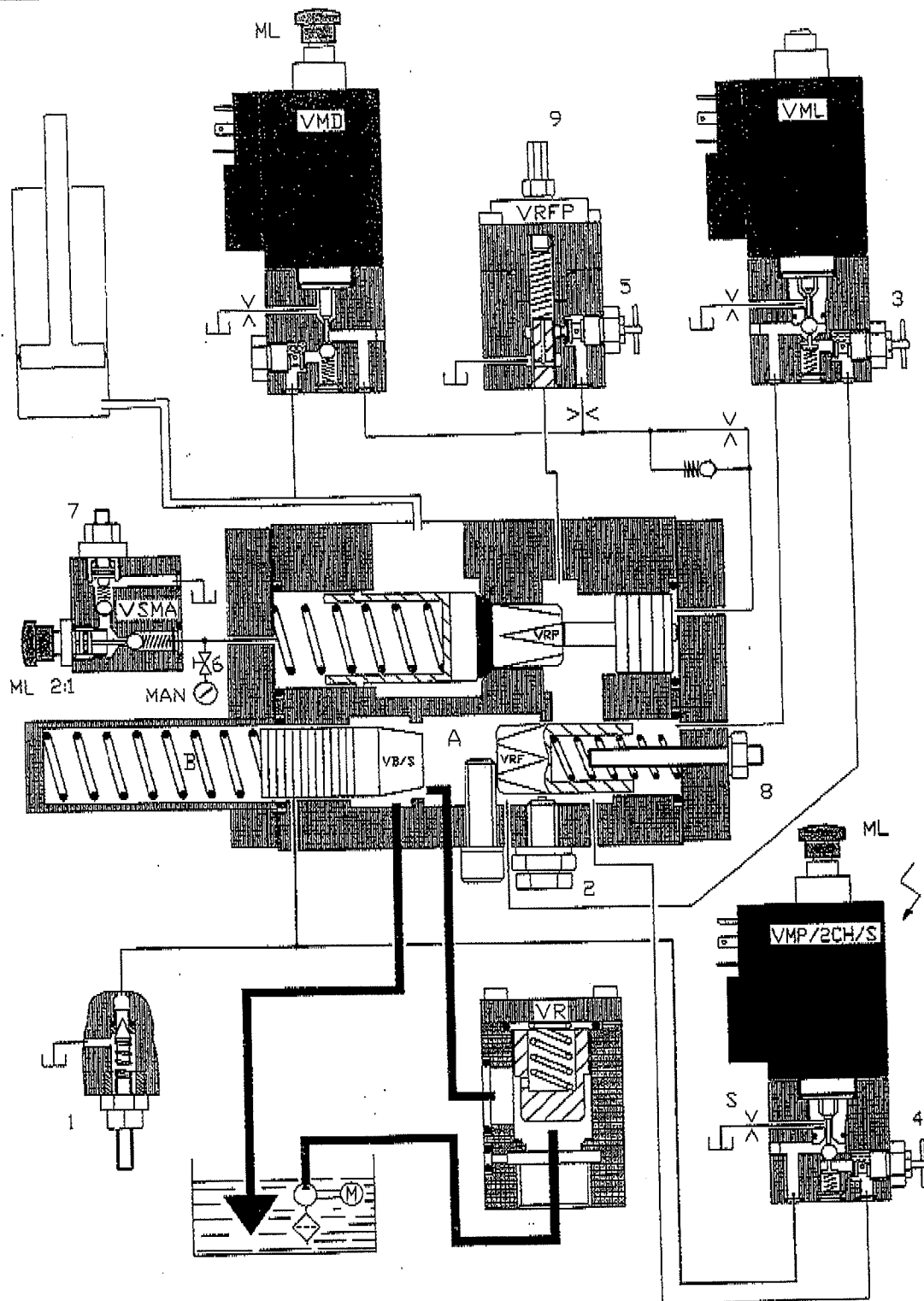
- VML energized and VMP/2CH/S de-energized  
 VML opens the discharged side and permits the oil in chamber C to drain to tank. This causes the pressure in chamber A to open the VRF spool.  
 At the same time, VMP/2CH/S connects chamber E with chamber B, the flow being controlled by the setting of screw 4, causing the VB/S spool to close in a controlled manner. When the VB/S spool closes the pressure in chamber A (and E) will increase, since less oil goes back to tank. When the pressure is high enough to open the VRF spool the elevator will start to move and will accelerate until the VB/S spool is completely closed (full speed).



UP TRAVEL (DECELERATION AND LEVELLING SPEED)

- VML de-energized

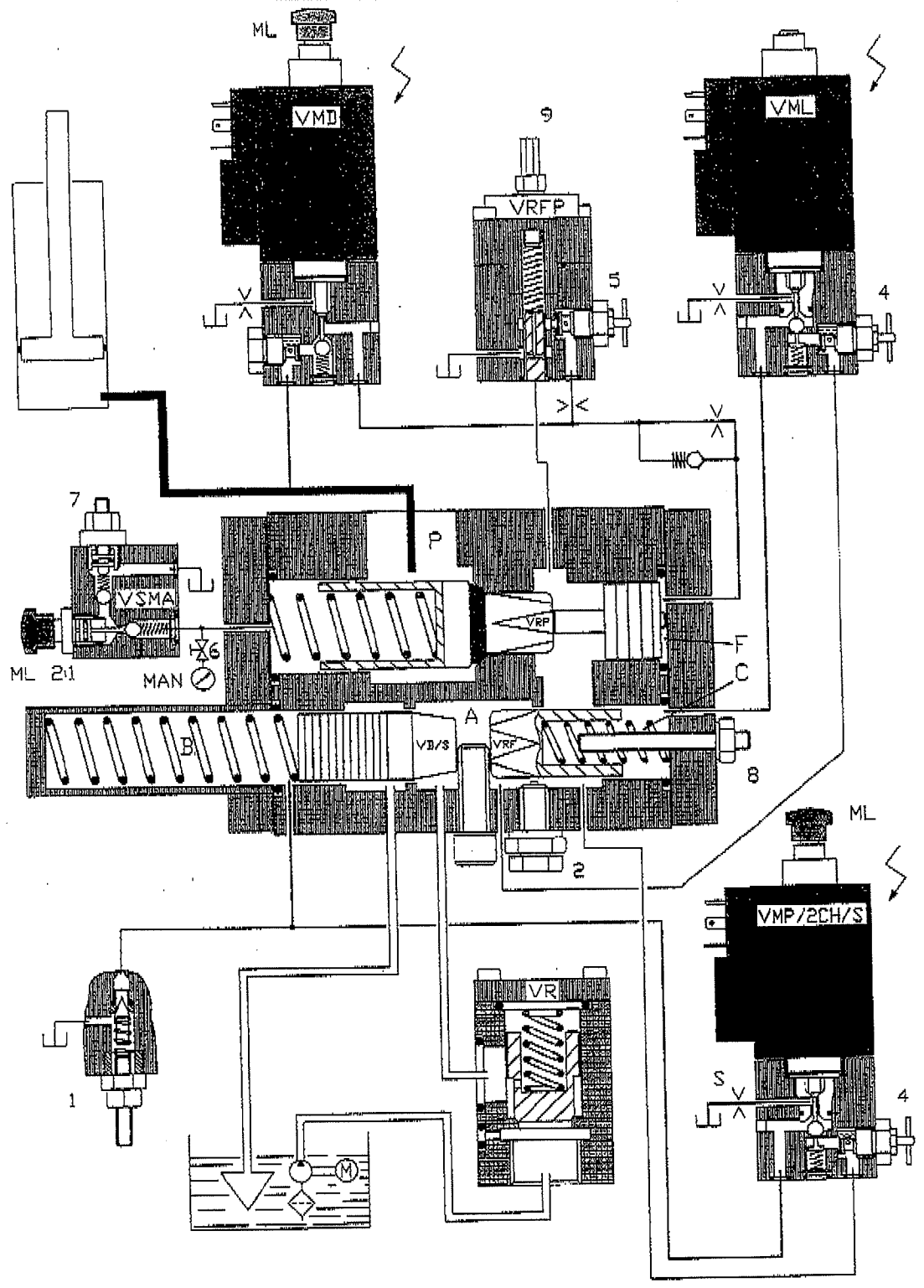
When VML is de-energized it connects chamber C with chamber A. This will cause the VRF spool to move into chamber A, and consequently the elevator starts to decelerate. The deceleration rate is controlled by the setting of screw 3. When the VRF spool is completely closed the elevator will move with a levelling speed, controlled by the setting of screw 2.



**UP TRAVEL (SOFT STOP)**

- VMP/2CH/S energized:

When VMP/2CH/S is energized chamber B will be connected to tank and, consequently, the VB/S spool will move backwards by the force of the pressure in chamber A. The movement of the VB/S spool is controlled by restrictor S. This will cause the elevator to come to a smooth and soft stop. The elevator will stop its movement when the VB/S spool is completely open and all the pump flow returns to the tank. The VRP spool then return to its rest position. The motor is de-energized shortly after the elevator is stopped. To ensure a soft stop VMP/2CH/S is de-energized (about 0.5-1sec.) after the motor.



**DOWN TRAVEL (START)**

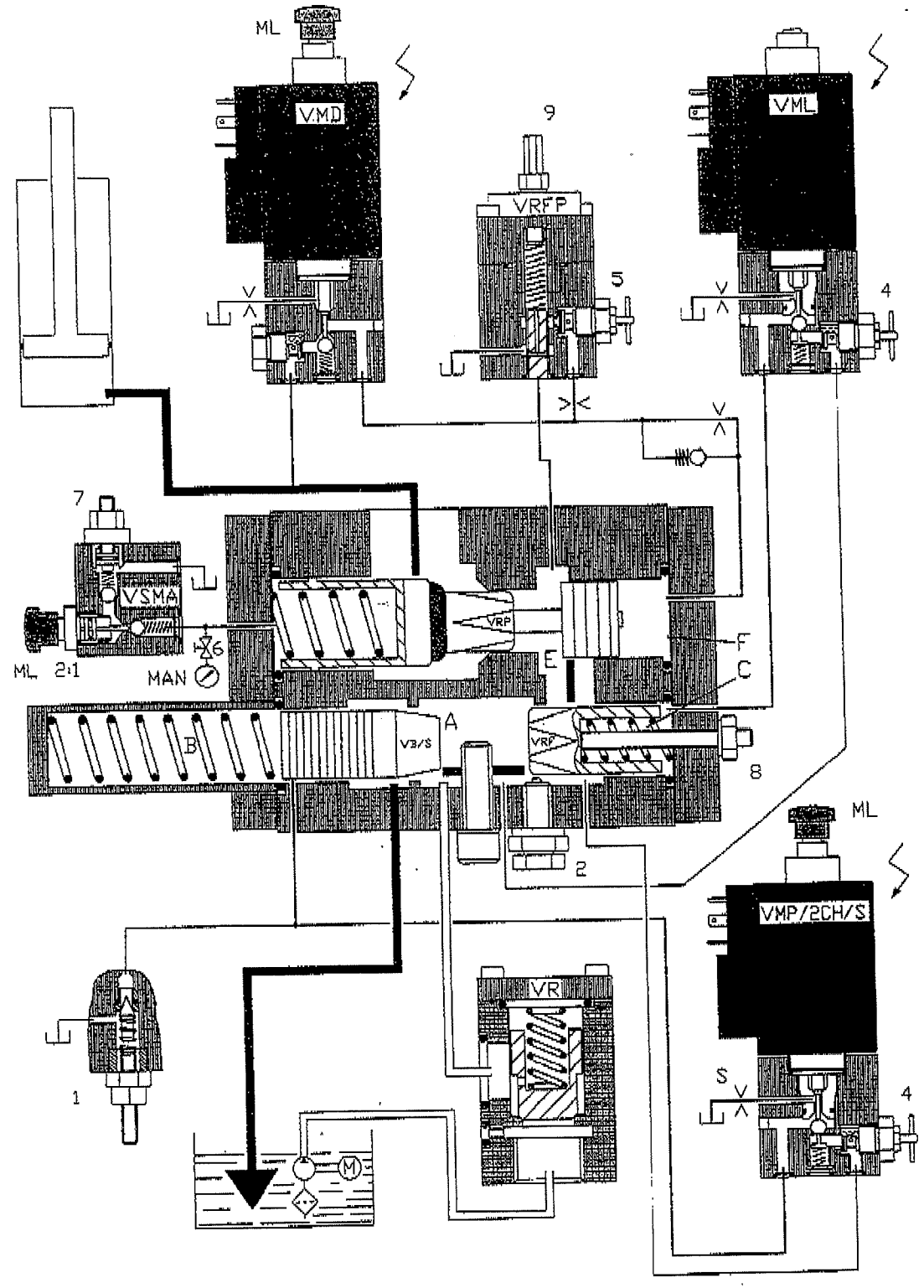
- VMD, VML and VMP/2CH/S energized

When VMD is energized the pressure from the cylinder can reach chamber F. This allows the opening of the VRF spool. When the pressure reaches chamber A both the VRF and the VB/S spool will open, since both the VML and the VMP/2CH/S valve is energized, thus eliminating the pressures in chamber C and B respectively.

# VENTILBLOCK 3010/2CH/S - VALVE BLOCK 3010/2CH/S

Funktionsbeskrivning / Working description

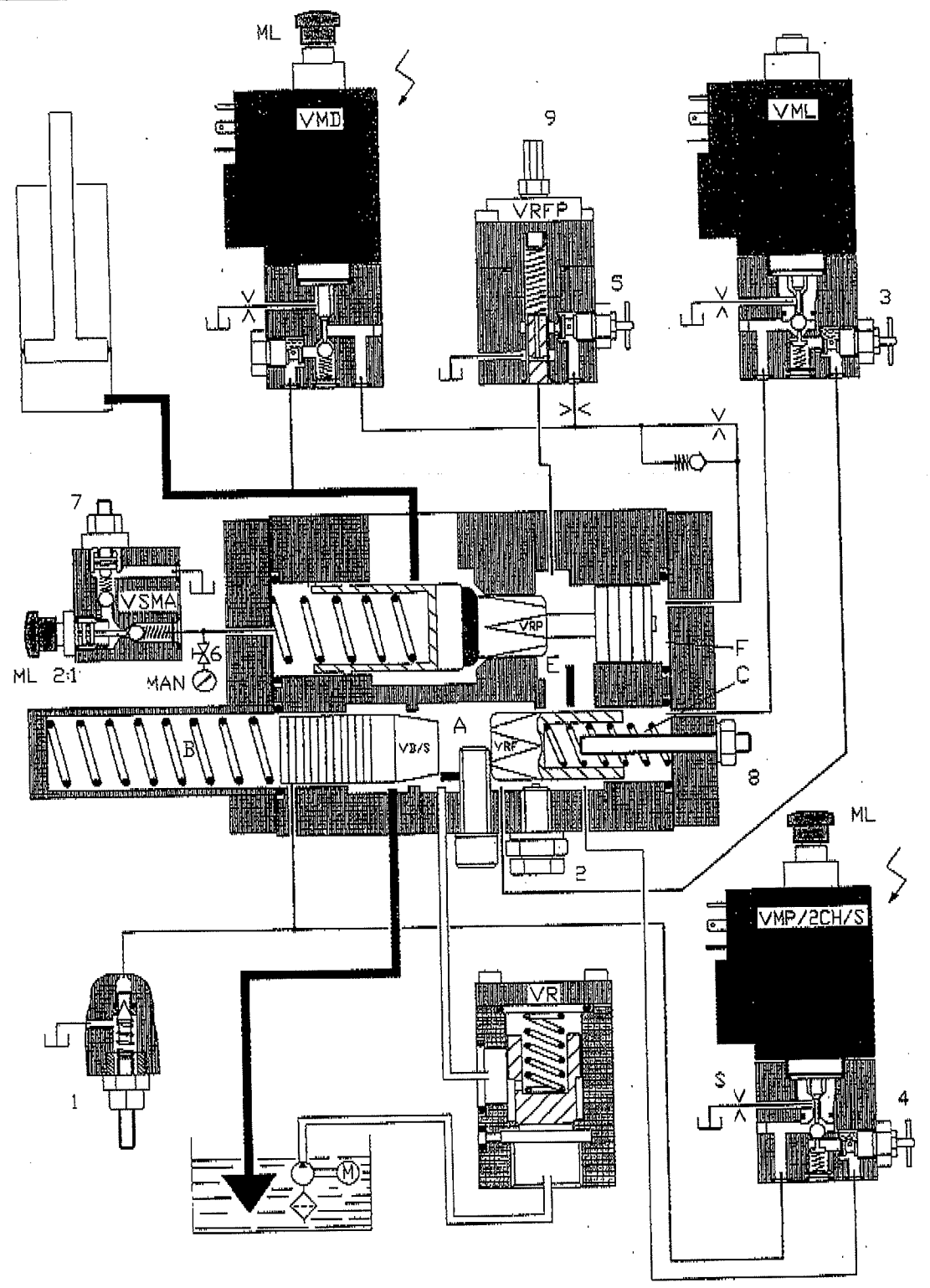
1:11	7/10
99-12-28	0



### DOWN TRAVEL (ACCELERATION AND FULL SPEED)

- VMD, VML and VMP/2CH/S energized:

The acceleration in down direction continues until the VRP spool stops its movement. This happens when the pressure in chamber E is high enough to win the force of the VRFP spring setted with screw 9. Then the pressure in chamber F will be reduced since the VRFP spool opens a restricted connection to tank. This means that the pressure in chamber E will be kept constant and, consequently, also the down full speed will be constant and independent of the pressure in the jack.



**DOWN TRAVEL (DECELERATION AND LEVELLING SPEED)**

- VML de-energized:

The deceleration in down direction is initiated when VML is de-energized. This connects chamber A with chamber C, which allows the VRF spool to move into chamber A. The movement of the VRF spool and, consequently, the deceleration is controlled by the setting of screw 3. When the VRF spool is completely closed the elevator will move with a levelling speed, controlled by the setting of screw 2.



# VENTILBLOCK 3010/2CH/S - VALVE BLOCK 3010/2CH/S

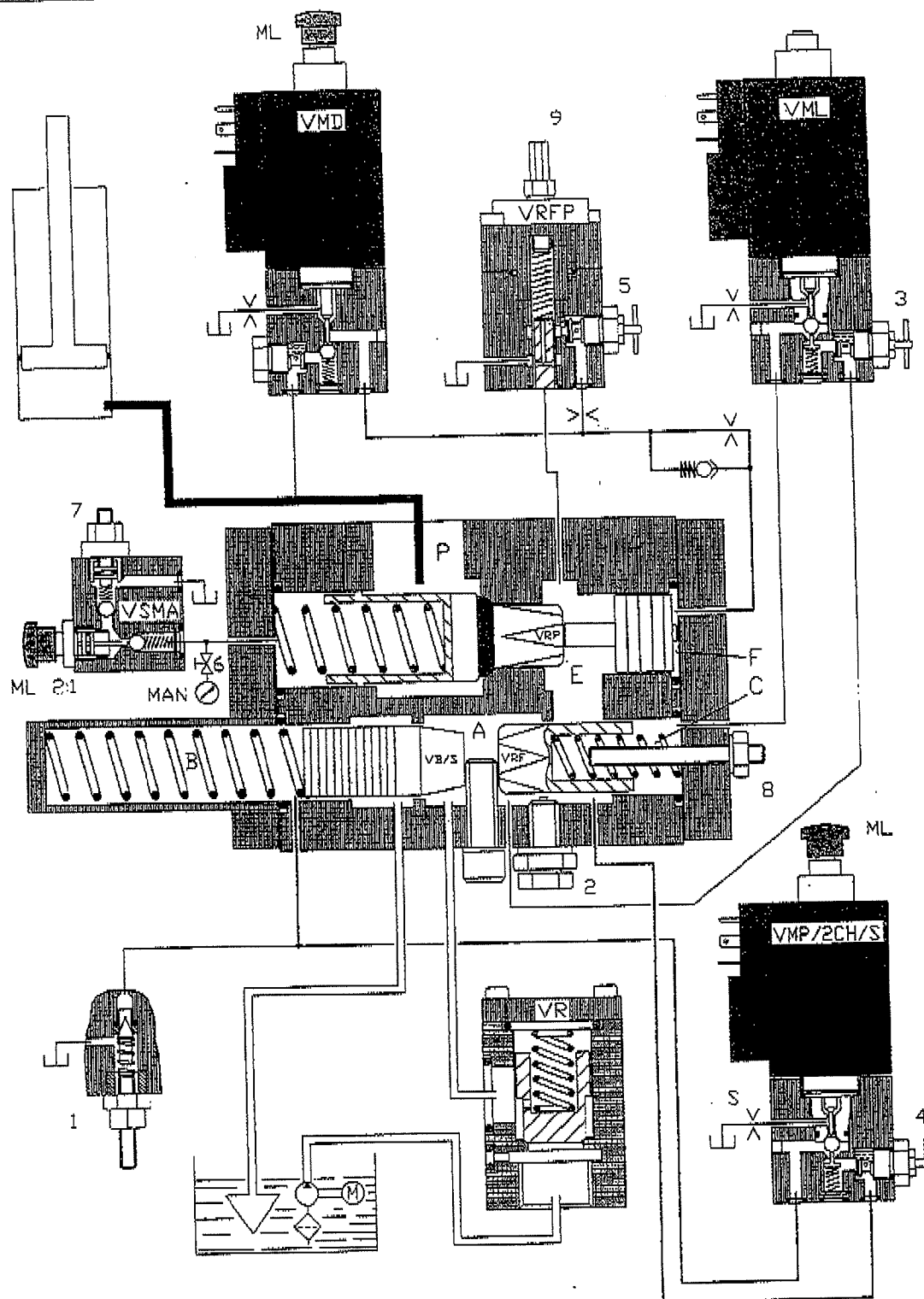
Funktionsbeskrivning / Working description

1:1

9/10

99-12-28

0

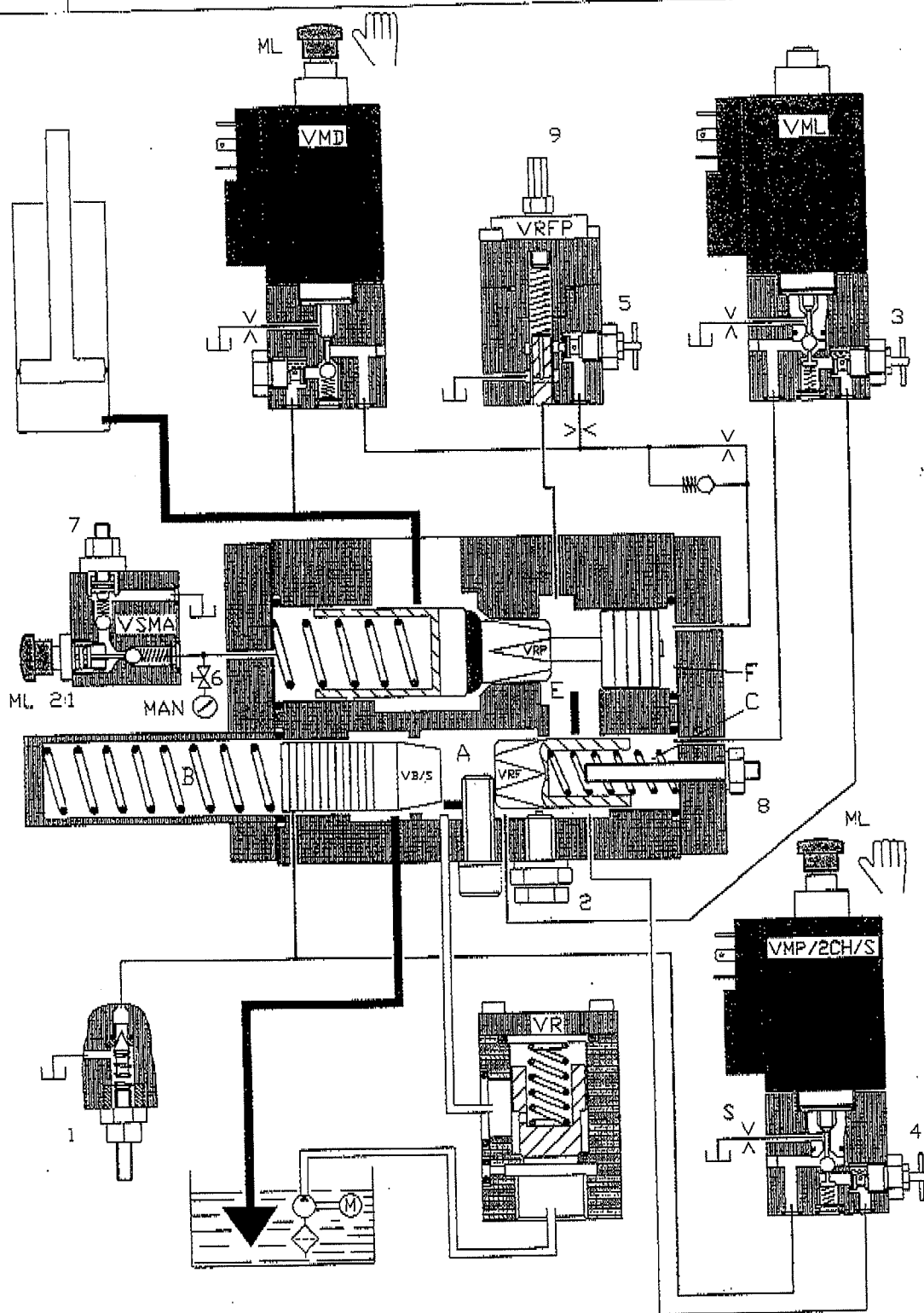


## DOWN TRAVEL (STOP)

- VMD and VMP/2CH/S de-energized:

At floor level both VMD and VMP/2CH/S are de-energized. When VMD is de-energized the oil in chamber F is drained to tank. The rate at which it drains is controlled by the fixed restrictor in the VMD valve. This allows the VRP spool to close in a controlled manner, giving a soft final stop.

When VMP/2CH/S is de-energized, chamber E is connected with chamber B. This, together with the force of the spring, forces the VB/S spool to close as well.



### EMERGENCY LOWERING

- Pushing the VMD and the VMP/2CH/S buttons:

When the VMD valve is in its "on" position, the jack pressure reaches chamber F and the VRP spool opens. The oil pressure can then reach chamber E and A. When also the VMP/2CH/S button is pushed, the pressure in chamber B will return to tank and, consequently, the VB/S spool opens and the elevator travels downwards with levelling speed.

- Pushing the ML 2:1 button

This solution is used to guarantee a minimum pressure to prevent slack ropes in 2:1 installations by using screw 7.