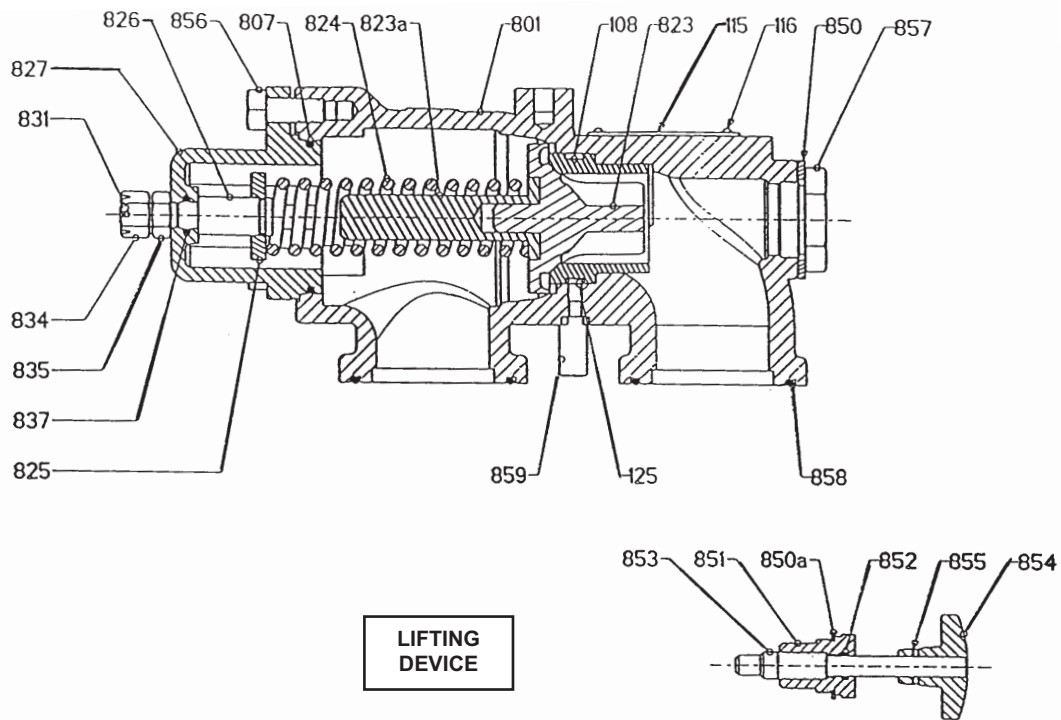


***Stainless steel
compensated bypass
Vanes pumps
P15 - P25 - P40 - P60***





FUNCTION

The compensated bypass operates as a safety valve by automatically limiting the delivery pressure to the maximum value for which it is set.

When the delivery pressure reaches the control pressure of the spring, the valve **823** lifts, thereby permitting a partial or total return of the liquid to the intake.

Used when the pump frequently has to discharge to its bypass, i.e. when the delivery is closed, the bypass has the characteristic of creating only a very small overpressure which enables the motor to supply the appropriate increase in pressure for clearly determined working conditions. However, it must be noted that the role of the bypass as a safety device is limited to the protection of the pump against accidental overpressures.

It is absolutely essential therefore to provide suitable protection for every electric motor - unless it is capable of withstanding the increase due to the maximum overpressure (pump delivering to the bypass whose spring is compressed to the maximum).

ORIENTATION

With the exception of the double bypass designed to protect the pump in the two operating directions, the single bypass unit protects the pump only for one operating direction. It is necessary therefore to check that it is correctly oriented by ascertaining that the cover **827** is located on the intake side, and to reverse it if it is incorrectly oriented.

REVERSING

To reverse the bypass, loosen the bolts **859** and turn the bypass through 180°.

Before locking the bypass in its new position, check the state of the seals **858** and their fitting.

Tighten the bolts **859** taking care to ensure a balanced adjustment so that the bypass remains vertical.

ADJUSTMENT

To adjust the bypass, unscrew the lock nut **835**, turn the adjusting nut **834** in the clockwise direction to increase the delivery pressure, and in the anticlockwise direction to reduce it. When the adjustment has been completed, do not forget to re-tighten the lock nut **835**.

The adjustment is satisfactory when the flowrate corresponds to the intended flowrate and when the motor withstands without incident or excessive energy consumption, the increased power due to the overpressure during the closing of the delivery. This is how the bypasses of our motor-pumps sets should be adjusted according to the informations supplied to the Engineering Department.

OBTAINING THE FLOWRATE

If the flowrate is lower than the intended flowrate, this may be due to incorrect adjustment of the bypass.

To put this right, gradually tighten the adjusting nut **834** after making sure that the pump is rotating at the prescribed speed.

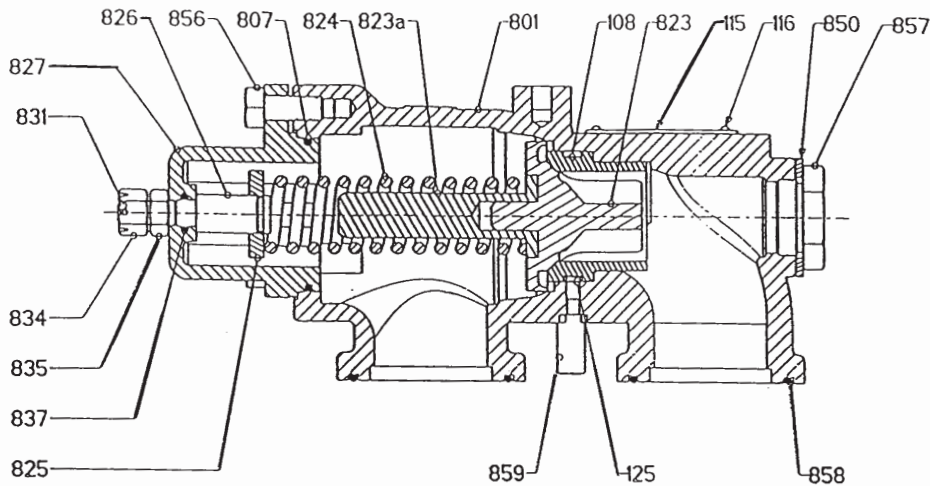
If, as a result of tightening, the spring becomes fully compressed or the operation of the motor is disturbed, without the desired flowrate being reached, this means that the set has to operate at a higher pressure than that for which it has been designed. It is necessary to consult our Engineering Department.

When the flowrate is obtained, make sure, by closing the delivery, that the motor withstands the increased power due to the overpressure without problem. Where necessary, loosen the adjusting nut **834** of the bypass slightly so as to allow the motor to attain the flowrate.

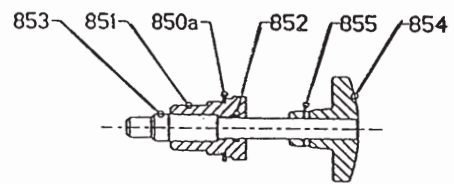
ENERGY CONSUMPTION

If the energy consumption does not correspond to the forecasts, this may be due to incorrect adjustment of the bypass.

To rectify this, close the delivery pipe and loosen the adjusting nut **834** until the consumption is satisfactory.



LIFTING DEVICE



OPERATION OF THE VALVE-LIFTING DEVICE

The valve lifting device, used for the purpose of varying the delivery of the pump and taking the load off the motor of a thermal set during start-up, makes it possible, in the operating mode, to create a partial or total return of the liquid to the intake without modification of the adjustment of the spring. Under the action of the hand wheel **854**, operating in the clockwise direction, the screw **853** raises the valve **823** thus creating a branch circuit. Do not forget at the end of the operation to return the hand wheel **854** to its initial position.

DISASSEMBLY

- Unscrew the 2 bolts **859**.
- Remove the complete bypass unit (with the 2 seals **858**).
- Undo the lock nut **835**.
- Unscrew the adjusting nut **834** as far as it will go (anti-clockwise) to slacken the spring.
- Remove the 3 screws **856** simultaneously (turn by turn) so as to maintain the cap **827** in the axis of the body **801**.
- Remove the cap assembly **827**, spring **824**, the spring guide **823a** and the valve **823**.
- Remove the plug **857** and its seal **850**.
- Knock out the pin **831**, remove the adjusting nut **834**, then the nut **835**.
- Take out the adjusting screw **826** from the cap **827**.
- Unscrew the spring guide **825**.
- Remove the seals **837** and **807**.

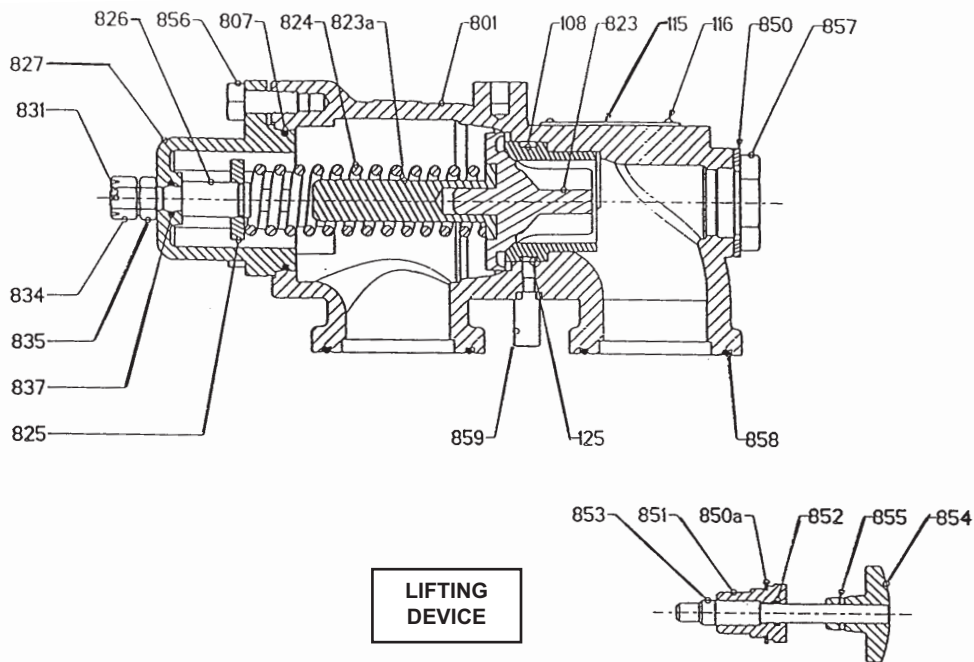
REASSEMBLY

- Fit the seals **837** and **807** (renew if necessary).
- After refitting the spring guide **825**, mount the shaft **826** in the cap **827**.
- Fit the lock nut **835**, then the adjusting nut **834**.
- Fit the pin **831**.
- Insert the plug **857** and its seal **850**.
- Then position the bypass body **801** vertically.
- Fit the valve **823** (replace it if the wear is excessive), the spring guide **823a** and the spring **824**.
- Position the spring guide **825** at the bottom of the cap **827** by adjusting the adjusting nut **834**.
- Then fit the cap assembly on the body **801** taking care to centre the adjusting screw **826** inside the spring **824**.
- Position the 3 screws **856**, turn them until contact is made with the cap **827**. Then tighten them alternately to maintain the shaft of the cap inside that the body and to avoid cutting the seal **807**.
- Then refit the complete bypass on the pump and adjust it (see § ORIENTATION and ADJUSTMENT).

PRESSURE RANGE

Point of bypass opening

PUMP TYPE	P15 - P25			P40 - P60		
Spring	2-4	4-7	7-12	2-3	3-6	6-12
Adjusting min. (bar)	2	3,5	7	2	3	6
Adjusting max. (bar)	3,5	7	12	3	6	12



° = Assemblies and parts can be available.

Ref.	No.	DESIGNATION
° 820	1	COMPENSATED BYPASS, COMPLETE (Please order reference 824 also)
108	1	Bypass seat
115	1	Plate
116	2	Plate rivet
125	1	Seat bolt
801	1	Bypass body
° 823	1	Compensated valve
823a	1	Spring guide
827	1	Bypass cap
858	2	Bypass seal (see 899)
° 898	1	ADJUSTING SCREW VALVE SET
807	1	Seal (see 898)
825	1	Spring guide
826	1	Adjusting screw (see 898)
831	1	Nut pin (see 899 or 898)
834	1	Adjusting nut (see 899 or 898)
835	1	Lock nut (see 899 or 898)
837	1	Seal (see 899 or 898)
856	3	Cap screw (see 899 or 898)
859	2	Fixing bolt (see 899)
° 866	1	COMPLETE PLUG (850+857)
° 824	1	SPRING 6 bar (standard) 3 bar or 9 bar (when asked)
° 899	1	BYPASS SEALS - SCREWS SET (807+831+834+835+837+850+852+855+856+858+859)
OPTIONS		
° 870	1	LIFTING DEVICE, COMPLETE
850a	1	Seal
851	1	Nut
852	1	Nut screw (see 899)
853	1	Screw
854	1	Hand wheel
855	1	Hand wheel pin (see 899)
° 820	1	DOUBLE COMPENSATED BYPASS The parts are identical to those of the compensated bypass, but doubled up. The bypass body is different.
801	1	Double compensated bypass body

To order spare parts, please indicate :

- TYPE and SERIAL NO. of the pump (stamped on pump plate).
- REFERENCES and DESIGNATIONS of the desired parts. Please note that only those complete parts or assemblies whose reference is preceded by (°) can be supplied.
- Instructions 212.