



INSTRUCTIONS 1010-E00 e

Section	1010
Effective	March 2008
Replaces	October 2004

Original instructions

CC8-40P - CC8-50P - CC8-65P

pumps

INSTALLATION

OPERATION

MAINTENANCE

BLACKMER
Z.I. Plaine des Isles
F- 89000 AUXERRE

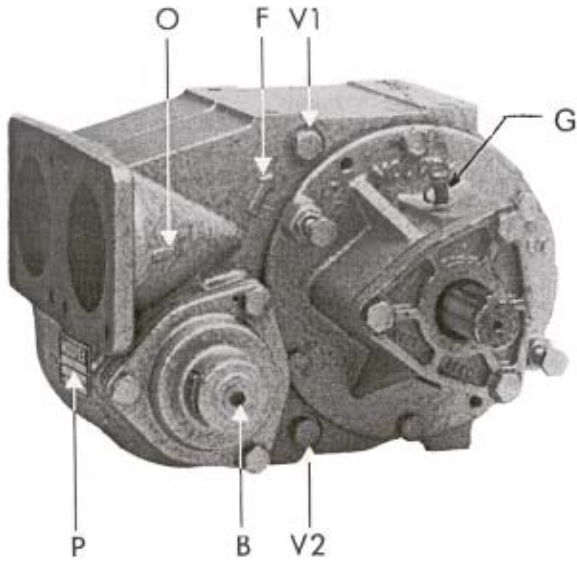
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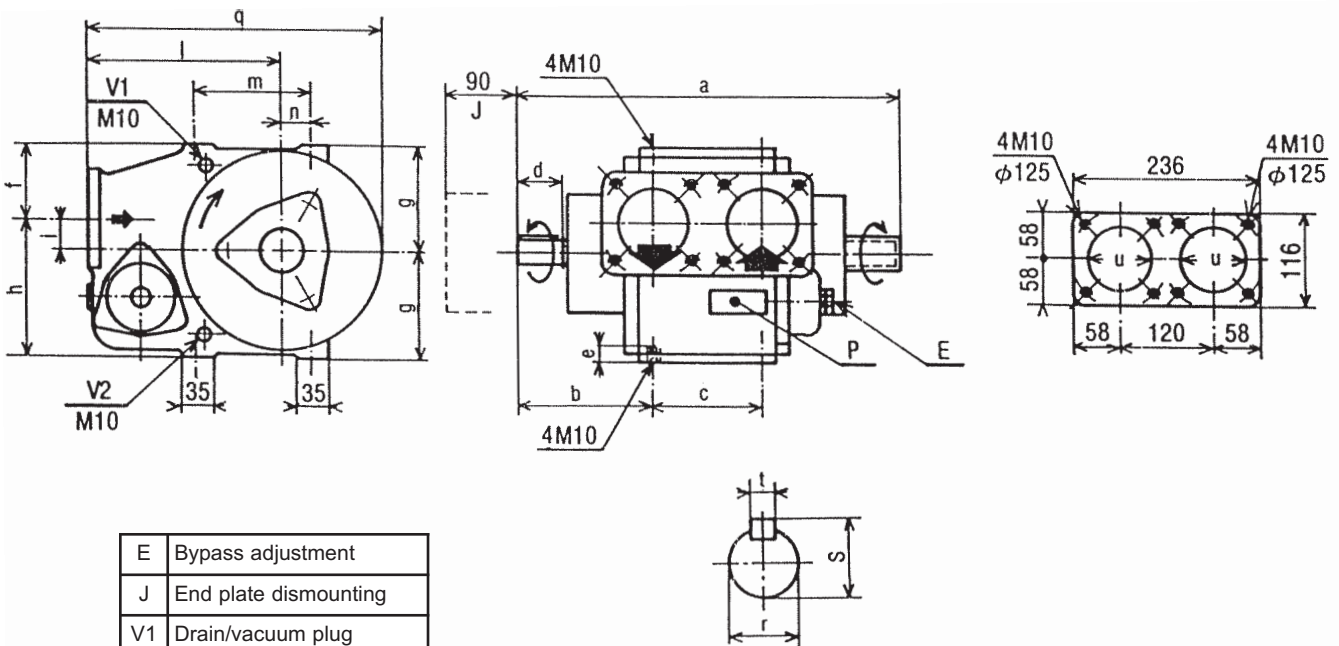
Your distributor :

1. PRESENTATION



- B Bypass
- P Pump plate
- V1 Drain plug-vacuum plug G1/4
- V2 Drain plug-pressure plug G1/4
- F Arrow rotation
- O Arrow suction

2. OVERALL DIMENSIONS - mm



E	Bypass adjustment
J	End plate dismounting
V1	Drain/vacuum plug
V2	Drain/pressure plug
P	Pump plate

Pump	a	b	c	d	e	f	g	h	i	l	m	n	q	r	s	t	u	Kg
CC8-40 CC8-50	443	158	110	50	17	79	112	145	33	216	120	30	318	30Ø6	33	8h9	80	48
CC8-65	745	170	120	52	18	85	118	151	33	222	130	30	338	30Ø6	33	8h9	80	57

The pump rotates in one direction only. This is indicated by an arrow on the pump housing. However, the pump has both of shaft-ends led out and must be driven through one the other depending on the direction of rotation of the power take-off.

Because the pump rotates in one direction only, the positions of the suction and discharge ports are not be reversed (see arrows on housing). The safety bypass has not to be reversed.

3. DISMANTLING - REASSEMBLY

Before any disassembly, make sure that the pump has been drained and must not start up, even accidentally.

4. NECESSARY TOOLS

- Flat wrenches 13, 17, 22
- Tube wrench 17
- Circlip opening pliers
- Screwdriver
- Mallet
- Torque wrench

Makeup torques :

- M103347 da N.mm
 - M 81684 da N.mm
 - M 6687 da N.mm
-

5. DISMANTLING PUMP ON SIDE OPPOSITE TO DRIVE SYSTEM

Unscrew the screws **723**, and remove the cover **712** and the seal **714**.

Remove circlip **537**.

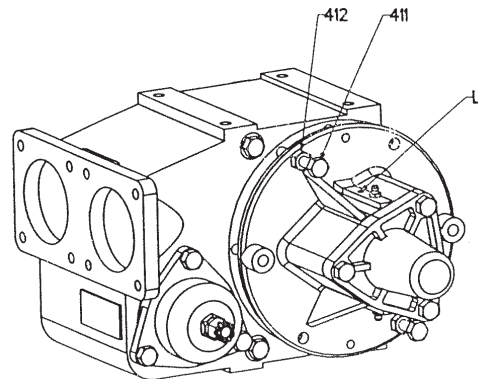
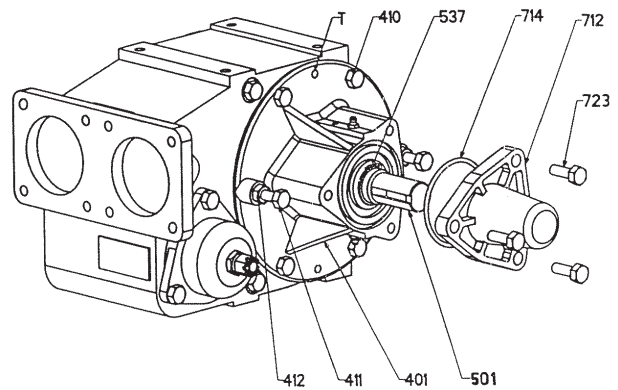
Carefully clean the shaft end (remove any trace of paint, oxidation, burrs...).

Unscrew the 4 screws **410**.

Unscrew the 4 screws **411** fitted with their nut **412** and place them in the 2 tapped holes T.

Screw up the 2 screws at the same time so that the end-plate is gradually released along the centre line.

When the end-plate is free on the shaft, hold it by hand supporting it.



6. DISMANTLING PUMP ON DRIVE SIDE

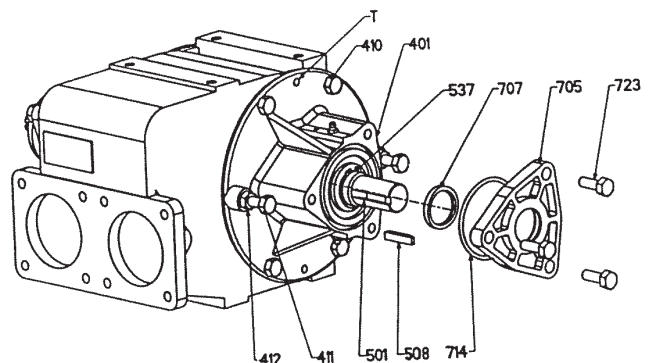
Uncouple the pump by removing the coupling.

Remove the key **508** and carefully clean the shaft end to remove any trace of paint, oxidation, burrs...

Unscrew the screws **723**, remove the cover **705** with its seal **714** taking care not damaging seal **707**.

Remove the circlip **537**.

Operate then in a identical way in § DISMANTLING PUMP ON SIDE OPPOSITE TO DRIVE SYSTEM.



7. REASSEMBLY OF THE PUMP

When putting the end-plate back into place, take care to have the shaft seal drive lugs facing the notches on rotor.

Replace the cover **712** or **705** on the end plate **401** with screws **723**.

Lubricate the shaft **501** slightly.

Make sure that the end-plate seal **403** is correctly positioned, check it and change it if necessary.

Position the end plate **401** on the shaft and approach it as far as possible by hand (make sure to position one of the drainage port L pointing down).

Finish fitting the end-plate, screwing the 2 nuts **412** gradually on to the 2 screws **411**.

Make sure that end-plate is centred while screwing.

When the end-plate is in place, remove the screws **411** and their nuts **412** and screw them up in the 2 bosses taking care to position one of the drainage port L pointing down.

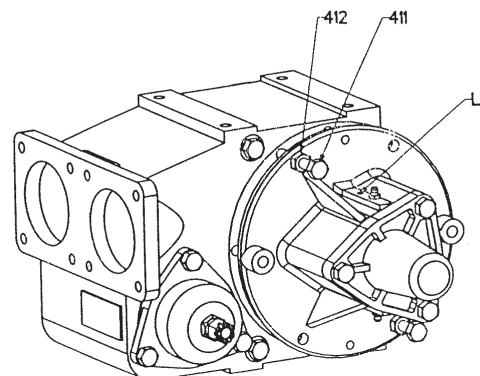
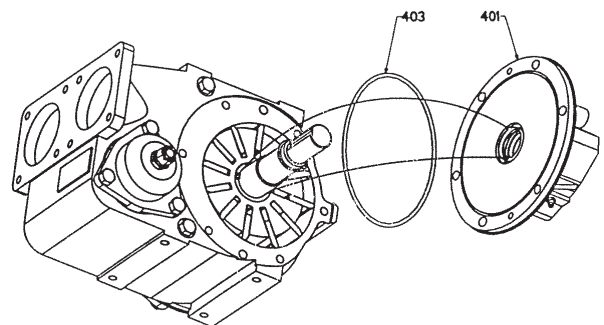
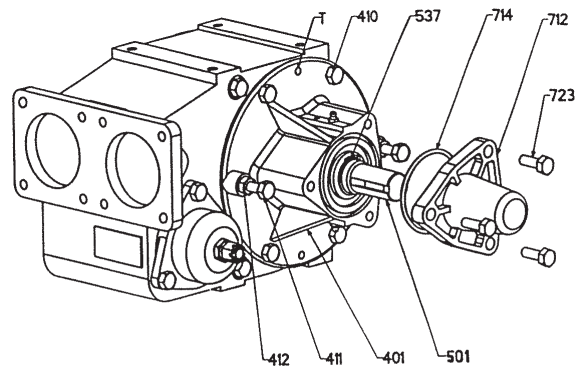
Replace the screws **410**.

Remove the cover **712** or **705**.

Replace the circlip **537**.

Replace the cover **705** with its seal **707** after check condition of seal.

Free the shaft line by a light blow of mallet on its extremity and make sure that the pump rotates freely when turned by hand.



8. CHANGING THE VANES

Open the pump on one side or the other.

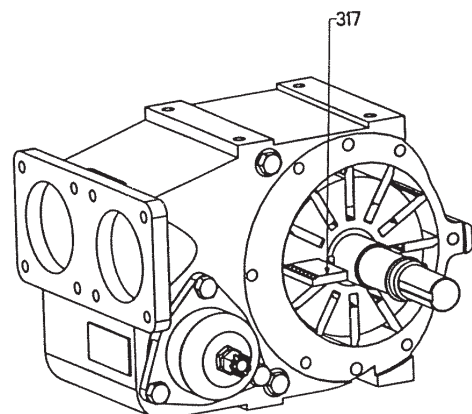
Remove the vanes **317**.

Check for wear (see § MAINTENANCE).

If vane wear is abnormal, check surface condition of body and of end-plate faces.

Refit the vanes (new if necessary) respecting the direction of assembly.

Reassemble the pump and check that it rotates freely when turned by hand.



9. INSPECTION OF THE PUSHRODS

Uncouple the pump by removing the coupling.

Dismantle the cover at the non-drive side (see § **DISMANTLING PUMP ON SIDE OPPOSITE TO DRIVE SYSTEM**).

Unscrew the 4 screws **410** and the 2 screws **411** with their nut **412**.

Pull on the end plate **401** in such a way as to release the rotor **301** from a little more than half of the pump body **101**.

Hold the vanes **317** in place by means of suitable straps (elastic, bracelets...).

Completely remove the shaft **501** with the rotor **301**, the vanes **317** and the complete bearing of the pump body **101**.

Do not dismantle this assembly.

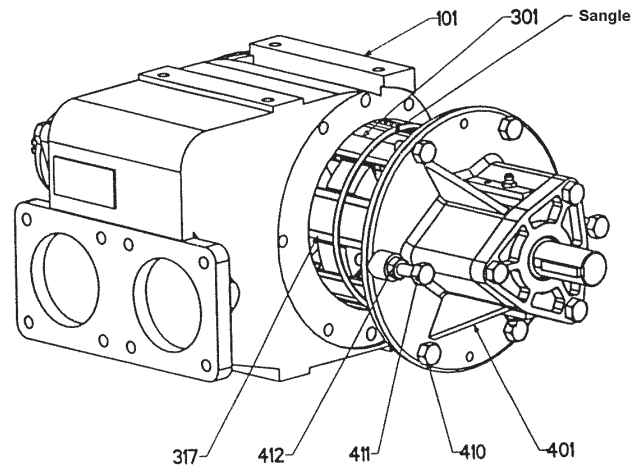
Remove the straps and the vanes **317**.

Remove the pushrods **318** by pushing them, if necessary, with a screwdriver.

Remove the rotor **301**.

Check the pushrods **318** for wear (see § MAINTENANCE) and change them as necessary.

Check the wear of the keyways and of the 2 keys **536**.



10. REASSEMBLY OF THE VANES AND THE PUSHRODS

Position the shaft **501** vertically with the end plate facing down.

Position the seal **403**, fixing it if necessary with a suitable lubricant.

Fit the keys **536**.

Insert the rotor **301** on to the shaft **501**.

Check that the holes of the plunger of the rotor **301** coincide with those of the shaft **501**. If they do not, re-insert the rotor **301** in the other direction.

See to it that the shaft seal carrier engages in the notches provided for this effect.

Insert the pushrods using orthogonal matings (see figure opposite).

Insert the pushrods making sure they are fitted in the right direction (see detail A) and check that they slide freely.

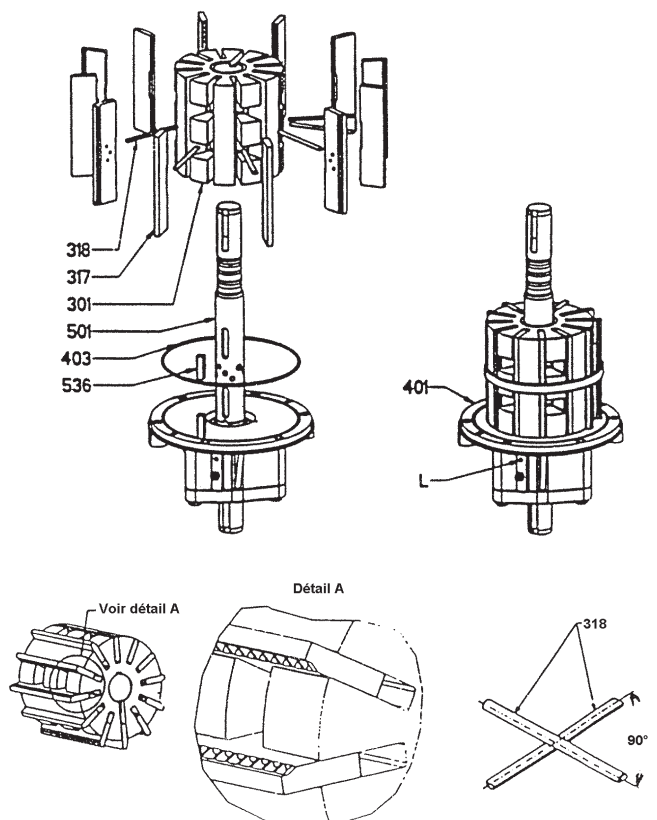
Hold them in place using suitable straps (elastic, bracelets...).

Insert this assembly in the body **101** joining the straps at an opportune moment.

Orientate the end plate **401** with a drainage port L pointing down and fixing it to the pump body **101**.

Re-fit the end plate on the non-drive side (see § REASSEMBLY OF THE PUMP).

Check that the pump rotates freely when turned by hand.

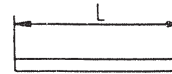
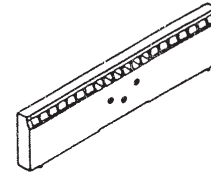
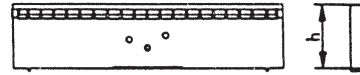


13. MAINTENANCE

Inspection of the vanes

Pump	DIMENSIONS OF THE VANES - mm	
	Original height "h"	Change when "h" < to
CC8-40	31,0	29,0
CC8-50	31,0	29,0
CC8-65	35,3	33,3

Pump	DIMENSIONS OF THE PUSHRODS - mm	
	Original lenght "L"	Change when "L" < to
CC8-40	82,5	82,0
CC8-50	85,0	84,5
CC8-65	85,4	84,9

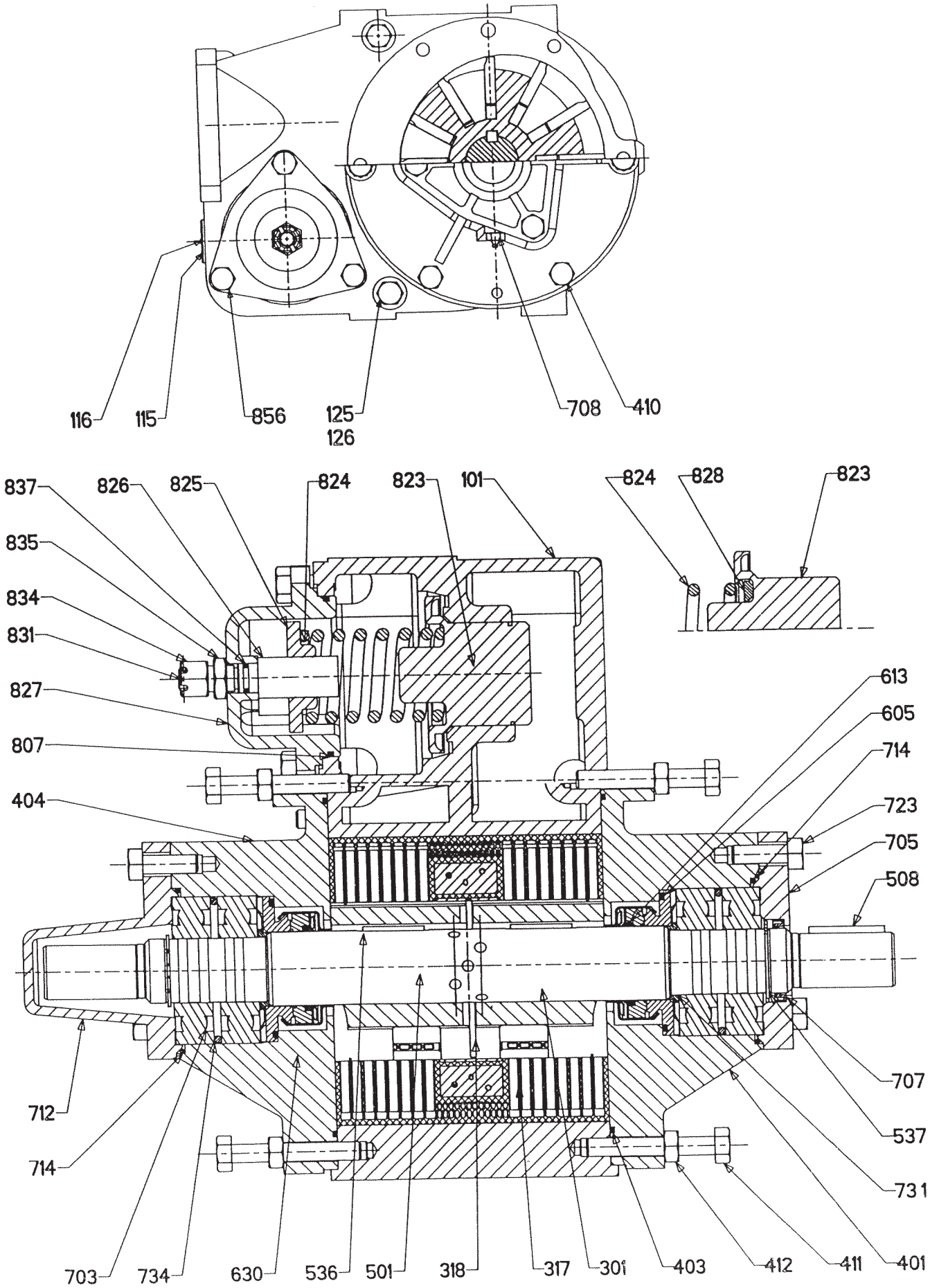


Lubrication of bearings

Pumps constructions AP : Do not lubricate, the bearings are lubricated for life.

Pumps constructions CP : Foresee periodic lubrication of bearings (see GENERAL INSTRUCTIONS).

14. EXPLODED VIEW



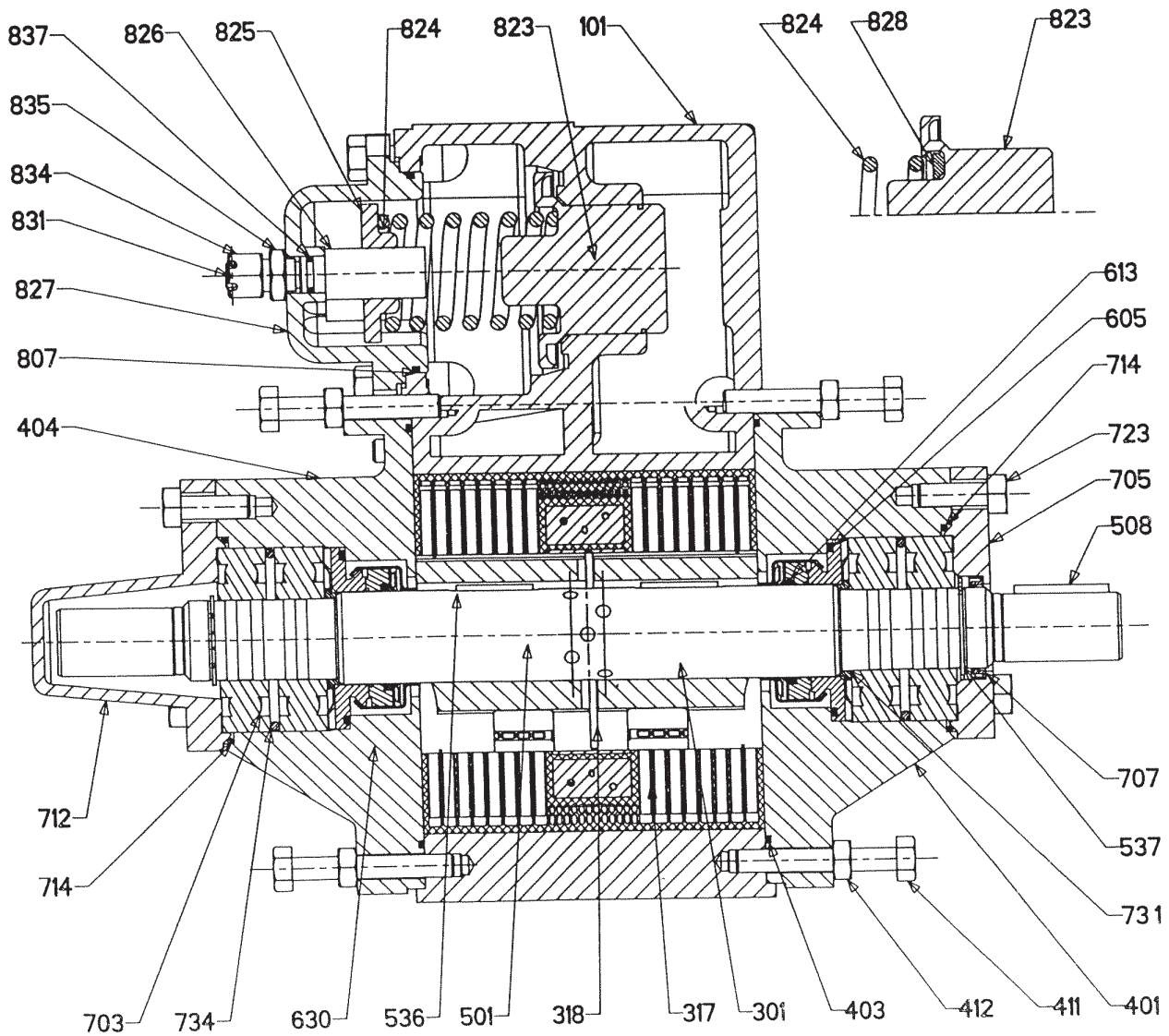
15. SPARE PARTS

* Sets of parts or parts available to order.

The Ref. corresponds to 1 piece of the reference part or set of parts.
Ex. : 1x rep. 317 = 1 vane - 1 x rep. 309 = 1 set de 6 vanes

REF.	Nb.	DESIGNATION
*098	1	SET OF SCREWS (410+411+412+723+856)
*099	1	SET OF PUMP SEALS (126+403+807)
*100	1	COMPLETE BODY
101	1	Body
108	1	Bypass seat
115	1	Pump plate
116	2	Plate rivet
*124	1	DRAIN PLUG AND SEAL
125	3	Drain plug
126	3	Seal See 099
*300	1	COMPLETE ROTOR
301	1	Rotor
317	12	Vane See 309
318	6	Pushrod See 325
*309	1	SET OF 12 VANES 317
*325	1	SET OF 6 PUSHRODS 318
*400	2	COMPLETE END PLATE
401	2	End plate
403	2	End plate seal See 099 ou 409
410	8	End plate screw See 098
411	4	End plate dismantling screw See 098
412	4	End plate dismantling nut See 098
*409	1	SET OF 2 END PLATE SEALS 403
*500	1	COMPLETE SHAFT
501	1	Shaft
*599	1	SET OF KEYS
508	1	End shaft key
536	1	Sliding rotor key
537	2	Retainer ring
731	2	Bearing guide washer
*630	2	COMPLETE SHAFT SEAL
604	2	Stationary
605	2	Stationary seal See 699
612	2	Cup
613	2	Cup seal See 699
614	2	Spring guide
615	6	Spring
616	2	Retainer shaft seal
*699	1	SET OF SHAFT SEAL SEALS (605+613)
Construction AP		
*700	1	COMPLETE BLIND BALL BEARING
703	2	Bearing greased for life See 704
714	1	Cover seal See 715
723	3	Cover screw See 098
733	1	Protection ring
734	1	Grease nipple
*712	1	Blind cover
Construction CP identical to the above except for :		
*700	1	COMPLETE BLIND BALL BEARING
703	2	Bearing
708	2	Grease nipple
Construction AP		
*700a	1	COMPLETE BALL BEARING
703a	2	Bearing greased for life See 704
705	1	Bearing cover
707	1	Lipseal See 715
714a	1	Cover seal See 715
723a	3	Cover screw See 098
733a	1	Protection ring
734a	1	Spacer
Construction CP identical to the above except for:		
*700a	1	COMPLETE BALL BEARING
703a	2	Bearing
708	2	Grease nipple
*704	1	SET OF 4 BEARINGS 703
*715	1	SET OF COVER SEALS (707+714)

15. SPARE PARTS (continued)



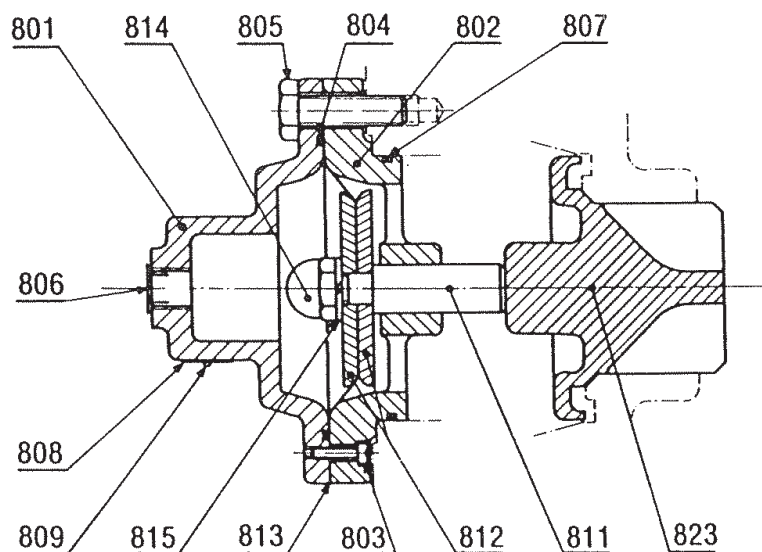
* Sets of parts or parts available to order.

The Ref. corresponds to 1 piece of the reference part or set of parts.
 Ex. : 1x rep. 317 = 1 vane - 1 x rep. 309 = 1 set de 6 vanes

REF.	Nb.	DESIGNATION
*820	1	COMPLETE COMPENSATED BYPASS
*823	1	Compensated valve
*827	1	Bypass cup
*898	1	ADJUSTMENT PIN ASSEMBLY
807	1	Seal See 899
825	1	Spring guide
826	1	Pressure screw
831	1	Nut pin See 899
834	1	Adjustment nut See 899
835	1	Lock nut See 899
837	1	Adjustment seal See 899
856	4	Cup screw See 098
*824	1	Spring : 2,5 or 4 or 8 bar (to specify)
*899	1	SET OF BYPASS SEALS AND SCREWS (807+831+834+835+837)

15. SPARE PARTS (continued)

PNEUMATIC BYPASS WITHOUT SPRING



* Sets of parts or parts available to order.

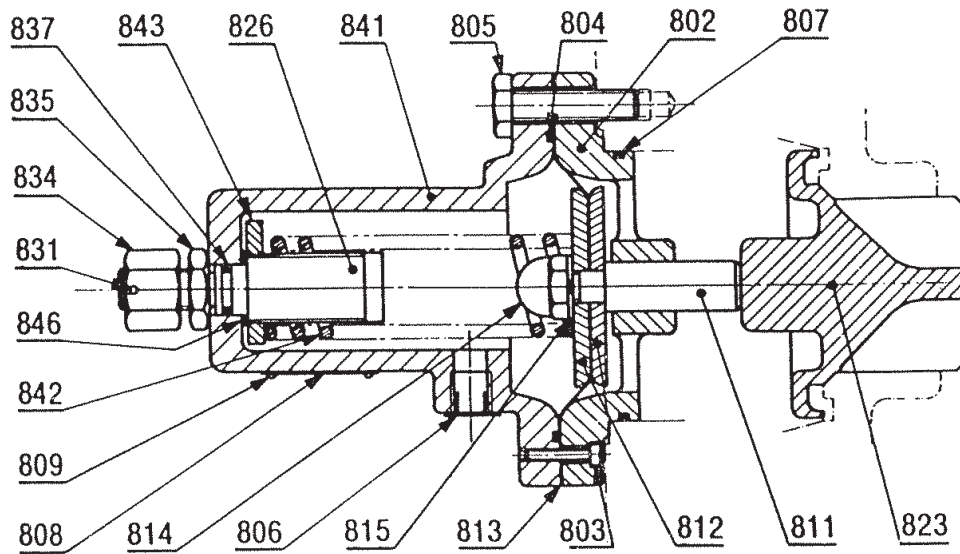
The Ref. corresponds to 1 piece of the reference part or set of parts.

Ex. : 1x rep. 317 = 1 vane - 1 x rep. 309 = 1 set de 6 vanes

VARIANTE		
REF.	Nb.	DESIGNATION
*800	1	COMPLETE PNEUMATIC BYPASS WITHOUT SPRING
801	1	Bypass cover
802	1	Bypass base
803	2	Cup screw
804	1	Base seal..... See 816
805	4	Bypass fixing screw
807	1	Base seal..... See 816
808	1	Plate
809	2	Plate rivet
*823	1	Compensated valve
*810	1	FITTED PUSHROD-DIAPHRAGM UNIT
811	1	Pushrod pin
812	1	Diaphragm washer
*813	1	Diaphragm
814	1	Blind nut
815	1	Lockwasher
*930	1	Regulator, settled, filled
*816	1	SET OF PNEUMATIC BYPASS SEALS 804+807

15. SPARE PARTS (continued)

PNEUMATIC BYPASS WITH SPRING



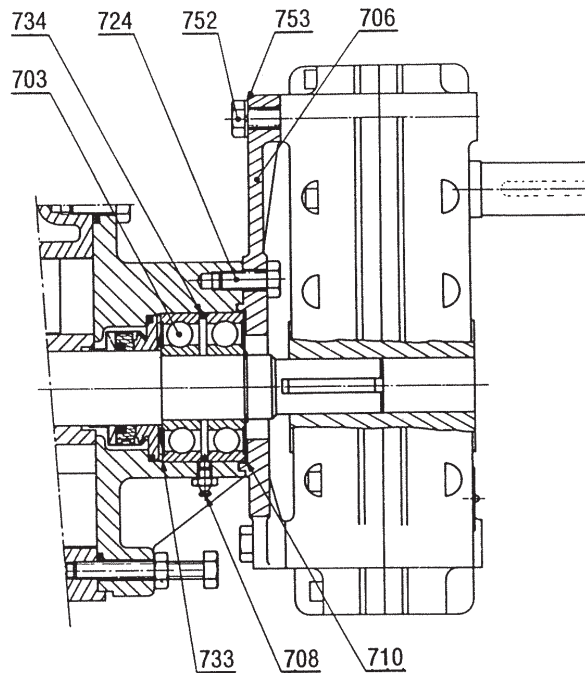
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 Ex. : 1x rep. 317 = 1 vane - 1 x rep. 309 = 1 set de 6 vanes

VARIANTE		
REF.	Nb.	DESIGNATION
*840	1	COMPLETE PNEUMATIC BYPASS WITH ADJUSTABLE SPRING
802	1	Bypass base
803	2	Cover screw
804	1	Base seal..... See 844
805	4	Bypass fixing screw
807	1	Base seal..... See 844
808	1	Plate
809	2	Plate rivet
*823	1	Valve
841	1	Bypass cup
*810	1	FITTED PUSHROD-DIAPHRAGM UNIT
811	1	Pushrod pin
812	1	Diaphragm washer
*813	1	Diaphragm
814	1	Blind nut
815	1	Lockwasher
*845	1	ADJUSTMENT PIN ASSEMBLY
826	1	Pressure screw
831	1	Nut pin See 844
834	1	Adjustment nut..... See 844
835	1	Lock nut..... See 844
837	1	Seal See 844
842	1	Spring
843	1	Spring guide
*930	1	Regulator, settled, filled
*844	1	SET OF SEALS AND NUTS (804+807+831+834+835+837)

15. SPARE PARTS (continued)

SPEED REDUCER FLANGED ON PUMP



* Sets of parts or parts available to order.

The Ref. corresponds to 1 piece of the reference part or set of parts.

Ex. : 1x rep. 317 = 1 vane - 1 x rep. 309 = 1 set de 6 vanes

VARIANTE		
REF.	Nb.	DESIGNATION
Construction AP		
*700a	1	COMPLETE BALL BEARING FOR SPEED REDUCER
703a	2	Bearing greased for life
*706	1	Reduction gear side plate
*710	1	Shim
724	3	Side-plate screw
733a	1	Protection ring
734a	1	Grease nipple
752	4	Reductor screw
753	4	Lock washer
Construction CP identical to the above except for :		
*700	1	COMPLETE BALL BEARING FOR SPEED REDUCER
703a	2	Bearing
708	2	Grease nipple

When ordering spare parts, please indicate :

- TYPE and SERIAL NUMBER of pump (stamped on pump plate)
- The REFERENCE and DESIGNATION of parts required. Take due note that only spares (complete assemblies or detail parts) identified by (*) can be supplied.
- INSTRUCTIONS 1010-E00.