MORIS
Macchine Oleodinamiche
Riduttori Impianti Speciali

Chapter 10

PERIODICAL CHECKS

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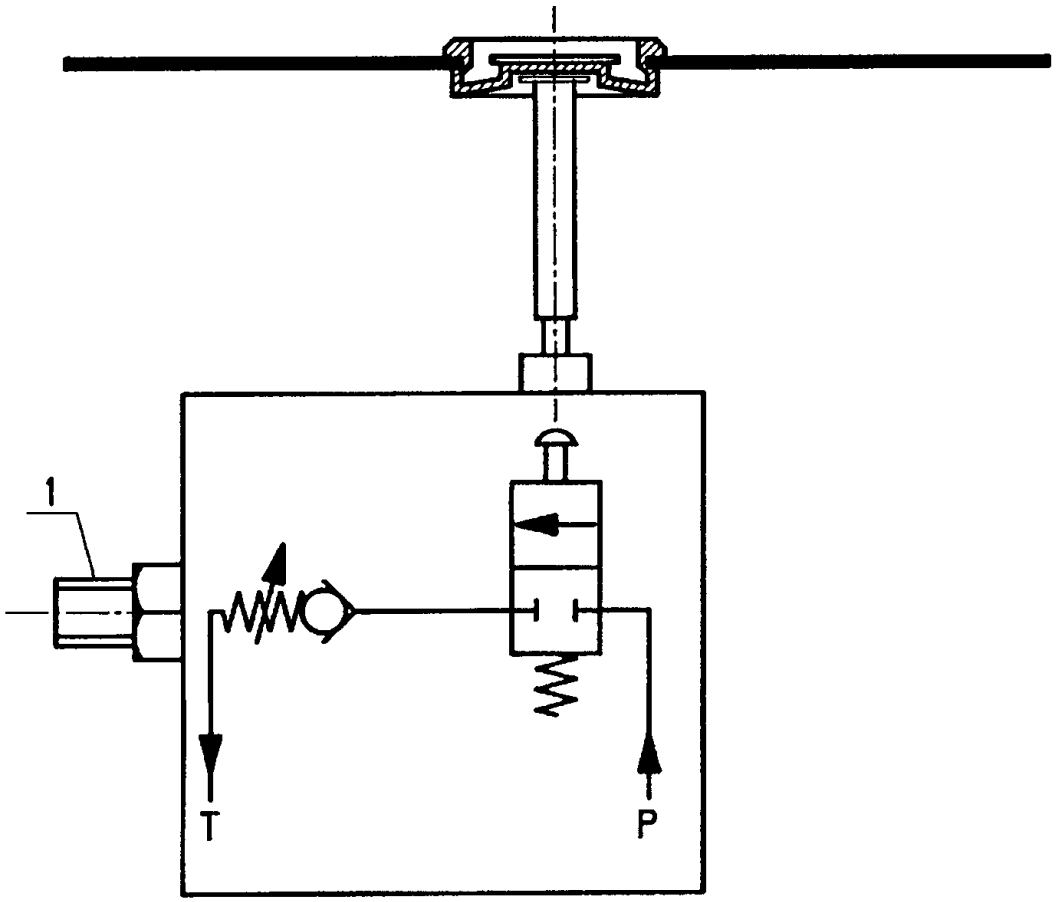
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Enclosed with this handbook and related production.

DRAWING	DESCRIPTION
9360	Manual descent control of rod, using safety means on indirect side acting 2:1 roped installations
9370	Test of installation at twice static pressure
9380	Gaskets repacking
9380/1/2/3	Gaskets repacking
9380/MCE-MCS/1/2	MCE-MCE Gaskets repacking
9560/1	Parts to be checked periodically in hydraulic installations
9560/2/3/4	Recommended checks (Description)
9404	Hand pump “HL”
9405	Hand pump



BY PRESSING THE RED PUSH BUTTON PLACED ON THE POWER UNIT COVER, THE MANUAL DESCENT OF THE ROD COMES INTO EFFECT.

IO ORDER TO TEST THIS CORRECTLY, CARRY OUT THE FOLLOWING PROCEDURE:

A) BLOCK THE CAR USING THE RELEVANT SAFETY MEANS.

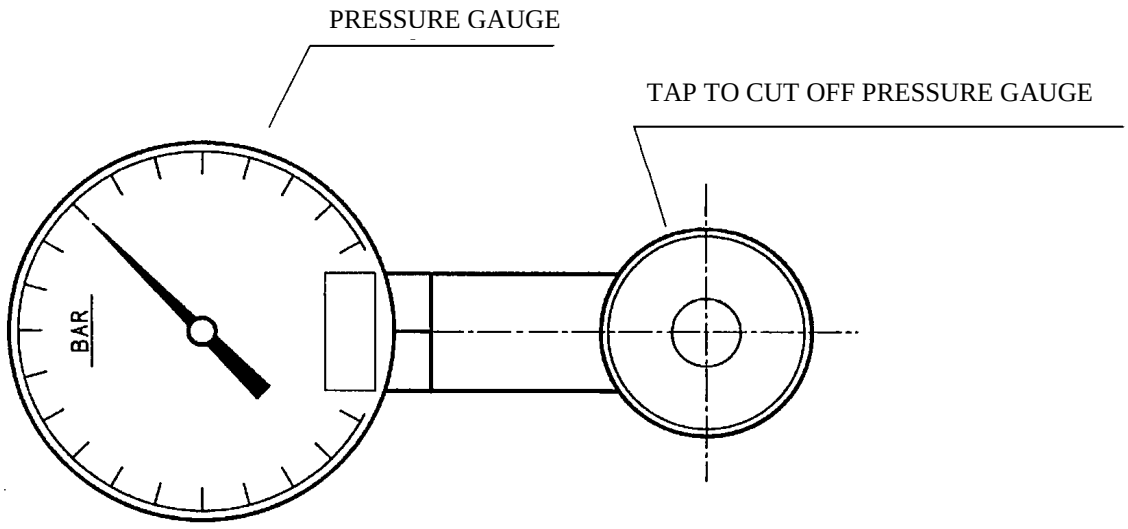
B) PRESS THE RED PUSH BUTTON FOR MANUAL DESCENT OF ROD.

C) THE ROD SHOULD NOT DESCEND.

D) IF IT DOES, TIGHTEN SCREW N. 1 UNTIL IT REMAINS STILL.

E) RELEASE THE SAFETY MEANS, SO THAT THE CAR FUNCTIONS NORMALLY.

F) CHECK THAT WHEN PRESSING THE RED PUSH BUTTON, EVERYTHING FUNCTIONS REGULARLY.



TOP VIEW

A) EXTEND THE RAM TO ITS FULL LENGHT, THUS RELEASE THE VALVE OF MAXIMUM PRESSURE.

B) ACTIVATE THE HAND PUMP UNTIL THE DESIRED PRESSURE IS ATTAINED.

C) IF PRESENT HM-SV OR OTHER UCMP VALVE, KEEP IT ENERGIZED OR OPEN MANUALLY.

D) WHEN THE TEST HAS BEEN COMPLETED, ELIMINATE THE PRESSURE EXCESS BY PROCESSING THE EMERGENCY MANUAL DESCENT PUSH BUTTON.

E) IF PRESENT HM-SV OR OTHER UCMP VALVE, RETURN IT TO THE NORMAL POSITION (NORMALLY CLOSED).

ONLY FOR POWER UNITS WITHOUT HAND PUMP:

1. *MAKE SURE THAT THE TAP TO CUT OFF THE PRESSURE GAUGE IS CLOSED.*
2. *REMOVE THE PRESSURE GAUGE.*
3. *INSERT THE DELIVERY CONNECTION FOR THE HAND PUMP.*
4. *OPEN THE TAP TO CUT OFF THE PRESSURE GAUGE.*
5. *OPEN THE TAP OF THE HAND PUMP DELIVERY FOR ABOUT 1 MINUTE.*
6. *CLOSE IT.*

AFTER TEST:

7. *TURN OFF THE TAP OF THE PRESSURE GAUGE.*
8. *REMOVE THE CONNECTING PIPE FOR MANUAL FUNCTION AND REINSERT THE PRESSURE GAUGE.*

A) EXTEND THE ROD COMPLETELY

B) WHILE EXECUTING A MANUAL SLOW DOWN STROKE, CHECK VISUALLY AND AT THE TOUCH THE ROD SURFACE (USE A CLEAN WIPING CLOTH).

C) REMOVE EVERY IRREGULARITY USING FINE EMERY CLOTH. IN CASE OF DEEP SCRATCHERS, TIGHTEN THE EMERY CLOTH TO A WOODEN SUPPORT.

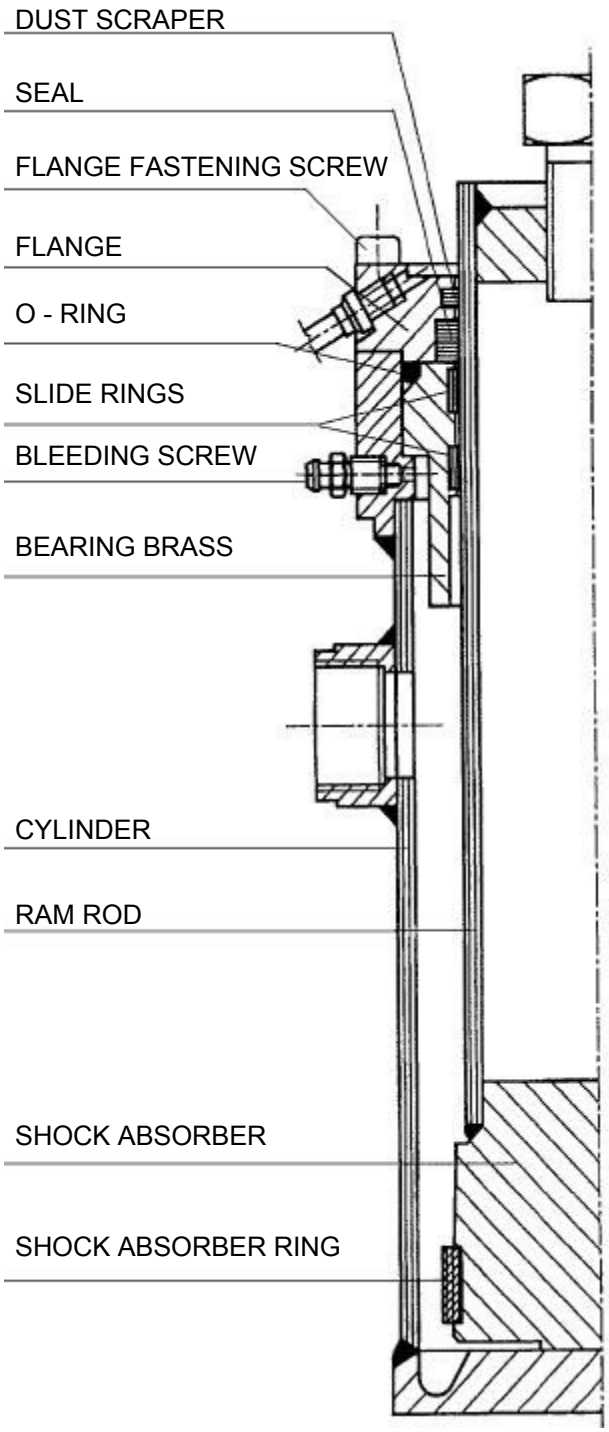
D) LOWER THE ELEVATOR CAR OR THE PULLEYS UNIT, TILL WHEN THE ROD PROTRUDES 50 cm. AT LESS.

E) CLEAN THE WHOLE UPPER SIDE OF THE CYLINDER HEAD; DISCONNECT THE ROD FROM THE SUPPORT OR FROM THE PULLEYS UNIT AND LOWER IT SLOWLY. REMOVE THE SCREWS AND EXTRACT THE GASKETS HOLDER HEAD FROM THE ROD.

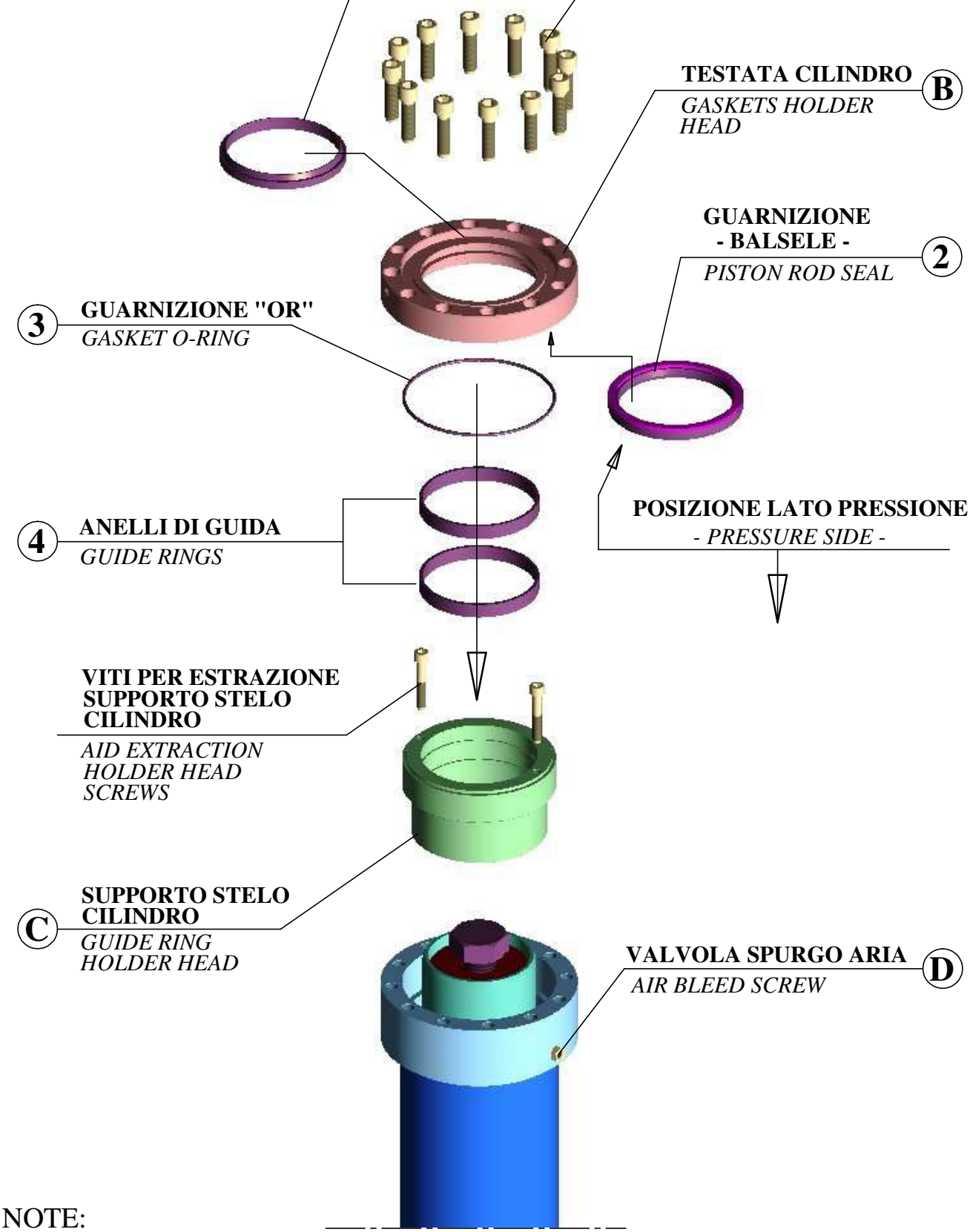
F) REMOVE THE MAIN GASKET WITH A SCREWDRIVER. PLACE THE NEW ONE AFTER GREASING, ADJUSTING IT WITH A WOODEN STICK. TAKE CARE NOT TO DAMAGE THE INSIDE LIP.

G) REPACK THE “OR” GASKET IN THE SAME WAY AND EVENTUALLY THE DUST SCREAPER ONE TOO.

H) REASSEMBLY AND CHECK THE CORRECT WORKING.



UT			**GESKETS REPACKING**	DATA 04/90
				N.DIS **9380**



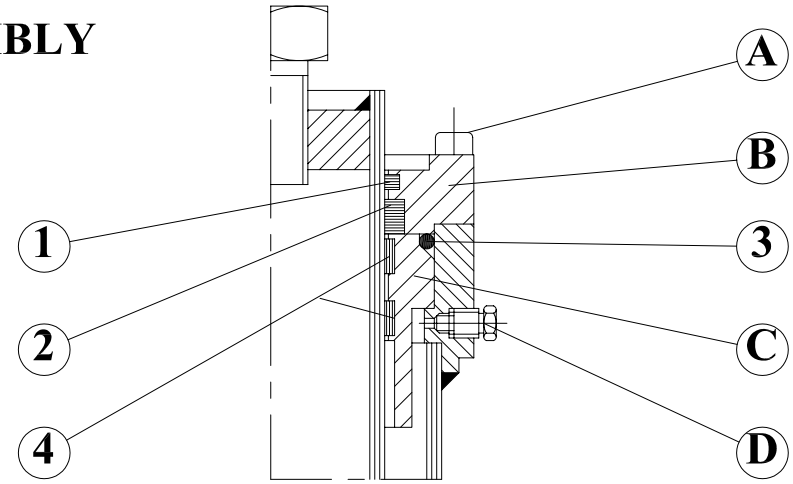
NOTE:

- Per descrizione vedere TAV. 9380/2

- For the description see the Table: 9380/2

UT			PROCEDURA DI SOSTITUZIONE GUARNIZIONI TESTATA PISTONE *GASKET REPACKING*	DATA *DATE* 01/09
				DIS. N° *DWG No* 9380/1

DISASSEMBLY



1 - Unloose the air bleed screw (D) by 1 or more turns to make sure there isn't any air left in the oil.

2 - Remove the 12 screws (A) from the gland ring (B).

3 - Extract the gland ring (B).

4 - Remove the wiper seal (1) and the piston rod seal (2).

Moris Italia always suggests to change the two guide ring, too.

To do that:

5 - Remowe the O-ring (3).

6 - The guide ring sleeve (C) can be drawn out by inserting two M8 screws.

7 - Remove the two guide rings (4).

Disassembly is now completed

CHANGING THE SEALS AND ASSEMBLY

1 - Renew the two guide rings (4)

2 - Replace the guide ring sleeve (C).

3 - Remove the two M8 screws that have been used.

4 - Renew the O-ring (3).

5 - Renew the wiper seal (1).

6 - Temporarily replace the gland ring (B) without the piston rod seal (2) to make sure that the O-ring (3) is perfectly in its right seat.
- For doing that it this enough pushing with the hands without using the 12 screws (A).

In this way we are sure that when we replace definitely the gland ring (B) with the piston piston rod seal (2), the preloading of the piston rod seal will not make the O-ring (3) come out of its seat.

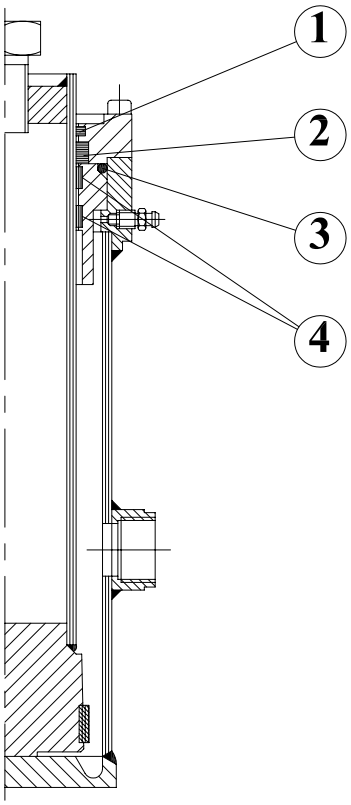
7 - Remove the gland ring (B).

8 - Put the piston rod seal (2) directly on the piston rod in beat on the guide ring sleeve (C). Pay attention to the correct orientation: the pressure side must be towards the ring sleeve. (That is face looking down).

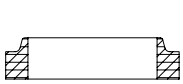
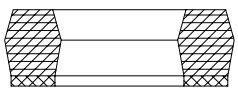
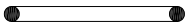
9 - Replace the gland ring (B), carefully screwing the 12 screws (A) having care to screw them tight in a diagonal way.

The cylinder is completely assembled again.

SEAL KITS



Type	Part No.
BZM 50	S.GUARN.C/050
BZM 60	S.GUARN.C/060
BZM 70	S.GUARN.C/070
BZM 80	S.GUARN.C/080
BZM 85	S.GUARN.C/085
BZM 90	S.GUARN.C/090
BZM 100	S.GUARN.C/100
BZM 110	S.GUARN.C/110
BZM 120	S.GUARN.C/120
BZM 130	S.GUARN.C/130
BZM 150	S.GUARN.C/150
BZM 160	S.GUARN.C/160
BZM 180	S.GUARN.C/180
BZM 200	S.GUARN.C/200

SEAL KITS				
Item	**1**	**2**	**3**	**4**
Description	**Wiper seal**	**Piston rod seal**	**O-ring**	**Guide rings**
				
Quantity	**1**	**1**	**1**	**2**

UT	**PROCEDURA DI SOSTITUZIONE GUARNIZIONI TESTATA PISTONE** *GASKETS REPACKING*	DATA *DATE* 01/09
		DIS. N° *DWG No* 9380/3

MCE-MCS PISTON HEAD DISASSEMBLY

NOTE:

- STOP AND BLOCK THE CAB UNDER SAFETY CONDITIONS, CLOSE COMPLETELY THE STEM AND REMOVE THE TOP PULLEY ASSEMBLY.

1) *UNSCREW THE OIL RECOVERY FITTING (Cod. 5332/90)*

2) *UNSCREW COMPLETELY THE BLEEDER VENT SCREW (Cod. 0384/0-P), AND REMOVE THE ANTI-UNSCREWING WASHER (Cod. 0384/MCE-P)*

3) *UNSCREW AND REMOVE THE GASKET HOLDER HEAD, PLACING TWO STUDS IN THE PROPER HOLES.*

4) *REMOVE THE BALSELE GASKET.*

5) *INSTALL THE NEW "BALSELE" GASKET. PAY ATTENTION TO THE CORRECT INSERTION: THE "PRESSURE SIDE" MUST BE PLACED DOWNWARD.*

6) *VERIFY THE O-RING INTEGRITY; LUBRICATE THE THREADS WITH GREASE OR OIL.*

7) *REPOSITION THE GASKET HOLDER HEAD AND SCREW WITH CARE.*

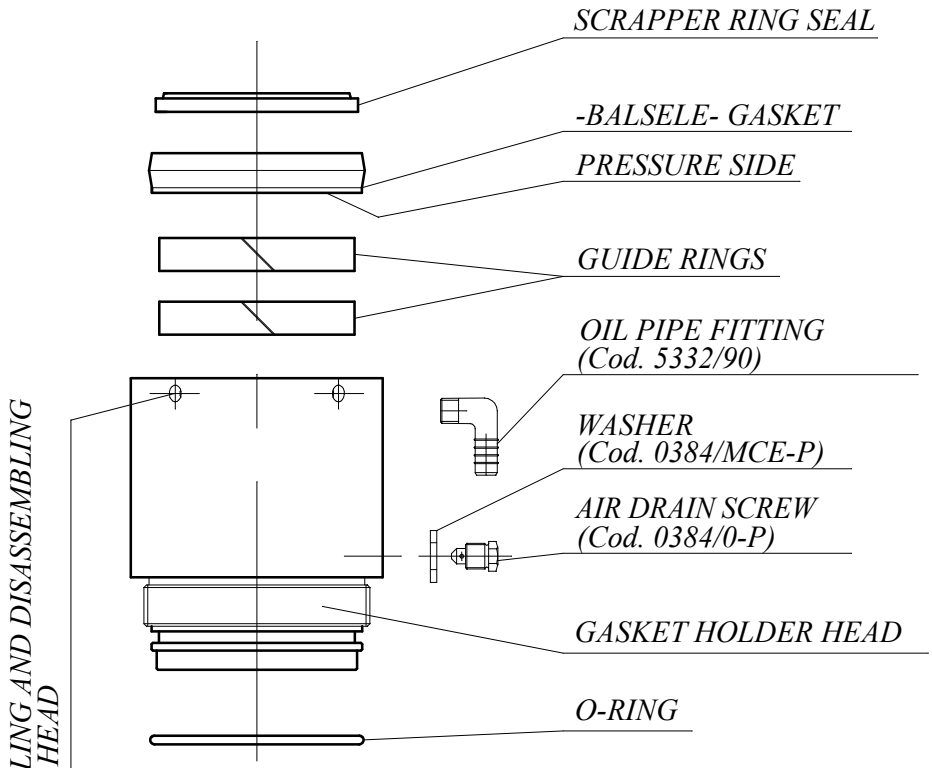
8) *REASSEMBLE THE BLEEDER VENT SCREW AND THE RELATED WASHER.*

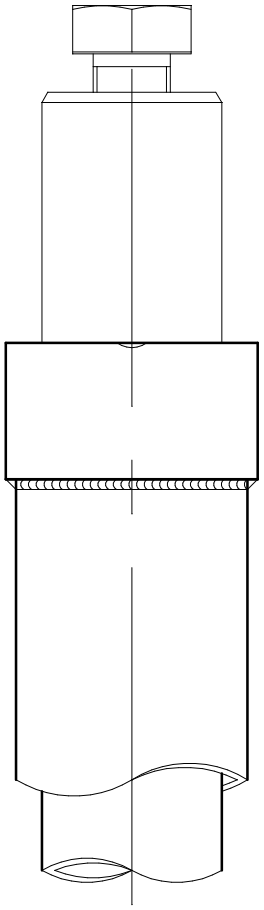
9) *REPOSITION THE PULLEY ASSEMBLY.*

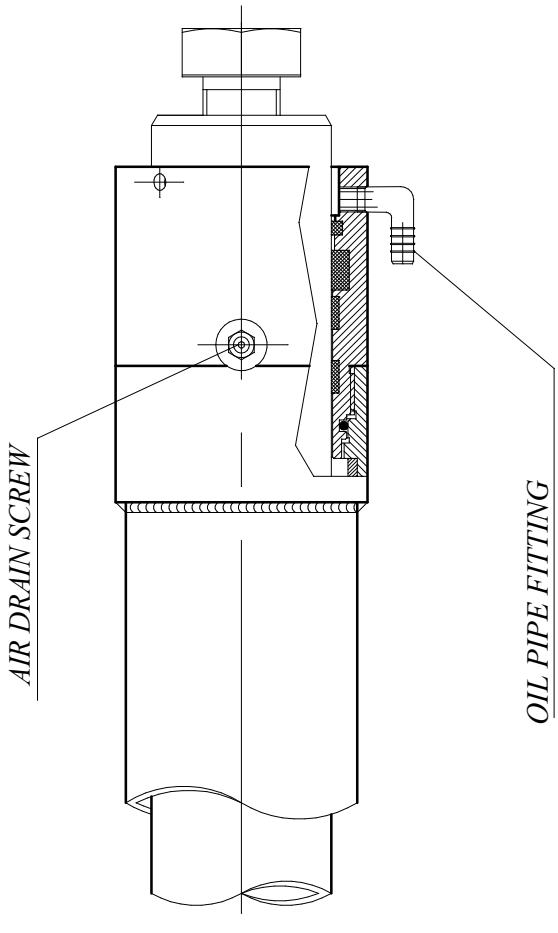
10) *PUT PRESSURE BACK INTO THE HYDRAULIC CIRCUIT, AND VENT THE AIR OUT THROUGH THE SPECIFIC SCREW.*

11) *REASSEMBLE THE OIL PIPE FITTING.*

(FOR LAYOUT SEE SHEET No 2)







VIEW WITH DISASSEMBLED GASKET HOLDER HEAD

VIEW WITH ASSEMBLED GASKET HOLDER HEAD

UT	**MCE-MCS GASKETS REPACKING**	DATE: 01/22 SHEET No 2 DWG No 9380/MCE-MCS

PARTS TO BE CHECKED	TYPE OF CHECK	INSTAL-LATION	MAINTENANCE			
			6 MONTHS	1 YEAR	5 YEARS	10 YEARS
1 - PISTON GASKET	SEALING EFFICIENCY	YES	YES	YES		
2 - VALVES GASKET	SEALING EFFICIENCY	YES	YES	YES		
3 - OIL	LEVEL	YES	YES			
4 - OIL	CONDITION	YES		YES		
5 - OILTIGHTNESS	IN GENERAL	YES		YES		
6 - TUBOFLEX FOR OIL INFLUX	IN GENERAL	YES	YES	YES		
6/1- TUBOFLEX INTERNAL TO THE GEAR-BOX	IN GENERAL	YES	YES	YES		
7 - DISPENSER FILTER	CLEANLINESS/ VERIFICATION	YES		YES		
7/1- FILTER ON SPIRAL PUMP	CLEANLINESS/ VERIFICATION	YES		YES		
8 - SEALS (IF THEY EXIST)	VISUAL	YES		YES		
9 - MOTORE	PROTECTION/ EFFICIENCY	YES		YES		
10 - PRESSURE	IN OPERATION	YES		YES		
11 - SPEED	ACCELERAT. DECELERAT.	YES		YES		
12 - STATIC PRESSURE	TEST AT 2 P.stat.	YES		YES		
13 - OVERPRESSURE VALVE	TEST	YES		YES		
14 - DROP VALVE	TEST	YES		YES		
15 - VALVE TO PREVENT SLACKENING OF CABLES	TEST	YES		YES		
16 - RECOVERY OF	TEST	YES	YES	YES		
17 - ALARM	TEST	YES	YES	YES		
15 - DATA PLATES AND DIAGRAMS	VISUAL	YES		YES		
19 - TOTAL REVISION	GENERAL				YES	
20 - MUFFLER OVER SPIRAL PUMP (IF IT EXISTS)	CONDITION	YES	YES	YES		

UT	PARTS TO BE CHECKED PERIODICALLY IN OLEODYNAMIC INSTALLATIONS	DATE 09/18
		DWG N. 9560/1

9560/1-IN

1. **PISTON GASKET (SEALING)-** Check that the amount of oil that collects in the recovery sump during the interval between two maintenance operations would be constant. In any case it should not be more than 1 litre for 1000 strokes. If it is more, replace gasket according to specifications.

2. **VALVE GASKETS (SEALING)-** After installation and at each maintenance service, check sealing efficiency by one of the following methods, after making sure that the temperature of the oil is more or less equal to room temperature

   a) plants with cutoff ball-cock: close the ball-cock and check that for 5 mins the pressure shown on the pressure gauge does not drop more than 4-6 bar.

   b) plants without cutoff ball-cock: put the piston in up-stroke, and raise the pressure until the safety valve is activated. Check that for 5 mins the pressure shown on the pressure gauge does not drop more than 4-6 bar.

   c) Alternative indicative procedure: check that the recovery device does not go into action for at least 10 minutes, when the car is stationary at level.

   Once a year, during annual maintenance, it is advisable to carry out a visual check on the state of preservation of the non-return valve gasket.

3. **OIL (LEVEL)-** Check that when the car is in its highest position, the oil in the tank does not fall below the minimum level.

4. **OIL (CONDITION)-** Carry out a visual check that the appearance of the oil (color) has not changed. Once a year it is advisable to drain a small amount of oil from the tank and check that it is still limpid. If not, continue to drain until it runs clear.

5. **OIL TIGHTNESS (IN GENERAL)-** Carry out a general check on the various components of the planet: switchboards, tubing, connections, drop-valve, piston, etc., for oil leaks due to blow-bys. Check that all tubes and joints are in good serviceability – they should not show any signs of damage.

6. **TUBOFLEX FOR OIL INFLUX (IN GENERAL)-** There should be no sign of leakages from any connections, nor should the tubes show any abnormalities. During the periodical checks, it is necessary to verify the status of the crimp and screw hose connectors, and to verify the absence of the following anomalies, which will be an indication of the material degradation: wear and tear, fissure cracks, abrasion, unglued parts, visible metal wires; deformation, bubbles, swollen parts or blister under pressure; sticky or soft areas; oil leakages.

6/1. **TUBOFLEX INTERNAL TO THE GEAR-BOX (IN GENERAL)-** There should be no sign of leakages from any connections, nor should the tubes show any abnormalities. During the periodical checks, it is necessary to verify the status of the crimp and screw hose connectors, and to verify the absence of the following anomalies, which will be an indication of the material degradation: wear and tear, fissure cracks, abrasion, unglued parts, visible metal wires; deformation, bubbles, swollen parts or blister under pressure; sticky or soft areas; oil leakages.

7. **DISPENSER FILTER (CLEANLINESS/VERIFICATION)-** Check the main filter mounted on the distributor, and clean or substitute it, if necessary.

7/1. **FILTER ON SPIRAL PUMP (CLEANLINESS/VERIFICATION)-** Verify general conditions and proceed to an eventual cleaning or replacement.

8. **SEALS: IF THEY EXIST (VISUAL)-** Check that seals are present where specified.

9. **MOTOR (PROTECTION EFFICIENCY)-** Check the efficiency of the motor protection according to the established procedures.

10. **PRESSURE (OPERATING)-** Take a survey of the operating pressure, and check that the values have remained constant in time. Remember to exclude the pressure gauge once the reading has been taken.

11. **SPEED(ACCELERATION-DECELERATION)-** Check all these functions and make sure that they correspond to the original values, which are suitable for efficient running of the installation.

12. **STATIC PRESSURE(TESTED AT TWICE NORMAL PRESSURE)-** This checking procedure gives ample proof that all components subjected to pressure are in good seviceability, including those for which a visual check is difficult.

13. **OVERPRESSURE VALVE (TEST)-** Check the pressure value at which the overpressure valve is activated. This value should never exceed the specified limites.

14. **FALL-VALVE (TEST)-** Check the efficiency of the fall-valve in the event of an increase in speed of descent of the car.

15. **VALVE TO PREVENT SLACKENING OF THE CABLES (TEST)-** The control should only be performed on installations in which the car is suspended by cable (reeving plants).

    In cases where the car is restrained on the guideways (parachute equipment activated) the piston should not descent if the push-button controlling the valve is pressed.

16. **RECOVERY (TEST)-** Perform downward transitions manually at the each level in order to control the efficiency of the electrical circuit ant the recovery contacts. It is better to perform this check at the normal leveling speed.

17. **ALARM (TEST)-** At each level check the efficiency of the acoustic alarm signal, according to the established procdures.

18. **PLATES AND DIAGRAMS (VISUAL)-** Make sure that all necessary plates and diagrams are suitably positioned: the oil plate, the file of instructions for manual operation, the wiring diagrams, the hydraulic circuits with indications of the tubing involved, the file of instructions in the event of a prolonged interruption during operation, etc.

19. **TOTAL REVISION (GENERAL)-** It is recommended that a complete revision of the oleodynamic equipments should be carried out every 5-10 years, depending upon the general conditions of the plant. This revision should repair and restore efficiency to all parts which may have suffered from ageing or contamination, in particular the oil.

    - disassemble the cylinder head and the valves;

    - complete filtering of the oil and cleaning out of the tank (the degree of filtration should be at least 30-40 micron;

    - control, claning, and if necessary substitution of the various filters incorporated in the plant;

    - ressembly of all components;

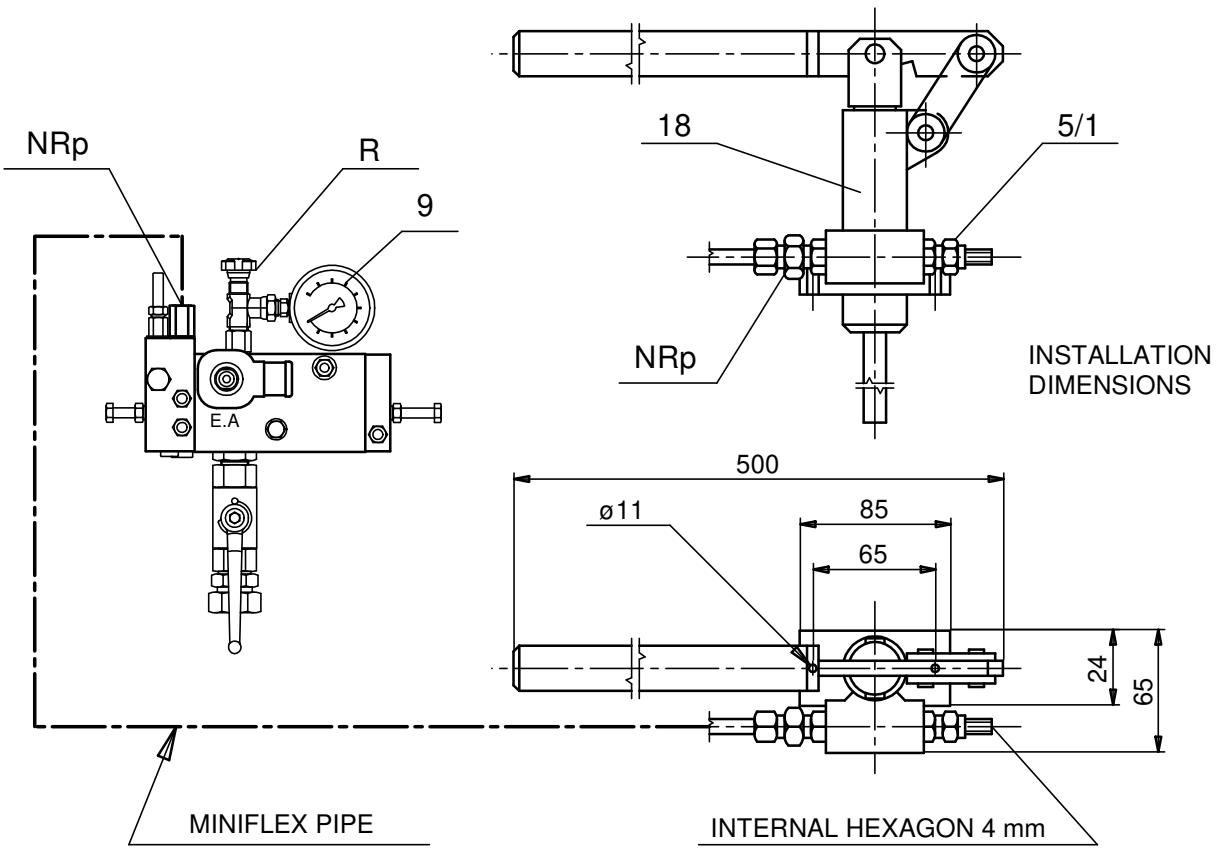
    - check on all adjustments, as with a new installation.

20 MUFFLER OVERSPIRAL PUMP: IF IT EXISTS (CONDITION)

- CHECK FOR ANOMALIES IN WELDED JUNCTURES WITH EVENTUAL POWER LOSS.

- REPLACE THE COMPONENT IF FOUNDED ABNORMAL.

TECHNICAL DATA: FLOW RATE FOR EVERY CYCLE 12 cm^3
MAX. ADMISSIBLE PRESSURE 110 bar

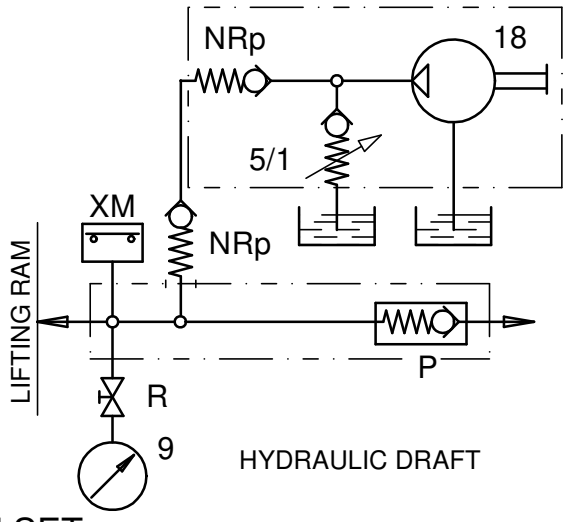


18- HAND PUMP

NRp- NONRETURN VALVE
OF THE HAND PUMP

5/1- OVERPRESSURE VALVE OF THE HAND
PUMP 2, 3 TIMES THE MAX STATIC PRESSURE

- THE HAND PUMP CONNECTION IS REALIZED
BETWEEN THE VALVE " P " AND THE PRESSURE
GAUGE "9"



HYDRAULIC DRAFT

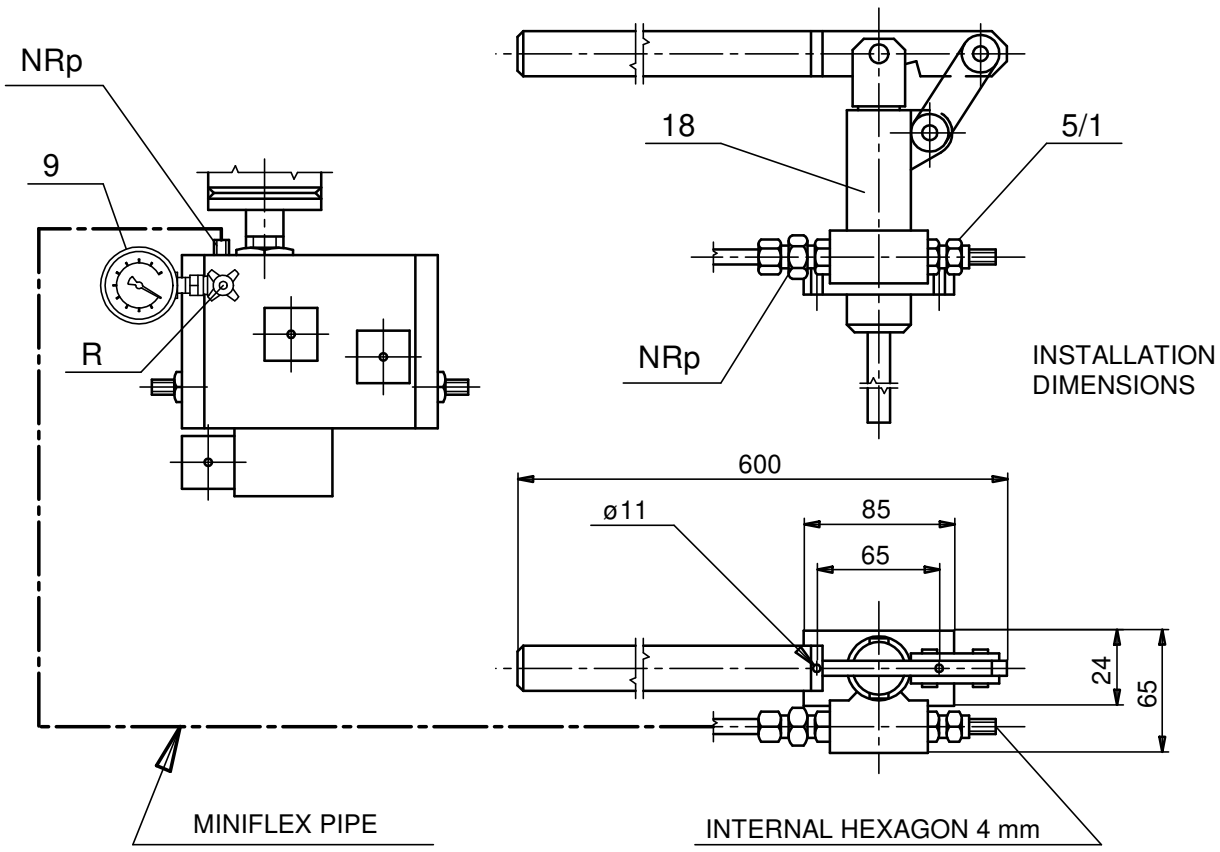
NOTES FOR THE HAND PUMP REGULATION SET

- BEFORE GIVING TENSION TO THE MOTOR, IT IS NECESSARY TO ACTUATE THE HAND PUMP, IN THE FOLLOWING WAY:

  - LOOSEN THE SCREW N°5/1 (ACTING ON THE HEXAGONAL N UT IN ORDER TO KEEP CONSTANT THE PROTRUDING LENGTH OF THE NUT SCREW) FOR ABOUT 2 - 5 TURNS.
  - OPERATE THE HAND PUMP IN ORDER TO OBTAIN THE OIL FLOW IN A REGULAR WAY (NO AIR), FROM THE N°5/1 SCREW OUTLET.
  - BRING BACK THE N°5/1 SCREW IN THE ORIGINAL POSITI ON, VERIFYING THE PRESSURE VALUE SET BEFORE (2, 3 TIMES THE MAX. STATIC PRESSURE).
  - FOR DIFFERENT PRESSURE VALUES, SET THE N°5/1 SCRE W (ROTATING CLOCKWISE THE PRESSURE INCREASES)

UT			HAND PUMP "HL"	DATE 12/07
				DWG N. 9404

TECHNICAL DATA: FLOW RATE FOR EVERY CYCLE 12 cm^3
MAX. ADMISSIBLE PRESSURE 110 bar



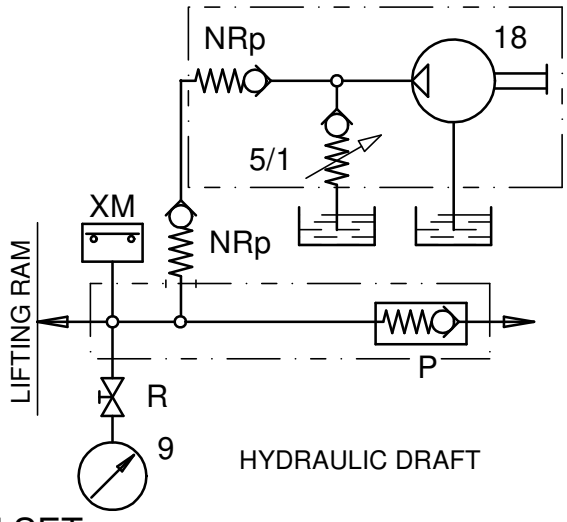
INSTALLATION DIMENSIONS

18- HAND PUMP

NRp- NONRETURN VALVE OF THE HAND PUMP

5/1- OVERPRESSURE VALVE OF THE HAND PUMP 2, 3 TIMES THE MAX STATIC PRESSURE

- THE HAND PUMP CONNECTION IS REALIZED BETWEEN THE VALVE " P" AND THE PRESSURE GAUGE " 9 "



HYDRAULIC DRAFT

NOTES FOR THE HAND PUMP REGULATION SET

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UT			HAND PUMP	DATE 12/07
				DWG N. 9405