



Macchine Oleodinamiche
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POWER UNIT FOR PASSENGERS AND GOODS LIFT

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UT		ASSEMBLY USE AND MAINTENANCE MANUAL	DATE 07/18
			DWG N. 9001/MI-IN

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UT				DATE	07/18
			INDEX ASSEMBLY AND USE MANUAL	DWG N.	IN-AEM

WARNING

- IN ORDER TO AVOID MOTOR DAMAGES, WIRE UP AS INDICATED ON THE TERMINAL BOARD COVER.
- WHEN THE MOTOR/PUMP IS FIRST STARTED UP, CHECK THE NOISE LEVEL, IF IT SEEMS TOO HIGH THEN THE PHASES MUST BE INVERTED AT THE CONTROL PANEL.

0552/IN

WARNING

- THIS POWER UNIT HAS BEEN FACTORY SET.
- READ THE ENCLOSED INSTRUCTIONS CAREFULLY BEFORE TO ADJUSTING ANY OF THE SCREW.

0553/IN

UT

General instructions for connection
motor and solenoid valves power unit

DATE

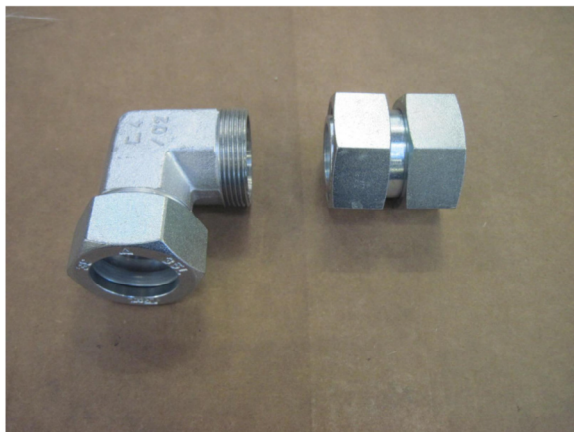
10/08

DWG Nr

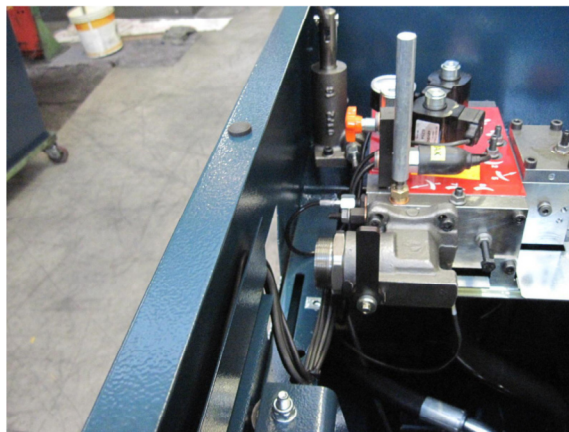
0985/IN

KIT per uscita centralina orizzontale KIT for horizontal outlet poxer unit

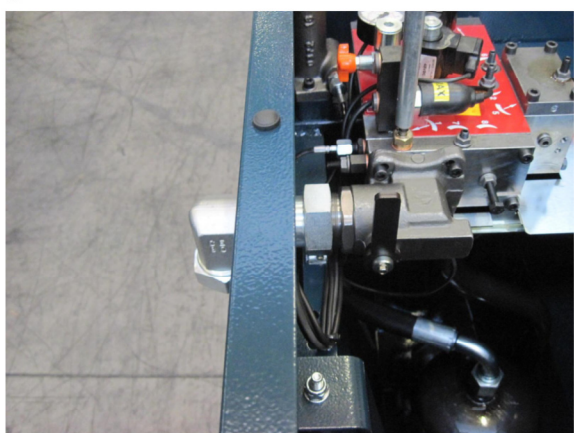
1



2



3



4



Codice articolo Item number	Descrizione Description
KIT.RACC/ORR35	Raccordo 90° tubo-tubo per attacco tubo flessibile da 1_1/4 (o barra tubo Ø 35mm) + raccordo con dado girevole femmina-femmina 90° fitting for 1_1/4 flex hose (or Ø 35mm rigid pipe) + straight coupling with swivel nut
KIT.RACC/ORR42	Raccordo 90° tubo-tubo per attacco tubo flessibile da 1_1/2 (o barra tubo Ø 42mm) + raccordo con dado girevole femmina-femmina 90° fitting for 1_1/2 flex hose (or Ø 42mm rigid pipe) + straight coupling with swivel nut

Montaggio: tramite il dado girevole, bisogna fissare adeguatamente il raccordo femmina-femmina sull'uscita della valvola a sfera. Una volta fissato detto raccordo, bisogna fissare adeguatamente ad esso il raccordo a 90° descritto nella tabella soprastante. Infine, dopo aver tolto il dado e l'ogiva, a questo raccordo andrà poi avvitata o la Vostra tubazione flessibile con attacco diretto oppure andrà fissata adeguatamente, tramite l'utilizzo del dado e dell'ogiva di cui il raccordo stesso è provvisto, la Vostra barra tubo.

Assembly: using the nut, adequately attach the straight coupling with swivel nut at the outlet of the ball valve. Once this coupling is attached, adequately attach the 90° fitting to it following the table above. Finally, after removing the nut and nicking edge, screw on your hose with direct attachment, or else, using the fitting's nut and nicking edge, adequately attach your rigid pipe using the nut and the nicking edge provided with the fitting.

Rev 02

KIT per uscita centralina verticale KIT for vertical outlet power unit

1



2



3



4

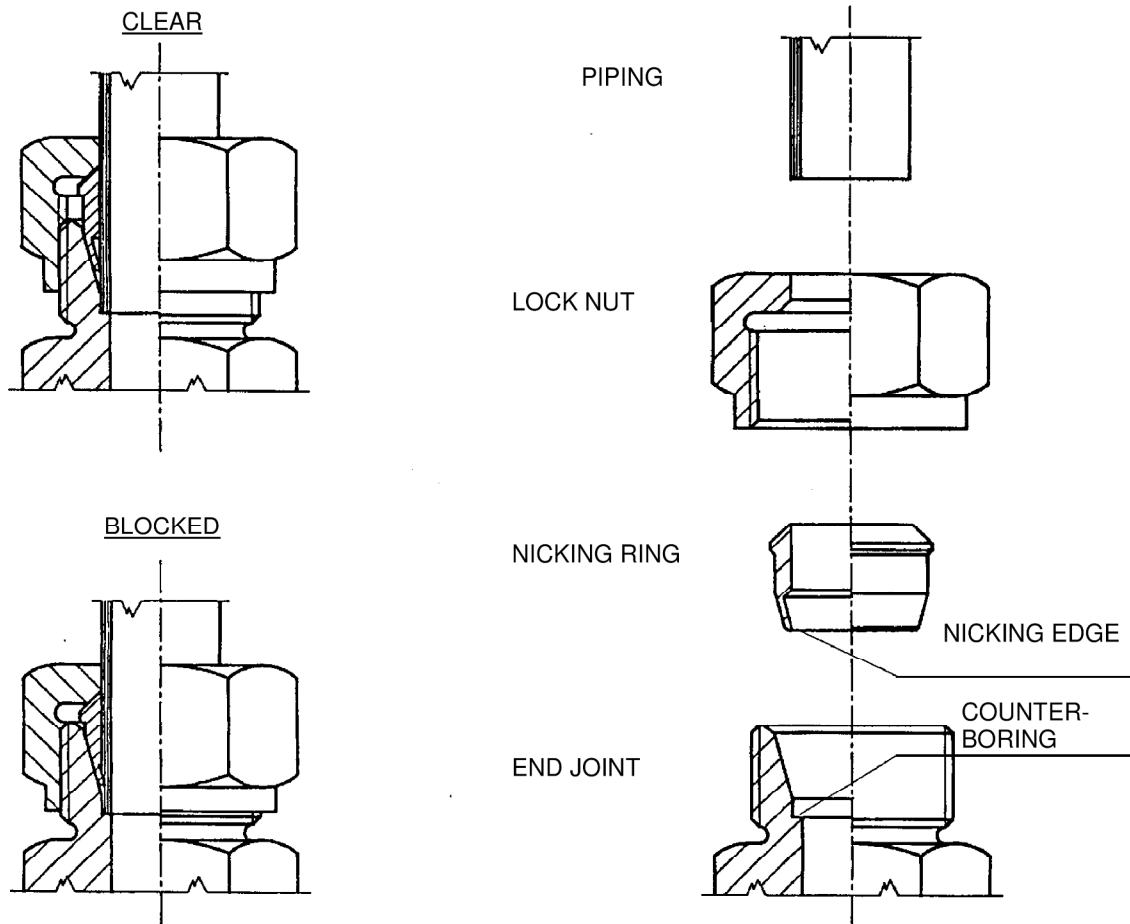


<i>Codice articolo item number</i>	<i>Descrizione Description</i>
KIT.RACC/VER28	Raccordo speciale a 90° per attacco tubo flessibile da 1" (o barra tubo Ø 28 mm) Special 90° elbow connection for 1" flex hose (or Ø 28 mm rigid pipe)
KIT.RACC/VER35	Raccordo speciale a 90° per attacco tubo flessibile da 1"1/4 (o barra tubo Ø 35 mm) Special 90° elbow connection for 1"1/4 flex hose (or Ø 35 mm rigid pipe)
KIT.RACC/VER42	Raccordo speciale a 90° per attacco tubo flessibile da 1"1/2 (o barra tubo Ø 42 mm) Special 90° elbow connection for 1"1/2 flex hose (or Ø 42 mm rigid pipe)

Montaggio: togliere il dado e l'ogiva posti sull'uscita della valvola a sfera e avvitare adeguatamente il raccordo speciale a 90° di cui nella tabella sopra. A questo raccordo andrà poi avvitato direttamente o la Vostra tubazione flessibile con attacco diretto oppure andrà fissata adeguatamente, tramite l'utilizzo del dado e dell'ogiva sopra menzionati, la Vostra barra tubo.

Assembly: remove the nut and the nicking edge from the outlet of the ball valve and appropriately tighten the special 90° fitting following the above table. Then, your hose with direct attachment will be directly screwed to this fitting, or else your rigid pipe will be adequately attached using the nut and the nicking edge noted above.

UT		KIT VERTICALE USCITA CENTRALINA KIT FOR VERTICAL OUTLET POWER UNIT	DATA DATE 04/09
			N°DIS. DWG N°



- 1) FOLLOW THE CUT OF THE PIPE CLOSELY AT RIGHT ANGLES.
- 2) THE PIPE MUST BE FREE OF BURR OR ANY INTERNAL IMPURITIES.
- 3) THE RING AND THREADS MUST BE LUBRICATED DURING INSTALLATION.
- 4) FIRSTLY INSERT THE LOCK NUT AND THEN THE NICKING RING WITH THE NICKING EDGE TURNED TOWARDS THE END JOINT.
- 5) THE PIPE MUST THEN BE INSERTED INTO THE END JOINT AND MUST REST AGAINST THE COUNTERBORING. THE LOCK NUT MUST THEN BE TIGHTEND BY HAND AS FAR AS POSSIBLE.
- 6) TAKE A SPANNER WITH AN EXTENSION, AND TIGHTEN THE LOCK NUT AT LEAST 1 AND ½ TURNS UNTIL THE NICKING EDGE TOUCHES THE PIPE (AS SHOWN ABOVE)
- 7) LOOSEN THE LOCK NUT, CHECKING THAT THE NICKING RING IS ABOUT 5 mm PROJECTING FROM THE PIPE OUTSIDE: CHECK THAT IT DOES NOT MOVE FROM THIS POSITION, AND THAT AT THE NICKING POINT THERE IS AN EVEN RIM THAT SHOWS THE OCCUREDE NICKING.
- 8) PROCEED WITH THE TIGHTENING AND BLOCKING OF LOCK NUT.

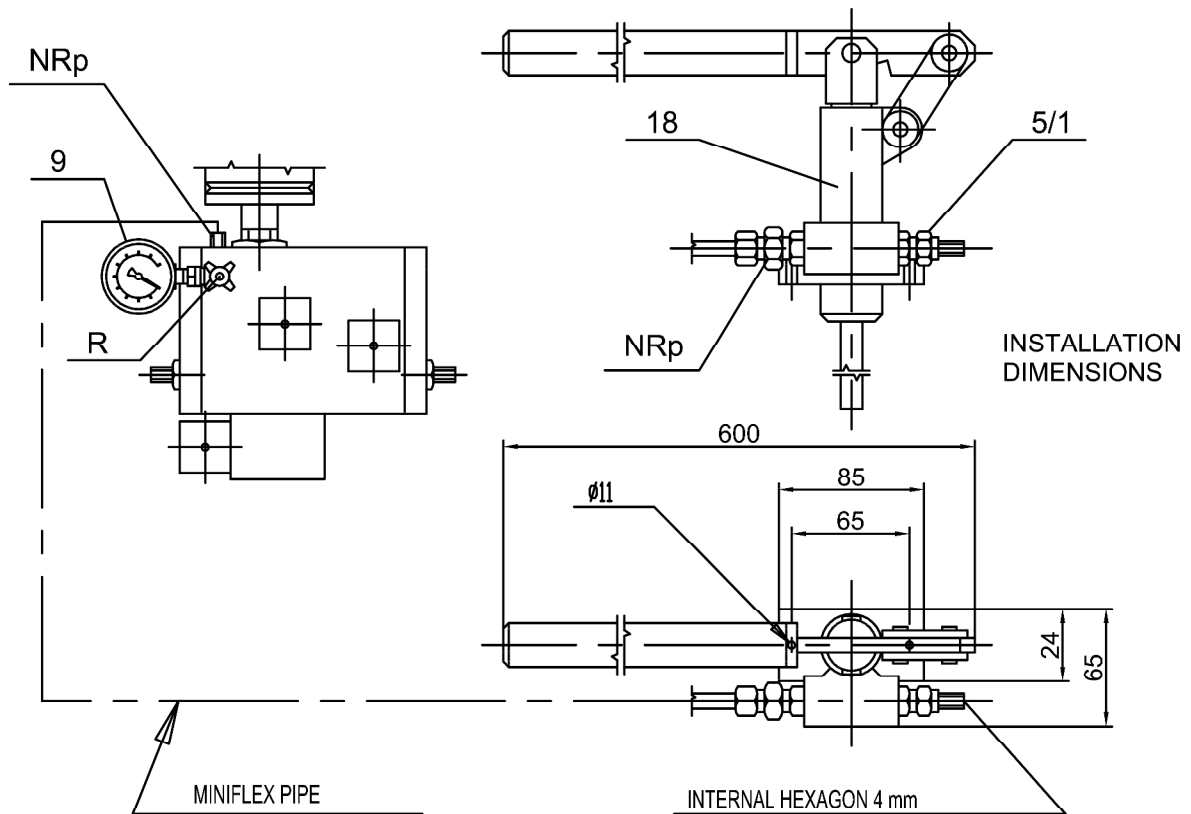
UT

**INSTRUCTIONS FOR THE CORRECT
INSTALLATION OF THE PIPE-WORK**

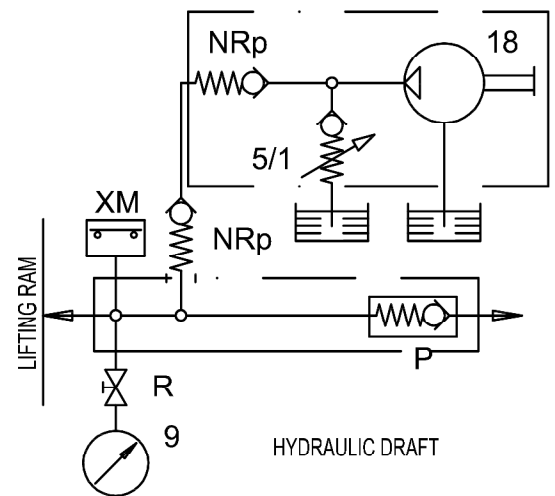
DATE 07/00

DWG N 9300

TECHNICAL DATA: FLOW RATE FOR EVERY CYCLE 12 cm³
 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 " " AND THE PRESSURE GAUGE " " 9



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 NUT 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 POSITION, VERIFYING THE PRESSURE VALUE SET BEFORE (2, 3 TIMES THE MAX. STATIC PRESSURE).
 - FOR DIFFERENT PRESSURE VALUES, SET THE N°5/1 SCREW (ROTATING CLOCKWISE THE PRESSURE INCREASES)

UT		HAND PUMP	DATE	12/07
			DWG N.	9405

1		MOTOR THERMOSTAT (MAX - 2.5 V)
2		
3		COMMON COILS 48/80 Vcc - 12 Vcc
4		E.A UP/DOWNWARD HIGH SPEED VALVE
5		E.B DOWNWARD VALVE
6		EM.-E.A (**)
7		EM.-E.B DOWNWARD EMERGENCY COIL
8		E. λ/Δ STAR DELTA VALVE
9		OIL THERMOSTAT AT 70°C
10		
11		220 V PREHEATING OIL DISTRIBUTOR
12		

∅14

COLLEGAMENTO MOTORE
 MOTOR-CONNECTION MOTOR-ANSCHLUSS
 CONNEXION DU MOTEUR CONNEXION DEL MOTOR
 LIGAÇÃO DO MOTOR ZAPOJENÍ MOTORU

AVVIAMENTO DIRETTO □ SOFT STARTER
 START: DIRECT ON-LINE DIREKTE ANLAUF
 DEMARRAGE DIRECT ARRANQUE DIRECTO
 ARRANQUE DIRECTO

380/660V
400/690V
415/720V

220/380V
230/400V
240/415V

ALIMENTAZIONE A1

WIRING: ALIMENTATION A1 ALIMENTAÇÃO A1

STROM-ZUFUEHRUNG: ALIMENTACION A1 NAPÁJENÍ:

AVVIAMENTO λ Δ /
 START: STAR/DELTA STERNDREIECK ANLAUF
 DEMARRAGE λ Δ / ARRANQUE λ Δ /
 ARRANQUE λ Δ / ZAPOJENÍ

1^a FASE

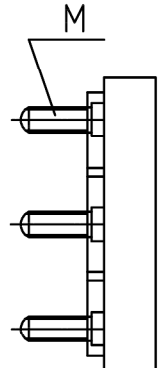
2^a FASE

1st PHASE 1^o PHASE 2nd PHASE 2^o PHASE
 1^{er} PHASE 1^a FASE 2^{ne} PHASE 2^a FASE
 1^a FASE 1^a FAZE 2^a FASE 2^a FAZE

J0496/UN

*




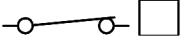
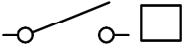
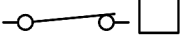
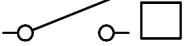
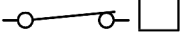
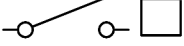
MOTOR POWER		PUMP	M
CV	KW	L/1'	
2-20	1.5-15	15-150	M6
13-50	9.5-37	180-650	M8
60-100	45-75	440-650	M10

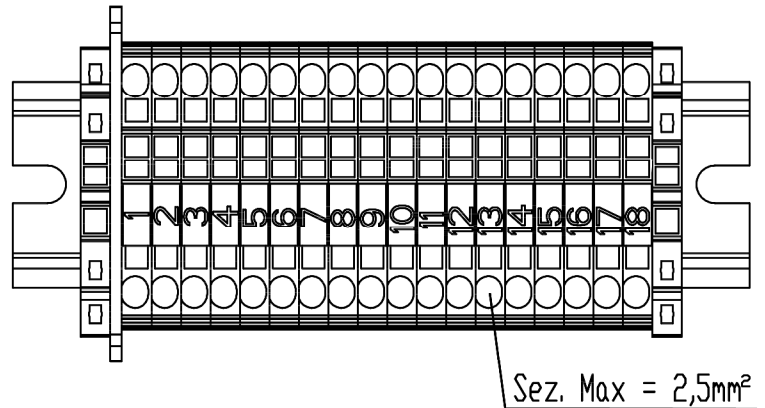


- E.A | - VALVES (STAR/DELTA ON REQUEST)
- E.B |
- E. λ/Δ |
- C.E. | - COMMON VALVE
- C.E.M. | - COMMON EMERGENCY VALVE
- EM. | - EMERGENCY
- E.A-E.B-E. λ/Δ - NORMAL USE 48V. RECTIFIED CURRENT-BLACK WIRE
- E.B - AUTOMATIC USE IN EMERGENCY 12 V. DIRECT CURRENT-WHITE WIRE

* NOTE: CONNECT DURING WINTER / COLD MONTHS (220V. - 50W.)
 < ** > FOR DOWNWARD HIGH SPEED JUMP WITH EM.-E.B

UT	ELECTRICAL WIRING IN THE POWER UNIT (TE.SEP)	DATE 03/09
		DWG N. 9310/1

1		MOTOR THERMOSTAT
2		(MAX - 2.5 V)
3	C.E.+ C.E.M.	COMMON COILS 48/80 Vdc - 12 Vdc
4		
5	E.A	UP/DOWN WARD HIGHT SPEED VALVE
6	E.B	DOWN WARD VALVE
7	EM,-E.B	DOWN WARD EMERGENCY COIL
8	E. Δ / \star	STAR/DELTA COIL
9		OIL THERMOSTAT AT 70°C
10		
11		230V/400V PREHEATING OIL DISTRIBUTOR
12		
13	X.M.	
14	min.	
15	X.M.	
16	max.	
17	X.M.	
18	max.	



E.A - SOLENOID VALVES
E.B - SOLENOID VALVES

C.E. - COMMON VALVE
C.E.M. - COMMON EMERGENCY VALVE
EM. - EMERGENCY

E.A-E.B-E. - NORMAL USE 48Vdc
BLACK WIRE

E.A.-E.B - AUTOMATIC USE IN EMERGENCY
12 Vdc WHITE WIRE

*

**




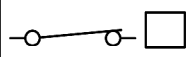
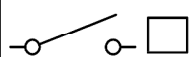
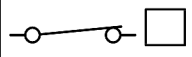
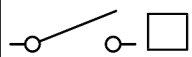
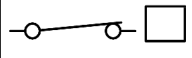
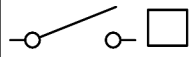
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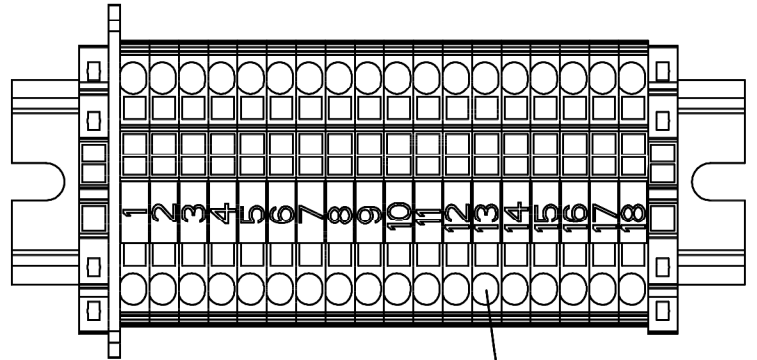
**

* N.B.: CONNECT IN PARALLEL THE OIL HEATING RESISTOR (WITH THERMOSTAT) AND THE VALVE HEATING RESISTOR DURING COLD SEASON (230V BLACK WIRE; 400V BLUE WIRE)

** OPTIONAL

UT		ELECTRICAL WIRING FOR POWER UNIT MARK2 (auxiliary circuits)	DATE	07/18
			DWG N.	9312/2

1		MOTOR THERMOSTAT (MAX - 2.5 V)
2		
3	C.E.+ C.E.M.	COMMON COILS 48/80 Vdc - 12 Vdc
4	C.E.	COMMON COILS 230 Vac
5	E.A	UP/DOWN WARD HIGHT SPEED VALVE
6	E.B	DOWN WARD VALVE
7	EM.-E.B	DOWN WARD EMERGENCY COIL
8	E. Δ/Δ	STAR/DELTA COIL
9		OIL THERMOSTAT AT 70°C
10		
11		230V/400V PREHEATING OIL DISTRIBUTOR
12		
13	X.M.	
14	min.	
15	X.M.	
16	max.	
17	X.M.	
18	max.	



Sez. Max = 2,5mm²

E.A - SOLENOID VALVES
E.B - SOLENOID VALVES

C.E. - COMMON VALVE
C.E.M. - COMMON EMERGENCY VALVE
EM. - EMERGENCY

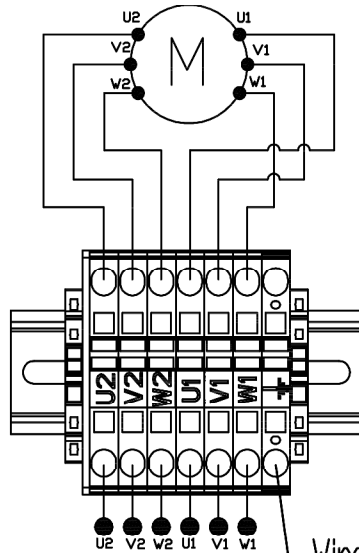
E.A-E.B-E. - NORMAL USE 48Vdc
BLACK WIRE

E.A.-E.B - AUTOMATIC USE IN EMERGENCY
12 Vdc WHITE WIRE

* N.B.: CONNECT IN PARALLEL THE OIL HEATING RESISTOR (WITH THERMOSTAT) AND THE VALVE HEATING RESISTOR DURING COLD SEASON (230V BLACK WIRE; 400V BLUE WIRE)

** OPTIONAL

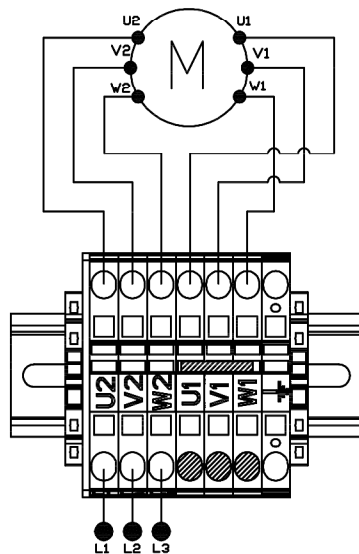
UT		ELECTRICAL WIRING FOR POWER UNIT MARK2 (auxiliary circuits common separated)	DATE	07/18
			DWG N.	9312/3



STARTING

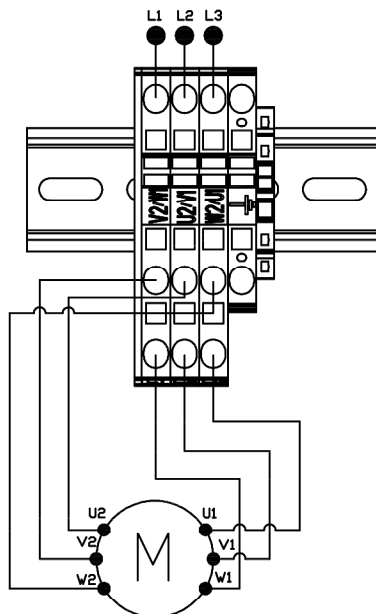
Y/Δ

Wire cross-section Max = 6mm²



DIRECT STARTING
or with SOFT-STARTER

Y 230-400 VAC
240-415 VAC



DIRECT STARTING
or with SOFT-STARTER

Δ 400-690 VAC
415-720 VAC

UT

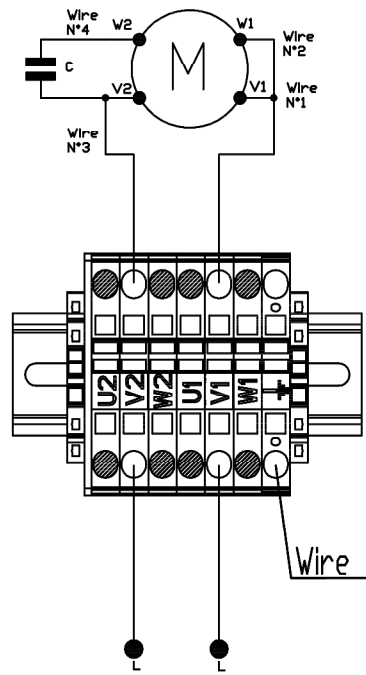
ELECTRICAL WIRING
FOR POWER UNIT MARK2
(main power 3-phase motor 8-16 CV)

DATE

07/18

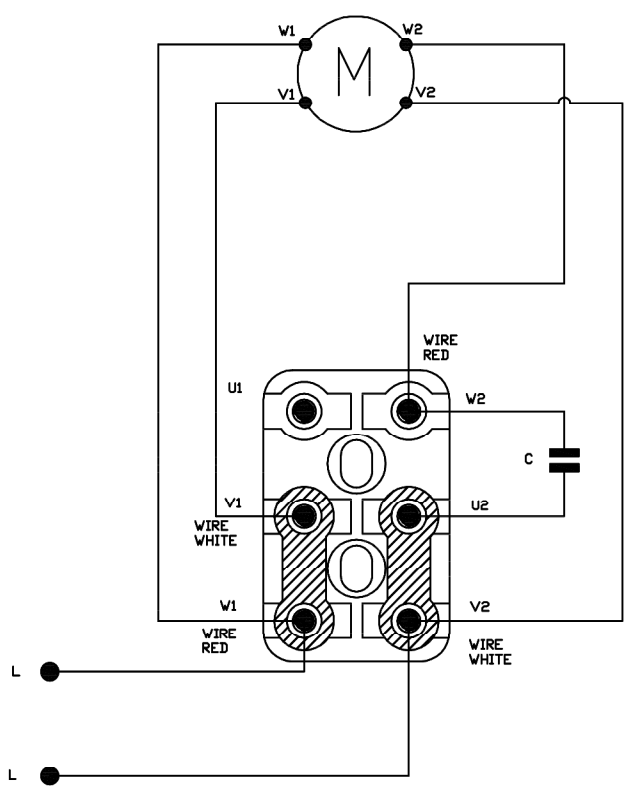
DWG N.

9312/4



WIRING
modular
terminal board

Wire cross-section Max = 6mm²

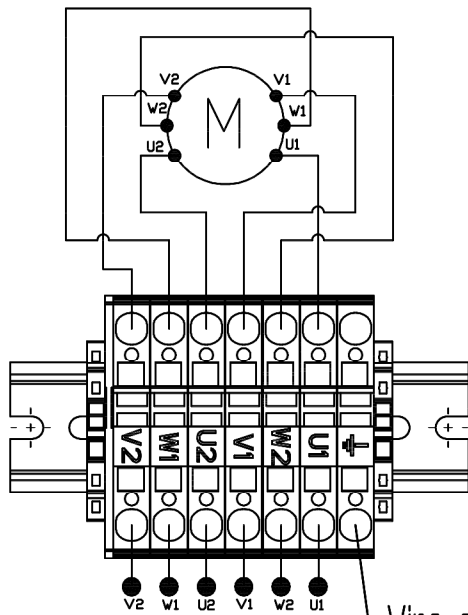


WIRING
box-terminal
board

UT	

ELECTRICAL WIRING
FOR POWER UNIT MARK2
(main power single phase motor)

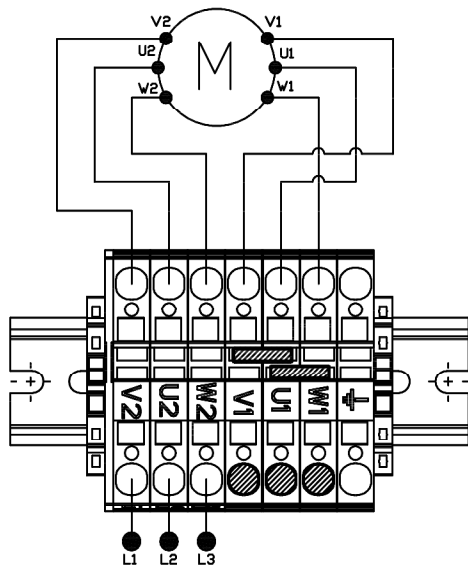
DATE	07/18
DWG N.	9312/5



STARTING

Y/Δ

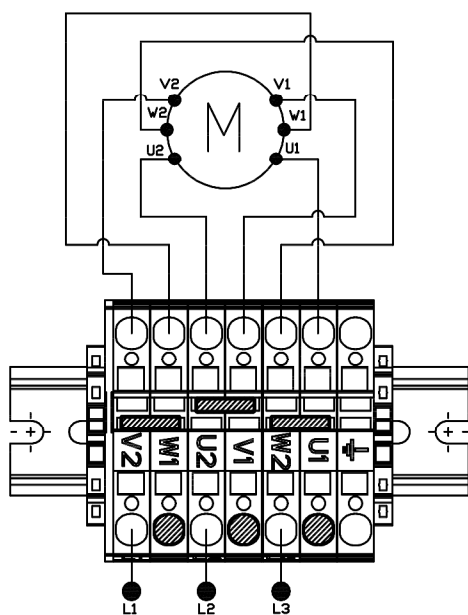
Wire cross-section Max = 10mm²



DIRECT STARTING
or with SOFT-STARTER

230-400 VAC

240-415 VAC



DIRECT STARTING
or with SOFT-STARTER

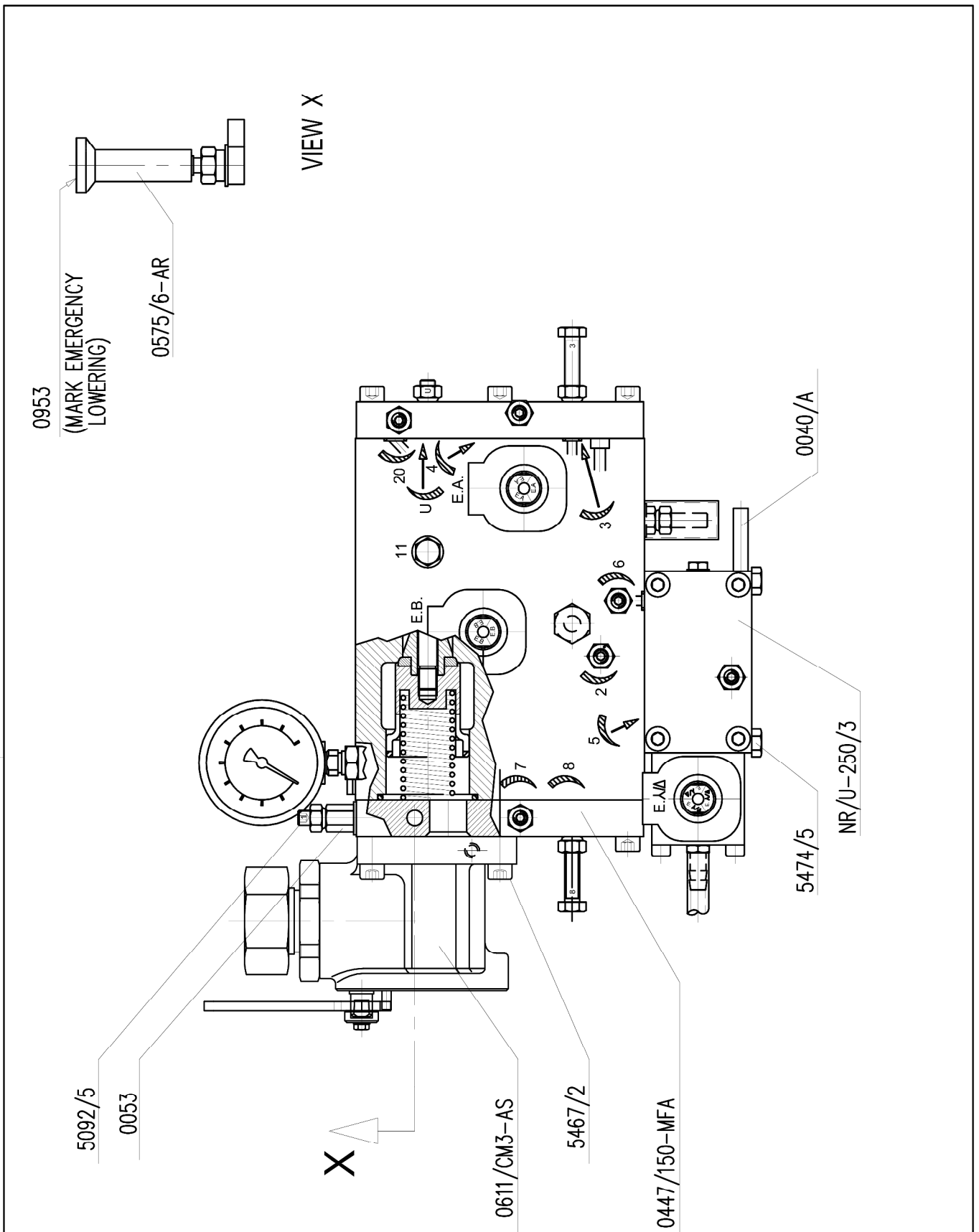
400-690 VAC

415-720 VAC

UT	

ELECTRICAL WIRING
FOR POWER UNIT MARK2
(main power 3-phase motor 20-25 CV)

DATE	07/18
DWG N.	9312/4-10



NOTE:

- FOR DETAILS OLEODYNAMIC DISTRIBUTOR
ARE NOT IDENTIFICATIONS, REF. DWG 9500/1

UT	

OLEODYNAMIC DISTRIBUTOR - 320 -
(15 / 250 L/MIN.) AVAILABLE FROM 03/2007

DATE	07/07
DWG Nr.	9500/1-320

UT

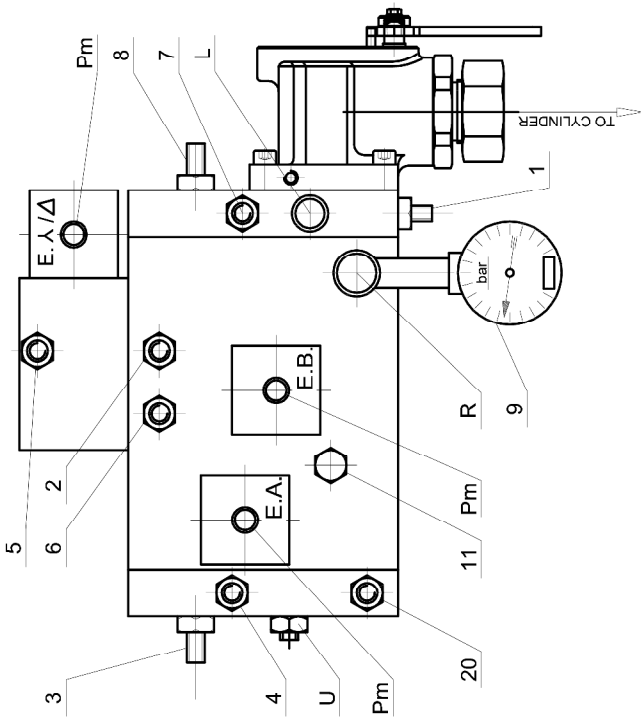
ADJUSTMENT AND OPERATION SCHEME OF DISTRIBUTOR (DISTRIBUTOR 15/250 L/MIN)

DATE

07/18

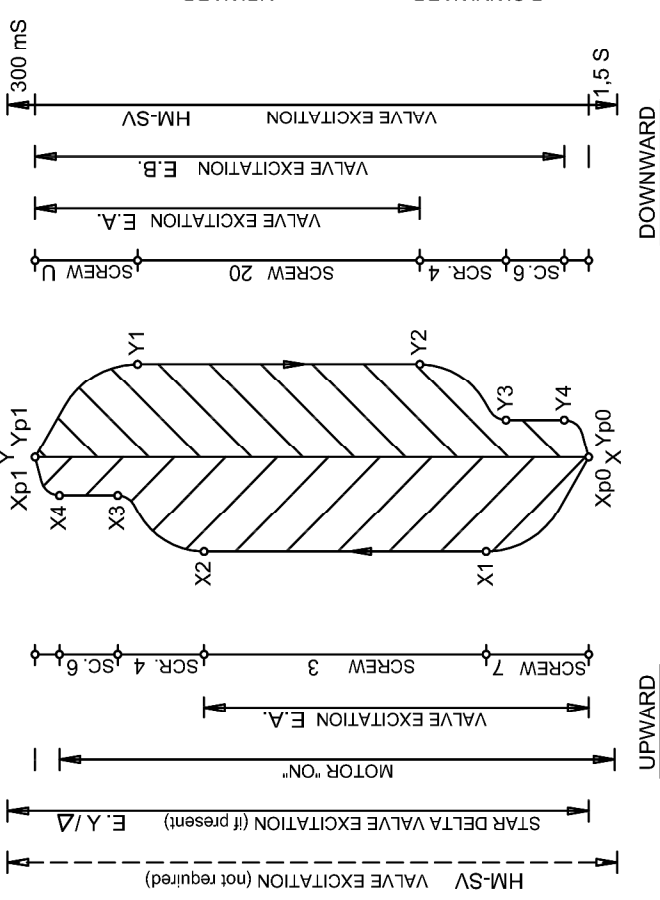
DWG Nr.

9237



ADJUSTMENT

- | | |
|-----------|---|
| SCREW- 1 | ADJUSTMENT FOR ROD COUNTERPRESSURE - TIGHTEN SCREW TO INCREASE COUNTERPRESSURE |
| SCREW- 2 | ADJUSTMENT AND TEST OF SAFETY VALVE FOR ROD FAILURE (SEE DWG N°9345) |
| SCREW- 3 | ADJUSTMENT FOR HIGH SPEED BALANCING IN UP/DOWN DIRECTION - TIGHTEN SCREW TO REDUCE SPEED |
| SCREW- 4 | ADJUSTMENT FOR 1ST DECELERATION PHASE - SCREW DOWN FOR A SOFT DECELERATION |
| SCREW- 5 | ADJUSTMENT FOR MAX. PRESSURE - TIGHTEN SCREW TO INCREASE PRESSURE |
| SCREW- 6 | ADJUSTMENT FOR LOW SPEED IN UPWARD AND DOWNWARD DIRECTION - TIGHTEN SCREW TO REDUCE SPEED |
| SCREW- 7 | ADJUSTMENT FOR DEPARTURE IN UPWARD DIRECTION - TIGHTEN SCREW FOR SOFT DEPARTURE (1) |
| SCREW- 8 | ADJUSTMENT FOR VALVE "D" COUNTERPRESSURE - TIGHTEN SCREW TO INCREASE COUNTERPRESSURE |
| 9 | PRESSURE GAUGE |
| SCREW- 11 | CONTROL OF PRESSURE SEAL BY NONRETURN VALVE WITH STANDSTILL SYSTEM |
| SCREW- 20 | ADJUSTMENT FOR DOWNWARD DIRECTION SPEED - TIGHTEN SCREW TO INCREASE SPEED |
- E.A. VALVE FOR HIGH SPEED IN UP/DOWNWARD DIRECTION
 E.B. DOWNWARD DIRECTION VALVE
 E.A./Δ STAR DELTA START VALVE
 L PUSH BUTTON FOR MANUAL EMERGENCY IN DOWNWARD DIRECTION
 Pm MANUAL PUSH BUTTON FOR STARTING EMERGENCY VALVE
 R TAP TO CUT OFF PRESSURE GAUGE
 U DOWNWARD DEPARTURE DEVICE - TIGHTEN SCREW TO REDUCE SPEED (1)



NOTE (1): DO NOT TIGHTEN COMPLETELY, SINCE DEPARTURE MOVEMENT MAY BE INTERRUPTED

OPERATION

- ELECTRIC MOTOR ON
- MOTOR SUPPLY AND E.A. VALVE EXCITATION AND Δ/Δ ACCELERATION IN UPWARD DIRECTION - ADJUST USING SCREW 7
- CONSTANT HIGH SPEED IN UPWARD DIRECTION - ADJUST USING SCREW 3
- 1ST DECELERATION PHASE FROM HIGH TO LOW SPEED - E.A. DE-ENERGIZED ADJUST USING SCREW 4
- CONSTANT LOW SPEED IN UPWARD DIRECTION - ADJUST USING SCREW 6
- 2ND DECELERATION PHASE TO FLOOR LEVEL (MOTOR OFF)
- DELAY FOR STAR DELTA VALVE DE-ENERGIZING
- E.A./E.B. VALVES EXCITATION - ACCELERATION IN DOWNWARD DIRECTION ADJUST USING SCREW U
- CONSTANT HIGH SPEED IN DOWNWARD DIRECTION - ADJUST USING SCREW 20
- 1ST DECELERATION PHASE - E.A. VALVE DE-ENERGIZED ADJUST USING SCREW 4
- CONSTANT LOW SPEED IN DOWNWARD DIRECTION - ADJUST USING SCREW 6
- 2ND DECELERATION PHASE TO FLOOR LEVEL - E.B. VALVE DE-ENERGIZED

NOTE: DURING THE DE-ENERGIZING PHASE OF E.A. VALVE, MAKE SURE THAT AFTER THE PHASE OF DECELERATION, THE DISTANCE AT WHICH LOW SPEED BEGINS IS AT LEAST 15/20 cm BEFORE LEVEL STOP

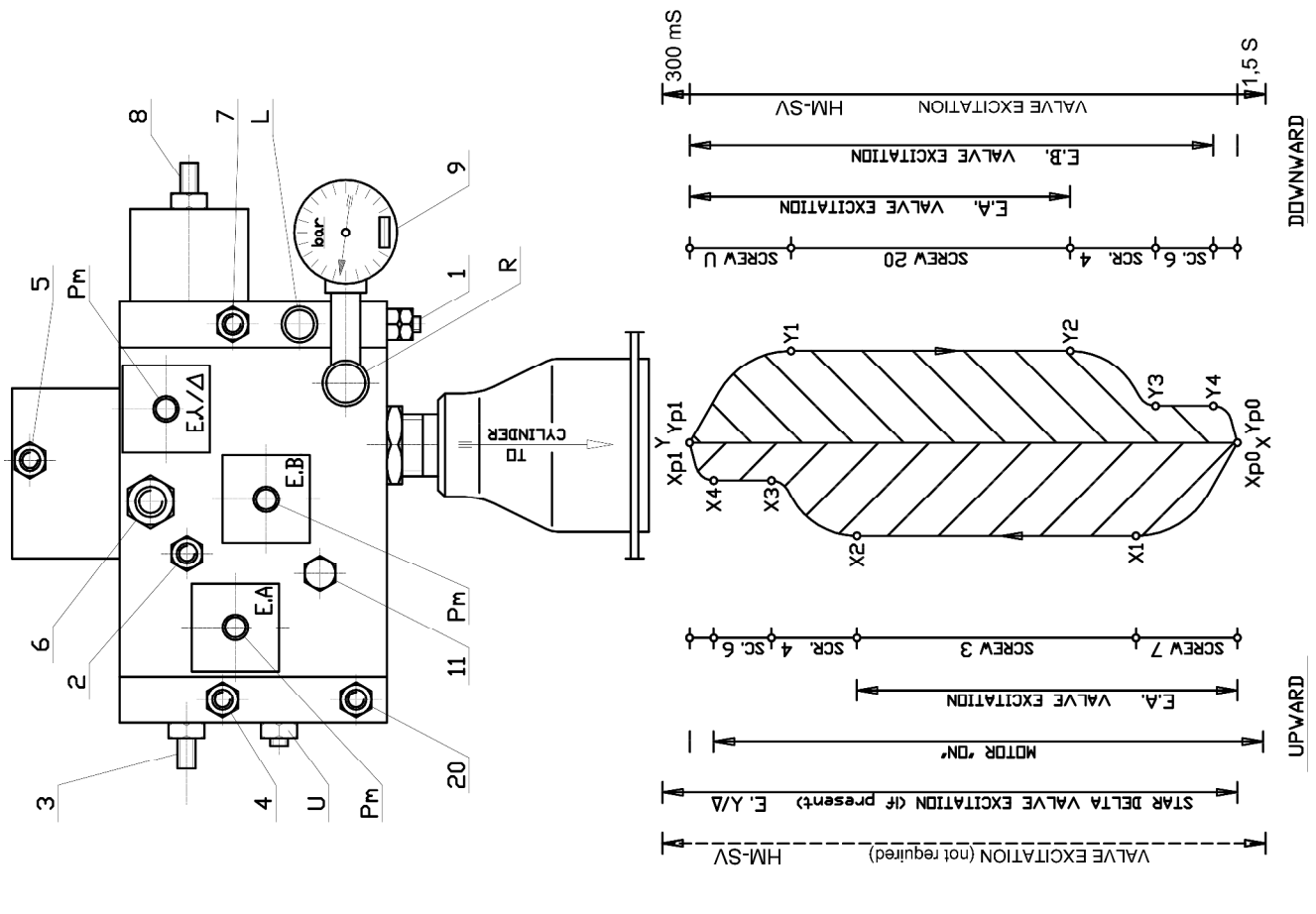
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**ADJUSTMENT AND OPERATION SCHEME
OF DISTRIBUTOR
(DISTRIBUTOR 300/650 L/MIN)**

DATE	07/18
DWG N.	9236/5

- ADJUSTMENT**
- 1 SCREW- ADJUSTMENT FOR ROD COUNTERPRESSURE - TIGHTEN SCREW TO INCREASE COUNTERPRESSURE
 - 2 SCREW- ADJUSTMENT AND TEST OF SAFETY VALVE FOR ROD FAILURE (SEE DWG N°9945)
 - 3 SCREW- ADJUSTMENT FOR HIGH SPEED BALANCING IN UP/DOWN DIRECTION - TIGHTEN SCREW TO REDUCE SPEED
 - 4 SCREW- ADJUSTMENT FOR 1ST DECELERATION PHASE - SCREW DOWN FOR A SOFT DECELERATION
 - 5 SCREW- ADJUSTMENT FOR MAX. PRESSURE - TIGHTEN SCREW TO INCREASE PRESSURE
 - 6 SCREW- ADJUSTMENT FOR LOW SPEED IN UPWARD AND DOWNWARD DIRECTION - TIGHTEN SCREW TO REDUCE SPEED
 - 7 SCREW- ADJUSTMENT FOR DEPARTURE IN UPWARD DIRECTION - TIGHTEN SCREW FOR SOFT DEPARTURE (Δ)
 - 8 SCREW- ADJUSTMENT FOR VALVE 'D' COUNTERPRESSURE - TIGHTEN SCREW TO INCREASE COUNTERPRESSURE
 - 9 PRESSURE GAUGE
 - 11 SCREW- CONTROL OF PRESSURE SEAL BY NONRETURN VALVE WITH STANDSTILL SYSTEM
 - 20 SCREW- ADJUSTMENT FOR DOWNWARD DIRECTION SPEED - TIGHTEN SCREW TO INCREASE SPEED
- E.A. VALVE FOR HIGH SPEED IN UP/DOWNWARD DIRECTION
 E.B. DOWNWARD DIRECTION VALVE
 E.A./Δ STAR DELTA START VALVE
 L PUSH BUTTON FOR MANUAL EMERGENCY IN DOWNWARD DIRECTION
 Pm MANUAL PUSH BUTTON FOR STARTING EMERGENCY VALVE
 R TAP TO CUT OFF PRESSURE GAUGE
 U DOWNWARD DEPARTURE DEVICE - TIGHTEN SCREW TO REDUCE SPEED (Δ)

- NOTE (Δ): DO NOT TIGHTEN COMPLETELY, SINCE DEPARTURE MOVEMENT MAY BE INTERRUPTED**
- OPERATION**
- ELECTRIC MOTOR ON
 MOTOR SUPPLY AND E.A. VALVE EXCITATION AND Δ/A
 ACCELERATION IN UPWARD DIRECTION - ADJUST USING SCREW 7
 CONSTANT HIGH SPEED IN UPWARD DIRECTION - ADJUST USING SCREW 3
 1ST DECELERATION PHASE FROM HIGH TO LOW SPEED - E.A. DE-ENERGIZED ADJUST USING SCREW 4
 CONSTANT LOW SPEED IN UPWARD DIRECTION - ADJUST USING SCREW 6
 2ND DECELERATION PHASE TO FLOOR LEVEL (MOTOR OFF)
 DELAY FOR STAR DELTA VALVE DE-ENERGIZING
- E.A./E.B. VALVES EXCITATION - ACCELERATION IN DOWNWARD DIRECTION ADJUST USING SCREW U
 CONSTANT HIGH SPEED IN DOWNWARD DIRECTION - ADJUST USING SCREW 20
 1ST DECELERATION PHASE - E.A. VALVE DE-ENERGIZED ADJUST USING SCREW 4
 CONSTANT LOW SPEED IN DOWNWARD DIRECTION - ADJUST USING SCREW 6
 2ND DECELERATION PHASE TO FLOOR LEVEL - E.B. VALVE DE-ENERGIZED
- NOTE:** DURING THE DE-ENERGIZING PHASE OF E.A. VALVE, MAKE SURE THAT AFTER THE PHASE OF DECELERATION, THE DISTANCE AT WHICH LOW SPEED BEGINS IS AT LEAST 15/20 cm BEFORE LEVEL STOP

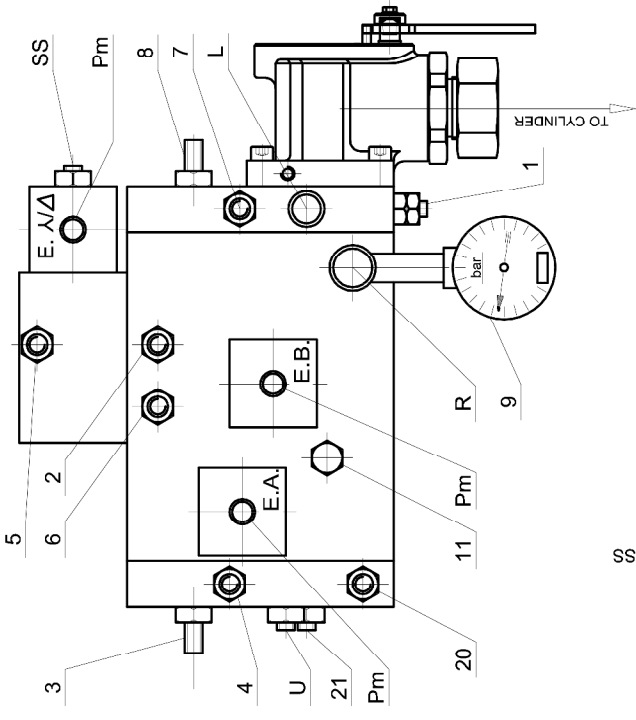


VALVE EXCITATION (not required)	HM-SV
STAR DELTA VALVE EXCITATION (if present)	E.A./Δ
MOTOR 'ON'	
E.A. VALVE EXCITATION	SCR. 4, SCR. 6
E.A. VALVE EXCITATION	SCR. 3
E.A. VALVE EXCITATION	SCR. 4, SCR. 6
E.A. VALVE EXCITATION	SCR. 6
E.B. VALVE EXCITATION	
VALVE EXCITATION	HM-SV
VALVE EXCITATION	300 ms
VALVE EXCITATION	1,5 s

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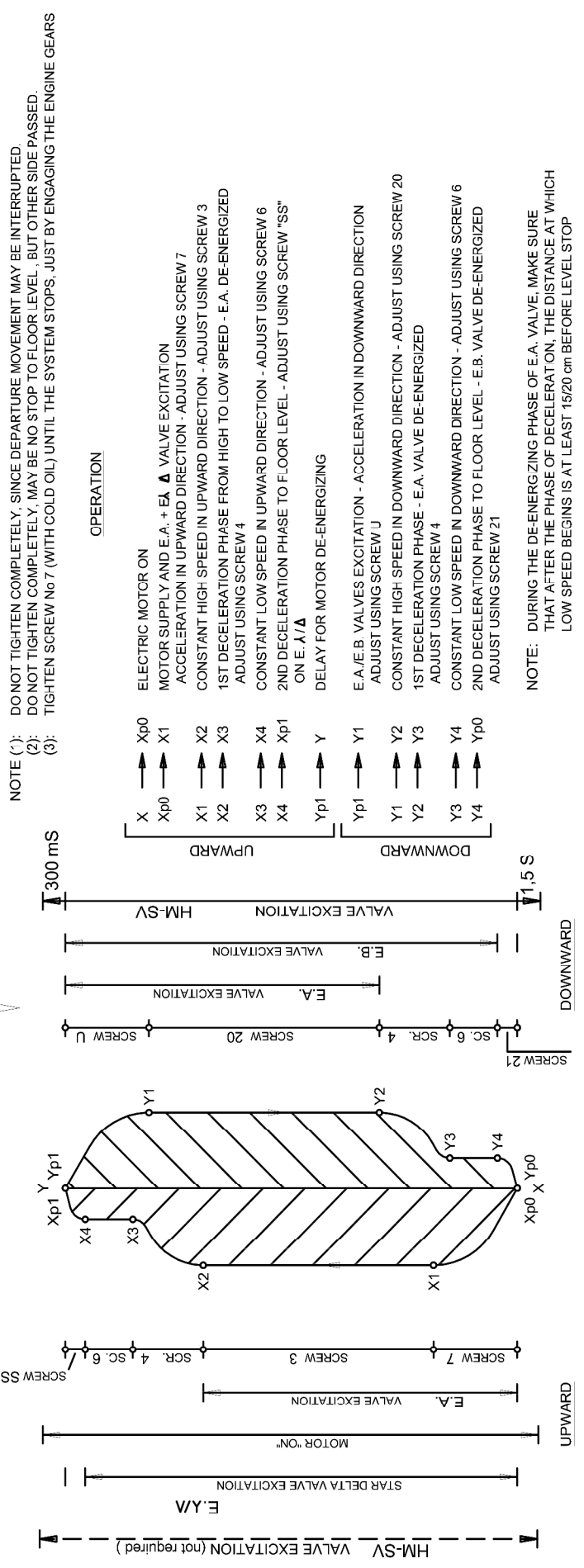
**ADJUSTMENT AND OPERATION SCHEME
OF DISTRIBUTOR FOR SOFT STOP+21 INSTALLATION**
(DISTRIBUTOR 15/250 L/MIN)

DATE	11/15
DWG Nr.	9227/SS+21



ADJUSTMENT

- 1 SCREW- 1 ADJUSTMENT FOR ROD COUNTERPRESSURE - TIGHTEN SCREW TO INCREASE COUNTERPRESSURE
 - 2 SCREW- 2 ADJUSTMENT AND TEST OF SAFETY VALVE FOR ROD FAILURE (SEE DWG N°9345)
 - 3 SCREW- 3 ADJUSTMENT FOR HIGH SPEED BALANCING IN UP/DOWN DIRECTION - TIGHTEN SCREW TO REDUCE SPEED
 - 4 SCREW- 4 ADJUSTMENT FOR 1ST DECELERATION PHASE - SCREW DOWN FOR A SOFT DECELERATION
 - 5 SCREW- 5 ADJUSTMENT FOR MAX. PRESSURE - TIGHTEN SCREW TO INCREASE PRESSURE
 - 6 SCREW- 6 ADJUSTMENT FOR LOW SPEED IN UPWARD AND DOWNWARD DIRECTION TIGHTEN SCREW TO REDUCE SPEED
 - 7 SCREW- 7 ADJUSTMENT FOR DEPARTURE IN UPWARD DIRECTION - TIGHTEN SCREW FOR SOFT DEPARTURE (1)
 - 8 SCREW- 8 ADJUSTMENT FOR VALVE "D" COUNTERPRESSURE - TIGHTEN SCREW TO INCREASE COUNTERPRESSURE
 - 9 SCREW- 9 PRESSURE GAUGE
 - 11 SCREW- 11 CONTROL OF PRESSURE SEAL BY NONRETURN VALVE WITH STANDSTILL SYSTEM
 - 20 SCREW- 20 ADJUSTMENT FOR DOWNWARD DIRECTION SPEED - TIGHTEN SCREW TO INCREASE SPEED
 - 21 SCREW- 21 ADJUSTMENT SOFT ARRIVAL TO FLOOR LEVEL - SCREW DOWN FOR SOFT ARRIVAL (2)
 - SS SCREW- SS ADJUSTMENT SOFT ARRIVAL TO FLOOR LEVEL - SCREW DOWN FOR SOFT ARRIVAL (3)
- E.A. VALVE FOR HIGH SPEED IN UP/DOWNWARD DIRECTION
 E.B. DOWNWARD DIRECTION VALVE
 E.A./A STAR DELTA START VALVE TYPE "SS" (HYDRAULIC ONLY)
 L PUSH BUTTON FOR MANUAL EMERGENCY IN DOWNWARD DIRECTION
 Pm MANUAL PUSH BUTTON FOR STARTING EMERGENCY VALVE
 R TAP TO CUT OFF PRESSURE GAUGE
 U DOWNWARD DEPARTURE DEVICE - TIGHTEN SCREW TO REDUCE SPEED (1)

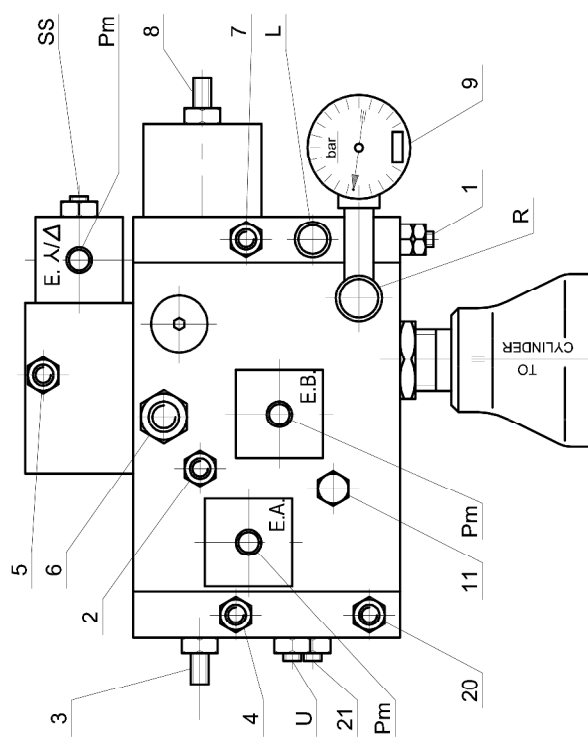


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ADJUSTMENT AND OPERATION SCHEME OF DISTRIBUTOR FOR SOFT STOP+21 INSTALLATION

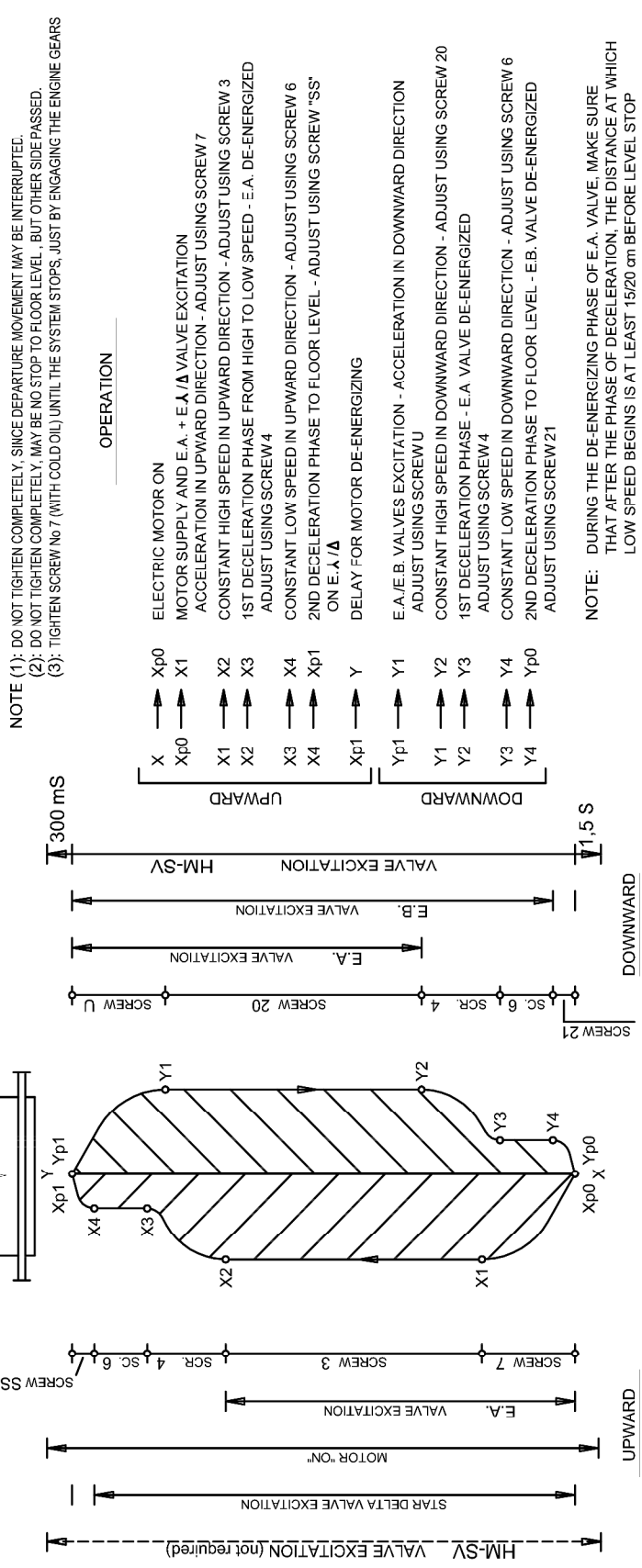
(DISTRIBUTOR 300/650 L/MIN)

DATE	11/15
DWG N.	9236/5-SS+21

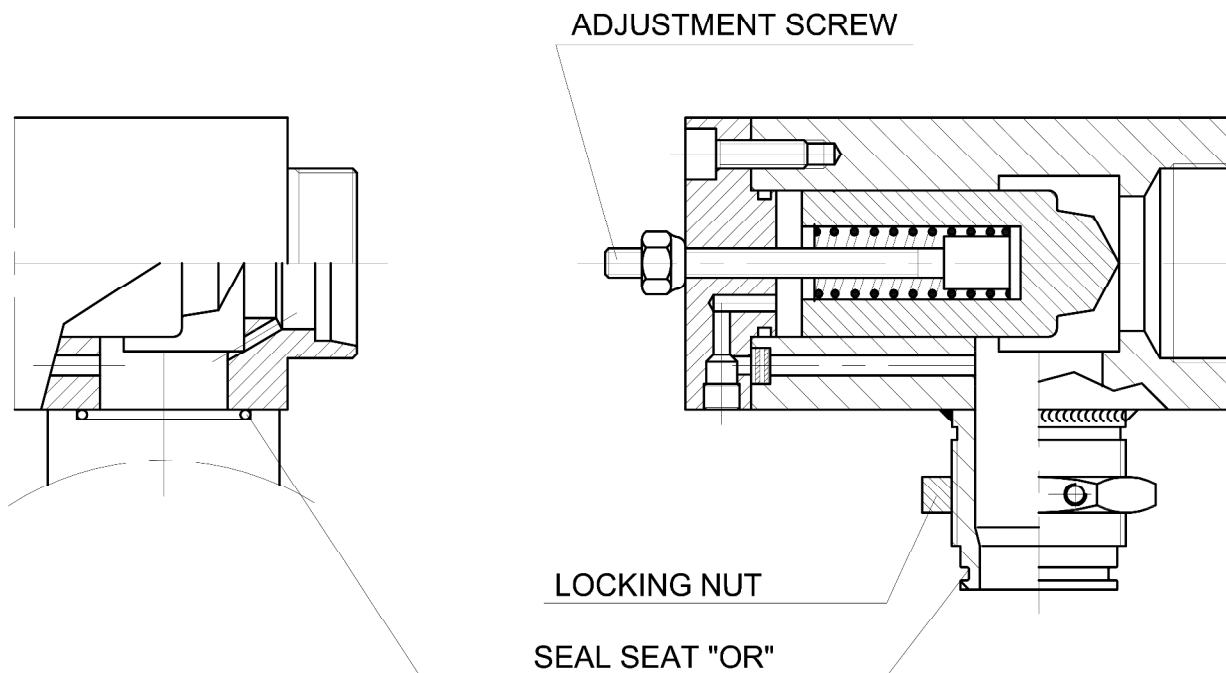


ADJUSTMENT

- 1 SCREW- ADJUSTMENT FOR ROD COUNTERPRESSURE - TIGHTEN SCREW TO INCREASE COUNTERPRESSURE
- 2 SCREW- ADJUSTMENT AND TEST OF SAFETY VALVE FOR ROD FAILURE (SEE DWG N° 9345)
- 3 SCREW- ADJUSTMENT FOR HIGH SPEED BALANCING IN UP/DOWN DIRECTION - TIGHTEN SCREW TO REDUCE SPEED
- 4 SCREW- ADJUSTMENT FOR 1ST DECELERATION PHASE - SCREW DOWN FOR A SOFT DECELERATION
- 5 SCREW- ADJUSTMENT FOR MAX PRESSURE - TIGHTEN SCREW TO INCREASE PRESSURE
- 6 SCREW- ADJUSTMENT FOR LOW SPEED IN UPWARD AND DOWNWARD DIRECTION TIGHTEN SCREW TO REDUCE SPEED
- 7 SCREW- ADJUSTMENT FOR DEPARTURE IN UPWARD DIRECTION - TIGHTEN SCREW FOR SOFT DEPARTURE (1)
- 8 SCREW- ADJUSTMENT FOR VALVE 'D' COUNTERPRESSURE - TIGHTEN SCREW TO INCREASE COUNTERPRESSURE
- 9 SCREW- PRESSURE GAUGE
- 11 SCREW- CONTROL OF PRESSURE SEAL BY NONRETURN VALVE WITH STANDSTILL SYSTEM
- 20 SCREW- ADJUSTMENT FOR DOWNWARD DIRECTION SPEED - TIGHTEN SCREW TO INCREASE SPEED
- 21 SCREW- ADJUSTMENT SOFT ARRIVAL TO FLOOR LEVEL - SCREW DOWN FOR SOFT ARRIVAL (2)
- SS SCREW- ADJUSTMENT SOFT ARRIVAL TO FLOOR LEVEL - SCREW DOWN FOR SOFT ARRIVAL (3)
- E.A. VALVE FOR HIGH SPEED IN UP/DOWNWARD DIRECTION
- E.B. DOWNWARD DIRECTION VALVE
- E.A./Δ STAR DELTA START VALVE TYPE "SS" (HYDRAULIC ONLY)
- L PUSH BUTTON FOR MANUAL EMERGENCY IN DOWNWARD DIRECTION
- Pm MANUAL PUSH BUTTON FOR STARTING EMERGENCY VALVE
- R TAP TO CUT OFF PRESSURE GAUGE
- U DOWNWARD DEPARTURE DEVICE - TIGHTEN SCREW TO REDUCE SPEED (1)



NOTE: DURING THE DE-ENERGIZING PHASE OF E.A. VALVE, MAKE SURE THAT AFTER THE PHASE OF DECELERATION, THE DISTANCE AT WHICH LOW SPEED BEGINS IS AT LEAST 1520 cm BEFORE LEVEL STOP



TYPE: 3/4" - 1"1/4 - 1"1/2

TYPE: 2"

OPERATING TEST:

- A - PREPARE THE CAR FULLY CHARGED (SEE POINT 4) AND SEND IT TO THE HIGHEST LEVEL.
- B - LOCK ON THE DISTRIBUTOR GROUP SCREW N. 2 AND UNSCREW SCREW N. 8.
ONLY FOR SINGLE SPEED VALVE: SCREW N. 3 AND N. 8 IN SAFETY UNSCREW.
(VALVES NOT MORIS FOLLOW THE INSTRUCTIONS OF THE MANUFACTURER).
- C - SET A DOWNWARD RUNNING SO THAT THE CAR WILL GO DOWN FASTER THAN THE NOMINAL SPEED,
OR FOLLOW THE INSTRUCTIONS OF THE MANUFACTURER.
- D - THE VALVE MUST BE ABLE TO STOP THE DESCENDING CAB AND TO KEEP IT STILL AT THE LATEST
WHEN THE SPEED REACHES A VALUE EQUAL TO THE NOMINAL DOWN STROKE SPEED "Vd"
INCREASED OF 0.3 m/s.
- E - ONLY FOR MORIS VALVES, WHEN THE CHECK HAS BEEN TERMINATED WITH THE CAR
IN STOP POSITION, RESET THE ADJUSTMENT SCREW N.2 (UNSCREW OF 3.5 TURNS)
AND N. 8 (ONLY FOR SINGLE SPEED VALVE: SCREW N. 3 AND N. 8) TO THE ORIGINAL CONDITION.

NOTE:

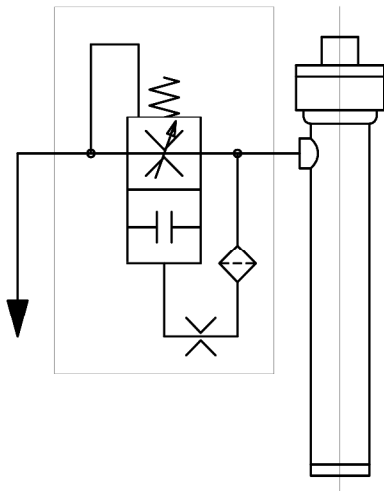
- 1) IF DURING THE CHECK THE VALVE DOES NOT OPERATE TAKE OFF THE CAP AND THE ADJUST
THE VALVE BY TURNING 1/4 OF A ROUND AT A TIME, REPEAT THE CHECK UNTIL IT FUNCTIONS.
- 2) THE VALVE CAN BE ORIENTATED IN ANY DIRECTION.
- 3) THE VALVE IS ALREADY CALIBRATED.
- 4) FOR SYSTEMS WITH TO OR MORE PISTONS, EACH FITTED WITH A STOP VALVE, THE FIRST TEST MUST
BE CARRIED OUT WITH A MIN. LOAD, BEFORE INCREASING THE WEIGHT UNTIL REACHING THE MAX.
LOAD IN TWO POINTS AT LEAST (HALFWAY AND MAX.) TO CHECK THE OPERATION.

UT		FUNCTIONAL CHECKING OF THE ADJUSTABLE STOP VALVE	DATE 07/16
			DWG N. 9345

N.B: Q=operating flow
Qn=nominal flow

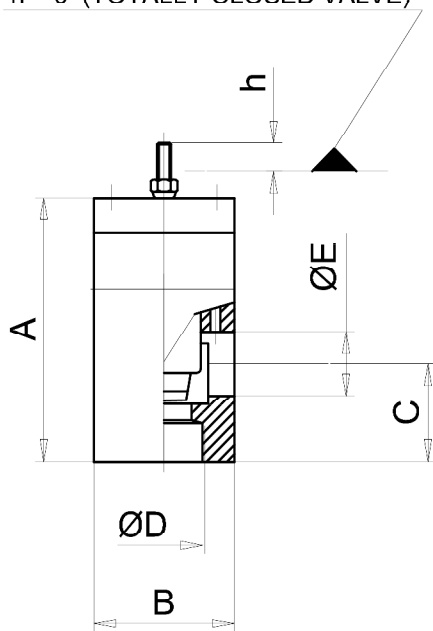
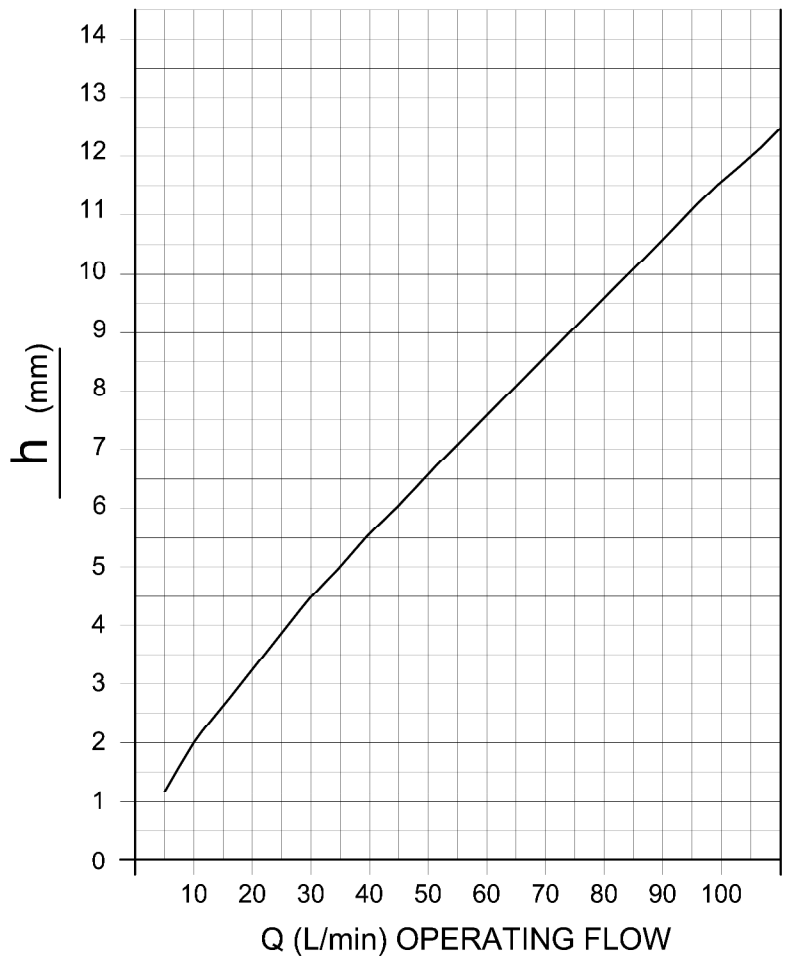
MANUAL ADJUSTMENT GRAPH:

- 1) CLOSE THE SCREW COMPLETELY (h=0)
- 2) ACCORDING TO Q (L/min), UNSCREW OF h (mm)



- RAM SPEED
AFTER VALVE
INTERVENTION:
Vd = 0 (m/s)

START VALUE FOR
MANUAL REGULATION
h = 0 (TOTALLY CLOSED VALVE)



Qn	MIN	8 L/min
	MAX	75 L/min
P	MIN	12 Bar
	MAX	80 Bar
T	MIN	10°C
	MAX	60°C
A	100	
B	∅50	
C	40	
D	3/4"	
E	18	

Table adjustment h in function of the nominal pump flow	
Nominal pump flow Qn [L/min]	h [mm]
8	2,6
12	3,5
18	4,5
23	5,0
30	5,5
35	6,2
45	7,6
55	8,9
75	11,3

NOTE:

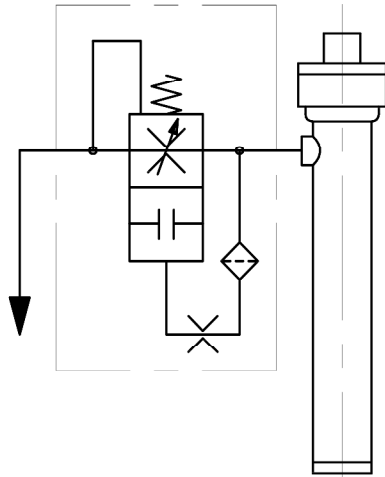
DATA TAKEN WITH:

- STATIC PRESSURE = 30 BAR
- OIL TEMPERATURE = 30°C

UT	

PROCEDURE FOR ADJUSTMENT OF
LOCK VALVE 3/4" HP (0825/P-VP22-HP)

DATE	03/17
DWG N°	9346/2

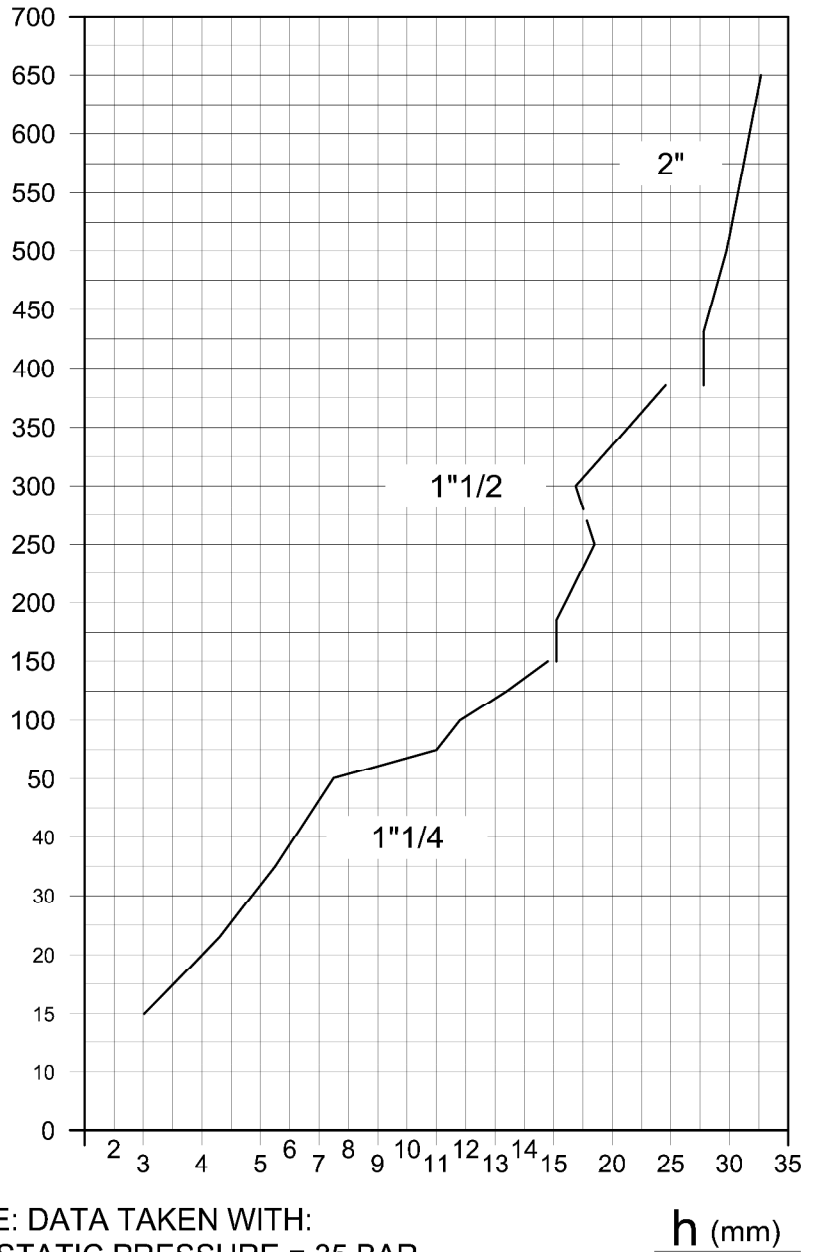


- RAM SPEED AFTER VALVE INTERVENTION

$V_d = 0$ (m/s)

VALUE BROUGHT FORWARD ON THE TESTING CERTIFICATE OF THE GEARCASE

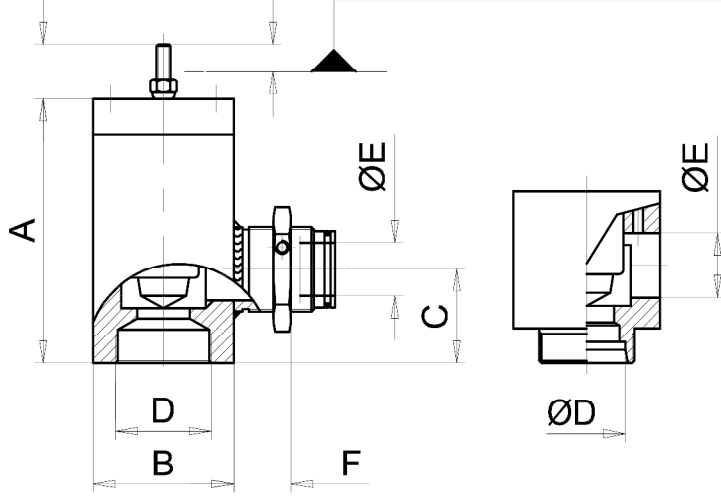
Q_n (l/1') NOMINAL FLOW RATE DOWNWARD



NOTE: DATA TAKEN WITH:
 - STATIC PRESSURE = 35 BAR
 - OIL TEMPERATURE = 35°C

h (mm)

G h $h=0$ (TOTALLY CLOSED VALVE)



TYPE: 2"

TYPE: 1" 1/4 - 1" 1/2

		1" 1/4	1" 1/2	2"
Q_n	MIN	15	151	381
	MAX	150	380	650
A		132	153	186
B		$\varnothing 70$	$\varnothing 70$	$\varnothing 75$
C		56	56	63
D		28 35	42	2"/F
E		25	30	40
F		/	/	24

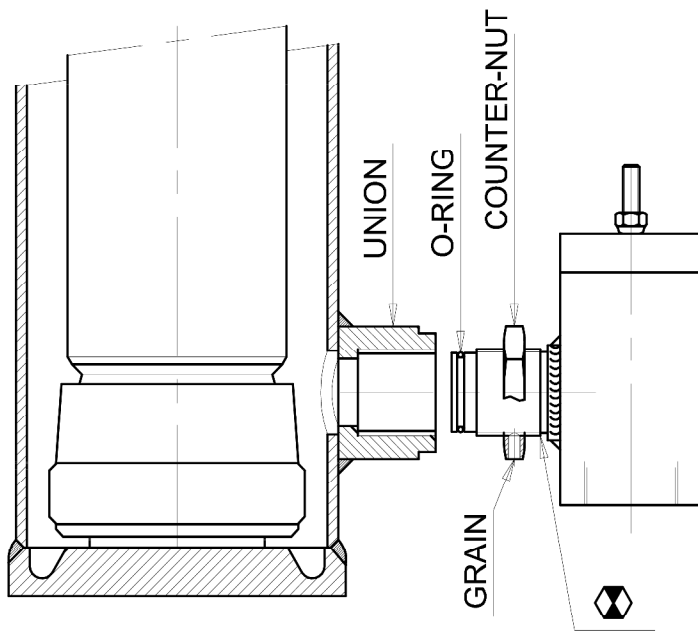
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DIMENSIONING AND REGULATION OF THE ADJUSTABLE STOP VALVE 1" 1/4; 1" 1/2; 2"



DATE	07/18
DWG N.	9346

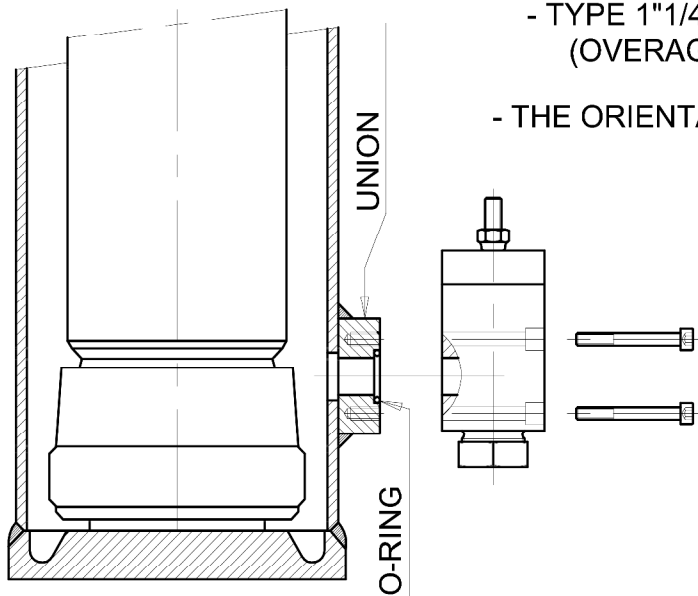
TYPE: 2"



- THE VALVE HAS TO BE DIRECTLY SCREWED ON PISTON UNTIL IT STOPS (MECHANICAL LEDGE).
- WITH COUNTER NUT IN LEDGE ON THE UNION, I HAVEN'T SEE THE THREAD. 
- POSSIBLE ORIENTATION ON 360° UNSCREWING IT BY ONE TURN (MAX POSSIBLE FOR O-RING SEAL)
- SCREW THE COUNTER-NUT UP TO MECHANICAL LEDGE (SIDE OF THE UNION SOLDERED TO THE CYLINDER)
- SCREW THE GRAIN ON THE COUNTER-NUT, TO THE BODY VALVE

* FOR HL POWER UNIT TYPE: *3/4" - *1"1/4 - 1"1/2

- THE VALVE HAS TO BE DIRECTLY MOUNTED ON THE PISTON USING:
 - TYPE 3/4": N° 4 SCREWS M6 (OVERAGE TIGHTENING TORQUE = 9.5 Nm)
 - TYPE 1"1/4 - 1"1/2: N° 4 SCREWS M8 (OVERAGE TIGHTENING TORQUE = 23.0 Nm)
- THE ORIENTATION IS POSSIBLE FOR ALL 90°



NOTE: REMEMBER TO VERIFY THAT THE SEAL O-RING GASKET IT IS ALWAYS INSERTED

UT

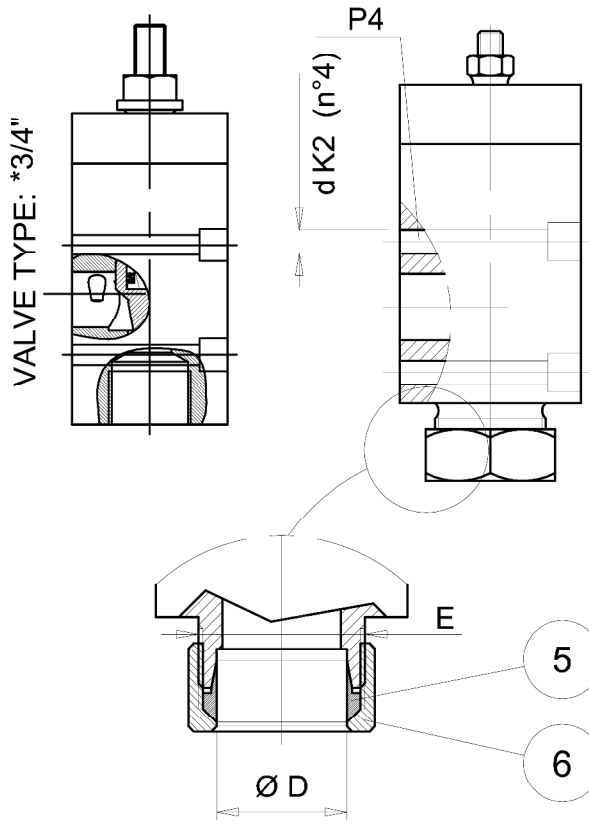
PROCEDURE FOR MOUNTING THE ADJUSTABLE
LOCKING VALVE

DATE

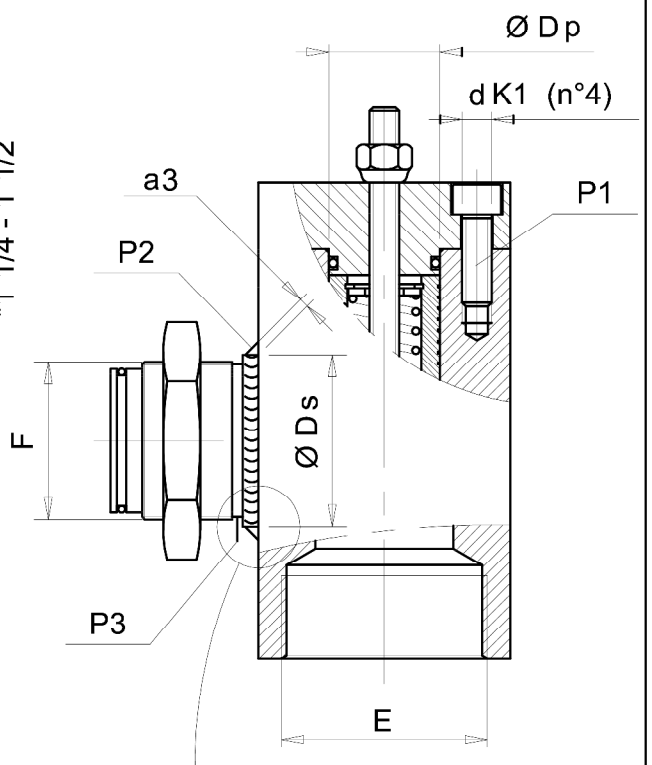
11/15

DWG N.

9348



VALVE TYPE:
*1"1/4 - 1"1/2



VALVE TYPE: 2"

* FOR HL POWER UNIT

	VALVE TYPE						
	*3/4" (8-75 L/1')		*1"1/4 (15-150 L/1')		1"1/2 (151-380 L/1')	2" (381-650 L/1')	
BEGINNING DATA	a 3	/	/	/	/	5.0	
	B	/	/	/	/	56.5	
	d K1	6.0	8.0	8.0	8.0	8.0	
	D	22.0	28.0	35.0	42.0	/	
	d K2	6.0	8.0	8.0	8.0	/	
	D p	22.0	30.0	40.0	53.0	53.0	
	D s	/	/	/	/	65.0	
	E	Nut thread		Male thread		Male thread	Nut thread
		M30x2	M36x2	M36x2	M45x2	M52x2	2" G
	F	/	/	/	/	/	2" G
	n°	4	4	4	4	4	4
	SB	/	/	/	/	/	4.75
	R _{p0.2}	*	*	*	*	*	*
	PIPE FLEX	3/4"	1"	1"	1"1/4	1"1/2	2"
	MAX PRESSURES CALCULATED	P1	115.6	172.7	97.1	97.1	55.3
P2		/	/	/	/	131.1	
P3		/	/	/	/	90.4	
P4		75.6	84.0	84.0	84.0	/	

- THE MAX. WORKING PRESSURE OF THE SMALLER AMONG INDICATED ONES (EN BAR)



UT _____

INITIAL DATA AND MAX PRESSURE
CALCULATED FOR THE BLOCK VALVE
INSPECTION / FLOW LIMIT

DATE 07/18
DWG Nr. 9065/1