



BENCH
PNEUMATIC
MECHANICAL
HYDRO-PNEUMATIC
MARKING

Ets LONG S.A.S. 80 rue du Loquois - ZAE Rumilly Sud
74150 MARGNY SAINT MARCEL
Phone: +33(0)4.50.01.11.58 Fax: +33(0)4.50.01.14.85
www.emg.fr - e-mail: commercial@emgpresse.com
SAS with capital of 674,800€ - SIRET no 780 084 901 00039

SERVICE MANUAL

EMG 6 PHR PRESS



CE

Contents

Declaration of conformity.....	2
1. Description.....	3
▪ General description.....	3
▪ Work station.....	3
▪ Normal use of the machine.....	3
▪ Safety instructions.....	4
2. Instructions.....	4
▪ Handling and installation.....	4
▪ Connection.....	5
▪ Noise and vibration reduction.....	5
▪ Operation and settings.....	5-6
3. Tool mounting and characteristics.....	7
4. Maintenance.....	8
▪ Servicing and preventive maintenance	8-9
▪ Instructions in the event of a breakdown or accident	9
▪ Spare parts specifications.....	9-10
5. Information regarding noise.....	10
6. Information regarding residual risks.....	11
7. Appendices	
▪ Assembly drawing and nomenclature.....	12-13
▪ Pneumatic diagrams and nomenclature.....	14-16

Ets LONG S.A.S Manufacturer of E.M.G. PRESSES
80 rue du Loquois – ZAE RUMILLY SUD
74150 Marigny St Marcel - FRANCE
Phone: + 33(0)4 50 01 11 58 Fax: +33(0)4 50 01 14 85
CAPITAL: 674 800 € - SIRET no: 780 084 901 00039 - RCS 73 B 109 - NAF: 2562B

EMG 6PHR PRESS

EC DECLARATION OF CONFORMITY COVERING EQUIPMENT SUBJECT TO SELF-CERTIFICATION

The undersigned manufacturer **LONG S.A.S** declares that the machine

“6 PHR” PNEUMATIC PRESS

Mark: **E.M.G.** Type: **6 PHR**

having for function the cold working of metals,

satisfies all the requirements of the Machines Directive 2006/42/CE,

and complies with the following harmonised standards:

- EN 13736 :2009

The person authorised to prepare the technical file is Mr. Michel Puthod, 80 rue du Loquois, ZAE RUMILLY SUD, 74150 MARIGNY St MARCEL.

Issued in Marigny, on

0 5 NOV. 2019

Michel Puthod
Technical manager



1. Description

❖ General description

The EMG 6 PHR press is a pneumatic press comprising a direct thrust double acting cylinder and a work table connected by a column.

The clear height between the table and slider is adjusted by moving the head on the column.

The working stroke is adjusted by changing the position of the cylinder stop.

MARK OF THE MACHINE	: E. M. G.
TYPE	: 6 PHR
Power	: 360 Kg at 6 bars : 480 Kg at 8 bars
Stroke	: 50 mm – adjustable from 0 to 50
Height between the table and slider	: 20 to 250 mm by moving the head of the cylinder
Max. slider speed	: 150 mm/s at 6 bars
Nature of control fluid	: Oiled and filtered air
Consumption	: 0.6 Litre for 1 cycle and for the whole stroke
Table dimensions	: 145 x 160 mm
Machine weight	: 25 Kg

❖ Work station

The work station is designed to be in front of the machine fixed to a workbench, or base supplied by EMG as an option.

The operator can work in the sitting or standing position. Work station ergonomics should be considered when installing the press.

The machine is supplied either:

- In version 1 without controls.
- In version 2 with bi-manual control, 2 side guards and a top guard.
- In version 3 with bi-manual and pedal control, 2 side guards and a top guard.

❖ Normal use of the machine

The EMG 6 PHR press is designed for assembly, crimping, folding, cutting, forming, drawing, etc. Its primary use is cold forming of metals. It can be used in the same way for working other sheet materials (such as cardboard, plastic, rubber or leather).

❖ Safety instructions

Authorised personnel

It is essential that adjustment, assembly and dismantling operations be done by qualified personnel.

Working or carrying out adjustment operations with two people on the machine is forbidden. Respect this rule and prevent third parties having access to the work area.

**ALL MAINTENANCE WORK MUST
BE DONE BY QUALIFIED PERSONNEL**

Equipment

Side guards must be in position: they can only be removed for work with embedded tools and must be refitted for all other types of work.

Never open the stroke adjustment guard except for tool setting.

Working with the pedal is strictly forbidden except for embedded tools.

Definition: embedded tools must be intrinsically safe. Their openings and safety distances must be in compliance with the requirements in table 4 of the EN 294:1992 standard, or not exceed 6mm. Any additional risk of crushing when working with systems other than embedded tools should be avoided by following table 1 of the EN349:1993 standard appendix D.

Equipment

Operators must be equipped with protection equipment appropriate to the work being done, in order to prevent injury (gloves, safety glasses, etc.).

If the noise caused by the operation performed on the machine is greater than 80 dB (A), they should wear ear protectors.

2. Instructions

❖ Handling and installation

When leaving our works, the version 1 machine is delivered in a cardboard packing case. Versions 2 and 3 are delivered fixed on an appropriate sized pallet.

We recommend positioning the machine with suitable lifting equipment (weight 25kg for version 1 of the press) lifting it with a sling under the press head.

It is necessary first to remove the top guard.

Clean off the rust protection covering the machined parts.

The machine should be used on a flat and level surface.

Fix the press on a bench with suitable bolts (2 holes Ø 11 are provided).

Make sure that the press is stable.

❖ Connection

The machine needs a compressed air supply (clean and dry) to operate.

- If the machine is delivered in version 1

The whole of the compressed air circuit of the press must be constructed by the user (take care to observe the safety standards of the installation).

- If the machine is delivered in version 2 or 3

1. Connect an air supply to the filter-regulator-lubricator (1/4" gas) using a pipe with an inside diameter of at least 6 mm and an average pressure of 6 bars, that may vary from 3 to 7 bars according to need.
2. Turn on the isolation valve at the air treatment unit inlet.
3. Adjust the air pressure to 6 bars at the press (lockable adjustment knob on the air treatment unit).
4. The unit is ready to operate. Make a vacuous operating test.

❖ Noise and vibrations reduction

If the machine is fixed on a support base we advise fitting shock absorbers feet (supplied as an option) to reduce noise and vibrations.

A full set of filter and exhaust pipes is available to reduce the noise of the machine (supplied as an option).

❖ Use

Various types of equipment are possible:

VERSION 1 MACHINE DELIVERED BARE – WITHOUT ANY EQUIPMENT

**SAFETY IS UNDER THE USER'S SOLE RESPONSIBILITY,
To be checked before putting the machine into use.**

VERSION 2 BI-MANUAL PUSHBUTTON CONTROL
WITH SIDE AND TOP GUARDS FOR THE WORKING SURFACE.

Press the two push buttons simultaneously and hold them down during the operation to be performed.

Releasing either of the buttons results in the slider returning to its top position.

VERSION 3 BI-MANUAL PUSHBUTTON CONTROL + PEDAL CONTROL
WITH SIDE AND TOP GUARDS FOR THE WORKING SURFACE.
KEY OPERATED SELECTOR FOR CYCLE CHANGE

Position 1: Operation in bi-manual control.

Position 2: Operation controlled by the pedal

(for **working with embedded tools or with a stroke of less than 6 mm**).

Reminder:

Embedded tools must be intrinsically safe. Their openings and safety distances must be in compliance with the requirements in table 4 of the EN 294:1992 standard, or not exceed 6mm. Any additional risk of crushing when working with systems other than embedded tools should be avoided by following table 1 of the EN349:1993 standard appendix D.

❖ Settings

Adjusting the position of the head of the cylinder on the column (see drawing 006-00-1000 page 12)

1. Hold the head in position.
2. With an 8mm Allen key, release the two M 10 screws (item 25) in the head.
3. With a 5 mm Allen key, tighten the central screw (item 26) slightly to open the head clamping clip (hold the head firmly during this operation).
4. Move it as required. Close by loosening the screw (item 26) and retighten the two M 10 screws (item 25).

Adjusting the stroke (see drawing 006-00-1000 page 12)

1. Remove the screw (item 3) holding the guard (item 17).
2. Remove the guard (item 17).
3. Release the adjustment nut screw (item 1).
4. Screw up or unscrew as required to obtain the desired height.
5. Re-tighten the screw (item 1).
6. Refit the guard (item 17).
7. Refit the screw (item 3) locking the guard.

3. Tool mounting and characteristics

The tools should be stable and firmly fixed to the press.

Their attachment is provided for in the machine slider and on the press table by T-shaped grooves.

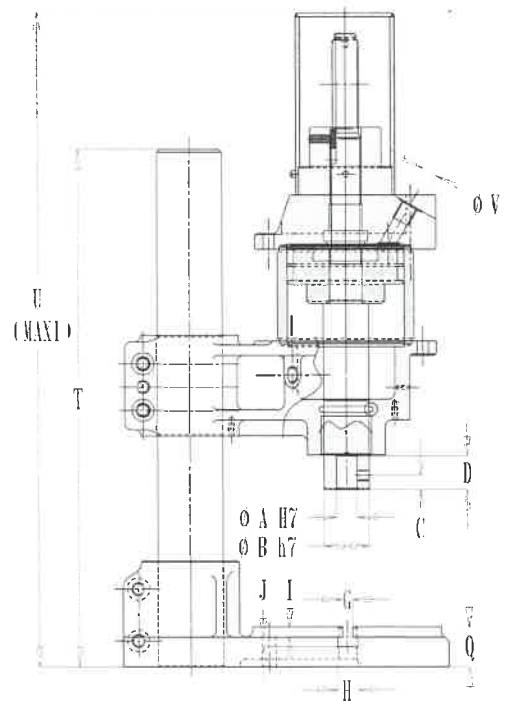
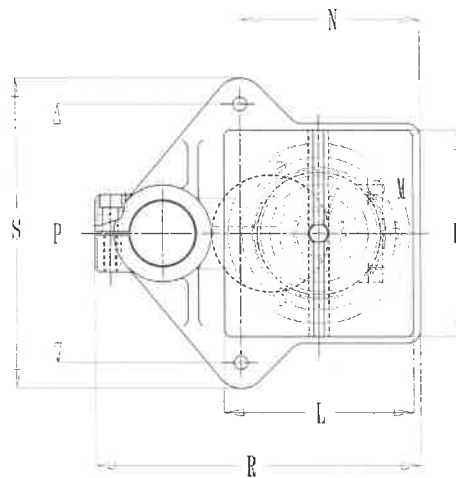
Maximum tool width 160 mm, maximum tool depth 145 mm

Slider $\varnothing 35$ h 7 Bore $\varnothing 16$ H7 depth 26, locking by an M8 clamping screw

The clear height is adjustable from 20 to 250 mm.

The stroke is adjustable from 0 to 50 mm.

A	$\varnothing 16$
B	$\varnothing 35$
C	12
D	26
G	8
H	15.50
I	8
J	7.50
K	160
L	145
M	14
N	138
P	200
Q	31
R	250
S	240
T	400
U	640
V	1/4 GAZ



Mounting of the top part of the tooling:

Use the $\varnothing 16$ H7 of the slider for centring.

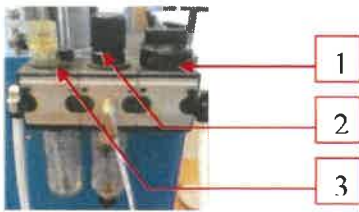
Rest the tool against the front face of the slider; then lock with a 4 mm Allen key using the grub screw on the side of the slider nearest the operator.

Mounting of the bottom part of the tooling:

Use the T-shaped groove with 2 M6 strips (option) to fix the bottom part of the tool to the press table.

4. Maintenance

❖ Maintenance



1- Isolation valve

This lock valve cuts off the supply and drains the air.

All maintenance operations on the air treatment unit must be done with this valve closed and padlocked (oil level, parts replacement, etc).

2- Filter-regulator

Pressure adjustment 3 to 6 bars. Maximum inlet pressure: 10 bars. Filtration level: 25µm.

Adjustment knob with "pull-turn-push" type locking device. Inlet filter.

Condensate level visible by transparent bowl.

Possibility of manual action on the drain while the tank is under pressure.

Clean or replace the inlet filter as soon as its appearance justifies it (impurities, rust, dirt, etc).

3- Lubricator

This provides the lubrication for the elements downstream. The oil level is visible through the tank.

The oil flow is adjusted by a cone point set screw. The adjustment direction is shown by +/-.

The oil flow should be adjusted while the air is passing through: Allow for an average of one drop of oil approximately every 50 press cycles.

Type of oil: MOBIL – VELOCITE No 6. (Grade ISO 10).

The oil level is corrected either by unscrewing the tank or via the top plug (level = 2/3 max.).

❖ Preventive maintenance

- ↳ **Once a week**
 - Clean the machine

- ↳ **Once a month**
 - Check the oil level in the FRL (Lubricator and Regulator Filter).
 - Check that the bi-manual control locks if the two buttons are not pressed simultaneously (out of synchronisation > 0.5 second)
 - Check that the press does not work when the top guard (6PHR-15) is removed.
 - Check that there are no air leaks in the circuit.

- ↳ **Once a year**
 - Clean the FRL inlet filter (access by removing the tank).
 - Clean the tank: never use solvent, but an alkaline solution (soapy water).
 - Disconnect the Ø 4 Rilsan tube from the check valve situated at the bottom of the press cylinder, operate the bi-manual control and check that the press remains locked in its top position. Reconnect the Ø 4 Rilsan tube.

❖ Instructions in the event of a breakdown or accident

In the event of a breakdown, check:

- That the inlet air pressure is at least 3 bars.
- That the top cap closing the access to the stroke adjustment is properly positioned (control valve engaged).
- That the cycle selector is in the desired position for version 3 (bi-manual or pedal).

If these conditions are fulfilled and your press still does not operate, contact the customer service: phone + 33 (0)4 50 01 11 58.

In case of accident:

Inform the SST (workplace first aid worker) of the company and/or the emergency services (phone 18 or 15 in France) and follow their advice.

Inform a company manager.

❖ Specifications for spare parts

Recommended spare parts

- 1 seal kit
- 1 controlled check valve
- 1 distributor 5/2
- 1 air treatment unit
- 2 litres of pneumatic oil

Note: To retain all the original qualities of your press, use only genuine manufacturer's spare parts.

Important notes for dismantling the cylinder

This operation must only be done by qualified maintenance personnel

The lower chamber of the press cylinder is kept under pressure by a controlled check valve, it is always under pressure. To dismantle the press cylinder safely, proceed as follows:

1. Turn off the air supply with the padlockable valve of the FRL unit and padlock the valve.
2. Disconnect the air supply to the press cylinder, and release the air under pressure from the cylinder before dismantling it completely:
 - Either by feeding the $\varnothing 4$ orifice of the check valve with a pressure of six bars to bleed the air trapped inside (the air should leak from the valve for a brief instant),
 - Or by slowly and progressively loosening the cylinder flange holding nuts to create a slight leak to release the air under pressure. When the air has escaped, continue the dismantling slowly and progressively.
3. You can then separate the cylinder body from its flanges.

5. Information regarding noise

Operating conditions during measurements when empty :

- Control : by bi-manual
- Frequency : 10 strokes/minute

Operating conditions during measurements when loaded:

- Nature of metal : 0.2 mm steel
- Type of operation : cutting at an angle of 90° - 5 mm sides
- Rate : 10 strokes/minute
- Striking force : 320 Kg

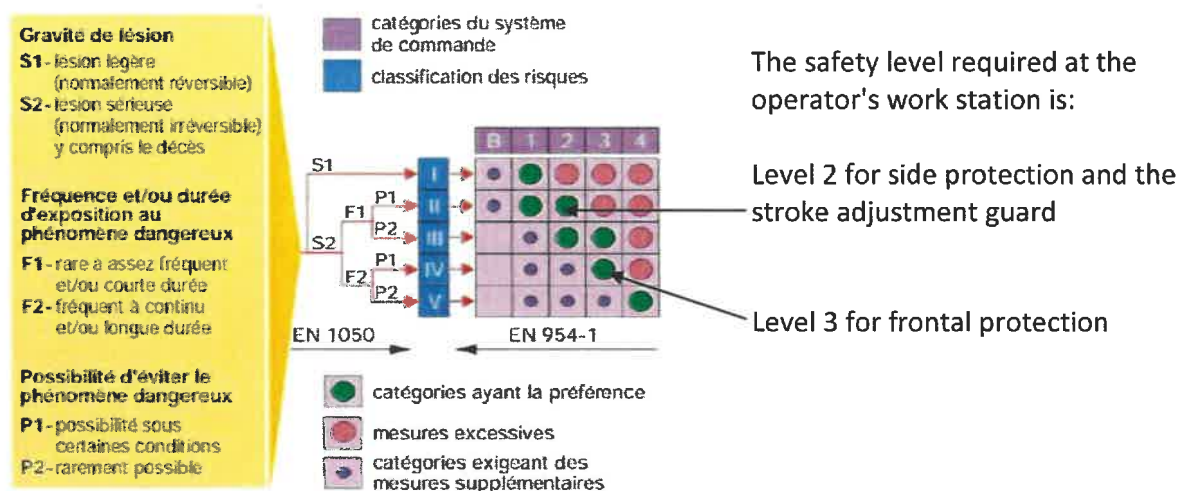
Measurement results:

- Empty : LAeq = 87.1 dB (A)
- Loaded : LAeq = 89.4 dB (A)

6. Information on residual risks

Despite the guards fitted to the machine, some risks may remain (swarf projection, tool breakage, etc). The operator should be equipped with suitable protection for the type of work to be done to ensure that he does not risk injury.

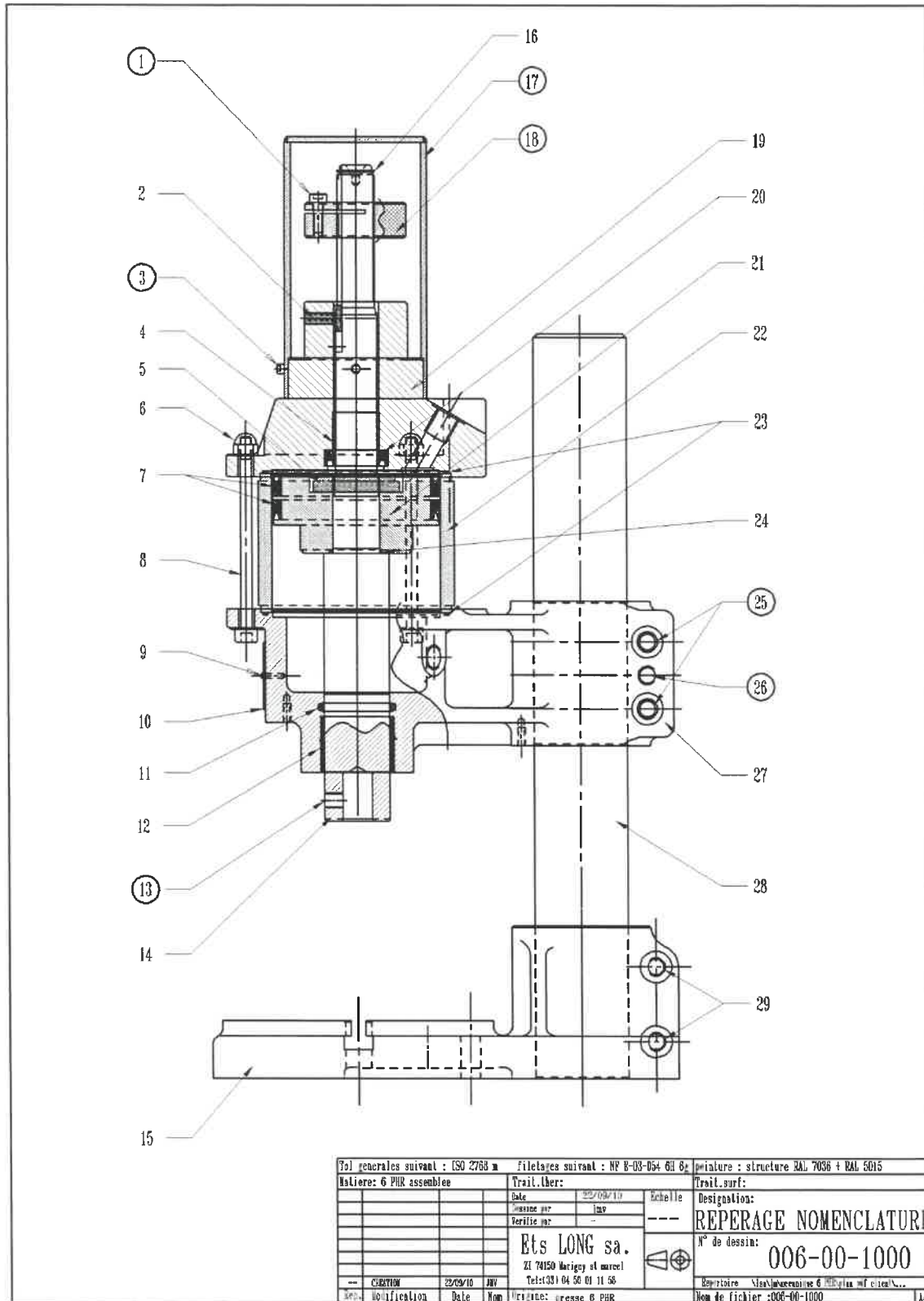
Risk assessment and safety category table according to EN 954-1




	RISKS	PROTECTION
Work station	Crushing, shearing/catching, cutting caused by the top plate	- continuous action on a bi-manual control required -control system ensuring that the slider remains in its top position if a component is faulty. - guards fixed to the sides and top
Ejection of air under pressure	Projection of compressed air, bursting of pipes to equipment	All components are generously dimensioned in relation to the press operating pressure. They are fixed and locked in their operating positions.
Electrical	N/A	No electricity supply to the machine
Heat	Burning by direct contact	In the event of heating over 50°, stop working, turn off and padlock the compressed air supply. Prevent access, and call in the maintenance department.
Noise	Damage to hearing capacity	It is specified in the service manual that personnel must be equipped with ear protection when performing noisy work or if the work station is in a noisy environment.

DRAWINGS, DIAGRAMS and DESCRIPTION (covering use, maintenance, repair and inspection)

MECHANICAL DRAWING 006-00-1000



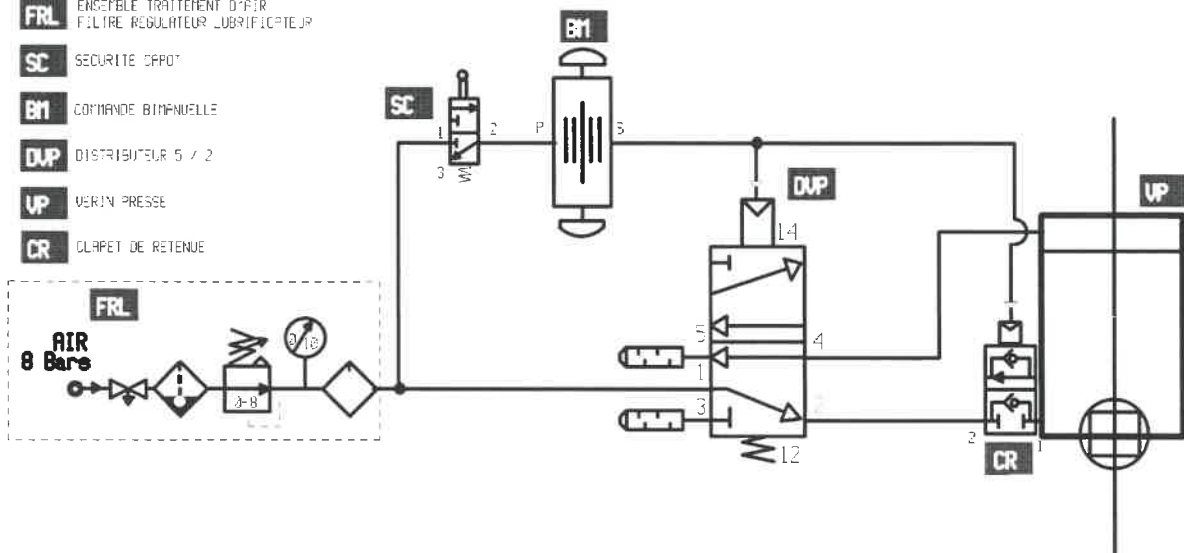
MECHANICAL NOMENCLATURE 6 PHR

			
Spare parts list for the 6 PHR press			
Number	Article code	Description	Qty
1	chc Ø M5 x 12	stop locking screw	1
2	006.30.3009	key	1
3	chc Ø M5 x 12	guard locking screw	1
4	006.30.4003	guide ring	1
5	006.30.4002	locknut	1
6	HB Ø M8	cylinder clamping nut	3
7	006.30.4006	piston seal (in the 6 PHR gasket set 006.20.2054)	2
8	chc Ø M5 x 100	cylinder clamping screw	3
9	006.30.4039	rivet	2
10	006.30.3012	identification plate	1
11	006.30.4008	O-ring seal (in the 6 PHR gasket set 006.20.2054)	1
12	006.30.4004	guide ring	1
13	HC Ø M8 x 8 screw	tool locking screw	1
14	006.30.3004	cylinder rod shaft	1
15	004.30.3001	base	1
16	006.30.4001	circlip	1
17	006.30.3015	guard	1
18	006.30.3008	adjustment screw	1
19	006.30.3003	top cap	1
20	006.30.4005	rod seal (in the 6 PHR gasket set 006.20.2054)	1
21	006.30.3006	piston	1
22	006.30.3007	cylinder	1
23	006.30.4009	O-ring seal (in the 6 PHR gasket set 006.20.2054)	2
24	006.30.4007	O-ring seal (in the 6 PHR gasket set 006.20.2054)	1
25	chc Ø M 10 x 45	head clamping screw	2
26	HC Ø M10 x 30 screw	lower support opening screw	1
27	006.30.3002	lower support	1
28	004.30.3002	column	1
29	chc Ø M 10 x 45	column clamping screw	2

PNEUMATIC DIAGRAM - 6 PHR IN VERSION 2

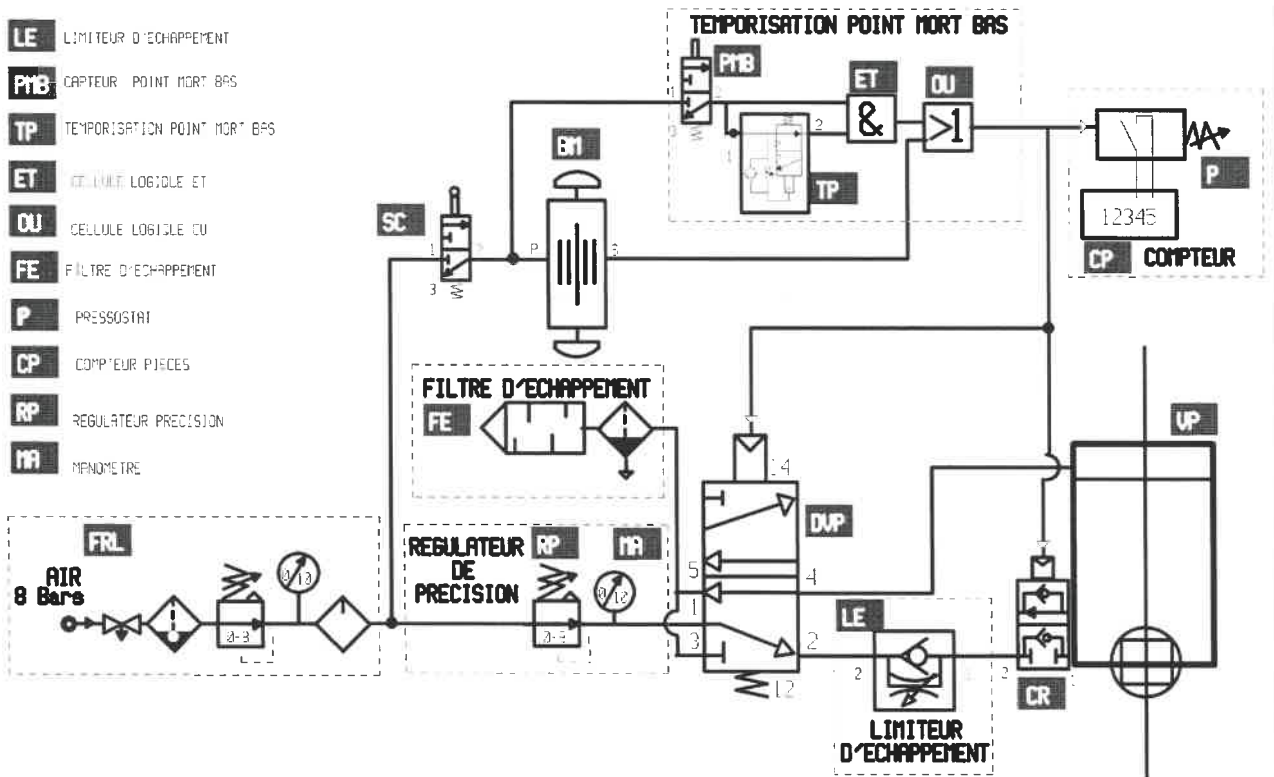
VERSION 2

- FRL** ENSEMBLE TRAITEMENT D'AIR
FILTRE REGULATEUR LUBRIFICATEUR
- SC** SECURITE D'APPOT
- BM** COMMANDE BIMANUELLE
- DUP** DISTRIBUTEUR 5 / 2
- UP** VERIN PRESSE
- CR** CLAPET DE RETENUE



VERSION 2 + OPTIONS

- LE** LIMITEUR D'ECHAPPEMENT
- PTB** CAPTEUR POINT MORT BAS
- TP** TEMPORISATION POINT MORT BAS
- ET** CELLULE LOGIQUE ET
- OU** CELLULE LOGIQUE OU
- FE** FILTRE D'ECHAPPEMENT
- P** PRESSOSTAT
- CP** COMPTEUR PIECES
- RP** REGULATEUR PRECISION
- MA** MANOMETRE



**SCHEMA PNEUMATIQUE POUR PRESSES EM6 6 PHR 8 PHR 1T
VERSION 2 COMMANDE BIMANUELLE + OPTIONS**

Ets. LONG S.A. 74150 Marigny st.Marcel 6PHR CAB V2 10/06/2010 MODIF.

D	
C	
B	
A	

PNEUMATIC DIAGRAM - 6 PHR IN VERSION 3

VERSION 3

FRL ENSEMBLE TRAITEMENT D'AIR
FILTRE REGULATEUR LUBRIFICATEUR

SC SECURITE CAPOT

BT COMMANDE BIMANUELLE

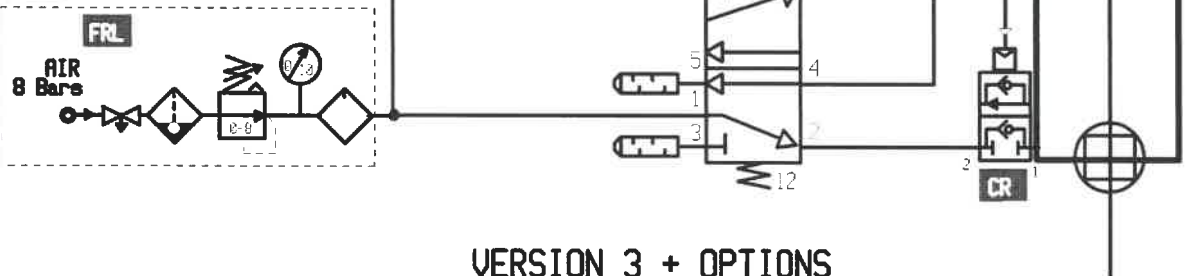
DUP DISTRIBUTEUR 5 / 2

UP VERIN PRESSE

CR CLAPET DE RETENUE

CY SELECTEUR DE CYCLE

PE PEDALE DE COMMANDE



VERSION 3 + OPTIONS

LE LIMITEUR D'ECHAPPEMENT

PMB CAPTEUR POINT MORT BAS

TP TEMPORISATION POINT MORT BAS

ET CELLULE LOGIQUE ET

OU CELLULE LOGIQUE OU

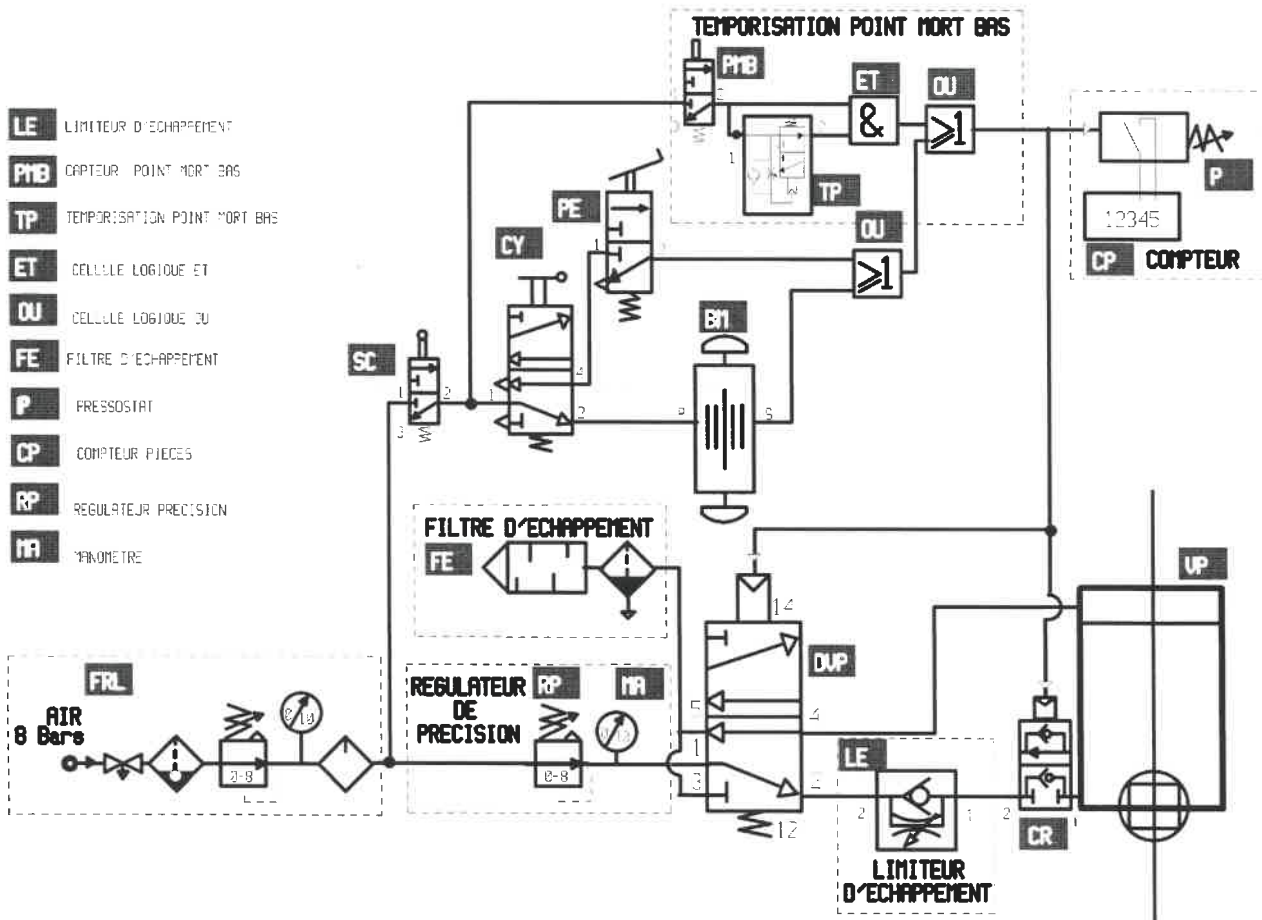
FE FILTRE D'ECHAPPEMENT

P PRESSOSTAT

CP COMPTEUR PIECES

RP REGULATEUR PRECISION

MA MANOMETRE



SCHEMA PNEUMATIQUE POUR PRESSES EMG 6 PHR 8 PHR 1T
VERSION 3 COMMANDE BIMANUELLE ET PEDALE + OPTIONS

Ets. LONG S.A. 74150 Marigny st.Marcel 6PHR CAB V3 10/06/2010 MODIF.

D
C
B
A

PNEUMATIC NOMENCLATURE 6 PHR



List of pneumatic equipment on the 6 PHR press

Item	Article code	Description	Qty
FRL	006.30.4012	Filter-regulator-lubricator	1
SC	006.30.4025	Roller microvalve, 3/2 NF	1
BM	006.30.4010	Bi-manual safety device	1
DVP	006.30.4015	Pneumatic distribution valve, 5/2 + base	1
VP	006.30.2000	Press cylinder, 6 PHR	1
CR	006.30.4038	Controlled check valve	1
		<u>Options</u>	
LE	006.30.4032	Flow regulator	1
PMB	010.30.4011	Plunger microvalve, 3/2 NF)	1
TP	008.30.4001	Pause at Dead Bottom Center	1
ET	008.30.4013	AND logic cell,	1
OU	006.30.4029	OR logic cell,	1
P	006.30.4040	Pressure switch	1
CP	006.30.4030	Counter	1
FE	008.30.4031	Exhaust filter	1
RP		Precision regulator, FDR 02	1
MA	MN 2V 614	Precision needle pressure gauge	1
MA	1876 116	Precision digital pressure gauge	1
CY	006.30.2054	Key operated selector switch	1
PE	006.30.2052	Pneumatic pedal	1