



PANDROL

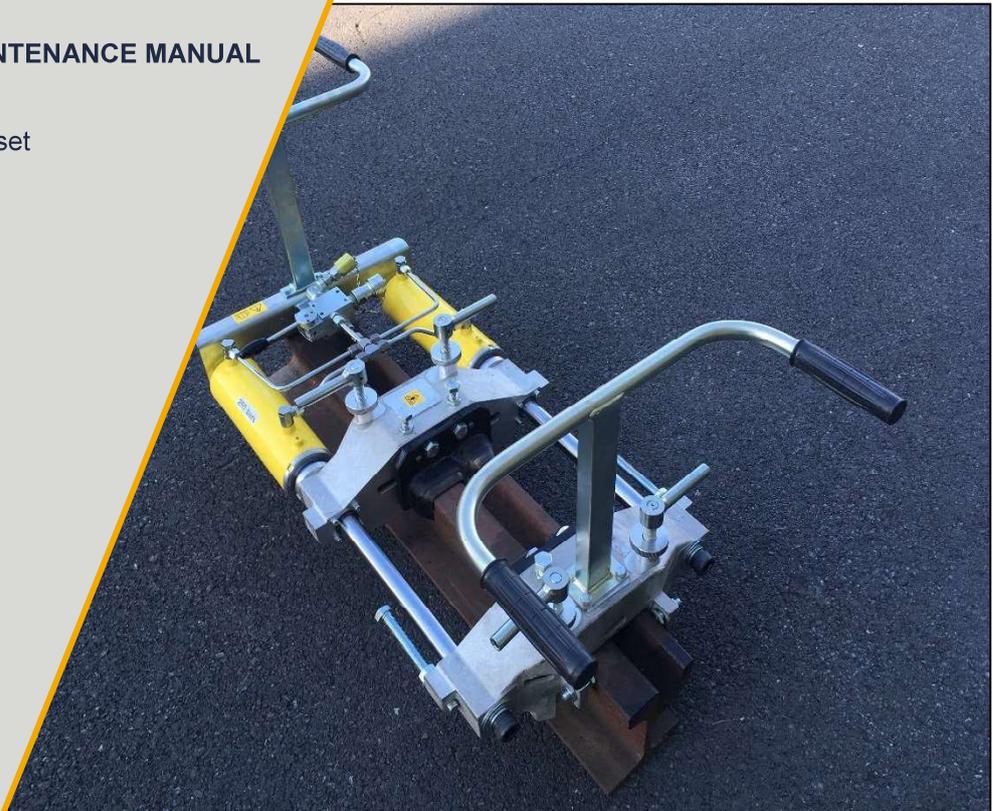
TWO PARTS WIDE HYDRAULIC SHEARING MACHINE FOR GROOVED RAIL

Ref 11332006

OPERATING AND MAINTENANCE MANUAL

EGH RAG TYPE
With separate hydraulic set

Ref 42111014



PANDROL

Siège Social et Usine : Z.I. du Bas Pré – B.P. 9 – 59590 RAISMES – FRANCE- Tél. : 33 (0) 3.27.22.26.26 - Fax : 33 (0) 3.27.22.26.00

Direction Générale et Commerciale Immeuble West Plaza – 9 rue du Débarcadère- CS90029 – 92707 COLOMBES Cedex

Tel 33.1.46.88.17.00 – Infos.pandrol@pandrol.com – Fax 33.1.46.88.17.00 et 17 66

15 of 38

En cas de litige, la version française fait référence – The French version will be decisive in cases of litigation

S U M M A R Y

	<u>Pages</u>
I SAFETY LABELS EXPLANATION	17
II GENERAL SAFETY INSTRUCTIONS	17
III SAFETY MEASURES	17
IV PRINCIPLE	18
V TECHNICAL SPECIFICATIONS	20
VI ADJUSTEMENTS BEFORE STARTING THE MACHINE	22
VII Use	26
1- Mold release	
2- Cutting	
VIII BLADES	27
1- Sharpening	
2- Different profiles blades	
IX SPARE LISTS	28
1- Grooved rails weld shearing unit	
2- Hydraulic fitting	
X CONTROL CARD	33
XI CONFORMITY CERTIFICATE	37

I – SAFETY LABELS EXPLANATION



WARNING! The machine can be dangerous



WARNING ! Be careful to the mobile pieces of the shearing machine so as to avoid any risk of squashing



Read carefully the instructions of the operating manual and make sur you understand them before using the machine

II – GENERAL SAFETY INSTRUCTIONS

- *Do not use the shearing machine until you have read and understood the entire contents of the operator's manual
- *The shearing machine is specially designed to cut off the metal excess, or deadhead, generated by rail aluminothermic welding, never use this machine for any other work
- Never use the shearing machine when you are tired, under the influence of medicines, alcohol or any substance that can affect your perception, dexterity or your appreciation capacity
- Do not mix different types of oil.

III – SAFETY MEASURES

- Check that all hydraulic pipes are correctly positioned so as to avoid their shearing or a contact with the weld
- To obtain high performances and get most satisfaction with the shearing machine, realise the different adjustments recommended with a particular attention before starting the machine

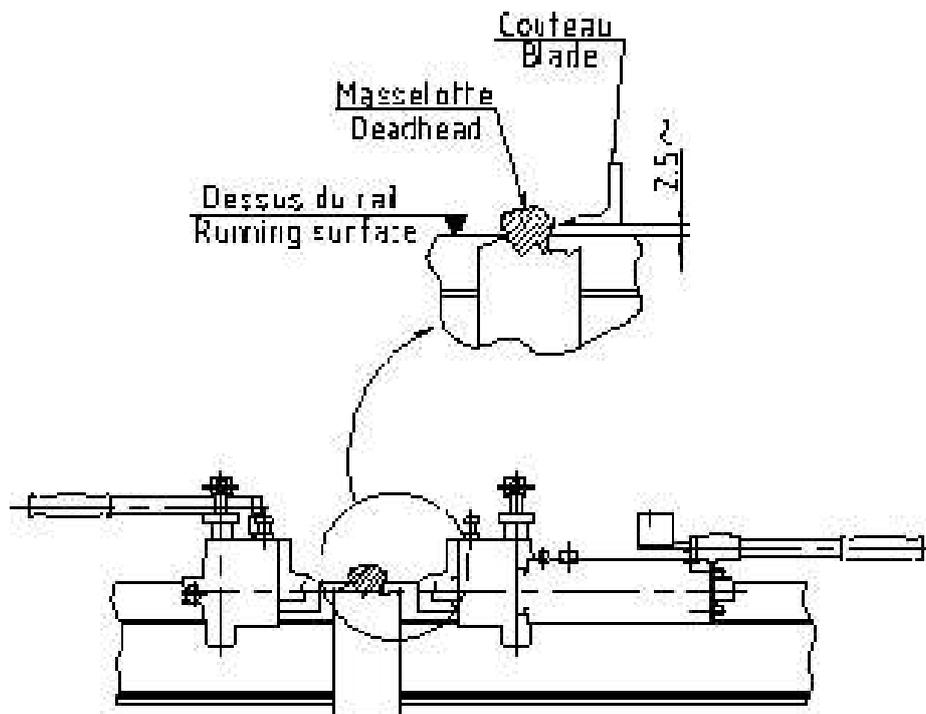
IV – PRINCIPLE

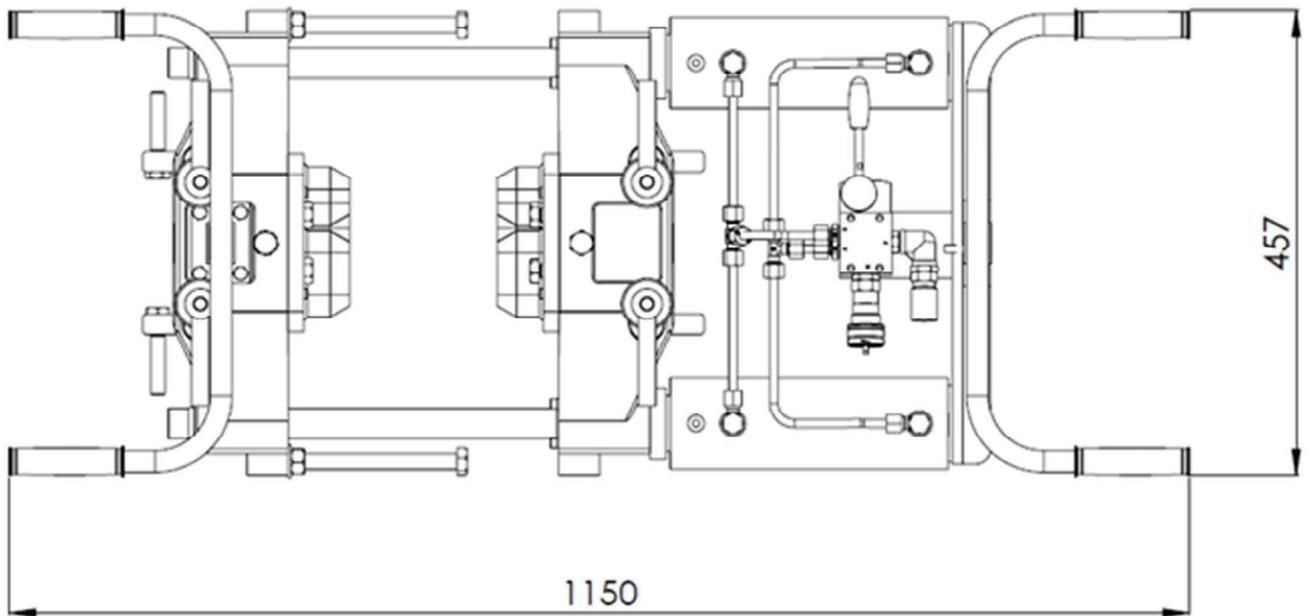
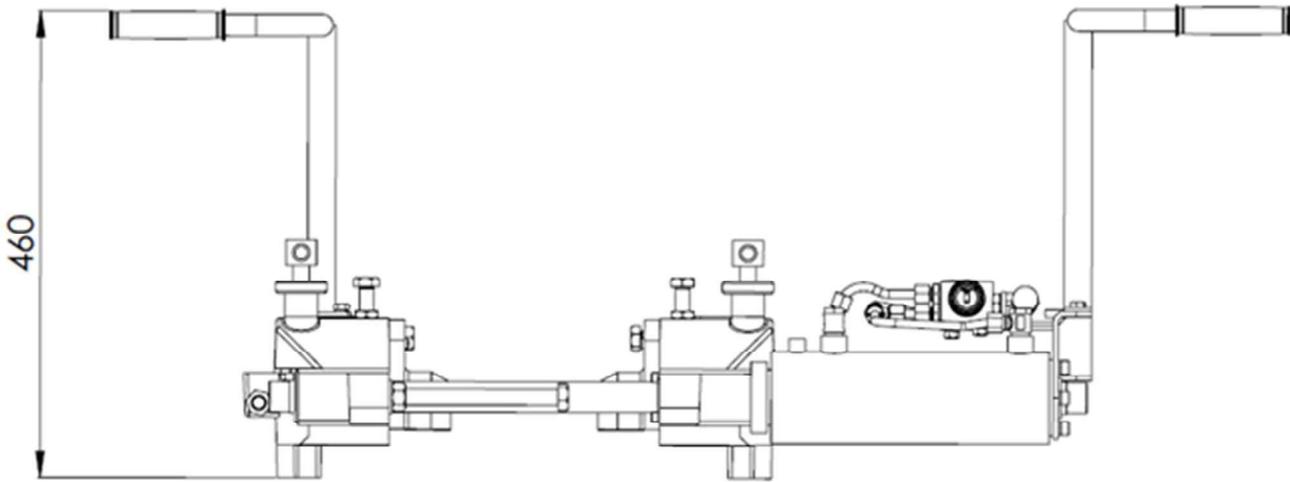
During aluminothermic welding, a deadhead which serves of metal reserve during solidification remains above the rail head.

Traditionally this deadhead was removed manually with a hammer and chisel, hard work which exposed the workers to projections of metal. The hydraulic shearing machine allows to cut the metal excess without any risk of damaging the rail.

After mould release, 2 hydraulically operated blades, guided by the rail itself, move and cut off the deadhead. This machine is lightweight and can easily be manipulated by two men.

A set of blades adapted to the various types of **grooved rails** allows the cutting in a single operation with precision.





V – TECHNICAL SPECIFICATIONS

Désignation Two parts shearing machine

Weight 43 Kg
without blades

Dimensions : L x l x h 1150 x 457 x 460

Force Hydraulic pressure 216 KN (22 T)
250 bar (3626 psi)

Hydraulic oil :

ISO 22 VG	Viscosity	2,3 Engler at 50 °C
Viscosity index	100	
Flash point	192 °C	

DO NOT MIX DIFFRENT TYPES OF OIL

- This machine must be used with an hydraulic assembly equipped with a for stroke engine, maximum hydraulic pressure 250 bars, minimum output 3 l/mn.
- Hydraulic hoses are delivered together with the hydraulic assembly.

fig. A

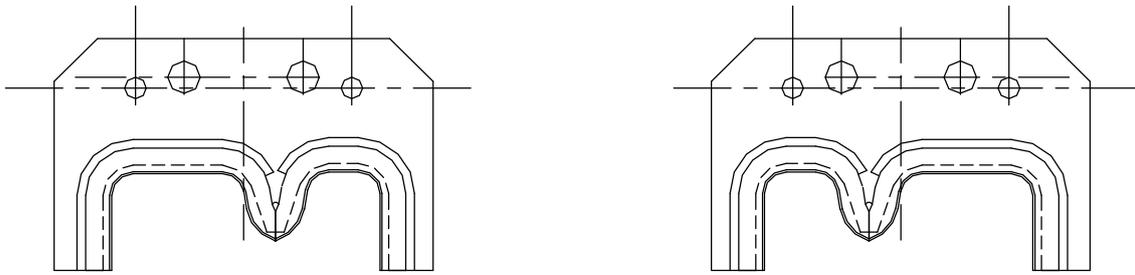
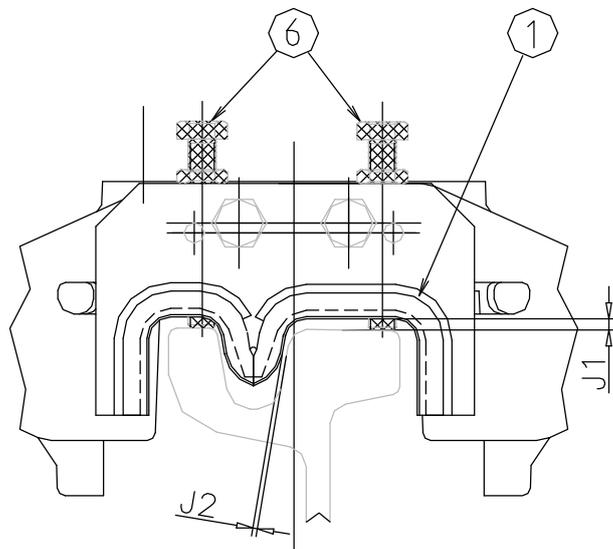


fig. B



VI – ADJUSTMENTS BEFORE STARTING THE MACHINE

A-Adjusting the blades

The grooved rail weld shearing machine is equipped with special blades **Figure A**

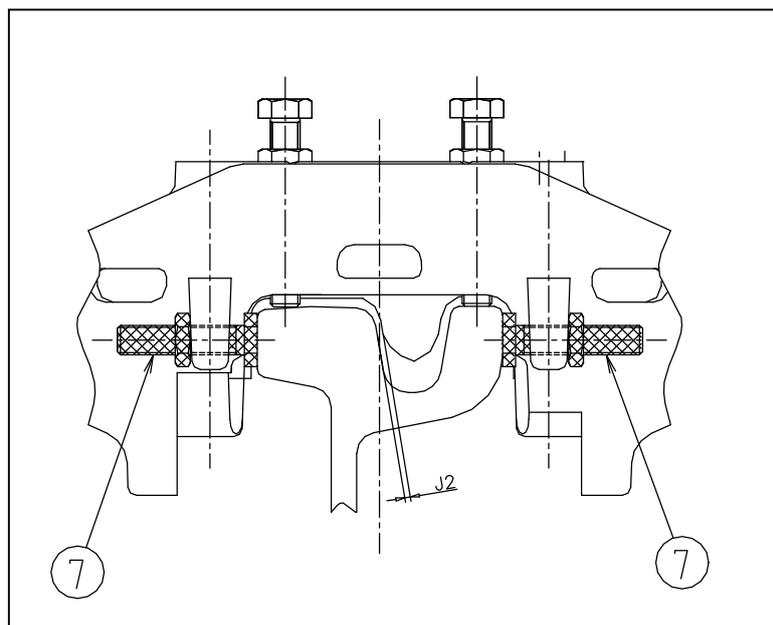
1 - Vertical adjustment **Figure B**

- Equip the shearing unit with the blades,
- Place it on the rail,
- Unlock the lock nuts and unscrew the screws **rep. 6** so as to create, between the blade cutting edge and the rail profile, the space **J1** to respect the space **J2 = minimum 2,5mm**
- The adjusting finished, lock the lock nuts of the screws **rep. 6**

2 - Centering the shearing unit **Figure C**

- On the fixed and the mobile crosspiece unlock the lock nuts, then tighten the screws **rep. 7** until they make contact with the rail so as to create a space **J2 = minimum 2,5 mm**
- The adjustment finished, loosen the screws **rep. 7** half of a turn so as to let a space of 1mm between the screws end and the rail
- Lock up the lock nuts of the screws **rep. 7**

To optimize the cutting operation, this adjustment should be made systematically every time the blades have been sharpened or replaced.

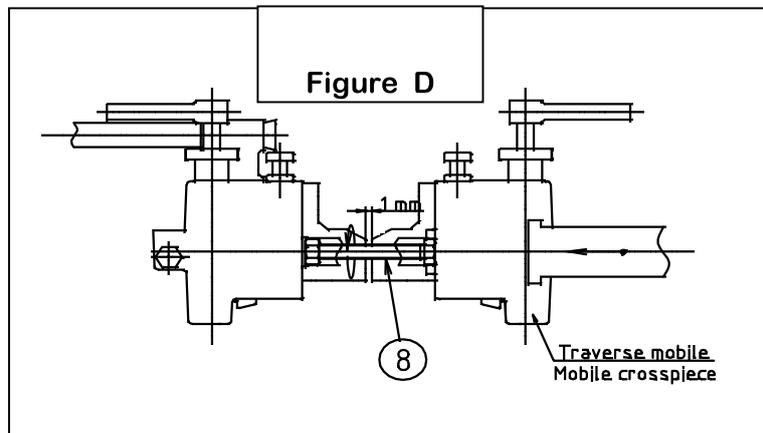


B-Stops adjustment

To provide the blades cutting edges from damaging, it's absolutely necessary to leave a space of 1mm when adjusting the 2 screws rep. 8

Instructions :

- a) Start up the hydraulic assembly
- b) Push the distributor lever (see hydraulic fittings rep. 44) towards the blades to move the mobile crosspiece until you obtain a space of 1mm between the two blades,
- c) Loosen the lock nuts of the screws **rep. 8** witch act like stop pieces,



- d) Place the screws head in contact with the mobile crosspiece

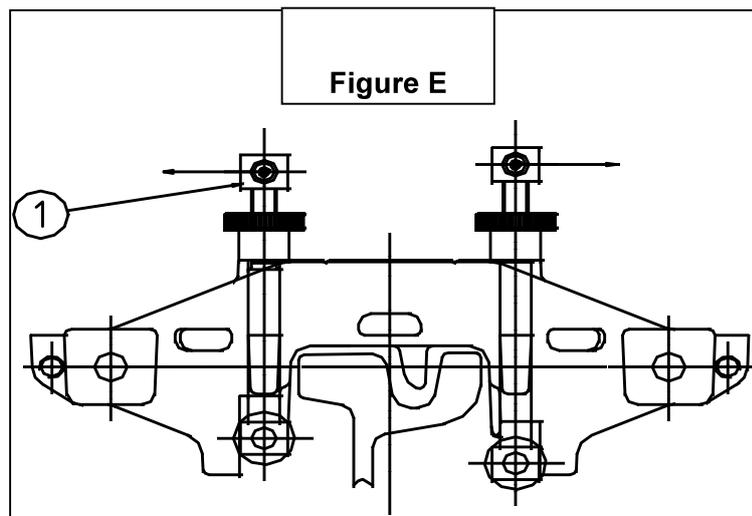
- e) Tighten the lock nuts,

- f) Stop the hydraulic assembly

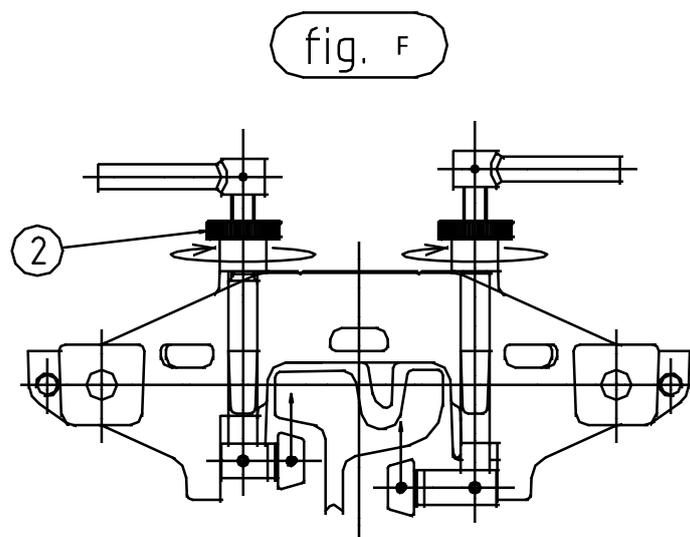
C-Adjustment of the locking system

The locking system (for bolts) improves the cutting action, making it safe and of good quality.

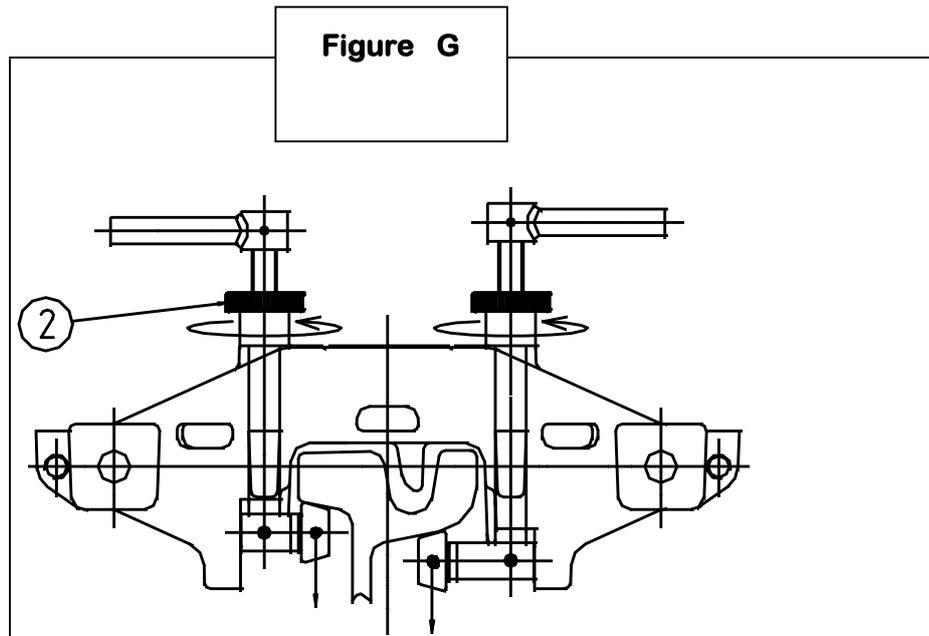
Instructions : The shearing unit placed on the rail, the blades adjusted, rotate the bolt lever **rep. 1** through 90° so as to engage the bolt under the rail
(Figure E)



Turn the knurled nut **rep. 2** to work up the bolt until the roller makes contact with the under part of the rail head (**Figure F**)



Loosen the nut **rep. 2** a quarter of turn to create a little space between the under part of the rail head and the bolt roller (**Figure G**).



DO THE SAME WITH THE THREE OTHER BOLTS

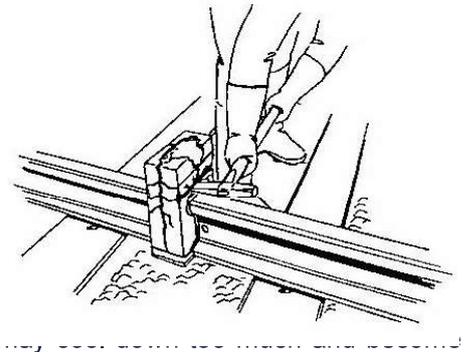
VII – USE

Before welding operation, put the shearing unit on the rail so as to verify that all the adjustments have been made (see section III, Adjustments).

1) DÉMOULAGE

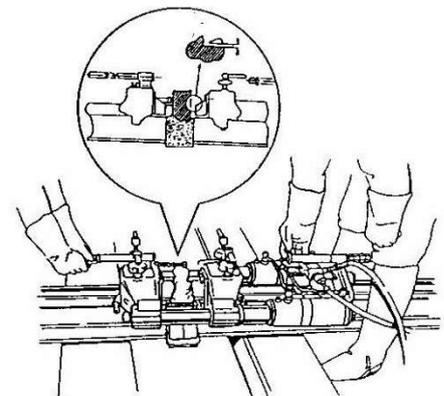
The welding finished, proceed as follows :

- Start up the hydraulic assembly
- Break the upper part of the mould respecting the time required between to the welding process.
- Remove the sand from each side of the deadhead
- Using a wire brush remove sand and debris resulting from the mould
- These operations must be done **quickly**, otherwise the deadhead will be impossible to cut



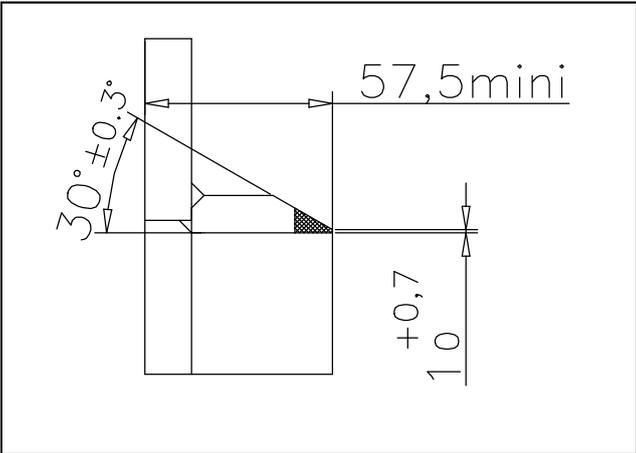
2) Cutting

- The welder and his assistant place the shearing machine on the rail with the deadhead centered in relation to the blades.
- Pivot the 4 bolts of the locking system under the rail head
- The operator, on the hydraulic distributor side, pushes the lever of the distributor towards the welding to cut (towards himself for the return). Once the stop screws make contact with the travelling crosspiece, **immediately** reverse the lever on the distributor in order to prevent a prolonged heating of blades.
- Release the bolts of the locking system.
- Remove the shearing machine from the rail.
- Using a hammer break the layer that still links the deadhead to the rail



VIII - BLADES

1) SHARPENING



The shape of the cutting edge along all the profile of the blade is very important in order to obtain optimum cutting quality.

The blades must be systematically inspected and sharpened (about every 50 cuts).

THESE BLADES CANNOT BE REBUILD UP BY WELDING

2) PROFILE BLADES LIST FOR THE VARIOUS TYPES OF GROOVED RAILS

<p>$L = 124$</p>	<p>1p BLADES I. 124</p> <p>REF. 11335030</p> <p>FOR RAILS RI60 RI 59 S.E.I. 35 G S.E.I. 35 GP S.E.I. 35 GM Rail NP 4 aM Rail NP 4 a</p>
-----------------------------	--

VII – LISTE DES PIÈCES DÉTACHÉES SPARE PARTS LIST

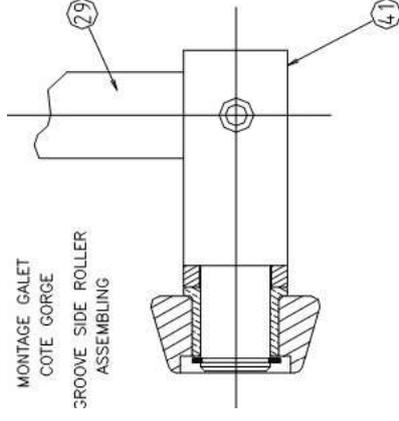
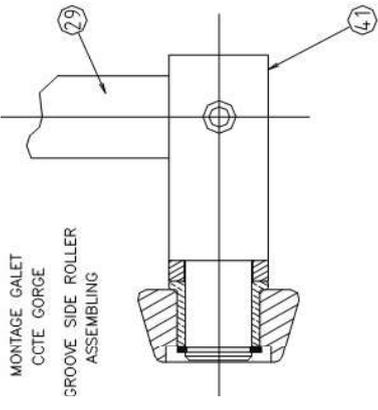
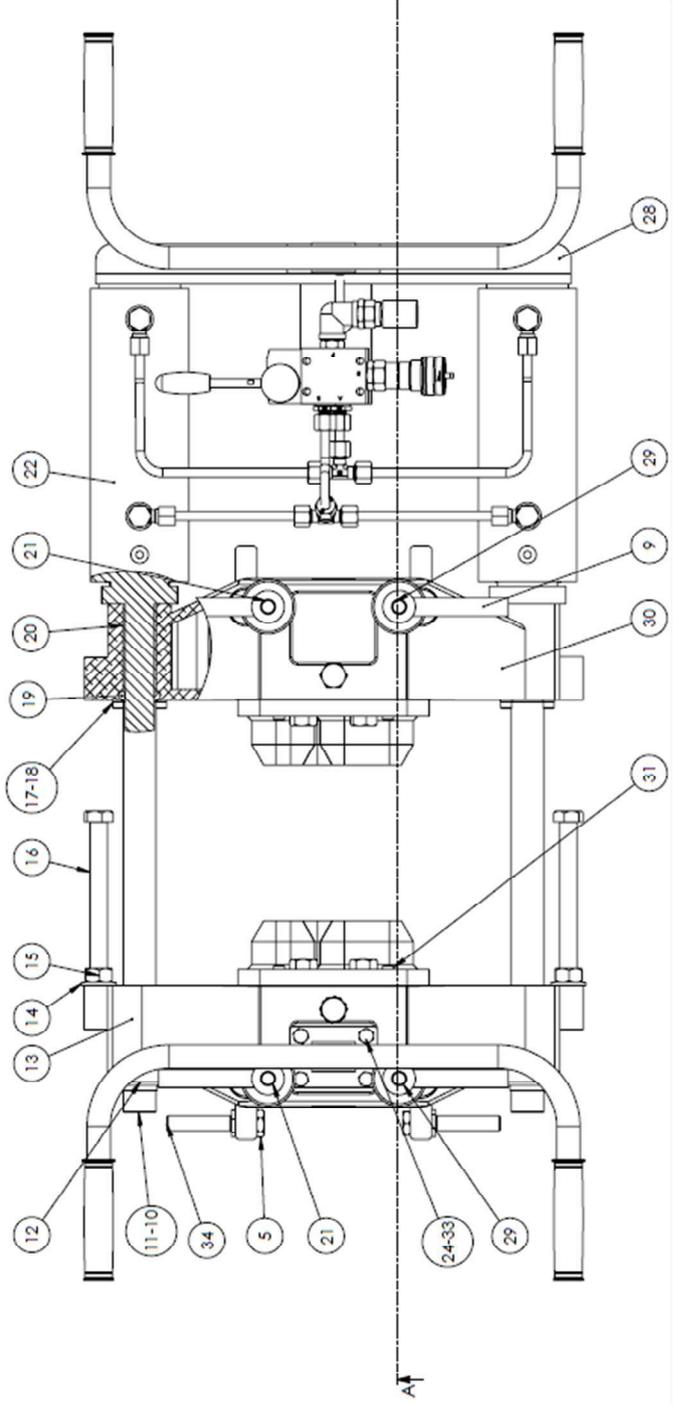
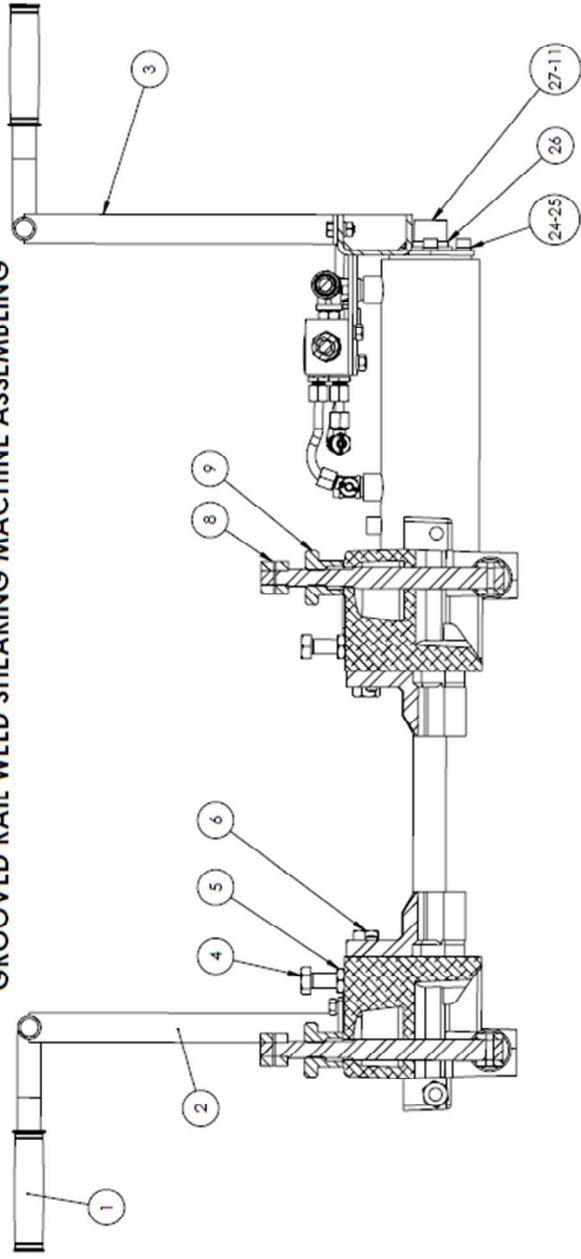
Ensemble d'ébavurage de rails à gorge

Grooved rails weld shearing unit

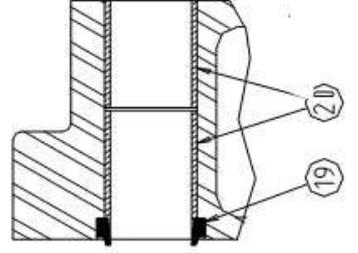
Circuit hydraulique

Hydraulic fittings

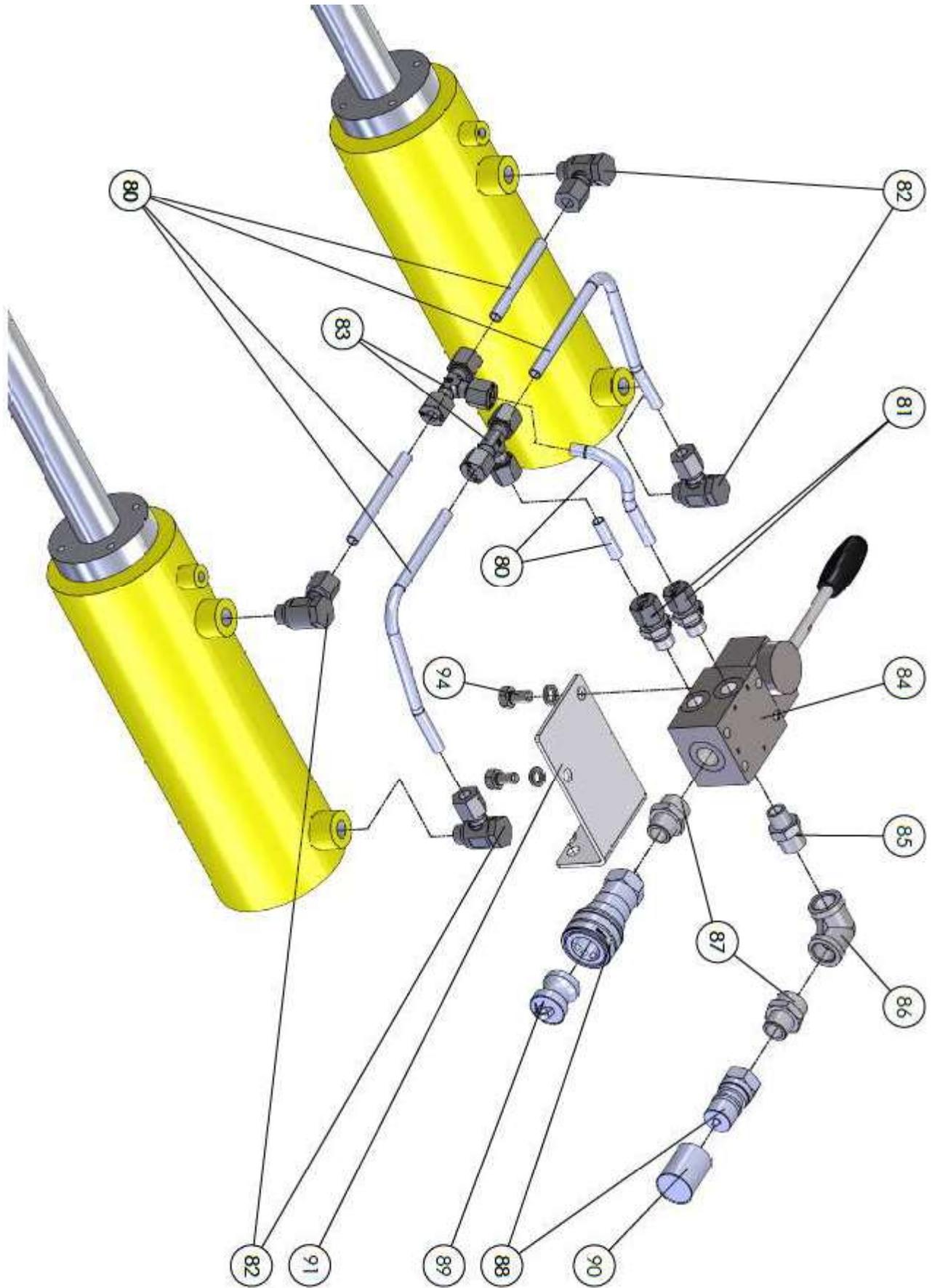
**ENSEMBLE EBAVUREUSE RAILS A GORGE
GROOVED RAIL WELD SHEARING MACHINE ASSEMBLING**



**MONTAGE DES COUSSINETS
ET JOINT RACLEUR
SEAL SCRAPPERS AND RINGS
ASSEMBLING**



Rep.	Référence	Qté.	Désignation	Description
1	47401005	4	Poignée caoutchouc	Rubber handle
2	35910477	1	Poignée de transport	Holding handle
3	35910409	1	Poignée de transport	Holding handle
4	41014002	4	Vis HM14 x 90	HM14 x 60 screw
5	40914004	6	Ecrou Hm M14	Hm M14 nut
6	41014001	4	Vis H M14 x 60	H M14 x 90 screw
7	31230014	4	Ecrou de réglage	Adjusting nut
8	41301012	4	Goupille élastique Mécanindus	Elastic pin Mecanindus
9	35910052	4	Poignée pour crochet à galet	Roller hook handle
10	41020001	2	Vis CHC M20 x 80	CHC M20 x 80 screw
11	41120002	4	Rondelle W20	W20 washer
12	41120003	2	Rondelle L20 U	L20 U washer
13	32930043	1 ensemble	Traverse fixe équipée de : - 2 goupilles cylindriques 10x30 (rep. 31)	Fix crosspiece equipped with : - 2 cylindrical pins 10x30 (rep 31)
14	41116004	2	Rondelle plate M16 N	M16 N flat washer
15	40916002	2	Ecrou H M16	H M16 screw
16	41016007	2	Vis HM16 x 160	HM16 x 160 screw
17	41006049	8	Vis CHc M6 x 100/24	CHc M6 x 100/24 screw
18	41106001	8	Rondelle W6	W6 washer
19	44201004	2	Joint racleurs	Scraper seals
20	45301005	4	Bague PCM 30x34x40	Ring PCM 30x34x40
21	31110184	2	Tige de manoeuvre	Operating rod
22	47501011	2	Vérin allégé	Light jack
	47501003	2	Colonne de vérin	Jack column
23	41008008	2	Vis HM8 x 16	HM8 x 16 screw
24	41108004	2	Rondelle W8	W8 washer
25	41008033	8	Vis CHc M8 x 20	CHc M8 x 20 screw
26	41120004	2	Rondelle plate M20 U	M20 U flat washer
27	41020002	2	Vis CHc M20 x 50	M20 x 50 screw
28	35910524	1	Traverse arrière	Back crosspiece
29	31110183	2	Tige de manoeuvre	Operating rod
30	32930044	1 ensemble	Traverse mobile équipée de : - 2 joints racleurs (rep 19) - 4 bagues PCM 30x34x40 (rep 20) - 2 goupilles cylindriques 10x30 (rep 31)	Mobile crosspiece equipped with : - 2 scraper seals (rep 19) - 4 rings PCM 30x34x40 (rep 20) - 2 cylindrical pins 10x30 (rep 31)
31	41304001	4	Goupille cylindrique 10x30	Cylindrical pin 10x30
33	41008002	4	Vis HM8 x 20	HM8 x 20 screw
34	31110188	4	Vis H M14 x 60 modifiée	Modified HM14 x 60 screw
35	41802001	4	Circlips pour arbre Ø 16	Circlips for Ø 16 shaft
36	31210142	4	Galet	Roller
37	45302002	4	Coussinet	Bearing
38	31210143	4	Bague de positionnement	Positioning ring
39	41301013	4	Goupille élastique diam. 8	Elastic pin diameter 8
40	31910027	2	Axe de galet	Roller axle
41	31910146	2	Axe de galet	Roller axle
60		1p	2 couteaux équipés	2 equipped blades
	47501016	1	Pochette de joints de vérin allégé	Gasket kit for light hydraulic jack



Rep.	Référence	Qté.	Désignation	Description			
80 81 82 83	21332059	1	KIT TUYAUTERIES HYDRAULIQUES HYDRAULIC PIPE SET				
84				47702004	1	Distributeur à tiroir	Distributor
85				47701033	1	Mamelon double inégal mâle	Double male fitting
86				47701031	1	Coude femelle 90°	90° female coupling
87	47701032	1	Mamelon double inégal mâle	Double male fitting			
88	47702009	1	Coupleur Gromelle complet standard	complete Gromelle coupling			
89	47702010	1	Bouchon de protection mâle	Male protection plug			
90	47702011	1	Bouchon de protection femelle	Female protection plug			
91	35910524	1	Traverse arrière	Back crosspiece			
92	41008020	2	Vis HM 8 x 20	Screw HM 8 x 20			
93	40908001	2	Ecrou M8	Nut HM8			
94	41008008	2	Vis H M8 x 16	Screw H M8x16			

21332059 KIT TUYAUTERIES HYDRAULIQUES / HYDRAULIC PIPE SET C :175 – EGH2

Rep.	Référence	Qté.	Désignation	Description
80	47601002	1	Tube hydraulique Ø 6/8	Hydraulic pipe Ø 6/8
81	47701036	2	Union mâle ¼"	Male coupling ¼"
82	47701034	4	Equerre orientable ¼"	Adjustable coupling ¼"
83	47701035	2	Té Egal 250 bars	T shaped connector 3627 PSI



**FICHE DE CONTROLE
CLIENT**

**CONTROL CARD
CUSTOMER'S COPY**

EBAVUREUSE RAILS A GORGE
A GROUPE HYDRAULIQUE SEPARÉ

GROOVED RAIL WELD SHEARING MACHINE
WITH SEPARATE HYDRAULIC SET
REF. 11332006

N°	Désignation des contrôles <i>Description of controls</i>	Contrôle <i>Checked by</i>
1	Réglage des vis de positionnement en hauteur <i>Height positioning screws adjustment</i>	
2	Réglage des vis de guidage <i>Guide screws adjustment</i>	
3	Système de verrouillage : <i>Locking system</i> - Ecrou de réglage en hauteur <i>Height adjustment nut</i> - Débattement des verrous <i>Clearance of locks</i>	
4	Étanchéité des constituants hydrauliques sous mise en pression : <i>Inspection of hydraulic components under pressure</i> - Raccords <i>Couplings</i> - Tuyauteries <i>Piping</i> - Vérins <i>Hydraulic jacks</i>	
5	Essai de fonctionnement à pression maximum de 250 bars <i>Operating test at maximum pressure of 250 bars</i>	
6	Aspect général <i>General aspect</i>	
7	Outillage <i>Tools</i>	
8	Notice d'utilisation REF. 42111014 <i>User's manual</i>	
<p>Date de fabrication <i>Date of manufacturing</i> :</p> <p>Fait à Raismes le <i>Drawn up in Raismes, the</i> :</p> <p>Nom <i>Name</i> :</p> <p>Signature <i>Signature</i> :</p>		

**Références à rappeler en cas de réclamation
*In case of complaint, please quote these references***

N° de machine *Machine nbr* :

Pompe Type, N° *Pump Type* : N°

SAV / Commercial

Contacter votre représentant commercial / Contact your local representative

Ou / Or +33 (0) 1 46 88 17 00

Ou / Or Infos.pandrol-fr@pandrol.com

IV - ATTESTATION DE CONFORMITE

CERTIFICATE OF CONFORMITY

Le constructeur soussigné (the undersigned manufacturer)

PANDROL (DIVISION MATERIEL)

Z.I DU BAS PRE

59590 RAISMES



Certifie que le matériel neuf désigné ci-après

(certify that the under described products)

EBAVUREUSE HYDRAULIQUE

HYDRAULIC SHEARING MACHINE

POUR RAILS A GORGE

FOR THROAT RAILS

A groupe hydraulique séparé

With separate hydraulic set

Référence 11332006

Référence 11332006

N° de machine (machine number) :

Est conforme (comply with)

- **A LA CONFORME EUROPEENE NF EN 13977**
(THE EUROPEENE NORM NF EN 13977)
- **AUX DISPOSITIONS REGLEMENTAIRES DEFINIES PAR LA DIRECTIVE 2006/42/CE**
(THE INFORMATIONS STATED IN THE LEGAL DOCUMENTATION OF THE DIRECTIVE 2006/42/CE)
- **Aux prescriptions de l'article R4313-20 (procedure d'auto certification)**
(the regulations of R4313-20 article – self certification procedure)
- **M. LISINSKI Aurélien est le détenteur du dossier technique**

Raismes, 05/2019
Bruno JOIRIS
Directeur Industriel

Aurélien LISINSKI
Responsable division matériel et équipement

PANDROL

Find out more at

pandrol.com

Partners in excellence