



# PANDROL

## EBAVUREUSE HYDRAYLIQUE LARGE EPM2

### REF 11334004

NOTICE D'UTILISATION ET D'ENTRETIEN

Pompe manuelle

Ref 4211002



PANDROL

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

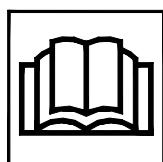
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## I – SAFETY LABELS EXPLANATION



**WARNING !** The machine can be dangerous.  
Careless and incorrect use can result in injury  
to the operator



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



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

## 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 TO BE TAKEN PRIOR TO INITIAL USE

- 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

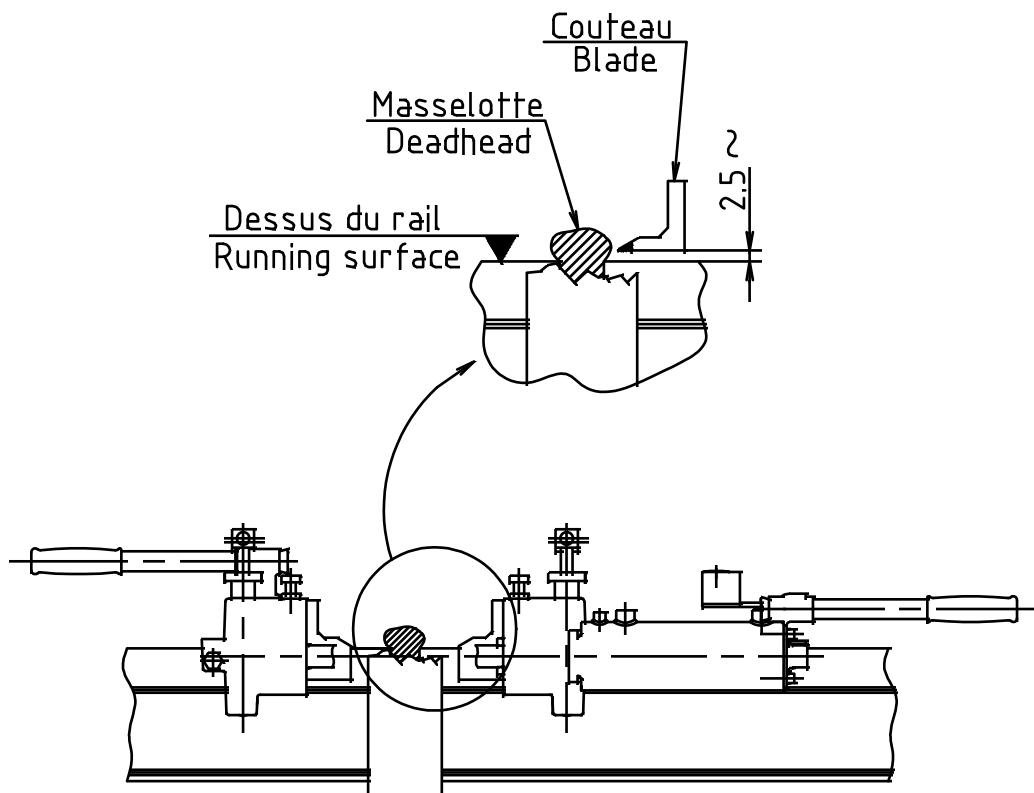
## IV - PRINCIPLE

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 Vignole rails allows the cutting in a single operation with precision.



# V - ADJUSTMENTS BEFORE STARTING THE MACHINE

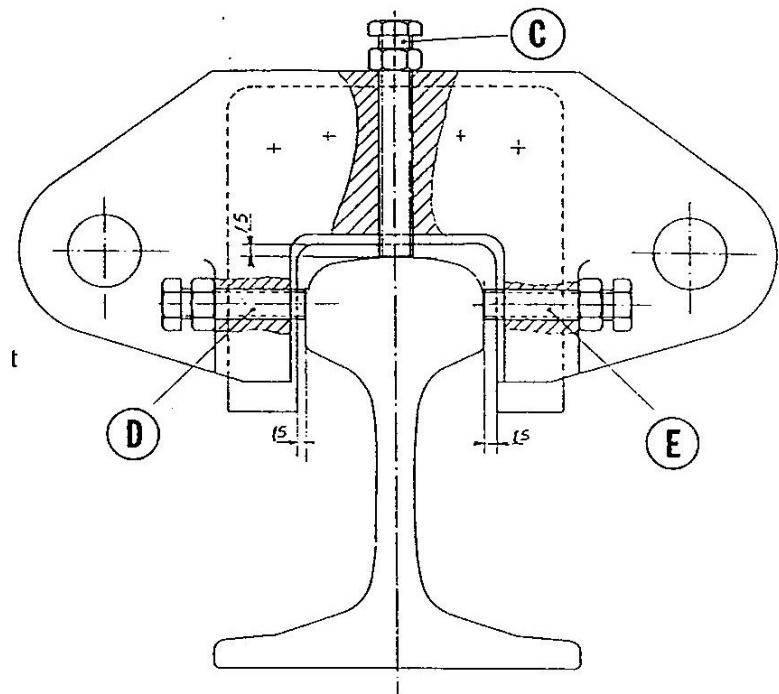
## 1) ADJUSTING THE BLADES

### a. Longitudinal guide

The cutting unit is guided longitudinally along the rail by 4 guide screws (rep. D and E) : 2 on the front crosspiece and 2 on the back one, which create a space between the cutting edge of the blade and the profile of the rail head.

#### Instructions

- Unlock the lock nuts and unscrew the rep. D and E screws
- On the left side, adjust the screw rep. D so as to obtain a space of 1.5 mm between the vertical cutting edge of the blade and the rail
- On the right side, tighten the screw rep. E so as to leave a space of 0.5 to 1 mm between this screw extremity and the rail
- Lock up the lock nuts



### b. Vertical adjustment

The front and back crosspieces are each fitted with a screw (rep. C)

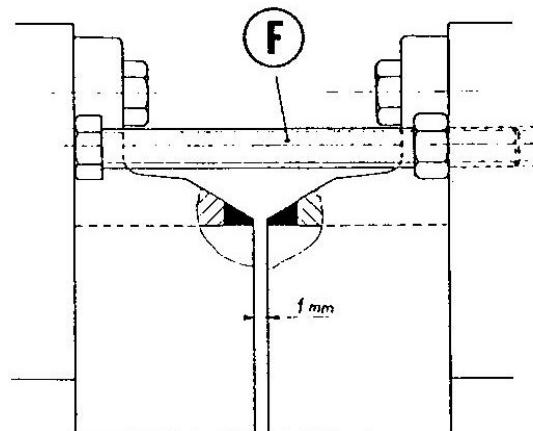
These screws are adjusted in the workshop so that there is a space of 1.5 to 2 mm between the cutting edge of the blades and the rail running surface

#### Instructions

- Loosen the lock nuts and unscrew the 2 screws rep. C
- Place a 1.5mm wedge on the rail running surface
- Place the cutting unit on the wedge
- Tighten the screws rep. C until they make contact with the rail
- Block the lock nuts

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

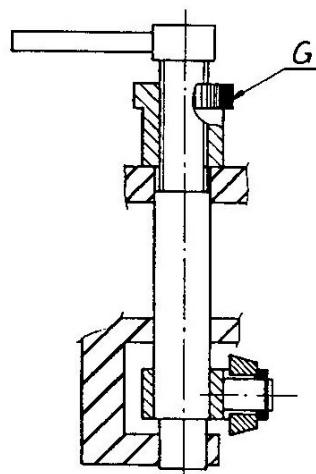
## 2) STOPS ADJUSTMENTS



To provide the blades cutting edges from damaging, it's absolutely necessary to leave a space of 1 mm when adjusting the 2 screws rep. F which act like stop pieces on the travelling crosspiece.

## 3 - ADJUSTING THE LOCKING SYSTEM

The locking system 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 through 90° so as to engage the bolt under the rail head,

- Turn the knurled nut (rep. G) until the bolt make contact under the rail head
- Loosen 1/8 of a turn the nut (rep. G) to create un little space
- Do the same with the three other bolts

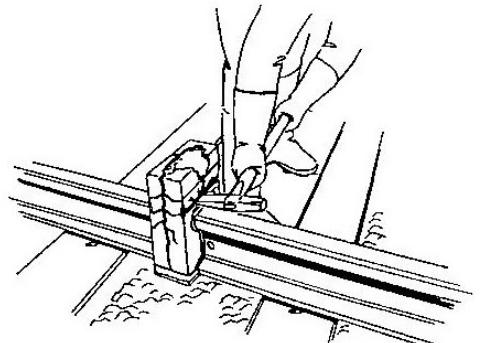
# VI - HOW TO OPERATE THE MACHINE

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-MOULD RELEASE

The welding finished, proceed as follows :

- Break the upper part of the mould respecting the time required between casting and mould release, according 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 from both sides of the deadhead.



These operations must be done quickly, otherwise the deadhead may cool down too much and become 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 towards the welding to cut (towards himself for the return).

Quickly manipulates the small lever from right to left to activate the pump. As soon as the tensile becomes important sets up the big lever and carries on acting the pump until the stop screws make contact.

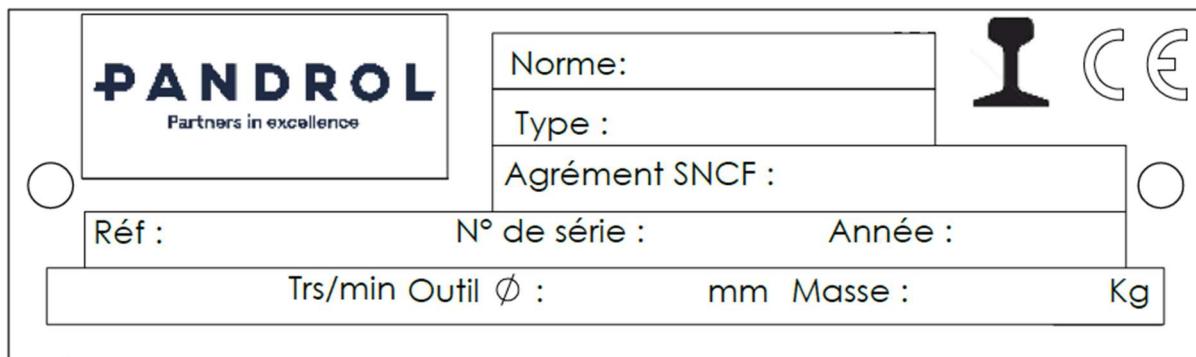
Then reverses immediately the distributor lever in order to prevent a prolonged heating of blades and pump for their return.

- 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 – SIGNALISATION

The hydraulic shearing machine benefits of traceability on the ID plate.

**ID PLATE**

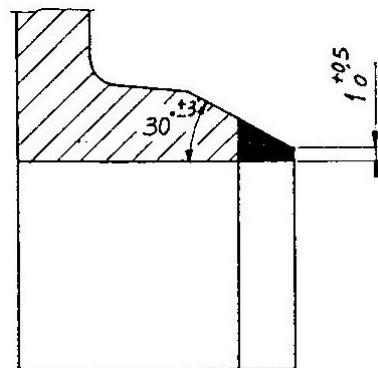


**ETIQUETTE EN 13977**



## VIII - BLADES

### 1) - SHARPENING

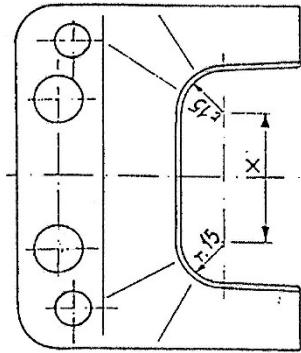


The shape of the cutting edge along all the profile of the blade is very important in order to obtain optimum cutting quality.

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

## **TYPES DE COUTEAUX A UTILISER SELON LES PROFILS DE RAILS**

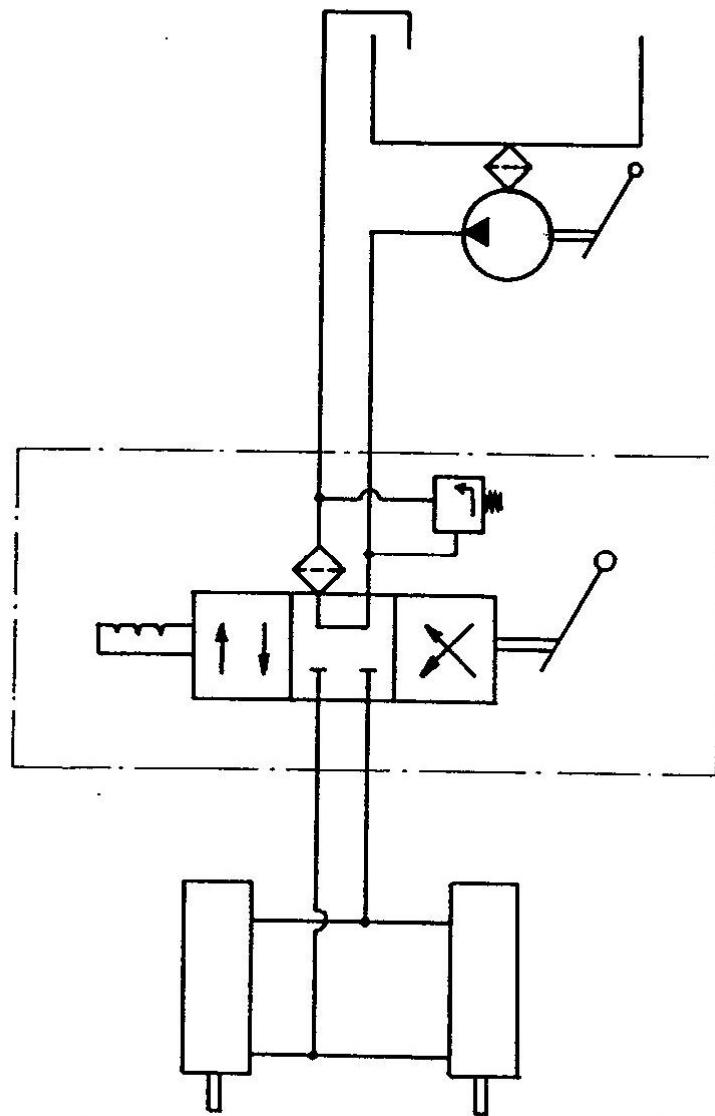
Type 32 Rail longés		Type 36 Rail longés		Type 40 Rail longés		Type 45 Rail longés		Type 48 Rail longés	
Standard	H.T.	Standard	H.T.	Standard	H.T.	Standard	H.T.	Standard	H.T.
20 Kg Std.	34 Kg PLMA	31 Kg Australie	41 Kg R41	CFF4	CFF4	41,2 Kg Type 16			
25 Kg	65 Lb ASCE	70 Lb U.P	SJ 41	CFF4 TJD	CFF4 TJD	45 Kg AL 16A			
50 Lb NSFB	70 Lb ASCE Thaïlande	36 Kg Anglais	42,1 Kg R14	S54	S54	50 Kg EB			
Ouganda	36 Kg UST	37,2 Kg Anglais	ou R42			105 Lb NYC			
50 Lb OBS	36 Kg UST Suisse	75 Lb ASCE	SJ 43			CFF6			
Ouganda	36 Kg CFF5	80 Lb ASCE	R 43			R 65			
26 Kg Std.	36 Kg AL 11A	80 Lb BSA	91 Lb RR			UIC 60			
26 Kg renforcé	75 Lb RBS Ouganda	80 Lb BSA	110 Lb CF & I			UIC 60 HH			
29 Kg	39 Kg ARAB	Sierra Leone	110 Lb RE			60 Kg EB			
BS 60 AFB Anglais	39 Kg PMA	80 Lb OBS Ouganda	112 Lb RE			UIC 61			
30 Kg Std.	39 Kg Nord	80 Lb RBS	90 Lb ASCE			122 BC & O			
30 Kg Nord	40 Kg Nord	U 60 CA	Mozambique			122 Lb			
30 Kg Suisse	40 Kg type Am.	60 Kg N	113 Lb HF						
31,6 Kg	85 CF & I	U 59	90 Lb BSA						
33,4 Kg Prussien	85 ARAA	85 Lb ASCE	115 Lb RE						
36 Kg Portugal	45 Kg Nord	85 Lb PS	119 Lb CF & I						
36 Kg S13	45 Kg Est	90,20 ARAA Brésil	127 Lb						
36 Kg S40 Std.	45,5 EV45	90,30 ARAB	S 49						
24 a	46 Kg S12	90 Lb GN	60 Kg Australie HH						
	U 33 Ame épaisse	90 Lb RA	60 Kg Chine						
	U 33 ou S33	90 Lb RB	50 Kg Australie						
	U 55	90 Lb SF	SJ 50						
	10 a	90 Lb CF & I	UIC 50						
		91 Lb Nelle Zélande	100 Lb AREA						
		CFF1	100 Lb RE						
		CFF1 TJD	100 Lb ASCE						
		UNI 46	100 Lb ARAB						
		47 Kg Australie	100 Lb RA						
			100 Lb RE						
			100 Lb CF & I						
			53 Kg Australie						
			ou 107 Lb Australie						
			CFF3 (UIC 54E)						
			A 74						
			UIC 71						
			155 Lb PS						
			155 Lb Penna						



Cote x : 32-36-40-45-48

# PANDROL

## IX - HYDRAULIC DIAGRAM





## X - TECHNICAL SPECIFICATIONS

Désignation	Single unit with manual pump		
Weight	56 kg without blades		
Dimensions	L x W x H 1020 x 500 x 480		
Force	216 KN (22 T)		
Hydraulic pressure	250 bar (3626 psi)		
Hydraulic oil	ISO 22 VG Viscosity Viscosity index 100 Flash point 192°C	2,3 Engler at 50°C	

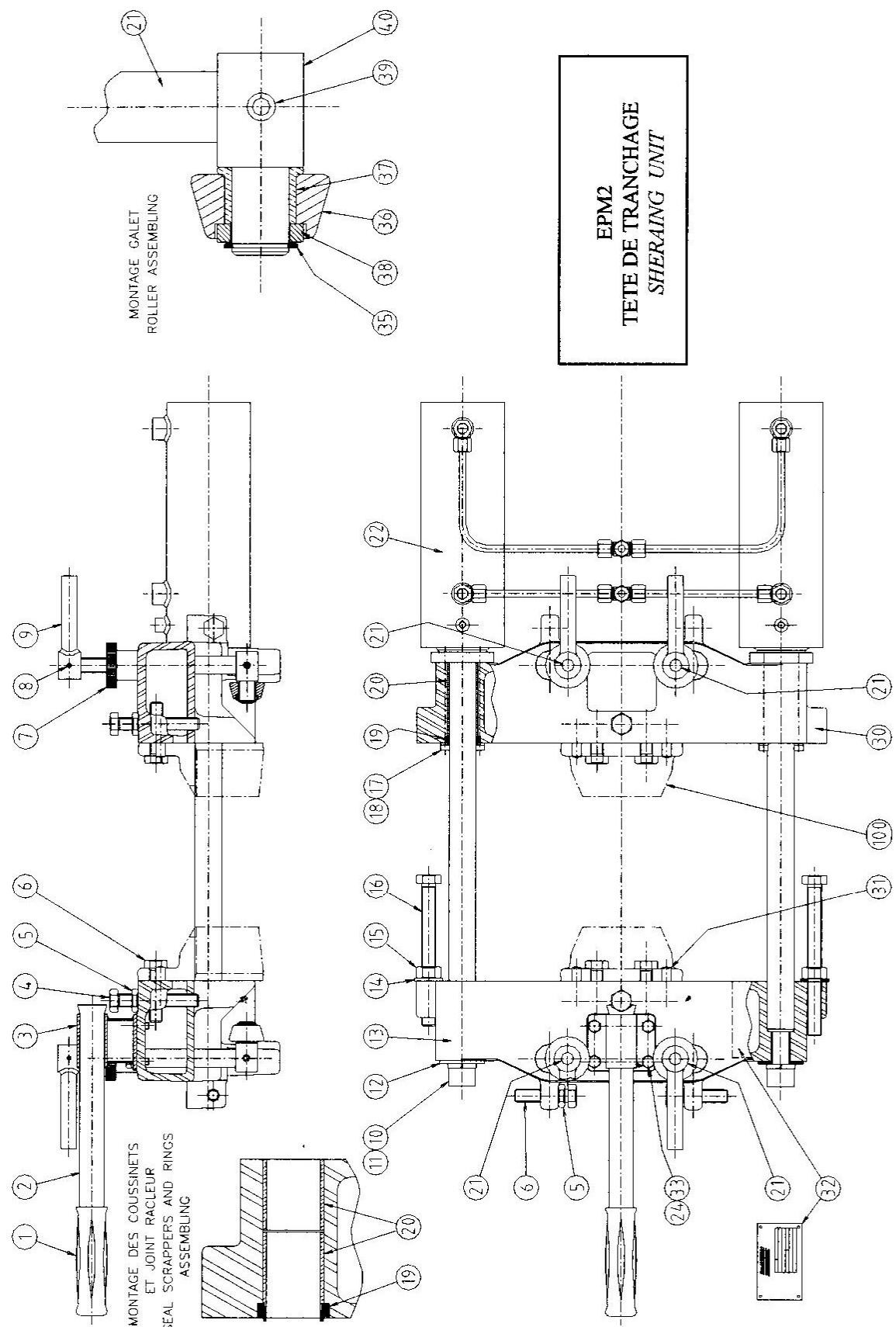
**DO NOT MIX DIFFERENT TYPES OF OIL**

## XI - LISTE DES PIECES DETACHEES *SPARE PARTS*

Tête de tranchage  
*Shearing unit*

Ensemble traverse support de pompe  
*Pump support crosspiece suit*

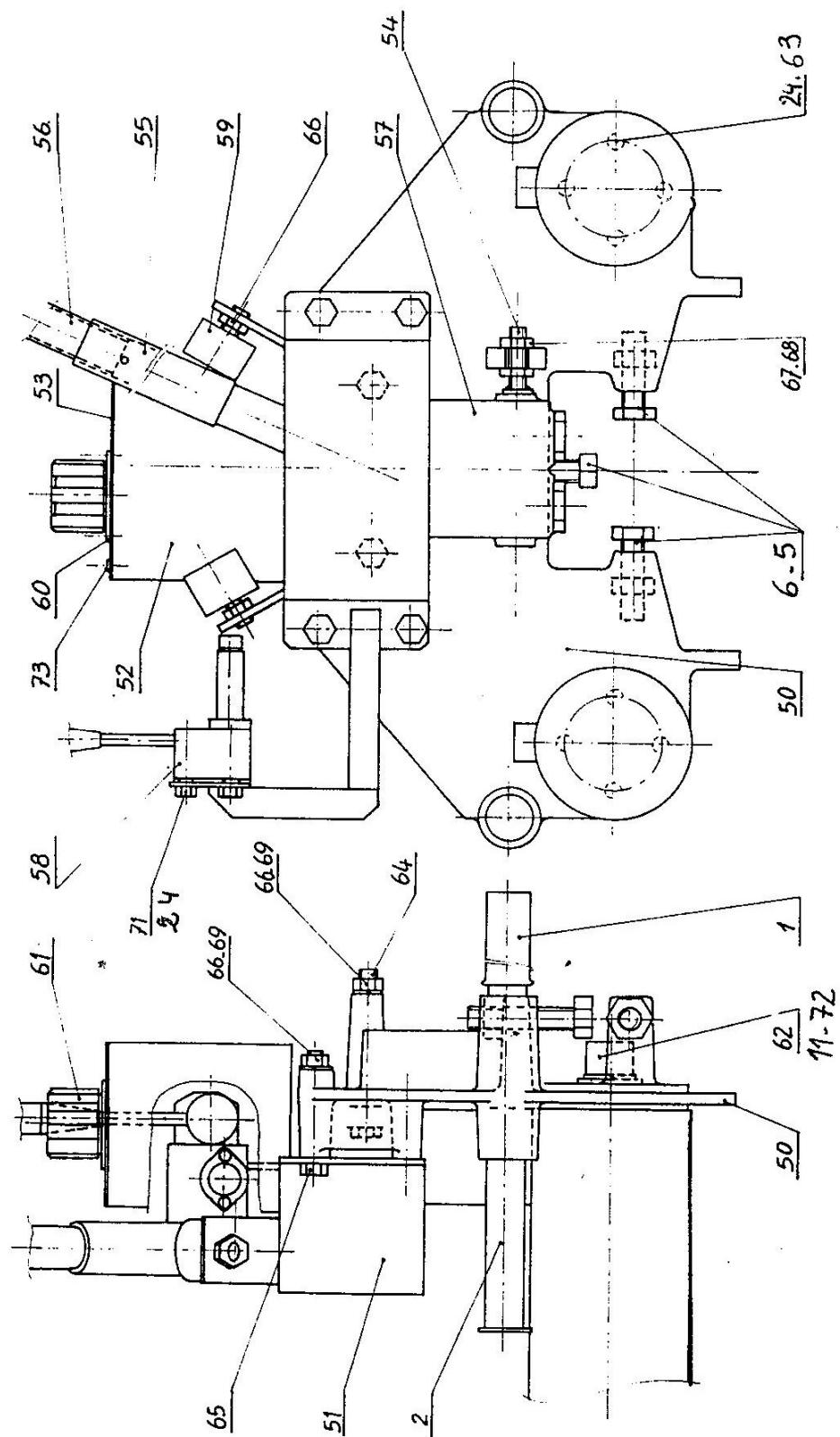
Circuit hydraulique  
*Hydraulical fitting*



Rep.	Référence	Qté.	Désignation	Description
1	47401002	1	Poignée caoutchouc	Rubber handle
2	33210001	1	Poignée de transport	Holding handle
3	35910146	1	Support de poignée	Handle support
4	41014002	2	Vis HM14 x 90	HM14 x 60 screw
5	40914004	4	Ecrou Hm M14	Hm M14 nut
6	41014001	6	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	2	Rondelle W20	W20 washer
12	41120003	2	Rondelle L20 U	L20 U washer
13	32930045	1 ensemble	Traverse fixe équipée de :	Fixe crosspiece equipped with :
			- 2 goupilles cylindriques 10x30 (rep. 31)	- 2 cylindrical pins 10x30 (rep 31)
14	41116004	2	Rondelle plate M16 N	M16 N flat washer
15	40916001	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	Joints racleurs	Scraper seals
20	45301005	4	Bague PCM 30x34x40	Rings PCM 30x34x40
21	31110184	4	Tige de manoeuvre	Operating rod
22	47501011	2	Vérin allégé	Light hydraulic jack
	47501003	2	Colonne de vérin	Jack column
24	41108004	6	Rondelle W8	W8 washer
30	32930046	1 ensemble	Traverse mobile équipée de :	Mobile crosspiece equipped with :
			- 2 joints racleurs (rep 19)	- 2 scraper seals (rep 19)
			- 4 bagues PCM 30x34x40 (rep 20)	- 4 rings PCM 30x34x40 (rep 20)
			- 2 goupilles cylindriques 10x30 (rep 31)	- 2 cylindrical pins 10x30 (rep 31)
31	41304001	4	Goupille cylindrique 10x30	Cylindrical pin 10x30
32	42221010	1	Etiquette alu standard	Label
33	41008002	4	Vis HM8 x 20	HM8 x 20 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	Positionning ring
39	41301013	4	Goupille élastique diam. 8	Elastic pin diameter 8
40	31910027	4	Axe de galet	Roller axle
100		1p	couteaux (voir liste page 9)	Blades (refer to the list page 19)
	<b>47501016</b>	<b>1</b>	<b>Pochette de joints de vérin allégé</b>	<b>Gasket kit for light hydraulic jack</b>

## ENSEMBLE TRAVERSE SUPPORT DE POMPE

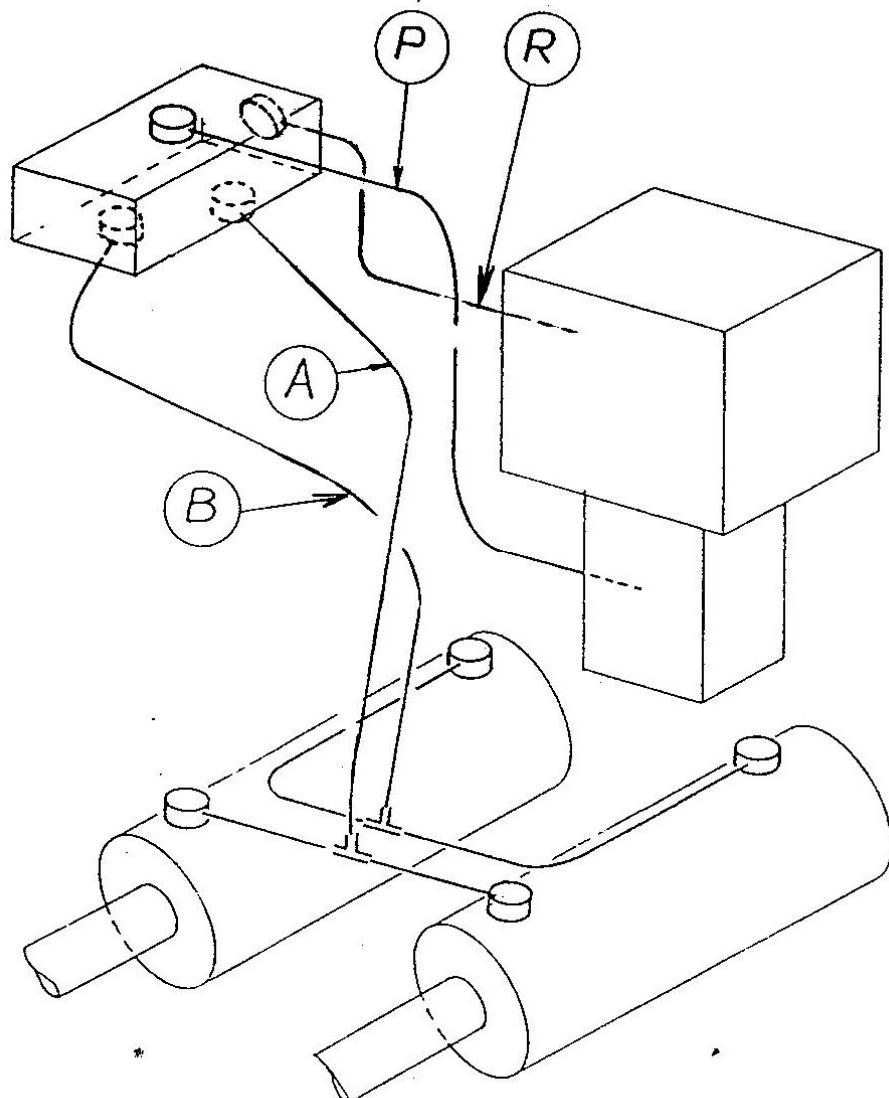
## PUMP SUPPORT CROSSPIECE SUIT



Rep.	Référence	Qté.	Désignation	Description
1	47401002	2	Poignée caoutchouc	Rubber handle
2	33210001	2	Poignée de transport	Handle
5	40914004	3	Ecrou Hm M14	Hm M14 nut
6	41014001	3	Vis HM 14 x 60	HM 14 x 60 screw
11	41120002	2	Rondelles W20	W20 washer
24	41108004	10	Rondelles W8	W8 washer
50	32930030	1	Traverse support de pompe	Pump support crosspiece
51	35910053	1	Butée de levier de pompe	Pump lever stop
52	*35910054	1 ensemble	Réservoir d'huile avec couvercle (rep 53)	Oil tank with cap (rep 53)
53	=> rep. 52	1	Couvercle de réservoir	Tank cap
54	35910055	1	Goujon	Stud
55	31910028	1	Levier de pompe	Pump lever
56	31210145	1	Grand levier de pompe	Long pump lever
57	39920001	1	Pompe ATOS modifiée	Pump ATOS modified
58	47702005	1	Distributeur avec limiteur de pression	Distributor with pressure relief valve
59	47340001	2	Plots amortisseurs	Shock -absorber
60	47701028	1	Monobloc de remplissage	Oil filling piece
61	47701029	1	Bouchon d'échappement	Exhaust Plug
62	41020002	2	Vis CHC M20 x 50	CHC M20 x 50 screw
63	41008003	8	Vis CHC M8 x 30	CHC M8 x 30 screw
64	41010008	2	Vis HM 10 x 120	HM 10 x 120 screw
65	41010009	4	Vis HM10 x 70	HM10 x 70 screw
66	40910001	8	Ecrou HM10	HM10 nut
67	40910003	2	Ecrou Hm M10	Hm M10 nut
68	41110004	2	Rondelle L10 N	L10 N washer
69	41110002	6	Rondelle W10	W10 washer
71	41008008	2	Vis HM8 x 16	HM 8 x 16 screw
72	41120004	2	Rondelle M20 N	M20 N washer
73	41004003	6	Vis à tôle	Sheet-Iron screw

=> pièces appartenant au sous-ensemble repéré \*, ne peuvent être vendues séparément

=> parts belonging to the referenced system (\*), they cannot be sold separately.



Rep. <i>Rep.</i>	Référence <i>Reference</i>	Qté. <i>Qty.</i>
A+B	21332018	1
P+R	21332019	1
A+B+P+ R	21332012	1

**FICHE DE CONTROLE  
C L I E N T**
**CONTROL CARD  
CUSTOMER'S COPY**
**EBAVUREUSE HYDRAULIQUE TETE LARGE  
A POMPE MANUELLE REF. 11334004**
**WIDE HYDRAULIC RAIL SHEARING MACHINE  
WITH HAND PUMP REF. 11334004**

N°	Désignation des contrôles <i>Description of controls</i>	Contrôle <i>Checked by</i>
1	Règlage des vis de positionnement en hauteur <i>Height positionning screws adjustment</i>	
2	Règlage des vis de guidage <i>Guide screws adjustment</i>	
3	Système de verrouillage : - Ecrou de réglage en hauteur - Débattement des verrous	<i>Locking system</i> <i>Height adjustment nut</i> <i>Clearance of locks</i>
4	Etanchéïté des constituants hydrauliques sous mise en pression : <i>Inspection of hydraulic components under pressure</i> - Raccords - tuyauterie - Vérins	
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	Outilage	<i>Tools</i>
8	Notice d'utilisation Ref. 42111002	<i>User's manual</i>
9	Garantie moteur	<i>Engine guarantee</i>
Date de fabrication		<i>Date of manufacturing :</i> .....
Fait à Raismes le		<i>Drawn up in Raismes, the :</i> .....
Nom		<i>Name :</i> .....
Signature		<i>Signature :</i> .....

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

N° de machine	<i>Machine nbr :</i> .....
Pompe Type, N°	<i>Pump Type :</i> ..... N° .....



**FICHE DE CONTROLE  
C L I E N T**

**CONTROL CARD  
CUSTOMER'S COPY**

**EBAVUREUSE HYDRAULIQUE TETE LARGE  
A POMPE MANUELLE REF. 11334004**

**WIDE HYDRAULIC RAIL SHEARING MACHINE  
WITH HAND PUMP REF. 11334004**

N°	Désignation des contrôles <i>Description of controls</i>	Contrôle <i>Checked by</i>
1	Règlage des vis de positionnement en hauteur <i>Height positionning screws adjustment</i>	
2	Règlage des vis de guidage <i>Guide screws adjustment</i>	
3	Système de verrouillage : - Ecrou de réglage en hauteur - Débattement des verrous	<i>Locking system</i> <i>Height adjustment nut</i> <i>Clearance of locks</i>
4	Etanchéïté des constituants hydrauliques sous mise en pression : <i>Inspection of hydraulic components under pressure</i> - Raccords - Tuyauteries - Vérins	<i>Couplings</i> <i>Pipings</i> <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	Outilage	<i>Tools</i>
8	Notice d'utilisation Ref. 42111002	<i>User's manual</i>
9	Garantie moteur	<i>Engine guarantee</i>
Date de fabrication <i>Date of manufacturing</i> : .....		
Fait à Raismes le <i>Drawn up in Raismes, the</i> : .....		
Nom <i>Name</i> : .....		
Signature <i>Signature</i> :		

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

N° de machine	<i>Machine nbr</i> : .....
Pompe Type, N°	<i>Pump Type</i> : ..... 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](mailto: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**

**Tête large à pompe manuelle**

**Type EPM2**

**Référence 11334004**

**HYDRAULIQUE SHEARING MACHINE**

**Wide shearing head and manual pump**

**EPM2 Type**

**Référence 11334004**

**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](http://pandrol.com)

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