PANDROL

HYDRAULIC SHEARING MACHINE EGH2

Ref 11332002

OPERATING AND MAINTENANCE MANUAL

With separate hydraulic set

Ref 42111003

PANDROL

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I – SAFETY LABELS EXPLANATION

WARNING ! The machine can be dangerous.

Careless and incorrect use results in injury to the operator

Read carefully the instructions of the operating manual

before using the machine**.**

WARNING ! Be careful to the mobile pieces of the

shearing machine so as to avoid any risk of squashing

II – GENERAL SAFETY INSTRUCTIONS

- Never use the shearing machine until you have read and understood the directions for use.
- Verify that the main electricity supply is the same as the one necessary for the machine perfect running.
- The operator must ensure that no one can affect his work area (people, animals, flammable material).
- The shearing machine is specially designed to cut the metal excess after an aluminothermic weld, **don't divert of its primary function.**
- The operator must respect the regulations, procedures and particular orders of the Railway operating Network.
- Never use the shearing machine when you are tired or under influence of medicines, alcohol or substances which can alter your sight, dexterity or appreciation capacity.
- All maintenance operations must be achieved by qualified staff.
- Hydraulic pipes and couplings must be correctly inspected before every use. Any defective component must be rejected.
- hearing machine weight is rather high, so three persons are necessary to handle and place it on track under no circumstances the original design and configuration of the shearing machine should be modify.
- The engine can be dismantling from the shearing unit, **never use it for any other operation.**
- The personal protective equipment may be necessary !

III - SAFETY MEASURES TO BE TAKEN PRIOR TO INITIAL USE

- Chek 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 - P R I N C I P L E

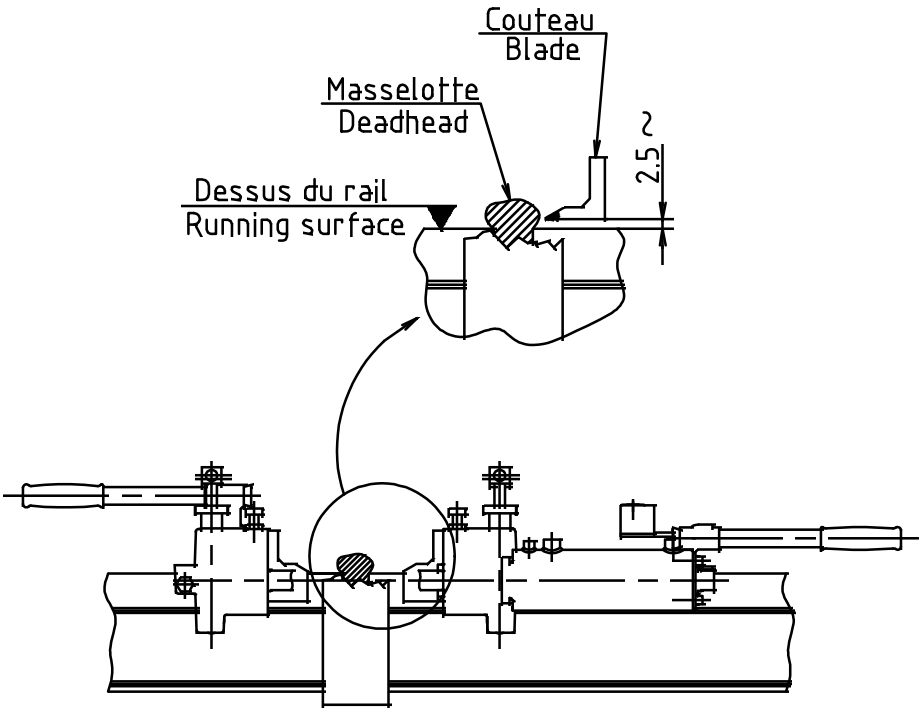
During aluminothermic welding, a deadhead which serves of metal reserve during solidification remains above the rail head.

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.

The hydraulic shearing machine is used for any type of welding process, included the HWR

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.

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

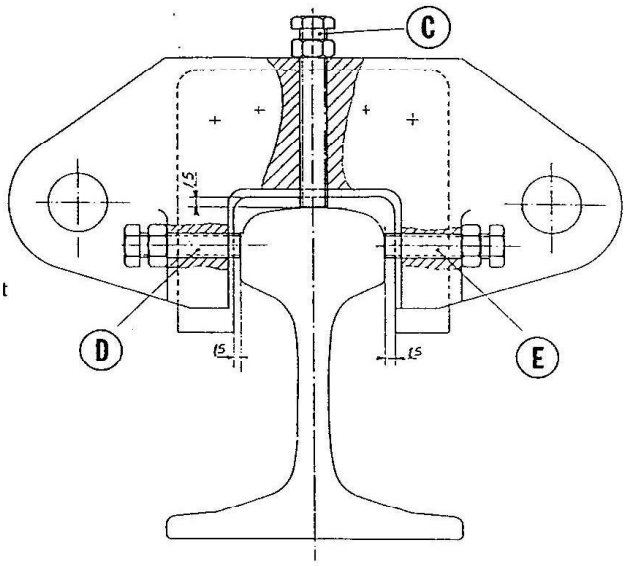
1) ADJUSTING THE BLADES

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**)

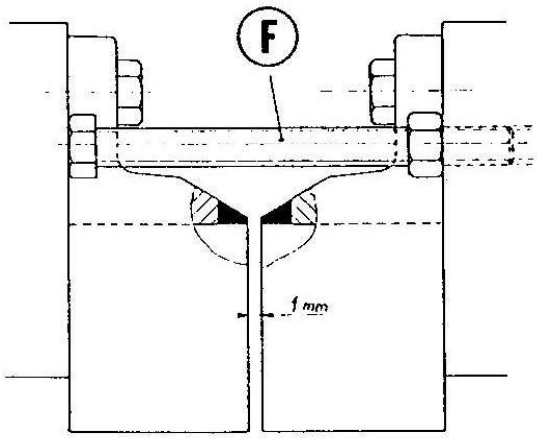
These screws are adjusted in the workshop so that there is a space of 1,5 to 2 mm between the cutting edge of the blades and the rail running surface

Instructions

- Loosen the lock nuts and unscrew the 2 screws rep. **C**
- Place the 1.5mm wedge ***reference 31910308*** 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.

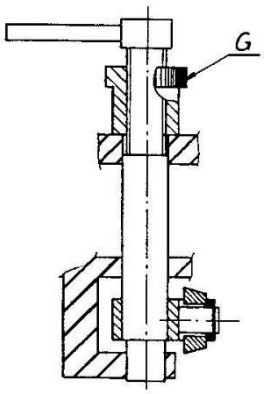
2 - STOPS ADJUSTMENTS



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** witch 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 other three bolts.

VI - HOW TO OPERATE THE MACHINE

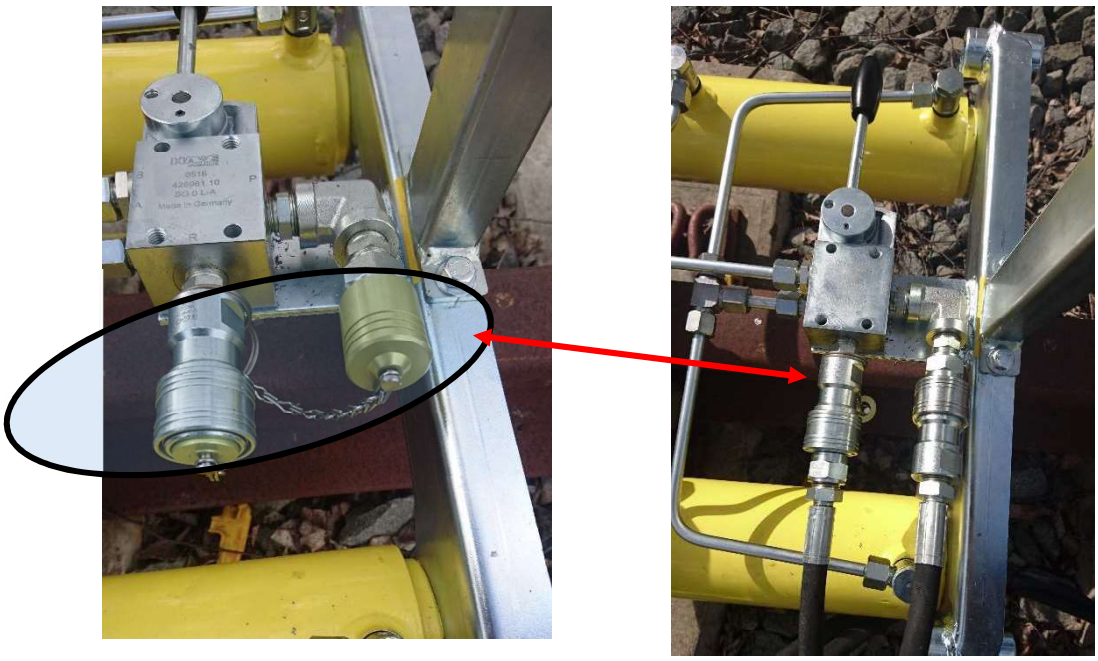
Before welding operation, put the shearing unit on the rail so as to verify that all the adjustments have been made (see section III, Adjustments).

When the engine adjusted, connect the hydraulic assembly with Bosch electric (motor GWS22.230 LVI)*

Ref product: 19511014

- Disconnected the hydraulic coupling male/female on the hydraulic hoses of the hydraulic assembly with bosch electric motor

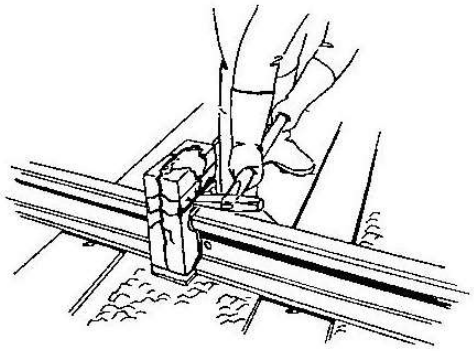
- Retire the plugs on the coupling of hydraulic distributeur
- Connect to hydraulic hoses on the hydraulic shearing machine



- Then connect the hydraulic unit on the power generator for start the hydraulic unit

1 - MOULD RELEASE

The welding finished, proceed as follows :

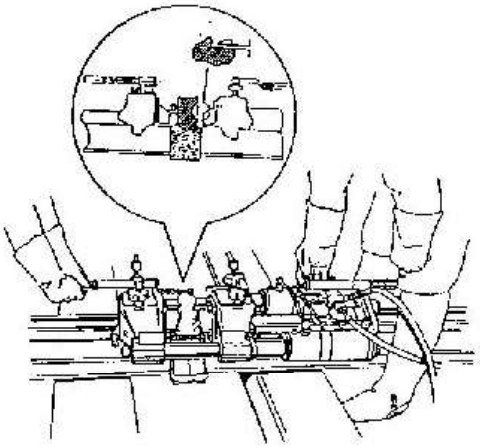


- Start up the hydraulic assembly
- Break the upper part of the mould respecting the time required between casting and mould release, according to the welding process.
- Remove the sand from each side of the deadhead.
- Using a wire brush remove sand and debris resulting from the mould from both sides of the deadhead.

These operations must be done **quickly**, otherwise the deadhead may cool down too much and become impossible to cut

2) - CUTTING

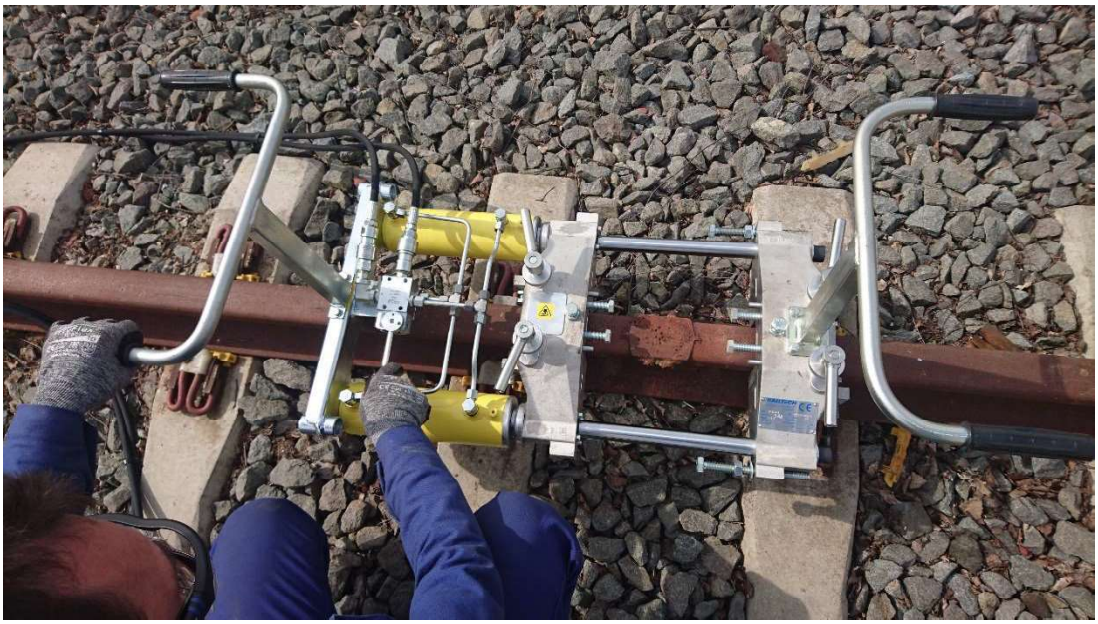
- The welder and his assistant place the shearing machine on the rail with the deadhead centered in relation to the blades.
- Pivot the 4 bolts of the locking system under the rail head
- The operator, on the hydraulic distributor side, pushes the lever of the distributor towards the welding to cut (towards 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.



VII – WORK STATION

The user must always handle the hydraulic shearing machine inside the ralway (safety recall)
The working area of the user is represented by blue perimeter and 4 arrows

The hydraulic shearing machine must always be postionned in this way for the user can easily manipulate the hydraylic distributor inside the railway.



VIII- MAINTENANCE

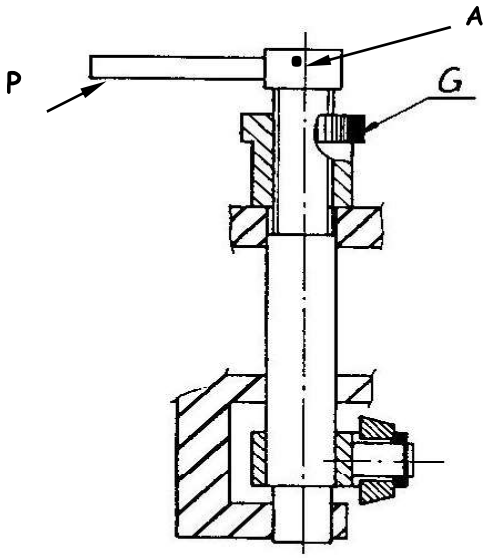
- Take care of the cleanliness of the shearing unit so as to make a good visual inspection
- Keep a watch on columns and scraper seals aspect, immediately replace grooved columns or faulty scraper seals. This operation must be realised by qualified staff
- Keep a watch on locking systems wear, due to the friction under le rail head hooks wear out : remove and replace them when the points dimension is inferior to 8 mm

Operating instructions

1 – Push out the pin **A** and take off the handle **P**

2 – Take off the nut **G**

3 – The hook falls



To assemble new hooks, reverse order of removal

If the mechanical coupling motor – hydraulic pump present of wear signs or incorrect functionning please replace it.

Réf produit : 31230028

OBJECT	Operation's nature	PERIODICITY		
		Before using	After using	Precense of wear signs or incorrect functioning
Complete machine	Inspection of the machine	X		
Complete machine	Clear the engine using a towel or comprimed air gun to remove the dirtness		X	
Wiper seal	Replacement			X
Cilinder rod	Replacement			X
Locking hook	Replacement			X

These recommendations are not restrictive. Continuous group monitoring and well-organized preventive maintenance will extend the life of the machine.

Responsibility for maintenance is the responsibility of the owner of the equipment.
Maintenance must be carried out at least once a year by a competent and qualified person

IX – SIGNALISATION

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

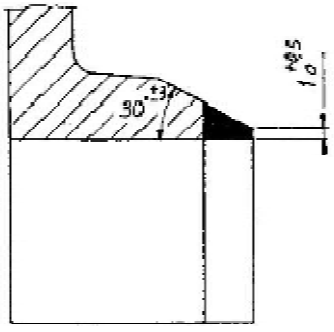
ID PLATE

ETIQUETTE EN 13977

X - BLADES

SHARPENING :

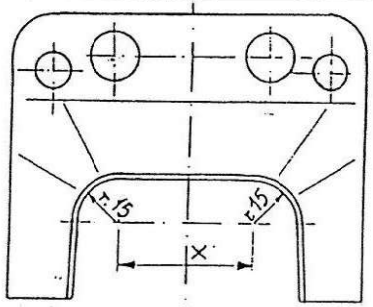
The shape of the cutting edge along all the blade profile is very important to obtain an optimum cutting quality



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

PROFILE BLADES LIST FOR THE VARIOUS TYPES OF VIGNOLE RAILS

Lenghtened Blades 32 type **Standard 11335018** **H.T. 11335032**	Lenghtened Blades 36 type **Standard 11335019** **H.T. 11335033**	Lenghtened Blades 40 type **Standard 11335024** **H.T. 11335034**		Lenghtened Blades 45 type **standard 11335022** **H.T. 11335028**		Lenghtened Blades 48 type **Standard 11335023** **H.T. 11335035**
20 Kg Std.	34 Kg PLMA	31 Kg Australie		41 Kg R41		41,2 Kg Type 16
25 Kg	65 Lb ASCE	70 Lb U.P	48 Kg LP	SJ 41	CFF4	45 Kg AL 16A
50 Lb NSFB	70 Lb ASCE Thaïlande	36 Kg Anglais	100 Lb HF	42,1 Kg R14	CFF4 TJD	50 Kg EB
Ouganda	36 Kg UST	37,2 Kg Anglais	50 Kg N	ou R42	S54	105 Lb NYC
50 Lb OBS	36 Kg UST Suisse	75 Lb ASCE	50 Kg Nelle Zélande	SJ 43	UIC 54 - U78	CFF6
Ouganda	36 Kg CFF5	80 Lb ASCE	50 Kg U 50	R 43	UIC 54 A (A65)	R 65
26 Kg Std.	UNI 36	Mozambique	UNI 50	91 Lb RR	UIC 54 HM	UIC 60
26 Kg renforcé	37,8 Kg AL 11A	80 Lb BSA	100 Lb PS	45 Kg ED	110 Lb CF & I	UIC 60 HH
29 Kg	75 Lb RBS Ouganda	80 Lb BSA	100 Lb RB	45 Kg Danemark	110 Lb RE	60 Kg EB
BS 60 AFB Anglais	39 Kg ARAB	Sierra Léone	52 Kg Metro	90 RBS	112 LB RE	UIC 61
30 Kg Std.	39 Kg PMA	80 Lb OBS Ouganda	U 60	90 Lb ASCE	113 A	122 BC & O
30 Kg Nord	40 Kg Nord	80 Lb RBS	U 60 CA	Mozambique	113 Lb HF	122 Lb
30 Kg Suisse	40 Kg type Am.	41 Kg Australie	60 Kg N	90 Lb BSA	115 Lb RE	63 Kg EB
31,6 Kg	85 CF & I	85 Lb ASCE	U 59	47 Kg Australie	119 Lb CF & I	127 Lb
33,4 Kg Prussien	85 ARAA	85 Lb PS		S 49	60 Kg Australie HH	127 Lb NYC
36 Kg Portugal	45 Kg Nord	45 Kg MSA		50 Kg Chine	60 Kg Australie	130 Lb PS
36 Kg S13	45 Kg Est	90.20 ARAA Brésil		50 Kg Australie	119 Lb	131 Lb RE
36 Kg S40 Std.	45,5 EV45	90.30 ARAB		SJ 50	62 Kg S52	130 Lb RE
24 a	46 Kg S12	90 Lb GN		UIC 50	130 Lb HF	66 Kg Australie
	U 33 Ame épaisse	90 Lb RA		100 Lb AREA		132 LB HH
	U 33 ou S33	90 Lb RB		100 Lb ASCE		132 Lb RE
	U 55	90 Lb SF		100 Lb ARAB		133 Lb RE
	10 a	90 Lb CF & I		100 Lb RA		68 Kg Australie
		91 Lb Nelle. Zélande		100 Lb RE		136 Lb CF & I
		CFF1		100 Lb CF & I		136 Lb HH
		CFF1 TJD		53 Kg Australie		136 Lb RE
		UNI 46		ou 107 Lb Australie		140 Lb RE
		47 Kg Australie		CFF3 (UIC 54E)		A 74
						UIC 71
						155 Lb PS
						155 Lb Penna



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

PANDROL

BLADES FOR SHEARING MACHINE

01/04/2004

XI - TECHNICAL SPECIFICATIONS

Désignation	Bibloc à groupe hydraulique séparé
Weight	43 Kg sans couteaux
Dimensions : L x l x h	1200 x 470 x 480
Force **Pression hydraulique**	216 KN (22 T) 250 bar (3626 psi)
Acoustic power level LWA	105 dB (A)
Acoustic pressure level Lpa	92 dB (A)
Vibrational acceleration level	Néant

Hydraulic oil : following DIN 51524 part 3 norm
Category HVLP ISO VG32

DO NOT MIX DIFFERENT TYPES OF OIL

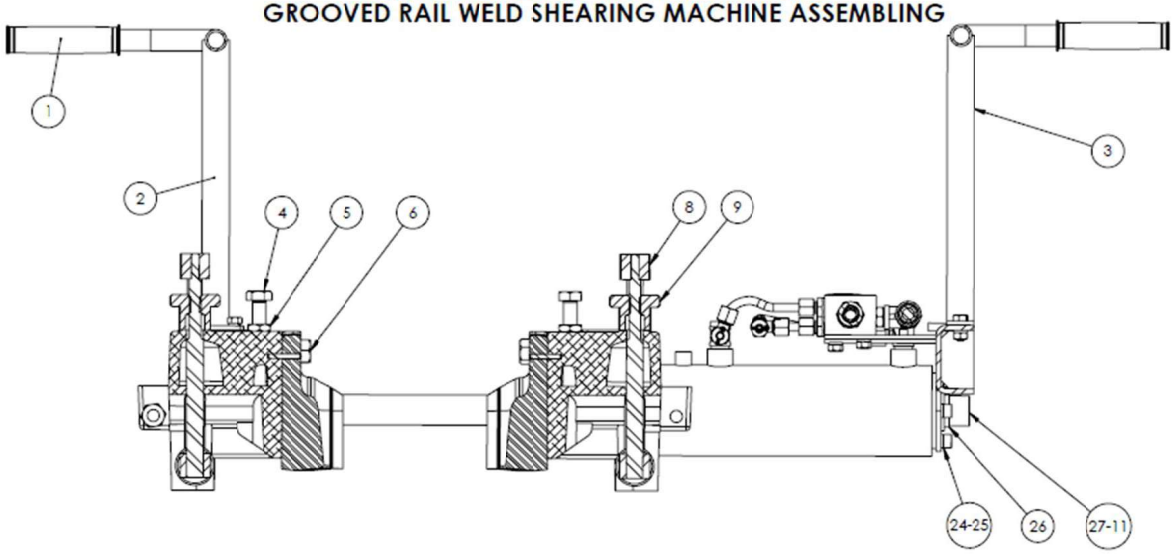
XII - LISTE DES PIECES DETACHEES
SPARE PARTS

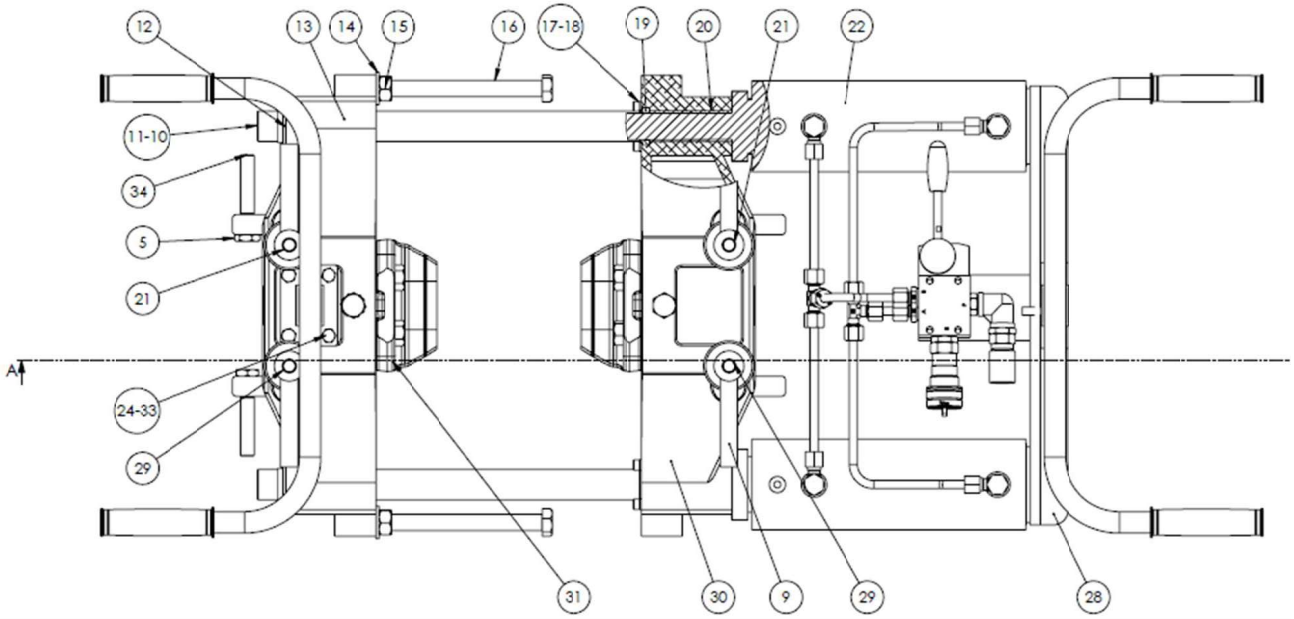
Tête de tranchage
Shearing unit

Ensemble traverse arrière
Back crosspiece suit

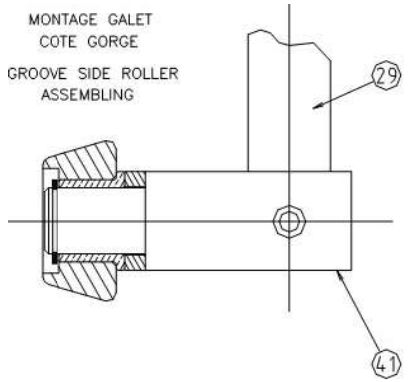
Circuit hydraulique
Hydraulical fitting

ENSEMBLE EBAVUREUSE RAILS A GORGE
GROOVED RAIL WELD SHEARING MACHINE ASSEMBLING

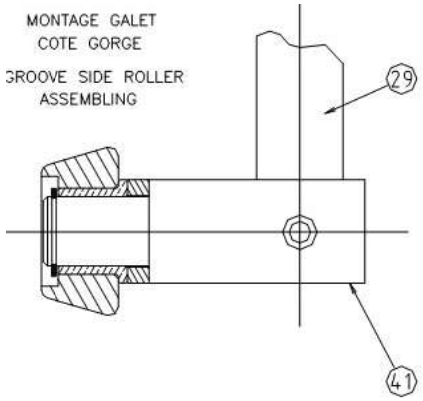




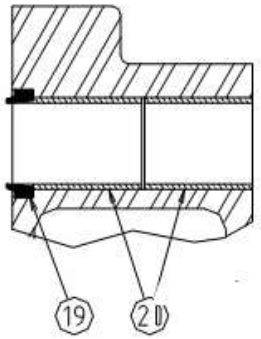
MONTAGE GALET
COTE GORGE
GROOVE SIDE ROLLER
ASSEMBLING



MONTAGE GALET
COTE GORGE
GROOVE SIDE ROLLER
ASSEMBLING

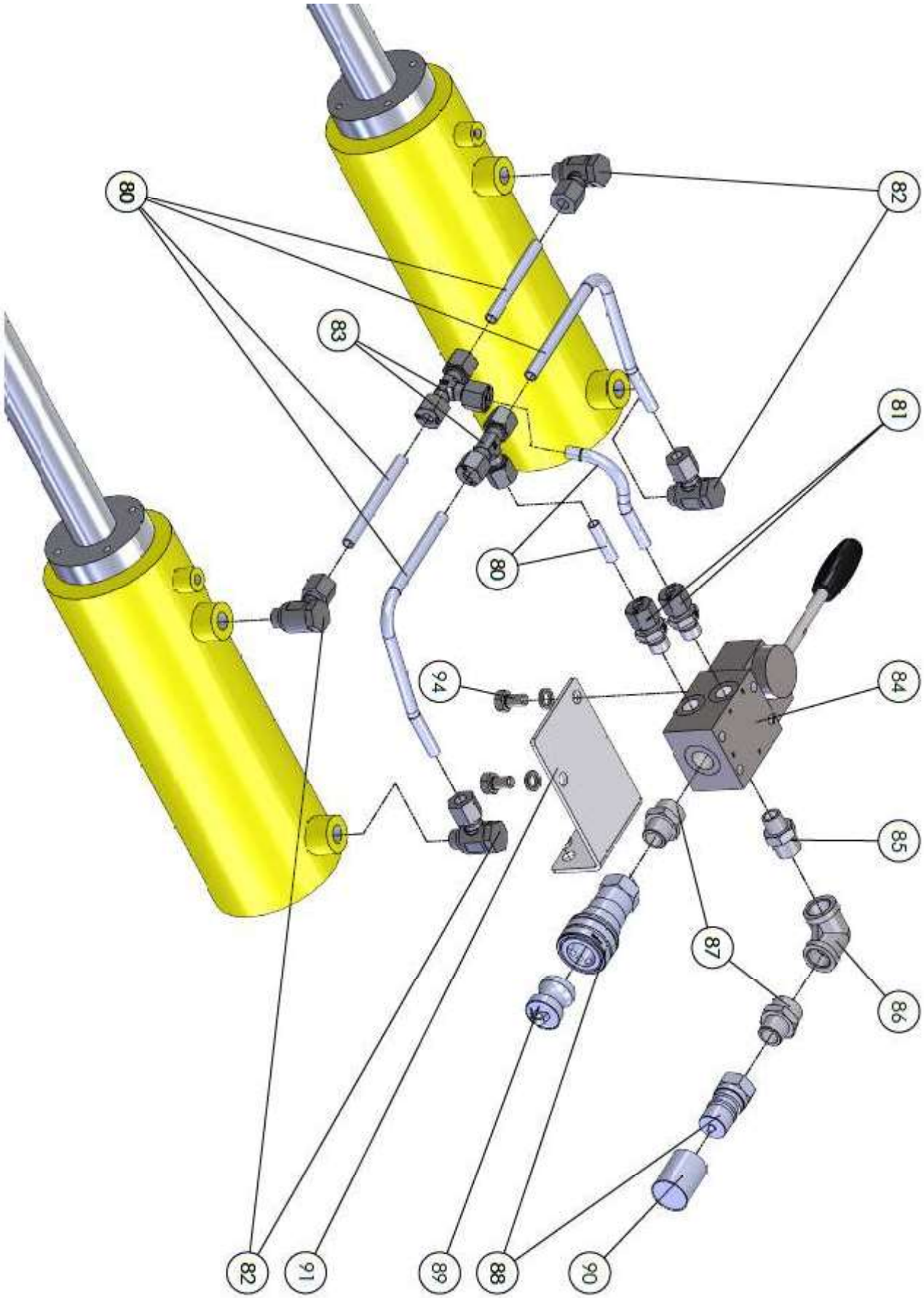


MONTAGE DES COUSSINETS
ET JOINT RACLEUR
SEAL SCRAPPERS AND RINGS
ASSEMBLING



TETE DE TRANCHAGE — SHEARING UNIT

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	32930045	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	Joints 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	32930046	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**

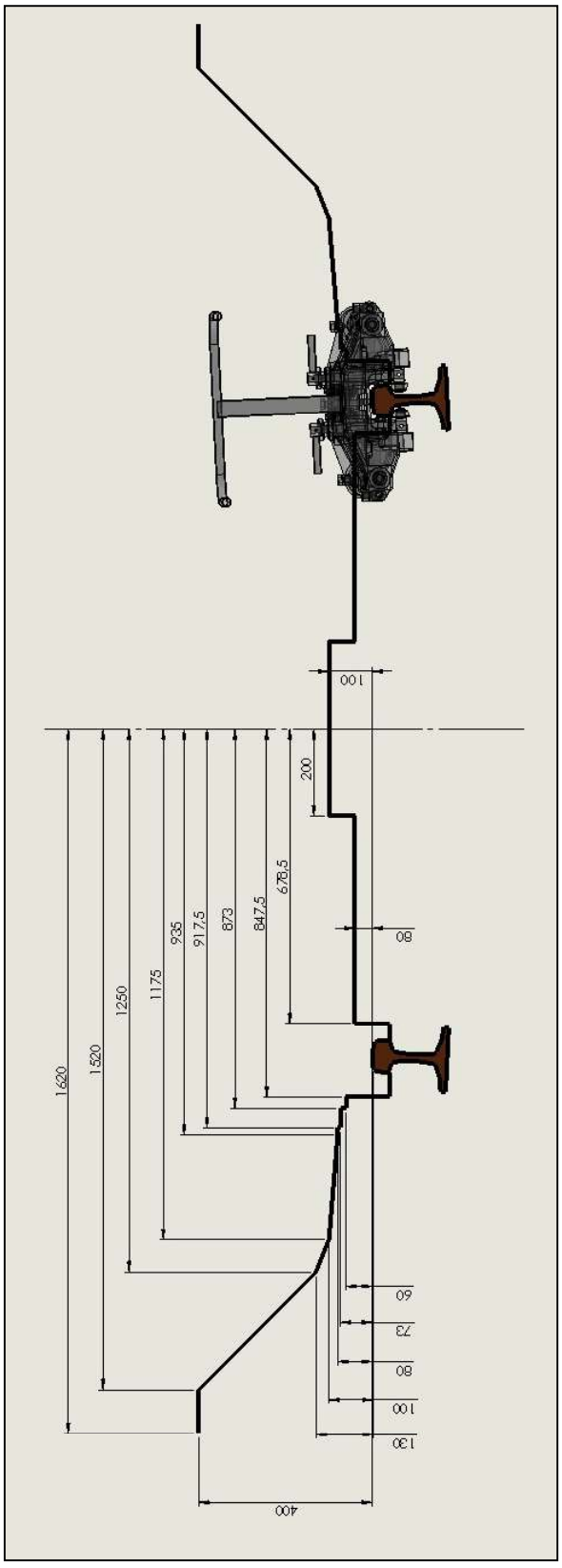


Rep.	Référence	Qté.	Désignation	Description
80 81 82 83	21332059	1	KIT TUYAUTERIES HYDRAULIQUES	HYDRAULIC PIPE SET
84	47702004	1	Distributeur à tiroir	Distributor
85	47701033	1	Mamelon double inégal mâle	Double male fitting
86	47701031	1	Coude femelle 90°	90° female coupling
87	47701032	1	Mamelon double 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

XIII - PLAN DE CONTRÔLE SUIVANT EN13977



FICHE DE CONTROLE C L I E N T	CONTROL CARD CUSTOMER'S COPY

EBAVUREUSE TETE LARGE **TWO PARTS WIDE HYDRAULIC RAIL**

A GROUPE HYDRAULIQUE SÉPARÉ **REF. 11332002** **WELD SHEARING MACHINE**

N°	Désignation des contrôles *Description of controls*		Contrôle *Checked by*
1	Règlage des vis de positionnement en hauteur *Hight positionning screws adjustment*		
2	Règlage des vis de guidage *Guide screws adjustment*		
3	Système de verrouillage :	*Locking system*	
	- Ecrou de règlage en hauteur	*Hight adjustment nut*	
	- Débattement des verrous	*Clearance of locks*	
4	Etanchéïté des constituants hydrauliques sous mise en pression : *Inspection of hydraulic components under pressure*		
	- Raccords	*Couplings*	
	- Tuyauteries	*Pipings*	
	- Vérins	*Hydraulic jacks*	
5	Essai de fonctionnement à pression maximum de 250 bars *Operating test at maximum pressure of 250 bars*		
6	Aspect général	*General aspect*	
7	Outillage + cale reference 31910308	*Tools and wedge 31910308*	
8	Notice d'utilisation Ref. 42111003	*User's manual* Ref. 42111003	
9	Garantie moteur	*Engine guarantee*	

Date de fabrication *Date of manufacturing :* .....

Fait à Raismes le *Drawn up in Raismes, the :* .....

Nom *Name :* .....

Signature *Signature :*

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°* .....

FICHE DE CONTROLE C L I E N T	CONTROL CARD CUSTOMER'S COPY

EBAVUREUSE TETE LARGE **TWO PARTS WIDE HYDRAULIC RAIL**

A GROUPE HYDRAULIQUE SÉPARÉ **REF. 11332002** **WELD SHEARING MACHINE**

N°	Désignation des contrôles *Description of controls*		Contrôle *Checked by*
1	Règlage des vis de positionnement en hauteur *Hight positionning screws adjustment*		
2	Règlage des vis de guidage *Guide screws adjustment*		
3	Système de verrouillage :	*Locking system*	
	- Ecrou de règlage en hauteur	*Hight adjustment nut*	
	- Débattement des verrous	*Clearance of locks*	
4	Etanchéïté des constituants hydrauliques sous mise en pression : *Inspection of hydraulic components under pressure*		
	- Raccords	*Couplings*	
	- Tuyauteries	*Pipings*	
	- Vérins	*Hydraulic jacks*	
5	Essai de fonctionnement à pression maximum de 250 bars *Operating test at maximum pressure of 250 bars*		
6	Aspect général	*General aspect*	
7	Outillage + cale reference 31910308	*Tools and wedge 31910308*	
8	Notice d'utilisation Ref. 42111003	*User's manual* Ref. 42111003	
9	Garantie moteur	*Engine guarantee*	

Date de fabrication *Date of manufacturing : .....*

Fait à Raismes le *Drawn up in Raismes, the : .....*

Nom *Name : .....*

Signature *Signature :*

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 locol representative

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

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

XV - 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***
Tête large – type EGH2	***Wide shearing head – EGH2 type***
A group hydraulique séparé	***With separate hydraulic set***
Référence 11332002	***Référence 11332002***

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
Responsible division matériel et équipement

PANDROL

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