



PANDROL

RAIL PROFILE GRINDER MR 150 4S

Ref 42143034

OPERATING AND MAINTENANCE MANUAL

HONDA GXR120 ENGINE

GRINDING WHEEL Ø 150 with 4 M8 SUNK NUTS

REF. 14331028



PANDROL

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12 of 38

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



SUMMARY

	<u>Pages</u>
I EXPLANATION OF SYMBOLS	14
II GENERAL SAFETY INSTRUCTIONS	14
III PRECAUTIONS BEFORE COMMISSIONING	16
IV PRESENTATION	16
V USE	17
5. Storage	
6. Handling	
7. Starting up the engine	
8. Principle	
8.1 Rough grinding	
8.2 Finishing	
VI AJUSTING THE GUIDING FLANGES	19
VII CHANGE OF GRINDING WHEEL	20
VIII MAINTENANCE	21
IX SPARE PARTS	22
X CHECK LISTS	33
XI ATTESTATION CONFORMITY	37

I – EXPLANATION OF SYMBOLS



WARNING ! The machine presents special risks. Careless use results in injuries.



Read the instructions carefully before using the machine.



WARNING ! Sparks can cause a fire in case of contact with inflammable materials like petrol, wood or dry grass

II – GENERAL SAFETY INSTRUCTIONS

1-General Safety

- The grinding unit is a machine to be handled by a single user and must be held in both hands in order to run it in a safe manner;
- The operator must wear protective gear that is indispensable for the grinding operations: goggles, gaiters, gloves, etc. ;
- If the burst of sparks is directed (directly or indirectly) towards an inflammable material (undergrowth, crops, etc.), have a screen to intercept the incandescent particles to prevent a fire;
- Precautions to be taken during the supply of fuel:
 - **DO NOT SMOKE,**
 - **STAY AWAY FROM OPEN FLAMES,**
 - **DO NOT SPILL FUEL OUTSIDE THE TANK.**
- If there is spilt fuel, immediately clean the machine and move it at least 5 m away from there before starting.
- Since the engine is warm, do not fill the tank to the brim, as the fuel may flow through the cap of the fuel tank due to expansion;
- If clothes come in contact with the fuel, change them immediately;
- The fuel must be stored in cans, in compliance with the regulations; and must be properly closed and labelled.

B-PREVENTION OF ACCIDENT RISKS DURING WORK

- Check the wheel rotation speed is compatible with the machine speed
 - Grinding wheel diameter : 150
 - Min. speed : 5000 rpm
 - Thickness : 70 mm
 - Fastening : 4 M8 sunk thread inserts
- Stop the engine before replacing the grinding wheel.
- Never use damaged grinding wheels.
- Any new or reassembled grinding wheel must be run at idle for 30 seconds; personnel must be kept at a distance during the test, except for the operator who must hold the machine in such a way that he/she is outside the safety guard opening side.
- Measure the grinding wheel rotation speed at regular intervals, and imperatively every time the machine is repaired.
- Check the tightening of the grinding wheel in order to prevent any accident during grinding.
- Fix and tighten the safety guard before operating the grinder.
- Replace the safety guard if a grinding wheel bursts.
- Store the grinding wheels in a dry place.
- Wearing personal protective equipment is mandatory



III – PRECAUTIONS BEFORE COMMISSIONING

Refer to the instructions of the engine manufacturer

Check the oil level of the engine on a daily basis.

IV - PRESENTATION

- The rail profile grinder helps to reshape the entire rail head, in an extremely precise manner, after welding.
- The operator can grind the top and the side of the head in a single operation: actually, this very easy-to-handle grinder is specially designed to work in all positions up to an angle of 90° from the vertical.
- The grinding wheel always being lowered at right angles to the rail.
- The flanges and rollers that rest on the rail guarantee perfect guiding of the grinder in all positions.

Optional equipment :

A turning kit to help the operator to effortlessly turn the machine to grind the outside of the rail



GENERAL FEATURES :

HONDA GXR 120 ENGINE	
* 4 stroke engine	(2,6 Kw) à 3600 rpm
* Wheel rotation speed	4000 ± 200 rpm
* Reference wheelbase	925 mm
* Weight	54 Kg
* Size	1380 x 600 x 950 mm
* Vibration level at the handle	6,18 m/s ²
* Noise level	87,3 dB
Sound pressure	102,3 dB
Sound power	

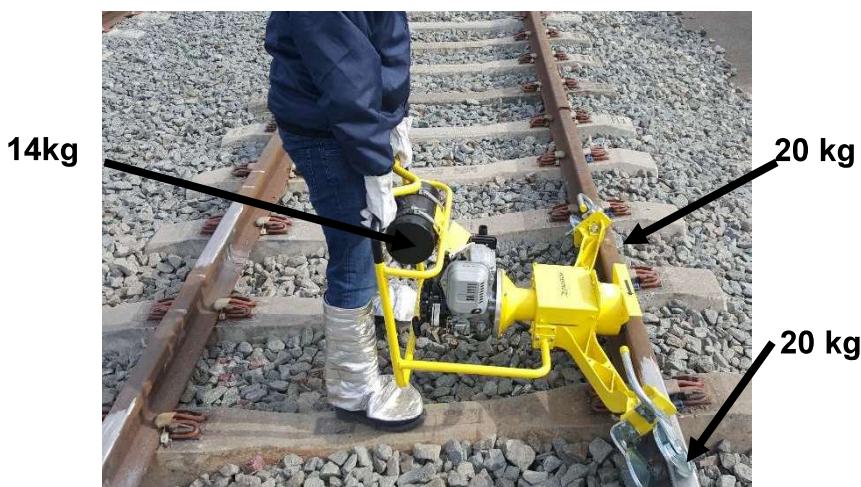
V- USE

1-Storage

- The grinder must be stored lying down
- Don't store the profile grinder outside without engine protection from rain
- Drain and clean the petrol circuit before a long storing time

2-Handling

- The weight of the grinder in order to work is 54 kg ;
- For its handling three persons are necessary, one at each handle at the two extremities and a third at the handle in the middle of the machine



3-Starting up the engine

- Ensure that the tank contains fuel before starting the engine
 - 1 – Open the fuel inlet valve
 - 2 – Pull the starting rope handle 2 to 3 times
 - 3 – Put the acceleration lever in the starter position "starter" lever

() Lever in "accélération" position
 () Lever in "idle" position



- Slow down the speed before cutting the power of the engine**

D-PRINCIPLE

Two rollers allow the use of the rail as a reference surface and guarantee perfect grinding of the top and side of the rail head.

To grind the second side of the rail head, turn the grinder 180°about a vertical axis. The turn control system makes the operation easier and allows the operator to have effortless handling.

Operating method

- Ensure that there are no obstacles that could disturb the grinding process: rail fasteners, etc.
- Place the machine on the rail and roll it on its two cylindrical rollers with the guiding flanges holding it laterally (if necessary adjust the flange gap as described in the following chapter)
- With the operator on the opposite side of the fuel tank, start the engine following the manufacturer's instructions (see attached engine documentation)
- The grinding wheel is moved forward by turning the handwheel clockwise with the left hand.
- For good-quality work, the grinding operation must be performed in the following manner:

A – Rough grinding :

- Grinding the weld down to about 1 mm from the rail surface is performed by a series of quick movements: back and forth movement along the rail while turning the feed handwheel of the grinding wheel. Always start from the top of the rail head and continue to the sides and rounded surfaces.

B – Finishing :

- Bring the machine back into the position of grinding of the top of the rail.
- The reference rollers perfectly seated on the rail, make the grinding wheel flush with the rail close to the weld, in an area that does not require grinding.
- Starting from the top and then going to the side and finally the rounded surface of the rail, finish the grinding operation by extending the joining over a length of about 10 cm.
- After the grinding is completed, the grinding wheel must be raised with a few turns of the handwheel to avoid it being engaged in the next welding

VI – ADJUSTING THE GUINDING FLANGES

A set of flanges guide the grinding wheel at each end of the machine.

The holding flange (M) has two positions that adjust the ground clearance of the machine while grinding the sides of the rail head

- For high fixing and rails < 36kg/m (see diagram 1)
- For rails > 36 kg/m (see diagram2)

The adjusting flange (R) helps to adjust the opening of the flanges to the rail head width.

Diagram N°1

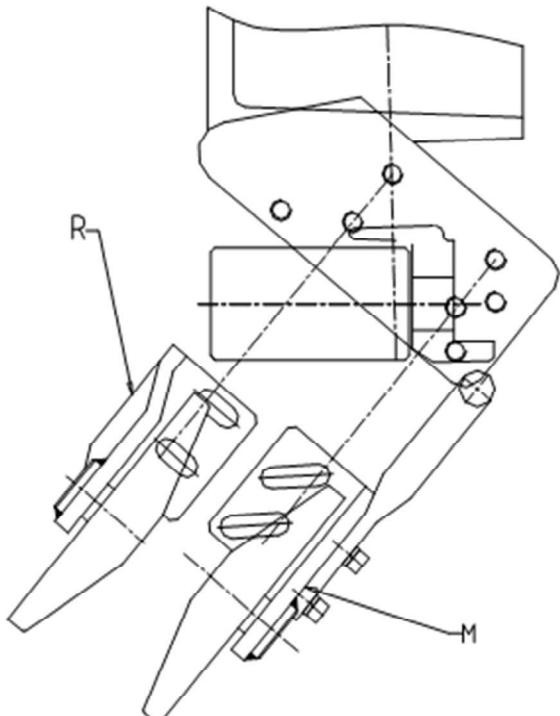
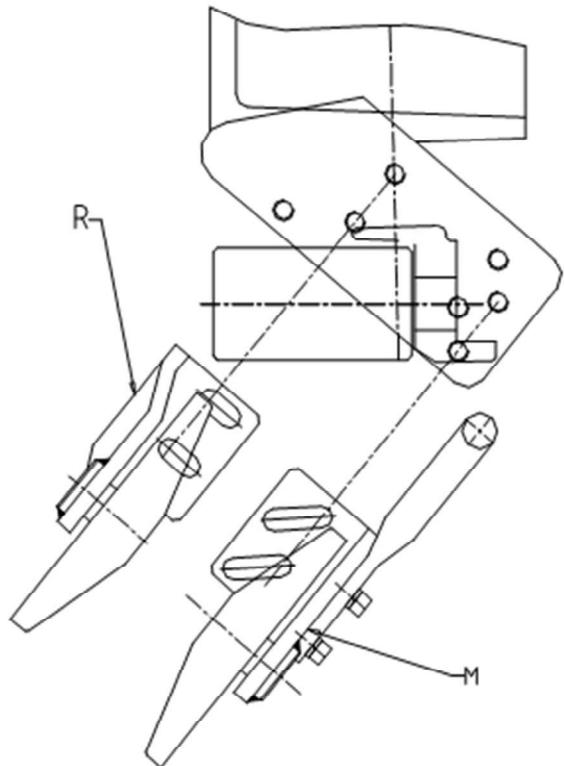


Diagram N°2



VII – CHANGE OF GRINDING WHEEL

It is imperative that the engine be shut down during the entire duration of the grinding wheel replacement operation

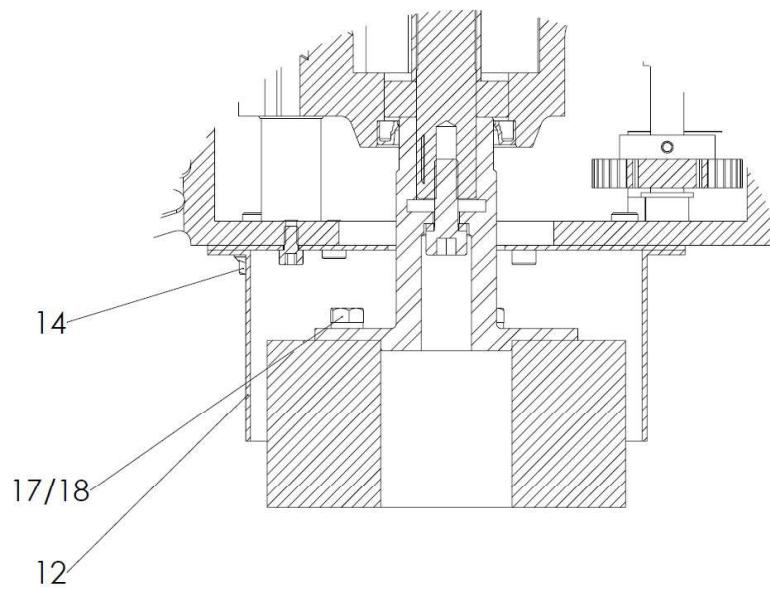
REMOVAL OF A WORN GRINDING WHEEL :

Lower the grinding wheel to the normal position, unscrew the 3 fixing screws (52) of the safety guard (07) and remove the latter by turning it slightly to release it from the screws heads.

After the safety guard is removed, unscrew the 4 holding screws 98 of the grinding wheel

MOUNTING A NEW GRINDING WHEEL :

* mount the grinding wheel on the plate using 4 screws 98 and washers 43



VIII – MAINTENANCE

OBJECT	DESCRIPTION	PÉRIODICITY			
		Before Use	After use	50 hour of use	Sign of wear or incorrect operation
Complete machine	Machine inspection	X			
Complete machine	Clean the scale if necessary		X		
Air filter	Replacement			X	
Engine Oil	Emptying			X	
Centrifugal clutch	Check and replace if necessary			X	
Guide roller	Replacement			X	

- Verify the integrity of the machine, check for fuel leakages, oil level
- Verify the free rotation of the grinding wheel
- Check the grinding wheel casing, it must be replaced if it has any dents or cracks on it; clean the carbon deposits if necessary
- Verify, by hand, the free rotation of the guide flanges and rollers: replace the ball bearings if their rotation is not easy and regular
- Remove and check the condition of the engine spark plug, clean it if necessary
- Ensure the cleanliness of the fuel filter (see chapter IX - engine equipment, 123), replace it if it is clogged up

This maintenance operation must be carried out by qualified staff:

- Replace the air filter
- Change the engine oil (tilt the machine to drain the oil)
- Check the wear and tear of the guide flanges and rollers (30 & 27 guide flanges and rollers page 16 & 17). Any part "eroded" more than 0.5 mm must be replaced.

Oil tank cap



IX – PIECES DETACHEES SPACE PARTS

Système d'avance

Drive mechanism

Corps de meuleuse et
ligne d'arbre

Grinder body and Shaft

Flasque et rouleaux de
guidage

*Guide flanges and
rollers*

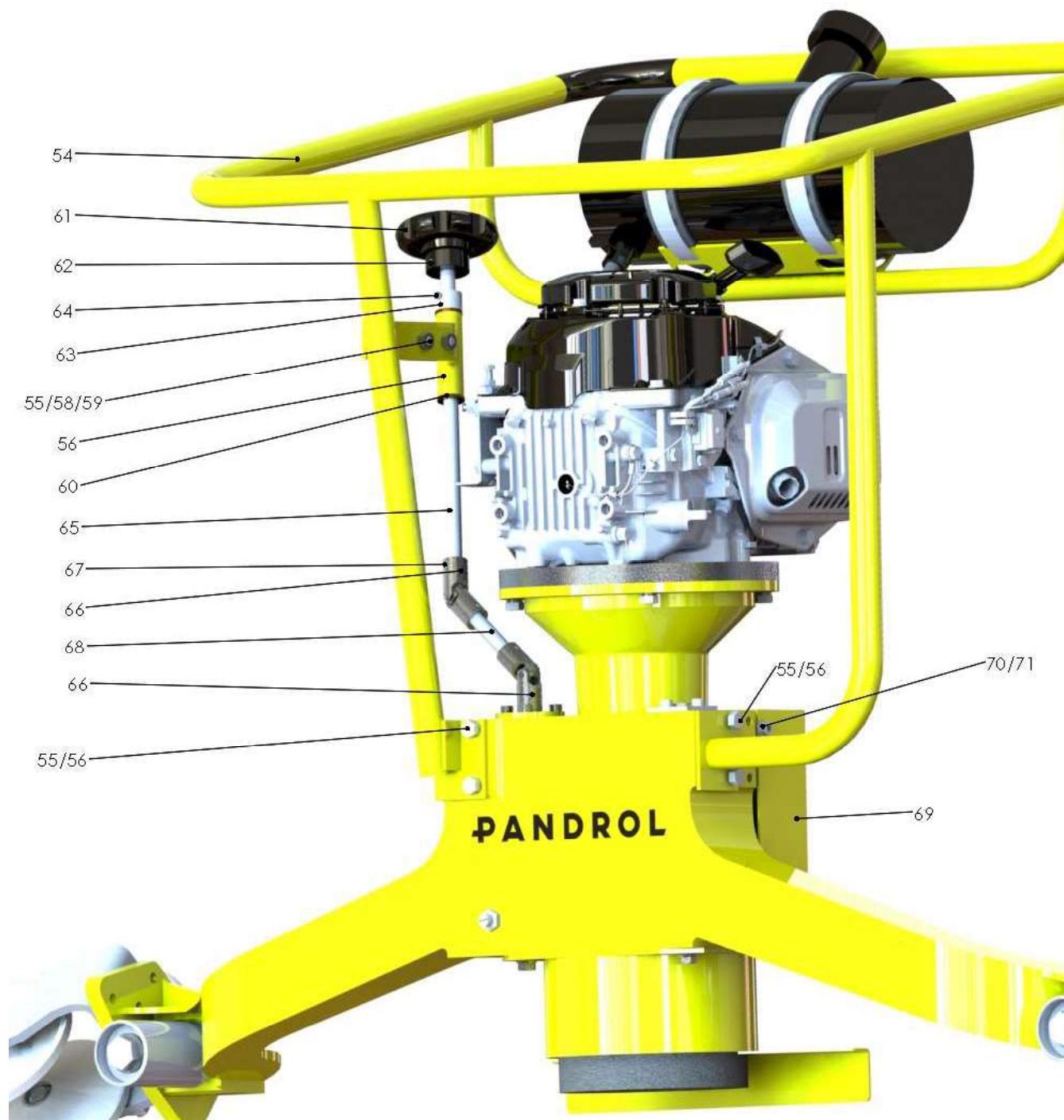
Equipement moteur

Engine equipment

Option Kit de
retournement

Optional Turning kit

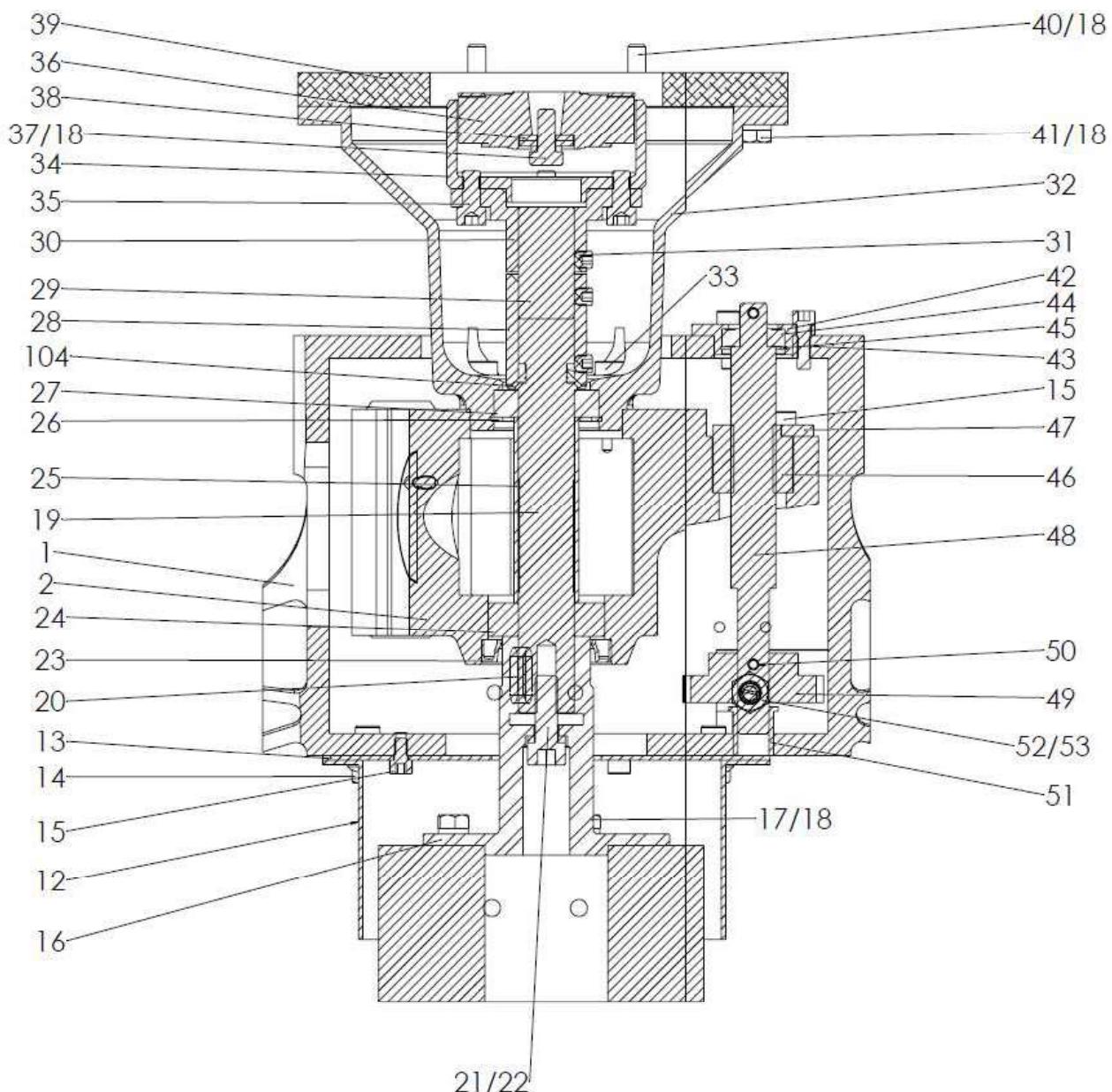
SYSTEME D'AVANCE / DRIVE MECHANISM



SYSTEME D'AVANCE / DRIVE MECHANISM

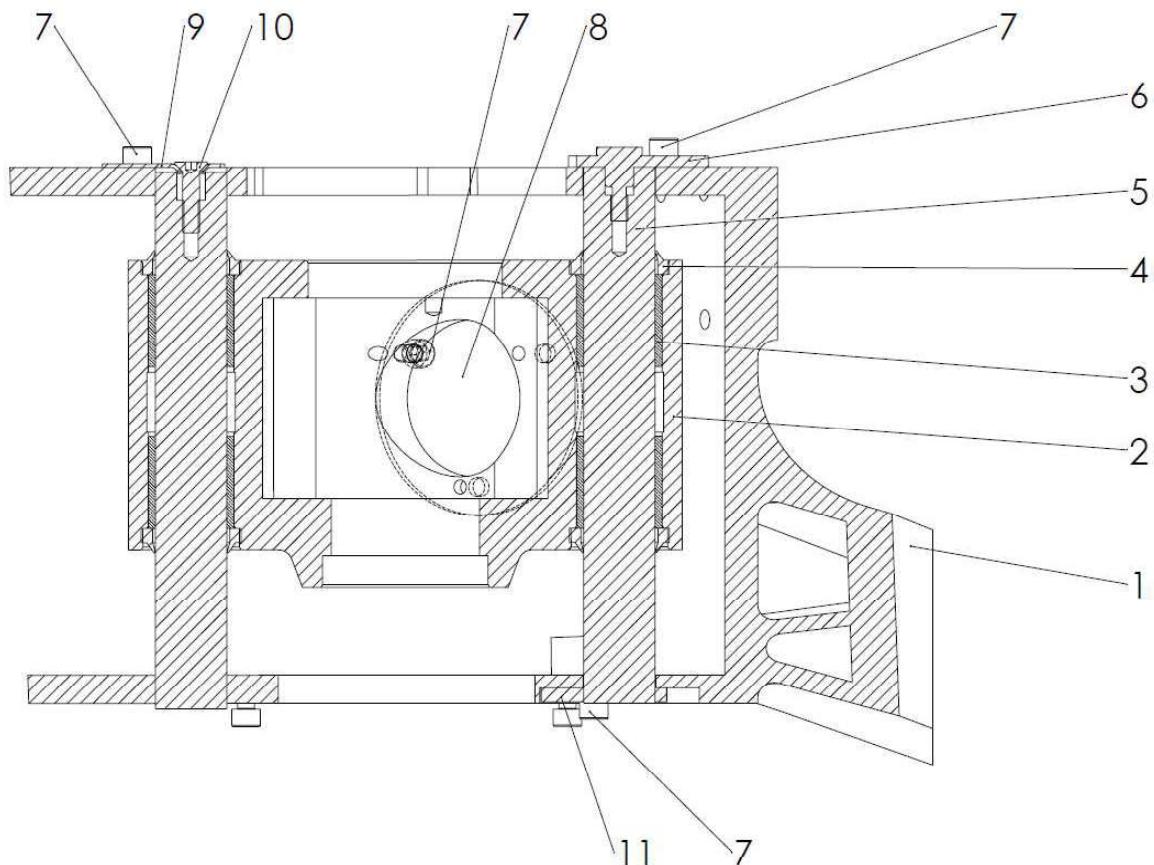
Rep	Ref	Qty	Désignation	Description
54	3591043 8	1	Poignée	Handle
55	4100802 0	6	Vis H M8x20	Screw H M8x20
56	3111015 5	1	Palier coudé	Bent bearing housing
56	4110800 4	4	Rondelle W8	Washer W8
58	4090800 4	2	Ecrou H M8	Nut H M8
59	4110800 4	2	Rondelle W8	Washer W8
60	4530200 3	2	Coussinet	Bearing
61	3127003 1	1	Volant usiné	Flywheel
62	4130100 2	1	Goupille 5x35	Cotter pin 5x35
63	3121006 6	1	Bague d'arrêt	Retaining ring
64	4100602 0	1	Vis STHC M6x8 bout pointu	Headless set screw HC M6x8
65	3111004 3	1	Axe d'avance	Drive axle
66	3191002 3	2	Cardan	Universal joint
67	4130100 7	4	Goupille 5x20	Cotter pin 5x20
68	3111004 2	1	Axe intermédiaire	Intermediate axle
69	3491000 5	1	Carter	Casing
70	4100600 2	4	Vis CHC M6x12	Screw CHC M6x12
71	4110600 4	4	Rondelle M6N	Washer M6U

CORPS DE MEULEUSE ET LIGNE D'ARBRE / GRINDER BODY AND SHAFT



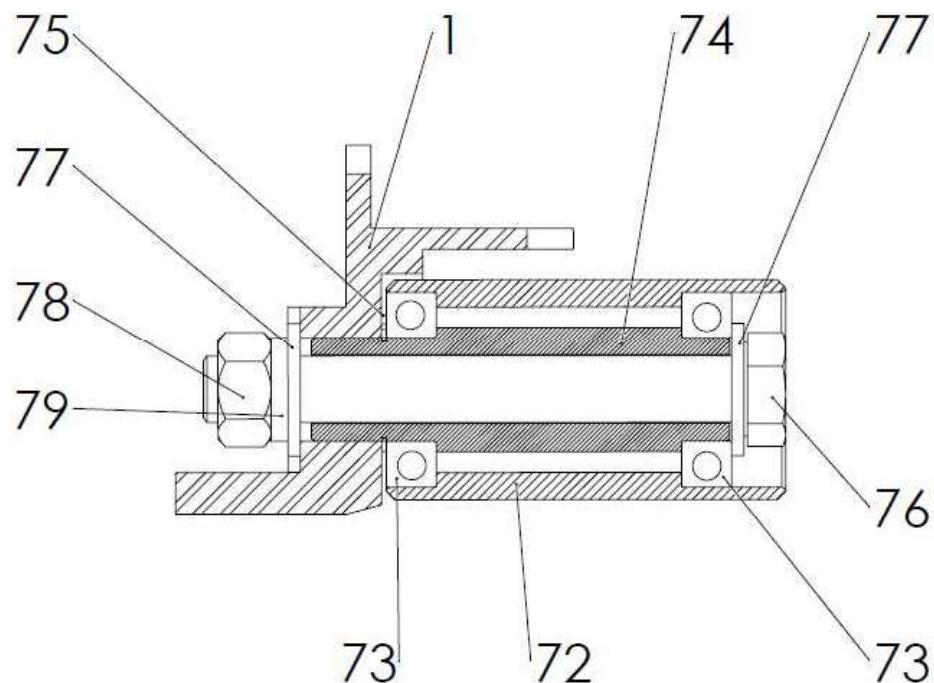
Rep	Ref	Qty	Désignation	Description
1	32930016	1	Coprs	Central unit
2	32930017	1	Moyeu central	Central hub
12	35910030	1	Carter de meule	Grinding wheel casing
13	35910029	1	Plaque inférieur avec écrou à sertir	Lower plate with embedded nut
14	41008012	3	Vis à embase H M8x20	Hexagon flange bolt H M8x20
15	41006002	5	Vis CHC M6x12	Screw CHC M6x12
16	31210469	1	Plateau de meule massif	Grinding flange
17	41008011	4	Vis H M8x16	Screw H M8x16
18	41118004	17	Rondelle W8	Washer M6U
19	31110237	1	Arbre cannelé	Splined shaft
20	41401009	1	Clavette forme A 8x7x25	Locking pin A 8x7x25
21	41010028	1	Vis CHC M10x30	Screw CHC M10x30
22	41110002	1	Rondelle W10	Washer W10
23	44202002	1	Joint d'étanchéité	Gasket
24	44010005	1	Roulement 6205 2RS	Ball bearing 6205 2RS
25	31210348	1	Entretroise	Spacer
26	41801006	1	Circclips ø47	Inner Circclips ø47
27	44010006	1	Roulement 6005 2RS	Ball bearing 6005 2RS
28	31210483	1	Accouplement cannelé femelle	Female splined coupling
29	31110430	1	Accouplement cannelé male	Male splined coupling
30	31210128	1	Plateau d'accouplement cannelé	Splined coupling plate
31	41008014	3	Vis STHC M8x8	Headless set screw HC M8x8
32	32930054	1	Lanterne	Bell-housing
33	41008022	4	Vis CHC M8x25	Screw CHC M8x25
34	31210383	1	Cloche d'embrayage	Clutch housing
35	41008052	4	Vis CHC M8x16	Screw CHC M8x16
36	45201013	1	Embrayage centrifuge REF:F04K12-0502 SUKO	Centrifugal clutch
37	41008020	1	Vis H M8x20	Screw H M8x20
38	31210147	2	Rondelle de centrage	Centering washer
39	31230098	1	Bride d'adaptation F943	Clamp engine F943
40	41008033	4	Vis CHC M8x20	Screw CHC M8x20
41	41008010	4	Vis H M8x25	Screw H M8x25
42	31210065	1	Palier de vis	Screw bearing
43	41008033	3	Vis CHC M6x20	Screw CHC M6x20
44	44010004	1	roulement 6001 2RS	Ball bearing 6001 2RS
45	41801004	1	Circclips øl 28	Inner Circclips ø28
46	31240007	1	Ecrou M20 pas à gauche	Left nut M20
47	31910020	1	Clavette	Locking pin
48	31110045	1	Vis M20 pas à gauche	Left screw M20
49	31210064	1	Pignon de maintien	Maintaining gear
50	41301006	1	Goupille 5x40	Cotter pin 5x40
51	45301003	1	Coussinet	Bearing
52	24331005	1	Ensemble vis à bille	Screw with ball
53	40910003	1	Ecrou Hm M10	Nut Hm M10
57	31210401	1	Bague de calage	Aduju sting ring

MOYEU CENTRAL / HUB CENTER

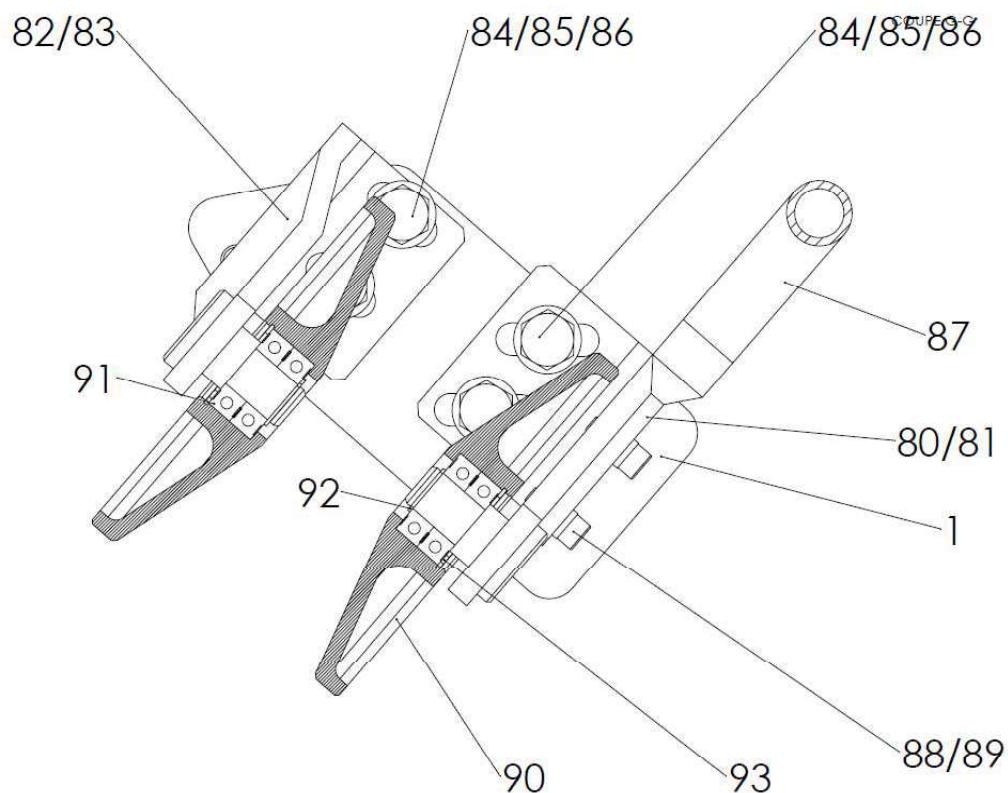


Rep	Ref	Qty	Désignation	Description
1	32930016	1	Corps	Central unit
2	32930017	1	Moyeu central	Central hub
3	45301002	4	Coussinet	Bearing
4	44201003	4	Joint racleur	Wiper seal
5	31110040	2	Colonne	Column
6	35910028	1	Bride supérieure de colonne	Upper column flange
7	41006002	8	Vis CHC M6x12	Screw CHC M6x12
8	31910021	1	Bouchon	Plug
9	31910205	1	Bride de colonne	Column flange
10	41006040	1	Vis TF/90 M6x25	Screw TF/90 M6x25
11	31910019	1	Bride inférieur de colonne	Lower column flange

ROULEAU DE GUIDAGE / GUIDE ROLLER



FLASQUE / FLANGE

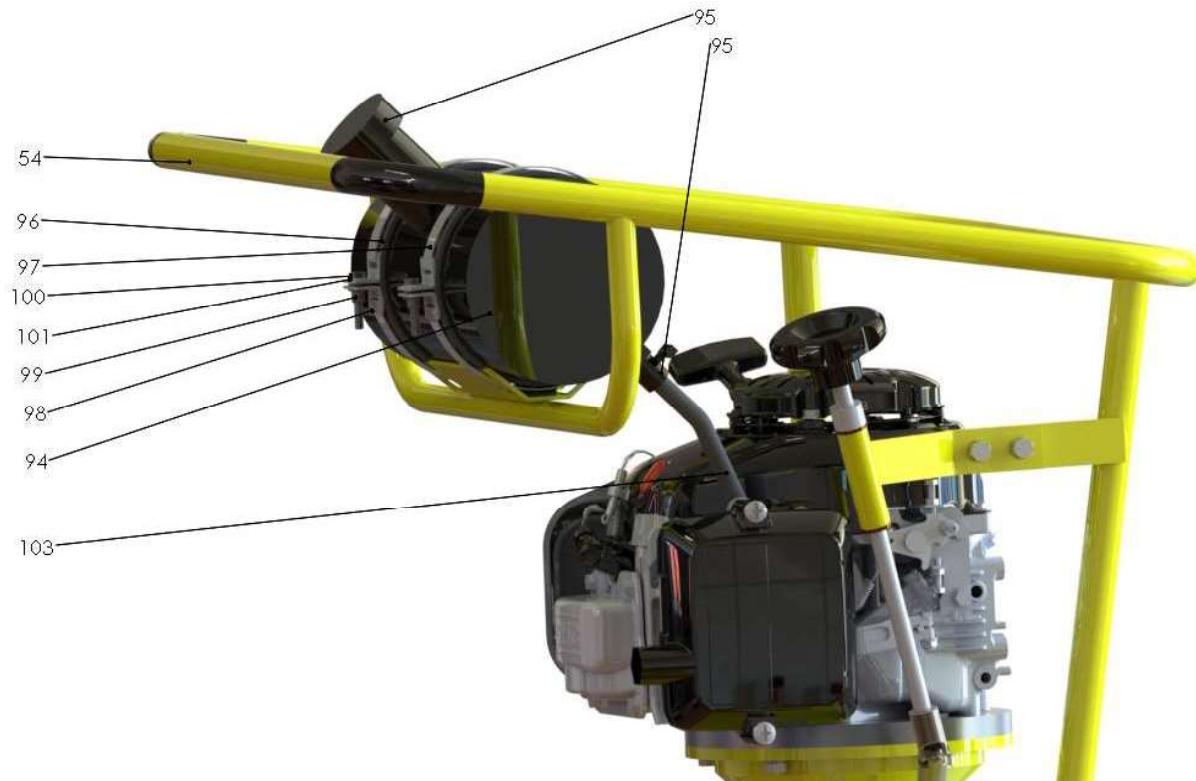


ROULEAUX DE GUIDAGE
GUIDE ROLLERS

Rep	Ref	Qty	Désignation	Description
1	32930016	1	Corps	Central unit
72	31210190	2	Rouleau	Roller
73	44010006	4	Roulement 6005 2RS	Ball bearing 6005 2RS
74	31210069	2	Axe de rouleau	Roller axle
75	41802005	2	Circlips E25	External Circlips ø25
76	41016005	2	Vis H M16x130	Screw H M16x130
77	41116004	4	Rondelle M16N	Washer M16N
78	40916002	2	Ecrou H M16	Nut H M16
79	41116003	2	Rondelle W16	Washer W16

FLASQUE
FLANGE

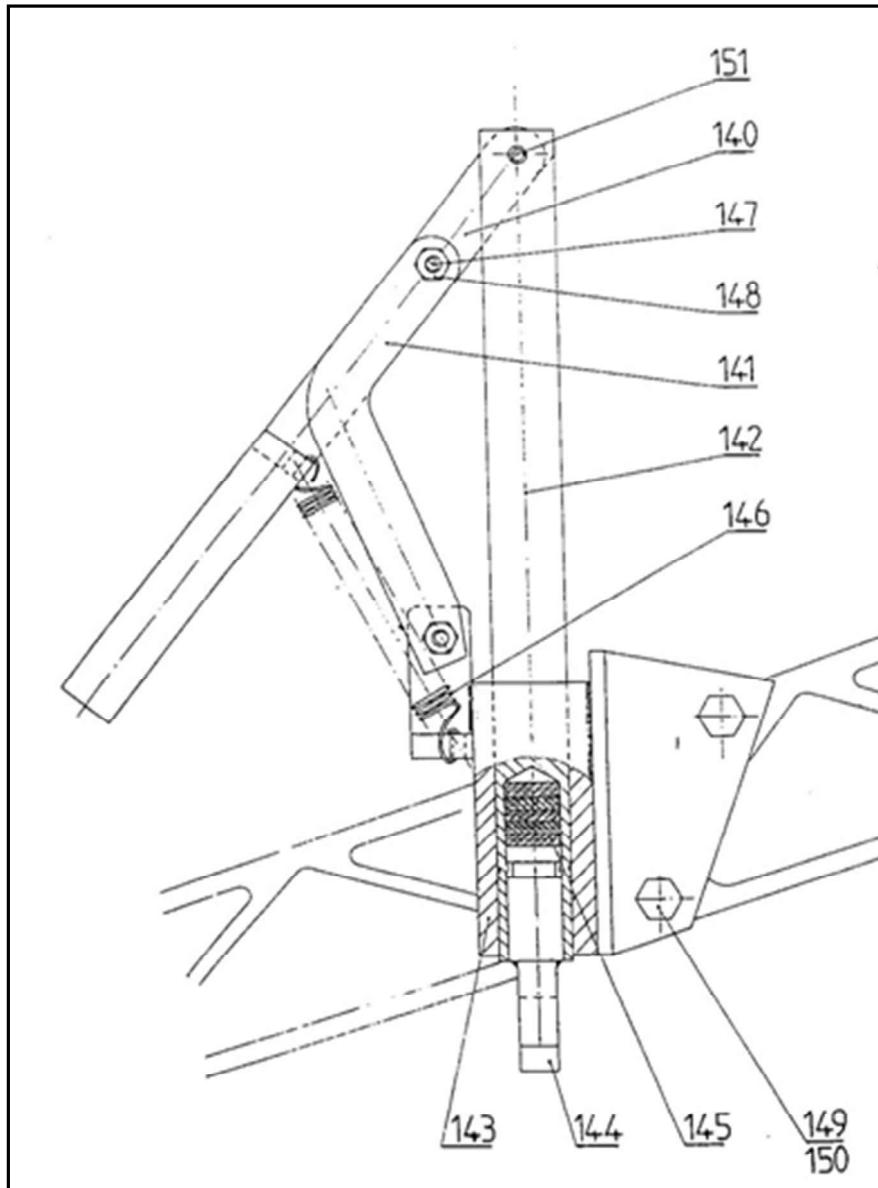
Rep	Ref	Qty	Désignation	Description
1	32930016	1	Corps	Central unit
80	35910033	1	Flasque de maintien gauche	Left guide flange
81	35910034	1	Flasque de maintien droit	Right guide flange
82	35910035	1	Flasque de réglage gauche	Left adjusting flange
83	35910036	1	Flasque de réglage droit	Right adjusting flange
84	41010005	8	Vis H M10x25	Screw H M10x25
85	41110002	8	Rondelle W10	Washer W10
86	41110003	8	Rondelle M10N	Washer M10N
87	34910051	2	Poignée inférieur	Lower handle
88	41006017	4	Vis CHC M6x16	Screw CHC M6x16
89	41106001	4	Rondelle W6	Washer W6
90	31210067	4	Flasque	Flange
91	44010007	8	Roulement 6002 2RS	Ball bearing
92	41802003	4	Circlips E15	External Circlips ø15
93	41801003	4	Circlips I32	Inner Circlips ø32



Rep	Ref	Qty	Désignation	Description
54	35910438	1	poignée	Handle
94	35910304	1	Réservoir	Fuel tank
95	48601315	1	Kit réservoir	Tank kit
96	42400069	2	Bande de caoutchouc	Rubber band
97	35910440	2	Attache de réservoir	Tank fixation
98	34910132	2	Patte attache réservoir	Tank fixing foot
99	40906010	2	Ecrou à sertir M6	Inserted nut
100	41006053	2	Vis H M6x35	Screw H M6x35
101	41106004	2	Rondelle M6N	Washer M6N
102	48602310	1	Contacteur	Switch
103	47602015	1	tuyau	Fuel pipe

**OPTION
KIT DE RETOURNEMENT**

**OPTIONAL
TURNING KIT**



Rep	Réf.	Qty	Désignation	Description
140	31110048	1	Levier de retournement	Turning lever
141	39910001	2	Biellette	Crank
	*24331014	1 ensem ble	Axe de retournement comportant :	Turning axle subsystem including :
*142		1	Axe	Axle
*144		1	Fourche	Fork
*145		5	Rondelle	Washer
143	35910038	1	Palier	Bearing
146	47201001	1	Ressort	Spring
147	41008005	2	Vis HM 8x30	Screw HM 8x30
148	40908001	2	Ecrou Nylstop M8	Nylstop M8 nut
149	41008008	2	Vis HM 8 x 16	Screw HM 8x16
150	41108004	2	Rondelle W8	Washer W8
151	41301005	1	Goupille élastique 8x24	Elastic stud 8x24

* pièces appartenant au sous-ensemble repéré, ne peuvent être vendues séparément.

* parts belonging to the referenced subsystem, they cannot be sold separately



FICHE DE CONTROLE
COPIE CLIENT

MEULEUSE DE PROFIL MR 150
MOTEUR HONDA GXR 120

CONTROL CARD
CUSTOMER'S COPY

RAIL PROFILE GRINDER MR 150
HONDA GXR120 ENGINE

14331028

N°	Désignation des opérations <i>Description of operation</i>	Contrôle <i>Checked by</i>
1	Rotation des galets et flasques de guidage <i>Rotation of rollers and guiding flanges</i>	
2	Fonctionnement du système d'avance de la meule <i>Process of the grinding wheel forward motion system</i>	
3	Vitesse de rotation de la meule / <i>Grinding wheel rotating speed</i>	
4	Essai de meulage / <i>Grinding test</i>	
5	Aspect general / <i>General appearance</i>	
6	Régime moteur en accéléré 4000 ± 200 tr/min <i>Engine normal speed 4000 ± 200 rpm</i>	
7	Outilage Tools	
8	Notice d'utilisation / <i>User's Manual</i>	REF 42143034
9	Garantie moteur / <i>Guarantee card for the engine</i>	
10	Accessoires / <i>Accessories</i>	

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

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	<i>Machine nbr.</i>
Moteur Type	<i>Engine Type</i>
Numéro	<i>Number</i>





FICHE DE CONTROLE
COPIE CLIENT

MEULEUSE DE PROFIL MR 150
MOTEUR HONDA GXR 120

CONTROL CARD
CUSTOMER'S COPY

RAIL PROFILE GRINDER MR 150
HONDA GXR120 ENGINE

14331028

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10	Accessoires / <i>Accessories</i>	
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.....
Moteur Type	Engine Type.....
Numéro	Number.....



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

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)

MEULEUSE DE PROFIL TYPE MR150

MR 150 RAIL PROFIL GRINDER

MOTEUR HONDA GXR 120

HONDA GXR 120 ENGINE

Meule diamètre 150
4 écrous noyés M8

Grinding wheel diameter 150
With four sunk nuts M8

Référence 14391003

Référence 14391003

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

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