Model PG-239

Electronic Automatic Grommet

Operating Manual

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INTRODUCTION

MACHINE MODEL PG-239 AUTOMATIC WITH TWO DEPOSITS TO PLACE GROMMET AND WASHER.

The object of this machine is to place grommet and washer in canvas, curtains, or any other material that requires this kind of reinforcement, can be used to place the grommet and washer, only the grommet or to simply perforate the material.

- Lack of familiarity with the machine usually leads the operator to elemental doubts about its operation.

- Read this manual carefully to securely operate and optimize the machine's capability.

- We urge you to follow this advice, and appreciate your trust at the moment of buying the machine.

SINCLAIR EQUIPMENT ASSUMES NO RESPONSIBILITY ABOUT THE INCORRECT USE OF THIS MANUAL OR INCORRECT INTERPRETATION OF THE INSTRUCTIONS PROVIDED.

MACHINE IDENTIFICATION AND PLATES

This machine includes an aluminum plate attached with four rivets indicating the following:

Factory Name
Manufacturing Year
Model and Manufacturing number
Power in kw
Air pressure (on pneumatic machines)
CE Mark
Weight in Kilograms

DESCRIPTION OF THE MACHINE AND ITS OPERATION.

MACHINE MODEL PG-239. AUTOMATIC ELECTRONIC WITH TWO HOPPER BOXES FOR PLACING GROMMET AND WASHER.

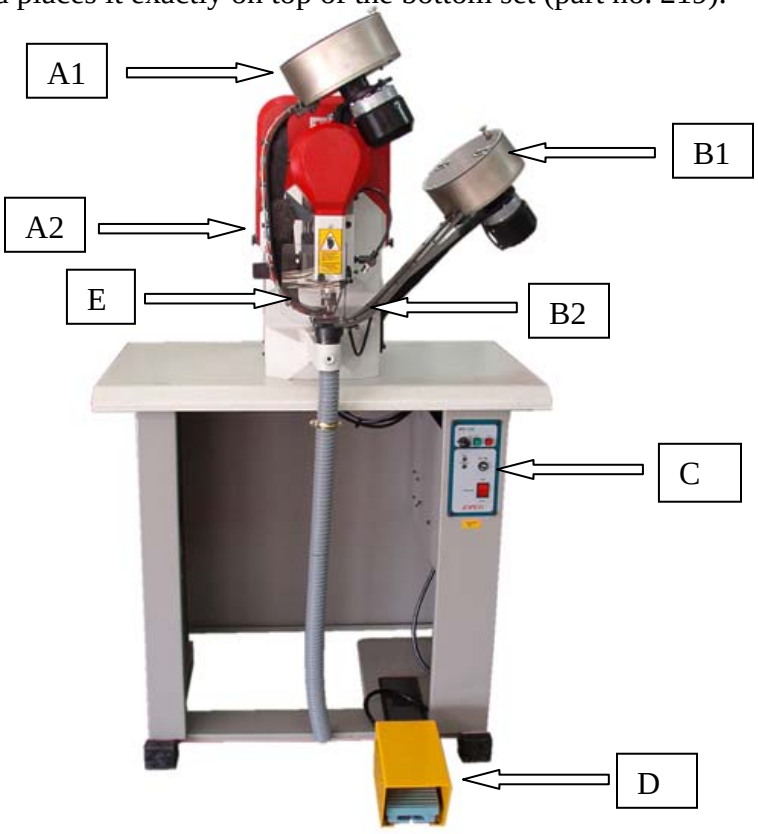
The machine consists of a metallic stand with a wood base on which the machine is mounted. The pedal and the electronic equipment that control the machine are located in the stand.
The head of the machine is comprised of a machine housing and two raceways (one on each side). The moving parts in the machine are located inside the housing, such as: the main motor, axles, eccentrics, bearings, etc. The grommets and the washers use the two raceways to descend.

The PG-239 model is designed to automatically place the grommets with washers, the grommet without the washer, or to punch holes in the material. Facing the machine, the grommets are placed in the left hopper box " A1 " and the washers in hopper box " B1 ".
Both hopper boxes are rotated by individual 24V motors. The grommets that descend along the left raceway " A2 " are held by a small finger, which stops them from falling.
Lower horizontal guides hold the washers descending along the right raceway " B2 ".

The machine is controlled by an electronic unit designated IMO V3 " C ", located inside the mounting stand. The IMO V3 unit receives an electric signal through pedal " D " that allows the main motor " E "located behind the head, to quickly rotate and haul the
flywheel (part no. 274) with a belt making a 360° rotation causing the motor to stop sharply.

The flywheel (part no. 274) has a main shaft (part no. 207) that joins the plunger with the other moving parts. By rotating 360°, it exerts pressure on the driving stem and therefore the grommeting action is completed.

The top set spindle (part no. 218) inside the top set (part no.217) inserts itself inside the grommet and pulls it down from raceway " A2 ". At the same time the slide (part no. 297) pushes the washer from the slide track and places it exactly on top of the bottom set (part no. 219).



INSTALLATION

The operator can work in a seated position.
The minimum space recommended is 7ft width by 5ft depth.

The machine comes with a 6 ft long cable.

WARNING: We recommend not having the power cord totally stretched.

MACHINE HANDLING

The transportation of this machine requires a series of operations.
Some of these operations may imply dangerous situations so please follow the following advise:

- Never stand beneath the cargo.
- Always lift the cargo gently.
- Avoid balancing the cargo.
- No brisk movements.
- Do not place yourself in the cargo moving trajectory.
- Use the correct equipment to move cargos.
- Check this equipment periodically.

The machine will carry packaging which is sufficient to avoid knocking or scraping any of its components. We advise that wooden packaging, in box or cage form, should always be used, always with adequate protection and the machine properly secured.

The machines should always travel in the vertical position and never be overturned.

UNLOADING AND LEVELLING

The machine should be unloaded by means of a crane, using ropes at both sides of the box. If the machine comes in a box or cage, it can be unloaded using a fork lift.
When the machine is on the floor, totally unpacked, it is to be transported by means of a pallet jack to its permanent location.
The machine comes out of the factory totally leveled, and does not need to be secured to the floor. It incorporates rubber leg tips for it not to move with vibration during use.
The floor underneath should be firm and strong.

LEARNING INSTRUCTIONS

!BEFORE STARTING THE MACHINE, READ THESE WARNINGS CAREFULLY!

- Before connecting the machine to the electrical outlet or the compressor, it should be placed in its permanent location. Do not connect any electrical devices to the machine before it has been placed in its permanent location.

- Cleaning, manipulation and replacement of parts of the machine must always be carried out with the machine disconnected from the mains power supply.

- ❖ Do not remove from the machine any parts which protect the user from possible accidents, or adhesive labels or signs indicating electrical or hazardous components.

! DANGEROUS AREA !

The most dangerous zone in the PG-239, is the denominated “Grommeting area”.

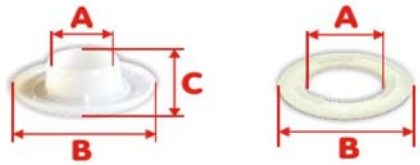
Never manipulate this zone without unplugging the machine from the electrical source.

This zone is protected with an acrylic lid and a protection ring that prevent the fingers from getting in this area.

MACHINE DESCRIPTION

The PG-239 model is an automatic electronic machine designed to set grommets with washers, grommets without washers or to make holes in the material.

Each machine is manufactured for a specific size of grommet and washer. Grommet models may differ in: the head size “B”, the length “C”, the interior diameter of tube “A”, the thickness, etc; and the washer models may differ in: the exterior diameter “B”, & the interior diameter of washer hole “A”, the washer shape, etc.



SINCLAIR EQUIPMENT RECOMMENDS YOU TO USE ALWAYS THE SAME TYPE OF GROMMET AND WASHER FOR WHICH THE MACHINE WAS DESIGNED. In order for the machine to set different grommet and washer models, certain parts need to be changed (the raceway and the top and bottom sets); but you always have to use the same washer the machine was manufactured for.

In order for the machine to set different grommet models, certain parts need to be changed. (SEE THE ADJUSTMENTS SECTION OF MANUAL.)

SINCLAIR EQUIPMENT will accept no responsibility arising from the use of this machine in any way different from that which is described in this instruction manual.

SETTING UP THE MACHINE FOR ITS OPERATION

PLEASE VERIFY THESE ADJUSTMENTS BEFORE CONNECTING THE MACHINE.

Before starting the machine for the first time, and each time the location of the machine is changed, or any changes are made in parts or any adjustments are done to it, we recommend the following steps:

After placing and making the machine level in its permanent location “STILL WITHOUT PLUGGING IT IN”, lubricate it with SAE 40 type oil in the grease cups and red marks. Let the oil have enough time to cover the parts and then clean the excess oil that might remain or drip.

1- Remove the cap nº 158 “pulley cover” that covers the flywheel by loosening the 4 allen screws that tighten it.
2- Rotate the flywheel nº 274 manually one cicle of 360º in the direction that the red arrow points (clockwise).
3- Verify that the machine is moving freely.
4- Put the cap on again (nº 158) and tighten it with the 4 allen screws.

The machine is equipped in the base with an electronic device “IMO V3” and a control panel showing the following features:

1- Main Switch: connects or disconnects all of the machine systems. When the switch is pushed towards the symbol “I”, the led will light showing that the machine is “ON”.

2- Marcha: red led shows that the machine is connected and in stand-by mode.

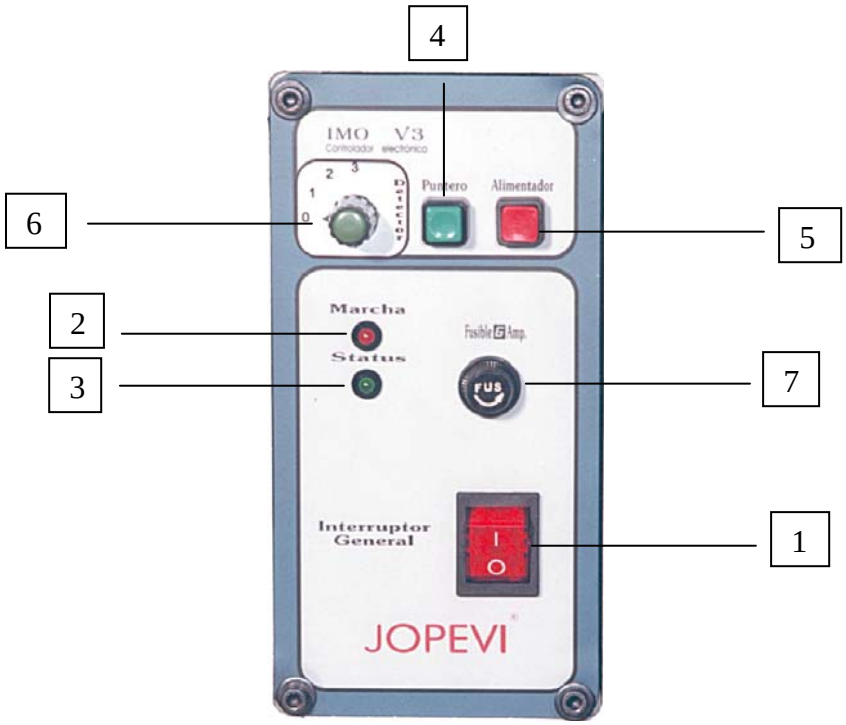
3- Status: green led will light every time we press the pedal indicating that the machine is in operation. If illuminated in a pulsating fashion, it indicates failure, disconnect the machine immediately.

4- Green pointer or switch: turns the lighted pointer on or off. Only in those machines equipped with this device (optional).

5- Red switch or feeder: connects or disconnects the two 24V motors that make the grommets and washers rotate in the deposits.

6- Washer detector: detects the flow of washers in the railing. When selected with the position “0”, it does not detect the washers in the railing, and the machine may place only grommets or punch holes. When pulsated to the outermost position “1”, it detects the washers, and will not allow to place the grommet without a washer or to punch holes. The railing must have at least 8 washers for this feature to work properly.
The position" 2" and" 3" doesn't have application in this model of machine, we therefore will always indicate" 0" or "1”.

7- 6 Amp fuse. Fuse holder. Uses a 6 amp fuse to protect the machine from high voltage.



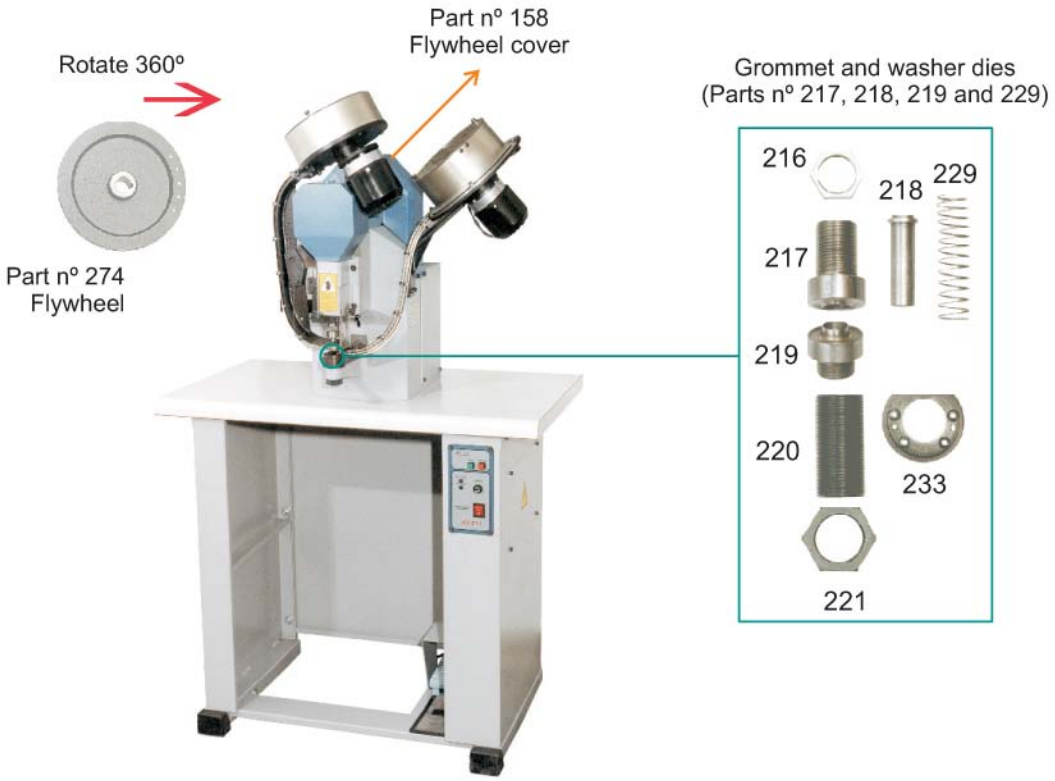
The IMO V3 device is responsible for the electrical working of the machine.
It must not be opened or manipulated except by an authorized technician, or with the consent of Sinclair Equipment.

OTHER MACHINE USES

For setting grommets without the washers, or punching out holes, all the washers must be removed from the hopper box and the guides, the grommet raceway must be moved back and the top and bottom dies (parts nº 217, 218, 219 and 229) must be replaced by other parts specific to this task.

THIS MACHINE MUST NOT BE USED FOR ANY FUNCTION OTHER THAN THAT FOR WHICH IT WAS ORIGINALLY DESIGNED AND WHICH IS SPECIFIED IN THIS INSTRUCTION MANUAL: THE AUTOMATIC SETTING OF GROMMETS WITHOUT WASHERS, GROMMETS ONLY, OR HOLE PUNCHING ONLY.

FIGURE 3



ADJUSTMENTS

Each PG-239 machine places a grommet model and a washer, although other grommet dimensions may be placed by replacing the corresponding parts. This replacement is quick and simple. In order to fix a different grommet model a whole new raceway is needed together with the appropriate set of dies.

With the machine unplugged:

1- Remove the stripper plate spring nº 237 from the raceway spring nut nº 238 which holds it in place.
2- Loosen both mounting screws nº 244 which are holding the front hopper box mounting bracket nº 240.
3- Use both hands for holding the grommet hopper box housing nº 242 and the grommet hopper box bottom plate nº 241and begin to push upwards (with slight clockwise rotations) in order to remove the whole raceway from the front hopper box mounting bracket nº 240.

The whole set of dies or some of its parts (part nº 217, 218, 219 y 229) will have to be replaced according to the different grommet models.
The dealer that sold you this machine or directly Sinclair will let you know about the parts that should be replaced. If no part of the set of dies needs to be replaced, continue at point 8.
Changing the whole set of dies:
4- Pull upwardsthe ring compensator nº 233C by moving the compensator base latch nº 196 that holds it.
5- Unscrew the top die nº 217, remove the top set spindle nº 218 and the top set spindle spring nº 229 , which are inside the top die. Unscrew the bottom die nº 219.
6- Replace the set of dies corresponding to the new grommet size, in the same order in which the other parts were removed. Firstly the top die nº 217 with the top set spindle nº 218 and the top set spindle spring nº 229 and then remove the bottom die nº 219.
7- Replace the ring compensator nº 233C around the bottom die nº 219, fit the compensator base latch nº 196 into the ring compensator groove nº 233C in order to hold it in place.

Before starting the machine, it is necessary to adjust the tightness of your setting (Point 4.2. Adjusting the tightness of setting, change of dies; page 12).

8- Fit the new grommet raceway into the front hopper box mounting bracket nº 240 while manually rotating it back and forth, so that the driving stem nº 243 which is in the lower part, gets into the hopper box motor spin axis nº 239.
9- Tighten both 6 allen screws nº 244 for holding the part nº 240 ,
10- Hold the stripper plate spring nº 237, which is held in place by the raceway spring nut nº 238.
11- The lower part of the raceway where the grommet you are going to set is placed, must be on the same vertical line as the spindle nº 218 so the spindle can take the grommet while coming down,
12- Adjust the tightness of setting (Point 4.2. Adjust the tightness of setting and changing dies). Remember you have to keep using the same washer model, you must not change it.

ADJUSTING THE TIGHTNESS OF SETTING, CHANGING DIES

Machine model PG-239 can set grommets in different types of material of different thicknesses. For a perfect grommeting action you can adjust the pressure that the dies put on the grommets. Each time the dies are changed, or a different material is used, it may be necessary to adjust the machine so that a proper setting is achieved.

Machine model PG-239 has two vertical axles:
- Nº 230 “Driving stem” that governs the cutting pressure, and,
- Nº 215CA “Plunger” that governs the pressure of the grommeting.

If you want to change the whole set of dies, you must follow the instructions from number 4 to number 7 shown at point 4.1.Change of grommet model; page 11. You must always change the dies with the machine disconnected from power source.

With the machine unplugged.

CUTTING PRESSURE:
- Remove the flywheel cover part nº 158A
- Manually rotate flywheel nº 274 (clockwise) until top set spindle nº 218, is in its lowest point
- Unscrew nut that holds the bottom die in place, then rotate the bottom die holder part nº 220 until the bottom die part nº 219 barely touches the top set spindle part nº 218. Secure the bottom die holder part nº 220 through nut. The pressure of the spindle nº 218 against the bottom die nº 219 must be minimum, the pressure which is sufficient for punching a hole on a piece of paper.

PRESSURE OF THE GROMMETING:
- By unscrewing nut part nº 216 you will be able to turn the top set nº 217 to the right or left, until the distance between the bottom die nº 219 and the top die nº 217 equals approximately the thickness of the material used for setting the grommets,
- Manually rotate flywheel nº 274 (clockwise) and check weather the adjustment of the dies is correct,
- Secure the top set nº 217 through nut nº 216
- Replace the flywheel cover nº 158

SETTING GROMMETS ONLY, WITHOUT THE WASHERS

Machine model PG-239 can also place grommets without the washers.

With the machine unplugged:

- Empty the hopper box and the raceway of washers,
- On the “IMO V3” turn the washer detection switch to the “0” position.
- Adjust the pressure of the grommeting and the cutting pressure

For placing grommets without washers, we advice you to replace the bottom die #219 with another one specific to this task.

PERFORATING ONLY

If what you want is simply to make perforations in the material, you must place a new complete set of dies and make the following adjustments:

With the machine disconnected from the power source:

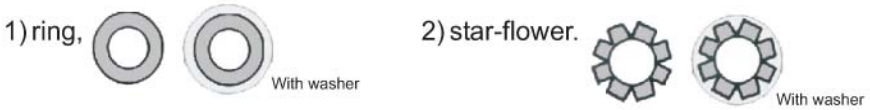
- Empty both the deposits and railings of any grommets and washers,
- Move the grommet railing to the left and secure it with a small puncher to the front raceway bracket part nº 272 ,
- Next place the new complete set of dies and adjust the machine's pressure.
- In the control panel "IMO V3" the washer detector switch must be set to the "0" position.

PLACEMENT LASER LIGHT (OPTIONAL ACCESSORIES)

- Your machine has an optional laser light that emits a red laser beam that can help with the placement of the grommet and washer.
- The machine includes a switch for this device, in the "IMO V3". For connecting the switch see Electric installation.

Note: Although the light power of this laser is very small. DO NOT SHINE THIS LIGHT DIRECTLY IN ANYONE'S EYES SINCE IT COULD BE HARMFUL. KEEP IT AWAY FROM CHILDREN.

- For small grommets and washers, the machine may come with a little air pipe attached to the washer raceway, which blows the washer down onto their right position, by means of an air compressor.
- For placing grommets and washers in materials such as: canvas, sailcloth, etc, a small metallic tray may be attached to the machine, in order to be used as a base for the material.
- If you wish to know the amount of grommets and washers that you set each day, you can use a grommet and washer meter.
- The back side of the grommet may have two shapes after having been placed in the material: 1) ring shaped grommeting, 2) star-flower shaped grommeting, depending on the kind of bottom die that you use:

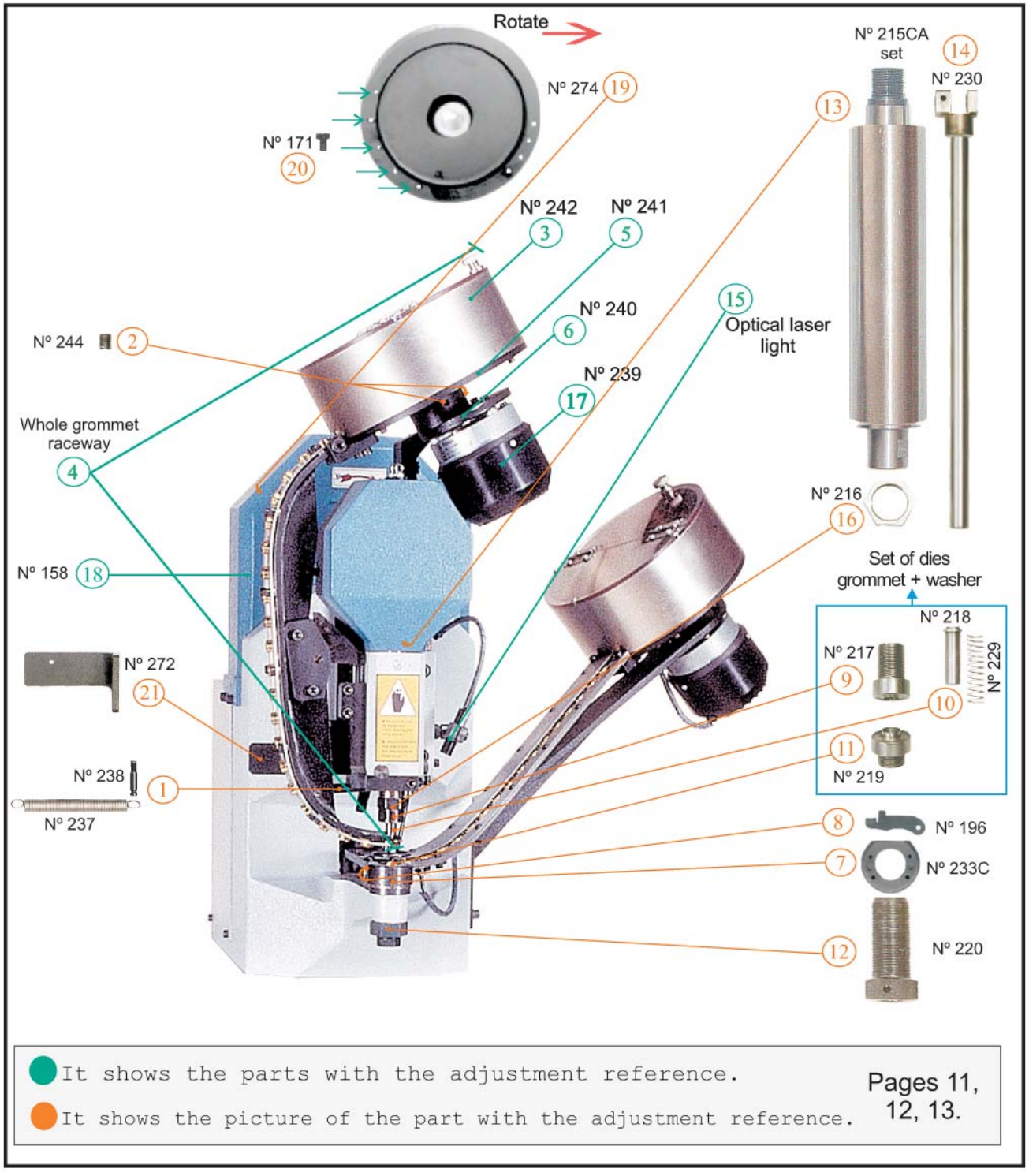


Ask for the flower-shaped or ring-shaped bottom die nº 219 according to the kind of grommeting that you wish to obtain.

Due to differences in the tension of different supply systems, the top-set spindle stop-position nº 218 may not be correct, and the spindle stops at a point lower than normal. If you change the position of the detector screw nº 171 by screwing it into another hole (generally the one next to it) of the flywheel nº 274, we will be able to stop the top set spindle nº 218 in another position. The correct position is as high as possible.

ADJUSTMENT QUICK REFERENCE GUIDE.

Note: The pictures are not on the same size scale.



It shows the parts with the adjustment reference.

It shows the picture of the part with the adjustment reference.

Pages 11, 12, 13.

MAINTENANCE

MECHANICAL PART OF THE MACHINE:

For an optimal operation of the machine, it is recommended that you keep some parts clean and always lubricated. The cleaning should ALWAYS be done with the machine disconnected from the electrical power source and the compressor.

The pedal we press to operate the machine should always be clean and clear of any debris that could prevent its normal operation.
The exterior of the machine should be cleaned with a rag that will not leave threads, so that the threads can not be stuck to the machine.

The head of the machine has exterior grease cups. You must use a manual pressure oil can to inject oil (the oil type to be used should be “SAE 40”) into the grease cups two or three times a week. We recommend to do this at the end of the journey, and clean up the possible excess oil the next day. During the first month of operation it must be done twice per week. After the first month it only needs to be done once a week.

If the machine is going to go for a long period of time without use, it will be necessary to do a general cleaning, and greasing in the indicated spots, disconnecting it from the compressor or from the power source (if it has any electrical devices), and then cover it so that it is protected from the dust and/or humidity.

ELECTRICAL PART OF THE MACHINE:

The electrical part of the machine the IMO V3 is clearly marked with a yellow triangle and does not need any type of maintenance. Do not open unless directed to do so by Sinclair.

The electrical parts of the machine: motors, cables, etc, come completely sealed and secured through nuts. The electrical parts need no maintenance, do not open or manipulate them.

Parts nº 149 flywheel optical detector and nº 338 optical washer detector, should be kept clean, and to achieve this, they should be wiped with a dry cloth.

If an optional laser light nº 155 has been installed, it needs no cleaning or maintenance, and remember that you must never shine it directly in anybody’s eyes, since it could be harmful.

Both the main motor and the two hopper box motors are totally sealed and do not require any maintenance.

Part nº 149 Flywheel optical detector

Part nº 338 Optical washer detector

Part nº 155 Laser light (optional)

ELECTRICAL PART

Note: The pictures are not on the same size scale.

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
THE MACHINE DOES NOT WORK WHEN PRESSING THE PEDAL.	Check that the machine is correctly connected to 220V current and the main switch (page 9 figure 2 point 1) is in the "On" position.	Connect and turn switch to "On" until red light is on.
	The main switch (page 9 figure 2 point 1) is lit and the fuse (page 9 figure 2 point 7) is burnt out.	Replace the 6 amp fuse.
	If the main switch is lit (page 9 figure 2 point 1) and the lights "On" and "Status" (page 9 figure 2 points 2 - 3) are flashing, verify that the home position detector part nº 149 is clean and next to screw nº 171 on flywheel nº 274 (approximately 1'5 mm.).	Clean part nº 149, adjust so that it is separated from the flywheel by aprox 1'5mm or replace it with a new one. When adjusting or replacing, care should be taken to manually rotate the flywheel in order to verify that it will **NOT TOUCH** the detector. If it continues not to work the IMO V3 is broken. DO NOT OPEN IT. Call the authorized distributor or directly to JOPEVI S.L.
DEFECTIVE GROMMETING.	Part nº 219 bottom set is worn out or broken.	Replace the bottom die nº 219 with a new one. See chapter IV. Pressure adjustments. Points 4.1. Change of grommet model and 4.2. Adjusting the tightness of setting, and changing dies pages 11 and 12.
	Incorrect adjustment of pressure.	See chapter IV. Pressure adjustments. Point 4.2. Adjusting the tightness of setting, and changing dies, page 12.
IT GIVES SEVERAL BLOWS SIMULTANEOUSLY.	Home position detector nº 149 dirty or broken.	Clean part nº 149, adjust so that it is separated from the flywheel by aprox 1'5mm, or replace it with a new one. When adjusting or replacing, care should be taken to manually rotate the flywheel in order to verify that it will not touch the detector screw nº 171.
	"IMO V3" electronic controller broken.	DO NOT OPEN IT. Call an authorized distributor or directly to JOPEVI, S.L.

PROBLEM	CAUSE	SOLUTION
JAMMED MACHINE.	Parts nº 218 and 219 worn out.	Replace with a new one. See Chapter IV. Adjustments. Points 4.1. Change grommet model, and 4.2. Cutting and grommeting pressure. Change dies, pages 11 and 12.
	The machine has too much cutting or grommeting pressure.	Adjust the pressure. See Chapter IV. Adjustments. Points 4.1. Change grommet model, and 4.2. Cutting and grommeting pressure. Change dies, pages 11 and 12.
	The drive belt nº 361 may be worn out or not too taut.	Lower the motor nº 160 a little bit with the 4 mount bolts nº 204. You must not tauten the drive belt nº 361 too much and if it is too worn out replace it with a new one.
FAILURE TO PICK UP GROMMETS.	The spindle nº 218 does not pick up the grommet from the raceway.	Part nº 268 and 132 are broken or worn out, replace them with new ones.
THE MACHINE CRUSHES THE HEAD OF THE GROMMETS.	The top die nº 217 or the grommet spindle nº 218 does not correspond to that grommet model.	Replace it with a new one, and adjust the machine pressure. See Chapter IV. Adjustments. Points 4.1 and 4.2. Change of dies, page 11 and 12.
SETTING BOTH GROMMETS AND WASHERS.	The machine fails to place washers.	Turn the washer detector to position "1". See Chapter III. Point 6, page 9. Check that the pusher nº 297 is not jammed, due to oil.

PROBLEM	CAUSE	SOLUTION
SETTING BOTH GROMMETS AND WASHERS.	The machine fails to place the washers.	Clean washer detector nº 203 with a dry cloth. See Chapter V. Maintenance. Point 5.2. Electrical part of the machine, page 15.
SETTING GROMMETS WITHOUT WASHERS.	The machine sets grommets and washers.	Empty the hopper box and the raceway of washers. Turn the washer detector switch to position "0". See page 9, Point 6. Washer detector switch.
	The lower part of the grommet is not properly riveted.	Replace the bottom die nº 219 by a new one for grommets only. See Chapter IV. Adjustments. Point 4.3. Setting grommets only, pages 12 and 13. Adjust the tightness of setting.
IT WILL NOT CUT OR LEAVE MATERIAL RESIDUALS.	Part nº 218 top set spindle or part nº 219 bottom set, is worn out or broken.	Replace it with a new one. See Chapter IV. Adjustments. Points 4.1 and 4.2, pages 11 and 12.
	Incorrect tightness of setting.	Check the cutting pressure. See Chapter IV. Adjusting the tightness of setting, and changing dies, page 12.

Difficulties may generally arise from the incorrect use of the machine by personnel not properly trained, who are liable to alter and upset essential mechanisms.

SECURITY

As we have indicated in the manual, the PG-239 machine has a series of protection devices to prevent the operator from getting his fingers caught or any other kind of accident. PLEASE DO NOT REMOVE THESE PROTECTION DEVICES.
The most dangerous area in the PG-239 is the grommeting area “C” where the operator may get his fingers or his hands caught. In order to prevent this, some protection devices have been installed:

FIGURE 4

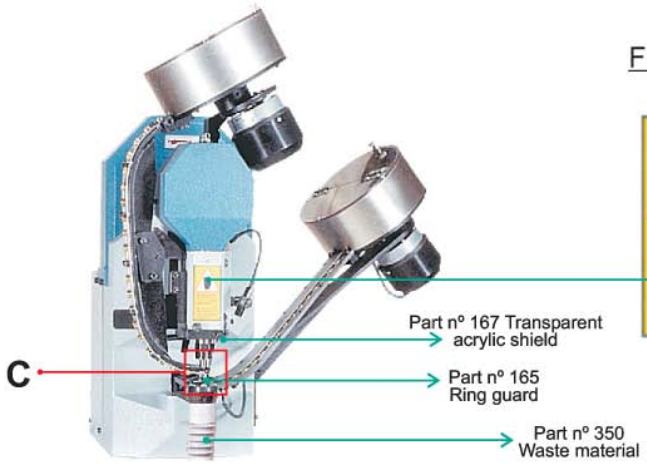


FIGURE 5

FIGURE 6

FIGURE 7

Note: The pictures are not on the same size scale.

In figure 4 “C” we indicate the area we consider dangerous for the operator.

This area “C” is protected by:
- A part #167 transparent acrylic shield that allows vision but does not permit the worker to introduce his hands, indicated in figure 4.
- A ring guard part #165 indicated in figure 7, that prevents the worker from accidentally introducing fingers or hands in the grommeting area.
- The waste material pipe #350 is used for absorbing the remaining pieces of material that are left after the grommeting action. This pipe allows the operator to work more comfortably.

These protection devices are tightly held through screws, that prevent them from becoming detached.

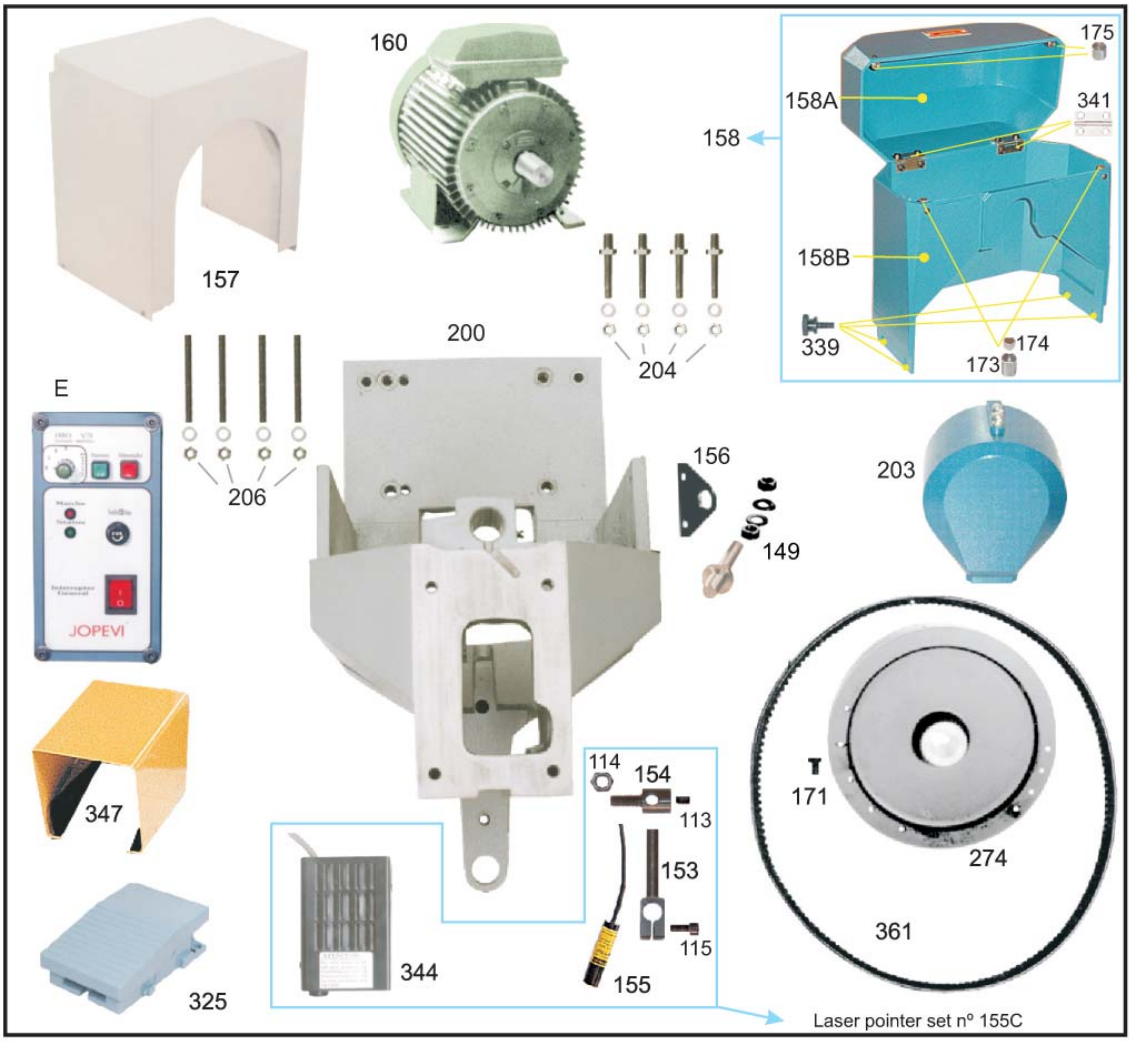
All areas considered dangerous are marked and securely enclosed.
The sticker shown in figure 5 warns you that the grommeting area "C" is a dangerous area, and the machine must always be unplugged before making any adjustments in that area.
All mechanical, electric and pneumatic parts are securely enclosed and tightly screwed up.

When the machine includes an optional device such as a laser pointer part #155C, you must not shine this pointer directly in anyone’s eyes since it could be harmful, and keep it away from children.

We strongly warn you that for any adjustment or any other manipulation that needs to be done, the machine must be disconnected from the electrical power source and the compressor air inlet.

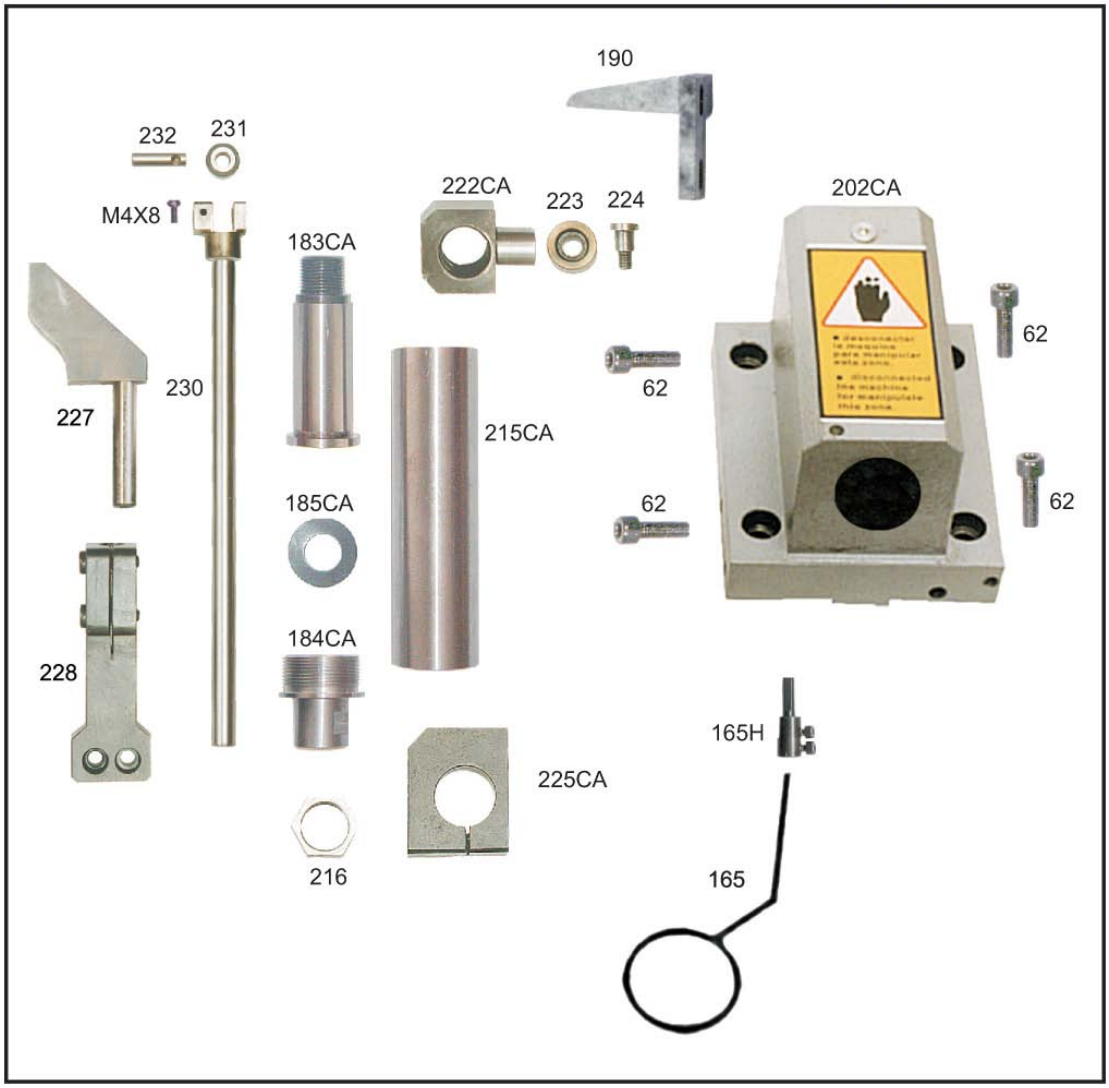
For any problem that may arise and can not be solved, please call the nearest distributor or get in contact directly with Sinclair Equipment.

Note: The pictures are not on the same size scale.



Schematic #	Part #	Description	Schematic #	Part #	Description
E	PGR239E	Electronic Device IMO V3	171	PGR239171	Flywheel Detector Screw
113	PGR239113	Threaded Pin	173	PGR239173	Bracket
114	PGR239114	Nut	174	PGR239174	Magnet 7mm
115	PGR239115	Screw	175	PGR239175	Part to fix with magnet
149	PGR239149	Flywheel Detector	200	PGR239200	Housing For Machine
153	PGR239153	Laser Pointer Bracket	203	PGR239203	Cover for Plunger Unit
154	PGR239154	Laser Pointer Threaded Support	204	PGR239204	Motor Mount Bolts, Nuts, & Washers (4)
155	PGR239155	Laser Pointer	206	PGR239206	Machine House Bolts,Nuts, & Washers (4)
155c	PGR239155C	Laser Pointer Set	274	PGR239274	Flywheel
156	PGR239156	Flywheel Detector Bracket	325	PGR239325	Electric Foot Pedal
157	PGR239157	Motor Cover	339	PGR239339	Screw For Plastic Cover
158	PGR239158	Flywheel Cover	341	PGR239341	Hinge
158a	PGR239158A	Upper Part of Flywheel Cover	344	PGR239344	Transformer Laser
158b	PGR239158B	Bottom Part Of Flywheel Cover	347	PGR239347	Foot Pedal Protector
160	PGR239160	Main Motor	361	PGR239361	Drive Belt

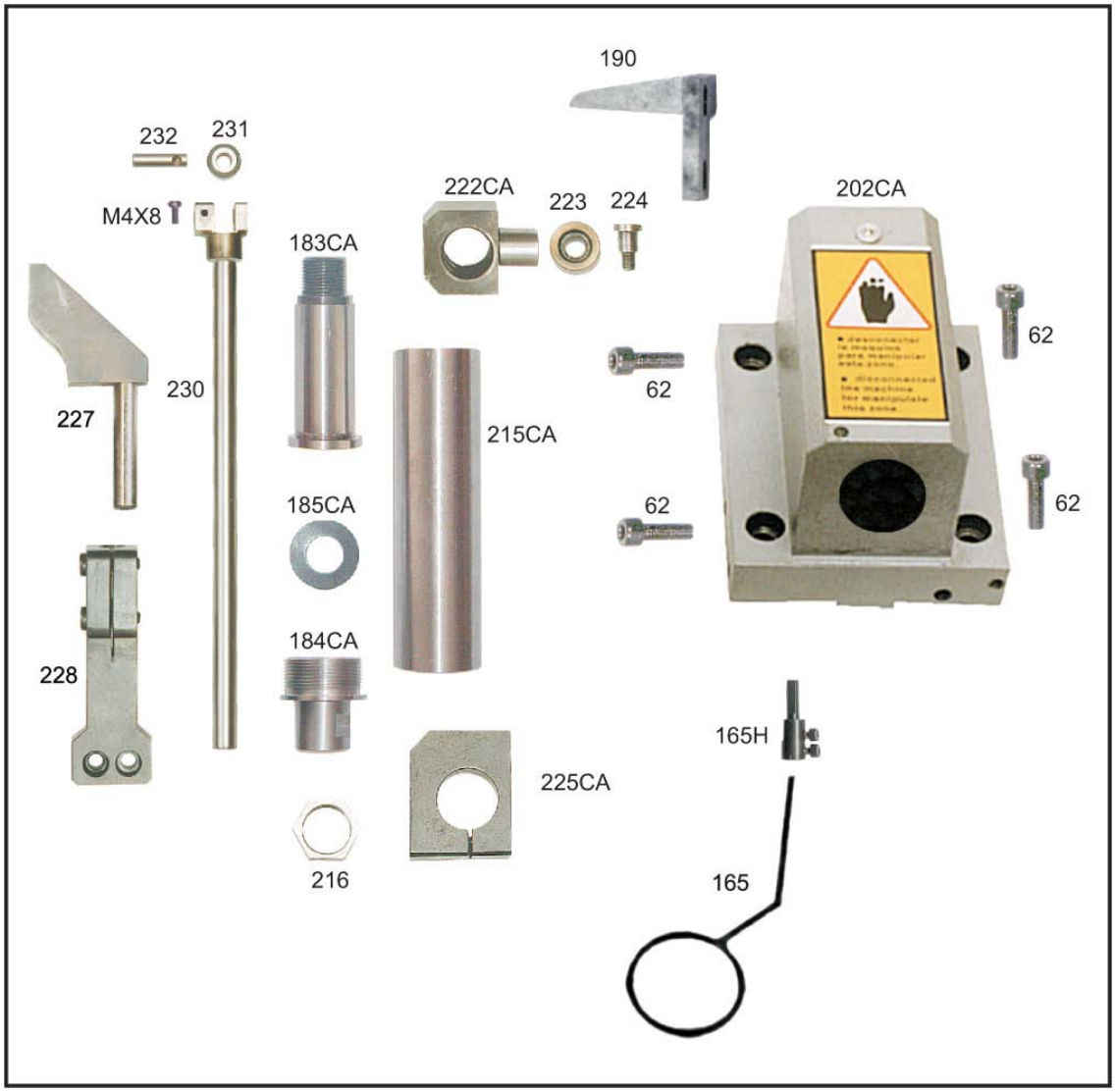
Note: The pictures are not on the same size scale.



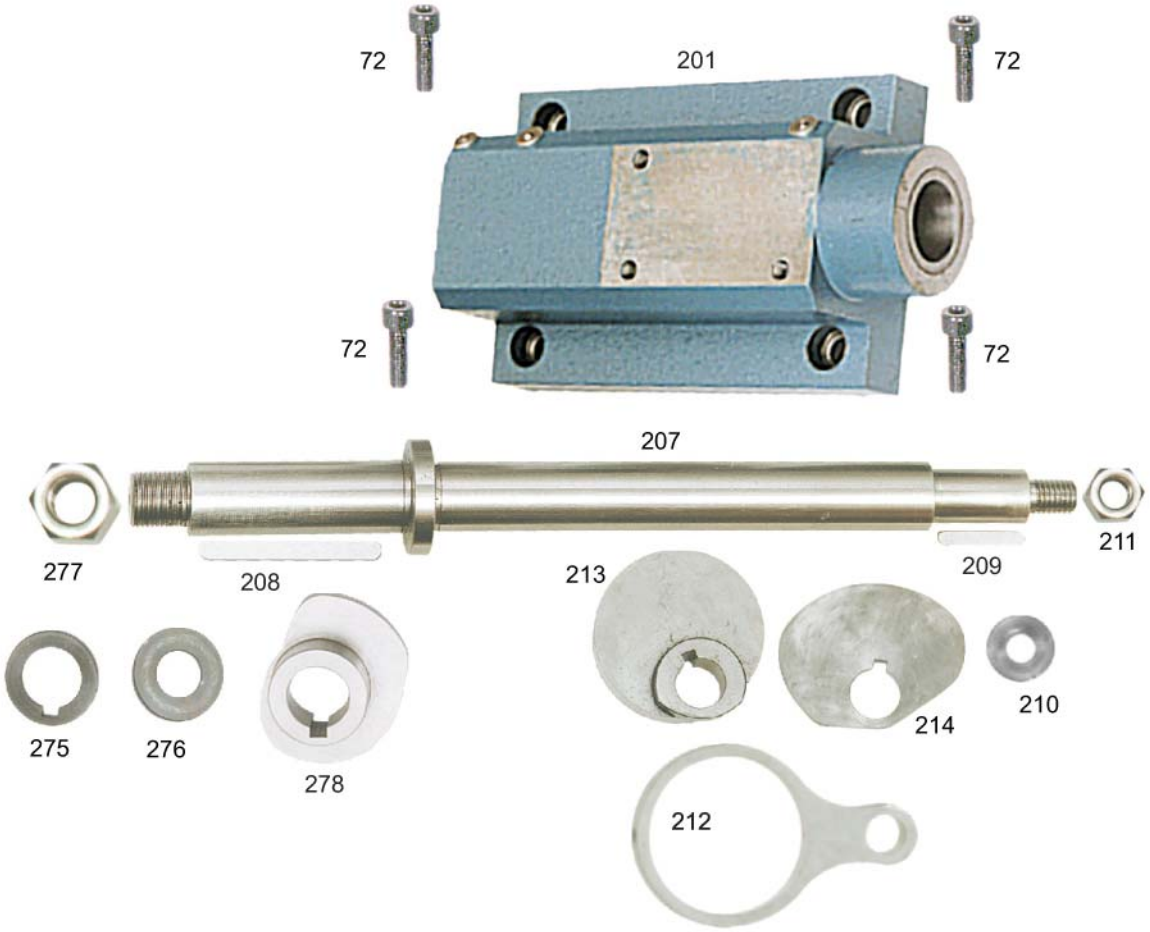
Schematic #	Part #	Description	Schematic #	Part #	Description
62	PGR23962	Screw To Fix Plunger Hsng	223	PGR239223	Plunger guide wheel for part #222
165	PGR239165	Ring Guard	224	PGR239224	Screw for part 223
165H	PGR239165H	Ring Guard Bracket	225CA	PGR239225CA	Bottom plunger ollar for part #184ca
190	PGR239190	Plunger	227	PGR239227	Raceway Cam
183CA	PGR239183CA	Upper part of washer compensator axle	228	PGR239228	Raceway Cam Bracket
184CA	PGR239184CA	Lower part of washer compensator axle	230	PGR239230	Driving Stem
185CA	PGR239185CA	Washer forcompensator axle	231	PGR239231	Driving Stem Guide Wheel
202CA	PGR239202CA	Plunger housing for 215	232	PGR239232	Driving Stem Pin
215CA	PGR239215CA	Upper guide collar washer compensator	M4X8	PGR239M4X8	Screws to fix part #232
216	PGR239216	Lock Nut			
222	PGR239222	Upper guide			

WITHOUT WASHER COMPENSATOR

Note: The pictures are not on the same size scale.



Schematic #	Part #	Description	Schematic #	Part #	Description
62	PGR23962	Screw To Fix Plunger Hsng	224	PGR239224	Screw for part 223
165	PGR239165	Ring Guard	225	PGR239225	Bottom Plunger Collar
165H	PGR239165H	Ring Guard Bracket	226	PGR239226	Bottom Plunger Guide Pin
190	PGR239190	Plunger	227	PGR239227	Raceway Cam
202	PGR239202	Plunger Housing	228	PGR239228	Raceway Cam Bracket
215	PGR239215	Upper Guide Collar	230	PGR239230	Driving Stem
216	PGR239216	Lock Nut	231	PGR239231	Driving Stem Guide Wheel
222	PGR239222	Upper Guide	232	PGR239232	Driving Stem Pin
223	PGR239223	Plunger guide wheel for part #222	M4X8	PGR239M4X8	Screws to fix part #232

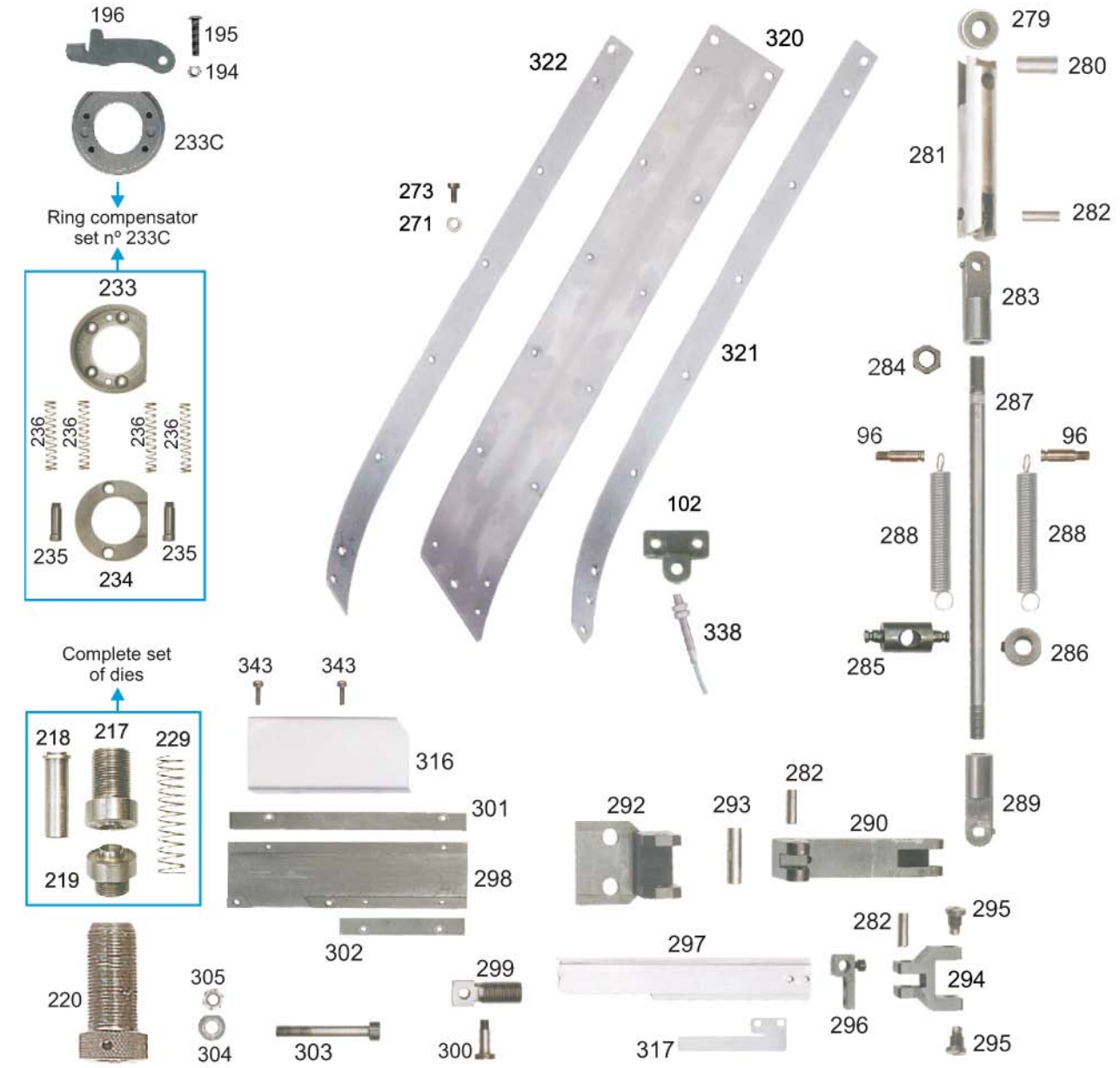


Schematic #	Part #	Description
72	PGR23972	Screw for part 201
201	PGR239201	Mainshaft Housing
207	PGR239207	Crankshaft
208	PGR239208	Crankshaft Key Way
209	PGR239209	Front Crankshaft Key Way
210	PGR239210	Front Washer
211	PGR239211	Front Crankshaft Nut
212	PGR239212	Collar
213	PGR239213	Collar Insert
214	PGR239214	Plunger Cam
275	PGR239275	Flywheel Washer
276	PGR239276	Flywheel Spacer
277	PGR239277	Flywheel Nut
278	PGR239278	Washer Slide Cam

WASHERS RACEWAY

Schematic #	Part #	Description
181	PGR239181	Screws for part 246
239	PGR239239	Hopper box motor
243	PGR239243	Brush pin
244	PGR239244	Threaded pin for holding hopper box
245	PGR239245	Brushes
246	PGR239246	Brush Spacer
247	PGR239247	Acrylic Box Cover
251	PGR239251	Knob for opening the hopper box cover
253	PGR239253	Upper box bearing
270	PGR239270	Mounting studs
291	PGR239291	Knob washer
310	PGR239310	Rear hopper box mounting bracket
313	PGR239313	Hopper box bottom plate
314	PGR239314	Rear hopper box mounting
315	PGR239315	Hopper box housing
341	PGR239341	Acrylic Box Hinge
385	PGR239385	Magnet

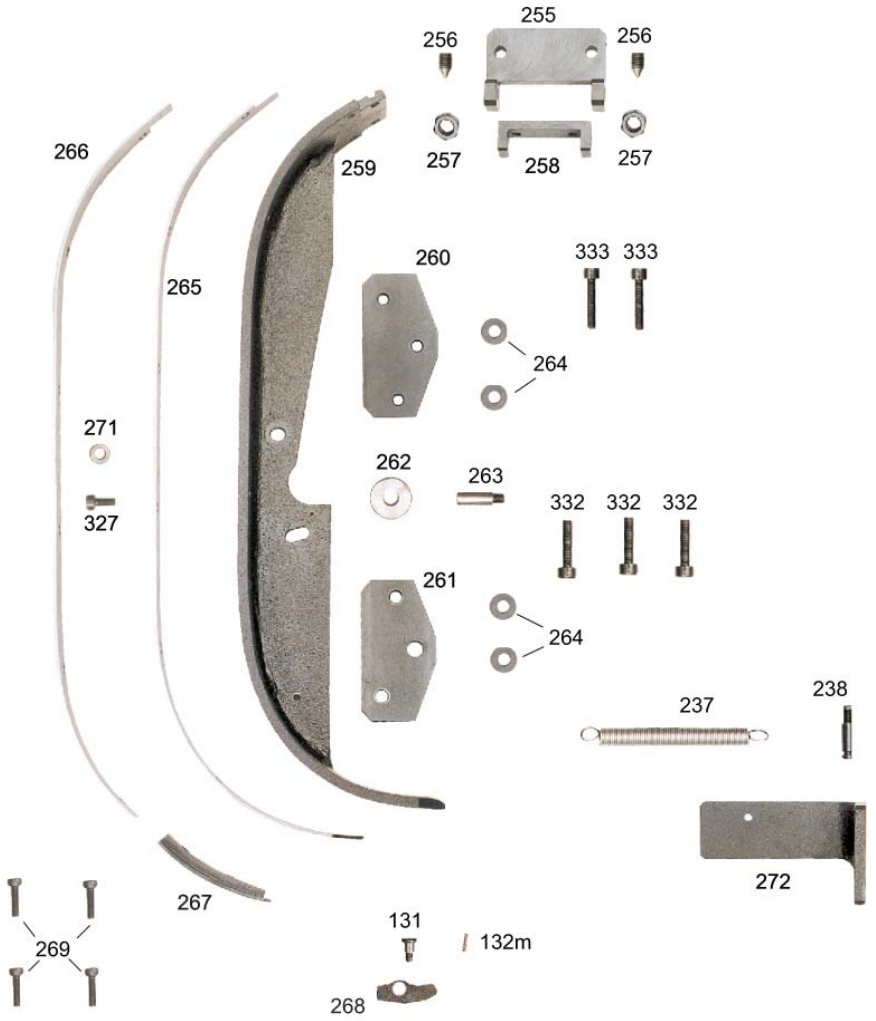
WASHERS RACEWAY



(See parts list on following page)

Schematic #	Part #	Description	Schematic #	Part #	Description
96	PGR23996	Driving stem spring holder	288	PGR239288	Spring for pusher
102	PGR239102	Washer detector bracket	289	PGR239289	Bottom connector
194	PGR239194	Nut for part 195	290	PGR239290	Slide rocker
195	PGR239195	Screw for part 196	292	PGR239292	Slide rocker bracket
196	PGR239196	Compensator base latch	293	PGR239293	Slide rocker pin
217	PGR239217	Top Die	294	PGR239294	Slide yoke
218	PGR239218	Top set spindle	295	PGR239295	Slide yoke screw
219	PGR239219	Bottom die	296	PGR239296	Slide yoke bracket for 297
220	PGR239220	Bottom die holder	297	PGR239297	Pusher
229	PGR239229	Top set spindle spring	298	PGR239298	Slide track
233	PGR239233	Die Base	299	PGR239299	Slide track stud
233C	PGR239233c	Ring compensator set	300	PGR239300	Slide stud screw
234	PGR239234	Base Washer	301	PGR239301	Long slide track rail
235	PGR239235	Screw for base	302	PGR239302	Short slide track rail
236	PGR239236	Base spring	303	PGR239303	Slide track attach. Screw
271	PGR239271	Raceway strip spacers	304	PGR239304	Washer for 303
273	PGR239273	Raceway screws	305	PGR239305	Lock washer for 303
279	PGR239279	Guide wheel slide cam	316	PGR239316	Slide track cover
280	PGR239280	Guide wheel pin	317	PGR239317	Slide track cover spring
281	PGR239281	Plunger for slide	320	PGR239320	Washer raceway strip
282	PGR239282	Connector pin	321	PGR239321	Right raceway strip
283	PGR239283	Top connector for part 287	322	PGR239322	Left raceway strip
284	PGR239284	Driving stem nut for 283	338	PGR239338	Washer detector
285	PGR239285	Spring holder	343	PGR239343	Screw
286	PGR239286	Driving stem collar			
287	PGR239287	Driving stem for pusher			

GROMMETS RACEWAY



Schematic #	Part #	Description	Schematic #	Part #	Description
131	PGR239131	Finger cut off screw	264	PGR239264	Right strip
132m	PGR239132M	Spring for part 268	265	PGR239265	Left upper strip
237	PGR239237	Stripper plate spring	266	PGR239266	Fixed guide
238	PGR239238	Raceway spring nut	267	PGR239267	Fixed guide
255	PGR239255	Front Hppr lwr brkt	268	PGR239268	Finger cut off
256	PGR239256	Mounting studs	269	PGR239269	Hopper box assy screws
257	PGR239257	Mounting stud nut	271	PGR239271	Raceway strip spacers
258	PGR239258	Front hopper lower bracket support	272	PGR239272	Front raceway brkt
259	PGR239259	Raceway support	327	PGR239327	Raceway screws
260	PGR239260	Outer raceway sprt	332	PGR239332	Mounting screws
261	PGR239261	Inner raceway sprt	333	PGR239333	Mounting screws
262	PGR239262	Raceway Brkt spacer			
263	PGR239263	Spacer stud			

GROMMETS RACEWAY

Schematic #	Part #	Description	Schematic #	Part #	Description
181	PGR239181	Screw for part 246	246	PGR239246	Brush spacer
239	PGR239239	Hopper box motor	247	PGR239247	Acrylic box cover
240	PGR239240	Front hopper box mntg brkt	251	PGR239251	Knob for opening hopper cover
241	PGR239241	Hopper box bottom plate	253	PGR239253	Upper box bearing
242	PGR239242	Hopper box housing	270	PGR239270	Mounting studs
243	PGR239243	Brush pin	291	PGR239291	Knob washer
244	PGR239244	Threaded pin	341	PGR239341	Acrylic box hinge
245	PGR239245	Brushes	385	PGR239385	Magnet

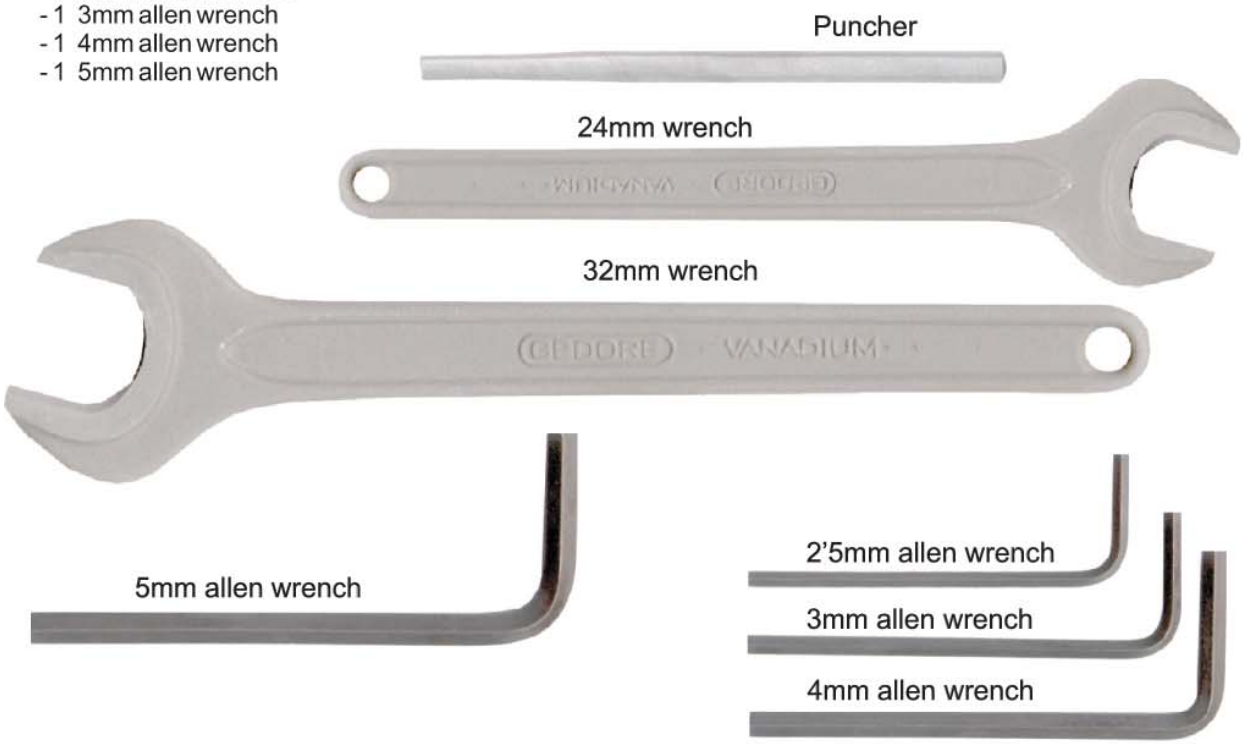
SUPPLIED TOOLS AND REPLACEMENT PARTS.

TOOLS.

Along with your machine, you will find all the necessary tools to do the required maintenance and adjustments as follows:

- 1 Puncher
- 1 24mm wrench
- 1 32mm wrench
- 1 2'5mm allen wrench
- 1 3mm allen wrench
- 1 4mm allen wrench
- 1 5mm allen wrench

Note: The pictures are not on the same size scale.



PARTS.

Included with the machine is a part nº 219 bottom die.

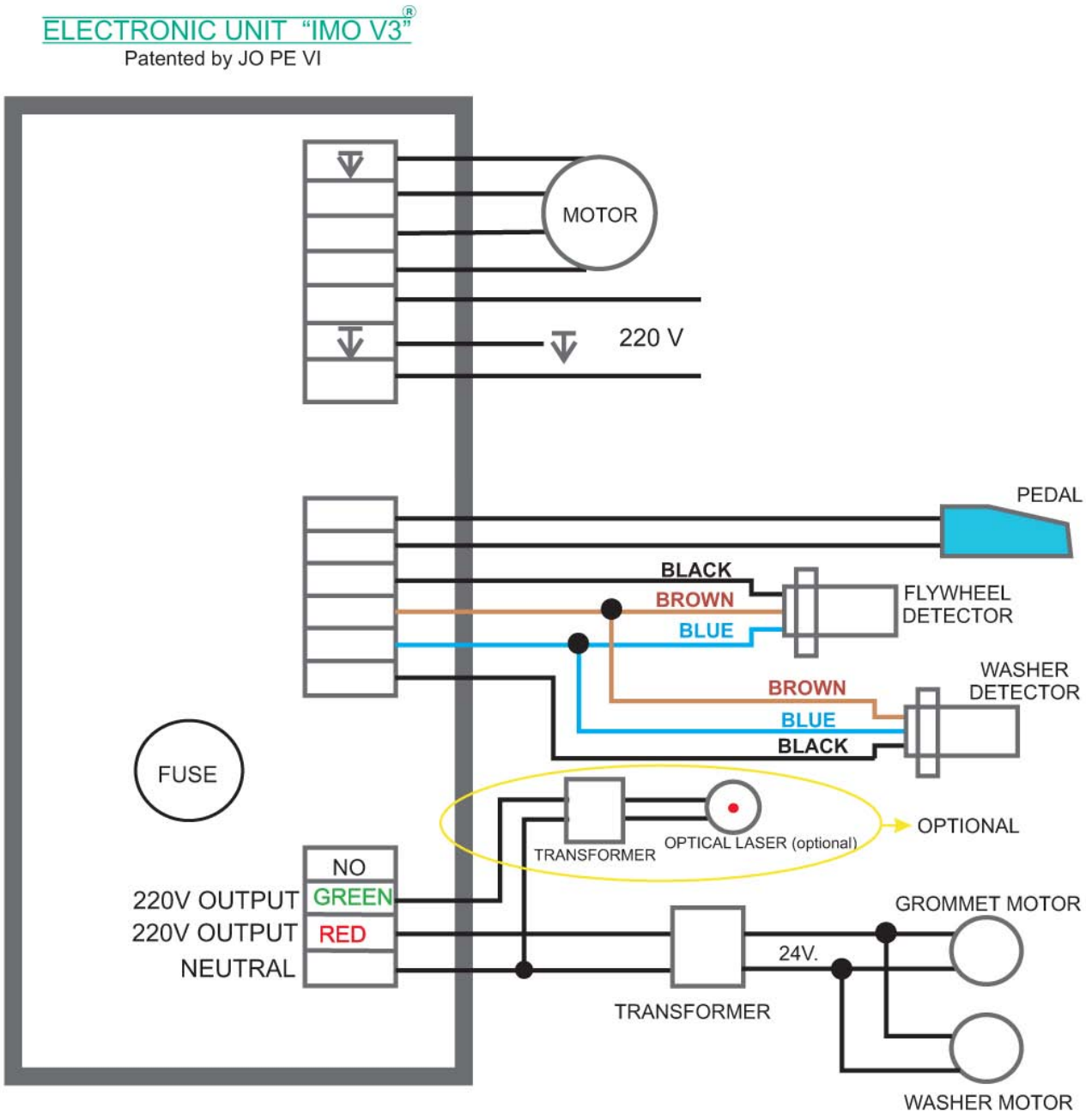
JOPEVI, S.L recommends to have a complete set of dies in stock parts nº: 217 - 218 - 219 and 229.

Part included

Part nº219
Bottom die

Parts recommended

ELECTRICAL INSTALLATION



NOTES