

# Excision®

Dependable Precision






## 310 PGD

MANUAL MITRE BANDSAW MACHINE

*OPERATION MANUAL*

# MACHINE CERTIFICATION AND IDENTIFICATION MARKING

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<b>Machine Model</b>	<b>310 PGD</b>		
<b>Serial Number</b>			
<b>Production Date</b>			
<b>Blade Variable Speed</b>	<b>25 - 90 m/min</b>		
<b>Coolant Motor</b>	<b>0,09/0,12kW - 2800 rpm</b>		
<b>Blade Dimension</b>	<b>3150 x 27 x 0.9 mm</b>		
<b>Main Motor</b>	<b>1.5 kW</b>	<b>Current</b>	<b>16A</b>
<b>Main Voltage</b>	<b>415 V</b>	<b>Cycle</b>	<b>50 - 60 Hz</b>
		<b>Made in Turkey</b>	

**NOTE : This manual is a part of the machine and must accompany it if moved within the company or sold.**

## ATTENTION !!!

**BEFORE USING THE MACHINE, PLEASE READ THIS MANUAL CAREFULLY. ALL EXPLANATIONS, INSTRUCTIONS AND WARNINGS ARE INTENDED TO PROTECT YOU!**

# EC DECLARATION OF CONFORMITY

The manufacturer declares that the machinery described herein conforms to the following EC directives and harmonised standards and relevant essential health and safety requirements.



**Manufacturer:** Excision Pty Ltd

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**Machine type/model:** PGD 310

**Applicable EC Directives:**

Machinery Directive 2006/42/EC,

Low Voltage Directive (LVD) 2014/35/EC ve

Electromagnetic Compatibility (EMC) Directive 2014/30/EC

**Applicable Harmonized Standards:**

TS EN ISO 12100, TS EN ISO 13850, TS EN 349+A1,

TS EN ISO 13850 , TS EN 14120, TS EN ISO 13849-1, TS EN 14119 , TS EN ISO 60204-1, TS EN ISO 14118

## WARRANTY CONDITIONS

The machine is under the warranty of Excision Pty Ltd For a period of 2 years for mechanical parts, 1 year for electric and electronic parts from the date of purchase. This warranty is subject to all of the terms and conditions listed below:

1. This warranty is valid only if the **Warranty Registration Form** is filled in and returned to the manufacturer or its authorized dealer within **two months after the** date of purchase.
2. The obligation of the manufacturer under this warranty shall be limited to repairing or replacing components which proves defective and which our examination shall disclose to our satisfaction to be defective.
3. Defects due to improper operation, misuse, neglect, alteration, irregular voltage conditions, inadequate wiring, improper installation (**all electrical and electronic components, all electrical motors etc.**) and due to accidents or any damage caused by transportation, flood, fire, natural disasters, theft are not included in this warranty and are strictly the responsibility of the purchaser.
4. Any part returned to Excision or its authorized dealer under the terms of this warranty shall be on the basis of transportation charges prepaid by the customer and must be accompanied by a record of the machine model code and serial number.
5. This warranty does not apply to the following components; band saw blade, blade pressure pads or brackets and blade guide bearings **because of being consumables**.
6. Manufacturer and authorized dealer cannot be blamed within maximum repair period for the material or moral damage. Apart from that act the period as Warranty Conditions and there will not be done any retroactive requirement.

Excision Pty Ltd

**Dealer:**



**WARRANTY REGISTRATION FORM**

Machine Model : .....

Serial Number : .....

Invoice Date : .....

Invoice Number : .....

**Dealer:**

**Customer:**

.....

.....

**Important!**

This form must be duly completed and returned to the manufacturer or its authorized dealer within **two months** after the date of purchase. Failure to do so will void the warranty.

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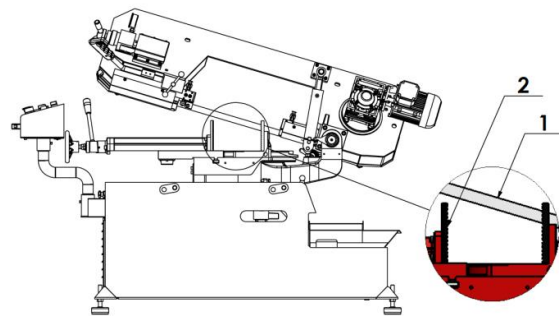
# 1 SAFETY

## 1.1 . Safety Rules

- Never allow unqualified persons to operate or interfere with the machine
- It is important to develop personal safety awareness. Observe all related safety regulations and pay attention for hazardous conditions. Discuss these conditions with your supervisor.
- You must use personal protective equipment, like safety glasses, gloves, safety work shoes.
- Do not remove warning signs and/or instruction plates off the machine.
- Make sure that all machine controls are set for the desired mode of operation, whenever the setting of the machine control is changed, run the machine in slow mode to make sure it operates as expected.
- Never disable any safety device to avoid its assigned function. These devices are intended to protect both the machine and its operator.
- Do not load, unload, operate or adjust the machine without proper instructions.
- This machine is specifically designed for cutting general metal material. Do not cut wood and analogous material, meat, fishery, food and agriculture products, combustible and radioactive materials.
- Enough space should be provided around the machine to avoid hitting and provide a convenient operation.
- Do not leave any tool on the machine after use. Do not put work stock or tools around the machine, to avoid injury.
- Do not operate the machine with its safety guards removed.
- Do not wear gloves when operating through control panel.

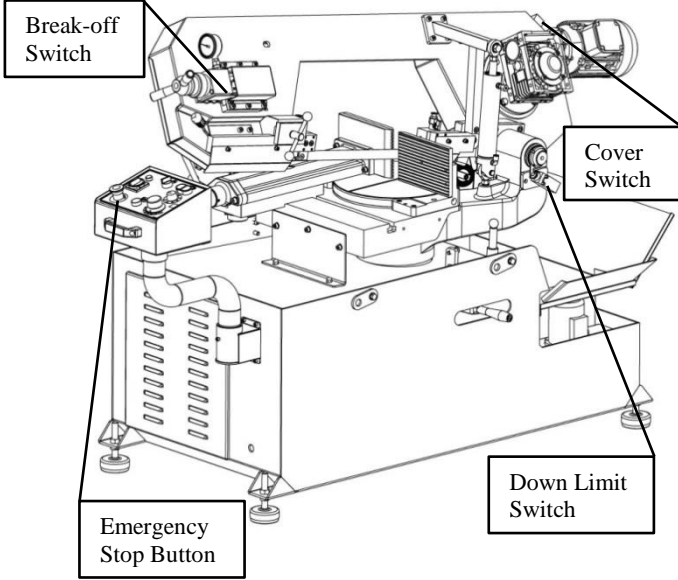
- Wear gloves only when loading/unloading the material, changing the blade and chip brush.
- Never touch the blade, moving work stock, nor put your hands into the vise area or chip conveyor unit until the machine halts completely.
- When selecting blade, blade speed and coolant, please refer to the operation manual or related documents.
- Before installation and operate the machine check the sufficiency of the earth of the machine to your electrician. Do not operate the machine without the earth.
- Determined and declared bench life of the machine by the Ministry of Industry and Trade is 10 years.
- For longevity please follow the maintenance directions at the manual.

## 1.2. Danger Zones on the Machine



- Do not open the guards/covers during operation.
- During cutting process keep your hands and fingers away from running blade which should on number one.
- During cutting process keep away from zone number two. It may cause hitting and dropping injury.
- Do not Touch electrical panel if you are not expert on electric.

### **1.3.Safety Equipments and Assignments**



#### **1.3.1. Break-off Switch**

This switch is used for to stop the machine while the blade pressure gets smaller than adjusted ones. The main causes of decrease in pressure are; dulling, cracking or breaking of blade. Operating the machine under these conditions endanger the operator.

#### **1.3.2. Cover Switch**

This switch provides to shut down the machine while the bow cover is open. Running the machine may cause wounding and serious gashes. Machine gives aural warning while the cover is open.

#### **1.3.3. Down Limit Switch**

This switch is used to adjust the bow's nadir to goes down. Down limit switch is a factory setting. Please do not tinker with the down limit switch.

#### **1.3.4. Emergency Stop Button**

Emergency stop button, places on the operator control panel- near the main switch, is red button and you can see it easily. In emergency cases, press to this button to stop the machine. Machine does not run while the button is

pressed. To rerun the machine, please turn left and release the button.

### **1.4. Warning Labels and Assignments**

#### **1.4.1. Glove Label**



Please use personal protective equipment, like glove, during operation and while changing the blade.

#### **1.4.2. Electricity Neutral Warning Label**



In this label, we declared the instructions how to make

the electric connection before installing machine or after handling the machine.

#### **1.4.3. High Voltage Label**

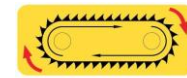


This label shows high voltage risk parts. All electrical connections should be done by a qualified electrician.

#### **1.4.4. Safety Equipments Label**



All the safety devices and guards are designed to intend to protect the operator. Please do not remove these safety guards.



#### **1.4.5. Arrow Label**

Blade's direction of rotation belongs to machine. Arrow label on the machine shows blade's direction of rotation. Please pay attention on direction of rotation while changing blade.



## 2 DESCRIPTION AND PROPERTIES

### 2.1. Technical Properties of the Machine

<b>MAIN MOTOR</b>	<b>1,5 kW, 1400 rpm</b>
COOLANT PUMP	0,12 kW, 2800 rpm
CUTTING SPEED	25-90 m/min
BLADE DIMENSION	3150x27x0,9
BLADE TENSION	Min. 30 bar -Max. 50 bar
BLADE QUALITY	Bi Metal
HEIGHT OF VISE BED	750 mm
MACHINE WEIGHT	480 Kg.
MACHINE DIMENSION	940 x1160 x 1980 mm
NUMBER OF PHASE	2
FREQUENCY	50-60 Hz
MAIN VOLTAGE	380 V

### 2.2. Standard Equipment

- 1 Bandsaw Blade
- Hydromechanical Band Tension
- Invertor
- Adjustable Tension Band Wheel
- Double way miter cutting ( Right side 60°, Left side 45° )
- Fast Clamping Arm
- Adjustable Length Setting Bar

### 2.6. Properties Table According to Metal Sawdust

Filling								
<b>Shape of the Filling</b>	Thick, hard and short	Thick, hard and brittle	Thick, hard and curled	Thick, hard and curled	Thin, spiral and curled	Thin, spiral and curled	Like dust	Thin and very curled
<b>Colour of the Filing</b>	Blue or brown	Blue or brown	Silver or yellow	Silver	Silver	Silver	Silver	Silver
<b>Bandsaw Speed</b>	Decrease	Decrease	Suitable	Increase	Suitable	Suitable	Decrease	Suitable
<b>Advance Speed</b>	Decrease	Decrease	Decrease a little	Decrease	Suitable	Increase	Increase	Decrease
<b>The others</b>	Control lubricant coolant level	Control lubricant coolant level	Control number of teeth	Control number of teeth				Use thick pitch saw

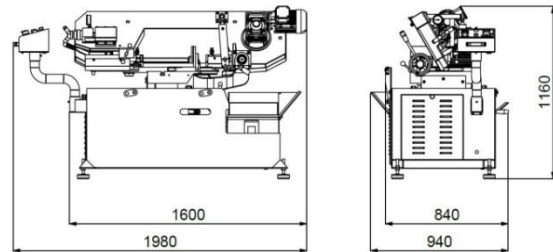
### 2.3. Noise Level

In accordance with the Machinery Directive 2006/42/EC

- The A-weighted continuous acoustic pressure does not exceed 70 dB (A).
- The maximum level of the C-weighted instantaneous acoustic pressure is always less than 130 dB.

**NOTE:** With the machine operating, the noise level will vary according to the different materials being processed and setting up. The user must therefore assess the intensity and if necessary provide the operators with the necessary personal protection.

### 2.4. Machine Dimensions

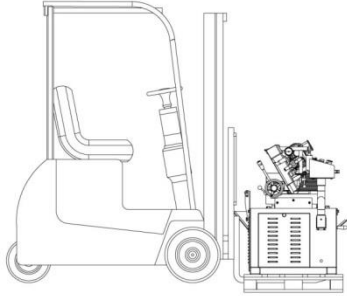


### 2.5. PGD 310 Bandsaw Machine Cutting Capacity

	0°	45°	60°
	250 mm	205 mm	130 mm
	170 mm	205 mm	130 mm
	170 x 310 mm	205 x 240 mm	130 140 mm

## 3 TRANSPORTATION AND INSTALLATION

### 3.1. Handling the Unpacked Machine



Make sure the machine is safely loaded and balanced when moving it with a forklift, failing to do so may cause personal injury or damage to the machine.

### 3.2. After Unpacking the Machine

Put the machine in a dry and sheltered place to prevent damage to the electrical and mechanical components. Apply appropriate lubricant (machine oil or grease) on the slide ways and non-painted areas to prevent rust.

### 3.3. Environmental Conditions

- Mains voltage and frequency complying with the machine motor characteristics.
- Environment temperature from  $-10^{\circ}\text{C}$  to  $50^{\circ}\text{C}$
- Relative humidity %10 to %90

### 3.4. Machine Placement and Position

The followings should be considered when positioning the machine:

**The floor:** The machine should be placed on a levelled concrete floor.

**Working Area:** Sufficient space should be allocated around the machine for comfortably loading and unloading work stock and for easy access during maintenance and repair. When necessary, all doors and access panels should be opened without interference.

**Lighting:** The machine and its surroundings should be well lit for operator's safety and for a convenient operation and maintenance.

## 4 PREPARATION BEFORE OPERATION

### 4.1. Cleaning

Unpainted and uncoated machine surfaces were coated with a rust inhibitor prior to shipment. The rust inhibitor should be cleaned with an appropriate solvent. To prevent rust on unpainted surfaces, a light coat of machine oil can be applied.

### 4.2. Lubricating

Lubricate all the sliding parts before starting.

### 4.3. Coolant

The machine is shipped with the coolant reservoir empty. Fill the reservoir with coolant until it is full. A sight gauge is mounted on the machine base to check coolant level.

**Caution:** Do not run the coolant pump without coolant in the reservoir. Otherwise, the coolant pump will be damaged.

### 4.4. Electrical Power Connection

1. Electrical connection must be done by a qualified electrician, in conformance with the required electrical standards of your area.
2. Turn off the main circuit breaker of the area in which the machine will be located.
3. Machine's power cord should be connected to an appropriate power source; make sure the voltage rate matches the one required for the machine.
4. It is important that the shipping brace should be removed from the saw before taking any further step.

**Note:** If the 'emergency stop button' is depressed, it must be released for the machine to run.

#### 4.5. Final Inspection Checklist before Operation

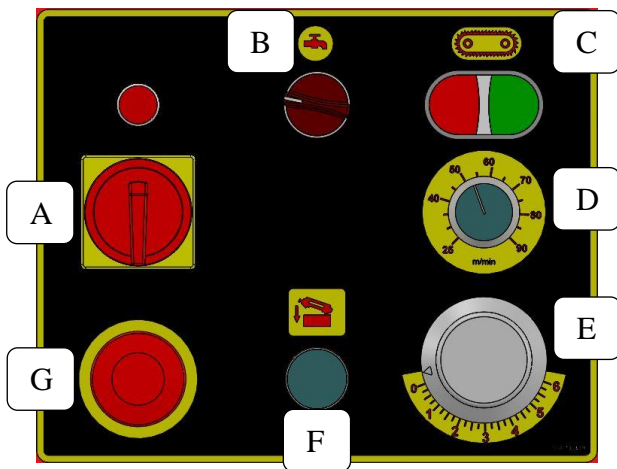
After installing the machine, a final inspection should be performed by considering the following checklist;

- Any missing components, guards or panels
- Removal of the shipping brace
- Lost fasteners and fittings, hoses and conduit
- Missing or damaged items
- Coolant, oil, or hydraulic leads
- Tools and others materials left on saw
- Safety measures, general condition and readiness for use

### 5 OPERATION

In this section, the functions of the machine will be described to guide the operator to become familiar with the machine and its components.

#### 5.1 Control Panel



##### A) Main Power Switch

The machine is ready when the main power switch is turned on.

##### B) Coolant Pump On/Off

Coolant pump switch on/off via this button.

**Caution:** Do not operate the coolant motor while coolant tank empty. Otherwise, the coolant motor will be damaged.

##### C) Open/Close Switch

Cutting process can be started and stopped with these buttons.

##### D) Blade Speed Arrangement Button

Blade speed can be adjusted 25-90 m/min by this button.

##### E) Bow Down Speed Valve

Bow down speed can be adjusted by this button.

##### F) Bow Down Button

To move bow down manually.

##### G) Emergency Stop Button

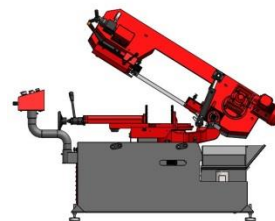
The "Emergency stop" push button stops *all functions* of the machine. The machine will not function until "Emergency stop button" is released. To release the emergency button, turn it in the direction indicated on its hub.

**Caution:** The "Emergency stop" push button does not disconnect the machine from the main power supply. To avoid from serious injury or death due to electricity shock, turn the main power switch off or disconnect the machine from the main supply before servicing it.

#### 5.2. Blade Changing Procedure

In order to achieve accurate and efficient cuts, it is important to use a sharp and correct blade for the material being cut.

- 1- Raise the saw frame to its highest position



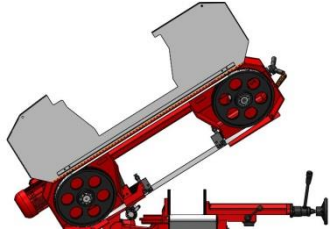
- 2- Turn the hand-wheel to left to loosen the blade.



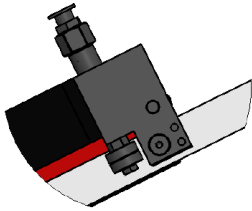
- 3- Switch off the main power switch of the machine.

**Caution:** Avoid serious injury by turning the machine's power off at the main switch before adjusting, servicing, or cleaning the saw.

- 4- Open all the wheel covers on the saw frame.



- 5- Loosen the bolts on the carbide blade guides. Lower the blade from bandsaw guides.



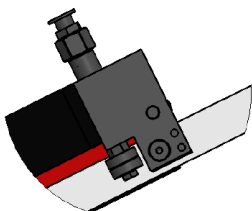
- 6- Lower the chip brush away from the blade by loosening the chip brush locking lever.

**Caution:** Wear heavy protective work gloves and safety glasses when handling blades to avoid injury.

- 7- Carefully remove the blade from the saw.  
8- Uncoil the new blade and insert the blade around the band wheels.

**Warning:** New blades are generally shipped in a coiled form. This puts them under tension and can suddenly be uncoiled. Take extreme caution to prevent injury when uncoiling the new blade. Make sure you wear safety gloves and glasses. Locate back of edge the blade into the carbide inserts (pressure pads) and guide bearings so the teeth point in downward direction.

- 9- Press the back edge of the blade firmly against the back-up of the carbide guides

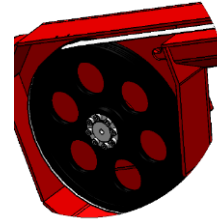


- 10- Turn on the main switch of the machine.

- 11- Turn the hand-wheel to right (to tensioning position) to apply a *light pressure*.



- 12- Press the back edge of the blade firmly against the flange of each band wheel.



- 13- Turn the hand-wheel to right (tensioning position) to exert sufficient tension on the saw blade.



- 14- Turn off the main switch of the machine.

- 15- Turn the bolts clockwise to tighten the carbide pressure pads against the blade. Tighten the carbide guides by hand only.

**Note:** Do not over-tighten the carbide pressure guides.

- 16- Adjust the position of the chip brush so that the bristles reach fully into the gullet of the blade without extending beyond. Then lock the chip brush in place.

**Important:** Improper positioning of the chip brush will result in excessive blade or chip brush wear.

- 17- Make sure that you close and secure the band wheel covers and blade guards at the end of this process.

## 6 MAINTENANCE

The maintenance schedule is listed below on the basis of daily, weekly, monthly and six-monthly intervals. Utmost care should be given to the maintenance. Poor maintenance or neglecting some of its requirements will result in premature machine failure and/or unsatisfactory performance.

### **6.1. Daily Maintenance**

- Clean/empty the chip reservoir whenever necessary.
- Use suitable brush with soft bristles. Do not use hard materials to clean the machine.
- Check whether the emergency stop button functions properly. Check that the entire wheel covers other safety guards are in place and fixed properly.
- Check the wear on the teeth of the saw blade.
- Check the level of coolant.
- Do not use pressured air for cleaning the machine; expect for unblocking the coolant pipes.

### **6.2. Weekly Maintenance**

- Clean the wheels, vise, slides and bearings.
- Pull the movable jaws of the vise back and clean the slides, beds and other moving components and lubricate with thin grease.
- Apply grease to the main vise roller drive mechanisms gearbox and vise roller bearings. Check the condition of these mechanisms and clean them if necessary before applying grease. Use EP type grease for vise roller drive mechanisms gearbox.
- Test the quality/condition of the coolant and water/boron oil ratio; if necessary renew it.
- Non-painted parts should be wiped with a clean cloth and oiled with protective machine oil to prevent rust.
- Coolant tank should be cleaned against chips to prevent them accumulating onto the floor of the tank.

### **6.3. Monthly Maintenance**

- Check the level of hydraulic oil from the site gauge. If the level drops below indicated min. line, add hydraulic system oil of grade 46.
- Check the conditions of saw blade guide bearings and carbide pressure pads at the ends of guide arms. They should be replaced when they become worn or loose.
- Check the gaps in the bearings of the wheels. Replace them if they are worn.
- Check the condition of hydraulic systems (cylinder/pistons, pipes/hoses, sealants and hydraulic couplings.)

### **6.4. Six-Monthly Maintenance**

- Perform all monthly maintenance checks for six-monthly maintenance too. And replaces those parts of the machine that do not function as expected or that are excessively worn.
- Check the work stock feeding rollers for wear and renew them if necessary.
- Check the vise roller drive mechanisms gearbox; renew the worn gear wheels if necessary.

### **6.5. Periodic Maintenance**

- Renew the wheel bearings.
- Renew the carbide pressure pads and the saw blade guide bearings.
- Check the viscosity/condition of the hydraulic oil. Renew if it is necessary.
- Check the worn/damaged/malfunctioning components that do not function properly.

## 7 TROUBLESHOOTING

Some of the generally faces troubles and their possible causes and/or remedies are presented in the following table.

PROBLEMS/FAULTS	POSSIBLE CAUSES AND REMEDIES
<p style="text-align: center;"><b>Non-straight cuts</b></p>	<ul style="list-style-type: none"> <li>• Insufficient blade tension</li> <li>• Incorrect or loose work stock clamping</li> <li>• Use coarser blade pitch</li> <li>• High feed rate or pressure</li> <li>• Tooth set damage</li> <li>• Guide arms are loose or set too far apart</li> </ul>
<p style="text-align: center;"><b>Premature blade breakage, premature tooth wear and chipped tooth</b></p>	<ul style="list-style-type: none"> <li>• Feed rate too high or too low</li> <li>• Check your coolant</li> <li>• Check/adjust carbide blade pressure pads</li> <li>• Check wheel alignment</li> <li>• Allow enough clearance before starting cut</li> <li>• Reduce band tension when the machine isn't operated</li> <li>• Cutting speed too high</li> <li>• Wrong tooth pitch</li> <li>• Incorrect or loose work stock clamping</li> <li>• Ineffective coolant application</li> <li>• Improper break-in period</li> <li>• Perform scheduled maintenance</li> </ul>
<p>Despite taking all necessary action, if a fault persists, you should call the service</p>	

## **8 DISMANTLING**

If the machine is to be scrapped;

1. Qualified personnel should carry out all dismantling process.
2. Switch the machine off and disconnect the power supply.
3. Drain the hydraulic oil and coolant.
4. Revert the preceding setting procedure for dismantling the machine.
5. Separate the material to be disposed of depending on their types and composition and have them collected and/or recycled by waste disposal services.

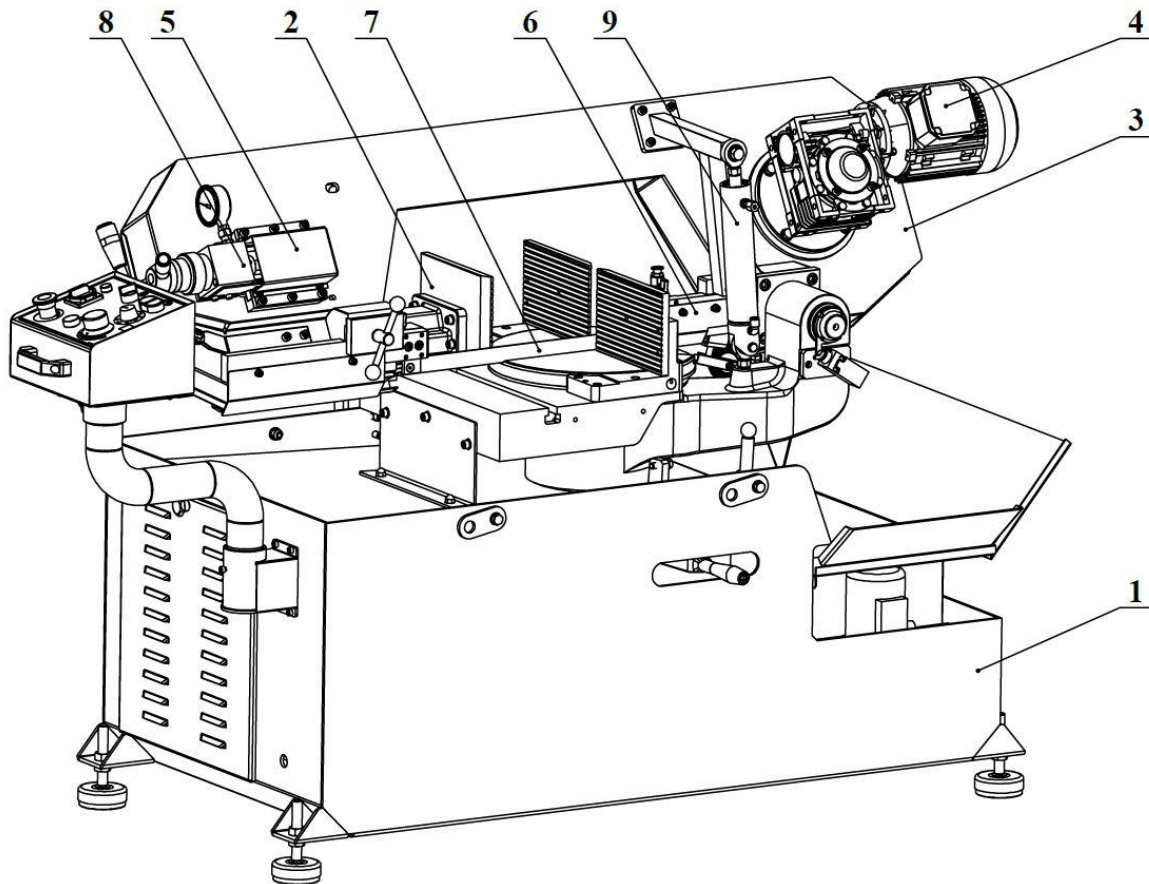
### **ORDERING SPARE PARTS**

When ordering spare parts, you must state;

MACHINE MODEL :  
SERIAL NUMBER :  
PART REFERENCE NUMBER :  
PART NAME :

Without these references we will not supply the spare parts.

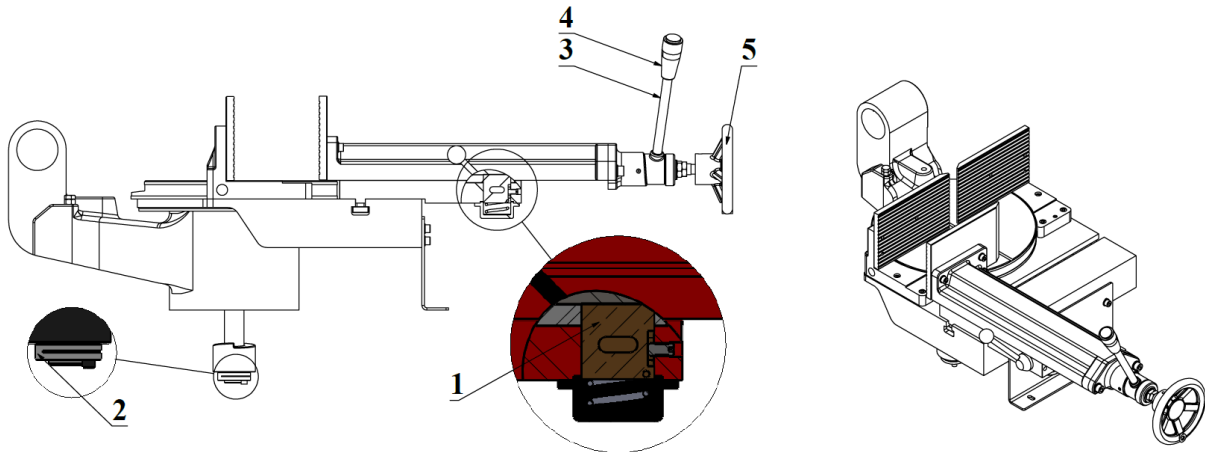
## 9 SPARE PART LIST



Part No	Part Name	Q.ty	Description	Part Code
09	Bow Lift Cylinder Assembly	1		151 06 12 150
08	Pressure Indicator Assembly	1		151 06 10 000
07	Band Saw	1		153 03 2216
06	Blade Guide Assembly	1		151 03 15 005
05	Blade Tensioning Assembly	1		151 06 11 001
04	Gearbox Assembly	1		151 06 08 001
03	Bow Assembly	1		151 06 04 000
02	Clamp Assembly	1		151 06 06 001
01	Machine Base Assembly	1		151 06 01 001

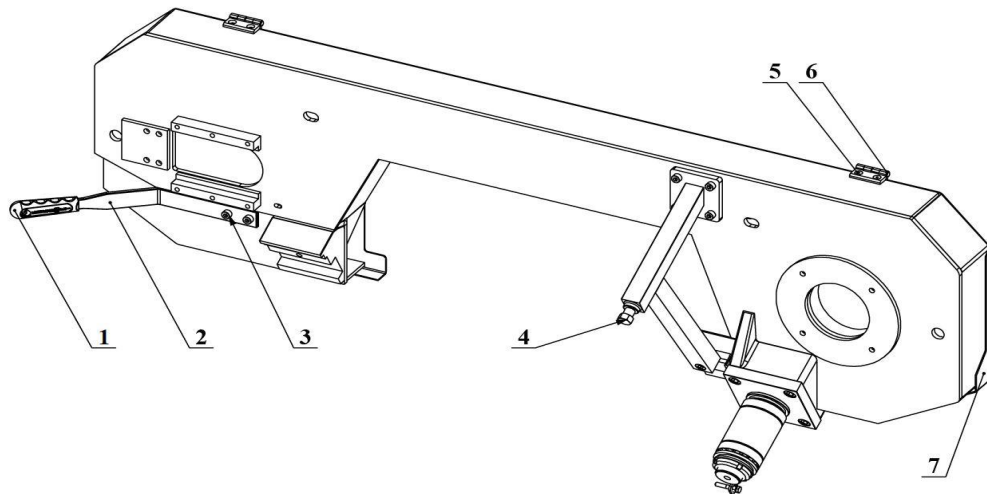


## 9.2. CLAMP ASSEMBLY



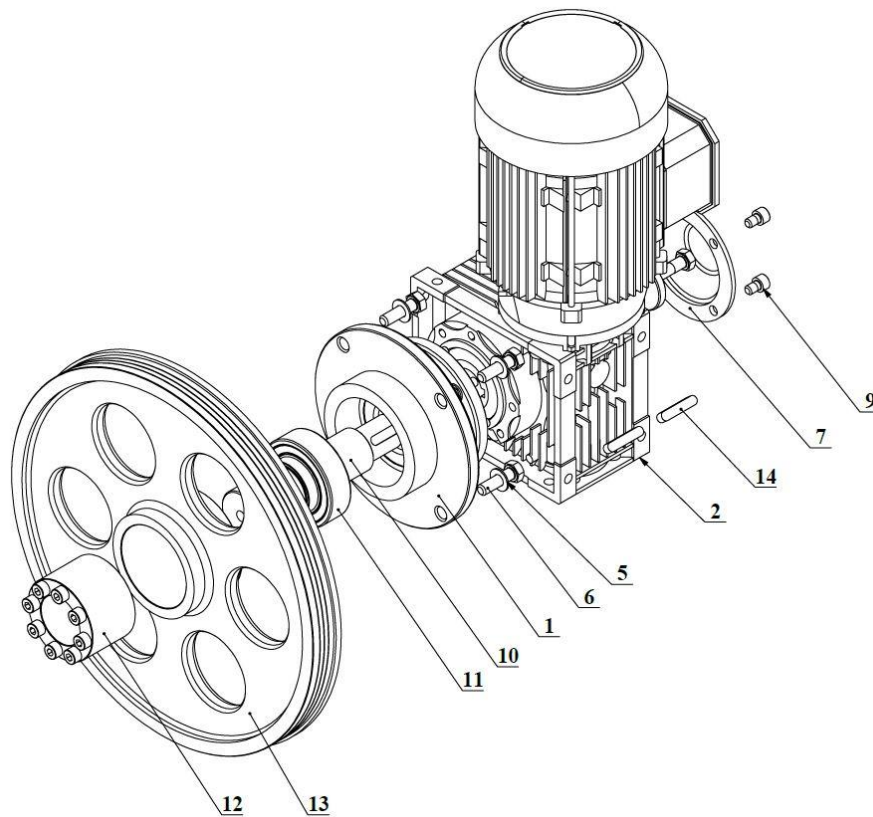
Part No	Part Name	Q.ty	Description	Part Code
05	Plastic Wheel	1		151 06 06 118
04	Bakalite Nut	1		150 06 1331
03	Vise Pressure Mile	1		151 02 06 320
02	Clamp Mile Nut	1		151 06 06 107
01	Clamp Nut	1		151 06 06 115
<b>PART NAME: CLAMP ASSEMBLY</b>			<b>PART CODE: 151 06 06 001</b>	

## 9.3. BOW ASSEMBLY



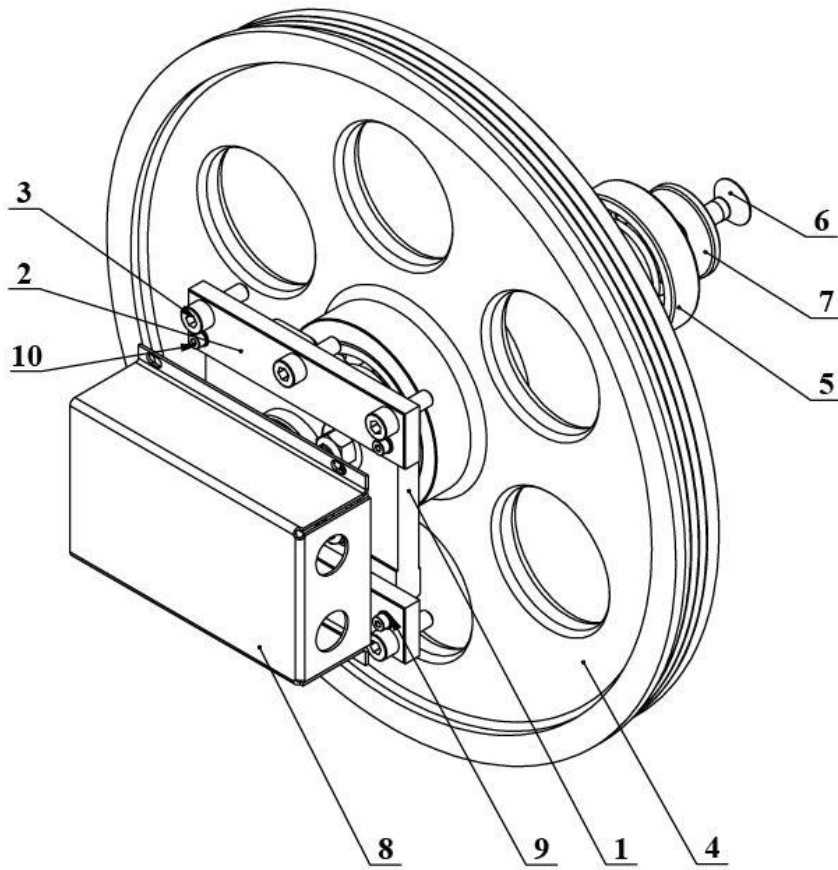
Part No	Part Name	Q.ty	Description	Part Code
07	Bow Cover	1		151 06 04 153
06	Backflap Hinge	2		150 06 1540
05	Bolt	4		150 06 531
04	Bow Lift Mile	1		151 06 04 141
03	Bolt	2		150 06 948
02	Lift Arm	1		151 02 04 121
01	Knob	1		150 06 1440
<b>PART NAME: BOW ASSEMBLY</b>			<b>PART CODE: 151 06 04 000</b>	

## 9.4. GEARBOX ASSEMBLY



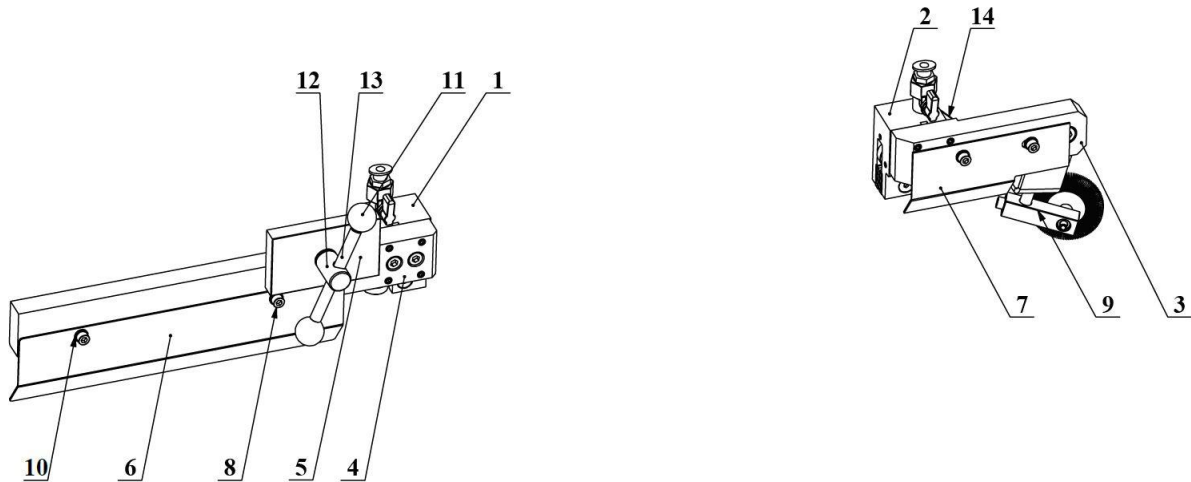
Part No	Part Name	Q.ty	Description	Part Code
14	Wedge	2		150 05 686
13	Gearbox Side Blade Wheel	1		151 06 08 102
12	Conical Fixing	1		150 06 1282
11	Bearing	1		150 06 1563
10	Gearbox Mile	1		151 06 08 104
09	Bolt	4		150 06 199
08	Gearbox Back Shim	1		151 03 08 210
07	Gearbox cover	1		151 03 08 010
06	Bolt	5		150 06 039
05	Shim	4		150 06 318
04	Bolt	8		150 06 1027
03	Shim	8		150 06 176
02	Gearbox With Motor	1		150 02 107
01	Gearbox Flange	1		151 06 08 103
<b>PART NAME: GEARBOX ASSEMBLY</b>			<b>PART CODE: 151 06 08 001</b>	

## 9.5. BLADE TENSIONING ASSEMBLY



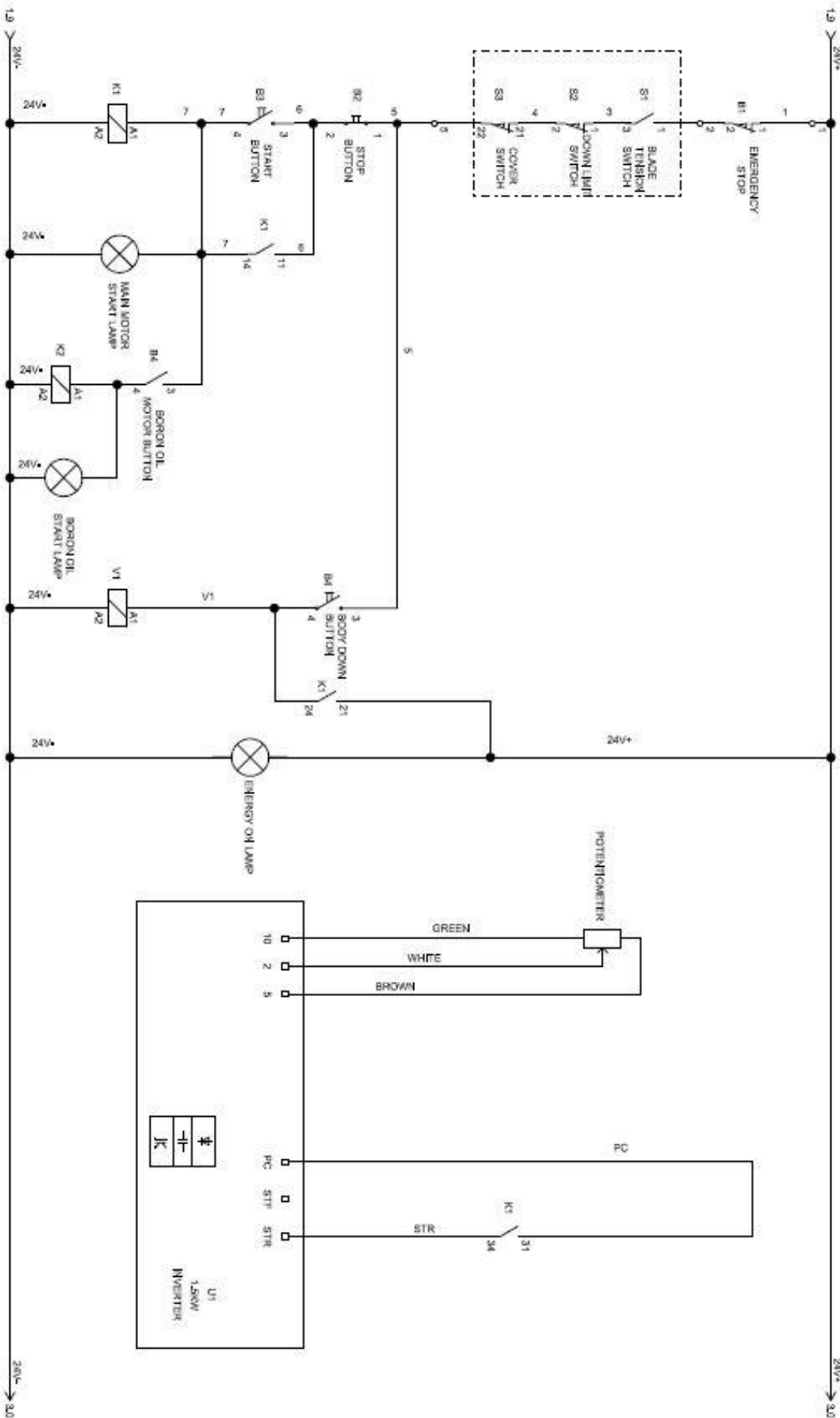
Part No	Part Name	Q.ty	Description	Part Code
10	Bolt	4		150 06 133
09	Shim	4		150 06 172
08	Protection Cover	1		151 03 11 650
07	Wheel Shim	1		151 02 11 155
06	Bolt	1		150 06 1285
05	Bearing	2		150 06 112
04	Wheel	1		151 06 11 102
03	Bolt	6		150 06 201
02	Guide Plate	2		151 03 11 500
01	Blade Tensioning Group	1		151 03 11 202
<b>PART NAME: BLADE TENSIONING ASSEMBLY</b>			<b>PART CODE: 151 06 11 001</b>	

## 9.6. BLADE GUIDE ASSEMBLY



Part No	Part Name	Q.ty	Description	Part Code
14	Back Protection Cover	1		151 03 15 956
13	Pressure Arm Mile	1		151 09 15 800
12	Locking Arm	1		151 09 15 700
11	Bakalite Nut	2		150 06 298
10	Shim	4		150 06 055
09	Bolt	4		150 06 201
08	Bolt	4		150 06 134
07	Fixed Protection Cover	1		151 03 15 955
06	Blade Protection Cover	1		151 03 15 600
05	Blade Slide Fixed	1		151 03 15 500
04	Mobile Blade Guide	1		151 03 15 307
03	Fixed Blade Guide	1		151 03 15 306
02	Right Block Complete	1		151 03 15 112
01	Left Block Complete	1		151 03 15 111
<b>PART NAME: BLADE GUIDE ASSEMBLY</b>			<b>PART CODE: 151 03 15 005</b>	

# 10 CONTROL CIRCUIT DIAGRAM



# 11 POWER CIRCUIT DIAGRAM

