PILOUS Demos

INSTRUCTION MANUAL

ARG 105 mobil • ARG 130 • ARG 130 TK • ARG 130 K ARG 130 mobil • ARG 130 super • ARG 130 super TK ARG 130 super K



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ORIGINAL INSTRUCTION MANUAL

Dear customer,

thank you for purchasing our product. We wish you a lot of success with it in your business. Please pay close attention to the following instructions in order to ensure faultless operation of the machine.

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0. General

This instruction manual provides the user with assistance and information about the PILOUS metal-cutting band saw and the possibilities of use corresponding to its purpose. The instruction manual contains important instructions on a safe, adequate and economically efficient operation. Observing the operating instructions will prevent risks; the repair and outage time costs will be reduced and the machine reliability and life increased. The instruction manual contains instructions based on the valid national safety regulations and environmental standards. The instruction manual must be always available at the machine site. The instruction manual must be read and used by the staff entrusted with the machine installation, transport and storage, use / operation, maintenance and disposal. In addition to the instruction manual and binding safety regulations in force in the user's country and at the service site, it is also necessary to observe the approved rules for safe and professional work.

Letter of Guarantee - Service

The Letter of Guarantee is a separate annex to the instruction manual.

Guarantee Period - see Letter of Guarantee

Conditions for Maintenance of Claims under Guarantee

- Transport and storage of the machine in accordance with the instruction manual
- Use and operation of the machine in accordance with the instruction manual
- · Connection of the machine to the power supply in accordance with the instruction manual

The guarantee does not apply to:

- Violent and mechanical damage of the machine caused by interference of the user or other persons.
- Inevitable events (natural disaster).
- Damage to the machine during transport.
- Storage or installation of the machine in humid, chemical or any other inappropriate environment.
- Wear parts (see the Letter of Guarantee).

Potential claims concerning guarantee and after-guarantee repairs should be made by phone, post or e-mail to the address: see the Letter of Guarantee.

Instruction for the User:

The Seller is obliged to hand over to the User the Letter of Guarantee immediately with the purchase of the product. The Letter of Guarantee must be properly and legibly filled out and confirmed by the Seller's stamp, signature and date of purchase. The Seller is obliged to inform the Buyer about the use and handling of the product.

Data Necessary for Claiming Guarantee (After-Guarantee) Repair

- Machine type
- Letter of Guarantee Number (identical with the serial number of the machine)
- Date of issue of the Letter of Guarantee

0.1. Safety Provisions

The machine design complies with the technical status and the approved safety and technical rules. In spite of this, the user's or the third persons' health can be endangered and/or the machine or other tangible goods may be unfavorably influenced during the operation of the machine. In order to prevent such hazards, it is absolutely necessary to observe the safety instructions in this instruction manual. These safety instructions must be read and understood by the respective persons before the machine has been put into operation. Failure to observe these instructions may lead to serious health and property damage! The safety instructions in this instruction manual are marked with safety symbols / danger spot signs.



0.2. Scope of Use / Use According to Designation

The machine is intended solely for cutting (primarily metal) workpieces. Any other use is considered as inadequate to the purpose. The manufacturer is not responsible for damages arising from such use. The user alone bears the risk. The use complying with the purpose includes also observing the operating instructions and the check and maintenance conditions.

Examples of materials that can be cut: structural steel cementing steel nitriding steel free-cutting steel heat-treated steel roller bearing steel spring steel tool steel high-speed steel cast steel cast iron copper brass aluminium plastics.

Consider the recommendations for use as prescriptive values. In case of special cases, consult the manufacturer.

0.3. Requirements on operators

The machine may only be operated by persons that have been appropriately trained and instructed in safety at work!

The machine may only be operated if it is in perfect condition with respect to technical safety. The user is obliged to check the machine for visually detectable damages and faults at least once per shift. Immediately report to your manager any damages and faults on protective devices and changes in the operation of the machine that threaten safety. No safety devices may be removed, moved, put out of operation or changed during the machine operation. Otherwise any warranty claims shall be null and void! If you need to remove any safety device during repair or maintenance, disconnect the machine from the mains and secure against restart.

- Remove loose parts of clothes, cover long hair.
- Make sure that all other persons stand or move at least 2 meters from the saw blade, protect them from flying chips and prevent harm to them in case the saw blade breaks.
- All persons helping you at the site must be made familiar with all the safety rules.
- The safety rules must be provided on a visible place at the site.
- Keep hands at a safe distance from the saw blade; never adjust the device when the motor is running. Switch off the motor and secure it against restart before you start handling the saw blade



Only persons with adequate electrician qualifications are allowed to open protective covers of the electrical equipment and to work on it.

0.4. Machine Requirements - Safety Devices

Danger of Injury!



No cover on the saw blade in the cutting area! High risk of injury in the operating area of the arm! Before you open protective devices, wait until the saw blade and the grinding wheel stop. Never use the sharpener when you are tired, exhausted, under the influence of medicaments, drugs or alcohol!

Horizontal metal band saw is a cutting machine equipped for saw blade cutting. In order to complete the manufacturing process the grinding wheel must reach the saw blade in the machining area. You can install the protective covers against contact with the saw blade only outside the machining area.

0.5. Protective Covers

The saw blade and its wheels are protected against contact outside the machining area. You can remove protective covers only if the machine is disconnected from the mains and the saw blade is still. Before leaving the band saw, all covers must be closed. To stop the machine in case of emergency, press **TOTAL STOP** button. You can put the machine back to operation only after you unlock the switch by pulling or twisting. The movable bar is fitted with a fixed protective cover guarding the blade outside the machining area.



Manual cleaning and removal of waste when the machine is working or running down is prohibited. A first-aid kit must be available at the workplace. You have to wear suitable work clothes, shoes and adequate protective equipment (eye protection, hearing protection, gloves, steel-toed work shoes) at work. Observe valid health rules concerning the air quality at the workplace.

1. Transport and storage



You can transport and lift the machine only with a forklift. THE USE OF A CRANE PROHIBITED!

1.1. Surface Protection

Machine parts are protected against corrosion by powder coating or a primer and two-component polyurethane varnish. Sliding surfaces are coated with anti-corrosive oil. Surfaces of other parts and components of the machine are treated by galvanization or blackening.

1.2. Packing

ARG 105 Mobil is shipped in a carton, other types are attached by screws to a EUR pallet which can be adapted as a casing or overseas box. The distance between the package and the floor is approximately 100 mm, which enables handling and transportation by a forklift. The machine is packed in a stretching foil that protects it against weather influence during transport.

Standard accessories:

1 bimetallic saw blade M42 (installed), 1 band saw instruction manual, 1 length stop.

1.3. Disassembly/Repacking

Disconnect the machine from the mains • empty and clean the metal chip tank and the coolant tank • clean the machine • apply anticorrosive oil on the sliding surfaces • fix the arm for transport • lift the machine and screw on the EUR pallet • make sure that all protective covers of the machine are in place and fastened • add the machine accessories.



Caution: used coolants belong to the category of special waste! Only a person with adequate electrician qualifications can disconnect the machine from the mains!

1.4. Disposal

When the machine has been definitely put out of operation, it should be disposed of in accordance with the provisions valid in the respective country. We recommend that you contact a specialist waste disposal service.

2. Technical Data

PILOUS P		ARG	105 m	obil	AR (supe	ARG 130 TK (super, mobil) table (sup		Al (super, r	ARG 130 K (super, mobil) with a base	
MAIN MOTOR V 230 - 1 phase		23	30 V, 50 Hz 0,55 kW	Ζ	2	30 V, 50 H 0,55 kW	Z	230 V, 50 Hz 0,55 kW		
MAINÍ MOTOR V400 V 400 - 3 phase					4	00 V, 50 H ,37 / 0,5 k\	z N	400 V, 50 Hz 0,37 / 0,5 kW		z N
COOLANT PUMP MOTOR					230 \	V, 400 V, 5 65 W	0 Hz	230 \	/, 400 V, 5 65 W	0 Hz
SAW BLADE SPEED V 230 - 1 phase			75 m/min			75 m/min			75 m/min	
SAW BLADE SPEED V 400 - 3 phase				40 / 80 m/min		40 / 80 m/min		in		
CUTTING RANGES	[mm]	90°	\ 45°	∑60°	90°	∐ 45°	60°	90°	∐ 45°	∑60°
	Ø	105	70	40	130	115	70	130	115	70
	a a a	105	65	40	130	105	60	130	105	60
	a×b b a	105x110	65x85	40×45	180x100	115x75	70×60	180x100	115x75	70×60
ARM SWING	90° 60° 45° 45°	6	90° 30° 45° 45°			90° 60° 45° 45°			90° 60° 45° 45°	
SAW BLADE SIZE		138	85×13×0,6	5	17	′30×13×0,6	65	17	30×13×0,6	65
SAW BLADE RUNNER WHEELS DIAMETER			160 mm			180 mm			180 mm	
VICE OPERATING HEIGHT	\$		110 mm		130 mm		900 mm			
COOLANT TANK				approximately 15 litres		approximately 15 litres				
MACHINE WEIGHT	Kg	29 kg		77 kg		100 kg				
MACHINE WEIGHT ARG 130 Mobil only	Kg				50 kg			50+17 kg		

Machine noise - measured in conformity with ČSN EN ISO 3746:2011

The acoustic pressure level at the workplace: 74 dB (A), acoustic power level: 87 dB (A).

The measured values exceed the value specified in the Government Regulation No. 176/2008, section 1.7.4.2, article u) and therefore ear protection must be used during the machine operation. The measurement was carried out while the machine was in a steady state and the saw blade speed was 75 m/min and 80m/min. During the operational state with a technical load, the most frequently used technological process was measured. Noise levels measured on the machines may vary depending on the type of cut material, saw blade speed and other factors.

3. Installation

3.1.Space Requirements

ARG 105 mobil, ARG 130 (super), ARG 130 (super) TK and ARG 130 mobil is a machine that can be transported flexibly according to user's needs and no special requirements on the required area need to be followed. Generally, the machine must be set up on a level surface in a way that prevents its vibration. You can install ARG 130 (super) on any suitable and even floor (concrete) in a factory hall. Observe the allowed floor load. Set the machine in level position using 4 screws in corners of the base. Remove the pallet. Set the machine on the place designated for use. Remove the anticorrosion film and dust from sliding surfaces and apply oil. Attach the length stop. Ensure connection to the mains (see section 3.3.). Only for saws with cooling systems: Check whether the outlet coolant pipe has not fallen out of the coolant tank cover during transport and whether it is fitted well inside. Pour the coolant (approximately 15 liters) into the coolant tank.



When handling coolants, risks linked to hazardous substances cannot be avoided. Observe the national norms and recommendations and manufacturer's or your company's operating instructions related to safe handling of coolants.

Recommendations/requirements:

- Allow for sufficient space for the feeding and removal of the workpiece and the machine maintenance the operator's working area should be delineated at 1 m minimum around the machine and 0.5 m around the roller conveyors.
- Install roller conveyors and/or a case for cut pieces collection for a safe handling of workpieces and to prevent accidents due to pieces falling off.
- Install a lift mechanism for heavy workpieces.
- Ensure proper lighting at the workplace







	ARG 105 mobil	ARG 130 (TK, super)	ARG 130 (super) K
Α			610
В			370
C min	440	550	1280
C max	650	810	1540
D min	750	980	980
D max	830	1030	1030
Е	320	420	480
F	220	290	230
G	150	130	130

C min - the arm is lowered C max - the arm is raised D min - the arm is lowered, the vice is closed D max - the arm is raised, the vice is opened

3.2. Machine installation



Protect the machine against humidity, rain and dust!

The machine may be operated in the ambient temperature between + 5° and + 40°C. The average air temperature must not exceed + 35°C within 24 hours. In temperatures below + 5°C the conventional coolants should be replaced by coolants designed for such temperatures.

3.3. Connection to the mains



Such operations must be carried out only by persons with electrician qualifications!

Make sure that the grid voltage, the voltage protection and the connection voltage comply with the power requirements specified in the point 2. Technical parameters. Connect the power cable to a protected 16A socket, in case of direct connection to the mains it is necessary to fit the supply with a lockable master switch. In machines with a 230V single-phase motor the 230V plug is installed. When connecting V400 (with a three-phase 400V motor) machines to the mains (3 NPe, 50 Hz, 400 V, TN-S), mind the colour coding of wires carefully: L1 brown, L2 black, L3 gray, N blue, PE yellow-brown. Improper connection of the neutral or PE wires may lead to damage of the electrical equipment or to and electric shock! If the motor rotates in an incorrect direction, swap the conductors L1 brown, L2 black on the junction box.



Failure to observe the aforementioned may lead to incorrect rotation of the bandsaw and the coolant pump. Danger: Damage to the machine!

3.4. Nameplate

	PILOUS D	® ()
MANUFACTURER	Producer Pilous-pásové pily, spol. s r.o.	
MANUFACTURER'S ADRESS	Address Żelezná 9, 619 00 Brno, CZ	
MACHINE MODEL	Model ARG 130 TK	Year 2019 YEAR OF MAN
SERIAL NUMBER	Serial No. 03/16/0067	77 kg MACHINE WEI
TOTAL WATTAGE	P 0,4kW	I 1,6A RATED CURRE
OPERATING VOLTAGE	○ u 1x230V/50Hz ·	

The data are only illustrative

IUFACTURE GHT ENT LTAGE

4. Machine description

Manual metal-cutting band saws allow for cutting of a wide range of different materials. Arm feed to the cut, arm uplift, workpiece feed, clamping and removal of workpieces are carried out manually. In ARG 130 super the feed to the cut is carried out by the weight of the arm with the possibility of regulating the vertical vice pressure by a system of springs. A welded metal saw blade serves as the cutting tool. The saw blade is mechanically tensioned on the blade wheel. It is powered by a wheel that is powered through a worm gearbox by a motor. In the machining zone, the saw blade is guided through the saw blade guide heads. Outside the machining zone the saw blade is protected by moving and fixed guards.

A	arm	F vice	 K movable bar clamping lever L saw blade tensioning M control handle N movable bar
B	saw blade	G turntable	
C	fixed bar	H base	
D	gearbox	I coolant tank with a pump	
E	motor	J arm swing locking lever	N movable bar

ARG 105 mobil



ARG 130 (super) TK







4.1. Control panel

V400 control panel



Basic features



4.2. Vice - Workpiece Clamping

Insert the workpiece between the fixed and the movable jaw of the vice so that it is supported by the vice loading surface and vibrations during cutting are prevented to the maximum possible extent. Before tightening the vice jaw, make sure the workpiece is inserted parallel with the fixed clamping jaw. You cannot align long heavy workpieces to the correct position by the movable clamping jaw. **Check whether the workpiece is properly clamped, otherwise you risk its ejection during cutting!**

4.3. Cutting Angle Settings

ARG band saws allow for both perpendicular cuts and cuts up to 60 °. The design of the machine allows for angular cutting without a need to handle the workpiece. The stop bolts facilitate a stable limit angle setting. To set the desired cutting angle, swing the entire arm and the turntable after releasing the arm swing locking lever or the adjustable table lever. After you set the desired angle (based on the angular scale), the turntable with the arm will lock using the arm swing locking lever or the adjustable table lever. The desired arm swing angle will subtract from the angle scale. When swinging the arm, raise it to about 20 mm above the loading surface of the vice in order to prevent the collision of the saw blade with the loading surface of the vice.



ARG 130 (TK, super), ARG 130 (super) K FIXED ARM CONTINUOUS ARM SWING STOP 60° SWING RANGE MOVING JAW FIXED JAW 0 0 ARM SWING LOCKING LEVER 90°-60 ANGLE SCALE 0 Q FIXED STOP 90° ARM SWING TURNTABLE

4.4. Saw Blade Guidance

The saw blade is guided by two guide heads both behind and in front of the cutting line (see the picture in Section 4.6.). The heads are fitted with eccentrically placed bearings and hardened steel blade guides that allow easier rewinding of the saw blade combined with the wheel guidance. The fixed guide head is attached to a fixed bar. The movable guide head is attached to a movable bar and moves to the distance of 5-10 mm from the movable clamping jaw of the vice. Before the cutting, always check whether the movable guide head and blade cover do not collide with the movable clamping jaw of the vice or with the workpiece within the whole range of arm descent. The guide bars are fitted with protective covers of the saw blade up to the machining area.



4.5. Replacement, Tensioning and Adjustment of the Saw Blade



A timely replacement of the saw blade is needed to achieve good cutting performance, surface finish quality and compliance with workpiece dimensions. Blunt saw blades cause high consumption of electrical power, uneven cuts and rough cutting surfaces. One of the decisive factors affecting the quality of the cut and the life of the cutting tool is the correct and sufficient saw blade tension.



Caution: You can remove protective covers only if the machine is disconnected from the mains and secured against restart.

Caution: Danger of injury by the sharp teeth of the saw blade. Use protective gloves. Do not reach between the wheels and the saw blade.

Disconnect the machine from the mains and secure it against restarting. Raise the arm to the upper position. Remove the protective covers of the saw blade and remove the back cover of the arm. Use the tensioning star nut to loosen the tensioning wheel and the whole blade. Take the saw blade off the wheels and push it off the guide heads (see Section 4.6.). Insert the new saw blade in the guide heads. Put it on the wheels and tension the saw blade by a tensioning star nut. Tension the star nut, so that the disc springs are fully compressed (no light coming through)! In this way, you can achieve correct tensioning of the saw blade. Remove the protective covers of the saw blade and remove the back cover of the arm. Restart the saw blade with the START button and let it turn once. Make sure that the blade is correctly placed in the guide heads. Restart the saw blade and let it turn once. Disconnect the machine from the mains and secure it against restarting. Remove the protective covers of the saw blade and the back cover of the arm. Make sure that the saw blade is correctly fitted on the guide heads and correctly installed on the wheels (see figure). If the saw blade is not correctly placed on the wheels, loosen the tensioning star nut and, using the wheel tilt adjusting screw, adjust the position of the saw blade on the wheel (see the picture). Tension the star nut, so that the disc springs are fully compressed (no light coming through)! Remove the protective covers of the saw blade and remove the back cover of the arm. Connect the machine to the mains and carry out a saw blade trial run. Disconnect the machine from the mains, remove the protective covers of the saw blade and the back cover of the arm. Check the placement of the saw blade on the wheels. Repeat the procedure, if required. For a quick check of saw blade positioning on the wheels, you can use the BLADE GUIDANCE CONTROL OPENING. Remove the protective covers of the saw blade and remove the back cover of the arm. Connect the machine to the mains and carry out the cutting.

4.6. Guide Heads Adjustment

The correct setting of the bearings and the hardened steel blade guides in the guide heads substantially influences the saw blade life and the quality of the cut. The eccentrically arranged guide head bearings must be set in such a manner that the saw blade surface is parallel to the surface of hardened steel blade guides with a minimum play (clearance) between the plates and the blade.



to center between guide bearings

Incorrect saw blade guidance

Guide Head Setting Procedure

Disconnect the machine from the mains and secure it against restarting. Raise the arm to the upper position. Set the movable guide head, so that the distance between the guide heads is approximately 15 cm. Disconnect the inlet pipes from coolant valves (if the machine is equipped with a saw blade cooling system). Remove the protective covers of the saw blade and the back cover of the arm. Loosen the tensioning star, take the saw blade off the wheels and push it off the guide heads. Unscrew the guide heads gradually from the fixed and movable bars, turn them by 180° (with bearings and hardened steel blade guides facing upwards) and screw back to the bars. Make sure that the guide heads are perpendicular to the guide bars and that the height of the guide heads is identical. If you find special washers between the quide head and the bar, make sure you place them back afterwards. Check the tightening of the fixed hardened steel blade guides. Insert approximately 25 cm of an old saw blade in the guide heads between the hardened steel blade guides and the bearings. Set the hardened steel blade guides using the width adjusting screw, so that the saw blade does moves between the guides without any play and jamming. When the saw blade has been adjusted, set the eccentrically mounted bearings in such a manner that the bearings do not "cut" the saw blade, but at the same time you have to prevent too much space for the saw blade between the bearings. When the saw blade moves, the bearings are carried along by the saw blade. Make sure that all bolt connections are tight. Unscrew the guide heads from the bars. Fit the saw blade on the wheels, check its correct alignment on the wheels and tension the saw blade. Install both guide heads on the saw blade in the space between the bars and adjust them in the correct position on the bars. You can achieve the correct guide head height in relation to the saw blade by lifting the guide heads, so that the upper hardened steel guide in the guide head is about 0.5-1 mm from the upper edge of the saw blade. See the picture. In this way, the correct guide head height towards the guide bars is achieved.

Set the guide heads perpendicular to the bars and tighten them. If you fail to achieve perpendicularity, the saw blade will either keep sliding off or running into the wheels. Remove the protective covers of the saw blade and remove the back cover of the arm. Connect the machine to the mains and carry out a short saw blade trial run. Disconnect the machine from the mains and secure it against restarting. Remove the protective covers of the saw blade and the back cover of the arm. Check the placement of the saw blade on the wheels and in guide heads. Make a correction, if necessary - see section 4.5. Remove the protective covers of the saw blade and remove the back cover of the arm. Connect the machine to the mains and carry out the video with instructions on www.pilous.cz.

4.7. Cooling system (only in ARG 130 TK (super), ARK 130 K (super))

The pump and the coolant tank are the basic elements of the cooling system. In ARG 130 K, you can remove the coolant tank from the machine base without the pump. The coolant pump conveys the coolant via hoses, valves and guide heads to the saw blade. The volume of the coolant is regulated by the valves on the guide heads. The coolant cools down and lubricates the saw blade and flushes away metal chips. The pump switches on and off when the saw blade drive is started or shut down. There is a setting container in the the coolant tank, which needs to be cleaned during regular checks depending on the material to be cut. It is important that the pump is always immersed in the coolant that facilitates its cooling. If the level of the coolant gets too low during cutting, the pump will be irreparably damaged.



When handling coolants, risks linked to hazardous substances cannot be avoided. Observe the manufacturer's and/or your company's instructions and recommendations referring to safe coolant handling.



5.Commissioning

5.1.Security Check



Is everything in perfect condition with regard to safety and technical condition? Are all protective devices mounted properly?

Danger of injury! No cover on the saw blade in the cutting area! High risk of injury in the operating area of the blade!

5.2. Cutting Procedure



The TOTAL STOP button is unlocked. Unlock the arm swing locking lever (J), raise the saw arm (A) to approx. 20 mm above the vice loading surface and by swinging the arm, set the required cutting angle on the angle scale and lock the arm swing locking lever (J) again. Open the moving clamping jaw (K) to such extent that allows for unhindered insertion of the workpiece between the jaws. Push the workpiece. You cannot align long heavy workpieces to the correct position by the moving clamping jaw. After the feed, the workpiece must always be adjusted parallel with the fixed clamping jaw. Choose the length of the cut workpiece. Use the movable clamping jaw (K) to clamp the workpiece. Set the correct distance of the movable guide head of the saw blade (O) to approximately 5–10 mm from the movable clamping jaw of the vice (K) and lock using the locking lever (L). Choose the cutting speed (in ARG 130 V400 only). In saws with cooling, set the required coolant volume using valves. Start the saw blade motor by pressing the switch on the control handle (N). The rate of the feed to the cut is dependent on the pressure exerted on the arm lever. The optimum value of descent speed can be determined very easily by ear. The saw blade movement must be noiseless, free from vibrations. Such a state can be achieved by reducing or increasing the pressure force (by the velocity of saw arm descent). The prerequisite of setting the optimum pressure is selecting the correct saw blade velocity and the optimum size of the saw blade teeth. After finishing the cutting, release the handle trigger (N). The cut has been finished. Raise the arm to the default upper position.

ARG 130 Super

Pull the locking pin (Q) of the arm. After starting up the saw blade by pressing the START button, place the saw manually into the cut. The rate of the feed to the cut is dependent on the pressure exerted by the weight of the arm. **It is not necessary to push the lever**, **the saw cuts automatically.** The system of a pulling and pushing spring balances the descent speed. This speed can be controlled using adjustable heads (P). If you screw the heads downwards, the machine will switch into the manual mode (then the feed is determined by the pressure exerted on the arm lever; after finishing the cutting, the arm will automatically move to the upper position). After you stop cutting, the saw blade will stop automatically.

6. Machine Maintenance

6.1. Maintenance and Inspection



Danger of injury!

Carry out the maintenance work only if the power switch is off or if the machine is disconnected from the mains.

Care and maintenance is absolutely necessary to maintain the functionality of the machine and its components. This includes: check and adjustment of band saw guide heads and limit angles cleaning metal chips removal removing metal chips from the internal part of the band saw arm coolantexchange lubrication of sliding surfaces and mounting checking of supply lines for damage vice check screw connection checking limit switch checking.



Check protective devices

Check the protection devices for possible damages and faults prior to the start of everyday work.



Check power cable

Check in regular intervals, at least once a week: integrity of electric installation integrity of connections and relief from pulling

Cleaning

Clean the machine in regular intervals (always at the end of the shift, or if required, during the shift). Use suitable cleaning agents. Do not use solvents (e.g. nitro thinner). Do not use compressed air! Compressed air would blow delicate chips and dirt particles under sliding elements or endanger the health of personnel by flying particles.

Removal / disposal of chips



Observe the instructions and recommendations concerning safe disposal of waste produced during operation.

Correct cutting angles will be achieved when the bearing surfaces for the workpiece and the surfaces of gripping jaws are free from metal chips or other impurities.

Coolant system cleaning



When handling coolants, risks linked to hazardous substances cannot be avoided. Observe the regulations and recommendations (operating instructions by professional associations or your company) related to safe handling of coolants.

The coolant tank cannot be removed from the machine base during the maintenance and cleaning. The coolant is limited by the length of the power cable and coolant hose. **Caution: Used coolant belongs to special waste category!**

Our recommendations: Regular cleaning and maintenance of the coolant increases the service life and functionality of the coolant pump. If possible, use the coolants miscible with water, non-irritant to skin and with high protection against aging and corrosion. At least once a week, check the quality of the coolant according the coolant manufacturer's recommendations. Optimum lubrication increases cutting productivity. There is a setting container in the the coolant tank, which needs to be cleaned during regular checks depending on the material to be cut.

Lubrication

Regular lubrication and cleaning extend the life and functionality of the machine. During the periodic inspection, check whether there is enough lubricant on the friction surfaces and trapezoidal screw of the vice and in friction surfaces on the movable bar of the saw blade. Or you can lubricate these areas with grease, such as MOGUL LV 2 WR (classified in accordance with: ISO 6743 - BCHB 2, DIN 51 502 - KP2K-20).

6.2. Repairs



Caution: Danger of injury!

Carry out repairs only when the master switch is off or secured against switching on or when the machine is isolated from the power supply and secured against restarting. We recommend that you contact an authorised service centre for repairs.

7. Failures - Potential Causes and Remedies

Failure	Possible cause	Remedy	
Saw blade feed cannot start	•The TOTAL STOP button is locked. •Motor overheating, safety thermal FA1 relay switched off •Actuated end switch of the lower arm position (only in ARG 130 Super) •Fuse in the control panel burnt (ARG 130 Super and ARG 130 400 V only)	 Release the button by pulling or twisting Motor overload - slow down the feed to the cut Raise the arm into the upper position Replace the fuse 	
The motor is on, but the saw blade is not moving	•Broken blade •The saw blade slips on the blade wheel •Other fault in the gearbox	 Replace the saw blade Tension the blade properly Call the service technician 	
Irregular cooling	•The coolant depleted •The coolant tank and/or supply pipes or the ball valves are contaminated •Broken pump	•Check the coolant •Clean the coolant tank and supply pipes •Replace the pump	
Vibration during cutting	 The feed to the cut occurs within a non-desirable range Wrong selection of saw blade tooth size Incorrectly adjusted guide heads, hardened steel blade guides, bearings Incorrectly clamped material 	 Set 5% less/more feed to the cut Check the tooth size, see section 8.2. Adjust it, see section 4.6. Check workpiece clamping 	
Broken teeth stuck in the cutting channel in the workpiece		•Do not cut into an old cutting channel with a new blade! Otherwise you damage the new blade with the first cut	
The cut is not rectangular	 Incorrectly set cutting angle 	•See Section 4.3.	
The blade cuts under	 Blunt saw blade Wrong selection of saw blade tooth size Feed to the cut is too quick The blade slid under guide bearings Clearance between hardened steel blade guides The workpiece is not placed parallel with the vice loading surface 	 Replace the blade Check the tooth size, see section 8.2. Adjust the feed Insert the blade properly as specified in section 4.5. Adjust it, see section 4.6. Align the roller conveyor, check workpiece clamping 	
Saw blade cracking between teeth	 Wrong selection of saw blade tooth size Feed to the cut is too quick Incorrectly adjusted or damaged guidance through heads (hardened steel blade guides, bearings) The moving guide head is too far from the workpiece Insufficient cooling Incorrectly clamped workpiece while cutting a bundle 	 Check the tooth size, see section 8.2. Adjust the feed Adjust (see section 4.6.) or replace them Move it closer, see section 4.4. Increase the coolant supply Clamp the workpiece properly 	
Saw blade cracking on the face	 Saw blade incorrectly placed on wheels (runs into the fitting) Wrong selection of saw blade tooth size Feed to the cut is too quick Incorrectly adjusted or damaged guidance through heads (hardened steel blade guides, bearings) The moving guide head is too far from the workpiece 	 Check, see section 4.5. Check the tooth size, see section 8.2. Adjust the feed Adjust (see section 4.6.) or replace them Move it closer, see section 4.4. 	

The adjustment of guide heads is a matter of regular maintenance and that is why such fault is not covered by the guarantee.



The prerequisite of the correct cutting power of the machine is the use of high-quality saw blades. In order to achieve a high cutting power, it is recommended to use bimetallic saw blades. The main saw blade component is a high-quality heat treated steel with a high elasticity limit. The tooth edges are high-speed steel of the following quality: M 42, M 51.

M 42 - a saw blade for universal use for cutting metallic and non-ferrous materials within the whole range of quality classes up to the 45 HRC hardness. The saw blade is suitable for cutting full materials of all cross-sections and diameters, profiles, pipes and bundles.

Saw Blade Tooth Arrangement

a) Constant - tooth edge spacing always equal

b) Variable - the tooth edge space is different, repeating periodically. This modern saw blade design enables a bigger cutting range in one saw blade type. It is able to eliminate vibrations caused by the tooth edge touching the material and thus to achieve a clean smooth cut and longer service life.



CONSTANT - tooth size 4/4

VARIABLE - tooth size 3/4



8.2. Selection of Tooth Size

The selection of the tooth size is of crucial importance for the saw blade service life.

Tooth sizes recommended for cutting full materials

PILOUS 🕨 👘		Manufactured tooth sizes in ARG 105, 130
Material cross-section	Number of teeth per inch	13x0,65 saw blade M42/67-69 HRC
0-10	18z	•
0-20	14z	•
0-30	10/14	•
20-50	8/12	•
30-50	10z	•
50-80	6/10	•
35-80	6z	•
50-100	5/8	•
80-150	4z	•

The following table refers to piece-by-piece cutting of sectional materials.

Tooth sizes recommended for cutting sections

Wall width	Pipe diameter (mm)							
(mm)	20	40	60	80	100	120	150	
2	14	14	14	14	14	14	10/14	
3	14	14	14	10/14	10/14	10/14	8/12	
4	14	14	10/14	10/14	8/12	8/12	6/10	
5	14	10/14	10/14	8/12	8/12	6/10	6/10	
6	14	10/14	8/12	8/12	6/10	6/10	5/8	
8	14	8/12	6/10	6/10	5/8	5/8	5/8	
10		6/10	6/10	5/8	5/8	5/8	5/8	
12		6/10	5/8	5/8	5/8	5/8	5/8	

Caution: The aforementioned values do not apply to cutting of different sectional materials. Such a requirement must be treated with respect to the shape of the sectional material, the number of pieces in the bundle and the dimensions. When the saw blade is used for cutting sectional materials, its service life will decrease by up to one third due to interrupted cutting.

Rule: At least four, but not more than thirty teeth must cut in while a workpiece is being cut.

8.3. Optimum workpiece clamping

Correct workpiece clamping can significantly influence the service life of the saw blade and the cutting accuracy. Moreover, it allows for correct selection of tooth size. In order to achieve the optimum cut (service life and cutting performance), observe these ways of clamping.



8.4. Running-in New Saw Blades

The running-in applies to new saw blades. The sharp cutting edges with extremely small edge radii enable high cutting power. In order to achieve maximum tool service life, you have to run in (optimum) the new saw blade. Given the correct cutting speed, the workpiece feed and the quality of its material, the saw blade must be run in only with 50% of currently used feed. Such measure will help you prevent breaking extremely sharp edges particularly in big workpiece sections. These micro-fragments cause destruction of other teeth. Should vibrations or noise due to oscillations manifest themselves when a new saw blade has been fitted, reduce the cutting speed slightly. In small workpiece sections it is recommended to run in the saw blade with a reduced power for 15 minutes, in big sections for 30 minutes. Then increase the feed slowly to the optimum value.



8.5. Factors Influencing Saw Blade Service Life

Inappropriate saw blade tooth size • inappropriate saw blade speed and saw blade descent speed to the cutting position • the saw blade (the whole band saw arm) leans against the workpiece when the band saw is not in the cutting position • the workpiece is not clamped as recommended • saw blade tension is not correct (mostly too little tension) • the saw blade is not correctly fitted on the guide wheels (the saw blade touches the wheel shoulder) • the saw blade guide heads are not correctly adjusted • the distance between the saw blade guide heads and the workpiece is too big • the oil content of the coolant is too low • the saw blade is not correctly run in • saw blade maintenance is insufficient, metal chips have not been removed from the band saw.

The above mentioned faults lead to inaccurate cut, reduction of the saw blade service life and/or its destruction.

8.6. Values Recommended for Cutting

The selection of values depends on the material class and the material section. The data in the table are only illustrative; they have to be adjusted to the material for certain ranges. The numbers of the CSN-Standards serve for information only. They define only the guide for the material properties for which the respective saw blade type is designed.

Material		Recommend (m	ed blade speed /min)	Arm des into the cu	cent speed ut (mm/min)	Cooling oil
ČSN	In general	ø 0-100 mm	ø 100-330 mm	ø 0-100 mm	ø 100-330 mm	volume (%)
11 107 - 11 110	Free-cutting steel	70-90	70-90	190-60	55-20	10-15
11 301 - 11 420 / 12 010 - 12 020	Structure/construction steel	60-90	60-80	190-60	55-30	10-15
11 500 - 11 600 / 12 020 - 12 060	Cementing steel	60-90	50-70	125-38	35-25	10-15
13 250 / 14 260 / 15 260	Spring steel	50-70	40-60	125-30	28-15	5-10
14 100 / 15 220	Bearing steel	50-70	30-60	125-30	28-15	3
14 220 / 15 124	Alloy steel	50-80	40-70	125-35	30-20	10
17 020 - 17 042	NIRO steel	40-50	30-40	75-15	12-4	10-15
17 115	Valve steel	40-60	30-50	90-23	21-10	3
17 253 - 17 255	Heat-resistant steel	30-40	30	40-7	6-1	15
19 063 - 19 083 / 15 142 / 16 142	Refining steel	60-90	40-70	125-35	30-25	5-10
19 150 / 19 192 - 19 312	Non-alloy tool steel	50-70	30-60	120-25	20-8	5-10
19 422 / 19 452 / 19 721 / 19 740	Alloy steel	40-50	30-50	100-20	18-2	5-10
19 436	Hammer steel	30-40	30-40	62-15	14-5	do not
19 662	Nitriding steel	40-50	30-40	76-25	23-12	5
19 721	Tool steel for hot processing	30-40	30	70-1	16-6	5
19 802 - 19 860	High speed steel	40-60	30-50	90-23	21-10	3
INCONEL, HASELLOY, NIMO	ONIC, INCOLOY	30	30	25-5	4-2	15-20
Heat-treated steel		30	30	25-5	4-2	15-20
Cast steel		30-70	30-60	190-60	55-25	40
Grey cast iron		40-80	30-70	190-60	55-30	do not
Copper, bronze, tin bronze		70-90	60-90	300-90	85-55	3
Red bronze		70-90	60-90	230-75	70-45	10
Aluminium bronze		40-70	30-60	230-75	70-45	10-15
Aluminium alloy castings		80-90	80-90	450-150	140-55	25
Al 99%, thermoplastics, plast	ics	50-90	50-80	450-150	140-55	do not

9. Wiring Diagram and Layout of Switching and Safety Elements

9.1. Wiring Diagram in ARG 105 mobil, ARG 130 (TK), ARG 130 K



Bandsaw blade

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Diagram:	Name:	Туре:	Order No.
SA1	Motor SA1 speed switch	ON 8PBS 7637	
KM1	Contactor	DILEM - 10 (230V50/60Hz)	012487
FU1	The fuse holder	PTF 30	001587
	Fuse glass	4A	001642
FA1	Thermal relay	in the motor winding	
SB1	MO head lock Red	M22-PV/K01	006104
SB2	Italian switch	D3V-16-1C5 microswitch	010241
M1	Electric motor ARG 105 230V	Electric motor MRT30-20-FT-RL-63/85, JMC71/2M spec.	021912
	Electric motor ARG 130 400V	Electric motor MRT40-25-FT-RT-71/85, TM71-4/2L	021913
	Electric motor ARG 130 230V	Electric motor MRT40A-25-FT-RL-71/85, JMC 71-2M 0.55kW 1x230V	021888
M2	400V coolant pump	Pump 1COP1-17, 20kPa/16l/min, 3x230V/3x400V, 50Hz	015819
	230V coolant pump	2CPP1-17 pump, 20 kPa/16l/min, 1x230V, 50Hz	016766

9.2. ARG 130 super wiring diagram





Bandsaw blade

ver. 1.1.2016

Diagram:	Name:	Туре:	Order No.
SA1	Motor SA1 speed switch	ON 8PBS 7637	009654
BP1	Lower position limit switch	FR6A1	002490
KM1	Contactor DILEM - 10 (230V50/60Hz)		012487
FU1	The fuse holder	PTF 30	001587
	Fuse glass	4A	001642
FA1	Thermal relay	in the motor winding	
SB1	SB1 MO head lock Red M22-PV/K01		006104
SB2	MO head pressing red	M22-D-R	006086
	MO head connection	M22-A	006103
	Mo switch, unit 1off	M22-K01	006091
SB3	MO head grip.green-lit	M22-D-G	006087
	MO head connection	M22-A	006103
	MO switch, unit 1on	M22-K10	006090
SB4	Italian switch	D3V-16-1C5 microswitch	010241
M1	Electric motor ARG 130	Electric motor MRT40-25-FT-RT-71/85, TM71-4/2L	021913
	Electric motor ARG 130 230V	Electric motor MRT40A-25-FT-RL-71/85, JMC 71-2M 0.55kW 1x230V	021888
M2	Coolant pump	Pump 1COP1-17, 20kPa/16l/min, 3x230V/3x400V, 50Hz	015819
	230V coolant pump	2CPP1-17 pump, 20 kPa/16l/min, 1x230V, 50Hz	016766

9.3. Layout of switching and safety elements in ARG 130 super



ARG 130 super V400

10. Assemblies 10.1. Guide Head Assembly



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Pos.	Order number	Name	Type ARG	Pcs
1	011698	guide head moving	105	1
	011705	guide head moving	130	1
2	011697	guide head fixed	105	1
	011704	guide head fixed	130	1
3	003642	allen screw M5x35	105,130	4
4	001547	625 2Z bearing	105,130	4
5	001904	exc. bearing guide head, small	105,130	2
6	001518	exc. bearing guide head, big	105,130	2
7	001824	allen screw M6x10	105	4
	001561	allen screw M6x20	130	2
8	011748	hardened steel plate	105,130	4
9	001821	allen screw M6x10	105,130	2
10	001567	M5x6 setting screw	105,130	2
11	001351	hardened steel blade guide KR 12x4	105,130	2

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Pos.	Order number	Name	Type ARG	Pcs	Pos.	Order number	Name	Type ARG	Pcs
1	014376	arm	105	1	16	022332	gearbox MI40 20/1, B14-71	130	1
	010079	arm	130	1		022041	gearbox MI30, i25, B14-63	105	1
2	001559	retaining ring, outer	105,130	1	17	021934	motor 1ph, 230V, 0,55kW, B14	130-230V	1
3	001755	tensioning wheel	105	1		022331	motor 3ph, 0,37/0,55kW, 4/2pól,B14	130-400V	1
	001509	tensioning wheel	130	1		022045	motor 0,56kW 048M/2 63c	105	1
4	001508	tensioning bolt	105,130	1	18	006076	shaft drive	130	1
5	001759	hardened pin 10x32	105,130	1		014523	shaft drive	105	1
6	001843	tensioning plate	105	1	19	001549	bearing 6004 2RS	130	1
	001634	tensioning plate	130	1		001720	bearing 6203 ZZ	105	1
7	009074	tensioning systém cover	105,130	1	20	001530	blade wheel	130	1
8	001804	starter lever	105,130	1		001754	blade wheel	105	1
9	010245	starter	105,130	1	21	001576	tight spring 6×6×14	130	1
10	001639	spring TP 25×12,2×0,9×1,6	105	8		002509	tight spring 5x 5x16	105	1
	001639	spring TP 25×12,2×0,9×1,6	130	10	22	009184	tight spring 6×6×32	130	1
11	001817	midst ring	105	1		003546	tight spring 5x 5x32	105	1
	001511	midst ring	130	1	23	001842	movable rod	105	1
12	001932	4HR hand wheel M12	105	1		009188	movable rod	130	1
	001510	hand wheel	130	1	24	003400	adjustable lever M8x32	105,130	1
13	009628	screw M6x14	105,130	4	25	001818	clamp	105	1
14	014901	arm back cover	105	1		011267	clamp	130	1
	004909	arm back cover	130	1	26	009980	blade cover	105	1
15	007324	protective creeling 12 mm	105,130	1		005021	blade cover	130	1

10.3. The Table, Joint and Vice assembly

10.3.1. The Table, Joint and Vice assembly in ARG 105 mobil



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Pos.	Order number	Name	Type ARG	Pcs
1	014774	base	105	1
2	010315	vice body	105	1
3	009856	jaw	105	1
4	009915	angular plate	105	1
5	009466	washer -rectangular	105	1
6	003708	trapezoidal screw	105	1
7	021155	ball M8 linaset	105	2
8	009467	trapezoidal rod	105	1
9	009468	stop rod	105	1
10	009855	stop -body	105	1
11	009628	screw M6x15	105	1
12	001896	eccentric	105	2
13	003039	bolt M10x45	105	1
14	015268	adjustable lever M10	105	1
15	010173	turntable	105	1
16	001409	case KU 1520	105	2
17	005103	closed nut M12	105	1
18	001938	pin	105	1
19	001903	measuring plate	105	1
20	001849	stop plate KR 20	105	4
21	012506	turning plug	105	1

10.3.2. The Table, Joint and Vice assembly in ARG 130



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Pos.	Order number	Name	Type ARG	Pcs	Pos.	Order number	Name	Type ARG	Pcs
1	010218	tank	130	1	21	009152	vice screw	130	1
2	009626	screw M10x50	130 (super) TK	4	22	012005	vice closing	130	1
3	009976	eccentric	130	2	23	006694	flexible pin 5x16	130	1
4	009451	stop rod	130	1	24	001537	spring 5×40×160×19,5	130	1
5	009153	stop -body	130	1	25	006862	three-wing nut	130	1
6	001948	adjustable lever M8x10	130	1	26	001421	measuring plate	130	1
7	001541	mesh	130	1	27	009672	eccentric	130	1
8	001580	conic handle	130	1	28	001932	hand wheel M12	130 super	2
9	001533	screwed lever	130	1	29	009248	end switch stop	130 super	1
10	009457	turntable	130	1	30	009942	arm fixing	130 super	1
11	010087	vice body	130	1	31	009860	protect tube 1	130 super	1
12	009462	jaw	130	1	32	009687	yoke	130 super	1
13	010018	joint	130	1	33	009919	spring	130 super	2
14	001404	bearing 6006 2Z	130	2	34	009860	protect tube 2	130 super	1
15	009459	tube spacer	130	1	35	009858	pivot-case	130 super	1
16	009877	joint cap	130	1	36	009857	pivot	130 super	1
17	001534	star nut	130	1	37	009686	spring guidance	130 super	1
18	005189	angular plate	130	1	38	009247	limit switch washer	130 super	1
19	009460	liner	130	1	39	010458	joint pivot	130 TK, K	1
20	009461	clevis	130	1	40	004241	flexible pin 5x28	130	1

10.4. Cooling Assembly in ARG 130



Pos.	Order number	Name	Type ARG	Pcs
1	001397	coolant tank	130	1
2	001335	setting container	130	1
3	001387	coolant tank lid	130	1
4	016766	pump 2CPP1-17, 20kPa/16l/min, 1x230V, 50Hz	130 230V	1
	015819	pump 1COP1-17, 20kPa/16l/min, 3x230V/3x400V, 50Hz	130 400V	1
5	001440	allen screw M6×16	130	4
6	001573	washer - flexible	130	4
7	001467	nut M6	130	4
8	002403	hose connector, tapered	130	1
9	001399	PVC hose DN 8×2	130	3,5 m
10	001401	T-piece TS 10	130	1
11	001398	hose clamp 7-13	130	2
12	001402	draincock 050	130	2
13	001399	PVC hose DN 8x2	130	0,7 m

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EU Declaration of Conformity

in accordance with Directive 2006/42/EC of the European Parliament and of the Council (Government Regulation No. 176/2008 Coll.) in accordance with Directive 2014/30/EU of the European Parliament and of the Council (Government Regulation No. 117/2016 Coll.)

Manufacturer: Pilous-pásové pily, spol. s r.o., Železná 9, Brno 619 00, CZ, VAT: CZ60727551

Identification data of the machine: Band saw including accessories

Type:

ARG

Serial number:

Description and designation of product function: The band saw is intended for cutting primarily metal materials, while the workpiece is clamped in a fixed vice and the cutting is carried out by a saw blade arm.

All applicable provisions the machine is in compliance with:

• Directive 2006/42/EC of the European Parliament and of the Council

• Directive 2014/30/EU of the European Parliament and of the Council

The EU Declaration of Conformity is issued to the sole responsibility of the producer.

Applied harmonized standards:

- ČSN EN ISO 16093:2018
- ČSN EN 50370 1:2005
- ČSN EN 50370 2:2003
- ČSN EN 614-1+A1:2009

Responsible for drawing up technical documentation: name, company address: Pilous-pásové pily, spol. s r.o., Železná 9, Brno 619 00, CZ, VAT: CZ60727551

This EU Declaration of Conformity is original EU Declaration of Conformity.

The last two digits of the year in which the CE mark was placed on the product: 19

person authorized to act on our behalf Ing. Petr Mašek Managing Director

In Brno, on: 1.10. 2019