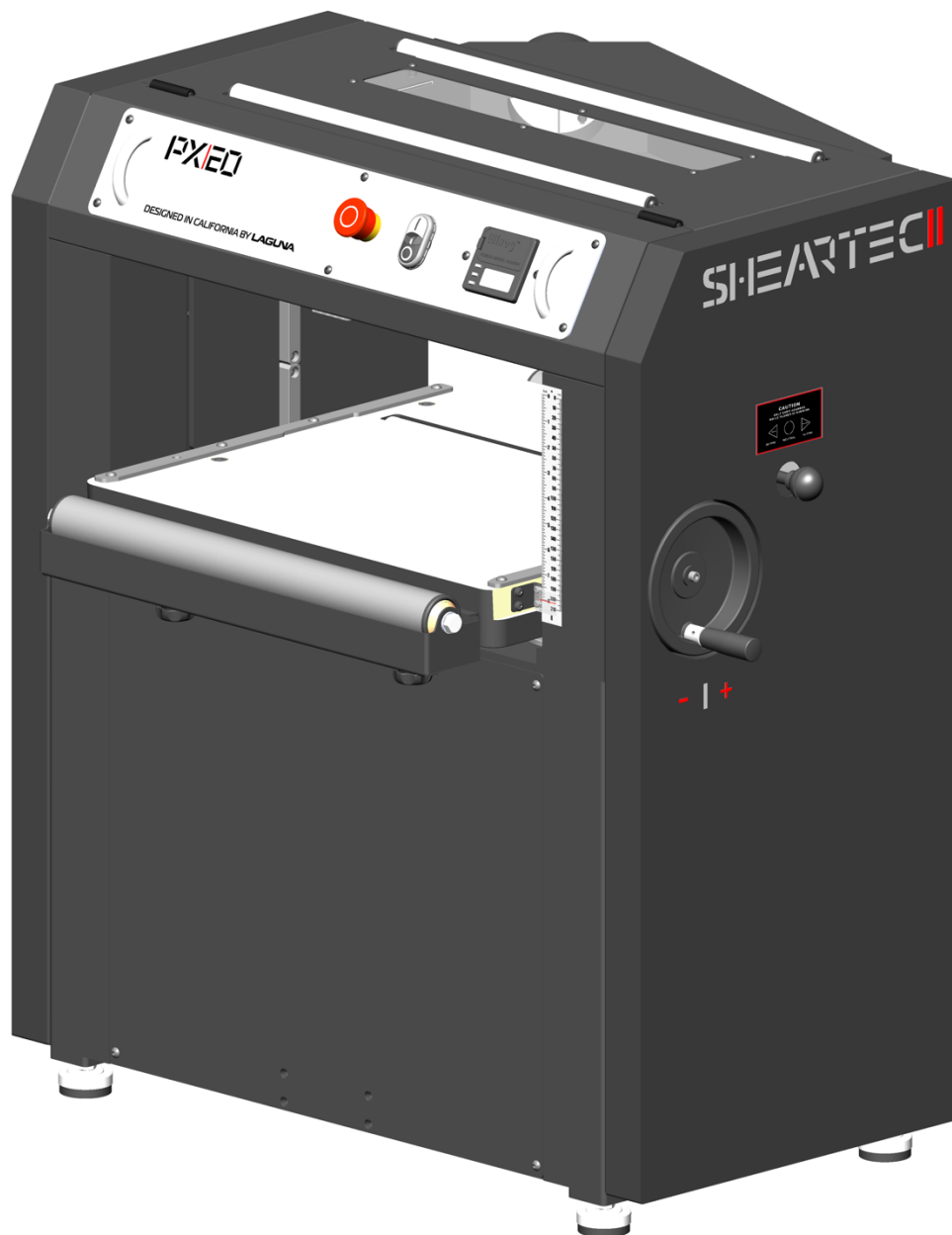


LAGUNA

OWNERS'S MANUAL

PX20 Planer



Thank you for investing in a PX20 Planer by Laguna Tools. This planer is one of a family of unique machines proudly offered by Laguna Tools. Every Laguna machine is engineered for years of dependable service. Please feel free to contact Laguna Tools if you have a question or suggestion. We appreciate working with you and your choice of a Laguna Tools machine for your shop.

Regards,
Torben Helshoj
President & Founder Laguna Tools

Dealer Machinery Warranty

New woodworking machines sold by Laguna Tools carry a two-year warranty effective from the date of dealer invoice to consumer.

Laguna Tools guarantees all new machine sold to be free of manufacturers' defective workmanship, parts and materials. We will repair or replace, without charge, any parts determined by Laguna Tools, to be a manufacturer's defect. In the event the item/part is determined to be damaged due to lack of maintenance, cleaning or misuse/abuse, the customer will be responsible for the cost to replace the item/part, plus all related shipping charges. This limited warranty does not apply to natural disasters, acts of terrorism, normal wear and tear, product failure due to lack of maintenance or cleaning, damage caused by accident, neglect, lack of or inadequate dust collection, misuse/abuse or damage caused where repair or alterations have been made or attempted by others.

This manual applies to the PX20-3PH Planer. Enter the model number and serial number below for quick reference when ordering accessories, supplies or parts. NOTE: The model and serial number plate can be found on the side of the planer.

Model: _____

Serial: _____

Laguna Tools
Grand Prairie

744 Refuge Way, Suite 200
TX 75050

800-234-1976

www.lagunatools.com

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SAFETY

READ AND UNDERSTAND THIS MANUAL AND ALL INSTRUCTIONS BEFORE USING THIS EQUIPMENT. Failure to follow all instructions may result in electric shock, fire and/or serious personal injury or property damage! Electronic copies of this manual are available at www.lagunatools.com.

SAFETY GUIDELINES - DEFINITIONS

This manual contains information that is important for you to know and understand. This information relates to protecting YOUR SAFETY and PREVENTING EQUIPMENT PROBLEMS. To help you recognize this information, we use the symbols below. Please read the manual and pay attention to these sections.



Indicates an imminently hazardous situation which, if not avoided, **will** result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, **could** result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, **may** result in minor or moderate injury.

CAUTION

(Used without the safety alert symbol) indicates a potentially hazardous situation which, if not avoided, **may** result in property damage.

Woodworking, metalworking, composites, etc. (and similar materials) can be dangerous if safe and proper operating procedures are not followed. As with all machinery, there are certain hazards involved with the operation of the machine. Using the machine with respect and caution will considerably lessen the possibility of personal injury. However, if normal safety precautions are overlooked or ignored, personal injury to the operator may result. Safety equipment such as guards, push sticks, hold-downs, feather-boards, goggles, dust masks and hearing protection can reduce the potential for injury. Even the best guard will not make up for poor judgement, carelessness or inattention. **Always use common sense** and exercise caution in the workshop. If a procedure feels

dangerous, do not try it. Figure out an alternative procedure that is safer. **REMEMBER:** Your personal safety is your responsibility.

IMPORTANT SAFETY INSTRUCTIONS



This machine was designed for certain applications only. We strongly recommend that this machine not be modified and/or used for any application other than that for which it was designed. If you have any questions relative to a particular application, DO NOT use the machine until you have first contacted the manufacturer to determine if it can or should be performed on the product.

If you have any questions relative to its application DO NOT use the product until you have contacted the manufacturer and we have advised you.

When using an electrical appliance/machine, basic precautions should always be followed, including the following:

READ ALL INSTRUCTIONS BEFORE USING (THIS MACHINE)!



To reduce the risk of fire, electric shock, or injury:

1. Do not leave appliance when plugged in. Unplug from outlet when not in use and before servicing.
2. Do not use outdoors or on wet surfaces
3. Do not allow to be used as a toy. Close attention is necessary when used by or near children.
4. Use only as described in this manual. Use only manufacturer's recommended attachments.
5. Do not use with damaged cord or plug. If appliance is not working as it should, has been dropped, damaged, left outdoors, or dropped into water, return it to a service center.
6. Do not pull or carry by cord, use cord as a handle, close a door on cord, or pull cord around sharp edges or corners. Do not run appliance over cord. Keep cord away from heated surfaces.
7. Do not unplug by pulling on cord. To unplug, grasp the plug, not the cord.
8. Do not handle plug or appliance with wet hands.
9. Do not put any object into openings. Do not use with any opening blocked; keep free of dust, lint, hair, and anything that may reduce air flow.
10. Keep hair, loose clothing, fingers, and all parts of body away from openings and moving parts.
11. Turn off all controls before unplugging.
12. Use extra care when cleaning on stairs.
13. Do not use to pick up flammable or combustible liquids, such as gasoline, or use in areas where they may be present.
14. Connect to a properly grounded outlet only. See Grounding Instructions.

SAVE THESE INSTRUCTIONS

- 1. Read and understand the warnings posted on the machine and in this manual. Failure to comply with all of these warnings may cause serious injury.**
2. Replace the warning labels if they become obscured or removed.
3. This machine is designed and intended for use by properly trained and experienced personnel only. If you are not familiar with the proper and safe operation of this type of machine, do not use until proper training and knowledge have been obtained.
4. Do not use this machine for other than its intended use. If used for other purposes, **LAGUNA TOOLS INC.**, disclaims any real or implied warranty and holds itself harmless from any injury that may result from that use.
5. Always wear approved safety glasses/face shields while using this machine.
6. Before operating this machine, remove tie, rings, watches and other jewelry, and roll sleeves up past the elbows. Remove all loose clothing and confine long hair. Non-slip footwear or anti-skid floor strips are recommended.
7. Wear ear protectors (plugs or muffs) during extended periods of operation.
8. Some dust created by power sanding, sawing, grinding, drilling and other construction activities contain chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are: (next page)
 - Lead from lead based paint.
 - Crystalline silica from bricks, cement and other masonry products.
 - Arsenic and chromium from chemically treated lumber.

Your risk of exposure varies, depending on how often you do this type of work. To reduce your exposure to these chemicals, work in a well-ventilated area and work with approved safety equipment, such as face or dust masks/respirators that are specifically designed to filter out microscopic particles.

9. Do not operate this machine while tired or under the influence of drugs, alcohol or any medication.
10. Make certain the switch is in the **OFF** position before connecting the machine to the power source.
11. Make certain the machine is properly grounded.
12. Make all machine adjustments or maintenance with the machine unplugged from the power source.
13. Form a habit of checking to see that all extra equipment such as adjusting keys, wrenches, scrap, stock, and cleaning rags are removed away from the machine before turning on.

14. Keep safety guards in place at all times when the machine is in use. If removed for maintenance purposes, use extreme caution and replace the guards immediately when maintenance is complete.
15. Make sure the dust collector is on a flat even surface and the wheels locked in place before use.
16. Check damaged parts. Before further use of the machine, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
17. Provide for adequate space surrounding work area and non-glare, overhead lighting.
18. Keep the floor around the machine clean and free of scrap material, oil and grease.
19. Keep visitors a safe distance from the work area. **Keep children away.**
20. Make your workshop child proof with padlocks, master switches or by removing starter keys.
21. Give your work undivided attention. Looking around, carrying on a conversation and "horse-play" are careless acts that can result in serious injury.
22. Maintain a balanced stance at all times so that you do not fall or lean against the dust collector. Do not overreach or use excessive force to perform any machine operation.
23. Use the right tool at the correct speed and feed rate. Do not force a tool or attachment to do a job for which it was not designed. The right tool will do the job better and safer.
24. Use recommended accessories; improper accessories may be hazardous.
25. Maintain machinery with care. Follow instructions for lubricating and changing accessories.
26. Turn off the machine before cleaning. Use a brush or compressed air to remove dust or debris — do not use your hands.
27. Do not stand on the machine. Serious injury could occur if the machine tips over.
28. Never leave the machine running unattended. Turn the power off and do not leave the machine until it comes to a complete stop.
29. Never operate or run the machine without closing the drum up against the lid. Failure to do so will result in the machine amperage increasing and may trip your circuit.

Familiarize yourself with the following safety notices used in this manual:

SAFETY GUIDELINES - DEFINITIONS

This manual contains information that is important for you to know and understand. This information relates to protecting YOUR SAFETY and PREVENTING EQUIPMENT PROBLEMS. To help you recognize this information, we use the symbols, described earlier. Please read the manual and pay attention to these sections.

GENERAL SAFETY RULES



FAILURE TO FOLLOW THESE RULES MAY RESULT IN SERIOUS INJURY.

FOR YOUR OWN SAFETY, READ AND UNDERSTAND THE INSTRUCTION MANUAL BEFORE OPERATING THE MACHINE. Learn the unit's application and limitations as well as the specific hazards peculiar to it.

KEEP WORK AREA CLEAN. Cluttered areas and benches invite accidents.

DON'T USE IN DANGEROUS ENVIRONMENT. Don't use this unit in damp or wet locations, or expose it to rain. Keep work area well-lighted.

KEEP CHILDREN AND VISITORS AWAY. All children and visitors should be kept a safe distance from work area.

DISCONNECT UNIT before servicing.

CHECK DAMAGED PARTS. Before further use of the unit, properly repair or replace any part that is damaged.



FAILURE TO FOLLOW THESE RULES MAY RESULT IN SERIOUS INJURY.

ADDITIONAL SAFETY INFORMATION

Intended use. This machine is intended for the applications discussed and approved by Laguna. Do not use this machine for non-approved applications or flammable, combustible, or hazardous materials.

Hazardous dust. Dust created while using machinery may cause cancer, birth defects, or long-term respiratory damage. Be aware of dust hazards associated with each work piece material, and always wear a NIOSH-approved respirator to reduce your risk.

Dust allergies. Dust from certain woods and other materials may cause an allergic reaction in people and animals. Make sure you know what type of dust you will be exposed to in case there is a possibility of an allergic reaction.

Wear respirator. Fine dust that is too small to be caught in the filter may be introduced into the ambient air during operation. Always wear a NIOSH-approved respirator during operation and for a short time after to reduce your risk of permanent respiratory damage.

Disconnecting power supply. Turn the switch off, disconnect from the power supply, and allow machine to come to a complete stop before leaving the machine unattended or doing any service, cleaning, maintenance, or adjustments.

Suspended dust particles and ignition sources. Do not operate in areas where explosion risks are high. Areas of high risk include, but are not limited to, areas near pilot lights, open flames, or other ignition sources.

Fire suppression. Only operate in locations that contain a fire suppression system or have a fire extinguisher nearby.

Static electricity. Plastic dust lines generate high amounts of static electricity as dust chips pass through them. Although rare, sparks caused by static electricity can cause explosions or fire. To reduce this risk, make sure all dust lines are thoroughly grounded by using a grounding wire.

Regular cleaning. Regularly check the machine for excessive dust and debris and clean. Make sure to regularly clean the surrounding area where the machine is operated—excessive dust buildup on overhead lights, heaters, electrical panels, or other heat sources will increase the risk of fire.

SAVE THESE INSTRUCTIONS. Refer to them often and use them to instruct others.

Please read and save these instructions. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference.



DO NOT EXPOSE THE MACHINE TO RAIN OR OPERATE THE MACHINE IN DAMP LOCATIONS.

MOTOR SPECIFICATIONS

The typical main motor is 5 HP and is wired for 400-415 Volt, Three-Phase, 50 HZ, AC current. Confirm your motor electrical configuration before connecting power! Before connecting the machine to the power source, make sure the starter and switches are in the "OFF" position. Power Cord and "plug" are NOT included. These must be installed by a qualified technician/electrician to meet all applicable codes.



Confirm electrical configuration (Voltage & Phase) of this machine before connecting to power source!

GROUNDING INSTRUCTIONS



THIS MACHINE MUST BE GROUNDED WHILE IN USE TO PROTECT THE OPERATOR FROM ELECTRIC SHOCK.

1. This machine must be connected to a grounded metal, permanent wiring system; or an equipment-grounding conductor must be run with the circuit conductors and connected to the equipment-grounding terminal or lead on the appliance.

The installer, such as a qualified electrician, shall cut (or bend over) and insulate the grounding conductor from a field wiring supply cable.

In the event of certain types of malfunctions or breakdowns, grounding provides a path of least resistance for electric current—in order to reduce the risk of electric shock.

Improper connection of the equipment-grounding wire can result in a risk of electric shock. The wire with green insulation (with or without yellow stripes) is the equipment-grounding wire. If repair or replacement of the power cord or plug is necessary, do not connect the equipment-grounding wire to a live (current carrying) terminal.

Check with a qualified electrician or service personnel if you do not understand these grounding requirements, or if you are in doubt about whether the tool is properly grounded. If you ever notice that a cord or plug is damaged or worn, disconnect it from power, and immediately replace it with a new one.

Power Supply Circuit Requirements

The power source circuit for your machine must be grounded and rated for sufficient amperage. Never replace a circuit breaker on an existing circuit with one of higher amperage without consulting a qualified electrician to ensure compliance with wiring codes. **If you are unsure about the wiring codes in your area or you plan to connect your machine to a shared circuit, consult a qualified electrician.**



IN ALL CASES, MAKE CERTAIN THE RECEPTACLE OR DISCONNECT IS PROPERLY GROUNDED. IF YOU ARE NOT SURE, HAVE A QUALIFIED ELECTRICIAN CHECK THE RECEPTACLE OR DISCONNECT.

UNPACKING

Your PX20 comes packed in a single box attached to a pallet. Before attempting to assemble this machine, follow these directions:

1. Carefully cut the banding straps and remove them from the box, if so packed.
2. Remove the box covering the machine.
3. Remove the plastic cover from the machine, if so packed.
4. Remove the wrapped dust chute.
5. Using the information below, ensure that all parts are present and in good condition.

WARNING

This step requires a forklift. The PX20 is heavy, be careful when lifting and handling it! Failure to comply may cause serious injury and/or damage to the machine and/or property! Use a forklift to remove PX20 from pallet and place on floor.

NOTE: Another option to remove the planer from the pallet is to attach hooks to frame of machine at each of the four corners. The machine can then be lifted with a harness and forklift.

NOTE: Another option to remove the planer from the pallet is to attach the included hooks to frame of machine at each of the four corners (Fig. 1). The hooks and bolts are included in the hardware kit. The machine can then be lifted with a harness and forklift. Remove and save hooks for later movement scenarios.

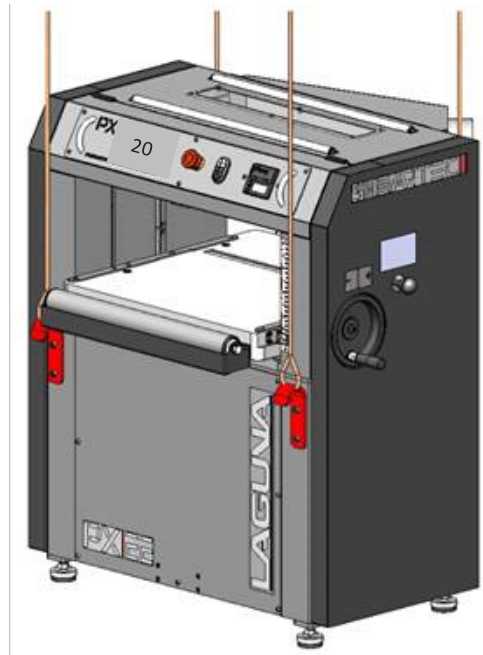


Figure 1: Lifting planer with hooks and harness

Inventory

Pallet

- 4 Leveling Feet with nuts (typically installed)

Bubble Wrap

- 1 Dust Chute
- 4 Hex Head Screws M6x10
- 2 T25 Torx Wrenches
- 4 Lifting hooks & hardware

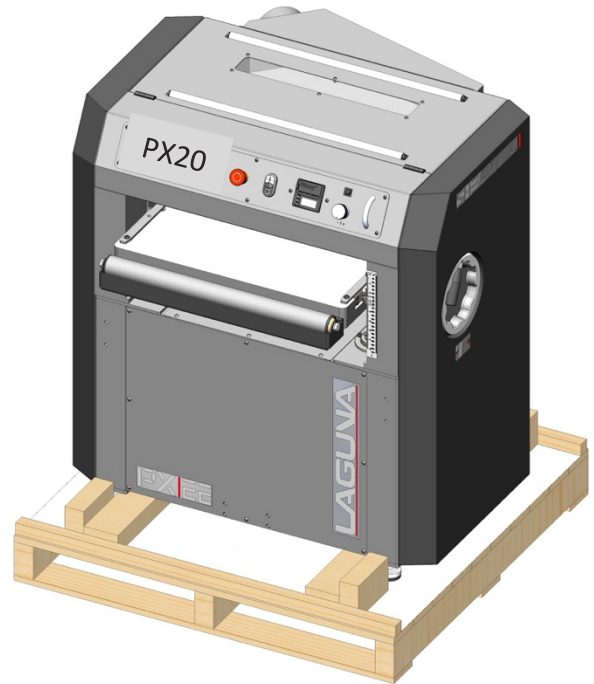


Figure 2: Pallet

Report any missing or damaged parts to your dealer or distributor. Prior to machine assembly and use, read this manual thoroughly to familiarize yourself with proper assembly, maintenance and safety procedures.

ASSEMBLY

Tools/items Required:

T-25 Torx wrench

9/16" wrench

1/2" wrench

5mm hex wrench

Power Cord and Plug (unless hard wiring into a disconnect)



For your own safety, do not connect the machine to the power source until the machine is completely assembled. Please also make sure that you read and understand the entire manual.

Machine Preparation and Setup:

1. Level machine using the four leveling feet on each of the four corners. Lock leveling feet into position with the nut on the leveling foot stud.

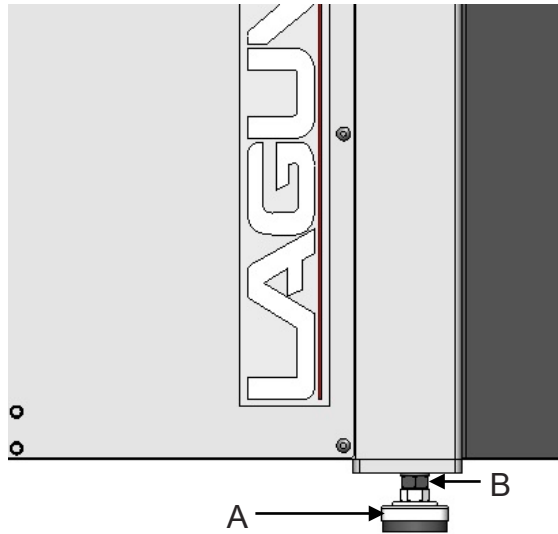


Figure 3: Leveling Feet

2. Clean all rust protected surfaces with a commercial de-greaser. DO NOT use acetone, gasoline, lacquer thinner or any type of cleaner that could damage paint. Coat cleaned surfaces with WD-40® or 20W machine oil.

Table Roller adjustment

3. Turn the knobs (Fig. 4, G) to move the table roller up or down to the desired position.

NOTE: The roller is typically set higher when planing rough stock. When planing smooth stock, the roller should be set slightly above, or flush with the table.

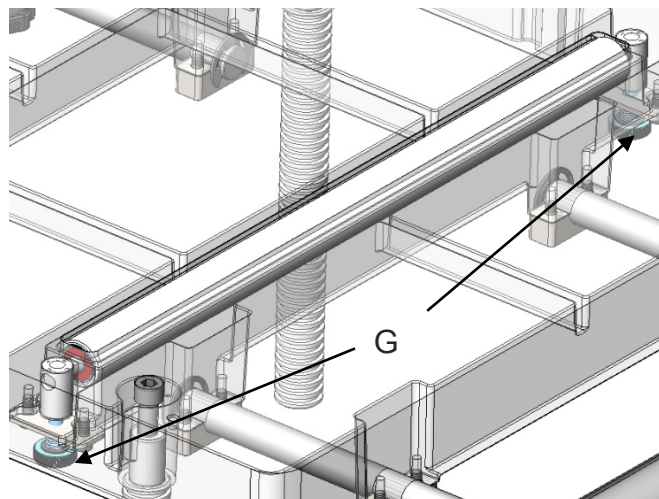


Figure 4: Table Roller

4. The dust chute can be attached with the port facing either to the right or left. To attach use four included screws (Fig. 5, H) to mount to the rear (outfeed) side of the planer head.

NOTE: *Make sure the dust collection system has sufficient capacity and CFM for this planer. Always turn ON the dust collector before planing.*

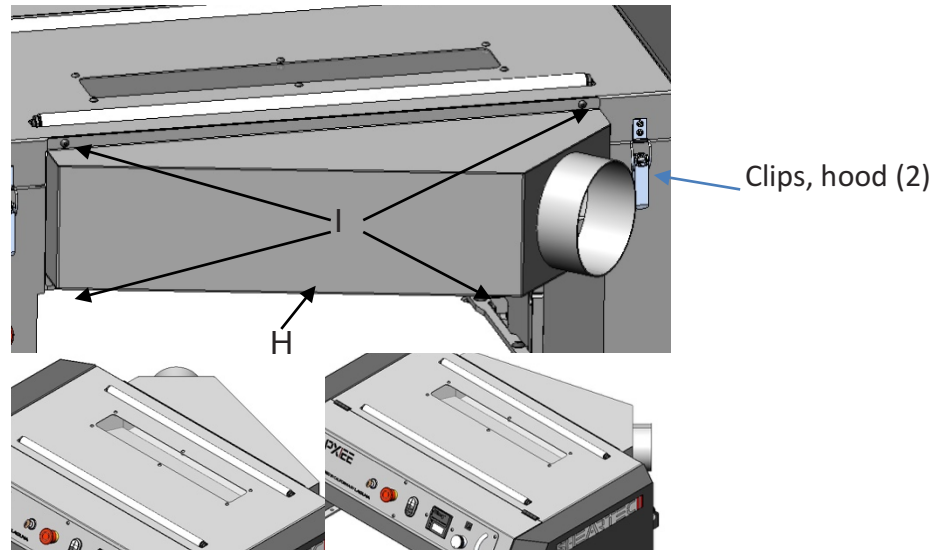


Figure 5: Dust Chute & Hood Clips

Opening Hood

1. Release the 2 Clips (Fig. 5) on each side of the hood.
2. Remove the two lower screws holding the dust chute in place (Fig. 5)
3. Raise hood until automatic latch secures hood in open position
4. To close, press IN automatic latch while lowering hood

Cutting Limiter

The Limiter (Fig. 6) acts as a stop to prevent the cutterhead from contacting the table and to prevent stock from sliding past the edge of the cutterhead.

Feed Speed Selector

The feed speed selector offers two feed speeds, 16 FPM & 28 FPM. Move lever (push/pull front to back) until it locks in place. The middle setting is neutral.

CAUTION

Change feed speeds **ONLY** when the machine is running!

COMPONENTS

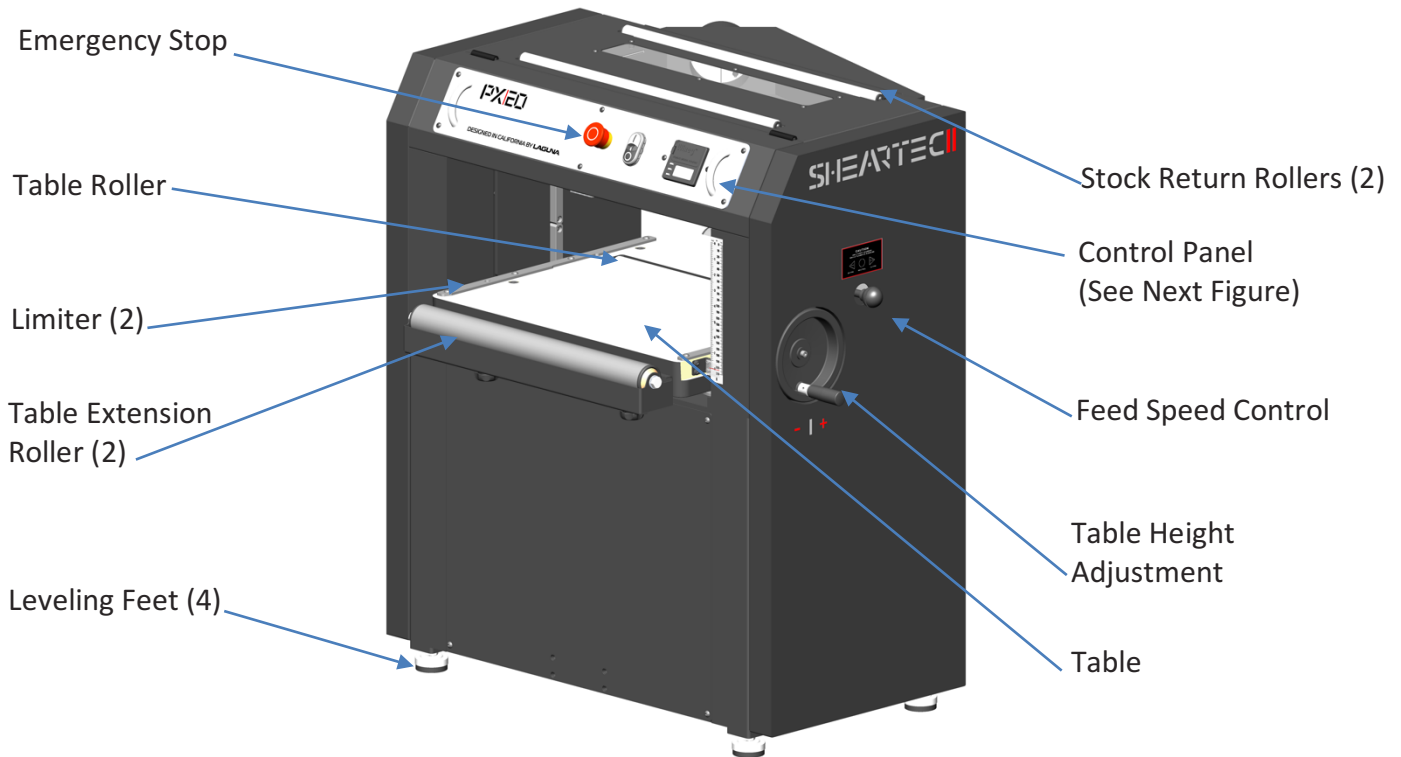


Figure 6: Main Components of PX20

Control Panel

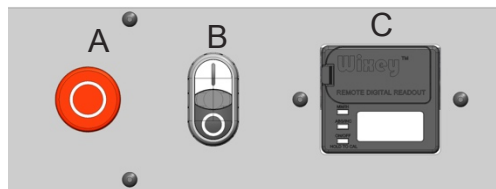


Figure 7: Control Panel

A. Emergency Stop (E-STOP); stops all functions of machine, however, power continues to machine.

NOTE: To reset E-STOP, rotate switch clockwise until the button "pops" out.

B. ON/OFF Switch; Starts and Stops rotation of cutterhead.

NOTE: Will not work if the E-STOP is engaged or if the Hood is open.

C. Digital Read Out (DRO); Thickness display

NOTE: Assembly is continued in next section "Power Supply"

POWER SUPPLY

Power Supply Circuit Requirements

The power source circuit for your machine must be grounded and rated for sufficient amperage. Never replace a circuit breaker on an existing circuit with one of higher amperage without consulting a qualified electrician to ensure compliance with wiring codes. **If you are unsure about the wiring codes in your area or you plan to connect your machine to a shared circuit, consult a qualified electrician.**



IN ALL CASES, MAKE CERTAIN THE RECEPTACLE IN QUESTION IS PROPERLY GROUNDED. IF YOU ARE NOT SURE, HAVE A QUALIFIED ELECTRICIAN CHECK THE RECEPTACLE.

MOTOR SPECIFICATIONS

The typical main motor is 5 HP and is typically wired for 400-415 Volt, Three Phase, 50 HZ, AC current. Confirm your motor electrical configuration before connecting power! Before connecting the machine to the power source, make sure the starter and switches are in the "OFF" position. Cord and "plug" are NOT included. These must be installed by a qualified technician/electrician to local codes.

NOTE: A "plug" and cord are NOT included and must be installed by a qualified technician/electrician or the power cable connected (hard wired) to an appropriate disconnect according to local codes. See Wiring Diagram



A qualified electrician should do the connection. When completed, the machine must conform to the National Electric Code and all local codes and ordinances.

Connecting Power (see Wiring Diagram)

1. Remove screws securing cover to connection box
2. Insert power cable through strain relief, tighten cinch nut and attach wires to terminals.
3. Re-install the connection box cover



Disconnect power supply to planer before continuing! Only connect power when required.

Calibrating the Thickness Scale

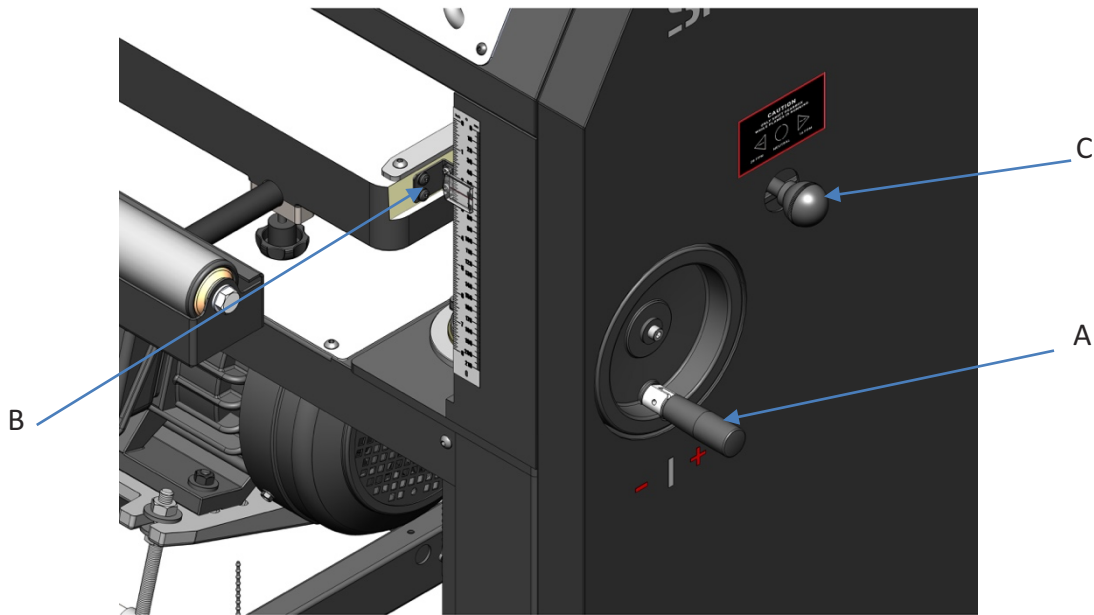


Figure 8: Thickness Scale Adjustment

NOTE: *The following procedures describe the use of a "calibrating board". It is a piece of hardwood which has been surfaced on one side with a jointer, drum sander or wide belt sander.*

1. With the planer OFF, the cutter head not rotating and power disconnected, place the Calibrating Board on the table, with the previously machined face "down", and slide under the cutterhead.
2. Use the Table Height Adjustment handle (Fig. 8, A) to raise the table until the infeed roller is approximately 1/16" (1.6mm) above the calibrating board.
3. Remove the calibrating board from the planer.
4. Connect power to the planer and turn ON.
5. Turn the height adjustment handle clockwise, one complete revolution, to raise the table and run the calibrating board (previously machined face "down") through the planer.
6. Repeat Step 5 until the planer removes the entire top surface of the calibrating board.

NOTE: *Drawing pencil marks across the width of the top of the calibrating board in several locations can make it easier to determine when the entire surface has been planned.*

7. Measure the thickness of the calibrating board with a caliper.
8. Loosen the screws of the Thickness Scale pointer and adjust the pointer (Fig. 8, B) until it corresponds to the measured thickness and tighten the screws.

Calibrating the DRO (Digital Read Out)

1. Remove the battery cover of the DRO and install 2 AAA batteries.

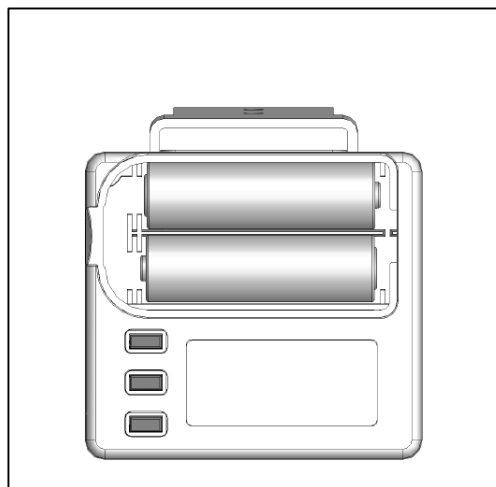



Figure 9: DRO Batteries

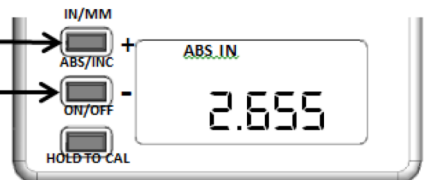
DRO Button Reference and Use

It is helpful to familiarize these buttons and their purpose with the Wixey™ DRO

ON/OFF and CALIBRATION

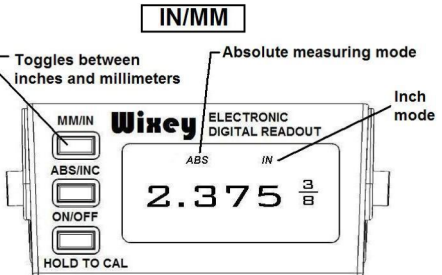
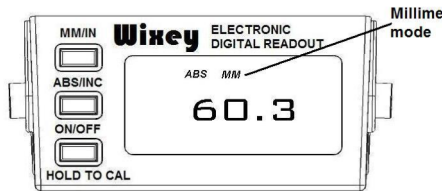


- PUSH MOMENTARILY TO TURN OFF AND ON
- HOLD FOR 3-5 SECONDS TO ENTER CALIBRATION MODE. THE "ABS IN" FLASHES
- TO CHANGE THE DISPLAY VALUE FROM 0.000 USE THE + OR – BUTTONS.

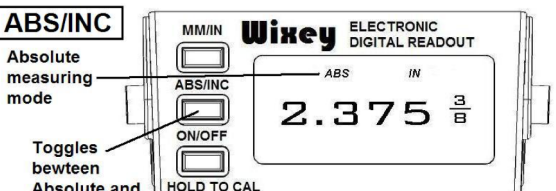
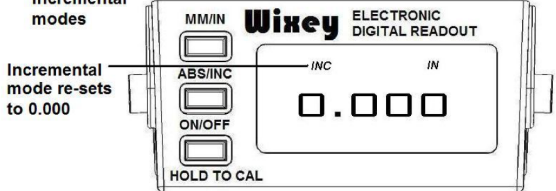
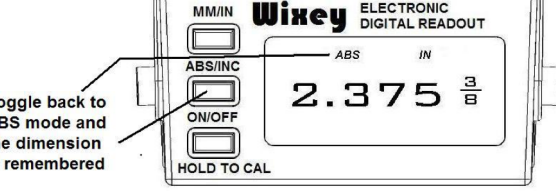


- A SHORT PRESS INCREASES ONE DIGIT. HOLDING THE BUTTON COUNTS FAST.
- PRESS THE ON/OFF BUTTON MOMENTARILY TO SET THE CALIBRATION VALUE. THE "ABS IN" WILL STOP FLASHING

IN/MM

ABS/INC

Figures 10-12: DRO Reference

OPERATION

1. Establish the proper depth of cut (typically less than 1/16" (1.6mm)), using either the DRO or scale.
2. Pull out and lock each extension roller to support long stock
3. Start dust collection.
4. Start planer.
5. Adjust feed speed (Fig. 7, C) to desired speed (16 or 28 FPM), while planer is running.
6. Feed stock into planer, maintain control and support of stock until the stock is securely feeding through planer.
7. Reposition yourself to the outfeed side of planer and control and support stock until it has exited the outfeed roller.

MAINTENANCE/ADJUSTMENT

Shear-Tec II Cutterhead



Figure 13: Shear-Tec II Cutterhead (52-60 in/lb.).

CAUTION

Knife inserts are dangerously sharp. Use extreme caution when inspecting, removing, or replacing knife inserts.

 **WARNING**

Turn planer OFF and disconnect power before performing any maintenance or adjustments!

The knife inserts on the 20" Planer are four-sided. When dull, remove each knife, rotate it 90° for a fresh edge, and re-install it **(52-60 in/lb.)**. No further adjustment is necessary. Use a Torx wrench (T25) to remove the knife insert screw. Use a second Torx wrench to hold the cutterhead (from rotating) in position (in another screw). **DO NOT USE YOUR HAND TO HOLD THE CUTTERHEAD!** See Fig. 13.

It is advisable to rotate all inserts at the same time to maintain consistent cutting. However, if one or more knife inserts develops a nick, rotate only those inserts that are affected. Each knife insert has an etched reference mark so you can keep track of the rotation. It is advisable to mark any knife with a nick with a pen, for future reference.

IMPORTANT: When removing or rotating inserts, clean saw dust from the screw, the insert, and the cutterhead platform. Dust accumulation between these elements can prevent the insert from seating properly, and may affect the quality of the cut.

Before installing each screw, lightly coat the screw threads with machine oil and wipe off any excess. Securely tighten each screw which holds the knife inserts before operating the jointer **(52-60 in/lb.)**.

 **WARNING**

Make sure all knife insert screws are tightened securely. Loose inserts can be propelled at high speed from a rotating cutterhead, causing injury **(52-60 in/lb.)**.

Conveying Rollers

Keep rollers clean to help prevent slippage of material.

Conveyor Roller Adjustment

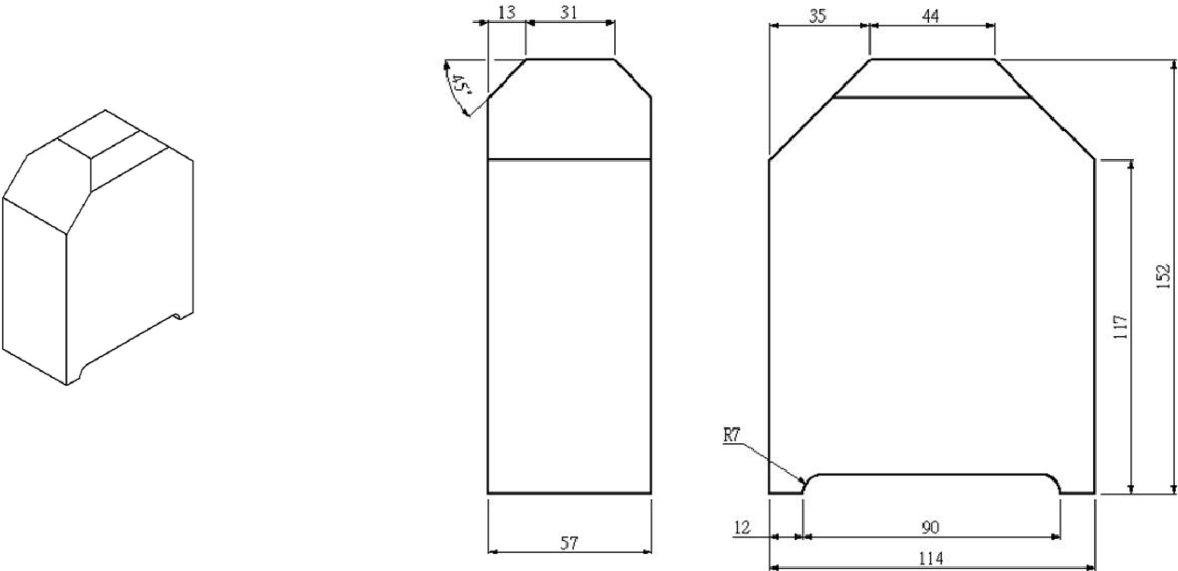
 **WARNING**

Turn planer OFF and disconnect power before performing any maintenance or adjustments!

The planer comes set-up from the factory and typically will not need adjustment. If it is determined adjustment is needed, follow these steps for setting the infeed roller, chip breaker, pressure bar and outfeed roller;

1. Make a hardwood block to the specifications in drawings (Figures 14 & 15). Use this wood gauge along with 0.02" (0.5mm) feeler gauge to set the planer up as shown in Fig. 16.

Figures 14 and 15 show dimensions in mm for the set up block for general planning needs.



Figures 14 & 15: Gauge Block

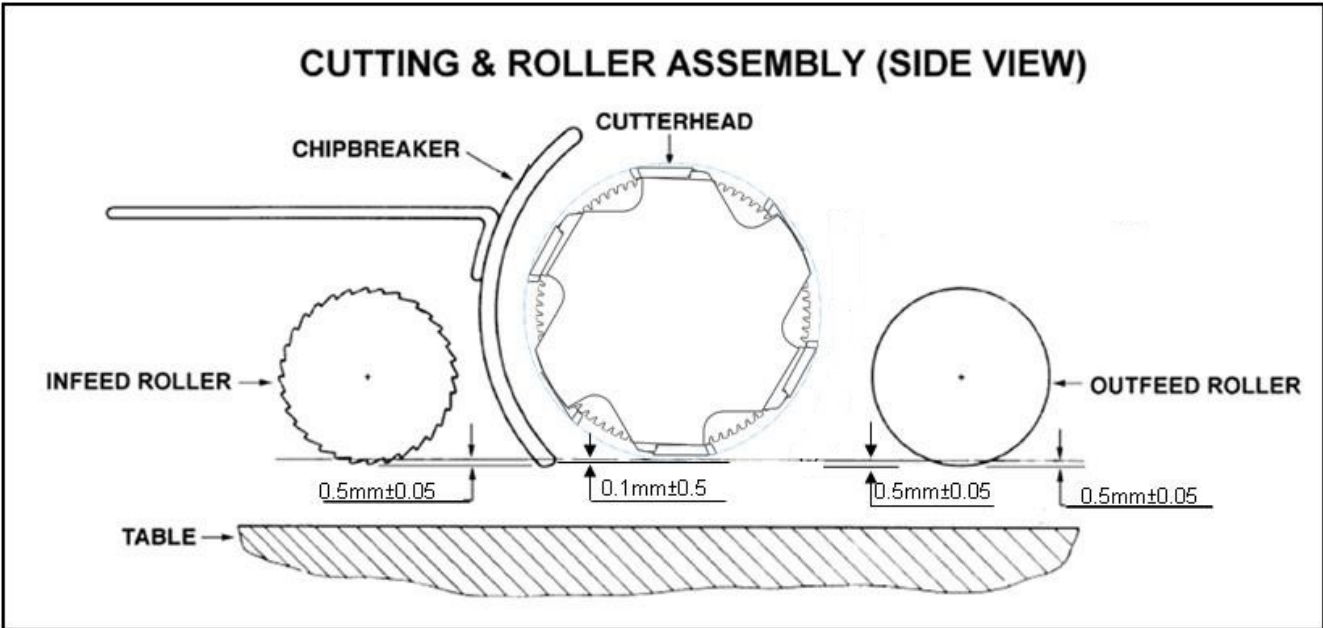


Figure 16: Cutterhead

Anti-Kickback Fingers

Anti-kickback fingers help prevent stock from being kicked out of the machine towards the user. Keep the fingers clean and free from saw dust, pitch gum, etc., so they operate smoothly.

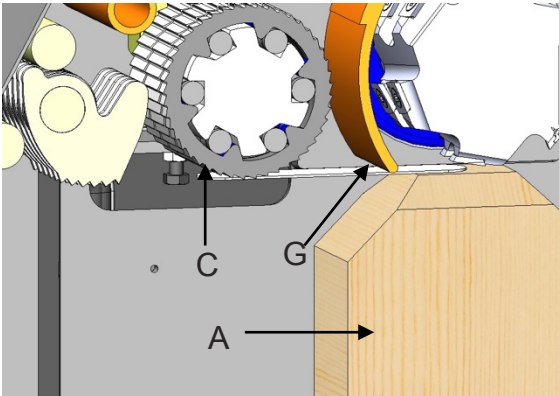


Fig. 17: Cutterhead

Adjustment of Infeed Roller

The in-feed roller should be set 0.02" (0.5mm) below the lowest point of knife. Make sure the knives are set properly see the "Setting / Changing Knives" section prior to making any adjustments.

WARNING

1. Disconnect machine from power source.
2. Place a hard wood gauge (Fig.17, A) under a knife in cutterhead (Fig.17, B). Place a 0.02" (0.5mm) feeler gauge (Fig.17, C) on top of wood block and raise table until feeler gauge contacts the knife in its lowest position.
3. Remove feeler gauge and place wood block under the left side of infeed roller (Fig.18, D). The top of wood gauge should just contact the infeed roller. If it doesn't, loosen jam nut (Fig. 18, E) and turn the adjusting screw (Fig.18, F) to raise, or lower the infeed roller until it contacts wood gauge then tighten the nut (E). Repeat for opposite side of the infeed roller.

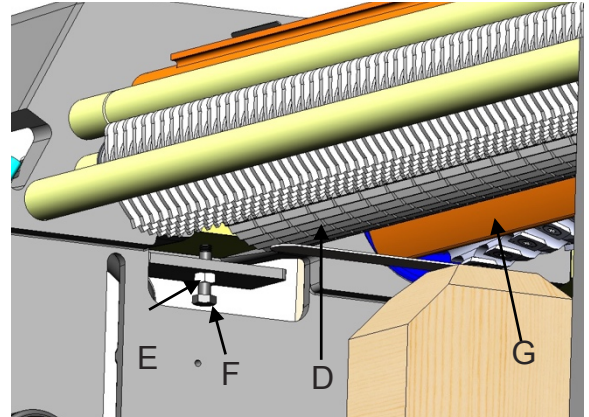


Fig. 18: Roller Adjustment

Adjustment of Pressure Bar

The pressure bar should be set even with the lowest point of knife. Make sure the knives are set properly see the "Setting / Changing Knives" section prior to making any adjustments.

1. Disconnect machine from power source.
2. 1. Loosen screw (Fig. 19, 1) and nut (Fig.19, 2) turn the screw to the right so that the pressure bar moves upward. Place gauge block and 0.2m/m thickness gauge (Fig.17, A) under the cutterhead.
3. Place gauge block under pressure bar.
4. Make pressure bar touch the top of the gauge block.
5. Final, tighten the screw and replace the nut.

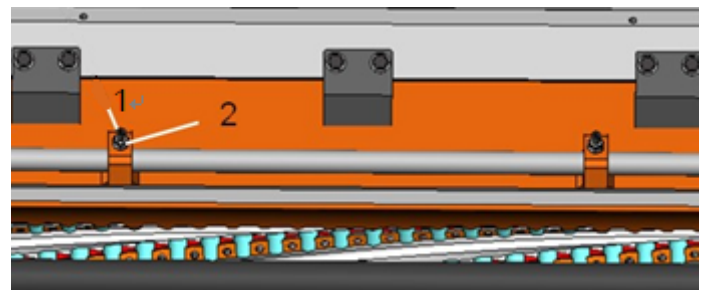


Fig. 19: Pressure Bar Adjustment

Adjustment of Out-feed Roller

The out-feed roller should be set 0.02" (0.5mm) below the lowest point of knife. Make sure the knives are set properly see the "Setting / Changing Knives" section prior to making any adjustments.

1. **Disconnect machine from power source.**
2. Place a hard wood gauge (Fig.17, A) under a knife in the cutterhead. Place a 0.02" (0.5mm) feeler gauge (Fig. 17, B) on top of wood block and raise table until the gauge contacts the knife in its lowest position.
3. Remove feeler gauge and place wood block (Fig.20, E) under the left side of outfeed roller (Fig. 20, F). The top of wood gauge should just contact the outfeed roller. If it doesn't, loosen jam nut (Fig. 21, H) and turn the adjusting screw (Fig. 21, G) to raise, or lower the out-feed roller until it contacts wood gauge.

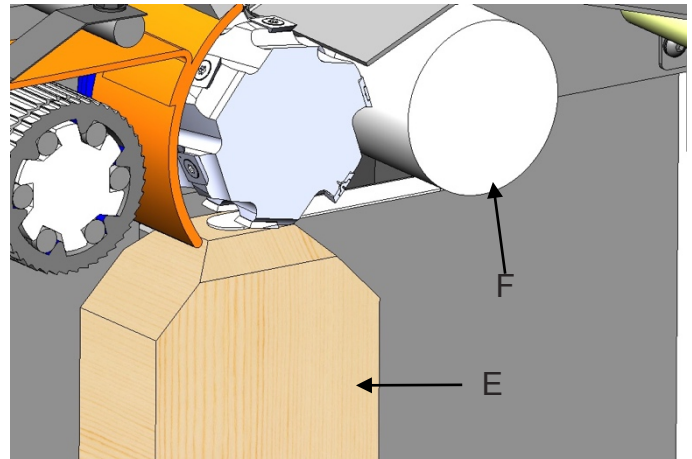


Figure 20: Out-Feed Roller Adjustment

WARNING

Knives are extremely sharp. Be very careful when handling knives. Failure to comply may cause serious injury!

The cutterhead is set-up with the same relationship to the infeed roller, pressure bar and outfeed roller. The planer comes set up from the factory and shouldn't need any adjustment.

If adjustment is necessary, follow the steps for setting the in-feed roller, chipbreaker, pressure bar and outfeed roller in relation to the helical cutterhead.

When it is time to rotate the knives ALL knives should be rotated at the same time. This is the same when replacing carbide knives ALL knives must be replaced at the same time. Mark the knives with a marker to identify which knives have been rotated. You can rotate the knives once before replacing. Use a Torx wrench to rotate or remove knives.

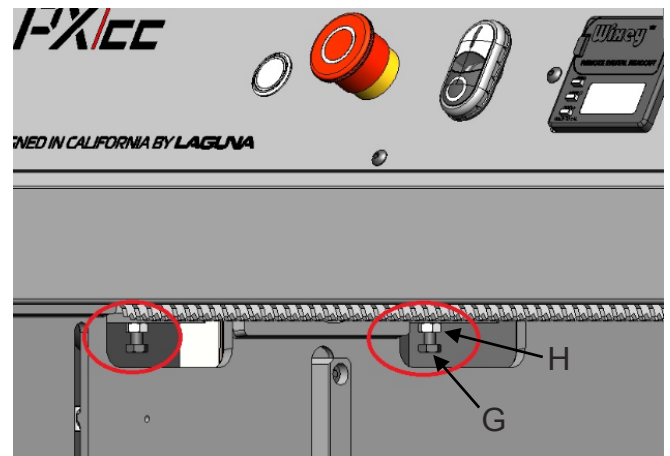


Figure 21: Roller Adjustment

Poly-V-Belt Adjustment

Poly-V-belt (Fig. 22, D) tension has been set at the factory. If the belt has stretched and need adjustment.



1. Disconnect machine from power source.
2. Open lower rear, and lower left-hand side panels. Loosen and tighten four adjustment nuts (Fig. 22, D) to move motor plate up, or down to increase, or decrease belt tension.
3. Tighten nuts against motor plate after adjustment is made.
4. Belts are tensioned properly when moderate finger pressure can deflect the v-belts about a 1/4"-1/2" midway between the pulleys.

Adjusting Table Rollers

The table rollers come pre-set from the factory and shouldn't need any adjustment. If adjustment is necessary, follow the below listed steps.

1. Lay a gauge or straight edge (Fig. 23, A) on the table across the roller (Fig. 23, B).
2. Raise the rollers until it contacts the straight edge and lock the handle. The pointer should be set at "0". If not adjust the pointer to read zero. Note: Spin the roller by hand to know when roller makes contact with the straight edge.
3. Move straight edge to the opposite side of bed roller and check to see that the roller just contacts straight edge. If not turn the knob (Fig. 24, C) under the table to raise or lower the bed roller until it just contacts the straight edge.

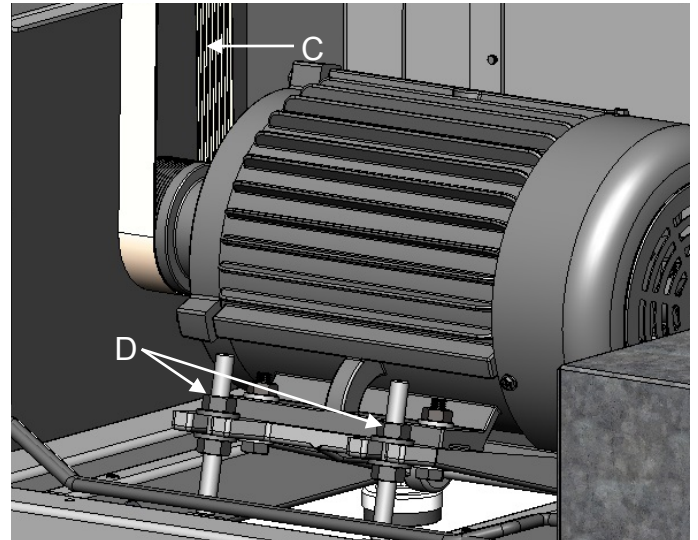


Figure 22: Poly-V-Belt Adjustment

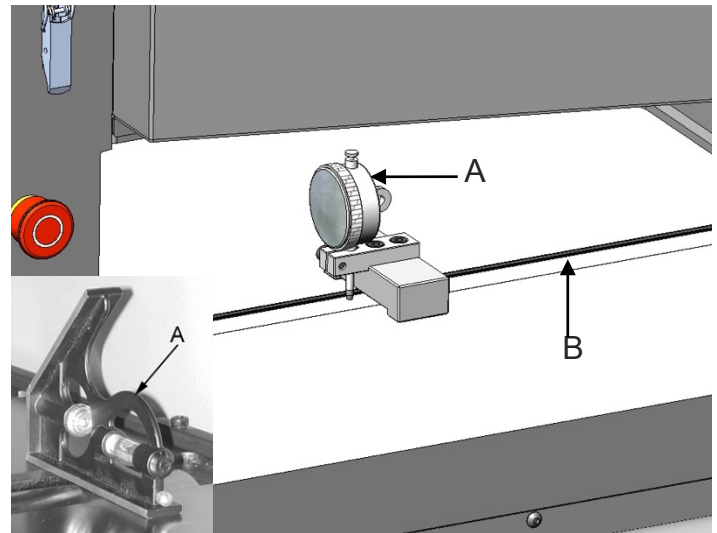


Figure 23: Table Roller Adjustment

⚠ WARNING

Disconnect the machine from power source before proceeding with any maintenance, lubrication or assembly! Failure to comply may cause serious injury!

Periodic, or regular inspections are required to ensure that the machine is in proper adjustment, and that all hardware is tight.

Clean out-feed rollers and table with a non-flammable solvent to remove pitch, gum and other unwanted build-up.

Periodically clean the inside of the machine for dust control.

Keep pulleys and belts free from dirt, dust, oil and grease. Replace worn belts as needed.

Replace worn knives or sharpen. If a knife gets nicked stagger the knives. Move one knife no more than 1/8" to the right and another knife no more than 1/8" to the left.

There is one limit switch on the planer that triggers if the hood is opened. Keep it clean and blown out with an air hose.

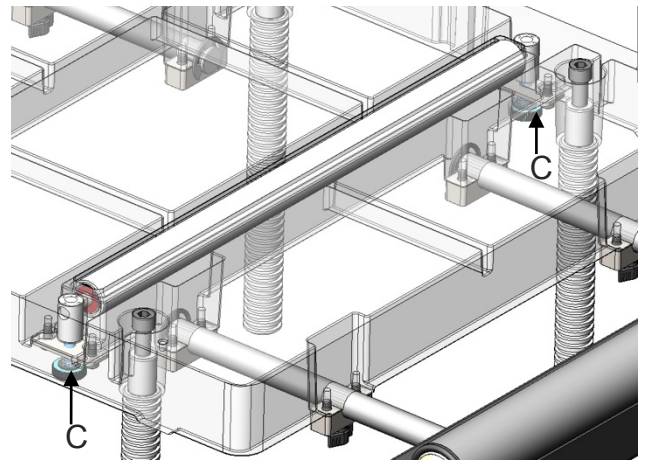


Figure 24: Table Roller Adjustment

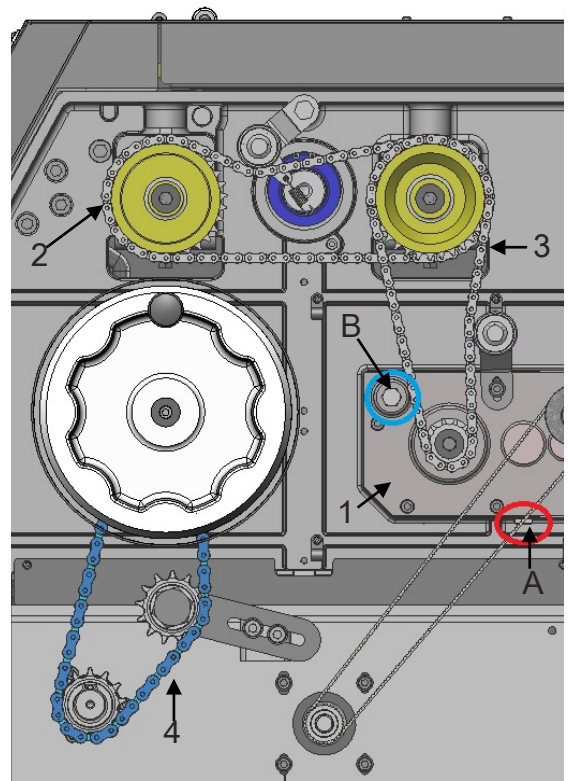


Figure 25: Lubrication

Lubrication (Fig. 25, 26 & 27)

No.	Position	Grease	Oil
1	Gear Box	No	Yes
2	Chain	Yes	No
3	Chain	Yes	No
4	Chain	Yes	No
5	Chain	Yes	No
6	Bushing	No	Yes
7	Lead Screw	Yes	No

- The Gear Box oil must be changed after 2500 hours of work. (Fig. 25)

- All chains must be lubricated regularly. (Fig. 25 & 26)

-Every 30 hours, lubricate the bushings. (Fig. 27)

- Lubricate the four lead screws regularly. (Fig. 26).

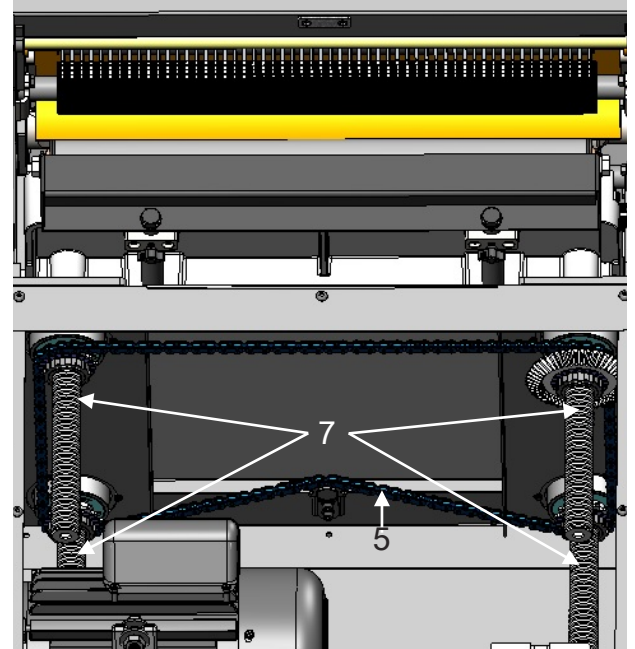


Figure 26: Lubrication

Change Lubricant

When lubrication needs to be changed:

1. Loosen the screw (Fig. 25, A).
2. Clean out old lubrication and let it dry.
3. Tighten screw A.
4. Replace clean lubricant by hole B

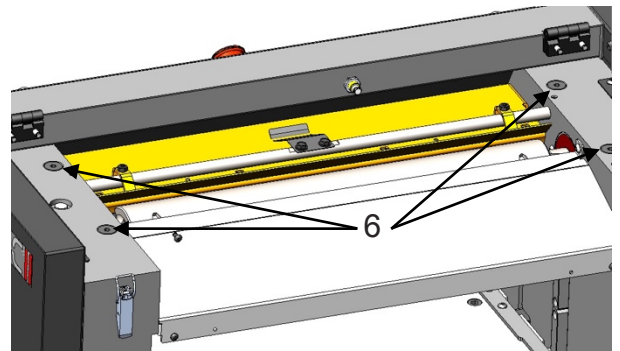


Figure 27: Lubrication

TROUBLESHOOTING

Description of	Possible Cause	Corrective Action
Machine will not start	<ol style="list-style-type: none"> 1. Fuse blown or circuit breaker tripped 2. Cord damaged 3. Not connected to power source 4. Connected to wrong voltage 5. Top cover is open 6. Emergency stop button pressed 7. Overload tripped 	<ol style="list-style-type: none"> 1. Replace fuse or reset circuit breaker 2. Have cord replaced 3. Check connection 4. Check voltage 5. Close top cover 6. Rotate emergency stop button clockwise until it pops out 7. Remove lower rear cover on the base and press reset switch found inside
Cutterhead does not come up to speed	<ol style="list-style-type: none"> 1. Low current 2. Motor not wired for correct voltage 	<ol style="list-style-type: none"> 1. Contact local electric company 2. Refer to motor nameplate for correct voltage
Workpiece stops when feeding	<ol style="list-style-type: none"> 1. Too much material being removed in one pass 2. Chipbreaker or pressure bar set too low 3. Insufficient pressure on in-feed or out-feed rollers 	<ol style="list-style-type: none"> 1. Reduce the amount of material being removed 2. Raise the pressure 3. Increase pressure on in-feed or out-feed rollers
Snipe	<ol style="list-style-type: none"> 1. Incorrect setting for infeed, out-feed rollers, pressure bar 2. Inadequate support of long boards 3. Table roller not set properly 	<ol style="list-style-type: none"> 1. Adjust feed system 2. Support long boards with extension rollers 3. Adjust table roller until desired results are achieved

Fuzzy Grain	<ol style="list-style-type: none"> 1. Planing wood with a high moisture content 2. Dull knives 	<ol style="list-style-type: none"> 1. Allow wood to dry properly 2. Rotate, replace or sharpen knives
Poor feeding of lumber	<ol style="list-style-type: none"> 1. Inadequate feed roll pressure 2. Planer bed dirty 3. Drive-belt(s) slipping 4. Dirty feed rollers 5. Incorrect setting for in-feed, out-feed rollers, pressure bar 	<ol style="list-style-type: none"> 1. Adjust feed roll tension or lower feed rollers 2. Clean pitch and residue off table with a non-flammable solvent 3. Increase drive-belt tension 4. Clean feed rollers with a non-flammable solvent 5. Adjust feed system

Dust Collection

To ensure proper operation and the longest knife life, it is critical to use dust extraction on this machine. Failure to do so may void your warranty. It is also important to maintain full air flow to your dust collection system. Make sure the filter media is clean and there are no obstructions in the ducting.

EXPLODED VIEWS

Cutterhead & Drivetrain

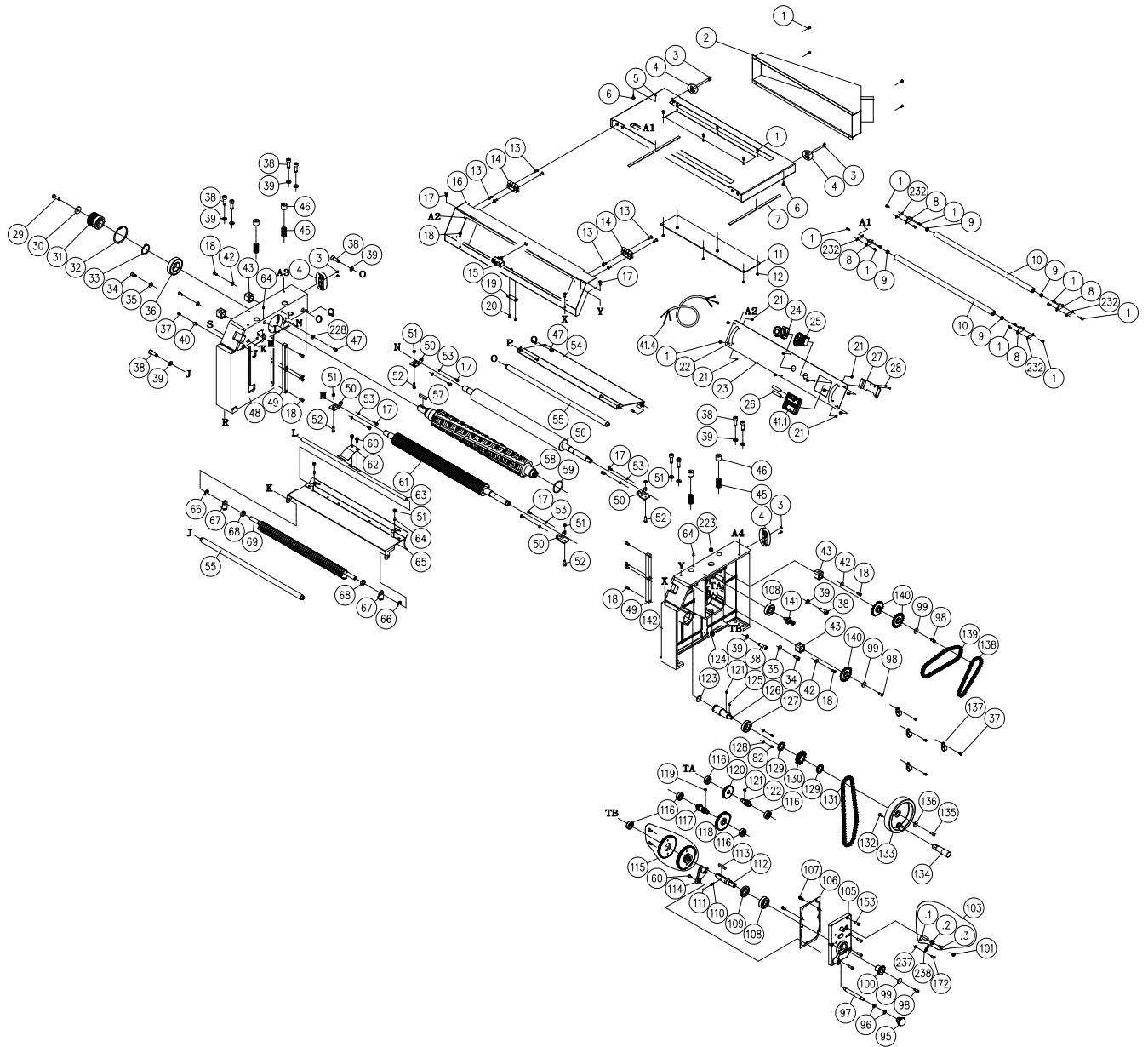
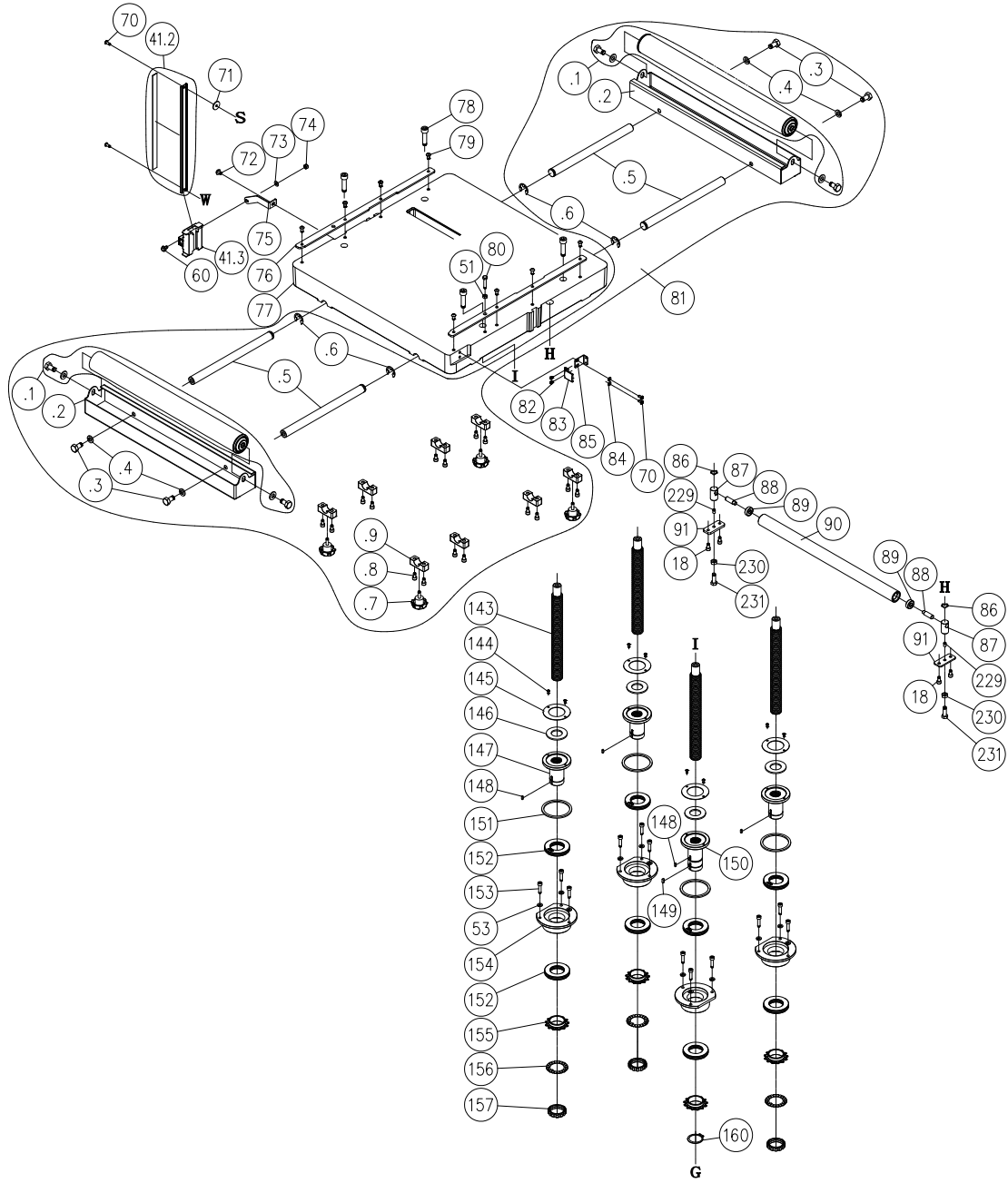
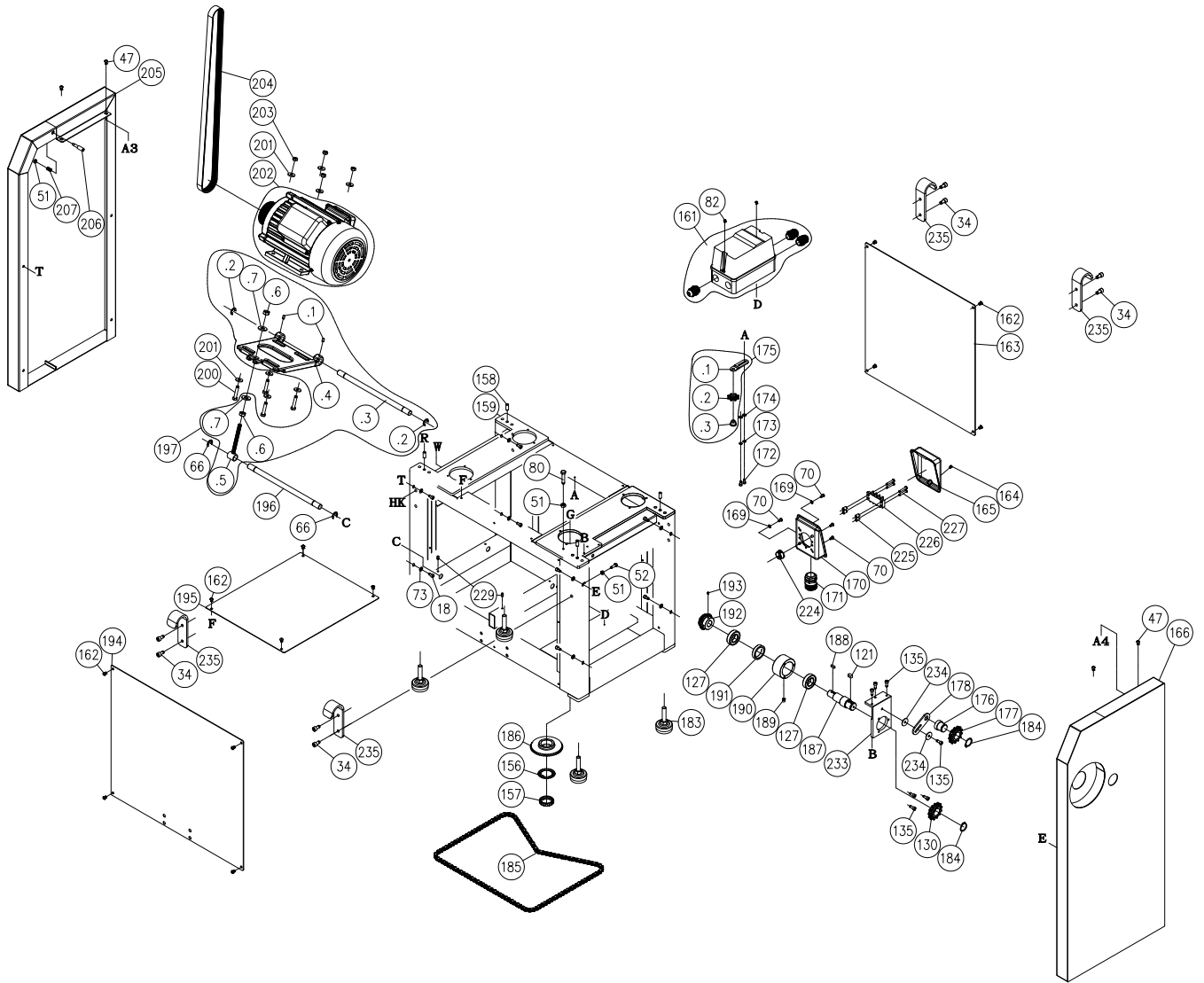


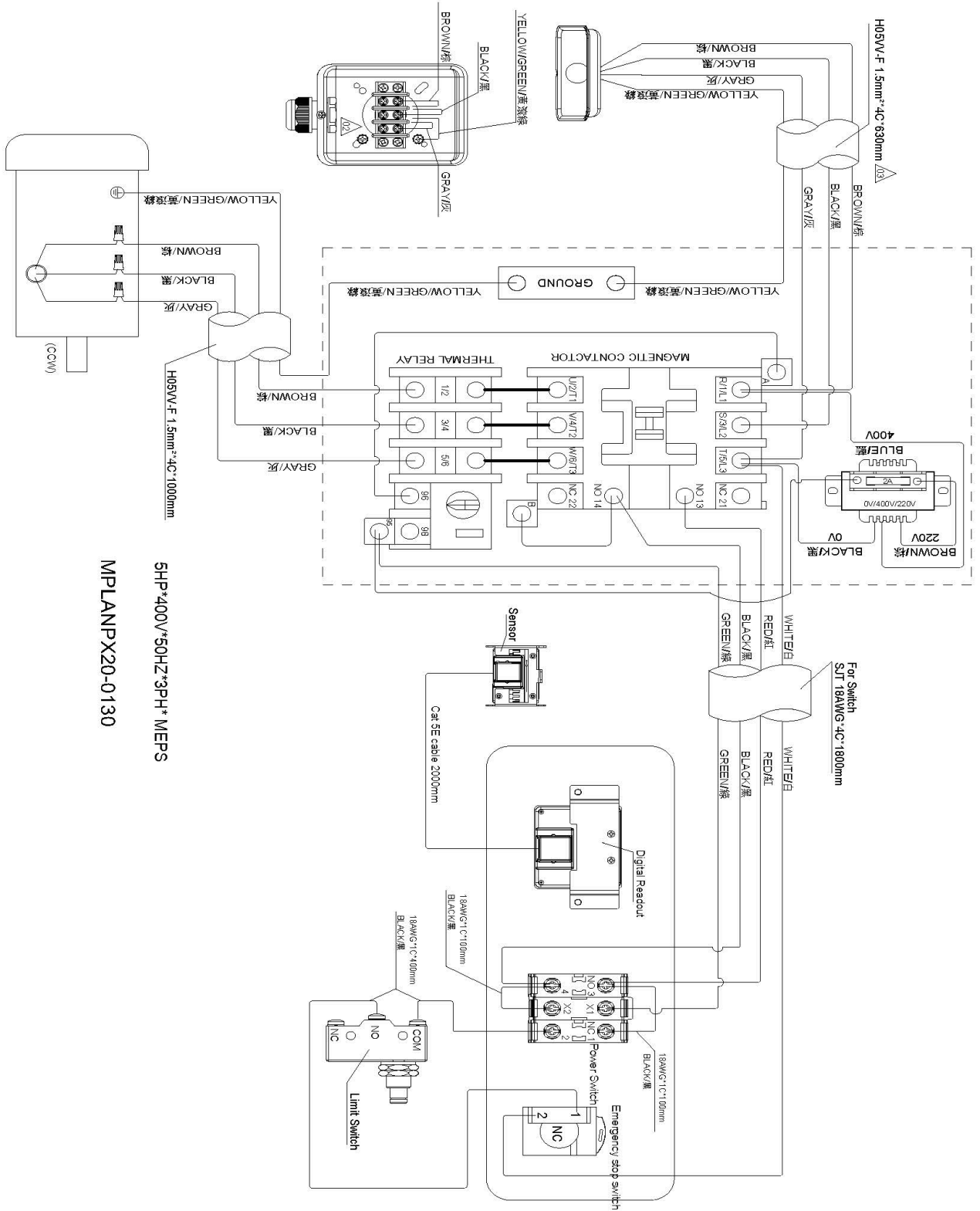
Table & Lift



Stand & Motor



Wiring Diagram 400V Three Phase



SHP*400V*50HZ*3PH*MEPS
 MPLANPX20-0130

MPLANPX20-0130 Part List

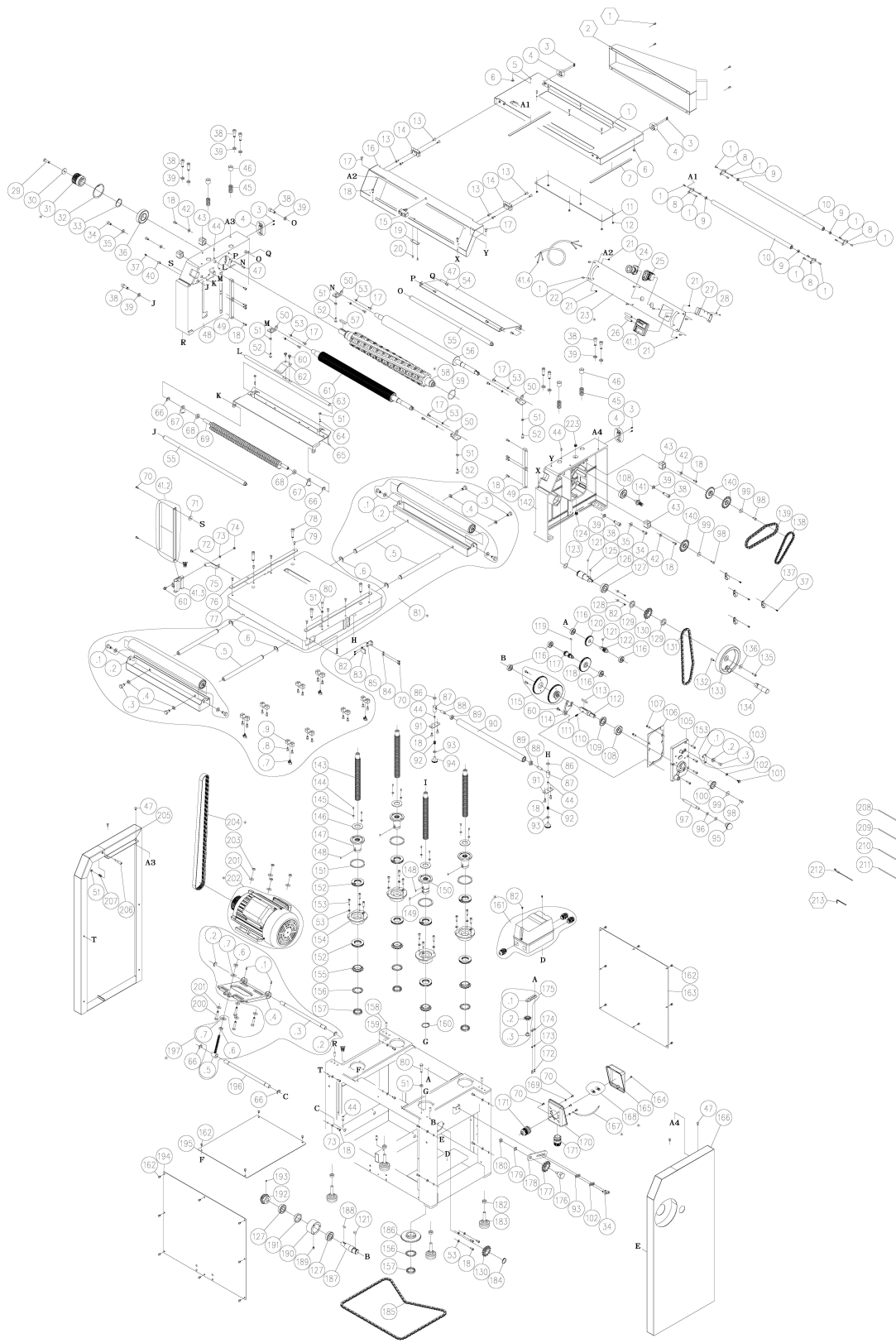
Key	Part No.	Descriptions	Specification	Q'ty
1	000804-107	Round Head Hex Screw	M5*0.8P*12	30
2	174833-196	Dust Chute		1
3	000302-201	Round Head Phillips Screw	M4*0.7P*6	8
4	230409-905	Buckle	CT-22	2
5	174832-196	Top Cover		1
6	340007-615	Block		2
7	200113-615	Sponge		2
8	174723-904	Roller Bracket		4
9	030119-000	Ball Bearing	605	4
10	361392-906	Roller		2
11	251317-620	PC Board		1
12	008302-100	Hex. Lock Nut	M5*0.8P/(8B*6H)	6
13	000403-207	Flat Head Phillips Screw	M6*1.0P*16	8
14	679030-008	Butterfly Hinge	AZ2510B	2
15	491101-000	Limited Switch	MJ2-1307	1
16	174831-196	Control Box Cover		1
17	000002-101	Hex. Screw	M6*1.0P*12	10
18	000103-103	CAP Screw	M6*1.0P*12	29
19	174828-000	Limit Plate		1
20	002102-201	Flat Head Phillips Lock Screw	M4*0.7P*10L	2
21	000301-101	Round Head Phillips Screw	M3*0.5P*6	4
22	300117-909	Handle		2
24	491153-000	Emergency Stop	NPB22-H01R	1
25	491127-000	Power Switch	M22DP-SF11E230WB(I,O)	1
26	490488-000	Battery	AAA	2
27	174750-000	Fixing Plate		1
28	001202-602	#N/A	M3*1.06P*6	2
29	048201-101	#N/A	M8*1.25P*20	1
30	006001-043	Flat Washer	8.2*30*4.0t	1
31	381423-902	Cutterhead Pulley	60HZ	1
31	381454-902	Cutterhead Pulley	50HZ	1
32	010121-000	Retaining Ring	RTW-80	1
33	010025-000	Retaining Ring	STW-40	1
34	000104-104	CAP Screw	M8*1.25P*16	4
35	006001-054	Flat Washer	8.5*20*2.0t	2
36	030223-002	Ball Bearing	6208	1
37	000302-102	Round Head Phillips Screw	M4*0.7P*8	5
38	000105-102	CAP Screw	M10*1.5P*25	12
39	006307-300	Spring Washer	10.2*18.5	12
40	021107-100	Wire Fixing Buckle	ACC-1.5-B	1
41	924681-001	Digital Read Out Assembly	Wixey Model WR5502 (22")	1
42	006001-034	Flat Washer	6.7*16*2.0t	4
43	130384-000	Bushing		4
44	000203-103	SET Screw	M6*1.0P*10	6
45	280276-000	Spring		4
46	380200-901	Screw		4
47	000801-202	Round Head Hex Screw	M6*1.0P*12	9
48	051446-000	Column-L		1
49	381405-902	Fixing Plate		4
50	174825-904	Adjustable Plate		4
51	008005-100	Hex. Nut	M6*1.0P(10B*5H)	9
52	000002-104	Hex. Screw	M6*1.0P*20	4
53	006303-100	Spring Washer	6.5*10.5	23
54	174830-196	Chip Guide		1
55	361391-902	Rod		2
56	361417-000	Outfeed Roller		1

57	012006-001	Key	8*8*40	1
58	924839-001	Helical Cutterhead Assy	LAGUNA SHEAR-TEC II	1
59	043343-000	Retaining Ring	NBR/46.3*3.1	1
60	000902-102	Hex. Screw W/Washer	M6*1.0P*12	4
61	924838-001	Infeed Roller Assembly		1
62	270015-901	Spring Plate		1
63	361389-902	Support Rod		1
64	000203-104	SET Screw	M6*1.0P*12	2
65	174837-019	Front Chip Guide		1
66	010208-000	Retaining Ring	ETW-12	4
67	174722-905	Anti-kick-back Finger		56
68	250060-615	Spacer		57
69	361390-902	Anti-kick-back Shaft		1
70	000303-104	Round Head Phillips Screw	M5*0.8P*12	8
71	006001-127	Flat Washer	5.5*22*2.0t	1
72	001603-102	Round Head Phillips Screw w/Flat Washer	M6*1.0P*10/6*13.2*1.0t	1
73	006001-032	Flat Washer	6.6*13*1.0t	9
74	008304-100	Hex. Lock Nut	M6*1.0P(10B*7H)	1
75	174827-904	Bracket		1
76	174826-904	Guide Plate		2
77	051449-000	Table		1
78	002604-103	Cap Locking Screw	M10*1.5P*40	4
79	000801-102	Round Head Hex Screw	M6*1.0P*12	8
80	000002-106	Hex. Screw	M6*1.0P*30	2
81	924841-001	Extension Roller Assembly		1
82	000302-701	Round Head Phillips Screw	M4*0.7P*6	6
83	250463-620	Pointor		1
84	006001-009	Flat Washer	5.2*10*1.0t	2
85	174561-196	Pointor Fixing Plate		1
86	006704-100	Waves Washer	WW-12	2
87	361365-902	Guide Block		2
88	361384-902	Roller Shaft		2
89	030005-001	Ball Bearing	608	2
90	190308-000	Roller		1
91	174763-904	Adjustable Plate		2
92	280261-000	Spring		2
93	006001-045	Flat Washer	8.5*16*1.0t	4
94	290110-000	Flat Head Bolt		2
95	250372-615	Knob		1
96	043303-000	Retaining Ring	P12	2
97	360358-901	Shaft		1
98	000002-203	Hex. Screw	M6*1.0P*16	3
99	006001-021	Flat Washer	6.2*22*3t	3
100	150008-000	Chain Sprocket		1
101	290104-902	Shoulder Screw		1
102	006305-100	Spring Washer	8.2*13.7	3
103	924699-001	Idler Assembly		1
105	090358-920	Gearbox Cover		1
106	340012-615	Gearbox Gasket		1
107	360355-901	Pin		2
108	030208-002	Ball Bearing	6204	2
109	043505-000	Oil Seal	SC25*47*6	1
110	280052-000	Spring		1
111	017002-000	Steel Ball	Ø6	1

112	360357-901	Shaft		1
113	012004-003	Key	6*6*40	1
114	130404-000	Shifting Claw		1
115	924811-001	Gear Assembly		1
116	030205-002	Ball Bearing	6201	5
117	320356-000	Shaft		1
118	320198-000	Gear		1
119	012003-002	Key	5*5*10	1
120	320406-000	Gear	52T	1
121	012003-003	Key	5*5*12	3
122	320160-000	Shaft		1
123	043337-000	O-Ring	P22	1
124	043401-000	Plug	PT1/4"-19	1
125	012002-011	Key	4*4*15	1
126	361383-902	Handwheel Assembly		1
127	030104-001	Ball Bearing	6005	3
128	006001-003	Flat Washer	4.3*12*1.0t	2
129	174700-902	Spacer		2
130	380259-000	Sprocket		2
131	016019-000	Chain	#40*42P	1
132	000702-104	Flat Head Hex. Screw	M6*1.0P*16	1
133	240092-008	Hand Wheel		1
134	230284-000	Folding Handle	HL-65	1
135	000103-105	CAP Screw	M6*1.0P*15	1
136	006001-026	Flat Washer	6.4*20*3.0t	1
137	021104-000	Wire Fixing Buckle	ACC-5	4
138	016322-000	Chain	#06B*42P	1
139	016311-000	Chain	#06B*54P	1
140	150029-000	Chain Sprocket		3
141	320405-000	Gear		1
142	051447-000	Column-R		1
143	361314-902	Lifting Lead Screw		4

144	000805-705	Round Head Hex Screw	M4*0.7P*8	8
145	006001-001	Flat Washer	4.3*10*1.0t	8
146	660289-000	Paking		4
147	051416-902	Lead Screw Seat		3
148	012001-003	Key	3*3*10	4
149	012002-005	Key	4*4*12	1
150	051415-902	Main Lead Screw Seat		1
151	660290-000	Packing		4
152	920133-001	Thrust Bearing		8
153	000103-107	CAP Screw	M6*1.0P*20	17
154	381404-902	Bearing Housing - Top		4
155	150016-000	Lifting Sprocket		4
156	170746-901	Teeth Washer		4
157	130094-903	Lock Nut		4
158	360413-901	Fixing Pin		4
159	174836-000	Base Casting		1
160	010014-000	Retaining Ring	STW-35	1
161	938069-001	Magnetic Switch Assembly	5HP*400V*3PH*AUR	1
162	000801-108	Round Head Hex Screw	M6*1.0P*8	20
163	174845-196	Base Rear Cover		1
164	003303-102	Round Head Phillips Screw	3/16"-24NC*1/4"	1
165	490124-000	Termnal Cover		1
166	174820-008	Side Cover - R		1
167	471008-001	Connect Cord	10AWG*1C*153mm	1
167	471026-028	#N/A	12AWG/3.5mm2*1C*153mm	1
168	021203-000	Relief Bushing	SW-P6H for 1PH	3
168	021203-000	Relief Bushing	SW-P6H for 3PH	4
169	006502-100	Teeth Washer	5.3*10(BW-5)	2
170	491116-008	Connect Box		1
171	023701-007	Strain Relief	MG25AS-14B	2
172	000102-103	CAP Screw	M5*0.8P*10	2
173	006302-300	Spring Washer	5.1*9.3	2
174	006001-012	Flat Washer	5.3*12*1.0t	2
175	920135-001	Tension Wheel Assembly		1
176	290040-901	Idler Shaft		1
177	150001-000	Idler		1
178	170413-901	Chain Tensioner Bracket		1
179	006006-120	Flat Washer	20*10.2±0.1*2±0.1	1
180	008007-100	Hex. Nut	M10*1.5P(17B*8H)	1
182	008009-100	Hex. Nut	M12*1.75P(19B*10H)	4
183	230403-000	Feet		4
184	010011-000	Retaining Ring	STW-25	1
185	016229-000	Chain	Z410*136P	1
186	320403-000	Bevel Gear		1
187	361312-902	Lifting Shaft		1
188	012003-004	Key	5*5*15	1
189	000204-102	SET Screw	M8*1.25P*10	1
190	381402-902	Bearing Housing		1
191	381403-902	Spacer		1
192	320207-000	Bevel Gear		1
193	000202-102	SET Screw	M5*0.8P*8	1
194	174834-196	Base Front Cover		1
195	174835-196	Base Top Cover		1
196	361385-902	Support Rod		1
197	925023-001	Motor Mounting Assembly		1
.1	000203-103	SET Screw	M6*1.0P*10	2
.2	010208-000	Retaining Ring	ETW-12	2
.3	361385-902	Support Rod		1
.4	050287-008	Motor Plate		1

.5	380148-901	Adjustable Rod		1
.6	008007-100	Hex. Nut	M10*1.5P(17B*8H)	2
.7	006003-091	Flat Washer	13*28*3.0t	2
197	925024-001	Motor Mounting Assembly	For MEPS Motor	1
.1	000204-102	SET Screw	M8*1.25P*10	2
.2	010209-000	Retaining Ring	ETW-15	2
.3	361423-902	Support Rod		1
.4	050321-008	Motor Plate		1
.5	380148-901	Adjustable Rod		2
.6	008007-100	Hex. Nut	M10*1.5P(17B*8H)	4
.7	006003-091	Flat Washer	13*28*3.0t	4
200	000003-108	Hex. Screw	M8*1.25P*40	4
201	006001-041	Flat Washer	8.2*22*3.0t	8
202	901309-001	Motor Assembly	5HP*400V*50HZ*3PH*2P	1
203	008006-800	Hex. Nut	M8*1.25P(13B*6.5H)	4
204	014372-000	Poly-V-Belt	530J-12	1
205	174823-008	Side Cover - L		1
206	360579-902	Support Pin		1
207	280089-901	Spring		1
208	471037-084	Connect Cord	18AWG*1C*100	1
209	471037-085	Connect Cord	18AWG*1C*100	1
210	471037-091	Connect Cord	18AWG*1C*400	1
211	471037-111	Connect Cord	18AWG*1C*400	1
212	230297-615	Cord Fixed Chain		4
213	040003-000	Hex. Wrench	3*63mm	1
223	043406-000	Plug	PT1/4"-19	1



Caster Set

Installing universal caster set (Fig. 28):

1. Raise and block planer for attaching caster set.
2. Assemble swivel caster into swivel caster bracket (straight bracket) by placing bolt #5 through bracket and caster and securing with lock nut #4. Then place bolt #6 down through bracket into caster mount.
3. Attach swivel caster to front (infeed) center of frame with four bolts #1, washers #2 and nuts #3. Tighten all four bolts.
4. Assemble caster (wheel) #.2 to bracket #.1 using bolt #.3 and nut #.4. Repeat this process for second caster.
5. Attach caster assembly #9 to rear (outfeed) side of frame using two bolts #1, two washers #2 and two nuts #3. Repeat process for both casters. Tighten all four bolts.
6. Carefully remove blocks with planer resting on casters.

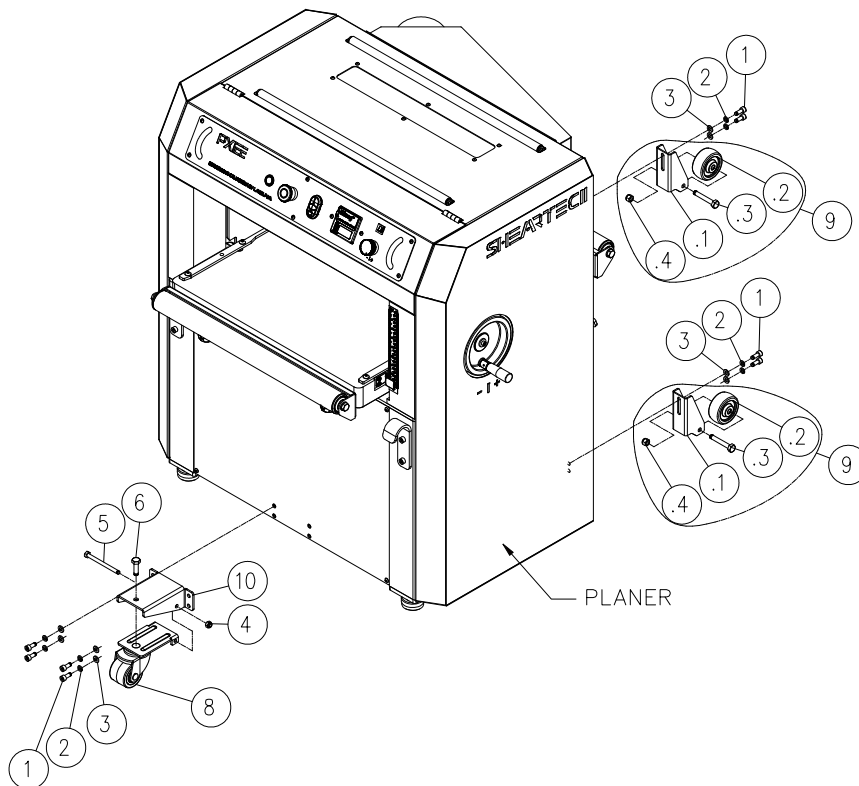


Figure 28: Caster Installation

Parts List for Universal Caster Set

Key	Part No.	Description	Specifications	Qty.
	JK0008	Universal Wheel Set		1
1	000104-106	CAP Screw	M8-1.25x20	12
2	006305-100	Spring Washer	8.2-13.7	8
3	006001-049	Flat Washer	8.5-16x2.0	8
4	008306-100	Lock Nut	M8-1.25P(13Bx9H)	1
5	000003-312	Hex Nut	M8-1.25x100	1
6	000004-104	Hex Screw	M10-1.5x35	1
8	920306-001	Swivel Wheel		1
9	970526-001	Wheel		2
.1	174877-904	Bracket		1
.2	250400-000	Wheel		1
.3	003005-106	Hex Screw	3/8"-16x2-1/2"	1
.4	009102-200	Lock Nut	3/8"-16 (14.2Bx11.5H)	1
10	174876-904	Bracket, Swivel Caster		1
11	174931-904	Universal Bracket	Not used for planer	1

SPECIFICATIONS: PX20

Main Motor:	5 HP / 1750 RPM
Electrical:	400V / 50Hz / 3PH
Circuit:	3 Phase
Air Volume:	600 CFM per port (min.)
Inlet:	One 4" port
Switch:	ON/OFF for main motor, E-STOP
Packing Size: (L x W x H)	42" x 29" x 48" (1067 x 737 x 1219 mm)
Machine weight:	830 lbs. (377 kg.)
Shipping weight:	934 lbs. (424 kg.)

SUPPLIES:

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Replacement knife screws

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