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OPERATORS MANUAL

THICKNESSER
by
INVICTA

Model
DGI-63D

INVICTA USA
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English Version

General Instructions

As with all equipment, safety is to be a priority. The operator should understand the safety features and apply good safety habits in transportation, adjustment, maintenance and operation of the machine. Practice and teach others the safe operating procedures of this machine and help to prevent the possibility of accidents.

Safety Rules

*1. **FOR YOUR OWN SAFETY, READ THE INSTRUCTION MANUAL BEFORE OPERATING THE MACHINE.***
Learning the machine's application, limitations, and specific hazards will greatly minimize the possibility of accidents and injury.

*2. **WEAR EYE AND HEARING PROTECTION. ALWAYS USE SAFETY GLASSES.***
Everyday eyeglasses are NOT safety glasses. USE CERTIFIED SAFETY EQUIPMENT. Eye protection equipment should comply with ANSI Z87.1 standards. Hearing equipment should comply with ANSI S3.19 standards.

*3. **WEAR PROPER APPAREL.***
Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Nonslip footwear is recommended. Wear protective hair covering to contain long hair.

*4. **DO NOT USE THE MACHINE IN A DANGEROUS ENVIRONMENT.***
The use of power tools in damp or wet locations or in rain can cause shock or electrocution.
Keep your work area well-lit to prevent tripping or placing arms, hands, and fingers in danger.

*5. **MAINTAIN ALL TOOLS AND MACHINES IN PEAK CONDITION.***
Keep tools sharp and clean for best and safest performance.
Follow instructions for lubricating and changing accessories.
Poorly maintained tools and machines can further damage the tool or machine and/or cause injury.

*6. **CHECK FOR DAMAGED PARTS.***
*Before using the machine, check for any damaged parts. Check for alignment of moving parts, binding of moving parts, breakage of parts, and any other conditions that may affect its operation. A guard or any other part that is damaged **should be properly repaired or replaced.***
Damaged parts can cause further damage to the machine and/or injury.

*7. **KEEP THE WORK AREA CLEAN.***
Cluttered areas and benches invite accidents.

*8. **KEEP CHILDREN AND VISITORS AWAY.***
Your shop is a potentially dangerous environment. Children and visitors can be injured.

*9. **REDUCE THE RISK OF UNINTENTIONAL STARTING.***
Make sure that the switch is in the "OFF" position before plugging in the power cord. In the event of a power failure, move the switch to the "OFF" position.
An accidental start-up can cause injury.

*10. **USE THE GUARDS.***
Check to see that all guards are in place, secured, and working correctly to reduce the risk of injury.

*11. **REMOVE ADJUSTING KEYS AND WRENCHES BEFORE STARTING THE MACHINE.***
Tools, scrap pieces, and other debris can be thrown at high speed, causing injury.

*12. **USE THE RIGHT MACHINE.***
Don't force a machine or an attachment to do a job for which it was not designed. Damage to the machine and/or injury may result.

13. ***USE RECOMMENDED ACCESSORIES.***
The use of accessories and attachments not recommended by Delta may cause damage to the machine or injury to the user.

14. ***USE THE PROPER EXTENSION CORD.***
Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage, resulting in loss of power and overheating. See the Extension Cord Chart for the correct size depending on the cord length and nameplate ampere rating. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.

15. ***SECURE THE WORKPIECE.***
Use clamps or a vise to hold the workpiece when practical. Loss of control of a workpiece can cause injury.

16. ***FEED THE WORKPIECE AGAINST THE DIRECTION OF THE ROTATION OF THE BLADE, CUTTER, OR ABRASIVE SURFACE.***
Feeding it from the other direction will cause the workpiece to be thrown out at high speed.

17. ***DON'T FORCE THE WORKPIECE ON THE MACHINE.***
Damage to the machine and/or injury may result.

18. ***DON'T OVERREACH.***
Loss of balance can make you fall into a working machine, causing injury.

19. ***NEVER STAND ON THE MACHINE.***
Injury could occur if the tool tips, or if you accidentally contact the cutting tool.

20. ***NEVER LEAVE THE MACHINE RUNNING UNATTENDED.***
TURN THE POWER OFF.
Don't leave the machine until it comes to a complete stop. A child or visitor could be injured.

21. ***TURN THE MACHINE "OFF", AND DISCONNECT THE MACHINE FROM THE POWER SOURCE*** *before installing or removing accessories, before adjusting or changing set-ups, or when making repairs. An accidental start-up can cause injury.*

22. ***MAKE YOUR WORKSHOP CHILDPROOF WITH PADLOCKS, MASTER SWITCHES, OR BY REMOVING STARTER KEYS.***
The accidental start-up

23. ***STAY ALERT, WATCH WHAT YOU ARE DOING, AND USE COMMON SENSE. DO NOT USE THE MACHINE WHEN YOU ARE TIRED OR UNDER THE INFLUENCE OF DRUGS, ALCOHOL, OR MEDICATION.***
A moment of inattention while operating power tools may result in injury.

24. ***USE OF THIS TOOL CAN GENERATE AND DISBURSE DUST OR OTHER AIRBORNE PARTICLES, INCLUDING WOOD DUST, CRYSTALLINE SILICA DUST AND ASBESTOS DUST.***
Direct particles away from face and body. Always operate tool in well ventilated area and provide for proper dust removal. Use dust collection system wherever possible. Exposure to the dust may cause serious and permanent respiratory or other injury, including silicosis (a serious lung disease), cancer, and death. Avoid breathing the dust, and avoid prolonged contact with dust. Allowing dust to get into your mouth or eyes, or lay on your skin may promote absorption of harmful material. Always use properly fitting NIOSH/OSHA approved respiratory protection appropriate for the dust exposure, and wash exposed areas with soap and water.

Additional Specific Safety Rules

*1. **DO NOT OPERATE THIS MACHINE** until it is completely assembled and installed according to the instructions. A machine incorrectly assembled can cause serious injury.*

*2. **OBTAIN ADVICE** from your supervisor, instructor, or another qualified person if you are not thoroughly familiar with the operation of this machine. Knowledge is safety.*

*3. **FOLLOW ALL WIRING CODES** and recommended electrical connections to prevent shock or electrocution.*

*4. **KEEP KNIVES SHARP** and free from rust and pitch. Dull or rusted knives work harder and can cause kickback.*

*5. **NEVER TURN THE MACHINE "ON"** before clearing the table of all objects (tools, scraps of wood, etc.). Flying debris can cause serious injury.*

*6**. NEVER TURN THE MACHINE "ON"** with the workpiece contacting the cutterhead. Kickback can occur.*

*7. **SECURE THE MACHINE TO A SUPPORTING SURFACE** to prevent the machine from sliding, walking or tipping over.*

*8. **PROPERLY SECURE THE KNIVES IN THE CUTTERHEAD** before turning the power "ON". Loose blades may be thrown out at high speeds causing serious injury.*

*9. **LOCK THE SPEED SETTING SECURELY** before feeding the workpiece through the machine. Changing speeds while planing can cause kick-back.*

*10. **AVOID AWKWARD OPERATIONS AND HAND POSITIONS.** A sudden slip could cause a hand to move into the knives.*

*11. **KEEP ARMS, HANDS, AND FINGERS** away from the cutterhead, the chip exhaust opening, and the feed rollers to prevent severe cuts.*

*12. **NEVER REACH INTO THE CUTTERHEAD AREA** while the machine is running. Your hands can be drawn into the knives.*

*13. **DO NOT STAND IN LINE OF THE WORKPIECE.** Kickback can cause injury**.***

*14. **ALLOW THE CUTTERHEAD TO REACH FULL SPEED** before feeding a workpiece. Changing speeds while planing can cause kickback.*

*15. **WHEN PLANING BOWED STOCK,** place the concave (cup down) side of the stock on the table and cut with the grain to prevent kickback.*

*16. **DO NOT FEED A WORKPIECE** that is warped, contains knots, or is embedded with foreign objects (nails, staples, etc.). Kickback can occur.*

*17. **DO NOT FEED A SHORT, THIN, OR NARROW WORKPIECE INTO THE MACHINE**. Your hands can be drawn into the knives and/or the workpiece can be thrown at high speeds. See the "OPERATION" section of this instruction manual for details.*

*18. **DO NOT FEED A WORKPIECE** into the outfeed end of the machine. The workpiece will be thrown out of the opposite side at high speeds.*

*19. **REMOVE SHAVINGS ONLY** with the power "OFF" to prevent serious injury.*

*20. **PROPERLY SUPPORT LONG OR WIDE WORKPIECES.** Loss of control of the workpiece can cause serious injury.*

*21. **NEVER PERFORM LAYOUT, ASSEMBLY** or set-up work on the table/work area when the machine is running. Serious injury will result.*

*22. **TURN THE MACHINE "OFF", DISCONNECT IT FROM THE POWER SOURCE,** and clean the table/work area before leaving the machine. **LOCK THE SWITCH IN THE "OFF" POSITION** to prevent unauthorized use. Someone else might accidentally start the machine and cause injury to themselves or others.*

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

POWER CONNECTIONS

A separate electrical circuit should be used for your machines. This circuit should not be less than #12 wire and should be protected with a 20 Amp time lag fuse. If an extension cord is used, use only 3-wire extension cords which have 3- prong grounding type plugs and matching receptacle which will accept the machine's plug. Before connecting the machine to the power line, make sure the switch (s) is in the "OFF" position and be sure that the electric current is of the same characteristics as indicated on the machine. All line connections should make good contact. Running on low voltage will damage the machine.
DO NOT EXPOSE THE MACHINE TO RAIN OR OPERATE THE MACHINE IN DAMP LOCATIONS.

MOTOR SPECIFICATIONS

The 22-610 has a 10 HP three phase motor that comes wired at 230 volts and 60 HZ alternating current. The motor is also capable of being wired for 460 volt operation, but this connection must be done by a qualified electrician and conform to the National Electric Code and all local codes and ordinances.

GROUNDING INSTRUCTIONS

These machines are not supplied with power cords and they are intended to be permanently connected to the building's electrical system. All wiring must be done by a qualified electrician and conform to the National Electric Code and all local codes and ordinances. For wiring instructions, see section "ELECTRICAL CONNECTIONS" in this manual.

FUNCTIONAL DESCRIPTION

FOREWORD

The Invicta Industrial Model DGI-63D Planer with a 10 HP, three-phase motor capable of 230 volt or 460volt operation with an LVC magnetic starter and automatic reset overload protection; 4-knife cutterhead, infeed and outfeed rollers, chipbreakers, dust chute, knife-setting gauge and wrench.

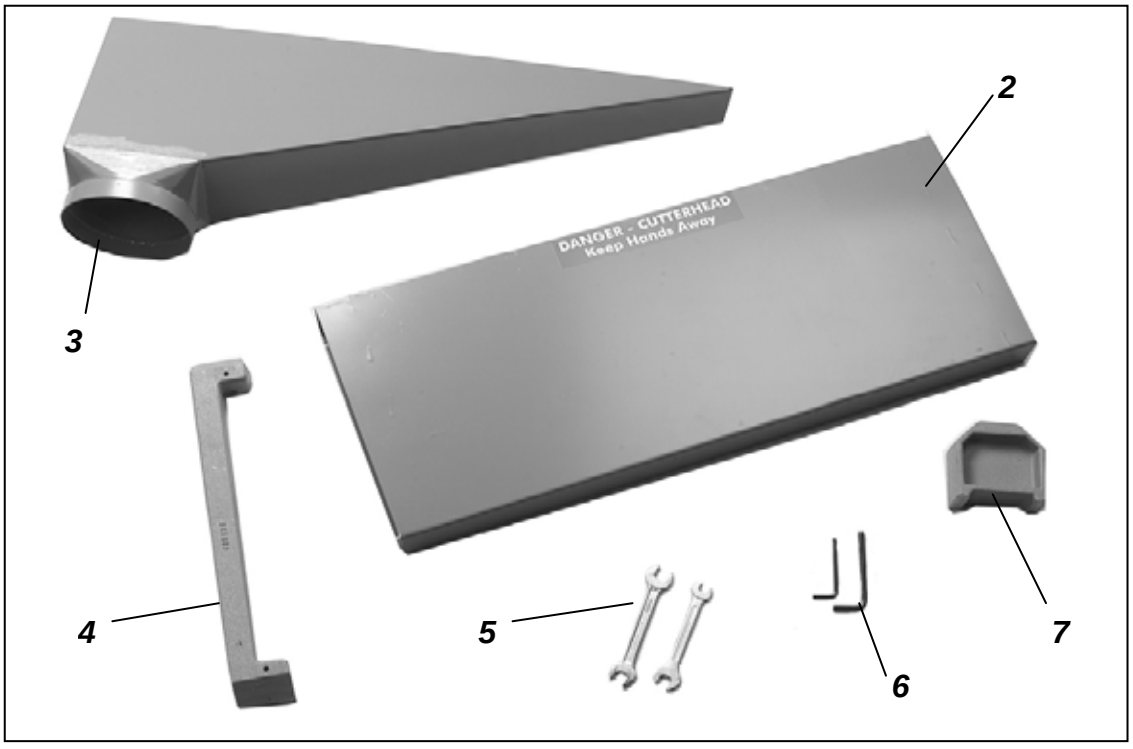
NOTICE: THE PHOTO ON THE MANUAL COVER ILLUSTRATES THE CURRENT PRODUCTION MODEL. ALL OTHER ILLUSTRATIONS CONTAINED IN THE MANUAL ARE REPRESENTATIVE ONLY AND MAY NOT DEPICT THE ACTUAL COLOR, LABELING OR ACESSORIES AND ARE INTENDED TO ILLUSTRATE TECHNIQUE ONLY.

CARTON CONTENTS

The planer is shipped complete in one container mounted to a shipping skid. Remove the wooden crate from around the machine. The planer is shipped with the motor, motor pulleys and belts assembled to the machine. Fig. 2, illustrates the loose items supplied with the machine.

1. Planer
2. Cutterhead guard
3. Dust chute
4. Knife guage
5. Open end wrenches
6. Hex wrenches
7. Gauge clock





UNPACKING AND CLEANING

Carefully unpack the machine and all loose items from the shipping container(s). Remove the protective coating from all unpainted surfaces. This coating may be removed with a soft cloth moistened with kerosene (do not use acetone, gasoline or lacquer thinner for this purpose). After cleaning, cover the unpainted surfaces with a good quality household floor paste wax.

UNLOADING AND POSITIONING MACHINE

This machine should be unloaded using a crane and slings around and under the table on both sides, as shown in Figure 2. Lift the machine slowly, making sure it is well balanced, and lower it carefully.

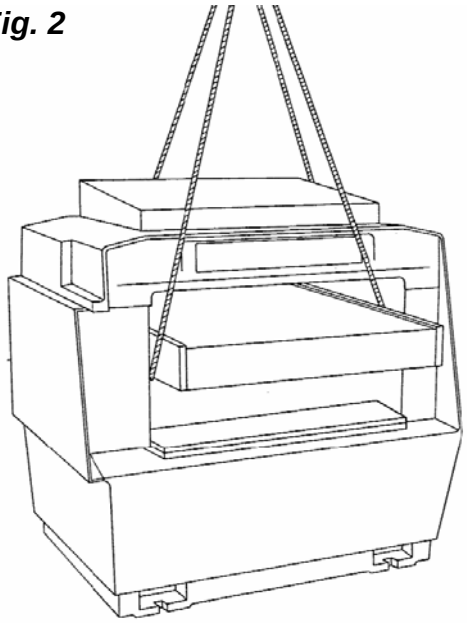
Using rollers or a similar hauling device, push the machine to the desired working site. Once the machine is in position it should be leveled and positioned on hard rubber pads placed underneath the four corners.

Remove protective coating from the table, bed rolls, feed rolls and cutterhead. This coating may be removed with a stiff brush and/or soft cloth moistened with kerosene (do not use acetone, gasoline or lacquer thinner for this purpose).

WARNING *CARE MUST BE TAKEN WHEN CLEANING THE CUTTERHEAD AS THE KNIVES ARE IN THE CUTTERHEAD AND THESE KNIVES ARE VERY SHARP.*

After cleaning table, cover table surface with a good quality paste wax.

Fig. 2



ELECTRICAL CONNECTIONS

Before connecting your machine to an electrical power system, make sure the motor rating agrees with the electrical system it is to be connected to. The 24" Planer is shipped wired for 230 volts, three phase operation.

If you desire to operate your planer at 460 volts, three phase operation, refer to the Electrical Instruction Manual supplied with your planer for detailed instructions on Changing Voftage of LVC Motor Starters. Three STEPS must be followed when changing line voltage. These steps are as follows:

1. Change leads in the motor junction box for the proper line voltage, as shown on the motor nameplate. Refer to Fig. 3.

2. Move the transformer primary pigtail to the proper terminal corresponding to the new input voltage.

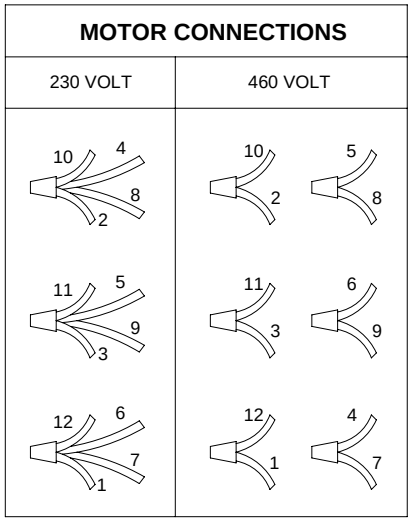


Fig. 3

3. Change the heater elements in the overload block for the proper voltage/amperage rating shown on the motor nameplate.

These three steps are clearly explained in the electrical instructions supplied with your planer.

To connect power to your machine, proceed as follows for either 200-230/460 volts, three phase operation.

1. Remove the four screws, one of which is shown at (A) Fig. 4, and remove cover (B).
2. Insert power line through entrance hole (E) and connect the three power lines to terminals L1, L2 and L3 (shown at C). The green ground wire should be connected to the ground terminal (J).
3. Replace cover (B) Fig. 4.

***IMPORTANT:** If after the machine is in operation, the cutterhead turns in the wrong direction, interchange any two of the three power lines (C) that are connected to terminals L1, L2 and L3.*

OVERLOAD PROTECTION

Your planer is provided with overload protection which will shutoff the motor if the planer is overloaded or if line voltage falls below safe levels, lithe motor shuts off due to overloading or low voltage, let the motor cool three to five minutes.
The overload block supplied with this planer will automatically reset itself and the machine can be started again by pushing the start button. If the machine continually shuts off due to overloading, the cause of overloading must be corrected. If this happens, it is recommended you obtain advice from a qualified electrician.

ASSEMBLING CUTTERHEAD GUARD AND DUST CHUTE

To assemble the cutterhead guard:

1. ***WARNING DISCONNECT MACHINE FROM POWER SOURCE***

2. Remove four screws and washers at (A) Fig. 6.
3. Place guard on planer cover (C) so that the holes in the guard (B) align with the holes in the cover (C).
4. Replace screws and washer removed in Step 1.
5. Remove three screws (E) Fig. 7 on planer cover (C).
6. Place dust chute on cover so that the holes in the dust chute (D) align with the holes in the cover (C).
7. Replace the screws and washers removed in Step 5.
8. The cutterhead guard (B) Fig. 7A and dust chute (D) Fig. 7A should be arranged as shown in Fig. 7A

Fig. 4

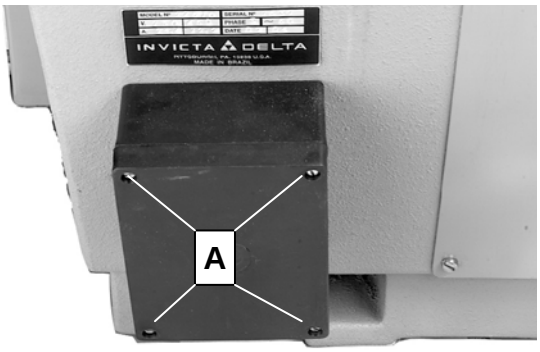


Fig. 5

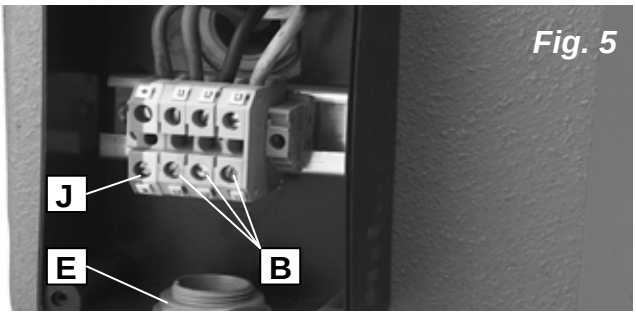


Fig. 6

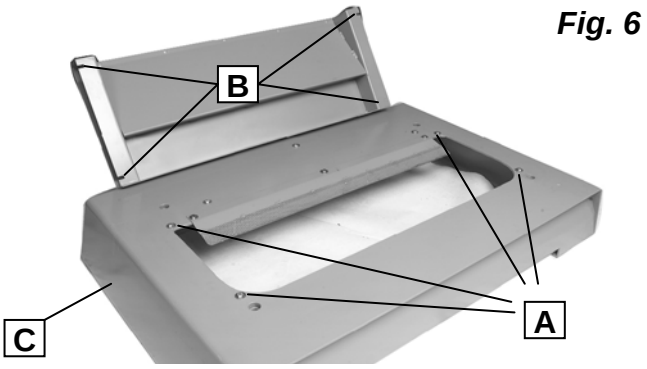


Fig. 7

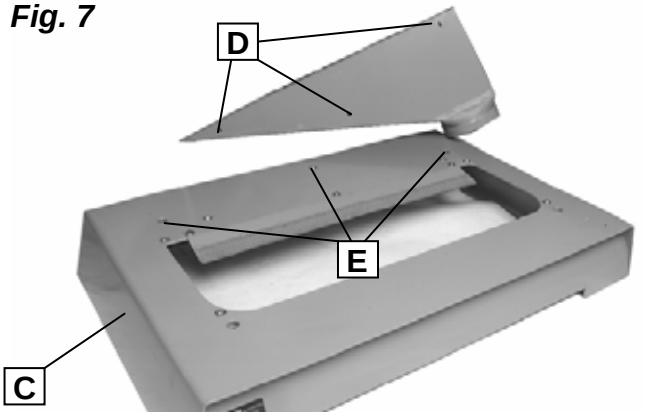
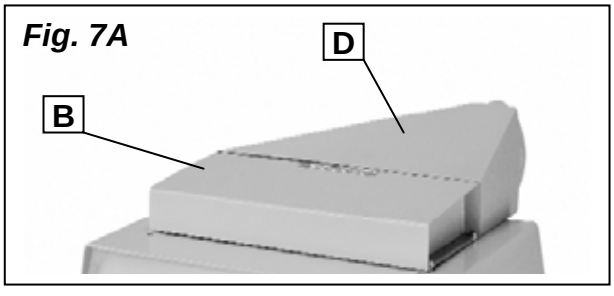


Fig. 7A



OPERATIONAL CONTROLS AND ADJUSTMENTS

STARTING AND STOPPING THE PLANER

The machine is started by pressing the green (shrouded)
"ON" button (A) and stopped by pressing the red (mushroom type) "OFF" button (B), as shown in Fig. 8.

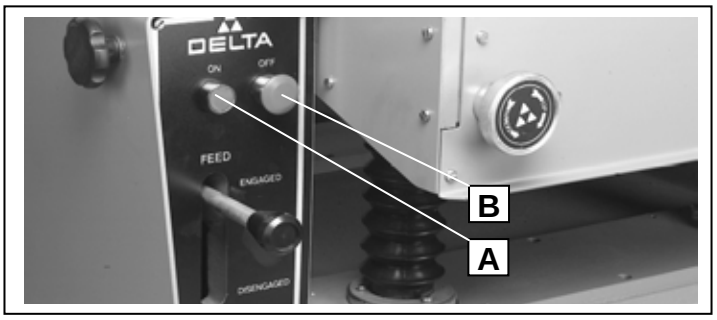


Fig. 8

TABLE RAISING AND LOWERING CONTROLS

WARNING DISCONNECT MACHINE FROM POWER SOURCE

For fast easy changes in thickness settings to accommodate thick or thin stock, the table can be rapidly raised or lowered by pulling up or pushing down on the table raising and lowering control lever (C) Fig. 9. NOTE: The machine must be turned "ON" and the feed rolls engaged when doing this. Fine adjustment of the table height can be made by loosening lock knob (D) Fig. 9, and turning table raising and lowering handwheel (E). Tighten lock knob (D) after table adjustment is made. The handy English/Metric Scale (F) indicates the desired table height setting. The English/Metric scale and shelf (G) Fig. 10, located on the front of the table is used to quickly determine the thickness of stock, before or after planing, by simply placing the stock on the shelf as shown in Fig. 10. This enables you to quickly position the table for the next cut.
NOTE: The setting of the table to its final position should
always be made by raising the table to the desired setting and not lowering the table. This insures that all backlash will be removed from the raising and lowering screws.

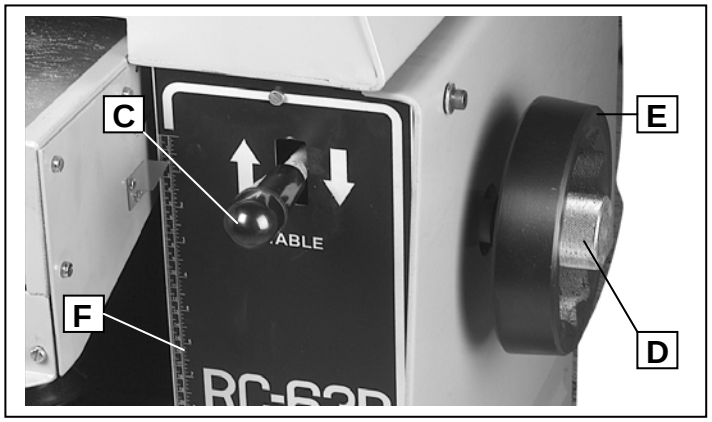


Fig. 9



Fig. 10

FEED ROLL SPEED CONTROLS

Your planer is supplied with feed roll speeds of 25 and 46 feet per minute. When the feed roll lever (A) is in the "up" position as shown in Fig. 11, the feed rolls are engaged and the planer will feed. When the lever (A) is in the "down" position the feed rolls are disengaged and the planer will not feed. To disenguage the feed rolls, at any time, simply push down on the engagement lever (A) Fig. 11.



Fig. 11

To change feed roll speeds, make sure the feed roll engagement lever (A) Fig. 12, is disengaged (in the down position) and open the left side door of the machine. When the belt (C) is on the smallest step of the motor pulley (D) and the largest step of the gearbox pulley (E), the feed roll speed will be 25 feet per minute. When the belt (C) is on the largest step of the motor pulley (D) and the smallest step of the gearbox pulley (E), the feed roll speed will be 46 feet per minute.

TABLE ROLLERS

Your planer is supplied with two table rollers (A) Fig. 13, which aid in feeding the stock by reducing friction and turn as the stock is fed through the planer. It is not possible to give exact dimensions on the proper height setting of the table rollers because each type of wood behaves differently. As a general rule, however, when planing rough stock the table rollers should be set HIGH and when planing smooth stock the table rollers should be set LOW.
To raise the table rollers (A) Fig. 13, turn adjustment knob (B) clockwise. To lower table rollers (A) turn adjustment knob (B) counterclockwise.

ANTI-KICKBACK FINGERS

Anti-kickback fingers (A) Fig. 14, are provided on your planer to prevent kickback. These fingers operate by gravity and it is necessary to inspect them occasionally to make sure they are free of gum and pitch so they move independently and operate correctly.

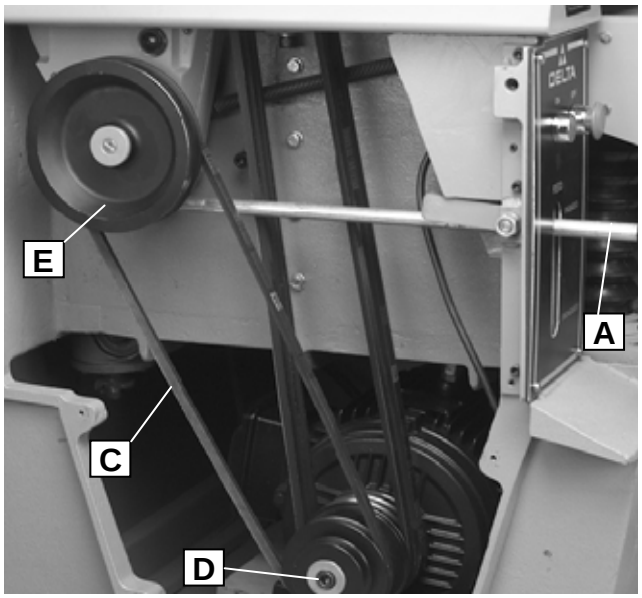


Fig. 12

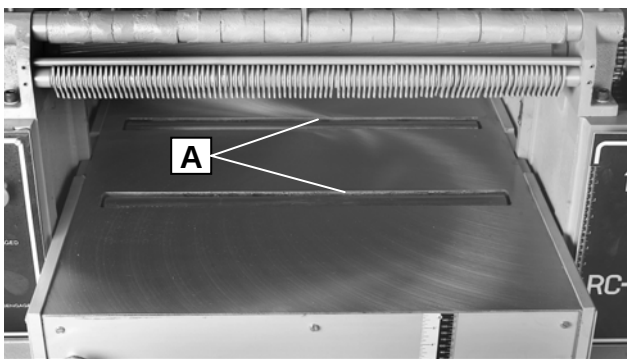


Fig. 13

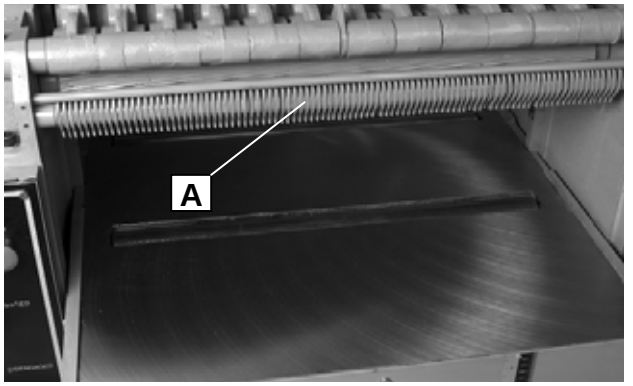


Fig. 14

CHECKING AND ADJUSTING BELT TENSION

DRIVE BELT TENSION: *Proper drive belt tension is obtained when there is zero deflection, using light finger pressure, on drive belts (A) Fig. 16, midway between pulleys.*
If an adjustment is necessary, push down on lever (B) Fig. 16, to disenguage feed roller. Loosen jam nut (C) Fig. 17, located on top of motor (D) and turn adjustment
stud (E) right or left as needed until proper drive belt tension is obtained. Tighten jam nut (C) after adjustment is made.

FEED ROLL BELT TENSION: *Proper tension on feed roll belt (F) Fig. 16, is obtained when there is approximately 1" deflection, using light finger pressure on feed roll belt (F), midway between pulleys. If an adjustment is necessary, change position of rod (B) Fig. 18, in stud (G) by tightening and loosening two nuts (H) until correct belt tension is obtained. Both nuts (H) should be tight against stud (G) as shown in Fig. 18, after adjustment is made.*

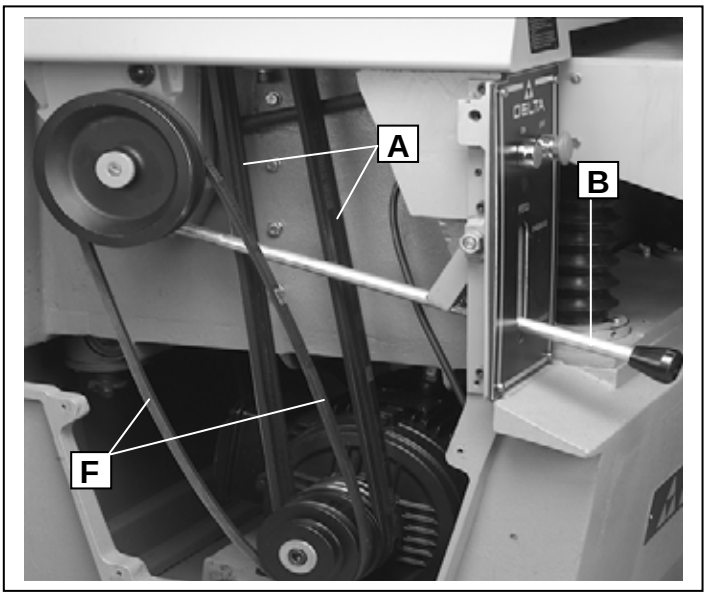


Fig. 16

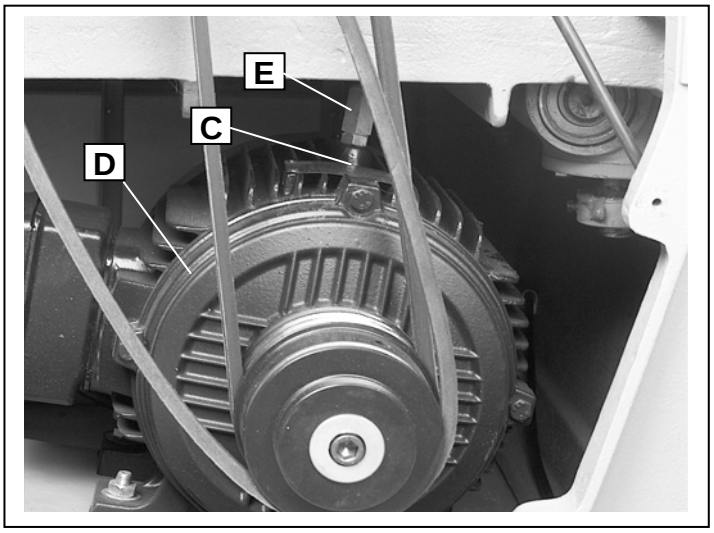


Fig. 17

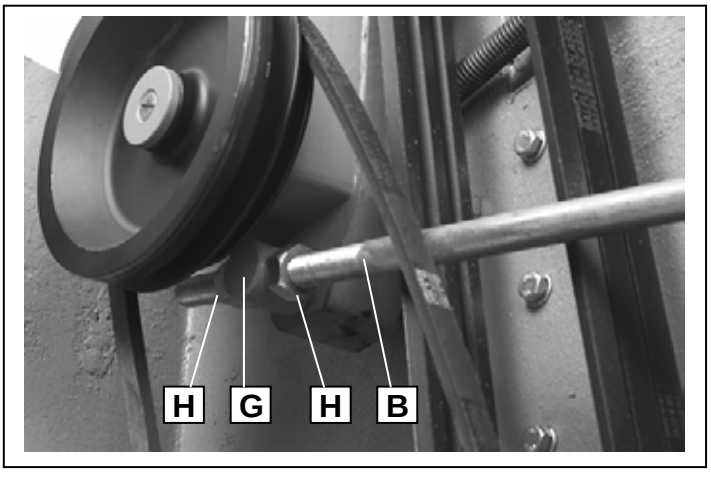


Fig. 18

CHECKING, ADJUSTING AND REPLACING KNIVES

1. When checking, adjusting or replacing the cutterhead knives on the planer, proceed as follows:

A. WARNING DISCONNECT MACHINE FROM POWER SOURCE

B. Remove the top cover of the planer exposing the cutterhead.

C. Check all four knives for proper setting using the knife guage (A), as shown in Fig. 20. When the guage (A) is placed on the cutterhead and the bottom of the two roll pins, one of which is shown at (B), are against the edge of the slot (C) opposite the knife, the knife should just contact the bottom of the guage (D).

D. If any of the knives require an adjustment, slightly loosen the knife locking bar of each of the four knives by turning the knife locking screws (E) Fig. 20, into the locking bar just enough to relieve stress in the cutterhead but not disturb the setting of the four knives.

E. To adjust the knife that must be reset, loosen all of that knife's locking screws (E) Fig. 20, by turning them into the locking bar. As the knife locking bar becomes loose, lifter springs under the knife will raise the knife until it contacts the bottom of the guage (D). Then snug up the knife locking bar by lightly backing out the locking screws (E) against the knife slot. IMPORTANT: AT THIS TIME, ONLY TIGHTEN THE KNIFE INTO THE SLOT ENOUGH TO HOLD IT IN POSITION. F. If additional knives must be reset, repeat STEP C.

G. After all four knives are set with the screws just snug, back out and tighten the locking screws, five of which are shown at (E) Fig. 20, against the slot. Start with the end screws first and proceed on alternate sides toward the center screws until the knife is securely held in the cutterhead. Tighten the remaining three knives in the same manner.

2. WARNING IF THE KNIVES ARE TO BE REMOVED FOR SHARPENING OR REPLACEMENT, EXTREME CARE SHOULD BE TAKEN AS THE KNIVES ARE VERY SHARP. TO REMOVE THE KNIVES, WEAR GLOVES AND PROCEED AS FOLLOWS:

A. WARNING DISCONNECT MACHINE FROM POWER SOURCE

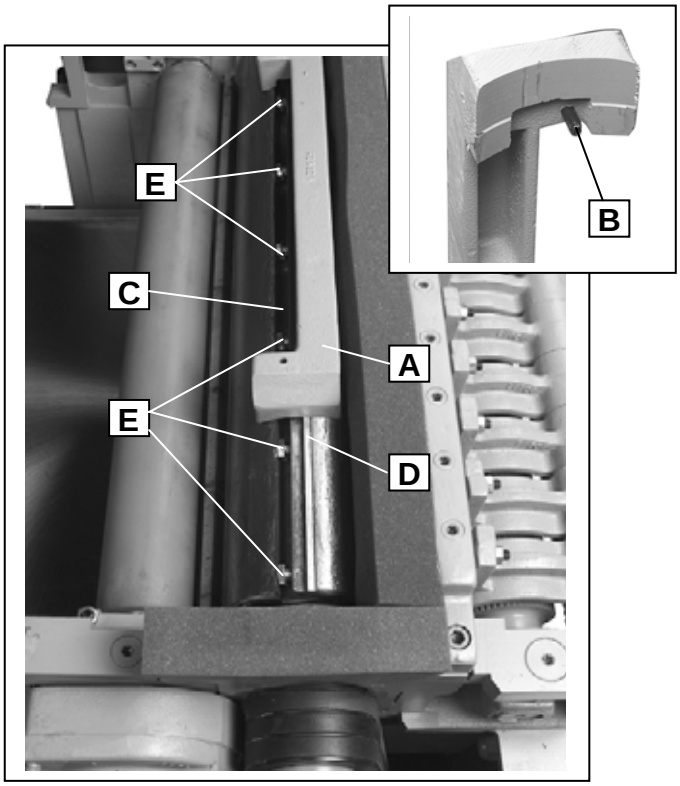


Fig. 20

B. To remove each knife, loosen the knife locking bar, by turning the locking screws, five of which are shown at (E) Fig. 20, into the knife locking bar and remove the locking bar, knife and springs located under the knife.

C. Remove the remaining three knives in the same manner.

D. Thoroughly clean the knife slots, knife bars, springs and screws. If the threads appear worn or stripped or if the heads are becoming rounded, replace them.

E. Inspect the cutting edge of the knives for nicks or wire edge. Hone the knives slightly using a stone or if the knives are to be sharpened, maintain a cutting angle of 40 degrees.

F. Insert springs, knives and knife locking bars into all four slots in the cutterhead. Push knives down as far as possible and back out locking screws, five of which are shown at (E) Fig. 20, just enough to hold all four knives in the cutterhead.

G. Adjust all four knives as explained in Step 1.

LEVELING THE TABLE

The table must be parallel to the cutterhead knives. To check and adjust, proceed as follows:

*1. **WARNING DISCONNECT MACHINE FROM POWER SOURCE***

2. Remove the four screws that attach the top cover to the planer and carefully remove the top cover.

3. Place a straight edge (A) Fig. 21, on the ground surfaces (B) of the planer, as shown.

4. Place the guage block (C) Fig. 21, on the table directly underneath the straight edge at one side, as shown, Raise the table until the guage block just touches the straight edge. Do not raise or lower the table any further until the adjustment for leveling the table is completed.

5. Move the guage block (C) Fig. 21, to the opposite (left end) of the table and check to see if the table is the same distance from the straight edge as on the right side.

6. Place the straight edge (A) on the two ground surfaces (B) of the outfeed end of the planer as shown in Fig. 22. Check both ends of the table with guage block (C) to see if table is level.

7. If the table is low or high at any of the four points checked with the guage block in Figs. 21 and 22, locate the post directly underneath the end of the table that must be adjusted. Then loosen the three screws, two of which are shown at (A) Fig. 22A, and turn flange (B) to raise or lower the table at that end.

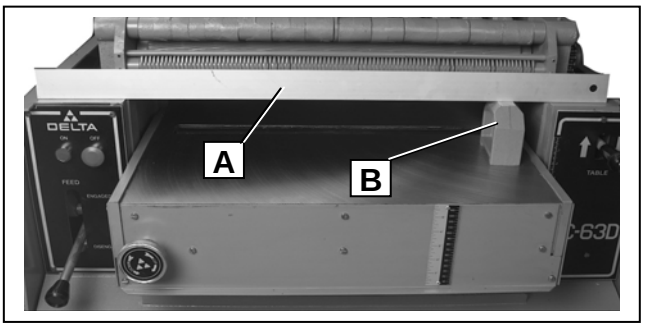


Fig. 21

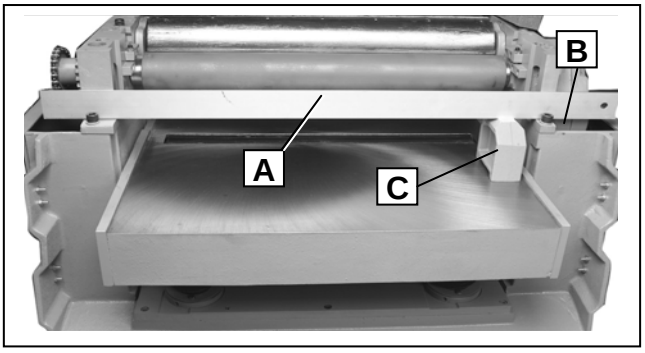


Fig. 22

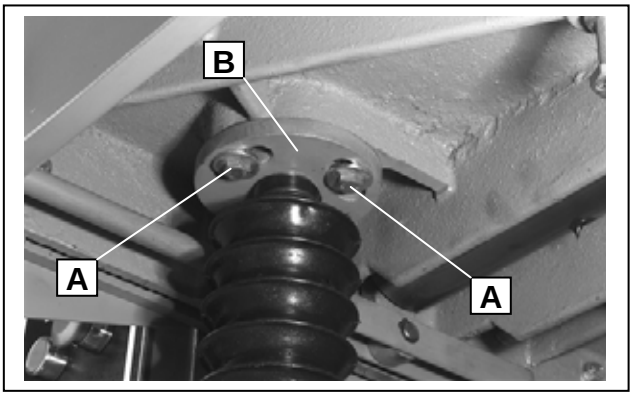


Fig. 22A

CHECKING AND ADJUSTING BED ROLL HEIGHT

The height of the bed rolls (A) and (E) Fig. 23A, should be set between .002" and .004" above the table surface, *with the bed rolls at their lowest position. To check the infeed bed roller height setting, proceed as follows:*

1. ***DISCONNECT MACHINE FROM POWER SOURCE***

2. Turn height adjustment knob (B), counterclockwise as far as it will go.

3. Place a straight edge (C), across the infeed and outfeed rollers on the left side of the table as shown.

4. With a feeler guage (D), measure the gap between the table surface and the straight edge (C) near the infeed roll (E).

5. If an adjustment to the infeed roller (E), is necessary, loosen set screw (F) Fig. 23B, located underneath the left front end of the table.

6. Turn adjustment collar (G) Fig. 23B left or right as needed to attain proper height adjustment.

7. Tighten set screw (F) Fig. 23B after adjustment is made.

To check the outfeed roller height setting, proceed as follows:

1. With a feeler guage (H) Fig. 23C, measure the gap between the table surface and the straight edge (C) near the outfeed roller (E).

2. If an adjustment to the outfeed roller is necessary, loosen jam nut (K) Fig. 230, located on the left side of machine under the table, and turn collar (L) right or left as needed until the outfeed roller is adjusted properly.

3. Tighten jam nut (K) Fig. 23D.

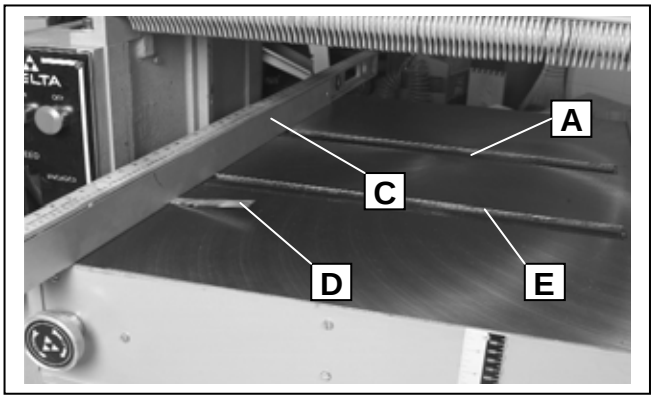


Fig. 23A

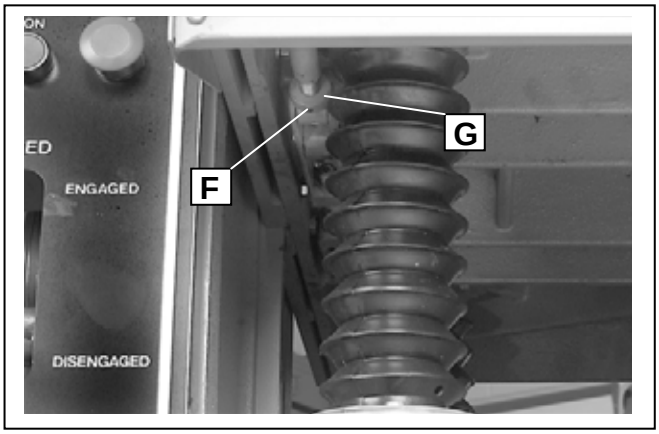


Fig. 23B

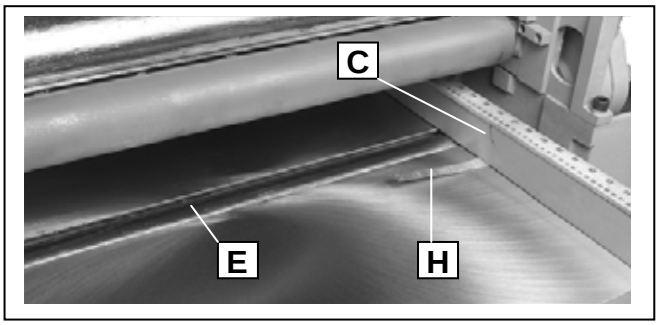


Fig. 23C

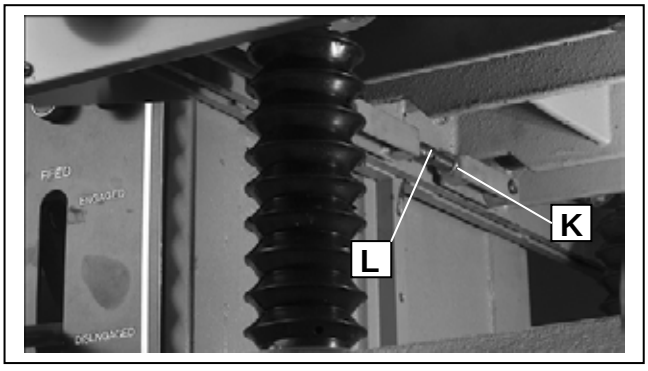


Fig. 23D

ADJUSTING PRESSURE BAR

IMPORTANT: THE PRESSURE BAR IS SET AT THE FACTORY AND SHOULD NOT NEED ASJUSTMENT. BUT WHEN KNIVES ARE SHARPENED OR REPLACED THE PRESSURE BAR SETTING SHOULD BE CHECKED AND ADJUSTED IF NECESSARY.

The pressure bar is located directly behind the cutterhead and rides on the planed surface of the stock, pressing the stock down on the table. If the stock does not feed, the pressure bar is set too low. If the stock has chatter marks, the pressure bar is set too high. The pressure bar must be parallel to the knives and set .040" below the cutting circle. To check and adjust the pressure bar, proceed as follows:

1. ***WARNING DISCONNECT MACHINE FROM POWER SOURCE***

2. Remove the four screws that attach the top cover (A) Fig. 24A to the planer and carefully remove the top cover.

3. Make certain the knives are adjusted properly as previously explained under CHECKING, ADJUSTING AND REPLACING KNIVES.

4. Place the guage block (A) Fig. 24B, on the table directly underneath the cutterhead as shown. Place a .040" feeler guage (B) Fig. 24B, on top of the guage block and raise the table until the knife (C) just touches the feeler guage when the knife is at its lowest point.

5. Next, set the feeler guage aside and move the guage block (A) Fig. 25, directly underneath the pressure bar (B) on one end of the table. The pressure bar (B) should just touch the guage block (A). Check the pressure bar at the opposite end of the table in the same manner.

6. If the pressure bar must be adjusted, remove screw (D) Fig. 26. Loosen screw (E) Fig. 26A, three or four turns. Turn screw (F) Fig. 26A clockwise to raise the bar or counter clockwise to lower the bar. The bottom of pressure bar should just touch the gauge block (A) Fig. 25.

8. Then tighten screw (E) Fig. 26A until it bottoms and then loosen it two complete turns. Replace screw (D) Fig. 26A.

9. This adjustment to the pressure bar should be made on the opposite end of the planer In the same manner.



Fig. 24A

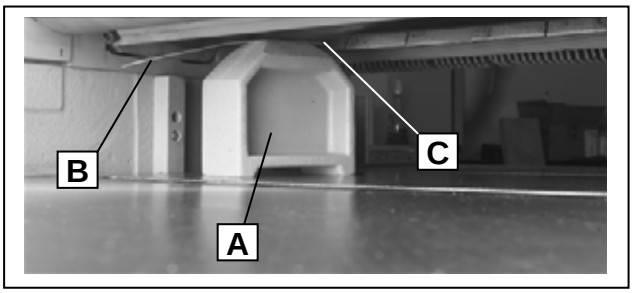


Fig. 23B

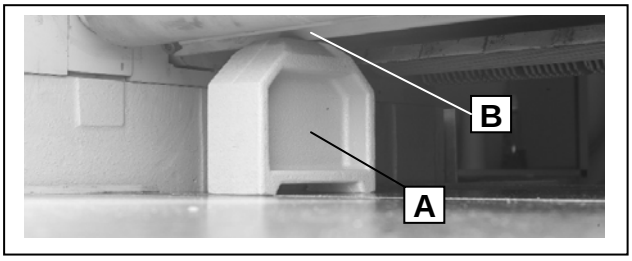


Fig. 25

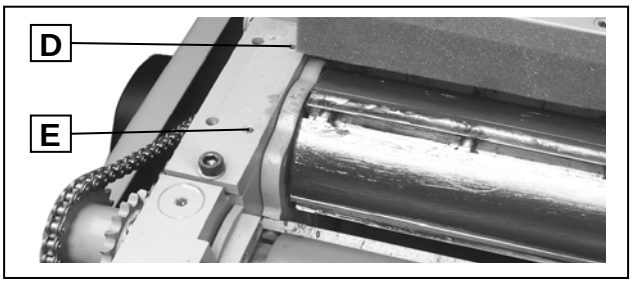


Fig. 26

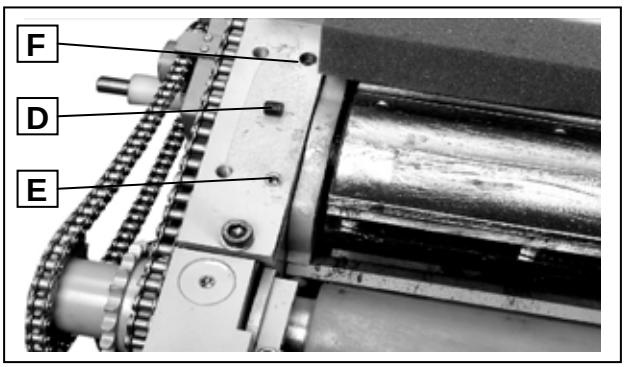


Fig. 26A

ADJUSTING THE CHIPBREAKER

The chipbreaker is located on the top of the planer and extends down around the front of the cutterhead. The chip-breaker segments raise as stock is fed through and "break or curl" the chips the same as the plane iron cap on a hand plane. The bottom of the chipbreaker must be parallel to the knives and set .040" below the cutting circle.
To check and adjust the chipbreaker, proceed as follows:

1. ***WARNING DISCONNECT MACHINE FROM POWER SOURCE***

2. Remove the four screws that attach the top cover to the planer and carefully remove the top cover.

3 Make certain the knives are adjusted properly as previously explained under CHECKING, ADJUSTING AND REPLACING KNIVES.

4. Place the guage block (A) Fig. 29, on the table directly underneath the cutterhead as shown. To adjust the chipbreaker, place a .040" feeler gauge (B) Fig. 29, on top of the guage block and raise the table until the knife (C) just touches the feeler guage when the knife is at its lowest point.

5. Move the guage block (A) Fig. 30, underneath each chipbreaker segment (B) as shown. The bottom of each chipbreaker segment should just touch the top of the guage block.

6. If an adjustment to any of the chipbreaker segments is necessary, loosen the corresponding lock nut, such as (C) Fig. 31, and turn adjusting screw (D) in or out as required. Then tighten lock nut (C).

7. Spring tension on the chipbreaker segments is properly set when the head of corresponding screw (E) Fig. 32, is two complete turns below surface of casting (F).

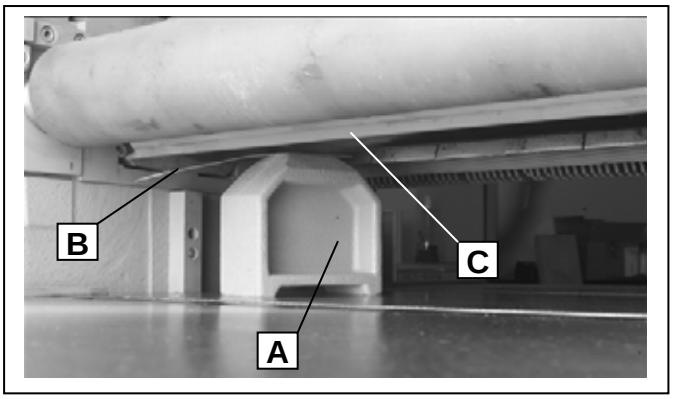


Fig. 29

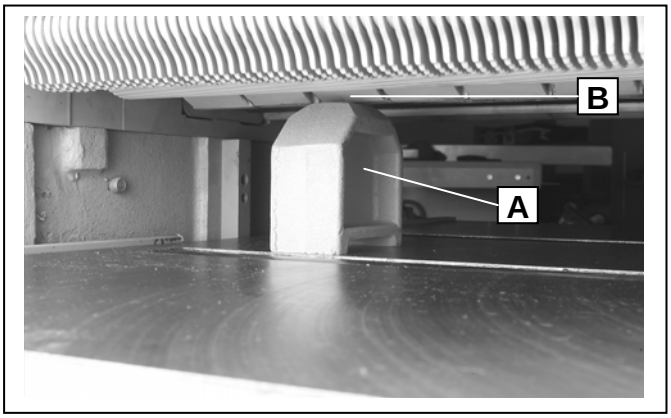


Fig. 30

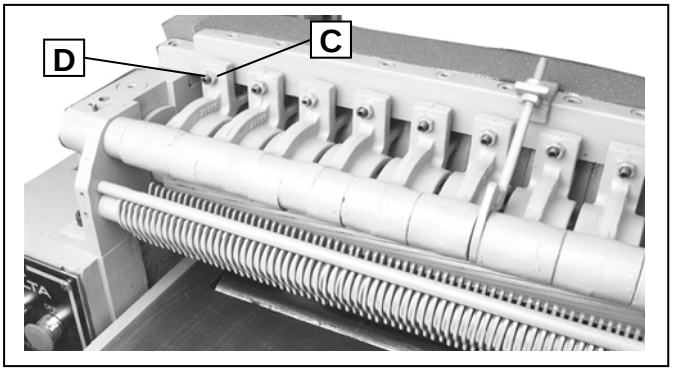


Fig. 31

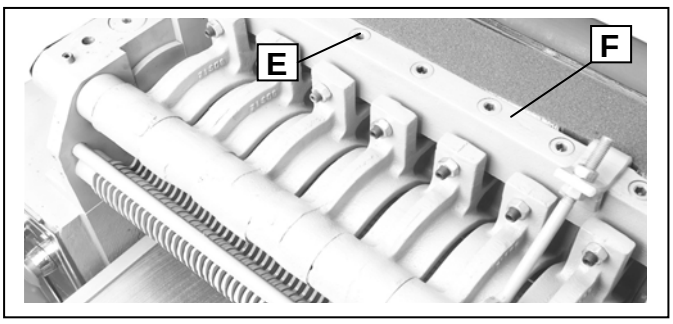


Fig. 32

ADJUSTING SPRING TENSION ON FEED ROLLERS

The outfeed roll (A) Fig. 33, and infeed roll (not visible) are those parts of your planer that feed the stock while it is being planed. The feed rolls are under spring tension and this tension must be sufficient to feed the stock uniformly through the planer without slipping but should not be too tight that it causes damage to the board. The tension should be equal at both ends of each roll. To adjust spring tension on the infeed roll, turn screws (B) Fig. 33, right or left until they are flush with top of casting (C). To adjust spring tension on the outfeed roll (A), turn screws (D) until they are 2 to 3 complete turns below surface of casting (E).

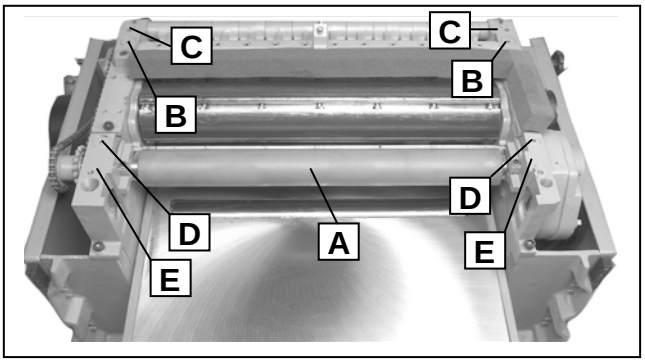


Fig. 33

ADJUSTING OUTFEED ROLLER

The outfeed roller (A) Fig. 34, should be .035" below the cutting circle. To check and adjust the outfeed roll, proceed as follows:

1. WARNING DISCONNECT MACHINE FROM POWER SOURCE

2. Make certain the knives are adjusted properly as previously explained under CHECKING,] ADJUSTING] AND REPLACING KNIVES.

3. Place the guage block (C) Fig. 35, on the table directly underneath the cutterhead, as shown. Place a .035" feeler guage (B) on top of the guage block and raise the table until the knife (A) just touches the feeler guage when the knife is at its lowest point. Do not move the table any further until the adjustment is completed.

4. Place the guage block underneath outfeed roll (A) Fig. 36. The feed roll should just touch the top of the guage block (C) which would be .035" below the cutting circle. If an adjustment is necessary, loosen locknut (D) Fig. 37, and turn adjusting screw (E) until the outfeed roll just touches the top of the guage block. Repeat at opposite end of feed roll.

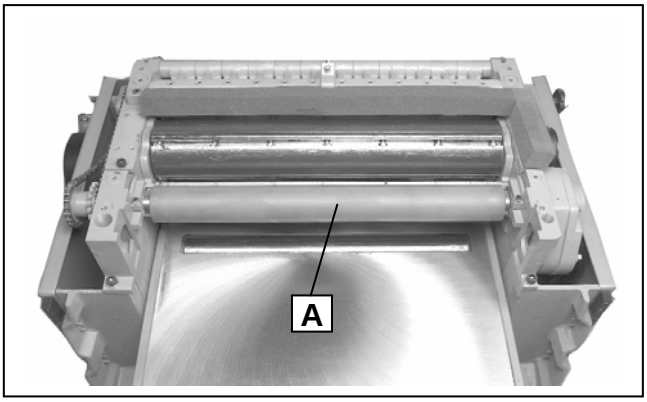


Fig. 34

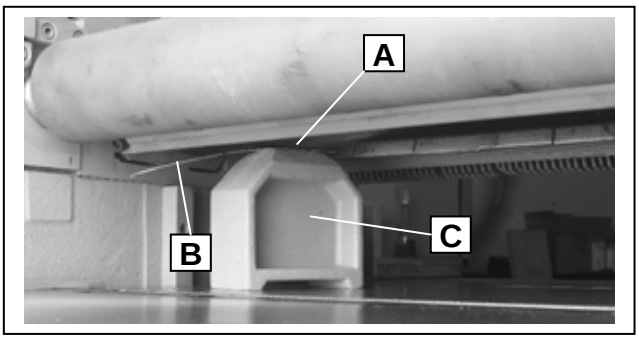


Fig. 35

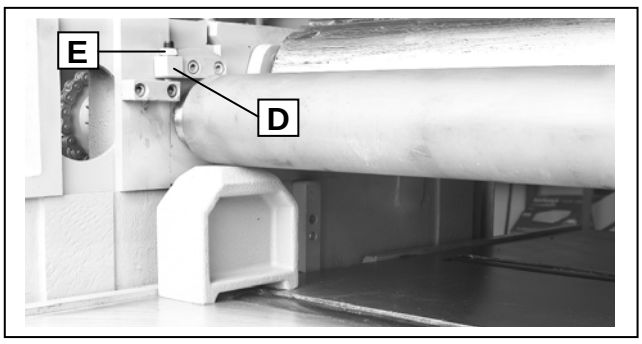


Fig. 37

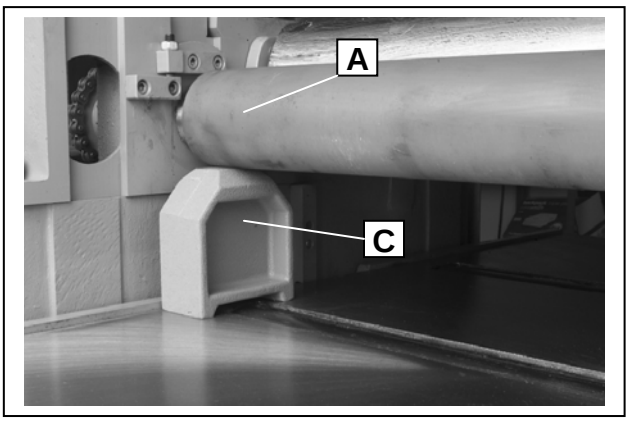


Fig. 36

ADJUSTING CHIP DEFLECTOR

1. ***WARNING DISCONNECT MACHINE FROM POWER SOURCE***

2. Remove the cutterhead guard.

3. *The edge (C) of the chip deflector (A) Fig. 38, should be adjusted so it is a minimum of .040" and a maximum] of .080" away from the cutting circle. Place a feeler gauge between the knife and the edge of the chip deflector as shown in Fig. 38. If an adjustment is necessary, loosen three screws (B) and move chip deflector.*

ADJUSTING TABLE HEIGHT SCALE

The table height scale is adjusted at the factory to indicate the distance from the table to the cutting circle (depth of cut).

To check and adjust the pointer, proceed as follows:

1. Run a piece of wood part way through the planer and stop the machine.

2. Measure the thickness of the finished piece. If necessary, loosen two screws (A) Fig. 39 adjust pointer (B) and retighten screws (A).

GAUGE BLOCK

*A gauge block has been supp*lied with your planer; however, *if it is ever necessa*ry to make a gauge block out of *hardwood, follow the instructions shown in Fig. 40.*

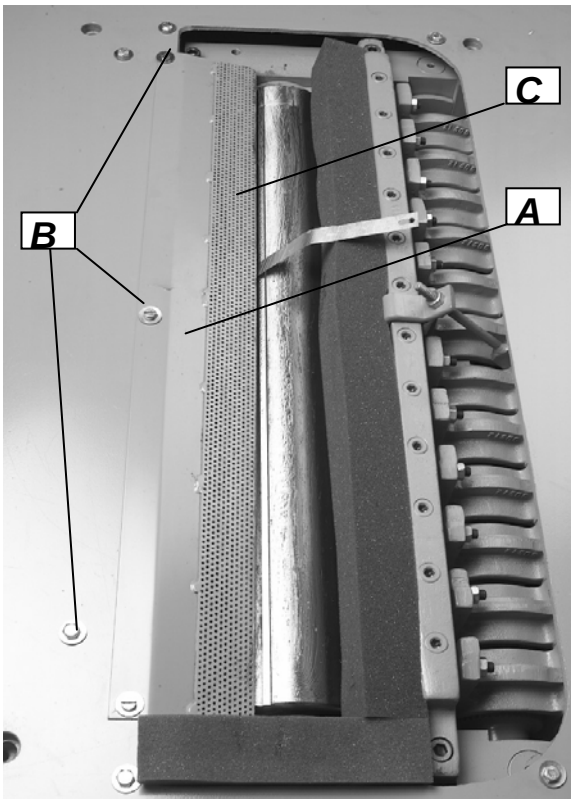


Fig. 38

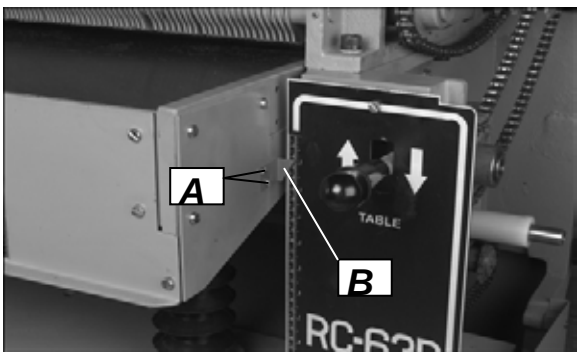


Fig. 39

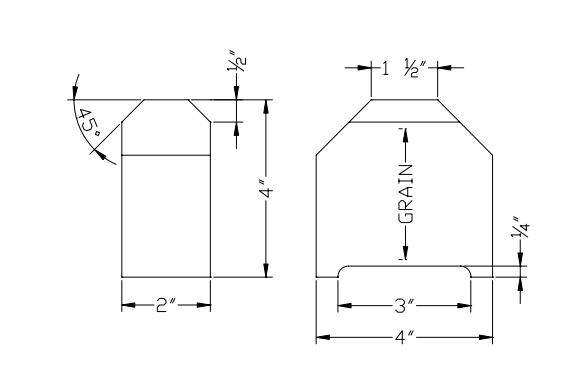


Fig. 40

MACHINE USE

When using your machine, follow these few simple steps for achieving the best results.

*1. **True Up One Face** – Feed one face of the board over a jointer, making thin cuts with each pass, until the entire surface is flat.*

*2. **Plane to Thickness** – Place the side you planed in **STEP 1** face down and feed the board through the planer. Plane until this side is flat, then plane both sides of the board until you are satisfied with the thickness. Make thin cuts, and alternate sides with each pass. If, during the planing operation, you notice the board twisting, warping, or bowing, repeat **STEP 1** and true up one face.*

3. When planing long stock, provide table extensions to support the infeed and outfeed end of the workpiece.

4. Plane with the grain only, and keep planer table clean. Occasionally, wax the table surface to reduce friction during the planing operation.

5. Cross-cut to Final Length – Cross-cut lumber to final length.

CAUTION: THE KNIVES ON THE PLANER WILL NOT WEAR EVENLY IF THE WOOD IS FED THROUGH THE SAME SPOT ON THE TABLE EVERY TIME. FEED THE WOOD THROUGH THE PLANER AT DIFFERENT SPOTS ON THE TABLE TO HELP ELIMINATE UNEVEN WEAR OF THE KNIVES.

LUBRICATION

Your machine requires lubrication as follows:

1. The four grease fittings, one of which is shown at (A) Fig. 41, located at the base of the four table posts are to be lubricated every 100 hours of operation with an automotive type lithium grease or equivalent.

2. As required, lubricate the four table raising and lowering screws, three of which are shown at (B) Fig. 42, with an automotive type lithium grease or equivalent.

3. The gear box oil should be changed once a year using extreme pressure gear oil, available from INVICTA The gear box drain plug is shown at (C) Fig. 43. The oil fill screw is shown at (B) and the oil level indicator is shown at (A) Fig. 43.

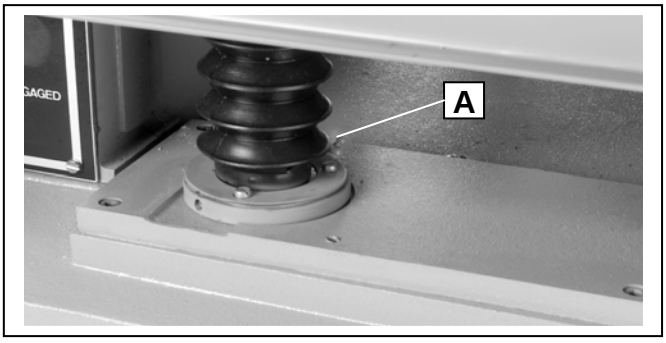


Fig. 41

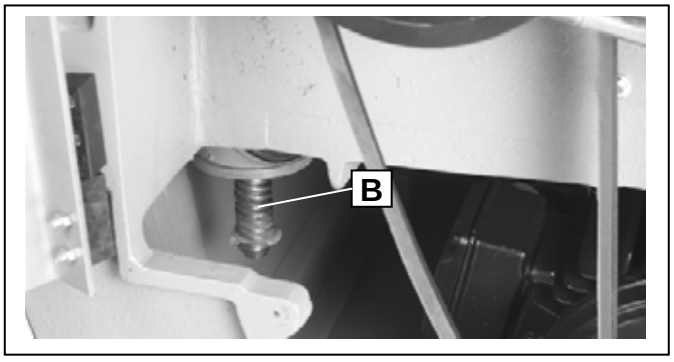


Fig. 42

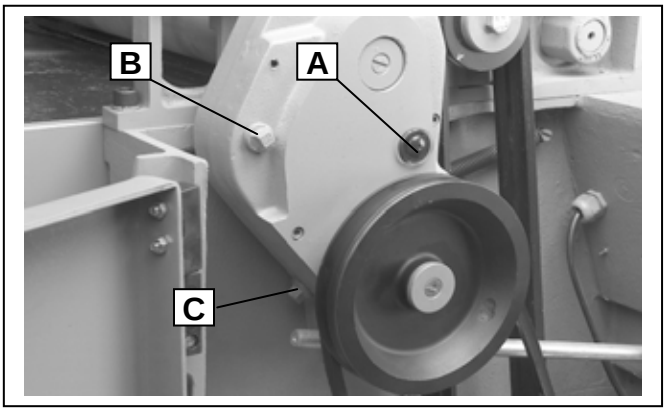
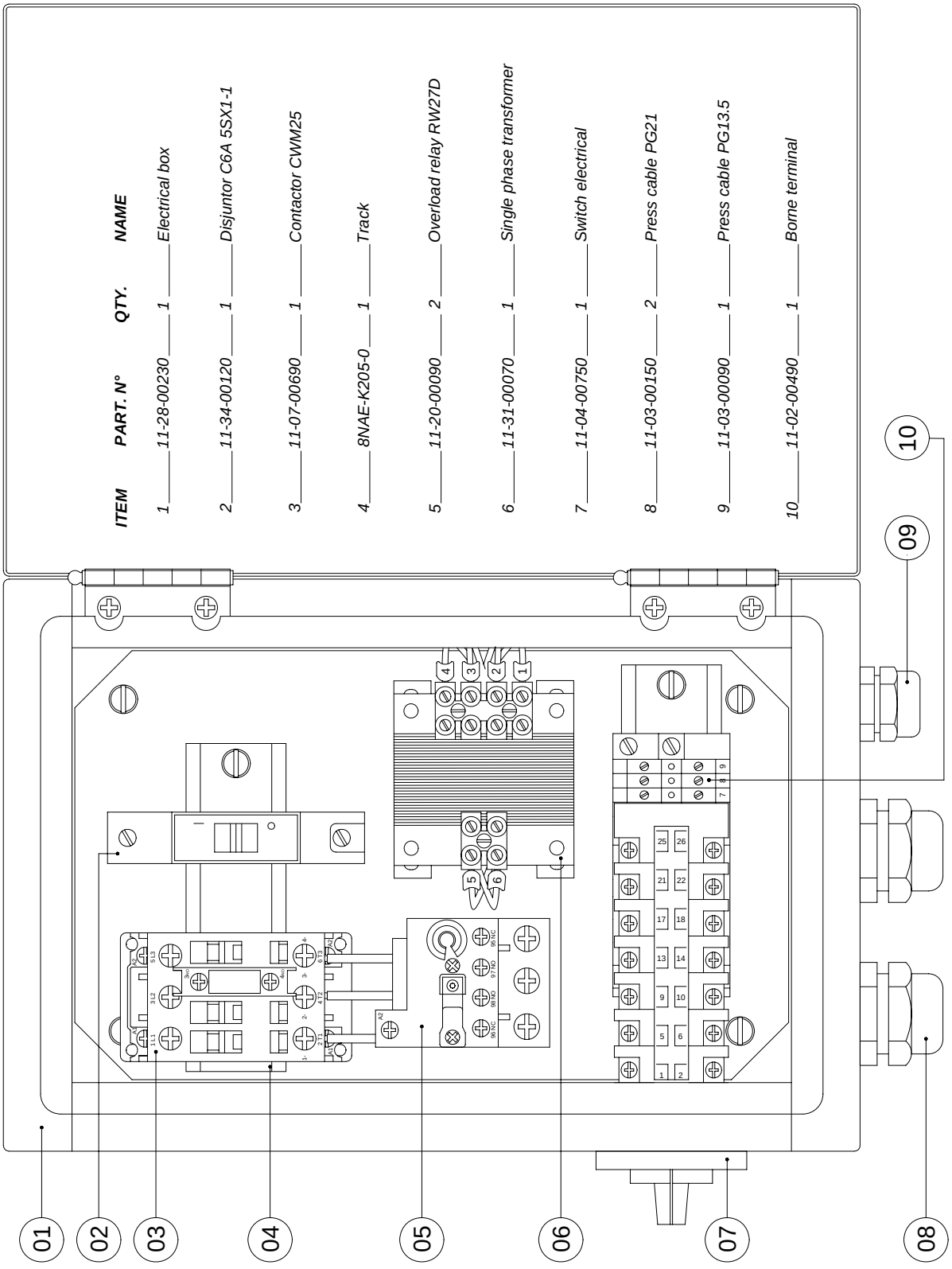


Fig. 43

ELECTRICAL BOX

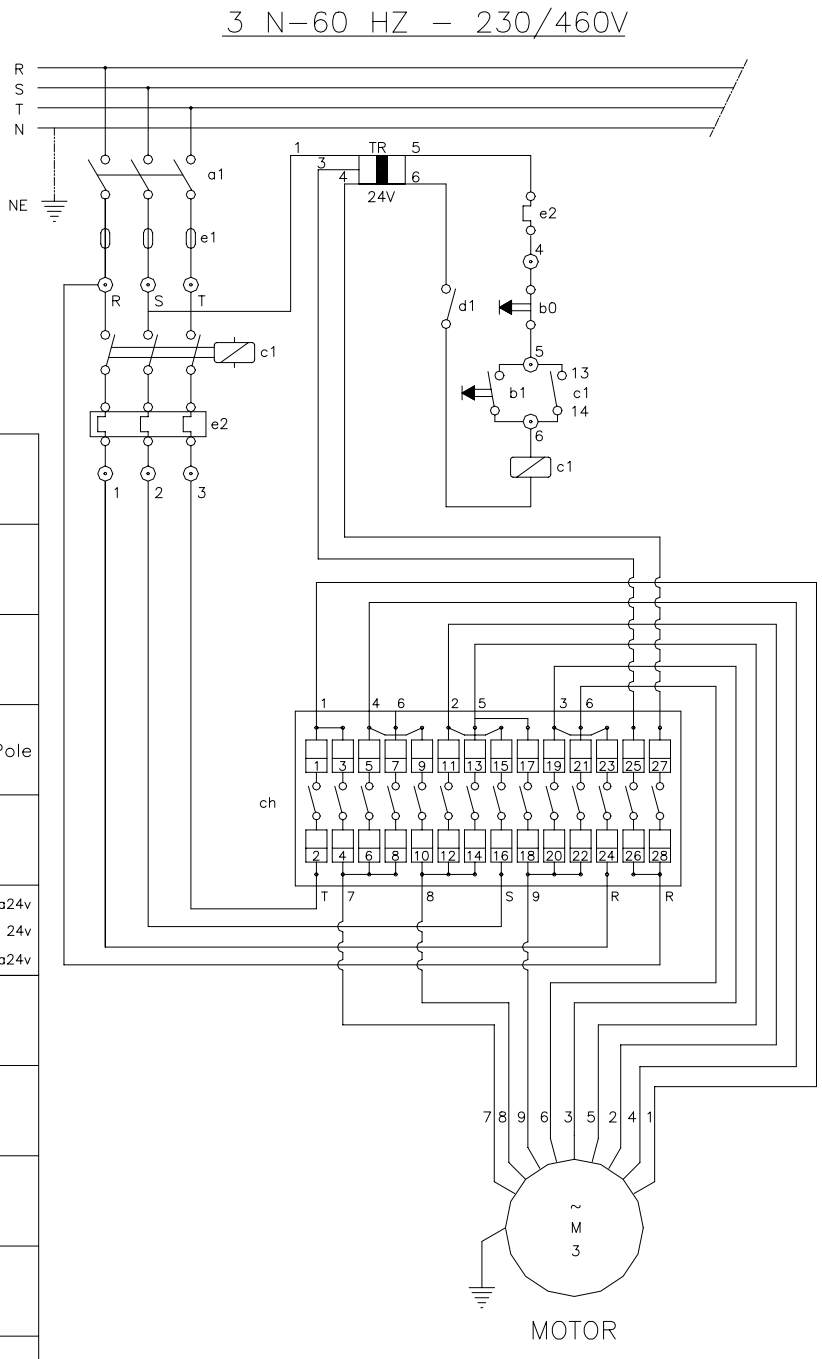
ITEM	PART. N°	QTY.	NAME
1	11-28-00230	1	Electrical box
2	11-34-00120	1	Disjuntor C6A 5SX1-1
3	11-07-00690	1	Contactor CWM25
4	8NAE-K205-0	1	Track
5	11-20-00090	2	Overload relay RW27D
6	11-31-00070	1	Single phase transformer
7	11-04-00750	1	Switch electrical
8	11-03-00150	2	Press cable PG21
9	11-03-00090	1	Press cable PG13.5
10	11-02-00490	1	Borne terminal

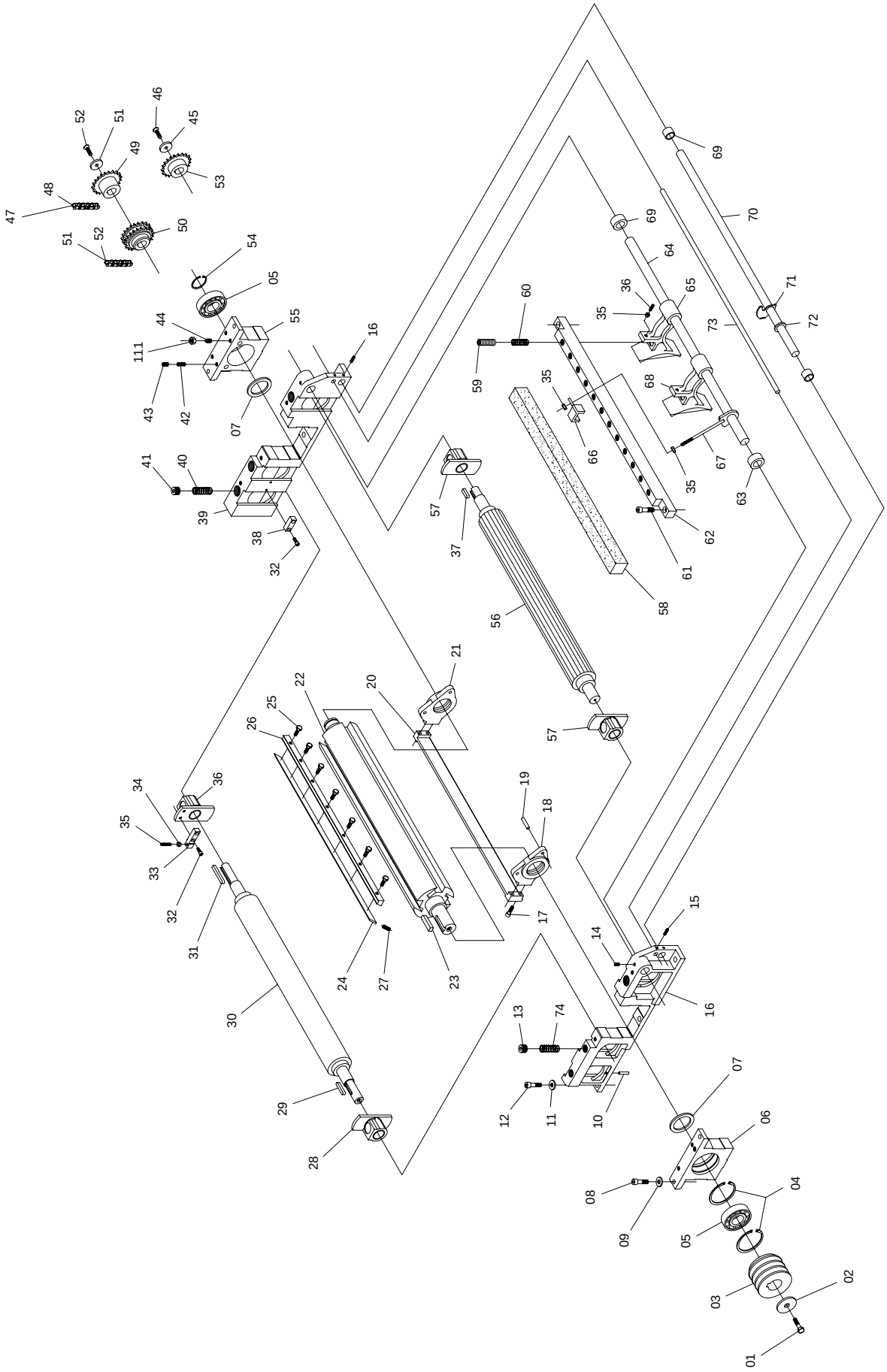


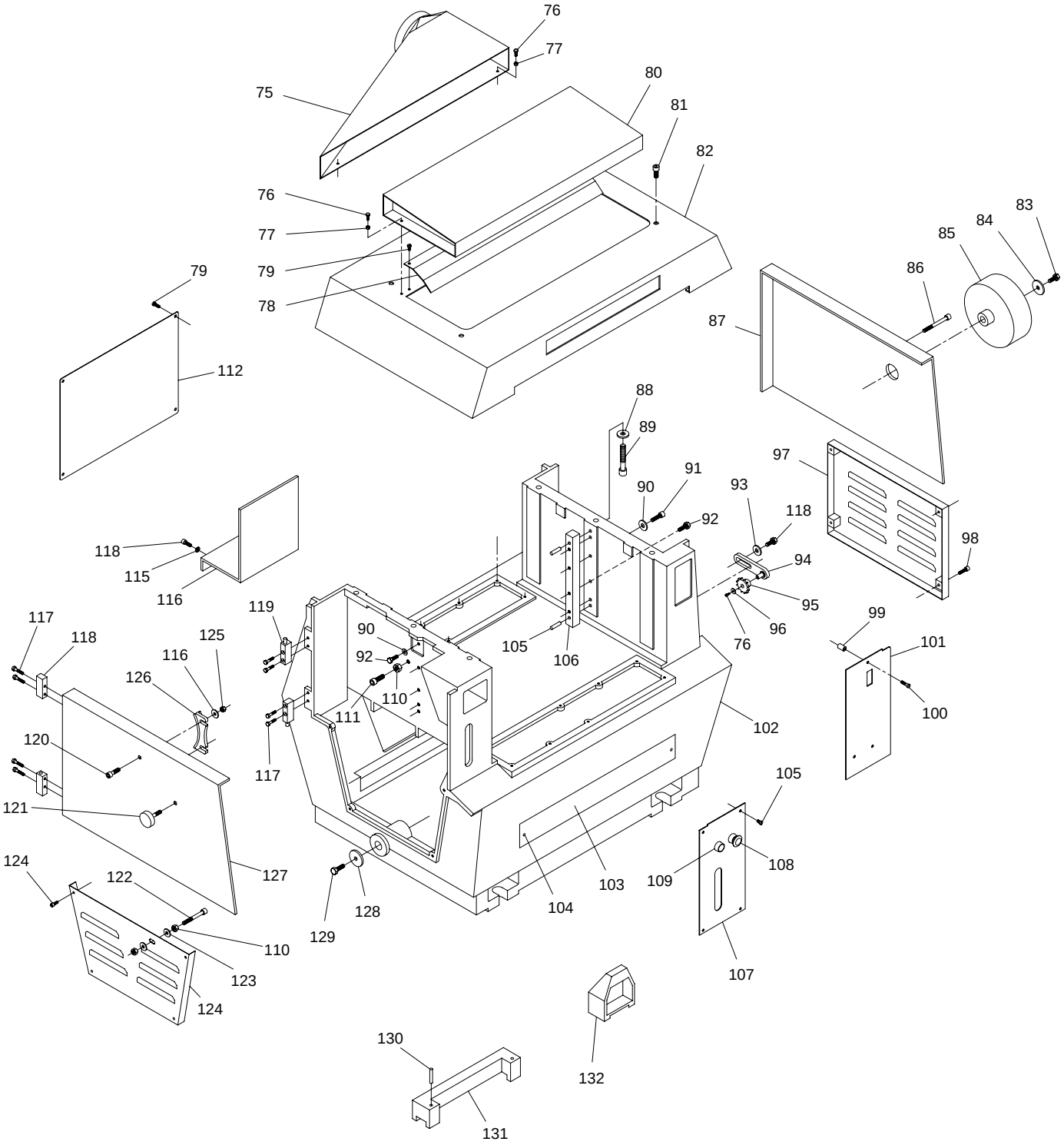
Select Switch – 230 / 460 V

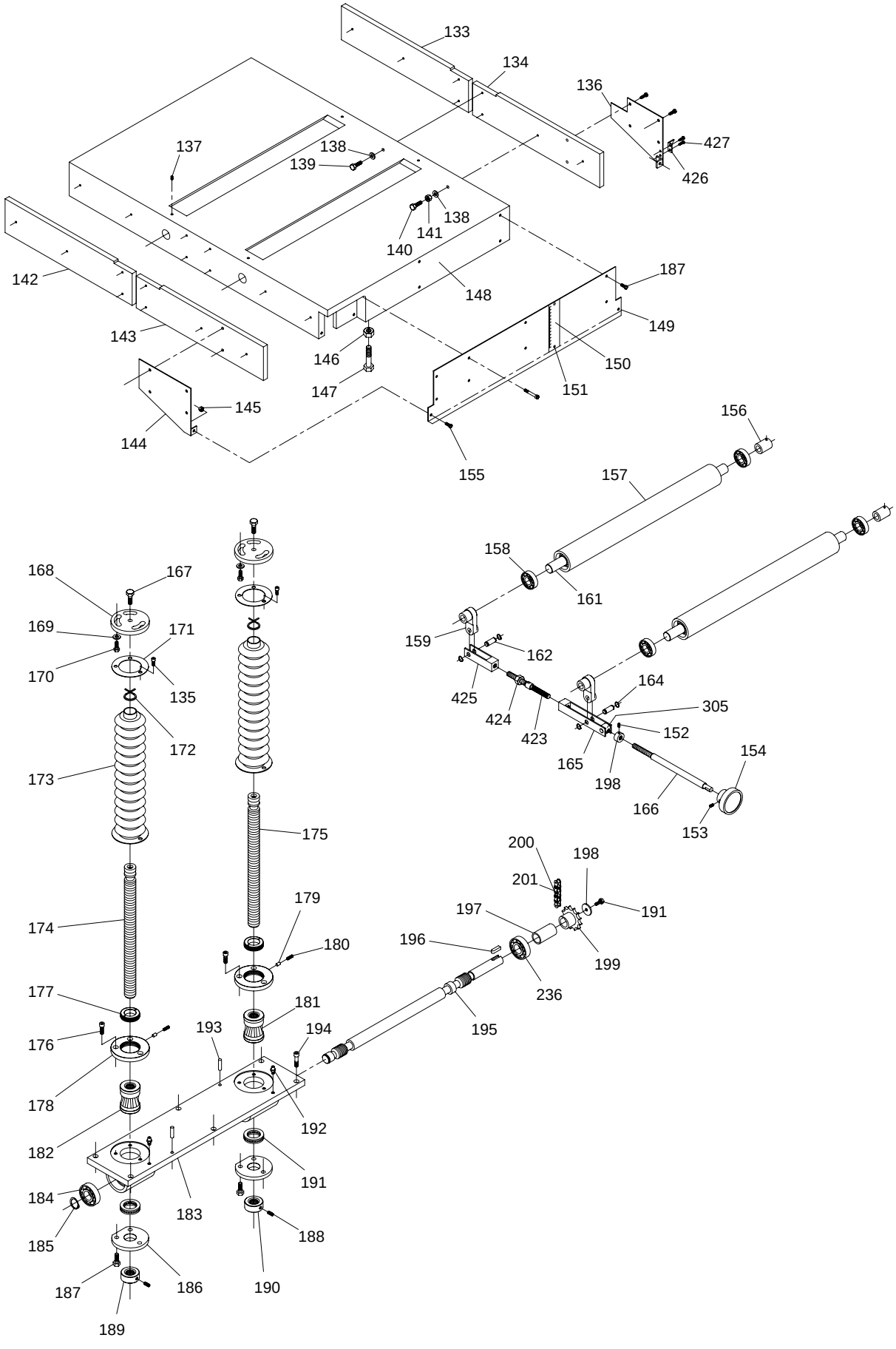
IMPORTANT
SELECT THE VOLTAGE (230/460V) OF YOUR INTERNAL ELECTRIC NETWORK.
THE VOLTAGE SELECTION KEY IS LOCATED ON THE ELECTRICAL BOX.
FOR YOU SAFETY THE VOLTAGE SELECTION KEY IS ON NEUTRAL POSITION.

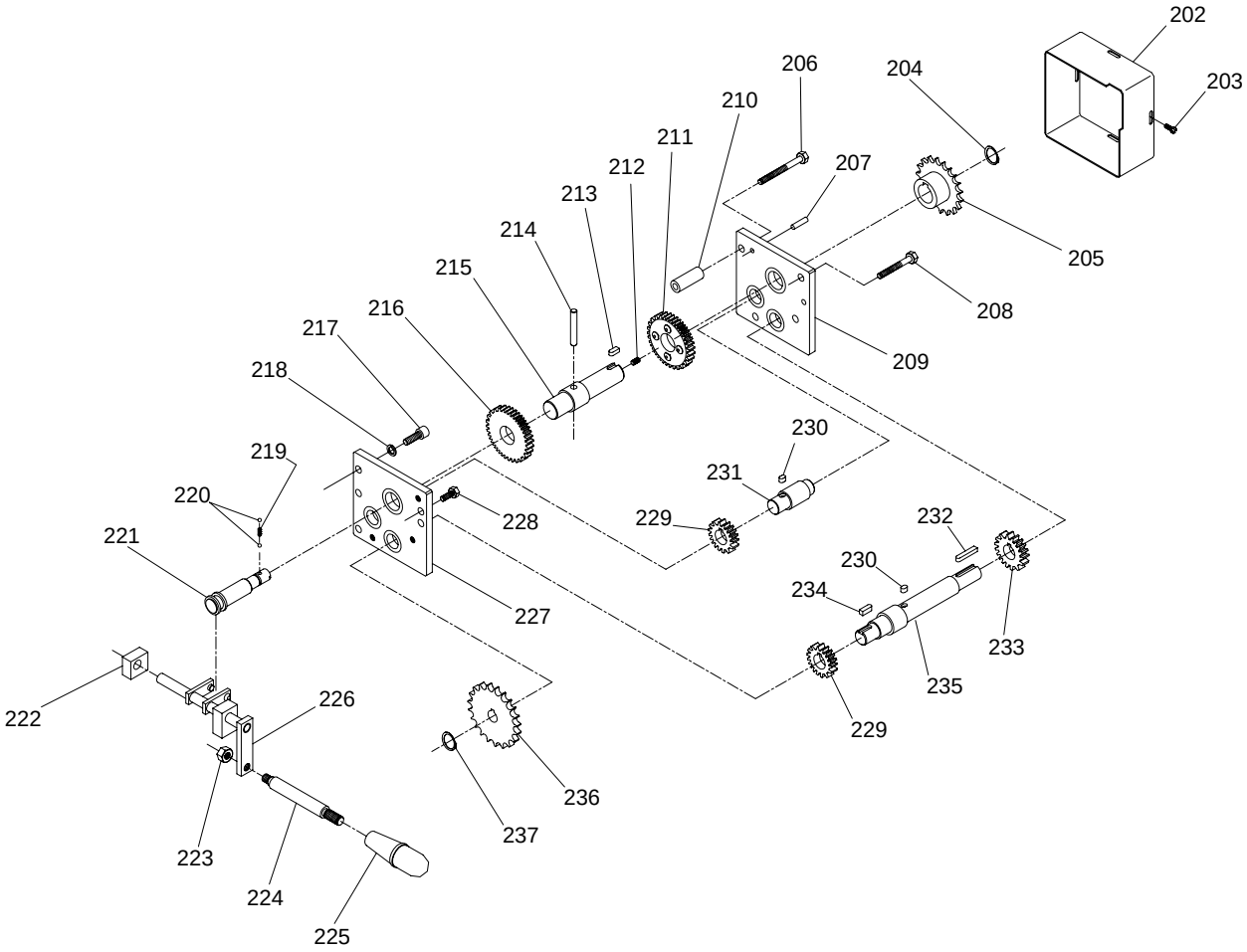
CODO	QTY.	NAME
b0	1	Off button – red
b1	1	On button – green
M	1	3 phase motor, 12,5 CV 2 Pole
⬡	1	Terminal
TR	1	–Ent.230/460v–Saida24v Transformer –Entry 230/460v–Quit 24v –Ent.230/460v–Saida24v
ch	1	Select switch – 230/460v
a1	1	Master switch
c1	1	Contact CWM40
d1	3	Circuit breaker 6A
e1	1	Delayed action fuse 50A – 500V
e2	1	Bi–metal relay RW27D 230V = 29,8A 460V = 14,9A

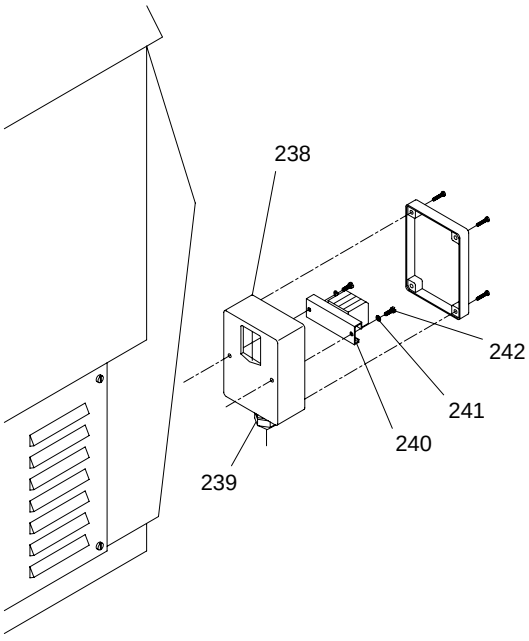


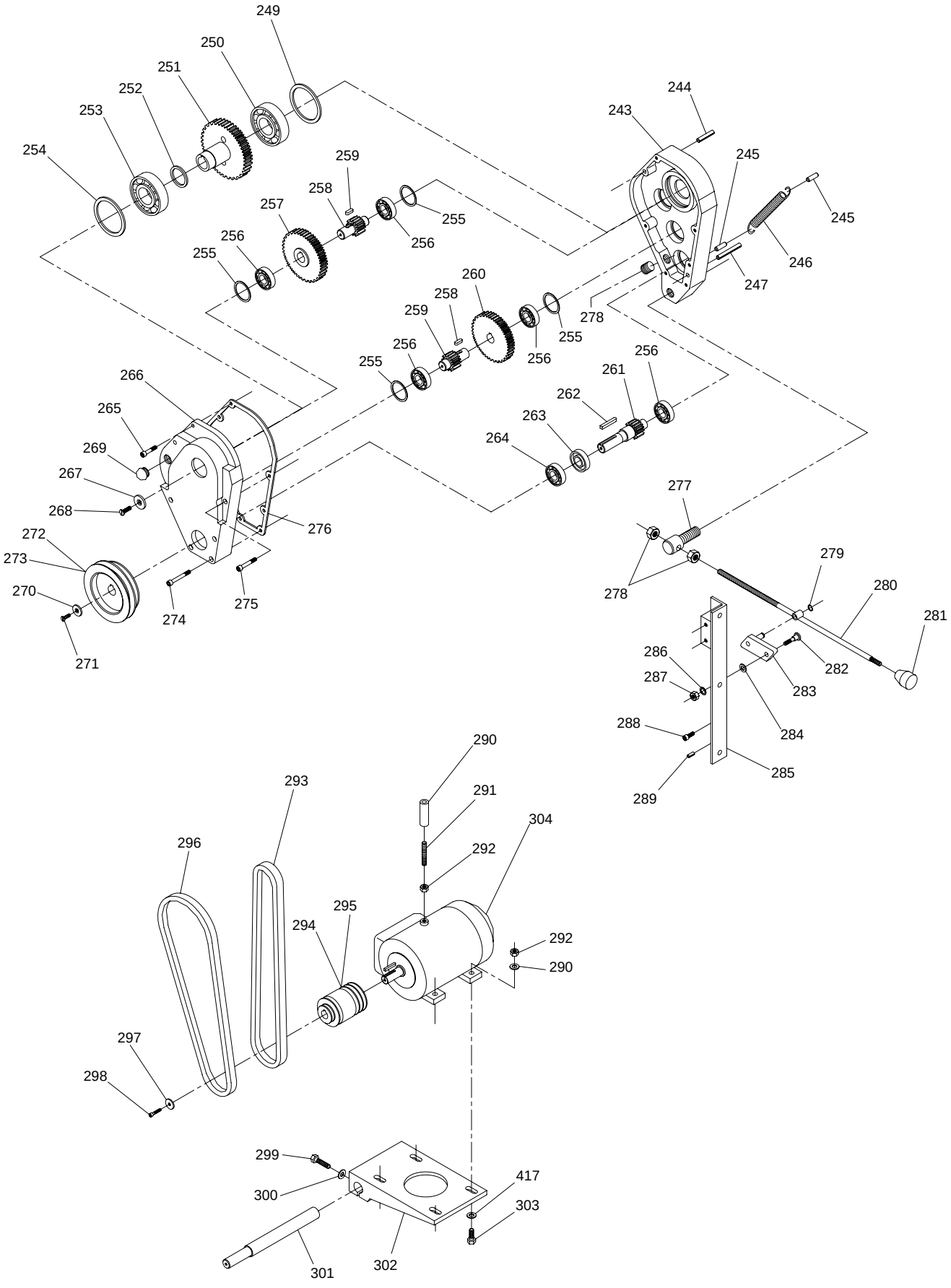

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Replacement Parts

FIG.	CODE	QTY.	NAME
01….	06-04-0100-0	01…	Hex head cap screw M12x1,75x35
02….	84DS-K100-0	01…	Cutter head washer
03….	84DS-KK20-0	01…	Cutter head pulley
04….	06-18-0026-0	02…	Spring ring
05….	03-00-0077-0	01…	Bearing 6208-2RS
06….	84DS-K208-0	01…	Left hand bearing
07….	84DS-K209-0	01…	O´ring
08….	06-03-0063-0	02…	Allen screw with head M10x1,5x35
09….	06-13-0023-0	02…	Lock washer Ø10mm
10….	26-03-0003-0	02...	Pin elastic Ø8x36mm
11….	06-13-0034-0	03…	Lock washer Ø13x2,5
12….	06-03-0099-0	03…	Allen screw with head M12x1,75x35
13….	87DS-K159-0	03…	Spring adjustment nut
14….	06-02-0060-0	01…	Allen screw without head M8x1,25x16
15….	06-02-0042-0	02…	Allen screw without head M6x1x12
16….	89DS-KK10-0	01…	Left hand side
17….	06-03-0065-0	04…	Allen screw with head M8x1,25x25
18…	84DS-K211-0	01…	Left hand pressure bar support
19….	84DS-K180-0	02…	Pressure bar pin
20….	84DS-K130-0	01…	Pressure bar blade
21….	84DS-K210-0	01…	Right hand pressure bar support
22….	84DS-KK35-0	01…	Cutterhead
23….	8NCV-K312-0	01…	Key
24….	05-00-0004-0	03…	Cutter 8NFC-KKK1-0
25….	8NPF-KK20-0	21…	Cutter screw
26….	8NCV-K501-0	03…	Key
27….	07-00-0030-0	08…	Spring 8NMO-KK55-0
28….	88DS-K174-0	01…	Left hand bearing
29….	8NCV-K242-0	01…	Key
30….	89DS-KK15-0	01…	Feed roller 2nd.
31….	8NCV-K331-0	01…	Key
32….	06-03-0078-0	02…	Allen screw with head M6x1x12
33….	88DS-K142-0	01…	Outfeed roller stop
34….	06-09-0020-0	01…	Hex nut M8x1,25
35….	06-02-0080-0	01…	Allen screw without head M8x1,25x30
36…	88DS-K173-0	01…	Right hand bearing
37…	8NCV-K311-0	01…	Key
38…	88DS-K143-0	01…	Stop bumper
39…	89DS-KK11-0	01…	Right hand side
40…	07-00-0035-0	03…	Spring 8NMO-KK70-0
41…	84DS-KK80-0	03…	Spring adjustment nut
42…	07-01-0031-0	02…	Spring 84DS-KK89-0
43…	84DS-K177-0	02…	Pressure bar screw
44…	06-02-0088-0	04…	Allen screw without head M10x1,5x10
45…	84DS-KK56-0	01…	Washer
46…	06-06-0034-0	01…	Flat head screw M8x1,25x25
47…	8NCO-KK25-0	01…	Chain
48…	16-23-0005-0	01…	ISO-083 Chain junction
49…	89DS-KK51-0	01…	Gear
50…	88DS-K165-0	01…	2nd. Roller gear
51…	8NCO-KK26-0	01…	Chain
52…	16-23-0002-0	01…	ASA-40 Chain junction
53…	88DS-K164-0	01…	1st. Roller gear
54…	06-18-0014-0	01…	E-40 Spring ring
55…	84DS-K207-0	01…	Right hand bearing
56…	82DG-K010-0	01…	1st. Feed roller
57…	84DS-K052-0	01…	Feed roller bearing
58…	89DS-K127-0	01…	Upper cover gasket
59…	88DS-K184-0	12…	Chipbreaker adjustment screw
60…	07-00-0037-0	12…	8NMO-KK72-0 Spring
61…	06-03-0068-0	02…	Allen screw with head M10x1,5x50
62…	89DS-KK13-0	01…	Spring bed
63…	89DS-KK25-0	02…	Chipbreaker stop bushing
64…	89DS-KK24-0	01…	Chipbreaker shaft
65…	89DS-KK12-0	11…	Chipbreaker
66…	89DS-K131-0	01…	Rod support
67…	89DS-K130-0	01…	Tie rod
68…	89DS-K129-0	01…	Chipbreaker
69…	84DS-KK33-0	02…	Back off bushing
70…	8NVL-K272-0	01…	Plain rod

Replacement Parts

FIG.	CODE	QTY.	NAME
71….	81DS-K120-0	88…	Hammer
72….	8NAR-KK48-0	95…	Washer
73….	8NVL-K211-0	01…	Plain rod
74….	07-00-0036-0	01…	8NMO-KK71-0
75….	89DS-K105-0	01…	Chip chute (optional)
76….	06-04-0136-0	07…	Hex head cap screw M6x1x12
77….	06-13-0002-0	07…	Washer plain Ø1/4”
78….	89DS-KK16-0	01…	Chip outlet plate
79….	06-05-0039-0	07…	Round head screw M6x1x10
80….	89DS-K101-0	01…	Chip outlet
81….	06-03-0063-0	04…	Allen screw with head M10x1,5x35
82….	89DS-KK60-0	01…	Upper cover
83….	06-04-0115-0	01…	Hex head cap screw M8x1,25x16
84….	8NAR-KK62-0	01…	Washer
85….	88DS-K182-0	01…	Handwheel
86….	06-03-0033-0	01…	Allen screw with head M8x1,25x70
87….	89DS-KKK9-0	01…	Right hand side cover
88….	06-13-0034-0	02…	Washer lock Ø13x2,5mm
89….	06-03-0103-0	02…	Allen screw with head M12x1,75x45
90….	06-13-0031-0	06…	Washer plain Ø8mm
91….	06-04-0083-0	06…	Hex head cap screw M8x1,25x30
92….	06-04-0119-0	01…	Hex head cap screw M8x1,25x25
93….	8NAR-KK81-0	02…	Washer
94….	87DS-KK84-0	01…	Chain stretcher
95….	87DS-K137-0	01…	Chain stretcher gear
96….	8NAR-KK96-0	01…	Washer
97….	89DS-KKK5-0	01…	Right hand lower cover
98….	06-03-0072-0	04…	Allen screw with head M6x1x30
99….	88DS-K125-0	03…	Panel spacer
100…	06-05-0051-0	03…	Round head screw M6x1x30
101…	10-03-0013-0	01…	Right hand panel 89DS-K118-0
102…	89DS-KKK1-0	01…	Base
103…	10-04-0043-0	01…	Emblem
104…	06-17-0002-0	02…	Rivet pop EAD-440-S
105…	26-03-0011-0	04…	Pin extension Ø8x24mm
106…	84DS-KK54-0	02…	Table guide
107…	10-03-0083-0	01…	Panel
108…	11-27-0002-0	01…	Red switch off button C2-111
109…	11-27-0001-0	01…	Green switch on button B2-111
110…	06-09-0019-0	05…	Hex nut M6x0,8
111…	06-03-0097-0	01…	Allen screw with head M10x1,5x30
112…	89DS-KK54-0	01…	Electric box cover
111…	06-09-0021-0	02…	Hex nut
115…	06-13-0033-0	02…	Lock washer Ø8,4x2
116…	89DS-KK55-0	01…	Electric box support
117…	06-04-0096-0	08…	Hex head cap screw M6x1x25
118…	82DX-K172-0	04…	Hinge
119…	82DX-K173-0	04…	Hinge
120…	06-03-0066-0	02…	Allen screw with head M8x1,25x20
121…	27-01-0033-0	01…	Knob
122…	06-04-0084-0	01…	Hex head cap screw M10x1,5x70
123…	06-13-0026-0	02…	Washer plain Ø10mm
124…	89DS-KKK2-0	01…	Laft hand lower cover
125…	06-09-0020-0	02…	Hex nut M8x1,25
126…	84DS-K150-0	01…	Brake
127…	89DS-KKK8-0	01…	Left hand cover
128…	8NAR-K113-0	01…	Washer
129…	06-04-0121-0	01…	Hex head cap screw M10x1,5x30
130…	26-01-0008-0	02…	Pin extension Ø5x40mm
131…	84DS-K112-0	01…	Cutter adjusting device
132…	88DS-K243-0	01…	Gauge block (optional)
133…	84DS-KK10-0	01…	Table guide (right side)
134…	89DS-KK98-0	01…	Table guide (left side)
135…	06-05-0039-0	04…	Round head screw M6x1x10
136…	89DS-KK74-0	01…	Skirt support (right hand)
137…	06-02-0043-0	04…	Allen screw without head M6x1x16
138…	06-13-0031-0	04…	Pain washer Ø8mm
139…	06-04-0119-0	12…	Hex head cap screw M8x1,25x25
140…	06-04-0106-0	04…	Hex head cap screw M8x1,25x40

Replacement Parts

FIG.	CODE	QTY.	NAME
141…	06-09-0020-0	04…	Hex nut M8x1,25
142…	84DS-KKK8-0	01…	Table guide (left side)
143…	89DS-KK97-0	01…	Table guide (left side)
144…	89DS-KK73-0	01…	Skirt support
145…	06-09-0019-0	02…	Hex nut M6x1
146…	88DS-K263-0	01…	Nut
147…	06-04-0102-0	02…	Hex head cap screw M12x1,75x60
148…	89DS-K166-0	01…	Table
149…	89DS-KK72-0	01…	Skirt
150…	10-00-0002-0	01…	Prior adjusting scale 88DS-K118-0
151…	06-17-0002-0	02…	Rivet POP EAD-4400-S
152…	06-02-0068-0	01…	Allen screw without head M5x0,8x8
153…	06-02-0054-0	01…	Allen screw without head M8x1,25x10
154…	8NMN-KK92-0	01…	Knob
155…	06-05-0049-0	02…	Round head screw M6x1x12
156…	84DS-KK29-0	02…	Table roller bushing
157…	84DS-KK86-0	02…	Roller body
158…	03-00-0030-0	04…	Bearing 6204-2Z
159…	88DS-KK25-0	02…	Roller link
161…	89DS-K169-0	02…	Table roller shaft
162…	84DS-KK51-0	02…	Link pin
164…	06-18-0003-0	04…	Spring ring E-12
165…	88DS-K260-0	01…	Adjusting stem
166…	89DS-K168-0	01…	Adjusting screw
167…	06-04-0098-0	04…	Hex head cap screw
168…	84DS-KK14-0	04…	Screw upper support
169…	8NAR-KK81-0	12…	Washer
170…	06-04-0083-0	12…	Hex head cap screw
171…	84DS-KK38-0	04…	Screw protector washer
172…	06-19-0001-0	04…	Lock ring 84DS-KK85-0
173…	16-17-0011-0	04…	Screw protector 84DS-K286-0
174…	84DS-KK70-0	02…	Screw (right hand thread)
175…	84DS-KK71-0	02…	Screw (left hand thread)

FIG.	CODE	QTY.	NAME
176…	06-03-0015-0	12…	Allen screw with head M8x1,25x16
177…	84DS-K214-0	04…	Screw adjusting nut
178…	84DS-K215-0	04…	Upper cover
179…	84DS-KK93-0	04…	Lock plug
180…	06-02-0055-0	04…	Allen screw with head M8x1,25x20
181…	84DS-K217-0	02…	Screw nut (right hand thread)
182…	84DS-K218-0	02…	Screw nut (Left hand tread)
183…	84DS-K216-0	02…	Screw support
184…	03-00-0046-0	02…	Bearing 6305-2Z
185…	06-18-0011-0	02…	Spring ring E-25
186…	84DS-KK36-0	04…	Lower cover
187…	06-04-0097-0	12…	Hex head cap screw M10x1,5x25
188…	06-02-0039-0	02…	Allen screw without head M8x1,25x16
189…	84DS-KK39-0	01…	Stop nut (right hand thread)
190…	89DS-KK99-0	01…	Stop nut (left hand thread)
191…	03-00-0062-0	02…	Bearing 51.107
192…	09-00-0005-0	04…	Grease fiting
193…	26-03-0002-0	04…	Extension pin Ø8x32
194…	06-03-0066-0	12…	Allen screw with head M8x1,25x20
195…	84DS-KK69-0	02…	Table movement worm thread
196…	06-25-0053-0	02…	Key 8NCV-K314-0
197…	84DS-KK40-0	02…	Back off bushing
198…	8NAR-KKK6-0	02...	Washer
199…	84DS-KK72-0	02…	Gear
200…	8NCO-KK12-0	01…	Chain
201…	16-23-0006-0	01…	Chain junction ASA-40
202…	88DS-K104-0	01…	Seal box
203…	06-05-0055-0	04…	Round head screw M4x0,7x6
204…	06-18-0011-0	01…	Spring ring E-25
205…	89DS-K122-0	01…	Gear with 18 teeth
206…	06-04-0137-0	01…	Hex head cap screw M8x1,25x80
207…	26-02-0002-0	03…	Extension pin Ø6x24
208…	06-04-0140-0	03…	Hex head cap screw M8x1,25x60
209…	89DS-KK92-0	01…	Gear support
210…	88DS-K102-0	04…	Back off ring

Replacement Parts

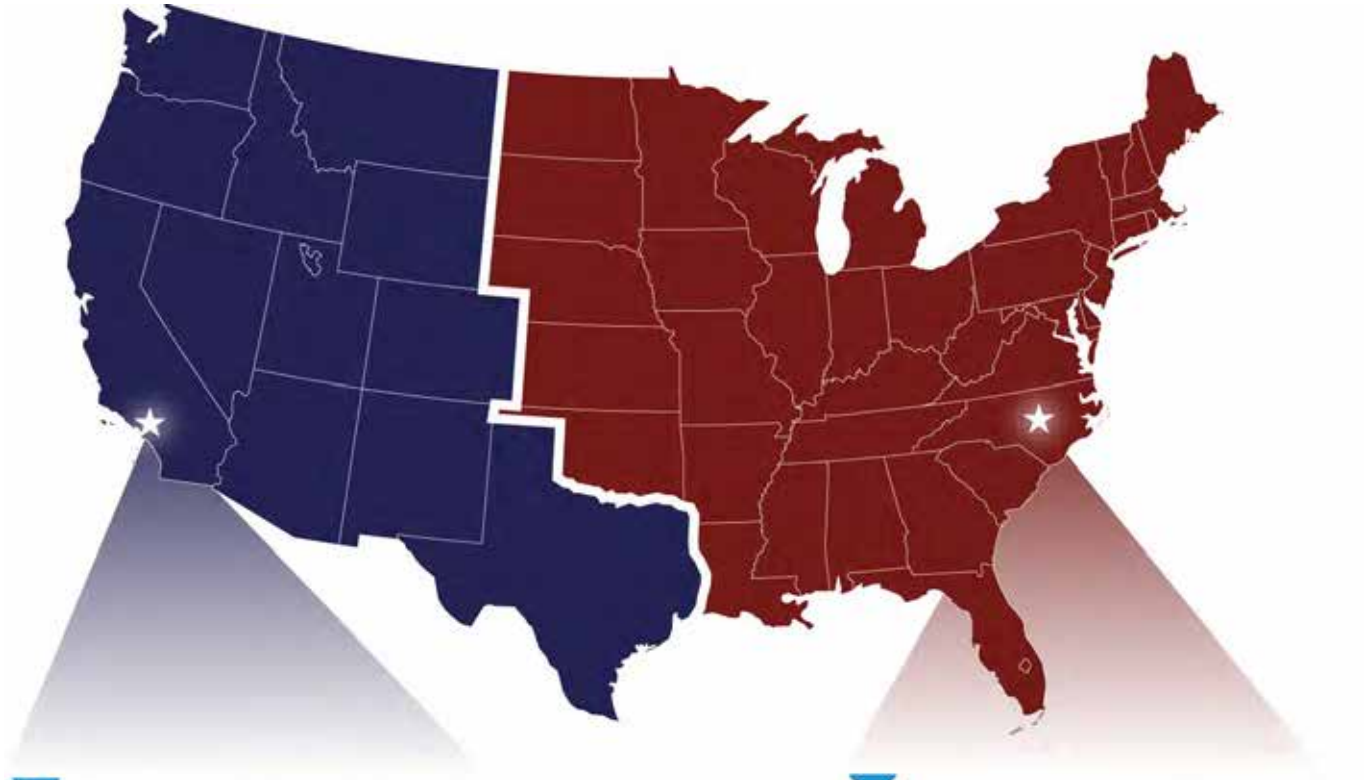
FIG.	CODE	QTY.	NAME
211…	89DS-K116-0	01…	Gear with pins and bushing
212…	06-02-0076-0	01…	Allen screw without head
213…	8NCV-K263-0	01…	Key
214…	88DS-KK86-0	01…	Transmission pin
215…	89DS-KK34-0	01…	Engaging shaft
216…	89DS-K115-0	01…	Gear with pins and bushing
217…	06-03-0065-0	03…	Allen screw with head M8x1,25x25
218…	06-13-0033-0	03…	Lock washer Ø8,4x2
219…	07-01-0015-0	01…	Spring 8NMO-KK93-0
220…	16-26-0006-0	01…	Steel ball Ø3/16"
221…	89DS-K110-0	01…	Counpling
222…	88DS-K100-0	01…	Lever support
223…	06-09-0021-0	01…	Hex nut M10x1,5
224…	88DS-K103-0	01…	Lever
225…	27-00-0007-0	01…	Bakelite handle 8NCA-KK17-0
226…	89DS-KK50-0	01…	Coupling lever
227…	89DS-KK48-0	01…	Gear support
228…	06-04-0119-0	01…	Hex head screw M8x1,25x25
229…	88DS-KK83-0	01…	Gear with 20 teeth
230…	8NCV-K262-0	01…	Key
231…	88DS-KK76-0	01…	Intemediate shaft
232…	8NCV-K329-0	01…	Key
233…	88DS-KK80-0	01…	Gear with 22 teeth
234…	8NCV-K244-0	01…	Key
235…	89DS-KK33-0	01…	Handwheel shaft
236…	89DS-KK36-0	01…	Gear
237…	06-18-0005-0	01…	Spring ring E-16
238…	11-33-0003-0	01…	Terminal box
239…	11-03-0015-0	01…	Cable clamp
240…	11-02-0048-0	01…	Terminal 8NAE-K042-0
241…	06-09-0026-0	02…	Hex nut M5x0,8
242…	06-05-0037-0	02…	Round head screw M5x0,8x12
243…	84DS-KKK7-0	01…	Reducer gear box
244…	26-03-0004-0	01…	Extension pin Ø8x40
245…	84DS-K165-0	01…	Reducer pin
246…	07-01-0038-0	01…	Spring 84DS-K157-0
247…	26-03-0008-0	01…	Pin extension Ø8x60
248…	24-04-0002-0	01…	Galvanized gas plug ½"
249…	06-20-0019-0	01…	Rubber ring nº 2232
250…	03-00-0008-0	01…	Bearing 6008-2RZ
251…	84DS-KK79-0	01…	Reducer gear 6th
252…	84DS-K114-0	01…	Stop washer
253…	03-00-0007-0	01…	Bearing 6007-2RS
254…	06-20-0018-0	01…	Rubber ring nº2230
255…	06-20-0017-0	02…	Rubber ring nº2225
256…	03-00-0028-0	02…	Bearing 6204
257…	84DS-KK78-0	01…	4th Reducer gear
258…	84DS-KK77-0	01…	Reducer gear 3rd and 5th
259…	8NCV-K243-0	01…	Key
260…	84DS-KK76-0	01…	2nd Reducer gear
261…	84DS-KK75-0	01…	1st Reducer gear
262…	8NCV-K315-0	01…	Key
263…	04-00-0010-0	01…	Retainer sabo 00266-BR1
264…	03-00-0081-0	01…	Bearing 6204-2RS
265…	06-03-0072-0	01…	Allen screw with head M6x1x30
266…	84DS-KKK6-0	01…	Reducer front box
267…	84DS-KK49-0	01…	Reducer washer
268…	06-06-0034-0	01…	Flat head screw M8x1,25x25
269…	24-08-0001-0	01…	Oil level sight glass ½"
270…	84DS-K103-0	01…	Reducer washer
271…	06-06-0026-0	01…	Flat head screw M8x1,25x20
272…	8NPM-K103-0	01…	Reducer driven pulley (for 60 Hz)
273…	8NPM-K107-0	01…	Reducer driven pulley (for 50 Hz)
274…	06-03-0075-0	04…	Allen screw with head M6x1x50
275…	06-03-0074-0	01…	Allen screw with head M6x1x40
276…	16-17-0010-0	01…	Reducer joint 84DS-KK97-0
277…	84DS-KK47-0	01…	Screw tilter nut
278…	06-09-0001-0	01…	Hex nut M16x2
279…	06-18-0034-0	01…	Spring ring RS-9
280…	84DS-K158-0	01…	Belt stretcher

Replacement Parts

FIG.	CODE	QTY.	NAME
281…	27-00-0009-0	01…	Bakelite handle 8NCA-KK20-0
282…	84DS-K164-0	01…	Screw
283…	84DS-K161-0	01…	Coupler
284…	8NAR-K119-0	01…	Washer
285…	84DS-K104-0	01…	Side shim
286…	06-13-0034-0	01…	Lock washer Ø13x2,5
287…	06-09-0022-0	01…	Hex nut M12x1,75
288…	06-03-0069-0	03…	Allen screw with head M6x1x16
289…	26-02-0013-0	02…	Extension pin Ø6x14
290…	89DS-KK23-0	01…	Belt stretcher
291…	8NPW-K528-0	01…	Stud
292…	06-09-0021-0	01…	Hex nut M10x1,5
293…	15-00-0010-0	03…	A-60 “V” Belt
294…	8NPM-K108-0	01…	60 Hz Driving pulley
295…	8NPM-K104-0	01…	50 Hz Driving pulley
296…	15-00-0008-0	01…	A-51 “V” Belt
297…	84DS-K111-0	01…	Driving pulley washer
298…	06-03-0082-0	01…	Allen screw with head M10x1,5x60
299…	06-04-0122-0	02…	Hex head cap screw M10x1,5x60
300…	06-13-0026-0	02…	Washer plain Ø10mm
301…	84DS-KK55-0	01…	Motor base shaft
302…	89DS-K120-0	01…	Motor base
303…	06-04-0089-0	04…	Hex head cap screw M10x1,5x50
304…	29-37-0060-0	01…	Motor 12,5CV-2P-208-230-460-60HZ
305…	88DS-K262-0	01…	Adjust screw nut
306…	88DS-K256-0	01…	Screw
307…	06-09-0022-0	01…	Hex nut
308…	88DS-K257-0	01…	Adjusting stem
309…	81PD-KK83-0	01…	Point
310…	06-05-0053-0	02…	Round head cap screw M4x0,7x10
423…	88DS-K256-0	01…	Adjusting screw
424…	06-09-0022-0	01…	Nut
425…	88DS-K257-0	01…	Pivot Bar Rear

FIG.	CODE	QTY.	NAME
			INFEED ROLLER SECTION
56…	82DG-K010-0	01…	Infeed roller assembly
			INFEED ROLLER PARTS
	16-03-0020-0	100..	Rubber
	81DG-KK84-0	23…	Small roll
	81DG-2100-0	01…	Right small roll
	81DG-2101-0	01…	Left small roll
	82DG-KK12-0	01…	Axle
	82DG-KK13-0	02…	Splitting ring
	82DG-KK14-0	02…	Splitting washer
	8NPF-KK39-0	01…	Screw

Parts and Service



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