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Warnings

Read the manual. Always read the owner’s manual carefully before attempting to use the machine. Know the limitations and hazards associated with the use of this planer.

Installation. If mounting machine to the floor, use high quality anchor bolts through the mounting holes on the base. If using a mobile base, be sure to lock the wheels.

Eye protection. Always wear approved safety goggles, glasses, or a face shield when operating this machine. NOTE: Common eyeglasses are only impact resistant, they are not safety glasses. Also use face or dust mask if the cutting operation is dusty.

Dress code. Do not wear loose clothing, neckties, jewelry, or gloves that can get caught in moving parts. Confine long hair. Keep sleeves above the elbow.

Placement. Place machine so that potential kickback area is not in line with aisles, doorways, wash stations or other work areas. Do not use machine in a damp or wet location, or expose to rain. Keep work area well lighted.

Electrical grounding. Your machine must be electrically grounded. If a cord and plug are used, make certain the grounding lug connects to a suitable ground. Follow the grounding procedure indicated by the National Electrical Code.

Guards. Be sure machine guards are in place and in good working order. Do not operate while gear cover is open. If a guard must be removed for adjustments or maintenance, it should be reinstalled immediately upon completion of the procedure and before operating the machine.

Housekeeping. Before turning on machine, remove all extra equipment such as keys, wrenches, scrap, stock, and cleaning rags from the machine. Keep the area around machine clean and free of scrap material and sawdust to minimize the danger of slipping.

Power off. Make sure the machine is either unplugged or electrically disconnected and locked out when performing maintenance or service work. Also, make sure switch is in OFF position before plugging in power cord. Never leave the machine running unattended. Do not leave machine until it comes to a complete stop.

Cutterhead. Keep knives sharp and free of all rust and pitch. Make sure gib screws are tightened securely.

Work piece. Check material for loose knots, nails and other defects that can damage knives and pose a safety hazard for the operator.

Keep hands away from feed rollers and cutterhead while operating.

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 undersize cord will cause a drop in line voltage resulting in loss of power and overheating. For runs up to 25 feet, use an 18 AWG or larger gauge cord.

Do not operate this machine while under the influence of drugs, alcohol or any medication.

If you are not thoroughly familiar with the operation of wood planers, obtain advice from your supervisor, instructor or other qualified person.

Health hazards. Some dust created by power sanding, sawing, grinding, drilling and other construction activities contains chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- Lead from lead-based paint.
- Crystalline silica from bricks and cement and other masonry products.
- Arsenic and chromium from chemically-treated lumber.

Your risk from these exposures 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 those dust masks that are specifically designed to filter out microscopic particles.
Features

![Diagram of woodworking machine with labeled parts: Return rollers, Magnetic Switch, Extension Rollers, 5" Dust port, Table raising and lowering handle, Feed rate shift handle, Oil bath gearbox, Lifting Handles, 5" Dust port.]

Specifications

Table Area (D x W/in.) ..................................................... 25-3/4 x 20 ...................................... 25-3/4 x 20
Maximum Planing (W/in.)............................................................... 20 ....................................... 20
Maximum Planing (T/in.).................................................................. 6 ..................................... 6
Full Width Cutting Depth (in.)...................................................... 3/32 ....................................... 3/32
Minimum Planing Depth (in.)...................................................... 6-3/4 ......................................... 6-3/4
Knives ...................................................................... (4) 20x1x1/8Thk ..................... (92) four-sided inserts
Cutterhead Speed (RPM) ......................................................... 5,000 .................................. 5,000
Cuts per Minute ........................................................................ 20,000 ................................ n.a.
Cutterhead Diameter (dia/in.)................................................... 3-3/16 ............................................. 3-3/16
Feed Rate (FPM). ................................................................. 24 & 31 ............................................. 24 & 31
Dust Chute Diameter (dia/in.).................................................. 5 ...................................... 5
Overall Dimensions (L x W x H/in.) ..................... 26 x 36-5/8 x 41-3/8 .................................. 26 x 36-5/8 x 41-3/8
Net Weight (approx. lbs.)............................................................. 640 ................................................. 640

*pre-wired 230V
Receiving

Carefully unpack the planer and any loose items from the wood crate and inspect for damage. Any damage should be reported immediately to your distributor and shipping agent. Before proceeding further, read your manual thoroughly to familiarize yourself with proper assembly, maintenance and safety procedures.

Remove the screws that hold the planer to the shipping skid. Remove the protective coating from the table, bed rolls, feed rolls, cutterhead and loose items packed with the machine, including lifting handles and motor pulley. This coating may be removed with a soft cloth moistened with Kerosene. Do not use acetone, gasoline or lacquer thinner for this purpose. Do not use solvents on plastic parts.

**CAUTION** Use care when cleaning the cutterhead, the knives are very sharp.

Installation & Assembly

1. There are four lifting handles (Fig. 3) on the machine. Pull the handles out for use, push in when not in use.

2. If a sling or forklift is used to lift the machine, be sure to lift by the handles only. See Fig. 3. Make sure machine is kept in level position while lifting.

3. For best planing performance, locate planer on a solid, level foundation and anchor to the floor with good quality lag screws. Do not tighten screws completely yet.

4. With machine in position, test table surface lengthwise and crosswise with machinist’s level. Place metal shims under low corners.

5. Check that all four corners are supported, then tighten lag screws.

6. Re-test level of table surface in both directions and adjust if necessary.

Starter Box

Mount the starter box at the left side of the machine with two socket head cap screws (Fig. 4).
Handwheel
1. Remove the nut and washer from the gearbox shaft, and place the handwheel onto the shaft (Fig. 5), making sure it is oriented so the handwheel slips over the key.
2. Place flat washer and hex nut on shaft and tighten with wrench.
3. Mount the handle in the threaded hole in the handwheel, and tighten with a wrench placed over the flat on the handle.

Table Extension Rollers
Mount the table extension rollers to the table using the provided hex cap screws and washers (A, Fig. 6). The rollers should be adjusted before operating the planer; see Adjusting Table Extension Rollers on page 11.

Extension Tables (Optional)
1. Mount a cast iron table to the edge of the main table with three M8 x 25 hex cap screws (Figure 6a). Do not fully tighten yet.
2. The extension table must be leveled with the main table. Place a straight edge (such as a jointed board) across both tables.
3. Insert three socket set screws with a hex wrench, and screw them in or out as needed until tables are level.
4. Securely tighten the hex cap screws.
5. Mount the second extension table to the opposite side of the planer table, using the same procedure.

Dust Collection Hood
The dust collection hood (Fig. 6b) comes standard with the model JWP-208 planer, and helps maintain a clean and safe work area. It is assembled to the planer with the screws and washers as shown.
Electrical Connections

**WARNING** Electrical connections must be made by a qualified electrician in compliance with all relevant codes. The machine must be properly grounded to help prevent electrical shock and possible fatal injury.

A power plug is not provided with the 208 planer. You may either connect one or "hard-wire" the machine directly to your electrical panel provided there is a disconnect near the machine. Consult the wiring diagrams on pages 32-35 for further clarification of wiring setup.

This machine must be grounded. Grounding provides a path of least resistance to help divert current away from the operator in case of electrical malfunction.

Make sure the voltage of your power supply matches the specifications on the motor plate of the machine.

**Extension Cords**

The use of an extension cord is not recommended for this machine, but if one is necessary make sure the cord rating is suitable for the amperage listed on the machine's motor plate. An undersize cord will cause a drop in line voltage resulting in loss of power and overheating.

The chart in Figure 7 shows the correct size cord to use based on cord length and motor plate amp rating. If in doubt, use the next heavier gauge. The smaller the gauge number the heavier the cord.

<table>
<thead>
<tr>
<th>Rated amps</th>
<th>25 ft</th>
<th>50 ft</th>
<th>100 ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-6</td>
<td>18</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>7-10</td>
<td>18</td>
<td>16</td>
<td>14</td>
</tr>
<tr>
<td>11-12</td>
<td>16</td>
<td>16</td>
<td>14</td>
</tr>
<tr>
<td>13-16</td>
<td>14</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>17-20</td>
<td>12</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>21-30</td>
<td>10</td>
<td>10</td>
<td>Not recommended</td>
</tr>
</tbody>
</table>

**Adjustments**

**Belt and Pulleys**

1. Using a straight edge, align the motor pulley (A, Fig. 8) and cutterhead pulley (B, Fig. 8). The motor plate can be moved for alignment by loosening the set screws (C, Fig. 9) in the motor plate.
2. Check belt tension. Proper tension is obtained when there is approximately 1/4” deflection of the center span of the pulleys using light finger pressure (Fig. 10).

3. If adjustment of belt tension is necessary, loosen one pair of hex nuts (E & F, Fig. 11) and turn the other pair to raise or lower the motor plate. Re-tighten nuts.

Table Rollers
Overview
Your planer is supplied with two table rollers (A, Fig. 12) which turn as the stock is fed into the planer, thus reducing friction. 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 at high position. When planing smooth stock the rollers should be set at low position.
**Note:** When raising the roller higher above the table, the available range is from .003" to .006" See Fig. 13.

The table rollers are factory set for average planing and are parallel to the table surface. If you desire to adjust the table rollers higher or lower, proceed as follows:

1. Disconnect machine from power source.
2. Lay a straight edge (B, Fig. 14) across both rollers.
3. On one side of the table, loosen the screws (C, Fig. 14) with a hex wrench, and turn the eccentric shafts (D, Fig. 14) to raise or lower the rollers.
4. When the proper height is achieved, tighten screws (C, Fig. 14).
5. Adjust the rollers from the opposite side of the table in the same manner.

**Important:** Be sure that the height of front and rear rollers are the same. The table rollers must always be set parallel to the table.

**Adjusting Table Extension Rollers**

1. Place a straight edge over the extension roller and the table, as shown in Fig. 15, to make sure the extension roller and table are at the same height. If necessary, adjust the table extension rollers as follows:
2. Loosen the screws and washers (A, Fig. 15) to move the extension roller to the proper position, then retighten the screws.
3. Adjust both front and rear extension rollers in the same manner.
Adjusting Depth of Cut

The cutting depth scale (A, Fig. 16) is a combination inch/metric scale with a cutting range from 0 to 8" (204mm). The distance of upward or downward movement is controlled by the handwheel (B, Fig. 16). One revolution of the handwheel is 0.059" (1.5mm). Before moving the table up or down, loosen the lock nuts (C, Fig. 16). After obtaining the proper table position, tighten the lock nuts (C, Fig. 16).

⚠️ WARNING Always tighten the lock nuts before operating the planer.

Cutterhead Adjustment

Overview

Although your planer was carefully adjusted at the factory, it should be checked before being put into operation. Any inaccuracies due to rough handling in transit can easily be corrected by following these directions.

To check the adjustments you will need a straight edge, feeler gauge, and a home made gauge block made of hardwood. This gauge block can be made by following the dimensions shown in Figure 17.

Knife Adjustment

When checking or adjusting the cutterhead knives, proceed as follows:

1. Disconnect machine from power source.
2. Remove the six screws (A, Fig. 18) and remove upper cover (B, Fig. 18).
3. To check and adjust knives, use the provided knife gauge (Fig. 19 & 20) and check all four knives. Knives should just contact the bottom of the center protrusion (D, Fig. 19) of the knife gauge.
4. If an adjustment to one or more of the knives is necessary, slightly loosen the knife gib (E, Fig. 19) by turning the six locking screws (F, Fig. 19) into the gib. Turn the screws just enough to relieve stress in the cutterhead without disturbing the setting of the knives. Do this for all four knives at the same time.
5. With the gauge in place over a knife (G, Fig. 19) continue to loosen the locking screws (F, Fig. 19) until the springs (H, Fig. 19) begin raising the knife. When knife comes into contact with the center protrusion (D, Fig. 19) of the gauge, snug up the gib by lightly backing out the six locking screws (F, Fig. 19) against the slot.
NOTE: At this time, only tighten the knife in the slot just enough to hold knife in position.

6. If additional knives must be reset, repeat step 5.

7. After all four knives are set with screws just snug, back out and tighten the six locking screws (F, Fig. 19 & 20), against the slot starting with the end screws first, then the center screws, until the knife is securely held in the cutterhead. Tighten remaining three knives in the same manner.

**Important:** Double check all screws for tightness.

**Replacing & Resetting Knives**

If the knives are removed for sharpening, care must be exercised in replacing and resetting them. Proceed as follows:

1. Disconnect machine from power source.

2. Remove six screws and upper cover (see Fig. 18).

3. To remove knife, loosen the gib (E, Fig. 19) by turning the six locking screws (F, Fig. 19) into the gib. Remove gib (E, Fig. 19), knife (G, Fig. 16) and springs (H, Fig. 19). NOTE: The inner two springs may pop out when the knife and gib are removed.

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

5. Thoroughly clean the knife slots, gibbs, springs and locking screws. Check the locking screws; if the threads appear worn or stripped or if the heads are becoming rounded, replace them.

6. 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 35 degrees.

7. Insert springs, knives and gib into slot of cutterhead. Back out locking screws just enough to hold the knife in the cutterhead.

8. Place knife gauge (C, Fig. 19) over knife.

9. While holding down on the knife gauge, loosen all six locking screws (F) by turning them into the gib (E) until cutting edge of knife comes into contact with the protrusion (D) of the gauge. Snug up the gib by slightly backing out the six locking screws against the slot.

**Note:** At this time, only tighten the knife into the slot just enough to hold the knife in position.
10. Replace and reset the other three knives in the same manner.

11. After all four knives are set with the screws just snug, back out and tighten the six screws (F) against the slot starting with the end screws first and then the center screws until the knife is securely held in the cutterhead. Tighten the remaining three knives in the same manner.

**WARNING** After replacing and checking knives, CHECK AGAIN carefully. Make certain the direction of knives is correct and all twenty-four locking screws are tightened securely.

**Replacing or Rotating Knife Inserts (Optional Spiral Cutterhead)**

The knife inserts on the model JWP-208HH are four-sided. When dull, simply remove each insert, rotate it 90° for a fresh edge, and re-install it.

Use the provided star point screwdriver to remove the knife insert screw. See Figure 20a. 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 rotations.

**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 planer!

**WARNING** Make sure all knife insert screws are tightened securely. Loose inserts can be propelled at high speed from a rotating cutterhead, causing injury.

**Checking Work Table Parallel to Cutterhead**

The work table is set parallel to the cutterhead at the factory and no further adjustment should be necessary. If your machine is planing a taper, first check to see if the knives are set properly in the cutterhead. Then check to see if the work table is set parallel to the cutterhead. Proceed as follows:
1. Disconnect machine from power source.

2. Place the gauge block (Figure 21) on the work table directly under the edge of a knife or knife insert as shown. Make slight contact with the knife edge by gently raising the table.

3. Move the gauge block to the opposite end of the work table. The distance from the work table to the edge of the knife should be the same on both ends of the knife.

Adjusting Work Table Parallel to Cutterhead

If the work table is not parallel to the cutterhead, perform the adjustment procedure as follows:

1. Disconnect the machine from power source.

2. Tilt planer on its side to expose underside of base, as shown in Fig. 22.

3. Remove bolt (A, Fig. 22) and loosen bolt (B, Fig. 22) which will allow you to move the idler sprocket assembly (C, Fig. 22) far enough to release tension on the chain.

4. Remove chain from the particular sprocket on corner of base that must be adjusted.
   
   Turn the sprocket by hand to bring that corner into adjustment with the other three corners. **NOTE:** Turning sprocket clockwise will increase the distance between the working table and headcasting; counter-clockwise will decrease the distance. This adjustment is very sensitive and it should not be necessary to turn the sprocket more than one or two teeth.

5. When adjustments are correct, replace chain around corner sprocket, slide sprocket (C, Fig. 22) back to re-tension chain, tighten bolt (B, Fig. 22) and replace and tighten bolt (A, Fig. 22).

Know the Transmitting Rollers of Your Planer

- A – Anti-Kickback Fingers
- B – Infeed Roller
- C – Chipbreaker
- D – Cutterhead
- D – Pressure Bar
- E – Outfeed Roller

The infeed roller (B, Fig. 23) and outfeed roller (F, Fig. 23) are those parts of your planer that feed the stock while it is being planed. The infeed and outfeed rollers are under spring tension and this tension must be sufficient to feed the stock uniformly through the planer without slipping but should not be so tight that it causes damage to the board. The tension should be equal at both ends of each roller.
**Anti-Kickback Fingers**

The anti-kickback fingers (A, Fig 23) help prevent kickback of stock. They operate by gravity and it is necessary to inspect them occasionally to make sure they are free of gum and pitch, so that they move independently and operate correctly.

**Adjusting Infeed & Outfeed Roller Spring Tension**

To adjust the spring tension of the infeed and outfeed rollers, turn screws (G & H, Fig. 24) with a hex wrench. Turn screws on opposite end of infeed/outfeed rollers in the same manner.

---

**Height of Infeed Roller, Chipbreaker, Pressure Bar & Outfeed Roller**

The infeed roller, chipbreaker, pressure bar and outfeed roller are adjusted at the factory. The infeed roller and the chipbreaker should be set at 0.004" (0.1mm) below the cutting circle; and the outfeed roller should be set at 0.02" (0.5mm) below the cutting circle. See Fig. 25.

If an adjustment to the infeed roller, chipbreaker, pressure bar or outfeed roller is necessary, use the following steps as an example of procedure.

To check and adjust the outfeed roller below the cutting circle, proceed as follows:

1. Disconnect machine from power source.
2. Make sure the knives are adjusted properly as previously explained under “Checking & Adjusting of Knives.”
3. Place the gauge block (J, Fig. 26) on the table directly underneath the cutterhead (D, Fig. 26). Using a 0.02” (0.5mm) feeler gauge (K, Fig. 26) placed on top of the gauge block, raise the working table until the knife just touches the feeler gauge when the knife is at its lowest point. Do not move the working table any further until the outfeed roller is adjusted.
4. Move the gauge block (J, Fig. 27) under one end of the outfeed roller (F, Fig. 27). The bottom of the outfeed roller should just touch the top of the gauge block. If an adjustment to the outfeed roller is necessary, loosen the lock nut (L, Fig. 27) and turn screw (M, Fig. 27) until the outfeed roller just touches the gauge block. Then tighten lock nut (L, Fig. 27).

5. Check and adjust opposite end of the outfeed roller in the same manner.

Feed Speed Control

Your machine is equipped with a spiral, serrated infeed roller and a solid outfeed roller. When the feed rollers are engaged, they turn to feed the stock. The feed rollers slow automatically when the machine is under heavy load for best planing in all conditions. The feed rollers are driven by chains (A, Fig. 28) and sprockets (B, Fig. 28) which take power directly from the cutterhead through the oil bath gear box (C, Fig. 28).

The gear box has two feed speeds. These are set by pulling out or pushing in the shift lever (D, Fig. 28) while the machine is running. The feed speed range is shown in Fig. 29.

Changing Accessories for Lowest Feed Speed

The lowest feed speed for your planer (16.2 fpm & 20.7 fpm) can be obtained by replacing the lower (gear shaft) sprocket and the chain. See Fig. 29. To change the sprocket and the chain on your machine, proceed as follows:

1. Disconnect machine from power source.
2. Remove the three hex cap screws and washers (E, Fig. 28).
3. Remove the three sprockets (B, Fig. 28) from the infeed roller, outfeed roller and the gear shaft at the same time.

4. When the sprockets (B, Fig. 28) are removed, replace the lower sprocket which will be assembled on the gear shaft.
5. Assemble the three sprockets and chains to the shafts, and tighten the hex cap screws (E, Fig. 28).

Return Rollers

The two return rollers on the top of the machine serve as a convenient rest for stock. They save time and motion for the operator as the stock is returned to the infeed side.
**Maintenance**

Periodic or regular inspections are required to ensure that the machine is in proper adjustment, that all screws are tight, that belts are in good condition, that dust has not accumulated in the electrical enclosures, and that there are no worn or loose electrical connections.

Buildup of sawdust and other debris can cause your machine to plane inaccurately. Periodic cleaning is not only recommended but mandatory for accurate planing.

Close-fitting parts, such as the cutterhead slot and gibs, should be cleaned with a cloth or brush and non-flammable solvent, and freed from clinging foreign matter.

Remove resin and other accumulations from feed rollers and table with a soft rag and non-flammable solvent.

Periodically check all the chains for proper tension and adjust accordingly if required.

**Tip:** If a foreign object nicks the knives, instead of throwing them away or trying to grind out the deep nick, simply stagger the knives in the head, moving one knife no more than 1/4" to the right and another knife no more than 1/4" to the left. The nick should no longer be noticeable.

The table should be kept clean and free of rust. Some users prefer a paste wax coating. Another option is talcum powder applied with a blackboard eraser rubbed in vigorously once a week; this will fill casting pores and form a moisture barrier. This method provides a table top that is slick and allows rust rings to be easily wiped from the surface. Important also is the fact that talcum powder will not stain wood or mar finishes as wax pickup does.

**Lubrication**

The bearings on the cutterhead are factory lubricated and sealed for life – no lubrication required.

The lubricant in the gearbox must be replaced every 2,500 hours. Multi-purpose gearbox lubricant will be suitable.

To replace the gearbox lubricant:

Remove the drain plug (A, Fig. 30), and filler cap (B, Fig. 30). Drain dirty oil thoroughly.

Tighten the drain plug (A, Fig. 30).

Fill with clean lubricant through hole (B, Fig. 30).

Tighten filler cap (B, Fig. 30).
[The item numbers on this chart are referenced with the accompanying illustrations.]

<table>
<thead>
<tr>
<th>No.</th>
<th>Position</th>
<th>Interval</th>
<th>Suitable Types of Lubricant</th>
<th>Fig. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Drive Chain</td>
<td>Frequently</td>
<td>Grease</td>
<td>30</td>
</tr>
<tr>
<td>2</td>
<td>Gear Box</td>
<td>When operated more than 2,500 hours</td>
<td>70 to 90 weight gear oil</td>
<td>30</td>
</tr>
<tr>
<td>3</td>
<td>Return Rollers</td>
<td>Frequently</td>
<td>SAE-30</td>
<td>32</td>
</tr>
<tr>
<td>4</td>
<td>Worm Gear</td>
<td>Frequently</td>
<td>Grease</td>
<td>33</td>
</tr>
<tr>
<td>5</td>
<td>Lead Screw</td>
<td>Frequently</td>
<td>Grease</td>
<td>33</td>
</tr>
<tr>
<td>6</td>
<td>Column</td>
<td>Frequently</td>
<td>Clean and SAE-30</td>
<td>33</td>
</tr>
<tr>
<td>7</td>
<td>Table Chain</td>
<td>Frequently</td>
<td>Grease</td>
<td>34</td>
</tr>
<tr>
<td>8</td>
<td>Feed Rollers</td>
<td>Frequently</td>
<td>SAE-30</td>
<td>35</td>
</tr>
</tbody>
</table>

*Figure 31*

*Figure 32*

*Figure 33*

*Figure 34*

*Figure 35*
### Troubleshooting

#### Operating Problems

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Snipe.</td>
<td>Table rollers not set properly.</td>
<td>Adjust rollers to proper height.</td>
</tr>
<tr>
<td></td>
<td>Inadequate support of long boards.</td>
<td>Support long boards with extension rollers.</td>
</tr>
<tr>
<td></td>
<td>Uneven feed roller pressure front to back.</td>
<td>Adjust feed roller tension.</td>
</tr>
<tr>
<td></td>
<td>Dull Knives</td>
<td>Sharpen knives.</td>
</tr>
<tr>
<td></td>
<td>Lumber not butter properly.</td>
<td>Butt end to end each piece of stock as they pass through.</td>
</tr>
<tr>
<td>Fuzzy Grain</td>
<td>Planing wood with a high moisture content.</td>
<td>Remove high moisture content from wood by drying.</td>
</tr>
<tr>
<td></td>
<td>Dull knives.</td>
<td>Sharpen or replace.</td>
</tr>
<tr>
<td>Torn Grain</td>
<td>Too heavy a cut.</td>
<td>Adjust proper depth of cut.</td>
</tr>
<tr>
<td></td>
<td>Knives cutting against grain.</td>
<td>Cut along the grain.</td>
</tr>
<tr>
<td></td>
<td>Dull knives.</td>
<td>Sharpen knives.</td>
</tr>
<tr>
<td>Rough/Raised Grain</td>
<td>Dull knives.</td>
<td>Sharpen knives.</td>
</tr>
<tr>
<td></td>
<td>Too heavy a cut.</td>
<td>Adjust proper depth.</td>
</tr>
<tr>
<td></td>
<td>Moisture content too high.</td>
<td>Remove high moisture content from wood by drying.</td>
</tr>
<tr>
<td>Rounded, glossy surface</td>
<td>Dull knives.</td>
<td>Sharpen or replace knives.</td>
</tr>
<tr>
<td></td>
<td>Feed speed too slow.</td>
<td>Increase speed.</td>
</tr>
<tr>
<td></td>
<td>Cutting depth too shallow.</td>
<td>Increase depth.</td>
</tr>
<tr>
<td>Poor feeding of lumber</td>
<td>Inadequate feed roller pressure.</td>
<td>Adjust feed roller tension.</td>
</tr>
<tr>
<td></td>
<td>Planer bed rough or dry.</td>
<td>If proper tension cannot be achieved, replace feed rollers.</td>
</tr>
<tr>
<td></td>
<td>Transmission v-belt slipping.</td>
<td>Clean pitch and residue, and wax planer table.</td>
</tr>
<tr>
<td></td>
<td>Surface of feed rollers too smooth.</td>
<td>Tighten transmission v-belt.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lightly roughen the feed roller surface with sandpaper.</td>
</tr>
</tbody>
</table>

#### Mechanical and Electrical Problems

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cutterhead not level with bed.</td>
<td>Level bed.</td>
</tr>
<tr>
<td>Board thickness does not match depth of cut scale.</td>
<td>Depth of cut scale incorrect.</td>
<td>Adjust depth of cut scale.</td>
</tr>
<tr>
<td>Problem</td>
<td>Possible Cause</td>
<td>Solution</td>
</tr>
<tr>
<td>---------</td>
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<td>----------</td>
</tr>
<tr>
<td>Chain jumping.</td>
<td>Inadequate tension.</td>
<td>Adjust chain tension.</td>
</tr>
<tr>
<td></td>
<td>Sprockets misaligned.</td>
<td>Align sprockets.</td>
</tr>
<tr>
<td></td>
<td>Sprockets worn.</td>
<td>Replace sprockets.</td>
</tr>
<tr>
<td>Machine will not start/restart or repeatedly trips circuit breaker or blows fuses.</td>
<td>No incoming power.</td>
<td>Verify unit is connected to power.</td>
</tr>
<tr>
<td></td>
<td>Overload automatic reset has not reset.</td>
<td>When planer overloads on the circuit breaker built into the motor starter, it takes time for the machine to cool sown before restart. Allow unit to adequately cool before attempting restart. If problem persists, check amp setting on the motor starter inside the electrical box.</td>
</tr>
<tr>
<td></td>
<td>Planer frequently trips.</td>
<td>One cause of overloading trips which are not electrical in nature is too heavy a cut. If too deep a cut is not the problem, then check the amp setting on the overload relays. Match the full load amps on the motor as noted on the motor plate. If amp setting is correct then there is probably a loose electrical lead. Check amp setting on motor starter.</td>
</tr>
<tr>
<td></td>
<td>Building circuit breaker trips of fuse blows.</td>
<td>Verify that planer is on a circuit of correct size. If circuit size is correct, there is probably a loose electrical lead. Check amp setting on motor starter.</td>
</tr>
<tr>
<td></td>
<td>Loose electrical connections.</td>
<td>Go through all the electrical connections on the planer including motor connections, verifying the tightness of each. Look for any signs of electrical arcing which is a sure indicator of loose connections or circuit overload.</td>
</tr>
<tr>
<td></td>
<td>Motor starter failure.</td>
<td>Examine motor starter for burned or failed components. If damage is found, replace motor starter. If motor starter looks okay but is still suspect, you have two options: have a qualified electrician test the motor starter for function, or purchase a new starter and establish if that was the problem on changeout.</td>
</tr>
<tr>
<td></td>
<td>Motor starter failure.</td>
<td>If you have access to a voltmeter, you can separate a starter failure from a motor failure by first, verifying incoming voltage at 220 +/- 20 and second, checking the voltage between starter and motor at 220 +/- 20.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If incoming voltage is incorrect, you have a power supply problem.</td>
</tr>
<tr>
<td></td>
<td>Motor failure.</td>
<td>If voltage between starter and motor is correct, you have a motor problem.</td>
</tr>
<tr>
<td></td>
<td>Motor failure.</td>
<td>If electrical motor is suspect, you have two options: Have a qualified electrician test the motor for function or remove the motor and take it to a qualified electric motor repair shop and have it tested.</td>
</tr>
<tr>
<td>Problem</td>
<td>Possible Cause</td>
<td>Solution</td>
</tr>
<tr>
<td>------------------------</td>
<td>----------------------------</td>
<td>---------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Miswiring of the unit.</td>
<td></td>
<td>Double check to confirm all electrical connections are correct and tight. Refer to wiring diagrams on pages 32-35 to make any needed corrections.</td>
</tr>
<tr>
<td>On/off switch failure.</td>
<td></td>
<td>If the on/off switch is suspect you have two options: Have a qualified electrician test the switch for function, or purchase a new on/off switch and establish if that was the problem on changeout.</td>
</tr>
</tbody>
</table>