

# **POWERMATIC®**

## **Operating Instructions and Parts Manual 16-inch Jointer**

**Model PJ1696**



For machines with serial no. 12061696217 and higher

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# Warranty and Service

Powermatic warrants every product it sells against manufacturers' defects. If one of our tools needs service or repair, please contact Technical Service by calling 1-800-274-6846, 8AM to 5PM CST, Monday through Friday.

## Warranty Period

The general warranty lasts for the time period specified in the literature included with your product or on the official Powermatic branded website.

- Powermatic products carry a limited warranty which varies in duration based upon the product. (See chart below)
- Accessories carry a limited warranty of one year from the date of receipt.
- Consumable items are defined as expendable parts or accessories expected to become inoperable within a reasonable amount of use and are covered by a 90 day limited warranty against manufacturer's defects.

## Who is Covered

This warranty covers only the initial purchaser of the product from the date of delivery.

## What is Covered

This warranty covers any defects in workmanship or materials subject to the limitations stated below. This warranty does not cover failures due directly or indirectly to misuse, abuse, negligence or accidents, normal wear-and-tear, improper repair, alterations or lack of maintenance.

## Warranty Limitations

Woodworking products with a Five Year Warranty that are used for commercial or industrial purposes default to a Two Year Warranty. Please contact Technical Service at 1-800-274-6846 for further clarification.

## How to Get Technical Support

Please contact Technical Service by calling 1-800-274-6846. **Please note that you will be asked to provide proof of initial purchase when calling.** If a product requires further inspection, the Technical Service representative will explain and assist with any additional action needed. Powermatic has Authorized Service Centers located throughout the United States. For the name of an Authorized Service Center in your area call 1-800-274-6846 or use the Service Center Locator on the Powermatic website.

## More Information

Powermatic is constantly adding new products. For complete, up-to-date product information, check with your local distributor or visit the Powermatic website.

## How State Law Applies

This warranty gives you specific legal rights, subject to applicable state law.

## Limitations on This Warranty

POWERMATIC LIMITS ALL IMPLIED WARRANTIES TO THE PERIOD OF THE LIMITED WARRANTY FOR EACH PRODUCT. EXCEPT AS STATED HEREIN, ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXCLUDED. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

POWERMATIC SHALL IN NO EVENT BE LIABLE FOR DEATH, INJURIES TO PERSONS OR PROPERTY, OR FOR INCIDENTAL, CONTINGENT, SPECIAL, OR CONSEQUENTIAL DAMAGES ARISING FROM THE USE OF OUR PRODUCTS. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

Powermatic sells through distributors only. The specifications listed in Powermatic printed materials and on the official Powermatic website are given as general information and are not binding. Powermatic reserves the right to effect at any time, without prior notice, those alterations to parts, fittings, and accessory equipment which they may deem necessary for any reason whatsoever.

## Product Listing with Warranty Period

90 Days – Parts; Consumable items
1 Year – Motors, Machine Accessories
2 Year – Woodworking Machinery used for industrial or commercial purposes
5 Year – Woodworking Machinery

NOTE: Powermatic is a division of JPW Industries, Inc. References in this document to Powermatic also apply to JPW Industries, Inc., or any of its successors in interest to the Powermatic brand.

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# Warnings

**Read the manual.** Read, understand, and follow the safety instructions found in this manual. Know the limitations and hazards in using the model PJ1696 Jointer. Decals are placed on each machine as reminders of good safety practice.

**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.

**Location.** Use extra care in the location of the jointer in the shop. Place the machine so that potential kickback area is not in line with aisles, doorways, wash stations, or other work areas.

**Electrical grounding.** Make certain that the machine frame is electrically grounded and that a ground lead is included in the incoming electrical service. If a cord and plug are used, make certain the grounding lug connects to a suitable ground. Follow the grounding procedure indicated in the National Electric Code.

**Eye safety.** 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.)

**Personal protection.** Before operating the machine, remove tie, rings, watch and other jewelry and roll up sleeves above the elbows. Remove all loose clothing and confine long hair. Protective type footwear should be used. Where the noise exceeds the level of exposure allowed in Section 1910.95 of the OSHA Regulations, use hearing protective devices. Do not wear gloves.

**Guards.** Be sure machine guards are in place and in good working order. Use them at all times on operations where they can be used. If a guard must be removed for any operation, make sure it is replaced immediately following completion of that operation.

**Work area.** Keep the floor around the machine clean and free of scrap material, saw dust, oil and other liquids to minimize the danger of tripping or slipping. Be sure the table is free of all scrap, foreign material and tools before starting to cut. Make certain the work area is well lighted and that a proper exhaust system is used to minimize dust. Powermatic recommends the use of anti-skid floor strips on the floor area where the operator normally stands and that each machine's work area be marked off. Provide adequate work space around the machine.

**Disconnect machine** before performing any service or maintenance. A machine under repair should be RED TAGGED to show it should not be used until the maintenance is complete.

**Housekeeping.** Before turning on machine, remove all extra equipment such as keys, wrenches, scrap, stock, and cleaning rags away from the machine.

**Power on.** On machines equipped with a manual starter make sure the starter is in "OFF" position before connecting power to machine.

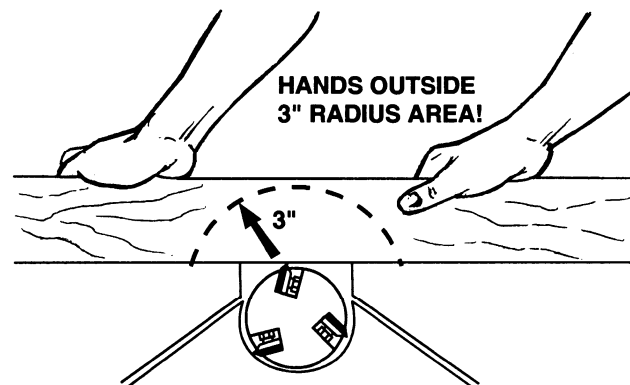
**Three inch rule.** When working a piece of wood on the jointer, follow the 3 inch radius rule. The hands must never be closer than 3 inches to the cutterhead. See Figure 1.

**Always use** a hold-down or push block when surfacing stock less than 12" inches long, or 3 inches wide, or 3 inches thick.

**Do not perform** jointing operations on material shorter than 8", narrower than 3/4" or less than 1/4" thick.

**Depth of cut.** Do not make cuts deeper than 3/4" when rabbeting. On other cuts such as edging, surfacing, etc., depth of cut should not be over 1/16" to avoid overloading the machine and to minimize chance of kickback.

**Avoid tip-in.** Never apply pressure to stock directly over the cutterhead. This may result in the stock tipping into the cutterhead along with the operator's fingers. Follow the 3 inch rule. Position hands away from extreme ends of stock, and push through with a smooth, even motion. Never back workpiece toward the infeed table.

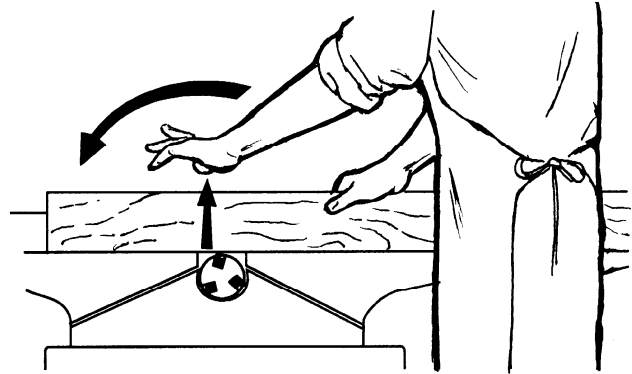


**FIGURE 1**

**Avoid Kickback.** "Pull-out" and the danger of kicked back stock can occur when the work piece has knots, holes, or foreign materials such as nails. It can also occur when the stock is fed against the grain on the jointer. The grain must run in the same direction you are cutting. Before attempting to joint, or plane, each work piece must be carefully examined for stock condition and grain orientation.

**NOTE:** At certain times it may be necessary to plane against the grain when working with a swirl grain wood or burls. With this type work the operator must use a lesser depth of cut and a slow rate of feed.

**Hand safety.** It is good practice to move the hands in an alternate motion from back to front as the work continues through the cut. Never pass the hands directly over the cutter knife. As one hand approaches the knives remove it from the stock in an arc motion and place it back on the stock in a position beyond the cutter knife (Figure 2). **NOTE:** At all times hold the stock firmly.



**FIGURE 2**

**Misuse.** Do not use this jointer for other than its intended use. If used for other purposes, Powermatic disclaims any real or implied warranty and holds itself harmless for any injury or damage which may result from that use. Do not equip or use this jointer with a motor larger than 7-1/2 Horsepower at 5,200 R.P.M. Use of a larger horsepower motor or higher cutterhead speed voids the warranty and Powermatic holds itself harmless for any injury which may result.

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

**Drugs, alcohol, medication.** Do not operate tool while under the influence of drugs, alcohol, or any medication.

**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.

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



This means that if precautions are not heeded, it may result in minor injury and/or possible machine damage.



This means that if precautions are not heeded, it may result in serious injury or possibly even death.

**- - SAVE THESE INSTRUCTIONS - -**

## Safety Label

Familiarize yourself with the location and content of this decal on your machine.

**⚠ WARNING**

1. For your own safety, read instruction manual before operating jointer.
2. Do not expose to rain or use in damp locations.
3. Always keep cutterhead and drive guards in place and in proper operating condition.
4. Never make jointing or planing cuts deeper than 1/8".
5. Always use hold-downs/push blocks for jointing material narrower than 3" or planing material thinner than 3".
6. Never perform jointing or planing cuts on pieces shorter than 8" in length.
7. Remove or fasten loose articles of clothing, such as neckties, etc. Contain long hair and remove all jewelry.
8. Use approved safety glasses and/or face shields to protect eyes.
9. disconnect machine from power source before performing any maintenance, adjustments or cleaning.
10. Never operate this machine while under the influence of drugs or alcohol.
11. Failure to comply with these warnings may result in serious personal injury.

**DO NOT REMOVE OR OBSCURE THIS LABEL.**

Figure 3

# Features: PJ1696 Jointer

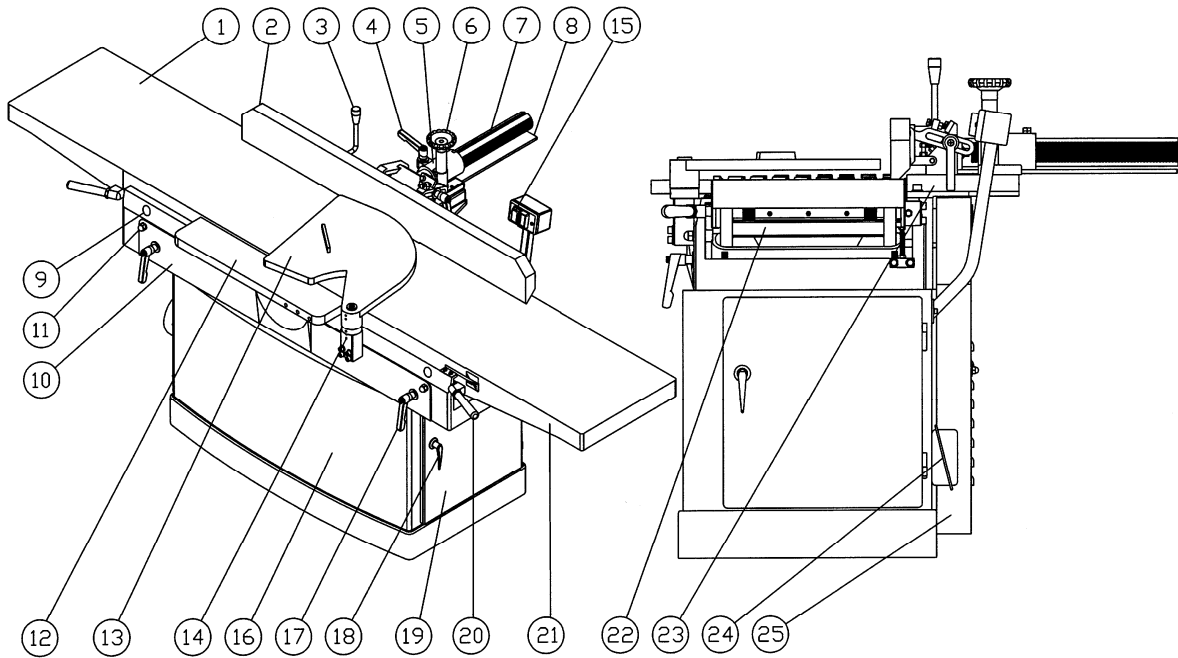


Figure 4

- |     |                                   |     |                               |
|-----|-----------------------------------|-----|-------------------------------|
| 1.  | Outfeed table                     | 14. | Guard Bracket Block           |
| 2.  | Fence                             | 15. | Pushbutton Switch             |
| 3.  | Fence Handle                      | 16. | Cabinet                       |
| 4.  | Lock Lever                        | 17. | Table Lock                    |
| 5.  | Cast Housing                      | 18. | Door Latch                    |
| 6.  | Control Handle - Forward/Backward | 19. | Cabinet Door                  |
| 7.  | Rack Column                       | 20. | Table Raising/Lowering Handle |
| 8.  | Cutterhead Guard Plate            | 21. | Infeed Table                  |
| 9.  | Eccentric Shaft                   | 22. | Eccentric Shaft               |
| 10. | Base                              | 23. | Fence Base                    |
| 11. | Eccentric Shaft                   | 24. | Junction Box                  |
| 12. | Rabbeting Ledge                   | 25. | Drive Belt Cover              |
| 13. | Cutter Guard                      |     |                               |

# Introduction

This manual is provided by Powermatic Inc. covering the safe operation and maintenance procedures for a Powermatic Model PJ1696 Jointer. This manual contains instructions on installation, safety precautions, general operating procedures, maintenance instructions and parts breakdown. This machine has been designed and constructed to provide years of trouble free operation if used in accordance with instructions set forth in this manual. If there are any questions or comments, please contact either your local supplier or Powermatic. Powermatic can also be reached at our web site: [www.powermatic.com](http://www.powermatic.com).

# Specifications

Model No.....	PJ1696
Stock No. ....	1791283
Motor.....	7-1/2HP, 3Ph, 230/460V*, 60Hz
Maximum width cutting capacity.....	16" (406 mm)
Maximum depth cutting capacity.....	3/4" (19 mm)
Cuts per minute.....	20,800
Table size.....	16" W x 96" L (406mm x 2438 mm)
Table height from floor.....	37-1/2" (800 mm)
Fence size.....	47-1/4" L x 5-1/4" H (1200 x 133 mm)
Fence tilt .....	45 degrees forward, 45 degrees backward
Positive stops .....	45 deg., 90 deg., 135 deg.
Cutterhead speed .....	5200 RPM
Number of knife inserts .....	56 standard, 2 rabbet
Cutterhead diameter .....	4" (98 mm)
Rabbeting capacity .....	3/4" (19 mm)
Dust connection diameter .....	6" (152 mm)
Overall dimension.....	46" L x 96" W x 43" H (1168 x 2438 x 1092 mm)
Packing dimension .....	39" L x 102" W x 29-1/2" H (991 x 2591 x 749 mm)
Net weight .....	1280 lbs. (582 kgs.)
Gross weight .....	1400 lbs. (636 kgs.)

\* pre-wired 230 volt **NOTE:** For 460V operation, magnetic switch (part no.PJ1696-205D) must be purchased separately and installed. A qualified electrician is recommended.

The above specifications were current at the time this manual was published, but because of our policy of continuous improvement, Powermatic reserves the right to change specifications at any time and without prior notice, without incurring obligations.



## Receiving the Jointer

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

Exposed metal parts such as the table and fence have been given a protective coating at the factory. This should be removed with a soft cloth moistened with a solvent (such as kerosene). Do not use acetone, gasoline or lacquer thinner for this purpose. Do not use an abrasive pad. After cleaning, it is recommended that you cover all unpainted surfaces with a good quality paste wax.

### Crate contents:

- 1 jointer
- 1 dust chute
- 1 fence assembly
- 4 hex wrenches (3, 5, 8 and 10mm)
- 3 open-end wrenches (10-12mm, 12-14mm, 17-19mm)
- 2 push pads
- 1 helical cutter head tool package:
  - 2 rabbet knives
  - 8 two-sided standard knives
  - 7 gibs
  - 7 gib nuts
  - 7 gib screws
  - 1 hex wrench 5mm (L type)
  - 3 hex wrenches 5mm (T type)
- 1 manual
- 1 warranty card

## Installation and Assembly

### Tools required

10mm hex wrench (provided)

Phillips screwdriver

The supplied tools are shipped inside the bottom of the stand, and can be removed through the dust outlet (A, Figure 5) on the left side of the machine.

Remove the bolts holding the jointer to the skid, and lift the machine from the skid using a hoist. The strap should be suitable to lift 1320 pounds of weight, and should be placed under the base casting as shown in Figure 6. DO NOT place strap under the tables.

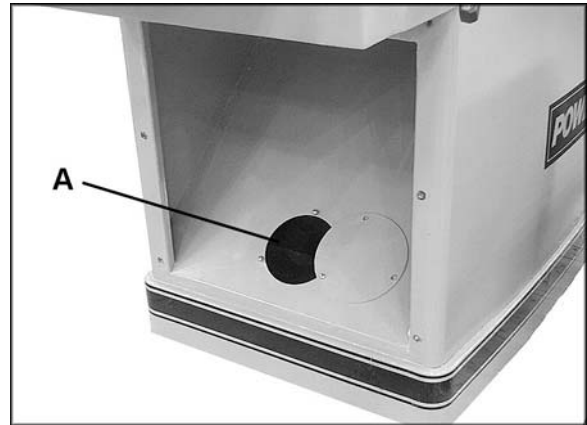


Figure 5

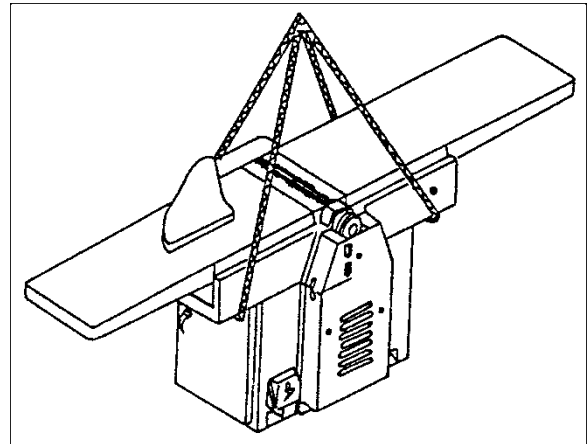


Figure 6

The jointer should be mounted to a solid, level foundation, preferably a concrete floor. The machine area should be clean, dry, well ventilated and well lighted, with sufficient space around the machine for operation and maintenance work.

This machine is equipped with noise-reducing table lips. The work site should, however, be one which minimizes reverberant sound from walls, ceilings and other equipment.

### Fence Installation

Mount the fence (A, Figure 7) to the holes on the jointer table with the two socket head cap screws (B, Figure 7), using a 10mm hex wrench. Tighten the screws (B, Figure 7) securely.

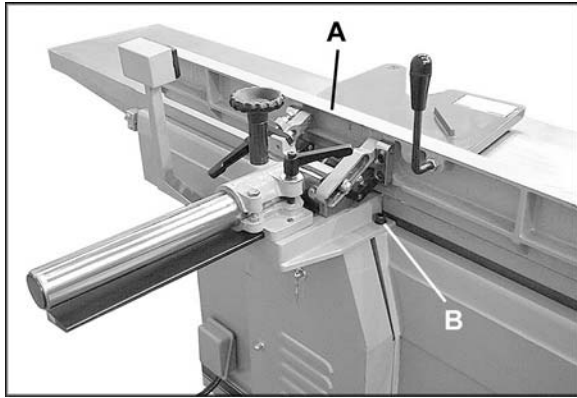


Figure 7

## Dust Hood

Mount the dust hood (C, Figure 8), to the left side of the jointer using the seven 1/4-20 x 1/2 screws (D, Figure 8) provided on the machine. Before mounting the dust hood, make sure the hole in the base is covered by the dust chute cover (shown in Figure 5).

It is recommended a dust collection system of appropriate size (at least 800 CFM) be connected to the dust outlet via a 6" diameter hose.



Figure 8

## Start/Stop Switch

The arm (E, Figure 9) on which the pushbutton switch is located is shipped in the down position. The screws (F, Figure 9) should be loosened with a 10mm hex wrench and the arm pivoted to upright position. Re-tighten screws.

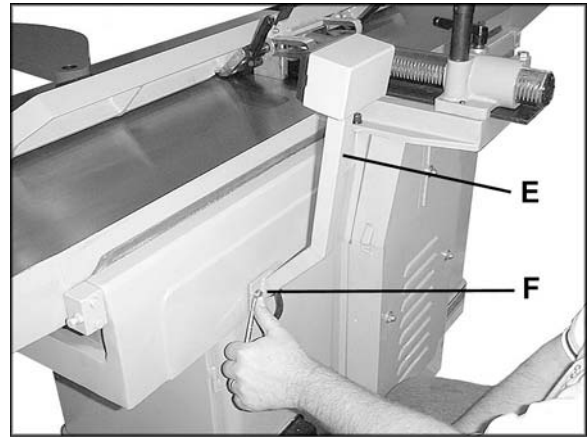


Figure 9

## Electrical Connection

**⚠WARNING** Electrical connections must be made by a qualified electrician. The machine must be properly grounded to help avoid electric shock and possible death.

**IMPORTANT:** Make sure the electrical characteristics are the same between the motor nameplate and the power source, and make sure the circuit on which the jointer will be used is properly fused and that the wire size is correct.

It is recommended that the jointer when operated at **230 volts**, be connected to a dedicated, minimum 40 amp circuit with a 40 amp circuit breaker or time delay fuse. When operated at **460 volts**, connect the jointer to a dedicated, minimum 20 amp circuit with 20 amp circuit breaker or time delay fuse. **Local codes take precedence over recommendations.**

1. Connect wires from the power source to the motor junction box. Refer to diagram inside the motor junction box cover (a similar diagram appears at the back of this manual). *The green wire (ground) must be properly grounded.*
2. After wiring is complete, turn motor on momentarily to check for proper direction of rotation (cutterhead should rotate toward infeed table). If rotation is in the wrong direction, disconnect machine and switch any two of the hot leads. Reconnect power and confirm proper rotation.
3. Run the machine without cutting for a short time to check that all powered functions are operating properly.

## 460V Conversion

The Jointer is pre-wired for 230 volt operation. If 460 volt operation is required, proceed as follows:

1. Re-connect the motor leads according to the wiring diagram.

2. Replace the installed magnetic switch with the switch rated for 460V operation (stock no. PJ1696-205D; separate purchase).
3. Change the dial on the overload relay to the appropriate setting for 460V operation.
4. Check for proper direction of rotation (cutterhead should rotate toward infeed table). If rotation is in the wrong direction, disconnect machine and switch any two of the hot leads. Reconnect power and confirm proper rotation.

## Adjustments

Tools required

17mm/19mm wrench

### Drive Belt

Remove the three crown nuts and washers (A, Figure 10) on the belt cover with a 17mm wrench, and remove the cover. Use a 19mm wrench to adjust the nuts in the motor support (B, Figure 11).

Raise or lower motor support to obtain proper tension, then re-tighten nuts.

NOTE: Proper tension will be achieved when there is a small amount of deflection in the belt when using moderate finger pressure. See Figure 12.

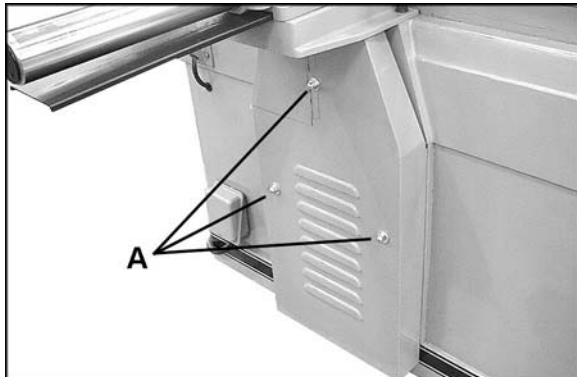


Figure 10

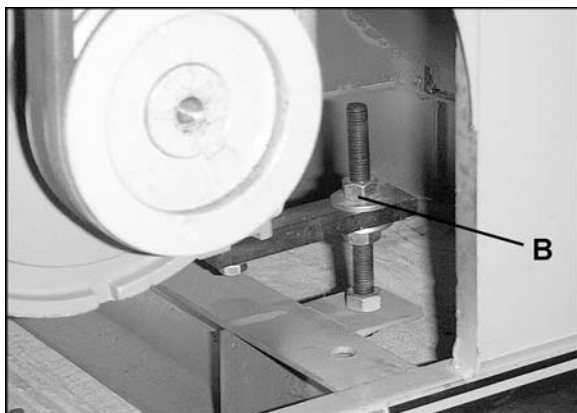


Figure 11

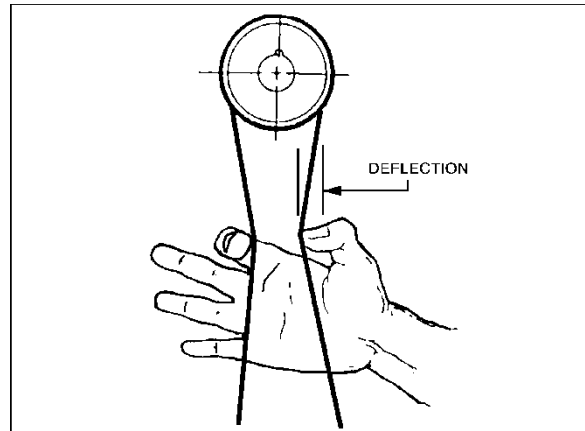


Figure 12

### Replacing Knife Inserts

The cutterhead on the PJ1696 is a solid steel helical insert design with 56 two-sided standard knives, and two rabbit knives on the outboard end of the cutterhead. Replacing knives is a simple process, and they will seat themselves properly without having to be set with a knife gauge.

After a period of use, dull knives should be flipped over, replaced or re-ground. To change a knife:

1. Loosen the gib screw (C, Figure 13) and remove the knife (D, Figure 13) from the slot.
2. Flip the knife 180 degrees and re-insert it, then tighten the gib screw (C, Figure 13). To ensure optimal cutting, all knives in the cutterhead should be flipped at the same time.

**⚠WARNING** Tighten gib screws firmly. Loose gib screws can result in knives being thrown out of the cutterhead, causing severe damage to the machine and possible serious or fatal injury to the operator or bystanders.

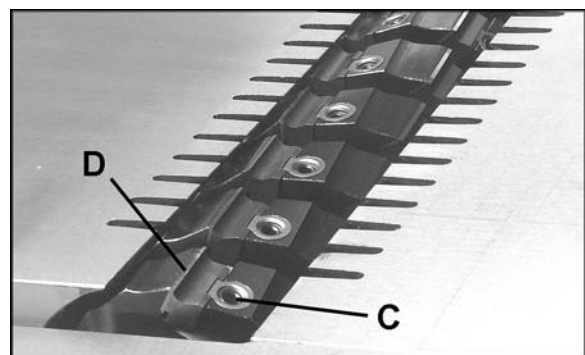


Figure 13

### Setting Outfeed Table

For accurate work in most jointing operations, the outfeed table must be exactly level with the knives at their highest point of revolution.

1. Raise the outfeed table to its highest point, and place a straight edge across it.

2. Turn the cutterhead until one row of knives is at its highest point.
3. Lower the outfeed table until the straight edge contacts a knife. Rock the cutterhead slightly to make sure the apex of the knife is contacting the straight edge. Lock the outfeed table at that setting.

After the outfeed table has been set at the correct height, it should not be changed except for special operations or after replacing knives.

Examples of incorrect settings:

If the outfeed table is too high, the finished surface of the workpiece will be curved, shown in Figure 14.

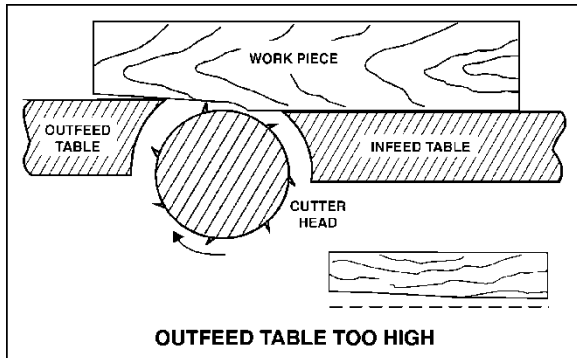


Figure 14

If the outfeed table is too low, the work will be gouged at the end of the cut, shown in Figure 15.

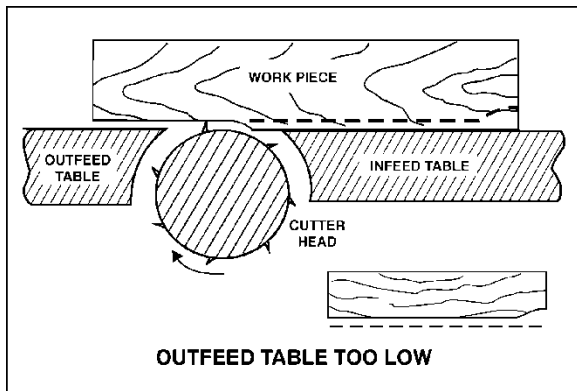


Figure 15

As a final check of the outfeed table adjustment, run a piece of wood slowly over the knives for 6 to 8 inches; it should rest firmly on both tables, as shown in Figure 16, with no open space under the finished cut.

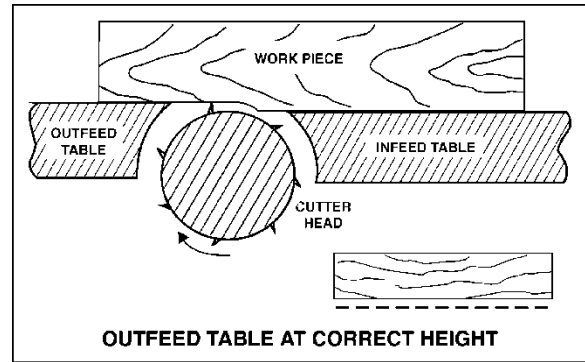


Figure 16

## Table Raising Limit Blocks

Refer to Figure 17.

A limit block, shown in Figure 17, is mounted to the rear of each table. It sets the maximum height the tables can be raised, and is pre-set at the factory. If adjustment is ever needed, loosen the hex nut (E) and turn the screw (F) as needed. Retighten hex nut (E).

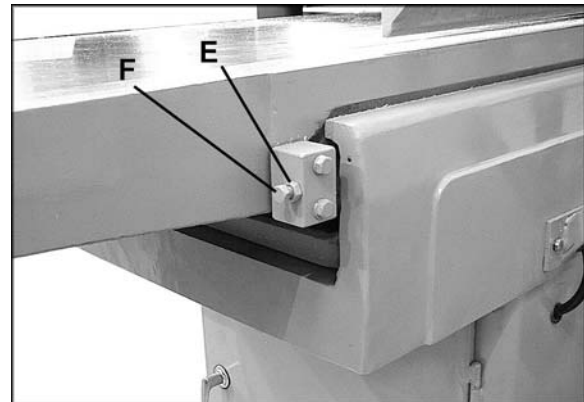


Figure 17

## Infed Table Adjustment

Refer to Figure 18.

Loosen lock lever (A) and move table adjustment arm (B) to raise or lower infeed table. Gauge (C) shows the distance of travel. Re-tighten lock lever (A).

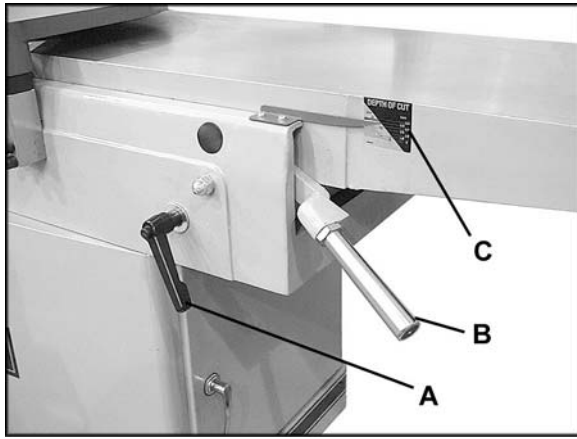


Figure 18

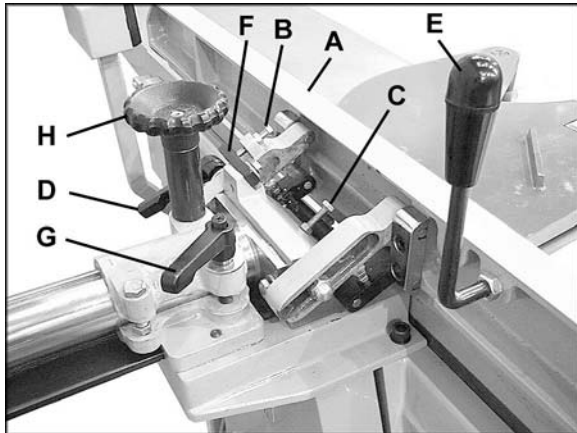


Figure 19

## Fence Adjustments

Refer to Figure 19.

The fence (A) tilts backward and forward 45 degrees. It contains a 90-degree stop (B) and a 45-degree stop (C). The stops should be checked for accuracy with a square or protractor against the fence, and adjusted if necessary.

To tilt the fence forward, loosen the lock lever (D) and tilt the fence using the handle (E). Re-tighten lock lever (D).

To tilt the fence backward, loosen the lock screw (D), pivot the stop block (F) out of the way, and tilt the fence using the handle (E). Re-tighten lock screw (D).

To move the fence forward or backward across the table, loosen lock screw (G), then turn knob (H). When desired position is reached, re-tighten lock screw (G) securely.

## Operating Instruction

NOTE: If you are inexperienced at jointing, use scrap pieces of lumber to check settings and get the feel of operations before attempting regular work.

**WARNING** Always use guard and keep hands away from cutterhead. Make sure all knives or knife inserts are secured in the cutterhead. Verify tightness (re-torque) of each insert on the helical head before operating.

## Hand Placement

At the start of the cut, the left hand holds the work firmly against the infeed table and fence while the right hand pushes the work toward the knives. After the cut is under way, the new surface rests firmly on the outfeed table. The left hand should press down on this part, at the same time maintaining flat contact with the fence. The right hand presses the work forward and before the right hand reaches the cutterhead it should be moved to the work on the outfeed table. FOLLOW THE 3 INCH RULE. NEVER PASS HANDS DIRECTLY OVER THE CUTTERHEAD.

## Edge Jointing

This is the most common operation for the jointer. Set guide fence square with the table. Depth of cut should be the minimum required to obtain a straight edge. Do not make cuts deeper than 1/8" in a single pass. Hold the best face of the piece firmly against the fence throughout the feed. See Figure 20.

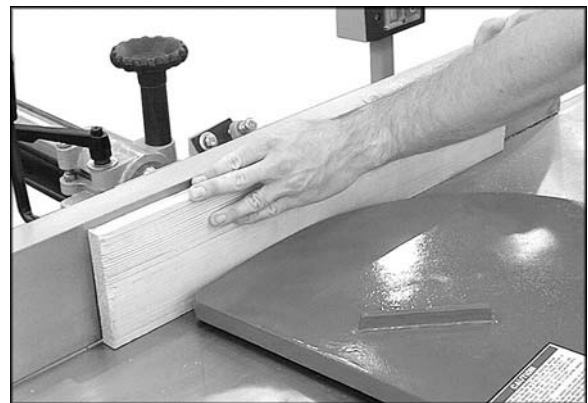


Figure 20

## Surfacing

Jointing the face of stock, or surfacing, is shown in Figure 21. Adjust the infeed table for depth of cut. Cuts of approximately 1/16" at a time are recommended, as this allows better control over the material being surfaced. More passes can then be made to reach the desired depth.

**⚠WARNING** Always use a hold down or push block when surfacing short stock or stock less than 3 inches thick.



Figure 21

## Rabbeting

**⚠WARNING** A rabbet cut requires removal of the cutter guard. Use extreme caution and keep hands clear of cutterhead. Always replace guard immediately after rabbeting operation is completed.

A rabbet is a groove cut along the edge of a board. See Figure 22. The width and thickness of the wood to be rabbeted depends upon the width and length of the rabbet. However, never rabbet a piece of wood less than 12" long.

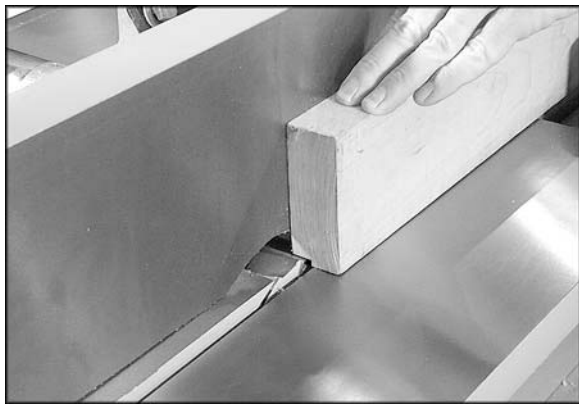


Figure 22

Use push blocks to rabbet cut whenever possible. The rabbeting capacity is 3/4".

1. Disconnect machine from power source.
5. Set fence for desired width of rabbet.
6. Check width of the rabbet by measuring the distance from end of knife in the cutterhead to the fence.
7. Reconnect power. Lower infeed table 1/32" at a time and make successive cuts until the desired depth of rabbet has been obtained.

See Figure 22. NOTE: It is easier and safer to take a series of shallow cuts.

## Jointing Warped Surfaces

If the wood to be jointed is dished or warped, take light cuts until the surface is flat. Avoid forcing such material down against the table; excessive pressure will spring it while passing the knives, and it will spring back and remain curved after the cut is completed.

## Jointing Short or Thin Work

When jointing short or thin pieces, use a push block to eliminate all danger to the hands. Two push blocks are shipped with your jointer. You can also make your own easily from scrap material. Two types are shown in Figure 23.

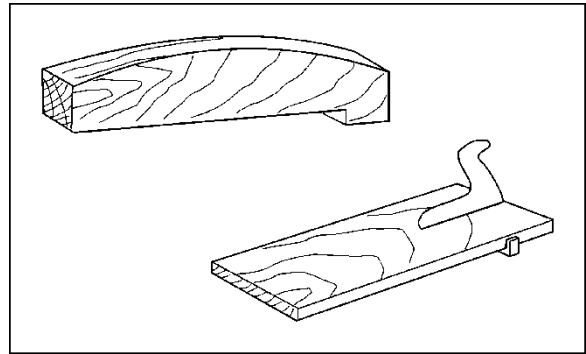


Figure 23

## Direction of Grain

Avoid feeding work into the jointer against the grain. This will result in chipped and splintered edges. See Figure 24. Feed *with* the grain to obtain a smooth surface, as shown in Figure 25.

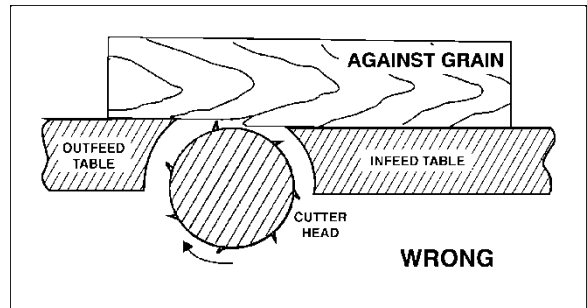


Figure 24

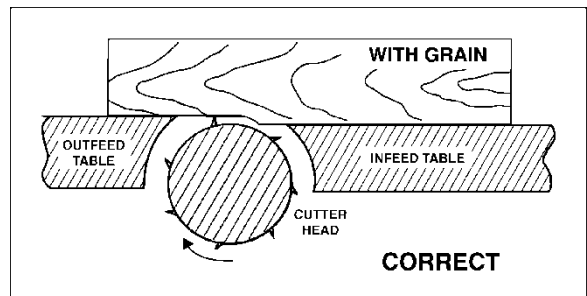


Figure 25

## Beveling

To cut a bevel, lock the fence at the required angle and run the work across the knives while keeping it firmly against the fence and tables. Several passes may be necessary to achieve the desired result.

## Taper Cuts

One of the most useful jointer operations is cutting an edge to a taper. The method can be used on a wide variety of work. Tapered legs of furniture are a common example.

Instead of laying the piece on the infeed table, lower the forward end of the work onto the outfeed table.

Do this very carefully, as the piece will span the knives, and they will take a "bite" from the work with a tendency to kick back unless the piece is firmly held. Now push the work forward as in ordinary jointing.

The effect is to plane off all the stock in front of the knives to increase depth, leaving a tapered surface. The ridge left by the knives when starting the taper may be removed by taking a very light cut according to the regular method for jointing, with the infeed table raised to its usual position.

Practice is required in taper operations, and the beginner is advised to make trial cuts on waste material. Taper cuts over part of the length and a number of other special operations can easily be done as the operator gains experience.

## Maintenance

**WARNING** Disconnect machine from power source before performing maintenance.

Check all screws and fasteners occasionally and keep them tightened securely.

The table and fence surfaces must be kept clean and free of rust for best results. Some users prefer a paste wax coating. Aerosol protectants are also available at hardware and tool stores.

## Lubrication

Use a high grade light grease on the steel adjusting screws for the raising and lowering mechanisms of the infeed and outfeed work tables.

The cutterhead runs in two single-row sealed and shielded ball bearings, which are pre-lubricated for life - no maintenance is necessary.

## Cutterhead Repairs

The entire cutterhead assembly may be removed for bearing replacement or other cutterhead maintenance procedures.

To remove the cutterhead:

1. Disconnect machine from power source.
2. Lower infeed and outfeed tables.
3. Remove rabbeting ledge and fence.
4. Remove belts.
5. Loosen the two bolts that hold the cutterhead to the bed – these are accessed from the underside of the bearing blocks as shown in Figure 26.

**CAUTION** Before removing cutterhead, wrap it with cloths to prevent personal injury.

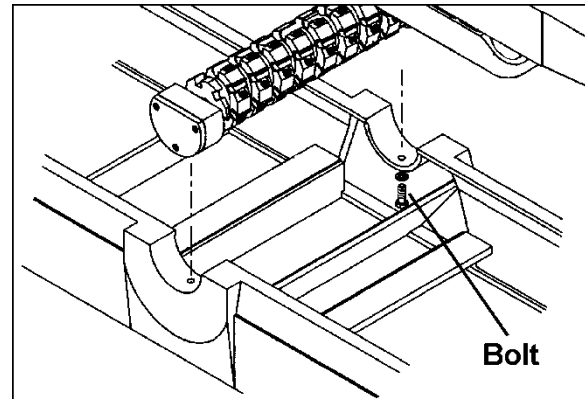


Figure 26

6. Slide the cutterhead out the rabbeting side.
7. Loosen lock screw (A, Figure 27) and remove pulley (B, Figure 27) and key (C, Figure 27).
8. Take down screws (D, Figure 27) on both sides and remove bearing cap plates (E, Figure 27).

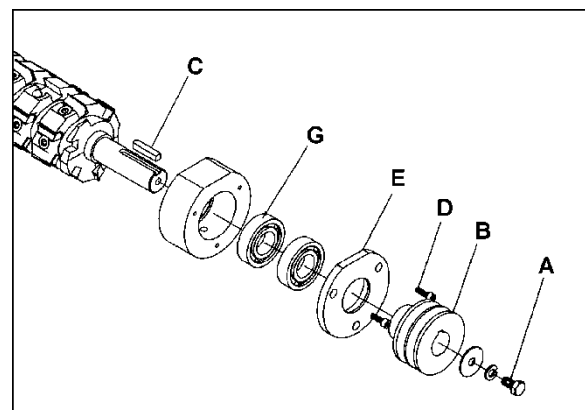


Figure 27

**IMPORTANT:** If the bearings (G, Figure 27) need replacement, Powermatic strongly recommends this be done by qualified service personnel. The bearings are press fitted and must be removed with an arbor press.

9. To re-install the cutterhead, reverse the above procedure. NOTE: Before reinstalling, make sure the machine's curved seats of the base casting are free of dirt, dust or grease, to help ensure a tight fit.

### **Blade Inserts**

When blade inserts become dull enough so that it is noticeable when cutting, they should be rotated to a fresh edge or replaced entirely. A sharp blade works easier and results in longer blade life. The penalty paid for a dull blade is less blade life and greater wear and tear on all parts of the machine.

An advantage of the helical style cutterhead is that if knife inserts develop nicks, these inserts can be individually flipped or replaced without the need to disturb the other inserts.

If the jointer is used often, keeping a spare set of blade inserts on hand is recommended.

Gum and Pitch which collect on the inserts cause excessive friction as the work continues, resulting in overheating of the inserts, less efficient cutting, and consequent loss of blade life. Use "Gum and Pitch Remover" or oven cleaner, to wipe off the inserts.



# Troubleshooting

Trouble	Probable Cause	Remedy
Finished stock is concave on the end.	Knife tip is higher than outfeed table.	Raise outfeed table until it is on the same level with tip of knife. See page 11.
Back end of stock is thicker than front side.	Knife tip is not leveled with outfeed table.	Adjust outfeed table to align with knife tip. See page 11.
Finished stock is concave in the middle.	Both tables have too much end fall.	Raise table ends by adjusting the screws at the four corners under the tables. See Figure 28 below.
Two tables are not in line.		Adjust using the screws shown in Figure 29. (Remove protective caps to access screw).
Ends of finished stock are cut more than the middle.	Table ends are raised higher than the middle.	Lower both table ends with the adjustment screws. See Figure 28.



Figure 28

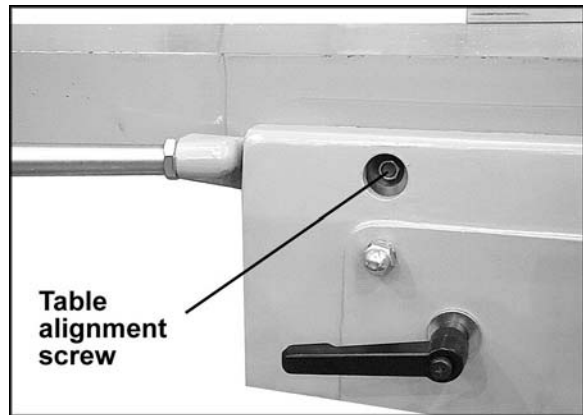


Figure 29

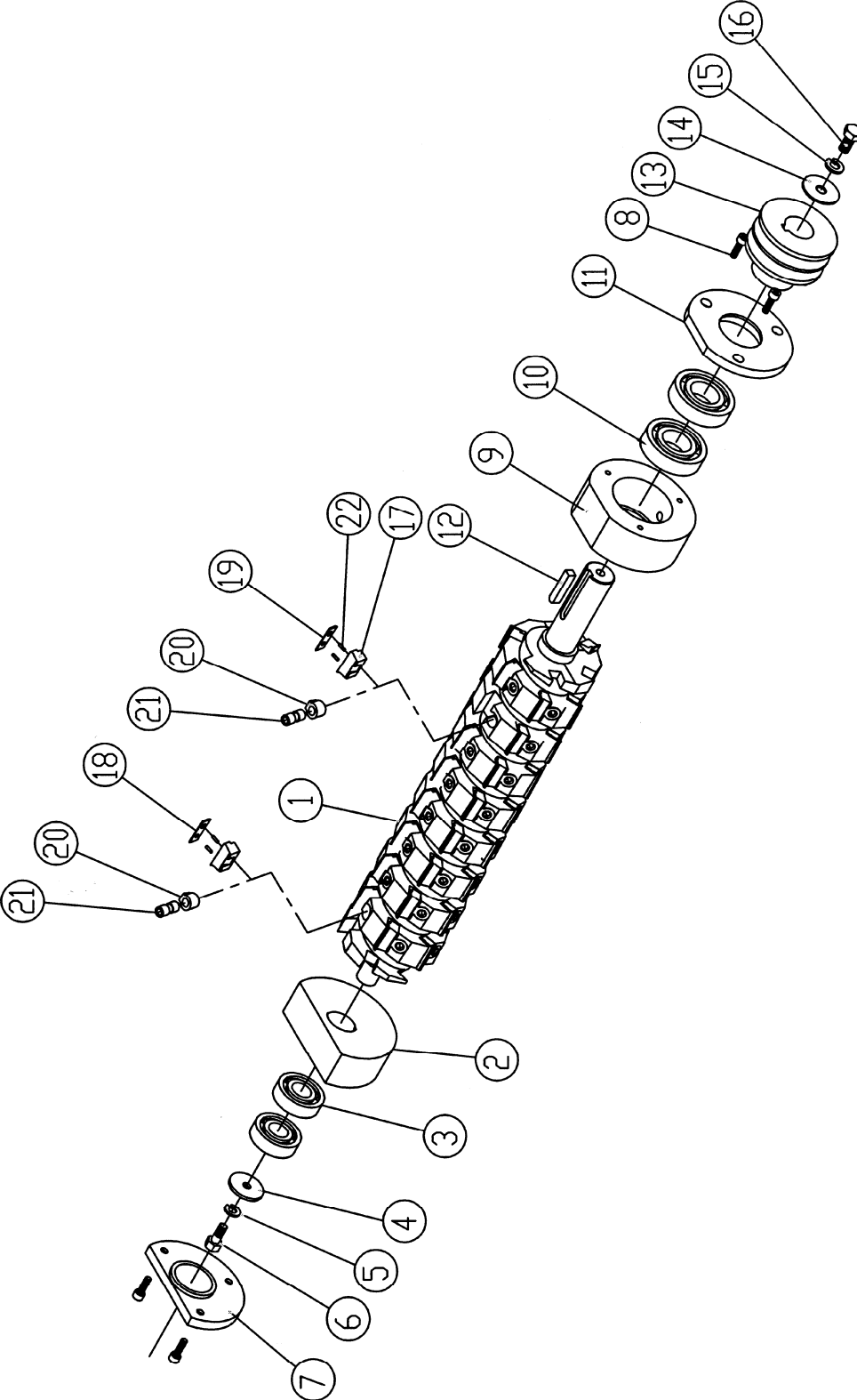
# Replacement Parts

Replacement parts are listed on the following pages. To order parts or reach our service department, call 1-800-274-6848, Monday through Friday (see our website for business hours, [www.powermatic.com](http://www.powermatic.com)). Having the Model Number and Serial Number of your machine available when you call will allow us to serve you quickly and accurately.

Parts List: **Cutterhead Assembly** (PJ1696 Jointer)

Index No.	Part No.	Description	Size	Qty
	PJ1696-001	Cutterhead Assembly (Items 1 thru 12 & 17 thru 21)		1
1	PJ1696-014	Cutterhead		1
2	PJ1696-002	Left Bearing Housing		1
3	BB-6204ZZ	Ball Bearing		2
4	PJ1696-003	Bearing Washer		1
5	TS-2361081	Lock Washer	M8	1
6	TS-1490031	Hex Cap Screw	M8 x 20	1
7	PJ1696-004	Left Bearing Cap Plate		1
8	TS-1503051	Socket Head Cap Screw	M6 x 20	6
9	PJ1696-005	Right Bearing Housing		1
10	BB-6206ZZ	Bearing		2
11	PJ1696-006	Right Bearing Cap Plate		1
12	PJ1696-007	Key	8 x 8 x 40L	1
13	PJ1696-008	Cutterhead Sheave		1
14	PJ1696-009	Retainer Washer		1
15	TS-2361101	Lock Washer	M10	1
16	TS-1491021	Hex Cap Screw	M10 x 20	1
17	PJ1696-010	Gib		58
18	PJ1696-011	Carbide Insert Knife-Rabbit (Sold in pkg of 2)		2
19	6400013	Carbide Insert Knife (Sold in pkg of 10)		56
20	PJ1696-012	Gib Nut		58
21	PJ1696-013	Gib Screw		58
22	PJ1696-015	Gib Pin		116

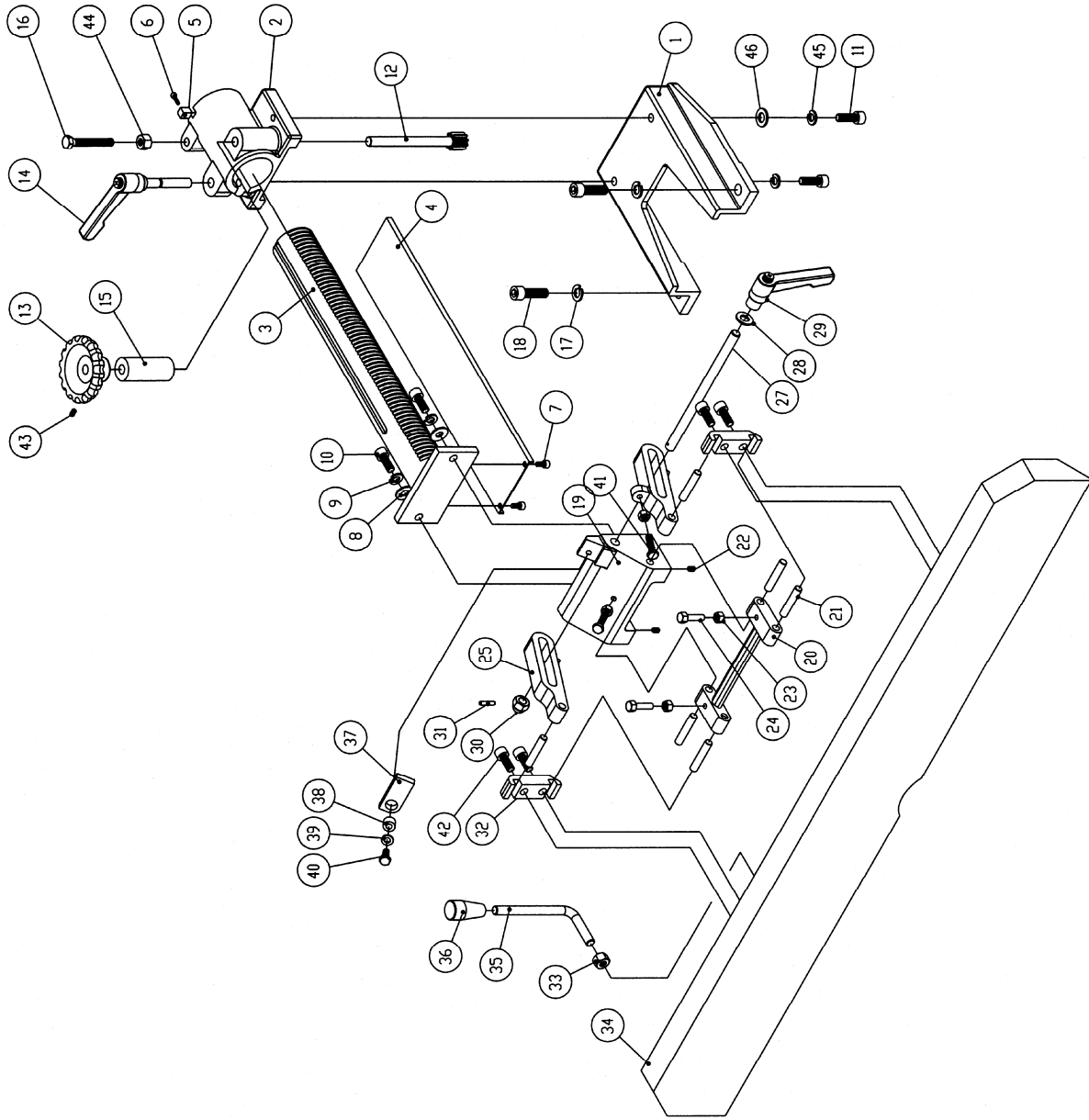
Cutterhead Assembly (PJ1696 Jointer)



Parts List: **Fence Assembly (PJ1696 Jointer)**

Index No.	Part No.	Description	Size	Qty
	PJ1696-100	Fence Assembly (Items 19 thru 41)		1
1	PJ1696-101	Fence Support		1
2	PJ1696-102	Bracket		1
3	PJ1696-103	Gear Column		1
4	PJ1696-104	Cutterhead Guard		1
5	PJ1696-105	Block		1
6	TS-1501051	Socket Head Cap Screw	M4 x 16	1
7	TS-1503031	Socket Head Cap Screw	M6 x 12	2
8	TS-1550071	Flat Washer	M10	3
9	TS-2361101	Lock Washer	M10	4
10	TS-1491031	Hex Cap Screw	M10 x 25	6
11	TS-1505051	Socket Head Cap Screw	M10 x 35	2
12	PJ1696-106	Pinion Gear		1
13	PJ1696-107	Handwheel		1
14	PJ1696-108	Handle		1
15	PJ1696-109	Collar		1
16	TS-1491121	Hex Cap Screw	M10 x 70	1
17	TS-2361121	Lock Washer	M12	2
18	TS-1506051	Socket Head Cap Screw	M12 x 40	2
19	PJ1696-110	Fence Bracket		1
20	PJ1696-111	Fence Hinge		1
21	PJ1696-112	Fence Hinge Shaft		6
22	TS-1523031	Socket Set Screw	M6 x 10	3
23	TS-2311081	Hex Nut (Full)	M8	4
24	TS-1490051	Hex Cap Screw	M8 x 30	2
25	PJ1696-113	Left Tilt Bracket		1
26	PJ1696-114	Right Tilt Bracket		1
27	PJ1696-115	Support Shaft		1
28	TS-2360121	Flat Washer	M12	3
29	PJ1696-116	Locking Handle		1
30	TS-2331121	Cap Nut	M12	1
31	PJ1696-117	Pin	Ø5x20L	1
32	PJ1696-118	Fence Hinge Base		2
33	TS-1540081	Hex Nut (Full)	M12	1
34	PJ1696-119	Fence Body		1
35	PJ1696-120	Handle Rod		1
36	PJ1696-121	Handle		1
37	PJ1696-122	Stop Plate, -90 Degree		1
38	PJ1696-123	Collar		1
39	TS-2361081	Lock Washer	M8	1
40	TS-1490031	Hex Cap Screw	M8 x 20	1
41	TS-1490061	Hex Cap Screw	M8 x 35	2
42	TS-1505021	Socket Head Cap Screw	M10 x 20	4
43	TS-1523041	Socket Set Screw	M6 x 12	1
44	TS-2311101	Hex Nut (Full)	M10	1
45	TS-2361101	Lock Washer	M10	2
46	TS-1550071	Flat Washer	M10	2

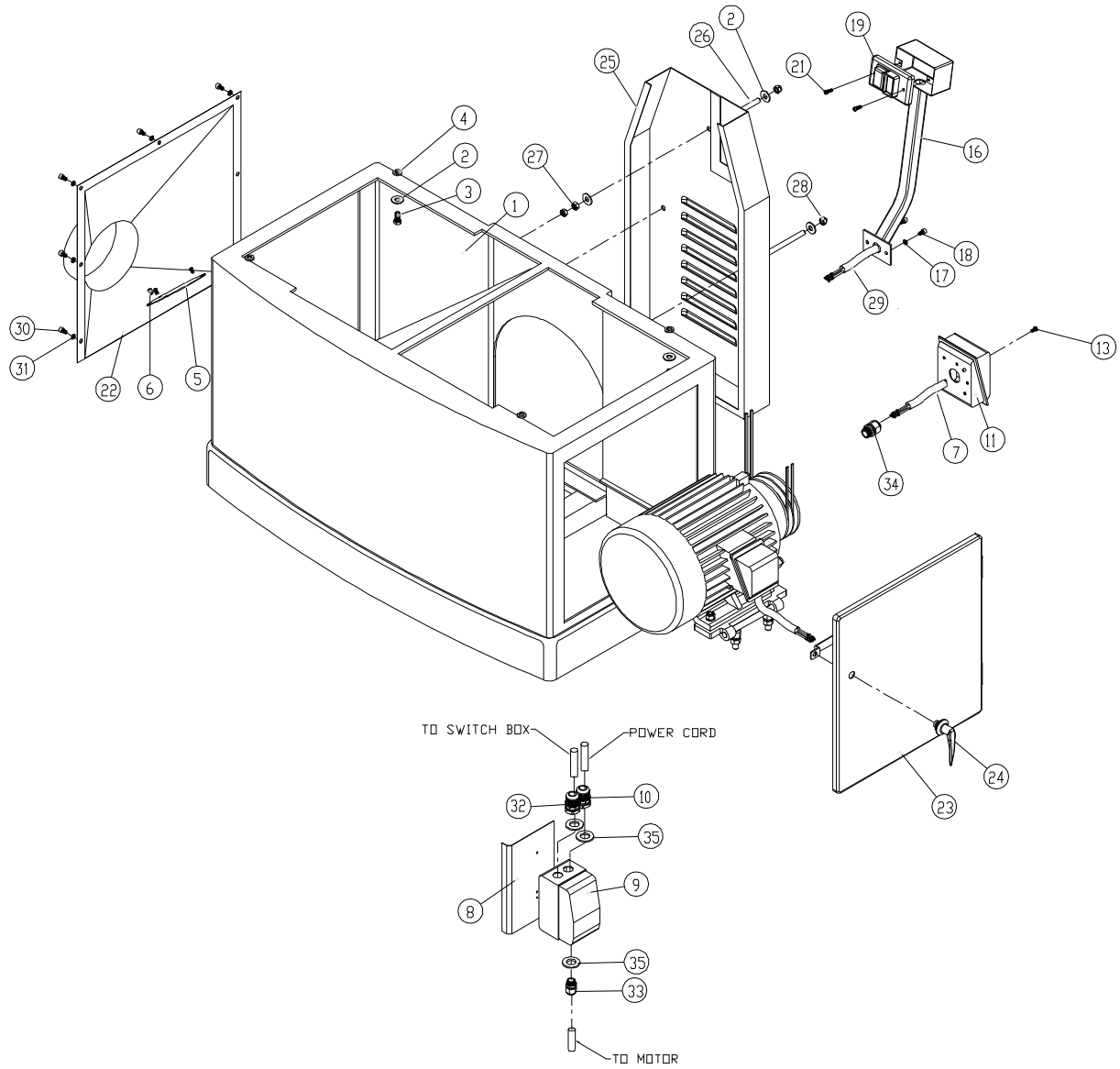
# Fence Assembly (PJ1696 Jointer)



Parts List: **Stand Assembly** (PJ1696 Joints)

Index No.	Part No.	Description	Size	Qty
1	PJ1696-201	Stand		1
2	TS-0680042	Flat Washer	3/8	10
3	TS-0060031	Hex Cap Screw	3/8-16 x 3/4	4
4	TS-0720091	Lock Washer	3/8	4
5	PJ1696-202	Safety Plate		1
6	TS-1533032	Pan Head Machine Screw	M5 x 8	3
7	PJ1696-203A	Control Cord	12AWG,600V	1
8	PJ1696-204A	Plate		1
9	PJ1696-205C	Magnetic Switch	230V, 3PH	1
	PJ1696-205D	Magnetic Switch	460V, 3PH	1
10	PJ1285-110B	Cord Clamp	MG-25A	2
11	PJ1696-207	Junction Box		1
13	TS-1533032	Pan Head Machine Screw	M5 x 10	2
16	PJ1696-210	Switch Arm		1
17	TS-2361061	Lock Washer	M6	9
18	TS-1503021	Socket Head Cap Screw	M6 x 10	9
19	PJ1696-211	Switch		1
21	PJ1696-212	Pan Head Machine Screw	M5 x 16	2
22	PJ1696-213	Dust Chute		1
23	PJ1696-214	Right Side Door		1
24	PJ1696-215	Latch		1
25	PJ1696-216	Motor Cover		1
26	PJ1696-217	Stud	3/8-16 x 4	3
27	TS-0570031	Hex Nut	3/8-16	6
28	TS-059303	Cap Nut	3/8-16	3
29	PJ1696-218A	Switch Cord	18AWG 600V	1
30	TS-0207021	Socket Head Cap Screw	1/4-20 x 1/2	7
31	TS-0720071	Lock Washer	1/4	7
32	PJ1696-232	Cord Clamp	PG-16B	1
33	PJ1285-110B	Cord Clamp	MG-25A	1
34	PJ1285-110B	Cord Clamp	MG-25A	1
35	PJ1285-135	Flat Washer	Ø40xØ25.5xØ3	6

# Stand Assembly (PJ1696 Joints)

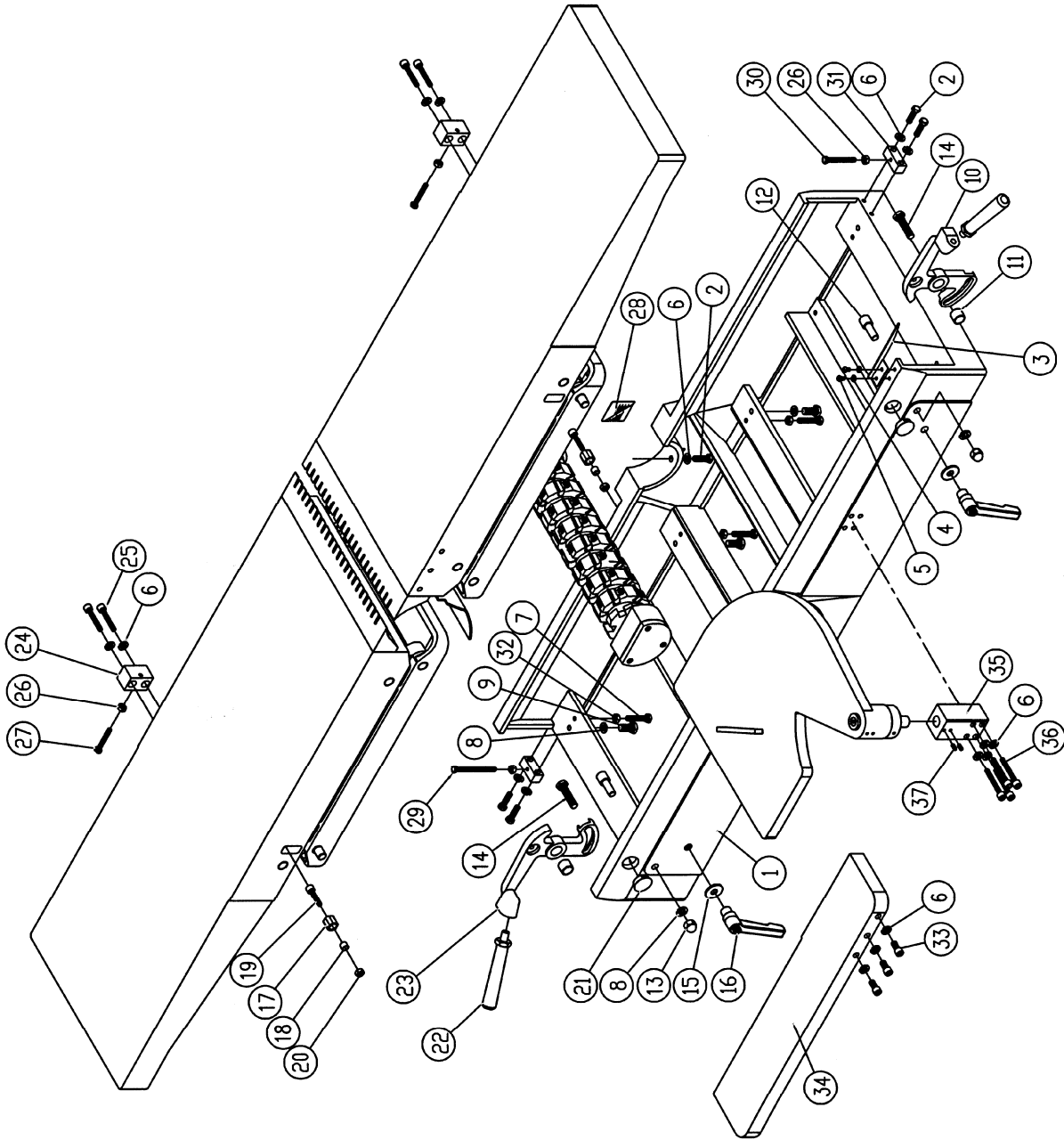


Parts List: **Bed Assembly** (PJ1696 Joints)

Index No.	Part No.	Description	Size	Qty
1	PJ1696-301	Table Base		1
2	TS-0090061	Hex Cap Screw	3/8-16 x 1-1/4	6
3	PJ1696-302	Pointer		1
4	TS-2361061	Lock Washer	M6	2
5	TS-1534032	Pan Head Machine Screw	M6 x 10	2
6	TS-0720091	Lock Washer	3/8	17
7	TS-0060051	Hex Cap Screw	3/8-16 x 1	8
8	TS-0720111	Lock Washer	1/2	10
9	TS-0070011	Hex Cap Screw	1/2-13 x 1	8
10	PJ1696-303	Table Lifting Handle		1
11	PJ1696-304	Bushing		2
12	PJ1696-305	Pivot Shaft		2
13	PJ1696-319	Cap Nut	1/2-13	2
14	PJ1696-306	Hex Cap Screw	1/2-13 x 2 3/4	2
15	TS-0680061	Flat Washer	1/2	2
16	PJ1696-307	Lock Handle		2
17	PJ1696-308	Stroke Fixed Block		2
18	PJ1696-309	Ring		2
19	TS-0209071	Socket Head Cap Screw	3/8-16 x 1-1/2	2
20	PJ1696-310	Flanged Hex Head Nut	3/8-16	2
21	PJ1696-311	Protector Cover		2
22	PJ1696-312	Knob Handle		2
23	PJ1696-313	Table Lifting Handle		1
24	PJ1696-314	Table Up Adjustment Plate		2
25	TS-0209091	Socket Head Cap Screw	3/8-16 x 2	4
26	TS-0561021	Hex Nut	5/16-18	4
27	TS-0051091	Hex Cap Screw	5/16-18 x 2	2
28	PJ1696-315	Depth Label		1
29	TS-0051151	Hex Cap Screw	5/16-18 x 3-1/2	1
30	TS-0051111	Hex Cap Screw	5/16-18 x 2-1/2	1
31	PJ1696-316	Adjustment Plate		2
32	TS-0561031	Hex Nut	3/8-16	8
33	TS-0209031	Socket Head Cap Screw	3/8-16 x 3/4	3
34	PJ1696-401	Rabbeting Table		1
35	PJ1696-318	Bracket Block		1
36	TS-0209111	Socket Head Cap Screw	3/8-16 x 2-1/2	4
37	TS-0267051	Socket Set Screw	1/4-20 x 1/2	2



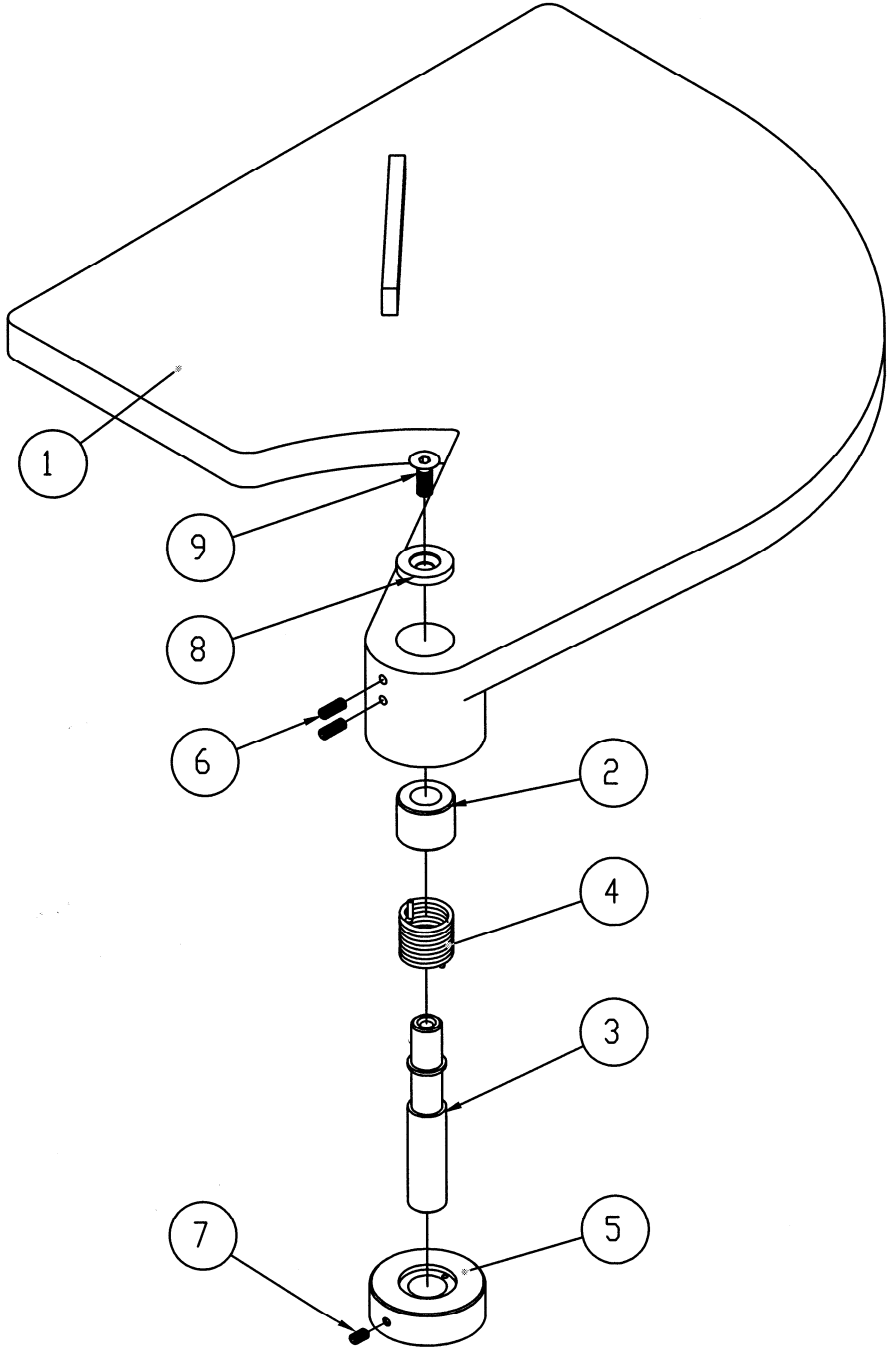
# Bed Assembly (PJ1696 Joints)



Parts List: **Cutterhead Guard Assembly** (PJ1696 Jointer)

<b>Index No.</b>	<b>Part No.</b>	<b>Description</b>	<b>Size</b>	<b>Qty</b>
1	PJ1696-402	Cutter Guard		1
2	PJ1696-407	Collar		1
3	PJ1696-403	Guard Post		1
4	PJ1696-404	Spring		1
5	PJ1696-405	Collar		1
6	TS-1523051	Socket Set Screw	M6 x 16	2
7	TS-1523031	Socket Set Screw	M6 x 10	1
8	PJ1696-408	Special Washer		1
9	PJ1696-409	Flat Head Machine Screw	M8 x 16	1

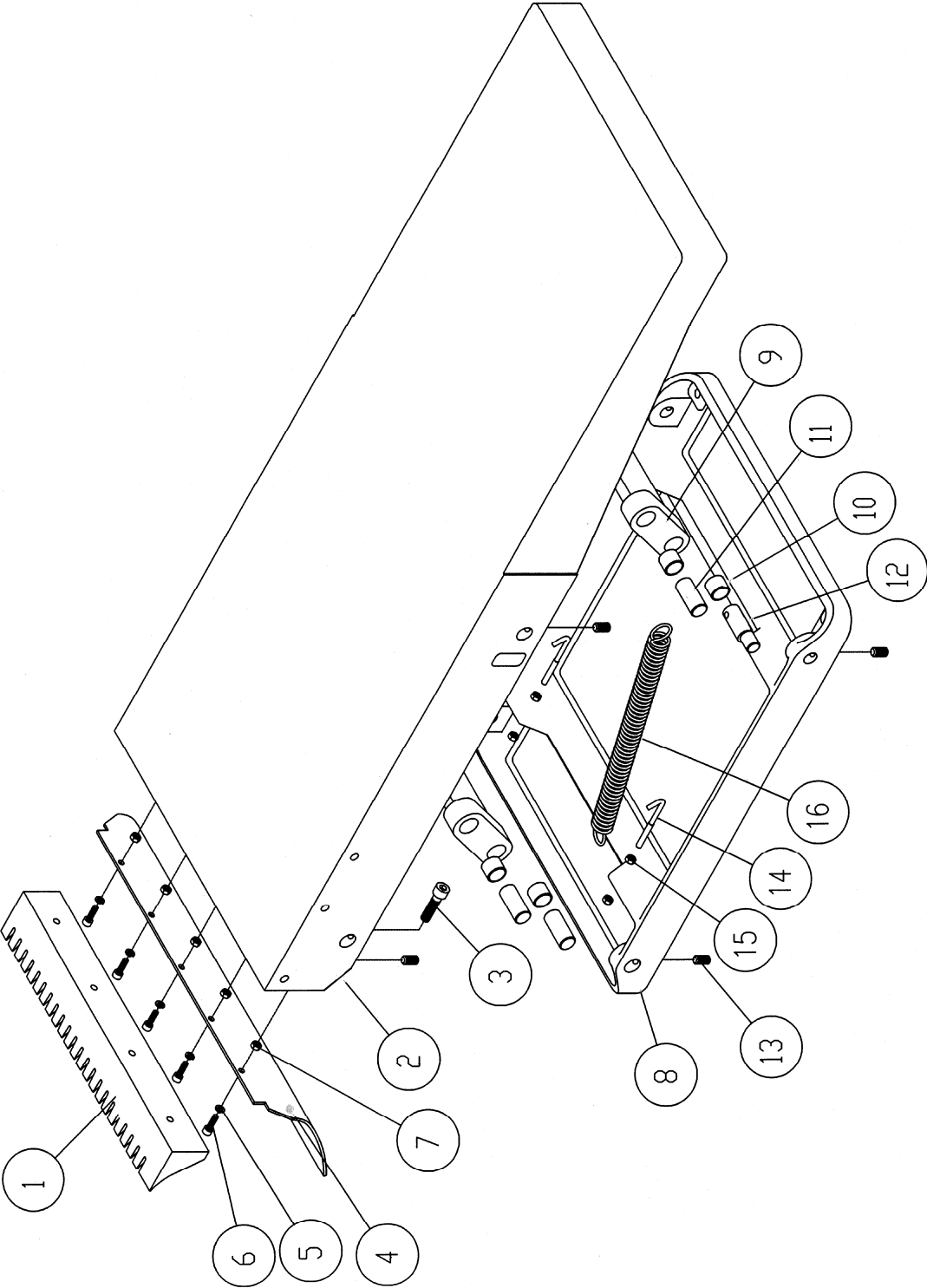
Cutterhead Guard Assembly (PJ1696 Jointer)



Parts List: **Infeed Table Assembly** (PJ1696 Jointer)

Index No.	Part No.	Description	Size	Qty
1	PJ1696-501	Infeed Table Lip		1
2	PJ1696-502	Infeed Table		1
3	TS-1505061	Socket Head Cap Screw	M10 x 40	4
4	PJ1696-503	Dust Deflector		1
5	TS-2361051	Lock Washer	M5	5
6	TS-1502051	Socket Head Cap Screw	M5 x 20	5
7	TS-1540031	Hex Nut	M5	5
8	PJ1696-504	Table Lifting Support Base		1
9	PJ1696-505	Table Raising Link Bar		2
10	PJ1696-506	Bushing		8
11	PJ1696-507	Pivot Shaft		6
12	PJ1696-508	Adjustment Shaft		2
13	TS-1525031	Socket Set Screw	M10 x 16	8
14	PJ1696-509	Special Bolt, for Spring	1/4-20 x 3	2
15	TS-0570011	Hex Nut	1/4-20	4
16	PJ1696-510	Table Lifting Spring		2

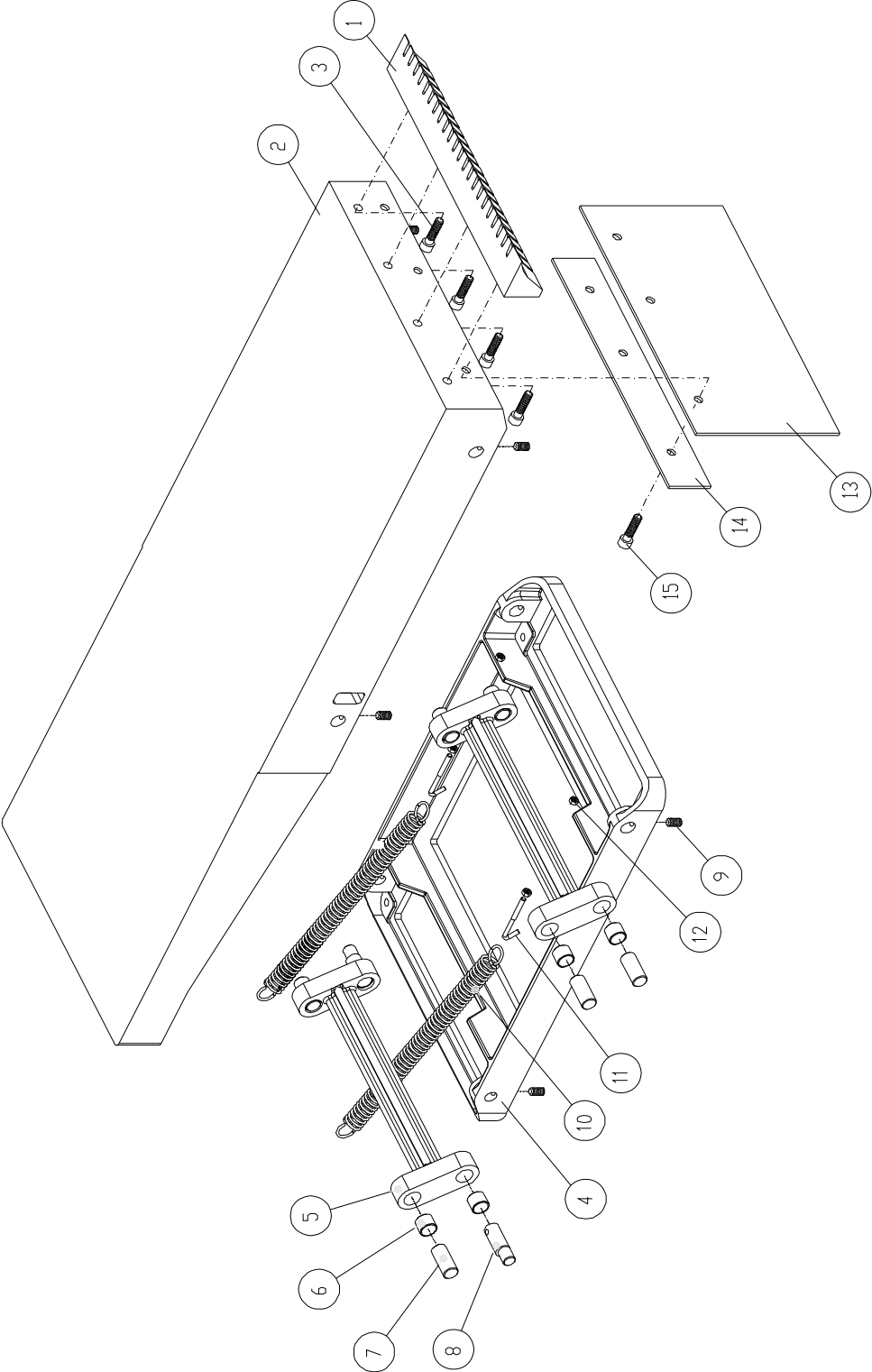
Infeed Table Assembly (PJ1696 Jointer)



Parts List: **Outfeed Table Assembly** (PJ1696 Jointer)

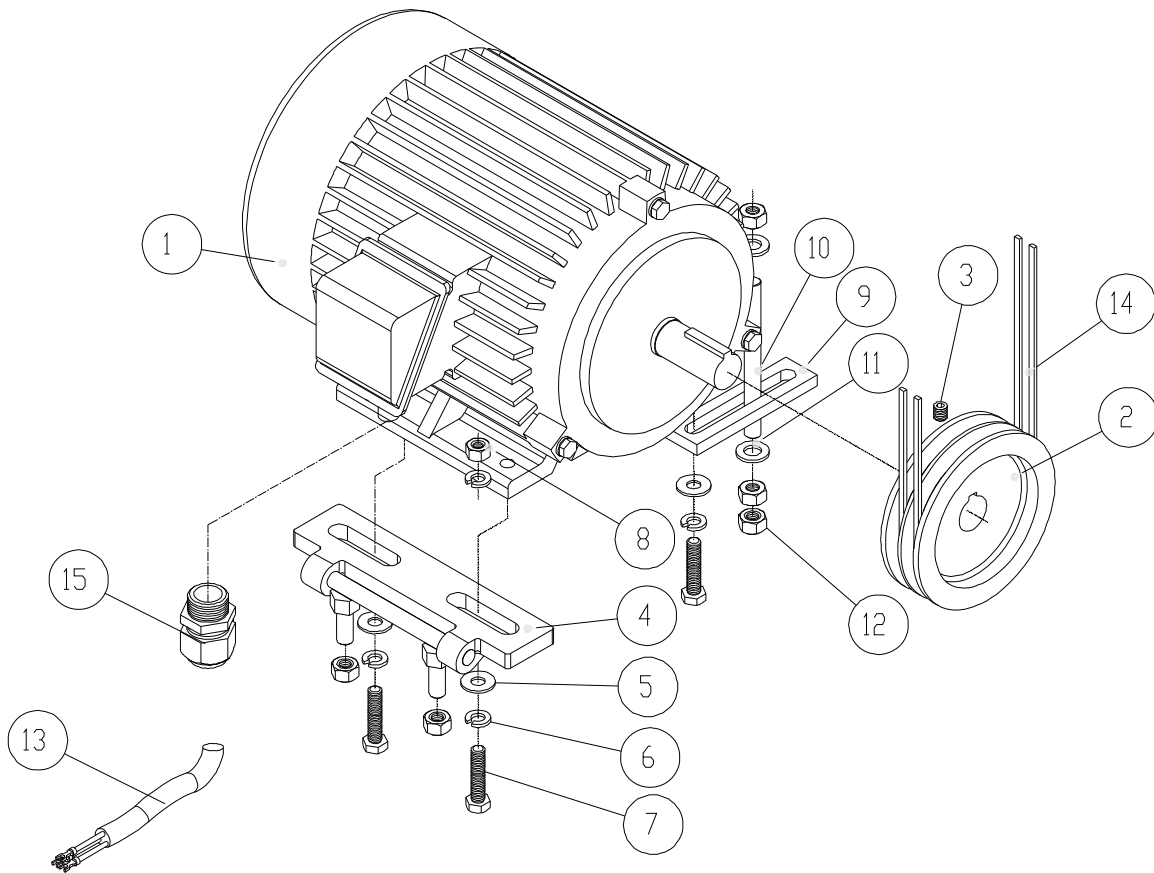
Index No.	Part No.	Description	Size	Qty
1	PJ1696-601	Outfeed Table Lip		1
2	PJ1696-602A	Outfeed Table		1
3	TS-1505061	Socket Head Cap Screw	M10 x 40	4
4	PJ1696-603	Table Lifting Support Base		1
5	PJ1696-604	Table Raising Link Bar		2
6	PJ1696-605	Bushing		8
7	PJ1696-606	Pivot Shaft		6
8	PJ1696-607	Adjustment Shaft		2
9	TS-1525031	Socket Set Screw	M10 x 16	8
10	PJ1696-608	Table Lifting Spring		2
11	PJ1696-609	Hanger		2
12	TS-0570011	Hex Nut	1/4-20	4
13	PJ1696-613	Dust Deflector		1
14	PJ1696-614	Steel Plate		1
15	TS-1502051	Socket Head Cap Screw	M5x20	3

**Outfeed Table Assembly (PJ1696 Joints)**



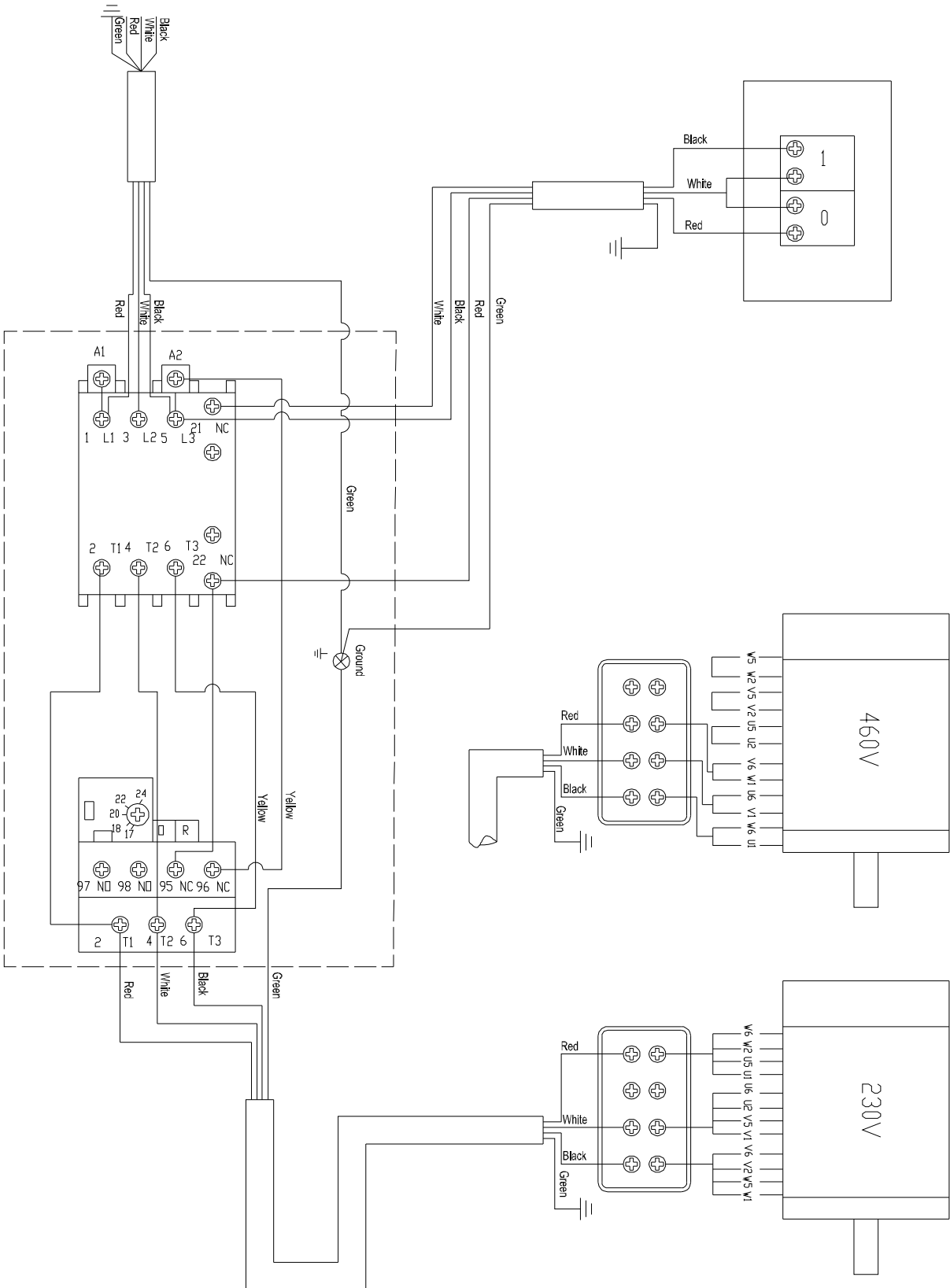
Parts List: **Motor Assembly** (PJ1696 Jointer)

Index No.	Part No.	Description	Size	Qty
1	PJ1696-701	Motor	7-1/2HP, 3Ph 230/460V, 60Hz	1
2	PJ1696-702	Motor Sheave		1
3	TS-1525011	Socket Set Screw	M10 x 10	2
4	PJ1696-703	Motor Bracket		1
5	TS-1550071	Flat Washer	M10	3
6	TS-2361101	Lock Washer	M10	6
7	TS-2210451	Hex Cap Screw	M10 x 45	3
8	TS-2311101	Hex Nut (Full)	M10	3
9	PJ1696-704	Support		1
10	PJ1696-705	Rod	M12 x 150	1
11	TS-2360121	Flat Washer	M12	2
12	TS-2311121	Hex Nut (Full)	M12	5
13	PJ1696-706A	Motor Cord	12AWG 600V	1
14	PJ1696-707	V-Belt		2
15	PJ1285-110B	Cord Clamp	MG-25A	1





# Electrical Connections



# Preventive Maintenance

Checklist for Model PJ1696 Jointer

Monthly:

- [ ] Inspect entire machine for loose bolts, nuts, screws. Tighten and replace as necessary.
- [ ] Clean table and cutterhead area, removing sawdust and chips with a soft bristle brush. Remove gum and pitch with oven cleaner.
- [ ] Lubricate adjusting screws beneath infeed and outfeed tables with a good grade non-hardening grease.
- [ ] Clean table surface. If rusted, use paste mixture of household ammonia, a good commercial detergent and 000 steel wool. Wash table down with hot, soapy water, rinse and dry thoroughly. Apply a light coat of paste wax, or another commercially available protectant to the table surface.
- [ ] Check belt condition. Replace as needed. Dress with paraffin. Check belt tension.
- [ ] Check motor for loose wiring and sawdust congestion, pulleys tight and in line.
- [ ] Check bearings. Replace any bad or suspect bearings immediately.
- [ ] Check fence accuracy.
- [ ] Check and re-set fence stops at 45 and 90 degree positions.
- [ ] Check electrical controls function. Clean dust from internal parts of magnetic control boxes.





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