PEQUEA
Tradition In Progress

OPERATOR'S MANUAL

Champion Chippers

Operation & Safety

Includes Model:

CX850
CX851

Part # 990026

YOU MUST FILL OUT YOUR WARRANTY REGISTRATION TO ACTIVATE YOUR WARRANTY AND TO QUALIFY FOR PARTS SERVICE!!

The purpose of this manual is to promote the safe and intended use of this machine. NEVER OPERATE ANY PIECE OF EQUIPMENT WITHOUT READING AND UNDERSTANDING THE OPERATOR/SAFETY MANUAL.

To the owner:

Thank You for purchasing a Champion Chipper from Pequea Machine Inc. We strive to give you the best equipment and the best service of any company. In order to receive maximum life from your equipment you must follow all of the operational suggestions outlined in this manual. If you feel that there is a feature that is missing or that could be improved, please feel free to call the service department at Pequea (717-354-4343) and give us any suggestions. We design all of our equipment with the end user in mind so we welcome any suggestions or complaints.

Record the name and number of the dealership that you purchased this machine from; also refer to the machine information when ordering parts or requesting service from your dealer.

Thank you for your business!

Dealer Name_____
Dealer Number_____
Service Manager/Technician_____
Model Number & Description_____
Serial Number_____
Date of Purchase_____

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INTRODUCTION

Champion is a division of Pequea Machine Inc. All Champion brand products are manufactured by Pequea and therefore fall under all of Pequea's warranty and service programs. If you have any questions regarding this chipper please contact the dealer that you purchased this machine from or you can contact Pequea's service department by phone, email or written letter:

Pequea Machine Inc
PO Box 399
New Holland, PA 17557

717-354-4343 phone
717-354-8843 fax
service@pequeamachine.com

The CX851 chipper is designed to chip indigenous wood. Materials that are processed may contain chemicals that could corrode the machine or spontaneously combust. NEVER CHIP ANY MATERIAL OTHER THAN NATURAL BRUSH OR BRANCHES.

SAFETY INSTRUCTIONS

• Do Not operate this machine until this manual has been read and fully understood; serious injury and death can occur if these safety warnings are ignored!

• Never allow more than one person to operate this machine at a time. If two people are working together it will increase the chance of your workmate engaging the machine or causing you to fall into the machine.

• Wood is much harder than human flesh! If your hand is ever near the chipping or feeding area serious injury can occur. NEVER place your hands on the machine while it is chipping.

• Never place your hands or feet on or near the machine while it is engaged.

• Never place your hands or feet on or near the material while it is feeding.

• DO NOT wear loose clothing, jewelry, or anything that can catch a branch that is feeding into the chipper.

• DO NOT stand directly in front of the infeed hopper when loading material into the hopper; always load from the side of the hopper. This will not allow any part of your body to be pulled into the machine.

START UP INSTRUCTIONS

•Place tractor transmission in neutral and set the parking brake, then turn the tractor engine off.

•Connect the 3 pt. hitch linkage to the chipper and secure them with safety snap pins.

•Adjust the top link so that the chipper sits level.

•Connect the pto shaft to the tractor. Be sure that the balls are set in the ball groove of the output pto shaft. Make sure that the pto safety chains on the tractor and the chipper are attached to both pieces of equipment in order to keep the protective pto shield from continuously rotating.

•Start tractor engine and hold the engine rpm's at a strong idle. Engage the pto slowly then after the rotor is spinning freely increase the tractor rpm's until the pto speed is around 540 rpm's.

•With the chipper now running, you may begin chipping as you follow all of the safety instructions outlined in the previous chapter.

CHIPPING TIPS

•Feed the blunt end of the branch in first.

•Trim the side limbs that won't fit into the hopper before you feed the chipper.

•Feed smaller material into the hopper from the side of hopper so that debris doesn't fly back at you.

•If you have a lot of dry material try to mix in some green limbs with the dry. The moisture in the green wood will lubricate the knives which will extend the life of the blades. Heat is a knife's worst enemy.

This icon indicates that if the following instructions are not followed, serious personal injury or death can occur.

BEFORE YOU START!

•Read and understand all safety and operational instructions in the Operator's Manual before using any piece of machinery.

•Do not allow children, disabled, or any other untrained people to operate this machine at any time.

•Do Not operate this machine near bystanders, moving traffic, or public places where debris could travel far enough to injure another person.

•Never place hands, feet, or any other part of the body inside of the chip chute or the feed hopper.

•Always wear protective eye wear, hearing protection, gloves, and long pants when operating any model chipper.

•Never wear loose or torn clothing when operating chipper.

•Check all nuts, bolts, and any other fasteners on the machine to be sure all parts are secure. The chipper could experience great vibration which can loosen fasteners, so be sure to inspect every 8 hours of operation.

OPERATIONAL SAFETY

Setting up the work area is critical to the safe use of the chipper by the operator and also the safety of nearby people. Follow the below instructions to ensure that no one is carelessly injured:

•Before the pto shaft is attached, make sure that no debris is left in the hopper.

•NEVER PUT ANY OTHER MATERIAL THAN WOOD INTO THE HOPPER. THIS COULD RESULT IN MACHINERY DAMAGE AND PERSONAL INJURY AND DEATH.

•Do not stack limbs or other materials too close to the machine. The operator could trip and fall into the chipper.

•Do not direct the chips toward yourself or other people.

•Make sure the wheels on the tractor have been blocked, that the transmission is in neutral, and the parking brake is applied.

Do not operate chipper unless all of these instructions have been followed.

•DO NOT ENGAGE THE PTO UNLESS ALL OF THE GUARDS ARE IN PLACE, THE 3 POINT LINKAGE IS ATTACHED WITH SAFETY PINS, AND THE BASE OF THE MACHINE IS FIRMLY RESTING ON THE GROUND. FAILURE TO DO THIS CAN RESULT IN PERSONAL INJURY OR DEATH!

•Do not allow children near the PTO shaft!

•Keep clear of the discharge area!

•Keep your face and any other part of your body clear of the Hopper opening.

•Do not lean into the hopper! When feeding material into the hopper, never allow your hands to cross the opening of the hopper.

•Never move the chipper while the chipper is running.

•Shut off the tractor and allow the rotor to completely stop before removing any debris. This could take up to 1 minute.

BELT DRIVE MAINTENANCE

BELT TENSION

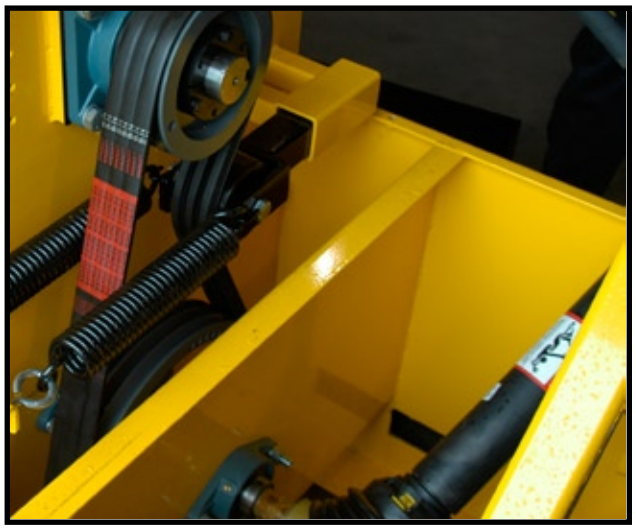
The belt tension is relatively maintenance free. The spring loaded idler will keep constant pressure on the belt during use. As the belt stretches the spring tension will lessen; at this point adjust the threaded eye bolt (shown in the upper right photo) by turning the nut clockwise until there is about 1-2” of deflection at the midpoint of the belt between the upper and lower pulleys. When adjusting the idler make sure that the springs have even pressure on the idler so as to ensure even wear on the belt..

BELT REPLACEMENT

•If the belts have been damaged or have stretched too much for the idler adjustment to correct, the belt will need to be replaced.

To replace the belts follow the steps below:

Before any service or maintenance is performed, the chipper must be disconnected from the tractor!



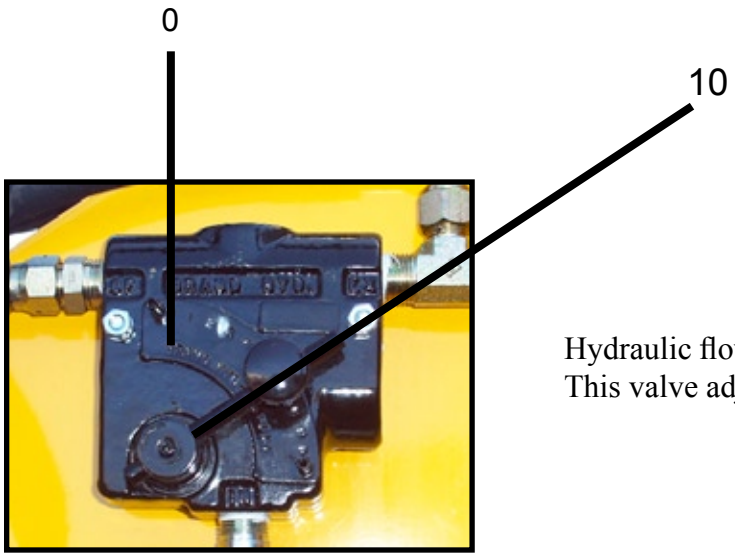
1. Loosen the spring tension by removing the (2) hex nuts on the eyebolt and then remove the spring.

2. Locate the (2) flange bearings that carry the shaft that drives the large pulley (lower right pulley as shown in the photo above); then remove the bolts.

3. Leaving the bearings in place on the shaft, pull the pulley away from the rotor side of the chipper far enough to allow the belt to slide out behind the bearing.

4. Install the new belt then reassemble the parts that were removed.

OPERATING INSTRUCTIONS, feeding material



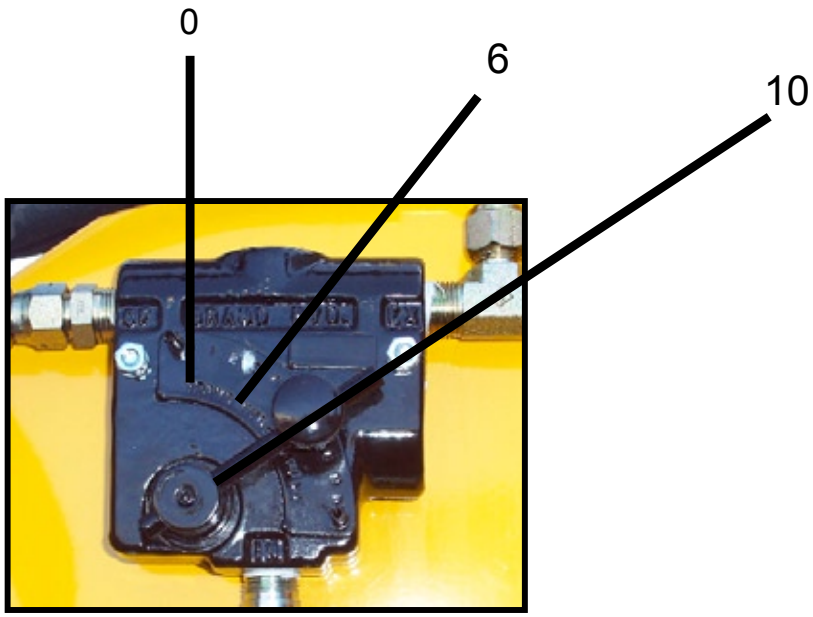
Hydraulic flow control-
This valve adjusts the speed of the feed motor.

The flow control will control the speed of the material being fed into the hopper. The tractor's hydraulic flow will ultimately determine the speed of the feed.

To adjust the speed of the feed system, rotate the lever to the right towards the number 10. The feed setting "0" will completely stop the flow of oil to the motor, stopping the feed motor.

The hydraulic system on the chipper requires at least 6 GPM to operate the chipper at full capacity. If the tractor has too much flow the oil in the tractor could overheat, causing the hydraulic fluid to loose it's viscosity. In this situation a self contained hydraulic pump must be installed. This option is available from Pequea Machine Inc. Contact your local dealer/distributor for pricing and availability.

OPERATING INSTRUCTIONS, feeding material



Generally speaking the most versatile setting for the flow control is the number 6 setting. This setting will allow the tractor to chip heavy material while maintaining a fast enough feed speed for the lighter brush. If the flow on the tractor is too high the number 6 setting could be too aggressive for the larger materials.

As a general guideline, the heavier material should feed at a rate of 50-80 feet per minute. The available horsepower will determine how fast this material can feed. The lighter material can feed 80-140 feet per minute.

The operator needs to determine the correct feed speed according to the tractor driving the chipper. The chips should be 1/2-5/8” thick. If the speed is too slow the chips will be smaller (if the feed is slow enough you will see a lot of sawdust). When the feed is too slow it can cause your blades to overheat which will dull the cutting edge a lot faster than normal.

Follow these instructions to find the correct feed speed:

Find a 3-4 inch branch or piece of wood to run through the chipper. Slow the flow control down to setting 2 or 3 and feed a couple of feet of the wood into the chipper.

Look at the chips coming out of the machine, they should be very small.

Increase the flow by rotating the valve to the next setting and chip a couple more feet at this setting.

Keep repeating these steps until you find the chips are consistently coming out of the chipper at 5/8” thick. Do not increase the feed speed beyond this point! If the feed speed is too high it will cause excessive strain on the chipper.

When feeding wood into the chipper, try to chip as much green wood as possible. The moisture in the green wood will lubricate the blades and keep the temperature lower.

OPERATING INSTRUCTIONS, feeding material

Shown below in figure 7 is the feed control bar that is used to control the valve that operates the feed roller.



It is important that the control bar operates the feed roller as shown in this manual. If the machine functions differently than this manual describes, contact your dealer or Pequea Machine immediately! 717-354-4343


Fig 7


Fig 8


Fig 9

The control bar (shown in fig7,8,9) determines the feeding direction of the chipper. The three different positions are shown above: Reverse-Neutral-Forward.

If the machine is running at full speed, always keep the control bar in Neutral (shown in figure 8), this way nothing can accidently be feed into the machine.

Figure 7 shows the Reverse position and figure 9 show the forward position. The forward position should always face the rear of the machine so that in an emergency the operator can just push the control bar and it will either stop feeding or reverse the feed roller.

OPERATING INSTRUCTIONS, feeding material

Sometimes when the brush is wet or if there are a lot of small twigs and branches the feed roller can slip because of the wet wood or of the small sized material. In this situation it is best to grab the control bar and switch from forward to reverse several times. You can even reverse the material and rotate it a different way so that the roller grabs a different part of the branch.

ALWAYS FEED FROM THE SIDE OF THE MACHINE! WHEN FEEDING FROM THE SIDE OF THE MACHINE IT IS IMPOSSIBLE FOR ANYTHING TO PULL YOU INTO THE CHIPPER.

WHEN FEEDING FROM DIRECTLY BEHIND THE MACHINE IT IS MUCH EASIER FOR A BRANCH TO PULL YOU INTO THE MACHINE.

WHEN FEEDING FROM THE SIDE OF THE HOPPER YOU ARE IN A POSITION THAT IS EASIEST TO OPERATE THE CONTROL BAR. STANDING DIRECTLY BEHIND THE MACHINE FORCES THE OPERATOR TO REACH OVER THE SAFETY DOOR, MAKING IT EASIER TO FALL INTO THE HOPPER.

OPERATING INSTRUCTIONS, feeding material

Fig 10

Fig 11

The chip chute, shown in figures 10 and 11, is adjustable via a spring loaded handle. Simply pull the handle down and rotate it forward or backward to vary the area of discharge. There is no general maintenance required for this feature.

The clamp handle, shown in figure 12, is an over center design that puts pressure on the chip chute assembly when the handle is pushed in towards the chute.

ALWAYS MAKE SURE THE CLAMP IS TIGHTENED BEFORE TRAVELING ON ANY PUBLIC ROAD, FAILURE TO DO SO COULD RESULT IN THE INJURY OF AN UNSUSPECTING BYSTANDER.

CLAMP TIGHT

CLAMP LOOSE

Fig 12

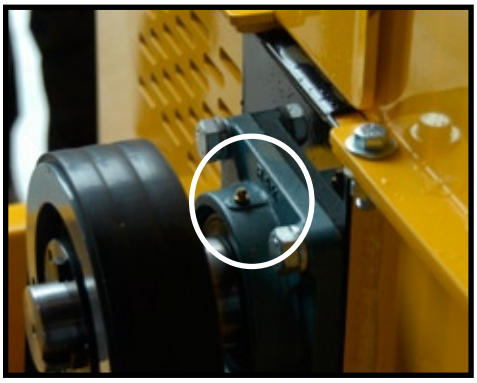
LUBRICATION

The feed roller bearings should be grease every 20 hours. There are (2) feed roller bearings. The picture to the left show the right bearing, the left is located on the same area on the opposite side of the feed chamber.

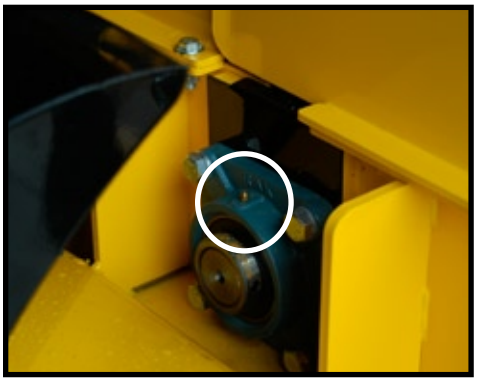
The feed roller pivot should always be wet with grease. Grease the feed pivot every 10 hours (this might be excessive but too much grease won't damage the feed).

The picture to the left shows the idler pulley slide. This part should always be wet with grease. Remove the springs and smear grease on the sliding tube and slide it back and forth until it is covered.

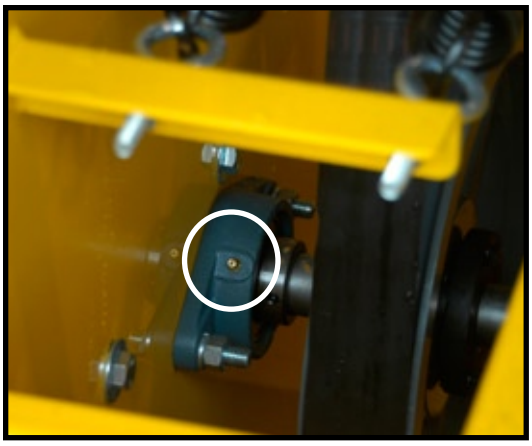
LUBRICATION



The main rotor bearings should be grease every 8 hours of operation. Wipe off all dirt on the grease fitting. The picture to the left shown the front rotor bearing.



The picture to the left shows the rear rotor bearing. This should also be greased every 8 hours.



The picture to the left shows the inner input shaft bearing. The outer bearing is located behind the pto shaft. These bearings should be greased every 8 hours.

Pequea Machine Inc. Limited Warranty

Pequea Machine Inc. offers a standard warranty for all equipment until 1 year after the date of retail sale.

This warranty will not be activated unless the warranty/safety registration form is returned to Pequea Machine Inc.

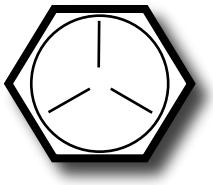
Within the warranty period Pequea will replace any parts found to be defective in materials or workmanship after the receipt of the parts in our plant. Labor rates to repair these parts will be based on a Pequea established time rate. All transportation costs incurred in shipping parts or retrieval of the chipper will be the responsibility of the purchaser.

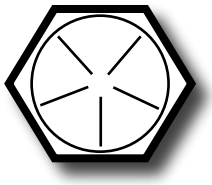
This warranty is void in case of accidents, misuse of normal operation, lack of maintenance, or failure to follow instructions in the operator's manual. This warranty is also in lieu of all other expressed warranties and voids any implied warranty as to the merchantability or fitness of the product for a particular purpose and of any other obligation on the part of Pequea. Some states do not allow limitations on how long the implied warranty lasts, so the above limitation may not apply to you.

This warranty applies only to parts or components which are defective, and does not cover necessary repair due to normal wear, misuse, accidents, or lack of proper maintenance. This includes belts, bearings, pulleys, and chipper knives. Regular maintenance of the unit to keep it in proper working order is the responsibility of the owner.

All warranty repairs must be done with Pequea approved replacement parts. All warranty work must be done by a Pequea approved service dealer. Any unauthorized parts or repairs will not be recognized under the Pequea warranty.

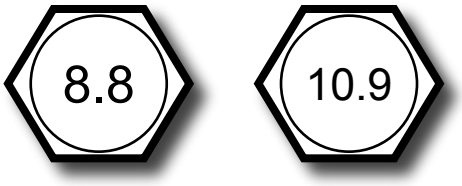
Standard Torque Chart





	GRADE 5 BOLTS		GRADE 8 BOLTS	
BOLT SIZE	**TORQUE (DRY) FT.LBS.**	**LUBRICATED FT.LBS.**	**TORQUE (DRY) FT.LBS.**	**LUBRICATED FT.LBS.**
1/4-20	8	6	12	9
1/4-28	10	7	14	10
5/16-20	17	13	24	18
5/16-24	19	14	27	20
3/8-16	30	23	45	35
3/8-24	35	25	50	35
7/16-14	50	35	70	50
7/16-20	55	40	80	60
1/2-13	75	55	110	80
1/2-20	85	65	120	90
9/16-12	110	80	150	110
9/16-18	120	90	170	130
5/8-11	150	110	210	160
5/8-18	170	130	240	180
3/4-10	260	200	380	280
3/4-16	300	220	420	310
7/8-9	430	320	600	450
7/8-14	470	350	670	500
1-8	640	480	910	680
1-14	720	540	1,020	760

Metric Torque Chart



		NEWTON METERS (NM)		*FOOT POUNDS (FT. LBS.)*	
BOLT SIZE	**CLASS**	**PLATED**	**UNPLATED**	**PLATED**	**UNPLATED**
M4 x .70	8.8	3.10	2.20	2.30	1.65
M5 x .80	8.8	6.10	5.50	4.58	4.13
M6 x 1.00	8.8	10.40	9.50	7.80	7.13
M7 x 1.00	8.8	17.00	15.50	12.75	11.63
M8 x 1.25	8.8	25.00	23.00	18.75	17.25
M8 x 1.00	8.8	27.00	24.50	20.25	18.38
M10 x 1.50	8.8	51.00	46.00	38.25	34.50
M10 x 1.00	8.8	57.00	52.00	42.75	39.00
M10 x 1.25	8.8	54.00	49.00	40.50	36.75
M12 x 1.75	8.8	87.00	79.00	65.25	59.25
M12 x 1.25	8.8	96.00	87.00	72.00	65.25
M12 x 1.50	8.8	92.00	83.00	69.00	62.25
M14 x 2.00	8.8	140.00	125.00	105.00	93.75
M14 x 1.50	8.8	150.00	135.00	112.50	101.25
M16 x 2.00	8.8	215.00	195.00	161.25	146.25
M18 x 2.50	8.8	300.00	280.00	225.00	210.00
M20 x 2.50	8.8	430.00	390.00	322.50	292.50
M22 x 2.50	8.8	580.00	530.00	435.00	397.50
M24 3.00	8.8	740.00	670.00	555.00	502.50
M6 x 1.00	10.9	15.50	14.00	11.63	10.50
M8 x 1.25	10.9	37.00	34.00	27.75	25.50
M10 x 1.50	10.9	75.00	68.00	56.25	51.00
M12 x 1.75	10.9	160.00	117.00	97.50	87.75
M14 x 2.00	10.9	205.00	185.00	153.75	138.75
M16 x 2.00	10.9	310.00	280.00	232.50	210.00

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