



# WOODCHIPPER

MODELS: BX AND BXT SERIES



WCH-0405 REV

**OPERATION INSTRUCTIONS AND  
PARTS MANUAL**



## Warranty

This product is warranted to be free of defects in materials and workmanship under normal use and service, for a period of one year from the date of purchase, when operated and maintained in accordance with the Operating and Maintenance Instructions supplied with this unit. This warranty does not cover misuse or negligence.

Under no circumstances will the manufacturer be liable for any consequential damage or expense of any kind, including loss of profits. The manufacturer is under no circumstances liable for tractor damage of any kind. The manufacturer is not liable for the maintenance of the product.

This warranty is extended only to the original purchaser. Warranty is void if repairs are attempted by anyone other than an Authorized Service Centre.

If a difficulty develops with the product, you should contact your nearest Authorized Repair Centre, or distributor. Only these locations are authorized to make repairs to the product or affect the replacement of defective parts, which will be done at no charge within a reasonable time after the receipt of the product. Units or parts should be returned at the customer's expense to the nearest repair location or Authorized Service Centre. Pack unit in a strong carton and pad tightly to avoid damage. Damage in-transit is not covered by warranty. Include original purchase receipt with any claim (keeping a copy for your files).

The distributor's liability under warranty is limited to repair of the product and/or replacement of parts and is given to the purchaser in lieu of all other remedies including incidental and consequential charges. There are no warranties, expressed or implied other than those specified herein. For the nearest Authorized Service Centre call the manufacturer. For Honda engine service contact your local Honda dealer or [www.honda.ca](http://www.honda.ca).

EMB MFG INC.  
4144 Boomer Line,  
St. Clements, ON  
NOB 2M0 Canada  
Phone: 519-699-9283 Fax:519-699-4146  
Website: [www.embmfg.com](http://www.embmfg.com) E-mail: [sales@embmfg.com](mailto:sales@embmfg.com)

## CAUTION

- **Read and understand Operator's Manual before operating machine.**
- Keep all children and pets away from area of operation to avoid injury caused by moving parts or flying debris.
- Keep hands, feet, and clothing away from moving parts. Never wear loose clothing near chipper as entanglement may result.
- Never run machine indoors; engine exhaust contains carbon monoxide, which is colourless, tasteless, and odourless. Prolonged exposure to carbon monoxide can cause death.
- Never open rotor housing until rotor has come to a complete stop.
- Before making any adjustments or servicing, or if material becomes clogged up in machine, shut off engine (trailer type) or disengage PTO and shut off engine (PTO type). Wait until machine has reached complete stop before adjusting or clearing debris.
- Use extreme caution when feeding material into chipper. Never allow metal, bottles, cans, rocks, or other foreign material to enter wood chipper.
- In the event of foreign material entering machine; shut down machine, turn off power supply, and wait for all motion to cease. Inspect all components for damaged or loose parts.
- Always wear safety goggles while operating machine.
- Never allow hands or any body part inside of the feeding chute or discharge hood.
- Stay clear of feeding chute and don't over reach. Keep proper balance and footing at all times.
- Keep processed material clear from discharge hood. Build-up of material may prevent adequate discharge, and can result in kick back of material into feeding chute.
- Do not transport or move machine while it is running.
- Inspect machine before each use to ensure it is free of damage and effects of misuse, and that all bolts are tight.
- Always operate machine on a level surface free of obstructions to ensure operator stability.
- Keep all guards and deflectors in place and in good working order.
- Stand clear of discharge chute in case of flying projectiles.
- On PTO models, always verify that tractor is in neutral and PTO is disengaged before starting tractor.
- Always use safety chains when towing a trailer type wood chipper.
- Be careful when attaching or detaching 3 point hitch model to

Warning! Never operate machine with shields or guards removed!

Starting Operation

**PTO Model**

- Back tractor to chipper. Connect tractor to chipper using 3 point hitch and PTO connections. PTO shaft must have at least 4 inches of overlap on telescoping tube for safe operation.
- To engage chipper start tractor engine and engage PTO. Increase engine speed to rated PTO RPM. Operate chipper at rated speed of 540 to 1000 RPM.

**Trailer Model**

**CAUTION!** Be sure to read and understand associated engine owner's manual before operating. Refer to engine owner's manual for engine starting procedure.

- Always check engine oil before starting. Fill to correct level if necessary.
- Set throttle to half speed to start. Apply choke to start cold engine. Warm engine may not require choke.
- This unit is equipped with a speed clutch, when engine reaches required RPM the rotor automatically engages.
- Increase engine speed to full RPM for chipping operation.

## Chipping Operation

- Chipper accepts various sizes of branches, depending on model. Small branches can be held together and fed through in a bundle. Larger limbs may need to have side branches trimmed to eliminate jamming.
- Place butt end of limb in chipper chute first. Feed through at a pace which power supply can handle. Knives need periodic sharpening and will lessen capacity and feeding action of chipper if dull. Refer to Service & Maintenance for sharpening instructions.

## Stopping Instructions

### **PTO Model**

- Move tractor throttle to low idle.
- Disengage tractor PTO and stop engine.

**WARNING!** Make sure machine has come to complete stop before disconnecting PTO or attempting to adjust or repair chipper.

### **Trailer Model**

**Refer to engine owner's manual for correct engine shut down procedure!**

- Move throttle to slow position and run for one minute to cool down.
- Turn off key switch to stop engine.
- Allow machine to come to full stop.

## Service and Maintenance

**WARNING! The chipper rotor may continue to rotate even with the engine stopped. Do not attempt to make adjustments or repairs until entire machine has come to a complete stop.**

### **Sharpening Knives**

It is recommended that you sharpen the chipper knives as required. Knives may need sharpening more or less frequently, varying on type of wood chipped. Knives will need to be set up to stationary knife after each sharpening. Knives are reversible and can be reversed between sharpenings.

### To sharpen knives:

1. Check to make sure rotor has come to a complete stop and power source is shut off.
2. Open rotor housing by loosening access cover clamp.
3. Rotate rotor by hand to access knives. Caution must be used while

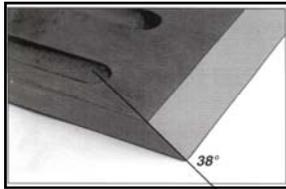


Figure 1A: Sharpening angle of rotor knife. (38 degrees on BX60— 32 degrees on BX40)

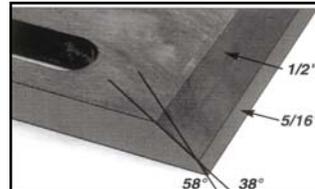


Figure 1B: Stationary knife angles (38 & 58 degrees )

4. turning rotor—even slow rotation could cut or sever a hand or fingers. Remove the 5 knife bolts (3 on BX40) and remove knives for sharpening or reverse the knives.
5. Be sure to maintain a 38 degree bevel on BX60 knives (32 degree bevel on BX40) on knife cutting edges. (See Figure 1A). When sharpening knives be sure to remove the same amount from each knife or else rotor can be thrown off balance.
6. Inspect stationary knife for wear and or damage. Stationary knife can be reversed or sharpened if necessary. See Figure 1B below for stationary knife angle sharpening specifications.

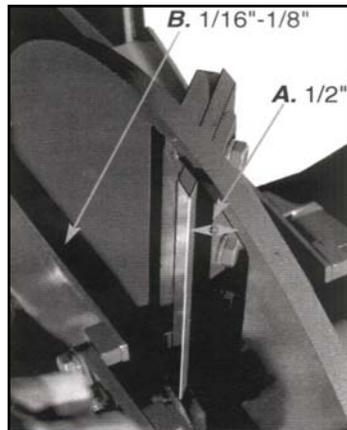


Figure 2

### Knife Setup

1. Install one knife onto chipper rotor. Set up so cutting edge protrudes past disk rotor ( 1/2"- BX60 & BX40). (See Figure 2, arrow point A). Tighten.
2. Set up stationary knife with rotor knife. Set up with 1/16" to 1/8" gap. (See Figure 2, arrow point B) Torque knife bolts to 165 ft.lb.
3. Install and set up remaining two knives with stationary knife using same measurements. Torque knife bolts to 165 ft. lb.

## **Lubrication Schedule**

### **PTO Model**

1. Two greaseable bearings on rotor shaft. (50 hours)
2. Two greaseable bearings on PTO shaft. (50 hours)

### **Trailer Model**

1. Two greaseable bearings on rotor. (50 hours)
  2. One grease zerk on foot pedal pivot. (50 hours)
  3. One grease zerk on each wheel hub. (50 hours)
- Service engine according to engine manual. Change engine oil and filter according to engine manufacturer's recommendations.
  - Maintain recommended tire pressures.
  - Always use safety chains when towing.
  - Check wheel bolts for correct torque.

## **Clearing Plugged Rotor**

If too large material or too much material is fed into the chipper, it could plug the rotor. To clear the rotor, proceed with the following:

### **PTO Models**

1. Disengage PTO and shut off tractor engine. Wait for rotor to come to a complete stop.
2. Lift rotor access cover.
3. Clean the debris out of the chipping rotor. Turn the rotor by hand to be sure it is free.
4. Replace rotor access cover.
5. Start tractor, engage PTO, and resume operation.

### **Trailer Models**

1. Depress foot clutch pedal. Stop engine and wait until all parts have stopped turning. Remove positive battery cable to avoid accidental startup.
2. Lift rotor access cover.
3. Clean the debris out of the chipping rotor. Turn the rotor by hand to be sure it is free.
4. Replace rotor access cover.
5. Depress foot clutch pedal. Start engine, engage foot clutch and resume operation.

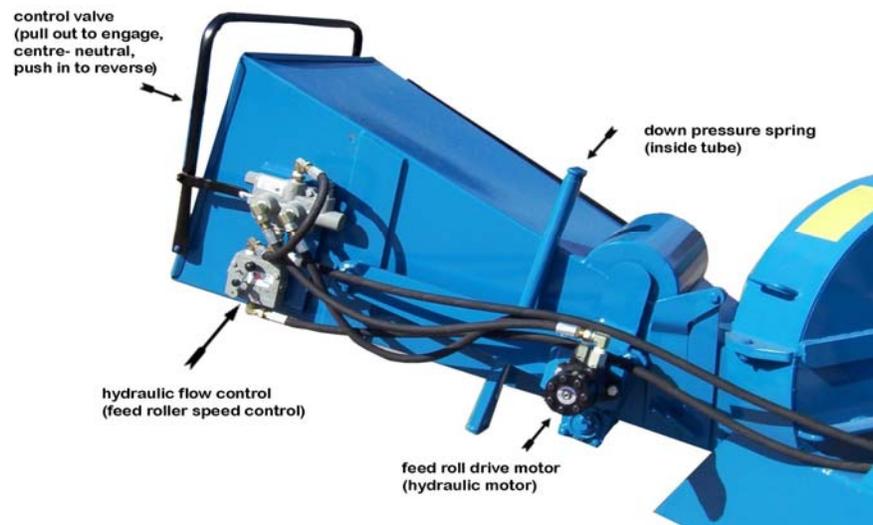
### **Shear Bolt Replacement**

PTO models are protected by a shear bolt on main rotor shaft. If shear bolt shears remove broken shear bolt and install replacement shear bolt. **For operator safety, never use a harder grade of shear bolt than recommended.**

**BX40 SHEARBOLT— M8 X 45MM (GRADE 8.8)**

**BX60 SHEARBOLT— M10 X 55MM (GRADE 8.8)(MOST SHAFTS)  
— M10 X 65MM (GRADE 8.8)**

### Hydraulic Feed Roll Operation



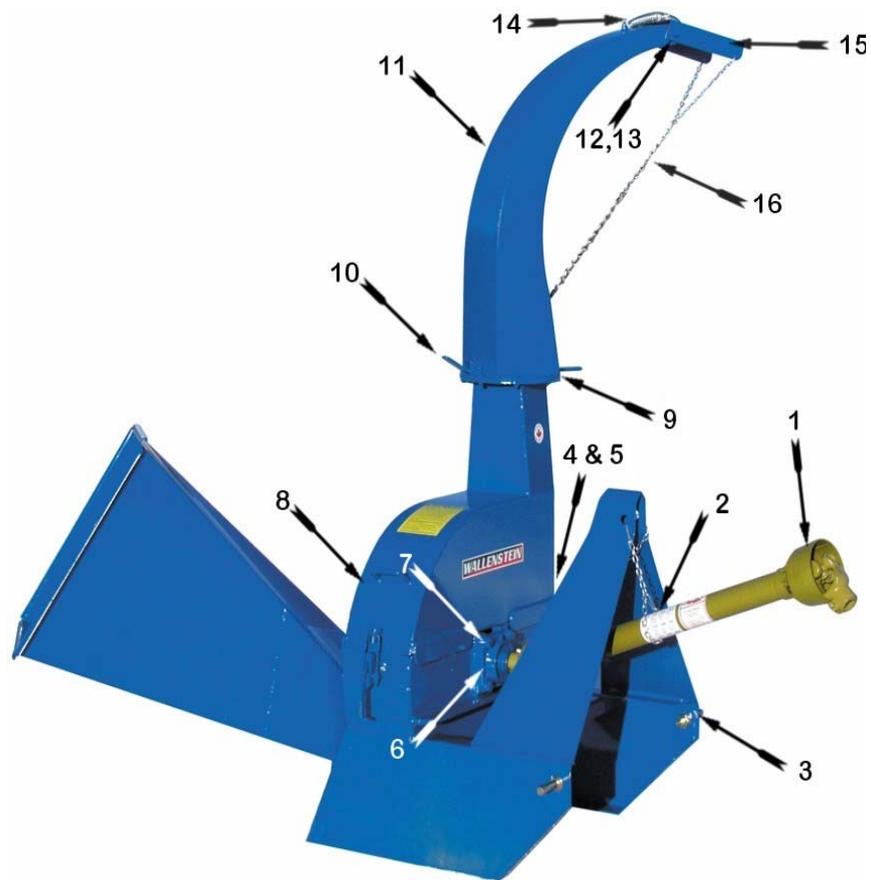
1. Install hoses to tractor remotes and lock or tie down tractor valve to provide continuous flow to hydraulic feed valve.
2. Pull out on control bar to engage hydraulic feed— detent valve will keep it engaged until pushed ahead to neutral. To reverse unit push control bar ahead. If unit operates backward, reverse direction of flow by changing tractor valve direction, or by switching hoses in the tractor remote.
3. Roller speed is controlled by the hydraulic flow control valve and is completely variable from a complete stop.

## BX40, BX60 Parts Breakdown List

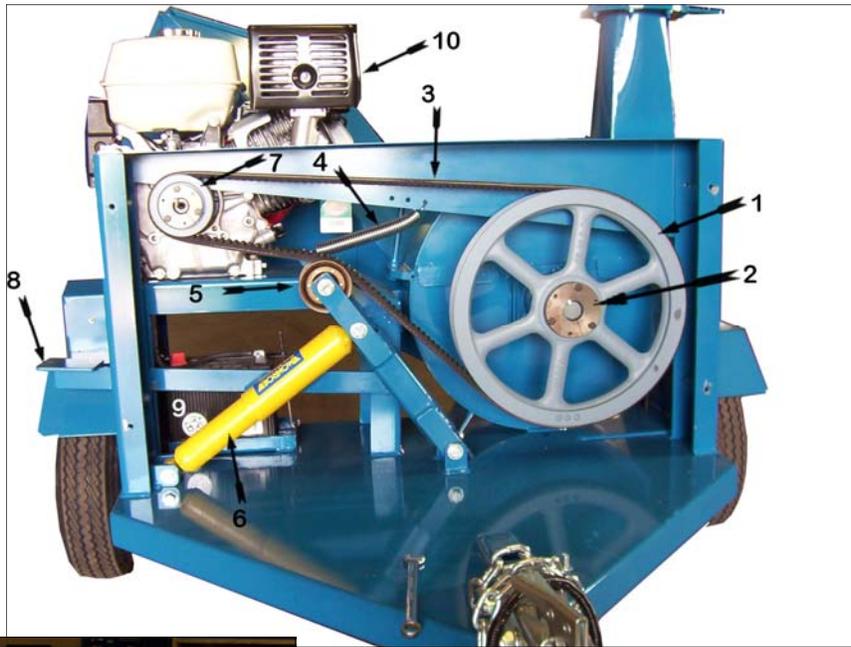
Position	Description	Quantity	BX60	BX40
1	PTO shaft-- complete assembly	1	C30001	C40003
2	shear bolt M10 x 55 mm (La Magdalena, Euro Gr 8.8 (SOME BX60)	1	C30002	
2	shear bolt M10 x 65 mm (Comer, Gr 8.8 (SOME BX60)	1	C30027	
	shear bolt M8 x 45 mm Gr. 8.8 (ALL BX40)	1		C40004
3	lift pin -- 7/8" Category 1	2	C30003	C30003
4	bolt-- 1/2" x 1 1/2"	2	C30004	C40006
5	1/2" locknut	2	C30005	C40007
6**	flanged bearing/locking collar assembly (4-BOLT) BX 40 USES ONE 4-BOLT AND ONE 2-BOLT, BX60 USES TWO 4-BOLT FLANGED BEARING ASSY.	2 (1-BX40)	C30006	C40008
6**	flanged bearing/locking collar assembly (2-BOLT) BX40 REAR	1 (BX40)		C40022
7	bolt-- 5/8" x 1 1/2" fine thread, Grade 8	20	C30007	
	Bolt-- 5/8" x 1 1/4 fine thread Grade 8	28		C40026
8	upper rotor housing	1	C30008	C40010
9	rotating ring assembly	1	C30009	C40011
10	spring latch kit (contains handle, spring, and pins)	1	C30010	C40012
11	hood	1	C30011	C40013
12	bolt-- 3/8" x 3/4"	2	C30012	C30012
13	3/8" locknut	2	C30013	C30013
14	deflector spring	1	C30014	N/A
15	deflector	1	C30015	C40014
16	chain (deflector adjustment)	1	C30016	N/A
	knob, deflector adjustment (BX40)		N/A	C40019
17	stationary knife	1	C30017	C40001
18	knife hold-down plate	4	C30018	C40018
19	reversible knife	3	C30019	C40002
20	rotor and shaft assembly	1	C30020	C40016
***	knife sharpening/adjusting gauge	1	C30021	C40017
***	yellow CAUTION decal (located on rotor housing)	1	C30022	C30022
***	"Wallenstein" decal	2	C30024	C30024
***	WARNING! Decal on rotor housing.	1	C30025	C30025



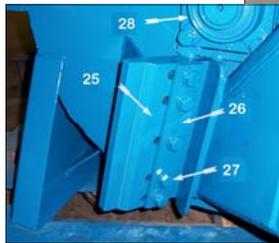
Knife detail:  
Bolts, knife hold down plate and knife shown.



**Stationary knife detail.**

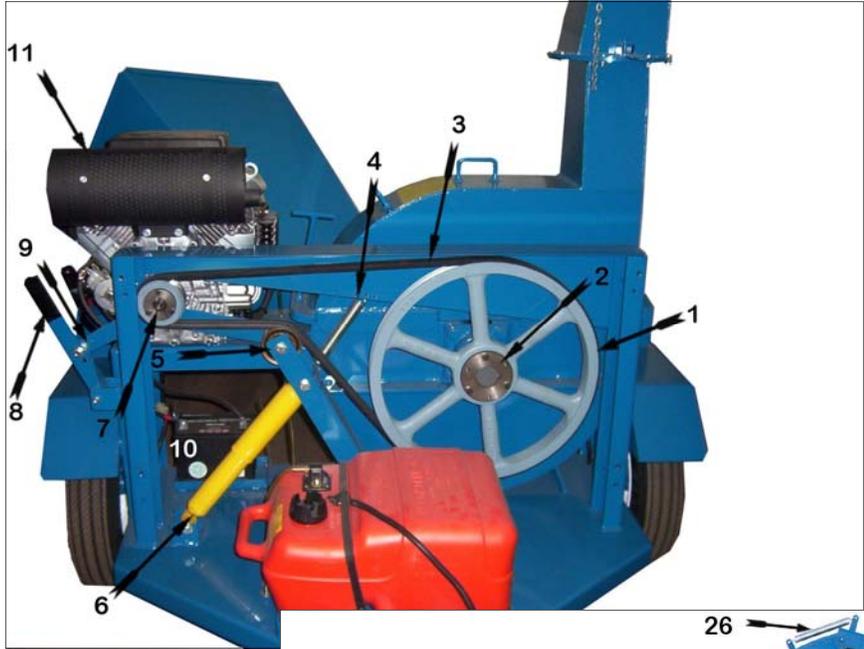


Knife detail:  
Bolts, knife hold down plate  
and knife shown.

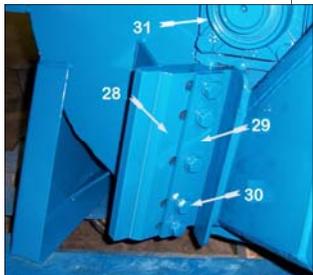


## BXT4013 PARTS LIST

<u>POSITION</u>	<u>QTY</u>	<u>DESCRIPTION</u>	<u>PART #</u>
1	1	PULLEY 2B16	C41011
2	1	TAPERED BUSHING SK 1 3/8	C41012
2	1	5/16" KEY	C41013
3	1	DRIVE BELT 2B85	C41014
4	1	TENSIONER SPRING	C30014
5	1	IDLER PULLEY	C41015
6	1	SHOCK ABSORBER	C41016
7	1	PULLEY 2B3.6	C41017
7	1	TAPERED BUSHING SH1	C41018
7	1	1/4" KEY	C41019
8	1	FOOT PEDAL DISENGAGEMENT ASSEMBLY	C41020
9	1	BATTERY-- L & G	BATT2
	1	BATTERY HOLD DOWN KIT	C41021
	2	BATTERY CABLE	C41022
10	1	GX390 HONDA ENGINE	GX390
11	1	FRONT SHIELD	C41023
12	1	BALL HITCH	W1110
13	1	LIGHT WIRING HARNESS	C41024
14	1	FRONT LEG	C41025
15	1	SNAPPER PIN	W1033
16	2	SAFETY CHAIN	W1031
17	2	4.80 X 8 WHEELS	W1028
18	2	SPINDLE/HUB ASSEMBY	W1029
19	1	4 X 4 TAIL LIGHT -- RIGHT HAND	W1052RH
19	1	4 X 4 TAIL LIGHT -- LEFT HAND	W1052LH
	1	THREADED T HANDLE (FOR ROTOR HOUSING)	C41026
20	1	TOP ROTOR HOUSING	C40010
21	1	SPRING LATCH KIT	C40012
22	1	HOOD	C40013
23	1	DEFLECTOR	C40014
24	2	DEFLECTOR KNOBS	C40015
	3	ROTOR KNIVES	C40002
2525	1	STATIONARY KNIFE	C40001
26	4	KNIFE HOLD DOWN PLATE	C40018
27	12	KNIFE BOLTS 5/8 X 1 1/4"	C40021
28**	1	FLANGED BEARING/LOCKING COLLAR ASSY. 4-BOLT(FRONT)	C40008
28**	1	FLANGED BEARING/LOCKING COLLAR ASSY. 2-BOLT(REAR)	C40022



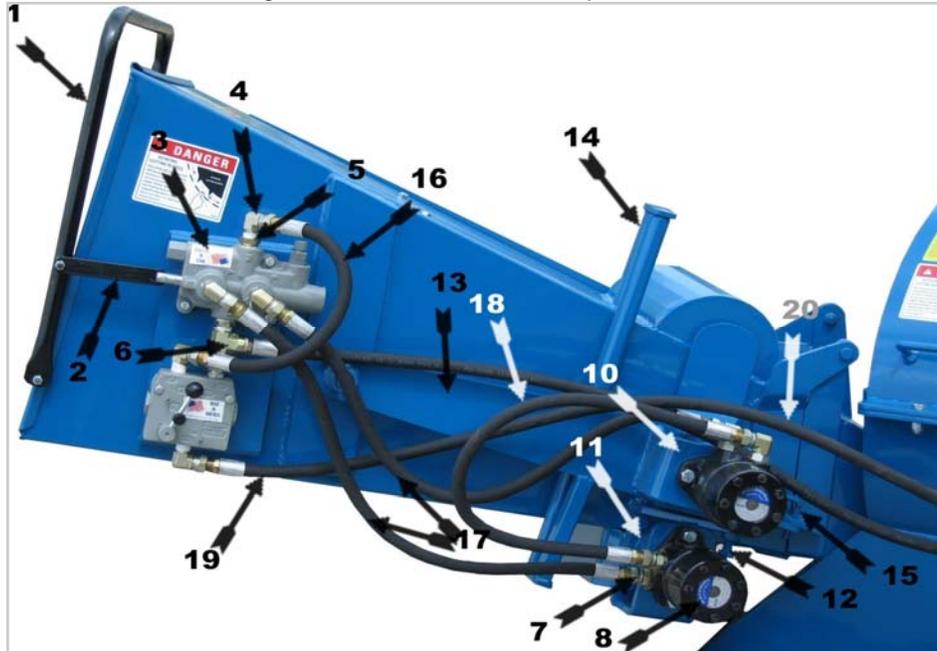
Knife detail:  
Bolts, knife hold down  
plate and knife shown.



### BXT5024 PARTS LIST

<u>POSITION</u>	<u>DESCRIPTION</u>	<u>QTY</u>	<u>PART NUMBER</u>
1	PULLEY 2B20	1	C31011
2	TAPERED BUSHING SF2	1	C31012
2	1/2" KEY	1	C31013
3	DRIVE BELT- 2B97	1	C31014
4	TENSIONER SPRING	1	C30014
5	IDLER PULLEY	1	C41015
6	SHOCK ABSORBER	1	C41016
7	PULLEY 2B4	1	C31015
7	TAPERED BUSHING -- SH 1 1/8"	1	C31016
7	1/4" KEY	1	C31017
8	HAND CLUTCH LEVER	1	C31018
9	HAND CLUTCH LINK	1	C31023
10	BATTERY-- L & G	1	BATT2
	BATTERY HOLD DOWN KIT	1	C41021
	BATTERY CABLE	2	C41022
11	GX620 HONDA ENGINE	1	GX620
12	FRONT SHIELD	1	C31019
13	BALL HITCH	1	W1110
14	LIGHT WIRING HARNESS	1	C41024
15	FRONT LEG	1	C31020
16	SNAPPER PIN	1	W1033
17	SAFETY CHAIN	2	W1031
18	5.30 X 12 WHEELS	2	C31021
19	SPINDLE/HUB ASSEMBY	2	W1029
20	4 X 4 TAIL LIGHT-- <b>RIGHT HAND</b>	1	W1052RH
20	4 X 4 TAIL LIGHT-- <b>LEFT HAND</b>	1	W1052LH
	THREADED T HANDLE (FOR ROTOR HOUSING)	1	C31022
21	TOP ROTOR HOUSING	1	C30008
22	SPRING LATCH KIT	1	C30010
23	HOOD	1	C30011
24	DEFLECTOR	1	C30015
25	DEFLECTOR CHAIN	1	C30016
26	DEFLECTOR SPRING	1	C30014
27	FUEL TANK	1	C31024
	FUEL LINE-- 1/4" X 54"	1	C31025
	ROTOR KNIVES	3	C30019
28	STATIONARY KNIFE	1	C30017
29	KNIFE HOLD DOWN PLATE	4	C30018
30	KNIFE BOLTS 5/8 X 1 1/2"	12	C30007
	ROTOR/SHAFT ASSY	1	C31026
31	FLANGED BEARING/LOCKING COLLAR ASSY.	2	C30006

## Hydraulic Feed Roll Operation



POSITION	DESCRIPTION	PART#	QTY
1	ENGAGEMENT LEVER/SAFETY BAR	C31010	1
2	CONNECTING LINK	C31011	1
3	DETENT VALVE	W1020	1
4	ELBOW, 90 DEGREES STREET	W1023	7
5	BUSHING, 3/4" TO 1/2" REDUCER	W1024	2
6	1/2" STREET TEE	C31025	1
	1/2" NIPPLE	C31026	1
7	1/2" SWIVEL	C31027	2
8	HYDRAULIC MOTOR	C31013	2
	MOTOR SHAFT KEY	C31019	2
10	FEED ROLL (TOP)	C31016	1
11	FEED ROLL (BOTTOM)	C31028	1
12	ADJUSTING SCREW, (PIVOT ARM) 5/8" X 2 1/2"	C31030	1
13	PIVOT ARM	C31014	1
14	SPRING, DOWN PRESSURE (INSIDE TUBE)	C31022	1
	BEARINGS, 1 1/2" 4-BOLT	C40008	4
	LOCKING COLLAR, 1 1/2"	C31029	4
	BOLT, 3/16" X 1 3/4" (FLOW CONTROL TO CHUTE)	C31031	2
	BOLT, 1/4" X 2" (VALVE TO CHUTE)	C31032	3
	BOLT, 1/2" X 2 1/2" (HYD MOTOR TO MOUNT)	C31033	4
	BOLT, 1/2" X 1 3/4" (CHUTE HINGE)	C31034	2
	BOLT, 3/8" X 1" (RUBBER SAFETY FLAP)	C31035	3
	RUBBER SAFETY FLAP	C31036	1
	BRACKET, RUBBER SAFETY FLAP	C31037	1
15	PIN, 3/8" X 4" 90 DEGREES	C31038	2
	<b>HOSES</b>		
16	HOSE, 15" (FLOW CONTROL TO VALVE)	C31021	1
17	HOSE, 29.5" (VALVE TO HYD MOTOR)	C31020	2
18	HOSE, 29.5" (HYD MOTOR TO HYD MOTOR)	C31020	1
19	HOSE, 118" (PRESSURE IN TO FLOW CONTROL)	C31023	1
20	HOSE, 118" (RETURN TO TRACTOR)	C31023	1

Troubleshooting Guide

<b><u>Problem</u></b>	<b><u>Probable Cause</u></b>	<b><u>Correction</u></b>
1. Rotor does not turn.	<ul style="list-style-type: none"> <li>a. shear bolt sheared (PTO model)</li> <li>b. obstructed discharge</li> <li>c. Rotor plugged.</li> <li>d. Belt loose or broken (trailer model)</li> </ul>	<p>Replace shear bolt.</p> <p>Shut down and clear debris. Clear rotor. Replace belt.</p>
2. Slow feeding.	<ul style="list-style-type: none"> <li>a. Knives are dull</li> <li>b. Blade angle wrong due to improper sharpening</li> <li>c. Discharge hood clogged</li> </ul>	<p>Sharpen knives.</p> <p>Re-sharpen knives to specified angle.</p> <p>Clear discharge hood.</p>
3. Chipper requires excessive power or stalls.	<ul style="list-style-type: none"> <li>a. Obstructed discharge</li> <li>b. Rotor plugged.</li> <li>c. Green material will not discharge</li> </ul>	<p>Clear discharge hood.</p> <p>Clear rotor</p> <p>Allow material to dry, or alternately feed in dry material</p>
4. Drive belts slipping or smoking.	<ul style="list-style-type: none"> <li>a. Loose or worn belts</li> <li>b. Plugged rotor</li> </ul>	<p>Check belt tension or replace belts.</p> <p>Clear rotor.</p>
5. PTO does not turn or has slow RPM's	<ul style="list-style-type: none"> <li>a. PTO not engaged on tractor</li> <li>b. PTO shaft loose</li> </ul>	<p>Engage PTO</p> <p>Check and repair all connections as required</p>
6. Vibration while running	<ul style="list-style-type: none"> <li>a. Driveline vibration</li> <li>b. Rotor out of balance</li> </ul>	<p>Check drive belts and pulleys for bad spots or wear. Check PTO shaft for wear.</p> <p>Inspect rotor for broken or missing chipper knives. Repair if needed. Check rotor to see if it wobbles. Check to see if rotor is assembled correctly.</p>
7. Engine dies or runs poorly	<ul style="list-style-type: none"> <li>a. Engine problems</li> </ul>	<p>Refer to engine operator's manual, or contact your local engine dealer.</p>

Important Information for your Records

**Date of Purchase:** \_\_\_\_\_

**Selling Dealer:** \_\_\_\_\_

\_\_\_\_\_

**Model Number:** \_\_\_\_\_

**Serial Number:** \_\_\_\_\_

Notes:



