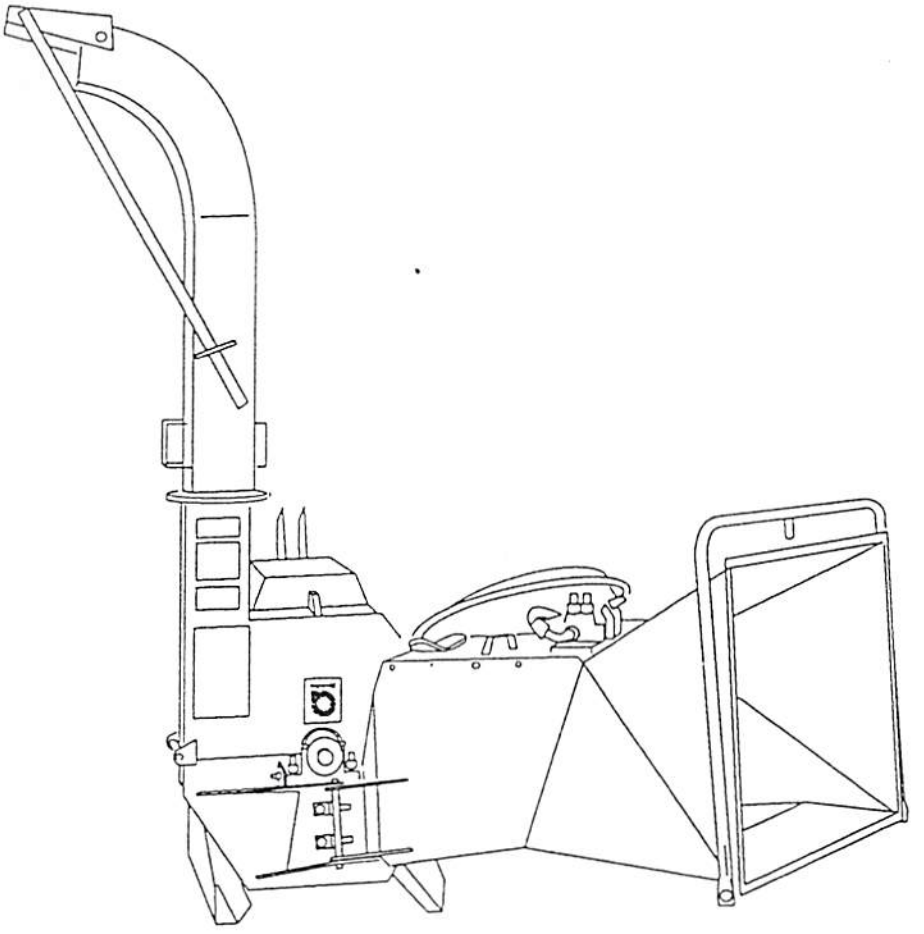
VALBY CHIPPER
CH150 / CH150 OEM

OPERATION, MAINTENANCE AND SPARE PARTS MANUAL

Machine code: 03340007



HF150 Hydraulic feed chute
HD11 Optional independent hydraulic unit

CH150 from machine no: 3340370–
CH150OEM from machine no: 3340864–
HF150 from machine no: 3343401–

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Orion Corporation
normet
Ahmolantie 6
FIN 74510 PELTOSALMI, Finland

Please Note:

Some pages may appear to be missing in this CH150 manual. All current pages are included in this manual. Pages have been removed due to duplicate or outdated information.

Safety precautions

CH150 Chipper

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Read before operating this machine! It is the owner's responsibility to instruct all equipment operators and support personnel in the operation of this chipper.
Do not attempt to operate this chipper without proper training
Do not operate this machine until the owner's manual has been completely read and understood.

Do not put any part of your body inside the feed chute for any reason! To feed short pieces, push them in with longer pieces. If the feed roller becomes tangled, reverse the feed until the material comes loose. then disengage the pto. Turn the engine off and remove the tangle. Do not work in front of the feed chute! Stand on the left side of the chute when you are feeding the chipper. The feed roller might jerk the tree up or to the right. If a tree jams inside the feed chute, turn the engine off and wait for all movement to stop before reaching inside the feed chute.

- Ensure that all bystanders are at least 100 feet away from the machine when it is running.
- Make sure that no one is in the path of flying woodchips. Point the discharge chute away from windows, doorways and other areas where people or animals may be. Point the discharge down wind so dust or chips will not blow onto the operator.
- Check that the feed chute is free from debris or other foreign objects before starting up. Check the material before you feed it. The material must be free from nails, rocks and all other materials that are not wood, paper or plastic. Feeding wire and barb wire into the chipper is very dangerous as it might drag in the operator.
- The operator should not use gloves that are in poor condition, because they may become caught in branches.
- Let go of the tree when the feedrollers or the knives get hold of it.
- Do not use the chipper for other uses than chipping wood.
- Check the moving parts. They should be fastened in place, in good working condition and all shields and guards must be in place.
- Familiarize yourself with the controls and how to stop the feedrollers and the disc in an emergency.
- Do not let children or incapable persons operate the chipper.
- Do not wear loose clothing, loose sleeves, neckties or long uncovered hair around moving parts of machinery.
- Keep the work area clean so there is nothing to trip over.
- Eye and ear protection must be used when operating this machine.
- Ensure that other people do not become endangered when you are using the chipper.
- Do not leave the chipper running unattended.
- Disengage the pto and turn the tractor off before you service the chipper. Remove the keys so that the tractor cannot be started up accidentally.
- Use only original parts replacements. Do not make any modifications.
- Inform everyone who works with the chipper about the risks and how they can avoid accidents.
- Stay alert! Do not operate chipper when fatigued.
- Failure to heed the warnings printed on the chipper or in the operator's manual might result in a serious injury or death.

ROTATING KNIVES
Don't risk cutting injury or being struck by high speed particles.
Don't reach into the feed chute for any reason.
Failure to follow these instructions could result in serious injury or death.

Technical specifications

CH150 Chipper

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1. INTRODUCTION

Valby CH150 is a multipurpose chipper for small dimension wood material up to 6" (150 mm) in diameter. It produces uniform chips which can be used for fuel, animal bedding, landscaping and mulch. Valby CH150 is a mobile, light machine for handling all kinds of wood waste from parks, roadsides and other environmental cleaning.

CH150 options:

- Dual motor hydraulic feed, manual or gravity hopper.
- Independent hydraulic unit.

2. MAIN PARTS

1. Upper chamber
2. Lower chamber
3. Disc
4. Knife
5. Vertical anvil
6. Horizontal anvil
7. Twig blade
8. Discharge chute

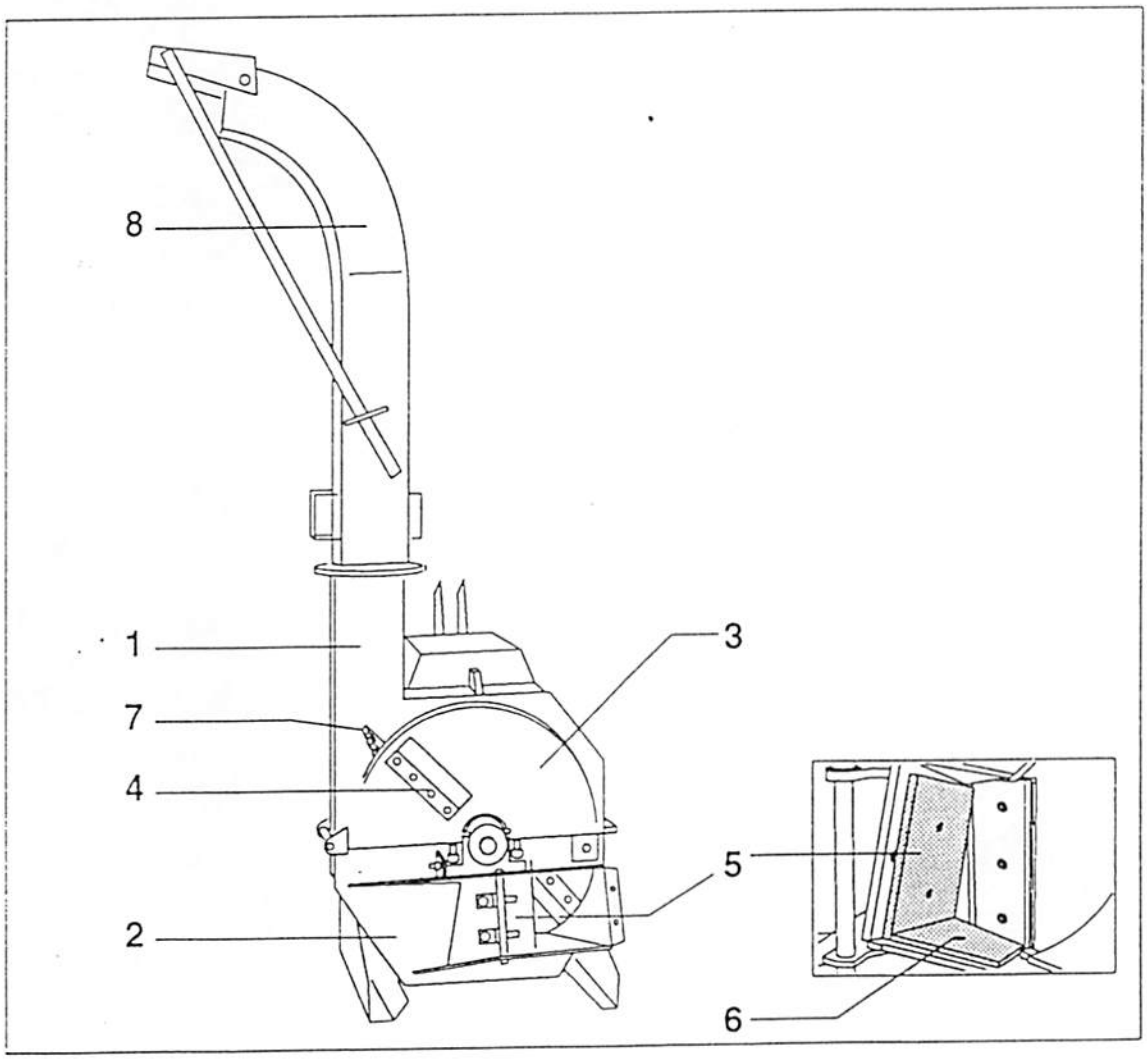

Fig.1. Main parts.

Technical specifications

CH150 Chipper

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3. DIMENSIONS

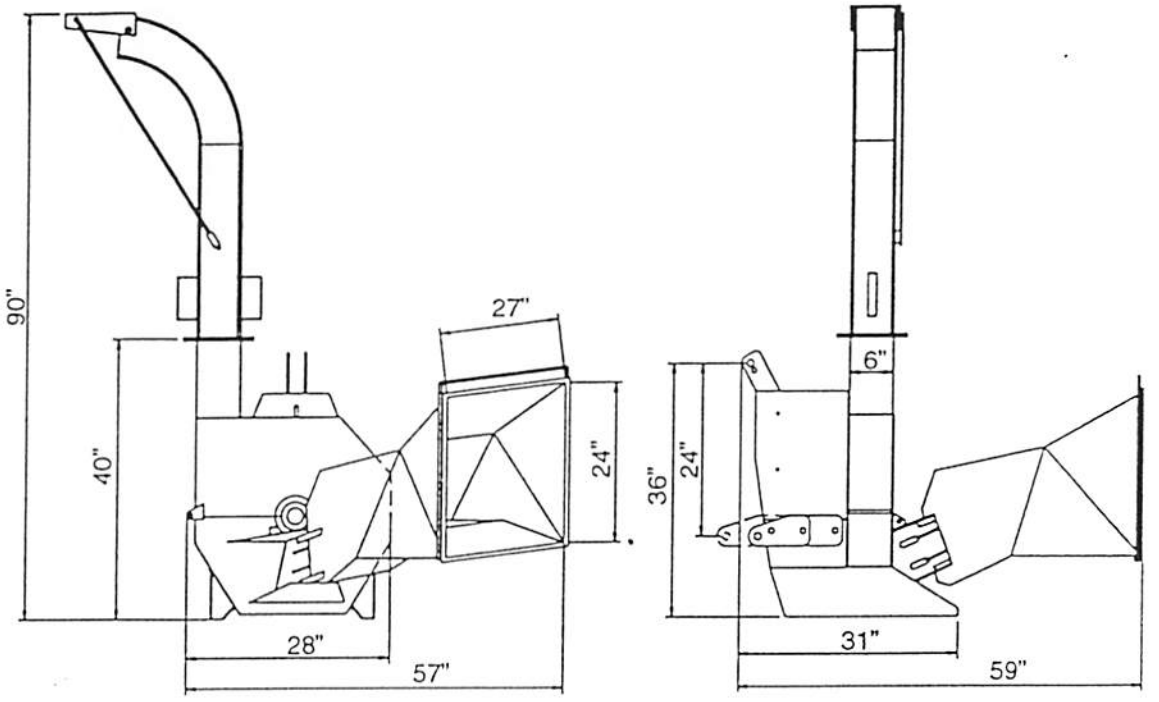

Fig.2. Dimensions of CH150 with HF150

4. TECHNICAL DATA

Output	5–20 m^3/h (177–706 ft^3/h)
Chip length	13 mm (1/2")
Max timber diameter	Ø 150 mm (6")
Power demand	18–40 kW (25–55 H.P.)
Rev. speed	1200–2200 rpm
Number of knives	2 pcs.
Power source	Tractor or stationary electric motor
Anchorage	3–point or bolted to base
Rotor diameter	Ø 670 mm (26 1/3")
Rotor weight	100 kg (220 lbs)
Bearings	Spherical roller bearings
Discharge chute	360° rotatable
Discharge chute height	2,3 m (7 1/2')
Opening of upper chamber	single hinge
Chipper weight	450 kg (990 lbs) hydraulic, 350 kg (770 lbs) manual

5. LIFTING

CAUTION!

Before lifting the machine or machine parts, check that the lifting equipment is in order. If the lifting points have been marked, lift only from the marked points.

Only a correct type of machine with a sufficient lifting capacity can be used for lifting. It is forbidden to lift equipment and parts of equipment with other equipment than lifters designed for this purpose.

The weight of the load to be lifted must be known and the operating capacity of the lifter informed by the manufacturer must not be exceeded.

The course of the lift must be chosen so that loads are not moved above people or object which may have people inside.

The hoisting cables and chains must be checked regularly. Discarded cables must be marked and removed from use immediately.

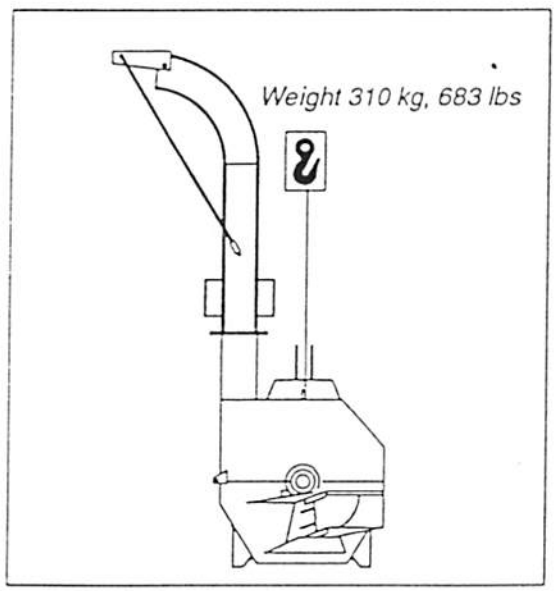

Fig.3. CH150 lifting points.

6. ASSEMBLY

- Fasten the 3–point hitch lift bar (part 37in spare parts drawing) to the chipper frame. Try first the holes that move the chipper farther away from the tractor. That position increases the life of the universal shaft. (If the tractor can not lift the chipper from that position or if the front end of the tractor becomes too light, then move the lift bar in.)
- Tighten the nuts with a 1 $^{3}/_{16}$" or 30 mm wrench to 260 Nm (190 foot pounds).
- Fasten the feed chute with pin as instructed in the separate feed chute's manual.
- Connect the discharge chute to the chipper. Adjust the lid control with the rod.
- The power is transferred to the chipper with a Power Take–Off shaft. The chipper has a 1 3/8" diameter 6 spline PTO hookup.
- Check that the PTO shaft is at correct length.

6.1. CUTTING THE PTO SHAFT TO THE CORRECT LENGTH

CAUTION!

If the PTO shaft is too long it might bind when the three point hitch is lifted up. Damage might be caused to the bearings of the chipper or to the PTO of the tractor. If the PTO shaft is too long it must be cut. Both PTO halves must be shortened by equal amounts.

- Turn the tractor off. Lower the chipper on a flat surface.
- Mount the chipper on the three point hitch of the tractor.
- With the chipper resting on the ground, see that the splined shafts of the tractor and chipper are horizontal.

Assembly and mounting

CH150 Chipper

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- Connect one shaft half to the chipper's PTO and the other half at the tractor's PTO. Lay the other PTO half on its side so that the end of the shaft is one inch from the PTO–end of the chipper. Mark lengths required. The tubes must be shortened so that they cannot reach the bottom when the chipper is lifted or lowered. Cut the plastic shield. See fig.4.–5.

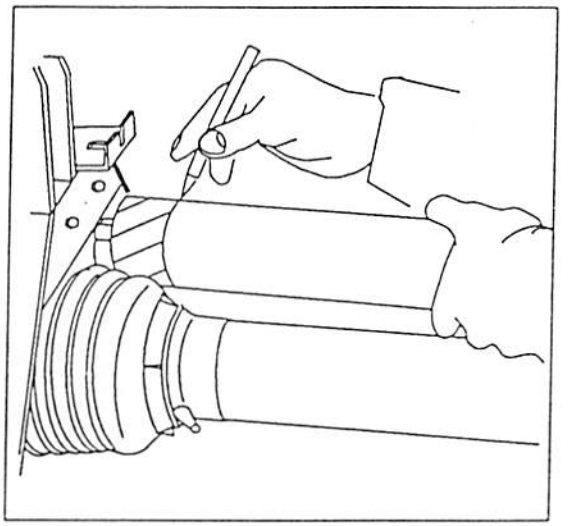

Fig.4.

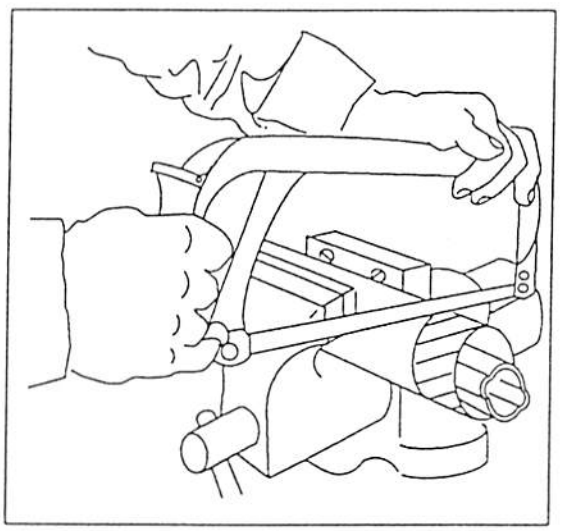

Fig.5.

- Cut a piece from profile tube which is as long as the piece you cut off from the shield. Shorten the other PTO shaft by the same length. After cutting file sharp edges. See fig.6.– 7.

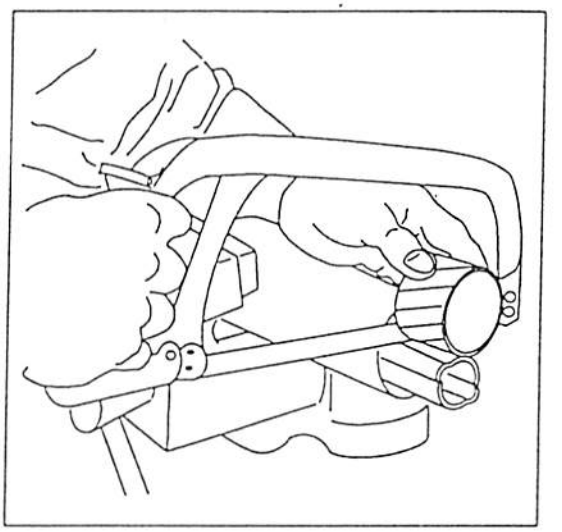

Fig.6.

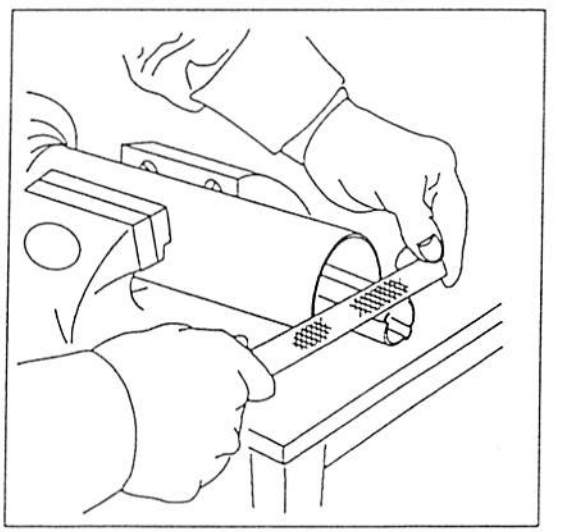

Fig.7.

7. USING THE CHIPPER

Do not attempt to operate this chipper without proper training. Read and understand the owner's manual before operating the machine.
Failure to heed the warnings printed on the chipper or in the operators manual might result in serious injury or death!

7.1. PRE OPERATION CHECKS

- Turn the tractor off.
- Lower the chipper on its legs on a hard, level surface so it will not tip over.
- Turn the chipper's axle by hand to ensure that the disk can turn freely and that there are no foreign objects in the chipper.
- Look inside feedchute to ensure that it is empty.
- Make sure that all shields are in place and intact. Removal of the shields is prohibited!
- Direct the discharge tube in desired position.

7.2. STARTING THE CHIPPER

- Whenever engaging the PTO clutch on your tractor, you are turning a flywheel with a 300–600 lb. load. Engage PTO slowly, allowing the flywheel to begin to rotate. Once you have the chipper moving, you may completely engage the PTO and then bring up your rpm to operating speed (540 rpm).
- The chipper is now ready for use.

7.3. CHIPPING

- Before feeding make sure that the material is free from stones, nails and all other materials that are not wood, paper or plastic.
- When feeding trees, do not stand in front of the feed chute. The feed roller might jerk the tree up or to the right. Feed the tree standing on the left side of the chute.
- When chipping wood, push the tree trunk inside the feed chute until the knives or feedrollers touch the tree. The chipper is self feeding, so let go of the tree as soon as the knives touch it.
- If you have a hydraulic feed chute, see separate operator manual for operating the chute.

Do not use chipper if temperature falls below −5°F (−20°C). This practice will prevent risk of damage to the knives. Also avoid chipping trees that are frozen solid as they will not self−feed well.

ROTATING KNIVES!
Don't risk cutting injury or being struck by high speed particles.
Don't reach into the feed chute for any reason.
Failure to follow these instructions could result in serious injury or death.

FIRE WARNING!
Always keep sufficient fire fighting equipment on hand when you are using the chipper. To prevent a fire, monitor the outside temperature of the shipper. Stop chipping until the chipper cools off.
You must pay very close attention to maintenance.
Check for hot bearings and maintain good housekeeping by cleaning up loose dust.
Pour water down the feed chute if the chipper starts smoking.

9. PERIODIC SERVICE

Always disengage the PTO and turn the tractor OFF before you service or repair the chipper.

Wait for all movement to stop before reaching inside the feed chute.

Remove the keys so that the tractor can not be started up accidentally.

Lock the disk for service or repair

Park the chipper on hard and level ground, so it will not fall down.

When handling the knives, use protective gloves.

Use only original spare parts.

Modifications of chipper are prohibited.

Observe common safety practises.

- Open the upper housing bolts. ($^3/_4$" or 19mm wrench). Remove or turn the upper housing.
- Lock the disk with the lock bolt.See fig.10.
- Remove or turn the feed chute to the side.

9.1. LUBRICATION

- The bearings are greased at the factory with Shell Alvania Grease R 3. A similar lubricant such as Kendall L427 should be used by you. Avoid overgreasing because it causes heat which reduces lubrication.
- Lubricate the bearings every 200 working hours or once a year.

1. Remove the top of the pillow bearing housing. Remove as much grease as you can and replace it with new grease, but do not fill the housing completely with grease. See bearing's assembly, fig. on page
2. Replace the top of the bearing housing. Tighten to 90 Nm (65 foot pounds)

- Lubricate the P.T.O shaft before putting into operation and frequently as shown in fig.9.
- Apply grease to inside of P.T.O's outer telescopic profile.
- When used in winter the guard tubes must be greased to prevent them from freezing solid.

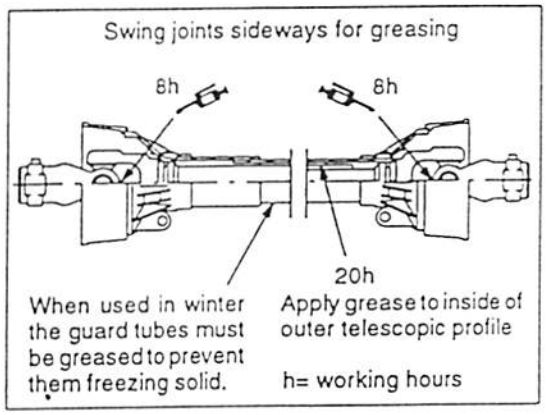

Fig.9. P.T.O shaft's lubrication points and frequency of lubrication.

Lubricating and maintenance instructions

CH150 Chipper

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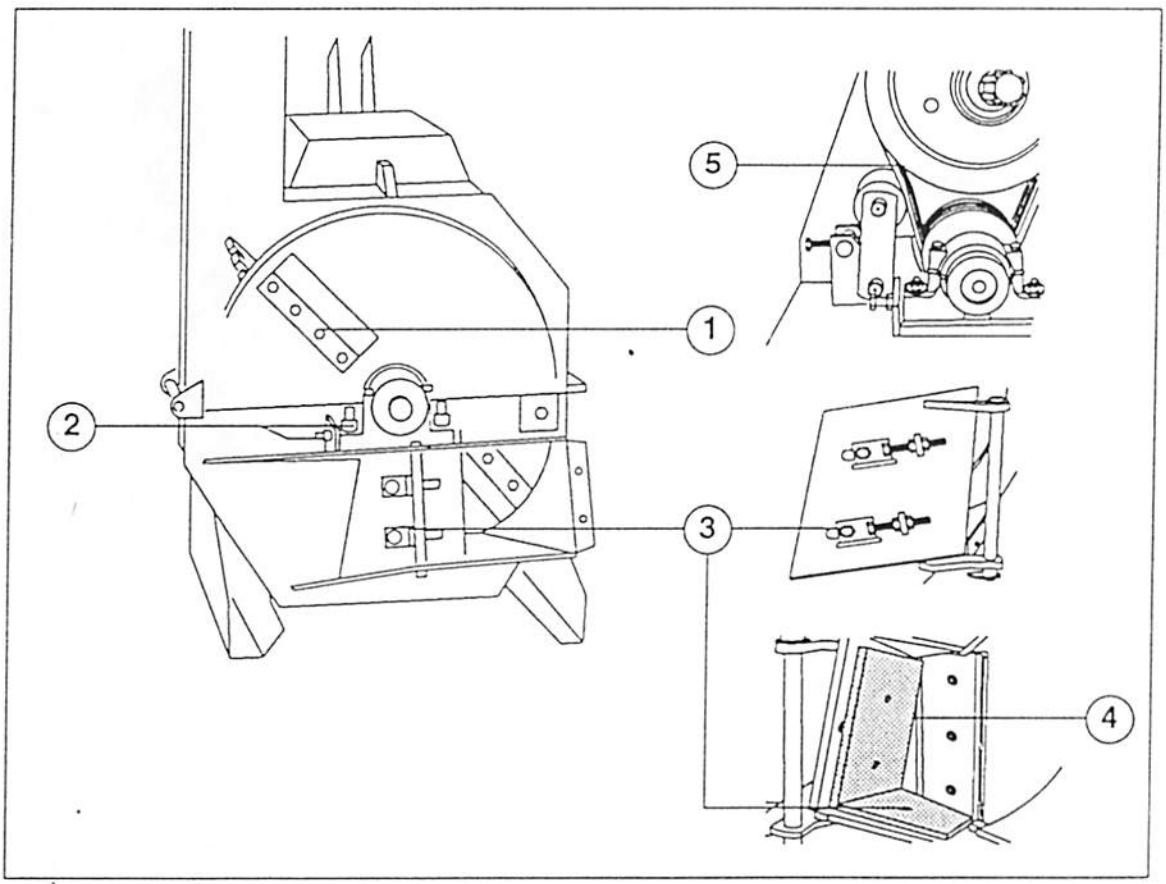
9.2. MAINTENANCE SCHEMA

- Check the tightness of the bolts and tighten when needed.
- The tightness of fasteners in the chipper must be checked once a week. On a new machine check the tightening after one hour of use.
- On a new machine, check the belt tension after first two working hours and after that periodically every month.
- Tighten as indicated in maintenance schema below.



Position	Socket size	Torque, Nm (Foot pounds)
1, Check knife bolts tightness	17mm (11/16")	45 (38)
2, Check bearing housing bolts tightness	19mm (3/4")	90 (65)
3, Check anvil bolts tightness	24mm (15/16")	200 (155)

Position	Socket size	Measurement
4, Check clearance between knives and anvil	19mm (3/4")	1,2–1,5 mm (1/30")
5, Check V–belt's tightness	19mm (3/4")	3–5 mm (1/8")

10. SERVICING THE KNIVES

ROTATING KNIVES!
Wait for all movement to stop before reaching inside the feed chute.

The disk continues rotating by flywheel moment after the P.T.O has been disconnected.

Failure to follow safety precautions could result in serious personal injury or death.

- Turn the tractor off.
- Open the upper housing bolts ($^3/_4$" or 19mm wrench). Turn the upper housing to the side.
- Lock the disk with lock bolt. See fig10.
- Remove or turn the feed chute to the side.
- Use protective gloves when handling the knives.

10.1. Sharpening the knives

You will notice the need to sharpen the knives when:

- Trees do not self–feed well.
- The power requirement is increased.
- The smoothness of the chip surface is decreased.

Keep the knives with their original pairs. That way the knives will be worn equally and the disk stays in balance.

Use gloves when removing or handling the knives, Turn the wrench so that your knuckles will not touch the knife if the wrench slips.

1. Lock the disk with lock bolt. Remove the four locknuts behind the knife frame (socket size $^{11}/_{16}$" or 17mm). See fig.10.
2. Remove the knife–fastening bolts, they are threaded through the disk (socket size 17mm or 11/16"). Turn the wrench so that your knuckles will not touch the knife if the wrench slips. Use gloves. See fig.11.

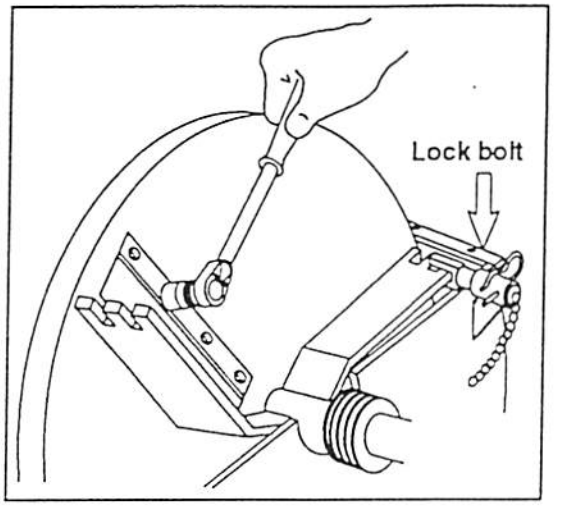


Fig.10.

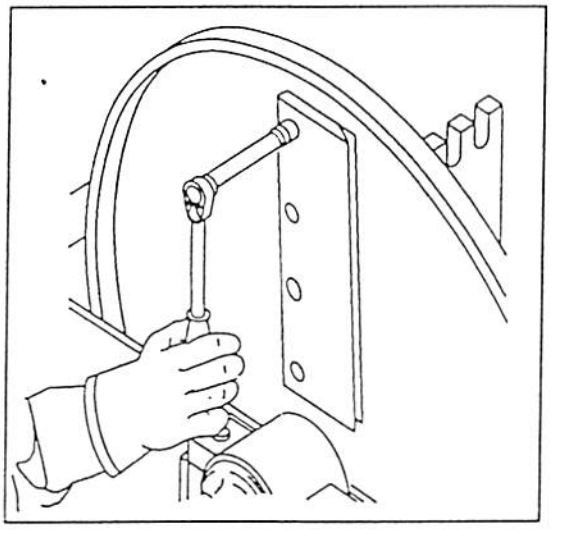


Fig.11.

3. Sharpen the knives at a 30 degree angle as shown in fig.12.

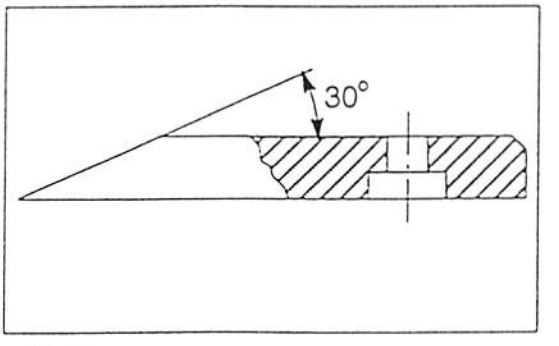


Fig.12.

Lubricating and maintenance instructions

CH150 Chipper

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Avoid getting the knife hot when sharpening. Sharpen both of the knives the same amount.

Certain corn choppers use the same style of knife as the CH/SH 250 Chipper (Papec for example). Automatic grinders, for example ANO 230x7x22 A30, to service this style of knife can thus be found at some implement dealers. Of course, grinders to service chipper knives are available from grinder and knife manufacturers.

- Fasten the knife and tighten the bolts to 38 foot pounds or 45 Nm.
- Adjust anvil clearance if needed.
- The anvil clearance must be adjusted after every 5–10 sharpenings, when the clearance between the knife and anvil becomes more than 1 mm or $^1/_{20}$".

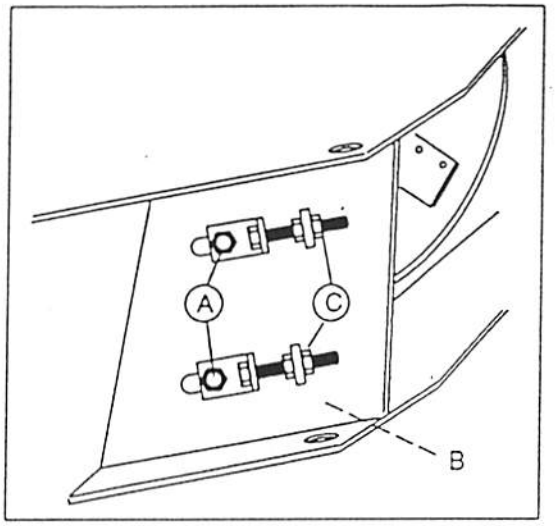

Fig.13.

10.2. ADJUSTING THE CLEARANCE BETWEEN KNIVES AND ANVIL

Usually you can sharpen the knives 10 times before there is a need to adjust the anvil. Adjust the anvil if the gap to the edge of the knives is over 1,5 mm or $^1/_{30}$ of an inch. See fig.14. on the facing page.

1. Loosen the three bolts (A, B) that fasten the anvils. One of the bolts is under the feed chute. The wrench size is $^{15}/_{16}$" or 24 mm.
2. Turn the disk so that a knife comes against the anvil. Move the anvil with the adjusting nuts (Pos. C. fig.13. wrench size $^3/_4$" or 19 mm) until the clearance is between $^1/_{20}$ and $^1/_{30}$ of an inch. If you do not have a gauge, use a matchbook cover as a guide.
3. Tighten adjusting nuts (C). Tighten anvil lock bolts (A and B) to 200 Nm or 155 foot pounds.

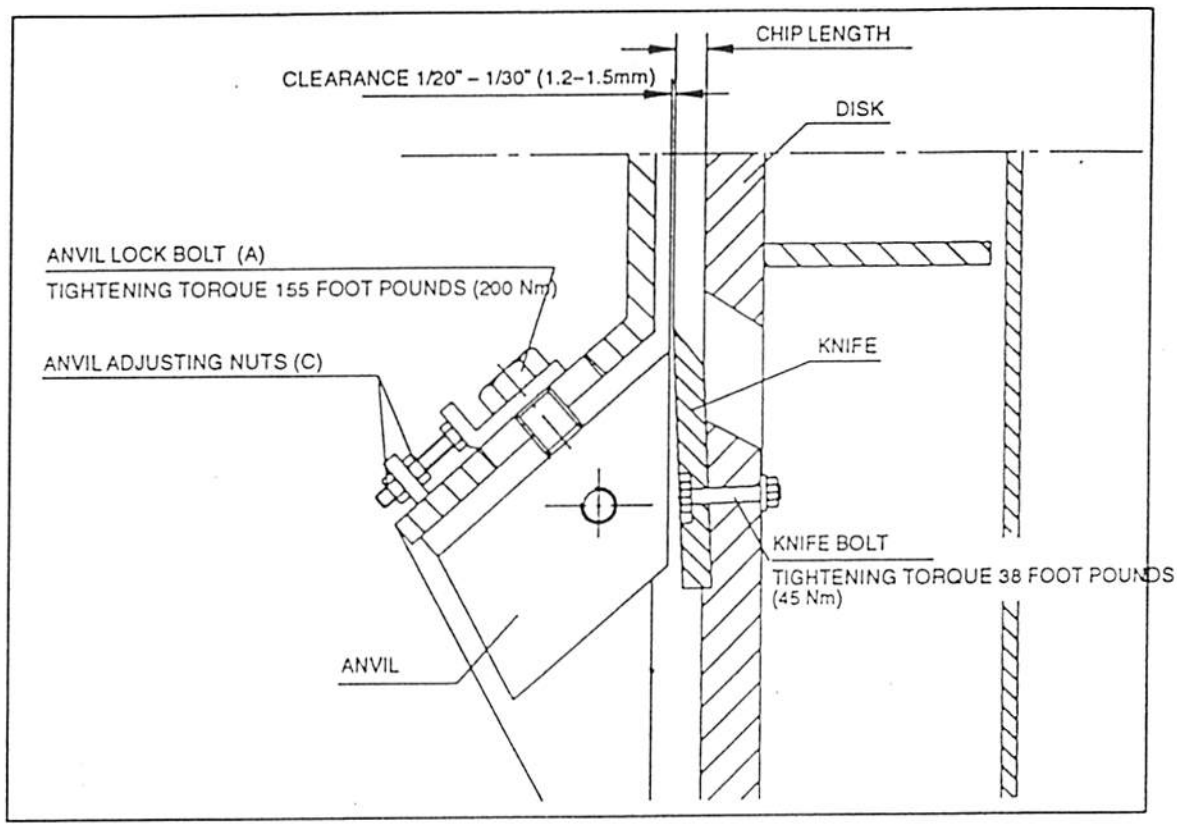

Fig.14.

10.3. SHARPENING THE ANVIL

If you notice wear or rounding of the inner edge of the anvil, sharpen the anvil so that original angles are retained.

Lubricating and maintenance instructions

CH150 Chipper

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10.4. REPLACING A BEARING

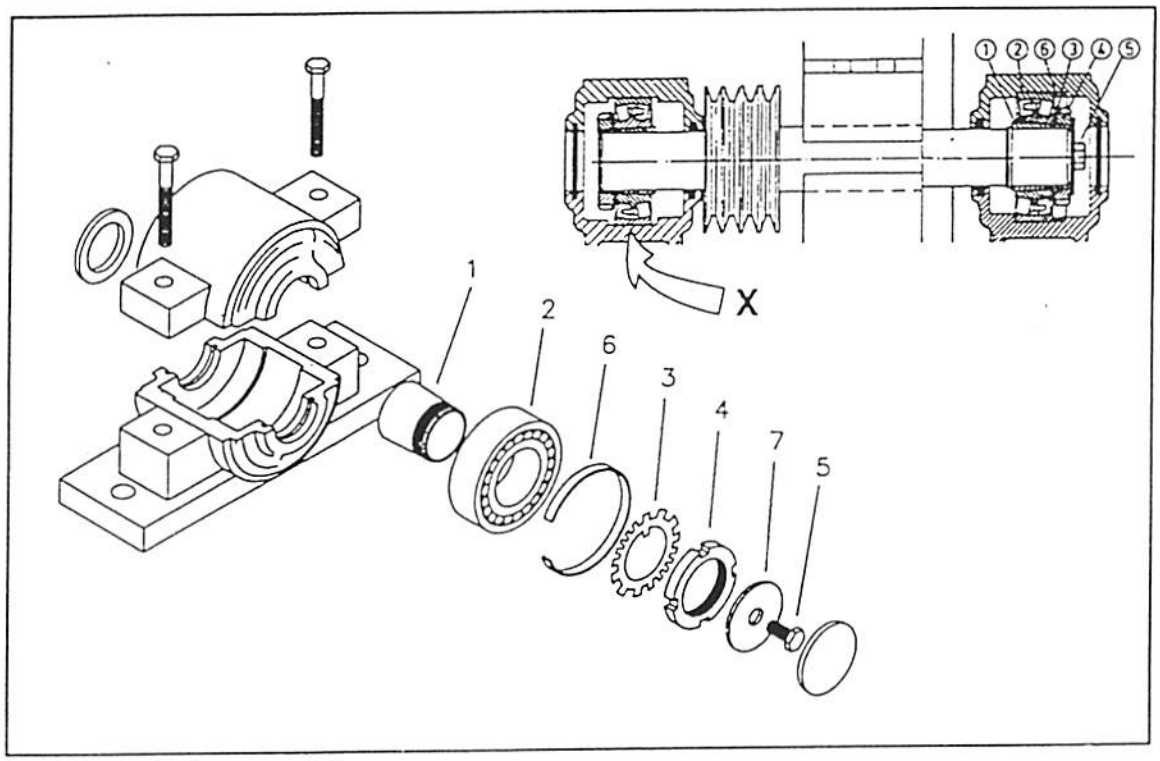

Fig.15. Bearing assembly

1. Open the upper housing.
2. Open and remove the tops of the pillow bearings.
3. Mark the location of the bearing on the axle.
4. Lift the disk from the pillow housings. You do not have to remove the disk from the disk housing. THE DISK WEIGHS OVER 90 kg (200 lbs), SO DO NOT ATTEMPT TO LIFT IT BY HAND.
5. Remove bolt #5 (see fig.15.) and the washer, and pull out the old bearing.
6. Place the new tightening cone #1 on the axle with the thread facing out. Place the tightening cone exactly where the old tightening cone was located.
7. Mount bearing #2 on the tightening cone so that the inside of the bearing fits on the tightening cone.
8. The securing ring #3 is placed on the tightening cone so that the inside tab goes in the groove of the tightening cone and the outside tabs are turned away from the bearing.
9. Mount the axle nut #4 and tighten until the bearing is tight on the cone. Do not tighten so much that you can feel resistance when you are turning the outer ring of the bearing.
10. Finally, fold over a tab of the securing ring #3 to a notch on the axle nut.

- The ring bushing #6, the washer on the axle end, and the bolt #5 are mounted only on the feed chute side of the chipper.
- The bearing on the pulley end of the axle is mounted so that it rests in the middle of the pillow housing (see fig.15., position X).

10.5. ADJUSTING THE BEARINGS.

1. Remove the two bolts that lock the top half of the pillow block bearing housing. The wrench size is 17 mm or $^{11}/_{16}$". Remove the top of the bearing housing.
2. Remove the grease from the bearing housing. Store it on a clean paper so that you can put the grease back later.
3. Remove the ring bushing #6 (fig.15.).
4. Measure with a feeler gauge the radial clearance of the bearing at the top of the bearing between the rollers and the outer ring. The clearance should be 0.0008 to 0.0012". Measure by pushing the feeler gauge between the rollers (point A, fig.16.) through the bearing, and after that by pushing the gauge through the clearance between the rollers and the outer ring by moving it back and forth (fig.17.). Do not push the feeler gauge by force through the clearance.
5. If the clearance is greater than 0,02–0,03 mm (0.0008 to 0.0012"), remove the washer by opening the bolt #5 and fold the tab of the securing ring #3 from the notch of the axle nut #4. The bearing is tightened by turning the axle nut #4 clockwise with a 70 mm or 2 $^3/_4$" hook spanner (fig.18.) until the right clearance is achieved. Do not tighten by hammering at the axle nut.
6. Turn the nut clockwise so that the notch lines up with the nearest tab and fold the tab over into the notch. Do not fold the same tab which has been folded earlier.
7. Mount the washer with the bolt #5 and replace the ring bushing #6.
8. Replace grease on the bearing.
9. Replace the top half of the pillow block bearing. Tighten the bolts to 50 Nm or 38 foot pounds.

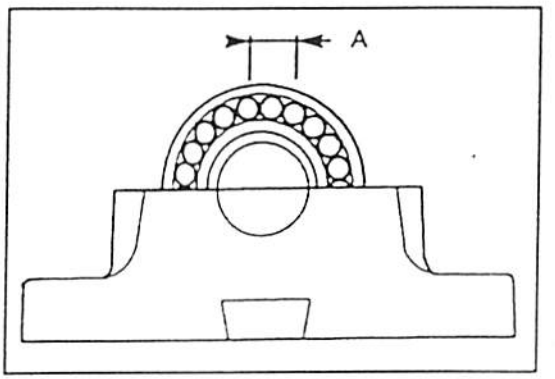

Fig.16. Push the feeler gauge between the rollers.

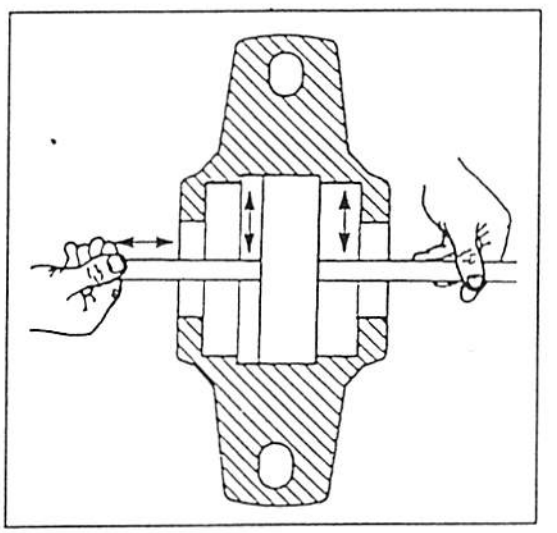

Fig.17. Measure the clearance by moving the feeler gauge back and forth.

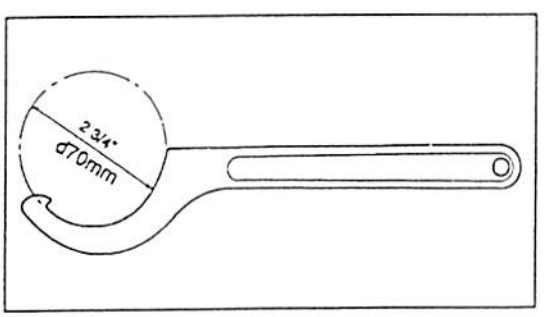

Fig.18. Tighten the bearing by turning the axle nut clockwise with a 2 $^3/_4$" hook spanner until the right clearance is achieved.

Lubricating and maintenance instructions

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10.6. CHANGING BELTS

If the belts are worn or damaged, they must be changed. The belts will stretch with use, so you must replace all of them at one time. Use industrial grade belts.

1. Open up the upper housing and turn it to the side
2. Remove the upper pulley assembly, weight 30 kg (66 lbs).
3. Remove the tops from both bearing housings. Do not remove the bearings which are fastened to the axle nor the lower part of the bearing housing, otherwise the disks axial position changes and you have to re-adjust the knives.
4. Lift up the disk; the disk weighs over 90 kg (200 lbs), so do not attempt to move it by hand.
5. Remove the belts and place your new belts on the lower pulley. BE CAREFUL NOT TO GET GREASE TO THE BELTS FROM THE BEARINGS!
6. Lower the disk so that the bearings go into their correct places.
7. Check the grease on the bearings (add if necessary) and replace the top half of the pillow block bearing. Tighten the bolts to 45 Nm or 38 foot pounds.
8. Replace the upper pulley assembly.
9. Put the belts in the grooves.
10. Tighten belts as described in chapter 10.7. "Tightening V-belts".

10.7. TIGHTENING THE V-BELTS

When using your machine for the first time, run the chipper for no more than two hours. Locate the idler on the left side of the pulleys. Check the belt tension.

New belts will stretch a lot and must be retightened after one and four hours of use.

To tighten the belts, loosen the locknut on the belt tightener (wrench size 3/4" or 19mm) and then turn the tightening bolt until the right tightness is reached, then tighten the locknut. See fig. 19.

The belts have the right tightness if you press on one belt with a force of 50N (15 lbs) and the belt moves 3-5 mm (1/8 inch). See fig. 20.

Run the machine another 3 to 4 hours. Re-check tension as above. After you have adjusted the belts about 3 or 4 times, all the stretch should be out of them. However, checking belt tension periodically is an important maintenance procedure.

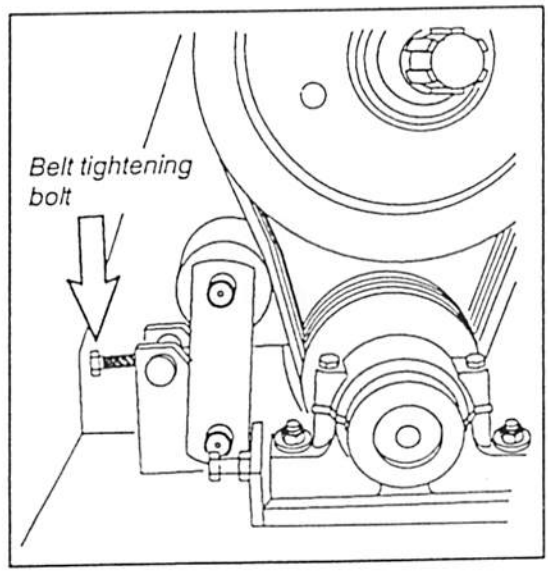


Fig.19. Tightening the belts.

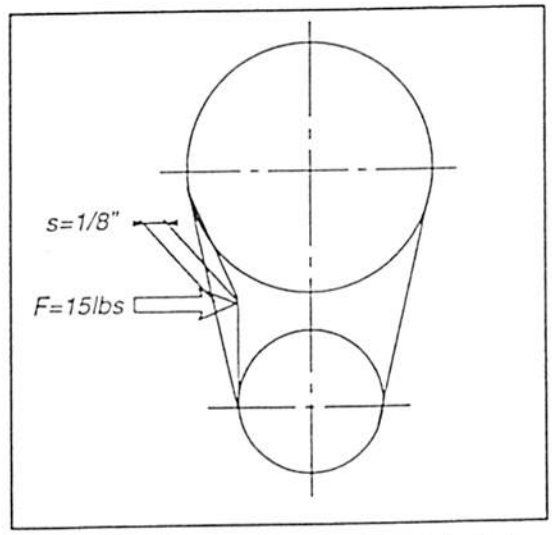
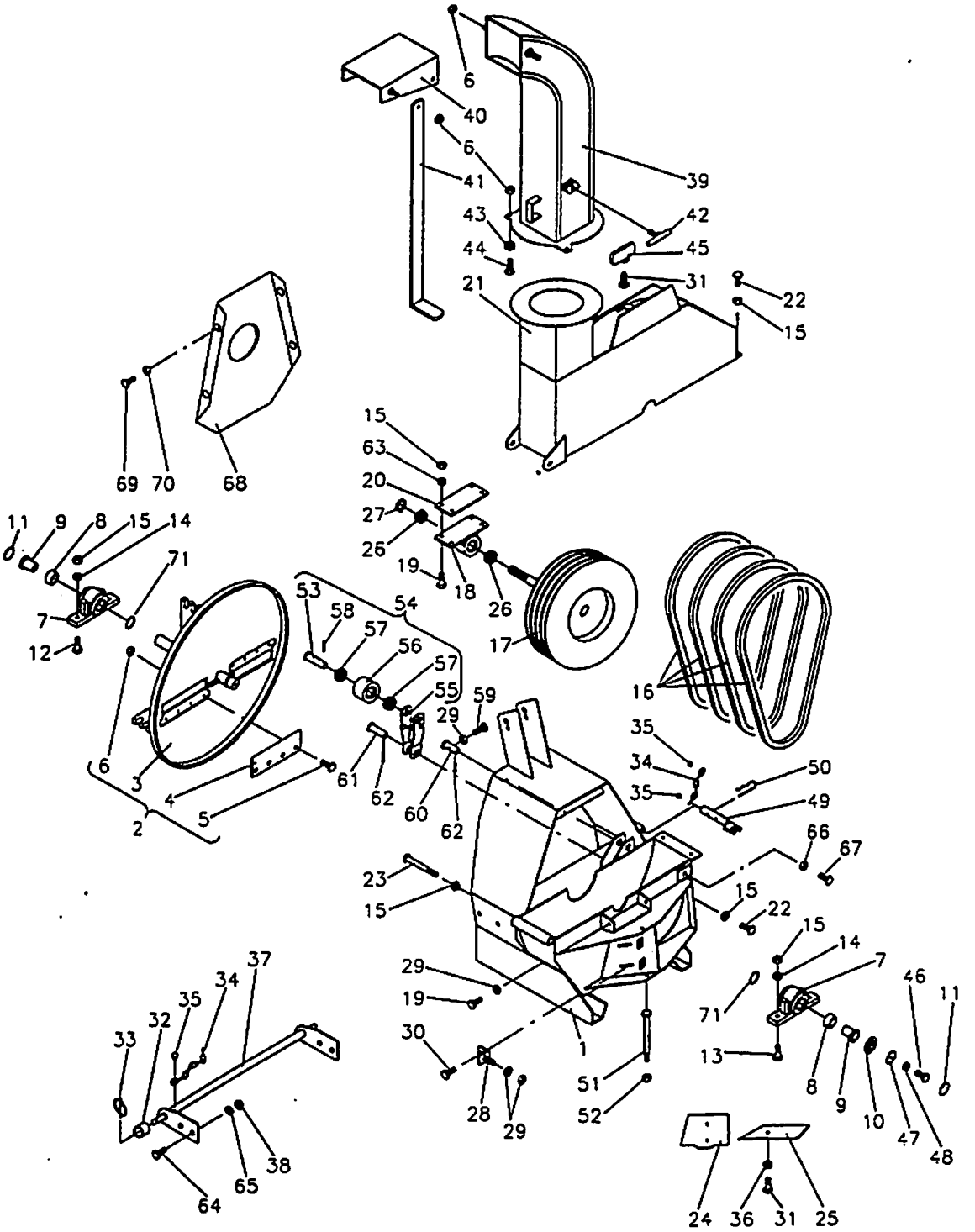


Fig.20. Checking the tightness of the belts.

Spare parts

CH150 Chipper

03340007



Spare parts

CH150 Chipper

03340007

Part	Order no.	Description	Remarks	Qty.
1.	13342134	Lower housing		1
2.	03340023	Disk, complete	incl. parts 3,4,5,6	1
3.	23340037	Disk		1
4.	43340041	Knife		2
5.	52060258	Bolt	M10 x 40 DIN 933	8
6.	52117108	Nut	M10 DIN 985	13
7.	54512355	Bearing housing	SNE 510 EC	2
8.	54512363	Roller bearing	22210 K	2
9.	54512371	Tightener sleeve	H–310	2
10.	54512389	Spacer ring	FRA–10/90	1
11.	54512397	End plate		2
12.	52062072	Bolt	M12 x 80 DIN 931	2
13.	52062056	Bolt	M12 x 60 DIN 931	2
14.	41215682	Washer		4
15.	52117124	Nut	M12 DIN 985	13
16.	54822382	V–belt		4
17.	23342546	V–belt pulley		1
18.	33342577	Bearing housing		1
19.	52062031	Bolt	M12 x 40 DIN 933	8
20.	43340421	Adjusting plate		1
21.	13340435	Upper housing		1
22.	52062023	Bolt	M12 x 30 DIN 933	4
23.	43340546	Bolt		1
24.	33341009	Vertical anvil		1
25.	33340993	Horizontal anvil		1
26.	54512140	Ball bearing	6209 2RS	2
27.	52230257	Circlip	45 x 2,5 DIN 471	1
28.	43291103	Anvil adjuster		2
29.	52110053	Nut	M12 DIN 934	9
30.	52062106	Bolt	M16 x 30 DIN 933	2
31.	52062098	Bolt	M16 x 25 DIN 93	2
32.	40293797	Sleeve		2
33.	52842150	Lynch pin	D10 L=45	2
34.	03291143	Chain		3
35.	52832045	Rivet	4,8 x 19	4
36.	43310499	Washer		1
37.	43341254	Draw bar		1
38.	52117207	Self locking nut	M20 DIN 985	4
39.	33340613	Discharge tube		1
40.	43340702	Deflector bonnet		1

Spare parts

CH150 Chipper

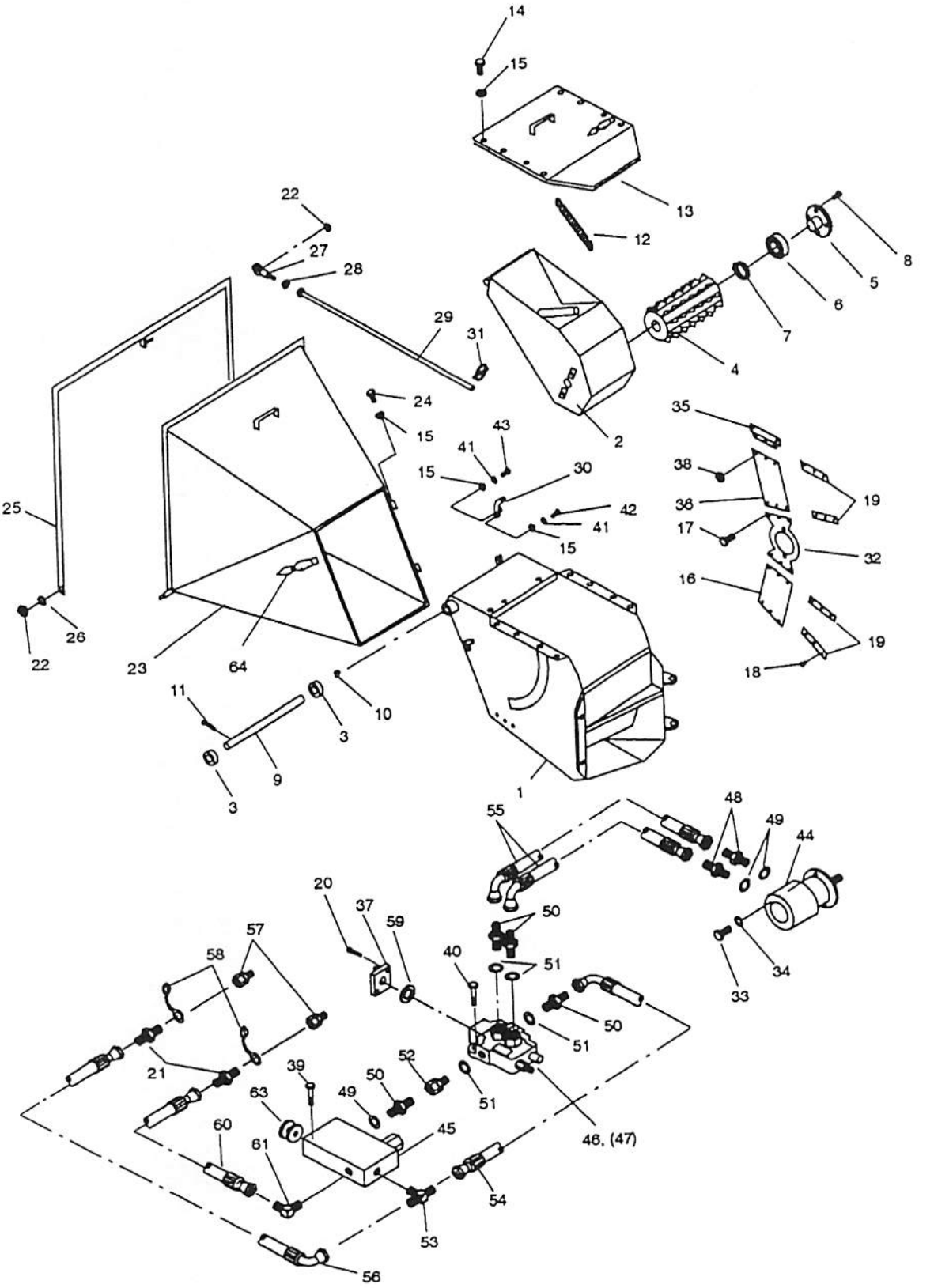
03340007

Part	Order no.	Description	Remarks	Qty.
41.	43340728	Rod		1
42.	43340736	Deflector control		1
43.	43340751	Roller		2
44.	52060241	Bolt	M10 x 35 DIN 933	2
45.	43340769	Wingnut		1
46.	52060233	Bolt	M10 x 35 DIN 933	1
47.	43340934	Axle end plate		1
48.	52211042	Spring washer	M10 DIN 127	1
49.	43340967	Disk lock		1
50.	52842143	Cotter pin	Ø5 x105	1
51.	52062791	Bolt	M16 x 220 DIN 931	1
52.	52117165	Nut	M16 DIN 985	1
53.	43341114	Pin		1
54.	43341064	Belt tightener, complete	incl. parts 53, 55–58	1
55.	43341072	Frame		1
56.	43341106	Roller		1
57.	54511134	Ball bearing	6005 2RS	2
58.	52840055	Spring washer		1
59.	52063658	Bolt	M12 x 120 DIN 933	1
60.	43341130	Tightener pin		1
61.	43341148	Pin		1
62.	52813086	Cotter pin		2
63.	52211059	Spring washer	M12	4
64.	52062213	Hex. screw	M20 x 40	4
65.	52211083	Spring washer	M20	4
66.	52110079	Nut	M16	1
67.	52062916	Screw	M16 x 60 DIN 933	1
68.	43342823	Belt shield		1
69.	52060126	Hex. screw	M8 x 20 DIN 933	4
70.	52117082	Lock nut	M8 DIN 985	4
71.	52332384	Seal	LP 45/45	2

Spare parts

HF150 Hydraulic feed chute

03341773



Spare parts

HF150 Hydraulic feed chute

03341773

Part	Order no.	Description	Remarks	Qty.
1	23341787	Frame		1
2	33341967	Roller holder		1
3	54561022	Plain bearing	MB 2015 DU	2
4	33342049	Feed roller		1
5	43313048	Roll fastener		1
6	54511340	Splined ball bearing	6207 2RS	1
7	52230067	Circlip	35 x 2,5 DIN 471	1
8	52090438	Screw	UK M10 x 20 DIN 7991	4
9	43342112	Shaft		1
10	52401015	Grease nipple	CR 1/8	1
11	52840204	Spring pin	5 x 40 DIN 1481	1
12	43342120	Spring	DS4,75 DU42 L=310	1
13	43342179	Cover		1
14	52060126	Screw	M8 x 20	8
15	52117082	Nut	M8 DIN 895	16
16	43342807	Protection rubber		1
17	52060381	Screw	M6 x 12 DIN 933	6
18	52832102	Draw rivet	4,8 x 15 Al	3
19	43291970	Support of protection rubber		4
20	52030087	Slotted screw	M5 x 20	2
21	52432069	Double nipple	R 1/2 – RK 1/2	2
22	52117108	Nut	M10 DIN 985	3
23	33342262	Extension piece		1
24	52060399	Screw	M8 x 80 DIN 931	2
25	43342336	Handle		1
26	52200045	Washer	M10 DIN 126	2
27	43342369	Adjusting plate		1
28	52110046	Nut	M10 DIN 934	1
29	43342385	Guide rod		1
30	43342401	Soccer lever		1
31	52842168	Lock pin	6,5	1
32	33291931	Fastening flange of motor		1
33	52062627	Screw	M12 x 50 DIN 931	2
34	52211059	Spring washer	M12 DIN 127	2
35	43342476	Rubber fastener		1
36	43342492	Protection rubber		1
37	54922372	Dust cover		1
38	52110020	Nut	M6 DIN 934	3
39	52060068	Screw	M6 x 50 DIN 933	2
40	52060159	Screw	M8 x 50 DIN 933	2

Spare parts

HF150 Hydraulic feed chute

03341773

Part	Order no.	Description	Remarks	Qty.
41	52200037	Washer	M8 DIN 126	2
42	52060092	Screw	M8 x 45 DIN 931	1
43	52063427	Screw	M8 x 35 DIN 933	1
44	56001035	Hydraulic motor	White HS24	1
44	56023823	Hydraulic motor	OMP315 from no: 3343158	1
44	56023989	Hydraulic motor	White HS15	(1)
45	56070832	Control valve	VRFC3770703	1
46	56050156	Valve (open)	HDM140 KO2-15VM-A02-L00	1
(47	56050164	Valve (closed)	HDM140 KO2-15VM-A02-L00	1)
48	52432051	Double nipple	R1/2 - R 1/2	2
49	52390200	Steel-rubber ring	21,5 x 28,7 x 2,5	3
50	52432010	Double nipple	R3/8-R1/2	4
51	52390556	Ring	U17,4 x 24,0 x 1,5	4
52	52435765	Connecting nipple	R3/8	1
53	52443132	T-nipple	RK1/2-R1/2	1
54	56526015	Hose assy.	K1/2"S l=0,3m	1
55	56526098	Hose assy.	K1/2"S l=0,7m	2
56	56526270	Hose assy.	K1/2"S l=2,2m	1
57	52449022	Quick coupling nipple	R1/2 (SK)	2
58	54922141	Plug		2
59	52357605	Gasget unit		1
60	56524275	Hose assy.	S1/2"S l=2,2m	1
61	52442365	Angle nipple	RK1/2-R1/2	1
62	52357902	Gasket unit	White 24	1
62	52357589	Gasket unit	OMP 315	1
62	52357894	Gasket unit	White 15	(1)
63	54924963	Knob		1
64	43342435	Lock		1

( ) = optional

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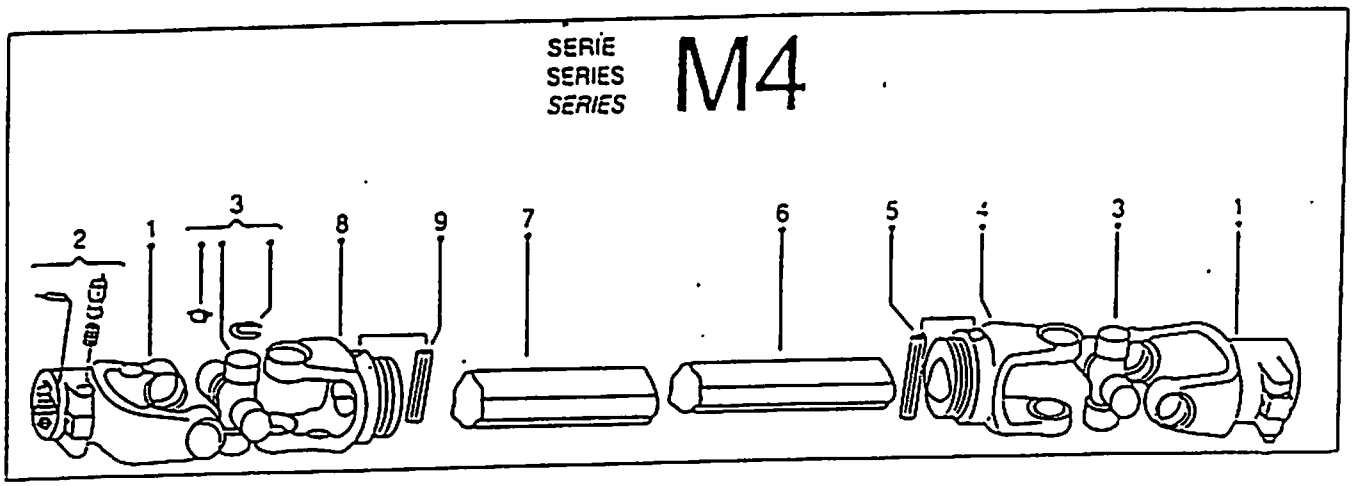

Pic	Part #	DESCRIPTION	Quan
1	8041	OUTER YOKE WITH QUICK COUPLER	2
2	1073	PUSH PIN SET	2
3	8081	CROSS	2
4	8115	INNER YOKE FOR INNER TUBE	1
5	4204	SPRING TENSION PIN FOR IT.	1
6	8105	INNER TUBE	1
7	8205	OUTER TUBE	1
8	8225	INNER YOKE FOR OUTER TUBE	1
9	8203	SPRING TENSION PIN FOR OT.	1
10	8263	PLASTIC RETAINING RING OT	1
11	8163	PLASTIC RETAINING RING IT	1
12	8091	SHIELD, COMPLETE	1
13	1000	CHAIN	1