CROMMELINS™
MACHINERY

CROMMELINS™ CHIPPER GTS700

OPERATION & INSTRUCTION MANUAL

Thank you for your selection of a CROMMELINS™ Chipper GTS700. This Operation Manual explains its use, installation, checking and maintenance. We highly recommend that you retain this manual for ready reference regarding proper handling of the CROMMELINS™ Chipper GTS700.

Spare Parts & Service
Phone: 1300 554 524
Freecall Fax: 1800 636 281
spareparts@crommelins.com.au
www.crommelins.com.au

Thank you very much for purchasing a CROMMELINS™ CHIPPER GTS700. This manual covers operation and maintenance of the CROMMELINS™ CHIPPER GTS700. This CROMMELINS™ CHIPPER GTS700 can be used by arbor industries, landscaping, councils, hire industries and general use.

Please take a moment to familiarise yourself with the proper operation and maintenance procedures in order to maximise the safe and efficient use of this product.

Keep this owner's manual at hand, so that you can refer to it at anytime.
Due to constant efforts to improve our products, certain procedures and specifications are subject to change without notice.

When ordering spare parts please have handy your products model number and serial number. Record these numbers in the boxes below for future reference.

MODEL NO.

SERIAL NO.

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1. SAFETY INSTRUCTIONS AND REGULATIONS REGARDING HEALTH AND SAFETY DURING OPERATION

1.1 Responsibility

- The GTS 700 wood chipper may only be operated by persons over eighteen years of age, who are familiar with the safety rules and the operation manual. First and foremost, users must be able to stop the machine immediately.
- Users are responsible for all damage caused to a third party.
- The GTS700 wood chipper is only to be used for the purpose mentioned in this instruction booklet. If the machine is used for any other purpose than described, the warranty and the responsibility of both the manufacturer and distributor will be null and void.
- The warranty will also be invalidated in the case of unauthorized intervention on the machine and whenever the safety instructions, as described in the following enclosures, are not followed.
- The user should be aware of the rules and regulations concerning the environment and noise levels. When using the GTS700 wood chipper it is necessary for the user to wear personal protective equipment against noise (ear protection). Wood chipping has to be stopped every hour for at least 15 minutes. During these intervals, which are necessary in order to avoid the user being exposed to too much noise, the user should not be exposed to noise.
- In case of professional use of the GTS700 wood chipper, the instructor must provide the user of the chipper with sufficient (written) instruction's to guarantee a safe use.

1.2 Instructions for safety during use

Users must wear heavy-duty footwear and appropriate, well fitting trousers. Safety goggles and hearing protection are mandatory. Do not wear loose clothes, or clothes with strings or ties. Long branches could lash into your face, so keep at a distance and always wear face protection. Wear gloves whenever dealing with the blades.
Defects must be corrected before use. Use only ORIGINAL spare parts for your own safety and validity of the warranty.

Check before every use at least the following:

- Loose bolts and nuts
- Damaged rubber flaps in the input tube – change them if they are damaged or worn.
- Oil level in the engine
- Cracks in the plating and/or failed welding
- Cracked or damaged wiring
- In-feed tube and rotor should be empty

- The user is responsible for the safety of all persons within a radius of 12m. Mark off an area at least 3 meters wide and 12 meters long on the output side. Use red/white ribbons for marking the danger zone.
- See that the machine stands horizontal and stands stable. The machine should not be used on a slope of more than 8.5 degrees.
- Do not allow processed material to build up in the discharge zone; this may prevent proper discharge and can result in kickback of material through the feed intake opening.
- The engine should only be run outdoors or in well-ventilated spaces. The smoke from the exhaust is very toxic and prolonged inhalation can be fatal.
- The fuel tank must be filled using a funnel (Fig.1), always in the open air or in a well-ventilated space, with the engine switched off and having cooled down. Fuel is highly flammable. Do not smoke or light a fire. Use only an approved container. Always replace and securely tighten the fuel cap after refueling.


Fig. 1

Fig. 2

- If fuel is spilled, do not attempt to start the engine, but move the machine away from the area of spillage before starting. Always clean up spilled fuel.
- Use only unleaded petrol (Fig.2).
- Place the machine in such a way that the exhaust fumes are blown away from the operator position. If needed move the machine.
- Do not operate the machine on a paved or gravel surface where ejected material could cause injury.
- Only operate the machine in an open space (e.g. not close to a wall or other fixed object).
- Never leave the machine unattended. If you leave the machine, stop the engine.
- Assemble the machine completely before use. Never use the machine without the in-feed or out-feed tube mounted on the machine. Always assemble the handle. All these parts assure that it is possible to work on a safe and easy way with the machine.
- If the blades hit a foreign object (anything except wood), or if the machine starts making unusual noises and/or shaking unusually, you must switch off the machine at once to stop the blades rotating. Switch off the engine and take the machine to the recommended dealer.
- Keep your face and body as far as possible from the input tube. While feeding the machine do not stand higher than the bottom of the wheels. Keep your balance and make sure your feet have grip on the soil. Do not bend forwards. Do not allow hands or any other part of the body or clothing inside the in-feed or out-feed tube. Stay away from moving parts.
- Replace warning signs if damaged or not sufficiently legible.
- It is prohibited to feed any other material into the machine (e.g. metal, stones, plastics or any other material) than those mentioned in the manual.
- Never put branches longer than 2m in the hopper. If needed cut the branches first. Never put branches with a diameter of more than 45mm in the machine.
- Do not use the machine in absence of light.

- Due to the vibrations of the machine it is possible that the machine moves. Always place the machine in a open area. Never put the machine next to an obstruction (tree, wall,…). Check the rubber feet under the support for damage each time you use the machine. If needed replace the rubber feet.
- Never move the machine when the engine is turning. Left over woodchips can be ejected out the conveyor.

1.3 Safety directions for use and maintenance

- Disconnect the spark plug wire before attempting to do maintenance on the machine.
- Wait until the engine is cooled down before attempting maintenance on the machine.
- The blades have to be sharp and well balanced.
- Never repair bent or damaged blades, but replace them. Always use ORIGINAL blades for your own safety!
- Do not perform maintenance in the absence of light.

1.4 Explanation of the stickers and safety symbols (Fig. 3)

Fig. 3

2. DESCRIPTION AND TECHNICAL SERVICE

2.1 Type description

Each GTS700 wood chipper is provided with a factory identification and serial number plate with the most important dates. You can find this plate on the chassis underneath the engine.

2.2 Service

This manual contains the instructions for the operation and basic maintenance of the GTS wood chipper. An authorised service dealer should carry out all other adjustments. It is advised to have the machine serviced once every year by an authorised service dealer.

2.3 Spare parts

Always use ORIGINAL spare parts, which are safe and guaranteed replacements.

2.4 Warranty

The warranty will be granted in accordance with the text on page 19 of this instruction manual.

3. GENERAL DESCRIPTION

The GTS700 is a wood chipper intended to shred all kinds of fresh cut wood with a diameter of maximum 45mm. It is also possible to shred roots, but the roots need to be cleaned from sand, earth, rocks or any other materials.
The machine consists out of an engine that propels a rotor. On the rotor there are two blades installed. Via a hopper (in-feed tube) the cut wood is introduced into the rotor where the material is shredded. The shredded material is then discharged via the conveyor (output tube). A deflector is installed on the conveyor to facilitate the position of ejected woodchips.
On the rotor housing one counter blade is installed.

4. ASSEMBLY INSTRUCTIONS

4.1 Assembly of the input tube

- Take the 4 M8 locking nuts and 4 rings (Fig. 4).
- Fit the holes on the hopper over the treaded ends on the rotor. The part of the hopper touching the rotor housing should slide into the rotor housing (Fig. 5).
- Put the rings on the threaded ends.
- Take a locking nut and tighten manually.
- Now tighten the nuts firmly. Start with the upper nuts first (Fig. 6).

IMPORTANT: Never re-use a locking nut. The locking nut prevents the bolts from loosening due to vibrations. The plastic inside the locking nut is damaged after use.


Fig. 4

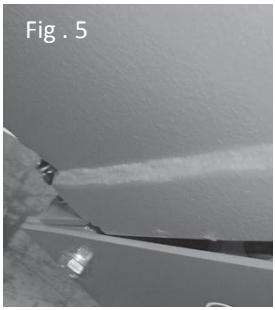


Fig . 5

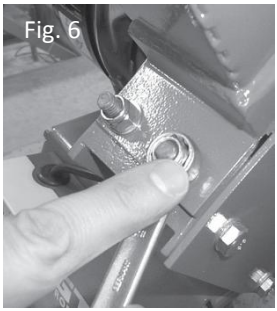


Fig. 6

4.2 Assembly of the handle

- Take the 2 M6x45 bolts, 4 rings and 2 M6 nuts (Fig. 7).
- Assemble the handle on the chassis (Fig. 8).
- Put a ring over the bolt.
- Put the bolt through the chassis and through the handle.
- Put the nut on the bolt (Fig. 9).
- Repeat these steps for the second bolt.
- Now tighten the bolts firmly.


Fig. 7

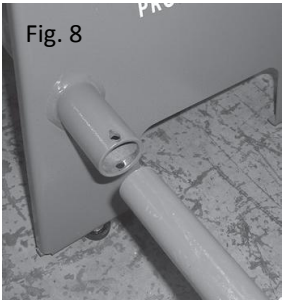


Fig. 8

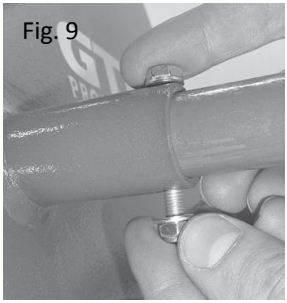
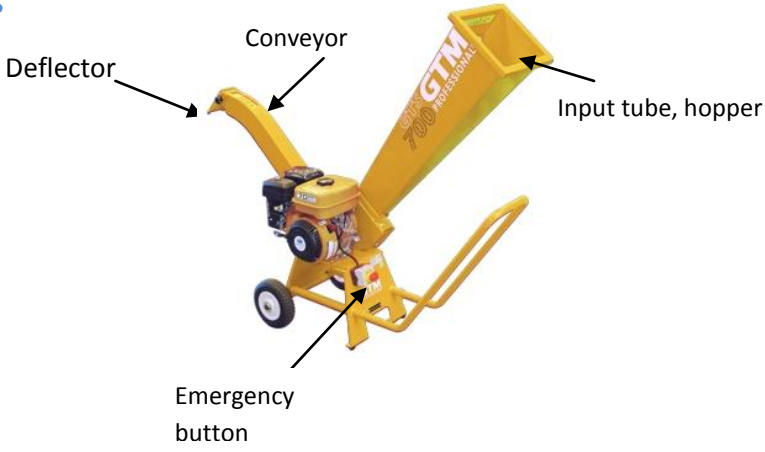


Fig. 9

5. CONTROLS



6. INSTRUCTIONS FOR USE

6.1 Preparation

Check that the machine is assembled according to the assembly instructions. Check following points before using the machine:

- No damage to the machine
- All bolts and nuts tightened firmly or according to specifications (e.g. blade bolts)
- Oil level of the engine (Oil should be at level with the threads of the filler hole)
- Emergency stop button connected correctly

Always respect the safety and environment instructions!

Before starting the machine, always check that there are no woodchips in the rotor. These chips can block the rotor, making it impossible to start the engine.

6.2 Starting the engine

Before starting the engine, execute following steps:

- Open the fuel valve.
- Close the choke handle.
- Open the throttle valve for 1/3.
- Verify that the emergency button is not active. (see chapter 6.5)
- Verify the position of the deflector. (see chapter 6.6)
- Put the on/off switch in the “on” position. (not applicable for electric start machines)

Pull the starter rope repeatedly to start the engine.
When the engine is running, push the choke handle back to the normal position. If you leave the choke handle open too long, you will flood the engine.
Let the engine run idle for at least 30 seconds before opening the throttle handle.
The machine is now ready for use.

Always start the machine idle (without load). Make sure that the input tube is empty and that there are no woodchips in the rotor.

6.3 Chipping/shredding

Put the branches (max 45mm) in the input until the wood chipper starts pulling the branches into the machine, release the branches. When shredding branches with a big diameter don't put too many in at once. Make sure the speed of the engine doesn't drop. If the speed of the engine should drop, pull the branches back and wait for the engine to get back on speed.
Cut side branches thicker than 20mm off from the main branch and feed them into the machine separately.
TIP: The hardness of the wood depends on the wood type, the time between pruning and chipping and how dry the branches are. The machine performs best if the branches are chipped right after pruning.

IMPORTANT: Check the torque of the blade bolts every two hours. If needed adjust the torque!

IMPORTANT: Never move the machine while the engine is running. Left over woodchips can be ejected during this action. Always stop the engine before moving the machine.

6.4 Stopping the machine

Make sure the machine is completely empty before stopping the engine. After feeding the last branch into the machine, let the machine turn for a couple of minutes. Then you can switch the machine off using the on/off switch.

Use the emergency button in case of unexpected situations.

6.5 Emergency stop button

The emergency stop button is situated on the chassis on the side of the in-feed. The button can be operated by foot or hand (Fig.10). Push the emergency stop button by pressing the button. The engine will stop immediately.
To release the emergency stop button, turn the red button. Within half a turn, the button is released and it will be possible to start the machine again.


Fig. 10

6.6 Deflector

The deflector guides the woodchips so they end up on a pre defined place. The angle of the deflector can be changed by the wing nut.

Never stand in front of the output of a wood chipper when the engine is turning.

6.7 Blocking of the rotor

It is possible that the rotor blocks because the rotor was not empty before stopping the engine or the emergency push button was pressed (leaving woodchips inside the rotor) or because the engine has stopped due to overloading the chipper with too many branches, etc.

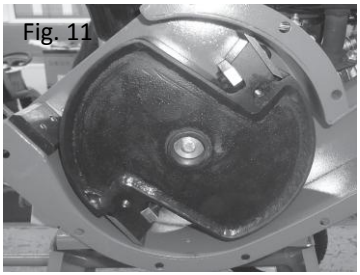


Fig. 11

To de-block the motor, follow these steps:

Put the on/off switch in the “off” position and remove the starter plug cap. Remove the input and output tubes. Clean the openings from left over woodchips. Pull the starter rope gently to rotate the rotor. Remove all woodchips before trying to start the engine again.

If it is not possible to clean the rotor completely, a more involved approach is needed:
Remove the bolts from the rotor housing to get access to the rotor.
Remove all woodchips (Fig.11).

Use a branch or a tool to remove the woodchips between the blades. Never use your hands. Be careful! The blades are very sharp and can cause serious injuries.

Always check the blades after a jam. Replace the blades immediately when damaged. Using damaged blades is very dangerous.

6.8 Blocking of conveyor

When too much wet material is put into the input, it is possible that the conveyor jams.
To empty the conveyor, follow these steps:
Put the on/off switch in the “off” position and remove the starter plug cap.
Disassemble the conveyor tube from the machine and remove all the material inside the output tube. Remove all the material on top of the rotor. Also remove the material inside the rotor to prevent the machine from blocking during start up.

Use a branch or a tool to remove the woodchips between the blades. Never use your hands.

7. MAINTENANCE

Before you start any maintenance activities, always take following precautions:

- Stop the engine and let the engine cool down, then remove the start plug cap.
- If the machine is equipped with an electrical start system, remove the key from the contact and disconnect the battery.

The GTS700 consists out of parts with a weight over 20kg. Never lift these parts alone. Ask someone to help you lift these parts.

7.1 Cleaning

We suggest cleaning the machine after every use. Remove woodchips and dust from the machine using a soft brush.

Never use high pressure water to clean the machine.

7.2 Verification of the emergency stop button

Start the machine as described earlier. Do not put any material in the input (hopper). Push on the emergency button. The machine should stop. Release the emergency button as described in chapter 6.5. It is now possible to start the machine again.

7.3 Replacing the blades

Replacement of the blades should only be performed by an authorised service dealer.

The blades are dull when the material isn't pulled into the machine anymore. The blades should be replaced. The blades are sharp on both sides, so you can turn the blades around and use the other side of the blade. When this side becomes dull, a new pair needs to be installed or the blades can be sharpened.

To replace the blades, follow the steps below:

- Remove the hopper and conveyor.
- Pull in the starter rope until you can see the blades through the input port on the rotor housing (Fig.12).
- Remove the cap on the side of the rotor house. When looking through the hole, the side of the rotor is visible. Locate the screw on the blade holder. Loosen this screw until it sticks through of the rotor housing. This screw is now preventing the movement of the rotor.
- Verify that the rotor is blocked by pulling the starter rope once more, the rotor should not turn.
- Now it is safe to remove the bolts and the blade.
- To unlock the rotor, tighten the screw which locks the rotor.

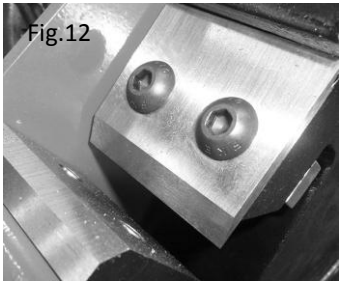


Fig.12

Always use gloves when handling the blades.

- Now repeat these steps to remove the second blade.

- In case of turning the blades, clean the blade thoroughly. No dirt should be on the bottom or top side of the blade.
- Clean the surface of the rotor where the blades should be mounted. These surfaces should be spot clean.
- Before mounting the blades on the rotor, inspect the blades for damages. Never install damaged blades. In case of damaged blades and/or doubt, contact your service dealer.
- Now the blades can be mounted on the rotor. Don't forget to block the rotor!
- Tighten the bolts firmly using a torque wrench. Attention: Before assembling the bolts, put a little loctite243 on the screws. Put the torque to 80Nm.
- When finished handling the blades, unlock the rotor by tightening the screw which locks the rotor. Don't forget to replace the cap on the side of the rotor housing.
- After installing the blades, check the gap between the blades and the counter blade. The gap should be no smaller than 0.5mm and not bigger than 0.95mm. The best way to check the gap is when the counter blade is in the middle of the grinded surface of the blade.

This adjustment is very critical for the good operation of the machine. If you experience any trouble during this procedure, contact your service dealer.

- When the distance between the blades is not according the above mentioned distances, the counter blade needs to be adjusted. Un-tighten the bolts from the counter blade, do not remove the bolts completely, just un-tighten them a bit. Adjust the position of the counter blade and check the distance between the blades. When the gap is according to specifications, tighten the bolts. Check the gap once more. Now tighten the bolts from the counter blade to a torque of 50Nm using a torque wrench.

  When both sides of the blades are dull, the blades can be sharpened again.

Always ask an experienced technician to sharpen the blades.

Don't sharpen a damaged blade. Using damaged blades can lead to dangerous situations.

Never use a grinder that doesn't guarantee a straight sharp edge. Never use a grinder that can change the alloy (soak out iron)

When grinding, the angles of the sharp side of the blades should be respected. See figure 13.

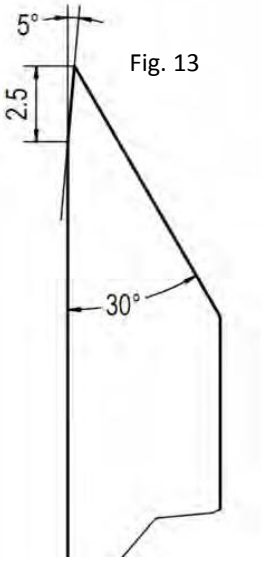


Fig. 13

When the blades have been sharpened again, and they are mounted onto the machine, make sure the blade bolts don't touch the counter blade. In case of doubt, replace the blade with a new one.

- When finished handling the blades, unlock the rotor by tightening the screw which locks the rotor. Don't forget to replace the cap on the side of the rotor housing.

7.4 Replace motor oil

Please refer to Subaru EX21 engine user manual.

7.5 Engine maintenance

Please consult the engine manual of the engine manufacturer.

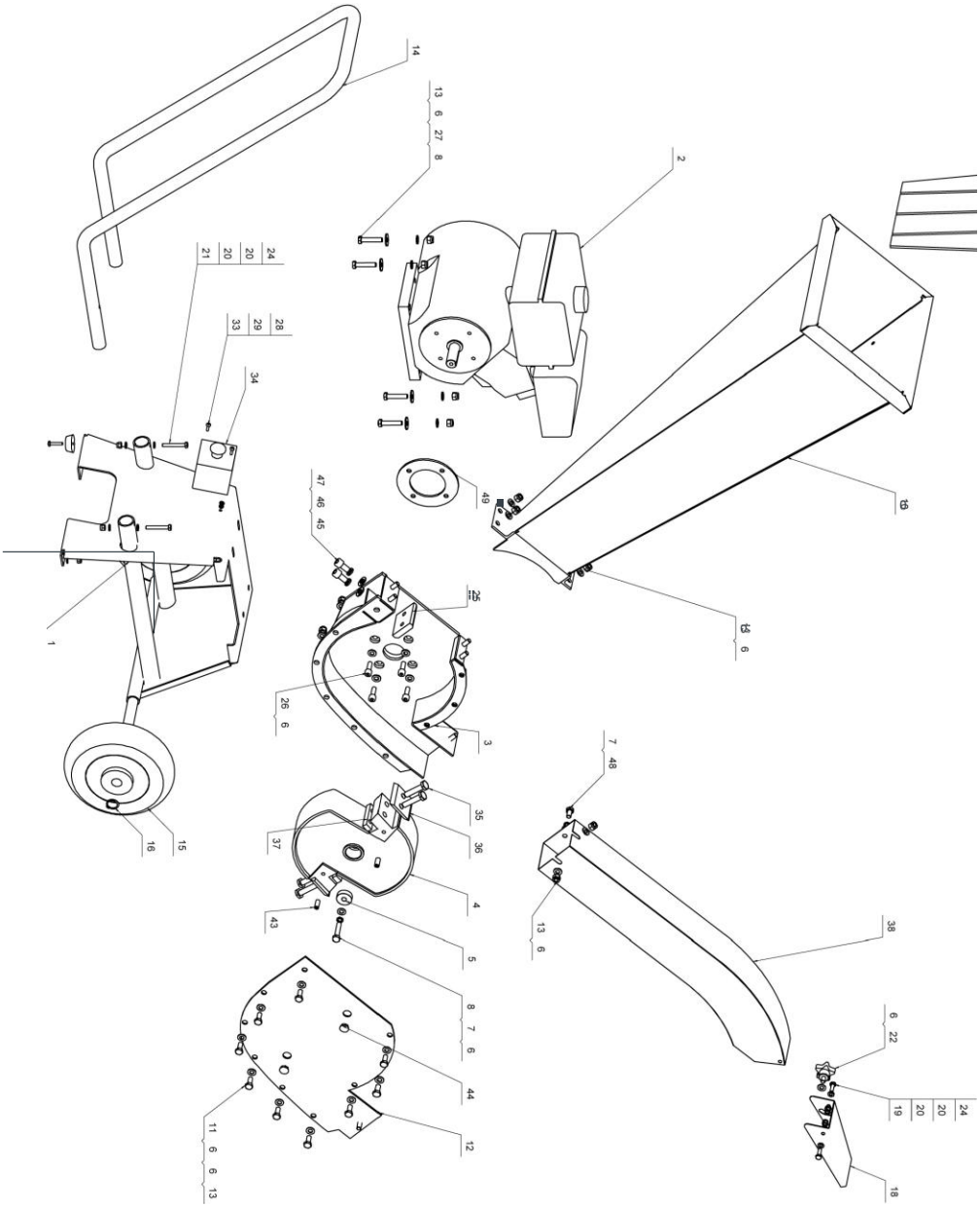
8. TECHNICAL SPECIFICATIONS

Type	GTS700
Engine	Subaru EX21D OHC 4 stroke petrol engine
Starter	Recoil
Displacement	211 cc
Power	7hp, 5.1kw
Fuel	Unleaded
Fuel tank capacity	3.2L
Oil sensor	Yes
Max. Diameter branches	45mm
Input:	
Input height	1.2m
Input dimensions	30 x 26cm
Output:	
Output height	75cm
Output direction	Back
Deflector	50 degrees adjustable
Emergency stop	Yes
Diameter wheels	20cm
Blades	2 + 1 counter blade
Dimensions (LxWxH)	165 x 50 x 140cm
Weight	58kg
Declared time – averaged emission sound pressure level A at work station	L pA,d = (102+4) dB (according to EN ISO 11201, work mode – according to EN 13683+A2)
Declared peak emission sound pressure level C – L pC,peak at work station	L pC, peak, d = (131+4) dB (according to EN ISO 11201, work mode – according to EN 13683+A2)
Guaranteed sound power level A	L WA, G = 115 dB (measurement and work mode by 2000/14/ES, annex III, part B, item 50)

9. TROUBLE SHOOTING TABLE

PROBLEM	CAUSE	SOLUTION
The wood chipper does not perform properly: the wood is not pulled in by the rotor itself. The chips do not have the same size	- The blades are worn too much - The diameter of the branches inserted into the machine is too large - The gap is too big between the fixed blade and the counter blade.	- Reverse, sharpen or change the blades (chapter 7.3) - Remove branches thicker than 45mm - Adjust the gap between fixed blade and counter blade: the correct gap is between 0.5mm and 0.95mm. (see chapter 7.3)
The engine does not start/the engine shuts off by itself	- Electrical problem with the engine - No fuel - No or not enough oil in the engine	- Check that the start-switch on the engine is on “on”. - Check if the emergency switch is de-activated. - Check oil and fuel levels (the oil should be at level with the threads of the filler hole). - If necessary: contact your dealer
The machine jams during use. The engine will not start/turn because the rotor is jammed	- The diameter of the branch is too big - There are unacceptable materials such as stones or metal in the input tube	- Check that the diameter of the branches is not more than 45mm - Check chapter 6.7 for an explanation on how to unblock the rotor.
The machine does not throw out chips any more. The output tube is jammed	- Too much wet material (leaves, grass, rotten material) has been fed into the machine	- Check chapter 6.8 for an explanation on how to unblock the conveyer.

10. PARTS DIAGRAM



11. PARTS LIST

PART NO.	ARTICLE NUMBER	NAME	QTY
1	M02-0082000-02	Frame	1
2	EX21D	Subaru EX21D	1
3	M03-0188000-02	Shredder box	1
4	M03-0189000-02	Rotor	1
5	M01-0088000-01	Spacer	1
6	S04-0M0816P-IR	Washer 8	35
7	S04-0M0815L-IR	Spring washer 8	2
8	S01-M08040N-FN	Bolt M8*40	5
10	M03-0194000-03	hopper	1
11	S01-M08020N-FN	bolt M8*20	9
12	M03-0192000-02	Shredder box plate	1
13	S03-M08000L-0N	Nut M8	19
14	M02-0083000-02	Frame handle	1
15	C05-R082006-01	Wheel	2
16	S09-O200000-00	Circlips 20	2
18	M03-0195000-03	Deflector	1
19	S01-M06020N-FN	bolt M6*20	5
20	S04-0M0616P-IR	Washer 6	14
21	S01-M06045N-PN	Bolt M6*45	2
22	S01-M08012S-PN	Star head bolt M8*12	1
24	S03-M06000L-0N	Nut M6	7
25	M03-0190000-04	Counter blade	1
26	S01-M08025J-FN	Bolt	4
27	S04-0M0824P-IR	Washer 8 (large)	4
28	S03-M04000N-0N	nut M4	2
29	S04-0M0408P-IR	Washer M4	2
30	M03-6020000-01	Rubber holder	1
31	M03-6021000-01	Rubber holder	1
32	M05-0025000-02	Hopper Rubber	1
33	S01-M04014R-FN	Screw M4*14	2
34	E02-SPCOE01-01	Emergency switch	1
35	S01-M10045X-FN	Special bolt for blade	4
36	M03-6018000-02	Blade	2

12. PARTS LIST CONT...

PART NO.	ARTICLE NUMBER	NAME	QTY
37	M03-0189003-01	Plate	2
38	M03-0193000-03	Conveyer	1
39	S01-M05020R-FN	Screw M5*20	2
40	S04-0M0510P-IR	Washer 5	2
41	S03-M05000L-0N	Nut M5	2
42	S21-0001000-01	Rubber cushion	2
43	S01-M08020J-FS	Screw	2
44	M05-0049000-01	Pluge	2
45	S01-M10020J-FN	Screw M10 x 20	2
46	S04-0M1016L-IR	Spring washer 10	2
47	S04-0M1020P-IR	Washer 10	2
48	S01-M08016N-FN	Bolt M8 x 16	1
49	M03-6019000-01	Disc plate	1

13. WARRANTY

Consult the CROMMELINS Machinery warranty leaflet (supplied with your new product) for full details and a list of service dealers for this product, also available online at www.crommelins.com.au