



SC12 Owner's Manual



BILLY GOAT SOD CUTTER **Operator's Manual** SC121H



SC12 Operator's Manual

ABOUT THIS MANUAL

THANK YOU for purchasing a BILLY GOAT® Sod Cutter. Your new machine has been carefully designed and manufactured to provide years of reliable and productive service. This manual provides complete operating and maintenance instructions that will help to maintain your machine in top running order. Read this manual carefully before assembling, operating, or servicing your equipment.

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Go to <http://www.billygoat.com> for French-Canadian translations of the product manuals.

Visitez <http://www.billygoat.com> pour la version canadienne-française des manuels de produits



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SERIAL PLATE DATA

Record the model number, serial number, date of purchase, and where purchased.

Purchase Date: _____

Purchased From: _____

BILLY GOAT INDUSTRIES, INC.
 1803 S.W. Jefferson
 Lee's Summit,
 MO 64082 USA
 Tel (816) 524-9666
 Fax (816) 524-6983

Model: Serial No.:

Unit(Weight): lbs. kg Engine Power: kW rpm

Specifications

SC121H

Engine: HP	5.5 HP (4.1 kw)
Engine: Model	GX160K1QX2
Engine: Type	Honda
Engine: Fuel Capacity	3.88 qt. (3.6 L)
Engine: Oil Capacity	0.69 qt. (0.65 L)
Total Unit Weight:	160# (73 Kg)
Max. operating slope	20°
Overall length	30" (780mm)
Overall width	16.5" (420mm)
Overall height	24" (610mm)
In accordance with 2000/14/EEC	106dBa
Sound at operators position	86dBa
Vibration at operator position	.8g

SAFETY



WARNING



This product can expose you to chemicals including gasoline engine exhaust, which is known to the State of California to cause cancer, and carbon monoxide, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.



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GENERAL SAFETY INSTRUCTIONS AND SYMBOLS

The safety symbols shown below are used throughout this manual. You should become familiar with them before assembling, operating, or servicing this equipment.



WARNING: This symbol indicates important information that will prevent injury to yourself or others.



This symbol indicates ear protection is recommended when operating this equipment.



This symbol indicates eye protection is recommended when operating this equipment.



This symbol indicates gloves should be worn when servicing this equipment.



This symbol indicates that this manual and the engine manufacturer's manual should be read carefully before assembling, operation, or servicing this equipment.



CAUTION: This symbol indicates important information that will prevent damage to your BILLY GOAT[®] Sod Cutter.



This symbol indicates the engine oil level should be checked before operating this equipment.

Read and make sure you thoroughly understand the following safety precautions before assembling, operating or servicing this equipment:



READ this manual and the engine manufacturer's manual carefully before assembling, operating, or servicing this equipment.



EAR PROTECTION is recommended when operating this equipment.



EYE PROTECTION is recommended when operating this equipment.



BREATHING PROTECTION is recommended when operating this equipment.



WARNING: **EXHAUST** from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

DO NOT operate this equipment on any unimproved forested, brushy, or grass covered land unless a spark arrester is installed on the muffler as required by Section 4442 of the California Public Resources Code. The arrester must be maintained in good working order. Other states may have similar laws. Federal laws apply on federal lands.

DO NOT run engine in an enclosed area. Exhaust gases contain carbon monoxide, an odorless and possibly fatal poison.



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⚠ WARNING: IMPORTANT! This cutting machine is capable of amputating hands and feet and throwing objects. Failure to observe the following safety instructions could result in serious injury or death.

- ⚠ WARNING:**
- ⊘ DO NOT** run this equipment indoors or in any poorly ventilated area. Refueling outdoors is recommended.
 - ⊘ DO NOT** refuel this equipment while the engine is running. Allow engine to cool for at least two minutes before refueling.
 - ⊘ DO NOT** store gasoline near an open flame.
 - ⊘ DO NOT** remove gas cap while engine is running.
 - ⊘ DO NOT** start or operate engine if strong odor of gasoline is present.
 - ⊘ DO NOT** start or operate engine if gasoline is spilled. Move equipment away from spill until gasoline has completely evaporated.
 - ⊘ DO NOT** smoke while filling the fuel tank.
 - ⊘ DO NOT** check for spark with spark plug or spark plug wire removed. Use an approved spark tester.
 - ⊘ DO NOT** operate engine without a muffler. Inspect muffler periodically and replace if necessary. If equipped with muffler deflector, inspect deflector periodically and replace if necessary.
 - ⊘ DO NOT** operate engine with grass, leaves or other combustible material near the muffler.
 - ⊘ DO NOT** touch muffler, cylinder, or cooling fins when hot. Contact with hot surfaces may cause severe burns.
 - ⊘ DO NOT** leave equipment unattended while in operation.
 - ⊘ DO NOT** park equipment on a steep grade or slope.
 - ⊘ DO NOT** operate equipment with bystanders in or near the work area.
 - ⊘ DO NOT** allow children to operate this equipment.
 - ⊘ DO NOT** operate equipment with guards removed.
 - ⊘ DO NOT** operate equipment near hot or burning debris or any toxic or explosive materials.
 - ⊘ DO NOT** operate equipment on slopes greater than specified in Specifications section of this manual.
 - ⊘ DO NOT** operate barefoot or wearing open sandals. Always wear substantial footwear
 - ⊘ DO NOT** place hands or feet underneath unit, or near any moving parts.
 - ⊘ DO NOT** pull backwards unless absolutely necessary
 - ⊘ DO NOT** operate the Sod Cutter while under the influence of alcohol or drugs.
 - ⊘ DO NOT** use near drop-offs, ditches, or embankments. The operator could lose footing or balance
 - ⊘ DO NOT** use on excessively steep slopes.
 - ⊘ DO NOT** ride or climb on the machine while in operation.
 - ⊘ DO NOT** change the engine governor setting or overspeed the engine.
- ALWAYS** be sure of your footing; keep a firm hold on the handle and walk; never run.
- ALWAYS** Stop the blade(s) when crossing gravel drives, walks, or roads.
- ALWAYS** Shut the engine (motor) off and wait until the blade comes before servicing.
- ALWAYS** use only in daylight or good artificial light.
- ALWAYS** Disengage the drive lever and blade lever before starting the engine.
- ALWAYS** wear safety goggles or safety glasses with side shields
- ALWAYS** remove spark plug wire when servicing equipment to prevent accidental starting.
- ALWAYS** check fuel lines and fittings frequently for cracks or leaks. Replace if necessary.
- ALWAYS** store fuel in approved safety containers.
- ALWAYS** wear proper foot apparel when mowing.
- ⚠ WARNING: Important**
- Remove all rocks, wire, string, etc. that can present a hazard during work prior to starting.
- ⚠ DO** identify and mark all fixed objects to be avoided during work such as sprinkler heads, water valves, limbs, or clothes line anchors, etc.



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SOUND



L_{WA}

SOUND LEVEL 86 dB(a) at Operator Position

106 dB(a)

Sound tests were conducted in accordance with 2000/14/EEC, and were performed on 9-13-04 under the conditions listed below.

⚠ Sound power level listed is the highest value for any model covered in this manual. Please refer to serial plate on the unit for the sound power level for your model.

General Conditions:	Sunny
Temperature:	69°F (21°C)
Wind Speed:	10 mph (16.1 kmh)
Wind Direction:	West
Humidity:	56%
Barometric Pressure:	30.16 Hg (102.13 kpa)

VIBRATION DATA

VIBRATION LEVEL .8 g (7.8m/s²)

Vibration levels at the operator's handles were measured in the vertical, lateral and longitudinal directions using calibrated vibration test equipment. Tests were performed on 9-13-04 under the conditions listed below.

General Conditions:	Sunny
Temperature:	69°F (21°C)
Wind Speed:	10 mph (16.1 kmh)
Wind Direction:	West
Humidity:	56%
Barometric Pressure:	30.16 Hg (102.13 kpa)

INTENDED USE

INTENDED USE: This machine may only be utilized for the purpose for which it was designed, i.e. to cut 30cm-wide strips of turf. Make sure that all operators of this equipment are trained in general machine use and safety.

WARNING: During operation the lawn and turf are cut into strips. Should the cutter's wheels skid during use it is advisable to adjust the cutting height using the special lever (Fig. 3, ref.A). If this operation does not prevent this occurrence check the state of the terrain. If it is too dry it should be wetted so that the blade encounters a slight resistance, thus making cutting operations easier.



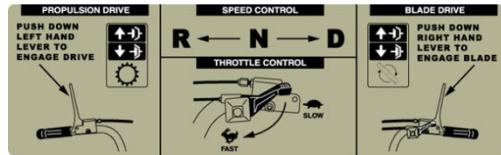
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INSTRUCTION LABELS

The labels shown below were installed on your BILLY GOA[®] Sod Cutter. If any labels are damaged or missing, replace them before operating this equipment. Item numbers from the Illustrated Parts List and part numbers are provided for convenience in ordering replacement labels. The correct position for each label may be determined by referring to the Figure and Item numbers shown.



LABEL DANGER KEEP HANDS AND FEET AWAY
P/N 400424



LABEL CONTROLS INSTRUCTION SC121
P/N 370405



LABEL WARNING GUARDS
P/N 900327

LABEL INSTRUCTION
P/N 370300

OPERATING INSTRUCTIONS

SOIL SHOULD BE DAMP WHEN CUTTING SOD.

1. LOWER CUT HEIGHT ADJUSTMENT LEVER TO DESIRED DEPTH. THIS WILL RAISE THE REAR WHEELS OFF OF THE GROUND.
2. MOVE TRANSMISSION SHIFT LEVER INTO DRIVE POSITION
3. ENGAGE CUTTING BLADE HAND CONTROL AND ALLOW BLADE TO CUT INTO THE TURF UNTIL THE REAR WHEELS ARE RESTING ON THE GROUND.
4. ENGAGE THE WHEEL DRIVE HAND CONTROL TO BEGIN FORWARD MOTION.
5. RELEASE BOTH HAND CONTROLS TO STOP THE CUTTER AT THE END OF THE CUT.
6. RAISE THE BLADE DEPTH CONTROL TO LIFT THE BLADE OUT OF THE GROUND.
7. ENGAGE BOTH HAND CONTROLS TO ALLOW THE BLADE TO CUT THROUGH THE SOD.

READ OWNERS MANUAL BEFORE OPERATING.

USE PERSONAL PROTECTION

NOT FOR PRODUCTION



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PACKING CHECKLIST

Your Billy Goat Sod Cutter is shipped from the factory in one crate, completely assembled except for the handles and controls.



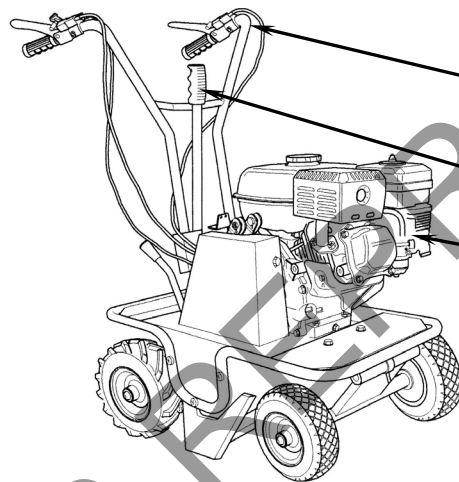
READ all safety instructions before assembling unit.
TAKE CAUTION when removing the unit from the box.



PUT OIL IN ENGINE BEFORE STARTING

PARTS BAG & LITERATURE ASSY

Warranty card P/N- 80102772, Owner's Manual P/N-370505.



Boxing Parts Checklist

- Upper handle assembly
- Shifter
- Honda 5.5 HP engine

ASSEMBLY

The turf cutter is delivered with the handlebars and the end part of the cutting height adjustment lever disassembled. Remove the cardboard packaging (to be disposed of in an appropriate manner, in accordance with current regulations in force).

To assemble proceed as follows:

-Lift the handlebar (Fig. 3 Ref. C) and insert it in the supports shown in Fig. 3 ref. E. Select the required cutting height and secure the setting using the screws provided (Fig. 3 ref. D).

-Fit the end part of the cutting height adjustment lever (Fig. 3 Ref. A) into its relative support (Fig. 3 ref. F) and secure using the screw provided (Fig. 3 Ref.B)

Before switching on ensure that the machine has been fully assembled correctly.

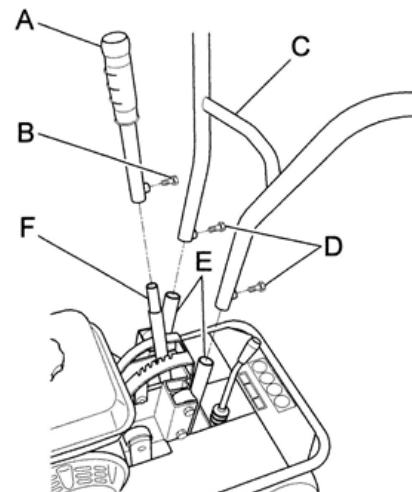


Fig. 3



OPERATOR CONTROLS

A) BLADE CLUTCH CONTROL LEVER

This is used to engage and disengage the blade movement. Lowering the lever engages the clutch and releasing it disengages the clutch.

WARNING

The blade will continue to move if the engine is running and the blade clutch is engaged, regardless of the position of the forward clutch.

B) ACCELERATOR CONTROL LEVER

This is used to adjust the number of engine revolutions according to the operations to be carried out. Hence at switch on the lever will be positioned on the minimum setting whilst during work operations it will be positioned as required by use.

C) FORWARD CLUTCH CONTROL LEVER

This lever only has two positions: engage and disengage. Lowering the lever engages the clutch and releasing it disengages the clutch. This lever automatically operates the service brake: when released the lever engages the brake, when engaged the lever disengages the brake

D) CUTTING HEIGHT ADJUSTMENT LEVER

This lever serves to adjust the cutting height according to the type of terrain and the thickness of the turf to be cut. (Fig.2 Ref. A)

F) COVER

The cover (Fig. 1, ref. F) prevents any contact with the moving parts of the machine. Use of the machine without the said cover is strictly prohibited.

I) ON SWITCH

Three-position switch:
(1) for starting the engine
(0) for switching off the engine

L) FORWARD-NEUTRAL GEAR SELECTOR LEVER

This lever selects the gears (1st or 2nd speed) or neutral.

WARNING: Select the required gear only after disengaging the forward clutch by releasing the relative lever (fig. 1, ref. C).

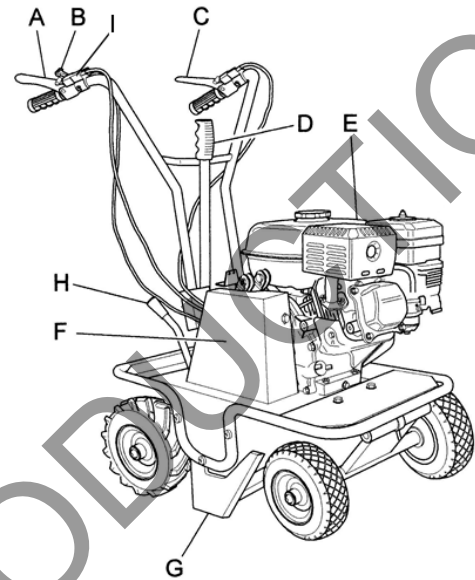


Fig. 1

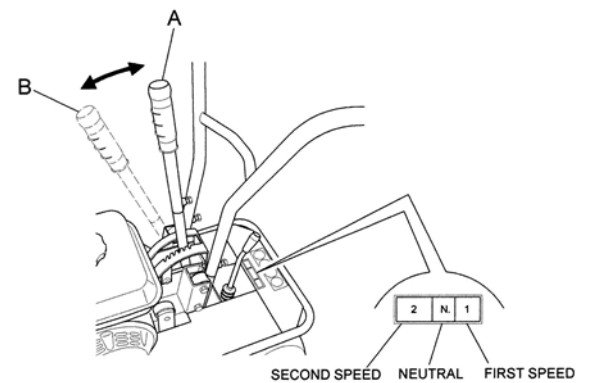



Fig. 2



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OPERATION

 Like all mechanical tools, reasonable care must be used when operating machine. **Inspect machine work area and machine before operating. Make sure that all operators of this equipment are trained in general machine use and safety.**

 **PUT OIL IN ENGINE BEFORE STARTING**

STARTING

 **ENGINE:** See engine manufacturer's instructions for type and amount of oil and gasoline used. Engine must be level when checking and filling oil and gasoline.

ENGINE SPEED: Controlled by throttle lever on engine.

FUEL VALVE: Move fuel valve to "ON" position.

CHOKE: Found on engine above fuel on switch.

THROTTLE: Adjust at engine. Pull starting rope to start engine.

FORWARD CONTROL AND BLADE MOVEMENT LEVERS


When released both of these levers instantly disengage the transmission connected to them. In this way they act as safety devices.


In the instance of difficulty or sudden emergency, the quick release of these levers will return them to their standard position (raised).

1. Select desired cutting height before starting engine.
2. Be sure drive lever or blade lever are not engaged.
3. Choke if necessary.
4. Pull back on starter rope slowly until resistance is felt. Then pull cord rapidly to start. Repeat if necessary.


Do not operate if excessive vibration occurs. If excessive vibration occurs, shut engine off immediately and check for damaged or worn blade, loose blade bolts, loose engine or lodged foreign objects.

HANDLING & TRANSPORTING:


 Using two people to lift machine is recommended. Lift holding the frame and the upper handle. Secure in place during transport.

 Never lift the machine while the engine is running. **ENGINE MUST BE OFF** while handling, lifting, or transporting the unit on or off the vehicle.

STORAGE

 Never store engine indoors or in enclosed poorly ventilated areas with fuel in tank, where fuel fumes may reach an open flame, spark or pilot light, such as a furnace, water heater, clothes dryer or other gas appliance.

If engine is to be unused for 30 days or more, prepare as follows:

 Be sure engine is cool. Do not smoke. Remove all gasoline from carburetor and fuel tank to prevent gum deposits from forming on these parts and causing possible malfunction of engine. Drain fuel outdoors, into an approved container, away from open flame. Run engine until fuel tank is empty and engine runs out of gasoline.

NOTE: Fuel stabilizer is an acceptable alternative in minimizing the formation of fuel gum deposits during storage. Add stabilizer to gasoline in fuel tank or storage container. Always follow mix ratio found on stabilizer container. Run engine at least 10 min. after adding stabilizer to allow it to reach the carburetor.

CAUTION: Wheels must be chocked or blocked when unit is parked on a slope.




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CUTTING OPERATION

⚠ Make sure to saturate the ground with water to allow the blade to travel through the sod with little resistance.

⚠ **CAUTION:** Shut off the blades when crossing gravel drives, walks or roads and under all conditions where thrown objects might be a hazard.

⚠ **CLEARING DEBRIS FROM UNDERSIDE OF MACHINE:** Turn engine off and wait for blade to stop completely. Disconnect spark plug wire and place the unit in gear to prevent the unit from rolling.

 Wearing durable gloves, remove debris. **Danger**, the debris may contain sharp materials. Reconnect spark plug wire.

⚠ **CAUTION:** Use extreme care when operating the blade. Inspect the work area for foreign objects that could cause damage to the unit or injure the operator if struck by the blade. Never operate the blade with bystanders in the work area.

GENERAL OPERATION:

Position the turf cutter outdoors on sufficiently firm, flat soil. Read the instructions provided by the engine manufacturer in the relative manual and follow them carefully to prevent situations arising which may endanger either persons or the machine.

WARNING: When using the machine for the first time it is advisable to get the feel of it by executing maneuvers on flat ground free of foreign objects.

After switching on the engine following the instructions given in the previous paragraph:

1. Move the gear lever (fig.2) to the 1st speed position

Warning If the gear engages with difficulty, partially engage the clutch for an instant before trying to engage the gear again.

2. Engage the blade control level using the relative lever (Fig. 1, ref. A)

Warning Choose a cutting height suitable for the type of terrain the machine is to be used on.

3. To move the machine, accelerate and then engage the forward clutch using the relative lever (Fig. 1, ref. C).
4. To select a different gear the forward clutch and the blade clutch must first be disengaged by releasing their levers (Fig. 1, ref. C and Fig. 1, ref. A). Then select the desired FORWARD position (in fig. 2) using the gear lever (Fig. 2), then re-engage the forward clutch control lever (Fig. 1, ref. C) to set the machine in motion again.
5. To stop the blade release the relative lever (Fig. 1 ref. A)
6. To stop forward movement of the machine release the relative le.1, ref. C) Then switch off the engine by moving the switch to the position (O) as shown in figure 1, ref. I.

CUTTING TIPS

- 1) Before commencing cutting operations, read the safety instructions given in the previous sections.
- 2) At first the setting of a relatively high cutting height is recommended (using the relative lever in figure 2, ref. A), lowering it gradually according to working conditions.
- 3) Engage the blade clutch (Fig. 1, ref. A) only after having carried out the machine switch on and gear engagement operations.
- 4) Before engaging the blade clutch (Fig. 1, ref. A), gradually move the accelerator (Fig. 1, ref. B) until the required speed is reached



MAINTENANCE

PERIODIC MAINTENANCE

Periodic maintenance should be performed at the following intervals:

Maintenance Operation	Every Use (daily)	Every 5 hrs or (daily)	Every 25 Hrs	Every 50 Hrs (Yearly)	Every 150 Hrs
Inspect for loose, worn or damaged parts.	•				
Check for excessive vibration		•			
Inspect belt for wear				•	
Engine (See Engine Manual)					
Grease pivot points				•	
Sharpen Blade			•		
Check tire pressure Note: inflate to mfr.'s specs. as shown on tire side wall			•		
Replacing transmission oil (see below)					
Replace blade and traction belts					•

Note: Blade, and drive belts are normal wear items. These should be inspected on a regular basis and replaced if worn. Also see your Billy Goat Dealer for servicing your machine.

CHECKING AND REPLACING THE TRANSMISSION OIL.

Check the transmission oil level using the relative oil level screw (fig. 11 ref. C). If oil leaks out upon removal of this screw then there is enough of it in the transmission. If not, remove the filling cap shown in fig. 11 ref. A, then top up with SAE 90.

The oil should be replaced after the first 20 hours of use and after this every 100 working hours.

Remove the drainage cap shown in fig. 11 (ref. B) and allow all the oil to run out. After refitting the drainage cap, fill the transmission from the filling cap with SAE 90 transmission oil.

Refit the lid securely to prevent any leakage of oil

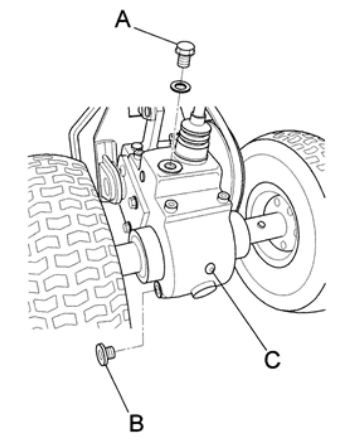


Fig. 11



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BELT REPLACEMENT

Switch off the engine and disconnect the spark plug wire before carrying out any maintenance or repair work on the machine.

If a belt is worn or breaks it should be replaced as follows:

-remove the metal guard (fig. 6 ref. A), by unscrewing and taking out the screws shown in figure 6 ref. B and C.

BLADE BELT

Disconnect the connecting rod (Fig. 7 Ref. B) by removing the nut and loosening the screw that secure it to the arm (Fig. 7 Ref. C)

-Once the connecting rod has been disconnected the belt can be slipped off (Fig. 7 Ref. A) by manually turning the relative lower pulley anticlockwise (Fig. 7 Ref. D).

-To fit the new belt follow the procedure in the reverse order.

-Afterwards check that the belt is correctly positioned by using the relative blade control lever. When this lever is lowered and the belt is at maximum tension, the distance between the belt and the relative belt guides (Fig. 7 Ref. E) should be approximately 2 mm.

-Then make sure that the belt works properly by tugging lightly on the self-winding starter cable with the engine switched off and the spark plug wire disconnected. If everything is working properly the pulley will turn on the engine but will not engage the belt.

If the belt engages push the engine back slightly towards the rear of the machine (in the direction of the handlebars) until the belt is in the correct position.

FORWARD CONTROL BELT

Remove the blade control belt following the instructions given in the preceding paragraph.

-Remove the blade (Fig.1 Ref. G) following the instructions provided in the section entitled "Blade removal and replacement"

-Then remove the forward control belt from the lower pulley by turning the belt anticlockwise (Fig. 8 Ref. A e B)

-To fit the new belt follow the procedure in the reverse order.

-Afterwards check that the belt is positioned and working correctly using the relative forward control lever. When this lever is lowered and the belt is at maximum tension, the distance between the belt and the relative belt guides (Fig. 8 Ref. C) should be approximately 2 mm.

-Then make sure that the belt works properly by tugging lightly on the self-winding starter cable with the engine switched off and the spark plug wire disconnected. If everything is working properly the pulley will turn on the engine but will not engage the belt.

If the belt engages push the engine back slightly towards the rear of the machine (in the direction of the handlebars) until the belt is in the correct position

SERVICE BRAKE CONTROL LEVER

The service brake (Fig. 9 Ref. A) is connected to the forward control lever (Fig. 1 Ref. C).

With the forward control lever released and the brake engaged ensure that there is play of approximately 2 or 3 mm between the adjustment screw and the brake cable (Fig. 9 Ref B and C)

WARNING. If there is no such play restore it immediately since the brake will not stop the machine once the forward control lever is released.

Make sure that the front part of the brake in direct contact with the pulley (Fig. 9 Ref. D) is not worn. If so, replace it.

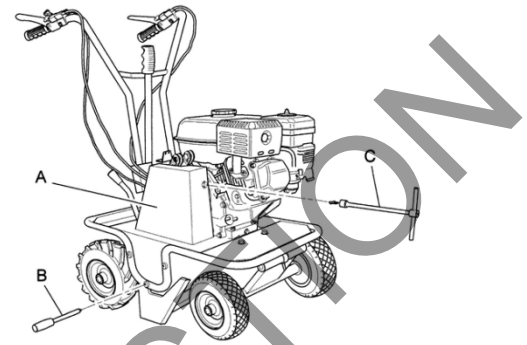


Fig. 6

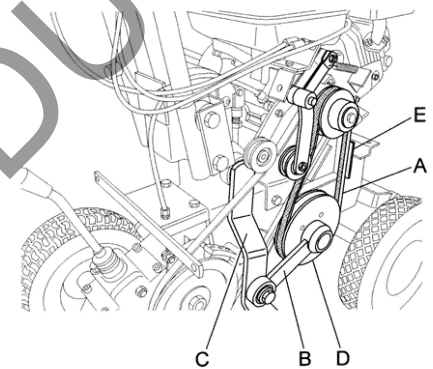


Fig. 7

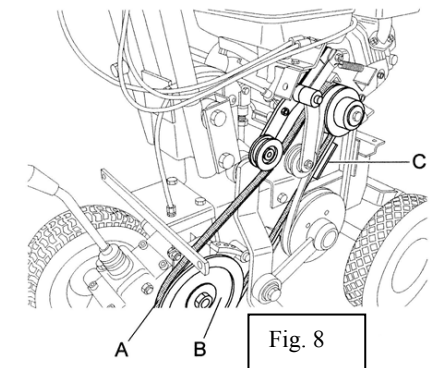


Fig. 8

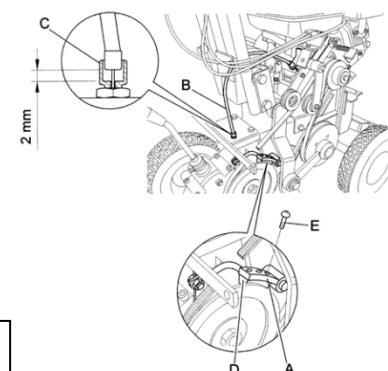


Fig. 9



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CHECKING AND REPLACING THE BLADE

Always check the state of the blade before commencing work. Do not forget to switch the engine off!

- Remove the sparkplug wire.
- During work operations if the blade (Fig. 10, ref. A) strikes stones or stumps stop straightaway and make sure that it has not become bent or broken. A damaged blade must be replaced.
- If the blade is very worn, cracked or bent, it may snap and project objects outwards, risking serious accident.
- Use heavy-duty work gloves to check or replace the blade to avoid risk of injury to hands.
- The blade fixing screws and relative nuts are also subject to wear. Always replace them at the same time as the blade, using bolts and screws of the same strength and type.
- The blade wears more quickly on dry, sandy ground. In these conditions it should be replaced more frequently.

To remove the blade, proceed as follows:

1. Switch off the engine and disconnect the spark plug wire
2. Adjust the cutting height to maximum
3. Check the state of the blade.

4. When repair or check of blade is completed reattach spark plug

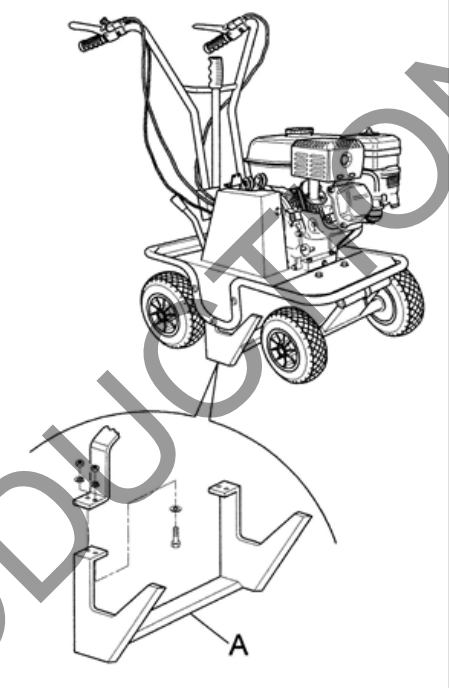


Fig. 10

CHECKS

- Adjust the belt and cable control tension after the first few working hours to compensate initial loosening.
- Briefly operate all the machine's components to detect any abnormal noises or overheating.
- During the initial running in period avoid heavy-duty usage to encourage proper settling of the mechanical parts.
- Never neglect maintenance operations after work and carry out all pre-scribed checks regularly.

A) TIRE PRESSURE

Regularly check the tire pressure. If both sets of tires are not inflated to average pressure the machine will tend to travel sideways during operation.

B) CABLE CONTROL ADJUSTMENT

To adjust the cables place the machine on flat ground, switch off the engine and disconnect the wire from the spark plug.

B1) BLADE CONTROL CABLE

Make sure that there is no play between the upper end of the cable and the adjustment screw. If there is, or if the cable has stretched, restore to ideal position using the relative adjustment screw (Fig. 5, ref. A)

If adjustment using the relative screw proves ineffective, the belts, and hence the engine mounting, must be adjusted. To perform this operation refer to section "BELT REPLACEMENT AND ADJUSTMENT" of this manual.

B2) FORWARD CONTROL CABLE

Make sure that there is no play between the upper end of the cable and the adjustment screw. If there is, or if the cable has stretched, restore to ideal position using the relative adjustment screw (Fig. 5, ref. A).

If adjustment using the relative screw proves ineffective, the belts, and hence the engine mounting, must be adjusted. To perform this operation refer to section "BELT REPLACEMENT AND ADJUSTMENT" of this manual

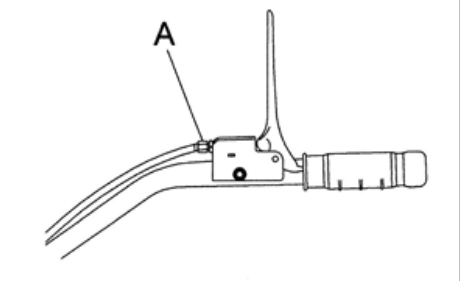


Fig. 5



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TROUBLESHOOTING

Problem	Possible Cause	Solution
Engine will not start.	Choke not on. Out of gasoline, bad or old gas. Spark plug wire disconnected. Dirty air cleaner. Blade clutch is engaged	Move throttle to start position. Check Gasoline. Check for spark with an approved tester. Clean or replace air cleaner. Disengage the Blade clutch lever.
Engine runs poorly	Spark plug wire loose. Engine RPM set too low. Carburetor out of adjustment. Water or dirt in fuel system. Spark plug fouled, faulty or wrong gap	Sharpen or replace blade. Check engine RPM (refer to engine manual). Adjust carburetor (refer to engine manual). Reset gap or replace spark plug (refer to engine manual).
Belt slips	Belt tension inadequate. Too great of a working depth. Belt worn.	Replace belt. Replace blade
Abnormal vibration.	Loose or out of balance blade. Bent blade. Loose engine bolts	Stop work immediately. Check blade mount and balance. Replace damaged or bent blade if required. Check engine mount.
Will not cut or has poor cutting performance	Dull or bent Blade. Debris locked against blade. Engine running at too low RPM. Sod is too dry.	Sharpen or replace blade. Remove debris. Check engine RPM (refer to engine manual). Apply more water to cutting area to loosen sod
Drive will not engage	Not set to gear. Out of adjustment drive cable. Broken drive cable. Worn or broken belt.	Shift lever to desired gear. Adjust drive cable. Replace with new cable. Replace belt.
Drive will not release.	Drive cable out of adjustment. Damaged drive lever.	Adjust drive cable. Replace drive cable.
Engine is locked, will not pull over.	Debris locked against blade. Damaged engine.	Remove debris. Refer to engine owner's manual. Replace control cable.

When servicing engine refer to specific manufacturer's engine owner's manual. All engine warranty is covered by the specific engine manufacturer. If your engine requires warranty or other repair work contact your local servicing engine dealer. When contacting a dealer for service it is a good idea to have your engine model number available for reference (See table page 12). If you cannot locate a servicing dealer in your area you can contact the manufacturer's national service organization.

To reach: Briggs & Stratton: 800-233-3723

WARRANTY CLAIM PROCEDURE

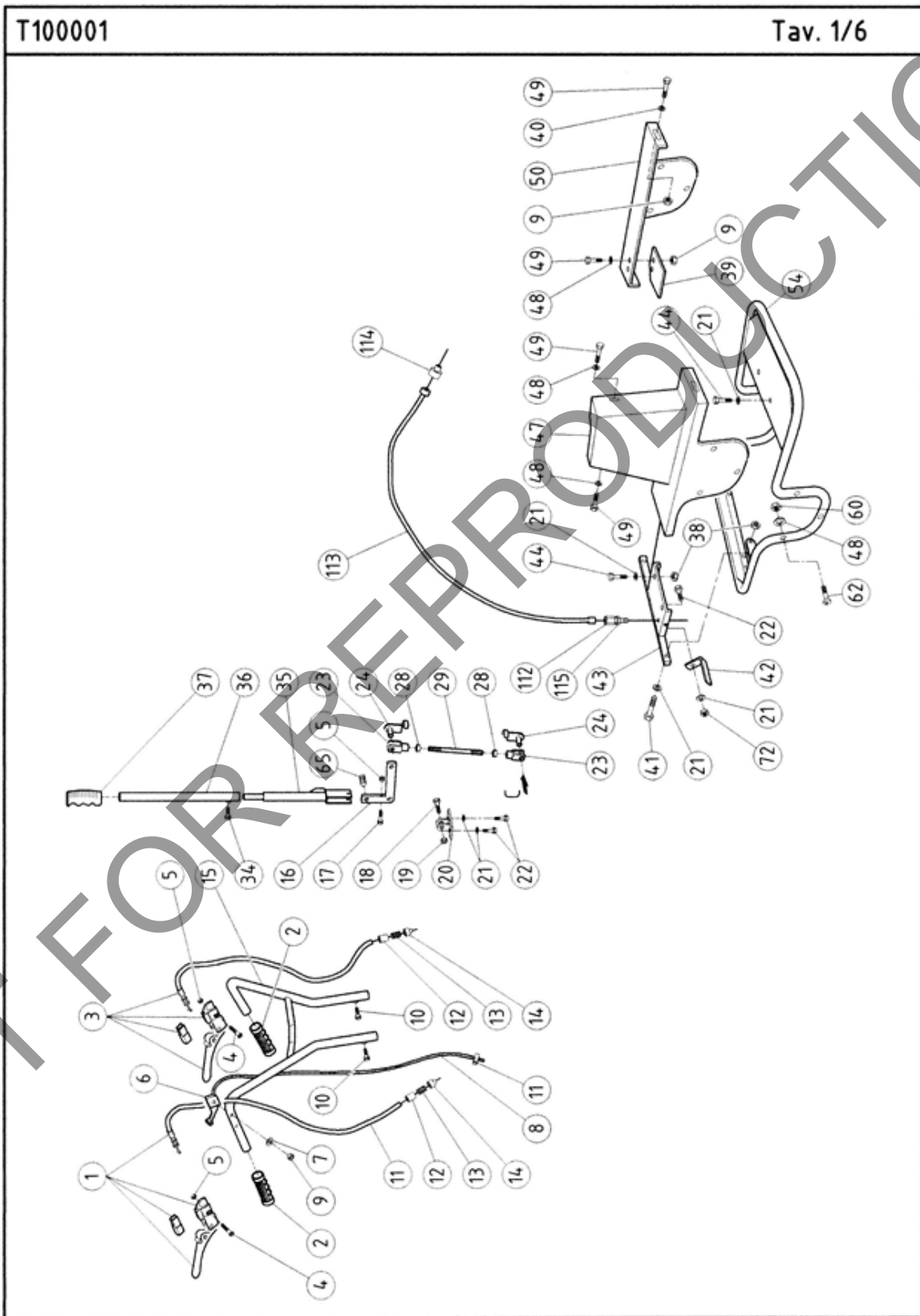
Should a BILLY GOAT[®] machine fail due to a defect in material and/or workmanship, the owner should make a warranty claim as follows:

- The machine must be taken to the dealer from whom it was purchased or to an authorized Servicing BILLY GOAT Dealer.
- The owner must present the remaining half of the Warranty Registration Card, or, if this is not available, the invoice or receipt.
- The Warranty Claim will be completed by the authorized BILLY GOAT Dealer and submitted to their respective BILLY GOAT Distributor for their territory Attention: Service Manager. Any parts replaced under warranty must be tagged and retained for 90 days. The model number and serial number of the unit must be stated in the Warranty Claim.
- The distributor service manager will sign off on the claim and submit it to BILLY GOAT for consideration.
- The Technical Service Department at BILLY GOAT will study the claim and may request parts to be returned for examination. BILLY GOAT will notify their conclusions to the distributor service manager from whom the claim was received.
- The decision by the Technical Service Department at BILLY GOAT to approve or reject a Warranty Claim is final and binding.

For online product registration go to www.billygoat.com



PARTS DRAWING SC 1/6





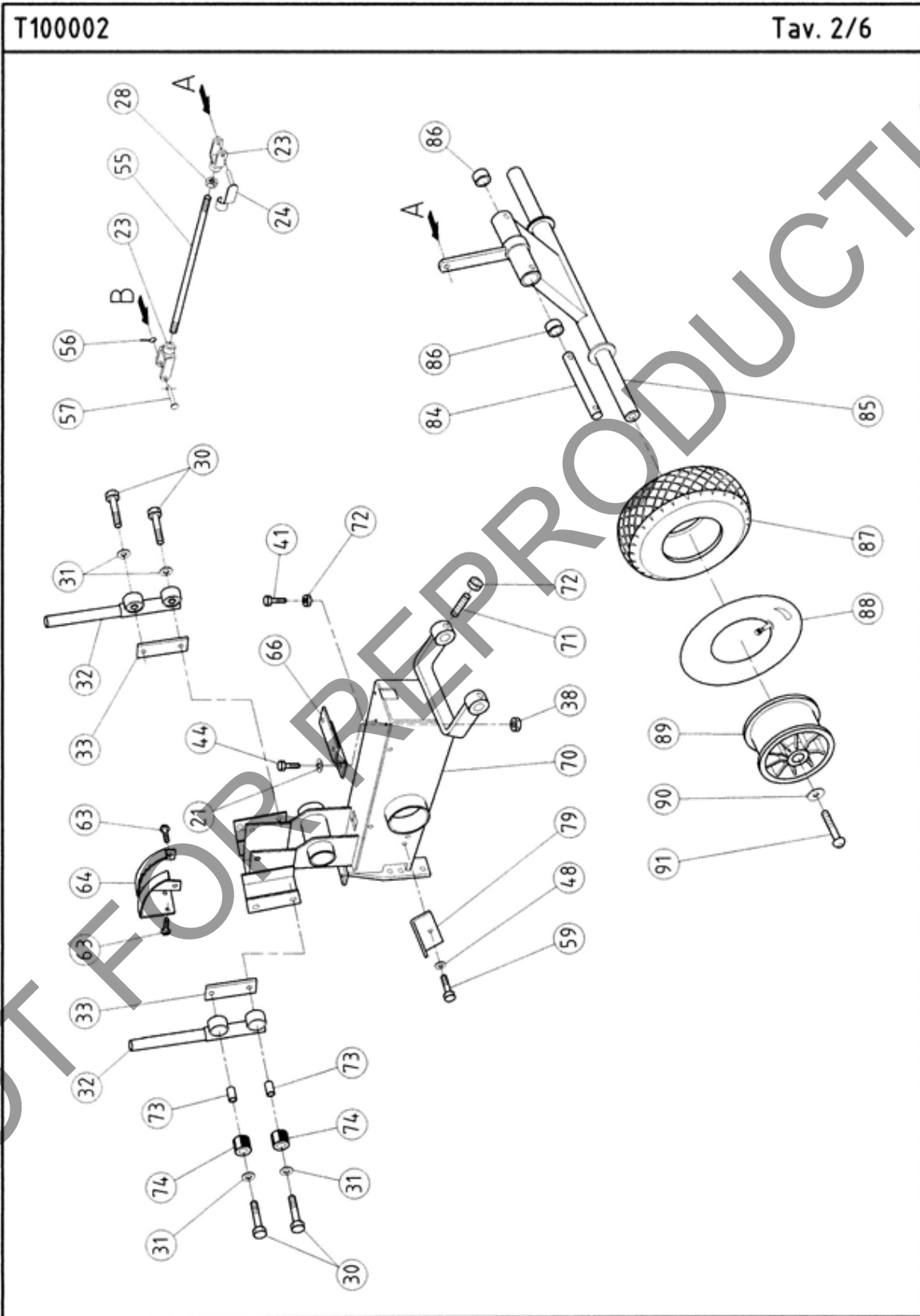
SC12 Operator's Manual

PARTS LIST 1/6

1	370252	Lever Control (righthand)	1
2	370257	Knob	2
3	370253	Lever Tightener (lefthand)	1
4	370178	Screw M6x55 UNI 5931	2
5	370107	Nut Lock M6 H6	3
6	370509	LEVER, THROTTLE HAND W/ SWITCH, SC12	1
7	370112	Washer Flat M6	1
8	370254	Cable Accelerator	1
9	370148	Nut Lock M6 H8	10
10	370281	Screw cap M10x 20	2
11	370256	Clamp Accelerator	1
12	370186	Spring guide	2
13	370143	Spring 10x25 C X F	2
14	370187	Cable guide	2
15	370274	Handle	1
16	370243	Lever	1
17	370282	Screw cap M6x45 P.F.	1
18	370283	Screw cap M10x50 P.F.	1
19	370149	Nut Lock M10	1
20	370248	Support Lever Height adjustment	1
21	370110	Washer Flat M8	9
22	370126	Screw cap M8x16	3
23	370259	Fork 03216055	2
24	370260	Clip Fork	2
28	370146	Nut M10	2
29	370235	Rod Tie Height-adjustment	1
34	370292	Screw cap M8x16	1
35	370425	Lever Height adjustment	1
36	370275	Extension Height Adjustment Lever	1
37	370189	Knob 0 22	1
38	370125	Nut Lock M8	4
39	370280	Plate Stopping Reverse Gear	1
40	370108	Washer Flat M6x18	6
41	370118	Screw cap M8x25	2
42	370191	Bracket Rear	1
43	370250	Support Rear guard	1
44	370130	Screw cap M8x20	4
47	370268	Guard Belt	1
48	370112	Washer Flat M6	10
49	370128	Screw cap M6 x 14	10
50	370269	Guard Side (lefthand)	1
54	370267	Guard Support Frame	1
60	370129	Nut Lock M5 H6.5	6
62	370152	Screw Crosshead M5x30	6
65	370144	Spring 13x25	1
72	370102	Nut 8 H 6.5	1
112	370294	Adjuster M6 X 40	1
113	370295	Cable Control Brake	1
114	370296	Bushing Sheath	1
115	370297	Nut M6 H4	1



PARTS DRAWING SC 2/6





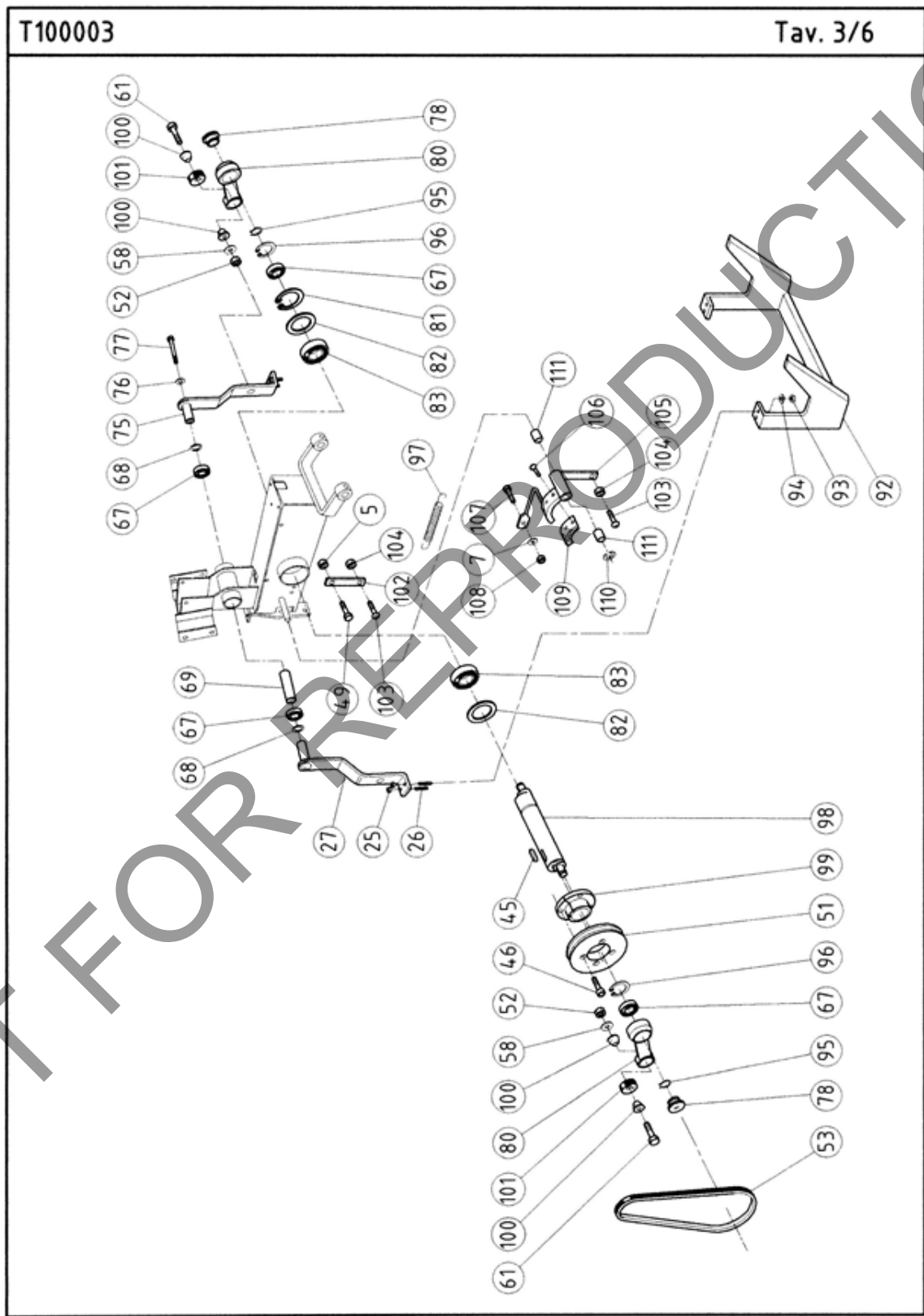
SC12 Operator's Manual

PARTS LIST 2/6

21	370110	Washer Flat M8	2
23	370259	Fork 03216055	2
24	370260	Clip Fork	1
28	370146	Nut M10	1
30	370147	Screwcap M10x50 P.F.	4
31	370145	Washer wave M10	4
32	370228	Support Handle	2
33	370247	Nut Special for handle support	2
38	370125	Nut Lock M8	2
41	370118	Screwcap M8x25	1
44	370130	Screwcap M8x20	2
48	370112	Washer Flat M6	1
55	370236	Connection tie-rod	1
56	370151	Pin Roll M30x2.5	1
57	370258	Pivot Ø 10	1
59	370134	Screwcap M6x10	1
63	370111	Screw Button Head M8x12	4
64	370424	Quadrant Tooth Height	1
66	370251	Support Front guard	1
70	370215	Body Sod Cutter	1
71	370153	Dowel M8x16	2
72	370102	Nut 8 H 6.5	3
73	370284	Dampener Vibration Internal Tube 12x10x28	4
74	370285	Dampener Vibration Handle Support 30x12x28	4
79	370239	Block Sliding Belt No. 1	1
84	370271	Pivot Axle Front	1
85	370218	Axle Front Complete	1
86	370276	Bushing Self-Lubricating 16x20x22	2
87	370206	Tire Front Wheel T090700	2
88	370204	Tube Inner Front Wheel	2
89	370401	Steel Rim Front wheel	2
90	370404	Washer wheel	2
91	370126	Screwcap M8x16	2
116	370402	Retainer Cap	4
117	370403	Roller Cage Bearing	2



PARTS DRAWING SC 3/6





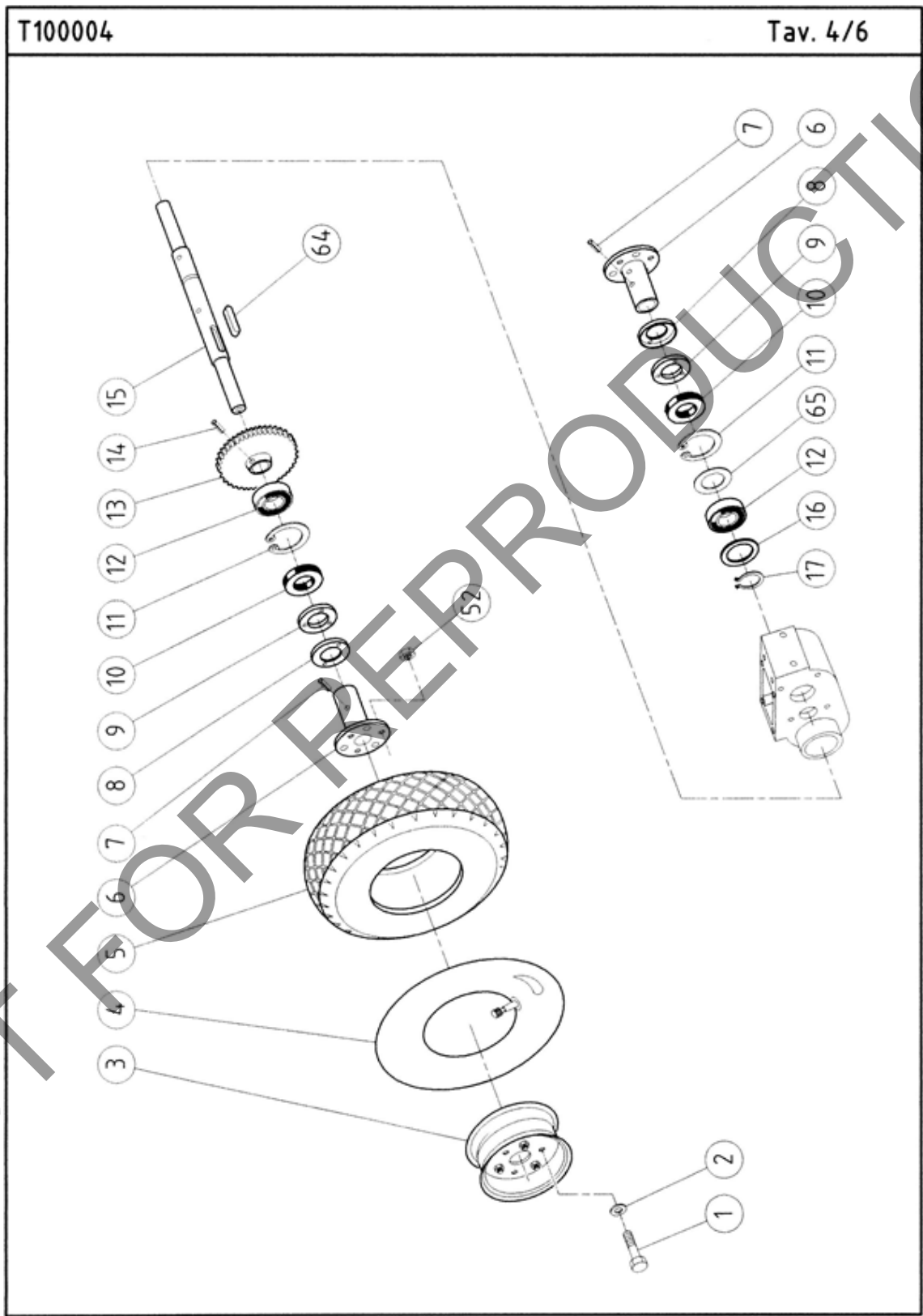
SC12 Operator's Manual

PARTS LIST 3/6

5	370107	Nut Lock M6 H6	1
7	370112	Washer Flat M6	1
25	370136	Nut M8 H5	4
26	370407	Washer Grower	4
27	370224	Arm Control Blade (Righthand)	1
45	370157	Key 8x7x25	1
46	370177	Screw Allen M6 x 25	4
49	370128	Screwcap M6 x 14	1
51	370211	Pulley for shaft with eccentrics	1
52	370150	Nut M12	2
53	370197	Belt Short XDV48/290	1
58	370124	Washer Flat M12x24	2
61	370287	Screw Special	2
67	370138	Bearing 17x40x12 6203-2RS	4
68	370135	Shim adjustment 17x24x0.5	2
69	370232	Bushing	1
75	370244	Arm control Blade (lefthand)	1
76	370120	Washer Split M6	1
77	370154	Screwcap M6x85 P.F.	1
78	370286	Cover Plastic Connecting Rod	2
80	370217	Rod Connecting	2
81	370155	Ring Snap Internal E35	1
82	370156	Shim adjustment 35x45x0.5	2
83	370137	Bearing 35x62x14 6007-2RS	2
92	370279	Blade Cutting	1
93	370408	Screw M8 x26	4
94	370123	Washer Wave M8	4
95	370122	Ring Snap Internal E17	2
96	370166	Ring Snap Internal 140	2
97	370309	Spring	1
98	370216	Shaft with eccentrics	1
99	370212	Pulley locking hub	1
100	370231	Semi-cone	4
101	370261	Pad Rubber	2
102	370298	Spring Hook	1
103	370299	Screw Button M6 X 16	2
104	370297	Nut M6 H4	2
105	370300	Brake	1
106	370301	Screwcap M4 X 14	3
107	370313	Clamp 7 X 20	1
108	370127	Nut M6	1
109	370303	Pad Brake	1
110	370173	Ring Radial elastic D 10	1
111	370304	Bushing Self Lock	2



PARTS DRAWING SC 4/6





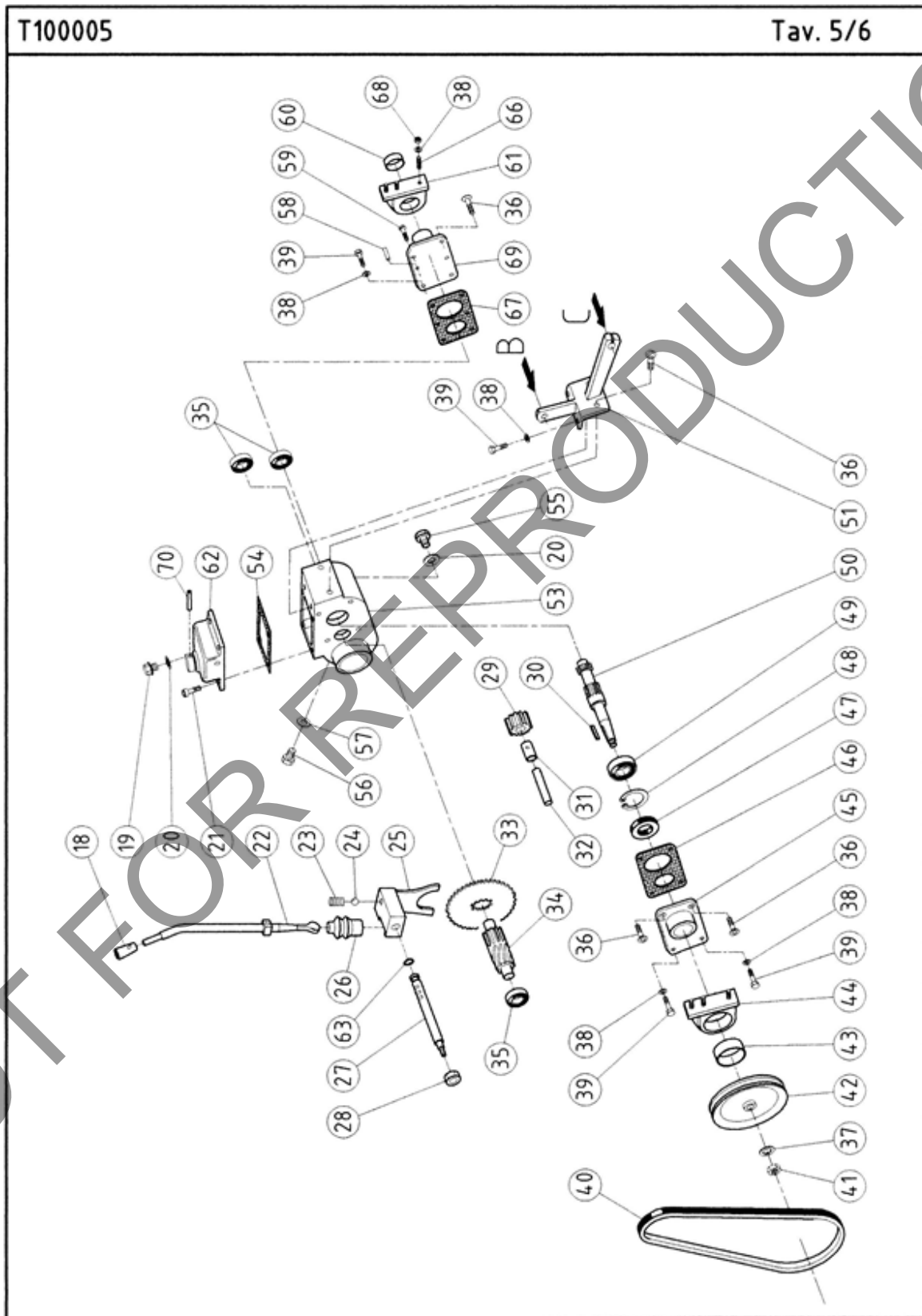
SC12 Operator's Manual

PARTS LIST 4/6

1	370126	Screwcap M8x16	6
2	370110	Washer Flat M8	6
3	370194	Rim Rear wheel	2
4	370277	Tube Inner Rear Wheel	2
5	370409	Tire Rear	2
6	370195	Hub wheel	2
7	370158	Pin Elastic 10x40	2
8	370288	Cover Dust	2
9	370289	Felt protection	2
10	370305	Ring Seal 25 X 52 X 7	2
11	370114	Ring Snap Internal 152	2
12	370131	Bearing 25x52x15 6205	2
13	370199	Gear Reduction-crown	1
14	370180	Dowel M8x14	1
15	370196	Axle Rear	1
16	370142	Shim adjustment 25x35x1	1
17	370290	Seeger E25	1
52	370136	Nut M8 H5	6
64	370170	Key 7x8x35	1
65	370121	Shim Adjustment Ø 42x52x0.5	1



PARTS DRAWING SC 5/6





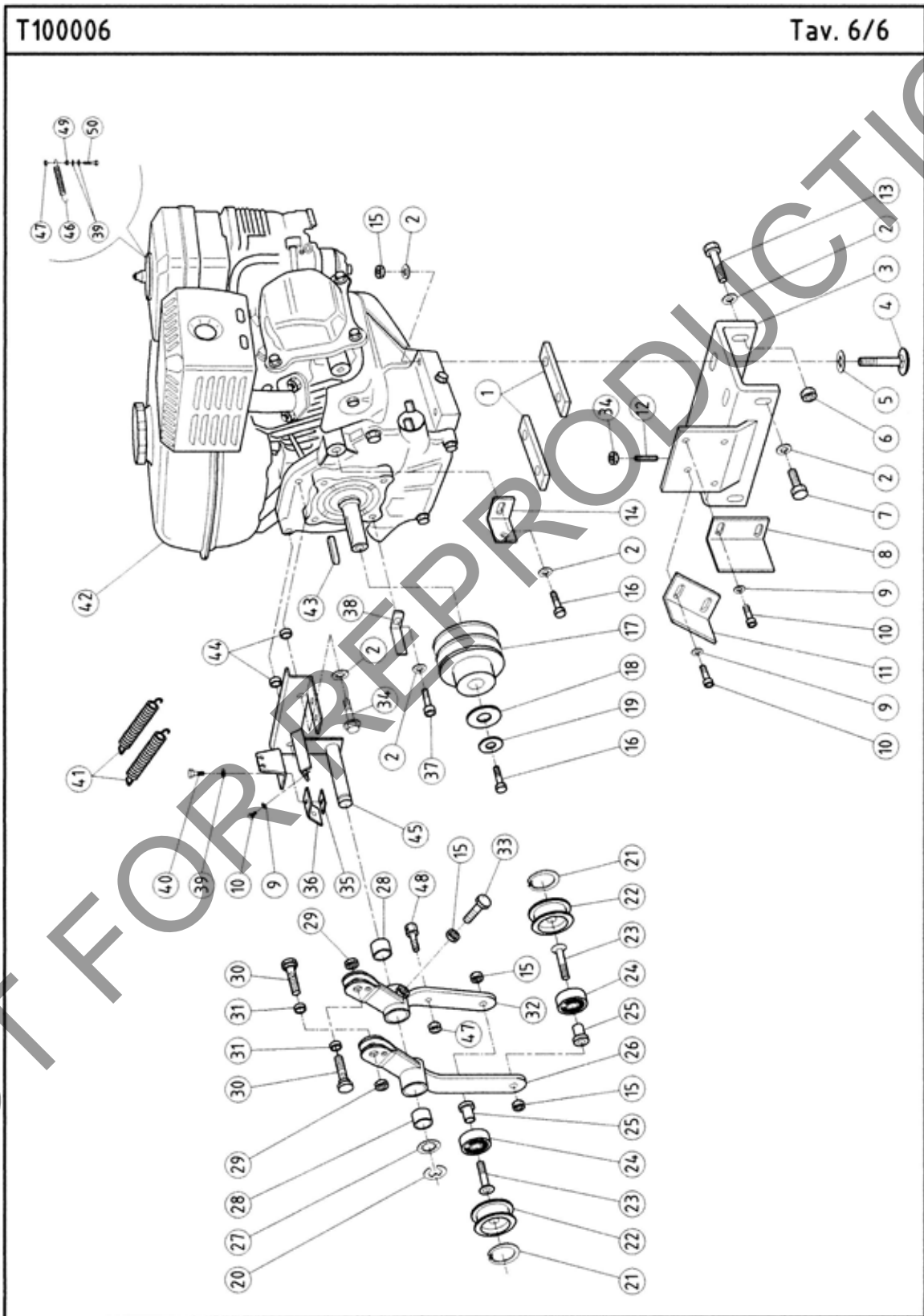
SC12 Operator's Manual

PARTS LIST 5/6

18	370182	Plastic knob Ø 12	1
19	370162	Cap Plastic	1
20	370163	Washer Fiber	1
21	370159	Screw Allen M 8 x 16	4
22	370226	Lever Engage-disengage	1
23	370264	Spring Gear Fork 6x25	1
24	370160	Ball	1
25	370410	Fork 1st-2nd	1
26	370161	Casing	1
27	370411	Fork pivot	1
28	370125	Nut Lock M8	1
29	370412	Gear Z18	1
30	370164	Key 5x5x18	1
31	370413	Gear 2nd Speed	1
32	370414	Pinion	1
33	370415	Gear 1st and 2nd	1
34	370416	Gear Reduction-pinion	1
35	370133	Bearing 15x35x11 6202-2RS	3
36	370104	Screwcap M8x18	4
37	370124	Washer Flat M12x24	1
38	370123	Washer Wave M8	12
39	370130	Screwcap M8x20	6
40	370198	Belt Big 48-430 L443	1
41	370150	Nut M12	1
42	370213	Pulley Cast iron prim. Ø= 150 mm.	1
43	370141	Bushing Self-lubricating	1
44	370209	Support Box (righthand)	1
45	370417	Cover (righthand)	1
46	370418	Gasket Cover (righthand)	1
47	370168	O-ring 17x40x7	1
48	370166	Ring Snap Internal 140	1
49	370179	Bearing 17x40x14 62203 2RS1	1
50	370419	Pinion Primary	1
51	370245	Support Tie Rod	1
53	370420	Gearbox	1
54	370242	Gasket Cover	1
55	370190	Cap Metal	1
56	370183	Button M6x8	1
57	370185	Washer fiber M6x10	1
58	370167	Pin Cylindrical 8x18	2
59	370109	Screw Button Head M8x16	1
60	370140	Bushing Self-lubricating PCM 252820 B	1
61	370210	Support Box (lefthand)	1
62	370208	Cover Box	1
63	370171	O-ring 108 (8.73 x 1.78)	1
66	370291	Screw Stud M8 UNI_5911	6
67	370421	Gasket Cover (lefthand)	1
68	370102	Nut 8 H6.5	6
69	370422	Cover Left	1
70	370169	Pin Cylindrical 6x35	1
71	370423	Roller Cage Bearing HK 1412	2



PARTS DRAWING SC 6/6





SC12 Operator's Manual

PARTS LIST 6/6

1	370193	Shim Engine 20x6	2
2	370110	Washer Flat M8	8
3	370234	Support Engine	1
4	370172	Screw TTQST 8x40	4
5	370175	Washer Toroidal M24	4
6	370125	Nut Lock M8	2
7	370126	Screwcap M8x16	2
8	370238	Guide Belt No. 1	1
9	370113	Washer Flat M5	5
10	370106	Screw Allen M5x8	5
11	370237	Guide Belt	1
12	370176	Dowel M8x35	1
13	370130	Screwcap M8x20	2
14	370266	Bracket Guard Support	1
15	370136	Nut M8 H5	4
16	370181	Screw 5/16 x 3/4 mm 19	2
17	370214	Pulley Engine Sect. H	1
18	370119	Washer Flat M8x32	1
19	370123	Washer Wave M8	1
20	370173	Ring Radial elastic D 10	1
21	370117	Ring Snap Internal 132	2
22	370219	Roll Tightening	2
23	370103	Screwcap M8x25	2
24	370116	Bearing 12x32x10 6201 2RS	2
25	370221	Bushing Bearing	2
26	370223	Tensioner Belt	1
27	370101	Shim adjustment 12.2x24x0.8	1
28	370115	Bushing Self-lubricating	2
29	370127	Nut M6	2
30	370220	Clamp	2
31	370188	Clamp spacer	2
32	370246	Tensioner Belt Threaded	1
33	370273	Screw Tensioner	1
34	370306	Screwcap M8 X 40	2
35	370270	Nut Special	1
36	370265	Bracket Guard Fixing	1
37	370184	Screwcap 5/16-24 x 5/8	1
38	370192	Bracket Front 15x3	1
39	370112	Washer Flat M6	3
40	370128	Screwcap M6 x 14	1
41	370262	Spring Cable Return	2
42	600115	Engine Honda 5.5 GX160K1QX2	1
43	370174	Key 4.8x4.8x32	1
44	370222	Spacer	2
45	370225	Support Tightener	1
46	370263	Spring Accelerator Return	1
47	370107	Nut Lock M6 H6	2
48	370307	Drum Wire Holder	1
49	370297	Nut M6 H4	1
50	370308	Screwcap M6 X 18	1

