

WARNING:

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- Lead from lead-based paints,
- Crystalline silica from bricks and cement and other masonry products, and
- Arsenic and chromium from chemically-treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

AVERTISSEMENT:

La poussière résultant d'un ponçage, d'un sciage, d'un meulage, d'un perçage ou de toute autre activité de construction renferme des produits chimiques qui sont connus par l'Etat de Californie pour causer des cancers, des défauts de naissance et autres anomalies de reproduction. Nous énumérons ci-dessus certains de ces produits chimiques:

- Plomb des peintures à base de plomb,
- Silice cristalline des briques et du ciment et autres matériaux de maçonnerie, et
- Arsenic et chrome du bois d'oeuvre traité chimiquement.

Le risque d'exposition à ces substances varie en fonction de la fréquence d'exécution de ce genre de travail. Pour réduire l'exposition à ces produits chimiques, travailler dans un lieu bien ventilé, et porter un équipement de protection agréé, par exemple un masque anti-poussière spécialement conçu pour filtrer les particules microscopiques.

ADVERTENCIA:

Algunos polvos creados por el lijado mecánico, el aserrado, el esmerilado, el taladrado y otras actividades de construcción contienen sustancias químicas conocidas por le Estado de California como agentes cancerígenos, defectos congénitos y otros daños reproductores. Algunos ejemplos de estas sustancias químicas son:

- El plomo de las pinturas a base de plomo,
- El sílice cristalino de los ladrillos y cemento y otros productos de mampostería, y
- El arsénico y el cromo de la madera tratada químicamente.

El riesgo resultante de la exposición varía según la frecuencia con que se realiza este tipo de trabajo. Para reducir la exposición a esta sustancias químicas: trabaje en un lugar bien ventilado y realice el trabajo utilizando el equipamiento apropiado, tal como las máscaras para el polvo especialmente diseñados para eliminar las partículas minúsculas.

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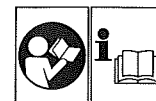
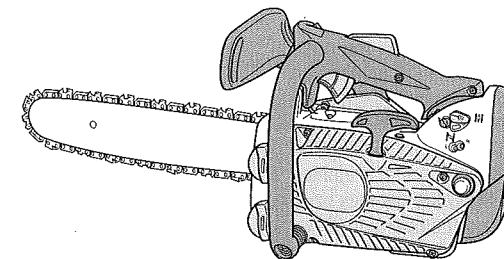
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Tanaka®

Model
Modèle
Modelo

TCS 33EDTP

Chain Saw
Tronçonneuse
Motosierra

**SAFETY INSTRUCTIONS AND INSTRUCTION MANUAL****⚠ WARNING**

IMPROPER OR UNSAFE use of this power tool can result in death or serious bodily injury! This manual contains important information about product safety. Please read and understand this manual **BEFORE** operating the power tool. Please keep this manual available for other users and owners before they use the power tool. This manual should be stored in safe place.

INSTRUCTIONS DE SECURITE ET MODE D'EMPLOI**⚠ AVERTISSEMENT**

Une utilisation **INCORRECTE OU DANGEREUSE** de cet outil motorisé peut entraîner la mort ou de sérieuses blessures corporelles ! Ce mode d'emploi contient d'importantes informations à propos de la sécurité de ce produit. Prière de lire et de comprendre ce mode d'emploi **AVANT** d'utiliser l'outil motorisé. Garder ce mode d'emploi à la disponibilité des autres utilisateurs et propriétaires avant qu'ils utilisent l'outil motorisé. Ce mode d'emploi doit être conservé dans un endroit sûr.

INSTRUCCIONES DE SEGURIDAD Y MANUAL DE INSTRUCCIONES**⚠ ADVERTENCIA**

¡La utilización **INAPROPIADA O PELIGROSA** de esta herramienta eléctrica puede provocar lesiones graves o la muerte! Este manual contiene información importante sobre la seguridad del producto. Lea y comprenda este manual **ANTES** de utilizar la herramienta eléctrica. Guarde este manual para que puedan leerlo otras personas antes de utilizar la herramienta eléctrica. Este manual debe ser guardado en un lugar seguro.

⚠ WARNING

The engine exhaust from this product contains chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

SAFETY PRECAUTIONS FOR CHAIN SAW USERS

Kickback safety precautions

WARNINGS! : Kickback may occur when the nose or tip of the guide bar (kickback zone (1)) touches an object, or when the wood closes in and pinches the saw chain in the cut. Tip contact in some cases may cause a lightning-fast reverse reaction, kicking the guide bar up and back toward the operator. Pinching the saw chain along the top of the guide bar may push the guide bar rapidly back toward the operator. Either of these reactions may cause you to lose control of the saw, which could result in serious personal injury. Do not rely exclusively upon the safety devices built into your saw. As a chain saw user, you should take several steps to keep your cutting jobs free from accident or injury. (Fig.1)

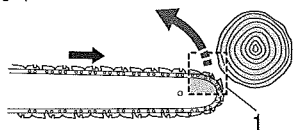


Fig. 1

- With a basic understanding of kickback, you can reduce or eliminate the element of surprise. Sudden surprise contributes to accidents.
- Keep a good firm grip on the saw with both hands, the right hand on the rear handle and the left hand on the front handle, when the engine is running. Use a firm grip with thumbs and fingers encircling the chain saw handles. A firm grip will help you reduce kickback and maintain control of the saw. Don't let go.
- Make sure that the area in which you are cutting is free from obstructions. Do not let the nose of the guide bar contact a log, branch, or any other obstruction that could be hit while you are operating the saw.
- Cut at high engine speeds.
- Do not overreach or cut above shoulder height.
- Follow the manufacturer's sharpening and maintenance instructions for the saw chain.
- Only use replacement bars and chains specified by the manufacturer or the equivalent.

Other safety precautions

- Do not operate a chain saw with one hand! Serious injury to the operator, helpers, bystanders, or any combination of these persons may result from one-handed operation. A chain saw is intended for two-handed use.
- Do not operate a chain saw when you are fatigued.
- Use safety footwear, snug-fitting clothing, protective gloves, and eye, hearing, and head protection devices.
- Use caution when handling fuel. Move the chain saw at least 10 feet (3 m) from the fueling point before starting the engine.
- Do not allow other persons to be near the chain saw when starting or cutting with the chain saw. Keep bystanders and animals out of the work area.
- Do not start cutting until you have a clear work area, secure footing, and a planned retreat path from the falling tree.
- Keep all parts of your body away from the saw chain when the engine is running.
- Before you start the engine, make sure that the saw chain is not contacting anything.
- Carry the chain saw with the engine stopped, the guide bar and saw chain to the rear, and the muffler away from your body.
- Do not operate a chain saw that is damaged, improperly adjusted, or not completely and securely assembled. Be sure that the saw chain stops moving when the throttle control trigger is released.
- Shut off the engine before setting the chain saw down.
- Use extreme caution when cutting small-size brush and saplings because slender material may catch the saw chain and be whipped toward you or pull you off balance.
- When cutting a limb that is under tension, be alert for springback so that you will not be struck when the tension in the wood fibers is released.
- Keep the handles dry, clean, and free of oil or fuel mixture.
- Operate the chain saw only in well-ventilated areas.
- Do not operate a chain saw in a tree unless you have been specifically trained to do so.
- All chain saw service, other than the items listed in the instruction manual(s) maintenance instructions, should be performed by competent chain saw service personnel. (For example, if improper tools are used to remove the flywheel or if an improper tool is used to hold the flywheel in order to remove the clutch, structural damage to the flywheel could occur and subsequently could cause the flywheel to burst.)

- When transporting your chain saw, use the appropriate guide-bar scabbard.
- When a chain saw is being used, a fire extinguisher should be available.

MEANINGS OF SYMBOLS

NOTE: Some units do not carry them.

		Symbols	
		⚠ WARNING The following show symbols used for the machine. Be sure that you understand their meaning before use.	
	It is important that you read, fully understand and observe the following safety precautions and warnings. Careless or improper use of the unit may cause serious or fatal injury.		Emergency stop
	Read, understand and follow all warnings and instructions in this manual and on the unit.		Fuel and oil mixture
	Always wear eye, head and ear protectors when using this unit.		Chain oil fill
	Warning, kickback danger. Be careful of possible sudden and accidental upward and/or backward motion of the guide bar.		Carburetor adjustment - Idle speed
	One-handed usage not permitted. While cutting, hold saw firmly with both hands with thumb firmly locked around front handle.		Carburetor adjustment - Low speed mixture
	The saw is specially designed for tree service and therefore shall be used by trained operators only, in off-ground work in trees.		Carburetor adjustment - High speed mixture
	Chain brake		Hot surface
	Choke - Run position (Open)		Priming pump
	Choke - Choked position (Closed)		Computed kickback angle (CKA) with actuated chain brake
	On/Start		Computed kickback angle (CKA) without a chain brake
	Off/Stop		

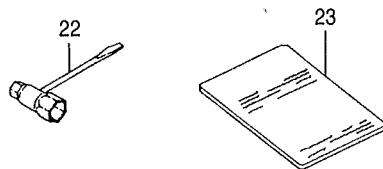
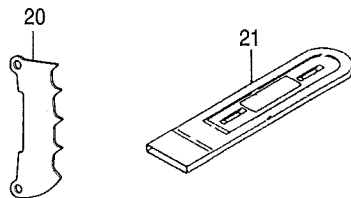
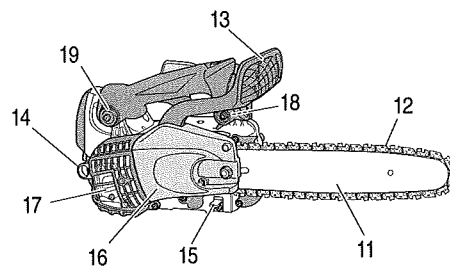
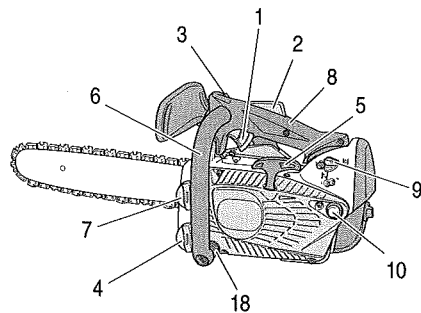
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WHAT IS WHAT?

1. Throttle trigger: Device activated by the operator's finger, for controlling the engine speed.
2. Throttle trigger lockout: Device that prevents the accidental operation of the throttle trigger until manually released.
3. Ignition switch: Device for allowing the engine to be started or stopped.
4. Oil tank cap: For closing the oil tank.
5. Recoil starter: Pull handle to start the engine.
6. Front handle: Support handle located at or towards the front of the engine housing.
7. Fuel tank cap: For closing the fuel tank.
8. Rear handle: Support handle located on the top of the engine housing.
9. Choke lever: Device for enriching the fuel/air mixture in the carburetor, to aid starting.
10. Priming pump: Device for supplying extra fuel, to aid starting.
11. Guide bar: The part that supports and guides the saw chain.
12. Saw chain: Chain, serving as a cutting tool.
13. Chain brake (Front hand guard): Device for stopping or locking the chain.
14. Attachment point: The part for suspending the unit by using a safety strap, carabineer or rope.
15. Chain catcher: device for restraining the saw chain.
16. Side case: Protective cover to the guide bar, saw chain, clutch and sprocket when the chain saw is in use.
17. Muffler: Reduces engine exhaust noise and directs the exhaust gases.
18. Anti-vibration spring: Reduce the transmission of vibrations to the operator's hands.
19. Anti-vibration rubber: Reduce the transmission of vibrations to the operator's hands.
20. Spiked bumper (if so equipped): Device for acting as a pivot when in contact with a tree or log.
21. Guide bar cover: Device for covering the guide bar and saw chain when the unit is not being used.
22. Combi box spanner: The tool for removing or installing a spark plug and tensioning the saw chain.
23. Handling instructions: Included with unit. Read before operation and keep for future reference to learn proper, safe techniques.



WARNINGS AND SAFETY INSTRUCTIONS

Pay special attention to statements preceded by the following words:

⚠ WARNING

Indicates a strong possibility of severe personal injury or loss of life, if instructions are not followed.

CAUTION

Indicates a possibility of personal injury or equipment damage, if instructions are not followed.

NOTE

Helpful information for correct function and use.

Operator safety

⚠ WARNING

This chain saw (CS33EDT/CS33EDTP) is designed especially for tree care and surgery. Only persons trained in tree care and surgery may use this saw. Observe all literature, procedures and recommendations from the relevant professional organization. Failure to do so constitutes a high accident risk. We recommend always using a rising platform for sawing in trees. Rappelling techniques are extremely dangerous and require special training. The operator must be trained in and familiar with the use of safety equipment and working and climbing techniques. Always use the restraining equipment for both the operator and the saw.

- Always use the gloves to reduce the effects of vibration.
- Always wear a safety face shield or goggles.
- Gloves should be used when sharpening chain.
- Always wear safety protective equipment such as jacket, trousers, gloves, helmet, boots with steel toe-caps and non-slip soles whenever you use a chain saw. For working in trees the safety boots must be suitable for climbing techniques. Do not wear loose clothing, jewelry, short pants, sandals or go barefoot.
- Secure hair so it is above shoulder length.
- Do not operate this tool when you are tired, ill or under the influence of alcohol, drugs or medication.
- Never let a child or inexperienced person operate the machine.
- Wear hearing protection. Pay attention to your surroundings. Be aware of any bystanders who may be signaling a problem.

Remove safety equipment immediately upon shutting off engine.

- Wear head protection.
- Never start or run the engine inside a closed room or building. Breathing exhaust fumes can kill.
- For respiratory protection, wear a protection mask while emitting the chain oil mist and dust from sawdust.
- Keep handles free of oil and fuel.
- Keep hands away from cutting equipment.
- Do not grab or hold the unit by the cutting equipment.
- When the unit turned off, make sure the cutting attachment has stopped before the unit is set down.
- When operation is prolonged, take a break from time to time so that you may avoid possible Hand-Arm Vibration Syndrome (HAVS) which is caused by vibration.
- The operator must obey the local regulations of cutting area.
- ⚠ **WARNING**
- Anti-Vibration systems do not guarantee that you will not sustain Hand-Arm Vibration Syndrome or carpal tunnel syndrome. Therefore, continual end regular users should monitor closely the condition of their hands and fingers. If any of the above symptoms appear, seek medical advice immediately.
- Long or continuous exposure to high noise levels may cause permanent hearing impairment. Always wear approved hearing protection when operating a unit/machine.
- If you are using any medical electric/electronic devices such as a pacemaker, consult your physician as well as the device manufacturer prior to operating any power equipment.

Unit/machine safety

- Inspect the entire unit/machine before each use. Replace damaged parts. Check for fuel leaks and make sure all fasteners are in place and securely tightened.
- Replace parts that are cracked, chipped or damaged in any way before using the unit/machine.
- Make sure the side case is properly attached.
- Keep others away when making carburetor adjustments.
- Use only accessories as recommended for this unit/machine by the manufacturer.
- Never let the chain strike any obstacle. If the chain makes contact, the machine should be stopped and checked carefully.

- Make sure the automatic oiler is working. Keep the oil tank filled with clean oil. Never let chain run dry on the bar.

⚠ WARNING

- Never modify the unit/machine in any way. Do not use your unit/machine for any job except that for which it is intended.
- Never use chain saw without any safety equipment or that has faulty safety equipment. It could result in serious personal injury.
- Using guide bar/chain other than recommended by the manufacturer which are not approved, could result in a high risk of personal accidents or injury.

Fuel safety

- Mix and pour fuel outdoors and where there are no sparks or flames.
- Use a container approved for fuel.
- Do not smoke or allow smoking near fuel or the unit/machine or while using the unit/machine.
- Wipe up all fuel spills before starting engine.
- Move at least 10 feet (3 m) away from fueling site before starting engine.
- Stop engine and let it cool for a few minutes before removing fuel tank cap.
- Empty the fuel tank before storing the unit/machine. It is recommended that the fuel be emptied after each use. If fuel is left in the tank, store so fuel will not leak.
- Store unit/machine and fuel in area where fuel vapors cannot reach sparks or open flames from water heaters, electric motors or switches, furnaces, etc.

⚠ WARNING

Fuel is easy to ignite or get explosion or inhale fumes, so that pay special attention when handling or filling fuel.

Cutting safety

- Do not cut any material other than wood or wooden objects.
- For respiratory protection, wear an aerosol protection mask when cutting the wood after insecticide has been applied.
- Keep others including children, animals, bystanders and helpers outside the hazard zone. Stop the engine immediately if you are approached.
- Hold the unit/machine firmly with the right hand on the rear handle and the left hand on the front handle.
- Keep firm footing and balance. Do not over-reach.
- Keep all parts of your body away from the muffler and cutting attachment when the engine is running.
- Keep Bar/Chain below waist level.

- Before felling a tree, the operator must be accustomed to the sawing techniques of the chain saw.
- Be sure to pre-plan a safe exit from a falling tree.
- While cutting, hold saw firmly with both hands with thumb firmly locked around front handle, and stand with feet well balanced and your body balanced.
- Stand to the side of the saw when cutting - never directly behind it.
- Always keep the spiked bumper face to a tree, because the chain may suddenly be drawn into a tree, if so equipped.
- When completing a cut, be ready to hold up the units as it breaks into clear, so it will not follow through and cut your legs, feet or body, or contact an obstruction.
- Be alert against kickback (when saw kicks up and back at operator). Never cut with the nose of the bar.
- When relocating to a new work area, be sure to shut off the machine and ensure that all cutting attachments are stopped.
- Never place the machine on the ground when running.
- Always ensure that the engine is shut off and any cutting attachments have completely stopped before clearing debris or removing grass from the cutting attachment.
- Always carry a first-aid kit when operating any power equipment.
- Never start or run the engine inside a closed room or building and/or near the inflammable liquid. Breathing exhaust fumes can kill.

Maintenance safety

- Maintain the unit/machine according to recommended procedures.
- Disconnect the spark plug before performing maintenance except for carburetor adjustments.
- Keep others away when making carburetor adjustments.
- Use only genuine Tanaka replacement parts as recommended by the manufacturer.

CAUTION

Do not disassemble the recoil starter. You may get a possibility of personal injury with recoil spring.

⚠ WARNING

Improper maintenance could result in serious engine damage or in serious personal injury.

Transport and storage

- Carry the unit/machine by hand with the engine stopped and the muffler away from your body.
- Allow the engine to cool, empty the fuel tank, and secure the unit/machine before storing or transporting in a vehicle.

- Empty the fuel tank before storing the unit/machine. It is recommended that the fuel be emptied after each use. If fuel is left in the tank, store so fuel will not leak.
- Store unit/machine out of the reach of children.
- Clean and maintain the unit carefully and store it in a dry place.

- Make sure ignition switch is off when transporting or storing.
- When transporting or storage, cover chain with guide bar cover.

If situations occur which are not covered in this manual, take care and use common sense. Contact Tanaka dealer if you need assistance.

SPECIFICATIONS

- Code "CS" of model name means "Chain saw"

Model	TCS33EDTP (30)	TCS33EDTP (35)
Type of equipment	Chain saw, portable	
Engine Size (cu. in.)	1.96 (32.2 cm ³)	
Spark Plug	NGK BPMR-7A	
Fuel Tank Capacity (fl.oz)	9.9 (290 ml)	
Chain Oil Tank Capacity (fl.oz)	6.1 (180 ml)	
Dry Weight (lbs) (Without guide bar and chain)	7.5 (3.4 kg)	
Chain pitch (in.)	3/8 (9.53 mm)	
Chain gauge (in.)	0.05 (1.27 mm)	
Sound pressure level LpA (dB (A)) by ISO 22868 Equivalent Uncertainty	100 3	
Sound power level LwA (dB (A)) by ISO 22868 Measured Uncertainty	109 3	
Sound power level LwA (dB (A)) by 2000/14/EC Measured Guaranteed	113 116	
Vibration level (m/s ²) by ISO 22867 Front handle Rear handle Uncertainty	4.4 6.1 1.0	
Guide bar length (in.)	12 (300 mm)	14 (350 mm)
Type of chain	91PX / VG045 (Oregon)	91PX / VG052 (Oregon)
Max. engine power by ISO 7293 (kW)	1.2/9,300	
Max. engine speed (min ⁻¹)	12,000	
Idle engine speed (min ⁻¹)	3,000	
Specific fuel consumption (g/kWh)	534	
Max. chain speed (m/sec)	22.9	
Sprocket (number of teeth)	6	

NOTE: Equivalent noise level/vibration levels by ISO 22868/22867 are calculated as the time-weighted energy total for noise/vibration levels under various working conditions with the following time distribution: 1/3 idle, 1/3 full, 1/3 racing speed.

* All data subject to change without notice.

ASSEMBLY PROCEDURES

⚠ WARNING

Never try to start engine without side case, bar and chain securely fastened.

1. Pull the chain brake (15) toward the front handle to check that the brake is disengaged. (Fig. 10)
2. Remove guide bar clamp nut (2). Remove the side case (3) (Fig. 2)

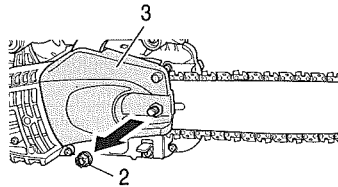


Fig. 2

* In case of installing the spiked bumper (4), install the spiked bumper (4) to the unit with two screws. (Fig. 3)

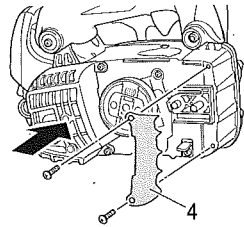


Fig. 3

3. Install the guide bar (5) onto the bolts (6), then push it toward the sprocket (7) as far as it will go. (Fig. 4)

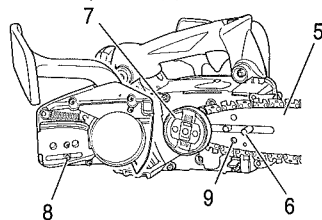


Fig. 4

4. Confirm the direction of saw chain (10) is correct as in the figure, and align the chain on the sprocket. (Fig. 5)

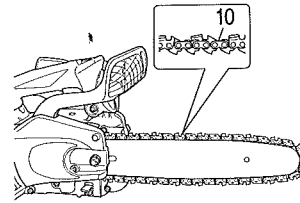


Fig. 5

5. Guide the chain drive links into the bar groove all around the bar.
6. Install the side case (3) onto the bolts (6). Make sure that the boss of chain tension adjust bolt (8) fits into the hole of the bar (9). (Fig. 4) Then tighten the guide bar clamp nut (2) by hand that allows the chain bar end to move up and down easily. (Fig. 2)
7. Raise the bar end, and tighten the saw chain (10) by turning the tension adjustment bolt (11) clockwise. To check proper tension, lightly lift up the center of chain and there should be about 0.02 - 0.04" (0.5 - 1.0 mm) clearance between bar and edge of drive link (12). (Fig. 6, 7)

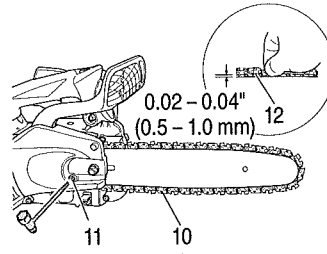


Fig. 6

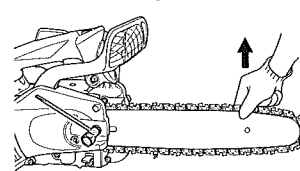


Fig. 7

CAUTION

PROPER TENSION IS EXTREMELY IMPORTANT

8. Raise the bar end and securely tighten the guide bar clamp nut with the combi box spanner. (Fig. 7)
9. A new chain will stretch so adjust the chain after a few cuts and watch chain tension carefully for the first half hour of cutting.

NOTE

Check the chain tension frequently for optimum performance and durability.

CAUTION

- When the chain is excessively tightened, the bar and chain will be damaged rapidly. Conversely, when the chain is excessively loosened, it may get out of the groove in the bar.
- Always wear gloves when touching the chain.

⚠ WARNING

During operation, hold chain saw firmly with both hands. A single hand operation may cause serious injury.

OPERATING PROCEDURES

Fuel (Fig. 8)

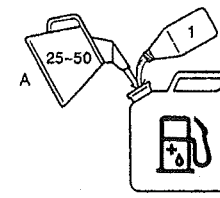


Fig. 8

⚠ WARNING

- The chain saw is equipped with a two-stroke engine. Always run the engine on fuel, which is mixed with oil. Provide good ventilation, when fueling or handling fuel.
- Fuel contains highly flammable and it is possible to get the serious personal injury when inhaling or spilling on your body. Always pay attention when handling fuel. Always have good ventilation when handling fuel inside building.

Fuel

- Always use branded 89 octane unleaded gasoline.
- Use genuine two-cycle oil or use a mix between 25:1 to 50:1, please consult the oil bottle for the ratio or Tanaka dealer.
- Only for the state of California at 50:1.
- If genuine oil is not available, use an anti-oxidant added quality oil expressly labeled for air-cooled 2-cycle engine use (JASO FC GRADE OIL or ISO EGC GRADE). Do not use BIA or TCW (2-stroke water-cooling type) mixed oil.
- Never use multi-grade oil (10 W/30) or waste oil.
- Always mix fuel and oil in a separate clean container. Always start by filling half the amount of gasoline, which is to be used. Then add the whole amount of oil. Mix (shake) the fuel mixture. Add the remaining amount of gasoline. Mix (shake) the fuel-mix thoroughly before filling the fuel tank.

Fueling

⚠ WARNING (Fig. 9)

- Always shut off the engine and let it cool for a few minutes before refueling.
- Do not smoke or bring flames or sparks near the fueling site.
- Slowly open the fuel tank (13), when filling up with fuel, so that possible overpressure disappears.
- Tighten the fuel tank cap carefully, after fueling.
- Always move the unit at least 10 feet (3 m) from the fueling area before starting.
- Always wash any spilled fuel from clothing immediately with soap.
- Be sure to check any fuel leaking after refueling.

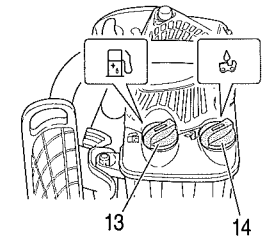


Fig. 9

Before fueling, clean the tank cap area carefully, to ensure that no dirt falls into the tank. Make sure that the fuel is well mixed by shaking the container, before fueling.

Chain oil (Fig. 9)

Slowly open the oil tank (14), and fill up with chain oil. Always use good quality chain oil. When the engine is running, the chain oil is automatically discharged. Fill up the oil tank (14) with chain oil every time when refueling.

NOTE

When pouring fuel (13) or chain oil (14) into the tank, place the unit with cap side up. (Fig. 9)

Chain brake operation (Fig. 10)

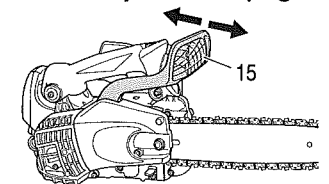


Fig. 10

Chain brake (15), is designed to activate in an emergency such as kick-back action. Please check to verify that it works properly before use.

Application of brake is made by moving the front hand guard towards the bar. During the chain brake operation, even if the throttle trigger is pulled, the engine speed does not increase and the chain does not turn. To release the brake, pull up the front hand guard. If the engine keeps rotating at high speed with the brake engaged, the clutch will overheat causing trouble. When the brake engages during operation, immediately release the throttle trigger to slow down the engine.

How to confirm:

- 1) Turn off the engine.
- 2) Holding the chain saw horizontally, release your hand from the front handle, hit the tip of the guide bar to a stump or a piece of wood, and confirm brake operation. Operating level varies by bar size.

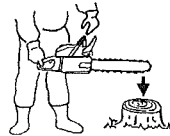


Fig. 11

In case the brake is not effective, ask our dealer for inspection and repairs.

Starting the cold engine (Fig. 12-17)

CAUTION

- Follow the instructions in this manual for starting the engine.
- Before starting, make sure that the bar/chain does not touch anything.

1. Make sure chain brake is engaged. (Fig. 12)

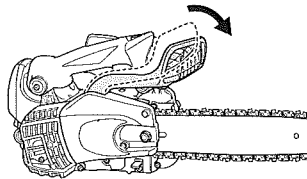


Fig. 12

2. Set ignition switch (16) to ON position. (Fig. 13)

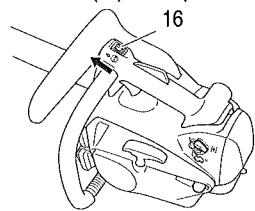


Fig. 13

3. Push priming pump (17) about ten times so that fuel flows through priming pump into carburetor. (Fig. 14)

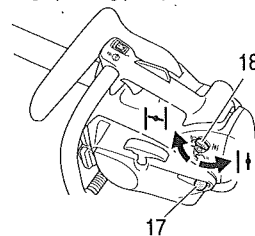


Fig. 14

4. Turn the choke lever (18) to choked position (Fig. 14). This will automatically lock the throttle in starting position.
5. Pull recoil starter briskly, taking care to keep the handle in your grasp and not allowing it to snap back. (Fig. 15)

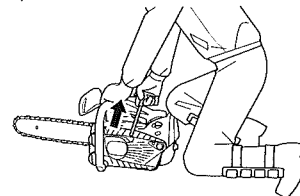


Fig. 15

6. When you hear first ignition, return the choke lever to run position. (Fig. 14)
7. Pull recoil starter briskly again in the aforementioned manner. (Fig. 15)

NOTE

If engine does not start, repeat procedures from 4 to 7.

8. As soon as engine start, pull throttle trigger full once and release immediately. (Fig. 16) Then half-throttle is disengaged.
9. Make sure chain brake is disengaged. (Fig. 17) Allow the engine about 2-3 minutes to warm up before subjecting it to any load. Do not run the engine at high speed without the load to shorten the longevity of the engine.

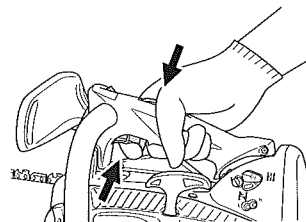


Fig. 16

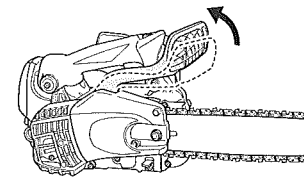


Fig. 17

Starting the warm engine

Use only 1, 2, 7, and 9 of the starting procedure for a cold engine.

If the engine does not start, use the same starting procedure as for a cold engine.

Chain lubrication test

Check that chain oil is discharged properly. When the saw chain starts to revolve, point the head of the guide bar to a stump, etc., and pull the throttle trigger to perform high-speed operation for around 10 seconds. If chain oil is sprayed over the stump, it is discharged properly. (Fig. 18)

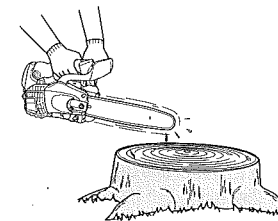


Fig. 18

WARNING

Do not carry the machine with the engine running.

Stopping (Fig. 19)

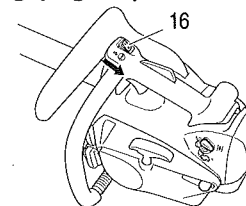


Fig. 19

Decrease engine speed, and push ignition switch (16) to stop position.

WARNING

Do not put the machine where there are flammable materials such as dried grass, since the muffler is still hot after the engine has stopped.

NOTE

If the engine does not stop, it can be forced to stop by rotating the choke lever to the choked position. Before restarting the engine, ask our dealer for repairs.

WARNING

- Do not overreach or cut above shoulder height.
- Use extra caution when felling, and do not use the saw in a nose-high position or above shoulder height.

CHAIN CATCHER

The chain catcher is located on the power head just below the chain to further prevent the possibility of a broken chain striking the chain saw user.

WARNING

Do not stand in-line with chain when cutting.

BASIC TECHNIQUES FOR MAKING FELLING, LIMBING AND BUCKING CUTS

The intention of the following information is to provide you with the general introduction to wood cutting techniques.

WARNING

○ This information does not cover all specific situations, which may depend on differences in terrain, vegetation, kind of wood, form and size of trees, etc. Consult your servicing dealer, forestry agent or local forestry schools for advice on specific woodcutting problems in your area. This will make your work more efficient and safer.

- Avoid cutting in adverse weather conditions, such as dense fog, heavy rain, bitter cold, high winds, etc. Adverse weather is often tiring to work in and creates potentially dangerous conditions such as slippery ground. High winds may force the tree to fall in an unexpected direction causing property damage or personal injury.

CAUTION

Never use a chain saw to pry or for any purpose for which it is not intended.

WARNING

- Avoid stumbling on obstacles such as stumps, roots, rocks, branches and fallen trees. Watch out for holes and ditches. Be extremely cautious when working on slopes or uneven ground. Shut off the saw when moving from one work place to another. Always cut at wide open throttle. A slow moving chain can easily catch and force the saw to jerk.

- Never use the saw with only one hand. You cannot control the saw properly and you may lose control and injure yourself severely. Keep the saw body close to your body to improve control and reduce strain. When cutting with the bottom part of the chain the reactive force will pull the saw away from you towards the wood you are cutting. The saw will control the feeding speed and sawdust will be directed towards you. (Fig. 20)

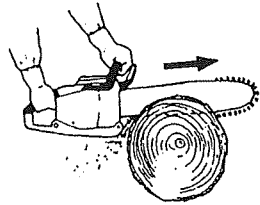


Fig. 20

- When cutting with the upper part of the chain the reactive force will push the saw towards you and away from the wood you are cutting. (Fig. 21)

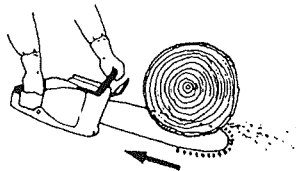


Fig. 21

- There is a risk of kickback if the saw is pushed far enough so that you begin to cut with the nose of the bar. The safest cutting method is to cut with the bottom part of the chain. Sawing with the upper part makes it much more difficult to control the saw and increases the risk of kickback.
- In case the chain locked, immediately release the throttle trigger. If the throttle trigger keeps rotating at high speed with the chain locked, the clutch will overheat causing trouble.

NOTE

Always keep the spiked bumper (if so equipped) face to a tree, because the chain may suddenly be drawn into a tree.

FELLING

Felling is more than cutting down a tree. You must also bring it down as near to an intended place as possible without damaging the tree or anything else.

Before felling a tree, carefully consider all conditions which may effect the intended direction, such as: Angle of the tree: Shape of the crown. Snow load on the crown. Wind conditions. Obstacles within tree range (e.g., other trees, power lines, roads, buildings, etc.).

⚠ WARNING

- Always observe the general conditions of the tree. Look for decay and rot in the trunk which will make it more likely to snap and start to fall before you expect it.
- Look for dry branches, which may break and hit you when you are working. Always keep animals and people at least twice the tree length away while felling. Clear away shrubs and branches from around the tree. Prepare a path of retreat away from the felling direction.

BASIC RULES FOR FELLING TREES

Normally the felling consists of two main cutting operations, notching and making the felling cut. Start making the upper notch cut on the side of the tree facing the feeling direction. Look through the kerf as you saw the lower cut so you do not saw too deep into the trunk. The notch should be deep enough to create a hinge of sufficient width and strength. The notch opening should be wide enough to direct the fall of the tree as long as possible. Saw the felling cut from the other side of the tree between one and two inches (3–5 cm) above the edge of the notch. (Fig. 22)

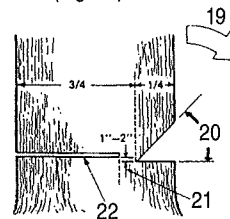


Fig. 22

- 19. Felling direction
- 20. 45° minimum notch opening
- 21. Hinge
- 22. Felling cut

Never saw completely through the trunk. Always leave a hinge.

The hinge guides the tree. If the trunk is completely cut through, you lose control over the felling direction. Insert a wedge or a felling lever in the cut well before the tree becomes unstable and starts to move. This will prevent the guide bar from binding in the felling cut

if you have misjudged the falling direction. Make sure no people have come into the range of the falling tree before you push it over.

FELLING CUT, TRUNK DIAMETER MORE THAN TWICE GUIDE BAR LENGTH

Cut a large, wide notch. Then cut a recess into the center of the notch. Always leave a hinge on both sides of the center cut. (Fig. 23)

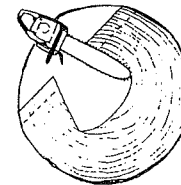


Fig. 23

Complete the felling cut by sawing around the trunk as in the Fig. 24.

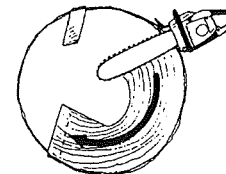


Fig. 24

⚠ WARNING

These methods are extremely dangerous because they involve the use of the nose of guide bar and can result in kickback.

Only properly trained professionals should attempt these techniques.

LIMBING

Limbing is removing the branches from a feller tree.

⚠ WARNING

A majority of kickback accidents occur during limbing.

Do not use the nose of the guide bar. Be extremely cautious and avoid contacting the log, other limbs or objects with the nose of the guide bar. Be extremely cautious of limbs under tension. They can spring back towards you and cause loss of control resulting in injury. (Fig. 25)

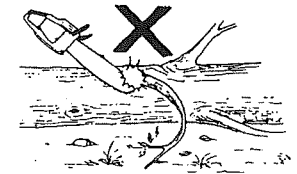


Fig. 25

Stand on the left side of the trunk. Maintain a secure footing and rest the saw on the trunk. Hold the saw close to you so that you are in full control of it. Keep well away from the chain. Move only when the trunk is between you and the chain. Watch out for spring back of limbs under tension.

LIMBING THICK BRANCHES

When limbing thick branches, the guide bar may get pinched easily. Branches under tension often snap up, so cut troublesome branches in small steps. Apply the same principles as for cross cutting. Think ahead and be aware of the possible consequences of all your actions.

CROSS CUTTING/BUCKING

Before starting to cut through the log, try to imagine what is going to happen. Look out for stresses in the log and cut through it in such a manner that the guide bar will not get pinched.

CROSS CUTTING LOGS, PRESSURE ON TOP

Take a firm stance. Begin with an upper cut. Do not cut too deeply, about 1/3 of the log diameter is enough. Finish with a bottom cut.

The saw cuts should meet. (Fig. 26)

25

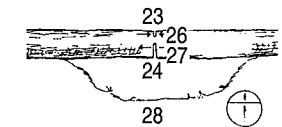


Fig. 26

- 23. Relieving cut
- 24. Cross cut
- 25. Pressure on top
- 26. Pressure side
- 27. Tension side
- 28. Relative depth of saw cuts

THICK LOG, LARGER THAN GUIDE BAR LENGTH

Begin by cutting on the opposite side of the log. Pull the saw towards you, followed by previous procedure. (Fig. 27)

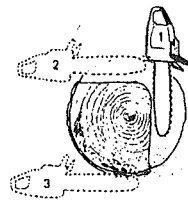


Fig. 27

If the log is lying on the ground make a boring cut to avoid cutting into the ground. Finish with a bottom cut. (Fig. 28)

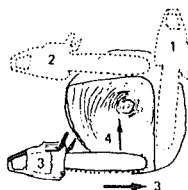


Fig. 28

⚠ WARNING KICKBACK DANGER

Do not attempt a boring cut if you are not properly trained. A boring cut involves the use of the nose of the guide bar and can result in kickback.

CROSS CUTTING LOGS, PRESSURE ON BOTTOM

Take a firm stance. Begin with a bottom cut. The depth of the cut should be about 1/3 of the log diameter. Finish with an upper cut. The saw cuts should meet. (Fig. 29)

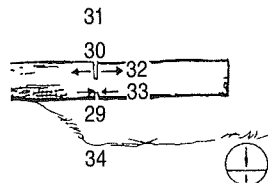


Fig. 29

- 29. Relieving cut
- 30. Cross cut
- 31. Pressure on bottom
- 32. Tension side
- 33. Pressure side
- 34. Relative depth of saw cuts

THICK LOG, LARGER THAN GUIDE BAR LENGTH

Begin by cutting on the opposite side of the log. Pull the saw towards you, followed by previous procedure. Make a boring cut if the log is close to the ground. Finish with a top cut. (Fig. 30)

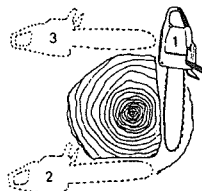


Fig. 30

⚠ WARNING KICKBACK DANGER

Do not attempt a boring cut if you are not properly trained. A boring cut involves the use of the nose of the guide bar and can result in kickback. (Fig. 31)

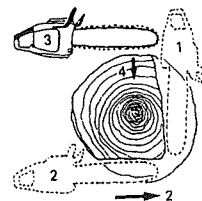


Fig. 31

IF THE SAW GETS STUCK

Stop the engine. Raise the log or change its position, using a thick branch or pole as a lever. Do not try to pull the saw free. If you do, you can deform the handle or be injured by the saw chain if the saw is suddenly released.

MAINTENANCE

MAINTENANCE, REPLACEMENT OR REPAIR OF THE EMISSION CONTROL DEVICES AND SYSTEM MAY BE PERFORMED BY ANY NON-ROAD ENGINE REPAIR ESTABLISHMENT OR INDIVIDUAL.

Carburetor adjustment (Fig. 32)

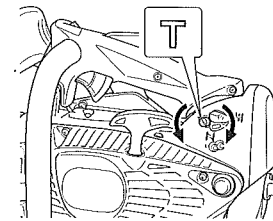


Fig. 32

⚠ WARNING

Never start the engine without the complete side case.

Otherwise the clutch can come loose and cause personal injuries.

In the carburetor, fuel is mixed with air. When the engine is test run at the factory, the carburetor is adjusted. A further adjustment may be required, according to climate and altitude. The carburetor has one adjustment possibility:

T = Idle speed adjustment screw.

Idle speed adjustment (T)

Check that the air filter is clean. When the idle speed is correct, the cutting attachment will not rotate. If adjustment is required, close (clockwise) the T-screw, with the engine running, until the cutting attachment starts to rotate. Open (counter-clockwise) the screw until the cutting attachment stops. You have reached the correct idle speed when the engine runs smoothly in all positions well below the rpm when the cutting attachment starts to rotate.

If the cutting attachment still rotates after idle speed adjustment, contact Tanaka dealer.

⚠ WARNING

When the engine is idling the cutting attachment must under no circumstances rotate.

NOTE

Some models sold in areas with strict exhaust emission regulation do not have high and low speed carburetor adjustments. Such adjustments may allow the engine to be operated outside of their emission compliance limits. For these models, the only carburetor adjustment is idle speed.

If you are not familiar with this type of adjustment, please ask for assistance from your Tanaka dealer.

Air filter (Fig. 33)

The air filter (37) and cleaner sponge (36), (38) must be cleaned from dust and dirt in order to avoid:

- Carburetor malfunctions.
- Starting problems.
- Engine power reduction.
- Unnecessary wear on the engine parts.
- Abnormal fuel consumption.

Clean the air filter daily or more often if working in exceptionally dusty areas.

Cleaning the air filter

Remove the air filter cover (35) and the cleaner sponge (36). Turn the air filter (37) 20° counter-clockwise and remove. Then remove the cleaner sponge (38).

Rinse them in warm soap suds. Check that the filter is dry before reassembly. An air filter that has been used for some time cannot be cleaned completely. Therefore, it must regularly be replaced with a new one. A damaged filter must always be replaced.

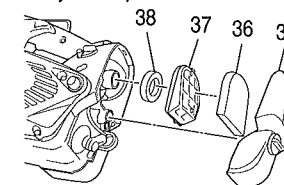


Fig. 33

Spark plug (Fig. 34)

The spark plug condition is influenced by:

- An incorrect carburetor setting.
- Wrong fuel mixture (too much oil in the gasoline)
- A dirty air filter.
- Hard running conditions (such as cold weather).

These factors cause deposits on the spark plug electrodes, which may result in malfunction and starting difficulties. If the engine is low on power, difficult to start or runs poorly at idling speed, always check the spark plug first. If the spark plug is dirty, clean it and check the electrode gap. Readjust if necessary. The correct gap is 0.024" (0.6 mm). The spark plug should be replaced after about 100 operation hours or earlier if the electrodes are badly eroded.

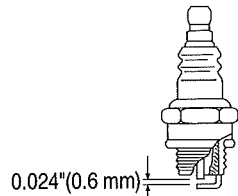


Fig. 34

NOTE

In some areas, local law requires using a resistor spark plug to suppress ignition signals. If this machine was originally equipped with resistor spark plug, use same type of spark plug for replacement.

Oiler port (Fig. 35)

Clean the chain oiler port (39) whenever possible.

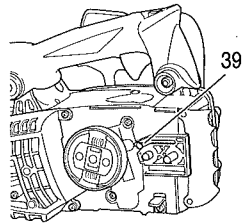


Fig. 35

Guide bar (Fig. 36)

Before using the machine, clean the groove and oiler port (40) in the bar with the special gauge offered as an optional accessory.

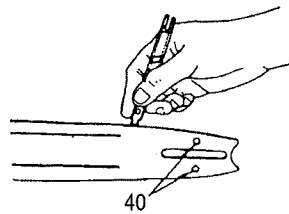


Fig. 36

Side case (Fig. 37)

Always keep the side case and drive area clean of saw dust and debris. Periodically apply oil or grease to this area to protect from corrosion as some trees contain high levels of acid.

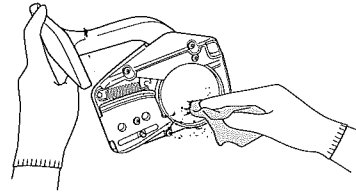


Fig. 37

Fuel filter (Fig. 38)

Remove the fuel filter from the fuel tank and thoroughly wash it in solvent. After that, push the filter into the tank completely.

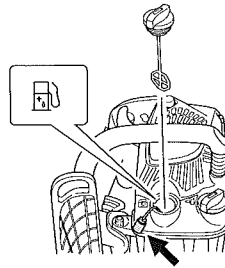


Fig. 38

NOTE

If the filter is hard due to dust and dirt, replace it.

Chain oil filter (Fig. 39)

Remove the oil filter and thoroughly wash it in solvent. After that, push the filter into the tank completely.

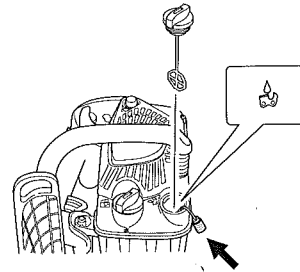


Fig. 39

NOTE

If the filter is hard due to dust and dirt, replace it.

Cleaning the cylinder fins (Fig. 40)

When wood chips are caught between cylinder fins (41), the engine may overheat, resulting in lower output. To avoid this, always keep cylinder fins and fan case clean.

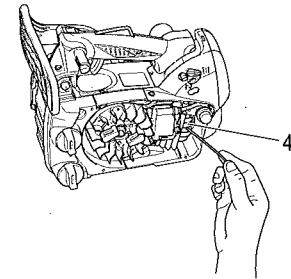
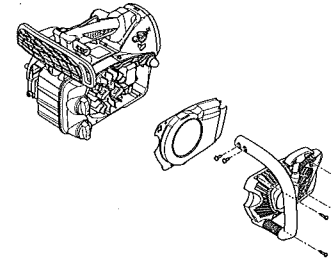


Fig. 40

For long-term storage

Drain all fuel from the fuel tank. Start and let engine run until it stops. Repair any damage which has resulted from use. Clean the unit with a clean rag, or the use of high pressure air hose. Put a few drops of two-cycle engine oil into the cylinder through the spark plug hole, and spin the engine over several times to distribute oil. Cover the unit and store it in a dry area.

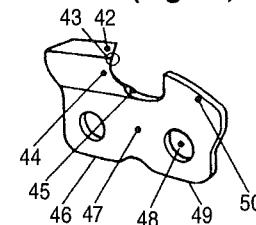
CHAIN SHARPENING**Parts of a cutter (Fig. 41, 42)**

Fig. 41

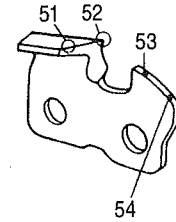


Fig. 42

⚠ WARNING

- Gloves should be used when sharpening chain.
- Be sure to round off the front edge to reduce the chance of kickback or tie-strap breakage.

- 42. Top plate
- 43. Working corner
- 44. Side plate
- 45. Gullet
- 46. Heel
- 47. Chassis
- 48. Rivet hole
- 49. Toe
- 50. Depth gauge
- 51. Correct angle on top plate (degree of angle depends on chain type)
- 52. Slightly protruding "hook" or point (curve on non-chisel chain)
- 53. Top of depth gauge at correct height below top plate
- 54. Front of depth gauge rounded off

LOWERING DEPTH GAUGES WITH A FILE

- 1) If you sharpen your cutters with a file holder, check and lower the depth.
- 2) Check depth gauges every third sharpening.
- 3) Place depth gauge tool on cutter. If depth gauge projects, file it level with the top of the tool. Always file from the inside of the chain toward an outside cutter. (Fig. 43)

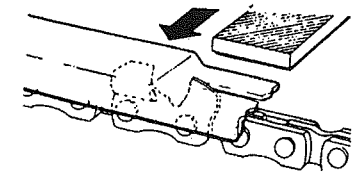


Fig. 43

- 4) Round off front corner to maintain original shape of depth gauge after using depth gauge tool. Always follow the recommended depth gauge setting found in the maintenance or operator manual for your saw. (Fig. 44)

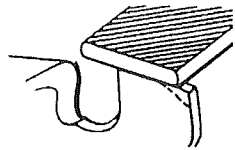


Fig. 44

NOTE

Do not file or alter the tops of bumper tie strap (55) or bumper drive link (56). Otherwise, this could increase the tendency of the chain saw to kick back. (Fig. 45)

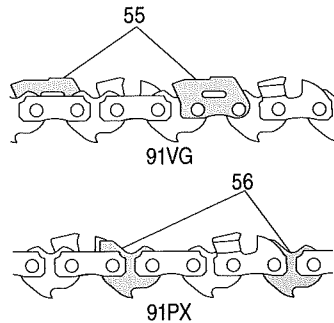


Fig. 45

GENERAL INSTRUCTIONS FOR FILING CUTTERS

File (57) cutter on one side of the chain from the inside out. File on forward stroke only. (Fig. 46)

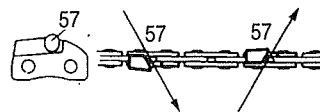


Fig. 46

- 5) Keep all cutters the same length. (Fig. 47)

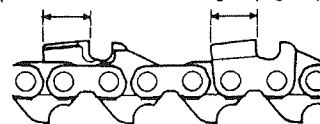


Fig. 47

- 6) File enough to remove any damage to cutting edges (side plate (58) and top plate (59) of cutter. (Fig. 48)

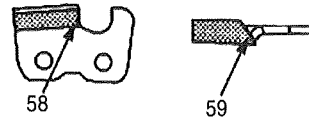


Fig. 48

SHARPENING ANGLES FOR SHARPENING SAW CHAIN

1. Part Number	91PX / VG
2. Pitch	3/8"
3. Depth Gauge Setting	0.025"
4. Side Plate Filing Angle	80°
5. Top Plate Angle	30°
6. File Guide Angle	90°

Replacement bar and chain combination

BAR NO. (E&S)	LENGTH-TYPE	NOSE-TYPE	CHAIN NO. (OREGON)	CKA
PO12-50CR	12"	SPROCKET	91PX045 91VG045	44° 50°
PO14-50CR	14"	SPROCKET	91PX052 91VG052	45° 35°

Maintenance schedule

Below you will find some general maintenance instructions. For further information please contact Tanaka dealer.

Inspection and service before use

- Check that no peel-off, degradation, or damage is observed in the Anti-Vibration rubber members, and no loosening or damage is observed in their fixtures.
- Check that no damage is observed in the Anti-Vibration springs, and no loosening or damage is observed in their fixtures.
- Check that no deformation or damage is observed in the front and rear handles.
- Check that the fixtures for front and rear handles are sufficiently tightened and free of damage.
- Check that bolts, nuts, etc. used for each part are sufficiently tightened and free of damage.

Daily maintenance

- Clean the exterior of the unit.
- Clean the chain oil filter port.
- Clean the groove and oil filter port in the guide bar.

- Clean the side case of saw dust.
- Check that the saw chain is sharp.
- Check that the bar nuts are sufficiently tightened.
- Make sure that the chain transport guard is undamaged and that it can be securely fitted.
- Check that nuts and screws are sufficiently tightened.
Especially inspect the bolt of muffler and ensure that they are properly tightened before starting engine. Should any of the bolts be loose, retighten them immediately. Failure to do so could result in serious hazard.
- Check the tip of the bar. Please exchange it for the new one when it is worn out.
- Check the band of chain brake. Please exchange it for the new one when it is worn out.

Weekly maintenance

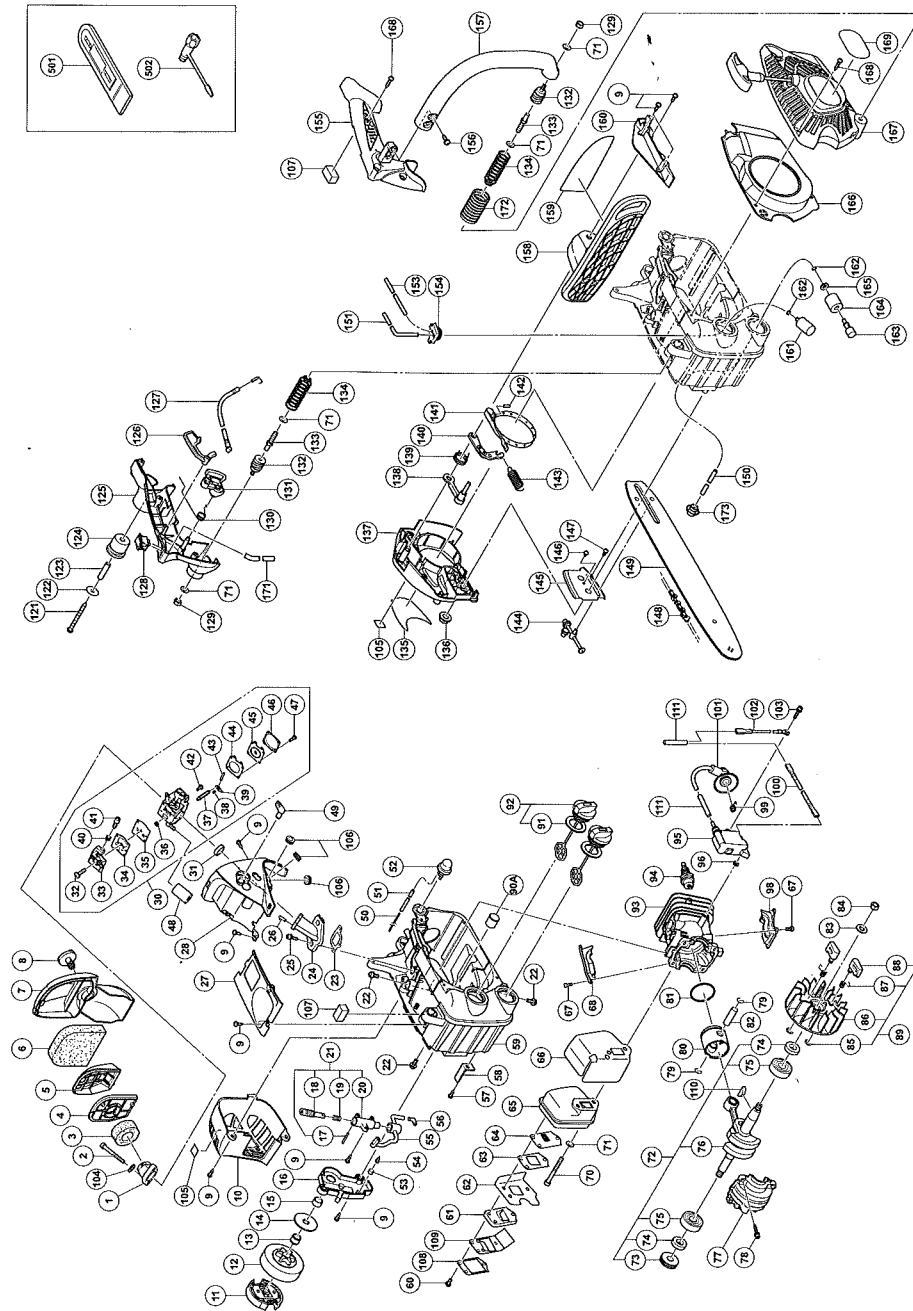
- Check the recoil starter, especially cord and return spring.
- Clean the exterior of the spark plug.
- Remove the spark plug and check the electrode gap. Adjust it to 0.024" (0.6 mm) or change the spark plug.
- Clean the cooling fins on the cylinder and check that the air intake at the recoil starter is not clogged.
- Clean the air filter.

Monthly maintenance

- Rinse the fuel tank with gasoline, and clean fuel filter.
- Clean chain oil filter.
- Clean the exterior of the carburetor and the space around it.
- Clean the fan and the space around it.
- Clean the muffler of carbon.

NOTE

When ordering the parts to your nearest dealer, please use the item numbers showing on the parts breakdown section in this instruction.



Item No.	Part Name	QTY
1	AIR CLEANER BASE	1
2	HEX. SOCKET HD. BOLT M5x45	2
3	CLEANER SPONGE (B)	1
4	CLEANER ELEMENT A COMP.	1
5	CLEANER ELEMENT B COMP.	1
6	CLEANER SPONGE (A)	1
7	CLEANER COVER	1
8	CLEANER KNOB	1
9	TAPPING SCREW (W/FLANGE) D4x16	13
10	MUFFLER COVER	1
11	CLUTCH	1
12	CLUTCH HOUSING	1
13	NEEDLE BEARING (D)	1
14	CLUTCH WASHER	1
15	CRANK SHAFT COLLAR	1
16	OIL PUMP COVER	1
17	NEEDLE ROLLER 2.5x19.8	2
18	PUMP GEAR	1
19	PUMP GEAR SPRING	1
20	PUMP CASE	1
21	PUMP ASSY (INCLUD. 17-20)	1
22	SEAL LOCK BOLT M5x15	5
23	INTAKE PACKING	1
24	INTAKE	1
25	HEX. SOCKET HD. BOLT M4x12	2
26	PULSE GUIDE	1
27	ENGINE CASE COVER	1
28	CLEANER BODY	1
30	CARBURETOR ASSY (INCLUD. 32-47)	1
31	INLET SPACER	1
32	SCREW	1
33	PUMP BODY	1
34	PUMP GASKET	1
35	PUMP DIAPHRAGM	1
36	INLET SCREEN	1
37	NEEDLE VALVE	1
38	VALVE SPRING	1
39	CONTROL LEVER	1
40	IDLE ADJUST SPRING	1
41	IDLE ADJUST SCREW	1
42	HINGE PIN SET SCREW	1
43	HINGE PIN	1
44	DIAPHRAGM PACKING-METERING	1
45	METERING DIAPHRAGM	1
46	DIAPHRAGM COVER-METERING	1
47	SET SCREW	4
48	IDOL SPONGE	1
49	CHOKE LEVER (GREEN)	1
50	PROTECTIVE COIL	1
51	FUEL PIPE 2.5x4x47	1
52	PRIMING PUMP COMP.	1
53	AIR VENT SPONGE	1
54	AIR VENT VALVE (B)	1
55	OIL PIPE	1
56	PIPE JOINT	1
57	FLANGED TAPPING SCREW D5x15	1
58	CHAIN CATCHER	1
59	ENGINE CASE ASSY (INCLUD. 54, 90)	1
60	MACHINE SCREW (W/WASHERS) M4x12	3
61	EXHAUST PIPE	1
62	MUFFLER SPECIAL PACKING	1
63	GAUZE FIXING PLATE	1
64	MUFFLER GAUZE	1
65	MUFFLER (W/CATALYZER)	1
66	MUFFLER PACKING	1
67	HEX. SOCKET HD. BOLT M4x10	6
68	SCAVENGING COVER (B)	1
70	HEX. SOCKET HD. BOLT M6x55	2
71	BOLT WASHER M6	6
72	CRANK WORM ASSY (INCLUD. 73-78)	1
73	WORM	1
74	OIL SEAL	2
75	BALL BEARING	2
76	CRANK SHAFT	1
77	CRANK CASE	1
78	HEX. SOCKET HD. BOLT (W/SP.WASHER) M5x18	4
79	CIRCLIP	2
80	PISTON (M)	1
81	PISTON RING (XR1-1856)	1
82	PISTON PIN	1
83	BOLT WASHER M7	1

Item No.	Part Name	QTY
84	FLYWHEEL NUT	1
85	RETAINING RING D4	2
86	MAGNETO ROTOR COMP.	1
87	STARTER PAWL SPRING	2
88	STARTER PAWL	2
89	MAGNETO ROTOR ASSY (INCLUD. 85-88)	1
90A	INNER CAP	1
91	TANK CAP PACKING	2
92	FUEL TANK CAP ASSY (INCLUD. 91)	2
93	CYLINDER	1
94	SPARK PLUG BPMR7A	1
95	IGNITION COIL	1
96	GLASS WASHER	2
98	SCAVENGING COVER (A)	1
99	METAL FITTING OF PLUG CAP (A)	1
100	CORD (A)	1
101	SPARK PLUG CAP	1
102	CORD (B)	1
103	HEX. SOCKET HD. BOLT (W/WASHERS) M4x18	2
104	WASHER M5	2
105	CAUTION LABEL (HOT)	2
106	GROMMET	3
107	PROTECTION SHEET	2
108	PACKING PLATE	1
109	MUFFLER SPECIAL PACKING (S)	1
110	WOODRUFF KEY 3x13x4.5	1
111	CORD INSULATION TUBE	2
121	TAPPING SCREW D5x40	1
122	WASHER 1.0	1
123	COLLAR 28.2	1
124	DAMPER	1
125	REAR HANDLE (B)	1
126	TRIGGER LOCK OUT (GREEN)	1
127	THROTTLE WIRE	1
128	STOP SWITCH	1
129	NUT M6	2
130	THROTTLE LEVER SPRING	1
131	THROTTLE LEVER (GREEN)	1
132	SPRING HOLDER	2
133	DAMPER SET BOLT	1
134	ANTIVIBRATION SPRING	2
135	NAME PLATE	1
136	FLANGE NUT M8	1
137	SIDE CASE (GREEN)	1
138	BRAKE SUPPORT PLATE	1
139	BRAKE LEVER SPRING	1
140	BRAKE LINK	1
141	BRAKE BAND	1
142	NEEDLE ROLLER D3	1
143	BRAKE SPRING	1
144	CHAIN PULLER	1
145	GUIDE PLATE (B)	1
146	TAPPING SCREW D3	1
147	TAPPING SCREW D4x10	1
148	SAW CHAIN (3/8X14") 91VG-52E	1
149	CHAIN BAR 14 INCH 3/8 SPROCKET PRC	1
150	FUEL PIPE	1
151	FUEL PIPE (FKM) L240	1
153	FUEL PIPE (FKM) L260	1
154	FUEL GROMMET	1
155	REAR HANDLE (A)	1
156	TAPPING SCREW (W/FLANGE) D5x16	2
157	FRONT HANDLE	1
158	BRAKE HANDLE	1
159	CAUTION LABEL (A)	1
160	BRAKE LINK COVER	1
161	PUMP FILTER BODY	1
162	CLIP	2
163	OIL FILTER BODY	1
164	OIL FILTER	1
165	BOLT WASHER D5	1
166	AIR DEFLECTOR	1
167	RECOIL STARTER (GREEN)	1
168	TAPPING SCREW (W/FLANGE) D4x20	8
169	LABEL	1
171	CORD INSULATION TUBE	1
172	SPRING COVER	1
173	FUEL GROMMET (A)	1
501	CHAIN COVER 14"	1
502	COMBI BOX SPANNER 13x19	1

