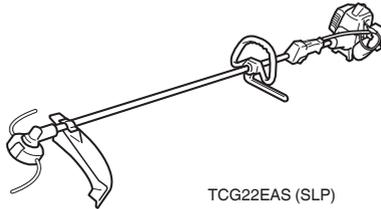


Tanaka

**Grass Trimmer/Brush Cutter
Rasentrimmer/Motorsense
Coupe- Herbes/Débroussailleuse
Bordatore/Decespugliatore
Motor Zeis/Motor bosmaaier
Motoguadañas/Desbrozadoras
Foice a motor/Roçadora**

**TCG 22EAS (SLP)/TCG 22EAS (SL)/TCG 22EAS (SP)
TCG 22EAS (S)/TCG 22EAD (SLP)/TCG 22EAD (SL)
TCG 22EAB (LP)/TCG 22EAB (L)/TCG 24EAS (SL)
TCG 24EAS (S)/TCG 27EAS (SL)/TCG 27EAS (S)
TCG 24EASP (SL)/TCG 24EASP (S)/TCG 27EASP (S)
TCG 27EASP (SL)**



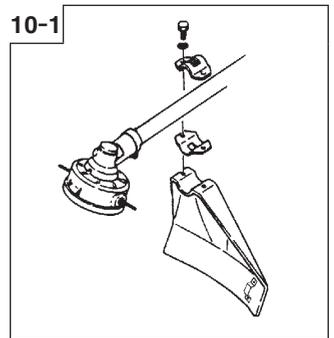
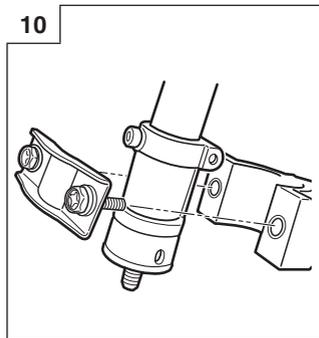
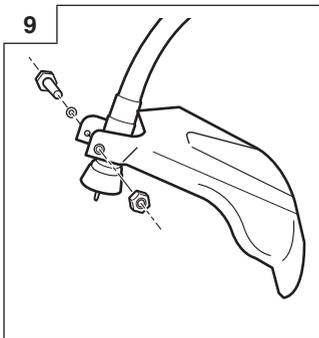
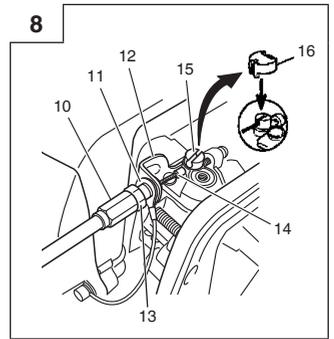
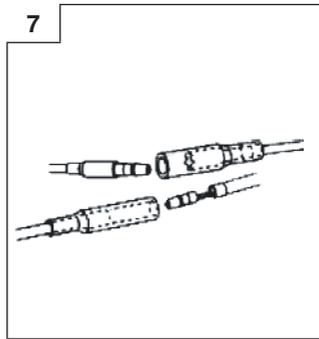
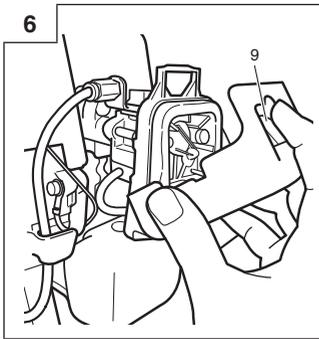
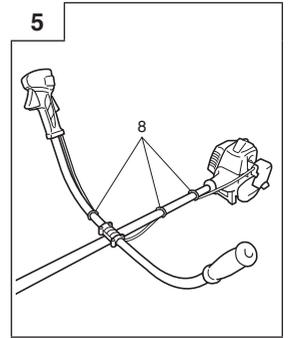
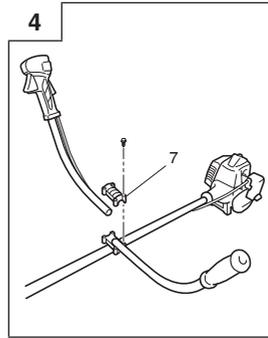
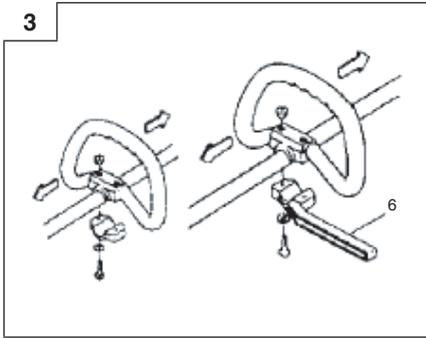
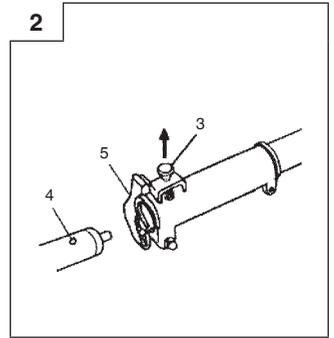
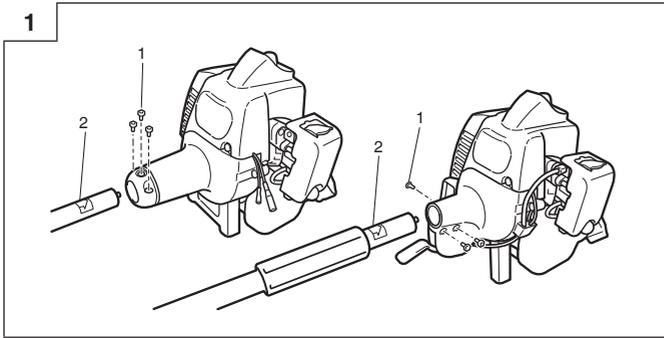
TCG22EAS (SLP)

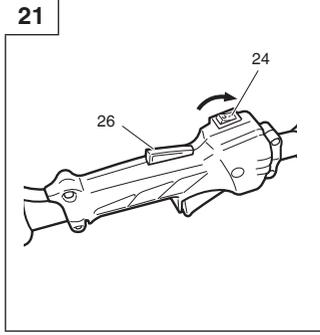
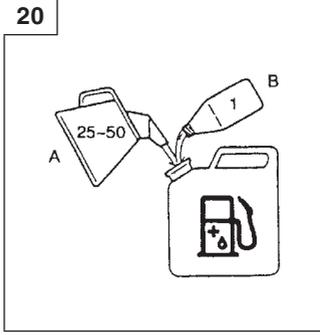
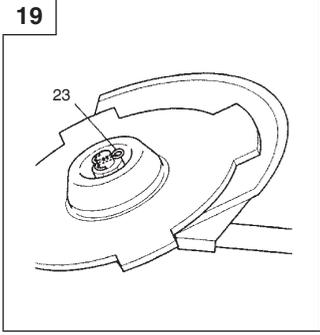
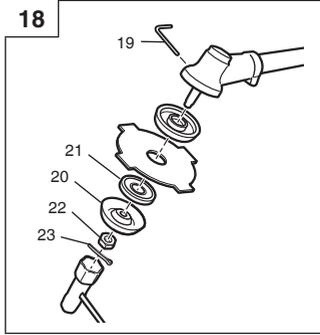
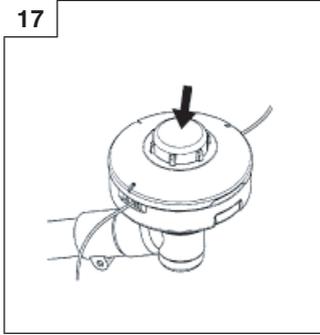
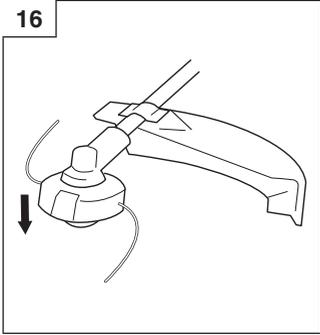
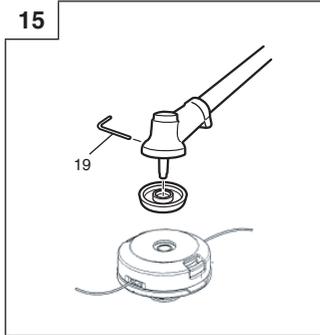
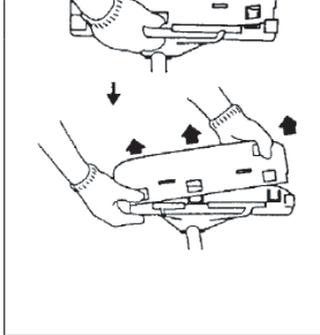
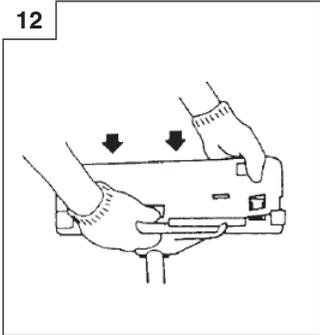
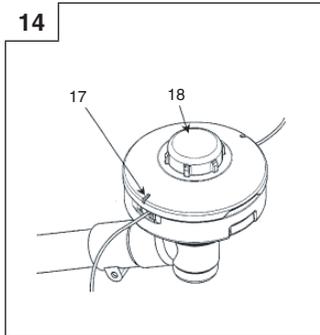
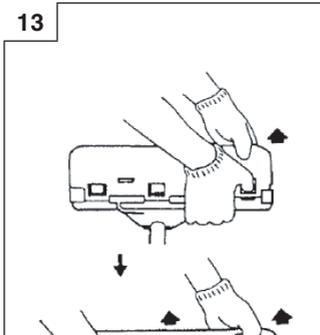
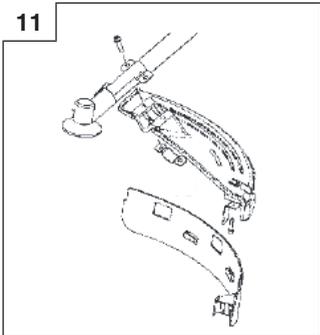


Read the manual carefully before operating this machine.
Lesen Sie vor der Verwendung diese Anleitung sorgfältig durch.
Lire attentivement le manuel avant d'utiliser la machine.
Leggere attentamente il manuale prima di mettere in funzione questa apparecchiatura.
Lees de handleiding zorgvuldig door voordat u de machine bedient.
Antes de utilizar esta máquina, lea cuidadosamente el manual.
Leia o manual atentamente antes de operar esta máquina.

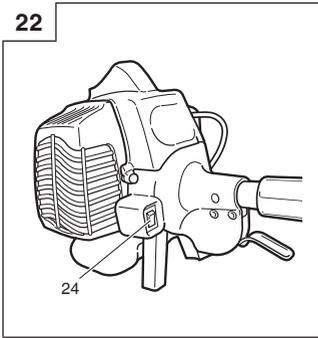
Handling instructions
Bedienungsanleitung
Mode d'emploi
Istruzioni per l'uso
Gebruiksaanwijzing
Instrucciones de manejo
Instruções de uso

Hitachi Koki

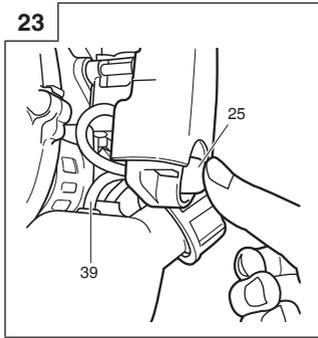




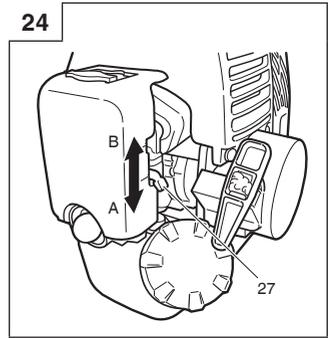
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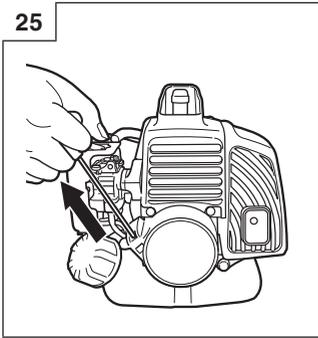
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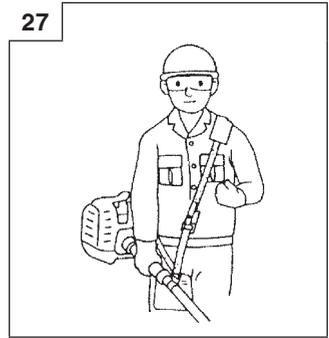
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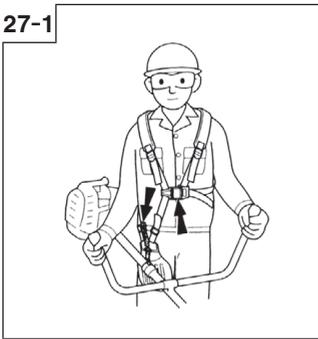
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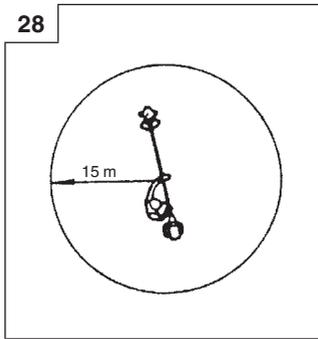
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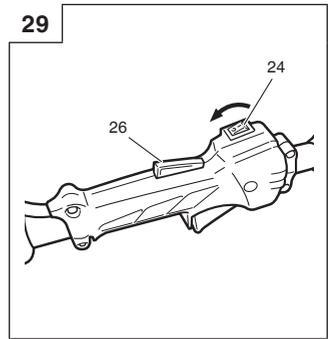
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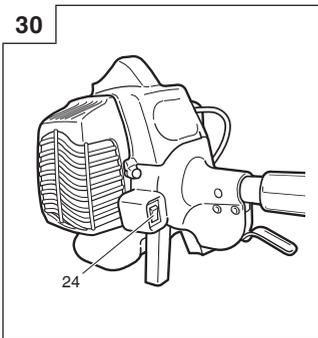
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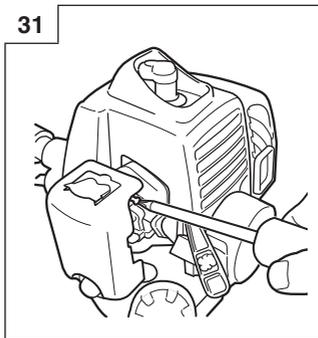
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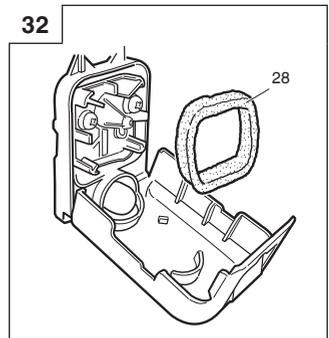
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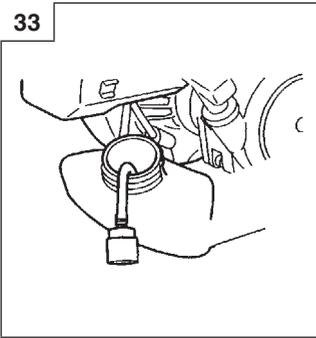
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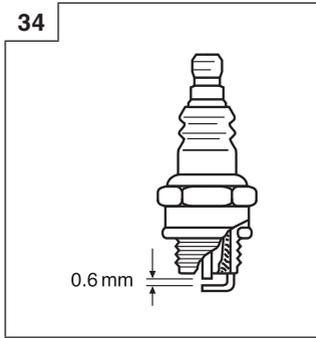
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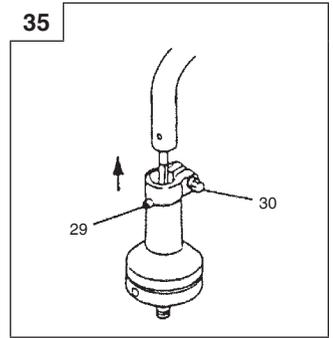
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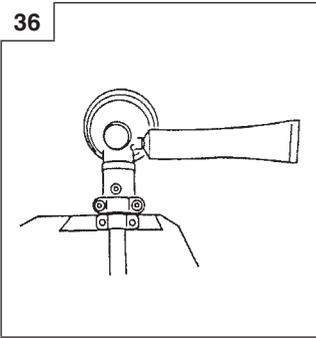
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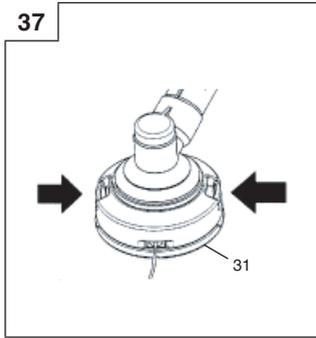
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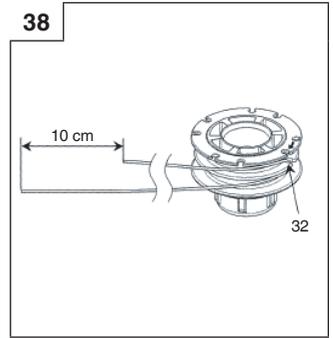
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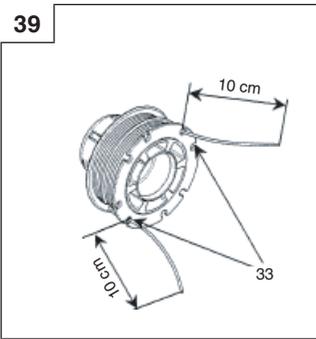
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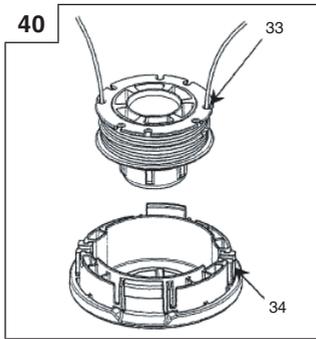
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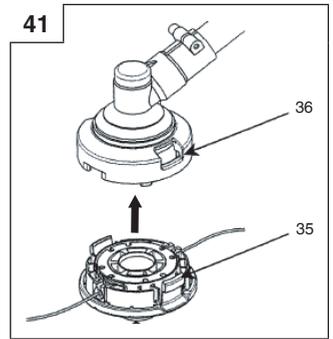
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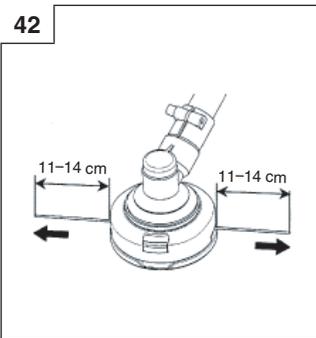
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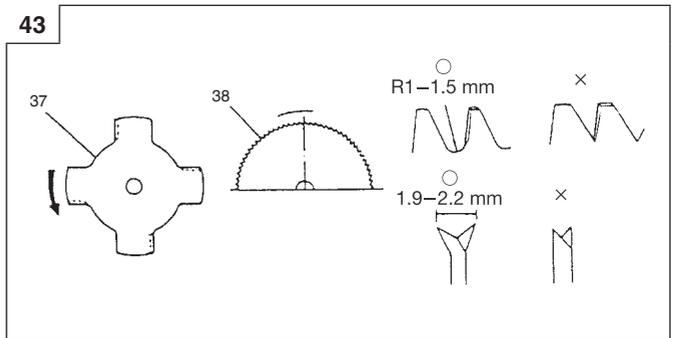
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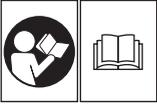
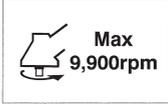
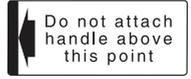


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MEANINGS OF SYMBOLS

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.		Shows maximum shaft speed. Do not use the cutting attachment whose max rpm is below the shaft rpm.
	Read, understand and follow all warnings and instructions in this manual and on the unit.		Gloves should be worn when necessary, e.g., when assembling cutting equipment.
	Always wear eye, head and ear protectors when using this unit.		Use anti-slip and sturdy footwear.
	Do not use metal/rigid blades when this sign is shown on the unit.		Blade thrust may occur when the spinning blade contacts a solid object in the critical area. A dangerous reaction may occur causing the entire unit and operator to be thrust violently. This reaction is called blade thrust. As a result, the operator may lose control of the unit which may cause serious or fatal injury. Blade thrust is more likely to occur in areas where it is difficult to see the material to be cut.
	Keep all children, bystanders and helpers 15 m away from the unit. If anyone approaches you, stop the engine and cutting attachment immediately.		
	Be careful of thrown objects.		Indicate handle location. Do not attach handle above this point.
			Indicates blade guard location for a trimmer head or semi-auto cutting head.
<p>Before using your machine</p> <ul style="list-style-type: none"> • Read the manual carefully. • Check that the cutting equipment is correctly assembled and adjusted. • Start the unit and check the carburetor adjustment. See "MAINTENANCE". 			

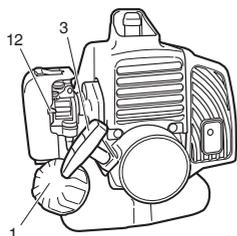
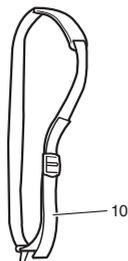
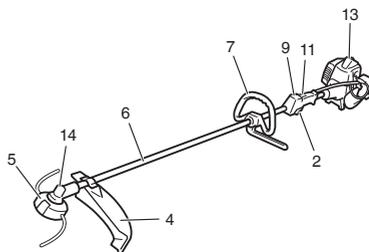
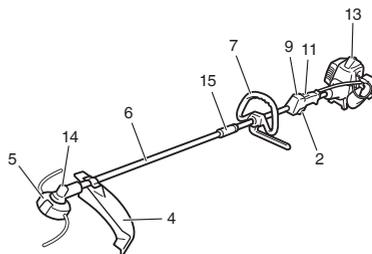
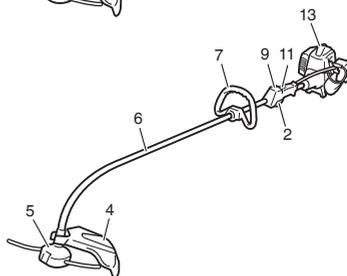
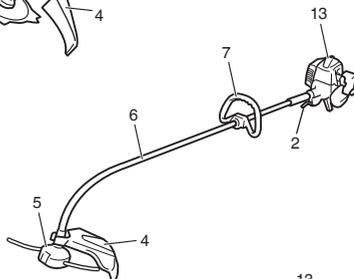
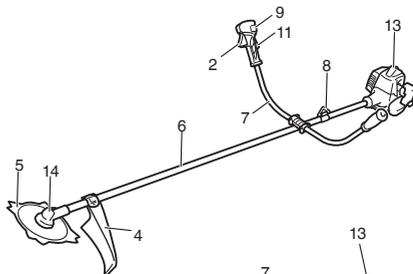
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 WARNINGS AND SAFETY INSTRUCTIONS8
 SPECIFICATIONS9
 ASSEMBLY PROCEDURES..... 10
 OPERATING PROCEDURES..... 12
 MAINTENANCE..... 12

WHAT IS WHAT

Since this manual covers several models, there may be some difference between pictures and your unit. Use the instructions that apply to your unit.

1. Fuel cap
2. Throttle trigger
3. Starter handle
4. Blade guard
5. Cutting attachment
6. Drive shaft tube
7. Handle
8. Suspension eyelet
9. Ignition switch
10. Harness
11. Throttle trigger lockout
12. Choke lever
13. Engine
14. Angle transmission
15. Joint case
16. Combi box spanner
17. Handling instructions



WARNINGS AND SAFETY INSTRUCTIONS

Operator safety

- Always wear a safety face shield or goggles.
- Always wear heavy, long pants, boots and gloves. 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.
- 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 is 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.

⚠ WARNING

- Antivibration systems do not guarantee that you will not sustain Hand-Arm Vibration Syndrome or carpal tunnel syndrome. Therefore, continual and regular users should monitor closely the condition of their hands and fingers. If any symptoms of the above appear, seek medical advice immediately.
- 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 safety guard is properly attached.
- Keep others away when making carburetor adjustments.
- Use only accessories as recommended for this unit/machine by the manufacturer.

⚠ 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.

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 3 m away from fueling site before starting engine.
- Stop engine before removing fuel 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 grass and brush.
- Inspect the area to be cut before each use. Remove objects which can be thrown or become entangled.

- For respiratory protection, wear an aerosol protection mask when cutting the grass after insecticide is scattered.
- Keep others including children, animals, bystanders and helpers outside the 15 m hazard zone. Stop the engine immediately if you are approached.
- Always keep the engine on the right side of your body.
- Hold the unit/machine firmly with both hands.
- 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 cutting attachment below waist level.
- 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 inflammable liquids. 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 Hitachi replacement parts as recommended by the manufacturer.

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 engine switch is off when transporting or storing.
- When transporting in a vehicle, cover blade with blade cover.

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

CAUTION

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

SPECIFICATIONS

		Model		TCG22EAS (SLP)	TCG22EAS (SP)	TCG22EAD (SLP)	TCG22EAB (LP)
		TCG22EAS (SL)	TCG22EAS (S)	TCG22EAD (SL)	TCG22EAB (L)		
Engine							
Displacement (cm ³) (ml)		21.1	21.1	21.1	21.1	21.1	21.1
Spark plug		NGK BMR7A	NGK BMR7A	NGK BMR7A	NGK BMR7A	NGK BMR7A	NGK BMR7A
Idling speed (min ⁻¹)		3000	3000	3000	3000	3000	3000
Recommended max. speed (min ⁻¹)		13000	13000	13000	13000	9900	9900
Speed of output shaft (min ⁻¹)		9900	9900	9900	9900	9900	9900
Max. engine output (kW)		0.63	0.63	0.63	0.63	0.63	0.63
Fuel tank capacity (cm ³) (ml)		450	450	450	450	450	450
Dry weight (kg)		4.4	4.7	4.7	4.7	3.9	3.9
Cutting attachment	Type / Dia. (mm)	Nylon cord	Nylon cord	Metal blade / 230	Nylon cord	Nylon cord	Nylon cord
Sound pressure level LpA (dB (A))	(ISO11806) Equivalent Uncertainty	90 3	89 3	91 3	90 3	90 3	90 3
Measured sound power level LwA (dB (A))	(ISO11806) Equivalent Uncertainty	104 3	104 3	103 3	104 3	104 3	104 3
Measured sound power level LwA (dB (A))	(2000/14/EC) Racing	107	107	106	107	107	107
Guaranteed sound power level LwA (dB (A))	(2000/14/EC) Racing	112	112	112	112	112	112
Vibration level (m/s ²) (ISO7916)							
Equivalent (Front / Left handle)		6.7	4.5	4.7	7.7	5.5	5.5
Equivalent (Rear / Right handle)		4.1	4.8	4.3	4.7	6.6	6.6
Idling (Front / Left handle)		4.9	2.7	2.7	4.1	5.5	5.5
Idling (Rear / Right handle)		3.3	3.4	3.4	3.7	4.7	4.7
Racing (Front / Left handle)		8.0	5.8	6.1	10.1	5.5	5.5
Racing (Rear / Right handle)		4.7	5.9	5.1	5.5	8.1	8.1

Model		TCG24EASP (SL)	TCG24EASP (S)		TCG27EASP (SL)	TCG27EASP (S)	
		TCG24EAS (SL)	TCG24EAS (S)	TCG27EAS (SL)	TCG27EAS (S)		
Engine							
Displacement (cm³) (ml)		23.9	23.9	26.9	26.9		
Spark plug		NGK BMR7A	NGK BMR7A	NGK BMR7A	NGK BMR7A		
Idling speed (min ⁻¹)		3000	3000	3000	3000		
Recommended max. speed (min ⁻¹)		11000	11000	11000	11000		
Speed of output shaft (min ⁻¹)		9900	9900	9900	9900		
Max. engine output (kW)		0.85	0.85	0.9	0.9		
Fuel tank capacity (cm³) (ml)		520					
Dry weight (kg)		4.6	4.9	4.9	5.1		
Cutting attachment	Type / Dia. (mm)	Nylon cord	Nylon cord	Metal blade / 230	Nylon cord	Nylon cord	Metal blade / 230
Sound pressure level LpA (dB (A))	(ISO11806) Equivalent Uncertainty	92 3	92 3	93 3	93 3	93 3	95 3
Measured sound power level LwA (dB (A))	(ISO11806) Equivalent Uncertainty	105 3	105 3	105 3	107 3	107 3	107 3
Measured sound power level LwA (dB (A))	(2000/14/EC) Racing	108	108	108	110	110	110
Guaranteed sound power level LwA (dB (A))	(2000/14/EC) Racing	111	111	111	111	111	111
Vibration level (m/s²) (ISO7916)							
Equivalent (Front / Left handle)		6.2	3.7	8.5	6.2	4.8	8.6
Equivalent (Rear / Right handle)		5.8	4.7	6.5	7.4	4.0	6.1
Idling (Front / Left handle)		4.2	2.6	2.6	3.1	2.8	2.8
Idling (Rear / Right handle)		3.1	4.4	4.4	2.0	3.9	3.9
Racing (Front / Left handle)		7.7	4.6	11.6	8.3	6.2	11.9
Racing (Rear / Right handle)		7.6	5.0	8.2	10.4	4.1	7.6

NOTE

Equivalent noise level/vibration level are calculated as the time-weighted energy total for noise/vibration levels under various working conditions with the following time distribution: 1/2 Idle, 1/2 racing.

* All data subject to change without notice.

ASSEMBLY PROCEDURES

Drive shaft to engine (Fig. 1)

Loosen tube locking bolt (1) about ten turns so that the bolt point will not obstruct drive shaft tube to be inserted. When inserting drive shaft tube, hold the tube locking bolt outward preventing inside fitting from obstructing as well.

Insert the drive shaft into the clutch case of the engine properly until the marked position (2) on the drive shaft tube meets the clutch case.

Some models may come with the drive shaft already installed.

NOTE

When it is hard to insert drive shaft up to the marked position on the drive shaft tube, turn drive shaft by the cutter mounting end clockwise or counter-clockwise. Tighten tube locking bolt lining up the hole in the shaft tube. Then tighten clamp bolt securely.

Installation of attachment

1. Join the attachment in place of it.
2. Make sure the lock pin (3) fits in the location hole (4) of tube and that the tube will not come off. (Fig. 2)
3. Tighten the knob nut (5) securely. (Fig. 2)

Installation of handle

WARNING

When you use steel/rigid blades on straight shaft trimmers or brush cutters, always use a barrier bar (6) and shoulder harness with the loop handle. (Fig. 3)

Attach the handle to the drive shaft tube with the angle towards the engine.
Adjust the location to the most comfortable position before operation.

NOTE

If your unit has handle location label on drive shaft tube, follow the illustration.

Remove the handle bracket (7) from the assembly. (Fig. 4)

Place the handles and attach the handle bracket with four bolts lightly. Adjust to appropriate position. Then attach it firmly with the bolts.

Attach the protection tube to the drive shaft or handle using cord clamps (8). (Fig. 5)

Throttle wire / stop cord

Press the upper tab (9) and open the air cleaner cover. (Fig. 6)

Connect stop cords. (Fig. 7)

If the throttle outer end (10) is threaded on your unit, screw it and the earth terminal (11) (if so equipped) into the cable adjuster stay (12) all the way, and then tighten this cable end using the adjuster nut (13) against the cable adjuster stay (12).

Connect throttle wire end (14) to carburetor (15) and install swivel cap (16) (if so equipped) where is included in tool bag, onto swivel (15) (Fig. 8).

Some models may come with the parts installed.

Installation of blade guard (Fig. 9, 10, 10-1, 11)

NOTE

The guard bracket may come already mounted to the gear case on some models.

Install the blade guard on drive shaft tube against angle transmission. Tighten the guard bracket firmly so that the blade guard does not swing or move down during operation.

Install the blade guard to the guard bracket, which also secures the guard to the gear case using the two guard mounting screws.

CAUTION

Some blade guards are equipped with sharp line limiters. Be careful with handling it.

When using a trimmer head with two piece type blade guard, attach the guard extension to the blade guard. (Fig. 12)

NOTE

- When attaching the guard extension to the blade guard, the sharp line limiter must be removed from the blade guard, (if so installed).
- If your unit has guard location label on drive shaft tube, follow the indication.
- To remove the guard extension, refer to the drawings. Wear gloves as the extension has a sharp line limiter, then push the four square tabs on the guard one by one in order. (Fig. 13)

Installation of semi-auto cutting head

1. Function

Automatically feeds more nylon cutting line when it is tapped at low rpm (not greater than 4500 rpm).

Specifications

Code No.	Type of attaching screw	Direction of rotation	Size of attaching screw
6696454	Female screw	Counterclockwise	M10×P1.25-LH
6696597	Female screw	Clockwise	M8×P1.25-RH

Applicable nylon cord

Cord diameter: Φ 3.0 mm Length: 2 m

Cord diameter: Φ 2.4 mm Length: 4 m

2. Precautions

- The case must be securely attached to the cover.
 - Check the cover, case and other components for cracks or other damage.
 - Check the case and button for wear.
If the wear limit mark (17) on the case is no longer visible or there is a hole in the bottom (18) of the button, change the new parts immediately. (Fig. 14)
 - The cutting head must be securely mounted to the unit's gear case.
 - For outstanding performance and reliability, always use Tanaka nylon cutting line. Never use wire or other materials that could become a dangerous projectile.
 - If the cutting head does not feed cutting line properly, check that the nylon line and all components are properly installed. Contact your Hitachi dealer if you need assistance.
- #### 3. Installation (Fig. 15)
- Install cutting head on gear case of grass trimmers/brush cutters. The mounting nut is left-hand-threaded. Turn clockwise to loosen/counterclockwise to tighten.

For curved shaft models, the mounting nut is right-hand-threaded. Turn counterclockwise to loosen/clockwise to tighten.

NOTE

- Since the cutter holder cap is not used here, keep it for when a metal blade is used, if so equipped.
 - Insert Allen wrench (19) into the hole of the gear case in order to lock the cutter holder.
- #### 4. Adjusting line length
- Set the engine speed as low as possible and tap the head on the ground. The nylon line will be drawn out about 3 cm with each tap. (Fig. 16)
Also, you can extend the nylon line by hand but the engine must be completely stopped. (Fig. 17)
 - Adjust the nylon line to the proper length of 11–14 cm before each operation.

Installation of cutting blade (Fig. 18)

(If so equipped)

When installing a cutting blade, make sure that there are no cracks or any damage in it and that the cutting edges are facing the correct direction.

NOTE

- When installing cutter holder cap (20), be sure to set concave side upward.
- Insert the alien wrench (19) into the hole of the angle transmission in order to lock the cutter holder (21). Please note that the cutter fixing bolt or nut (22) has left-handed threads, (clockwise to loosen/ counter-clockwise to tighten). Tighten the fixing bolt or nut with the box wrench.
- If your unit is of a nut securing type and equipped with a cotter pin, the blade must be retained with a new pin (23) each time installed. (Fig. 19)

CAUTION

- Before operation, make sure the blade has been properly installed.
- If your unit is equipped with protection cover under a cutting blade, check it for wear or cracks before operation. If any damage or wear is found, replace it, as it is an article of consumption.

WARNING

For Hitachi heads, use only flexible, non-metallic line recommended by the manufacturer. Never use wire or wire ropes. They can break off and become a dangerous projectile.

OPERATING PROCEDURES

Fuel (Fig. 20)

WARNING

- The trimmer 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 Hitachi dealer.
- 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 fuel, which is to be used. Then add the whole amount of oil. Mix (shake) the fuel mixture. Add the remaining amount of fuel.
Mix (shake) the fuel-mix thoroughly before filling the fuel tank.

Fueling

WARNING

- Always shut off the engine before refueling.
- Slowly open the fuel tank, when filling up with fuel, so that possible over-pressure disappears.
- Tighten the fuel cap carefully, after fueling.
- Always move the trimmer at least 3 m from the fueling area before starting.
- Always wash any spilled fuel from clothing immediately with soap.
- Be sure to check for any fuel leakage after refueling.

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.

Starting

CAUTION

Before starting, make sure the cutting attachment does not touch anything.

1. Set ignition switch (24) to ON position. (Fig. 21, 22)
* Push priming bulb (25) several times so that fuel flows through return pipe (39). (Fig. 23)
2. Set choke lever (27) to CLOSED position (A). (Fig. 24)
3. Pull recoil starter briskly, taking care to keep the handle in your grasp and not allowing it to snap back. (Fig. 25)
4. When you hear the engine want to start, return choke lever to RUN position (open) (B). Then pull recoil starter briskly again.

NOTE

If engine does not start, repeat procedures from 2 to 5.

5. Then allow the engine about 2-3 minutes to warm up before subjecting it to any load.

Cutting (Fig. 26, 27, 28)

- When cutting, operate engine at over 6500 rpm. Extended time of use at low rpm may wear out the clutch prematurely.
- Cut grass from right to left.
- Cut grass from left to right (only curve shaft model).
- Blade thrust may occur when the spinning blade contacts a solid object in the critical area.
A dangerous reaction may occur causing the entire unit and operator to be thrust violently. This reaction is called blade thrust. As a result, the operator may lose control of the unit which may cause serious or fatal injury. Blade thrust is more likely to occur in areas where it is difficult to see the material to be cut.
- Wear the harness as shown in the figure (if so equipped). The blade turns counter-clockwise, therefore, be advised to operate the unit from right to left for efficient cutting. Keep onlookers out of working area at least 15 m.

NOTE

Press the quick release button or pull emergency release flap (if so equipped) in the event of emergency. (Fig. 27-1)

WARNING

If cutting attachment should strike against stones or other debris, stop the engine and make sure that the attachment and related parts are undamaged. When grass or vines wrap around attachment, stop engine and attachment and remove them.

Stopping (Fig. 29, 30)

Decrease engine speed and run at an idle for a few minutes, then turn off ignition switch (24).
For models with an engine ignition switch, keep the ignition switch pressed until the engine comes to a complete stop.

WARNING

A cutting attachment can injure while it continues to spin after the engine is stopped or power control is released. When the unit is turned off, make sure the cutting attachment has stopped before the unit is set down.

Semi-auto cutting head

- When cutting, operate engine at over 6500 rpm. Extended time of use at low rpm may wear out the clutch prematurely.
- Cut grass from right to left.
- Cut grass from left to right (only curve shaft model).

WARNING

A cutting attachment can injure while it continues to spin after the engine is stopped or power control is released. When the unit is turned off, make sure the cutting attachment has stopped before the unit is set down.

Automatically feeds more nylon cutting line when it is tapped at low rpm (not greater than 4500 rpm).

MAINTENANCE

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

Carburetor adjustment (Fig. 31)

WARNING

- The cutting attachment may be spinning during carburetor adjustments.
- Never start the engine without the complete clutch cover and tube assembled! 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 basically 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 your Hitachi dealer.

NOTE

- Standard Idle rpm is 2800-3200 rpm.

⚠ WARNING

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

Air filter (Fig. 32)

The air filter 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

Open the air filter cover and the filter (28). Rinse it 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.

Fuel filter (Fig. 33)

Drain all fuel from fuel tank and pull fuel filter line from tank. Pull filter element out of holder assembly and rinse element in warm water with detergent.

Rinse thoroughly until all traces of detergent are eliminated. Squeeze, do not wring, away excess water and allow element to air dry.

NOTE

If element is hard due to excessive dirt buildup, replace it.

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. Re-adjust if necessary. The correct gap is 0.6 mm. The spark plug should be replaced after about 100 operation hours or earlier if the electrodes are badly eroded.

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.

Flexible drive shaft (Fig. 35)

Flexible drive shaft should be removed and lubricated with good quality lithium grease every 20 hours. To remove the flexible shaft, first remove screw (29), loosen bolt (30) and remove the gear case then pull the shaft out of the drive shaft pipe. Clean the shaft off and apply a generous coat of lithium grease to it and insert it back into the drive shaft pipe, turn it until it drops into place then install the gear case, install & tighten screw (29) and screw (30).

Angle transmission (Fig. 36)

Check angle transmission or angle gear for grease level about every 50 hours of operation by removing the grease filler plug on the side of angle transmission.

If no grease can be seen on the flanks of the gears, fill the transmission with quality lithium based multipurpose grease up to 3/4. Do not completely fill the transmission.

Semi-auto cutting head**Nylon line replacement**

- (1) Remove the case (31) by firmly pushing inward the locking tabs with your thumbs as shown in Fig. 37.
- (2) After removing the case, take out the reel and discard the remaining line.
- (3) Fold the new nylon line unevenly in half as shown in picture. Hook the U-shaped end of the nylon line into the groove (32) on the center partition of the reel. Wind both halves of the line on the reel in the same direction, keeping each half of the line on its own side of the partition. (Fig. 38)
- (4) Push each line into the stopper holes (33), leaving the loose ends approx. 10 cm in length. (Fig. 39)
- (5) Insert both loose ends of the line through the cord guide (34) when placing the reel in the case. (Fig. 40)

NOTE

When placing a reel in the case, try to line up the stopper holes (33) with the cord guide (34) for easier line release later.

- (6) Place the cover over the case so that the cap locking tabs (35) on the case meet the long holes (36) on the cover. Then push the case securely until it clicks into place. (Fig. 41)
- (7) The initial cutting line length should be approx. 11–14 cm and should be equal on both sides. (Fig. 42)

Blade (Fig. 43)**⚠ WARNING**

Wear protective gloves when handling or performing maintenance on the blade.

- Use a sharp blade. A dull blade is more likely to snag and thrust. Replace the fastening nut if it is damaged and hard to tighten.
- When replacing blade, purchase one recommended by Hitachi, with a 25.4 mm (one inch) fitting hole.
- When installing a saw blade (38), always face the stamped side up. In the case of a 3 or 4 tooth blade (37), it can be used on either side.
- Use the correct blade for the type of work.
- When replacing blades, use appropriate tools.
- When cutting edges become dull, re-sharpen or file as shown in the illustration. Incorrect sharpening may cause excessive vibration.
- Discard blades that are bent, warped, cracked, broken or damaged in any way.

NOTE

When sharpening blade it is important to maintain an original shape of radius at the base of the tooth to avoid cracking.

Maintenance schedule

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

Daily maintenance

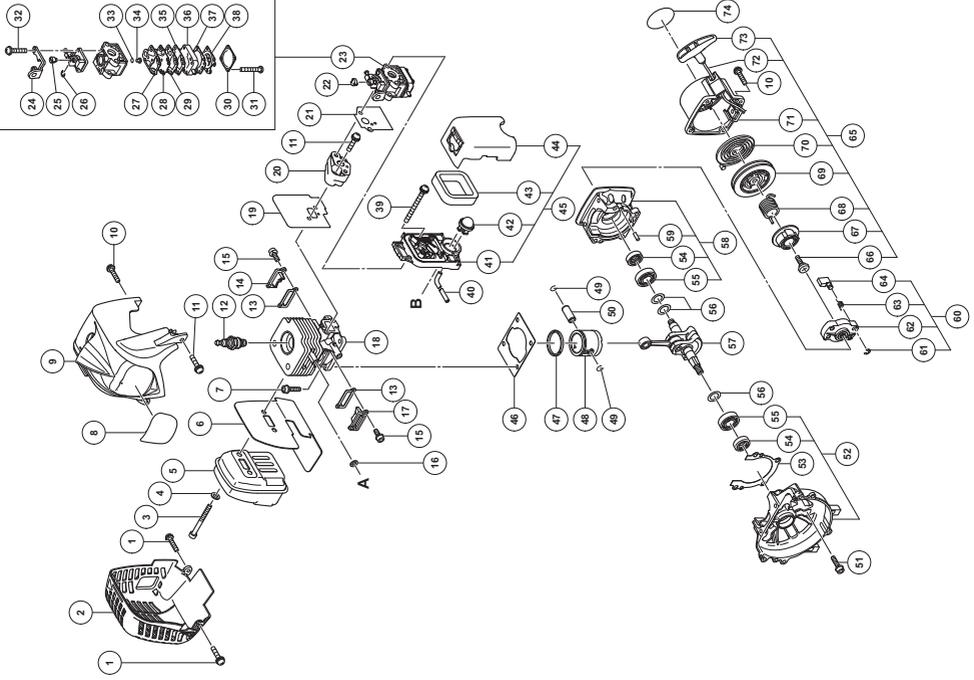
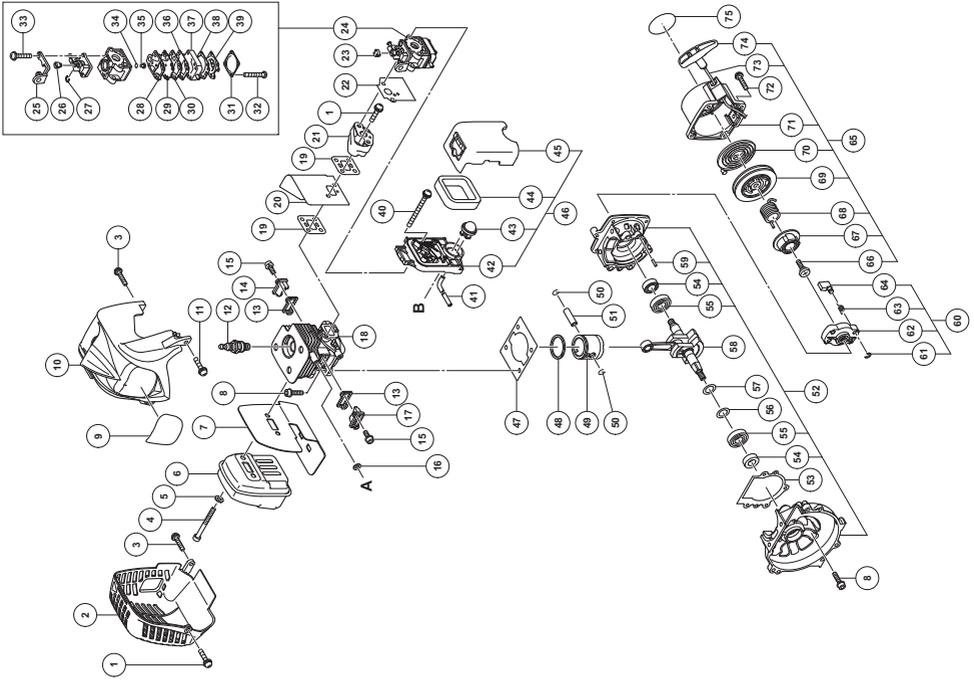
- Clean the exterior of the unit.
- Check that the harness is undamaged.
- Check the blade guard for damage or cracks. Change the guard in case of impacts or cracks.
- Check that the cutting attachment is properly centred, sharp, and without cracks. An off-centre cutting attachment induces heavy vibrations that may damage the unit.
- Check that the cutting attachment nut is sufficiently tightened.
- Make sure that the blade transport guard is undamaged and that it can be securely fitted.
- Check that nuts and screws are sufficiently tightened.

Weekly maintenance

- Check the starter, especially the cord and return spring.
- Clean the exterior of the spark plug.
- Remove it and check the electrode gap. Adjust it to 0.6 mm, or change the spark plug.
- Check that the angle gear is filled with grease up to 3/4.
- Clean the air filter.

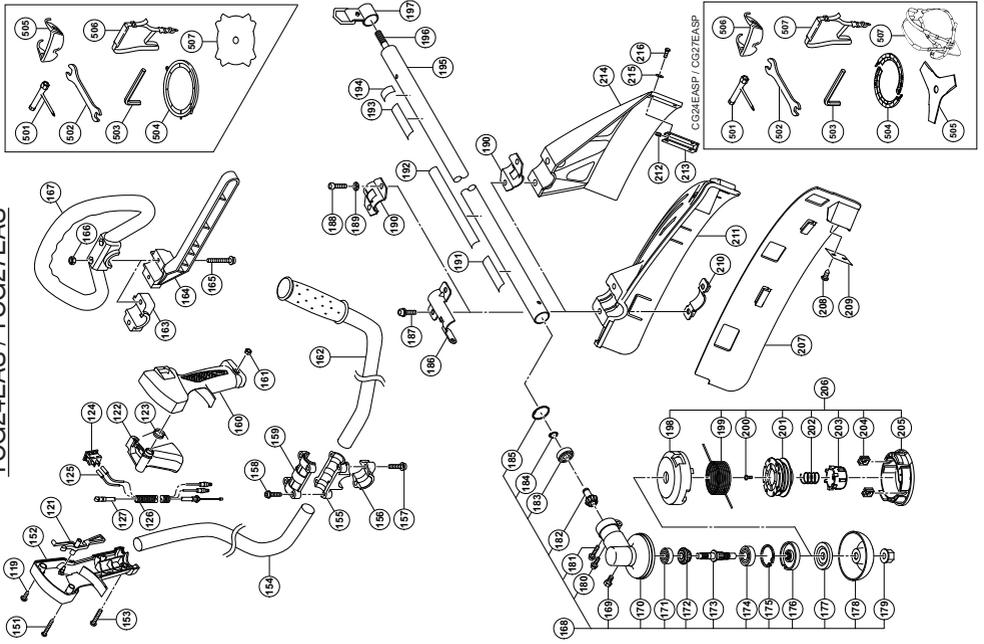
Monthly maintenance

- Rinse the fuel tank with gasoline.
- Clean the exterior of the carburetor and the space around it.
- Clean the fan and the space around it.

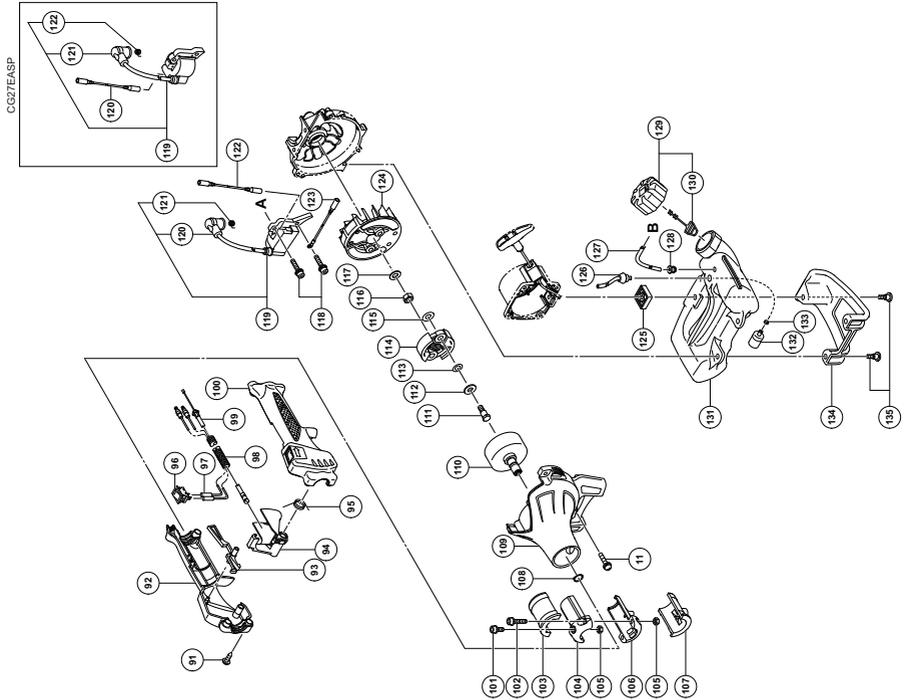


TCG22EAS / T CG24EASP / T CG27EASP

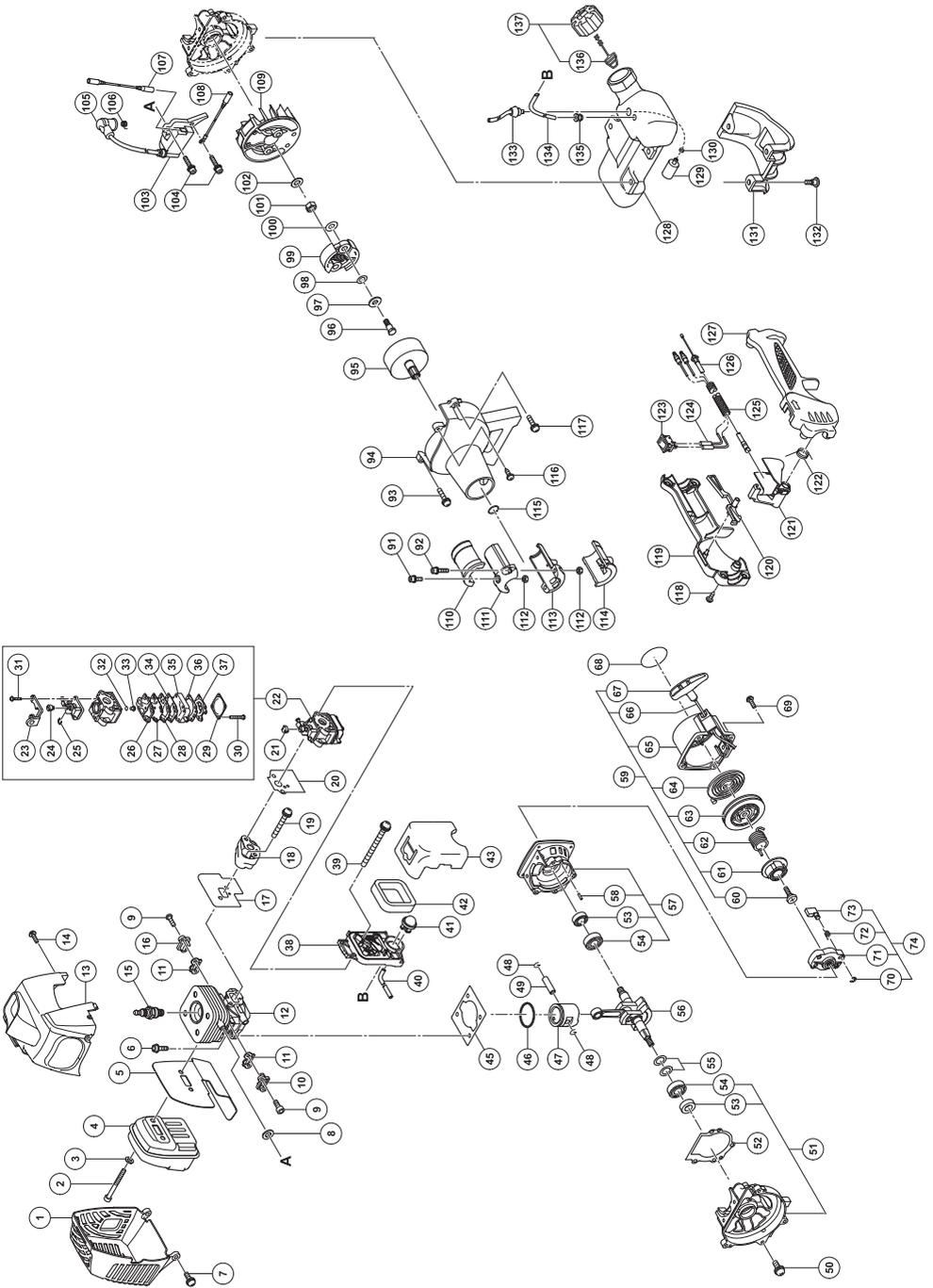
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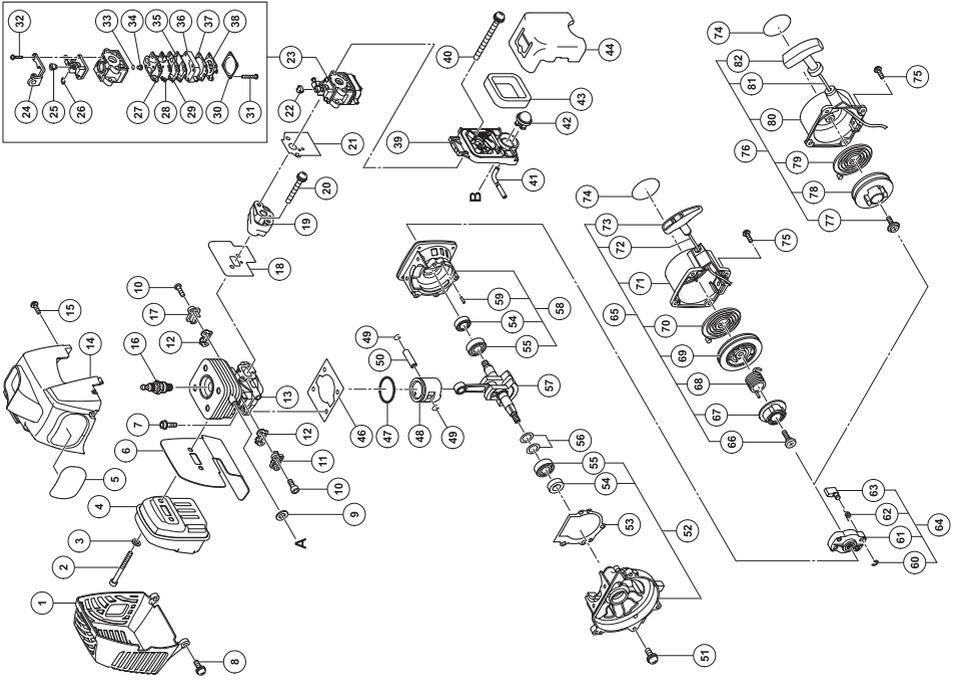
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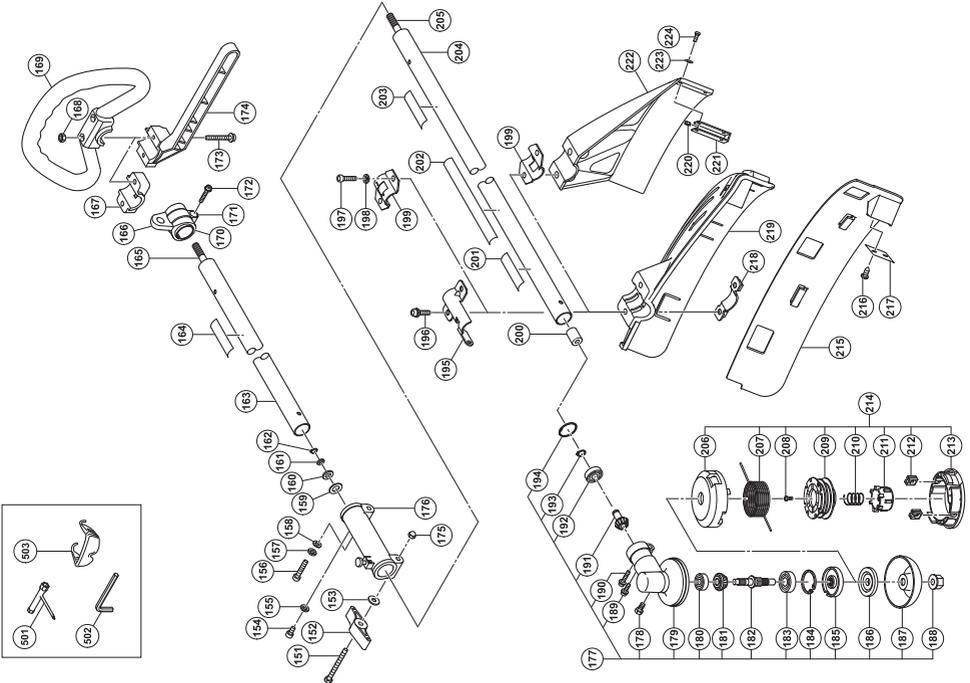
TCG22EAD

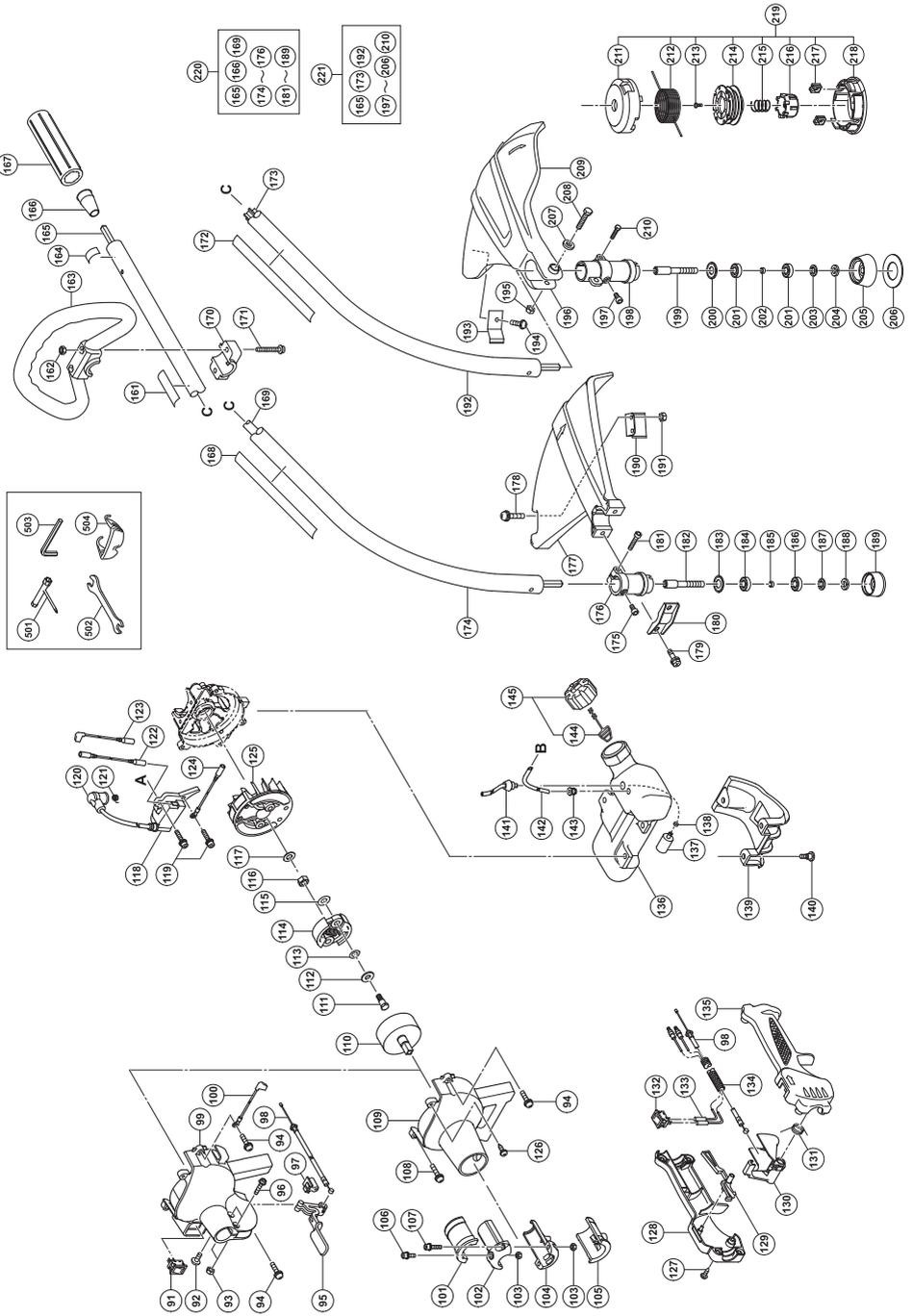


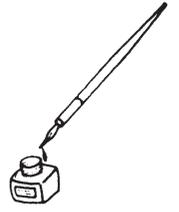
TCG22EAB



TCG22EAD







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<p>Representative office in Europe Hitachi Power Tools Europe GmbH Siemensring 34, 47877 Willich 1, F. R. Germany</p> <p>Technical file at: Hitachi Koki Europe Ltd. Clonshaugh Business & Technology Park, Dublin 17, Ireland</p> <p>Head office in Japan Hitachi Koki Co., Ltd. Shinagawa Intercity Tower A, 15-1, Konan 2-chome, Minato-ku, Tokyo, Japan</p>		<p>CE 31. 8. 2012</p> <p><i>F. Tashimo</i></p> <p>F. Tashimo Vice-President & Director</p>	

 **Hitachi Koki Co., Ltd.**