



**OPERATOR'S MANUAL
MANUEL D'UTILISATION
BEDIENUNGSANLEITUNG
MANUALE ISTRUZIONI**

**PAS Trimmer Attachment
MODEL 99944200840**

ENGLISH

FRANCAIS

DEUTSCH

ITALIANO



**WARNING, SEE OPERATOR'S MANUAL
LIRE SOIGNEUSEMENT CE MANUEL AVANT
TOUTE UTILISATION
ACHTUNG! BEDIENUNGSANLEITUNG LESEN
ATTENZIONE, LEGGERE IL MANUALE ISTRUZIONI**

INTRODUCTION

Welcome to the ECHO family. This ECHO product was designed and manufactured to provide long life and on-the-job-dependability. Read and understand this manual and the SAFETY MANUAL you found in the same package. You will find both easy to use and full of helpful operating tips and SAFETY messages.

THE OPERATOR'S MANUAL

Read and understand this manual before operation. Keep it in a safe place for future reference. It contains specifications and information for operation, starting, stopping, maintenance, storage and assembly specific to this product.

THE ATTACHMENT OPERATOR'S MANUAL

Read and understand this manual before operation. Keep it in a safe place for future reference. It contains specifications and information for operation and maintenance specific to the attachment.

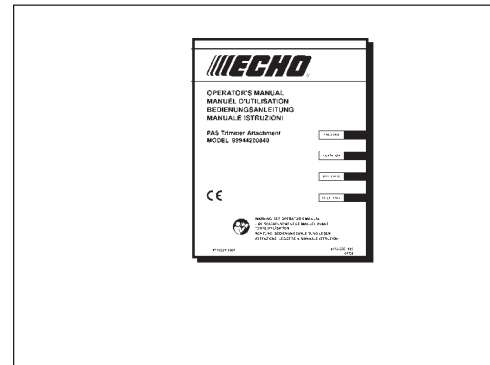


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Specifications, descriptions and illustrative material in this literature are as accurate as known at the time of publication, but are subject to change without notice. Illustrations may include optional equipment and accessories, and may not include all standard equipment.

MANUAL SAFETY SYMBOLS & IMPORTANT INFORMATION

Throughout this manual and on the product itself, you will find safety alerts and helpful, information messages preceded by symbols or key words. The following is an explanation of those symbols and key words and what they mean to you.



This symbol accompanied by the words **WARNING** and **DANGER** calls attention to an act or condition that can lead to serious personal injury to operator and bystanders.



The circle with the slash symbol means whatever is shown within the circle is prohibited.



IMPORTANT The enclosed message provides information necessary for the protection of the unit.

NOTE This enclosed message provides tips for use, care and maintenance of the unit.

SAFETY

DECALS

Locate these safety decals on your unit. The complete unit illustration found in the "DESCRIPTION" section, will help you locate them. Make sure the decals are legible and that you understand and follow the instructions on them. If a decal cannot be read, a new one can be ordered from your ECHO Dealer.

Debris Shield Decal



P/N 89018623760

Shaft Decal

P/N 89061763630



INTERNATIONAL SYMBOLS

Symbol form/shape	Symbol description/application	Symbol form/shape	Symbol description/application
	Carefully read the operator's manual		Wear foot protection and gloves
	Safety alert		Warning! Thrown objects!
	Wear eyes, ears and head protection		Usage without shield not permitted

Symbol form/shape	Symbol description/application	Symbol form/shape	Symbol description/application
	DO NOT USE BLADES - Line Head Only		The maximum speed of the cutting attachment shaft in r/min
			Keep bystanders away 15m

SAFETY INSTRUCTIONS

PERSONAL CONDITION AND SAFETY EQUIPMENT

WARNING DANGER

Trimmer/Brush Cutter users risk injury to themselves and others if the trimmer/brush cutter is used improperly or safety precautions are not followed. Proper clothing and safety gear must be worn when operating a trimmer/brush cutter.

Physical Condition

Your judgment and physical dexterity may not be good:

- if you are tired or sick,
- if you are taking medication,
- if you have taken alcohol or drugs.

Operate unit only if you are physically and mentally well.

Eye Protection

Wear eye protection that meets ANSI Z87.1 or CE requirements whenever you operate the unit.

Hand Protection

Wear no-slip, heavy duty work gloves to improve your grip on the unit handles. Gloves also reduce the transmission of machine vibration to your hands.

Hearing Protection

ECHO recommends wearing hearing protection whenever unit is used.

Proper Clothing

Wear snug fitting, durable clothing;

- Pants should have long legs, shirts with long sleeves.
- DONOT WEAR SHORTS,
- DONOT WEAR TIES, SCARVES, JEWELRY.

Wear sturdy work shoes with non-skid soles;

- DONOT WEAR OPENTOED SHOES,
- DONOT OPERATE UNIT BAREFOOTED.

Hot Humid Weather

Heavy protective clothing can increase operator fatigue which may lead to heat stroke. Schedule heavy work for early morning or late afternoon hours when temperatures are cooler.

EXTENDED OPERATION/EXTREME CONDITIONS

Vibration and Cold

It is believed that a condition called Raynaud's Phenomenon, which affects the fingers of certain individuals, may be brought about by exposure to vibration and cold. Exposure to vibration and cold may cause tingling and burning sensations, followed by loss of color and numbness in the fingers. The following precautions are strongly recommended, because the minimum exposure which might trigger the ailment is unknown.

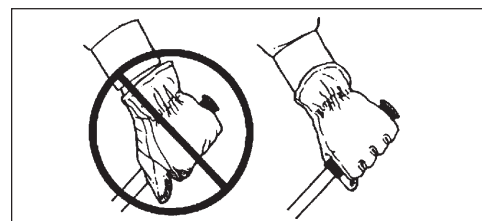
- Keep your body warm, especially the head, neck, feet, ankles, hands, and wrists.
- Maintain good blood circulation by performing vigorous arm exercises during frequent work breaks, and also by not smoking.
- Limit the hours of operation. Try to fill each day with jobs where operating the trimmer or other hand-held power equipment is not required.
- If you experience discomfort, redness and swelling of the fingers followed by whitening and loss of feeling, consult your physician before further exposing yourself to cold and vibration.

Repetitive Stress Injuries

It is believed that overusing the muscles and tendons of the fingers, hands, arms and shoulders may cause soreness, swelling, numbness, weakness, and extreme pain in those areas. Certain repetitive hand activities may put you at a high risk for developing a Repetitive Stress Injury (RSI). An extreme RSI condition is Carpal Tunnel Syndrome (CTS), which could occur when your wrist swells and squeezes a vital nerve that runs through the area. Some believe that prolonged exposure to vibration may contribute to CTS. CTS can cause severe pain for months or even years.

To reduce the risk of RSI/CTS, do the following:

- Avoid using your wrist in a bent, extended, or twisted position. Instead, try to maintain a straight wrist position. Also, when grasping, use your whole hand, not just the thumb and index finger.
- Take periodic breaks to minimize repetition and rest your hands.
- Reduce the speed and force with which you do the repetitive movement.
- Do exercises to strengthen the hand and arm muscles.
- Immediately stop using all power equipment and consult a doctor if you feel tingling, numbness, or pain in the fingers, hands, wrists, or arms. The sooner RSI/CTS is diagnosed, the more likely permanent nerve and muscle damage can be prevented.



EQUIPMENT

WARNING DANGER

Use only ECHO approved attachments. Serious injury may result from the use of a non-approved attachment combination. ECHO, INC. will not be responsible for the failure of cutting devices, attachments or accessories which have not been tested and approved by ECHO. Read and comply with all safety instructions listed in this manual and safety manual.

- Check unit for loose/missing nuts, bolts, and screws. Tighten and/or replace as needed.
- Inspect shield for damage and ensure that the cut-off knife is securely in place. Replace if either is damaged or missing.
- Check that the cutting attachment is firmly attached and in safe operating condition.
- Check that front loop handle and shoulder strap/ or shoulder/ waist harness are adjusted for safe, comfortable operation. See Assembly Section for proper adjustment.

SAFE OPERATION

WARNING DANGER

Do not operate this product indoors or in inadequately ventilated areas. Engine exhaust contains poisonous emissions and can cause serious injury or death.

Provide Safety And Operating Instructions To All Operators

- Provide all users of this equipment with the Operator's Manual and Safety Manual for instructions on Safe Operation.

Keep A Firm Grip

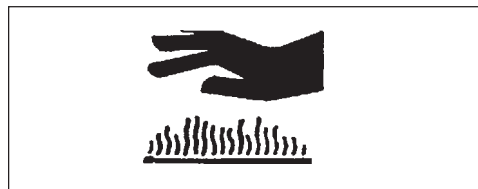
- Hold the front and rear handles with both hands with thumbs and fingers encircling the handles

Keep A Solid Stance

- Maintain footing and balance at all times. Do not stand on slippery, uneven or unstable surfaces. Do not work in odd positions or on ladders. Do not over reach.

Avoid Hot Surfaces

- Keep exhaust area clear of flammable debris. Avoid contact during and immediately after operation.

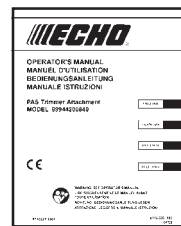


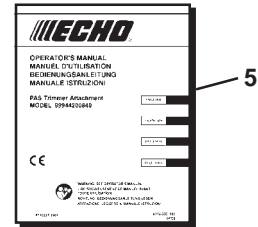
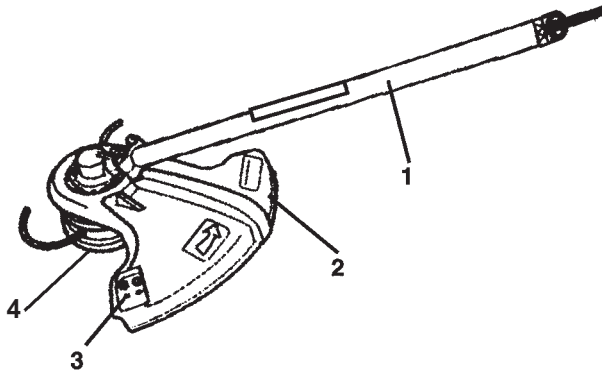
DESCRIPTION

After opening the carton, check for damage. Immediately notify your retailer or ECHO Dealer of damaged or missing parts. Use the contents list to check for missing parts.

CONTENTS

- 1 - PAS Trimmer Attachment
- 1 - Operator's Manual
- 1 - Locking Tool
- 1 - Plastic Debris Shield
- 1 - Nylon Trimmer Head
- 1 - Safety Goggle
- 1 - Shield Plate
- 3 - 5mm x 15mm Screws (shield mounting)





1. **LOWER DRIVE SHAFT ASSEMBLY** - Includes the Debris Shield Assembly, Gear Housing assembly, Flexible Drive Cable, Nylon Cutter Head and Safety Decals.
2. **PLASTIC DEBRIS SHIELD ASSEMBLY** - Included in plastic bag (co-pack). **MUST** be installed on unit before use, see Assembly Instructions. Shield assembly includes the Cut-Off Knife and Safety Decal. Mounts on the Gear Housing Assembly just above the cutting attachment. Helps protect the operator by deflecting debris produced during the trimming operation. This shield must be replaced with the steel shield for blade use.
3. **CUT-OFF KNIFE** - Trims line to the correct length: 127mm from head to end of line after head is tapped on the ground during operation and the line advances. If trimmer is operated without a cut-off knife the line will become too long. If the line is more than the listed length the operating speed will slow, the engine overheat and engine damage may occur.
4. **NYLON CUTTER HEAD** - Contains replaceable nylon trimming line that advances when the trimmer head is tapped against the ground while the head is turning at normal operating speed.
5. **OPERATOR'S MANUAL** - Included in plastic bag (co-pack). Read before operation and keep in a safe place for future reference, i.e., operation, maintenance, storage and specifications.

SPECIFICATIONS

PAS Trimmer Attachment

MODEL	PAS Trimmer Attachment
Shaft Length	870mm (34.3 in.)
Attachment Width	178mm (7.0 in.)
Attachment Height	255 mm (10.0 in.)
Weight (dry) w/line head	1.43 kg (3.15 lb.)
Drive Shaft	1/4" Flex Shaft
Direction of Rotation	Counter clockwise viewed from the top
Cutter Head	Nylon line head (2-lines) with .095" Cross Fire™ Line Line Capacity 6 m (20 ft.)

NOTE Install U-handle and metal shield when using metal blade.

ASSEMBLY

POWER HEAD SHAFT/LOWER SHAFT ASSEMBLY

Tools Required: None

Parts Required: PAS or SRM-SB Power Head w/Shaft & Coupling.

1. Set Power Head/Shaft Assembly on a level surface.
2. Pull locator pin (A) out, and turn counter-clockwise 1/4 turn to lock-out position.
3. Carefully fit attachment drive shaft assembly into coupler (B) to decal assembly line (C), making sure that the inner lower drive shaft engages into the square upper drive shaft socket.

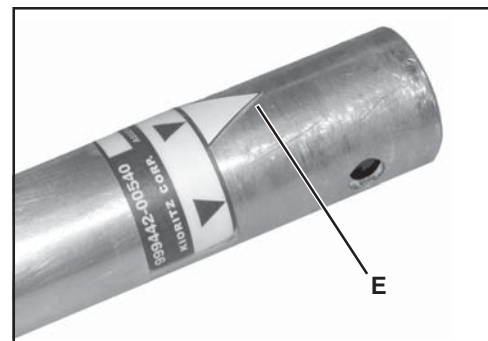
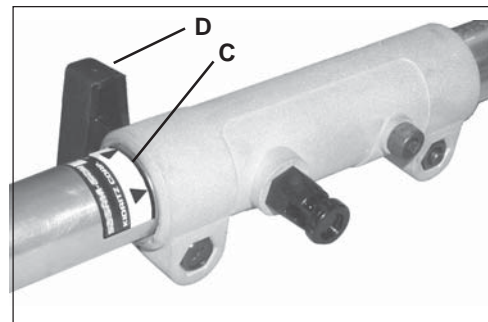
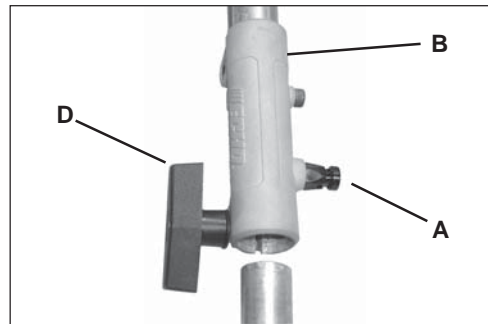
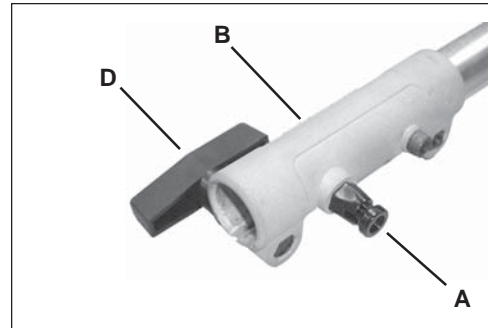
NOTE

Earlier model Power Heads may have shorter couplings. Short couplings fit flush to decal point (E). New couplings are 120 mm (4-3/4 in.) long, and fit flush to line (C).

NOTE

Lower bearing housing and head assembly must be in line with the engine.

4. Rotate locator pin (A) 1/4 turn clockwise to engage lower shaft hole. Insure locator pin is fully engaged by twisting lower drive shaft. Locator pin should snap flush in coupler. Full engagement will prevent further shaft rotation.
5. Secure lower shaft assembly to coupler by tightening clamping knob (D).



PLASTIC SHIELD INSTALLATION

(For Nylon Line Operation)

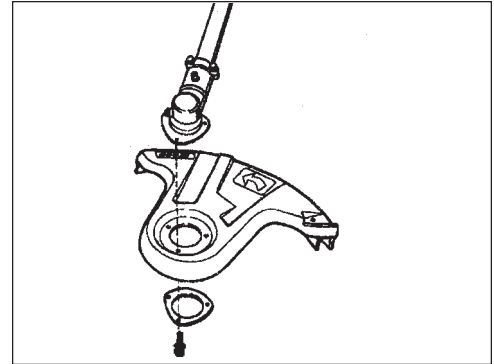
Tools Required: Screwdriver.

Parts Required: Plastic Shield, Shield Plate, three (3) 5 mm x 15 mm screws.

NOTE

The plastic shield is for use with the Nylon Line Head only.

1. Snap the shield on the bottom of the bearing housing flange.
2. Place shield plate on shield, align holes and install three (3) screws.

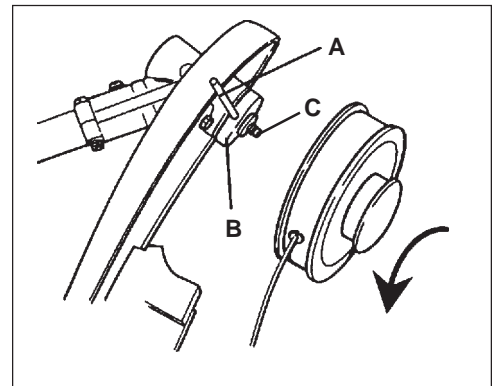


NYLON LINE HEAD INSTALLATION

Tools Required: Head Locking Tool

Parts Required: Nylon Line Head.

1. Align locking hole in upper plate (B) with notch in edge of gear housing and insert head locking tool (A).
2. Remove plastic sleeve from P.T.O. shaft (C).
3. Be sure upper plate (B) remains on P.T.O. shaft.
4. Thread line head onto P.T.O. shaft by turning it counter clockwise until head is tight against upper plate (B).
5. Remove locking tool (B).



OPERATION

WARNING **DANGER**

The cutting attachment should not rotate at idle. If attachment rotates, readjust carburetor according to "Carburetor Adjustment" instructions in this manual or see your ECHO Dealer, otherwise serious personal injury may result.

NOTE

Refer to the power head Operator's Manual for proper and safe operating techniques.

WARNING **DANGER**

Inspect starting area for hazards such as rocks, glass, debris etc. which could be contacted by the cutting attachment when starting. Keep helpers and bystanders at least 15 m (50 ft.) from starting area, otherwise serious personal injury may result.

MAINTENANCE

Your ECHO unit is designed to provide many hours of trouble-free service. Regular scheduled maintenance will help your unit achieve that goal. If you are unsure or are not equipped with the necessary tools, you may want to take your unit to an ECHO Service Dealer for maintenance. To help you decide whether you want to DO-IT-YOURSELF or have the ECHO Dealer do it, each maintenance task has been graded. If a task is not listed, see your ECHO Dealer for repairs.

SKILL LEVELS

- Level 1** = Easy to do. Most required tools come with unit.
- Level 2** = Moderate difficulty. Some specialized tools may be required.
- Level 3** = Experience required. Specialized tools are required. ECHO recommends that the unit be returned to your ECHO dealer for service.

MAINTENANCE INTERVALS

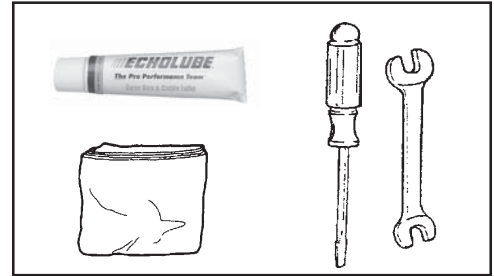
Component/System	Maintenance Procedure	Skill Level	Frequency
Drive Shaft	Grease	1	Every 25 hours of use
Gear Housing	Grease	1	Every 50 hours of use
Screws/Nuts/Bolts	Inspect/Tighten/Replace	1	Before each use

LUBRICATION

Level 1.

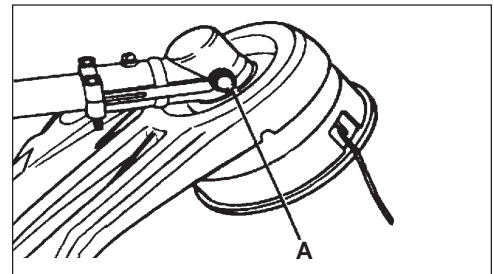
Tools Required: 8 mm Open End Wrench, Screwdriver, Clean Rag

Parts Required: Lithium Base Grease.



Gear Housing

1. Clean all loose debris from gear box.
2. Remove plug (A) and check level of grease.
3. Add grease if necessary, DO NOT over fill.
4. Install plug (A).

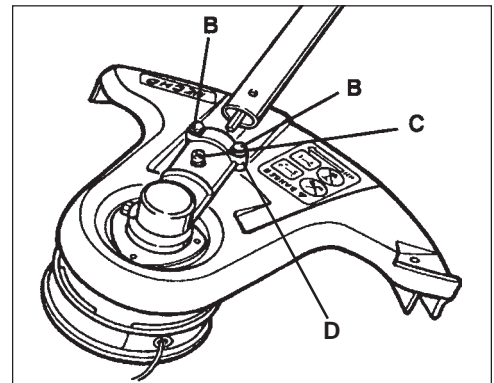


Drive Shaft (Lower)

IMPORTANT

Lower and upper drive shaft must be lubricated with high temperature automotive grease every 25 hours of operation, otherwise drive shaft assembly overheating and failure can result.

1. Loosen two (2) screws (B) and remove center locating screw (C). Pull gear box and shield from drive shaft housing.
2. Pull flexible cable from the drive shaft housing, wipe clean and re-coat with a thin coating [15 ml (1/2 oz.)] of Lithium Base Grease.
3. Slide the flexible cable back in the drive housing. DO NOT get dirt on the flex cable.
4. Install the gear housing and shield assembly.



IMPORTANT

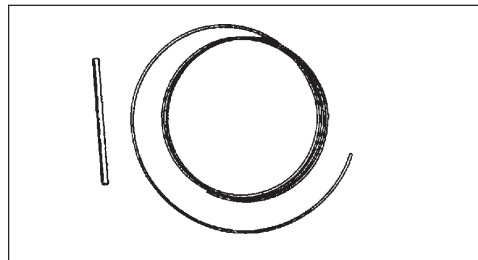
Flat edge of washers (D) must be against drive shaft.

NYLON LINE REPLACEMENT

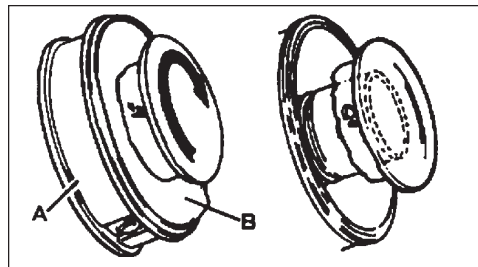
Level 1.

Parts Required: ECHO0.095 in. Nylon Trimmer Line 6 m (20 ft.) long.

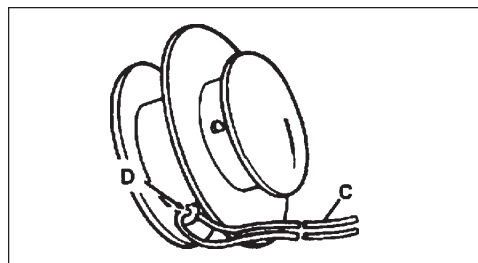
1. Shut engine off. Lay unit on the ground with head assembly up.



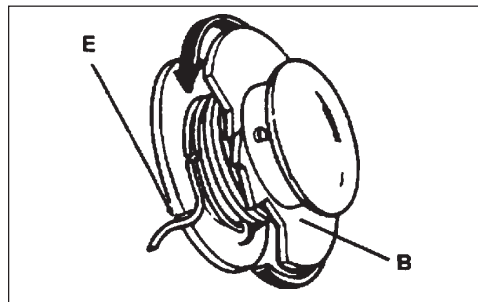
2. Hold drum (A) and turn spool (B) CW (clockwise) until it stops. Pull spool from drum. DO NOT push in on spool when turning.



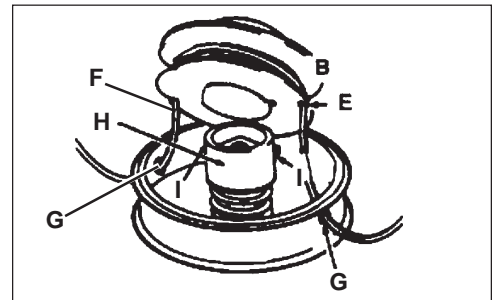
3. Use one piece of new nylon line (C) 6 m (20 ft.) long and thread through the molded loop (D) on the spool. Pull line tight and adjust so one end is 15 cm (6 in.) longer than the other.



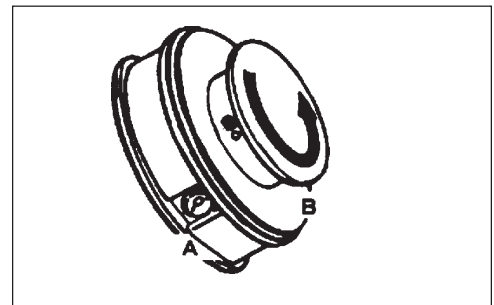
4. Hold the spool, opening toward you. Place index finger between the two strands and wind line, tightly and evenly, in direction of arrow (E) marked "CC".



5. Stop when approximately 15-20 cm (6-8 in.) line (C) remains and place ends of line in notches (F) in spool (B).
6. Feed ends of line through housing eyelets (G) and place spool (B) over drive (H). Align pegs (I) on drive with notches in spool, and push spool into drum.
7. Pull on both lines until they come free from notches (F) in spool.



8. Hold drum (A) firmly and turn spool (B) CCW (counterclockwise) until it stops. DO NOT push in on spool when turning.



9. Pull both lines out and trim to cut-off knife length.

DECLARATION "CE" OF CONFORMITY

The undersigned manufacturer:

KIORITZ CORPORATION
7-2 SUEHIROCHO 1-CHOME
OHME ; TOKYO 198-8711
JAPAN

declares that the hereunder specified new unit:

PRO ATTACHMENT™ SERIES

Brand : **ECHO**
Type : **PAS-2400**

assembled by:

ECHO, INCORPORATED
400 Oakwood Road
Lake Zurich, Illinois 60047-1564
U.S.A.

complies with:

- * the requirements of Directive **98/37/EC (1998)**
- * the requirements of Directive **89/336/EEC**
(use of harmonized standards **EN 50081-1, EN 50082-1, EN 55014 & EN 55022**)
- * the requirements of Directive **2002/88/EC**
- * the requirements of Directive **2000/14/EC**
Conformity assessment procedure followed **ANNEX V**
Measured sound power level : **106 dB(A)**
Guaranteed sound power level : **109 dB(A)**

Tokyo,
May 1st 2004

KIORITZ CORPORATION



F. AIYAMA, GENERAL MANAGER



NOTES



KIORITZ CORPORATION

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