

FOREWORD

This service manual provides technical information on the 1980 models including its features, differences from the 1979 models and new service procedure.

Please read this manual thoroughly so that you can have a good knowledge of the new model and make best use of it in your sales and after-service activities.

**SERVICE DEPARTMENT
YAMAHA MOTOR CO., LTD.**

NOTE: _____

The Research and Engineering Departments of Yamaha are continually striving to further perfect all models. Improvements and modifications are therefore inevitable.

In light of this fact, all specifications within this manual are subject to change without notice.

Particularly important information is distinguished in this manual by the following notations:

NOTE:

A NOTE provides key information to make procedures easier or cleaner.

CAUTION:

A CAUTION indicates special procedures that must be followed to avoid change to the machine.

WARNING:

A WARNING indicates special procedures that must be followed to avoid injury to a machine operator or person inspecting or repairing the machine.

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1. MODIFICATIONS

(Compared with 1979 model ET250)

A. ENGINE

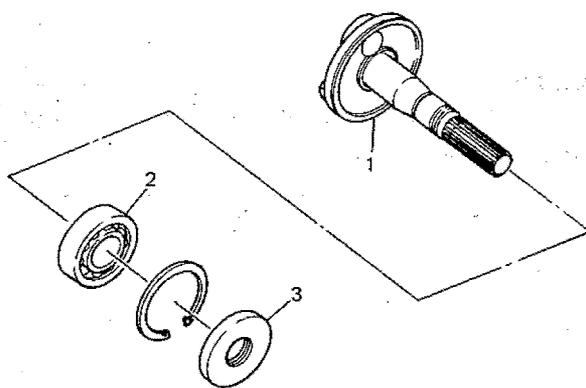
1. Left crank

Due to use of a new type clutch, the crankshaft is tapered at its end to mount the clutch.

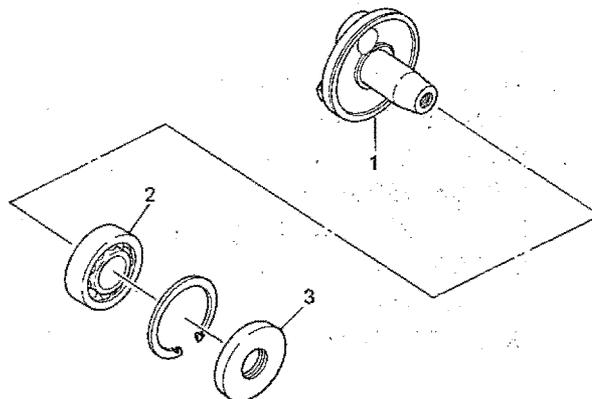
(Refer to "B. Drive, clutch.")

As a result, the bearing and oil seal inside diameters are changed from 32 mm to 30 mm.

'79 model



'80 model



1. Left crank (8F3-11412-00)
2. Bearing (93306-30605)
3. Oil seal (93102-32161)

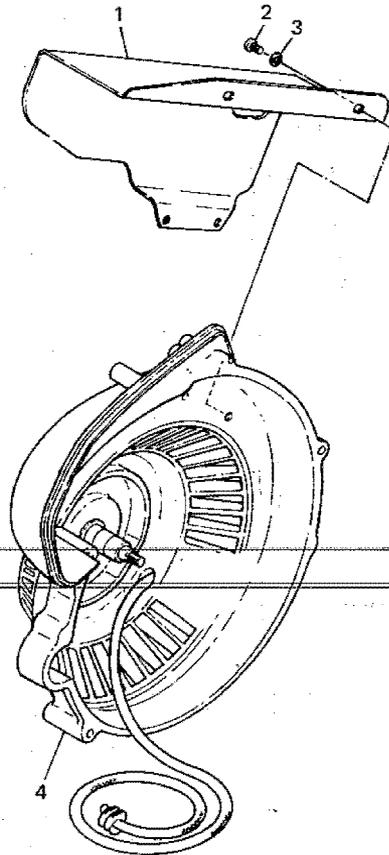
Interchangeability: No

1. Left crank (8J2-11412-00)
2. Bearing (93306-30617)
3. Oil seal (93102-30188)

2. Starter

The air duct is no longer provided because there will be no problem of

overheating. Accordingly, the insert for mounting of the air duct on the starter case is no longer used.



1. Air duct ... No longer used
(8G5-15471-00)
2. Screw ... No longer used
(98506-05008)
3. Plain washer ... No longer used
(92906-05200)
4. Starter case
(8F3-15711-01)

NOTE: _____
The 1979 model can also be used without installing the air duct.

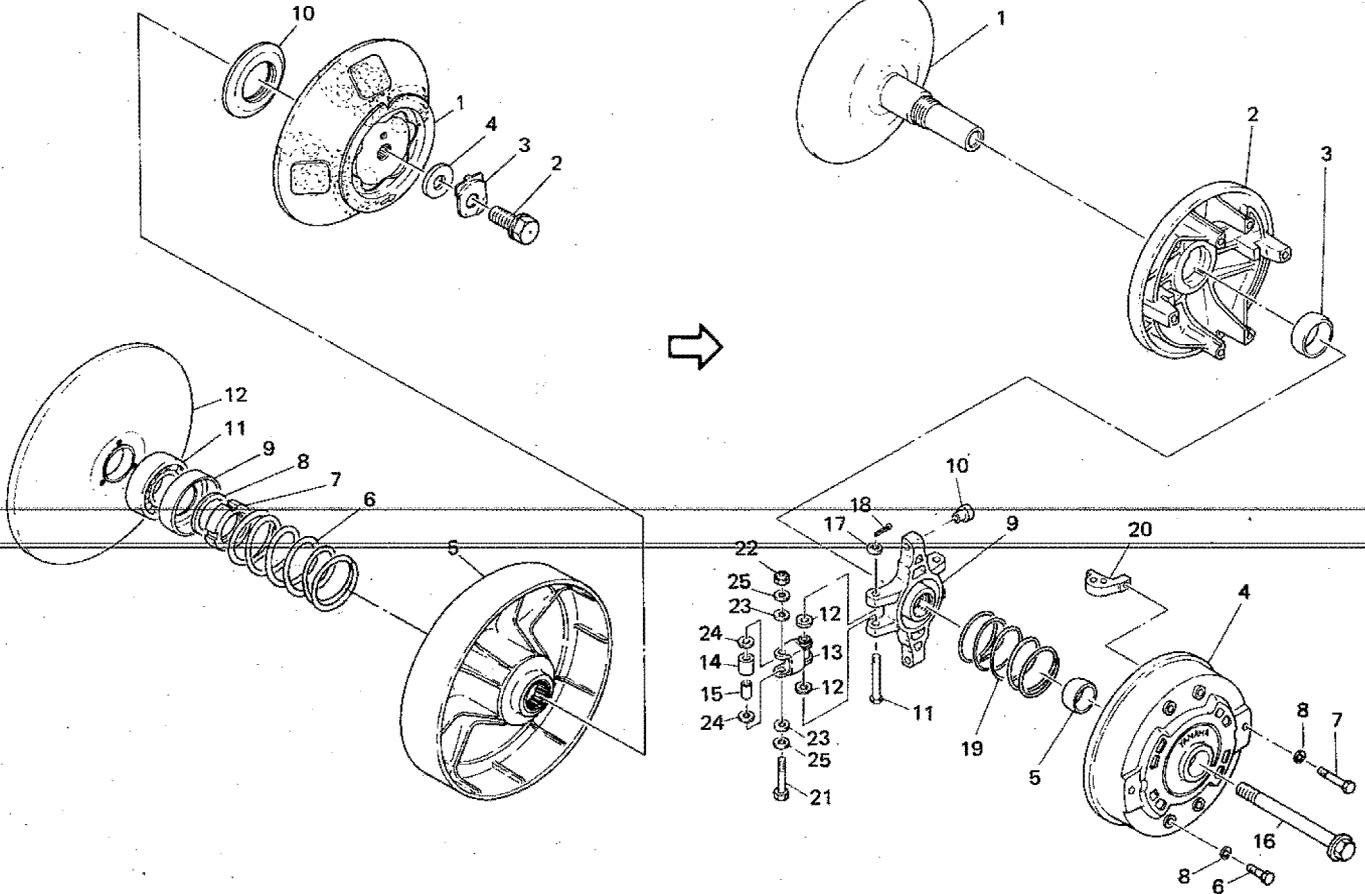
B. DRIVE

Primary sheave

For better clutch operation and increased durability, the new clutch has been adopted.

'79 model

'80 model



- 1. Primary sheave cap complete (8H7-17630-00)
- 2. Bolt (90105-12009)
- 3. Washer (90215-12084)
- 4. Washer (90201-12191)
- 5. Primary sliding sheave complete (8F3-17620-00)
- 6. Compression spring (90501-55451)
- 7. Nut (90179-28088)
- 8. Washer (90208-28003)
- 9. Spring set (820-17644-00)
- 10. Cam (8G5-17623-00)
- 11. Primary fixed sheave complete (8E3-17610-00)

- 1. Primary fixed sheave complete (8H9-17610-00)
- 2. Primary sliding sheave (8H9-17621-00)
- 3. Bushing (90389-39023)
- 4. Cap (8H9-17631-00)
- 5. Bushing (90389-26022)
- 6. Bolt (97311-06025)
- 7. Bolt (97311-06040)
- 8. Spring washer (92902-06100)
- 9. Spider (8H9-17627-00)
- 10. Slide (8A7-17653-00)
- 11. Pin with hole (90240-07066)
- 12. Plate washer (90201-06589)
- 13. Weight (8H9-17632-00)
- 14. Collar (90387-09698)
- 15. Collar (90387-06697)
- 16. Bolt (8H9-17647-00)
- 17. Plate washer (90201-06053)
- 18. Cotter pin (91402-25012)
- 19. Compression spring (90501-55345)
- 20. Cam (8J2-17623-00)
- 21. Hexagon bolt (90101-06440)
- 22. Self locking nut (95601-06100)
- 23. Plate washer (90201-06727)
- 24. Plate washer (90201-09728)
- 25. Plate washer (90201-06750)

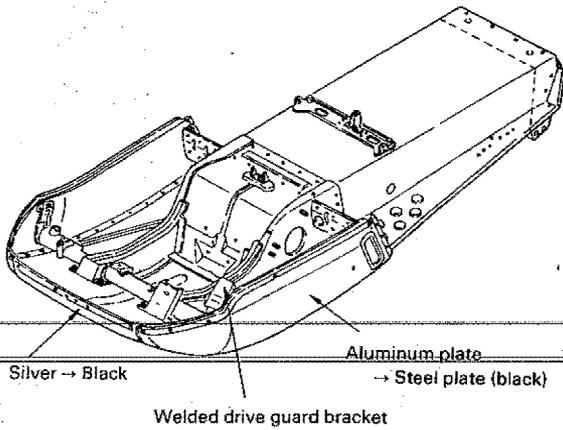
Interchangeability: No

C. CHASSIS

1. Frame

(8H7-21910-00 → 8K3-21910-00)

- For better durability of the frame, the engine hood material is changed from aluminum to steel plate (Black coating).
- The drive guard bracket is welded to the hood for easy assembling.
- The front part of the frame is painted black as part of the new 1980 model design.



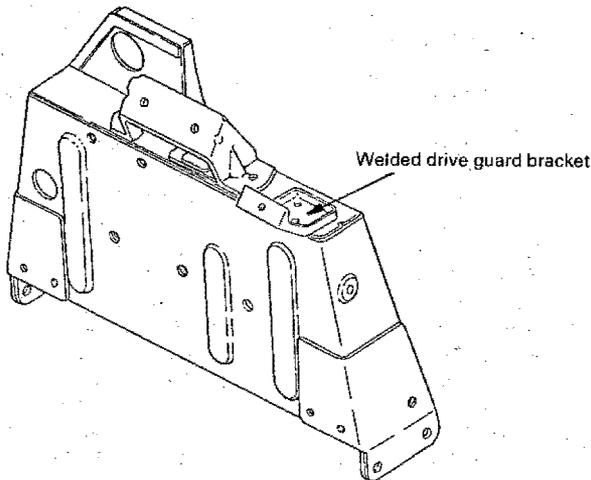
8K3-21910-00 can be used on both '79 and '80 models.

8H7-21910-00 can not be used on '80 model.

2. Steering gate

(8H7-23871-00 → 8K3-23871-00)

For easy assembling and maintenance, the drive guard bracket is welded to the steering gate.



Interchangeability: Yes

(The previous model's steering gate (8H7-23871-00 is interchangeable, as a set with the drive guard bracket (8F3-77316-01), with the new steering gate).

NOTE:

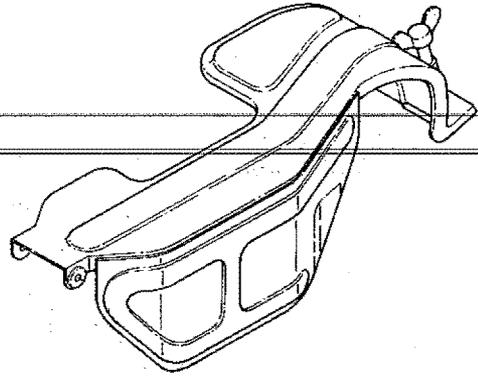
Due to modifications in 1. and 2. above, the 1979 model's drive guard bracket 1 (8G5-77315-00) and bracket 2 (8F3-77316-01) are no longer used.

3. Drive guard

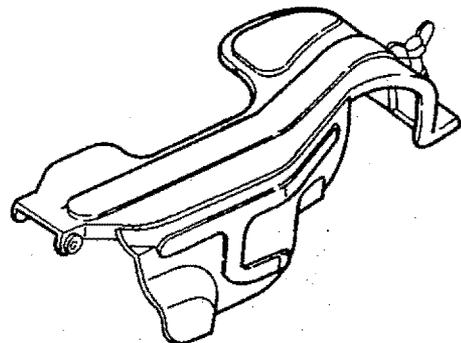
(8F3-77311-01 → 8G8-77311-00)

Due to use of the new type clutch, the shape of the drive guard is changed.

'79 model



'80 model



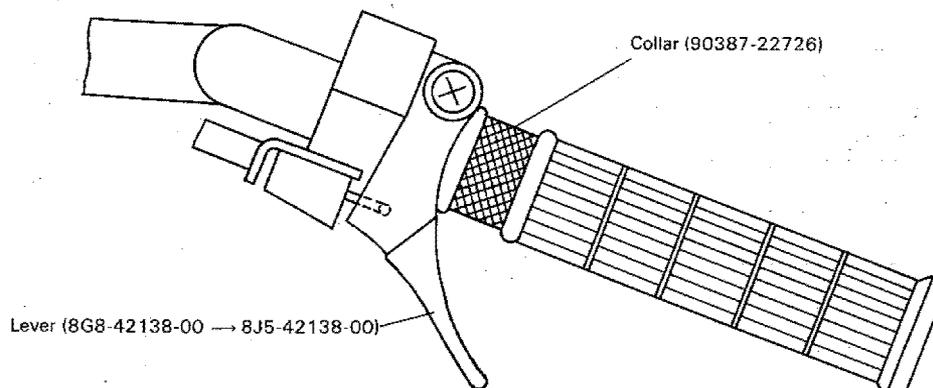
8G8-77311-00 can be used on both '79 and '80 models.

8F3-77311-01 can not be used on '80 model.

4. Throttle

To keep the throttle cable end, which is held by the throttle lever, from contact-

ing the throttle grip, a collar is mounted and the lever is properly curved.



Lever (8J5-42138-00) and collar (90387-22726) can be used on both 1979 and 1980 models.

Lever (8G8-42138-00) can not be used on the 1980 model.

5. Tune-up label (8K3-77743-00)

As an aid to service, a tune-up label is attached to the intake silencer.



ET250 (8K3) SPECIFIKATIONER

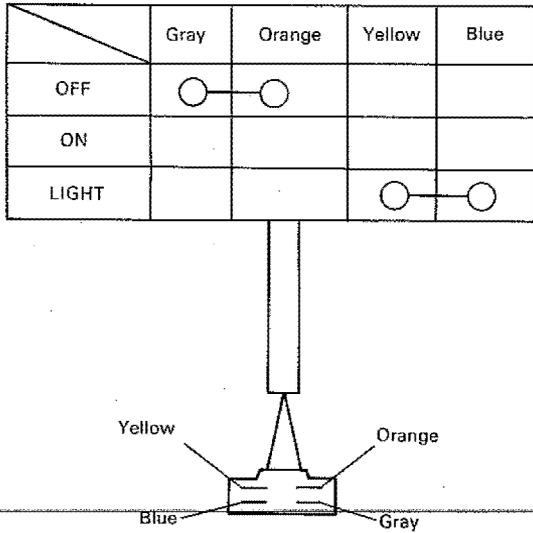
1. BENSIN	MIN 92 OKT. R.O.N.
2. MOTOROLJA	YAMALUBE
3. TÄNDSTIFT	B-8HS (NGK)
4. ELEKTRODEAVSTAND	0.5 ~ 0.6 mm
5. TÄNDINSTÄLLNING	1.2 ± 0.1 mm
6. LÅGFART (BRÄNSLE) JUSTERINGSSKRUV	20 ÖPPEN
7. TOMGANGSVARVTAL	1300 RPM
8. BRÄNSLENIVÅ	15 ± 3.6 mm
9. KEDJEHUS OLJEVOLYM OCH VISKOSITET	450 cc, GEAR OLJA SAE #75 ~ 80
10. VARITORAVSTAND	266 ± 2 mm
11. VARIATOR SIDFÖRSKJUTNING	11 ± 1 mm
12. MATTPÄNNING	25 ~ 30 mm/10 kg
* FÖR YTERLIGARE INFORMATION SE INSTRUKTIONSBOKEN FÖR DENNA MODELL.	
* SPECIFIKATIONER KAN ÄNDRAS UTAN MEDDELANDE.	

D. ELECTRICAL

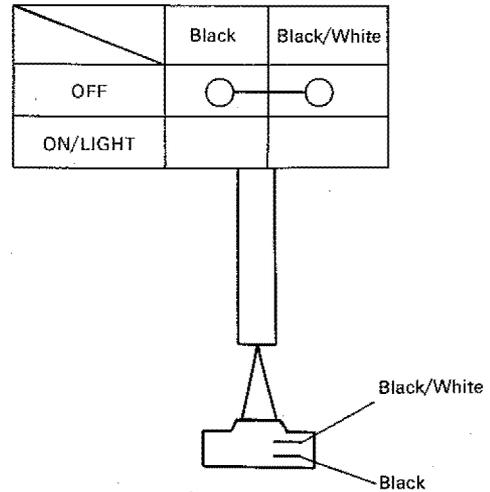
1. Main switch
(8F3-82508-20 → 8J5-82508-21)
For additional safety, the headlight and

taillight circuits are changed so that these lights are kept turned on as long as the engine is in operation.

'79 model



'80 model

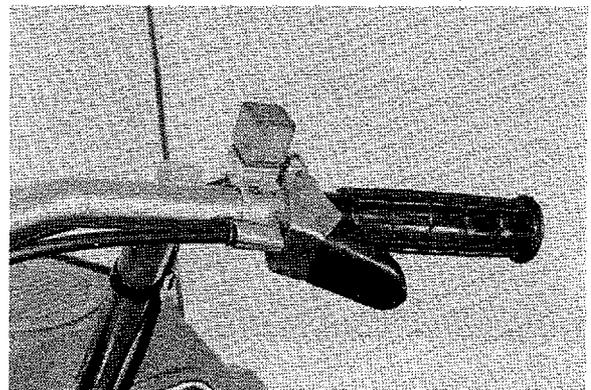


Interchangeability: No

2. Wire harness
(8H7-82590-20 → 8K3-82590-20)
For additional safety, the headlight and taillight circuits are changed so that these lights are kept turned on as long as the engine is in operation.
(Refer to "2-E Circuit Diagram.")

3. Engine stop switch
(8E3-83976-01)
For additional safety, the engine stop switch is added.

Interchangeability: No



2. SERVICE

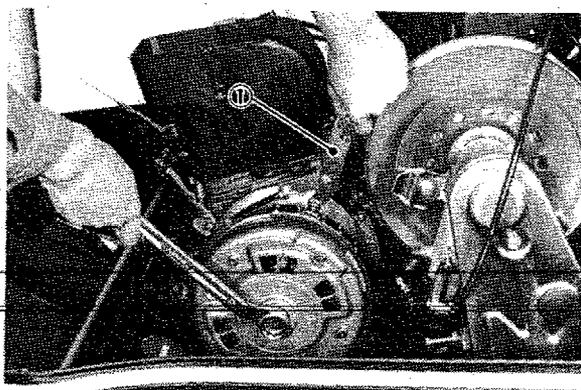
A. NEW SERVICE PROCEDURE

(New service procedure applied to the 1980 ET250)

Primary sheave

1. Removal
 - a. Remove the primary sheave mounting bolt, using the sheave holder.

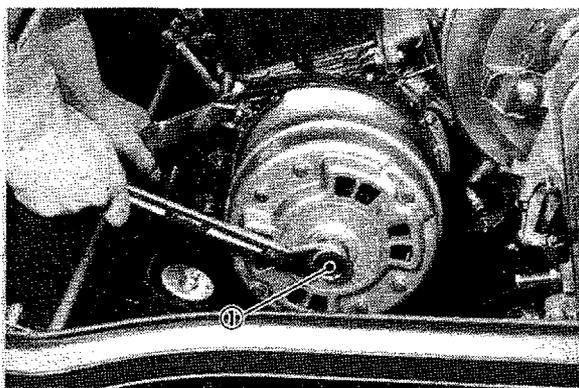
Tool name	Tool No.
Sheave holder	90890-01880



1. Sheave holder

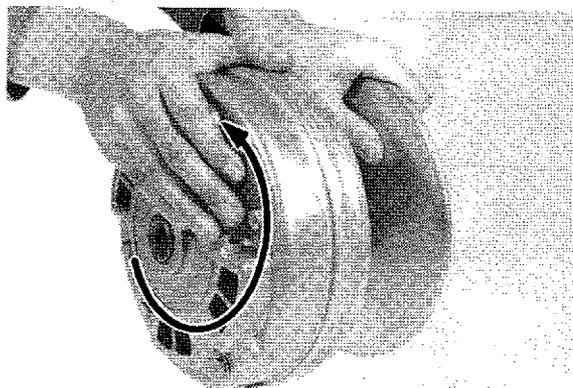
- b. Remove the primary sheave assembly, using the primary fixed sheave puller bolt and primary sheave holding tool.

Tool name	Tool No.
Primary fixed sheave puller bolt (M18 P1.5)	90890-01881



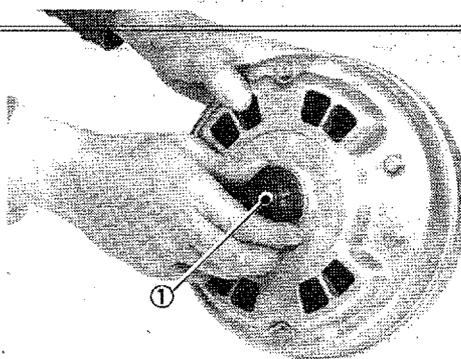
1. Primary fixed sheave puller bolt

2. Disassembly
 - a. Separate the sliding sheave assembly from the fixed sheave by rotating the sliding sheave counterclockwise.



- b. Install the sheave sub-assembly tool to the primary sheave.

Tool name	Tool No.
Sheave sub-assembly tool	90890-01879



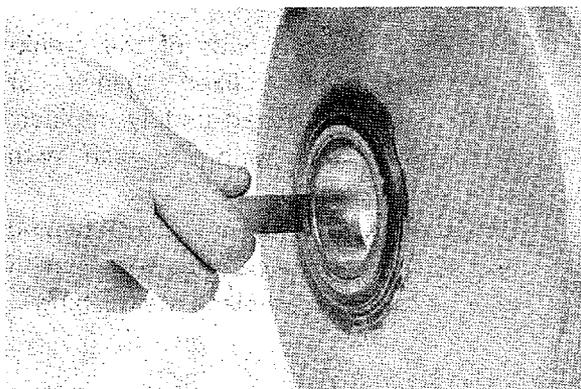
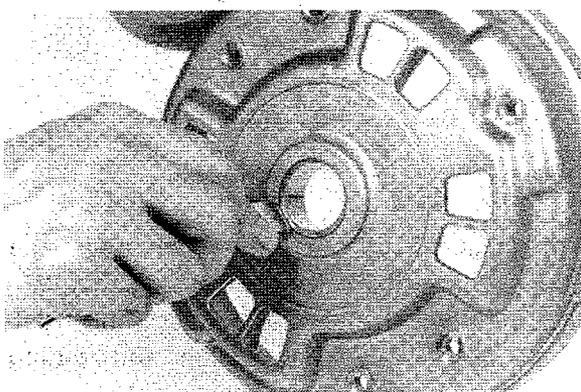
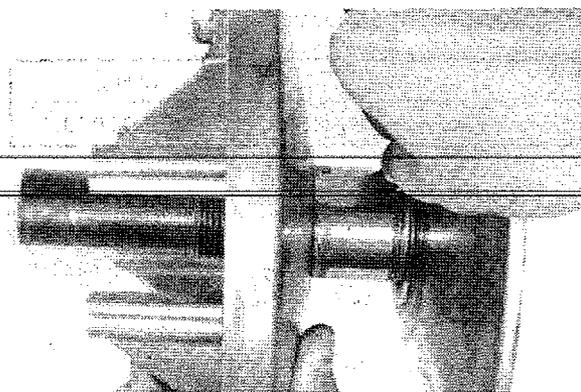
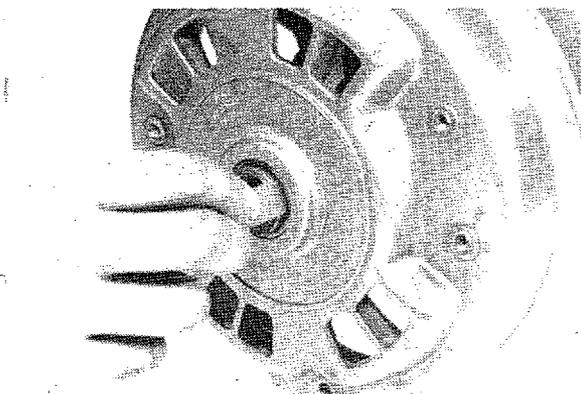
1. Sheave sub-assembly tool

- c. Loosen the six bolts securing the primary sheave cap and sliding sheave.
 - d. Remove the sheave subassembly tool. The primary sheave cap and sliding sheave cap now be disassembled.

3. Inspection

- a. Check the tapered ends of the crankshaft and primary fixed sheave for scratches. If scratched unduly, replace. If scratches are minor, burnish with emery cloth.
- b. Check the primary sheave cap bushing and sliding sheave bushing for wear. If beyond tolerance, replace the bushing.

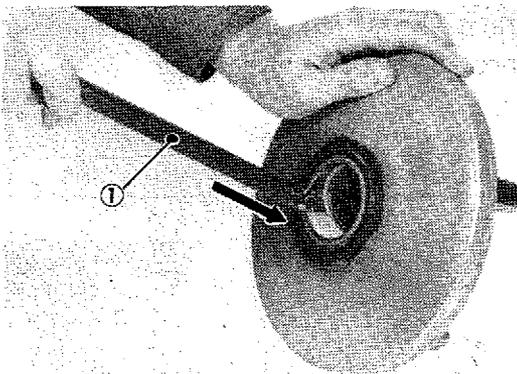
	Bushing clearance, limit	
	Small bushing	Large bushing
Inside	0.25 mm (0.01 in)	0.25 mm (0.01 in)
Outside	0.25 mm (0.01 in)	0.25 mm (0.01 in)



NOTE:

If bushing is installed tightly, remove the bushing using the bushing tool.

Tool name	Tool No.
Bushing tool	90890-01877



1. Bushing tool

c. Check the compression spring for free length. If excessively fatigued, replace.

d. Check the spider and roller for smooth movement and wear.

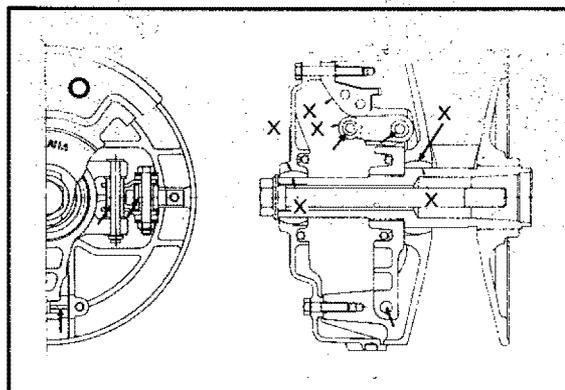
e. Check both sheaves for warping. If warped, replace.

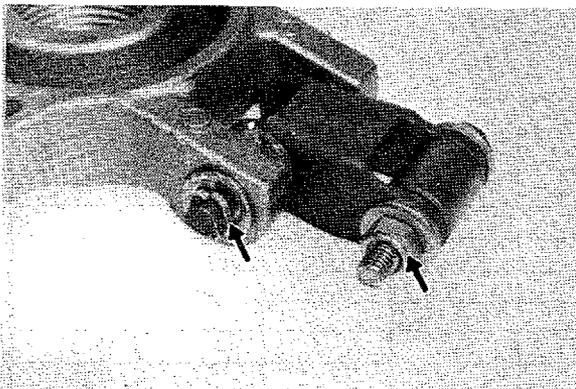
4. Reassembly

a. Oil the points shown in the illustration. Do not apply the grease on the portion of X mark. For other parts, greasing is unnecessary.

CAUTION:
If the U-nut or cotter pin is removed for the greasing, replace it with new one.

← X Free from grease
← Greasing point

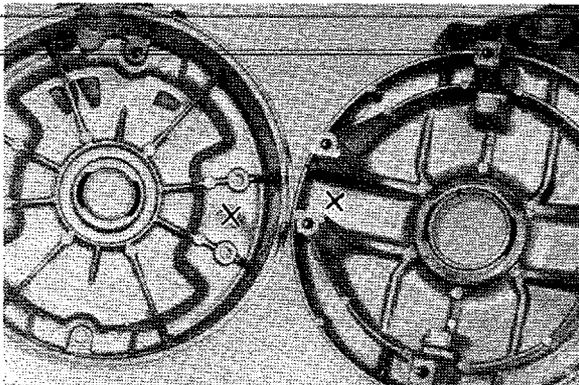




- b. Install the component parts to the sliding sheave and the sheave cap.

NOTE:

When installing the primary sheave cap to the primary sliding sheave, be sure to align the X mark on the sheave cap with that on the spider.

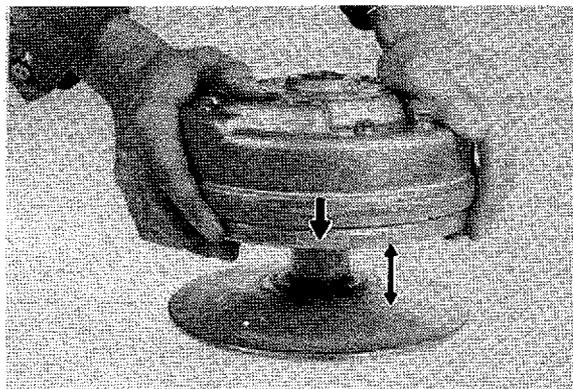


- c. Install the sheave subassembly tool and tighten the cap.
d. Tighten the six primary sheave cap bolts and remove the subassembly tool.

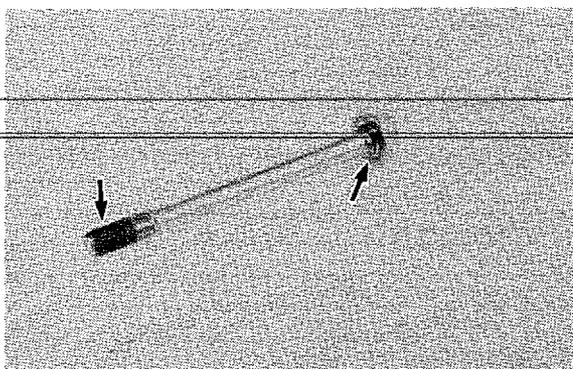
Tightening torque:
11 Nm (1.1 m-kg, 8 ft-lb)

CAUTION:

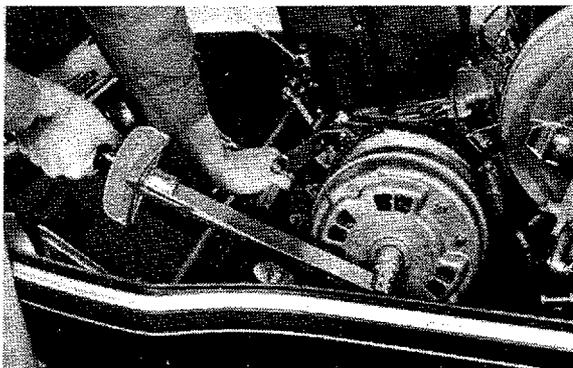
Make sure that the primary sheave cap assembly slides in contact with the fixed sheave boss.



- e. Clean the tapered portions of crankshaft and fixed sheave.
f. Fit the fixed sheave to the tapered portion of crankshaft.
g. Apply engine oil to the threaded portion of primary sheave bolt and its contact surface with spring washer.



- h. Tighten the primary sheave mounting bolt, using primary sheave cap holding tool.



Tightening torque:
First tightening the bolt to a torque of A, then loosen it.
Retighten bolt to a final torque of B.
A: 100 Nm (10 m-kg, 72.5 ft-lb)
B: 60 Nm (6 m-kg, 43.5 ft-lb)

B. MAINTENANCE INTERVALS
[PERIODIC MAINTENANCE]

Check point	Every			When necessary	Seasonally
	20 hrs. or 400 km (250 mi)	40 hrs. or 800 km (500 mi)	80 hrs or 1600 km (1000 mi)		
ENGINE:					
Tightness of bolts and nuts	○				○
Bends, cracks and wear	○				○
Abnormal noise	○				○
Loose connection and breaks of fuel and pulse pipes	○				○
Loose connection and breaks of oil pipes	○				○
Loose connection and breaks of oil delivery pipe	○				○
Manual rope starter system		○			○
Carburetor					
● Fuel level		○			○
● Operation of starter jet		○			○
● Mixing adjuster (pilot screw)				○	○
● Idling speed adjustment				○	○
Operation and adjustment of oil pump		○			○
Ignition timing					○
Cylinder compressions			○		○
Cylinder head/exhaust pipe decarbonize					○
Spark plug condition, gap and cleaning	○				○
Tightening of the cylinder head**					○
DRIVE:					
Tightness of bolts and nuts	○				○
Wear on slide runners	○				○
Primary drive system		○			○
V-belt	○				○
Secondary drive system		○			○
Sheave distance		○			○
Sheave offset		○			○
Brake pad wear		○			○
Brake operation and adjustment		○			○
Guide wheel rubber		○			○
Wear of drive track wheel sprocket		○			○
Drive track adjustment	Initial 100 km (60 mi) and 300 km (200 mi)	○			○
Breaks in drive track		○			○
Bends in front and rear axles		○			○
Checking of lock washers		○			○
Drive chain adjustment		○			○
Drive chain oil level		○			○
BODY:					
Tightness of bolts and nuts	○				○
Bends and cracks	○				○
Welded riveted, joints	○				○
Ski adjustment		○			○
Ski runner wear	○				○
Breaks in fuel tank		○			○
Cleaning of fuel tank					○
Fuel filter					○
Loose connection and breaks in fuel pipe		○			○
Breaks in oil tank		○			○
Oil filter					○

Check point	Every			When necessary	Seasonally
	20 hrs. or 400 km (250 mi)	40 hrs. or 800 km (500 mi)	80 hrs or 1600 km (1000 mi)		
ELECTRICAL:					
Wear, breakage of wire covering		○			○
Breaks in high-tension cord	○				○
Voltage regulator working voltage					○
Operation of engine stop switch		○			○
Operation of tether switch		○			○
Headlight		○			○
Taillight		○			○
Brake light		○			○

** Retighten every 10 hours from the first use.

[LUBRICATION INTERVALS]

Lubrication point	Every			When necessary	Seasonally	Oil/Grease Brand name
	20 hrs. or 400 km (250 mi)	40 hrs. or 800 km (500 mi)	80 hrs. or 1,600 km (1,000 mi)			
ENGINE:						
Starter case					○	Aeroshell grease #7A or Esso Beacon 325 grease
Oil pump control box			○		○	
Pump drive cover			○		○	
Oil in the oil tank				○		YAMALUBE 2-cycle oil
DRIVE:						
Primary sheave weight and roller pins		○			○	Molybdenum disulfide snowmobile grease
Secondary shaft and sliding sheave		○			○	
Front axle housing		○			○	Light all-purpose grease
Shaft 1 and shaft 2 (Slide rail)			○		○	
Drive chain oil replacement		○			○	Gear oil API "GL-3" SAE #75 or #80
BODY:						
Steering column lower bearing		○			○	Light all-purpose grease
Steering column upper bearing		○			○	Motor oil
Steering links		○			○	Light all-purpose grease
Ski column		○			○	
Ski wear plate		○			○	
Ski retaining pin		○			○	
Brake wire end stopper and brake lever		○			○	Esso Beacon 325 grease

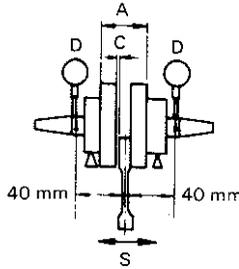
C. SPECIFICATIONS**General**

NOTE: * ... New specification
(Compared with 1979 ET250)

Model: Model (I.B.M. No.) Frame I.D. and starting number Engine I.D. and starting number	* ET250('80) (8K3) * 8H7-054001 * S246-054001
Dimension: Overall length Overall width (std) Overall height (w/windshield)	* 2,435 mm 905 mm 1,040 mm

Engine

Description: Engine type Engine model Displacement Bore × stroke Effective compression ratio Starting system Ignition system Lubrication system	Fan cooled, two stroke 5-port, single cylinder S246 246 cm ³ 73 × 59 mm 6.3 : 1 Recoil hand starter C.D.I. "Autolube" oil injection
Cylinder head: Combustion chamber volume (with spark plug) Compression chamber type Head gasket thickness	32.1 cm ³ Dome + squish 0.5 mm
Cylinder: Material Bore size Taper limit Out of round limit	Cast iron sleeves aluminum cylinder 73 mm 0.05 mm (0.0020 in) 0.01 mm (0.0004 in)
Piston: Piston skirt clearance (Measuring point) Piston over size Piston pin outside diameter × length	0.045 ~ 0.050 mm (10 mm from piston skirt end) 1st 73.25 mm 2nd 73.50 mm 3rd 73.75 mm 4th 74.00 mm 18 × 55 mm
Piston ring: Piston ring design (Top) Piston ring design (2nd) Ring end gap (Installed) (Top) Ring end gap (Installed) (2nd)	Keystone Keystone 0.3 ~ 0.5 mm 0.3 ~ 0.5 mm
Small end bearing: Type	Needle bearing
Big end bearing: Type	Needle bearing
Crankshaft: Crankshaft assembly width (A) Crankshaft deflection (D)	56 ⁺⁰ / _{-0.05} mm 0.02 mm

<p>Connecting rod large end side clearance (C) Connecting rod small end deflection (S)</p>  <p>Crank pin outside diameter × length Crank pin type Crank bearing type (Left) × q'ty Crank bearing type (Right) × q'ty Crank oil seal type (Left) × q'ty Crank oil seal type (Right) × q'ty</p>	<p>0.5 mm 2 mm</p> <p>24 × 55 mm Solid shaft * #6306 C3 special treatment x 1 pc. #6206 C3 × 1 pc. * FPJ30-72-8 x 1 pc. FPJ30-48-8 × 1 pc.</p>																																									
<p>Carburetor: Type and manufacture/quantity I.D. mark Main jet (M.J.) Slow adjusting screw (Air screw) (S.A.) Slow jet (S.J.)</p>	<p>CDX38-32 KEIHIN SEIKI × 1 8H700 #138 2.0 turns out #50</p>																																									
<p>Intermediate jet (I.J.)</p>	<p>#40</p>																																									
<p>Starter jet (St.J.) Fuel level (F.L.) Idling engine speed</p>	<p>0.95 mm + 1.5 ± 3.5 mm 1,300 r/min</p>																																									
<p>Main jet setting chart:</p> <table border="1" data-bbox="523 1209 1404 1500"> <thead> <tr> <th rowspan="2">Altitude</th> <th colspan="6">Temperature</th> </tr> <tr> <th>-30°C (-22°F)</th> <th>-20°C (-4°F)</th> <th>-10°C (14°F)</th> <th>0°C (32°F)</th> <th>10°C (50°F)</th> <th>20°C (68°F)</th> </tr> </thead> <tbody> <tr> <td>Sea level</td> <td colspan="2">← #138 →</td> <td colspan="2">← #130 →</td> <td colspan="2">← #140 →</td> </tr> <tr> <td>~ 700m</td> <td colspan="2">← #138 →</td> <td colspan="2">← #130 →</td> <td colspan="2"></td> </tr> <tr> <td>~ 1400m</td> <td colspan="2">← #138 →</td> <td colspan="2">← #130 →</td> <td colspan="2"></td> </tr> <tr> <td>~ 2000m or more</td> <td colspan="2">← #138 →</td> <td colspan="2">← #130 →</td> <td colspan="2">← #125 →</td> </tr> </tbody> </table>		Altitude	Temperature						-30°C (-22°F)	-20°C (-4°F)	-10°C (14°F)	0°C (32°F)	10°C (50°F)	20°C (68°F)	Sea level	← #138 →		← #130 →		← #140 →		~ 700m	← #138 →		← #130 →				~ 1400m	← #138 →		← #130 →				~ 2000m or more	← #138 →		← #130 →		← #125 →	
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<p>Lubrication: Autolube pump — Color code Autolube pump — Minimum stroke Autolube pump — Maximum stroke Autolube pump — Reduction ratio Autolube pump — Output Min. Autolube pump — Output Max. Oil tank capacity Oil grade</p>	<p>Green 0.20 ~ 0.25 mm (0.008 ~ 0.01 in) 1.85 ~ 2.05 mm (0.073 ~ 0.081 in) 1/40 13.5 cm³/h/1,300 r/min (0.46 oz/h/1,300 r/min) 440 cm³/h/6,500 r/min (14.9 oz/h/6,500 r/min) 2.2 liter YAMALUBE 2-cycle oil</p>																																									

Drive and track suspension

Transmission: Type Drive ratio Engagement rpm Primary spring Part No. Primary spring Color code Secondary spring Part No. Secondary spring Color code Secondary spring pre-load (Twist) Sheave distance Sheave off-set V-belt width and outer line length V-belt wear limit	V-belt automatic centrifugal engagement 3.5 : 1 ~ 1 : 1 * 3200 r/min * 90501-55345 * Red—Red 90508-40080 Not painted 160° * 266 ± 2 mm (10.47 ± 0.08 in) 11 ± 1 mm (0.43 ± 0.04 in) 31.6 × 1,099 mm (1.24 × 43.3 in) 26 mm (1.02 in)
Track suspension: Type Damper type Slide runner wear limit Track width Track deflection Length on ground Wheel sprocket material and number of teeth	Slide rail suspension Oil and gas damper 10 mm (0.4 in) 381 mm (15 in) 25 ~ 30 mm/10 kg (0.98 ~ 1.18 in/22 lb) 650 mm (25.6 in) Polyethylene 11T
Secondary drive: Type Reduction ratio Chain pitch × number of links Free play Chain housing oil quantity Chain housing oil grade	Chain (#40K-1) 23/12 (1.917) 12.7 mm (0.5 in) × 60 pcs. 10^{+5}_{-2} mm ($0.4^{+2}_{-0.08}$ in) 450 cm ³ (15.21 oz) Gear oil API "GL-3" SAE #75 or #80
Brake: Type Brake pad thickness Brake pad wear limit Gap between pad and disc	Disc brake 7.3 mm (0.29 in) 1 mm (0.04 in) 0.2 ~ 1.0 mm (0.008 ~ 0.039 in)

Chassis

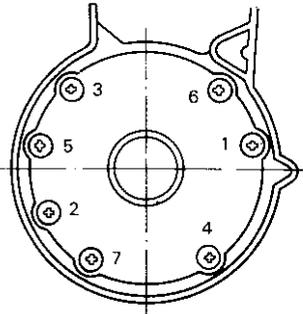
Frame: Frame design and material	Aluminum and steel
Steering system: Caster (ski column) Camber Ski length × width × thickness Ski stance Ski toe-out Steering linkage type Lock to lock angle (Steering column) Right Lock to lock angle (Steering column) Left Lock to lock angle (Ski) Right Lock to lock angle (Ski) Left	25° 0° * 1000 × 136 × 2.6 mm 750 mm (38.6 in) 0 ~ 6 mm (0.24 in) Tie-rod 55° 15' 55° 15' Right hand ski 24.9°, Left hand ski 27.6° Right hand ski 27.6°, Left hand ski 24.9°
Front suspension: Type Damper type	Leaf spring × 3 Oil damper
Fuel tank: Capacity Fuel grade	22.7 liter Regular gasoline

Electrical

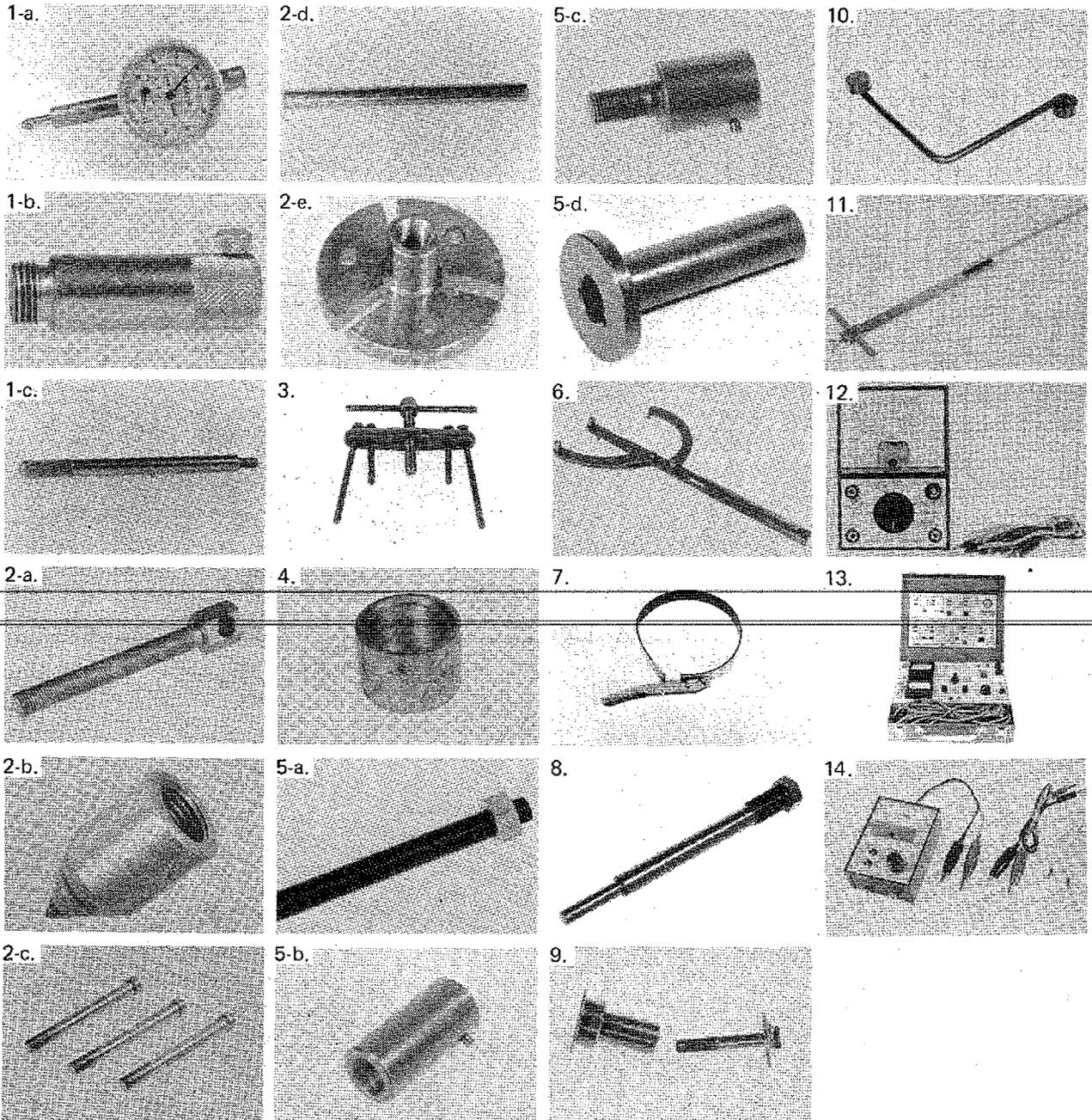
Ignition system: Type—flywheel magneto (C.D.I. Type) Model/manufacturer Voltage Pulser coil resistance Charging coil resistance	F3T355/MITSUBISHI 12V 9.0Ω at 20°C (68°F) (White/Red—Black) 350Ω at 20°C (68°F) (Brown—Black) 15.0Ω at 20°C (68°F) (Blue—Black)
Ignition timing: B.T.D.C.	1.2 ± 0.1 mm (0.05 ± 0.004 in)
Ignition coil: Model: Manufacturer Spark gap Primary winding resistance Secondary winding resistance Diode (Yes or No)	F6T411/MITSUBISHI 9 mm (0.35 in)/300 r/min 11 mm (0.43 in)/3,000 r/min 1.0Ω at 20°C (68°F) 5.9kΩ at 20°C (68°F) No
Spark plug: Type and quantity Spark plug gap	NGK B-8HS × 1 pc. 0.5 ~ 0.6 mm (0.020 ~ 0.024 in)
Spark plug cap: Type Noise suppressor resistance	Rubber type with noise suppressor 5 kΩ at 20°C (68°F)
C.D.I. unit: Model/manufacturer	8H4-20/MITSUBISHI
Lighting system: Lighting output Lighting coil resistance Head light type Bulb wattage/q'ty Tail/brake light wattage	12V-100W 0.19Ω at 20°C (68°F) (Yellow—Black) Semi shield 12V-45/40W × 1 pc. 12V-8W/23W
A.C. regulator: Model/manufacturer Voltage	TRIZ-24B HITACHI or S8516B TOSHIBA 13.8 ± 0.5V

Tightening torque

Part to be tightened	Thread size	Tightening torque	Remarks
[Engine]			
Spark plug	M14 P1.25	28 Nm (2.8 m-kg, 20 ft-lb)	
Cylinder head	M8 P1.25	First: 20 Nm (2.0 m-kg, 14.5 ft-lb) Final: 25 Nm (2.5 m-kg, 18 ft-lb)	
Flywheel magneto	M16 P1.0	73 Nm (7.3 m-kg, 53 ft-lb)	
Fand and flywheel magneto	M6 P1.0	10 Nm (1.0 m-kg, 7 ft-lb)	
Pully and flywheel magneto	M8 P1.25	16 Nm (1.6 m-kg, 7.5 ft-lb)	
Flywheel base	M6 P1.0	7 Nm (0.7 m-kg, 5 ft-lb)	Use LOCK-TITE

Part to be tightened	Thread size	Tightening torque	Remarks
Crankcase left and right Tightening sequence 	M6 P1.0	7 Nm (0.7 m-kg, 5 ft-lb)	
Crankcase and engine bracket	M10 P1.25	30 Nm (3.0 m-kg, 22 ft-lb)	
Cylinder and ring nut	M8 P1.25	23 Nm (2.3 m-kg, 16.5 ft-lb)	
Pump drive cover and crankcase	M8 P1.25	23 Nm (2.3 m-kg, 16.5 ft-lb)	Use LOCK-TITE
Pump drive cover and crankcase	M6 P1.0	10 Nm (1.0 m-kg, 7 ft-lb)	Use LOCK-TITE
Starter case and crankcase	M6 P1.0	10 Nm (1.0 m-kg, 7 ft-lb)	
Cylinder head and air shroud	M6 P1.0	7 Nm (0.7 m-kg, 5 ft-lb)	Use LOCK-TITE
Crankcase and air shroud	M6 P1.0	7 Nm (0.7 m-kg, 5 ft-lb)	Use LOCK-TITE
Air shroud 1 and 2	M6 P1.0	7 Nm (0.7 m-kg, 5 ft-lb)	Use LOCK-TITE
Pump drive cover 1 and 2	M6 P1.0	7 Nm (0.7 m-kg, 5 ft-lb)	Use LOCK-TITE
Silencer 1 and 2	M5 P0.8	5 Nm (0.5 m-kg, 3.5 ft-lb)	
Startercase and duct	M5 P0.8	5 Nm (0.5 m-kg, 3.5 ft-lb)	Use LOCK-TITE
[Drive and track suspension]			
* Primary sliding sheave and cap	M6 P1.0	11 Nm (1.1 m-kg, 8 ft-lb)	
* Installation of primary sheave	UNF 1/2"	Initial: 100 Nm (10m-kg, 72.5 ft-lb) Loosen once and retighten: 60 Nm (6.0 m-kg, 43.5 ft-lb)	Use motor oil
Chaincase housing and frame	M8 P1.25	25 Nm (2.5 m-kg, 18 ft-lb)	
Front axle housing and frame	M8 P1.25	25 Nm (2.5 m-kg, 18 ft-lb)	
Front axle (R.H.)	M20 P1.0	80 Nm (8.0 m-kg, 58 ft-lb)	
Chain drive sprocket	M12 P1.25	40 Nm (4.0 m-kg, 29 ft-lb)	Use cotter pin
Chain driven sprocket	M8 P1.25	25 Nm (2.5 m-kg, 18 ft-lb)	
Housing cap	M8 P1.25	15 Nm (1.5 m-kg, 11 ft-lb)	
Chain tensioner adjusting lock nut	M10 P1.25	33 Nm (3.3 m-kg, 24 ft-lb)	
Sprocket wheel and front axle	—	5 Nm (0.5 m-kg, 3.5 ft-lb)	
Shaft 1 and frame	M10 P1.25	55 Nm (5.5 m-kg, 40 ft-lb)	
Pivot arm 1 and sliding frame 1	M10 P1.25	40 Nm (4.0 m-kg, 29 ft-lb)	Use LOCK-TITE
Suspension wheel	M12 P1.25	80 Nm (8.0 m-kg, 58 ft-lb)	
Spring hook	M8 P1.25	25 Nm (2.5 m-kg, 18 ft-lb)	
Sliding frame 1	M8 P1.25	25 Nm (2.5 m-kg, 18 ft-lb)	
Rear guide wheel	M8 P1.25	25 Nm (2.5 m-kg, 18 ft-lb)	Use LOCK-TITE
Sliding runner 1	M6 P1.0	2.5 Nm (0.25 m-kg, 2 ft-lb)	
Sliding runner 2	M6 P1.0	6 Nm (0.6 m-kg, 4.5 ft-lb)	
Stopper	M6 P1.0	4 Nm (0.4 m-kg, 3 ft-lb)	
[Chassis]			
Engine mounting bolt (nut)	M10 P1.25	30 Nm (3.0 m-kg, 22 ft-lb)	
Ski runner	M8 P1.25	14 Nm (1.4 m-kg, 10 ft-lb)	
Steering column and gate	M8 P1.25	20 Nm (2.0 m-kg, 14.5 ft-lb)	
Steering relay rod adjusting nut	M10 P1.25	30 Nm (3.0 m-kg, 22 ft-lb)	
Universal joint	M10 P1.25	30 Nm (3.0 m-kg, 22 ft-lb)	
Outside arm and ski column	M10 P1.25	30 Nm (3.0 m-kg, 22 ft-lb)	
Steering relay ass'y	M10 P1.25	30 Nm (3.0 m-kg, 22 ft-lb)	
Steering lower bracket	M8 P1.25	20 Nm (2.0 m-kg, 14.5 ft-lb)	
Steering column 1 and 2	M8 P1.25	14 Nm (1.4 m-kg, 10 ft-lb)	
Steering gate	M8 P1.25	14 Nm (1.4 m-kg, 10 ft-lb)	

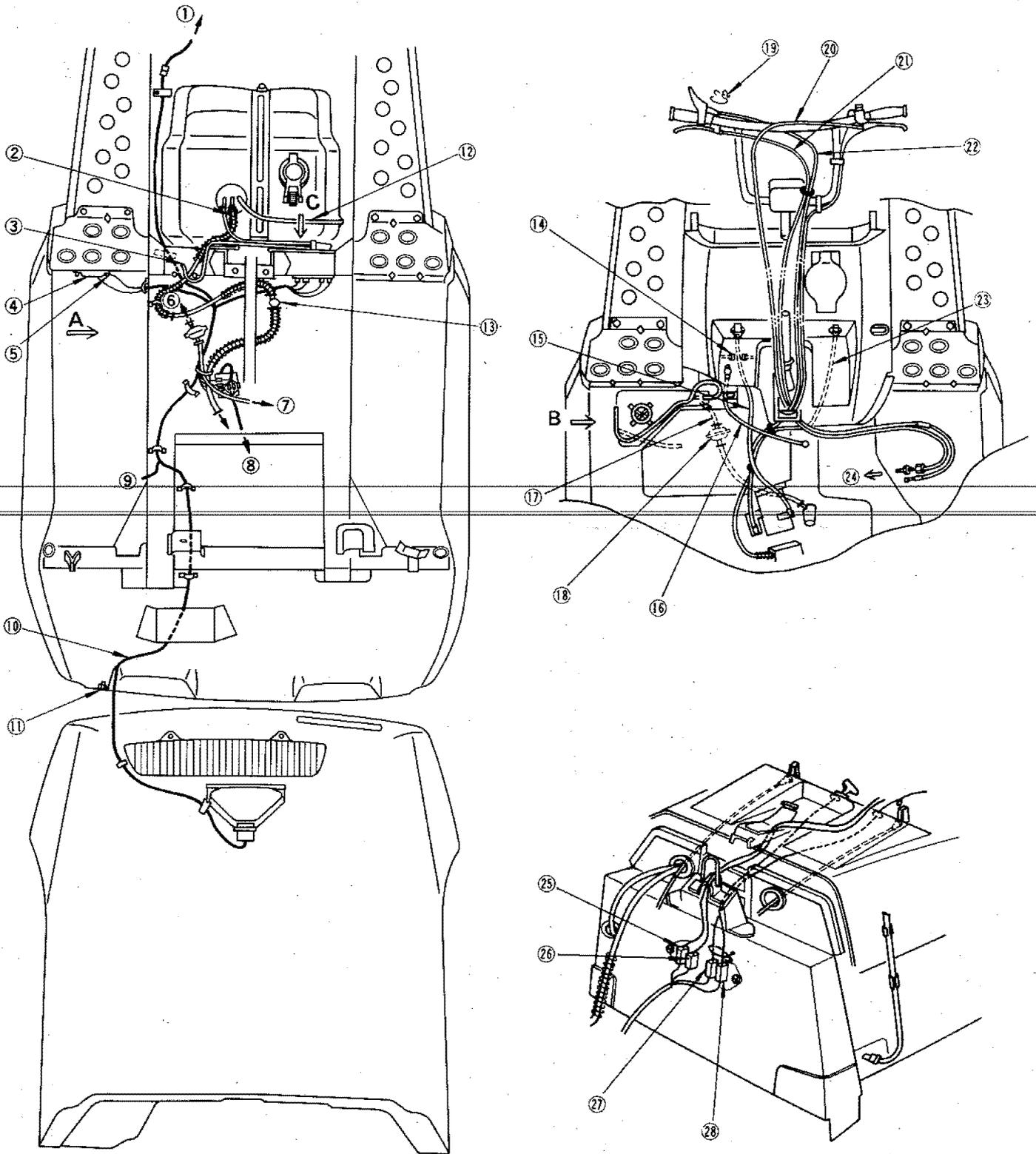
D. SPECIAL TOOLS
(For 1980 ET250)

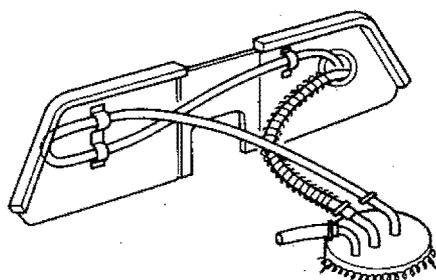
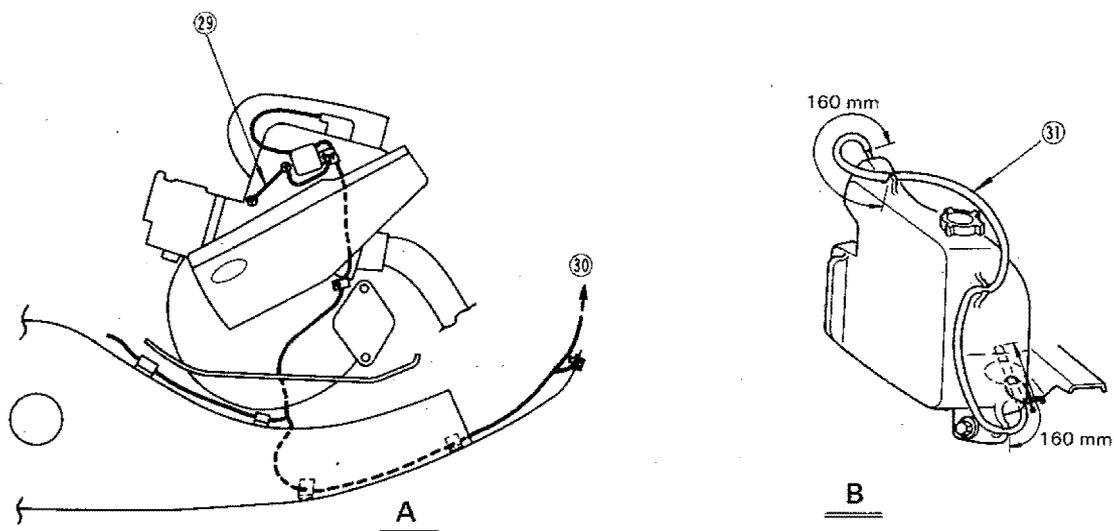


No.	Description	Tool No.
1-a	Dial gauge	90890-03097
1-b	Dial gauge stand No. 2	90890-01195
1-c	Needle (56 mm)	90890-03098
2-a	Flywheel puller bolt	90890-01803
2-b	Flywheel puller attachment	90890-01804
2-c	Flywheel puller screw	90890-01806
2-d	Drive handle	90890-01817
2-e	Flywheel puller body	90890-01848
3	Crankcase separation tool	90890-01135
4	Spacer (φ80 × 55 mm)	90890-01818
5-a	Crank installer bolt	90890-01275
5-b	Crank installer bolt adaptor (M16) (for Right)	90890-01280

No.	Description	Tool No.
5-c	Crank installer bolt adaptor (M12) (for Left)	90890-01279
5-d	Crank installer pot	90890-01274
6	Rotor holding tool	90890-01235
7	Sheave holder	90890-01880
8	Primary fixed sheave puller (M18)	90890-01881
9	Sheave sub-assembly tool	90890-01879
10	Bushing tool	90890-01877
11	Sheave gauge	90890-01875
12	Pocket tester	90890-03104
13	Electro tester	90890-03021
14	A.C. Regulator checker	90890-03090

E. WIRE ROUTING DIAGRAM





- | | |
|--|--|
| 1. To taillight | 17. Oil pipe |
| 2. Fuel pipe | 18. Oil filter |
| 3. Through pipe inside the steering gate | 19. Clip |
| 4. Voltage regulator | 20. Left brake wire |
| 5. Ground to body | 21. Right brake wire |
| 6. To oil tank | 22. Throttle wire |
| 7. To oil pump | 23. Decompression wire |
| 8. To carburetor | 24. To brake caliper |
| 9. To ignition coil | 25. Brake light switch lead wire coupler |
| 10. Wire harness assembly | 26. Beam switch lead wire coupler |
| 11. Ground to body | 27. Tether switch lead wire coupler |
| 12. Fuel level pipe | 28. Main switch lead wire coupler |
| 13. Fuel cock | 29. Ground lead wire |
| 14. Grommet | 30. To head light |
| 15. Starter wire | 31. Oil tank breather pipe |
| 16. Fuel cock wire | |

F. WIRING DIAGRAM

