



# YAMAHA

## SNOWMOBILE

# ET 250 ('80)

## SUPPLEMENTARY SERVICE MANUAL



Frame serial number : 8H7-054001 ~ 8H7-054999  
Engine serial number : S246-054001 ~ S246-054999

8K3-28197-20

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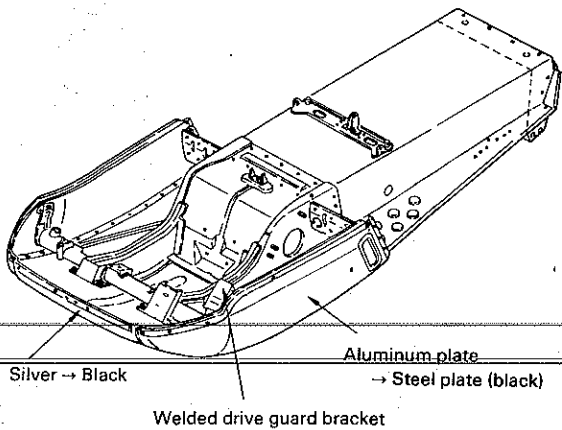
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**C. CHASSIS**

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.



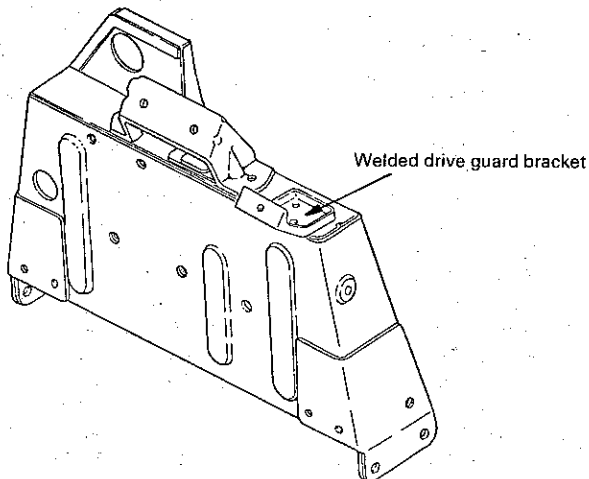
8K3-21910-00 can be used on both '79 and '80 models.

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:**

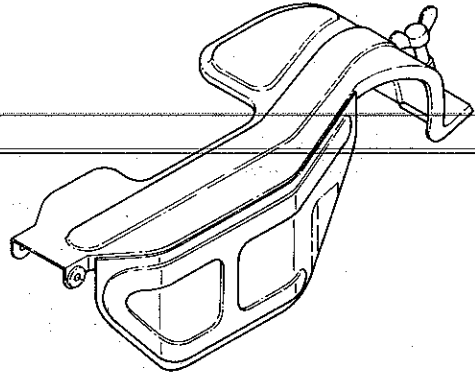
Due to modifications in 1. and 2. above, the 1979 model's drive guard bracket 1 (8G5-77315-00) and bracket 2 (8F3-77316-01) are no longer used.

3. Drive guard

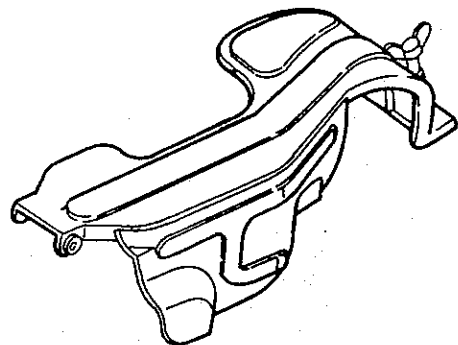
(8F3-77311-01 → 8G8-77311-00)

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.

**Drive and track suspension**

<b>Transmission:</b> 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)
<b>Track suspension:</b> 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
<b>Secondary drive:</b> 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 $\begin{smallmatrix} +5 \\ -2 \end{smallmatrix}$ mm (0.4 $\begin{smallmatrix} +2 \\ -0.08 \end{smallmatrix}$ in) 450 cm <sup>3</sup> (15.21 oz) Gear oil API "GL-3" SAE #75 or #80
<b>Brake:</b> 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)

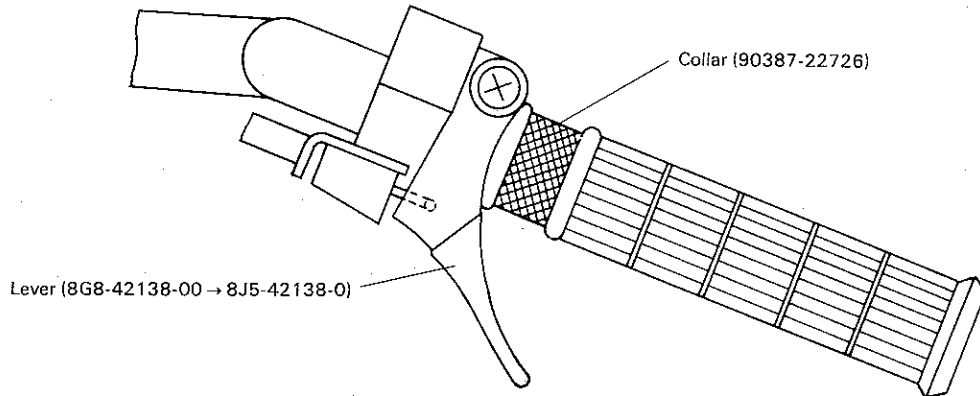
**Chassis**

<b>Frame:</b> Frame design and material	Aluminum and steel
<b>Steering system:</b> 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°
<b>Front suspension:</b> Type Damper type	Leaf spring × 3 Oil damper
<b>Fuel tank:</b> Capacity Fuel grade	22.7 liter Regular gasoline

4. Throttle

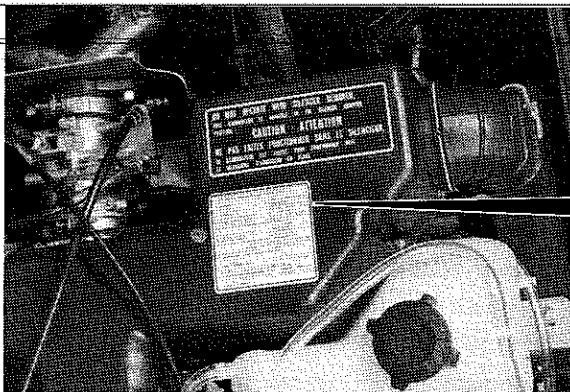
To keep the throttle cable end, which is held by the throttle lever, from contacting the throttle grip, a collar is mounted and the lever is properly curved.

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 (8K5-77743-00)

For easy service, the tune-up label is adhered to the intake silencer.



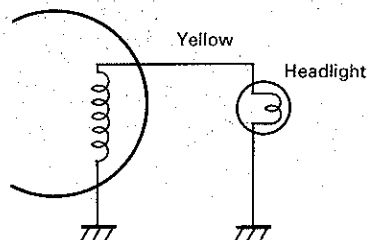
ET340 (8K5) SPECIFIKATIONER	
1. BENSIN	MIN 92-OKT. R.O.N.
2. MOTOROLJA	YAMALUBE
3. TÄNDSTIFT	BR-9ES (NGK)
4. ELEKTRODEAVSTAND	0.7 ~ 0.8 mm
5. TÄNDINSTÄLLNING	1.6 ± 0.1 mm
6. LÅGFART (BRÄNSLE) JUSTERINGSSKRUV	1.0 ÅPEN
7. TOMGANGSVARVTAL	1700 RPM
8. BRÄNSLENIVÅ	25 ± 1 mm
9. KEDJEHUS OLJEVOLYM OCH VISKOSITET	400 cc. GEAR OLJA SAE #75 ~ 80
10. VARITORAVSTAND	266 ± 2 mm
11. VARIATOR SIDOFÖRSKJUTNING	11 ± 1 mm
12. MATTSPÄNNING	25 ~ 30 mm/10 kg
* FÖR YTTRELLIGARE INFORMATION SE INSTRUKTIONSBOKEN FÖR DENNA MODELL.	
* SPECIFIKATIONER KAN ÄNDRAS UTAN MEDDELANDE.	

D. ELECTRICAL

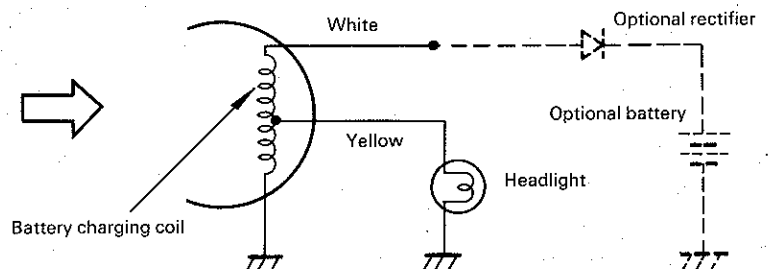
1. C.D.I. magneto (8H5-85500-20 → 8J9-85500-20)

○ For optional electric starter, the battery charging coil is added.

'79 model

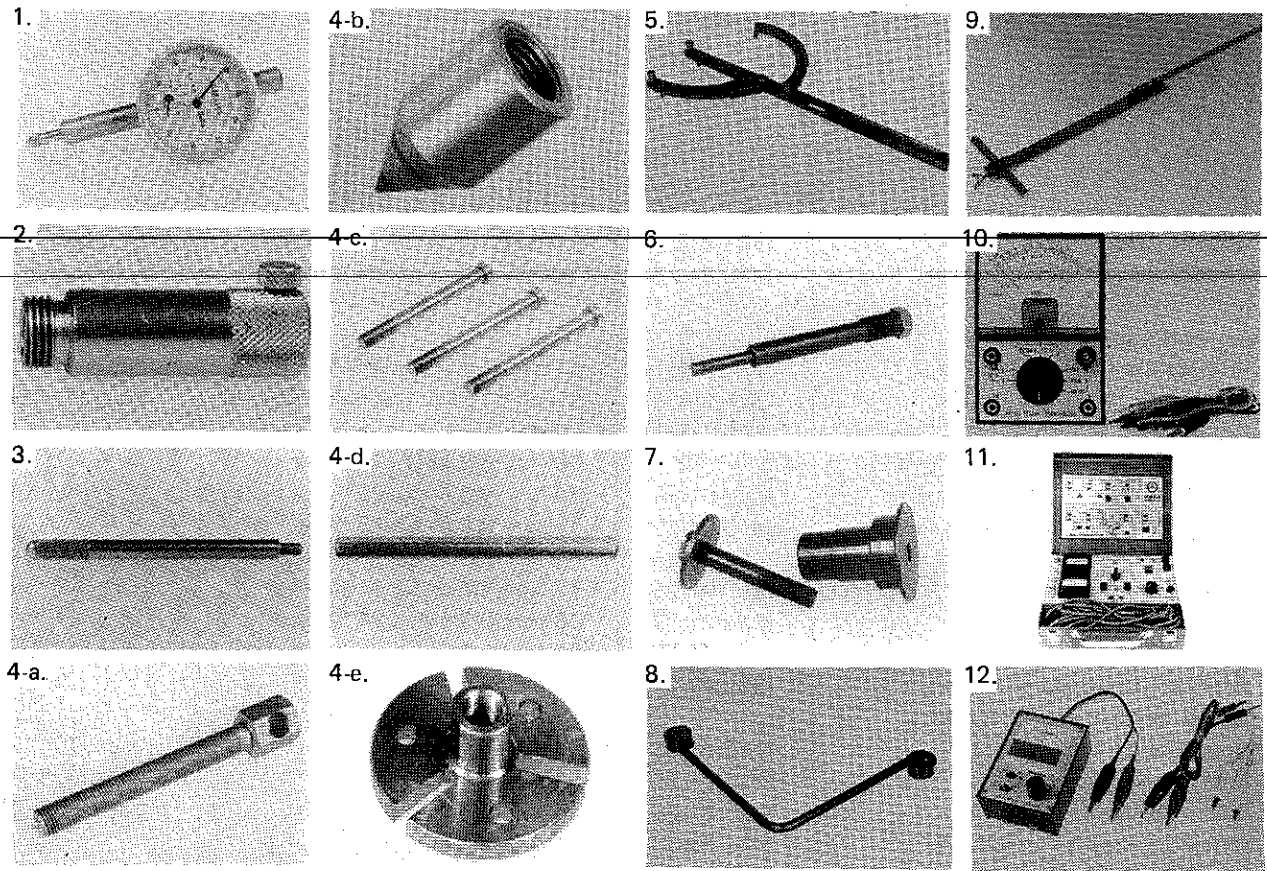


'80 model



Steering column and gate	M8 P1.25	20 Nm (2.0 m-kg, 14.5 ft-lb)	Use lock washer
Steering relay rod adjusting nut	M10 P1.25	25 Nm (2.5 m-kg, 18 ft-lb)	Use lock washer and wave washer
Out side arm and ski column	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)	Use lock washer
Installation of steering column 1, 2	M8 P1.25	14.5 Nm (1.45 m-kg, 10.5 ft-lb)	Use lock washer
Steering relay ass'y	M10 P1.25	30 Nm (3.0 m-kg, 22 ft-lb)	Use cotter pin
Universal joint	M10 P1.25	25 Nm (2.5 m-kg, 18 ft-lb)	
Steering gate	M8 P1.25	14 Nm (1.4 m-kg, 10 ft-lb)	

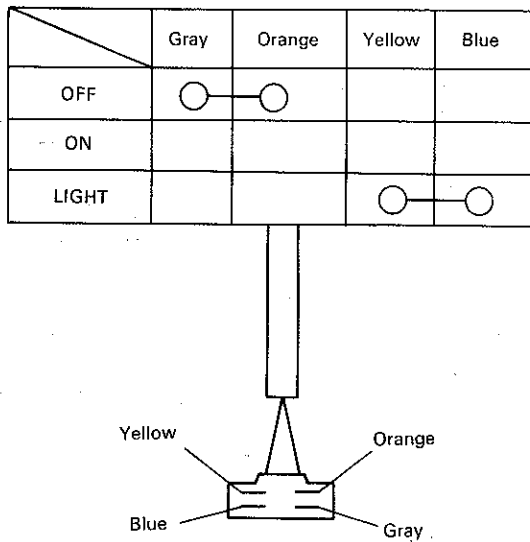
**C. SPECIAL TOOLS**



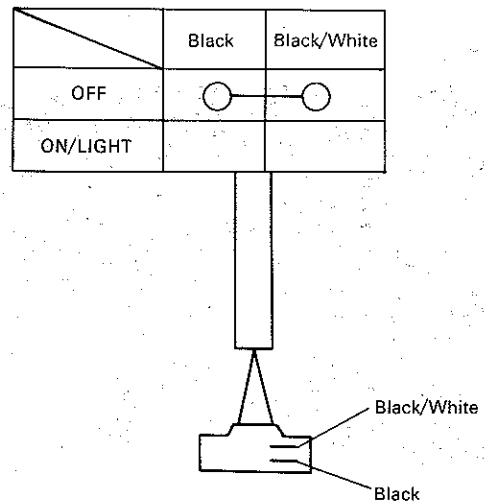
No.	Description	Tool No.
1	Dial gauge	90890-03097
2	Dial gauge stand No. 2	90890-01196
3	Dial gauge needle (56 mm)	90890-03098
4-a	Flywheel puller bolt	90890-01803
4-b	Flywheel puller attachment	90890-01804
4-c	Flywheel puller screw	90890-01806
4-d	Drive handle	90890-01817
4-e	Flywheel puller body	90890-01848
5	Rotor holding tool	90890-01235

6	Primary fixed sheave puller	90890-01859
7	Sheave sub-assembly tool	90890-01858
8	Bushing tool	90890-01877
9	Sheave gauge	90890-01875
10	Pocket tester	90890-03104
11	Electro tester	90890-03021
12	A.C. Regulator checker	90890-03090

'79 model



'80 model



Interchangeability: No

4. Wire harness

(8G8-82590-20 → 8J6-82590-20)

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-D Wiring Diagram.")

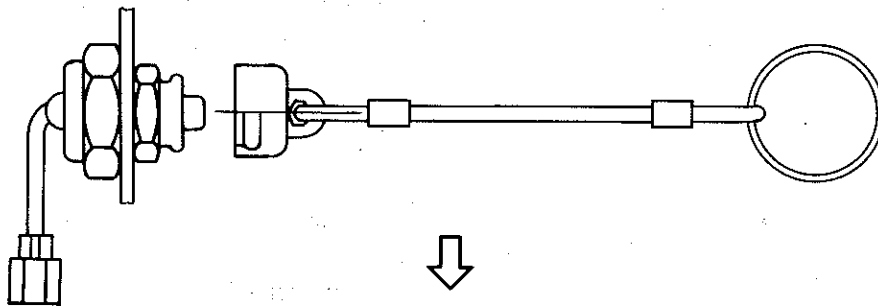
Interchangeability: No

5. Tether switch

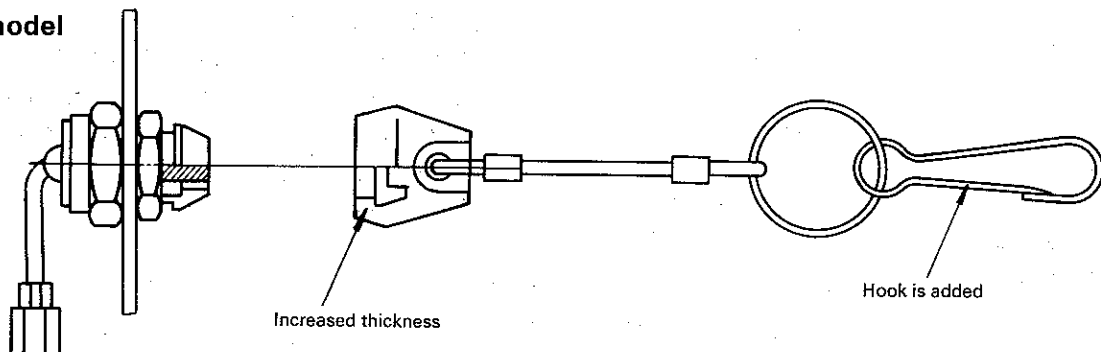
(8F3-82550-00 → 8H8-82550-00)

To prevent the switch from coming off easily, the rubber cap thickness is increased, by which the durability and strength of the cap is also increased. The ring is provided with a hook so it can easily be hooked to the clothes.

'79 model

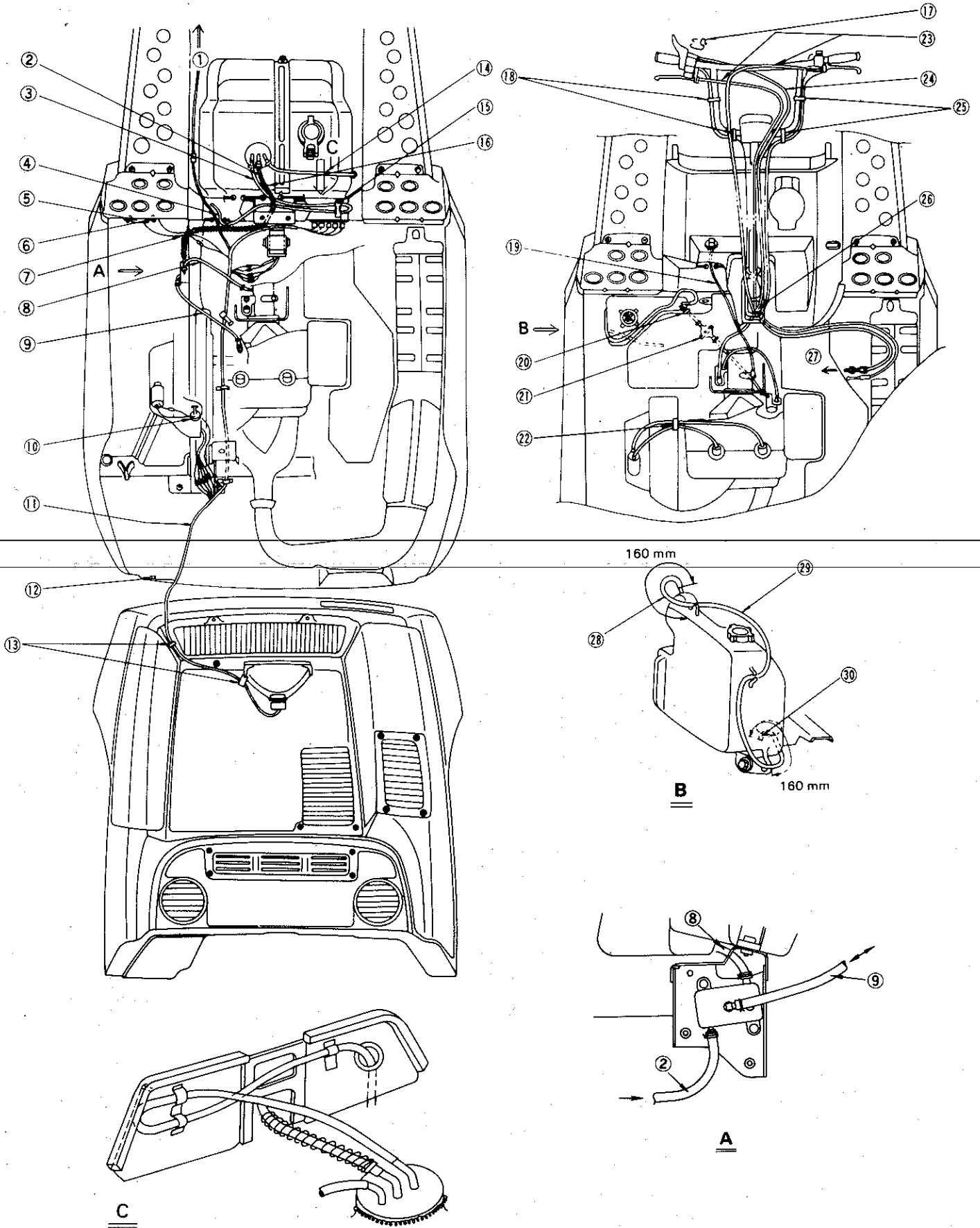


'80 model



Interchangeability: Yes

### E. WIRE AND PIPE ROUTING DIAGRAM



## 4. SPECIFICATIONS

NOTE: \* ..... New specification  
(Compared with 1979 EX440)

### General

Model: Model (I.B.M. No.) Frame I.D. & starting number Engine I.D. & starting number	* EX440('80) (8J8) * 8G6-050101 * SS433-050101
Dimension: Overall length Overall width (std) Overall height (w/windshield)	* 2,550 mm (100.4 in) 980 mm (38.6 in) 995 mm (39.2 in)

### Engine

Description: Engine type  Engine model Displacement Bore × Stroke Effective compression ratio Starting system Ignition system Lubrication system	Fan cooled two-stroke 7-port torque induction, twin cylinders SS433 433 cm <sup>3</sup> (26.42 cu.in) 68 × 59.6 mm (2.68 × 2.35 in) 7.0 : 1 Recoil hand starter C.D.I. "Autolube" oil injection
Cylinder head: Combustion chamber volume (with spark plug) Compression chamber type Head gasket thickness	24.6 cm <sup>3</sup> (1.50 cu.in) Dome + Squish 0.5 mm (0.02 in)
Cylinder: Material Bore size Taper limit Out of round limit	Cast iron sleeves aluminum 68 mm (2.677 in) 0.05 mm (0.0020 in) 0.01 mm (0.0004 in)
Piston: Piston skirt clearance (Measuring point)  Piston oversize  Piston pin outside diameter × length	0.045 ~ 0.050 mm (0.0018 ~ 0.0020 in) (20 mm from piston skirt end) 1st 68.25 mm (2.687 in) 2nd 68.50 mm (2.697 in) 3rd 68.75 mm (2.707 in) 4th 69.00 mm (2.717 in) φ18 × 55 mm (φ0.709 × 2.17 in)
Piston ring: Piston ring design (Top) (2nd) Ring end gap (installed) (Top) (installed) (2nd)	Keystone Keystone 0.35 ~ 0.55 mm (0.014 ~ 0.022 in) 0.35 ~ 0.55 mm (0.014 ~ 0.022 in)
Small end bearing: Type	Needle bearing
Big end bearing: Type	Needle bearing
Crankshaft: Crankshaft assembly width (A) (F) Crankshaft deflection (D)	174 ± 0.1 mm (6.85 ± 0.004 in) 56 <sup>+0</sup> / <sub>-0.05</sub> mm (2.205 <sup>+0</sup> / <sub>-0.002</sub> in) 0.03 mm (D-1) 0.04 mm (D-2) 0.04 mm (D-3) 0.05 mm (D-4)

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