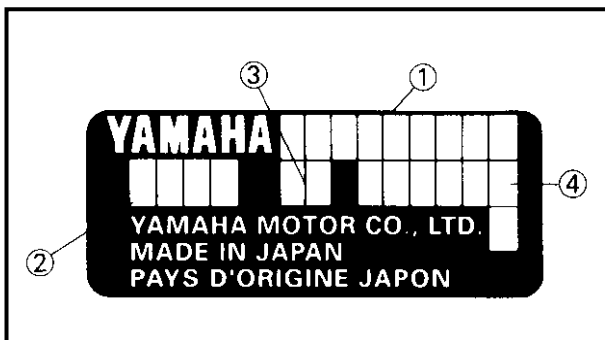
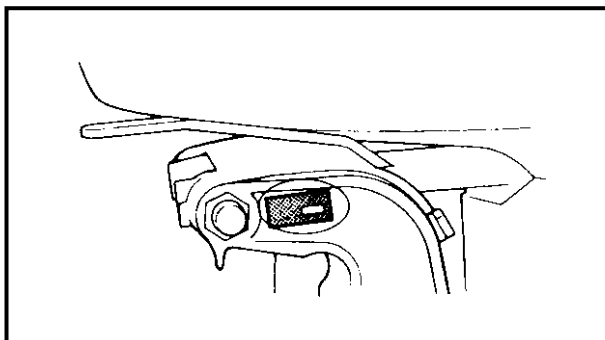

CHAPTER 1

GENERAL INFORMATION



IDENTIFICATION	1-1
SERIAL NUMBER	1-1
STARTING SERIAL NUMBERS	1-1
SAFETY WHILE WORKING	1-2
FIRE PREVENTION	1-2
VENTILATION.....	1-2
SELF-PROTECTION.....	1-2
OILS, GREASES AND SEALING FLUIDS.....	1-2
GOOD WORKING PRACTICES	1-3
DISASSEMBLY AND ASSEMBLY	1-4
SPECIAL TOOLS	1-5
MEASURING	1-6
REMOVAL AND INSTALLATION	1-8



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**IDENTIFICATION
SERIAL NUMBER**

The serial number of the outboard motor is stamped on a plate attached to the port side of the clamp bracket.

- ① Serial number

NOTE:

For USA model:

As an anti-theft measure, a special label on which the outboard motor serial number is stamped is bonded to the port side of the clamp bracket. The label is specially treated so that peeling it off causes cracks across the serial number.

- ① Model name
- ② Approved model No.
- ③ Transom height
- ④ Serial number

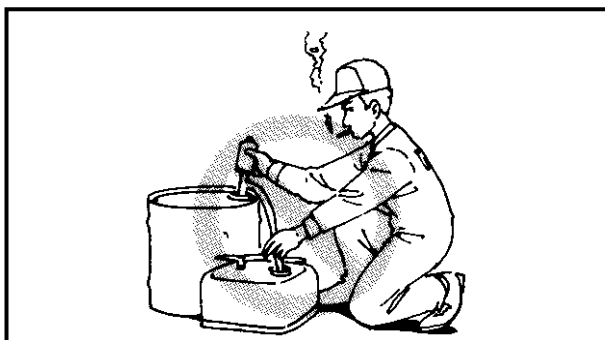
STARTING SERIAL NUMBERS

The starting serial number blocks are as follows:

Model			Approved model No.	Serial number	Model			Approved model No.	Serial number
World-wide	USA	Canada			World-wide	USA	Canada		
50GETO	—	—	62F	L: 400805 ~	70BEDO	—	—	6H3	L: 402029 ~
60FEHTO	P60TH	P60TH	6H2	L: 551924 ~ X: 750186 ~	70BETO	70TR	70TR		L: 491824 ~ X: 731262 ~
60FED	—	C60ER		S: 001118 ~ L: 305624 ~	75CET	C75TR	C75TR		6H0
60FEDO	—	—		S: 100850 ~ L: 407212 ~	75CETO	—	75TR	L: 900371 ~ L: 457543 ~	
60FET	C60TR	C60TR		S: 050474 ~ L: 357665 ~	80AETO	—	—	X: 851331 ~	
60FETO	—	—		X: 710231 ~ S: 150756 ~ L: 472180 ~	90AEHD	—	—	6H1	
				S: 150756 ~ L: 472180 ~	90AED	—	—		L: 354053 ~ L: 498690 ~
				X: 732000 ~	90AET	C90TR	C90TR		X: 856313 ~
						90AETO	90TR B90TR	90TR	

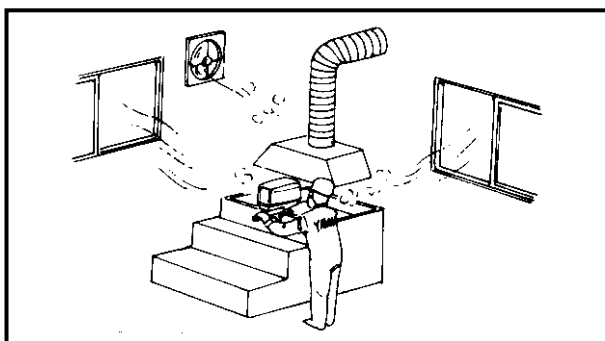
SAFETY WHILE WORKING

The procedures given in this manual are those recommended by Yamaha to be followed by Yamaha dealers and their mechanics.



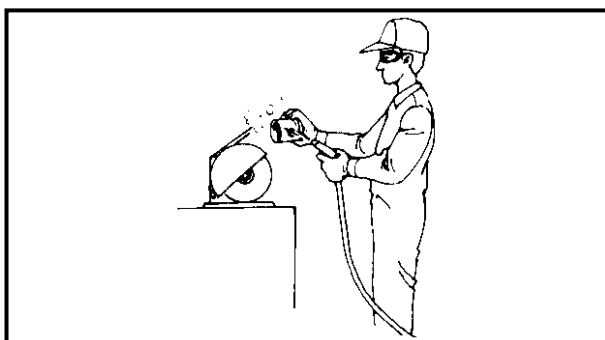
FIRE PREVENTION

Gasoline (petrol) is highly flammable. Petroleum vapor is explosive if ignited. Do not smoke while handling and keep it away from heat, sparks, and open flames.



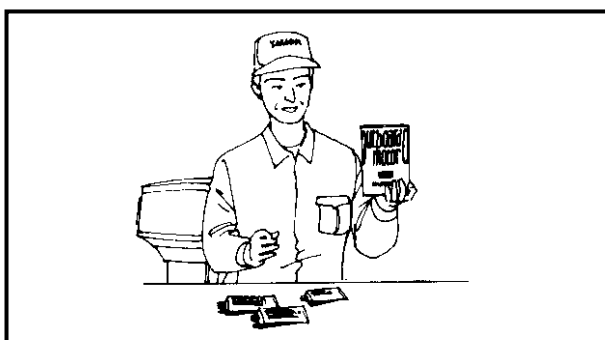
VENTILATION

Petroleum vapor is heavier than air and if inhaled in large quantities will not support life. Engine exhaust gases are harmful to breathe. When test-running an engine indoors, maintain good ventilation.



SELF-PROTECTION

Protect your eyes with suitable safety glasses or safety goggles when using compressed air, when grinding or when doing any operation which may cause particles to fly off. Protect hands and feet by wearing safety gloves or protective shoes if appropriate to the work you are doing.



OILS, GREASES AND SEALING FLUIDS

Use only genuine Yamaha oils, grease and sealing fluids or those recommended by Yamaha.

Under normal conditions of use, there should be no hazards from the use of the lubricants mentioned in this manual. However, safety is all-important and by adopting good safety practices, any risk is minimized.

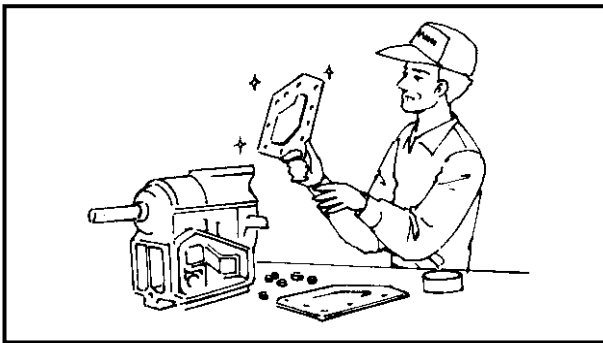
A summary of the most important precautions is as follows:

1. While working, maintain good standards of personal and industrial hygiene.
2. Clothing which has become contaminated with lubricants should be changed as soon as practicable, and laundered before further use.
3. Avoid skin contact with lubricants; do not, for example, place a soiled wiping-rag in one's pocket.
4. Hands, and any other part of the body which have been in contact with lubricants or lubricant-contaminated clothing, should be thoroughly washed with hot water and soap as soon as practicable.
5. To protect the skin, the application of a suitable barrier cream to the hands before working is recommended.
6. A supply of clean, lint-free cloths should be available for wiping purposes.

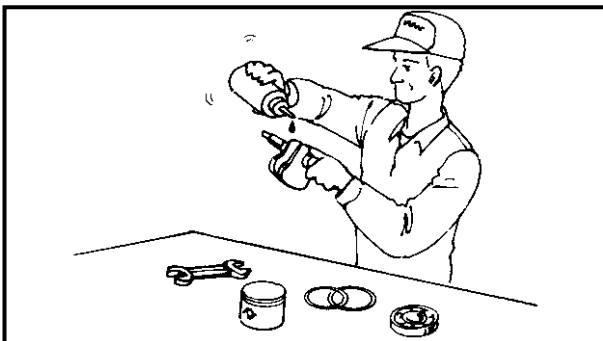


GOOD WORKING PRACTICES

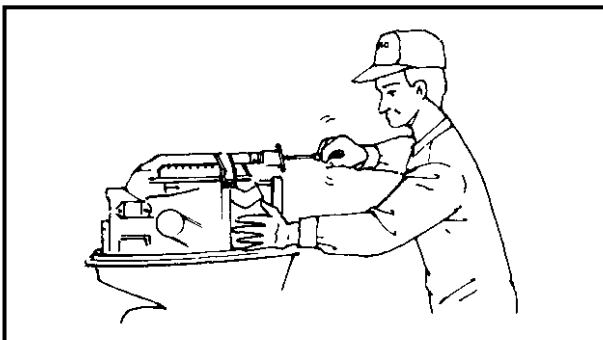
1. **The right tools**
Use the special tools that are advised to protect parts from damage. Use the right tool in the right manner - don't improvise.
2. **Tightening torque**
Follow the torque tightening instructions. When tightening bolts, nuts and screws, tighten the larger sizes first, and tighten inner-positioned fixings before outer-positioned ones.

**3. Non-reusable items**

When reassembling, always use new gaskets, packing, O-rings, oil seals, split-pins and circlips, etc.

**DISASSEMBLY AND ASSEMBLY**

1. Clean parts with compressed-air when disassembling them.
2. Oil the contact surfaces of moving parts before assembly.



3. After assembly, check that moving parts operate normally.

4. Install bearings with the manufacturer's markings on the side exposed to view and liberally oil the bearings.
5. When installing oil seals, apply a light coating of water-resistant grease to the outside circumference.

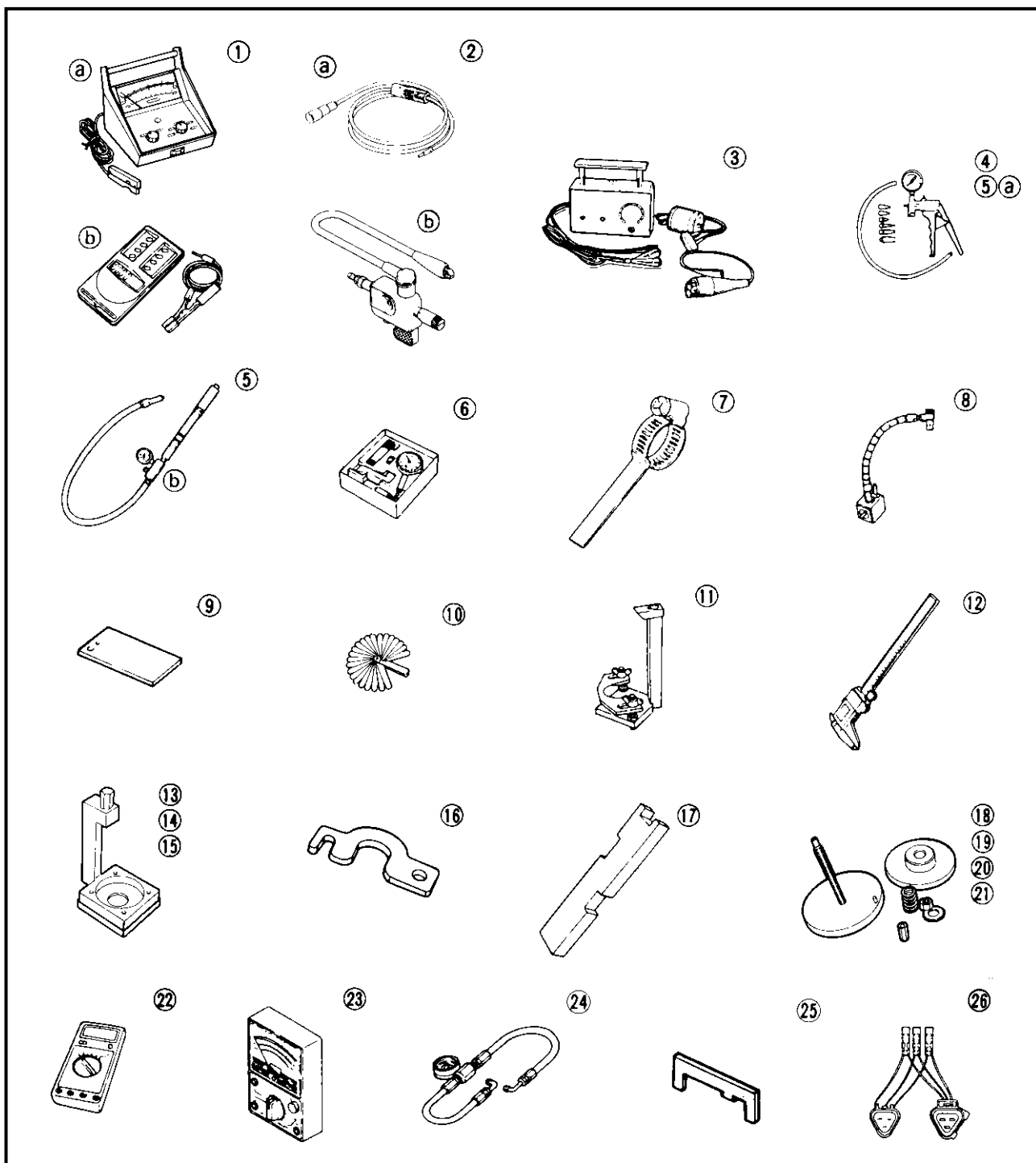
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SPECIAL TOOLS

The use of correct special tools recommended by Yamaha will aid the work and enable accurate assembly and tune-up. Improvisations and use of improper tools can cause damage to the equipment.

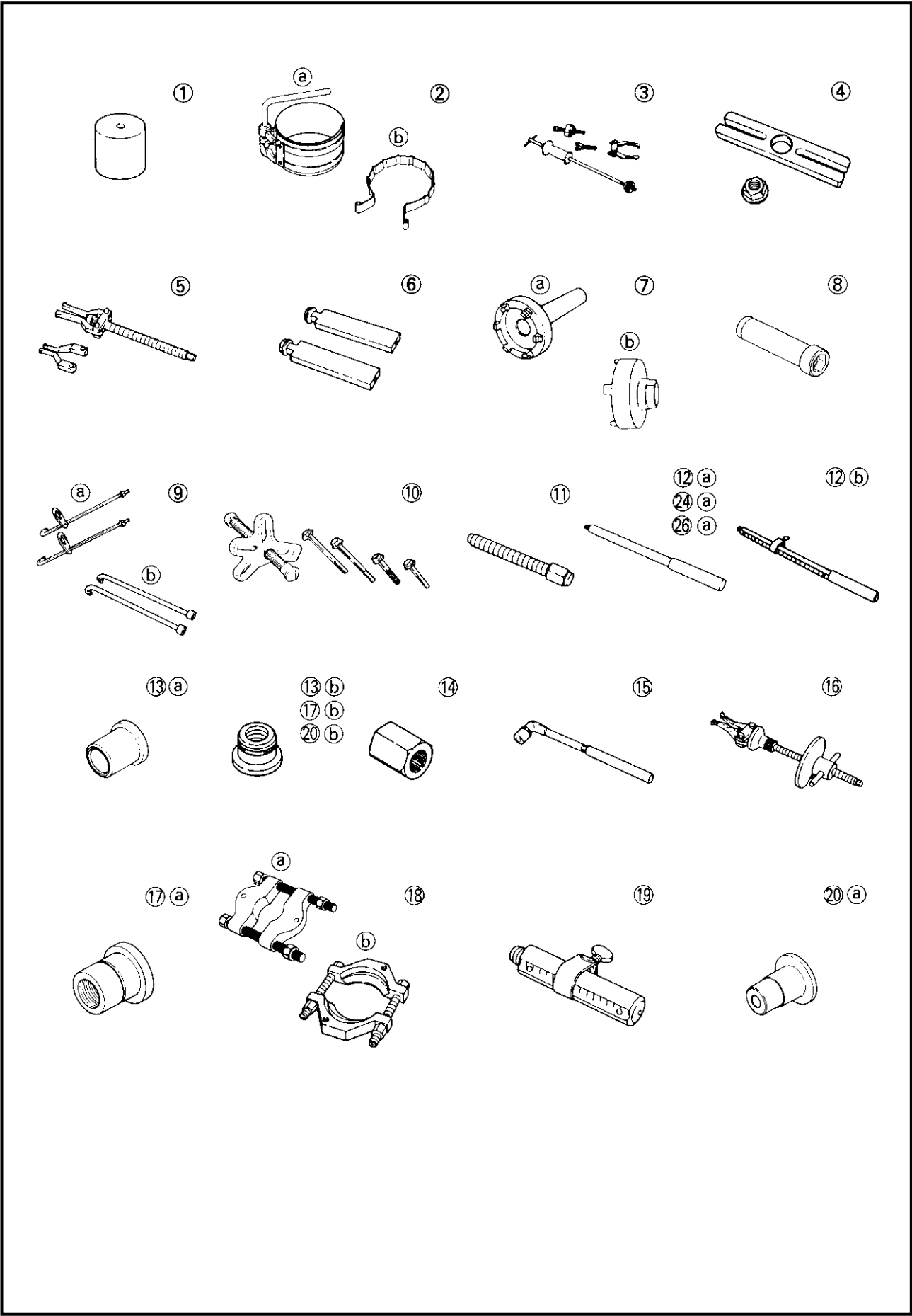
NOTE:

- For USA and Canada, use part numbers starting with "YB-", "YM-", "YU-" or "YW-".
- For others, use part numbers starting with "90890-".



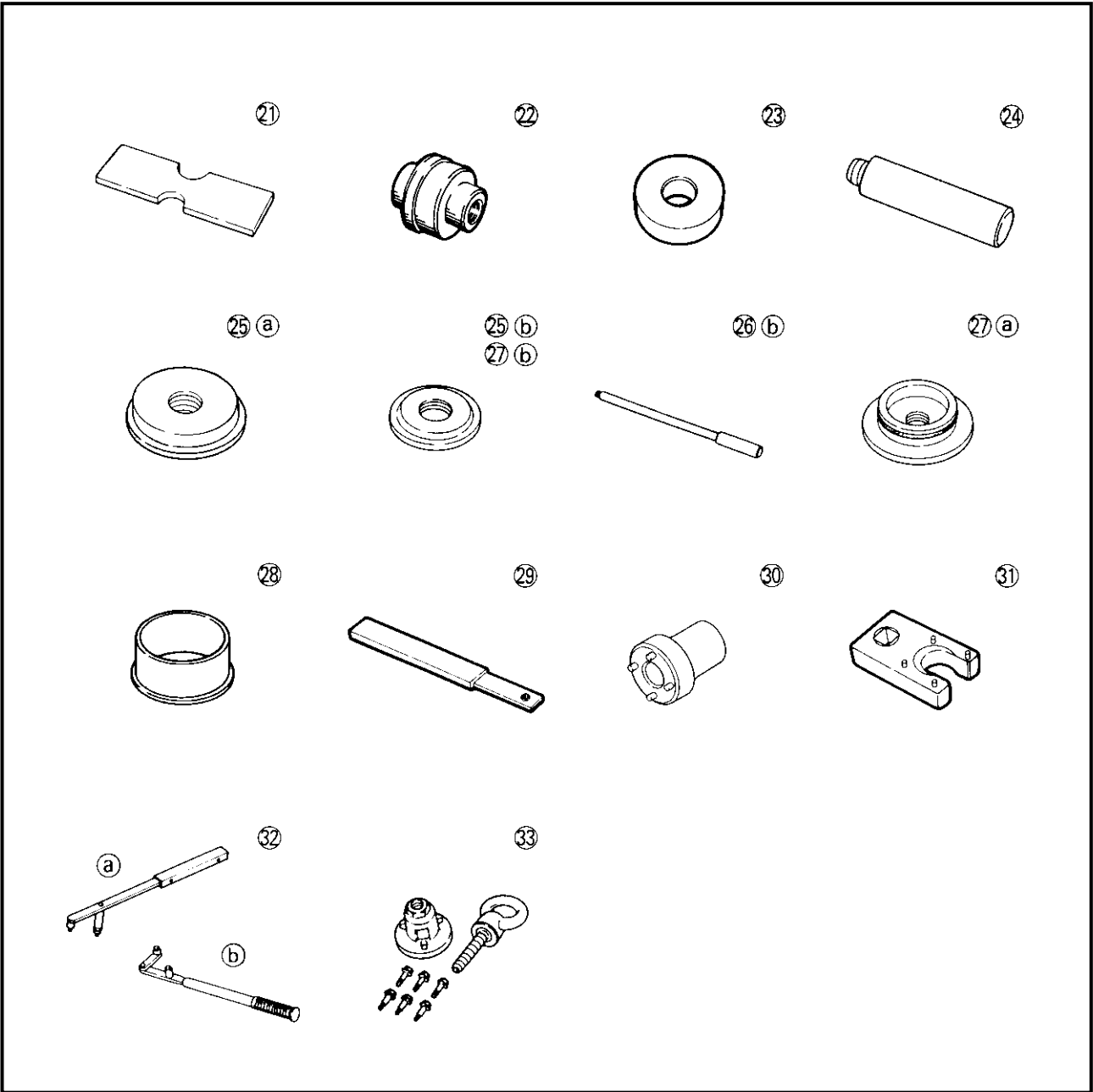
MEASURING

	Tool name	Tool No.		Use for:	
		USA and Canada [Ⓐ]	Except for USA and Canada [Ⓑ]		
1	Tachometer	YU-08036-A	90890-06760	Idle speed	
2	Dynamic spark tester	YM-34487	90890-06754	Ignition system	
3	CDI tester	YU-91022-B	N.A.	Ignition system	
4	Mity Vac	YB-35956	90890-06756	Fuel joint	
5	Pressure tester	YB-35956	90890-06762	Lower case	
6	Dial gauge	YU-03097	90890-01252	Backlash	
7	Backlash indicator	YB-06265	90890-06706	Backlash	
8	Magnet base	YU-34481	90890-06705	Backlash	
9	Backlash adjusting plate	YB-07003	N.A.	Backlash	
10	Thickness gauge	YU-26900-8	N.A.	Shimming	
11	Pinion height gauge	N.A.	90890-06702	Pinion shimming	
12	Digital caliper	N.A.	90890-06704	Pinion shimming	Forward shimming
13	Gauge block	YB-34432-9	N.A.	Pinion shimming	
14	Adapter plate	YB-34432-10	N.A.	Pinion shimming	
15	Gauge base	YB-34432-11	N.A.	Pinion shimming	
16	Clamp	YB-34432-17	N.A.	Pinion shimming	
17	Shimming plate	N.A.	90890-06701	Forward shimming	
18	Base plate	YB-34446-1	N.A.	Forward shimming	
19	Compression spring	YB-34446-3	N.A.	Forward shimming	
20	Press plate	YB-34446-5	N.A.	Forward shimming	
21	Gauge pin	YB-34446-7	N.A.	Forward shimming	
22	Digital multimeter	YU-34899-A	90890-06752	Electrical	
23	Pocket tester	YU-03112	90890-03112	Electrical	
24	Pressure gauge	YB-06181	N.A.	PTT unit	
25	Shimming gauge	YB-34468-3 YB-34468-5	N.A.	Reverse shimming	
26	3 pins test harness	YB-06443	90890-06757	Peak voltage measurement	



REMOVAL AND INSTALLATION

	Tool name	Tool No.		Use for:
		USA and Canada [Ⓐ]	Except for USA and Canada [Ⓑ]	
1	Small end bearing installer	YB-06107 YB-06287	90890-06527	Connecting rod
2	Piston slider	YU-33294	90890-06530	Cylinder piston
3	Slide hammer set	YB-06096	N.A.	Water pump housing oil seal Reverse gear bearing Propeller shaft housing oil seal Drive shaft outer bearing Forward gear outer bearing
4	Stopper guide plate	N.A.	90890-06501	Water pump housing oil seal Bearing housing Reverse gear bearing Propeller shaft housing oil seal Drive shaft outer bearing
5	Bearing puller	N.A.	90890-06535	Water pump housing oil seal Reverse gear bearing Propeller shaft housing oil seal Drive shaft outer bearing
6	Stopper guide stand	N.A.	90890-06538	Water pump housing oil seal Reverse gear bearing Propeller shaft housing oil seal Drive shaft outer bearing
7	Ring nut wrench	YB-06048 YB-34447	90890-06510 90890-06511	Ring nut
8	Extension	N.A.	90890-06513	Ring nut
9	Claw	YB-06207	90890-06502 90890-06503	Propeller shaft housing
10	Universal puller	YB-06117	N.A.	Propeller shaft housing
11	Center bolt	N.A.	90890-06504	Propeller shaft housing
12	Drive rod	YB-06071	90890-06602	Propeller shaft housing oil seal Drive shaft needle bearing
13	Needle bearing attachment	YB-06153	90890-06612	Propeller shaft housing bearing
14	Drive shaft holder	YB-06049 YB-06151	90890-06518 90890-06519	Pinion nut
15	Pinion nut holder	N.A.	90890-06505	Pinion nut
16	Bearing outer race puller	N.A.	90890-06523	Forward gear outer bearing
17	Needle bearing attachment	YB-06155	90890-06611	Drive shaft needle bearing
18	Bearing separator	YB-06219	90890-06534	Crank shaft bearing Reverse gear bearing Forward gear bearing
19	Drive rod	YB-06071	90890-06604	Propeller shaft needle bearing
20	Needle bearing attachment	YB-06153	90890-06612 90890-06614	Propeller shaft needle bearing



	Tool name	Tool No.		Use for:
		USA and Canada [Ⓐ]	Except for USA and Canada [Ⓑ]	
21	Bearing depth plate	N.A.	90890-06603	Propeller shaft needle bearing Drive shaft needle bearing
22	Oil seal attachment	YB-06269	N.A.	Propeller shaft oil seal
23	Needle bearing depth stop	YB-34473	N.A.	Drive shaft needle bearing
24	Driver rod	YB-06071	90890-06606	Drive shaft outer bearing
25	Bearing outer race attachment	YB-06156	90890-06626 90890-06627	Drive shaft outer bearing
26	Driver rod	YB-06071	90890-06605	Forward gear outer bearing
27	Bearing outer race attachment	YB-06276-B	90890-06621 90890-06622	Forward gear outer bearing
28	Bearing inner race attachment	N.A.	90890-06640 90890-06662	Forward gear inner bearing
29	Shift rod wrench	YB-06052	N.A.	Shift rod
30	Cylinder end screw wrench	YB-06175-1A	N.A.	PTT
31	Cylinder end screw wrench	YB-06175-2B	90890-06544 90890-06548	PTT
32	Flywheel holder	YB-06139	90890-06522	Flywheel
33	Flywheel puller	YB-06117	90890-06521	Flywheel