YAMAHA

DT100A, B, C
DT125A, B, C
DT175A, B, C
(1974-1976)

Service Manual

LIT-11616-01-04

NOTICE

This manual has been written by Yamaha Motor Company for use by Authorized Yamaha Dealers and their qualified mechanics. In light of this purpose it has been assumed that certain basic mechanical precepts and procedures inherent to our product are already known and understood by the reader.

Without such basic knowledge, repairs or service to this model may render the machine unsafe, and for this reason we must advise that all repairs and/or service be performed by an Authorized Yamaha Dealer who is in possession of the requisite basic product knowledge.

The Research, Engineering, and Service Departments of Yamaha are continually striving to further improve all models manufactured by the company. Modifications are therefore inevitable and changes in specifications or procedures will be forwarded to all Authorized Yamaha Dealers and will, where applicable, appear in future editions of this manual.

This service manual has been constructed to cover the indicated models, years 1974 thru 1975. During these years some changes were made to these models. Therefore, obtaining an updated Parts List for the individual model of your concern is highly recommended.

YAMAHA
DT100A, B, C/DT125A, B, C/DT175A, B, C
1974 – 1976 Models
COMBINED SERVICE MANUAL
1st Edition, December 1975

FOREWORD

This Service Manual has been written to acquaint the mechanic with the disassembly, reassembly, maintenance, and troubleshooting procedures required to provide optimum performance and longevity of the unit.

The information enclosed should be closely studied to avoid unnecessary repairs and to provide the owner with a sound, safe, dependable machine.

SERVICE DEPT.
OVERSEAS ENGINEERING DIVISION
YAMAHA MOTOR CO., LTD.

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CHAPTER 1. GENERAL INFORMATION

1

CHAPTER 1. GENERAL INFORMATION

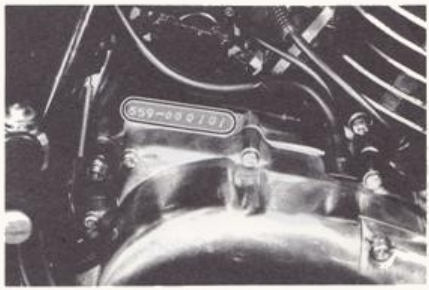
1-1. MACHINE IDENTIFICATION

The frame serial number is located on the right-hand side of the headstock assembly. The first three digits identify the model. This is followed by a dash. The remaining digits identify the production number of the unit.
The engine serial number is located on a raised boss on the upper rear, left-hand side of the engine . Engine identification follows the same code as frame identifcation.
Normally, both serial numbers are identical; however, on occasion they may be two or three numbers off.

Starting Serial Numbers		
DT100A · 437-000101	DT100B · 437-100101	DT100C · 558-000101
DT125A · 444-000101	DT125B · 444-100101	DT125C · 560-000101
DT175A · 443-000101	DT175B · 443-100101	DT175C · 559-000101

Frame serial number

Engine serial number



1-2. EXTERNAL VIEW 1976 Models
(1974, 1975 Models similar in appearance)

Predominant Colors
DT100A - Desert Gold
DT100B - El Toro Orange
DT100C - Chappy Green

DT100C

Predominant Colors
DT125A - Brandy Red
DT125B - Chappy Red
DT125C - Chappy Red

DT125C

Predominant Colors
DT175A - Yale Blue
DT175B - Balboa Blue
DT175C - French Blue

DT175C

1-3. SPECIFICATIONS

A. General Specifications (DT100A,B;DT125A,B;DT175A,B Specifications on page 7A)

Items \ Model	DT100C	DT125C	DT175C
Dimensions:			
Overall length	1,970 mm (77.5 in)	2,045 mm (80.5 in)	2,050 mm (80.7 in)
Overall width	860 mm (33.9 in)	←	←
Overall height	1,070 mm (42-1 in)	1,090 mm (42.9 in)	←
Seat height (unloaded)	795 mm (31.3 in)	820 mm (32.3 in)	810 mm (31.9 in)
Wheelbase	1,305 mm (51.3 in)	1,325 mm (52.2 in)	1,350 mm (53.1 in)
Min. ground clearance	240 mm (9.4 in)	250 mm (9.8 in)	255 mm (10.0 in)
Weight:			
Net	93 kg (205 lbs)	104.5 kg (230 lbs)	100 kg (220 lbs)
Performace:			
Min. tuning radius	2,000 mm (78.7 in)	2,100 mm (82.7 in)	←
Braking distance	15 m/(50) km/h	←	←
	(49 ft/(31) mph)	←	←
Engine:			
Model/Type	2-stroke, gasoline, 7 port	←	←
Lubricating system	Separate lubrication (YAMAHA AUTOLUBE)	←	←
Cylinder	Single forward inclined, torque induction	←	←
Displacement	97 cc (5.7 cu.in)	123 cc (7.5 cu.in)	171 cc (10.4 cu.in)
Bore and stroke	52 mm × 45.6 mm (2.0 in × 1.8 in)	56 mm × 50 mm 2.21 in × 1.97 in)	66 mm × 50 mm (2.6 in × 1.97 in)
Compression ratio	7.2 : 1	7.1 : 1	6.6 : 1
Starting system	Primary kick starter	Electric kick starter	Primary kick starter
Ignition system	Flywheel magneto	Battery	Flywheel magneto
Ignition timing	BTDC 1.8±0.15 mm	←	←
Spark plug	B-7ES (NGK)	B-8ES (NGK)	←
Carburetor:			
MFR/Type/Q'ty	MIKUNI/VM22SS/1	MIKUNI/VM24SS/1	←
Air cleaner:	Oiled foam rubber	←	←
Primary drive:			
Clutch	Wet, multiple disc	←	←
Primary reduction system	Gear	←	←
Capacities:			
Gasoline tank	7 lit (1.8 US gal)	←	←
Oil tank	1.2 lit (1.3 US qt)	←	←
Transmission:			
Type	Constant mesh	←	←
Reduction ratio 1st	35/11 (3.181)	35/11 3.181	35/11 3.181
2nd	30/15 (2.000)	30/15 2.000	30/15 2.000
3rd	26/19 (1.368)	26/19 1.368	26/19 1.368
4th	23/23 (1.000)	23/23 1.000	23/23 1.000
5th	20/25 (0.800)	20/25 0.800	20/25 0.800
Secondary reduction system	Chain	←	←
Secondary reduction ratio	49/14 (3.500)	45/15 (3.000)	45/16 (2.812)

Items \ Model	DT100C	DT125C	DT175C
Chassis:			
Frame	Tubular double cradle		
Suspension system, front	Telescopic fork	←	←
Suspension system, rear	Swinging arm	←	←
Cushion system, front	Coil spring, oil damper	←	←
Cushion system, rear	Coil spring, oil damper	←	←
Steering system:			
Caster	59° 30'	58°	58° 30'
Trail	130 mm (5.12 in)	141 mm (5.55 in)	
Front forks/Type	Telescopic fork	←	←
Braking system:			
Type of brake	Internal expansion, drum	←	←
Operation system, front	Right hand operation, wire	←	←
Operation system, rear	Right hand operation link-rod	←	←
Tire size:			
Front	2.75—19—4PR (Trial universal)	2.75—21—4PR (Trial universal)	←
Rear	3.00—18—4PR (Trial universal)	3.25—18—4PR (Trial universal)	3.50—18—4PR (Trial universal)
Flywheel magneto:			
Model	F000T0—1773	GS114—02	F140—06
Manufacturer	MITSUBISHI	HITACHI	←
Battery:			
Model	(6N4B—2A—3)	(12N7—3B) (12N7—3B—1)	(6N4B—2A—3)
Capacity	6V, 4AH	12V, 7AH	6V, 4AH
Lighting:			
Headlight	6V, 30W/30W	12V, 30W/30W	6V, 30/30W
Taillight	6V, 5.3W	12V, 8W	6V, 5.3W
Stoplight	6V, 17W	12V, 27W	6V, 17W
Meter light	6V, 3W	12V, 3W × 2	(6V, 3W) × 2
Flasher light	6V, 17W	12V, 27W	6V, 17W
High beam indicater light	6V, 3W	←	←

B. Maintenance Specifications

Items \ Model	DT100C	DT125C	DT175C
Autolube:			
Pump plunger diameter	4.0 mm (0.157 in)	5.5 mm (0.216 in)	←
Pump stroke (Max. throttle)	1.85～2.05 mm (0.728～0.807 in)	←	←
Pump stroke (Min. throttle)	0.20～0.25 mm (0.078～0.098 in)	←	←
Pump color code	Green	Sky blue	←
Engine - Top end:			
Cylinder head volume	10.8±0.2 cc	13.9±0.3 cc	23.4±0.4 cc
Cylinder allowable taper	0.05 mm (0.0019 in)	←	←
Top ring end gap, free	6.5 mm (0.256 in)	4.5 mm (0.177 in)	8.5 mm (0.334 in)
2nd ring end gap, free	6.0 mm (0.236 in)	5.5 mm (0.216 in)	4.5 mm (0.177 in)
Top ring end gap, installed	0.3～0.5 mm (0.012～0.019 in)	0.15～0.35 mm (0.006～0.014 in)	0.3～0.5 mm (0.012～0.019 in)
2nd ring end gap, installed	0.3～0.5 mm (0.012～0.019 in)	0.15～0.35 mm (0.006～0.014 in)	0.3～0.5 mm (0.012～0.019 in)
Ring groove clearance, top	—	—	—
Ring groove clearance, 2nd	0.03～0.07 mm (0.0012～0.0027 in)	←	←
Piston clearance	40～45μ	35～40μ	40～45μ
Engine - Clutch:			
Friction plate thickness	4.0 mm (0.157 in)	←	←
Clutch plate warp.allowance	0.2 mm (0.0078 in)	←	←
Clutch spring free length	34 mm (1.338 in)	←	←
Primary lash tolerance	135～137	144	143～145
Primary reduction ratio	74/19 (3.894)	←	←
Engine - Transmission:			
Oil type	SAE10W-30 (above 68°F) SAE20W-40 (below 68°F)	← ←	← ←
Oil quantity	650 cc	750 cc	650 cc
Carburation:			
Manufacturer	MIKUNI	←	←
Model	VM22SS	VM24SS	←
I.D.Number	55860	56060	55960
Venturi size	22 mm	24 mm	←
Jet needle and clip position	4J13-4	4G2-2	5G4-4
Cut away	2.0	←	←
Main jet	#160	#100	#140
Pilot jet	#22.5	#25	←
Air jet	2.5φ	0.5φ	←
Needle jet	Q-0	Q-2	Q-4
Starter jet	#30	#40	←
Air screw (turns out)	1-1/2	1-3/4	1-1/2
Idle speed	1,350 ～ 1,450 rpm	1,300～1,400 rpm	←
Float level	21.0±1.0 mm	←	←
Chassis:			
Brake shoe diameter (front)	110 mm (4.33 in)	130 mm (5.11 in)	←
Brake shoe diameter (rear)	130 mm (5.11 in)	←	←
Front tire-Manufacturer	YOKOHAMA/	←	←
Front tire-Size	2.75－19－4PR	2.75－21－4PR	←
Front tire-Pressure	22 psi	←	←

Items \ Model	DT100C	DT125C	DT175C
Rear tire-Manufacturer/Size	YOKOHAMA	←	←
Rear tire-Size	3.00－18－4PR	3.25－21－4PR	3.50－21－4PR
Rear tire-Pressure	26 psi	←	←
Wheel runout limit-Lateral	2.0 mm (0.078 in)	←	←
Wheel runout limit-Vertical	2.0 mm (0.078 in)	←	←
Drive chain-Size	DID 428	←	←
Drive chain-Pitch	12.70 mm (0.5 in)	←	←
Drive chain-No. of links	111L	113L	←
Front fork oil-Capacity (Each leg)	160±4 cc	130±4 cc	←
Front fork oil-Type	SAE10W-30	←	←
Steering ball race (upper)-			
Ball quantity	22	←	←
Size	3/16 in	←	←
Steering ball race (lower)-			
Ball quantity	19	←	←
Size	1/4 in	←	←
Fork spring free length	442 mm (17.4 in)	437 mm (17.2 in)	←
Electrical - Ignition:			
Spark plug type	B-7ES/NGK	B-8ES/NGK	B-8ES/NGK
Min. spark gap	6 mm or more	←	←
Ignition coil:			
Manufacturer/Model	MITSUBISHI/F6T40973	HITACHI/CM11-508	MITSUBISHI/F6T40972
Primary resistance	4.5Ω at 20°C (68°F)	3.9Ω at 20°C (68°F)	4.5Ω at 20°C (68°F)
Secondary resistance	6.0Ω at 20°C (68°F)	8.0Ω at 20°C (68°F)	6.0Ω at 20°C (68°F)
Contact breaker point gap	0.30μF	0.22μF	0.30μF
Contact braker point gap	0.35±0.05 mm	←	←
Spark plug gap	0.5～0.6 mm	←	←
Ignition timing	BTDC 1.8±0.05 mm	←	←
Ignition advance		10° ～ 14°/ 1,350 ～ 1,600 rpm	12° ～ 15°/ 1,700 ～ 2,500 rpm
Electrical - Lighting charging:			
Charging voltage	5.3V or more/2,500 rpm 7.5V or less/8,000 rpm	14V, 7A Max. output	5.5V or more/2,500 rpm 7.2±0.3V/5,000 rpm
Charging amperage	0.5A or more/2,500 rpm 1.2A or less/8,000 rpm 0.1A or more/2,500 rpm 3.8A or less/8,000 rpm		0.[illegible]A or more/2,500 rpm 2.7±0.4A/5,000 rpm
Electrical - Voltage regulator:			
Manufacturer	—	HITACHI	—
Model	—	T107-20	—
No load voltage adjustment	—	15.8～16.5V/2,500 rpm	—
Yoke gap	—	0.6～0.7 mm (0.023～0.03 in)	—
Core gap	—	0.4～0.7 mm (0.015～0.03 in)	—
Point gap	—	0.4～0.5 mm (0.015～0.020 in)	
Voltage coil resistance	—	11.8±10% (58°F)	—

Items \ Model	DT100C	DT125C	DT175C
Electrical - Cutout relay:			
Cut-in voltage	—	13.0±0.5V rpm	—
Core gap	—	0.8～1.0 mm (0.031～0.039 in)	—
Yoke gap	—	0.2 mm (0.007 in)	—
Point gap	—	0.6～0.8 mm (0.023～0.031 in)	—
Electrical - Starter switch:			
Manufacturer	—	HITACHI	—
Model	—	A104-71	—
Coil winding resistance	—	3.5±10% (58°F)	—
Actuating voltage-ON	—	6.5V	—
Actuating voltage-OFF	—	4V	—
Core gap	—	1.7 mm (0.067 in)	—
Point gap	—	1.0 mm (0.039 in)	—
Electrical - Dynamo:			
Manufacturer	—	HITACHI	—
Model	—	GS114-02	—
Output	—	0.26 kW	—
Locking voltage	—	8.2V	—
Locking amperage	—	150A or less	—
Locking torque	—	1.4 kg-m or less	—
Brush spring pressure	—	400～560 g	—
Brush dimensions (T × W × L)	—	9 × 4.5 × 20.5 mm	—
Brush min. length	—	9 mm (0.35 in)	—
Brush quantity	—	4 pcs.	—
Field coil resistance; shunt coil	—	4.8Ω	—
Field coil resistance; series coil	—	0.0268Ω	—
Commutator dia.	—	38.5 mm (1.515 in)	—
Commutator dia. wear limit	—	36.5 mm (1.437 in)	—
Mica under cut	—	0.5 ～ 0.8 mm (0.020 ～ 0.031 in)	—
Electrical-Battery:			
Manufacturer	GS or Furukawa	←	←
Model	6N4B-2A-3	12N7-3B-1	6N4B-2A-3
Capacity	6V-4AH	12V-7AH	6V-4AH

1–2 SPECIFICATIONS

A. General Specifications

MODEL	DT100A,B	DT125A,B	DT175A,B
Dimensions:			
Overall length	77.8 in. (1,975 mm)	79.3 in. (2,015 mm)	79.5 in. (2,020 mm)
Overall width	34.3 in. (870 mm)	34.3 in. (870 mm)	34.3 in. (870 mm)
Overall height	42.5 in. (1,080 mm)	42.5 in. (1,080 mm)	42.9 in. (1,090 mm)
Wheelbase	50.4 in. (1,280 mm)	51.6 in. (1,310 mm)	52.2 in. (1,330 mm)
Min. ground clearance	8.9 in. (225 mm)	9.1 in. (230 mm)	9.1 in. (230 mm)
Weight:			
Net	201 lbs. (91 kg)	227 lbs. (103 kg)	214 lbs. (97 kg)
Performance:			
Max. speed			
Fuel consumption	152.9 mpg at 31 mph	129.4 mpg at 31 mph	117.6 mpg at 31 mph
(on paved level roads)	(66 km/l at 50 km/h)	(55 km/l at 50 km/h)	(50 km/l at 50 km/h)
Climbing ability	27 degrees	30 degrees	30 degrees
Min. turning radius	75.6 in. (1,920 mm)	77.0 in. (1,955 mm)	77.8 in. (1,975 mm)
Braking distance	49.2 ft. at 31 mph	49.2 ft. at 31 mph	49.2 ft. at 31 mph
	(15 m at 50 km/h)	(15 m at 50 km/h)	(15 m at 50 km/h)
Engine:			
Model	437	444	443
Type	2 stroke, gasoline	2 stroke, gasoline	2 stroke, gasoline
Lubricating system	Separate lubrication (YAMAHA Autolube)	Separate lubrication (YAMAHA Autolube)	Separate lubrication (YAMAHA Autolube)
Cylinder	Single, forward inclined, torque induction	Single, forward inclined, torque induction	Single, forward inclined, torque induction
Displacement	5.92 cu.in. (97 c.c.)	7.51 cu.in. (123 c.c.)	10.43 cu.in. (171 c.c.)
Bore and Stroke	2.047 x 1.795 in. (52 x 45.6 mm)	2.205 x 1.969 in. (56 x 50 mm)	2.598 x 1.969 in. (66 x 50 mm)
Compression ratio	6.8 : 1	7.1 : 1	6.8 : 1
Starting system	Primary kick starter	Electric & kick starter	Primary kick starter
Ignition system	Magneto ignition	Battery ignition	Magneto ignition
Ignition timing	1.8 mm B.T.D.C.	1.8 mm B.T.D.C.	1.8 mm B.T.D.C.
Spark plug	B-8HS	B-8ES	B-8ES
Carburetor:			
Type	VM22SS	VM24SH	VM24SS
M.J.	#150	#140	#160
J.N.	4L6-2	4G2-3	5G4-3
Air cleaner:	Wet, foam rubber	Wet, foam rubber	Wet, foam rubber
Transmission:			
Clutch	Wet, multiple-disk	Wet, multiple-disk	Wet, multiple-disk
Primary reduction system	Gear	Gear	Gear
Primary reduction ratio	3.894 (74/19)	3.894 (74/19)	3.894 (74/19)

MODEL	DT100A,B	DT125A,B	DT175A,B
Gear box:			
Type	Constant mesh 5-speed forward	Constant mesh 5-speed forward	Constant mesh 5-speed forward
Reduction ratio 1st	3.181 (35/11)	3.181 (35/11)	3.181 (35/11)
2nd	2.000 (30/15)	2.000 (30/15)	2.000 (30/15)
3rd	1.368 (26/19)	1.368 (26/19)	1.368 (26/19)
4th	1.000 (23/23)	1.000 (23/23)	1.000 (23/23)
5th	0.800 (20/25)	0.800 (20/25)	0.800 (20/25)
Secondary reduction system	Chain	Chain	Chain
Secondary reduction ratio	3.500 (49/14)	3.214 (45/14)	2.812 (45/16)
Chassis:			
Model	437	444	443
Frame	Tubular double loop	Tubular double loop	Tubular double loop
Suspension system, front	Telescopic fork	Telescopic fork	Telescopic fork
Suspension system, rear	Swinging, arm	Swinging, arm	Swinging, arm
Cushion system, front	Coil spring, oil damper	Coil spring, oil damper	Coil spring, oil damper
Cushion system, rear	Coil spring, oil damper	Coil spring, oil damper	Coil spring, oil damper
Steering system:			
Caster	59°	59°	59°
Trail	5.20 in. (132 mm)	4.88 in. (124 mm)	4.80 in. (122 mm)
Braking system:			
Type of brake	Internal expansion	Internal expansion	Internal expansion
Operation system, front	Right hand operation	Right hand operation	Right hand operation
Operation system, rear	Right foot operation	Right foot operation	Right foot operation
Tire size:			
Front	2.75x19-4P	3.00x19-4P	3.00x19-4P
Rear	3.00x18-4P	3.25x18-4P	3.50x18-4P
Flywheel magneto:		Starter-Dynamo:	
Model	F000T01771	GS114-01	F140-04
Manufacturer	Mitsubishi Ltd.	Hitachi Ltd.	Hitachi Ltd.
Battery:			
Model	6N4B-2A	12N7-3B	6N4B-2A
Manufacturer	Furukawa, GS	Furukawa	Furukawa, GS
Capacity	6V, 4AH	12V, 7AH	6V, 4AH
Lighting:			
Head light	6V, 25W/25W	12V, 25W/25W	6V, 25W/25W
Tail light	6V, 5.3W	12V, 8.3W	6V, 5.3W
Stop light	6V, 17W	12V, 27W	6V, 17W
Meter light	6V, 3W	12V, 3Wx2	6V, 3W
Flasher light	6V, 17W	12V, 27W	6V, 17W
High beam indicator light	6V, 1.5W	12V, 3W	6V, 1.5W
Tanks:			
Gasoline tank capacity	1.6 US gals. (6 lit.)	1.8 US gals. (7 lit.)	1.8 US gals. (7 lit.)
Oil tank capacity	1.3 US qts. (1.2 lit.)	1.3 US qts. (1.2 lit.)	1.3 US qts. (1.2 lit.)

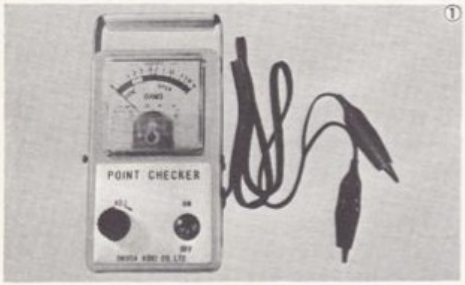
B. Maintenance Specifications

ITEM	DT100A,B		DT125A,B		DT175A,B	
AUTOLUBE						
Minimum Pump Stroke (At Idle)	0.0079~0.0098 in.	0.20~0.25 mm	0.0079~0.0098 in.	0.20~0.25 mm	0.0079~0.0098 in.	0.20~0.25 mm
Maximum Pump Stroke (At Full Throttle)	0.0728~0.0807 in.	1.85~2.05 mm	0.0728~0.0807 in.	1.85~2.05 mm	0.0728~0.0807 in.	1.85~2.05 mm
MAGNETO/IGNITION						
Ignition Source Coil Resistance	1.7Ω ± 10%		1.7Ω ± 10%		2.1Ω ± 10%	
Ignition Coil Resistance (Primary)	1.02Ω ± 10%		4.9Ω ± 10%		1.7Ω ± 10%	
Ignition Coil Res. (Secondary)	6,000Ω ± 20%		11,000Ω ± 20%		6,000Ω ± 20%	
Charging Source Coil Res. (Day Winding)	1.14Ω ± 10%		1.14Ω ± 10%		0.48Ω ± 10%	
Charging Source Coil Res. (Night Winding)	0.47Ω ± 10%		0.47Ω ± 10%		0.78Ω ± 10%	
Ignition Timing	$0.0709^{+0.0079}_{-0.0197}$ in.	$1.8^{+0.2}_{-0.5}$ mm	$0.0709^{+0.0079}_{-0.00197}$ in.	$1.8^{+0.2}_{-0.5}$ mm	$0.0709^{+0.0079}_{-0.0197}$ in.	$1.8^{+0.2}_{-0.5}$ mm
Ignition Point Gap	0.0118~0.0157 in.	0.3~0.4 mm	0.0118~0.0157 in.	0.3~0.4 mm	0.0118~0.0157 in.	0.3~0.4 mm
Condenser Capacity	0.30 μF		0.22 μF		0.30 μF	
ENGINE–TOP END						
Tolerance Limits	0.0020 in.	0.05 mm	0.0020 in.	0.05 mm	0.0019 in.	0.05 mm
Piston Clearance	0.0016~0.0017 in.	0.040~0.045 mm	0.0016~0.0017 in.	0.040~0.045 mm	0.0016~0.0017 in.	0.040~0.045 mm
Top Ring End Gap (Free)	0.1181 in.	3.0 mm	0.2167 in.	5.5 mm	0.3349 in.	8.5 mm
Top Ring End Gap (Installed)	0.0059~0.0138 in.	0.15~0.35 mm	0.0059~0.0138 in.	0.15~0.35 mm	0.0118~0.0197 in.	0.3~0.5 mm
2nd Ring End Gap (Free)	0.1575 in.	4.0 mm	0.1379 in.	3.5 mm	0.1778 in.	4.5 mm
2nd Ring End Gap (Installed)	0.0059~0.0138 in.	0.15~0.35 mm	0.0118~0.0197 in.	0.30~0.50 mm	0.0018~0.0197 in.	0.3~0.5 mm
Ring/Ring Groove Clearance Top	0.0008~0.0035 in.	0.02~0.09 mm	0.0004~0.0035 in.	0.01~0.09 mm	0.0028~0.0055 in.	0.07~0.14 mm
2nd	0.0012~0.0027 in.	0.03~0.07 mm	0.0012~0.0027 in.	0.03~0.07 mm	0.0012~0.0027 in.	0.03~0.07 mm
Connecting Rod Axial Play	0.0236 in.	0.6 mm	0.0236 in.	0.6 mm	0.0236 in.	0.6 mm
Connecting Rod/Crank Side Clearance	0.0157~0.0197 in.	0.4~0.5 mm	0.0157~0.0197 in.	0.4~0.5 mm	0.0157~0.0197 in.	0.4~0.5 mm
Compression Pressure	6.8 : 1		7.1 : 1		6.8 : 1	
ENGINE–CLUTCH						
Friction Plate Thickness	0.1575 in.	4 mm	0.1575 in.	4 mm	0.1575 in.	4 mm
Clutch Plate Warp Allowance	0.0079 in.	0.2 mm	0.0079 in.	0.2 mm	0.0079 in.	0.2 mm
Spring Free Length	1.3396 in.	34 mm	1.3396 in.	34 mm	1.3396 in.	34 mm
Housing Bushing Inner Diameter	$0.9062^{+0.0006}_{-0.0002}$ in.	$23^{+0.016}_{-0.005}$ mm	$1.0244^{+0.0006}_{-0.0002}$ in.	$26^{+0.016}_{-0.005}$ mm	$1.0244^{+0.0006}_{-0.0002}$ in.	$26^{+0.016}_{-0.005}$ mm
Bushing Spacer O.D.	$0.9062^{-0.0008}_{-0.0012}$ in.	$23^{-0.020}_{-0.033}$ mm	$1.0244^{+0.0008}_{-0.0012}$ in.	$26^{-0.020}_{-0.033}$ mm	$1.0244^{+0.0008}_{-0.0012}$ in.	$26^{-0.020}_{-0.033}$ mm
Bushing/Spacer Clearance	$0.9062^{-0.0006}_{-0.0006}$ in.	$23^{-0.015}_{-0.017}$ mm	$1.0244^{+0.0006}_{-0.0006}$ in.	$26^{-0.015}_{-0.017}$ mm	$1.0244^{+0.0006}_{-0.0006}$ in.	$26^{-0.015}_{-0.017}$ mm
Main Shaft Outer Diameter	$0.6698^{-0.0002}_{-0.0006}$ in.	$17^{-0.006}_{-0.017}$ mm	$0.7880^{+0.0002}_{-0.0008}$ in.	$20^{-0.007}_{-0.020}$ mm	$0.7880^{-0.0002}_{-0.0008}$ in.	$20^{-0.007}_{-0.020}$ mm
Bushing Spacer Inner Diameter	$0.6698^{+0.0005}_{-0.0024}$ in.	$17^{+0.012}_{-0.006}$ mm	$0.7880^{+0.0005}_{-0.0002}$ in.	$20^{+0.012}_{-0.006}$ mm	$0.7880^{+0.0005}_{-0.0002}$ in.	$20^{+0.012}_{-0.006}$ mm
Main Shaft/Spacer Clearance	$0.6698^{-0.0002}_{-0.00004}$ in.	$17^{-0.005}_{-0.001}$ mm	$0.7880^{-0.00004}_{-0.0003}$ in.	$20^{-0.001}_{-0.008}$ mm	$0.7880^{-0.00004}_{-0.0003}$ in.	$20^{-0.001}_{-0.008}$ mm

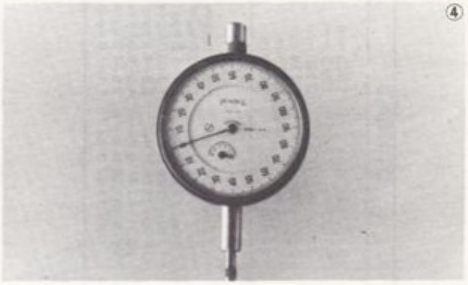
ITEM	DT100A,B		DT125A,B		DT175A,B	
CHASSIS						
Front Brake Shoe Diameter	4.3143 in.	109.5 mm	5.1023 in.	129.5 mm	5.1023 in.	129.5 mm
Rear Brake Shoe Diameter	5.1023 in.	129.5 mm	5.1023 in.	129.5 mm	5.1023 in.	129.5 mm
Wheel Run-out Limits Vertical	0.0701 in.	0.178 mm	0.0701 in.	0.178 mm	0.0701 in.	0.178 mm
Wheel Run-out Limits Lateral	0.0701 in.	0.178 mm	0.0701 in.	0.178 mm	0.0701 in.	0.178 mm
Front Fork Spring Free Length	17.4148 in.	442 mm	17.2178 in.	437 mm	17.2178 in.	437 mm
Rear Shock Spring Free Length	7.9982 in.	203 mm	7.9982 in.	203 mm	7.9982 in.	203 mm
TORQUE VALUES						
See also Torque Chart						
Transmission Drain Plug	10.85–18.09 ft-lbs.	1.5–2.5 kg-m	10.85–18.09 ft-lbs.	1.5–2.5 kg-m	10.85–18.09 ft-lbs.	1.5–2.5 kg-m
Front Fork Cap Bolt	10.85–21.71 ft-lbs.	1.5–3.0 kg-m	10.85–21.71 ft-lbs.	1.5–3.0 kg-m	10.85–21.71 ft-lbs.	1.5–3.0 kg-m
Front Axle Securing Nut	7.96–13.02 ft-lbs.	1.1–1.8 kg-m	7.96–13.02 ft-lbs.	1.1–1.8 kg-m	7.96–13.02 ft-lbs.	1.1–1.8 kg-m
Cylinder Head Bolt	13.02–18.09 ft-lbs.	1.8–2.5 kg-m	13.02–18.09 ft-lbs.	1.8–2.5 kg-m	13.02–18.09 ft-lbs.	1.8–2.5 kg-m
Flywheel Securing Nut	18.09–32.56 ft-lbs.	2.5–4.5 kg-m	18.09–32.56 ft-lbs.	2.5–4.5 kg-m	18.09–32.56 ft-lbs.	2.5–4.5 kg-m
Clutch Securing Nut	28.94–43.41 ft-lbs.	4.0–6.0 kg-m	28.94–43.41 ft-lbs.	4.0–6.0 kg-m	28.94–43.41 ft-lbs.	4.0–6.0 kg-m
Drive Sprocket Securing Nut	18.09–32.56 ft-lbs.	2.5–4.5 kg-m	18.09–32.56 ft-lbs.	2.5–4.5 kg-m	18.09–32.56 ft-lbs.	2.5–4.5 kg-m
Drive Sprocket Securing Bolt(s)	7.96–13.02 ft-lbs.	1.1–1.8 kg-m	7.96–130.2 ft-lbs.	1.1–1.8 kg-m	7.96–13.02 ft-lbs.	1.1–1.8 kg-m

1-4. SPECIAL TOOLS AND GAUGES

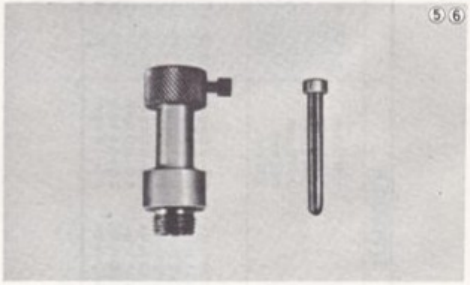
1. **Point Checker**
   Part No. 90890-03031



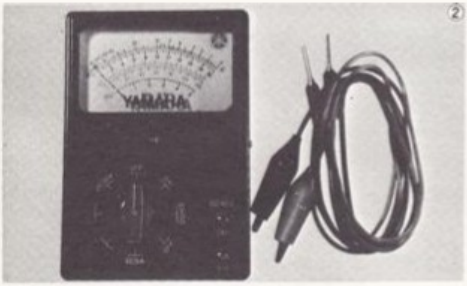
4. **Dial Gauge**
   Part No. 90890-03002



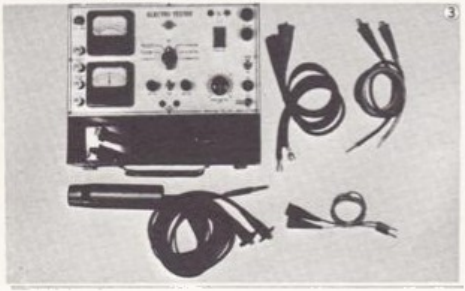
5. **Dial Gauge Stand**
   Part No. 90890-01039
6. **Dial Gauge Needle**
   Part No. 90890-03042



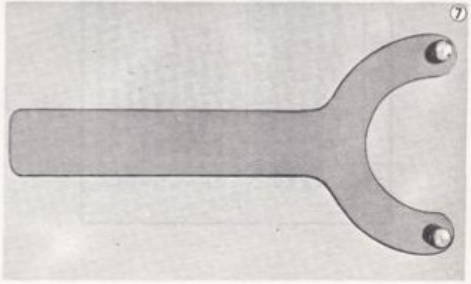
2. **Pocket Tester**
   Part No. 90890-03043



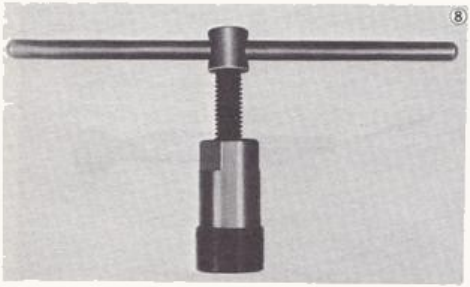
3. **Electro Tester**
   Part No. 90890-03021



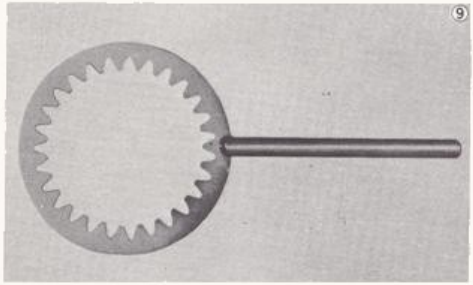
7. **Flywheel Holding Tool**
   Part No. 90890-01032



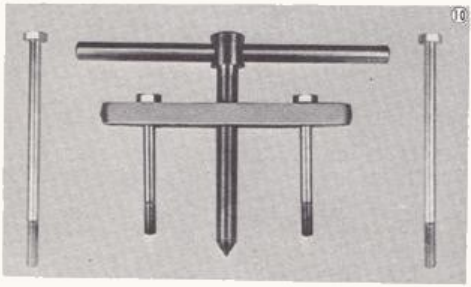
8. **Flywheel Puller**
Part No. 90890-01148



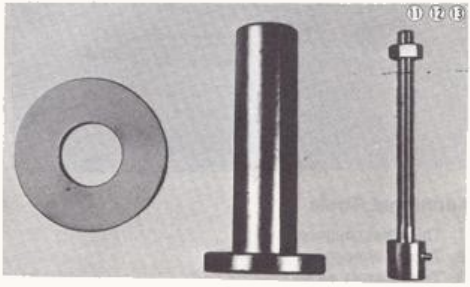
9. **Clutch Holding Tool**
Part No. 90890-00000



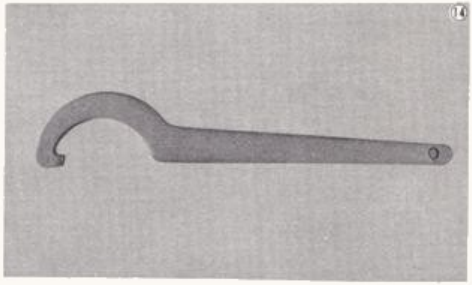
10. **Crankcase Separating Tool**
Part No. 90890-01011



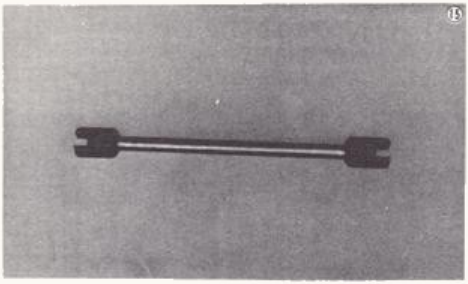
11. **Spacer**
Part No. 90890-01016
12. **Crankshaft Setting Pot**
Part No. 90890-01012
13. **Crankshaft Setting Tool**
Part No. 90890-01017



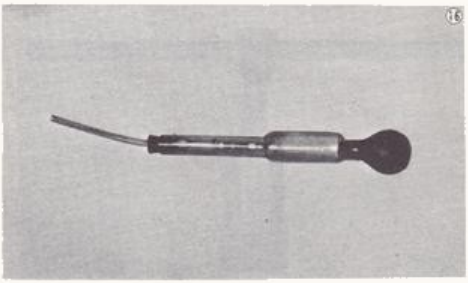
14. **Steering Nut Wrench**
Part No. 90890-01051



15. Spoke Wrench Set
Part No. 90890-05019



16. Hydrometer
Part No. 90890-03036



Additional Tools

1. Thickness gauge set
2. Torque wrench
3. Tire pressure gauge
4. Fluid measure (graduated cylinder)
5. Micrometer(s)
6. Caliper
7. Cylinder gauge

CHAPTER 2. PERIODIC INSPECTIONS AND ADJUSTMENTS

2

CHAPTER 2. PERIODIC INSPECTIONS AND ADJUSTMENTS

INTRODUCTION:

This chapter includes all information necessary to perform recommended inspections and adjustments. These preventative maintenance procedures, if followed, will insure more reliable vehicle operation and a longer service life. The need for costly overhaul work will be greatly reduced. This information not only applies to vehicles already in service, but also to new vehicles that are being prepared for sale. Any service technician performing preparation work should be familiar with this chapter.

2-1. TOOLS

A. Special Tools

1. Torque Wrench
2. Steering Nut Wrench
3. Spoke Wrench

B. Gauges (Measuring Instruments)

1. Point Checker
2. Dial Gauge
3. Dial Gauge Stand
4. Thickness Gauge Set
5. Hydrometer
6. Tire Pressure Gauge
7. Fluid Measure

2-2. MAINTENANCE INTERVAL CHARTS

The following charts should be considered strictly as a guide to general maintenance and lubrication intervals. You must take into consideration that weather, terrain, geographical location, and a variety of individual uses all tend to demand that each owner alter this time schedule to match his environment. For example, if the motorcycle is continually operated in an area of high humidity, then all parts must be lubricated much more frequently than shown on the chart to avoid damage caused by water to metal parts.

PERIODIC MAINTENANCE

Periodic inspection, adjustment and lubrication will keep your motorcycle in the safest and most efficient condition. Safety is an obligation of the motorcycle owner.

The most important points of motorcycle inspection, adjustment and lubrication are explained below; if the owner is not familiar with motorcycle service, this work should be done by a Yamaha dealer.

Lubrication Intervals

Item	Remarks	Type	Initial (mile)				Thereafter Every (mile)		
			250	500	1,000	2,000	1,000	2,000	4,000
Transmission oil change	Warm engine before draining	No. 1	CHK	○	○		CHK	○	
Drive chain	Lube/Adjust as required	No. 2			See Notes				
Drive chain	Remove/clean/lube/adjust	No. 2			○		○		
Control and meter cables	All-apply thoroughly	No. 3			○	○		○	
Throttle grip and housing	Light application	No. 4				○		○	
Tacho and speedo gear housings	Light application	No. 4				○			○
Rear arm pivot shaft	Apply until grease shows	No. 5			○		○		
Brake pedal shaft	Light application	No. 4			○			○	
Change pedal shaft	Light application	No. 4			○			○	
Stand shaft pivot(s)	Light application	No. 4			○			○	
Front forks	Drain completely	No. 8		CHK		○	CHK	○	
Steering ball races	Inspect thoroughly	No. 6				○		CHK	○
Point cam lubricating wick	Very light application	No. 7			○				○
Wheel bearings	Do not over-pack	No. 6				○	CHK	○	

See Service Notes on following page.
Be sure to check the above points before long-distance touring.

Recommended Lubricant Type

No. 1. Use Yamalube 4-cycle oil, or SAE 20W/40 type "SE" motor oil.

No. 2. Use SAE 10W/30 type "SE" motor oil. (If desired, specialty type lubricants of quality manufacture may be used.)

No. 3. Use SAE 20W/40 type "SE" motor oil. (If desired, or at ambient temperature below 30°F, a graphite base "dry" lubricant of quality manufacture may be used.)

No. 4. Light duty: Lithium soap base grease.
Heavy duty: Standard chassis lube grease. (Do not use chassis lube grease on throttle/throttle housing.)

No. 5. Use a soft chassis lube grease (short fiber).

No. 6. Medium-weight wheel bearing grease of quality manufacture—preferably waterproof.

No. 7. Light-weight machine oil.

No. 8. Use Yamaha fork oil.

NOTE:

Drive chain must be lubricated every 200 ~ 250 miles. If unit is subjected to extremely hard use, chain must be inspected frequently and serviced as required.

Periodic Maintenance Chart

Item	Remarks	Initial (mile)				Thereafter Every (mile)	
		250	500	1,000	2,000	1,000	2,000
Brake system (complete)	Check/Adjust as required, repair as required		○	○		○	
Clutch	Check/Adjust as required		○	○		○	
Battery	Top-off/Check special gravity monthly, or	○		○		○	
Spark plug(s)	Inspect/Clean or replace as required	○	○	○		○	
Wheels and tires	Pressure/Spoke—Tension/runout	○	○	○		○	
Fittings and fasteners	Tighten before each trip and/or	○	○	○		○	
Drive chain	Tension/Alignment No. 1	○	○	○		○	
Transmission oil level check	Unit level/Engine warm	○	○	○		○	
Air filter	Wet type—Clean/replace as required No. 2			○	○		○
Fuel petcock(s)	Clean/Flush tank as required	○		○		○	
Ignition Timing	Adjust/Clean or replace parts as required		○	○	○		○
Carburetor adjustment	Check operation/Fittings		○	○	○		○
Carburetor overhaul	Clean/Repair as required/Refit/Adjust						4,000
Cylinder compression	Preventive maintenance check		○	○	○		○
Decarbonize engine	Includes exhaust system			○			○

SERVICE NOTES:

No. 1. DRIVE CHAIN: In addition to tension and alignment, chain must be lubricated every 200 ~ 250 miles (300 ~ 400 km). If unit is subjected to extremely hard usage and wet weather riding, chain must be checked constantly. See "Lubrication Intervals" for additional details.

No. 2. AIR FILTER: Remove and clean filter at least once per month or every 1,000 miles (1,600 km).

2-3. ENGINE

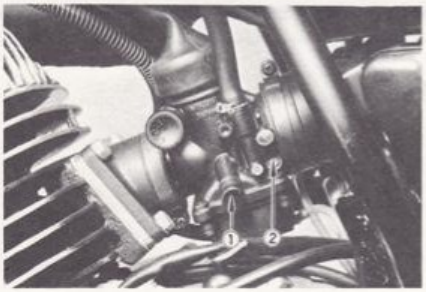
A. Carburetor

1. Make certain that throttle cable freeplay is proper.
2. Pilot air screw
   Turn air adjusting screw (1) until it lightly seats, then back it out turns specified. This adjustment can be made with engine stopped.

Air screw (turns out):			
DT100A, B:	1-1/4	DT100C:	1-1/2
DT125A, B:	1-1/2	DT125C:	1-3/4
DT175A, B:	1-3/4	DT175C:	1-1/2

3. Start the engine and let it warm up.
4. Throttle stop screw
   Turn throttle stop screw (2) in or out to achieve smooth engine operation at idle speed specified in Carburetor Setting Table.

Idle speed:	
DT100A,B,C	1,350 ~ 1,450 rpm
DT125A,B,C	1,300 ~ 1,400 rpm
DT175A,B,C	1,300 ~ 1,400 rpm

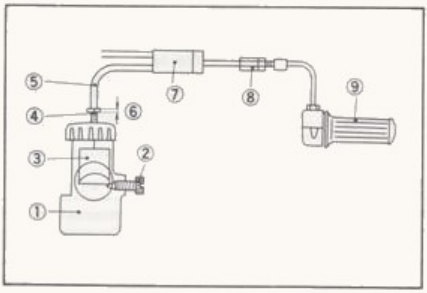


1. Throttle stop screw
2. Pilot air screw

NOTE:

The pilot air and idle speed screws are separate adjustments but they must be adjusted at the same time to achieve optimum operating condition at engine idle speeds.

5. Throttle cable
   After engine idle speed is set, make cable freeplay adjustment at cable adjustor near throttle grip. Loosen locknut and turn adjustor until there is 0.5 ~ 1.0 mm freeplay between throttle cable housing and cable adjustor. Retighten locknut. Loosen cable adjustor locknut (at top of carburetor) and turn cable adjustor until there is 1.0 mm freeplay in cable "2". Retighten locknut.

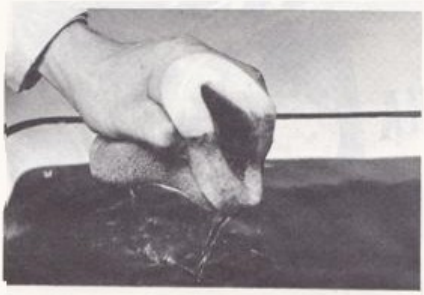


1. Carburetor
2. Throttle stop screw
3. Throttle valve
4. Throttle cable adjuster
5. Throttle cable (2)
6. Free play (1.0 mm, 0.04 in)
7. Wire cylinder
8. Cable adjuster
9. Throttle grip

B. Air Cleaner

1. Remove the air cleaner element assembly.

2. Slip the element off the wire mesh guide.
3. Wash the element gently but thoroughly, in solvent.



4. Squeeze excess solvent out of element and dry.
5. Pour a small quantity of 30W motor oil onto cleaner element and work thoroughly into the porous foam material. Element must be damp with oil but not dripping.
6. Re-insert the wire mesh cleaner element guide into the element.
7. Coat the upper and lower edges of the cleaner element with lube grease. This will provide an air-tight seal between the cleaner case cover and cleaner seat.)
8. Re-install the element assembly, case cover and seat.

NOTE:

Each time cleaner element maintenance is performed, check the air inlet to the cleaner case for obstructions. Check the air cleaner joint rubber to the carburetor and manifold fittings for an air-tight seal. Tighten all fittings thoroughly to avoid the possibility of unfiltered air entering the engine.

CAUTION:

Never operate the engine with the air cleaner element removed.
This will allow unfiltered air to enter, causing rapid wear and possible engine damage. Additionally, operation without the cleaner element will affect carburetor jetting with subsequent poor performance and possible engine overheating.

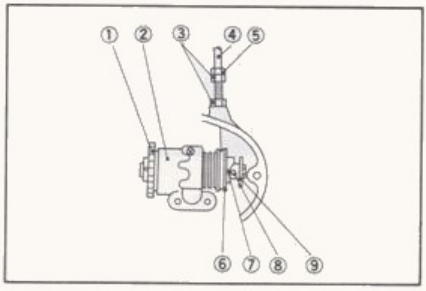
C. Autolube Pump

1. Cable adjustment

a. Remove Autolube pump cover, which is located forward portion of the righthand crankcase cover.

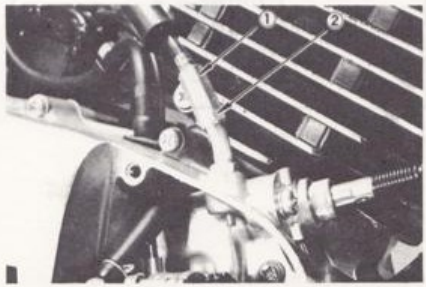
b. Rotate throttle slightly until all slack is removed from all cables. Hold the position.

c. Check to see that Autolube pump plunger pin (8) is aligned with the mark on the Autolube pump pulley.



1. Starter plate
2. Oil pump
3. Locknut
4. Pump cable
5. Adjuster
6. Adjusting pulley
7. Match mark
8. Guide pin
9. Adjusting plate

d. If the mark (7) and pin (8) are not in alignment, loosen cable length adjustor lock nut on top of crankcase cover and adjust cable length until alignment is achieved.
Tighten adjustor locknut.

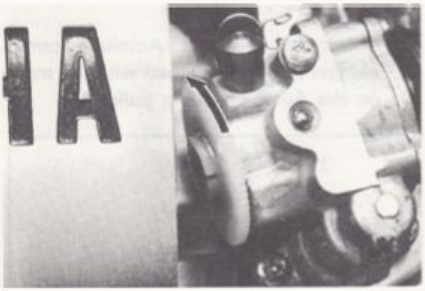


1. Adjuster
2. Lock nut

NOTE:
Before adjusting Autolube cable always set throttle cable freeplay first. (Refer to 2-3, A, 5.)

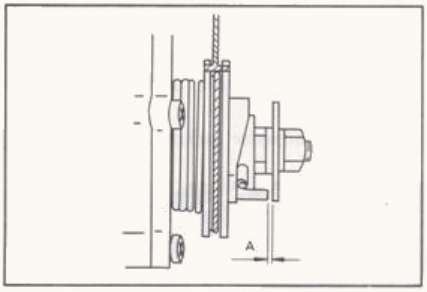
2. Pump stroke adjustment

a. With throttle closed, rotate starter plate (1) until the pump plunger moves fully out and away from the pump body to its outermost limit.



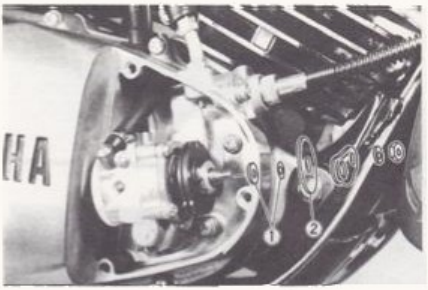
b. Measure gap with thickness gauge between raised boss on pump adjust pulley (6) and adjust plate (9). If clearance is not correct, remove adjust plate locknut and adjust plate.

Minimum Pump Stroke:
0.20 ~ 0.25 mm. (.008 ~ .01")



A: Minimum pump stroke

c. Remove or add an adjustment shim as required.



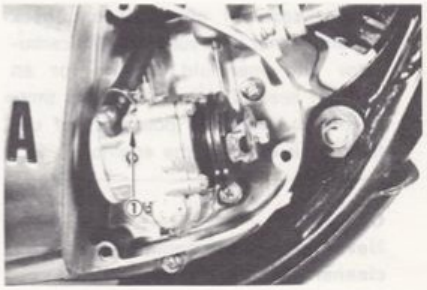
1. Adjusting shim
2. Adjusting plate

d. Reinstall adjust plate and locknut. Tighten the locknut.
Re-measure gap. Repeat procedure as required.

3. Bleeding the pump
The Autolube pump and delivery lines must be bled on the following occasions:
   1) A new machine out of the crate.
   2) Whenever the Autolube tank has run dry.
   3) Whenever any portion of the Autolube system is disconnected.

a. Remove the pump cover.

b. Remove the pump bleed screw and allow 3 to 5 minutes to fill pump with oil and begin to drain from bleed screw hole.



1. Bleed screw

d. Rotate the starter plate until a steady flow of oil, with no air bubbles, comes out.

e. Re-install bleed screw and pump cover.

D. Engine and Transmission Oil

1. Engine

a. Autolube oil

We recommend that first choice be Yamaha Autolube oil. If for any reason you should use another type, the oil should meet or exceed BIA certification "TC-W". Check container top or label for service specification. If above oils not available, use a 30 or 40 wt 2-stroke oil for air-cooled engines.

CAUTION:

Under extremely cold conditions [0°C degrees (32°F) or below] 30 and 40 wt oils become very thick and will not flow as readily to the Autolube pump. This may cause oil pump starvation.

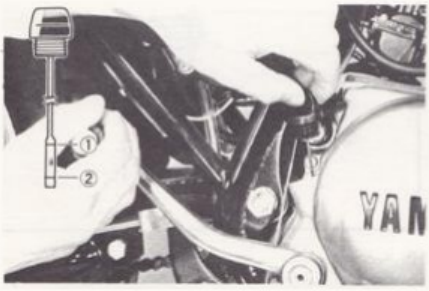
b. Autolube tank

Always check Autolube tank oil level before operating machine. If oil level shows at sight glass window.

1) Raise seat.
2) Remove filler cap and top off tank.

2. Transmission

a. The dip stick is located above and slightly in front of the kick crank. To check level, start the engine and let it run for several minutes to warm and distribute oil. Unscrew the dip stick and clean. Set it on the case threads in a level position. Remove and check level.



1. Max. Level
2. Min. Level

NOTE:

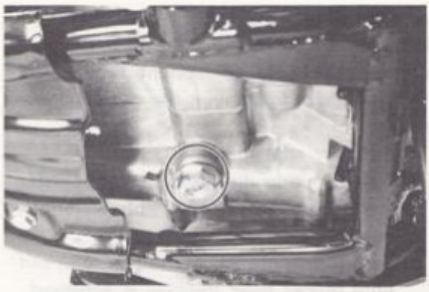
Be sure the machine is level and on both wheels.

b. The stick has Minimum and Maximum marks.

The oil level should be between the two. Top off as required.

Recommended Oil:
Motor oil SAE 10W/30 "SE"

c. A drain bolt is located on the bottom of the crankcase.



With the engine warm, remove the plug and drain oil. Re-install plug and add fresh oil.

Transmission Drain Plug Torque:
2.0 ~ 2.5 m-kgs

Transmission Oil Quantity:
DT100A,B,C; 650 cc
DT125A,B,C; 750 cc
DT175A,B,C; 650 cc

Transmission oil should be replaced several times during the break-in period. If the unit is used for competition, oil replacement should also be often.

CAUTION:

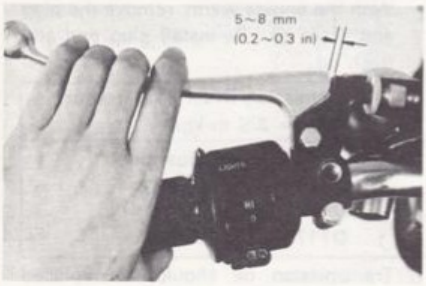
Under no circumstances should any additives be included with the transmission oil. This oil also lubricates and cools the clutch. Many additives will cause severe clutch slippage.

E. Clutch

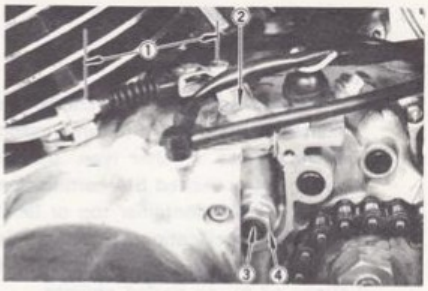
This model has two clutch cable length adjusters and a clutch mechanism adjuster. Cable length adjusters are used to take up slack from cable stretch and to provide sufficient freeplay for proper clutch operation under various operating conditions. The clutch mechanism adjuster is used to provide the correct amount of clutch "throw" for proper disengagement.

Normally, once the mechanism is properly adjusted, the only adjustment required is maintenance of freeplay at rhe clutch handle lever.

1. Freeplay adjustment
   a. Loosen either the handle lever adjuster locknut or the cable inline length adjuster locknut.
   b. Turn the length adjuster either in or out until proper lever freeplay is achieved.



2. Mechanism adjustment
   a. Remove rear, left-hand crankcase cover. Note position of clutch axle lever under engine.
   b. Loosen adjusting screw lock nut and fully tighten eccentric adjusting screw.
   c. Turn either cable length adjuster in or out until lever is positioned slightly behind main axle center line.
   d. Back eccentric adjust screw out until axle lever shaft contacts clutch push rod inside engine.
      Turn adjust screw in approximately 1/8 turn and tighten lock nut. Readjust handle lever freeplay as required.



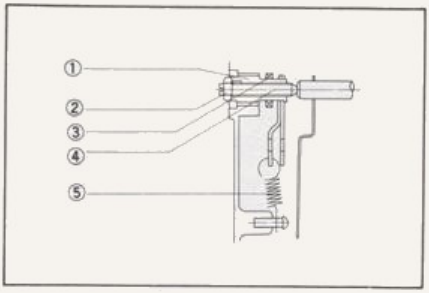
1. Minimum distance
2. Axle lever
3. Adjusting screw
4. Locknut

NOTE:

After adjusting, pull clutch lever in and hold against handle grip. Measure distance from outer cable stopper (bottom of cylinder fin) to center of axle lever clevis pin. If distance is less than specified, loosen cable length adjuster slightly to achieve minimum distance.

Minimum Distance: 55 mm (2.16 in)

3. Mechanical adjustments (DT125A,B,C)
   Loosen lock nut (10 mm) and turn set screw clockwise until it lightly seats against clutch push rod. Back set screw out 1/4 turn and tighten lock nut while holding set screw with a screwdriver.



1. Push screw
2. Locknut
3. Oil seal
4. Adjusting screw
5. Return spring

F. Cylinder Head

Check torque of cylinder head holding nuts. Tighten in a crisscross pattern.

Cylinder Head Nut Torque:
2.1 ~ 2.5 m-kg (15 ~ 18 ft - lbs.)

2-4. CHASSIS

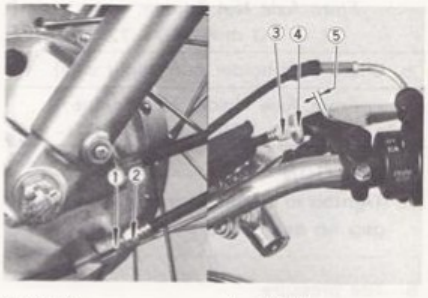
A. Fuel Petcock

1. Clean fuel filter.
   a. Turn fuel petcock to "off-position" and disconnect fuel pipe.
   b. Remove filter cap and clean filter.

NOTE:
If filter is damaged, replace.

B. Front Brake and Wheel

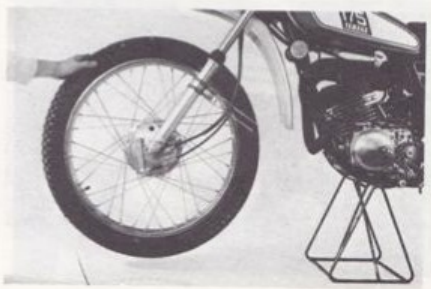
1. Front brake adjustment
   Front brake cable freeplay can be adjusted to suit rider preference, but a minimum freeplay of 5 ~ 8 mm should be maintained. Freeplay can be adjusted at handle bar lever or brake shoe plate.
   a. Loosen the adjuster locknut (2).
   b. Turn the adjuster (1) in or out until adjustment is suitable.
   c. Tighten the adjuster locknut (2).



1. Lock nut
2. Adjuster
3. Adjuster
4. Lock nut
5. 5~8 mm (0.2~0.3 in)

2. Brake lining check
   Brake linings can be checked through the inspection hole in the shoe plate. If thickness is less than 2 mm, replace the brake shoes.
3. Spoke adjustment and torque
   a. Raise the wheel off the ground. Spin. Check rim runout.

Rim Runout Limits:	
Vertical:	2 mm
Lateral:	2 mm



   b. Check each spoke for tightness.

Spoke Torque:	
Front Wheel:	0.3 m-kg
Rear Wheel:	0.3 m-kg

NOTE:
If loose spokes are found, tighten them.

4. Front axle

a. Check axle nut.

Front Axle Nut Torque:
7 ~ 10 m-kg (50 – 72 ft - lbs)

b. Check axle holder nuts (right side).

Front Axle Holder Nut Torque:
0.8 ~ 1.25 m-kg (6 – 10 ft - lbs)

CAUTION:

Tighten in stages to maintain an even gap on each side.

5. Tire pressure

Front Tire Pressure:
0.9 kg/cm² (14 lbs/sq in)

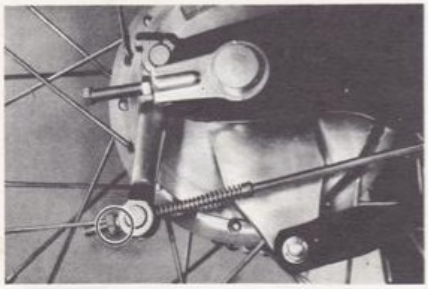
C. Rear Brake and Wheel

1. Rear brake adjustment

Adjust rear brake pedal play to suit, providing a minimum of 25 mm free-play.

Adjustment is accomplished as follows:

a. Using a 13 mm wrench, turn the adjusting nut on the rear brake rod in or out until brake pedal freeplay is suitable (25 mm minimum freeplay).



NOTE:

Rear brake pedal adjustment must be checked whenever chain is adjusted or rear wheel is removed and then re-installed.

2. Brake lining check

Brake linings can be checked through the inspection hole in the shoe plate. If thickness is less than 2 mm, replace the brake shoes.

3. Spoke adjustment and tension

Adjust rear wheel spoke tension per front wheel instructions.

4. Rear axle

Check axle nut.

Rear Axle Nut Torque:
8.3 ~ 13 m-kg (60 – 94 ft - lbs)

5. Tire pressure

Rear Tire Pressure:
1.1 kg/cm² (17 lbs/sq in)

D. Drive Chain

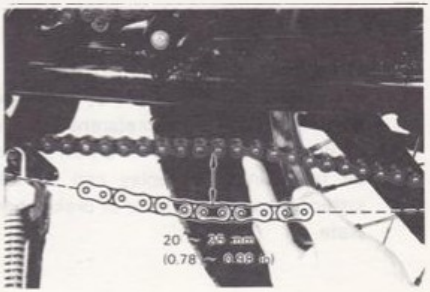
1. Drive chain adjustment

To adjust drive chain, proceed as follows:

a. Remove rear axle cotter pin (1). (See next page)

b. Loosen rear axle securing nut (3).

c. With rider in position on machine, both wheels on ground, set axle adjusters until there is 20 to 25 mm freeplay in the drive chain at the bottom of the chain at a point midway between the drive and driven axles.

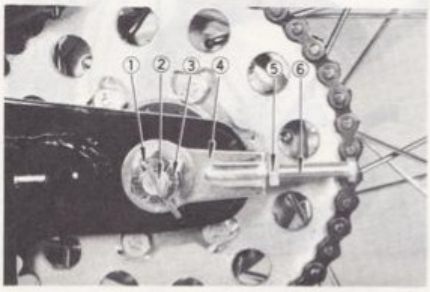


d. Turn adjusters (chain puller bolts) both left and right, until axle is situated in same positions as shown by position mark on swing arm axle tabs.
e. Tighten the rear axle securing nut (3).

Rear Axle Nut Torque:
8.3 ~ 13 m-kg(60 – 100 ft - lbs)

f. Install a new cotter pin and bend the ends over.

NOTE:
Tighten bolt locknuts thoroughly.



1. Cotter pin
2. Rear wheel axle
3. Axle nut
4. Chain puller
5. Locknut
6. Adjuster

2. Drive chain maintenance
The chain should be lubricated per the recommendations given in the Maintenance and Lubrication Interval charts. More often if possible.
Preferably after every use.

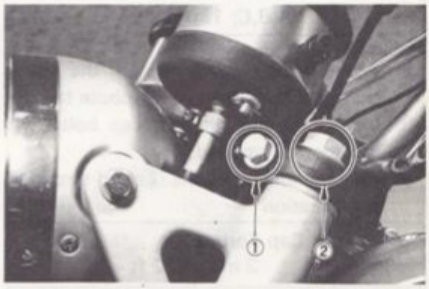
a. Wipe off dirt with shop rag. If accumulation is severe, use wire brush, then rag.
b. Apply lubricant between roller and side plates on both inside and outside of chain. Don't skip a portion as this will cause uneven wear.
Apply thoroughly. Wipe off excess.

NOTE:
Chain and lubricant should be at room temperature to assure penetration of lubricant into rollers. Choice of lubricant is determined by use and terrain. SAE 20wt or 30wt motor oil may be used, but several specialty types by accessory manufactures offer more penetration and corrosion resistance for roller protection. In certain areas, semi-drying lubricants are preferable. These will resist picking up sand particles, dust, etc.

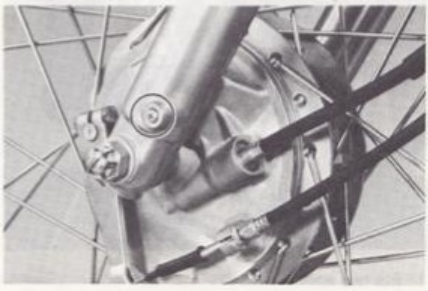
c. Periodically, remove the chain. Wipe and/or brush excess dirt off. Blow off with high pressure air.
d. Soak chain in solvent, brushing off remaining dirt. Dry with high pressure air. Lubricate thoroughly while off machine. Work each roller thoroughly to make sure lubricant penetrates. Wipe off excess. Re-install.

E. Front Fork Oil Change

1. With the front wheel removed or raised off the floor with a suitable frame stand, loosen pinch bolt ① at the top of each inner fork tube.



2. Remove cap bolts ② from inner fork tubes.
3. Remove drain screw from each outer tube with open container under each drain hole.



4. After most of oil has been drained, slowly raise and lower outer tubes to pump out remaining oil.
5. Replace drain screws.

NOTE:
Check gaskets, replace if damaged.

6. Pour specified amount of oil into the inner tube through the upper end opening. Use Yamaha fork oil 10W, 20W,30W

NOTE:
Specialty type fork oils of quality manufacture may be used. Select the weight of oil that suits local conditions and your preference (lighter for less damping; heavier for more damping).

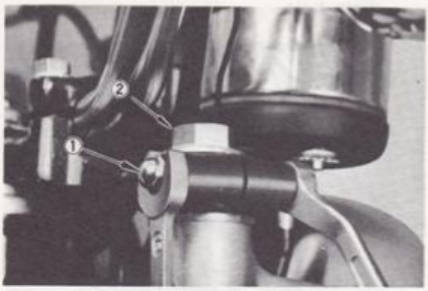
Front Fork Oil Capacity:
DT100A,B,C; 160 ±4 cc
DT125A,B,C; 130 ±4 cc
DT175A,B,C; 130 ±4 cc

7. After filling, slowly pump the outer tubes up and down to distribute the oil.
8. Inspect O-ring on fork cap bolts and replace if damaged.
9. Replace fork cap bolts ② and torque to specification

Fork Cap Torque:
3 m-kg (22 ft - lbs)

10. Tighten pinch bolts ① at fork crown and torque to specification.

Fork Tube Pinch Bolt Torque:
0.8 ~ 1.25 m-kg(5.8 – 9 ft - lbs)



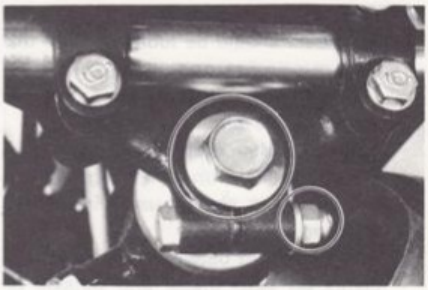
1. Fork tube pinch bolts
2. Fork cap bolts

F. Suspension, Steering and Swing Arm

1. Steering head adjustment
The steering assembly should be checked periodically for any looseness. Do this as follows:

a. Block machine up so that front wheel is off the ground.
b. Grasp bottom of forks and gently rock fork assembly backward and forward, checking for any looseness in the steering assembly bearings.

c. If steering head needs adjustment, loosen crown pinch bolt and steering fitting bolt.



d. Using steering nut wrench, adjust steering head fitting nut until steering head is tight without binding when forks are turned.

NOTE:
Excessive tightening of this nut will cause rapid wear of ball bearings and races.
Re-check for looseness and freedom of movement.

e. Tighten steering fitting bolt and crown pinch bolt in that order.

NOTE:

After completing steering adjustment, make certain forks pivot from stop to stop without binding. If binding is noticed, repeat adjustment.

2. Suspension

a. Check all suspension for proper operation.

b. Check all suspension for proper tightness.

c. Check rear shocks (R & L) for identical adjustment.

3. Swing arm

a. Check for freedom of up and down movement.

b. Check side to side freeplay.

Swing Arm Freeplay:
1.0 mm at end of swing arm

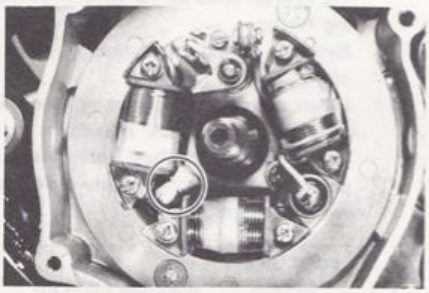
c. Check all securing bolts for proper tightness.

d. Grease swing arm periodically.

2-5. ELECTRICAL

A. Contact Breaker Points

1. Apply a few drops of light-weight machine oil or distributor lubricant to the point cam lubricator.



2. The ignition points can be lightly sanded with 400 ~ 600 grit sandpaper to remove corrosion.
   Place a piece of clean paper between the points, let them close, and repeatedly remove the paper until no residue shows. The paper may be dipped in lacquer thinner or point cleaning fluid to remove oil and sanding residue from point surfaces.
3. Point replacement should only be necessary when point gap exceeds maximum tolerance; when the points are severely pitted; or if the points become shorted or show faulty operation.

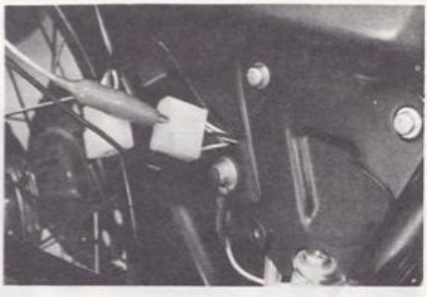
NOTE:

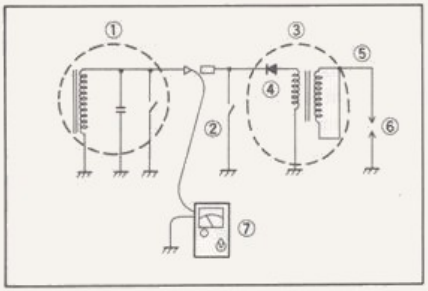
New points, when installed, must be cleaned and adjusted.

B. Ignition Timing for DT100A,B,C/175A,B,C

Ignition timing must be set with dial gauge and point checker.
Proceed as follows:

1. Remove spark plug and screw Dial Gauge Stand into spark plug hole.
2. Insert Dial Gauge into stand.
3. Remove left engine crankcase cover.
4. Switch on point checker and adjust. Disconnect magneto harness from main harness. Connect red lead of Point Checker to black wire in wire harness coming from magneto.
5. Connect black lead of Point Checker to unpainted surface of cylinder fin or unpainted crankcase bolt or screw.





1. Flywheel magneto
2. Engine stop switch
3. Ignition coil
4. Diode
5. High tension cord
6. Spark plug
7. Point checker

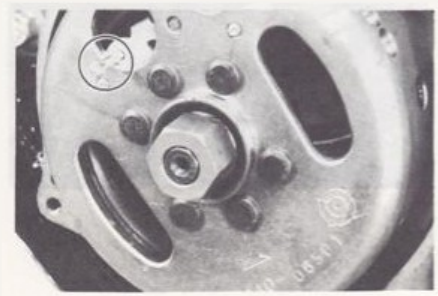
NOTE:

If magneto backing plate has been removed, loosen three mounting screws and rotate backing plate until screws are centered in slots.

6. Rotate magneto flywheel until piston is at top-dead-center. Set the zero on dial gauge face to line up exactly with dial gauge needle.
   Tighten set screw on spark plug stand to secure dial gauge assembly. Rotate flywheel back and forth to be sure that indicator needle does not go past zero.

NOTE:

On the DT175's the spark advancer is built in the flywheel magneto. Keep the advancer in the fully-advanced position.

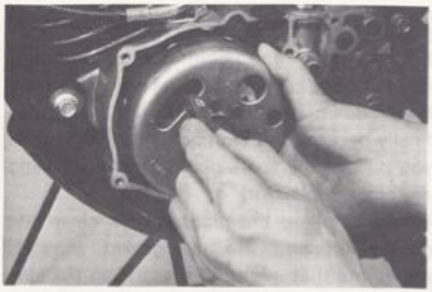


7. Starting at T.D.C. rotate flywheel clockwise until dial gauge reads approximately 4 needle revolutions before-top-dead-center (B.T.D.C.).
8. Slowly turn flywheel counterclockwise until dial gauge reads ignition advance setting listed in Specifications Table. At this time, the point checker needle should swing from "CLOSED" to "OPEN" position, indicating the contact breaker (ignition points) have just begun to open.

Ignition Timing (B.T.D.C.):
1.8 ± 0.15 mm (.071 in)

9. Repeat steps 7 and 8 to verify point opening position.
   If points do not open within specified tolerance, they must be adjusted.
10. Adjust ignition points by barely loosening Phillips head screw before rechecking timing.
    Recheck timing by repeating steps 7 and 8.
11. When correct ignition timing has been accomplished, check maximum point gap by turning flywheel until maximum point gap occurs. Measure point gap with thickness gauge.

Point Gap	
Normal	0.35 mm (.014 in)
Minimum:	0.30 mm (0.3 in)
Maximum:	0.40 mm (0.4 in)



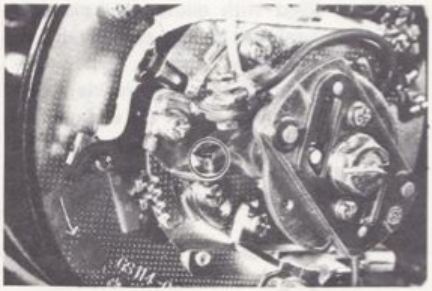
NOTE:

If the maximum point gap is over tolerance the contact breaker assembly should be replaced. Do not attempt to bend the fixed point breaker to decrease maximum point gap. This will only result in point misalignment, difficulty in setting timing and premature point failure.

12. Remove dial gauge assemly and stand. Disconnect point checker. And reconnect magneto wire harness. Replace engine crankcase cover.

C. Ignition Timing for all DT125's

1. Tools and instruments for adjusting are as follows:
   Dial gauge (accuracy-1/100 mm)
   Dial gauge adapter
   YAMAHA electrotester or YAMAHA point checker.
   Point wrench
   Slotted-head screwdriver
   12-mm wrench
2. Rotate the armature until the point is at its widest opening. Adjust point gap of contact breaker with a feeler gauge to 0.30 ~ 0.35 mm (0.011 ~ 0.016 in).



3. Screw the dial gauge adapter (B) into the spark plug hole of cylinder head and install the gauge. Tighten the gauge set screw with finger pressure only. Turn the armature bolt counterclockwise until the piston reaches Top Dead Center. At this point the dial gauge needle will pause. Turn the dial gauge face until the zero indicator lines up with needle.

4. Insert a match, bent spoke or other suitable material into the hole in the advance plate of the governor assembly. This will hold the governor assembly at the maximum advance position. This assembly must be at maximum advance before the engine is timed.

5. Connect the electrotester (or point checker) terminals to the point assembly. Positive (+) lead to Negative (−) to a good ground.

6. From the Top Dead Center position, rotate the armature against the normal direction of rotation until the dial gauge indicates 2.5 ~ 3.0 mm travel.
   Then, in the normal direction of rotation, turn the crank until the dial gauge reads 1.8 mm B.T.D.C. At this point the point checker needle should swing from "CLOSED" to "OPEN" position, indicating the contact breaker has just begun to open.

D. Spark Plug

The spark plug indicates how the engine is operating. If the engine is operating correctly, and the machine is being ridden correctly, then the tip of the white insulator around the positive electrode of the spark plug will be a medium tan color. If the insulator is very dark brown or black color, then a plug with a hotter heat range might be required. This situation is quite common during the engine break-in period.

If the insulator tip shows a very light tan or white color is actually pure white and glazed or if electrodes show signs of melting, then a spark plug with a colder heat range is required.

Remember, the insulator area surrounding the positive electrode of the spark plug must be a medium tan color. If it is not, check carburetion timing and ignition adjustments.

The spark plug must be removed and checked. Check electrode wear, insulator color, and electrode gap.

Spark Plug Gap: 0.5 ~ 0.6 mm

Engine heat and combustion chamber deposits will cause any spark plug to slowly break down and erode. If the electrodes finally become too worn, or if for any reason you believe the spark plug is not functioning correctly, replace it.

When installing the plug, always clean the gasket surface, use a new gasket, wipe off any grime that might be present on the surface of the spark plug, torque the spark plug properly.

Spark Plug Tightening Torque
2.5 ~ 3.0 m-kg
(20 ~ 22 ft - lbs)

E. Battery

A poorly maintained battery will deteriorate quickly. The battery fluid should be checked at least once a month.

1. The level should be between the upper and lower level marks. Use only distilled water if refilling is necessary.

   NOTE:
   Normal tap water contains minerals which are harmful to a battery; therefore, refill only with distilled water.

2. Always make sure the connections are correct when putting the battery back in the motorcycle. The red lead is for the + terminal and the black lead is for the − terminal. Make sure the breather pipe is properly connected and is not damaged or obstructed.

   NOTE:
   When filled with diluted sulfuric acid (electrolyte), this battery can be put into use immediately. That is, it is a dry-charged battery. It is advisable, however, that the battery be charged as much as possible before using for the first time for maximum performance. This initial charge will prolong the life of the battery.
   Charging current: 0.4A
   Charging hours: 10hrs.

F. Headlight

When necessary, adjust the headlight beam as follows.

1. Adjust horizontally by tightening or loosening the adjust screw, as in the illustration.
   To adjust to the right:
   tighten the screw
   To adjust to the left:
   loosen the screw

1. Adjusting screw

2. Adjust vertically as follows:

a. Remove the anchor screw holding the headlight rim and remove the rim by prying lightly with a screwdriver at the gap provided at the bottom of the headlight.

NOTE:
Take care not to damage the headlight.

b. Slightly loosen the two headlight mounting nuts (See illustration) and refit the rim to the headlight body.

NOTE:
Do not tighten the anchor screw yet.

c. Next, adjust vertically by moving the headlight body. When adjustment is complete, hold the body in place, remove the rim and tighten the two mounting nuts. Then refit the rim to the headlight body.

Replacing the Headlight Bulb

When necessary replace the headlight bulb with the specified type as described below:

1. Remove the screws holding the headlight rim and the rim assembly unit.
2. Push the socket in and turn it counterclockwise to remove socket and bulb. bulb.
3. Replace the old bulb with a new one.
4. Insert the socket into the lens and install the lens assembly into the headlight body.
5. Secure the headlight rim to the body with the screws.

NOTE:
Take care not to damage the headlight as it is very fragile.

CHAPTER 3. ENGINE OVERHAUL

CHAPTER 3. ENGINE OVERHAUL

3-1. TOOLS

A. Special Tools

1. Flywheel Holding Tool
2. Flywheel Puller
3. Clutch Holding Tool
4. Crankcase Separating Tool
5. Spacer
6. Crankshaft Setting Pot
7. Crankshaft Setting Tool
8. Torque Wrench

B. Gauges (Measuring Instruments)

1. Thickness Gauge
2. Outside Micrometer
3. Cylinder Gauge
4. Vernier Calipers

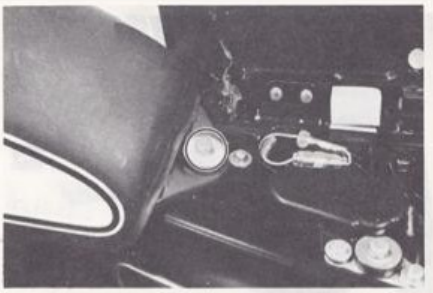
3-2. REMOVAL

A. Preparation for Removal

1. All dirt, mud, dust, and foreign material should be thoroughly removed from the exterior of the engine before removal and disassembly. This will prevent any harmful foreign material from entering the interior of the engine assembly.
2. Before engine removal and disassembly, be sure you have proper tools and cleaning equipment so you can perform a clean and efficient job.
3. During disassembly of the engine, clean and place all parts in trays in order of disassembly. This will ease and speed assembly time and insure correct re-installation of all engine parts.
4. Start the engine and warm it for a few minutes; turn off and drain transmission oil.

B. Fuel Tank Assembly

1. Turn fuel petcock to the "OFF" position and disconnect fuel pipe. Remove the bolt holding the rear of the fuel tank and remove the fuel tank.
2. Lift up rear of tank and slide back.

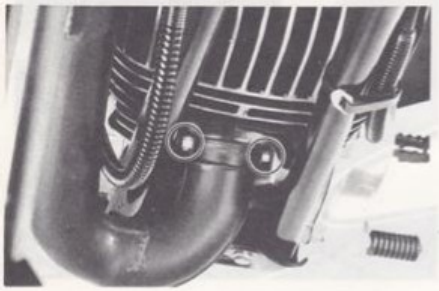


C. Muffler

1. Remove protector.

2. Remove the bolt holding the exhaust pipe to the frame.

3. Remove the bolts holding the exhaust pipe to the cylinder.



4. Remove exhaust pipe assembly.

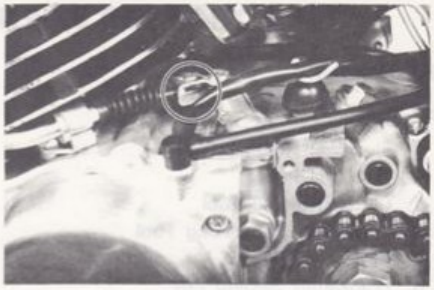
D. Wiring and Cables

1. Remove spark plug cap.
2. Remove oil pump cover.
3. Remove oil pipe at oil pump and oil delivery pipe at carburetor.

NOTE:
Pull oil pipe through oil pipe holder and plug the end so oil will not run out of oil tank.

1. Delivery pipe 2. Oil pipe

5. Rotate pump pulley to full throttle position and remove wire end from pulley seat.
6. Loosen wire adjuster lock nut and remove adjuster and wire complete.
7. Remove tachometer calbe.
8. Remove clutch wire at handle lever first and then at clutch push lever on bottom of cylinder fin.



E. Carburetor

1. Loosen two carburetor hose clamps.

2. Push air cleaner joint (hose) off the carburetor inlet and rotate carburetor body to remove carburetor easily.
Noting the presence, location and routing of all vent and overflow tubes, pull carburetor toward you.

NOTE:
Remove mixing chamber top and throttle valve assembly.

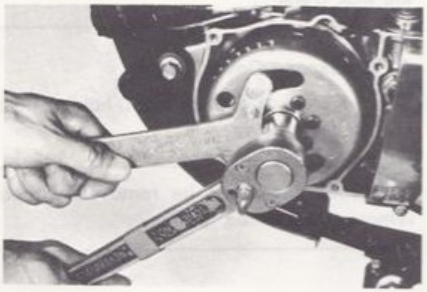
F. Change Pedal

Completely remove bolt securing change pedal. Remove change pedal.

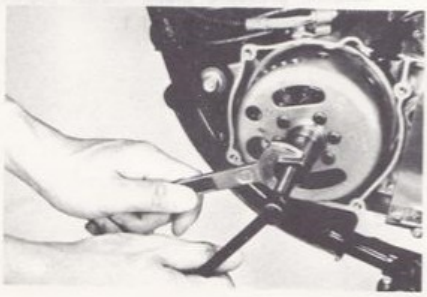
G. Flywheel Magneto

1. Remove crankcase left cover.
2. Remove flywheel securing nut using magnet holder, note the position and direction of the washers.
3. Install flywheel puller on flywheel and tighten it flywheel and tighten it.

NOTE:
The puller body has a lefthand thread.



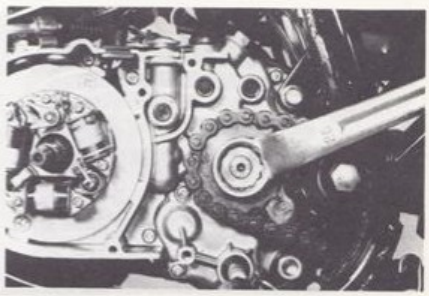
4. While holding puller body, tighten push bolt. This will pull flywheel off the tapered end of the crankshaft.



5. Disconnect the magneto lead wires from the main harness at the right, rear frame down tube.
6. Remove flywheel backing plate assembly.

H. Drive Chain

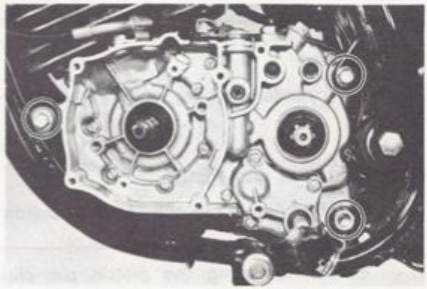
1. Loosen drive sprocket before disconnecting chain.
   a. Bend down lock tab.
   b. Apply rear brake.
   c. Loosen sprocket securing nut.



2. Remove master link and chain.

I. Removal

1. Remove three engine mounting bolts.

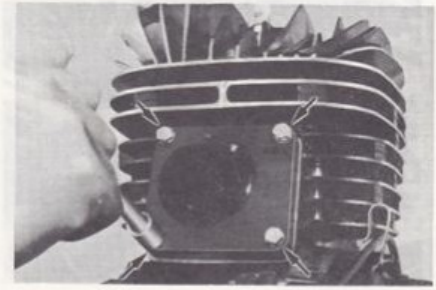


2. Remove engine from right side of frame.

3-3. DISASSEMBLY

A. Reed Valve Assembly

Remove reed valve assembly holding bolts (4), carburetor joint and reed valve assembly.



B. Cylinder Head

NOTE:

Loosen spark plug before loosening cylinder head.

C. Cylinder

Remove cylinder holding bolts (4) and cylinder.

D. Piston Pin and Piston

1. Remove piston pin clip (1) from piston.

   NOTE:

   Before removing the piston pin clip, cover the crankcase with a clean rag so you will not accidentally drop the clip into the crankcase.

2. Push piston pin from opposite side, then pull out. Protect pin with rag as shown.

   NOTE:

   Before removing piston pin, deburr clip groove and pin hole area.

E. Kick Crank

Remove kick crank securing bolt and kick crank.

NOTE:

The bolt must be completely removed from the kick crank.

F. Crankcase Cover, Right

Remove crankcase cover (right) holding bolts (12) and the cover.

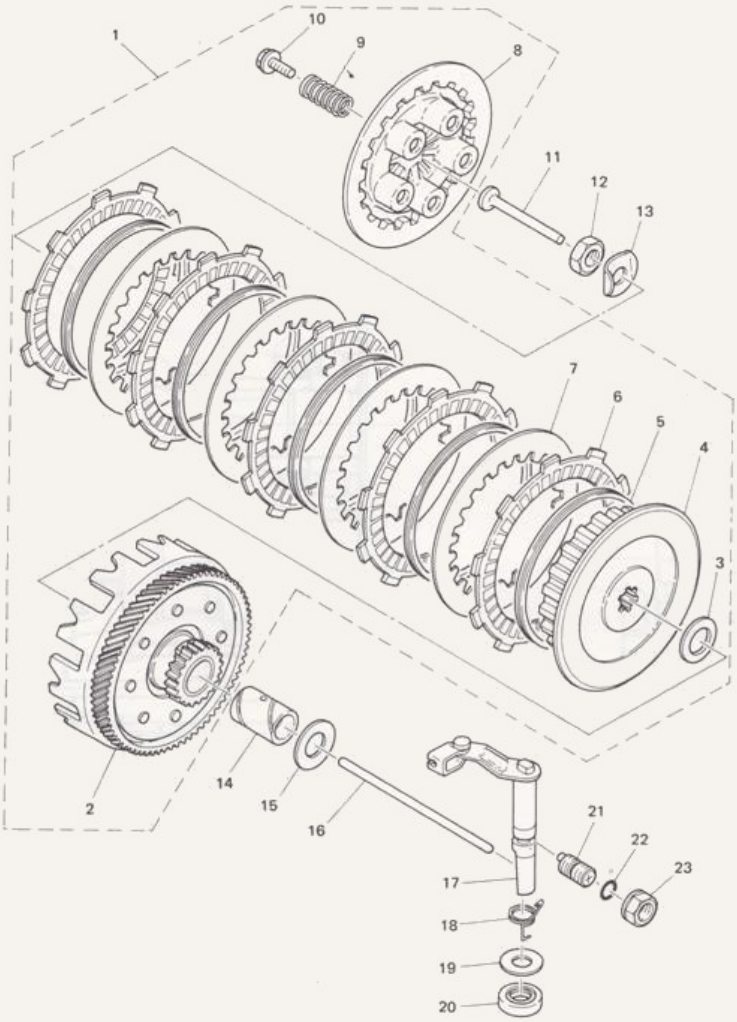
NOTE:

Crankcase cover can be removed without removing Autolube pump.

G. Clutch Assembly and Primary Drive Gear

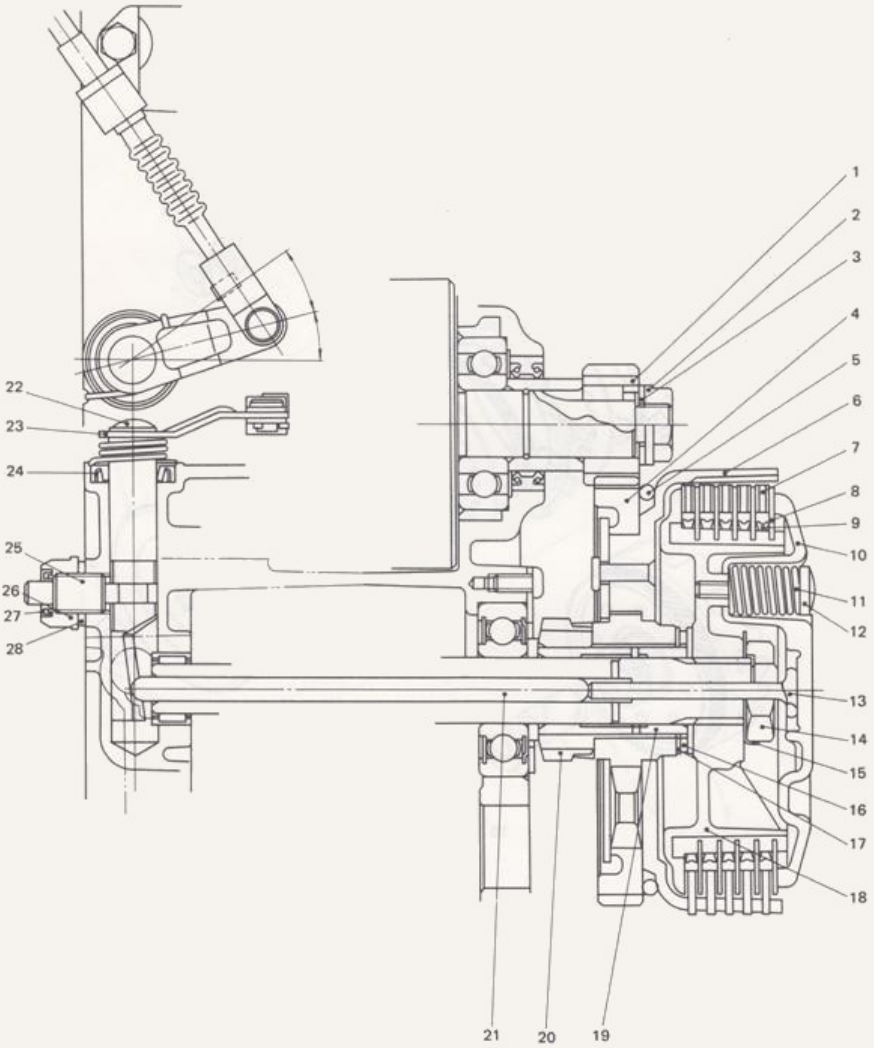
1. Remove five clutch spring holding screws, pressure plate, clutch plates, friction plates, push rod 1.

Clutch



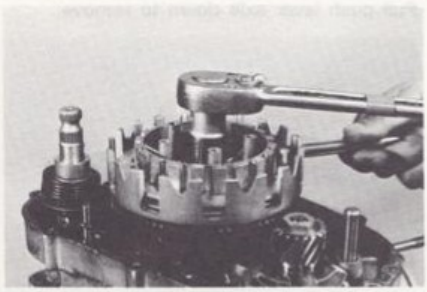
1. Clutch assembly
2. Primary driven gear complete
3. Thrust plate, left
4. Clutch boss
5. Cushion ring
6. Friction plate
7. Clutch plate 2
8. Pressure plate
9. Compression spring
10. Hexagon bolt with washer
11. Push rod 1
12. Hexagon nut
13. Lock washer
14. Spacer
15. Plate washer
16. Push rod 2
17. Push lever assembly
18. Torsion spring
19. Plate washer
20. Oil seal
21. Screw
22. O-ring
23. Nut

Primary Drive

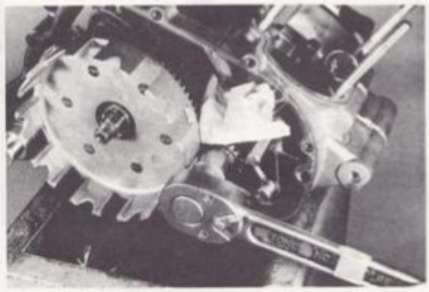


1. Primary drive gear
2. Drive gear locknut
3. Lock washer
4. Primary driven gear
5. O-ring
6. Clutch housing
7. Friction plate
8. Clutch plate
9. Cushion ring
10. Pressure plate
11. Clutch spring
12. Spring screw
13. Push rod (2)
14. Driven gear locknut
15. Lock washer
16. Thrust plate
17. Thrust bearing
18. Clutch boss
19. Bushing
20. Kick pinion gear
21. Push rod (1)
22. Push axle
23. Push axle lever
24. Push axle oil seal
25. Push axle adjusting screw
26. Adjusting screw locknut
27. Adjusting screw oil seal
28. Gasket

2. Install clutch holding tool on clutch boss. Remove locknut, washers, in that order.



3. Loosen primary drive gear by first placing a folded rag (at least 16 layers) between the teeth of the primary gears to lock them as shown in the figure. Then loosen drive gear nut. Remove nut and washer.



4. Remove driven gear assembly, primary drive gear, crankshaft oil seal retainers, and tachometer drive gear.

NOTE:

A universal gear puller may be needed to remove primary drive gear from crankshaft. If driven gear spacing collar and spacing washer remain on the shaft, remove at this time.

H. Kick Axle Assembly

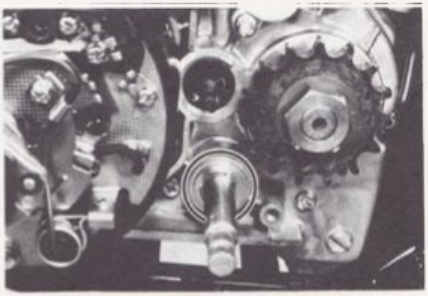
Install kick crank on kick axle. Rotate kick axle counter-clockwise approximately 1/8 turn and pull straight out.

I. Change Shaft Assembly

Two types of change lever assemblies are used. The DT125(A,B,C) uses a one-piece change shaft. The DT100 and DT175(A,B,C) use two change shafts and two interconnecting levers.

1. Removing change shaft assembly "DT125"(A,B,C Models)

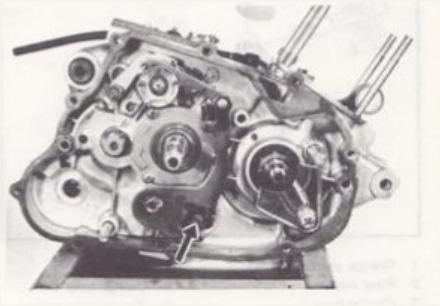
a. Remove circlip and washer from shaft (left side crankcase).



b. On right side of engine, lift spring-loaded arm above shift drum end plate and pull change shaft assembly out.

NOTE:

Shift return spring will come off with change shaft assembly.



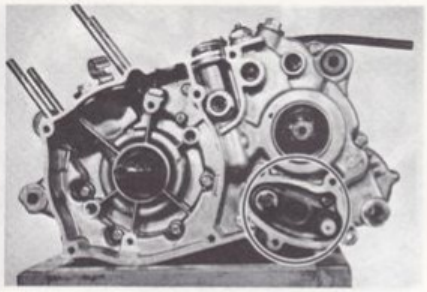
2. Removing change shaft assembly DT100 and DT175 (A, B, C Models)

a. Remove shift mechanism cover.

NOTE:

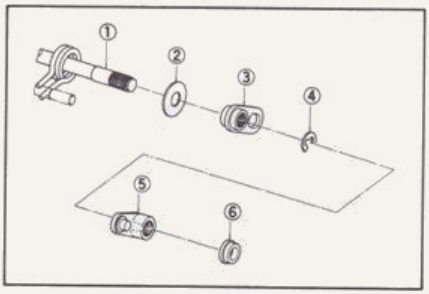
Change shaft 2 (Ref. 7—5) may come off with cover.

b. Remove outside shim from change shaft 2 or stuck to change lever 3 and put aside.



c. Remove circlip (E-8) holding change lever 4 to change shaft assembly.

d. Remove change lever 4, change axle washer, change lever roller, and inside shim and put aside.



1. Change shaft assembly
2. Plate washer
3. Change lever 4
4. Circlip
5. Change lever 3
6. Change lever roller

e. On right side of engine, lift spring-loaded arm above shift drum end plate and pull change shaft assembly out.

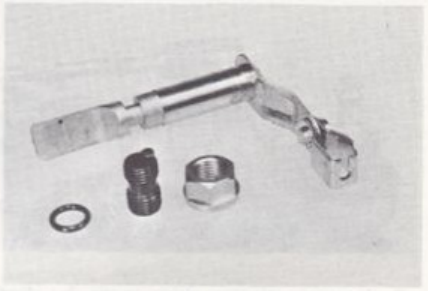
NOTE:

Shift return spring will come off with change shaft assembly.

J. Clutch Push Lever Axle

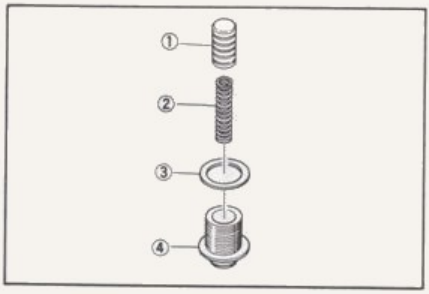
Loosen adjusting screw lock nut and remove adjusting screw.

Pull push lever axle down to remove.

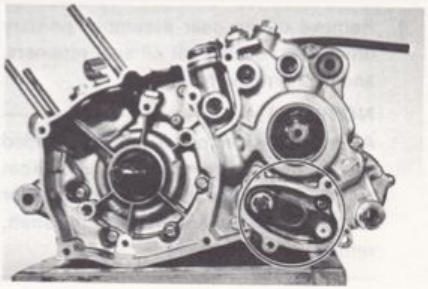


K. Shift Cam Stopper

Remove bolt, spring and stopper.

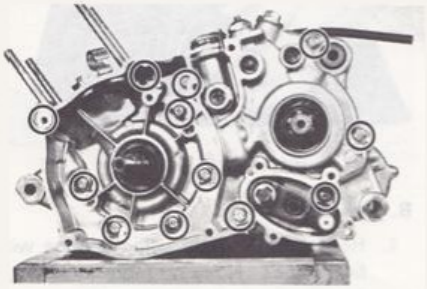


1. Cam stopper
2. Cam stopper spring
3. Drain plug gasket
4. Spring screw



L. Crankcase

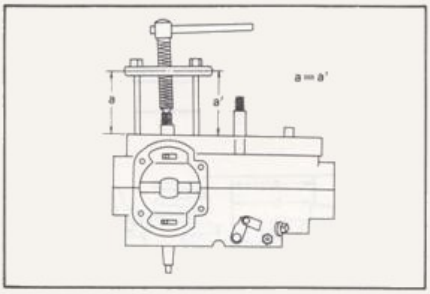
1. Working in a crisscross pattern, loosen 14 hexagon bolts 1/4 turn each. Remove them after all are loosened.



2. Install crankcase separating tool as shown.

NOTE:

Fully tighten the tool securing bolts, but make sure the tool body is parallel with the case. If necessary, one screw may be backed out slightly to level tool body.



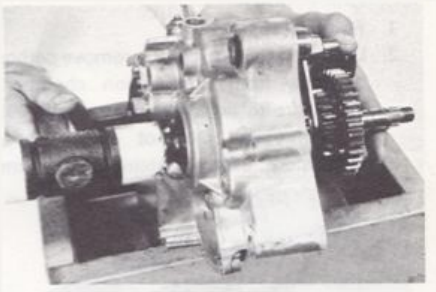
CAUTION:

Use soft hammer to tap on the case half. Tap only on reinforced portions of case. Do not tap on gasket mating surface. Work slowly and carefully. Make sure the case halves separate evenly. If one end "hangs up", take pressure off the push screw, realign and start over. If the halves are reluctant to separate, check for a remaining case screw or fitting. Do not force.

3. As pressure is applied, alternately tap on the front engine mounting boss, the transmission shafts and the shift drum.

M. Transmission

Transmission shafts, shift forks and shift cam should be removed as an assembly. Tap lightly on the transmission drive shaft with a soft hammer to remove.



NOTE:

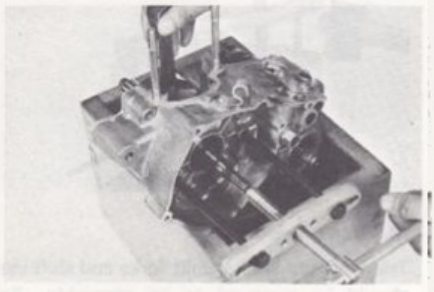
Remove assembly carefully. Note the position of each part. Pay particular attention to the location and direction of shift forks.

N. Crankshaft

Remove crankshaft assembly with the crankcase separating tool.

NOTE:

Note the thrust shim position, if any.



3-4. INSPECTION AND REPAIRING

A. Cylinder Head

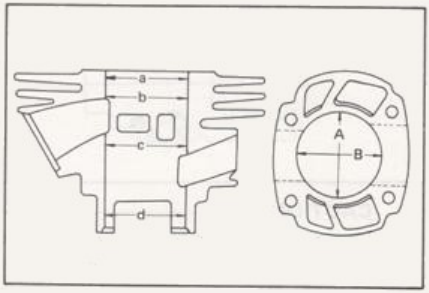
1. Remove spark plug.
2. Using a rounded scraper, remove carbon deposits from combustion chamber. Take care to avoid damaging the spark plug threads. Do not use a sharp instrument; avoid scratching aluminum.

3. Place on a surface plate. There should be no warpage. Correct by re-surfacing as follows:
   Place 400 ~ 600 grit wet sandpaper on surface plate and re-surface head using a figure-eight sanding pattern. Rotate head several times to avoid removing too much material from one side.

B. Cylinder

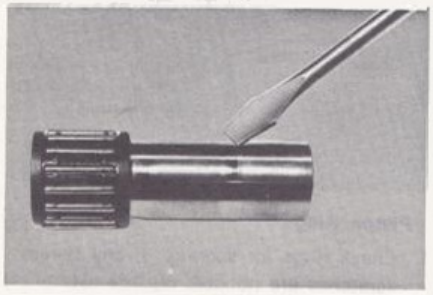
1. Hone cylinder bore using a hone with fine stones. Hone no more than required to remove all wear marks.
2. Using a cylinder gauge set to standard bore size measure the cylinder. Measure front-to-rear and side-to-side at top, center and bottom just above exhaust port. Compare minimum and maximum measurements. If over tolerance and not correctable by honing, rebore to next over-side.

Max. allowable taper ...	0.05 mm
Max. allowable out-of-round	0.01 mm



C. Piston Pin and Bearing

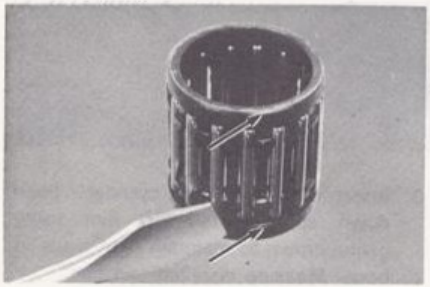
1. Check the pin for signs of wear. If any wear is evident, replace pin and bearing.



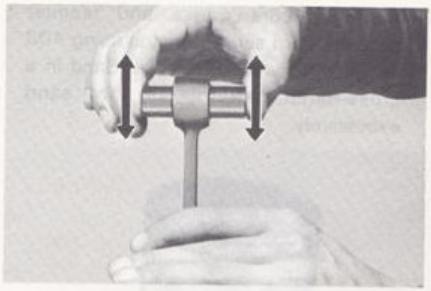
2. Check the pin and bearing for signs of heat discoloration. If excessive (heavily blued), replace both.

NOTE:
Shiny spots on pin from race wear are normal. Replace pin and bearing only if wear is excessive (indentation on pin, etc.).

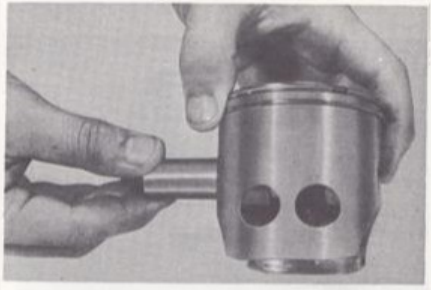
3. Check the bearing cage for excessive wear or damage. Check the rollers for signs of flat spots. If found, replace pin and bearing.



4. Apply a light film of oil to pin and bearing surfaces. Install in connecting rod small end. Check for play. There should be no noticeable vertical play. If play exists, check connecting rod small end for wear. Replace pin and bearing or all as required.

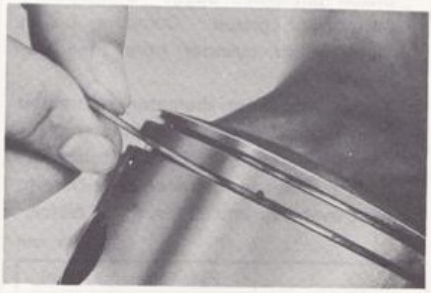


5. The piston pin should have no noticeable freeplay in piston. If the piston pin is loose, replace the pin and/or the piston.



D. Piston

1. Remove piston ring.
2. Remove carbon deposits from piston crown.
3. Remove carbon deposits from ring grooves.

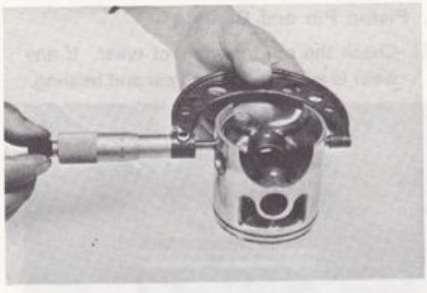


4. Remove score marks and lacquer deposits from sides of piston using 400 ~ 600 grit wet sandpaper. Sand in a cross-hatch pattern. Do not sand excessively.

5. Wash piston in solvent and wipe dry.
6. Using an outside micrometer, measure piston diameter. The piston is cam-ground and tapered. The only measuring point is at right-angles to the piston pin holes about 10 mm from bottom of piston. Compare piston diameter to cylinder bore measurements.
   Piston maximum diameter subtracted from minimum cylinder diameter gives piston clearance. If beyond tolerance, hone cylinder to tolerance or re-bore to next over-size and fit over-size piston.

Unit: mm

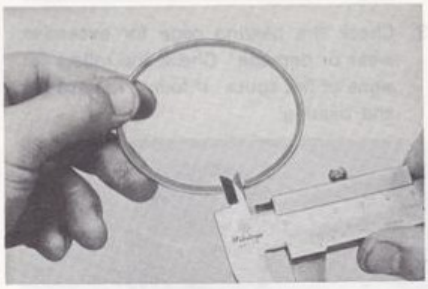
Model	Piston clearance (mm)	
	Min.	Max.
DT100 A, B, C	0.040	0.045
DT125 A, B	.040	.045
DT125 C	0.035	0.040
DT175 A, B, C	0.040	0.045
Maximum wear limit	0.1	



E. Piston Rings

1. Check rings for scoring. If any severe scratches are noticed, replace set.
2. Measure ring end gap in free position. If beyond tolerance, replace set.

RING END GAP mm (in)	DT100		DT125		DT175
	A,B	C	A,B	C	A,B,C
Top ring (free) mm (in)	3.0 (0.118)	6.5 (0.256)	5.5 (0.216)	4.5 (0.177)	8.5 (0.334)
2nd ring (free) mm (in)	4.0 (0.157)	6.0 (0.236)	3.5 (0.138)	5.5 (0.216)	4.5 (0.177)

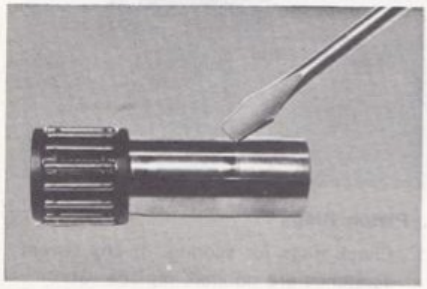


3. Insert each ring into cylinder. Push down approximately 20 mm using piston crown to maintain right-angle to bore. Measure installed end gap.
   If beyond tolerance, replace set.

	all 100, 125	all 175
Top ring end gap, installed	0.20 mm	0.40 mm
2nd ring end gap, installed	0.20 mm	0.40 mm

C. Piston Pin and Bearing

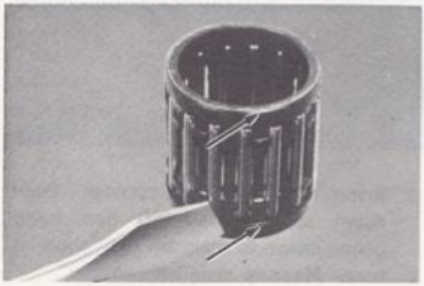
1. Check the pin for signs of wear. If any wear is evident, replace pin and bearing.



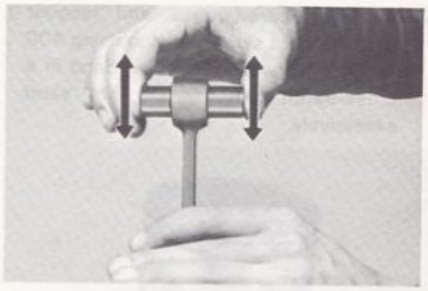
2. Check the pin and bearing for signs of heat discoloration. If excessive (heavily blued), replace both.

   NOTE:
   Shiny spots on pin from race wear are normal. Replace pin and bearing only if wear is excessive (indentation on pin, etc.).

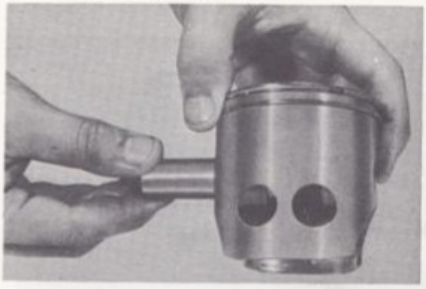
3. Check the bearing cage for excessive wear or damage. Check the rollers for signs of flat spots. If found, replace pin and bearing.



4. Apply a light film of oil to pin and bearing surfaces. Install in connecting rod small end. Check for play. There should be no noticeable vertical play. If play exists, check connecting rod small end for wear. Replace pin and bearing or all as required.

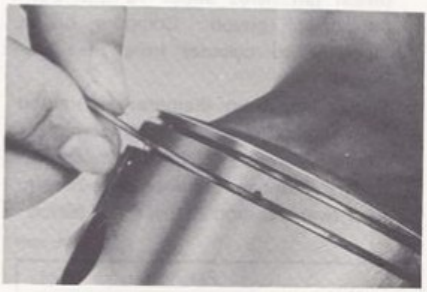


5. The piston pin should have no noticeable freeplay in piston. If the piston pin is loose, replace the pin and/or the piston.



D. Piston

1. Remove piston ring.
2. Remove carbon deposits from piston crown.
3. Remove carbon deposits from ring grooves.

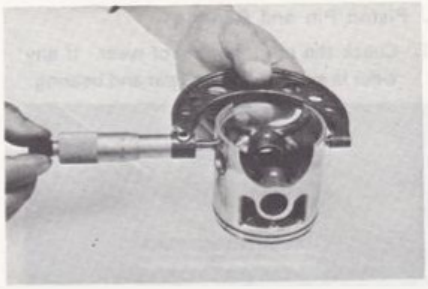


4. Remove score marks and lacquer deposits from sides of piston using 400 ~ 600 grit wet sandpaper. Sand in a cross-hatch pattern. Do not sand excessively.

5. Wash piston in solvent and wipe dry.
6. Using an outside micrometer, measure piston diameter. The piston is cam-ground and tapered. The only measuring point is at right-angles to the piston pin holes about 10 mm from bottom of piston. Compare piston diameter to cylinder bore measurements.
   Piston maximum diameter subtracted from minimum cylinder diameter gives piston clearance. If beyond tolerance, hone cylinder to tolerance or re-bore to next over-size and fit over-size piston.

Unit: mm

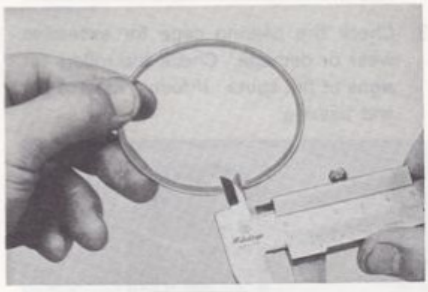
Model	Piston clearance (mm)	
	Min.	Max.
DT100 A, B, C	0.040	0.045
DT125 A, B	.040	.045
DT125 C	0.035	0.040
DT175 A, B, C	0.040	0.045
Maximum wear limit	0.1	



E. Piston Rings

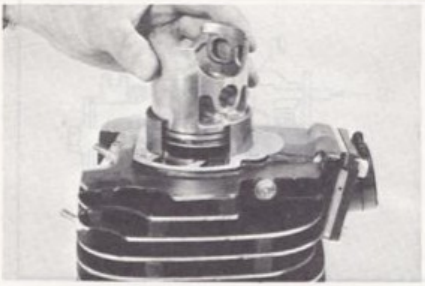
1. Check rings for scoring. If any severe scratches are noticed, replace set.
2. Measure ring end gap in free position. If beyond tolerance, replace set.

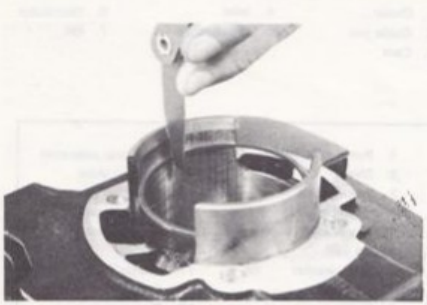
RING END GAP mm (in)	DT100		DT125		DT175
	A,B	C	A,B	C	A,B,C
Top ring (free) mm (in)	3.0 (0.118)	6.5 (0.256)	5.5 (0.216)	4.5 (0.177)	8.5 (0.334)
2nd ring (free) mm (in)	4.0 (0.157)	6.0 (0.236)	3.5 (0.138)	5.5 (0.216)	4.5 (0.177)



3. Insert each ring into cylinder. Push down approximately 20 mm using piston crown to maintain right-angle to bore. Measure installed end gap. If beyond tolerance, replace set.

	all 100, 125	all 175
Top ring end gap, installed	0.20 mm	0.40 mm
2nd ring end gap, installed	0.20 mm	0.40 mm





4. With rings installed in grooves, insert feeler gauge between ring side and groove. If beyond tolerance, replace ring and/or piston as required.

	Min.	Max.
1st ring groove clearance	—	—
2nd ring groove clearance	0.03 mm	0.07 mm

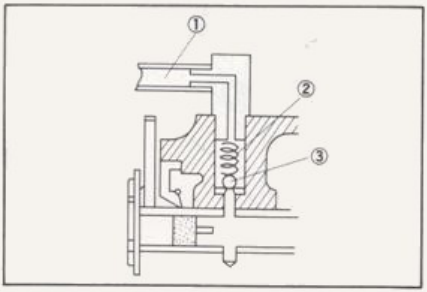
5. Check ring expander. If worn excessively, or broken, replace ring set.

F. Autolube Pump

The Yamaha Autolube Pump is a sealed unit. Its output has been checked and adjusted at the factory. Except for the components shown in the illustration, no further disassembly of the pump should be attempted.

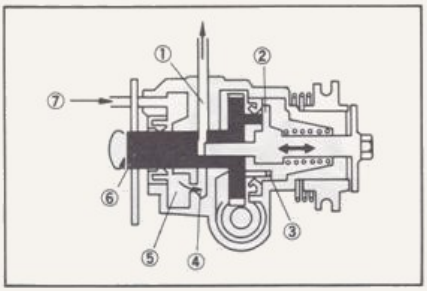
The adjustments and servicing of the Autolube pump are covered in 2-3-C.

1. Description of operation
   a. The pump is driven directly off the crankshaft. Its output is controlled by the throttle-grip setting and the engine rpm.
   b. Oil flow to the pump from the Autolube reservoir tank is via gravity feed.
   c. Oil flow from the pump to the cylinder is via rubber tubing. Oil is delivered directly into the intake port where it is picked-up by the carburetor air stream for delivery to the bottom end and cylinder walls.
   d. A spring-loaded check ball at the delivery line junction prevents backflow to the pump when the engine is not running.



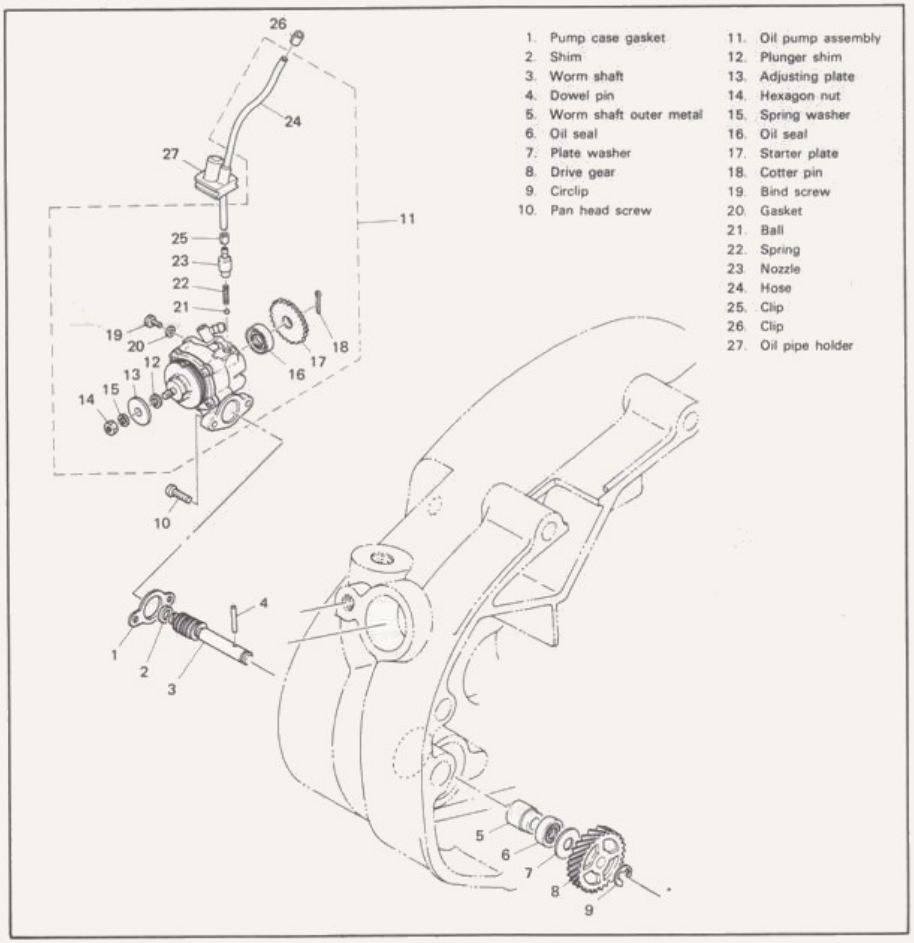
1. Delivery pipe
2. Check-ball spring
3. Check-ball

2. Removal and disassembly
   a. Remove (two) Phillips screws securing pump to crankcase cover. Remove pump.
   b. Disassembly is straight forward and can be accomplished by the parts illustration.



1. Outlet
2. Guide pin
3. Cam
4. Inlet
5. Oil chamber
6. Distributor
7. Oil

Autolube Pump



1. Pump case gasket
2. Shim
3. Worm shaft
4. Dowel pin
5. Worm shaft outer metal
6. Oil seal
7. Plate washer
8. Drive gear
9. Circlip
10. Pan head screw
11. Oil pump assembly
12. Plunger shim
13. Adjusting plate
14. Hexagon nut
15. Spring washer
16. Oil seal
17. Starter plate
18. Cotter pin
19. Bind screw
20. Gasket
21. Ball
22. Spring
23. Nozzle
24. Hose
25. Clip
26. Clip
27. Oil pipe holder

3. Troubleshooting and repair

a. Wear or an internal malfanction may cause pump output to vary from the factory setting. This situation is, however, extremely rare. If output is suspect, check the following:
   1) Obstructions in delivery line to pump or from pump to cylinder.
   2) Worn or damaged pump body seal or crankcase cover seal.
   3) Missing or imporperly installed check ball or spring.
   4) Improperly installed or routed oil delivery line(s).
   5) Loose fitting(s) allowing air entry to pump and/or engine.

b. If all inspections show no obvious problems and output is still suspect, connect a delivery line from the pump to a graduated container (cc). Keep the delivery line short. Rotate the pump bleed wheel while counting pump plunger strokes. If output is not to specification, replace pump assembly.

Autolube Pump Specifications

Pump Output in cc's @200 Strokes (DT models A, B, C)		DT100 (all)	DT125/175(all)
Max. Throttle	Min.	4.63	8.79
	Max.	5.15	9.74
Min. Throttle	Min.	0.50	0.95
	Max.	0.63	1.19

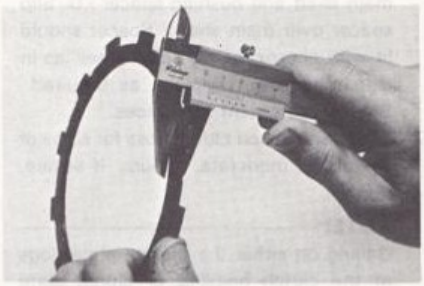
Pump Stroke Length (All Models)		
Maximum Throttle	Min.	1.85 mm
	Max.	2.05 mm
Minimum Throttle	Min.	0.20 mm
	Max.	0.25 mm

4. Reassembly
   Always install a new pump case gasket.

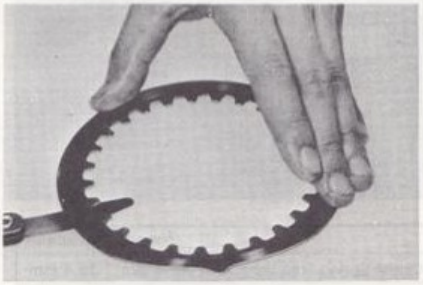
G. Clutch

1. Measure the friction plates at three or four points. If their minimum thickness exceeds tolerance, replace.

	New	All Models Wear Limit
Friction Plate Thickness:	3.0 mm	2.7 mm



2. Check the friction plate for signs of warpage and heat damage, replace as required.
3. Check each clutch plate for signs of heat damage and warpage. Place on surface plate (Plate glass is acceptable) and use feeler gauge as illustrated. If warpage exceeds tolerance, replace.



Clutch Plate Warpage Allowance:
0.05 mm maximum

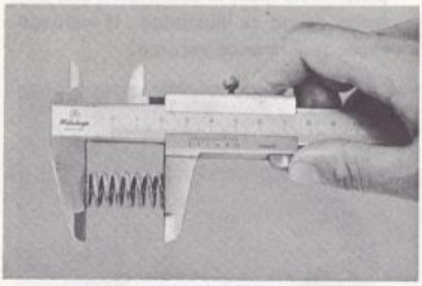
NOTE:
For optimum performance, if any friction or clutch plate requires replacement, it is advisable to replace the entire set.

4. Thoroughly clean the primary driven gear assembly and spacer.
   Apply a light film of oil on the bushing surface and spacer. Fit the spacer into the bushing. It should be a smooth, thumb-press fit. The spacer should rotate smoothly within the bushing.

5. Check the bushing, spacer and main shaft for signs of galling heat damage, etc. If severe, replace as required.
6. Apply a thin coat of oil on transmission main shaft and bushing spacer I.D. Slip spacer over main shaft. Spacer should fit with approximately same "feel" as in clutch housing. Replace as required. See measurement tolerances.
7. Check splines on clutch boss for signs of galling. If moderate, deburr. If severe, replace.

NOTE:
Galling on either the friction plate dogs of the clutch housing or clutch plate splines of the clutch boss will cause erratic clutch operation.

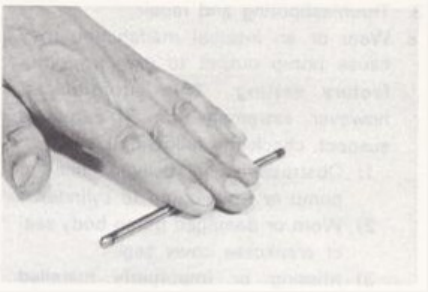
8. Measure each clutch spring. If beyond tolerance, replace.



	New	Minimum
Clutch Spring Free Length	36.4 mm	35.4 mm

NOTE:
For optimum clutch operation it is advisable to replace the clutch springs as a set, if one or more are faulty.

9. Roll the push rod across a surface plate. If rod is bent, replace.



H. Primary Drive

Primary drive is via helical cut gears. The drive gear is mounted on the crankshaft and the driven gear is integral with the clutch assembly and mounted on the transmission main shaft.

Primary Reduction Ratio (All Models)		
No. of Teeth		Ratio
Drive	Driven	
19	74	3.894

1. Check the drive gear and driven gear for obvious signs of wear or damage from foreign material within the primary case.
2. If primary drive gears exhibit excessive noise during operation, gear lash may be incorrect.
   Numbers are scribed on the side of each gear. Add these numbers. If their total exceed tolerance, replace with a numbered gear that will bring total within specification.

NOTE:
This procedure is rarely required. However, if a gear must be replaced due to damage, it is always advisable to pay strict attention to the lash numbers during replacement.

	Lash Numbers		
	DT100C	DT125C	DT175C
Primary Drive Gear	80 to 83	88 to 92	88 to 92
Primary Driven Gear	52 to 56	52 to 56	52 to 56
Lash Tolerance	135 to 137	144	144

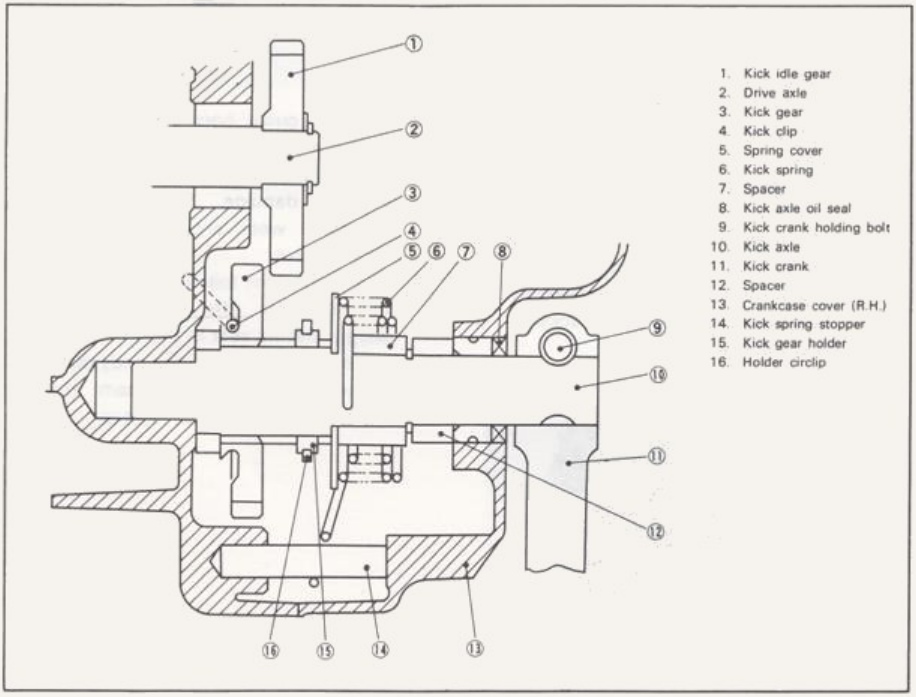
3. Check the shoulder on the primary drive gear where the crankshaft seal rides. It should not be severely worn or galled. If so, replace gear and seal.
4. Check the O-ring on the crankshaft. If damaged or misshapen, replace.
5. Check the tightness of rivets at the rear of the clutch housing. Check to see if the gear on the clutch housing is loose excessively due to the deterioration of damper rubber. Check the back plate for warpage.

Kick Starter Mechanism

I. Kick Starter Mechanism

1. The primary kick-starter system (one-touch kick-starter) is employed.
   However, a new "non-constant-mesh" mechanism has been introduced instead of the constant-mesh kick gear type, such as the ratchet and rollerlock system.

   That is, the kick gear meshes with idler gear only when the kick starter pedal is kicked. After the engine has started, the kick gear and the idler gear disengage. This mechanism not only eliminates noise resulting from the constant mesh of the kick gear with the idler gear, but also greatly contributes to the durability of the kick starter assembly.



2. Checking

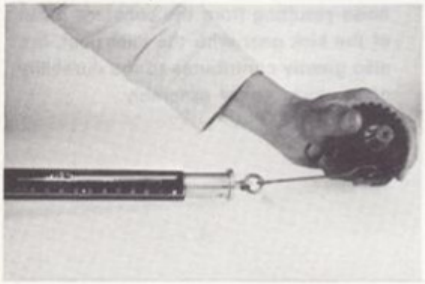
a. Kick axle assembly

1) Remove the each parts from axle assembly.

b. Kick clip

1) The pressure of the kick clip is 2.2 kg (4.85 lb).

If above pressure is too strong, spring wear and kick starter slipping will result. On the other hand, if it is too weak, the same slippage will occur particularly at low temperatures. Do not try to bend the clip.



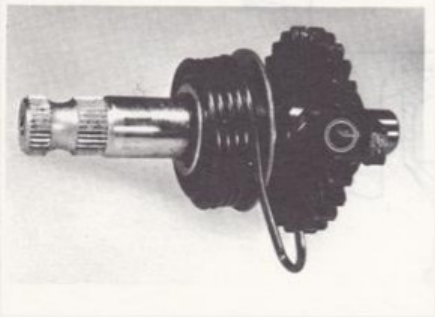
2) Check the clip for damage and wear, and determine whether or not, it should be replaced taking the above (item 2) into consideration.

Kick gear and kick idle gear

Install the kick gear with chamfered side of the teeth facing the kick spring. Clean the kick gear in solvent and check the following:

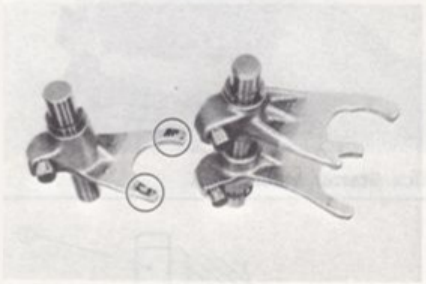
a) Scratches, damage and cracks.

b) Wear in the axle hole.

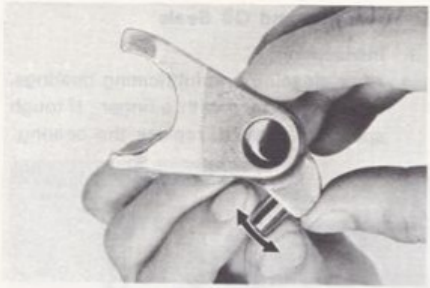


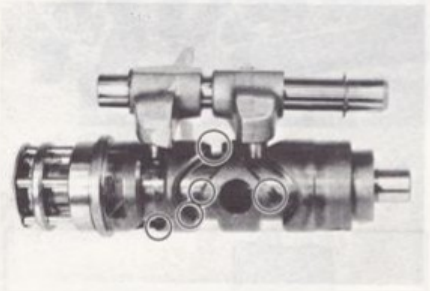
J. Transmission

1. Inspect each shift fork for signs of galling on gear contact surfaces. Check for bending. Make sure each fork slides freely on its guide bar.

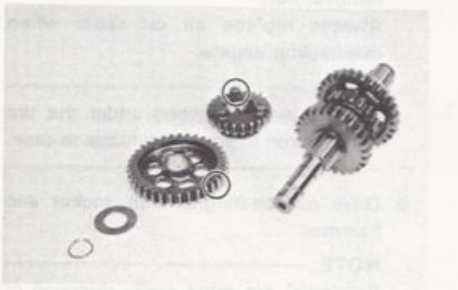


2. Roll the guide bars across a surface plate. If any bar is bent, replace.
3. Check the shift cam grooves for signs of wear or damage. If any profile has excessive wear and/or any damage, replace cam.
4. Check the cam followers on each shift fork for wear. The follower should fit snugly into its seat in the shift fork, but not over-tight. Check the ends that ride in the grooves in the shift cam. If they are worn or damaged, replace.





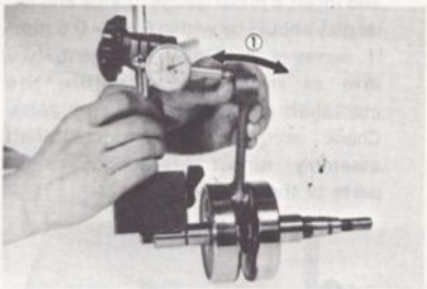
5. Check shift cam dowel pins and side plate for looseness, damage, or wear. Repair as required.
6. Check the transmission shafts using a centering device and dial gauge. If any shaft is bent, replace.
7. Carefully inspect each gear. Look for signs of obvious heat damage (blue discoloration). Check the gear teeth for signs of pitting, galling, or other extreme wear. Replace as required.



8. Check to see that each gear moves freely on its shaft.
9. Check to see that all washers and clips are properly installed and undamaged. Replace bent or loose clips and bent washers.
10. Check to see that each gear properly engages its counterpart on the shaft. Check the mating dogs for rounded edges, cracks, or missing portions. Replace as required.

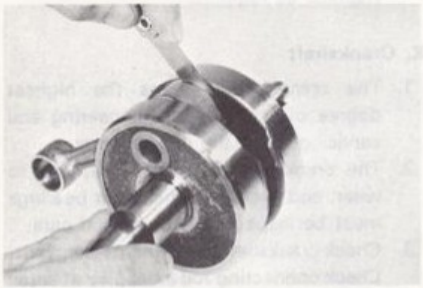
K. Crankshaft

1. The crankshaft requires the highest degree of accuracy in engineering and servicing of all the engine parts.
2. The crankshaft is more susceptible to wear, and therefore, the crank bearings must be inspected with special care.
3. Check crankshaft components per chart. Check connecting rod axial play at small end (to determine the amount of wear of carnk pin and bearing at large end).

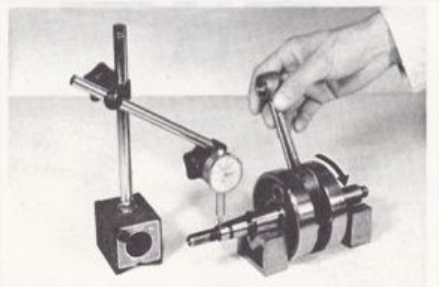


1. Axial play

Small end play should not exceed 2 mm.
If small end play exceeds 2 mm, disassemble the crankshaft, check connecting rod crank pin and large end bearing. Replace defective parts.
Small end play after reassembly should be within 0.8 ~ 1.0 mm.
Check the connecting rod for axial play at large end.



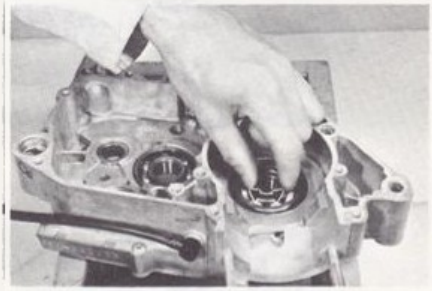
Move the connecting rod to one side and insert a feeler gauge. Large end axial play should be within 0.4 ~ 0.5 mm.
If excessive axial play is present, (0.6 mm or more) disassemble the crankshaft and replace any worn parts.
Check accuracy of the crankshaft assembly runout. (Misalignment of parts of the crankshaft)



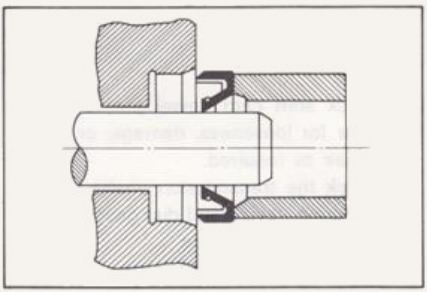
Dial gauge readings should be within 0.03 mm.
Correct any misalignment by tapping the flywheel with a brass hammer and by using a wedge.

L. Bearings and Oil Seals

1. Inspection.
   a. After cleaning and lubricating bearings, rotate inner race with a finger. If rough spots are noticed, replace the bearing.



   b. Check oil seal lips for damage wear. Replace as required.

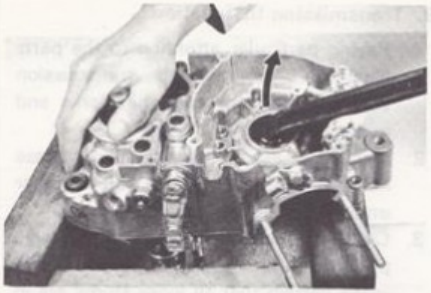


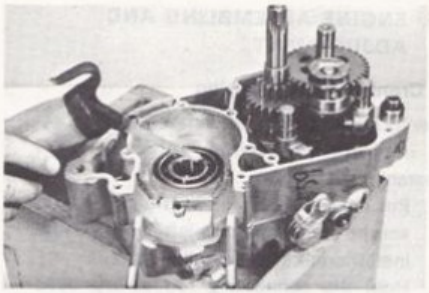
2. Removal
   a. Pry oil seal(s) out of place using a tire removal iron.
   Always replace all oil seals when overhauling engine.

   NOTE:
   Place a piece of wood under the tire removal iron to prevent damage to case.

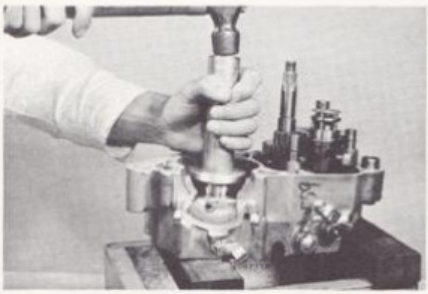
   b. Drive out bearing(s) with socket and hammer.

   NOTE:
   Bearing(s) are most easily removed or installed if the cases are first heated to approximately 90° ~ 120°C (200 250°F). Bring the case up to proper temperature slowly. Use an oven to avoid distortion of the cases.





3. Installation
   Install bearing(s) and oil seal(s) with their manufacturer's marks or numbers facing outward. (In other words, the stamped letters must be on the exposed view side). When installing bearing(s) or oil seal(s), apply a light coating of light-weight lithium base grease to balls and seal lip(s).



M. Crankcase

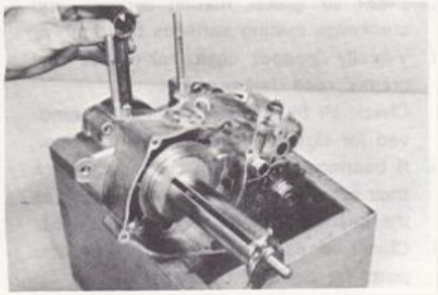
1. Thoroughly wash the case halves in mild solvent.
2. Clean all gasket mating surfaces and crankcase mating surfaces thoroughly.
3. Visually inspect case halves for any cranks, road damage, etc.
   Check all fittings not previously removed for signs of loosening or damage.
5. If bearings have been removed, check their seats for signs of damage (such as the bearing spinning in the seat, etc.).
6. Check oil delivery pasages in transfer ports for signs of blockage.
7. If bearings have not been removed, oil them thoroughly immediately after washing and drying. Rotate the bearings checking for roughness indicating damaged races or balls.
8. Check needle bearing(s) in transmission section for damage. Replace as required.

3-5. ENGINE ASSEMBLING AND ADJUSTMENT

A. Crankshaft Installation

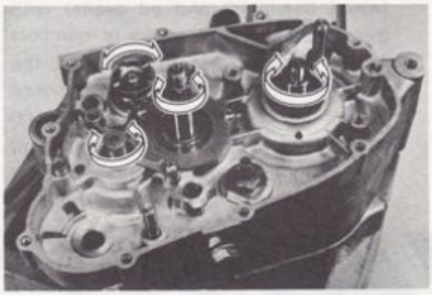
After all bearings and seals have been installed in both crankcase halves, install crankshaft as follows:

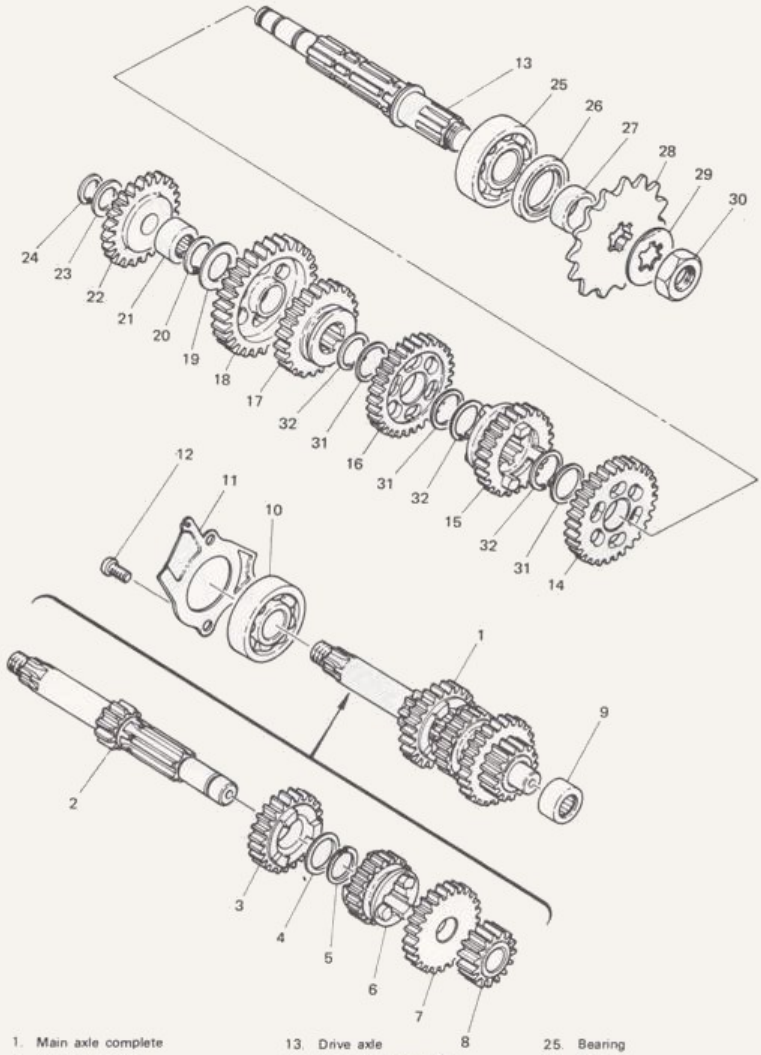
1. Put shim on left side of the crankshaft, set the crankshaft into left case half and install crankshaft installing tool.
2. Hold the connecting rod at top dead center with one hand while turning the handle of the installing tool with the other. Operate tool until crankshaft bottoms against bearing.



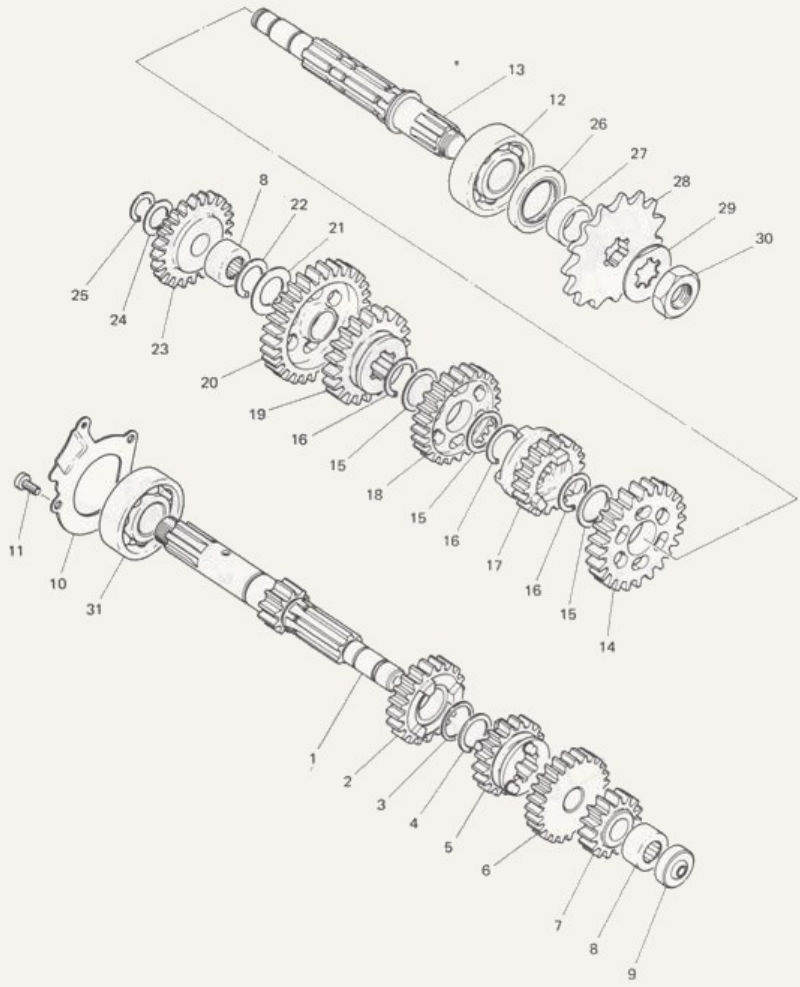
B. Transmission Installation

1. Paying particular attention to the parts illustration, assemble the transmission shafts, shift cam, and shift forks and guide bars in your hand.
2. Install the assembly into the left case half. Tap into place with soft hammer until all shafts are fully seated.
3. Check to see that all parts move freely prior to transmission operation and make certain that all loose shims are in place.

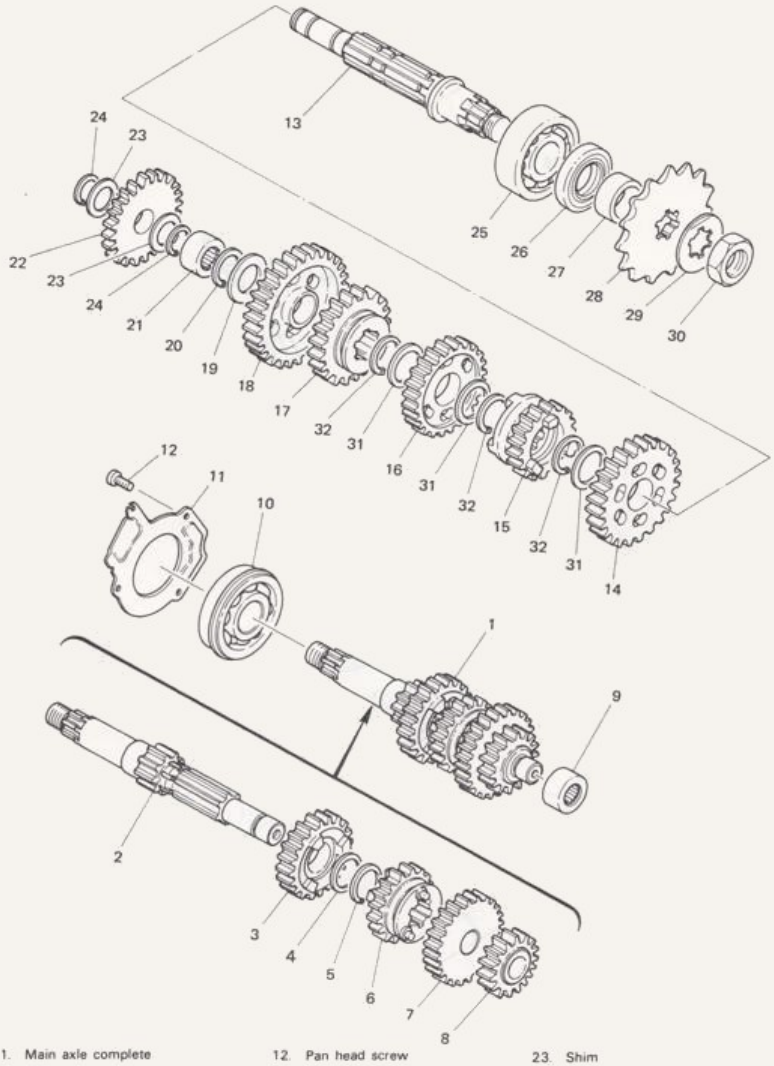




1. Main axle complete
2. Main axle (11T)
3. 4th pinion gear (23T)
4. Plate washer
5. Clip
6. 3rd pinion (19T)
7. 5th pinion gear (25T)
8. 2nd pinion gear (15T)
9. Bearing
10. Bearing
11. Bearing cover plate
12. Panhead screw
13. Drive axle
14. 2nd wheel gear (30T)
15. 5th wheel gear (20T)
16. 3rd wheel gear (26T)
17. 4th wheel gear (23T)
18. 1st wheel gear (35T)
19. Drive axle shim
20. Circlip
21. Bearing
22. Kick idler gear
23. Thrust washer
24. Circlip
25. Bearing
26. Oil seal
27. Collar
28. Drive sprocket (13T)
    Drive sprocket (14T)
    Drive sprocket (15T)
29. Lock washer
30. Locknut
31. Plate washer
32. Clip

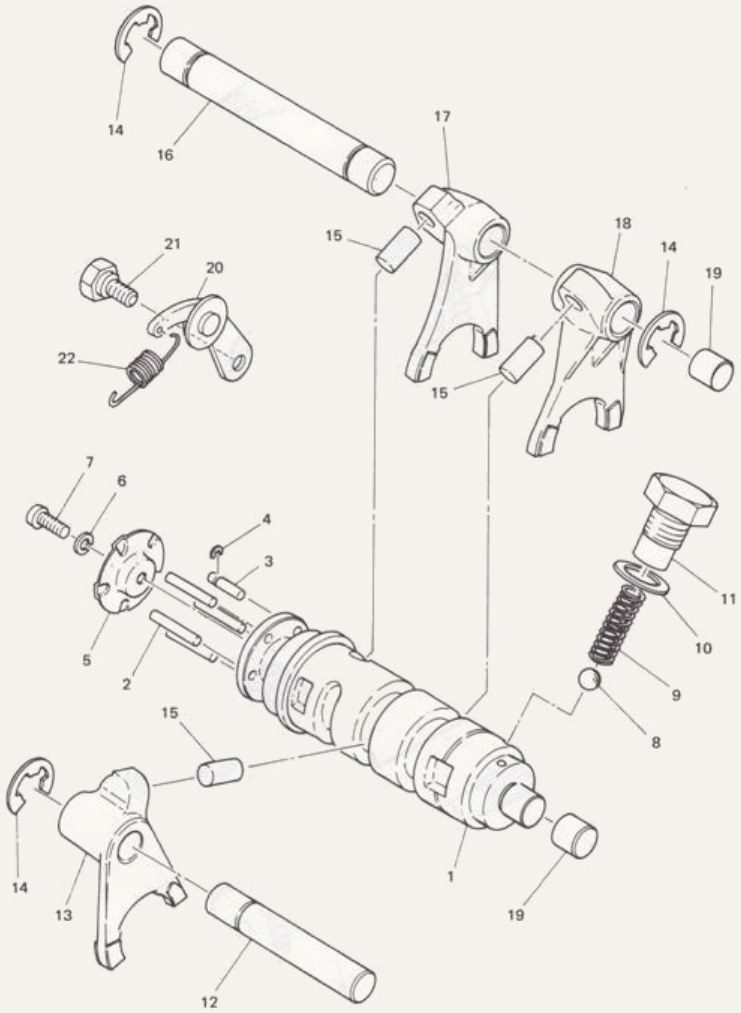


1. Main axle
2. 4th pinion gear (23T)
3. Gear hold washer
4. Clip
5. 3rd pinion gear (19T)
6. 5th pinion gear (25T)
7. 2nd pinion gear (15T)
8. Bearing
9. Push rod seal
10. Cover plate
11. Pan head screw
12. Bearing
13. Drive axle
14. 2nd wheel gear (30T)
15. Gear hold washer
16. Clip
17. 5th wheel gear (20T)
18. 3rd wheel gear (26T)
19. 4th wheel gear (23T)
20. 1st wheel gear (35T)
21. Drive axle shim
22. Circlip
23. Kick idle gear (25T)
24. Thrust whaser
25. Circlip
26. Oil seal
27. Distance collar
28. Drive sprocket (13T)
    Drive sprocket (14T)
    Drive sprocket (15T)
    Drive sprocket (16T)
29. Lock washer
30. Locknut
31. Bearing



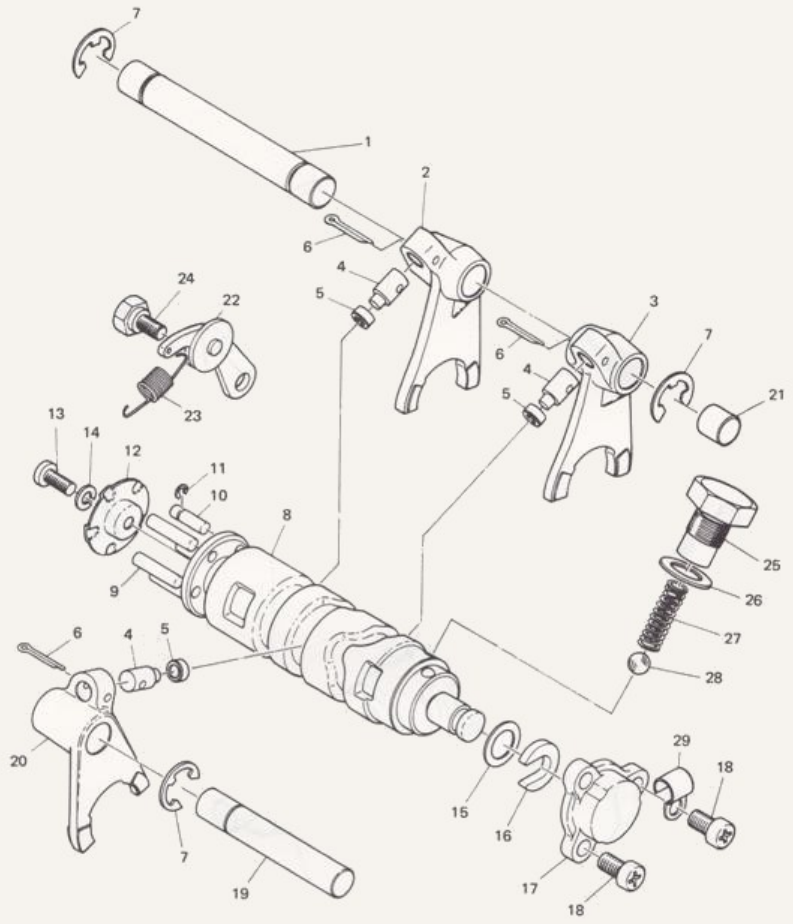
1. Main axle complete
2. Main axle
3. 4th pinion gear
4. Plate washer
5. Circlip
6. 3rd pinion gear
7. 5th pinion gear
8. 2nd pinion gear
9. Bearing
10. Bearing
11. Cover plate
12. Pan head screw
13. Drive axle
14. 2nd wheel gear
15. 5th wheel gear
16. 3rd wheel gear
17. 4th wheel gear
18. 1st wheel gear
19. Drive axle shim
20. Circlip
21. Bearing
22. Kick idle gear
23. Shim
24. Circlip
25. Bearing
26. Oil seal
27. Collar
28. Drive sprocket
29. Lock washer
30. Lock nut
31. Plate washer
32. Circlip

Shifter 1 (DT100A, B, C)



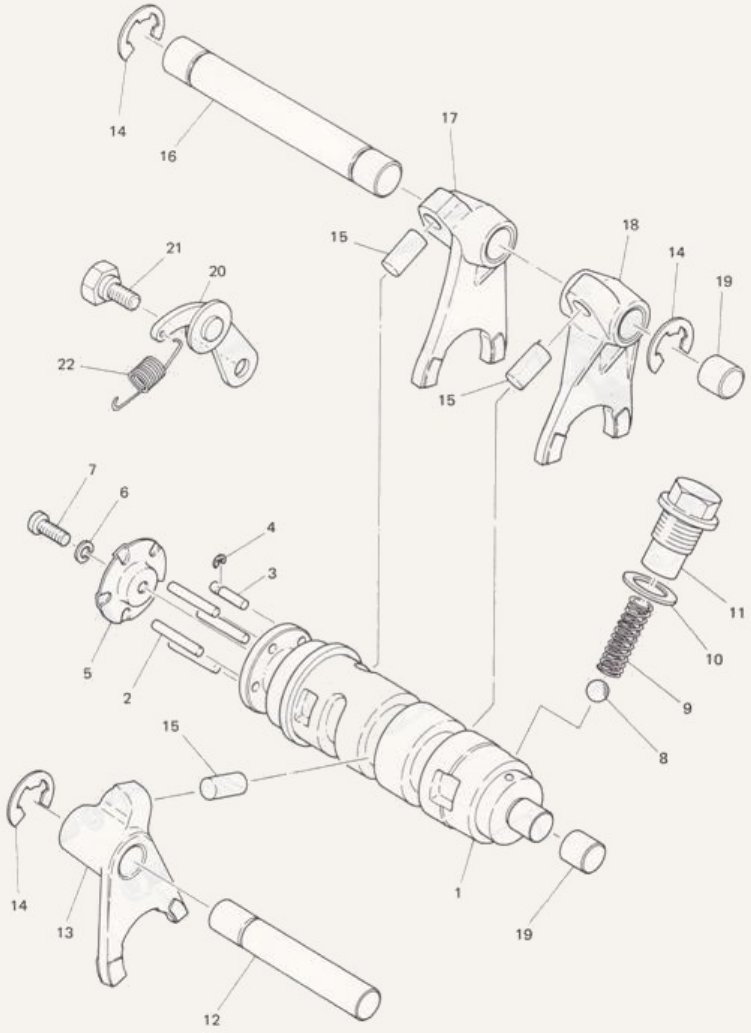
1. Shift cam
2. Dowel pin
3. Locating pin
4. Locating clip
5. Side plate
6. Spring washer
7. Panhead screw
8. Ball
9. Neutral spring
10. Gasket
11. Spring screw
12. Shift fork guide bar
13. Shift fork 2
14. Circlip
15. Cam follower pin
16. Shift fork guide bar
17. Shift fork 3
18. Shift fork 1
19. Blind plug
20. Stopper lever assembly
21. Stopper bolt
22. Stopper spring

Shifter 1 (DT125A, B, C)



1. Shift fork guide bar
2. Shift fork 3
3. Shift fork 1
4. Cam follower pin
5. Cam follower roller
6. Cotter pin
7. Circlip
8. Shift cam
9. Dowel pin
10. Locating pin
11. Locating pin clip
12. Side plate
13. Pan head screw
14. Spring washer
15. Plain washer
16. Shift cam holder
17. Shift cam blind plug
18. Pan head screw
19. Shift fork guide bar
20. Shift fork 2
21. Blind blug
22. Stopper lever assembly
23. Stopper spring
24. Stopper bolt
25. Spring screw
26. Gasket
27. Neutral spring
28. Ball
29. Clamp

Shifter 1 (DT175A, B, C)

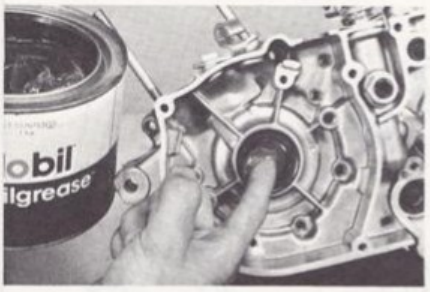


1. Shift cam
2. Dowel pin
3. Locating pin
4. Locating clip
5. Side plate
6. Spring washer
7. Panhead screw
8. Ball
9. Neutral spring
10. Gasket
11. Spring screw
12. Shift fork guide bar
13. Shift fork 2
14. Circlip
15. Cam follower pin
16. Shift fork guide bar
17. Shift fork 3
18. Shift fork 1
19. Blind plug
20. Stopper lever assembly
21. Stopper bolt
22. Stopper spring

C. Crankcase

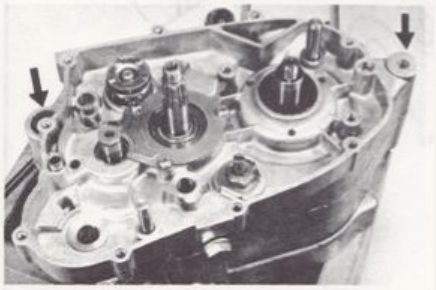
1. Apply Yamaha Bond No. 4 to the mating sufaces of both case halves. Apply thoroughly, over all mating surfaces.

   NOTE:
   Apply a coat of grease to oil seal lip on crankcase (L)

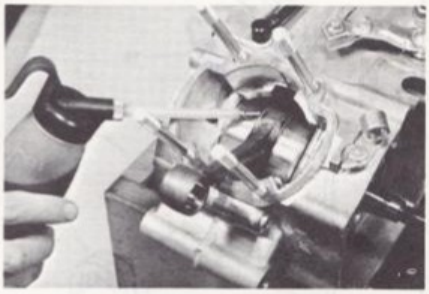


2. Set the crankcase right half onto the shafts and tap lightly on the case with a soft hammer to assemble.

   NOTE:
   1. Do not tap on machined surface or end of crankshaft.
   2. Before installing the crankshaft, check the crankshaft O-ring for scratches and damages.



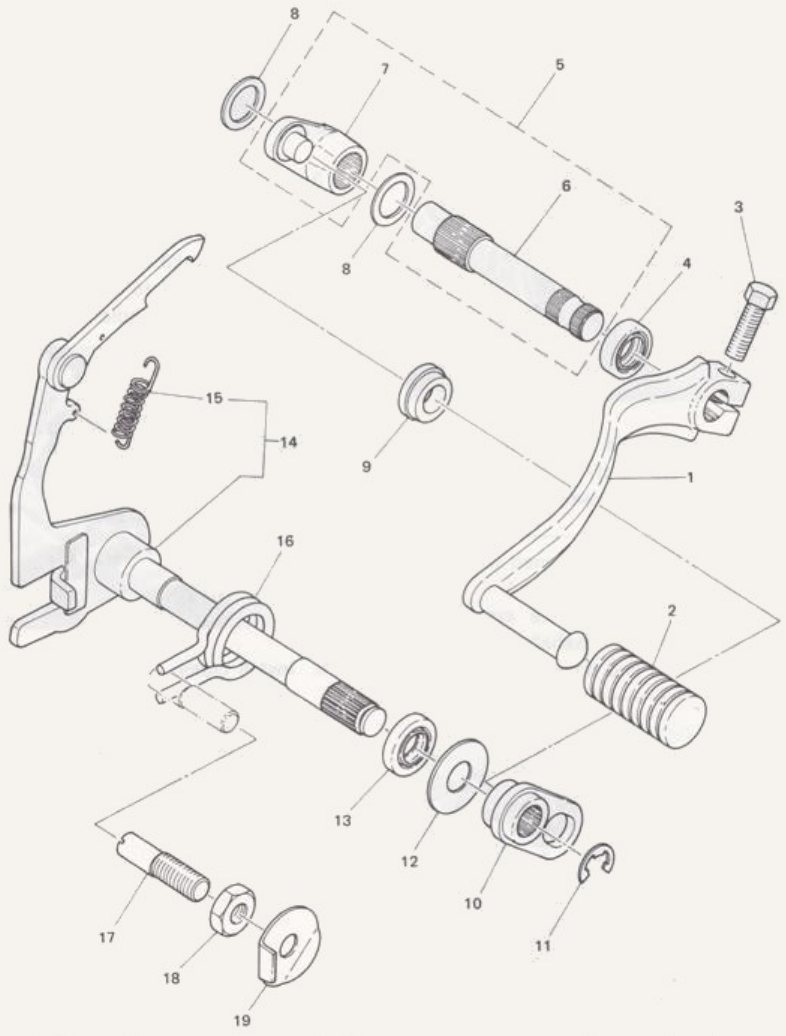
3. Install all crankcase bolt and tighten in stages using crisscross pattern.
4. After reassembly, apply a liberal coating of two-stroke oil to the crank pin and bearing and into each crankshaft bearing oil delivery hole.



5. Install clutch push lever axle and shift cam stopper.
6. Check crankshaft and transmission shafts for proper operation and freedom of movement.

D. Shifter

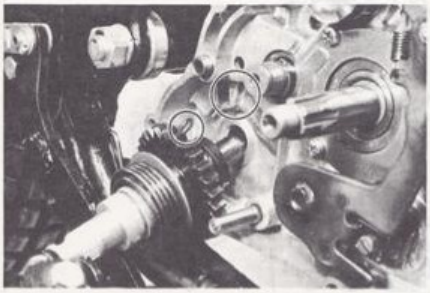
Take special care so that all parts are installed correctly. Particularly on the 100 and 175 models, refer to the list of parts as shown below for correct installation.



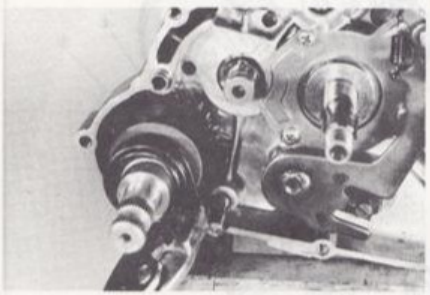
1. Change pedal
2. Change pedal cover
3. Hexagon bolt
4. Oil seal
5. Change shaft 2 assembly
6. Change shaft 2
7. Change lever 3
8. Shim
9. Change lever roller
10. Change lever 4
11. Circlip
12. Plate washer
13. Oil seal
14. Change shaft assembly
15. Change lever spring
16. Return spring
17. Adjusting screw
18. Hexagon nut
19. Lock washer

E. Kick Starter Assembly

1. Install kick crank on the kick axle temporalily.
2. While keeping the kick stopper upwards, engage the kick axle return spring with the slot on end of the kick axle.

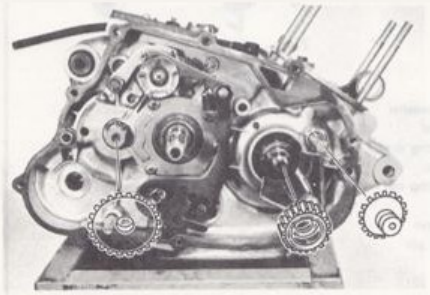


3. Rotate kick crank counterclockwise approximately 3/4 turn and push straight in.



F. Kick Idle, Tachometer Drive and Primary Drive Gears

Install kick idle gear, tachometer drive gear and primary drive gear.



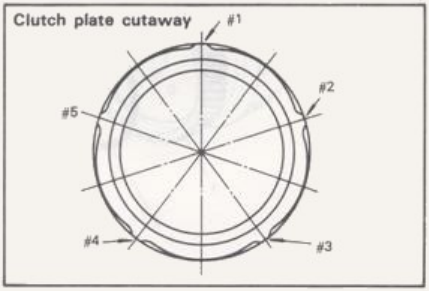
NOTE:
Tighten primary drive gear securing nut after clutch assembly is intalled.

G. Clutch

1. Install thrust plate primary driven gear, thrust plate and clutch boss in that order.
2. Install clutch holding tool on clutch boss and tighten lock nut.

Clutch lock nut torque:
7.0 ~ 8.0 m-kg (50 ~ 60 ft-lb)

3. On the model DT100C.
   In order to reduce noise caused by the clutch plates and clutch boss, each clutch plate is cut away at part of the edge #1. This permits the clutch plate to move outward due to centrifugal force. Align one of the plate cutaways so that it is centered as shown in #2 with the arrow on the hub. Install a friction plate, next install a clutch plate with cutaway off-set approximately 60° from previous plate. Continue this procedure in a clockwise direction until all clutch plates are installed.



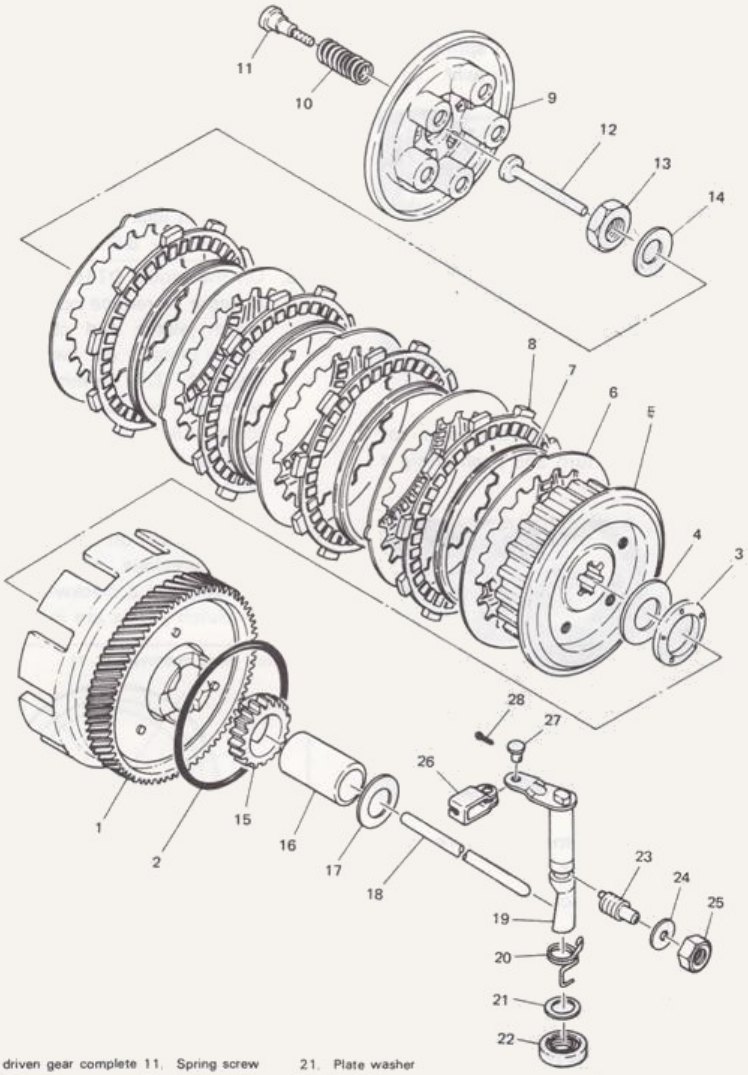
NOTE:
Install all parts with a heavy coat of SAE 10W/30 motor oil on their mating surfaces.

4. Install steel ball and push rod into main axle.
5. Install clutch pressure plate.

CAUTION:
Tighten primary drive gear not at this time.

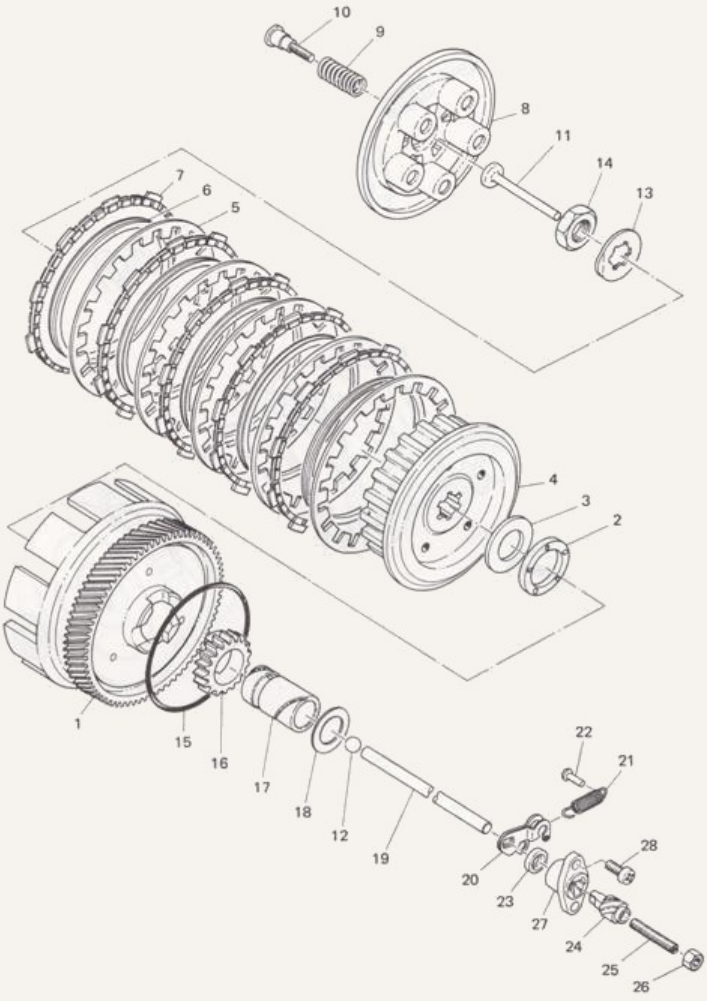
Primary drive gear nut torque:
7.0 ~ 9.0 m-kg (50 ~ 65 ft-lb)

Clutch (DT100A, B, C)



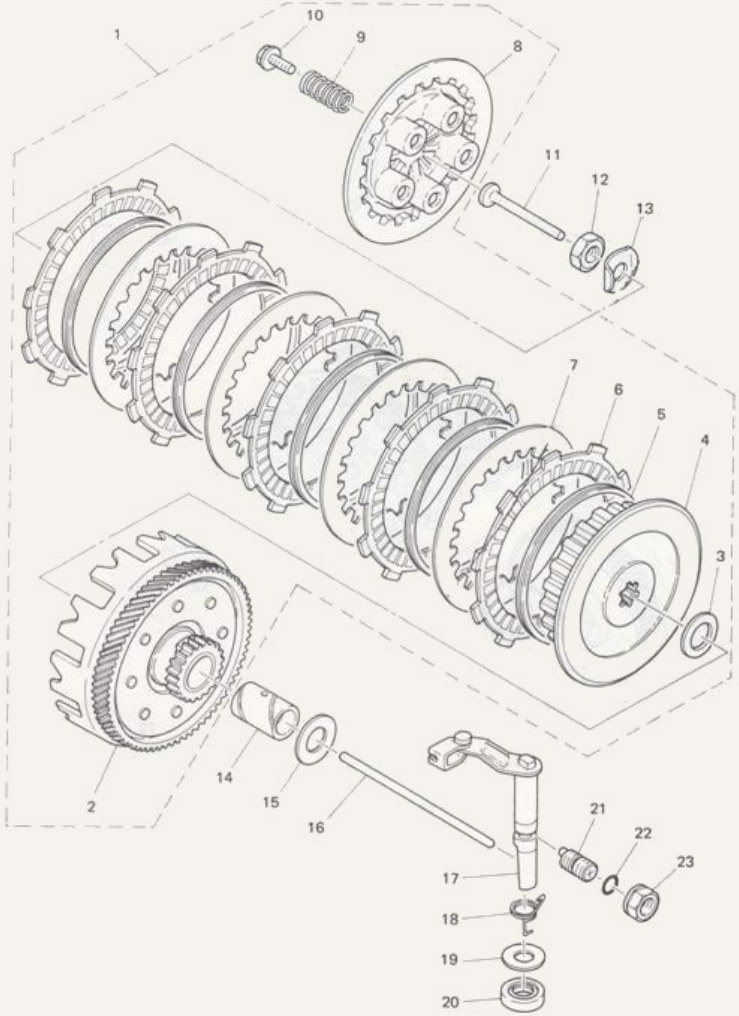
1. Primary driven gear complete
2. Friction ring
3. Thrust bearing
4. Thrust plate
5. Clutch boss
6. Clutch plate
7. Cushion ring
8. Friction plate
9. Pressure plate
10. Clutch spring
11. Spring screw
12. Push rod 1
13. Locknut
14. Spring
15. Kick pinion gear
16. Spacer
17. Thrust plate
18. Push rod 2
19. Push lever axle
20. Torsion spring
21. Plate washer
22. Oil seal
23. Adjusting screw
24. Gasket
25. Adjusting nut
26. Joint
27. Joint pin
28. Cotter pin

Clutch (DT125A, B, C)



1. Primary driven gear complete (74T)
2. Thrust bearing
3. Thrust plate, right
4. Clutch boss
5. Clutch plate
6. Cushion ring
7. Friction plate
8. Pressure plate
9. Clutch spring
10. Spring screw
11. Push rod (1)
12. Ball (1/4")
13. Look washer
14. Locknut
15. O-ring
16. Kick pinion gear (19T)
17. Distance collar
18. Thrust plate, left
19. Push rod (2)
20. Push lever
21. Lever return spring
22. Spring hook
23. Oil seal
24. Push screw
25. Adjusting screw
26. Locknut
27. Push screw housing
28. Pan head screw

Clutch (DT175A, B, C)



1. Clutch assembly
2. Primary driven gear complete (74T)
3. Thrust plate
4. Clutch boss
5. Cushion ring
6. Friction plate
7. Clutch plate
8. Pressure plate
9. Clutch spring
10. Spring screw
11. Push rod 1
12. Hexagon nut
13. Lock washer
14. Spacer
15. Plate washer
16. Push rod 2
17. Push lever assembly
18. Torsion spring
19. Plate washer
20. Oil seal
21. Screw
22. O-ring
23. Locknut

H. Crankcase Cover, Right

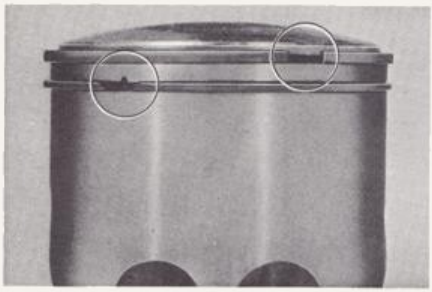
While properly engaging crankshaft and oil pump worm shaft, install crankcase cover (right).

I. Piston

1. During reassembly, coat the piston ring grooves, piston skirt areas, piston pin and bearing with two-stroke oil.
2. Install new piston pin clips and make sure they are fully seated in their grooves.

NOTE:

Take care during installation to avoid damaging the piston skirts against the crankcase as the cylinder is installed. Note the two induction holes in the piston skirt. These must be to the rear during installation.



J. Cylinder

1. Install a new cylinder base gasket.
2. Install cylinder with one hand while compressing piston rings with other hand.

NOTE:

Make sure the rings are properly positioned.

K. Cylinder Head

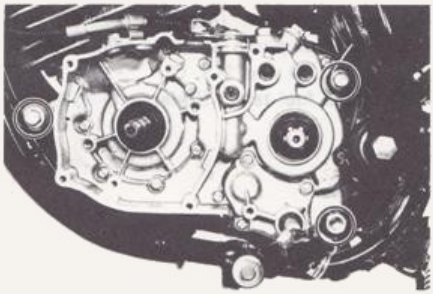
Install cylinder head gasket and cylinder head.

3-6. MOUNTING

Refer to sections 2-3 and 3-2 and mount the engine in the frame as follows:

1. Place the engine in the frame from right side. (Refer to 3-2, I)
2. Install three engine mounting bolts with proper tightening torque.

Bolt No.	Bolt size	Tightening Torque
1	10 mm	3.8 ~ 6.0 m-kg(27 ~ 43ft-lb)
2	8 mm	1.8 ~ 2.9 m-kg(13 ~ 21ft-lb)
3	8 mm	1.8 ~ 2.9 m-kg(13 ~ 21ft-lb)



3. Install drive sprocket and chain.

NOTE:

Install chain joint in proper direction.

4. Tighten drive sprocket with proper torque. (Refer to 3-2, H)

Drive sprocket nut torque:
7.0 ~ 9.0 m-kg (50 ~ 65 ft-lb)

5. Install clutch wire, and adjust. (Refer to 3-2 D)
6. Install flywheel magneto and connect wires. (Refer to 2-3, E)

NOTE:

When installing flywheel, make sure woodruff key is properly seated in keyway of crankshaft Apply a light coating of lithium soap base grease to tapered portion of crankshaft end. Carefully install flywheel taking care to align for woodruff key. Install bevelled washer, lock washer and locknut. Tighten carefully to recommended torque value.

Flywheel nut torque: 7.0 ~ 7.5 m-kg

Whenever the flywheel is removed, ignition timing must be re-set. (Refer to 2-5, B or C)

7. Adjust ignition timing. (Refer to 2-5, B or C)
8. Install crankcase cover (left) and change pedal. (Refer to 3-2, F)
9. Install tachometer cable. (Refer to 3-2 D)
10. Install carburetor assembly and adjust. (Refer to 3-2, E)
11. Install muffler. (Refer to 3-2, C)
12. Install oil pump wire and adjust. (Refer to 3-2, D and 2-3, C)
13. Install fuel tank. (Refer to 3-2, B)

CHAPTER 4. CARBURETION

4

4

CHAPTER 4. CARBURETION

4-1. GAUGES (MEASURING INSTRUMENTS)

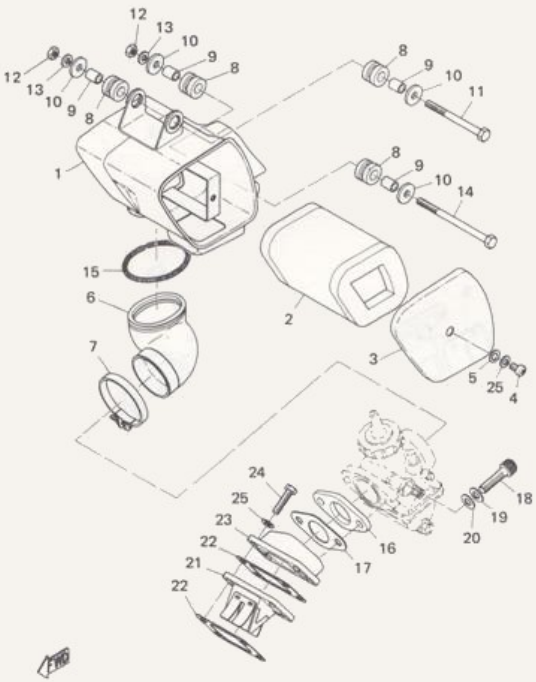
1. Vernier calipers

4-2. AIR CLEANER

Description

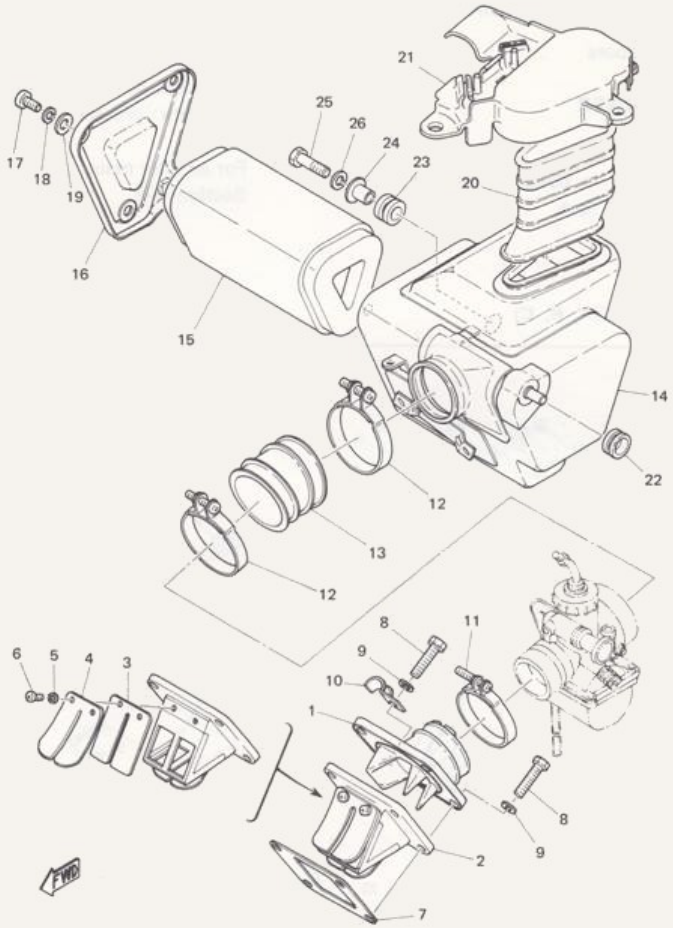
1. The air filter is housed within a case below the oil tank.
2. The filter is made of polyurethane foam with a stiff bristle covering.
3. For carburetion to function properly, the filter must be in place; must be clean; and must be damp with oil to provide adequate protection to vital engine parts.
4. For air filter maintenance see Chapter 2, Section 3-B.

Air Cleaner (DT125A, B, C)



1. Air cleaner case
2. Air cleaner element
3. Cleaner case cap
4. Pan head screw
5. Plain washer
6. Air cleaner joint
7. Band
8. Battery box damper
9. Fender mount collar
10. Leg shield washer
11. Bolt
12. Nut
13. Spring washer
14. Bolt
15. Band
16. Joint
17. Gasket
18. Bolt
19. Spring washer
20. Plain washer
21. Lead valve assembly
22. Valve seat packing
23. Joint
24. Bolt
25. Spring washer

Air Cleaner (DT100A, B, C/175A, B, C)



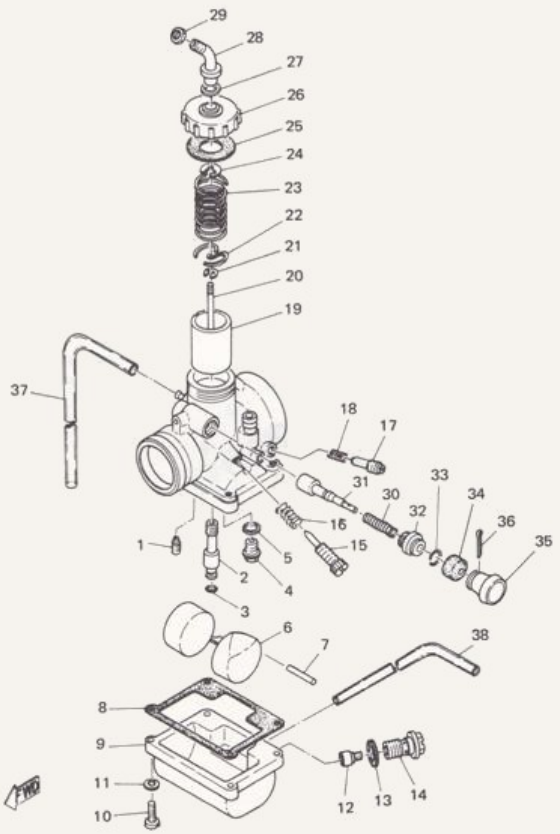
1. Carburetor joint
2. Reed valve assembly
3. Reed valve
4. Reed valve stopper
5. Spring washer
6. Pan head screw
7. Valve seat packing
8. Hexagon bolt
9. Spring washer
10. Clamp
11. Hose clamp
12. Hose calmp
13. Air cleaner joint
14. Air cleaner case
15. Air cleaner element
16. Case cap
17. Pan head screw
18. Spring washer
19. Plate washer
20. Duct
21. Cleaner duct cover
22. Grommet
23. Grommet
24. Fender collar
25. Bolt
26. Spring washer

4-3. CARBURETOR

A. Description

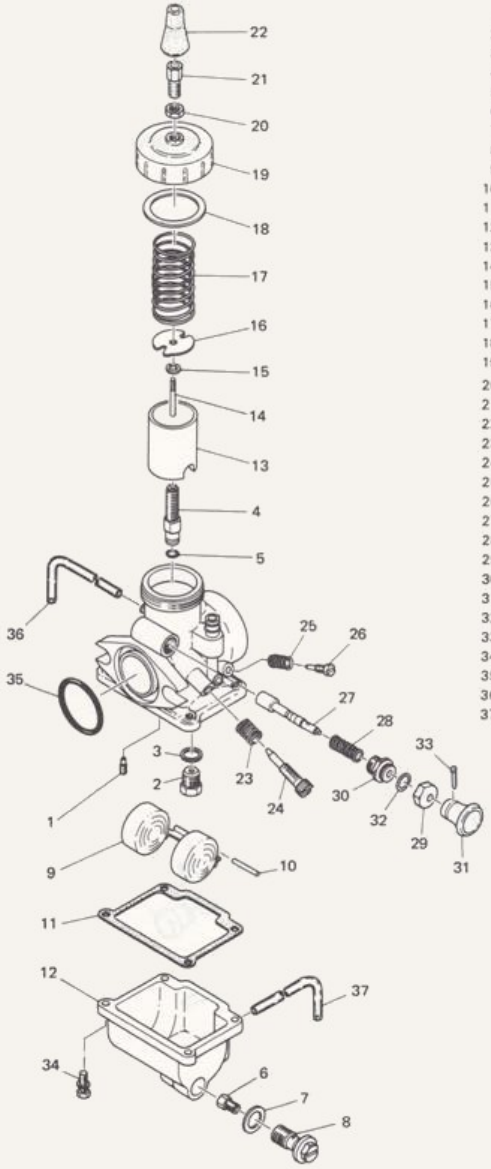
1. The carburetor is of primary concern to proper engine operation. Considerable care should be taken during disassembly, inspection, and maintenance to see that all circuits are working correctly and that all adjustments properly made.
2. Prior to carburetor disassembly, study the sections on air filter, spark plug, Autolube and ignition timing thoroughly. Each of these components works in conjunction with the carburetor to provide maximum performance and longevity.

Carburetor (DT100A, B, C)



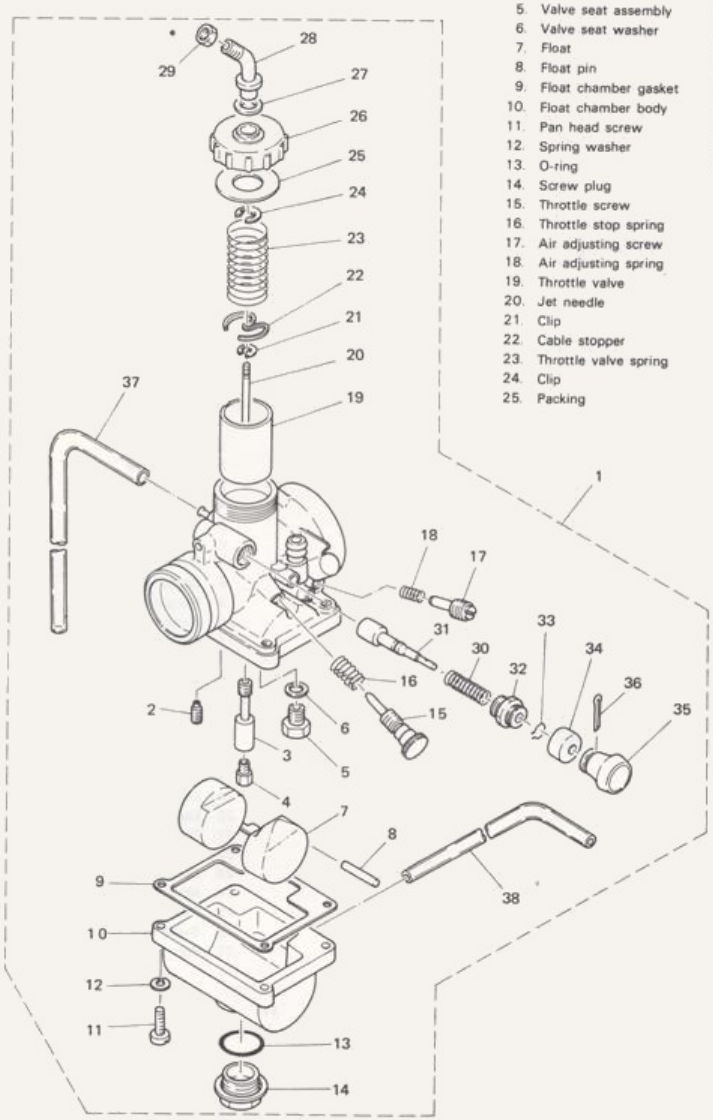
1. Pilot jet
2. Main nozzle
3. O-ring
4. Valve seat assembly
5. Valve seat washer
6. Float
7. Float pin
8. Float chamber gasket
9. Float chamber body
10. Pan head screw
11. Spring washer
12. Main jet
13. Gasket
14. Banjo bolt
15. Throttle stop screw
16. Throttle stop spring
17. Air adjusting screw
18. Air adjusting spring
19. Throttle valve
20. Jet needle
21. Clip
22. Spring seat
23. Throttle valve spring
24. Clip
25. Packing
26. Mixing chamber top
27. Packing
28. Guide wire tube
29. Wire adjust nut
30. Plunger spring
31. Starter plunger
32. Plunger cap
33. Plunger clip
34. Plunger cap cover
35. Holder
36. Cotter pin
37. Air vent pipe
38. Overflow pipe

Carburetor (DT125A, B, C)



1. Pilot jet
2. Valve seat assembly
3. Valve seat washer
4. Main nozzle
5. O-ring
6. Main jet
7. Gasket
8. Banjo bolt
9. Float
10. Float pin
11. Float chamber gasket
12. Float chamber body
13. Throttle valve
14. Jet needle
15. Clip
16. Cable stopper
17. Throttle valve spring
18. Packing
19. Mixing chamber top
20. Wire adjusting nut
21. Wire adjusting screw
22. Adjusting screw cap
23. Stop screw spring
24. Throttle stop screw
25. Air adjusting screw spring
26. Air adjusting screw
27. Starter plunger
28. Plunger spring
29. Plunger cap cover
30. Plunger cap
31. Holder
32. Plunger clip
33. Cotter pin
34. Pan head screw
35. O-ring
36. Air vent pipe
37. Over flow pipe

Carburetor (DT175A, B, C)



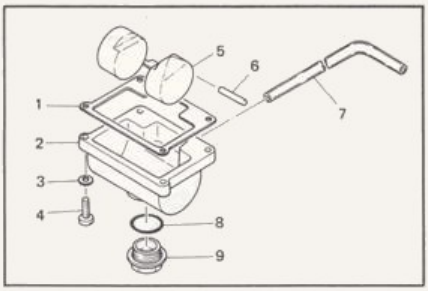
1. Carburetor assembly
2. Pilot jet
3. Main nozzle
4. Main jet
5. Valve seat assembly
6. Valve seat washer
7. Float
8. Float pin
9. Float chamber gasket
10. Float chamber body
11. Pan head screw
12. Spring washer
13. O-ring
14. Screw plug
15. Throttle screw
16. Throttle stop spring
17. Air adjusting screw
18. Air adjusting spring
19. Throttle valve
20. Jet needle
21. Clip
22. Cable stopper
23. Throttle valve spring
24. Clip
25. Packing
26. Mixing chamber top
27. Packing
28. Wire guide tube
29. Wire adjusting nut
30. Plunger spring
31. Starter plunger
32. Plunger cap
33. Plunger clip
34. Plunger cap cover
35. Holder
36. Cotter pin
37. Air vent pipe
38. Over flow pipe

B. Disassembly

The carburetor can be divided largely into the float and mixing sections. The former maintains a constant fuel level in the float chamber, and the latter mixes fuel with air at a specific ratio.

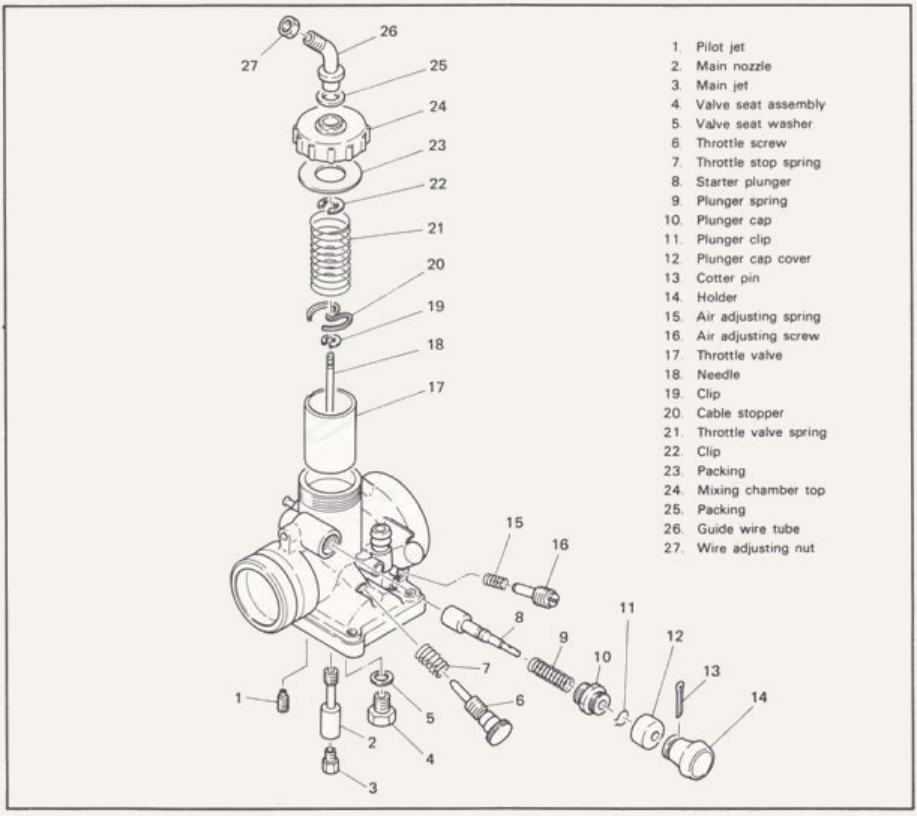
The mixing chamber consists of the slow circuit and main circuits. When the carburetor requires overhaul, therefore, it should be disassembled according to the respective functions so that inspections and adjustments will be easy.

1. Float chamber
   The float chamber is made up of the parts shown in the following diagram.



1. Float chamber gasket
2. Float chamber body
3. Spring washer
4. Pan head screw
5. Float
6. Float pin
7. Over flow pipe
8. O-ring
9. Screw plug

2. Mixing chamber
   The mixing chamber is made up of the parts shown in the following.

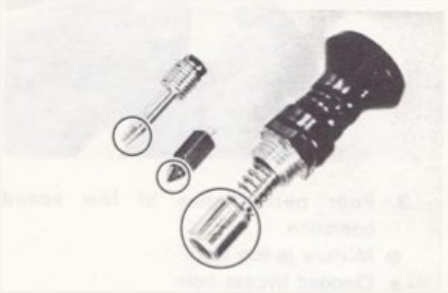


1. Pilot jet
2. Main nozzle
3. Main jet
4. Valve seat assembly
5. Valve seat washer
6. Throttle screw
7. Throttle stop spring
8. Starter plunger
9. Plunger spring
10. Plunger cap
11. Plunger clip
12. Plunger cap cover
13. Cotter pin
14. Holder
15. Air adjusting spring
16. Air adjusting screw
17. Throttle valve
18. Needle
19. Clip
20. Cable stopper
21. Throttle valve spring
22. Clip
23. Packing
24. Mixing chamber top
25. Packing
26. Guide wire tube
27. Wire adjusting nut

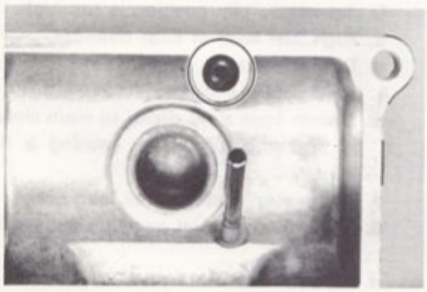
C. Checking

Check the following parts for:

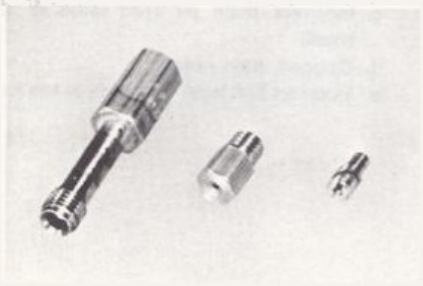
1. Float section
   a. Float valve end and seat for wear



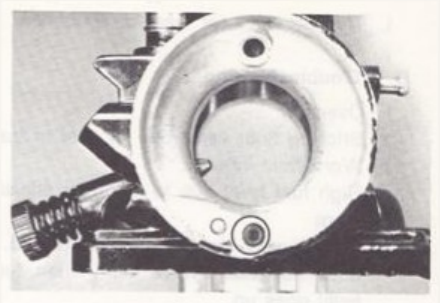
   b. Float for breakage and action (sticking)
   c. Float chamber for fouling and dust accumulation
   d. Float chamber gasket for damage
   e. Starter jet for clogging



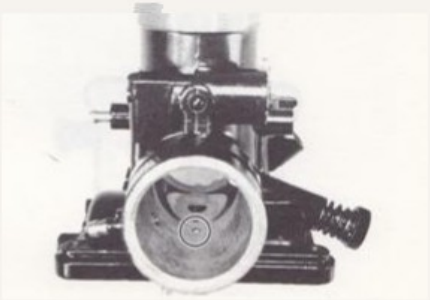
2. Mixing section
   a. Main jet for clogging
   b. Pilot jet for clogging
   c. Main nozzle for clogging



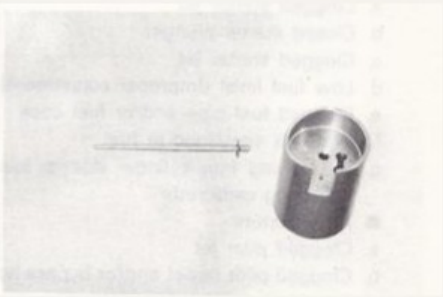
   d. Pilot air hole for clogging



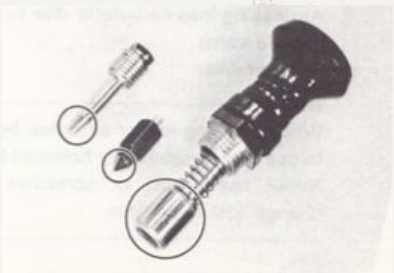
   e. Bleed air hole for clogging
   f. Bypass hole and pilot outlet for clogging



   g. Jet needle for wear, scratches or bends



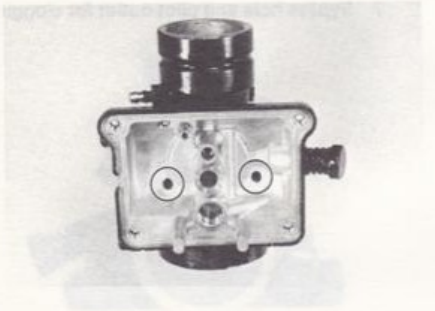
   h. Pilot air screw end for bends or wear



i. Throttle valve for wear or scratches

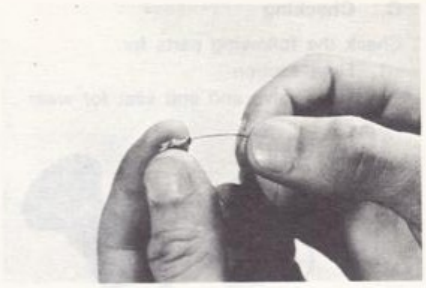
D. Troubleshooting

1. Overflow
a. Sticking float valve due to dust in fuel
b. Worn float valve
c. High fuel level due to incorrect adjustment
d. Float is very slow in movement, and it does not close valve seat when fuel level goes up.
e. Clogged air vent hole



2. Hard starting
● Lean mixture
a. Clogged starter jet
b. Closed starter plunger
c. Clogged starter jet
d. Low fuel level (Improper adjustment)
e. Clogged fuel pipe and/or fuel cock
f. Water is contained in fuel
g. Air leaking into cylinder due to loose mounting carburetor
● Rich mixture
a. Clogged pilot jet
b. Clogged pilot outlet and/or bypass hole
c. Incorrectly adjusted throttle stop screw
d. Water remains in float chamber
e. Clogged air vent
f. Air leaking into carburetor due to worn throttle valve
g. Dirty air filter

NOTE:
When cleaning jets or air holes, be sure to use compressed air or horsetail hairs. Never use wires, or scratches may change fuel flow rates.

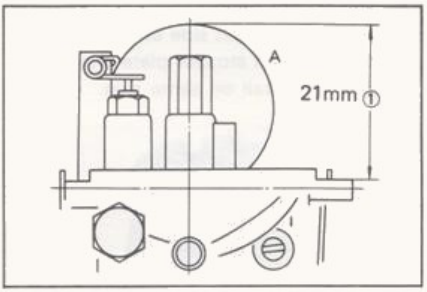


3. Poor performance at low speed operation
● Mixture is too lean.
a. Clogged bypass hole
b. Clogged main jet
c. Low fuel level in float chamber
d. Cutaway is too large.
e. Jet needle clip position is too high.
● Mixture is too rich.
a. Main jet is too large.
b. Jet needle clip position is too high.
c. High fuel level in float chamber
d. Dirty air filter
4. Poor acceleration
a. Switch from slow circuit to main circuit is not smoothly done, causing a flat spot.
b. Carburetor is set on the lean side.
c. Main jet and/or jet needle is set on the lean side.
d. Throttle does not open.
e. Low fuel level in float chamber
5. Poor performance at mid and high speed operation
a. Clogged main jet
b. Clogged air bleed
c. Incorrect main jet (Too large or too small)
d. Clogged main nozzle
e. Incorrect fuel level (Too high or too low)

E. Float Level

The carburetor float level is checked by the Yamaha factory during assembly and testing. But rough riding, worn needle valve, or bent float arm can cause the float level to fluctuate. If the float level rises, this will cause a rich fuel/air mixture that can cause poor performance and spark plug fouling. If the float level decreases, this can cause a lean fuel/air mixture that can result in engine damage. If the machine is subjected to continuous rough riding or many miles of travel, the float level should be checked and set regularly and in the following manner:

1. Remove the float chamber body, and turn over the mixing body. Let the float arm rest on the needle valve without compressing the spring.
2. Then measure the distance from the top of the float to the float bowl gasket surface.



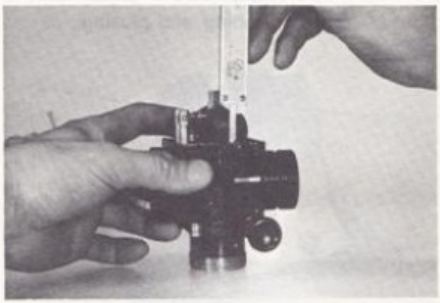
1. Measured from top of float to float bowl gasket surface

3. When the distance measures less than the recommended distance, bend the tang down. If it is greater, bend the tang up, (with carburetor body upside down).
4. Using a vernier caliper, measure the distance of the float arm from the top of the float chamber gasket seat (gasket removed) to the float arm.

Float level (All models):
21.0 ±1.0 mm

NOTE:
The float arm should be just resting on, but not depressing, the spring loaded inlet needle.

5. To correct float height, bend the tang a slight amount as required.
   Correct as required.



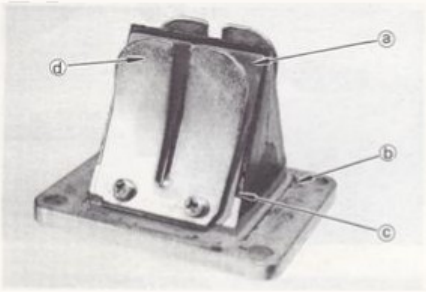
F. Reassembly and Installation

When reassembling the carburetor, make sure parts are not lost scratched or damaged. Particular care should be taken not to scratch or bend the throttle slide or jet needle.

4-4. REED VALVE ASSEMBLY

A. Description

1. Yamaha has designed a unique stainless steel reed valve located between the carburetor and cylinder. The valve works independently on a demand basis. There's no mechanical device, such as a rotary valve or piston skirt to govern its opening and closing.



2. Construction of reed valve assembly

a. Valve
The valve is made of special flexible stainless steel and designed to open and close the inlet port.

b. Case
The case is made of a die-cast aluminum alloy.

c. Gasket
Made of heat-and oil-resisting rubber, the gasket is "welded" to the case by heat.

d. Valve stopper
The valve stopper is made of highly-durable cold-rolled stainless steel plate, and controls the movement of the valve.

3. Handling the reed valve

a. As explained earlier, the reed valve is operated by changes in crankcase pressure and by the inertia effect of the fuel-air stream. It is a high-precision piece, and therefore, it must be handled with special care.

4. Storage

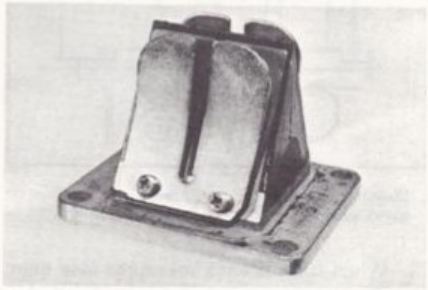
a. The reed valve must be stored in a clean and dry place and must not be exposed to the sun. Particularly, it must be kept free from salt. Avoid touching the valve.

B. Removal and Troubleshooting

With carburetor removed, proceed as follows:

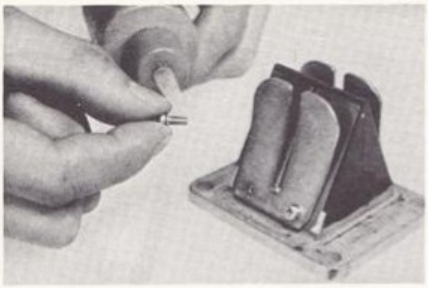
1. Remove the bolts (4) holding the intake manifold and reed valve assembly to cylinder.
2. Inspect rubber intake manifold for signs of weathering, checking or other deterioration.
3. Inspect reed petals for signs of fatigue cracks. Reed petals should fit flush or nearly flush against neoprene seats. If in doubt as to sealing ability, apply suction to carburetor side of assembly. Leakage should be slight to moderate.
4. If disassembly of the reed valve assembly is required, proceed as follows:

a. Remove Phillips screws (4) securing stopper plate and reed to reed block. Handle reed carefully. Avoid scratches and do not bend.
Note from which side of the reed block the reed and stopper plate were removed. Reinstall on same side.

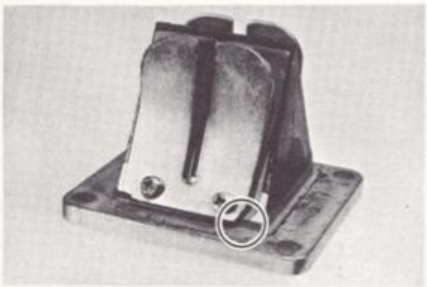


b. During reassembly, clean reed block, reed, and stopper plate thoroughly. Apply a holding agent, such as "Lock-Tite", to threads of Phillips screws. Tighten each screw gradually to avoid warping.

Tightening torque: 8.0 cm-kg (7 in-lb)

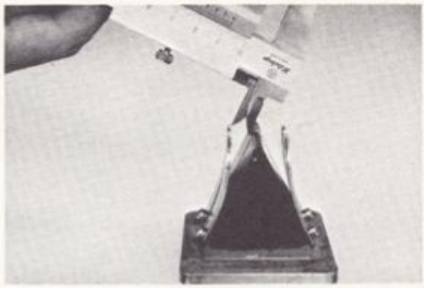


NOTE:
During reassembly, note the cut in the lower corner of the reed and stopper plate. Use as aid to direction of reed installation.



5. Valve stopper
   The valve stopper controls the movement of the valve. Check clearance "a".

Standard value "a":
9.0 ±0.7 mm (0.354 ±0.0275 in)



Checking valve stopper clearance "a"

NOTE:
If clearance "a" is larger than specified, the valve will be broken. If smaller, valve performance can be impaired

6. During reassembly of the reed valve assembly and manifold, install new gaskets and torque the securing bolts gradually and in pattern. Tighten thoroughly.

CHAPTER 5. CHASSIS

CHAPTER 5. CHASSIS

5-1. TOOLS

A. Special Tools

1. Steering nut wrench
2. Torque wrench

B. Gauges (Measuring Instruments)

1. Vernier Caliper
2. Fluid Measuring Cup
3. Tire Pressure Gauge
4. Grease Gun

5-2. FRONT WHEEL

A. Removal

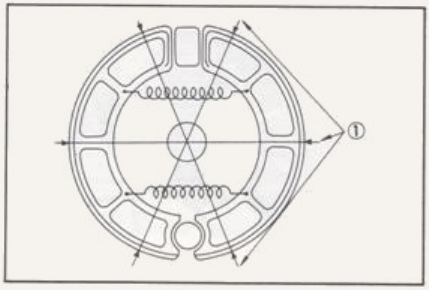
1. Disconnect the brake cable at the front brake lever.
2. Disconnect the brake cable at the front wheel backing plate.
3. Disconnect the speedometer cable from the front wheel backing plate.
4. Remove cotter pin from front axle.
5. Remove the front axle nut.
6. Loosen the two axle holder nuts at the bottom of the right-hand fork leg.
7. Remove the front wheel axle by simultaneously twisting and pulling out on the axle. Then remove the wheel assembly.
   (Raise the front of the machine by placing a suitable stand under the engine.)

B. Front Axle

Remove any corrosion from axle with emery cloth. Then place it on a surface plate and check for bending. If bent, replace.

C. Checking Brake Shoe Wear

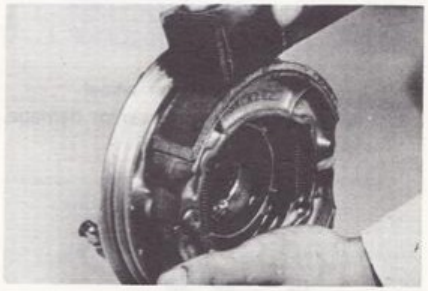
1. Measure the outside diameter at the brake shoes with slide calipers.



1. Measuring points

Front brake shoe diameter (A, B, C models)	
DT100 (all)	110 mm (4.33 in)
DT125/175 (all)	130 mm (5.12 in)
Replacement limit:	
DT100 (all)	105 mm (4.13 in)
DT125/175 (all)	125 mm (4.92 in)

2. Remove any glazed areas from brake shoes using coarse sand paper.

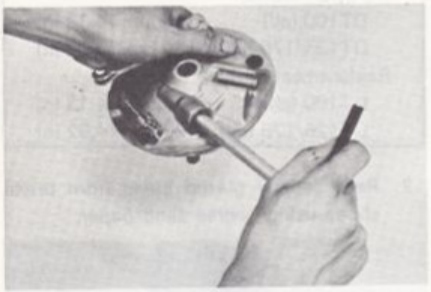


D. Brake Drum

Oil or scratches on the inner surface or the brake drum will impair braking performance or result in abnormal noises.
Remove oil by wiping with a rag soaked in lacquer thinner or solvent. Remove scratches by lightly and evenly polishing with emery cloth.

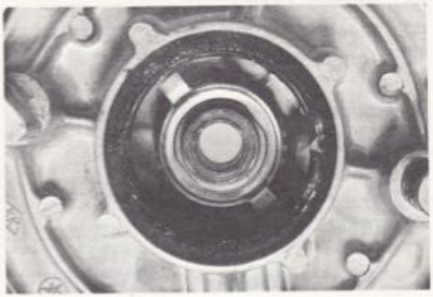
E. Checking Speedometer Gear

1. Remove the worm gear bushing using the special tool, and remove the worm gear.



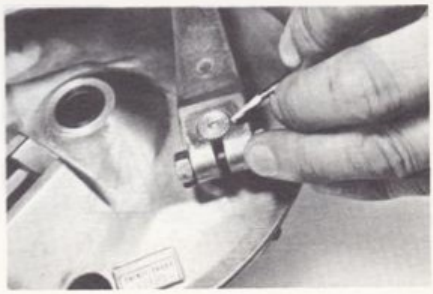
2. Remove the worm gear wheel.
3. Check each gear for wear or damage, and replace as required.

4. When installing the gears, apply grease to tooth surfaces so that it does not spread over the outer surface of the oil seal.



5. Remove the camshaft and grease. If the cam face is worn, replace.

NOTE:
Before removing the cam lever, put a match mark on the cam lever and camshaft to indicate their positions for easy assembly.



F. Replacing Wheel Bearings

If the bearings allow play in the wheel hub or if wheel does not turn smoothly, replace the bearings as follows:

1. First clean the outside of the wheel hub.
2. Drive the bearing out by pushing the spacer aside (the spacer "floats" between the bearings) and tapping around the perimeter of the bearing inner race with a soft metal drift pin and hammer. Either or both bearings can be removed in this manner.
3. To install the wheel bearing, reverse the above sequence. Be sure to grease the bearing before installation. Use a socket that matches the outside race of the bearing as a tool to drive in the bearing.

G. Installing Front Wheel

1. After replacing wheel and axle, tighten axle nut FIRST and install a new cotter pin.

   NOTE:
   Align the groove of the spacer and the surface of the holder.

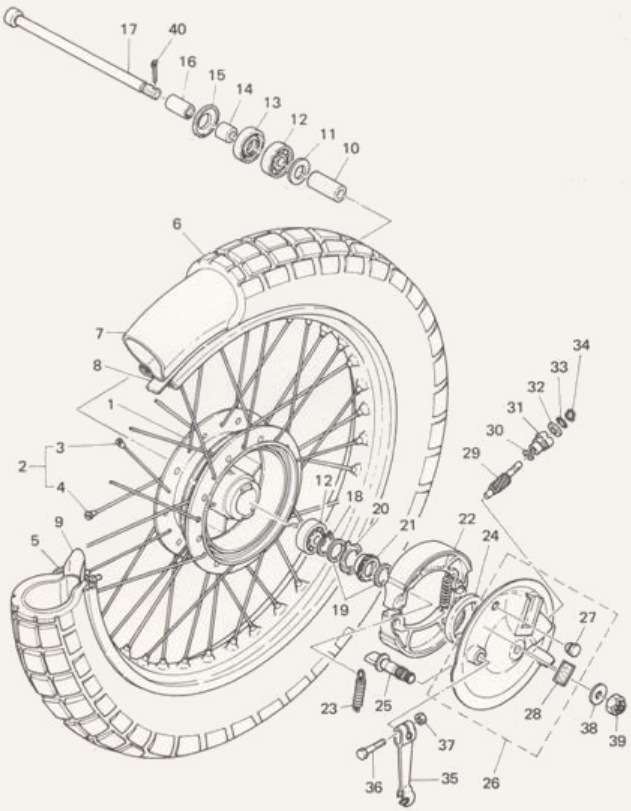
Axle nut torque: 7 ~ 10 m-kg (50 ~ 70 ft-lb)

2. Then tighten the axle holder nuts.

Holder nut torque: 0.8 ~ 1.25 m-kg (6 ~ 9 ft-lb)

3. Connect front brake cable and speedometer cable.

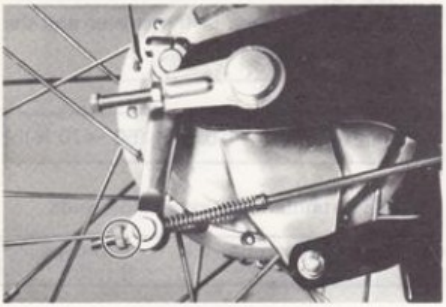
Front Wheel



5-3. REAR WHEEL

A. Removal

1. Remove the tension bar and brake rod from rear shoe plate.



2. Disconnect the drive chain.
3. Remove cotter pin from rear axle.
4. Remove the rear axle nut.
5. Pull out the rear axle by simultaneously twisting and pulling out.
   (For this step, elevate the wheel by placing a suitable stand under the engine.)
6. Remove the rear wheel assembly.

B. Checking Brake Shoe Wear

See front wheel section, paragraph 5-2. C.

Rear brake shoe diameter:	
(all models)	130 mm (5.11 in)
Replacement limit:	125 mm (4.92 in)

C. Brake Drum

See front wheel section, paragraph 5-2. D.

D. Replacing Wheel Bearings

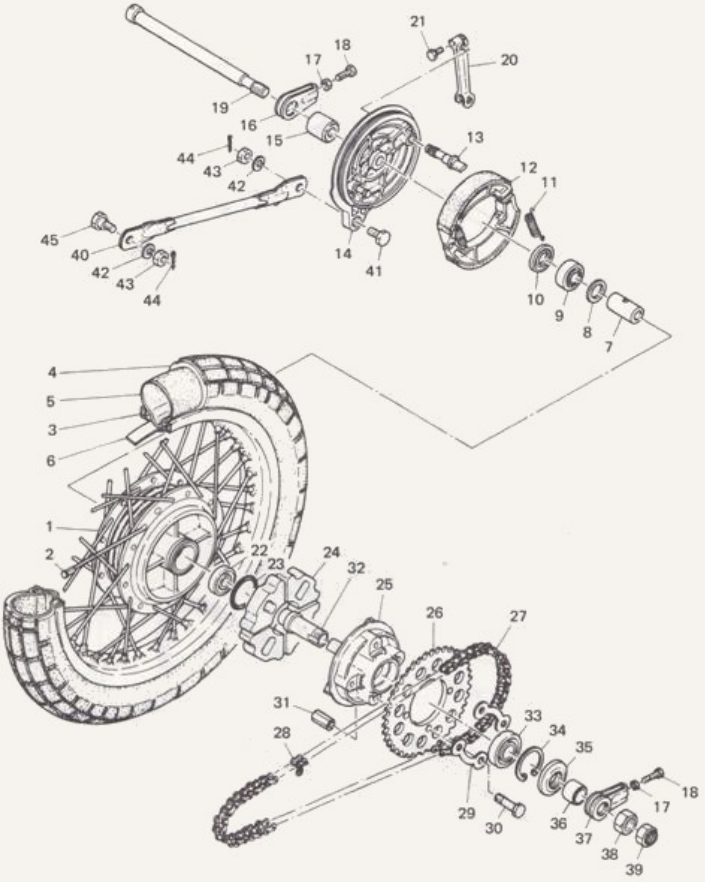
See front wheel section, paragraph 5-2. F.

E. Installing Rear Wheel

1. Install wheel and axle, and tighten axle nut.

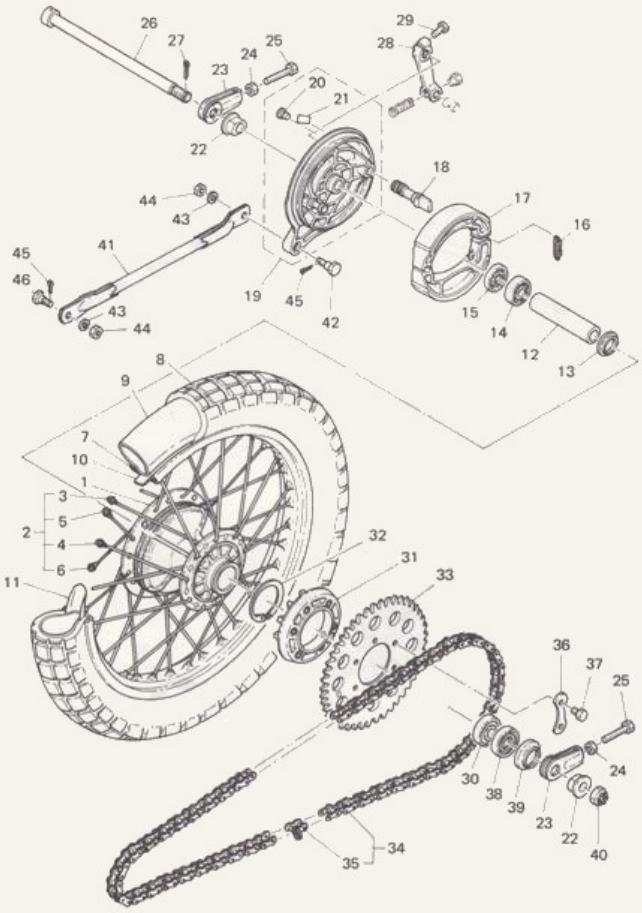
Axle nut torque: 8.3 ~ 13.0 m-kg (60 ~ 94 ft-lb)

2. Connect drive chain, brake rod and tension bar.
3. Adjust drive chain. (See chapter 2, paragraph 4. D.)
4. Adjust rear brake. (See chapter 2, paragraph 4. C.)



1. Hub
2. Spoke set
3. Rim
4. Tire
5. Tube
6. Rim band
7. Bearing spacer
8. Spacer flange
9. Bearing
10. Oil seal
11. Shoe return spring
12. Brake shoe complete
13. Camshaft
14. Brake shoe plate
15. Wheel shaft collar
16. Chain puller
17. Locknut
18. Adjusting bolt
19. Wheel shaft
20. Camshaft lever
21. Bolt
22. Bearing
23. O-ring
24. Clutch damper
25. Hub clutch
26. Sprocket wheel gear
27. Chain
28. Chain joint
29. Lock washer
30. Bolt
31. Nut
32. Sprocket shaft
33. Bearing
34. Circlip
35. Oil seal
36. Collar
37. Chain puller
38. Hexagon nut
39. Castle nut
40. Tension bar
41. Bolt
42. Spring washer
43. Nut
44. Cotter pin
45. Bolt

DT125C, DT175C Rear Wheel (DT125A, B/DT175A, B)



1. Hub	17. Brake shoe complete	33. Sprocket wheel gear (43T)
2. Spoke set	18. Camshaft	Sprocket wheel gear (45T)
3. Inner left spoke set	19. Brake shoe plate assembly	Sprocket wheel gear (47T)
4. Outer left spoke set	20. Grommet	34. Chain
5. Inner right spoke set	21. Indicator label	35. Chain joint
6. Outer right spoke set	22. Collar	36. Lock washer
7. Rim	23. Chain puller	37. Bolt
8. Tire	24. Locknut	38. Oil seal
9. Tube	25. Adjusting bolt	39. Dust cover
10. Rim band	26. Wheel shaft	40. Castle nut
11. Bead spacer	27. Cotter pin	41. Tension bar
12. Bearing spacer	28. Camshaft lever	42. Bolt
13. Spacer flange	29. Bolt	43. Spring washer
14. Bearing	30. Bearing	44. Nut
15. Oil seal	31. Clutch damper	45. Cotter pin
16. Shoe return spring	32. Circlip	46. Bolt

5-4. RIMS AND SPOKES (FRONT AND REAR WHEELS)

A. Checking for Loose Spokes

Loose spokes can be checked by bracing the machine off the ground so that the wheel can spin free.

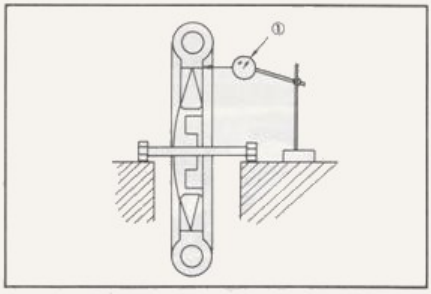
Slowly revolve the wheel and at the same time let the metal shaft of a fairly heavy screwdriver bounce off each spoke. If all the spokes are tightened approximately the same, then the sound given off by the screwdriver hitting the spokes should sound the same. If one spoke makes a dull flat sound, then check it for looseness.

B. Checking Rim "Run-Out"

While you have the wheel elevated, you should check that it does not have too much run-out. "Run-out" is the amount the wheel deviates from a straight line as it spins. Spin the wheel, and solidly anchor some sort of a pointer about 3 mm away from the side of the rim.

As the wheel spins, the distance between the pointer and the rim should not change more than 2 mm total. Any greater fluctuation should be eliminated by properly adjusting the spokes.

Run-out limits: 2 mm lateral
Run-out limits: 2mm vertical



1. Dial gauge

5-5. TIRES AND TUBES

A. Removal

1. Remove valve cap, valve core, and valve stem lock nut. Loosen bead spacer(s), (rim locks).
2. When all air is out of tube, separate tire bead from rim (both sides), by stepping on tire with your foot.
3. Use two tire removal irons (with rounded edges) to work the tire bead over the edge of the rim, starting 180° opposite the tube stem. Take care to avoid pinching the tube as you do this.
4. After you have worked one side of the tire completely off the rim, then you can slip the tube out. Be very careful not to damage the stem while pushing it back out of the rim hole.

NOTE:

If you are changing the tire itself, then finish the removal by working the second bead off the rim.

B. Installation

Reinstalling the tire and tube can be accomplished by reversing the disassembly procedure. The only difference in procedure would be right after the tube has been installed, but before the tire has been completely slipped onto the rim, momentarily inflate the tube. This removes any creases that might exist. Release the air and continue with reassembly. Also, right after the tire has been completely slipped onto the rim, check to make sure that the stem comes out of the hole in the rim at a right angle to the rim. Finally, inflate the tire and tighten the bead spacer securing nut(s).

Tire Pressure (Normal Riding)
Front: 0.9 kg/cm^2 (13 p. s. i)
Rear: 1.1 kg/cm^2 (15 p. s. i)

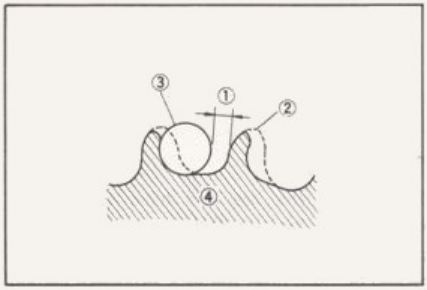
5-6. DRIVE CHAIN AND SPROCKETS

NOTE:
Please refer to Maintenance Intervals and Lubrication Intervals charts for additional information.

A. Drive Sprocket

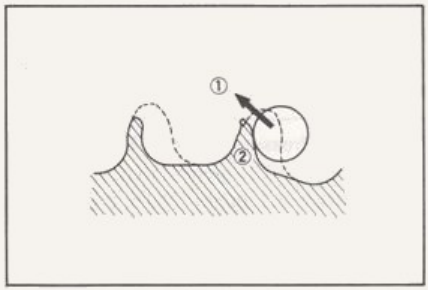
With the left crankcase cover removed, proceed as follows:

1. Using a blunt chisel, flatten the drive sprocket lock washer tab.
2. With the drive chain in place, transmission in gear, firmly apply the rear brake. Remove the sprocket securing nut. Remove the sprocket.
3. Check sprocket wear. Replace if wear decreases tooth width as shown.



1. 1/4 tooth
2. Correct
3. Roller
4. Sprocket

4. Replace if tooth wear shows a pattern such as that in the illustration, or as precaution and common sense dictate.



1. Slip off
2. Bend teeth

5. During reassembly, make sure the lock washer splines are properly seated on the drive shaft splines. Tighten securing nut thoroughly to specified torque value. Bend lock washer tab fully against securing nut flats.

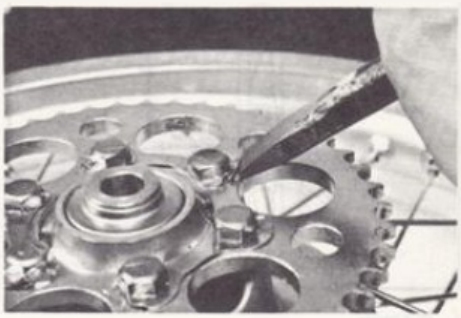
Drive Sprocket Securing Nut Torque:
7.0 ~ 9.0 m-kg (50 ~ 65 ft-lb)

B. Driven Sprocket

With the rear wheel removed, proceed as follows:

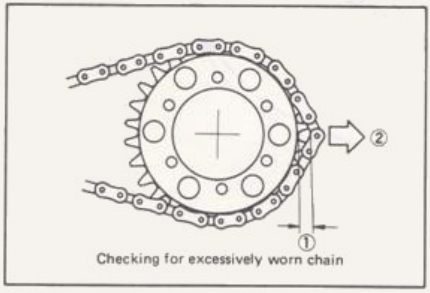
1. Using a blunt chisel, flatten the securing bolt lock washer tabs.
   Remove the securing bolts. Remove the lock washers and sprocket.
2. Check sprocket wear per procedures for the drive sprocket.
3. Check the sprocket to see that it runs true. If bent, replace.
4. During reassembly, make sure that sprocket and sprocket seat are clean. Tighten the securing bolts in a crisscross pattern.
   Bend the tabs of the lock washers fully against the securing bolt flats.

Driven Sprocket Securing Bolt Torque:
1.8 ~ 2.9 m-kg (13 ~ 21 ft-lb)



C. Chain Inspection

1. With the chain installed on the machine, excessive wear may be roughly determined by attempting to pull the chain away from the rear sprocket. If the chain will lift away more than one-half the length of the sprocket teeth, remove and inspect.
   If any portion of the chain shows signs of damage, or if either sprocket shows signs of excessive wear, remove and inspect.



Checking for excessively worn chain

1. 1/2 tooth 2. Pull

2. Check the chain for stiffness. Hold as illustrated. If stiff, soak in solvent solution, clean with wire brush, dry with high pressure air. Oil chain thoroughly and attempt to work out kinks. If still stiff replace.
3. Check the side plate for damage. Check to see if excessive play exists in pins and rollers. Check for damaged rollers. Replace as required.

D. Chain Maintenance

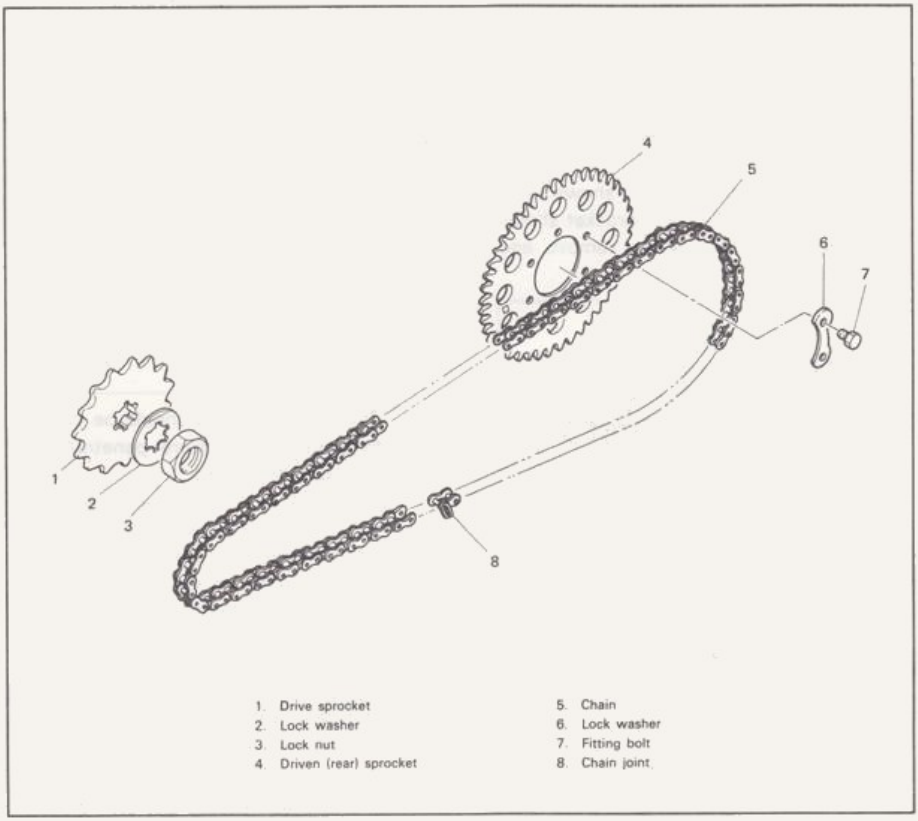
The chain should be lubricated per the recommendations given in the Maintenance and Lubrication Intervals charts. More often if possible. Preferably after every use. See "Chassis and Suspension, Swing Arm", for additional information regarding chain guide.

1. Wipe off dirt with shop rag. If accumulation is severe, use wire brush, then rag.
2. Apply lubricant between roller and side plates on both inside and outside of chain. Don't skip a portion as this will cause uneven wear. Apply thoroughly. Wipe off excess.

   NOTE:
   Chain and lubricant should be at room temperature to assure penetration of lubricant into rollers.
   Choice of lubricant is determined by use and terrain. SAE 20wt. or 30wt. oil may be used, but several specialty types by accessory manufacturers offer more penetration, corrosion resistance for roller protection. In certain areas, semi-drying lubricants are preferable. These will resist picking up sand particles, dust, etc.

3. Periodically, remove the chain. Wipe and/or brush excess dirt off. Blow off with high pressure air.
4. Soak chain in solvent, brushing off remaining dirt. Dry with high pressure air. Lubricate thoroughly to make sure lubricant penetrates. Wipe off excess. Re-install.

Drive Chain and Sprockets



1. Drive sprocket
2. Lock washer
3. Lock nut
4. Driven (rear) sprocket
5. Chain
6. Lock washer
7. Fitting bolt
8. Chain joint

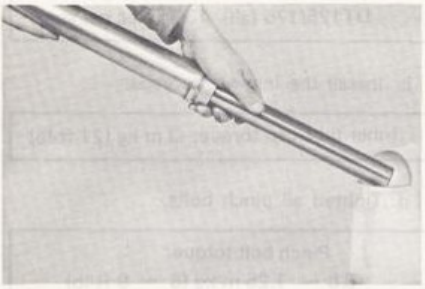
5-7. FRONT FORKS

A. Disassembly

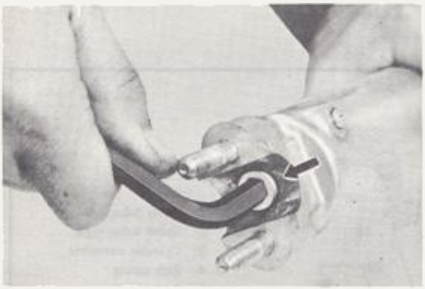
1. With the front wheel, speedometer cable and front brake cable removed, the fork legs can be removed from the upper and lower brackets by loosening upper and lower pinch bolts.

   NOTE:
   Before loosening the upper and lower pinch bolts, loosen the front fork cap bolt.

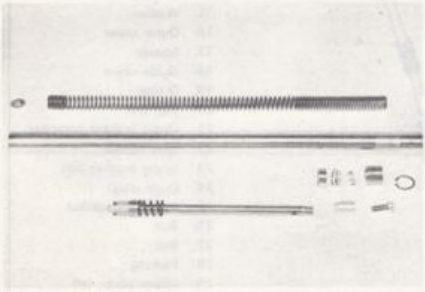
2. Remove the caps and drain the oil from both fork tubes.



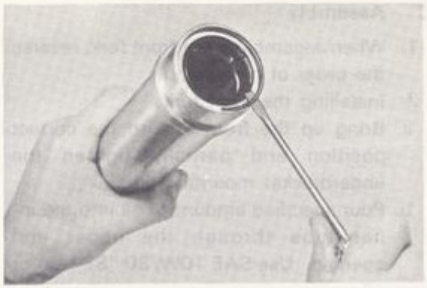
3. Remove the special bolt from bottom of outer tubes.



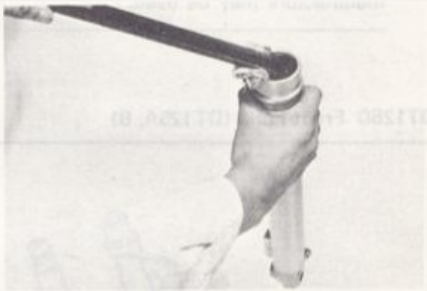
4. Remove inner tube and damper assembly from outer tube.
5. Remove clip from bottom of inner tube and pull out damper assembly. Inspect and replace if damaged.



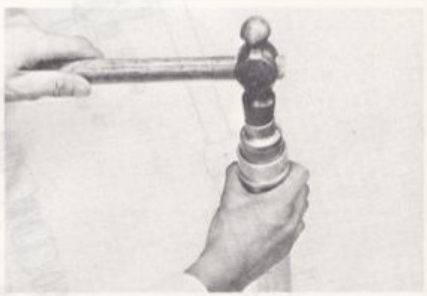
6. To replace fork seal, remove wire clip, felt ring and cover washer from outer tube.



7. Carefully pry out old seal without damaging fork tube.



8. Insert new seal "open" side down using large socket and steel hammer.



B. Inspection

Inspect the inner tube for bends or scratches. If the bend is slight, it can be corrected with a press. It is recommended, however, to replace the tube.

C. Assembly

1. When assembling the front fork, reverse the order of disassembly.
2. Installing the front forks

a. Bring up the front fork to the correct position and partially tighten the underbracket mounting bolt.

b. Pour specified amount of oil into the inner tube through the upper end opening. Use SAE 10W/30 "SE" motor oil.

NOTE:
Specialty type fork oils of quality manufacture may be used.

Fork oil capacity:	
DT100 (all)	160±4 cc per side
DT125/175 (all)	130±4 cc per side

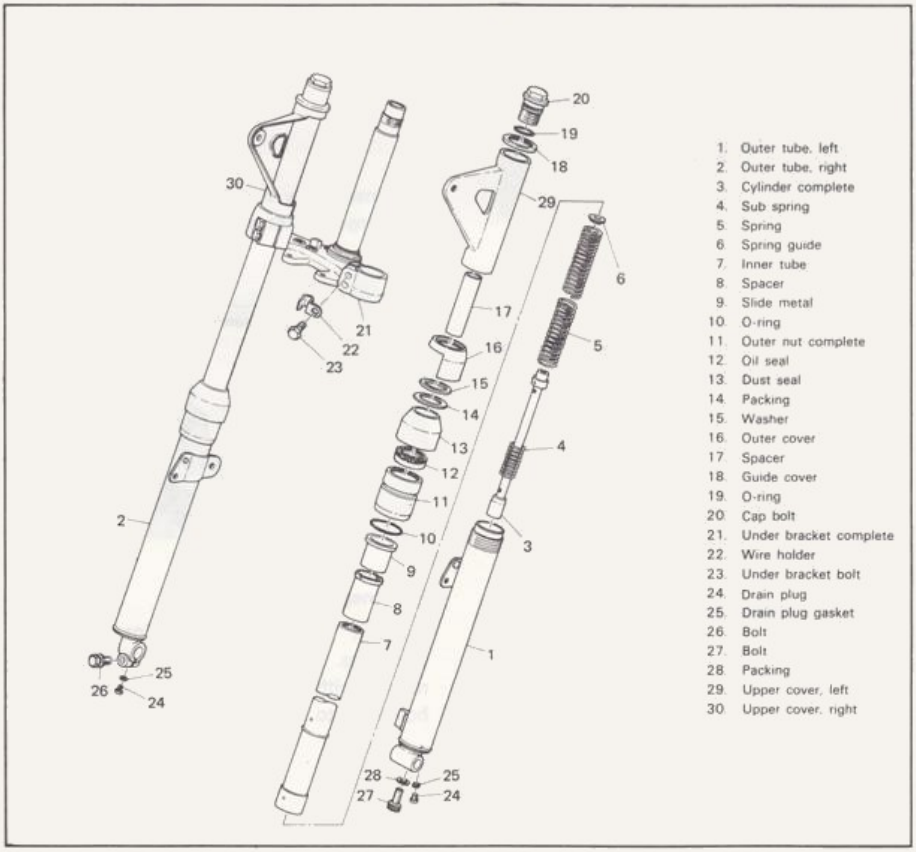
c. Install the inner tube caps.

Inner tube cap torque: 3 m-kg (21 ft-lb)

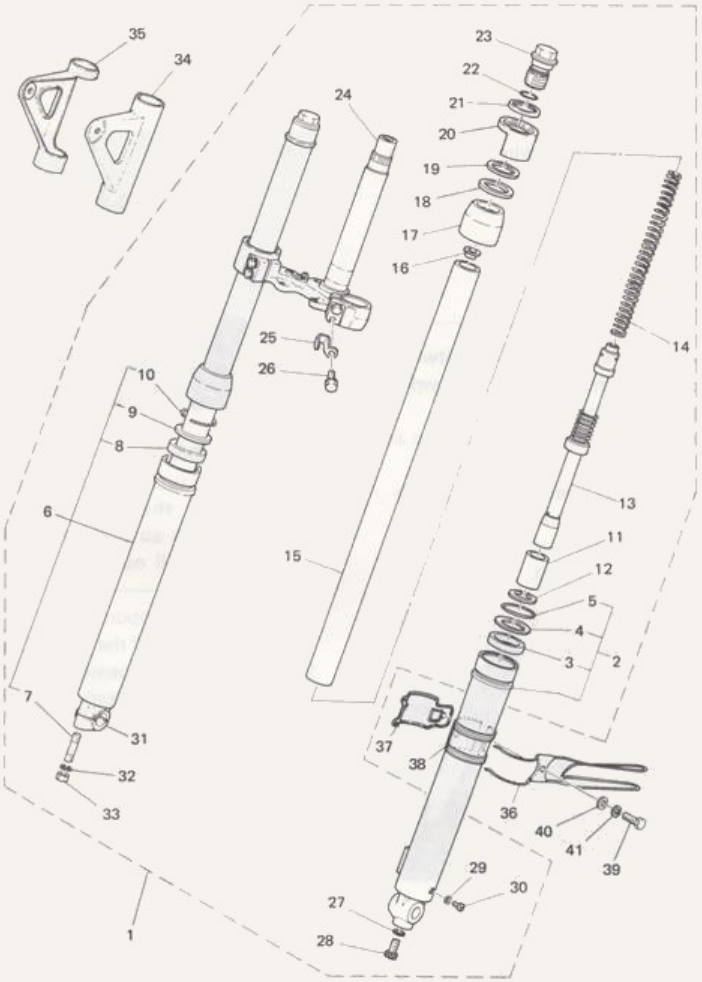
d. Tighten all pinch bolts.

Pinch bolt torque:
0.8 ~ 1.25 m-kg (6 ~ 9 ft-lb)

DT125C Front Fork (DT125A, B)



DT100C/175C Front Fork (DT100A, B/175A, B)



1. Front fork assembly	12. Circlip	23. Cap bolt	34. Upper cover, left
2. Outer tube left complete	13. Front fork cylinder complete	24. Under bracket complete	35. Upper cover, right
3. Oil seal	14. Fork spring	25. Wire holder	36. Wire holder 1
4. Oil seal washer	15. Inner tube	26. Under bracket bolt	37. Wire holder 2
5. Oil seal clip	16. Spring upper seat	27. Packing	38. Damper
6. Outer tube right complete	17. Dust seal	28. Bolt	39. Hexagon bolt
7. Axle holder bolt	18. Packing	29. Drain plug gasket	40. Plate washer
8. Oil seal	19. Washer	30. Drain plug	41. Spring washer
9. Oil seal washer	20. Outer cover	31. Axle holder	
10. Oil seal clip	21. Upper cover guide	32. Spring washer	
11. Front fork piston	22. Packing (O-ring)	33. Nut	

5-8. STEERING HEAD

A. Adjustment

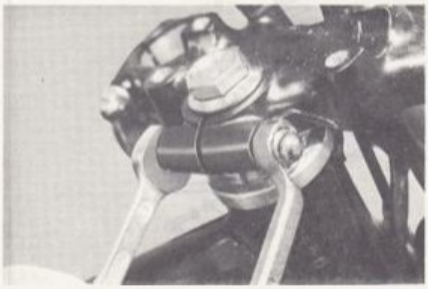
Refer to Chapter 2, Section 2-4, paragraph F for steering head adjustment procedure.

B. Disassembly

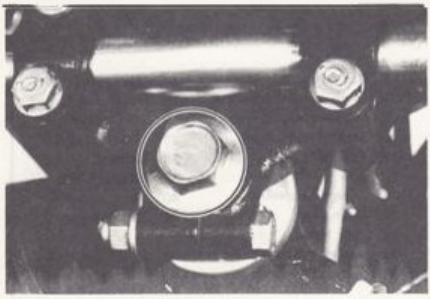
1. After removing front forks, remove headlight from headlight body.
2. Disconnect electrical wires between headlight body and main wiring harness from frame.

   NOTE:
   Removal of fuel tank will aid in disconnecting wiring.

3. Disconnect any electrical wires between handlebar switches and main wiring harness in headlight body.
4. Disconnect clutch and throttle cables at handlebars.
5. Disconnect (tachometer and) speedometer cables at instruments.
6. Remove handlebars and put aside.
7. Loosen stem pinch bolt.



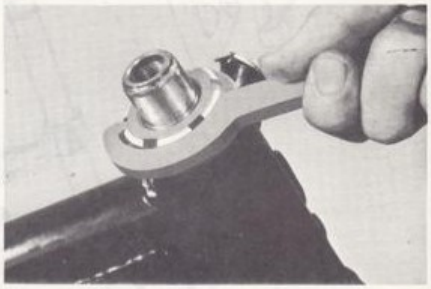
8. Remove stem fitting bolt.



9. Remove handle crown (upper bracket) and instruments, as an assembly.

   NOTE:
   Hold headlight body to keep it from falling.

10. Remove steering ring nut with steering nut wrench.



CAUTION:
Support under bracket with one hand to hold the bracket up into the headstock so that the loose bearings will not fall out.

11. While still supporting the under bracket, carefully lift off the upper bearing cover.
12. Lift off the top bearing race and remove all of the ball bearings from the upper bearing assembly.

Ball quantity (size): 22 (3/16 in)

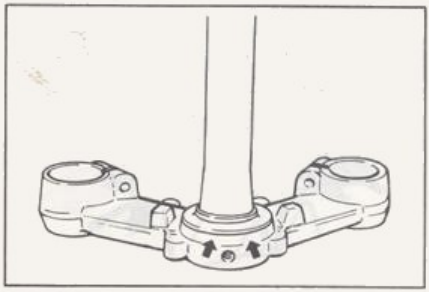
13. Remove bracket while being very careful not to lose any bearings from the lower assembly.

Ball quantity (size): 19 (1/4 in)

14. Remove races from head pipe using drift punch and hammer as shown. Work the race out gradually by tapping lightly around its complete diameter.

15. Remove the bearing race from the lower bracket by tapping around its diameter with a drift punch and hammer.

NOTE:
Remove dust seal.

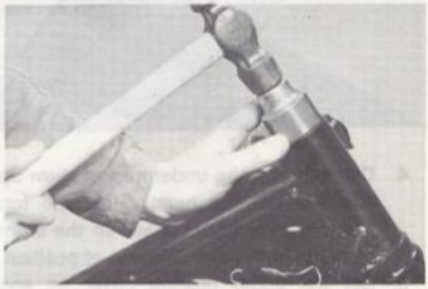


C. Inspection

1. Examine all the balls for pits or partial flatness. If any one is found defective, the entire set (including both races) should be replaced. If either race is pitted, shows rust spots, or is damaged in any way, replace both races and all balls.
2. Examine dust seal under lowest race and replace if damaged.

D. Installation

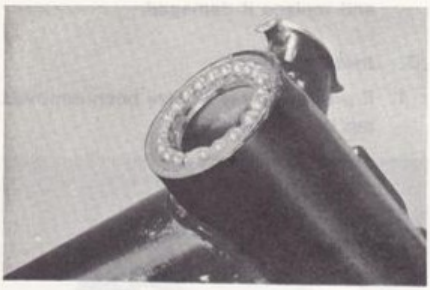
1. If pressed-in races have been removed, tap in new races.



2. Grease the lower ball race of the bottom assembly and arrange the balls around it. Then apply more grease.

3. Grease the lower ball race of the upper assembly and arrange the balls around it. Then apply more grease and set the top race into place.

NOTE:
Use medium-weight wheel bearing grease of quality manufacturer—preferably waterproof.



4. Carefully slip the underbracket stem up into the steering head. Hold the top bearing assembly in place so the stem does not knock any balls out of position.
5. Set the upper bearing cover on and install the ring nut. Tighten the ring nut so that all freeplay is taken up, but so the bracket can still pivot freely from lock to lock. Recheck for freeplay after the entire fork unit has been installed. (Refer to Section 2-4, F for adjustment procedure.)
6. Install the fork tubes into the underbracket to ease headlight body installation.
7. Install the headlight body and stays onto the fork tubes with all rubber and steel spacing washers properly in place.
8. Install the upper fork bracket. Tighten steering fitting bolt then tighten stem pinch bolt. Torque to specification.

Steering fitting bolt:
4.2 ~ 6.5 m-kg (30 ~ 47 ft-lb)
Stem pinch bolt:
0.8 ~ 1.25 m-kg (6 ~ 9 ft-lb)

9. Tighten upper fork tube pinch bolts and torque to specification.

Upper fork tube pinch bolt torque:
0.8 ~ 1.25 m-kg (6 ~ 9 ft-lb)

NOTE:
Make certain that tops of fork tubes are adjusted to the same level. If necessary, loosen underbracket pinch bolts and adjust.

10. Install handlebars and torque to specification.

Handlebar mounting bolt torque:
0.8 ~ 1.25 m-kg (6 ~ 9 ft-lb)

11. Reconnect all electrical wiring and check operation.
12. Install headlight and check operation.
13. Install front wheel.
14. Reconnect speedometer and tachometer cables.
15. Reconnect clutch, front brake and throttle cables and check operation.

5-9. SWING ARM

A. Inspection

1. With rear wheel and shock absorbers removed, grasp the ends of the arm and move from right to left to check for freeplay.

Swing arm freeplay: 1.0 mm

2. If freeplay is excessive, remove swing arm and replace swing arm bushing.

B. Lubrication

1. Apply grease to grease fitting on top of pivot with low pressure hand operated gun. Apply until fresh grease appears at both ends of pivot shaft.

Recommended lubricant: Smooth chassis lube grease

2. Wipe off excess grease.

C. Removal

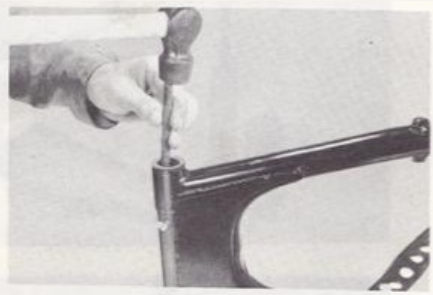
1. Remove nut on swing arm pivot bolt and tap out bolt with a long aluminum or brass rod.

   NOTE:
   Carefully remove the arm while noting the location of spacing washers and shims.

Pivot bolt torque: 5 ~ 8 m-kg(36 ~ 58 ft-lb)

2. Tap out old bushing from each side of pivot using the long rod.
3. Install new bushings using a press.

   NOTE:
   If tapping on bushing, bushing may be broken.



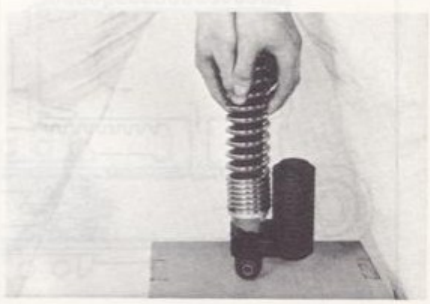
5-10. REAR SHOCK ABSORBER

A. Removal

Remove the rear shock absorber mounting bolts, and remove the rear shock absorber assembly.

B. Inspection

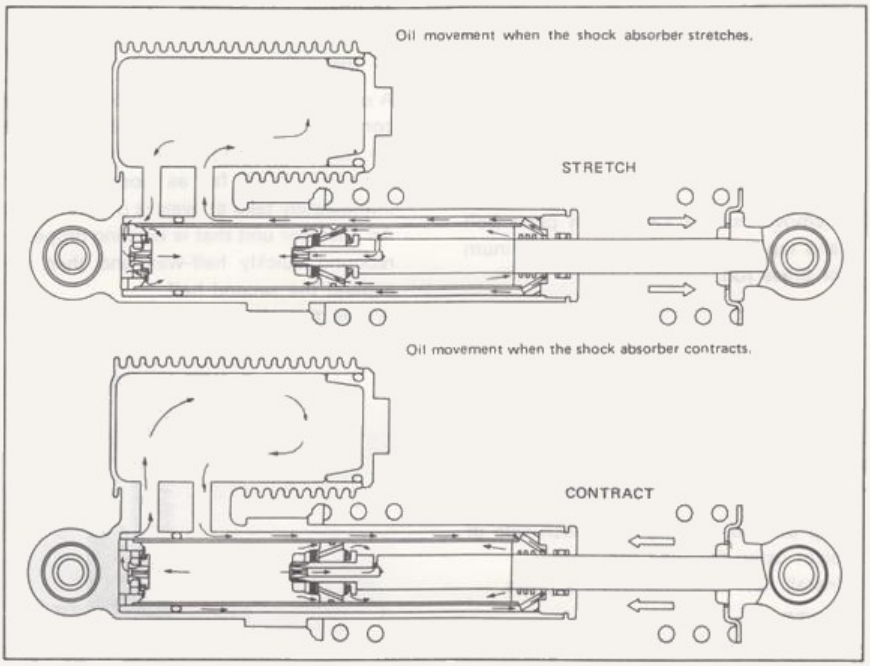
A unit that has lost its absorber qualities will compress quite easily and rebound quickly. To test the effectiveness of the unit, compress it as far as possible and then immediately take all weight off the absorber. An absorber unit that is working properly will rebound quickly half-way and then slowly expand the second half.
A defective absorber with rebound to its fullest length without hesitation.



Thermal Phase Shocks (DT175B)

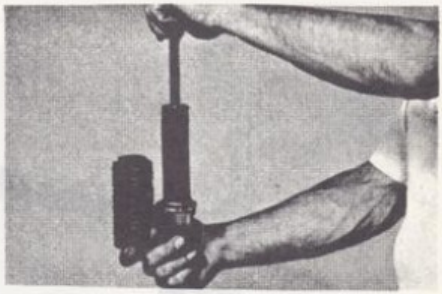
Rear shock absorbers used on DT175B are of the 'Thermal Phase' type utilizing a separate oil reservoir. The separate reservoir permits use of a larger quantity of oil. Additionally, the oil tank also acts as a heat sink. This allows the oil to dissipate heat and retain its normal viscosity.

A. Operation



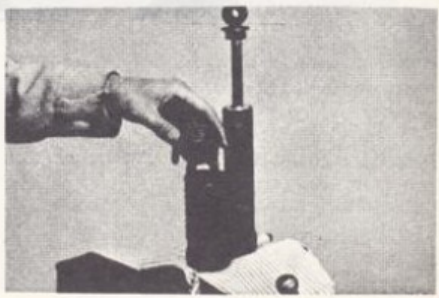
B. Inspection

1. Remove shock.
2. Place shock bottom eyelet in vise. Grasp and compress spring from top. Remove upper spring seat and spring.
3. Operate shock absorber shaft to check damping. As you push down, only slight damping should be felt. Return stroke will have considerable damping. If there is no damping, replace cylinder rod assembly.

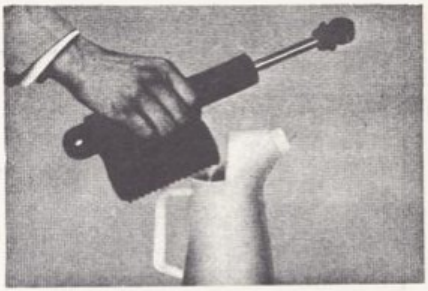


C. Shock Absorber Oil Change

1. Remove the shock absorber from the machine and remove the spring and the cap from reservoir.

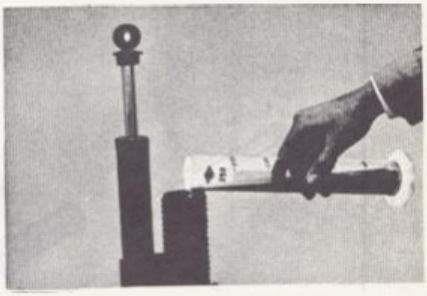


2. Pour oil out of reservoir. Pump the shock absorber shaft to remove all oil from the damping sylinder.



3. Wash the entire unit in mild solvent and pump out all solvent afterward.

4. Measure the correct amount of Yamaha Shock Oil or another specialty shock oil and refill the unit. As you pour the oil in, slowly pump the damper to distribute the oil and eliminate any air bubbles.

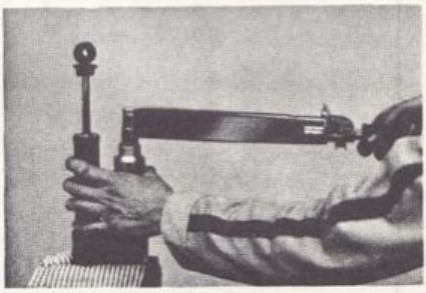


Note:

Choose the weight oil that will suit rider preference and local conditions.

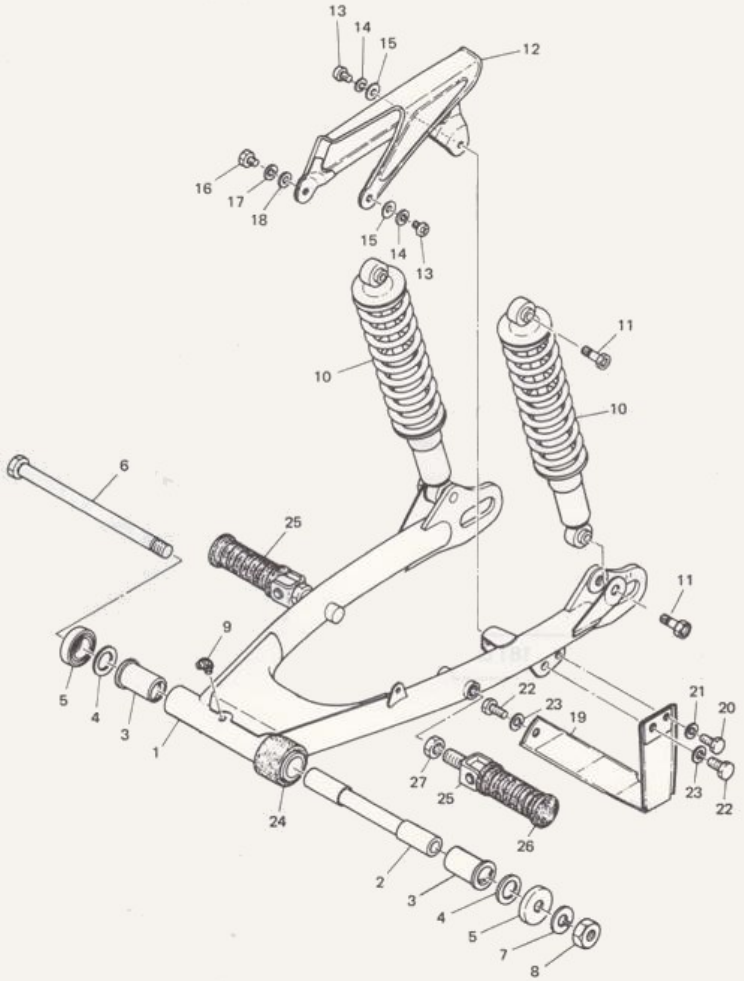
Rear shock oil capacity:	181 cc

5. Replace reservoir cap and springs and re-install the shock absorber.



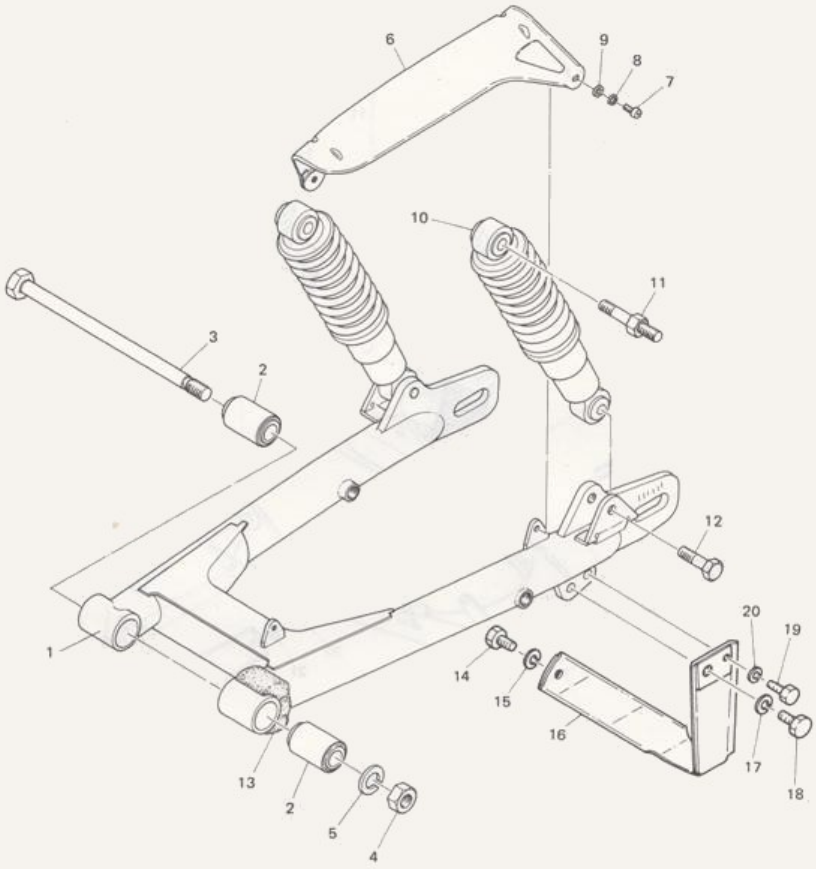
RESERVOIR CAP TORQUE:	2.0 ~ 2.3 m-kgs. (170 ~200 in-lbs.)

DT100C Rear Arm (DT100A, B)



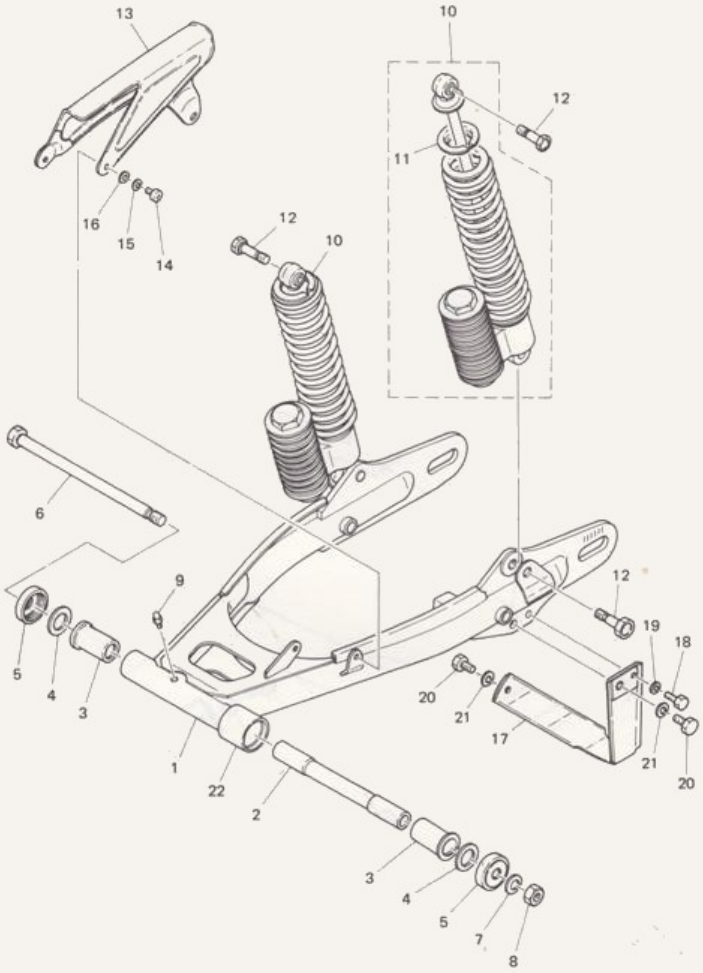
1. Rear arm complete
2. Bushing 2
3. Bushing 1
4. Shim
5. Thrust cover
6. Pivot shaft
7. Spring washer
8. Nut
9. Grease nipple
10. Rear shock absorber
11. Bolt
12. Chain case
13. Panhead screw
14. Spring washer
15. Plain washer
16. Bolt
17. Spring washer
18. Plain washer
19. Chain guard
20. Bolt
21. Spring washer
22. Bolt
23. Spring washer
24. Guard seal
25. Rear footrest assembly
26. Rear footrest cover
27. Rear footrest nut

DT125C Rear Arm (DT125A, B)



1. Rear arm complete
2. Rear arm bushing
3. Pivot shaft
4. Nut
5. Spring washer
6. Chain case
7. Pan head screw
8. Spring washer
9. Plain washer
10. Rear shock absorber assembly
11. Rear shock absorber bolt
12. Rear shock absorber bolt
13. Guard seal
14. Bolt
15. Spring washer
16. Chain guard
17. Spring washer
18. Bolt
19. Bolt
20. Spring washer

DT175C Rear Arm (DT175A, B) (typical)



1. Rear arm complete
2. Bushing 2
3. Bushing 1
4. Shim
5. Thrust cover
6. Pivot shaft
7. Spring washer
8. Hexagon nut
9. Grease nipple
10. Rear shock absorber assembly
11. Spring upper seat
12. Bolt
13. Chain case
14. Panhead screw
15. Spring washer
16. Plain washer
17. Chain guard
18. Hexagon bolt
19. Spring washer
20. Hexagon bolt
21. Spring washer
22. Guard seal

5-11. CABLES AND FITTINGS

A. Cable Maintenance

NOTE:

See Maintenance and Lubrication Intervals Charts for additional information.

Cable maintenance is primarily concerned with preventing deterioration through rust and weathering; and providing for proper lubrication to allow the cable to move freely within its housing.

Cable removal is straight-forward and uncomplicated. Removal will not be discussed within this section. For details, see the individual maintenance section for which the cable is an integral part.

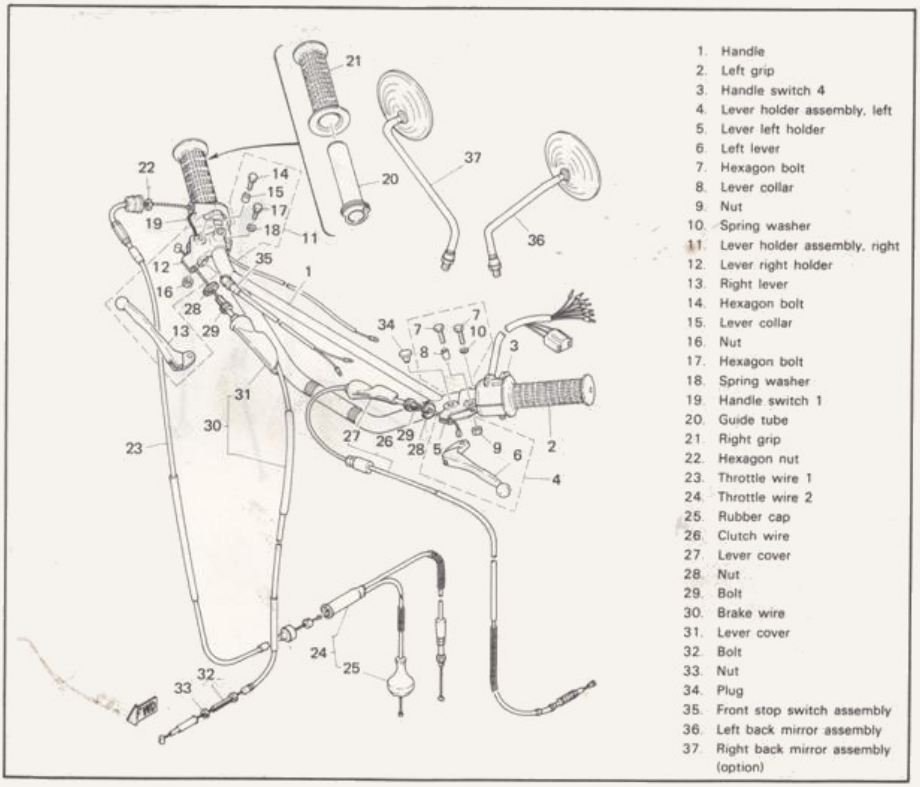
Cable routing is of paramount importance, however. For details of cable routing, see the cable routing diagrams at the end of this manual.

1. Remove the cable.
2. Check for free movement of cable within its housing. If movement is obstructed, check for fraying or kinking of the cable strands. If damage is evident, replace the cable assembly.
3. To lubricate cable, hold in vertical position. Apply lubricant to uppermost end of cable. Leave in vertical position until lubricant appears at bottom end. Allow excess to drain and re-install.

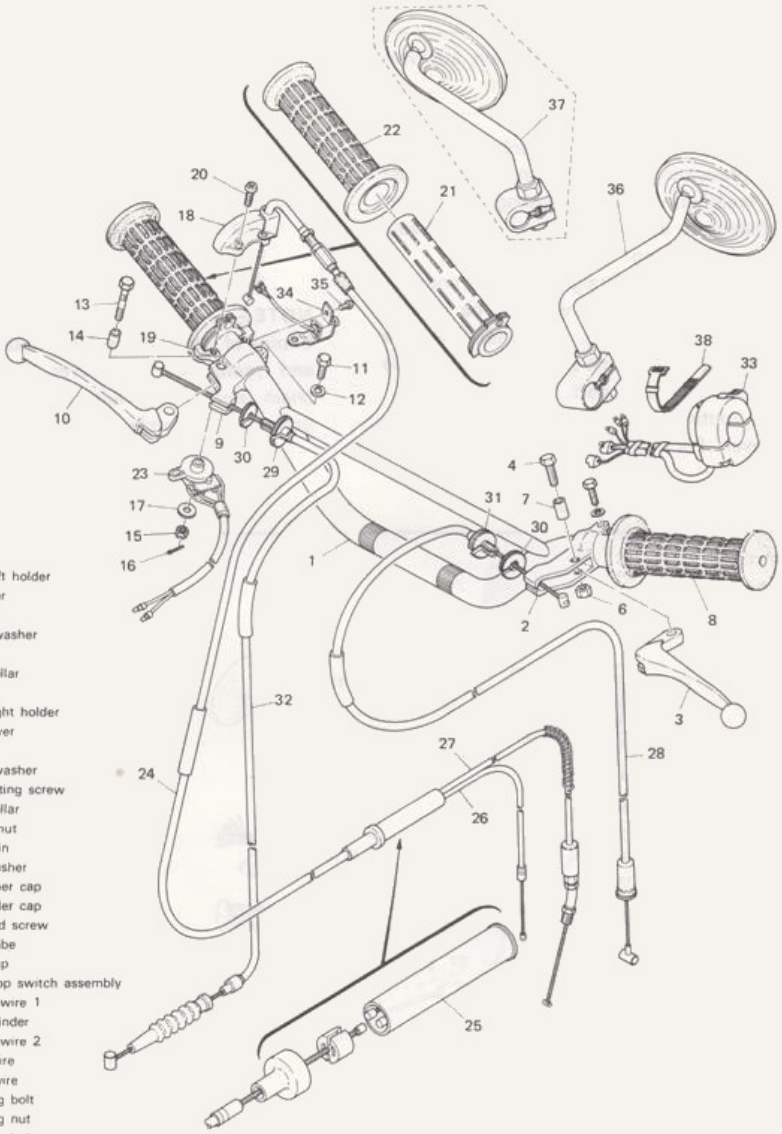
NOTE:

Choice of lubricant depends upon conditions and preference. However, a semi-drying chain and cable lubricant will probably perform adequately under most conditions.

DT175C Handle, Wire (DT175A, B)



DT125C Handle, Wire (DT125A, B)



1 Handle
2 Lever left holder
3 Left lever
4 Bolt
5 Spring washer
6 Nut
7 Lever collar
8 Left grip
9 Lever right holder
10 Right lever
11 Bolt
12 Spring washer
13 Lever fitting screw
14 Lever collar
15 Slotted nut
16 Cotter pin
17 Plain washer
18 Grip upper cap
19 Grip under cap
20 Pan head screw
21 Guide tube
22 Right grip
23 Front stop switch assembly
24 Throttle wire 1
25 Wire cylinder
26 Throttle wire 2
27 Pump wire
28 Clutch wire
29 Adjusting bolt
30 Adjusting nut
31 Adjusting bolt
32 Brake wire
33 Handle switch 3
34 Handle switch 1
35 Pan head screw
36 Left back mirror assembly
37 Right back mirror assembly
38 Switch cord band

B. Throttle Maintenance

1. Remove two Phillips head screws from throttle housing assembly and separate two halves of housing.
2. Disconnect cable end from throttle grip assembly and remove grip assembly.
3. Wash all parts in mild solvent and check contact surfaces for burrs or other damage. (Also clean and inspect right-hand end of handlebar.)
4. Lubricate contact surfaces with light coat of lithium soap base grease and reassemble.

   NOTE:
   Tighten housing screws evenly to maintain an even gap between the two halves.

5. Check for smooth throttle operation and quick spring return when released and make certain that housing does not rotate on handlebar.

C. Cable Junction Maintenance

The throttle cable cylinder (junction point for Autolube control cable) must be periodically maintained also.

1. Remove throttle cable number one from handlebar housing.
2. Remove throttle cable number two from carburetor mixing chamber top.
3. Remove Autolube pump cable from pump pulley. Remove cable adjustor.
4. Remove seat and fuel tank.
5. Remove cable/cylinder assembly complete.
6. Remove cylinder cap, throttle cable two and Autolube pump cable.
7. Wash assembly thoroughly in solvent.
8. Lubricate all associated cables.
9. Apply a thin coating of lubricant to cylinder walls.

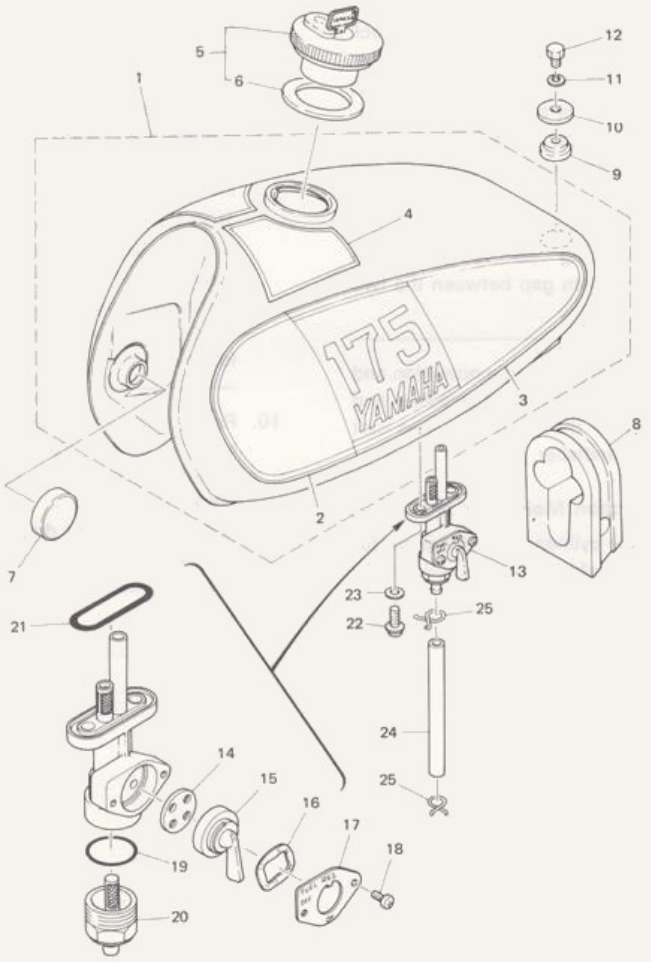
   NOTE:
   A small amount of lithium soap base grease may be used in lieu of cable lubricant. However, if machine is to be used in extreme cold, use the cable lubricant.

10. Reassemble all cables. Make sure cylinder is sealed from damage due to weather and riding conditions. Reinstall.
    See cable routing diagrams for correct installation position. See Mechanical Adjustments Chapter for correct cable adjustment.

5-12. MISCELLANEOUS CHASSIS COMPONENTS

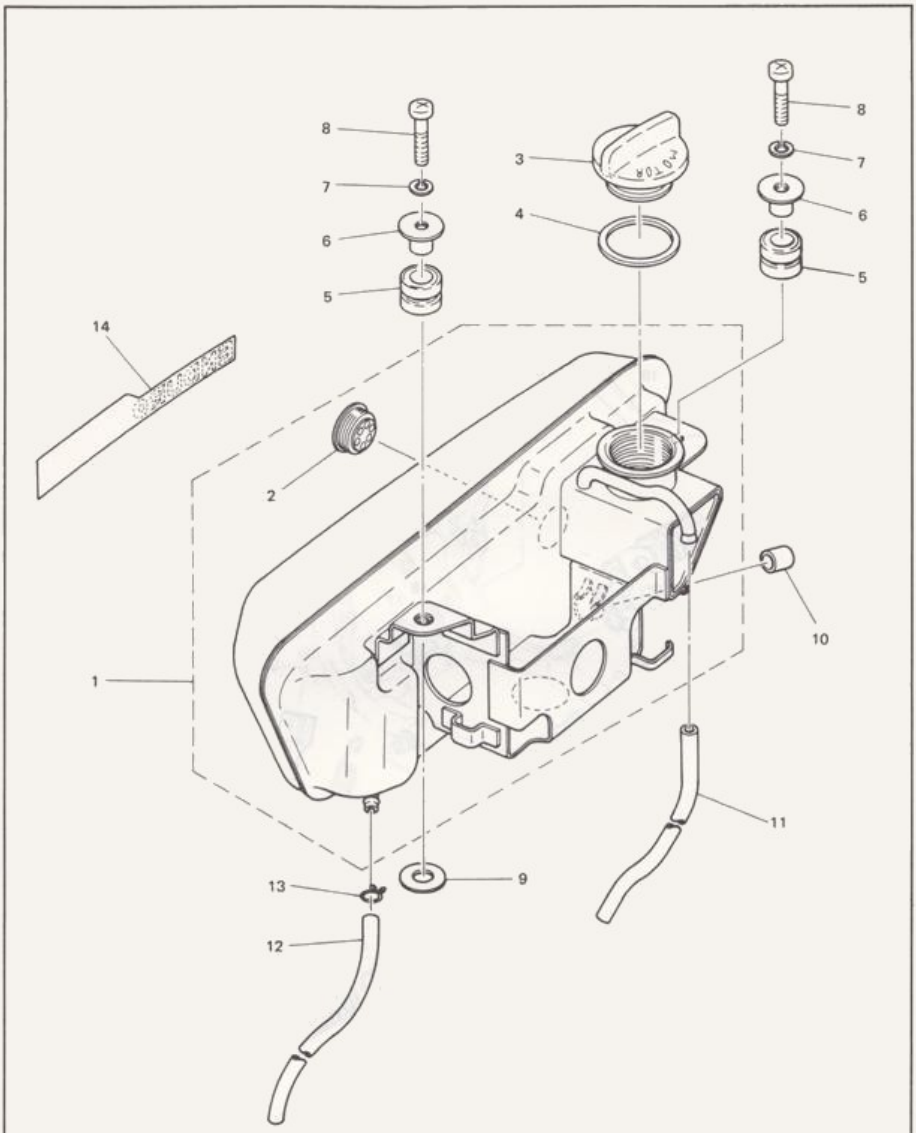
(See individual model parts list for specific part identification.)

A. Fuel Tank



1. Fuel tank complete
2. Graphic, fuel tank 1
3. Graphic, fuel tank 3
4. Graphic, fuel tank 7
5. Cap assembly
6. Cap packing
7. Locating damper
8. Fuel tank damper
9. Grommet
10. Washer
11. Spring washer
12. Bolt
13. Fuel cock assembly
14. Cock packing
15. Cock lever
16. Wave washer
17. Lever fitting plate
18. Lever fitting screw
19. O-ring
20. Filter cup
21. O-ring
22. Screw
23. Plate washer
24. Fuel pipe
25. Clip

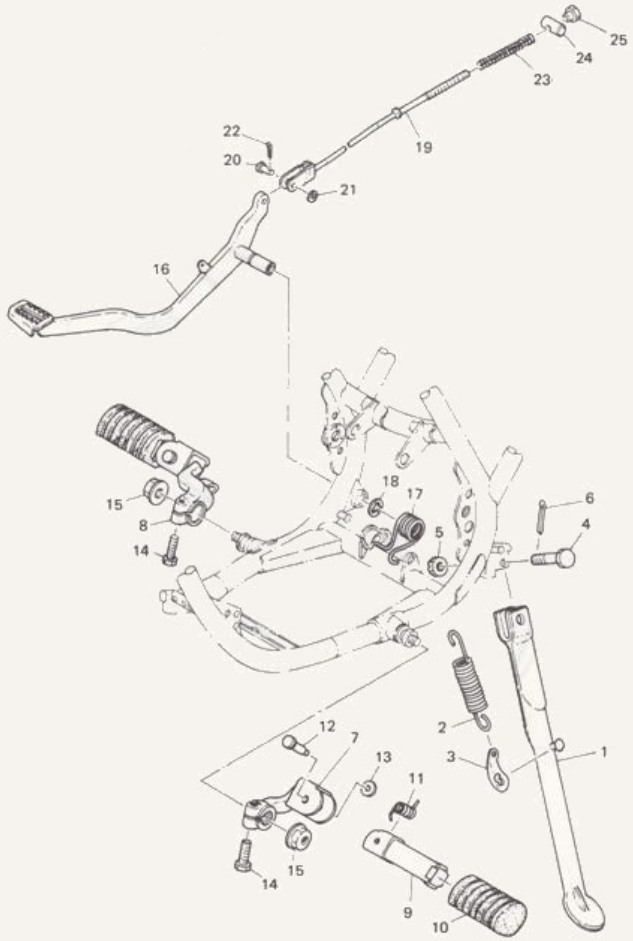
B. Oil Tank



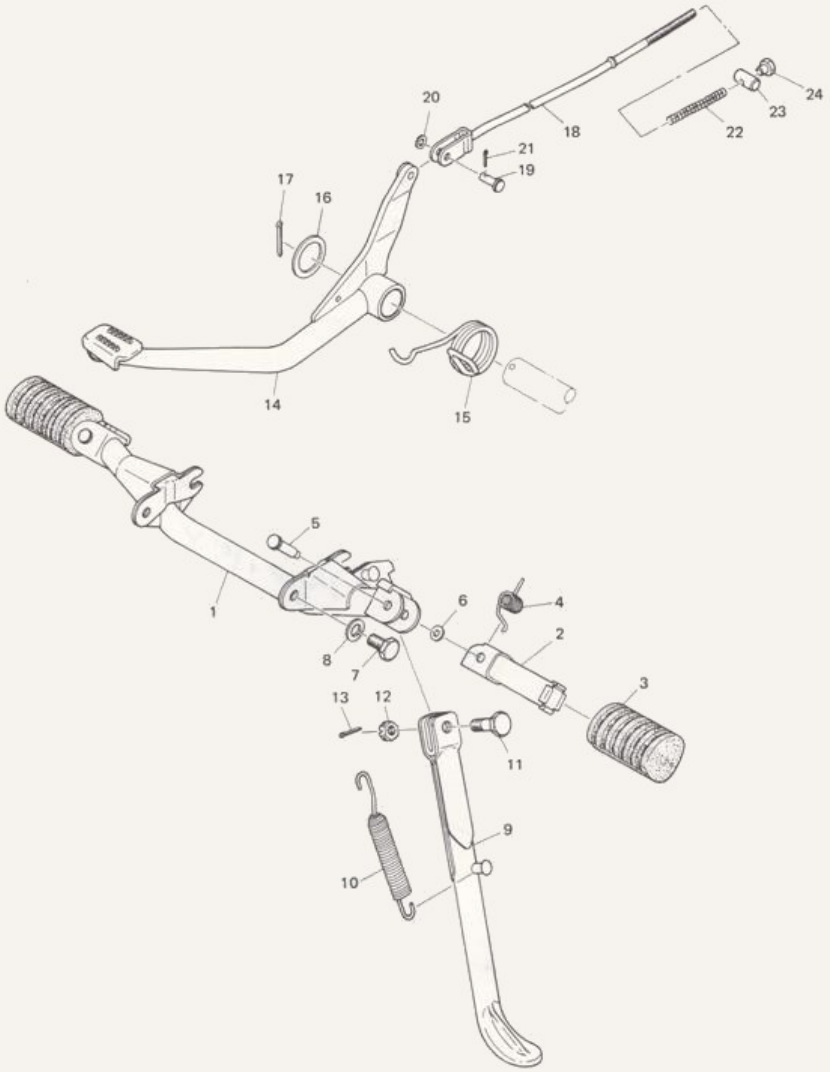
1. Oil tank complete
2. Level gauge
3. Oil tank cap
4. Gasket
5. Grommet
6. Collar
7. Spring washer
8. Panhead screw
9. Plate washer
10. Oil tank damper
11. Air vent pipe
12. Oil pipe
13. Clip
14. Enduro emblem

C. Stand • Footrest • Brake Pedal

DT100C (DT100A, B)

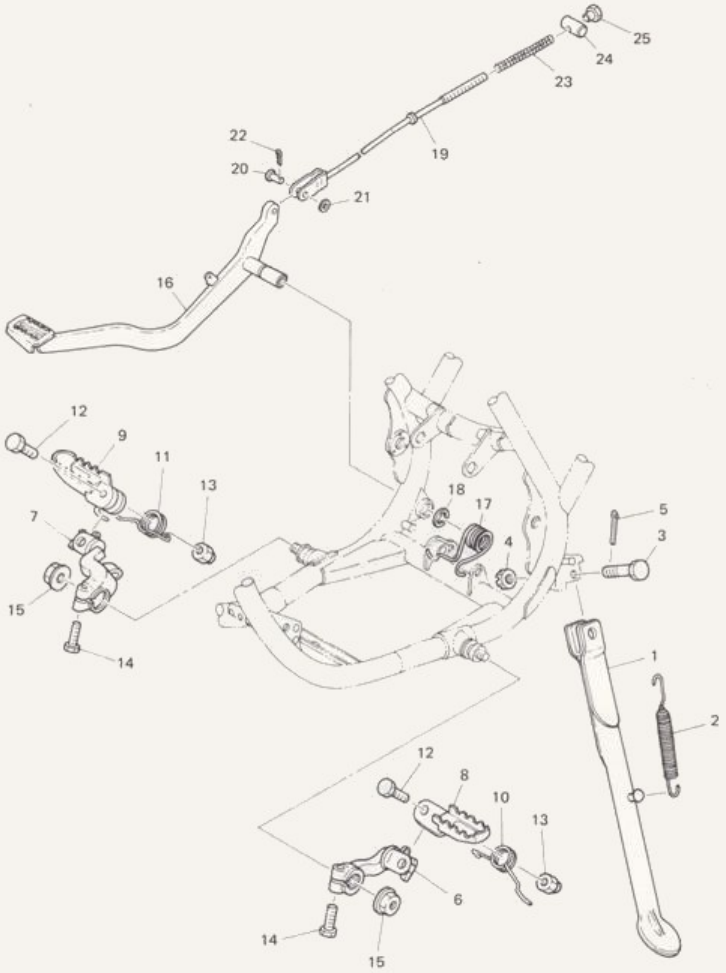


1. Side stand
2. Side stand spring
3. Side stand link
4. Hexagon bolt
5. Slotted nut
6. Cotter pin
7. Footrest bracket, left
8. Footrest bracket, right
9. Footrest
10. Footrest cover
11. Return spring
12. Clevis pin
13. Plate washer
14. Bolt
15. Flange nut
16. Brake pedal
17. Return spring
18. Circlip
19. Brake rod
20. Link joint pin
21. Plain washer
22. Cotter pin
23. Rod spring
24. Clevis pin
25. Adjusting nut



1. Footrest bar
2. Footrest peg
3. Footrest cover
4. Return spring
5. Clevis pin
6. Special washer
7. Bolt
8. Spring washer
9. Side stand
10. Spring
11. Bolt
12. Slotted nut
13. Cotter pin
14. Brake pedal
15. Brake pedal spring
16. Brake shaft washer
17. Cotter pin
18. Brake rod
19. Link joint pin
20. Plain washer
21. Cotter pin
22. Rod spring
23. Clevis pin
24. Adjusting nut

DT125A, B, C (typical)



1. Side stand
2. Tension spring
3. Bolt
4. Castle nut
5. Cotter pin
6. Footrest bracket, left
7. Footrest bracket, right
8. Left footrest peg
9. Right footrest peg
10. Footrest return spring, left
11. Footrest return spring, right
12. Hexagon bolt
13. Self locking nut
14. Hexagon bolt
15. Flange nut
16. Brake pedal
17. Return spring
18. Circlip
19. Brake rod
20. Joint pin
21. Plate washer
22. Cotter pin
23. Rod spring
24. Clevis pin
25. Adjusting nut

CHAPTER 6. ELECTRICAL SYSTEM FOR DT100C, DT175C

6

CHAPTER 6. ELECTRICAL SYSTEM FOR DT100C AND DT175C

6-1. SPECIAL TOOLS

A. Pocket Tester

B. Electro Tester

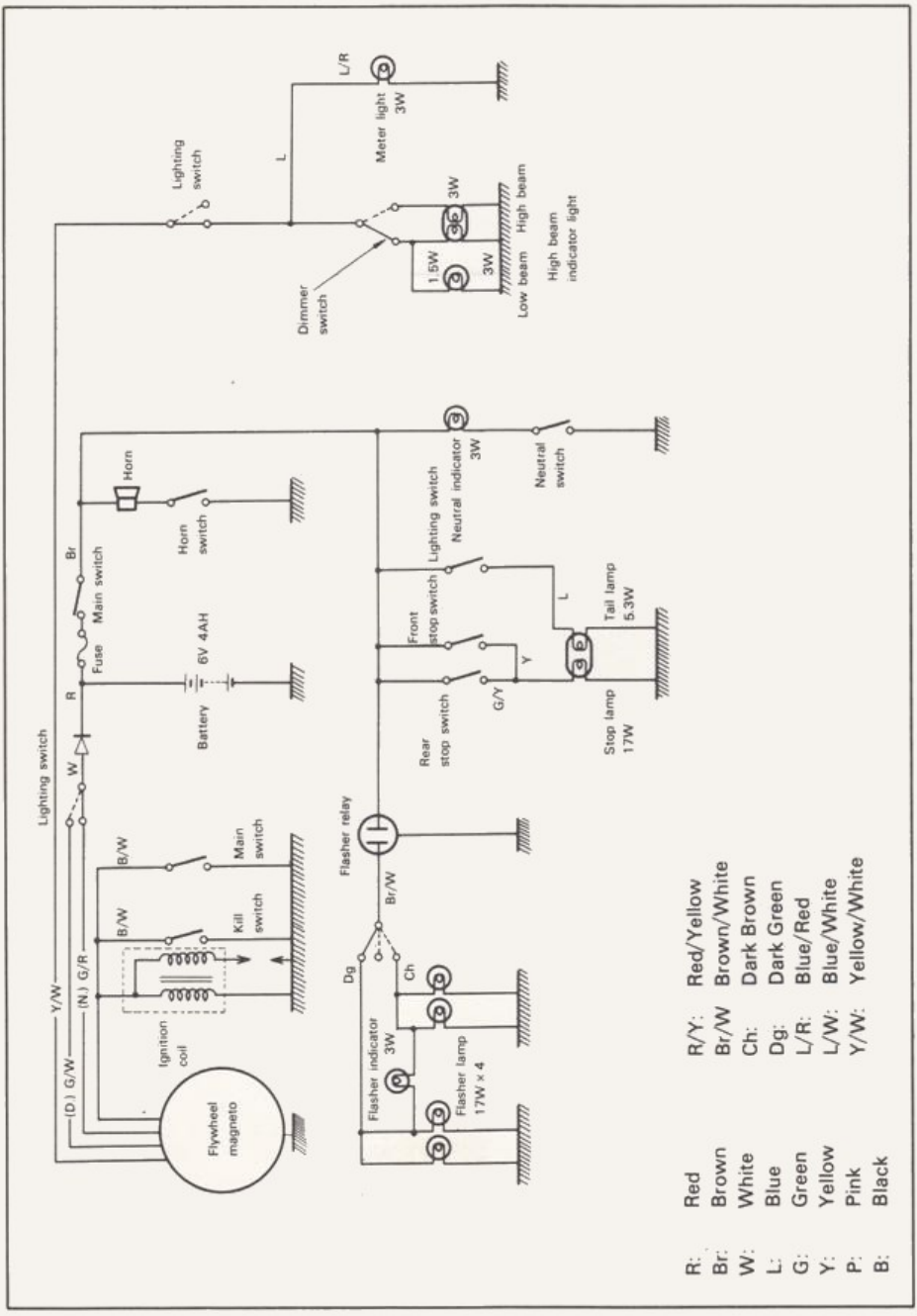
6-2. ELECTRICAL COMPONENTS

PART NAME	MANUFACTURER	MODEL	
		DT100C	DT175C
Spark plug	N.G.K.	B-7ES	B-8ES
Ignition coil	Mitsubishi/Hitachi	F6T40973	F6T40972
Flywheel magneto	Mitsubishi/Hitachi	F000T01771	F140-06
Rectifier	Stanley	DE2304	←
Fuse	Taiko Mfg.	10A × 2	←
Battery	Furukawa/G.S.	6N4B-2A (6V4AH)	←
Ignition switch	Asahi Denso		
Handlebar switch (R)	Asahi Denso		
Handlebar switch (L)	Asahi Denso		
Front stop switch	Asahi Denso		
Rear stop switch	Asahi Denso		
Headlight	Koito Mfg.	6V 30/30W	←
High beam ind. bulb		6V 3.0W	←
Tail/stop light bulb		6V 5.3/17W	←
Neutral light bulb		6V 3W	←
Speedometer bulb		6V 3W × 2	←
Tacometer bulb		—	6V 3W
Flasher bulb(s)		6V 17W	←
Flasher ind. bulb		6V 3W	←
Flasher relay	Nihon Denso	JFK-0070	←
Horn	Nikko Kinzoku	MF2-6	←
A.C. Regulator (DT175C only)	Stanley	—	SRS-610

6-3. DESCRIPTION

Both the DT100C and DT175C models utilize a flywheel magneto to generate electrical energy for the ignition, and charging systems. A 6-volt wet-type storage battery provides electrical power for the horn, stoplight, neutral light, and flasher lights.

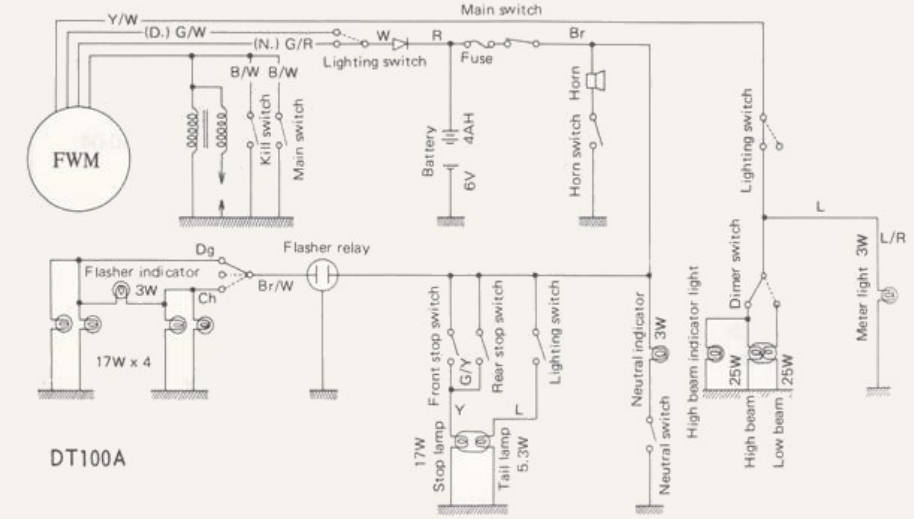
6-4. CONNECTION DIAGRAM



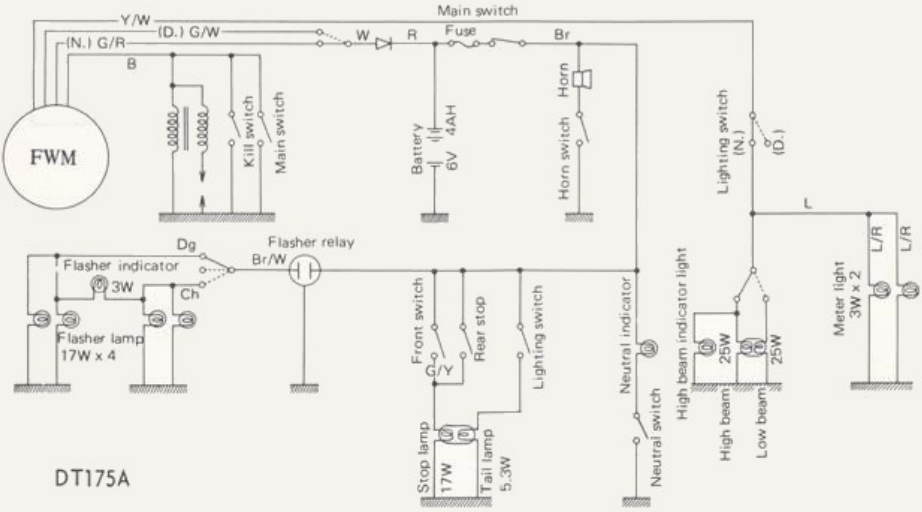
ELECTRICAL COMPONENTS (DT100A, B/DT175A, B)

PART NAME	MANUFACTURER	MODEL/TYPE/RATING
Spark Plug	N.G.K.	B-8ES
Ignition Coil	MITSUBISHI/HITACHI	F6T401/CM61-20
Flywheel Magneto	MITSUBISHI/HITACHI	F000TO1771/F140-04
Rectifier	STANLY	DE2304
Fuse	TAIKO MFG.	10A x 2
Battery	FURUKAWA/G.S.	6N4B-2A, 6V4AH
Ignition Switch	ASAHI DENSO	———
Handlebar Sw. (R)	ASAHI DENSO	———
Handlebar Sw. (L)	ASAHI DENSO	———
Front Stop Switch	ASAHI DENSO	———
Rear Stop Switch	ASAHI DENSO	———
Headlight	KOITO MFG.	6V 25/25W
High Beam Ind. Bulb	———	6V 1.5W
Tail/Stop Light Bulb	———	6V 5.3/17W
Neutral Light Bulb	———	6V 3W
Speedometer Bulb	———	6V 3W
Tachometer Bulb	———	6V 3W
Flasher Bulb(s)	———	6V 17W
Flasher Ind. Bulb	———	6V 3W
Flasher Relay	NIHON DENSO	JFK-0070
Horn	NIKKO KINZOKU	MF2-6

CONNECTION DIAGRAM (DT100A, B/175A, B)



DT100A

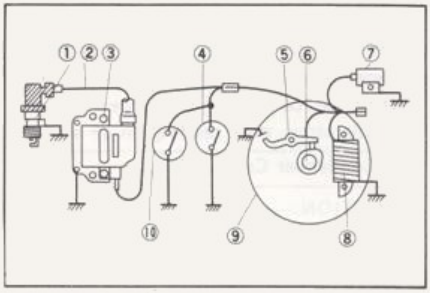


DT175A

6-5. IGNITION SYSTEM

A. Description of Operation

The ignition system consists of the components as shown below. As the flywheel rotates, the contact breaker points begin to open and close, alternately. This make-and-break operation develops an electromotive force in the ignition power source coil, and produces a voltage in the ignition coil primary windings. The ignition coil is a kind of transformer, with a 1 : 50 turn ratio of the primary to the secondary winding. The voltage (150 ~ 300V) which is produced in the primary coil, is stepped up to 12,000 ~ 14,000V by mutual-induction and the electric spark jumps across the spark plug electrodes.



1 Spark plug
2 High-tension wire
3 Ignition coil
4 Main switch
5 Contact breaker
6 Cam
7 Condenser
8 Ignition power source coil
9 Flywheel magneto
10 Engine stop switch

B. Ignition Timing

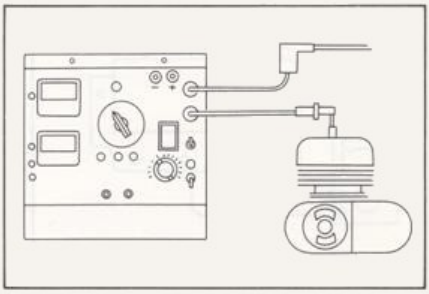
Refer to Chapter 2, Section 5, A and B for ignition timing procedure.

C. Spark Gap Test

The entire ignition system can be checked for misfire and weak spark using the Electro Tester. If the ignition system will fire across a sufficient gap, the entire ignition system can be considered good. If not, proceed with individual component tests until the problem is found.

1. Warm-up engine thoroughly so that all electrical components are at operating temperature.
2. Stop engine and connect tester as shown.
3. Start engine and increase spark gap until misfire occurs. (Test at various rpm's between idle and red line.)

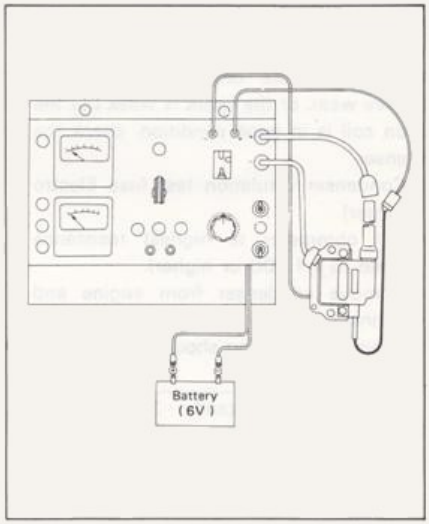
Minimum Spark Gap: 5 mm



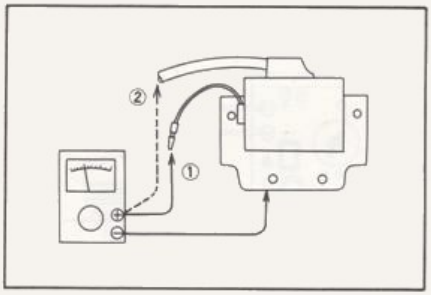
D. Ignition Coil Test

1. Coil spark gap test
   a. Remove fuel tank and disconnect ignition coil from wire harness and spark plug.
   b. Connect Electro Tester as shown.
   c. Connect fully charged 6V battery to tester.
   d. Turn on spark gap switch and increase gap until misfire occurs.

Minimum Spark Gap: 6 mm



2. Coil winding resistance tests
   Use a pocket tester or equivalent ohmmeter to determine resistance and continuity of primary and secondary coil windings.



1 Primary coil resistance check
2 Secondary coil resistance check

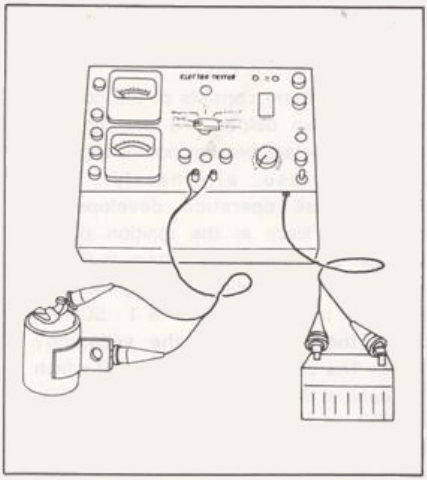
Model	Primary coil resistance Use (Ω × 1) scale	Secondary coil resistance Use (Ω × 100 scale)
DT100(all)	1.02Ω ±10%	6.0kΩ ±20%
DT175(all)	1.7Ω ±10%	6.0kΩ ±20%

E. Condenser Test

The condenser is capable of staring a large electrical charge.
If it were not for the condenser, an electric arc would jump across the separating contact points, causing them to burn.
Burned contact points greatly affect the flow of current in the primary winding of the ignition coil. If the contact points show excessive wear, or the spark is weak but the ignition coil is in good condition, check the condenser.

1. Condenser insulation test (use Electro Tester)
   a. Set ohmmeter to highest resistance scale (Ω × 1,000 or higher).
   b. Remove condenser from engine and connect ohmmeter as shown below.
   c. Resistance reading should be "Infinity" or very close to it.

Minimum Resistance: 3MΩ

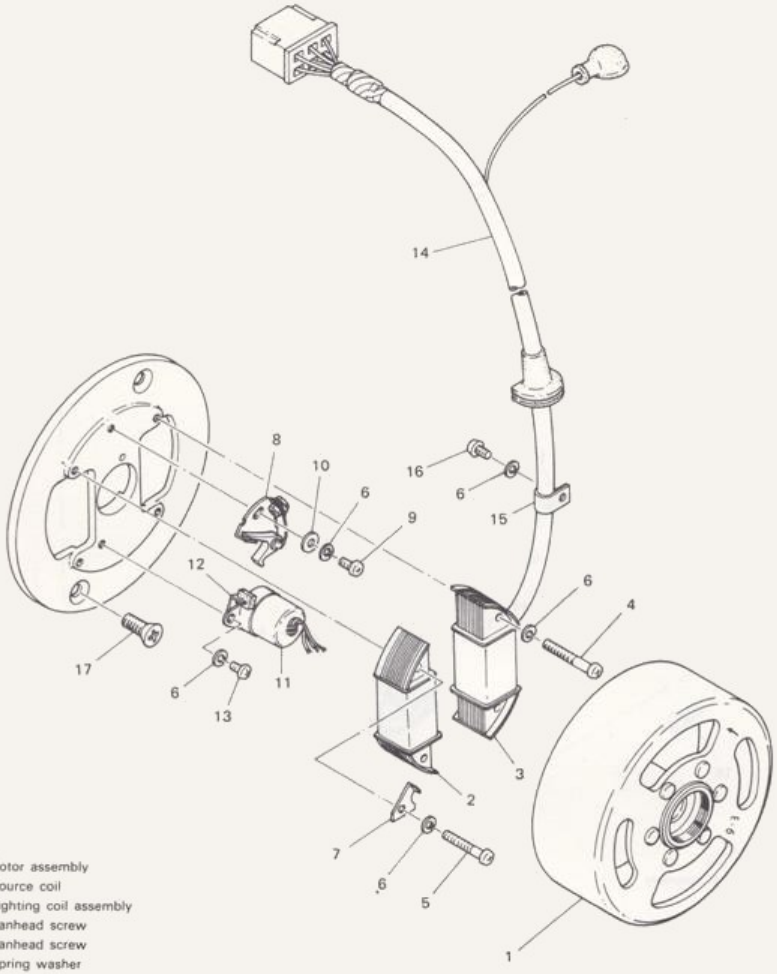


2. Capacity test (use Electro Tester)
   a. Calibrate capacity scale.
   b. Connect tester (same as insulation test).
   c. Meter needle will deflect and return to center as condenser is charged. After needle stops, note reading on μF scale.

Condenser Cap.: 0.30 μF

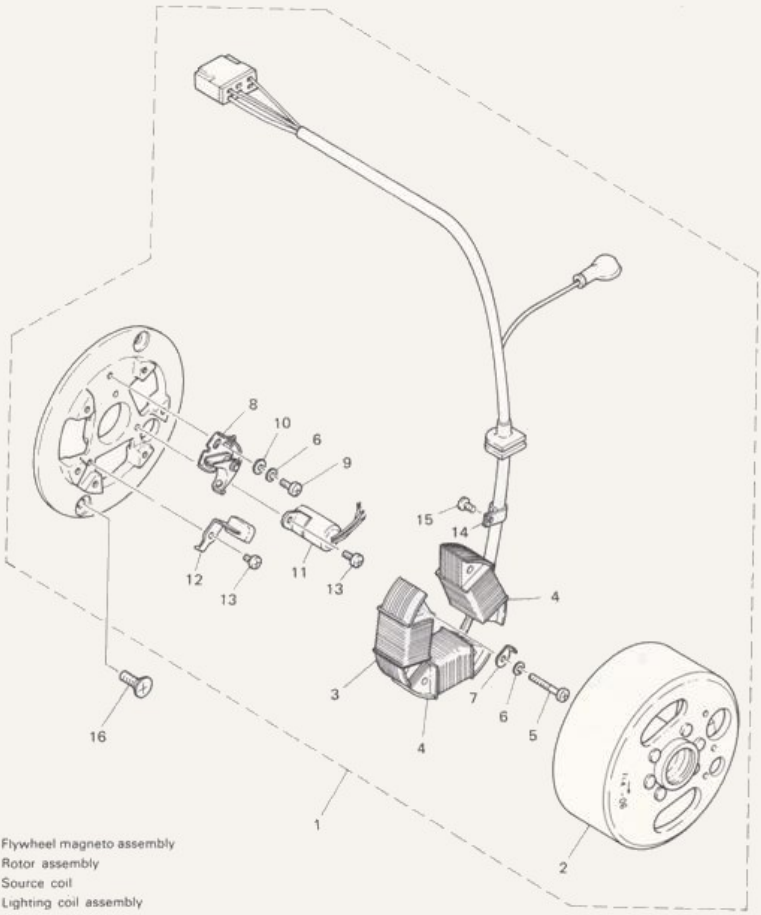
CAUTION:
After this measurement, the condenser should be discharged by connecting the positive and negative sides with a thick wire to prevent shock.

DT100C Flywheel Magneto



1. Rotor assembly
2. Source coil
3. Lighting coil assembly
4. Panhead screw
5. Panhead screw
6. Spring washer
7. Timing plate
8. Contact breaker assembly
9. Panhead screw
10. Plain washer
11. Condenser
12. Lubricator
13. Panhead screw
14. Lead wire assembly
15. Lead clamp
16. Panhead screw
17. Flat head screw

DT175C Flywheel Magneto



1. Flywheel magneto assembly
2. Rotor assembly
3. Source coil
4. Lighting coil assembly
5. Panhead screw
6. Spring washer
7. Timing plate
8. Contact breaker assembly
9. Panhead screw
10. Plain washer
11. Condenser
12. Lubricator
13. Panhead screw
14. Lead clamp
15. Panhead screw
16. Flat head screw

6-6. CHARGING SYSTEM

The charging system consists of the magneto flywheel, the charging/lighting coil, rectifier, and the battery.

A. Description

As the flywheel rotates, an alternating current is generated in the charging lighting coils. The coil has three output wires:

DT100 (all models A, B, C)

Green — Daytime battery charging

Yellow — A.C. lighting (headlight, taillight, etc.)

Green/Red — Nighttime battery charging

DT175C

Yellow — A.C. lighting (headlight, taillight, etc.)

Green/Yellow — Battery charging (Day and Nighttime)

B. Charging Output Test

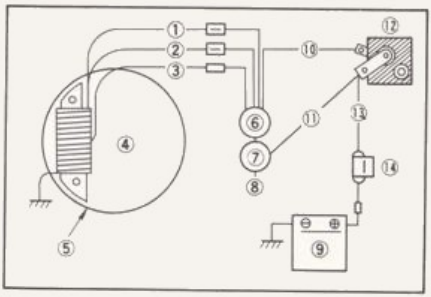
1. Voltage Test

a. Raise seat and locate red battery wire connection.

b. Connect D.C. voltmeter as shown.

c. Turn ignition switch to ON (daytime) position, start engine and note voltage readings at specified rpm's.

d. Switch to nighttime (lights on) and note voltage readings at specified rpm's.



1. Green (DT100C), Green/Yellow (DT175C)
2. Yellow (DT100C, DT175C)
3. Green/Red (DT100C) No (DT175C)
4. Flywheel magneto
5. Lighting coil
6. Lighting switch
7. Main switch
8. Ground
9. Battery
10. White
11. Red
12. Rectifier
13. Red
14. Fuse

DT100A, B/175A, B on page 121A.

FUNCTION	WIRE CONNECTIONS
Daytime charging (DT100C)	Green to White
Nighttime charging(DT100C)	Green/Red to White
Charging (DT175C) (Day and Night)	Green/Yellow to White
A.C. lighting (All Models) (headlight, taillight)	Yellow to Blue
D.C. lighting (All Models)	Red to Brown

DT100C			
	Any point on A.C. Circuit	G/R	G
2,500 rpm	5.3V or more	0.5A or more	0.1A or more
8,000 rpm	7.5V or less	1.2A or more	3.8A or less

DT175C		
	Any point on A.C. Circuit	G/Y
2,500 rpm	5.5V or more	1.8±0.5A
8,000 rpm	8.0V or less	3.3±0.5A

DT100A,B/DT175A,B

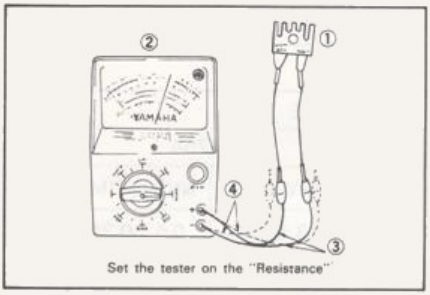
Engine R.P.M.	VOLTAGE			
	DT100A		DT175A	
	DAYTIME	NIGHTTIME	DAYTIME	NIGHTTIME
2,000	7.9 ± 0.5 V	6.5 ± 0.5 V	7.5 ± 0.5 V	6.9 ± 0.5 V
4,000	8.4 V	6.6 V	8.2 V	7.9 V
6,000	8.4 V	6.9 V	8.4 V	8.0 V
8,000	8.45 V	7.2 V	8.5 V	8.2 V

Engine R.P.M.	AMPERAGE			
	DT100A		DT175A	
	DAYTIME	NIGHTTIME	DAYTIME	NIGHTTIME
2,000	1.8 ± 0.3A	0.18 ± 0.3A	0.8 ± 0.3A	0.6 ± 0.3A
4,000	2.3 A	0.60 A	1.8 A	1.5 A
6,000	2.8 A	0.72 A	2.4 A	1.6 A
8,000	3.2 A	0.80 A	3.0 A	1.7 A

DT100A,B/175A,B	
FUNCTION	CONNECTIONS
Daytime charging	Green to white
Nighttime charging	Green/red to white
AC lighting	Yellow/white to blue
DC lighting	Red to brown

C. Checking Silicon Rectifier

1. Checking with normal connection using Yamaha Pocket Tester:
   Connect the tester's red lead (+) to the silicon rectifier's red lead, and connect the tester's black lead (−) to the rectifier's white lead.
2. Checking with reversed connection using Yamaha Pocket Tester:
   Reverse the tester leads.

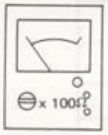
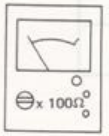
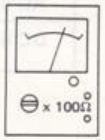


1. Silicon rectifier
2. Pocket tester
3. Checking with normal connection
4. Checking with reversed connection

CAUTION:

The silicon rectifier can be damaged, if subject to overcharging. Special care should be taken to avoid a short circuit and/or incorrect connection of the positive and negative leads at the battery. Never connect the rectifier directly to the battery to make a continuity check.

Result

	Good	Replace	Replace
Normal connection			
Reversed connection			

NOTE:

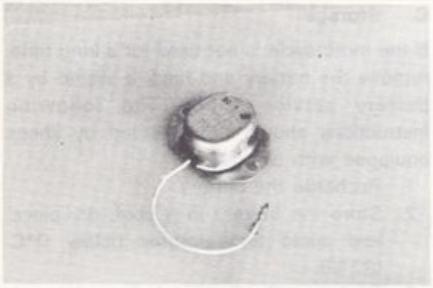
This rectifier test must be checked in both normal and reversed connections.

D. A.C. Voltage Regulator

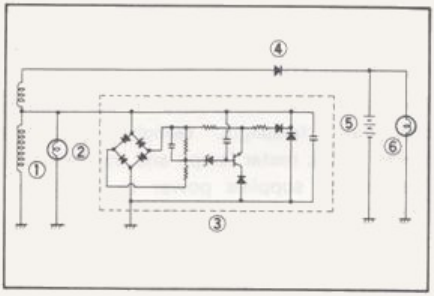
1. Description

When the engine speed rises beyond a certain level, the flywheel magneto output voltage stops increasing, but it still arrives at about 000 volts. To control this output voltage, a voltage regulator is connected to the flywheel magneto, thus protecting electrical parts against damage.

In this model, a diode-built-in voltage regulator is used, which is superior in durability and maintenance-free. e.



2. Wiring diagram



1. Flywheel magneto
2. A.C. load
3. A.C. voltage regulator
4. Silicon rectifier
5. Battery
6. D.C. load

3. Specifications

Manufacturer:	Stanley
Model:	TR6Z-02
Voltage setting:	7.2 ±0.3V at regulator terminal at 5,000 rpm (20°C, 68°F)

4. Measurements

a. With battery removed (with headlight, taillight and meter light)

A.C. voltage: 8.0V or less at 8,000 rpm
D.C. voltage: 9.0V or less at 8,000 rpm

b. With headlight removed (with taillight, meter light and battery)

A.C. voltage: 8.5V or less at 8,000 rpm

c. Measurement with battery removed

Set the pocket tester to the D.C. 20V range, and connect the + lead wire to the input terminal of the battery and connect the — lead wire to the frame. To measure the A.C. voltage, connect the + lead wire of the pocket tester set to the A.C. 20V range in series to the blue wire of the headlight, and ground the — lead wire.

d. When the headlight is removed, check the A.C. voltage at the blue wire of the headlight in the same manner as 1. above. In this test, the ground wire of the headlight should be kept removed.

6-7. BATTERY

The battery is a 6V, 4AH unit that is the power source for the horn, stoplight, neutral light, flasher lights and taillight. Due to the fluctuating charging rate at low engine speeds, the battery will lose its charge if the horn, flashers, and stoplight are used excessively at low engine speeds.
Battery charging begins at about 2,500 rpm. Therefore, it is recommended to sustain engine rpm's at, or over 3,000 to maintain a proper battery charge. Additionally, if the above components are used excessively, battery water level should be checked more frequently than normal as continuous charging will dissipate the water.

A. Checking

1. If sulfation (white accumulations) occurs on plates due to lack of battery electrolyte, the battery should be replaced.
2. If the bottom of the cells are filled with corrosive material falling off plates, the battery should be replaced.
3. If the battery shows the following defects, it should be replaced.

a. The voltage will not rise to a specific value even after long hours charging.
b. No gassing occurs in any cell.
c. The 6V battery requires a charging voltage of more than 8.4V in order to supply a current of 0.4A for 10 hours.

B. Service Life

The service life of a battery is usually 2 to 3 years, but lack of care as described below will shorten the life of the battery.

1. Negligence in keeping battery topped off with distilled water.
2. Battery being left discharged.
3. Over-charging by rushing change.
4. Freezing.
5. Filling with water or sulfuric acid containing impurities.
6. Improper charging voltage/current on new battery.

Battery	6V 4AH
Electrolyte	Specific Gravity: 1.26 Quantity: 160 cc
Initial charging current	0.4 Amperes/25 hours (New battery)
Re-charging current	0.4 Amperes/10 hours (or until Specific gravity reaches 1.26)
Re-fill fluid	Distilled water to Maximum Level line
Re-fill period	Check once per month or more often as required

C. Storage

If the motorcycle is not used for a long time, remove the battery and have it stored by a battery service shop. The following instructions should be observed by shops equipped with charger.

1. Recharge the battery.
2. Store the battery in a cool, dry place, and avoid temperatures below 0°C. (32°F).
3. Recharge the battery before re-installation.

6-8. LIGHTING AND SIGNAL SYSTEMS

A. Description

The lighting system consists of the lighting coil, horn, headlight, taillight, stoplight, flasher lights, meter lamps and the battery. The battery supplies power to the horn, stoplight, neutral light, taillight and flasher lights. Lighting coils in the flywheel magneto supply alternating current (A.C.) for the headlight, meter lights, and for charging the battery through a silicon rectifier diode.

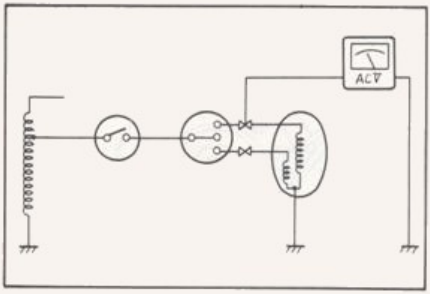
WARNING:

Use bulbs of the correct capacity for the headlight, meter lamp and high-beam indicator which are directly connected to the flywheel magneto.
If large capacity bulbs are used, the voltage will drop, giving a poor light. On the contrary, if smaller capacity bulbs are used, the voltage will rise, shortening the life of bulbs.

When the headlight beam switch is operated to change the beam from one to another, the headlight is designed to keep both bulbs burning during the change-over. This is to protect other light bulbs, meter lamps, etc., from burning out as a result of turning off the headlight, even temporarily. If one of these light bulbs is burnt out while the machine is running, it will overload other bulbs and shorten their service life.
Reduce engine speed and replace a burnt bulb as quickly as possible.

B. Lighting Tests and Checks — A.C. Circuit

1. A.C. Circuit Output Test
   With all A.C. lights in operation the circuit will be balanced and the voltage will be the same at all points at a given rpm.



   a. Switch Pocket Tester to "AC20V" position.
   b. Connect positive (+) test lead to yellow connection and negative (—) test lead to a good ground.
   c. Start engine, turn on lights and check voltage at each engine speed in table below.

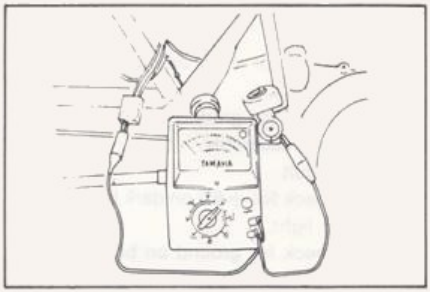
      If measured voltage is too high or too low, check for bad connections, damaged wires, burned out bulbs or bulb capacities are too large throughout the A.C. lighting circuit.

Engine rpm	Voltage
2,500 rpm	5.5V A.C. or more
8,000 rpm	8.0V A.C. or more

NOTE:
This voltage test can be made at any point throughout the A.C. lighting circuit and the readings should be the same as specified above.

2. Lighting Coil Resistance Check
   If voltage is incorrect in A.C. lighting circuit, check the resistance of the yellow wire windings of the lighting coil.
   a. Switch Pocket Tester to "Ω × 1" position and zero meter.
   b. Connect positive (+) test lead to yellow, green and green-red wire from magneto and negative (—) test lead to a good ground on engine. Read the resistance on ohms scale.

	Lighting Coil Resistance (at 20°C, 68°F)	
	DT100C	DT175C
Ground to Yellow Leads	0.22Ω±10%	0.48Ω±10%
Ground to Green/Red Leads	0.37Ω±10%	—
Ground to Green Leads	0.08Ω±10%	—
Ground to Green/Yellow	—	0.78Ω±10%



3. If A.C. lighting circuit components check out properly but circuit voltage is still excessive, go to charging circuit checks (Sec. 6-6).
   If voltage is low in charging circuit due to a defective battery, rectifier or connection, voltage will be too high in lighting circuit.

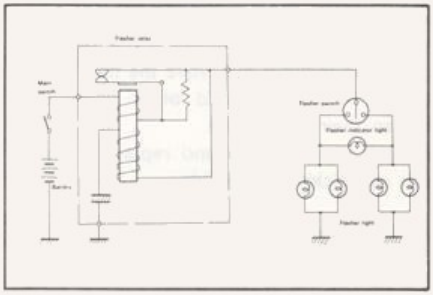
C. Lighting Tests and Checks — D.C. Circuit

The 6V battery provides power for operation of the horn, taillight, stoplight, neutral light and flasher lights. If none of the above operate, always check battery voltage before proceeding further. Low battery voltage indicates either a faulty battery, low battery water, or a defective charging system. See Section 6-5 ~ 6-6, Charging System, for checks of battery and charging system.

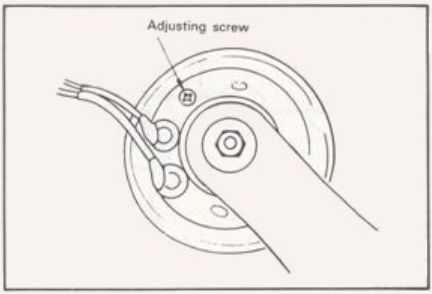
1. Horn does not work.
   a. Check for +6V on brown wire to horn.
   b. Check for good grounding of horn (pink wire) when horn button is pressed.
2. Stoplight does not work.
   a. Replace bulb.
   b. Check for 6V on yellow wire to stoplight.
   c. Check for 6V on brown wire to each stop switch (front brake and rear brake switches).
   d. Check for ground on black wire to tail/stoplight assembly.
3. Taillight does not work.
   a. Replace bulb.
   b. Check for 6V on blue wire.
   c. Check for ground on black wire to tail/stoplight assembly.
4. Flasherlight(s) do not work.
   a. Replace bulb.
   b. Right Circuit.
      1) Check for +6V on dark green wire to light.
      2) Check for ground on black wire to light assembly.
   c. Left Circuit
      1) Check for +6V on dark brown wire to light.
      2) Check for ground on black wire to light assembly.
   d. Right and Left Circuits do not work.
      1) Check for +6V on brown wire to flasher switch on left handlebar.
      2) Check for +6V on brown wire to flasher relay.
      3) Replace flasher relay.
      4) Replace flasher switch.

D. Flasher Relay and Horn

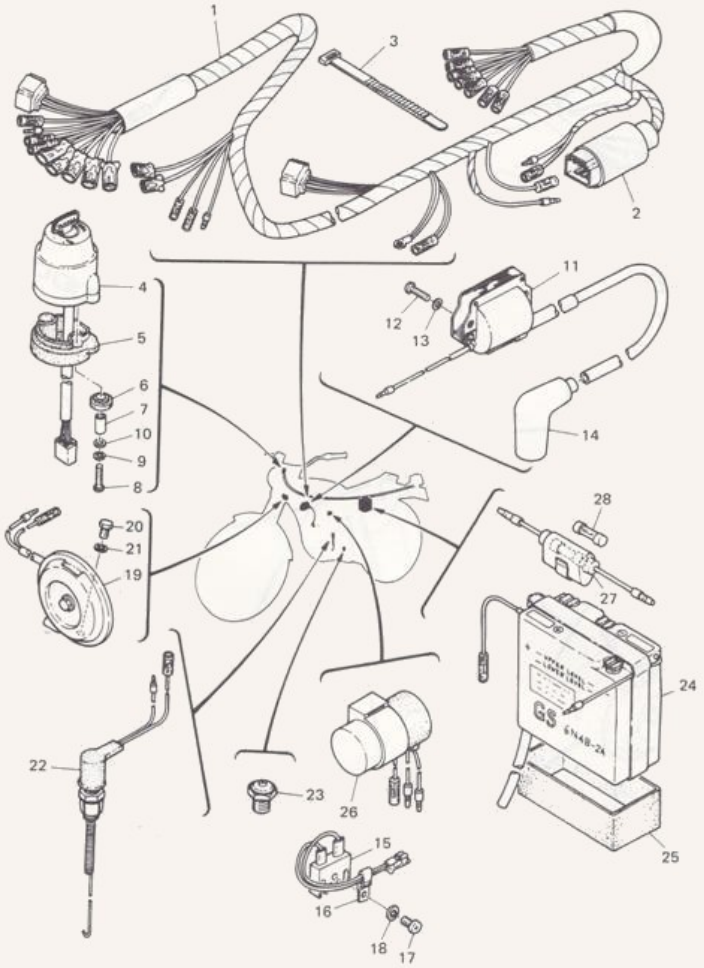
1. Flasher relay
   The flasher relay is employed 6V, condenser type.



2. Horn
   The horn is a 6V, flat type, and has a tone volume adjusting screw on its back.

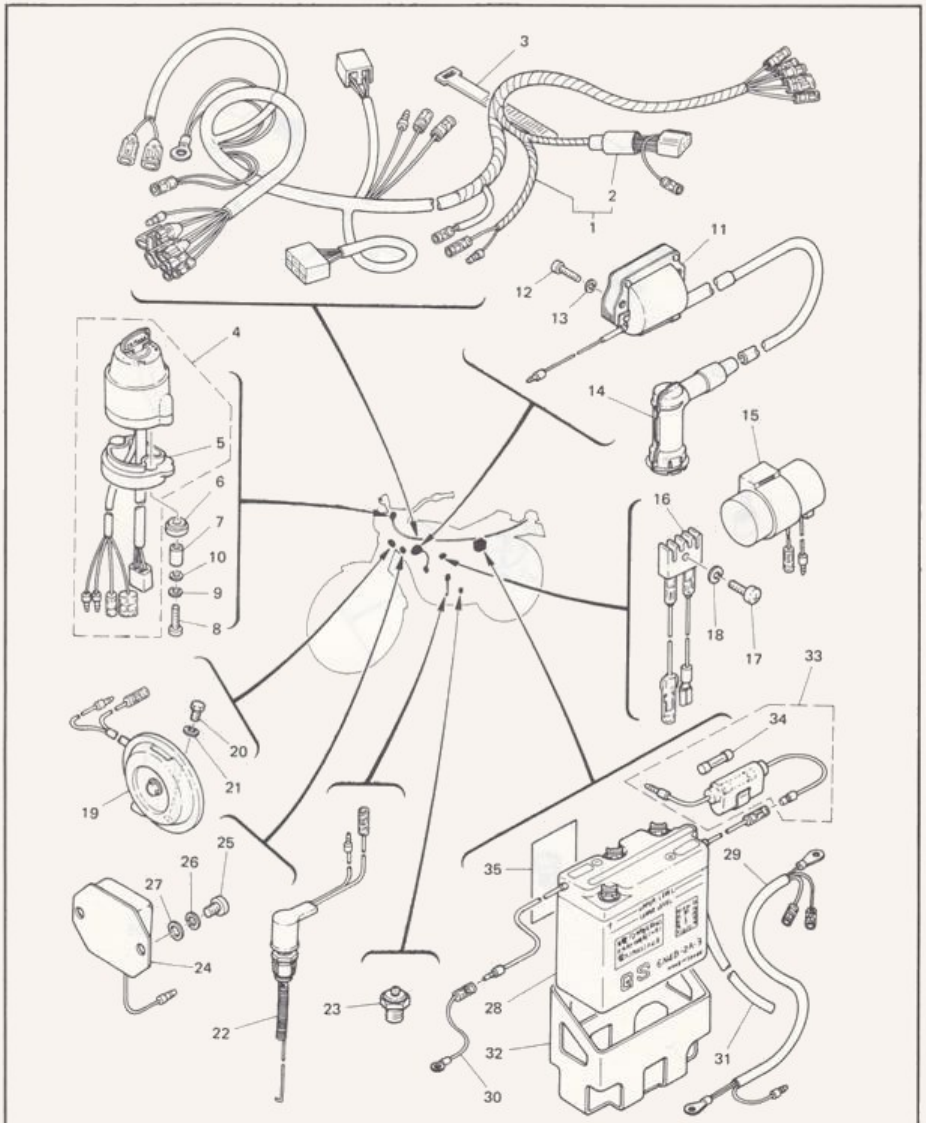


DT100C Electrical Components (See DT100A,B, C Parts Lists for specific component identification)



1. Wire harness assembly
2. Connector cover
3. Switch cord band
4. Main switch assembly
5. Main switch damper 1
6. Main switch damper 2
7. Main switch collar
8. Panhead screw
9. Spring washer
10. Plain washer
11. Ignition coil assembly
12. Panhead screw
13. Spring washer
14. Plug cap assembly
15. Rectifier assembly
16. Clamp
17. Panhead screw
18. Spring washer
19. Horn
20. Bolt
21. Spring washer
22. Stop switch assembly
23. Neutral switch assembly
24. Battery assembly
25. Battery band
26. Flasher relay assembly
27. Fuse holder assembly
28. Fuse

DT175C Electrical Components (See DT175A, B, C parts lists for specific component identification)



1. Wire harness assembly
2. Connector cover
3. Switch cord band
4. Main switch assembly
5. Main switch damper 1
6. Main switch damper 2
7. Main switch collar
8. Panhead screw
9. Spring washer
10. Plain washer
11. Ignition coil assembly
12. Panhead screw
13. Spring washer
14. Plug cap assembly
15. Flasher relay assembly
16. Rectifier assembly
17. Panhead screw
18. Spring washer
19. Horn
20. Hexagon bolt
21. Spring washer
22. Stop switch assembly
23. Neutral switch assembly
24. Voltage regulator assembly
25. Hexagon bolt
26. Spring washer
27. Plate washer
28. Battery assembly
29. Plus lead wire
30. Minus lead wire
31. Hose
32. Battery seat
33. Fuse holder assembly
34. Fuse
35. Battery label

6-9. SPARK PLUG

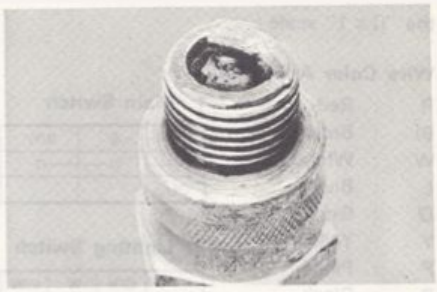
The life of a spark plug and its discoloring vary according to the habits of the rider. At each periodic inspection, replace burned or fouled plugs with suitable ones determined by the color and condition of the bad plugs. One machine may be ridden only in urban areas at low speeds, whereas another may be ridden for hours at high speeds, so confirm what the present plugs indicate by asking the rider how long and how fast the rides, and recommend a hot, standard or cold plug type accordingly. It is actually economical to install new plugs often since it will tend to keep the engine in good condition and prevent excessive fuel consumption.

A. How to "Read" Spark Plug (Condition)

1. Best ... When the porcelain around the center electrode is a light tan color.

2. If the electrodes and porcelain are black and somewhat oily, replace the plug with a hotter-type for low speed riding.

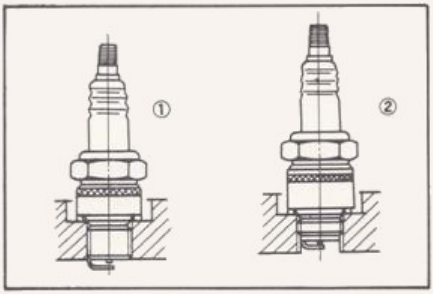
3. If the porcelain is burned white and/or the electrodes are partially burned away, replace the plug with a colder-type for high speed riding.



B. Inspection

1. Inspect and clean the spark plug at least once per month or every 500 ~ 1,000 km.
2. Clean the electrodes of carbon and adjust the electrode gap.
3. Be sure to use the proper reach plug as replacement to avoid overheating, fouling or piston damage.

MODEL	Spark Plug (NGK)	GAP
DT125A, B	B8ES	0.6 ~ 0.7 mm
DT100B, DT125C DT175A, B, C	B8ES	0.5 ~ 0.6 mm
DT100A	B8HS	0.5 ~ 0.6 mm
DT100C	B7ES	0.5 ~ 0.6 mm



6-10. SWITCHES

The main switch and the right and left handlebar switches may be checked for continuity or shorts with a pocket tester on the "Ω × 1" scale.

Wire Color Abbreviations

R : Red
Br : Brown
W : White
L : Blue
G : Green
Y : Yellow
P : Pink
B : Black
R/Y : Red/Yellow
Br/W : Brown/White
Ch : Dark Brown
Dg : Dark Green
L/R : Blue/Red
L/W : Blue/White
Y/W : Yellow/White

1. Main Switch

	B	B/W	R	Br
OFF	○	○		
ON			○	○

2. Lighting Switch

	G/R	W	Y/W	L	Br	L/W
OFF	○	○				
ON		○	○	○	○	○

3. Dimmer Switch

	Y	L	G
Hi	○	○	
Low		○	○

4. Flasher Switch

	Ch	Br/W	Dg
L	○	○	
R		○	○

5. Horn Button

	Ground	P
OFF		
ON	○	○

6. Engine Stop Switch

	Ground	B/W
OFF	○	○
RUN		

CHAPTER 7. ELECTRICAL SYSTEM FOR DT125C

7

CHAPTER 7. ELECTRICAL SYSTEM FOR DT125C

(DT125A, B Similar)

7-1. SPECIAL TOOLS

A. Pocket Tester

B. Electro Tester

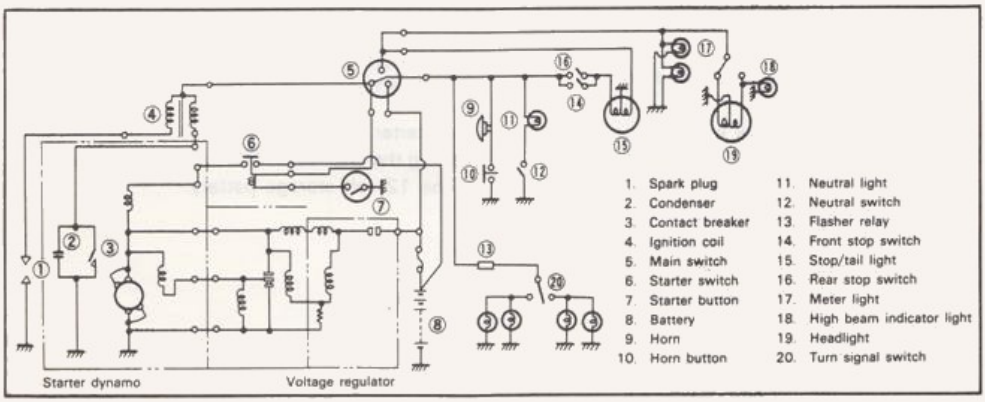
7-2. ELECTRICAL COMPONENTS

PART NAME	MANUFACTURER	DT125B	DT125A, B
Spark plug	N.G.K.	B-8ES	←
Ignition coil	Hitachi Ltd.	CM11-50B	CM-61-50
Starter Dynamo	Hitachi Ltd.	GS114-02	M100-03
Voltage regulator	Hitachi Ltd.	T107-20	T107-17
Starting switch	Hitachi Ltd.	A104-71	T104-35
Fuse	Taiko Mfg.	20AX2	←
Battery	Furukawa	12N7-3B, 12V 7AH	←
Ignition switch	Asahi Denso		
Handlebar switch (R)	Asahi Denso		
Handlebar switch (L)	Asahi Denso		
Front stop switch	Asahi Denso		
Rear stop switch	Asahi Denso		
Headlight	Koito Mfg.	12V 30/30W	12V 25/25W
High beam ind. bulb		12V 3W	←
Tail/stop light bulb		12V 8/27W	
Neutral light bulb		12V 3W	
Speedometer bulb		12V 3W	
Tachometer bulb		12V 3W	
Flasher bulb(s)		12V 27W	
Flasher relay	Nihon Denso	JFK-0110	
Horn	Nikko Kinzoku	MF-12	←

7-3. DESCRIPTION

The DT125C is equipped with a 12-volt starter dynamo which serves as a combination starter and direct current (D.C.) generator. All electrical components are powered directly by the 12-volt storage battery.

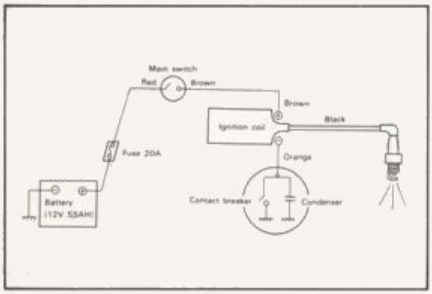
7-4. CONNECTION DIAGRAM



7-5. IGNITION SYSTEM (BATTERY IGNITION)

A. Description

The ignition system consists of the parts as shown in the following diagram. As the switch is turned on, the crankshaft begins to turn, and the cam attached to the armature makes the contact points open and close. This causes the current to flow and stop flowing alternately, thus induction a voltage in the primary circuit. The voltage produced in the primary winding by self-induction is stepped up by mutual-induction, and a high voltage is generated in the secondary winding in proportion to the turn ratio of the primary winding to the secondary. This high voltage causes a spark at the spark plug gap.



B. Ignition Timing-Checking and Adjustment (Refer to 2-5, C)

C. Spark Gap Test (Refer to 6-5, C)

D. Ignition Coil

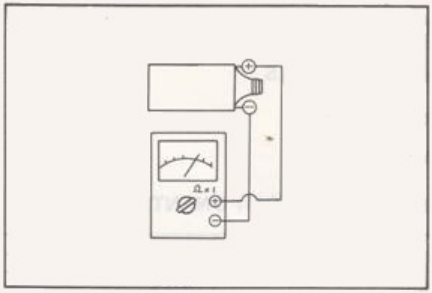
The ignition coil is installed inside the frame above the engine.

1. Ignition coil test (removed from the engine)

a. Ignition coil primary winding continuity test

The test is conducted by using the Yamaha pocket tester (Ω × 1). Connect the positive tester cord to the ignition primary positive side, and the negative tester cord to the ignition primary negative side.

Normal primary winding resistance: 4.2Ω

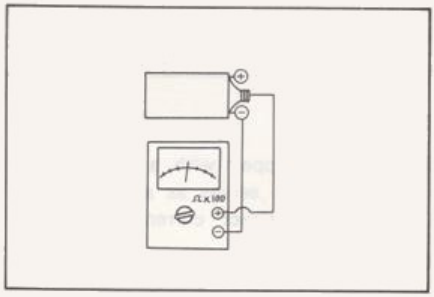


b. Ignition coil secondary winding continuity test

The Yamaha pocket tester (Ω × 100) is used. Connect the positive tester cord to the high tension cord and the negative tester cord to the primary negative side.

Normal secondary winding resistance: 10.8kΩ

* For details on spark test with the spark plug installed on the engine, refer to the "Flywheel Magneto".



7-6. STARTING AND CHARGING SYSTEM

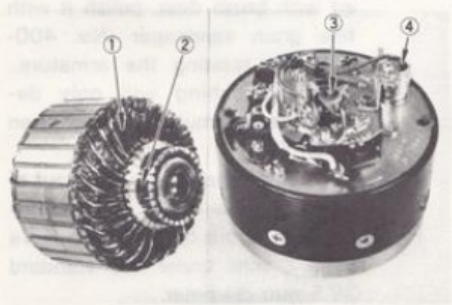
The starter dynamo has two functions: (1) starting the engine; and (2) supplying current to the 12-volt storage battery.

A. Charging Mode

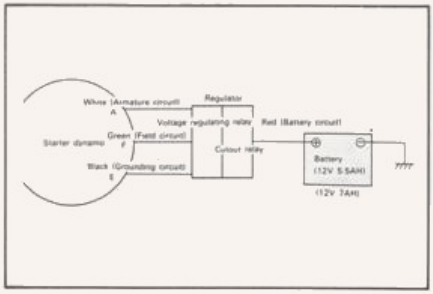
The charging system of the starter dynamo consists of the yoke assembly (shunt field coil and brushes) and the armature assembly (commutator). The armature coil cuts through the magnetic lines of force of the field coil as the engine runs so that the flow of alternating current is induced. The alternating current is converted into a direct current through the commutator brushes. The direct current voltage is kept constant by the voltage regulator, and supplied to each lead of the ignition, lighting and signal systems as well as to the battery.

B. Starting Mode

In the starting system of the starter dynamo, the series coil and the armature, working as a D.C. motor, generate a great amount of torque, by which the engine is cranked.



1. Armature coil
2. Commutator
3. Contact breaker
4. Condenser



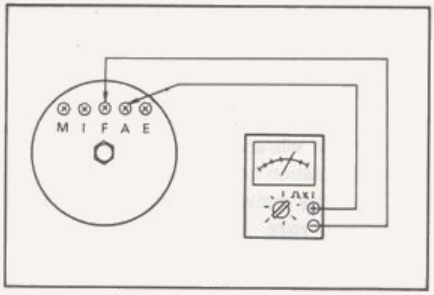
C. Checking the Dynamo

First disconnect the wires from the terminals A (white) and F (green), then ground the terminal F to E (black), with a jumper wire. Connect the positive lead of the tester to terminal A (white), and ground the negative tester lead to the engine. Start the engine and keep it running at 2,000 rpm. If the electricity generated reads more than 14V on the tester, the generator is in good working condition.

CAUTION:

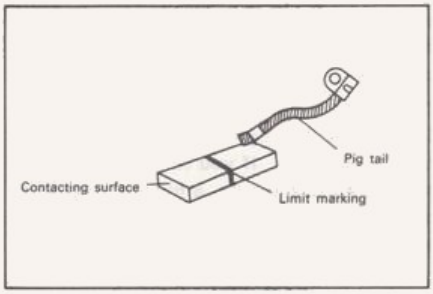
Do not run the engine at more than 2,000 rpm in this test. If you run the engine at more than 2,000 rpm, a high voltage current generated will ruin the coil, lead wire, etc.

1. Field coil continuity test
   Test is made by using the Yamaha pocket tester ($\Omega \times 1$). Connect the positive tester cord to the A terminal of the dynamo yoke, and connect the negative tester cord to the F terminal.



2. Checking carbon brushes

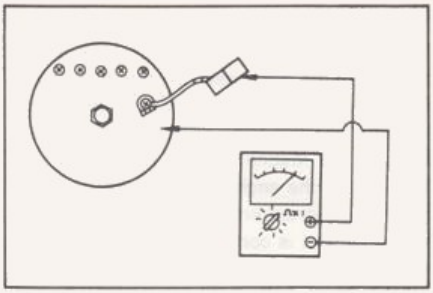
a. The contact surface of the carbon brush with the commutator must be more than three-fourths of the entire contact surface. If the brush is worn more than the limit, the charging efficiency of the dynamo will be reduced. Replace with a new one.



b. Materials of the brush
Use the brush having the model No. "MH-33" on its side.

c. Handling the brushes
When replacing the brushes, be sure the braided lead of the positive brush does not touch the edge of the breaker plate or brush holder, and that the lead of the negative brush does not touch the positive brush spring. The friction of the braided lead against other parts as a result of vibrations may wear through the insulation and cause a short circuit.

d. Continuity between carbon brush and dynamo yoke
Use the Yamaha pocket tester ($\Omega \times 1$).
There should be no continuity between the positive side brush and the yoke.
When there is continuity between the negative side brush and the yoke, the brush is considered to be in good condition.



If there is continuity between the positive side brush and the yoke, the possible cause may be short circuit of the brush holders or between the A and F terminals.

3. Checking the Armature Assembly

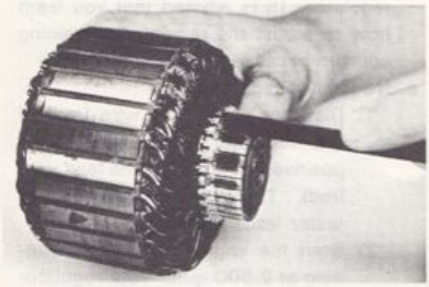
a. Thoroughly clean the commutator of oil and dirt.

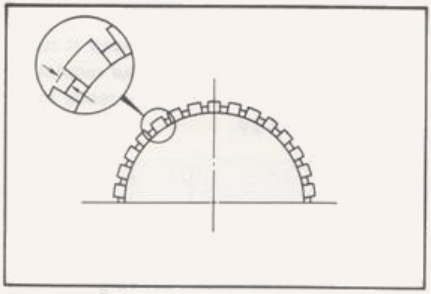
1) If the commutator is rough or dulled with brush dust, polish it with fine grain sandpaper (No. 400-600) by rotating the armature. Partial polishing will only deform the commutator and shorten brush life.

2) If the commutator is burned, out of round, or too rough to be sandpapered, turn it on a lathe no more than 2 mm under the standard 38.5 mm diameter.

b. Checking the commutator mica undercut

If the commutator is worn and if it has high mica, the mica should be undercut with saw blade. Sand off all burrs with sandpaper, be sure the mica is cut away clean between segments, leaving no thin edge next to segments.

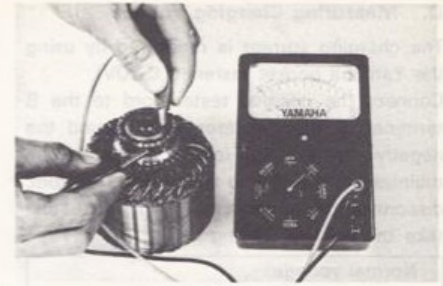




Standard mica undercut	0.5 ~ 0.8 mm (0.0197 ~ 0.0315 in)
Minimum allowable mica undercut	0.2 mm (0.0079 in)

c. Continuity between commutator and iron core

For testing, use the Yamaha pocket tester ($\Omega \times 1$). If there is continuity between the commutator and the iron core, the armature coil is considered to be shortcircuit.



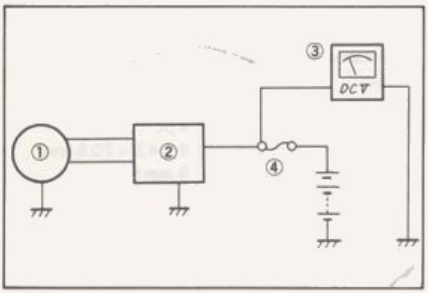
4. Dynamo Adjustment Standards (all 125)

Field:	
Resistance Shunt Series	4.8Ω
Brushes:	
Material	MH-33
Number	4 pc
Width × thickness × length	9 × 4.5 × 20.5 mm
Minimum length	9 mm (0.35 in)
Spring capacity	400 ~ 560g
Commutator:	
Diameter	38.5 mm (1.515 in)
Minimum diameter	36.5 mm (1.437 in)
Mica undercut	0.5 ~ 0.8 mm (0.0197~0.0315 in)
Minimum mica undercut	0.2 mm (0.0079 in)
Difference between max. and min. diameter	0.03 mm (0.0012 in)
Breaker:	
Point gap	0.35 ±0.05 mm (0.013 ±0.002 in)
Point pressure	1.5 ~ 1.7 kg
Ignition timing	1.8 ±0.05 mm (0.07 ±0.002 in)
Automatic spark advance	10 ~14°/ 1,350 ~ 1,600 rpm
Other:	
Dynamo dia. (outer)	134φ
Armature taper	1/5
Cut-in rpm and volt	13.0±0.5V, 2000 rpm
Capacity:	
Rated output rpm	2,300 rpm 14V7A

D. Measuring Charging Voltage

The charging current is measured by using the Yamaha pocket tester (D.C.20V).
Connect the positive tester cord to the B terminal of the regulator, and ground the negative tester cord to the frame. While maintaining the engine speed at 3,000 rpm, disconnect the battery circuit at the fuse, and take the voltage reading.

Normal voltage:
14 ~ 16V at 3,000 rpm



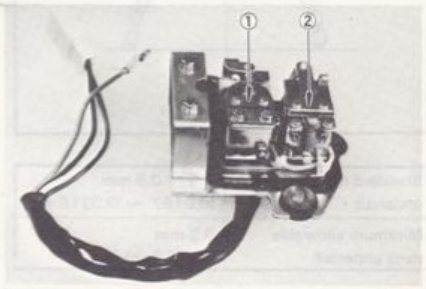
1. Dynamo
2. Rugulator
3. Pocket tester
4. Fuse

E. Regulator (Voltage Regulator)

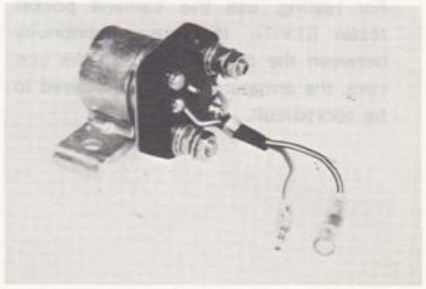
The dynamo alone can not provide stable electric current because fluctuating engine rpm affects the voltage. The regulator (also called a voltage relay) stabilizes the voltage generated by breaking the field coil circuit when the voltage exceeds a pre-set level. A cutout relay (also called a charging relay) is built into the regulator. It allows stable electric current from the dynamo output is lower than that of the battery voltage, it breaks the circuit to the battery so that battery will not drain. The starting switch is provided to direct a flow of current to the starter dynamo when the engine is started.

1. Checkout
   If the regulator can no longer control the voltage, the battery will be drained or over-charged, and all electrical parts may be burned out. So use a good tester when inspecting or adjusting the regulator. (It is advised that you learn how to adjust the regulator at training courses because it is very difficult.)

a. No-load voltage test
   1) Disconnect the lead wire (red) of the regulator and connect the positive tester lead to the lead wire (red). Then ground the negative tester lead.
   2) Start the engine and keep it running at 2,500 rpm. Your regulator is correct if the tester reads 15.8 ~ 16.5V.
   3) Start the engine and keep it running at 5,000 rpm. Your regulator is correct if the tester reads less than 16.9V.



1. Voltage regulator
2. Cut out relay



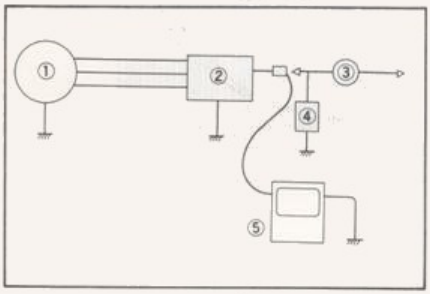
1. Starter relay

b. Adjustment

1) If the measured voltage is more or less than specified, adjust it by tightening or loosening the adjusting screw on the voltage relay side.

2) Cut-in voltage of the Cutout Relay

a) Connect the tester positive lead to the B(red) terminal, and then ground the negative lead to the frame.



1. Dynamo
2. Regulator
3. Main switch
4. Battery
5. Pocket tester

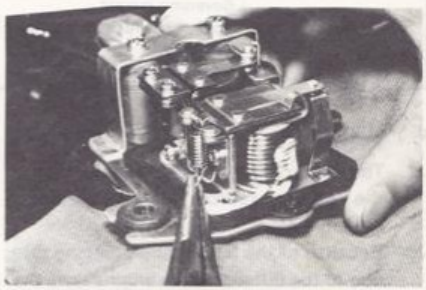
b) Start the engine, and increase engine speeds slowly. The cutout relay is correctly set if its breaker points close at 12.5 ~ 13.5V.

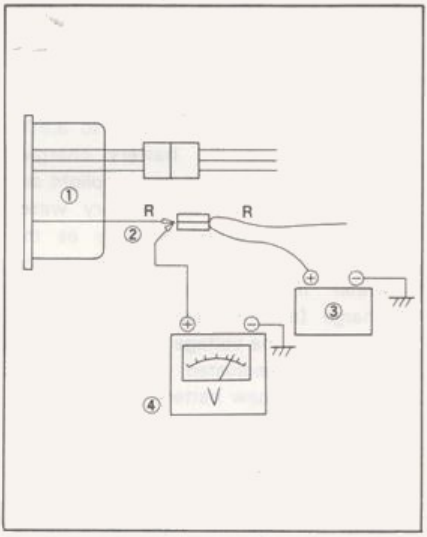
c) Adjustment

If the breaker points will not close at the specified voltage, adjust the cutout relay by changing its spring tension.

NOTES:

1. In actual practice, there will rarely be need to adjust the cutout relay.
2. If the point surfaces of the voltage and cutout relays are worn or pitted, polish them with fine sandpaper (No. 400-600) before making any adjustment.





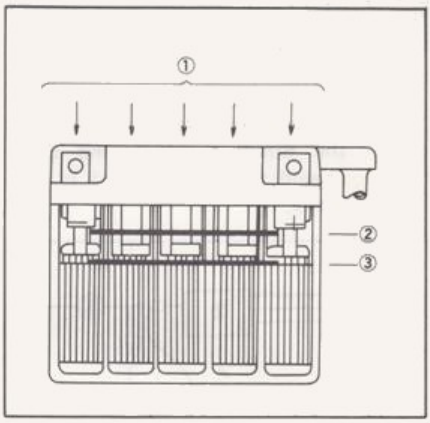
1. Regulator
2. Red lead
3. Battery
4. Pocket tester

2. Regulator Maintenance Standards

	Item	Maintenance standards	Inspection
Voltage regulator	No load voltage adjustment value	15.8 – 16.5V/2,500 rpm	When voltage is irregular
Voltage relay	Voltage coil resistance value Compensation value Core gap Point gap	11.8Ω/20°C (68°F) 10Ω/20°C (68°F) 0.4 – 0.7 mm 0.4 – 0.5 mm	
Cutout relay	Cut-in voltage Reversing current Voltage coil resistance value Core gap Point gap	13 ± 0.5V 5A or less 11.2Ω/20°C (68°F) 0.8 – 1.0 mm 0.6 – 0.8 mm	

F. Battery

1. The battery is a 12V-7AH unit that is the power source for all electrical components.
   Because of the fluctuating charging rate due to the differences in engine rpm, the battery will lose its charge if the horn and stoplight are excessively used at low rpm. The charging of the battery begins at about 2,500 rpm.
   Therefore, it is recommended to sustain engine rpm at about 2,500 to 3,500 rpm to keep the battery charged properly. If the horn and stoplight are used frequently, the battery water should be checked regularly as the continuing charging will dissipate the water. If the battery will not retain a charge (and the battery is in good condition), the voltage regulator setting should be readjusted.
2. Servicing a new battery
   Check battery housing for cracks or other damage. Fill the battery with electrolyte and let set for an hour. This allows the acid to soak into the plates. With the caps off, hook up a trickle charger to the battery and charge it at 1 amp/hour rate or less. Check the specific gravity. Each cell should have a rating of 1.270 ~ 1.280. If the electrolyte has dropped below minimum level after charging, add electrolyte (rating of 1.270 ~ 1.280).



1. Fill here
2. Max. Level
3. Min. Level

3. Battery maintenance
   a. Periodic inspection can determine the condition of the battery housing and the condition of the internal parts. Check for cracks or holes in the housing. Check for broken plates, sulfation, low fluid level, or corroded terminals.
   b. The battery housing is marked with a minimum and maximum fluid level. If any cell fluid level drops below the minimum level, fill with distilled water to correct height. Check once a month or more often in hot weather. DO NOT use tap water.

4. Charging

a. Remove the battery and check the specific gravity of each cell. A fully charged cell reads between 1.270 ~ 1.280. If the rating is less than 1.260, the battery needs charging.

b. Fill each cell to the proper level with distilled water. Leave the filler caps off until battery charging has finished. Use a battery charger that may be regulated for a maximum output of 1.6 amp. The DT125C battery uses a 7 amp/hour battery. DO NOT exceed a one amp input as excessive heat may be generated within the battery.

NOTES:

1. An autotransformer may be used to regulate output of an automobile battery charger.
2. Battery fluid level sometimes drops during charging. Refill if necessary, using distilled water.

5. Trouble-shooting

a. Excessive fluid evaporation from cells: Normal battery operation requires fluid to be added to the cells approximately once a month. If distilled water must be added every week or two, the battery is possibly being overcharged. Check voltage input from the dynamo.

b. Won't hold a full charge:

1) First check the dynamo output to eliminate the possibility of a low charging rate. Next, check for loose terminal connections (creating high resistance), or a build up of material in the bottom of the housing that could short the plates. Nothing can be done about loose terminals themselves except to replace the battery.

2) Sediment at the bottom of the housing can sometimes be removed by flushing the battery out several times with distilled water if the cell is discharged; flush with electrolyte if fully charged. Dry the battery off and recharge for a few hours. If enough loose sediment is flushed out, the battery could hold a charge. If the battery still cannot hold a full charge, replace it.

d. Sulfation: Sulfation, in the form of a white, scaly material, gradually forms on the plates and at the bottom of the housing. It is created over a period of time as the sulfuric acid combines with the lead plates to produce lead sulfate (white particles of sulfation). It is a product of age and use. The battery usually needs to be replaced when sulfation reaches the point of shorting out the plates.

e. Make sure that the wires are hooked to the proper battery terminals. The red wire must be hooked to the "positive" terminal, the black lead must be hooked to the "negative" terminal. If the wires are reversed, the battery will quickly loose its charge. Very likely the battery will be destroyed if the reversed hookup is left connected for any length of time.

6. Storage

a. Whether it is a new battery or one that has been in service, preparation for storage of either one is almost identical. When new, the battery is dry charged (no electrolyte). Keep it away from moisture and heat. A stored dry-charged battery can last several months without losing a great deal of its charge.

b. A used battery should be filled to the maximum level with distilled water, given a complete charge and stored in a cool area (coldness slows the process of battery discharge). It should be given a booster charge every two months. When preparing to place a stored battery back into service, check for sufficient electrolyte and fully charge the battery.

7. Service Standards

Battery Spec.	12V 7HA	
Electrolyte specific gravity and quantity	1.27 ~ 1.28 520 cc	At full charge
Charging current	0.7A for 13 hours (Charge until specific gravity reaches 1.27 ~ 1.28)	When discharged
Refilling of electrolyte: Diameter:	Distilled water up to the max. level line	Once a month

G. Switches

The main switch and right and left handlebar switches may be checked for continuity or shorts with a pocket tester on the ($\Omega \times 1$) scale.

1. Main switch (DT125C)

	R	Br
OFF		
ON	O	O

2. Engine stop switch

	Br	R/W
OFF		
RUN	O	O

3. "Light" switch

	Br	L
OFF		
ON	O	O

4. Flasher switch

	Ch	Br/W	Dg
Left	O	O	
Neutral			
Right		O	O

5. Dimmer switch

	Y	L	G
Low		O	O
Hi	O	O	

6. Starter button

	L/W	Ground
OFF		
ON	O	O

7. Horn button

	P	Ground
OFF		
ON	O	O

7-7. LIGHTING SYSTEM

A. Description

The lighting system consists of the horn, headlight, taillight, stoplight, neutral light, flasher lights, meter lamps and the battery. The battery supplies 12-volt power to all lights and signals.

B. Light Bulbs and Horn

1. Headlight
   The headlight has a dual 12V, 25W /25W bulb. A high beam indicator light mounted in the tachometer has a 12V, 3W bulb.
2. Taillight and Stoplight
   A dual filament 12V, 8.3W taillight and 12V, 27W stoplight bulb is mounted in the taillight assembly. The lens of the taillight is provided with reflectors on its three sides — rear, right and left.
3. Flasher Lights
   The flasher lights each have a 12V, 27W bulb. A flasher pilot light mounted in the tachometer has a 12V, 3W bulb.
4. Neutral Indicator Light
   A neutral indicator light mounted in the tachometer has a 12V, 3W bulb.
5. Speedometer and Tachometer
   The speedometer and tachometer each have one 12V, 3W bulb for illumination.
6. Horn
   The horn is a 12V, flat type, and has a tone volume adjusting nut on its back.

C. Lighting Tests and Checks

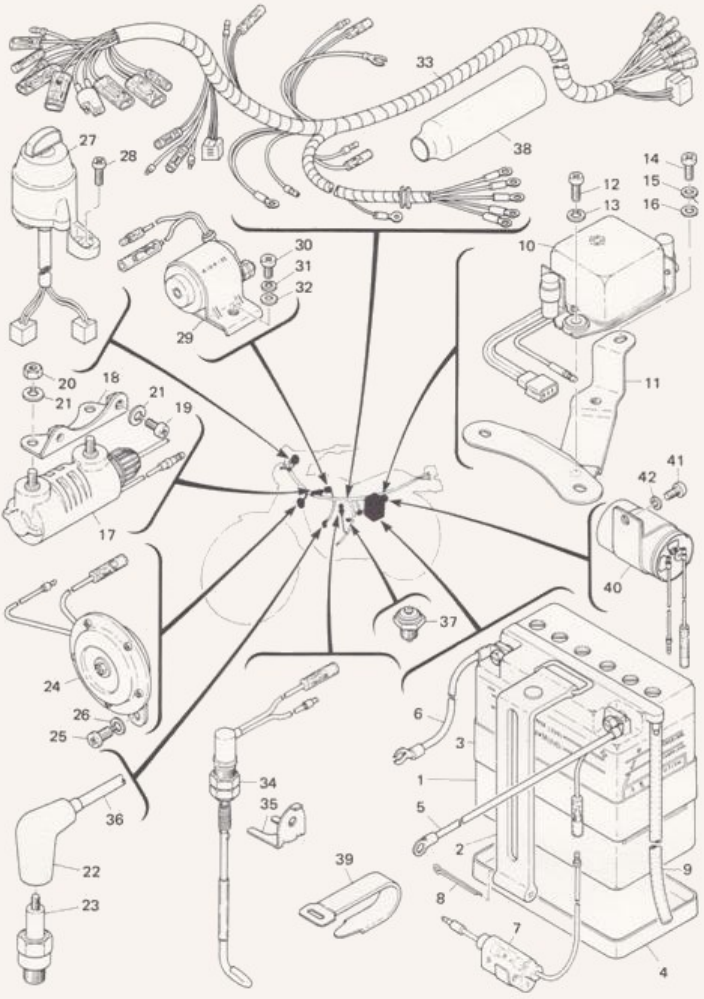
The 12V battery provides power for operation of the horn and all lights. If none of the above operate, always check battery voltage before proceeding further. Low battery voltage indicates either a faulty battery, low battery water, or a defective charging system. See Section 5-7, Charging System, for checks of battery and charging system.

1. Horn does not work.
   a. Check for +12 volts on brown wire to horn.
   b. Check for good grounding of horn (pink wire) when horn button is pressed.
2. Neutral light does not work.
   a. Replace bulb.
   b. Check for ground on light blue wire to neutral light when transmission is in neutral.
   c. Check for +12 volts on brown wire to neutral light.
   d. Replace neutral switch.
3. Taillight does not work.
   a. Replace bulb.
   b. Check for +12 volts on blue wire to taillight.
   c. Check for ground on black wire to tail/stop light assembly.
4. Stoplight does not work.
   a. Replace bulb.
   b. Check for +12 volts on yellow wire to stoplight.
   c. Check for +12 volts on brown wire to each stop switch (front brake and rear brake switches).
   d. Check for ground on black wire to tail/stop light assembly.
5. Flasher light(s) does (do) not work.
   a. Replace bulb.
   b. Right Circuit
      1) Check for +12 volts on dark green wire to light.
      2) Check for ground on black wire to light assembly.
   c. Left Circuit
      1) Check for +12 volts on dark brown wire to light.
      2) Check for ground on black wire to light assembly.
   d. Right and Left Circuits do not work.
      1) Check for +12 volts on brown/white wire to flasher switch on left handlebar.
      2) Ch-ck for +12 volts on brown wire to flasher relay.
      3) Replace flasher relay.
      4) Replace flasher switch.
6. Headlight
   a. High beam does not work.
      1) Check for +12 volts on yellow wire to headlight with dimmer switch in "High" position.
      2) Check for ground on black wire to headlight assembly.
      3) Replace headlight.

b. High beam indicator light (in tachometer) does not work.
   1) Replace bulb.
   2) Check for +12 volts on yellow wire to light.

c. Low beam does not work.
   1) Check for +12 volts on green wire to headlight with dimmer switch in "Low" position.
   2) Check for ground on black wire to headlight assembly.
   3) Replace headlight.

DT125C Electrical Components (See DT125A, B, C, Parts Lists for specific component identification)



1. Battery assembly
2. Battery band
3. Battery band
4. Battery seat
5. Plus lead wire
6. Minus lead wire
7. Fuse holder assembly
8. Cotter pin
9. Breather pipe
10. Voltage regulator assembly
11. Regulator fitting plate
12. Pan head screw
13. Spring washer
14. Pan head screw
15. Spring washer
16. Plain washer
17. Ignition coil assembly
18. Ignition coil bracket
19. Pan head screw
20. Nut
21. Spring washer
22. Plug cap assembly
23. Spark plug
24. Horn
25. Pan head screw
26. Spring washer
27. Main switch assembly
28. Pan head screw
29. Starter switch assembly
30. Pan head screw
31. Spring washer
32. Plain washer
33. Wire harness assembly
34. Stop switch assembly
35. Stop switch stay
36. High tension cord
37. Neutral switch assembly
38. Connector cover
39. Switch cord band
40. Flasher relay assembly
41. Pan head screw
42. Spring washer

CHAPTER 8. APPENDICES

CHAPTER 8. APPENDICES

8-1. TROUBLESHOOTING GUIDE

The following guide is not complete in itself. If a problem is found within an individual component mentioned within the chart, refer to the section or chapter involved for inspection procedures.

A. No Start or Difficult to Start

Possible Cause	Remedy
Ignition System	
No Spark	1. Check ignition main switch. 2. Check ignition kill switch. 3. Check point assembly. 4. Check condenser. 5. Check wiring, dynamo coil. 6. Check coil. 7. Check high tension lead. 8. Check spark plug.
Weak or Intermittent Spark	1. Use Electro-Tester, spark gap test. 2. Check spark plug. 3. Check high tension lead. 4. Check ignition assembly.
Air/Fuel Systems	
No Fuel	1. Check fuel tank. 2. Check fuel petcock. 3. Remove main jet, check fuel flow.
Intermittent or Poor Fuel Flow	1. Clean fuel tank, check fuel tank cap vent. 2. Clean fuel petcock. 3. Remove carburetor, service.
Bad Fuel	1. Flush fuel system, completely. 2. Add fresh fuel, proper grade.
Blocked Air Intake or Malfunction	1. Clean and lube filter. 2. Check reed valve assembly.

B. Engine/Exhaust Systems

Possible Cause	Remedy
Incorrect Compression Pressure	1. If reading too high, check for excessive carbon. 2. If reading too low, check. a. Cylinder head gasket. b. Cylinder base gasket. c. Piston, rings, cylinder.
Poor Bottom End Compression	Check crankcase seals L. D R.
Blocked Exhaust System	1. Check muffler. 2. Check exhaust port carbon formation. 3. Check exhaust pipe for internal damage.

C. Poor Idle and/or Low Speed Performance

Possible Cause	Remedy
Ignition System	
Spark Plug Fouled or Incorrect Gap	Clean or correct gap, or replace if necessary.
Contact Points Bad	Clean or correct gap, or replace if necessary.
Ignition Timing Incorrect	Reset timing.
Weak Spark	Check ignition coil and condenser.
Air/Fuel Systems	
Tank Cap Vent Plugged	Clean or repair as necessary.
Fuel Petcock Plugged	Clean or repair as necessary.
Carburetor Slow Speed System Inoperative	Clean or repair as necessary.
Pilot Screw Improperly Adjusted or Plugged	Clean or repair as nceessary.
Carburetor Float Level Incorrect	Measure and adjust if required.
Starter Lever On	Check or repair as necessary.
Air Leak	Check or repair as necessary.
Carburetor Not Level	Check or repair as necessary.
Engine/Exhaust Systems	See "No Start".

D. Poor Mid-Range and Poor High Speed Performance

Possible Cause	Remedy
Ignition System	
Spark Plug Incorrect	Clean or correct gap or change plug if necessary.
Spark Advance Defective	Check for correct "retard" to "full advance" position.
Ignition Timing Incorrect	Reset.
Points Set too Close	Regap.
Air/Fuel Systems	
Dirty Air Filter Element	Clean.
Carburetor Float Level Incorrect	Measure and adjust if required.
Incorrect Main Jet Size	Remove jet and check size.
Incorrect Jet Needle Notch	Check position of needle clip.
Cracked or Leaking Reeds	Replace.
Carburetor Not Level	Level.

8-2. CONVERSION TABLES

Metric to Inch System

	Known	Multiplier (Rounded Off)	Result
Torque	m-kg	7.235	ft-lb
	m-kg	86.82	in-lb
	cm-kg	0.0724	ft-lb
	cm-kg	0.8682	in-lb
Weight	kg	2.205	lb
	g	0.03527	oz
Flow/Distance	km/lit	2.352	mpg
	km/h	0.6214	mph
	km	0.6214	mi
	m	3.281	ft
	m	1.094	yd
	cm	0.3937	in
	mm	0.03937	in
Volume/Capacity	cc (cm^3)	0.03381	oz (US liq)
	cc (cm^3)	0.06102	cu.in
	Lit	2.1134	pt (US liq)
	Lit	1.057	qt (US liq)
	Lit	0.2642	gal (US liq)
Misc.	kg/mm	56.007	lb/in
	kg/cm^2	14.2234	psi (lb/in^2)
	Centigrade (°C)	5/9 (°F−32)	Fahrenheit (°F)

Definition of Terms:

m-kg = Meter Kilograms: Usually torque.
g = Gram(s).
kg = Kilogram(s): 1,000 grams.
km = Kilometer(s).
lit = Liter(s).
km/lit = Kilometer(s) Per Liter: Mileage.
cc = Cubic Centimeter(s) (cm^3): Volume or Capacity.
kg/mm = Kilogram(s) Per Millimeter: Usually Spring Compression Rate.
kg/cm^2 = Kilogram(s) Per Square Centimeter: Pressure.

Inch to Metric System

	Known	Multiplier (Rounded Off)	Result
Torque	ft-lb	0.13826	m-kg
	in-lb	0.01152	m-kg
	ft-lb	13.825	m-kg
	in-lb	1.1518	m-kg
Weight	lb	0.4536	kg
	oz	28.35	g
Flow/Distance	mpg	0.4252	km/lit
	mph	1.609	km/h
	mi	1.609	km
	ft	0.3048	m
	yd	0.9144	m
	in	2.54	cm
	in	25.4	mm
Volume/Capacity	oz (US liq)	29.57	cc (cm^3)
	cu.in	16.387	cc (cm^3)
	pt (US liq)	0.4732	Lit
	qt (US liq)	0.9463	Lit
	gal (US liq)	3.7853	Lit
Misc.	lb/in	0.017855	kg/mm
	psi (lb/in^2)	0.07031	kg/cm^2
	Fahrenheit (°F)	9/5 (°C+32)	Centigrade (°C)

Millimeters to Inches

	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	0	0.0039	0.0079	0.0118	0.0157	0.0197	0.0236	0.0276	0.0315	0.0354
1	0.0394	0.0433	0.0472	0.0512	0.0551	0.0591	0.0630	0.0669	0.0709	0.0748
2	0.0789	0.0827	0.0866	0.0906	0.0945	0.0984	0.1024	0.1063	0.1102	0.1142
3	0.1181	0.1200	0.1260	0.1299	0.1339	0.1378	0.1417	0.1457	0.1496	0.1535
4	0.1575	0.1614	0.1654	0.1693	0.1732	0.1772	0.1811	0.1850	0.1890	0.1929
5	0.1969	0.2000	0.2047	0.2087	0.2126	0.2165	0.2205	0.2244	0.2283	0.2323
6	0.2362	0.2402	0.2441	0.2480	0.2520	0.2559	0.2598	0.2638	0.2677	0.2717
7	0.2756	0.2795	0.2835	0.2874	0.2913	0.2953	0.2992	0.3031	0.3071	0.3110
8	0.3150	0.3189	0.3228	0.3268	0.3307	0.3346	0.3386	0.3425	0.3465	0.3504
9	0.3543	0.3583	0.3622	0.3661	0.3701	0.3740	0.3780	0.3819	0.3858	0.3898
10	0.3937	0.3976	0.4016	0.4055	0.4094	0.4134	0.4173	0.4213	0.4252	0.4291

0.01 mm = 0.0004 in 0.02 mm = 0.0008 in 0.03 mm = 0.0012 in 0.04 mm = 0.0016 in
0.05 mm = 0.0020 in 0.06 mm = 0.0024 in 0.07 mm = 0.0028 in 0.08 mm = 0.0032 in
0.09 mm = 0.0035 in 0.10 mm = 0.0039 in

Inches to Millimeters

	0	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0	0	0.254	0.508	0.762	1.016	1.270	1.524	1.778	2.032	2.286
0.1	2.540	2.794	3.048	3.302	3.556	3.810	4.064	4.318	4.572	4.826
0.2	5.080	5.334	5.588	5.842	6.096	6.350	6.604	6.858	7.112	7.366
0.3	7.620	7.874	8.128	8.382	8.636	8.890	9.144	9.398	9.652	9.906
0.4	10.160	10.414	10.668	10.922	11.176	11.430	11.684	11.938	12.192	12.446
0.5	12.700	12.954	13.208	13.462	13.716	13.970	14.224	14.478	14.732	14.986
0.6	15.240	15.494	15.748	16.002	16.256	16.510	16.764	17.018	17.272	17.526
0.7	17.780	18.034	18.288	18.542	18.796	19.050	19.304	19.558	19.812	20.066
0.8	20.320	20.574	20.828	21.082	21.336	21.590	21.844	22.098	22.352	22.606
0.9	22.860	23.114	23.368	23.622	23.876	24.130	24.384	24.638	24.892	25.146
1.0	25.400	25.654	25.908	26.162	26.416	26.670	26.924	27.178	27.432	27.686

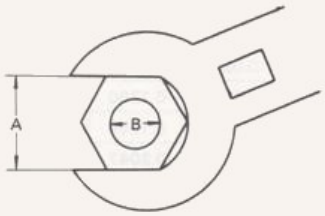
0.001 in = 0.0254 mm 0.002 in = 0.0508 mm 0.003 in = 0.0762 mm
0.004 in = 0.1016 mm 0.005 in = 0.1270 mm 0.006 in = 0.1524 mm
0.007 in = 0.1778 mm 0.008 in = 0.2032 mm 0.009 in = 0.2286 mm
0.010 in = 0.254 mm

8-3. TORQUE SPECIFICATIONS

The list at right covers those stud/bolt sizes with standard I.S.O. pitch threads. Torque specifications for components with thread pitches other than standard are given within the applicable chapter.

Torque specifications call for dry, clean threads. Components such as the cylinder or cylinder head should be at room temperature prior to torquing. A cylinder head or any other item with several fasteners should be torqued down in a cross-hatch pattern in successive stages until torque specification is reached. The method is similar to installing an automobile wheel and will avoid warping the component.

Standard Torque Setting



A. Distance across flats

B. Outside thread diameter

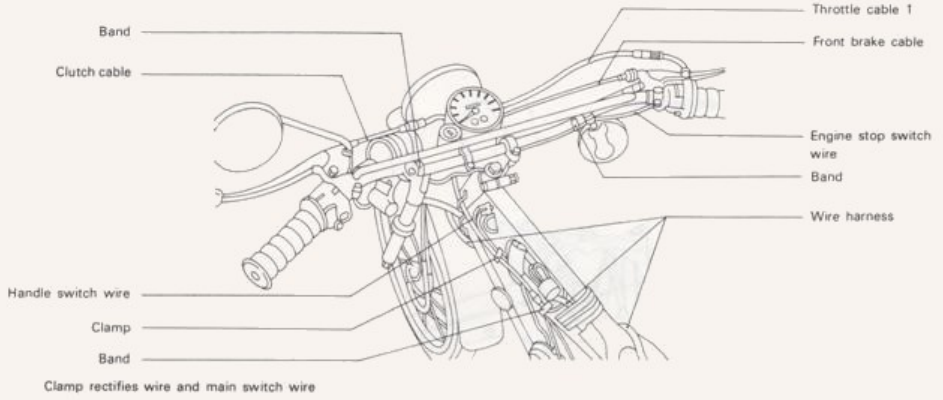
A	B	TORQUE SPECIFICATION		
		m-kg	ft-lb	in-lb
10 mm	6 mm	1.0	7.2	85
12 mm	8 mm	2.0	15	175
14 mm	10 mm	3.5 - 4.0	25 - 29	300 - 350
17 mm	12 mm	4.0 - 4.5	29 - 33	350 - 400
19 mm	14 mm	4.5 - 5.0	33 - 36	400 - 440
22 mm	16 mm	5.5 - 6.5	41 - 49	480 - 570
24 mm	18 mm	5.8 - 7.0	42 - 50	500 - 600
27 mm	20 mm	7.0 - 8.3	50 - 60	600 - 700
Spark plug		2.5 - 3.0	20 - 22	230 - 250

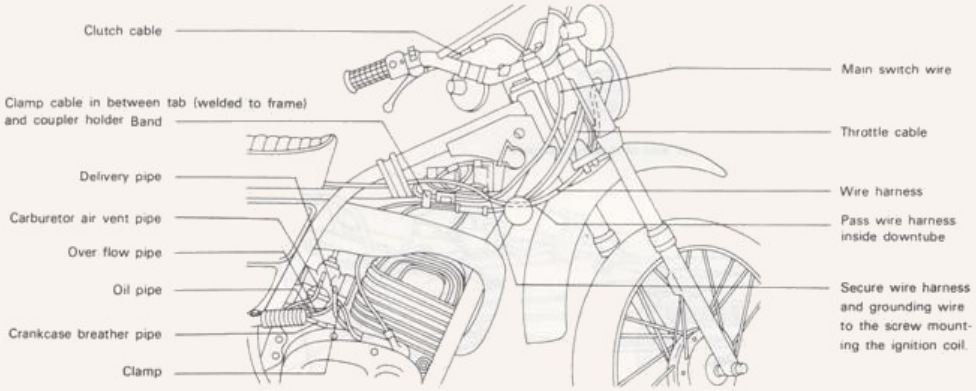
Section Parts to Tightened	Tightening Torque
Cylinder head holding nut (8 mm)	1.0 m-kg
D.C. generator securing screw (6 mm)	0.7 — 1.1 m-kg
Clutch boss securing nut (16 mm)	6.5 — 8.0 m-kg
Drive sprocket securing nut (16 mm)	6.5 — 9.0 m-kg
Crankcase tightening screw (6 mm)	1.1 — 1.3 m-kg
Primary drive gear securing nut (12 mm)	4.5 — 7.2 m-kg
Front wheel shaft securing nut (14 mm)	6.6 — 10.5 m-kg
Front fork tube pinch bolt (10 mm)	1.6 — 2.6 m-kg
Steering shaft securing nut (16 mm)	5.0 — 6.0 m-kg
Engine mounting nut (6 mm)	2.5 — 3.5 m-kg
Pivot shaft securing nut (14 mm)	6.6 — 10.5 m-kg
Rear wheel shaft securing nut (14 mm)	6.6 — 10.5 m-kg

8-4. CABLE ROUTING DIAGRAMS

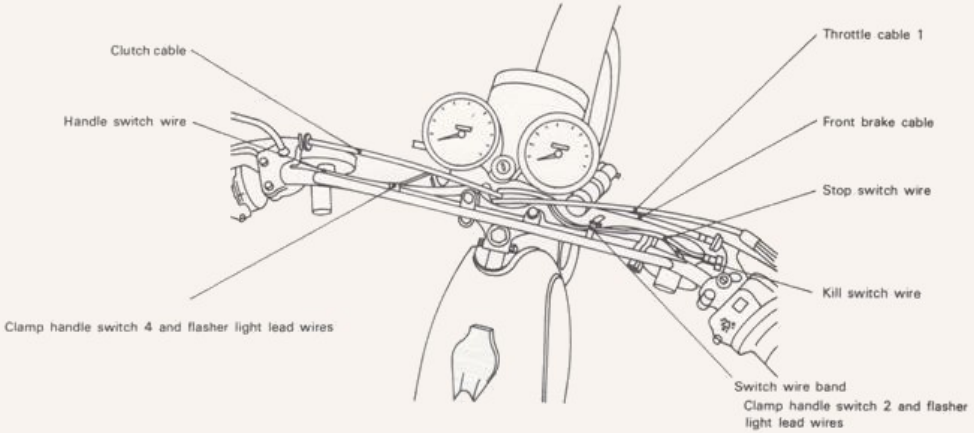
DT100C Cable Routing Diagram

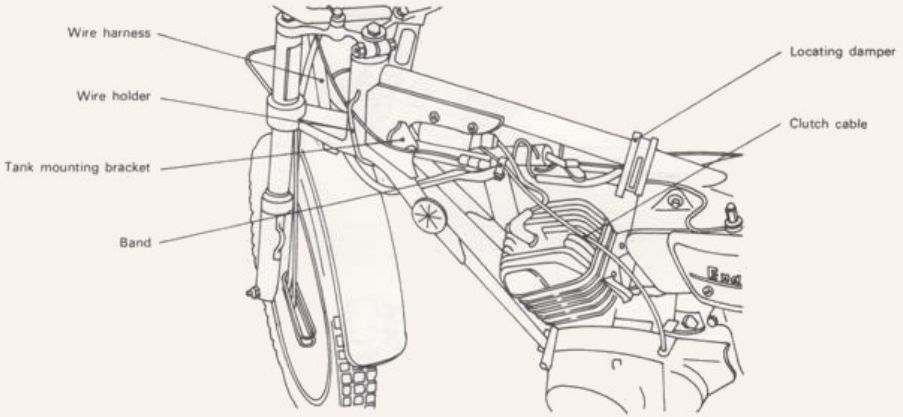
For other details (not shown in this diagram), refer to the DT175C Cable Routing Diagram.

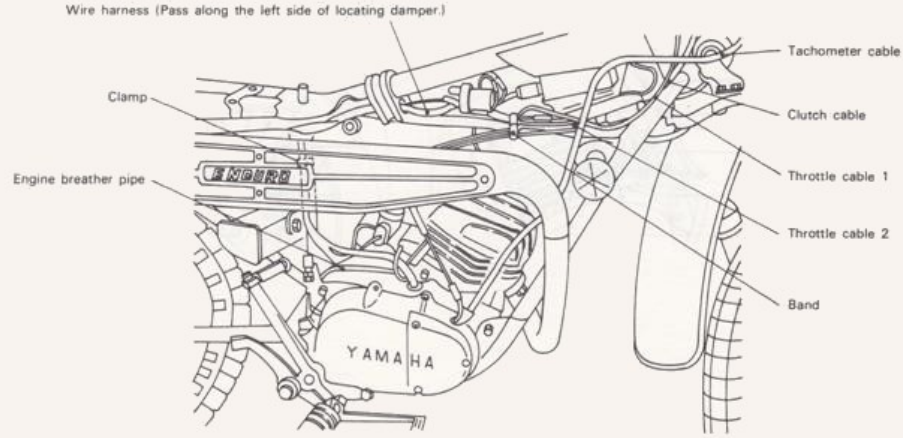




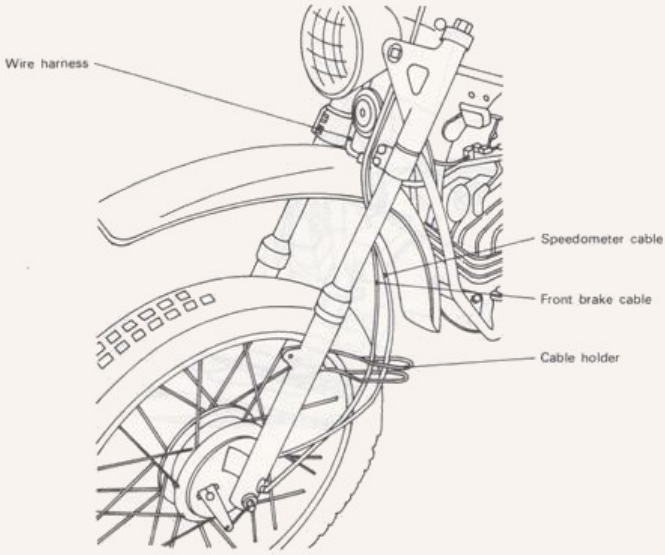
DT125C Cable Routing Diagram (1)

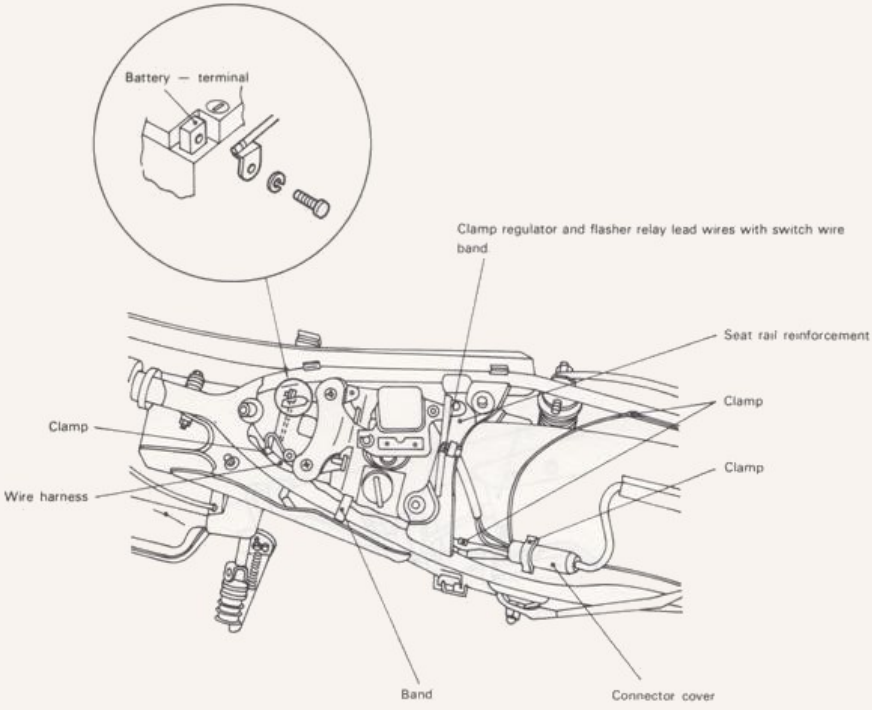




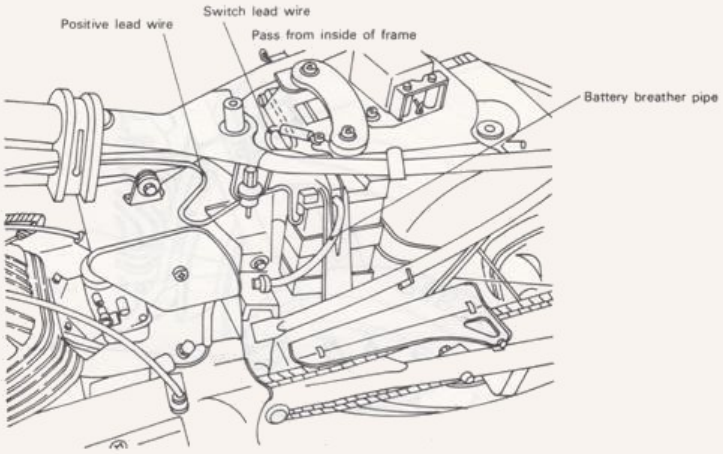


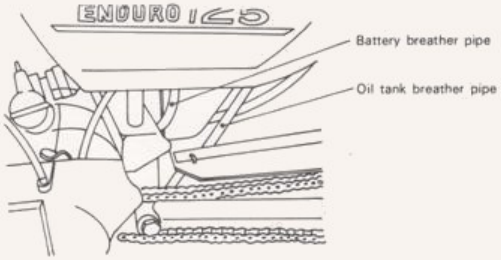
DT125C Cable Routing Diagram (2)

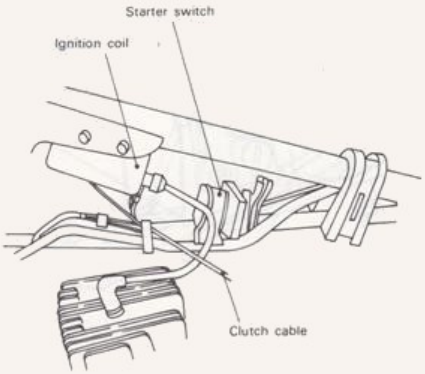




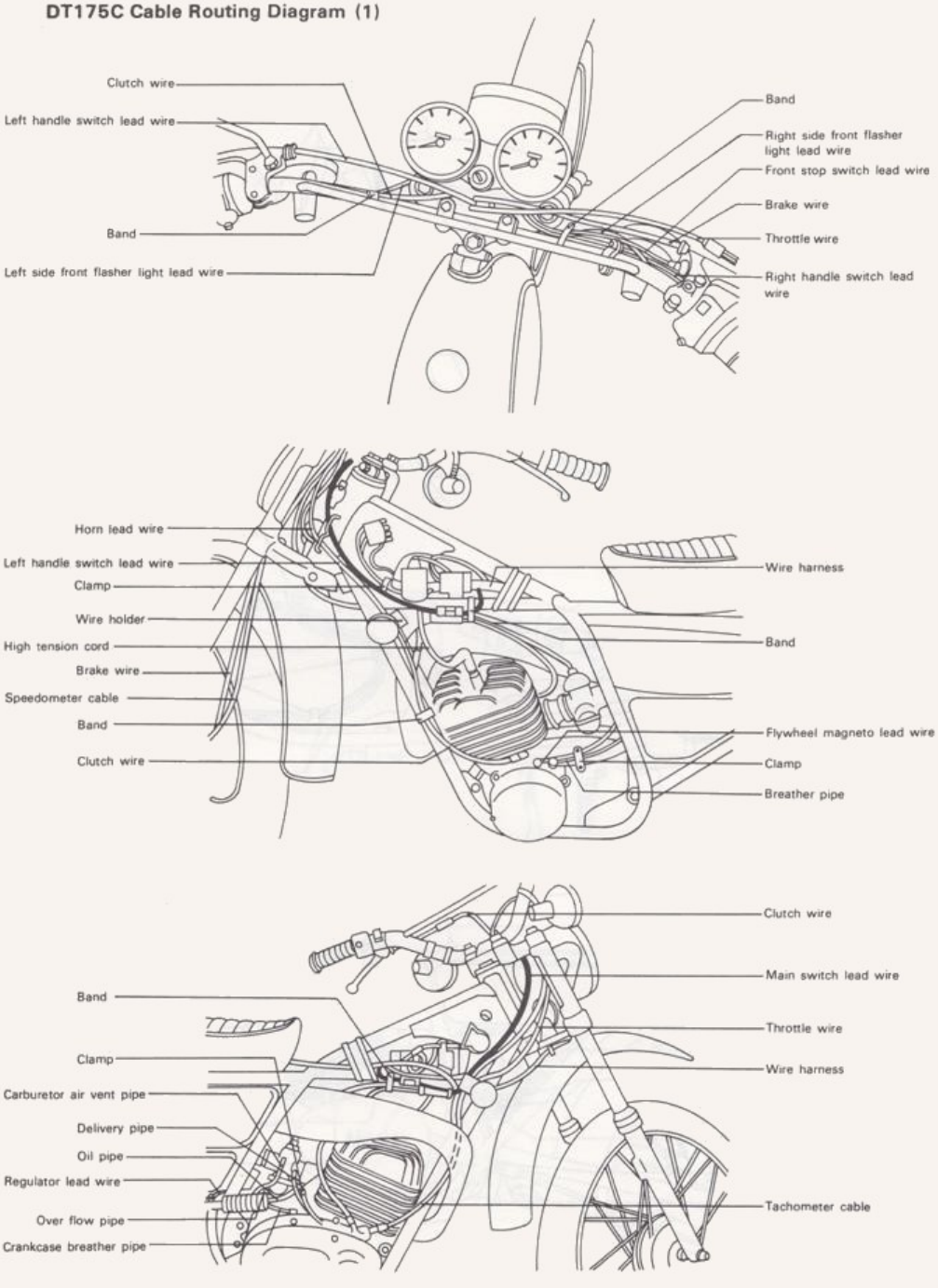
DT125C Cable Routing Diagram (3)



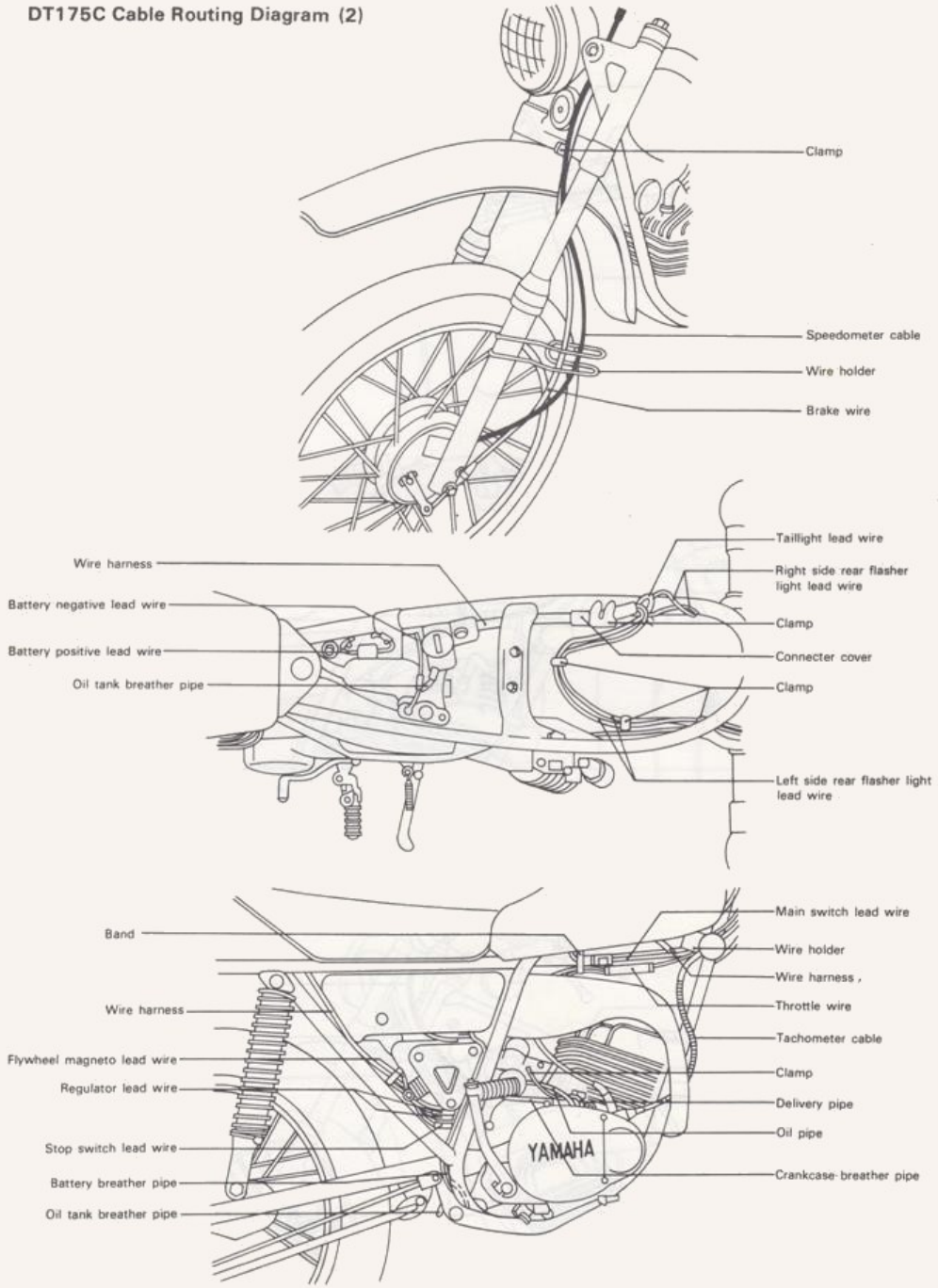




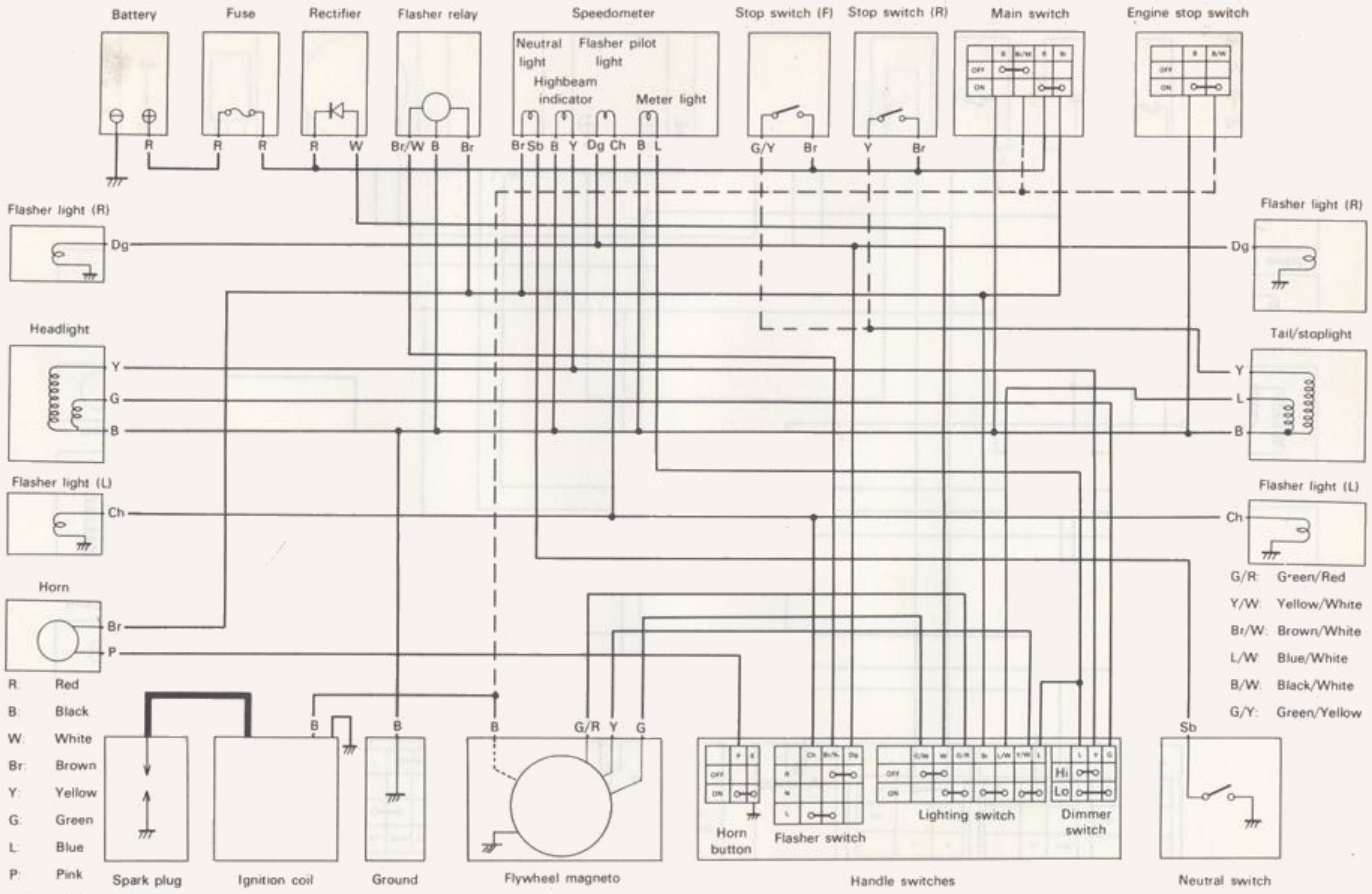
DT175C Cable Routing Diagram (1)



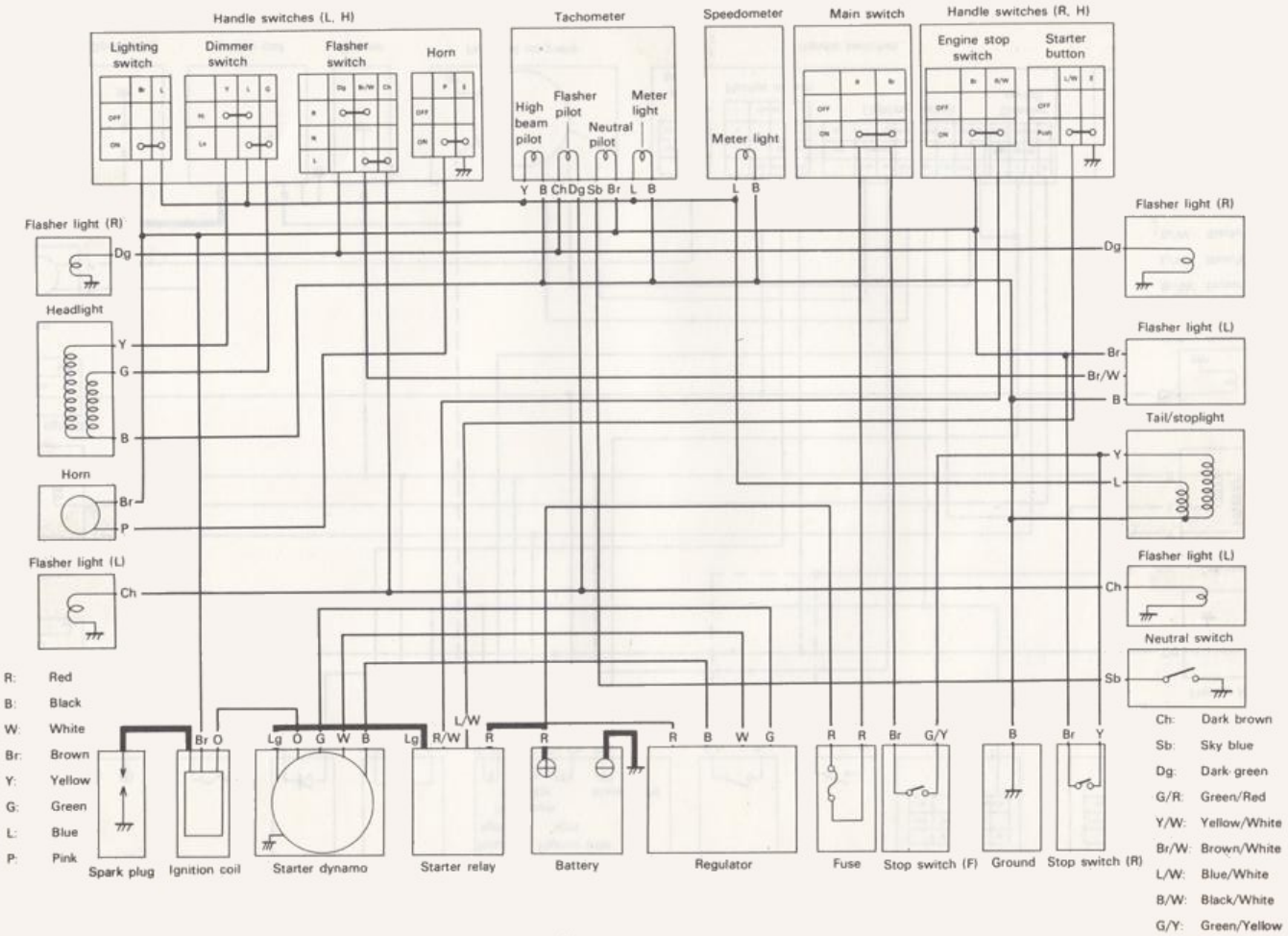
DT175C Cable Routing Diagram (2)



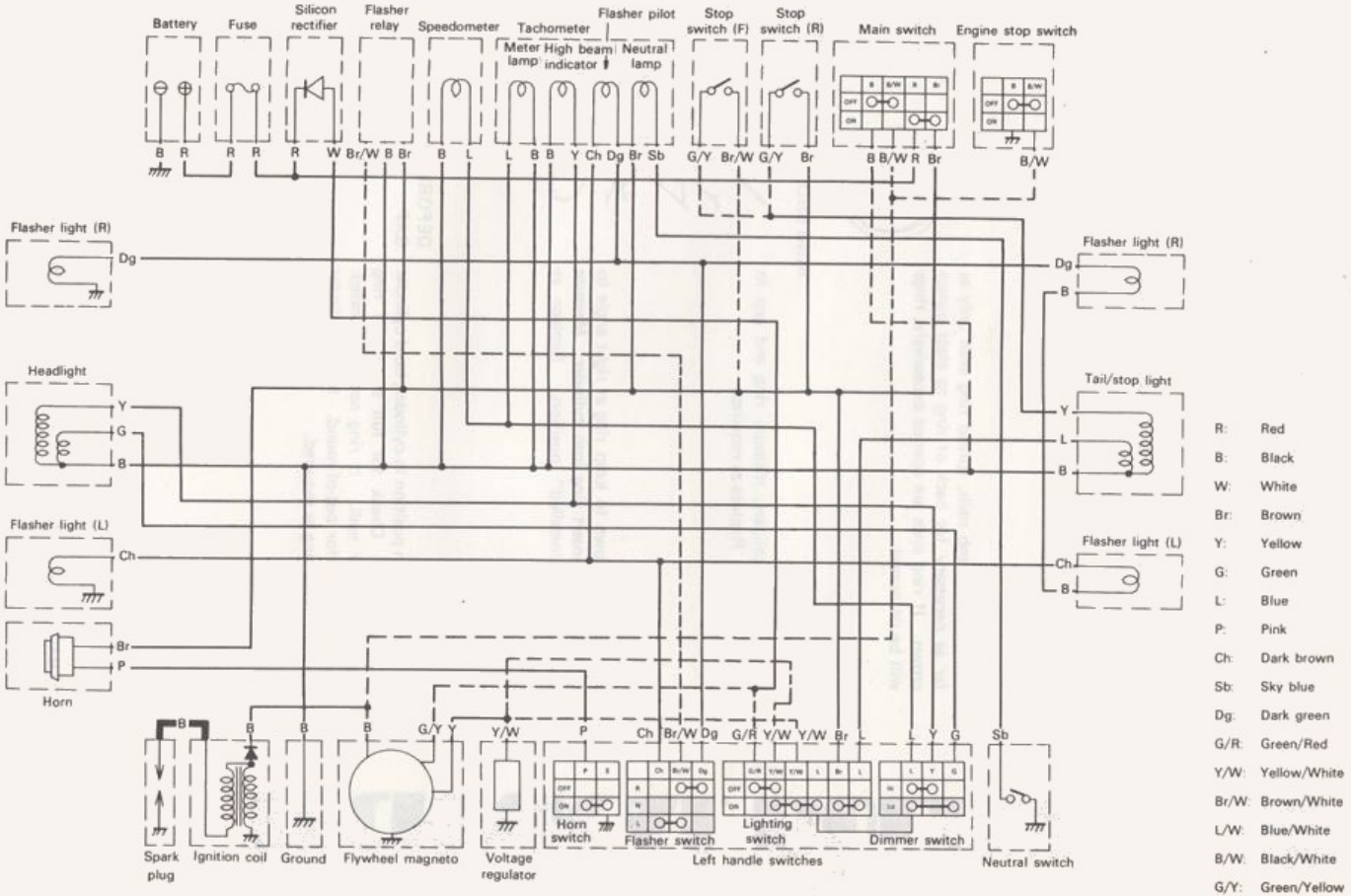
DT100C WIRING DIAGRAM



DT125C WIRING DIAGRAM



DT175C WIRING DIAGRAM



ALL MODELS

M4-008

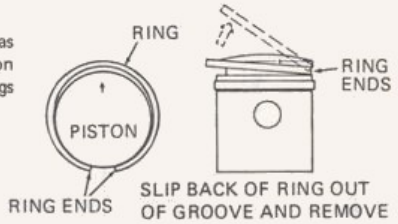
PISTON RING HANDLING

TECHNICAL BULLETIN

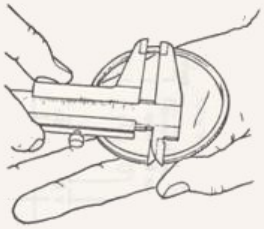
Recent changes in piston ring material require considerable care in handling and troubleshooting. Use following procedure.

NOTE: See appropriate Service Manual for four-stroke oil ring handling and troubleshooting procedures.

1. Using your thumb nails, spread ring ends only as far as necessary for back of ring to clear piston crown. If ring ends are opened excessively, rings will be deformed.

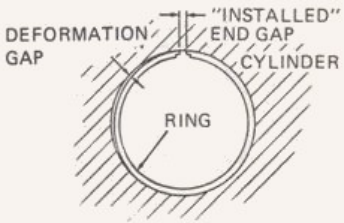


2. Using vernier calipers, measure ring end gap in "free" position. Replace as required.



3. Using piston crown to keep ring at right angle to cylinder bore, insert ring into cylinder. Measure end gap in "installed" position. Replace as required.

4. With ring still in position in cylinder, hold cylinder towards light. Check for full seating of ring against cylinder wall. If ring not fully seated, check cylinder for out-of-round. Repair cylinder and/or replace ring as required.



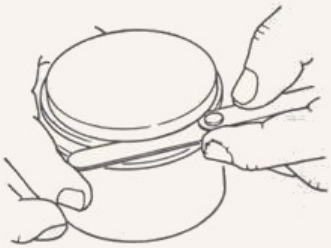
 1/25/74

M4-008

ALL MODELS – PISTON RING HANDLING

5. Service piston, ring expanders (if fitted), ring grooves, and wrist pin hole as required per established procedure for carbon removal, etc.

6. Install piston rings, reversing Step 1. Again take care that ring ends are not spread too far. Such action will cause ring deformation.



6. With rings installed, check ring groove clearance. Replace piston and/or rings as required.

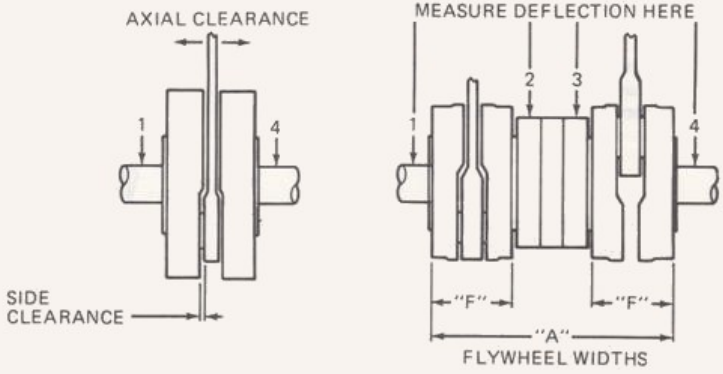
NOTE: The primary concern in handling rings is to make sure the rings are not deformed during removal or installation. "Free" end gap measurement (Step 2) and checking for full seating (Step 4) are the best methods to check for possible ring deformation. Any deformed ring (out-of round) should be immediately replaced.

† † † †

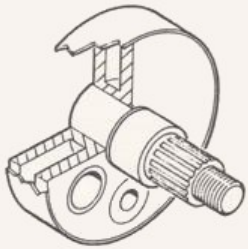
TECHNICAL BULLETIN

ALL 1974 MODELS
CRANKSHAFT SPECIFICATIONS

Following is crankshaft data for all 1974 model machines. There will be no wall chart containing this information this year. However, a wall chart will be printed containing both 1974 and 1975 crankshaft data after 1975 models are released.



NOTE: On YZ250 model only, the crank wheel design has been changed to reduce weight. The crank wheels, after forging, are fly-cut and a steel band is heat-shrunk over the opening to reduce crankcase volume. For further information refer to Motorcycle Service News Bulletin No. 393.



See Page 2 for data chart.

MODEL	DISP. (cc)	DEFLECTION TOLERANCE				FLYWHEEL WIDTHS		ROD CLEARANCE			
								AXIAL		SIDE	
		1	2	3	4	F	A	NEW	MAX	MAX	MIN
RD60A	55	0.03			0.03	$38^{+0.05}_{-0.10}$		0.8~1.0	2.0	0.5	0.2
RD200A	195	0.03	0.05	0.05	0.03	$47^{+0.05}_{-0.10}$	$140^{+0}_{-0.20}$	0.8~1.0	2.0	0.3	0.1
RD250A	247	0.03	0.05	0.05	0.03	$52^{+0}_{-0.05}$	$154^{+0.05}_{-0.10}$	0.8~1.0	2.0	0.3	0.1
RD350A	347	0.03	0.05	0.05	0.03	$52^{+0}_{-0.05}$	$154^{+0.05}_{-0.10}$	0.8~1.0	2.0	0.3	0.1
TX500/A	498	– one piece plain bearing crankshaft –									
TX650A	653	0.03	0.05	0.05	0.03	$66^{+0.05}_{-0.10}$	$186^{+0}_{-0.03}$	0.8~1.0	2.0	0.6	0.3
GT80A	73	0.03			0.03	$38^{+0.05}_{-0.10}$		0.8~1.0	2.0	0.5	0.4
DT100A	97	0.03			0.03	$50^{+0.05}_{-0.10}$		0.8~1.0	2.0	0.5	0.4
DT125A	123	0.03			0.03	$56^{+0.05}_{-0.10}$		0.8~1.0	2.0	0.5	0.4
DT175A	171	0.03			0.03	$56^{+0.05}_{-0.10}$		0.8~1.0	2.0	0.5	0.4
DT250A	246	0.03			0.03	$64^{+0}_{-0.05}$		0.8~1.0	2.0	0.5	0.4
DT360A	351	0.03			0.03	$64^{+0}_{-0.05}$		0.8~1.0	2.0	0.5	0.4
GTMXA	73	0.03			0.03	$38^{+0.05}_{-0.10}$		0.8~1.0	2.0	0.5	0.4
MX100A	97	0.03			0.03	$50^{+0.05}_{-0.10}$		0.8~1.0	2.0	0.5	0.4
MX125A	123	0.03			0.03	$56^{+0.05}_{-0.10}$		0.8~1.0	2.0	0.5	0.4
MX175A	171	0.03			0.03	$56^{+0.05}_{-0.10}$		0.8~1.0	2.0	0.5	0.4
MX250A	246	0.03			0.03	$64^{+0}_{-0.05}$		0.8~1.0	2.0	0.5	0.4
MX360A	351	0.03			0.03	$64^{+0}_{-0.05}$		0.8~1.0	2.0	0.5	0.4
SC500A	496	0.03			0.03	$64^{+0}_{-0.05}$		0.8~1.0	2.0	0.5	0.4
YZ80A	73	0.03			0.03	$38^{+0.05}_{-0.10}$		0.8~1.0	2.0	0.5	0.4
YZ125A	123	0.03			0.03	$56^{+0.05}_{-0.10}$		0.8~1.0	2.0	0.5	0.4
YZ250A	246	0.03			0.03	$62^{+0}_{-0.05}$		0.8~1.0	2.0	0.5	0.4
YZ360A	351	0.03			0.03	$62^{+0}_{-0.05}$		0.8~1.0	2.0	0.5	0.4
TY80A	73	0.03			0.03	$38^{+0.05}_{-0.10}$		0.8~1.0	2.0	0.5	0.4
TY250A	246	0.03			0.03	$64^{+0}_{-0.05}$		0.8~1.0	2.0	0.6	0.4
TA125A	124	0.03	0.05	0.05	0.03	$43^{+0.05}_{-0.10}$	$126^{+0}_{-0.30}$	0.8~1.0	2.0		
TZ250A	247	0.03	0.05	0.05	0.03	$52^{+0}_{-0.05}$	$154^{+0.05}_{-0.10}$	0.8~1.0	2.0	0.3	0.1
TZ350A	347	0.03	0.05	0.05	0.03	$52^{+0}_{-0.05}$	$154^{+0.05}_{-0.10}$	0.8~1.0	2.0	0.3	0.1
TZ750A	694	0.03	0.05	0.05	0.03	$52^{+0}_{-0.05}$	$154^{+0.05}_{-0.10}$	0.8~1.0	2.0	0.3	0.1

TECHNICAL BULLETIN

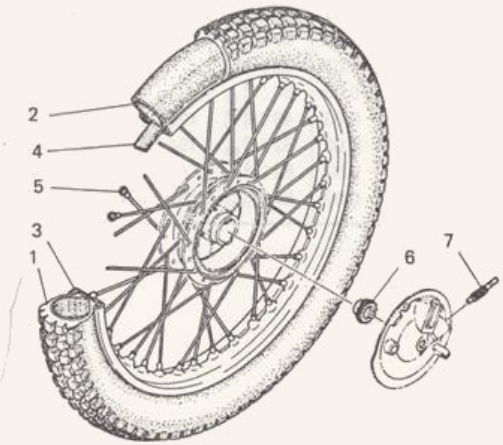
DT125A/B, DT175A/B
21" FRONT WHEEL PARTS

MOTORCYCLE
M4-086

The factory has made available the exact parts needed to convert the standard 19" front wheel to a 21" wheel and tire. These parts are used with the existing front hub. The speedometer drive gear and meter gear must be replaced in the brake shoe plate in order to maintain the accuracy of the speedometer/odometer.

PARTS ORDERING

NO.	PART NUMBER	DESCRIPTION	QTY.	PRICE	REMARKS
1	94127-21071-00	Tire	1	$22.50 - N	2.75 x 21 - 4 pr. Knobby Tread
	94127-21112-00	Tire	1	19.50 - N	2.75 x 21 - 4 pr. Trials Universal
2	94227-21031-00	Tube	1	4.92 - A	2.75 x 21
3	94416-21123-00	Rim	1	16.50 - A	1.60A x 21
4	94327-21024-00	Rim Band	1	1.00 - A	2.75 x 21
5	458-25104-00-00	Spoke Set	1	6.18 - A	
6	248-25135-10-00	Drive Gear	1	2.70 - A	
7	248-25138-10-00	Meter Gear	1	2.30 - A	
8	401-21511-00-20	Front Fender	1	14.62 - A	Silver - matches rear fender
	ACC-11110-21-00	Front Fender	1	8.95 - N	Gray with chrome bracket



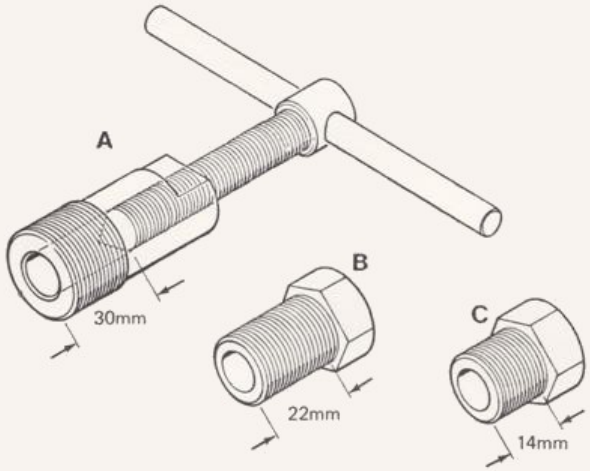
† † † †

 8/30/74

TECHNICAL BULLETIN

ALL MAGNETO MODELS
MAGNETO ROTOR PULLERS

There are three magneto rotor pullers now available. The table below gives the year and model of machine for each rotor puller.



Magneto rotor puller A (see illustration above) is used on all magnetos with outer rotors. Puller B is used on all moto cross machines that have an inner rotor and puller C is used on all road racers with inner rotors.

YEAR	MODELS	DESCRIPTION	PART NUMBER
'74, '75 and '76	RD60A,B,C GTMXA,B,C GT80A,B,C DT100A,B,C DT125A,B DT175A,B,C DT250A,B,C DT360A DT400B,C TY80A,B TY175B,C TY250A,B,C MX100A,B MX125A,B MX175A,B MX360A MX400B SC500A YZ80A,B,C LB80-IIAC LB80-IIHC, TT500 TX500	Magneto Outer Rotor Puller A	90890-01148-00
'74, '75 and '76	YZ125A,B,C YZ250A,B YZ360A,B MX125C MX250A,B	Magneto Inner Rotor Puller B	90109-20405-00
'74/'75	TA125, TZ250A,B TZ350A,B TZ750A,B	Magneto Inner Rotor Puller C	90109-20416-00

