

SUZUKI

GS1000

NEW MODEL TECHNICAL BULLETIN

SR-8502 (英) E-01
SUPPL.

FOREWORD

This new model technical bulletin has been produced primarily for experienced mechanics whose job it is to inspect, adjust, repair and service SUZUKI motorcycles. Apprentice mechanics and do-it-yourself mechanics, will also find this manual an extremely useful guide.

Model GS1000 manufactured to standard specifications is the main subject matter of this Manual. However, the GS1000 machines distributed in your country might differ in minor respects from the standard-specification GS1000 and, if they do, it is because some minor modifications (which are of no consequence in most cases as far as servicing is concerned) had to be made to comply with the statutory requirements of your country.

Please refer to the GS1000 service manual except for the items described in this new model technical bulletin.

This manual covers three models of the GS1000 series: GS1000D, GS1000H and GS1000E

SUZUKI MOTOR CO., LTD.

*Service Department
Overseas Operations Division*

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GS1000T

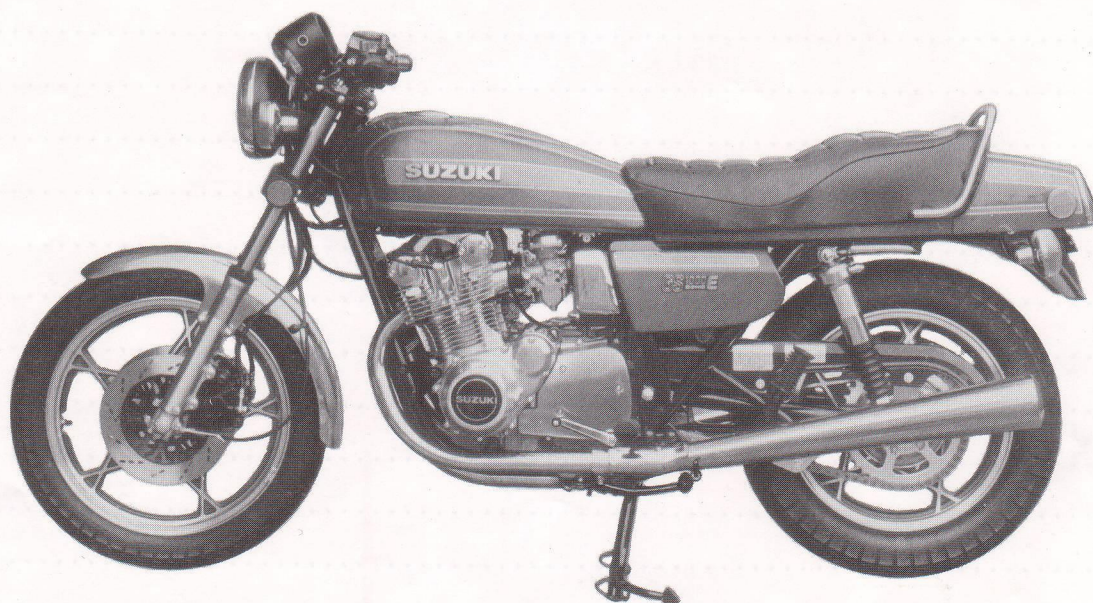
CONTENTS

GS1000T	2
SPECIFICATIONS.....	3
SERVICE DATA	5
TORQUE TABLE	16
SPECIAL MATERIALS	19
MODIFICATIONS.....	21
FUEL SYSTEM	26
FULL-TRANSISTORIZED IGNITION SYSTEM	44
CHARGING SYSTEM	50
FRONT MASTER CYLINDER	54
FRONT CALIPER.....	58
FRONT FORK.....	62
WIRE AND CABLE ROUTING.....	63
WIRING DIAGRAM	65

GS1000T



Right side



Left side

SPECIFICATIONS

DIMENSIONS AND DRY MASS

Overall length	2 225 mm (87.6 in)
Overall width	850 mm (33.5 in)
Overall height	1 165 mm (45.9 in)
Wheelbase	1 505 mm (59.3 in)
Ground clearance	155 mm (6.1 in)
Dry mass	230 kg (507 lbs) (GS1000D)
	234 kg (516 lbs) (GS1000H and GS1000E)
Gross vehicle weight rating	455 kg (1 003 lbs)

ENGINE

Type	Four-stroke, air-cooled, DOHC
Number of cylinders	4
Bore	70.0 mm (2.756 in)
Stroke	64.8 mm (2.551 in)
Piston displacement	997 cm ³ (60.8 cu.in)
Compression ratio	9.2 : 1
Carburetor	MIKUNI BS34SS, four
Air cleaner	Paper element
Starter system	Electric
Lubrication system	Wet sump

TRANSMISSION

Clutch	Wet multi-plate type
Transmission	5-speed constant mesh
Gearshift pattern	1-down, 4-up
Primary reduction	1.775 (87/49)
Final reduction	2.800 (42/15)
Gear ratios, Low	2.500 (35/14)
2nd	1.777 (32/18)
3rd	1.380 (29/21)
4th	1.125 (27/24)
Top	0.961 (25/26)
Drive Chain	DAIDO D.I.D. 630YL or TAKASAGO RK630GSO, 96 links

CHASSIS

Front suspension	Telescopic, pneumatic/coil spring, oil dampened
Rear suspension	Swinging arm, oil dampened, damper 4-way/spring 5-way adjustable (GS1000D and GS1000H)
	Swinging arm, pneumatic/coil spring, oil dampened (GS1000E)
Steering angle	40° (right and left)
Caster	63°00'
Trail	116 mm (4.57 in)
Turning radius	2.6 m (8.5 ft)
Front brake	Disc brake, twin
Rear brake	Disc brake

Front tire size	3.25V19-4PR (GS1000D E-24) 3.50V19-4PR (GS1000D, GS1000H and GS1000E The others)
Rear tire size	4.00V18-4PR (GS1000D E-24) 4.50V17-4PR (GS1000D, GS1000H and GS1000E The others)
Front tire pressure	175 kPa (1.75 kg/cm ² , 25 psi) (Normal solo riding)
Rear tire pressure	200 kPa (2.00 kg/cm ² , 28 psi) (Normal solo riding)

ELECTRICAL

Ignition type	Transistorized
Ignition timing	17° B.T.D.C. below 1 500 r/min and 37° B.T.D.C. above 2 350 r/min
Spark plug	NGK B8ES or NIPPON DENSO W24ES-U
Spark plug gap	0.6 — 0.8 mm (0.024 — 0.031 in) both NGK and NIPPON DENSO
Battery	12V 50.4 kC (14 Ah)/10HR
Generator	Three-phase A.C. generator
Fuse	10/10/10/10/15A

CAPACITIES

Fuel tank	19 L (5.0/4.2 US/Imp gal)
Engine oil change	3.4 L (3.6/3.0 US/Imp qt)
filter change	3.8 L (4.0/3.3 US/Imp qt)
overhaul	4.2 L (4.4/3.7 US/Imp qt)
Front fork air pressure	80 kPa (0.8 kg/cm ² , 11.38 psi) (GS1000D and GS1000H E-01) (GS1000E E-01, 24, 30) 100 kPa (1.0 kg/cm ² , 14.22 psi) (GS1000D, GS1000H and GS1000E The others)
Front fork oil	24.1 ml (8.15/8.49 US/Imp oz) in each leg (GS1000D and GS1000H E-01) (GS1000E E-01, 24, 30) 259 ml (8.75/9.12 US/Imp oz) in each leg (GS1000D, GS1000H and GS1000E The others)

NOTE:

- E-01: General market
- E-24: Australia
- E-30: Singapore

* Specifications subject to change without notice.

SERVICE DATA

VALVES + GUIDES

Unit: mm (in)

Item		Standard	Limit
Valve dia.	IN	37.9 – 38.1 (1.49 – 1.50)	—
	EX	31.9 – 32.1 (1.25 – 1.26)	—
Valve lift	IN	8.0 (0.31)	—
	EX	7.5 (0.30)	—
Valve clearance or Tappet clearance (when cold)	IN/EX	0.03 – 0.08 (0.001 – 0.003)	—
Valve guide to Valve stem clearance	IN	0.025 – 0.055 (0.0009 – 0.0022)	0.090 (0.0035)
	EX	0.040 – 0.070 (0.0016 – 0.0028)	0.100 (0.0039)
Valve guide I.D.	IN/EX	7.000 – 7.015 (0.2756 – 0.2762)	—
Valve stem O.D.	IN	6.960 – 6.975 (0.2740 – 0.2746)	—
	EX	6.945 – 6.960 (0.2734 – 0.2740)	—
Valve stem runout	IN/EX	—	0.05 (0.002)
Valve head thickness	IN/EX	—	0.5 (0.02)
Valve seat width	IN/EX	1.1 – 1.3 (0.04 – 0.05)	—
Valve head radial runout	IN/EX	—	0.03 (0.001)
Valve spring free length (IN/EX)	INNER	—	33.9 (1.33)
	OUTER	—	41.3 (1.63)
Valve spring tension (IN/EX)	INNER	29.3 – 34.0 kg (64.59 – 74.96 lbs) at length 23 mm (0.91 in)	—
	OUTER	50.4 – 58.3 kg (111.11 – 128.53 lbs) at length 27 mm (1.06 in)	—

CAMSHAFT + CYLINDER + HEAD

Unit: mm (in)

Item		Standard	Limit
Cam height	IN	36.320 – 36.360 (1.4299 – 1.4315)	36.020 (1.4181)
	EX	35.770 – 35.810 (1.4083 – 1.4098)	35.470 (1.3965)
Camshaft journal oil clearance	IN/EX	0.037 – 0.065 (0.0015 – 0.0026)	0.150 (0.0059)
Camshaft journal holder I.D.	IN/EX	22.012 – 22.025 (0.8666 – 0.8671)	—
Camshaft journal O.D.	IN/EX	21.960 – 21.975 (0.8646 – 0.8652)	—
Camshaft runout	IN/EX	—	0.1 (0.004)
Cam chain 20 pitch length		—	157.80 (6.213)
Cam chain pin (at arrow “3”)		20th pin	—
Cylinder head distortion		—	0.2 (0.008)

PISTON + RING + CYLINDER

Unit: mm (in)

Item		Standard	Limit
Compression pressure		900 — 1 300 kPa (9 — 13 kg/cm ² , 128 — 185 psi)	700 kPa (7 kg/cm ² , 100 psi)
Compression pressure difference		—	200 kPa (2 kg/cm ² , 28 psi)
Piston to Cylinder clearance		0.050 — 0.060 (0.0020 — 0.0024)	0.120 (0.0047)
Cylinder bore		70.000 — 70.015 (2.7559 — 2.7565)	70.080 (2.7590)
Piston dia.		69.945 — 69.960 (2.7537 — 2.7543) Measure the 10 (0.39) from piston skirt end.	69.880 (2.7512)
Cylinder distortion		—	0.2 (0.008)
Piston ring free end gap	1st N	Approx. 8.5 (0.33)	6.8 (0.27)
	2nd N	Approx. 8.5 (0.33)	6.8 (0.27)
Piston ring end gap	1st	0.15 — 0.35 (0.006 — 0.014)	0.7 (0.03)
	2nd	0.15 — 0.35 (0.006 — 0.014)	0.7 (0.03)
Piston ring groove clearance	1st	—	0.180 (0.0071)
	2nd	—	0.150 (0.0059)
Piston ring groove width	1st	1.21 — 1.23 (0.047 — 0.048)	—
	2nd	1.21 — 1.23 (0.047 — 0.048)	—
	Oil	2.51 — 2.53 (0.099 — 0.100)	—
Piston ring thickness	1st	1.175 — 1.190 (0.0463 — 0.0469)	—
	2nd	1.170 — 1.190 (0.0461 — 0.0469)	—
Piston pin bore I.D.		18.002 — 18.008 (0.7087 — 0.7090)	18.030 (0.7098)
Piston pin O.D.		17.995 — 18.000 (0.7085 — 0.7087)	17.980 (0.7079)

CRANKSHAFT

Unit: mm (in)

Item	Standard	Limit
Conrod small end I.D.	18.006 — 18.014 (0.7089 — 0.7092)	18.040 (0.7102)
Conrod deflection	—	3.0 (0.12)
Conrod big end side clearance	0.10 — 0.65 (0.004 — 0.026)	1.00 (0.039)
Crankshaft runout	—	0.05 (0.002)

OIL PUMP

Unit: mm (in)

Item	Standard	Limit
Oil pump reduction ratio	1.723 (87/49 × 33/34)	—
Oil pressure (at 60°C, 140°F)	Above 10 kPa (0.1 kg/cm ² , 1.42 psi) Below 50 kPa (0.5 kg/cm ² , 7.11 psi) at 3000 r/min	—
Tip clearance	—	0.20 (0.008)
Outer rotor clearance	—	0.25 (0.010)
Side clearance	—	0.15 (0.006)

CLUTCH

Unit: mm (in)

Item	Standard	Limit
Clutch cable play	2 — 3 (0.08 — 0.12)	—
Drive plate thickness	2.9 — 3.1 (0.11 — 0.12)	2.6 (0.10)
Drive plate claw width	15.6 — 15.8 (0.61 — 0.62)	14.8 (0.58)
Drive plate distortion	—	0.2 (0.008)
Driven plate thickness	1.6 ± 0.06 (0.06 ± 0.002)	—
Driven plate distortion	—	0.1 (0.004)
Clutch spring free length	—	38.5 (1.52)
Primary drive to Driven gear backlash	0 — 0.03 (0 — 0.001)	0.08 (0.003)

TRANSMISSION

Unit: mm (in)

Item		Standard	Limit
Primary reduction		1.775 (87/49)	—
Final reduction		2.800 (42/15)	—
Gear ratios	Low	2.500 (35/14)	—
	2nd	1.777 (32/18)	—
	3rd	1.380 (29/21)	—
	4th	1.125 (27/24)	—
	Top	0.961 (25/26)	—
Gear backlash	Low	0.03 (0.001)	0.08 (0.003)
	2nd	0.03 (0.001)	0.08 (0.003)
	3rd	0.03 (0.001)	0.08 (0.003)
	4th	0.10 (0.004)	0.15 (0.006)
	Top	0.10 (0.004)	0.15 (0.006)
Shift fork to Groove clearance		0.4 — 0.6 (0.016 — 0.024)	0.8 (0.031)
Shift fork groove width		5.45 — 5.55 (0.215 — 0.219)	—
Shift fork thickness		4.95 — 5.05 (0.195 — 0.199)	—
Counter shaft length (Low to 2nd)		109.5 $\begin{smallmatrix} +0 \\ -0.1 \end{smallmatrix}$ (4.31 $\begin{smallmatrix} +0 \\ -0.004 \end{smallmatrix}$)	—
Drive chain	Type	D.I.D.: 630YL TAKASAGO: RK630GSO	—
	Links	96	—
	20 pitch length	—	383.0 (15.08)
Drive chain slack		20 — 30 (0.8 — 1.2)	—

CARBURETOR

Unit: mm (in)

Item		Specification
Carburetor type		MIKUNI BS34SS
Bore size		34 (1.34)
I.D. No.		49110
Idle r/min		1 050 ± 100 r/min
Fuel level		5.0 ± 0.5 (0.20 ± 0.02)
Float height		22.4 ± 1.0 (0.88 ± 0.04)
Main jet	(M.J.)	#107.5
Main air jet	(M.A.J.)	1.7
Jet needle	(J.N.)	5D57-3
Needle jet	(N.J.)	X-8
Pilot jet	(P.J.)	40
By pass	(B.P.)	0.9, 0.8, 0.8
Pilot outlet	(P.O.)	0.8
Valve seat	(V.S.)	2.0
Starter Jet	(G.S.)	45
Pilot screw	(P.S.)	1 ⁵ / ₈
Pilot air jet	(P.A.J.)	#155
Throttle cable play		0.5 — 1.0 (0.02 — 0.04)

ELECTRICAL

Unit: mm (in)

Item		Specification
Ignition timing		17° B.T.D.C. below, 1 500 ± 150 r/min and 37° B.T.D.C. above, 2 350 ± 150 r/min
Firing order		1, 2, 4, 3
Spark plug	Type	NGK: B8ES N.D.: W24ES-U
	Gap	0.6 — 0.8 (0.024 — 0.031)
Spark performance		Over 8 (0.3) at 1 atm
Signal coil resistance		Approx. 290 — 360Ω BI-G
Ignition coil resistance	Primary	O/W — W or B/Y Approx. 3 — 5Ω
	Secondary	Plug cap — Plug cap Approx. 31 — 33 kΩ
Generator No-Load voltage		More than 80V (AC) at 5 000 r/min
Regulated voltage		14.0 — 15.5V at 5 000 r/min
Starter motor:	Brush length	Limit: 6 (0.24)
	Commutator under cut	Limit: 0.2 (0.008)
Starter relay resistance		3 — 4Ω
Battery:	Type designation	YB14L — A2
	Capacity	12V 50.4 kC (14 Ah)/10HR
	Standard electrolyte S.G.	1.28 at 20°C (68°F)
Fuse size:	Headlight	10A
	Turn signal	10A
	Ignition	10A
	Main	15A
	Output terminal	10A

BRAKE + WHEEL

Unit: mm (in)

Item		Standard	Limit
Rear brake pedal height		20 (0.8)	—
Brake disc thickness	Front	5.0 ± 0.2 (0.2 ± 0.008)	4.5 (0.18)
	Rear	6.7 ± 0.2 (0.26 ± 0.008)	6.0 (0.24)
Brake disc runout		—	0.30 (0.012)
Master cylinder bore	Front	15.870 — 15.913 (0.6248 — 0.6265)	—
	Rear	14.000 — 14.043 (0.5512 — 0.5529)	—
Master cylinder piston dia.	Front	15.811 — 15.838 (0.6225 — 0.6235)	—
	Rear	13.957 — 13.984 (0.5495 — 0.5506)	—
Brake caliper cylinder bore	Front	38.180 — 38.219 (1.5031 — 1.5047)	—
	Rear	38.180 — 38.256 (1.5031 — 1.5061)	—
Brake caliper piston dia.	Front	38.025 — 38.050 (1.4970 — 1.4980)	—
	Rear	38.098 — 38.148 (1.4999 — 1.5019)	—
Wheel rim runout	Axial	—	2.0 (0.08)
	Radial	—	2.0 (0.08)
Wheel axle runout	Front	—	0.25 (0.010)
	Rear	—	0.25 (0.010)
Tire size	Front	3.25V19-4PR: GS1000D E-24 3.50V19-4PR: The others	—
	Rear	4.00V18-4PR: GS1000D E-24 4.50V17-4PR: The others	—
Tire tread depth	Front	—	1.6 (0.06)
	Rear	—	2.0 (0.08)

SUSPENSION

Unit: mm (in)

Item	Standard	Limit
Front fork stroke	160 (6.3)	—
Front fork spring free length	—	416 (16.4) GS1000D and GS1000H ... E-01 GS1000E ... E-01, 24, 30
	—	346 (13.6) GS1000D, GS1000H and GS1000E ... The others
Front fork oil level	140 (5.5) GS1000D and GS1000H ... E-01 GS1000E ... E-01, 24, 30	—
	110 (4.3) GS1000D, GS1000H and GS1000E ... The others	—
Front fork air pressure S.T.D.	80 kPa (0.8 kg/cm ² , 11.38 psi) GS1000D and GS1000H ... E-01 GS1000E ... E-01, 24, 30	—
	100 kPa (1.0 kg/cm ² , 14.22 psi) GS1000D, GS1000H and GS1000E ... The others	—
Rear shock absorber air pressure S.T.D.	190 kPa (1.9 kg/cm ² , 27.0 psi) GS1000E ... E-01, 24, 30	—
	200 kPa (2.0 kg/cm ² , 28.4 psi) GS1000E ... The others	—
Rear wheel travel	100 (3.9)	—
Swinging arm pivot shaft runout	—	0.3 (0.012)

COUNTRY OR AREA:

E-01 General
E-24 Australia
E-30 Singapore

FUEL + OIL + CAPACITY

Item	Specification
Fuel type	Gasoline used should be graded 90 octane or higher in Research Method
Fuel tank	19 L (5.0/4.2 US/Imp gal)
Engine oil type	SAE 10W/40
Engine oil capacity Change Filter change Overhaul	3 400 ml (3.6/3.0 US/Imp qt)
	3 800 ml (4.0/3.3 US/Imp qt)
	4 200 ml (4.4/3.7 US/Imp qt)
Front fork oil type	SAE 10W/20
Front fork oil capacity (each leg)	241 ml (8.15/8.49 US/Imp oz) GS1000D and GS1000H ... E-01 GS1000E ... E-01, 24, 30
	259 ml (8.75/9.12 US/Imp oz) GS1000D, GS1000H, GS1000E ... The others
Brake fluid type	SAE J1703

TIRE PRESSURE

GS1000D E-24

Cold Inflation Tire Pressure	NORMAL RIDING						CONTINUOUS HIGH SPEED RIDING					
	Solo Riding			Dual Riding			Solo Riding			Dual Riding		
	kPa	kg/cm ²	psi	kPa	kg/cm ²	psi	kPa	kg/cm ²	psi	kPa	kg/cm ²	psi
FRONT	175	1.75	25	200	2.00	28	200	2.00	28	225	2.25	32
REAR	200	2.00	28	225	2.25	32	225	2.25	32	280	2.80	40

GS1000D, GS1000H and GS1000E The others

Cold Inflation Tire Pressure	NORMAL RIDING						CONTINUOUS HIGH SPEED RIDING					
	Solo Riding			Dual Riding			Solo Riding			Dual Riding		
	kPa	kg/cm ²	psi	kPa	kg/cm ²	psi	kPa	kg/cm ²	psi	kPa	kg/cm ²	psi
FRONT	175	1.75	25	175	1.75	25	200	2.00	28	200	2.00	28
REAR	200	2.00	28	225	2.25	32	225	2.25	32	280	2.80	40

WATTAGE

Unit: W

Item		Specification												
		E-01	E-02	E-04	E-17	E-18	E-21	E-22	E-24	E-25	E-26	E-30	E-34	E-39
Headlight	HI	60	←	←	←	←	←	←	←	←	←	←	←	←
	LO	55	←	←	←	←	←	←	←	←	←	←	←	←
Parking or city light		—	4	←	←	←	←	←	—	4	←	—	4	←
Tail/Brake light		8/23	5/21	←	←	←	←	←	8/23	5/21	←	8/23	5/21	←
Turn signal light		23	21	←	←	←	←	←	23	21	←	23	21	←
Speedometer light		3.4	←	←	←	←	←	←	←	←	←	←	←	←
Tachometer light		3.4	←	←	←	←	←	←	←	←	←	←	←	←
Turn signal indicator light		3.4	←	←	←	←	←	←	←	←	←	←	←	←
High beam indicator light		3.4	←	←	←	←	←	←	←	←	←	←	←	←
Neutral indicator light		3.4	←	←	←	←	←	←	←	←	←	←	←	←
Oil pressure indicator light		3.4	←	←	←	←	←	←	←	←	←	←	←	←
License light		8	5	←	←	←	←	10	8	10	5	8	5	←

COUNTRY OR AREA:

E-01 General

E-02 England

E-04 France

E-17 Sweden

E-18 Switzerland

E-21 Belgium

E-22 West Germany

E-24 Australia

E-25 The Netherlands

E-26 Denmark

E-30 Singapore

E-34 Italy

E-39 Austria

TORQUE TABLE

ENGINE

Item	N·m	kg·m	lb·ft
Camshaft holder bolt	8 — 12	0.8 — 1.2	6.0 — 8.5
Cylinder head nut	9 — 14	0.9 — 1.4	6.5 — 10.0
Cylinder head nut	35 — 40	3.5 — 4.0	25.5 — 29.0
Cylinder head cover bolt	6 — 10	0.6 — 1.0	4.5 — 7.0
Crankcase bolt (6 mm)	6 — 10	0.6 — 1.0	4.5 — 7.0
Crankcase bolt (8 mm)	13 — 23	1.3 — 2.3	9.5 — 16.5
Starter motor bolt	4 — 7	0.4 — 0.7	3.0 — 5.0
Oil pan bolt	6 — 10	0.6 — 1.0	4.5 — 7.0
Engine mounting bolt (8 mm)	25	2.5	18.0
Engine mounting bolt (10 mm)	35	3.5	25.5
Primary drive gear bolt	15 — 20	1.5 — 2.0	11.0 — 14.5
Starter clutch bolt	15 — 20	1.5 — 2.0	11.0 — 14.5
Camshaft sprocket bolt	6 — 10	0.6 — 1.0	4.5 — 7.0
Cam chain guide bolt No. 4	4 — 7	0.4 — 0.7	3.0 — 5.0
Cam chain tensioner bolt	9 — 14	0.9 — 1.4	6.5 — 10.0
Cam chain tensioner adjuster bolt	4 — 7	0.4 — 0.7	3.0 — 5.0
Air cleaner bolt	4 — 7	0.4 — 0.7	3.0 — 5.0
Exhaust pipe bolt	9 — 14	0.9 — 1.4	6.5 — 10.0
Muffler bolt	18 — 28	1.8 — 2.8	13.0 — 20.0
Pressure switch housing bolt	6 — 9	0.6 — 0.9	4.5 — 6.5
Clutch spring bolt	8 — 12	0.8 — 1.2	6.0 — 8.5
Clutch sleeve hub nut	50 — 70	5.0 — 7.0	36.0 — 50.5
Clutch release arm bolt	6 — 10	0.6 — 1.0	4.5 — 7.0
Gear shifting cam stopper spring holder bolt	18 — 28	1.8 — 2.8	13.0 — 20.0
Gear shift arm stopper	15 — 22	1.5 — 2.2	11.0 — 16.0
Gear shift lever bolt	13 — 23	1.3 — 2.3	9.5 — 16.5
Engine sprocket nut	90 — 100	9.0 — 10.0	65.0 — 72.5
Generator rotor bolt	90 — 100	9.0 — 10.0	65.0 — 72.5

CHASSIS

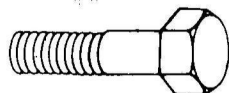
Item	N•m	kg•m	lb•ft
Handlebar clamp bolt	12 — 20	1.2 — 2.0	8.5 — 14.5
Steering stem upper clamp bolt	15 — 25	1.5 — 2.5	11.0 — 18.0
Front fork upper bracket bolt (R, L)	20 — 30	2.0 — 3.0	14.5 — 21.5
Front fork lower bracket bolt (R, L)	15 — 25	1.5 — 2.5	11.0 — 18.0
Steering stem head nut	36 — 52	3.6 — 5.2	26.0 — 37.5
Front fork axle holder nut	15 — 25	1.5 — 2.5	11.0 — 18.0
Front axle shaft nut	36 — 52	3.6 — 5.2	26.0 — 37.5
Swinging arm pivot shaft nut	50 — 80	5.0 — 8.0	36.0 — 58.0
Rear torque link nut	20 — 30	2.0 — 3.0	14.5 — 21.5
Rear axle nut	85 — 115	8.5 — 11.5	61.5 — 83.0
Rear shock absorber bolt and nut	20 — 30	2.0 — 3.0	14.5 — 21.5
Footrest bolt	27 — 43	2.7 — 4.3	19.5 — 31.0
Front brake caliper mounting bolt	25 — 40	2.5 — 4.0	18.0 — 29.0
Front and rear brake disc plate bolt	15 — 25	1.5 — 2.5	11.0 — 18.0
Front brake caliper axle bolt	40 — 55	4.0 — 5.5	29.0 — 40.0
Front brake master cylinder mounting bolt	5 — 8	0.5 — 0.8	3.5 — 6.0
Front and rear brake hose union bolt	15 — 25	1.5 — 2.5	11.0 — 18.0
Front and rear brake bleeder bolt	7 — 9	0.7 — 0.9	5.0 — 6.5
Rear brake caliper mounting bolt	25 — 40	2.5 — 4.0	18.0 — 29.0
Rear brake caliper axle bolt	20 — 30	2.0 — 3.0	14.5 — 21.5
Rear brake master cylinder mounting bolt	15 — 25	1.5 — 2.5	11.0 — 18.0
Chain adjuster support bolt	10 — 15	1.0 — 1.5	7.0 — 11.0

TIGHTENING TORQUE CHART

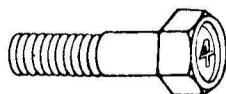
For other bolts and nuts not listed above, refer to this chart:

TIGHTENING TORQUE

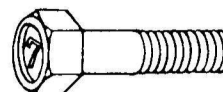
Thread Diameter (mm)	Conventional or "4" Marked Bolt			"7" Marked Bolt		
	N•m	kg•m	lb•ft	N•m	kg•m	lb•ft
5	2 — 4	0.2 — 0.4	1.5 — 3.0	3 — 6	0.3 — 0.6	2.0 — 4.5
6	4 — 7	0.4 — 0.7	3.0 — 5.0	7 — 10	0.7 — 1.0	5.0 — 7.5
8	9 — 14	0.9 — 1.4	6.5 — 10.0	20 — 25	2.0 — 2.5	14.5 — 18.0
10	18 — 28	1.8 — 2.8	13.0 — 20.0	35 — 40	3.5 — 4.0	25.5 — 29.0



Conventional Bolt



"4" Marked Bolt

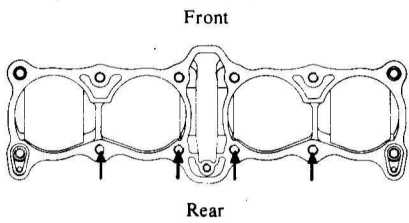
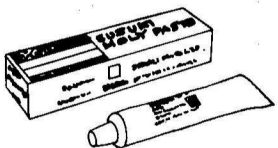


"7" Marked Bolt

SPECIAL MATERIALS

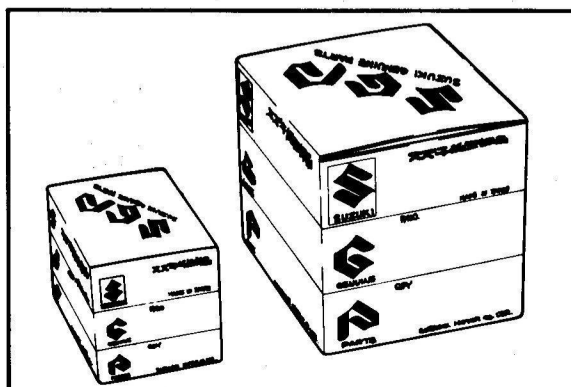
The materials listed below are needed for maintenance work on the GS1000, and should be kept on hand for ready use. They supplement such standard materials as cleaning fluids, lubricants, emery cloth and the like. How to use them and where to use them are described in the text of this manual.

Material	Part
①  99000-32040 THREAD LOCK CEMENT	* Cam shaft end cap screw 8 pcs * Cylinder stud bolt..... 12 pcs * Oil filter cap nut 3 pcs * Carburetor bracket screw 8 pcs * Front fork allen bolt..... 2 pcs * Carburetor set screw..... 8 pcs
②  99000-32050 THREAD LOCK "1342"	* Gearshift cam guide screw 2 pcs * Gearshift cam pawl screw 2 pcs * Countershaft B/g retainer screw..... 3 pcs * Drive shaft plate screw 4 pcs * Engine oil pump screw 4 pcs * Generator stator screw 3 pcs * Generator stator lead wire guide screw 2 pcs * Oil gallery plate screw 3 pcs * Oil sump filter screw 3 pcs * Starter motor securing bolt..... 2 pcs
③  99000-32090 THREAD LOCK SUPER "1332B"	* Generator rotor bolt
④  99000-32020 THREAD LOCK SUPER "1333B"	* Starter clutch allen bolt..... 3 pcs * Cam chain guide bolt 1 pc * Cam chain guide screw..... 2 pcs * Cam sprocket allen bolt..... 4 pcs * Primary drive gear bolt..... 2 pcs * Gear shift stopper..... 1 pc * Muffler cover screw 4 pcs

Material	Part
⑤  99000-32030 THREAD LOCK SUPER "1303B"	* 2nd drive gear
⑥  99000-31030 SUZUKI BOND No. 4	* Mating surfaces of upper and lower crank case. * Cylinder stud bolt..... 4 pcs (Apply a small quantity to the threads of cylinder stud bolts.)  Front Rear
⑦  99000-25100 SUZUKI SILICONE GREASE	* Apply to caliper axle shaft.
⑧  99000-25140 SUZUKI MOLY PASTE	* Valve stem. * Cam shaft. * Chain tensioner adjuster shaft. * Counter shaft washer. * Outer counter shaft. * Input cam dog.

USE OF GENUINE SUZUKI PARTS

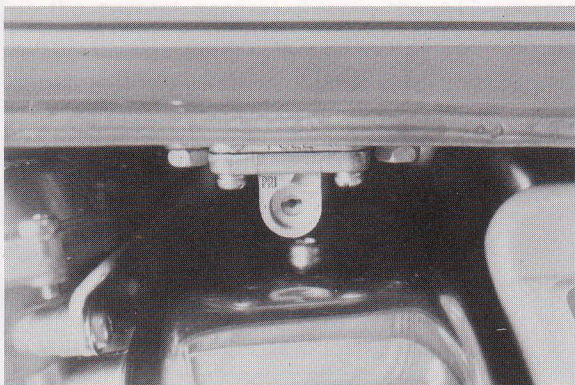
To replace any part of the machine, use a genuine SUZUKI replacement part. Imitation parts or parts supplied from any other source than SUZUKI, if used to replace SUZUKI parts, will reduce the machine's performance and, even worse, could induce costly mechanical trouble.



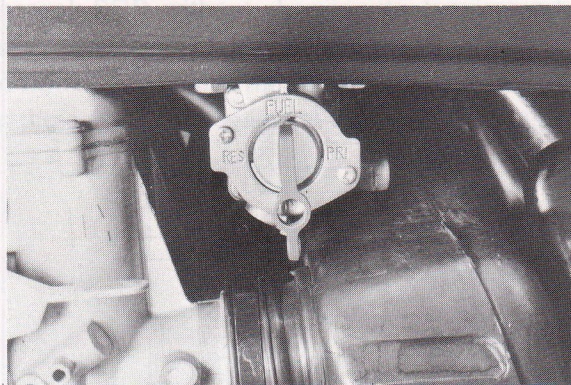
MODIFICATIONS

FUEL SYSTEM

- The fuel cock has been changed as shown below.

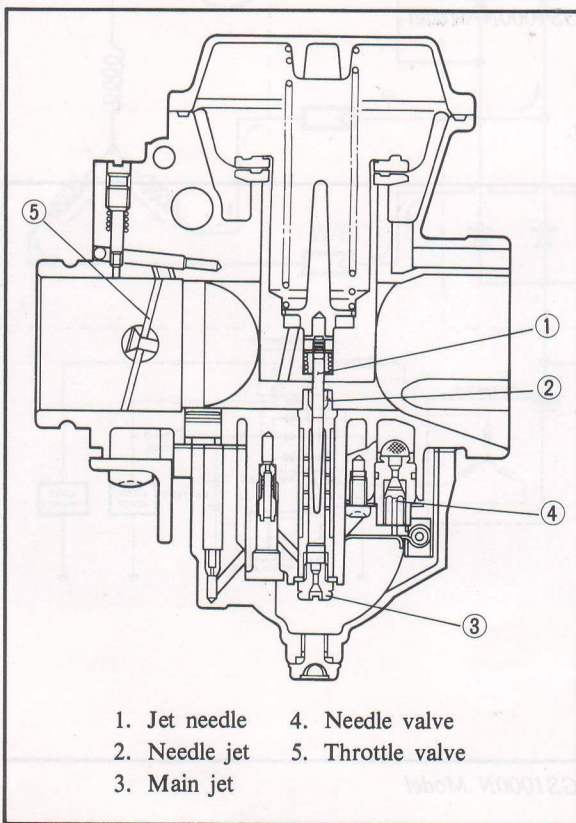


GS1000T Model

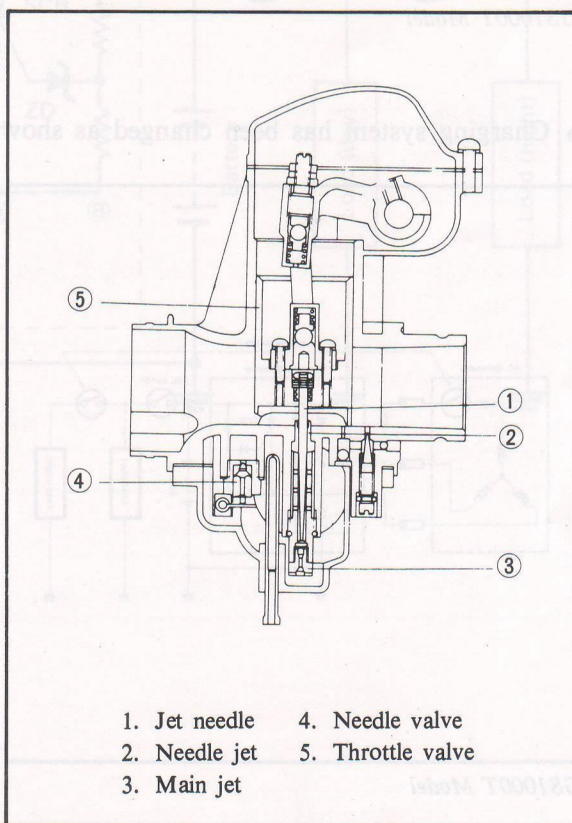


GS1000N Model

- The carburetor has been changed from MIKUNI VM28SS to MIKUNI BS34SS.



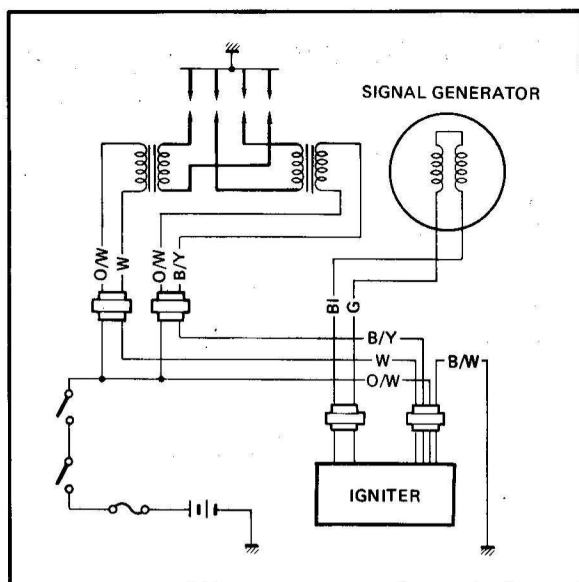
GS1000T Model



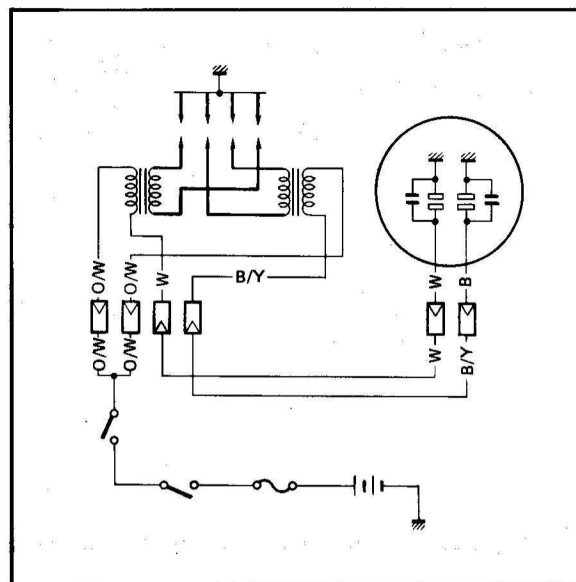
GS1000N Model

ELECTRICAL

- The ignition system has been changed from the battery ignition system to the maintenance-free transistorized ignition system.

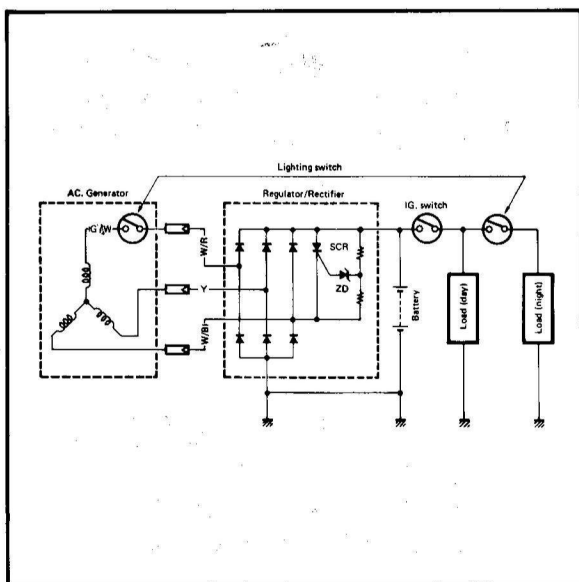


GS1000T Model

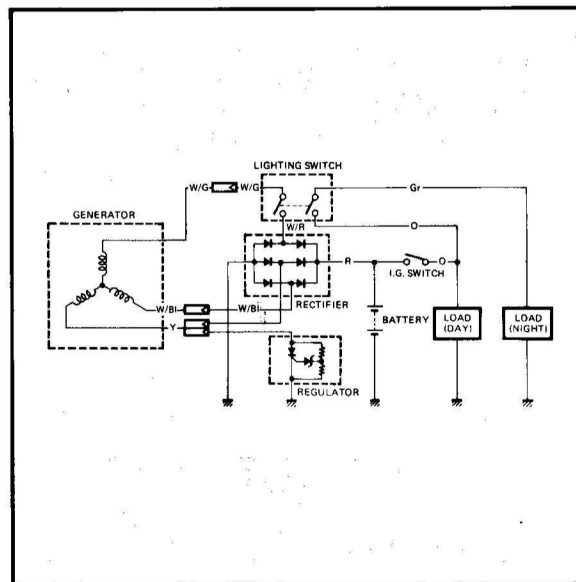


GS1000N Model

- Charging system has been changed as shown below.

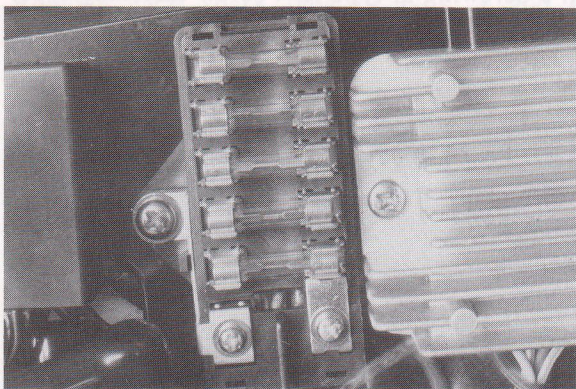


GS1000T Model

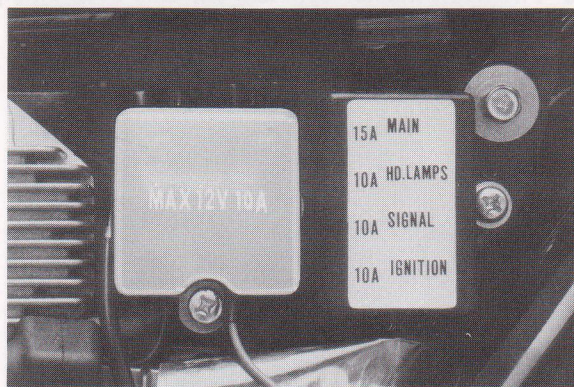


GS1000N Model

- The fuse box and output terminal have been changed from the separate type to the combined type.

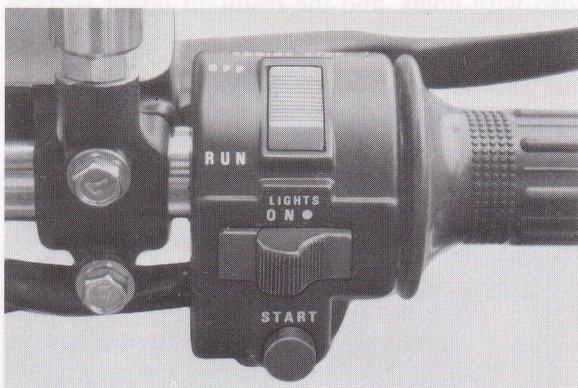


GS1000T Model

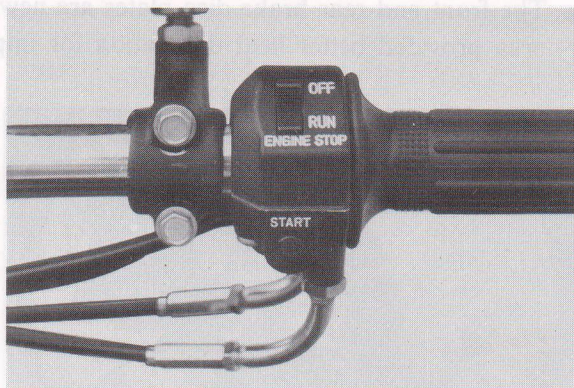


GS1000N Model

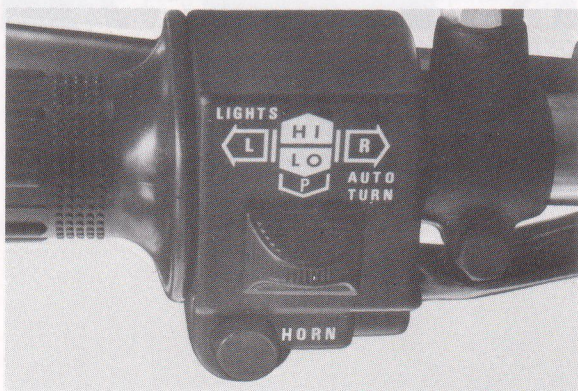
- The right and left handlebar switches have been changed to a multiple type as shown below:



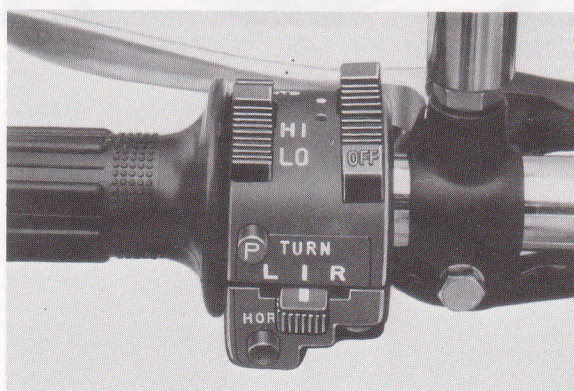
Right



Right



Left GS1000T Model



Left GS1000N Model

CHASSIS

- The front master cylinder cap has been changed from a screwing-in type to 4-screw fastening type.

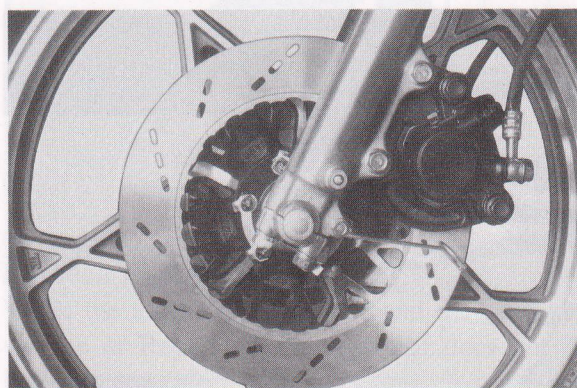


GS1000T Model

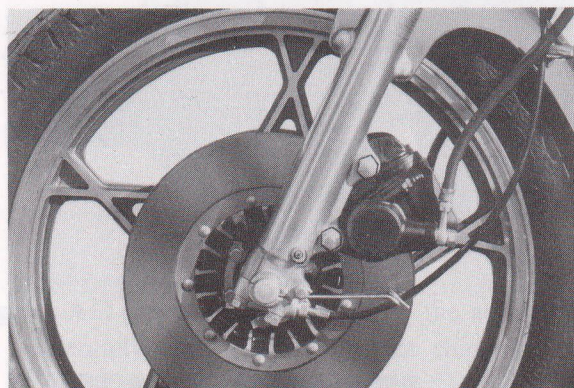


GS1000N Model

- The front and rear brake disc plates are newly provided with holes, and the resultant larger surface area provided better heat dissipation for improved braking efficiency.



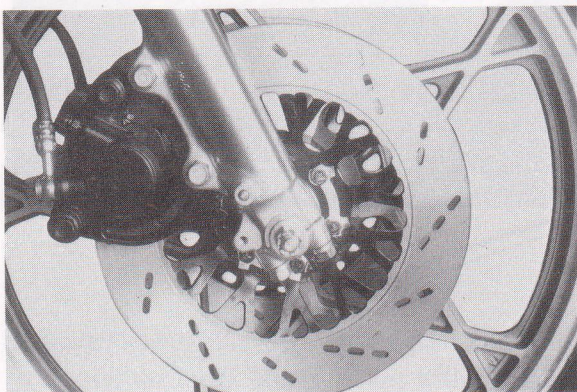
GS1000T Model



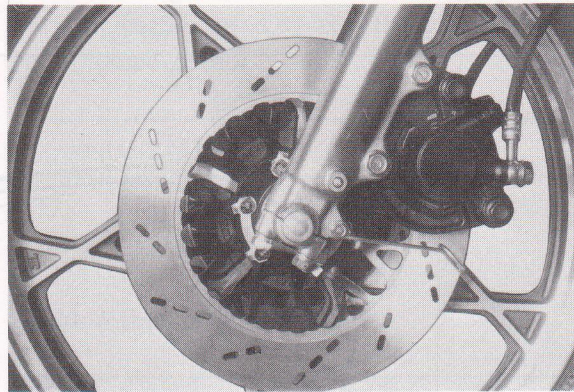
GS1000N Model

CAUTION:

Be careful not to reverse the right and left front disc plates.

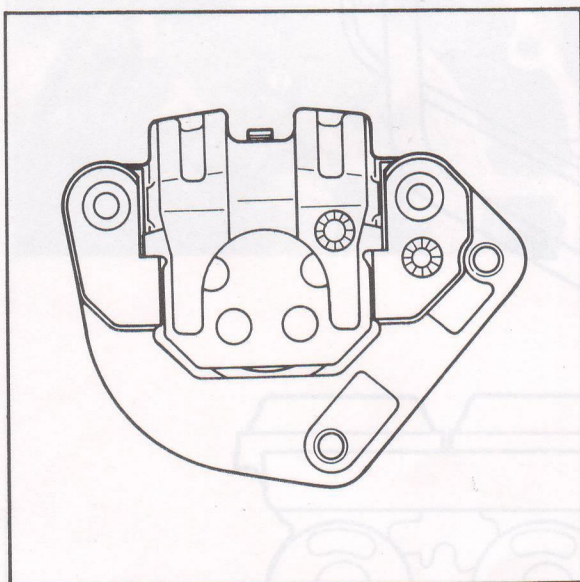


Right front disc plate

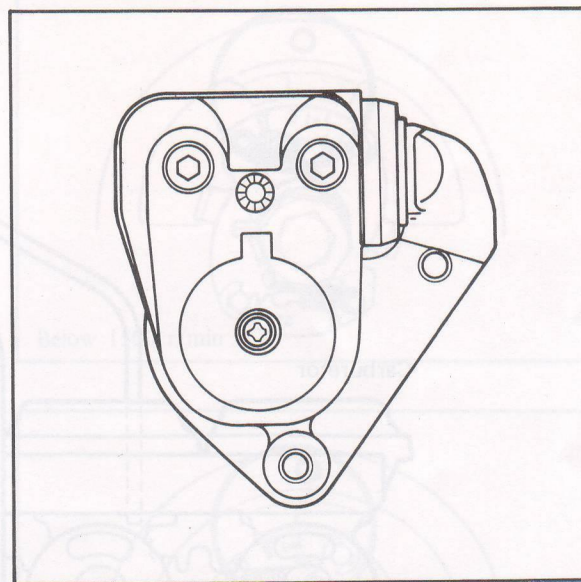


Left front disc plate

- Front brake caliper has been changed as shown below.



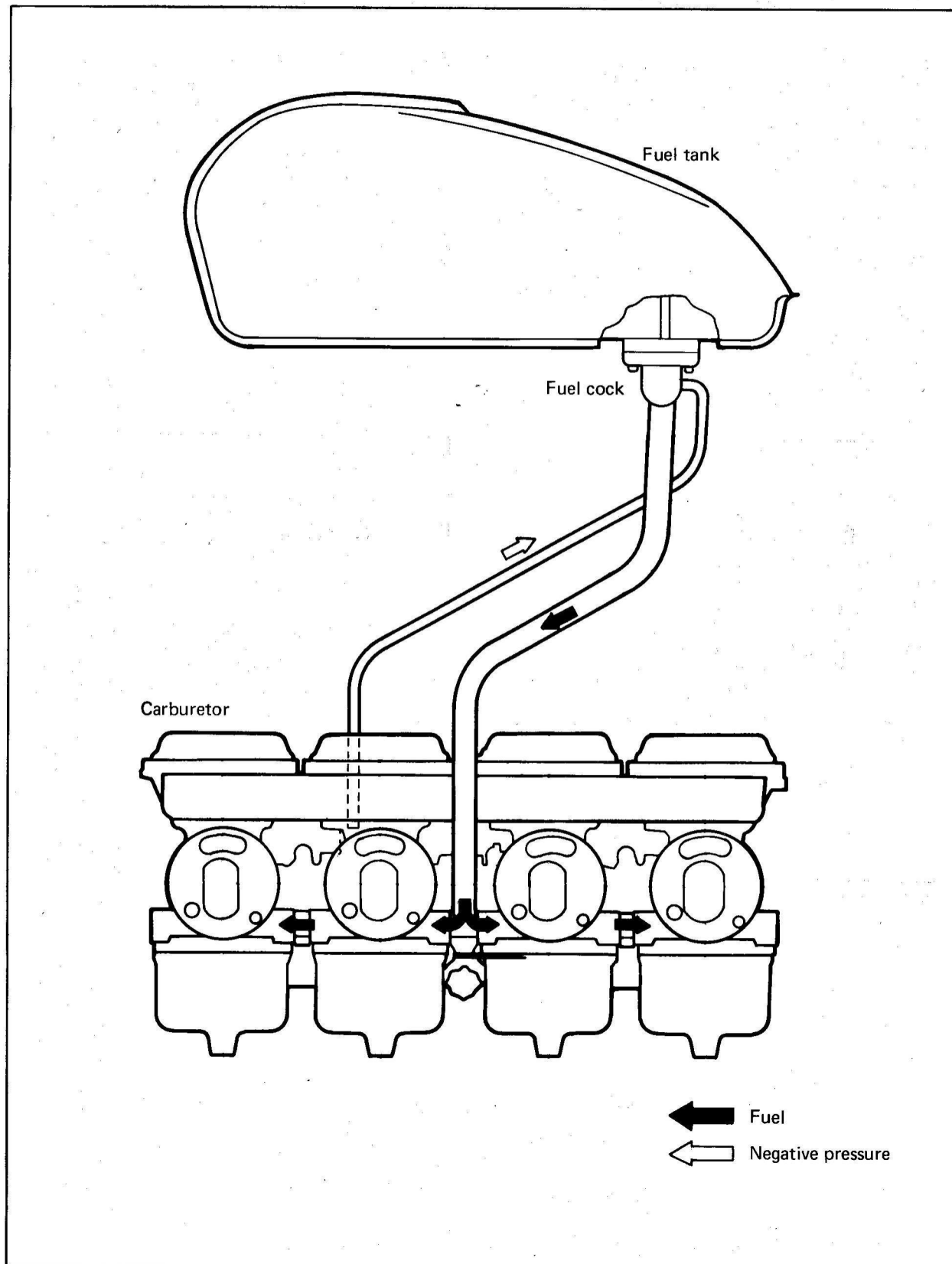
GS1000T Model



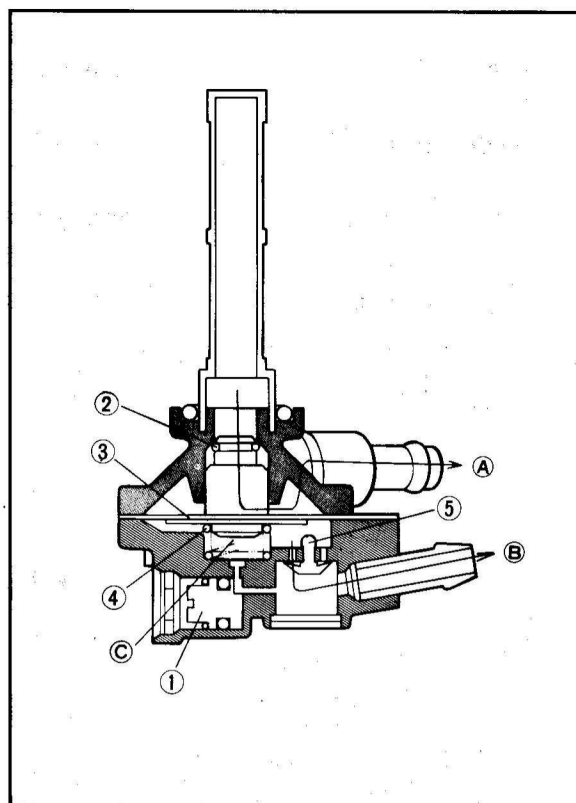
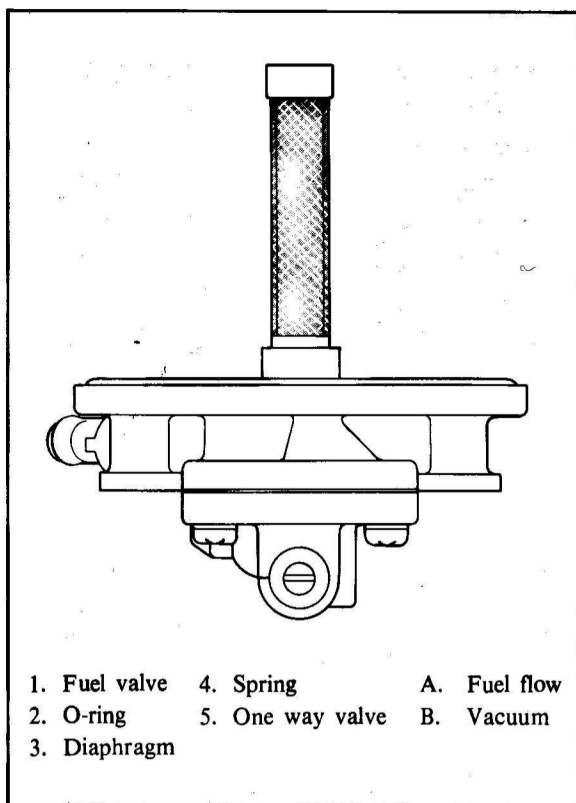
GS1000N Model

FUEL SYSTEM

When turning starter motor, negative pressure is generated in the combustion chamber. This negative pressure works on the diaphragm of fuel cock through passageway provided in the carburetor main bore and vacuum pipe, and diaphragm builds up a negative pressure which is higher than the spring pressure. Fuel valve is forced to open due to diaphragm operation, and thus allow fuel to flow into carburetor float chamber.



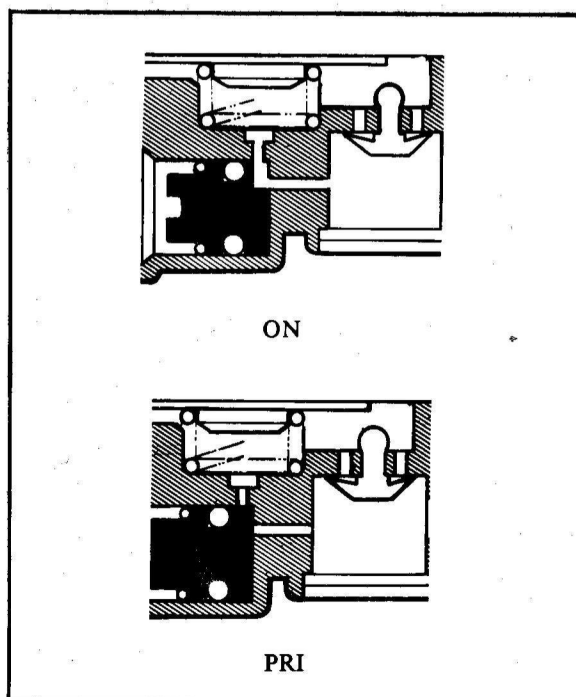
FUEL COCK



When the engine is not running with the valve in the ON position, the fuel valve is kept in the closed position by applying pressure utilizing a spring so that no fuel will flow to the carburetors. When the engine is engaged, a negative pressure is generated in the diaphragm chamber (C) through the vacuum (negative pressure) pipe which is connected to the carburetors, and builds up a negative pressure which is higher than the spring pressure so that the diaphragm is forced to open the fuel valve and thus allow the fuel to flow to the carburetors.

On the other hand, setting the valve in the ON position keeps the air return orifice open. Negative pressure does not accumulate on the diaphragm at the time of engine stopping, and then the spring pressure actuates the diaphragm to move back to its original position and closes the fuel valve.

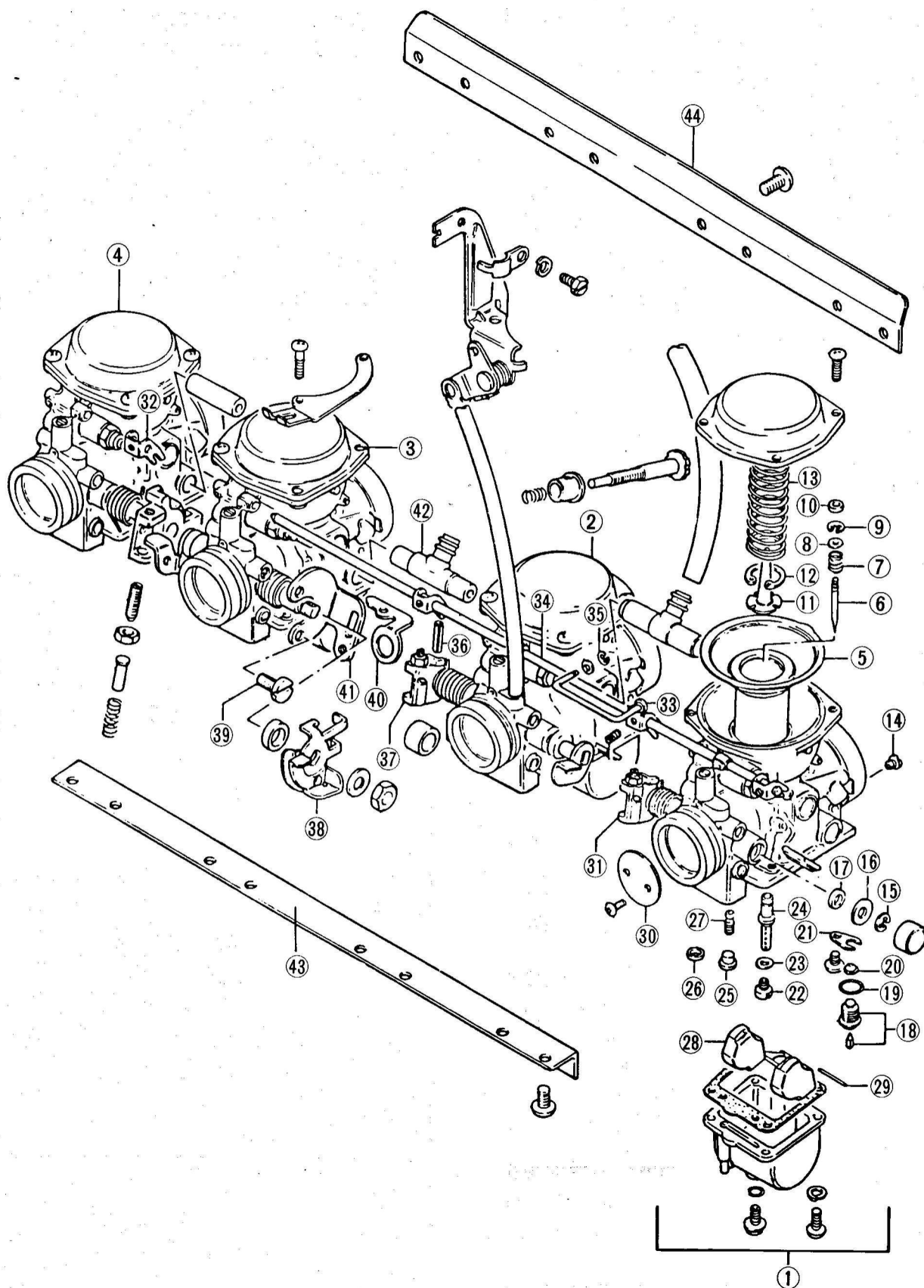
However, setting the valve in PRI position with a screwdriver causes the air return orifice to close, resulting in negative pressure in the chamber (C) under the diaphragm. This negative pressure doesn't allow the fuel valve to close and therefore the fuel keeps flowing to the carburetors.



CAUTION:

When starting the engine at PRI position, be sure to change the valve from PRI position to ON position immediately.

CARBURETOR



- | | |
|---------------------|-------------------|
| 1 Carburetor, No. 1 | 23 Washer |
| 2 Carburetor, No. 2 | 24 Needle jet |
| 3 Carburetor, No. 3 | 25 Plug |
| 4 Carburetor, No. 4 | 26 Gasket |
| 5 Diaphragm | 27 Pilot jet |
| 6 Jet needle | 28 Float |
| 7 Spring | 29 Pin |
| 8 Washer | 30 Throttle valve |
| 9 E-ring | 31 Shaft |
| 10 Ring | 32 Lever |
| 11 Guide holder | 33 Lever |
| 12 Clip | 34 Starter shaft |
| 13 Spring | 35 E-ring |
| 14 Pilot air jet | 36 Pin |
| 15 E-ring | 37 Lever |
| 16 Gasket | 38 Lever |
| 17 Seal | 39 Screw |
| 18 Needle valve | 40 Bracket |
| 19 O-ring | 41 Bracket |
| 20 Filter | 42 Nipple |
| 21 Plate | 43 Plate |
| 22 Main jet | 44 Plate |

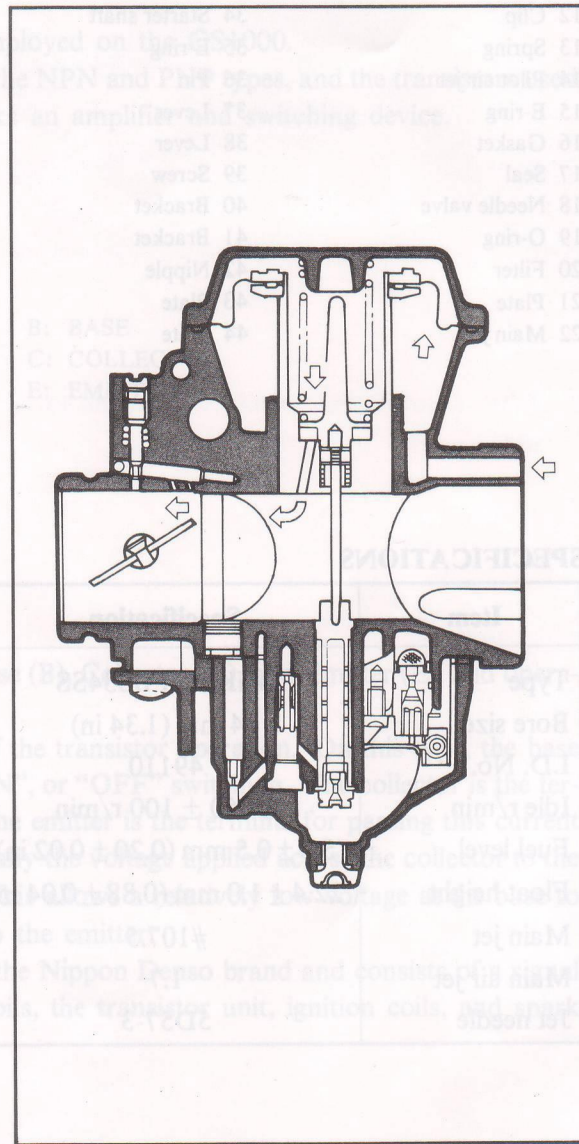
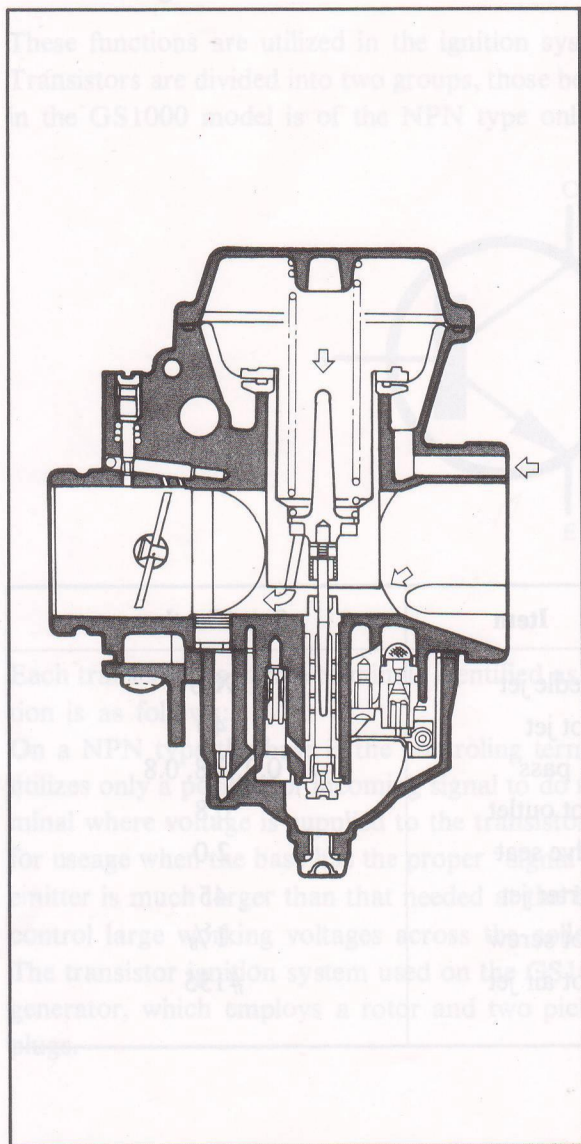
SPECIFICATIONS

Item	Specification	Item	Specification
Type	MIKUNI BS34SS	Needle jet	X-8
Bore size	34 mm (1.34 in)	Pilot jet	40
I.D. No.	49110	By pass	0.9, 0.8, 0.8
Idle r/min	1 050 $\pm$ 100 r/min	Pilot outlet	0.8
Fuel level	5.0 $\pm$ 0.5 mm (0.20 $\pm$ 0.02 in)	Valve seat	2.0
Float height	22.4 $\pm$ 1.0 mm (0.88 $\pm$ 0.04 in)	Starter jet	45
Main jet	#107.5	Pilot screw	1 $\frac{5}{8}$
Main air jet	1.7	Pilot air jet	#155
Jet needle	5D57-3		

DIAPHRAGM AND PISTON OPERATION

The carburetor is of a variable-venturi type, whose venturi cross section area is increased or decreased automatically by the piston according to the vacuum present on the downstream side of the venturi. Vacuum is admitted into the diaphragm chamber through an orifice provided in the piston.

Rising vacuum overcomes the spring force, causing the piston to rise to increase the said area and thus prevent the air velocity from increasing. Thus, air velocity in the venturi passage is kept relatively constant for improved fuel atomization and for securing an optimum ratio of fuel to air in the mixture.

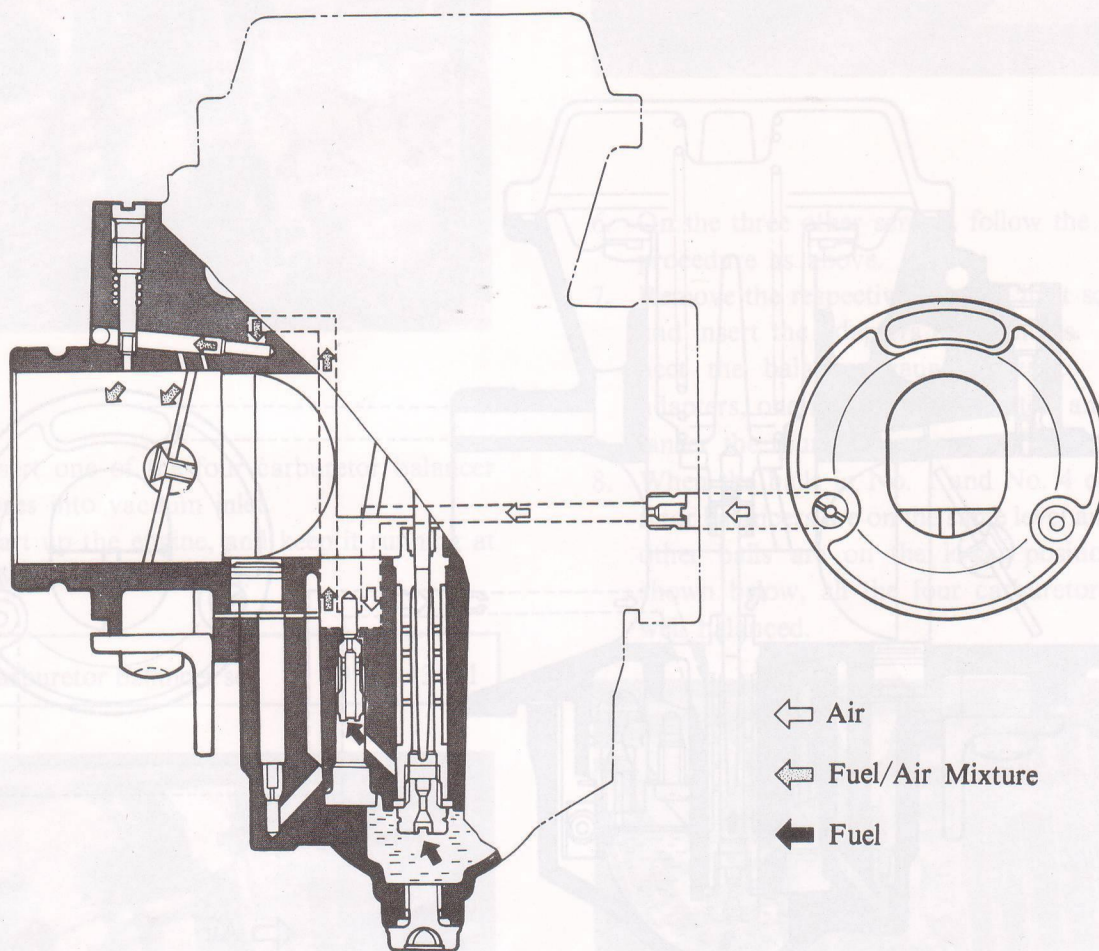


SLOW SYSTEM

This system supplies fuel during engine operation with throttle valve closed or slight opened.

The fuel from float chamber is first passed through main jet and metered by pilot jet where it mixes with air coming in through pilot air jet.

This mixture, rich with fuel, then goes up through pilot pipe to pilot screw. A part of the mixture is discharged into the main bore out of bypass port. The remainder is then metered by pilot screw and sprayed out into the main bore through pilot outlet.



If the balls in No. 1 and No. 4 or in No. 2 and No. 3 carburetor balancers are off more than the radius of the ball, make an adjustment as follows:

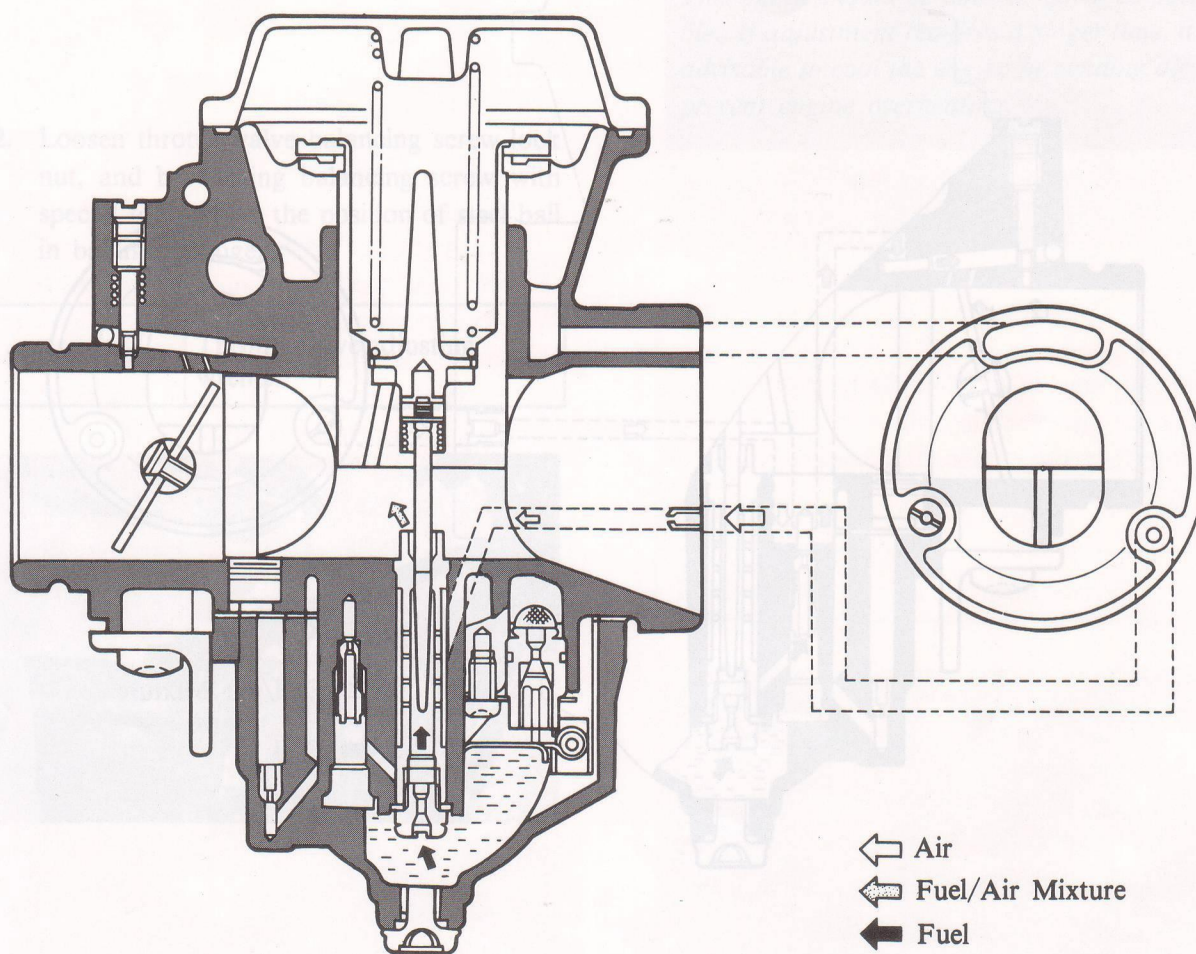
MAIN SYSTEM

As throttle valve is opened, engine speed rises, and this increases vacuum in the venturi. Consequently the piston valve moves upward.

Meanwhile, the fuel in float chamber is metered by main jet, and the metered fuel enters needle jet, in which it mixes with the air admitted through main air jet to form an emulsion.

The emulsified fuel then passes through the clearance between needle jet and jet needle, and is discharged into the venturi, in which it meets main air stream being drawn by the engine.

Mixture proportioning is accomplished in needle jet; the clearance through which the emulsified fuel must flow is large or small, depending ultimately on throttle position.



Adjusting order

A (for No. 2 carb) → B (for No. 3) → C (for No. 4)

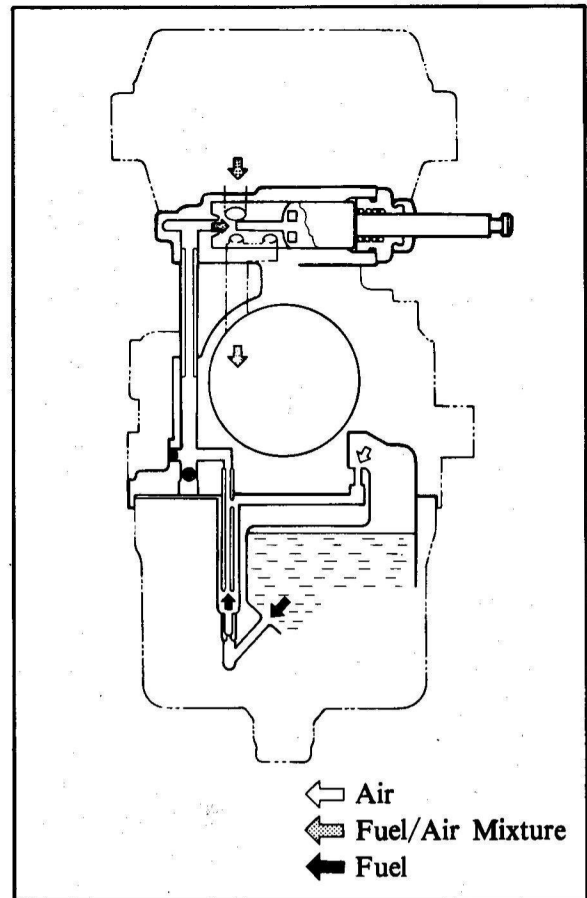
3. After adjusting, tighten throttle valve balancing screw lock nut.
4. After this adjustment, adjust the idling speed to somewhere between 950 and 1150 r/min with throttle stop adjusting screw.

STARTER SYSTEM

Pulling up the choke knob slides starting plunger to draw fuel into the starter circuit from the float chamber through starter jet.

Starter jet meters this fuel, which then flows into starter pipe and mixes with the air coming from the float chamber. The mixture, rich in fuel content, reaches starting plunger and mixes again with the air coming through a passage extending from behind the diaphragm.

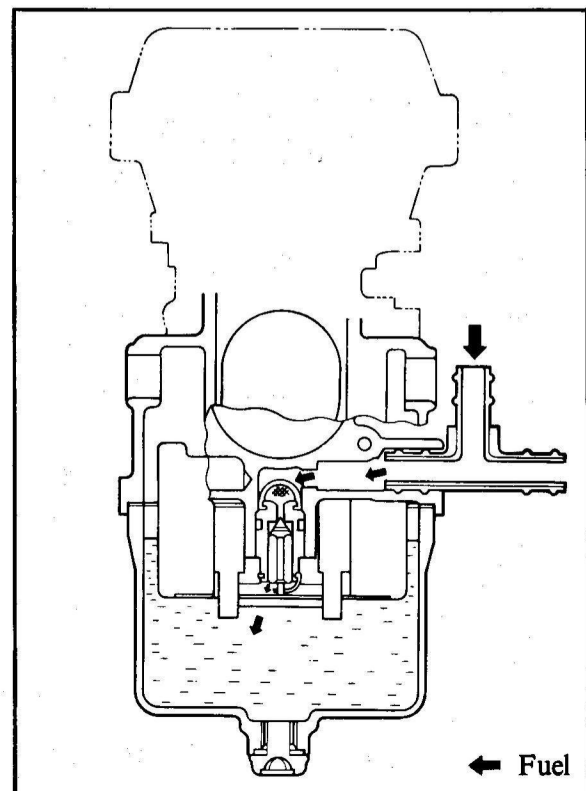
The two successive mixings of fuel with air are such that a proper air/fuel mixture for starting is produced when the mixture is sprayed out through starter outlet into the main bore.



FLOAT SYSTEM

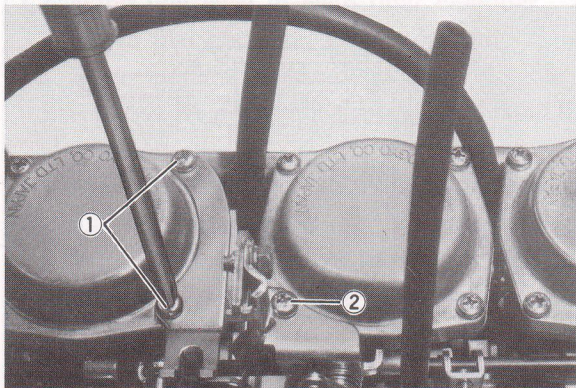
Floats and needle valve are associated with the same mechanism, so that, as the floats move up and down, the needle valve too moves likewise. When fuel level is up in float chamber, floats are up and needle valve remains pushed up against valve seat. Under this condition, no fuel enters the float chamber.

As the fuel level falls, floats go down and needle valve unseats itself to admit fuel into the chamber. In this manner, needle valve admits and shuts off fuel alternately to maintain a practically constant fuel level inside the float chamber.

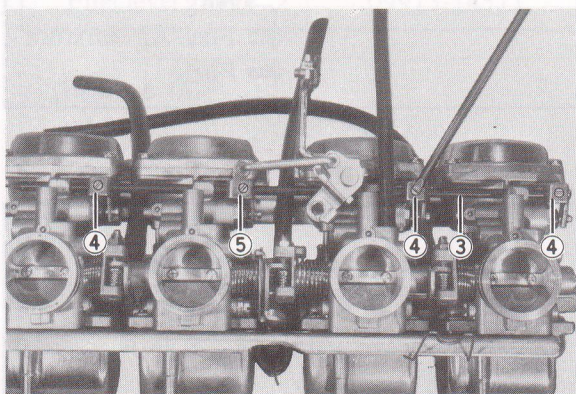


DISASSEMBLY

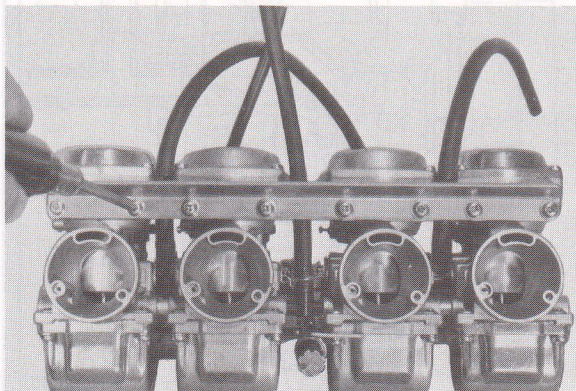
- Remove two throttle bracket screws ① and starter bracket screw ②, and remove bracket.



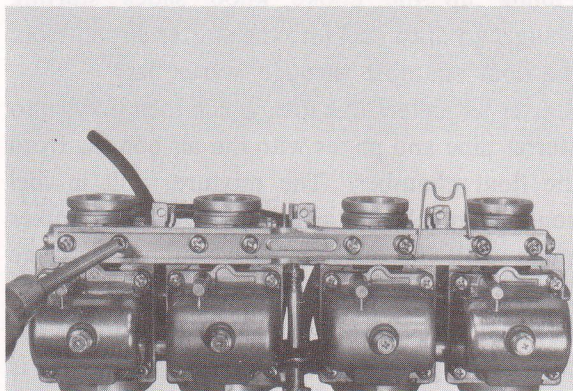
- Loosen four screws, and remove starter shaft ③, three levers ④ and starter bracket and lever ⑤.



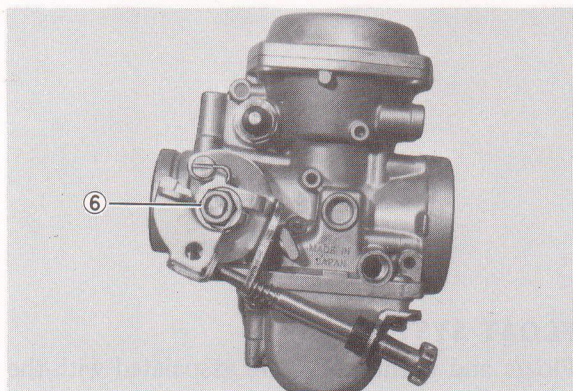
- Remove eight screws and remove the plate.



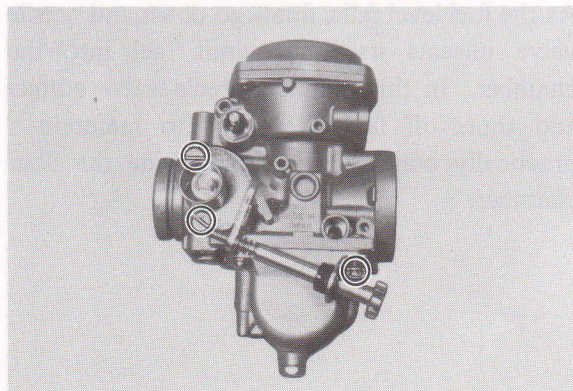
- Remove eight screws and remove the plate.



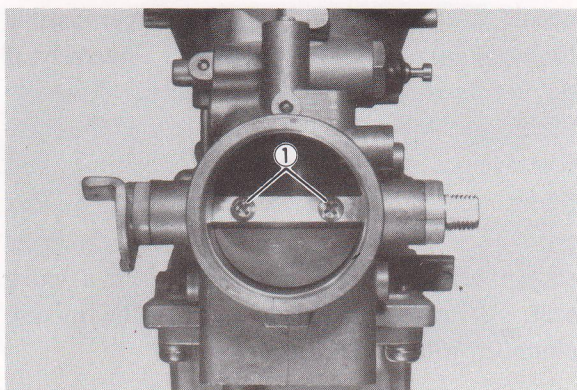
- Separate four carburetors, remove nut ⑥ and remove adjuster lever.



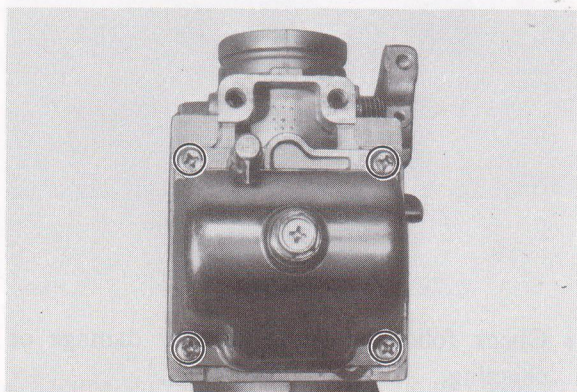
- Remove three screws, and remove adjuster bracket.



- Remove two throttle valve screws ① and pull out the throttle valve by turning throttle valve shaft.

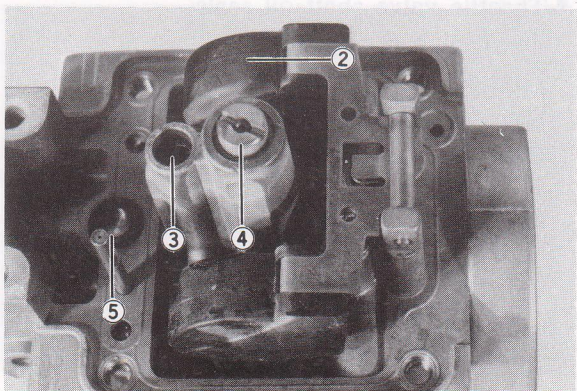


- Remove four screws and remove float chamber.

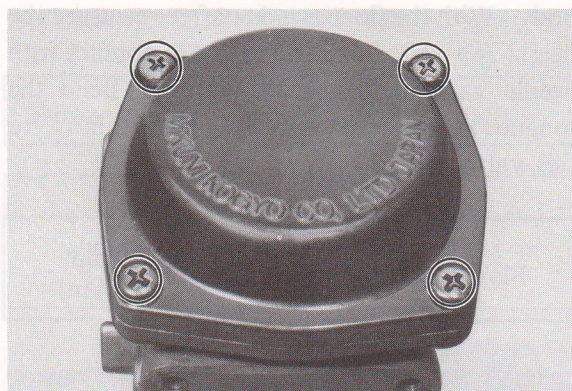


- Remove float ②, pilot jet ③ and main jet ④.

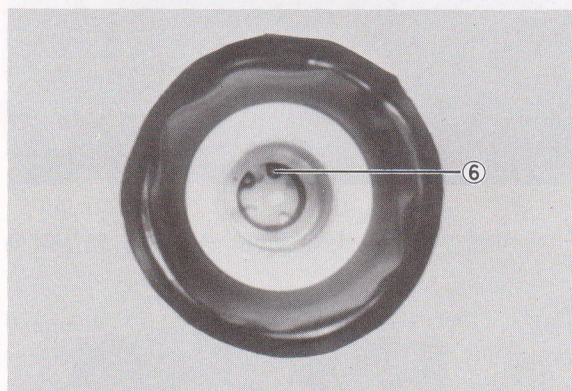
NOTE:
Do not fall down the O-ring ⑤.



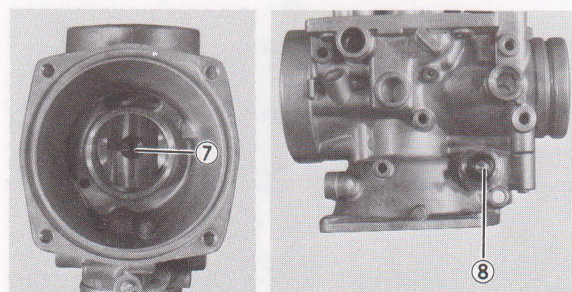
- Remove four screws and remove carburetor cap.



- Remove circlip ⑥ from piston.



- Remove needle jet ⑦ from the top side.
- Remove starter valve housing ⑧.

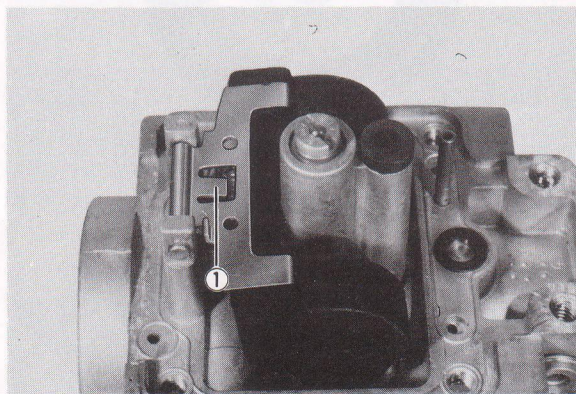
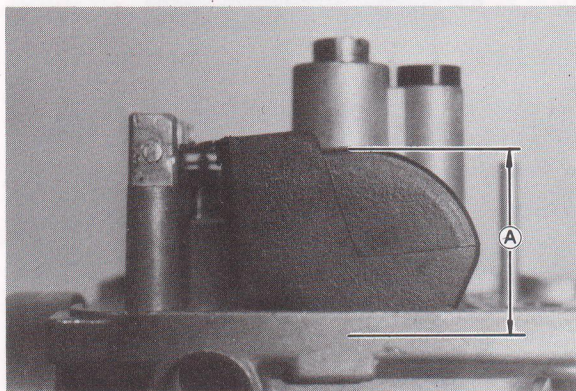


INSPECTION

Float Height Adjustment

To check the float height, invert the carburetor body. With the float arm kept free, measure the height (A) while float arm is just in contact with needle valve by using the caliper. Bend the tongue ① as necessary to bring the height (A) to this valve.

Float height (A)	$22.4 \pm 1.0 \text{ mm}$ ($0.88 \pm 0.04 \text{ in}$)
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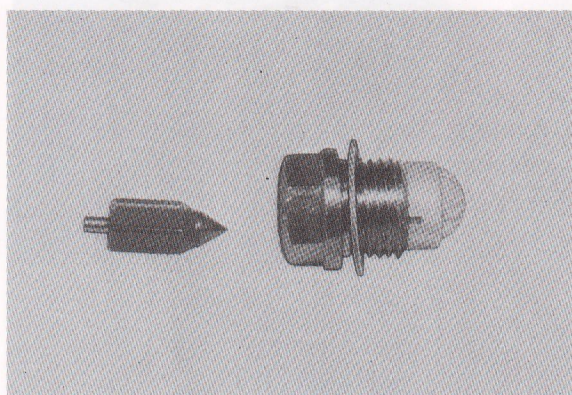
NOTE:

Be sure to remove the gasket before measuring the height.

Needle Valve

If foreign matter is caught between the valve seat and the needle, the gasoline will continue flowing and cause it to overflow. If the seat and needle are worn out beyond the permissible limits, similar trouble will occur. Conversely, if the needle sticks, the gasoline will not flow into the float chamber.

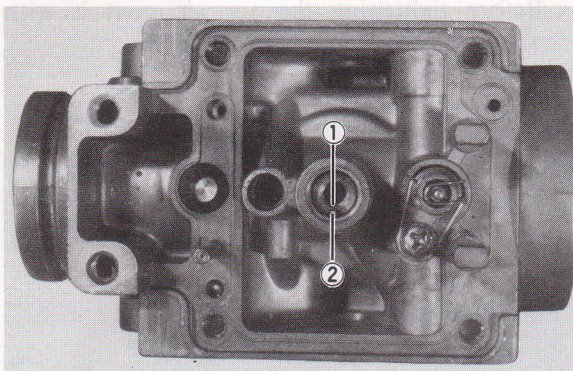
Remove the carburetor, float chamber and floats, and clean the float chamber and float parts with gasoline. If the needle is worn as shown below, replace it together with a valve seat. Clean the fuel passage of the mixing chamber with compressed air.



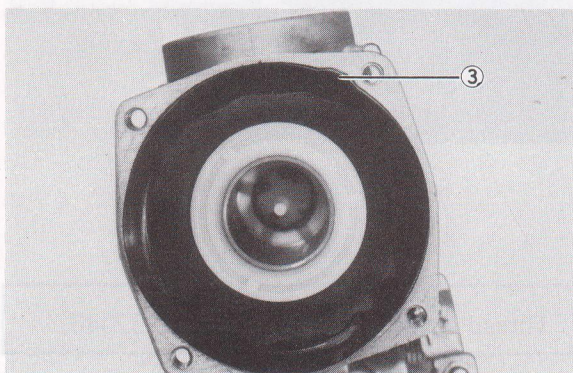
- Check following items for any damage or clogging.
 - * Pilot jet
 - * Main jet
 - * Main air jet
 - * Pilot air jet
 - * Needle jet air bleeding hole and O-ring
 - * Float
 - * Needle valve mesh
 - * Diaphragm
 - * Gasket
 - * Throttle valve shaft oil seals
 - * Drain plug O-ring
 - * Pilot screw O-ring
 - * Starter chamber gasket
 - * Pilot outlet and bypass holes

REASSEMBLY

- Align the groove ① of the needle jet with the pin ② and replace it.



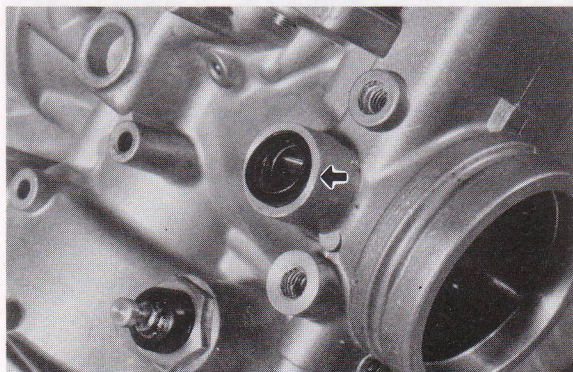
- Place tongues ③ of diaphragm to carburetor body properly.



- Secure carburetor cap and float chamber with screws.

Tightening torque	$2.5 - 4.5 \text{ N}\cdot\text{m}$ $0.25 - 0.45 \text{ kg}\cdot\text{m}$ $1.8 - 3.0 \text{ lb}\cdot\text{ft}$
-------------------	---

- When fitting throttle valve shaft oil seals, groove should be faced outside.

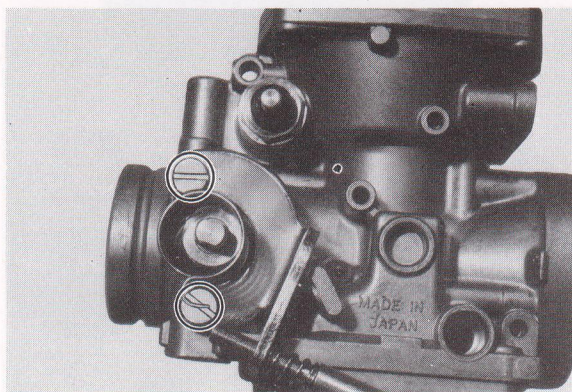


- Secure adjuster bracket to No. 3 carburetor with two screws.

Before tightening the screws, coat them with **THREAD LOCK CEMENT**.

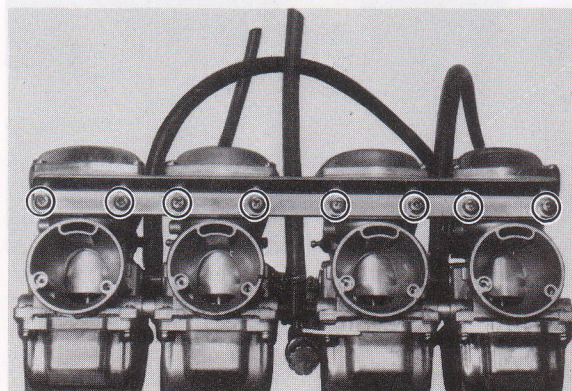
Thread lock cement	99000-32040
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Tightening torque	$2.5 - 4.5 \text{ N}\cdot\text{m}$ $0.25 - 0.45 \text{ kg}\cdot\text{m}$ $1.8 - 3.0 \text{ lb}\cdot\text{ft}$
-------------------	---



- Secure adjuster lever with nut.
- Connect the carburetors correctly, and secure top of each carburetor to the plate with screws.

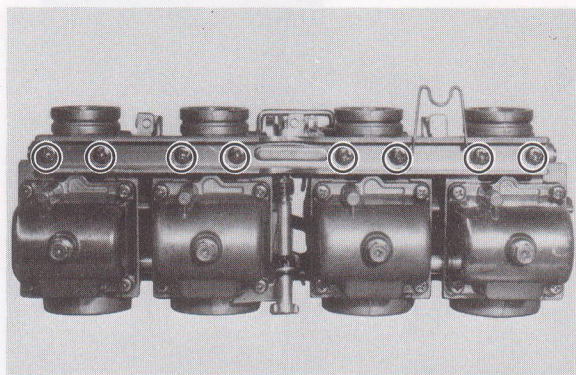
Tightening torque	$2.5 - 4.5 \text{ N}\cdot\text{m}$ $0.25 - 0.45 \text{ kg}\cdot\text{m}$ $1.8 - 3.0 \text{ lb}\cdot\text{ft}$
-------------------	---



- Secure bottom of each carburetors to the plate with screws. Before tightening the screws, coat it with **THREAD LOCK CEMENT**.

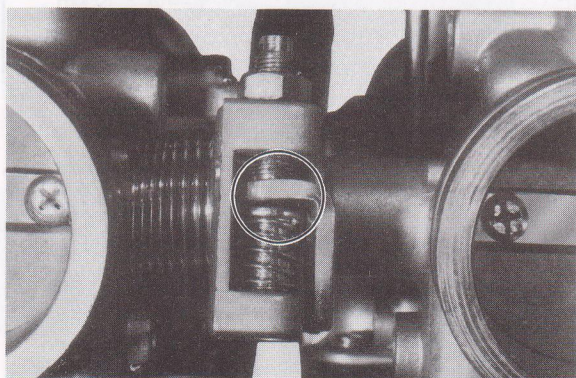
Thread lock cement	99000-32040
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Tightening torque	4.0 – 6.0 N·m 0.4 – 0.6 kg·m 3.0 – 4.5 lb·ft
-------------------	--



CAUTION:

Make sure the throttle shaft lever is installed as shown in photo.

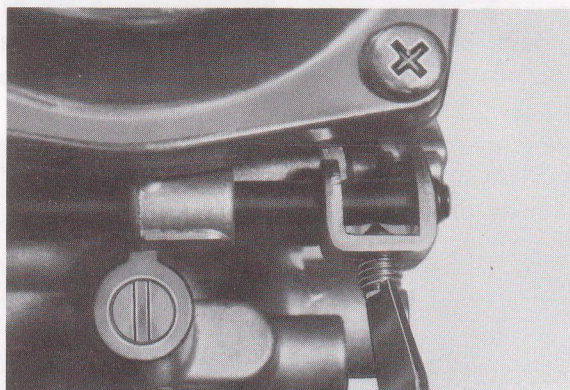


- Pass starter shaft through carburetors and starter levers, and secure starter lever with screws.

Before tightening the screws, coat it with **THREAD LOCK CEMENT**.

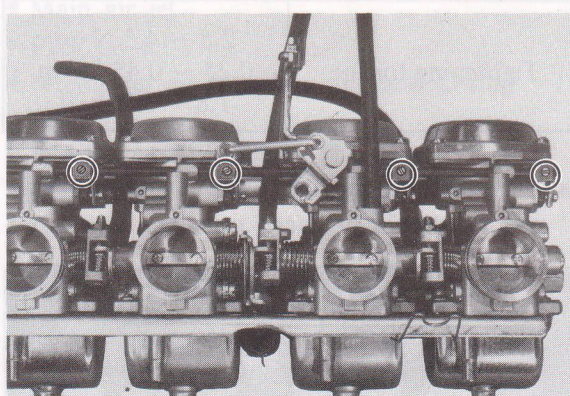
CAUTION:

Align the end of screw with recess in starter shaft.



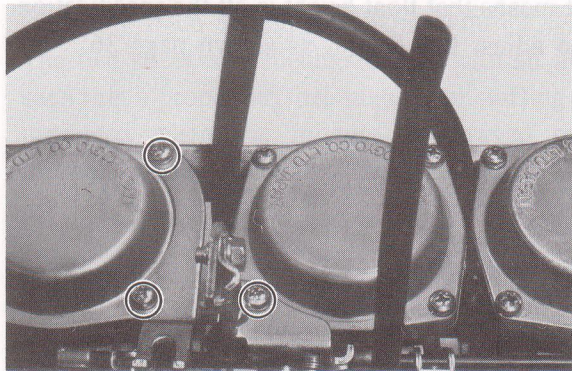
Thread lock cement	99000-32040
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Tightening torque	0.6 – 1.0 N·m 0.06 – 0.10 kg·m 0.4 – 0.7 lb·ft
-------------------	--

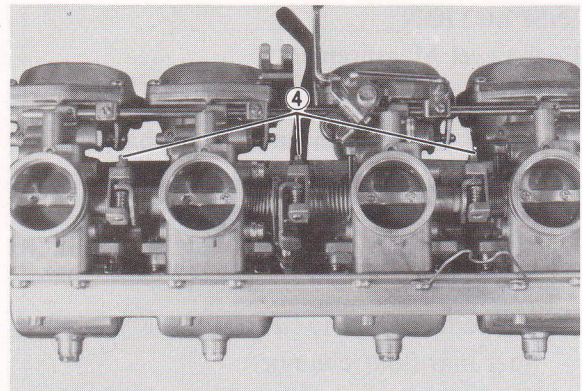
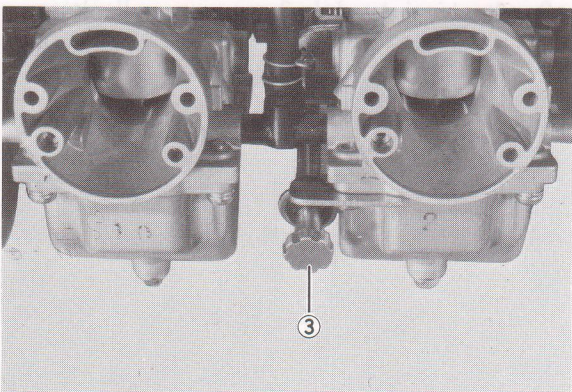
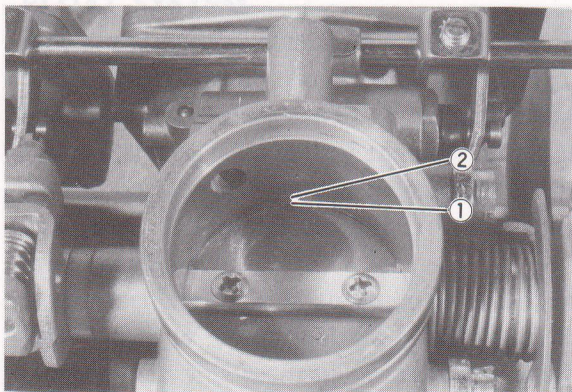


- Secure throttle bracket to No. 3 carburetor, and secure starter bracket to No. 2 carburetor cap, using screws.

Tightening torque	2.5 — 4.5 N·m 0.25 — 0.45 kg·m 1.8 — 3.0 lb·ft
-------------------	--



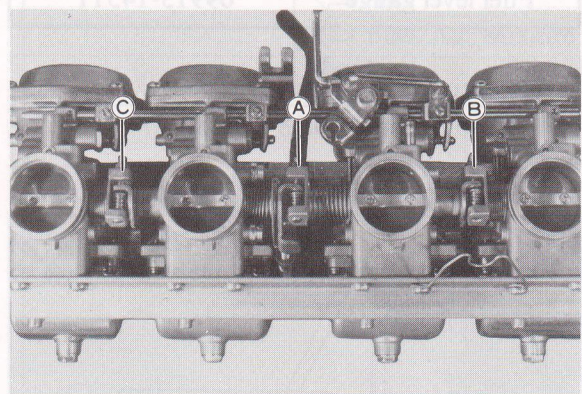
- Set each throttle valve in such a way that its top end ① meets the foremost bypass ②. This is accomplished by turning throttle valve stop screw ③ and balance screw ④.



NOTE:

When adjusting the throttle balance screws, adjusting order is as follows:

Ⓐ (for No. 2 carb.) → Ⓑ (for No. 1) → Ⓒ (for No. 4).



After each job is completed, mount the carburetor on the engine and the following adjustments are necessary.

- * Engine idle r/min
- * Throttle cable play
- * Balancing carburetor

INSPECTION

Fuel Level Measurement

To check the fuel level, proceed as follows:

Checking fuel level in each float chamber

1. Leave fuel cock in "ON" position.
2. Place machine on center stand.
3. Remove float chamber screw and install the special tool.
4. Move fuel valve to "PRI" position to admit fuel into float chamber.
5. With the float chamber filled with fuel, turn the valve back to "ON" position, and start up the engine.
6. Run the engine at the idling speed (950 — 1 150 r/min), and measure distance (A) with the middle line of the level gauge aligned with the mating surface of the float bowl as shown in the illustration (A) should be within the range specified here.

Fuel level gauge	09913-14511
------------------	-------------

Distance (A):

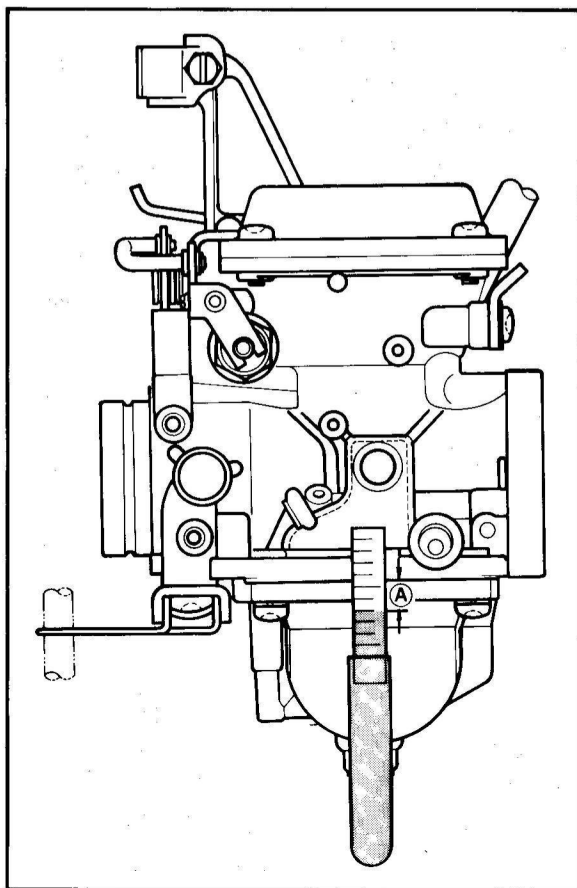
4.5 — 5.5 mm (0.18 — 0.22 in)

NOTE:

When checking the fuel level, place the machine on the center stand. The fuel level should be center of the float chamber.

Fuel level adjustment

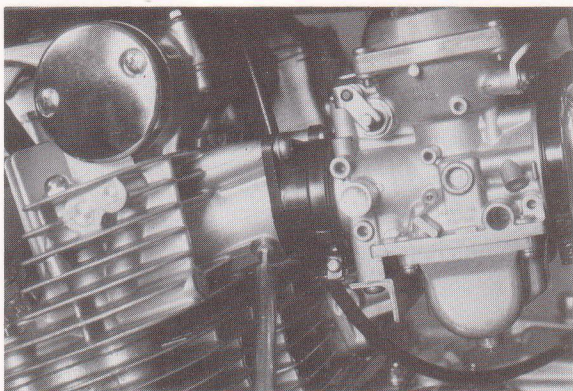
If distance (A) is not within the specified range, it means that float height is off the specification, to adjust this height, as shown page 36.



BALANCING THE CARBURETORS

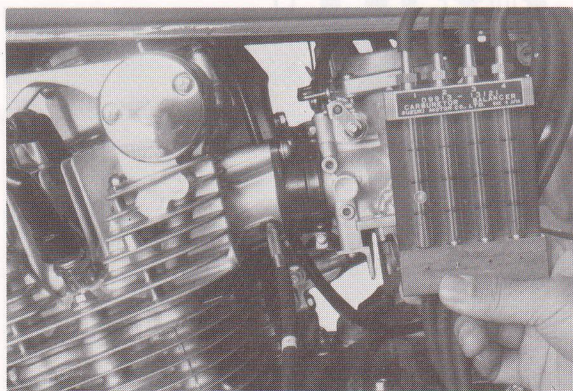
When any carburetor has been disassembled or replaced, check that the negative pressures (vacuum) in four carburetors are well balanced, using the carburetor balancer set in the following manner.

1. Place machine on center stand.
2. After warming up the engine completely, remove either No. 1 or No. 4 vacuum inlet screw, using a 4-mm hexagon wrench.

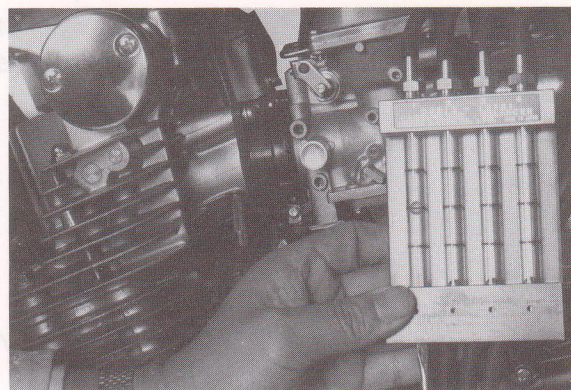


3. Insert one of the four carburetor balancer hoses into vacuum inlet.
4. Start up the engine, and keep it running at 1 500 — 2 000 r/min.

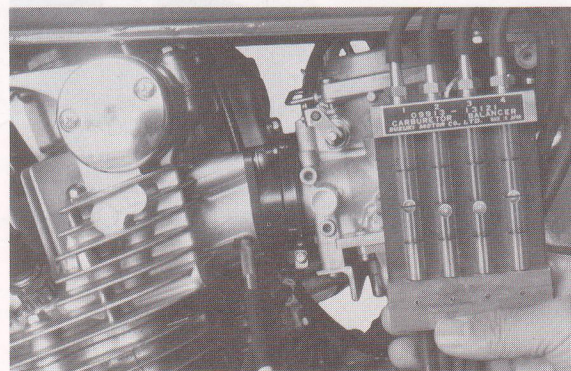
Carburetor balancer set	09913-13121
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5. Turn the air screw of the gauge so that the vacuum acting on the tube of that hose will bring the steel ball in the tube to the center.

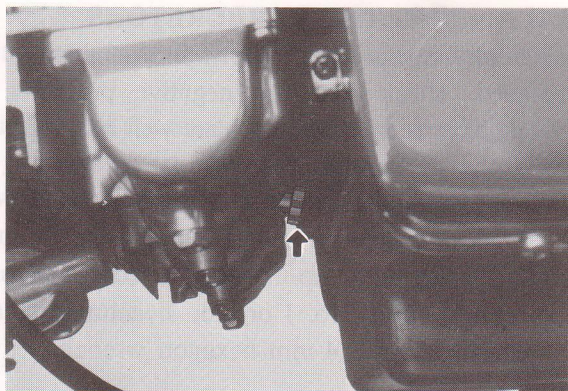
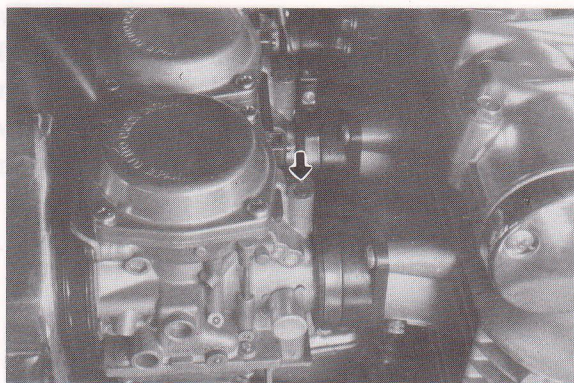


6. On the three other screws, follow the same procedure as above.
7. Remove the respective vacuum inlet screws and insert the adapters in the holes. Connect the balancer gauge hoses to these adapters, one hose to one adapter, and balance the four carburetors as follows:
8. When the balls in No. 1 and No. 4 carburetor balancers are on the same level and the other balls are on the lower position as shown below, all the four carburetors are well balanced.



If the balls in No. 1 and No. 4 or in No. 2 and No. 3 carburetor balancers are off more than the radius of the ball, make an adjustment as follows:

1. Turn in and out the pilot screw of carburetor which must be adjusted, and set it when the engine idles faster.



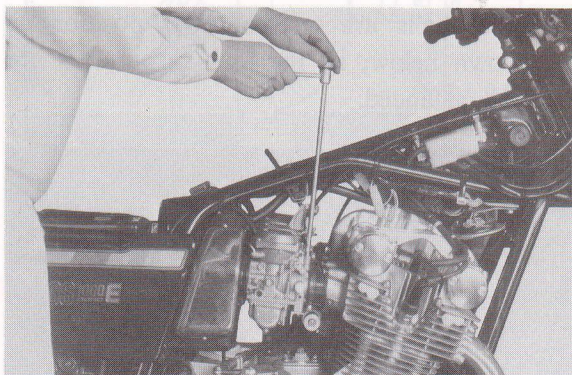
CAUTION:

This check should be done as quick as possible. If adjustment requires a longer time, it is advisable to cool the engine by sending air to prevent engine overheating.

2. Loosen throttle valve balancing screw lock nut, and by turning balancing screw with special tool, adjust the position of steel ball in balancer gauge.

09913-14910

Throttle valve adjusting wrench



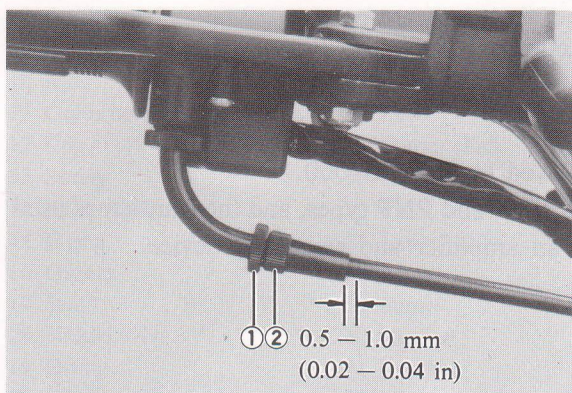
Adjusting order

A (for No. 2 carb) → B (for No. 1) → C (for No. 4)

3. After adjusting, tighten throttle valve balancing screw lock nut.
4. After this adjustment, adjust the idling speed to somewhere between 950 and 1 150 r/min with throttle stop adjusting screw.

THROTTLE CABLE ADJUSTMENT

1. Loosen lock nut ①.
2. Adjust the cable slack by turning adjuster ② in or out to obtain the correct slack 0.5 – 1.0 mm (0.02 – 0.04 in).



3. After adjusting the slack, tighten the lock nut.



SPECIFICATIONS

Item	Specification	Item	Specification
Each transistor has three terminals identified as the Base (B), Collector (C), and Emitter (E), and operates as follows:		On a NPN type the base is the controlling terminal of the transistor operation. On this type the base utilizes only a positive or incoming signal to be the "ON" or "OFF" switching. The collector is the terminal where voltage is supplied to the transistor and the emitter is the terminal for passing this current for usage when the base has the proper signal. Usually the voltage applied across the collector to the emitter is much larger than that needed for the base. This allows a relatively low voltage at the base to control large working voltages across the collector to the emitter.	
The transistor ignition system used on the GS1000 is the Nippon Denso brand and consists of a signal generator, which employs a rotor and two pick-up coils, the transistor unit, ignition coils, and spark plugs.			

FULL-TRANSISTORIZED IGNITION SYSTEM

A fully transistorized ignition system is now employed on the GS1000. Its primary advantages are:

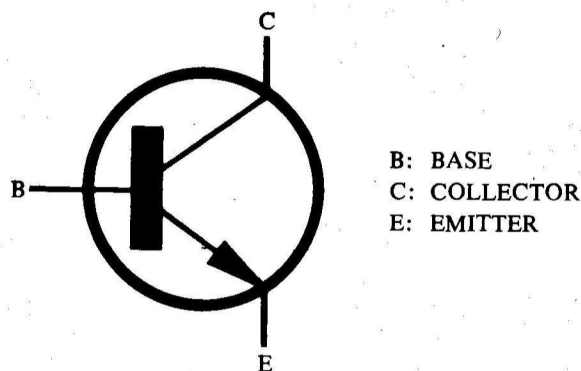
- * Trouble free operation due to elimination of contact breaker points which can become contaminated.
- * Ignition timing is maintained properly at all times and require no maintenance.
- * Free from arcing and provides the ignition coil with stable secondary voltage.
- * Excellent vibration and moisture resistance.

Transistor functions can be divided into four main functions:

1. Amplification
2. Switching
3. Oscillation
4. Modulation

These functions are utilized in the ignition system employed on the GS1000.

Transistors are divided into two groups, those being of the NPN and PNP types, and the transistors used in the GS1000 model is of the NPN type only, works an amplifier and switching device.



Each transistor has three terminals identified as the Base (B), Collector (C), and Emitter (E), and operation is as follows:

On a NPN type the base is the controlling terminal of the transistor operation. On this type, the base utilizes only a positive or incoming signal to do the "ON", or "OFF" switching. The collector is the terminal where voltage is supplied to the transistor and the emitter is the terminal for passing this current for useage when the base has the proper "signal". Usually the voltage applied across the collector to the emitter is much larger than that needed at the base. This allows a relatively low voltage at the base to control large working voltages across the collector to the emitter.

The transistor ignition system used on the GS1000 is the Nippon Denso brand and consists of a signal generator, which employs a rotor and two pick-up coils, the transistor unit, ignition coils, and spark plugs.

SIGNAL GENERATOR:

The signal generator is mounted on the right hand side of the engine in the area commonly used for the contact breaker points. It is comprised of an iron rotor attached to a mechanical advance mechanism and two pick-up coils, with magnets at their bases, affixed to a plate. Each pick-up coil consists of a coil or wire and a yoke or coil and is mounted 180° apart on the plate.

As the rotor tip is turned past the coils, AC current is produced and used for switching within the transistor unit.

The transistor unit controls power to the ignition coils and causes the spark plugs to fire at the proper time.

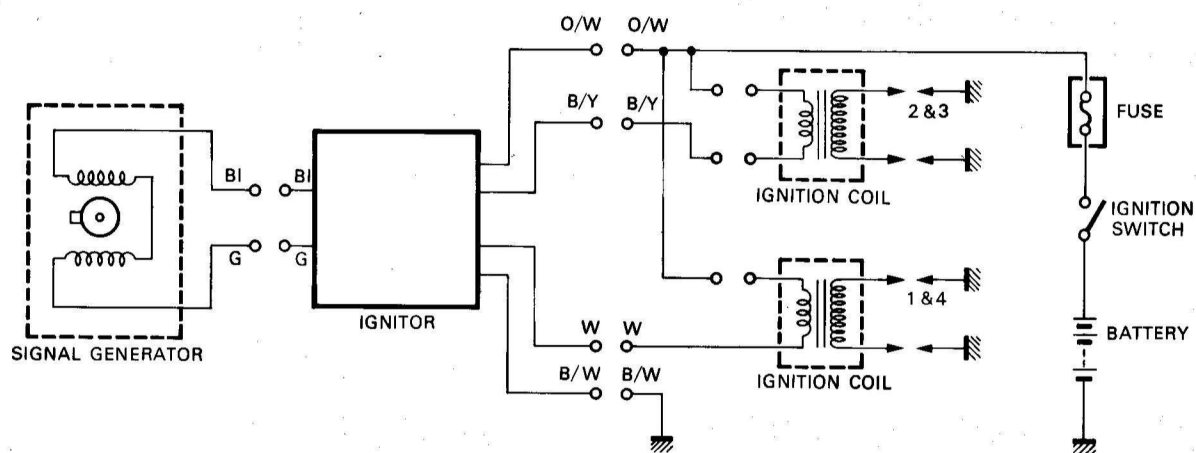
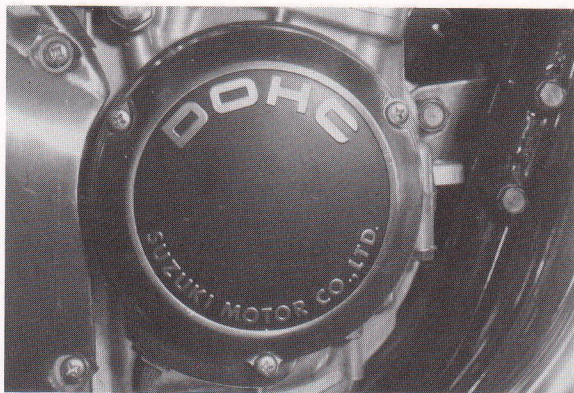


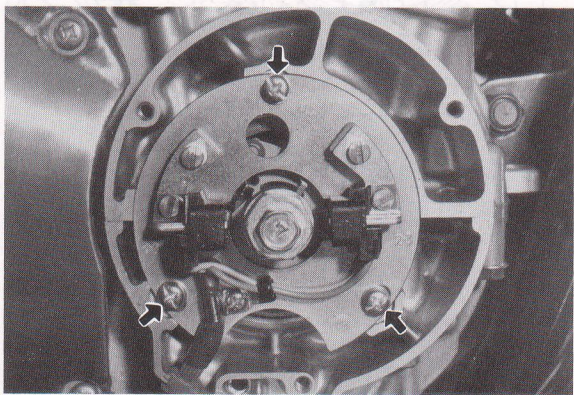
Fig. 75.

REMOVAL

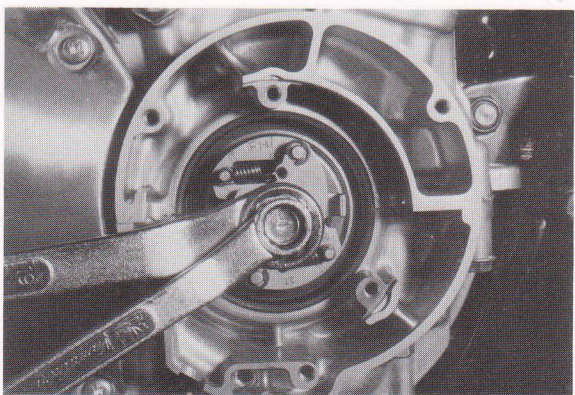
- Remove signal generator cover.



- Remove three screws and then remove the signal generator assembly and timing plate.

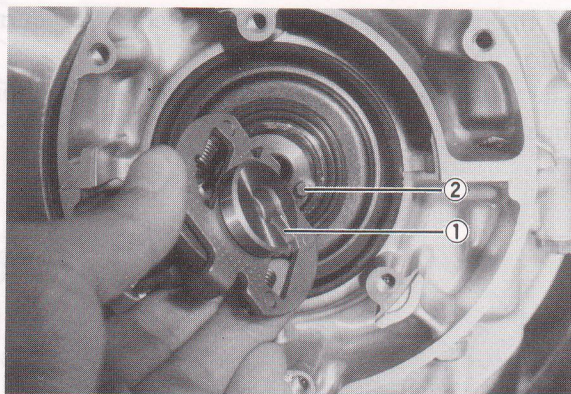


- Apply wrench to crank turning nut to remove automatic advance governor mounting bolts and the crank turning nut. Remove signal generator rotor and advance governor.

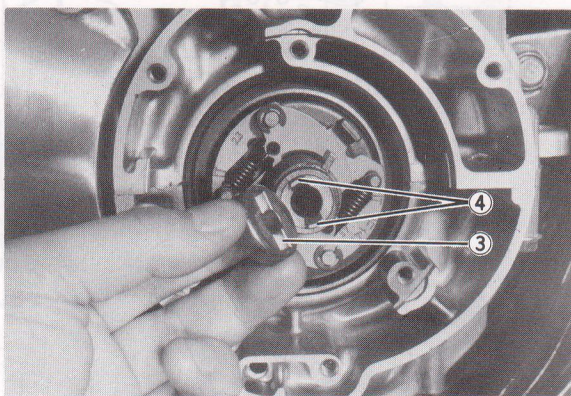


REASSEMBLY

- Make sure to fit the slot ① on the back surface of the automatic advance governor over the locating pin ② at the end of crankshaft.

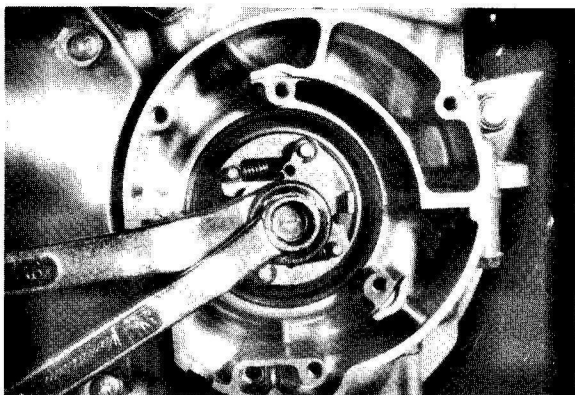


- Fit the groove ③ of the crankshaft turning nut on protrusion ④ of the advance governor body.

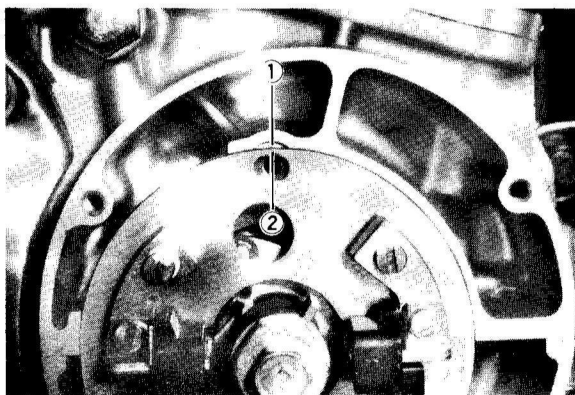


- Hold the crankshaft turning nut and tighten the governor center bolt with specified torque.

Tightening torque	13 — 23 N·m
	1.3 — 2.3 kg·m
	9.5 — 16.5 lb·ft



- Install the timing plate and signal generator so that the index line ① aligns with the index mark ②.



INSPECTION

IGNITION TIMING

Check the performance of the timing mechanism using the timing light. Illuminate the advance governor with the timing light and vary the engine speed to see if the ignition is correctly timed or not.

09900-27311

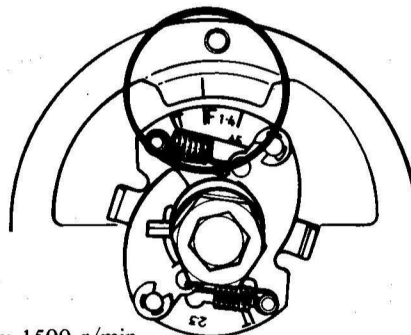
Timing light

Ignition timing specifications

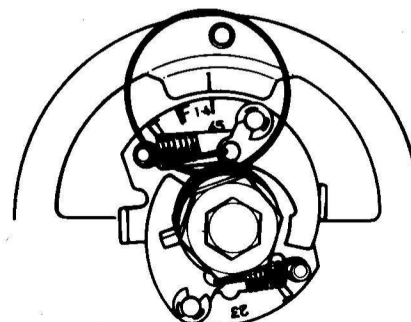
Ignition timing

17° B.T.D.C. below
1 500 r/min and
37 — B.T.D.C. above
2 350 r/min

Below 1500 r/min

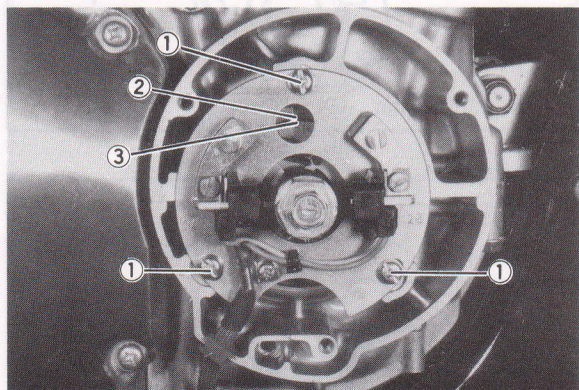
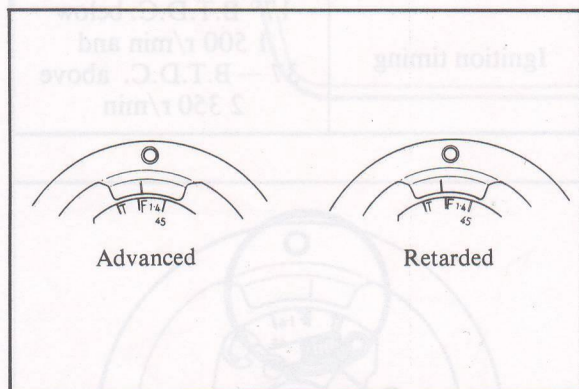


Above 2350 r/min



The procedure is as follows:

- Clip the timing light on the high tension cord of the No. 1 or No. 4 cylinder.
- Run the engine at a speed not exceeding 1 500 r/min. Under this condition, "F" mark on No. 1 and No. 4 cylinder side and timing mark should be in perfect alignment: If not, loosen three stator securing screws ① and adjust the ignition timing by turning stator base as shown.
- Run the engine in the speed range above 2 350 r/min, and similarly observe the position of mark ② relative to mark ③. If the two marks are in register, it means that the ignition is properly advanced.



SIGNAL GENERATOR RESISTANCE

Measure the resistance between lead wires.

If the resistance noted to show infinity or too low a resistance value must be replaced.

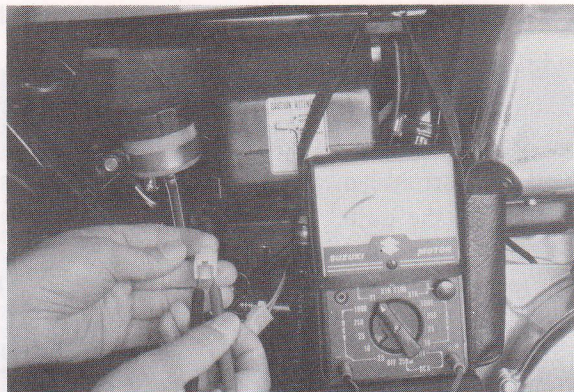
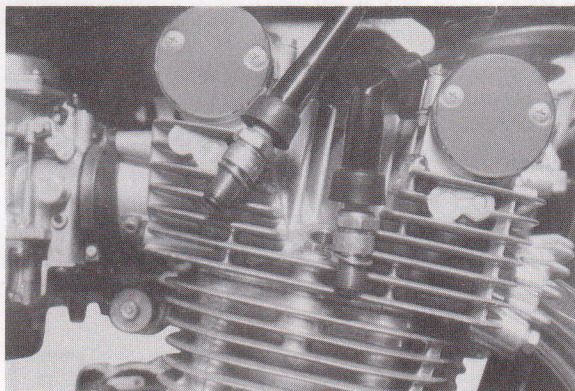
09900-25002	Pocket tester
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STD resistance	
BI — G	290 — 360Ω



IGNITER

Remove each spark plug of Nos. 3 and 4 cylinders, fit it to respective plug cap and place it on the cylinder head.



Remove the frame cover on the right side and disconnect the lead wire from the signal generator.

Now connect $\oplus$ pin of SUZUKI Pocket Tester (X1 Ω range) with Blue lead wire on the igniter side and $\ominus$ pin with Green lead wire. The igniter is in good condition if the following is observed: The moment the test pins are connected the spark plug of No. 4 cylinder sparks and the moment the tester pins are disconnected the spark plug of No. 3 cylinder sparks.

NOTE:

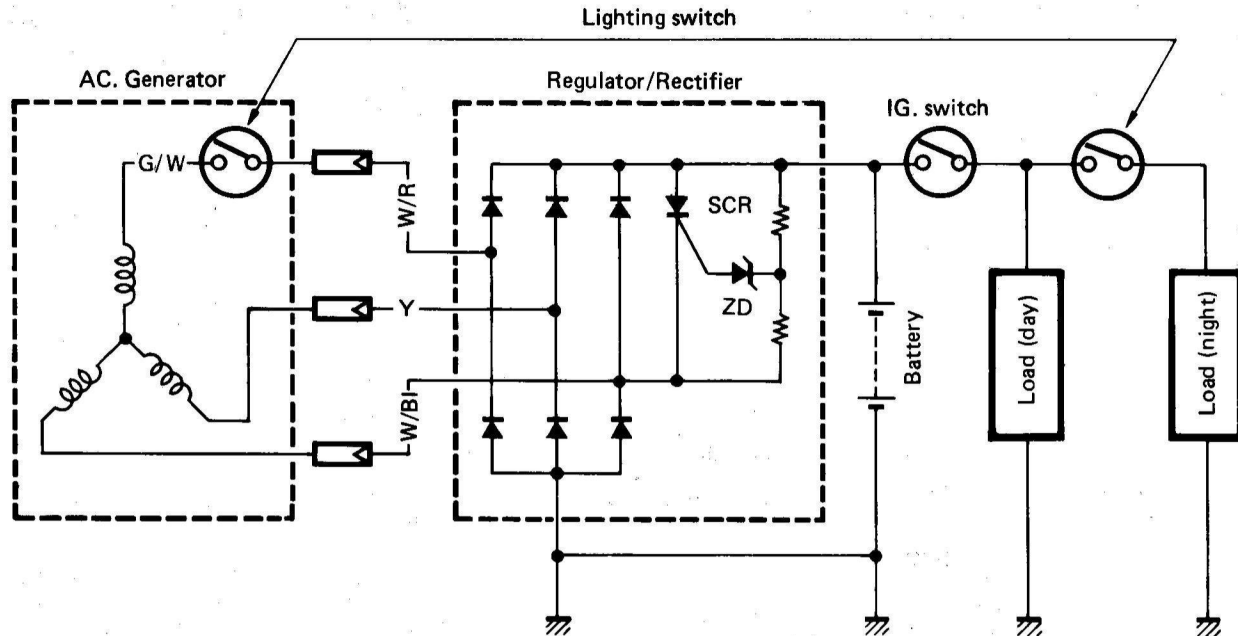
This checking presupposes that the ignition coil used for checking is a good one.

CHARGING SYSTEM

DESCRIPTION

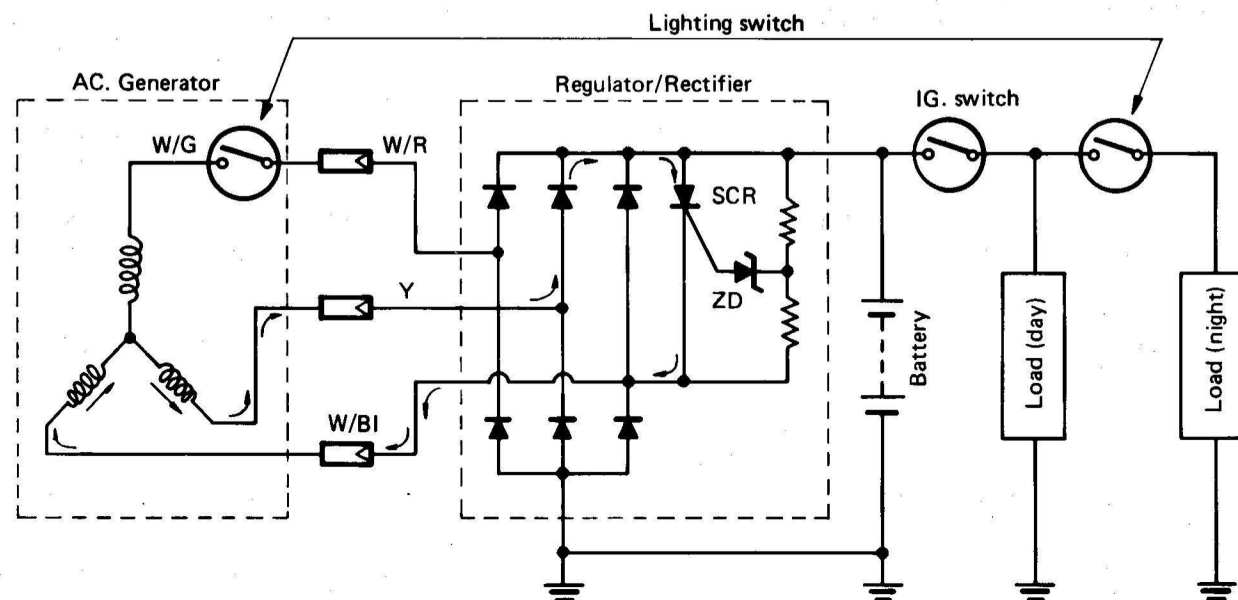
This motorcycle, the circuit of its charging system is indicated in the figure, is composed of AC generator, regulator/rectifier unit and battery.

The AC current generated from AC generator is rectified by rectifier and is turned into DC current, then it charges the battery.

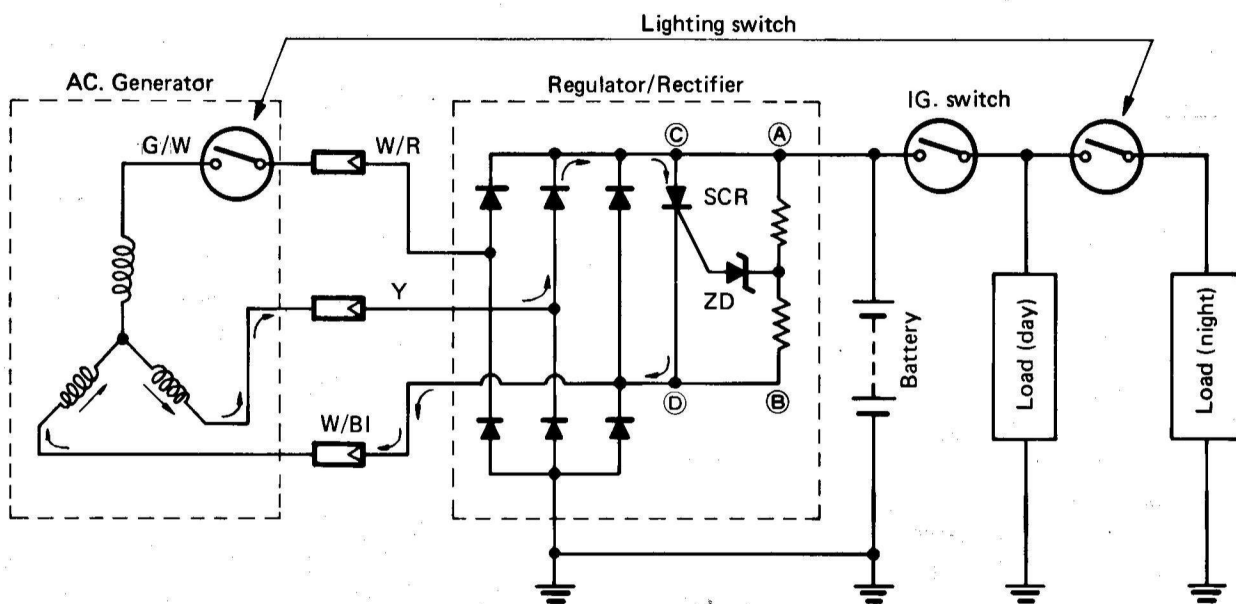


Function of Regulator

While the engine r/min is low and the generated voltage of AC generator is lower than the adjusted voltage of Regulator, the regulator does not function, incidentally the generated current charges the battery directly.



When the engine r/min becomes higher, the generated voltage of AC generator also becomes higher and the voltage between points (A) and (B) of regulator becomes high accordingly, and when it reaches the adjusted voltage of regulator, ZD (Zener diode) sends signal to the gate of SCR (Thyristor). Then the SCR becomes conductive to the direction from point (C) to point (D). Namely at the state of this the current generated from the AC generator get through SCR without charging the battery and returns to AC generator again. At the end of this state, since the AC current generated from AC generator flows into the point (D), reverse current tends to flow to SCR, then the circuit of SCR turns to OFF mode and begins to charge the battery again. Thus these repetitions maintain charging voltage to the battery constant and protect it from overcharging.



INSPECTION

Charging Output Check

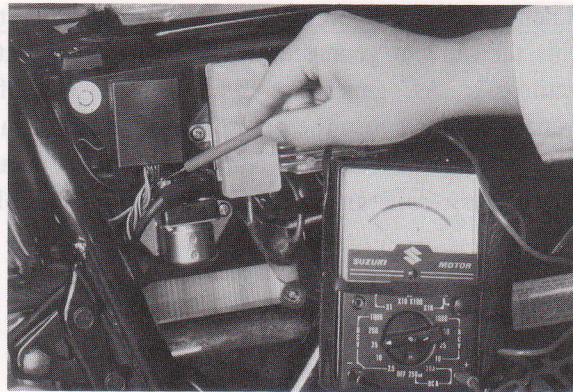
- Start the engine and keep it running at 5 000 r/min with the lighting switch turned ON (High position).
- Using pocket tester, measure the DC voltage between the starter relay ⊕ terminal and ground.
- If the tester reads under 14V or over 15.5V, the regulator/rectifier is faulty.

NOTE:

When making this test, be sure that the battery is in a fully-charged condition.

09900-25002

Pocket tester



STD charging output

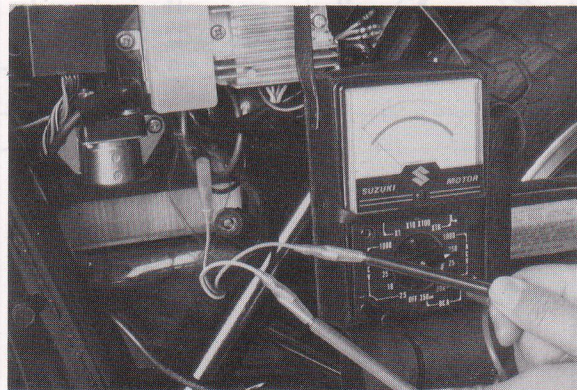
14 — 15.5V (DC) at 5 000 r/min

AC GENERATOR NO-LOAD PERFORMANCE

- Disconnect the three lead wires from the AC generator terminal.
- Start the engine and keep it running at 5 000 r/min.
- Using the pocket tester, measure the AC voltage between the three lead wires.
- If the tester reads under 80V, the AC generator is faulty.

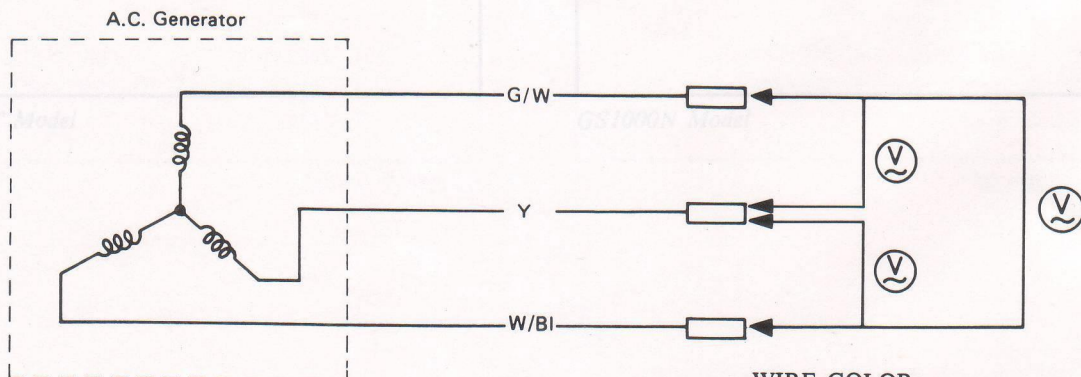
09900-25002

Pocket tester



STD No-load performance

80V (AC) or over at 5 000 r/min



WIRE COLOR:

Y Yellow
W/BI White with Blue tracer
G/W Green with White tracer

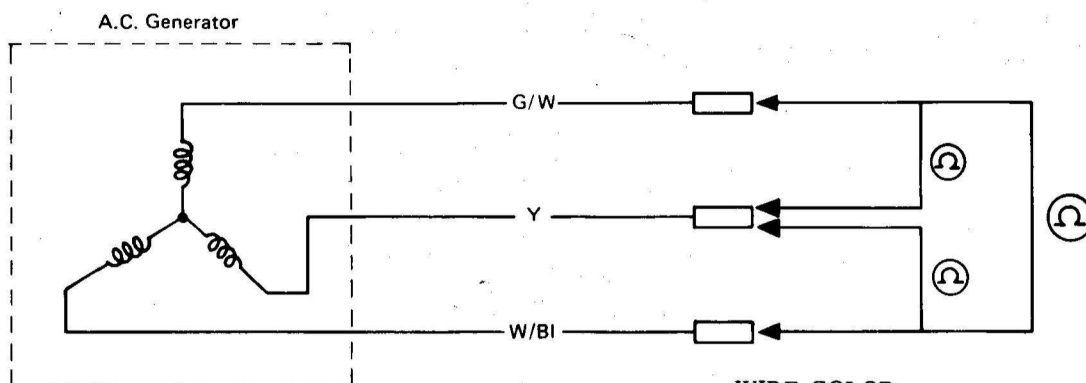
Using pocket tester, check the continuity between the lead wires of the stator.
Also check that the stator core is insulated.

NOTE:

When making this test, it is not necessary to remove the AC generator.

09900-25002

Pocket tester



WIRE COLOR:

Y..... Yellow

W/BI..... White with Blue tracer

G/W Green with White tracer

REGULATOR/RECTIFIER

Using pocket tester (X1 Ω range), measure the resistance between the lead wires in the following table.

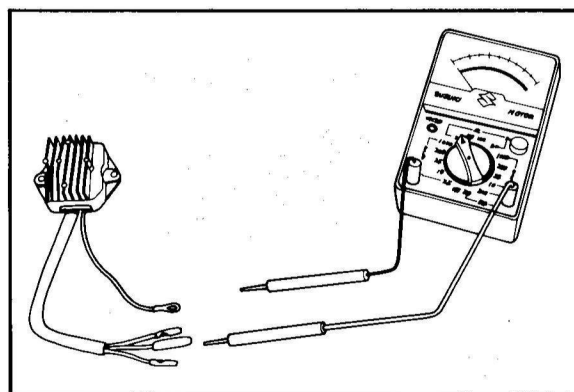
If the resistance reading is incorrect, replace the regulator/rectifier.

09900-25002

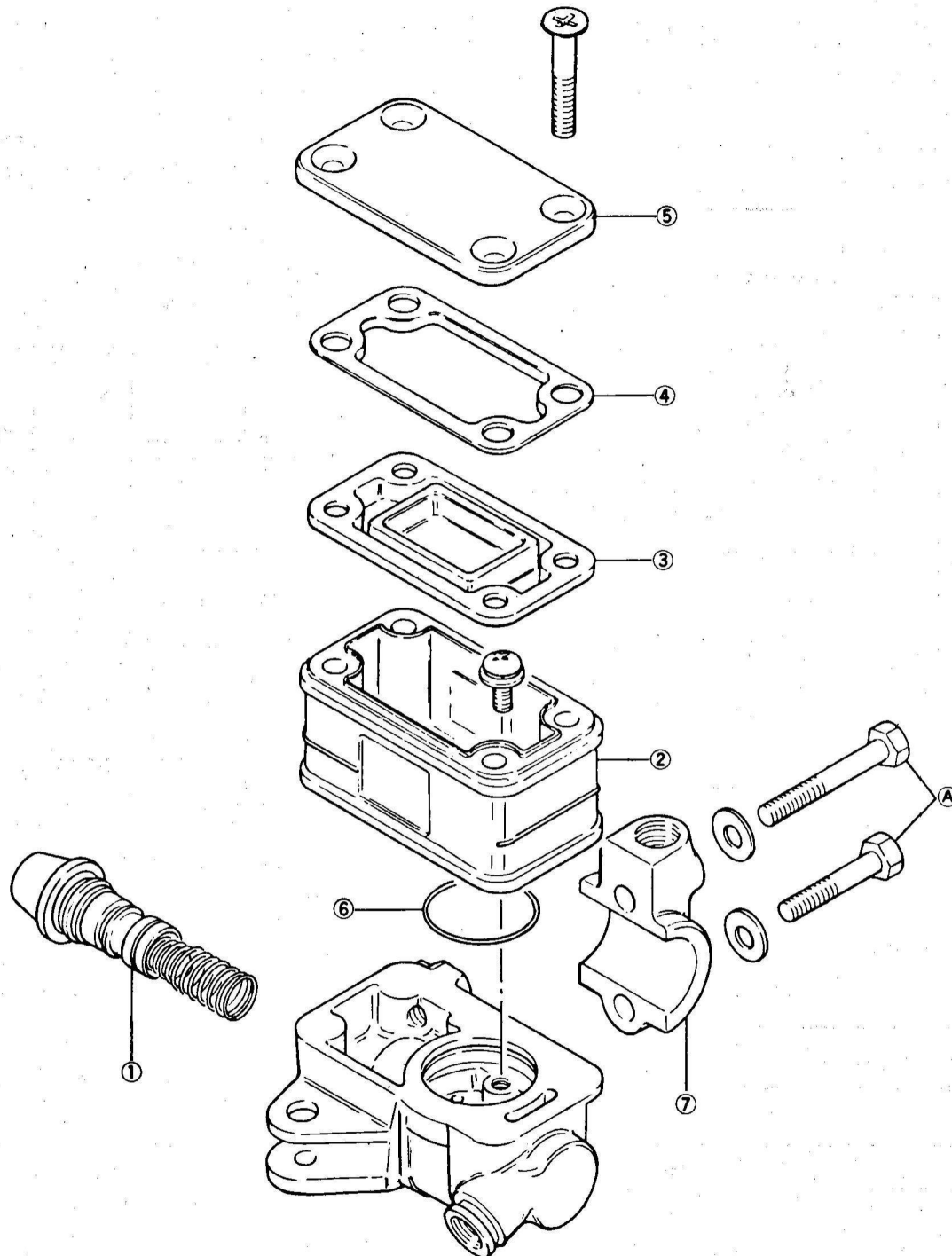
Pocket tester

Unit: Ω

		⊕ Prove of tester				
⊖ Prove of tester	R	R	W/BI	W/R	Y	B/W
	W/BI	5 - 6	∞	∞	∞	∞
	W/R	5 - 6	∞	∞	∞	∞
	Y	5 - 6	∞	∞	∞	∞
	B/W	35 - 45	5 - 6	5 - 6	5 - 6	5 - 6



FRONT MASTER CYLINDER

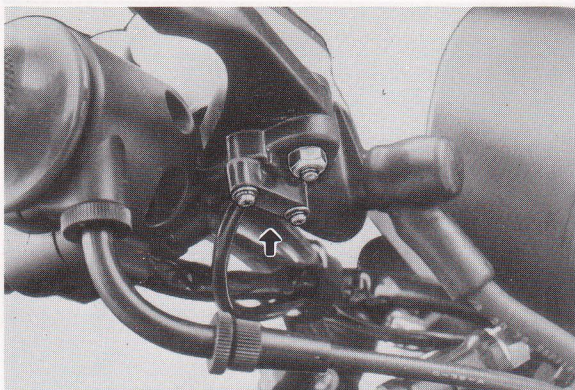


1. Piston and cap set
2. Reservoir
3. Diaphragm
4. Plate
5. Cap
6. O-ring
7. Holder

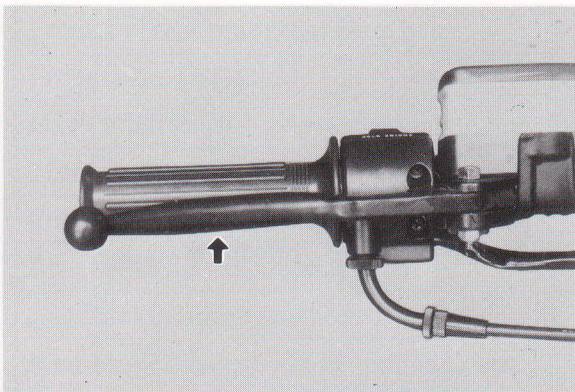
Tightening torque			
	N•m	kg•m	lb•ft
(A)	5 — 8	0.5 — 0.8	3.5 — 6.0

MASTER CYLINDER REMOVAL AND DISASSEMBLY

- Take off front brake light switch.



- Remove front brake lever.



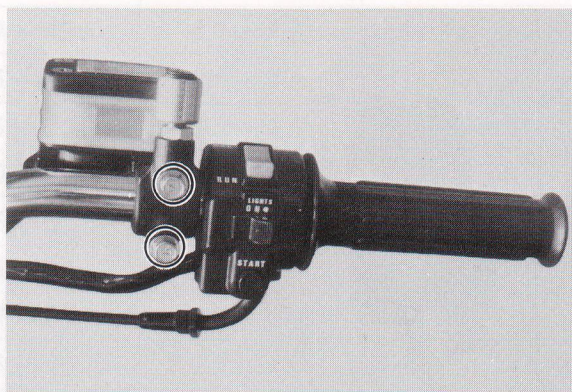
- Place a rag underneath the union bolt on the master cylinder to catch spilled drops of brake fluid. Unscrew the union bolt and disconnect the brake hose/master cylinder joint.

CAUTION:

Completely wipe off any brake fluid adhering to any part of motorcycle. The fluid reacts chemically with paints, plastics, rubber materials, etc.



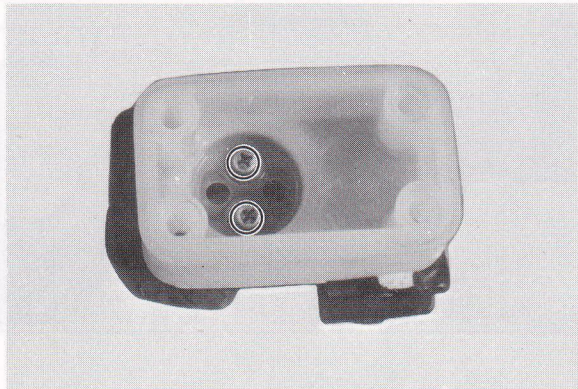
- Remove master cylinder ass'y after removing two fitting bolts.



- Remove filler cap and drain brake fluid.

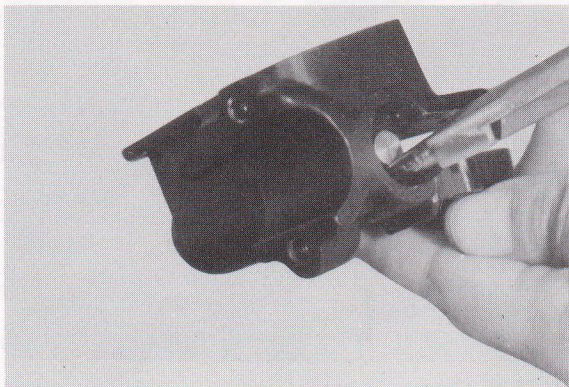


- Remove the two screws.

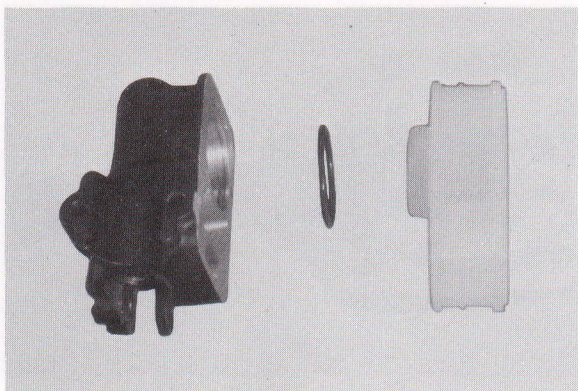


- Remove circlip by using special tool.

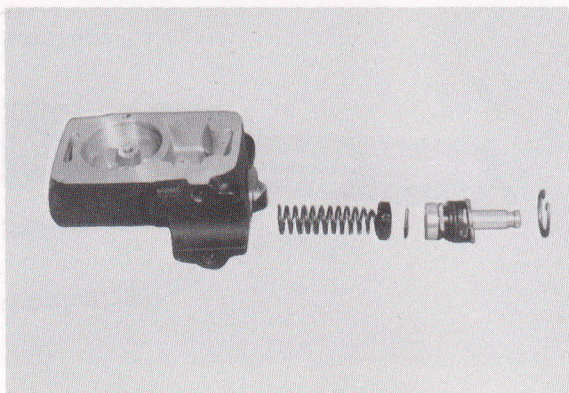
09900-06108	Snap ring pliers
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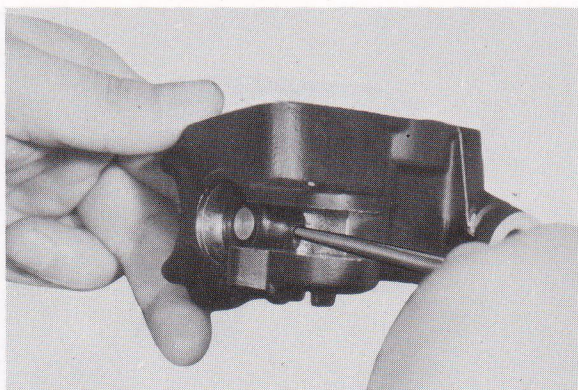
- Pull out the reservoir and O-ring.



- Pull out piston, primary cup and spring.

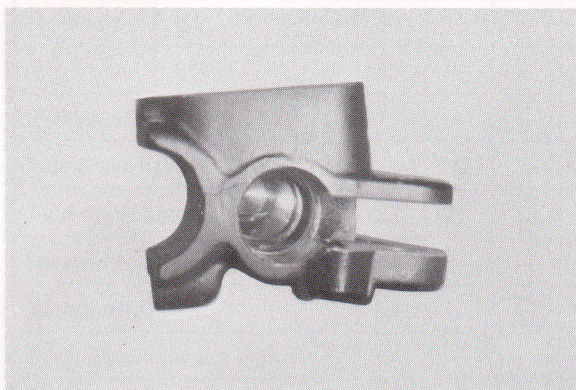


- Draw out dust seal boot.

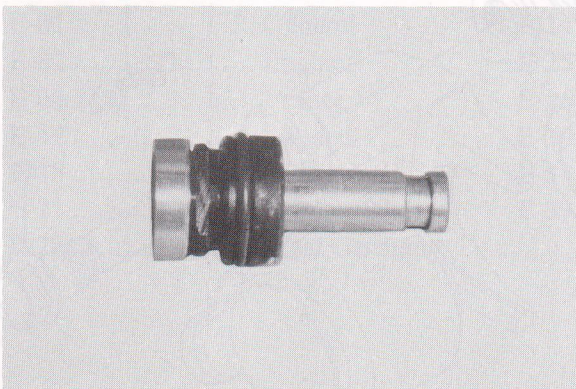


MASTER CYLINDER INSPECTION

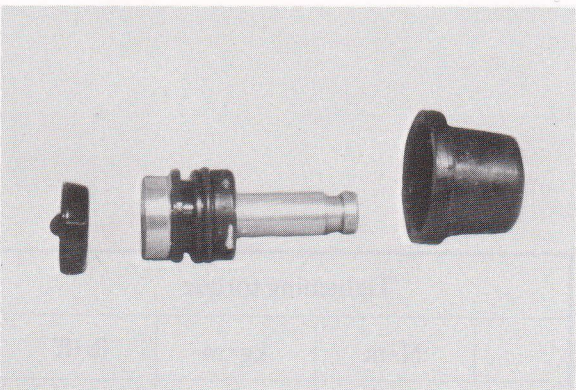
- Inspect the cylinder bore wall for any scratch or other damage.



- Inspect the piston surface for scratch or other damage.



- Inspect the primary cup, secondary cup and dust seal boot for damage.



MASTER CYLINDER REASSEMBLY

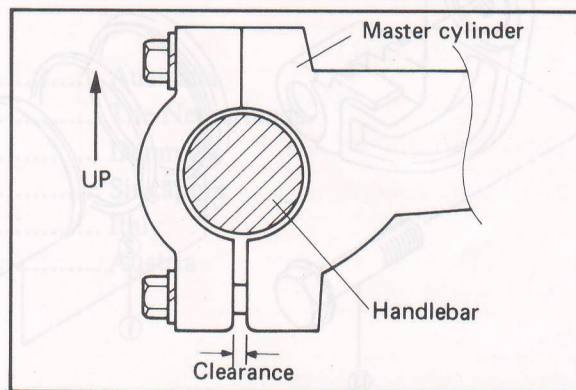
- Reassemble the master cylinder in the reverse order of disassembly and by taking the following steps:

CAUTION:

Wash the master cylinder components with fresh brake fluid before reassembly. Never use cleaning solvent or gasoline to wash them.

Apply brake fluid to the cylinder bore and all the internals to be inserted into the bore.

- When remount the master cylinder to the handlebars, first tighten the clamp bolt for upside as shown.

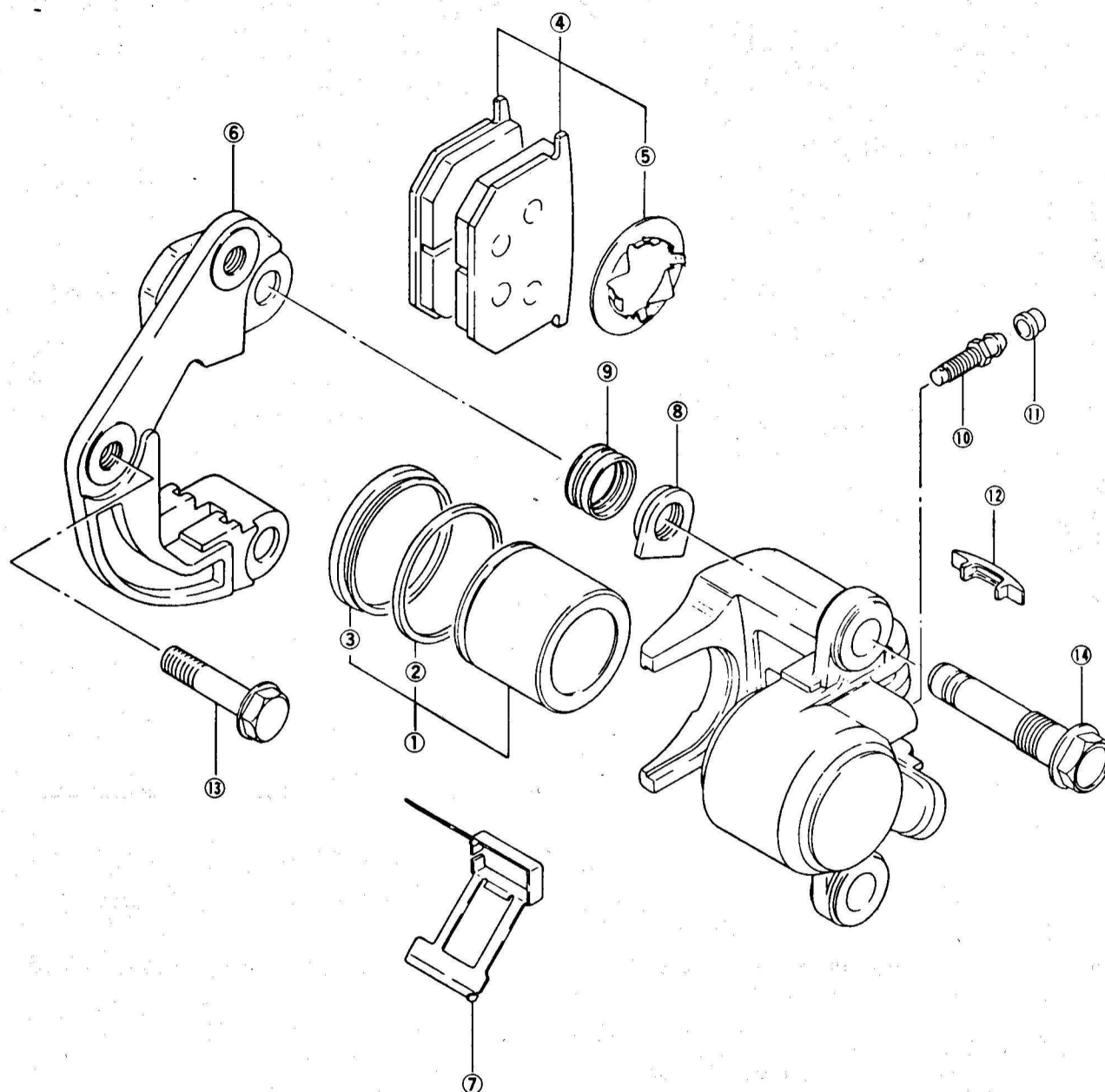


CAUTION:

Adjust the front brake light switch after installation.

Bleeding the air after reassembling master cylinder.

FRONT CALIPER



1. Piston set
2. Piston seal
3. Piston boot
4. Pad set
5. Pad shim
6. Caliper holder
7. Spring
8. Nut
9. Boot
10. Bleeder
11. Bleeder cap
12. Cover
13. Bolt
14. Bolt

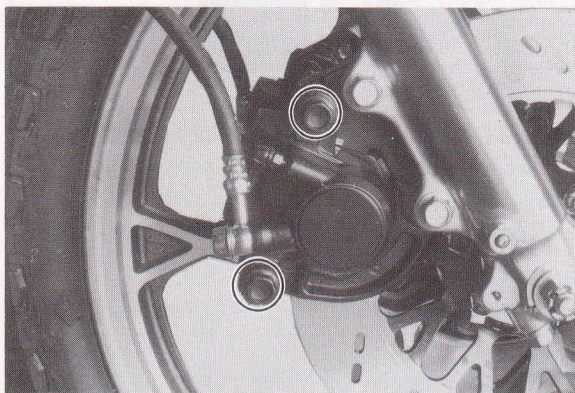
Tightening torque			
	N•m	kg•m	lb•ft
13	20—40	2.0—4.0	14.5—29.0
14	40—55	4.0—5.5	29.0—40.0

BRAKE PAD REPLACEMENT

- Remove two bolts and take off caliper.

CAUTION:

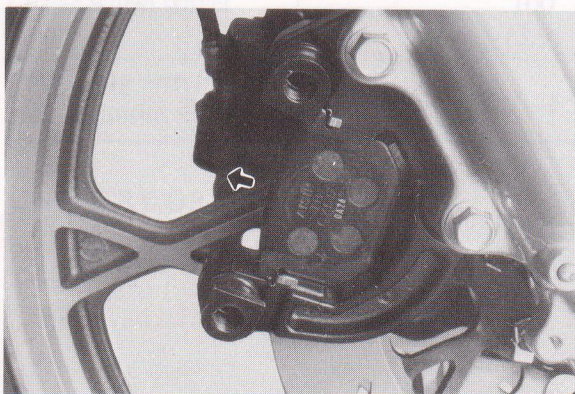
Do not operate the brake lever when removing the caliper.



- Pull out brake pads with pad shim.

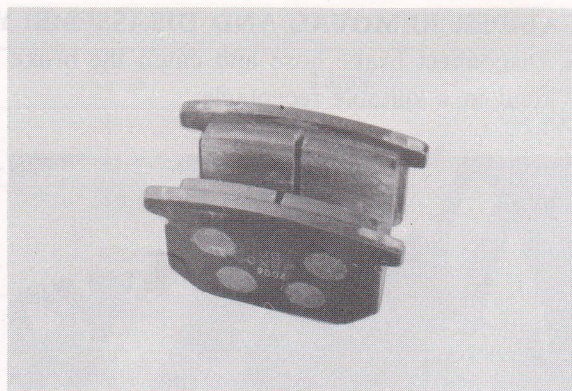
CAUTION:

Replace the brake pad with a set, otherwise braking performance will be adversely affected.



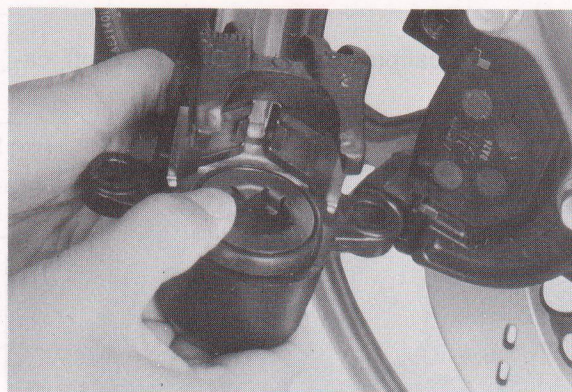
CAUTION:

Do not apply pad grease, when installing the brake pads.



NOTE:

Push in the piston all the way to the caliper when remount the caliper.

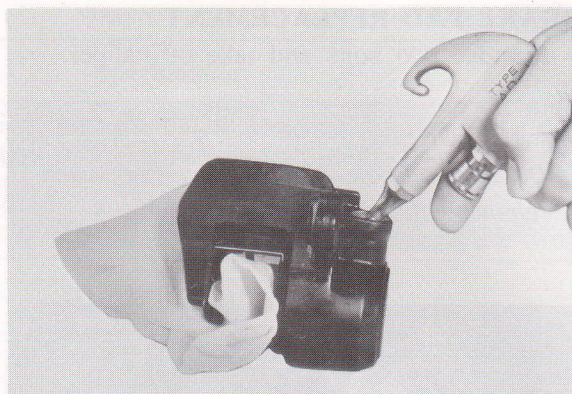
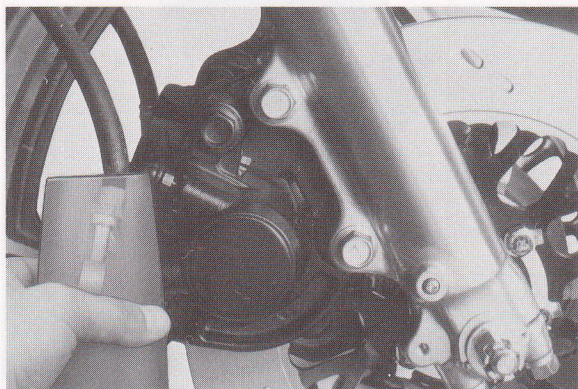


- Tighten the caliper axle bolts with specified torque.

Tightening torque	15 — 20 N•m
	1.5 — 2.0 kg•m
	11.0 — 14.5 lb•ft

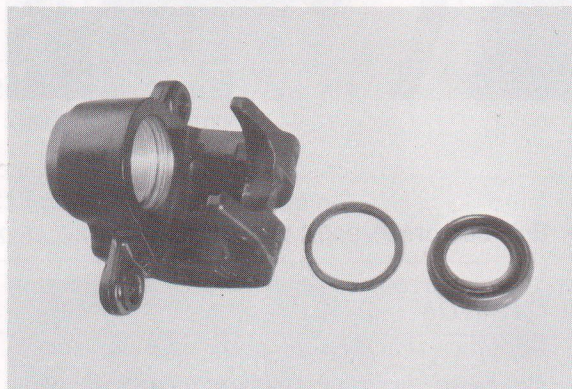
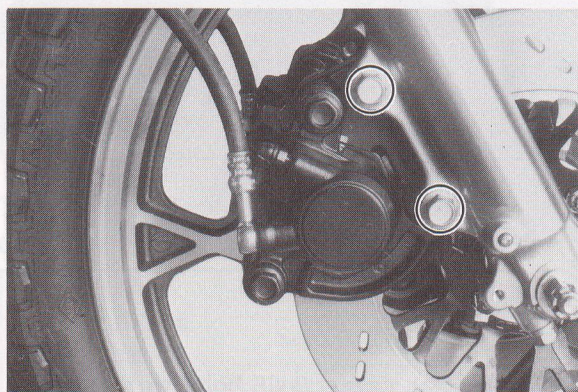
CALIPER REMOVAL AND DISASSEMBLY

- Disconnect brake hose and catch the brake fluid in a suitable receptacle.



- Remove piston boot and piston seal.

- Remove caliper axle bolts and take off caliper.



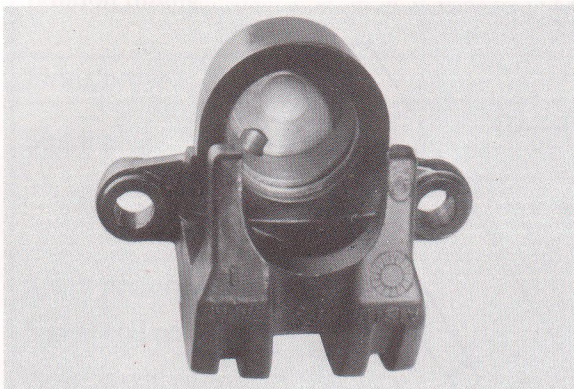
- Place a rag over the piston to prevent popping up. Draw out the piston by using air gun.

CAUTION:

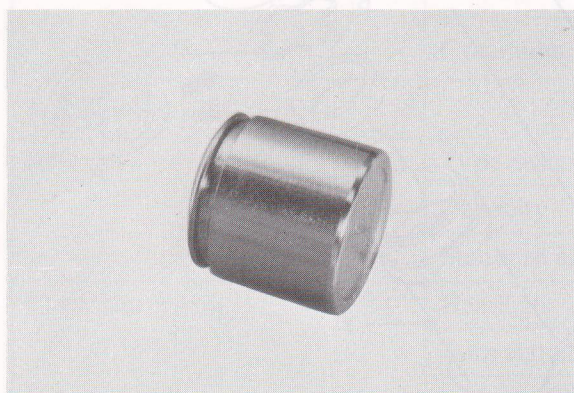
Do not use high pressure air for preventing piston damage.

CALIPER AND DISC INSPECTION

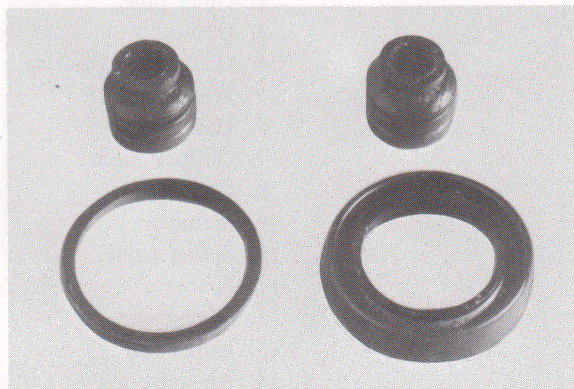
- Inspect the cylinder bore wall for nick, scratch or other damage.



- Inspect the piston surface for any flow or other damage.



- Inspect the each rubber parts for damage and wear.



CALIPER REASSEMBLY

- Reassemble the caliper in the reverse orders of disassembly and by taking the following steps:

CAUTION:

Wash the caliper components with fresh brake fluid before reassembly.

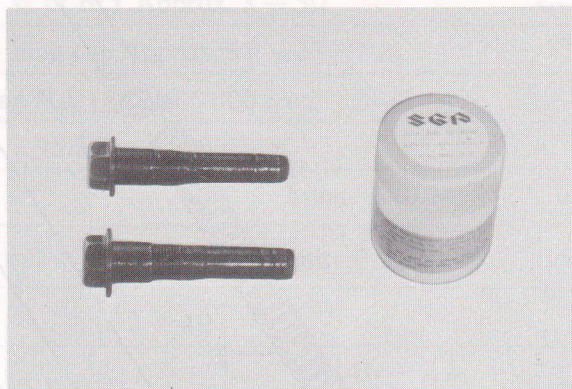
Never use cleaning solvent or gasoline to wash them.

Apply brake fluid to the caliper bore and piston to be inserted into the bore.

- Apply grease to the cliper axles.

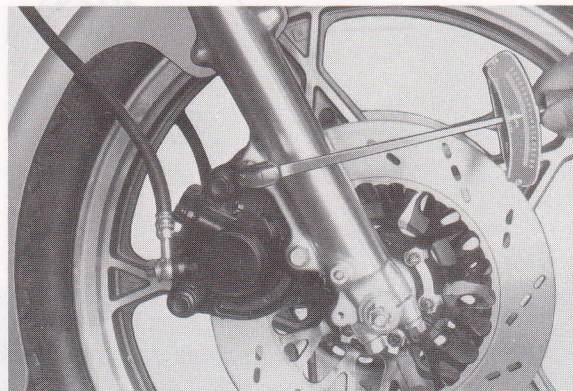
99000-25100

SUZUKI Silicone grease

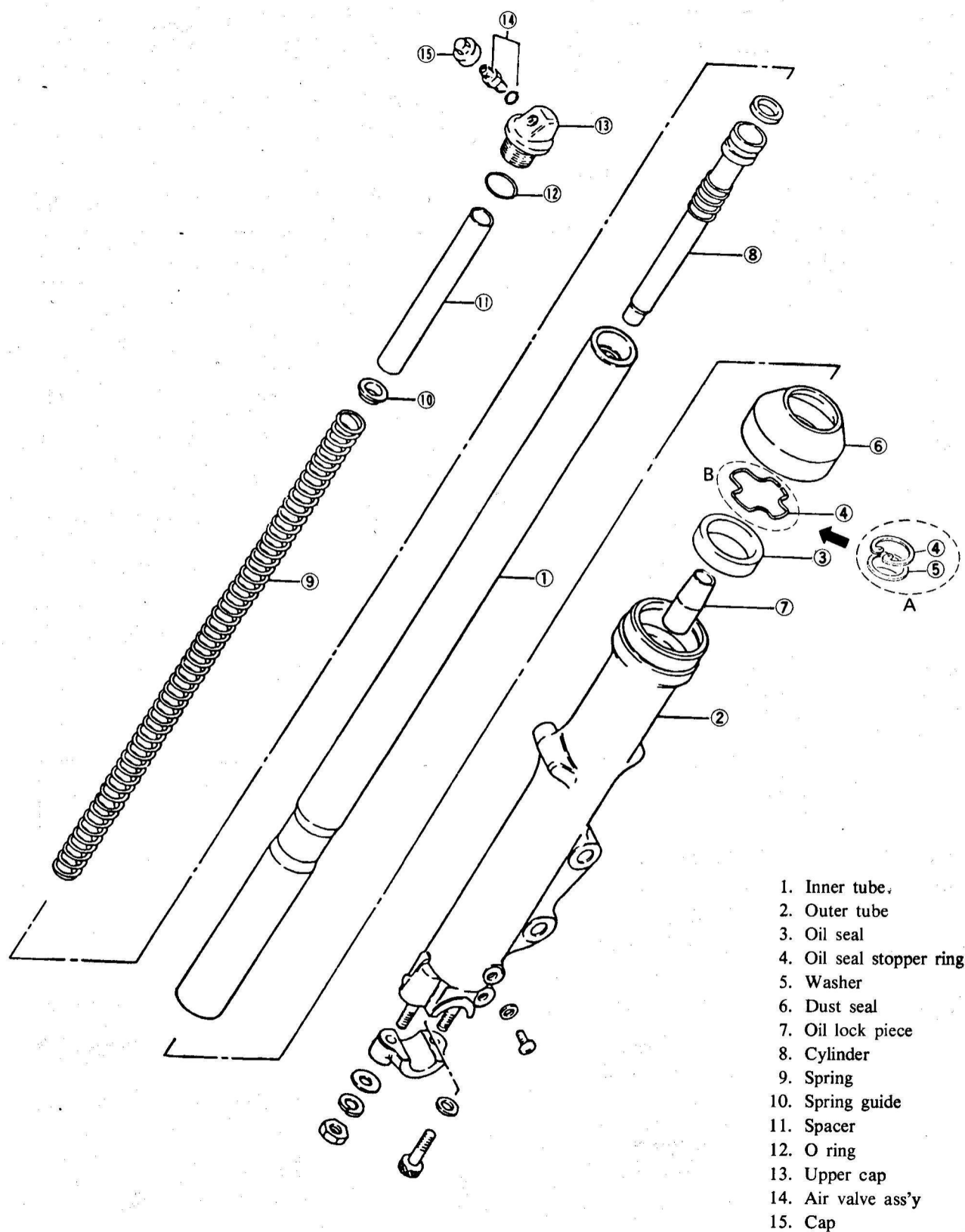


- Tighten the caliper axle nuts and caliper mounting bolts with specified torque.

	Tightening torque
Caliper axle bolt	40 – 55 N•m 4.0 – 5.5 kg•m 29.0 – 40.0 lb•ft
Caliper bolt	20 – 40 N•m 2.0 – 4.0 kg•m 14.5 – 29.0 lb•ft



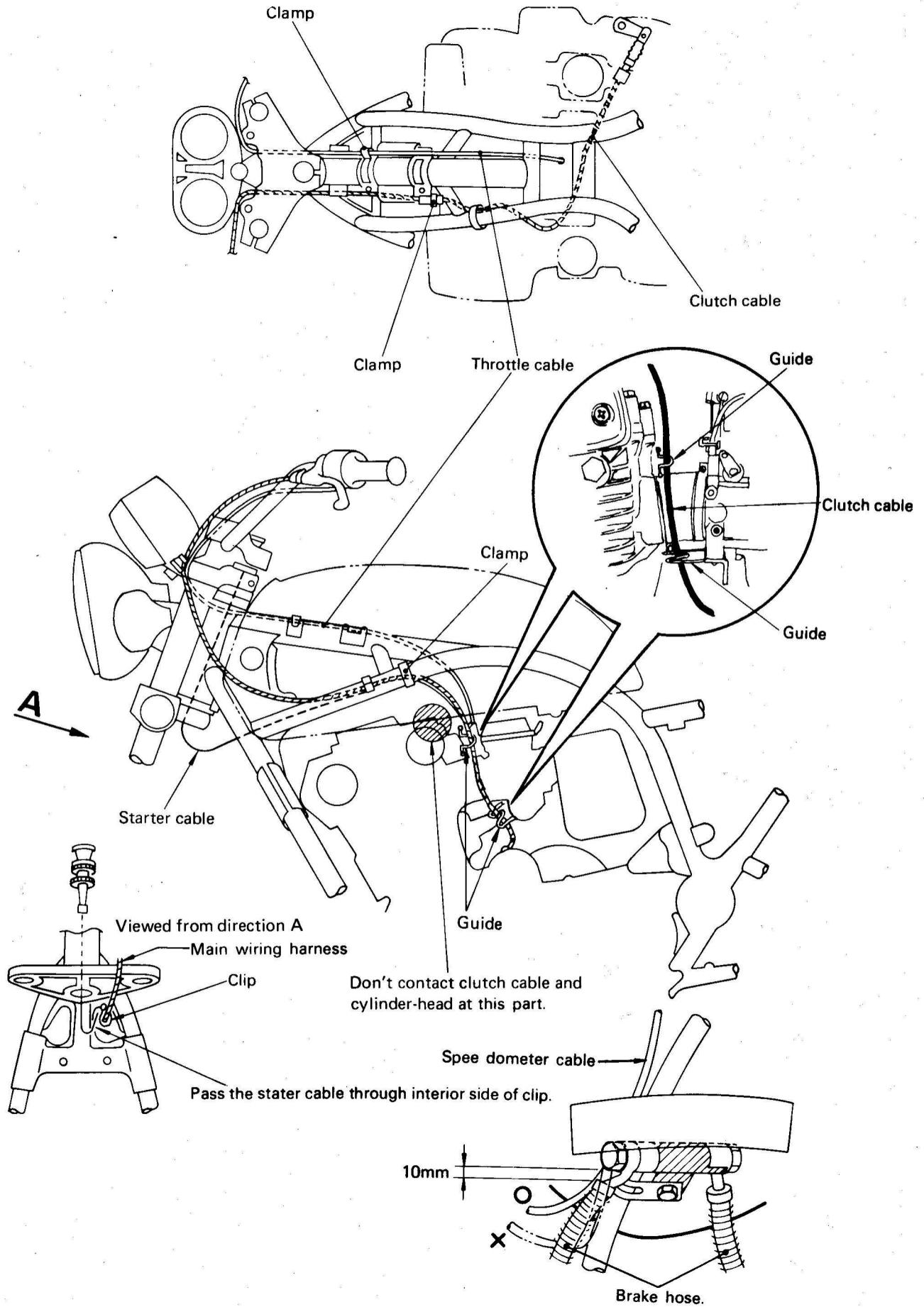
FRONT FORK

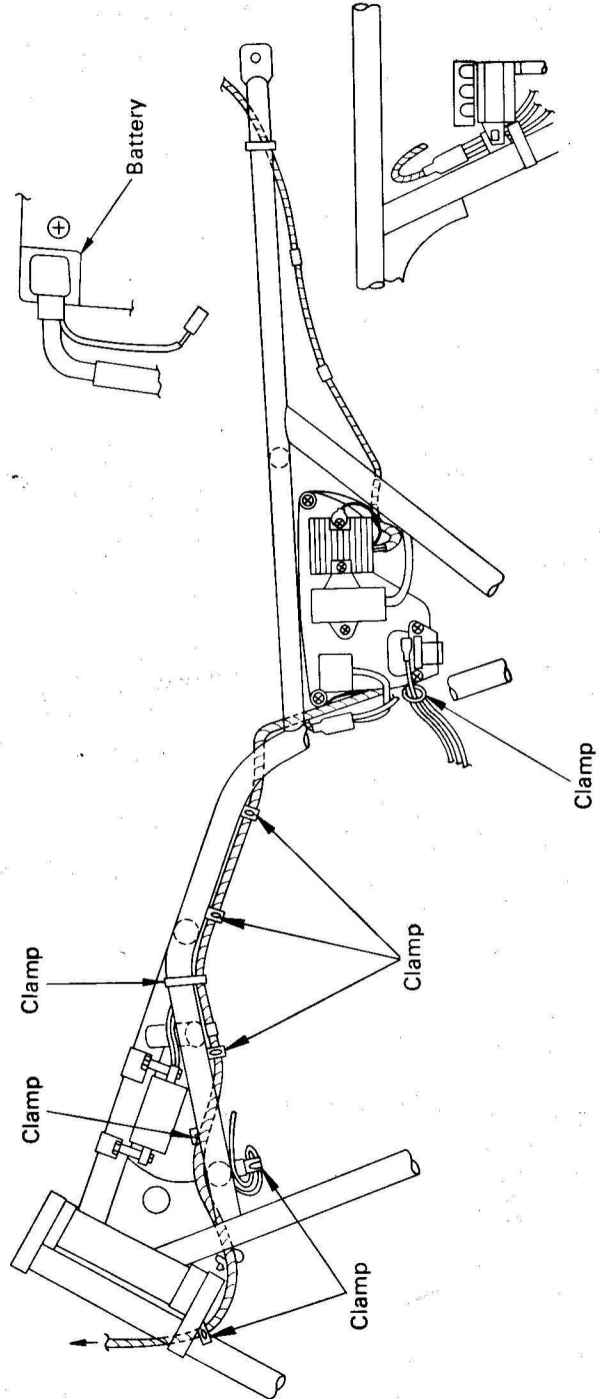
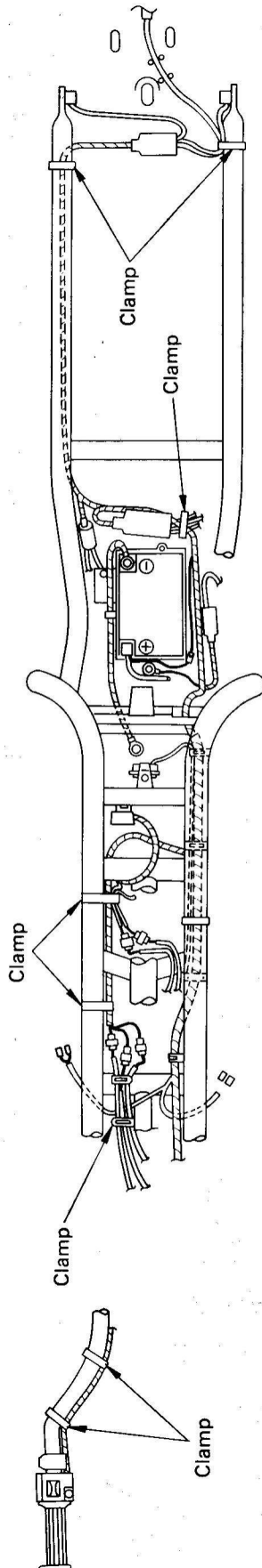


NOTE:

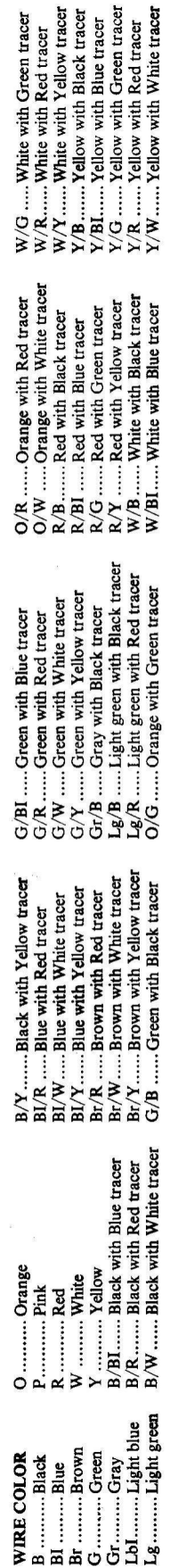
Although the parts for stopping the front fork oil seal has been changed from A to B (as shown illustration), the disassembling procedure is the same as that for GS1000 C and N models.

WIRE AND CABLE ROUTING

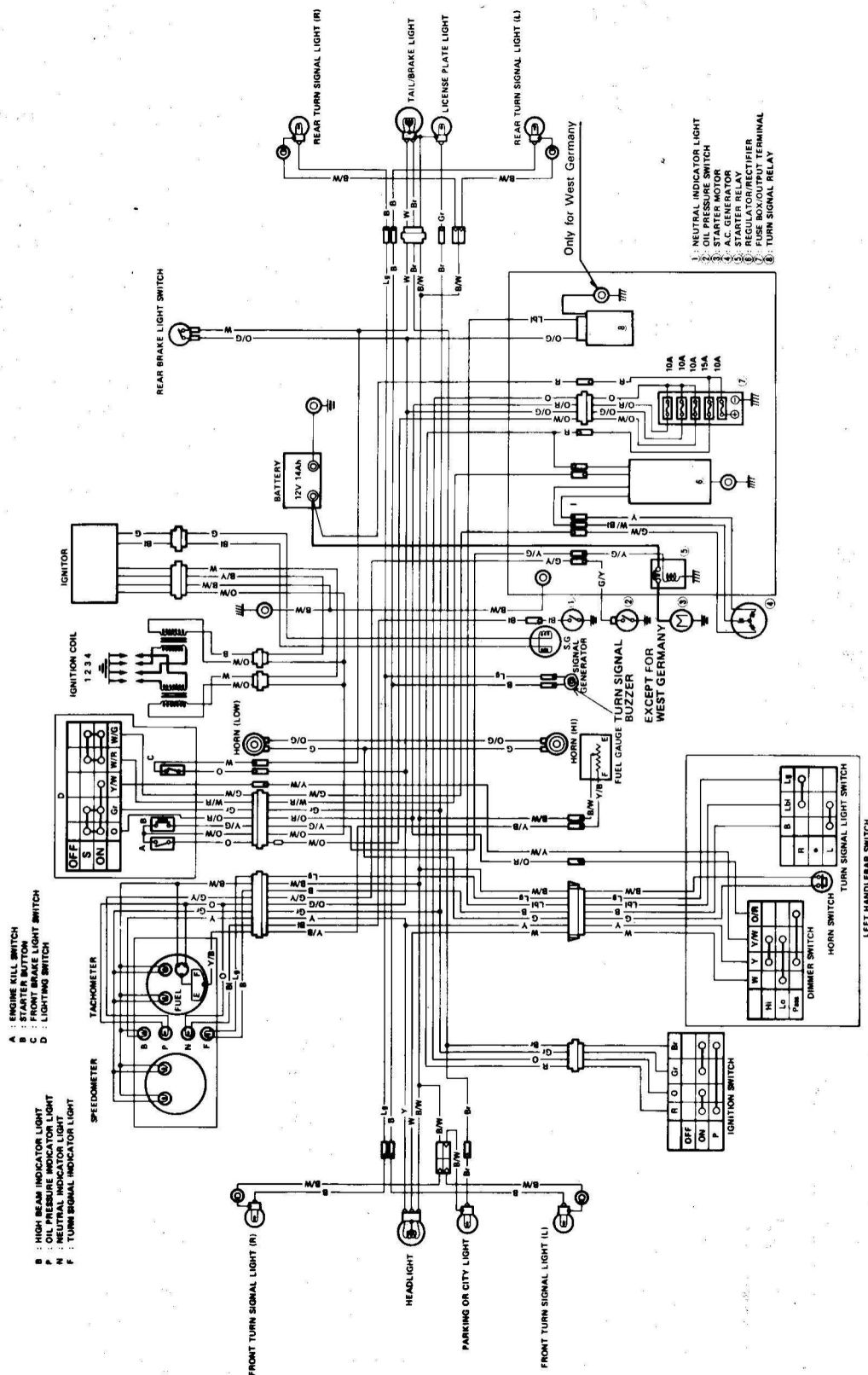




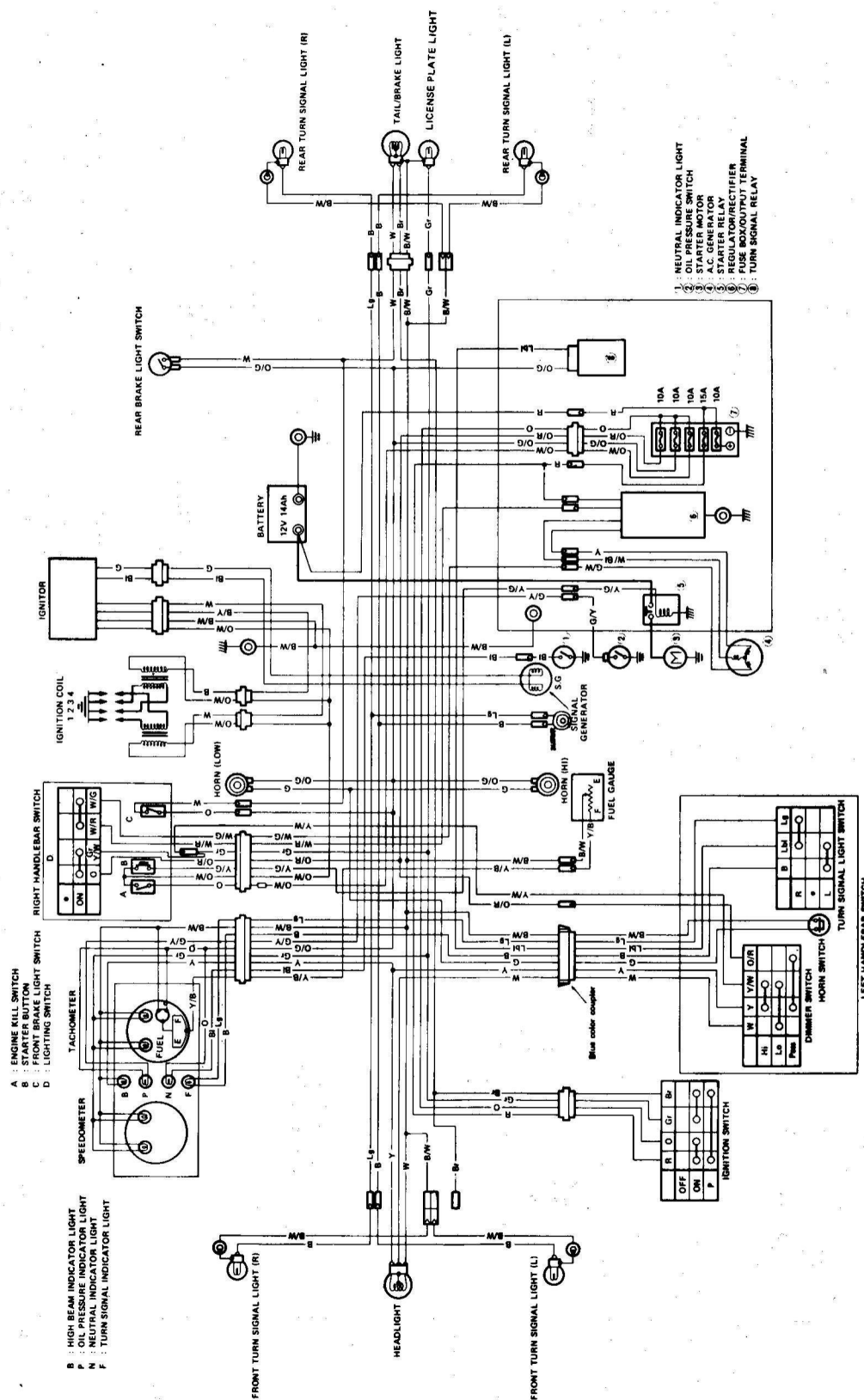
GS1000H and GS1000D (For Belgium and England)



GS1000H and GS1000D (For Austria, France, Italy, Sweden, Switzerland and West Germany)

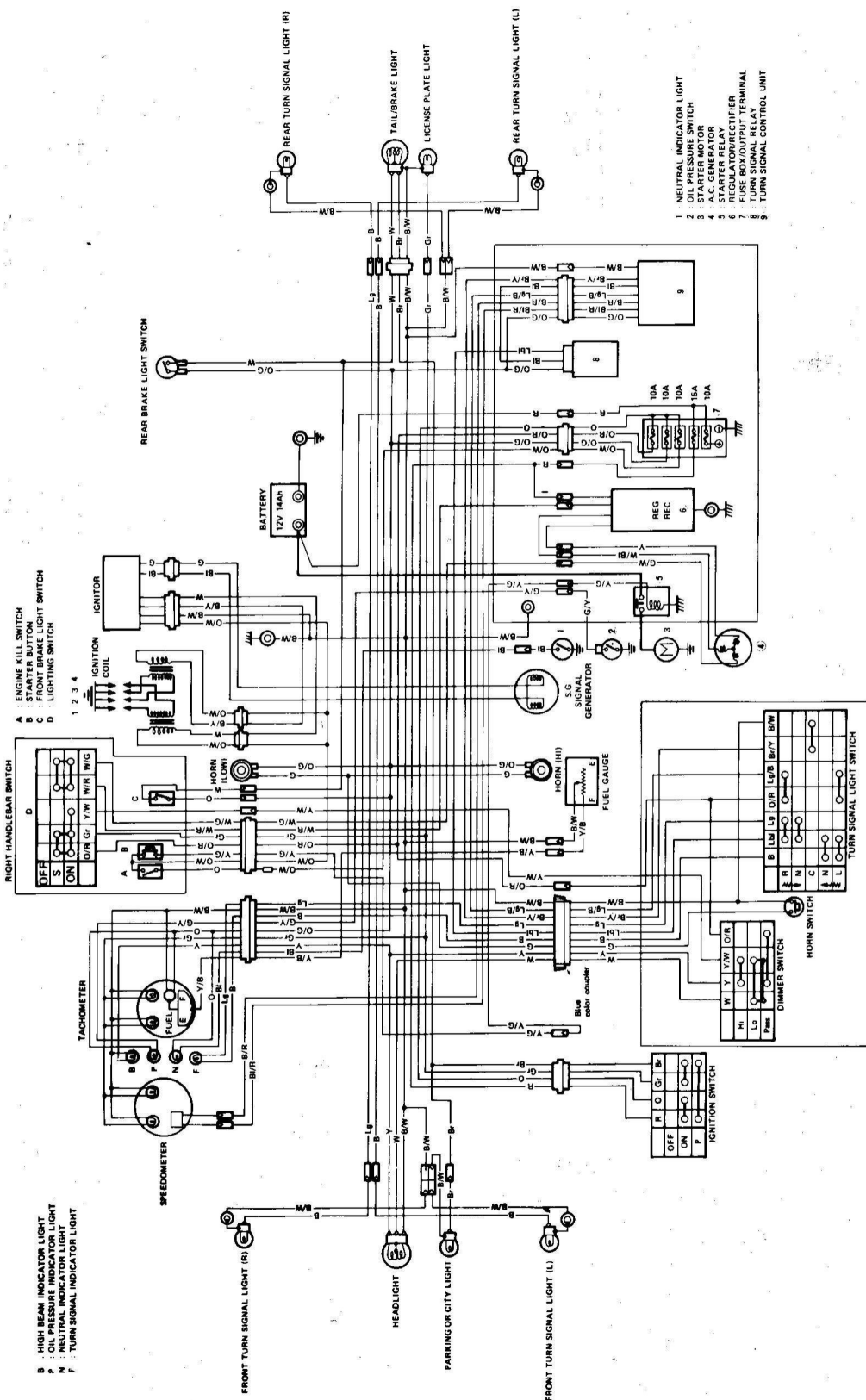


GS1000H and GS1000D (For other markets)



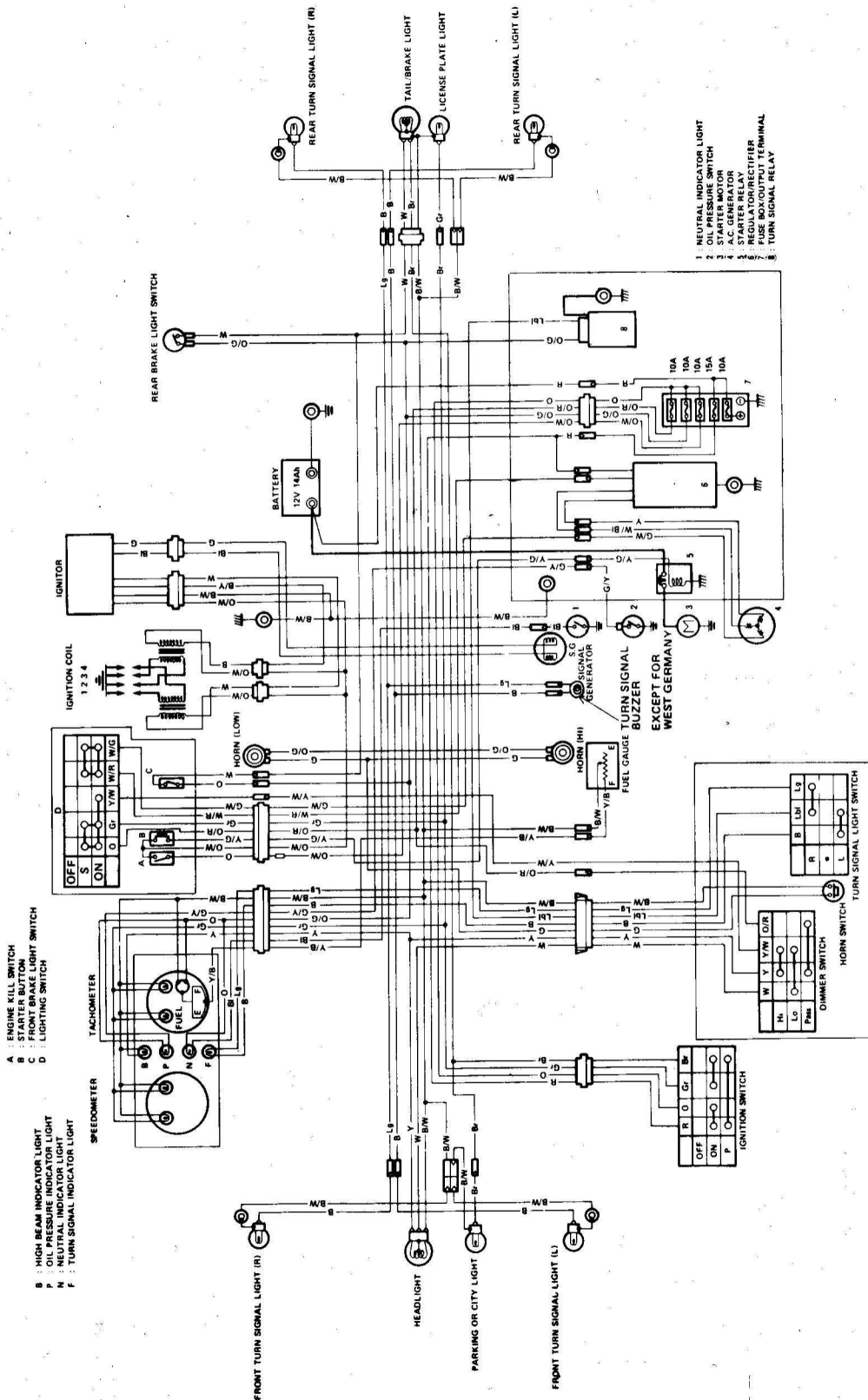
W/G	.....	White with Green tracer
W/R	.....	White with Red tracer
W/Y	.....	White with Yellow tracer
Y/B	.....	Yellow with Black tracer
Y/Bl	.....	Yellow with Blue tracer
Y/G	.....	Yellow with Green tracer
Y/R	.....	Yellow with Red tracer
Y/W	.....	Yellow with White tracer
O/R	.....	Orange with Red tracer
O/W	.....	Orange with White tracer
R/B	.....	Red with Black tracer
R/Bl	.....	Red with Blue tracer
R/G	.....	Red with Green tracer
R/Y	.....	Red with Yellow tracer
W/B	.....	White with Black tracer
W/Bl	.....	White with Blue tracer
G/Bl	.....	Green with Blue tracer
G/R	.....	Green with Red tracer
G/W	.....	Green with White tracer
G/Y	.....	Green with Yellow tracer
Gr/B	.....	Gray with Black tracer
Lg/B	.....	Light green with Black tracer
Lg/R	.....	Light green with Red tracer
O/G	.....	Orange with Green tracer
B/Y	.....	Black with Yellow tracer
Bl/R	.....	Blue with Red tracer
Bl/W	.....	Blue with White tracer
Bl/Y	.....	Blue with Yellow tracer
Br/R	.....	Brown with Red tracer
Br/W	.....	Brown with White tracer
Br/Y	.....	Brown with Yellow tracer
G/B	.....	Green with Black tracer

GS1000E (For Austria, Denmark, France, Italy, Sweden, Switzerland and the Netherlands)



WIRE COLOR	B/Y	G/B	O/R	W/G
O	Orange	Black with Yellow tracer	Orange with Red tracer	White with Green tracer
P	Pink	Blue with Red tracer	O/W	White with Red tracer
B	Black	BI/W	R/B	W/Y
Bl	Blue	BI/Y	R/B	White with Yellow tracer
W	White	BI/Y	R/B	Yellow with Black tracer
Y	Yellow	Br/R	R/B	White with Black tracer
G	Green	Br/W	R/Y	Yellow with Green tracer
Gr	Gray	Br/W	R/Y	Yellow with Green tracer
Lb	Light blue	B/R	R/Y	White with Red tracer
Lg	Light green	B/W	W/BI	Yellow with White tracer

GS1000E (For West Germany)



WIRE COLOR	WIRE COLOR	WIRE COLOR	WIRE COLOR
B Black	O/R Orange with Red tracer	G/B Green with Blue tracer	B/Y Black with Yellow tracer
BI Blue	O/W Orange with White tracer	G/R Green with Red tracer	BI/W Blue with White tracer
Br Brown	R/B Red with Black tracer	G/W Green with White tracer	BI/Y Blue with Yellow tracer
G Green	R/BI Red with Blue tracer	G/Y Green with Yellow tracer	Br/R Brown with Red tracer
Gr Gray	R/G Red with Green tracer	Gr/B Gray with Black tracer	Br/W Brown with White tracer
Lb Light blue	R/Y Red with Yellow tracer	Lg/B Light green with Black tracer	B/R Black with Red tracer
Lg Light green	W/R White with Red tracer	Lg/R Light green with Red tracer	B/W Black with White tracer
	W/Y White with Yellow tracer	O/G Orange with Green tracer	
	Y/B Yellow with Black tracer		
	Y/BI Yellow with Blue tracer		
	Y/G Yellow with Green tracer		
	Y/R Yellow with Red tracer		
	Y/W Yellow with White tracer		

B : HIGH BEAM INDICATOR LIGHT
P : OIL PRESSURE INDICATOR LIGHT
N : NEUTRAL INDICATOR LIGHT
F : TURN SIGNAL INDICATOR LIGHT



O Orange
P Pink
R Red
W White
Y Yellow
B/BI Black w
B/R Black w
B/W Black w

with Blue tracer
with Red tracer
with White tracer

B/Y Black with Yellow tracer
 BI/R Blue with Red tracer
 BI/W Blue with White tracer
 BI/Y Blue with Yellow tracer
 Br/R Brown with Red tracer
 Br/W Brown with White tracer
 Br/Y Brown with Yellow tracer
 G/B Green with Black tracer

G/BI Green with Blue tracer
G/R Green with Red tracer
G/W Green with White tracer
G/Y Green with Yellow tracer
Gr/B Gray with Black tracer
Lg/B Light green with Black tracer
Lg/R Light green with Red tracer
O/G Orange with Green tracer

O/R Orange with Red tracer
O/W Orange with White tracer
R/B Red with Black tracer
R/BI Red with Blue tracer
R/G Red with Green tracer
R/Y Red with Yellow tracer
W/B White with Black tracer
W/BI White with Blue tracer

W/G White with Green tracer
W/R White with Red tracer
W/Y White with Yellow tracer
Y/B Yellow with Black tracer
Y/BI Yellow with Blue tracer
Y/G Yellow with Green tracer
Y/R Yellow with Red tracer
Y/W Yellow with White tracer

This image shows a full page of white paper with horizontal dotted lines. The lines are evenly spaced and run across the width of the page, providing a guide for handwriting practice. There are no margins, text, or other markings on the paper.

Prepared by

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*Service Department
Overseas Operations Division*

March, 1980

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