

GSX-R1100J ('88-MODEL)

This section describes service data and service specifications which differ from those of the GSX-R1100H ('87-model).

NOTE:

Any differences between "H" ('87-model) and "J" ('88-model) in specifications and service data are clearly indicated with the asterisk marks (). Please refer to the sections 1 through 9 for details which are not given in this section.*

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SPECIFICATIONS

DIMENSIONS AND DRY MASS

Overall length	2 115 mm (83.3 in)
Overall width	745 mm (29.3 in)
Overall height	1 215 mm (47.8 in)
Wheelbase	1 460 mm (57.5 in)
Ground clearance	125 mm (4.9 in)
Seat height	795 mm (31.3 in)
Dry mass	*199 kg (438 lb)

ENGINE

Type	Four-stroke, air-cooled with SACS, DOHC, TSCC
Number of cylinders	4
Bore	76.0 mm (2.992 in)
Stroke	58.0 mm (2.283 in)
Piston displacement	1 052 cm ³ (64.2 cu.in)
Compression ratio	9.7 : 1
Carburetor	MIKUNI BST34SS, four
Air cleaner	Polyester fiber element
Starter system	Electric starter motor
Lubrication system	Wet sump

TRANSMISSION

Clutch	Wet multi-plate type, hydraulically operated
Transmission	5-speed constant mesh
Gearshift pattern	1-down, 4-up
Primary reduction ratio	1.622 (73/45)
Gear ratios, Low	2.384 (31/13)
2nd	1.631 (31/19)
3rd	1.250 (25/20)
4th	1.045 (23/22)
Top	0.913 (21/23)
Final reduction ratio	*3.214 (45/14)...E-02, 18,21,22,24,25,34,39 *3.285 (46/14)... ...Others
Drive chain	DAIDO D.I.D.532ZL or TAKASAGO RK532GSV, 114 links

CHASSIS

Front suspension	Telescopic, coil spring, oil damped, spring pre-load 4-way adjustable, damping force 3-way adjustable
Rear suspension	Full-floating suspension system, gas/oil damped, spring pre-load fully adjustable, damping force 4-way adjustable
Front suspension stroke	130 mm (5.1 in)
Rear wheel travel	126 mm (5.0 in)
Caster	63°30'
Trail	116 mm (4.6 in)
Steering angle	30° (right & left)
Turning radius	3.2 m (10.5 ft)
Front brake	Disc, twin
Rear brake	Disc
Front tire	110/80VR18 V260
Rear tire	*160/60VR18 V260

ELECTRICAL

Ignition type	Transistorized
Ignition timing	13° B.T.D.C. below 1 500 rpm and 35° B.T.D.C. above 2 350 rpm
Spark plug	NGK J9A...E-24,34 NGK JR9A...Others
Battery	12V 50.4 kC (14Ah)/10 HR
Generator	Three phase A.C. generator
Circuit breaker	30 A
Fuse	10/10/10/10/10A

CAPACITIES

Fuel tank, including reserve	21.0 L (5.5 US gal)... ...E-02, 24 19.0 L (5.0 US gal)... ...Others
reserve	4.5 L (4.8 US qt)
Engine oil, oil change with filter change	3 400 ml (3.6 US qt) 3 700 ml (3.9 US qt)

- These specifications are subject to change without notice.
- Asterisk mark (*) indicates the new J model specifications.

SERVICE DATA

VALVE + GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	28.5 (1.12)	—
	EX.	25 (1.0)	—
Valve lift	IN.	8.8 (0.35)	—
	EX.	8.2 (0.32)	—
Valve clearance (when cold)	IN. & EX.	0.10–0.15 (0.004–0.006)	—
Valve guide to valve stem clearance	IN.	0.020–0.047 (0.0008–0.0019)	0.35 (0.014)
	EX.	0.040–0.067 (0.0016–0.0026)	0.35 (0.014)
Valve guide I.D.	IN. & EX.	5.000–5.012 (0.1969–0.1973)	—
Valve stem O.D.	IN.	4.965–4.980 (0.1955–0.1961)	—
	EX.	4.945–4.960 (0.1947–0.1953)	—
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve stem end length	IN. & EX.	—	2.5 (0.10)
Valve seat width	IN. & EX.	0.9–1.1 (0.035–0.043)	—
Valve head radial runout	IN. & EX.	—	0.03 (0.001)
Valve spring free length (IN. & EX.)	INNER	—	35.0 (1.38)
	OUTER	—	37.8 (1.49)
Valve spring tension (IN. & EX.)	INNER	5.3–6.5 kg (11.7–14.3 lbs) at length 28 mm (1.1 in)	—
	OUTER	13.1–15.1 kg (28.9–33.3 lbs) at length 31.5 mm (1.2 in)	—

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN.	33.878–33.918 (1.3338–1.3354)	33.580 (1.3220)
	EX.	33.533–33.573 (1.3202–1.3218)	33.240 (1.3087)
Camshaft journal oil clearance	IN. & EX.	0.032–0.066 (0.0013–0.0026)	0.150 (0.0059)

ITEM	STANDARD		LIMIT
Camshaft journal holder I.D.	IN. & EX.	22.012–22.025 (0.8666–0.8671)	—
Camshaft journal O.D.	IN. & EX.	21.959–21.980 (0.8645–0.8654)	—
Camshaft runout	IN. & EX.	—	0.10 (0.004)
Cam chain 20-pitch length	—		158.0 (6.22)
Cam chain pin (at arrow "3")	22nd pin		—
Rocker arm I.D.	IN. & EX.	12.000–12.018 (0.4724–0.4731)	—
Rocker arm shaft O.D.	IN. & EX.	11.973–11.984 (0.4714–0.4718)	—
Cylinder head distortion	—		0.20 (0.008)

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD			LIMIT
Compression pressure	1 000–1 400 kPa 10–14 kg/cm ² 142–199 psi			800 kPa 8 kg/cm ² 114 psi
Compression pressure difference	—			200 kPa 2 kg/cm ² 28 psi
Piston to cylinder clearance	0.055–0.065 (0.0021–0.0025)			0.120 (0.0047)
Cylinder bore	76.000–76.015 (2.7921–2.9927)			76.075 (2.9951)
Piston diam.	75.940–75.955 (2.9898–2.9903) Measure at 15 mm (0.6 in) from the skirt end.			75.880 (2.9874)
Cylinder distortion	—			0.20 (0.008)
Piston ring free end gap	1st	R	Approx. 8.4 (0.33)	6.7 (0.26)
	2nd	R	Approx. 8.2 (0.32)	6.6 (0.26)
Piston ring end gap	1st	0.2–0.35 (0.008–0.014)		0.7 (0.03)
	2nd	0.2–0.35 (0.008–0.014)		0.7 (0.03)
Piston ring to groove clearance	1st	—		0.18 (0.007)
	2nd	—		0.15 (0.006)
Piston ring groove width	1st	1.01–1.03 (0.040–0.041)		—
	2nd	1.01–1.03 (0.040–0.041)		—
	Oil	2.01–2.03 (0.079–0.080)		—

ITEM	STANDARD		LIMIT
Piston ring thickness	1st	0.97–0.99 (0.038–0.039)	—
	2nd	0.97–0.99 (0.038–0.039)	—
Piston pin bore	20.002–20.008 (0.7875–0.7877)		20.030 (0.7886)
Piston pin O.D.	19.996–20.000 (0.7872–0.7874)		19.980 (0.7866)

CONROD + CRANKSHAFT

Unit: mm (in)

ITEM	STANDARD		LIMIT
Conrod small end I.D.	20.010–20.018 (0.7878–0.7881)		20.040 (0.7890)
Conrod big end side clearance	0.10–0.20 (0.004–0.008)		0.30 (0.01)
Conrod big end width	20.95–21.00 (0.825–0.827)		—
Crank pin width	21.10–21.15 (0.831–0.833)		—
Conrod big end oil clearance	0.032–0.056 (0.0013–0.0022)		0.080 (0.0031)
Crank pin O.D.	37.976–38.000 (1.4951–1.4961)		—
Crankshaft journal oil clearance	0.020–0.044 (0.0008–0.0017)		0.080 (0.0031)
Crankshaft journal O.D.	35.976–36.000 (1.4164–1.4173)		—
Crankshaft thrust clearance	* 0.05–0.13 (0.002–0.005)		—
Crankshaft thrust bearing thickness	Left side	* 2.36–2.48 (0.093–0.098)	—
	Right side	* 2.42–2.44 (0.095–0.096)	—
Crankshaft runout	—		0.05 (0.002)

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	1.885 (73/45 × 43/37)	—
Oil pressure (at 60°C, 140°F)	Above 300 kPa (3.0 kg/cm ² , 43 psi) Below 600 kPa (6.0 kg/cm ² , 85 psi) at 3 000 r/min.	—

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Drive plate thickness	2.52–2.68 (0.100–0.106)	2.22 (0.087)
Driven plate distortion	—	0.10 (0.004)

Asterisk mark (*) indicates the new J model specifications.

ITEM	STANDARD	LIMIT
Clutch spring free length	—	34.0 (1.34)
Clutch master cylinder bore	14.000–14.043 (0.5511–0.5529)	—
Clutch master cylinder piston diam.	13.957–13.984 (0.5495–0.5506)	—
Clutch release cylinder bore	35.700–35.762 (1.4055–1.4079)	—
Clutch release cylinder piston diam.	35.650–35.675 (1.4035–1.4045)	—

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM	STANDARD	LIMIT
Primary reduction ratio	1.622 (73/45)	—
Final reduction ratio	E-02,18,21,22, 24,25,34,39 * 3.214 (45/14)	—
	The others * 3.285 (46/14)	—
Gear ratios	Low 2.384 (31/13)	—
	2nd 1.631 (31/19)	—
	3rd 1.250 (25/20)	—
	4th 1.045 (23/22)	—
	Top 0.913 (21/23)	—
Shift fork to groove clearance	No.1, No.2 & No.3 0.1–0.3 (0.004–0.012)	0.50 (0.020)
Shift fork groove width	No.1, No.2 & No.3 5.0–5.1 (0.197–0.201)	—
Shift fork thickness	No.1, No.2 & No.3 4.8–4.9 (0.189–0.193)	—
Drive chain	Type DAIDO: DID532ZL TAKASAGO: RK532GSV	—
	Links 114 links	—
	20-pitch length —	319.4 (1.26)
Drive chain slack	20–25 (0.8–1.0)	—

CARBURETOR

ITEM	SPECIFICATION				
I.D. No.	* 06B60	* 06B80	* 06B90	* 07B00	* 07B10
Carburetor type	MIKUNI BST34SS	←	←	←	←
Bore size	34 mm (1.3 in)	←	←	←	←
Idle r/min.	1 100 ± 100 r/min.	←	←	←	←
Fuel level	1.5 ± 0.5 mm (0.06 ± 0.02 in)	←	←	←	←
Float height	14.6 ± 1.0 mm (0.58 ± 0.04 in)	←	←	←	←

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ITEM		SPECIFICATION				
Main jet	(M.J.)	#130	←	#127.5	#130	←
Main air jet	(M.A.J.)	0.6 mm	←	←	←	←
Jet needle	(J.N.)	4D 13-3	5D 36-3	4D 13-3	←	←
Needle jet	(N.J.)	O-9	P-2	O-9	←	←
Throttle valve	(Th.V.)	#130	#125	#130	←	←
Pilot jet	(P.J.)	#42.5	#32.5	#42.5	←	←
By-pass	(B.P.)	0.8,0.8,0.8 mm	←	←	←	←
Pilot outlet	(P.O.)	0.7 mm	0.8 mm	0.7 mm	←	←
Valve seat	(V.S.)	2.0 mm	←	←	←	←
Starter jet	(G.S.)	#42.5	←	←	←	←
Pilot screw	(P.S.)	2.0 turns out	2 1/2 turns out	2 turns out	1 1/2 turns out	2 turns out
Pilot air jet	(P.A.J.)	#150	#125	#150	←	←
Throttle cable play		0.5—1.0 mm (0.02—0.04 in)	←	←	←	←

ELECTRICAL

Unit: mm (in)

ITEM		SPECIFICATION		NOTE
Ignition timing		13° B.T.D.C. Below 1 500 r/min. and 35° B.T.D.C. Above 2 350 r/min.		
Firing order		1-2-4-3		
Spark plug		Type	NGK: J9A	E-24, 34
			NGK: JR9A	E-02,04,06,15, 16,17,18,21,22, 25,28,39,53
		Gap	0.6—0.7 (0.024—0.028)	
Spark performance		Over 8 (0.3) at 1 atm.		
Signal coil resistance		Approx. 130—180 Ω		Tester range: (× 100 Ω)
Ignition coil resistance		Primary	⊕ tap— ⊖ tap Approx. 3—5 Ω	Tester range: (× 1 Ω)
		Secondary	Plug cap—Plug cap Approx. 25—45 kΩ	Tester range: (× 1 kΩ)
Generator		Slip ring O.D.	Limit: 14.0 (0.55)	N.D.
		Brush length	Limit: 4.5 (0.18)	
Regulated voltage		Above 13.5 V at 5 000 r/min.		
Starter motor		Brush length	Limit: 6 (0.2)	MITSUBA
		Commutator under-cut	Limit: 0.2 (0.008)	
Starter relay resistance		3—5 Ω		
Battery	Type designation	YB14L-A2		
	Capacity	12 V 50.4 kC (14 Ah)/10 HR		
	Standard electrolyte S.G.	1.28 at 20°C (68°F)		

ITEM		SPECIFICATION	NOTE
Fuse size	Headlight	10 A	
	Turn signal	10 A	
	Ignition	10 A	
	Taillight	10 A	
	Power source	10 A	

WATTAGE

Unit: W

ITEM		SPECIFICATION					
		E-02,16, 21	E-06,24	E-28	E-04,15, 17,22, 25,39, 53	E-18	E-34
Headlight (HI/LO)	RH	60/55	←	←	55	60/55	35/55
	LH	60/55	←	←	←		35/55
Parking or position light		4			4	←	←
Tail/Brake light		5/21	←	8/23	5/21	←	←
Turn signal light		21	21	23	21	←	←
Speedometer light		3	←	←	←	←	←
Tachometer light		3	←	←	←	←	←
Turn signal indicator light		1.7	←	←	←	←	←
High beam indicator light		1.7	←	←	←	←	←
Neutral indicator light		3	←	←	←	←	←
Oil pressure indicator light		1.7	←	←	←	←	←
License light		5	←	8	5	←	←

BRAKE + WHEEL

Unit: mm (in)

ITEM	STANDARD		LIMIT
Rear brake pedal height	55 (2.2)		—
Brake disc thickness	Front	4.5 ± 0.2 (0.177 ± 0.008)	4.0 (0.15)
	Rear	6.0 ± 0.2 (0.236 ± 0.008)	5.5 (0.22)
Brake disc runout	—		0.30 (0.012)
Master cylinder bore	Front	15.870–15.913 (0.6248–0.6265)	—
	Rear	12.700–12.743 (0.5000–0.5017)	—
Master cylinder piston diam.	Front	15.827–15.854 (0.6231–0.6242)	—
	Rear	12.657–12.684 (0.4983–0.4994)	—
Brake caliper cylinder bore	Front	32.030–32.106 (1.2610–1.2640)	—
	Rear	38.180–38.256 (1.5031–1.5061)	—

ITEM	STANDARD		LIMIT
Brake caliper piston diam.	Front	31.995–32.000 (1.2596–1.2598)	—
	Rear	38.098–38.148 (1.5000–1.5019)	—
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	110/80VR18 V260	—
	Rear	* 160/60VR18 V260	—
Tire tread depth	Front	—	1.6 (0.06)
	Rear	—	2.0 (0.08)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	130 (5.12)	—	
Front fork spring free length	—	463 (18.2)	
Front fork oil level	159 (6.26)	—	
Rear wheel travel	126 (4.96)	—	
Swingarm pivot shaft runout	—	0.3 (0.01)	

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kg/cm ²	psi	kPa	kg/cm ²	psi
FRONT	250	2.50	36	250	2.50	36
REAR	250	2.50	36	290	2.90	42

FUEL + OIL

ITEM	SPECIFICATION	NOTE
Fuel type	Use only unleaded or low-lead type gasoline of at least 85-95 pump octane ($\frac{R+M}{2}$ method) or 89 octane or higher rated by the Research Method.	E-28
	Gasoline used should be graded 85-95 octane or higher. An unleaded or low-lead type gasoline is recommended.	The others

Asterisk mark (*) indicates the new J model specifications.

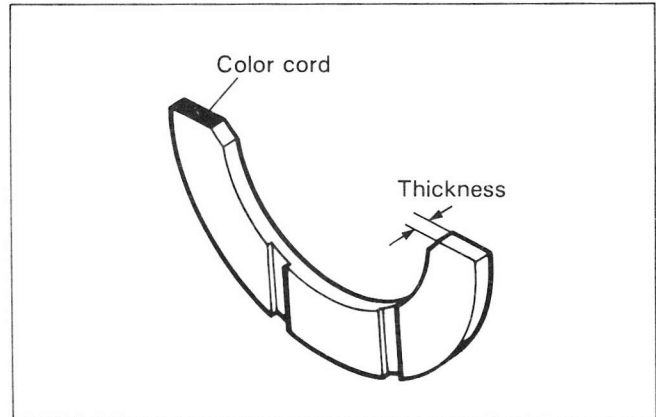
ITEM	SPECIFICATION		NOTE
Fuel tank including reserve reserve	21.0 L (5.5 US gal)		E-02, 24
	19.0 L (5.0 US gal)		The others
	4.5 L (4.8 US qt)		
Engine oil type	SAE 10W/40, API SE or SF		
Engine oil capacity	Change	3 400 ml (3.6 US qt)	
	Filter change	3 700 ml (3.9 US qt)	
	Overhaul	4 700 ml (5.0 US qt)	
Front fork oil type	Fork oil #15		E-28
	Fork oil #10		The others
Front fork oil capacity (each leg)	417 ml (14.1 US oz)		
Brake fluid type	DOT3, DOT4 or SAE J1703		

CHANGES

The following changes have been made, beginning with the GSX-R1100J (1988-model).

CRANKSHAFT THRUST BEARING

The thickness of crankshaft thrust bearings has been changed. In accordance with this change, the crankshaft thrust clearance has been changed.



Thrust bearing selection table (For '86-model and '87-model)

Clearance before inserting left-side thrust bearing	Color (Part No.)	Thrust bearing thickness	Thrust clearance
2.43—2.49 mm (0.096—0.098 in)	Black (12228-06B00-OC0)	2.33—2.39 mm (0.092—0.094 in)	0.04—0.16 mm (0.002—0.006 in)
2.49—2.55 mm (0.098—0.100 in)	Green (12228-06B00-OB0)	2.39—2.45 mm (0.094—0.096 in)	
2.55—2.62 mm (0.100—0.103 in)	Red (12228-06B00-0A0)	2.45—2.51 mm (0.096—0.099 in)	

Thrust bearing selection table (For '88-model)

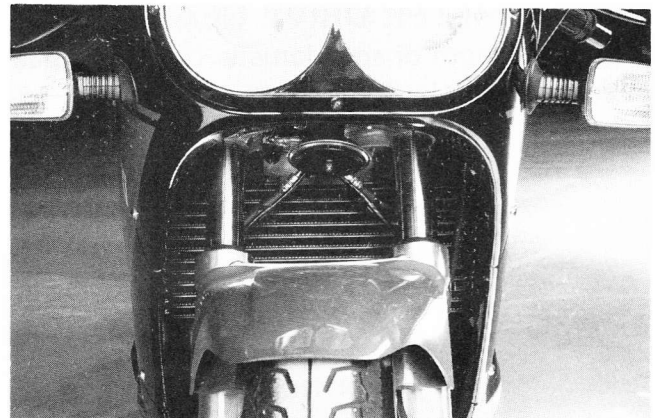
Clearance before inserting left-side thrust bearing	Color (Part No.)	Thrust bearing thickness	Thrust clearance
2.44—2.49 mm (0.096—0.098 in)	Black (12228-48B00-OH0)	2.36—2.38 mm (0.093—0.094 in)	0.06—0.13 mm (0.002—0.005 in)
2.49—2.54 mm (0.098—0.099 in)	Green (12228-48B00-OEO)	2.42—2.44 mm (0.095—0.096 in)	0.05—0.12 mm (0.002—0.005 in)
2.54—2.59 mm (0.099—0.101 in)	Red (12228-48B00-OC0)	2.46—2.48 mm (0.097—0.098 in)	0.06—0.13 mm (0.002—0.005 in)

NOTE:

Right-side thrust bearing has the same specification as the GREEN of left-side thrust bearing.

OIL COOLER

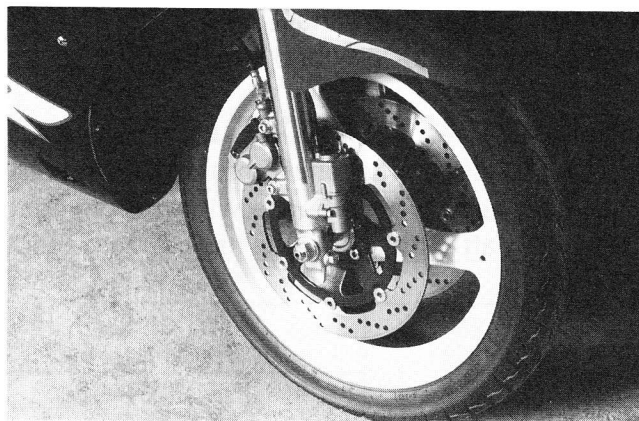
The oil cooling capacity has been increased by 7% for cooling efficiency.



WHEEL AND WHEEL HUB BEARING

The wing-shaped/cavity spoke wheels have been attached.

The load capacity of wheel hub bearings has been increased.



TIRE

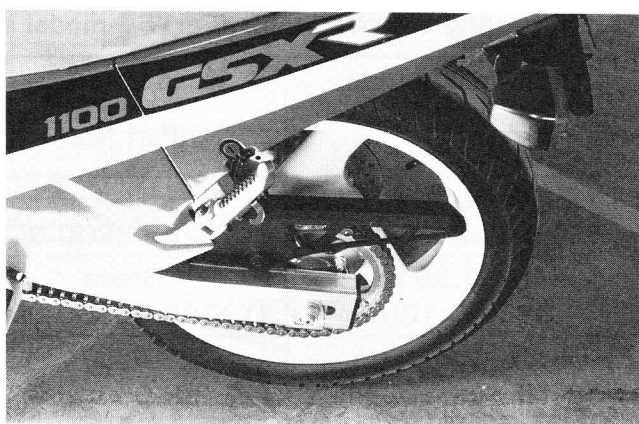
Wheel from 4" to 4.5"

The rear tire size has been changed as follows.

150/70 VR18 V260



160/60 VR18 V260



Rear suspension setting table has been changed in accordance with the rear tire size.

REAR SUSPENSION SETTING TABLE

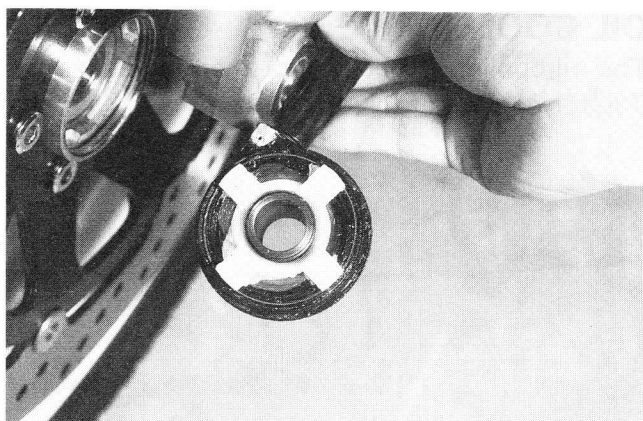
ITEM	Damping force		Spring pre-load	Remarks
	E-28	Others		
Standard	4	2	177.5 mm (6.99 in)	Soloriding
Softer	3	1	179.0 mm (7.05 in)	Soloriding
Stiffer	4	3	176.0 mm (6.93 in)	Soloriding
Dual riding	4	3	174.5 mm (6.87 in)	—

CAUTION:

Do not set the spring to a length less than 167 mm (6.58 in) or more than 185 mm (7.28 in).

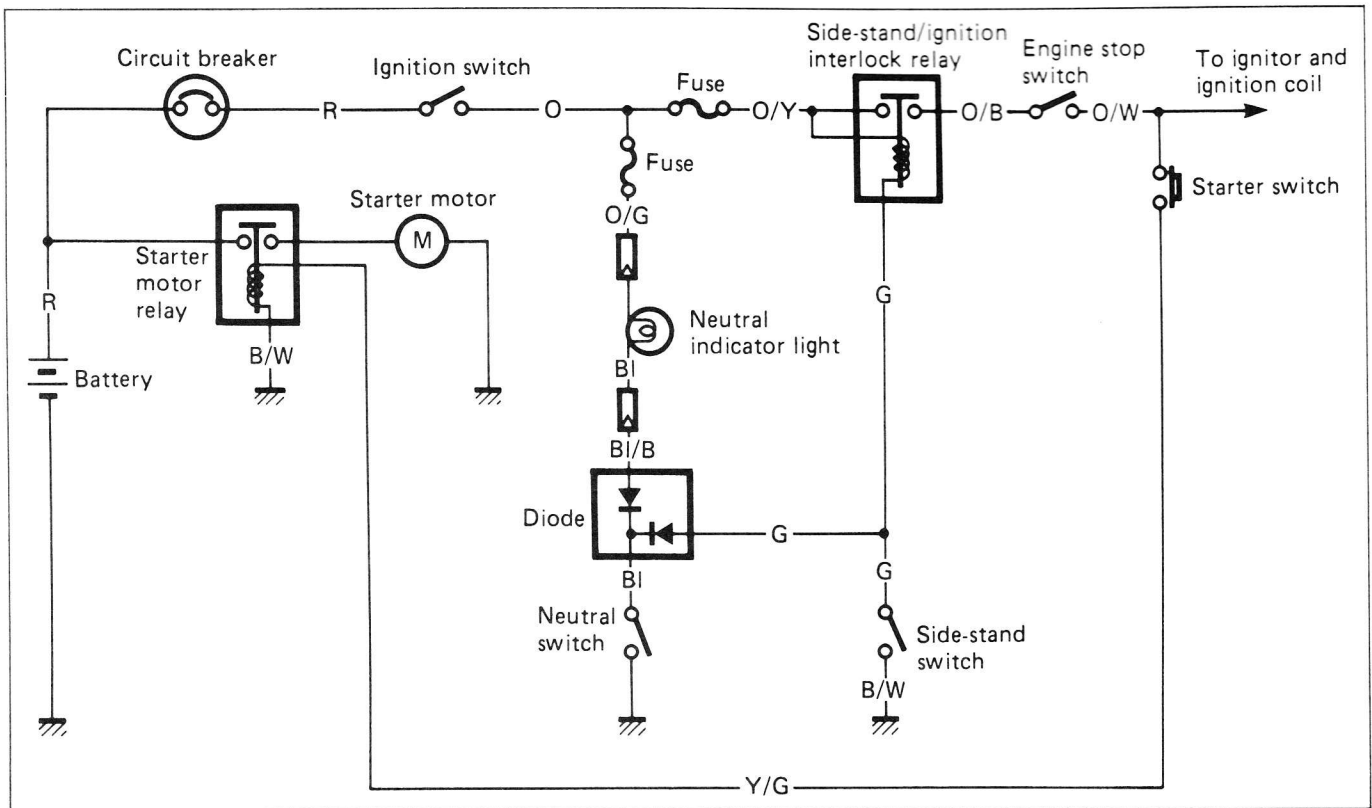
SPEEDOMETER DRIVE GEAR

The pawl length of speedometer drive gear has been increased by 2 mm.



SIDE-STAND/IGNITION INTERLOCK SYSTEM

This side-stand/ignition interlock system has been newly attached to prevent starting the motorcycle with the side-stand left down. The system is operated by an electric circuit provided between the battery and ignition coil. *NOTE: For Canada model, this system has been attached since H ('87) model.*

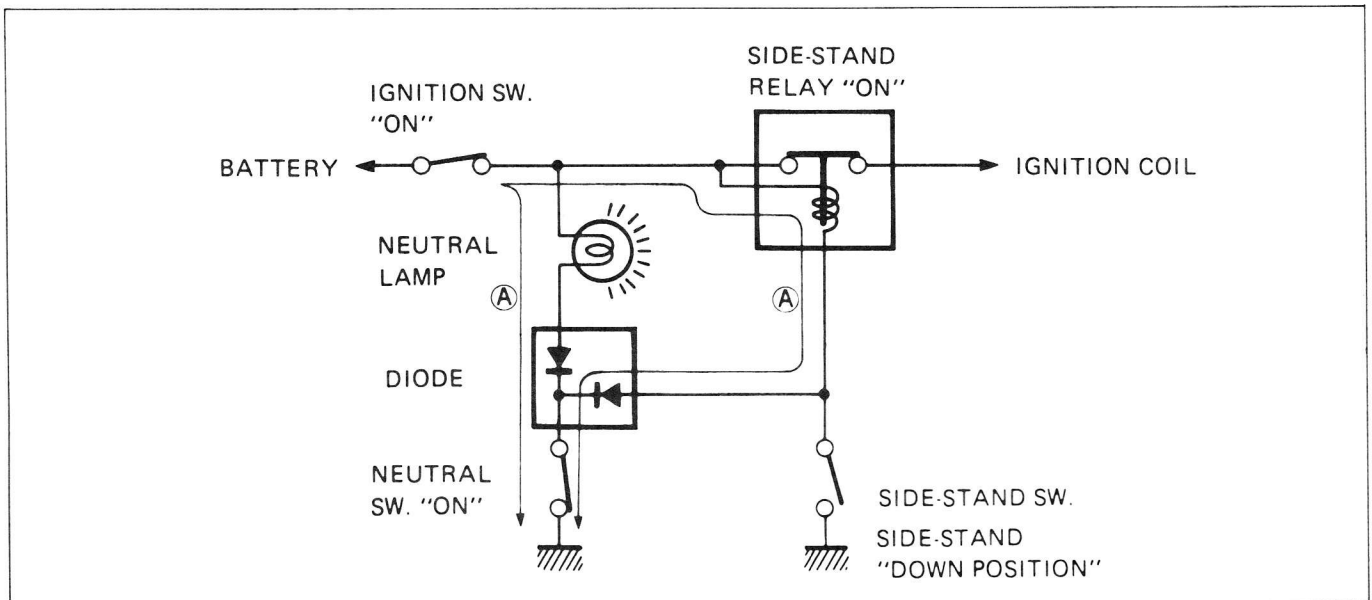


The circuit consists of relay, lamp, diode and switches and decides to live the ignition coil depending on the position of the TRANSMISSION and SIDE-STAND with the neutral and side-stand switches working mutually.

The ignition coil lives only in two situations as follows:

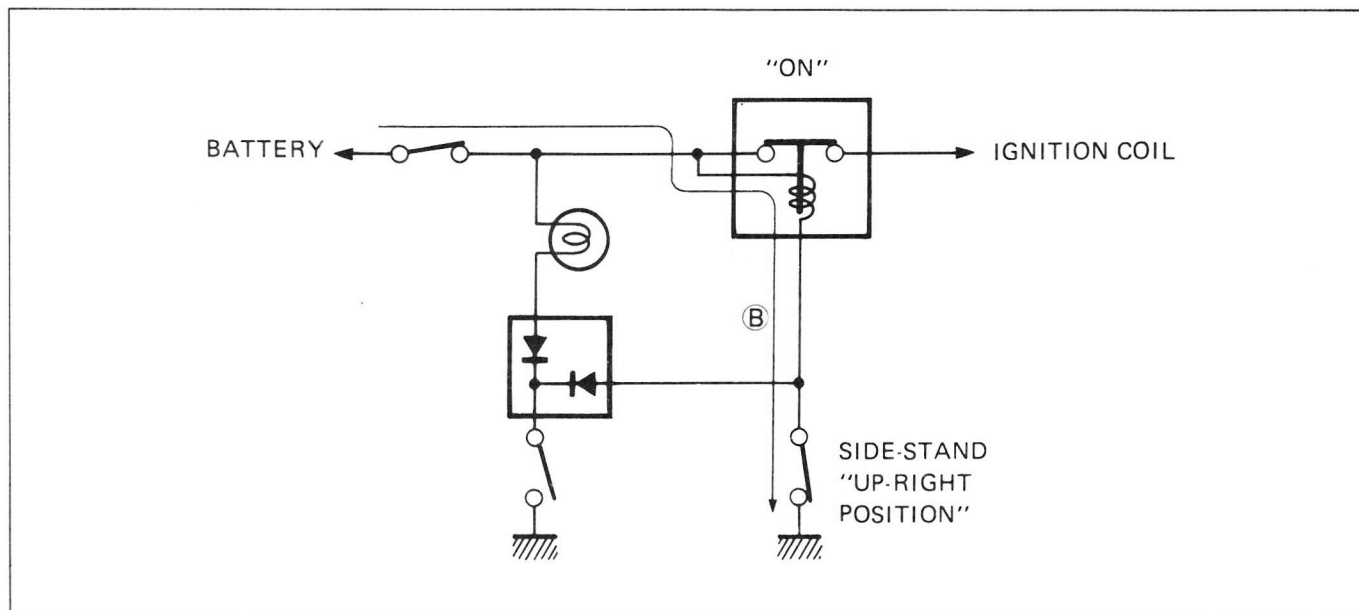
1. Transmission: "NEUTRAL (ON)" Side-stand: "DOWN (OFF)"

The current flow **(A)** turns "ON" the relay and the ignition coil lives even the side-stand is kept down. This is for warming up the engine.



2. Side-stand: "UP-RIGHT (ON)"

The current flow ⑥ turns "ON" the relay and the ignition coil lives. The engine can be easily started at any transmission position.



INSPECTION

If the interlock system does not operate properly, check each component. If any abnormality is found, replace the component with a new one.

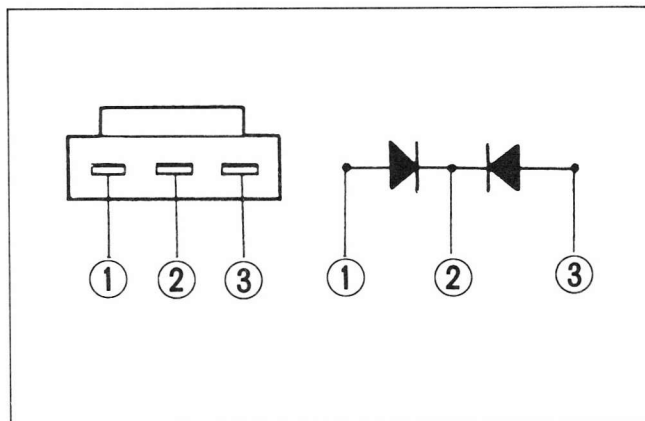
09900-25002

Pocket tester

Diode

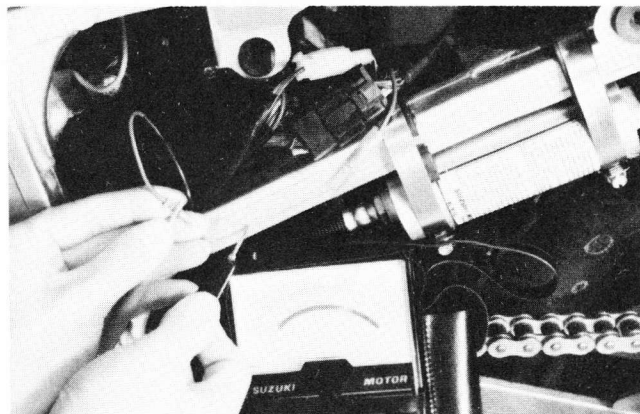
The diode can pass current only in one direction.

- Check the continuity between ① and ②. If one way continuity the diode is in good condition.
- Also check the continuity between ② and ③ as required.



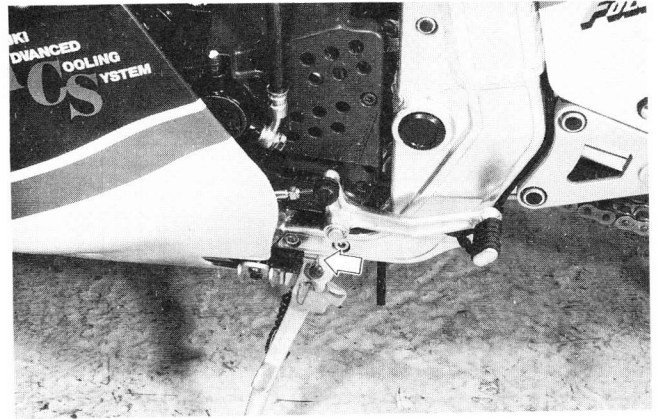
Neutral switch

- Disconnect the neutral switch lead and check the continuity between BI and ground with the transmission in "NEUTRAL"

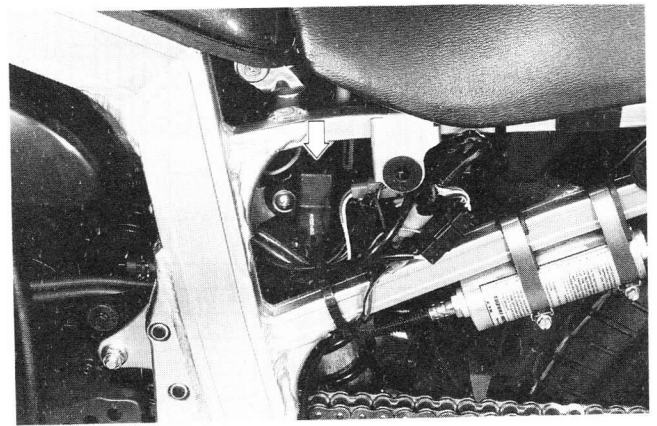


Side-stand switch

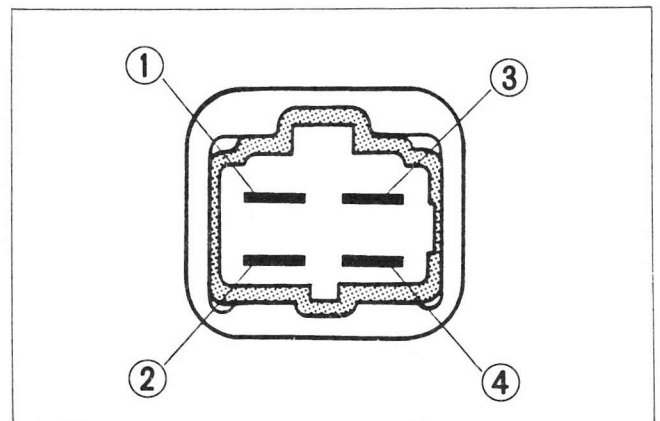
	G	B/W
ON (Upright position)		
OFF (Down position)		

**Side-stand/ignition interlock relay**

The side-stand/ignition interlock relay is located behind the left frame cover.

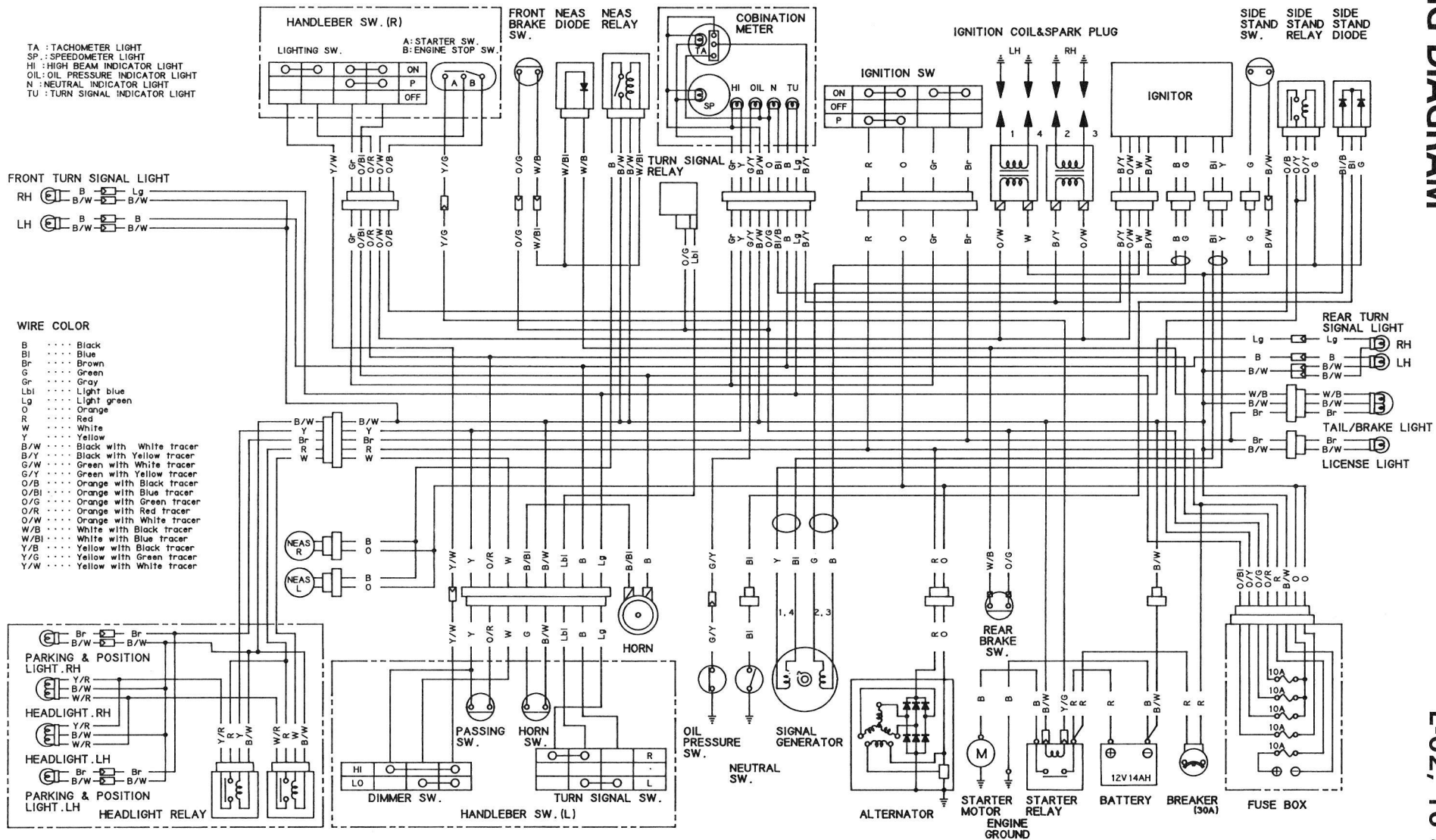


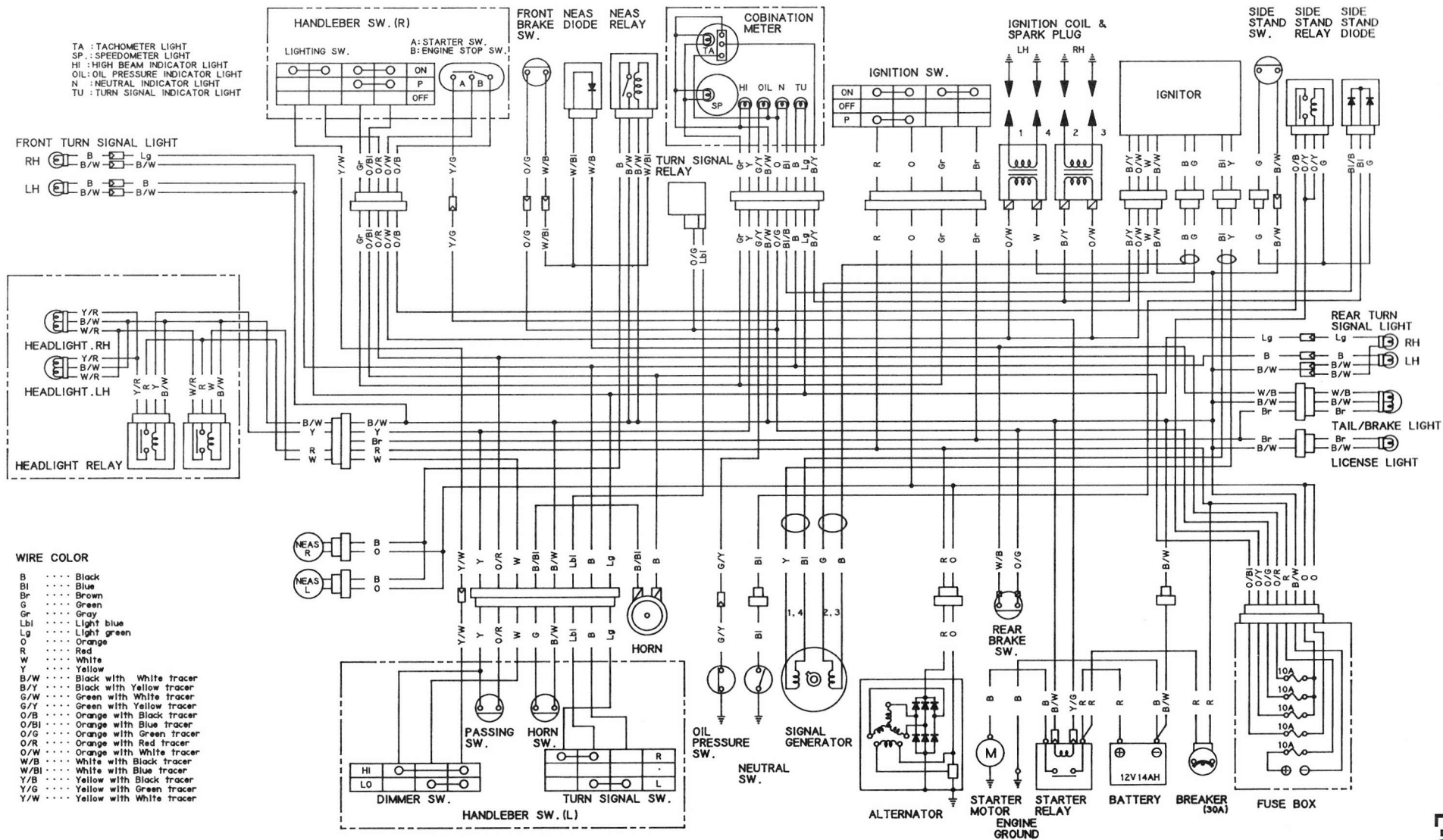
First, check the insulation between ① and ② terminals with pocket tester. Then apply 12 volts to ③ and ④ terminals, $\oplus$ to ③ and $\ominus$ to ④, and check the continuity between ① and ②. If there is no continuity, replace it with a new one.

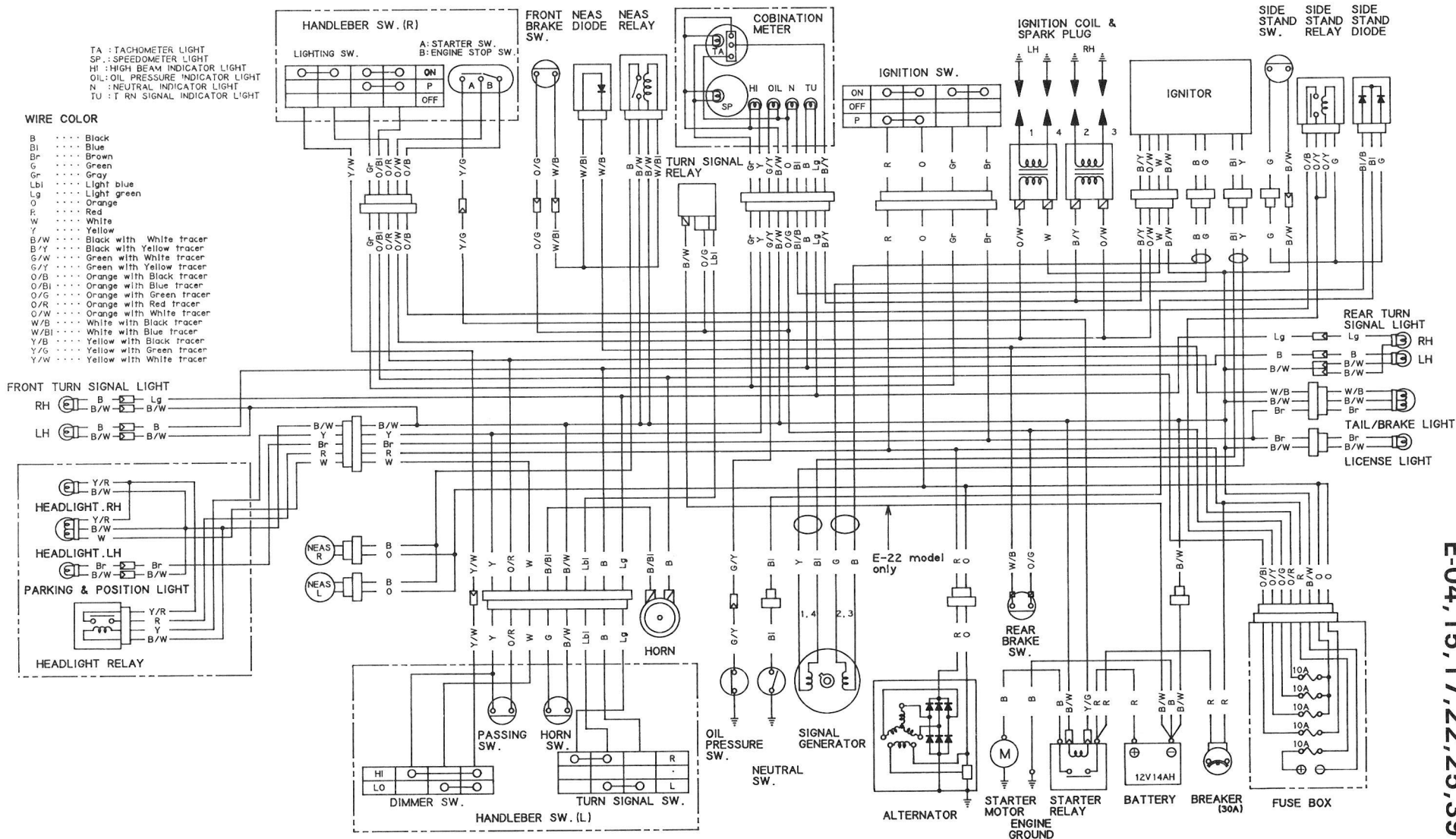


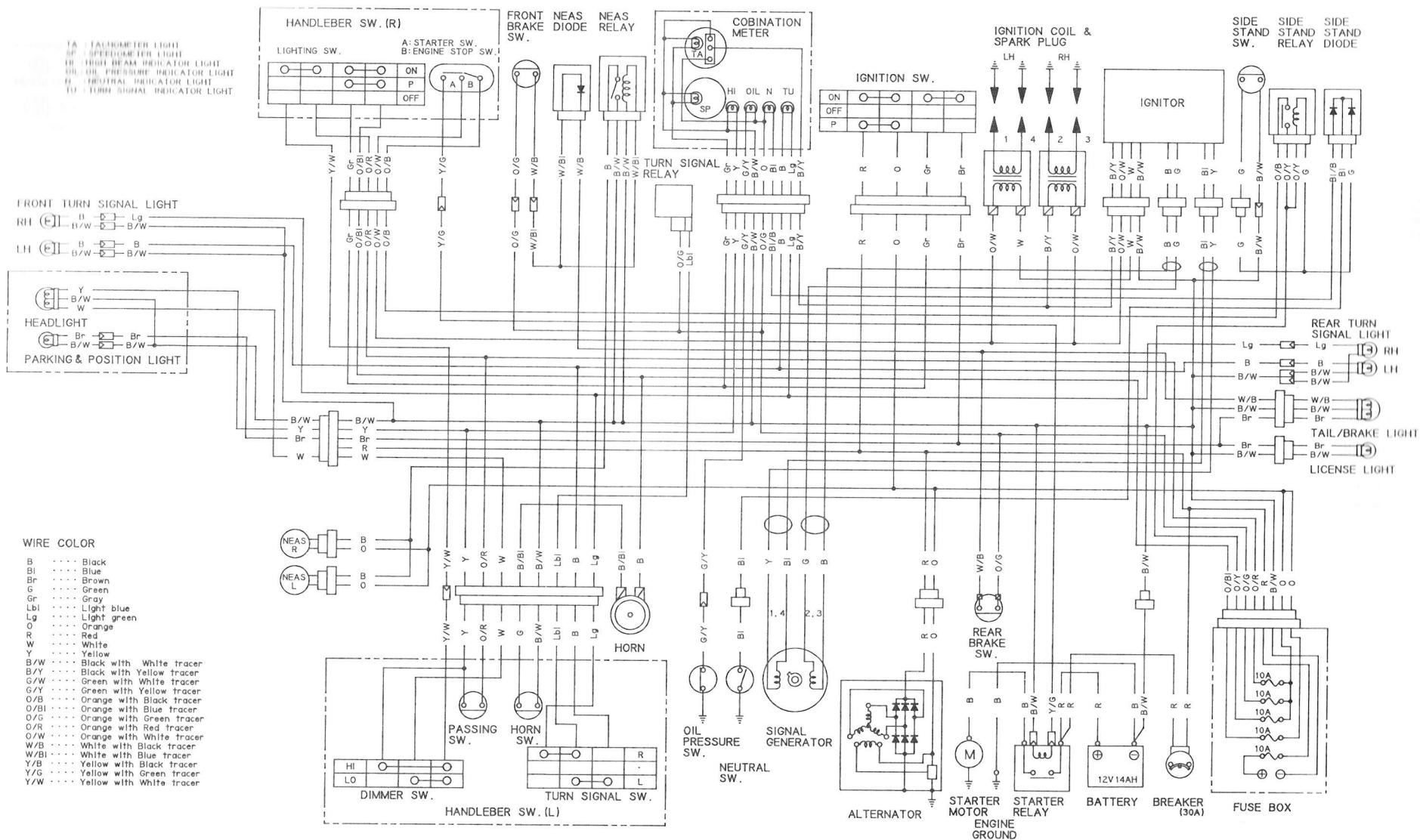
WIRING DIAGRAM

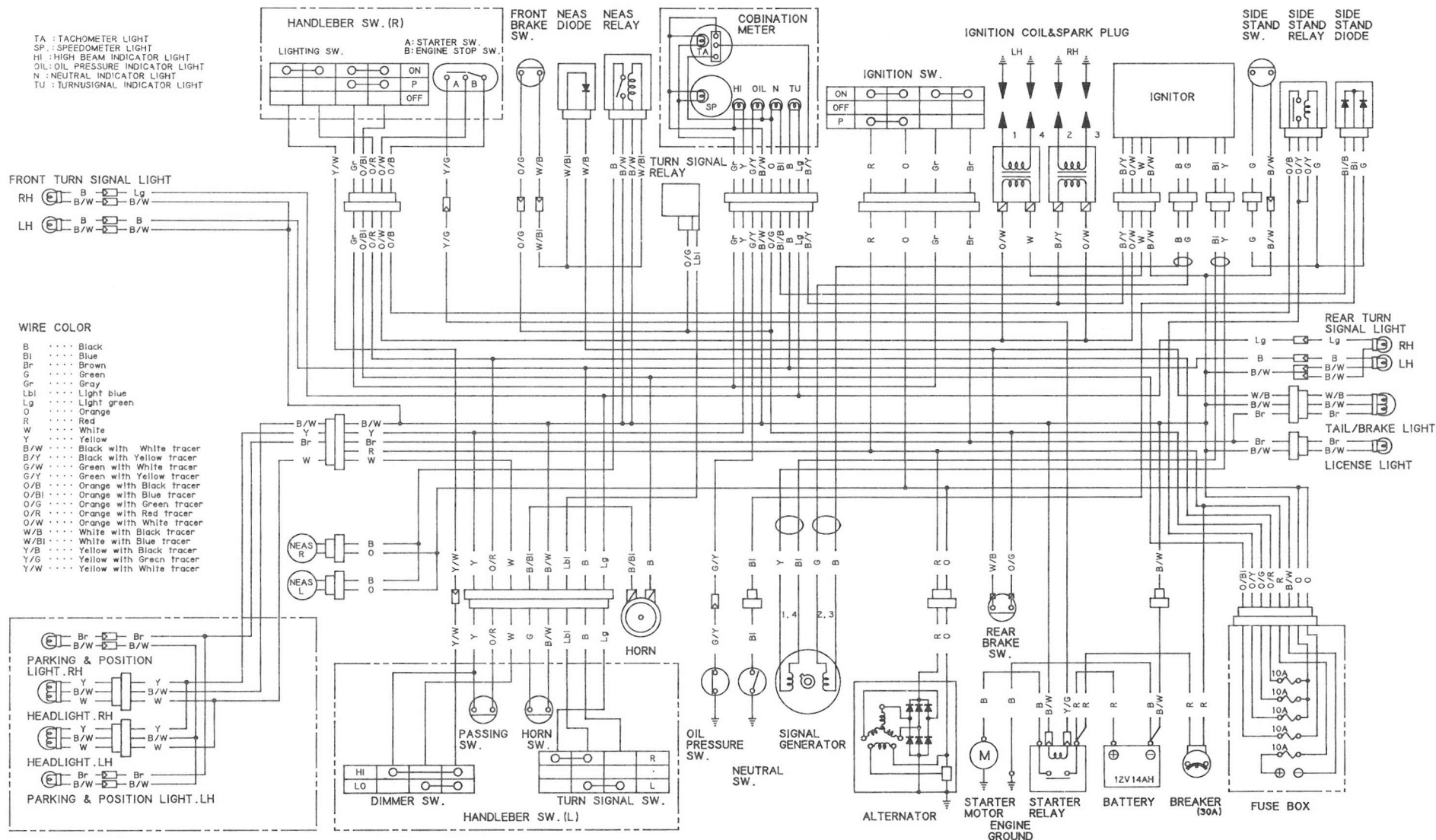
E-02, 16 and 21



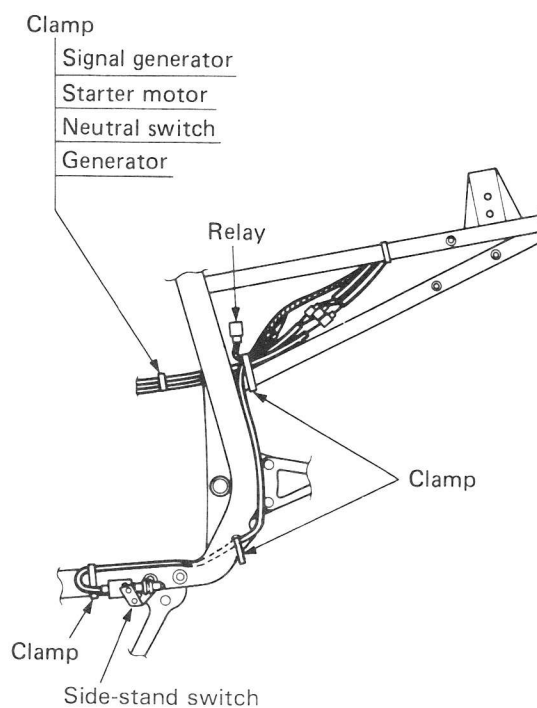
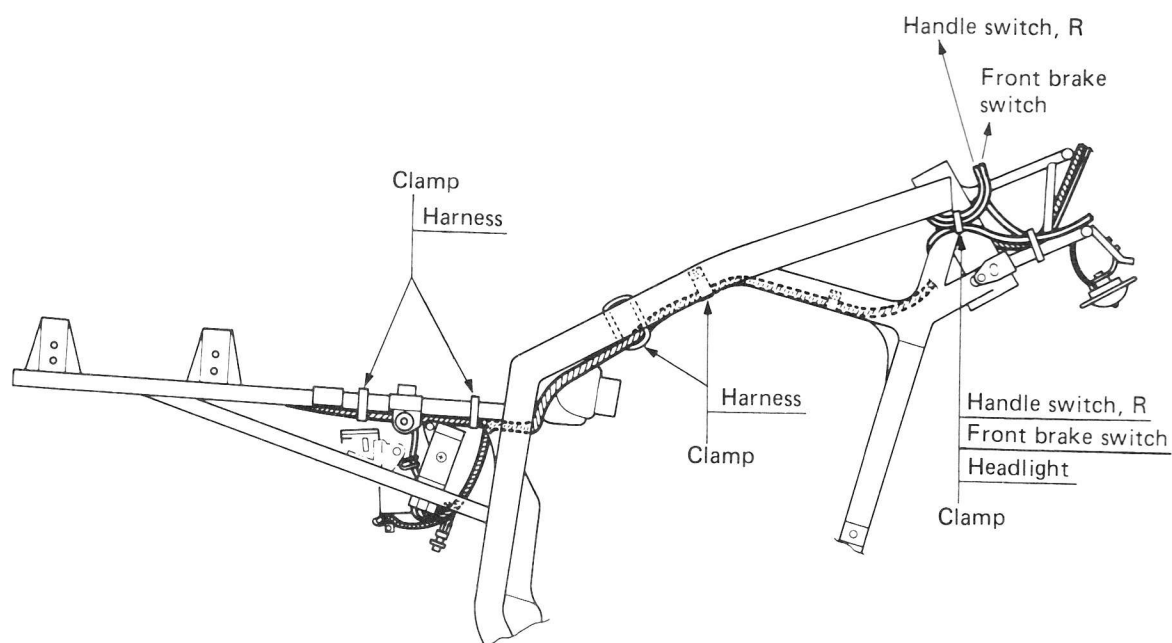








WIRE ROUTING



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