DR350R/SER ('94-MODEL)

FOREWORD

This section describes service data and servicing procedures which differ from those of the DR350P/SP ('93-MODEL).

NOTE:

- *Any differences between DR350P/SP and DR350R/SER in specifications and service data are clearly indicated with the asterisk marks (*).*
- *Please refer to the sections 1 through 12 for details which are not given in this section.*

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SPECIFICATIONS

DR350R

DIMENSIONS AND DRY MASS

Overall length	2 165 mm (82.5 in)
Overall width	885 mm (34.8 in)
Overall height	1 250 mm (49.2 in)
Wheelbase	*1 450 mm (57.1 in)
Ground clearance	310 mm (12.2 in)
Seat height	920 mm (36.2 in)
Dry mass	113 kg (249 lbs)

ENGINE

Type	Four-stroke, air-cooled with SACS, OHC
Valve clearance, IN	0.05—0.10 mm (0.002—0.004 in)
EX	*0.17—0.22 mm (0.007—0.009 in)
Number of cylinder	1
Bore	79.0 mm (3.110 in)
Stroke	71.2 mm (2.803 in)
Piston displacement	348 cm³ (21.2 cu. in)
Compression ratio	9.5 : 1
Carburetor	TM33SS, single
Air cleaner	Polyurethane foam element
Starter system	Primary kick
Lubrication system	Dry sump

TRANSMISSION

Clutch	Wet multi-plate type
Transmission	6-speed constant mesh
Gearshift pattern	1-down, 5-up
Primary reduction ratio	*3.200 (64/20)
Gear ratios, Low	2.416 (29/12)
2nd	1.733 (26/15)
3rd	1.333 (24/18)
4th	1.111 (20/18)
5th	0.952 (20/21)
Top	0.826 (19/23)
Final reduction ratio	*2.933 (44/15)
Drive chain	RK520SO or DID520VC.5, 110 links

CHASSIS

Front suspension	*Telescopic, coil spring, oil damped, compression damping force 12-way adjustable ..... For Canada and U.S.A. Telescopic, coil spring, oil damped, spring preload fully adjustable, damping force adjustable ..... For Barbados
Rear suspension	Link type, coil spring, gas/oil damped, spring preload fully adjustable, compression damping force fully adjustable
Front suspension stroke	280 mm (11.0 in)
Rear wheel travel	280 mm (11.0 in)
Caster	62° 30'
Trail	118 mm (4.65 in)
Steering angle	45° (right & left)
Turning radius	*2.3 m (7.5 ft)
Front brake	Disc brake, hydraulically operated
Rear brake	Disc brake, hydraulically operated
Front tire size	80/100-21 51M, tube
Rear tire size	110/100-18 64M, tube

ELECTRICAL

Ignition type	Electronic ignition (CDI)
Ignition timing	30° B.T.D.C. above 4300 r/min
Spark plug	*NGK CR9EK or NIPPONDENSO U27ET-R
Generator	Flywheel magneto
Headlight	12V 55W
Taillight	12V 5W

CAPACITIES

Fuel tank including reserve	9.5 L (2.5/2.1 US/Imp. gal)
Reserve	1.8 L (0.5/0.4 US/Imp. gal)
Engine oil, oil change	1700 ml (1.8/1.5 US/Imp. qt)
with filter change	1900 ml (2.0/1.7 US/Imp. qt)
overhaul	2100 ml (2.2/1.8 US/Imp. qt)
Front fork oil (each leg)	* 541 ml (18.3/19.0 US/Imp. oz) ..... For Canada and U.S.A. 586 ml (19.8/20.6 US/Imp. oz) ..... For Barbados

Asterisk mark (*) indicates the New "R" model specifications.

DR350SER

DIMENSIONS AND DRY MASS

Overall length	2 335 mm (91.9 in)	Germany and Switzerland
	*2 235 mm (88.0 in)	Others
Overall width	885 mm (34.8 in)	
Overall height	1 245 mm (49.0 in)	
Wheelbase	*1 440 mm (56.7 in)	
Ground clearance	290 mm (11.4 in)	
Seat height	* 890 mm (35.0 in)	
Dry mass	* 130 kg (286 lbs)	

ENGINE

Type	Four-stroke, air-cooled with SACS, OHC
Valve clearance, IN	0.05—0.10 mm (0.002—0.004 in)
EX	0.17—0.22 mm (0.007—0.009 in)
Number of cylinder	1
Bore	79.0 mm (3.110 in)
Stroke	71.2 mm (2.803 in)
Piston displacement	348 cm³ (21.2 cu. in)
Compression ratio	9.5 : 1
Carburetor	BST33, single
Air cleaner	Polyurethane foam element
Starter system	*Electric
Lubrication system	Dry sump

TRANSMISSION

Clutch	Wet multi-plate type
Transmission	6-speed constant mesh
Gearshift pattern	1-down, 5-up
Primary reduction ratio	3.200 (64/20)
Gear ratios, Low	2.416 (29/12)
2nd	1.733 (26/15)
3rd	1.333 (24/18)
4th	1.111 (20/18)
5th	0.952 (20/21)
Top	0.826 (19/23)
Final reduction ratio	2.733 (41/15)
Drive chain	RK520SO or DID520VC.5, 108 links

CHASSIS

Front suspension	Telescopic, coil spring, oil damped, spring preload fully adjustable, compression damping force 8-way adjustable
Rear suspension	Link type, coil spring, gas/oil damped, spring preload fully adjustable, compression damping force fully adjustable
Front suspension stroke	280 mm (11.0 in)
Rear wheel travel	*255 mm (10.0 in)
Caster	62° 30'
Trail	115 mm (4.53 in)
Steering angle	45° (right & left)
Turning radius	2.3 m (7.5 ft)
Front brake	Disc brake, hydraulically operated
Rear brake	Disc brake, hydraulically operated
Front tire size	80/100-21 51P
Rear tire size	110/90-18 61P

ELECTRICAL

Ignition type	Electronic ignition
Ignition timing	30° B.T.D.C. above 4300 r/min
Spark plug	NGK CR9EK or NIPPONDENSO U27ETR
Battery	*12V 21.6 kC (6Ah)/10HR
Generator	Three-phase A.C. generator
Fuse	15A
Headlight	12V 60/55W
Position light	12V 4W
Turn signal light	12V 21W
Tail/Brake light	12V 5/21W
License plate light	12V 5W
Speedometer light	12V 1.7W (x 2 pcs)
Tachometer light	12V 3W
Neutral indicator light	12V 1.7W
High beam indicator light	12V 1.7W
Turn signal indicator light	12V 1.7W

CAPACITIES

Fuel tank, including reserve	9.0 L (2.4/2.0 US/Imp gal)	Others
	8.0 L (2.1/1.8 US/Imp gal)	California only (U.S.A.)
Reserve	2.0 L (0.5/0.4 US/Imp gal)	
Engine oil, oil change	1 700 ml (1.8/1.5 US/Imp qt)	
with filter change	1 900 ml (2.0/1.7 US/Imp qt)	
overhaul	2 100 ml (2.2/1.8 US/Imp qt)	
Front fork oil (each leg)	569 ml (19.2/20.0 US/Imp oz)	

SERVICE DATA

DR350R

VALVE + GUIDE

Unit: mm (in)

ITEM		STANDARD	LIMIT
Valve diam.	IN.	30.6 (1.20)	———
	EX.	27.0 (1.06)	———
Valve clearance (when cold)	IN.	0.05—0.10 (0.002—0.004)	———
	EX.	*0.17—0.22 (0.007—0.009)	———
Valve guide to valve stem clearance	IN.	0.010—0.037 (0.0004—0.0015)	———
	EX.	0.030—0.057 (0.0012—0.0022)	———
Valve stem deflection	IN. & EX.	———	0.35 (0.014)
Valve guide I.D.	IN. & EX.	5.000—5.012 (0.1969—0.1973)	———
Valve stem O.D.	IN.	4.975—4.990 (0.1959—0.1965)	———
	EX.	4.955—4.970 (0.1951—0.1957)	———
Valve stem runout	IN. & EX.	———	0.05 (0.002)
Valve head thickness	IN. & EX.	———	0.5 (0.02)
Valve stem end length	IN. & EX.	———	1.8 (0.07)
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 28.0 mm (1.10 in)	———
	OUTER	13.1—15.1 kg (28.9—33.3 lbs) at length 31.5 mm (1.24 in)	———

Asterisk mark (*) indicates the New "R" model specification.

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN.	*33.450—33.490 (1.3169—1.3185)	*33.150 (1.3051)
	EX.	*33.520—33.560 (1.3197—1.3213)	*33.220 (1.3079)
Camshaft journal oil clearance	Right side	0.032—0.066 (0.0013—0.0026)	0.150 (0.0059)
	Left side	0.028—0.059 (0.0011—0.0023)	0.150 (0.0059)
Camshaft journal holder I.D.	Right side	22.012—22.025 (0.8666—0.8671)	———
	Left side	17.512—17.525 (0.6894—0.6900)	———
Camshaft journal O.D.	Right side	21.959—21.980 (0.8645—0.8654)	———
	Left side	17.466—17.484 (0.6876—0.6883)	———
Camshaft runout	———		0.10 (0.004)
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	———		0.05 (0.002)
Cylinder head cover distortion	———		0.05 (0.002)
De-compression lever play	0—2 (0—0.08)		———

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD			LIMIT
Piston to cylinder clearance	0.055—0.065 (0.0022—0.0026)			0.120 (0.0047)
Cylinder bore	79.000—79.015 (3.1102—3.1108)			79.075 (3.1132)
Piston diam.	78.940—78.955 (3.1079—3.1085) Measure at 15 mm (0.6 in) from the skirt end.			78.880 (3.1055)
Cylinder distortion	———			0.05 (0.002)
Piston ring free end gap	1st	R	Approx. 10.2 (0.40)	8.2 (0.32)
	2nd	R	Approx. 11.1 (0.44)	8.9 (0.35)
Piston ring end gap	1st		0.15—0.30 (0.006—0.012)	0.70 (0.028)
	2nd		0.35—0.50 (0.014—0.020)	0.70 (0.028)

Asterisk mark (*) indicates the New "R" model specifications.

ITEM	STANDARD		LIMIT
Piston ring to groove clearance	1st	—	0.180 (0.007)
	2nd	—	0.150 (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)	—
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 + BALANCER

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	20.006—20.014 (0.7876—0.7880)	20.040 (0.7890)
Conrod deflection	—	3.0 (0.12)
Conrod big end side clearance	0.10—0.55 (0.004—0.022)	1.0 (0.04)
Conrod big end width	21.95—22.00 (0.864—0.866)	—
Crank web to web width	60.0 ± 0.1 (2.362 ± 0.004)	—
Crankshaft runout	—	0.05 (0.002)
Balancer spring free length	—	10.3 (0.41)

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	1.590 (35/22)	—
Oil pressure (at 60°C,140°F)	Above 40 kPa (0.4 kg/cm², 5.7 psi) Below 140 kPa (1.4 kg/cm², 19.9 psi) at 3 000 r/min.	—

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch lever play	10—15 (0.4—0.6)	———
Drive plate thickness	2.72—2.88 (0.107—0.113)	2.42 (0.095)
Drive plate claw width	15.8—16.0 (0.62—0.63)	15.2 (0.60)
Driven plate distortion	———	0.10 (0.004)
Clutch spring free length	———	29.5 (1.16)

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM		STANDARD	LIMIT
Primary reduction ratio		*3.200 (64/20)	———
Final reduction ratio		*2.933 (44/15)	———
Gear ratios	Low	2.416 (29/12)	———
	2nd	1.733 (26/15)	———
	3rd	1.333 (24/18)	———
	4th	1.111 (20/18)	———
	5th	0.952 (20/21)	———
	Top	0.826 (19/23)	———
Shift fork to groove clearance		0.1—0.3 (0.004—0.012)	0.5 (0.020)
Shift fork groove width	No.1,No.2 & No.3	5.0—5.1 (0.197—0.200)	———
Shift fork thickness	No.1,No.2 & No.3	4.8—4.9 (0.189—0.193)	———
Drive chain	Type	D.I.D. 520VC5 or RK520SO	———
	Links	110	———
	20-pitch length	———	319.4 (12.57)
Drive chain slack		25—40 (1.0—1.6)	———

Asterisk mark (*) indicates the New "R" model specifications.

CARBURETOR

ITEM	SPECIFICATION
Carburetor type	TM33 SS
Bore size	33 mm
I.D. No	14D0
Idle r/min.	1 400 ± 100 r/min
Float height	14.2 ± 1.0 mm (0.56 ± 0.04 in)
Main jet (M.J.)	#127.5
Main air jet (M.A.J.)	0.7 mm
Jet needle (J.N.)	5FP96-3rd
Needle jet (N.J.)	P-8
Cut-away (C.A.)	1.5
Pilot jet (P.J.)	#37.5
By-pass (B.P.)	0.8 mm
Pilot outlet (P.O.)	0.6 mm
Valve seat (V.S.)	1.8 mm
Starter jet (G.S.)	#50
Pilot screw (P.S.)	1 ⅛ turn back
Pilot air jet (P.A.J.)	1.1 mm
Throttle cable play (pulling cable)	0.5—1.0 mm (0.02—0.04 in)

ELECTRICAL

Unit: mm (in)

ITEM	SPECIFICATION		NOTE
Ignition timing	30°B.T.D.C. above 4 300 r/min		
Spark plug	Type	ND:*U27ETR NGK:*CR9EK	
	Gap	*0.6—0.7 (0.024—0.028)	
Spark performance	Over 8 (0.3) at 1 atm.		
Ignition coil resistance	Primary	0.1—1.0 Ω	Terminal — Ground
	Secondary	12—22 kΩ	Plug cap — Terminal
Magneto coil resistance	Lighting	0.1—1.5 Ω	Y—B
	Power source	350—650 Ω	W—Br
	Pick-up No.1	350—700 Ω	G—Bl
	Pick-up No.2	350—700 Ω	Y—Gr
Magneto no-load voltage (when engine is cold)	More than 40 V (AC) at 5 000 r/min.		Y—B
Regulated voltage	12—14 V at 5 000 r/min.		

Asterisk mark (*) indicates the New "R" model specifications.

WATTAGE

Unit: W

ITEM	SPECIFICATION
Headlight	55
Taillight	5

BRAKE + WHEEL

Unit: mm (in)

ITEM		STANDARD	LIMIT
Brake lever play		0.1—0.3 (0.004—0.010)	———
Rear brake pedal height		5 (0.2)	———
Brake disc thickness	Front	3.5 ± 0.2 (0.138 ± 0.008)	3.0 (0.118)
	Rear	4.0 ± 0.2 (0.157 ± 0.008)	3.5 (0.138)
Brake disc runout		———	0.30 (0.012)
Master cylinder bore	Front	11.000—11.043 (0.4331—0.4348)	———
	Rear	12.700—12.743 (0.5000—0.5017)	———
Master cylinder piston diam.	Front	10.957—10.984 (0.4314—0.4324)	———
	Rear	12.657—12.684 (0.4983—0.4994)	———
Brake caliper cylinder bore	Front	27.000—27.050 (1.0630—1.0650)	———
	Rear	27.000—27.050 (1.0630—1.0650)	———
Brake caliper piston diam.	Front	26.900—26.950 (1.0591—1.0610)	———
	Rear	26.900—26.950 (1.0591—1.0610)	———
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	80/100-21 51M	———
	Rear	110/100-18 64M	———
Tire tread depth	Front	———	4.0 (0.16)
	Rear	———	4.0 (0.16)

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	280 (11.0)	———	
Front fork spring free length	———	*551 (21.7)	E-03,28
	———	608 (23.9)	E-94
Front fork oil level	*144 (5.67)	———	E-03,28
	145 (5.71)	———	E-94
Rear shock absorber gas pressure	1 000 kPa (10 kg/cm², 142 psi)	———	
Rear shock absorber spring pre-set length	*267.3 (10.5)	———	E-03,28
	268.2 (10.6)	———	E-94
Rear wheel travel	280 (11.0)	———	
Swingarm pivot shaft runout	———	0.3 (0.01)	

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	kPa	kg/cm²	psi
FRONT	100	1.0	14
REAR	100	1.0	14

Asterisk mark (*) indicates the New "R" model specifications.

E-03 ..... U.S.A. E-28 ..... Canada E-94 ..... Barbados

FUEL + OIL

ITEM	SPECIFICATION		NOTE
Fuel type	Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$ method) or 91 octane or higher rated by the research method. Gasoline containing MTBE (Methyl Tertiary Butyl Ether), less than 10% ethanol, or less than 5% methanol with appropriate cosolvents and corrosion inhibitor is permissible.		E-03
	Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$ method) or 91 octane or higher rated by the Research Method.		E-28
	Gasoline used should be graded 85-95 octane or higher. An unleaded gasoline is recommended.		E-94
Fuel tank including reserve	9.5 L (2.5/2.1 US/Imp gal)		
reserve	1.8 L (0.5/0.4 US/Imp gal)		
Engine oil type	SAE 10W/40, API SE or SF		
Engine oil capacity	Change	1 700 ml (1.8/1.5 US/Imp qt)	
	Filter change	1 900 ml (2.0/1.7 US/Imp qt)	
	Overhaul	2 100 ml (2.2/1.8 US/Imp qt)	
Front fork oil type	*Fork oil SS05		E-03,28
	Fork oil #10		E-94
Front fork oil capacity (each leg)	*541 ml (18.3/19.0 US/Imp oz)		E-03,28
	586 ml (19.8/20.6 US/Imp oz)		E-94
Brake fluid type	DOT 4		

Asterisk mark (*) indicates the New "R" model specifications.

E-03 ..... U.S.A. E-28 ..... Canada E-94 ..... Barbados

DR350SER
VALVE + GUIDE

Unit: mm (in)

ITEM	STANDARD		LIMIT
Valve diam.	IN.	30.6 (1.20)	—
	EX.	27.0 (1.06)	—
Valve clearance (when cold)	IN.	0.05—0.10 (0.002—0.004)	—
	EX.	0.17—0.22 (0.007—0.009)	—
Valve guide to valve stem clearance	IN.	0.010—0.037 (0.0004—0.0015)	—
	EX.	0.030—0.057 (0.0012—0.0022)	—
Valve stem deflection	IN. & EX.	—	0.35 (0.014)
Valve guide I.D.	IN. & EX.	5.000—5.012 (0.1969—0.1973)	—
Valve stem O.D.	IN.	4.975—4.990 (0.1959—0.1965)	—
	EX.	4.955—4.970 (0.1951—0.1957)	—
Valve stem runout	IN. & EX.	—	0.05 (0.002)
Valve head thickness	IN. & EX.	—	0.5 (0.02)
Valve stem end length	IN. & EX.	—	1.8 (0.07)
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 28.0 mm (1.10 in)	—
	OUTER	13.1—15.1 kg (28.9—33.3 lbs) at length 31.5 mm (1.24 in)	—

CAMSHAFT + CYLINDER HEAD

Unit: mm (in)

ITEM	STANDARD		LIMIT
Cam height	IN.	33.450—33.490 (1.3169—1.3185)	33.150 (1.3051)
	EX.	33.520—33.560 (1.3197—1.3213)	33.220 (1.3079)
Camshaft journal oil clearance	Right side	0.032—0.066 (0.0013—0.0026)	0.150 (0.0059)
	Left side	0.028—0.059 (0.0011—0.0023)	0.150 (0.0059)
Camshaft journal holder I.D.	Right side	22.012—22.025 (0.8666—0.8671)	———
	Left side	17.512—17.525 (0.6894—0.6900)	———
Camshaft journal O.D.	Right side	21.959—21.980 (0.8645—0.8654)	———
	Left side	17.466—17.484 (0.6876—0.6883)	———
Camshaft runout	———		0.10 (0.004)
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	———		0.05 (0.002)
Cylinder head cover distortion	———		0.05 (0.002)

CYLINDER + PISTON + PISTON RING

Unit: mm (in)

ITEM	STANDARD	LIMIT
Piston to cylinder clearance	0.055—0.065 (0.0022—0.0026)	0.120 (0.0047)
Cylinder bore	79.000—79.015 (3.1102—3.1108)	79.075 (3.1132)
Piston diam.	78.940—78.955 (3.1079—3.1085) Measure at 15 mm (0.6 in) from the skirt end.	78.880 (3.1055)
Cylinder distortion	———	0.05 (0.002)
Piston ring free end gap	1st R Approx. 10.2 (0.40)	8.2 (0.32)
	2nd R Approx. 11.1 (0.44)	8.9 (0.35)
Piston ring end gap	1st	0.15—0.30 (0.006—0.012)	0.70 (0.028)
	2nd	0.35—0.50 (0.014—0.020)	0.70 (0.028)

ITEM	STANDARD		LIMIT
Piston ring to groove clearance	1st	—	0.180 (0.007)
	2nd	—	0.150 (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)	—
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 + BALANCER

Unit: mm (in)

ITEM	STANDARD	LIMIT
Conrod small end I.D.	20.006—20.014 (0.7876—0.7880)	20.040 (0.7890)
Conrod deflection	—	3.0 (0.12)
Conrod big end side clearance	0.10—0.55 (0.004—0.022)	1.0 (0.04)
Conrod big end width	21.95—22.00 (0.864—0.866)	—
Crank web to web width	60.0 ± 0.1 (2.362 ± 0.004)	—
Crankshaft runout	—	0.05 (0.002)
Balancer spring free length	—	10.3 (0.41)

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	1.590 (35/22)	—
Oil pressure (at 60°C,140°F)	Above 40 kPa (0.4 kg/cm², 5.7 psi) Below 140 kPa (1.4 kg/cm², 19.9 psi) at 3 000 r/min.	—

CLUTCH

Unit: mm (in)

ITEM	STANDARD	LIMIT
Clutch lever play	10—15 (0.4—0.6)	———
Drive plate thickness	2.72—2.88 (0.107—0.113)	2.42 (0.095)
Drive plate claw width	15.8—16.0 (0.62—0.63)	15.2 (0.60)
Driven plate distortion	———	0.10 (0.004)
Clutch spring free length	———	29.5 (1.16)

TRANSMISSION + DRIVE CHAIN

Unit: mm (in) Except ratio

ITEM		STANDARD		LIMIT
Primary reduction ratio		3.200 (64/20)		———
Final reduction ratio		2.733 (41/15)		———
Gear ratios	Low	2.416 (29/12)		———
	2nd	1.733 (26/15)		———
	3rd	1.333 (24/18)		———
	4th	1.111 (20/18)		———
	5th	0.952 (20/21)		———
	Top	0.826 (19/23)		———
Shift fork to groove clearance		0.1—0.3 (0.004—0.012)		0.5 (0.020)
Shift fork groove width		No.1,No.2 & No.3	5.0—5.1 (0.197—0.200)	———
Shift fork thickness		No.1,No.2 & No.3	4.8—4.9 (0.189—0.193)	———
Drive chain		Type	D.I.D. 520VC5 or RK520SO	———
		Links	108	———
		20-pitch length	———	319.4 (12.57)
Drive chain slack		25—40 (1.0—1.6)		———

Specifications marked with asterisk (*) are exclusive to DR350SER.

E-03 ... U.S.A. (other than California) E-04 ... France E-18 ... Switzerland
E-21 ... Belgium E-22 ... Germany E-28 ... Canada
E-33 ... California E-34 ... Italy E-94 ... Barbados

CARBURETOR

ITEM		SPECIFICATION		
		E-04,21,34,94	E-03	E-33
Carburetor type		BST33SS	←	←
Bore size		33 mm	←	←
I.D. No.		*14EK	*14EP	*14ES
Idle r/min.		1 500 ± 100 r/min.	←	←
Float height		14.6 ± 1.0 mm (0.57 ± 0.04 in)	←	←
Main jet	(M.J.)	#135	#127.5	←
Main air jet	(M.A.J.)	0.6 mm	←	←
Jet needle	(J.N.)	5CD56-3rd	5CD16	←
Needle jet	(N.J.)	O-3	O-6	←
Throttle valve	(Th.V.)	#115	←	←
Pilot jet	(P.J.)	#42.5	#37.5	←
By-pass	(B.P.)	0.8,0.8,0.8 mm	←	←
Pilot outlet	(P.O.)	0.8 mm	1.0 mm	←
Valve seat	(V.S.)	1.5 mm	←	←
Starter jet	(G.S.)	*#35	←	←
Pilot screw	(P.S.)	PRE-SET (1⅛ turns back)	PRE-SET	←
Pilot air jet	(P.A.J.)	1.3 mm	←	←
Throttle cable play (pulling cable)		0.5—1.0 mm (0.02—0.04 in)	←	←

ITEM		SPECIFICATION		
		E-22	E-28	E-18
Carburetor type		BST33SS	←	←
Bore size		33 mm	←	←
I.D. No.		*14EM	*14ER	*14EL
Idle r/min.		1 500 ± 100 r/min.	←	1 400 ± 50 r/min.
Float height		14.6 ± 1.0 mm (0.57 ± 0.04 in)	←	←
Main jet	(M.J.)	#127.5	←	#132.5
Main air jet	(M.A.J.)	0.6 mm	←	←
Jet needle	(J.N.)	5CD56-4th	←	←
Needle jet	(N.J.)	O-5	←	O-7
Throttle valve	(Th.V.)	#115	←	←
Pilot jet	(P.J.)	#37.5	←	←
By-pass	(B.P.)	0.8,0.8,0.8 mm	←	←
Pilot outlet	(P.O.)	0.8 mm	←	0.9 mm
Valve seat	(V.S.)	1.5 mm	←	←
Starter jet	(G.S.)	#35	←	←
Pilot screw	(P.S.)	PRE-SET (1⅛ turns back)	PRE-SET (1¾ turns back)	PRE-SET (2.0 turns back)
Pilot air jet	(P.A.J.)	1.2 mm	←	1.3 mm
Throttle cable play (pulling cable)		0.5—1.0 mm (0.02—0.04 in)	←	←

Specifications marked with asterisk (*) are exclusive to DR350SER.

ELECTRICAL

Unit: mm (in)

ITEM		SPECIFICATION	NOTE
Ignition timing		30°B.T.D.C. above 4 300 r/min	
Spark plug	Type	ND: U27ETR NGK: CR9EK	
	Gap	0.6—0.7 (0.024—0.028)	
Spark performance		Over 8 (0.3) at 1 atm.	
Ignition coil resistance	Primary	0.1—1.0 Ω	Terminal — Ground
	Secondary	12—22 kΩ	Plug cap — Terminal
Magneto coil resistance	Charging	0.1—1.5 Ω	Y—Y
	Power source	350—650 Ω	W—Br
	Pick-up No.1	350—700 Ω	G—Bl
	Pick-up No.2	350—700 Ω	Y—Gr
Magneto no-load voltage (when engine is cold)		More than 60 V (AC) at 5 000 r/min.	Y—Y
Regulated voltage		13.0—15.5 V at 5 000 r/min.	
Magneto Max. output		Approx. 125 W 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—7 Ω	
Battery	Type designation	*YTX7L-BS	
	Capacity	*12V 21.6 kC (6Ah)/10HR	
	Standard electrolyte S.G.	1.320 at 20°C (68°F)	
Fuse size		*20 A	

WATTAGE

Unit: W

ITEM		SPECIFICATION	
		E-03,33	The others
Headlight	HI	60	←
	LO	55	←
Position light			4
Tail/Brake light		5/21	←
Turn signal light		21	←
Tachometer light		3	←
Speedometer light		1.7 x 2	←
Turn signal indicator light		1.7	←
High beam indicator light		1.7	←
Neutral indicator light		1.7	←
License light		5	←

Specifications marked with asterisk (*) are exclusive to DR350SER.

BRAKE + WHEEL

Unit: mm (in)

ITEM		STANDARD	LIMIT
Brake lever play		0.1—0.3 (0.004—0.010)	———
Rear brake pedal height		5 (0.2)	———
Brake disc thickness	Front	3.5 ± 0.2 (0.138 ± 0.008)	3.0 (0.118)
	Rear	4.0 ± 0.2 (0.157 ± 0.008)	3.5 (0.138)
Brake disc runout		———	0.30 (0.012)
Master cylinder bore	Front	12.700—12.743 (0.5000—0.5017)	———
	Rear	12.700—12.743 (0.5000—0.5017)	———
Master cylinder piston diam.	Front	12.657—12.684 (0.4983—0.4994)	———
	Rear	12.657—12.684 (0.4983—0.4994)	———
Brake caliper cylinder bore	Front	27.000—27.050 (1.0630—1.0650)	———
	Rear	30.230—30.280 (1.1902—1.1921)	———
Brake caliper piston diam.	Front	26.900—26.950 (1.0591—1.0610)	———
	Rear	30.160—30.180 (1.1874—1.1882)	———
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 & type	Front	80/100-21 51P *Dunlop D601J (E-03,28,33) Dunlop K560J (others)	———
	Rear	110/90-18 61P *Dunlop D601 (E-03,28,33) Dunlop K560J (others)	———
Tire tread depth	Front	———	3.0 (0.12)
	Rear	———	3.0 (0.12)

Specifications marked with asterisk (*) are exclusive to DR350SER.

SUSPENSION

Unit: mm (in)

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	280 (11.0)	———	
Front fork spring free length	———	602 (23.7)	
Front fork oil level	152 (6.0)	———	
Rear shock absorber gas pressure	1 000 kPa (10 kg/cm², 142 psi)	———	
Rear shock absorber spring pre-set length	*253.4 (10.0)	———	
Rear wheel travel	* 255 (10.0)	———	
Swingarm pivot shaft runout	———	0.3 (0.01)	

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	SOLO RIDING			DUAL RIDING		
	kPa	kg/cm²	psi	kPa	kg/cm²	psi
FRONT	150	1.50	22	150	1.50	22
REAR	150	1.50	22	175	1.75	25

FUEL + OIL

ITEM		SPECIFICATION		NOTE
Fuel type		Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$) or 91 octane or higher rated by the research method. Gasoline containing MTBE (Methyl Tertiary Butyl Ether), less than 10% ethanol, or less than 5% methanol with appropriate cosolvents and corrosion inhibitor is permissible.		E-03,33
		Use only unleaded gasoline of at least 87 pump octane ($\frac{R+M}{2}$ method) or 91 octane or higher rated by the Research Method.		E-28
		Gasoline used should be graded 85-95 octane or higher. An unleaded gasoline is recommended.		For the others
Fuel tank including		8.0 L (2.1/1.8 US/Imp gal)		E33
		9.0 L (2.4/2.0 US/Imp gal)		For the others
	reserve	2.0 L (0.5/0.4 US/Imp gal)		
Engine oil type		SAE 10W/40, API SE or SF		
Engine oil capacity	Change	1 700 ml (1.8/1.5 US/Imp qt)		
	Filter change	1 900 ml (2.0/1.7 US/Imp qt)		
	Overhaul	2 100 ml (2.2/1.8 US/Imp qt)		
Front fork oil type		Fork oil #10		
Front fork oil capacity (each leg)		569 ml (19.2/20.0 US/Imp oz)		
Brake fluid type		DOT 4		

TIGHTENING TORQUE (DR350SER)

ENGINE

ITEM	N·m	kg-m	lb-ft
Cylinder head cover bolt	10	1.0	7.0
Camshaft sprocket bolt	15	1.5	11.0
Cylinder head bolt	38	3.8	27.5
Cylinder head nut	25	2.5	18.0
Cylinder base nut	25	2.5	18.0
Rocker arm shaft bolt	28	2.8	20.0
Balancer shaft bolt	50	5.0	36.0
Primary drive gear nut	70	7.0	50.5
Magneto rotor nut	130	13.0	94.0
Starter clutch bolt	*26	*2.6	*19.0
Clutch sleeve hub nut	50	5.0	36.0
Gearshift arm stopper	19	1.9	13.5
Gearshift cam driven gear bolt	10	1.0	7.0
Cam chain tensioner mounting bolt Right hand	10	1.0	7.0
Cam chain tensioner mounting bolt Left hand	11	1.1	8.0
Cam chain tensioner spring holder bolt	8	0.8	6.0
Engine oil drain plug (on the crankcase)	21	2.1	15.0
Engine oil drain bolt (on the frame)	18	1.8	13.0
Crankcase bolt	11	1.1	8.0
Oil pipe union bolt	21	2.1	15.0
Oil gallery plug	23	2.3	16.5
Oil strainer	28	2.8	20.0
Oil hose union bolt	28	2.8	20.0
Oil check bolt	10	1.0	7.0
Oil hose bolt (on the crankcase)	10	1.0	7.0
Oil hose bolt (on the cylinder head)	23	2.3	16.5
Oil hose clamp screw	1.8	0.18	13.0
T.D.C. plug	23	2.3	16.5
Engine mounting bolt and nut	66	6.6	48
	41	4.1	29.5
	23	2.3	16.5
Exhaust pipe bolt	23	2.3	16.5
Muffler connection bolt	23	2.3	16.5
Muffler mounting bolt	26	2.6	19.0

PERIODIC MAINTENANCE SCHEDULE (DR350SER)

IMPORTANT: The periodic maintenance intervals and service requirements have been established in accordance with EPA regulations. Following these instructions will ensure that the motorcycle will not exceed emission standards and it will also ensure the reliability and performance of the motorcycle.

NOTE:
More frequent servicing may be performed on motorcycles that are used under severe conditions however, it is not necessary for ensuring emission level compliance.

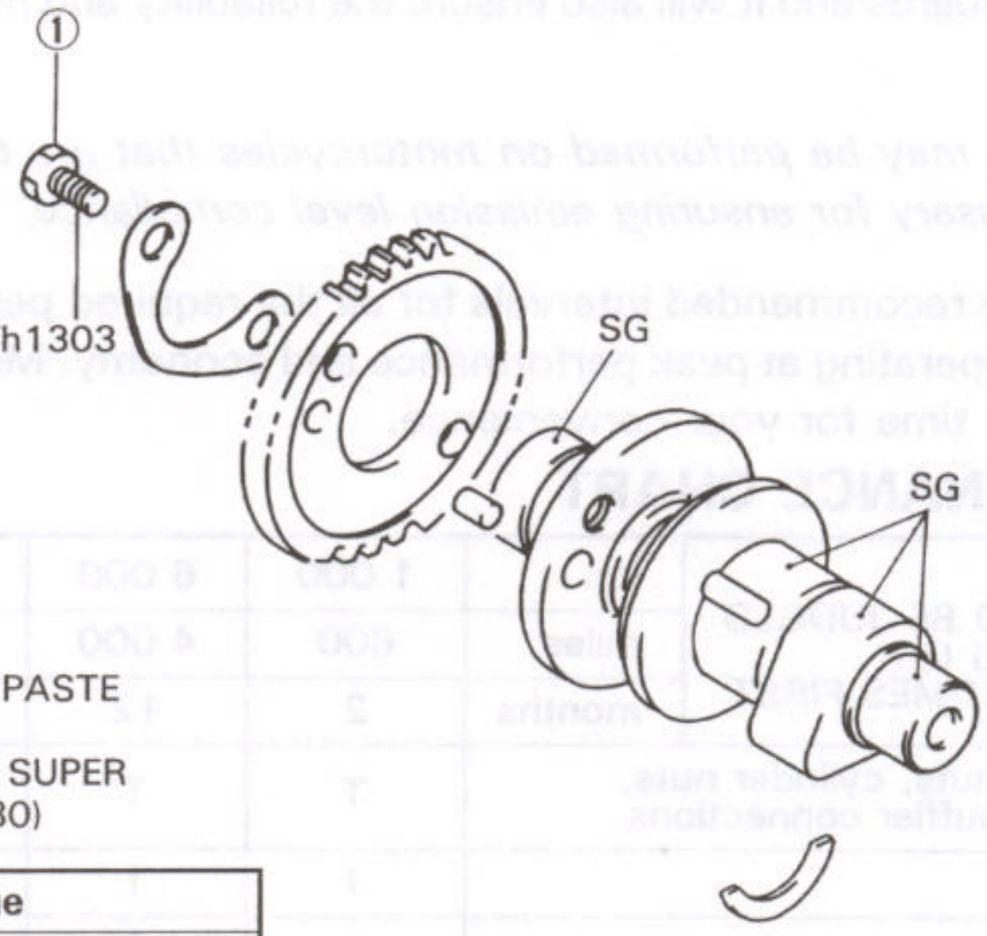
The chart below lists the recommended intervals for all the required periodic service work necessary to keep the motorcycle operating at peak performance and economy. Mileages are expressed in terms of kilometers, miles and time for your convenience.

PERIODIC MAINTENANCE CHART

INTERVAL: THIS INTERVAL SHOULD BE JUDGED BY ODOMETER READING OR MONTHS WHICHEVER COMES FIRST	km	1 000	6 000	12 000	18 000	24 000
	miles	600	4 000	7 500	11 000	15 000
	months	2	12	24	36	48
Cylinder head bolts and nuts, cylinder nuts, exhaust pipe bolts and muffler connections		T	T	T	T	T
Valve clearance		I	I	I	I	I
Spark plug		—	I	R	I	R
Spark arrester (Only for U.S.A. and Canada)		—	C	C	C	C
Air cleaner		Clean every 3 000 km (2 000 miles).				
Engine oil and oil filter		R	R	R	R	R
Engine oil hoses		I	I	I	I	I
Engine oil strainer		C	C	C	C	R
Carburetor		I	I	I	I	I
Fuel line (Vapor hose... California model only)		I	I	I	I	I
		Replace every 4 years.				
Clutch		I	I	I	I	I
Drive chain		I	I	I	I	I
		Clean and lubricate every 1 000 km (600 miles).				
Brakes		I	I	I	I	I
Brake hoses		I	I	I	I	I
		Replace every 4 years.				
Brake fluid		I	I	I	I	I
		Replace every 2 years.				
Tires		I	I	I	I	I
Steering		I	I	I	I	I
Front forks		I	—	I	—	I
Rear suspension		I	—	I	—	I
Chassis bolts and nuts		T	T	T	T	T

I : Inspect and adjust, clean, lubricate or replace as necessary
R : Replace T : Tighten C : Clean

CAMSHAFT/AUTOMATIC DE-COMP. ASSEMBLY

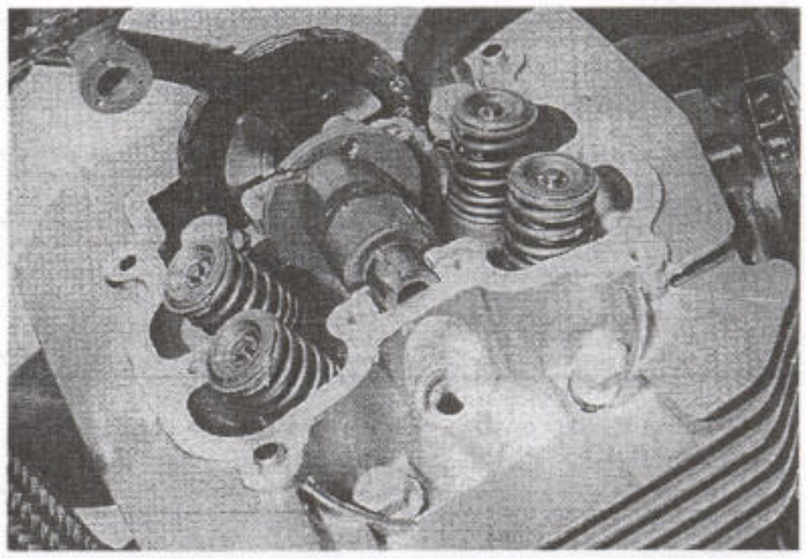


SG: Apply SUZUKI MOLY PASTE (99000-25140)
Th1303: Apply THREAD LOCK SUPER "1303" (99000-32030)

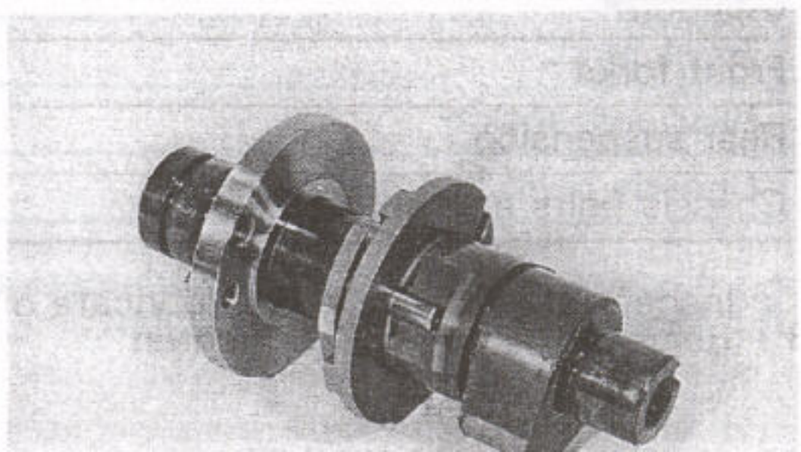
Tightening torque		
ITEM	N·m	kg-m
①	15	1.5

REMOVAL

- Remove the frame covers, seat and fuel tank.
- Drain engine oil.
- Remove the T.D.C. inspection plug and magneto cover cap.
- Turn the crankshaft counter clockwise to set the position at T.D.C. on the compression stroke.
- Remove the chain tensioner.
- Remove the intake and exhaust valve inspection caps.
- Remove the cylinder head cover.
- Remove the camshaft end cap.
- Flatten the lock washers and remove the camshaft sprocket bolts.
- Remove the sprocket and camshaft/auto-decompression assembly.



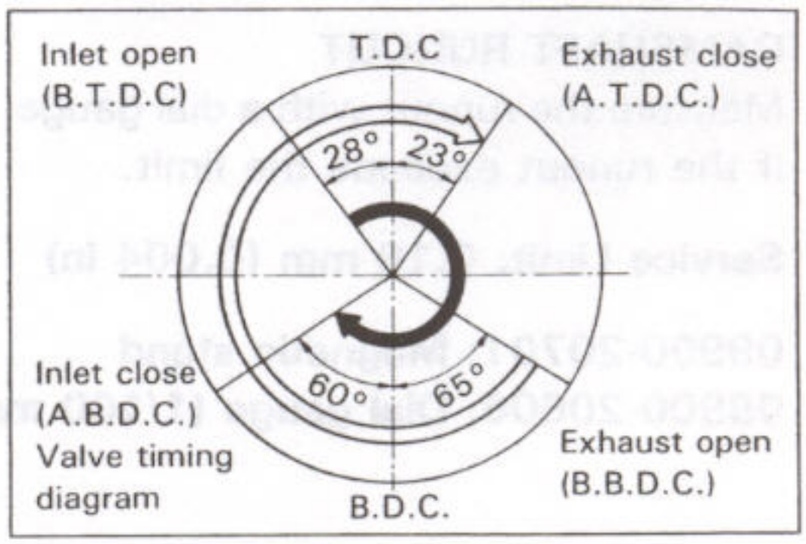
CAUTION:
Do not attempt to disassemble the camshaft/automatic decomp. assembly. It is not serviceable.



INSPECTION

CAMSHAFT

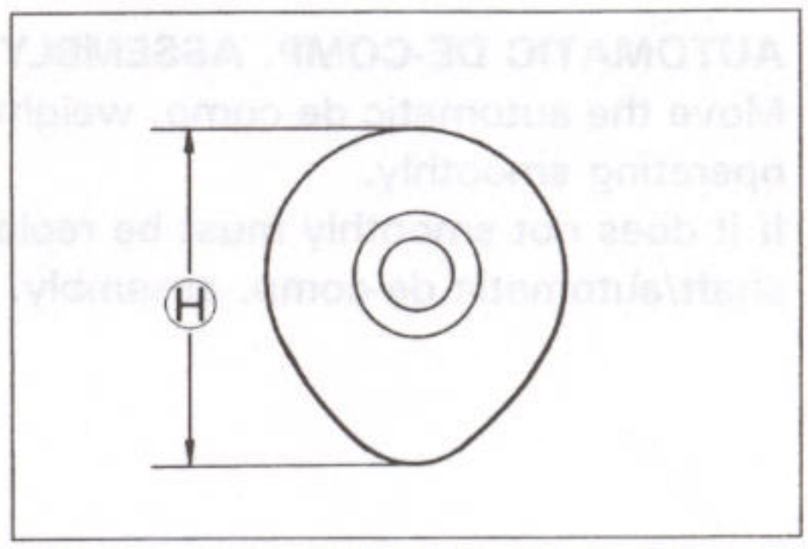
The camshaft should be checked for runout and also for wear of cams and journals if the engine has been noted to produce abnormal noise or vibration or to lack output power. Any of these malconditions could be caused by a worn camshaft.



Valve timing diagram

CAMSHAFT CAM WEAR

Worn-down cams are often the cause of mistimed valve operation resulting in reduced output power. The limit of cam wear is specified for both intake and exhaust cams in terms of cam height Ⓗ, which is to be measured with a micrometer. Replace the camshaft if found it worn down to the limit.



Cam height

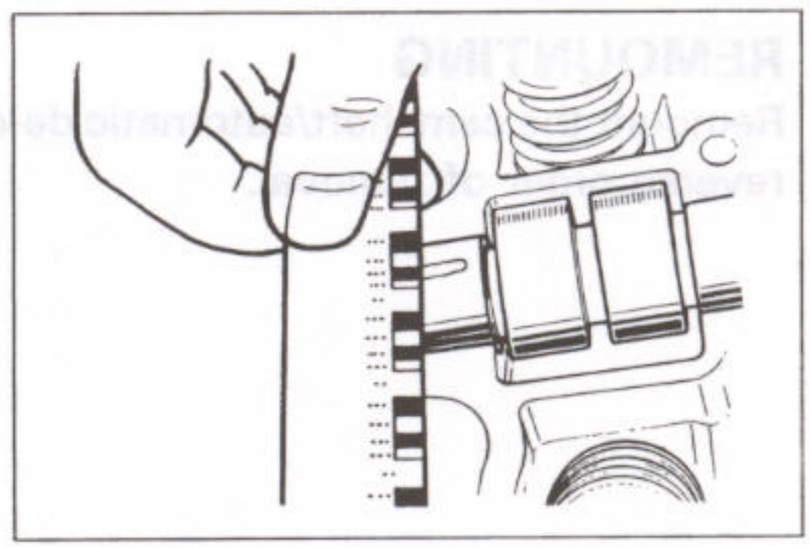
Height Ⓗ	Service Limit
Intake cam	33.150 mm (1.3051 in)
Exhaust cam	33.220 mm (1.3079 in)

09900-20202: Micrometer (25—50 mm)

CAMSHAFT JOURNAL WEAR

Determine whether each journal is worn down to the limit or not by measuring camshaft journal oil clearance with the camshaft installed. Use plastigauge to read the clearance, which is specified as follows.

Camshaft journal oil clearance
Service Limit: 0.150 mm (0.0059 in)



- Tighten the cylinder head cover bolts evenly and diagonally to the specified torque.

Tightening torque: 10 N·m (1.0 kg-m)

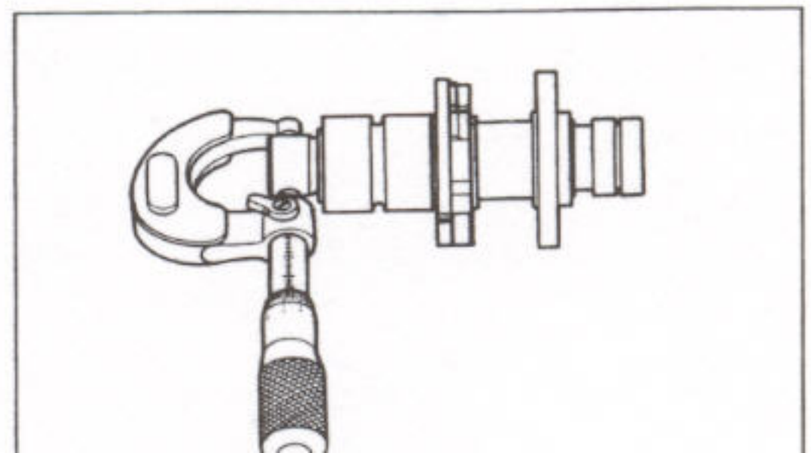
09900-22301: Plastigauge

NOTE:
To properly measure the oil clearance with plastigauge, all gasket material must be removed from fitting surfaces of cylinder head and cover. Do not apply SUZUKI BOND No. 1207B/1215 until after the oil clearance has been determined.

If the camshaft journal oil clearance measured exceeds the limit, measure the outside diameter of camshaft. Replace either the cylinder head set or the camshaft if the clearance is incorrect.

Camshaft journal O.D.

	Standard
Right side	21.959—21.980 mm (0.8645—0.8654 in)
Left side	17.466—17.484 mm (0.6876—0.6883 in)

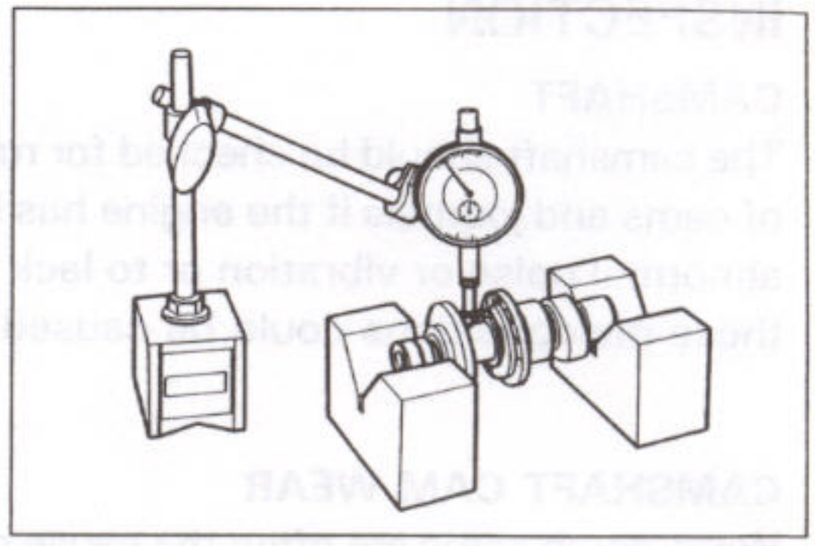


CAMSHAFT RUNOUT

Measure the runout with a dial gauge. Replace the camshaft if the runout exceeds the limit.

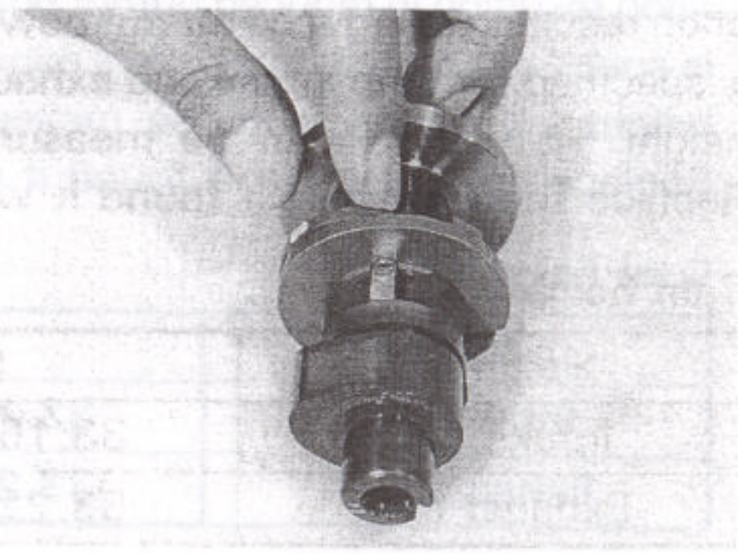
Service Limit: 0.10 mm (0.004 in)

09900-20701: Magnetic stand
09900-20606: Dial gauge (1/100 mm)



AUTOMATIC DE-COMP. ASSEMBLY

Move the automatic de-comp. weight by hand to inspect if operating smoothly.
If it does not smoothly must be replaced with a new camshaft/automatic de-comp. assembly.



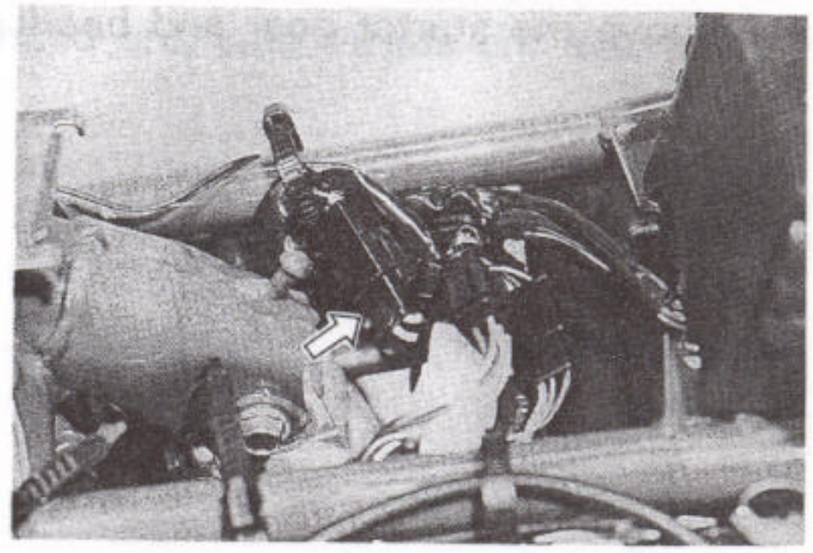
REMOUNTING

Remount the camshaft/automatic de-comp. assembly in the reverse order of removal.

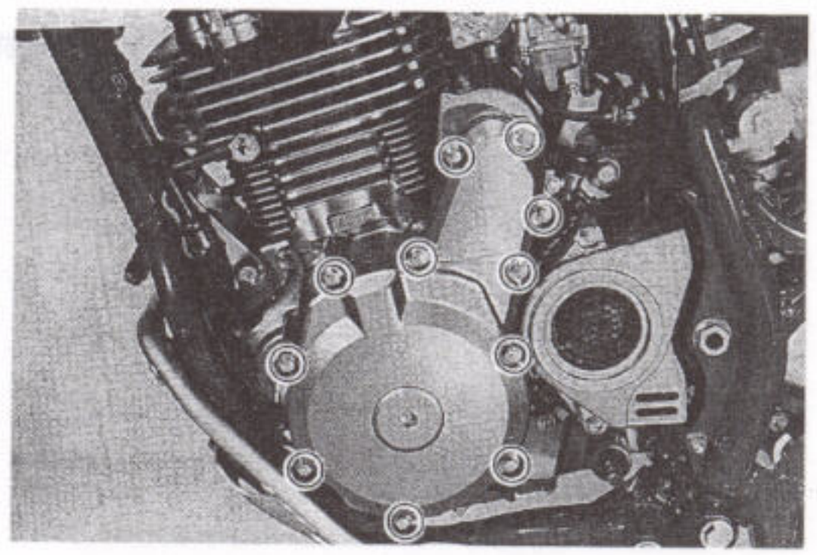
STARTER CLUCH (DR350SER)

REMOVAL

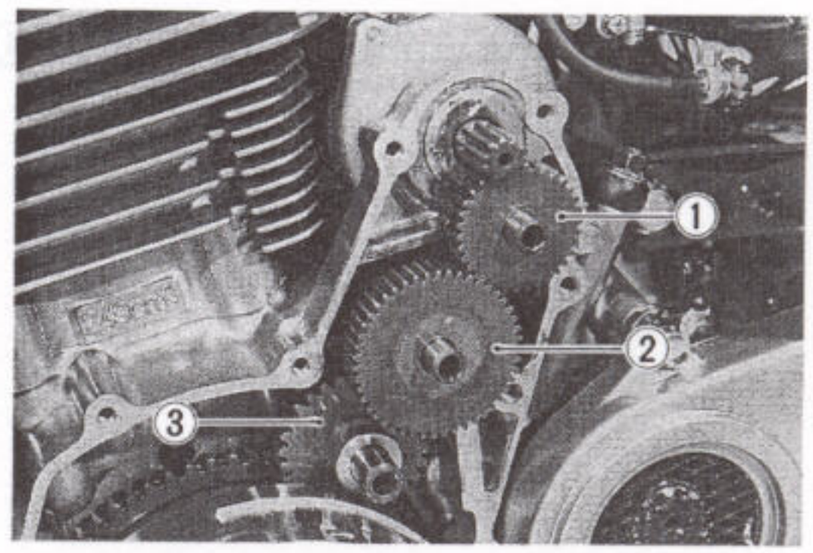
- Drain engine oil.
- Remove the frame covers.
- Remove the seat.
- Disconnect the magneto lead wires after moving the CDI unit.



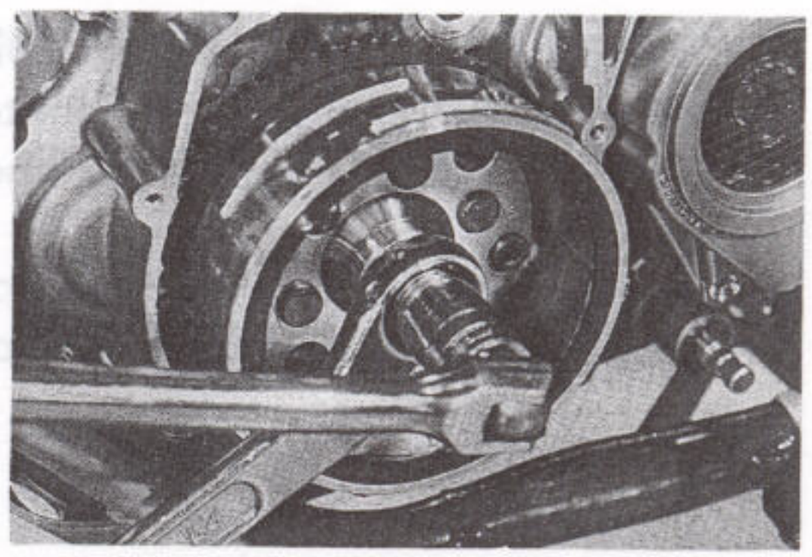
- Remove the gearshift lever.
- Remove the magneto cover.



- Remove the starter idle gears with shaft.
  ①: Starter idle gear No.1
  ②: Starter idle gear No.2
  ③: Starter idle gear No.3



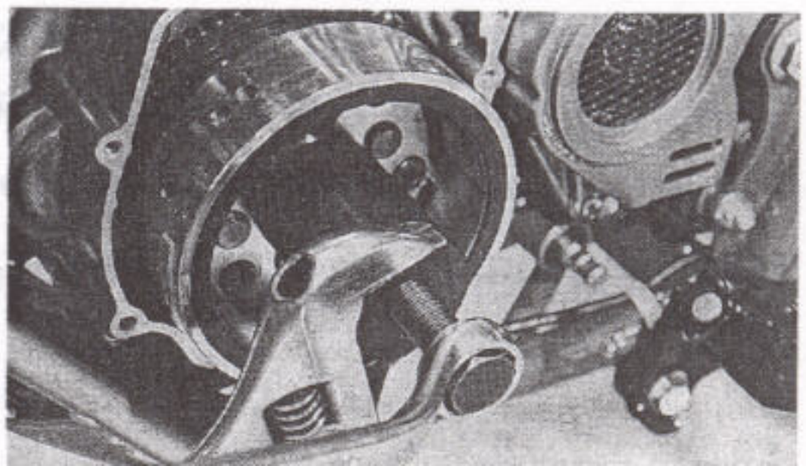
- Remove the magneto rotor nut with a 27 mm box-end wrench.



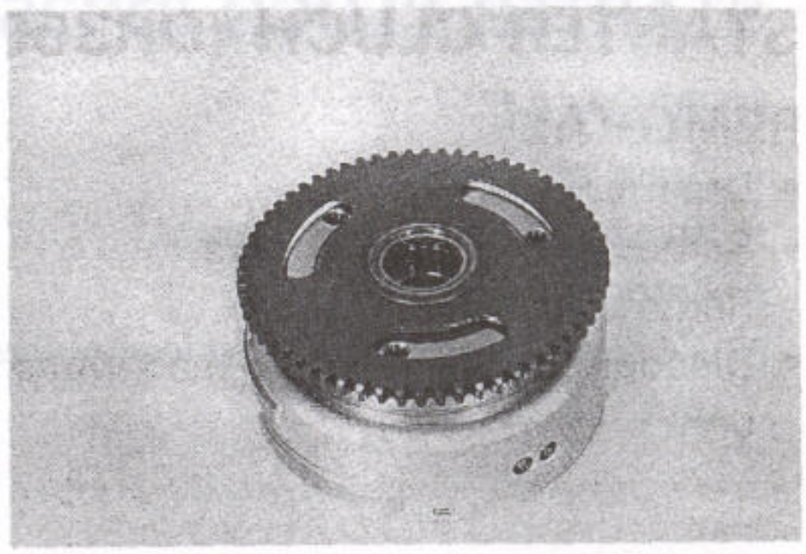
- Remove the magneto rotor assembly with the special tool.

09930-34912: Rotor remover

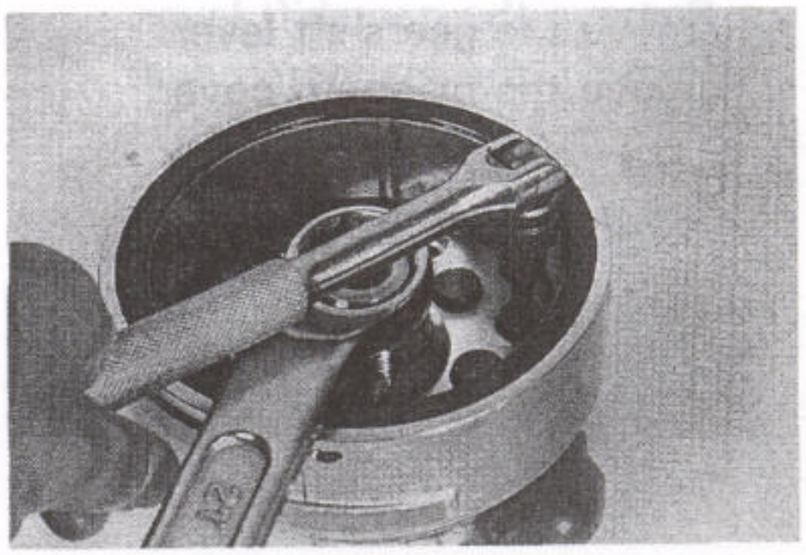
CAUTION:
Do not hit the rotor with a hammer.



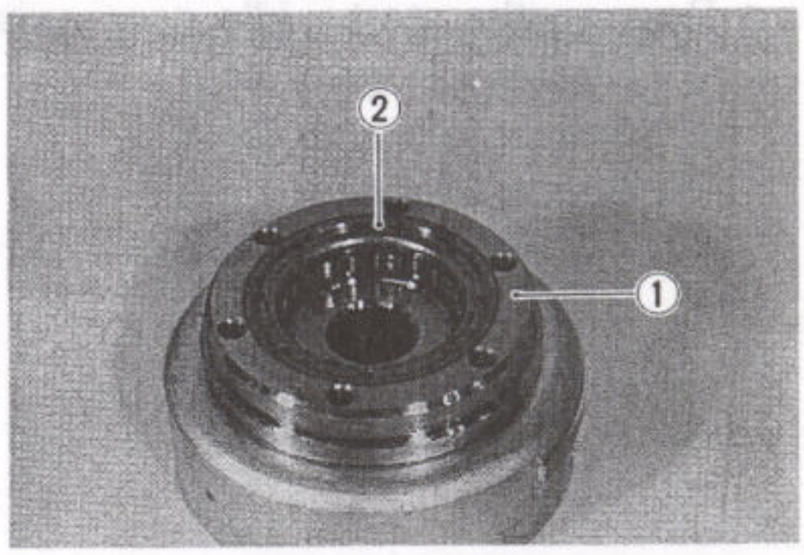
- Remove the starter gear and bearing.



- Remove the three bolts with 6 mm hexagon wrench and 27 mm box-end wrench.



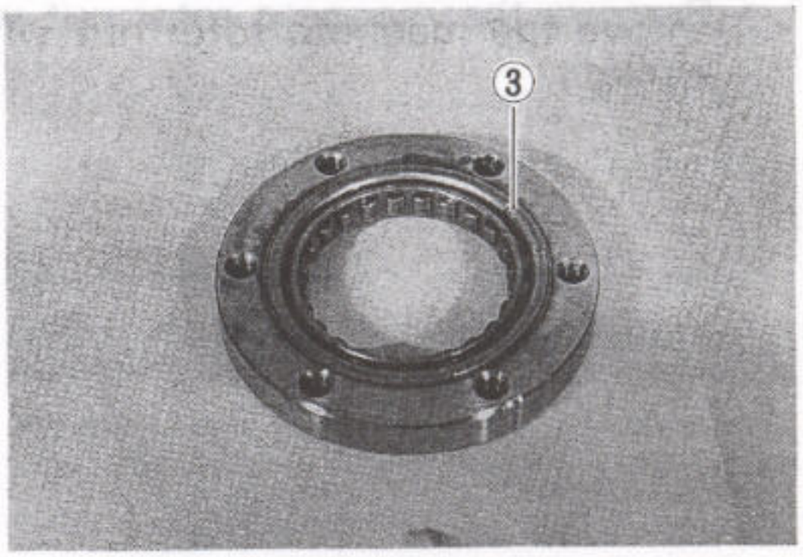
- Remove the starter clutch holder ① and starter clutch ②.



REASSEMBLY AND REMOUNTING

Reassemble and remounting the starter clutch in the reverse order of removal and disassembly, and also carry out the following steps.

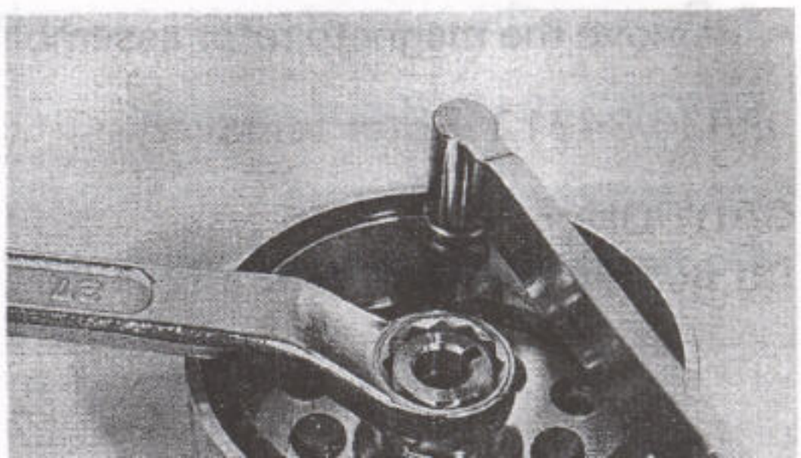
- When installing the starter clutch to the rotor, face the cut ③ of the cage to the rotor as shown in photo.



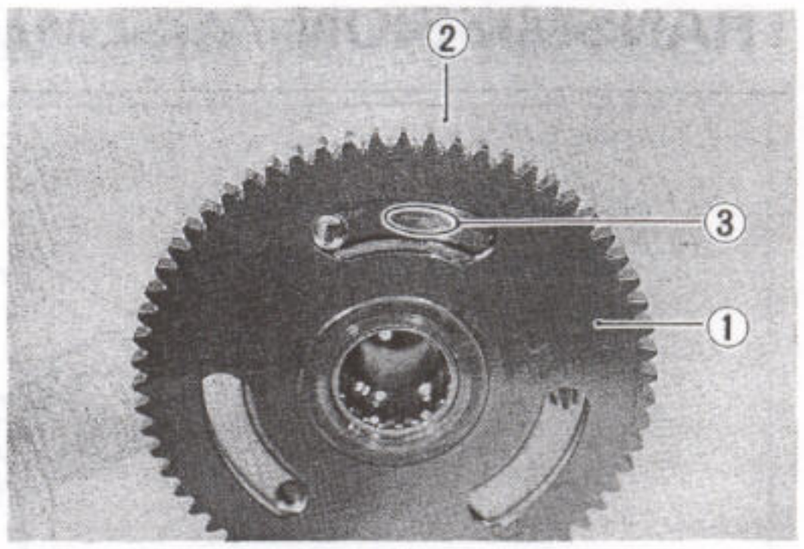
- Apply THREAD LOCK SUPER "1303" to the bolts and tighten them to the specified torque.

99000-32030: THREAD LOCK SUPER "1303"

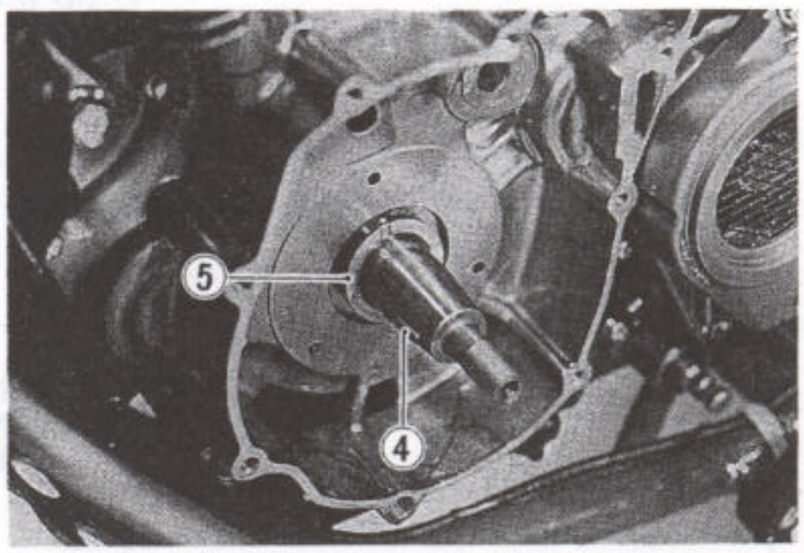
Tightening torque: 26 N·m (2.6 kg-m, 19.0 lb-ft)



- Install the starter gear ① to the stater clutch.
- Check that the rotor ② turns in the direction of the arrow mark ③ on the starter clutch holder while holding the starter gear ①, and that the rotor ② never turns in the opposite direction of the arrow mark ③.



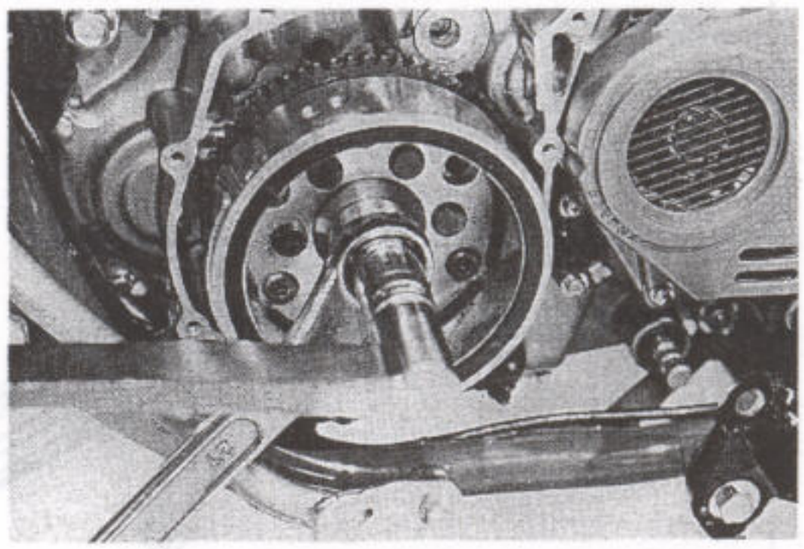
- Degrease the tapered portion of the magneto rotor and also crankshaft.
- Fit the key ④ and washer ⑤.
- Install the magneto rotor assembly.



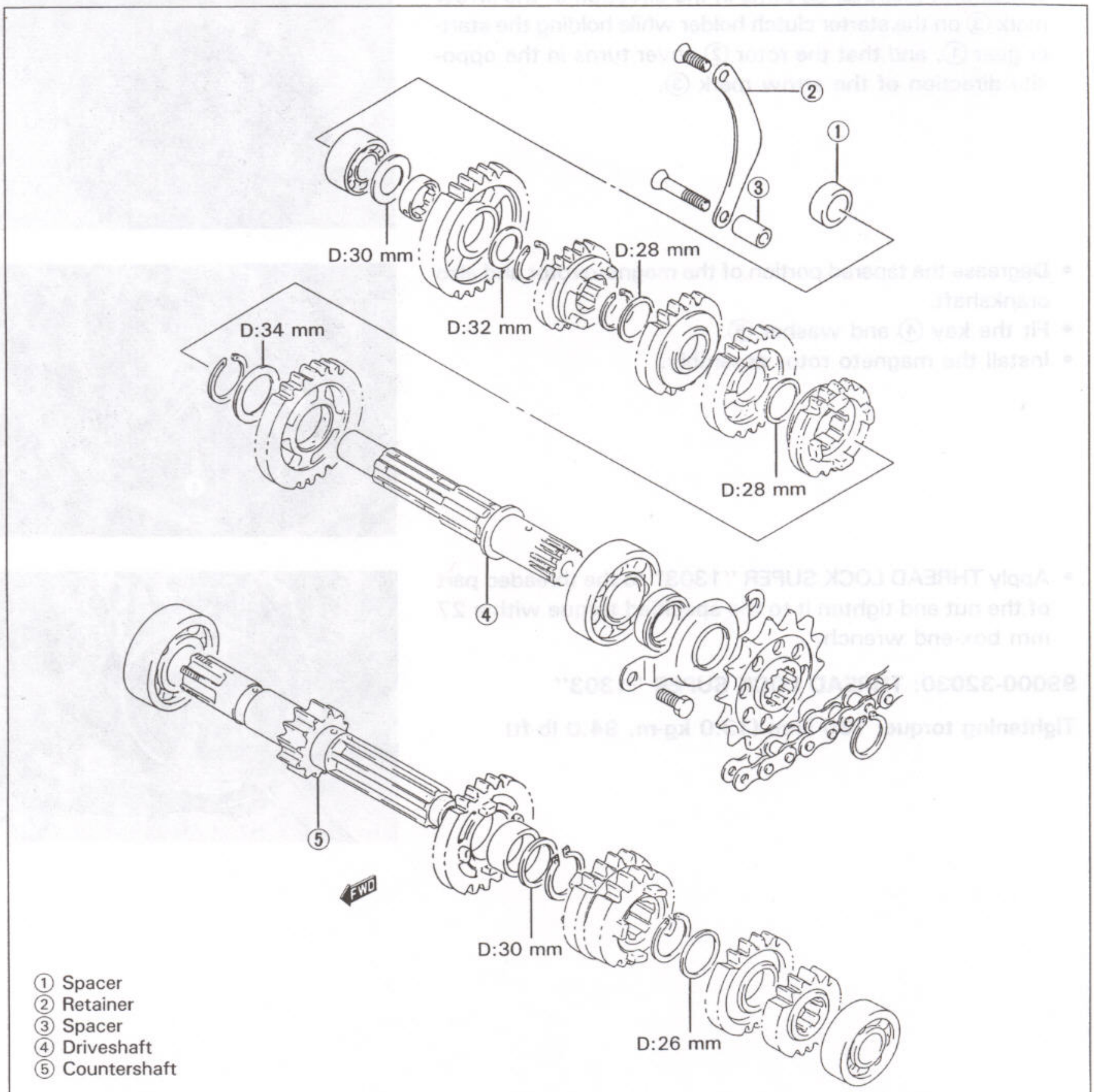
- Apply THREAD LOCK SUPER "1303" to the threaded part of the nut and tighten it to the specified torque with a 27 mm box-end wrench.

99000-32030: THREAD LOCK SUPER "1303"

Tightening torque: 130 N·m (13.0 kg-m, 94.0 lb-ft)



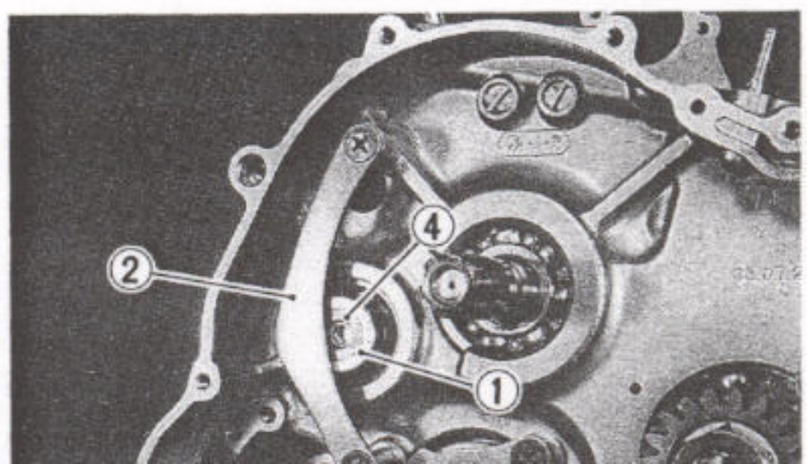
TRANSMISSION ASSEMBLY



① Spacer
② Retainer
③ Spacer
④ Driveshaft
⑤ Countershaft

Note: "D" means the outer diameter of washers.

- Install the spacer ① to the driveshaft ④ before installing the retainer ②.



EMISSION CONTROL CARBURETOR COMPONENTS (DR350SER)

DR350SER motorcycles are equipped with precision, manufactured carburetors for emission level control. These carburetors require special mixture control components and other percision adjustments to function properly.

There are several carburetor mixture control components in each carburetor assembly. Three (3) of these components are machined to much closer tolerances than standard machined carburetor jets. These three (3) particular jets—MAIN JET, NEEDLE JET, PILOT JET— must not be replaced by standard jets. To aid in identifying these three (3) jets a different design of letter and number are used. If replacement of these close tolerance jets becomes necessary, be sure to replace them with the same type close tolerance jets marked as in the examples shown below.

The jet needle is also of special manufacture. Only one clip position is provided on the jet needle. If replacement becomes necessary the jet needle may only be replaced with an equivalent performing replacement component. Suzuki recommends that Genuine Suzuki Parts be utilized whenever possible for the best possible performance and durability.

Conventional Figures Used on Standard Tolerance Jet Components	1 2 3 4 5 6 7 8 9 0
Emission Type Figures Used On Close Tolerance Jet Components	1 2 3 4 5 6 7 8 9 0

The carburetor specification for the emission-controlled DR350SER are as follows.

Carburetor I.D. No.	Main Jet	Needle Jet	Jet Needle	Pilot Jet	Pilot Screw
14ES (California model)	#127.5	0-6	5CD16	#37.5	PRE-SET DO NOT ADJUST
14EP (Other state models)					

The pilot screw is pre-set by the factory utilizing specialized testing and adjusting procedures. The pilot screw is not adjustable as the idle circuit is ''sealed'' after factory adjustment. Adjusting, interferring with, improper replacement, or resetting of any of the carburetor components may adversely affect carburetor performance and cause the motorcycle to exceed the exhaust emission level limits. If persons, who are unaware of these special carburetor servicing requirements tamper with the carburetors the Suzuki dealer should restore the carburetors to their original condition or if unable to effect repairs, contact the distributors representative for further technical information and assistance.

IGNITION AND STARTER SYSTEM (DR350SER)

DESCRIPTION

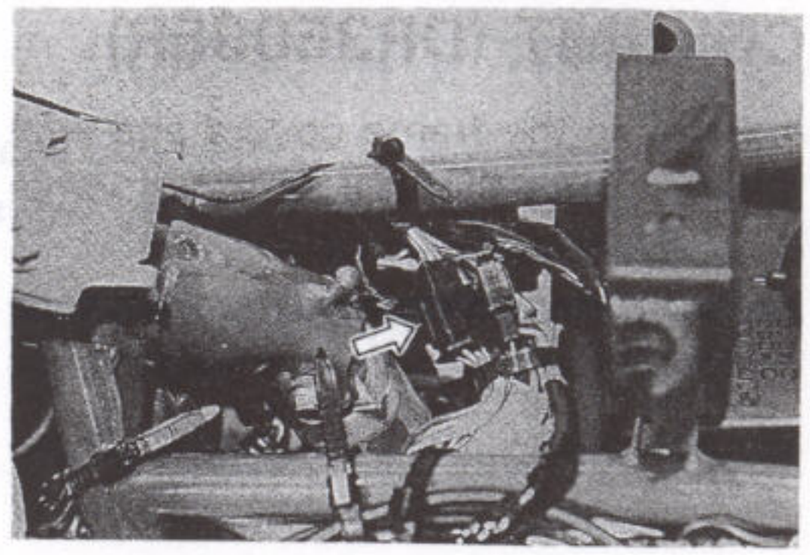
The capacitor discharged ignition system consists of a signal generator, CDI unit, ignition coil and spark plug. The electrical energy generated by the signal generator charges the capacitor. This energy is released in a single surge at the specified ignition timing point, and current flows through the primary side of the ignition coil. A high voltage current is induced in the secondary windings of the ignition coil resulting in strong spark between the spark plug gap. Ignition cut-off circuit is incorporated in the CDI unit. If the crankshaft turns in the reverse direction and reverse current is produced, this circuit works on the capacitor to cut off the primary current of the ignition coil. It causes no sparking between spark plug gap.

The starter system consists of a side-stand switch, neutral switch, clutch switch and side-stand relay. This function is to supply the current from the battery to the side-stand relay and starter relay only when the transmission gear is at the neutral position or when the side-stand is at the upright position.

Note: Clutch switch is installed only for U.S.A. and Canada.

GENERATOR (DR350SER)

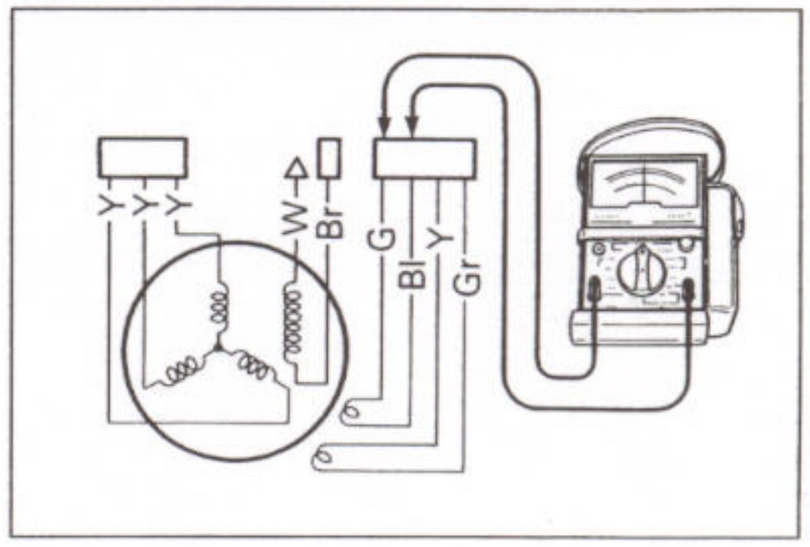
GENERATOR STATOR COIL



- Remove the frame covers and seat.
- Disconnect the generator lead wires.

Measure the resistance between the lead wires with a pocket tester as shown in the illustration.

09900-25002: Pocket tester



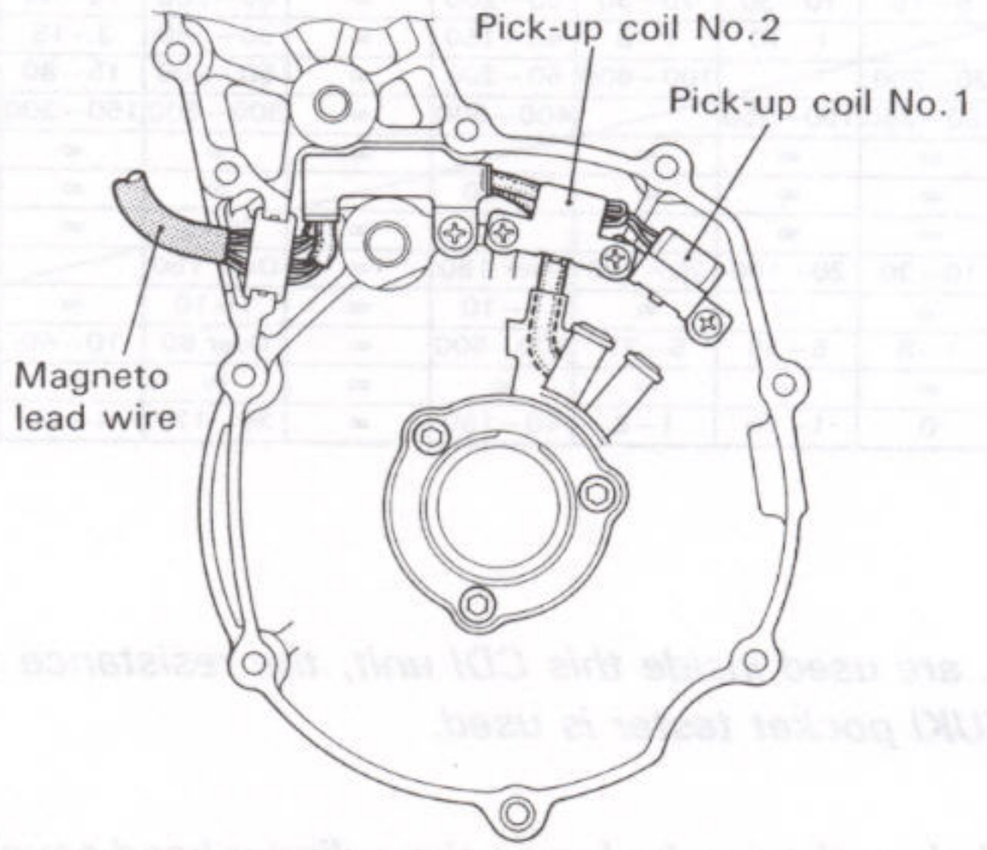
Generator stator coil resistance (DR350SER)

Charging coil: 0.1—1.5 Ω (Y—Y)
Power source coil: 350—650 Ω (W—Br)
Pick-up coil No.1: 350—700 Ω (G—Bl)
Pick-up coil No.2: 350—700 Ω (Y—Gr)

WIRE COLOR

B	: Black	Gr	: Gray
Bl	: Blue	W	: White
Br	: Brown	Y	: Yellow
G	: Green		

GENERATOR STATOR INSTALLATION



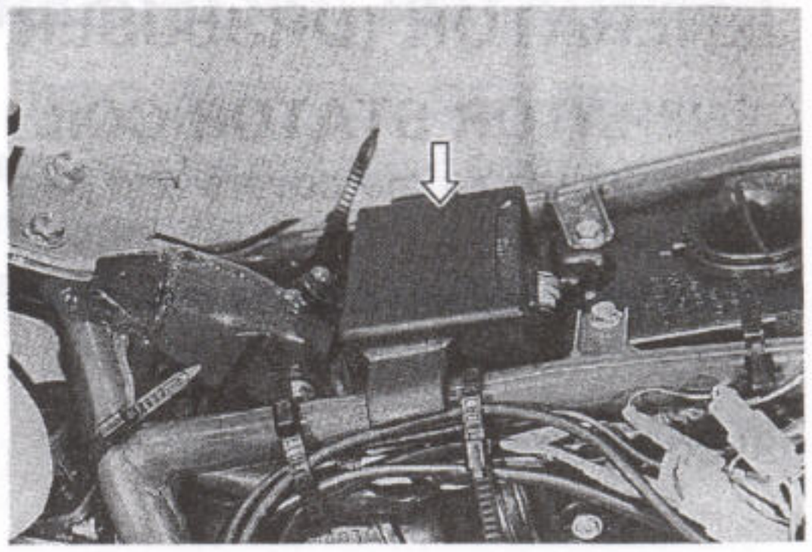
DR350SER

CDI UNIT (DR350SER)

- Remove the frame covers and seat.
- Disconnect the CDI unit lead wires.

Check the continuity and measure the resistance values with a pocket tester.

09900-25002: Pocket tester



WIRE COLOR

Bl	: Blue
Br	: Brown
G	: Green
Gr	: Gray
W	: White
Y	: Yellow
B/W	: Black with White tracer
B/Y	: Black with Yellow tracer
Bl/B	: Blue with Black tracer
Bl/R	: Blue with Red tracer
G/R	: Green with Red tracer
W/Bl	: White with Blue tracer
W/R	: White with Red tracer

DR350SER

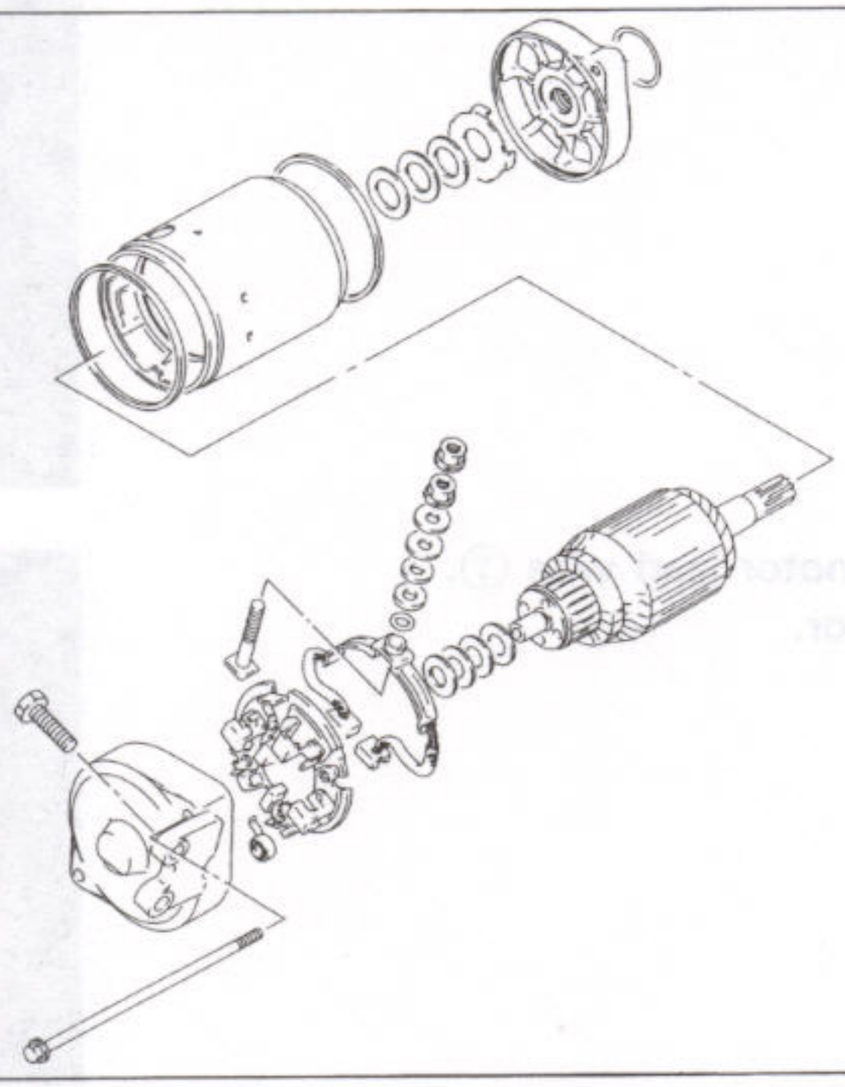
Unit: kΩ

⊖ Probe of tester to:	⊕ Probe of tester to: G	Bl	Y	Gr	W	Br	Bl/R	Bl/B	G/R	W/R	G/Y	W/Bl	B/Y	B/W
G		5–15	15–30	5–15	10–30	10–30	50–200	∞	50–200	10–40	∞	∞	20–80	5–20
Bl	5–15		5–15	0	1–10	1–8	40–150	∞	30–180	3–15	∞	∞	5–30	0
Y	15–30	5–15		5–15	10–30	10–30	50–200	∞	50–200	15–40	∞	∞	20–80	5–20
Gr	5–15	0	5–15		1–10	1–8	40–150	∞	30–180	3–15	∞	∞	5–30	0
W	70–250	30–200	70–250	30–200		100–600	50–200	∞	50–200	15–80	∞	∞	Over 300	30–200
Br	100–250	100–250	100–250	100–250	150–250		400–600	∞	300–600	150–300	∞	∞	1–10	100–200
Bl/R	∞	∞	∞	∞	∞	∞		∞	∞	∞	∞	∞	∞	∞
Bl/B	∞	∞	∞	∞	∞	∞	1–10		∞	∞	∞	∞	∞	∞
G/R	∞	∞	∞	∞	∞	∞	∞	∞		∞	∞	∞	∞	∞
W/R	20–60	10–30	20–60	10–30	20–100	20–100	Over 150	∞	Over 150		∞	∞	50–600	10–30
G/Y	∞	∞	∞	∞	∞	∞	1–10	∞	1–10	∞		∞	∞	∞
W/Bl	10–30	1–8	10–30	1–8	5–30	5–25	100–600	∞	Over 80	10–40	∞		15–200	1–8
B/Y	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞		∞
B/W	5–15	0	5–15	0	1–10	1–8	40–150	∞	30–170	4–15	∞	∞	5–30	

NOTE:
As capacitors, diodes, etc. are used inside this CDI unit, the resistance values will deffer when an ohmmeter other than SUZUKI pocket tester is used.

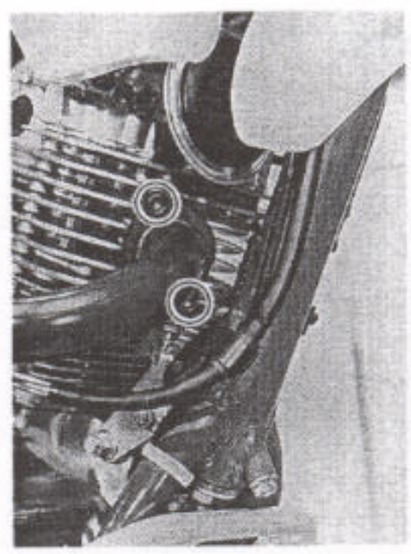
NOTE:
Remove the spark plug and place the spark plug on the cylinder head cover kick the engine and check the sparks of the spark plug. If no sparking at spark plug gap, replace the CDI unit or inspect the magneto coils, ignition coils and spark plug. If the magneto coils, ignition coils and spark plug checked are correct, the CDI unit may be faulty, replace the CDI unit with a new one.

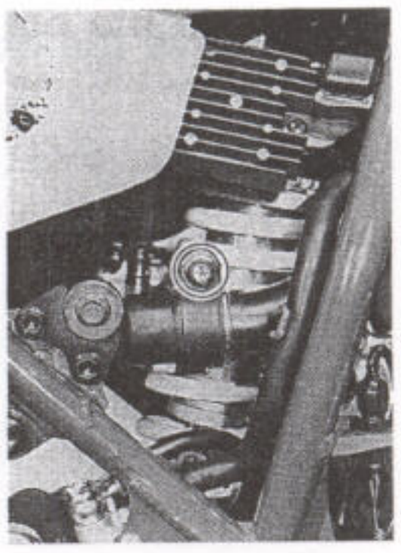
STARTER MOTOR (DR350SER)



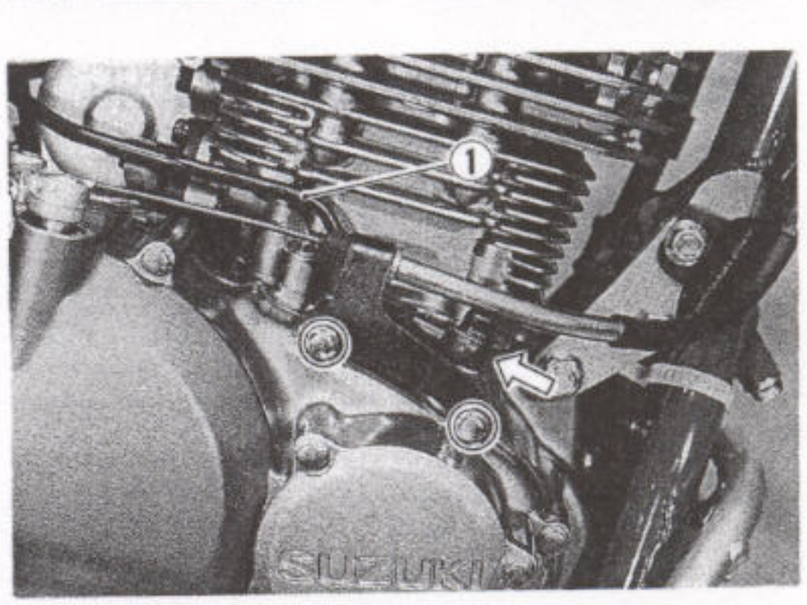
STARTER MOTOR REMOVAL AND DISASSEMBLY

- Remove the exhaust muffler.

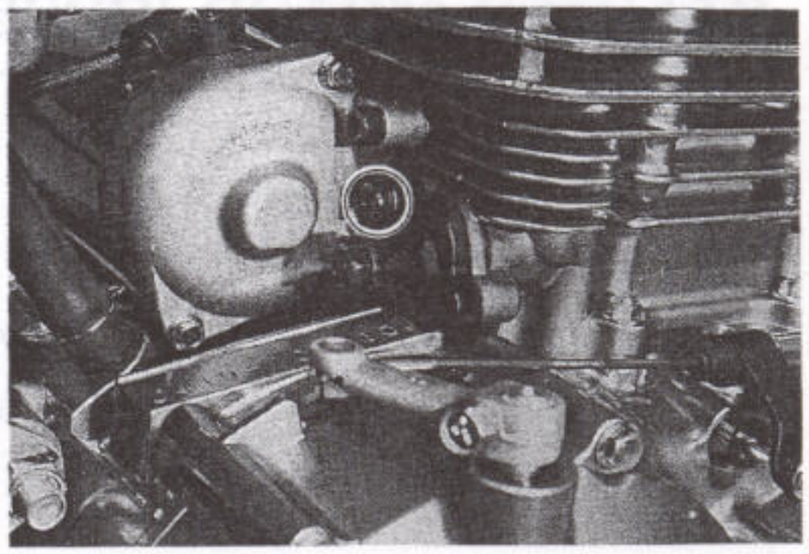




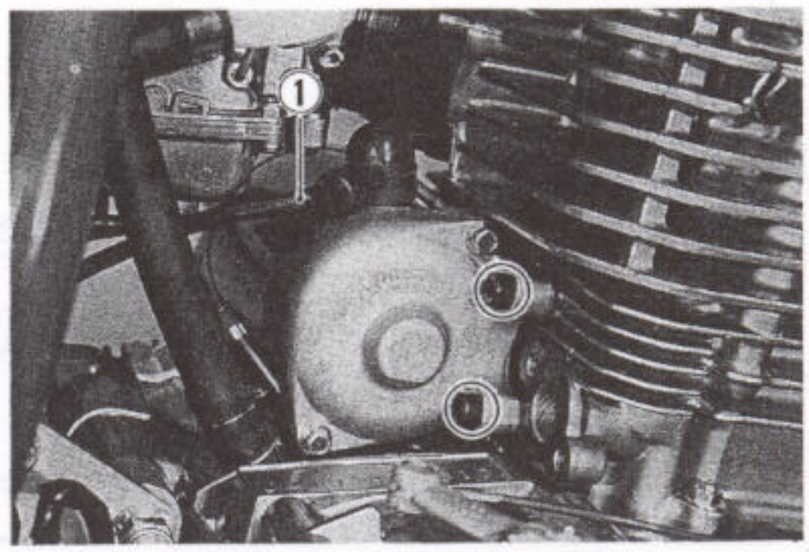
- Remove the engine oil pipe ① after loosening the clutch cable holder bolts.



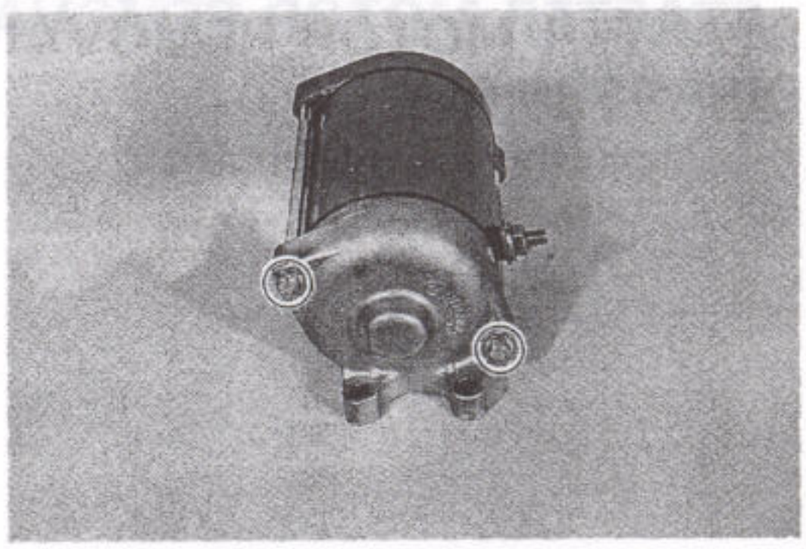
- Remove the cam chain tensioner adjuster.



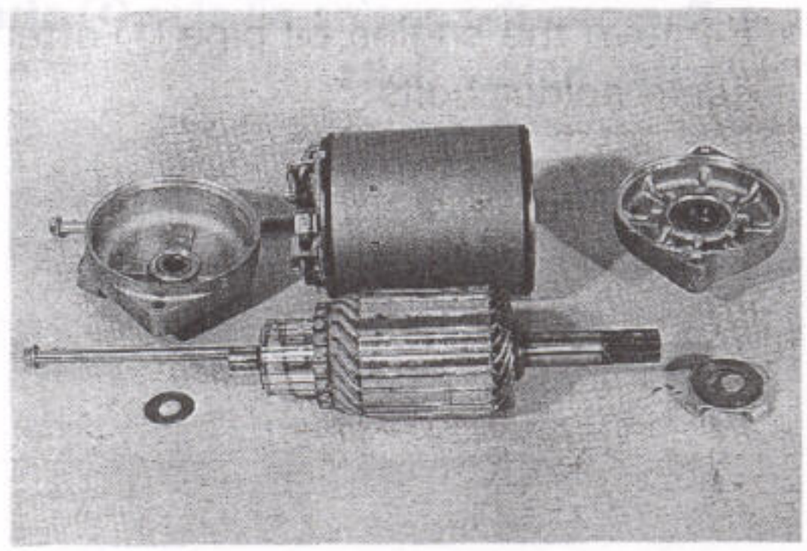
- Disconnect the starter motor lead wire ①.
- Remove the starter motor.



- Remove the bolts.



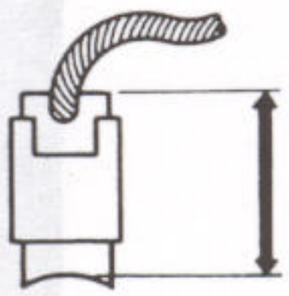
- Disassemble the starter motor.



STARTER MOTOR INSPECTION

CARBON BRUSH

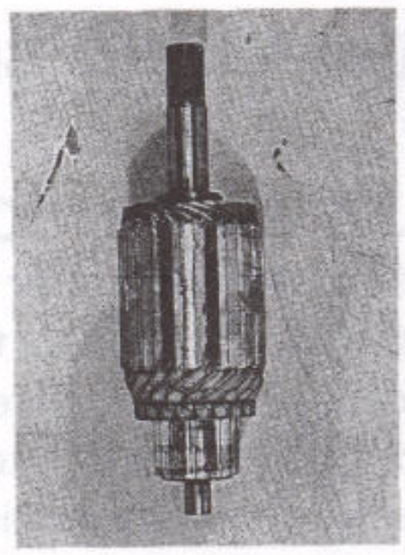
When the brushes are worn, the motor will be unable to produce sufficient torque, and the engine will be difficult to turn over. To prevent this, periodically, inspect the length of the brushes, replacing them when they are too short or chipping.

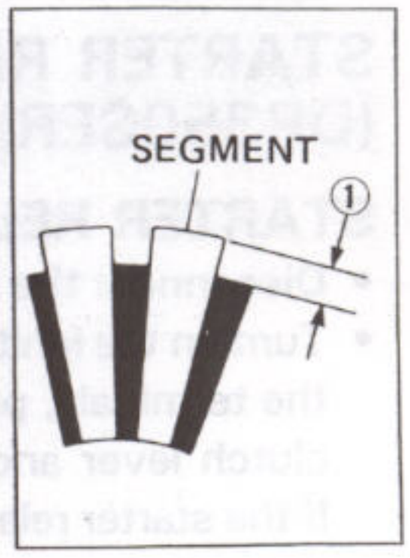


COMMUTATOR

If the commutator surface is dirty, starting performance decreases. Polish the commutator with #400 or similar fine emery paper when it is dirty.
After polishing it, wipe the commutator with a clean dry cloth.
Measure the commutator under-cut ①.

Service Limit: 0.2 mm (0.008 in)

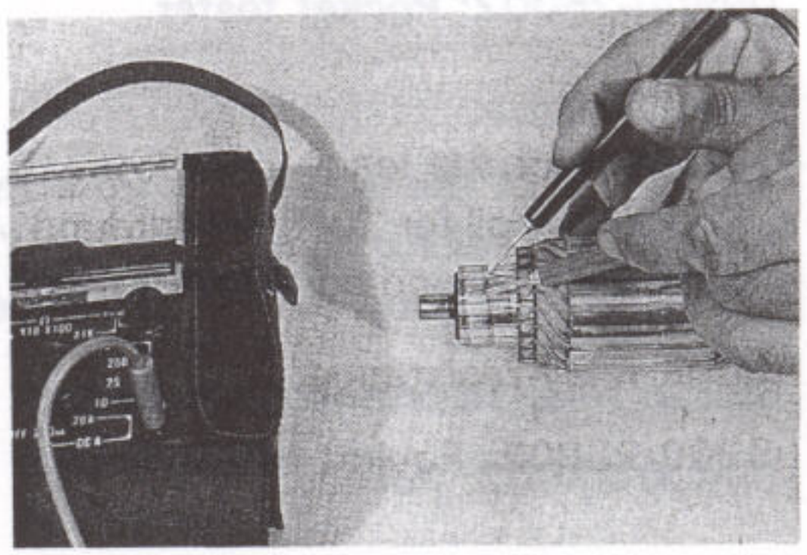




ARMATURE COIL

Using a pocket tester, check the coil for open and ground by placing probe pins on each commutator segment and rotor core (to test for ground) and on any two segments at various places (to test for open), with the brushes lifted off the commutator surface.
If the coil is found to be open-circuited or grounded, replace the armature. Continuous use of a defective armature will cause the starter motor to suddenly fail.

09900-25002: Pocket tester



STARTER MOTOR REASSEMBLY

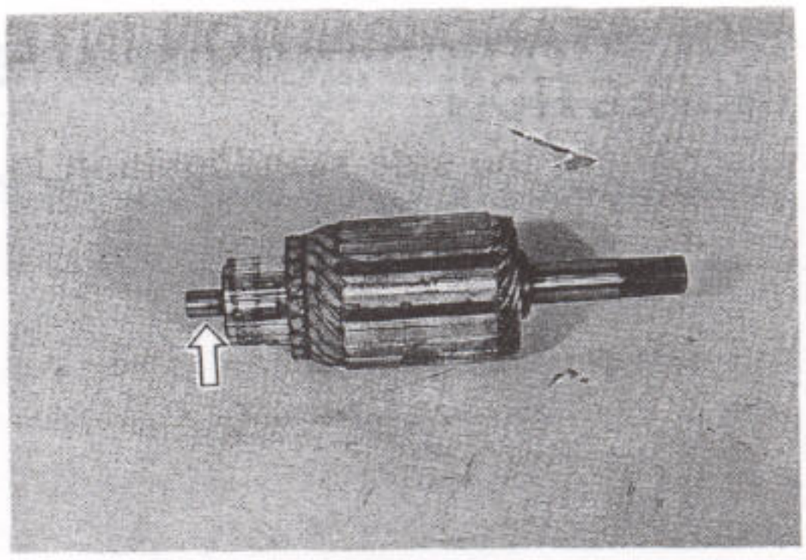
O-RING

CAUTION:
Replace the O-ring with new ones to prevent oil leakage and moisture.

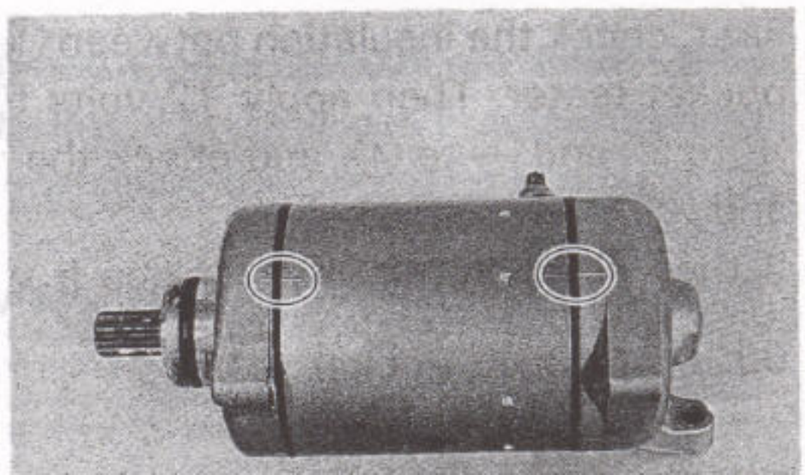
ARMATURE

- Apply a small quantity of moly paste to the armature end.

99000-25140: SUZUKI Moly Paste



- When installing the motor housing and housing end, align the marks.

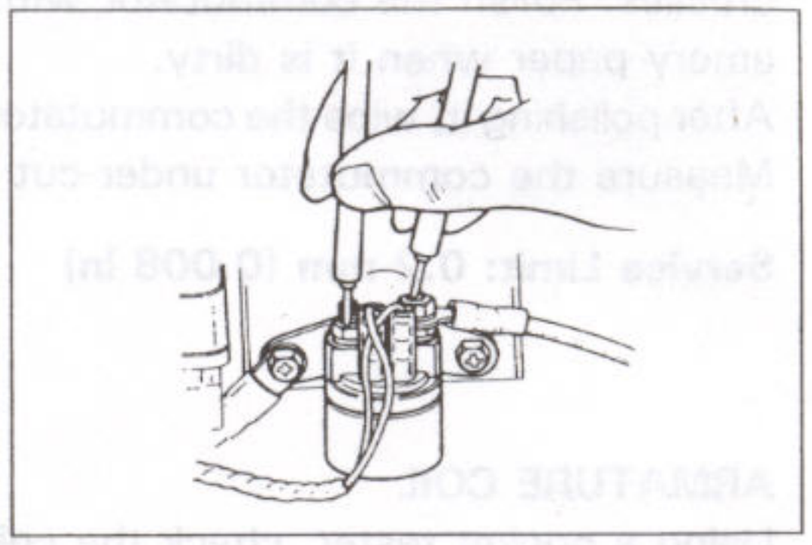


STARTER RELAY AND SIDE-STAND/IGNITION INTERLOCK RELAY (DR350SER)

STARTER RELAY INSPECTION

- Disconnect the lead wire of starter motor at starter relay.
- Turn on the ignition switch, inspect the continuity between the terminals, positive and negative, when squeezing the clutch lever and pushing the starter button.
  If the starter relay is in sound condition, continuity if found.

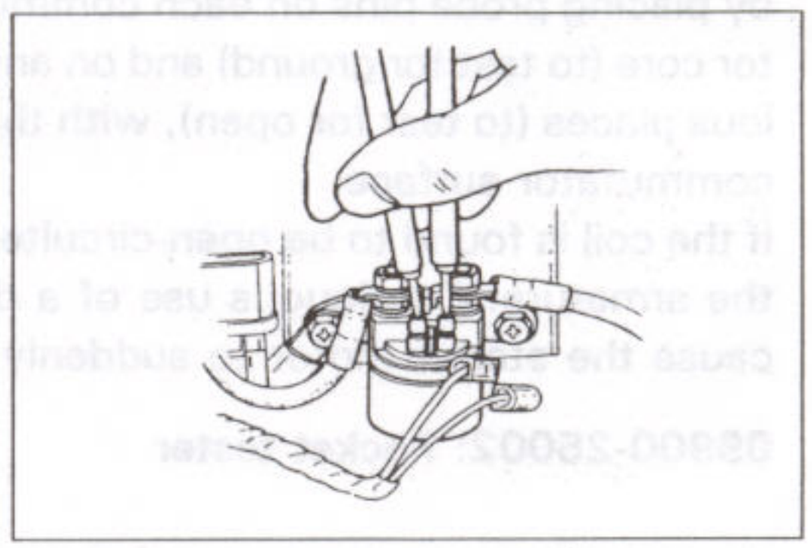
09900-25002: Pocket tester



- Disconnect the lead wires from the starter relay.
- Check the coil for "open", "ground" and ohmic resistance.
  The coil is in good condition if the resistance is as follows.

Starter relay resistance: 3—7 Ω

09900-25002: Pocket tester



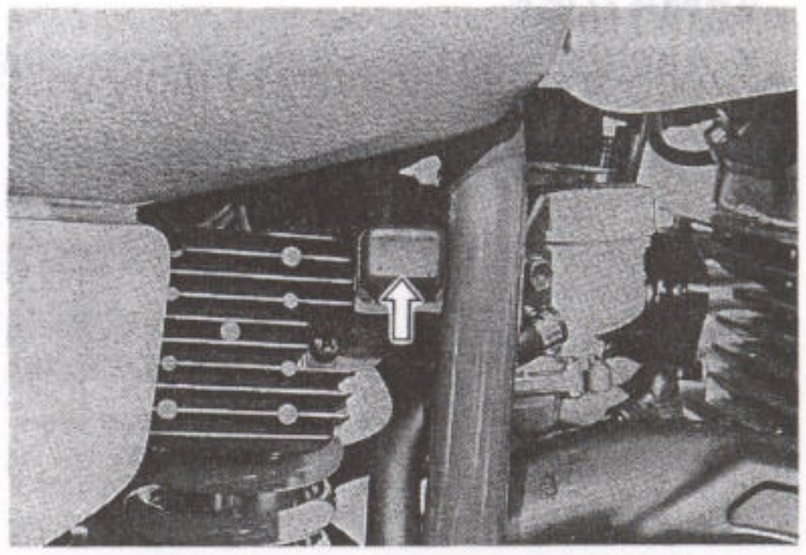
SIDE-STAND SWITCH INSPECTION

	Green	Black/White
ON (Up-right position)	○———	———○
OFF (Down position)		

NOTE:
When inspecting side-stand switch, connect the ⊕ probe of pocket tester to Black/White lead wire and ⊖ probe to Green lead wire.

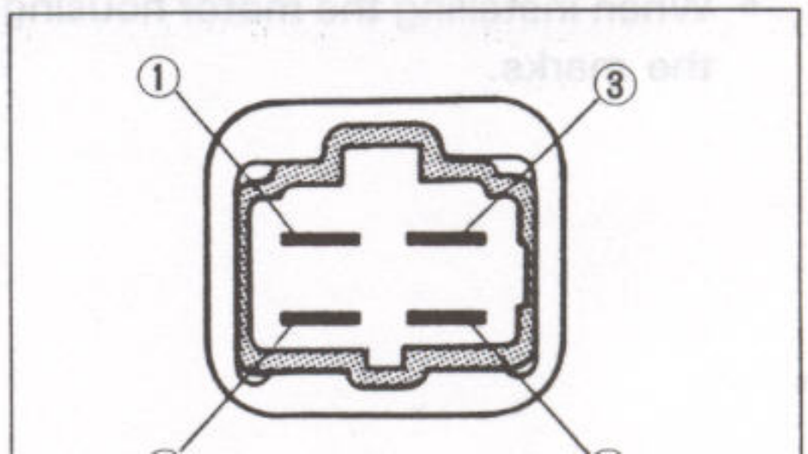
SIDE-STAND/IGNITION INTERLOCK RELAY INSPECTION

Disconnect the side-stand/ignition interlock relay.



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

09900-25002: Pocket tester



BATTERY (DR350SER)

SPECIFICATIONS

Type designation	YTX7L-BS
Capacity	12V 21.6 kC (6 Ah)/10HR
Standard electrolyte S.G.	1.320 at 20°C (68°F)

RECHARGING OPERATION

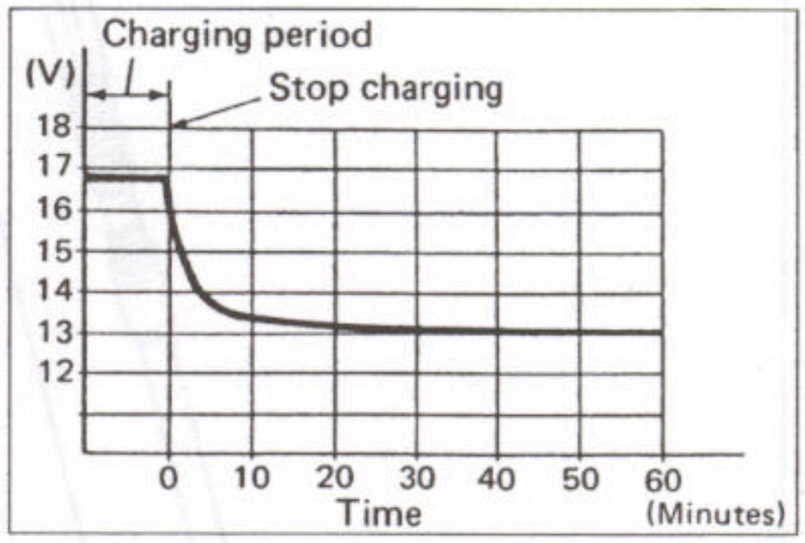
- Using the pocket tester, check the battery voltage. If the voltage reading is less than the 12.0V (DC), recharge the battery with a battery charger.

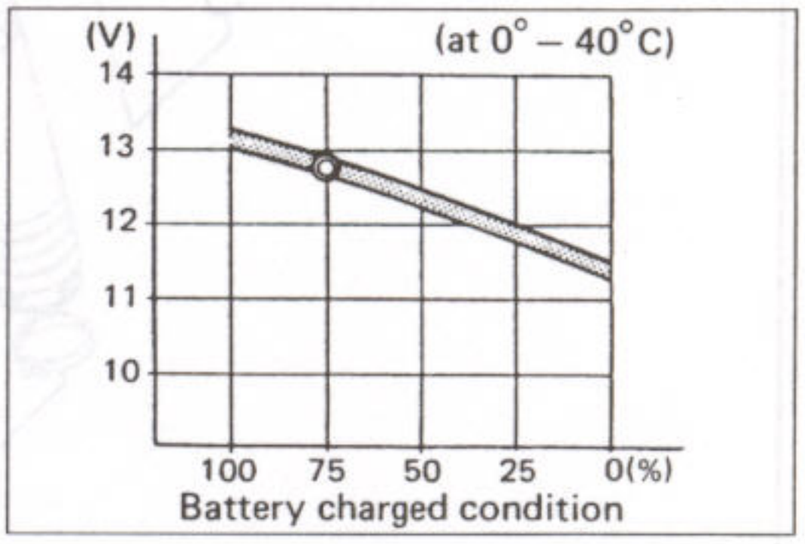
CAUTION:
When recharging the battery, remove the battery from the motorcycle.

NOTE:
Do not remove the caps on the battery top while recharging.

Recharging time: 0.7A for 5 hours or 3A for one hour

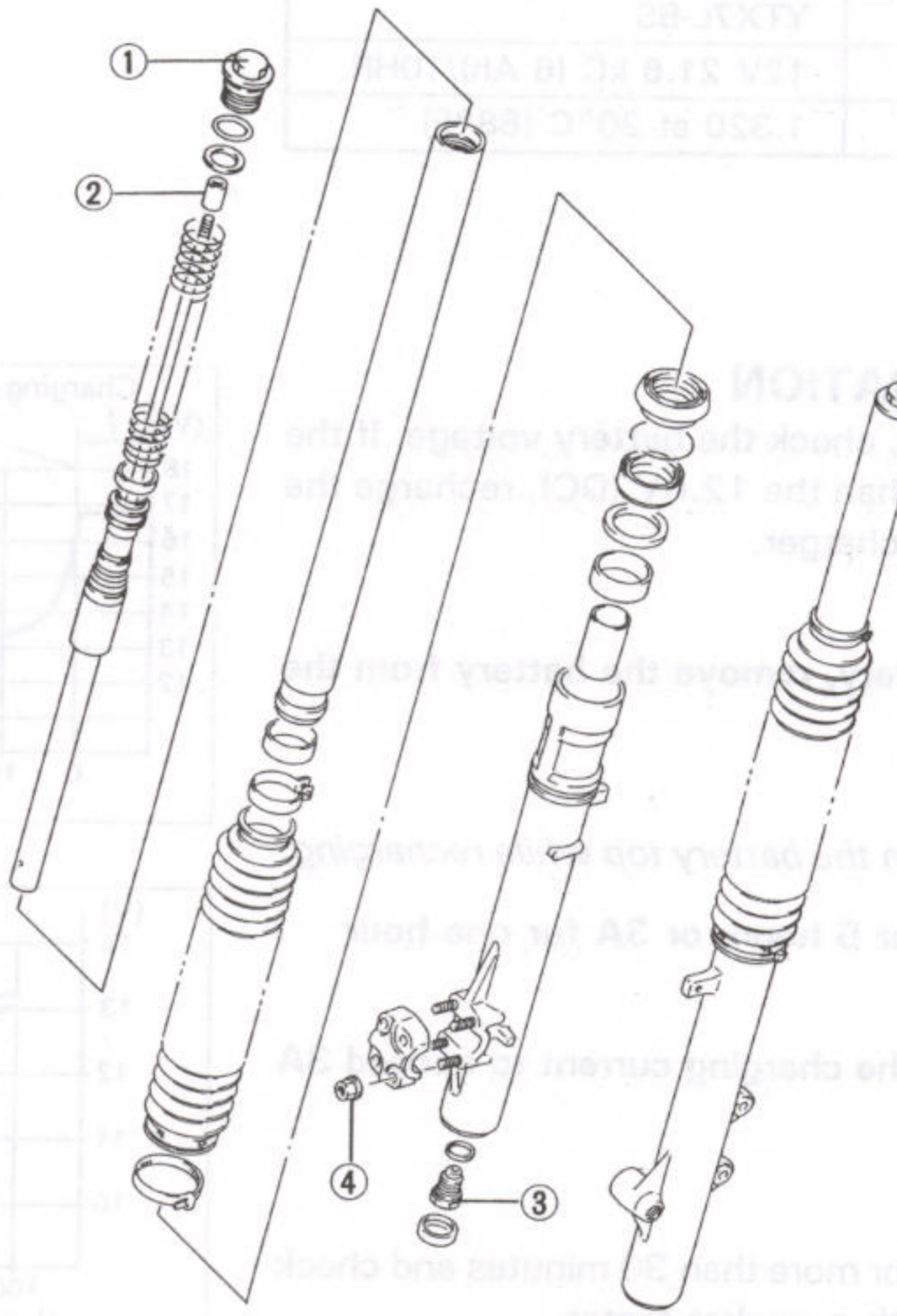
CAUTION:
Be careful not to permit the charging current to exceed 3A at any time.





- After recharging, wait for more than 30 minutes and check the battery voltage with a pocket tester.
- If the battery voltage is less than the 12.5V, recharge the battery again.
- If battery voltage is still less than 12.5V after recharging, replace the battery with a new one.
- When a battery is left for a long term without using, it is subject to discharge. When the motorcycle is not used for more than 1 month (especially during the winter season), check the battery voltage once a month at least.

FRONT FORK (DR350R)



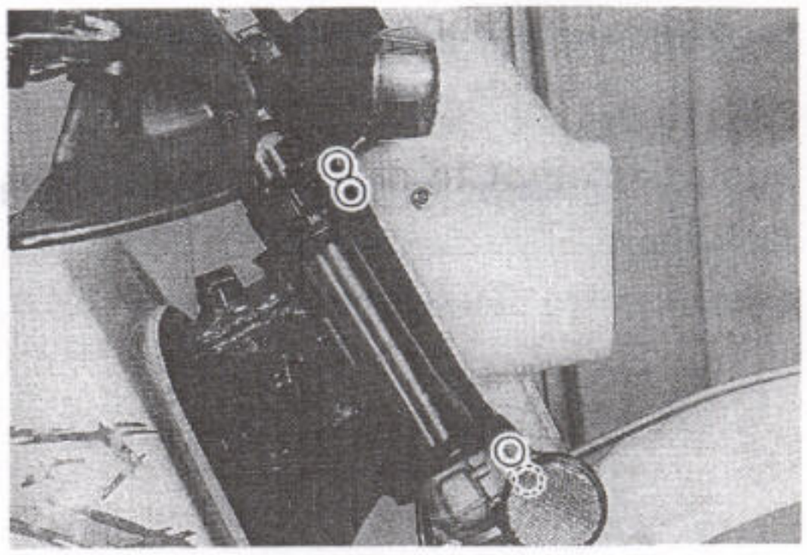
Tightening torque		
ITEM	N·m	kg-m
①	35	3.5
②	20	2.0
③	35	3.5
④	7	0.7

REMOVAL AND DISASSEMBLY

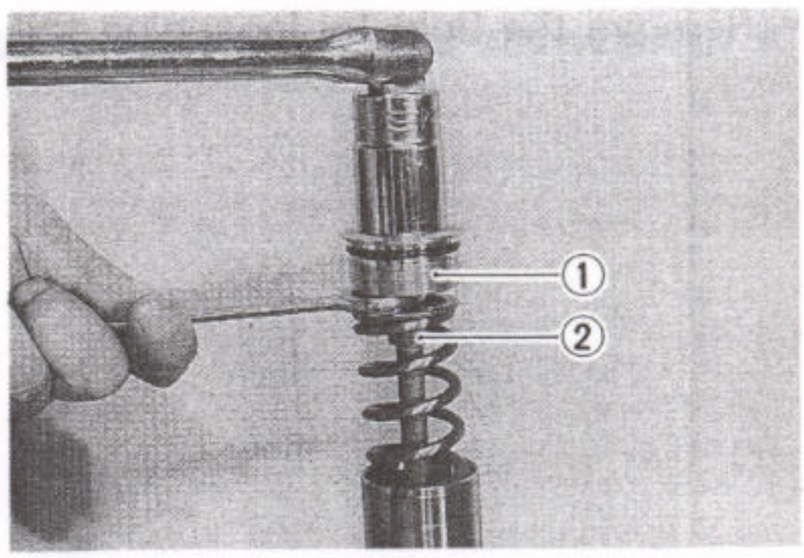
- Remove the front wheel.
- Remove the front brake caliper mounting bolts.
- Remove the front brake hose holder and meter cable guide.

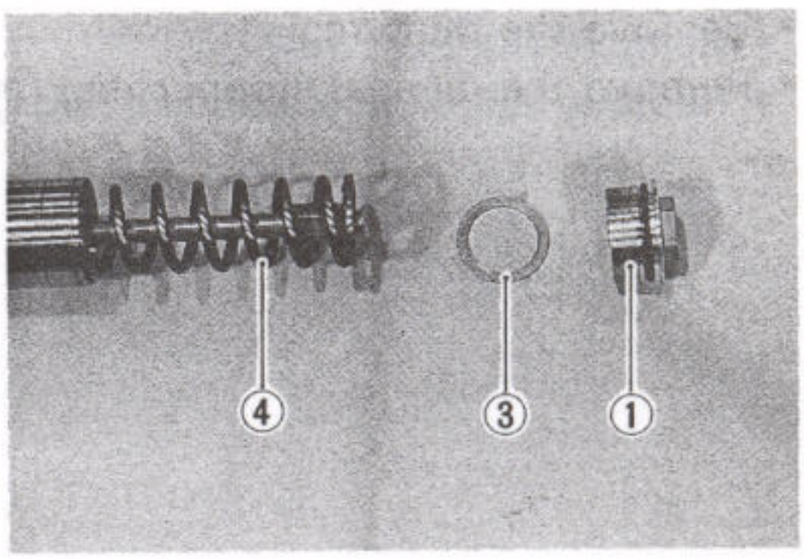
- Remove the front fork by loosening the upper and lower clamp bolts.

NOTE:
Slightly loosen the front fork cap facilitate later disassembly, before loosening the lower clamp bolts.

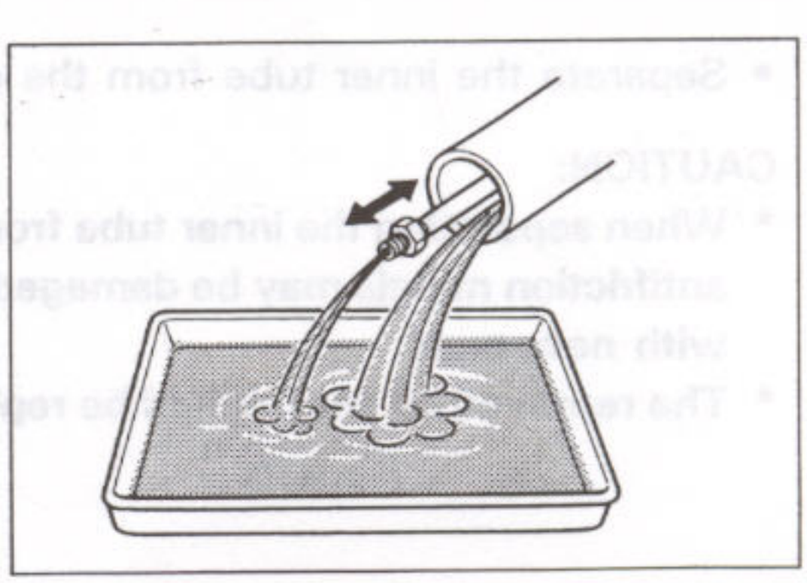


- Remove the front fork cap ① by loosening the lock nut ②.
- Remove the washer ③ and spring ④.

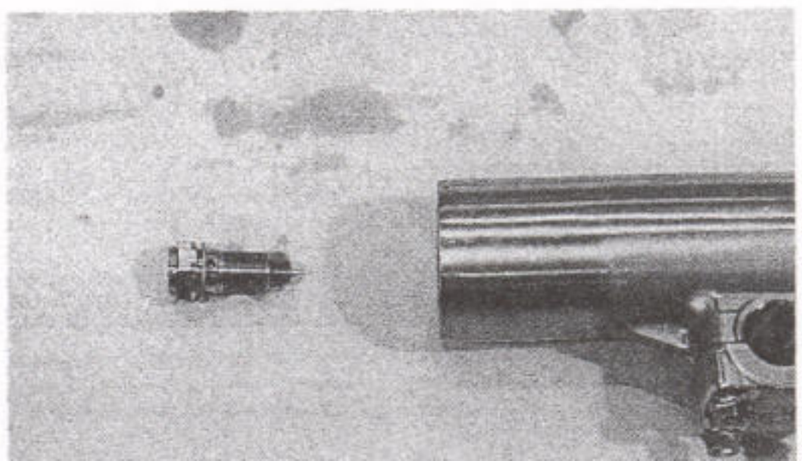




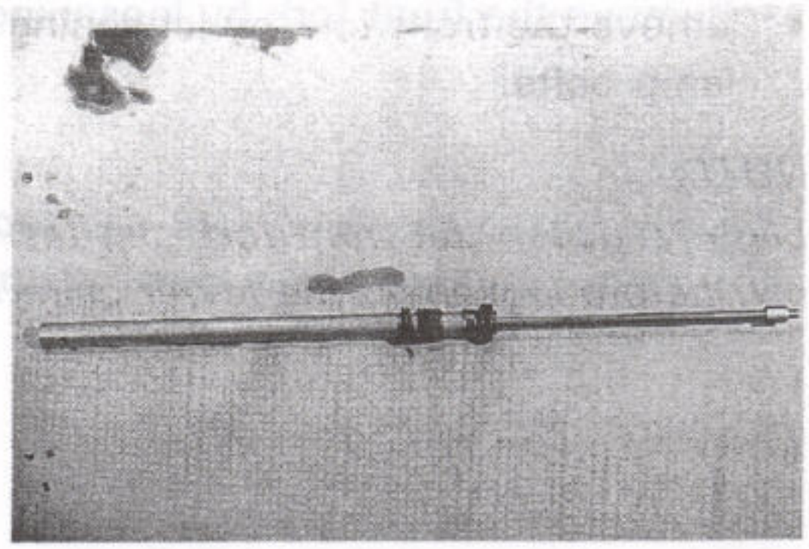
- Invert the fork and stroke the inner tube and inner rod several times to drain fork oil. Hold the fork inverted for a few minutes to drain oil.



- Remove the damper rod bolt.

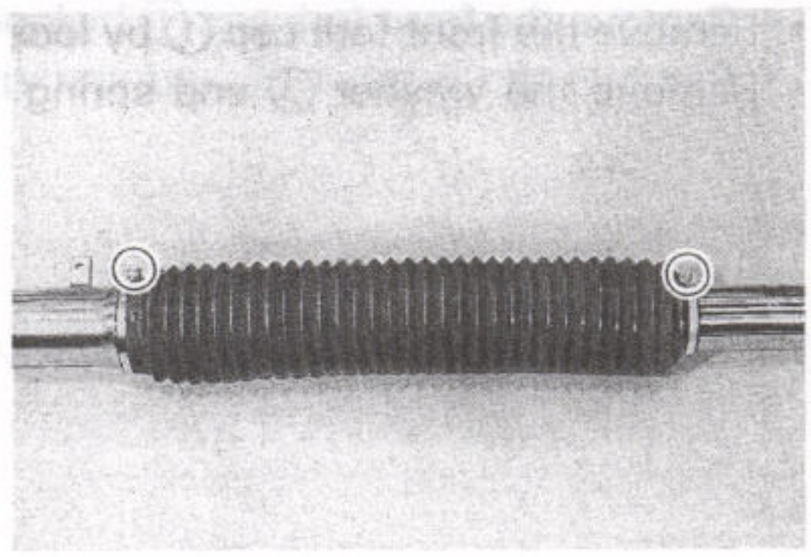


- Remove the inner rod.

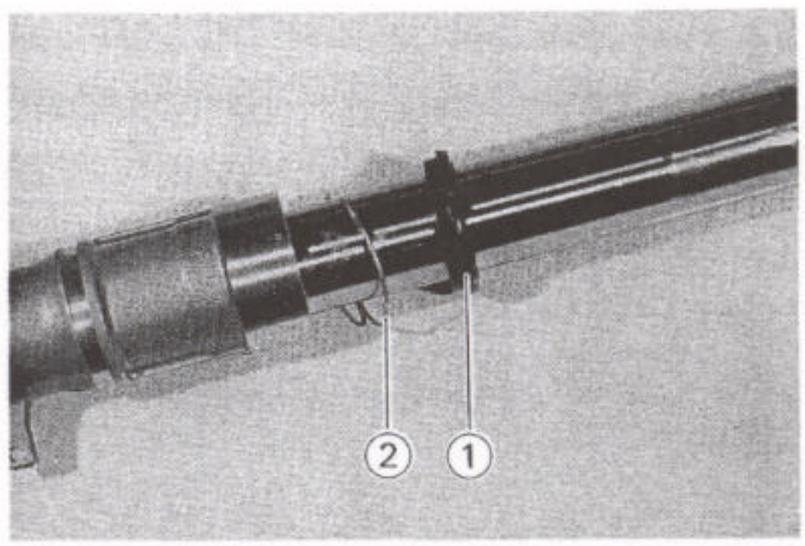


CAUTION:
Do not attempt to disassemble the inner rod. It is not serviceable.

- Remove the boot by loosening the clamp screws.

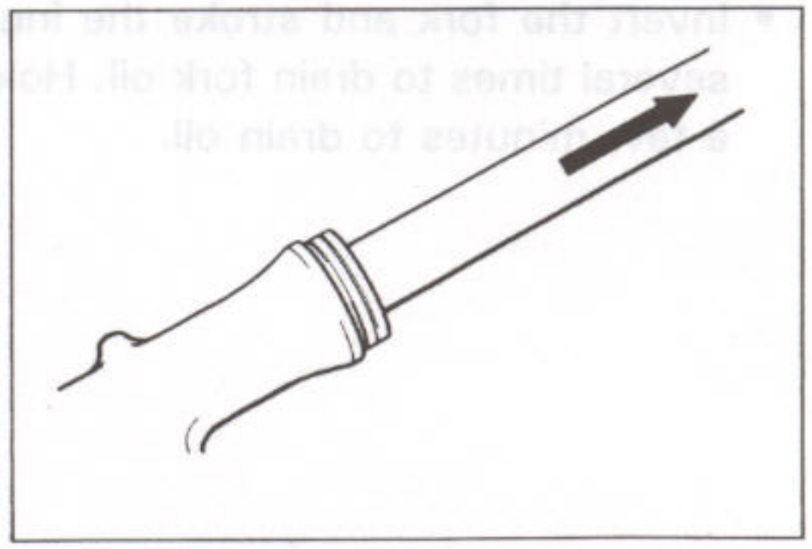


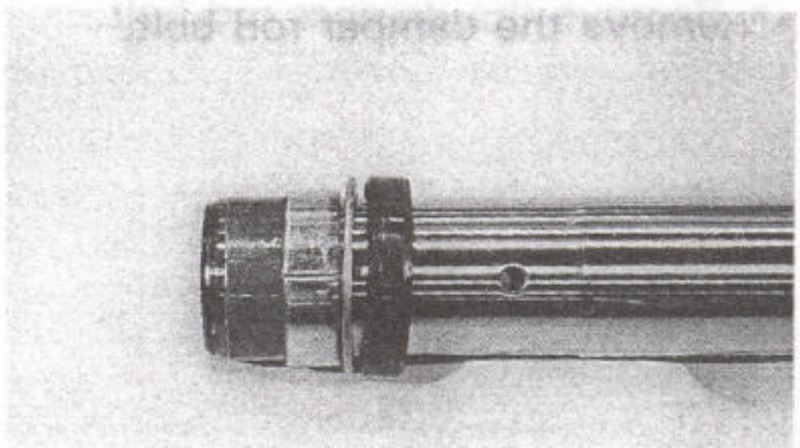
- Remove the dust seal ①.
- Remove the oil seal stopper ring ②.



- Separate the inner tube from the outer tube.

CAUTION:
* **When separating the inner tube from the outer tube, both antifriction metals may be damaged and must be replaced with new ones.**
* **The removed oil seal should be replaced with a new one.**

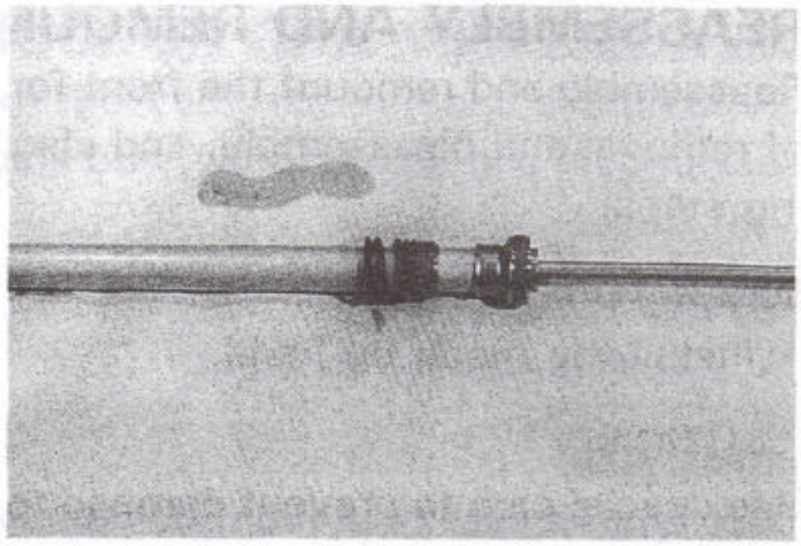




INSPECTION

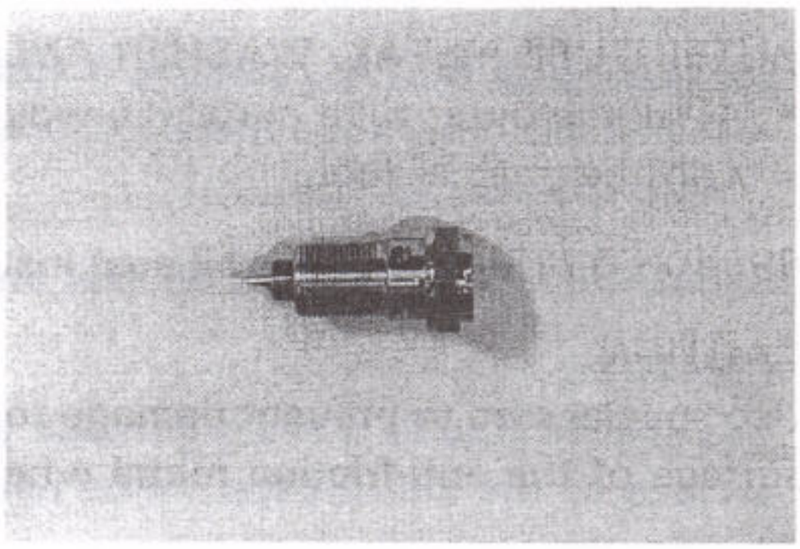
DAMPER ROD RING

Inspect the damper rod ring for wear or damage.



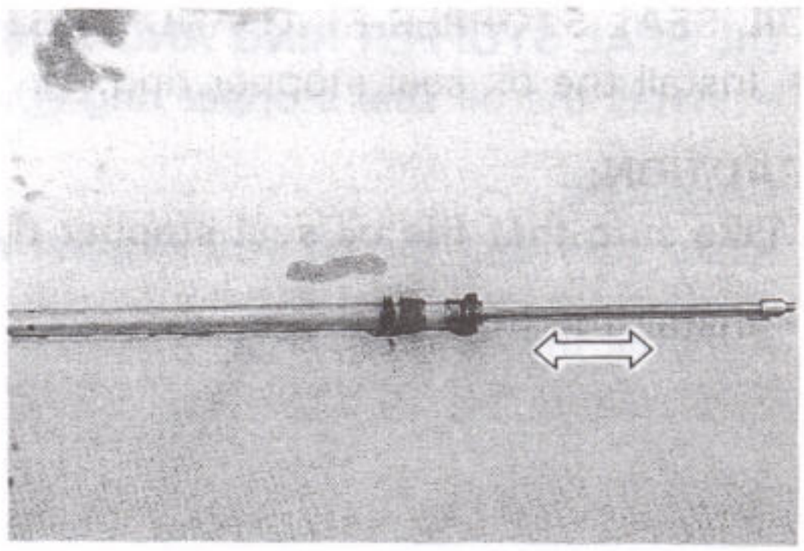
DAMPER ROD BOLT/DAMPING FORCE ADJUSTER

Inspect the damper rod bolt/damping force adjuster for wear or damage.



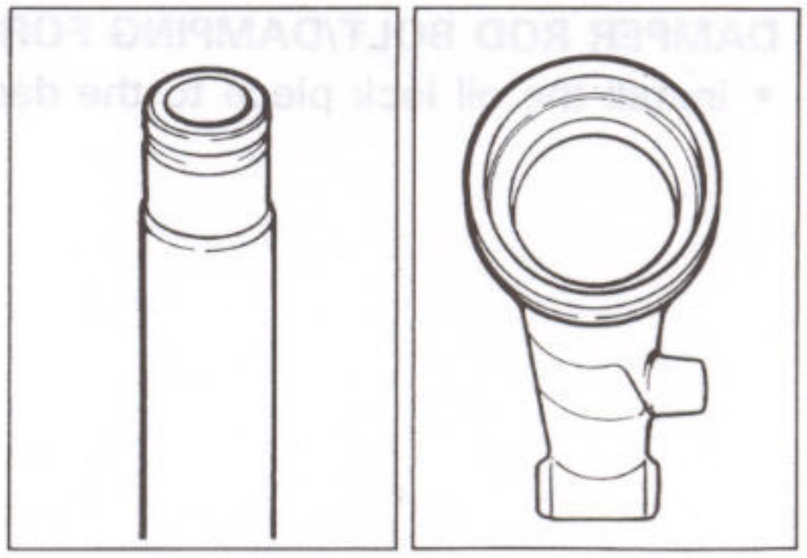
DAMPER ROD

Move the inner rod by hand to inspect it if operating smoothly.



INNER AND OUTER TUBE

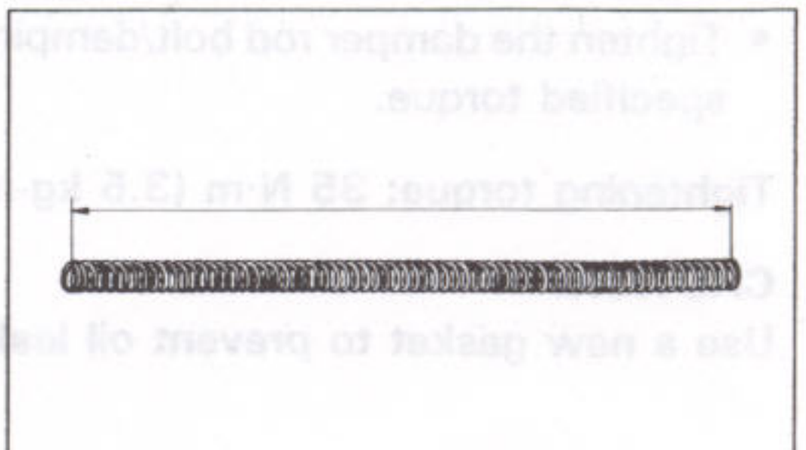
Inspect the inner tube and outer tube sliding surfaces for any scuffing or flaws.



FORK SPRING

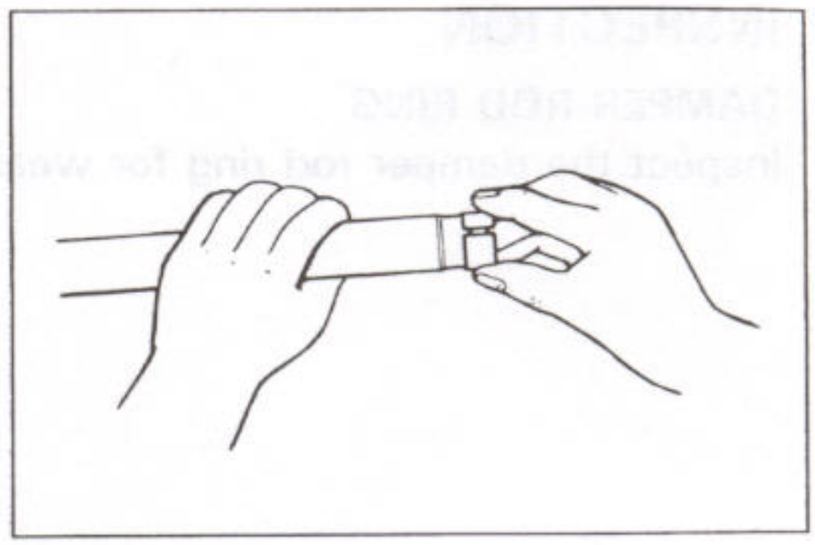
Measure the fork spring free length. If it is shorter than the service limit, replace it with a new one.

Service Limit: 551 mm (21.7 in)



REASSEMBLY AND REMOUNTING

Reassemble and remount the front fork in the reverse order of removal and disassembly, and also carry out the following steps:



INNER TUBE METAL

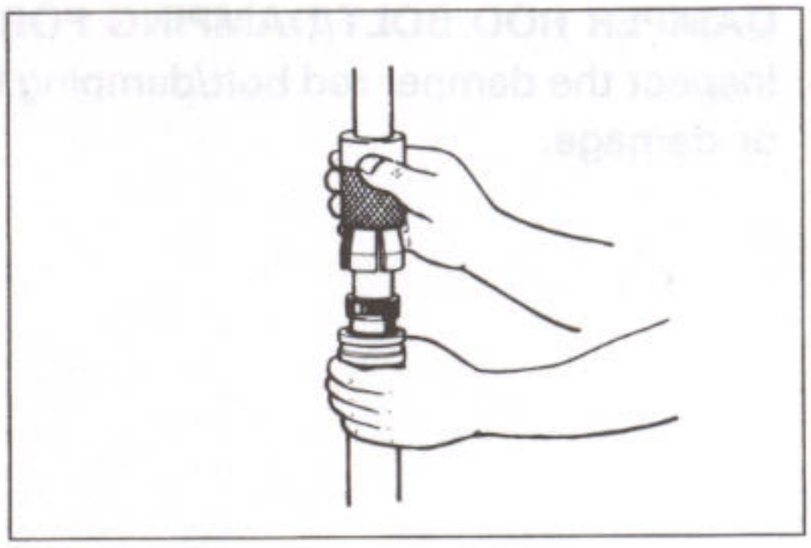
- Install the metal by hand.

CAUTION:
Use special care to prevent damage to the "Teflon" coated surface of the anti-friction metal when mounting it.

OUTER TUBE METAL, WASHER AND OIL SEAL

- Install the outer tube metal ①, washer ② and oil seal ③ with the special tool.

09940-50113: Front fork oil seal installer



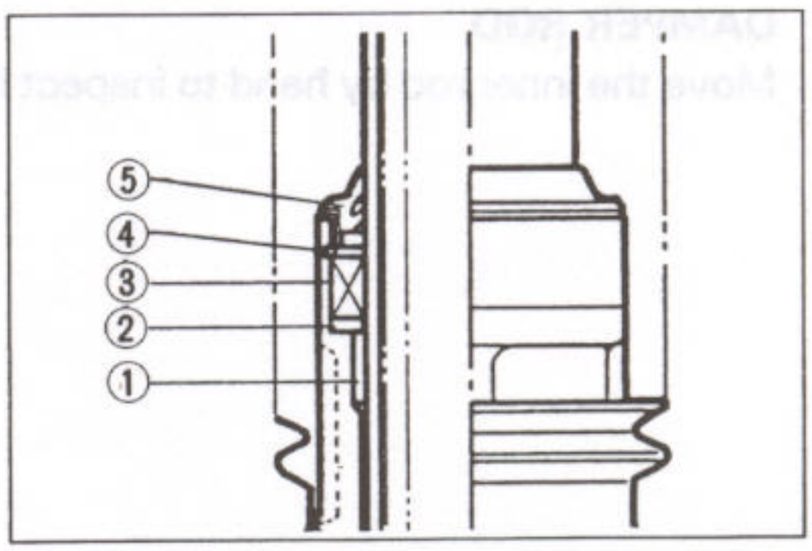
CAUTION:
Use special care to prevent damage to the "Teflon" coated surface of the anti-friction metal when mounting it.

OIL SEAL STOPPER RING AND DUST SEAL

- Install the oil seal stopper ring ④.

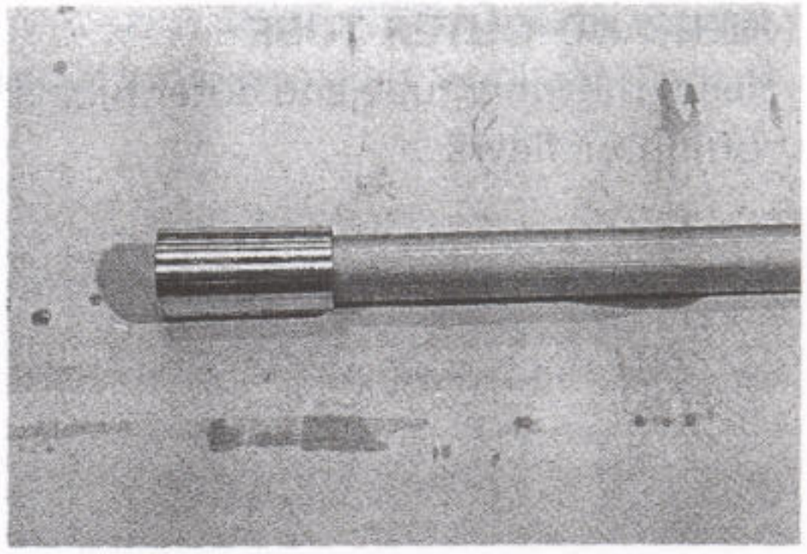
CAUTION:
Make sure that the oil seal stopper ring fitted securely.

- Install the dust seal ⑤.



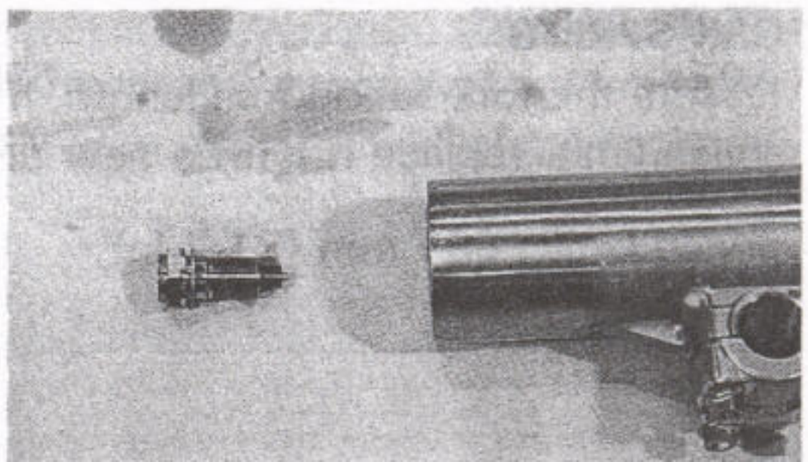
DAMPER ROD BOLT/DAMPING FORCE ADJUSTER

- Install the oil lock piece to the damper rod.



- Tighten the damper rod bolt/damping force adjuster to the specified torque.

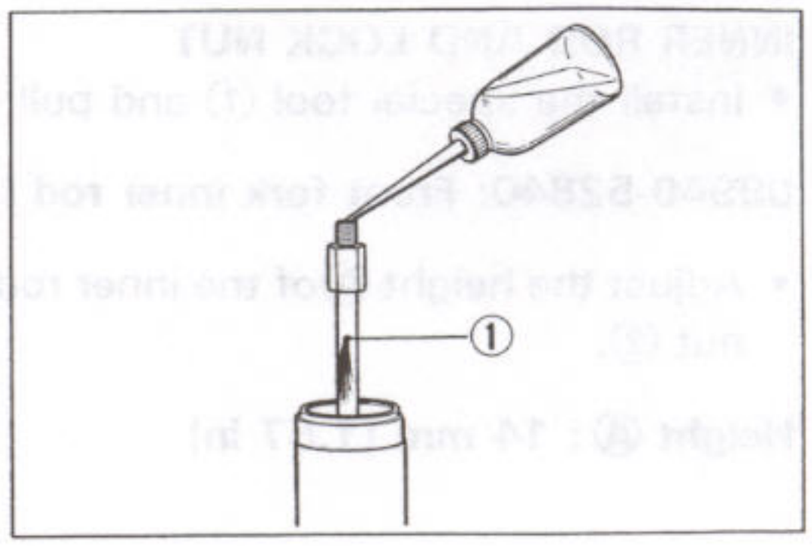
Tightening torque: 35 N·m (3.5 kg-m)



CAUTION:
Use a new gasket to prevent oil leakage.

FORK OIL

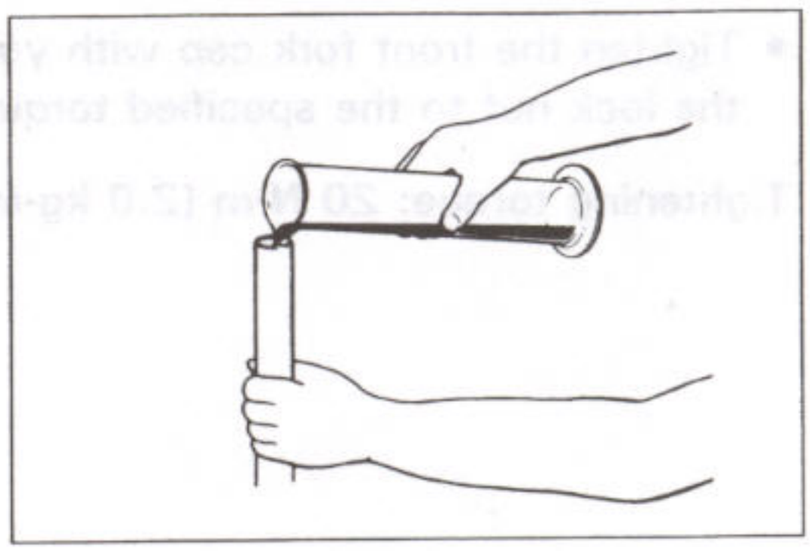
- Place the front fork vertically with full compressed position.
- Pour fork oil until its flow from the hole ① on inner rod as shown in the illustration, and then pour fork oil to the inner tube.
- For the fork oil, be sure to use a front fork oil whose viscosity rating meets specifications below.



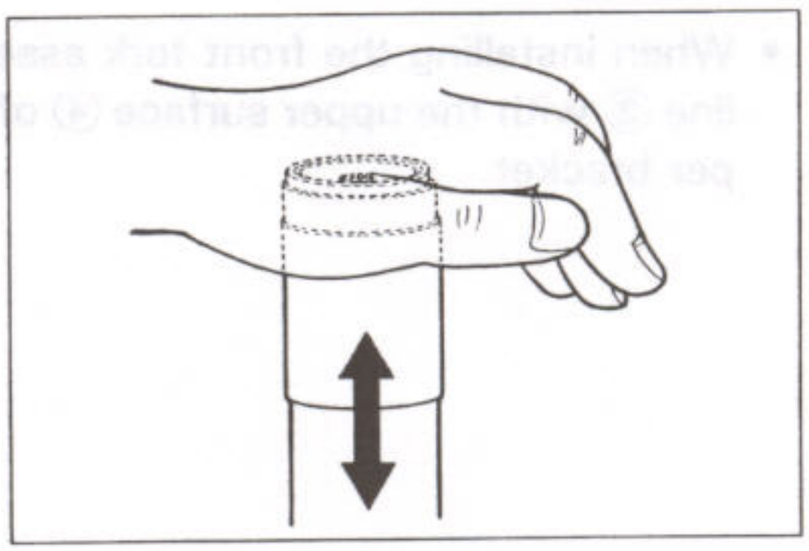
Fork oil type: Fork oil SS-05

99000-99001-SS5: Fork oil SS-05

Capacity (each leg): 541 ml (18.3/19.0 US/Imp oz)



- Cover the inner tube with palm, and move the inner tube up and down 3 or 4 times.

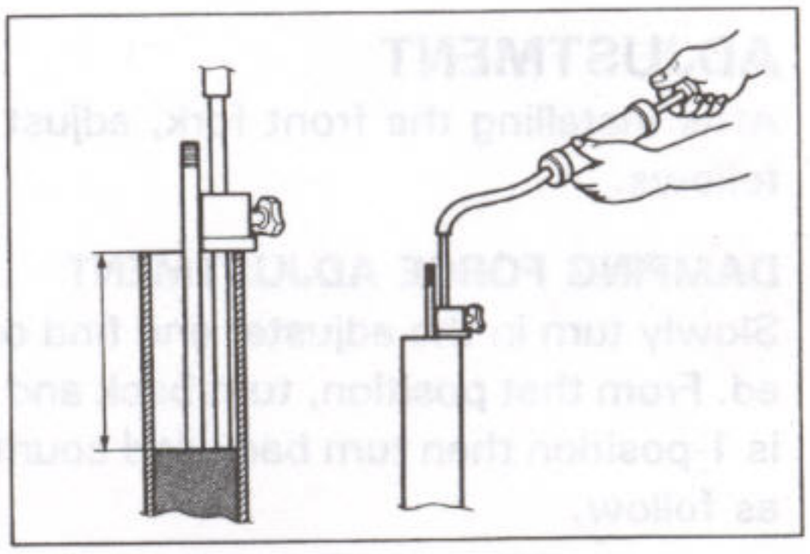


- Hold the front fork vertical and adjust the fork oil level with the special tool.

Oil level: 144 mm (5.7 in)

09943-74111: Fork oil level gauge

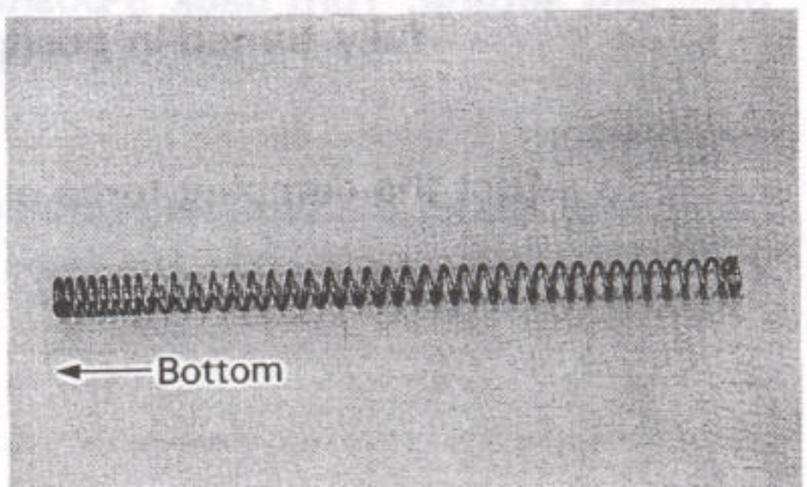
NOTE:
When adjusting the oil level, remove the fork spring and compress the inner tube fully.



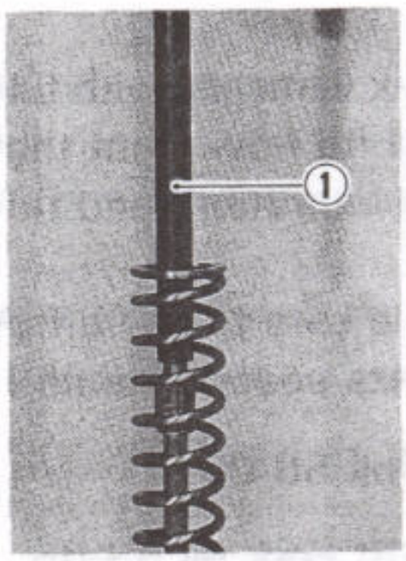
FORK SPRING

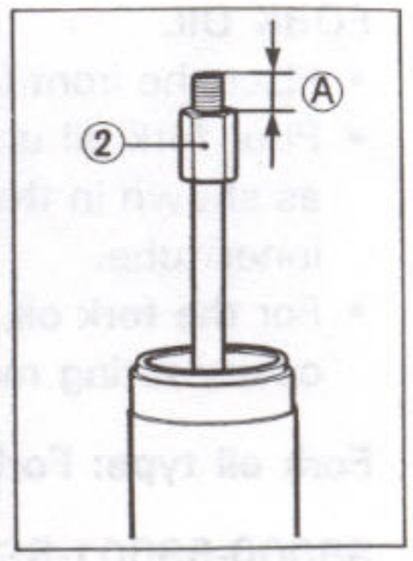
- Install the fork spring as shown in the photograph.

NOTE:
Close-pitch end of spring should position bottom.



INNER ROD AND LOCK NUT



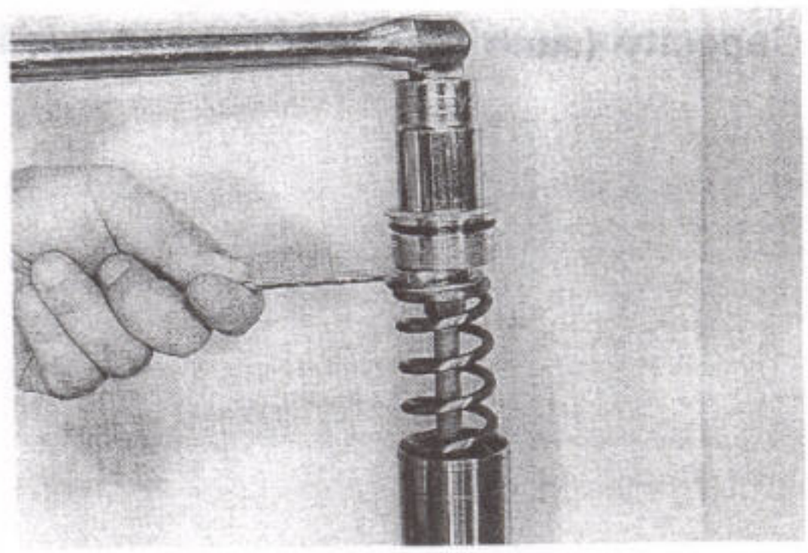


- Install the special tool ① and pull up the inner rod.

09940-52840: Front fork inner rod holder

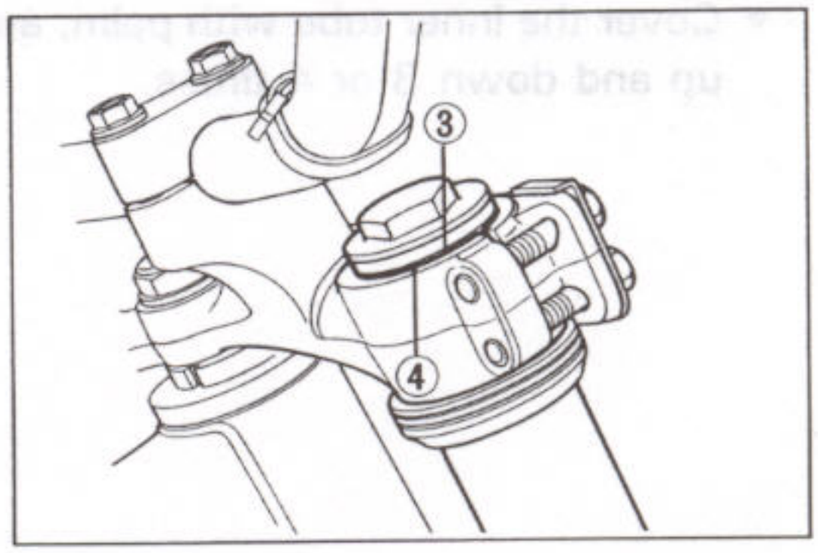
- Adjust the height Ⓐ of the inner rod by adjusting the lock nut ②.

Height Ⓐ: 14 mm (1.57 in)



- Tighten the front fork cap with your finger, and tighten the lock nut to the specified torque.

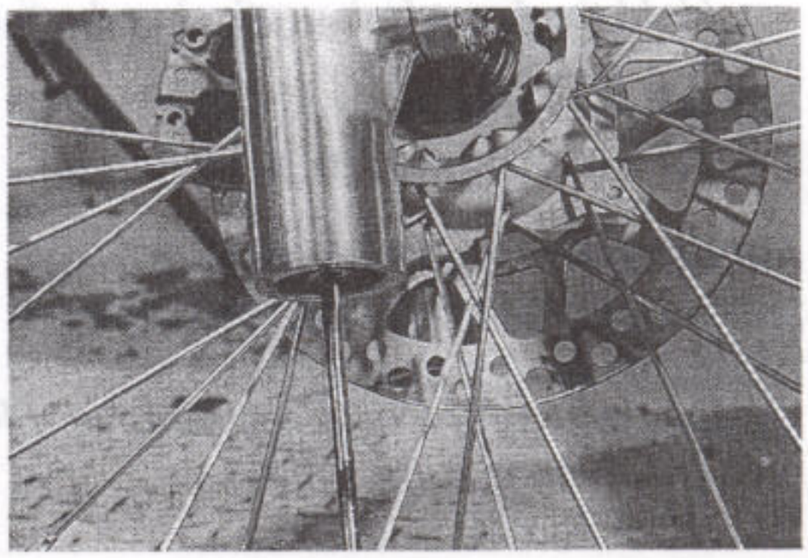
Tightening torque: 20 N·m (2.0 kg-m)



- When installing the front fork assembly, align the upper line ③ with the upper surface ④ of the steering stem upper bracket.

ADJUSTMENT

After installing the front fork, adjust the damping force as follows.



DAMPING FORCE ADJUSTMENT

Slowly turn in the adjuster and find out the adjuster is seated. From that position, turn back and find out first click that is 1-position then turn back and count the specified position as follow.

Standard setting: Turn back 9-positions from fully turned-in position

WARNING:
Be sure to adjust the damping force on both front fork legs equally.

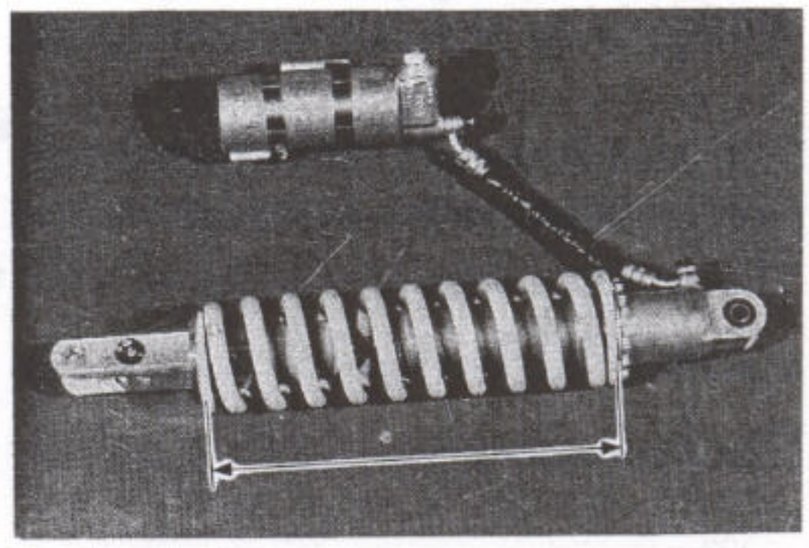
REAR SHOCK ABSORBER

Adjust the spring pre-load and damping force as follows.

DR350R

SPRING PRE-LOAD ADJUSTMENT

- Remove the shock absorber.
- Loosen the lock nut and adjust the spring tension of the shock absorber by turning the adjuster ring with the special tool.



Standard spring pre-set length: 267.3 mm (10.5 in)

09910-60611: Universal clamp wrench

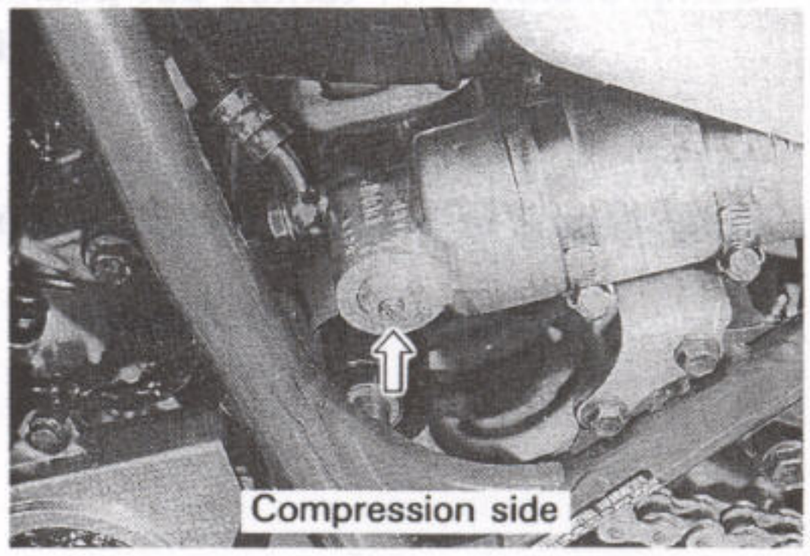
CAUTION:
After adjusting the pre-load, tighten the spring adjuster lock ring securely.

DAMPING FORCE ADJUSTMENT

COMPRESSION SIDE

Fully turn the damping force adjuster clockwise. It is at stiffest position and turn it out to standard setting position as follows.

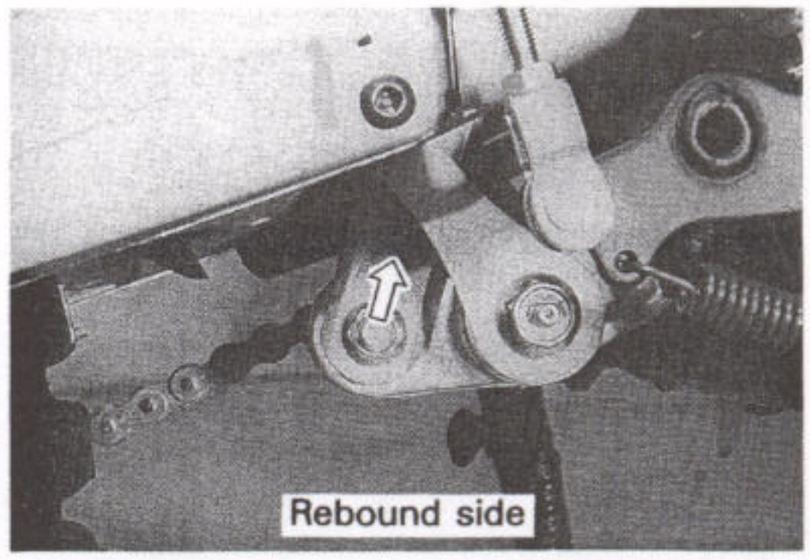
Standard: 1-turn out from fully turned-in position



REBOUND SIDE

Fully turn the damping force adjuster clockwise. It is at stiffest position and turn it out to standard setting position as follows.

Standard: 2½-turns out from fully turned-in position

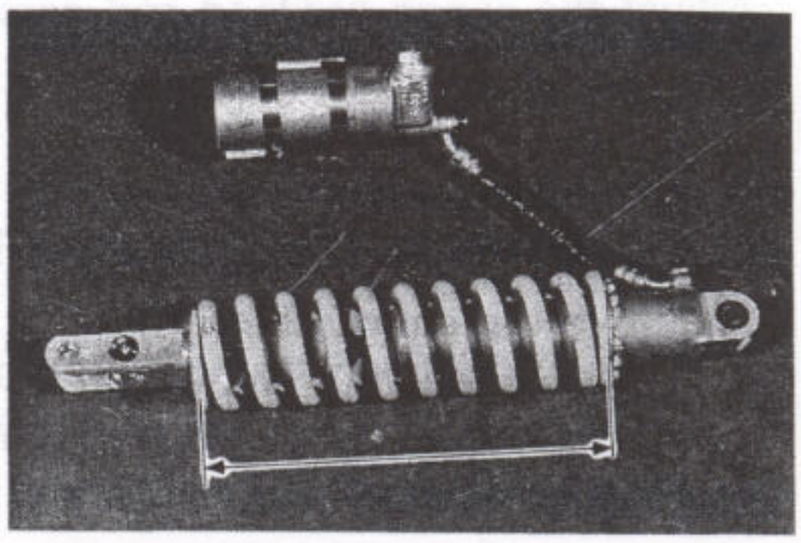


REAR SHOCK ABSORBER SETTING

Spring pre-set length	Softtest	272.0 mm (10.7 in)
	STD	267.3 mm (10.5 in)
	Stiffest	259.0 mm (10.2 in)
Damping force	Compression STD	1-turn out
	Rebound STD	2½-turns out

DR350SER

SPRING PRE-LOAD AND DAMPING FORCE ADJUSTMENT



Standard spring pre-set length:
DR350SER: 253.4 mm (10.0 in)

09910-60611: Universal clamp wrench

CAUTION:
After adjusting the pre-load, tighten the spring adjuster lock ring securely.

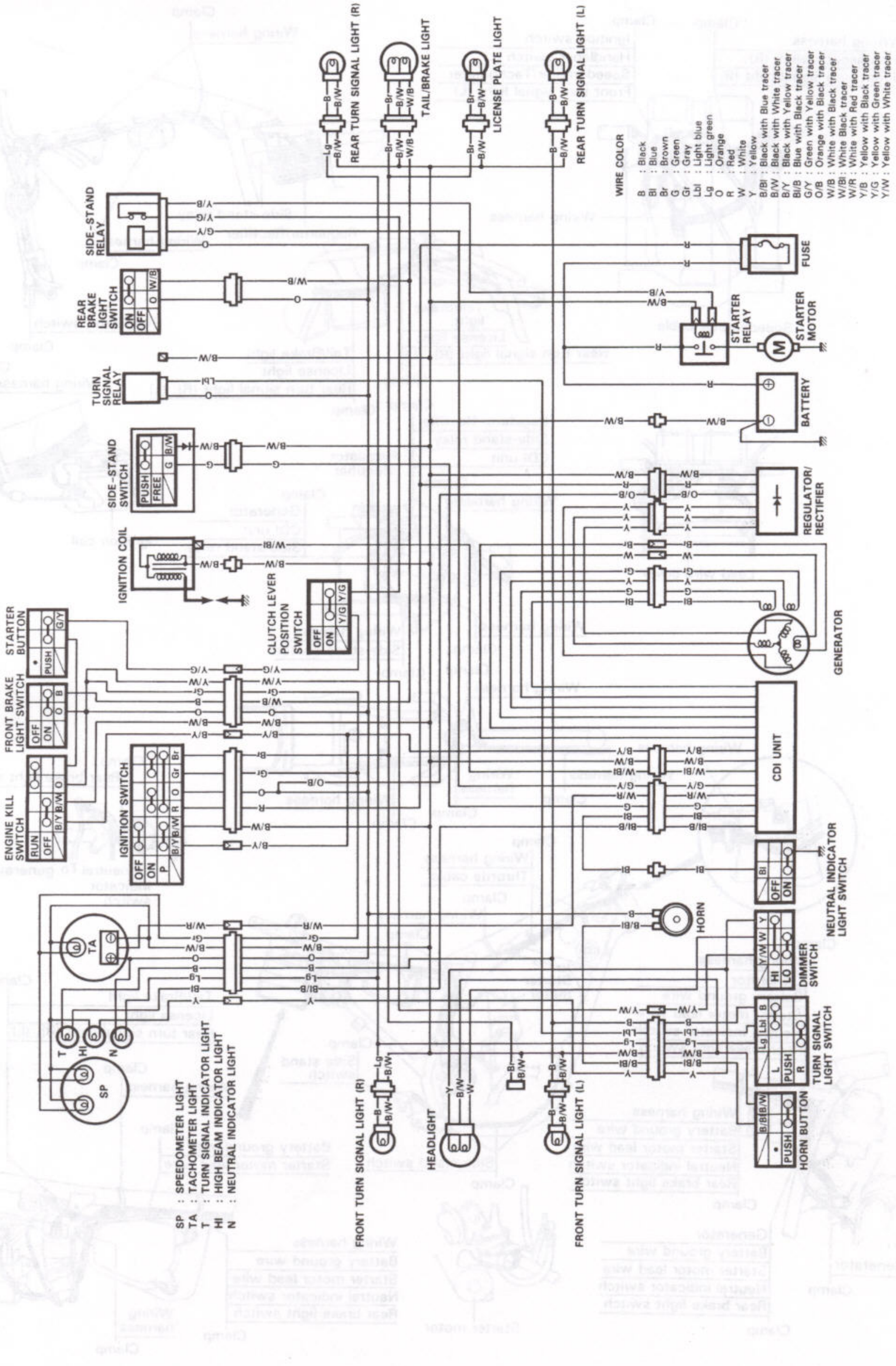
SETTING TABLE
Spring length
STD : 253.4 mm (10.0 in)
Softer : 258.4 mm (10.2 in)
Stiffer : 235.9 mm (9.3 in)

Damping force adjuster
Compression : ¾ turned-out position from the fully turned-in position.

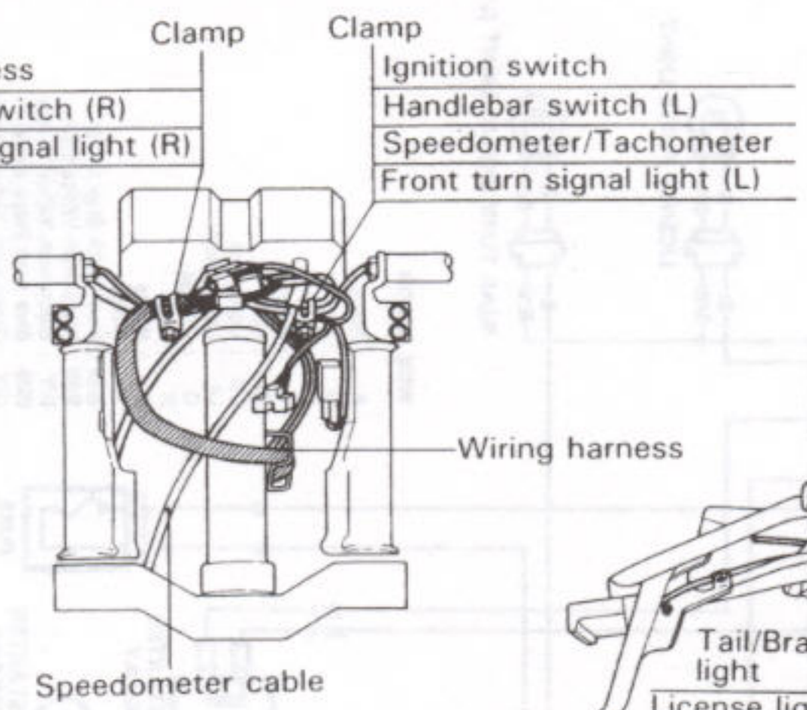
NOTE:
Fully turned-in position provides stiffest damping force.

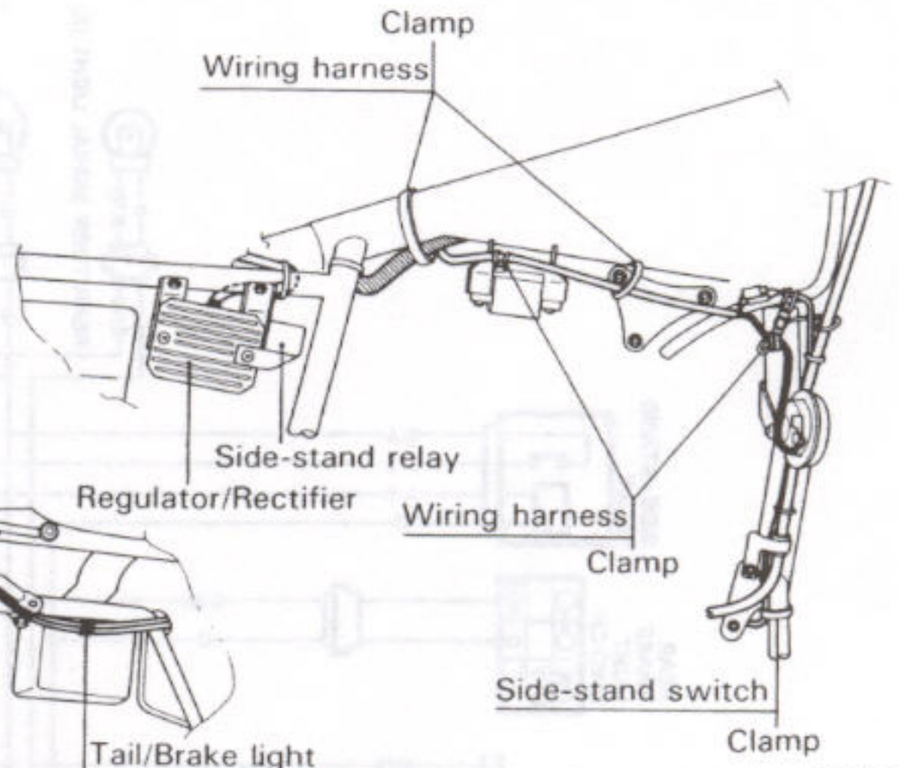
Spring pre-set length	Softest	
	STD	
	Softest	
Damping force	Compression STD	
	Rebound STD	

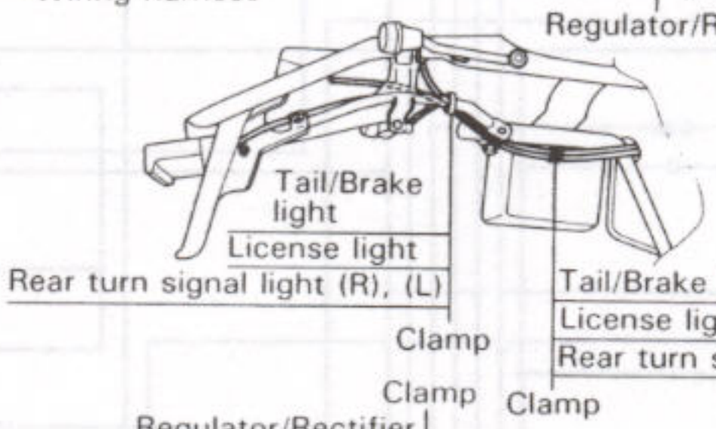
WIRING DIAGRAM (DR350SER)

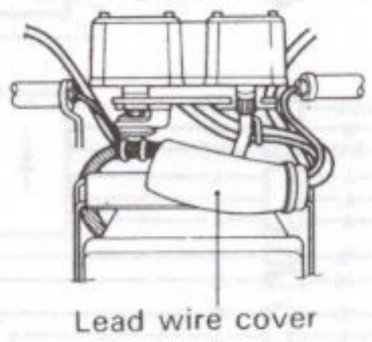


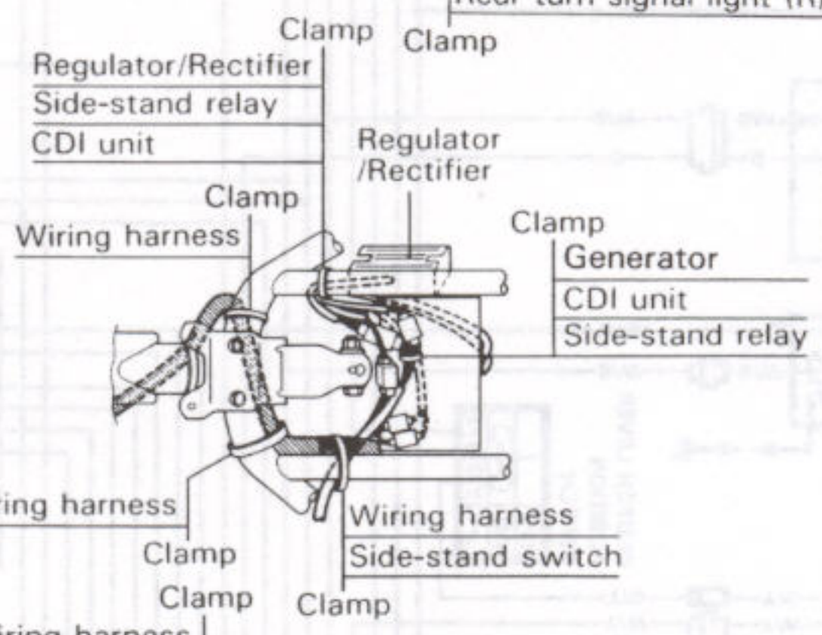
WIRE ROUTING (DR350SER)

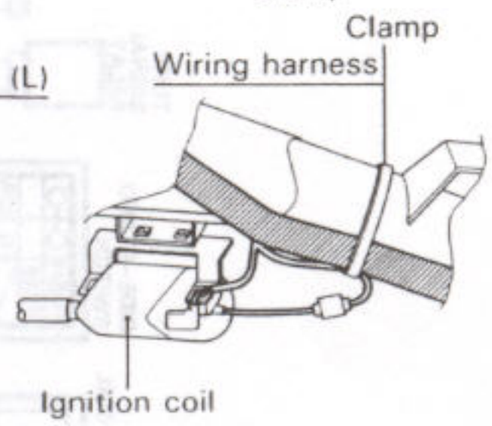


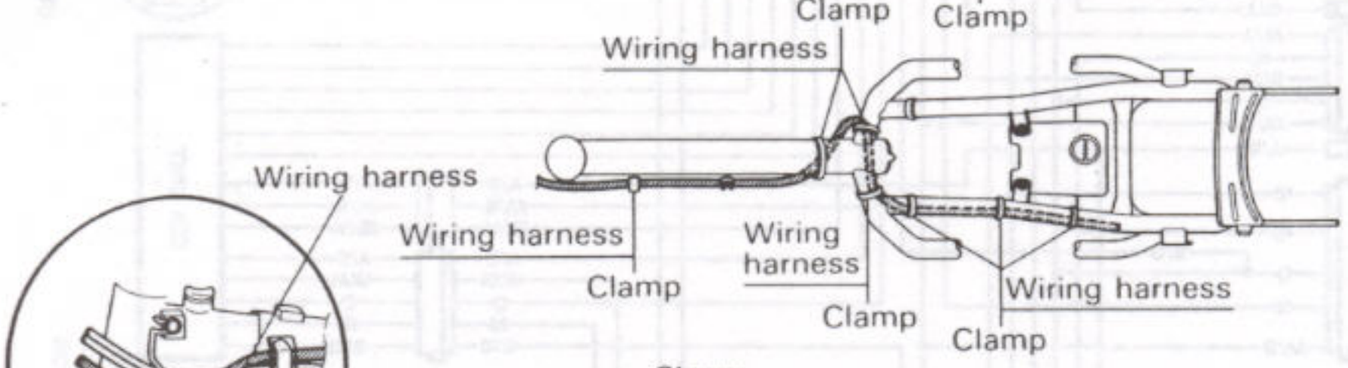


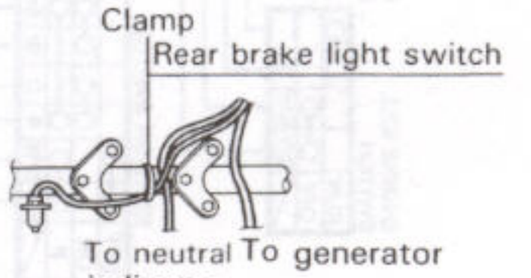


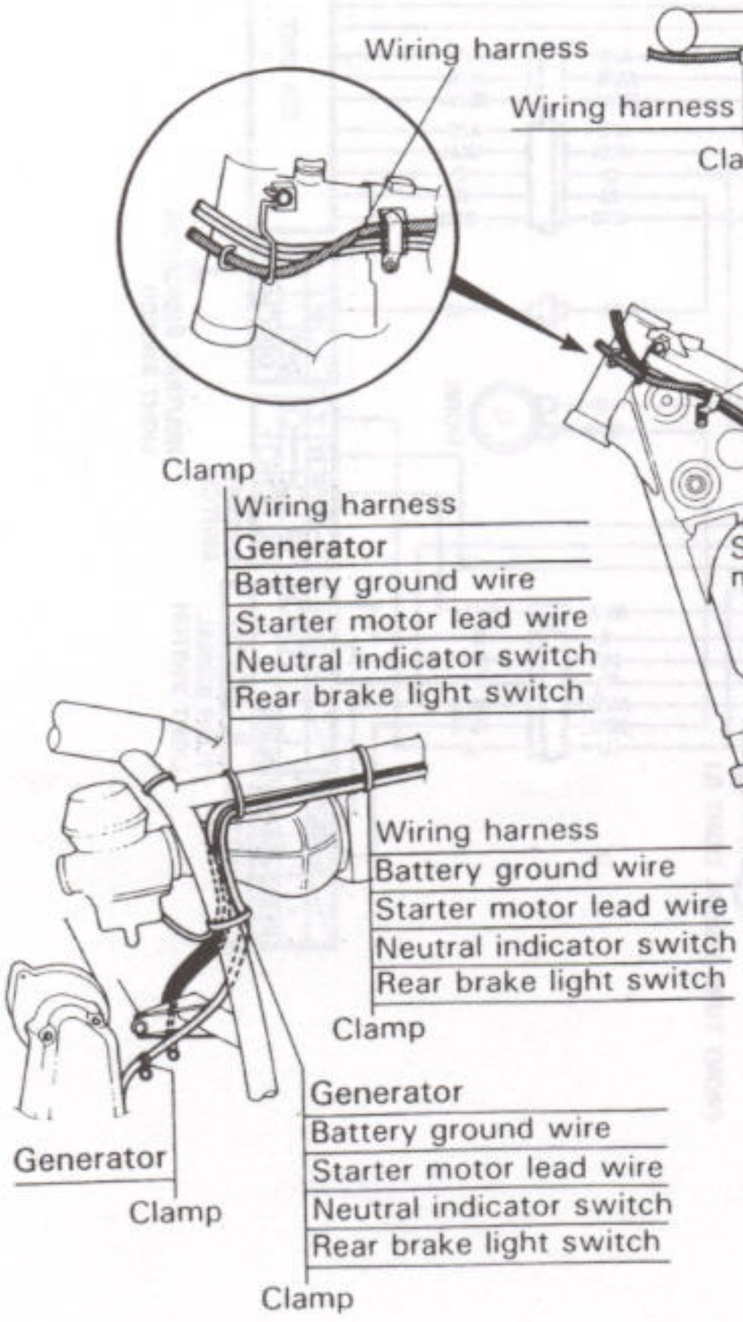


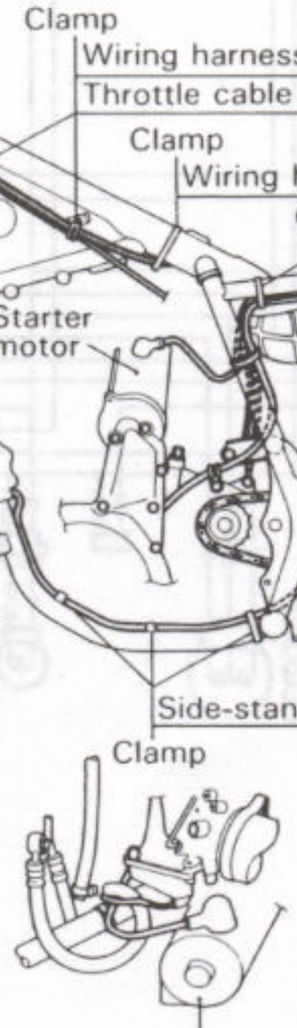


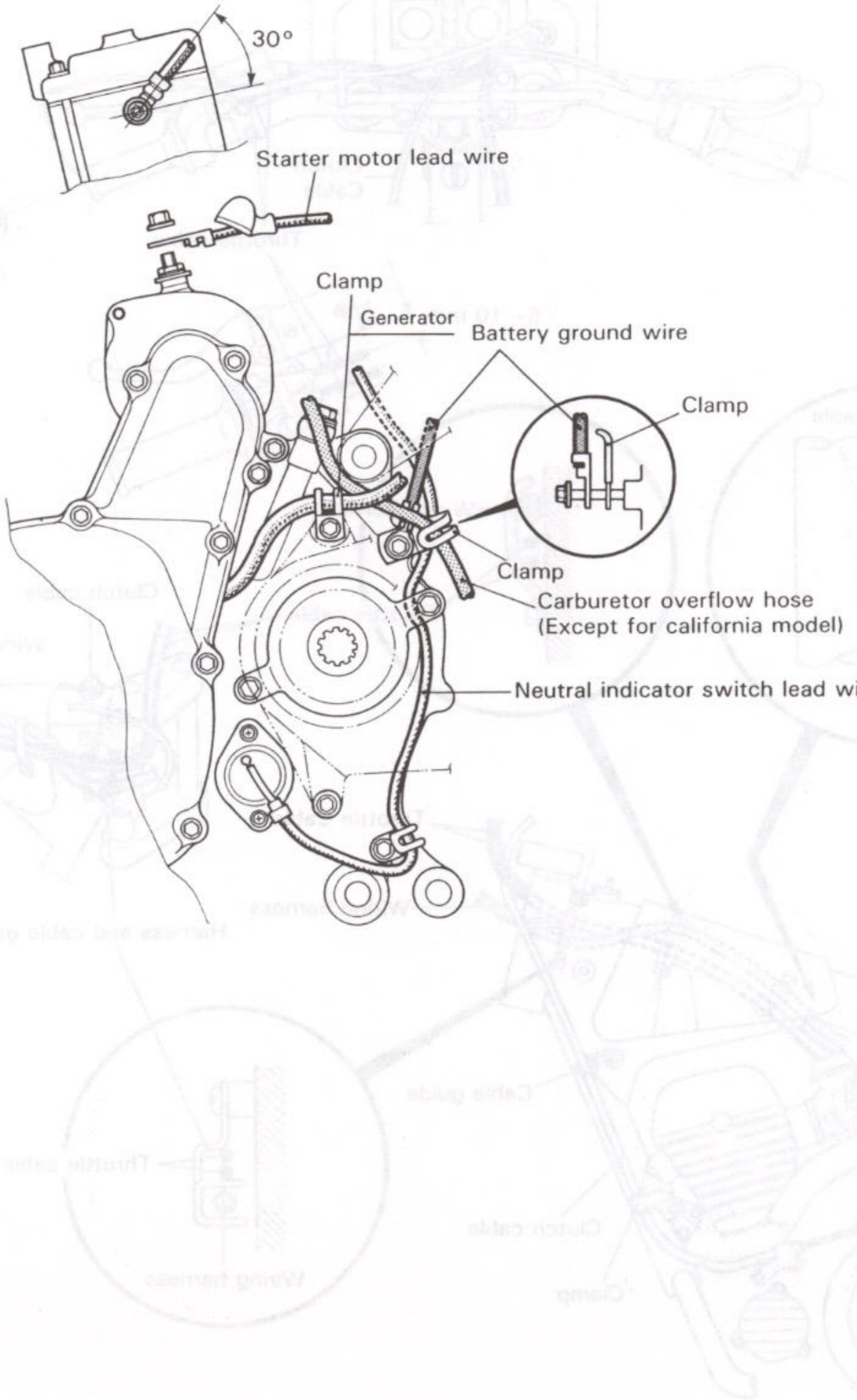




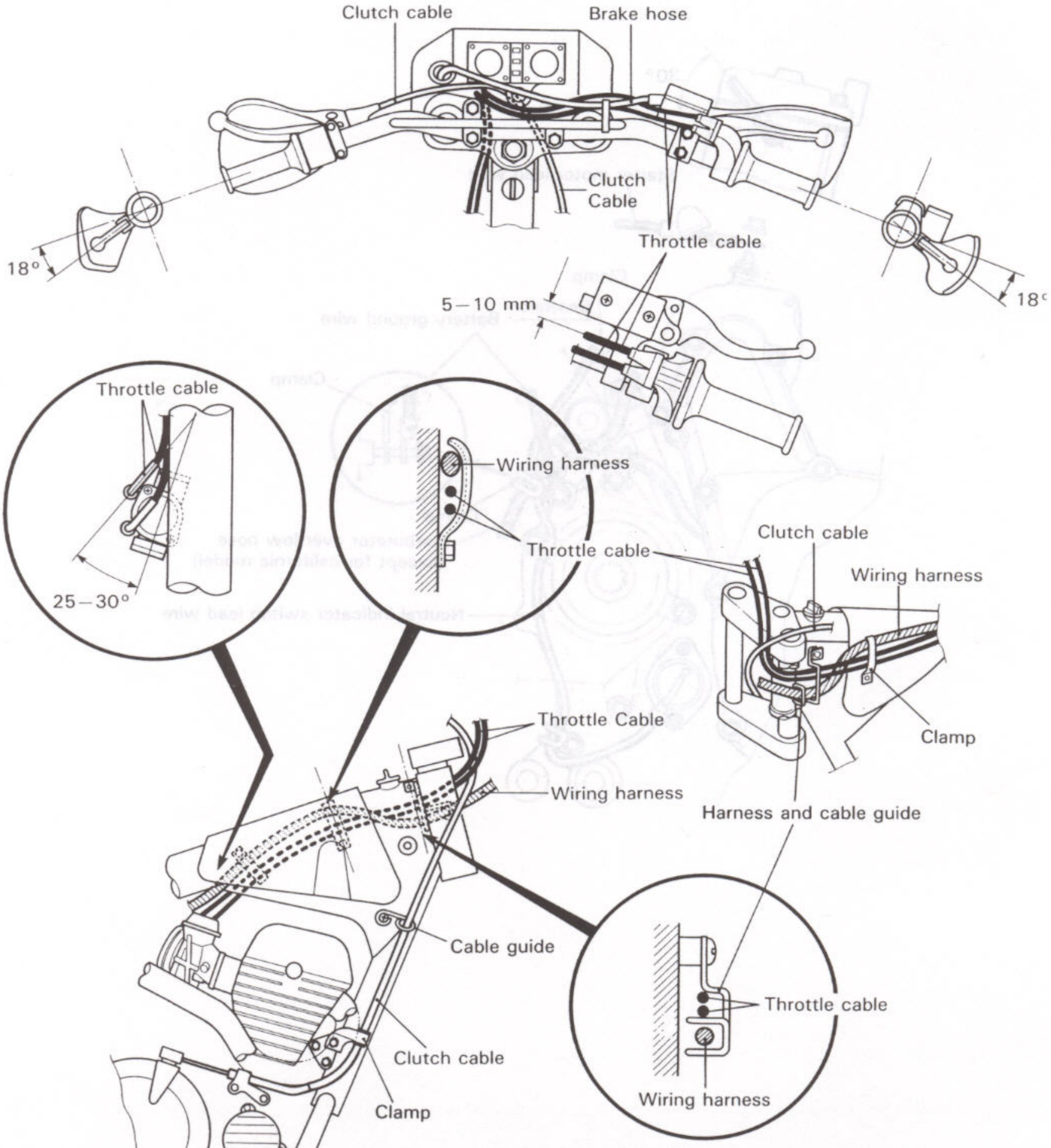






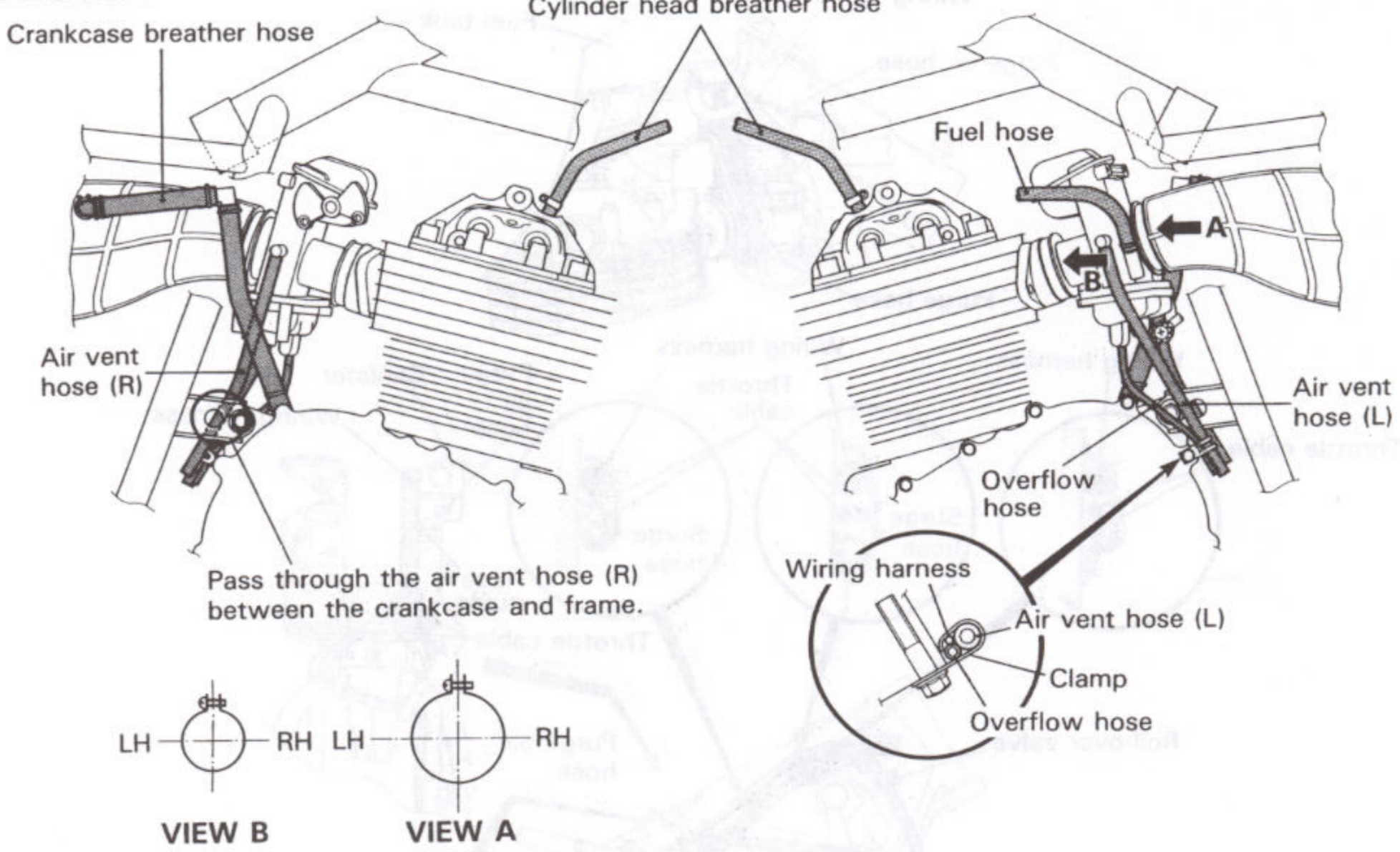

30°
Starter motor lead wire
Clamp
Generator
Battery ground wire
Clamp
Clamp
Carburetor overflow hose
(Except for california model)
Neutral indicator switch lead wire

CABLE ROUTING (DR350SER)



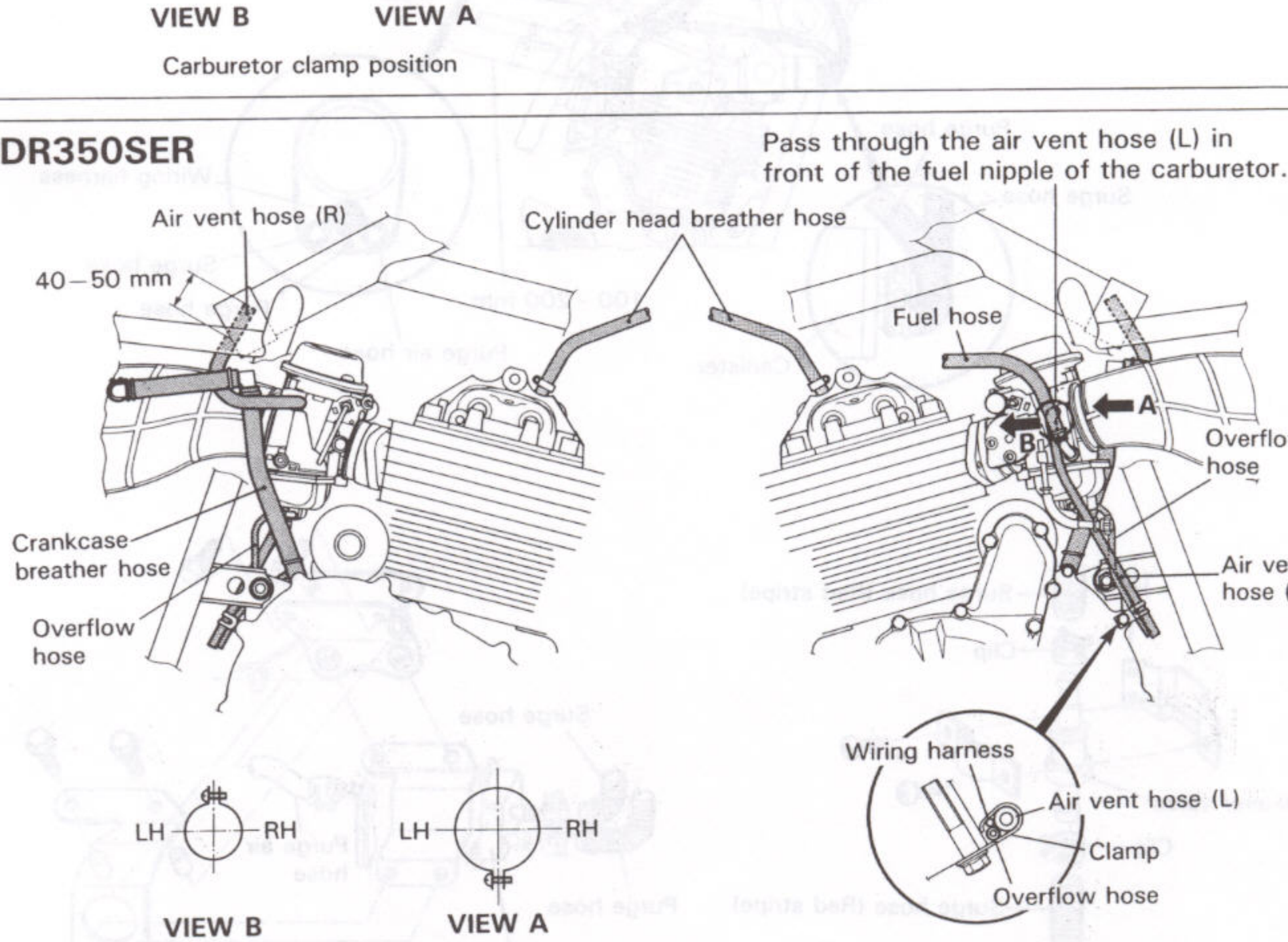
CARBURETOR HOSE ROUTING

DR350R



Carburetor clamp position

DR350SER



Carburetor clamp position

CANISTER HOSE ROUTING (California model only) (DR350SER)