


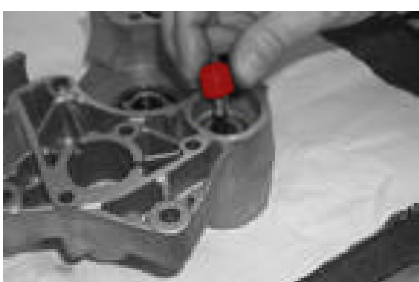
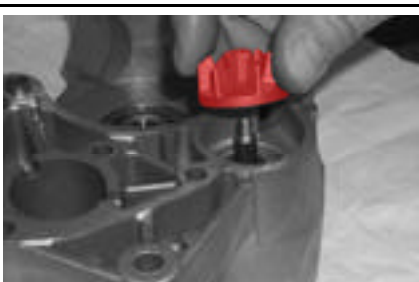


ENGINE REASSEMBLY

WATER PUMP PREASSEMBLY

DIAGRAM	DESCRIPTION	TOOL CODE	NOTES
	<p>Preassemble the WATER PUMP SHAFT UNIT by mounting the components in the following order: snap ring + bearing + spacer + bearing and secure with the snap ring.</p> <p>Insert the complete unit in the HALF CRANKCASE FLYWHEEL SIDE</p>		
	Insert the SPACER RING		
	Insert the SPECIAL SNAP RING		
	Insert the SEAL RING	143155	THE SEAL RING MUST ALWAYS BE REPLACED WITH A NEW ONE
	Reassemble the WATER PUMP ROTOR		Tightening torque 5 - 6 Nm + Loxal 83 - 54

CRANKCASE PREASSEMBLY



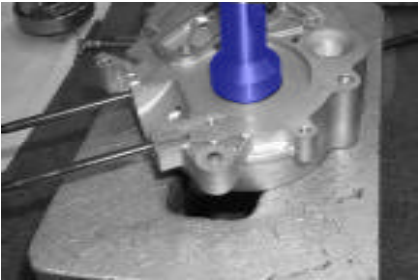
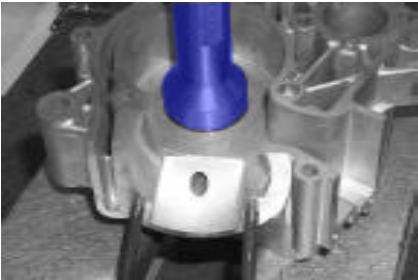

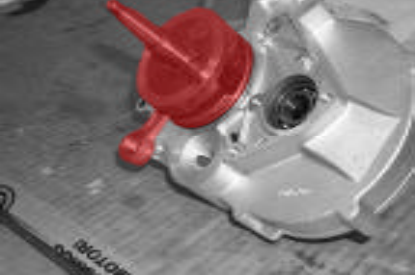
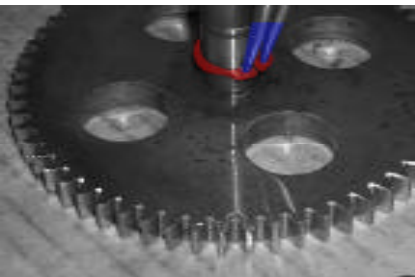
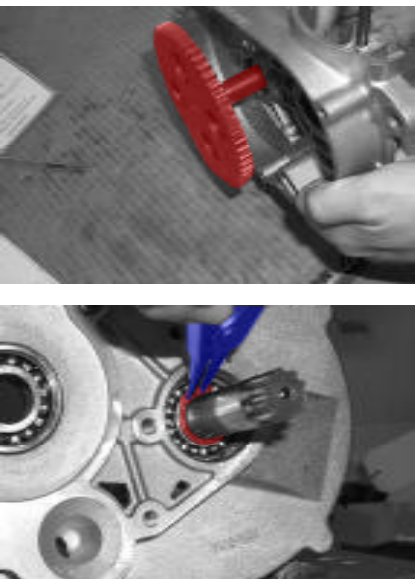
DIAGRAM	DESCRIPTION	TOOL CODE	NOTES
 	Drive the OUTPUT SHAFT BEARING into the half crankcase clutch side and secure with the snap ring	143176	LUBRICATE THE HOUSING LEAVE THE PRINT ON THE BEARING VISIBLE
 	Drive the CRANKSHAFT BEARINGS into the half crankcase clutch side and into the half crankcase flywheel side.	143154	LUBRICATE THE HOUSING LEAVE THE PRINT ON THE BEARING VISIBLE
	Drive the ROLLER CAGE OUTPUT SHAFT into the half crankcase flywheel side.	143156	LUBRICATE THE HOUSING LEAVE THE PRINT ON THE BEARING VISIBLE

DIAGRAM	DESCRIPTION	TOOL CODE	NOTES
	<p>Insert the DRIVE SHAFT in the half crankcase clutch side</p>		
	<p>Insert the SNAP RING onto the second output shaft slot (near transmission gear)</p>		
	<p>Insert the OUTPUT SHAFT into the half crankcase clutch side and secure with SNAP RING</p>		

CRANKCASE “CLOSING”


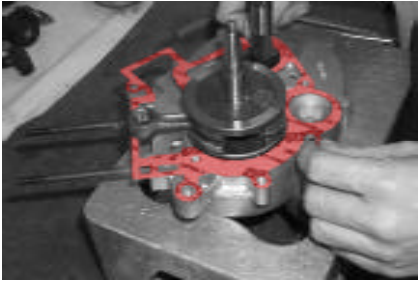


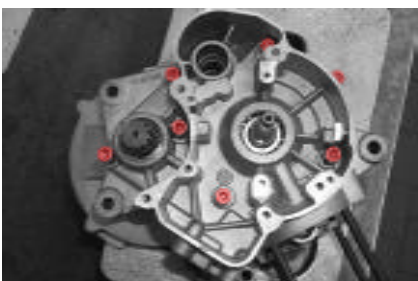
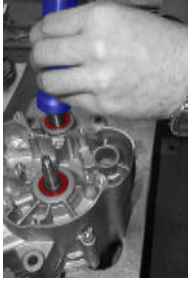
DIAGRAM	DESCRIPTION	TOOL CODE	NOTES
	<p>Insert the DOWEL PINS</p>		

DIAGRAM	DESCRIPTION	TOOL CODE	NOTES
	<p>Lubricate the CRANKCASE GASKET on both sides.</p> <p>Apply the CRANKCASE GASKET on the half crankcase clutch side using the 2 dowel pins for centering.</p>		
	<p>Assembly the HALF CRANKCASES</p>		
	<p>Fix 1 x BOLT M6X60 in the position between the stud bolts and the reed valve zone.</p>		<p>DO NOT TIGHTEN</p>
	<p>Fix the remaining 7 X BOLTS M6X50. <u>Cross-tighten the bolts using a tightening torque of 10-12 Nm.</u> <u>Check to make sure that the crankshaft and output shaft rotate smoothly.</u></p>		
	<p><u>Grease the oil seal housing and the oil seal lip carefully.</u></p> <p>Install the CRANKSHAFT OIL SEAL RINGS and the OUTPUT SHAFT OIL SEAL RING.</p> <p><u>Trim the crankcase gasket (cylinder zone and carburetor zone.)</u></p>	<p>143179 143180 143181</p>	<p>GREASE TYPE GR/SM2</p>

FLYWHEEL SIDE

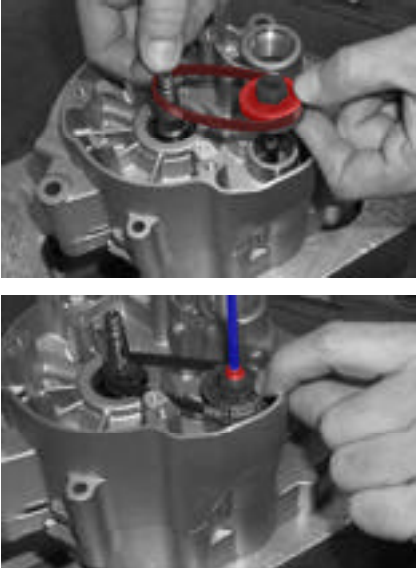



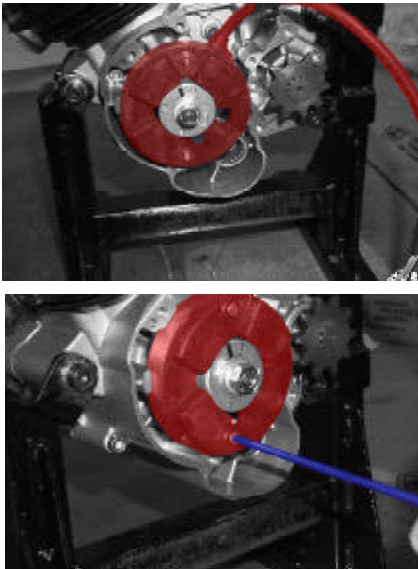



DIAGRAM	DESCRIPTION	TOOL CODE	NOTES
	<p>Mount the DRIVEN PULLEY on the water pump shaft and position the PUMP DRIVE BELT on the splined section of the crankshaft.</p> <p>Secure the pulley with bolt M4x14</p>		<p>Tightening torque 3 - 4 Nm + Loxal 83- 54</p>
	<p>Mount the SPROCKET and secure with the SNAP RING</p>		
	<p>Place the UNDER ROTOR SPACER on the crankshaft.</p> <p>Caulk the key seat on the crankshaft and insert the FLYWHEEL KEY.</p>		
	<p>Mount the FLYWHEEL ROTOR with the black side facing the crankcase.</p>	143151	<p>Tightening torque 8 - 10 Nm + Loxal 83 - 54</p>

DIAGRAM	DESCRIPTION	TOOL CODE	NOTES
	<p>Install the FLYWHEEL STATOR with the output cable facing the crankcase.</p> <p>Secure the flywheel stator with 2 BOLTS M4 x 18</p>		<p>Tightening torque 3 - 4 Nm</p>
	<p>Drive in the 2 elastic dowel pins in the cover. and make sure that they do NOT INTERFERE with the bracket mounting face.</p> <p>Assemble the BRACKET on the flywheel cover.</p>		
	<p>Assemble the FLYWHEEL COVER placing the rubber fairleads in their proper seats on the cover.</p>		
	<p>Secure the FLYWHEEL COVER using:</p> <p>3 SCREWS M5X50 + WASHER. 1 SCREW M5X20 + WASHER.</p>		<p>Tightening torque 3-4 N.m.</p>

CYLINDER - PISTON - HEAD UNIT


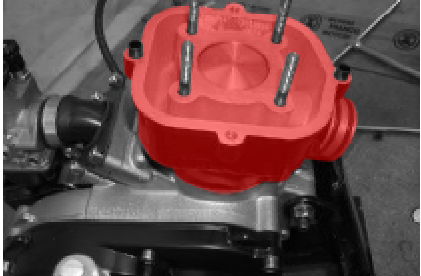






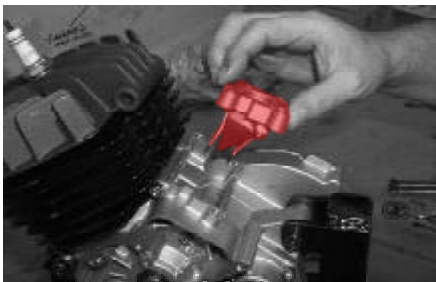
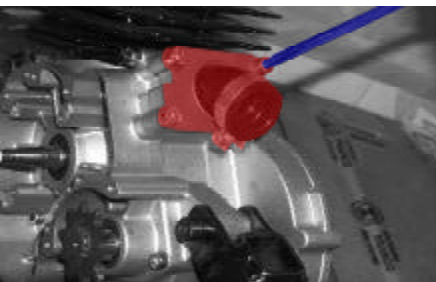

DIAGRAM	DESCRIPTION	TOOL CODE	NOTES
	Assemble the ROLLER CAGE , PISTON and PISTON PIN and secure with CIRCLIPS . <u>OIL THE PISTON</u>		WHEN INSTALLING THE PISTON TURN THE ARROW MARK ON THE HEAD OF THE PISTON TO THE EXHAUST SIDE
	Insert the CYLINDER BASE GASKET and mount the CYLINDER		
	Insert the CYLINDER HEAD DOWEL PINS		
	Apply the O-RING SEAL on the CYLINDER HEAD		
	Install the CYLINDER HEAD on the CYLINDER using the dowel pins as centering reference		

DIAGRAM	DESCRIPTION	TOOL CODE	NOTES
	Fit the 4 CYLINDER HEAD NUTS on the stud bolts and tighten		(Cross tighten) Tightening torque 12 - 14 Nm.
	Fit the 4 CYLINDER HEAD BOLTS and tighten		(Cross tighten) Tightening torque 10 - 12 Nm.
	Install the SPARK PLUG and tighten		Tightening torque 20 - 25 Nm.

CARBURETOR UNIT

DIAGRAM	DESCRIPTION	TOOL CODE	NOTES
	Insert the CARBURETOR MANIFOLD BASE including the REED VALVE .		
	Assemble the CARBURETOR MANIFOLD on the base and secure with 4 BOLTS M6X25 .		Check the angle position of the MANIFOLD before tightening the bolts. Tightening torque 9 - 10 Nm.
	Assemble the CARBURETOR and tighten the CLAMP SCREW .		Tightening torque 3 - 4 Nm.

CLUTCH COVER


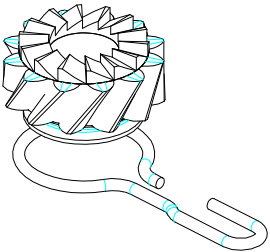







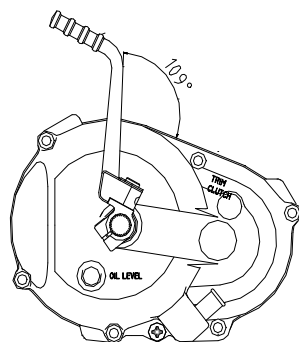
DIAGRAM	DESCRIPTION	TOOL CODE	NOTES
	Drive the WATER CIRCUIT DELIVERY PIPE into place		
	Assemble the SPRING on the sliding gear as shown on the figure. Lubricate the inside of the spring using GR MU/3 grease.	143167	
	Assemble the SLIDING GEAR on the cover and secure the SPRING between the two stops.		
	Assemble the SPACER RING and O-RING on the KICK STARTER SHAFT . Lubricate the O-ring area using GR MU/3 grease.		
	Lubricate the KICK STARTER SHAFT in the clutch cover operating zone using grease type MOLYCOTE . Install KICK STARTER SHAFT in the clutch cover and make sure that the gear section is engaged properly with the sliding gear. After assembly check that the spring of the sliding gear is correctly positioned between the two stops.		

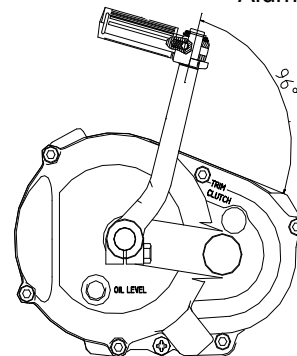
DIAGRAM	DESCRIPTION	TOOL CODE	NOTES
	<p>Install and load the RETURN SPRING on the kick starter shaft.</p> <p>Secure the spring on the backstop in the clutch cover.</p>		
	<p>Assemble the SPRING WASHER and secure with the SNAP RING.</p>		
	<p>Place the SPACER on the kick starter shaft and secure with the snap ring.</p>		
	<p>Assemble the KICK STARTER LEVER and fasten by using the bolt M7x25.</p> <p>KICK STARTER LEVER POSITION <u>*Steel lever = 109°</u> <u>*Aluminium lever = 96°</u></p> <p><u>Check axial clearance: 0.1 - 0.3 mm</u></p>		<p>Tightening torque 8-10 N.m.</p>

KICK STARTER LEVER POSITION

*Steel lever = 109°



*Aluminium lever = 96°



CLUTCH SIDE



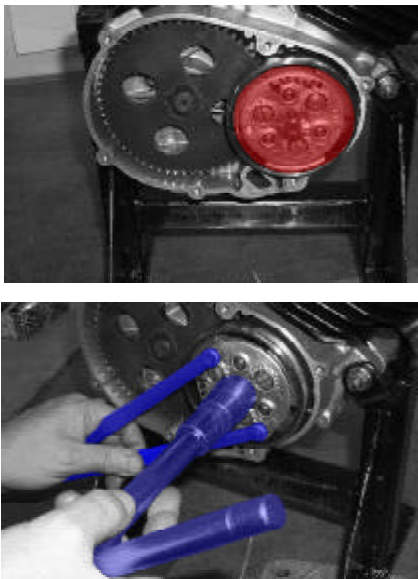



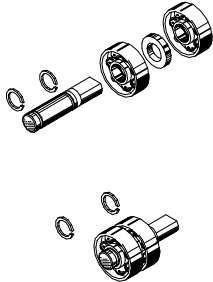
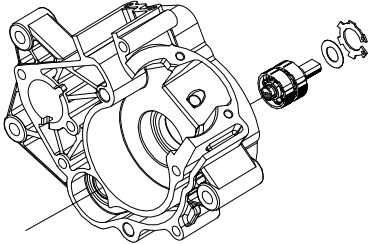
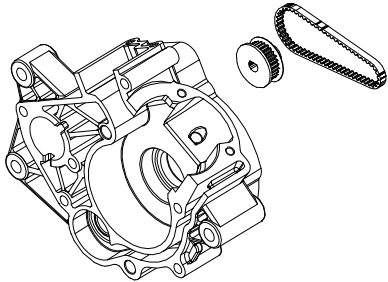
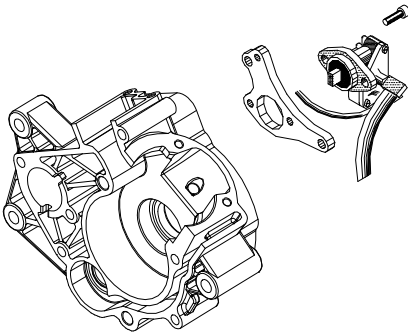
DIAGRAM	DESCRIPTION	TOOL CODE	NOTES
	<p><u>Insert the 0.8mm SPACER RING on the crankshaft clutch side.</u></p> <p>Lubricate the clutch bell operating zone of the crankshaft using the grease type ROCOL ASP MOLYCOTE.</p> <p>Install the CLUTCH BELL</p>		
	<p>Insert the 2.5 mm SPACER RING</p>		
	<p>Install the CLUTCH ON THE CRANKSHAFT, INSERT THE BELLEVILLE WASHER and clamp the clutch using the SPECIAL FRONT-CLUTCH NUT. (LEFT HAND THREAD)</p> <p><u>Add LOXEAL 83-54 to the clutch nut and tighten</u></p> <p><u>Tightening torque 50-55 N.m.</u></p> <p><u>Check the axial clearance of the clutch bell: 0.3 - 0.5 mm</u></p> <p>Assemble the clutch cover gasket.</p>	<p>Compass tool</p>	<p style="text-align: center;">CAUTION</p> <p>In order to avoid any clutch hub jamming on the spline shaft and to ensure any future disassembly operation of the clutch unit, make sure to apply LOXEAL 83-54 exclusively on the clutch nut and NOT on shaft end.</p>

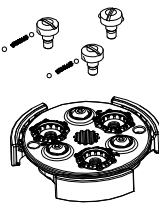
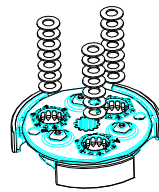
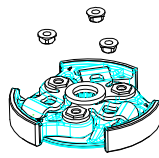
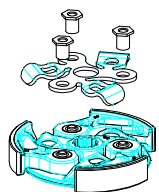
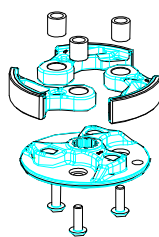
DIAGRAM	DESCRIPTION	TOOL CODE	NOTES
	Mount the clutch cover and secure with 6 BOLTS M6 x 30 .		Tightening torque 10-12 N.m.
	Insert the OIL DRAIN PLUG + WASHER and tighten.		Tightening torque 8-10 N.m.
	Pour 250 cc of oil type AGIP RADULA 68 SAE 20W and fit the OIL FILLER CAP + GASKET . AFTER COMPLETED ASSEMBLY CHECK THAT THE ENGINE ROTATES SMOOTHLY		Recommended Oil type: AGIP RADULA 68 SAE 20W

S6 OIL MIXER PUMP

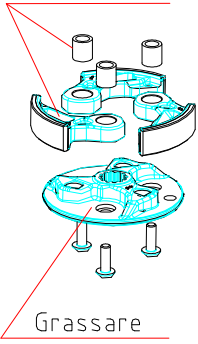
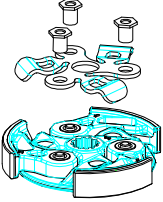
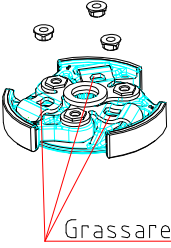
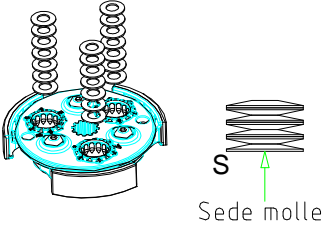
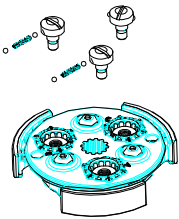
DIAGRAM	DESCRIPTION	TOOL CODE	NOTES
	<p>Preassemble the 2 BEARINGS and SPACER on the OIL MIXER PUMP DRIVE SHAFT and secure with 2 SNAP RINGS.</p> <p>The print on the bearings should face the drive end of the shaft.</p>		
	<p>Lubricate the bearing housing. Drive the OIL MIXER PUMP DRIVE SHAFT UNIT into the half crankcase flywheel side.</p>	143155	
	<p>Insert the CLEARANCE SPACER. Assemble the BEARING SNAP RING.</p>	143342	
	<p>Insert the DRIVE BELT onto the DRIVEN PULLEY.</p> <p>Install the pulley on the oil mixer pump shaft and the drive belt onto the splined part of the crankshaft.</p>		
	<p>Assemble the oil mixer pump on the support bracket and tighten the screw M5x12.</p> <p>In order to simplify the assembly operation of the oil mixer pump, make sure that the timing of the driven pulley and the oil mixer pump shaft do match.</p> <p>Install the BRACKET with OIL MIXER PUMP into the housing of the half crankcase flywheel side.</p>		<p>Tightening torque 5 - 6 Nm</p>

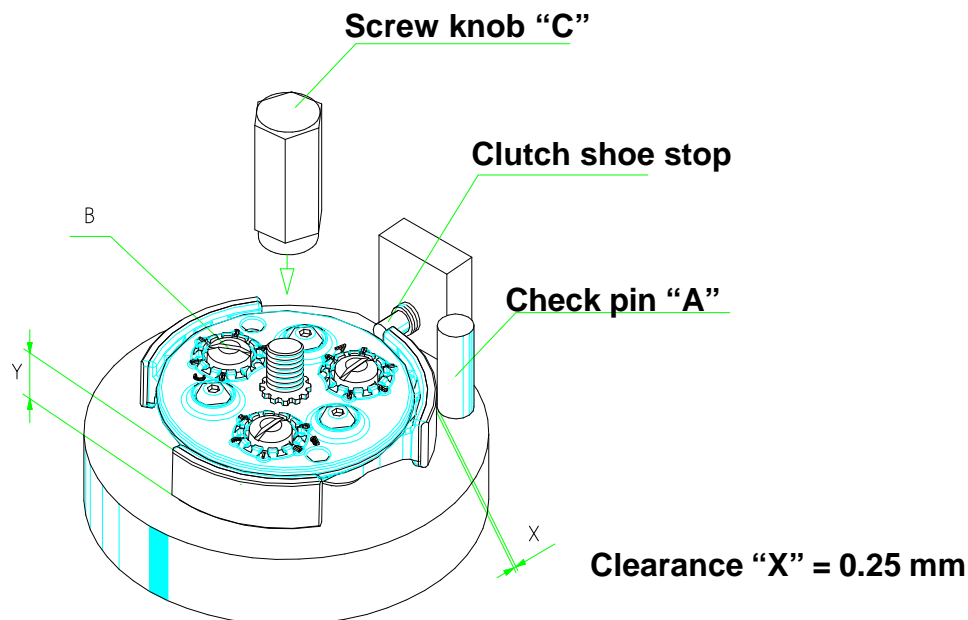
SPECIAL 3-SHOE CLUTCH

DISASSEMBLY

	<p>Remove the 3 special clutch adjusting screws.</p> <p>ATTENTION Each screw contains 1 spring an 2 balls.</p>
	<p>Remove the 21 Belleville washers.</p> <p>Take note of the assembly configuration.</p>
	<p>Remove the screw couplings.</p>
	<p>Unscrew the clutch shoe retainer pawls and remove the flat spring.</p>
	<p>Disassemble the clutch shoes, the bushings and the 3 clutch shoe socket screws M4x14.</p>

SPECIAL 3-SHOE CLUTCH REASSEMBLY

	<p>Grassare = Lubricate</p> <p>Apply a thin film of molycote grease on the shoe-holder plate. Insert the clutch shoe socket screws.</p> <p>Lubricate the outer diameter working zone of the 3 bushings with molycote grease. Insert the bushings in the clutch shoe fulcrums.</p> <p>Position and install the clutch shoes on the shoe-holder plate using the bushings as centering references. Apply a thin film of molycote grease on the working area of the flat spring.</p>
	<p>Assemble the flat spring on the clutch with the 3 clutch shoe retainer pawls and tighten.</p> <p>Tightening torque 5.8 - 6.8 Nm</p>
	<p>Lubricate the square holes in the flat spring and insert the 3 screw coupling.</p> <p>Grassare = Lubricate</p>
	<p>Insert 7 Belleville washers in each hole maintaining the correct assembly configuration. See figure.</p> <p>Sede molle = Spring seat.</p>
	<p>Place 2 balls and 1 spring in each of the 3 special clutch adjusting screws.</p> <p>Install the 3 adjusting screws making sure that the balls and the the springs remain positioned correctly in the screw housings.</p>

SPECIAL 3-SHOE CLUTCH ADJUSTMENT PROCEDURE

Place the clutch on the special tool code 143294 and block it using the screw knob "C". Position the clutch with one of the shoes blocked against the tool clutch shoe stop. Mount the main tool screw knob "C" and apply a constant torque of 8,5 Nm by using a dynamometric spanner tool with direct torque reading.

When keeping the torque constant, check the clearance "X" between the shoe and the check pin "A" using a thickness gauge.

CAUTION

The thickness gauge must make minimal friction against the parts: it should not pass freely and should not stick between the clutch shoe and the check pin.

Make sure that the thickness gauge do pass along the entire thickness "Y" of the shoes.

ADJUSTMENT PROCEDURE (1 clutch shoe at a time)

1/Unload the dynamometric spanner tool.

2/To increase the clearance "X" turn the screw "B" clockwise.

3/To decrease the clearance "X" turn the screw "B" anti clockwise.

4/Repeat the procedure for each clutch shoe.

