TECHNICAL DATA - ENGINE 640 Duke, Adventure '98

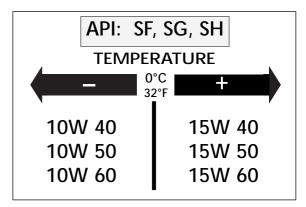
Туре	640 LC4			
Design	Liquid-cooled single cylinder 4-stroke engine with balancer shaft and electric starter			
Displacement	624,6 ccm			
Bore / Stroke	101 / 78 mm			
Ratio	11,0 : 1			
Fuel	unleaded premium gasoline with a least RON 95			
Valve timing	4 valves over rocker arm and 1 overhead camshaft, camshaft drive through single chain			
Camshaft	249° (249/1)			
Valve timing by 1 mm	IO 13° BTDC EO 53° BBDC			
valve clearence	IC 51° ABDC EC 11° ATDC			
Valve diameter	Intake: 36 mm Exhaust: 30 mm			
Valve clearence cold	Intake: 0.15 mm Exhaust: 0.15 mm			
Crank shaft bearing	2 cylinder roller bearing			
Connecting rod bearing	needle bearing			
Top end bearing	bronze bushing			
Piston	cast aluminium alloy			
Piston rings	1 compression ring, 1 taper face ring, 1 oil scraper ring			
Engine lubrication	2 Eaton-Oilpumps			
Quantity of engine oil	see table			
Engine oil	2.1 liters including frame			
Primary ratio	straight geared spur wheels 30:81 teeth			
Clutch	multi disc clutch in oil bath			
Transmission	5-speed claw shifted			
Ignition system	contactless DC- CDI ignition with digital advanced system type KOKUSAN			
Ignition timing	adjustment to max. 38° BTDC at 6000 rpm			
Generator	12V 200W			
Spark plug	NGK DR8EA			
Spark plug gap	0.7 mm Iiquid cooled, permanent rotation of cooling liquid through mechanic driven water pump			
Cooling system				
Cooling liquid	1 liter, 40% antifreeze, 60% water, at least -25° C (-13° F)			
Starting equipment	electric starter, kick starter			

ASSEMBLY CLEARANCE, WEAR LIMIT					
Crank shaft	axial play				
	run out of crank stud				
Connecting rod bearing	radial playmax. 0.05 mm				
	axial play				
Cylinder	bore				
Piston	assembly clearancemax. 0.12 mm				
Piston rings end gap	compression rings				
	oil scraper ringmax. 1.00 mm				
Valves	seat sealing intakemax. 1.50 mm				
	seat sealing exhaustmax. 2.00 mm				
	run out of valve headsmax. 0.05 mm				
	valve guides diameter				
Oil pumps	clearance outer rotor - housingmax. 0.20 mm				
	clearance outer rotor - inner rotor				
Bypaß valve	minimum spring length				
Clutch	Length of springs				
	wear limit organicmin. 2.50 mm				
Camshaft	diameter of bearing bolt (needle bearing)				
Transmission shafts	axial play				

TIGHTENING TORQUES - ENGINE			
Hexagon nut at primary gear	M20x1.5	Loctite 242 + 170 Nm	(125 ft.lb)
Collar nut flywheel	M16x1.25 LH thread	80° C + 150 Nm	(132 ft.lb)
Hexagon nut for inner clutch hub	M18x1.5	80 Nm	(60 ft.lb)
Kickstarter stop screw	M12x1.5	50 Nm	(35 ft.lb)
Allan head screws oil pump	M6	Loctite 242 + 8 Nm	(6 ft.lb)
Allan head screws freewheel hub	M6x12/M6x12.5	Loctite 648 + 18 Nm	(13 ft.lb)
Hexagon screw camshaft gear	M10	Loctite 242 + 35 Nm	(26 ft.lb)
Allan head screw cylinder head top sect.	M6x25/M6x65/M6x70 (8.8)	8 Nm	(6 ft.lb)
Allan head screw cylinder head top sect.	M6x50/M6x55 (12.9)	20 Nm	(15 ft.lb)
Cylinder head screws	M10	50 Nm	(37 ft.lb)
Collar nuts at cylinder base	M10	40 Nm	(30 ft.lb)
Hexagon screw chain sprocket	M10	Loctite 242 + 40 Nm	(30 ft.lb)
Oil drain plug	M22x1.5	30 Nm	(22 ft.lb)
Magnetic plug	M12x1.5	20 Nm	(15 ft.lb)
Plug bypass valve	M12x1.5	20 Nm	(15 ft.lb)
Hollow screws oil lines	M8x1	10 Nm	(7.4 ft.lb)
Hollow screws oil lines	M10x1	15 Nm	(11 ft.lb)
Jet screw clutch cover	M8	10 Nm	(7,4 ft.lb)
Screw plug timing-chain tensioner	M12x1.5	20 Nm	(15 ft.lb)
Counternuts valve adjusting screws	M7x0.75	20 Nm	(15 ft.lb)
Crankshaft locking bolt	M8	25 Nm	(19 ft.lb)
Engine mounting bolt	M8	40 Nm	(30 ft.lb)
Engine mounting bolt	M10	70 Nm	(50 ft.lb)

GEAR RATIOS					
Primary ratio	Transmission	Original final drive ratio	Available chain drive sprockets		
30:81	1st gear 14:35 2nd gear 15:24 3rd gear 18:21 4th gear 20:19 5th gear 22:18	17:38	15 t 16 t for chain 17 t 5/8 x 1/4"	38 t 40 t for chain 42 t 5% x 1/4" 45 t 48 t	

BASIC CARBURETOR SETTING				
	640 LC4 25 kW	640 LC4 37 kW		
Туре	PHM 40 SD	PHM 40 SD		
Carbsetting number	210198	210198		
Main jet	155	155		
Needle jet	DR 268	DR 268		
Idling jet	45	45		
Jet needle	K 51	K 51		
Needle clip pos. f. top	4. from top	4. from top		
Mixt. adj. screw open	1.5 turns	1,5 turns		
Throttle valve	40	40		
Starting jet	55	55		
Performance restrictor	slide stop 28mm	_		



Engine oil

Use only oil brands, which meet quality requirements of API-classes SF, SG or SH (informations on bottles) or higher. Both, mineral and synthetic oils with above specifications can be used.

!	! CAUTION					<u>!</u>		
Poor oil	QUALITY	OR	MINOR	QUANTITY	EFFECT	EARLY	ENGI-	
NE-WEAR.								