

TECHNICAL SPECIFICATIONS – ENGINE 400/540 SXC '98

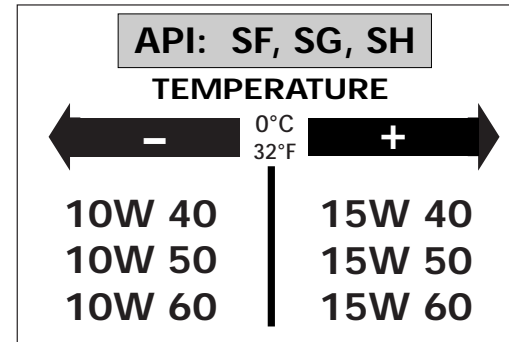
| Engine | 400 LC4 | 540 LC4 |
|--------------------------------------|---|--|
| Design | Liquid-cooled single cylinder 4-stroke engine with and without balancer shaft | |
| Displacement | 398 cm ³ | 538,5 cm ³ |
| Bore / Stroke | 89 / 64 mm | 95 / 76 mm |
| Ratio | 10,8 : 1 | 11,1 : 1 |
| Fuel | unleaded 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 valve clearance | IO 22° BTDC EO 60° BBDC IC 42° ABDC EC 4° ATDC | IO 13° BTDC EO 53° BBDC IC 51° ABDC EC 11° ATDC |
| Valve diameter | Intake: 36 mm Exhaust: 30 mm | |
| Valve clearance cold | Intake: 0,20 mm Exhaust: 0,20 mm | 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 | forged/cast aluminium alloy | |
| Piston rings | 1 compression ring, 1 taper face ring, 1 oil scraper ring | |
| Engine lubrication | forced-feed lubrication through two Eaton-Oilpumps with oil sump | |
| Engine oil | see below # | |
| Engine oil quantity | 1,40liters | |
| Primary ratio | straight geared spur wheels 30 : 81 teeth | |
| Clutch | multi disc clutch in oil bath | |
| Transmission | 5-speed claw shifted | |
| Gear ratio | 1st 14:35 2nd 15:24 3rd 18:21 4th 20:19 5th 22:18 | |
| Ignition system | contactless thyristor ignition with electronic advanced system type SEM | |
| Ignition timing | 400 SXC : adjustment to max. 38 ° BTDC at 6000 rpm 540 SXC: adjustment to max. 32 ° BTDC at 6000 rpm | |
| Generator | 12V 130W | |
| Spark plug | NGK D8EA | |
| Spark plug gap | 0,6 mm | |
| Cooling system | liquid cooled, permanent rotation of cooling liquid through mechanic driven water pump | |
| Cooling liquid | 1 liter, 40% antifreeze, 60% water, at least -25 ° C (-13 ° F) | |
| Starting equipment | decompressor automatic and hand actuated, cold and hot start knob on carburetor | |

TOLERANCE, ASSEMBLY CLEARANCE

| | | |
|------------------------|---|--|
| Crank shaft | axial play | 0,03 - 0,12 mm (0,001-0,005 in) |
| | run out of crank stud | max. 0,04 mm (0,0016 in) |
| Connecting rod bearing | radial play | max. 0,05 mm (0,0019 in) |
| | axial play | max. 1,00 mm (0,04 in) |
| Piston | assembly clearance 400/540/620 | max. 0,12 mm (0,005 in) |
| Piston rings end gap | compression rings | max. 0,60 mm (0,023 in) |
| | oil scraper ring | max. 0,80 mm (0,031 in) |
| Valves | seat sealing intake | max. 1,50 mm (0,059 in) |
| | seat sealing exhaust | max. 2,00 mm (0,079 in) |
| | run out of valve heads | max. 0,03 mm (0,001 in) |
| | valve guides diameter | max. 7,05 mm (0,277 in) |
| Oil pump | clearance outer rotor - housing | max. 0,20 mm (0,008 in) |
| | clearance outer rotor - inner rotor | max. 0,20 mm (0,008 in) |
| Bypaß valve | minimum spring lenght | 25 mm (1 in) |
| Clutch discs | wear limit organic | 2,5 mm (0,1 in) |
| Transmission shafts | axial play | 0,1 - 0,4 mm (0,004 in) |
| Clutch | minimum clutchspring lenght | 34,5 mm (new 37 mm)(1,36 in - new 1,45 in) |

| TIGHTENING TORQUES - ENGINE | | |
|------------------------------------|--------------------|----------------------------------|
| Hexagon nut at primary gear | M20x1,5 | Loctite 242 + 170 Nm (125 ft.lb) |
| Collar nut flywheel | M12x1 LH thread | 60 Nm (44 ft.lb) |
| Hexagon nut for inner clutch hub | M18x1,5 | Loctite 242 + 80 Nm (59 ft.lb) |
| Kickstarter stop screw | M12x1,5 | 50 Nm (37 ft.lb) |
| AH screws oil pump | M6 | Loctite 242 + 8 Nm (6 ft.lb) |
| Hexagon screw camshaft gear | M10 | Loctite 242 + 35 Nm (26 ft.lb) |
| AH screw cylinder head top sect. | M6x25 | 8 Nm (6 ft.lb) |
| AH screw cylinder head top sect. | M6x50/M6x55 (12.9) | 20 Nm (15 ft.lb) |
| AH screw cylinder head top sect. | M6x65/M6x70 (8.8) | 8 Nm (6 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) |
| Banjo bolts oil lines | M8x1 | 10 Nm (7 ft.lb) |
| Banjo bolt oil lines | M10x1 | 15 Nm (11 ft.lb) |
| Jet screw clutch cover | M8x1 | 10 Nm (7 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) |
| Spark Plug | M12 | 20 Nm (15 ft.lb) |

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**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 !

Poor oil quality or minor quantity effect early engine-wear.

| BASIC CARBURETOR SETTING | | | | |
|---------------------------|-----------|-----------------|------------|-----------------|
| | 400 SXC | 400 SXC (20 kW) | 540 SXC | 540 SXC (20 kW) |
| Carburetor | PHM 38 ND | PHM 38 ND | VHSB 38 QS | VHSB 38 QS |
| Carburetor setting number | 120198 | 120198 | 081297 | 091297 |
| Main jet | 140 | 140 | 185 | 140 (185) |
| Needle jet | AB 265 | AB 265 | FN 260 | FN 260 |
| Idling jet | 50 | 50 | 33 | 33 |
| Jet needle | K 32 | K 32 | K 32 | K 32 |
| Needle position from top | II | II | II | II |
| Mixture.adju. screw open | 1,5 turn | 1,5 turn | 1,5 turn | 1,5 turn |
| Throttle valve | 50/1 | 50/1 | 50 | 50 |
| Starting jet | 45 | 45 | 40 | 40 |
| Performance restrictor | - | slide stop 56mm | - | slide stop 36mm |