

TECHNICAL DATA – ENGINE 400/620 Super Competition, RXC, EGS

| Engine | 400 LC4 | 620 LC4 |
|--------------------------------------|--|--|
| Design | Liquid-cooled single cylinder 4-stroke engine with balancer shaft | |
| Displacement | 398 cm ³ | 609 cm ³ |
| Bore / Stroke | 95 / 56,2 mm | 101 / 76 mm |
| Ratio | 10,0 : 1 | 10,5 : 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 | Intake: 249° Exhaust: 225° (995) | 249° (249) |
| Valve timing by 1 mm valve clearance | IO 17° BTDC EO 46° BBDC IC 52° ABDC EC 1° BTDC | IO 14° BTDC EO 56° BBDC IC 55° ABDC EC 13° ATDC |
| Valve diameter | Intake: 36 mm | Exhaust: 30 mm |
| Valve clearance cold | Intake: 0,10 mm | Exhaust: 0,10 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 Eaton-Oilpump with oil sump | |
| Engine oil | see below # | |
| Engine oil quantity | SC, RXC: 1,6 liters / EXC, EGS: 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 thyristor ignition with electronic advanced system type SEM | |
| Ignition timing | adjustment to max. 38° BTDC at 6000 rpm | 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 | |

GEAR RATIOS

| Primary ratio | Transmission | Original final drive ratio | Available chain drive sprockets | Available final drive sprockets |
|----------------|---------------------|--------------------------------------|---|---|
| 30:81 | SC, RXC EXC, EGS | 400 SC, RXC, EXC, EGS 14:40/15:45 | 14 t | 38 t |
| | 1st gear 14:35 | 16:45 | 15 t for chain | 40 t |
| | 2nd gear 16:24 | 620 SC, RXC, EXC, EGS | 16 t ⁵ / ₈ x 1/4" | 42 t for chain |
| | 3rd gear 18:21 | 15:50/16:40 | 17 t | 45 t ⁵ / ₈ x 1/4" |
| | 4th gear 20:19 | | | 48 t |
| 5th gear 22:18 | | | 50 t | 52 t |

TOLERANCE, ASSEMBLY CLEARANCE

| | |
|------------------------|---|
| Crank shaft | axial play.....0,03 - 0,12 mm run out of crank studmax. 0,04 mm |
| Connecting rod bearing | radial play.....max. 0,05 mm axial playmax. 1,00 mm |
| Piston | assembly clearance 400/620max. 0,12 mm |
| Piston rings end gap | compression ringsmax. 0,60 mm oil scraper ringmax. 0,80 mm |
| Valves | seat sealing intakemax. 1,50 mm seat sealing exhaustmax. 2,00 mm run out of valve headsmax. 0,03 mm valve guides diameter.....max. 7,05 mm |
| Oil pump | clearance outer rotor - housingmax. 0,20 mm clearance outer rotor - inner rotormax. 0,20 mm |
| Bypass valve | minimum spring length.....25 mm |
| Clutch discs | wear limit organic2,5 mm |
| Transmission shafts | axial play.....0,1 - 0,4 mm |
| Autodeko | minimum dekospring length.....7 mm |
| Clutch | minimum clutchspring length.....40,5 mm (new 43 mm) |

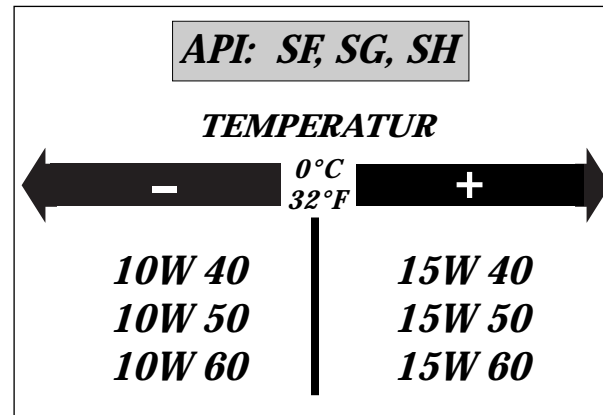
TIGHTENING TORQUES - ENGINE

| | | |
|--|--------------------|---------------------|
| Hexagon nut at primary gear | M20x1,5 | Loctite 242 + 170Nm |
| Collar nut flywheel | M12x1 LH thread | 60 Nm |
| Hexagon nut for inner clutch hub | M18x1,5 | 80 Nm |
| Kickstarter stop screw | M12x1,5 | 70 Nm |
| Allen head screws oil pump | M6 | 8 Nm |
| Hexagon screw camshaft gear | M10 | 35 Nm |
| Allen head screw cylinder head top sect. | M6x25 | 8 Nm |
| Allen head screw cylinder head top sect. | M6x60/M6x65 (12.9) | 20 Nm |
| Allen head screw cylinder head top sect. | M6x65/M6x70 (8.8) | 8 Nm |
| Cylinder head screws | M10 | 50 Nm |
| Collar nuts at cylinder base | M10 | 40 Nm |
| Hexagon screw chain sprocket | M10 | Loctite 242 + 60 Nm |
| Oil drain plug | M22x1,5 | 50 Nm |
| Magnetic plug | M12x1,5 | 20 Nm |
| Plug bypass valve | M12x1,5 | 20 Nm |
| Hollow screws oil lines | M8 | 10 Nm |
| Hollow screws oil lines | M12 | 20 Nm |
| Jet screw clutch cover | M8 | 10 Nm |
| Screw plug timing-chain tensioner | M12x1,5 | 20 Nm |
| Counternuts valve adjusting screws | M7x0,75 | 20 Nm |

(Nm x 0,738 = ft. lbs)

| BASIC CARBURETOR SETTING | | | | | | | |
|----------------------------------|---|---|------------------|--|---|---------------------|-------------------|
| | <i>400 SC. ED 400 EGS A, D, AUS</i> | <i>400 SC. DIVERSE, USA, J 400 EGS DIVERSE, J</i> | <i>400 EGS D</i> | <i>620 SX DIVERSE 620 SC. DIV, USA 620 EGS DIVERSE, GR</i> | <i>620 SC. F, D 620 EGS F, D, AUS</i> | <i>620 EGS A, D</i> | <i>620 EGS CH</i> |
| <i>Carburetor</i> | <i>PHM 38 SD</i> | <i>PHM 38 SD</i> | <i>PHM 38 SD</i> | <i>PHM 40 SD</i> | <i>PHM 40 SD</i> | <i>PHM 40 SD</i> | <i>PHM 40 SD</i> |
| <i>Carburetor setting number</i> | <i>140295</i> | <i>4894/6</i> | <i>4920/3</i> | <i>4922</i> | <i>4922/3</i> | <i>4922/2</i> | <i>4922/3 CH</i> |
| <i>Main jet</i> | <i>135</i> | <i>190</i> | <i>170</i> | <i>195</i> | <i>135</i> | <i>170</i> | <i>135</i> |
| <i>Needle jet</i> | <i>DR 268</i> | <i>DR 270</i> | <i>DR 268</i> | <i>DR 272</i> | <i>DR 268</i> | <i>DR 268</i> | <i>DR 268</i> |
| <i>Idling jet</i> | <i>45</i> | <i>45</i> | <i>45</i> | <i>45</i> | <i>45</i> | <i>45</i> | <i>45</i> |
| <i>Jet needle</i> | <i>K 51</i> | <i>K 51</i> | <i>K 51</i> | <i>K 51</i> | <i>K 51</i> | <i>K 51</i> | <i>K 51</i> |
| <i>Needle position from top</i> | <i>3 rd</i> | <i>2 nd</i> | <i>3 rd</i> | <i>2 nd</i> | <i>3 rd</i> | <i>3 rd</i> | <i>3 rd</i> |
| <i>Mixture.adju. screw open</i> | <i>1,5 turn</i> | <i>2 turn</i> | <i>1,5 turn</i> | <i>1,5 turn</i> | <i>1,5 turn</i> | <i>1,5 turn</i> | <i>1,5 turn</i> |
| <i>Throttle valve</i> | <i>40</i> | <i>40</i> | <i>40</i> | <i>40</i> | <i>40</i> | <i>40</i> | <i>40</i> |
| <i>Starting jet</i> | <i>45</i> | <i>45</i> | <i>45</i> | <i>45</i> | <i>45</i> | <i>45</i> | <i>45</i> |

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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.