

SPECIFICATIONS

ENGINE SPECIFICATIONS

for Models 100 and 200 Aluminum Die-Cast Engines

Bore	3.500
Stroke	2.250
Piston displacement model 100	21.58 cu. in.
Piston displacement model 200	43.16 cu. in.
Compression ratio model 100	6.85:1
Compression ratio model 200	6.85:1
Cylinder compression	110 lb.
Brake horsepower model 100	9
Brake horsepower model 200	18
Maximum torque at 2500 R.P.M. model 100....	15 Ft. lb.
Maximum torque at 2500 R.P.M. model 200....	32 Ft. lb.
Governor model 200	flyball type
Engine rotation (viewed from flywheel).....	clockwise
Air cleaner model 100.....	Replaceable paper cartridge
Air cleaner model 200	Replaceable paper cartridge
Spark plug	A.C. -C85TS or equivalent
Spark plug gap .....	.025
Breaker point gap .....	.020
Ignition timing model 100	18° B.T.D.C.
Ignition timing model 200	7° B.T.D.C.
Valve tappet clearance .....	.005 COLD
Carburetor high speed adjustment.....	2¼ turns open
Carburetor idle speed adjustment	1 to 2 turns open (approximate)
Oil filter 200	Full flow (disposable)
Valve spring tension	65 lb. valve closed 90 lb. valve open
Valve seat angle	45°
Valve stem diameter .....	.310 - .311
Wrist pin .....	.8250 - .8752
Ring width .....	.145 - .155
Ring gap .....	.010 - .020
Cam shaft journal .....	.9680 - .9675

Crankshaft journal (main)	1.9985 - 1.9990
Crankshaft journal (rod)	1.7485 - 1.7490
Intake valve opens	4° - B.T.D.C.
Intake valve closes	39° - A.B.D.C.
Exhaust valve opens	4° - B.B.D.C.
Exhaust valve closes	39° - A.T.D.C.
Cam gear backlash .....	.002 - .004
Camshaft journal clearance .....	.002 - .0025
Piston clearance .....	.002

CAPACITIES

Crankcase model 100	1 qt.
Crankcase model 200	2 qt. (if oil filter is replaced 2½ qt.)

FUELS AND OILS

Gasoline	85 to 101 Octane, regular or ethyl regular preferred
Engine oil	good grade detergent SAE 30 about 32° F SAE 10 below 32° F

RECOMMENDED TORQUES FOR MODEL 100 & 200 ENGINE SCREWS AND NUTS

Screw Size	Torque-Foot-Pounds
¼-20 & ¼-28	6 - 8
5/16-18 & 5/16-24 - except connecting rod and valve cover nuts	14 - 16
3/8-16 & 3/8-24	22 - 25
5/8-14 Flywheel nut)	60 - 75
Spark plug (18 m.m.)	22 - 25
Connecting rod nuts	18 - 20
5/16-24 valve cover nuts	5 - 7

The following are the exact dimensions to which all M109 and M218 Crankshafts should be ground when using undersize bearings:

UNDERSIZE	MAIN JOURNALS	CRANK PIN JOURNALS
.015	1.9840-1.9835	1.7340-1.7335
.030	1.9690-1.9685	1.7190-1.7185

The following are the exact dimensions to which all M109 and M218 cylinders should be honed when using oversize pistons:

OVERSIZE	CYLINDER DIAMETER
.020	3.5200-3.5210
.030	3.5300-3.5310