TIGHTENING TORQUES

	Nm	lbf ft
Distributor to timing cover	9,5	7
Alternator to block	50	37
Tensioner, adjusting nut and bolt	15	11
Cylinder block drain plug	20	15
Oil pump valve plug to pump body	45	33
Oil drain plug	39	29
Chain tensioner inspection plug	39	29
Spark plugs	30	22
Side flange to cylinder head	15	11
Earth cable to alternator terminal	5,4	4
Positive cable to alternator terminal	5,4	4
Positive cable to starter terminal	9,5	7
Engine earth cable	20	15
Carburettor to inlet manifold	20	15
Sump to cylinder block	15	11
Front housing to cylinder head and timing gear casing	12	9
Timing gear casing to cylinder block	12	9
Clutch housing to cylinder block	54	40
Clutch housing to gearbox	54	40
Big end nuts	65	48
Main bearing bolts	110	81
Inlet manifold to cylinder head	15	11
Exhaust manifold to cylinder head	20	15
Oil pump valve body	9,5	7
Oil pump cover to pump body	15	11
Side cover plate to cylinder head	12	9
Water outlet cover to casing	12	9
Rocker arm cover	5,4	4
Cylinder head to cylinder block	89,5	66
Starter motor to cylinder block	54	40
Drive plate to crankshaft	80	59

	Nm	lbf ft
Stiffener bracket to cylinder block	54	40
Stiffener bracket to clutch housing	54	40
Oil pressure switch	35	26
Clutch mechanism to flywheel	24	18
Vibration damping pad to block	15	11
Guide pad to block	15	11
Oil pump to block	20	15
Water pump to timing gear casing	15	11
Fuel pump to timing cover	20	15
Crankshaft pulley	135	100
Temperature pick-up	15	11
Plug lead cover to cylinder head	15	11
Sprocket to camshaft	15	11
Water outlet casing to cylinder head	12	9
Filter cartridge mounting to block	12	9
Engine mounting to engine	24	18
Alternator support to timing gear casing	15	11
Crankshaft bearing seal support	9,5	7
Hot air take-off support	15	11
Strainer to oil pump cover	12	9
Mounting pad assembly to mounting	20	15
Mounting pad assembly to cross member	24	18
Rear pad to rear cross member	24	18
Rear pad to gearbox extension	24	18
Chain tensioner to block	9,5	7
Belt tensioner to alternator	20	15
Belt tensioner to timing gear casing	20	15
Temperature switch on radiator	35	26
Gearbox rear cross member to body	24	18
Fan and pulley	5,4	4
Flywheel to crankshaft	80	59

DATA

GENERAL

Type. 4 cylinder in line, tilted transversely at 15° to right, overhead camshaft.

Firing order	1—3—4—2 No. 1 at flywheel end
Direction of rotation	Clockwise as seen from the front of the engine.
Capacity standard bore	1981 cm^3 (120.8 in^3)
Stroke	75 mm (2.952 in)
Compression-ratio	8.15:1 (± 0.15)
-pressures	11,7—12, 4 Bar (170—180 p.s.i.) at cranking speed.

CYLINDER BLOCK

Cylinder bore diameter	
Class A	91.692 to 91.702 mm (3.6099 to 3.6103 in)
Class B	91.702 to 91.712 mm (3.6103 to 3.6107 in)
Class C	91.712 to 91.722 mm (3.6107 to 3.6111 in)
Bore oversizes	+ 0.1 mm or + 0.4 mm (+.0039 in or + 0.0157 in)

The bore diameter should be checked 40 mm (1.574 in) from the cylinder head gasket face.

Inspection tolerances	(Permissible taper 0.005 mm ((0.0002 in) with the largest (diameter at the bottom.)
on re-bored block.	(Permissible ovality and run-out ((0.005 mm (0.0002 in)
Main bearing bore diameter	
Red) Paint marks on bearing caps	60.826 to 60.836 mm (2.3947 to 2.3951 in)
Blue)	60.836 to 60.846 mm (2.3951 to 2.3955 in)
Width of centre main bearing	28.18 to 28.22 mm (1.1094 to 1.111 in)

CRANKSHAFT

Crankshaft stroke	75 mm (2.952 in)
Crankshaft end float	0.09 to 0.27 mm (.0035 to .011 in)
Main bearing running clearance	0.049 to 0.087 mm (0.0019 to 0.0034 in)

Diameter of main journals	
Red	56.967 to 56.977 mm (2.2427 to 2.3431 in)
Blue	56.957 to 56.967 mm (2.2424 to 2.2427 in)
Undersizes for regrinding	0.1-0.2-0.5-0.75-1.0 mm (0.0039-0.0078-0.0197-0.0295-0.0394 in)
Thicknesses of main journals	
Red	1.891 to 1.900 mm (0.744 to 0.748 in)
Blue	1.901 to 1.910 mm (0.0749 to 0.0752 in)
Width of centre main bearing	33.03 to 33.07 mm (1.3003 to 1.3019 in)
Oversizes	+ 0.2-+ 0.3- +0.4 mm (+ 0.0078-+ 0.0118-+ 0.157 in)
Thrust washer thickness	2.31 to 2.36 mm (0.0909 to 0.0929 in)
Diameter of crankpins	
Red	51.959 to 51.967 mm (2.0455 to 2.0458 in)
Blue	51.951 to 51.959 mm (2.0452 to 2.0455 in)
Undersizes for regrinding	0.1-0.2-0.5-0.75-1.0 mm (0.0039-0.0078-0.0197-0.0295-0.0394 in)
Crankshaft self lubricating bush	
Inside diameter	15.03 to 15.05 mm (0.5917 to 0.5925 in)
Outside diameter	19.11 to 19.15 mm (0.7523 to 0.7539 in)
Length	23.8 to 24.2 mm (0.937 to 0.952 in)
Flywheel	
Diameter	288 mm (11.33 in)
Starter ring gear	
Diameter	292 mm (11.496 in)

CONNECTING RODS

Distance between centres	137 ± 0.075 mm (5.3937 ± 0.0029 in)
Big end shell locating bore	
Red	55.877 to 55.885 mm (2.1999 to 2.2002 in)
Blue	55.885 to 55.893 mm (2.2002 to 2.2005 in)

Small end bush bore	25.939 to 25.982 mm (1.0212 to 1.0229 in)
Small end with bush fitted	24.002 to 24.009 mm (0.9449 to 0.9452 in)
Interference between bush and connecting rod	0.08 to 0.15 mm (0.0031 to 0.0059 in)

The four connecting rods on any given engine must be the same weight to within the nearest 3 grm. (0.10 ozs).

Big end shell thickness	
Red	1.932 to 1.941 mm (0.076 to 0.0764 in)
Blue	1.940 to 1.949 mm (0.0763 to 0.0767 in)
Big end running clearance	0.028 to 0.062 mm (0.0011 to 0.0024 in)
Big end side clearance	0.10 to 0.37 mm (0.0039 to 0.0145 in)

PISTON

Maximum weight difference of any two pistons on one engine	3 gram (0.10 oz)
Nominal diameter measured 18.5 mm (0.728 in) below the gudgeon pin bore	
Class A	91.652 to 91.662 mm (3.6083 to 3.6087 in)
Class B	91.662 to 91.672 mm (3.6087 to 3.6091 in)
Class C	91.672 to 90.682 mm (3.6091 to 3.6095 in)

Classification identification is stamped on the crown. Class A pistons are not supplied for service use. Replace with Class B.

Piston to bore clearance (nominal)	0.03 to 0.050 mm (0.0011 to 0.0019 in)
Piston oversizes	+ 0.10-+ 0.40 mm (+ 0.0039-+ 0.0157 in)
Piston ring gaps	
Compression ring	0.35 to 0.55 mm (0.0137 to 0.0216 in)
Scraper ring	0.35 to 0.55 mm (0.0137 to 0.0216 in)
Expander ring	0.38 to 1.40 mm (0.0149 to 0.0551 in)
Compression ring groove clearance	0.045 to 0.072 mm (0.0017 to 0.0028 in)
Scraper ring groove clearance	0.045 to 0.072 mm (0.0017 to 0.0028 in)

DESCRIPTION AND MODIFICATIONS

This may seem a little out of place but I have heard about problems with people stealing work and selling it - for example on eBay.

If you're reading this and you bought this manual anywhere then you have been ripped off.

Please contact me via my email mikejamson@hotmail.com Otherwise I can be found on the dodge50 facebook page, if not then get in contact with Greg and he can pass the message on to me.

I have note done this pdf manual for my own personal gain and wish to see the community of 50 series owners benefit from the information here, and I do not want to see the community get taken advantage of and somebody else gain from it unfairly.

The information in pdf format will hopefully allow more of these wonderful trucks to stay on the road by providing information to everybody.

This has been quite a long and involved process to scan the manual and to convert it into a pdf format. I do aplogise as I have used several different scanners and several different computers to do it, so there are no doubt some errors hidden throughout, as well as some editing errors.

I have aimed to balance quality and file size and hope that this balance meets to everybody's approval.

If you see an error please let me know and I will fix it as soon as I can.

Expander ring groove clearance	0.014 to 0.232 mm (0.0005 to 0.0091 in)
Gudgeon pin	
Diameter	23.991 to 23.995 mm (0.9445 to 0.9446 in)
Length	69.5 mm (2.736 in)

LUBRICATION SYSTEM

Oil pressure at 40-120° C and 3,000 r.p.m.	3.6 to 5.6 bar (52.2 to 81.2 lbf/in²)
Oil pump	
Valve spring free length	45 mm (1.771 in)
Length under load	4.5 ± 0.2 Kg = 2 mm (10 lb ± 44 lb = 0.984 in)

CYLINDER HEAD

Valve clearances—cold	
Inlet	0.20 mm (0.008 in)
Exhaust	0.30 mm (0.012 in)
Core plug diameter	32 mm (1.259 in)
Maximum permissible amount to be machined from cylinder head and front casing	0.30 mm (0.012 in)
Standard gasket thickness	1.2 ± 0.1 mm (0.047 ± 0.004 in)
Repair gasket thickness	1.5 ± 0.1 mm (0.059 ± 0.004 in)
Valve guides	
Material	Cast iron
Inside diameter	9.022 to 9.040 mm (0.3552 to 0.3559 in)
Outside diameter	15 mm (0.590 in)
Length	56 mm (2.204 in)
Valve seats	
Material	Cast iron
Seat locating area diameter	
Inlet	41.5 mm (1.634 in)
Exhaust	36 mm (1.417 in)
Inlet valve	
Outside diameter of valve head	43 mm (1.692 in)
Stem diameter	8.975 to 8.990 mm (0.3533 to 0.3539 in)
Seat angle	90° to 90° 30′
Stem to guide clearance	0.022 to 0.065 mm (0.0008 to 0.0026 in)
Valve lift (zero clearance)	8.95 mm (0.3523 in)

Exhaust valve	
Outside diameter of valve head	38 mm (1.496 in)
Stem diameter	8.950 to 8.965 mm (0.3253 to 0.3523 in)
Seat angle	90° to 90° 30′
Stem to guide clearance	0.047 to 0.090 mm (0.0018 to 0.0035 in)
Valve lift (zero clearance)	8.95 mm (0.3523 in)
Valve springs	
Free length	52.3 mm (2.059 in)
Length under load of 48 daN	37 mm (1.456 in)

CAMSHAFT

No. 1 Bearing diameter	43.940 to 43.965 mm (1.7299 to 1.7309 in)
No. 2 Bearing diameter	45.940 to 45.965 mm (1.8086 to 1.8096 in)
No. 3 Bearing diameter	46.440 to 46.465 mm (1.8283 to 1.8293 in)
No. 4 Bearing diameter	46.940 to 46.965 mm (1.8480 to 1.8490 in)
No. 5 Bearing diameter	47.440 to 47.465 mm (1.8677 to 1.8687 in)
Camshaft bearing clearance	0.035 to 0.085 mm (0.0013 to 0.0033 in)
End float	0.08 to 0.20 mm (0.0031 to 0.0078 in)

ROCKER ARMS

Bore diameter	18.018 to 18.040 mm (0.7094 to 0.7102 in)
Clearance between rocker arm and shaft	0.01 to 0.048 mm (0.0004 to 0.0018 in)

VALVE TIMING

Inlet opens	21° 13′ B.T.D.C.
Inlet closes	46° 47′ A.B.D.C.
Exhaust opens	55° 24′ B.B.D.C.
Exhaust closes	12° 36′ A.T.D.C.