

ISX Series Engines

Cylinder Block - Torque Values

main bearing capscrews	300+90
connecting rod	52+60
crankshaft pulley mounting capscrews	130
front crankshaft seal	
installation tool bolts	15
lower gear cover capscrews	21
crankshaft seal nuts	71 in-lb
special bolt (red loctite)	41
front gear housing capscrews	53
crank position sensor	18
oil pan capscrews	35
piston cooling nozzle	48
lower concept idler gear	22+60
upper gear cover	21
lower gear cover	21
camshaft position sensor	18
accessory drive idler gear	22+60
concept gear screws	21
injector cam concept gear bolt	160+90
valve cam gear bolt	109
block stiffener plate	102

Cylinder Head - Torque Values

cylinder head bolts	300+90
injector camshaft retainer	30
injector camshaft cover plate	30
injector rocker lever shaft bolts	22+60
valve rocker lever shaft bolts	22+60
injector hold down bolts	60
valve cover bolts	18

Fuel System - Torque Values

fuel pump mounting bolts	120 in-lb
IFSM mounting capscrews	33

Lubricating Oil System - Torque Values

oil cooler bolts	35
oil cooler element bolts	15
oil pan bolts	35
oil pump	40
oil suction tube	35

Cooling System - Torque Values

thermostat housing bolts	41
thermostat housing cover bolts	25
fan hub bolts	85
water pump bolts	53
belt tensioner bolts	25
water inlet connection (dot to block)	45
exhaust manifold bolts	35
turbocharger mounting bolts	45

Mounting Adaptations - Torque Values

front engine support bolts	122
flywheel mounting bolts	184
flywheel housing bolts	145
valve adjustment locknuts	33
Injector adjustment locknuts	55
Injector adjustment	71 in. lb.

M11 Series Engines

Cylinder Block - Torque Values

main bearings bolts	155
camshaft thrust plate bolts	35
camshaft rear cover plate bolts	35
crankshaft pulley bolts	150
front gear cover bolts	15
front engine support bolts	50
front gear housing bolts	50
camshaft idler gear mounting bolts	45+60
hydraulic pump idler gear mounting bolts	45+60
water pump idler gear bolts	45+60
piston cooling nozzle	18
water header plate	40
connecting rod	155

Cylinder Head - Torque Values

cylinder head bolts	160+90
fuel pump side mounting bolts	50
rocker lever (cast iron)	135
valve cover	130 in-lb
rocker lever housing	35
camfollower studs	25
camfollower supports	35
injector hold down	55
engine brake mounting bolts	60

Lubricating Oil System - Torque Values

oil cooler mounting bolts	35
oil cooler flange mounting bolts	35
suction tube bolts	45
oil pan	35
oil pump	30

Cooling System - Torque Values

fan drive pulley idler shaft locknut	140
coolant filter head bolts	40
coolant heater housing bolts	40
thermostat housing bolts	40
coolant thermostat housing support bolts	40
fan pulley	50
water pump bolts	35
water pump pulley bolt	55

Drive Unit - Torque Values

accessory drive bolts	35
accessory drive pulley mounting bolt	400
hydraulic drive adapter mounting bolts	35

Air Intake System - Torque Values

air intake manifold bolts	35
turbocharger mounting nuts	45
turbocharger V band clamps	75 in ft
turbocharger drain line bolts	20
exhaust manifold bolts	35

Mounting Adaptations - Torque Values

front engine support bracket	50
flywheel mounting bolts	135
flywheel housing bolts	145

ISB Series Engines

Cylinder Block - Torque Values

connecting rod bolts	73
oil pan bolts	18
main bearing bolts	66+90
camshaft thrust washer bolts	18
front cover bolts	18
crankshaft pulley bolts	92
flywheel bolts	101
gear housing bolts	18
rear cover bolts	80 in lb

Cylinder Head - Torque Values

cylinder head bolts	66+90
rocker lever pedestal bolts	27
fan hub bolts	18
belt tensioner bolts	32
valve cover bolts	18

Fuel System - Torque Values

fuel injection pump mounting bolts	32
fuel injection pump retaining nut	125
high pressure fuel line (pump end)	18
high pressure fuel line (head end)	28
injector	89 in lb

Lubricating Oil System - Torque Values

oil cooler	18
oil pan	18
oil pan drain plug	60
oil pump	18
suction tube bolts	18

Cooling System - Torque Values

thermostat housing bolts	18
water pump mounting bolts	18

Intake Air System - Torque Values

intake manifold mounting bolts	18
turbocharger mounting nuts	33
turbo oil drain bolts	20
exhaust manifold bolts	32
air compressor mounting nuts	57
air compressor support bolts	18

Mounting Adaptations - Torque Values

front engine support bracket	50
flywheel bolts	101
flywheel housing bolts	44

ISC Series Engines

Cylinder Block - Torque Values

connecting rod bolts	52+60
main bearing bolts	70+90
camshaft bolts	18
front gear cover bolts	18
vibration damper mounting bolts	92
exhaust manifold bolts	32

Cylinder Head - Torque Values

cylinder head bolts	108+90
rocker lever	44

Fuel System - Torque Values

fuel pump mounting nuts	32
fuel pump support bracket	32
caps fuel pump drive gear nut	151

Lubricating Oil System - Torque Values

oil cooler mounting bolts	18
oil pan mounting bolts	18
oil pump	18
suction tube bolts	18
oil thermostat	37

Mounting Adaptations - Torque Values

front engine support bracket	50
flywheel	101
flywheel housing	44

CAPS Modular Repair

rotor plug	10
rate shape snubber	124in+90
accumulator module	50
distributor module	35
rate shape tube fittings	34
fuel pressure sensor	60
fuel temperature sensor adaptor	30
fuel temperature sensor	120in

B Series Engines (Mechanical)**Base Engine - Torque Values**

connecting rod bolts	74
crankshaft pulley bolts	92
<i>cylinder head bolts</i>	
<i>(all capscrews)</i>	66
<i>(long capscrews only)</i>	90
<i>(all capscrews)</i>	+90 deg
front engine support bracket	57
flywheel	101
flywheel housing	44
camshaft thrust plate bolt	18
gear cover	18
gear housing bolts	18
main bearing bolts	129
rear seal cover	48 in-lb
rocker support bolts	18

Cooling System - Torque Values

aftercooler bolts	18
fan hub bolts	18
thermostat housing bolts	18
water pump mounting bolts	18

Lubricating Oil System - Torque Values

oil cooler	18
oil pan	18
oil pump	18
suction tube bolts	18

Combustion Air System -Torque Values

exhaust manifold bolts	32
turbocharger mounting nuts	33
turbocharger oil drain line bolts	18

Fuel System - Torque Values

fuel injection pump mounting bolts	18
<i>injection pump drive gear nut</i>	
<i>bosch rotary</i>	48
<i>bosch inline</i>	122
injector retaining nut	44

C Series Engines (Mechanical)**Cylinder Block - Torque Values**

connecting rod bolts	88
main bearings	129
camshaft thrust plate bolt	18
vibration damper mounting bolts	148

Cylinder Head - Torque Values

<i>cylinder head bolts</i>	
<i>(all capscrews)</i>	52
<i>(long capscrews only)</i>	105
<i>(all capscrews)</i>	+90 deg
exhaust manifold bolts	32
front engine support bracket	83
front gear cover bolts	18
flywheel	101
flywheel housing	57
gear housing bolts	
rear seal cover	80 in-lb
rocker support bolts	41

Cooling System - Torque Values

belt tensioner	32
fan hub bolts	18
thermostat housing bolts	18
water pump mounting bolts	18

Lubricating Oil System - Torque Values

oil cooler mounting bolts	18
oil pan	18
suction tube bolts	80 in-lb
oil pump	18

Combustion Air System -Torque Values

turbocharger mounting nuts	33
turbocharger oil drain line bolts	18

Fuel System - Torque Values

<i>injection pump drive gear nut</i>	
<i>A pump</i>	68
<i>MW pump</i>	77
<i>P pump</i>	122
injector clamp	18
injection pump mounting nuts	32

N14 Series Engines

Base Engine Component - Torque Values	
accessory drive mounting bolts	45
accessory drive pulley flanged nut	310
cam follower housing bolts	35
camshaft support bolts	20
c brake mounting bolts	75
connecting rod bolts	195
cylinder head bolts	220+90
front engine support bolts	50
flywheel mounting bolts	200
flywheel housing mounting bolts	150
front gear cover bolts	50
main bearing bolts	255
oil pan mounting bolts	50
5/15 oil pan mounting bolts	20
rear cover mounting bolts	35
rocker housing mounting bolts	85
rocker lever shaft mounting bolts	115
vibration damper mounting bolts	190
injector holddown bolts	30
Cooling System - Torque Values	
fan hub mounting bolts	80
water pump idler pulley shaft lock nut	50
water pump mounting bolts	35
thermostat housing bolts	35
Lubricating Oil System - Torque Values	
oil cooler assembly mounting bolts	35
oil cooler core bolts	20
oil cooler housing bolts	35
oil pump bolts	40
oil cooler connection retainer bolts	35
Intake Air System - Torque Values	
exhaust manifold bolts	60
intake manifold mounting bolts	35
turbocharger mounting nuts	32
turbocharger oil drain line bolts	32

ISX - 02 Series Engines

egr valve clamps	150 in
banjo fitting bolt	88 in
egr cooler	
mounting nuts	17
mounting bolts	34
hose clamp	