

# AERA Torque Specs

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Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
ACURA	1.6	97	D16A1	86-89	23 FT/LBS	40 FT/LBS	22, 47 FT/LBS
ACURA	1.7	104	B17A1	92-93	14,23 FT/LBS	56 FT/LBS	22,61 FT/LBS
ACURA	1.8	112	B18A1	90-94	30 FT/LBS	56 FT/LBS	22,61 FT/LBS
ACURA	1.8	110	B18B1	94-01	15,24 FT/LBS	22, 58 FT/LBS	22,63 FT/LBS
ACURA	1.8	110	B18C1	94-00	15, 33 FT/LBS	22# ALL, BOLT #1&5: 56 FT/LBS, BOLT #2,3&4: 49 FT/LBS	22, 60 FT/LBS
ACURA	1.8	110	B18C5	97-03	ROD BOLT STRETCH OF .005-.006" (0.127-0.1524 MM)	22 FT/LBS, BOLTS #1&5 54 FT/LBS, BOLTS #2-4 47 FT/LBS	22, 63 FT/LBS
ACURA	2.0	122	K20A2	02-03		22 FT/LBS, +56°	29 FT/LBS, +90°, +90° (NEW BOLTS ADD 1 ADDITIONAL 90° TURN)
ACURA	2.5	149	G25A4	95-98	24 FT/LBS	22,50 FT/LBS	74 FT/LBS
ACURA	2.5	150	G25A1	92-94	24 FT/LBS NUTS	22,50 FT/LBS	55,74 FT/LBS
ACURA	2.5	151	C25A1	86-87	33 FT/LBS	29# 9MM BOLTS, 50# 11MM BRIDGE BOLTS, 36# 10MM SIDE BOLTS	1986:49 FT/LBS, 1987:56 FT/LBS
ACURA	2.7	163	C27A1	87-90	33 FT/LBS	11MM:29 FT/LBS, BRIDGE BLT:33#, SIDE BOLTS:36 FT/LBS	22,56 FT/LBS
ACURA	3.0	182	C30A1	91-95	14 FT/LBS + 95° ADDITIONAL TURN	OUTER 29 FT/LBS, INNER 48 FT/LBS	56 FT/LBS in 3 STEPS
ACURA	3.2	193		96-99	40 FT/LBS	29 FT/LBS	M8: 15 FT/LBS, M11: 47 FT/LBS
ACURA	3.2	193		96-98	40 FT/LBS	29 FT/LBS	M8: 15 FT/LBS, M11: 47 FT/LBS
ACURA	3.2	196	C32A6	96-99	33 FT/LBS	9MM BOLTS 33#, 11MM BOLTS 58#, 10MM SIDE BOLTS 37 FT/LBS	58 FT/LBS
ACURA	3.2	196	C32A1	91-96	33 FT/LBS FOR NUTS	9MM: 29 FT/LBS, 10MM: 36 FT/LBS, 11MM: 57 FT/LBS	29,56 FT/LBS
ACURA	3.5	211	C35A1	96-98	33 FT/LBS	9MM 29 FT/LBS, 11MM 56 FT/LBS, 10MM SIDE BOLTS 36 FT/LBS	56 FT/LBS
ACURA	3.5	214		98-01	40 FT/LBS	29 FT/LBS, REAR CRANK SEAL RETAINER 13 FT/LBS	M8: 15 FT/LBS, M11: 47 FT/LBS
ALFA ROMEO	1.6	96		62-81	67-72 FT/LBS	63-67 FT/LBS	97-104 FT/LBS
ALFA ROMEO	1.8	110		69-71	37 FT/LBS	35 FT/LBS	57 FT/LBS RETORQUE TO 64 FT/LBS COLD AFTER 1500 MILES.
ALFA ROMEO	2.0	119		85-88	37 FT/LBS	35 FT/LBS	57 FT/LBS RETORQUE-64 FT/LB COLD AFTER 1500 MILES.
ALFA ROMEO	2.5	152		81-89	39-44 FT/LBS	62-64 FT/LBS	57 FT/LBS, AFTER 621 MILES LOOSEN & RETORQUE COLD-65#
ALFA ROMEO	3.0	181		88-89	39-44 FT/LBS	62-64 FT/LBS	57 FT/LBS, AFTER 621 MILES AND LOOSEN & RETORQUE COLD-65#
ALLIS CHALMERS	0.4	25			35-45 FT/LBS	85 FT/LBS	
ALLIS CHALMERS	1.0	62			20-25 FT/LBS	75-85 FT/LBS PAL NUT: 5-10 FT/LBS	3/8" CAP SCREWS: 57 FT/LBS
ALLIS CHALMERS	1.0	61		75-82	32-40 FT/LBS	36-43 FT/LBS	65-72 FT/LBS LARGE BOLT, 29-36 FT/LBS SMALL BOLT
ALLIS CHALMERS	1.0	60			35-40 FT/LBS PIN CLAMPING BOLT 35-40 FT/LBS	30 FT/LBS	
ALLIS CHALMERS	1.3	77			66-73 FT/LBS	80-106 FT/LBS	119-146 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
ALLIS CHALMERS	1.5	90			66-73 FT/LBS	80-106 FT/LBS	119-146 FT/LBS
ALLIS CHALMERS	1.9	116			PIN CLAMPING BOLT 35-40 FT/LBS		65 FT/LBS
ALLIS CHALMERS	1.9	116			35-40 FT/LBS PIN CLAMPING BOLT 35-40 FT/LBS	80 FT/LBS	65 FT/LBS
ALLIS CHALMERS	2.0	120					60 FT/LBS
ALLIS CHALMERS	2.1	125			35-40 FT/LBS PIN CLAMP IN	GRADE 8 BOLT 75-85 FT LBS****	60 FT/LBS
ALLIS CHALMERS	2.1	125			35-40 FT/LBS PIN CLAMPING BOLT 35-40 FT/LBS	80 FT/LBS	60 FT/LBS
ALLIS CHALMERS	2.2	139			35-40 FT/LBS PIN CLAMPING BOLT 35-40 FT/LBS	90-95 FT/LBS	80-85 FT/LBS
ALLIS CHALMERS	2.3	143			75-85 FT/LBS	103-113 FT/LBS	82-91 FT/LBS
ALLIS CHALMERS	2.3	142			65-75 FT/LBS	180-190 FT/LBS	
ALLIS CHALMERS	2.3	143		85-82	75-85 FT/LBS	103-113 FT/LBS	82-91 FT/LBS
ALLIS CHALMERS	2.3	142	3S233		36-40 FT/LBS	43-58 FT/LBS	65-80 FT/LBS
ALLIS CHALMERS	2.4	149			35-40 FT/LBS	90-95 FT/LBS	80-85 FT/LBS
ALLIS CHALMERS	2.4	149			35-40 FT/LBS	90-95 FT/LBS	80-85 FT/LBS, RETORQUE HOT
ALLIS CHALMERS	2.4	149			35-40 FT/LBS	90-95 FT/LBS	80-85 FT/LBS, RETORQUE HOT
ALLIS CHALMERS	2.5	153			50-60 FT/LBS	125-135 FT/LBS	
ALLIS CHALMERS	2.5	153			35-40 FT/LBS	125-135 FT/LBS	110 FT/LBS
ALLIS CHALMERS	2.5	152			65-70 FT/LBS PLAIN*, 45-50 FT/LBS CADMIUM-PLATED*	110-115 FT/LBS	55-60 FT/LBS
ALLIS CHALMERS	2.5	153			40-45 FT/LBS	110-120 FT/LBS	110 FT/LBS
ALLIS CHALMERS	2.6	160			35-40 FT/LBS PIN CLAMPING BOLT 35-40 FT/LBS	90-95 FT/LBS	80-85 FT/LBS
ALLIS CHALMERS	2.6	158			75-85 FT/LBS	103-113 FT/LBS	82-91 FT/LBS
ALLIS CHALMERS	2.9	175			40-50 FT/LBS PIN CLAMPING BOLT 35-40 FT/LBS	120-130 FT/LBS	110-120 FT/LBS
ALLIS CHALMERS	2.9	175			50-60 FT/LBS	125-135 FT/LBS	
ALLIS CHALMERS	3.3	201			70 FT/LBS CASTELLATED NUTS, 40 FT/LBS LUG LOCK NUTS	85 FT/LBS	1/2" STUDS: 70 FT/LBS 3/8" STUDS: 25 FT/LBS
ALLIS CHALMERS	3.3	200			SEE TB 2018-R	135 FT/LBS	165 FT/LBS
ALLIS CHALMERS	3.3	200					73,150 FT/LBS ROCKER SHAFT 28-33 FT/LBS
ALLIS CHALMERS	3.3	201			70 FT/LBS CASTELLATED NUTS, 40 FT/LBS LUG LOCK NUTS	85 FT/LBS	1/2" STUDS: 70 FT/LBS 3/8" STUDS: 25 FT/LBS
ALLIS CHALMERS	3.3	200			SEE TB 2018-R	130-140 FT/LBS	165 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
ALLIS CHALMERS	3.6	220			44-46 FT/LBS	130-135 FT/LBS	205-215 FT/LBS
ALLIS CHALMERS	3.6	220			44-46 FT/LBS	130-135 FT/LBS	205-215 FT/LBS
ALLIS CHALMERS	3.7	226			45-55 FT/LBS	130-140 FT/LBS	7/16" CAP SCRWS:70-75#, 1/2"CAP SCRWS & 4 STUD NUTS:90-95#
ALLIS CHALMERS	3.7	226			35-45 FT/LB SELF LOCKING NUTS,70 FT/LBS CASTELLATED NUTS	85 FT/LBS	1/2" 70 FT/LBS, 3/8" 25 FT/LBS
ALLIS CHALMERS	3.7	226		54-57	45-55 FT/LBS	130-140 FT/LBS	7/16" CAP SCREWS: 70-75#, 1/2"CAP SCRWS & 4 STUD NUTS:90-95#
ALLIS CHALMERS	3.8	230			30-40 FT/LBS	125-135 FT/LBS	95-100 FT/LBS
ALLIS CHALMERS	3.8	230			40-45 FT/LBS	110-120 FT/LBS	110 FT/LBS
ALLIS CHALMERS	3.8	230			40-45 FT/LBS	110-120 FT/LBS	110 FT/LBS
ALLIS CHALMERS	3.8	230			40-45 FT/LBS	110-120 FT/LBS	110 FT/LBS
ALLIS CHALMERS	3.9	236			65-70 FT/LBS	145-150 FT/LBS	85 FT/LBS
ALLIS CHALMERS	4.3	262			40-50 FT/LBS	120-130 FT/LBS	95# STUDS, 105 FT/LBS SCREWS
ALLIS CHALMERS	4.3	262			40-50 FT/LBS	120-130 FT/LBS	110-120 FT/LBS
ALLIS CHALMERS	4.3	265			40-45 FT/LBS	130-140 FT/LBS	63-73,150 FT/LBS
ALLIS CHALMERS	4.3	262			40-45 FT/LBS	110-120 FT/LBS	105 FT/LBS
ALLIS CHALMERS	4.5	273			50-60 FT/LBS	125-135 FT/LBS	
ALLIS CHALMERS	4.5	273			35-40 FT/LBS	125-135 FT/LBS	
ALLIS CHALMERS	4.9	301			SEE TB 2018-R	130-140 FT/LBS	165 FT/LBS
ALLIS CHALMERS	4.9	301			SEE TB 2018-R	130-140 FT/LBS	63-73,150 FT/LBS ROCKER SHAFT 28-33 FT/LBS
ALLIS CHALMERS	4.9	301			SEE TB 2018-R	130-140 FT/LBS	63-73,150 FT/LBS
ALLIS CHALMERS	4.9	301			SEE TB 2018-R	130-140 FT/LBS	165 FT/LBS
ALLIS CHALMERS	5.6	344			120-130 FT/LBS	5/8" BOLTS 160-170 FT/LBS 3/4" BOLTS 210-230 FT/LBS	5/8" = 190-200 FT/LBS 1/2" = 95-100 FT/LBS
ALLIS CHALMERS	5.6	344			120-130 FT/LBS	5/8" BOLTS 160-170 FT/LBS 3/4" BOLTS 210-230 FT/LBS	5/8" = 190-200 FT/LBS 1/2" = 95-100 FT/LBS
ALLIS CHALMERS	5.6	344			120-130 FT/LBS	5/8" BOLTS" 160-170 FT/LBS 3/4" BOLTS 210-230 FT/LBS	5/8" = 190-200 FT/LBS 1/2" = 95-100 FT/LBS
ALLIS CHALMERS	7.0	426		70	SEE TB 2018-R	170-190 FT/LBS	110,165 FT/LBS, RETORQUE HOT
ALLIS CHALMERS	7.0	426			80-85 FT/LBS 6 PT BOLTS, 68 FT/LBS 12 PT BOLTS	170-190 FT/LBS	110,165 FT/LBS, RETORQUE HOT
ALLIS CHALMERS	7.0	426		70-70	SEE TB 2018-R	170-190 FT/LBS	150 FT/LBS
ALLIS CHALMERS	7.0	426		70-85	SEE TB 2018-R	170-190 FT/LBS	110, 165 FT/LBS, RETORQUE HOT
ALLIS CHALMERS	8.5	516			120-130 FT/LBS	5/8" BOLTS 160-170 FT/LBS 3/4" BOLTS 210-230 FT/LBS	EARLY ENGINES WITH FINE THREAD1/2" = 100, 5/8" = 185 FT/LBS*
ALLIS CHALMERS	8.5	516	685		160 FT/LBS	5/8" BOLTS 190 FT/LBS, 3/4" BOLTS 220 FT/LBS	1/2" BOLTS 115#, 5/8" BOLTS 200#, COVER 14 FT/LBS
ALLIS CHALMERS	8.5	516			120-130 FT/LBS	5/8" BOLTS 160-170 FT/LBS 3/4" BOLTS 210-230 FT/LBS	1/2" = 100, 5/8" = 180 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
ALLIS CHALMERS	8.5	516	10000		120-130 FT/LBS	5/8" BOLTS 160-170 FT/LBS, 3/4" BOLTS 210-230 FT/LBS **	
ALLIS CHALMERS	12.0	731			190-200 FT/LBS	7/8 BOLTS 400 FT/LBS, 5/8 BOLTS 200 FT/LBS 12 PT HEADS	185 FT/LBS
ALLIS CHALMERS	13.1	799			190-200,245 FT/LBS	5/8": 160-170,185 FT/LBS 7/8": 370-380,400 FT/LBS	
ALLIS CHALMERS	13.8	844			190-200,245 FT/LBS	1ST:5/8" 160-170, 7/8" 370-380#, 2ND: 5/8" 185#, 7/8" 400#	
ALLIS CHALMERS	13.8	844			190-200,245 FT/LBS	1ST 5/8:160-170, 7/8:370-380 2ND 5/8:185, 7/8:400	.625"BLT:185#, .750"BLT: W/OUTSHANK 275#, SHANK & 12PT 390#
ALLIS CHALMERS	13.8	844			190-200, 245 FT/LBS	1) 5/8:160-170FT/LBS, 7/8:370-380FT/LB 2) 5/8:185#, 7/8:400#	
ALLIS CHALMERS	13.8	844			190-200 FT/LBS	185 FT/LBS	185 FT/LBS
ALLIS CHALMERS	34.4	2100			150-160 FT/LBS	280-290 FT/LBS	
AUDI	1.5	90		73-74			29,43 FT/LBS, + 180°
AUDI	1.6	97		82-83	22 FT/LBS	48 FT/LBS	29,43,54#, WARM ENGINE, + 90° AFTER 1000 MILES TIGHTEN + 90°
AUDI	1.6	97		75-80			54 FT/LBS + 90°, 11MM BOLTS:29,43 FT/LBS,+ 180°
AUDI	1.7	105		81-83	33 FT/LBS	47 FT/LBS	29,43,54 FT/LBS
AUDI	1.8	109	AEB	97-00	22 FT/LBS, +90°	48 FT/LBS, +90°, REAR OIL SEAL: M8 BOLTS 15 FT/LBS	44 FT/LBS, +90°, +90° **
AUDI	1.8	112		84-87			29,43 FT/LBS + 180°
AUDI	1.8	112		86-88	22 FT/LBS + 90°	47 FT/LBS	29,44 FT/LBS, + 90°, + 90°
AUDI	1.8	109		84-	22 FT/LBS + 90°	47 FT/LBS	M11 BOLTS: 29 FT/LBS, 43 FT/LBS.,+ 180°
AUDI	1.8	109		85-87	22 FT/LBS + 90°	47 FT/LBS	M11 BOLTS: 29,43 FT/LBS,+ 180°
AUDI	1.8	110	AMB	01-03			
AUDI	1.9	114		74-77			65 FT/LBS
AUDI	1.9	114		73			65 FT/LBS
AUDI	2.0	121		82-85	33 FT/LBS *	47 FT/LBS	29,43,54#,+180°, WARM ENGINE, +90°, AFTER 1000 MILES +90°
AUDI	2.0	121		88-90	22 FT/LBS + 90°	47 FT/LBS	29, 43 FT/LBS, + 180°
AUDI	2.0	121		77-79	41 FT/LBS	58 FT/LBS	65 FT/LBS COLD, 80 FT/LBS HOT
AUDI	2.0	121		80-83	33 FT/LBS *	47 FT/LBS	29,43,54#, + 180°, WARM ENGINE+ 90°, AFTER 1000 MILES, + 90°
AUDI	2.1	131		78-83		47 FT/LBS	29,43 FT/LBS, + 180°
AUDI	2.1	131		84-86			29,43 FT/LBS, + 180°
AUDI	2.2	136		91	22 FT/LBS, + 90°	48 FT/LBS	29,44 FT/LBS, + 180°
AUDI	2.2	136		83-87	22 FT/LBS, + 90°	47 FT/LBS	M11 BOLTS:29,43 FT/LBS, + 180°CAM CAPS = 14 FT/LBS
AUDI	2.2	136		85-86	22 FT/LBS, + 90°	47 FT/LBS	M11 BOLTS: 29,43 FT/LBS, +180°
AUDI	2.2	136		86-91	37 FT/LBS	47 FT/LBS	29,43 FT/LBS, + 180°
AUDI	2.3	141		89-91	37 FT/LBS	47 FT/LBS	29,43 FT/LBS + 180°
AUDI	2.3	141		87-91	37 FT/LBS	47 FT/LBS	29,43 FT/LBS, + 180°
AUDI	2.3	141		87-92	37 FT/LBS	47 FT/LBS	29,43 FT/LBS, + 180°

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AUDI	2.8	170		96-98	22 FT/LBS, + 90° USE NEW	1ST: VERTICAL 44#, +90°, +90°, THEN: HORIZONTAL 18#, USE NEW	44#, +90°, +90° USE NEW BOLTS
AUDI	2.8	169	AAH	92-94	15 FT/LBS, + 90° VERTICAL *, 295 FT/LBS HORIZONTAL *	44#, + 90° -- TIGHTEN VERTICAL BOLTS 1ST, KEEPING HORIZ LOOSE	44 FT/LBS, + 90°, + 90° - USE NEW
AUDI	2.8	170		95-	22 FT/LBS, +90° USE NEW	1ST: VERTICAL 44#, +90°, +90°, THEN: HORIZONTAL 18#, USE NEW	44 FT/LBS, +90°, +90° USE NEW
AUDI	2.8	169	AHA	98-01	M8=22 FT/LBS +90°, M8.5=30 FT/LBS +90° REPLACE BOLTS	44 FT/LBS + 180° REPLACE BOLTS CHK BEARING CLR USE 44 FT/LBS	44 FT/LBS +90° +90°
AUDI	3.6	217	PT	90-91			29,43 FT/LBS, + 180°
AUDI	4.2	256	ABH	92-94			29,43 FT/LBS, + 180°
AUSTIN	0.9	58		56-65	35 FT/LBS	60-65 FT/LBS	40 FT/LBS
AUSTIN	0.9	58		52-62	35 FT/LBS	60-65 FT/LBS	40 FT/LBS
AUSTIN	1.1	67		64	35 FT/LBS	60 FT/LBS	40 FT/LBS
AUSTIN	1.1	67		62-72	35 FT/LBS	60 FT/LBS	
AUSTIN	1.2	73		54-59	23-25 FT/LBS	70-75 FT/LBS	
AUSTIN	1.2	78		64-			40 FT/LBS
AUSTIN	1.5	91		54-61	23-25 FT/LBS	70-75 FT/LBS	
AUSTIN	1.6	99		61-72	23-25 FT/LBS	70-75 FT/LBS	
AUSTIN	1.8	112		73-75	40-45 FT/LBS	70 FT/LBS	45-50 FT/LBS
AUSTIN	1.8	110		64-80	40-45 FT/LBS	70 FT/LBS	
AUSTIN	2.6	159		56-59	60-65 FT/LBS	85-90 FT/LBS	65-70 FT/LBS
AUSTIN	3.0	183		59-67	50 FT/LBS	75 FT/LBS -THREADED SEAL	75 FT/LBS
BEDFORD	3.6	220			55-65 FT/LBS USE NEW BOLTS	85 FT/LBS	NUTS:9/16=120# 5/8=160#, BOLTS:120#, STUDS:9/16=85# 5/8=85#
BEDFORD	5.4	330			55-65 FT/LBS USE NEW BOLTS	85 FT/LBS	NUTS:9/16=120# 5/8=160#, BOLTS:120#, STUDS:9/16=85# 5/8=85#
BMW	1.8	108		80-83	38-41 FT/LBS	42-45 FT/LBS	25-32,49-52,56-59#, REPEAT 56-59#
BMW	1.8	108		84-85	38-41 FT/LBS	42-45 FT/LBS	25-29#, 42-45#, WAIT 15 MIN, +20-36°, WAIT 2.5 MIN, +20-30°
BMW	1.8	110		93-95	17 FT/LBS, + 70°	14-18 FT/LBS, + 50°	22-26#, +90°, +90° USE NEW
BMW	1.8	110	M42B18	91-95	15 FT/LBS + 70°	14-18 FT/LBS, + 50°	22-26 FT/LBS + 90° + 90° - USE NEW HEAD BOLTS
BMW	1.9	116	M44	92-98			
BMW	2.0	121		77-79	38-41 FT/LBS	42-45 FT/LBS	25-32,49-52,56-59#, REPEAT 56-59#
BMW	2.0	121		73-76	38-41 FT/LBS	42-46 FT/LBS	25-32,49-52,56-59 FT/LBS, REPEAT 59 FT/LBS
BMW	2.3	140		88-91	7,22 FT/LBS + 60-62°	16 FT/LBS + 47-53 °	35-37,57-59 FT/LBS, WAIT 15 MIN, 71-73 FT/LBS
BMW	2.4	149		85-86	14 FT/LBS + 70°	43-48 FT/LBS	36-43,65-69 FT/LBS, + 90°
BMW	2.5	152	M50	91-95	17 FT/LBS, + 70°	15-18 FT/LBS, + 50°	22-26 FT/LBS, + 90°, + 90° -->USE NEW BOLTS

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BMW	2.5	152	M20	87-90	15 FT/LBS + 70° USE NEW BOLTS	44-49 FT/LBS	29-33, 44-47 FT/LBS, + 20-30°
BMW	2.7	164		82-89	15 FT/LBS, + 70°	44-49 FT/LBS	29-33,44-47 FT/LBS , +20-30°
BMW	2.8	170		79-81	38-41 FT/LBS	42-45 FT/LBS	26-32,49-52,56-59 FT/LBS, REPEAT 59 FT/LBS
BMW	2.8	170	M52	97-00	17 FT/LBS, +70° USE NEW BOLTS		22-26 FT/LBS, +90°, +90° --> USE NEW BOLTS
BMW	3.0	182	S50	95-05			
BMW	3.0	183		94-95	45 INCH/LBS, +20°, +80°	15#,+70° CLEAN & LIGHTLY OIL, SLEEVE BOLTS: 15 FT/LBS,+45°	22#,+80°,+80° NEW,LIGHT OILED,TGHTN CROSSW MIDDLE-OUTSIDE
BMW	3.0	182		77-78			32,52,59 FT/LBS, WARM ENGINE, 59 FT/LBS
BMW	3.0	182		75-78	38-41 FT/LBS	42-45 FT/LBS	25-32,49-52,56-59 FT/LBS, REPEAT 59 FT/LBS
BMW	3.2	195	S52	97-02	17 FT/LBS, +70°, USE NEW BOLTS	ALUM BLOCK: 20 FT/LBS +70°, IRON BLOCK: 20 FT/LBS +50°	22-26 FT/LBS, +90°, +90°, --->USE NEW BOLTS
BMW	3.2	196		81-84	38-41 FT/LBS	42-45 FT/LBS	32,52,59 FT/LBS, + 20-30°
BMW	3.2	196		78-80	38-42 FT/LBS		32,52,59 FT/LBS, WARM ENGINE, 59 FT/LBS
BMW	3.4	209		87-93	38-42 FT/LBS	43-46 FT/LBS	43-46#, WAIT 20 MIN, 58-60#, RUN ENGINE 25 MIN, + 30-40°
BMW	3.4	209		85-88	38-41 FT/LBS	42-45 FT/LBS	25-29,43-46,57-60 FT/LBS, WAIT 20 MIN, + 20-30°
BMW	3.5	211		87-88	38-41 FT/LBS	42-45 FT/LBS	42-45#, WAIT 15 MIN, + 30-36°,RUN ENGINE 25 MIN, + 30-40°
BMW	3.5	211		89-91	38-41 FT/LBS	42-45 FT/LBS	42-45#, WAIT 15 MIN, + 30-36°,RUN ENGINE 25 MIN, + 30-40°
BMW	4.0	242		94-95	42 INCH/LBS, + 20°, + 80°	15 FT/LBS, + 70° CAP BOLTS, 15 FT/LBS, + 45° SLEEVE BOLTS	22 FT/LBS, + 80°, + 80° --> USE NEW HEAD BOLTS!
BMW	4.4	268		97-99	15 FT/LBS, +80^ USE NEW BOLTS	15 FT/LBS, +70^ USE NEW BOLTS, SLEEVE BOLTS: 15#, +45^	22 FT/LBS, +80^, +80^ USE NEW, LIGHTLY OILED BOLTS *
BMW	5.0	304		88-92	7,22 FT/LBS, + 60°	36 FT/LBS + 70°	22#, WAIT 15 MIN, + 120°
BUDA	0.0	0			75-85 FT/LBS		
BUDA	0.0	0			75-85 FT/LBS		
BUDA	0.6	38			50-60 FT/LBS	125-135 FT/LBS	
BUDA	2.5	153			40-45 FT/LBS	110-120 FT/LBS	110 FT/LBS
BUDA	2.9	175			50-60 FT/LBS	125-135 FT/LBS	
BUDA	2.9	175			50-60 FT/LBS	125-135 FT/LBS	
BUDA	3.0	182			50-60 FT/LBS	125-135 FT/LBS	
BUDA	3.0	182			50-60 FT/LBS	125-135 FT/LBS	
BUDA	3.8	230			50-65 FT/LBS	125-135 FT/LBS	95-105 FT/LBS
BUDA	4.3	262			55 FT/LBS	120 FT/LBS	110 FT/LBS
BUDA	4.5	273			50-60 FT/LBS	125-135 FT/LBS	
BUDA	4.6	279			75-85 FT/LBS	150-160 FT/LBS	95-105 FT/LBS
BUDA	4.8	294			75-85 FT/LBS	150-160 FT/LBS	95-105 FT/LBS
BUDA	5.2	317			75-85 FT/LBS	150-160 FT/LBS	95-105 FT/LBS
BUDA	5.3	325			75-85 FT/LBS	150-160 FT/LBS	95-105 FT/LBS
BUDA	5.3	325			75-85 FT/LBS	150-160 FT/LBS	95-105 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
BUDA	5.5	336			75-85 FT/LBS		
BUDA	5.6	344			120-130 FT/LBS	5/8" BOLTS 160-170 FT/LBS 3/4" BOLTS 210-230 FT/LBS	
BUDA	5.7	344			120-130 FT/LBS	5/8" BOLT 160-170 FT/LBS 3/4" BOLT 210-230 FT/LBS	
BUDA	5.8	358			75-85 FT/LBS		
BUDA	6.0	369			75-85 FT/LBS		
BUDA	6.2	381			75-85 FT/LBS		
BUDA	6.4	393			75-85 FT/LBS		
BUDA	6.4	393			75-85 FT/LBS		
BUDA	6.6	404			75-85 FT/LBS		
BUDA	6.6	404			75-85 FT/LBS		
BUDA	6.8	415			75-85 FT/LBS		
BUDA	6.8	415			75-85 FT/LBS		
BUDA	7.0	430					
BUDA	7.0	428			75-85 FT/LBS		
BUDA	7.4	451			75-85 FT/LBS		
BUDA	7.5	458			75-85 FT/LBS		
BUDA	7.7	468			75-85 FT/LBS		
BUDA	7.7	470					
BUDA	7.7	468			75-85 FT/LBS		
BUDA	7.8	479			75-85 FT/LBS		
BUDA	8.3	504			75-85 FT/LBS		
BUDA	8.5	516			120-130 FT/LBS	5/8" BOLTS 160-170 FT/LBS 3/4" BOLTS 210-230 FT/LBS	
BUDA	8.6	525			75-85 FT/LBS		
CASE	0.9	52			23-25 FT/LBS	36-40 FT/LBS	51-58 FT/LBS 10M SCREWS, 80-87 FT/LBS 12M SCREWS
CASE	1.0	60			23-25 FT/LBS	36-40 FT/LBS	51-58 FT/LBS 10M SCREWS, 80-87 FT/LBS 12M SCREWS
CASE	1.1	65			23-25 FT/LBS	36-40 FT/LBS	51-58 FT/LBS 10M SCREWS, 80-87 FT/LBS 12M SCREWS
CASE	1.3	79			40-43 FT/LBS	36-40 FT/LBS	73-79 FT/LBS 12M SCREWS, 147-167 FT/LBS 14M SCREWS
CASE	1.5	91			40-43 FT/LBS	36-40 FT/LBS	72-80 FT/LBS SCREWS #1,2,&3, 108-116 FT/LBS ALL OTHERS
CASE	1.6	95			60 FT/LBS	90 FT/LBS	70 FT/LBS
CASE	1.8	110			35 FT/LBS NUTS	75 FT/LBS BRG SET SCREWS	75 FT/LBS NUTS
CASE	2.0	124			60 FT/LBS	95 FT/LBS	1/2" STUDS 65 FT/LBS, 3/8" STUDS 45 FT/LBS
CASE	2.0	124			3/8" BOLT = 45-50 FT/LBS. 60 FT/LBS	95 FT/LBS	65 FT/LBS 1/2" STUDS, 45 FT/LBS 3/8" STUDS
CASE	2.1	126			45-50 FT/LBS	95-100 FT/LBS	
CASE	2.1	126			45-50 FT/LBS	90-100 FT/LBS	60-65 FT/LBS
CASE	2.3	137			50 FT/LBS	120 FT/LBS	30,60,90 FT/LBS
CASE	2.4	146			50 FT/LBS	120 FT/LBS	30,60,90 FT/LBS
CASE	2.4	148		55-60	45-50 FT/LBS	90-100 FT/LBS	60-65 FT/LBS
CASE	2.4	148		55-60	45-50 FT/LBS	95-100 FT/LBS	



Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
CASE	2.4	148		61-66	45-50 FT/LBS	90-100 FT/LBS	60-65 FT/LBS
CASE	2.4	146			50 FT/LBS	120 FT/LBS	30,60,90 FT/LBS
CASE	2.5	154			50 FT/LBS	120 FT/LBS	90 FT/LBS
CASE	2.5	154		41-54	65 FT/LBS	100 FT/LBS	60 FT/LBS
CASE	2.5	154			50 FT/LBS	120 FT/LBS	30,60,90 FT/LBS
CASE	2.6	159			45-50 FT/LBS	90-100 FT/LBS	95-100 FT/LBS, RETORQUE HOT
CASE	2.6	159			45-50 FT/LBS	90-100 FT/LBS	
CASE	2.6	157			35-40 FT/LBS	85-95 FT/LBS	70-75 FT/LBS
CASE	2.7	164			50 FT/LBS	120 FT/LBS	30,60,90 FT/LBS
CASE	2.7	164			45-50 FT/LBS	90-100 FT/LBS	95-100 FT/LBS
CASE	2.7	165		41-54	65 FT/LBS	100 FT/LBS	60 FT/LBS
CASE	2.7	165		41-54	65 FT/LBS	100 FT/LBS	60 FT/LBS
CASE	2.7	164			50 FT/LBS	120 FT/LBS	NUTS 95-100 FT/LBS, BOLTS 110-115 FT/LBS
CASE	2.7	164			50 FT/LBS	120 FT/LBS	30,60,90 FT/LBS
CASE	2.8	171		41-54	65 FT/LBS	100 FT/LBS	60 FT/LBS
CASE	3.0	185			50 FT/LBS	140 FT/LBS	30,60,90 FT/LBS
CASE	3.1	186			50 FT/LBS	140 FT/LBS	30,60,90 FT/LBS
CASE	3.1	188			45-50 FT/LBS	90-100 FT/LBS	NUTS 95-100#, BOLTS 110-115# FT/LBS
CASE	3.1	186			50 FT/LBS	140 FT/LBS THRUST WIDTH	30,60,90 FT/LBS, RETORQUE HOT
CASE	3.1	188			45-50 FT/LBS	90-100 FT/LBS	95-100 FT/LBS, RETORQUE HOT
CASE	3.4	207			45-50 FT/LBS * OIL HOLE OR #S TOWARDS CAMSHAFT	165-185 FT/LBS 9/16" BOLTS	110-115 FT/LBS NUTS OR BOLTS
CASE	3.4	207			45-55 FT/LBS * OIL HOLE OR #S TOWARDS CAMSHAFT	90-100 FT/LBS	95-100# NUTS, 110-115# BOLTS FT/LBS
CASE	3.6	219			50 FT/LBS	140 FT/LBS THRUST WIDTH 1.624-1.626	30, 60, 90 FT/LBS
CASE	3.6	219			50 FT/LBS	220 FT/LBS CENTER MAIN, 160 FT/LBS ALL OTHERS	30,60,90 FT/LBS
CASE	3.6	219			50 FT/LBS	140 FT/LBS THRUST WIDTH 1.624-1.626	30,60,90 FT/LBS
CASE	3.6	219			50 FT/LBS	140 FT/LBS	30,60,90 FT/LBS
CASE	3.9	239		85-93	26,51,73 FT/LBS	44,88,129 FT/LBS	29,62,93 FT/LBS
CASE	4.1	251			95-105 FT/LBS	145-155 FT/LBS	100 FT/LBS STUD NUTS, 145-150 FT/LBS CAP SCREWS
CASE	4.1	251			95-105 FT/LBS	145-155 FT/LBS	70,140,210 FT/LBS
CASE	4.1	251			95-105 FT/LBS	145-155 FT/LBS	
CASE	4.3	260			70 FT/LBS	150 FT/LBS	75 FT/LBS
CASE	4.4	267			95-105 FT/LBS	145-155 FT/LBS	
CASE	4.4	267			95-105 FT/LBS	145-155 FT/LBS	100 FT/LBS STUD NUTS, 145-150 FT/LBS CAP SCREWS
CASE	4.4	267			95-105 FT/LBS	145-155 FT/LBS	70,140,210 FT/LBS
CASE	4.5	276			70 FT/LBS	150 FT/LBS	75 FT/LBS
CASE	4.7	284			95-105 FT/LBS	145-155 FT/LBS	100 FT/LBS
CASE	4.7	284			95-105 FT/LBS	145-155 FT/LBS	100# NUTS, 150# BOLTS
CASE	4.9	301			95-105 FT/LBS	145-155 FT/LBS	70,140,210 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
CASE	4.9	301		60-70	95-105 FT/LBS	145-155 FT/LBS	100 FT/LBS NUTS, 145-150 FT/LBS BOLTS
CASE	5.4	329			50 FT/LBS	160 FT/LBS THRUST WIDTH 1.932-1.934	30,60,100 FT/LBS
CASE	5.4	329			50 FT/LBS	160 FT/LBS THRUST WIDTH 1.932-1.934 **	30,60,90 FT/LBS
CASE	5.5	336			95-105 FT/LBS	145-155 FT/LBS	70,140,200-210 FT/LBS
CASE	5.5	336			95-105 FT/LBS	200-210 FT/LBS BOLTS W/WASHER 145-155# W/O WASHER	70, 140, 200-210 FT/LBS
CASE	5.9	359		85-93	22, 44, FT/LBS + 60°	37, 45, 66, FT/LBS + 90°	29,62,93 FT/LBS + 90°
CASE	6.2	377			95-105 FT/LBS	145-155 FT/LBS	98-102 FT/LBS
CASE	6.2	377			95-105 FT/LBS	145-155 FT/LBS	98-102 FT/LBS
CASE	6.2	377			95-105 FT/LBS	145-155 FT/LBS	70,140,210 FT/LBS
CASE	6.2	377			95-105 FT/LBS	145-155 FT/LBS	98-102 FT/LBS
CASE	6.2	377			95-105 FT/LBS	145-155 FT/LBS	98-102 FT/LBS
CASE	6.2	377			95-105 FT/LBS	145-155 FT/LBS	100 FT/LBS STUD NUTS, 145-150 FT/LBS CAP SCREWS
CASE	6.6	401			95-105 FT/LBS	145-155 FT/LBS	70,140,210 FT/LBS
CASE	6.6	401			95-105 FT/LBS	145-155 FT/LBS	100 FT/LBS STUD NUTS, 145-150 FT/LBS SCREWS
CASE	6.6	404		40-53	150 FT/LBS	150 FT/LBS	125 FT/LBS
CASE	6.6	401			95-105 FT/LBS	145-155 FT/LBS	100 FT/LBS STUD NUTS, 145-150 FT/LBS SCREWS
CASE	7.4	451			95-105 FT/LBS	145-155 FT/LBS W/O WASHERS, 200-210 FT/LBS W/WASHERS	70,140,210 FT/LBS
CASE	7.4	451			95-105 FT/LBS	145-155 FT/LBS	100 FT/LBS STUD NUTS, 145-150 FT/LBS CAP SCREWS
CASE	8.3	505			30,60,88 FT/LBS	37,88,129 FT/LBS	37,110,148 FT/LBS
CASE	8.3	504			95-105 FT/LBS	200-210 FT/LBS BOLTS W/WASHER 145-155# W/O WASHER	70,140,210 FT/LBS
CASE	8.3	504			95-105 FT/LBS	200-210 FT/LBS BOLTS W/WASHER,145-155# W/OUT WASHER	70,140,210 FT/LBS
CASE	8.3	504			95-105 FT/LBS	144-155 FT/LBS BOLT W/O WASHER200-210 FT/LBS BOLT W/WASHER	70,140,210 FT/LBS
CASE	8.3	505		85-98	30,66,88 FT/LBS	37,88,129 FT/LBS	27,110,148 FT/LBS
CASE	11.1	674			81 FT/LBS	214 FT/LBS	16MM BOLT = 177 FT/LBS 18MM BOLTS = 221 FT/LBS
CATERPILLAR	0.0	0					5580-6020 PSI, EARLIER ENG WITH 7W-001 HEADS=4880-5320 PSI
CATERPILLAR	0.0	0			45-55 FT/LBS	350 FT/LBS	130,180,180 FT/LBS NUTS, 175-205 FT/LBS STUD
CATERPILLAR	0.0	0			35-40 FT/LBS		
CATERPILLAR	0.6	36	D315 Starter		14 FT/LBS		
CATERPILLAR	1.4	83			36 FT/LBS	60-70 FT/LBS	64-70 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
CATERPILLAR	1.4	83			36 FT/LBS		
CATERPILLAR	2.0	120			30 FT/LBS	55 FT/LBS	43, 60 FT/LBS
CATERPILLAR	2.5	152	XD3P				30,50, LOOSEN 1 BLT/TIME & RE-*TORQUE 50, RUN ENG, LOOSEN 1/4
CATERPILLAR	2.5	153			44 FT/LBS NUTS - USE NEW	75-90 FT/LBS	SPECIAL PROCEDURE SEE COMMENTS BOX IN FINAL ASSEMBLY *
CATERPILLAR	2.7	163	G1600		31-35 FT/LBS	55-60 FT/LBS	60-65 FT/LBS
CATERPILLAR	3.9	236			75 FT/LBS SILVER NUTS, 95 FT/LBS DULL BLACK NUTS	150 FT/LBS	30-35,65-70,95-100 FT/LBS, -->RUN ENGINE, REPEAT 95-100#
CATERPILLAR	4.0	244	3054	97-02	90 FT/LBS	CENTER CAP 1/2 BOLTS 100 FT/LBS, OTHERS 9/16 130 FT/LBS	ALL:80,80#, SHORT BOLTS +150°,MEDIUM +180°, LONG +210°
CATERPILLAR	4.0	244	3054	97-02	90 FT/LBS	CENTER CAP 1/2 BOLTS 100 FT/LBS, OTHERS 9/16 130 FT/LBS	ALL:80,80#, SHORT BOLTS +150°,MEDIUM +180°, LONG +210°
CATERPILLAR	4.1	251			58 FT/LBS	118 FT/LBS	65,80-90 FT/LBS
CATERPILLAR	4.1	252			58 FT/LBS	118 FT/LBS	65,90 FT/LBS ----> BOLTS W/X: 80,110 FT/LBS
CATERPILLAR	4.1	252			58 FT/LBS	118 FT/LBS	65,90 FT/LBS ----> BOLTS W/X: 80,110 FT/LBS
CATERPILLAR	4.1	252			58 FT/LBS	93-94 FT/LBS	65,90 FT/LBS ----> BOLTS W/X: 80,110 FT/LBS
CATERPILLAR	4.1	252			58 FT/LBS	118 FT/LBS	65,90 FT/LBS ----> BOLTS W/X: 80,110 FT/LBS
CATERPILLAR	4.1	252			58 FT/LBS	118 FT/LBS	65,90 FT/LBS ----> BOLTS W/X: 80,110 FT/LBS
CATERPILLAR	4.3	259			72-80 FT/LBS	97-105 FT/LBS	83-91 FT/LBS
CATERPILLAR	4.3	260	3064		72-80 FT/LBS	97-105 FT/LBS	83-91 FT/LBS
CATERPILLAR	4.4	269	3114	89-94	35-45 FT/LBS, + 55-65°	35-45# + 90° USE MOLY LUBE CAP WIDTH 6.2982-6.2998	99-121,305-335,305-335# M20, 36-46# SMALL M10
CATERPILLAR	5.0	305	S6S		36-44 FT/LBS	72-80 FT/LBS	83-91 FT/LBS
CATERPILLAR	5.0	304	3046		36-44 FT/LBS	72-80 FT/LBS	83-91 FT/LBS
CATERPILLAR	5.1	312			85 FT/LBS	155 FT/LBS	85,125 FT/LBS BOLT W/X: 105,160 FT/LBS
CATERPILLAR	5.1	312			85 FT/LBS	155 FT/LBS	85,125 FT/LBS ----> BOLT W/X: 105,160 FT/LBS
CATERPILLAR	5.2	318	3204		30 FT/LBS, + 60°, SEE TB 1144R **	45 FT/LBS, + 60°	1/2" BOLT: 60, 110 FT/LBS, 3/8" BOLT: 32- 37 FT/LBS
CATERPILLAR	5.2	318	3204		30 FT/LBS, + 60°	45 FT/LBS, + 60°	1/2" BOLT: 60,110 FT/LBS, 3/8" BOLT: 32- 37 FT/LBS
CATERPILLAR	5.2	318	3204		30 FT/LBS, + 60°	45 FT/LBS, + 60°	1/2 BOLTS 60,110 FT/LBS 3/8 BOLT 32-37 FT/LBS
CATERPILLAR	5.4	330			40-45 FT/LBS	85-95 FT/LBS	70-75 FT/LBS
CATERPILLAR	5.7	350	D4		85 FT/LBS	155 FT/LBS	105,155,165 FT/LBS ----> 3/8 BOLTS: 22,32,32 FT/LBS
CATERPILLAR	5.7	350			85 FT/LBS	155 FT/LBS	110,175,175 FT/LBS ----> 3/8 BOLTS: 22,32,32 FT/LBS
CATERPILLAR	6.4	389			72-80 FT/LBS	97-105 FT/LBS	83-91 FT/LBS
CATERPILLAR	6.4	390	7JK1		72-80 FT/LBS	97-105 FT/LBS	83-91 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
CATERPILLAR	6.6	403	3116	89-95	35-45 FT/LBS, + 55-65°	35-45# + 90° USE MOLY LUBE CAP WIDTH 6.2982-6.2998	SEE TB 1574
CATERPILLAR	7.0	425			30 FT/LBS + 90°	30 FT/LBS + 90°	115,175,175 FT/LBS ----> 3/8 BOLTS: 22,32,32 FT/LBS
CATERPILLAR	7.0	425	3304		27-33 FT/LBS, +90°	27-33 FT/LBS, +90°	115,172-198#,REPEAT 172-198#, 3/8" BOLTS:22,32#,REPEAT 32#
CATERPILLAR	7.0	425			30 FT/LBS + 90°	30 FT/LBS + 90°	115,175,175 FT/LBS ----> 3/8 BOLTS: 22,32,32 FT/LBS
CATERPILLAR	7.0	425			30 FT/LBS + 90°	30 FT/LBS + 90°	115,175,175 FT/LBS ----> 3/8 BOLTS: 22,32,32 FT/LBS
CATERPILLAR	7.0	425			30 FT/LBS + 90°	40 FT/LBS + 90°	115,175,175 FT/LBS ----> 3/8 BOLTS: 22,32,32 FT/LBS
CATERPILLAR	7.0	425	3304		30 FT/LBS + 90°	30 FT/LBS + 90°	115,175,175 FT/LBS ----> 3/8 BOLTS: 22,32,32 FT/LBS
CATERPILLAR	7.2	439	3126B		35.45 FT/LBS, +55+65°	35-45 FT/LBS, +90° - USE MOLY LUBE, CAP WIDTH 6.2982-6.2998"	LARGE: 99-121,305-335, REPEAT 305-335 FT/LBS, SMALL: 36-46#
CATERPILLAR	7.2	439	3126	95-02	35-45 FT/LBS, + 55-65°	40# + 90° USE MOLY LUBE CAP WIDTH 6.2982-6.2998	99-121,305-335,305-355# M20, 36-46# SMALL M10 BOLTS
CATERPILLAR	8.6	525			85 FT/LBS	155 FT/LBS	85,125 FT/LBS ----> BOLT W/X: 105,160 FT/LBS
CATERPILLAR	8.6	522	1140		30 FT/LBS, + 60° NUT, LUBRICANT REQUIRED		
CATERPILLAR	8.6	522	3145		27-33 FT/LBS + 60° TURN	60,175 FT/LBS	60,95,95 FT/LBS FOR BOLTS 1-18 32 FT/LBS FOR BOLTS 19-22
CATERPILLAR	8.6	522	3140				
CATERPILLAR	8.6	525			85 FT/LBS	155 FT/LBS	85,125 FT/LBS ----> BOLT W/X: 105,160 FT/LBS
CATERPILLAR	8.6	525			30 FT/LBS + 90°	30 FT/LBS + 90°	115,175,175 FT/LBS ----> 3/8 BOLTS: 22,32,32 FT/LBS
CATERPILLAR	8.6	525	1673		30 FT/LBS + 90°	30 FT/LBS + 90°	115,175,175 FT/LBS, 3/8" BOLTS: 22,32,32 FT/LBS
CATERPILLAR	9.4	573	1150				**1ST 90-100 ***2ND 105-110 BOLTS #S 19- 22 27-37 FOR BOTH
CATERPILLAR	9.8	597			45-55 FT/LBS +180°	350 FT/LBS	
CATERPILLAR	9.8	595			45-55 FT/LBS, + 180°	350 FT/LBS	200,330 FT/LBS, REPEAT 330#
CATERPILLAR	10.3	644	C10	96-02	90-100 FT/LBS, +60°	66-74 FT/LBS + 90° ADDITIONAL TURN	FULL SHANK: #1-26=99-121 FT/LBS +90°, #27-33=15-25 FT/LBS *
CATERPILLAR	10.3	629	3176	89-96	90-100 FT/LBS, + 60°	66-74 FT/LBS, + 90°	189-211 FT/LBS ROCKER SHAFT BOLT 66-74,FT/LBS
CATERPILLAR	10.4	636	1160		60-70 FT/LBS	175 FT/LBS	95 FT/LBS R/ARM BRACKET = 13- 23 FT/LBS
CATERPILLAR	10.4	636	3150				
CATERPILLAR	10.4	636	3160		27-33 FT/LBS + 55-65° TURN	45-75 FT/LBS THEN 165-185 FT/LBS	50-70, 90-100, 90-100 FT/LBS SMALL BOLTS 30-37 FT/LBS
CATERPILLAR	10.4	636	3208	87-92	NUT: 30 FT/LBS, + 60^ ----> LUBRICANT REQUIRED	30 FT/LBS, + 120° -----> LUBRICANT REQUIRED	BOLT 1-18: 60,110,110 FT/LBS BOLT 19-22: 32 FT/LBS
CATERPILLAR	10.4	636	3208		NUT:30 FT/LBS, + 60^ ----> LUBRICANT REQUIRED	30 FT/LBS, + 120° LUBRICANT REQUIRED	BOLT 1-18: 60,110,110 FT/LBS BOLT 19-22: 32 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
CATERPILLAR	10.4	636	3208		NUT: 30 FT/LBS, + 60° ----> LUBRICANT REQUIRED	30 FT/LBS, + 120° -----> LUBRICANT REQUIRED	BOLT 1-18: 60,110,110 FT/LBS BOLT 19-22: 32 FT/LBS
CATERPILLAR	10.4	636	3208		NUT: 30 FT/LBS, + 60° ----> LUBRICANT REQUIRED	30 FT/LBS, + 120° -----> LUBRICANT REQUIRED	BOLT 1-18: 60,110,110 FT/LBS BOLT 19-22: 32 FT/LBS
CATERPILLAR	10.5	638			30 FT/LBS + 90°	30 FT/LBS + 90°	115,175,175 FT/LBS ----> 3/8 BOLTS: 22,32,32 FT/LBS
CATERPILLAR	10.5	638	1674		330 FT/LBS, + 90°	70 FT/LBS + 90°, STUD: 120#	135,185, REPEAT 185 FT/LBS
CATERPILLAR	10.5	638			27-33 FT/LBS + 90°	70 FT/LBS + 90°, STUD 120#	135,185,185 FT/LBS
CATERPILLAR	10.5	638			30 FT/LBS + 90°	30 FT/LBS + 90°	115,175,175 FT/LBS ----> 3/8 BOLTS: 22,32,32 FT/LBS
CATERPILLAR	10.5	638			27-33 FT/LBS + 90°	65-75 FT/LBS + 90° NUTS, STUD INTO BLOCK:115-125 FT/LBS	135,185,185 FT/LBS
CATERPILLAR	10.5	638	1673		30 FT/LBS + 90°	30 FT/LBS + 90°	115,175,175 FT/LBS, 3/8" BOLTS: 22,32,32 FT/LBS
CATERPILLAR	10.5	638	1673		30 FT/LBS + 90°	30 FT/LBS + 90°	115,175,175 FT/LBS, 3/8" BOLTS: 22,32,32 FT/LBS
CATERPILLAR	10.5	638	1674		330 FT/LBS + 90°	70 FT/LBS + 90°, STUD: 120#	135,185,REPEAT 185 FT/LBS
CATERPILLAR	10.5	638			27-33 FT/LBS + 90°	70 FT/LBS + 90°, STUD 120#	135,185,185 FT/LBS
CATERPILLAR	10.5	638			85 FT/LBS	155 FT/LBS NUTS, 75-85 FT/LBS STUDS	
CATERPILLAR	10.5	638	3306C		30 FT/LBS + 90°	30 FT/LBS + 90°	115,175,175 FT/LBS ----> 3/8 BOLTS: 22,32,32 FT/LBS
CATERPILLAR	10.5	638			27-33 FT/LBS, +90°	27-33 FT/LBS, +90°	115,175-198#, REPEAT 172-198#, 3/8" BOLTS:22,32#,REPEAT 32#
CATERPILLAR	10.5	638	3306B		30 FT/LBS + 90°	30 FT/LBS + 90°	115,175,175 FT/LBS ----> 3/8 BOLTS: 22,32,32 FT/LBS
CATERPILLAR	10.5	638			30 FT/LBS, + 90°	30 FT/LBS, + 90°	115,175,175 FT/LBS ----> 3/8 BOLTS: 22,32,32 FT/LBS
CATERPILLAR	10.5	638			30 FT/LBS + 90°	40 FT/LBS + 90°	115,175,175 FT/LBS ----> 3/8 BOLTS: 22,32,32 FT/LBS
CATERPILLAR	10.5	638			30 FT/LBS + 90°	30 FT/LBS + 90°	115,175,175 FT/LBS ----> 3/8 BOLTS: 22,32,32 FT/LBS
CATERPILLAR	10.5	638	1674		330 FT/LBS, + 90°	70 FT/LBS + 90°, STUD: 120#	135,185,185 FT/LBS
CATERPILLAR	10.5	638			27-33 FT/LBS + 90°	70 FT/LBS + 90°, STUD 120#	135,185,185 FT/LBS
CATERPILLAR	11.4	693					
CATERPILLAR	11.5	700			45-55 FT/LBS + 90°	350 FT/LBS	NUTS:130, 185, 185 FT/LBS
CATERPILLAR	11.5	700	1676		45-55 FT/LBS, + 90°	65-75 FT/LBS, + 90°	NUTS: 130,185, REPEAT 185 FT/LBS
CATERPILLAR	11.9	747	C12	96-03	75-85 FT/LBS +55-65°	71-74 FT/LBS, +90° W/ SAE 30 OR MOLY LUBE	SEE TB 1969
CATERPILLAR	12.2	744			120 FT/LBS	170 FT/LBS	200,330 FT/LBS
CATERPILLAR	12.2	744			120 FT/LBS	170 FT/LBS STUD NUT	200,330 FT/LBS
CATERPILLAR	12.5	763	C13	04-05			
CATERPILLAR	13.6	831			123-127 FT/LBS	7/8": 350 FT/LBS, 5/8": 58 FT/LBS	

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
CATERPILLAR	13.6	831			123-127 FT/LBS	7/8" BOLTS: 350 FT/LBS, 5/8" BOLTS: 58 FT/LBS	
CATERPILLAR	13.6	831			123-127 FT/LBS	7/8" BOLTS: 350 FT/LBS, 5/8" BOLTS: 58 FT/LBS	
CATERPILLAR	13.6	831					
CATERPILLAR	13.6	831			5B913 BOLT: 150 FT/LBS, 4H9841 BOLT: 190 FT/LBS*	5/8 STUD 58#, 7/8 STUD 350# W/CASTLE NUT 400# + ALIGN C/P	*EARLY: 5/8" STUD=60,90 FT/LBS & 7/8" STUD=150,200 FT/LBS
CATERPILLAR	13.6	831			5B913 BOLT: 150 FT/LBS, 4M9841 BOLT: 190 FT/LBS	5/8 STUD: 58#, 7/8 STUD: 350#,W/CASTLE NUT: 400# + ALIGN C/P	*EARLY: 5/8" STUD=60,90 FT/LBS & 7/8" STUD=150,200 FT/LBS
CATERPILLAR	13.6	831			5B913 BOLT: 150 FT/LBS, 4M9841 BOLT: 190 FT/LBS	5/8 STUD: 58#, 7/8 STUD: 350#,LATE 7/8 ONLY: 100# + 90°	*EARLY: 5/8" STUD=60,90 FT/LBS & 7/8" STUD=150,200 FT/LBS
CATERPILLAR	13.6	831			5B913 BOLT: 150 FT/LBS, 4M9841 BOLT: 190 FT/LBS	5/8 STUD: 58#, 7/8 STUD: 350#,LATE 7/8 ONLY: 100# + 90°	*EARLY" 5/8" STUD=60,90 FT/LBS & 7/8" STUD=150,200 FT/LBS
CATERPILLAR	13.6	831			5B913 BOLT: 150 FT/LBS, 4M9841 BOLT: 190 FT/LBS	5/8 STUD: 58#, 7/8 STUD: 350#,LATE 7/8 ONLY: 100# + 90°	*EARLY 5/8 STUD: 60,90 FT/LBS,7/8 STUD: 150,200 FT/LBS
CATERPILLAR	13.6	831			5B913 BOLT: 150 FT/LBS, 4M9841 BOLT: 190 FT/LBS	5/8 STUD: 58#, 7/8 STUD: 350#,LATE 7/8 ONLY: 100# + 90°	*EARLY: 5/8" STUD=60,90 FT/LBS & 7/8" STUD=150,200 FT/LBS
CATERPILLAR	13.6	831			5B913 BOLT: 150 FT/LBS, 4H9841 BOLT: 190 FT/LBS	EARLY 7/8" NUTS=400#, LATE 7/8" NUTS=400-450# (CASTLE)	*EARLY: 5/8" STUD=60,90 FT/LBS 7/8" STUD=150,200 FT/LBS
CATERPILLAR	13.6	831			123-127 FT/LBS	7/8": 350 FT/LBS, 5/8": 58 FT/LBS	
CATERPILLAR	14.6	893		91-95	60-72 FT/LBS, +85-95°	190 FT/LBS + 120°	200,330,330 FT/LBS STUDS 20 FT/LBS
CATERPILLAR	14.6	893			17-23 FT/LBS + 180° EARLY, 45-55#+180° "MARKED H" BOLT	350 FT/LBS NUTS, 190# STUDS	200,230 FT/LBS
CATERPILLAR	14.6	893	1693		17-23# + 180° EARLY, 45-55#+180° LATER "H" BOLT	75 FT/LBS + 120°, STUD: 190# STUD 190 FT/LBS	200,230, REPEAT 230 FT/LBS
CATERPILLAR	14.6	893	1693		17-23# + 180° EARLY, 45-55#+180° LATER "H" BOLT	75 FT/LBS + 120°, STUD: 190# STUD 190 FT/LBS	200,230, REPEAT 230 FT/LBS
CATERPILLAR	14.6	893	1693		17-23# + 180° EARLY, 45-55#+180° LATER "H" BOLT	75 FT/LBS + 120°, STUD: 190# STUD 190 FT/LBS	200,230, REPEAT 230 FT/LBS
CATERPILLAR	14.6	893	1693		17-23# + 180° EARLY, 45-55#+180° LATER "H" BOLT	75 FT/LBS + 120°, STUD: 190 FT/LBS	200,230,REPEAT 230 FT/LBS
CATERPILLAR	14.6	893	1693		17-23 FT/LBS + 180° EARLY, 45-55#+180° LATER "H" BOLT	350 FT/LBS, STUD 190 FT/LBS	200,230 FT/LBS
CATERPILLAR	14.6	893			60 FT/LBS + 120°	180-200 FT/LBS + 115-125°	SEE TB-723

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
CATERPILLAR	14.6	893			17-23 FT/LBS + 180° EARLY, 45-55# +180° "MARKED H" BOLT	350 FT/LBS, STUD 190 FT/LBS STUD 190#	200,230 FT/LBS
CATERPILLAR	14.6	893	5DS-1LW	93-05	60-72 FT/LBS, + 90°	190 FT/LBS + 120°	200, 318-348#, REPEAT 318-348#
CATERPILLAR	14.6	893			54-66 FT/LBS + 115-125°	180-200 FT/LBS + 115-125°	SEE TB-723
CATERPILLAR	14.6	893			17-23 FT/LBS + 180° EARLY, 45-55# +180° LATER "H" BOLT	350 FT/LBS, STUD 190 FT/LBS	200,230 FT/LBS
CATERPILLAR	14.6	893			45-55 FT/LBS + 180°	350 FT/LBS	200,330,330 FT/LBS
CATERPILLAR	14.6	893			17-23 FT/LBS	350 FT/LBS	
CATERPILLAR	14.6	893	C15	99-03	59-61 FT/LBS, +90°	180-200 FT/LBS, +115-125°, PISTON COOLING JET 24-36 FT/LBS	189-211, 319-341 FT/LBS, REPEAT 319-341 FT/LBS
CATERPILLAR	14.6	893			60 FT/LBS + 120°	180-200 FT/LBS + 115-125°	SEE TB-723 PRE-CUP, 140-160 FT/LBS
CATERPILLAR	15.6	955	C16		59-61 FT/LBS, +90°	180-200 FT/LBS, +115-125°, PISTON COOLING JET 24-36 FT/LBS	189-211, 319-341 FT/LBS, REPEAT 319-341 FT/LBS
CATERPILLAR	16.3	992					
CATERPILLAR	18.0	1099			60 FT/LBS + 120°	190 FT/LBS + 120°	180-220,315-345,315-345 FT/LBS
CATERPILLAR	19.5	1191			90 FT/LBS + 120°	60 FT/LBS + 120°, STUD 170#	175,250,250 FT/LBS
CATERPILLAR	19.5	1191			90 FT/LBS + 120°	60 FT/LBS + 120°, STUDS 170#	175,250,250 FT/LBS
CATERPILLAR	19.5	1191			85-95 FT/LBS + 120°	60 FT/LBS +120°-MOLY LUBE REQ,STUD: 170 FT/LBS	
CATERPILLAR	19.5	1191			58-62 FT/LBS, + 1/3 TURN --> PLUS AMOUNT-LOCK.	350 FT/LBS,150-180# CAP STUDS,4 STUDS @ REAR OF BLOCK 35-45#	140,200 FT/LBS
CATERPILLAR	20.4	1246			75 FT/LBS + 60°	100 FT/LBS + 120°, STUD 170#	100,210,420 FT/LBS SPARK PLUG ADAPTOR 150#
CATERPILLAR	20.4	1246			75 FT/LBS + 60°	100 FT/LBS + 120°, STUD 170#	100,210,420 FT/LBS
CATERPILLAR	20.4	1246			75 FT/LBS + 60°	100 FT/LBS + 120°, STUD 170#	100,210,420 FT/LBS
CATERPILLAR	20.4	1246			75 FT/LBS + 60°	100 FT/LBS + 120°, STUD 170#	100,210,420 FT/LBS
CATERPILLAR	20.4	1246			75 FT/LBS + 60°	100 FT/LBS + 120°, STUD 170#	100,210,420 FT/LBS
CATERPILLAR	20.4	1246			5B913 ROD: 150 FT/LBS, 4H9841 ROD: 190 FT/LBS	5/8" 58 FT/LBS, 7/8" 150,350#,STUD 170 FT/LBS	5/8": 60,90 FT/LBS * 7/8": 150,200 FT/LBS **
CATERPILLAR	20.4	1246			75 FT/LBS + 60°	3/8" 95 FT/LBS, 7/8" 400-450#,STUD 170 FT/LBS	100,210,420 FT/LBS
CATERPILLAR	20.4	1246	13000		123-127 FT/LBS		
CATERPILLAR	20.4	1246			5B913 ROD: 150 FT/LBS, 4H9841 ROD: 190 FT/LBS	5/8": 58 FT/LBS, 7/8": 350#, STUD 170 FT/LBS	5/8": 60,90 FT/LBS * 7/8": 150,200 FT/LBS **
CATERPILLAR	20.4	1246			75 FT/LBS + 60°	100 FT/LBS + 120°, STUD 170#	100,210,420 FT/LBS
CATERPILLAR	20.4	1246			75 FT/LBS + 60°	100 FT/LBS + 120°, STUD 170#	5/8: 60,120 FT/LBS, 7/8: 150,300 FT/LBS
CATERPILLAR	20.4	1246			5B913 ROD: 150 FT/LBS, 4H9841 ROD: 190 FT/LBS	5/8: 58 FT/LBS, 7/8: 150,350#,STUD: 170 FT/LBS	5/8: 60,90 FT/LBS * 7/8: 150,200 FT/LBS **

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
CATERPILLAR	20.4	1246			75 FT/LBS + 60°	100 FT/LBS + 120°, STUD 170#	100,210,420 FT/LBS SPARK PLUG ADAPTOR 150#
CATERPILLAR	20.4	1246			75 FT/LBS + 60°	100 FT/LBS + 120°, STUD 170#	5/8: 60,120 FT/LBS, 7/8: 150,300 FT/LBS
CATERPILLAR	20.4	1246			5B913 ROD: 150 FT/LBS, 4H9841 ROD: 190 FT/LBS	5/8: 58 FT/LBS, 7/8: 150,350#, STUD: 170 FT/LBS	5/8": 60,90 FT/LBS * 7/8": 150,200 FT/LBS **
CATERPILLAR	20.4	1246			75 FT/LBS + 60°	100 FT/LBS + 120°, STUD 170#	100,210,420 FT/LBS
CATERPILLAR	24.1	1473			70-80 FT/LBS, + 60°	135-145 FT/LBS, + 120°	180,300,REPEAT 300 FT/LBS
CATERPILLAR	24.1	1473			70-80 FT/LBS, + 55-65°	NUTS: 135-145 FT/LBS + 120°	180/300/300 FT/LBS
CATERPILLAR	24.1	1473			70-80 FT/LBS, + 55-65°	445 FT/LBS	300 FT/LBS
CATERPILLAR	27.0	1649			54-66 FT/LBS, +120°	180-200 FT/LBS, +120°	
CATERPILLAR	27.2	1662			123-127 FT/LBS	5/8" BOLTS: 58 FT/LBS, 7/8" BOLTS: 350 FT/LBS	
CATERPILLAR	29.3	1786			90 FT/LBS + 120°	60 FT/LBS + 120°, STUDS 170# DECK STUD TORQUE: 20 FT/LBS	175,250,250 FT/LBS
CATERPILLAR	29.3	1786			90 FT/LBS, + 120°		
CATERPILLAR	32.2	1964			36-44 FT/LBS, + 120°	190-210 FT/LBS, + 120°	150,250 FT/LBS, REPEAT 250#
CATERPILLAR	32.2	1964			36-44 FT/LBS + 120°	190-210 FT/LBS + 120°	
CATERPILLAR	34.5	2105			65 FT/LBS, + 90°	90-110# +180°, 3/4": 90-110#+215°, 7/8": 130-150# +180°	ALL: 22#, BOLTS #1-8: 200,330#
CATERPILLAR	34.5	2105			65 FT/LBS + 90°	90-110# +180°, 3/4": 90-110#+215°, 7/8": 130-150# +180°	ALL: 22#, BOLTS #1-8: 200,330#
CATERPILLAR	34.5	2105			65 FT/LBS + 90°	90-110# +180°, 3/4": 90-110#+215°, 7/8": 130-150# +180°	ALL: 22#, BOLTS #1-8: 200,330#
CATERPILLAR	39.0	2382			90 FT/LBS + 120°	60 FT/LBS + 120°, STUDS 170#, DECK STUD TORQUE: 20 FT/LBS	175,250,250 FT/LBS
CATERPILLAR	39.0	2382	D349		90 FT/LBS, + 120°		
CATERPILLAR	48.3	2946			44 FT/LBS, + 120°	200 FT/LBS, + 120°	150,250,240-260 FT/LBS
CATERPILLAR	48.8	2976			36-44 FT/LBS, + 120°	190-210 FT/LBS, + 120°	150,250 FT/LBS, REPEAT 250#
CATERPILLAR	51.8	3158			65 FT/LBS, + 90°	90-110# +180°, 3/4": 90-110#+215°, 7/8": 130-150# +180°	ALL: 22#, BOLTS #1-8: 200, 330#
CATERPILLAR	64.4	3928			36-44 FT/LBS + 120°	190-210 FT/LBS, + 120°	150,250 FT/LBS, REPEAT 250#
CATERPILLAR	69.0	4210			65 FT/LBS, + 90°	90-110 FT/LBS, + 180°	ALL: 22#, BOLTS #1-8: 200, 330#
CATERPILLAR	221.7	13527			#1&2 198-242#, #3&4 198-242#, REPEAT #3&4 198-242#, ALL+180°	1019-1715 PSI,LOOSEN,REPEAT; SIDE BOLTS: 1210-1470 FT/LBS	4783-5217 PSI
CATERPILLAR	294.0	17942			#1&2:198-242#, #3&4:198-242#, #3&4:REPEAT 198-242#,ALL:+180°	1019-1715 PSI,LOOSEN,REPEAT; SIDE BOLTS 1210-1470 FT/LBS	4783-5217 PSI
CHECKER	3.7	226		47-64	40-45 FT/LBS		
CHRIS-CRAFT IN-LINE	2.2	133	A & B		42 FT/LBS	77 FT/LBS	35 FT/LBS
CHRIS-CRAFT IN-LINE	3.6	221	K		39 FT/LBS	FRONT & INTER=70 FT/LBS, CENTER & REAR=60 FT/LBS	60 FT/LBS
CHRIS-CRAFT IN-LINE	3.8	230	K		39 FT/LBS	FRONT & INTER=70 FT/LBS, CENTER & REAR=60 FT/LBS	60 FT/LBS
CHRIS-CRAFT IN-LINE	3.9	237	KFL		39 FT/LBS	FRONT & INTER=70 FT/LBS, CENTER & REAR=60 FT/LBS	60 FT/LBS



Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
CHRIS-CRAFT IN-LINE	3.9	237	KLC & KBL		39 FT/LBS	FRONT & INTER=70 FT/LBS, CENTER & REAR=60 FT/LBS	60 FT/LBS
CHRIS-CRAFT IN-LINE	3.9	237	KL		39 FT/LBS	FRONT & INTER=70 FT/LBS, CENTER & REAR=60 FT/LBS	60 FT/LBS
CHRIS-CRAFT IN-LINE	5.2	320	M		56 FT/LBS	FRONT & INTER=70 FT/LBS, CENTER & REAR 60 FT/LBS	65 FT/LBS
CHRIS-CRAFT IN-LINE	5.6	339	ML & MBL		56 FT/LBS	FRONT & INTER=70 FT/LBS, CENTER & REAR=60 FT/LBS	65 FT/LBS
CHRIS-CRAFT IN-LINE	5.6	339	MCL		56 FT/LBS	FRONT & INTER=80 FT/LBS, CENTER & REAR=70 FT/LBS	65 FT/LBS
CHRIS-CRAFT IN-LINE	6.6	404	W & WB		53 FT/LBS	FRONT & INTER=105 FT/LBS, CENTER & REAR=70 FT/LBS	70 FT/LBS
CHRYSLER	1.4	85		81-87	31-33 FT/LBS	44-48 FT/LBS	42 FT/LBS, LOOSEN 1 AT A TIME,RETORQUE-45 FT/LBS **
CHRYSLER	1.4	85		83-84	30-33 FT/LBS	41-48 FT/LBS	41 FT/LBS
CHRYSLER	1.4	86	G12B	77-84	24-25 FT/LBS	37-39 FT/LBS	51-54 FT/LBS 13-15 FT/LBS AUX VALVE
CHRYSLER	1.5	91		80			
CHRYSLER	1.5	91		90-96	14 FT/LBS + 90°	37-39 FT/LBS	52-55 FT/LBS
CHRYSLER	1.5	91	G15B	85-88	24-25 FT/LBS	37-39 FT/LBS	51-54 FT/LBS
CHRYSLER	1.5	91	4G15	89-90	14.5 FT/LBS + 90°	37-39 FT/LBS	51-54 FT/LBS
CHRYSLER	1.6	98		83-86	23-25 FT/LBS	36-39 FT/LBS	51-54 FT/LBS CAM CAPS 24-25 FT/LBS
CHRYSLER	1.6	98	4G61	89-92	37-39 FT/LBS	37-41 FT/LBS	65-72 FT/LBS
CHRYSLER	1.6	98		83-84	23-25 FT/LBS	36-39 FT/LBS	51-54 FT/LBS
CHRYSLER	1.6	98		02-03	19 FT/LBS, +90°	45 FT/LBS, BEDPLATE BOLTS 22 FT/LBS	M10:15#, M8:11#, M10:30#,REPEAT 30#,+90°, M8:22#
CHRYSLER	1.6	98		79-80	23-25 FT/LBS	36-39 FT/LBS	51-54 FT/LBS
CHRYSLER	1.6	98		89-	37-39 FT/LBS	37-41 FT/LBS	65-72 FT/LBS
CHRYSLER	1.6	97		83-86	28 FT/LBS	48 FT/LBS	52 FT/LBS
CHRYSLER	1.6	98		01-03	19 FT/LBS, +90°	45 FT/LBS, BEDPLATE BOLTS 22 FT/LBS	M10:15#, M8:11#, M10:30#,REPEAT 30#,+90°, M8:22#
CHRYSLER	1.6	98		85-89	23-25 FT/LBS	36-39 FT/LBS	51-54 FT/LBS
CHRYSLER	1.7	105		78-83	35 FT/LBS	47 FT/LBS	60 FT/LBS + 90°
CHRYSLER	1.7	105		66-70	29 FT/LBS	55 FT/LBS	45 FT/LBS
CHRYSLER	1.7	105		85-87	35 FT/LBS	47 FT/LBS	22,52FT/LBS,WAIT 3MIN & LOOSE-THEN 15 FT/LBS, +121-125° *
CHRYSLER	1.8	110		92-	24-25 FT/LBS	37-39 FT/LBS	51-54 FT/LBS
CHRYSLER	1.8	110	4G93	93-94	14.5 FT/LBS, + 90°	18 FT/LBS, + 90°	54#, LOOSEN,14.5#, +90°, +90°
CHRYSLER	1.8	107	4G37	89-93	24-25 FT/LBS	37-39 FT/LBS	51-54 FT/LBS
CHRYSLER	1.8	107	4G37	93-94	24-25 FT/LBS	37-39 FT/LBS	51-54 FT/LBS
CHRYSLER	2.0	122		04	20 FT/LBS, +90°	M8 BOLTS 25 FT/LBS, M11 BOLTS 60 FT/LBS	** SEE COMMENTS - 4 STEPS
CHRYSLER	2.0	122		04	20 FT/LBS, +90°	M8 BOLTS 25 FT/LBS, M11 BOLTS 60 FT/LBS	** SEE COMMENTS - 4 STEPS
CHRYSLER	2.0	122	G63B	89-91	36-38 FT/LBS	37-39 FT/LBS	80 FT/LBS
CHRYSLER	2.0	122		02-04	20 FT/LBS, +90°	M8 BOLTS 25 FT/LBS, M11 BOLTS 60 FT/LBS	4 STEPS, SEE COMMENTS - HEAD SECTION *

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
CHRYSLER	2.0	122	420A	95-04	20 FT/LBS + 90°	MAIN BOLTS# 1-10, 55-60 FT/LBS, BED PLATE BOLTS 21-22 FT/LBS	1-6=20 FT/B 7-10=20 FT/LB B 1-6=50 FT/LBS B 7-10=20 FT/LBS **
CHRYSLER	2.0	122		01-02	20 FT/LBS, +90^	M11 BOLTS: 60 FT/LBS, M8 BOLTS: 25 FT/LBS	25,50,50 FT/LBS, +90^, SEE TB 1749
CHRYSLER	2.0	120		87	35 FT/LBS	47 FT/LBS	22,52#,WAIT 3 MIN,LOOSEN,15#, + 121-124° *
CHRYSLER	2.0	121		77-79	41 FT/LBS	58 FT/LBS	65-72 FT/LBS
CHRYSLER	2.0	122	4G63	90-94	36-38 FT/LBS	47-51 FT/LBS	65-72 FT/LBS *
CHRYSLER	2.0	122		83-90	36-38 FT/LBS	37-39 FT/LBS	80 FT/LBS
CHRYSLER	2.0	122		74-88	33-34 FT/LBS	37-39 FT/LBS	65-72 FT/LBS JET VALVE: 13-15 FT/LBS
CHRYSLER	2.0	122		93-98	14.5 FT/LBS, + 90-100°	18 FT/LBS, + 90-100°	58 FT/LBS, LOOSEN, 15 FT/LBS, + 90°, + 90°
CHRYSLER	2.0	122	4G63	93-94	14.5 FT/LBS, + 90-100°	47-51 FT/LBS	65-72 FT/LBS
CHRYSLER	2.0	122	G63B	83-90	36-38 FT/LBS	37-39 FT/LBS	80 FT/LBS
CHRYSLER	2.0	122		95-04	20 FT/LBS, + 90°	M11 BOLTS: 60 FT/LBS M8 BOLTS: 25 FT/LBS*	25, 50, 50 FT/LBS, + 90°, SEE TB 1749
CHRYSLER	2.0	122		90-92	36-38 FT/LBS	47-51 FT/LBS	65-72, 80 FT/LBS
CHRYSLER	2.0	122					
CHRYSLER	2.1	126	J8S232	83-87	48 FT/LBS	69 FT/LBS 67-72 FT/LBS RECHECK	22,37,77,77 FT/LBS
CHRYSLER	2.2	135		83-85	40 FT/LBS, + 90°	30 FT/LBS, + 90°	45,65,65 FT/LBS, + 90°
CHRYSLER	2.2	135		86-90	40 FT/LBS, + 90°	35 FT/LBS, + 90°	45, 65, 65 FT/LBS, + 90°
CHRYSLER	2.2	132		86-88	46 FT/LBS	69 FT/LBS	37,59,69 FT/LBS
CHRYSLER	2.2	135		83-85	40 FT/LBS, + 90°	30 FT/LBS, + 90°	45,65,65 FT/LBS, + 90° CAM BOLTS 27 FT/LBS
CHRYSLER	2.2	135		83-85	40 FT/LBS, + 90°	30 FT/LBS, + 90°	M10 30, 45, 45FT/LBS + 90°, M11 45, 65, 65 FT/LBS, + 90°
CHRYSLER	2.2	135		86-87	40 FT/LBS, + 90°	30 FT/LBS, + 90°	45, 65, 65 FT/LBS, + 90°
CHRYSLER	2.2	135		89-90	32,47 FT/LBS	33,47,78 FT/LBS	32, 50, 65 FT/LBS, + 90°
CHRYSLER	2.2	135		91-94	40 FT/LBS, + 90^	30 FT/LBS, + 90°	45,65,65 FT/LBS, + 90°
CHRYSLER	2.2	135		83-85	40 FT/LBS, + 90°	35 FT/LBS, + 90°	45,65,65 FT/LBS, + 90° /11MM**
CHRYSLER	2.2	135		86-88	40 FT/LBS, + 90°	30 FT/LBS, + 90°	45,65,65 FT/LBS, + 90°
CHRYSLER	2.2	135		90-	40 FT/LBS, + 90°	30 FT/LBS, + 90°	45,65,65 FT/LBS, + 90°
CHRYSLER	2.2	134		42-71	3/8" BOLT: 35-45 FT/LBS 7/16" BOLT: 50-55 FT/LBS	65-75 FT/LBS	60-70 FT/LBS
CHRYSLER	2.2	135		91-93	50 FT/LBS	30 FT/LBS, + 90°	45,65,65 FT/LBS, + 90° CAM BOLTS 27 FT/LBS
CHRYSLER	2.2	135		82-85	40 FT/LBS, + 90°	30 FT/LBS, + 90°	45,65,65 FT/LBS, + 90°
CHRYSLER	2.2	135		81-82	40 FT/LBS + 90°	35 FT/LBS, + 90°	45,45 FT/LBS, + 90°
CHRYSLER	2.2	135		86-90	40 FT/LBS, + 90°	30 FT/LBS, + 90°	45, 65, 65 FT/LBS, + 90° CAM BOLTS 27 FT/LBS
CHRYSLER	2.3	143	4D55	83-85	33-34 FT/LBS	55-61 FT/LBS	76-83 FT/LBS
CHRYSLER	2.3	143	M4D55	84-85	33-34 FT/LBS	55-61 FT/LBS	76-83 FT/LBS
CHRYSLER	2.4	143		87-88	23-25 FT/LBS	36-39 FT/LBS	80 FT/LBS
CHRYSLER	2.4	148		03-04	20 FT/LBS, +90°	M8 BOLTS 21 FT/LB, M11 BOLTS 55 FT/LBS, CRANK TARGET RING 9#	25, 50 FT/LBS, REPEAT 50 FT/LBS, +90°

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
CHRYSLER	2.4	148		04	20 FT/LBS, +90°	M8=21 FT/LBS, M11=55 FT/LBS, CRANK TARGET RING=110 INCH/LBS	25, 50 FT/LBS, REPEAT 50 FT/LBS, +90°
CHRYSLER	2.4	148		95-05	20 FT/LBS, + 90° NEW BOLTS	M11 BOLTS: 30 FT/LBS + 90° M8 BOLTS: 25 FT/LBS + 90°	25, 50, 50 FT/LBS, +90° SEE TB 1749
CHRYSLER	2.4	143		90-92	37-38 FT/LBS	37-39 FT/LBS	58 FT/LBS, LOOSEN ALL, THEN 14.5 FT/LBS, + 90°, + 90°
CHRYSLER	2.4	143		85-86	23-25 FT/LBS	36-39 FT/LBS	65-72 FT/LBS
CHRYSLER	2.4	143		93-95	14 FT/LBS, + 90^	18 FT/LBS, + 90°	58 FT/LBS, LOOSEN ALL, THEN 14.5 FT/LBS, + 90°, + 90°
CHRYSLER	2.4	143		93-95	14 FT/LBS, + 90°	18 FT/LBS, + 90°	58 FT/LBS, LOOSEN ALL, THEN 14.5 FT/LBS, + 90°, + 90°
CHRYSLER	2.4	146		96-04	20 FT/LBS, + 90° USE NEW BOLTS	30 FT/LBS + 90° M8 BOLTS 21 FT/LBS	SEE COMMENTS BOX BELOW
CHRYSLER	2.4	148		96-03	20 FT/LBS + 90°	M11 BOLTS: 60 FT/LBS M8 BOLTS: 25 FT/LBS	25,50,50 FT/LBS, + 90° L/BOLTS20,20,20 FT/LBS, + 90° S/BOLTS
CHRYSLER	2.5	151		81-83	30 FT/LBS	70 FT/LBS	85-90 FT/LBS
CHRYSLER	2.5	153		87-90	40 FT/LBS, + 90°	30 FT/LBS, + 90°	45, 65, 65 FT/LBS, + 90°
CHRYSLER	2.5	153		93-95	40 FT/LBS + 90° USE NEW BOLTS	30 FT/LBS, + 90°	45,65,65 FT/LBS, + 90° *
CHRYSLER	2.5	150		84-86	33 FT/LBS	80 FT/LBS	ALL EXCEPT BOLT 8: 85 FT/LBS, BOLT 8:75 FT/LB,CAM BOLTS= 27#
CHRYSLER	2.5	152	6G73	95-00	37 FT/LBS	69 FT/LBS	80 FT/LBS
CHRYSLER	2.5	153		86-87	40 FT/LBS, + 90°	30 FT/LBS, + 90°	45,65,65 FT/LBS, + 90°
CHRYSLER	2.5	153		91-95	40 FT/LBS, + 90°	30 FT/LBS, + 90°	45, 65, 65 FT/LBS, + 90° *
CHRYSLER	2.5	153		92-93	40 FT/LBS + 90°	30 FT/LBS + 90°	45,65,65 FT/LBS, + 90° *
CHRYSLER	2.5	152	6G73	95-99	NUTS: 37 FT/LBS	69 FT/LBS	80 FT/LBS
CHRYSLER	2.5	150		86-88	33 FT/LBS	80 FT/LBS	1986-87:85#, 1988:100 FT/LBS CAM BOLTS 27 FT/LBS
CHRYSLER	2.5	153		94-95	40 FT/LBS + 90°	30 FT/LBS, + 90°	45,65,65 FT/LBS, + 90° *
CHRYSLER	2.5	150		89-93	33 FT/LBS	80 FT/LBS	110 FT/LBS, #7 BOLT=100 FT/LBS, CAM BOLTS 27 FT/LBS
CHRYSLER	2.5	150		91-02	33 FT/LBS	80 FT/LBS	22, 45, 110 FT/LBS
CHRYSLER	2.5	151		81-83	30 FT/LBS	70 FT/LBS	85-90 FT/LBS
CHRYSLER	2.5	153		89-92	40 FT/LBS + 90°	30 FT/LBS, + 90°	45, 65, 65 FT/LBS + 90°
CHRYSLER	2.6	156		84-88	33-34 FT/LBS	55-61 FT/LBS **** PISTON OILERS 21-22 FT/LBS	65-72 FT/LBS COLD, 73-79 FT/LBS HOT
CHRYSLER	2.6	156	4G54	81-85	33-34 FT/LBS	55-61 FT/LBS	65-72 FT/LBS COLD, 73-79 FT/LBS HOT
CHRYSLER	2.6	156		79-82	33-34 FT/LBS	55-61 FT/LBS	65-72# COLD, 73-79 FT/LBS HOT BOLT 11: 15 FT/LBS HOT
CHRYSLER	2.6	156		78-79	33-34 FT/LBS	55-61 FT/LBS	65-72# COLD, 73-79 FT/LBS HOT
CHRYSLER	2.6	156		85-89	33-34 FT/LBS	55-61 FT/LBS	65-72 FT/LBS COLD, 73-79 FT/LBS HOT
CHRYSLER	2.6	156		83-86	33-34 FT/LBS	55-61 FT/LBS	65-72 FT/LBS COLD, 73-79 FT/LBS HOT
CHRYSLER	2.7	165		03-05	4, 18 FT/LBS, +90°	40 FT/LBS, +90°, REAR MAIN SEAL 80 INCH/LBS	12MM=44 FT/LBS, +90°, +90°, 8MM=15 FT/LBS
CHRYSLER	2.7	167		98-03	20 FT/LBS +90°	15 FT/LBS +90° INNER, 20 FT/LBS +90° OUTER, CROSS BOLTS 21#	M11 BOLTS: 35, 55, 55 FT/LBS, +90° M8 BOLTS: 250 INCH/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
CHRYSLER	2.7	167		00-03	20 FT/LBS +90°	IN 15 FT/LBS + 90°, 20 FT/LBS + 90° OUTER, CROSS BOLTS 21#	M11 BOLTS: 33, 55, 55 FT/LBS, M8 BOLTS: 250 INCH/LBS
CHRYSLER	2.7	167		00-03	20 FT/LBS +90^	IN 15 FT/LBS + 90°, 20 FT/LBS + 90° OUTER, CROSS BOLTS 21#	M11 BOLTS: 33, 55, 55 FT/LBS, M8 BOLTS: 250 INCH/LBS
CHRYSLER	2.8	173		84-87	34-44 FT/LBS	63-83 FT/LBS	55-77 FT/LBS, 18 FT/LBS ROCKER NUT
CHRYSLER	2.8	170		60-71	45 FT/LBS	85 FT/LBS	65-70 FT/LBS
CHRYSLER	3.0	181		91-92	38 FT/LBS NUTS	58 FT/LBS	80 FT/LBS
CHRYSLER	3.0	181		91-92	38 FT/LBS	60 FT/LBS	80 FT/LBS
CHRYSLER	3.0	181		90-92	37-38 FT/LBS NUTS	55-61 FT/LBS	65-72 FT/LBS
CHRYSLER	3.0	181		93-97	38 FT/LBS NUTS	67 FT/LBS	91 FT/LBS, LOOSEN, 91 FT/LBS
CHRYSLER	3.0	184		88-	35 FT/LBS	CAP NUT: 20 FT/LBS, + 75°	45 FT/LBS, LOOSEN, 30 FT/LBS, + 180 ° *
CHRYSLER	3.0	181		93-95	38 FT/LBS NUTS	67 FT/LBS	80 FT/LBS
CHRYSLER	3.0	181		93-95	38 FT/LBS NUTS	57 FT/LBS	80 FT/LBS
CHRYSLER	3.0	181		91-92	38 FT/LBS NUTS	58 FT/LBS	80 FT/LBS
CHRYSLER	3.0	184		49-61	27-30 FT/LBS	66-70 FT/LBS	57-60 FT/LBS
CHRYSLER	3.0	181		96-99	NUTS: 38 FT/LBS	60 FT/LBS	80 FT/LBS
CHRYSLER	3.0	181		87-95	37-38 FT/LBS NUTS	55-61 FT/LBS	80 FT/LBS - REUSE OF BOLTS OK,TIGHTEN IN 3 STEP PROCESS
CHRYSLER	3.0	181		92	38 FT/LBS NUTS	60 FT/LBS	80 FT/LBS
CHRYSLER	3.0	181		01-01			
CHRYSLER	3.0	184		89-92	35 FT/LBS	CAP NUT: 20 FT/LBS, + 75°	45 FT/LBS, LOOSEN, 30 FT/LBS, + 180 ° *
CHRYSLER	3.1	190	DD	28-32		80-85 FT/LBS	
CHRYSLER	3.2	196		53-65	27-30 FT/LBS	66-70 FT/LBS, ALUMINUM ENGINE:55-58 FT/LBS	60 FT/LBS
CHRYSLER	3.2	198		74-74	45 FT/LBS	85 FT/LBS	65-70 FT/LBS
CHRYSLER	3.2	195		98-01	40 FT/LBS + 90^	15 FT/LBS + 90° INNER 20 FT/LBS + 90° OUTER	45, 65, 65 FT/LBS + 90°
CHRYSLER	3.3	201		35-43	45-50 FT/LBS	70-85 FT/LBS	70-75 FT/LBS, NUTS=55-65 FT/LB
CHRYSLER	3.3	201		03-04	40 FT/LBS, +90°	30 FT/LBS, +90°, REAR OIL SEAL RETAINER 105 INCH/LBS	45, 65 FT/LBS, REPEAT 65 FT/LBS, +90X167 **
CHRYSLER	3.3	201		94-97	40 FT/LBS, + 90°	30 FT/LBS, + 90°	45,65,65 FT/LBS, + 90° **
CHRYSLER	3.3	201		03-04	40 FT/LBS, +90°	30 FT/LBS, +90°, OIL SEAL RETAINER 105 INCH/LBS	45, 65 FT/LBS, REPEAT 65 FT/LBS, +90° **
CHRYSLER	3.3	201		90-02	40 FT/LBS, + 90°	30 FT/LBS, + 90°	45, 65, 65 FT/LBS, + 90° **
CHRYSLER	3.3	201		94-98	40 FT/LBS, + 90°	30 FT/LBS, + 90°	45,65,65 FT/LBS, + 90° ** ROCKER ARM SUPPORT 21 FT/LBS
CHRYSLER	3.3	201		98-01	40 FT/LBS, + 90°	30 FT/LBS, + 90°	45,65,65 FT/LBS, + 90° ** ROCKER ARM SUPPORT 21 FT/LBS
CHRYSLER	3.3	199		65-70	27-30 FT/LBS	75-85 FT/LBS	80-85 FT/LBS
CHRYSLER	3.3	201		93-97	40 FT/LBS, + 90°	30 FT/LBS, + 90°	45,65,65 FT/LBS, + 90° ** ROCKER ARM SUPPORT 21 FT/LBS
CHRYSLER	3.5	218		33-56	45-50 FT/LBS	75-80 FT/LBS	70-75 FT/LBS, NUTS:55-65 FT/LB
CHRYSLER	3.5	215		02-04	40 FT/LBS, +90°	15 FT/LBS, +90°, TRAY 20 FT/LBS, +90°, SIDE BOLTS 21 FT/LBS	45, 65, 65 FT/LBS, +90°
CHRYSLER	3.5	215		02-04	40 FT/LBS, +90°	15 FT/LBS,+90°, TRAY=20 FT/LBS,+90°, SIDE BOLTS=21 FT/LBS	45, 65, 65 FT/LBS, +90°

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
CHRYSLER	3.5	215		02-04	40 FT/LBS, +90°	15 FT/LBS, +90°, TRAY=20 FT/LBS, SIDE BOLTS=21 FT/LBS	45, 65, 65 FT/LBS, +90°
CHRYSLER	3.5	215		93-97	40 FT/LBS, + 90°	30 FT/LBS, + 90° 40 FT/LBS SIDE BOLTS	45, 65, 65 FT/LBS, + 90° ---> NOT-EXCEED 90 FT/LBS
CHRYSLER	3.5	215		98-02	40 FT/LBS, +90°	15 FT/LBS +90°, TRAY 20# +90°, SIDE BOLTS 21 FT/LBS	45, 65, 65 FT/LBS, +90°
CHRYSLER	3.6	218		65-71	45-50 FT/LBS	80-85 FT/LBS	60-70 FT/LBS
CHRYSLER	3.7	225		82	45 FT/LBS	85 FT/LBS	65-70 FT/LBS
CHRYSLER	3.7	225			45 FT/LBS	85 FT/LBS	65 FT/LBS
CHRYSLER	3.7	225		02-03	20 FT/LBS, +90°		
CHRYSLER	3.7	225		80	45 FT/LBS	85 FT/LBS	65-70 FT/LBS
CHRYSLER	3.7	225		60-80	45 FT/LBS	85 FT/LBS, ALUMNIUM BLOCK 50 FT/LBS	65-70 FT/LBS
CHRYSLER	3.7	225		83-84	45 FT/LBS	85 FT/LBS	65-70 FT/LBS
CHRYSLER	3.7	225		69-80	45 FT/LBS	85 FT/LBS	65-70 FT/LBS
CHRYSLER	3.7	225		77-80	45 FT/LBS	85 FT/LBS	65-70 FT/LBS
CHRYSLER	3.7	225		81-82	45 FT/LBS	85 FT/LBS	65-70 FT/LBS
CHRYSLER	3.7	225		81-82	45 FT/LBS	85 FT/LBS	65-70 FT/LBS
CHRYSLER	3.7	225		82	45 FT/LBS	85 FT/LBS	65-70 FT/LBS
CHRYSLER	3.7	225		82-87	45 FT/LBS	85 FT/LBS	65-70 FT/LBS COLD, HOT: 76 FT/LBS
CHRYSLER	3.7	225		76-87	45 FT/LBS	85 FT/LBS	34,69 FT/LBS COLD, 34,76 FT/LBS HOT
CHRYSLER	3.8	230		42-52	45-50 FT/LBS	80-85 FT/LBS	65-70 FT/LBS
CHRYSLER	3.8	232		64-79	27-30 FT/LBS	75-85 FT/LBS	1964-72: 80-85 FT/LBS, 1973-80: 105 FT/LBS
CHRYSLER	3.8	231		91-00	40 FT/LBS, + 90°	30 FT/LBS, + 90°	45,65,65 FT/LBS, + 90° **
CHRYSLER	3.8	231		01-03	40 FT/LBS, +90°	30 FT/LBS, +90°, CROSS BOLTS 45 FT/LBS	45, 65 FT/LBS, REPEAT 65 FT/LBS, +90° **
CHRYSLER	3.9	235		33-47	50-55 FT/LBS		
CHRYSLER	3.9	239		88-91	45 FT/LBS	85 FT/LBS	105 FT/LBS
CHRYSLER	3.9	239		92-02	45 FT/LBS	85 FT/LBS	50 FT/LBS, 105 FT/LBS
CHRYSLER	3.9	239		87-88	45 FT/LBS	85 FT/LBS	105 FT/LBS
CHRYSLER	3.9	237		42-56	40-45 FT/LBS	80-85 FT/LBS	65-70 FT/LBS
CHRYSLER	3.9	237		42-56	40-45 FT/LBS	80-85 FT/LBS	
CHRYSLER	4.0	241		32-41	40-45 FT/LBS	80-85 FT/LBS	
CHRYSLER	4.0	243		81-85	61.5-68.7 FT/LBS	69.1-72.3 FT/LBS **	90.4 FT/LBS
CHRYSLER	4.0	241		53-55	45-50 FT/LBS	85 FT/LBS	85 FT/LBS
CHRYSLER	4.0	242		89-90	30-35 FT/LBS	40,70,80 FT/LBS	22,45,110 FT/LBS (EXCEPT #11)-BOLT #11: 100 FT/LBS
CHRYSLER	4.0	242		87-88	33 FT/LBS	40,70,80 FT/LBS	22, 45, 110 FT/LBS
CHRYSLER	4.0	242		91-97	33 FT/LBS	40,70,80 FT/LBS	22,45,110 FT/LBS
CHRYSLER	4.0	242		98-04	33 FT/LBS	40,70,80 FT/LBS MAIN CAP BRACE 35 FT/LBS	22,45,110 FT/LBS EXCEPT BLT 11BOLT #11: 100 FT/LBS
CHRYSLER	4.1	251		42-68	40-45 FT/LBS	85 FT/LBS	65 FT/LBS
CHRYSLER	4.1	250		56-61	46-50 FT/LBS	80-85 FT/LBS, REAR BEARING CAP: 50-55 FT/LBS	60-65 FT/LBS
CHRYSLER	4.2	258		83-89	30-35 FT/LBS	75-85 FT/LBS	* SEE TB 748

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
CHRYSLER	4.2	258		83-89	30-35 FT/LBS 30-35 FT/LBS (75->)	75-85 FT/LBS	* SEE TB 748
CHRYSLER	4.2	258		90	26-30 FT/LBS (71-74) 30- 35 FT/LBS (75->)	75-85 FT/LBS	105 FT/LBS
CHRYSLER	4.2	258		70-83	26-30 FT/LBS (71-74) 30- 35 FT/LBS (75->)	75-85 FT/LBS	1970-72:80-85#, 1973-80:105#, 1981-83:85#, ROCKER ARM:19#
CHRYSLER	4.3	265		52-68	45 FT/LBS	80-85 FT/LBS	70 FT/LBS
CHRYSLER	4.4	270		55-56	40-45 FT/LBS	80-85 FT/LBS	85 FT/LBS
CHRYSLER	4.5	277		56-57	45-50 FT/LBS	80-85 FT/LBS	85 FT/LBS
CHRYSLER	4.5	273		62-69	45-50 FT/LBS	80-85 FT/LBS	1962-63: 85 FT/LBS 1964-77: 95 FT/LBS
CHRYSLER	4.5	273			45 FT/LBS	85 FT/LBS	85 FT/LBS
CHRYSLER	4.6	282		37-52			
CHRYSLER	4.7	287		63-66	46-50 FT/LBS	80-85 FT/LBS, REAR BEARING CAP 50-55 FT/LBS	58-62 FT/LBS
CHRYSLER	4.7	287		99-04	20 FT/LBS, +90°	INNER, 25 IN/LBS + 90° TURN OUTER 40 FT/LBS	**
CHRYSLER	4.8	290		66-69	27-37 FT/LBS	95-105 FT/LBS	72-77 FT/LBS, 1/2" BOLT 95-110 FT/LBS SEALER ON #7 BOLT
CHRYSLER	4.9	301		55	45 FT/LBS	85 FT/LBS	85 FT/LBS
CHRYSLER	5.0	304		70-79	30-35 FT/LBS	90-105 FT/LBS	100-120 FT/LBS SEALER NEEDED ON #7 BOLT
CHRYSLER	5.0	303		56-58	45-50 FT/LBS	80-85 FT/LBS	
CHRYSLER	5.1	313		57-66	45 FT/LBS	80-85 FT/LBS	
CHRYSLER	5.2	318		81-82	45-50 FT/LBS	85-90 FT/LBS	95 FT/LBS
CHRYSLER	5.2	318		98-99	45 FT/LBS	85 FT/LBS	50, 105 FT/LBS
CHRYSLER	5.2	315		55-57	45-50 FT/LBS	80-85 FT/LBS	85 FT/LBS ROCKER SHAFT BOLTS = 85 FT/LBS
CHRYSLER	5.2	318		83-89	45-50 FT/LBS	85-90 FT/LBS	50,105 FT/LBS
CHRYSLER	5.2	320		55			
CHRYSLER	5.2	318		77-80	45-50 FT/LBS	85-90 FT/LBS	95 FT/LBS
CHRYSLER	5.2	318		73-76	45-50 FT/LBS	85-90 FT/LBS	105 FT/LBS
CHRYSLER	5.2	318		80	45-50 FT/LBS	85-90 FT/LBS	95 FT/LBS
CHRYSLER	5.2	318		77-79	45-50 FT/LBS	85-90 FT/LBS	105 FT/LBS
CHRYSLER	5.2	318		69-76	45-50 FT/LBS	85-90 FT/LBS	95 FT/LBS
CHRYSLER	5.2	318		95-99	45 FT/LBS	85 FT/LBS	50, 105 FT/LBS
CHRYSLER	5.2	318		88-91	45-50 FT/LBS	85-90 FT/LBS	50,105 FT/LBS
CHRYSLER	5.2	318		92-04	45 FT/LBS	85 FT/LBS	50, 105 FT/LBS
CHRYSLER	5.2	318		78-80	40-45 FT/LBS	85-90 FT/LBS	105 FT/LBS
CHRYSLER	5.2	318		83-84	45-50 FT/LBS	85-90 FT/LBS	95 FT/LBS
CHRYSLER	5.2	318		81-82	45-50 FT/LBS	85-90 FT/LBS	95 FT/LBS
CHRYSLER	5.2	318		83-87	45-50 FT/LBS	85-90 FT/LBS	105 FT/LBS
CHRYSLER	5.2	318		83-89	45 FT/LBS	85 FT/LBS	105 FT/LBS
CHRYSLER	5.2	318		81-82	45-50 FT/LBS	85-90 FT/LBS	95 FT/LBS
CHRYSLER	5.2	318		81-82	45-50 FT/LBS	85-90 FT/LBS	95 FT/LBS
CHRYSLER	5.2	318		83-91	45-50 FT/LBS	85-90 FT/LBS	50,105 FT/LBS
CHRYSLER	5.2	318		81-85	45-50 FT/LBS	85-90 FT/LBS	50,95 FT/LBS
CHRYSLER	5.2	318		81-82	45-50 FT/LBS	85-90 FT/LBS	95 FT/LBS
CHRYSLER	5.2	318			45 FT/LBS	85 FT/LBS	85 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
CHRYSLER	5.2	318		81-82	45-50 FT/LBS	85-90 FT/LBS	95 FT/LBS
CHRYSLER	5.2	318		62-67	45-50 FT/LBS	80-85 FT/LBS	95 FT/LBS
CHRYSLER	5.2	318		83-87	45-50 FT/LBS	85-90 FT/LBS	105 FT/LBS
CHRYSLER	5.3	326		55-57	46-50 FT/LBS		
CHRYSLER	5.3	323		35-51	45-50 FT/LBS	80-85 FT/LBS	65-70 FT/LBS
CHRYSLER	5.3	325	HEMI	55-57	45-50 FT/LBS	80-85 FT/LBS	85 FT/LBS
CHRYSLER	5.4	330	S24	56-	45-50 FT/LBS	80-85 FT/LBS	85 FT/LBS
CHRYSLER	5.4	331		54-56	PLAIN 45, COATED 40 FT/LBS	80-85 FT/LBS	85 FT/LBS
CHRYSLER	5.4	327		57-66	46-50 FT/LBS	80-85 FT/LBS, REAR BEARING CAP 50-55 FT/LBS	60-65 FT/LBS
CHRYSLER	5.4	331		51-54	PLAIN 45, COATED 40 FT/LBS	80-85 FT/LBS	85 FT/LBS
CHRYSLER	5.6	340		68-73	45 FT/LBS	85 FT/LBS	95 FT/LBS
CHRYSLER	5.6	343		67-69	26-30 FT/LBS, 290 & 343 ENGINES	95-105 FT/LBS	72-77 FT/LBS, 1/2" BOLT 95-110 FT/LBS SEALER ON #7 BOLT
CHRYSLER	5.6	340			45 FT/LBS	85 FT/LBS	85 FT/LBS
CHRYSLER	5.6	341	HEMI	56-57	45-50 FT/LBS		
CHRYSLER	5.7	345	HEMI	57	45 FT/LBS	85 FT/LBS	100 FT/LBS
CHRYSLER	5.7	345	HEMI	03-05	15 FT/LBS, +90°	M12 BOLTS=20 FT/LBS, +90°, M8 CROSSBOLTS=21 FT/LBS	M12 BOLTS=25,40 FT/LBS, +90°, M8 BOLTS=15, 25 FT/LBS
CHRYSLER	5.7	350		68-71	40-50 FT/LBS	95 FT/LBS	65-80 FT/LBS
CHRYSLER	5.8	354		56-58	45-50 FT/LBS		
CHRYSLER	5.8	354		56-56	45-50 FT/LBS	85 FT/LBS	85 FT/LBS
CHRYSLER	5.9	360		83-87	45 FT/LBS	85 FT/LBS	105 FT/LBS
CHRYSLER	5.9	360		77-79	45 FT/LBS	85 FT/LBS	105 FT/LBS
CHRYSLER	5.9	360		80-	45 FT/LBS	85 FT/LBS	105 FT/LBS
CHRYSLER	5.9	359	B-SERIES	97-98	22,44 FT/LBS + 60°	37, 45, 66 FT/LBS + 90°	66, 89 FT/LBS, +90° SEE TB 909
CHRYSLER	5.9	359	B-SERIES	94-96	22,44 FT/LBS + 60°	37, 45, 66, FT/LBS + 90°	66, 89 FT/LBS, +90° SEE TB 909
CHRYSLER	5.9	360		70-79	30-35 FT/LBS	90-105 FT/LBS	100-120 FT/LBS SEALER NEEDED ON #7 BOLT
CHRYSLER	5.9	359	B SERIES	89-97	22, 44, FT/LBS + 60°	37, 45, 66, FT/LBS + 90°	66, 89 FT/LBS, +90° SEE TB 909
CHRYSLER	5.9	359	B-SERIES	01-03	26, 51, 73 FT/LBS	37, 45, 66 FT/LBS, +90°	59, 77 FT/LBS, REPEAT 77 FT/LBS, +90°, COVER=18 FT/LBS
CHRYSLER	5.9	359	B-SERIES	98-02	22, 44, FT/LBS + 60° *	37, 45, 66, FT/LBS + 90°	59,77,77 FT/LBS, +90°
CHRYSLER	5.9	360		80	45 FT/LBS	85 FT/LBS	105 FT/LBS
CHRYSLER	5.9	360		92-01	45 FT/LBS	85 FT/LBS	50, 105 FT/LBS
CHRYSLER	5.9	360		89-91	45 FT/LBS	85 FT/LBS	105 FT/LBS
CHRYSLER	5.9	361		80-81	45 FT/LBS	85 FT/LBS	95 FT/LBS
CHRYSLER	5.9	360		89-91	33 FT/LBS	30,60,90,100 FT/LBS	80,110 FT/LBS SEALER NEEDED ON #7 BOLT
CHRYSLER	5.9	360		80-82	45 FT/LBS	85 FT/LBS	105 FT/LBS
CHRYSLER	5.9	360		98-02	45 FT/LBS	85 FT/LBS	50, 105 FT/LBS
CHRYSLER	5.9	360		92-97	45 FT/LBS	85 FT/LBS	50, 105 FT/LBS
CHRYSLER	5.9	360		89-91	45 FT/LBS	85 FT/LBS	105 FT/LBS
CHRYSLER	5.9	360		83-88	45 FT/LBS	85 FT/LBS	105 FT/LBS
CHRYSLER	5.9	360		81-	45 FT/LBS	85 FT/LBS	105 FT/LBS
CHRYSLER	5.9	360		82	45 FT/LBS	85 FT/LBS	105 FT/LBS
CHRYSLER	5.9	360		81-82	45 FT/LBS	85 FT/LBS	105 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
CHRYSLER	5.9	360		76-79	45 FT/LBS	85 FT/LBS	105 FT/LBS
CHRYSLER	5.9	360		77-79	45 FT/LBS	85 FT/LBS	105 FT/LBS
CHRYSLER	5.9	360		71-75	45 FT/LBS	85 FT/LBS	95 FT/LBS
CHRYSLER	5.9	360		83-88	30-35 FT/LBS	95-105 FT/LBS	110 FT/LBS SEALER NEEDED ON #7 BOLT
CHRYSLER	5.9	360		76-78	45 FT/LBS	85 FT/LBS	1976-77: 95 FT/LBS 1978: 105 FT/LBS
CHRYSLER	5.9	360		79-	45 FT/LBS	85 FT/LBS	105 FT/LBS
CHRYSLER	5.9	360		80	45 FT/LBS	85 FT/LBS	105 FT/LBS
CHRYSLER	5.9	360		74-76	45 FT/LBS	85 FT/LBS	95 FT/LBS
CHRYSLER	5.9	360		77-79	45 FT/LBS	85 FT/LBS	105 FT/LBS
CHRYSLER	5.9	360		73-75	45 FT/LBS	85 FT/LBS	95 FT/LBS
CHRYSLER	5.9	361		57-78	45 FT/LBS	85 FT/LBS	70 FT/LBS
CHRYSLER	5.9	360		80-82	45 FT/LBS	85 FT/LBS	105 FT/LBS
CHRYSLER	5.9	359	B-SERIES	00-01	22, 44, FT/LBS + 60°	37, 45, 66, FT/LBS + 90°	59, 77, 77 FT/LBS, +90°
CHRYSLER	6.2	377		46-53			
CHRYSLER	6.3	383		59-71	45 FT/LBS	85 FT/LBS	70 FT/LBS
CHRYSLER	6.4	390		68-76	35-45 FT/LBS	95-100 FT/LBS	72-77 FT/LBS, 1/2" BOLT 95-110 FT/LBS ON #7 BOLT **
CHRYSLER	6.4	392		57-58	40-45 FT/LBS	85-90 FT/LBS	
CHRYSLER	6.6	400		74-78	45 FT/LBS	85 FT/LBS	70 FT/LBS
CHRYSLER	6.6	400		72-78	45 FT/LBS	85 FT/LBS	70 FT/LBS
CHRYSLER	6.6	400		75-76	45 FT/LBS	85 FT/LBS	70 FT/LBS
CHRYSLER	6.6	401		71-78	35-40 FT/LBS	95-100 FT/LBS	105-115 FT/LBS SEALER NEEDED ON #7 BOLT
CHRYSLER	6.8	413		59-76	45 FT/LBS	85 FT/LBS	70 FT/LBS
CHRYSLER	6.8	413		59-77	45 FT/LBS	85 FT/LBS	70 FT/LBS
CHRYSLER	7.0	426		71-77	65 FT/LBS	100 FT/LBS, SIDE BOLTS 45 FT/LB	75 FT/LBS
CHRYSLER	7.0	426		66-71	65 FT/LBS	100 FT/LBS SIDE BOLTS 45 FT/LB	70-75 FT/LBS IRON HEADS INCLUDING STUDS **
CHRYSLER	7.0	426		65-66	PLAIN 45 FT/LBS, HEAVY DUTY 50-55 FT/LBS	85 FT/LBS, CRANK REAR BRG SEAL 30 FT/LBS	70 FT/LBS
CHRYSLER	7.2	440		66-73	45 FT/LBS WITH OIL	85 FT/LBS	70 FT/LBS
CHRYSLER	7.2	440		74-76	45 FT/LBS WITH OIL	85 FT/LBS	70 FT/LBS
CHRYSLER	7.8	478		69-77	60-70 FT/LBS		
CHRYSLER	8.0	488		94-97	45 FT/LBS	20,85 FT/LBS	43,105 FT/LBS
CHRYSLER	8.0	488		99-02	45 FT/LBS	* SEE COMMENTS	BOLTS #1-12: 35,90 FT/LBS VALLEY BOLTS: 95 INCH/LBS
CHRYSLER	8.0	488		94-02	45 FT/LBS	20,85 FT/LBS, REAR SEAL RETAINER 16 FT/LBS	43,105 FT/LBS
CHRYSLER	9.0	549		70-74	60-70 FT/LBS		
CONTINENTAL	0.0	0			20-25 FT/LBS		
CONTINENTAL	0.9	56			20-25 FT/LBS	35-40 FT/LBS	35-45 FT/LBS --- RETORQUE HOT
CONTINENTAL	0.9	56			20-25 FT/LBS	35-40 FT/LBS	
CONTINENTAL	1.0	62			20-25 FT/LBS	75-85 FT/LBS 10 FT/LBS	3/8" CAP SCREWS: 53-57 FT/LBS
CONTINENTAL	1.0	62			20-25 FT/LBS	85-95 FT/LBS	35-40 FT/LBS --- RETORQUE HOT
CONTINENTAL	1.1	69			20-25 FT/LBS	35-40 FT/LBS	
CONTINENTAL	1.1	69			20-25 FT/LBS	35-40 FT/LBS	
CONTINENTAL	1.1	69			20-25 FT/LBS	35-40 FT/LBS	



Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
CONTINENTAL	1.1	69			20-25 FT/LBS	85-95 FT/LBS	35-40 FT/LBS
CONTINENTAL	1.3	79			45-50 FT/LBS	110-120 FT/LBS	10MM=10-15,20-25,35-40# COLD, THEN RETORQUE HOT TO 30-35# *
CONTINENTAL	1.5	91			20-25 FT/LBS	85-95 FT/LBS	35-40 FT/LBS
CONTINENTAL	1.5	91			20-25 FT/LBS	85-90 FT/LBS	35-40 FT/LBS
CONTINENTAL	1.5	91			20-25 FT/LBS	35-40 FT/LBS	
CONTINENTAL	1.8	112			20-25 FT/LBS	90-95 FT/LBS	35-40 FT/LBS
CONTINENTAL	1.8	112					
CONTINENTAL	2.0	124			40-45 FT/LBS	85-95 FT/LBS	70-75 FT/LBS
CONTINENTAL	2.0	122			45-50 FT/LBS	110-120 FT/LBS	10MM= 50-55 12MM= 80-85 FT/LBS
CONTINENTAL	2.0	122			45-50 FT/LBS	110-120 FT/LBS	10MM=10-15,20-25,35-40# COLD, THEN RETORQUE HOT TO 30-35# *
CONTINENTAL	2.0	120			40-45 FT/LBS	85-95 FT/LBS	70-75 FT/LBS
CONTINENTAL	2.1	129			40-45 FT/LBS	70-75 FT/LBS	70-75 FT/LBS
CONTINENTAL	2.2	135			40-45 FT/LBS	85-95 FT/LBS	70-75 FT/LBS
CONTINENTAL	2.2	134			40-45 FT/LBS	85-95 FT/LBS	70-75 FT/LBS
CONTINENTAL	2.3	140			40-45 FT/LBS	7/16" 70-75 FT/LBS	3/8" 35-40#, 7/16" 70-75#, 1/2"95#, 9/16" 135#, 5/8" 150#
CONTINENTAL	2.4	145			40-45 FT/LBS	85-95 FT/LBS	70-75 FT/LBS
CONTINENTAL	2.6	157			35-40 FT/LBS	85-95 FT/LBS	70-75 FT/LBS
CONTINENTAL	2.6	157			20-25 FT/LBS	35-40 FT/LBS	
CONTINENTAL	2.7	164			45-50 FT/LBS	110-120 FT/LBS	10MM=10-15,20-25,35-45# COLD, THEN RETORQUE HOT TO 30-35# *
CONTINENTAL	2.7	164			45-50 FT/LBS	110-120 FT/LBS	10MM= 50-55 FT/LBS, 12MM= 80-85 FT/LBS
CONTINENTAL	2.7	163			40-45 FT/LBS	1/2" BOLTS 85-95 FT/LBS	3/8" BOLT = 35-40 FT/LBS 7/16" BOLT = 70-75 FT/LBS
CONTINENTAL	2.7	164			40-45 FT/LBS	110-120 FT/LBS	10MM= 50-55 12MM= 80-85 FT/LBS
CONTINENTAL	2.7	163			40-45 FT/LBS	85-95 FT/LBS	70-75 FT/LBS
CONTINENTAL	2.7	162			40-45 FT/LBS	85-95 FT/LBS	70-75 FT/LBS
CONTINENTAL	2.8	170			40-45 FT/LBS	100-110 FT/LBS	
CONTINENTAL	2.9	176			35-40 FT/LBS	85-95 FT/LBS	70-75 FT/LBS
CONTINENTAL	3.0	184			40-45 FT/LBS	100-110 FT/LBS	
CONTINENTAL	3.1	186			5/16"=20-25#,3/8"=35-40#,7/16"=70-75#,1/2"=90#,9/16"=105#	5/16"=20-25#,3/8"=35-40#,7/16"=70-75#,1/2"=85-95#,9/16"=105#	3/8"=35-40#, 7/16"=70-75#, 1/2"=95#, 9/16"=135#, 5/8"=150#
CONTINENTAL	3.2	193			75 FT/LBS	100 FT/LBS	3/8=35-40#,7/16=70-75#,1/2=100-110#,9/16=130-140#,5/8=150#
CONTINENTAL	3.2	193			75 FT/LBS	105 FT/LBS	100 FT/LBS
CONTINENTAL	3.3	202			40-45 FT/LBS	100-110 FT/LBS	
CONTINENTAL	3.3	202			40-45 FT/LBS	100-110 FT/LBS	
CONTINENTAL	3.3	199			40-45 FT/LBS	100-110 FT/LBS	
CONTINENTAL	3.4	206	G206		40-45 FT/LBS	85-95 FT/LBS	70-75 FT/LBS
CONTINENTAL	3.4	209			5/16=20-25#,3/8=35-40#,7/16=70-75#,1/2=85-95#,9/16=100-110#	5/16=20-25#,3/8=35-40#,7/16=70-75#,1/2=85-95#,9/16=100-110#	3/8=35-40#, 7/16=70-75#, 1/2=95#, 9/16=135#, 5/8=150#
CONTINENTAL	3.6	218			40-45 FT/LBS	100-110 FT/LBS	GO BY BOLT SIZE
CONTINENTAL	3.7	223			40-45 FT/LBS		

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
CONTINENTAL	3.7	227			40-45 FT/LBS	85-95 FT/LBS	30-40 FT/LBS - USE A CIRCLE PATTERN FOR TORQUE SEQUENCE
CONTINENTAL	3.7	226			40-45 FT/LBS	3/8=40# 7/16=75# 1/2=95# 9/16=120# 5/8=150#; ALUM BLOCKS:70#	3/8=40# 7/16=75# 1/2=110# 9/16=140# 5/8=150#; ALUM HEADS:35#
CONTINENTAL	4.0	242			40-45 FT/LBS		
CONTINENTAL	4.0	245			40-45 FT/LBS	85-95 FT/LBS	30-40 FT/LBS
CONTINENTAL	4.0	244			40-45 FT/LBS	85-95 FT/LBS	30-40 FT/LBS
CONTINENTAL	4.0	243			40-45 FT/LBS	70-75 FT/LBS	
CONTINENTAL	4.2	253			20-25 FT/LBS	35-40 FT/LBS	
CONTINENTAL	4.3	260			90-100 FT/LBS	70-75 FT/LBS	
CONTINENTAL	4.4	271			20-25 FT/LBS	35-40 FT/LBS	
CONTINENTAL	4.4	271			5/16=20-25#,3/8=35-40#,7/16=70-75#,1/2=85-95#,9/16=100-110#	5/16=20-25#,3/8=35-40#,7/16=70-75#,1/2=85-95#,9/16=100-110#	3/8=35-40#, 7/16=70-75#, 1/2=95#, 9/16=135#, 5/8=150#
CONTINENTAL	4.4	271			20-25 FT/LBS	35-40 FT/LBS	
CONTINENTAL	4.5	277			40-45 FT/LBS 3/8 BOLTS	70-75 FT/LBS 7/16 BOLTS	
CONTINENTAL	4.5	277			40-45 FT/LBS	70-75 FT/LBS	
CONTINENTAL	4.8	290			5/16=20-25#,3/8=35-40#,7/16=70-75#,1/2=85-95#,9/16=100-110#	5/16=20-25#,3/8=35-40#,7/16=70-75#,1/2=85-95#,9/16=100-110#	3/8=35-40#,7/16=70-75#,1/2=95#, 9/16=135#, 5/8=150#
CONTINENTAL	4.8	290			20-25 FT/LBS	35-40 FT/LBS	
CONTINENTAL	5.4	330			20-25 FT/LBS	35-40 FT/LBS	
CONTINENTAL	5.4	330			5/16=25# 3/8=40# 7/16=75# 1/2=85-95# 9/16=100-110#	3/8=40# 7/16=75# 1/2=95# 9/16=120# 5/8=150#; ALUM BLOCKS=70#	3/8=40# 7/16=75# 1/2=95# 9/16=135# 5/8=150#; ALUM HEADS 35#
CONTINENTAL	6.0	363			5/16=25# 3/8=45# 7/16=60# 1/2=95# 9/16=100-110#	3/8=40# 7/16=75# 1/2=95# 9/16=110# 5/8=155# ALUM BLOCK: 65#	3/8=40# 7/16=70-75# 1/2=110# 9/16=135# 5/8=150# ALUM HD:35#
CONTINENTAL	6.1	371			5/16=20-25#,3/8=35-40#,7/16=70-75#,1/2=85-95#,9/16=100-110#	5/16=20-25#,3/8=35-40#,7/16=70-75#,1/2=85-95#,9/16=100-110#	3/8=35-40#,7/16=70-75#,1/2=95#,9/16=135#,5/8=150#
CONTINENTAL	6.5	396			40-45 FT/LBS	35-40 FT/LBS	
CONTINENTAL	6.6	405			20-25 FT/LBS		
CONTINENTAL	6.6	405			40-45 FT/LBS		
CONTINENTAL	7.0	427			45-50 FT/LBS	5/16=20-25#,3/8=35-40#,7/16=70-75#,1/2=85-95#,9/16=100-110#	3/8=35-40#,7/16=70-75#,1/2=95#,9/16=135#,5/8=150#
CONTINENTAL	7.0	427			5/16=25# 3/8=45# 7/16=60# 1/2=100# 9/16=110#	3/8=40# 7/16=75# 1/2=95# 9/16=120# 5/8=150#; ALUM BLOCK=70#	3/8=40# 7/16=75# 1/2=95# 9/16=140# 5/8=150#; ALUM HEAD=35#
CONTINENTAL	7.8	478			5/16=25# 3/8=45# 7/16=60# 1/2=100# 9/16=120#	3/8=40# 7/16=75# 1/2=95# 9/16=120# 5/8=150#; ALUM BLOCK=70#	3/8=40# 7/16=75# 1/2=110# 9/16=140# 5/8=155#; ALUM HEAD=35#
CONTINENTAL	8.2	501			5/16=25# 3/8=45# 7/16=60# 1/2=100# 9/16=120#	3/8=40# 7/16=75# 1/2=95# 9/16=120# 5/8=150#; ALUM BLOCKS=70#	3/8=40# 7/16=75# 1/2=110# 9/16=140# 5/8=155#; ALUM HEADS=35#

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
CONTINENTAL	8.4	513			5/16=25# 3/8=45# 7/16=60# 1/2=100# 9/16=120#	3/8=40# 7/16=75# 1/2=95# 9/16=120# 5/8=150#; ALUM BLOCKS=70#	3/8=40# 7/16=75# 1/2=110# 9/16=140# 5/8=155#; ALUM HEADS=35#
CONTINENTAL	9.4	572			5/16=25# 3/8=45# 7/16=60# 1/2=100# 9/16=120#	3/8=40# 7/16=75# 1/2=95# 9/16=120# 5/8=150#; ALUM BLOCKS=70#	3/8=40# 7/16=75# 1/2=110# 9/16=140# 5/8=155#; ALUM HEADS=35#
CONTINENTAL	9.4	572			5/16=20-25#,3/8=35-40#,7/16=70- 75#,1/2=85-95#,9/16=100-110#	5/16=20-25#,3/8=35-40#,7/16=70- 75#,1/2=85-95#,9/16=100-110#	105 FT/LBS
CONTINENTAL	9.9	602			5/16=25# 3/8=45# 7/16=60# 1/2=100# 9/16=120#	3/8=40# 7/16=75# 1/2=95# 9/16=120# 5/8=150#; ALUM BLOCKS=70#	3/8=40# 7/16=75# 1/2=110# 9/16=140# 5/8=155#; ALUM HEADS=35#
CONTINENTAL	9.9	603			5/16=20-25#,3/8=35-40#,7/16=70- 75#,1/2=85-95#,9/16=100-110#	5/16=20-25#,3/8=35-40#,7/16=70- 75#,1/2=85-95#,9/16=100-110#	105 FT/LBS
CONTINENTAL	9.9	603			5/16=20-25#,3/8=35-40#,7/16=70- 75#,1/2=85-95#,9/16=100-110#	5/16=20-25#,3/8=35-40#,7/16=70- 75#,1/2=85-95#,9/16=100-110#	105 FT/LBS
CONTINENTAL	12.3	749			5/16=25# 3/8=45# 7/16=60# 1/2=100# 9/16=120#	3/8=40# 7/16=75# 1/2=95# 9/16=120# 5/8=150#; ALUM BLOCKS=70#	3/8=40# 7/16=75# 1/2=110# 9/16=140# 5/8=155#; ALUM HEADS=35#
CONTINENTAL	13.1	802			5/16=20-25#,3/8=35-40#,7/16=70- 75#,1/2=85-95#,9/16=100-110#	5/16=20-25#,3/8=35-40#,7/16=70- 75#,1/2=85-95#,9/16=100-110#	3/8=35-40#,7/16=70- 75#,1/2=95#,9/16=135#,5/8=150#
CONTINENTAL	13.4	820			5/16=25# 3/8=45# 7/16=60# 1/2=100# 9/16=120#	3/8=40# 7/16=75# 1/2=95# 9/16=120# 5/8=150#; ALUM BLOCKS=70#	3/8=40# 7/16=75# 1/2=110# 9/16=140# 5/8=155#; ALUM HEADS=35#
CUMMINS	1.4	90			35 FT/LBS + 30°	35 FT/LBS + 60°	3/4" 400#, 11/16" 260#
CUMMINS	1.7	105			35 FT/LBS + 60°	35 FT/LBS + 30°	3/4" 400 FT/LBS, 11/16" 260 FT/LBS
CUMMINS	1.7	105			22,40,63 FT/LBS	30,60,90 FT/LBS	42,65 FT/LBS, + 90°
CUMMINS	2.2	140			35 FT/LBS + 60°	35 FT/LBS + 30°	3/4" 400 FT/LBS, 11/16" 260 FT/LBS
CUMMINS	2.3	140			22,40,63 FT/LBS	30,60,90 FT/LBS	42,65 FT/LBS, + 90°
CUMMINS	2.3	140			22,40,63 FT/LBS	30,60,90 FT/LBS	42,65 FT/LBS, + 90°
CUMMINS	3.3	199			29 FT/LBS, +90°	83 FT/LBS, LOOSEN ALL, THEN 98 FT/LBS	51, 80 FT/LBS, +90°
CUMMINS	3.4	210			22,40,63 FT/LBS	30,60,90 FT/LBS	42,65 FT/LBS, + 90°
CUMMINS	3.4	210			22,40,63 FT/LBS	30,60,90 FT/LBS	42,65 FT/LBS, + 90°
CUMMINS	3.9	239		83-98	22, 44 FT/LBS + 60°	37, 45, 66 FT/LBS + 90°	SEE TB 1542R FOR HEAD TORQUE INFORMATION
CUMMINS	3.9	238	QSB	98-04	22,44 FT/LBS, +60° WITH 15W- 40 OIL	37,45,66 FT/LBS, +90° WITH 15W- 40 OIL	59,77,77 FT/LBS, +90°
CUMMINS	4.5	275	QSB	98-04	22,44 FT/LBS, +60° WITH 15W- 40 OIL	37,45,66 FT/LBS, +90° WITH 15W-40 OIL	59,77,77 FT/LBS, +90°
CUMMINS	5.8	352			30, 55, FT/LBS, LOOSEN, 25 FT/LBS + 30° + 30°	60,120,180 FT/LB, LOOSEN, 60,120,180 FT/LB, SIDE BOLT 100#	100-105 FT/LBS
CUMMINS	5.9	359		83-98	22,44 FT/LBS + 60°	37, 45, 66 FT/LBS + 90°	66, 89 FT/LBS, +90° SEE TB 909

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
CUMMINS	5.9	359	B SERIES	98-03	22,44 FT/LBS, +60° WITH 15W-40 OIL	37,45,66 FT/LBS, +90° WITH 15W-40 OIL	59,77,77 FT/LBS, +90°
CUMMINS	6.2	378			20,50#, LOOSEN, 20#, +30°, +30°	55,115,165#, LOOSEN, REPEAT; SIDE BOLTS 35-40,100-110 FT/LB	30,90,140 FT/LBS, RETORQUE HOT
CUMMINS	6.6	401			15,30#, LOOSEN, 15,30#, +60° 4)15# 5)30# 6)60°	65,140#, LOOSEN, 45#, +60° 4)45# 5)60°	
CUMMINS	7.6	464			15#,30#, LOOSEN, 15#,30#, +60°	65#,140#, LOOSEN, 45#, +60°	
CUMMINS	7.6	464			15#,30#, LOOSEN, 15#,30#, +60°	65#,140#, LOOSEN, 45#, +60°	
CUMMINS	7.6	464			15#,30#, LOOSEN, 15#,30#, +60°	140#, LOOSEN, 45#, + 60°	
CUMMINS	7.6	464			15#,30#, LOOSEN, 15#,30#, +60°	65#,140#, LOOSEN, 45#, +60°	
CUMMINS	7.6	464			15#,30#, LOOSEN, 15#,30#, +60°	65#,140#, LOOSEN, 45#, +60°	
CUMMINS	7.6	464			15#,30#, LOOSEN, 15#,30#, +60°	65#,140#, LOOSEN, 45#, +60°	3/4 BOLTS=400 FT/LBS 11/16 BOLTS=260 FT/LBS
CUMMINS	7.7	470			20,50# LOOSEN,20,20#,+30°+30°		
CUMMINS	8.1	495			140 FT/LBS, LOOSEN ONE TURN, 50-55 FT/LBS + 60°	320 FT/LBS, LOOSEN, 140 FT/LBS + 30°	430-450 FT/LBS
CUMMINS	8.3	505		91-00	30,66,88 FT/LBS	37,88,129 FT/LBS	ALL BOLTS 52 FT/LBS, LONG BOLTS 105 FT/LBS, ALL BOLTS +90°
CUMMINS	8.3	504			20,50#, LOOSEN, 20,20#, +30°, +30°	65,125,175#, LOOSEN, 65,125,175# SIDE BLTS:35-40,65-70,100-110#	80-90,110-115 FT/LBS
CUMMINS	8.3	505	ISC/QSC	98-03	FOR TESTING: 89 FT/LBS, FOR ASSEMBLY: 26,52 FT/LBS, +60°	37, 70 FT/LBS, +60°	108, REPEAT 108 FT/LBS, +90°
CUMMINS	8.3	505		85-90	30,66,88 FT/LBS	37,88,129 FT/LBS	27, 110, 148 FT/LBS WITH OIL
CUMMINS	9.1	555			45,90 FT/LBS, LOOSEN, 40-45 FT/LBS, + 60°	65,125,175#, LOOSEN, 65,125,175#, SIDE CAPSCREWS: 40,70,110#	30,90,140 FT/LBS, RETORQUE HOT
CUMMINS	10.0	611	L10	85-90	50,105,155#, LOOSEN, 50,105,155# FT/LBS	50,105,155#, LOOSEN, 50,105,155 FT/LBS	75,125,175#, LOOSEN, 75,125,175 FT/LBS
CUMMINS	10.0	611	L10	91-96	50,105,155#, LOOSEN, 50,105,155 FT/LBS	50,105,155#, LOOSEN, 50,105,155 FT/LBS	75,125,175#, LOOSEN, 75,125,175 FT/LBS
CUMMINS	11.0	672		40-68	75,140#, LOOSEN, 55#, +60°	155,310#, LOOSEN, 145#, +30°	25, 125, 225, 325, 425, 460-480 FT/LBS
CUMMINS	11.0	661	M11	91-01	50,105,155#, LOOSEN COMPLETELY, 50,105,155 FT/LBS	50,105,155#, LOOSEN COMPLETELY, 50,105,155 FT/LBS	100,160#, +90° ROTATE AT LEAST 1 FLAT, BUT NOT MORE THAN 2.**
CUMMINS	11.0	672			75/140 FT/LBS, LOOSEN BOLTS, 30/55 FT/LBS, PLUS 60°	155,310#, LOOSEN, 145#, +30°	25,125,225,375,425,460-480#
CUMMINS	12.2	743			75,140#, LOOSEN, 55#, +60°	155,310#, LOOSEN, 145, +30° THEN 350 FT/LBS	460-480 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
CUMMINS	12.8	784			50,100#, LOOSEN, 30,60#, +60° 30, 60 FT/LBS + 60° TURN		
CUMMINS	14.0	855			25FT LB STEPS-170 FT LBS *	3/4" 90/170/255#,LOOSEN,REPEAT1" 110/210/305#, LOOSEN,REPEAT	100, 220,220 FT/LBS, +90°
CUMMINS	14.0	855		88-91	75 FT/LBS, THEN 170 FT/LBS	1" BOLT 110,210,305 FT/LBS, LOOSEN, REPEAT 110,210,305#	100, 200, 220 FT/LBS, +90^
CUMMINS	14.0	855		88-93	75,170 FT/LBS	3/4" BOLT: 90,170,255 FT/LBS 1" BOLT: 110,210,305 FT/LBS	100, 220, 220 FT/LBS, + 90°
CUMMINS	14.0	855			75,150 FT/LBS		
CUMMINS	14.0	855			75 FT/LBS, THEN 170 FT/LBS		
CUMMINS	14.0	855		91-	75,195 FT/LBS	90,170,255# LOOSEN & REPEAT	100,220, 220 FT/LBS, + 90°
CUMMINS	14.0	855		91-00	75, 195 FT/LBS	90, 170, 255 FT/LBS LOOSEN & REPEAT	100,220, 220 FT/LBS, + 90°
CUMMINS	14.0	855			75,150 FT/LBS	3/4" 90,170,255#,LOOSEN,REPEAT1" 110,210,305#,LOOSEN,REPEAT	100, 220, 220 FT/LBS, +90°
CUMMINS	14.8	903			60, 100 FT/LBS, LOOSEN, 40, 70, 105 FT/LBS	160, 350#, LOOSEN, 90, 180#, +60° S/BOLTS: 25, 75, 150#	80, 135, 185, 240, 300 FT/LBS
CUMMINS	15.0	912	ISX	97-05	52 FT/LBS + 60°	SEE COMMENT BOX BELOW	300 FT/LBS + 90° ADDITIONAL TURN
CUMMINS	18.8	1150			80,150,220#, LOOSEN & REPEAT REPEAT 80,150,220 FT/LBS	200,450 FT/LB, LOOSEN & REPEATREPEAT 200,450 FT/LBS	BLACK BOLTS- 4 STEPS: 370# MAX, OTHERS- 4 STEPS: 360# MAX
CUMMINS	18.8	1150	KT1150		80,150,220#, LOOSEN & REPEAT 80,150,220 FT/LBS	200,450 FT/LB, LOOSEN & REPEAT 200,450 FT/LBS	BLACK BOLTS- 4 STEPS: 370# MAX, OTHERS- 4 STEPS: 360# MAX
CUMMINS	23.2	1414					
CUMMINS	24.4	1486		60-70			
CUMMINS	28.0	1710			60,100,140-150#, LOOSEN,REPEATLOOSEN, REPEAT FRIST TWO STEPS	420-460 FT/LBS SIDE BOLTS - 135-145 FT/LBS	SEE TB 1472
CUMMINS	28.0	1710			70-80,140-150#, LOOSEN, REPEAT 70-80, 140-150#	420-460 FT/LBS SIDE BOLTS - 135-145 FT/LBS	SEE TB 1472
CUMMINS	38.0	2300			80,150,220#, LOOSEN, REPEAT 80,150,220 FT/LBS	200,450 FT/LB, LOOSEN, REPEAT 200,450 FT/LBS	BLACK BOLTS- 4 STEPS: 370# MAX, OTHERS- 4 STEPS: 360# MAX
DAEWOO	1.6	98		99-03	18 FT/LBS, +30°, +15°	37 FT/LBS, +45°, +15°	18 FT/LBS, +60°, +60°, +60°, +10°
DAEWOO	2.0	122	TC20N	99-02	26 FT/LBS, +45°, +15°	37 FT/LBS, +45°, +15°	18 FT/LBS, +90°, +90°, +90°
DAEWOO	2.2	134	T22SED	99-02	26 FT/LBS, +45°, +15°	37 FT/LBS, +45°, +15°	18 FT/LBS, +90°, +90°, +90°
DAEWOO	3.3	199	DB33A		11MM BOLT=85-89#, 11T & 12T BOLTS=69-72#	174 FT/LBS	83 FT/LBS
DAEWOO	8.1	492	D1146	97-03			
DAEWOO	11.1	674	DE12T		202 FT/LBS	217 FT/LBS, BALANCE WGT FIXING BOLT 65 FT/LBS	12 POINT BOLTS: 43#, +180°, +150°, 6 POINT (HEX): 177 FT/LBS





Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
DDC	4.7	284			65-75 FT/LBS CASTELLATED NUT, 60-70 FT/LBS LUBRITE NUT	190-200 FT/LBS	170-180# BOLTS, 175-185# NUTS
DDC	5.2	318			5/16" BOLTS 24-28 FT/LBS 3/8" BOLTS 40-45 FT/LBS	120-130 FT/LBS	170-180 FT/LBS
DDC	7.0	426			65-75 FT/LBS CASTELLATED NUT, 60-70 FT/LBS LUBRITE NUT	190-200 FT/LBS	170-180# BOLTS, 175-185# NUTS
DDC	7.0	426			65-75 FT/LBS CASTELLATED NUT, 60-70 FT/LBS LUBRITE NUT	190-200 FT/LBS	170-180# BOLTS, 175-185# NUTS
DDC	7.0	426			65-75 FT/LBS CASTELLATED NUT, 60-70 FT/LBS LUBRITE NUT	165-175 FT/LBS	170-180# BOLTS, 175-185# NUTS
DDC	7.0	426			65-75 FT/LBS CASTELLATED NUT, 60-70 FT/LBS LUBRITE NUT	190-200 FT/LBS	170-180# BOLTS, 175-185# NUTS
DDC	7.0	426			65-75 FT/LBS CASTELLATED NUT, 60-70 FT/LBS LUBRITE NUT	190-200 FT/LBS	170-180# BOLTS, 175-185# NUTS
DDC	7.0	426			65-75 FT/LBS CASTELLATED NUT, 60-70 FT/LBS LUBRITE NUT	190-200 FT/LBS	170-180# BOLTS, 175-185# NUTS
DDC	7.0	426			65-75 FT/LBS CASTELLATED NUT, 60-70 FT/LBS LUBRITE NUT	190-200 FT/LBS	170-180# BOLTS, 175-185# NUTS
DDC	7.0	426			65-75 FT/LBS CASTELLATED NUT, 60-70 FT/LBS LUBRITE NUT	165-175 FT/LBS	170-180# BOLTS, 175-185# NUTS
DDC	7.0	426			65-75 FT/LBS CASTELLATED NUT, 60-70 FT/LBS LUBRITE NUT	165-175 FT/LBS	170-180# BOLTS, 175-185# NUTS
DDC	7.0	424			40-45 FT/LBS **	120-130 FT/LBS	180-190 FT/LBS
DDC	7.0	426			65-75 FT/LBS CASTELLATED NUT, 60-70 FT/LBS LUBRITE NUT	190-200 FT/LBS	170-180# BOLTS, 175-185# NUTS
DDC	7.0	426			65-75 FT/LBS CASTELLATED NUT, 60-70 FT/LBS LUBRITE NUT	165-175 FT/LBS	170-180# BOLTS, 175-185# NUTS
DDC	7.6	466	40 SERIES	98-02	115 FT/LBS	160 FT/LBS	110, 155, 165 FT/LBS
DDC	7.6	466		94-99	115 FT/LBS	160 FT/LBS	110, 155, 165 FT/LBS
DDC	8.2	500		80-89	59-70 FT/LBS	INNER: 103-108 FT/LBS OUTER: 66-76 FT/LBS	14MM BOLTS 145 FT/LBS OR WITH 15MM BOLTS 110 FT/LBS +90°
DDC	8.2	500			59-70 FT/LBS	INNER: 103-108 FT/LBS OUTER: 66-76 FT/LBS	14MM BOLTS=145 FT/ LBS OR 15MM BOLTS=110 FT/ LBS +90°



Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
DDC	8.5	518	50 SERIES	92-05	118-137 FT/LBS WITH CLEAN ENGINE OIL	347-391 FT/LBS	185-210 FT/LBS ** TORQUE TWICE **
DDC	8.7	530	40 SERIES	98-02	115 FT/LBS	160 FT/LBS	110,155,165 FT/LBS
DDC	9.1	552			60-70 FT/LBS	TB-629	230-240# NEW HEAD &/OR BLOCK, 200-210# USED HEAD &/OR BLOCK
DDC	9.3	568			65-75 FT/LBS CASTELLATED NUT, 60-70 FT/LBS LUBRITE NUT	165-175 FT/LBS	170-180# BOLTS, 175-185# NUTS
DDC	9.3	568			65-75 FT/LBS CASTELLATED NUT, 60-70 FT/LBS LUBRITE NUT	165-175 FT/LBS	170-180# BOLTS, 175-185# NUTS
DDC	9.3	568			65-75 FT/LBS CASTELLATED NUT, 60-70 FT/LBS LUBRITE NUT	165-175 FT/LBS	170-180# BOLTS, 175-185# NUTS
DDC	9.3	568			65-75 FT/LBS CASTELLATED NUT, 60-70 FT/LBS LUBRITE NUT	190-200 FT/LBS	170-180# BOLTS, 175-185# NUTS
DDC	9.3	568			65-75 FT/LBS CASTELLATED NUT, 60-70 FT/LBS LUBRITE NUT	190-200 FT/LBS	170-180# BOLTS, 175-185# NUTS
DDC	10.8	660					
DDC	11.1	677	60 SERIES	86-04	118-137 FT/LBS	347-391 FT/LBS	1986-2002=185-210#, SEPT 2002 & UP=220# - SEE TB 2059 & 2213
DDC	12.1	736			60-70 FT/LBS, * WRIST PIN BOLTS 55-60 FT/LBS USE ANTI SEIZ *	FORMER 250-260#, LATE(CAPTURED WASHER) 230-240#	200-210 FT/LBS
DDC	12.7	775	60 SERIES	86-04	118-137 FT/LBS	347-391 FT/LBS	1986-2002=185-210#, SEPT 2002 & UP=220# - SEE TB 2059 & 2213
DDC	14.0	852			65-75 FT/LBS CASTELLATED NUT, 60-70 FT/LBS LUBRITE NUT	190-200 FT/LBS	170-180# BOLTS, 175-185# NUTS
DDC	18.1	1104			60-70 FT/LBS		
DDC	18.6	1136			65-75 FT/LBS, CASTELLATED NUT,60-70 FT/LBS LUBRITE NUT		
DDC	24.1	1472			60-70FT/LBS	230-240 FT/LBS	230-240 FT/LBS W/INRNL COMP#2
DDC	39.1	2384			45-55 FT/LBS, + 130-150°	280-290 FT/LBS	140-150 FT/LBS 90-100 FT/LBS ROCKER SHAFT
DEUTZ	0.0	0			22 FT/LBS, + 60°, + 60°	37 FT/LBS, + 30°, + 60°, + 60°	44 FT/LBS, + 60°, + 60°, + 60°, + 30°
DEUTZ	0.0	0			22 FT/LBS,+ 60°,+ 30° USE NEW	22 FT/LBS,+ 60°,+ 45°	30#,+ 45°,+ 45°,+ 45°,+ 30°
DEUTZ	0.0	0			22 FT/LBS + 60°, 60°		
DEUTZ	0.4	25			26 FT/LBS	26 FT/LBS	30 FT/LBS
DEUTZ	0.7	41			33 FT/LBS	26 FT/LBS	40 FT/LBS
DEUTZ	1.4	83			22 FT/LBS, + 60°, + 60°	37 FT/LBS, + 60°, + 45°	22,59,118 FT/LBS, + 120°
DEUTZ	1.4	83			22 FT/LBS, + 60°, + 60°	37 FT/LBS, + 60°, + 45°	22, 59, 118 FT/LBS, + 120°
DEUTZ	1.4	83			22 FT/LBS, + 60°, + 60°	37 FT/LBS, + 60°, + 45°	22,59,118 FT/LBS, + 120°

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
DEUTZ	1.7	101			22 FT/LBS, + 30°, + 60°		29.5#,+ 45°, + 45°, + 45°, + 30°
DEUTZ	1.7	101			22 FT/LBS, + 30°, + 60°	22 FT/LBS, + 30°, + 30°	29.5#,+ 45°, + 45°, + 45°, + 30°
DEUTZ	1.9	115			22 FT/LBS, +60°, +30°	22 FT/LBS, +60°, +45°	30 FT/LBS,+45°,+45°,+45°,+30°
DEUTZ	1.9	115			22 FT/LBS, +60°, +30°	22 FT/LBS, +60°, +45°	30 FT/LBS,+45°,+45°,+45°,+30°
DEUTZ	2.7	167			22 FT/LBS, +60°, +60°	37 FT/LBS, +60°, +45°	22, 59, 118 FT/ LBS, +120°
DEUTZ	2.8	172			22 FT/LBS, +60°, +30°	22 FT/LBS, +60°, +45°	30 FT/LBS,+45°,+45°,+45°,+30°
DEUTZ	2.8	172			22 FT/LBS, +60°, +30°	22 FT/LBS, +60°, +45°	30 FT/LBS,+45°,+45°,+45°,+30°
DEUTZ	3.8	229			22 FT/LBS, +60°, +30°	22 FT/LBS, +60°, +45°	30 FT/LBS,+45°,+45°,+45°,+30°
DEUTZ	4.1	249			22 FT/LBS,+ 60°, + 30° USE NEW	22 FT/LBS,+ 60°, + 45°	30#,+ 45°, + 45°, + 45°, + 30°
DEUTZ	4.1	249			22 FT/LBS, +60°, +30°, USE NEW	22 FT/LBS, +60°, +45°	30 FT/LBS, +45°, +45°, +45°, +30°
DEUTZ	4.7	286			22 FT/LBS, +60°, +30°	22 FT/LBS, +60°, +45°	30 FT/LBS,+45°,+45°,+45°,+30°
DEUTZ	5.6	343			22 FT/LBS, +60°, +30°	22 FT/LBS, +60°, +45°	30 FT/LBS,+45°,+45°,+45°,+30°
DEUTZ	5.6	343			22 FT/LBS, +60°, +30°	22 FT/LBS, +60°, +45°	30 FT/LBS,+45°,+45°,+45°,+30°
DEUTZ	5.6	343			22 FT/LBS, +60°, +30°	22 FT/LBS, +60°, +45°	30 FT/LBS,+45°,+45°,+45°,+30°
DEUTZ	6.1	374				SNUG, 30° + 60° + 60° SIDE BOLTS, SNUG, 30° + 30°	
DEUTZ	6.1	374			22 FT/LBS,+ 60°, + 30° USE NEW	22 FT/LBS,+ 60°, + 45°	30#,+ 45°, + 45°, + 45°, + 30°
DEUTZ	6.1	374			22 FT/LBS, +60°, +30° - USE NEW	22 FT/LBS, +60°, +45°	30# +45°, +45°, +45°, +30°
DEUTZ	6.1	374				SNUG, 30° + 60° + 60° SIDE BOLTS; SNUG, 30° + 30°	
DEUTZ	8.5	517			22 FT/LBS, +60°+60°	44#, +30°+60°+60° VERTICAL 44#, +30°+30° HORIZONTAL	44 FT/LBS, +60°+60°+60°
DEUTZ	9.6	584			22 FT/LBS,+60°+60°	44#, +30°+60°+60° VERTICAL, 44#, +30°+30° HORIZONTAL	44#, +60°+60°+60°, W/RR350 HEADMATERIAL: 44#, +60°+60°+60°+30°
DEUTZ	11.3	690			22 FT/LBS, +60°+60°	44#, +30°+60°+60° VERTICAL, 44 FT/LBS, +30°+60° HORIZONTAL	44 FT/LBS, +60°+60°+60°
DEUTZ	12.0	731		85	190-200 FT/LBS	185 FT/LBS	185 FT/LBS
DEUTZ	12.8	779			22 FT/LBS,+60°+60°	44#, +30°+60°+60° VERTICAL, 44#, +30°+30° HORIZONTAL	44#, +60°+60°+60°, W/RR350 HEADMATERIAL: 44#, +60°+60°+60°+30°
DEUTZ	13.4	817			20 FT/LBS, +60^, +60^	VERTICAL: 44#, +30^, +60^, +60^ THEN HORIZONTAL: 44#, +30^, +30^	
DEUTZ	14.1	862			22 FT/LBS, +60°+60°	44#, +30°+60°+60° VERTICAL, 44 FT/LBS, +30°+30° HORIZONTAL	44 FT/LBS, +60°+60°+60°
DEUTZ	14.7	897			22 FT/LBS, +60°+60°	44#, +30°+60°+60° VERTICAL, 44 FT/LBS, +30°+30° HORIZONTAL	44 FT/LBS, +60°+60°+60°
DEUTZ	16.0	973			22 FT/LBS, +60°+60°	44#, +30°+60°+60° VERTICAL, 44 FT/LBS, +30°+30° HORIZONTAL	44#, +60°+60°+60°, W/RR350 HEADMATERIAL: 44#, +60°+60°+60°+30°
DEUTZ	16.7	1021			20 FT/LBS, +60^, +60^	VERTICAL: 44#, +30^, +60^, +60^ THEN HORIZONTAL: 44#, +30^, +30^	
DEUTZ	17.0	1035			22 FT/LBS, +60°+60°	44#, +30°+60°+60° VERTICAL, 44 FT/LBS, +30°+30° HORIZONTAL	44 FT/LBS, +60°+60°+60°
DEUTZ	19.1	1168			22 FT/LBS,+60°+60°	44#, +30°+60°+60° VERTICAL, 44#, +30°+30° HORIZONTAL	44#, +60°+60°+60°, W/RR350 HEADMATERIAL: 44#, +60°+60°+60°+30°

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
DEUTZ	20.1	1225			20 FT/LBS, +60°, +60°	VERTICAL: 44#, +30°, +60°, +60° THEN HORIZONTAL: 44#, +30°, +30°	
FERGUSON	1.9	113			42-46 FT/LBS	90-100 FT/LBS	60-65 FT/LBS
FERGUSON	2.0	120		46-53	35-40 FT/LBS		
FERGUSON	2.1	134			40-45 FT/LBS		
FERGUSON	2.1	127			50-55 FT/LBS	80-85 FT/LBS	60-65 FT/LBS
FERRARI	3.0	183		77-84	48 FT/LBS	65 FT/LBS	72 FT/LBS
FIAT	0.0	0			88.5 FT/LBS		
FIAT	0.9	55		73			29 FT/LBS
FIAT	1.1	68		73	38 FT/LBS		69 FT/LBS
FIAT	1.1	66		80-87	38 FT/LBS	59 FT/LBS	15,33,69 FT/LBS
FIAT	1.3	79		73-78	38 FT/LBS	58 FT/LBS	69 FT/LBS
FIAT	1.4	88		73	38 FT/LBS	58 FT/LBS	58 FT/LBS
FIAT	1.5	91		79-80	38 FT/LBS		69 FT/LBS
FIAT	1.5	91		81-83			69 FT/LBS
FIAT	1.6	98		73	40 FT/LBS	58 FT/LBS	58 FT/LBS
FIAT	1.8	107		75-78	37 FT/LBS	FRONT: 59 FT/LBS OTHERS: 83 FT/LBS	54-56 FT/LBS
FIAT	2.0	122		78-80	36 FT/LBS	58, 83 FT/LBS	61 FT/LBS
FIAT	2.0	122		81-83	36 FT/LBS	58, 83 FT/LBS	61 FT/LBS
FIAT	2.6	158			75-85 FT/LBS	103-113 FT/LBS	82-91 FT/LBS
FIAT	3.7	224	8041M		80 FT/LBS	111 FT/LBS	111 FT/LBS
FIAT	3.7	224			61-68 FT/LBS	59 FT/LBS + 90°	80 FT/LBS
FIAT	4.6	278	B10		91-97 FT/LBS	98-105 FT/LBS	166-173 FT/LBS
FIAT	5.5	336			61-68 FT/LBS	59 FT/LBS, +90°	44 FT/LBS, +90°, +90° ----> DO NOT EXCEED 144 FT/LBS *
FIAT	5.8	355		88-	80 FT/LBS		109 FT/LBS
FIAT	5.9	358			30 FT/LBS, + 60°	59 FT/LBS, + 90°	44 FT/LBS, +90°, +90°-- DO NOT EXCEED 144# MAX TORQUE *
FIAT	6.0	366			61-68 FT/LBS	59 FT/LBS, + 90°	44#, + 90°, + 90°, ----> DO NOT EXCEED 144 FT/LBS *
FIAT	6.0	366			30 FT/LBS, + 60°	59 FT/LBS, + 90°	44#, + 90°, + 90°, ---> DO NOT EXCEED 144 FT/LBS *
FIAT	8.1	494			88.5 FT/LBS	155 FT/LBS	88,125,162 FT/LBS
FIAT	13.8	842			202 FT/LBS	304 FT/LBS	217 FT/LBS
FORD	0.7	43	LEK752C2		18-20 FT/LBS		108-112 FT/LBS
FORD	0.7	43	LEK757C		18-20 FT/LBS		94 FT/LBS
FORD	0.8	49	LEK802D		18-20 FT/LBS		110-114 FT/LBS
FORD	0.8	49	LEK802D/1200		18-20 FT/LBS	52-60 FT/LBS	110-114 FT/LBS
FORD	0.9	53			22-25 FT/LBS	18-25 FT/LBS	33-36 FT/LBS
FORD	1.0	58			22-25 FT/LBS	18-22 FT/LBS	33-36 FT/LBS
FORD	1.1	67		89-92	3 FT/LBS, + 90°	64-75 FT/LBS	22 FT/LBS, + 90°, + 90°
FORD	1.1	67					
FORD	1.1	69	LET862C		59-63 FT/LBS		110-114 FT/LBS
FORD	1.1	67	KSG 1.1	93-98	30-35 FT/LBS	55-60 FT/LBS	65-70 FT/LBS
FORD	1.1	68	K773		18-20 FT/LBS	36-39 FT/LBS	44-48 FT/LBS SMALL NUTS, 111-114 FT/LBS LARGE NUTS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
FORD	1.1	67		84-88	19-24 FT/LBS	64-75 FT/LBS	8-11,30-37,60-66 FT/LBS, WAIT 10-20 MINUTES, 74-81 FT/LBS
FORD	1.3	79		89-	3 FT/LBS, + 90°	64-75 FT/LBS	22 FT/LBS, + 90°, + 90°
FORD	1.3	81	SOHC	88-89	11-13,22-25 FT/LBS	22-27 FT/LBS	35-40,56-60 FT/LBS
FORD	1.3	81	SOHC	89-97	11-13,22-25 FT/LBS	40-44 FT/LBS	35-40,56-60 FT/LBS
FORD	1.3	77	LE892		59-63 FT/LBS		110-114 FT/LBS
FORD	1.3	79		84-89	21-27 FT/LBS	64-75 FT/LBS	8-11,30-37,60-66 FT/LBS, WAIT 10-20 MINUTES, 74-81 FT/LBS
FORD	1.3	81	J843		36-40 FT/LBS	36-40 FT/LBS	65-69 FT/LBS
FORD	1.4	87	LEM853		32-36 FT/LBS	52-60 FT/LBS	4-48 FT/LBS SMALL NUTS, 111-114 FT/LBS LARGE NUTS
FORD	1.4	85		80-92	32-36 FT/LBS	36-39 FT/LBS	10MM BOLT: 45 FT/LBS, 14MM BOLT: 95 FT/LBS
FORD	1.4	85	H843		32-36 FT/LBS	36-39 FT/LBS	44-48 SMALL NUTS, 111-114 FT/LBS LARGE NUTS
FORD	1.5	91	N843		36-40 FT/LBS	36-40 FT/LBS	65-69 FT/LBS
FORD	1.5	91	KENT	62-63	30-35 FT/LBS	65-70 FT/LBS	65-70 FT/LBS
FORD	1.6	98	CVH	83-85	19-25 FT/LBS	67-80 FT/LBS	40 FT/LBS, + 90°, + 90°
FORD	1.6	98	VGS416	78-93	30-35 FT/LBS	55-60 FT/LBS	65-70 FT/LBS
FORD	1.6	98	CVH	83-85	19-25 FT/LBS	67-80 FT/LBS	40 FT/LBS, + 90°, + 90°
FORD	1.6	98		88-88	35-38 FT/LBS	40-43 FT/LBS	59-64#, WARM ENG, 69-72 FT/LBS
FORD	1.6	98	DOHC	91-94	37-40 FT/LBS	40-43 FT/LBS	35-40 FT/LBS, 56-60 FT/LBS
FORD	1.6	98		87-92	35-38 FT/LBS	40-43 FT/LBS	40,60 FT/LBS
FORD	1.6	98	CVH	83-85	19-25 FT/LBS	67-90 FT/LBS	40 FT/LBS, + 90°, + 90°
FORD	1.6	98	KSG 1.6	78-96	30-35 FT/LBS	55-60 FT/LBS	65-70 FT/LBS
FORD	1.6	98	CVH	81-82	19-25 FT/LBS	67-90 FT/LBS	40 FT/LBS, + 90°, + 90°
FORD	1.6	98	OHV	76-80	30-35 FT/LBS	55-60 FT/LBS	30,50,65-70 FT/LBS
FORD	1.6	98		78-80	30-35 FT/LBS	55-60 FT/LBS	65-70 FT/LBS
FORD	1.6	98		80	30-35 FT/LBS	65-70 FT/LBS	20-30, 50-55, 65-70 FT/LBS
FORD	1.6	98	CVH	83-85	19-25 FT/LBS	67-80 FT/LBS	40 FT/LBS, + 90°, + 90°
FORD	1.6	98	DOHC	91-94	37-40 FT/LBS	40-43 FT/LBS	35-40 FT/LBS, 56-60 FT/LBS
FORD	1.6	98	OHV	70-73	30-35 FT/LBS	65-70 FT/LBS	65-70 FT/LBS
FORD	1.6	98	CVH	83-85	19-25 FT/LBS	67-90 FT/LBS	40 FT/LBS, + 90°, + 90°
FORD	1.7	104			18-22 FT/LBS	65-75 FT/LBS	30-40,40-50,50-60 FT/LBS
FORD	1.7	104			58-62 FT/LBS	51-58 FT/LBS	65-69 FT/LBS
FORD	1.8	112	DOHC	91-98	35-37 FT/LBS	40-43 FT/LBS	56-60 FT/LBS
FORD	1.8	110		72-78	31 FT/LBS (75-78), 30# (73-74)	63 FT/LBS (1975-78) 60 FT/LBS 1973-74	70 FT/LBS
FORD	1.9	116	CVH	86-90	19-25 FT/LBS	67-80 FT/LBS	30,44 FT/LBS, + 90°, + 90°
FORD	1.9	116	CVH	86-96	19-25 FT/LBS	67-80 FT/LBS	44 FT/LBS, + 90°, + 90°
FORD	1.9	116	CVH	87-96	19-25 FT/LBS	67-80 FT/LBS	30, 44 FT/LBS, + 90°, + 90°
FORD	2.0	122		84-87	51-54 FT/LBS	61-65 FT/LBS	20 FT/LBS, + 90°, + 90°
FORD	2.0	122	N844	93-04	36-40 FT/LBS	36-40 FT/LBS	65-69 FT/LBS
FORD	2.0	122	SPI	97-03	26-30 FT/LBS	66-79 FT/LBS	30-44 FT/LBS, +90°, +90°
FORD	2.0	122		74-74	29-34 FT/LBS	65-75 FT/LBS	14-29,36-50,65-80 FT/LBS
FORD	2.0	122		71-74	29-34 FT/LBS	65-75 FT/LBS	75-80 FT/LBS
FORD	2.0	122		03-05	26 FT/LBS, +90°	18 FT/LBS, +60°	15, 30 FT/LBS, +90°

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
FORD	2.0	120		39-52	35-40 FT/LBS	75-85 FT/LBS	BOLTS 65-70 FT/LBS, NUTS: 50-55#
FORD	2.0	122		83-88	30-36 FT/LBS	50-60, 80-90 FT/LBS	50-60, 80-90 FT/LBS
FORD	2.0	122		81-82	31 FT/LBS	63 FT/LBS	63-68 FT/LBS
FORD	2.0	122		79-80	36-40 FT/LBS	63 FT/LBS	65-69 FT/LBS COLD, 69-72 FT/LBS NORMAL TEMP
FORD	2.0	122		93-97	16-19 FT/LBS, + 90°	13-16 FT/LBS, + 90°	13-16 FT/LBS, 2ND STEP + 90°, 3RD STEP 90°
FORD	2.0	122	ZETEC-CNG	96-00	16-19 FT/LBS, + 90°	13-16 FT/LBS, + 90°	18, 33 FT/LBS, + 105° NEW BOLTS
FORD	2.0	122		84-85	25-30, 30-36 FT/LBS	50-60, 80-90 FT/LBS	50-60, 80-90 FT/LBS
FORD	2.0	122	ZETEC	95-03	16-19 FT/LBS, + 90°	13-16 FT/LBS, + 90°	18, 33 FT/LBS, + 105° NEW BOLTS
FORD	2.2	136		40-	40 FT/LBS	80 FT/LBS	
FORD	2.2	134		83-84	50-54 FT/LBS	80-85 FT/LBS	80-85 FT/LBS
FORD	2.2	136		37-40	22-24 FT/LBS	80 FT/LBS	
FORD	2.2	133		89-92	48-51 FT/LBS	61-65 FT/LBS	59-64 FT/LBS
FORD	2.2	133		89-92	48-51 FT/LBS	61-65 FT/LBS	59-64 FT/LBS
FORD	2.2	134		54-60	40-50 FT/LBS, WEIGHT TOTAL = 840 GRAMS	95-105 FT/LBS	80-85 FT/LBS ROCKER ARM SUPPORT 40-55 FT/LB
FORD	2.3	140		85-86	21-26 FT/LBS	52-56 FT/LBS	51-59, 70-76 FT/LBS
FORD	2.3	140		76-80	30-36 FT/LBS	80-90 FT/LBS	60,90 FT/LBS
FORD	2.3	140		79-80	30-36 FT/LBS	80-90 FT/LBS	50-60,80-90 FT/LBS
FORD	2.3	140		76-79	30-36 FT/LBS	80-90 FT/LBS	50-60,80-90 FT/LBS
FORD	2.3	140		83-88	30-36 FT/LBS	80-90 FT/LBS	50-60,80-90 FT/LBS
FORD	2.3	138			58-62 FT/LBS	51-58 FT/LBS	65-69 FT/LBS - ROCKER ARM NUT 20-29 FT/LBS
FORD	2.3	140		74-75	30-36 FT/LBS	80-90 FT/LBS	50-60,80-90 FT/LBS
FORD	2.3	140		80-87	30-36 FT/LBS	80-90 FT/LBS	50-60, 80-90 FT/LBS
FORD	2.3	140		85-86	21-26 FT/LBS	52-56 FT/LBS	51-59, 70-76 FT/LBS
FORD	2.3	140		83-85	30-36 FT/LBS	80-90 FT/LBS	50-60,80-90 FT/LBS
FORD	2.3	140		85-91	21-26 FT/LBS	52-56 FT/LBS	51-59, 70-76 FT/LBS
FORD	2.3	141		87-94	21-26 FT/LBS	52-56 FT/LBS	51-59, 70-76 FT/LBS
FORD	2.3	138	T854-B		58-62 FT/LBS	51-58 FT/LBS	65-69 FT/LBS
FORD	2.3	140		85-87	33-34 FT/LBS	55-61 FT/LBS	76-83 COLD, 84-90 HOT FT/LBS
FORD	2.3	140		89-98	25-30,30-36 FT/LBS	50-60, 80-90 FT/LBS	50-60, 80-90 FT/LBS
FORD	2.3	140		80-84	30-36 FT/LBS	80-90 FT/LBS	50-60,80-90 FT/LBS
FORD	2.3	140	LRG423	95-01	30-36 FT/LBS	50-60, 75-85 FT/LBS	52 FT/LBS, REPEAT 52 FT/LBS, + 90-100°
FORD	2.3	140	LSG423		30-36 FT/LBS	80-90 FT/LBS	50-60, 80-90 FT/LBS
FORD	2.3	140		85-88	25-30, 30-36 FT/LBS	50-60, 80-90 FT/LBS	50-60, 80-90 FT/LBS
FORD	2.3	140		81-82	30-36 FT/LBS	80-90 FT/LBS	60,90 FT/LBS
FORD	2.3	140		83-86	21-26 FT/LBS	52-66 FT/LBS	51-59, 70-76 FT/LBS
FORD	2.3	140		91-93	30-36 FT/LBS	80-90 FT/LBS	50-60, 80-90 FT/LBS
FORD	2.3	140		01-04	26 FT/LBS + 90°	63 FT/LBS, TIGHTEN THRUST LOCATION LAST	44 IN/LBS, 11, 33 FT/LBS + 90° + 90°
FORD	2.4	149		84-85	14 FT/LBS + 70°	43-49 FT/LBS	43 FT/LBS, WAIT 15 MIN.+ 90° +RUN ENGINE 20 MINUTES, + 90°***
FORD	2.4	144		61-67	30-36 FT/LBS	110-115 FT/LBS	100-105 FT/LBS
FORD	2.4	144		61-67	30-36 FT/LBS		
FORD	2.4	144		60-64	30-36 FT/LBS	60-70 FT/LBS	65-75 FT/LBS
FORD	2.4	144			35-45,45-55 FT/LBS		100-110 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
FORD	2.4	144			50-55 FT/LBS CADMIUM, 65-70 FT/LBS PLAIN	90-95 FT/LBS	55-60 FT/LBS
FORD	2.5	155	DURATEC	95-02	26-33 FT/LBS, + 90-120° USE NEW BOLTS	29 FT/LBS, + 90° USE NEW BOLTS - BOLTS 17-22- 18.5 FT/LB	27-32#, +90°, LOOSEN 360°,27-32#, +90°, +90° USE NEW BOLTS
FORD	2.5	153	99L	93-99	16-19 FT/LBS, +85-95°	"4" BOLT HEAD:17-19# +80°, "1" BOLT HEAD:17-19# +70° ***	17-19 FT/LBS, +85-95°, +85-95° NEW BOLTS
FORD	2.5	152			50-55 FT/LBS CADMIUM, 65-70 FT/LBS PLAIN	90-95 FT/LBS	55-60 FT/LBS
FORD	2.5	152		98-00	26-30,31-36 FT/LBS	15 FT/LBS, +80°	52,52 FT/LBS, +90-100°
FORD	2.5	153		86-91	21-26 FT/LBS	51-66 FT/LBS	52-59, 70-76 FT/LBS
FORD	2.6	0					
FORD	2.6	158		61-75	60-65 FT/LBS	115-125 FT/LBS	60,90,115 FT/LBS
FORD	2.6	158		68-75	60-65 FT/LBS	115-125 FT/LBS	60,90,115 FT/LBS
FORD	2.6	159		72-73	22-26 FT/LBS	65-75 FT/LBS	65-80 FT/LBS
FORD	2.8	172		55-60	45-50 FT/LBS	110-115 FT/LBS	105-115 FT/LBS
FORD	2.8	171		74-79	21-25 FT/LBS	65-75 FT/LBS	65-80 FT/LBS
FORD	2.8	171		83-86	21-25 FT/LBS	65-75 FT/LBS	29-40,40-51,70-85 FT/LBS
FORD	2.8	171		75-77	21-25 FT/LBS	65-75 FT/LBS	65-80 FT/LBS
FORD	2.8	171		74	21-25 FT/LBS	65-75 FT/LBS	65-80 FT/LBS
FORD	2.8	172		53-80	45-50 FT/LBS SQUIRT HOLE-CAMSIDE OF BLK	90-105 FT/LBS	65-70 FT/LBS, 1/2" BOLTS: 110 FT/LBS
FORD	2.8	170		61-72	19-24 FT/LBS	65-75 FT/LBS	70-75 FT/LBS
FORD	2.9	175	BSD-329		60-65 FT/LBS	115-125 FT/LBS	1/2" BOLTS: 90,100,110 FT/LBS,9/16" BOLTS: 156,190,217 FT/LB
FORD	2.9	175		65-68	60-65 FT/LBS	115-125 FT/LBS	60,90,115 FT/LBS
FORD	2.9	175		61-75	60-65 FT/LBS	115-125 FT/LBS	60,90,115 FT/LBS
FORD	2.9	177		86-92	21-25 FT/LBS	65-75 FT/LBS	22,51-55 FT/LBS, WAIT 5 MIN, THEN ROTATE 90°
FORD	2.9	177		87-90	21-25 FT/LBS	65-75 FT/LBS	22,51-55 FT/LBS, WAIT 5 MIN, THEN ROTATE 90°
FORD	2.9	177		15-27	45 FT/LBS	60-70 FT/LBS	40,40,50,RUN HOT THEN 60FT/LBS SEE COMMENTS FOR SEQUENCE
FORD	3.0	183	VULCAN	97-03	23-29 FT/LBS	63-69 FT/LBS	53 FT/LBS, LOOSEN 1 FULL TURN,37,68 FT/LBS - SEE TB 2063 **
FORD	3.0	183		96-03	23-29 FT/LBS	63-69 FT/LBS	53 FT/LBS, LOOSEN 1 FULL TURN, 37,68 FT/LBS - SEE TB 2063 **
FORD	3.0	183		00-03	23-29 FT/LBS	56-62 FT/LBS	35-39#, LOOSEN 1 FULL TURN, 20-24#, +90°, +90° - SEE TB 2063
FORD	3.0	183			60-65 FT/LBS	115-125 FT/LBS	90,100,110 FT/LBS
FORD	3.0	182	DURATECH	96-04	29-33 FT/LBS, + 90-120°	TB1773	27-32#, +85-95°, LOOSEN 360°, 27-32#, +85-95°, +85-95° *
FORD	3.0	183		86-90	26 FT/LBS	63-69 FT/LBS	37, 68 FT/LBS USE NEW BOLTS
FORD	3.0	183		90-99	23-29 FT/LBS	56-62 FT/LBS	53 FT/LBS, LOOSEN 1 FULL TURN, 37,68 FT/LBS - SEE TB 2063 **
FORD	3.0	181		93-99	10-12, 28-32 FT/LBS	67-74 FT/LBS	22#,43#, LOOSEN, 22#,43-47# BOLT "A": 6 FT/LBS
FORD	3.0	182	YAMAHA	89-95	22-26,33-36 FT/LBS	36-51,58-64 FT/LBS	37-50,62-68 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
FORD	3.1	192		80-89	60-65 FT/LBS	115-125 FT/LBS	60,90,115 FT/LBS
FORD	3.1	192		80-89	60-65 FT/LBS	115-125 FT/LBS	60,90,115, 140, 160 FT/LBS
FORD	3.1	192		65-72	45-50 FT/LBS	1/2" 100-105 FT/LBS 9/16" 110-115 FT/LBS	100-115 FT/LBS
FORD	3.1	192		64-79	45-50 FT/LBS	95-105 FT/LBS 1/2" FT/LBS 9/16" 110-115	110 FT/LBS W/ NEW HEAD BOLTS ROCKER SHAFT BLT, 45-55 FT/LBS
FORD	3.2	195	YAMAHA	93-95	22-26,33-37 FT/LBS	34-51,58-65 FT/LBS	36-51,61-69 FT/LBS
FORD	3.3	201	BSD-333	75-90	60-65 FT/LBS	115-125 FT/LBS	60,90,115 FT/LBS
FORD	3.3	201		99-02	10-12, 28-32 FT/LBS	66-74 FT/LBS	BOLT "A": 71 INCH/LBS
FORD	3.3	200		83	19-24 FT/LBS	60-70 FT/LBS	70-75 FT/LBS
FORD	3.3	201	BSG-333	65-72	60-65 FT/LBS	115-125 FT/LBS	60,90,115 FT/LBS
FORD	3.3	200		80-82	19-24 FT/LBS	60-70 FT/LBS	70-75 FT/LBS
FORD	3.3	200	MODEL A	28-32	45 FT/LBS	80 FT/LBS	55 FT/LBS
FORD	3.3	201	BSD-333	65-72	60-65 FT/LBS	115-125 FT/LBS	1/2" BOLTS: 90,100 110 FT/LBS,9/16" BOLTS: 115,140,160 FT/LB
FORD	3.3	200		63-79	19-24 FT/LBS	60-70 FT/LBS	70-75 FT/LBS
FORD	3.4	207	YAMAHA	96-99	30-33 FT/LBS +90-120°	** SEE COMMENTS BOX BELOW	20-23 FT/LBS + 85-95° USE NEW
FORD	3.5	216			35-45,45-55 FT/LBS		100-110 FT/LBS
FORD	3.5	215	CAR	52-53	45-50 FT/LBS	95-105 FT/LBS	
FORD	3.6	220		58-67	55-60 FT/LBS	1/2": 70-75#, 9/16": 95-100#,5/8": 115-120#	85-90 FT/LBS
FORD	3.6	221		62-63	19-24 FT/LBS	60-70 FT/LBS	72 FT/LBS LONG BOLTS, 65 FT/LBS SHORT BOLTS
FORD	3.6	223		64-67	40-50 FT/LBS	95-105 FT/LBS	1954-1960 65-75 FT/LBS, 1961-64 105-115 FT/LBS
FORD	3.6	221		37-45	40 FT/LBS	80 FT/LBS	50-60 FT/LBS
FORD	3.7	226		47-52	50-55 FT/LBS	95-105 FT/LBS	65-70 FT/LBS
FORD	3.7	223		54-61	45-50 FT/LBS	95-105 FT/LBS	1954-60-65-75 FT/LBS, 1961=105-115 FT/LBS
FORD	3.7	226		41-47	50-55 FT/LBS		65-70 FT/LBS
FORD	3.8	232		82-87	31-36 FT/LBS	65-81 FT/LBS	SEE TB-1292R
FORD	3.8	232		88-95	31-36 FT/LBS, LOOSEN, 31-36 FT/LBS	65-81 FT/LBS	SEE TB'S 1292R & 1672
FORD	3.8	232		96-03	15-18, 31-33 FT/LBS, + 90-120°	1996-97 81-89 FT/LBS, 1998 UP 37 FT/LBS, 115-125°	SEE TB 1672R & TB 2000
FORD	3.8	232		84-85	31-36 FT/LBS	65-81 FT/LBS	SEE TBS 1292R & 1672
FORD	3.8	233		72-78	60-65 FT/LBS	115-120 FT/LBS	90, 100, 110 FT/LBS, RETORQUE AFTER 50 HRS RUNNING
FORD	3.8	233		65-88	60-65 FT/LBS	115-120 FT/LBS	90,100,110 FT/LBS ----> RETORQUE AFTER 50 HRS RUNNING
FORD	3.8	232		89-95	31-36 FT/LBS, LOOSEN 2-3 TURNS, 31-36 FT/LBS	65-74#, #2 CAP STUD=67-81#	SEE TBS 1292R & 1672
FORD	3.9	241		00-04			BOLTS #1-10: 15,26,33#, +90°, +90°, BOLTS #11-12: 15#, +90°
FORD	3.9	240		65-74	40-45 FT/LBS	60-70 FT/LBS	70-75 FT/LBS
FORD	3.9	239	Y	54-	45-50 FT/LBS	95-105 FT/LBS	65-70 FT/LBS
FORD	3.9	239		46-53	40 FT/LBS	80 FT/LBS	50-60 FT/LBS CAST IRON, 35-40 FT/LBS ALUMINUM

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
FORD	3.9	238		04-05	18, 33 FT/LBS, +105°	37 FT/LBS, +120°, CRANK POSITION SENSOR (CKP) 53 INCH/LBS	
FORD	4.0	244		90-02	18-24 FT/LBS, SEE TB 1540	66-77 FT/LBS	44, 55 FT/LBS, +80-85° -----> SEE TB-671 (7 STEPS) **
FORD	4.0	244	SOHC	97-01	14 FT/LBS, + 90° USE NEW BOLTS	67-74 FT/LBS / LADDER PAN SET SCREWS 17-35 IN/LBS	12MM: 26 FT/LBS,+90°, +90° USE NEW BOLTS, THEN 8MM: 24 FT/LBS
FORD	4.0	242		67-70	85-90 FT/LBS	115-120 FT/LBS	1)80-85# 2)90-95# 3)105-110# TURBO AFTER 5/1/76 3)120-125#
FORD	4.0	245		00-04	15 FT/LBS, +90° - USE NEW BOLTS	72 FT/LBS	12MM: 26 FT/LBS,+90°, +90° USE NEW BOLTS, THEN 8MM: 24 FT/LBS
FORD	4.0	242		60-70	45-50 FT/LBS	110-115 FT/LBS	95-100 FT/LBS DRY R/SHAFT BOLTS = 45-55 FT/LBS
FORD	4.1	250		69-80	21-26 FT/LBS	60-70 FT/LBS	70-75 FT/LBS
FORD	4.1	250		79-81	21-26 FT/LBS	60-70 FT/LBS	70-75 FT/LBS
FORD	4.2	254		69-82	45-55,55-60 FT/LBS NUTS, 85-90 FT/LBS BOLTS	115-120 FT/LBS	80-85,90-95,105-110 FT/LBS
FORD	4.2	256		97-04	29 FT/LBS, PLUS 90° REPLACE BOLTS	81-88 FT/LBS, 2000 37# +90°, 2001 37# +120° *	SEE TB1903 * REPLACE BOLTS *
FORD	4.2	256		72-78	60-65 FT/LBS	115-120 FT/LBS	90,100,110 FT/LBS --> RETORQUE AFTER 50 HRS RUNNING
FORD	4.2	256	BSD-442		60-65 FT/LBS	115-125 FT/LBS	1/2" BOLTS: 90,100,115 FT/LBS,9/16"BOLTS: 115,140,160 FT/LBS
FORD	4.2	255		80-82	19-24 FT/LBS	60-70 FT/LBS	55-65, 65-72 FT/LBS
FORD	4.2	254		83-92	80-85,85-90 FT/LBS	110-115,115-120 FT/LBS	45-55,90 FT/LBS, + 90°
FORD	4.2	256	BSD-442T		60-65 FT/LBS	115-125 FT/LBS	1/2" BOLTS: 90,100,115 FT/LBS,9/16"BOLTS: 115,140,160 FT/LBS
FORD	4.2	256		68-72	60-65 FT/LBS	115-125 FT/LBS	90, 100, 110 FT/LBS
FORD	4.2	255		49-53	40 FT/LBS	90-105 FT/LBS	65-70 FT/LBS
FORD	4.2	256		44-55	45-50 FT/LBS	95-105 FT/LBS	75 FT/LBS
FORD	4.2	254		68-72	110-115 FT/LBS	115-120 FT/LBS	105-110 FT/LBS
FORD	4.3	260		63-64	19-24 FT/LBS	60-70 FT/LBS	72 FT/LBS LONG BOLTS, 65 FT/LBS SHORT BOLTS
FORD	4.3	262		61-64	45-50 FT/LBS	95-105 FT/LBS	105-115 FT/LBS
FORD	4.4	267		36-39	45-50 FT/LBS	60-70 FT/LBS	ALUMINUM HEADS=40 FT/LBS, CAST IRON=50 FT/LBS
FORD	4.4	268	BSD-444		60-65 FT/LBS	115-125 FT/LBS	1/2" BOLTS:90,100,115 FT/LBS**9/16" BOLTS:115,140,160 FT/LBS
FORD	4.4	272	Y	56-66	45-50 FT/LBS	95 FT/LBS	65-75 FT/LBS, WATCH BOLT LENGHTS
FORD	4.4	268	BSD-444T		60-65 FT/LBS	115-125 FT/LBS	1/2" BOLTS:90,100,115 FT/LBS *9/16"BOLTS: 115,140,160 FT/LBS
FORD	4.6	281		91-05	1992, 93 18-25 FT/LBS + 85-95° ** NEW BOLTS	22-25 FT LBS + 85-95° SIDE BOLTS 14-17# *** NEW BOLTS	1991,92 18-25# +85-95° AGAIN +85-95° **** NEW BOLTS
FORD	4.6	281		03-05	REUSE OK NOT TTY, 18, 59 FT/LBS	30 FT/LBS +90°, JACK SCREWS 44 ,89 IN/LBS, SIDE BLT15 FT/LBS	
FORD	4.6	279		52-55	45-50 FT/LBS	120-130 FT/LBS	110 FT/LBS BOLTS MARKED "FT", ALL OTHERS 90 FT/LBS



Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
FORD	4.6	281	TRITION	96-01	15-19 FT/LBS, 30-33 FT/LBS, +90-120° USE NEW BOLTS	28-31# THEN 85-95° NEW BOLTS CROSS BOLTS 20-24# + 85-95°	1991-92:15-22#, +85-95°, +85-95° **** SEE COMMENTS BOX
FORD	4.6	281		93-03	22-25 FT/LBS, + 85-95° NEW BOLTS	9,21,32 FT/LBS, +85-95° USE NEW BOLTS (SEE TB 1809)	15-22 FT/LBS, +85-95°, +85-95° NEW HEAD BOLTS
FORD	4.6	281		97-04	30-33 FT/LBS, +90-120°		27-32 FT/LBS, +90°, +90°
FORD	4.7	289	90°V	63-68	19-24 FT/LBS	60-70 FT/LBS	72 FT/LBS LONG BOLTS, 65 FT/LBS SHORT BOLTS
FORD	4.7	289	90°V	66-67	19-24 FT/LBS .312" DIAMETER BOLTS	60-70 FT/LBS	72 FT/LBS LONG BOLTS, 65 FT/LBS SHORT BOLTS
FORD	4.7	289	90°V	64-68	40-45 FT/LBS .375" DIAMETER BOLTS	60-70 FT/LBS	72 FT/LBS LONG BOLTS, 65 FT/LBS SHORT BOLTS
FORD	4.8	292		40-48	45-50 FT/LBS	60-70 FT/LBS	ALUMINUM HEADS=40 FT/LBS, CAST IRON=50 FT/LBS
FORD	4.8	292	Y	55-66	45-50 FT/LBS	95 FT/LBS, CAUTION CHECK BOLT LENGTHFOR REAR CAP	65-75 FT/LBS ** , WATCH BOLT LENGHTS
FORD	4.9	300		83-84	40-45 FT/LBS	60-70 FT/LBS	50-55, 60-65, 70-85 FT/LBS
FORD	4.9	300	CSG-649	65-93	40-45 FT/LBS	60-70 FT/LBS	55,65,70-85 FT/LBS ROCKER STUD NUT 17-23 FT/LBS
FORD	4.9	300		85-86	40-45 FT/LBS	60-70 FT/LBS	50-55, 60-65, 70-85 FT/LBS ROCKER PIVOT BOLT 17-23 FT/LBS
FORD	4.9	300		82-84	40-45 FT/LBS	60-70 FT/LBS	50-55, 60-65, 70-85 FT/LBS
FORD	4.9	300		78	40-45 FT/LBS	60-70 FT/LBS	50-55, 60-65, 70-85 FT/LBS
FORD	4.9	300		73-79	40-45 FT/LBS	60-70 FT/LBS	50-55, 60-65, 70-85 FT/LBS
FORD	4.9	300		85-86	40-45 FT/LBS	60-70 FT/LBS	50-55, 60-65, 70-85 FT/LBS
FORD	4.9	300		76-85	40-45 FT/LBS	60-70 FT/LBS	50-55,60-65,70-85 FT/LBS ROCKER STUD NUT 20-23 FT/LBS
FORD	4.9	300		78-79	40-45 FT/LBS	60-70 FT/LBS	50-55, 60-65,70-85 FT/LBS
FORD	4.9	300		87-96	40-45 FT/LBS	60-70 FT/LBS	1ST 50-55, 2ND 60-65, 3RD 70-85 FT/LBS **
FORD	5.0	302		97-00	19-24 FT/LBS	61-68 FT/LBS	25-35, 45-55 FT/LBS, +85-90^
FORD	5.0	302		91-95	19-24 FT/LBS	60-70 FT/LBS	** LONG BOLTS 80 FT/LBS, SHORT BOLTS = 68 FT/LBS
FORD	5.0	302		84-87	19-24 FT/LBS	60-70 FT/LBS	LONG BOLTS 80 FT/LBS SHORT BOLTS 68 FT/LBS ***
FORD	5.0	302		85-97	19-24 FT/LBS	60-70 FT/LBS	LONG BOLTS 80 FT/LB SHORT BOLTS 68 FT/LBS ***
FORD	5.0	302		86-86	19-24 FT/LBS	60-70 FT/LBS	LONG BOLTS 80 FT/LBS SHORT BOLTS 68 FT/LBS **
FORD	5.0	302		84-87	19-24 FT/LBS	60-70 FT/LBS	LONG BOLTS 80 FT/LBS SHORT BOLTS 68 **
FORD	5.0	302		74-81	19-24 FT/LBS	60-70 FT/LBS	LONG BOLTS 80 FT/LBS SHORT BOLTS 68 FT/LBS **
FORD	5.0	302		74-82	19-24 FT/LBS	60-70 FT/LBS	LONG BOLTS 80 FT/LBS SHORT BOLTS 68 FT/LBS **
FORD	5.0	302		56-65	45-50 FT/LBS	120-130 FT/LBS	95-110 FT/LBS
FORD	5.0	302		68-73	19-24 FT/LBS	60-70 FT/LBS	SHORT 68 FT/LBS, LONG BOLTS 80 FT/LBS **

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
FORD	5.0	302		88-93	19-24 FT/LBS	60-70 FT/LBS	LONG BOLTS 80 FT/LBS SHORT BOLTS 68 FT/LBS **
FORD	5.0	302		87-93	19-24 FT/LBS	60-70 FT/LBS	LONG BOLTS 80 FT/LBS SHORT 68 FT/LBS **
FORD	5.0	302		95-97	19-24 FT/LBS	60-70 FT/LBS	25-35,45-55 FT/LBS, + 90° USE NEW HEAD BOLTS
FORD	5.0	302		69-71	40-45 FT/LBS	60-70 FT/LBS OUTER BOLTS 35-40 FT/LBS	80 FT/LBS UPPER, 70 FT/LB LOWER
FORD	5.0	302		68-69	19-24 FT/LBS	60-70 FT/LBS	LONG BOLTS 80 FT /LBS SHORT BOLTS 68 FT/LBS **
FORD	5.0	302		83-87	19-24 FT/LBS	60-70 FT/LBS	LONG BOLTS 80 FT/LBS SHORT BOLTS 68 FT/LBS **
FORD	5.0	302	CSG-850		19-24 FT/LBS	60-70 FT/LBS	LONG BOLTS 80 FT/LBS SHORT BOLTS 68 FT/LBS **
FORD	5.0	304	BSD-450T		110 FT/LBS	145 FT/LBS	9/16" BOLTS:115/140/160 FT/LBS
FORD	5.0	305	GENESIS	95-99	110 FT/LBS	145 FT/LBS	160 FT/LBS COLD
FORD	5.1	312	Y	56-60	45-50 FT/LBS	95 FT/LBS	65-75 FT/LBS, WATCH BOLT LENGHTS
FORD	5.2	317		52-55	45-50 FT/LBS	120-130 FT/LBS	110 FT/LBS BOLTS MARKED "FT", ALL OTHERS 90 FT/LBS
FORD	5.4	330		58-69	55-60 FT/LBS	1/2" 70-75#; 9/16" 95-100# 5/8" 115-120#	85-90 FT/LBS
FORD	5.4	330		99-02	30-33 FT/LBS, +90°-120° ROTATION, NEW BOLTS	27-32 FT/LBS, +85-95° ROTATION, NEW BOLTS ** SEE COMMENTS	27-32 FT/LBS, +90°, +90°, NEW BOLTS
FORD	5.4	330	FE	62-65	40-45 FT/LBS	95-105 FT/LBS	70,80,90 FT/LBS
FORD	5.4	330	FE	66-76	40-45 FT/LBS	90-105 FT/LBS	70,80,90 FT/LBS
FORD	5.4	332	FE	58-59	45-50 FT/LBS	95-105 FT/LBS	80-90 FT/LBS
FORD	5.4	330		01-03			
FORD	5.4	332	FE	58-59	45-50 FT/LBS	120-130 FT/LBS	95-110 FT/LBS
FORD	5.4	330		99-01	18, 30 FT/LBS, +90° - USE NEW BOLTS	18,30#, +90° - USE NEW. CROSS BOLTS: 30#, +90° - USE NEW.	30 FT/LBS, +90° - USE NEW BOLTS
FORD	5.4	330		98-03	30-33 FT/LBS, +90°-120° ROTATION, NEW BOLTS	27-32 FT/LBS, +85-95° ROTATION, NEW BOLTS ** SEE COMMENTS	15-22 FT/LBS, +85-95°, +85-95°, NEW BOLTS
FORD	5.5	337		48-52	45-55 FT/LBS	95-105 FT/LBS	BOLTS 65-70 FT/LBS, NUTS 50-55 FT/LBS
FORD	5.6	341		55	45-50 FT/LBS	120-130 FT/LBS	80-90 FT/LBS
FORD	5.8	352	FE	58-67	40-45 FT/LBS	95-105 FT/LBS	80-90 FT/LBS
FORD	5.8	351	355	70-74	40-45 FT/LBS	95-105 FT/LBS, 4 BOLT MAIN OUTER BOLTS 40 FT/LBS	95-105 FT/LBS
FORD	5.8	351	M	75-82	40-45 FT/LBS	1/2" BOLTS: 95-105 FT/LBS 3/8" BOLTS: 35-45 FT/LBS	95-105 FT/LBS
FORD	5.8	351		69-78	40-45 FT/LBS	95-105 FT/LBS	85,95,105-112 FT/LBS
FORD	5.8	351		79	40-45 FT/LBS	95-105 FT/LBS	85,95,105-112 FT/LBS
FORD	5.8	351	90°V	80-82	40-45 FT/LBS	95-105 FT/LBS	85,95,105-112 FT/LBS
FORD	5.8	351	90°V		40-45 FT/LBS	95-105 FT/LBS	85,95,105-112 FT/LBS
FORD	5.8	351	90°V	93-96	40-45 FT/LBS	95-105 FT/LBS	85,95,105-112 FT/LBS
FORD	5.8	351	90°V	68-74	40-45 FT/LBS	95-105 FT/LBS	85,95,105-112 FT/LBS
FORD	5.8	351		83-91	40-45 FT/LBS	95-105 FT/LBS	85,95,105-112 FT/LBS
FORD	5.8	351	90°	69-71	40-45 FT/LBS	95-105 FT/LBS	85, 95, 105-112 FT/LBS
FORD	5.8	351		84-97	40-45 FT/LBS	95-105 FT/LBS	85,95,105-112 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
FORD	5.9	359		95-00	26, 52, 74 FT/LBS	45, 89, 130 FT/LBS	66, 66# ALL, 90,90# LONG BOLTS ONLY, +90° ALL
FORD	5.9	362			45-55,55-60 FT/LBS	110-115,115-120 FT/LBS	45-55 FT/LBS, +90°, +90°
FORD	5.9	361	FE	66-78	40-45 FT/LBS	95-105 FT/LBS	70,80,90 FT/LBS
FORD	5.9	360	FE	68-78	45 FT/LBS	95-105 FT/LBS	70,80,90 FT/LBS
FORD	5.9	361	FE	58-58	40-45 FT/LBS	95-105 FT/LBS	70, 80, 90 FT/LBS
FORD	5.9	362		69-82	45-55,55-60 FT/LBS NUTS, 85-90 FT/LBS BOLTS	115-120 FT/LBS	80-85,90-95,105-110 FT/LBS
FORD	6.0	363			80-85, 85-90 FT/LBS	110-115, 115-120 FT/LBS	45-55, 90 FT/LBS, + 90°, + 90°
FORD	6.0	363		64-70	85-90 FT/LBS BOLTS	115-120 FT/LBS	80-85,90-95,105-110 FT/LBS TURBO AFTER 5/1/76 3)120-125#
FORD	6.0	368		56-57	45-50 FT/LBS	120-130 FT/LBS	90 FT/LBS
FORD	6.0	365	VT-365	02-05	33, 50 FT/LBS	110, 130, 170 FT/LBS	65/85 FT/LBS, + 90° + 90° + 90°
FORD	6.0	363			55-60 FT/LBS	115-120 FT/LBS	105-110 FT/LBS
FORD	6.1	370	385	79-94	40-45 FT/LBS	95-105 FT/LBS	80,110,140 FT/LBS
FORD	6.1	370	385	79-93	40-45 FT/LBS	95-105 FT/LBS	80,110,140 FT/LBS
FORD	6.2	380			110-115 FT/LBS	115-120 FT/LBS	105-110 FT/LBS
FORD	6.2	380			80-85, 85-90 FT/LBS	110-115,115-120 FT/LBS	45-55, 90 FT/LBS, + 90°
FORD	6.2	380			80-85, 85-90 FT/LBS	110-115, 115-120 FT/LBS	45-55, 90 FT/LBS, +90^
FORD	6.2	380		69-82	85-90 FT/LBS BOLTS, 55- 60 FT/LBS NUTS	115-120 FT/LBS	80-85,90-95,105-110 FT/LBS
FORD	6.3	383	MEL	57-61	40-45 FT/LBS	95-105 FT/LBS	85-105 FT/LBS
FORD	6.4	390	FE	61-76	40-45 FT/LBS	95-105 FT/LBS	90 FT/LBS
FORD	6.4	391	FE	64-79	40-45 FT/LBS	95-105 FT/LBS	70,80,90 FT/LBS ROCKER SHAFT BOLT 40-45 FT/LBS
FORD	6.4	390	FE	68-76	40-45 FT/LBS	95-105 FT/LBS	70,80,90 FT/LBS
FORD	6.6	400		79-82	40-45 FT/LBS	95-105 FT/LBS (1/2" BOLTS) 35-45 FT/LBS (3/8" BOLTS)	75,95,105 FT/LBS
FORD	6.6	401	BSD-666T	68-94	60-65 FT/LBS	115-125 FT/LBS	1/2"BLT 110#; 9/16"BLT 160# *
FORD	6.6	401	BSD-666	68-82	60-65 FT/LBS	115-125 FT/LBS	1/2"BLT 110#; 9/16"BLT 160# *
FORD	6.6	400		71-79	40-45 FT/LBS	95-105 FT/LBS (1/2" BOLTS) 35-45 FT/LBS (3/8" BOLTS)	95-105 FT/LBS
FORD	6.6	401		86-98	78-80 FT/LBS USING BOLTS	140-150 FT/LBS	115,140,160 FT/LBS
FORD	6.6	401		58-76	60-65 FT/LBS	150-165 FT/LBS (1958-1965) 130- 150 FT/LBS (1966-1981)	
FORD	6.7	406	FE	62-63	40-45 FT/LBS	95-105 FT/LBS CROSS BOLTS 20 FT/LBS, 40 FT/LBS	90 FT/LBS
FORD	6.7	410	MEL	58-58	45-50 FT/LBS	95-105 FT/LBS	125-135 FT/LBS
FORD	6.7	410	FE	66-67	40-45 FT/LBS	95-105 FT/LBS	80-90 FT/LBS
FORD	6.8	413		97-05	30-33 FT/LBS, +90-120° USE NEW BOLTS	22-25 FT/LBS, +85-95° USE NEW, SIDE BOLTS: 7,14-17 FT/LBS	30 FT/LBS, +85-95°, +85-95° USE NEW BOLTS (SEE TB 2054)
FORD	6.8	414	SERIES K	35-40	55-60 FT/LBS	110-120 FT/LBS	
FORD	6.9	420		83-88	35,51 FT/LBS	75/95 FT/LBS	40, 65, 80 FT/LBS NEW BOLTS 40, 70, 80, 80 FT/LBS USED BOLT
FORD	7.0	429	385	89-96	40-45 FT/LBS	95-105 FT/LBS	80, 110, 140 FT/LBS
FORD	7.0	427	FE	64-67	58-62 FT/LBS	95-105 FT/LBS *	100-110 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
FORD	7.0	427	FE	63-68	53-58 FT/LBS NUT OR 63-65 FT LBS.12 POINT BOLT SOLID SHANK	95-105 FT/LBS, CROSS BOLTS 20 FT/LBS AND THEN 40 FT/LBS	100 FT/LBS
FORD	7.0	429	385	79-90	40-45 FT/LBS	95-105 FT/LBS	130-140 FT/LBS
FORD	7.0	429	385	91-95	45-50 FT/LBS	95-105 FT/LBS	80,110,140 FT/LBS
FORD	7.0	428	FE	66-70	40-45 FT/LBS 3/8 BOLTS, 53-58 FT/LBS 13/32 BOLTS *	95-105 FT/LBS	90 FT/LBS
FORD	7.0	430	MEL	58-65	45-50 FT/LBS	95-105 FT/LBS	125-135 FT/LBS
FORD	7.0	427	FE	63-68	53-58 FT/LBS NUT, 63-65 FT/LBS 12 POINT BOLT	95-105 FT/LBS, CROSS BOLTS 20, 40 FT/LBS	30, 50, 70, 85, 100 FT/LBS
FORD	7.0	429	385	68-73	40-45 FT/LBS	95-105 FT/LBS, OUTER BOLTS 2, 3+4 CJ & SCJ 70-80 FT/LBS 7/16	70-80,100-110,130-140 FT/LBS
FORD	7.0	429	385	69-70	"S" ENGINE 70-75#, "T" ENGINE 40-45 FT/LBS	1/2" BOLT 95-105#, 3/8" BOLT 70-80#, 7/16" BOLT 35-40#	55-60, 75-80, 90-95 FT/LBS
FORD	7.3	444		88-94	38,51 FT/LBS	75,95 FT/LBS	65, 85, 100, 100 FT/LBS
FORD	7.3	444		95-05	52, 80 FT/LBS	75 FT/LBS, 95 FT/LBS	65,85,95 FT/LBS
FORD	7.3	444		94-95	38, 51 FT/LBS	75,95 FT/LBS, + 45°	65, 90, 110, 110 FT/LBS
FORD	7.5	456	GENESIS	95-99	110 FT/LBS	145 FT/LBS	160 FT/LBS COLD
FORD	7.5	456	GEMINI	95-99	110 FT/LBS	145 FT/LBS	160 FT/LBS COLD
FORD	7.5	460	LSG875		45-50 FT/LBS	95-105 FT/LBS	80,110,130-140 FT/LBS
FORD	7.5	460	385	87-97	40-45 FT/LBS	95-105 FT/LBS	70-80,100-110,130-140 FT/LBS
FORD	7.5	460	385	74-78	40-45 FT/LBS	95-105 FT/LBS	80,110,130-140 FT/LBS
FORD	7.5	460	385	78-	40-45 FT/LBS	95-105 FT/LBS	80,110,130-140 FT/LBS
FORD	7.5	460	385	74-77	40-45 FT/LBS	95-105 FT/LBS	70-80,100-110,130-140 FT/LBS
FORD	7.5	460	385	75-76	40-45 FT/LBS	95-105 FT/LBS	135-140 FT/LBS
FORD	7.5	460	385	87-98	40-45 FT/LBS	95-105 FT/LBS	70-80,100-110,130-140 FT/LBS ROCKER ARM BOLT, 18-25 FT/LBS
FORD	7.5	460	385	74-79	40-45 FT/LBS	95-105 FT/LBS	80,110,130-140 FT/LBS
FORD	7.5	460	385	79-87	40-45 FT/LBS	95-105 FT/LBS	80,110,130-140 FT/LBS
FORD	7.5	460	385	68-73	40-45 FT/LBS	95-105 FT/LBS	80,110,130-140 FT/LBS
FORD	7.6	462	MEL	66-68	40-45 FT/LBS	95-105 FT/LBS	135-145 FT/LBS
FORD	7.8	474		86-95	105-112 FT/LBS	140-150 FT/LBS	115,140,160 FT/LBS ROCKER SHAFT SAME AS HEAD BOLT
FORD	7.8	477		78-81	60-65 FT/LBS	150-165 FT/LBS	140, 160, 170-180 FT/LBS
FORD	7.8	475		73-79	60-65 FT/LBS	95-105 FT/LBS	170-180 FT/LBS
FORD	8.3	505	CUMMINS C-SER	95-00	30, 60, 88 FT/LBS	37, 88, 129 FT/LBS	52, 105 FT/LBS, + 90°
FORD	8.8	534		58-81	60-65 FT/LBS	150-165 FT/LBS	140,160,180 FT/LBS
GM	1.0	61	LP2	86-88	24-26 FT/LBS	36-41 FT/LBS	46-52 FT/LBS
GM	1.0	61	LP2	89-00	24-26 FT/LBS	39-42 FT/LBS	46-52 FT/LBS
GM	1.0	61	LP2	85-	24-26 FT/LBS	36-41 FT/LBS	46-51 FT/LBS
GM	1.3	79	LY8	98-00	24-26 FT/LBS	39-42 FT/LBS	46-52 FT/LBS
GM	1.3	79		92-94	24-27 FT/LBS	37-41 FT/LBS	51-54 FT/LBS ROCKER SHAFT 6-8 FT/LBS
GM	1.3	79	L72	95-96	26 FT/LBS	40 FT/LBS	44 FT/LBS (COVER NUTS) C/HD-ENG BLOCK BLT 54 FT/LB
GM	1.3	79		98-00	26 FT/LBS	40 FT/LBS, 97 INCH/LBS REAR SEAL HOUSING	49 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
GM	1.4	85		76-77	34-40 FT/LBS	40-52 FT/LBS	75 FT/LBS
GM	1.5	92		87-89	24-27 FT/LBS	61-69 FT/LBS	29,58 FT/LBS ROCKER SHAFT BOLT 16 FT/LBS
GM	1.5	90		86-88	24-27 FT/LBS	61-69 FT/LBS	29,58 FT/LBS ROCKER SHAFT BOLT 16 FT/LBS
GM	1.5	92		85-87	24-27 FT/LBS	61-69 FT/LBS	29, 58 FT/LBS ROCKER SHAFT BOLT 16 FT/LBS
GM	1.6	98		91-93	18 FT/LBS + 90°	NEW BOLTS 44 FT/LBS + 40-50° 1991 NEW BOLT,37 FT/LBS+45-60°	18 FT/LBS, + 60°, + 60°, + 30°, WARM +30-50°
GM	1.6	98		79-80	40 FT/LBS	50 FT/LBS	75 FT/LBS
GM	1.6	97	4A-LC	85-88	26-32 FT/LBS	40-47 FT/LBS	40-47 FT/LBS
GM	1.6	97	LWO	90-91	36 FT/LBS	44 FT/LBS	58 FT/LBS
GM	1.6	98		88-90	18 FT/LBS + 30°	44 FT/LBS +45-50°	18#, +60°, +60°, +60°, WARM ENG, + 30-50°*
GM	1.6	98		80-82	40 FT/LBS	50-52 FT/LBS	65-77 FT/LBS
GM	1.6	97	4AFE	95-97	18 FT/LBS + 90°	44 FT/LBS	22 FT/LBS + 90° + 90°
GM	1.6	97	LO1	95-99	26 FT/LBS	40 FT/LBS	26,41,52 FT/LBS (SECOND PASS), 52 FT/LBS (FINAL)
GM	1.6	98		82-87	40 FT/LBS	50 FT/LBS	75 FT/LBS
GM	1.6	98		76-77	34-40 FT/LBS	46 FT/LBS	75 FT/LBS
GM	1.6	97		89-90	6 SIDED: 36 FT/LBS, 12 SIDED:29 FT/LBS, + 90°	43 FT/LBS	22 FT/LBS, + 90°, + 90°
GM	1.6	97	4AFE	89-94	6 SIDED: 36 FT/LBS, 12 SIDED:29 FT/LBS, + 90°	43 FT/LBS	44 FT/LBS
GM	1.6	98		98-	26 FT/LBS	40 FT/LBS	26,41,52 FT/LBS
GM	1.6	97	G16A	89-96	24-27 FT/LBS	40 FT/LBS	51-54 FT/LBS
GM	1.6	97	LS5	95-97	26 FT/LBS	40 FT/LBS, 106 INCH/LBS REAR SEAL HOUSING	54 FT/LBS
GM	1.6	97	4XE1	90-96	36 FT/LBS	44 FT/LBS, USING 3 STEPS	29,58 FT/LBS
GM	1.6	98		78-79	34-40 FT/LBS	40-52 FT/LBS	75 FT/LBS
GM	1.8	111		81-86	58-65 FT/LBS	72-80 FT/LBS	21-26,83-98 FT/LBS NEW BOLTS, 90-105 FT/LBS USED BOLTS
GM	1.8	112		82-87	39 FT/LBS	57 FT/LBS	18 FT/LBS, +60°, +60°, +60°, WARM ENG, THEN 30-50° MORE
GM	1.8	108		93-94	36 FT/LBS	44 FT/LBS	44 FT/LBS
GM	1.8	112		81-85	39 FT/LBS	57 FT/LBS	73-85 FT/LBS
GM	1.8	110		92-93	18 FT/LBS, + 100°	44 FT/LBS	29,58 FT/LBS
GM	1.8	108		92-04	18 FT/LBS + 90°	44 FT/LBS	22 FT/LBS + 90° + 90°
GM	1.8	110		72-75	43 FT/LBS	72 FT/LBS	72 FT/LBS
GM	1.8	110		76-86	43 FT/LBS	72 FT/LBS	72 FT/LBS
GM	1.8	110	2ZZGE	00-05	22 FT/LBS, +90°	16, 32 FT/LBS, +45°, +45°	26 FT/LBS, +180°
GM	1.8	112		84-87	39 FT/LBS	57 FT/LBS	18 FT/LBS, +60°, +60°, +60°, WARM ENG, THEN 30-50° MORE
GM	1.9	116	LLO	90-02	31-33 FT/LBS, 1999 UP 10, 15, 19 FT/LBS + 75°	37 FT/LBS	48 FT/LBS, LOOSEN, 22FT/LBS, 37FT/LBS, + 90° ROTATION
GM	1.9	119		82-85	33 FT/LBS	72 FT/LBS	44,65,80 FT/LBS
GM	1.9	116	L24	93-02	31-33 FT/LBS, 1999 UP 10, 15, 19 FT/LBS + 75°	37 FT/LBS	48#, LOOSEN, 22#, 37#, +90°

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
GM	1.9	116	L24	90-94	31 FT/LBS	37 FT/LBS	48#, LOOSEN, 22#, 37#, +90°
GM	2.0	122		87-89	34-43 FT/LBS	63-77 FT/LBS	73-83# LONG BOLTS,62-70# SHORT
GM	2.0	121		82-84	34-43 FT/LBS	63-77 FT/LBS	65-75 FT/LBS
GM	2.0	121		82-86	34-43 FT/LBS	63-77 FT/LBS	1982-84: 65-75 FT/LBS, 1985-86: 73-85 FT/LBS
GM	2.0	122		88-90	26 FT/LBS,+40-45° USE NEW BOLTS	44 FT/LBS, + 40-50° USE NEW BOLTS	18 FT/LB,+60° 3X,WARM,+30-50° USE NEW BOLTS *
GM	2.0	122	L34	99-01	33 FT/LBS	31,44 FT/LBS	39,61#, LOOSEN COMPLETELY, 39,61,76# M6 BOLT: 97 INCH/LBS
GM	2.0	122		87-88			73-83# LONG BOLTS,62-70# SHORT
GM	2.0	122		82-86	34-43 FT/LBS	63-77 FT/LBS	1982-84: 65-75 FT/LBS, 1985-86: 73-85 FT/LBS
GM	2.0	122	COSWORTH VEGA	75-76	40-45 FT/LBS	65 FT/LBS	60 FT/LBS
GM	2.0	122		90-95	26 FT/LBS, + 40-50° USE NEW BOLTS	44 FT/LBS, + 40-50° USE NEW BOLTS	18#,+60°, +60°, +60°, WARM ENG, +30-50° USE NEW BOLTS
GM	2.0	122		88-91	26 FT/LBS, +40-45° USE NEW BOLTS	44 FT/LBS + 40-50° USE NEW BOLTS	18 FT/LBS,+60° 3X,WARM +30-50°USE NEW BOLTS
GM	2.0	122		87-91	26 FT/LBS, + 40-50° USE NEW BOLTS	44 FT/LBS, + 40-50° USE NEW BOLTS	18FT/LBS,+60° 3X,WARM,+ 30-50° USE NEW BOLTS
GM	2.0	122		87-90	26 FT/LBS, + 40-50° USE NEW BOLTS	44 FT/LBS, + 40-50° USE NEW BOLTS	18FT/LBS,+60° 3X,WARM,+30-50° USE NEW BOLTS
GM	2.2	134		91-94	34-43 FT/LBS	70 FT/LBS	46 FT/LBS LONG , 43 FT/LBS SHORTS, + 90° ALL BOLTS *
GM	2.2	134	L61	00-04	18 FT/LBS + 100° **	15 FT/LBS, +70°, PERIMETER BOLTS 18# ** REPLACE ALL BOLTS	22 FT/LBS, +155° ** REPLACE BOLTS / SMALL BOLTS 18 FT/LBS
GM	2.2	134	L43	00-01	38 FT/LBS	70 FT/LBS	LONG BOLTS 46#, +90°, SHORT BOLTS 43#, +90°
GM	2.2	134	L61	02-03	18 FT/LBS, +100° ALWAYS REPLACE BOLTS	15 FT/LBS, +70° ALWAYS REPLACE BOLTS	22 FT/LBS, +155° ALWAYS REPLACE BOLTS
GM	2.2	137		81-85	58-65 FT/LBS	116-130 FT/LBS	1ST STEP 40-47 FT/LBS, 2ND STEP W/ USED BOLTS 61-69FT/LBS *
GM	2.2	134		90-91	34-43 FT/LBS	70 FT/LBS	46 FT/LBS + 90° LONG BOLTS, 43 FT/LBS + 90° SHORT BOLTS
GM	2.2	134	LN2	98-02	38 FT/LBS	37/70 FT/LBS	46 FT/LBS + 90° LONG BOLTS, 43 FT/LBS + 90° SHORT BOLTS
GM	2.2	134	LN2	94-97	38 FT/LBS	70 FT/LBS	46 FT/LBS + 90° LG BLT, 43 FT/LBS + 90° SHORT BOLT REUSE OK
GM	2.3	138		89-94	18 FT/LBS + 90°	15 FT/LBS + 90°	ALL BOLTS 26 FT LBS, LONG BOLTS 30 FT LBS THEN 90° ON ALL
GM	2.3	140		71-76	20-26 FT/LBS		60 FT/LBS
GM	2.3	138	LD2	94-95	18 FT/LBS, + 80°	15 FT/LBS, + 90°	ALL BOLTS 26 FT LBS, LONG BOLTS 30 FT LBS THEN 90° ON ALL
GM	2.3	138		88-	18 FT/LBS + 90°	15 FT/LBS + 90°	ALL BOLTS 26 FT LBS, LONG BOLTS 30 FT LBS THEN 90° ON ALL
GM	2.3	140		74-75	20-26 FT/LBS	65 FT/LBS	60 FT/LBS
GM	2.3	140		60-63	20-25 FT/LBS	42-48 FT/LBS 7/16" BOLTS, 7-13 FT/LBS 5/16" BOLTS	27-33 FT/LBS
GM	2.3	140		76-77	20-26 FT/LBS	65 FT/LBS	60 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
GM	2.3	138	LGO	88-95	18 FT/LBS, + 80°	15 FT/LBS, + 90°	ALL BOLTS 26 FT LBS, LONG BOLTS 30 FT LBS THEN 90° ON ALL
GM	2.3	140		74-75	20-26 FT/LBS	65 FT/LBS	60 FT/LBS
GM	2.3	140		76-77	20-26 FT/LBS	65 FT/LBS	60 FT/LBS
GM	2.3	138	L40	92-95	18 FT/LBS, + 80°	15 FT/LBS, + 90°	SEE BELOW *
GM	2.4	145		61-63	20-25 FT/LBS	42-48 FT/LBS: 7/16" BOLTS, 7-13 FT/LBS: 5/16" BOLTS	27-33 FT/LBS
GM	2.4	146	LD9	96-02	18 FT/LBS + 90°	15 FT/LBS + 90°	L BOLTS: 40 FT/LBS + 90° S BOLTS: 30 FT/LBS + 90°
GM	2.5	151		79-83	30 FT/LBS	65 FT/LBS	SEE TB 1640
GM	2.5	152	TRACKER	01-03		10MM: 43.5 FT/LBS, 8MM: 19.5 FT/LBS	
GM	2.5	151		87-88	30 FT/LBS	65 FT/LBS	SEE TB 1640
GM	2.5	151		90-92	30 FT/LBS	65 FT/LBS	SEE TB 1640
GM	2.5	153		62-80	33 FT/LBS FOR 11/32" NUT 40 FT/LBS FOR 3/8" NUT	70 FT/LBS	93 FT/LBS
GM	2.5	151		82-83	30 FT/LBS	70 FT/LBS	SEE TB 1640
GM	2.5	151		85-87	30 FT/LBS	65 FT/LBS	SEE TB 1640
GM	2.5	151		87-91	30 FT/LBS	65 FT/LBS	SEE TB 1640
GM	2.5	151		79-79	30 FT/LBS	65 FT/LBS	SEE TB 1640
GM	2.5	151		82-86	30 FT/LBS	70 FT/LBS	SEE TB 1640
GM	2.5	151		77-79	30 FT/LBS	65 FT/LBS	SEE TB 1640
GM	2.5	151		89-	30 FT/LBS	65 FT/LBS	SEE TB 1640
GM	2.5	151		91-93	30 FT/LBS	65 FT/LBS	SEE TB 1640
GM	2.5	151		89-91	30 FT/LBS	70 FT/LBS	SEE TB 1640
GM	2.5	151		87-88	30 FT/LBS	70 FT/LBS	SEE TB 1640
GM	2.5	151		85-86	30 FT/LBS	70 FT/LBS	SEE TB 1640
GM	2.5	151		78-80	30 FT/LBS	65 FT/LBS	SEE TB 1640
GM	2.5	151		83-86	32 FT/LBS	65 FT/LBS	SEE TB 1640
GM	2.5	151		82-83	30 FT/LBS	65 FT/LBS	SEE TB 1640
GM	2.7	164	110	64-69	20-26 FT/LBS	42-48 FT/LBS: 7/16" BOLT 7-13 FT/LBS: 5/16" BOLT	40 FT/LBS
GM	2.8	173		87-89	34-40 FT/LBS	63-74 FT/LBS	33 FT/LBS + 90°
GM	2.8	173		82-84	34-40 FT/LBS	63-74 FT/LBS	40 FT/LBS, + 90°
GM	2.8	170	LK5, 2800	04-05	18 FT/LBS, +110°	18 FT/LBS, +180°	MED=22# +155°, SHORT=62 INCH/LB +60°, LONG=62 INCH/LB +120° *
GM	2.8	173		85-86	34-40 FT/LBS	63-74 FT/LBS	40 FT/LBS + 90°
GM	2.8	173		82-85	34-40 FT/LBS	63-74 FT/LBS	65-75 FT/LBS
GM	2.8	173		86-93	34-40 FT/LBS	63-74 FT/LBS	40 FT/LBS + 90° ROCKER NUT 18 FT/LBS
GM	2.8	173		82-85	34-40 FT/LBS	63-74 FT/LBS	40 FT/LBS + 90°
GM	2.8	173		85-88	39 FT/LBS	70 FT/LBS	40 FT/LBS + 90° VIN S ROCKER NUT 18 FT/LBS
GM	2.8	173		79-80	34-40 FT/LBS	63-74 FT/LBS	40 FT/LBS, + 90°
GM	2.8	173		85-92	39 FT/LBS	70 FT/LBS	40 FT/LBS + 90°
GM	2.8	173		80-86	34-40 FT/LBS	63-74 FT/LBS	40 FT/LBS, + 90°

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
GM	3.0	181		94-04	11/32" BOLT 33 FT/LBS, 3/8" BOLTS 40 FT/LBS	65 FT/LBS	93 FT/LBS
GM	3.0	181	L81	97-04	26 FT/LBS + 45° + 15°	37 FT/LBS + 60° + 15°	18 FT/LBS, +90°, +90°, +90°, +15°
GM	3.0	181		87-88	40 FT/LBS	100-110 FT/LBS	25 FT/LBS, + 90°, + 90°
GM	3.0	181		85-86	40 FT/LBS	100-110 FT/LBS	25 FT/LBS, + 90°, + 90°
GM	3.0	181		74-93	11/32" BOLT 33 FT/LBS 3/8" BOLT 40 FT/LBS	65 FT/LBS	93 FT/LBS
GM	3.0	181		82-85	40 FT/LBS	110 FT/LBS	80 FT/LBS
GM	3.1	191		89-90	39 FT/LBS	70 FT/LBS	RWD: 40 FT/LBS, +90° FWD: 33 FT/LBS, +90°
GM	3.1	191	LG6	90-95	39 FT/LBS	70 FT/LBS	40 FT/LBS, + 90° USE SEALANT
GM	3.1	191	LG8	00-02	15 FT/LBS, +75°	37 FT/LBS, +77°	33 FT/LBS, +90°
GM	3.1	191	L82	93-99	15 FT/LBS, + 75°	37 FT/LBS, + 75° OIL PAN SIDE BOLTS, 37 FT/LBS	33 FT/LBS, + 90°
GM	3.1	191	LH0	89-94	39 FT/LBS	70 FT/LBS	RWD: 40 FT/LBS, +90° FWD: 33 FT/LBS, +90°
GM	3.2	198		62-65	30-45 FT/LBS	100-125 FT/LBS	65-70 FT/LBS
GM	3.2	194		29-32	35-45 FT/LBS	100 FT/LBS FOR 1/2" BOLTS	75 FT/LBS
GM	3.2	196		78-79	40 FT/LBS	110 FT/LBS	80 FT/LBS
GM	3.2	194		62-72	30-35 FT/LBS	60-70 FT/LBS	95 FT/LBS
GM	3.2	195		61-63	45 FT/LBS	95 FT/LBS, REAR BRG CAP 120#	95 FT/LBS
GM	3.3	200		78-79	45 FT/LBS	70 FT/LBS	65 FT/LBS
GM	3.3	204		89-93	20 FT/LBS, + 50°	26 FT/LBS, + 50°	35#, +130°, 4-CENTER BOLTS +30° MORE.
GM	3.4	204	LA1	96-03	15 FT/LBS + 75°	37 FT/LBS + 75°	37 FT/LBS + 90°
GM	3.4	207	LQ1	95-97	15 FT/LBS, + 75°	37 FT/LBS, + 75°	44 FT/LBS, + 90°
GM	3.4	207	LQ1	91-95	37-39 FT/LBS, 1995 15 FT/LBS +75°	37 FT/LBS, + 90°, 1995 37 FT/LBS +75°	37 FT/LBS, + 90°, 1995 44 FT/LBS +90°
GM	3.4	207	L32	93-95	39 FT/LBS	37 FT/LBS, + 90°	37 FT/LBS, + 90°
GM	3.4	207	LA1	99-00	15 FT/LBS + 75°	37 FT/LBS + 77°	37 FT/LBS + 90°
GM	3.4	208		35-36	45-50 FT/LBS	80-90 FT/LBS	60 FT/LBS
GM	3.5	215		61-63	30-35 FT/LBS	50-60 FT/LBS AND REAR MAIN CAP 70 FT/LBS	45-55 FT/LBS
GM	3.5	215		64-65	30-35 FT/LBS	60-70 FT/LBS	85-100 FT/LBS
GM	3.5	215		61-63	30-45 FT/LBS	50-55 FT/LBS, REAR = 65-70#	50-55 FT/LBS W/OIL ON BOLTS
GM	3.5	216		37-52	30-35 FT/LBS	85-95 FT/LBS	75-80 FT/LBS
GM	3.5	212	LX5	98-03	22 FT/LBS, LOOSEN, 18 FT/LBS + 110°	20 FT/LBS + 50°	M11: 30 FT/LBS +60°+60°+80° M6: 106 IN/LBS
GM	3.5	206		29-38	40-45 FT/LBS		75-80 FT/LBS
GM	3.7	224		40-47	40-45 FT/LBS		
GM	3.7	223		37-38	45-50 FT/LBS	80-90 FT/LBS	60 FT/LBS
GM	3.7	225		64-67	30-40 FT/LBS	65-70 FT/LBS	1965-67: 65-80 FT/LBS 1964: 60-70 FT/LBS
GM	3.7	223		39-40	45-50 FT/LBS	80-90 FT/LBS	60 FT/LBS
GM	3.7	228		39-51	40-45 FT/LBS	95 FT/LBS	75-85 FT/LBS
GM	3.7	223		35-36	45-50 FT/LBS	80-90 FT/LBS	60 FT/LBS
GM	3.8	231		78-81	40 FT/LBS	110 FT/LBS	80 FT/LBS
GM	3.8	231		86-87	40 FT/LBS	110 FT/LBS	25#, +90°, +90° -DO NOT EXCEED 60 FT/LBS
GM	3.8	231		82-	40 FT/LBS	110 FT/LBS	80 FT/LBS



Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
GM	3.8	231		88-	45 FT/LBS	90 FT/LBS	25 FT/LBS, + 90°, + 90°
GM	3.8	232		36-	45-50 FT/LBS	80-90 FT/LBS	60 FT/LBS
GM	3.8	229		80-82	45 FT/LBS	70 FT/LBS	65 FT/LBS
GM	3.8	231	L36	95-04	20 FT/LBS + 50°	30 FT/LBS + 110° SIDE BOLTS 11 FT/LBS + 45° **	DO NOT REUSE BOLTS! - REPLACE ALL BOLTS ****
GM	3.8	230		63-70	45 FT/LBS	65 FT/LBS	95 FT/LBS
GM	3.8	230		65-68	35-45 FT/LBS	60-70 FT/LBS	95 FT/LBS
GM	3.8	231		88-91	20 FT/LBS, + 50°	90 FT/LBS	35# +130°, 4 CENTER BOLTS +30°
GM	3.8	231	L27	91-94	20 FT/LBS + 50°	26 FT/LBS + 50°	35 FT/LBS, + 130°, THEN + 30° MORE ON 4 CENTER BOLTS
GM	3.8	229		83-84	45 FT/LBS	70 FT/LBS	65 FT/LBS
GM	3.8	231		78	40 FT/LBS	110 FT/LBS	80 FT/LBS
GM	3.8	231		84-85	40 FT/LBS	100 FT/LBS	25,50,72#, WAIT 15 MIN, 72# 1984: 80 FT/LBS
GM	3.8	231		83	40 FT/LBS	110 FT/LBS	80 FT/LBS
GM	3.8	231		86-88	40 FT/LBS	100 FT/LBS	25 FT/LBS + 90° + 90°
GM	3.8	231		78-81	40 FT/LBS	110 FT/LBS	80 FT/LBS
GM	3.8	231		82-	40 FT/LBS	110 FT/LBS	80 FT/LBS
GM	3.8	231		84-86	40 FT/LBS	110 FT/LBS	80 FT/LBS
GM	3.8	231		85-86	40 FT/LBS	100 FT/LBS	25 FT/LBS, + 90°, + 90° 1985: 72 FT/LBS
GM	3.8	231		87-88	40 FT/LBS	110 FT/LBS	25 FT/LBS, + 90°, + 90°
GM	3.8	231		78-	40 FT/LBS	110 FT/LBS	80 FT/LBS
GM	3.8	231		79	40 FT/LBS	110 FT/LBS	80 FT/LBS
GM	3.8	231		83-87	40 FT/LBS	110 FT/LBS	80 FT/LBS
GM	3.8	231	L67	92-94	20 FT/LBS + 50°	26 FT/LBS + 50°	35# +130°, BOLTS #1-4 +30°
GM	3.8	231	L67	95-01	20 FT/LBS + 50°	26 FT/LBS + 50°	DO NOT REUSE BOLTS! - ALWAYS REPLACE *****
GM	3.8	231		75-77	40 FT/LBS	110 FT/LBS	80 FT/LBS
GM	3.8	231	L67	95-01	20 FT/LBS, + 50°	26 FT/LBS, + 45°	35 FT/LBS, 130°, 4 CENTER BOLTS AN ADDITIONAL 30°
GM	3.9	235	4BD2-TC	85-94	29 FT/LBS, + 60-90°	166-180 FT/LBS	50,65 FT/LBS, + 90-120°
GM	3.9	239		41-54	45-50 FT/LBS	1941-48: 80-90 FT/LBS, 1949-54: 95 FT/LBS, 120# REAR	60 FT/LBS
GM	3.9	235		49-62	35-45 FT/LBS	100-110 FT/LBS	90-95 FT/LBS
GM	4.0	244	L47	95-01	1995 20 FT/LBS, + 90°, * SEE COMMENTS	15 FT/LBS, + 65° CRANKCASE BOLTS 22 FT/LBS	30 FT/LBS, +70°, +60°, +60° - USE NEW, 6MM BOLTS: 8.8 FT/LBS
GM	4.0	248		37-50	45 FT/LBS	85-95 FT/LBS	75-85 FT/LBS, 1953-55: 90-100 FT/LBS
GM	4.1	250		77-78	35-45 FT/LBS	60-70 FT/LBS	95 FT/LBS
GM	4.1	250		66-69	35-45 FT/LBS	60-70 FT/LBS	95 FT/LBS
GM	4.1	250		81-85	35-45 FT/LBS	60-70 FT/LBS	95 FT/LBS
GM	4.1	249		37-49	45-50 FT/LBS	1937-48: 80-90 FT/LBS, 1949: 95 FT/LBS, 120# REAR	60 FT/LBS
GM	4.1	252		87-	22 FT/LBS	85 FT/LBS	38,74 FT/LBS, BOLTS 1,3&4: 90#
GM	4.1	250		78-80	35-45 FT/LBS	60-70 FT/LBS	95 FT/LBS
GM	4.1	252		87-88	22 FT/LBS	85 FT/LBS	SEE TB 1235
GM	4.1	252		82-86	22 FT/LBS	85 FT/LBS	38,74 FT/LBS, BOLTS 1,3&4: 90#
GM	4.1	256		54-56	40-50 FT/LBS	85-95 FT/LBS	50-60 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
GM	4.1	252		82-84	40 FT/LBS	110 FT/LBS	80 FT/LBS
GM	4.1	252		80-81	40 FT/LBS	110 FT/LBS	80 FT/LBS
GM	4.2	256	LL8	02-05	18 FT/LBS, +110°	18 FT/LBS, +180°	MED=22#,+155°,SHORT=62 INCH/LB,+60°,LONG=62 INCH/LB,+120° *
GM	4.2	261		54-62	35-45 FT/LBS CLAMP BOLT = 30 FT/LBS	100-110 FT/LBS	90-95 FT/LBS
GM	4.2	257		37-48	50-55 FT/LBS	1-4: 100 FT/LBS 5: 140 FT/LBS	60-70 FT/LBS
GM	4.3	262	L35	92-04	1992 20 FT/ LBS + 60°, 1993- 2000 20 FT/ LBS + 70°	70 FT/LBS	** 1992-95 22 FT/LBS, 44 FT/LBS, 66 FT/LBS ** SEE COMMENTS
GM	4.3	262		96-00	45 FT/LBS	70 FT/LBS	22 FT/LBS + 55° SHORT, 65° MEDIUM, 75° LONG
GM	4.3	265	L99	94-96	47 FT/LBS	78 FT/LBS	65 FT/LBS
GM	4.3	260		82-85	42 FT/LBS	89 FT/LBS (107 FOR '82) OUTER BOLTS ARE 50 FT/LBS	142 FT/LBS, BOLTS 5,6,11-14 59 FT/LBS
GM	4.3	260		82-85	20 FT/LBS, + 60°	89 FT/LBS (107 FOR '82) OUTER BOLTS ARE 50 FT/LBS	142 FT/LBS BOLTS 5,6,11-14: 59 FT/LBS
GM	4.3	265		80-81	35 FT/LBS	70 FT/LBS	95 FT/LBS
GM	4.3	262		85-86	45 FT/LBS	70 FT/LBS	65 FT/LBS
GM	4.3	262		92-95	45 FT/LBS	70 FT/LBS	65 FT/LBS AND SEALER
GM	4.3	262		79-80	42 FT/LBS	107 FT/LBS	
GM	4.3	262	LB4	86-97	20 FT/LBS, + 60°	75 FT/LBS	25,45,65 FT/LBS APPLY SEALER
GM	4.3	262		75-76	3/8" BOLTS 45 FT/LBS, 11/32" BOLTS 35 FT/LBS	75 FT/LBS	65 FT/LBS
GM	4.3	262	LU4	90-91	20 FT/LBS + 60°	80 FT/LBS, SIDE BLTS 75 FT/LBS	25,45,65 FT/LBS APPLY SEALER
GM	4.3	260		77-81	42 FT/LBS	80 FT/LBS BOLTS #1-4, 120 FT/LBS BOLT #5	85# CLEAN & OIL ENTIRE BOLT
GM	4.3	264		53-56	40-45 FT/LBS	100-110 FT/LBS	65-75 FT/LBS
GM	4.3	260		75-76	42 FT/LBS	80 FT/LBS	85 FT/LBS
GM	4.3	265		55-57	3/8" BOLTS: 45 FT/LBS, 11/32" BOLTS: 35 FT/LBS	60-70 FT/LBS	65 FT/LBS
GM	4.3	263		50-53	40-45 FT/LBS	90-100 FT/LBS	65-70 FT/LBS
GM	4.3	260		77-82	42 FT/LBS	80 FT/LBS	85 FT/LBS
GM	4.3	260		75-76	42 FT/LBS	80 FT/LBS	85 FT/LBS
GM	4.3	262		85-86	45 FT/LBS	75 FT/LBS	25,45,65 FT/LBS APPLY SEALER
GM	4.3	261		59-62	35-45 FT/LBS CLAMP BOLT = 30 FT/LBS	100-110 FT/LBS	90-95 FT/LBS
GM	4.4	270		45-62	45 FT/LBS	85-95 FT/LBS	75-85 FT/LBS, 1953-55 = 90-100 FT/LBS
GM	4.4	268		50-53	45-50 FT/LBS	95 FT/LBS, 120 FT/LBS REAR 95#S FOR 1949	60 FT/LBS
GM	4.4	267		79-82	45 FT/LBS	75 FT/LBS	65 FT/LBS
GM	4.5	272		90	24 FT/LBS	85 FT/LBS	38,74# BOLTS 1,3,&4: 90# 90 FT/LBS *
GM	4.5	272		88	22 FT/LBS	85 FT/LBS	38,74#, BOLTS 1,3,& 4 90# * 90 FT/LBS *
GM	4.5	272		88-89	22 FT/LBS	85 FT/LBS	38,74#, BOLTS 1,3,& 4: 90# * 90 FT/LBS *

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
GM	4.6	283		56-67	3/8" BOLTS: 45 FT/LBS 11/32" BOLTS: 35 FT/LBS	60-70 FT/LBS	65 FT/LBS
GM	4.6	279	L37	93-03	1993-95 18-20 FT/LBS + 90° *	15 FT/LBS, + 65° SIDE BOLTS 22 FT/LBS	30 FT/LBS, + 70°, + 60°, + 60° USE NEW BOLTS
GM	4.6	279	LD8	93-03	1994-95 18-20 FT/LBS + 90° * SEE COMMENTS	15 FT/LBS, + 65° SIDE BOLTS 22 FT/LBS	30 FT/LBS + 70°, + 60°, + 60° USE NEW BOLTS
GM	4.7	287		55-55	35-45 FT/LBS	95 FT/LBS, REAR 120 FT/LBS	95 FT/LBS
GM	4.8	293	LR4	99-02	15 FT/LBS + 60° OR 15 FT/LBS, + 75° - SEE TB 2205	INNER 15 FT/LBS + 80° SIDE BOLTS 18 FT/LBS	** SEE COMMENTS BELOW, MUST USE NEW 8MM & 11MM BOLTS!
GM	4.8	292		74-77	30-35 FT/LBS	60-70 FT/LBS	95 FT/LBS, BOLT 11: 85 FT/LBS
GM	4.8	292		63-73	30-35 FT/LBS	60-70 FT/LBS	92 FT/LBS
GM	4.8	292		78-90	30-35 FT/LBS	60-70 FT/LBS	92 FT/LBS, BOLT 11: 85 FT/LBS
GM	4.9	301		77-79	35 FT/LBS	70 FT/LBS, REAR BRG CAP 100#	90-95 FT/LBS
GM	4.9	300	L26	91-95	25 FT/LBS	85 FT/LBS	SEE TB 1235
GM	4.9	300		64-67	30-40 FT/LBS	1964: 50-55#, REAR BRG 65-70# 1965-67: 95-120 FT/LBS ALL	65-70 FT/LBS
GM	4.9	301		77-81	35 FT/LBS	70 FT/LBS, REAR BRG CAP 100#	90-95 FT/LBS
GM	4.9	301		77-81	28 FT/LBS	135 FT/LBS	90-95 FT/LBS
GM	4.9	301		79-81	35 FT/LBS	70 FT/LBS, REAR BRG CAP 100#	90-95 FT/LBS
GM	5.0	305	LO3	88-92	30 FT/LBS	76 FT/LBS	22, 45, 68 FT/LBS
GM	5.0	305	L69	84-88	35 FT/LBS 11/32" BOLTS 45 FT/LBS 3/8" BOLTS	75 FT/LBS	65 FT/LBS
GM	5.0	307		80-90	18 FT/LBS + 70°	#1-4: 80 FT/LBS,#5: 120 FT/LBS	125-130 FT/LBS W/OIL ON BOLTS*
GM	5.0	305		77-79	45 FT/LBS 3/8" BOLTS 35 FT/LBS 11/32" BOLTS	75 FT/LBS	65 FT/LBS
GM	5.0	305		83	45 FT/LBS	70 FT/LBS	65 FT/LBS
GM	5.0	303		49-53	45-50 FT/LBS	85-95 FT/LBS 140 FT/LBS ON THE REAR	65-70 FT/LBS
GM	5.0	305		89-95	45 FT/LBS 3/8" BOLTS, 35 FT/LBS 11/32" BOLTS	75 FT/LBS	65 FT/LBS
GM	5.0	305	LG4	78-88	45 FT/LBS 3/8" BOLTS 35 FT/LBS 11/32" BOLTS	75 FT/LBS	65 FT/LBS
GM	5.0	302		50-57	35-45 FT/LBS	90-95 FT/LBS	90-100 FT/LBS
GM	5.0	302		67-69	45 FT/LBS	75 FT/LBS	65 FT/LBS
GM	5.0	305		76-79	45 FT/LBS	75 FT/LBS	65 FT/LBS
GM	5.0	304		49-53	35-45 FT/LBS	100 FT/LBS, REAR BRG CAP 140#	50-60 FT/LBS
GM	5.0	305		81-87	45 FT/LBS	75 FT/LBS	65 FT/LBS
GM	5.0	305	LB9	88-92	45 FT/LBS	75-80 FT/LBS	22, 45, 67 FT/LBS
GM	5.0	305		60-75	65-75 FT/LBS	130-140 FT/LBS #5 W/1/2" BOLT 55-65 FT/LBS	65-72 FT/LBS
GM	5.0	307		83-90	42 FT/LBS	#1-4 80 FT/LBS, #5 120 FT/LBS	125-130 FT/LBS
GM	5.0	305		82	3/8" BOLTS 45 FT/LBS 11/32" BOLTS 35 FT/LBS	75 FT/LBS	65 FT/LBS
GM	5.0	307		68-73	40-45 FT/LBS	70-75 FT/LBS	65 FT/LBS
GM	5.0	305	L30	96-99	20 FT/LBS + 55°	78 FT/LBS	* SEE COMMENTS BOX BELOW = USE SEALANT

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
GM	5.0	305		80-81	45 FT/LBS	75 FT/LBS	65 FT/LBS
GM	5.0	305		76	45 FT/LBS 3/8" BOLTS FT/LBS 11/32" BOLTS 35	75 FT/LBS	65 FT/LBS
GM	5.2	316		56-56	45 FT/LBS	95 FT/LBS, REAR CAP 120 FT/LBS	95 FT/LBS
GM	5.2	320		37-52	60-65 FT/LBS	90-100 FT/LBS	50-60 FT/LBS
GM	5.3	325	LM7	99-04	15 FT/LBS, +60° OR 15 FT/LBS, +75° - SEE TB 2205	INNER 15 FT/LBS + 80° SIDE BOLTS 18 FT/LBS	** SEE COMMENTS BELOW -- MUST USE NEW 8MM & 11MM BOLTS!
GM	5.3	322		53-56	40-45 FT/LBS	100-110 FT/LBS	65-75 FT/LBS
GM	5.3	322		37-40	50-60 FT/LBS	130-140 FT/LBS	70-75 FT/LBS
GM	5.3	324		54-56	40-50 FT/LBS	100 FT/LBS, REAR BRG CAP 140#	60-70 FT/LBS
GM	5.3	326		63-67	45 FT/LBS	90-110FT/LBS, REAR BRG CAP 110- 130 FT/LBS	85-100 FT/LBS
GM	5.4	331		49-55	40-45 FT/LBS	90-100 FT/LBS	65-70 FT/LBS
GM	5.4	327		62-67	30-35 FT/LBS	60-70 FT/LBS	65 FT/LBS
GM	5.4	327		68-69	45 FT/LBS	75 FT/LBS	65 FT/LBS
GM	5.4	330		64-67	42 FT/LBS	80 FT/LBS, REAR MAIN 120 FT/LB	80 FT/LBS ROCKER BRACKET 35 FT/LBS
GM	5.4	330		49-53	35-45 FT/LBS	85-95 FT/LBS	50-60 FT/LBS
GM	5.5	336		57-59			90-95 FT/LBS
GM	5.5	336		57-59	35-45 FT/LBS	100 FT/LBS,REAR BRG 120 FT/LBS	90-95 FT/LBS
GM	5.6	347		57-57	35-45 FT/LBS	100 FT/LBS,REAR BRG 120 FT/LBS	
GM	5.6	340		64-67	40-50 FT/LBS	95-120 FT/LBS	65-70 FT/LBS
GM	5.7	351		65-	65-75 FT/LBS	170-180 FT/LBS,REAR BRG 55-65 FT/LBS	65-72 FT/LBS
GM	5.7	350		89-92	48 FT/LBS NUTS, 35 FT/LB 11/32" BOLTS, 45 FT/LBS 3/8" BOLTS	75 FT/LBS INNER 65 FT/LBS OUTER	24,44,66 FT/LBS
GM	5.7	350		70-75	45 FT/LBS	95 FT/LBS 120 FT/LBS REAR BRG CAP ONLY	95 FT/LBS
GM	5.7	350		86-96	45 FT/LBS 45 FT/LBS 3/8" BOLTS	75 FT/LBS LONG 65 FT/LBS SHORT	24, 44, 66 FT/LBS
GM	5.7	350	LT5, ZR1	89-95	22 FT/LBS + 80-85°	#1,3&5: 30 FT/LBS + 50° #2&4: 15 FT/LBS + 80° OTHERS 22FTLB	LUBRICATE BOLTS & WASHERS W/ENGINE OIL, 45,74,118 FT/LBS
GM	5.7	350		74-	40-42 FT/LBS	95 FT/LBS	80 FT/LBS
GM	5.7	350		75-77	40-42 FT/LBS	95 FT/LBS	65-80 FT/LBS
GM	5.7	350		68-74	11/32 BOLTS 35 FT/ LBS, 3/8 BOLTS 40-42 FT/LBS	95 FT/LBS	65-80 FT/LBS
GM	5.7	346	LS6	01-04			SEE COMMENTS IN HEAD
GM	5.7	346	LS1	97-04	15 FT/LBS + 60°, LATER BOLTS 15 FT/LBS + 75° - SEE TB 2205	INNER 15 FT +80°, OUTER 15 FT +53°, SIDE BOLTS 18 FT/LBS	PLEASE SEE TB 1951
GM	5.7	350		83-86	45 FT/LBS 3/8" BOLTS 35 FT/LBS 11/32" BOLTS	75 FT/LBS	24,44,66 FT/LBS
GM	5.7	350		80-	42 FT/LBS	80 FT/LBS	24,44,66,FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
GM	5.7	350	LL0	89-95	45 FT/LBS	80 FT/LBS FOR INNER BOLTS 70 FT/LBS FOR OUTER BOLTS	25,45,65 FT/LBS
GM	5.7	346		40-48	50-60 FT/LBS	130-140 FT/LBS	70-75 FT/LBS
GM	5.7	350		80-88	45 FT/LBS	75 FT/LBS INNER, 65 FT/LBS OUTER	70 FT/LBS
GM	5.7	350	LT4	96-96	47 FT/LBS	68 FT/LBS, INBOARD BOLTS: 78 FT/LBS	22 FT/LBS, THEN 67° ON SHORT BOLTS, 80° ON MEDIUM & LONG BOLT
GM	5.7	350		78-79	45 FT/LBS 3/8" BOLTS 35 FT/LBS 11/32" BOLTS	75 FT/LBS	24,44,66 FT/LBS
GM	5.7	350		73-77	40-42 FT/LBS	95 FT/LBS	65-80 FT/LBS
GM	5.7	350		77-80	42 FT/LBS	80 FT/LBS BOLTS #1-4, 120 FT/LBS BOLT #5	130 FT/LBS
GM	5.7	350		78-79	42 FT/LBS	120 FT/LBS	130# CLEAN & OIL ENTIRE BOLT
GM	5.7	350		80-	42 FT/LBS	120 FT/LBS	130 FT/LBS
GM	5.7	350		80-81	42 FT/LBS	120 FT/LBS	130 FT/LBS
GM	5.7	350		68-75	45 FT/LBS	75 FT/LBS (INNER) 65 FT/LBS (OUTER) BOLTS	24, 44, 65 FT/LBS
GM	5.7	350		77-80	40-42 FT/LBS	95 FT/LBS	65-80 FT/LBS
GM	5.7	348		58-65	35-45 FT/LBS	90-100 FT/LBS	60-70 FT/LBS
GM	5.7	350		74-76	45 FT/LBS	75 FT/LBS	24, 44, 66 FT/LBS
GM	5.7	350		76-	45 FT/LBS	75 FT/LBS	24,44,66 FT/LBS
GM	5.7	350		69-76	42 FT/LBS	60-80 FT/LBS AND REAR BOLTS 90-120 FT/LBS	80-85 FT/LBS FOR 7/16" BOLT, 130 FT/LBS FOR 1/2" BOLT
GM	5.7	350		77-82	45 FT/LBS 3/8" BOLTS 35 FT/LBS 11/32" BOLTS	75 FT/LBS INNER 65 FT/LBS OUTER	65 FT/LBS
GM	5.7	350		80-83	48# NUTS, 35# 11/32" BOLTS, 45 FT/LBS 3/8" BOLTS	75 FT/LBS INNER 65 FT/LBS OUTER	24,44,66 FT/LBS
GM	5.7	350	LT1	92-97	1992-94 47 FT/LBS, 1995-97 20 FT/LBS AND 55°	68 FT/LBS, INBOARD BOLTS: 78 FT/LBS	22 FT/LBS, + 67° SHORT, 80° MED + LONG BLTS, TORQUE TO ANGLE
GM	5.7	350		68-77	35-45 FT/LBS	95 FT/LBS, REAR BRG 120 FT/LBS	100 FT/LBS
GM	5.7	350		78-80	42 FT/LBS	120 FT/LBS	130 FT/LBS -WITH ENGINE OIL ONTHREADS AND BOLT HEAD
GM	5.7	350		81-85	42 FT/LBS	120 FT/LBS	130 FT/LBS -WITH ENGINE OIL ONTHREADS & BOLT HEAD
GM	5.7	350		79-88	48# NUTS, 35# 11/32" BOLTS, 45 FT/LBS 3/8" BOLTS	75 FT/LBS INNER 65 FT/LBS OUTER	24,44,66 FT/LBS
GM	5.7	350		74	45 FT/LBS	95 FT/LBS 120 FT/LBS REAR BRG CAP ONLY	80 FT/LBS
GM	5.7	350	L98	85-92	45 FT/LBS 3/8" BOLTS 35 FT/LBS 11/32" BOLTS	75 FT/LBS INNERS, OUTERS 65 FT/LBS	75 FT/LBS
GM	5.7	350	L31	96-02	20 FT/LBS + 55°	1996-99 74 FT/LBS INNER, 64 FT/LBS OUTER, ** SEE COMMENTS	* SEE COMMENTS BOX BELOW = USE SEALANT
GM	5.7	350		78-79	42 FT/LBS	80 FT/LBS BOLTS #1-4, 120 FT/LBS BOLT #5	130 FT/LBS CLEAN & OIL BOLTS
GM	5.8	351		65-72	55-65 FT/LBS	#S 1-3 130-140 FT/LBS, REAR BRG 85-95 FT/LBS	65-72 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
GM	5.8	351		65-72	65-75 FT/LBS	170-180 FT/LBS,REAR BRG 55-65#	
GM	5.9	361		38-49			
GM	6.0	366		91-98	45 FT/LBS	100 FT/LBS	80-85 FT/LBS
GM	6.0	364	LQ4	99-04	15 FT/LBS, +60° OR 15 FT/LBS, +75° - SEE TB 2205	INNER 15 FT/LBS + 80°, OUTER 15 # + 51°, SIDE 18 FT/LBS	** SEE COMMENTS BELOW -- MUST USE NEW 8MM & 11MM BOLTS!!
GM	6.0	366		89-90	45 FT/LBS	100 FT/LBS	80-85 FT/LBS
GM	6.0	365		58-62		1956-60:90-100#, 1961:80-105#,1962:95 FT/LBS	1958-60: 65-70 FT/LBS 1961-62: 75 FT/LBS
GM	6.0	365		56-58	40-45 FT/LBS	90-100 FT/LBS	65-70 FT/LBS
GM	6.0	368		80-84	40 FT/LBS	90 FT/LBS	95 FT/LBS
GM	6.0	368		80-84	40 FT/LBS	90 FT/LBS	95 FT/LBS
GM	6.0	366		68-90	45 FT/LBS	100 FT/LBS	80-85 FT/LBS
GM	6.0	364		57-61	40-45 FT/LBS	100-110 FT/LBS	65-75 FT/LBS
GM	6.0	364	LQ9	02-03	15 FT/LBS, +60°	INNER 15 FT/LBS, +80° SIDE BOLTS 18 FT/LBS	* SEE COMMENTS BELOW -- MUST USE NEW 8MM & 11MM BOLTS!!
GM	6.1	371		57-60	45-50 FT/LBS	REAR:140 FT/LBS,OTHERS:100#	60-70 FT/LBS
GM	6.1	370		57-58	35-45 FT/LBS	100 FT/LBS,REAR BRG 140 FT/LBS	95 FT/LBS
GM	6.2	379		73-76	65-75 FT/LBS	130-140#, REAR BRG CAP 85-95#	
GM	6.2	379		82-86	44-52 FT/LBS	105-117 FT/LBS INNER, 94-105 FT/LBS OUTER	20,50 FT/LBS, + 90°
GM	6.2	379		87-93	44-52 FT/LBS	105-117 FT/LBS INNER, 94-105 FT/LBS OUTER	20,50 FT/LBS, + 90°
GM	6.2	379		87-93	44-52 FT/LBS	105-117 FT/LBS INNER, 94-105 FT/LBS OUTER	20, 50 FT/LBS, + 90°
GM	6.2	379		82-86	44-52 FT/LBS	105-117 FT/LBS INNER, 94-105 FT/LBS OUTER	20,50 FT/LBS, + 90°
GM	6.4	390		63-	40-45 FT/LBS	95 FT/LBS	75 FT/LBS
GM	6.4	389		59-66	45 FT/LBS	95 FT/LBS, REAR BRG CAP 120#	95 FT/LBS
GM	6.4	390		59-62	40-45 FT/LBS	1956-60:90-100#, 1961:80-105#,1962:95 FT/LBS	1959-60: 65-70 FT/LBS 1961-62: 75 FT/LBS
GM	6.4	394		59-64	35-45 FT/LBS	100 FT/LBS, REAR BRG CAP 140#	60-80 FT/LBS
GM	6.5	397		98-99	44-52 FT/LBS	105-117 FT/LBS FOR INNER, 30 FT/LBS FOR OUTER TB1522	20,55,55 FT/LBS + 90° USE TEFLON TAPE ON HEAD BOLTS.
GM	6.5	396		65-72	45 FT/LBS	2 BOLT CAPS 95 FT/LBS, 4 BOLT CAPS 105 FT/LBS	80 FT/LBS
GM	6.5	397	L49	94-95	44-52 FT/LBS	INNER 105-117 FT/LBS, OUTER 94-105 FT/LBS- SEETB1522	20, 55, 55 FT/LBS + 90° USE TEFLON TAPE ON HEAD BOLTS.
GM	6.5	394		59-64	32-42 FT/LBS	100 FT/LBS,REAR BRG CAP 140#	60-80 FT/LBS
GM	6.5	397	L56	94-00	44-52 FT/LBS	INNER 105-117 FT/LBS, OUTER 94-105 FT/LBS, SEE TB 1522	20, 55, 55 FT/LBS, + 90° USE TEFLON TAPE ON HEAD BOLTS.
GM	6.5	397	L57	94-99	48 FT/LBS	INNER 105-117 FT/LBS, OUTER 94-105 FT/LBS SEE TB 1522	20, 55, 55 FT/LBS, + 90° USE TEFLON TAPE ON HEAD BOLTS.
GM	6.5	397	L65	92-00	44-52 FT/LBS	105-117 FT/LBS FOR INNER, 94-105 FT/LBS FOR OUTER TB1522	20FT/LBS,55FT/LBS,55FT/LBS + 90° **

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
GM	6.6	400		72-77	45 FT/LBS	95 FT/LBS, REAR BRG CAP 120# 120 FT/LBS REAR BRG CAP ONLY	95 FT/LBS
GM	6.6	403		77-81	42 FT/LBS	(1-4) 80 FT/LBS (5) 120 FT/LBS	130 FT/LBS
GM	6.6	400		77-80	45 FT/LBS	75 FT/LBS	65 FT/LBS
GM	6.6	400		65-69	32-42 FT/LBS	80 FT/LBS, REAR BRG CAP 120#	80 FT/LBS
GM	6.6	400		68-69	32-42 FT/LBS	90-120 FT/LBS	80 FT/LBS
GM	6.6	400		75-75	45 FT/LBS	95 FT/LBS, 120# REAR BRG CAP 120 FT/LBS REAR BRG CAP ONLY	95 FT/LBS
GM	6.6	400		72-75	45 FT/LBS	95 FT/LBS, 120# REAR BRG CAP 120 FT/LBS REAR BRG CAP ONLY	95 FT/LBS
GM	6.6	400		79-80	45 FT/LBS	75 FT/LBS	65 FT/LBS
GM	6.6	400		77-79	45 FT/LBS	95 FT/LBS, REAR BRG CAP 120#	95-100 FT/LBS
GM	6.6	403	LB7	01-03	47 FT/LBS, +30°, +30°	37, 59 FT/LBS, +90°, +75°, --- SIDE BOLTS 58 FT/LBS	M12 BOLTS 37 2ND 59 FT/LBS, 3RD + 150°, M8 BOLTS 18 FT/LBS
GM	6.6	400		67-79	45 FT/LBS	95 FT/LBS, REAR BRG CAP 120#	95 FT/LBS
GM	6.6	401		59-66	40-50 FT/LBS	1959-64: 100-110 FT/LBS 1965- 66: 95-120 FT/LBS	1959-61: 65-75 FT/LBS 1962-66: 65-80 FT/LBS
GM	6.6	400		74-75	45 FT/LBS	95 FT/LBS, 120# REAR BRG CAP 120 FT/LBS REAR BRG CAP ONLY	95 FT/LBS
GM	6.6	400		67-69	40-50 FT/LBS	80-115 FT/LBS	100 FT/LBS
GM	6.6	402		70-72	45 FT/LBS	2 BOLT CAPS 95 FT/LBS, 4 BOLT CAPS 105 FT/LBS	80 FT/LBS
GM	6.6	403		77-77	42 FT/LBS	1-4: 80 FT/LBS, 5: 120 FT/LBS	130 FT/LBS
GM	6.6	403		78-79	42 FT/LBS	1-4: 80 FT/LBS, 5: 120 FT/LBS 120 FT/LBS BOLT #5	130 FT/LBS
GM	6.6	400		70-78	45 FT/LBS	80 FT/LBS	65 FT/LBS
GM	6.6	401		73-77	65-75 FT/LBS	130-140 FT/LBS, 1/2" REAR BOLTS 55- 65 FT/LBS	65-72 FT/LBS
GM	6.6	400		75-76	45 FT/LBS	75 FT/LBS	65 FT/LBS
GM	6.7	409		61-66	35-45 FT/LBS	95-105 FT/LBS	65 FT/LBS
GM	6.9	421		61-66	45 FT/LBS	#1-4: 95 FT/LBS, #5: 120 FT/LBS #5: 120 FT/LBS	95 FT/LBS
GM	6.9	421		61-66	45 FT/LBS	#1-4: 95 FT/LBS #5: 120 FT/LBS	95 FT/LBS
GM	7.0	428		67-69	45 FT/LBS	#1-4: 95 FT/LBS #5: 120 FT/LBS	95 FT/LBS
GM	7.0	425		77-79	40 FT/LBS	90 FT/LBS	95 FT/LBS
GM	7.0	425		77-79	40 FT/LBS	90 FT/LBS	95 FT/LBS
GM	7.0	425		65-67	32-42 FT/LBS	#1-4: 80 FT/LBS #5: 120 FT/LBS	80 FT/LBS
GM	7.0	427		66-90	45-55 FT/LBS, 7/16" BOLTS=63- 73# W/OIL .009 STRETCH	90-100 FT/LBS H.O.: 110- 120 FT/LBS	80-85 FT/LBS
GM	7.0	429		63-67	40 FT/LBS	95 FT/LBS	60 FT/LBS
GM	7.0	430		67-69	40-50 FT/LBS	80-115 FT/LBS	100 FT/LBS
GM	7.0	425		63-66	40-50 FT/LBS	1959-64: 100-110 FT/LBS, 1965- 66: 95-120 FT/LBS	65-80 FT/LBS
GM	7.0	427	LR0	91-96	45 FT/LBS	100 FT/LBS H.O.: 110- 120 FT/LBS	80-85 FT/LBS
GM	7.1	432		70-73	65-75 FT/LBS	130-140#, REAR BRG CAP 85-95#	

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
GM	7.4	454		75	45-55 FT/LBS	90-100 FT/LBS	30,60,80 FT/LBS
GM	7.4	454		76-79	45-55 FT/LBS	90-100 FT/LBS	30,60,80 FT/LBS
GM	7.4	454	LP4	99-01	47 FT/LBS	102 FT/LBS, CRANK POSITION SENSOR BOLT: 106 INCH/LBS	ALL BOLTS: 37 FT/LBS, THEN SEE COMMENTS *
GM	7.4	454		76-78	45-55 FT/LBS	90-100 FT/LBS INNER 100 FT/LBS OUTER	30,60,80 FT/LBS
GM	7.4	454		80	45-55 FT/LBS	90-100 FT/LBS	30,60,80 FT/LBS
GM	7.4	454		91-97	48 FT/LBS	90-100 FT/LBS	30,60,80 FT/LBS
GM	7.4	454		87-90	45-55 FT/LBS	90-100 FT/LBS	30,60,80 FT/LBS
GM	7.4	454		70-75	45-55 FT/LBS	90-100 FT/LBS	30 60, 80 FT/LBS
GM	7.4	454	L29	96-00	45 FT/LBS	90-100 FT/LBS	30, 60, 85 FT/LBS
GM	7.4	454	L21	99-01	47 FT/LBS	102 FT/LBS	SEE COMENTS
GM	7.4	454		87-90	45-55 FT/LBS	90-100 FT/LBS	30,60,80 FT/LBS
GM	7.4	454	L21	98-00	47 FT/LBS	102 FT/LBS	ALL 37 FT/LBS +60° THEN LONG +90° & SHORT +30° *
GM	7.4	454		80-86	45-55 FT/LBS	90-100 FT/LBS	30, 60, 80 FT/LBS
GM	7.5	455		71-76	43 FT/LBS	100 FT/LBS, REAR CAP BOLTS 120 FT/LBS	95 FT/LBS
GM	7.5	455		70-76	45 FT/LBS	110 FT/LBS	100 FT/LBS
GM	7.5	455		70-76	45 FT/LBS 3/8" BOLTS 63 FT/LBS 7/16" BOLTS **	95 FT/LBS, REAR CAP 120 FT/LBS	95 FT/LBS
GM	7.5	455		71-76	45 FT/LBS	95 FT/LBS, REAR CAP 120 FT/LBS	95 FT/LBS
GM	7.5	455	326	74-76	42 FT/LBS WITH 30W OIL	120 FT/LBS	85 FT/LBS
GM	7.5	455		74-74	42 FT/LBS WITH 30W OIL	120 FT/LBS	85 FT/LBS
GM	7.5	455		74-74	42 FT/LBS WITH 30W OIL	120 FT/LBS	85 FT/LBS
GM	7.5	455		68-76	42-45 FT/LBS WITH 30W OIL	110-120 FT/LBS WITH 30W OIL	80-85 FT/LBS WITH 30W OIL
GM	7.5	455		74-76	42 FT/LBS WITH 30W OIL	110-120 FT/LBS WITH OIL	80-85 FT/LBS WITH OIL
GM	7.5	455		72-75	42 FT/LBS WITH 30 W OIL	120 FT/LBS	85 FT/LBS
GM	7.7	472		68-74	40 FT/LBS	90 FT/LBS	115-120 FT/LBS
GM	7.8	478		65-77	65 FT/LBS	170-180#, 1/2" BOLT 55-65#	125-135 FT/LBS
GM	7.8	478		65-77	65-75 FT/LBS	#S 1-3 130-140 FT/LBS, REAR BRG 85-95 FT/LBS	65-72 FT/LBS
GM	8.1	496		01-04	22 FT/LBS, +90° REPLACE NUTS	INNER BOLTS: 22 FT/LBS, +90°, OUTER STUDS: 22 FT/LBS, +80°	22#, +120° ALL BOLTS, THEN LONG +60°, MED +45°, SHORT+30° **
GM	8.1	496		01-04	22 FT/LBS, +90° REPLACE NUTS	INNER BOLTS: 22 FT/LBS, +90°, OUTER STUDS: 22 FT/LBS, +80°	22#, +120° ALL BOLTS, THEN LONG +60°, MED +45°, SHORT+30° **
GM	8.2	500		80-91	59-70 FT/LBS	INNER: 103-108 FT/LBS, OUTER: 66-76 FT/LBS 12MM BOLT°	15MM: 110 FT/LBS, + 90°, 14MM: 145 FT/LBS
GM	8.2	500		70-76	40 FT/LBS	90 FT/LBS	115-120 FT/LBS
GM	8.2	502		91-01	3/8" 50 FT/LBS, 7/16" 73 FT/LBS	110 FT/LBS	85 FT/LBS SEE SERVICE MANUAL, 3 DIFFERENT BOLTS USED,
GM	8.2	500		80-91	59-70 FT/LBS	INNER: 103-108 FT/LBS, OUTER: 66- 76 FT/LBS 12MM BOLT ***	15MM: 110 FT/LBS, + 90°, 14MM: 145 FT/LBS
GM	8.2	500		70-73	40 FT/LBS	90 FT/LBS	115-120 FT/LBS
HANOMAG	6.3	387			130-140 FT/LBS	282-296 FT/LBS	253-275 FT/LBS



Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
HANOMAG	9.5	580			130-140 FT/LBS	282-296 FT/LBS	253-275 FT/LBS
HANOMAG	10.8	660			130-140 FT/LBS	282-296 FT/LBS	253-275 FT/LBS
HARLEY DAVIDSON	0.9	54					65 FT/LBS
HARLEY DAVIDSON	1.2	74				200 FT/LBS CRANK PIN NUTS	65 FT/LBS
HENRY	2.2	134		51-53	50-55 FT/LBS	60-70 FT/LBS	
HENRY	2.2	134		53-71	3/8" BOLT: 35-45 FT/LBS 7/16" BOLT: 50-55 FT/LBS	65-75 FT/LBS	60-70 FT/LBS
HERCULES	0.0	0			53-56		
HERCULES	0.9	57	NXA		42 FT/LBS		
HERCULES	1.1	65			25 FT/LBS	77 FT/LBS	35 FT/LBS
HERCULES	1.1	66	NXB		42 FT/LBS		
HERCULES	1.8	113			45 FT/LBS	77 FT/LBS	
HERCULES	2.0	123			42 FT/LBS	77 FT/LBS	STUDS 40 FT/LBS, SCREWS W WASHER 45 FT/LBS
HERCULES	2.1	130			7/16 BOLT = 56 FT/LBS **	70-80 FT/LBS	9/16 SOLID & 5/8 HOLLOW STUDS = 135, 5/8 SOLID = 175 FT/LBS
HERCULES	2.2	133			150 FT/LBS	FRONT, REAR, CENTER 105 FT/LBS INTERMEDIATE 85 FT/LBS	158 FT/LBS
HERCULES	2.2	133			42 FT/LBS	77 FT/LBS	52 FT/LBS
HERCULES	2.3	141			30-35 FT/LBS	55-60 FT/LBS	60-65 FT/LBS
HERCULES	2.4	149			70 FT/LBS	1/2" BOLTS FT/LBS, 9/16" BOLTS 130 FT/LBS	9/13" 147 FT/LBS, 5/8" 160 FT/LBS
HERCULES	2.4	149			7/16 BOLT = 56 FT/LBS 9/16 BOLT = 115 FT/LBS	1/2" BOLTS FT/LBS, 9/16" BOLTS 130 FT/LBS	9/16 SOLID & 5/8 HOLLOW STUDS = 135, 5/8 SOLID = 175 FT/LBS
HERCULES	2.4	149				1/2" BOLTS FT/LBS, 9/16" BOLTS 130 FT/LBS	9/16 SOLID & 5/8 HOLLOW STUDS = 135, 5/8 SOLID = 175 FT/LBS
HERCULES	2.7	164			53-56 FT/LBS	FRONT & INTERMEDIATE: 80 FT/LBS, REAR & CENTER: 70 FT/LBS	
HERCULES	2.7	166			150 FT/LBS	FRONT, REAR, CENTER 105 FT/LBS INTERMEDIATE 85 FT/LBS	158 FT/LBS
HERCULES	2.7	163			30-35 FT/LBS	55-60 FT/LBS	60-65 FT/LBS
HERCULES	2.7	164			53-56 FT/LBS	FRONT & INTERMEDIATE: 80 FT/LBS, REAR & CENTER: 70 FT/LBS	
HERCULES	2.8	169				1/2" BOLTS FT/LBS, 9/16" BOLTS 130 FT/LBS	9/16 SOLID & 5/8 HOLLOW STUDS = 135, 5/8 SOLID = 175 FT/LBS
HERCULES	2.8	173			56 FT/LBS	70-80 FT/LBS	
HERCULES	2.8	169			70 FT/LBS	1/2" BOLTS FT/LBS, 9/16" BOLTS 130 FT/LBS	9/13": 147#, 5/8": 160#
HERCULES	2.8	169				1/2" BOLTS FT/LBS, 9/16" BOLTS 130 FT/LBS	9/16 SOLID & 5.8 HOLLOW STUDS = 135, 5/8 SOLID = 175 FT/LBS
HERCULES	2.9	176			35 FT/LBS		
HERCULES	3.1	188			53-56 FT/LBS	FRONT & INTERMEDIATE: 80 FT/LBS, REAR & CENTER: 70 FT/LBS	

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
HERCULES	3.1	190			53-56 FT/LBS	FRONT,INTERMEDIATE:70 FT/LBS CENTER,REAR: 60 FT/LBS	NUTS 60 FT/LBS, BOLTS 100 FT/LBS
HERCULES	3.1	190			53-55 FT/LBS	FRONT,INTERMEDIATE:70 FT/LBS CENTER,REAR: 60 FT/LBS	
HERCULES	3.1	191			39 FT/LBS		
HERCULES	3.1	188			53-56 FT/LBS	FRONT & INTERMEDIATE: 80 FT/LBS, REAR & CENTER: 70 FT/LBS	SEE COMMENTS:
HERCULES	3.2	199			56 FT/LBS	70-80 FT/LBS	
HERCULES	3.3	199			70 FT/LBS	9/16": T-130#, PLAIN-80# 1/2": T- 100#, PLAIN-80#	9/16" BOLTS 147 FT/LBS, 5/8" BOLTS 160 FT/LBS
HERCULES	3.3	199			175 FT/LBS	5/8": 95 FT/LBS, 1/2": 77#	158 FT/LBS
HERCULES	3.3	199			70 FT/LBS		9/16": 147#, 5/8": 160#
HERCULES	3.3	198					9/16 SOLID & 5/8 HOLLOW STUDS = 135, 5/8 SOLID = 175 FT/LBS
HERCULES	3.3	198					9/16 SOLID & 5.8 HOLLOW STUDS = 135, 5/8 SOLID = 175 FT/LBS
HERCULES	3.3	199			53-56 FT/LBS	FRONT & INTERMEDIATE: 80 FT/LBS, REAR & CENTER: 70 FT/LBS	
HERCULES	3.3	199			53-56 FT/LBS	FRONT, INTERMEDIATE: 80 FT/LBSREAR, CENTER: 70 FT/LBS	
HERCULES	3.3	198					9/16 SOLID & 5/8 HOLLOW STUDS = 135, 5/8 SOLID = 175 FT/LBS
HERCULES	3.3	199			53-56 FT/LBS	FRONT & INTERMEDIATE: 80 FT/LBS, REAR & CENTER: 70 FT/LBS	
HERCULES	3.4	205			35-36 FT/LBS	FRONT,INTERMEDIATE:70 FT/LBS CENTER,REAR: 60 FT/LBS	
HERCULES	3.4	205			53-56 FT/LBS	FRONT,INTERMEDIATE:70 FT/LBS CENTER,REAR: 60 FT/LBS	
HERCULES	3.5	214			53-56 FT/LBS	FRONT & INTERMEDIATE: 80 FT/LBS, REAR & CENTER: 70 FT/LBS	65-100 FT/LBS
HERCULES	3.5	212			56 FT/LBS	70-80 FT/LBS	
HERCULES	3.6	221			39 FT/LBS, PIN CLAMP BOLT 35 FT/LBS	FRONT,INTERMEDIATE:70 FT/LBS CENTER,REAR: 60 FT/LBS	BOLTS MANIFOLD SIDE=75 FT/LBS , ALL OTHERS 100 FT/LBS
HERCULES	3.6	221			53-56 FT/LBS	FRONT,INTERMEDIATE:70 FT/LBS CENTER,REAR: 60 FT/LBS	
HERCULES	3.7	226			70 FT/LBS	FRONT,INTERMEDIATE,REAR: 130# CENTER: 100#	SEE TB 1072
HERCULES	3.7	226			70 FT/LBS	9/16": T-130#, PLAIN-80# 1/2": T- 100#, PLAIN-80#	9/16": 147#, 5/8": 160#
HERCULES	3.7	226			70 FT/LBS	70-80 FT/LBS	9/16": 147#, 5/8": 160#
HERCULES	3.7	226			70 FT/LBS	FRONT,INTERMEDIATE,REAR: 130# CENTER: 100#	SEE TB 1072

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
HERCULES	3.7	226			53-56 FT/LBS	FRONT & INTERMEDIATE:80 FT/LBS, REAR & CENTER:70 FT/LBS	
HERCULES	3.7	226			53-56 FT/LBS	FRONT & INTERMEDIATE: 80 FT/LBS, REAR & CENTER: 70 FT/LBS	
HERCULES	3.7	226			53-56 FT/LBS	FRONT & INTERMEDIATE: 80 FT/LBS, REAR & CENTER: 70 FT/LBS	
HERCULES	3.7	226					9/16 SOLID & 5/8 HOLLOW STUD = 135, 5/8 SOLID = 175 FT/LBS
HERCULES	3.7	226			175 FT/LBS	5/8": 95 FT/LBS, 1/2": 77#	158 FT/LBS
HERCULES	3.7	226					9/16 SOLID & 5/8 HOLLOW STUDS = 135, 5.8 SOLID = 175 FT/LBS
HERCULES	3.7	226					9/16 SOLID & 5/8 HOLLOW STUDS = 135, 5/8 SOLID = 174 FT/LBS
HERCULES	3.8	230			53-56 FT/LBS	FRONT,INTERMEDIATE:70 FT/LBS CENTER,REAR: 60 FT/LBS	SEE COMMENTS
HERCULES	3.8	232					
HERCULES	3.8	232			53-56 FT/LBS	60-70 FT/LBS	
HERCULES	3.8	230			53-56 FT/LBS	FRONT,INTERMEDIATE:70 FT/LBS CENTER,REAR: 60 FT/LBS	
HERCULES	3.9	237			53-56 FT/LBS	FRONT,INTERMEDIATE:70 FT/LBS CENTER,REAR: 60 FT/LBS	NUTS 60, BOLTS 100 FT/LBS
HERCULES	3.9	237			53-56 FT/LBS	FRONT,INTERMEDIATE:70 FT/LBS CENTER,REAR: 60 FT/LBS	
HERCULES	3.9	237			53-56 FT/LBS	FRONT,INTERMEDIATE:70 FT/LBS CENTER,REAR: 60 FT/LBS	
HERCULES	3.9	237			53-56 FT/LBS	FRONT,INTERMEDIATE:70 FT/LBS CENTER,REAR: 60 FT/LBS	NUTS = 60 FT/LBS, BOLTS = 100 FT/LBS.
HERCULES	4.0	245	JXE		53-56 FT/LBS	60-70 FT/LBS	
HERCULES	4.0	245			53-56 FT/LBS	60-70 FT/LBS	100 FT/LBS
HERCULES	4.0	242			1/2": 105#, 7/16": 53#	FRONT, INTERMEDIATE: 105# CENTER, REAR: 70#	SCREW: 75#, STUD NUTS: 100#
HERCULES	4.1	249			150 FT/LBS	FRONT,REAR,CENTER 105 FT/LBS INTERMEDIATE 85 FT/LBS	158 FT/LBS
HERCULES	4.2	255			175 FT/LBS	5/8": 95 FT/LBS, 1/2": 77#	158 FT/LBS
HERCULES	4.3	260			175 FT/LBS	5/8": 95 FT/LBS, 1/2": 78#	157 FT/LBS
HERCULES	4.3	263			53-56 FT/LBS	60-70 FT/LBS	
HERCULES	4.5	272			150 FT/LBS	FRONT,REAR,CENTER 105 FT/LBS INTERMEDIATE 85 FT/LBS	158 FT/LBS
HERCULES	4.6	282			53-56 FT/LBS	60-70 FT/LBS	
HERCULES	4.9	298			1/2": 105#, 7/16": 53#	FRONT, INTERMEDIATE: 105# CENTER, REAR: 70#	SCREW: 75#, STUD NUTS: 100#
HERCULES	4.9	298			70 FT/LBS	"T" 9/16 BOLTS 130, 1/2 = 100 FT/LBS, PLAIN TOPS = 80 FT/LBS	5/8": 75/125/ 175 FT/LBS
HERCULES	4.9	298					9/16 SOLID & 5/8 HOLLOW STUDS = 135, 5/8 SOLID = 175 FT/LBS
HERCULES	4.9	298			175 FT/LBS	5/8": 95 FT/LBS, 1/2": 78#	157 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
HERCULES	4.9	298			70 FT/LBS	9/16" T-130 FT/LBS, PLAIN-80# 1/2" T-100#, PLAIN-80#	9/13": 147#, 5/8": 175# HOLLOW 5/8" STUDS, 135 T/LBS
HERCULES	4.9	298			68-72 FT/LBS	78-82 FT/LBS	130-140 FT/LBS
HERCULES	4.9	298		55-60	175 FT/LBS	5/8": 95 FT/LBS, 1/2": 78-80#	157 FT/LBS
HERCULES	4.9	298			175 FT/LBS	5/8": 95 FT/LBS, 1/2": 78#	157 FT/LBS
HERCULES	5.2	320			56 FT/LBS	CENTER & REAR: 70 FT/LBS, FRONT & INTERMED: 80 FT/LBS	100 FT/LBS
HERCULES	5.2	320			53-56 FT/LBS	60 FT/LBS CENTER AND REAR. 70 FT/LBS FRONT & INTERMDIATE	SEE COMMENTS IN HEAD SECTION
HERCULES	5.2	320			50-60 FT/LBS	60-70 FT/LBS	
HERCULES	5.2	320			53-56 FT/LBS	FRONT & INTERMED: 80 FT/LBS, REAR & CENTER: 70 FT/LBS	
HERCULES	5.5	339			53-56 FT/LBS	130 FT/LBS EXCEPT CENTER = 100FT/LBS. OLDER "T" REAR=80FT/LB	9/16" NUTS 147 FT/LBS, 5/8" NUTS 175 FT/LBS
HERCULES	5.6	339			70 FT/LBS	9/16": T-130#, PLAIN-80# 1/2": T-100#, PLAIN-80#	9/16" = 147#, 5/8" = 175#
HERCULES	5.6	339					
HERCULES	5.6	339			1/2": 105#, 7/16": 53#	FRONT, INTERMEDIATE: 105# CENTER, REAR: 70#	SCREW: 75#, STUD NUTS: 100#
HERCULES	5.6	339			175 FT/LBS	5/8": 95 FT/LBS, 1/2": 78#	157 FT/LBS
HERCULES	5.6	339			53-56 FT/LBS	60-70 FT/LBS CENTER+REAR=60 FT/LBS	
HERCULES	5.6	339			70 FT/LBS	80 FT/LBS, WITHOUT "T" ON BOLT	5/8": 75/125/ 175 FT/LBS
HERCULES	5.6	339					9/16 SOLID & 5/8 HOLLOW STUDS = 135, 5/8 SOLID = 175 FT/LBS
HERCULES	5.6	339				FRONT & INTERMED=70 FT/LBS, CENTER & REAR=60 FT/LBS	
HERCULES	5.6	339			53-56 FT/LBS	60-70 FT/LBS	65 FT/LBS
HERCULES	5.9	358			1/2": 105#, 7/16": 53#	FRONT, INTERMEDIATE: 105# CENTER, REAR: 70#	SCREW: 75#, STUD NUTS: 100#
HERCULES	5.9	361			1/2": 105#, 7/16": 53#	FRONT, INTERMEDIATE: 105# CENTER, REAR: 70#	SCREW: 75#, STUD NUTS: 100#
HERCULES	6.3	383			1/2": 105#, 7/16": 53#	FRONT, INTERMEDIATE: 105# CENTER, REAR: 70#	SCREW: 75#, STUD NUTS: 100#
HERCULES	6.6	404			1/2": 105#, 7/16": 53#	FRONT, INTERMEDIATE: 105# CENTER, REAR: 70#	SCREW: 75#, STUD NUTS: 100#
HERCULES	6.6	404			1/2": 105#, 7/16": 53#	FRONT & INTERMEDIATE: 105#, CENTER & REAR: 70#	SCREW: 75#, STUD NUTS: 100#
HERCULES	6.6	404			53 FT/LBS	FRONT & INTERMEDIATE: 105#, CENTER & REAR: 70#	75 FT/LBS
HERCULES	7.8	478			115-120 FT/LBS	135-140 FT/LBS	80, 130, 147, 160 FT/LBS
HERCULES	7.8	478			115-120 FT/LBS	135-140 FT/LBS	80, 130, 147, 160 FT/LBS
HERCULES	7.8	478			115-120	135-140 FT/LBS	
HERCULES	7.8	478			115-120 FT/LBS	135-140 FT/LBS	80, 130, 147, 160 FT/LBS
HERCULES	8.2	501				175 FT/LBS	
HERCULES	24.1	1468			350 FT/LBS	260 FT/LBS	315 FT/LBS
HERCULES	24.1	1468			350 FT/LBS	260 FT/LBS	315 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
HINO	3.8	234		88-92	88-93 FT/LBS	101-116 FT/LBS	50, 79, 101 FT/LBS
HINO	5.3	324	J05C-TD	02-03			M12 BOLTS=43 INCH/LB,+90°,+90°,M10 BOLTS=43 FT/LB, COVER=18#
HINO	6.0	364		86-87	88-93 FT/LBS	101-116 FT/LBS	50, 79, 101 FT/LBS
HINO	6.4	393			120-133 FT/LBS	115-130 FT/LBS	66-68,98-101,131-137 FT/LBS
HINO	6.5	396		85-96	120-133 FT/LBS	115-130 FT/LBS	66-68,98-101,131-137 FT/LBS
HINO	6.7	411		84-90	120-133 FT/LBS	115-130 FT/LBS	66-68,98-101,131-137 FT/LBS
HINO	7.8	480			159-173 FT/LBS	196-209 FT/LBS	174-188 FT/LBS, BOLT #27: 47-54 FT/LBS
HINO	8.0	486	J08	02-03	51 FT/LBS + 90° + 45°	51 FT/LBS + 90° + 45°	M12 BOLTS=43 INCH/LB,+90°,+90°,M10 BOLTS=43 FT/LB, COVER=18#
HINO	8.8	538	EP100T				16MM=239-253 FT/LBS, 10 MM=47-54 FT/LBS
HINO	9.4	575		81-90	174 FT/LBS	209 FT/LBS	85,135,175-188 FT/LBS * SEE COMMENTS IN HEAD SECTION
HINO	9.8	600					NON-PLATED BOLT : 94-101,130-137,166- 173 FT/LBS *
HINO	13.3	809	EK100		145-159 FT/LBS COAT WITH OIL	174-188 FT/LBS COAT WITH OIL	16MM=196-209#, 12MM=58-65# COAT ALL BOLTS W/OIL
HONDA	0.3	16	GXV270		124 INCH/LBS		26 FT/LBS - SEE NOTES TAB
HONDA	0.3	16	GX270		124 INCH/LBS		26 FT/LBS
HONDA	0.3	21	GX340		124 INCH/LBS		26 FT/LBS
HONDA	0.3	21	GXV340		124 INCH/LBS		26 FT/LBS - SEE NOTES TAB
HONDA	0.4	24	GX390		124 INCH/LBS		26 FT/LBS
HONDA	0.4	24	GXV390		124 INCH/LBS		26 FT/LBS
HONDA	1.2	75	EB3	78-79	18-21 FT/LBS	27-31 FT/LBS	40 FT/LBS
HONDA	1.2	75	EB1	73-	18-21 FT/LBS	27-31 FT/LBS	30-35#-ENG #EB1-1019949, 37-42# FROM ENG #EB1-1019950
HONDA	1.2	75	EB2	74-77	18-21 FT/LBS	27-31 FT/LBS	40 FT/LBS
HONDA	1.3	79	EJ1	78-80	18-21 FT/LBS	27-31 FT/LBS	22,43 FT/LBS
HONDA	1.3	82	EV1	85-87	23 FT/LBS	48 FT/LBS	22,49 FT/LBS
HONDA	1.3	82	EV1	84-	21 FT/LBS	36 FT/LBS	44 FT/LBS
HONDA	1.3	79	EJ1	83-	18-21 FT/LBS	27-31 FT/LBS	44 FT/LBS
HONDA	1.3	79	D13A2	87-	20 FT/LBS	36 FT/LBS	22,43-49 FT/LBS
HONDA	1.3	79		04-05	7.2 FT/LBS, +90°	18 FT/LBS, +40°	22 FT/LBS, +130°
HONDA	1.3	79	EJ1	81-82	18-21 FT/LBS	27-31 FT/LBS	22,43 FT/LBS
HONDA	1.5	91	D15Z1	92-95	NUT 24 FT/LBS	18,38 FT/LBS	22,53 FT/LBS
HONDA	1.5	91	D15B8	92-95	24 FT/LBS	18,38 FT/LBS	22,48 FT/LBS - SEE TB2027
HONDA	1.5	91	D15B7	92-95	24 FT/LBS	18,38 FT/LBS	22,48 FT/LBS - SEE TB2027
HONDA	1.5	91	D15B6	88-91	20 FT/LBS NUT	33 FT/LBS	22,43-49 FT/LBS - SEE TB 2027
HONDA	1.5	91	D15B2	88-91	23 FT/LBS	33 FT/LBS	22,48 FT/LBS - SEE AERA TB1728 & TB2027
HONDA	1.5	91	D15B1	88-91	23 FT/LBS	47 FT/LBS	22,48 FT/LBS - SEE AERA TB1728 & TB2027
HONDA	1.5	91	D15A2	87-91	20 FT/LBS	36 FT/LBS	44 FT/LBS - SEE TB 2027 JET VALVE = 58 FT/LBS
HONDA	1.5	91	EW1	85-87	20 FT/LBS	48 FT/LBS	22,49 FT/LBS AUX NUT 10 FT/LBS
HONDA	1.5	91	D15A3	87-	20 FT/LBS	36 FT/LBS	44 FT/LBS
HONDA	1.5	91	EW1	84-87	20 FT/LBS	33-36 FT/LBS	22,49 FT/LBS
HONDA	1.5	91	EM1	80-	18-21 FT/LBS	30-35 FT/LBS	
HONDA	1.5	91	EM1	81-82	18-21 FT/LBS	30-35 FT/LBS	44 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
HONDA	1.5	91	ED3	76-77	18-21 FT/LBS	30-35 FT/LBS	44 FT/LBS
HONDA	1.5	91	EM1	83-	18-21 FT/LBS	30-35 FT/LBS	44 FT/LBS
HONDA	1.5	91	ED4	75-76	18-21 FT/LBS	30-35 FT/LBS	44 FT/LBS
HONDA	1.5	91	ED4	77-	18-21 FT/LBS	30-35 FT/LBS	44 FT/LBS
HONDA	1.5	91	EW4	84-87	19-22 FT/LBS	30-35 FT/LBS	22,44 FT/LBS AUX NUT: 58 FT/LBS
HONDA	1.5	91	EW3	85-86	23 FT/LBS	48 FT/LBS	22,49 FT/LBS
HONDA	1.5	91	ED1	75-	18-21 FT/LBS	30-35 FT/LBS	44 FT/LBS
HONDA	1.5	91	ED3	78-79	18-21 FT/LBS	30-35 FT/LBS	44 FT/LBS
HONDA	1.5	91	ED4	78-79	18-21 FT/LBS	30-35 FT/LBS	44 FT/LBS
HONDA	1.5	91	ED2	75-76	18-21 FT/LBS	30-35 FT/LBS	44 FT/LBS
HONDA	1.6	97	D16Y7	96-00	23 FT/LBS	18,38 FT/LBS	14,36,49 FT/LBS, REPEAT 49 FT/LBS
HONDA	1.6	97	D16Y8	96-03	23 FT/LBS	18,38 FT/LBS	14,36,49 FT/LBS, REPEAT 49 FT/LBS
HONDA	1.6	97	D16Y5	96-00	23 FT/LBS	18,38 FT/LBS	14,36,49 FT/LBS, REPEAT 49 FT/LBS
HONDA	1.6	97	D16A6	88-91	20# (1988-89), 23# (1990-91) 490 GRAMS TOTAL WEIGHT	33 FT/LBS 10 MM (1988-89), 47 FT/LBS 11 MM (1990-91)	ALL BOLTS 14,36,49 FT/LBS, THEN BOLTS #1&2 REPEAT 49 FT/LBS*
HONDA	1.6	97	D16Z6	92-95	24 FT/LBS	18 FT/LBS, 38 FT/LBS	22,53 FT/LBS
HONDA	1.6	98	EF1	76-77	18-21 FT/LBS	30-35 FT/LBS	44 FT/LBS
HONDA	1.6	98	EF1	78-	18-21 FT/LBS	30-35 FT/LBS	44 FT/LBS
HONDA	1.6	97	B16A3	95-00	23 FT/LBS	18, 58 FT/LBS	B16A3: 22,62 FT/LBS, B16A2: 14,36,49#, REPEAT 49#
HONDA	1.7	102	D17A1	01-03	24 FT/LBS		14, 36, 49 FT/LBS
HONDA	1.7	102	D17A2	01-04	24 FT/LBS	18, 38 FT/LBS	14, 36, 49 FT/LBS
HONDA	1.8	110	A18A1	87-	23 FT/LBS	48 FT/LBS	22,49 FT/LBS
HONDA	1.8	107	EK1	83-	18-21 FT/LBS	30-35 FT/LBS	ACCORD: 44 FT/LBS PRELUDE: 49 FT/LBS
HONDA	1.8	107	EK1	81-82	18-21 FT/LBS	30-35 FT/LBS	1981:44 FT/LBS, 1982:49 FT/LBS
HONDA	1.8	107	EK1	80-	18-21 FT/LBS	30-35 FT/LBS	44 FT/LBS
HONDA	1.8	107	EK1	79-	18-21 FT/LBS	30-35 FT/LBS	44 FT/LBS
HONDA	1.8	112	ES1	83-84	23 FT/LBS	48 FT/LBS	22,49 FT/LBS
HONDA	1.8	112	ES2	84-85	23 FT/LBS	48 FT/LBS	22,49 FT/LBS
HONDA	1.8	112	ES3	85-85	23 FT/LBS	48 FT/LBS	22,49 FT/LBS
HONDA	1.8	112	ET2	84-86	23 FT/LBS	48 FT/LBS	22,49 FT/LBS
HONDA	2.0	119	B20A5	87-91	34 FT/LBS	49 FT/LBS	22,49 FT/LBS
HONDA	2.0	120	B20B4	97-98	23 FT/LBS	18, 56 FT/LBS	22, 63 FT/LBS, END BOLT 46 FT/LBS W / OIL
HONDA	2.0	119	A20A3	87-89	23 FT/LBS	49 FT/LBS	22,49 FT/LBS
HONDA	2.0	119	B20A3	88-91	23 FT/LBS	49 FT/LBS	22,49 FT/LBS
HONDA	2.0	120	B20Z2	99-01	23 FT/LBS	18,56 FT/LBS	22,63 FT/LBS, END PIVOT BOLT 46 FT/LBS WITH OIL
HONDA	2.0	119	BS1	85-86	23 FT/LBS	48# (1985), 49 FT/LBS (1986)	22,49 FT/LBS
HONDA	2.0	122	F20C1	00-02	18 FT/LBS, +90°	22 FT/LBS, +60°, 8MM BOLT=16 FT/LBS	21 FT/LBS, +90°, +90° (IF NEW: +90° ADDTNL), 8MM=16#
HONDA	2.0	122	K20A3	02-03	14 FT/LBS, +90°		
HONDA	2.0	119	A20A1	87-89	23 FT/LBS	49 FT/LBS	22,49 FT/LBS
HONDA	2.1	125	B21A1	90-91	34 FT/LBS	49 FT/LBS	22, 49 FT/LBS * SEE COMMENTS BOX
HONDA	2.2	132	H22A1	92-96	34 FT/LBS	22, 54 FT/LBS	29, 51, 72 FT/LBS
HONDA	2.2	132	F22B6	94-97	34 FT/LBS	22,55 FT/LBS	29,51,78 FT/LBS
HONDA	2.2	132	F22B2	94-97	34 FT/LBS	22,55 FT/LBS	29,51,78 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
HONDA	2.2	132	F22B1	94-97	34 FT/LBS	22,55 FT/LBS	29,51,72 FT/LBS
HONDA	2.2	132	F22A1	92-93	35 FT/LBS	22,53 FT/LBS	29,52,74 FT/LBS
HONDA	2.2	132	F22A1	90-91	34 FT/LBS	22,53 FT/LBS	29,51,78 FT/LBS
HONDA	2.2	134		98-00	25 FT/LBS, +45^, +15^	36 FT/LBS, +45^, +15^	18 FT/LBS, +90^, +90^, +90^
HONDA	2.2	132	H22A4	97-01	34 FT/LBS	22, 54 FT/LBS	29, 51, 72 FT/LBS
HONDA	2.3	140	4ZD1	94-98	43 FT/LBS	72 FT/LBS	58, 72 FT/LBS
HONDA	2.3	138	H23A1	92-95	35 FT/LBS	22,55 FT/LBS	29, 52, 74 FT/LBS
HONDA	2.3	138	F23A1	98-03	34 FT/LBS	22, 58 FT/LBS	22#, +90°, +90° (IF USING NEW BOLTS,22#, +90°, +90°, +90°)
HONDA	2.3	138	H23A4	97-98	35 FT/LBS	22,55 FT/LBS	29,52,74 FT/LBS
HONDA	2.4	144	K24A4	03-05	14 FT/LBS, +90°	22 FT/LBS, +56°, 8MM BOLTS=16 FT/LBS	
HONDA	2.6	158	4ZE1	94-97	43 FT/LBS	72 FT/LBS	58, 72 FT/LBS
HONDA	2.7	163	C27A1	95-97	33 FT/LBS	11MM: 29#, BRIDGE BOLT: 33#, SIDE BOLTS: 36 FT/LBS	22,56 FT/LBS
HONDA	3.0	183	J30A1	98-04	10 FT/LBS, +90^	56 FT/LBS, SIDE BOLTS: 36 FT/LBS	29, 51, 72 FT/LBS
HONDA	3.2	193		94-97	40 FT/LBS	*** SEE COMMENTS	M8: 15 FT/LBS, M11: 47 FT/LBS
HONDA	3.2	193	6VD1-W	94-02	40 FT/LBS	** SEE COMMENTS	M8: 15 FT/LBS, M11: 47 FT/LBS USE NEW BOLTS
HONDA	3.5	222	J35A1	98-01	14 FT/LBS	56 FT/LBS, SIDE BOLT 36 FT/LBS	29,29, 51,51, 72,72 FT/LBS
HUDSON	0.0	0		56	52-56 FT/LBS		
HUDSON	4.1	250		56	46-50 FT/LBS	80-85 FT/LBS 50-55 FT/LBS REAR BEARING CAP	
HUDSON	4.2	254		32-52	45 FT/LBS		
HUDSON	5.1	308		55-56	40-45 FT/LBS	75-80 FT/LBS	70-80 FT/LBS COLD
HUDSON	5.2	320		55-56			
HUDSON	5.4	327		57	46-50 FT/LBS	80-85 FT/LBS 50-55 FT/LBS REAR BEARING CAP	
HUDSON	5.7	352		56			
HYUNDAI	0.0	0					
HYUNDAI	1.5	90	G4EKS	95-02	26-28 FT/LBS	41-44 FT/LBS	52-55 FT/LBS COLD, 59-63# HOT
HYUNDAI	1.5	90	G4EKS	95-96	26-28 FT/LBS	41-44 FT/LBS	52-55 FT/LBS COLD, 59-63# HOT
HYUNDAI	1.5	90	G4EK	93-94	25-27.5 FT/LBS	40-43 FT/LBS	51-54# COLD, 59-61 FT/LBS HOT
HYUNDAI	1.5	90	G4AJR	90-94	24-25 FT/LBS	37-39 FT/LBS	51-54# COLD, 59-61 FT/LBS HOT
HYUNDAI	1.5	90	G15B	86-89	24-25 FT/LBS	37-39 FT/LBS	51-54# COLD, 59-61 FT/LBS HOT
HYUNDAI	1.6	98		01-03	24-26 FT/LBS	41-44 FT/LBS	26 FT/LBS, +90°, RELEASE ALL BOLTS, REPEAT 26 FT/LBS, +90°
HYUNDAI	1.6	98		88-91	23-25 FT/LBS	36-39 FT/LBS	51-54 FT/LBS
HYUNDAI	1.6	97	G4DRR	92-95	36-38 FT/LBS	47-51 FT/LBS	65-72 FT/LBS 1993 & UP: 76-83 FT/LBS
HYUNDAI	1.8	112	G4DMR	93-99	36-38 FT/LBS	47-51 FT/LBS	76-83 FT/LBS
HYUNDAI	1.8	110	G4GM	95-99	36-38 FT/LBS	20-24 FT/LBS, +65°	M10: 22 FT/LBS, +65°, +65° M12: 26 FT/LBS, +65°, +65°
HYUNDAI	1.8	107	G37B	93-94	24-25 FT/LBS	37-39 FT/LBS	51-54 FT/LBS
HYUNDAI	2.0	121		04-05	36-39 FT/LBS	20-24 FT/LBS, +60-65°	M10=18 FT/LBS, +60-65°, M12=22 FT/LBS, +60-65°
HYUNDAI	2.0	122	G4AP	92-98	36-38 FT/LBS NUT	47-51 FT/LBS	76-83 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
HYUNDAI	2.0	122	G4GF	92-03	36-38 FT/LBS NUT	47-51 FT/LBS	76-83 FT/LBS
HYUNDAI	2.0	121		99-01	37-39 FT/LBS	20-24 FT/LBS, +60-65°	M10=22#,+60-65°, +60-65° M12=26#, +60-65°, +60-65°
HYUNDAI	2.4	143	G4JS	99-01	13-16 FT/LBS, +90^	18 FT/LBS, +90^	14#, LOOSEN ALL, 14#, +90°, +90°
HYUNDAI	2.4	143		01-05			
HYUNDAI	2.4	143	G4CS	89-91	36-38 FT/LBS	36-39 FT/LBS	32-36,65-72 FT/LBS
HYUNDAI	2.5	152		99-01	11-14 FT/LBS, +90°	M10: 20-24 FT/LBS, +90^, M8: 10-13 FT/LBS, +90^	18 FT/LBS, +60°, +45° COLD
HYUNDAI	2.7	165		01-03	12-15 FT/LBS, +90°	M10=10-12 FT/LBS, M7=7-9 FT/LBS	18 FT/LBS, +60°, +45° (COLD), HEAD COVER 3.6-4.3 FT/LBS
HYUNDAI	3.0	183		89-98	36-38 FT/LBS	55-61 FT/LBS	77-85 FT/LBS
HYUNDAI	3.5	213	6GCU	02-03	26 FT/LBS, +90° - USE NEW BOLT	65-72 FT/LBS, REAR OIL SEAL 7-9 FT/LBS	75-82 FT/LBS, HEAD COVER 4-5 FT/LBS
INFINITI	2.0	122	SR20DE	91-96	10-12, 28-33 FT/LBS	24-25, 54-61 FT/LBS	29#, 58#, LOOSEN ALL, 25-33#, + 90°, + 90°
INFINITI	3.0	181	M30	90-92	10-12 FT/LBS, 28-33 FT/LBS	67-74 FT/LBS	22#,43#,LOOSEN ALL,22#,40-47#
INFINITI	3.0	183	VG30DE	93-96	12 FT/LBS, + 60-65°	67-74 FT/LBS	22#,43#,LOOSEN ALL,22#,40-47#
INFINITI	3.0	183	I30	96-98	12 FT/LBS, +60-65°	67-74 FT/LBS	25-33 FT/LBS, +90-95°, +90-95°
INFINITI	4.1	252		97-00	10-12 FT/LBS, +60-65°	#1-10=29#, #11-20=30#, #1-10 +45°, #11-20 +40°, #21-30=36# *	22,69 FT/LBS, LOOSEN ALL, 18-25 FT/LBS, +90-95°
INFINITI	4.5	274		90-99	10-12, 28-33 FT/LBS	7 STEP PROCEDURE, SEE TB 1742R	22#, 69#, LOOSEN ALL BOLTS, 18-25#, 69-72#
ISUZU	0.5	33	2KA1		29 FT/LBS	65 FT/LBS	75 FT/LBS NEW BOLTS, 83 FT/LBS USED BOLTS
ISUZU	0.6	36	2KB1		29 FT/LBS	65 FT/LBS	75 FT/LBS NEW BOLTS, 83 FT/LBS USED BOLTS
ISUZU	0.7	40	2KC1		29 FT/LBS	65 FT/LBS	75 FT/LBS NEW BOLTS, 83 FT/LBS USED BOLTS
ISUZU	0.8	49	3KA1		29 FT/LBS	65 FT/LBS	75 FT/LBS NEW BOLTS, 83 FT/LBS USED BOLTS
ISUZU	0.9	54	3KB1		29 FT/LBS	65 FT/LBS	75 FT/LBS NEW BOLTS, 83 FT/LBS USED BOLTS
ISUZU	0.9	56	3LA1		28-30 FT/LBS		
ISUZU	1.0	60	3KC1		29 FT/LBS	65 FT/LBS	75 FT/LBS NEW BOLTS, 83 FT/LBS USED BOLTS
ISUZU	1.0	59	2AA1		55-61 FT/LBS	116-130 FT/LBS	56-60 FT/LBS
ISUZU	1.1	67	3LB1				
ISUZU	1.2	72	2AB1		55-61 FT/LBS	116-130 FT/LBS	56-60 FT/LBS
ISUZU	1.5	90	4XC1T	87-89	24-27 FT/LBS	61-69 FT/LBS	29,58 FT/LBS ROCKER SHAFT BOLT 16 FT/LBS
ISUZU	1.5	90		85-89	24-27 FT/LBS	61-69 FT/LBS	29,58 FT/LBS ROCKER SHAFT BOLT 16 FT/LBS
ISUZU	1.5	89	3AA1		55-61 FT/LBS	116-130 FT/LBS	56-60 FT/LBS
ISUZU	1.5	90		85-88	25 FT/LBS	65 FT/LBS	29,58 FT/LBS
ISUZU	1.6	97	4XE1	90-91	24-27 FT/LBS	65 FT/LBS	29,58 FT/LBS
ISUZU	1.6	97		90-92	24-27 FT/LBS	61-69 FT/LBS	22,58 FT/LBS
ISUZU	1.6	97		91-92	24-27 FT/LBS	61-69 FT/LBS	22,58 FT/LBS
ISUZU	1.6	97		88-93	24-27 FT/LBS	61-69 FT/LBS	29,58 FT/LBS



Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
ISUZU	1.7	104	4LC1		17-20 FT/LBS + 100-115°	61-69 FT/LBS	12MM 61-69 FT/LBS + 60-90° 8MM = 18-25 FT/LBS
ISUZU	1.8	110	4FB1		47 FT/LBS	66-72FT?LBS	103 FT/LBS
ISUZU	1.8	109	3AB1		61 FT/LBS	116-130 FT/LBS	47,58 FT/LBS NEW BOLT, 47,65 FT/LBS USED BOLT
ISUZU	1.8	111		81-84	54-61 FT/LBS	72-80 FT/LBS	98 FT/LBS NEW BOLTS, 105 FT/LBS USED BOLTS
ISUZU	1.8	110		91-92	11 FT/LBS, + 45-60^	65 FT/LBS	29,58 FT/LBS
ISUZU	1.8	111	G180Z	81-85	43 FT/LBS	72 FT/LBS	72 FT/LBS
ISUZU	1.9	119		82-88	43 FT/LBS	72 FT/LBS	44,65,80 FT/LBS
ISUZU	2.0	119	G201		54-61 FT/LBS	116-130 FT/LBS	108 FT/LBS
ISUZU	2.0	119	C190		58-65 FT/LBS	115-130 FT/LBS	47,58 FT/LBS NEW, 47,65 FT/LBS USED
ISUZU	2.0	122	C201		59 FT/LBS	122 FT/LBS	59 FT/LBS INJECTOR ASSEMBLY - 54 FT/LBS
ISUZU	2.0	122	C201		59 FT/LBS	122 FT/LBS	59 FT/LBS INJECTOR ASSEMBLY - 54 FT/LBS
ISUZU	2.0	121	4ZC1	85-89	43 FT/LBS	72 FT/LBS	61,72 FT/LBS
ISUZU	2.2	136	C223	86-87	58-65 FT/LBS	116-130 FT/LBS	40-47#, 54-61# NEW BOLTS, 40-47#, 61-69# USED BOLTS
ISUZU	2.2	136	C223	85-87	58-65 FT/LBS	116-130 FT/LBS	40-47,54-61 FT/LBS NEW BOLTS, 40-47,61-69 FT/LBS USED BOLTS
ISUZU	2.2	136	D201		62 FT/LBS	125 FT/LBS	40-47#, 54-63# NEW BOLTS, 40-47#, 61-69# USED BOLTS
ISUZU	2.2	135	C221		56-59 FT/LBS	116-130 FT/LBS	54-61 FT/LBS
ISUZU	2.2	134	4LE1		54-61 FT/LBS WITH ENGINE OIL	61-69 FT/LBS WITH ENGINE OIL	61-69 FT/LBS, PLUS 60-90° TURN, USE ENGINE OIL ON THREADS
ISUZU	2.2	134		98-02	25 FT/LBS, +45°, +15°	36 FT/LBS, +45°, +15°	18 FT/LBS, +90°, +90°, +90°
ISUZU	2.2	134		96-98	38 FT/LBS	70 FT/LBS	STEP 1: 46# LONG, 43# SHORT, STEP 2: + 90°
ISUZU	2.3	137	4ZD1	86-95	43 FT/LBS	72 FT/LBS	58, 72 FT/LBS
ISUZU	2.3	137	4ZD1	85-87	43 FT/LBS	72 FT/LBS	58, 72 FT/LBS
ISUZU	2.4	146	C240		58-65 FT/LBS	123-152 FT/LBS	47,58# NEW BOLT, 47,65# USED (WITH OIL ON THREADS)
ISUZU	2.6	156	4ZE1	88-98	43 FT/LBS	72 FT/LBS	58-72 FT/LBS
ISUZU	2.8	0		83-87			
ISUZU	2.8	173		89-91	39 FT/LBS	70 FT/LBS	40 FT/LBS + 90°
ISUZU	2.8	169	4JB1		58-65 FT/LBS	116-130 FT/LBS	57-67 FT/LBS NEW, 72-80 FT/LBS USED
ISUZU	3.1	189		91-94	39 FT/LBS	70 FT/LBS	40 FT/LBS + 90°
ISUZU	3.2	193	6VD2	92-02	40 FT/LBS	BOLTS #17-24=29#, #1-8=29#, #9-16=22#, #9-15 +55-65° TB1845	M8: 15 FT/LBS, M11: 47 FT/LBS
ISUZU	3.2	193	6VD1	92-98	40 FT/LBS	BOLT #17-24=29#, #1-8=29#, #9-16=22#, #9-15 +55-65° TB1845	M8: 15 FT/LBS, M11: 47 FT/LBS
ISUZU	3.3	199	4BC2		79-87 FT/LBS	166-180 FT/LBS	51,65#,+ 90-120° FOR LAMINATEDSTEEL HEAD GASKETS *
ISUZU	3.5	214	6VE1	98-05	40 FT/LBS	OIL GALLEY 22# + 60°, MAIN BOLTS & SIDE BOLTS 29 FT/LBS	21, 47 FT/LBS USE NEW BOLTS! INSTALL DRY

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
ISUZU	3.6	219	4BB1		79-87 FT/LBS	166-180 FT/LBS	51,65#, + 90-120° FOR LAMINATEDSTEEL HEAD GASKETS*
ISUZU	3.6	222	4BE1		87 FT/LBS	174 FT/LBS	51, 65 FT/LBS, +90-120°
ISUZU	3.9	235	4BD2-TC	85-99	29 FT/LBS + 60-90°	166-180 FT/LBS	50,65 FT/LBS + 120-150° (SEE TB 1668)
ISUZU	3.9	235	4BD1T	86-91	87 FT/LBS	174 FT/LBS	50,65 FT/LBS, + 120-150° (SEE TB 1668)
ISUZU	3.9	235	4BD1T	86-91	87 FT/LBS	174 FT/LBS	50,65 FT/LBS, +120-150° (SEE TB 1668)
ISUZU	3.9	235	4BD1	85-90	87 FT/LBS	174 FT/LBS	50, 65 FT/LBS, +120-150° (SEE TB 1668)
ISUZU	3.9	235	4BD1	85-90	87 FT/LBS	174 FT/LBS	50, 65 FT/LBS, +120-150° (SEE TB 1668)
ISUZU	4.1	249	DA220		72-87 FT/LBS	123-152 FT/LBS	80-94 FT/LBS
ISUZU	4.3	262	4BG1			166-181 FT/LBS	
ISUZU	4.3	262		98-	45 FT/LBS	70 FT/LBS	22 FT/LBS, THEN SHORT BOLTS +55^, MEDIUM +65^, LONG +75^
ISUZU	4.3	262		97-99	45 FT/LBS	70 FT/LBS	65 FT/LBS AND SEALER
ISUZU	4.8	290	4HE1-TC	99-03	29 FT/LBS, +60°, THEN +30° WITH MOLY LUBE ON THREADS	M14 72, 98 FT/LBS, +30-60° W MOLY LUBE, M10 27 FT/LBS W OIL	72, 108 FT/LBS, +30-60°
ISUZU	5.2	317	4HG1		30 FT/LBS, +30°, THEN +30-60° ADDITIONAL	98 FT/LBS, +30-60°	72, 109 FT/LBS, +45°
ISUZU	5.4	329	6BB1		79-87 FT/LBS	166-180 FT/LBS	51,65#, + 90-120° FOR LAMINATEDSTEEL HEAD GASKETS*
ISUZU	5.8	353	6BD1	76-88	87 FT/LBS	174 FT/LBS	50,69 FT/LBS NEW, 83 FT/LBS USED
ISUZU	5.8	353	6BD1-T		28 FT/LBS, +60-90°	175 FT/LBS	50,65 FT/LBS, +90-120°
ISUZU	6.5	396	6BG1	88-94	28 FT/LBS, +60-90°	16-181 FT/LBS	50,65 FT/LBS, +90-120° NEW, 50 FT/LBS, +90° USED
ISUZU	6.5	396	6BG1-T	88-94	28 FT/LBS, +60-90°	175 FT/LBS	50,65 FT/LBS, +90-120°
ISUZU	7.1	435	6HE1-TC	94-01	29 FT/LBS, + 60°, + 45°	M14: 72,98 FT/LBS, + 45°, M10: 27 FT/LBS	72,108 FT/LBS, + 30-60°
ISUZU	7.8	475	6HK1-TC	98-01	29 FT/LBS, +60°, +30°	M14 BOLTS: 72,108 FT/LBS, +30-60° * M10: 27 FT/LBS	M14: 72, 108 FT/LBS, +30-60°, M10: 28 FT/LBS *
ISUZU	8.4	513	6SA1-T	86-90	SEE COMMENTS	14MM BOLTS 72/98 FT LBS + 45°, 10MM BOLTS 28 FT/LBS	1986-87:78,98 FT/LBS, +30-60°, 1988-90:72,108 FT/LBS, +30-60°
ISUZU	8.4	513	6SA1	84-92	29 FT/LBS + 60° + 60°	72-98 FT/LBS + 30°	1984-87: 78,98 FT/LBS, + 60° 1988-89: 72,108 FT/LBS, + 60°
ISUZU	9.8	598	6SD1	91-98	SEE COMMENTS	72,108 FT/LBS, + 30° M10 BOLT = 23-33 FT/LBS	
ISUZU	12.0	733	6RB2T	70-80	79.5 FT/LBS MAX		
ISUZU	12.0	733	6RA1	70-80	66-72 FT/LBS, 79.5 FT/LBS MAX	275-289 FT/LBS WITH OIL	108-145 FT/LBS, +60° WITH MOLY PASTE
ISUZU	12.0	733	E120	70-80	65-79 FT/LBS	260-304 FT/LBS	
ISUZU	13.7	838	6RB1	78-88	65-80 FT/LBS	260-305 FT/LBS	
IVECO	0.0	0					
IVECO	0.0	0			34 FT/LBS + 90° LUBRICATE	87 FT/LBS + 90° LUBRICATE BOLTS	73, 73 FT/LBS + 180°
IVECO	0.0	0			194-214 FT/LBS	39 FT/LBS, +120°, CHECK @ 325#SIDE BOLTS 184 FT/LBS	22,118 FT/LBS, +120°
IVECO	3.7	224			61-68 FT/LBS	59 FT/LBS + 90°	80 FT/LBS
IVECO	3.9	238		85-94	30 FT/LBS, + 60^	60 FT/LBS, + 90°	80 FT/LBS
IVECO	3.9	238			30 FT/LBS, + 60^	60 FT/LBS, + 90°	80 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
IVECO	5.4	330			111 FT/LBS	155 FT/LBS	M16:184 FT/LBS, M18:243 FT/LBS
IVECO	5.5	336			61-68 FT/LBS	59 FT/LBS, +90°	44 FT/LBS, +90°, +90° ----> DO NOT EXCEED 144 FT/LBS *
IVECO	5.5	336			82-101 FT/LBS	113-137 FT/LBS	113-137 FT/LBS
IVECO	5.5	336			61-68 FT/LBS	59 FT/LBS, +90°	44 FT/LBS, +90°, +90° ----> DO NOT EXCEED 144 FT/LBS *
IVECO	5.9	358			30 FT/LBS, + 60°	59 FT/LBS, + 90°	44 FT/LBS + 90° + 90°-- DO NOT EXCEED MAX TORQUE OF 144# *
IVECO	5.9	358			30 FT/LBS, + 60^	59 FT/LBS, + 90°	44 FT/LBS, +90°, +90°-- DO NOT EXCEED 144# MAX TORQUE *
IVECO	5.9	358			30 FT/LBS, + 60°	60 FT/LBS, + 90°	45 FT/LBS, + 90°, + 90°
IVECO	7.4	452		70-79	50,94 FT/LBS	110 FT/LBS	80,120,166 FT/LBS
IVECO	8.1	494			88.5 FT/LBS	155 FT/LBS	88,125,162 FT/LBS
IVECO	8.1	494			87 FT/LBS	152 FT/LBS	87,123,159 FT/LBS
IVECO	9.6	584			118-133 FT/LBS	225-247 FT/LBS	58,116,177 FT/LBS, REPEAT 177 FT/LBS
IVECO	9.8	599			155 FT/LBS	217 FT/LBS BLOCK REAR SUPPORT: 58 FT/LBS	210 FT/LBS ROCKER SHAFT SUPPORT 65 FT/LBS
IVECO	10.3	629			155 FT/LBS	217 FT/LBS	210 FT/LBS
IVECO	13.8	842			202 FT/LBS USE NEW	304 FT/LBS	217 FT/LBS
IVECO	13.8	842			202 FT/LBS USE NEW	304 FT/LBS	217 FT/LBS
JAGUAR	2.5	152		03-05	17, 32 FT/LBS, +105°	BOLT 1-8=18#,BOLT 9-16=30#,BOLT 1-16=+90°,BOLT 17-22=18# *	22 FT/LBS, +90°, LOOSEN 360°, 22 FT/LBS, +90°, +90° **
JAGUAR	3.0	181		03-05	17, 32 FT/LBS, +105°	BOLT 1-8=18#,BOLT 9-16=30#,BOLT 1-16=+90°,BOLT 17-22=18# *	22 FT/LBS, +90°, LOOSEN 360°, 22 FT/LBS, +90°, +90° **
JAGUAR	3.4	210		61-65	37.5 FT/LBS		
JAGUAR	3.6	219	AJ6	88-92	52-54 FT/LBS	100-104 FT/LBS	45 FT/LBS + 90° USE NEW BOLTS
JAGUAR	3.8	230		55-64	37 FT/LBS	83 FT/LBS	58 FT/LBS
JAGUAR	4.0	244		97-00	6-9, 22 FT/LBS, +90°	MUST USE NEW BOLTS - 12 STEPS:SEE FINAL ASSEMBLY PAGE 2	USE NEW - HAND TIGHT ALL, THEN 10MM:15,26#,+90+90°,8MM:17-20#
JAGUAR	4.0	243		93-96	39-41 FT/LBS USE NEW BOLTS	100-105 FT/LBS USE NEW BOLTS	45 FT/LBS, +90° USE NEW BOLTS
JAGUAR	4.0	243		90-97	37-44 FT/LBS USE NEW BOLTS	100-105 FT/LBS USE NEW BOLTS	45 FT/LBS, +90° USE NEW BOLTS
JAGUAR	4.2	258		66-87	36-38 FT/LBS	69-72 FT/LBS	50-52 FT/LBS CAM CAPS 9 FT/LBS
JAGUAR	5.3	326		72-90	40-41 FT/LBS	1/2" BOLTS 59-62 FT/LBS 3/8" BOLTS 27-28 FT/LBS	3/8"=27-28#, 7/16"=49-52 FT/LBS
JAGUAR	6.0	366		94-96	37-44 FT/LBS	1/2" BOLTS 59-62 FT/LBS 3/8" BOLTS 27-28 FT/LBS	3/8"=25-31#,7/16"=47-58 FT/LBS
JEEP	2.2	134		53-71	3/8" BOLT: 35-45 FT/LBS, 7/16" BOLT: 50-55 FT/LBS	65-75 FT/LBS	60-70 FT/LBS
JEEP	2.4	148		47-50	35-40 FT/LBS		
JEEP	2.6	161		50-62	35-40 FT/LBS		60-70 FT/LBS
JEEP	3.7	226		54-65	40-45 FT/LBS	85-95 FT/LBS	30-35 FT/LBS
JEEP	3.8	230		62-65	40-45 FT/LBS	85-95 FT/LBS	75-80 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
JEEP	4.2	258		71-77	1965-74: 27-30 FT/LBS 1975-93: 30-35 FT/LBS	75-85 FT/LBS	105 FT/LBS
JEEP	5.0	304		70-79	1974-74: 27-30 FT/LBS 1975-91: 30-35 FT/LBS	95-105 FT/LBS	
JEEP	5.4	327		65-68	46-50 FT/LBS	80-85 FT/LBS, REAR BEARING CAP 50-55 FT/LBS	58-62 FT/LBS
JEEP	5.7	350		68-71	35 FT/LBS	95 FT/LBS	75 FT/LBS
JEEP	5.9	360		71-91	1971-74: 27-30 FT/LBS 1975-91: 30-35 FT/LBS	95-105 FT/LBS	110 FT/LBS
JEEP	6.6	401		74-78	35-40 FT/LBS	95-100 FT/LBS	105-115 FT/LBS
JOHN DEERE	0.0	0					
JOHN DEERE	0.0	0	3TG66		17 FT/LBS	40 FT/LBS	25 FT/LBS
JOHN DEERE	0.0	0			16 FT/LBS	16 FT/LBS	10,16 FT/LBS
JOHN DEERE	0.0	0	3TG72		17 FT/LBS	58 FT/LBS	45 FT/LBS
JOHN DEERE	0.0	0					
JOHN DEERE	0.0	0			15 FT/LBS		24, 38 FT/LBS
JOHN DEERE	0.1	8			9 FT/LBS, 106 INCH/LBS		7,15 FT/LBS
JOHN DEERE	0.2	13			14 FT/LBS, 168 INCH/LBS	15.5 FT/LBS	7,16 FT/LBS
JOHN DEERE	0.2	13			14 FT/LBS, 168 INCH/LBS		7,16 FT/LBS
JOHN DEERE	0.5	28			14-15 FT/LBS	12-17 FT/LBS CRANKCASE COVER	25-29 FT/LBS
JOHN DEERE	0.7	43			12.5-14 FT/LBS	25-27 FT/LBS	14-16 FT/LBS
JOHN DEERE	0.7	43			12.5-14 FT/LBS	25-27 FT/LBS	16-18 FT/LBS
JOHN DEERE	0.8	48			12.5-14 FT/LBS	25-27 FT/LBS	14-16 FT/LBS
JOHN DEERE	0.8	48			12.5-14 FT/LBS	25-27 FT/LBS	14-16 FT/LBS
JOHN DEERE	0.8	48			12.5-14 FT/LBS	25-27 FT/LBS	14-16 FT/LBS
JOHN DEERE	0.9	54	3TNA72		17-21 FT/LBS	58 FT/LBS	14,28,45 FT/LBS
JOHN DEERE	1.0	60			14-15.5 FT/LBS	25-27 FT/LBS	TOP 6 NUTS W/WASHERS: 11-13#, BOTTOM 4 NUTS: 14-16 FT/LBS
JOHN DEERE	1.0	61	3TN75RJ		29 FT/LBS	58 FT/LBS	16,31,51 FT/LBS
JOHN DEERE	1.1	66		31-42	42 FT/LBS		
JOHN DEERE	1.2	70	3TNC78		29 FT/LBS	58 FT/LBS	16,31,51 FT/LBS
JOHN DEERE	1.2	75	3TN78		29 FT/LBS	58 FT/LBS	16,31,51 FT/LBS
JOHN DEERE	1.3	78			41 FT/LBS	HOUSING: 33-36 FT/LBS *, HOUSING-BLOCK: 59 FT/LBS	44,88,118-133 FT/LBS
JOHN DEERE	1.3	78			41 FT/LBS	HOUSING: 48-52 FT/LBS *, HOUSING-BLOCK: 59 FT/LBS	44,88,118-133 FT/LBS
JOHN DEERE	1.3	77		41-46	42 FT/LBS	77 FT/LBS	42 FT/LBS
JOHN DEERE	1.4	87	3TN84RJ		35 FT/LBS	72 FT/LBS	18,36,58 FT/LBS
JOHN DEERE	1.4	83			35 FT/LBS	72 FT/LBS	18,36,58 FT/LBS
JOHN DEERE	1.6	100		52-57	55-60 FT/LBS	140 FT/LBS	100-110 FT/LBS
JOHN DEERE	1.6	100		45-55	63 FT/LBS		96 FT/LBS 3/4 OIL LEAD STUD 180 FT/LBS
JOHN DEERE	1.6	100		52-57	55-60 FT/LBS	140 FT/LBS	100-110 FT/LBS
JOHN DEERE	1.7	101			55-60 FT/LBS	140 FT/LBS	100 FT/LBS
JOHN DEERE	1.7	105	3T90TJ		48 FT/LBS	HOUSING: 48-53 FT/LBS *, HOUSING-BLOCK: 59 FT/LBS	NUTS=43#, BOLTS=43,87,116-130#, BOLT #5&6=20,40,55 FT/LBS
JOHN DEERE	1.7	105	3T90J		48 FT/LBS	HOUSING: 48-53 FT/LBS *, HOUSING-BLOCK: 59 FT/LBS	44,88,118-133 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
JOHN DEERE	1.8	111			35 FT/LBS	72 FT/LBS	18,36,58 FT/LBS
JOHN DEERE	1.8	113			55-60 FT/LBS	140 FT/LBS	100 FT/LBS
JOHN DEERE	1.9	115		58-63	40-45 FT/LBS	145 FT/LBS	125 FT/LBS
JOHN DEERE	1.9	113			55-65 FT/LBS	140 FT/LBS	85-95 FT/LBS
JOHN DEERE	1.9	115			40-45 FT/LBS	145 FT/LBS	
JOHN DEERE	1.9	116	4TN84		35 FT/LBS	72 FT/LBS	18,36,58 FT/LBS
JOHN DEERE	1.9	113			55-60 FT/LBS	140 FT/LBS	85-95 FT/LBS
JOHN DEERE	1.9	113			55-65 FT/LBS	140 FT/LBS	85-95 FT/LBS
JOHN DEERE	2.2	135			40-45 FT/LBS LUBRICATED	85 FT/LBS	110 FT/LBS - RETORQUE HOT AFTER LOOSENING 1/4 TURN
JOHN DEERE	2.4	145		58-63	40-45 FT/LBS	145 FT/LBS	125 FT/LBS
JOHN DEERE	2.4	149		32-46	100 FT/LBS	150 FT/LBS	
JOHN DEERE	2.4	145			40-45 FT/LBS	145 FT/LBS	125-150 FT/LBS
JOHN DEERE	2.5	155			40-45 FT/LBS	145 FT/LBS	
JOHN DEERE	2.5	152			60-70 FT/LBS	85 FT/LBS	35,65,110 FT/LBS
JOHN DEERE	2.7	165			40-45 FT/LBS	145 FT/LBS	125 FT/LBS
JOHN DEERE	2.7	164			60-70 FT/LBS	85 FT/LBS, MODEL 1530: 110#	110 FT/LBS RETORQUE HOT
JOHN DEERE	2.7	164			40-45 FT/LBS	85 FT/LBS	110 FT/LBS RETORQUE HOT
JOHN DEERE	2.7	165			40-45 FT/LBS	145 FT/LBS	
JOHN DEERE	2.9	179			52# BLACK & PHOSPHATE COATED BOLT, 63# NATURAL COLOR BOLT	85 FT/LBS	4.25"SCRW:47,65,95#,RETORQ HOT4.5"SCRW:35,88,110#,RETRQ HOT*
JOHN DEERE	2.9	175			100 FT/LBS	150 FT/LBS	
JOHN DEERE	2.9	179			40 FT/LBS, + 90-100°	85 FT/LBS	75, 100, 110 FT/LBS, + 50-70°
JOHN DEERE	2.9	179			40 FT/LBS, + 90-100°	85 FT/LBS	75, 110, 110 FT/LBS, + 50-70°
JOHN DEERE	2.9	179	179		52# BLACK & PHOSPHATE COATED BOLT, 63# NATURAL COLOR BOLT	85 FT/LBS	4.25"SCRW:47,65,95#,RETORQ HOT4.5"SCRW:35,88,110#,RETRQ HOT*
JOHN DEERE	2.9	175			100 FT/LBS	150 FT/LBS	
JOHN DEERE	3.0	180			40-45 FT/LBS	85 FT/LBS	110 FT/LBS RETORQUE HOT
JOHN DEERE	3.1	190		35-45	85 FT/LBS	167 FT/LBS BRG HOUSING RETAIN SCREWS:100#	104 FT/LBS, WARM ENGINE, 104 FT/LBS
JOHN DEERE	3.1	190			100 FT/LBS	150 FT/LBS	
JOHN DEERE	3.1	186			40-45 FT/LBS	85 FT/LBS	
JOHN DEERE	3.1	190			87 FT/LBS	50, 100, 145 FT/LBS, REAR SEAL HOUSING: 19 FT/LBS	30, 60, 100 FT/LBS
JOHN DEERE	3.1	190			85 FT/LBS NUTS	100 FT/LBS, BLOCK-MAIN CASE166 FT/LBS	104 FT/LBS, RETORQUE HOT
JOHN DEERE	3.1	186			40-45 FT/LBS	85 FT/LBS	110 FT/LBS
JOHN DEERE	3.1	190			85 FT/LBS	100 FT/LBS, BLOCK-MAIN CASE166 FT/LBS	
JOHN DEERE	3.3	201			85-95 FT/LBS	150 FT/LBS	115 FT/LBS
JOHN DEERE	3.3	202			60-70 FT/LBS BLACK BOLTS USE NEW BOLTS	85 FT/LBS	110 FT/LBS RETORQUE HOT
JOHN DEERE	3.3	202			40-45 FT/LBS	85 FT/LBS	110 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
JOHN DEERE	3.5	217		58-63	40-45 FT/LBS	145-150 FT/LBS	145-150 FT/LBS
JOHN DEERE	3.6	217		58-63	40-45 FT/LBS	145-150 FT/LBS	145-150 FT/LBS
JOHN DEERE	3.6	217		58-63	40-45 FT/LBS	145-150 FT/LBS	145-150 FT/LBS
JOHN DEERE	3.6	219			52 FT/LBS - BLACK BOLT 63 FT/LBS - NATURAL COLOR BOLT	85 FT/LBS	35,65,95 FT/LBS
JOHN DEERE	3.6	219			40-45 FT/LBS OILED	85 FT/LBS	110 FT/LBS RETORQUE HOT
JOHN DEERE	3.6	219			52 FT/LBS - BLACK BOLT 63 FT/LBS - NATURAL COLOR BOLT	85 FT/LBS	35,65,95 FT/LBS
JOHN DEERE	3.7	227		64-67	85-95 FT/LBS	150 FT/LBS	115 FT/LBS
JOHN DEERE	3.9	239			40 FT/LBS, + 90-100°	85 FT/LBS	75, 110, 110 FT/LBS, + 50-70°
JOHN DEERE	3.9	239			52# BLACK & PHOSPHATE COATED, 63 FT/LBS SILVER COLOR BOLT	85 FT/LBS	95 FT/LBS BEFORE S/# 686938 *
JOHN DEERE	3.9	239			52# BLACK & PHOSPHATE COATED, 63 FT/LBS SILVER COLOR	85 FT/LBS	95 FT/LBS BEFORE SER #686938, AFTER SERIAL # SEE COMMENTS *
JOHN DEERE	3.9	239			40 FT/LBS, + 90-100°	85 FT/LBS	75,110,110 FT/LBS, + 50-70°
JOHN DEERE	4.0	241			85-95 FT/LBS	150 FT/LBS	
JOHN DEERE	4.1	248			40-45 FT/LBS	145 FT/LBS	
JOHN DEERE	4.2	254		61-63	55 FT/LBS + 90° USE NEW BOLTS	150 FT/LBS	115 FT/LBS
JOHN DEERE	4.2	254				150 FT/LBS	
JOHN DEERE	4.4	270	4270		120-130 FT/LBS	150 FT/LBS	
JOHN DEERE	4.4	270	4270		55 FT/LBS, + 90° OLD STYLE IS 95# (REPORTED)	150 FT/LBS	115 FT/LBS ROCKER ARM BOLTS 55 FT/LBS
JOHN DEERE	4.5	276			50 FT/LBS, + 90-100°	85 FT/LBS	75,110,110 FT/LBS + 50-70°
JOHN DEERE	4.5	276			50 FT/LBS, + 90-100°	85 FT/LBS	75,110,110 FT/LBS, + 50-70°
JOHN DEERE	4.5	276			95 FT/LBS	85 FT/LBS	4.25"SCRW:35,65,95# RETORQ HOT4.5"SCRW:35,88,110# RETRQ HOT*
JOHN DEERE	4.5	276	4045TF275		43 FT/LBS, +90-100°	100 FT/LBS	75, 110 FT/LBS, WAIT 5 MINUTES, 110 FT/LBS, +50-70°
JOHN DEERE	4.5	276	4045HF475		43 FT/LBS, +90-100°	100 FT/LBS	75, 110 FT/LBS, WAIT 5 MIN, 110 FT/BLS, +50-70°
JOHN DEERE	4.5	276			95 FT/LBS	85 FT/LBS	4.25"SCRW:35,65,95# RETORQ HOT4.5"SCRW:35,88,110# RETRQ HOT*
JOHN DEERE	4.9	302			85-95 FT/LBS	150 FT/LBS	115 FT/LBS
JOHN DEERE	5.0	303			60-70 FT/LBS	85 FT/LBS	35,65,95 FT/LBS
JOHN DEERE	5.0	303			60-70 FT/LBS	85 FT/LBS	35,65,95 FT/LBS
JOHN DEERE	5.0	303		56-60	100-110 FT/LBS	150 FT/LBS, BLOCK-MAIN CASE175 FT/LBS	150 FT/LBS
JOHN DEERE	5.3	321			105 FT/LBS	150 FT/LBS BLOCK-MAIN NUTS: 167 FT/LBS	150 FT/LBS, WARM, 150 FT/LBS
JOHN DEERE	5.3	321			100 FT/LBS		95 FT/LBS, LARGE STUD = 150#

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
JOHN DEERE	5.4	329			52 FT/LBS BLACK BOLT, 63 FT/LBS SILVER BOLT	85 FT/LBS	35,65,95 FT/LBS
JOHN DEERE	5.4	329			52 FT/LBS BLACK BOLT, 63 FT/LBS SILVER BOLT	85 FT/LBS	35,65,95 FT/LBS
JOHN DEERE	5.4	329			40-45 FT/LBS	85 FT/LBS	
JOHN DEERE	5.6	341			85-95 FT/LBS	150 FT/LBS	115 FT/LBS ROCKER SHAFT BOLTS 55 FT/LBS
JOHN DEERE	5.6	341			100-110 FT/LBS	150 FT/LBS	115 FT/LBS ROCKER SHAFT BOLTS 55 FT/LBS
JOHN DEERE	5.9	361			80-90 FT/LBS	150 FT/LBS, BLOCK-MAIN CASE=275 FT/LBS	275 FT/LBS
JOHN DEERE	5.9	362			200-220 FT/LBS	75 FT/LBS	275 FT/LBS
JOHN DEERE	5.9	361			80-90 FT/LBS	150 FT/LBS, BLOCK-MAIN CASE275 FT/LBS	275 FT/LBS
JOHN DEERE	5.9	359			40 FT/LBS, + 90-100°	85 FT/LBS	75,110,110 FT/LBS, + 50-70°
JOHN DEERE	5.9	359			40 FT/LBS, + 90-100°	85 FT/LBS	75,110,110 FT/LBS, + 50-70°
JOHN DEERE	5.9	359			40-45 FT/LBS	85 FT/LBS	
JOHN DEERE	5.9	359			52# BLACK & PHOSPHATE COATED BOLT, 63# NATURAL COLOR BOLT	85 FT/LBS	4.25"SCRW:35,65,95#, RETORQ HOT4.5"SCRW:35,88,110#, RETRQ HOT*
JOHN DEERE	5.9	359			52# BLACK & PHOSPHATE BOLT, 63 FT/LBS SILVER BOLT	85 FT/LBS	4.25"SCRW:47,65,95# RETORQ HOT5.0"SCRW:35,88,110# RETRQ HOT*
JOHN DEERE	5.9	362			100-110 FT/LBS	150 FT/LBS	115 FT/LBS ROCKER SHAFT BOLTS 55 FT/LBS
JOHN DEERE	6.2	381			120-130 FT/LBS	150 FT/LBS	115 FT/LBS
JOHN DEERE	6.2	379		50-57	80-90 FT/LBS	150 FT/LBS	208 FT/LBS, WARM ENGINE, 208 FT/LBS
JOHN DEERE	6.2	376		55	200-220 FT/LBS	LEFT & RIGHT = 75 FT/LBS CENTER = 50 FT/LBS	208 FT/LBS
JOHN DEERE	6.2	376			200-220 FT/LBS		275 FT/LBS
JOHN DEERE	6.6	404			55 FT/LBS, + 90°	150 FT/LBS	115 FT/LBS
JOHN DEERE	6.6	404			55 FT/LBS, + 90°	150 FT/LBS	115 FT/LBS
JOHN DEERE	6.6	404		67-76	55 FT/LBS, + 90°	150 FT/LBS	115 FT/LBS
JOHN DEERE	6.8	416		49-54	CASTELLATED NUTS 167 FT/LBS MARS DEN NUTS 210 FT/LBS		208 FT/LBS
JOHN DEERE	6.8	414			50 FT/LBS, + 90-100°	85 FT/LBS	75,110,110 FT/LBS, + 50-70°
JOHN DEERE	6.8	416			210 FT/LBS MARS DEN NUTS, 167 FT/LBS CASTELLATED NUTS	150 FT/LBS	208 FT/LBS
JOHN DEERE	6.8	414			50 FT/LBS, + 90-100°	85 FT/LBS	75,110,110 FT/LBS, + 50-70°
JOHN DEERE	6.8	414			95 FT/LBS	85 FT/LBS	4.25"SCRW:35,65,95# RETORQ HOT4.5"SCRW:35,88,110# RETRQ HOT*
JOHN DEERE	6.8	414			95 FT/LBS	85 FT/LBS	4.25"SCRW:35,65,95# RETORQ HOT4.5"SCRW:35,88,110# RETRQ HOT*
JOHN DEERE	6.8	414	6068TF275		43 FT/LBS, +90-100°	100 FT/LBS	75, 110 FT/LBS, WAIT 5 MIN, 110 FT/LBS, +50-70°

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
JOHN DEERE	6.8	414	6068HF475		43 FT/LBS, +90-100°	100 FT/LBS	75,110 FT/LBS, WAIT 5 MIN, 110 FT/LBS, +50-70°
JOHN DEERE	6.8	413		38-53	62.5 FT/LBS		208 FT/LBS
JOHN DEERE	7.6	466			55 FT/LBS, + 100°	150 FT/LBS	180 FT/LBS
JOHN DEERE	7.6	466			20,55 FT/LBS + 90° TIGHTEN BLIND BOLT HOLE FIRST!	150 FT/LBS	10.9 BOLT:105,130,130# * 12.9 BOLT:165,180,180# *
JOHN DEERE	7.6	466			20,55 FT/LBS + 90° TIGHTEN BLIND HOLE BOLT FIRST!	150 FT/LBS	10.9 BOLT:105,130,130# * 12.9 BOLT:165,180,180# *
JOHN DEERE	7.6	466			20,55 FT/LBS + 90° TIGHTEN BLIND BOLT HOLE FIRST!	150 FT/LBS ** OIL PUMP GEAR TO PUMP 40FT/LBS (54 NM)	10.9 BOLT:105, 130, 130# * 12.9 BOLT:165, 180, 180# *
JOHN DEERE	7.6	466			55 FT/LBS + 100°	150 FT/LBS	180 FT/LBS
JOHN DEERE	7.6	466			55 FT/LBS + 90°	150 FT/LBS	180 FT/LBS
JOHN DEERE	7.6	466			20,55 FT/LBS + 90° TIGHTEN BLIND HOLE BOLT FIRST!	150 FT/LBS	FLG HEAD-NO WASHR:75,95#,+100°
JOHN DEERE	7.6	466			20,55 FT/LBS + 90° TIGHTEN BLIND HOLE BOLT FIRST!	150 FT/LBS	G GRADE W/WASHR:165,180,180#**FLG HEAD-NO WSHR:75,95#, +100°
JOHN DEERE	7.7	472		50-59	200-220 FT/LBS	150 FT/LBS	275 FT/LBS STUD NUTS
JOHN DEERE	8.1	496		94-05	20, 55 FT/LBS + 90°	170 FT/LBS	80 FT/LBS, +90, +90, +90
JOHN DEERE	8.2	501			100 FT/LBS		208 FT/LBS
JOHN DEERE	8.7	531		60-81	55 FT/LBS, + 90°	205-215 FT/LBS	175-185 FT/LBS
JOHN DEERE	8.7	531			55 FT/LBS, + 90°	210 FT/LBS	3 POINT: 170#, 6 POINT: 180# "6 POINT" = 180 FT/LBS
JOHN DEERE	10.1	619			20, 55 FT/LBS, +100° - TIGHTEN BLIND HOLE SIDE FIRST.	210 FT/LBS	150 FT/LBS, +100°
JOHN DEERE	10.2	619			20,55 FT/LBS, + 100° -----> TIGHTEN BLIND HOLE SIDE FIRST.	210 FT/LBS	150 FT/LBS, + 100°
JOHN DEERE	10.2	619		68-81	20,55 FT/LBS, + 100° -----> TIGHTEN BLIND HOLE SIDE FIRST.	210 FT/LBS	10.9 BOLT:150,180,180 FT/LBS**12.9 BOLT:200,240,240 FT/LBS**
JOHN DEERE	10.5	641		98-05	20 FT/LBS, 55 FT/LBS +95°	218 FT/LBS	74, 120, 120 FT/LBS, +90°, +90°
JOHN DEERE	10.9	664			27 FT/BLS + 95°	218 FT/LBS	74,120,120 FT/LBS,+90°, +90°
JOHN DEERE	12.5	766		98-05	20 FT/LBS, 55 FT/LBS + 95°	218 FT/LBS	74,120,120 FT/LBS, +90°, +90°
JOHN DEERE	15.7	955		75-85	74 FT/LBS, + 90° PIST COOL LINE HOLLOW SCRW 40#	53, 95, 160 FT/LBS	129,215 FT/LBS --> OIL ENTIRE CAP SCREW & WASHER
KAISER	2.6	161		54-55			
KAISER	3.7	226		46-50	40-45 FT/LBS	75-85 FT/LBS	
KIA	0.0	0					
KIA	1.5	91		01-04	47-51 FT/LBS	40-43 FT/LBS	36 FT/LBS, LOOSEN, 18 FT/LBS, +90°



Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
KIA	1.6	97		03-05	22-24 FT/LBS	40-43 FT/LBS	36#, LOOSEN ALL, 18#, +90° - USE NEW BOLTS, SEE TB2216
KIA	1.6	97		95-97	35-37 FT/LBS	40-44 FT/LBS	35-40,56-60 FT/LBS
KIA	1.6	97		94-98	35-37 FT/LBS	40-44 FT/LBS	35-40,56-60 FT/LBS
KIA	1.6	97		94-96	35-37 FT/LBS	40-44 FT/LBS	35-40, 56-60 FT/LBS
KIA	1.8	112		95-98	35-37 FT/LBS	40-44 FT/LBS	35-40, 56-60 FT/LBS
KIA	1.8	109		99-02	35-37 FT/LBS	29 FT/LBS, LOOSEN, 14 FT/LBS, +90°, +60°	36 FT/LBS, LOOSEN, 29 FT/LBS, +90°, +90°
KIA	2.0	122		95-97	50 FT/LBS	63 FT/LBS	20, 40, 62 FT/LBS
KIA	2.0	122		95-00	50 FT/LBS	63 FT/LBS	20, 40, 62 FT/LBS
KIA	2.4	144		01-05	13-16 FT/LBS, +90°	18 FT/LBS, +90°	14 FT/LBS, LOOSEN ALL, 14 FT/LBS, +90°, +90°
KIA	3.5	213		02-04	24-27 FT/LBS, +90-94°	52-59 FT/LBS, DRIVE PLATE 54-57 FT/LBS	77-85 FT/LBS
KOHLER	0.2	11			7 FT/LBS (80 INCH/LBS)		17 FT/LBS (200 INCH/LBS)
KOHLER	0.2	9			12 FT/LBS		17 FT/LBS
KOHLER	0.3	19			17 FT/LBS		15-20 FT/LBS
KOHLER	0.3	19			12 FT/LBS NEW, 8 FT/LBS USED		15-20 FT/LBS
KOHLER	0.3	16			20 FT/LBS, LOOSEN, 17 FT/LBS LUBRICATE THREADS		20 FT/LBS
KOHLER	0.3	17			17 FT/LBS		15-20 FT/LBS
KOHLER	0.3	16			17 FT/LBS		15-20 FT/LBS
KOHLER	0.3	16			17 FT/LBS		15-20 FT/LBS
KOHLER	0.4	24			22 FT/LBS NEW, 17 FT/LBS USED		25-30 FT/LBS
KOHLER	0.4	24			17 FT/LBS STRAIGHT SHANK BOLT, 11 FT/LBS STEP-DOWN TYPE BOLT		15,30 FT/LBS
KOHLER	0.4	24			POSI-LOCK: 22# NEW, 17# USED, CAPSCREW: 24 FT/LBS		25-30 FT/LBS
KOHLER	0.4	26			17 FT/LBS STRAIGHT SHANK BOLT, 11 FT/LBS STEP-DOWN TYPE BOLT		30 FT/LBS
KOHLER	0.5	29			22 FT/LBS NEW, 17 FT/LBS USED		25-30 FT/LBS
KOHLER	0.5	32			100 INCH/LBS	216 INCH/LBS (18 FT/LBS)	
KOHLER	0.5	29	SV470S & SV480S		50, 100 INCH/LBS		180, 360 INCH/LBS (15, 30 FT/LBS)
KOHLER	0.5	31			22 FT/LBS NEW, 17 FT/LBS USED		25-30 FT/LBS
KOHLER	0.5	31			POSI-LOCK: 22# NEW, 17# USED, CAPSCREW: 24 FT/LBS		25-30 FT/LBS
KOHLER	0.5	29			POSI-LOCK: 22# NEW, 17# USED, CAPSCREW: 24 FT/LBS		25-30 FT/LBS
KOHLER	0.5	33	SV530S & SV540S		50, 100 INCH/LBS		180, 360 INCH/LBS (15, 30 FT/LBS)

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
KOHLER	0.6	36	SV590S & SV600S		50, 100 INCH/LBS		180, 360 INCH/LBS, (15, 30 FT/LBS)
KOHLER	0.6	35			6MM STEP-DOWN 100 INCH/LBS	216 INCH/LBS (18 FT/LBS)	
KOHLER	0.6	38	CH18		11 FT/LBS (130 INCH/LBS)		30 FT/LBS
KOHLER	0.6	36			22 FT/LBS NEW, 17 FT/LBS USED		25-30 FT/LBS
KOHLER	0.6	34			40 FT/LBS, LOOSEN, 35 FT/LBS		40 FT/LBS
KOHLER	0.6	36		69-78	25 FT/LBS - OIL BOLTS	END PLATES, 25 FT/LBS	30-35 FT/LBS
KOHLER	0.6	36			POSI-LOCK: 22# NEW, 17# USED, CAPSCREW: 24 FT/LBS		25-30 FT/LBS
KOHLER	0.7	44	CH25		11 FT/LBS (130 INCH/LBS)		30 FT/LBS
KOHLER	0.7	42			12 FT/LBS NEW, 8 FT/LBS USED	22# FOR NUTS & 3/8" SCREWS, 17 FT/LBS FOR 5/16" SCREWS	15-20 FT/LBS - LUBRICATE WITH OIL.
KOHLER	0.7	42			12 FT/LBS NEW, 8 FT/LBS USED	22# FOR NUTS & 3/8" SCREWS, 17 FT/LBS FOR 5/16" SCREWS	15-20 FT/LBS - LUBRICATE WITH OIL
KOHLER	0.7	42			12 FT/LBS NEW, 8 FT/LBS USED	22 FT/LBS NUTS & 3/8" SCREWS, 17 FT/LBS 5/16" SCREWS	15-20 FT/LBS
KOHLER	0.8	47			12 FT/LBS NEW, 8 FT/LBS USED	22 FT/LBS NUTS & 3/8" SCREWS, 17 FT/LBS 5/16" SCREWS	15-20 FT/LBS
KOHLER	0.8	48			5/16:17 FT/LBS, 3/8:25 FT/LBS		35 FT/LBS
KOHLER	0.9	54			5/16:17 FT/LBS, 3/8:25 FT/LBS		35 FT/LBS
KOHLER	1.0	58			5/16:17 FT/LBS, 3/8:25 FT/LBS		35 FT/LBS
KOHLER	1.0	59			18 FT/LBS	50 FT/LBS	35 FT/LBS
KOHLER	1.1	65			18 FT/LBS	50 FT/LBS	35 FT/LBS
KOHLER	1.1	67			35 FT/LBS		40 FT/LBS
KOMATSU	0.0	0				275 FT/LBS	
KOMATSU	0.0	0					
KOMATSU	2.6	159			25,25,34 FT/LBS	80,94 FT/LBS	51, 72, 94 FT/LBS
KOMATSU	2.9	179			22#, LOOSEN, 22,33 FT/LBS	83,98 FT/LBS	
KOMATSU	3.3	199			29-30 FT/LBS, + 90°	95-105 FT/LBS	51,80 FT/LBS, + 90°
KOMATSU	3.3	199			29-30 FT/LBS, + 90°	80-87 FT/LB, LOOSEN COMPLETELY, 94-101 FT/LBS	51,80 FT/LBS, + 90°
KOMATSU	3.3	199			29-30 FT/LBS, + 90°	95-105 FT/LBS	51,80 FT/LBS, + 90°
KOMATSU	3.3	199			29-30 FT/LBS, + 90°	95-105 FT/LBS	51,80 FT/LBS, + 90°
KOMATSU	4.0	242			94 FT/LBS	72,108#, LOOSEN ALL BOLT, 72,108,145 FT/LBS SEE COMMENTS	159,246,296 FT/LBS
KOMATSU	4.0	242			94 FT/LBS	72,108 FT/LBS, LOOSEN ALL BOLT, 72,108,145 FT/LBS	159,246,296 FT/LBS
KOMATSU	4.0	242			43,80 FT/LBS, LOOSEN, 43,81 FT/LBS	72,108 FT/LBS, LOOSEN ALL BOLT, 72,108,145 FT/LBS	159,246,296 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
KOMATSU	4.9	299			29-30 FT/LBS, + 90°	80-87 FT/LB, LOOSEN COMPLETELY, 94-101 FT/LBS	51,80 FT/LBS, + 90°
KOMATSU	4.9	299			29-30 FT/LBS, + 90°	80-87 FT/LB, LOOSEN COMPLETELY, 94-101 FT/LBS	51,80 FT/LBS, + 90°
KOMATSU	4.9	299			29-30 FT/LBS, + 90°	95-105 FT/LBS	51,80 FT/LBS, + 90°
KOMATSU	4.9	299			29-30 FT/LBS + 90°	95-105 FT/LBS	51,80 FT/LBS, + 90°
KOMATSU	6.5	396			94 FT/LBS	72,108 FT/LBS, LOOSEN ALL BOLT 72,108,145 FT/LBS	65,94,145 FT/LBS, COAT W/OIL
KOMATSU	6.5	396			94 FT/LBS	72,108 FT/LBS, LOOSEN ALL BOLT 72,108,145 FT/LBS	65,94,145 FT/LBS, COAT W/OIL
KOMATSU	7.1	435		83-93	43,80#, LOOSEN ALL, 43,81 FT/LBS	50,144 FT/LBS, LOOSEN ALL, 50,101,144 FT/LBS	65,94,130 FT/LBS
KOMATSU	7.1	436			53-56 FT/LBS, +90-120° - COAT WITH OIL	51-65, 112-119 FT/LBS, +90-120° - COAT THREAD WITH OIL	
KOMATSU	7.1	435		83-93	43,80#, LOOSEN, 43,81 FT/LBS	50,144 FT/LBS, LOOSEN ALL, 50,101,144 FT/LBS	65,94,130 FT/LBS
KOMATSU	7.2	442			72-86 FT/LBS	202-246 FT/LBS	141-148 FT/LBS
KOMATSU	7.2	442			72-86 FT/LBS	202-246 FT/LBS	141-148 FT/LBS
KOMATSU	7.2	442			72-86 FT/LBS	202-246 FT/LBS	141-148 FT/LBS
KOMATSU	8.5	518	4D130 DIESEL		58,86#, LOOSEN, 58,85 FT/LBS THEN 85 FT/LBS	75,260#, LOOSEN, 75,260,290#	72,101,148 FT/LBS
KOMATSU	11.1	674			69-76 FT/LBS, + 90°	65-80,137-151 FT/LBS, + 90-120° ADDITIONAL TURN	65-80, 94-108 FT/LBS, + 90°
KOMATSU	11.1	674			22 FT/LBS, + 90°	22,44 FT/LBS, + 90°	22,30 FT/LBS, + 90°
KOMATSU	11.1	674			76 FT/LBS, + 90-120°	80,151 FT/LBS, + 90-120°	22#, 30#, +90°
KOMATSU	12.2	743			100-145 FT/LBS	311-347 FT/LBS	
KOMATSU	12.8	783				333-376 FT/LBS	
KOMATSU	15.2	929			94 FT/LBS, + 90-120°	87,159 FT/LBS, + 90-120°	108,159 FT/LBS + 90-120°
KOMATSU	19.3	1175	6D155-1		159, LOOSEN, 58, 159, 206, 300 FT/LBS	506-564 FT/LBS	386-408 FT/LBS
KOMATSU	19.3	1175				333-376 FT/LBS	
KOMATSU	19.3	1175			152,300#, LOOSEN, 58,152,206, 300 FT/LBS	FINAL TORQUE 506-564 FT/LBS USING 6 STEP PROCEDURE	209,318,397 FT/LBS
KOMATSU	23.2	1413			137-152 FT/LBS, + 90-105°	406, 774-831 FT/LBS, LOOSEN, 239-311, 506-579, 774-831 FT/LBS	58, 170, 282, 448 FT/LBS* R/ARM BOLT = 69-76 FT/LBS
KUBOTA	0.0	0	GS200		10-14.5 FT/LBS	10-14.5 FT/LBS FOR 2 CRANKCASE MOUNTING SCREWS	25-34 FT/LBS
KUBOTA	0.1	8			7-10 FT/LBS	6-9 FT/LBS	15-21 FT/LBS
KUBOTA	0.1	3			3-4 FT/LBS	2.1-2.3 FT/LBS	6.4-6.6 FT/LBS
KUBOTA	0.1	5			3.4 FT/LBS	2.5-3.5 FT/LBS	8-10 FT/LBS
KUBOTA	0.2	11			10-14.5 FT/LBS	10-14.5 FT/LBS	14.5-21.7 FT/LBS
KUBOTA	0.3	17			12-17 FT/LBS	10-14 FT/LBS	25-34 FT/LBS
KUBOTA	0.3	15			12.3-17 FT/LBS	10-14.5 FT/LBS	25-29 FT/LBS
KUBOTA	0.4	24			22-25 FT/LBS	18-20 FT/LBS	73-87 FT/LBS
KUBOTA	0.5	31			20-22 FT/LBS	M8 BOLTS: 22-25#, M7 BOLTS: FLANGED 21#, NON FLANGED 14-17#	29-32 FT/LBS, HEAD COVER CAP NUTS 5-6 FT/LBS
KUBOTA	0.5	28			22-25 FT/LBS	18-20 FT/LBS	73-87 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
KUBOTA	0.5	32			36-40 FT/LBS	18-20 FT/LBS	101-115 FT/LBS
KUBOTA	0.6	35			30 FT/LBS	CASE BOLT 1=18 FT/LBS, CASE BOLT 2=40 FT/LBS	58 FT/LBS
KUBOTA	0.6	39			14 FT/LBS M6 BOLTS, 22 FT/LBS M7 BOLTS		
KUBOTA	0.6	35			23 FT/LBS	CASE BOLT 1=18 FT/LBS, CASE BOLT 2=26 FT/LBS	
KUBOTA	0.6	36			36-40 FT/LBS	18-20 FT/LBS	101-115 FT/LBS
KUBOTA	0.6	37			11-14 FT/LBS S/N 12475 & BELOW 20-22 FT/LBS S/N 12476 & ABOVE	10 FT/LBS CENTER BOLTS, 8 FT/LBS REAR CASE	29-33 FT/LBS
KUBOTA	0.7	45			27-30 FT/LBS	47-50 FT/LBS	55-60#, WARM ENGINE, 55-60#
KUBOTA	0.7	45			27-30 FT/LBS	22-25 FT/LBS CASE SCREWS, 47-50 FT/LBS RETAINER SCREW	55-58#, RUN 30 MIN, 55-58#
KUBOTA	0.7	44			19-22 FT/LBS	20-23 FT/LBS	29-33 FT/LBS
KUBOTA	0.7	41			20-22 FT/LBS	M8 BOLTS: 22-25#, M7 BOLTS: FLANGED 21#, NON FLANGED 14-17#	D650B: 29-32#, D650A: 31-35# HEAD COVER CAP NUTS 5-6 FT/LBS
KUBOTA	0.8	47			20-22 FT/LBS	M8 BOLTS: 22-25#, M7 BOLTS: FLANGED 21#, NONFLANGED 15-17#	D750-B: 48-51#, D750-A: 31-35#, HEAD COVER CAP NUTS 5-6 FT/LBS
KUBOTA	0.9	53			27-30 FT/LBS	48-50 FT/LBS RETAINER SCREW, 22-25 FT/LBS CASE SCREWS	55-58 FT/LBS
KUBOTA	0.9	57			20-22 FT/LBS	22-25 FT/LBS	48-51 FT/LBS
KUBOTA	0.9	55			30-34 FT/LBS		
KUBOTA	0.9	52			20-22 FT/LBS	22-25 FT/LBS	48-51 FT/LBS
KUBOTA	1.1	65			43-47 FT/LBS		148-155# LARGE, 36-45# SMALL
KUBOTA	1.1	68			27-30 FT/LBS	47-50#, CAP SCREWS RETAINING CASE HALVES: 25-30 FT/LBS	55-60#, WARM ENGINE, 55-60#
KUBOTA	1.1	68			27-30 FT/LBS	48-50 FT/LBS RETAINER SCREWS, 22-25 FT/LBS CASE SCREWS	55-58 FT/LBS
KUBOTA	1.1	68			27-30 FT/LBS	22-25 FT/LBS, CASE LOCATING CAP SCREWS: 47-50 FT/LBS	55-58#, RUN 30 MIN, 55-58#
KUBOTA	1.1	69			30-34 FT/LBS	M8: 22-25 FT/LBS, M9: 36-40 FT/LBS	47-51 FT/LBS
KUBOTA	1.2	75					50 FT/LBS
KUBOTA	1.2	73			30-34 FT/LBS	M8 BOLTS = 22-25 FT/LBS, M9 BOLTS = 36-40 FT/LBS	47-51 FT/LBS
KUBOTA	1.3	79			27-30 FT/LBS, 11-14# CAP SCREWS	47-50 FT/LBS, 22-25# BRG CAPS	58-61 FT/LBS
KUBOTA	1.3	79			27-30 FT/LBS	48-50 FT/LBS RETAINER SCREWS, 22-25 FT/LBS CASE SCREWS	55-58 FT/LBS
KUBOTA	1.3	79			27-30 FT/LBS	LOCATING CAP SCREWS: 47-50 FT/LBS	55-58#, RUN 30 MIN, 55-58#
KUBOTA	1.3	78			43-47 FT/LBS	47-50 FT/LBS	125-135#, WARM ENGINE, 125-135#

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
KUBOTA	1.4	85	D1402-DI		27-30 FT/LBS, 11-14# CAPSCREWS	22-25 FT/LBS FOR CAP BOLTS, CARRIER BOLTS: 47-50 FT/LBS	58-61 FT/LBS
KUBOTA	1.4	85			27-30 FT/LBS	48-50 FT/LBS RETAINER SCREW, 22-25 FT/LBS CASE SCREWS	55-58 FT/LBS
KUBOTA	1.5	91			27-30 FT/LBS	22-25 FT/LBS, CASE LOCATINGCAP SCREWS: 47-50 FT/LBS	55-58 FT/LBS, RUN 30 MIN, 55-58 FT/LBS
KUBOTA	1.5	91			30-34 FT/LBS	M8: 22-25 FT/LBS, M9: 36-40 FT/LBS	47-51 FT/LBS
KUBOTA	1.5	89			36 FT/LBS	CASE BOLT 1=25 FT/LBS, CASE BOLT 2=54 FT/LBS	58 FT/LBS
KUBOTA	1.5	92	D1503		32.5-36.2 FT/LBS	M9=34-37.6 FT/LBS, M10=50.6-54.2 FT/LBS	69-72 FT/LBS, RETORQUE AFTER 30 MIN RUN-IN
KUBOTA	1.7	106			27-30 FT/LBS	22-25 FT/LBS CASE SCREWS: 48-50 FT/LBS	BOLT W/WASHER, 58-62 FT/LBS FLANGED BOLT 65-68 FT/LBS
KUBOTA	1.7	106			27-30 FT/LBS	22-25 FT/LBS CASE SCREWS, 48-50 FT/LBS RETAINER SCREW	BOLT W/WASHER: 58-61 FT/LBS, FLANGED BOLT: 65-68 FT/LBS
KUBOTA	1.9	114			30 FT/LBS	CASE BOLT 1=27 FT/LBS, CASE BOLT 2=50 FT/LBS	58 FT/LBS
KUBOTA	1.9	114			FLANGED: 33-36 FT/LBS, NON-FLANGED: 26-30 FT/LBS	M9: 34-37 FT/LBS, M10: 50-54 FT/LBS	69-73 FT/LBS
KUBOTA	1.9	114			27-30 FT/LBS	48-50 FT/LBS RETAINER SCREW, 22-25 FT/LBS CASE SCREWS	55-58 FT/LBS
KUBOTA	1.9	114			27-30 FT/LBS	48-50 FT/LBS	58-62 FT/LBS, ----> AFTER SER #2323 65-68 FT/LBS
KUBOTA	2.2	136			27-30 FT/LBS	M8: 22-25 FT/LBS, M10: 47-51 FT/LBS	SCREWS & NUTS: 58-62 FT/LBS STUDS: 25-29 FT/LBS
KUBOTA	2.2	134			27-30 FT/LBS	SCREW: 34-38,47-51 FT/LBS	SCREWS 69-72#, COVER NUTS 5-6#
KUBOTA	2.3	142			27-30 FT/LBS, 11-14# CAPSCREWS	47-50 FT/LBS,22-25# BRG CAPS	65-68 FT/LBS
KUBOTA	2.4	148			30 FT/LBS	CASE BOLT 1=27 FT/LBS, CASE BOLT 2=50 FT/LBS	68 FT/LBS
KUBOTA	2.5	152			36 FT/LBS	CASE BOLT 1=37 FT/LBS, CASE BOLT 2=54 FT/LBS	68 FT/LBS
KUBOTA	2.6	158			27-30 FT/LBS	M8: 22-25 FT/LBS, M10: 47-51 FT/LBS	SCREWS & NUTS: 58-62 FT/LBS, STUDS: 25-29 FT/LBS
KUBOTA	2.6	158			30 FT/LBS	CASE BOLT 1=27 FT/LBS, CASE BOLT 2=50 FT/LBS	58 FT/LBS
KUBOTA	2.8	168					
KUBOTA	2.8	170			27-30 FT/LBS	M8: 22-25 FT/LBS, M10: 47-51 FT/LBS	SCREWS & NUTS: 58-62 FT/LBS, STUDS: 25-29 FT/LBS
KUBOTA	2.8	168			36 FT/LBS	CASE BOLT 1=37 FT/LBS, CASE BOLT 2=54 FT/LBS	68 FT/LBS
KUBOTA	2.8	170	S2802-DI-A		30 FT/BLS	CASE BOLT 1=27 FT/LBS, CASE BOLT 2= 50 FT/LBS	58 FT/LBS
KUBOTA	3.0	182				130-137 FT/LBS	
KUBOTA	3.2	196			79.6 FT/LBS	130-137 FT/LBS	

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
KUBOTA	3.3	202	V3300-E		60 FT/LBS	108 FT/LBS	80 FT/LBS
KUBOTA	3.5	213					
KUBOTA	4.0	243					
KUBOTA	4.3	262					
KUBOTA	4.3	264			80 FT/LBS	137 FT/LBS	94 FT/LBS
KUBOTA	4.3	262			80 FT/LBS	137 FT/LBS	94 FT/LBS
KUBOTA	4.7	284			80 FT/LBS	137 FT/LBS	94 FT/LBS
LEROI	2.9	176			60 FT/LBS	150 FT/LBS	
LEROI	3.3	201			60 FT/LBS	150 FT/LBS	
LEROI	3.7	226			60 FT/LBS	150 FT/LBS	
LEROI	13.8	844			90 FT/LBS	150 FT/LBS	
LEXUS	2.5	153	2VZFE	90-91	18 FT/LBS + 90°	45 FT/LBS + 90°	25 FT/LBS + 90° + 90°
LEXUS	3.0	183	1MZFE	94-01	18 FT/LBS, + 90°	12 PT: 16#, + 90°-TIGHTEN 1ST, THEN SIDE BOLTS: 20#	12 PT BOLTS: 40 FT/LBS, + 90°, RECESSED BOLTS 13 FT/LBS
LEXUS	3.0	183	2JZGE	92-02	22 FT/LBS, + 90°	33 FT/LBS, + 90°	25 FT/LBS, + 90°, + 90°
LEXUS	3.0	183	3VZFE	92-94	18 FT/LBS, + 90°	45 FT/LBS, + 90°	12 PT BOLT: 25#, + 90°, + 90°, RECESSED HEXAGON BOLT: 13#
LEXUS	4.0	244	1UZFE	90-98	18 FT/LBS, + 90°	NUTS: 20 FT/LBS, + 90°, SIDE BOLTS: 36 FT/LBS	29 FT/LBS + 90°
LEXUS	4.5	274	1FZFE	95-02	35 FT/LBS, +90°	54 FT/LBS, +90°	29 FT/LBS, +90°, +90°
LEYLAND	0.0	0			60 FT/LBS	100 FT/LBS	100 FT/LBS
LEYLAND	0.0	0		69-85	60 FT/LBS	100 FT/LBS	100 FT/LBS
LEYLAND	1.6	98		70-80	60 FT/LBS	WASHER	100 FT/LBS
LEYLAND	1.8	110		74-87	35 FT/LBS NUT	75 FT/LBS	75 FT/LBS NUTS
LIEBHERR	5.6	342			22 FT/LBS, + 45°, + 30°, + 30°	22 FT/LBS, + 30°, + 30°, + 30°	22 FT/LBS, + 60°, + 60°, + 60°
LIEBHERR	5.6	342			22 FT/LBS, + 45°, + 30°, + 30°	22 FT/LBS, + 30°, + 30°, + 30°	22 FT/LBS, + 60°, + 60°, + 60°
LIEBHERR	6.1	373			22 FT/LBS, + 45°, + 30°, + 30°	22 FT/LBS, + 30°, + 30°, + 30°	22 FT/LBS, + 60°, + 60°, + 60°
LIEBHERR	8.4	513			22 FT/LBS, + 45°, + 30°, + 30°	22 FT/LBS, + 30°, + 30°, + 30°	22 FT/LBS, + 60°, + 60°, + 60°
LIEBHERR	8.4	513			22 FT/LBS, + 45°, + 30°, + 30°	22 FT/LBS, + 30°, + 30°, + 30°	22 FT/LBS, + 60°, + 60°, + 60°
LIEBHERR	9.2	559			22 FT/LBS, + 45°, + 30°, + 30°	22 FT/LBS, + 30°, + 30°, + 30°	22 FT/LBS, + 60°, + 60°, + 60°
LISTER	0.2	13			25 FT/LBS	30 FT/LBS	20 FT/LBS, AFTER RUNNING 20 HR LOOSEN 1/4 TURN & RETIGHTEN
LISTER	0.3	19			25 FT/LBS	30 FT/LBS	20 FT/LBS AFTER RUNNING 20 HRS LOOSEN 1/4 TURN & RETIGHTEN *
LISTER	0.3	16			25 FT/LBS	30 FT/LBS	20 FT/LBS AFTER RUNNING 20 HRS LOOSEN 1/4 TURN & RETIGHTEN *
LISTER	0.4	25			15 FT/LBS	20 FT/LBS	30 FT/LBS
LISTER	0.5	29			18 FT/LBS	20 FT/LBS	30 FT/LBS
LISTER	0.6	39			32 FT/LBS	15 FT/LBS DOWEL LOCATING PLUG, 20 FT/LBS HOUSING	50 FT/LBS
LISTER	0.6	37			25 FT/LBS	30 FT/LBS	20 FT/LBS, AFTER RUNNING 20 HRS LOOSEN 1/4 TURN & RETIGHTEN *
LISTER	0.6	39			32 FT/LBS		50 FT/LBS
LISTER	0.7	44			18 FT/LBS	15 FT/LBS, REAR 20 FT/LBS	35 FT/LBS, COVERS 6 FT/LBS
LISTER	0.7	40			57 FT/LBS	25 FT/LBS, BRG HOUSING CAP SCRW 40 FT/LBS	55-65 FT/LBS, RETORQUE AFTER 20 HRS RUNNING
LISTER	0.8	47			32 FT/LBS	15 FT/LBS DOWEL LOCATING PLUG, 20 FT/LBS HOUSING	50 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
LISTER	0.8	49			57 FT/LBS	25 FT/LBS, BRG HOUSING CAP SCREW 40 FT/LBS	55-65 FT/LBS, RETORQUE AFTER 20 HRS RUNNING
LISTER	0.9	57			18 FT/LBS	15 FT/LBS, REAR 20 FT/LBS	65 FT/LBS, COVERS 6 FT/LBS
LISTER	1.0	58			18 FT/LBS	20 FT/LBS	30 FT/LBS
LISTER	1.1	66			18 FT/LBS	15 FT/LBS, REAR 20 FT/LBS	35 FT/LBS, COVERS 6 FT/LBS
LISTER	1.3	80			57 FT/LBS	25 FT/LBS, BRG HOUSING CAP SCREW 40 FT/LBS	55-65 FT/LBS, RETORQUE AFTER 20 HRS RUNNING
LISTER	1.3	77			32 FT/LBS		50 FT/LBS
LISTER	1.3	77			32 FT/LBS	15 FT/LBS DOWEL LOCATING PLUG, 20 FT/LBS HOUSING	50 FT/LBS
LISTER	1.4	85			18 FT/LBS	15 FT/LBS, REAR 20 FT/LBS	65 FT/LBS, COVERS 6 FT/LBS
LISTER	1.5	94			32 FT/LBS	15 FT/LBS DOWEL LOCATING PLUG, 20 FT/LBS HOUSING	50 FT/LBS
LISTER	1.5	89			18 FT/LBS	15 FT/LBS, REAR 20 FT/LBS	35 FT/LBS, COVERS 6 FT/LBS
LISTER	1.5	94			32 FT/LBS	15 FT/LBS DOWEL LOCATING PLUG, 20 FT/LBS HOUSING	50 FT/LBS
LISTER	1.6	98			32 FT/LBS	15 FT/LBS DOWEL LOCATING PLUG, 20 FT/LBS HOUSING	45 FT/LBS
LISTER	1.6	99			57 FT/LBS	25 FT/LBS, BRG HOUSING CAP SCREW 40 FT/LBS	55-65 FT/LBS, RETORQUE AFTER 20 HRS RUNNING
LISTER	1.9	116			32 FT/LBS		50 FT/LBS
LISTER	1.9	116			32 FT/LBS		50 FT/LBS
LISTER	1.9	116			32 FT/LBS	15 FT/LBS DOWEL LOCATING PLUG, 20 FT/LBS HOUSING	50 FT/LBS
LISTER	1.9	114			18 FT/LBS	15 FT/LBS, REAR 20 FT/LBS	65 FT/LBS, COVERS 6 FT/LBS
LISTER	2.1	128			68 FT/LBS		80 FT/LBS
LISTER	2.3	142			32 FT/LBS	15 FT/LBS DOWEL LOCATING PLUG, 20 FT/LBS HOUSING	50 FT/LBS
LISTER	2.3	142			32 FT/LBS	15 FT/LBS DOWEL LOCATING PLUG, 20 FT/LBS HOUSING	50 FT/LBS
LISTER	2.4	147			32 FT/LBS	15 FT/LBS DOWEL LOCATING PLUG, 20 FT/LBS HOUSING	45 FT/LBS
LISTER	2.4	148			57 FT/LBS	25 FT/LBS, BRG HOUSING CAP SCRW 40 FT/LBS	55-65 FT/LBS, RETORQUE AFTER 20 HRS RUNNING
LISTER	3.2	192			68 FT/LBS		80 FT/LBS
LISTER	4.2	256			68 FT/LBS		80 FT/LBS
LOMBARDINI	0.3	20			25 FT/LBS	22 FT/LBS FLYWHEEL END, 26 FT/LBS GEAR TRAIN END	25 FT/LBS
LOMBARDINI	0.3	16			25 FT/LBS	22 FT/LBS FLYWHEEL END, 26 FT/LBS GEAR TRAIN END	25 FT/LBS
LOMBARDINI	0.4	22			25 FT/LBS	22 FT/LBS FLYWHEEL END, 26 FT/LBS GEAR TRAIN END	25 FT/LBS
LOMBARDINI	0.4	24			25 FT/LBS	22 FT/LBS FLYWHEEL END, 26 FT/LBS GEAR TRAIN END	25 FT/LBS
LOMBARDINI	0.4	22			25 FT/LBS	22 FT/LBS FLYWHEEL END, 26 FT/LBS GEAR TRAIN END	29 FT/LBS
LOMBARDINI	0.5	31			22 FT/LBS	22 FT/LBS FLYWHEEL SIDE, 18 FT/LBS GEAR TRAIN SIDE	37 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
LOMBARDINI	0.5	28			22 FT/LBS	22 FT/LBS FLYWHEEL SIDE, 18 FT/LBS GEAR TRAIN SIDE	37 FT/LBS
LOMBARDINI	0.6	36			36 FT/LBS	22 FT/LBS	44 FT/LBS
LOMBARDINI	0.6	39			33 FT/LBS	26 FT/LBS FLYWHEEL SIDE, 30 FT/LBS GEAR TRAIN SIDE	58 FT/LBS
LOMBARDINI	0.7	40			36 FT/LBS	22 FT/LBS	44 FT/LBS
LOMBARDINI	0.7	45			36 FT/LBS	22 FT/LBS	44 FT/LBS
LOMBARDINI	0.7	43			33 FT/LBS	26 FT/LBS FLYWHEEL SIDE, 30 FT/LBS GEAR TRAIN SIDE	58 FT/LBS
LOMBARDINI	0.7	44			25 FT/LBS	22 FT/LBS CENTER, 18 FT/LBS END	33 FT/LBS
LOMBARDINI	0.8	48			25 FT/LBS	22 FT/LBS CENTER, 18 FT/LBS END	33 FT/LBS
LOMBARDINI	0.8	50			33 FT/LBS	26 FT/LBS FLYWHEEL SIDE, 30 FT/LBS GEAR TRAIN SIDE	58 FT/LBS
LOMBARDINI	1.1	68			22 FT/LBS	22 FT/LBS CENTER, 18 FT/LBS END	44 FT/LBS
LOMBARDINI	1.3	81			36 FT/LBS	30 FT/LBS CENTER, 18 FT/LBS END	44 FT/LBS
LOMBARDINI	1.3	80			36 FT/LBS	30 FT/LBS CENTER, 18 FT/LBS END	44 FT/LBS
LOMBARDINI	1.3	82			36 FT/LBS	25 FT/LBS FLY END, 36# CENTER	65 FT/LBS,ROCKER ARM COVER 15#
LOMBARDINI	1.5	90			36 FT/LBS	30 FT/LBS CENTER, 18 FT/LBS END	44 FT/LBS
LOMBARDINI	1.6	100			36 FT/LBS	25 FT/LBS FLY END, 36# CENTER	65 FT/LBS,ROCKER ARM COVER 15#
LOMBARDINI	1.6	98			29 FT/LBS	END SUPPORTS: 18 FT/LBS, CENTER SUPPORTS: 22 FT/LBS	40 FT/LBS
LOMBARDINI	1.9	114			29 FT/LBS	END SUPPORTS: 18 FT/LBS, CENTER SUPPORTS: 22 FT/LBS	40 FT/LBS
LOMBARDINI	2.0	123			36 FT/LBS	25 FT/LBS FLY END, 36# CENTER	65 FT/LBS,ROCKER ARM COVER 15#
LOMBARDINI	2.5	151			36 FT/LBS	25 FT/LBS FLY END, 36# CENTER	65 FT/LBS,ROCKER ARM COVER 15#
LOMBARDINI	2.8	170			36 FT/LBS	25 FT/LBS FLY END, 36# CENTER	65 FT/LBS,ROCKER ARM COVER 15#
LONG	2.3	143			81-88 FT/LBS	105-112 FT/LBS	84-93 FT/LBS
LONG	3.1	190			81-88 FT/LBS	105-112 FT/LBS	84-93 FT/LBS
LONG	3.6	219			81-88 FT/LBS	105-112 FT/LBS	84-93 FT/LBS
MACK	0.0	0			45 FT/LBS		
MACK	3.7	226			35-40 FT/LBS	100-110 FT/LBS	30-35 FT/LBS
MACK	4.1	253			70-75 FT/LBS		
MACK	4.4	270			70-75 FT/LBS		
MACK	4.8	290			70-75 FT/LBS		
MACK	5.4	330			70-75 FT/LBS		
MACK	5.5	335		84-89	74-81 FT/LBS	DRY: 118 FT/LBS, WITH OIL: 133 FT/LBS	129-136 FT/LBS
MACK	6.2	377		90-95	26 FT/LBS, +60° USE NEW BOLTS. "791" BOLT: 26	74 FT/LBS, + 60°	133#, 184#, LOOSEN, 92#, +120°RETORQUE 92 FT/LBS + 120° TURN
MACK	7.8	475			80 FT/LBS (OILED)	150# STUD NUT (OILED), 155# STUD	140 FT/LBS
MACK	7.8	477			85 FT/LBS	150# NUT - OILED, 155# STUD	140 FT/LBS
MACK	8.4	510		50-53			125-130 FT/LBS LONG STUDS, 95-100 FT/LBS SHORT STUDS
MACK	8.8	538		79-88	155 FT/LBS	243 FT/LBS	14MM=133FT/LBS 18MM= 266FT/LBS
MACK	9.8	600			103 FT/LBS	243 FT/LBS	14MM BOLTS: 118 FT/LBS, 20MM BOLTS: 118 FT/LBS, + 180°
MACK	9.9	605			145-150 FT/LBS	100-105 FT/LBS	



Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
MACK	11.0	672		58-89	145-150 FT/LBS	240 FT/LBS 11/16:200 FT/LBS	200 FT/LBS, CYL HEAD PIPE PLUG: 55# - SEE TB 1751
MACK	11.0	672			145-150 FT/LBS	175# 5/8 BOLT, 200# 11/16 BOLT200# 11/16 BOLT	50, 125, 200 FT/LBS OIL CAPSCREWS
MACK	11.0	672		88-97	150 FT/LBS	190-200 FT/LBS FOR NON TIE, TIE BOLTS 220 FT/LBS	50,125,220 FT/LBS ROCKER BRACKET 55 FT/LBS
MACK	11.0	672					125-130 FT/LBS
MACK	11.1	676			145-150 FT/LBS	5/8:175 FT/LBS 11/16:200 FT/LBS	HOT, ONE AT A TIME.
MACK	11.1	675			150 FT/LBS	150 FT/LBS	BOLT: 50,125,200,WARM ENG,220#NUT: 50,125,175#
MACK	11.6	707			145-150 FT/LBS	100-105 FT/LBS	
MACK	11.6	707			150 FT/LBS	150 FT/LBS	
MACK	11.7	711			150 FT/LBS	150 FT/LBS	
MACK	12.0	728		98-03	M14 THREADS & CAP-TO-ROD ALIGN SLEEVES=30#, +90° *	210#, MAIN BRG CAP BUTTRESS SCREW 95#	50,125,205#,RUN ENG, THEN LOOSEN, RETORQUE TO 205#,COVER=16#
MACK	12.0	728		89-02	24M BOLT=150#, 211M BOLT =30#,+90°, 212M BOLT=30#,+90° *	200-220 FT/LBS SIDE BOLTS 85-95 FT/LBS	195-215 FT/LBS, CYL HEAD PIPE PLUG: 55# - SEE TB 1751
MACK	14.2	864				240 FT/LBS	
MACK	14.2	865			150 FT/LBS	12 POINT: 350 FT/LBS CROSS BOLT: 100 FT/LBS	
MACK	16.3	998		90-01	166-184 FT/LBS - USE NEW BOLTS	375 FT/LBS FOR BORING, 350 FT/LBS FOR ASSEMBLY	100,220 FT/LBS RETORQUE HOT
MASERATI	2.5	122		80-88	47 FT/LBS	72 FT/LBS	72 FT/LBS
MASSEY FERGUSON	0.9	53			33-40 FT/LBS	54-61 FT/LBS	12M SCREWS:33-36#, 10M:15-18#,THEN 12M:65-72#, 10M:29-36#
MASSEY FERGUSON	1.1	69			33-40 FT/LBS	54-61 FT/LBS	12M SCREWS:33-36#, 10M:15-18#,THEN 12M:65-72#, 10M:29-36#
MASSEY FERGUSON	1.1	65			36-43 FT/LBS	43-58 FT/LBS	29-36,65-80 FT/LBS R/SHAFT RETAIN STUD NUT 21-29#
MASSEY FERGUSON	1.3	77			44-50 FT/LBS	43-58 FT/LBS	29-36,65-80 FT/LBS R/SHAFT RETAIN STUD NUT 21-29#
MASSEY FERGUSON	1.4	87			33-40 FT/LBS	36-43 FT/LBS 54-61 FT/LBS CENTER BRG CAPS	12MM 33-38# & 10MM 15-18#, THEN 12MM 65-72# & 10MM 29-36#
MASSEY FERGUSON	1.5	90			44-50 FT/LBS	43-58 FT/LBS	29-36,65-80 FT/LBS R/SHAFT RETAIN STUD NUT 21-29#
MASSEY FERGUSON	2.0	122			51 FT/LBS	58 FT/LBS	
MASSEY FERGUSON	2.1	129			40-45 FT/LBS	70-75 FT/LBS	70-75 FT/LBS
MASSEY FERGUSON	2.2	134			40-45 FT/LBS	85-95 FT/LBS	70-75 FT/LBS
MASSEY FERGUSON	2.3	138			65-70 FT/LBS	FRNT&REAR BRG-BLOCK:18- 20#,CENTER BRG-BLOCK:39-42# *	100-105 FT/LBS
MASSEY FERGUSON	2.4	145			40-45 FT/LBS	85-95 FT/LBS	70-75 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
MASSEY FERGUSON	2.6	157			30-35 FT/LBS	85-95 FT/LBS	70-75 FT/LBS
MASSEY FERGUSON	3.3	201			30 FT/LBS + 90°	148 FT/LBS	59 FT/LBS, +90°, +90°, 22 FT/LBS HEAD STUDS-BLOCK
MASSEY FERGUSON	3.4	206	G-206		40-45 FT/LBS	85-95 FT/LBS	70-75 FT/LBS
MASSEY FERGUSON	4.0	242			70-75 FT/LBS	80-85 FT/LBS	100-110 FT/LBS
MASSEY FERGUSON	4.4	268			30 FT/LBS + 90°	148 FT/LBS	59 FT/LBS, +90°, +90°, 22 FT/LBS HEAD STUDS-BLOCK
MASSEY FERGUSON	5.2	318			105 FT/LBS	150 FT/LBS	100 FT/LBS, RETORQUE HOT
MASSEY FERGUSON	6.6	402			30 FT/LBS + 90°	148 FT/LBS	59 FT/LBS, +90°, +90°, 22 FT/LBS HEAD STUDS-BLOCK
MASSEY FERGUSON	7.4	449			30 FT/LBS + 90°	148 FT/LBS	59 FT/LBS, +90°, +90°, 22 FT/LBS HEAD STUDS-BLOCK
MASSEY FERGUSON	9.5	580			130-140 FT/LBS	282-296 FT/LBS	253-275 FT/LBS
MAZDA	1.3	78		76-77	19-24 FT/LBS		
MAZDA	1.3	78		78-	19-34 FT/LBS		47-51 FT/LBS
MAZDA	1.4	86		79-80			47-51 FT/LBS
MAZDA	1.4	86		79-80			47-51 FT/LBS
MAZDA	1.5	90	D5FE	84-86	22-26 FT/LBS	48-50 FT/LBS	56-59 FT/LBS
MAZDA	1.5	91	Z5	95-98	22-25 FT/LBS	22-27, 40-43 FT/LBS	13-16 FT/LBS, +85-95°, +85-95°
MAZDA	1.5	90		70-79	35-38 FT/LBS	60-65 FT/LBS	60-65 FT/LBS
MAZDA	1.5	90		81-85	22-26 FT/LBS	49-52 FT/LBS	56-59 FT/LBS
MAZDA	1.6	97		73-78	1970-74: 30#, 1975-77: 31#	1970-74: 60#, 1975-77: 63#	56-60 FT/LBS
MAZDA	1.6	97		87-92	35-38 FT/LBS	22-27, 40-43 FT/LBS	56-60 FT/LBS
MAZDA	1.6	98		90-92	37-40 FT/LBS	40-43 FT/LBS	56-60 FT/LBS
MAZDA	1.6	98		85-86	37-41 FT/LBS	40-43 FT/LBS	56-60 FT/LBS
MAZDA	1.6	97	NA	70-81	30 FT/LBS	60 FT/LBS	56-60 FT/LBS
MAZDA	1.6	97		93-94	35-38 FT/LBS	22-27 FT/LBS, 40-43 FT/LBS	56-60 FT/LBS
MAZDA	1.6	98		90-95	35-37 FT/LBS	40-43 FT/LBS	35-40, 56-60 FT/LBS
MAZDA	1.6	98	ZM	99-02	35-37 FT/LBS	22-27, 40-43 FT/LBS, SUPPORT PLATE 12-15 FT/LBS	13-16 FT/LBS, +85-95°, +85-95°
MAZDA	1.8	110		77-78	31 FT/LBS	63 FT/LBS	56-60 FT/LBS
MAZDA	1.8	112	NB	97-04	35-37 FT/LBS	40-43 FT/LBS	56-60 FT/LBS
MAZDA	1.8	112		79-84			56-60 FT/LBS
MAZDA	1.8	112		93-94	35-37 FT/LBS	40-43 FT/LBS	56-60 FT/LBS
MAZDA	1.8	112		92-94	16-19 FT/LBS, + 85-95°	+75°BOLT C:15# +65° BOLT D:14-16#	17-19 FT/LBS, + 85-95°
MAZDA	1.8	112		90-96	35-37 FT/LBS	40-43 FT/LBS	56-60 FT/LBS
MAZDA	1.8	112		90-92	35-37 FT/LBS	40-43 FT/LBS	56-60 FT/LBS
MAZDA	2.0	120		84-86	37-41 FT/LBS	61-68 FT/LBS	WARM=69-80 FT/LBS COLD=59-64 FT/LBS
MAZDA	2.0	122		84-85	51-54 FT/LBS	61-65 FT/LBS	22 FT/LBS + 90-105° + 90-105°
MAZDA	2.0	120		81-	31 FT/LBS	63 FT/LBS	59-64 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
MAZDA	2.0	120		82-84	30-34 FT/LBS	62-66 FT/LBS	66-70 FT/LBS
MAZDA	2.0	120		84-87	37-41 FT/LBS	61-68 FT/LBS	WARM=69-80 FT/LBS COLD=59-64 FT/LBS
MAZDA	2.0	122		93-02	16-19 FT/LBS, + 90°	13-16 FT/LBS, + 90°	13-16 FT/LBS, + 90°, + 90°
MAZDA	2.0	122		84-87	30-34 FT/LBS	61-66 FT/LBS	66-70 FT/LBS
MAZDA	2.0	122		83-87	37-41 FT/LBS	61-68 FT/LBS	WARM=69-80 FT/LBS COLD=59-64 FT/LBS
MAZDA	2.0	122		83-87	37-41 FT/LBS	61-68 FT/LBS	59-64 FT/LBS COLD=59-64 FT/LBS
MAZDA	2.0	120		79-80	30-36 FT/LBS	80-90 FT/LBS	65-69# COLD 69-72# HOT
MAZDA	2.0	121		71-79	35-38 FT/LBS	60-65 FT/LBS	60-65 FT/LBS
MAZDA	2.2	133		87-93	48-51 FT/LBS	61-65 FT/LBS	29-32, 59-64 FT/LBS
MAZDA	2.2	135		82-84	50-54 FT/LBS	80-85 FT/LBS	80-85 FT/LBS
MAZDA	2.2	0			46-50 FT/LBS	61-66 FT/LBS	62-70 FT/LBS
MAZDA	2.2	133		88-92	48-51 FT/LBS	61-65 FT/LBS	1ST STEP 29-32, 2ND STEP 59-64 FT/LBS
MAZDA	2.3	140		94-97	25-30, 30-36 FT/LBS	50-60, 75-85 FT/LBS	51-59, 80-89 FT/LBS
MAZDA	2.3	137		94-99	16-20 FT/LBS, +83-97°	BOLT "A" 17-19# +75-85°, "B"19# +65-75°, "C" 16# +55-65° *	17-19 FT/LBS, +85-95°, +85-95°
MAZDA	2.5	153		98-03	26-30, 31-36 FT/LBS	15 FT/LBS, +80^	52, 52 FT/LBS, +90-100°
MAZDA	2.5	153		93-00	16-19 FT/LBS, + 83-97°	** SEE COMMENTS BOX FINAL ASSY	17-19 FT/LBS, + 85-95°+ 85-95°
MAZDA	2.5	153		93-95	16-19 FT/LBS, + 83-97°	BOLT A:17-19# +75-85°,B:17-19#+65-75°,C:13-15# +60°,D:14-16#	17-19 FT/LBS, + 85-95° NEW BOLTS
MAZDA	2.5	154			60 FT/LBS PHOSPHATED, 45 FT/LBS NON-PHOSPHATED	85 FT/LBS	85 FT/LBS
MAZDA	2.6	156	G54	86-88	33-34 FT/LBS	55-61 FT/LBS	COLD 65-72#, HOT 73-79# AUXILARY VALVE = 13-15#
MAZDA	2.6	159	G6	89-94	48-51 FT/LBS	61-65 FT/LBS	LARGE BOLTS: 59-64 FT/LBS, SMALL BOLTS: 12-17 FT/LBS
MAZDA	3.0	182	HA	81-94	60-66 FT/LBS	81-85 FT/LBS	81-85 FT/LBS
MAZDA	3.0	180		90-97	22 FT/LBS, + 90°	14 FT/LBS, + 90°, + 45°	14 FT/LBS, + 90°, + 90°
MAZDA	3.0	180		88-89	22 FT/LBS, + 90°	14 FT/LBS, + 90°, + 45°	14 FT/LBS, + 90°, + 90°
MAZDA	3.0	182		94-98	26 FT/LBS	59 FT/LBS	59#, LOOSEN 1 FULL TURN, 37, 68#
MAZDA	3.0	182	DURATECH	03	29-33 FT/LBS, +90-120°	SEE TB 1773	27-32#, +85-95°, LOOSEN 360°, 27-32#, +85-95°, +85-95° *
MAZDA	3.0	180		90-96	22 FT/LBS, + 90°	14 FT/LBS, + 90°, + 45°	14 FT/LBS, + 90°, + 90°
MAZDA	3.5	211	SL	84-00	59-66 FT/LBS	74-77 FT/LBS	44 FT/LBS, +90°, +90°
MAZDA	4.0	247	ZB	80-04	60-66 FT/LBS	81-85 FT/LBS	87-92 FT/LBS
MAZDA	4.0	244		90-98	18-24 FT/LBS	66-77 FT/LBS	SEE TB-671 (7 STEPS)
MERCEDES BENZ	0.0	0				74,147,221 FT/LB + 90° TURN (100, 200, 300-330 NM + 90-100°)	
MERCEDES BENZ	1.7	103	M136	53-61			
MERCEDES BENZ	1.8	108	OM636	75-76	27-29 FT/LBS	58 FT/LBS	51-58 FT/LBS
MERCEDES BENZ	1.8	108		53-61			
MERCEDES BENZ	1.9	116	121.9	59-62	27 FT/LBS	57 FT/LBS	65 FT/LBS (HOT)

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
MERCEDES BENZ	2.0	121		64-68	40 FT/LBS	65 FT/LBS	65 FT/LBS
MERCEDES BENZ	2.2	140	M180	64-69	29-36 FT/LBS +90°-100°	65 FT/LBS	65 FT/LBS
MERCEDES BENZ	2.2	134	M111	94-98	33 FT/LBS, +90°		
MERCEDES BENZ	2.2	134	M115	67-73			10MM: 22,41# 12MM: 52,74# WARM ENG, 10MM: 41# 12MM: 74#
MERCEDES BENZ	2.2	134	OM601	84-85	40 FT/LBS + 90°	66 FT/LBS	18,30 FT/LBS, WAIT 10 MIN, +90°, +90°
MERCEDES BENZ	2.2	134	OM615	68-73	30-37 FT/LBS, + 90°	65 FT/LBS	58 FT/LBS, RUN ENGINE, RETORQUE HOT- 65 FT/LBS
MERCEDES BENZ	2.3	141	M127	63-67	27 FT/LBS	58 FT/LBS	29,43,58 FT/LBS COLD, 65 FT/LBS (HOT) (WITH GRAPHITED OIL)*
MERCEDES BENZ	2.3	140	102	86-90	37 FT/LBS + 90°	66 FT/LBS	52 FT/LBS + 90° + 90°
MERCEDES BENZ	2.3	140	102.9	84-88	37 FT/LBS + 90°	66 FT/LBS	52 FT/LBS + 90° + 90°
MERCEDES BENZ	2.3	140	M180.945	64-69	29-36 FT/LBS	57 FT/LBS	65 FT/LBS CAMSHAFT CAPS = 18 FT/LBS
MERCEDES BENZ	2.3	140	102	91-95	30-37 FT/LBS, + 90-100°	66 FT/LBS	12MM: 52 FT/LBS, + 90°, + 90°, 8MM: 18 FT/LBS
MERCEDES BENZ	2.3	140	M115	74-78	29-36 FT/LBS + 90-100^	65 FT/LBS	10MM: 22,41# 12MM: 52,74# WARM ENG, 10MM: 41#, 12MM: 74#
MERCEDES BENZ	2.4	147	616	80-85	30-37 FT/LBS, + 90-100°	58-65 FT/LBS	66 FT/LBS, RUN ENGINE 5 MIN, 66 FT/LBS
MERCEDES BENZ	2.4	147	616	73-79	30-37 FT/LBS, + 90-100°	58-65 FT/LBS	66 FT/LBS, RUN ENGINE 5 MIN, 66 FT/LBS
MERCEDES BENZ	2.4	146		84-83	28-36 FT/LBS, + 90-100°	58-65 FT/LBS	HEX BOLTS: 51,66,73 FT/LBS 12 PT: 30,51 FT/LBS, +90°, +90°
MERCEDES BENZ	2.5	152	129	65-68	27 FT/LBS	58 FT/LBS	65 FT/LBS, RETORQUE HOT.
MERCEDES BENZ	2.5	152		67-72	22-27 FT/LBS	58 FT/LBS	51-58 FT/LBS
MERCEDES BENZ	2.5	152		86-93	40 FT/LBS, + 90°	66 FT/LBS	HEX BOLT: 18#,30#,WAIT 10 MIN,+ 90°, + 90° 8MM BOLT: 18#
MERCEDES BENZ	2.5	152		87	40 FT/LBS, + 90°	66 FT/LBS	HEX: 18#, 30#, + 90°, + 90° 8MM: 18 FT/LBS
MERCEDES BENZ	2.6	159		86-91	22 FT/LBS, + 90°	40 FT/LBS, + 90°	52 FT/LBS, + 90°, + 90°
MERCEDES BENZ	2.7	167	M110	75-81	30-37 FT/LBS, + 90°		65 FT/LBS
MERCEDES BENZ	2.8	170		74-81	30-37 FT/LBS + 90-100°	59 FT/LBS	74 FT/LBS
MERCEDES BENZ	2.8	171	104.9	93-97	22.1 FT/LBS (29.9 NM) + 90-100°	40.6 FT/LBS (55NM) + 90-100°	41 FT/LBS, + 90°, + 90°
MERCEDES BENZ	2.8	170	M130	67-72	29-36 FT/LBS	57 FT/LBS	65 FT/LBS
MERCEDES BENZ	2.8	171		99-05			15, 37 FT/LBS, +60-70°, +60-70°
MERCEDES BENZ	3.0	183	103.9	86-92	22 FT/LBS, + 90°	40 FT/LBS, + 90°	52 FT/LBS, + 90°, + 90°
MERCEDES BENZ	3.0	183	OM603	86-87	40 FT/LBS, + 90°	66 FT/LBS	8MM BOLTS: 18 FT/LB, HEX BOLTS: 18,30#,WAIT 10 MIN,+90°, +90°
MERCEDES BENZ	3.0	183	OM617	76-80	30-37 FT/LBS + 90-100°	58-65 FT/LBS	66 FT/LBS, RUN ENGINE 5 MIN, 66 FT/LBS
MERCEDES BENZ	3.0	183	OM617	82-87	30-37 FT/LBS + 90°	65 FT/LBS	HEX BOLTS: 51,66,73 FT/LBS 12 POINT: 30,51#, +90°, +90°
MERCEDES BENZ	3.0	183	OM603	83-87	40 FT/LBS, + 90°	66 FT/LBS	52 FT/LBS, + 90°, + 90°
MERCEDES BENZ	3.0	183	617.9	81-85	30-37 FT/LBS + 90°	65 FT/LBS	HEX BOLTS: 51,66,73 FT/LBS 12 POINT: 30,51#, +90°, +90°
MERCEDES BENZ	3.2	195	104.9	92-95	SEE DIAGRAMS FOR VERSIONS OF BOLT ID	41 FT/LBS + 90°	41 FT/LBS, + 90°, + 90°
MERCEDES BENZ	3.2	195	112	98-03	4, 18.5 FT/LBS, +90°	M8: 15#, +90°, M8 SIDE BOLT: 22#, M10: 22#, +90°	15, 37, 44-52 FT/LBS, REPEAT 44-52 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
MERCEDES BENZ	3.5	211	OM603	87-93	22 FT/LBS + 90°	10MM=41 FT/LBS, 12MM=66 FT/LBS	18,30,+90°, +90°, "A" BOLTS 18#
MERCEDES BENZ	3.8	234	M116.960	82-85	33 FT/LBS	10MM 47# 12MM 72#	22#,43#,WAIT 10 MIN,43 FT/LBS 43#LET SET 10 MIN.LOOSE&RETIGT
MERCEDES BENZ	3.8	233	116	79-80	33 FT/LBS	10MM 47 FT/LBS, 12MM 72 FT/LBS	22#,43#,WAIT 10 MIN,43 FT/LBS 43#LET SET 10 MIN.LOOSE&RETIGT
MERCEDES BENZ	4.0	242	OM364A		30-37 FT/LBS, +90-110°	33-41 FT/LBS, +90-110°	44, 66, 89 FT/LBS
MERCEDES BENZ	4.2	256	116.965	86-93	33 FT/LBS, + 90°	LARGE BOLTS: 37 FT/LBS, SMALL BOLTS: 22 FT/LBS	22,43#, WARM ENGINE, LET ENG SET FOR 10 MIN, RETORQUE 22,43#
MERCEDES BENZ	4.2	256	119.975	93-94	33 FT/LBS, LOOSEN COMPLETELY, 26 FT/LBS, + 90°		41 FT/LBS, + 90°, + 90°, BOLT& WSHR ASMBLY (3 PER HEAD) 18#
MERCEDES BENZ	4.3	259	MBE900	97-02	8, 33 FT/LBS, +90°	22, 60, 114 FT/LBS, +90°	15, 52, 125, 207 FT/LBS, +90°, +90°
MERCEDES BENZ	4.3	262	113	99-01	4, 11 FT/LBS, +90°	M8: 15#, +90°, M8 SIDE BOLT: 22#, M10: 22#, +90°	15, 37,44-52 FT/LBS, REPEAT 44-52 FT/LBS
MERCEDES BENZ	4.5	276	M117	76-80	30-37 FT/LBS, + 90-100°	12MM 74 FT/LBS, 10MM 47 FT/LBS	44 FT/LBS
MERCEDES BENZ	5.0	303	M117.963	84-91	33 FT/LBS, + 100°	LARGE BOLTS 37 FT/LBS SMALL BOLTS 22 FT/LBS	22#,43#, WARM ENG, LET SET FOR 10 MIN, LOOSEN, 43 FT/LBS
MERCEDES BENZ	5.0	305	119.974	92-99	33#,LOOSEN COMPLETELY,26#,+90°		41 FT/LBS, +90°, +90° *
MERCEDES BENZ	5.6	338		88-91	33 FT/LBS + 90°	37 FT/LBS LARGE BOLTS, 22 FT/LBS SMALL BOLTS	22,43#,WARM ENG,LET SET 10 MINLOOSEN & REPEAT 22,43 FT/LBS
MERCEDES BENZ	5.6	338		86-89	33 FT/LBS + 90°	37 FT/LBS LARGE BOLTS, 22 FT/LBS SMALL BOLTS	22,43#,WARM ENG,LET SET 10 MINLOOSEN & REPEAT 22,43 FT/LBS
MERCEDES BENZ	5.7	346	OM352A		74 FT/LBS, + 90°, + 20°	COMMENTS~	44 FT/LBS, + 90°, + 20°
MERCEDES BENZ	5.7	346	OM352		74 FT/LBS, +90°, +20°	COMMENTS~	44 FT/LBS, +90°, +20°
MERCEDES BENZ	6.0	366	OM366	87-94	14&15 MM BOLT: 81 FT/LB + 100°	37-44 FT/LBS + 90-110°	44,66,81 FT/LBS
MERCEDES BENZ	6.4	389	MBE900	97-02	8, 33 FT/LBS, +90°	22, 60, 114 FT/LBS, +90°	15, 52, 125, 207 FT/LBS, +90°, +90°, HEAD COVER=22 FT/LBS
MERCEDES BENZ	6.8	417		77-79			18 FT/LBS
MERCEDES BENZ	9.7	589	OM355		58 FT/LBS	167 FT/LBS	29,56,87 FT/LBS
MERCEDES BENZ	9.8	599	OM355		58 FT/LBS	167 FT/LBS	29,56,87 FT/LBS
MERCEDES BENZ	10.0	608		83-90	29-37,74 FT/LBS, + 90-100°	74,148,221-243 FT/LBS,+90-100°	7,37,74,103,133-140#, +90-100°
MERCEDES BENZ	11.0	669			33,74 FT/LBS, + 90°	74,147,221 FT/LBS, + 90° SIDE BOLTS: 109 FT/LBS	7,36,74,107 FT/LBS
MERCUISER	2.3	140	120 HP	85-95	33 FT/LBS	85 FT/LBS	85 FT/LBS
MERCUISER	2.5	153	110 HP	62-80	40 FT/LBS FOR 3/8" NUT	70 FT/LBS	93 FT/LBS
MERCUISER	3.0	181	140 HP	94-04	11/32" BOLT 33 FT/LBS, 3/8" BOLT 40 FT/LBS	65 FT/LBS	93 FT/LBS
MERCUISER	3.0	181	130 HP	74-93	11/32" BOLT 33 FT/LBS 3/8" BOLT 40 FT/LBS	65 FT/LBS	93 FT/LBS
MERCUISER	3.7	224	165 HP		40 FT/LBS	55 FT/LBS	35, 66, 130 FT/LBS RETORQUE AFTER 1ST STARTUP & COOLDOWN
MERCUISER	4.1	250	160 HP	66-75	35-45 FT/LBS	60-70 FT/LBS	95 FT/LBS
MERCUISER	4.3	262	ALPHA / GEN +	91-05			
MERCUISER	4.3	262	175 HP	86-90	45 FT/LBS	70-80 FT/LBS	25, 45, 65 FT/LBS
MERCUISER	5.0	305	220 & 230 HP	99-02	20 FT/LBS, +70°	15 FT/LBS, +73° (OPTIONAL- W/OUT ANGLE TORQUE 77#)	ALL 22 FT/LBS, THEN SHORT +55°, MED +65°, LONG +75°

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
MERCUISER	5.0	305	228 HP		45 FT/LBS	80 FT/LBS	65 FT/LBS
MERCUISER	5.7	350	250,260,300 HP	99-02	20 FT/LBS, +55°	15 FT/LBS, +73°, (OPTIONAL - W/OUT ANGULAR TORQUE 77#)	ALL 22 FT/LBS, THEN SHORT +55°, MED +65°, LONG +75°
MERCUISER	6.2	377	340 HP	00-03	45 FT/LBS WITH CLEAN ENGINE OIL	15 FT/LBS, +73° (IF NO ANGLE GAUGE AVLBL USE 77# FOR FINAL)	22 FT/LBS, +55° SHORT BOLTS, +65° MED BOLTS, +75° LONG BOLTS
MERCUISER	7.4	454	425 HP	90-94	65 FT/LBS	110 FT/LBS	20, 50, 75 FT/LBS
MERCUISER	7.4	454	425 HP	86-93	65 FT/LBS	110 FT/LBS	80 FT/LBS
MERCUISER	7.4	454	525 HP SC	91-94	65 FT/LBS	110 FT/LBS	20, 50, 75 FT/LBS
MERCUISER	7.4	454	450 HP	93-94	65 FT/LBS	110 FT/LBS, WINDAGE TRAY 35 FT/LBS	20, 50, 75 FT/LBS
MERCUISER	7.4	454	450 HP	93	65 FT/LBS	110 FT/LBS	20, 50, 75 FT/LBS
MERCUISER	8.2	502	465 HP	90	65 FT/LBS	110 FT/LBS	80 FT/LBS
MERCUISER	8.2	502	470 HP		73 FT/LBS	110 FT/LBS	BOLTS *
MERCUISER	8.2	502	600 HP SC	90-94	65 FT/LBS	110 FT/LBS	20, 50, 75 FT/LBS
MERCUISER	8.9	540	575 HP	85-92	90 FT/LBS	110 FT/LBS	80 FT/LBS
MERCUISER	8.9	540	500 HP	90	80 FT/LBS	110 FT/LBS	80 FT/LBS
MERCUISER	9.4	572	MCM 800 SC	91-98	65 FT/LBS	110 FT/LBS	20, 50, 75 FT/LBS
MG	0.9	58	9CG	52-62	35 FT/LBS	60-65 FT/LBS	40 FT/LBS
MG	0.9	58	9CG	61-62	35 FT/LBS	60-65 FT/LBS	40 FT/LBS
MG	1.1	67	10CG & 10CC	62-	PLAIN: 50 FT/LBS, NYLOC: 32-34 FT/LBS	60-65 FT/LBS	PLAIN: 42 FT/LBS, STAMPED "2" OR DRILL POINT: 50 FT/LBS
MG	1.2	73		54-61			
MG	1.3	76		40-54	27 FT/LBS	60 FT/LBS	60 FT/LBS
MG	1.3	78		66-74	45 FT/LBS	60 FT/LBS	PLAIN STUDS: 42 FT/LBS W/"22" STAMP OR DRILL PT: 50#
MG	1.3	76		66-70	25-27 FT/LBS, GUDGEON PIN CLAMP SCREW 25#	62.5 FT/LBS THREAD STUDS AND OIL GALLEY 12 MM X 1.50	50 FT/LBS
MG	1.3	78		66-74	PLAIN: 40 FT/LBS, NYLOC: 32-24 FT/LBS	60 FT/LBS	PLAIN: 42 FT/LBS, WITH "22" STAMP OR DRILL POINT: 50 FT/LBS
MG	1.5	91	PE94J	75-80	COLOR DYED: 50 FT/LBS, PHOSPHATED: 46 FT/LBS	65 FT/LBS	46 FT/LBS
MG	1.5	91		54-59	23-35 FT/LBS	70-75 FT/LBS	30-35 FT/LBS
MG	1.6	99		60-61	23-25 FT/LBS	70-75 FT/LBS	40 FT/LBS
MG	1.6	99		61-62	23-25 FT/LBS	70-75 FT/LBS	46 FT/LBS
MG	1.8	112		65-75	40-45 FT/LBS	70 FT/LBS	45-50 FT/LBS
MG	1.8	110		72-74	35 FT/LBS	70 FT/LBS	45-50 FT/LBS
MG	1.8	110		73-76	35 FT/LBS	70 FT/LBS	45-50 FT/LBS
MG	1.8	110		77-80	35 FT/LBS	70 FT/LBS	45-50 FT/LBS
MG	1.8	110		65-72	35 FT/LBS	70 FT/LBS	45-50 FT/LBS
MG	1.8	110		65-72	31-35 FT/LBS	70 FT/LBS	45-50 FT/LBS
MINI	1.6	97.6	R53	02-05			
MINN MOLINE	0.0	0			42 FT/LBS		
MINN MOLINE	0.0	0			42 FT/LBS		
MINN MOLINE	1.9	118			75-85 FT/LBS	103-113 FT/LBS	82-91 FT/LBS
MINN MOLINE	2.7	165			60-65 FT/LBS	CAPS #1-2: 90-100 FT/LBS, CAP #3: 60-65 FT/LBS	
MINN MOLINE	3.3	165			80-85 FT/LBS	BRG CAP #1: 130-140 FT/LBS, BRG CAP #2-3: 100-105 FT/LBS	



Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
mitsubishi	1.3	79	MT250		40-43 FT/LBS	36-40 FT/LBS	BOLTS #1-3: 73-79 FT/LBS, BOLTS #4-11: 147-167 FT/LBS
mitsubishi	1.4	86	K4E		23-25 FT/LBS	36-40 FT/LBS	M10: 47-58 FT/LBS, M12: 83-90 FT/LBS
mitsubishi	1.4	88	4G33		23-25 FT/LBS	36-39 FT/LBS	59 FT/LBS
mitsubishi	1.4	86		77-84	24-25 FT/LBS	37-39 FT/LBS	51-54 FT/LBS 13-15 FT/LBS AUX VALVE
mitsubishi	1.5	91	MT300		40-43 FT/LBS	36-40 FT/LBS	72-80 FT/LBS SCREWS #1,2,&3, 108-116 FT/LBS ALL OTHERS
mitsubishi	1.5	91	KE150		40-43 FT/LBS, ENGINE TYPE T31: 29-31 FT/LBS	36-40 FT/LBS	108-116 FT/LBS, M14 SCREWS ON TAPPET SIDE: 72-79 FT/LBS
mitsubishi	1.5	90		87-89	24-25 FT/LBS	37-39 FT/LBS SEE TB 2039	51-54 FT/LBS
mitsubishi	1.5	91		90-94	14 FT/LBS, +90°	37-39 FT/LBS SEE TB 2039	52-55 FT/LBS
mitsubishi	1.5	90	G15B	85-88	24-25 FT/LBS	37-39 FT/LBS	51-54 FT/LBS
mitsubishi	1.5	90		89-90	14.5 FT/LBS, +90°	37-39 FT/LBS SEE TB 2039	51-54 FT/LBS
mitsubishi	1.5	92	4G15	90-99	14 FT/LBS + 90°	37-39 FT/LBS - SEE TB 2039	52-55 FT/LBS THRU 1996 **
mitsubishi	1.6	98		83-84	23-25 FT/LBS	36-39 FT/LBS	51-54 FT/LBS
mitsubishi	1.6	98	4G61	89-90	36-38 FT/LBS	47-51 FT/LBS	72-80 FT/LBS
mitsubishi	1.6	98	4G61	90-92	37-39 FT/LBS	37-41 FT/LBS	80 FT/LBS
mitsubishi	1.6	98	4G32	80-95	23-25 FT/LBS	36-40 FT/LBS	51-54# COLD, 58-61 FT/LBS HOT
mitsubishi	1.6	98	G32B	85-86	23-25 FT/LBS	36-39 FT/LBS	51-54 FT/LBS
mitsubishi	1.6	98	G32B	87-88	23-25 FT/LBS	36-39 FT/LBS	51-54 FT/LBS
mitsubishi	1.6	98		83-86	23-25 FT/LBS	36-39 FT/LBS	51-54 FT/LBS
mitsubishi	1.8	107	4G37	93-94	24-25 FT/LBS	37-39 FT/LBS - SEE TB 2039	51-54 FT/LBS
mitsubishi	1.8	107	4G37	89-92	24-25 FT/LBS	37-39 FT/LBS	51-54 FT/LBS
mitsubishi	1.8	111	4G93	92-00	25 FT/LBS	18 FT/LBS, +90-100°	54 FT/LBS, COMPLETELY LOOSEN, 15 FT/LBS, +90°, +90°
mitsubishi	1.8	109	G62B	84-88	23-25 FT/LBS	36-39 FT/LBS	65-72 FT/LBS
mitsubishi	1.8	107	4G37	90-92	24-25 FT/LBS	37-39 FT/LBS - SEE TB 2039	51-54 FT/LBS
mitsubishi	1.8	110	G37B	92-94	24-25 FT/LBS	37-39 FT/LBS	51-54 FT/LBS
mitsubishi	1.8	109	G62B	82-83	23-25 FT/LBS	36-39 FT/LBS	65-72 FT/LBS
mitsubishi	2.0	122	G63B	87-	23-25 FT/LBS	36-39 FT/LBS	65-72 FT/LBS ENGINE AND TORQUE 72-80 FT LBS
mitsubishi	2.0	122	4G63	89-92	36-38 FT/LBS SEE TB 2033	36-39 FT/LBS - SEE TB 2039	80 FT/LBS
mitsubishi	2.0	122	420A	95-99	20 FT/LBS + 90°	M11 BOLTS: 30 FT/LBS, +90° * M10 BOLTS(BEDPLATE):40 FT/LBS*	BOLTS 1-6=20#;BOLTS 7-10=20# *BOLTS 1-6=50#;BOLTS 7-10=20# *
mitsubishi	2.0	122	4G63	90-92	36-38 FT/LBS SEE TB2033	47-51 FT/LBS FOR 1990-91 - SEE TB 2039	80 FT/LBS
mitsubishi	2.0	122	4G63	95-99	14 FT/LBS + 90° OF ROTATION	47-51 FT/LBS - SEE TB 2039	58#, LOOSEN, 15#, +90°, +90°
mitsubishi	2.0	122	4G94	02-05			52-58 FT/LBS, LOOSEN, 13-16 FT/LBS, +90°, +90°
mitsubishi	2.0	122	G63B	84-86	23-25 FT/LBS	36-39 FT/LBS	80 FT/LBS
mitsubishi	2.0	122	G63B	88-89	23-25 FT/LBS	47-51 FT/LBS	65-72 FT/LBS
mitsubishi	2.0	122	G63B	83-	33-34 FT/LBS	36-39 FT/LBS	80 FT/LBS
mitsubishi	2.0	122	4G52	74-82	33-34 FT/LBS	54-61 FT/LBS	73-79 FT/LBS (HOT) JET VALVE, 13-15 FT/LBS



Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
MITSUBISHI	2.0	122	4G63	90-92	36-38 FT/LBS SEE TB2033	47-51 FT/LBS FOR 1990-91 - SEE TB 2039	65-72, 80 FT/LBS *
MITSUBISHI	2.0	122	4G63	04		17-19 FT/LBS, +90°	
MITSUBISHI	2.0	122	4G63		14.5 FT/LBS +90°	14.5 FT/LBS +90°	14.5 FT/LBS, +90°, +90°
MITSUBISHI	2.0	122	4G52		32-35 FT/LBS	55-61 FT/LBS	65-72 FT/LBS
MITSUBISHI	2.0	122	4G63	93-94	14.5 FT/LBS + 90°	47-51 FT/LBS - SEE TB 2039	BOLTS 1-6: 24#,48#,48#,+90° BOLTS 7-10: 20#,20#,20#,+90°
MITSUBISHI	2.1	127		74-89	36-44 FT/LBS	58-65 FT/LBS	83-90 FT/LBS ROCKER SHAFT 7-14 FT/LBS
MITSUBISHI	2.3	143	4D55	83-87	33-34 FT/LBS	55-61 FT/LBS	76-83 FT/LBS
MITSUBISHI	2.4	143	4G64	94-97	23-25 FT/LBS	36-39 FT/LBS	58 FT/LBS, LOOSEN ALL, THEN 14.5 FT/LBS, + 90°, + 90°
MITSUBISHI	2.4	143	4G64	89-92	23-25 FT/LBS	37-39 FT/LBS SEE TB 2039	65-72 FT/LBS
MITSUBISHI	2.4	143	4G64	94-95	14 FT/LBS, PLUS 90°	47-51 FT/LBS - SEE TB 2039	58 FT/LBS, LOOSEN ALL, THEN 14.5 FT/LBS, + 90°, + 90°
MITSUBISHI	2.4	143	G64B	87-88	23-25 FT/LBS	36-39 FT/LBS	80 FT/LBS
MITSUBISHI	2.4	143	4G64	93-02	14 FT/LBS, + 90°	18 FT/LBS, + 90° SEE TB 2039	58 FT/LBS, LOOSEN ALL, THEN 14.5 FT/LBS, + 90°, + 90°
MITSUBISHI	2.4	143	G64B	85-86	23-25 FT/LBS	36-39 FT/LBS	65-72 FT/LBS
MITSUBISHI	2.5	152	6G73	95-95		57 FT/LBS	80 FT/LBS
MITSUBISHI	2.6	156		86-89	33-34 FT/LBS	55-61 FT/LBS	65-72# COLD, 73-79# HOT
MITSUBISHI	2.6	156	4G54	83-85	33-34 FT/LBS	55-61 FT/LBS	65-72# COLD, 73-79# HOT
MITSUBISHI	2.6	156	4G54	83-89	33-34 FT/LBS	55-61 FT/LBS	65-72# COLD, 73-79# HOT
MITSUBISHI	2.6	159	S4E		61-65 FT/LBS	75-79 FT/LBS	86-90 FT/LBS
MITSUBISHI	2.6	156		84-85	33-34 FT/LBS	55-61 FT/LBS	65-72# COLD, 73-79# HOT LBS
MITSUBISHI	2.6	156	4G54	86-90	33-34 FT/LBS	55-61 FT/LBS	80 FT/LBS
MITSUBISHI	2.6	156		83-85	33-34 FT/LBS	55-61 FT/LBS	65-72# COLD, 73-79# HOT
MITSUBISHI	2.6	156		86-87	33-34 FT/LBS	55-61 FT/LBS	65-72# COLD, 73-79# HOT
MITSUBISHI	2.8	173	4M40	97-00	37 FT/LBS, +90° - OILED	15 FT/LBS, +90°, +90° - OILED	74 FT/LBS, LOOSEN, 34 FT/LBS, +90°, +90°
MITSUBISHI	3.0	181		93-98	38 FT/LBS NUTS	67 FT/LBS - SEE TB 2039	91 FT/LBS, LOOSEN, 91 FT/LBS
MITSUBISHI	3.0	181		88-92	NUTS: 37-38 FT/LBS	55-61 FT/LBS	65-72 FT/LBS
MITSUBISHI	3.0	181		87-91	NUTS: 37-38 FT/LBS	55-61 FT/LBS	65-72 FT/LBS
MITSUBISHI	3.0	181	6G72	93-96	38 FT/LBS NUTS	57 FT/LBS SEE TB 2039	80 FT/LBS
MITSUBISHI	3.0	181		91-92	38 FT/LBS	60 FT/LBS "9" BOLT 70 FT/LBS "10" BOLT	91 FT/LBS, LOOSEN, 91 FT/LBS
MITSUBISHI	3.0	181	6G72	95-03	37-39 FT/LBS	66-72FT/LBS	80 FT/LBS, LOOSEN AND RETIGHTEN TO 80 FT/LBS
MITSUBISHI	3.0	181		91-94	38 FT/LBS	58 FT/LBS	76-83 FT/LBS
MITSUBISHI	3.0	181		93-98	38 FT/LBS NUTS	67 FT/LBS - SEE TB 2039	80 FT/LBS
MITSUBISHI	3.3	201	4D31T	87-92	76 FT/LBS	130 FT/LBS	130 FT/LBS
MITSUBISHI	3.3	203	S4S		36-44 FT/LBS	72-80 FT/LBS	83-91 FT/LBS
MITSUBISHI	3.5	213	6G74DN	94-96	25 FT/LBS, +90-100°	54 FT/LBS - SEE TB 2039	80 FT/LBS COLD
MITSUBISHI	3.5	213		94-97	25 FT/LBS, +90-100°	54 FT/LBS	80 FT/LBS
MITSUBISHI	3.5	213	6G74	97-02	38 FT/LBS	54 FT/LBS	TIGHTEN WITH 2-3 STEPS, ENGINE COLD: 80 FT/LBS
MITSUBISHI	3.9	238	4D34T	92-94	92 FT/LBS	130 FT/LBS	145 FT/LBS
MITSUBISHI	3.9	239	S6E		61-65 FT/LBS	75-79 FT/LBS	86-90 FT/LBS
MITSUBISHI	4.0	243	6DR51A		61-69 FT/LBS	72-80 FT/LBS	90 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
mitsubishi	4.4	271	S6E2		61-65 FT/LBS	75-79 FT/LBS	86-90 FT/LBS
mitsubishi	4.9	301	6D31T	89-93	76 FT/LBS OILED	130 FT/LBS OILED	130 FT/LBS OILED
mitsubishi	4.9	300	6D310AT	90-92	76 FT/LBS	130 FT/LBS	130 FT/LBS
mitsubishi	5.0	305	S6S		36-44 FT/LBS	72-80 FT/LBS	83-91 FT/LBS
mitsubishi	5.4	331	6DS7		51-65 FT/LBS FOR 6DS7-00011 62-76 FT/LBS FOR 6DS7-00012	75 FT/LBS	130 FT/LBS
mitsubishi	5.9	357		95-00	22 FT/LBS, +90°	43 FT/LBS, +90°	110 FT/LBS, +90°
mitsubishi	6.6	400	6D14		76 FT/LBS OILED	130 FT/LBS OILED	130 FT/LBS OILED
mitsubishi	6.7	406	6D142A	75-89	94 FT/LBS	135 FT/LBS	14MM BOLTS = 145 FT/LBS, 10MM BOLTS = 25 FT/LBS
mitsubishi	6.9	422	6D15	74-86	94 FT/LBS	135 FT/LBS	14MM BOLTS = 145 FT/LBS, 10MM BOLTS = 25 FT/LBS
mitsubishi	7.5	460	6D16	87-88	76 FT/LBS W/OIL ON BOLTS	130 FT/LBS W/OIL ON BOLTS	130 FT/LBS W/OIL ON BOLTS
mitsubishi	8.6	522	6DB1				
mitsubishi	11.2	680	6D22	92-95	85 FT/LBS	273 FT/LBS	129 FT/LBS, + 90-110°
MURPHY	0.8	46			M12-10.9: 55-59 FT/LBS M12-12.9: 70-74 FT/LBS	96-103 FT/LBS	37-40 FT/LBS
MURPHY	1.5	91			M12-10.9: 55-59 FT/LBS M12-12.9: 70-74 FT/LBS	96-103 FT/LBS	D202 ENGINE: 126-132 FT/LBS, D302 ENGINE: 37-40 FT/LBS
MURPHY	1.9	115			70-73 FT/LBS	118-125 FT/LBS	37-40 FT/LBS
MURPHY	1.9	115			56-59 FT/LBS	96-103 FT/LBS	37-40 FT/LBS
MURPHY	2.1	127			56-59 FT/LBS	96-103 FT/LBS	126-129 FT/LBS
MURPHY	2.1	127			70-74 FT/LBS	118-125 FT/LBS	148-154 FT/LBS
MURPHY	2.2	136			M12-10.9: 55-59 FT/LBS, M12-12.9: 70-74 FT/LBS	96-103 FT/LBS	D202 ENGINE: 126-132 FT/LBS, D302 ENGINE: 37-40 FT/LBS
NAVISTAR	1.0	60	C60		16 FT/LBS	55 FT/LBS	45 FT/LBS
NAVISTAR	1.2	71	M471G		30 FT/LBS	45 FT/LBS	49 FT/LBS
NAVISTAR	1.6	99	SD-16		37-41 FT/LBS	45 FT/LBS	43,94 FT/LBS MAIN BOLT, 21,36 FT/LBS SUB-BOLT
NAVISTAR	1.9	113	C113	37-40	40-45 FT/LBS COTTER PIN NUT, 43-49 FT/LBS SELF LOCKING NUT	75 FT/LBS	65 FT/LBS
NAVISTAR	2.0	123	SUPER C		43-49 FT/LB SELF-LOCKING NUTS,40-45 FT/LBS NUTS W/COTTER PIN	75-80 FT/LBS	65 FT/LBS
NAVISTAR	2.1	132	FC		60 FT/LBS		
NAVISTAR	2.1	132	FK		60 FT/LBS		
NAVISTAR	2.2	132	F-12		60 FT/LBS		
NAVISTAR	2.2	135	2404		43-49 FT/LBS	75-80 FT/LBS	80-90 FT/LBS
NAVISTAR	2.2	135	2404		43-49 FT/LBS NUTS	75-80 FT/LBS	80-90 FT/LBS
NAVISTAR	2.3	144	B414		40-45 FT/LBS	BOLT W/WASHER 70-75 FT/LBS CONVEX HEAD BOLT 80-85 FT/LBS	75-80 FT/LBS
NAVISTAR	2.3	144	B275				
NAVISTAR	2.3	146	2424		43-49 FT/LBS	75-80 FT/LBS	80-90 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
NAVISTAR	2.5	154	BD154		40-45 FT/LBS	PLACE BOLT(CONCAVE HEAD) 80-85	75-80 FT/LBS
NAVISTAR	2.5	155	D155		18.5 FT/LBS + 120°	30,60,110 FT/LBS	30,60,110 FT/LBS
NAVISTAR	2.5	152	C152		40 FT/LBS	75-80 FT/LBS	70 FT/LBS
NAVISTAR	2.5	152		61-68	40-45 FT/LBS	75-85 FT/LBS	65 FT/LBS
NAVISTAR	2.5	153	2504		40-45 FT/LBS	75-80 FT/LBS	75-80 FT/LBS
NAVISTAR	2.6	161		52-62	35-40 FT/LBS		
NAVISTAR	2.6	164			40 FT/LBS	75-80 FT/LBS	
NAVISTAR	2.6	164			40 FT/LBS	75-80 FT/LBS	70 FT/LBS
NAVISTAR	2.6	157			43-49 FT/LBS	75-85 FT/LBS	65,90 FT/LBS
NAVISTAR	2.7	169			40-50 FT/LBS	75-80 FT/LBS	
NAVISTAR	2.7	166			40-50 FT/LBS	75-85 FT/LBS	110-120 FT/LBS
NAVISTAR	2.7	169			40 FT/LBS	75-80 FT/LBS	70-75 FT/LBS
NAVISTAR	2.7	164			40-50 FT/LBS	75-80 FT/LBS	
NAVISTAR	2.8	174	HD174E		56-70 FT/LBS		
NAVISTAR	2.8	175			40-50 FT/LBS	75-80 FT/LBS	70-75 FT/LBS
NAVISTAR	2.8	175			40-50 FT/LBS	75-80 FT/LBS	
NAVISTAR	2.8	175			40 FT/LBS	75 FT/LBS	70 FT/LBS
NAVISTAR	2.8	175			PLACE BOLT: 50 FT/LBS, PITCH BOLT: 45 FT/LBS	75-85 FT/LBS	65,90 FT/LBS
NAVISTAR	2.9	179	D179		18.5 FT/LBS, +120°	PITCH-10.9K:109#, 12.9K:141#, NECKD DOWN-10.9K:80#,12.9K:97#	30,60,110 FT/LBS
NAVISTAR	3.0	188			40-50 FT/LBS	75-85 FT/LBS	110-120 FT/LBS
NAVISTAR	3.1	193			70-75 FT/LBS	100 FT/LBS	
NAVISTAR	3.2	199		64-67			
NAVISTAR	3.2	196		80-83	40-45 FT/LBS	75-85 FT/LBS	110 FT/LBS
NAVISTAR	3.3	200			PLACE BOLT: 50 FT/LBS, PITCH BOLT: 45 FT/LBS	75-85 FT/LBS	65,90 FT/LBS
NAVISTAR	3.4	213	GRD214	37-49	56-70 FT/LBS	1/2"= 75-85 FT/LBS, 9/16=85 FT/LBS, 5/8" = 90-100 FT/LBS	75-85 FT/LBS
NAVISTAR	3.4	206	D206		18.5 FT/LBS, +120°	30,60,110 FT/LBS	30,60,110 FT/LBS
NAVISTAR	3.5	214	GRD214A	50-55	56-70 FT/LBS	1/2" BOLTS 75-85 FT/LBS 5/8" BOLTS 90-100 FT/LBS	65-75 FT/LBS
NAVISTAR	3.6	223			45-55 FT/LBS		
NAVISTAR	3.6	220		50-62	45-55 FT/LBS	75-85 FT/LBS	85-95 FT/LBS
NAVISTAR	3.6	220		55-63	45-55 FT/LBS	75-85 FT/LBS	85-95 FT/LBS
NAVISTAR	3.6	220			45-55 FT/LBS	75-85 FT/LBS	85-95 FT/LBS
NAVISTAR	3.6	220			45-55 FT/LBS	75-85 FT/LBS	85-95 FT/LBS
NAVISTAR	3.6	220			45-55 FT/LBS	75-85 FT/LBS	85-95 FT/LBS
NAVISTAR	3.6	221			50 FT/LBS	80 FT/LBS	90 FT/LBS
NAVISTAR	3.6	220			45-55 FT/LBS	75-85 FT/LBS	85-95 FT/LBS
NAVISTAR	3.7	226		62-69	45-55 FT/LBS	75-85 FT/LBS	
NAVISTAR	3.8	239	D239		18.5 FT/LBS, +120°	10.9M BOLTS = 30,60,110 FT/LBS12.9M BOLTS = 30,59,144 FT/LBS	30, 60, 110 FT/LBS
NAVISTAR	3.8	236			45-55 FT/LBS	75-85 FT/LBS	
NAVISTAR	3.8	232		68-74	26, 30 FT/LBS	75, 85 FT/LBS	80, 85 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
NAVISTAR	3.8	236			45-55 FT/LBS	80 FT/LBS	
NAVISTAR	3.8	232			26-30 FT/LBS		
NAVISTAR	3.8	236	TD9		45-55 FT/LBS	75-85 FT/LBS	110-120 FT/LBS
NAVISTAR	3.8	233	GRD233	41-58	56-70 FT/LBS	1/2" BOLTS 75-85 FT/LBS 5/8" BOLTS 90-100 FT/LBS	65 FT/LBS
NAVISTAR	3.9	239	D239		18.5 FT/LBS + 120°	10.9M BOLTS = 30,60,110 FT/LBS 12.9M BOLTS = 30,59,144 FT/LBS	BOLTS W/FLNGE 30,59,110 FT/LBS BOLTS W/WSHER 30,59,85 FT/LBS
NAVISTAR	3.9	246	D246		18 FT/LBS, +120°	*SEE COMMENTS LUBE THREADS	
NAVISTAR	3.9	240	BD240	63-69	45-55 FT/LBS	75-85 FT/LBS	TORQUE BY BOLT SIZE
NAVISTAR	3.9	240	SD240		45-55 FT/LBS	75-85 FT/LBS	90 FT/LBS
NAVISTAR	3.9	240			45-55 FT/LBS	75-85 FT/LBS	
NAVISTAR	3.9	240			45-55 FT/LBS	75-85 FT/LBS	
NAVISTAR	3.9	241		57-67	45-55 FT/LBS	75-85 FT/LBS	85-95 FT/LBS
NAVISTAR	3.9	240			45-55 FT/LBS	75-85 FT/LBS	
NAVISTAR	4.0	246	D246		18 FT/LBS, +120°	10.9M BOLTS = 30,60,110 FT/LB 12.9M BOLTS = 30,59,144 FT/LBS	30,60,90 FT/LBS, BOLT WITH WSR30/60/110 FT/LBS W BOLT COLLAR
NAVISTAR	4.0	242			56-70 FT/LBS		
NAVISTAR	4.1	248		61-68	53 FT/LBS	100 FT/LBS	110 FT/LBS
NAVISTAR	4.1	248			55-60 FT/LBS	100-105 FT/LBS	110 FT/LBS
NAVISTAR	4.1	250			56-70 FT/LBS		
NAVISTAR	4.1	248			110-120 FT/LBS	3/4" BOLTS 250-275 FT/LBS, 5/8" BOLTS 150-175 FT/LBS	110-135 FT/LBS
NAVISTAR	4.1	248			55-60 FT/LBS	100-105 FT/LBS	
NAVISTAR	4.2	258		72-74	26-30 FT/LBS	75-85 FT/LBS	
NAVISTAR	4.3	264		63-74	45-55 FT/LBS	75-85 FT/LBS	85-95 FT/LBS
NAVISTAR	4.3	266	266 GAS	66-71	45-55 FT/LBS	75-85 FT/LBS	110 FT/LBS
NAVISTAR	4.3	264		50-62	55-60 FT/LBS	100-105 FT/LBS	90 FT/LBS
NAVISTAR	4.3	263			50 FT/LBS	80 FT/LBS	90 FT/LBS
NAVISTAR	4.3	264		50-62	115# LUBE W/WHITE LEAD & OIL	5/8 STUDS: 150-175 FT/LBS 3/4 STUDS: 250-275 FT/LBS	110 FT/LBS
NAVISTAR	4.4	268		75-85	18 FT/LBS, +120°	10.9 BOLT = 30/59/107 FT/LBS 12.9 BOLT = 30/59/144 FT/LBS	30,59,110 FT/LBS W/COLLAR, 30,59,85 FT/LBS W/WASHER
NAVISTAR	4.4	269		40-69	75-85 FT/LBS	100-110 FT/LBS	100-110 FT/LBS
NAVISTAR	4.5	275	V-275	05-06	33, 50 FT/LBS	110, 130, 170 FT/LBS	68, 85 FT/LBS, +90°, +90°, +90°
NAVISTAR	4.6	282	UTD282	53-70	75-85 FT/LBS	100-110 FT/LBS	90 FT/LBS
NAVISTAR	4.6	281	D281		115 FT/LBS	CENTER: 250-275 FT/LBS, OTHERS: 150-175 FT/LBS	110-135 FT/LBS
NAVISTAR	4.6	281			55-60 FT/LBS	100-105 FT/LBS	110 FT/LBS
NAVISTAR	4.6	282	D282		45-55 FT/LBS	75-85 FT/LBS	125 FT/LBS
NAVISTAR	4.8	291			45-50 FT/LBS	75-85 FT/LBS	65, 90 FT/LBS
NAVISTAR	4.9	301			45-50 FT/LBS	75-85 FT/LBS	85-90 FT/LBS
NAVISTAR	4.9	301			45-55 FT/LBS	75-85 FT/LBS, 12.9 = 140 FT/LBS	85-90 FT/LBS
NAVISTAR	5.0	304	304A	58-80	45-55 FT/LBS	75-85 FT/LBS	110 FT/LBS
NAVISTAR	5.0	308			65-75 FT/LBS	100-110 FT/LBS	75-80# DRILLED; 100-110# SOLID
NAVISTAR	5.0	308	BD308	55-57	65-75 FT/LBS	100-110 FT/LBS	75-80# DRILLED*; 100-110# SOLID
NAVISTAR	5.0	308			65-75 FT/LBS	100-110 FT/LBS	75-80# DRILLED; 100-110# SOLID

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
NAVISTAR	5.1	312			60,130 FT/LBS	115 FT/LBS	100,165 FT/LBS
NAVISTAR	5.1	310	D310		18 FT/LBS, +120°	30,60,110 FT/LBS	30,60,90 FT/LBS
NAVISTAR	5.2	318	RED-318		75-85 FT/LBS		
NAVISTAR	5.5	335	TD-9A		70-75 FT/LBS	125 FT/LBS	160 FT/LBS
NAVISTAR	5.5	335			55 FT/LBS	5/8 STUDS: 150-175 FT/LBS, 3/4 STUDS: 250-275 FT/LBS	160 FT/LBS
NAVISTAR	5.5	335			70-75 FT/LBS	125 FT/LBS 5/8" BOLTS 150-175 FT/LBS	160 FT/LBS
NAVISTAR	5.7	345		76-81	45-55 FT/LBS	75-85 FT/LBS	110 FT/LBS
NAVISTAR	5.7	350	TD-9		55-60 FT/LBS	INNER 250-275 FT/LBS OUTER 150-175 FT/LBS	145-160 FT/LBS
NAVISTAR	5.7	350			85-90 FT/LBS	125-130 FT/LBS	160-165 FT/LBS
NAVISTAR	5.8	358	D358		18 FT/LBS + 120° OR USE JUST 75 FT/LBS	BOLT MARKED 10K=80# 12K=97# 10.9=115# 12.9=140#	50, 70, 90 FT/LBS
NAVISTAR	5.8	354			75 FT/LBS CADMIUM PLATED, 95 FT/LBS PHOSPHATED	200 FT/LBS	115 FT/LBS FORMED WASHER, 95 FT/LBS SEPARATE
NAVISTAR	5.9	360	DT360	87-94	80 FT/LBS	115 FT/LBS	110,155,165 FT/LBS
NAVISTAR	5.9	360	D360		130 FT/LBS	115 FT/LBS	110,165 FT/LBS
NAVISTAR	5.9	361	D361	60-72	105 FT/LBS	115 FT/LBS	65, 135 FT/LBS
NAVISTAR	5.9	361		49-69	75-85 FT/LBS		
NAVISTAR	6.0	365	V-365	03-05	33, 50 FT/LBS	110, 130, 170 FT/LBS	65, 85 FT/LBS, +90°, +90°, +90°
NAVISTAR	6.1	370	UD370		40-50 FT/LBS		
NAVISTAR	6.1	372	RD372	49-69	75-85 FT/LBS	100-110 FT/LBS	100-110 FT/LBS, OIL SUPPLY BOLT 75-85 FT LBS
NAVISTAR	6.4	392		56-83	40-45 FT/LBS	75-85 FT/LBS	110 FT/LBS
NAVISTAR	6.5	401		62-74	60-70 FT/LBS		
NAVISTAR	6.5	401			65-75 FT/LBS	100-110 FT/LBS	90-100 FT/LBS
NAVISTAR	6.6	402	DT402	75-85	18 FT/LBS, +120°	10.9 BOLT = 30/59/107 FT/LBS 12.9 BOLT = 30/59/144 FT/LBS	30,59,110# WITH COLLAR, 30,59,85 FT/LBS WITH WASHER
NAVISTAR	6.6	401		75-84	75-85 FT/LBS		
NAVISTAR	6.6	401		49-69	75-85 FT/LBS		100-110 FT/LBS *
NAVISTAR	6.6	404		80-86	38-44 FT/LBS	90-100 FT/LBS	100-110 FT/LBS
NAVISTAR	6.7	408	DT408	93-96	115 FT/LBS	115 FT LBS, ENGINE SERIAL #850001 AND HIGHER 130 FT/LBS	110,155,165 FT/LBS
NAVISTAR	6.7	407	D407		105 FT/LBS	115 FT/LBS	65, 135 FT/LBS
NAVISTAR	6.7	406		49-69	75-85 FT/LBS	100-110 FT/LBS	FT/LBS
NAVISTAR	6.7	407	DT407		105 FT/LBS	115 FT/LBS	65, 135 FT/LBS
NAVISTAR	6.8	414	DT414		130 FT/LBS	115 FT/LBS	110,165 FT/LBS
NAVISTAR	6.9	420		83-88	35,51 FT/LBS	75,95 FT/LBS	40,65,80 FT/LBS - NEW BOLTS 40,70,80,80 FT/LBS - USED BOLT
NAVISTAR	7.0	429	TD20		115 FT/LBS	235 FT/LBS	100,190,310 FT/LBS
NAVISTAR	7.1	436			130 FT/LBS	115 FT/LBS	110,115,165 FT/LBS
NAVISTAR	7.3	444	A160,175&190F	94-03	52,80 FT/LBS	75,95 FT/LBS	65,85,105 FT/LBS
NAVISTAR	7.3	446		74-82	38-44 FT/LBS	90-100 FT/LBS	100-110 FT/LBS
NAVISTAR	7.3	444		88-94	38-51 FT/LBS	75,95 FT/LBS	65,85,100,100 FT/LBS
NAVISTAR	7.4	450		49-69	65-75 FT/LBS	100-110 FT/LBS	100-110 FT/LBS
NAVISTAR	7.5	461		56-68	60-70 FT/LBS	100-110 FT/LBS	

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
NAVISTAR	7.5	461	TD14		73 FT/LBS*	153 FT/LBS FOR 14, 14A, 141 =225-245 FT/LBS	190 FT/LBS NUTS
NAVISTAR	7.6	466	DT466B	49-76	130 FT/LBS	115 FT/LBS	110, 115, 165 FT/LBS
NAVISTAR	7.6	466	DT466	94-96	115 FT/LBS	160 FT/LBS	110, 115, 165 FT/LBS
NAVISTAR	7.6	466	DT466C	90-93	115 FT/LBS	115 FT LBS	110, 155, 165 FT/LBS
NAVISTAR	7.6	466	DT466B	80-90	130 FT/LBS	115 FT/LBS	110, 115, 165 FT/LBS
NAVISTAR	7.6	466	DT466C	88-90	130 FT/LBS	115 FT/LBS	110,115,165 FT/LBS
NAVISTAR	7.6	462		56-68	55 FT/LBS, + 90°		
NAVISTAR	7.6	466	DT466E	97-00	115 FT/LBS	160 FT/LBS	1997-1998 1/2 110, 115, 165 FT/LBS ** 1998 1/2 & UP
NAVISTAR	7.6	466	DT466E	00-04	115 FT/LBS, 120 FT/LBS FOR FRACTURED RODS ONLY	1ST 100, 2ND 130 FT/LBS, 3RD +90° W/ 10W-40	100, 130 FT/LBS, REPEAT 130 FT/LBS, +90° **
NAVISTAR	7.8	478		56-78	60-70 FT/LBS W/HARDENED WASHER	100-110 FT/LBS	80-90 FT/LBS
NAVISTAR	8.2	501		49-69	75-85 FT/LBS	100-110 FT/LBS	100-110 FT/LBS< EXCEPT THE OILSUPPLY BOLT, 75-85 FT/LBS.
NAVISTAR	8.2	502		49-69	75-85 FT/LBS	100-120 FT/LBS	
NAVISTAR	8.7	530	530	97-04	115 FT/LBS	160 FT/LBS	110, 155, 165 FT/LBS
NAVISTAR	8.7	530	530	93-96	115 FT/LBS	160 FT/LBS	110, 155, 165 FT/LBS
NAVISTAR	8.8	537		75-82	65-70 FT/LBS	125-135 FT/LBS	85 FT/LBS
NAVISTAR	9.0	550	D170		55 FT/LBS + 90°	125-135 FT/LBS SIDE BOLTS: 40-50 FT/LBS	110 FT/LBS
NAVISTAR	9.0	549		60-78	60-70 FT/LBS W/HARDEND WASHER	100-110 FT/LBS	90-100 FT/LBS
NAVISTAR	9.0	551		78-85	55 FT/LBS, +60°	125-135 FT/LBS, USE NEW BOLTS SIDE BOLTS: 40-45 FT/LBS	110 FT/LBS BEFORE SER #14928, AFTER #14928 = 120 FT/LBS
NAVISTAR	9.1	554	TD18		55-60 FT/LBS (NUTS)	100-120 FT/LBS	120-140 FT/LBS (NUTS)
NAVISTAR	9.4	573	TD20		105 FT/LBS	275-300 FT/LBS	250 FT/LBS WITH MOLYKOTE® APPLIED
NAVISTAR	9.4	573			40 F/TLBS, 120-130 FT/LBS	275-300 FT/LBS	300-320 FT/LBS
NAVISTAR	9.9	605			65-70 FT/LBS	125-135 FT/LBS	90-100 FT/LBS
NAVISTAR	11.3	691			70-75 FT/LBS	225-245 FT/LBS	120-140 FT/LBS
NAVISTAR	13.1	800			40, 130 FT/LBS	190 FT/LBS WITH MOLY LUBE CROSS BOLT 160 FT/LBS	220 FT/LBS (WITH MOLY LUBE)
NAVISTAR	13.4	817	D817 A SERIES		145-155 FT/LBS	225-245 FT/LBS	75, 265 FT/LBS
NAVISTAR	13.4	817	D817 B SERIES		145-155 FT/LBS	225-245 FT/LBS	75, 265 FT/LBS
NAVISTAR	13.4	817	D817 C SERIES		145-155 FT/LBS	225-245 FT/LBS	457 FT/LBS AND SUPER STUD 525 FT/LBS
NISSAN	0.0	0	DA120		72-87 FT/LBS	123-152 FT/LBS	43,58,80-94 FT/LBS
NISSAN	0.0	0	DA640		72-87 FT/LBS	72-87 FT/LBS	43,58,80-94 FT/LBS
NISSAN	1.2	72	A12	73-	37 FT/LBS	39 FT/LBS	42 FT/LBS
NISSAN	1.2	76	A12A	80-	25 FT/LBS	39 FT/LBS	53 FT/LBS
NISSAN	1.2	72	A12	72-	25 FT/LBS	39 FT/LBS	35 FT/LBS
NISSAN	1.2	76	A12A	81-82	25 FT/LBS	39 FT/LBS	53 FT/LBS
NISSAN	1.3	79	A13	74-	25 FT/LBS	39 FT/LBS	53 FT/LBS
NISSAN	1.4	85	A14	75-77	25 FT/LBS	39 FT/LBS	53 FT/LBS
NISSAN	1.4	85	A14	81-82			53 FT/LBS
NISSAN	1.4	85	A14	79-80	25 FT/LBS	39 FT/LBS	53 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
NISSAN	1.4	85	A14	78-	25 FT/LBS	39 FT/LBS	53 FT/LBS
NISSAN	1.5	91	A15	79-80	23-27 FT/LBS	36-43 FT/LBS	51-54 FT/LBS
NISSAN	1.5	90	J15	69-90	22-29 FT/LBS	72-80 FT/LBS, ARROW TOWARDS FRONT	36-43 FT/LBS
NISSAN	1.5	69	D11	66-78	24-25 FT/LBS	76-80 FT/LBS	51-54 FT/LBS
NISSAN	1.5	91	A15	81-82	23-27 FT/LBS	36-43 FT/LBS	53 FT/LBS
NISSAN	1.5	91	E15	82-83	23-27 FT/LBS	36-43 FT/LBS	29-33, 51-54 FT/LBS
NISSAN	1.6	97	GA16I	89-90	23-27 FT/LBS	34-38 FT/LBS	22,47, LOOSEN, 22,48 FT/LBS SMALL BOLTS 5-6 FT/LBS
NISSAN	1.6	98	R16	66-68	25 FT/LBS		48 FT/LBS PLAIN BOLT, 55 FT/LBS ALLEN HEAD BOLT
NISSAN	1.6	98	R16	69-70	25 FT/LBS		48 FT/LBS PLAIN BOLT, 55 FT/LBS ALLEN HEAD BOLT
NISSAN	1.6	97	L16	73-	25 FT/LBS	37 FT/LBS	43 FT/LBS
NISSAN	1.6	97	GA16DE	91-98	17-21 FT/LBS NUTS	34-38 FT/LBS	1-10:22,43 FT/LBS, LOOSEN, 22,43 FT/LBS BOLTS 11-15: 5 FT/LBS
NISSAN	1.6	97	E16S	86-88	23-27 FT/LBS	36-43 FT/LBS	51-54 FT/LBS SEE TB-822
NISSAN	1.6	97	E16I	86-88	23-27 FT/LBS	36-43 FT/LBS	51-54 FT/LBS SEE TB-822
NISSAN	1.6	97	E16	83-86	23-27 FT/LBS	36-43 FT/LBS	51-54 FT/LBS SEE TB-822
NISSAN	1.6	97	CA16DE	87-	12,33 FT/LBS	33-40 FT/LBS	22,76, LOOSEN, 22,76 FT/LBS CAM CAPS 7-9 FT/LBS
NISSAN	1.6	99	SD-16		37-41 FT/LBS		43,94 FT/LBS MAIN BOLT, 21,36 FT/LBS SUB-BOLT
NISSAN	1.6	97	L16	72-	21 FT/LBS	36 FT/LBS	40-43 FT/LBS
NISSAN	1.7	102	CD17	83-87	23-27 FT/LBS	33-40 FT/LBS	43-51, 72-80 FT/LBS
NISSAN	1.8	108	QG18D	00-02	10-12 FT/LBS, +35-40°	34-38 FT/LBS	* SEE COMMENTS
NISSAN	1.8	110	CA18ET	84-86	22-27 FT/LBS	33-40 FT/LBS	58-65 FT/LBS
NISSAN	1.8	110	CA18DE	88-89	10-12, 30-33 FT/LBS	33-40 FT/LBS	22#, 76#, LOOSEN COMPLETELY, REPEAT 22#, 76#
NISSAN	1.8	110	CA18ET	87-88			22#, 58#, LOOSEN, 22#, 54-61#
NISSAN	1.8	108	L18	73-74	37 FT/LBS	37 FT/LBS	54 FT/LBS
NISSAN	2.0	122	SR20DE	96-99	10-12 FT/LBS, +60-65° OR 28-33 FT/LBS	20-24 FT/LBS, 75-80°, LOOSEN ALL, 24-28 FT/LBS, +45-50°	29, 58 FT/LBS, LOOSEN ALL, 25-33 FT/LBS, +90°, +90°
NISSAN	2.0	120	CA20E	84-86	22-27 FT/LBS	33-40 FT/LBS	54-61 FT/LBS
NISSAN	2.0	119	Z20E	81-	37 FT/LBS	37 FT/LBS	55 FT/LBS
NISSAN	2.0	119	Z20S	80-	37 FT/LBS	37 FT/LBS	55 FT/LBS
NISSAN	2.0	119	Z20E	80-	37 FT/LBS	37 FT/LBS	55 FT/LBS
NISSAN	2.0	119	Z20	84-86	33-40 FT/LBS	33-40 FT/LBS	58-65 FT/LBS
NISSAN	2.0	122	SR20DE	91-96	10-12, 28-33 FT/LBS	24-28, 54-61 FT/LBS	29, 58 FT/LBS, LOOSEN, 25-33#, +90-100°, +90-100°
NISSAN	2.0	119	L20B	74-79	37 FT/LBS	37 FT/LBS	54 FT/LBS
NISSAN	2.0	121	H20	77-92	35-44 FT/LBS	61-72 FT/LBS	58-69 FT/LBS
NISSAN	2.0	120	CA20E	87-89	24-27 FT/LBS	33-40 FT/LBS	FT/LBS
NISSAN	2.0	121	U20	67-70	35-44 FT/LBS	72-80 FT/LBS	58-69 FT/LBS
NISSAN	2.0	120	CA20S	82-83	22-27 FT/LBS	33-40 FT/LBS	1982:54 FT/LBS 1983:62 FT/LBS
NISSAN	2.0	121	H20-II	93-02	23-27 FT/LBS	61-69 FT/LBS	54-61 FT/LBS
NISSAN	2.0	119	Z20S	81-	37 FT/LBS	37 FT/LBS	55 FT/LBS
NISSAN	2.0	119	L20B	80-80	37 FT/LBS	37 FT/LBS	56 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
NISSAN	2.2	133	Z22E	82-83	33-40 FT/LBS	33-40 FT/LBS	1980-82: 55 FT/LBS 1983: 62 FT/LBS
NISSAN	2.2	133	Z22	82-	37 FT/LBS	37 FT/LBS	55 FT/LBS
NISSAN	2.2	132	SD22	81-83	38-41 FT/LBS	123-127 FT/LBS	87-94 FT/LBS LARGE, 36# SMALL
NISSAN	2.2	133	Z22	81-	37 FT/LBS	37 FT/LBS	55 FT/LBS
NISSAN	2.3	140	SD23	82-87	49-52 FT/LBS	123-127 FT/LBS	33-40 FT/LBS SMALL, 87-94 FT/LBS LARGE
NISSAN	2.4	146	KA24E	89-90	10-12, 28-33 FT/LBS	33-40 FT/LBS	54,61 FT/LBS ROCKER BRACKET 11-18 FT/LBS
NISSAN	2.4	146	Z24I	86-90	27-33 FT/LB AFTER SER #829143,PRIOR: 33-40 FT/LBS	33-40 FT/LBS	58 FT/LBS, LOOSEN ALL BOLTS, 22 FT/LBS, 54-61 FT/LBS
NISSAN	2.4	146	Z24	83-89	27-33 FT/LB AFTER SER #829143,PRIOR: 33-40 FT/LBS	33-40 FT/LBS	58 FT/LBS, LOOSEN ALL BOLTS, 22, 54-61 FT/LBS
NISSAN	2.4	146	L24E	77-80	37 FT/LBS	37 FT/LBS	56 FT/LBS
NISSAN	2.4	146	L24E	81-84	33-40 FT/LBS	33-40 FT/LBS	62 FT/LBS
NISSAN	2.4	146	L24	70-73	1970-72 20, 24 FT/LBS, 1973 33, 40 FT/LBS	33-40 FT/LBS	1970-71 33, 47 FT/LBS, 1972 47, 54 FT/LBS, 1973 29,43,47-61#
NISSAN	2.4	146	KA24E	92-94	10-12, 28-33 FT/LBS	34-38 FT/LBS	22, 59 FT/LBS, LOOSEN, 18-25 FT/LBS, +80-85°
NISSAN	2.4	146	KA24E	89-91	10-12, 28-33 FT/LBS	33-40 FT/LBS	22#, 58#, LOOSEN, 22#, 61#
NISSAN	2.4	146	KA24DE	95-02	10-12,28-33 FT/LBS	34-38 FT/LBS	22,58#, LOOSEN, 22,54-61#
NISSAN	2.4	146	KA24DE	91-97	10-12, 28-33 FT/LBS	34-41 FT/LBS	22,58#, LOOSEN, 22,54-61#
NISSAN	2.4	146	KA24E	90-	10-12, 28-33 FT/LBS	34-38 FT/LBS	22 FT/LBS, 59 FT/LBS, LOOSEN ALL, 18-25 FT/LBS, + 80-85°
NISSAN	2.4	146	KA24E	91-98	10-12 FT/LBS, 28-33 FT/LBS, 1995-98 10-12 FT/LBS + 60-65°	34-38 FT/LBS	22#, 58#, LOOSEN, 22#, 54-61# ** SEE COMMENTS BOX
NISSAN	2.5	151	H25		28-33 FT/LBS	61-69 FT/LBS	54-61 FT/LBS
NISSAN	2.5	153	QR25DE	02-04	13.7-15.1 FT.LBS, + 85-90°	BOLTS 1-10 26.7-31.1, + 60-65°, BLTS 11-22 14.4-18.0 FT/LBS	72#, LOOSEN, 26-32#, +75-80°, +75-80° - SEE TB2182
NISSAN	2.5	152	SD25	83-87	49-52 FT/LBS	123-127 FT/LBS	33-40 FT/LBS SMALL, 87-94 FT/LBS LARGE
NISSAN	2.5	152	RB25DE	89-99			
NISSAN	2.6	156	L26	74-	37 FT/LBS	37 FT/LBS	57 FT/LBS
NISSAN	2.6	157	RB26DETT	89-99	10-12 FT/LBS, +60-65°	34-38 FT/LBS, BAFFLE PLATE TO MAIN BRG CAP 12-15#	21,80 FT/LBS, LOOSEN, 18-25 FT/LBS,+90° (OR 80-83 FT/LBS)
NISSAN	2.7	163	TD27	88-92	58-61 FT/LBS	123-131 FT/LBS	36-44, 72 FT/LBS
NISSAN	2.8	168	L28ET	81-83	33-40 FT/LBS	33-40 FT/LBS	57-62 FT/LBS
NISSAN	2.8	170	LD28	81-84	33-40 FT/LBS	51-58 FT/LBS	87-94 FT/LBS
NISSAN	2.8	168	L28E	75-80	37 FT/LBS	37 FT/LBS	57-62 FT/LBS
NISSAN	2.8	168	L28E	81-83	37 FT/LBS	37 FT/LBS	57-62 FT/LBS
NISSAN	3.0	181	VG30ET	84-86	33-40 FT/LBS	67-74 FT/LBS	40-47 FT/LBS
NISSAN	3.0	181	VG30I	86-89		67-74 FT/LBS	
NISSAN	3.0	181	VG30DETT	90-96	1ST 10-12 FT/LBS, 2ND 43-48 FT/LBS	67-74 FT/LBS	30, 90#, LOOSEN, 30, 90 FT/LBS TIGHTEN SMALL BOLT 9 FT/LBS
NISSAN	3.0	181	VG30E	87-95	33-40 FT/LBS	67-74 FT/LBS	22#,43#,LOOSEN,22#,40-47#
NISSAN	3.0	181	VG30	84-87	33-40 FT/LBS	67-74 FT/LBS	40-47 FT/LBS



Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
NISSAN	3.0	181	VE30DE	92-94	10-12, 43-48 FT/LBS	67-74 FT/LBS	29,90#, LOOSEN, 30,90 FT/LBS
NISSAN	3.0	181		90-94	10-12, 43-48 FT/LBS	67-74 FT/LBS	29,90 FT/LBS, LOOSEN, 29,90 FT/LBS
NISSAN	3.0	182	VQ30DE	95-00	24-28 FT/LBS, +90-95°	24-28 FT/LBS + 90°	72#, LOOSEN, 25-32#, +90°, +90°
NISSAN	3.0	181	VG30E	87-97	33-40 FT/LBS	67-74 FT/LBS	22#,43#,LOOSEN,22#,43-47#
NISSAN	3.0	181	H30		35-44 FT/LBS	72-80 FT/LBS	58-69 FT/LBS
NISSAN	3.0	181	VG30DE	90-96	10-12, 43-48 FT/LBS	67-74 FT/LBS	22,90#,LOOSEN, 22,90 FT/LBS TIGHTEN SMALL BOLTS 9 FT/LBS
NISSAN	3.3	199	SD33	81-83	38-41 FT/LBS	123-127 FT/LBS	87-94 FT/LBS LARGE, 45 FT/LBS SMALL
NISSAN	3.3	201	VG33E	96-02	10-12 FT/LBS, +60-65°	66-74 FT/LBS *	22, 43 FT/LBS, LOOSEN, 22#, +60-65°
NISSAN	3.5	211	FD35T	86-90	83-87 FT/LBS	123-127 FT/LBS	51-58,105-112 FT/LBS
NISSAN	3.5	213	VQ35DE	01-03	14-15 FT/LBS, +90-95°	24-25 FT/LBS, +90-95°	72 FT/LBS, LOOSEN, 26-32 FT/LBS, +90-95°, +90-95°
NISSAN	4.0	243			61.5-68.7 FT/LBS	69.1-72.3 FT/LBS *	90.4 FT/LBS
NISSAN	4.0	241	PF	65-78	33-49 FT/LBS	72-87 FT/LBS	61-65 FT/LBS
NISSAN	4.0	241	P40	79-86	36-43 FT/LBS	72-87 FT/LBS	51-65 FT/LBS
NISSAN	4.2	254	TB42	90-97	28-30 ,49-52 FT/LBS	119-127 FT/LBS	22, 42-49 FT/LBS, LOOSEN ALL, 22, 47-64 FT/LBS
NISSAN	4.2	254	TD42T	90-96	58-61 FT/LBS NUT	123-130 FT/LBS	29-33,43-47 FT/LBS, + 80-100°
NISSAN	4.6	282	FD46TA	99-04	TO JULY 2001 83-87#, AUG 2001 & LATER 98-105#	123-145 FT/LBS, APPLY OIL TO BOLT SEAT & THREAD	43,72,123-137 FT/LBS
NISSAN	5.7	345	FD6		85-89 FT/LBS	125-155 FT/LBS	44, 111 FT/LBS
NISSAN	6.9	423	FE6TA	98-04	98-105 FT/LBS	130-145 FT/LBS	72,130-145 FT/LBS
NISSAN	6.9	423	FE6TA	92-97	83-87 FT/LBS	123-127 FT/LBS	43,72,108-130 FT/LBS NOZZLE SLEEVES 25-29 FT/LBS
NISSAN	6.9	423	FE6	80-90	83-87 FT/LBS	123-127 FT/LBS	43,72,108-130 FT/LBS NOZZLE SLEEVES 25-29 FT/LBS
NISSAN	6.9	423	FE6T	88-91	83-87 FT/LBS	123-127 FT/LBS	43,72,108-130 FT/LBS NOZZLE SLEEVES 25-29 FT/LBS
NISSAN	7.4	452	NE6	85-94			43,72,108-130 FT/LBS NOZZLE SLEEVES 25-29 FT/LBS
NISSAN	10.3	629	PD6T		130-134 FT/LBS	174-179 FT/LBS	108-116, 159-166 FT/LBS
NISSAN	11.7	712	PE6T		130-134 FT/LBS	174-179 FT/LBS	108-116, 159-166 FT/LBS
OLIVER	2.3	144		55-59	46-50 FT/LBS	87-92 FT/LBS	
OLIVER	2.5	144		55-59	46-50 FT/LBS	87-92 FT/LBS	92-100 FT/LBS
OLIVER	3.1	191			80-86 FT/LBS	102-115 FT/LBS	82-91 FT/LBS
OLIVER	3.4	209		35-51	40-45 FT/LBS	100-110 FT/LBS	
OLIVER	3.4	210			80-86 FT/LBS	102-115 FT/LBS	102-115 FT/LBS
OLIVER	3.5	216		55-67	40-45 FT/LBS MARSDEN BOLT 32-35 FT/LBS CASTLE TYPE		
OLIVER	3.5	216		55-67	44-46 FT/LBS	87-92 FT/LBS	92-100 FT/LBS
OLIVER	3.8	232			31-35 FT/LBS ESNA, 44- 46 FT/LBS MARSDEN-SLOTTED	108-112 FT/LBS	116 FT/LBS, DRILLED SCREW =96-100 FT/LBS
OLIVER	4.3	265		47-67	56-58 FT/LBS FOR OLD BOLTS, 44-46 FT/LBS FOR NEW BOLTS	108-112 FT/LBS	92-100 FT/LBS
OLIVER	4.6	278	B10		91-97 FT/LBS	98-105 FT/LBS	166-173 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
OLIVER	5.1	310			NEW 12PT. BOLTS = 44-46 FT/LBS	129-133 FT/LBS	129-133 FT/LBS REAR OIL SCREW 113-117 FT/LBS **
OLIVER	5.8	354			75 FT/LBS CADMIUM PLATED, 95 FT/LBS PHOSPHATED	200 FT/LBS	115 FT/LBS FORMED WASHER, 95 FT/LBS SEPARATE WASHER
OLIVER	7.0	425			70-75 FT/LBS NUTS	3/4" 240 FT/LBS, 5/8" 140 FT/LBS	170-175 FT/LBS
OLIVER	7.4	451			70-75 FT/LBS NUTS	3/4" 240 FT/LBS, 5/8" 140 FT/LBS	FT/LBS
OLIVER	7.8	478			115-120 FT/LBS	135-140 FT/LBS	160 FT/LBS IN 4 STEPS
OLIVER	8.3	504			70-75 FT/LBS NUTS	3/4" 240 FT/LBS, 5/8" 140 FT/LBS	170-175 FT/LBS
OLIVER	9.6	585			55-60 FT/LBS NUTS	3/4" 196-204 FT/LBS, 5/8" 108-112 FT/LBS	170-175 FT/LBS, 100-105 FT/LBS FRONT NUT WATER MANIFOLD FLANG
OMC	5.0	302			19-24 FT/LBS	60-70 FT/LBS	25-35, 45-55 FT/LBS + 90°
OMC	5.7	350			45 FT/LBS	70-80 FT/LBS	25, 45, 65 FT/LBS
OMC	5.8	351			40-45 FT/LBS	95-105 FT/LBS	95-105, 105-112 FT/LBS
OMC	7.5	460			40-45 FT/LBS	95-105 FT/LBS	70-80, 100-110, 130-140 FT/LBS
ONAN	0.2	12					
ONAN	0.7	43			14 FT/LBS	25-27 FT/LBS R/BEARING PLATE	16 FT/LBS
ONAN	0.8	48			12-14 FT/LBS		
ONAN	0.8	48			12-14 FT/LBS		14-16 FT/LBS
ONAN	0.8	48	P248V		12-14 FT/LBS		ASBESTOS GASKET: 16-18#, GRAPHOIL GASKET 14-16#
ONAN	0.8	48			12-14 FT/LBS	25-27# REAR BRG PLATE, * MOUNTING SCREWS-SEE COMMENTS	14-16 FT/LBS
ONAN	0.8	50			17-20 FT/LBS	20-25 FT/LBS	32 FT/LBS
ONAN	0.8	50			17-20 FT/LBS	20-25 FT/LBS	32 FT/LBS
ONAN	0.8	50			17-20 FT/LBS	20-25 FT/LBS	32 FT/LBS
ONAN	1.0	60			27-29 FT/LBS (CAST ROD) ALUMINUM ROD = 14-16 FT/LBS		30 FT/LBS
ONAN	1.0	60			ALUMN, 14-16 FT/LBS, IRON 27-29 FT/LBS	25-28 FT/LBS	NUTS, COLD 18-20 FT/LBS
ONAN	1.0	60			27-29 FT/LBS		14# COLD W/COMPRESSION WASHER, 17# COLD W/OUT COMP WASHER
ONAN	1.7	105			63 FT/LBS	90 FT/LBS	90 FT/LBS
ONAN	2.0	120			27-29 FT/LBS		
ONAN	2.3	140	L SERIES		22,40,63 FT/LBS	30,60,90 FT/LBS	42,65 FT/LBS + 90°
ONAN	2.3	140			63 FT/LBS	90 FT/LBS	90 FT/LBS
ONAN	3.4	210	L SERIES		22, 40, 63 FT/LBS	30, 60, 90 FT/LBS	42, 65 FT/LBS, +90°
ONAN	3.4	210	L SERIES		22,40,63 FT/LBS	30,60,90 FT/LBS	42,65 FT/LBS, +90°
OPEL	1.8	111		76-79	33 FT/LBS	72 FT/LBS	72 FT/LBS
OPEL	1.9	116		67-75			COLD 58 FT/LBS, WARM 72 FT/LBS
PACKARD	3.9	237		37	55-60 FT/LBS	82-85 FT/LBS	60-62 FT/LBS
PACKARD	4.0	245		39-48	45-46 FT/LBS	82-85 FT/LBS	60-62 FT/LBS
PACKARD	4.6	282		35-47	55-60 FT/LBS *	82-85 FT/LBS	60-62 FT/LBS
PACKARD	4.7	288		48-54	60-65 FT/LBS	90-95 FT/LBS	63 FT/LBS
PACKARD	5.2	320		35-39	45-50 FT/LBS	65-70 FT/LBS	60-62 FT/LBS
PACKARD	5.2	320		55	60-65 FT/LBS	90-95 FT/LBS	
PACKARD	5.4	327		48-54	60-65 FT/LBS	90-95 FT/LBS	63 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
PACKARD	5.8	356		40-42	56-58 FT/LBS	82-85 FT/LBS	60-62 FT/LBS
PACKARD	5.8	352		55-56	60-65 FT/LBS	90-95 FT/LBS	55-60 FT/LBS
PACKARD	5.9	359		54	60-75 FT/LBS		
PACKARD	6.1	374		51-56	40-45 FT/LBS		
PACKARD	6.3	384		35-36	45-50 FT/LBS	82-85 FT/LBS	60-62 FT/LBS
PACKARD	7.8	473		35-39		1935: 65-70#, 1936: 82-85#, 1937-1939 UNKNOWN	60-62 FT/LBS
PERKINS	0.0	0			65-70		
PERKINS	0.0	0			22-25 FT/LBS		33-37 FT/LBS
PERKINS	0.0	0			22-25 FT/LBS		33-37 FT/LBS
PERKINS	0.0	0			70-80 FT/LBS	110-120 FT/LBS	
PERKINS	0.5	28		86-00	17 FT/LBS	16 FT/LBS MAIN BRG BOLTS, 20 FT/LBS CRANK RETAINING BOLTS	25-29 FT/LBS
PERKINS	0.7	41			17 FT/LBS	16 FT/LBS, 20 FT/LBS CRANK RETAINING BOLTS	25-29 FT/LBS
PERKINS	0.9	53					
PERKINS	1.0	59		98-00		16 FT/LBS, 20 FT/LBS CRANK RETAINING BOLTS	36-38 FT/LBS
PERKINS	1.3	81			38 FT/LBS	38 FT/LBS, 20 FT/LBS HEX HOLE BOLTS, 38 FT/LBS HEX BOLTS	72-76 FT/LBS
PERKINS	1.5	91		99-00	38 FT/LBS	38 FT/LBS, 20 FT/LBS HEX HOLE BOLTS, 38 FT/LBS HEX BOLTS	72-76 FT/LBS
PERKINS	1.6	99			42 FT/LBS	85 FT/LBS	60 FT/LBS
PERKINS	1.8	107			42 FT/LBS	80-85 FT/LBS	60 FT/LBS, COAT GASKET WITH HYLORAR
PERKINS	1.8	107			42 FT/LBS	85 FT/LBS	60 FT/LBS
PERKINS	2.0	121			35 FT/LBS	83 FT/LBS, REAR OIL SEAL HSNG:M8=16 FT/LBS, M10=32 FT/LBS	37,74 FT/LBS, +90°
PERKINS	2.0	122				16 FT/LBS, CRANK RETAINING BOLTS: 20# HEX HOLE, 38# HEX	72-76 FT/LBS
PERKINS	2.2	135			38 FT/LBS	38 FT/LBS, RETAINING BOLTS: 20# HEX HOLE, 38# HEX	72-76 FT/LBS
PERKINS	2.4	144			50-55 FT/LBS CADMIUM, 65-70 FT/LBS PLAIN	90-95 FT/LBS	55-60 FT/LBS
PERKINS	2.5	152			70# SELF-LOCKING (NOT PLATED),45# CADMIUM, 60# PHOSPHATED	110 FT/LBS	60 FT/LBS NUTS,70 FT/LBS BOLTS
PERKINS	2.5	152			PLATED),45# CADMIUM, 60# PHOSPHATED	110 FT/LBS	60 FT/LBS NUTS,70 FT/LBS BOLTS
PERKINS	2.5	152			40-45 FT/LBS	110-115 FT/LBS	55-60 FT/LBS
PERKINS	2.5	154			60 FT/LBS PHOSPHATED, 45 FT/LBS NON-PHOSPHATED	85 FT/LBS	85 FT/LBS
PERKINS	2.5	152			70# SELF LOCKING (NOT PLATED),45# CADMIUM, 60# PHOSPHATED*	110-115 FT/LBS	60 FT/LBS NUTS, 70 FT/LBS SCREWS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
PERKINS	2.5	152			70# SELF LOCKING (NOT PLATED),45# CADMIUM, 60# PHOSPHATED	110 FT/LBS	60 FT/LBS NUTS,70 FT/LBS BOLTS
PERKINS	2.5	152			70# SELF-LOCKING (NOT PLATED),45# CADMIUM, 60# PHOSPHATED	110 FT/LBS	60 FT/LBS NUTS,70 FT/LBS BOLTS,70 FT/LBS SETSCREWS
PERKINS	2.5	152			70# SELF LOCKING (NOT PLATED),45# CADMIUM, 60# PHOSPHATED	110 FT/LBS	60 FT/LBS NUTS, 70 FT/LB BOLTS
PERKINS	2.5	152			70# SELF LOCKING (NOT PLATED),45# CADMIUM, 60# PHOSPHATED	110-115 FT/LBS	60 FT/LBS NUTS,70 FT/LBS BOLTS
PERKINS	2.5	152			70# SELF LOCKING (NOT PLATED),45# CADMIUM, 60# PHOSPHATED	110-115 FT/LBS	60 FT/LBS NUTS,70 FT/LBS BOLTS
PERKINS	2.5	152			70# SELF-LOCKING (NOT PLATED),45# CADMIUM, 60# PHOSPHATED	110-115 FT/LBS	60 FT/LBS NUT, 70 FT/LBS BOLTS
PERKINS	2.5	152			70# SELF-LOCKING (NOT PLATED),45# CADMIUM, 60# PHOSPHATED	110-115 FT/LBS	60 FT/LBS NUT, 70 FT/LBS BOLT
PERKINS	2.5	154			65 FT/LBS, 60 FT/LBS PHOSPHATED - REPLACE NUTS WHEN REMOVED	85 FT/LBS	90 FT/LBS
PERKINS	2.6	159	UB		40 FT/LBS	108 FT/LBS	52, 74 FT/LBS - LUBRICATE BOLTS
PERKINS	2.7	164			66 FT/LBS	118 FT/LBS	59,103,118 FT/LBS
PERKINS	3.0	183	UA		40 FT/LBS	108 FT/LBS	LUBRICATE BOLTS, 52, 74 FT/LBS
PERKINS	3.0	182		94-99	65 FT/LBS	85 FT/LBS	90 FT/LBS
PERKINS	3.0	183	UC		40 FT/LBS	108 FT/LBS	LUBRICATE BOLTS 52, 74 FT/LBS
PERKINS	3.2	192			70-80 FT/LBS	100-110 FT/LBS	
PERKINS	3.3	201			66 FT/LBS	148 FT/LBS	59,103,118 FT/LBS
PERKINS	3.3	203			45 FT/LBS	115 FT/LBS	NUTS ONLY: 60 FT/LBS, STUDS AND NUTS: 70 FT/LBS
PERKINS	3.3	203			45 FT/LBS CADMIUM PLATED *, 70 FT/LBS SELF LOCKING *	115 FT/LBS	70 FT/LBS - RETORQUE AFTER 25 HOURS OF OPERATION
PERKINS	3.5	212			70 FT/LBS CADMIUM (SILVER) * 90 FT/LBS PHOSPHATED (BLACK) *	150 FT/LBS, AFTER SER #212U582& 212UA119095: 180 FT/LBS	100 FT/LBS, 88# FOR 1/2" SCREWW/INTEGRAL HEAD WASHER (COLD)
PERKINS	3.5	212			70 FT/LBS CADMIUM (SILVER) * 90 FT/LBS PHOSPHATED (BLACK) *	150 FT/LBS, AFTER SER #212U582& 212UA119095: 180 FT/LBS	100 FT/LBS, 88# FOR 1/2" SCREWW/INTEGRAL HEAD WASHER (COLD)
PERKINS	3.5	212			65-70 FT/LBS	140-150 FT/LBS	85-90 FT/LBS
PERKINS	3.9	236			80 FT/LBS	150 FT/LBS PRIOR-SERIAL #U6330 & UA58746 **	1/2": 100 FT/LBS, 7/16" BOLT = 85 FT/LBS
PERKINS	3.9	236			80 FT/LBS	145#, ENG #236UA1660A & ON:171 FT/LBS	96 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
PERKINS	3.9	236			70 FT/LBS CADMIUM (SILVER), * 90 FT/LBS PHOSPHATED (BLACK) *	150#,AFTR SER #U82408,UA50507,UC19949,UE4404 ,US12129: 180#	100 FT/LBS, SCREWS W/INTEGRAL WASHER 88 FT/LBS **
PERKINS	3.9	236			70 FT/LBS CADMIUM (SILVER), * 90 FT/LBS PHOSPHATED (BLACK) *	150#,AFTR SER #U82408,UA50507,UC19949,UE4404 ,US12129: 180#	100 FT/LBS, SCREWS W/INTEGRAL WASHER=88 FT/LBS **
PERKINS	3.9	236			70 FT/LBS CADMIUM (SILVER), * 90 FT/LBS PHOSPHATED (BLACK) *	150#,AFTR SER #U82408,UA50507,UC19949,UE4404 ,US12129: 180#	100 FT/LBS, SCREWS W/INTEGRAL WASHER 88 FT/LBS
PERKINS	3.9	236			70 FT/LBS CADMIUM (SILVER) * 90 FT/LBS PHOSPHATED (BLACK) *	150#,AFTR SER #U82408,UA50507,UC19949,UE4404 ,US12129: 180#	100 FT/LBS, SCREWS W/INTEGRAL WASHER 88 FT/LBS **
PERKINS	3.9	236			70 FT/LBS CADMIUM (SILVER), * 90 FT/LBS PHOSPHATED (BLACK) *	150#,AFTR SER #U82408,UA50507,UC19949,UE4404 ,US12129: 180#	100 FT/LBS, SCREWS W/INTEGRAL WASHER 88 FT/LBS **
PERKINS	4.0	243			92 FT/LBS	185 FT/LBS	80 FT/LBS SHORT BOLTS: 150° MEDIUM BOLTS: 180° LONG: 210°
PERKINS	4.0	243		88-96	92 FT/LBS NUTS, 114# SETSCREWS	185 FT/LBS	SEE TB 1756
PERKINS	4.0	243		99-03			AR&AS ALL 33#, 1/2" +180°, M10 SHORT&MED +120°, LONG +150°
PERKINS	4.0	243		88-96	92 FT/LBS NUTS, 114# SETSCREWS	185 FT/LBS	ALL BOLTS 80 FT/LBS, S/B +150°MEDIUM/BOLT +180, L/BOLT +180°
PERKINS	4.1	248			70 FT/LBS (CADMIUM) SILVER, * 90 FT/LBS PHOSPHATED (BLACK) *	150 FT/LBS, AFTER SER #U6330 &UA58746: 180 FT/LBS	100 FT/LBS, SCREWS W/INTEGRAL WASHER 88 FT/LBS
PERKINS	4.1	248			70 FT/LBS CADMIUM (SILVER), * 90 FT/LBS PHOSPHATED (BLACK) *	150 FT/LBS, AFTR SERIAL NUMBERS U6330& UA58746: 180 FT/LBS	100 FT/LBS, SCREWS W/INTEGRAL WASHER=88 FT/LBS
PERKINS	4.1	248			92 FT/LBS	185 FT/LBS	80#,80#, SHORT BOLTS +150°, MEDIUM +180°, LONG +210°
PERKINS	4.4	268			66 FT/LBS	148 FT/LBS	59,103,118 FT/LBS
PERKINS	4.4	270			100-105 FT/LBS	125-130 FT/LBS	80-85 FT/LBS EARLY STYLE, 103-110 FT/LBS LATER STYLE
PERKINS	5.0	302			100-105 FT/LBS	145-150 FT/LBS	105-110 FT/LBS
PERKINS	5.0	305			45 FT/LBS FOR CADMIUM PLATED	110-120 FT/LBS	NUTS = 60 FT/LBS, BOLTS 70 #S
PERKINS	5.2	318			105 FT/LBS	150 FT/LBS	100 FT/LBS, RETORQUE HOT
PERKINS	5.8	354			75 FT/LBS CADMIUM PLATED, 95 FT/LBS PHOSPHATED	150 FT/LBS*	85 FT/LBS STUD NUTS
PERKINS	5.8	354			75 FT/LBS CADMIUM PLATED, 95 FT/LBS POSPHATED	150 FT/LBS*	115 FT/LBS FORMED WASHER, 95 FT/LBS SEPARATE
PERKINS	5.8	354			75 FT/LBS CADMIUM PLATED, 95 FT/LBS PHOSPHATED	150 FT/LBS*	115 FT/LBS FORMED WASHER, 95 FT/LBS SEPARATE
PERKINS	5.8	354			75 FT/LBS CADMIUM PLATED, 95 FT/LBS PHOSPHATED	150 FT/LBS*	85 FT/LBS STUD NUTS
PERKINS	5.8	354			75 FT/LBS CADMIUM PLATED, 95 FT/LBS PHOSPHATED	150 FT/LBS*	115 FT/LBS FORMED WASHER, 95 FT/LBS SEPARATE WASHER

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
PERKINS	5.8	354			75 FT/LBS CADMIUM PLATED, 95 FT/LBS PHOSPHATED	150 FT/LBS*	115 FT/LBS FORMED WASHER, 95 FT/LBS SEPARATE
PERKINS	6.0	365			92 FT/LBS	185 FT/LBS	80 FT/LBS SHORT BOLTS: 150° MEDIUM BOLTS: 180° LONG: 210°
PERKINS	6.1	372			80 FT/LBS	150 FT/LBS**	100 FT/LBS
PERKINS	6.1	372			90 FT/LBS PLAIN, 70 FT/LBS CADMIUM PLATED	150 FT/LBS EARLY ENGINES, 180 FT/LBS CURRENT ENGINES	60 FT/LBS
PERKINS	6.6	402			66 FT/LBS	148 FT/LBS	59,103,118 FT/LBS
PERKINS	7.4	450			22 FT/LBS + 90° + 90°	148 FT/LBS	59,103,118 FT/LBS
PERKINS	8.3	504			105 FT/LBS		
PERKINS	8.4	510			95 FT/LBS	5/8" 210#; 1/2" SIDE BOLTS*:S=75 FT/LBS, W=100 FT/LBS	125 FT/LBS
PERKINS	8.9	540			105 FT/LBS	5/8" 210#; 1/2" SIDE BOLTS*:S BOLT= 75, W BOLT= 100 FT/LBS	155 FT/LBS
PERKINS	8.9	540			105 FT/LBS	5/8" 210#; 1/2" SIDE BOLTS*:S= 75 FT/LBS, W= 100 FT/LBS	125 FT/LBS
PERKINS	10.5	640			105 FT/LBS	SETSCREWS:9/16" 160#, 1/2" 110 FT/LBS	155 FT/LBS
PEUGEOT	0.0	0	TUD5		30 FT/LBS	15 FT/LBS, +50°	30 FT/LBS, +260°
PEUGEOT	1.6	97		83-86	28 FT/LBS	48 FT/LBS	52 FT/LBS
PEUGEOT	1.9	116		88-91			
PEUGEOT	1.9	116	XUD9	95-96	30 FT/LBS, LOOSEN, 15 FT/LBS, +70°	52#, CASE BOLT 51-54#, CASE 1/2 BOLT 34-38#, RELIEF VLV 38#	15, 45 FT/LBS, +180°, MAX BOLT LENGTH 5.71" (145.000 MM)
PEUGEOT	2.0	120		80-87	29 FT/LBS	54 FT/LBS	36 FT/LBS, LOOSEN 1 AT A TIME & RETORQUE 14 FT/LBS, + 90°
PEUGEOT	2.0	120		71-79	29 FT/LBS	55 FT/LBS	43, 60 FT/LBS
PEUGEOT	2.0	119			38-45 FT/LBS	72-86 FT/LBS	WITH FLANGED INJECTORS 47-50#, WITH THREADED INJECTORS 44#
PEUGEOT	2.2	132		85-86	47 FT/LBS	80 FT/LBS	37, 61 FT/LBS
PEUGEOT	2.2	132		85-90	47 FT/LBS	80 FT/LBS	37, 61 FT/LBS
PEUGEOT	2.2	132		87-90	47 FT/LBS	80 FT/LBS	37, 61 FT/LBS
PEUGEOT	2.3	141		77-81	38-45 FT/LBS	72-86 FT/LBS	22,51, LOOSEN 1/4 TURN, 51#, WITH THREADED INJECTORS 58#
PEUGEOT	2.3	141		85-88	38-45 FT/LBS	72-86 FT/LBS	22,51, LOOSEN 1/4 TURN, 51#, W/THREADED INJECTORS 58 FT/LBS
PEUGEOT	2.8	174		87-88	33-37 FT/LBS	22-26 FT/LBS, + 75°	7,22,44 FT/LBS
PORSCHE	1.6	97		60-69	33 FT/LBS	26 FT/LBS SMALL FRONT NUTS, 13 FT/LBS	24 FT/LBS
PORSCHE	1.7	102		73			23 FT/LBS
PORSCHE	1.7	102		73		M8=14.5 FT/LBS, M10X1.25=24 FT/LBS	23 FT/LBS
PORSCHE	1.8	109		74-76		M8=14 FT/LBS, M10 X 1.25=24 FT/LBS	23 FT/LBS
PORSCHE	2.0	121		76-77	43 FT/LBS	58 FT/LBS #1-4 MAINS 47 FT/LBS #5 MAIN	1) 72 FT/LBS COLD 2) RETORQUE WARM-86 FT/LBS
PORSCHE	2.0	121		65-69	43 FT/LBS	58 FT/LBS #1-4 MAINS 47 FT/LBS #5 MAIN	

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
PORSCHE	2.0	121		80-82	43 FT/LBS	58 FT/LBS #1-4 MAINS 47 FT/LBS #5 MAIN	29,58,80 FT/LBS, WAIT 60 MIN**
PORSCHE	2.0	121		72	36.2 FT/LBS	HALF HEX NUT M8=17 FT/LBS, HALF BRG POINTS M10=25.3 FT/LBS	22.8 FT/LBS
PORSCHE	2.0	121		76-79	43 FT/LBS	58 FT/LBS #1-4 MAINS 47 FT/LBS #5 MAIN	1) 72 FT/LBS COLD 2) RETORQUE WARM-86 FT/LBS
PORSCHE	2.0	121		77-	43 FT/LBS	58 FT/LBS #1-4 MAINS 47 FT/LBS #5 MAIN	1) 72 FT/LBS COLD 2) RETORQUE HOT-86 FT/LBS
PORSCHE	2.0	121		80-82	43 FT/LBS	58 FT/LBS #1-4 MAINS 47 FT/LBS #5 MAIN	
PORSCHE	2.0	120		75-76			1) 72 FT/LBS COLD 2) RETORQUE WARM 86 FT/LBS
PORSCHE	2.0	120		73-74	23.9 FT/LBS	M 10 23.9 FT/LBS, M8 14.5 FT/LBS	23.1 FT/LBS
PORSCHE	2.0	121		77-79	43 FT/LBS	58 FT/LBS #1-4 MAINS 47 FT/LBS #5 MAIN	1) 72 FT/LBS COLD 2) RETORQUE WARM-86 FT/LBS
PORSCHE	2.3	143		72-73	35 FT/LBS	M10=26 FT/LBS, M8=18 FT/LBS	24 FT/LBS
PORSCHE	2.3	143		73-	35 FT/LBS		
PORSCHE	2.3	143		73-	35 FT/LBS		
PORSCHE	2.5	151		87-88	NUTS: 54 FT/LBS, USE NEW NUTS	6MM:6#, 8MM:15#, 10MM:15,37#, 12MM:15,37,66 FT/LBS	14,38,65 FT/LBS, WAIT 30 MIN, LOOSEN 180°, 61 FT/LBS ***
PORSCHE	2.5	151		82-88	41-45 FT/LBS USE NEW NUTS	6MM:6 FT/LBS; 8MM:14 FT/LBS; 10MM:14,36#; 12MM:14,29,55#	14, 36, 61 FT/LBS
PORSCHE	2.5	151		89-			
PORSCHE	2.5	151		87-88	NUTS: 54 FT/LBS USE NEW NUTS	6MM:6#, 8MM:15#, 10MM:15,37#, 12MM:15,37,66 FT/LBS	14,38,65 FT/LBS, WAIT 30 MIN, LOOSEN 180°, 61 FT/LBS***
PORSCHE	2.5	151		88-			14,38,65 FT/LBS, WAIT 30 MIN, LOOSEN 180°, 61 FT/LBS ***
PORSCHE	2.5	151		86-91	54 FT/LBS USE NEW NUTS	6MM:6#, 8MM:14#, 10MM:14,36#, 12MM:14,29,55 FT/LBS	14, 36, 61 FT/LBS
PORSCHE	2.7	164		74-76	35 FT/LBS		24 FT/LBS
PORSCHE	2.7	164		74-76	35 FT/LBS	M10 BOLTS = 26 FT/LBS M8 BOLTS = 18.5 FT/LBS	24 FT/LBS
PORSCHE	2.7	164		77-	35 FT/LBS	M10=26 FT/LBS, M8=18 FT/LBS	24 FT/LBS
PORSCHE	3.0	183		76-77			22-24 FT/LBS
PORSCHE	3.0	183		78-79	37 FT/LBS	M10=26 FT/LBS, M8=18 FT/LBS	24 FT/LBS
PORSCHE	3.0	183		80-83	37 FT/LBS	25 FT/LBS	22 FT/LBS
PORSCHE	3.0	182		89-91	55-59 FT/LBS	M12=22# +60°, M10=15,37#, M8=15#, M6=7#	
PORSCHE	3.0	183		78-79	37 FT/LBS	26# M10 BOLTS, 19# M8 BOLTS	25 FT/LBS
PORSCHE	3.0	181		92-95	18 FT/LBS, +90°		15 FT/LBS, +60°, +90°
PORSCHE	3.2	193		84-89	36 FT/LBS	25 FT/LBS	23 FT/LBS
PORSCHE	3.3	201		86-89	36 FT/LBS	25 FT/LBS	23 FT/LBS CAMSHAFT HOUSING 18 FT/LBS
PORSCHE	3.3	201		78-86	37 FT/LBS		
PORSCHE	3.3	201		81-86	36 FT/LBS	25 FT/LBS	23 FT/LBS
PORSCHE	3.6	220		89-96	11 FT/LBS, + 90°, + 90°	37 FT/LBS LONG BOLTS, 30 FT/LBS SHORT BOLTS	11 FT/LBS, + 90°

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
PORSCHE	4.5	273		78-79	46 FT/LBS		
PORSCHE	4.7	285		83-84	42-46 FT/LBS	10MM BOLTS: 14,29-33 FT/LBS, 12MM BOLTS: 14,29,44-47 FT/LBS	POSPHATED: 14,36,65 FT/LBS, * ZINC COATED: 14#, +90°, +90° *
PORSCHE	5.0	302		85-86	42-46 FT/LBS	10MM NUT: 14#,29-33#,36-40# 12MM NUT: 14#,29#,43-47#	
RENAULT	0.3	16			36-40 FT/LBS SCOOP NUT, 22-25 FT/LBS CAP SCREWS		22,36 FT/LBS GUDGEONS 22-25 FT/LBS FIXATION NUTS
RENAULT	0.8	51.6	R800		25-30 FT/LBS	40-50 FT/LBS	45 FT/LBS
RENAULT	0.8	47.8	R839		25-30 FT/LBS	40-50 FT/LBS	45 FT/LBS
RENAULT	1.0	58		62-67	25 FT/LBS	45 FT/LBS	
RENAULT	1.1	68		59-71	25 FT/LBS	45 FT/LBS	
RENAULT	1.1	67			25-30 FT/LBS	40-50 FT/LBS	40-50 FT/LBS
RENAULT	1.3	79		76-79			45-50 FT/LBS
RENAULT	1.4	85		80-84			42 FT/LBS
RENAULT	1.6	95		68-72			50-55 FT/LBS
RENAULT	1.6	101		81-84	33 FT/LBS	48 FT/LBS	57-61 FT/LBS
RENAULT	1.7	105		85-87	35 FT/LBS	47 FT/LBS	22,52FT/LBS,WAIT 3MIN & LOOSE-THEN 15 FT/LBS,123° +/- 2° *
RENAULT	2.0	120		87	35 FT/LBS	47 FT/LBS	22,52FT/LBS,WAIT 3MIN & LOOSE-THEN 15FT/LBS,123° +/- 2° *
RENAULT	2.1	126		83-86	48 FT/LBS	69 FT/LBS 67-72 FT/LBS RECHECK	22,37,77,77 FT/LBS
RENAULT	2.2	132		84-85	46 FT/LBS	69 FT/LBS	37,59,65-72 FT/LBS
RENAULT	2.2	132		86-91	46 FT/LBS	69 FT/LBS	69 FT/LBS CAM SPROCKET 39 FT/LBS
REO	1.8	110			65-70 FT/LBS	85-90 FT/LBS	
REO	2.1	130			65-70 FT/LBS	85-90 FT/LBS	
REO	2.3	145			65-70 FT/LBS	85-90 FT/LBS	
REO	2.4	145			65-70 FT/LBS		
REO	2.6	160			65-70 FT/LBS	85-90 FT/LBS	
REO	2.6	162			65-70 FT/LBS	90-95 FT/LBS	
REO	2.7	170			65-70 FT/LBS	90-95 FT/LBS	110-120 FT/LBS RETORQUE AFTER 1000 MILES
REO	2.7	170			65-70 FT/LBS	90-95 FT/LBS	
REO	2.8	170			65-70 FT/LBS	85-90 FT/LBS	
REO	3.0	186			65-70 FT/LBS	90-95 FT/LBS	
REO	3.0	186			65-70 FT/LBS	90-95 FT/LBS	
REO	3.1	190			65-70 FT/LBS	90-95 FT/LBS	
REO	3.1	186			65-70 FT/LBS		
REO	3.2	200			65-70 FT/LBS		
REO	3.3	200			65-70 FT/LBS		
REO	3.4	209			30-35 FT/LBS	100-110 FT/LBS	
REO	3.7	226			30-35 FT/LBS		
REO	3.9	240			45-55 FT/LBS		
REO	4.1	255			65-70 FT/LBS	85-90 FT/LBS	100 FT/LBS
REO	4.2	255		58-65	65-70 FT/LBS	90-95 FT/LBS	110-120 FT/LBS, RETORQUE HOT
REO	4.2	255			65-70 FT/LBS	85-90 FT/LBS	100 FT/LBS



Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
REO	4.7	292			65-70 FT/LBS	85-90 FT/LBS	100 FT/LBS
REO	4.8	292		58-67	65-70 FT/LBS	90-95 FT/LBS	110-120 FT/LBS, RETORQUE HOT
REO	4.8	292		55-58	65-70 FT/LBS	85-90 FT/LBS	100 FT/LBS
REO	5.4	331		55-57	65-70 FT/LBS	85-90 FT/LBS	100 FT/LBS
REO	5.4	331		57-67	65-70 FT/LBS	90-95 FT/LBS	110-120 FT/LBS, RETORQUE HOT
REO	5.4	331		55-58	65-70 FT/LBS	85-90 FT/LBS	100 FT/LBS
REO	5.4	331			65-70 FT/LBS		
REO	5.4	331			65-70 FT/LBS		
REO	5.4	331		58-67	65-70 FT/LBS	85-90 FT/LBS	110-120 FT/LBS RETORQUE HOT
REO	5.9	362		59-67	65-70 FT/LBS	90-95 FT/LBS	110-120 FT/LBS, RETORQUE HOT
REO	6.0	200			65-70 FT/LBS	90-95 FT/LBS	MILES
REO	6.4	390		55-58	65-70 FT/LBS	MODELS OV-195 & OV-200: 85-90#MODEL OV-207: 90-95 FT/LBS	MODELS OV-195 & OV-200: 100# MODEL OV-207: 110-120 FT/LBS
REO	6.6	400		61-67	65-70 FT/LBS	90-95 FT/LBS	110-120 FT/LBS, RETORQUE HOT
REO	6.6	400		66	60-70 FT/LBS		
REO	7.2	440		55-57	65-70 FT/LBS	85-90 FT/LBS	100 FT/LBS
REO	7.2	440		56-67	65-70 FT/LBS	90-95 FT/LBS	
ROVER	2.3	140		78	BOLT HAS MACHINED THREADS	85 FT/LBS	65 FT/LBS
ROVER	3.5	217		79-87	30-35 FT/LBS	95-100 FT/LBS	65-70 FT/LBS CENTER & INNER 40-45 FT/LBS FOR OUTER BOLTS
ROVER	3.9	241		89-96			
ROVER	3.9	241		89-96	30-35 FT/LBS	66 FT/LBS	65-70 FT/LBS CENTER & INNER 40-45 FT/LBS FOR OUTER BOLTS
ROVER	4.0	241		89-96	15 FT/LBS + 80° (20 NM + 80°) * REPLACE BOLTS *	SEE COMMENTS BOX BELOW	15 FT/LBS, + 90°, + 90° * REPLACE BOLTS *
ROVER	4.0	241		97-00	15 FT/LBS + 80° (20 NM + 80°) * REPLACE BOLTS *	SEE COMMENT BOX BELOW	15 FT/LBS, + 90°, + 90° * REPLACE BOLTS *
ROVER	4.6	278		96-04	14.7 FT/LBS, + 80° REPLACE BOLTS AND NUTS EVERYTIME		15 FT/LBS, +90°, +90° SEE TB2210
SAAB	1.5	91		62-67	21-25 FT/LBS	65-75 FT/LBS	
SAAB	1.7	104		68-72			
SAAB	1.7	104		68-73	25 FT/LBS	72 FT/LBS	68 FT/LBS
SAAB	1.9	113		70-80			
SAAB	2.0	121	B205	94-99	41 FT/LBS ROD BEARING BOLT	81 FT/LBS	44,59 FT/LBS, + 90°
SAAB	2.0	121		84-92	41 FT/LBS ROD BEARING BOLT	81 FT/LBS	44,59 FT/LBS, + 90°
SAAB	2.0	121	B202	86-94	41 FT/LBS	81 FT/LBS	44#, 66#, COOL 30 MIN, LOOSEN,66#, + 90°
SAAB	2.0	121	B201E	73-75			45,67#, COOL 30 MINUTES, + 90°
SAAB	2.0	121	B201	78-89	40 FT/LBS	79 FT/LBS	44,67,90 FT/LBS
SAAB	2.0	121	B205	99-03	16 FT/LBS, +70°		44, 59 FT/LBS, +90°
SAAB	2.1	129		91-93	41 FT/LBS ROD BEARING BOLT	81 FT/LBS	44,59 FT/LBS, + 90° -- SEE TB 1754
SAAB	2.3	140	B235	98-03	16 FT/LBS, +70°		30, 44 FT/LBS, +90°
SAAB	2.3	140		96-99	41 FT/LBS	81 FT/LBS	44,59 FT/LBS, +90°
SAAB	2.3	140		90-95	41 FT/LBS ROD BEARING BOLT	81 FT/LBS	44,59 FT/LBS, + 90°
SAAB	2.3	140	B235	98-03	16 FT/LBS, +70°		33, 44 FT/LBS, +90°
SAAB	2.5	152		94-98	26 FT/LBS, +45°, +15°	37 FT/LBS, +60°, +15°	18 FT/LBS, +90°, +90°, +90°

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
SAAB	3.0	181	B308	98-03	26 FT/LBS, +45°, +15°	37 FT/LBS, +60°, +15°	18.5 FT/LBS, +90°, +90°, +90°
SAAB	3.0	230		95-98	26 FT/LBS, +45°, +15°	37 FT/LBS, +60°, +15°	18 FT/LBS, +90°, +90°, +90°
SAME	1.8	110			83 FT/LBS	87 FT/LBS	72 FT/LBS AIR BAFFLE SIDE, 58 FT/LBS MANIFOLD SIDE
SAME	2.1	127			83 FT/LBS	87 FT/LBS	72 FT/LBS AIR BAFFLE SIDE, 58 FT/LBS MANIFOLD SIDE
SAME	2.7	166			83 FT/LBS	87 FT/LBS	72 FT/LBS AIR BAFFLE SIDE, 58 FT/LBS MANIFOLD SIDE
SAME	3.1	190			83 FT/LBS	87 FT/LBS	72 FT/LBS AIR BAFFLE SIDE, 58 FT/LBS MANIFOLD SIDE
SAME	3.6	221			83 FT/LBS	87 FT/LBS	72 FT/LBS AIR BAFFLE SIDE, 58 FT/LBS MANIFOLD SIDE
SAME	4.2	253			83 FT/LBS	87 FT/LBS	72 FT/LBS AIR BAFFLE SIDE, 58 FT/LBS MANIFOLD SIDE
SAME	4.5	276			83 FT/LBS	87 FT/LBS	72 FT/LBS AIR BAFFLE SIDE, 58 FT/LBS MANIFOLD SIDE
SAME	5.2	317			83 FT/LBS	87 FT/LBS	72 FT/LBS AIR BAFFLE SIDE, 58 FT/LBS MANIFOLD SIDE
SAME	5.4	331			83 FT/LBS	87 FT/LBS	72 FT/LBS AIR BAFFLE SIDE, 58 FT/LBS MANIFOLD SIDE
SAME	6.2	380			83 FT/LBS	87 FT/LBS	72 FT/LBS AIR BAFFLE SIDE, 58 FT/LBS MANIFOLD SIDE
SATOH	0.5	33	KE55		23-25 FT/LBS		80-87 FT/LBS
SATOH	0.7	41	KE70		23-25 FT/LBS		94-101 FT/LBS
SATOH	0.8	47	KE75		40-43 FT/LBS		94-101 FT/LBS
SCANIA	0.0	0			85 FT/LBS	150# NUT - OILED, 155# STUD	140 FT/LBS
SCANIA	0.0	0			80 FT/LBS	155 FT/LBS	140 FT/LBS
SCANIA	7.8	475			149 FT/LBS OILED THREADS	285 FT/LBS	122,176,257 FT/LBS
SCANIA	9.0	547	DS9		30-37, 81 FT/LBS	52-66, 214 FT/LBS	44,111,184#, +90°, RCKR BRKT 111#, RCKR ADJ SCRW 29#
SCANIA	11.0	672			80 FT/LBS	214 FT/LBS	90,130,190 FT/LBS, +90° *
SCANIA	11.1	674			81 FT/LBS	214 FT/LBS	16MM BOLT = 177 FT/LBS 18MM BOLTS = 221 FT/LBS
SHIBAURA	0.7	43			18-20 FT/LBS		108-112 FT/LBS
SLANZI	1.8	107			45-48 FT/LBS	33 FT/LBS CENTER SUPPORT	61 FT/LBS
STERLING	2.5	153		87-88	33 FT/LBS	9MM:20 FT/LBS, 11MM:50 FT/LBS, SIDE BOLTS:36 FT/LBS	29,56 FT/LBS
STERLING	2.7	163		87-92	33 FT/LBS	11MM: 29 FT/LBS, BRIDGE BLT: 33FT/LBS, SIDE BOLTS: 36 FT/LBS	22,56 FT/LBS
STUDEBAKER	0.0	0		49-56	28-32 FT/LBS	85-95 FT/LBS	
STUDEBAKER	0.0	0		49-54	28-32 FT/LBS	85-95 FT/LBS	
STUDEBAKER	2.6	164		39-40	25-27 FT/LBS		
STUDEBAKER	2.7	170		43-54	1941-1950 25-27 FT/LBS, 1951-1953 28-32 FT/LBS	1941-1950 80-95 FT/LBS, 1951-1953 88-93 FT/LBS	1941-1950 52 FT/LBS, 1951 UP 48 FT/LBS
STUDEBAKER	2.7	170		55-64	28-32 FT/LBS	85-95 FT/LBS	46-50 FT/LBS
STUDEBAKER	2.8	169		43-54	28-32 FT/LBS	85-95 FT/LBS	
STUDEBAKER	2.8	170		55-60	28-32 FT/LBS	85-95 FT/LBS	

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
STUDEBAKER	3.0	185		55-58	28-32 FT/LBS	85-95 FT/LBS	
STUDEBAKER	3.0	185		55-58	28-32 FT/LBS	85-95 FT/LBS	
STUDEBAKER	3.2	194		65-66	30-35 FT/LBS	60-70 FT/LBS	
STUDEBAKER	3.6	224		55-56	52-54 FT/LBS	1955: 88-93 FT/LBS, 95 FT/LBS	1956: 85-95 FT/LBS
STUDEBAKER	3.6	224		55-56	52-54 FT/LBS	1955: 88-93 FT/LBS, 95 FT/LBS	1956: 85-95 FT/LBS
STUDEBAKER	3.7	224		56-64	52-54 FT/LBS	85-95 FT/LBS	
STUDEBAKER	3.8	232		51-54	52-54 FT/LBS	88-93 FT/LBS	
STUDEBAKER	4.0	246		50-60	50-55 FT/LBS	85-95 FT/LBS	83 FT/LBS
STUDEBAKER	4.2	259		55-64	52-54 FT/LBS	85-95 FT/LBS	
STUDEBAKER	4.2	259		55-64	52-54 FT/LBS	85-95 FT/LBS	
STUDEBAKER	4.7	289		57-64	52-54 FT/LBS	85-95 FT/LBS	55-65 FT/LBS
STUDEBAKER	4.7	289		59-64	52-54 FT/LBS	85-95 FT/LBS	
STUDEBAKER	4.7	289		57-64	52-54 FT/LBS	85-95 FT/LBS	55-65 FT/LBS
STUDEBAKER	4.9	304		64-65	52-54 FT/LBS	85-95 FT/LBS	
STUDEBAKER	5.0	304		63-64	52-54 FT/LBS	85-95 FT/LBS	
STUDEBAKER	5.7	352		56-59	40-45 FT/LBS	90-95 FT/LBS	55-60 FT/LBS
SUBARU	1.2	72	EF12	87-94	29-33 FT/LBS	30-35 FT/LBS	29,54,*57 FT/LBS, RETORQUE
SUBARU	1.2	72	EF12	90-94	29-33 FT/LBS	30-35 FT/LBS	29,54,51-57 FT/LBS
SUBARU	1.4	83		73-75			37-43 FT/LBS
SUBARU	1.4	83		76-76			37-43 FT/LBS
SUBARU	1.6	97	EA71	78-86	29-31 FT/LBS		22,43,47 FT/LBS
SUBARU	1.6	97	EA71	76-77			37-43 FT/LBS
SUBARU	1.8	109	EA82	85-88	29-31 FT/LBS	8MM BOLTS: 17-20 FT/LBS 10MM BOLTS: 29-35 FT/LBS	22,43,47 FT/LBS
SUBARU	1.8	109	EA82	89-94	29-31 FT/LBS	8MM: 17-20#, 10MM: 29-35#	22,43,47 FT/LBS
SUBARU	1.8	111	EJ18E	93-96	32-34 FT/LBS	17-20# BLOCK BOLT (L-R), 46-56# BLOCK SVC HOLE PLUG	21,51#,LOOSEN 180°,LOOSN 180°,#1&2 25#,#3-6 11#,+90°,+90°
SUBARU	1.8	109	EA81	80-89	29-31 FT/LBS		22,43,47 FT/LBS
SUBARU	2.0	122	EJ20T	02-05	32.9 FT/LBS	34.7 FT/LBS	8 STEP TORQUE -- SEE TB2245
SUBARU	2.2	135	EJ22E	95-01	32-34 FT/LBS	17-20 FT/LBS CASE BOLTS	21,51#, LOOSEN, BOLT #1&2 25#,BOLTS #3-5 11#, +90°, +90°
SUBARU	2.2	135	EJ22E	95-01	31-34 FT/LBS	6 MM 57 IN/LBS, 8 MM 17-20 FT/LBS, 10 MM 33-37 FT/LBS	1&2 25FT/LBS, 3,4,5 & 6 11FT/LBS, LOOSEN & REPEAT, +90° +90°
SUBARU	2.2	135	EJ22	91-94	NUT: 32-34 FT/LBS	17-20 FT/LBS (CASE BOLTS)	59#,LOOSEN ALL,BOLT #1&2 25#, BOLT #3-5 14#,+80-90°, +80-90°
SUBARU	2.2	135	EJ22	90-00	32-34 FT/LBS	17-20 FT/LBS (CASE BOLTS)	* SEE COMMENTS BOX BELOW
SUBARU	2.5	150	EJ25	01-03	31-34 FT/LBS	6MM 57 INCH/LBS, 8MM 17-19.5 FT/LBS, 10MM 32.5-37 FT/LBS	22,51#,LOOSEN, BOLT 1-2 25#, BOLT 3-6 11#, ALL +90°, +90°
SUBARU	2.5	150	EJ25D	96-00	31-34 FT/LBS	6MM 57 IN/LBS, 8MM 16-19 FT/LBS, 10MM 32-36 FT/LBS	* SEE COMMENTS OR TB 1945R
SUBARU	2.7	164	ER27	88-91	29-31 FT/LBS	8MM: 17-20 FT/LBS, 35 FT/LBS	10MM: 29-35 FT/LBS
SUBARU	2.7	164	ER27	88-91	29-31 FT/LBS	8MM: 17-20 FT/LBS, 35 FT/LBS	10MM: 29-35 FT/LBS
SUBARU	2.7	164	ER27	88-91	29-31 FT/LBS	8MM: 17-20 FT/LBS, 35 FT/LBS	10MM: 29-35 FT/LBS
SUBARU	3.3	202	EG33D	92-95	NUT: 32-34 FT/LBS	17-20 FT/LBS (CASE BOLTS)	22,51#,LOOS 180°,LOOS 180°,20#BLT 1-4:33#+90°,BLT5-8:33#+90°

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
SUBARU	3.3	202	EG33D	96-97	32-34 FT/LBS	17-20 FT/LBS CASE BOLT	22,50#, LOOSEN, 20#, BOLTS #1-4: 33#, +90°, BOLTS #5-8: 33#, +90°
SUPERIOR	50.2	3064			125 FT/LBS		250 FT/LBS NUTS *
SUPERIOR	108.1	6597			340-360 FT/LBS NUTS	250-275 FT/LBS STUD/NUTS BLOCK-BED STUD NUTS 165-175	380 FT/LBS STUD/NUTS
SUZUKI	0.0	0					
SUZUKI	0.1	4			35-40 INCH/LBS	CRANKCASE COVER=98-115 INCH/LBS OR 9-10 FT/LBS	130-147 INCH/LBS (11-12 FT/LBS)
SUZUKI	0.1	5			45 INCH/LBS	88 INCH/LBS	70 INCH/LBS
SUZUKI	0.1	4			42 INCH/LBS	30 INCH/LBS	54-84 INCH/LBS
SUZUKI	0.1	5			35-40 INCH/LBS	98-115 INCH/LBS (8-10 FT/LBS) CRANKCASE COVER	130-147 INCH/LBS (11-12 FT/LBS)
SUZUKI	0.1	4			35 INCH/LBS	53 INCH/LBS	88 INCH/LBS
SUZUKI	1.0	59	F10A		20-23 FT/LBS	31-35 FT/LBS	41-44 FT/LBS
SUZUKI	1.3	79	G13K	89-91	24-27 FT/LBS	37-41 FT/LBS	48-51 FT/LBS
SUZUKI	1.3	79	G13K	92-94	24-27 FT/LBS	37-42 FT/LBS	48-52 FT/LBS
SUZUKI	1.3	79	G13A	85-94	24-27 FT/LBS	37-41 FT/LBS	51-54 FT/LBS
SUZUKI	1.6	97		99-01	26 FT/LBS	39 FT/LBS	25,40 FT/LBS, LOOSEN COMPLETELY, 25, 50 FT/LBS
SUZUKI	1.6	97		89-95	24-27 FT/LBS	37-41 FT/LBS	51-54 FT/LBS
SUZUKI	1.6	97		92-93	NUT: 24-27 FT/LBS	37-42 FT/LBS	48-52 FT/LBS
SUZUKI	1.6	97		94-98	24-27 FT/LBS	37-42 FT/LBS	48-52 FT/LBS
SUZUKI	1.8	110	J18	96-02	32 FT/LBS	8MM: 18 FT/LBS, 10MM: 44 FT/LBS	77 FT/LBS, 6MM BOLT: 97 INCH/LBS
SUZUKI	2.0	122	J20	99-04		8MM: 43.5 FT/LBS, 10MM: 19.5 FT/LBS	38#, 61#, LOOSEN TO ZERO, 38#, 38#, 76#, THEN SMALL M6=8#
SUZUKI	2.5	152	H25	99-02		10MM: 43.5 FT/LBS, 8MM: 19.5 FT/LBS	38#, 61#, LOOSEN TO ZERO, 38#, 76#, THEN SM BOLTS 7.5#
SUZUKI	2.7	165	H27	01-02	32.5 FT/LBS	10MM: 19.5 FT/LBS, 8MM: 43.5 FT/LBS -TIGHTEN 10MM BOLTS 1ST!	38, 61 FT/LBS, LOOSEN, 38, 38, 76 FT/LBS, HEX BOLT 7.5#
TECUMSEH	0.1	8			8-9 FT/LBS		13-17 FT/LBS
TECUMSEH	0.2	11			7-8 FT/LBS STD SCREWS, 8-9 FT/LBS DURLOK SCREWS		13-17 FT/LBS
TECUMSEH	0.2	10			8-9 FT/LBS		13-17 FT/LBS
TECUMSEH	0.2	12			13-15 FT/LBS		13-17 FT/LBS
TECUMSEH	0.2	10			8-9 FT/LBS		18-20 FT/LBS
TECUMSEH	0.2	12			13-15 FT/LBS		13-17 FT/LBS
TECUMSEH	0.2	14			8-9 FT/LBS		13-17 FT/LBS
TECUMSEH	0.2	11			8.5 FT/LBS		16.5 FT/LBS
TECUMSEH	0.2	11			17.5 FT/LBS		16.5 FT/LBS
TECUMSEH	0.2	10			8.5 FT/LBS		16.5 FT/LBS
TECUMSEH	0.2	11			8.5 FT/LBS		16.5 FT/LBS
TECUMSEH	0.2	12			8.5 FT/LBS		16.5 FT/LBS
TECUMSEH	0.2	9			8-9 FT/LBS		18-20 FT/LBS
TECUMSEH	0.2	11			7-8 FT/LBS		13-17 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
TECUMSEH	0.2	13			8-9 FT/LBS		15-18 FT/LBS
TECUMSEH	0.2	10		83-	8-9 FT/LBS		13-17 FT/LBS
TECUMSEH	0.2	9			8-9 FT/LBS		13-17 FT/LBS
TECUMSEH	0.2	10			8-9 FT/LBS		13-17 FT/LBS
TECUMSEH	0.3	19			10 FT/LBS	COVR65-110 INCH/LBS BRG RETAINER	15 FT/LBS
TECUMSEH	0.3	19			10 FT/LBS (120 INCH/LBS)	COVR65-110 INCH/LBS BRG RETAINER	15 FT/LBS
TECUMSEH	0.3	17			10 FT/LBS	COVR65-110 INCH/LBS BRG RETAINER	15 FT/LBS
TECUMSEH	0.3	15			SCREWS, 17-18# DURLOCK TYPE SCREWS	COVER65-110 INCH/LBS BRG RETAINER	15-17 FT/LBS
TECUMSEH	0.3	19			17-18 FT/LBS DURLOK TYPE SCREW	COVR65-110 INCH/LBS BRG RETAINER	15-17 FT/LBS
TECUMSEH	0.3	19			10 FT/LBS	COVR65-110 INCH/LBS BRG RETAINER	15 FT/LBS
TECUMSEH	0.3	19			9 FT/LBS (110 INCH/LBS)	65-110 INCH/LBS CRANKASE COVER& BRG RETAINER	17 FT/LBS (200 INCH/LBS)
TECUMSEH	0.3	20			9-11 FT/LBS	COVR65-110 INCH/LBS BRG RETAINER	15-17 FT/LBS
TECUMSEH	0.3	21			7-9 FT/LBS	5-9 FT/LBS CRANKCASE COVER & BEARING RETAINER	15-20 FT/LBS
TECUMSEH	0.4	24			7-9 FT/LBS	5-9 FT/LBS CRANKCASE COVER, 5 9 FT/LBS BEARING RETAINER	15-20 FT/LBS
TECUMSEH	0.4	22			SCREWS, 17-18 FT/LBS DURLOCK TYPE	COVR65-110 INCH/LBS BRG RETAINER	15-17 FT/LBS
TECUMSEH	0.4	22			SCREWS, 17-18 FT/LBS DURLOK TYPE	COVR65-110 INCH LBS BRG RETAINER	15-17 FT/LBS
TECUMSEH	0.4	22			17-18 FT/LBS		15-20 FT/LBS
TECUMSEH	0.5	28			7-9 FT/LBS	COVR65-110 INCH/LBS BRG RETAINER	15-20 FT/LBS
TECUMSEH	0.5	30			7-9 FT/LBS	5-9 FT/LBS CRANKCASE COVER, 5 9 FT/LBS BEARING RETAINER	15-20 FT/LBS
TOYOTA	0.0	0	14Z		68-77 FT/LBS	90-108 FT/LBS	79-87 FT/LBS
TOYOTA	0.0	0	13Z		66-77 FT/LBS	90-108 FT/LBS	79-87 FT/LBS
TOYOTA	0.0	0	12Z		68-77 FT/LBS	90-108 FT/LBS	79-87 FT/LBS
TOYOTA	1.2	71	3K-C	70-79			39-48 FT/LBS
TOYOTA	1.3	79	4K-C	81-82			40-47 FT/LBS
TOYOTA	1.3	79	4K-E	83-84	29-37 FT/LBS	40-47 FT/LBS	40-47 FT/LBS
TOYOTA	1.5	92	1NZFXE	01-05	11 FT/LBS, +90°	16 FT/LBS, +90°	22 FT/LBS, +90°, +90°
TOYOTA	1.5	89	3P		30-34 FT/LBS NUT	71-79 FT/LBS	74-84 FT/LBS
TOYOTA	1.5	91	4P		30-34 FT/LBS *	71-79 FT/LBS	74-84 FT/LBS
TOYOTA	1.5	91	2R	64-71	32 FT/LBS	75 FT/LBS	80 FT/LBS
TOYOTA	1.5	89	3A	80-86	26-32 FT/LBS	40-47 FT/LBS	40-47 FT/LBS
TOYOTA	1.5	89	3A-C	81-88	26-32 FT/LBS	40-47 FT/LBS	40-47 FT/LBS
TOYOTA	1.5	89	3E	87-90	29 FT/LBS	42 FT/LBS	22, 33 FT/LBS, + 90°
TOYOTA	1.5	89	3E-E	90-94	29 FT/LBS	42 FT/LBS	22,36 FT/LBS, + 90°
TOYOTA	1.5	89	1A-C	80-	36 FT/LBS	44 FT/LBS	40-47 FT/LBS
TOYOTA	1.5	91	5K-E	84-85	29-37 FT/LBS	40-47 FT/LBS	40-47 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
TOYOTA	1.5	89	5EFE	92-98	29 FT/LBS	42 FT/LBS	33 FT/LBS + 90°
TOYOTA	1.6	97	4AGZE	88-89	36 FT/LBS	44 FT/LBS	22 FT/LBS, + 90°, + 90°
TOYOTA	1.6	97	2T-C	71-79	29-36 FT/LBS	52-63 FT/LBS	62-64 FT/LBS
TOYOTA	1.6	97	4A-C	83-87	26-32 FT/LBS	40-47 FT/LBS	40-47 FT/LBS
TOYOTA	1.6	97	4A-F	88-89	36 FT/LBS	43 FT/LBS	44 FT/LBS
TOYOTA	1.6	97	4A-FE	88-96	12 SIDED NUT: 29 FT/LBS + 90°	43 FT/LBS	44 FT/LBS -2 DIFF LENGTH BOLTS LONG BOLTS ON EXHAUST CAM SIDE
TOYOTA	1.6	97	4A-GE	88-89	12 SIDED NUT: 29 FT/LBS, + 90°	43 FT/LBS	22 FT/LBS, + 90°, + 90°
TOYOTA	1.6	97	4A-LC	87-88	26-32 FT/LBS	40-47 FT/LBS	40-47 FT/LBS
TOYOTA	1.6	97	4A-FE	93-98	21 FT/LBS + 90°	43 FT/LBS	22 FT/LBS, +90°, +90°
TOYOTA	1.6	97	4A-GELC	85-89	29 FT/LBS, + 90°	44 FT/LBS	43 FT/LBS
TOYOTA	1.6	97	4AGEC	85-87	36 FT/LBS	44 FT/LBS	43 FT/LBS
TOYOTA	1.8	112	1CTLG	84-85	37-43 FT/LBS	71-81 FT/LBS	84-90 FT/LBS
TOYOTA	1.8	108	3T-C	80-82	29-36 FT/LBS	52-63 FT/LBS	62-68 FT/LBS
TOYOTA	1.8	109.5	2ZZGE	00-03	22 FT/LBS, +90°	16,32 FT/LBS, +45°, +45°	26 FT/LBS, +180°
TOYOTA	1.8	109	7AFE	93-97	18 FT/LBS + 90°	44 FT/LBS	22 FT/LBS, + 90°, + 90°
TOYOTA	1.8	107.5	1ZZFE	98-03	15 FT/LBS, + 90°	14 FT/LBS 6 POINT BOLT, 16, 32#, +45°, +45° 12 POINT	36 FT/LBS, + 90°
TOYOTA	1.8	112	1C-LC	84-85	37-43 FT/LBS	71-81 FT/LBS	84-90 FT/LBS
TOYOTA	1.9	113	8R	69-71	39-47 FT/LBS	68-83 FT/LBS	75-85 FT/LBS
TOYOTA	1.9	113		66-69	43-51 FT/LBS	75-80 FT/LBS	80-85 FT/LBS
TOYOTA	2.0	122	5R		43-50 FT/LBS	74-84 FT/LBS	74-84 FT/LBS
TOYOTA	2.0	122	5R		43-50 FT/LBS	74-84 FT/LBS	74-84 FT/LBS
TOYOTA	2.0	122	3Y-EC	84-85	36 FT/LBS	58 FT/LBS	12 & 8MM: 12:54-61# 8:11-16#, 14 & 12MM: 14:65# 12:14#
TOYOTA	2.0	122	1AZFE	01-03	18 FT/LBS, +90°	15, 30 FT/LBS, +90°	58 FT/LBS, +90°
TOYOTA	2.0	120	18R-C	71-74	39-48 FT/LBS	69-83 FT/LBS	75-87 FT/LBS
TOYOTA	2.0	120	2CTLG	86-	43-51 FT/LBS	71-81 FT/LBS	33 FT/LBS
TOYOTA	2.0	122	2SELC	83-86	33-39 FT/LBS	40-47 FT/LBS	44-50 FT/LBS
TOYOTA	2.0	122	3S-FE	96-00	18 FT/LBS, +90°	43 FT/LBS	36 FT/LBS, +90°
TOYOTA	2.0	122	3S-GELC	87-89	47 FT/LBS	43 FT/LBS	40 FT/LBS
TOYOTA	2.0	122	3SFE	86-91	CAMARY 36 FT/LBS, CELICA 18 FT/LBS + 90°	43 FT/LBS	1986-89 47 FT/LBS, 1990 36 FT/LBS + 90° OF ROTATION
TOYOTA	2.0	122	3S-GELC	86-89	36 FT/LBS	43 FT/LBS	40 FT/LBS
TOYOTA	2.0	122	3SGTE	90-95	18 FT/LBS, + 90°	43 FT/LBS	36 FT/LBS, + 90°
TOYOTA	2.0	122	3SGTE	87-89	49 FT/LBS	43 FT/LBS	36 FT/LBS, + 90°
TOYOTA	2.2	137	4Y	89-95	34-36 FT/LBS	54-58 FT/LBS	8MM: 14 FT/LBS 12MM: 45 FT/LBS 14MM: 65 FT/LBS
TOYOTA	2.2	137	4Y-EC	84-89	36 FT/LBS	58 FT/LBS	14MM=65 FT/LBS, 12MM=14 FT/LBS
TOYOTA	2.2	134	5SFE	90-00	18 FT/LBS, + 90°	43 FT/LBS	18, 35 FT/LBS, + 90°
TOYOTA	2.2	134		81-83	37-43 FT/LBS	71-81 FT/LBS	84-90 FT/LBS
TOYOTA	2.2	134	20R	78-80	42-48 FT/LBS	72-80 FT/LBS	53-63 FT/LBS
TOYOTA	2.2	134	20R	75-77	42-48 FT/LBS	72-80 FT/LBS	52-64 FT/LBS
TOYOTA	2.3	137	2M	68-72	31-34 FT/LBS	72-78 FT/LBS	55-61 FT/LBS, 8MM BOLT 7-12 FT/LBS
TOYOTA	2.4	144	22REC	85-88	42-48 FT/LBS	72-80 FT/LBS	53-63 FT/LBS
TOYOTA	2.4	146	2TZ-FE	91-97	1991-93=22 FT/LBS, +90°, 1994-97=33 FT/LBS, +90°	29 FT/LBS, + 90°	29 FT/LBS, + 90°, + 90°

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
TOYOTA	2.4	148	2RZ-FE	96-02	33 FT/LBS, + 90°	29 FT/LBS, + 90°	29 FT/LBS, + 90°, + 90°
TOYOTA	2.4	150	2L	84-87	43 FT/LBS	76 FT/LBS	87 FT/LBS
TOYOTA	2.4	144	22R-E	89-95	51 FT/LBS	76 FT/LBS	58 FT/LBS
TOYOTA	2.4	144	22R-TEC	85-87	42-48 FT/LBS	72-80 FT/LBS	58 FT/LBS
TOYOTA	2.4	144	22R	81-84	51 FT/LBS	69-83 FT/LBS	53-63 FT/LBS 12 -14 FT/LBS IN SEQUENCE
TOYOTA	2.4	144	2AZ-FE	02-05	18 FT/LBS, + 90°, * SEE CONNECTING ROD COMMENTS *	30 FT/LBS, + 90°, * SEE CYLINDER BLOCK COMMENTS *	58 FT/LBS, + 90°, * SEE CYLINDER HEAD COMMENTS *
TOYOTA	2.4	150	2LT	85-87	43 FT/LBS	76 FT/LBS	87 FT/LBS
TOYOTA	2.5	151	2J	69-72	47-54 FT/LBS, (11 MM BOLT)	72-79 FT/LBS	84-86 FT/LBS
TOYOTA	2.5	153	2VZFE	88-92	18 FT/LBS, + 90°	45 FT/LBS, + 90°	25 FT/LBS, + 90°, + 90°, ALLEN HEAD BOLT: 13 FT/LBS
TOYOTA	2.6	156	4M	73-79	31-34 FT/LBS	72-78 FT/LBS	55-61 FT/LBS, 8MM BOLT 7-12 FT/LBS
TOYOTA	2.6	156	4M-E	79-80	31-34 FT/LBS	72-78 FT/LBS	55-60 FT/LBS
TOYOTA	2.7	165	3RZFE	94-00	33 FT/LBS, + 90°, W/OIL	29 FT/LBS, + 90° WITH OIL	29 FT/LBS, + 90°, + 90°, BOLTS .4094" MIN IN THREADS OR REPL
TOYOTA	2.8	168	5M-E	81-82	33 FT/LBS	75 FT/LBS	55-61 FT/LBS
TOYOTA	2.8	168	5MGE	82-88	33 FT/LBS	75 FT/LBS	58 FT/LBS
TOYOTA	2.8	169	5P		47-54 FT/LBS	75 FT/LBS	84-86 FT/LBS
TOYOTA	2.9	176	B	72-84			36 FT/LBS, + 90°, + 90°
TOYOTA	3.0	180	3VZ-FE	92-93	18 FT/LBS, + 90°	45 FT/LBS, + 90°	12 PT BOLT: 25#, + 90°, + 90°, RECESSED HEX BOLT: 13 FT/LBS
TOYOTA	3.0	183	1MZFE	94-02	18 FT/LBS, + 90°	12 POINT:16#,+90° TIGHTEN 1ST,THEN SIDE BOLTS: 20 FT/LBS	12 POINT: 40 FT/LBS, + 90°, RECESSED BOLTS: 13 FT/LBS
TOYOTA	3.0	180	7MGTE	87-92	47 FT/LBS	75 FT/LBS	22,44,58 FT/LBS
TOYOTA	3.0	180	7M-GE	86-92	47 FT/LBS	75 FT/LBS SEE ES41 FOR SEQNCE	22,44,58 FT/LBS (SEE ES 41 FOR TRQ. SEQUENCE)
TOYOTA	3.0	180	3V-ZE	88-95	18 FT/LBS, + 90°	45 FT/LBS, + 90°	33 FT/LBS, + 90°, + 90°, 27 FT/LBS SMALL BOLT
TOYOTA	3.0	183	2JZ-GE	93-98	21 FT/LBS, + 90°	33 FT/LBS, + 90°	25 FT/LBS, + 90°, + 90°
TOYOTA	3.0	183	1KZTE		22 FT/LBS, +90°	36 FT/LBS, +90°, REAR OIL SEAL TO BLOCK 9 FT/LBS	29 FT/LBS, +90°, +90°
TOYOTA	3.0	182	5L	97-04			58 FT/LBS, +90°, +90°
TOYOTA	3.3	202		05			
TOYOTA	3.4	209	3B	81-90		145 FT/LBS	36 FT/LBS, + 90°, + 90°
TOYOTA	3.4	207	5VZFE	95-99	18 FT/LBS, + 90°	45 FT/LBS, + 90°	12 PT BOLTS: 25#, +90°, +90°, RECESSED BOLTS: 13#
TOYOTA	3.4	207	5VZFE	95-04	18 FT/LBS, + 90°	45 FT/LBS, + 90°	12 POINT: 25 FT/LBS,+90°,+90°, RECESSED BOLTS 13 FT/LBS
TOYOTA	3.6	218	H	69-81	62-69 FT/LBS	93-102 FT/LBS	80-87 FT/LBS ROCKER SUPPORT 11-15 FT/LBS
TOYOTA	3.8	223	14B		51 FT/LBS, +90°	144 FT/LBS	36 FT/LBS, +90°, +90°
TOYOTA	3.9	237	F	65-74	35-55 FT/LBS	90-108 FT/LBS BOLTS #1-3, 76-94 FT/LBS BOLT #4	85-90 FT/LBS
TOYOTA	3.9	241	3F	88-92	43 FT/LBS	17MM:85 FT/LBS, 19MM:99 FT/LBS	90 FT/LBS
TOYOTA	4.0	243	2H	82-92	62-69 FT/LBS	93-102 FT/LBS	80-87 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
TOYOTA	4.0	241	3F-E	88-92	43 FT/LBS	17MM:85 FT/LBS, 19MM:99 FT/LBS	90 FT/LBS
TOYOTA	4.2	258	2F	81-87	35-55 FT/LBS	90-108 FT/LBS, --> #4: 76-94 FT/LBS	85-90 FT/LBS
TOYOTA	4.2	258	2F	75-80	35-55 FT/LBS, PISTON PIN CLAMP BOLT 40 FT/LBS	90-108 FT/LBS, REAR BEARING CAP 76-94 FT/LBS	85-90 FT/LBS
TOYOTA	4.4	267	11Z	88-94	68-77 FT/LBS	90-108 FT/LBS	79-87 FT/LBS
TOYOTA	4.5	274	1FZ-FE	94-98	35 FT/LBS, + 90°	54 FT/LBS, + 90°	29 FT/LBS, + 90°, + 90°
TOYOTA	4.7	287	2UZ-FE	00-04	18 FT/LBS + 90°	20 FT/LBS, +90°	24 FT/LBS, +180°
TOYOTA	6.5	396	2D	64-93	80-94 FT/LBS	91-108 FT/LBS	LIFTER SIDE = 94-101 FT/LBS, ALL OTHERS = 105-112 FT/LBS
TRIUMPH	1.1	70		62-64	42-46 FT/LBS	55-60 FT/LBS	42-46 FT/LBS
TRIUMPH	1.3	79		67-70	38-46 FT/LBS	50-65 FT/LBS	38-46 FT/LBS
TRIUMPH	1.3	79		70-74	45 FT/LBS	65 FT/LBS	
TRIUMPH	1.5	91		73-80	46 FT/LBS*	65 FT/LBS	42-46 FT/LBS
TRIUMPH	1.5	91		73-80	46 FT/LBS*	65 FT/LBS	42-46 FT/LBS
TRIUMPH	2.0	122		75-81	45 FT/LBS	65 FT/LBS	45-55 FT/LBS
TRIUMPH	2.0	122		75-81			45-55 FT/LBS
TRIUMPH	2.1	130		62-67	50-55 FT/LBS	85-90 FT/LBS	100-105 FT/LBS
TRIUMPH	2.5	152		68-76	(BLACK) 50 FT/LBS CADMIUM (SILVER)	65 FT/LBS* SEE COMENTS	80 FT/LBS
TRIUMPH	3.5	215		80-81	35 FT/LBS	55 FT/LBS, REAR CAP BOLTS 70#	
TRIUMPH	3.5	215		80-81	35 FT/LBS	55 FT/LBS, REAR CAP BOLTS 70#	
TRIUMPH	3.5	215		80-81	35 FT/LBS	55 FT/LBS, REAR CAP BOLTS 70#	
TRIUMPH	3.5	215		80-81	35 FT/LBS	55 FT/LBS, REAR CAP BOLTS 70# REAR CAP BOLTS: 70 FT/LBS	SHORT BOLT: 45 FT/LBS, LONG & MED BOLTS: 70 FT/LBS
UNIVERSAL	0.3	16			25 FT/LBS		22 FT/LBS
UNIVERSAL	0.3	18			25 FT/LBS		22 FT/LBS
UNIVERSAL	0.5	28			23-25 FT/LBS		25-29 FT/LBS
UNIVERSAL	0.6	37			23-25 FT/LBS	36-43 FT/LBS	87-94 FT/LBS
UNIVERSAL	0.8	50			40 FT/LBS	60 FT/LBS	40 FT/LBS
UNIVERSAL	0.8	47			23-25 FT/LBS	36-43 FT/LBS	M10 BOLTS: 51-58 FT/LBS, M12 BOLTS: 80-86 FT/LBS
UNIVERSAL	1.0	60			23-25 FT/LBS	36-43 FT/LBS	M10 BOLTS: 51-58 FT/LBS, M12 BOLTS: 80-86 FT/LBS
UNIVERSAL	1.1	68			27-30 FT/LBS	22-25 FT/LBS	54-58 FT/LBS RCKR ARM BRACKET 12-15 FT/LBS
UNIVERSAL	1.1	64			33 FT/LBS	60 FT/LBS HOT	35 FT/LBS HOT
UNIVERSAL	1.3	80			23-25 FT/LBS	36-43 FT/LBS	M10 BOLTS: 51-58 FT/LBS, M12 BOLTS: 87-94 FT/LBS
UNIVERSAL	1.5	91			27-30 FT/LBS	22-25 FT/LBS	54-58 FT/LBS RCKR ARM BRACKET 12-15 FT/LBS
UNIVERSAL	1.5	91			38-43 FT/LBS	36-43 FT/LBS	M10: 51-58#, M14: 109-115# -->M14 BOLTS #3,4,9,10: 80-86#
UNIVERSAL	1.6	95			25 FT/LBS	60 FT/LBS	40 FT/LBS
UNIVERSAL	1.9	115			27-30 FT/LBS	22-25 FT/LBS	54-58 FT/LBS RCKR ARM BRACKET 12-15 FT/LBS
UNIVERSAL	2.3	141			42 FT/LBS	77 FT/LBS	40 FT/LBS



Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
UNIVERSAL	2.4	149			50 FT/LBS	100 FT/LBS	55 FT/LBS
UNIVERSAL	3.8	230			39 FT/LBS	60 FT/LBS CENTER & REAR, 70 FT/LBS FRONT & INTERMEDIATE	60 FT/LBS
UNIVERSAL	4.6	283			33 FT/LBS	65 FT/LBS	65 FT/LBS
UNIVERSAL	5.2	320			56 FT/LBS	60 FT/LBS CENTER & REAR, 70 FT/LBS FRONT & INTERMEDIATE	65 FT/LBS
UNIVERSAL	5.6	340			56 FT/LBS	60 FT/LBS CENTER & REAR, 70 FT/LBS FRONT & INTERMEDIATE	65 FT/LBS
UNIVERSAL	7.1	430			45-50 FT/LBS	95-105 FT/LBS	95-105 FT/LBS
VOLKSWAGEN	0.0	0					
VOLKSWAGEN	1.2	73		55-65	36 FT/LBS	36 FT/LBS	
VOLKSWAGEN	1.5	90		77-81	33 FT/LBS EARLY RIGID TYPE, 22# + 180° LATE STRETCH TYPE *	48 FT/LBS	6PT 1MM BOLTS:35,50,65 FT/LBS 12PT 12MM BOLTS:29,43# + 180°
VOLKSWAGEN	1.5	89		78-79			54 FT/LBS + 90°
VOLKSWAGEN	1.5	89		73-75			54 FT/LBS + 90°
VOLKSWAGEN	1.6	97		85	35 FT/LBS, USE NEW BOLTS		
VOLKSWAGEN	1.6	97		82-84	33 FT/LBS EARLY RIGID TYPE, 22# + 180° LATE STRETCH TYPE *	48 FT/LBS	M11:66 FT/LBS, M12:44# + 180°
VOLKSWAGEN	1.6	97		76	33 FT/LBS		54 FT/LBS + 90 °
VOLKSWAGEN	1.6	97		85-	35 FT/LBS, USE NEW BOLTS		30,43 FT/LBS + 180°
VOLKSWAGEN	1.6	97		76-81	33 FT/LBS		54 FT/LBS + 90°
VOLKSWAGEN	1.6	97		76-80	33 FT/LBS		54 FT/LBS + 90°
VOLKSWAGEN	1.6	97		85-	35 FT/LBS, USE NEW BOLTS		
VOLKSWAGEN	1.6	97		86-92	22 FT/LBS, + 90°, + 90°	48 FT/LBS	29,43 FT/LBS, + 90°, + 90°
VOLKSWAGEN	1.6	97		86-92	35 FT/LBS, USE NEW BOLTS	48 FT/LBS	30,43 FT/LBS + 180°
VOLKSWAGEN	1.6	97		85	35 FT/LBS, USE NEW BOLTS		
VOLKSWAGEN	1.6	97		83-84	22FT/LBS + 90° -** USE NEW BOLTS		54 FT/LBS, 12PT BOLTS=54# +90°
VOLKSWAGEN	1.6	97		85	35 FT/LBS, USE NEW BOLTS		
VOLKSWAGEN	1.6	97		82-84	22# + 180° LATE STRETCH TYPE *	48 FT/LBS	M11: 66 FT/LBS, M12: 44# +180°
VOLKSWAGEN	1.6	97		75-80			54 FT/LBS + 90°
VOLKSWAGEN	1.6	97		73	24 FT/LBS	18 FT/LBS FOR SEALING NUTS AND 14 FT/LBS FOR OTHERS	
VOLKSWAGEN	1.6	97		73	24 FT/LBS	18 FT/LBS FOR SEALING NUTS AND 14 FT/LBS FOR OTHERS	
VOLKSWAGEN	1.6	97		75-81	36 FT/LBS	36 FT/LBS	
VOLKSWAGEN	1.6	97		73-74	24 FT/LBS	18 FT/LBS FOR SEALING NUTS AND 14 FT/LBS FOR OTHERS	
VOLKSWAGEN	1.6	97		75	36 FT/LBS	36 FT/LBS	

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
VOLKSWAGEN	1.6	97		73-74	36 FT/LBS	36 FT/LBS	
VOLKSWAGEN	1.6	97		81-84	35 FT/LBS EARLY RIGID TYPE, 22# + 180° LATER STRETCH TYPE	47 FT/LBS	11MM: 65#, 12MM: 44# + 180°
VOLKSWAGEN	1.6	97		73-74	24 FT/LBS	18 FT/LBS FOR SEALING NUTS AND 14 FT/LBS FOR OTHERS	
VOLKSWAGEN	1.6	97		75-78			
VOLKSWAGEN	1.6	97		59-74	24 FT/LBS	18 FT/LBS FOR SEALING NUTS AND 14 FT/LBS FOR OTHERS	M8 NUT = 18 FT/LBS, M10 = 23 FT/LBS
VOLKSWAGEN	1.6	97		73-74	24 FT/LBS	SEALING NUTS 18 FT/LBS, OTHERS 14 FT/LBS	
VOLKSWAGEN	1.6	97		73-74	36 FT/LBS	36 FT/LBS	
VOLKSWAGEN	1.7	104		81-84	33 FT/LBS	48 FT/LBS	12 PT BOLTS 54 FT/LBS +90°, OTHERS 29,44 FT/LBS +180°
VOLKSWAGEN	1.7	102		73			
VOLKSWAGEN	1.7	104		82-83	33 FT/LBS	48 FT/LBS	
VOLKSWAGEN	1.7	104		81-84	33 FT/LBS	48 FT/LBS	12 PT BOLTS: 54 FT/LBS + 90°
VOLKSWAGEN	1.8	109		85-90	22 FT/LBS + 90°	47 FT/LBS	29#, 44#, + 90°, + 90°
VOLKSWAGEN	1.8	110	AEB	98-01	22 FT/LBS, +90° USE NEW BOLTS	48 FT/LBS, +90° USE NEW BOLTS	30, 44 FT/LBS, +90°, +90° USE NEW BOLTS ***
VOLKSWAGEN	1.8	109		88-92	22 FT/LBS, +90°	47 FT/LBS	29,44 FT/LBS, +90°, +90°
VOLKSWAGEN	1.8	109		85-87	22 FT/LBS +90°	47 FT/LBS	29,44 FT/LBS, +90°, +90°
VOLKSWAGEN	1.8	109		86-89	22 FT/LBS +90°	47 FT/LBS	29,44 FT/LBS, +90°, +90°
VOLKSWAGEN	1.8	109		89-93	22 FT/LBS, + 90°	48 FT/LBS	29,44 FT/LBS, + 90°, + 90°
VOLKSWAGEN	1.8	109		88-92	22 FT/LBS, + 90°	47 FT/LBS	29,44 FT/LBS, + 90°, + 90°
VOLKSWAGEN	1.8	109		85-92	22 FT/LBS + 90°	47 FT/LBS	29,44 FT/LBS, + 90°, + 90°
VOLKSWAGEN	1.8	109		83-89	22 FT/LBS + 90°	47 FT/LBS	29,44 FT/LBS, + 90°, + 90°
VOLKSWAGEN	1.8	109	ABG	91-93	22 FT/LBS +90° ROD BRG CAP NUT	50 FT/LBS	30,45 FT/LBS, + 180°
VOLKSWAGEN	1.8	109		90-94	22 FT/LBS +90° ROD BRG CAP NUT	50 FT/LBS	33,44 FT/LBS, + 180°
VOLKSWAGEN	1.8	109		85-90	22 FT/LBS, +90°	47 FT/LBS	29, 44 FT/LBS, +90°, +90°
VOLKSWAGEN	1.8	109		85-86	22 FT/LBS + 90°	47 FT/LBS	29,44 FT/LBS, + 90°, + 90°
VOLKSWAGEN	1.9	117		83-85	33 FT/LBS		7,25,37 FT/LBS
VOLKSWAGEN	1.9	116	ALH	00-03	22 FT/LBS, +90°	48 FT/LBS, +90°	30, 44 FT/LBS, +90°, +90° - ALWAYS USE NEW.
VOLKSWAGEN	1.9	116	AAZ	93-98	22 FT/LBS, +90°	48 FT/LBS	30,44 FT/LBS, +90°, +90°
VOLKSWAGEN	1.9	116	AHH	95-99	22 FT/LBS + 90°	48 FT/LBS + 90°	30, 44 FT/LBS + 90° + 90°
VOLKSWAGEN	2.0	121		90-93	22 FT/LBS +90° ROD BRG CAP NUT	50 FT/LBS	30,44 FT/LBS + 180°
VOLKSWAGEN	2.0	121	ABA	93-99	22 FT/LBS +90° ROD BRG CAP NUT	48 FT/LBS	30, 44 FT/LBS, + 90°, + 90° REPLACE BOLTS
VOLKSWAGEN	2.0	120		76-79			
VOLKSWAGEN	2.0	121	AEG	99-03	22 FT/LBS, +90°	48 FT/LBS, +90° - USE NEW	30#, +90°, +90° - USE NEW, VALVE COVER 89 INCH/LBS
VOLKSWAGEN	2.0	120		77-79	25 FT/LBS		
VOLKSWAGEN	2.0	120		72-84	25 FT/LBS		22 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
VOLKSWAGEN	2.0	121	AEG	98-03	22#, +90° USE NEW	48#, +90° USE NEW	30 FT/LB, +90°, +90° USE NEW BOLTS
VOLKSWAGEN	2.0	121	ABA	99-02	22 FT/LBS, +90° - USE NEW	48 FT/LBS, +90° - USE NEW	30, 44 FT/LBS, +90°, +90° - USE NEW
VOLKSWAGEN	2.1	129		86-91	33 FT/LBS	8 MM BOLT = 15 FT/LBS 10 MM BOLTS = 22 FT/LBS	7,25,37 FT/LBS
VOLKSWAGEN	2.1	131		84-	36 FT/LBS	47 FT/LBS	29,43 FT/LBS + 180°
VOLKSWAGEN	2.2	136		85-88	22 FT/LBS + 90°	47 FT/LBS	30,44 FT/LBS + 180°
VOLKSWAGEN	2.2	136		74-84	36 FT/LBS	47 FT/LBS	1983-84: 54 FT/LBS + 90°
VOLKSWAGEN	2.2	136		85-88	22 FT/LBS + 90°	47 FT/LBS	30,44 FT/LBS + 180°
VOLKSWAGEN	2.2	136		83	36 FT/LBS	47 FT/LBS	54 FT/LBS + 90°
VOLKSWAGEN	2.3	140		87-	22 FT/LBS + 90°	47 FT/LBS	30,44 FT/LBS + 180°
VOLKSWAGEN	2.4	146	AAB	93-97			
VOLKSWAGEN	2.5	153	AAF	92-95	22 FT/LBS, + 90°	50 FT/LBS	30,44 FT/LBS, + 90°, + 90°
VOLKSWAGEN	2.8	169	AHA	98-00	M8=22 FT/LBS,+90°, M8.5=30 FT/LBS,+90° ALWAYS REPLACE BOLTS	44 FT/LBS, +90° ALWAYS REPLACE BOLTS	44 FT/LBS, +90°, +90°
VOLKSWAGEN	2.8	170	AXK	02-03			
VOLKSWAGEN	2.8	169	ATQ	01-02	M8=22 FT/LBS,+90°, M8.5=30 FT/LBS,+90° ALWAYS REPLACE BOLTS	44 FT/LBS, +90° ALWAYS REPLACE BOLTS	44 FT/LBS, +90°, +90°
VOLKSWAGEN	2.8	170	AAA	92-99	22 FT/LBS, + 90° USE NEW	22 FT/LBS, + 180°	30, 40 FT/LBS, +180° USE NEW BOLTS
VOLVO	1.8	109		61-68	38-42 FT/LBS	87-94 FT/LBS	61-69 FT/LBS
VOLVO	2.0	121		74-75	38-42 FT/LBS	87-94 FT/LBS	72 FT/LBS
VOLVO	2.0	121		71-73	38-42 FT/LBS	87-94 FT/LBS	72 FT/LBS
VOLVO	2.0	121			40 FT/LBS	90 FT/LBS	65 FT/LBS
VOLVO	2.1	130		76-80	38-42 FT/LBS	87-94 FT/LBS	76-83 FT/LBS
VOLVO	2.1	130	AQ125A	83-85	38-42 FT/LBS	87-94 FT/LBS	76-83 FT/LBS
VOLVO	2.1	130		81-83	38-42 FT/LBS	87-94 FT/LBS	76-83 FT/LBS
VOLVO	2.1	130		82	38-42 FT/LBS	87-94 FT/LBS	76-83 FT/LBS
VOLVO	2.1	130		81	38-42 FT/LBS	87-94 FT/LBS	76-83 FT/LBS
VOLVO	2.1	129	AQ140A		46 FT/LBS	90 FT/LBS	80 FT/LBS
VOLVO	2.1	130		81-85	43-48 FT/LBS	85-91 FT/LBS	15,44 FT/LBS, + 90°
VOLVO	2.3	141		74	46 FT/LBS	90 FT/LBS	44,81 FT/LBS *
VOLVO	2.3	141	AQ125B		15, 43 FT/LBS, +90^	80 FT/LBS	66 FT/LBS
VOLVO	2.3	141	AQ145A		46 FT/LBS	80 FT/LBS	66 FT/LBS
VOLVO	2.3	141		85	15 FT/LBS, + 90° MAX BOLT LENGTH: 2.185, RENEW IF LONGER	81 FT/LBS	15,29 FT/LBS, + 120°
VOLVO	2.3	141		94-95	15 FT/LBS, + 90^	M10: 15,33 FT/LBS, + 90° M8: 18 FT/LBS, M7: 13 FT/LBS	15,44 FT/LBS, + 130°, UPPER CYL HEAD RETAIN BOLT 13#
VOLVO	2.3	141		85-87	15 FT/LBS, + 90°	80 FT/LBS	15,45 FT/LBS, + 90°
VOLVO	2.3	141		88-94	15 FT/LBS, + 90°	80 FT/LBS	15, 45 FT/LBS, + 90°
VOLVO	2.3	141	B23FT	84-84	43-48 FT/LBS	85-91 FT/LBS	15, 44 FT/LBS + 90°
VOLVO	2.3	141		86-94	15 FT/LBS, + 90°	80 FT/LBS	15,45 FT/LBS, + 90°
VOLVO	2.3	141	B234F	89-92	15 FT/LBS, + 90°	80 FT/LBS	16,34 FT/LBS, + 105-120°
VOLVO	2.3	141		82-84	38-42 FT/LBS	87-94 FT/LBS	44,81 FT/LBS
VOLVO	2.4	145		81-84	35 FT/LBS	48 FT/LBS	30,44,50 FT/LBS, + 90°, AFTER1000 MILES RETORQUE + 90°

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
VOLVO	2.4	146			83 FT/LBS	103 FT/LBS	22,44,74 FT/LBS, + 90°, + 90°
VOLVO	2.4	149		91-98	15 FT/LBS + 90°	M10: 15,33 FT/LBS, +90°, M8: 18 FT/LBS, M7: 13 FT/LBS	15 FT/LBS, 44 FT/LBS, + 130° TURN
VOLVO	2.4	145		83-86	35 FT/LBS	48 FT/LBS	30,44,50 FT/LBS, + 90°, AFTER 1000 MILES RETORQUE + 90°
VOLVO	2.4	146			83 FT/LBS	103 FT/LBS	22,44,74 FT/LBS, + 90°, + 90°
VOLVO	2.5	152		85-	15 FT/LBS, + 90° MAX BOLT LENGTH: 2.185", RENEW IF LONGER	81 FT/LBS	15,29 FT/LBS, + 120°
VOLVO	2.5	153	B5254T	98-04		10MM 15,33#, 8MM 18#, 7MM 13#, THEN 10MM +90°	15, 30 FT/LBS, +130°
VOLVO	2.5	152		93		15,33 FT/LBS, +90°	15,44 FT/LBS,+130°BOTTOM HALF,13 FT/LBS TOP HALF
VOLVO	2.7	163		76-79			7,22,44 FT/LBS, WAIT 15 MINS, LOOSEN BOLTS, 14 FT/LBS, +120°
VOLVO	2.8	173		80-91	33-37 FT/LBS	22-26 FT/LBS, +75°	7,22,44 FT/LBS, WAIT 15 MINS, LOOSEN, 14 FT/LBS, +120°
VOLVO	2.8	170	B6284T	99-00	15 FT/LBS, +90°		15, 44 FT/LBS, +130° -- USE NEW BOLTS
VOLVO	2.9	178	B6304S	92-98	15 FT/LBS + 90° ADDITIONAL TURN	M10=15,33 FT/LBS, M8=18 FT/LBS, M7=13 FT/LBS, M10 +90°	15, 44 FT/LBS, +130°
VOLVO	3.0	182	AQ165A		40 FT/LBS	90 FT/LBS	65 FT/LBS
VOLVO	3.0	182		72-73	38-42 FT/LBS	87-94 FT/LBS	65 FT/LBS
VOLVO	3.0	178	B6304F	92-99	15 FT/LBS + 90°	15,33 FT/LBS, +90°	15,44 FT/LBS,+130°BOTTOM HALF,13 FT/LBS TOP HALF
VOLVO	3.0	182		74-75	38-42 FT/LBS	87-94 FT/LBS	65 FT/LBS
VOLVO	3.6	219			83 FT/LBS	103 FT/LBS	22,44,74 FT/LBS, + 90°, + 90°
VOLVO	3.6	219			83 FT/LBS	103 FT/LBS, ENGINES W/SERIAL #BELOW 2201: 133 FT/LBS	96 FT/LBS
VOLVO	3.6	219			83 FT/LBS	103 FT/LBS	22,44,74 FT/LBS, + 90°, + 90°
VOLVO	3.8	229	AQ175A		45 FT/LBS		65 FT/LBS
VOLVO	4.5	273			118 FT/LBS	111 FT/LBS	37, 111, 148, 148 FT/LBS, RETORQUE HOT 148 FT/LBS *
VOLVO	5.0	307	AQ200A		45 FT/LBS		65 FT/LBS
VOLVO	5.5	334		83-86	115 FT/LBS	101 FT/LBS	22,62 FT/LBS, + 60°
VOLVO	5.5	334			140 FT/LBS	101-111 FT/LBS	22,62 FT/LBS, +60^
VOLVO	5.5	334		80-92	140 FT/LBS	101-111 FT/LBS	22,62 FT/LBS, +60°
VOLVO	6.7	409		88-92	140 FT/LBS (190 NM)	55, 110 FT/LBS	22, 66 FT/LBS, +60°
VOLVO	6.7	409			118 FT/LBS	101 FT/LBS	29,103,140 FT/LBS
VOLVO	6.7	409			140 FT/LBS	110 FT/LBS	22,66 FT/LBS, REPEAT 66#, +60°
VOLVO	6.7	409			140 FT/LBS	55, 110 FT/LBS	22, 66 FT/LBS, +60^
VOLVO	9.6	586			29,55 FT/LBS, + 90°	250 FT/LBS	37,147,272 FT/LBS, + 90°
VOLVO	9.6	586			170 FT/LBS	244 FT/LBS	15,74,148,222,280 FT/LBS
VOLVO	12.0	732			30,55 FT/LBS, + 90°	233-269 FT/LBS	37,111,140 FT/LBS, + 60°
VOLVO	12.0	731		83-92	244 FT/LBS	251 FT/LBS	30,118,129-137 FT/LBS
VOLVO	12.1	740			177-195 FT/LBS	97-125 FT/LBS, +120°	37-51 FT/LBS, +90°, +90°
VOLVO	16.1	983					37, 92, 148 FT/LBS, +90°, +90°
VOLVO	16.1	983					37, 92, 148 FT/LBS, +90°, +90°

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
WAUKESHA	0.0	0			27-31 FT/LBS CASTLE NUT, 13-17 FT/LBS ESNA NUT	ROLLER BEARING	3/8" STUD: 33-36 FT/LBS, 3/8" CAP SCREW: 28-29 FT/LBS
WAUKESHA	1.0	61			27-31 FT/LBS CASTLE NUT, 13-17 FT/LBS ESNA NUT	ROLLER BEARING	3/8" STUD: 33-36 FT/LBS, 3/8" CAP SCREW: 28-29 FT/LBS
WAUKESHA	1.9	113			44-46 FT/LBS	88-92 FT/LBS	
WAUKESHA	2.0	121			46-50 FT/LBS	88-92 FT/LBS	
WAUKESHA	2.1	125					
WAUKESHA	2.2	135			108-112 FT/LBS	125-133 FT/LBS	
WAUKESHA	2.2	133			44-46 FT/LBS	88-92 FT/LBS	60-62 FT/LBS, RETORQUE HOT & AFTER 50 HOURS OF OPERATION
WAUKESHA	2.3	145			67-69 FT/LBS	267-275 FT/LBS	
WAUKESHA	2.4	144			46-50 FT/LBS DRY, 44- 46 FT/LBS OILED	88-92 FT/LBS	96-100 FT/LBS DRILLED SCREW, 112-117 FT/LBS UNDRILLED SCREW
WAUKESHA	2.4	144			46-50 FT/LBS DRY, 44- 46 FT/LBS OILED	88-92 FT/LBS	96-100 FT/LBS DRILLED SCREW, 112-117 FT/LBS UNDRILLED SCREW
WAUKESHA	2.5	155			31-35 FT/LBS ESNA, ** 44-46 FT/LBS MARSDEN**	88-92 FT/LBS	112-117 FT/LBS SOLID, 96-100 FT/LBS HOLLOW
WAUKESHA	2.5	155			40-45 FT/LBS MARSDEN BOLT, * 32-35 FT/LBS ESNA *	88-92 FT/LBS	112-117# SOLID, 96-100# HOLLOW
WAUKESHA	2.5	155			40-45 FT/LBS MARSDEN BOLT, 32-35 FT/LBS CASTLE TYPE	88-92 FT/LBS	112-117# SOLID, 96-100# HOLLOW
WAUKESHA	2.5	155			31-35 FT/LBS ESNA,** 44-46 FT/LBS MARSDEN**	88-92 FT/LBS	112-117 FT/LBS SOLID CAP SCRW,96-100 FT/LBS DRILLED CAP SCRW
WAUKESHA	2.5	155			46-50 FT/LBS DRY, 44- 46 FT/LBS OILED	88-92 FT/LBS	96-100 FT/LBS DRILLED SCREW, 112-117 FT/LBS UNDRILLED SCREW
WAUKESHA	2.5	155			31-35 FT/LBS ESNA BOLT* 44-46 FT/LBS MARSDEN BOLT*	88-92 FT/LBS	112-117 FT/LBS (SOLID) 96-100 FT/LBS (HOLLOW)
WAUKESHA	2.9	176			40-45 FT/LBS MARSDEN BOLT,* 32-35 FT/LBS ESNA*	88-92 FT/LBS	112-117# SOLID, 96-100# HOLLOW
WAUKESHA	2.9	180			46-50 FT/LBS	88-92 FT/LBS	
WAUKESHA	2.9	176			32-35 FT/LBS ELASTIC NUT,* 44-46 FT/LBS MARSDEN NUT*	88-92 FT/LBS	88-92 FT/LBS
WAUKESHA	3.0	185			46-50 FT/LBS DRY, 44-46# OILED		
WAUKESHA	3.1	195			88-92 FT/LBS	108-112 FT/LBS	
WAUKESHA	3.2	194			46-50 FT/LBS DRY, 44- 46 FT/LBS OILED	88-92 FT/LBS	96-100 FT/LBS DRILLED SCREW, 112-117 FT/LBS UNDRILLED SCREW
WAUKESHA	3.2	194			46-50 FT/LBS DRY, 44- 46 FT/LBS OILED	88-92 FT/LBS	96-100 FT/LBS DRILLED SCREW, 112-117 FT/LBS UNDRILLED SCREW
WAUKESHA	3.2	194			46-50 FT/LBS DRY, 44- 46 FT/LBS OILED	88-92 FT/LBS	96-100 FT/LBS DRILLED SCREW, 112-117 FT/LBS UNDRILLED SCREW

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
WAUKESHA	3.4	209			46-50 FT/LBS DRY, 44-46 FT/LBS OILED	88-92 FT/LBS	96-100 FT/LBS DRILLED SCREW, 112-117 FT/LBS UNDRILLED SCREW
WAUKESHA	3.5	216			46-50 FT/LBS DRY, 44-46 FT/LBS OILED	88-92 FT/LBS	96-100 FT/LBS DRILLED SCREW, 112-117 FT/LBS UNDRILLED SCREW
WAUKESHA	3.6	220			44-46 FT/LBS	130-135 FT/LBS	110-117 FT/LBS
WAUKESHA	3.6	220			44-46 FT/LBS	130-135 FT/LBS	110-117 FT/LBS
WAUKESHA	3.6	220			44-46 FT/LBS	130-135 FT/LBS	110-117 FT/LBS
WAUKESHA	3.6	220			44-46 FT/LBS	130-135 FT/LBS	205-215 FT/LBS
WAUKESHA	3.8	232			31-35 FT/LBS ESNA, 44-46 FT/LBS MARSDEN-SLOTTED	88-92 FT/LBS	112-117 FT/LBS SOLID CAP SCRWS, 92-100 FT/LBS DRILLED CAP SCRWS
WAUKESHA	3.8	232			31-35 FT/LBS ESNA, 44-46 FT/LBS MARSDEN-SLOTTED	88-92 FT/LBS	112-117 FT/LBS
WAUKESHA	4.0	245					
WAUKESHA	4.3	265		53-64	31-35 FT/LBS ESNA, 44-46 FT/LBS MARSDEN	108-112 FT/LBS	112-117 FT/LBS SOLID, 96-100 FT/LBS DRILLED
WAUKESHA	4.3	265			88-92 FT/LBS "PLACE TYPE": 88-92 FT/LBS	108-112 FT/LBS	112-117 FT/LBS SOLID, 96-100 FT/LBS DRILLED
WAUKESHA	4.3	265			56-58 FT/LBS	108-112 FT/LBS	96-100 FT/LBS DRILLED SCREW, 112-117 FT/LBS UNDRILLED SCREW
WAUKESHA	4.3	265			88-92 FT/LBS PLACE SCREW	108-112 FT/LBS	112-117 FT/LBS SOLID 96-100 FT/LBS DRILLED
WAUKESHA	4.3	265		62-64	56-60 FT/LBS		
WAUKESHA	4.3	265			56-58 FT/LBS NUTS, 88-90 FT/LBS "PLACE TYPE"	108-112 FT/LBS	112-117 FT/LBS SOLID, 96-100 FT/LBS DRILLED
WAUKESHA	4.6	283			56-58 FT/LBS OLD BOLTS 44-46 FT/LBS NEW BOLTS	129-133 FT/LBS	125-133 FT/LBS
WAUKESHA	4.6	283			44-46 FT/LBS	129-133 FT/LBS	129-133 FT/LBS
WAUKESHA	5.0	302			56-58 FT/LBS	108-112 FT/LBS	92-100#, * 3/16" HOLE 79-83#, TOP 3/16" & BOTTOM 1/8" 96-99#
WAUKESHA	5.0	302			46-50 FT/LBS DRY, 44-46 FT/LBS OILED	108-112 FT/LBS	92-100 FT/LBS
WAUKESHA	5.0	302			56-58 FT/LBS NUTS, 88-90 FT/LBS "PLACE TYPE" BOLT	108-112 FT/LBS	92-100 FT/LBS
WAUKESHA	5.0	302			88-92 FT/LBS	125-133 FT/LBS	
WAUKESHA	5.1	310			44-46 FT/LBS	129-133 FT/LBS	129-133 FT/LBS
WAUKESHA	5.1	310			44-46 FT/LBS	129-133 FT/LBS	FT/LBS
WAUKESHA	5.2	320			56-58 FT/LBS NUTS, 88-92 FT/LBS "PLACE TYPE" BOLT	108-112 FT/LBS	92-100 FT/LBS
WAUKESHA	5.2	320			56-58 FT/LBS NUTS, 88-90 FT/LBS "PLACE TYPE" BOLT	108-112 FT/LBS	92-100 FT/LBS
WAUKESHA	5.4	330			44-46 FT/LBS	130-135 FT/LBS	205-215 FT/LBS
WAUKESHA	5.4	330			44-46 FT/LBS	130-135 FT/LBS	205-215 FT/LBS
WAUKESHA	5.7	352			221-229 FT/LBS		
WAUKESHA	7.0	426			108-112 FT/LBS	125-133 FT/LBS	167-175 FT/LBS
WAUKESHA	7.0	426			108-112 FT/LBS	125-133 FT/LBS	167-175 FT/LBS
WAUKESHA	7.4	451			108-112 FT/LBS	125-133 FT/LBS	167-175 FT/LBS
WAUKESHA	8.2	501			67-69 FT/LBS	267-275 FT/LBS	

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
WAUKESHA	8.6	525			75-79 FT/LBS ESNA, 96-100 FT/LBS MARSDEN	129-133 FT/LBS	200-208 FT/LBS LARGE, 150-155 FT/LBS SMALL
WAUKESHA	8.6	525			96-100 FT/LBS	129-133 FT/LBS	
WAUKESHA	9.1	554			75-79 FT/LBS ESNA, 96-100 FT/LBS MARSDEN	129-133 FT/LBS	200-208 FT/LBS
WAUKESHA	9.1	554			75-79 FT/LBS ESNA, 96-100 FT/LBS MARSDEN	129-133 FT/LBS	200-208 FT/LBS
WAUKESHA	9.1	554			96-100 FT/LBS	129-133 FT/LBS	
WAUKESHA	9.3	570			60-62 FT/LBS	108-112 FT/LBS	129-133 FT/LBS
WAUKESHA	10.5	638			67-69 FT/LBS	267-275 FT/LBS	
WAUKESHA	12.8	779			56-60 FT/LBS ESNA, 67-69 FT/LBS MARSDEN	267-275 FT/LBS	200-208 FT/LBS LONG, 150-154 FT/LBS SHORT
WAUKESHA	12.8	779			67-69 FT/LBS	292-300 FT/LBS	250-267 FT/LBS
WAUKESHA	13.4	817			56-60 FT/LBS ESNA, 67-69 FT/LBS MARSDEN	267-275 FT/LBS	200-208 FT/LBS LONG, 150-154 FT/LBS SHORT
WAUKESHA	13.4	817			56-60 FT/LBS ESNA, 67-69 FT/LBS MARSDEN	267-275 FT/LBS	LONG: 200-208 FT/LBS SHORT: 150-154 FT/LBS
WAUKESHA	14.5	884			83-85 FT/LBS	148-152 FT/LBS	5/8" STUDS: 179-183 FT/LBS 1/2" STUDS: 90-92 FT/LBS
WAUKESHA	16.6	1012			85-88 FT/LBS	292-300 FT/LBS	
WAUKESHA	17.7	1077			317-321 FT/LBS	79-83 FT/LBS CROSS-TIE BOLTS, 600-604 FT/LBS NUTS	5/8"NUT 186-190#, 3/4"NUT 296-300#, 3/4"CAPSCREW 320-325#
WAUKESHA	17.7	1077			317-321 FT/LBS	79-83 FT/LBS CROSS-TIE BOLTS, 600-604 FT/LBS NUTS	5/8"NUT 186-190#, 3/4"NUT 296-300#, 3/4"CAPSCREW 320-325#
WAUKESHA	19.6	1197			75-79 FT/LBS ESNA, 108-112 FT/LBS MARSDEN	292-300 FT/LBS	292-300 FT/LBS
WAUKESHA	19.6	1197			75-79 FT/LBS ESNA, 96-100 FT/LBS MARSDEN	292-300 FT/LBS	200-208 FT/LBS
WAUKESHA	19.6	1197			85-88 FT/LBS	292-300 FT/LBS	
WAUKESHA	19.6	1197			85-88 FT/LBS	292-300 FT/LBS	
WAUKESHA	26.5	1616			317-321 FT/LBS	79-83 FT/LBS CROSS-TIE BOLTS, 600-604 FT/LBS NUTS	5/8"NUT 186-190#, 3/4"NUT 296-300#, 3/4"CAPSCREW 320-325#
WAUKESHA	26.5	1616			317-321 FT/LBS	79-83 FT/LBS CROSS-TIE BOLTS, 600-604 FT/LBS NUTS	5/8"NUT 186-190#, 3/4"NUT 296-300#, 3/4"CAPSCREW 320-325#
WAUKESHA	31.2	1905			LOCKING,167-175# COTTER PIN LOCKING	292-300 FT/LBS	342-350# CRANKCASE #97120, 396-400# CRANKCASE #97120A
WAUKESHA	31.2	1905			221-229 FT/LBS PLACE SCREWS	292-300 FT/LBS CASTLE NUT, 221-229 FT/LBS ESNA NUT	342-350# CRANKCASE #97120, 396-400# CRANKCASE #97120A
WAUKESHA	35.3	2154			317-321 FT/LBS	79-83 FT/LBS CROSS-TIE BOLTS, 600-604 FT/LBS NUTS	5/8"NUT 186-190#, 3/4"NUT 296-300#, 3/4"CAPSCREW 320-325#
WAUKESHA	35.3	2154			317-321 FT/LBS	79-83 FT/LBS CROSS-TIE BOLTS, 600-604 FT/LBS NUTS	5/8"NUT 186-190#, 3/4"NUT 296-300#, 3/4"CAPSCREW 320-325#
WAUKESHA	40.6	2474			233-243 FT/LBS	267-275 FT/LBS	167-175 FT/LBS
WAUKESHA	47.4	2894			SERIES, 180-190 FT/LBS 205407 SERIES	CROSS-TIE CAP SCREWS: 242-250#	1" STUD (CURRENT): 625-650#, 7/8" STUD: 446-450 FT/LBS
WAUKESHA	47.4	2894			SERIES, 180-190 FT/LBS 205407 SERIES	271-279# ELASTIC STOP NUTS, 242-250# CROSS-TIE CAP SCREWS	1" STUD (CURRENT): 625-650#, 7/8" STUD: 446-450 FT/LBS
WAUKESHA	47.4	2894			167-175 FT/LBS	292-300 FT/LBS	292-300 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
WAUKESHA	47.4	2894			167-175 SLOTTED LOCKING NUT, 221-229# PLACE TYPE LOCKNG BLT	292-300 FT/LBS	CURRENT: 396-400 FT/LBS* EARLY: 329-333 FT/LBS*
WAUKESHA	57.7	3520			167-175 FT/LBS	292-300 FT/LBS	292-300 FT/LBS
WAUKESHA	60.8	3711			233-243 FT/LBS	267-275 FT/LBS	167-175 FT/LBS
WAUKESHA	83.6	5100			125-129 FT/LBS ESNA 167-175 FT/LBS MARSDEN	292-300# ELASTIC STOP NUTS, 242-250 FT/LBS CROSS-TIE BOLTS	1 3/8" STUDS 329-333 FT/LBS 2 1/4" STUDS 396-400 FT/LBS
WAUKESHA	94.9	5788			167-175 FT/LBS	291-300 FT/LBS	1 3/8" THREAD ENGAGE 329-333# 2 1/4" THREAD ENGAGE 400-408#
WAUKESHA	94.9	5788					
WAUKESHA	94.9	5788			125-129 FT/LBS ESNA, 167-175 FT/LBS MARSDEN	292-300# ELASTIC STOP NUTS, 242-250 FT/LBS CROSS-TIE BOLTS	1 3/8" STUDS 329-333 FT/LBS 2 1/4" STUDS 396-400 FT/LBS
WAUKESHA	115.4	7040	IND		125-129 FT/LBS ESNA, 167-175 FT/LBS MARSDEN	292-300# ELASTIC STOP NUTS, 242-250 FT/LBS CROSS-TIE BOLTS	1 3/8" STUDS 329-333 FT/LBS 2 1/4" STUDS 396-400 FT/LBS
WAUKESHA	115.4	7042			175 FT/LBS		
WAUKESHA	115.4	7041				292-300 FT/LBS	
WHITE	0.3	20			48-52 FT/LBS		
WHITE	1.8	110			65-70 FT/LBS		
WHITE	1.9	120			40-65 FT/LBS		
WHITE	2.1	130			40-65 FT/LBS		
WHITE	2.2	140			40-65 FT/LBS		
WHITE	2.3	143			75-85 FT/LBS	103-113 FT/LBS	82-91 FT/LBS
WHITE	2.4	150			50-65 FT/LBS		
WHITE	4.0	250			50-65 FT/LBS		
WHITE	4.1	252					
WHITE	4.3	265			46-50 FT/LBS	87-92 FT/LBS	112-117 FT/LBS
WHITE	4.6	283			46-50 FT/LBS	87-92 FT/LBS	COMMENTS
WHITE	5.6	340			50-65 FT/LBS		
WHITE	5.8	354			80 FT/LBS USE NEW NUTS	180 FT/LBS	100 FT/LBS
WHITE	7.3	450			50-65 FT/LBS		
WHITE	7.4	452					
WHITE	7.5	462			50-65 FT/LBS		
WHITE	7.8	478			115-120 FT/LBS	135-140 FT/LBS	80,130,147,160 FT/LBS
WHITE	9.6	585	M. MOLINE		55-60 FT/LBS	108-112 FT/LBS 5/8" BOLTS, 196-204 FT/LBS 3/4" BOLTS	170-175 FT/LBS
WISCONSIN	0.0	0		55	20 FT/LBS		18 FT/LBS
WISCONSIN	0.0	0			20 FT/LBS		18 FT/LBS
WISCONSIN	0.0	0			22 FT/LBS		18 FT/LBS
WISCONSIN	0.0	0			22 FT/LBS		18 FT/LBS
WISCONSIN	0.0	0			22 FT/LBS	50 FT/LBS	32 FT/LBS
WISCONSIN	0.0	0			22 FT/LBS	50 FT/LBS	32 FT/LBS
WISCONSIN	0.0	0		68	22 FT/LBS	50 FT/LBS	32 FT/LBS
WISCONSIN	0.0	0		62-74	22 FT/LBS		18 FT/LBS
WISCONSIN	0.0	0		55	20 FT/LBS		18 FT/LBS
WISCONSIN	0.0	0			32-36 FT/LBS	NUT 45-50 FT/LBS, SCREW 28-32#	STUDS 32-36 FT/LBS, CAPSCREWS 45-47 FT/LBS
WISCONSIN	0.0	0		68-68	22 FT/LBS		18 FT/LBS
WISCONSIN	0.0	0		63-63	22 FT/LBS		18 FT/LBS



Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
WISCONSIN	0.0	0		64-76	22 FT/LBS		18 FT/LBS
WISCONSIN	0.0	0			20 FT/LBS		32 FT/LBS
WISCONSIN	0.0	0			20 FT/LBS		18 FT/LBS
WISCONSIN	0.0	0			22 FT/LBS		18 FT/LBS
WISCONSIN	0.3	21			25 FT/LBS	22 FT/LBS	33 FT/LBS
WISCONSIN	0.3	18		49-55	18-20 FT/LBS	14-18 FT/LBS MAIN BRG PLATE, 62-78 FT/LBS CYLINDER-BLOCK	14-18 FT/LBS
WISCONSIN	0.3	18		39-55	18-20 FT/LBS	14-18 FT/LBS MAIN BRG PLATE, 62-78 FT/LBS CYLINDER-BLOCK	14-18 FT/LBS
WISCONSIN	0.3	18			18-20 FT/LBS	14-18 FT/LBS MAIN BRG PLATE, 62-78 FT/LBS CYLINDER-BLOCK	14-18 FT/LBS
WISCONSIN	0.3	19		41-49	18 FT/LBS	14-18 FT/LBS MAIN BRG PLATE, 62-78 FT/LBS CYLINDER-BLOCK	26-32 FT/LBS
WISCONSIN	0.4	23		33-41	18-20 FT/LBS	26-32 FT/LBS MAIN BRG PLATE, 62-78 FT/LBS CYLINDER-BLOCK	26-32 FT/LBS
WISCONSIN	0.4	23		41-49	18-20 FT/LBS	26-32 FT/LBS MAIN BRG PLATE, 62-78 FT/LBS CYLINDER-BLOCK	26-32 FT/LBS
WISCONSIN	0.4	23		49-57	18-20 FT/LBS	26-32 FT/LBS MAIN BRG PLATE, 62-78 FT/LBS CYLINDER-BLOCK	26-32 FT/LBS
WISCONSIN	0.4	26			25 FT/LBS	22 FT/LBS	33 FT/LBS
WISCONSIN	0.4	23		57	18-20 FT/LBS	26-32 FT/LBS MAIN BRG PLATE, 62-78 FT/LBS CYLINDER-BLOCK	26-32 FT/LBS
WISCONSIN	0.4	23			18-20 FT/LBS	26-32 FT/LBS MAIN BRG PLATE, 62-78 FT/LBS CYLINDER-BLOCK	26-32 FT/LBS
WISCONSIN	0.4	23			25 FT/LBS		36 FT/LBS
WISCONSIN	0.4	23			18-20 FT/LBS	26-32 FT/LBS MAIN BRG PLATE, 62-78 FT/LBS CYLINDER-BLOCK	26-32 FT/LBS
WISCONSIN	0.5	33		41-57	32 FT/LBS	26-32 FT/LBS MAIN BRG PLATE, 62-78 FT/LBS CYLINDER-BLOCK	26-32 FT/LBS
WISCONSIN	0.5	29			29 FT/LBS		36 FT/LBS
WISCONSIN	0.5	33			29 FT/LBS		36 FT/LBS
WISCONSIN	0.6	38		41-57	32 FT/LBS	26-32 FT/LBS MAIN BRG PLATE, 62-78 FT/LBS CYLINDER-BLOCK	26-32 FT/LBS
WISCONSIN	0.6	38		57	32 FT/LBS	26-32 FT/LBS MAIN BRG PLATE, 40-50 FT/LBS CYLINDER-BLOCK	26-32 FT/LBS
WISCONSIN	0.6	37			29 FT/LBS		36 FT/LBS
WISCONSIN	0.7	41		41-57	32 FT/LBS	26-32 FT/LBS MAIN BRG PLATE, 62-78 FT/LBS CYLINDER-BLOCK	26-32 FT/LBS
WISCONSIN	0.7	41			36 FT/LBS	M8: 22 FT/LBS, M12: 51 FT/LBS	51 FT/LBS
WISCONSIN	0.8	46			27-29 FT/LBS	113 INCH/LBS	36 FT/LBS
WISCONSIN	0.8	46			22-24 FT/LBS	32-34 FT/LBS	22-24 FT/LBS
WISCONSIN	0.8	46		46-57	22-24 FT/LBS	32-34 FT/LBS	22-24 FT/LBS
WISCONSIN	0.8	46			36 FT/LBS	M8: 22 FT/LBS, M12: 51 FT/LBS	51 FT/LBS
WISCONSIN	0.9	54		57-76	22-28 FT/LBS	32-34 FT/LBS	22-24 FT/LBS
WISCONSIN	0.9	54		57-76	22-28 FT/LBS	32-34 FT/LBS	22-24 FT/LBS
WISCONSIN	0.9	54			22-24 FT/LBS	32-34 FT/LBS	22-24 FT/LBS
WISCONSIN	0.9	54	TJD	68-68	22-28 FT/LBS	45-50 FT/LBS	22-24 FT/LBS
WISCONSIN	0.9	54			22-28 FT/LBS	32-34 FT/LBS	22-24 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
WISCONSIN	0.9	52			27-29 FT/LBS	113 INCH/LBS	36 FT/LBS
WISCONSIN	0.9	53			25 FT/LBS	SCREWS, M8 NUTS: 18#, M10 NUTS: 25#	33 FT/LBS
WISCONSIN	0.9	54		46-57	22-24 FT/LBS	32-34 FT/LBS	22-24 FT/LBS
WISCONSIN	0.9	54			22-28 FT/LBS	32-34 FT/LBS	22-24 FT/LBS
WISCONSIN	1.0	58			27-29 FT/LBS	113 INCH/LBS	36 FT/LBS
WISCONSIN	1.0	61			25 FT/LBS	SCREWS, M8 NUTS: 18#, M10 NUTS: 25#	33 FT/LBS
WISCONSIN	1.1	69			27-29 FT/LBS	113 INCH/LBS	36 FT/LBS
WISCONSIN	1.2	74			27-29 FT/LBS	113 INCH/LBS	36 FT/LBS
WISCONSIN	1.5	92		40-69	22-24 FT/LBS	40-50 FT/LBS ROLLER BEARING	22-24 FT/LBS
WISCONSIN	1.5	92		40-69	28 FT/LBS	50 FT/LBS ROLLER BEARING	24 FT/LBS
WISCONSIN	1.5	92			22-24 FT/LBS	40-50 FT/LBS ROLLER BEARING	22-24 FT/LBS
WISCONSIN	1.8	108		40-76	28 FT/LBS	50 FT/LBS ROLLER BEARING	24 FT/LBS
WISCONSIN	1.8	108			22-28 FT/LBS	45-50 FT/LBS ROLLER BEARING	22-24 FT/LBS
WISCONSIN	1.8	108		56-56	22-28 FT/LBS	45-50 FT/LBS ROLLER BEARING	22-24 FT/LBS
WISCONSIN	1.8	108		56	22-28 FT/LBS	45-50 FT/LBS ROLLER BEARING,MODEL W4-1770: 40-45 FT/LBS	22-24 FT/LBS
WISCONSIN	1.8	108			22-28 FT/LBS	40-50 FT/LBS ROLLER BEARING	22-24 FT/LBS
WISCONSIN	1.8	108		40-76	22-24 FT/LBS	40-50 FT/LBS ROLLER BEARING	22-24 FT/LBS
WISCONSIN	1.8	108			22-24 FT/LBS	40-50 FT/LBS ROLLER BEARING	22-24 FT/LBS
WISCONSIN	1.8	108			22-28 FT/LBS	40-45 FT/LBS	22-24 FT/LBS
WISCONSIN	2.5	154			28-32 FT/LBS	58-62 FT/LBS	28-32 FT/LBS
WISCONSIN	2.5	154		60-70	32 FT/LBS	32 FT/LBS PLATE & RETAINER, SEE COMMENTS IN BLOCK (PG 2) *	10,20,30 FT/LBS
WISCONSIN	2.5	154		44-53	28-32 FT/LBS	62-78 FT/LBS	25-32 FT/LBS
WISCONSIN	2.5	154	VG4D	53	28-32 FT/LBS	58-62 FT/LBS	28-32 FT/LBS
WISCONSIN	2.5	177			28-32 FT/LBS	CENTER HANGER 32-35 FT/LBS,-> HANGER-BLOCK 74-76 FT/LBS	10, 20, 30 FT/LBS
WISCONSIN	2.5	154		53-53	26-32 FT/LBS	62-78 FT/LBS	25-32 FT/LBS
WISCONSIN	4.2	255		53-60	40-50 FT/LBS	95-110 FT/LBS	25-30 FT/LBS
YANMAR	0.0	0			17 FT/LBS		45 FT/LBS
YANMAR	0.0	0			17-20 FT/LBS	18-20 FT/LBS	29,58,72-79 FT/LBS CYL HEAD ASSIST BOLTS 20 FT/LB
YANMAR	0.0	0			32.5 FT/LBS	BLT=32#FLY SIDE HOUSING=18 FT/LBS	
YANMAR	0.0	0			17 FT/LBS	40 FT/LBS	25 FT/LBS
YANMAR	0.0	0			47 FT/LBS	INTRMED HOUSNG=32# SET BLT=51#FLY SIDE HOUSING=32.5 FT/LBS	
YANMAR	0.0	0			40 FT/LBS	INTRMED HOUSNG=32# SET BLT=51#FLY SIDE HOUSING=32.5 FT/LBS	
YANMAR	0.0	0			32.5 FT/LBS	BLT=32#FLY SIDE HOUSING=18 FT/LBS	
YANMAR	0.0	0			47 FT/LBS	INTERMED 2 HALVES TOGETHER 51#	130 FT/LBS

Make	Liter	CID	Engine Model	Year	Rod Torque	Main Torque	Cylinder Head Bolt Torque
YANMAR	0.0	0			47 FT/LBS	32.5 FT/LBS FLY SIDE HOUSING	
YANMAR	0.2	13	L48AE		13-15 FT/LBS		HEAD NUTS: 20-23#, HEAD STUD BOLTS (STUD SIDE): 9-11#
YANMAR	0.2	12	L40AE		13-14.5 FT/LBS		20-23 FT/LBS NUTS, 9-11 FT/LBS STUD BOLTS
YANMAR	0.3	19			16-17 FT/LBS	17-20 FT/LBS	69-75 FT/LBS
YANMAR	0.3	17	L60AE		13-14 FT/LBS		30-33 FT/LBS HEAD NUTS, 11-12 FT/LBS STUD BOLTS
YANMAR	0.3	21	L75AE		27-31 FT/LBS		42-45# HEAD NUTS, 18-21# STUD BOLTS (STUD SIDE)
YANMAR	0.3	18	L70AE		13-15 FT/LBS		NUTS 30-33 FT/LBS, STUD BOLTS (STUD SIDE) 9-11 FT/LBS
YANMAR	0.4	24	L90AE		27-31 FT/LBS		42-45# HEAD NUTS, 18-21# STUD BOLTS (STUD SIDE)
YANMAR	0.4	27			38-41 FT/LBS	17-20 FT/LBS	69-75 FT/LBS
YANMAR	0.4	22			28-30 FT/LBS	17-20 FT/LBS	69-75 FT/LBS
YANMAR	0.4	25	L100AE		27-31 FT/LBS		NUTS 39-42#, STUD BOLTS (STUD SIDE) 9-11 FT/LBS
YANMAR	0.4	23			28-30 FT/LBS	17-20 FT/LBS	69-75 FT/LBS
YANMAR	0.5	30			38-41 FT/LBS	17-20 FT/LBS	69-75 FT/LBS
YANMAR	0.6	38			33-36 FT/LBS	28 FT/LBS	112-116 FT/LBS
YANMAR	0.6	36			16-20 FT/LBS	18-19 FT/LBS	P/N 55-4594:72-80 FT/LBS, P/N 55-4596:16-20 FT/LBS
YANMAR	0.6	36			38-41 FT/LBS	17-20 FT/LBS	95-101 FT/LBS
YANMAR	0.6	36	2T72HLE		18 FT/LBS	INTRMED HOUSNG=22# SET BLT=32#FLY SIDE HOUSING=18 FT/LBS	
YANMAR	0.7	40	3.66		17-20 FT/LBS	39-41 FT/LBS	24-26 FT/LBS ROCKER ARM SUPPORT 17-21 FT/LB
YANMAR	0.7	40			33-36 FT/LBS	28 FT/LBS	112-116 FT/LBS
YANMAR	0.7	42			38-41 FT/LBS	17-20 FT/LBS	95-101 FT/LBS
YANMAR	0.8	46			42-45 FT/LBS	17-20 FT/LBS	138-151 FT/LBS
YANMAR	0.9	57	3T72HLE		18 FT/LBS	INTRMED HOUSNG=22# SET BLT=32#FLY SIDE HOUSING=18 FT/LBS	
YANMAR	0.9	52			42-45 FT/LBS	17-20 FT/LBS	138-151 FT/LBS
YANMAR	0.9	54	3.88		17-20 FT/LBS	55-65 FT/LBS	14,28,44-47 FT/LBS
YANMAR	0.9	52			35 FT/LBS	HALF CAPSCREW:35#,INTERMED SETSCREW:52#, REAR CAPSCREW:19#	MAIN: 30,60,94 FT/LBS AUXILIARY: 9,20,30 FT/LBS
YANMAR	1.0	61			47 FT/LBS	28 FT/LBS	127-134 FT/LBS
YANMAR	1.0	61			28-30 FT/LBS	57-59 FT/LBS	16, 31, 50-52 FT/LBS
YANMAR	1.2	70			27-30 FT/LBS	56-59 FT/LBS	25-26, 49-52 FT/LBS
YANMAR	1.2	75			29 FT/LBS	58 FT/LBS	16,31,51 FT/LBS
YANMAR	1.2	70			33-36 FT/LBS	28 FT/LBS	127-134 FT/LBS
YANMAR	1.3	78			35 FT/LBS	HALF CAPSCREW:35#,INTERMED SETSCREW:52#, REAR CAPSCREW:19#	MAIN: 30,60,94 FT/LBS AUXILIARY: 9,20,30 FT/LBS

