

GENERAL MOTORS

GENERAL SPECIFICATIONS						
Engine	Net HP At RPM	Torque (Ft. Lbs. at RPM)	Compr. Ratio	Bore	Stroke	Displ. Cu. Ins.
292"	115@3400	215@1600	8.00:1	3.875"	4.12"	292"
350"	160@4000	265@2400	8.00:1	4.000"	3.48"	350"
366"	200@4000	305@2800	8.00:1	3.937"	3.76"	366"
427"	220@4000	360@2400	8.00:1	4.250"	3.76"	427"
454"	245@3800	365@2800	8.00:1	4.250"	4.00"	454"

VALVES							
Engine & Valve	Head Diam.	Face Angle	Seat Angle	Seat Width	Stem Diameter	Stem Clearance	Valve Lift
292" Int.	1.72"	45°	46°	.031-.063"	.3410-.3417"	.0010-.0027"	.....
Exh.	1.50"	5°	46°	.063-.094"	.3410-.3417"	.0015-.0032"	.....
350" Int.	1.94"	45°	46°	.031-.063"	.3410-.3417"	.0010-.0027"	.....
Exh.	1.50"	45°	46°	.0630.094"	.3410-.3417"	.0010-.0027"	.....
366" Int.	.....	45°	46°	.031-.063"	.....	.0010-.0027"	.....
Exh.	.....	45°	46°	.363-.094"	.....	.0012-.0029"	.....
427" Int.	.....	45°	46°	.031-.063"	.....	.0010-.0027"	.....
Exh.	.....	45°	46°	.063-.094"	.....	.0014-.0029"	.....
454" Int.	.....	45°	46°	.031-.063"	.3715-.3722"	.0010-.0027"	.....
Exh.	.....	45°	46°	.063-.094"	.3713-.3720"	.0014-.0027"	.....

VALVE SPRINGS			
Engine	Free Length	PRESSURE (LBS.)	
		Valve Closed	Valve Open
292"	1.90"	85-93@1.69"	174-184@1.30"
350"	2.03"	76-84@1.69"	194-206@1.25"
366"	2.05"	84-96@1.80"	210-230@1.40"
427"	2.05"	84-96@1.80"	210-230@1.40"
454"	2.05"	84-96@1.80"	210-230@1.40"

CAMSHAFT			
Engine	Journal Diam.	Clearance	Lobe Lift
292"	1.8682-1.8692"	.....	.2315"
350"	1.8682-1.8692"	.....	.2600"
366"	1.9487-1.9497"	.....	.2343"
427"	1.9487-1.9497"	.....	.2343"
454"	1.9482-1.9492"	.....	.2588"

PISTONS, PINS, RINGS						
Engine	PISTONS		PINS		RINGS	
	Clearance	Piston Fit	Rod Fit	Rings	End Gap	Side Clearance
292"	.0026-.0036"	.00015-.00025"	.0008-.0016"	1	.010-.020"	.0020-.0040"
				2	.010-.020"	.0020-.0040"
				3	.015-.055"	.0050-.0055"
350"	.0016-.0026"	.00016-.00026"	.0008-.0016"	1	.010-.020"	.0012-.0032"
				2	.013-.025"	.0012-.0032"
				3	.015-.055"	.0020-.0070"
366"	.0030-.0040"	.00025-.00035"	.0008-.0021"	1	.010-.020"	.0018-.0032"
				2	.010-.020"	.0018-.0032"
				3	.010-.030"	.0025-.0035"
427"	.0039-.0049"	.00025-.00035"	.0008-.0021"	1	.010-.020"	.0018-.0032"
				2	.010-.020"	.0018-.0032"
				3	.010-.030"	.0005-.0065"
454"	.0034-.0044"	.00025-.00035"	.0013-.0021"	1	.010-.020"	.0018-.0032"
				2	.010-.020"	.0018-.0032"
				3	.010-.030"	.0020-.0035"

GENERAL MOTORS (Cont.)

CRANKSHAFT MAIN & CONNECTING ROD BEARINGS							
Engine	MAIN BEARINGS				CONNECTING ROD BEARINGS		
	Journal Diam.	Clearance	Thrust Bearing	Crankshaft End Play	Journal Diam.	Clearance	Side Play
292" 350"	2.2983-2.2993"	.0008-.0034"	No. 7	.002-.006"	2.0990-2.1000"	.0007-.0027"	.006-.017"
No. 1	2.4484-2.4493"	.0008-.0020"	No. 5	.002-.006"	2.1990-2.2000"	.0013-.0035"	.008-.014"
No. 2, 3, 4	2.4481-2.4493"	.0011-.0023"					
No. 5	2.4479-2.4488"	.0017-.0033"					
366"							
No. 1, 2, 3, 4	2.7481-2.7490"	.0013-.0025"	No. 5	.006-.010"	2.1990-2.2000"	.0013-.0035"	.013-.023"
No. 5	2.7473-2.7483"	.0029-.0045"					
427"							
No. 1, 2, 3, 4	2.7481-2.7490"	.0013-.0025"	No. 5	.006-.010"	2.1990-2.2000"	.0014-.0030"	.013-.023"
No. 5	2.7473-2.7483"	.0029-.0045"					
454"							
No. 1	2.7485-2.7495"	.0013-.0025"	No. 5	.006-.010"	2.1990-2.2000"	.0014-.0030"	.013-.023"
No. 2, 3, 4	2.7481-2.7490"	.0013-.0025"					
No. 5	2.7478-2.7488"	.0024-.0040"					

TIGHTENING SPECIFICATIONS

292"

Application	Ft. Lbs.
Cylinder Head Bolts①	95
Intake Manifold-to-Head	35
Exhaust Manifold Bolts	30
Main Bearing Cap Bolts	65
Connecting Rod Cap Nuts	40
Flywheel Bolts	110
Harmonic Balancer Bolt	60

① — See cylinder head tightening sequence.

350"

Application	Ft. Lbs.
Cylinder Head Bolts①	65
Intake Manifold	30
Exhaust Manifold	②20
Main Bearing Cap Bolts	70
Connecting Rod Cap Nuts	45
Flywheel Bolts	60

① — See cylinder head tightening sequence.

② — Tighten two center bolts to 30 ft. lbs.

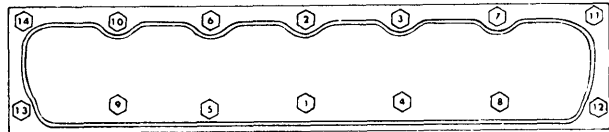
366", 427" & 454"

Application	Ft. Lbs.
Cylinder Head Bolts①	80
Intake Manifold	30
Exhaust Manifold	20
Main Bearing Cap Bolts	110
Connecting Rod Cap Nuts	50
Flywheel Bolts	65
Torsional Damper	85

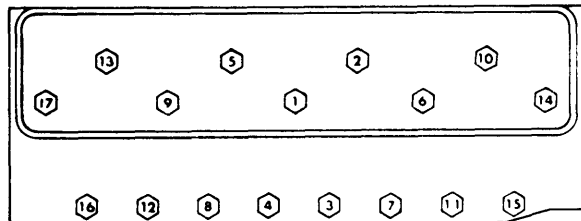
① — See cylinder head tightening sequence.

CYLINDER HEAD TIGHTENING SEQUENCE

292"



350"



366", 427" & 454"

