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FLYWHEEL WITH RING GEAR

	<u>GASOLINE</u>	<u>DIESEL</u>
Maximum Runout	0.005	0.005
Diameter	14.075-14.065	14.075-14.065
Ring Gear Teeth (Number)	111	111

DIESEL IDLER GEAR

	<u>GASOLINE</u>	<u>DIESEL</u>
Shaft Diameter		0.999-1.000
Shaft Running Clearance		
Standard		0.0015-0.003
Maximum		0.005
Bushing Inside Diameter		1.002-1.0015
Plunger Spring		31/32 at 7-1/2 lbs ± 1 lb.

GASOLINE GOVERNOR

	<u>GASOLINE</u>	<u>DIESEL</u>
Governor Shaft Bushing	1.002-1.0015	
Governor Gear Hub Diameter	0.9990-0.9995	
Hub Running Clearance		
Standard	0.002-0.003	
Maximum	0.005	

OIL PUMP

	<u>GASOLINE</u>	<u>DIESEL</u>
Type	Vane	Vane
Shaft End Play	1/32"	1/32"

PISTONS

	<u>GASOLINE</u>	<u>DIESEL</u>
Material		Aluminum Alloy
Surface Treatment		Tin plated
New Piston Fit In New Sleeves (Pull On Feeler Gauge)	3-6 lbs on 1/2 x 0.002	3-6 lbs on 1/2 x 0.002
Pistons Removed From	Top	Top
Length	3-3/4	3-3/4
Skirt Diameter	3-5/8	3-5/8
Maximum Allowance Out-Of-Round	Cam ground	Cam ground
Piston Ring Groove Width		
Top	0.097-0.096	0.097-0.096
2nd	0.096-0.095	0.096-0.095
3rd	0.096-0.095	0.096-0.095
Oil Ring	0.1890-0.1880	0.1890-0.1880
Piston Pin Bore Diameter		
Coded Red	1.2497-1.2498	1.2497-1.2498
Coded White	1.2498-1.2499	1.2498-1.2499
Coded Blue	1.2499-1.2500	1.2499-1.2500

PISTON PINS

	<u>GASOLINE</u>	<u>DIESEL</u>
	Type	Full floating
Installation	Fit pin at room temperature with thumb pressure	
Pin Held In Position By	Retaining Rings	
Oversize	0.005 0.010	0.005 0.010
Outside Diameter (Standard Pin)		
Coded Red	1.2495-1.2494	1.2495-1.2494
Coded White	1.2496-1.2495	1.2496-1.2495
Coded Blue	1.2497-1.2496	1.2497-1.2496
Running Clearance In Piston		
Standard	0.0002-0.0004	0.0002-0.0004
Maximum	0.0008	0.0008
Running Clearance In Rod		
Standard	0.0004-0.0009	0.0004-0.0009
Maximum	0.0019	0.0019
Rockwell "C" Hardness	60-63	60-63

PISTON PIN BUSHING

	<u>GASOLINE</u>	<u>DIESEL</u>
	Type	Slotted and split
Material	Steel backed bronze	
Inside Diameter		
Standard	1.2503-1.2501	1.2503-1.2501
Length	0.537-0.551	0.537-0.551

PISTON RINGS

	<u>GASOLINE</u>	<u>DIESEL</u>
	Material	Cast iron - top ring chrome faced
Compression Rings	Flexible steel	
Oil Rings		
Compression Rings For Piston	3	3
Compression Ring Width	0.0935-0.0930	0.0935-0.0930
Compression Ring Side Clearance		
Top - Standard	0.0025-0.0040	0.0025-0.0040
2nd - Standard	0.0015-0.0030	0.0015-0.0030
3rd - Standard	0.0015-0.0030	0.0015-0.0030
Maximum	0.006	0.006
End Gap		
Standard	0.010-0.020	0.010-0.020
Maximum	0.045	0.045
Oil Ring Rail End Gap (Used With Flexible Rings)	0.015-0.055	0.015-0.055

PUSH RODS

	<u>GASOLINE</u>	<u>DIESEL</u>
Length	11	10-9/16
Maximum Runout	0.020	0.020

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ROCKER ARMS

	<u>GASOLINE</u>	<u>DIESEL</u>
Rocker Arm Shaft Spring		
Free Length	2-1/2	2-1/2
Compressed Length	5/8 at 10 lbs.	5/8 at 10 lbs.
Inside Diameter Of Bushing	0.7455-0.7445	0.7455-0.7445
Contact Button Radius	3/8	3/8
Rocker Arm Running Clearance		
Standard	0.0035-0.0015	0.0035-0.0015
Maximum	0.005	0.005

ROCKER ARM SHAFT

	<u>GASOLINE</u>	<u>DIESEL</u>
Shaft Diameter		
Standard	0.743-0.742	0.743-0.742
Minimum	0.740	0.740
Restrictor Plug Location From Rear Of Shaft	12-3/4	12-3/4

SLEEVES

	<u>GASOLINE</u>	<u>DIESEL</u>
Type	Wet	Wet
Material	Cast Iron	Cast iron
Brinell Hardness	212-293	212-293
Bore		
Standard	3.6250-3.6265	3.6250-3.6265
Maximum (Measured At Top Of Ring Travel)	3.6275	3.6275
Out-Of-Round		
Maximum	0.002	0.002
Taper		
Maximum	0.004	0.004
Overall Length	7-1/16	7-1/16
Projection Above Crankcase (For Gasket Crush)	0.001-0.004	0.001-0.004
Crankcase Sleeve Lower Bore	4.031-4.032	4.031-4.032
Crankcase Sleeve Upper Bore	4.312-4.313	4.312-4.313
Sleeve Counterbore Depth In Crankcase	0.250-0.248	0.250-0.248
Sleeve Flange Thickness	0.251-0.252	0.251-0.252
Sleeve Outer Diameter		
Upper Flange	4.3100-4.3085	4.3100-4.3085
Packing Ring Lands	4.0290-4.0275	0.0290-4.0275
Sleeve Upper Flange Clearance In Crankcase	0.002-0.0045	0.002-0.0045

TIMING GEARS

	<u>GASOLINE</u>	<u>DIESEL</u>
Type	Helical gears	
Material	Steel forging	
Back Lash		
Idle Gear To Crankshaft Gear		0.004-0.006
Maximum For Wear		0.007
Governor Gear To Camshaft Gear	0.004-0.006	
Maximum For Wear	0.007	
Camshaft Gear To Crankshaft Gear	0.004-0.006	0.004-0.006
Maximum For Wear	0.007	0.007

VALVES

	<u>GASOLINE</u>	<u>DIESEL</u>
Material		
Intake	Silcrome XB	Silcrome XB
Exhaust	21-4N	Silcrome XB
Valve Arrangement (Front To Rear)	E-I-I-E-E-I-I-I-E-E-I-I-E	E-I-I-E-E-I-I-E-E-I-I-E
Valve Length Overall		
Intake	5-3/64	5-61/64
Exhaust	5-5/64	5
Valve Stem Runout - Maximum	0.002	0.002
Valve Stem Diameter		
Intake		
Standard	0.373-0.372	0.373-0.372
Minimum	0.369	0.369
Exhaust		
Standard	0.372-0.371	0.372-0.371
Minimum	0.368	0.368
Valve Running Clearance In Guides		
Intake		
Standard	0.003-0.001	0.003-0.001
Maximum	0.005	0.005
Exhaust		
Standard	0.004-0.002	0.004-0.002
Maximum	0.007	0.007
Valve Face Angle	44-1/2°	44-1/2°
Valve Head Diameter		
Intake	1.390-1.397	1.244-1.237
Exhaust	1.251-1.258	1.120-1.110
Valve Timing		
Intake Opens	8° BTDC	8° BTDC
Intake Closes	30° ABDC	30° ABDC
Exhaust Opens	40° BBDC	40° BBDC
Exhaust Closes	10° ATDC	10° ATDC
Valve Lift		
Intake	0.3125	0.3125
Exhaust	0.281	0.281
Valve Port Diameter	Refer to Cylinder Head Specifications	
Maximum Valve Face Runout	0.002	0.002
Maximum Valve Seat Runout	0.002	0.002
Valve Margin - Minimum	1/64	1/64
Valve Clearance (Cold)		
Intake	0.009-0.011	0.009-0.011
Exhaust	0.015-0.017	0.019-0.021

VALVE GUIDES

	<u>GASOLINE</u>	<u>DIESEL</u>
Type	Straight	
Material	Cast iron alloy, Brinell hardness 220 Minimum	
Valve Guide Bore		
Standard	0.374-0.375	0.374-0.375
Maximum		
Intake	0.377	0.377
Exhaust	0.378	0.378

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VALVE GUIDES (Continued)

	<u>GASOLINE</u>	<u>DIESEL</u>
Valve Guide Length		
Intake	2-13/32	3-3/16
Exhaust	2-1/2	2-5/16
Valve Guide Height Above Machined Top Surface Of Cylinder Head		
Intake	27/32	15/16
Exhaust	15/16	1-3/16

VALVE SPRINGS

	<u>GASOLINE</u>	<u>DIESEL</u>
Material	Spring steel	
Part Number		
Intake	106 573-A	159 026-A
Exhaust	159 026-A	106 573-A
Free Length		
106 573-A	2.562	2.562
159 026-A	2.440	2.440
Compressed Length		
106 573-A	1.906 at 59 lbs ± 4 lbs	
	1.506 at 95 lbs ± 4 lbs	
159 026-A	1.750 at 57 lbs ± 4 lbs	
	1.350 at 90 lbs ± 4 lbs	

VALVE LIFTERS

	<u>GASOLINE</u>	<u>DIESEL</u>
Type	Mushroom	Mushroom
Diameter		
Standard	0.6245-0.6240	0.6245-0.6240
Minimum	0.619	0.619
Maximum Allowable Out-Of-Round	0.0003	0.0003
Lifter Guide Bore		
Standard	0.625-0.626	0.625-0.626
Maximum	0.631	0.631
Running Clearance	0.0005-0.002	0.0005-0.002

TORQUE WRENCH VALUES IN FOOT POUNDS (OILED)

	<u>GASOLINE</u>	<u>DIESEL</u>
Cylinder Head Cap Screws	112-117	112-117
Cylinder Head Oil Cap Screw	96-100	96-100
Main Bearing Cap Screws	87-92	87-92
Connecting Rod Nuts	46-50	46-50
Manifold Nuts	25-27	25-27
Rocker Arm Shaft Bracket Nuts	25-27	25-27
Flywheel Cap Screws	67-69	
Spark Plugs	34	
Injector Flange Nuts		12-17
Nozzle Cap Nuts		50-55
Energy Cell Caps		96-100