

SPECIFICATIONS

	<u>TO-30 (Z-129)</u>	<u>TO-20 & TE-20 (Z-120)</u>
VALVES		
Intake Valves		
Head Dia.	1.273-1.283 in.	1.010-1.020 in.
Face Angle	30 deg.	45 deg.
Margin	_____ 3/64 in. _____	
Stem Dia.	_____ .3141-.3149 in. _____	
Overall Length	4 in.	3 31/32 in.
Head Marking	_____ "IN" _____	
Stem Marking	Z-205	Z-222
Intake Valve Seats		
Seat Angle	30 deg.	45 deg.
Type.	_____ Ground in head _____	
Exhaust Valves		
Head Dia.	_____ 1.135-1.145 in. _____	
Face Angle	44 deg.	45 deg.
Margin	_____ 3/64 in. _____	
Stem Dia.	_____ .3124-.3132 in. _____	
Overall Length	_____ 4 1/16 in. _____	
Head Marking	_____ "EX" _____	
Stem Marking	Z-208	Z-203
Exhaust Valve Seats		
Seat Angle	_____ 45 deg. _____	
Type.	_____ Insert _____	
Cutter Dia.	1.261 in.	1.136 in.
Replacement Insert Dia.	1.2635-1.3645 in.	1.1385-1.1395 in.
Allowable Valve Wear		
Min. Stem Dia.	_____ .001 in. less than new _____	
Max. Face Runout	_____ .002 total indicator reading _____	
Min. Margin Thickness	_____ 1/32 in. _____	
VALVE GUIDES		
Max. Allowable Internal Dia.	_____ .3177 in. _____	
VALVE SPRINGS		
Free Length	_____ 2 1/16 in. _____	
47-53 Lb. Load Length	_____ 1 45/64 in. _____	
96-104 Lb. Load Length	_____ 1 27/64 in. _____	
ROCKER ARM SHAFT		
Dia. of Shaft	_____ .622-.623 in. _____	
Min. Allowable Dia.	_____ .621 in. _____	
ROCKER ARM BUSHING		
Dia. of Bushing	_____ .624-.625 in. _____	
Max. Allowable Dia.	_____ .626 in. _____	

CYLINDER SLEEVES

	TO-30 (Z-129)	TO-20 & TE-20 (Z-120)
Max. Out-Of-Round001 in.	
Taper0002-.0015 in.	
Original Dia.	3.250-3.252 in.	3.1875-3.1895 in.
Max. Allowable Dia.	3.262 in.	3.199 in.

PISTONS

Piston Taper	Bottom dia. .0012 in. greater than top dia.
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Piston Rings

Side Clearance of Ring in Groove006 max.
End Clearance007 min.

Piston Pin Dia.8591-.8593 in. also available in .003 in. oversize
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CRANKSHAFT

Main Bearing Journal Dia.	2.250-2.249 in.
Connecting Rod Journal Dia.	1.9375-1.9365 in.
End Play003-.007 in.
Bearing Oil Clearance0015-.0025 in.

CAMSHAFT

End Play003-.007 in.
Timing Gear Backlash.002 in.

Camshaft Journal

Front Journal Original Dia.	1.8090-1.8095 in.
Front Journal Min. Dia.	1.8070 in.
Center Journal Original Dia.	1.7460-1.7465 in.
Center Journal Min. Dia.	1.7440 in.
Rear Journal Original Dia.	1.6835-1.6840 in.
Rear Journal Min. Dia.	1.6815 in.

Camshaft Bearing

Front Bearing	1.8115-1.8125 in.
Center Bearing.	1.7490-1.7500 in.
Rear Bearing.	1.6865-1.6875 in.

CLUTCH SPECIFICATIONS (See Fig. 138)

TORQUE SPECIFICATIONS

Cylinder Head Nuts	70-75 lb. ft.
Connecting Rod Studs.	40-45 lb. ft.
Main Bearing Cap Screws	85-95 lb. ft.
Camshaft Nut	60-80 lb. ft.
Flywheel Nut	50-55 lb. ft.
Cranking Nut	130-140 lb. ft.
Oil Filter Base Cap Screws	30-35 lb. ft.
Spark Plugs	32 lb. ft.
Clutch Cover Cap Screw.	10-12 lb. ft.

SPECIFICATIONS

	TO-30 (Z-129)	TO-20 & TE-20 (Z-120)
ENGINE OIL		
Weight	_____ SAE 30 above 50 deg. F. _____	_____ SAE 20W below 50 deg. F. _____
	_____ SAE 20W below 50 deg. F. _____	_____ SAE 10W below 10 deg. F. _____
	_____ SAE 10W below 10 deg. F. _____	
Crankcase Capacity	5 qt.	6 qt.
Oil Pressure (Operating Temp.)		
Idle (400 RPM)	_____ 15 PSI min. _____	
Full Throttle (2200 RPM)	_____ 20-30 PSI _____	
OIL PUMP		
Pump Gear Backlash	_____ .007 in. max. _____	
Pump Gear Side Clearance	_____ .003-.004 in. _____	
Drive Gear Backlash	_____ .005-.010 in. _____	
RELIEF VALVE SPRING		
Free Length	_____ 2 in. _____	
Test Length	_____ 1 3/8 in. @ 8 1/4 lbs. load _____	
FILTER		
Element Part No.	TO-18662-A	TO-18662-2
Base Cap Screw Torque	_____ 30-35 lb. ft. _____	
Cover Cap Screw Torque	_____ 85-95 lb. ft. _____	