

GENERAL SPECIFICATIONS

MODEL DESIGNATION - - - - - UJ UJS UJR UJSR UJVD
 ENGINE TYPE - - - - - Vertical, 4 Cycle, L-Head
 NUMBER OF CYLINDERS - - - - - Four
 BORE AND STROKE - - - - - 2-9/16" x 3-1/8"
 TOTAL PISTON DISPLACEMENT - 64.46 CUBIC INCHES
 COMPRESSION RATIO - - - - - 6.3:1
 ENGINE ROTATION - - - - - Counter-Clockwise (From Flywheel
 End)
 REDUCTION GEAR RATIO - - - - - 2.04:1
 V-DRIVE REDUCTION RATIOS - - 1:1, 1.29:1, 1.67:1, 2:1
 MAXIMUM OPERATING ANGLE - - Appx. 12° to 15° Maximum

BRAKE HORSEPOWER: @

	RPM	600	1000	1500	2000	2500	3000	3500
UJS-UJSR	BHP	4	7.1	11	15	18	--	--
UJ-UJR-UJVD	BHP	5	7.3	11.9	16.2	20	25	30

FUEL - - - - - Regular Grade Gasoline 92-94
 Octane
 LUBRICATION OIL - - - - - Engine - SAE 30
 V-Drive 80-90-140 Gear Lube --
 90 Hypoid Lube -- SAE 10-W-30
 WATER PUMP GREASE - - - - - Any Good Grade Water Pump Grease
SUGGESTED OIL LEVELS - Angle of Installation Amount of Oil at Full Amount of Oil at Low
MODELS UJ - UJVD - - 0° Angle 5-3/4 Quarts 5 Quarts
 5° Angle 4-3/4 Quarts 4 Quarts
 10° Angle 3-1/2 Quarts 2-3/4 Quarts
 15° Angle 2-3/4 Quarts 2-1/4 Quarts
MODEL UJR - - 0° Angle 6 Quarts 5-1/2 Quarts
 5° Angle 5-1/4 Quarts 3-3/4 Quarts
 10° Angle 4 Quarts 2-3/4 Quarts
 15° Angle 3-1/4 Quarts 2-1/2 Quarts

ADJUSTMENT DATA

IGNITION:

SPARK PLUG - - - - - Champion J-8 14M/M
 Gap Clearance .035
 IGNITION TIMING - - - - - Breaker Points Just Starting to
 Open - TDC (Top Dead Center)
 DISTRIBUTOR POINT GAP
 CLEARANCE - - - - - Prestolite - .018 to .020
 Delco - .025
 DWELL ANGLE - - - - - Prestolite - 51°
 Delco - 31° to 34°
 MAGNETO POINT GAP
 CLEARANCE - - - - - .014 to .018

→ .05 - .055 mm

ADJUSTMENT DATA -Continued

VALVES:

FIRING ORDER - - - - -	No. 1 on Flywheel End 1-2-4-3
VALVE SEQUENCE - - - - -	Exh. -Int. -Int. -Exh. -Exh. -Int. - Int. -Exh.
INLET VALVE OPENS - - - - -	5° before TDC
CLOSES - - - - -	50° after LDC
EXHAUST VALVE OPENS - - - - -	45° before LDC
CLOSES - - - - -	10° after TDC
VALVE SEAT ANGLE - - - - -	45°
VALVE SEAT WIDTH - - - - -	1/32"
VALVE STEM SIZE - - - - -	.3120 to .3115 (Tolerance)
VALVE STEM CLEARANCE - - - - -	.002 to .003
VALVE GUIDE CLEARANCE-	
REAM TO - - - - -	.3145 to .3150
VALVE TAPPET CLEARANCE-	
Intake - - - - -	.008-Hot; .010 - Cold
Exhaust - - - - -	.010-Hot; .012 - Cold
SUGGESTED VALVE LIFTER	
TOOL - - - - -	SNAP-ON TOOL CF-19
MAIN BEARING JOURNAL - - - - -	1.9880 +.0005 -.0000
CONNECTING ROD JOURNAL - - - - -	1.5625 +.0000 -.0005
MAIN BEARING CLEARANCE -	
On Crkshft - - - - -	.001 to .0025
CONN. ROD BEARING CLEARANCE	.001 to .0025
CRANKSHAFT END PLAY - - - - -	.002 to .003 (At Front Bearing Only)
CONNECTING ROD END PLAY - - - - -	.004 to .008
	(Install w/No. on Rod Toward Camshaft)
CAMSHAFT BEARING JOURNAL-	1.3745 ³ +.0005 -.0000
CAMSHAFT BEARING CLEARANCE	.0015 to .0025 (REAMED AFTER INSTALLATION IN BLOCK)
CYLINDER BORE - - - - -	2.562 to 2.563 Diameter (HONE FINISH)
	(Install Pistons w/Arrow Pointing to Reverse Gear End. Slot will be on left side - facing rear. Install Piston Rings - Compression - with Groove Side Up (Top of Piston)
PISTON RING SIDE CLEARANCE (Width)	
Compression Ring Top - - - - -	.0015 to .003
Compression Ring Center - - - - -	.001 to .0025
Oil Ring - - - - -	.001 to .0025
PISTON RING GAP CLEARANCE-	.007 to .015
PISTON SKIRT CLEARANCE - - - - -	.0015 Feeler to 5 Lbs Pull
PISTON PIN SIZE - - - - -	.6880" - Standard

ADJUSTMENT DATA -Continued

PISTON PIN CLEARANCE

IN PISTON - - - - -	.001 - .002
OIL PUMP DRIVE END PLAY - -	.001 to .003
OIL PUMP GEAR BACK LASH - -	.003 to .005
CAMSHAFT GEAR BACK LASH -	.002 to .004
IDLER GEAR BACK LASH - - - -	.002 to .004
ACCESSORY GEAR BACK LASH -	.002 to .004
ALTERNATOR BELT TENSION -	3/8" Maximum depression between centers.

TORQUE WRENCH TENSION

CYLINDER HEAD STUD NUTS - -	35 Ft. Lbs - (Engine Hot)
CONNECTING ROD BOLT NUTS -	25 Ft. Lbs
FLYWHEEL STUD NUTS - - - - -	35 Ft. Lbs
MAIN BEARING NUTS - Front & Rear - -	60 Ft. Lbs
MANIFOLD STUD NUTS - - - -	35 Ft. Lbs - (Engine Hot)
SPARK PLUG - - - - -	30 Ft. Lbs -

GENERAL INFORMATION

EXHAUST FLANGE - - - - -	1 - 1/4" NPT (National Pipe Thread Size)
WATER INLET - - - - -	3/8" NPT
WATER OUTLET - - - - -	3/8" NPT
FUEL PUMP CONNECTION - - -	1/8" NPT
FUEL LINE - Copper Tubing - -	5/16" OD

SIGNIFICANT ENGINE CHARACTERISTICS

Up to Serial No. 79475	All parts interchangeable - -Dole Thermostat System (On Manifold) -Prestolite Ignition
Serial No. 79475 thru 170508	New Style - Not interchangeable w/above - -Holley Thermostat System (Cyl. Head) -Delco Remy Ignition System
Serial 170509 and up	-Bendix 288482 Carburetor System
Serial 170509	-First Motorola Alternator (Interchange- able)
Serial 171514	-First Engine less Valve Chamber Oil line
Serial 174340	-First Engine with Oberdorfer Water Pump
Serial 174802	-First Engine with New Style Valves
Serial 175503	-First Engine with New Style Block - (Front Oil Fill)
Serial 176500	-First Engine with Guide Tolerances .3150