

Overhaul Manual

The following information was gleaned from the Continental Motors Overhaul Manual. Have tried to show just the info that is dealing with the N-62 since that was what Earthmaster used. It is called a Spec. 15 engine. The AC G and the Massey Harris Pony used the N-62 also but with a different Spec. number.

MODEL	N-62
No. of cylinders	4
Bore and Stroke	2 $\frac{3}{8}$ x 3 $\frac{1}{2}$
Displacement Cu. In.	62
Compression Ratio	6.46
Max. Oil Pressure**	20-30
Min. Oil Pressure (Idling)	7
Firing Order	1-3-4-2
Main Brg. Frt.	2 x 1 $\frac{1}{32}$
Main Brg. Center	
Main Brg. Rear	2 x 1 $\frac{1}{32}$
Conn. Rod Brg.	
Dia. and Length	1 $\frac{1}{2}$ x $\frac{3}{4}$
Oil Capacity	
Crankcase	3 $\frac{1}{2}$
Filter	$\frac{1}{2}$
Total	4
Valve Clearance	
Intake	.012
Exhaust	.012
Water Capacity	in quarts —
Engine	2
Engine and Radiator	11
Weight (Bare Engine)	210

LIMITS AND CLEARANCE DATA

Engine Model	N-62
PISTONS	
Cylinder Dia.	2.377 / 2.375
*Wear Limits—Cyl. Bore	.008
Piston Pin Hole Dia.	.5436 / .5434
Ring Groove Width—#1	.096 / .095
*Max. Wear Limit Width	.098
Ring Groove Width #2	.096 / .095
*Max. Wear #3	.1885 / .1875
Limit Width #2	.098
#3	.1905
Ring Groove Width #4	None
*Max. Wear Limit Width	—
Piston Fit-Feeler Gauge	.002
Lbs. Pull	5-10 #

PISTON RINGS

Ring Width—#1	.0935 / .0925
*Wear Limits—Min. Width	.0905
Ring Width—#2	.0935 / .0925
#3	.1865 / .1860
*Wear Limits—	
Min. Width #2	.0905
#3	.1840
Ring Width—#4	None
Wear Limits—Min. Width	—
Ring Width—#5	None
Wear Limits—Min. Width	—
Ring Gap Clear.—#1	.017 / .007
Ring Gap Clear.—#2 & 3	.017 / .007
Ring Gap Clear.—#4	None
Ring Gap Clear.—#5	None
Ring Side Clear.—#1	.0035 / .0015
Ring Side Clear.—#2	.0035 / .0015
#3	.0025 / .001
Ring Side Clear.—#4	None

VALVE GUIDE

VALVE GUIDE	INTAKE AND EXHAUST
Length	1 $\frac{21}{32}$
Outside Dia.	.5645 / .5635
Stem Hole Dia.	.3169 / .3159
*Wear Limits—Max. Dia.	.3184
Distance, Cyl. Block Contact Face to Guide	2 $\frac{5}{32}$

VALVES, INTAKE

Stem Dia.	.3149 / .3141
*Wear Limits, Min. Dia.	.3121
Seat Angle	30°
Stem Clearance Limits	.001 / .0006
*Wear Limits—Max. Cl.	.003
Desired Stem Clear.	.0008

VALVES, EXHAUST

Stem Dia.	.3132 / .3124
*Wear Limits—Min. Dia.	.3104
Seat Angle	45°
Stem Clearance—Limits	.0047 / .0043
*Wear Limits, Max. Cl.	.0063
Desired Stem Cl.	.0035

VALVE SPRINGS

Outside Dia.	$\frac{7}{8}$
Length—Valve closed	1 $\frac{3}{8}$
Load—Valve closed	18-22 #
*Wear Limits—Min. Wgt.	16 #
Length—Valve open	1 $\frac{1}{8}$
Load—Valve open	32-38 #
*Wear Limits—Min. Wgt.	29 #

CAMSHAFT BORE IN BLOCK — FINISH REAMED

Model	Front	Front Intern.	Center	Rear Intern.	Rear
N56	1.749	None	None	None	1.249
	1.748				1.248
N62	1.750	None	None	None	1.250
	1.749				1.249

Engine Model

CAMSHAFT

Brg. Journal Dia. #1	1.7465 / 1.7455
#2	1.7465 / 1.7455
#3	1.2465 / 1.2455
#4	None
*Wear Limits—Min. Dia.	
Bushing—Inside Dia. #1	1.750 / 1.749
#2	1.750 / 1.749
#3	1.250 / 1.249
#4	(No Bushings)
Bushing—Clearance Limits	.0045 / .0025
End Play	.007 / .003

CONNECTING RODS

Bush. Hole Dia.	.6067 / .6057
Brg. Hole Dia.	1.6240 / 1.6245
Brg. Thickness	.06175 / .06150
*Wear Limits—Min. Thk.	.0610
Dia.—Crank Pin	1.500-1.499
*Wear Limits—Min. Dia.	1.498
Clearance Limits	.0005 / .0025
Desired Clearance	.0015
*Wear Limits—Max. Cl.	.0035
Side Play	.010 / .006
Desired Side Play	.006

MAIN BEARINGS

Dia. of Brg. Bore in Block	2.1710 / 2.1703
Brg. Thickness	.08475 / .08450
*Wear Limits—Min. Thk.	.0840
Dia. of Main Brg. Jr.	2.000 / 1.999
*Wear Limits—Min. Dia.	1.998
Clearance Limits	.003 / .0008
Desired Clearance	.0015
C/S End Play.	.003 / .008

PISTON PIN

Length	1.925 / 1.920
Diameter	.5435 / .5433
*Wear Limits—Min. Dia.	.5430
Desired Fit	Light Push
Bush. Hole Dia.—Fin.	.5438 / .5436
*Wear Limits—Max. Dia.	.5448
Pin Cl. in Bushing	.0005 / .0001
Desired Pin Fit	.0003

REASSEMBLING ENGINE

In the foregoing, we have outlined procedures for checking, repairing or replacing the many wearing parts in the engine.

In most cases, the instructions have covered the reassembly of parts or subassemblies made up of several parts.

When reassembling pistons and connecting rods, use a good ring compressor and oil the bores thoroughly. A hammer handle may be used to bump the pistons out of the ring compressor into the cylinder bore.

Once more, we call attention to care demanded to prevent connecting rods damaging the cylinder bore finish and at the same time as they are assembled over the crank pin, locate them carefully in order to protect the bearing surfaces.

Always lubricate the bearings with clean engine oil when assembling, and tighten them to the torque specified. Use lockwires, cotter pins or lock-washers as required to prevent nuts and screws from loosening.

Clean cylinder head and block surfaces thoroughly before installing gasket. Tighten all cylinder heads or cap screws evenly and torque in following sequence to the recommended torque.

Before assembling the oil pan with new gaskets make certain that gasket surfaces are flat and clean. Tighten screws in accordance with limits prescribed in torque chart — to avoid looseness or overstraining.

Torque Specifications for Cylinder Head Tightening Sequence in Foot Pounds

Size - Diameter		1/2"	9/16"	5/8"
3/8"	7/16"			
Cylinder Heads		100-110	130-140	145-155
35-40	70-75			

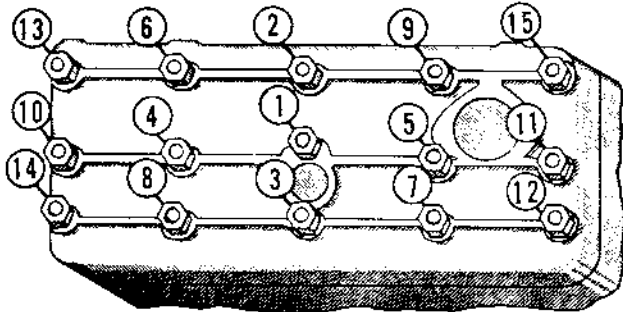


Figure 177 — Cylinder Head Tightening Sequence — Four Cylinder

S.A.E. OIL BODY GRADES

The oil body grades available from the lightest (SAE 5W) to the heaviest (SAE 40) are:

5W	10W	20W	20	30	40
← 5W - 20 →					
	← 10W - 30 →				

MULTI-GRADE OILS — Such as SAE 5W-20 and SAE 10W-30 have the starting grade characteristics of the lighter oil and after it warms up it has the running characteristic of the heavier grade.

The following SAE grades are general recommendations for Continental L-Head engines during changing seasonal atmospheric temperatures:

ENGINE SERIES	SEVERE WINTER BELOW 0°F.	NORMAL WINTER 0° - 32°F.	SPRING-FALL 32° - 75°F.	SUMMER ABOVE 75°F.
N	SAE 5W-20	10W	SAE 20W	SAE 30

Figure 169 — Checking Oil Pump End Clearance

Pressure relief is located externally on the right-hand side, near the oil pan flange at the center. (on the N series, it is located in the rear end plate). Pressure is controlled by a plunger and spring, the latter specifically for a certain range. The only adjustment variation is either to change springs or assemble or remove washers from behind the present spring. Up to four washers are permissible.

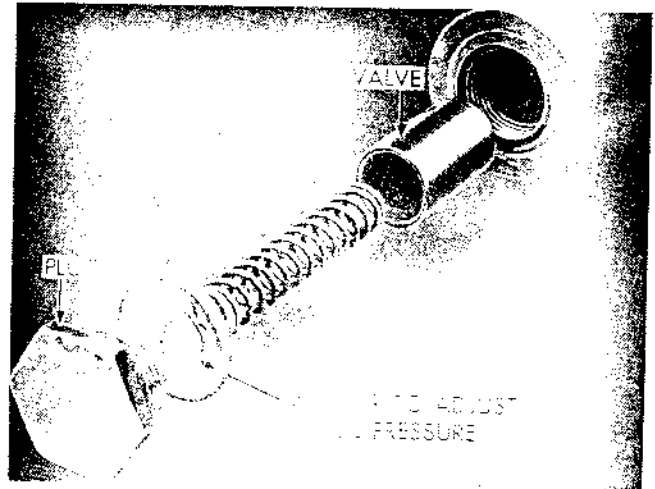


Figure 170 — Oil Pressure Relief Valve

If upon completion of your overhaul you find low oil pressure your relief valve spring may be weak. You can add shims to the spring (washer shown). Seems I added 2 1/4" lock washers.

SECTION X TORQUE SPECIFICATIONS

Continental L-Head engines have many studs, bolts, and cap screws of special material and sizes and it is very important that special care be exercised to replace all studs and bolts in their respective locations during assembly of engine.

The torque specifications, foot pounds, listed below, **MUST** be followed in order to have the assembled engine conform to the original specifications:

Size-Diameter	5/16"	3/8"	7/16"	1/2"	9/16"	5/8"
Cylinder Heads	.....	35-40	70-75	100-110	130-140	145-155
Main Bearing Caps	.....	35-40	70-75	85-95	110-120	140-150
Connecting Rods	20-25	40-45	55-60	90-100	110-120	.....
Flywheels	20-25	35-40	70-75	85-95	100-110	145-155
Manifolds	15-20	25-30	40-50	50-60	50-60	60-70
Gear Covers, Water Pumps, Front and Rear End Plates	15-20	25-30	50-55	80-90	.....	.....
Oil Pans	12-16	12-16	.....	.....	.....	.....
Flywheel Housings	15-20	25-30	50-55	80-90	115-125	.....

Camshaft Nut

Thread Size	3/4"	7/8"	1"	1 1/8"	1 1/4"	
C.I. Shafts	65-70#	70-80#	95-100#	125-130#	145-150#	
Forged Steel Shafts		*120-125#	*175-180#			
Elastic Stop Nut w. C.I. or Forged Steel Shaft		65-70#				

*When Cam Gear Governor is used with a steel camshaft, torque cam nut to 85-90#