

TM 5-5060

T. O. 19-75-DBC-1

WAR DEPARTMENT TECHNICAL MANUAL

MOTORIZED AIR COMPRESSOR LE ROI MODEL 105GA

TM 5-5060

WAR DEPARTMENT

WASHINGTON 25, D. C., *30 November 1942*

TM 5-5060, Maintenance Manual and Parts Catalog, Motorized Air Compressor, Model 105GA, is published for the information and guidance of all concerned.

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**LE ROI
MOTORIZED AIR COMPRESSOR
MODEL 105GA**

TECHNICAL MANUAL

Includes
Independent Pneumatic "Thor" Air Tools

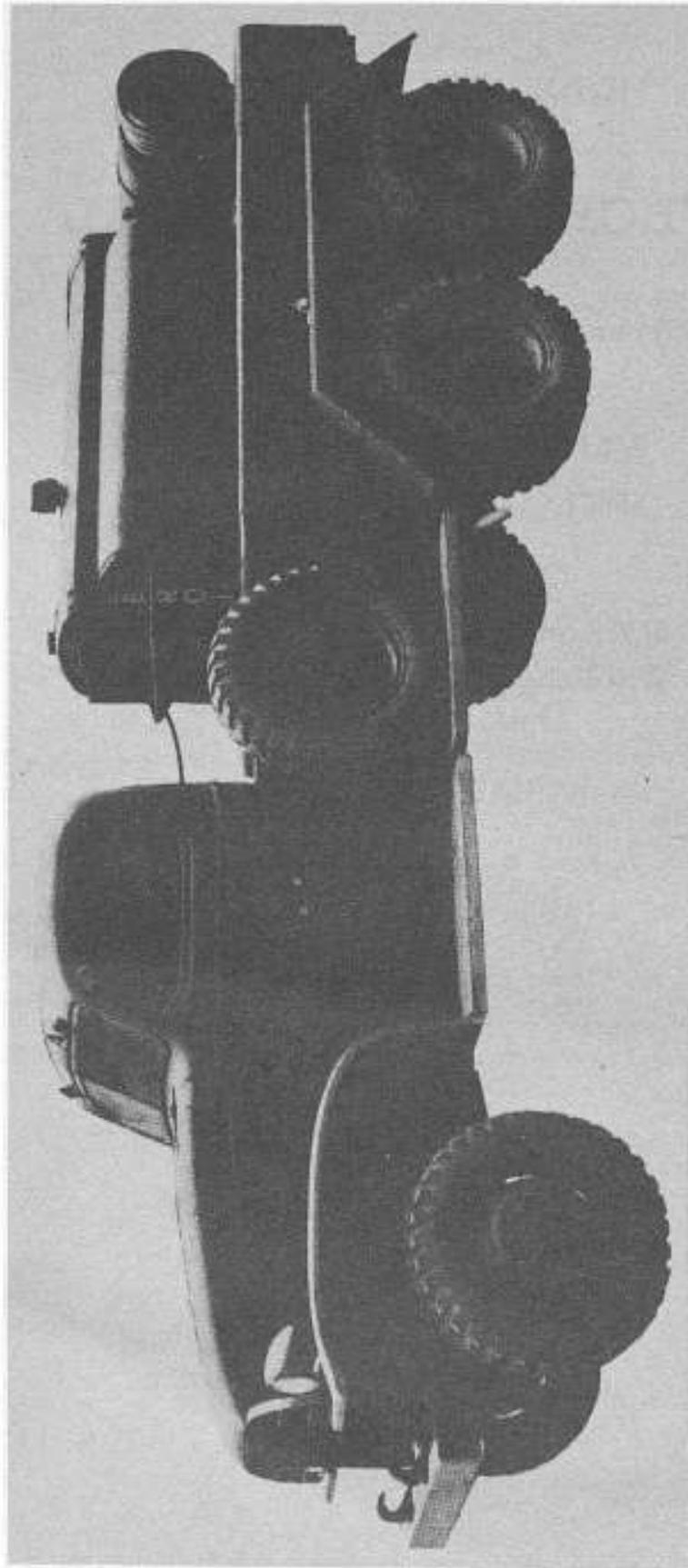
WAR DEPT. PURCHASE ORDERS
55861, 57727, C-3198, DA 1464-C

CONTRACT NUMBERS

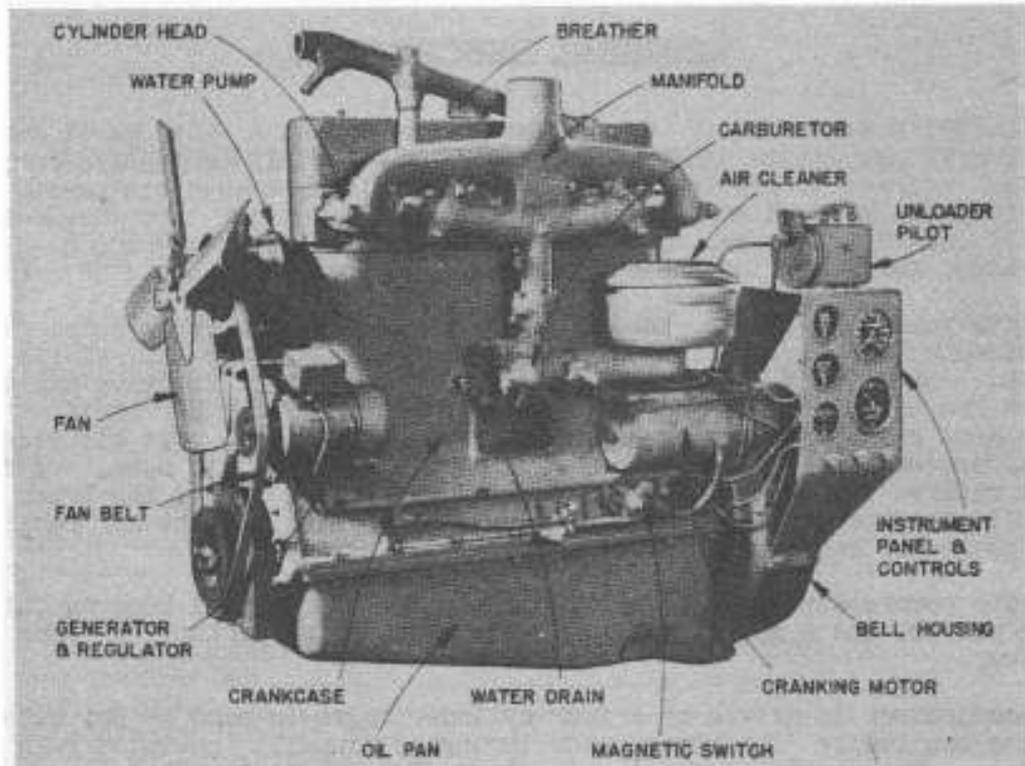
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SERIAL NUMBER DATA

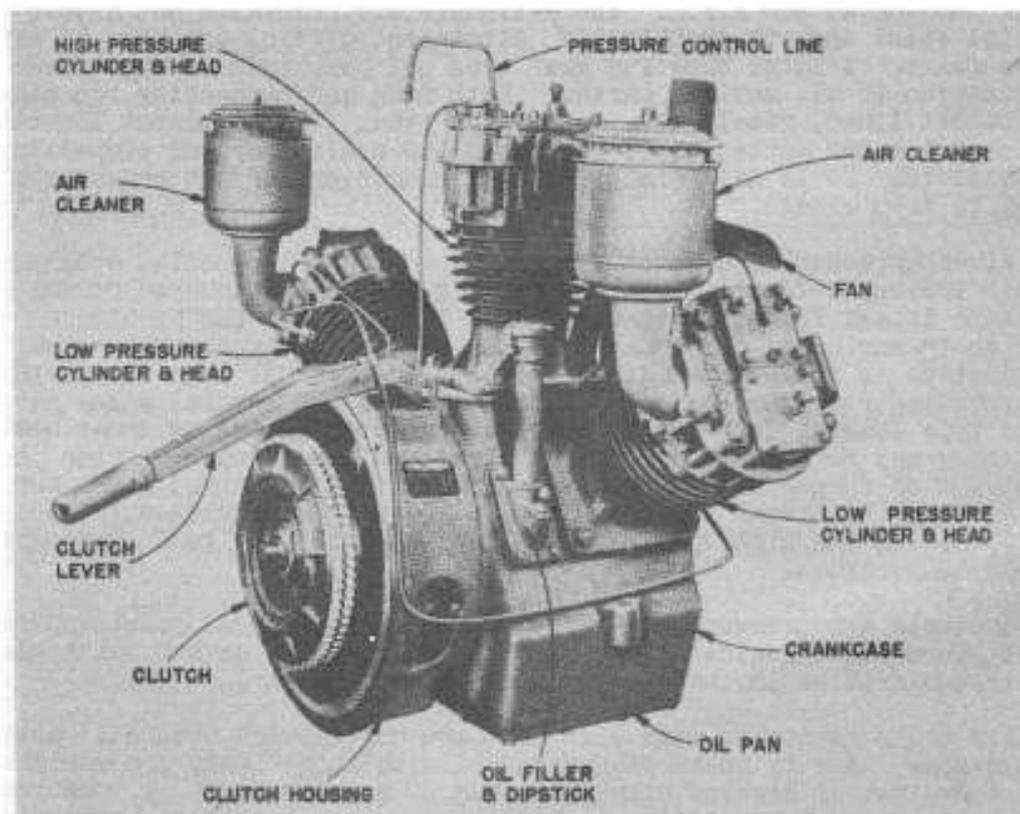
U. S. P. O.	LE ROI C. O.	ENGINE	COMPRESSOR
55861 } 55668 }	17892	{ 157000 to 158998 160200 to 160274	157001 to 158999 160201 to 160275
55727	18357	171500 to 172508	171501 to 172509
C-3198	18846	172510 to 177260	172511 to 177261
DA-1464-C	18847	177262 to 177488	177263 to 177489



Le Roi Model 105CA Motorized Air Compressor
Mounted on General Motors 2 1/2 Ton, 6 x 6 Truck



Model D318, Gasoline Engine



Model 105, 2 Stage, Air Cooled, Air Compressor

GENERAL DESCRIPTION

The Le Roi Motorized Air Compressor is mounted on a six wheel General Motor's Truck. It is equipped with easily accessible tool boxes for convenient storage of air tools, spare parts, miscellaneous equipment, etc. The tool box mounted transversely behind the truck cab provides seating facilities for three men, and is arranged with safety straps and hand-rail to reduce the danger of their being accidentally thrown off.

A fifty gallon fuel tank, located beneath the air receiver, is partially shielded by a heavy steel guard, protecting about one-half of its contents. When full, this tank provides adequate fuel to drive the truck about 150 miles and also operate the compressor for eight hours. Two live hose reels, mounted at each end of the eight cubic foot air receiver tank, are each equipped with one-hundred feet of 3/4" air hose. A fifty foot reserve length of air hose is stored in toolbox behind the truck cab. Two fixed air outlets are provided in the rear side of the air receiver, for emergency connections.

The air compressor unit is completely enclosed by a steel hood top, hinged side panels, and a splash pan, thereby affording protection from the weather.

The compressor is driven by a four cylinder valve-in-head Le Roi gasoline engine coupled to the compressor through a manually operated Twin Disc Clutch. The clutch is the "spring loaded" type which affords a maximum of plate wear before adjustment is required. The engine has a displacement of 318 cubic inches and can develop a maximum of thirty-four horse power running at 865 R.P.M. The cylinders are removable wet sleeve type. Special steel inserts practically eliminate pitting and wear of exhaust valve seats. A large capacity gear type oil pump insures full force feed lubrication to all moving parts. Both main and connecting rod bearings are babbit lined, steel back, precision type. A thermostat located in the engine water outlet hose, regulates the cooling system temperature to at least 160° F. to maintain efficient operation and to reduce the tendency to form sludge.

The air compressor is a three cylinder two stage, air-cooled model and delivers 105 cubic feet of free air per minute, at one-hundred pounds gauge pressure at sea level. Connecting rod bearings are the precision type, same as in engine, but crankshaft mains are tapered roller bearings. Lubrication is positive by means of a plunger type oil pump driven through a connecting rod from the crankshaft. Valves are special alloy circular plate type assembled in cages which are mounted in the cylinder heads so that they may be quickly and easily removed without removing the heads. They rest on forged steel seats and are retained by forged steel bumpers. The tubular, sectional type, air cooled intercooler efficiently cools the air entering the high pressure cylinder to within a few degrees of the intake temperature.

All controls are conveniently grouped on the instrument panel and sufficient gauges are provided to enable the operator to detect, at a glance, any irregularities in the operation of the compressor.

The air tools furnished with each unit are quickly and securely attached to the hose ends by means of universal couplings; they are designed to give a maximum of service with a minimum of maintenance. A combination vise is attached to a rigid, portable work bench which is conveniently stored in the transverse tool box when not in use.

SPECIFICATIONS—ENGINE AND AIR COMPRESSOR

APPROX. CAPACITIES (U. S. MEASURE)

Fuel Tank.....	50 gals.
Cooling System.....	8 gals.
Crankcase (Oil Pan) Engine.....	14 qts.
Crankcase (Oil Pan) Compressor.....	8 qts.

ENGINE

Model (Gasoline).....	D318
Cylinders.....	4
Bore.....	4-1/2"
Stroke.....	5"
Engine Speed (Governed).....	865 R.P.M.
Magneto (Fixed Spark) Clockwise Rotation American Bosch.....	MJC4C
Magneto Breaker Gap.....	.012" to .014"
Spark Plug Gap.....	.025" to .030"
Valve Clearance (Engine Hot).....	.015"
Carburetor (Zenith) Updraft.....	62A10
Firing Order.....	1-2-4-3

CLUTCH

Double Plate (Spring Loaded) Twin Disc Model SL-211.....	11-1/2"
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COMPRESSOR

Model.....	105G
Cylinders (2 low pressure - 1 high pressure).....	3
Bore (low pressure).....	5-3/4"
Bore (high pressure).....	5"
Stroke.....	5"
Stages.....	2
Capacity (cubic feet of air per minute delivered at 100 lbs. gauge pressure at sea level).....	105

GENERAL

Length Overall (Bumper to Bumper).....	254"
Width Overall (From outsides of fenders).....	90"
Height Overall (To top of muffler).....	93" *
Weight Total (Complete with all tools, fuel & oil).....	14,300#

*87" with muffler removed.

IDENTIFICATION AND INDEX TO MANUFACTURERS
OF ACCESSORIES AND EQUIPMENT USED ON LEROI
MODEL 1056A AIR COMPRESSOR

ENGINE AND COMPRESSOR

<u>PART NAME</u>	<u>LE ROI NUMBER</u>	<u>MANUFACTURER NAME AND ADDRESS</u>	<u>MODEL, TYPE OR PART NO.</u>
AIR CLEANER (ENGINE) . .	A77-145-1	AIR MAZE CORP. CLEVELAND, OHIO	37L-0BF
AIR CLEANER (COMPRESSOR)	A77-166	AIR MAZE CORP. CLEVELAND, OHIO	V31-0B
BATTERY	A117-49	GLOBE-UNION, INC. MILWAUKEE, WISCONSIN	#134 6 Volt.
CARBURETOR.	A84-546-2	ZENITH CARBURETOR DIVISION BENDIX AVIATION CORP. DETROIT, MICHIGAN	62A10
CLUTCH.	A75-279	TWIN DISC CLUTCH CO. RACINE, WISCONSIN	SL-2-11½
CRANKING MOTOR.	A107-93	DELCO-REMY DIVISION GENERAL MOTORS CORP. ANDERSON, INDIANA	700
CYLINDER HEAD BREATHER .	A77-137	AIR MAZE CORP. CLEVELAND, OHIO	ZOH
FUEL PUMP	A81-99-5	A.C. SPARK PLUG DIVISION GENERAL MOTORS CORP. FLINT, MICHIGAN	1537453
GENERATOR AND REGULATOR	A108-85	DELCO-REMY DIVISION GENERAL MOTORS CORP. ANDERSON, INDIANA	1101374
MAGNETIC SWITCH	A76-49	DELCO-REMY DIVISION GENERAL MOTORS CORP. ANDERSON, INDIANA	#1459
MAGNETO	A86-126-1	AMERICAN BOSCH CORP. SPRINGFIELD, MASS.	MJC4C-334 CW
OIL FILTER.	A43-114	FUROLATOR PRODUCTS INC. NEWARK, NEW JERSEY	N1744 Assy. N-17 Element
UNLOADER PILOT.	A76-81	PENN ELECTRIC SWITCH CO. GOSHEN, INDIANA	G-1

AIR TOOLS

CLAY DIGGER	A88-169-2	INDEPENDENT PNEUMATIC TOOL CO. CHICAGO, ILLINOIS	412
PAVING BREAKER.	A88-168-1	INDEPENDENT PNEUMATIC TOOL CO. CHICAGO, ILLINOIS	25
SINKER ROCK DRILL	A88-167	INDEPENDENT PNEUMATIC TOOL CO. CHICAGO, ILLINOIS	75
WOOD BORING MACHINE . . .	A88-170	INDEPENDENT PNEUMATIC TOOL CO. CHICAGO, ILLINOIS	62-WB

LE ROI COMPANY
MILWAUKEE, WISCONSIN

OPERATING INSTRUCTIONS

STARTING
MACHINE SHOULD BE SET APPROXIMATELY LEVEL TO INSURE EQUAL LUBRICATION TO ALL PARTS. SEE THAT THERE IS FUEL IN TANK. OPERATE FUEL PUMP LEVER BY HAND TO FILL CARBURETOR. SEE THAT ENGINE COOLING SYSTEM IS FULL OF WATER. CHECK OIL LEVEL IN ENGINE & COMPRESSOR CRANKCASES. SEE THAT COMPRESSOR CLUTCH IS DISENGAGED. PULL CHOKE OUT & CRANK ENGINE ONE REVOLUTION. PUSH CHOKE IN HALF WAY. PULL IGNITION SWITCH OUT, & CRANK ENGINE. IF ENGINE DOES NOT START IMMEDIATELY, PUSH IN CHOKE & CRANK UNTIL ENGINE FIRES.

IN EXTREME COLD WEATHER WHEN STARTING IS DIFFICULT, CRANK THE ENGINE WITH THE CHOKE ALL THE WAY OUT FOR A FEW REVOLUTIONS OR IT MAY BE NECESSARY TO REMOVE SPARK PLUGS & POUR A SMALL AMOUNT OF GASOLINE INTO EACH CYLINDER. WAIT A FEW MINUTES FOR THE GASOLINE TO EVAPORATE. PULL OUT IGNITION SWITCH & START. ALLOW ENGINE TO WARM UP A FEW MINUTES BEFORE STARTING COMPRESSOR.

STOPPING
DISENGAGE CLUTCH TO STOP COMPRESSOR. ALLOW ENGINE TO IDLE A FEW MINUTES BEFORE CLOSING IGNITION SWITCH. OPEN RECEIVER DRAIN COCK.

For the operator's convenience, the simplified instruction plate is reproduced above. For detailed instructions covering care, operation and maintenance of Le Roi Motorized Air Compressor, please refer to section entitled Data.

LE ROI COMPANY
MILWAUKEE, WISCONSIN

ENGINE OIL CAP. 3½ GALS.
USE: S. A. E. 20 IN SUMMER
S. A. E. 10 IN WINTER
CHANGE OIL EVERY 100 HRS.
KEEP OIL TO FULL MARK ON
BAYONET GAUGE.

This is a reproduction of the oiling instruction plate fixed to side of engine. For detailed lubrication instructions see section "Lubrication".

LE ROI COMPANY
MILWAUKEE, WISCONSIN

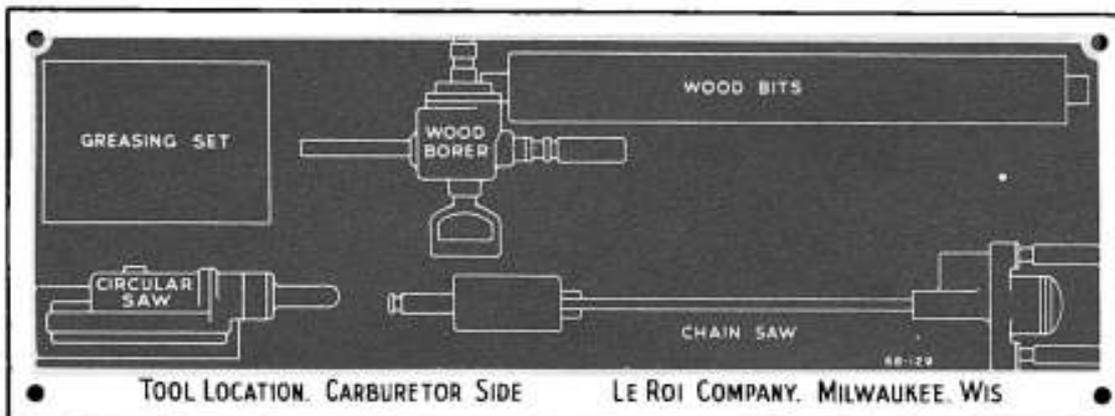
COMPRESSOR OIL CAP. 2 GALS.
USE: S. A. E. 20 IN SUMMER
S. A. E. 10 IN WINTER
CHANGE OIL EVERY 200 HRS.
KEEP OIL TO FULL MARK ON
BAYONET GAUGE.

This is a reproduction of the oiling instruction plate fixed to side of compressor. For detailed lubrication instructions see section "Lubrication".

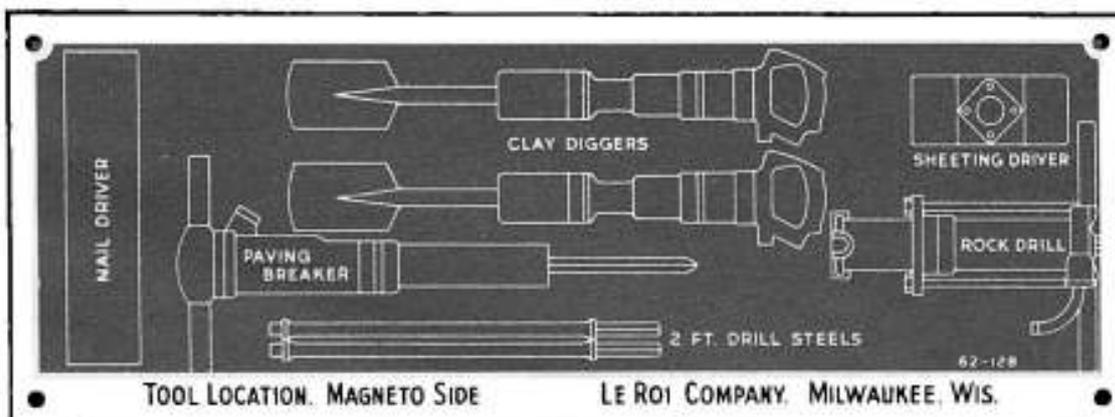
MANUFACTURED BY		LE ROI COMPANY	
MILWAUKEE, WIS.			
MODEL	<input type="text"/>	IMPORTANT	
STROKE	<input type="text"/>	WHEN ORDERING PARTS FOR UNIT TO WHICH THIS PLATE IS ATTACHED ALWAYS GIVE THIS SERIAL NUMBER	
BORE	<input type="text"/>		
BORE	<input type="text"/>		
R.P.M.	<input type="text"/>	DATE	<input type="text"/>

When ordering spare or replacement parts for this Motorized Air Compressor Unit or when corresponding with the factory regarding it, it is necessary this serial number be indicated.

THIS IS THE SERIAL NUMBER WE REQUIRE.



Above plate shows storage facilities provided for tools and equipment in Tool Box (Carburetor side).



Above plate shows storage facilities provided for tools and equipment in Tool Box (Magneto side).