

**IM-140-E**

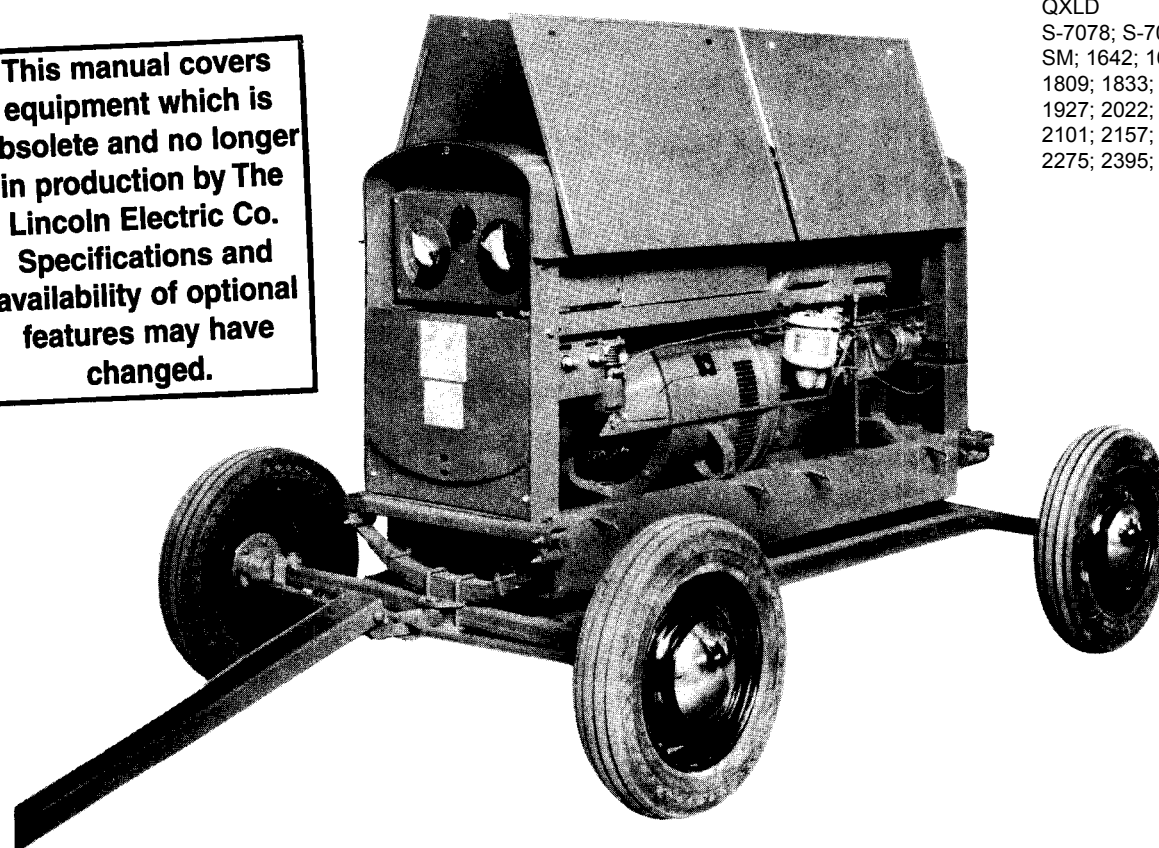
February, 1956

PARTS LIST

"Shield-Arc" SAE-300 Ampere Welder

Powered by HERCULES QXLD-5 Engine

This manual covers equipment which is obsolete and no longer in production by The Lincoln Electric Co. Specifications and availability of optional features may have changed.



IM140
Shield-Arc SAE-300 Hercules
QXLD
S-7078; S-7078-SB; S-7078-
SM; 1642; 1643; 1644; 1658;
1809; 1833; 1843; 1844; 1845;
1927; 2022; 2023; 2099; 2100;
2101; 2157; 2158; 2159; 2274;
2275; 2395; 2868; 2869; 2870

TYPES: S-7078
S-7078-SB
S-7078-SM

WELDER CODE NUMBERS 1642 AND HIGHER
(For welders with lower code numbers see IM-139)

THE LINCOLN ELECTRIC COMPANY

The World's Largest Manufacturer of Arc Welding Equipment

Cleveland 17, Ohio

HOW TO ORDER REPLACEMENT PARTS

In ordering replacement parts, refer to the pictures of the welder shown on the preceding pages to get part name and number. From the nameplate, get the serial number, code number and name and model of welding machine. Parts should be ordered from The Lincoln Electric Co., its branch offices, or the nearest Authorized Field Service Shop. (The "Lincoln Service Directory" listing these shops geographically is available on request.)

Only Hercules Engine Parts with Lincoln Electric Part Numbers (those which are preceded by the letters L, M, S or T) will be listed and sold by The Lincoln Electric Company.

Other Hercules Engine Parts are available at Lincoln Authorized Field Service Shops, Hercules Motors Corporation of Canton, Ohio, and their Authorized Distributors. (The Lincoln Electric Company would furnish such Hercules Engine Parts were it desired, but at necessarily higher prices. If desired, consult Factory for prices.)

SERVICE

The Lincoln Electric Company has Authorized Field Service Shops in all industrial centers in the United States, Canada, Cuba and Hawaii. These shops stock GENUINE Lincoln Replacement Parts and have Factory Trained men to service your welder. They also offer Preventive Service and Welder Rental to "Keep Them Welding". The Lincoln FSS Exchange Plans, extended only through the FSS, give you factory built and guaranteed STATORS, ARMATURES and other parts at material savings over rewinding.

REMANUFACTURING

"Lincoln Conditioning"

After your welder has provided many years of trouble-free service, Lincoln provides a remanufacturing service whereby a welder may be returned to the factory and completely rebuilt. The unit is completely disassembled and rebuilt so that all important electrical and mechanical parts are returned to original new-welder performance standards, new parts being used wherever necessary.

"Lincoln Conditioning", as this service is called, enables you to choose the time when you want your welders to be overhauled. It avoids breakdowns and costly waiting for replacement or repair on the job.

A new welder guarantee is issued with each remanufactured welder. This assures you that you will receive another full service life from your welder at less than half the cost of a new unit. Contact your nearest Lincoln welding engineer for full details.

GUARANTEE

The Lincoln Electric Company, the Seller warrants all new equipment except engines and accessories thereof against defects in workmanship and material for a period of one year from date of shipment, provided the equipment has been properly cared for, and operated under normal conditions. Engines and engine accessories are warranted free from defects for a period of ninety days from the date of shipment.

If the Buyer gives the Seller written notice of any defects in equipment or electrode within any period of warranty and the Seller's inspection confirms the existence of such defects, then the Seller shall correct the defect or defects at its option, either by repair or replacement F.O.B. its own factory or other place as designated by the Seller.

No expense, liability or responsibility will be assumed by the Seller for repairs made outside of the Seller's factory without written authority from the Seller.

The Seller shall not be liable for any consequential damages in case of any failure to meet the conditions of any warranty. The liability of the Seller arising out of the supplying of said equipment or electrode or its use by the Buyer, whether on warranties or otherwise, shall not in any case exceed the cost of correcting defects in the equipment or replacing defective electrode in accordance with the above guarantee. Upon the expiration of any period of warranty, all such liability shall terminate.

The foregoing guarantees and remedies are exclusive and there are no other guarantees or warranties either expressed or implied.

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I. BASE, FRAME AND CANOPY

Part Number	Qty.	Description
L-2505-1		Roof (Code 1700 and higher)
L-2505-2	1	Roof (Code 1699 and lower)
L-2467	1	Complete Base Assembly
M-7534-A	4	Door Assembly (see Note 1)
S-4828-A	8	Hood Fastener & Drive Screw Assembly (old style)
S-8929-1	8	Door Hook
T-9721-1	8	Spring
1/8"x1"	8	Cotter Pin
M-6491	1	Rear Door Assembly & Panel
M-6466	1	Rear Door Support Assembly
S-5610	1	Support—Control Box & Gas Tank
M-4566	1	Support—Gas Tank & Control Box
M-5249-1	2	"Lincoln" Decal

II. ADAPTER PLATE & COUPLING (ENGINE TO WELDER)

A. COUPLING & FAN

M-6729	1	Generator Fan
S-7803	1	Ring
M-6730	1	Disc
S-8042	2	Disc Backing Plate
T-8833-2	8	Bolt (Disc to hub)
T-9049-1	4	Bolt Locking Clip, Center
T-8833-1	8	Bolt, (Disc to flywheel)
T-9049	4	Bolt Locking Clip, Outer

B. ADAPTER PLATE

L-2655-1	1	Adapter Plate
46065-B	1	Adapter Plate Gasket
4123-A	7	Adapter Plate Screw, 1/2"-13 x 7/8"
2100-A	3	Adapter Plate Screw, 1/2"-13 x 7/8"
14856-A	1	Adapter Plate Screw, 1/2"-13 x 1"
312-A	11	Adapter Plate Lockwasher, 1/2" SAE
3543-B	1	Adapter Plate Oil Seal
2055-B	1	Starter Hole Cover
8938-A	3	Screw, Starter Hole Cover, 3/8"-16 x 5/8"
342-A	3	Lockwasher, Starter Hole Cover

III. WELDER

A. GENERATOR

I. FRAME, BRACKETS & FIELD COILS

M-6528-2	1	Generator Frame
T-8293	1	Name Plate, (Specify serial & code numbers)
T-5163	4	Main Pole Pieces
FKL-405-D	2	Shunt Coils
FKL-120-D	2	Series Coils
S-4584	4	Interpole Assembly, consisting of:
S-4584-1	4	Interpole Coil
S-4573-B	4	Interpole Pole Piece
M-5585	1	End Bracket & Exciter Frame Assembly (see Note 3)
S-5960	1	Rocker
T-3980-1	2	Exciter Pole Piece (see Note 3)
FDW-5E	2	Exciter Field Coil (see Note 3)
T-9100	1	Exciter Lead Shield, 3/4" x 9" fiber.

Note 1. When replacing old style door order kit T-9874, which includes new style door hook assemblies. (One kit required for each door)

III. WELDER

Part Number	Qt'y.	Description
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A. GENERATOR (cont'd)

2. ARMATURE & ROTATING PARTS

L-2667-13	1	Generator Armature Assembly (see Note 3) including:
M-7016	1	Shaft & Coupling Hub Assembly
FKL-37.4H	1	Coil Set
M-6979-1	1	Commutator
FDW-24.28A	1	Exciter Armature (see Note 3)
T-5345	1	Exciter Sleeve Collar
T-6225-1	1	Exciter Lock Nut
T-7090-1	1	Exciter Nut Washer
310	1	Generator Armature Bearing
T-3110	1	Bearing Nut Lock Washer
T-8621	1	Washer, Bearing Spacer
T-3107	1	Bearing Nut
204	1	Exciter Bearing (used only on Codes 2274, 2275 & 2395)
M-6738	1	Exciter Coupling (used only on Codes 2274, 2275 & 2395)

3. COVERS & DUST CAPS

S-7800	1	Inner Dust Cap
S-7799	1	Outer Dust Cap
T-3633-11	2	Gasket, Dust Cap
M-5583	1	Generator Commutator Cover
L-2594	1	Exciter End Shell

4. BRUSHES & BRUSHOLDERS

M-6964-10A	4	Generator Brushholder Assembly, including:
M-6963-6	4	Stud
M-6304-2B3	4	Plate & Retainer Assembly
T-8495	8	Spring & Clip Assembly
T-1450	4	Insulating Tube
T-4479	8	Insulating Washer
T-2414	4	Plain Washer (small Hole)
T-9020	4	Plain Washer (large Hole)
T-344	8	Generator Brush
T-6968	2	Exciter Brush (see Note 3)
S-6531-A	2	Exciter Brushholder Assembly, including: (see Note 3)
T-6887	2	Spring
T-8167	4	Insulating Tube
T-7626	8	Insulating Washer

B. CONTROLS

1. OUTPUT TERMINALS

T-8061	2	Output Stud Assembly, consisting of:
T-6931-2	2	Stud
T-2719	4	Insulating Washer
T-4122	2	Insulating Bushing
T-3960	2	Wing Nut
T-3962	1	Marker "To Work"
T-3961	1	Marker "Electrode"
T-8973	4	Rivets, Marker

2. CONTROL BOX

G-604-P	1	Complete Control Box (see Note 2)
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Note 2. For component parts see 3405 page 23. Welders with FDR 3 K.W. Oversize Exciter (Codes 2274, 2275 and 2395) use Control Box G-604.

Note 3. Welders with FDR 3 K.W. Oversize Exciter (Codes 2274, 2275 and 2395) use the following parts: L-2667-11 Generator Armature Assembly; FDR 24.16 Exciter Armature; FDR-125A Exciter Field Coil (2 req.); L-2536 Exciter Frame; S-7622 Exciter Pole Piece (2 req.); T-7554 Exciter Brush (4 req.); S-6711-B Exciter Brushholder Assembly (2 req.).

IV. ENGINE

Part Number	Qty.	Description
A. BASIC ENGINE		
1. CYLINDER BLOCK & MAIN BEARINGS		
47007-AS	1	Cylinder Block Ass'y. (Eng. Serial 766,000 & up), including:
47005-AS	1	Cylinder Block Ass'y. (" " 765,999 & lower), including:
49693-AS	1	Main Bearing Assembly, including:
42693-B	2	Front Main Bearing Shell
46694-B	2	Center Main Bearing Shell
42696-B	8	Intermediate Main Bearing Shell
46695-B	2	Rear Main Bearing Shell
40543-B	1	Front Main Bearing Cap (Not serviced separately)
46103-B	1	Center Main Bearing Cap (Not serviced separately)
40544-B	4	Intermediate Main Bearing Cap (Not serviced separately)
46104-B	1	Rear Main Bearing Cap (Not serviced separately)
40070-A	10	Cylinder Main Bearing Cap Screw— $\frac{1}{2}$ "-13 x 2"
40071-A	8	Cylinder Main Bearing Cap Screw— $\frac{7}{16}$ "-14 x 2"
4731-A	10	Cylinder Main Bearing Cap Screw Lockwasher— $\frac{1}{2}$ "
4732-A	8	Cylinder Main Bearing Cap Screw Lockwasher— $\frac{7}{16}$ "
7239-A	8	Cylinder Expansion Plug— $\frac{1}{4}$ " Diameter
1075-A	4	Cylinder Pipe Plug— $\frac{1}{2}$ " Standard
8-A	1	Cylinder Drain Cock— $\frac{1}{8}$ " Brass
60-A	1	Cylinder Oil Tube Pipe Plug— $\frac{1}{4}$ " Standard
59-A	8	Cylinder Oil Tube Pipe Plug— $\frac{1}{8}$ " Standard
4879-A	1	Cylinder Fuel Pump Hole Cover
22564-A	1	Cylinder Fuel Pump Hole Cover Gasket
1048-A	2	Cylinder Fuel Pump Hole Cover Screw— $\frac{5}{16}$ "-18 x $\frac{1}{2}$ "
615-A	2	Cylinder Fuel Pump Hole Cover Screw Lockwasher
59-A	1	Cylinder Block Oil Filter Drain Opening Plug
22270-A	1	Generator Hole Cover
	1	Oil Gauge Nipple ($\frac{1}{8}$ " Std. x $\frac{1}{4}$ ")
T-10732-2	1	Oil Gauge Elbow ($\frac{1}{8}$ " Std. x 45°)
49534-A	1	Bayonet Gauge Bushing
3201-A	1	Oil Tube Pipe Plug
46041-A	2	Camshaft Bearing, Front & Rear
46044-A	2	Camshaft Bearing, Center
46140-A	1	Idler Shaft Bearing
46047-A	6	Valve Guides, Exhaust
49212-A	6	Valve Guides, Intake
46089-A	12	Valve Tappet Guides
46028-A	4	Valve Compartment Plug
14895-A	6	Manifold Attaching Stud
4164-A	2	Cylinder Head Stud
S-8163	1	Oil Gauge Assembly

2. CRANKSHAFT & FLYWHEEL

46839-E	1	Crankshaft
22104-A	4	Crankshaft Flywheel Bolt
1656-A	4	Crankshaft Flywheel Bolt Nut— $\frac{1}{2}$ "-20
1707-A	2	Crankshaft Flywheel Dowel
665-A	2	Crankshaft Flywheel Expansion Plug
46039-B	1	Crankshaft Gear
4413-A	1	Crankshaft Gear Key
1710-A	4	Crankshaft Flywheel Bolt Cotter— $\frac{1}{8}$ " x 1"
4642-A	1	Crankshaft Dowel
24660-C	1	Flywheel
22505-C	1	Ring Gear
T-8906	4	Stud, Flywheel to Coupling

IV. ENGINE

Part Number	Qty.	Description
A. BASIC ENGINE (cont'd)		
3. CONNECTING RODS		
46066-Asy	6	Connecting Rod & Bearing Assembly, including:
46390-C	6	Connecting Rod Assembly
46191-C	6	Connecting Rod Cap Not sold separately
46697-B	12	Connecting Rod Bearing Shell
46156-A	12	Connecting Rod Cap Bolt
301-A	12	Connecting Rod Cap Bolt Nut Cotter Pin
6331-A	12	Connecting Rod Cap Bolt Nut
46111-A	6	Connecting Rod Piston Pin Clamp Screw
14842-A	6	Connecting Rod Piston Pin Clamp Screw Lockwasher
4. PISTONS		
47122-AS	6	Piston & Pin Assembly, including:
49234-C	6	Piston
46022-B	6	Piston Pin
46341-A	6	Piston Ring—Compression (2nd Groove)
49233-A	12	Piston Ring—Oil Regulator (3rd & 4th Groove)
46340-A	6	Piston Ring—Compression (Top Groove)
46111-A	6	Piston Pin Clamp Screw
14842-A	6	Piston Pin Clamp Screw Lockwasher
5. IDLER SHAFT		
46139-A	1	Idler Shaft
46138-B	1	Idler Shaft Gear
46140-A	1	Idler Shaft Bearing
22107-A	1	Idler Shaft Thrust Washer
40068-A	1	Idler Shaft Thrust Plunger
6. CAMSHAFT		
46814-D	1	Camshaft
46041-A	2	Camshaft Front and Rear Bearing
46044-A	2	Camshaft Center Bearing
46049-B	1	Camshaft Gear
4265-A	1	Camshaft Gear Key
46045-A	1	Camshaft Thrust Washer
40068-A	1	Camshaft Thrust Plunger
7. VALVES		
47020-A	6	Valve—Intake
49210-A	6	Valve—Exhaust
46958-A	12	Valve Spring
46013-A	12	Valve Spring Seat
46011-A	12	Valve Spring Seat Pin
49212-A	6	Valve Guide—Intake
38010-AS	12	Valve Tappet & Screw Assembly, including:
27317-A	12	Valve Tappet
46019-A	12	Valve Tappet Adjusting Screw
14974-A	12	Valve Tappet Adjusting Nut—3/8"-24 Nut
46089-A	12	Valve Tappet Guide
46008-B	2	Valve Cover Gasket
46007-B	1	Valve Cover
4337-A	4	Valve Cover Screw—1/2"-13 x 2 1/2"
76109-A	4	Washer—Copper Asbestos
4080-A	4	Plain Washer
49225-BS	1	Valve Cover Plate Assembly (Front), including
49226-BS	1	Valve Cover Plate
49215-A	1	Valve Cover Baffle Plate
11836-A	1	Valve Cover Boss
M-7146	1	Air Baffle
46047-A	6	Valve Guide, Exhaust

IV. ENGINE

Part Number	Qty.	Description
A. BASIC ENGINE (cont'd)		
8. CYLINDER HEAD		
48200-D	1	Cylinder Head
47230-D	1	Cylinder Head Gasket
13850-A	22	Cylinder Head Cap Screw— $\frac{1}{2}$ "-13 x $2\frac{1}{4}$ "
1075-A	1	Cylinder Head Pipe Plug— $\frac{1}{2}$ "
14264-A	1	Cylinder Head Pipe Plug— $\frac{3}{8}$ "
3443-A	2	Lifting Eye
4164-A	2	Stud
9. MANIFOLD		
46795-D	1	Manifold
46798-B	1	Manifold Gasket
14264	3	Manifold Pipe Plug
14895-A	6	Manifold Stud, $7/16$ " x $1\frac{1}{2}$ "
13123-A	6	Manifold Stud Nut
1388-A	6	Manifold Stud Washer
4640-A	1	Manifold Set Screw
S-7348	1	Exhaust Pipe Assembly, including:
S-7348-1	1	Exhaust Pipe
S-7348-2	1	Exhaust Disc
10. GEAR COVER		
46709-D	1	Gear Cover
46033-B	1	Gear Cover Gasket
4266-A	8	Gear Cover Screw
342-A	8	Gear Cover Lockwasher
14594-AS	1	Gear Cover Thrust Screw Assembly (Idler)
2048-A	2	Gear Cover Thrust Screw Nut
11087-AS	1	Gear Cover Oil Seal Assembly
11784-A	1	Gear Cover Oil Seal Sleeve
14599-A	1	Screw
14749-A	1	Copper Washer } In Water Pump Thrust Screw Hole
11284-AS	1	Gear Cover Thrust Screw Assembly (Cam)
20795-BA	1	Breather Cap Assembly (up to engine serial 771907)
11. OIL PUMP		
47150-CS	1	Oil Pump Assembly, including:
4387-A	2	Oil Pump Snap Ring
22154-A	2	Oil Pump Gear—Large
1179-A	2	Oil Pump Gear Key—Woodruff No. 2
22124-A	1	Oil Pump Shaft
45266-A	1	Oil Pump Drive Gear
2047-A	1	Oil Pump Drive Gear Washer
4809-A	1	Oil Pump Drive Gear Pin— $5/32$ " Diameter x $1-1/8$ "
22155-A	1	Oil Pump Idler Shaft
2058-A	1	Oil Pump Pressure Regulator Screw— $5/16$ "-24x $1\frac{1}{2}$ "
28-A	1	Oil Pump Pressure Regulator Screw Nut— $5/16$ "-24
1660-A	1	Oil Pump Pressure Regulator Nut
1347-A	1	Oil Pump Pressure Regulator Spring
22129-A	1	Oil Pump Pressure Regulator Piston
1385-A	1	Oil Pump Pressure Regulator Fitting
41124-C	1	Oil Pump Body
46159-A	1	Oil Pump Cover
4604-A	6	Oil Pump Cover Screw— $\frac{1}{4}$ "-20 x $\frac{1}{4}$ "
14069-A	2	Oil Pump Cover Screw— $\frac{1}{4}$ "-20 x $5/8$ "
4655-A	2	Oil Pump Cover Screw— $\frac{1}{4}$ "-20 x $1-1/8$ "
628-A	6	Oil Pump Cover Lockwasher
14972-A	1	Oil Pump Felt Washer
22119-A	1	Oil Pump Attaching Gasket
1864-A	3	Oil Pump Screw— $3/8$ "-16 x 1"
342-A	3	Oil Pump Lockwasher— $3/8$ " SAE

IV. ENGINE

Part Number	Qt'y.	Description
A. BASIC ENGINE (cont'd)		
12. OIL PAN		
49507-D	1	Oil Pan
46083-B	2	Oil Pan Gasket
1864-A	18	Oil Pan Attaching Screw—3/8"-16 x 7/8"
14855-A	2	Oil Pan Attaching Screw—3/8"-16 x 15/16" (Front)
342-A	20	Oil Pan Attaching Screw Lockwasher—3/8" SAE
49533-AS	1	Oil Pan Bayonet Gauge Assembly
565-A	1	Oil Pan Pipe Plug (Drain)
46396-BS	1	Oil Pan Baffle Plate Assembly
1536-A	4	Oil Pan Baffle Plate Attaching Screw
628-A	4	Oil Pan Baffle Plate Attaching Screw Lockwasher
13374-A	1	Oil Breather Pipe Nipple
4220-A	1	Oil Breather Pipe Elbow
43361-BS	1	Oil Breather Assembly
47679-BS	1	Oil Filler Pipe Assembly
40713-A	1	Oil Filler Pipe Attaching Gasket
13148-A	2	Oil Filler Pipe Attaching Stud
342-A	2	Oil Filler Pipe Attaching Stud Lockwasher
752-A	2	Oil Filler Pipe Attaching Stud Nut
49877-AS	1	Oil Filler Cap and Neck Assembly (prior to eng. serial 771907)
6327-BS	1	Oil Filler Breather Assembly (eng. serial 771907 & higher)

13. WATER PUMP

47177-DS	1	Water Pump Assembly, including:
47187-C	1	Water Pump Cover
43257-A	1	Water Pump Cover Bushing
46803-C	1	Water Pump Body
23114-A	1	Water Pump Body Bushing
4661-A	1	Water Pump Shaft Cork Washer
23116-A	1	Water Pump Oil Retainer
22175	1	Water Pump Packing Bushing
46800-BS	1	Water Pump Shaft
40198-A	1	Water Pump Distributor Driving Gear
1179-A	1	Water Pump Distributor Driving Gear Key
22177-A	1	Water Pump Packing Nut L.H.
21265-A	1	Water Pump Packing Gland
22166-A	1	Water Pump Packing, Rear
8126-A	1	Water Pump Thrust Washer
22165-1	1	Water Pump Impeller
513-A	1	Water Pump Impeller Key
1157-A	1	Water Pump Impeller Pin
8126-A	1	Water Pump Thrust Washer
22164-A	1	Water Pump Cover Gasket
303-A	4	Water Pump Cover Screw
615-A	4	Water Pump Cover Screw Lockwasher
23115-A	1	Water Pump Steel Gland
21270-A	1	Water Pump Packing - Front
21265-A	1	Water Pump Packing Gland - End
22178-A	1	Water Pump Packing Nut - R.H. End
40183-B	1	Water Pump Drive Shaft
46668-B	1	Water Pump Sleeve
45728-B	1	Water Pump Sleeve Bushing - Buy 22171-B
14904-A	2	Water Pump Thrust Washer
46195-B	1	Water Pump Driving Gear
4413-A	1	Water Pump Driving Gear Key
46170-A	1	Water Pump Cradle Gasket
749-A	1	Water Pump Grease Cup

Continued on next page

IV. ENGINE

Part Number	Qty.	Description
A. BASIC ENGINE (cont'd)		
13. WATER PUMP (cont'd)		
46170-A	1	Water Pump Attaching Gasket
1865-A	3	Water Pump Attaching Screw
342-A	3	Water Pump Attaching Screw Lockwasher
46667-B	1	Water Pump Discharge Pipe
22151-A	1	Water Pump Discharge Pipe Hose
4275-A	2	Water Pump Discharge Pipe Hose Clamp
87-A	1	Water Pump Discharge Pipe Gasket
1864-A	2	Water Pump Discharge Pipe Screw
342-A	2	Water Pump Discharge Pipe Screw Lockwasher
When the above Water Pump is used with Magneto only, use the following:		
8079-A	1	Distributor Hole Plug
8051-A	1	Distributor Hole Plug Screw—3/8"-16 x 1-1/8"
300-A	1	Distributor Hole Plug Screw Nut—3/8"-16
14. CRANKCASE VENTILATION		
4055-A	1	Crankcase Vent. Street Ell
13207-A	1	Crankcase Vent. Tube Elbow
49778-AS	1	Crankcase Vent. Metering Valve
8467-A	1	Crankcase Vent. Metering Elbow
47884-A	1	Crankcase Vent. Tube
4121-A	1	Crankcase Vent. Tube Nut
4122-A	1	Crankcase Vent. Tube Ferrule
4120-A	1	Crankcase Vent. Tube Union (In Val. Cover)
49755-B	1	Thermostat Housing
46665-A	1	Thermostat Housing Attach. Gasket
315-A	2	Thermostat Housing Attach. Screw
342-A	2	Thermostat Housing Attach. Screw Lockwasher
11770-BS	1	Thermostat
42737-B	1	Water Outlet Pipe
42752-A	1	Water Outlet Pipe Attach. Gasket
4266-A	4	Water Outlet Pipe Attach. Screw
342-A	4	Water Outlet Pipe Attach. Screw Lockwasher
49927-B	1	Water By-pass Tube
14515-A	2	Water By-pass Tube Hose
14443-A	4	Water By-pass Tube Hose Clamp
46858-B	1	Water Inlet Pipe
86-A	1	Water Inlet Pipe Gasket
1381-A	2	Water Inlet Pipe Attaching Studs
28-A	2	Water Inlet Pipe Attaching Stud Nut
615-A	2	Water Inlet Pipe Attaching Stud L'washer
4760-A	1	Water Inlet Pipe Plug
15. OIL FILTER		
M-6980	1	Oil Filtrator Assembly
T-9149	2	Stud - Oil Filter Mounting
S-8099-1	1	Oil Line - Long
S-8099-2	1	Oil Line - Short
T-9116	3	Male Elbow
T-2414	1	Oil Filter Spacer
T-9114	1	St. Male Connection
C-4P2	1	Filter Element
T-9225	1	Oil Line Clip

IV. ENGINE

Part Number	Qty.	Description
A. BASIC ENGINE (cont'd)		
16. RADIATOR AND HOSES (water system capacity - 18 quarts)		
G-946-1	1	Radiator
S-8353	1	Radiator Cap
S-8095	1	Top Hose, radiator to block
T-8917	1	Hose Clamp, Top, 1½" I.D.
T-8629	1	Hose Clamp, Top, 2" I.D.
M-7215	1	Lower Hose, radiator to water pump
T-8917	1	Hose Clamp, Lower, 1½" I.D.
T-8629	1	Hose Clamp, Lower, 2" I.D.

17. GASKET KIT

46820-AS	1	Gasket Kit Assembly, including:
49202-C	1	Cylinder Head Gasket
46798-B	1	Manifold Gasket
10471-A	1	Governor Attaching Gasket
46665-A	1	Thermostat Housing Gasket
42752-A	1	Water Outlet Pipe Attaching Gasket
86-A	1	Water Inlet Pipe Attaching Gasket
5496-A	1	Carburetor Attaching Gasket
4661-A	1	Water Pump Shaft Cork Washer
22166-A	1	Water Pump Packing
22164-A	1	Water Pump Cover Gasket
21270-A	1	Water Pump Packing, End
46170-A	1	Water Pump Cradle Gasket
46170-A	1	Water Pump Attaching Gasket
87-A	1	Water Pump Discharge Pipe Gasket
76109-A	4	Valve Cover Screw Gaskets
46083-B	2	Oil Pan Attaching Gaskets
3543-A	1	Adapter Plate Oil Seal
46065-B	1	Adapter Plate Attaching Gasket
22564-A	1	Cylinder Block Fuel Pump Hole Cover Gasket
46662-A	1	Cylinder Block Water Opening Cover Gasket
11087-AS	1	Gear Cover Oil Seal Assembly
46033-B	1	Gear Cover Gasket
14972-A	1	Oil Pump Felt Washer
46008-B	2	Valve Cover Gasket
22119-A	1	Oil Pump Attaching Gasket

B. ACCESSORIES

I. GOVERNOR

M-7157	1	Governor Assembly, (see Note 4)
7921-5	1	Governor Operating Spring (white)
43877-B	1	Governor Pressure Lubricating Tube
3794-A	1	Governor Pressure Lubricating Union
14945-A	1	Governor Pressure Lubricating Union (In Governor)
14946-A	2	Governor Pressure Lubricating Tube Nut
14947-A	2	Governor Pressure Lubricating Tube Ferrule
3734-A	2	Governor Pressure Lubricating Tube Clamp
T-9113-1	1	Governor Connecting Rod
3794-A	1	Water Pump Lub. Tube Metering Union (In Cyl. Blk)
47858	1	Water Pump Lubricating Tube
14947-A	1	Water Pump Lubricating Tube Ferrule
14946-A	1	Water Pump Lubricating Tube Nut

Continued on next page

Note 4. For Component Parts of Governor See 3408 pp. 11 & 12

IV. ENGINE

Part Number	Qty.	Description
B. ACCESSORIES (cont'd)		
1. GOVERNOR (cont'd)		
4055-A	1	Water Pump Lub. Tube Elbow
6168-AS	1	Water Pump & Gov. Lub. Tube Tee Assembly
4280-A	1	Water Pump & Gov. Lub. Tube Tee Nipple
4053-A	1	Water Pump & Gov. Lub. Tube Tee Coupling
47859-B	1	Governor Lubricating Tube
14947-A	1	Governor Lubricating Tube Ferrule
14946-A	1	Governor Lubricating Tube Nut
14945-A	1	Governor Lubricating Tube Union (On Gov.)
3734-A	1	Governor Lubricating Tube Clamp
5496-A	3	Carburetor and Valve Box Attaching Gasket
3711-A	2	Carburetor and Valve Box Attaching Studs
752-A	2	Carburetor and Valve Box Attaching Stud Nut L'washers
10471-A	1	Governor Attaching Gasket
1092-A	2	Governor Attaching Screw
335-A	2	Governor Attaching Screw L'washer
T-8624	2	Governor Connecting Rod Ball Joint
1/4"-28	3	Governor Connecting Rod Ball Joint Nut
E-106-A-2	1	Governor Connecting Rod Lockwasher
T-8628	1	Governor Seal
2. ENGINE REGULATOR		
L-2299	1	Regulator Assembly (see IM-117 for component Parts)
S-8058-7	1	Air Line
T-9076	1	Air Line Connector
S-8108	1	Control Rod
3. FAN, PULLEY & FAN BELT		
L-2656	1	Fan Assembly with Fracket, including:
M-7210	1	Blade Assembly
T-9354	1	Clamping Washer (1" I.D.)
T-9637	1	Clamping Washer (13/16" I.D.)
M-7209	1	Bracket
T-9353	1	Adjusting Screw
	2	Fan Mounting
	3	Hex. Hd. Cap Screw 3/8"-16 x 1 1/4"
	1	Lockwashers 3/8" St'd.
	1	Hex. Hd. Cap Screw 3/8"-16 x 1"
S-7519	1	Fan Belt
46275-B	1	Fan Drive Pulley
4265-A	1	Fan Drive Pulley Key
14734-A	1	Fan Drive Pulley Lockwasher
4. STARTING CRANK		
S-7430	1	Starting Crank Handle
14734-A	1	Starting Jaw Lockwasher
S-7529	1	Crank Ratchet
5. FUEL SYSTEM		
a) GAS TANK & LINES		
L-2643-1	1	Gas Tank Assembly
S-8000	1	Gas Tank Cap (formed Tank)
S-6185	1	Gas Strainer
S-8326-1	1	Gas Line with Connector Nuts
T-4169	1	Gas Line Clamp
T-9158	1	Gas Line Connector (Strainer End)
T-9134	1	Gas Line Elbow (Carburetor End)

IV. ENGINE

Part Number	Qty.	Description
B. ACCESSORIES (cont'd)		
5. FUEL SYSTEM (cont'd)		
b) CARBURETOR & CONTROLS		
S-8318	1	Carburetor (Component Part See 3408 Page 17)
S-7525	1	Carburetor Choke Control Assembly
T-2567	1	Throttle Spring
T-7894-3	1	Throttle Spring Rod
5496-A	1	Gasket
4598-A	2	Stud - Carburetor Mounting
752-A	2	Stud Nuts
342-A	2	Stud Lockwashers
76109-A	2	Copper Washers
c) AIR CLEANER		
M-7158	1	Air Cleaner
M-7145-1	1	Air Cleaner Bracket
M-7146	1	Air Cleaner Baffle

IV. ENGINE

B. ACCESSORIES (cont'd)

6. IGNITION

Name & Description	Qty.	Part Number		
		Magneto Ignition Crank Start	Magneto Ignition Battery Start	Distributor Ignition Battery Start
a) PLUGS & HIGH TENSION WIRES				
Spark Plug	6	S-7567	S-7567	S-7567
Spark Plug Wire to #1 Cylinder	1	S-7518-12	S-7518-12	S-7518-9
Spark Plug Wire to #2 Cylinder	1	S-7518-12	S-7518-12	S-7518-2
Spark Plug Wire to #3 Cylinder	1	S-7518-3	S-7518-3	S-7518-10
Spark Plug Wire to #4 Cylinder	1	S-7518-9	S-7518-9	S-7518-10
Spark Plug Wire to #5 Cylinder	1	S-7518-13	S-7518-13	S-7518-9
Spark Plug Wire to #6 Cylinder	1	S-7518-2	S-7518-2	S-7518-15
Wire, Distributor to Coil	1	----	----	S-7518-16
Rubber Nipple	6	T-8627	T-8627	T-8627
Spark Plug Wire Bracket	2	40110-A	40110-A	40110-A
b) MAGNETO or DISTRIBUTOR				
Magneto (American Bosch MRD-6A-101) including (see Note 5)	1	S-8705	S-8705	----
Switch Bracket	1	S-8142	S-8142	----
Switch	1	S-8020	S-8020	----
Switch Plate	1	T-9061	T-9061	----
Lead Assembly	1	T-9141	T-9141	----
Distributor (Delco-Remy 1111824) (see Note 6)	1	----	----	M-7405-1
Distributor Advance Arm	1	----	----	S-8130
Distributor Bracket	1	----	----	S-7517
Lead, Distributor to Coil		----	----	S-5614-34
c) BATTERY, LEADS & HANGER				
Battery, Domestic	1	----	M-6583-2	M-6583-2
Battery, Export	1	----	M-6583-1	M-6583-1
Battery Hanger	1	----	M-6532	M-6532
Battery Clamp	1	----	S-7429	S-7429
"Negative" Cable	1	----	S-5938-S	S-5938-S
Ground Cable	1	----	S-8002	S-8002
d) STARTER, GENERATOR & COIL				
Generator with Out-Out (Delco-Remy 1101408) (see Note 7)	1	----	M-7064	M-7064
Generator Gasket	1	----	S-7527	S-7527
Generator Gear	1	----	S-7520	S-7520
Starting Motor (Delco-Remy 1107974)(see Note 8)	1	----	M-7065	M-7065
Ignition Coil (Delco-Remy 1115327)	1	----	----	M-7201
Ignition Coil Bracket	1	----	----	S-8747
Lead Assembly, coil to switch	1	----	----	S-5614-46
Lead Assembly, starter to st. button	1	----	S-5614-43	S-5614-43
Lead Assembly, meter to starter	1	----	S-5614-41	S-5614-41
Lead Assembly, meter to st. button	1	----	S-5614-33	S-5614-33
Lead Assembly, meter to cut-out	1	----	S-5614-45	S-5614-45
Ammeter	1	----	S-7514	S-7514
Starter Push Button	1	----	T-9623	T-9623
Pull-Out Switch	1	----	----	S-8080
Pull-Out Switch Plate	1	----	----	T-9061
7. CONVERSION KIT				
Crank Start to Battery Start Kit (includes items in IV-B-6-c, -d, -e,)	1	M-7191	----	----

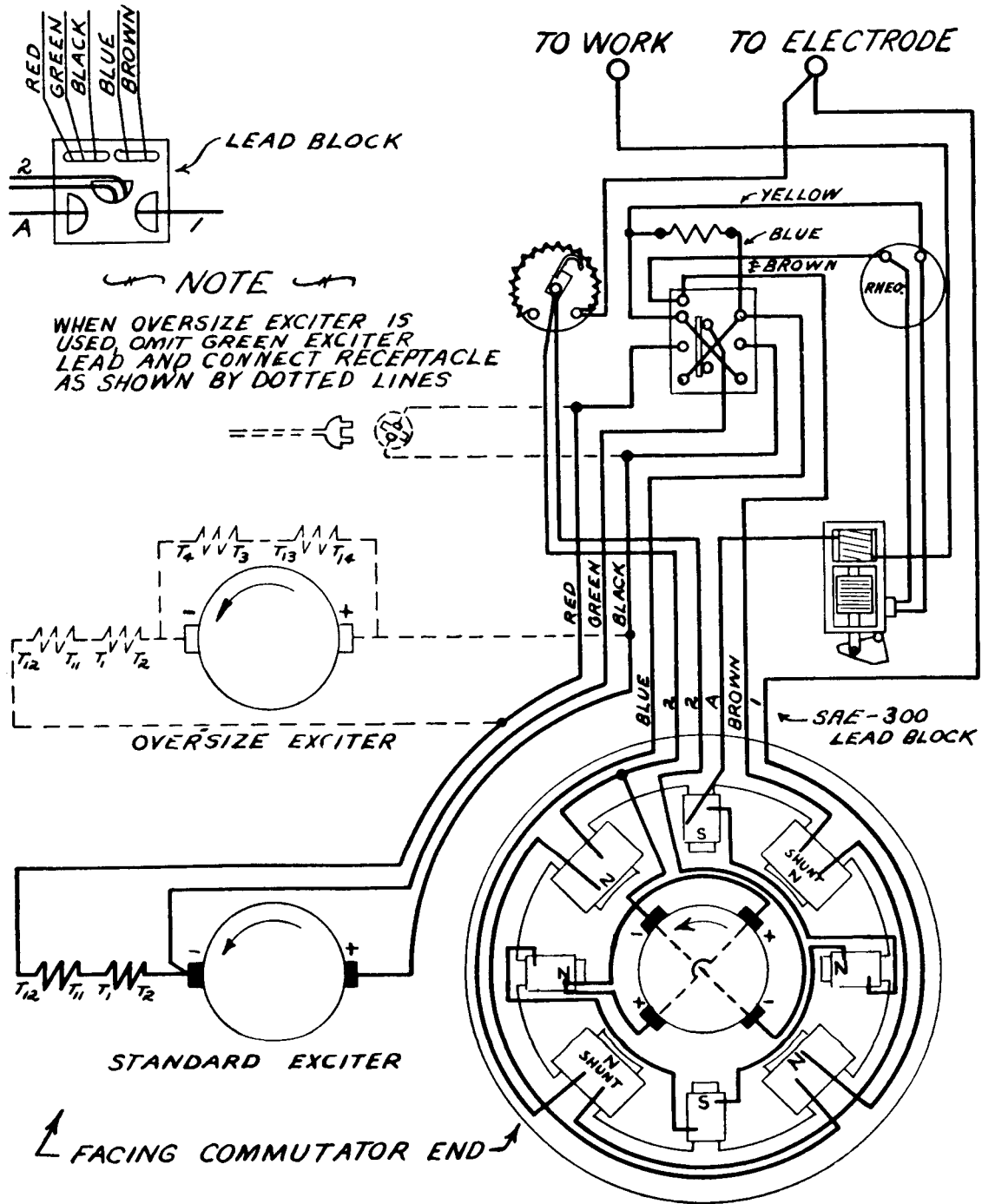
Note 5. Old Style Magneto S-8143 (American Bosch MJH-6C-101)

Note 6. Old Style Distributor M-6987 (Auto-Lite Model IGC-6001-2D) for component parts see 3408 pp 7 & 8.
Old Style Distributor M-7178 (Delco-Remy 1110198).

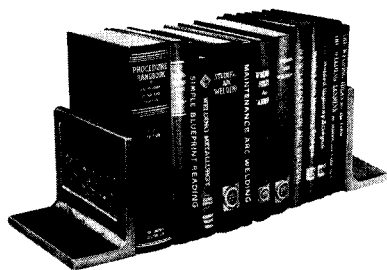
Note 7. Old Style Generator M-6681 (Auto-Lite Model GBM-4622A-5) for component parts see 3408 pp 5 & 6.

Note 8. Old Style Starter M-6589 (Auto-Lite Model MAX-4063) for component parts see 3408 pp 9 & 10.

V. WIRING DIAGRAM



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As a service to its users, the Lincoln Electric Company publishes the following books. Order directly from The Lincoln Electric Company, Cleveland 17, Ohio.

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