PARTS CATALOG

FOR



ELECTRIC GENERATING PLANTS



ONAN

956-301

1400 73RD AVENUE N.E. • MINNEAPOLIS, MINNESOTA 55432

A DIVISION OF STUDEBAKER CORPORATION

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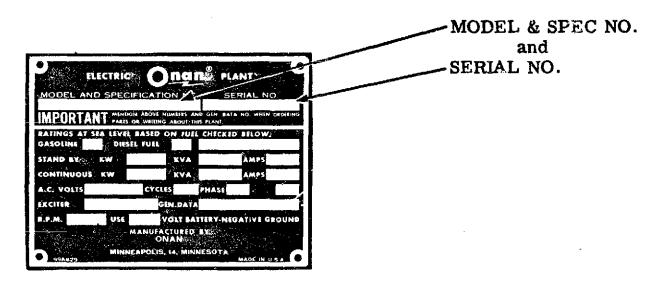
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Price \$1.00

ONAN PARTS

ALL PARTS IN THIS LIST ARE ONAN PARTS. FOR ONAN PARTS OR SERVICE, CONTACT THE DEALER FROM WHOM YOU PURCHASED THIS EQUIPMENT OR REFER TO YOUR NEAREST AUTHORIZED SERVICE STATION.

TO AVOID ERRORS OR DELAY IN FILLING YOUR PARTS ORDER, PLEASE FURNISH ALL INFORMATION REQUESTED. REFER TO THE ONAN NAMEPLATE ON YOUR PLANT. ONAN NAMEPLATE IS LOCATED ON THE UPPER RIGHT SIDE OF THE FLYWHEEL HOUSING. ALWAYS GIVE THE COMPLETE:

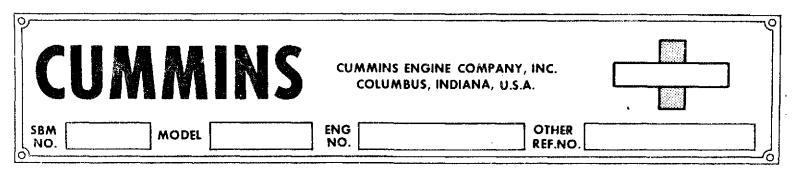


CUMMINS PARTS

ALL CUMMINS PARTS MUST BE ORDERED FROM THE CUMMINS ENGINE COMPANY, INC., COLUMBUS, INDIANA OR THEIR NEAREST AUTHORIZED CUMMINS DISTRIBUTOR OR DEALER.

REFER TO THE CUMMINS ENGINE NAMEPLATE LOCATED ON THE GEAR COVER ON THE RIGHT SIDE OF THE ENGINE AS VIEWED FACING THE RADIATOR END.

WHEN ORDERING PARTS OR REQUESTING SERVICE INFORMATION, SUPPLY CUMMINS WITH ALL INFORMATION STATED ON THE ENGINE NAMEPLATE.





PARTS CATALOG DE SERIES

This parts catalog applies to the standard ONAN DFE Series electric generating plants. They are powered by a Cummins Model NHRS-6 engine which is more completely described in the Cummins manual. Basically, the engine is a 6 cylinder, water cooled, super charged diesel (compression ignition) type. The cylinder bore is 5-1/8 inches, piston stroke is 6 inches, and displacement is 743 cubic inches.

Cummins Engine parts must be selected from the appropriate Cummins parts list and parts must be secured from the Cummins Engine Company or their authorized distributor or dealer.

"Right" or "Left" sides of the Generator and Controls are determined by FACING the Radiator (Front) End.

Parts in this catalog are illustrated in groups and have reference numbers which correspond to the like numbers in the list for that group. Parts illustrations are typical and should not be construed to represent a particular part number.

Compare your ONAN plant nameplate MODEL and SPEC. with the Plant Data Table. The Plant Data Table contains all descriptive information pertinent to the list, such as voltage, phase, etc. which appears in the description of some parts that differ between basic models.

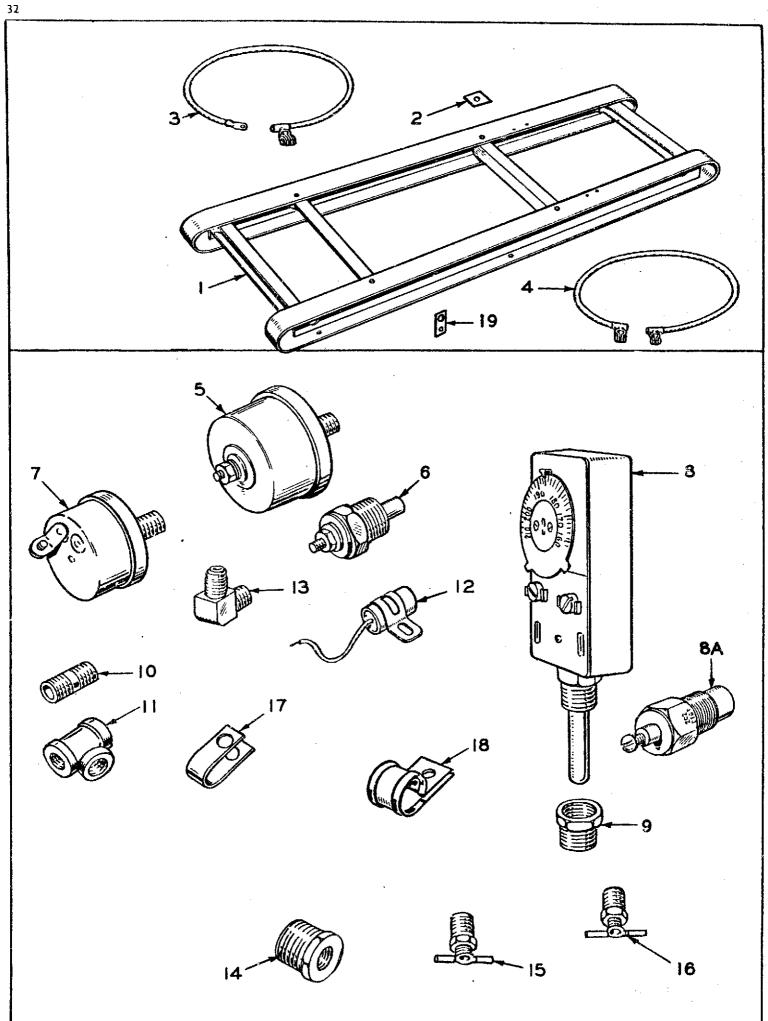
UNLESS OTHERWISE MENTIONED IN THE PARTS DESCRIPTION, PARTS ARE INTERCHANGEABLE BETWEEN ALL MODELS LISTED IN THE DATA TABLE.

ELECTRICAL DATA VOLTS CYCLE PHASE WIRE WATTS MODEL & SPEC. NO. † 120/208 50 3 135DFE-54R8/ 135,000 277/480 4 3 135,000 50 135DFE-54XR8/ 4 120/240 3 135,000 50 135DFE-55DR8/A 4 3 135,000 220/380 135DFE-57R8/ 50 3 4 175,000 120/208 175DFE-4R8/ 60 277/480 3 4 175,000 60 175DFE-4XR8/ 4 3 120/240 175,000 60 175DFE-5DR8/A 175,000 175DFE-9R8/ 600 60

PLANT DATA TABLE

- † The NUMBER after the diagonal line (/) signifies standard or optional features (1 is standard). The LETTER ending the Model and Spec No. is the Spec Letter and will advance with manufacturing changes (A to B, B to C, etc.).
- ▲ This is a delta-wound 240 volt model with one phase center-tapped. A limited amount of 1 phase 120/240 volt power can be utilized together with 3 phase power as long as no terminal current exceeds the rated nameplate current.





PoweFIG. 1 - MOUNTING BASE, BATTERY CABLES & SENDER GROUP
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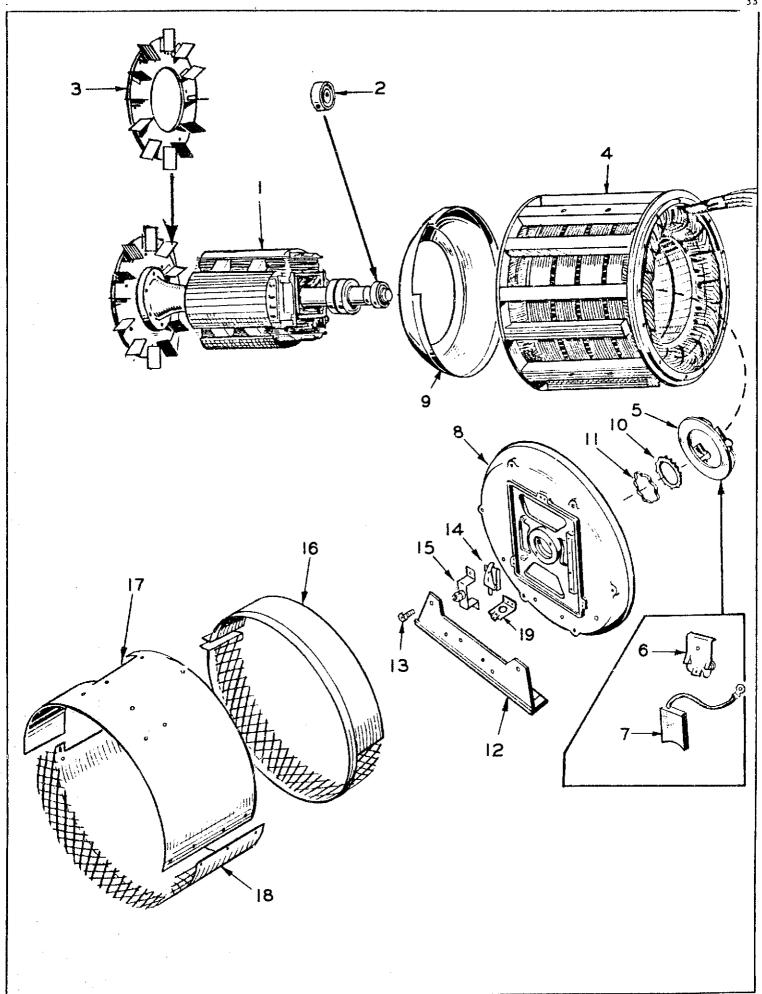


FIG. 2 - GENERATOR GROUP - Alternator Portion



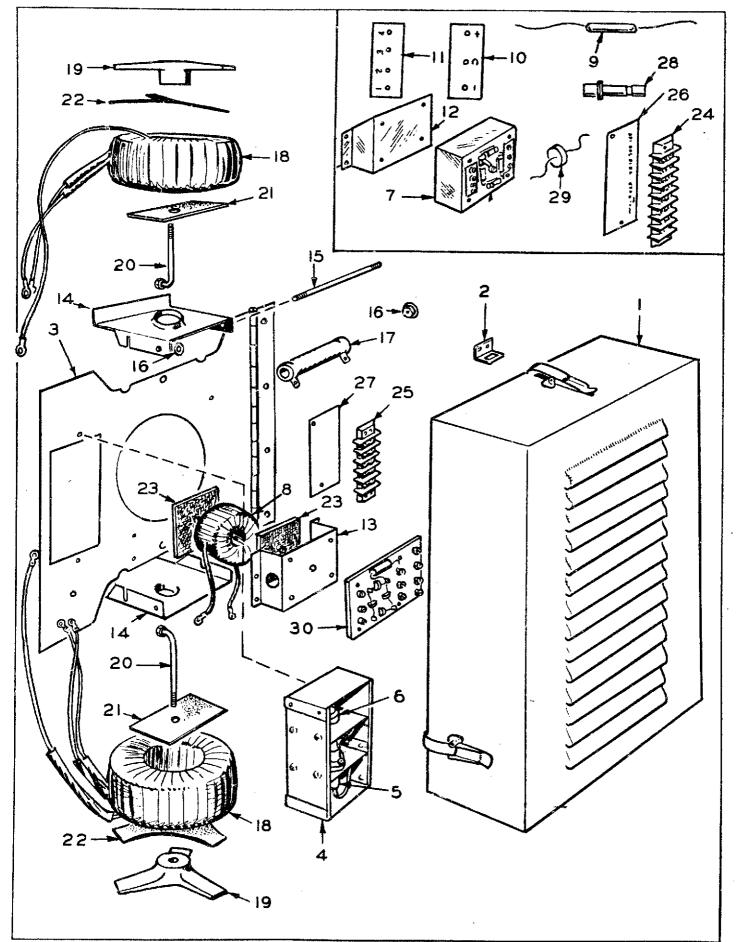
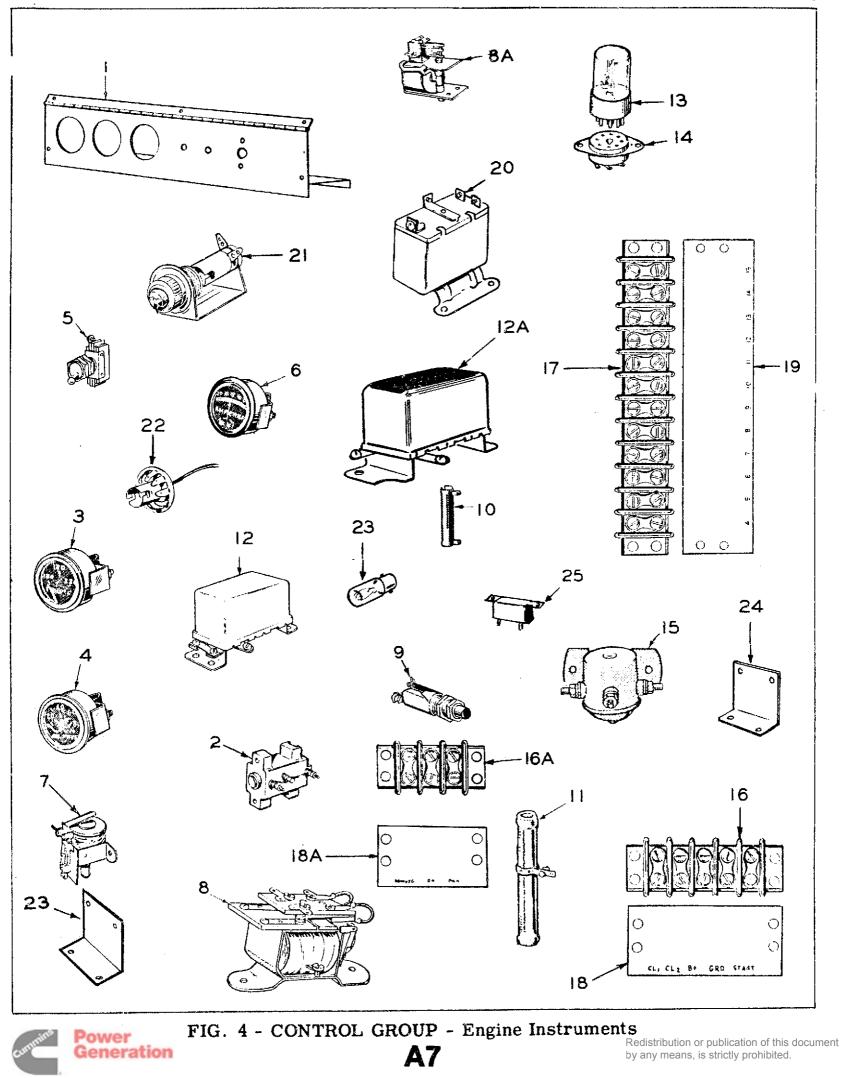


FIG. 3 - GENERATOR GROUP - Exciter Portion







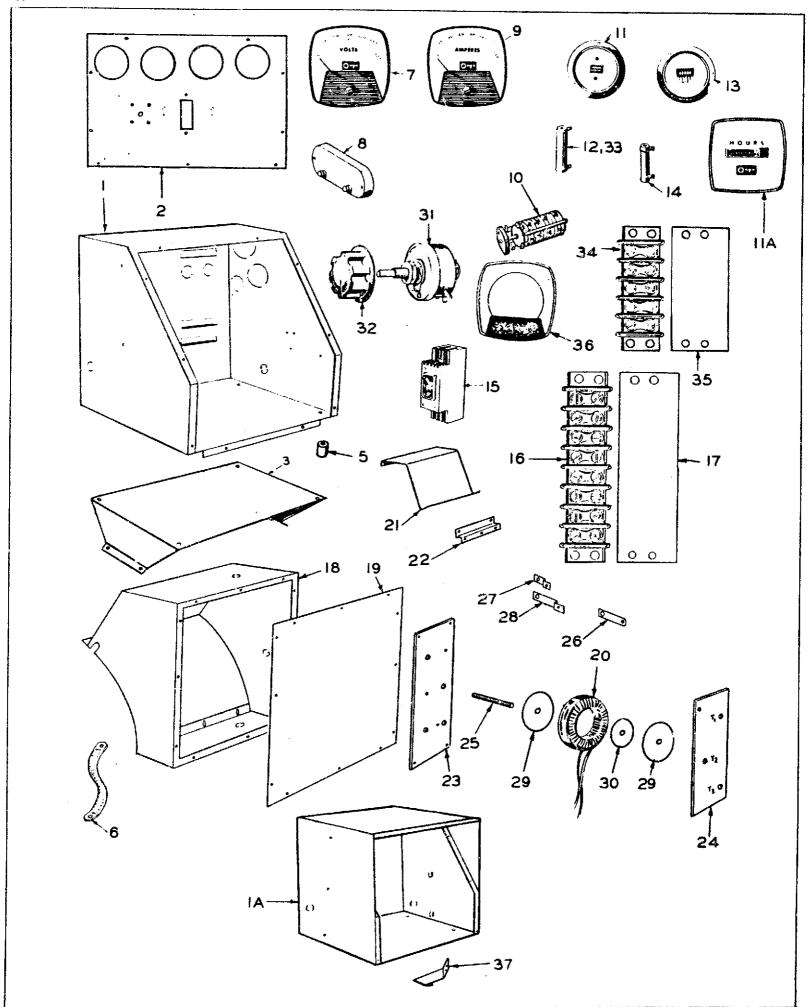




FIG. 5 - CONTROL GROUP - AC Cutput

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REPLACEMENT ENGINE

100P246

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Engine, Replacement (Cummins Engine Company Model NHRS-6) General description: Includes - Complete Cylinder Block; Fuel Pump; Air Cleaner; Fuel Filter; Oil Filter; Starter & Solenoid; Charge Generator & Voltage Regulator; Governor; Radiator; Water Pump; Fan Blades & Belt; Fan Guard; Exhaust Manifold; Flywheel Housing; Oil Cooler; and Engine Supports.

> Excludes - Throttle Control; Engine Wiring; Water Temperature & Oil Pressure Gauge Senders; and Mounting Base.

FIG. 1 - MOUNTING BASE, BATTERY CABLES & SENDER GROUP

1	403C559	1	Base, Mounting.
2			Shim, Generator to Mounting Base.
	232A1489	2	No. 16 Gauge (.0598).
	232A1490	2	No. 20 Gauge (.0359).
3			Cable, Battery.
	416A 444	1	Positive.
	416A 445	1	Negative.
4	416A 446	1	Cable, Battery Jumper.
5	193A98	1	Sender, Oil Pressure Gauge (Engine Sending unit only).
6	193A100	1	Sender, Water Temperature Gauge (Engine Sending unit only).
7	309P64	1	Switch, Oil Pressure.
8	309B1	1	Switch, High Water Temperature Cut-off - Adjustable - Use 309A146.
ÅA	309A 146	1	Switch, High Water Temperature Cut-off - Non-Adjustable - Replaces 309B1.
9	505-19	2	Bushing, Pipe Reducer (1/2 x 3/8) High Water Temperature Switch (1), Water Temperature Gauge Sender (1).
10	505-98	1	Nipple, Close (1/8 x 3/4") Oil Pressure Tee to Block.
11	505-59	1	Tee, Pipe (1/8") Oil Pressure Switch and Cil Gauge Sender Mounting.
12	312 A 58	2	Condenser1 Mfd. (1) Charge Generator, (1) Charge Regulator - Replaces 312A15.
13	502-218	1	Elbow, Male $(5/8" \times 1/2")$ Brass - Fuel Inlet to Injection Pump.
14	505-131	1	Bushing, Pipe Reducer (3/4 x 3/8") Radiator Outlet to Drain Valve.
15,16			Valve, Drain.
15	504-28	1	Radiator Drain.
16wer	504-3	1	Cylinder Water Jacket Drain.
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Generation

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234D79

234C137

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REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
FIG	. 1 - MO	UNTING BA	SE, BATTERY CABLES & SENDER GROUP (Cont.)
17, 18		•	Clip, Harmess - Engine Control Connections.
17	416A96	3	"U" Shaped - All Metal.
18	332-49	2	"O" Shaped - Metal with rubber insulator.
19	191A214	1 1	Connector, Starter Terminal (1"x2" Copper Strip).

FIG. 2 - GENERATOR GROUP (Alternator Portion)

NOTE: Output Terminal Box, Cover & Internal Parts are listed in the AC Output Control Group (Mounts on Side of Generator). 1 Rotor Assy, Incl. Brg., Blwr., & Dr. Assy. \star 2 Bearing 510P63 1 To Spec "E" 510P88 1 Begin Spec "E" 3 1 205C61 Blower. 4 1 Stator Assembly, Wound. * 5 212C248 1 Rig Assembly, Brush - Includes Brushes & Springs. 6 212B1105 4 Spring, Brush. 7 4 214A 56 Brush. 8 211D153 1 *Bell, End - Alternator to Exciter. 9 234D69 1 Baffle, Air. 10 Holder, Bearing - Anti-Rotation 1 232A1186 To Spec "E". 232A 1808 1 Begin Spec "E". 11 Spring, Bearing Holder - Anti-Rotation 232A1187 To Spec "E". 1 232A 1807 1 Begin Spec "E" 12 232D1396 1 Support, Generator Mounting 13 805-35 4 Bolt, Place - Generator Mtg. Support to End Bell 14 150A717 1 Switch Assembly, Overspeed 15 150A713 1 Bracket, Overspeed Switch - Includes Contact Point 16 234D70 1 Band, Generator - Front Portion (Narrow) Band, Generator - Rear Portion (Wide) 17 234D80 1 Upper Half - Prior to Spec "C". 17 1 234C136 Upper Half - Begin Spec "C".

★-Order by description, giving Model, Spec and Serial Number (ONAN Nameplate).

Bracket, Conduit Connector

*- To order end bell for plants prior to Spec "E", also order 232A1807 Ring, 232A1808 Spring, 510P88 Bearing, 526A17 Spacer, and 812-192Screw.

FIG. 3 - GENERATOR GROUP (Exciter Portion) Model 2SX

Lower Half - Prior to Spec "C".

Lower Half - Begin Spec "C".

1			Cover, Exciter.		Ì
	234D73	1	Prior to Spec "C".		
	234D116	1	Begin Spec "C".		
rife.	Pow232A 1376	3	Bracket, Fastening - Exciter Cover to Alternator	looum.	ont
LUTTE	Generation		End Bell. by any means, is strictly prohibited.	ocume	CIII

REF.	PART NO.	QUANT	DESCRIPTION
	FIG. 3	- GENER	ATOR GROUP (Exciter Portion) Model 2SX (Cont.)
3 4	234D74	1	Panel Only, Exciter. Rectifier Assembly, Power - Complete.
	305B206	1	Prior to Spec "C" (Includes four #305-205 Rectifiers plus wire and hardware).
	305 B22 8	. 1	Begin Spec "C" (Includes two #305P233 and two #305P234 Rectifiers plus wire and hardware).
5,6 5	305P234	4	Rectifier Only, Power (Field). Prior to Spec "C" (Included in Rectifier Assembly #305B206) - Replaces 305-205. Begin Spec "C".
5	305P233	2	Lower two - Negative (Included in Rectifier Assembly #305B228).
6	305P234	2	Upper two - Positive (Included in Rectifier Assembly #305B228).
7,8		_	Reactor, Voltage Control.
7	315B53	1 1	Prior to Spec "C" - 60-Cycle.
8	315A78		Begin Spec "C" - 60-Cycle.
8	315A80	1	50-Cycle.
9			Resistor, Voltage Control Reactor.
	304-443	1	Prior to Spec "C" (Included in Reactor Assembly #315B53).
	304P476	1	Begin Spec "C" (Included in Rectifier & Resistor Assembly #305B227).
10,11			Strip, Marker - Voltage Control Reactor Connections - Prior to Spec "C".
10	332A644	1	Marked +, C,
11	332A645	1	Marked 1, 2, 3, 4.
12,13			Bracket, Mounting - Voltage Control Reactor.
12	232B1404		Prior to Spec "C".
13	234B115	1	Begin Spec "C".
14	234B75	2	Bracket, Gate Reactor Mounting.
15	520A190	1	Stud, Fixed Resistor Mounting.
16	304A15	2	Washer, Fixed Resistor Centering.
17	304-442	1	Resistor, Fixed - Mounts to Gate Reactor Bracket.
18			Reactor, Gate.
	315A51	2	60-Cycle
	315A61	2	50-Cycle
19	232A138		Retainer, Gate Reactor.
2 0	232A 140	3 2	Stud, Gate Reactor Mounting.
21	232B1388	3 2	Gasket, Gate Reactor Mounting.
22	232B138	7 2	Gasket, Gate Reactor to Retainer.
23 24 25	232A1548	3 2	Gasket, Control Reactor Coil Mounting.
24, 25	9964 506	4	Block, Terminal.
24	332A 503	1	Prior to Spec "C" (8 Place).
25	332A 532	1	Begin Spec "C" (5 Place).



40			PARTS LIST
REF. NG.	PART NO.	QUANT. USED	DESCRIPTION
	FIG. 3	- GENERA	ATOR GROUP (Exciter Portion) Model 2SX (Cont.)
26,27			Strip, Terminal Block Marker.
26	332A643	1	Prior to Spec "C" - For 8 Place Block.
27	332A693	1	Begin Spec "C" - For 5 Place Block.
28,29			Rectifier, Voltage Control Reactor.
28	305-203	4.	Prior to Spec "C" (Included in Reactor Assembly #315B53).
29	305P240	4	Begin Spec "C" (Included in Rectifier & Resistor Assembly #305B227) - Replaces 305P218.
30	305B227	1	Resistor Assy., Rectifier & (Includes #304P476 Resistor and (4) Rectifiers #305P218) - Begin Spec "C".
	FI	G. 4 - COI	NTROL GROUP (Engine Instruments Portion)
1			Panel Only, Lower Control -
	301C1672	1	Prior to Spec "D".
	301C2124	1	Begin Spec "D".
2	320A 104	1	Limiter, Cranking.
3	193B112	1	Gage, Water Temperature (Panel Unit Only).
4	193B111	1	Gage, Oil Pressure (Panel Unit Only).
5			Switch, Toggle -
	308P2	1	Panel Lights - Begin Spec "D".
	308P2	1	RUN, STOP, AUTOMATIC - Prior to Spec "D".
	308P138	1	RUN, STOP, REMOTE - Begin Spec "D".
6	302A61	1	Ammeter, Charge (30-0-30)
7			Relay, Time Delay.
	307A388	1	Prior to Spec "F".
	307A899	1	Begin Spec "F".
8,8A	0.0		Relay, Emergency Stop -
8	307B299	1	Prior to Spec "D".
8A	307A655	1	Begin Spec "D" - Latching.
9	308-91	1	Button, Emergency Stop Re-set - Prior to Spec "D".
10	2044440	0	Resistor, Fixed -
	304A 446	2	(1) Water Temperature Gauge, (1) Oil Pressure Gauge (150 Ohm, 10 Watts) 5/16 x 1-3/4".
	304A262	3	(1) Start-Disconnect Relay (2) Emergency Stop Relay (50 Ohm, 10 Watt) 5/16 x 1-3/4" -
	304A262	1	Prior to Spec "D". Start-Disconnect Relay (50 Ohm, 10 Watt)
	304A248	1	5/16 x 1-3/4" - Begin Spec "D". Time Delay Relay (100 Ohm, 10 Watt) 5/16 x
	304A276	1	1-3/4" - prior to Spec "F". Between Fuel Solenoid Relay and Emergency
	44.4	_	work and workers are my man and be a facility

Begin Spec "D".

Stop Relay (75 Ohm, 10 Watt) $5/16 \times 1-3/4$ " -

Pilot Relay (25 Ohm, 25 Watt) 3/4 x 2" - Redistribution or publication of this document Spec "D" through "E".

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			PARIS LIST
REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
	FIG.	4 - CONT	ROL GROUP (Engine Instruments Portion)
11			Resistor, Adjustable -
	304A66	1	Between Start-Disconnect Relay and Cranking Limiter - 3/4 x 4".
	304A194	1	Between Fuel Solenoid Relay and Start-Disconnect Relay - 9/16 x 2" - Prior to Spec "F".
12,12	A		Relay, Fuel Solenoid -
12	307B4	1	Prior to Spec "D".
12A	307B597	1	Begin Spec "D".
13			Relay, Cycle Cranking - Plug-in Type -
	307-509	1	Prior to Spec "D" - 15 Second Delay.
	307A697	1	Spec "D" through "E" - 10 Second Delay.
	307A753	1	Spec "D" through "E" - 5 Second Delay.
14	323-52	2	Socket, Cycle Cranking Relay - Prior to Spec "F" (Prior to Spec "D" 1 Only Used).
15	307-61	1	Relay, Pilot - Prior to Spec "F".
16,16	1.17		Block, Terminal -
16	332A604	1	Remote Operation Connection (5 Place) - Prior to Spec "D".
16A	332A611	1	Remote Operation Connection (3 Place) - Begin Spec "D".
17	332A607	1	Engine Connection (12 Place).
18,18	1,19		Strip, Block Marker -
18	332A679	1	For Remote Operation Block (Marked CL1, CL2, B+, GND., START) - Prior to Spec "D".
18A	332A762	1	For Remote Operation Block (Marked REMOTE B +, GND) - Begin Spec "D".
19	332A608	1	For Engine Connection Block (Marked 4 through 15).
20	307B52	1	Relay, Start-Disconnect.
21	322P69	1	Receptacle, Pilot Light - Begin Spec "D".
$\overline{22}$	322P72	$\overline{2}$	Receptacle, Panel Light - Begin Spec "D".
23	322P17	3	Bulb, (1) Pilot Light (2) Panel Lights - Begin Spec "D"
24	301A1685		Bracket, Time Delay Relay Mounting.
25	320P240	1	Breaker, Circuit - Starter Motor - Begin Spec "F".

FIG. 5 - CONTROL GROUP (AC Output Portion)

1,1A			Box Only, Control -
1	301D1537	1	Prior to Spec "D".
1A	301D2115	1	Begin Spec ''D''.
2	*	1	Panel Only, Upper Control.
3	301C1830	1	Bracket, Control Box Mounting - Single Piece (Replaces two piece brackets).
Power	40 2 A78	4	Rubber, Mounting - Control Box to Mounting Bracket



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REF.	PART NO.	QUANT. USED	DESCRIPTION
	FIG.	5 - CONT	ROL GROUP (AC Output Portion) Cont.
6 7	337A44	1	Strap, Ground. Voltmeter, AC (Check VOLTMETER Scale - Select according to rating) -
	302P421	1	Voltmeter Scale Reads 0-300 - Replaces 302-41.
	302P422	ī	Voltmeter Scale Reads 0-600 - Replaces 302-42.
	302P423		Voltmeter Scale Reads 0-750.
8	302-157	1	Multiplier, Meter (Resistor) Voltmeter to Selector Switch - Use only with 0-500 Scale Voltmeter (Used Prior to Spec "D").
9			Ammeter, AC (Check AMMETER Scale - Select According to Rating) -
	302P412	1	Ammeter Scale Reads 0-250.
	302P413	1	Ammeter Scale Reads 0-300 - Replaces 302-14.
	302P414	1	Ammeter Scale Reads 0-500.
	302P415	1	Ammeter Scale Reads 0-750 - Replaces 302-384.
10	308-22	1	Switch, Voltage and Current Selector.
11,11A	1		Meter, Running Time -
11	302-212	1	Prior to Spec "D" -
	302-212	1	60 Cycle Plants - (NOTE: When used to replace #302-387 Meter on earlier 480 volt models, also order #304A125 Resistor.
444	302-102	1	50 Cycle Plants
11A	2027 465	1	Begin Spec "D" -
	302P465	1	For 120/208 Volt, 120/240 Volt, and 600 Volt - 3 Phase - 60 Cycle Plants - Begin Spec "D".
	302P466	1	For 220/380 Volt, 3 Phase, 60 Cycle Plants -
	302P467	1	Begin Spec "D". For 277/480 Volt, 3 Phase, 60 Cycle Plants -
	302P469	1	Begin Spec "D". For 220/380 Volt. 3 Phase, 50 Cycle Plants - Begin Spec "D".
12	304A99	1	Resistor, Running Time Meter - 5,000 Ohm, 10 Watt (Used only with #302-212 Meter on 120/240 Volt, 3 Phase Plants - Prior to Spec "C").
	304A125	1	15, 000 Ohm, 25 Watt (Used only with #302-212 Meter on 480 Volt Plants - Prior to Spec "D").
	304A 445	1	6, 500 Ohm, 25 Watt (Used only with #302-387 Meter on early 480 Volt Plants - Prior to Spec "D").
	304A536	1	9,000 Ohm, 50 Watt (Used only with #302P465 Meter on 600 Volt Plants - Begin Spec "D").
13			Meter, Frequency -
	302-213	1.	60 Cycle Plants.
	302-234	1	50 Cycle Plants.



REF.	PART NO.	QUANT. USED	DESCRIPTION
	FIG	. 5 - CON	TROL GROUP (AC Output Portion) Cont.
14			Resistor, Frequency Meter -
	304A305	1	45,000 Ohm, 10 Watt (Used only on 480 Volt, 3 Phase, 3 Wire Plants and 220/380 Volt, 3 Phase, 4 Wire Plants Begin Spec "D").
	304A 125	1	15,000 Ohm, 25 Watt (Used only on 120/240 Volt, 3 Phase, 4 Wire Plants Prior to Spec "C" and 220/380 Volt, 3 Phase, 4 Wire Plants Begin Spec "D".
	304A 402	1	60,000 Ohm, 10 Watt (Used only on 600 Volt, 3 Phase, 3 Wire Plants Begin Spec "D".
15			Breaker, Circuit -
	320B2	1	15 Amp - Prior to Spec "D".
	320B170	1	18 Amp - Begin Spec "D".
16	332A503	1	Block, Terminal (8 Place).
17	332A601	1	Strip, Block Marker (Marked 15 through 22).
18	301E1682	1	Box Only, Output Terminal - Mounts on Side of Generator.
19	301C1683	1	Cover, Output Terminal Box.
20			Transformer, Current (Mounts in Output Terminal Box) Check TRANSFORMER Nameplate - Select according to rating -
	302B107	3	Transformer Nameplate Reads "Ratio 300/5" (Use with 0-300 Scale AC Ammeter).
	302B385	3	Transformer Nameplate Reads ''Ratio 750/5'' (Use with 0-750 Scale AC Ammeter).
	302B209	3	Transformer Nameplate Reads ''Ratio 250/5'' (Use with 0-250 Scale AC Ammeter).
	302B372	3	Transformer Nameplate Reads "Ratio 500/5" (Use with 0-500 Scale AC Ammeter).
21,22			Bracket, Current Transformer Bottom Panel Mounting (Bolt to Generator Frame) - Prior to Spec "C" -
21	232C1391	1	Upper (Large).
22	232C1390	1	Lower (Small).
23,24			Panel Only, Current Transformer - Prior to Spec "C" -
23	232C1418	1	Bottom Panel - Current Transformer Mounting (Mounts Output Terminal Studs).
24	232B1419	1	Top Panel - Current Transformer - Prior to Spec"C".
25	232A1420	4	Stud, Output Terminal - Copper (7/8-14 x 6-1/2") - Prior to Spec "C".
26	337A58	1	Strap, Output Terminal - Copper - Terminal Stud to Ground (3-3/8" x 1-1/2") Prior to Spec "C".
27	232A1416	1	Strap, Output Terminal - Copper - GROUNDED Stud to Machine Screws (2-3/4" x 1-1/2") Prior to Spec "C".
28	232A1415	3	Strap, Output Terminal - Copper - UNGROUNDED Studs to Machine Screw (4-1/4" x 1-1/2") Prior to Spec "C".



REF. NO.	PART NO.	QUANT. USED	DESCRIPTION
	FIG.	5 - CONT	TROL GROUP (AC Output Portion) Cont.
29	508A81	6	Washer, Neoprene Insulating - Current Transformer Mounting (4-1/2" O.D.) - Prior to Spec "C".
30	508A83	3	Washer, Fibre - Current Transformer Mounting 2-1/4" O.D.) - Prior to Spec "C".
31	303-111	1	Rheostat Voltage Regulator - 175 Ohm, Model H - Begin Spec "C".
32	303-32	1	Knob, Rheostat - Begin Spec "C".
33	304A484	1	Resistor, Fixed - Rheostat (825 Ohm, 75 Watt) Begin Spec "C".
34	332A604	1	Block, Terminal - Exciter Connections - (5 Place) - Begin Spec "C".
35	332A690	1	Strip, Block Marker (5 Place) - Begin Spec "C".
36	302B448	As Req.	Plate, Meter Face - For appearance only - to give round meter a square look.
37	301A1914	1	Bracket, Panel Stop - Begin Spec "D".

