

W135:11-2518

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TM 11-2518

WAR DEPARTMENT TECHNICAL MANUAL

NON-CIRCULATING

ROTARY CONVERTERS

24-VOLT D. C.—110-VOLT A. C.

AND

110-VOLT D. C.—110-VOLT A. C.

WAR DEPARTMENT • 12 MAY 1944

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WAR DEPARTMENT,
WASHINGTON 25, D. C., 12 May 1944.

Tentative TM 11-2518, War Department Technical Manual, Rotary Converters, 24-Volt D.C.=110-Volt A.C. and 110-Volt D.C.=110-Volt A.C., is published for the information and guidance of all concerned.

[A.G. 300.7 (12 Apr 44).]

BY ORDER OF THE SECRETARY OF WAR:

G. C. MARSHALL,
Chief of Staff.

OFFICIAL:

J. A. ULIO,
*Major General,
The Adjutant General.*

DISTRIBUTION:

"X"

(For explanation of symbols see FM 21-6.)

NOTE: Unsatisfactory performance of this equipment will be reported immediately on W.D., A.G.O. Form No. 468. If this form is not available, see TM 38-250.

WAR DEPARTMENT TECHNICAL MANUAL
T M 11-2518

ROTARY CONVERTERS
24-VOLT D. C.—110-VOLT A. C.
AND
110-VOLT D. C.—110-VOLT A. C.



WAR DEPARTMENT

12 MAY 1944

United States Government Printing Office

Washington 1945

GENERAL CONDITIONS of PURCHASE

Janette Products are produced in conformity with the Fair Labor Standards Act of 1938.

DAMAGE—We assume no responsibility beyond delivery of carefully packed apparatus to the transportation company. If a converter is damaged in transit, the consignee should immediately notify the transportation company and file a claim for damages.

IMPORTANT—When ordering parts always give the SERIAL NUMBER of the machine for which the parts are wanted. A minimum charge of \$0.50 will be made for a single order for parts.

Parts are priced f.o.b. Factory, Chicago, Ill. and are subject to change without notice.

Special packing for either domestic or export shipment can be furnished for an additional charge.

GUARANTEE—Janette rotary converters (not electric governors) are guaranteed only against faulty workmanship and flaws in material. Any parts, which shall within one (1) year from date of shipment from the factory be proved to have been defective in these respects when delivered, will be repaired or replaced (at our option) by the Company, F.O.B., Chicago. This guarantee is in place of any guarantee or warranty which would be implied by law. The Company does not guarantee the fitness of its products for any particular purpose. The Company's liability is limited to such

replacement, and it shall not be held responsible in any form of action for direct or consequential damages to property or person. As there is so wide a variety of conditions under which the Company's products may operate, any greater responsibility than herein set forth cannot be assumed unless a specific guarantee has been previously made in writing. This guarantee shall be void in the case of any products which have been disassembled, repaired or tampered with in any way, except when such work has been done with the Company's written permission.

All claims as to defective material must be made in writing within ten days from receipt of material. The Company shall then have the option of reinspection at the customer's plant, or its own, before allowing or rejecting such claim. Defects that do not impair service shall not be cause for rejection. The Company shall have the privilege of replacing, within a reasonable time, any material agreed upon as not complying with the order. No claim will be allowed for material damaged in transit. The expenses in connection with claims for which the Company is not liable may be charged to the customer.

The Company will not be liable for any work done to correct alleged defects or errors unless such work is authorized in writing by the Company.

INSTALLATION

A CONVERTER should be installed in a clean, dry, well ventilated place, preferably not below 32° F., or above 104° F., in such a manner as to be easily accessible for inspection and cleaning. It should be mounted on a level surface, as near as possible to the device or apparatus it is to operate, in order to minimize voltage drop. In locations where vibration or "running" noise is objectionable, vibration dampening materials can be used between the converter and its base.

WIRING—Be sure the voltage of the power line is the same as the D.C. voltage stamped on the converter nameplate. A wiring connection diagram is shown on page 8. Use conductors large enough to keep voltage drop to a minimum. It is important that the D.C. and A.C. wiring to and from a converter, be made in SEPARATE conduits, both ends of which should be well grounded. All connections should be soldered and the contact prongs of plugs and receptacles checked for fit, because poor contacts may cause arcing and serious interference. Radio reception can sometimes be improved by reversing the polarity of the D.C. leads or plug, if one is supplied. As these converters are designed for starting "across the line" without resistors, time delay fuses similar to Fusetrans or starters with thermal overload protection are recommended.

GROUNDING: (Converter with filter)—To obtain the best reception from a radio receiver it may be necessary to try various connection combinations for grounding.

A ground wire (preferably stranded) of at least No. 12 B&S gauge should be connected to a water pipe, or equally good ground by means of a suitable clamp. The contact surfaces MUST be clean. Steam pipes or radiators usually are not good for grounding and should not be used unless no better ground is available. The ground wire should be as short as possible.

Separate ground wires should be used for the converter and

radio chassis; each unit should have its own individual ground wire.

1. The manufacturers' instructions for grounding the radio receiver should be complied with.
2. Connect the converter leads (or plug) to the D.C. power supply. Connect the radio and start the converter.
3. If reception is unsatisfactory, try connecting a ground wire to the terminal post on the filter box.
4. The yellow wire from the filter box, which is connected to a screw on the frame of the converter before shipment from the factory, is the ground wire from the center of the filter system. Try the reception with this yellow wire disconnected.
5. Try connecting the yellow wire to the ground terminal post on the filter box.
6. Reception sometimes can be improved by interchanging the D.C. leads, or by reversing the plug prongs, (if one is supplied) in the receptacle which changes the polarity.

In the event of trouble a converter should not be tested for grounds until all ground wires in the filter and on the converter frame have been disconnected.

INTERFERENCE—This is often caused by motors, generators, X-Ray machines and similar apparatus. The filter system of the converter is not intended to eliminate such interference, as this can be only eliminated at the source. A set of twin condensers with the center point grounded, connected across the brushes of the unit causing the interference, will usually eliminate this trouble. "Leaky" wiring is very often responsible for interference. A set of twin condensers of 1 mfd. capacity, with a rating of 400 volts D.C., grounded at the center point, connected across the A.C. line at the radio chassis, may reduce this kind of interference. Shielding an ungrounded converter by completely surrounding it with a well grounded copper screen, is a good method to use for reducing interference from outside of a converter.

MAINTENANCE

COMMUTATOR—The commutator, collector (slip) rings, brushes and brush holders, should be thoroughly cleaned at regular intervals. In order to reach the commutator, it may be necessary to move the D.C. brush leads or loosen the upper and lower screws in the end frame and slightly shift the brushholder ring. If the ring is moved be sure to reset to its original position. The correct position is indicated by a small arrow on the ring which points to a mark on the end frame. Wipe them off with a soft cheesecloth moistened with kerosene or carbon tetrachloride, or blow out the dirt with dry air under pressure. Dirty brushes may stick in their holders and cause sparking at the commutator.

SEASONING—It requires some months of operation for a new commutator to become seasoned. During this period, segments may loosen, causing high or low bars or an

eccentric commutator. If this happens, the commutator should be turned in a lathe. An eccentric commutator or slip ring will cause a distinct knocking action on the brushes.

SANDING—A rough commutator can be smoothed by holding No. 00 (or No. 000) sandpaper against it by means of a thin piece of hard wood which has a straight edge. If commutator stones are available, start with a coarse and finish with a fine grain stone. Clean out all dust, especially from the brushes and slots, and see that the brushes move freely in their holders and have sufficient spring tension to hold them in firm contact with the commutator. DO NOT use emery cloth, oil or lubricants on a commutator, or abrasives on collector (slip) rings. IF the rings become blackened, clean with alcohol or carbon tetrachloride.



Fig. 1—Sanding a commutator. The best method is to hold the sandpaper with a strip of hard wood.

SEATING BRUSHES—See that the commutator is smooth before installing new brushes, which should be of a make and grade recommended by JANETTE engineers. Wrap a strip of No. 00 sandpaper firmly around the commutator (or rings) with abrasive side out. Insert brushes and springs into the holders. Oscillate the armature or pull the sandpaper back and forth until brush face conforms to the curve of the commutator or slip ring. When nearly bedded the sandpaper should be pulled only in the direction the armature rotates when running. Clean the dust from brushes, holders, and slots. If possible run the converter for several hours without load to polish the brush faces. Seating brushes can

TURNING—If the commutator (or slip rings) becomes eccentric, or has high or low bars it should be "turned." Protect the windings from copper chips and dust, by wrapping them with a piece of light canvas or oil cloth. Take light cuts with a fairly sharp (diamond) pointed tool. Use a surface speed of about 300/400 feet per minute for a carbon steel tool or 500/600 f.p.m. for a stellite cutting tool.

$R.P.M. = (F.P.M. \times 12) \div (\text{Diameter in inches} \times 3.14)$
 $F.P.M. = (R.P.M. (\text{lathe}) \times \text{dia. (commutator)} \times 3.14) \div 12$. Undercut the mica to a depth of about .04". If no undercutting tool is available, attach a suitable handle to a hack saw blade and grind off the "set." Be sure that all mica fins along the sides of the slots are removed. It is good practice to slightly bevel the edges of the commutator bars.



Fig. 2—Sanding in a brush.

also be done by using a free wearing, fine grain, brush seating stone if the dust is thoroughly cleaned out.

BURNISHING—After "sanding" or "turning" a commutator (or slip rings) should be burnished. The end grain of a small block of hard wood (maple is good) can be held against the commutator with heavy pressure. An oak strip, with several layers of six or eight ounce, hard woven, canvas duck fastened over one end, held against the commutator with heavy pressure is an excellent means of polishing and removing surface deposit. Regular frequent cleaning of the commutator surface with canvas will go a long way in preventing the need for major resurfacing operations.

LUBRICATION

SLEEVE BEARINGS—CAUTION—Before leaving the factory, oil is drained from the bearings of converters equipped with sleeve type bearings, in order to prevent leakage of the oil during shipment. Fill bearings before starting the converter for the first time. Slowly pour 3/8 ounce of high grade mineral oil (of approximately 150 viscosity at 100°F. which is within the S.A.E. No. 10 range) into the oil cup on top of each bearing, or until oil appears at the overflow holes. After approximately 1000 hours of operation, more oil should be added. Do not use animal fat, vegetable or heavy cylinder oil. The following oils, or equal, are recommended:

Standard Oil Co. (Indiana), Stanol No. 15; Socony-Vacuum Oil Co. Gargoyle Vacuoline oil light or Mobiloil Arctic Special; Shell Oil Co. 3647 Albus 27 oil; Sinclair Refining Co., Saline Oil and Texas Co. Ursa oil P-10.

BALL BEARINGS—For ordinary service in ambient temperatures of from 32° to 104°F., the original grease should be sufficient for 9 to 12 months' operation. For severe service and high ambient temperatures, it is advisable to add a small amount of grease every 3 months.

For ambient temperatures above 32°F.: Use a smooth or short fibre ball bearing grease of 250-300 A.S.T.M. worked penetration and containing a refined mineral oil of 250-350 viscosity at 100°F. It should show no separation at 250°F. and must be free from any fillers, grit or other harmful impurities.

For ambient temperatures below 32°F.: Use a smooth or short fibre ball bearing grease of 300-350 A.S.T.M. worked penetration and containing a refined mineral oil of a viscosity not to exceed 200 at 100°F. It must be free from any fillers, grit or other harmful impurities.

DO NOT over-lubricate as this will cause temperature rise on the bearing; may lead to serious heating and/or force grease out of the bearing.

As quietness and life of a ball bearing depends upon cleanliness, use only a CLEAN, high grade grease. CAUTION: Keep the cover on the grease can, removing it only for the short interval that grease is being taken from the can. Do not lay the cover where it can pick up dirt. Make certain that the utensil with which you take the grease from the can is perfectly clean. Avoid the use of a wooden paddle. Use instead something with a steel blade like a putty knife, which can be wiped off smooth and clean.

When the housing covers are to be removed wipe them clean of all dirt. After the first year of service and every year thereafter, (oftener if conditions warrant) the old grease should be renewed. Insert a grease solvent, such as kerosene or carbon tetrachloride into the bearings by means of a syringe. Start the converter and allow the solvent to churn for a few minutes, then remove the bearing caps and wash out the bearings. Replace the caps and inject a small amount of light lubricating oil. Allow to churn for a few minutes then drain off. Fill the bearing housings not more than one third to one half full of grease. Ball bearings should not be removed from the housings unless proper tool equipment is available.

GREASES RECOMMENDED

MANUFACTURER	ABOVE 32°F.	BELOW 32°F.
Standard Oil Co. (Indiana)	Stanobar No. 2	Omega
Socony-Vacuum Oil Co.	Gargoyle BRB No. 3	Gargoyle A No. 0
Shell Oil Co.	5472 EXL No. 2	5121 Albida No. 1
Sinclair Refining Co.	AF No. 1	AF No. 1
Texas Co.	Texaco Starfak "M"	Texaco Starfak "L"

U.S. Navy specification 14-L-3B grade B medium grease. (Socony-Vacuum PD288C grease meets this specification)

AUTOMATIC FREQUENCY CONTROL

MODEL DSIX—Automatic frequency control is constructed with a moulded Bakelite disc, steel hub insert, hard commutator copper split slip rings, which are insulated from the Bakelite disc. A split ring is used, which reverses the current each revolution, thereby supplying A.C. to the contacts to prevent polarization, roughening and sticking. A set of spring supported contacts on the face of the governor disc,

cuts a resistor into the shunt field circuit of the converter when the speed decreases and cuts it out when the speed increases. This interruption frequency, about 100 to 200 per second, is determined by the normal periodic frequency of the contact spring, which is independent of the speed of the converter. This high frequency permits an accuracy of about 60 cycles plus or minus 3/4% (approximately 1/2 cycle), with

a plus or minus 7% variation in D.C. input voltage, at a varying load from $\frac{1}{3}$ to full load; for 50 cycles plus or minus approximately $\frac{3}{4}$ cycle.

The contact springs are adjusted roughly for a converter speed of 3600 RPM and closer adjustment may have to be made. If a tachometer indicates higher than 3600 RPM, or if a synchronous clock connected to the A.C. output leads of the converter runs fast, lower the frequency by readjusting the contact spring screws on the governor.

FREQUENCY—To check output frequency when no frequency meter is available, connect a small synchronous electric clock to the A.C. output leads and determine whether this clock runs fast or slow when compared with any available timepiece.

TO INCREASE FREQUENCY back up the small set screw on the outer contact spring on the face of the governor disc and follow up with the set screw on the inner spring contact, until the air gap between the contacts is approximately $\frac{1}{32}$ ". This moves the entire contact assembly towards the periphery of the governor disc, which increases the frequency by increasing the speed of the converter.

TO REDUCE FREQUENCY screw in the small set screw bearing against the outer spring contact and back up the set screw for the inner contact spring, until the air gap between the contacts is about $\frac{1}{32}$ ". This moves the entire contact assembly away from the periphery of the disc, which decreases the frequency by decreasing the speed of the converter.

PITTING of the contact points may cause erratic governor action. When this happens smooth the points with No. 000 or No. 00 sandpaper. (Do not use emery cloth.) After cleaning the contacts readjust the governor for the correct frequency (speed) as described above.

THE SLIP RINGS on the split back governor disc should occasionally be cleaned with No. 000 or No. 00 sandpaper. (Do not use emery cloth.) Also clean between the rings. Any carbon dust or oil can be removed at this point by using a toothpick. Keep the governor free from any accumulation of dust and oil.

IMPORTANT—Always keep a spare set of brushes on hand for both the converter and governor. Also a spare governor disc assembly. Whenever the spare governor disc is installed, return immediately the other disc to JANETTE MANUFACTURING COMPANY, 556 WEST MONROE STREET, CHICAGO 6, ILLINOIS, with a purchase order to cover repair or replacement. Be sure to give the type and serial number of the converter with which it is used. We do not build electric governors and do not guarantee this apparatus but do supply the best available make.

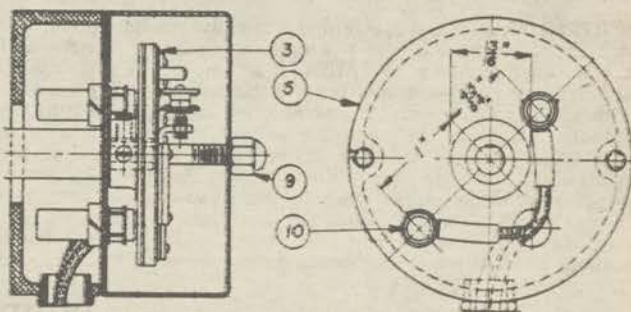


Fig. 3—Numbers of Governor Parts

MISCELLANEOUS INFORMATION

CAUTION: When a load consists of a number of radio receivers, which may be turned on or off, where a mixed load such as a motor, radio or lamp are connected to a converter of large capacity; or where the D.C. supply voltage of a converter is subject to abnormal fluctuations, protection should be provided for EACH receiver against high A.C. output voltage. An adjustable resistor such as an Ohmite, Clarostat, Amperite, Vitrohm, etc., can be used. It may also be advisable to use an A.C. voltmeter. An adjustable transformer in the A.C. line is also a good method to use for protecting apparatus from damage by high A.C. voltage.

POWER FACTOR: As the A.C. capacity of a converter is rated in VOLTAMPERES, the POWER FACTOR of the load should be given when ordering. Power factor is the ratio of actual watts (measured by a wattmeter) to the voltamperes (VOLTS $\times$ AMPERES). The power factor is obtained by dividing WATTS by voltamperes and is expressed in percent. The power factor is 100% when the volt-amperes and watts are the same. When the watt load is smaller than the volt-amperes, the power factor is less than 100%.

Examples of high power factor loads are heating devices, filament lamps, irons, toasters, radios, amplifiers, etc. Motors, inductive loads, some types of transformers, are medium or low power factor loads. A converter must be wound for the SAME POWER FACTOR as that of the A.C. load it supplies.

NOTE: These two conditions apply when the SAME volt-ampere load is supplied.

HIGH POWER FACTOR CONVERTER and a LOW POWER FACTOR load—The no load will be lower than full load speed; the A.C. output frequency and voltage higher, which causes sparking at brushes and heating of commutator and armature. The high speed may also unbalance the armature and the high cycles, cause trouble in the load.

LOW POWER FACTOR CONVERTER and a HIGH POWER FACTOR load—Lower A.C. output frequency and voltage result, which may damage the D.C. windings and injure the apparatus connected to the converter.

GASEOUS ELECTRIC SIGNS: To select a converter, add the VOLTAMPERE ratings stamped on the nameplates of all transformers used and select a converter whose voltampere rating equals or exceeds the total voltamperes of the trans-

formers. Transformers for neon signs are built for both low (40%) and high (85%) power factor.

CAUTION: If a high power factor converter is underloaded or operated from a D.C. supply voltage higher than stamped on the nameplate, or both, overheating or breakdown of the sign transformer and converter may result.

SPECIAL APPLICATIONS: Janette converters are built in a great many special types and designed for a wide variety of applications. Prices will be quoted upon receipt of complete details of the application.

FLUORESCENT LAMPS: A standard converter should be used ONLY when the minimum lamp load at any time is 50%, or more of the TOTAL voltampere load. A specially wound converter, with closer voltage regulation than a standard machine, is recommended where lamps may be turned on or off, until the load on the converter is less than 50% of its rated capacity. Any size converter can be supplied for special close voltage regulation but the capacity will be 20% less than listed.

Fluorescent lamps and control auxiliaries are rated in WATTS. The power factor is normally about 80% but when corrected with condensers, 85% to 95%. To obtain volt-amperes, divide watts by the power factor. For example: a 20 watt lamp requires an auxiliary of about 7 watts, or a total load of 27 watts. A bank of 11 such lamps would total 11x27 or 297 watts. For lamps having a power factor of 80%, the voltamperes would be $297 \div .8 = 371$ voltamperes. If the load is 85% P.F. $297 \div .85 = 350$ volt ampere capacity required.

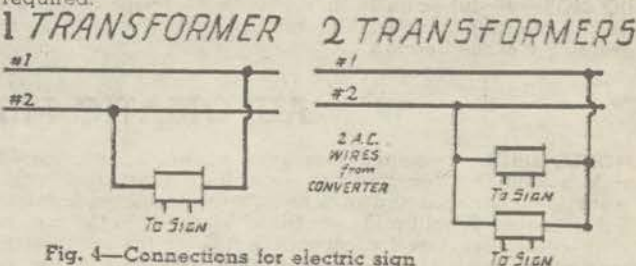


Fig. 4—Connections for electric sign transformers and converters.

PARTS PRICE LIST for TYPE CS and CSF CONVERTERS

1-7

DIRECT CURRENT INPUT VOLTAGE OF CONVERTER

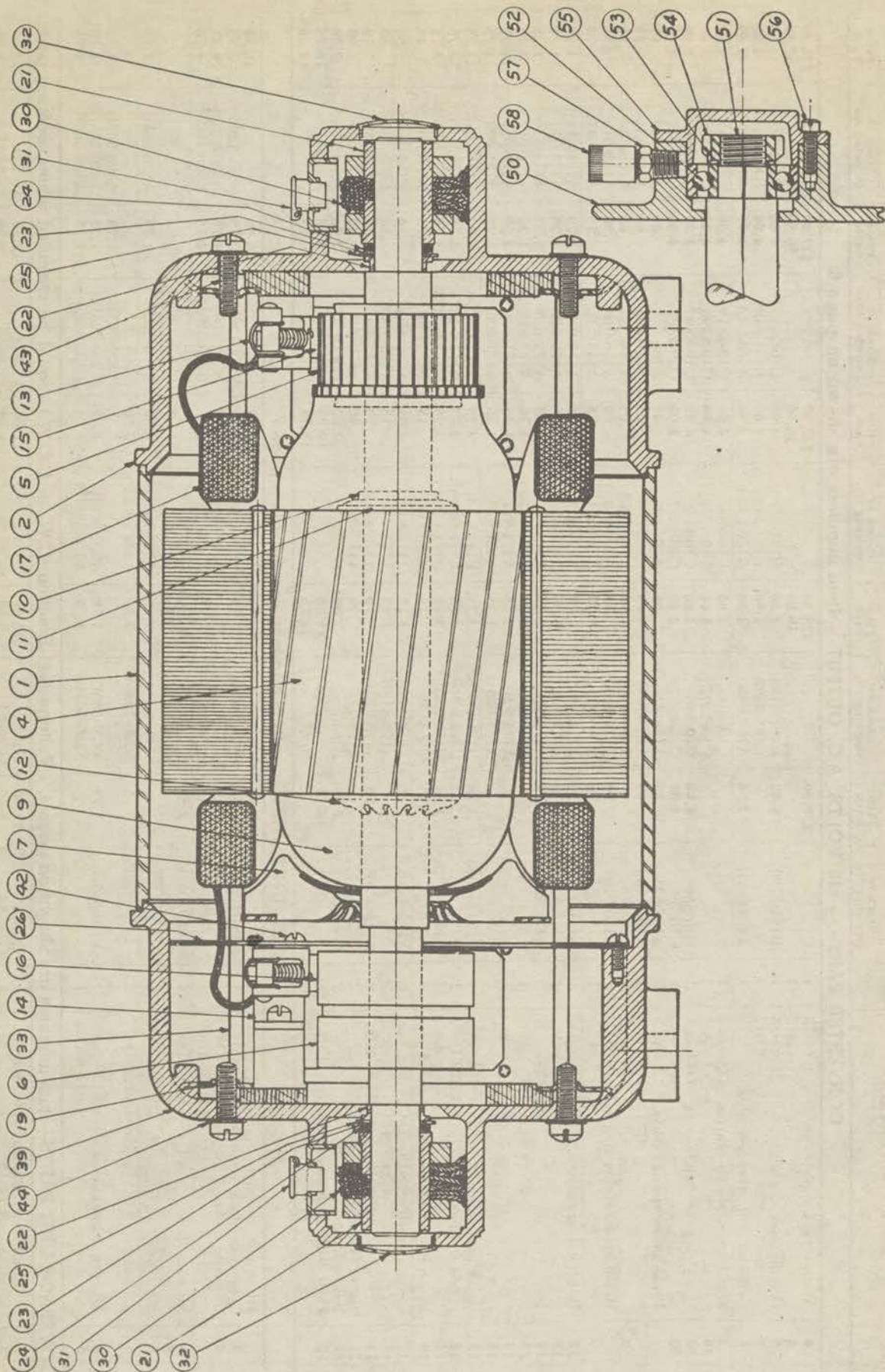
Item No.	DESCRIPTION OF PART	No. Req.	12			24			32			115			230		
			Stock or Drawing No.	Price Each	Price Each	Stock or Drawing No.	Price Each	Price Each	Stock or Drawing No.	Price Each	Price Each	Stock or Drawing No.	Price Each	Price Each	Stock or Drawing No.	Price Each	Price Each
CONVERTER PARTS — 110 VOLTS, A.C. OUTPUT — Item numbers are shown on page 6.																	
4	Armature—complete	1	CS13		\$38.00												\$28.00
4	Commutator assembly	1	CS12														37.50
5	Collector (slip) ring assembly	1	CS12														4.00
6	End frame—sleeve bearing—D.C. end	1	CS12														4.00
39	—ball bearing—D.C. end	1	CS12														4.00
50	Brush holder spring CS13—D.C. end	2	CS12														4.00
50	—CS12—D.C. end	2	CS12														4.00
50	Brush holder rocker ring only—D.C. end	2	CS12														4.00
13	Brush holder only—CS13—D.C. right	1	CS12														4.00
13	—D.C. left	1	CS12														4.00
14	—A.C.	2	CS12														4.00
13	CS12—D.C. right	1	CS12														4.00
13	—D.C. left	1	CS12														4.00
14	—A.C.	2	CS12														4.00
13	Brush holders and ring complete	1	CS13 D.C.														3.75
13	—CS12 D.C.	1	CS12 D.C.														3.75
14	Brush holder clamp	1	CS12														3.75
14	Carbon brush—CS13—D.C.	2	CS12														3.75
15	—CS12—D.C.	2	CS12														3.75
15	—CS13 and CS12 A.C.	2	CS12														3.75
21	Sleeve bearing— $\frac{5}{8}$ "	2	CS12														3.75
52	Ball bearing	2	CS12														3.75
17	Field coils—series and shunt	Set	CS13														3.75
		Set	CS12														3.75

FILTER UNIT PARTS — Item numbers are shown on page 7

	Filter unit complete	1	S284-1266	16.50 3.75	S284-1266 B320-5265E	16.50 3.75 4.75	S284-1266 B320-5265A B320-5265J	16.50 3.75 4.75	S284-1266 B320-5265E	16.50 3.75 4.75
3	Condenser block—complete assembly	1								
4	Iron core choke	1								
4	—CS12—D.C.	1								
5	Air core choke	4	A320-1055E	2.50	A320-1055E	2.50	A320-565B	1.75	A320-565B	1.75
5	—CS12—D.C.	2								
5	—CS12—D.C.	1								
5	Air core (zig zag) choke	1	A320-565B	1.75	A320-565B	1.75	A320-565B	1.75	A320-565B	1.75
5	—CS12—A.C.	1								

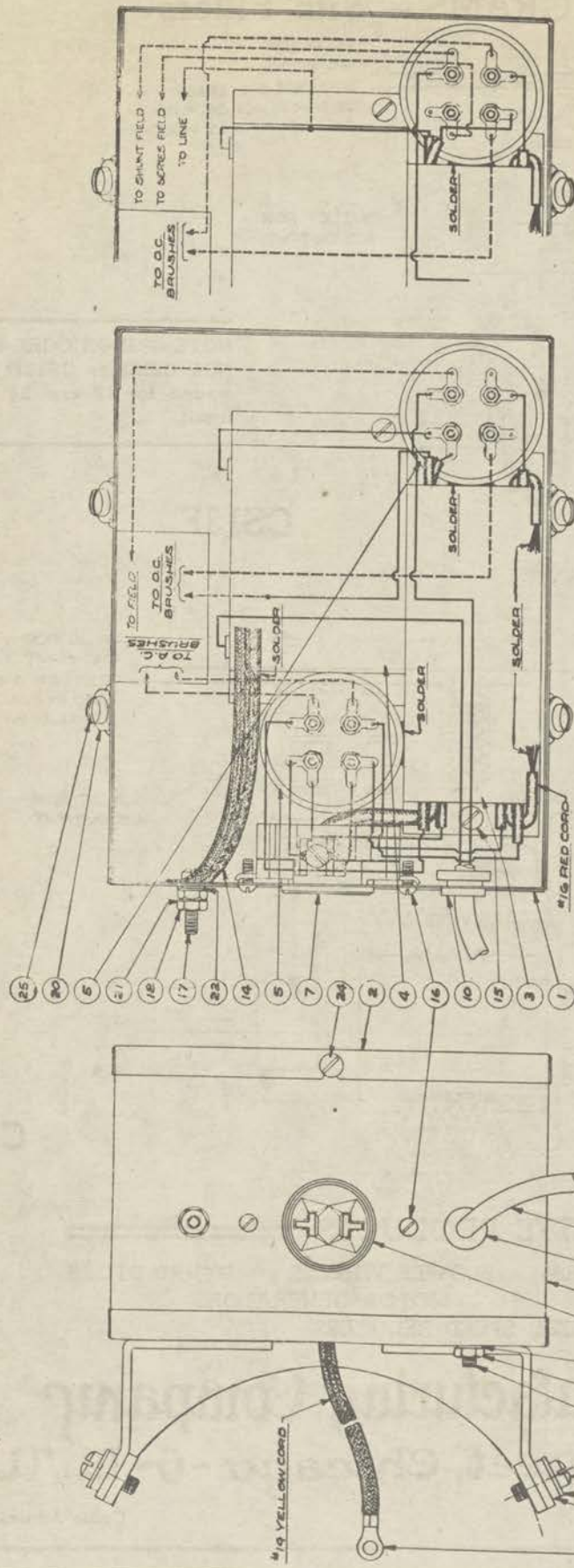
GOVERNOR UNIT PARTS—Item numbers are shown on page 4. Voltage and Rotation (C.W. or C.C.W.) should be specified when ordering parts.										
2	Governor housing assembly complete	1	C653A G763A1	13.50 9.50	C653A G763A1	12.50 8.50	C653A G763A1	12.50 8.50	C653A G763A1	12.50 8.50
3	Governor unit DSIX	1								
4	Governor case	1	C375H	1.00	C375H	1.00	C375H	1.00	C375H	1.00
5	Brush holder disc assembly	1	C557A	1.25	C557A	1.25	C557A	1.25	C557A	1.25
7	Governor cover	1	C460H	1.25	C460H	1.25	C460H	1.25	C460H	1.25
9	Acorn nut No. 10-24	1	M194N	.10	M194N	.10	M194N	.10	M194N	.10
10	Brush with spring and shunt	2	C755A	.35	C755A	.35	C755A	.35	C755A	.35

DETAIL DIAGRAM and ITEM NUMBERS of CONVERTER PARTS



SECTION THRU HUB OF BALL BEARING CONVERTER

ASSEMBLY of FILTER UNIT for TYPE CSF CONVERTERS



EXCEPT WHERE OTHERWISE NOTED
ALL WIRES ARE #16 BLANCH COARD

TOP VIEW COVER REMOVED

NOTE - IN ORDER TO SHOW CONNECTIONS MORE CLEARLY THE WIRING IS SHOWN SCHEMATICALLY.

CS13F and CS12F

CS13F

CS12F

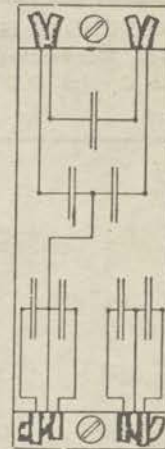
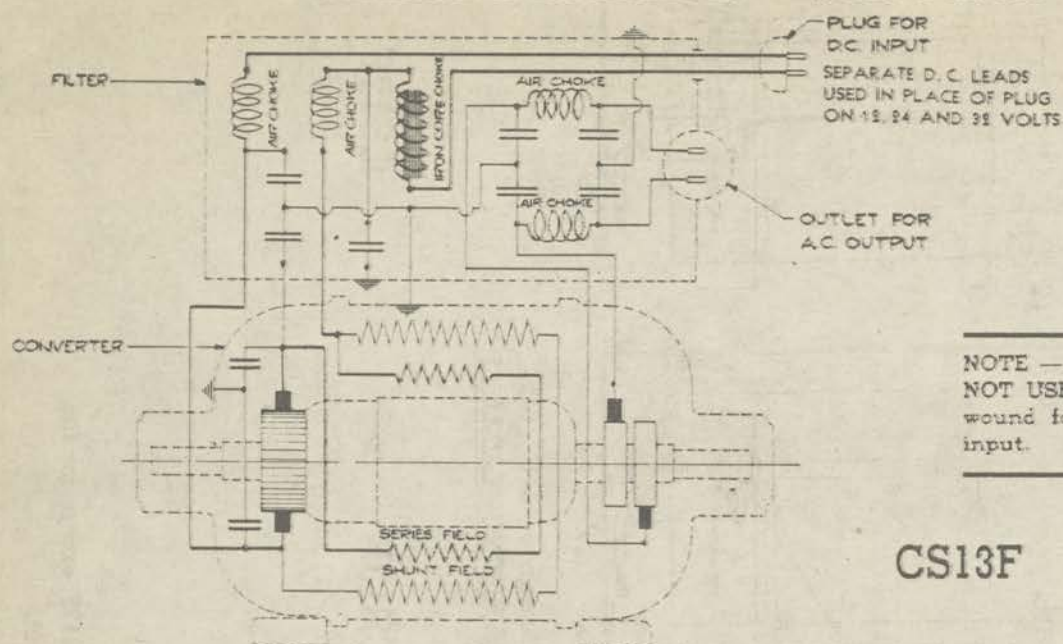


DIAGRAM OF CONDENSED BLOCH SHOWING INTERIOR CONNECTIONS

The wiring connections are the same for CS13F and CS12F except for the manner in which D.C. leads are brought out.

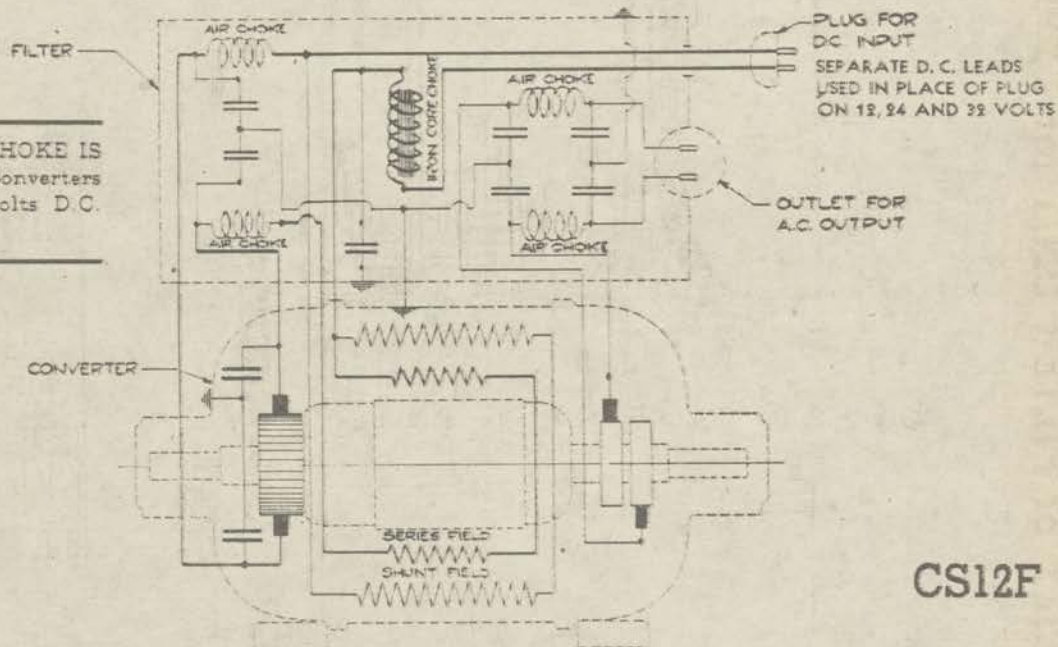
WIRING DIAGRAMS — With Filters



NOTE — IRON CORE CHOKE IS NOT USED on CS13F Converters wound for 12 and 24 volts D.C. input.

CS13F

NOTE — IRON CORE CHOKE IS NOT USED on CS12F Converters wound for 12, 24 and 32 volts D.C. input.



CS12F

JANETTE PRODUCTS

MOTORLESS SPEED REDUCERS BLOWER WHEELS DYNAMOTORS
GENERATORS MOTOR GENERATORS
MOTORIZED SPEED REDUCERS

Janette Manufacturing Company

556-558 W. Monroe Street, Chicago - 6 - Ill., U. S. A.

Chicago Telephone Franklin 5174

Cable Address Janetteco

MAINTENANCE PARTS LIST

For Tentative TM 11-2518, Rotary Converter (24 V/DC to 110 V/AC) and Rotary Converter (110 V/DC to 110 V/AC).

NOTE: Order maintenance parts by stock number, name, and description.
Only maintenance parts listed can be requisitioned.

Ref. Symbol	Signal Corps Stock Number	Name of Part and Description	Station Stock	Region Stock	Quantity per Unit
.....	.....	BOOK: technical manual.....	.....	*	1
		CONVERTER PARTS			
4	3H5182.6/A5	ARMATURE: complete; double-wound; (for 115-v d-c only).....	.....	*	1
4	3H5182.6/A5	ARMATURE: complete; double-wound; (for 24-v d-c input only).....	.....	*	1
21	3H5182.1/B1	BEARING: sleeve; ($\frac{5}{8}$ " diam. shaft, 0.620" ID, 0.8770" OD).....	.....	*	2
15	3H5182.1/B3	BRUSH: carbon; ($\frac{1}{2}$ " x $\frac{3}{8}$ " x $\frac{15}{16}$ " long; for 110-v d-c input only).....	*	*	2
15	3H5180/B4	BRUSH: carbon; d-c; ($\frac{1}{2}$ " diam. x $\frac{5}{8}$ " x $\frac{15}{16}$ " long; for 24-v d-c input only).....	*	*	2
15	3H5180/B5	BRUSH: carbon; a-c; ($\frac{1}{2}$ " diam. x $\frac{3}{8}$ " x $\frac{15}{16}$ " long with flexible shunt and term lug).....	*	*	2
19	3H5182.6/C15	CLAMP: brush holder.....	.....	*	4
.....	3H5182.6/H15	HOLDER: brush; d-c; (rocker ring only).....	.....	*	1
13	3H5182.6/H18	HOLDER: brush; d-c; left; (for 110-v d-c only).....	.....	*	1
13	3H5182.6/H17	HOLDER: brush; d-c; right; (for 110-v d-c only).....	.....	*	1
13	3H5182.5/H15	HOLDER: brush; d-c; left; (for 24-v only).....	.....	*	1
13	3H5182.5/H16	HOLDER: brush; d-c; right; (for 24-v only).....	.....	*	1
14	3H5180/H11	HOLDER: brush; a-c; rocker ring assembly.....	.....	*	1
13	3H5182.1/H10	HOLDER: brush; d-c; rocker ring assembly (for 110-v only).....	.....	*	1
13	3H5180/H10	HOLDER: brush; d-c; rocker ring assembly; (for 24-v only).....	.....	*	1
.....	3H5182.1/S10	SPRING: brush holder; ($\frac{7}{32}$ " ID x $\frac{7}{16}$ " long, 0.027" diam. music wire) (for 110-v d-c; 110-v a-c).....	*	*	2†
.....	3H5180/S10	SPRING: brush holder; ($\frac{7}{32}$ " ID x $\frac{1}{2}$ " long, 0.035" diam. music wire) (for 24-v d-c; not used on 110-v d-c to 110-v a-c model).....	*	*	2
		FILTER UNIT PARTS			
3	3H5182.6/B15	BLOCK: capacitor; complete assembly.....	*	*	1
10	3H5182.6/B30	BRUSH: with spring and shunt.....	*	*	2
3	3H5182.6/G15	GOVERNOR UNIT D SIX.....	.....	*	1
5	3H5182.6/H16	HOLDER: brush; disk assembly.....	.....	*	1

*Indicates stock available. †4 furnished on 110-v d-c to 110-v a-c converter. 2 furnished on 24-v d-c to 110-v a-c converter.

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