

**FOR
SERVICE, INFORMATION OR
PARTS**

WRITE:

TENDAIRE INDUSTRIES, INC.

*1100 WEST CEDAR STREET
BERESFORD, SD 57004*

PHONE: (800) ON WATTS

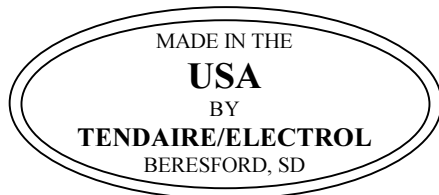
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acpower@tendaire.com*

Serial No. _____

Date Shipped from Factory ____/____/____



**INSTALLATION &
OPERATING
INSTRUCTIONS FOR
HYDRAULIC DRIVEN
ELECTROL™
AC GENERATORS**

MODELS

2BCEHF-25/032

2BCEHF-25/050

2BCEHF-30/



TENDAIRE
INDUSTRIES, INC.



**1100 W. Cedar St., Beresford, SD 57004
Phone (605) 763-5500 * Fax (605) 763-5073**

IMPORTANT

This booklet contains important information. Please read this booklet before you install the ELECTROL hydraulic drive A.C. generator.

All ELECTROL generators are thoroughly tested and run under load conditions before they leave the factory.

When properly installed, operated and maintained, they will give many years of trouble-free service. Keep this booklet with the unit for future reference.

HYDRAULIC DRIVE GENERATOR MAINTENANCE SCHEDULE

DAILY ► *Check the voltage output*

WEEKLY ► *Inspect hydraulic motor and flow control for oil leakage*

MONTHLY ► *Inspect hydraulic lines and connections leading to the generator for wear or possible fatigue.
Check the cleanliness of the hydraulic oil. A #10 micron filter should be used. Dirty hydraulic oil will cause excessive wear inside the motor. A worn motor will cause low voltage under load.*

CAUTION

*Over speed of the self-excited generator will cause over-heating and/or damage to the full wave bridge located in the endbell.
(Maximum generator speed 3000 R.P.M.)*

**SEE: Electrical trouble-shooting (no output voltage)*

Effective 09/05

WARRANTY

Tendaire Industries, Inc. hereby guarantees for a period of one year as hereinafter stated, the alternator described below to be free from defects in material and workmanship of properly installed, operated and serviced under normal conditions according to our instructions.

Taking apart the generator will VOID the warranty!

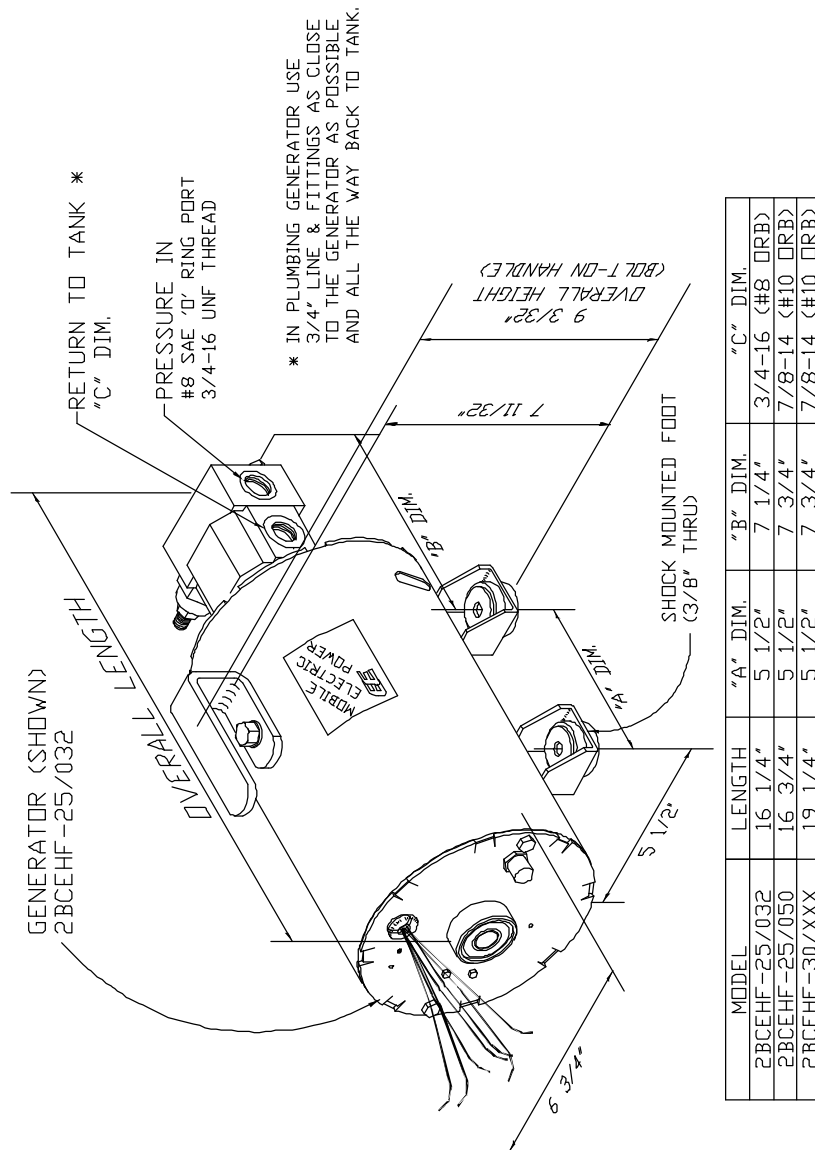
*All parts will be repaired or replaced by Tendaire Industries, Inc. if found by it to be defective in material or workmanship within one year
FROM DATE OF SHIPMENT.*

All transportation charges on parts, or units submitted for replacement or repair, under this warranty must be borne by the purchaser.

There is no other warranty expressed or implied. Tendaire Industries, Inc. shall in no event be liable for consequential damages.

ELECTRICAL TROUBLE-SHOOTING HYDRAULIC DRIVE

Internal-excitation (self excited)
External-Excitation (12 V.D.C. battery excited)
External-Excitation (24 V.D.C. battery excited)



SYMPTOM	PROBABLE CAUSE	REMEDY
No output voltage (Will not apply to 12/24 volt D.C. external excitation)	Open or short in armature	Replace armature
	Open or short in stator shunt field	Replace stator
	Inadequate oil supply	Refer to hydraulic section
Low voltage output with no load and low voltage output with load	Dirty, worn or sticking brushes	Clean and free up brushes. Replace if less than 3/8" in length.
	Open or short in full wave bridge (located in stator)	Replace bridge
	NOTE: Disconnect leads for testing.	
	Open or short in armature	Replace armature
	Open or short in stator series field	Replace stator

NOTE

It is extremely important that all wires be marked before they are disconnected. It may be necessary to flash generator when it is reassembled. Refer to "loss of residual magnetism."

ELECTRICAL TROUBLESHOOTING

HYDRAULIC DRIVE

Internal-excitation (self excited)

External-Excitation (12 V.D.C. battery excited)

External-Excitation (24 V.D.C. battery excited)

SYMPTOM	PROBABLE CAUSE	REMEDY
No output voltage	Fuse (External excitation only)	Replace fuse
	No oil flow or Low oil flow on Self excited generators	Provide oil flow
	Open or short in electric solenoid valve	Replace electric solenoid valve
	Dirty, worn or sticking brushes	Clean and free up brushes. Replace if less than 3/8" in length
(Will not apply to 12/24 volt D.C. external excitation) →	Loss of residual magnetism. NOTE: Loss of residual magnetism will occur upon disassembly.	With Generator NOT running and all equipment turned off, plug 12 volt D.C. into 110 volt outlet of generator. Remove 12 volt D.C. plug. Start generator and check output.
		WARNING Armature must NOT be rotating!!
(Will not apply to 12/24 volt D.C. external excitation) →	Open or short in full wave bridge (Located in endbell) NOTE: Disconnect leads for testing	(1) Replace bridge (2) Replace endbell assembly

-- continued --

INSTALLATION

The hydraulic driven generator can be mounted in any convenient location provided there is access to the hydraulic system.

*The generator can be mounted in any horizontal position (side, top, or bottom). **DO NOT** mount with armature shaft in vertical position.*

Generators mounted in compartments must have direct and unrestricted access to outside ventilation.

Any electrical outlets must be weather proof and wired into the generator's electrical system with #12-3/S cord.

CAUTION

Over speed of the self-excited generator will cause overheating and/or damage to the full wave bridge located in the endbell. (maximum generator speed 3000 R.P.M.)

***SEE:** *Electrical trouble-shooting (no output voltage).*

AFTER INSTALLATION:

Start engine

Engage generator

Apply load to generator

Allow generator to operate for 15 minutes (to warm hydraulic oil)

Inspect all connections for oil leaks

****NOTE****

Hydraulic oil return line to tank *MUST NOT* exceed 50 P.S.I. back pressure *AT THE MOTOR PORT*. Return line should be sized such that line velocity does not exceed 10 F.P.S. (Feet per second).

HYDRAULIC REQUIREMENTS

MODEL	MOTOR	G.P.M.	P.S.I.
2BCEHF-25/032	.258 CID	3.60 GPM (max)	2400 PSI
2BCEHF-25/050	.388 CID	5.85 GPM (max)	2000 PSI
2BCEHF-30/xxx	.388 CID	7.40 GPM (max)	2400 PSI

NOTES

20 GPM (max) to flow control

Hydraulic oil return line to tank *MUST NOT* exceed 50 P.S.I. back pressure *AT THE MOTOR PORT.*

Return line should be sized such that line velocity does not exceed 10 F.P.S. (feet per second).

HYDRAULIC TROUBLE-SHOOTING HYDRAULIC DRIVE

Internal-excitation (self excited)
External-Excitation (12 V.D.C. battery excited)
External-Excitation (24 V.D.C. battery excited)

SYMPTOM	PROBABLE CAUSE	REMEDY
<i>No output voltage or low output voltage with or without load</i>	<i>No oil flow</i>	<i>Provide oil flow</i>
	<i>Dirty oil and filter</i>	<i>Change oil and filter, a #10 micron filter should be used</i>
	<i>Dirty flow control cartridge</i>	<i>(1) Clean cartridge (2) Replace cartridge</i>
	<i>Flow control setting is too low</i>	<i>Adjust flow control (generator speed 3000 RPM)</i>
<i>Hydraulic oil leak</i>	<i>Loose fittings</i>	<i>Tighten fittings</i>
	<i>Damaged oil seal, "O" ring and/or gasket</i>	<i>Replace oil seal, replace "O" ring and/or gasket</i>

NOTE

The hydraulic system providing oil to the generator must be efficient, with proper adjustments capable of supplying required GPM at 2000 P.S.I. continuous to the generator. Refer to hydraulic requirements for required GPM.