

**FOR
SERVICE, INFORMATION OR
PARTS**

WRITE:

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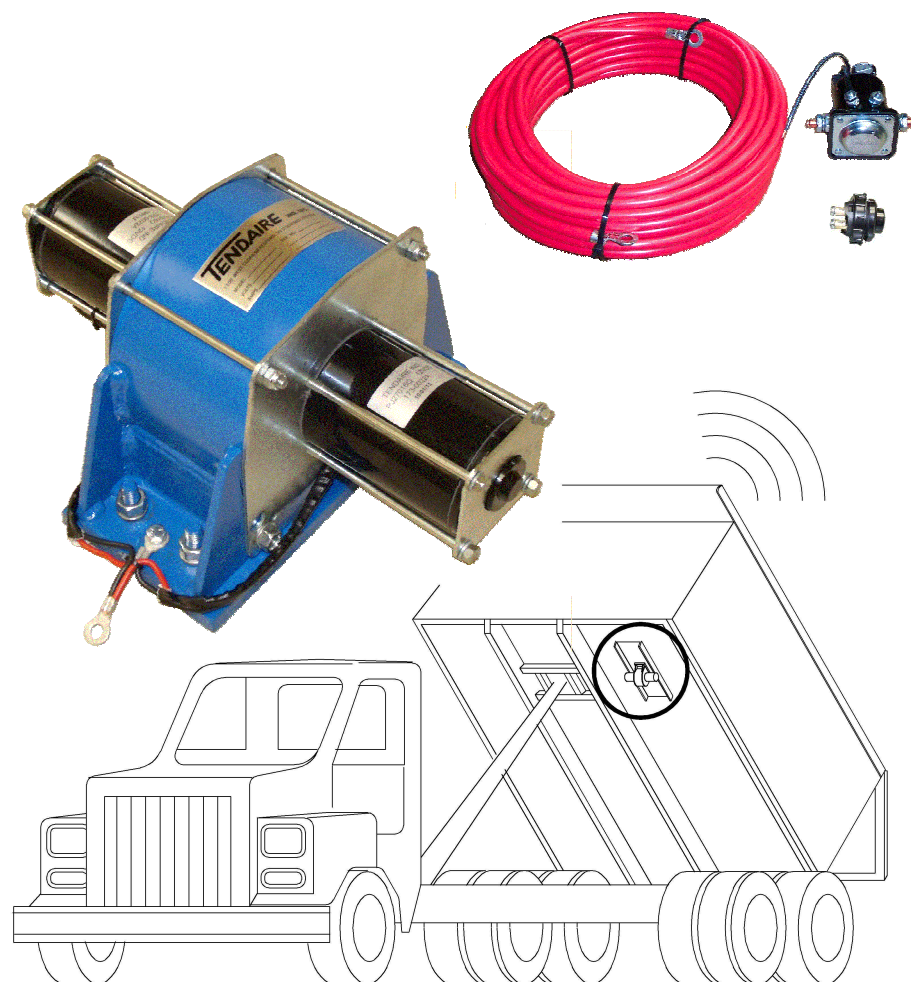
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Serial No. _____

Date Shipped from
Factory _____/_____/_____



**INSTALLATION & OPERATING
INSTRUCTIONS FOR TENDAIRE
MODEL BlueOx35
UNIVERSAL ROTATING VIBRATOR**



TENDAIRE
INDUSTRIES, INC.

**1100 W. Cedar Street
Beresford, SD 57004**

Phone: (800) ON WATTS, (605) 763-5500 Fax: (605) 763-5073

Check your packaging for these items:

- Qty. 1 **BlueOx35** Vibrator
- Qty. 1 VT-6 Timer
- Qty. 1 Momentary Push-button Switch
- Qty. 1 50 Ft. of #6 AWG Battery Cable
- Qty. 1 Either Steel Mounting Base -- Option "S"
Or Aluminum Mounting Base -- Option "A"

Please call Tendaire if you are missing any of these items

IMPORTANT NOTICE

This booklet contains operating instructions for Tendaire **BlueOx35** 12 Volt D.C. rotating vibrator. All Tendaire vibrators are thoroughly tested and inspected before they leave the factory. When properly installed, operated, and maintained, they will give you many years of good trouble-free service. Read this booklet carefully before installing and operating the unit. Keep it with your unit for future reference.

The vibrator is designed for mounting using common "C" channel to the box of your dump truck with cross members, the blade or bucket of your front-end loader. With an optional formed "C" mounting bracket the **BlueOx35** mounts to your flat bottomed or round bottomed bed to provide a fast, efficient means for discharging, and maintaining a controlled feed rate of materials while dumping loads.

The Model **BlueOx35** is designed to be used on dump trucks 5 cubic yards and up, dump trailers, off the road haulers, dirt scrapers, hoppers, ag lime and fertilizer spreaders, and many other applications where discharging a load is a problem.

WARRANTY

TENDAIRE INDUSTRIES, INC. hereby guarantees for a period of 3 years as hereafter stated, the vibrator described below to be free from defects in material and workmanship if properly installed, operated and serviced under normal conditions according to our instructions. This warranty is void if the **VT-6 Timer** is not installed.

All parts will be repaired or replaced by **TENDAIRE INDUSTRIES, INC.** if found to be defective in material or workmanship within 3 years from the date of shipment.

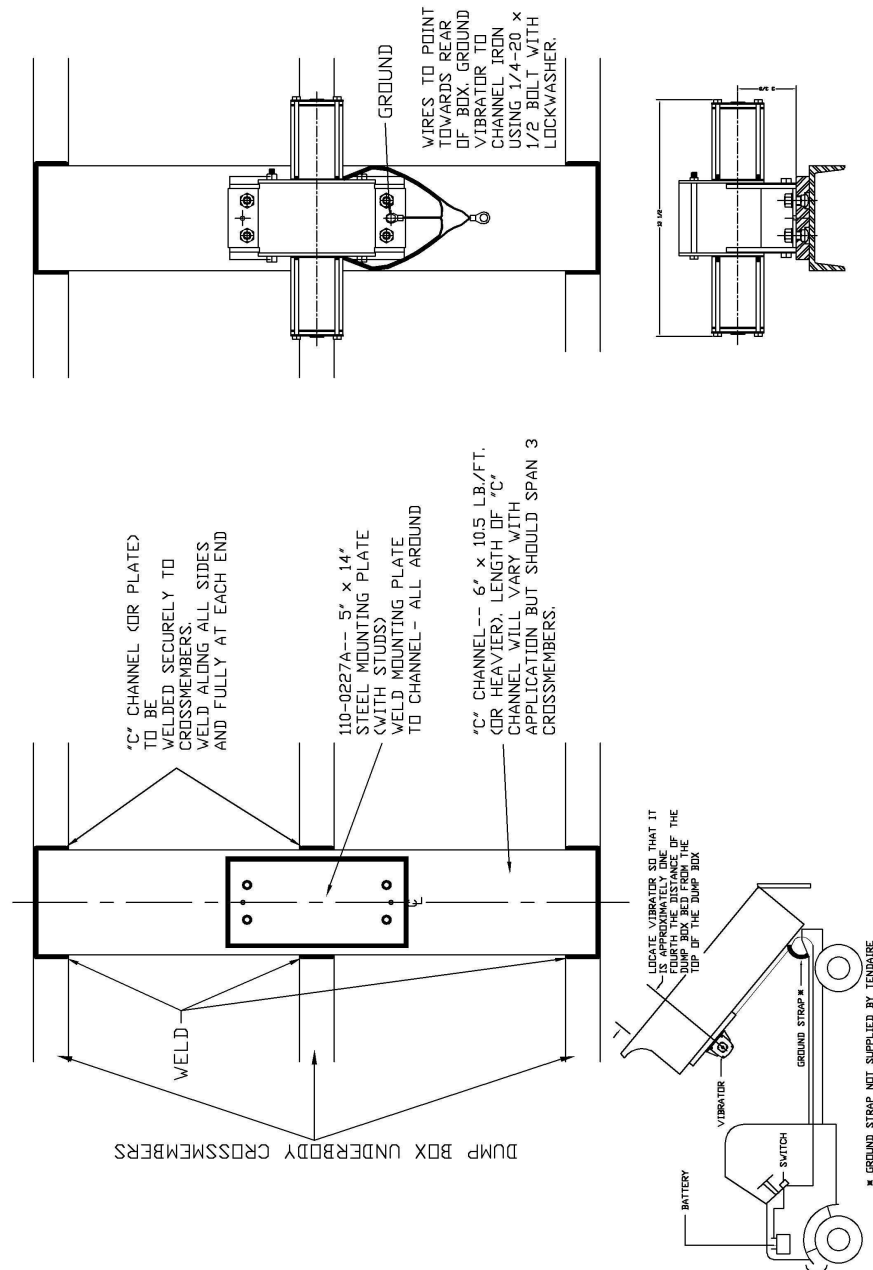
All transportation charges on parts or units submitted for replacement or repair under this warranty must be borne by the purchaser.

There is no other warranty expressed or implied. **TENDAIRE INDUSTRIES, INC.** shall in no event be liable for consequential damages.

MAINTENANCE RECORD

DATE	NAME	TYPE OF PREVENTATIVE MAINTENANCE OR REPAIR

Vibrator Installation- BED with CROSSMEMBERS



General Description of TENDAIRE Vibrator

All TENDAIRE vibrators are built with high quality industrial type components. Vibrator bearings are electrical motor grade, lubricated and double sealed precision ball bearings. Vibrator eccentric is punched from hot rolled pickled & oiled steel. End bells and shaft are precision machined. Drive motors are high efficiency, permanent magnet D.C. with impregnated brass permanently lubricated sleeve bearings. All vibrators are polyester powder coated and clear zinc plated for rust protection.

TENDAIRE Pushbutton Switch:

The TENDAIRE pushbutton switch is a heavy duty, high current carrying capacity, momentary contact switch. The switch can be mounted in any convenient location inside the vehicle.

TENDAIRE Power Cord:

The TENDAIRE power cord is 50 feet of #6 AWG red battery cable.

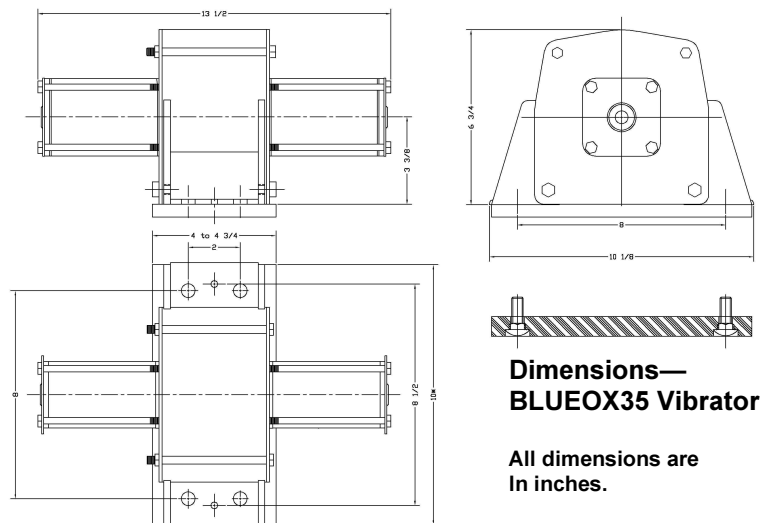
TENDAIRE VT-6 Timer Switch:

The TENDAIRE VT-6 Timer Switch will extend the life of your vibrator by automatically limiting the time that the vibrator can be continuously run. It mounts between the push button switch and the vibrator and is easy to install.

SPECIFICATIONS

BLUEOX35

VOLTAGE:	12 VOLTS DC
AMPS:	48 AMPS
VIBRATIONS:	2800 PER MINUTE
THRUST:	3500 LBS
WEIGHT:	36 LBS
SWITCH:	DASH MOUNTED PUSH BUTTON
CABLE:	50 FT. #6 AWG
USAGE:	INTERMITTENT (<10 SEC.)
TIMER SWITCH:	VT-6
WARRANTY:	3 YEAR LIMITED



**Dimensions—
BLUEOX35 Vibrator**

**All dimensions are
in inches.**

INSTALLATION

Location of Vibrator

Vibrator should be located approximately $\frac{1}{4}$ the distance of the dump box bed from the front of the dump box. Check to be sure when the dump box is fully lowered the vibrator does not touch any portion of the vehicle such as gas tanks, hydraulic lines, hydraulic tanks, etc. Preferably on one side or the other and definitely away from the cylinder end or any other support that will restrict its effectiveness.

Installing Vibrator

“C” Channel or 3/8” thick plate (5/16” Min.) should be used with a recommended length of at least 24” for LWC dump bodies (crossmemberless). “Tear-out” of the bed can occur if too small a plate or channel is used for mounting!

Measure the cross section of three stringers (outside edge to outside edge). Cut length of at least 6” x 10.5 Lb./Ft. “C” Channel** to span this distance. Center the vibrator base plate within this length of “C” channel, check that vibrator mounting will not interfere with the hoist operation.

Position the “C” Channel in place on the three stringers you have selected and **CONTINUOUS** weld BOTH ENDS “C” channel to stringer and sides where it contacts the stringer. Be sure your welds penetrate deeply, are strong, and secure. All of the force exerted by your vibrator is transmitted through the welds. Secure the vibrator to vibrator base plate. Use all the studs to mount the vibrator.

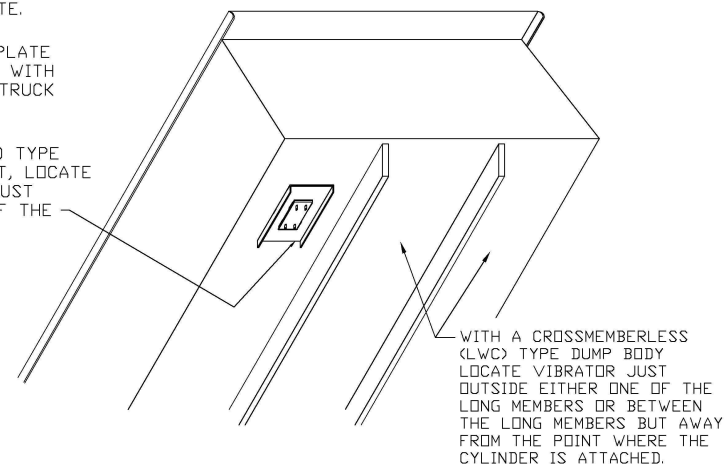
(**Note-- Tendaire offers optional mounting plates in 18” and 24” lengths)

Vibrator Installation- FLAT BOTTOMED BED

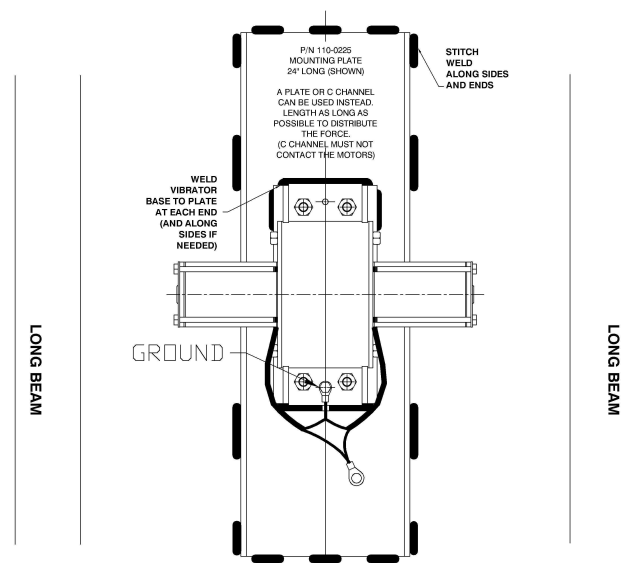
IMPORTANT-- STITCH WELD BOTH SIDES AND BOTH ENDS OF A “C” CHANNEL OR PLATE TO THE BED BOTTOM.
WELD 5” x 14” VIBRATOR MOUNTING PLATE TO THE “C” CHANNEL OR PLATE.

LOCATE “C” CHANNEL OR PLATE SO AS NOT TO INTERFERE WITH HOIST OR THE FRAME OF TRUCK WHEN BED IS LOWERED.

WITH A FRONT MOUNTED TYPE TELESCOPIC TYPE HOIST, LOCATE THE MOUNTING PLATE JUST OUTSIDE EITHER ONE OF THE LONG MEMBERS.

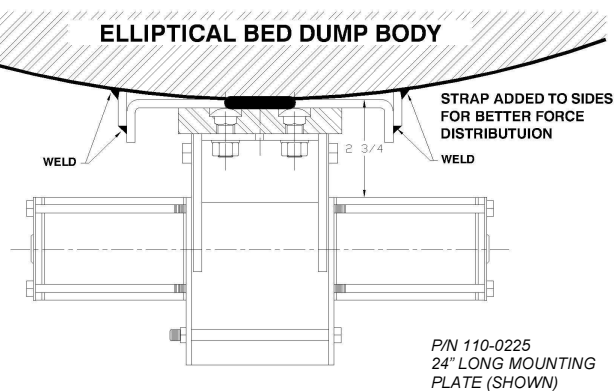


“C” Channel or plate used should be 3/8” thick (5/16” Min.) and with a recommended length of at least 24”. “Tear-out” of the bed can occur if too small a plate or channel is used for mounting!

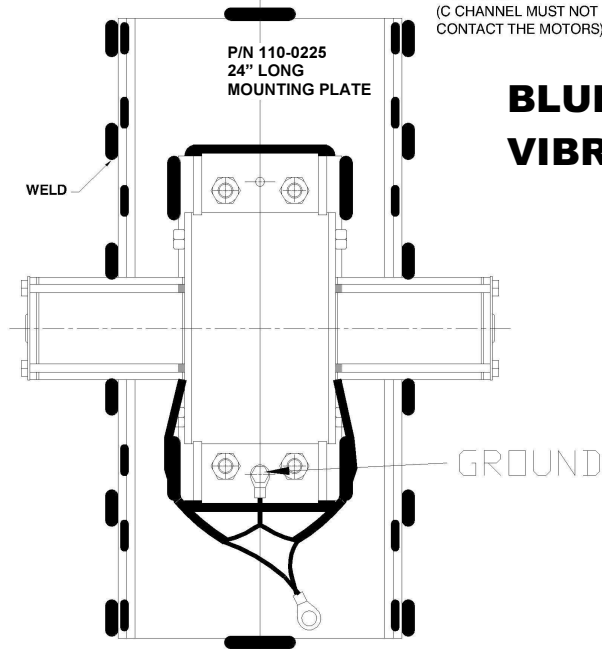


*Shown using 24 inch long “C” mounting plate
(Mounted between the long beams)*

Vibrator Installation- ELLIPTICAL BED MOUNTING



A PLATE OR C CHANNEL CAN BE USED INSTEAD. 24" LENGTH (OR LONGER) TO DISTRIBUTE THE FORCE. (C CHANNEL MUST NOT CONTACT THE MOTORS)



BLUEOX35 VIBRATOR

Shown using 24 inch long "C" mounting plate

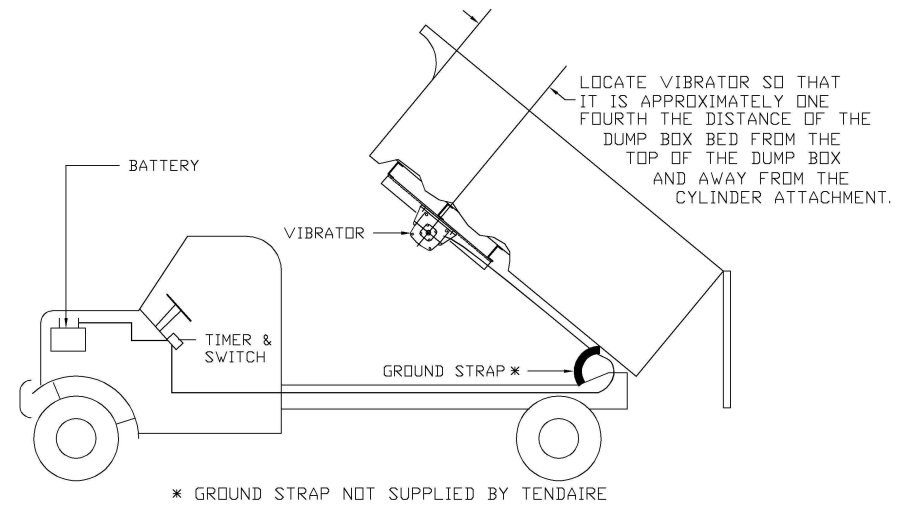


Figure 5. Vibrator Location

IMPORTANT--WELD EACH END AND SIDES OF MOUNTING PLATE OR CHANNEL TO EVERY CROSSMEMBER IT CONTACTS. WELD VIBRATOR 5" x 14" BASE IN CENTER THE MOUNTING PLATE OR CHANNEL AT EACH END AND STITCH WELD ALONG SIDES.

WITH A FRONT MOUNTED TYPE TELESCOPIC TYPE HOIST, LOCATE THE MOUNTING PLATE OR CHANNEL JUST OUTSIDE EITHER ONE OF THE LONG MEMBERS.

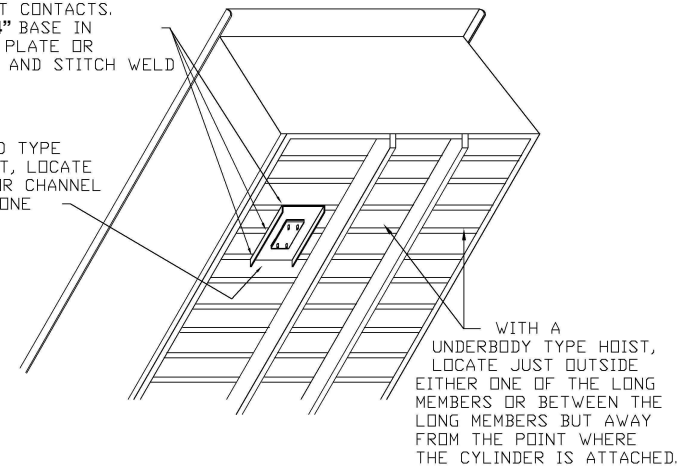


Figure 6. Plate or Channel Installation

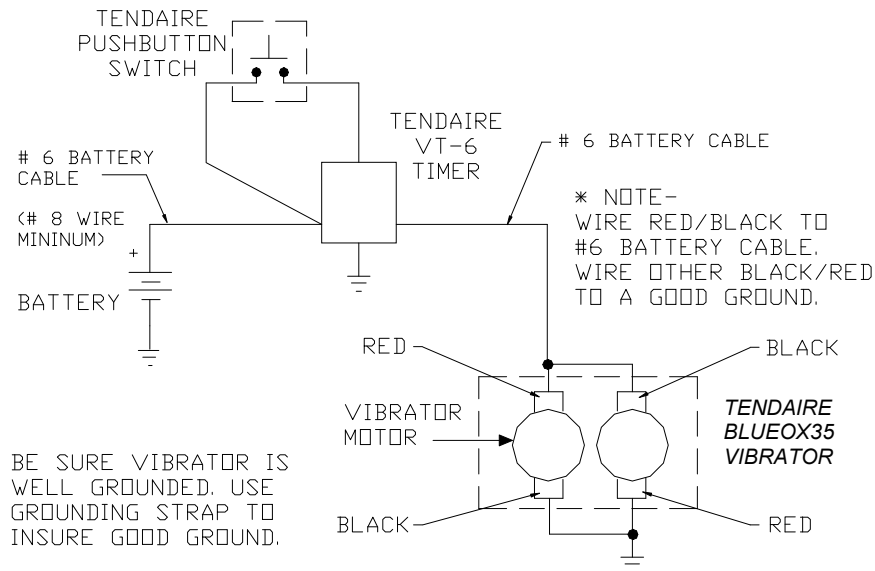
TROUBLESHOOTING

Electrical connection

Mount the TENDAIRE pushbutton switch in any convenient location, ideally dash mounted inside the vehicle on the driver side. Connect #6 AWG battery cable to other terminal of switch. Run the battery cable to the vibrator following the truck frame back to the box hinge point, and going up the underbody of the dump box. Make sure cable is secure, and will not get pinched when the dump body is lowered. Connect #6 AWG battery cable to one ring terminal of the vibrator, ground other terminal to the angle iron. Connect #6 AWG battery cable from the switch to the positive terminal of the battery.

***NOTE-** On the BLUEOX35, leads from motors are connected red to black. One terminal is used for positive, the other for ground. (Wires are connected in this manner so one motor spins in a clockwise rotation, the other motor spins in a counter-clockwise rotation). **DO NOT RECONNECT AS RED TO RED & BLACK TO BLACK!**

Use a grounding strap to bypass the hinge on the body. (see fig 5)

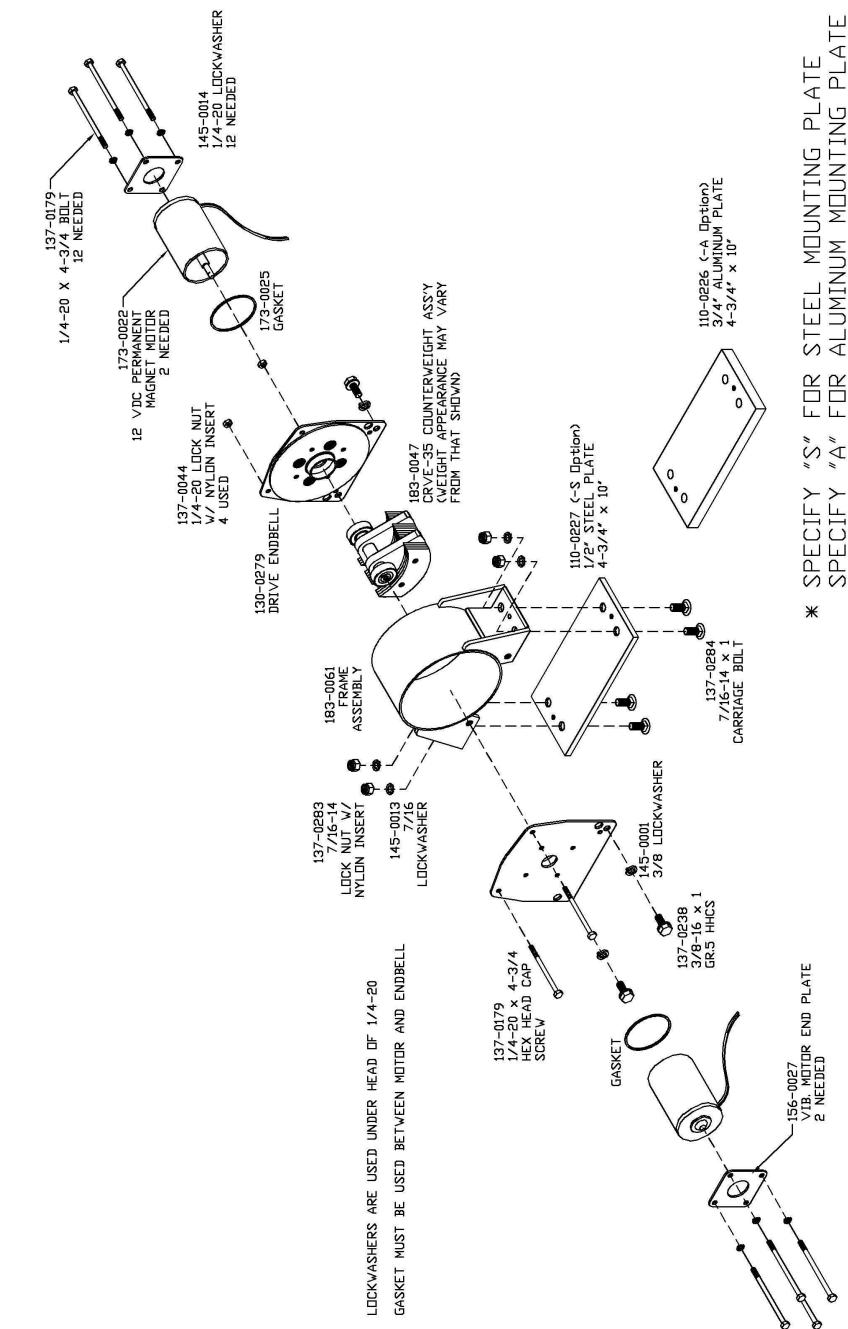


Vibrator malfunctions are often caused by simple problems, often overlooked, such as loose electrical connections. Should problems develop, these items should be checked before assuming the vibrator or switch is defective.

TROUBLESHOOTING CHART

SYMPTOM	PROBABLE CAUSE	REMEDY
NO VIBRATION OR LOW VIBRATIONS	LOOSE ELECTRICAL CONNECTION	CHECK ALL ELECTRICAL CONNECTIONS, TIGHTEN LOOSE CONNECTIONS
	GROUND STRAP AROUND HINGE, LOOSE OR MISSING.	CHECK TO SEE GROUND STRAP IS IN GOOD CONDITION & IN CORRECT LOCATION.
	CABLE OR WIRE SEVERED	REPLACE OR REPAIR CABLE OR WIRE
	SWITCH OPEN	CLOSE SWITCH (PUSH)
	DEFECTIVE SWITCH	REPLACE SWITCH, CHECK WITH CONTINUITY LIGHT
	DEFECTIVE MOTOR*	REPLACE ONE OR MORE MOTORS
NOISY VIBRATOR	LOOSE MOUNTING BOLTS	TIGHTEN ALL BOLTS USED IN FASTENING VIBRATOR TO ANGLE IRONS.
	LOOSE ANGLE IRONS	WELD ANGLE IRONS SECURELY.
	WORN OR DRY BEARINGS	INSPECT BEARINGS. REPLACE IF WORN OR DRY. ROTATE BEARING, IF IT FEELS ROUGH, REPLACE.

* Note that one motor will not operate the **BlueOx35**. Continued attempts to operate the **BlueOx35** with one motor not functioning properly will result in the functioning motor failing.



BLUEOX35 Parts View

* SPECIFY "S" FOR STEEL MOUNTING PLATE
SPECIFY "A" FOR ALUMINUM MOUNTING PLATE

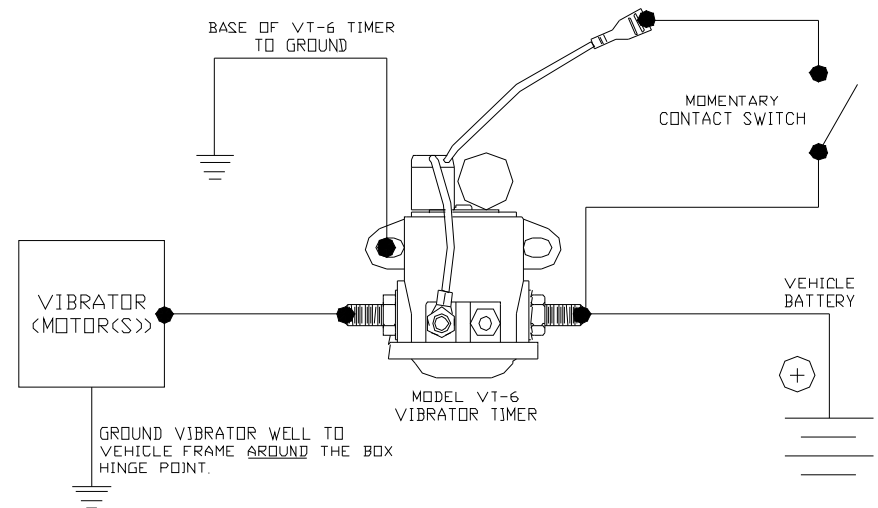


Figure 9. Electrical Connection VT-6 Timer

INSTALLATION INSPECTION PROCEDURES

- 1. LOCATION:** Vibrator and vibrator power cable must be located so that they clear gas tanks, hydraulic tanks, etc., when the dump box is lowered. Vibrator should also be located approximately 1/4 the distance of the dump box bed from the front of the dump box. (See figures 5 & 6)
- 2. MOUNTING:** Refer to appropriate drawing for mounting instructions dependant on whether you have a bed with cross members, a flat bottomed bed or a round bottomed bed.
- 3. VIBRATOR MOUNT:** Vibrator should be attached to the "C" Channel (or plate) with two 3/4-16 UNF x 1-1/2" grade 5 or grade 8 bolts. Lock washers, and/or locking nuts must be used. Bolts should be securely tightened.
- 4. ELECTRICAL CONNECTIONS:** Electrical connections should be secure, and isolated from the vehicle frame with electrical tape
- 5. PRACTICES:** This list is not intended to be all inclusive as good mechanical and electrical sense and practices are expected and essential for all installations.

OPERATION

Initial Operation

Before placing vibrator in operation for the first time, inspect unit to make certain electrical connections, vibrator location, and mounting are correct. Review Section 2.

Operation Precautions

The following precautions should be followed whenever operating the vibrator. Failure to observe these precautions could result in damage to the equipment.

CAUTION

VIBRATOR SHOULD BE OPERATED ONLY WHEN THE DUMP BOX IS RAISED. OPERATING THE VIBRATOR WITH THE DUMP BODY LOWERED CAN RESULT IN DAMAGE TO THE VIBRATOR, THE VEHICLE OR EXCESSIVE COMPACTION OF YOUR CARGO.

CAUTION

CONTINUED OPERATION OF THE VIBRATOR WHEN THE VEHICLE IS NOT RUNNING WILL EVENTUALLY DRAIN THE VEHICLE BATTERY. VIBRATOR WILL NOT DELIVER FULL THRUST WHEN OPERATED WITHOUT THE BATTERY FULLY CHARGED.

CAUTION

THE **BlueOx17** & **BlueOx35** VIBRATORS ARE DESIGNED FOR INTERMITTENT DUTY CYCLE. 3-7 SECONDS SHOULD LOOSEN MOST STUCK MATERIALS. THE **VT-6 TIMER** PROVIDES 6-7 SECONDS OF OPERATION.

Operation of Vibrator

- 1) Raise the dump body up to the angle desired.
- 2) Depress the Tendaire pushbutton switch for 3 to 7 seconds to allow time for all materials to become discharged. The vibrator (Models **BlueOx17** & **BlueOx35**) is designed for intermittent use only, and operation in this manner will give you many years of trouble free service. The Tendaire switch is a momentary contact switch, and the vibrator will discontinue operating as soon as the switch is no longer depressed.
- 3) To turn vibrator off, simply discontinue depressing the pushbutton switch

MAINTENANCE

Preventative Maintenance

Preventative maintenance is the practice of checking the equipment at regular intervals and correcting minor disorders before they become serious. The following chart is enclosed as a guide for establishing a preventative maintenance program.

PREVENTATIVE MAINTENANCE SCHEDULE

	PROCEDURE
Daily	Check for vibrator output
Weekly	Check that the vibrator mounting bolts are secure
Monthly	Check condition of weld on vibrator mounting angle irons. Check electrical connections. Tighten if loose Check cable from battery to switch, and from switch to vibrator for abrasion or scuffing. Repair, cover with electrical tape, and secure.

Motor and Motor Maintenance

The vibrator motor(s) are high efficiency permanent magnet motors. Generally, when its time to replace brushes, it's also time to replace the rotor. This should not take place until the unit has been in service for several years.

Bearings

Vibrator bearings are the double sealed ball-bearing type. Periodic replenishment of grease is not required. Replace the bearings if they become noisy. This indicates they have become worn or dry. Many years of operation can generally be expected before replacement becomes necessary. The bearings are a press fit on the rotating weight shaft. They must be pulled from the shaft and new bearings pressed onto the shaft. When pressing bearings onto the shaft, care must be taken, that pressure is applied only on the bearing inner race. Pressure applied to the outer race will damage the bearing. Final position of bearing on shaft is with bearing inner race resting against bearing shoulder on the shaft. Motor bearings are impregnated brass permanently lubricated sleeve bearings, which are designed to be maintenance free over the life of the motor.