

Service Instructions

Syntron[®]
Electromagnetic
Vibrators

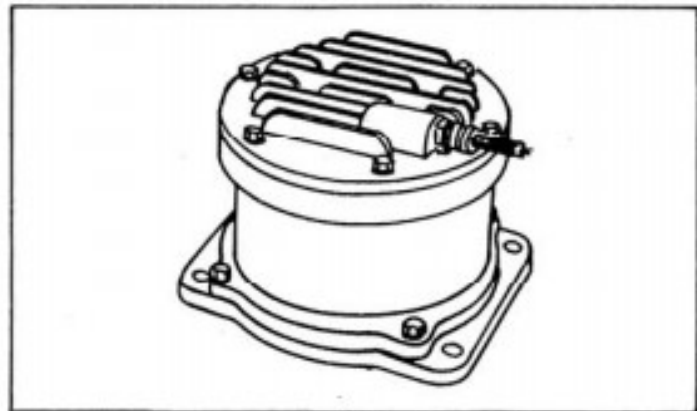
Model Series:

V-85-C

V-86-C

V-180-C

V-181-C



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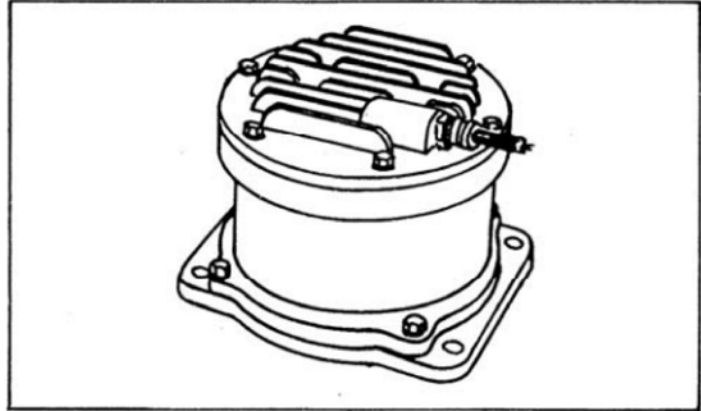
Vibrators

Model Series: V-85-C

V-86-C

V-180-C

V-181-C



Thank you for buying your equipment from Syntron Material Handling. This manual will help you to understand how your equipment operates and what is required to maintain peak performance. Please read it thoroughly and keep it for reference.

Your satisfaction is important to us, so please direct any comments to our Marketing Communications Department.



Safety instruction: Products Safety Labels must remain highly visible on the equipment. Establish a regular schedule to check visibility. Should safety labels require replacement, contact Syntron Material Handling for an additional supply free of charge.

INTRODUCTION

Syntron Electromagnetic Vibrators, Models V-85, V-86, V-180 and V-181 produce a pattern of pulsating vibrations which penetrate a material mass, keeping the particles agitated and in a free flowing condition.

With a separate controller, a rectifier within the controller allows the vibrator stroke to be controlled. Vibrators with built-in controls do not provide for control of vibrator stroke.



CAUTION: Hopper vibrators should operate only while the hopper is open to flow; otherwise, it may pack the hopper contents. SMH recommends maximum operating temperature of 200 °F (93 °C).

INSTALLATION

Vibrator Models V-85-C1, V-86-C1, V-180-C1 and V-181-C1 are designed for mounting in any position EXCEPT IN AN UPRIGHT, HORIZONTAL POSITION. Models V-85-C and V-180-C are designed for mounting in an UPRIGHT, HORIZONTAL POSITION ONLY. Refer to Figure 1.

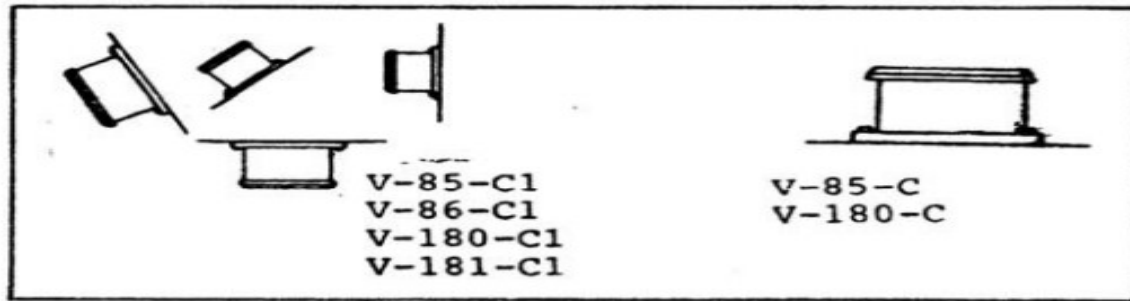


FIGURE 1 - VIBRATOR MOUNTING POSITIONS

The base plates of all models of the V-85 and V-86 series vibrators have four 11/16" diameter mounting holes positioned at 7" wide x 10" long centers. The four mounting holes of the V-180 AND V-181 series Vibrators are 13/16" diameter positioned with centers on a 12" square. Grade 5 mounting bolts with Lock washers are recommended. At frequent intervals, these bolts should be checked for tightness.

If the surface to which the vibrator is to be mounted is uneven, the unit must be shimmed to assure a flush mounting. Refer to Figure 2 for a typical installation on conical-shaped hopper.

The recommended size of the mounting bracket is 13 1/2" square for the V-85 and V-86 series vibrator and 15 1/2" square for the V-180 and V-181 series. The bracket must be sufficient strength and weight so that this will not deflect when the vibrator is in operation.

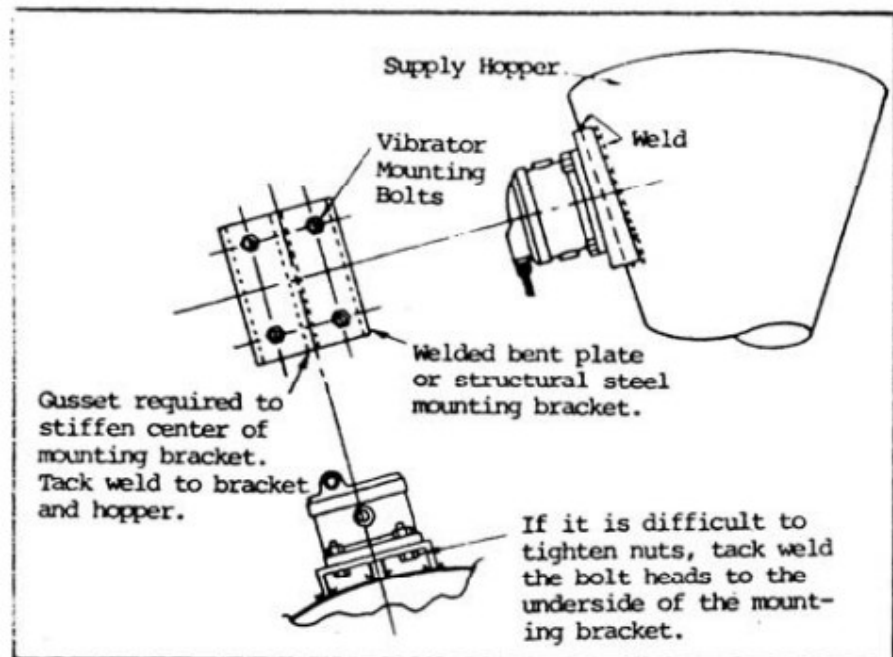


FIGURE 2 - VIBRATOR MOUNTING ON AN UNEVEN SURFACE.

CONTROLLER

Except Models V-85-C1S, V-86-C1S, V-180-C1S and V-181-C1S, these vibrators require a separate controller to control the vibrator output. The controller contains a double-pole, single throw switch with ON and OFF positions, to control the starting and stopping of the vibrator; a rheostat to control the stroke of the vibrator; a rectifier that changes alternating current to pulsating current; fuses and terminals.

Install the controller close to the vibrator, preferably on a wall and in a clean, dry location, free from excessive vibration.



WARNING: Keep the controller door closed, when the vibrator is in operation.

Refer to the wiring diagram inside the control box. Be certain the specifications of the power source are as shown on the equipment nameplate. If rigid conduit is used, provide at least 18" of flexible cable between the vibrator and the conduit.



WARNING: The electrical power supply connection to the Syntron Material Handling supplied controller must be made through a customer supplied safety disconnect switch which must be mounted next to the controller.

The vibrator is equipped with a 3-wire cable, one of which is the ground. The separate control box is provided with a ground connection to which the vibrator is connected. **BE SURE THE CONTROL BOX IS PROPERLY CONNECTED TO AN EFFICIENT GROUND!!**

MAINTENANCE

These vibrators require very little maintenance. The vibrator and controller should be kept relatively clean and free from excessive moisture.



WARNING: Before performing any maintenance work, the electrical power must be disconnected at the safety disconnect switch.

Excessive wear to the armature stop ring will cause the armature to strike the core causing damage to the vibrator. If striking occurs **IMMEDIATELY** de-energize the unit. See Trouble Shooting Section of this manual for corrective measure to be taken.

TROUBLE SHOOTING

Problem	Cause	Correction
Vibrator will not operate	Blown Fuse	*Replace
	Open Circuit	Repair
	High or Low Current Setting	Correct (see current rating)
	Faulty Brush in Control Rheostat	*Replace
	Faulty Switchgear	*Repair or Replace
	Defective Coil	*Replace
Vibrator "Strikes" (noted by loud rapping noise)	Faulty Armature Stop	**Repair
Vibratory lacks impact	Faulty Impact Blocks	*Replace
	Faulty Spring Rings	** Repair
	Faulty Rectifier	*Replace

* Replace only with parts recommended, or supplied by Syntron Material Handling.

** Repair or replacement off the armature stop and spring rings will require returning the equipment to the factory Contact the Customer Service Department of Syntron Material Handling for more Information.

DISASSEMBLY PROCEDURE

Refer to illustration.

1. De-energize unit, remove the armature stop assembly (A). Remove remaining portion of the vibrator from its operating position.
2. Remove magnet assembly (C) and cable assembly (B) from cover.
3. Remove base plate (H).
4. Remove impact blocks (E & F) and shims (G).

Item D has been factory assembled and must be replaced as a single unit.

REASSEMBLY PROCEDURE

To reassemble vibrator reverse the 4-step procedure outlined in the Disassembly Procedure.

CURRENT RATINGS

V-85 & V-86Series Vibrator

7.0 amps	115V/50-60Cy
3.5 amps	230V/60Cy
4.0 amps	230V/50Cy
1.8 amps	460V/50-60Cy

V-180 & V-181 Series Vibrator

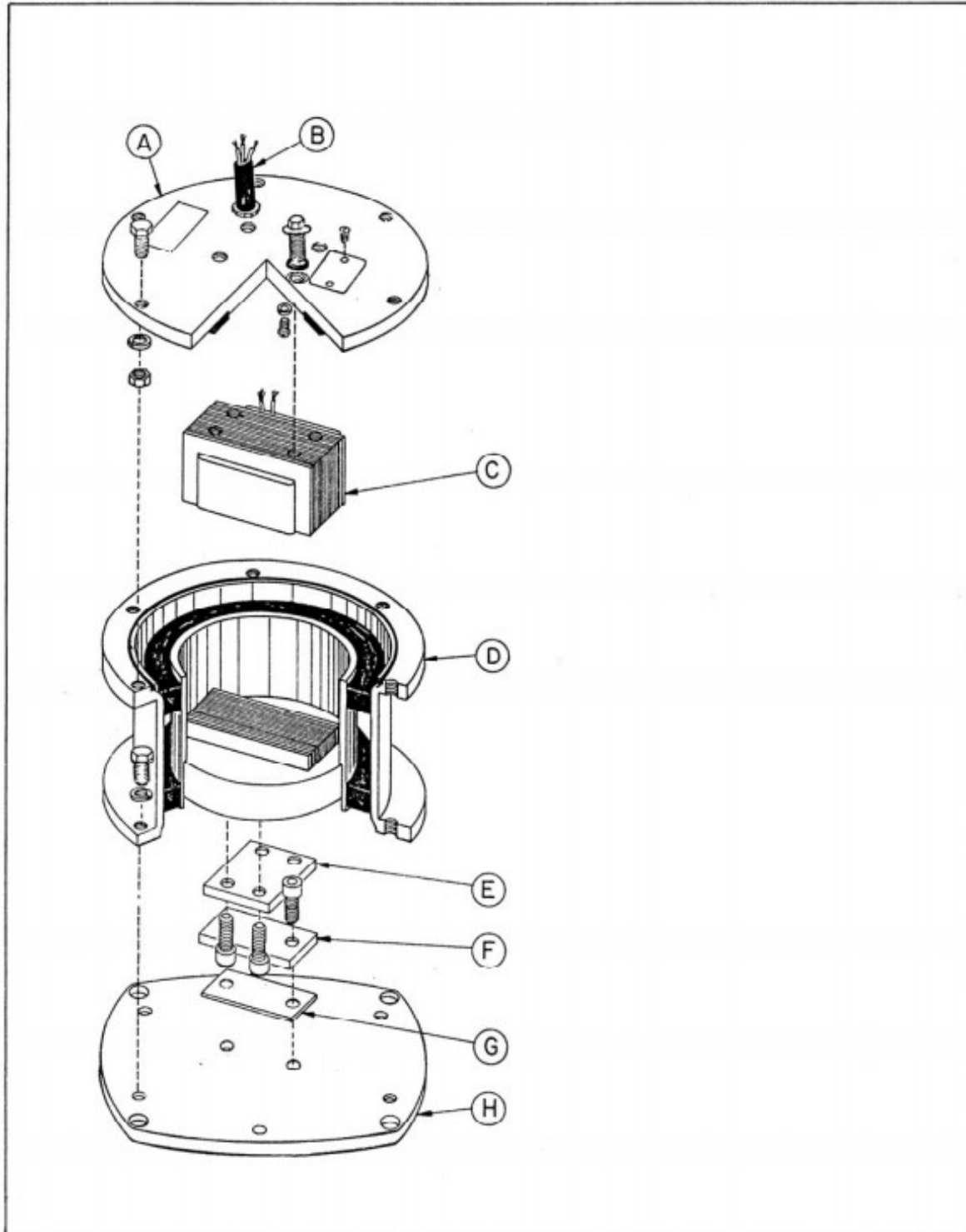
12 amps	230V/50-60Cy
6 amps	460V/60Cy
4.6 amps	575V/60Cy
6.3 amps	380V/50Cy

PARTS LIST – V-180-C, C1, C1S, and V-181-C1, C1S VIBRATORS

ITEM	DESCRIPTION	QTY	PART NO.
A	Armature Stop Assembly (Models V-180-C, V-180-C1 and V-181-C1)	1	C-163905-A
	Armature Stop Assembly (Models V-180-C1S and V-181-C1S) using Rectifier A-81219-B (230V) Rectifier A-81219-C (460V)	1	C-163905-B
	Retainer Clip	1	A84603
	Machine Screw Rd. Hd. (#10-32 x 3/8")	1	H0203101
	Lockwasher (#10)	1	H0112401
	Lockwasher (1/2")	6	H0113601
	Cap Screw, Hex Hd. (1/2"-20 x 1-3/4")	6	H0313901
	Hex Nut (1/2"-20)	6	H0104469
	* Nameplate	1	A-61712
	*Warning Label	1	A-125254
B	Cable Assembly	1	B-160155-B
	Cable Grip (V-180-C1, V-181-C1, V-180-C1S, V-181-C1S)	1	0102X008
	Cable Grip (V-180-C)	1	0102X038
	Connector	2	0202X004
	Lockwasher (#10)	1	H0112458
	Mach. Screw Rd. Hd. Br. (#10-32 x 1/4")	1	H0202902
	Teflon Tape	As Req'd.	0243X026
C	Magnet Assembly (230V/60Cy)	1	B-114070-A
	Magnet Assembly (460V/60 Cy)	Only	B-114070-B
	Loctite Sealant	As Req'd.	0185X006
	O-Ring (1/2" O.D. x 3/8" I.D.)	4	0149X068
	Cap Screw hex Washer Hd., Zinc (1/2"-13 x 1")	4	H0207006
D	Body Assembly	1	C-164482-A
	O-Ring	2	A-140009-F
	Lockwasher (1/2")	6	H0113601
	** Cap Screw Hex Hd. (1/2"-20 x 1-1/4")	6	H0313701
E	Top Impact Block Stl.	1	A-126164
	Cap Screw, Soc. Hd. (1/2"-20 x 1")	4	H0404600
F	Bottom Impact Block, Stl. (V-180 Units)	1	A-126164
	Bottom Impact Block, Rubber (V-181 Units)	1	A-126172
	** Cap Screw, Soc. Hd. (1/2"-20 x 1")	4	H0404600
G	Shim (.005" Tk.)	As	A-126170-A
	Shim (.002" Tk.)	Req'd.	A-126170-B
H	Base Plate	1	C-163943-1

- *Do not remove or paint over safety labels

- ** Torque = 55 ft-lb



VIBRATOR ASSEMBLY - MODEL SERIES V-180-C & V-181-C

PARTS LIST– V-85-C, C1, C1S, and V-86-C, C1, C1S VIBRATORS

ITEM	DESCRIPTION	QTY	PART NO.
A	Armature Stop Assembly	1	A-110405
	Plainwasher (3/8")	6	H0117010
	Lockwasher (3/8")	6	H0113209
	√Cap Screw Hex Hd., Gr. 2 (3/8"-16 x 1-1/4")	6	H0310301
	* Nameplate	1	A-61712
	* Warning Label	1	A-125254
B	Cable Assembly	1	C-160136-M
	Cable Grip	1	0102X002
	Connector	2	0202X002
	Lockwasher (#10)	1	H0112458
	Mach. Screw Rd. Hd. Br. (#10-32 x 1/4")	1	H0202902
C	Magnet Assembly (115V/50 Cy)		D-158151-D
	Magnet Assembly (230V/50 Cy)		D-158151-E
	Magnet Assembly (460V/50 Cy)	1	D-158151-F
	Magnet Assembly (115V/60 Cy)	Only	D-158151-A
	Magnet Assembly (230V/60 Cy)		D-158151-B
	Magnet Assembly (460V/60 Cy)		D-158151-C
	Magnet Assembly (115V/60 Cy) using Rectifier A-81219-A V-85-C1S		D-158151-A
	Magnet Assembly (230V/60 Cy) using Rectifier A-81219-B	&	D-158151-B
	Magnet Assembly (460V/60 Cy) using Rectifier A-81219-C V-86-C1S		D-158151-C
	Magnet Assembly (115V/50 Cy) using Rectifier A-81219-A	Only	D-158151-D
	Magnet Assembly (230V/50 Cy) using Rectifier A-81219-B		D-158151-E
	Magnet Assembly (460V/50 Cy) using Rectifier A-81219-C		D-158151-F
	Loctite Sealant	As Req'd.	0185X006
	O-Ring (1/2" O.D. x 3/8" I.D.)	4	0149X067
	Screw, Hex Hd., flange Whiz Lock (3/8"-16 x 1")	4	H0209206
D	Body Assembly	1	B-164494-A
	O-Ring	1	A-140009-E
	Plainwasher, H.S. (1/2")	4	H0117362
	Lockwasher, Hvy. (1/2")	4	H0113607
	⊗Cap Screw, Hex Hd. (1/2"-13 x 1-1/2")	4	H0315401
E	Top Impact Block, Stl.	1	A-117922
	Cap Screw, Soc. Hd. Gr.8 (3/8"-16 x 3/4")	2	H0406800
F	Bottom Impact Block, Stl. V-85	1	A-117922
	√Cap Screw, Soc. Hd. w/Locking Element Units	2	H0407200
	Gr. 8 (3/8"-16 x 1")		
	Bottom Impact Block, Rubber V-86	1	A117945
	Cap Screw, Soc. Hd. w/Locking Element Units	2	H0406800
	Gr. 8 (3/8"-16 x 3/4")		
G	Shim (.005" Tk.)	As	A-117924-A

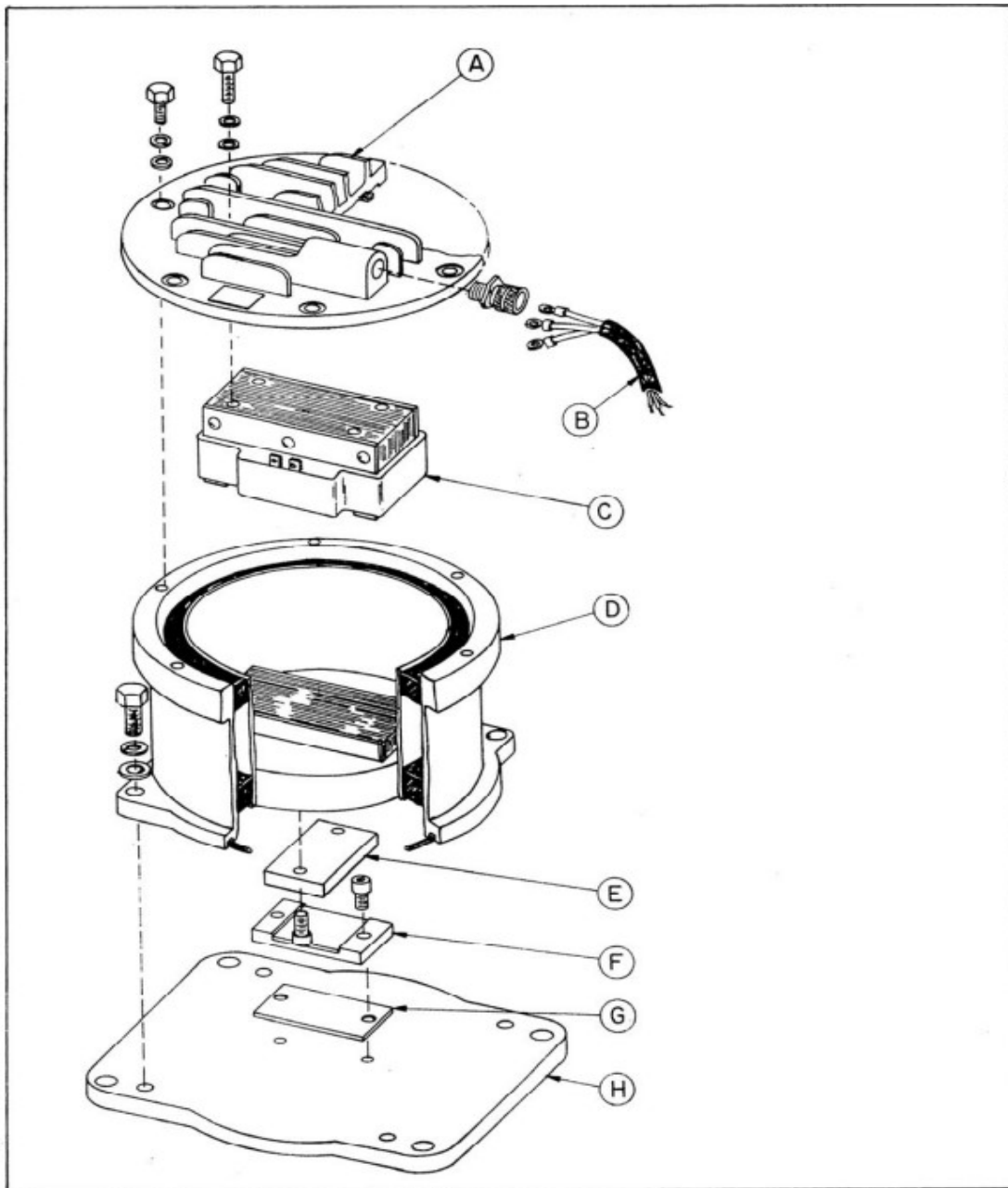
Shim (.002" Tk.)
Base Plate

Req'd. A-117924-B
1 B-117923

* Do not remove or paint over safety labels. If safety labels need replaced, contact Syntron Material Handling for an Extra supply free of charge.

▽Torque = 20 ft-lb

⊗Torque = 50 ft-lb



VIBRATOR ASSEMBLY - MODEL SERIES: V-85-C & V-86-C