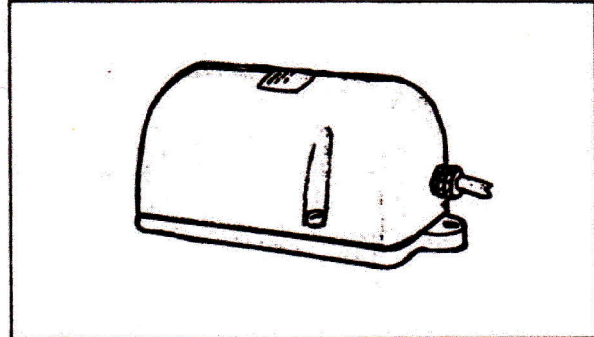


## **Service Instructions**

### **Syntron® Vibrator Model: V-20 (RC)**

TARNOS reserves the right to make changes at any time, without any liability or other obligation on its part, in materials, equipment, specifications and models, and also to discontinue the manufacture and sale of models, and the parts and components thereof. For further detailed information, please contact TARNOS.



Safety instructions: Product safety labels must remain highly visible on the equipment. Establish a regular schedule to check visibility. If safety labels require replacement, please contact TARNOS.

## **INTRODUCTION**

The Syntron® electromechanical vibrator model V-20 produces a pattern of vibrations which penetrate a material mass, keeping the particles agitated and in a free flowing condition.

A controller, required for RC operation, uses a rectifier to block the bottom portion of the sine wave producing a pulsating pattern of electrical current. The action of the vibrator operating from a half cycle of power is transmitted through the springs to the equipment to be vibrated.

The "S" model vibrator has a built-in rectifier, which eliminates the need of a controller. However, the vibrator output remains constant. The "S" model vibrator is connected directly to the power supply.

V-20 vibrators do not operate from an AC power supply.

## **INSTALLATION**

The vibrator may be installed in any position, at any angle as long as the longitudinal axis is on a vertical plane. If the mounting surface is not flat, the vibrator must be shimmed. The shim must be strong enough so it will not deflect when the vibrator is in operation.

The base is provided with 7/16" (11.11 mm) diameter mounting holes on 9-1/4" (235 mm) centers. The bolts must be securely tightened. Check frequently to see that these bolts remain tight.

The vibrator is connected to the controller and the controller to the power supply.


Refer to the wiring diagram furnished with the controller.

The current supply must be the same as the rating designated on the nameplate.

## **OPERATION**

**NOTE:** If the vibrator is installed on a hopper, do not operate the vibrator while the hopper is closed, the vibratory action will compact the contents of the hopper.

The use of a controller permits the output of the vibrator to be controlled by turning the rheostat knob; clockwise to increase output and counterclockwise to decrease output. Refer to the Service Instructions supplied for the controller.

 **CAUTION:** If the current draw is excessive, the armature and the magnet assemblies begin to strike; indicated by a loud rapping noise. Immediately decrease the rheostat setting until the striking stops, indicated by the diminishing noise. Refer to "Air gap adjustment" instructions to correct striking condition.

## **TROUBLE SHOOTING**

Problem	Cause	Correction
Vibrator operates below capacity	Loose hardware	Repair
	Defective magnet	*Replace
	Defective rubber mounts	*Replace
Vibrator does not run	Loose connections in controller	Repair
	Defective rheostat	*Replace

\* Replace only with parts supplied or recommended by TARNOS.


## **MAINTENANCE**

The V-20 vibrator requires very little maintenance. It should be kept clean and dry. The hardware must be kept tight.

 **WARNING:** Before doing any internal work on the vibrator de-energize and lockout the power supply.

If it is necessary to replace springs, remove the cover and cap screws which secure the springs. When removing spring stacks take note of the arrangement of the springs, spacers and clamps. The spring stacks must be replaced in the reverse order as removed. After new springs have been installed it may be necessary to adjust the air gap.

## **AIR GAP ADJUSTMENT**

 **WARNING:** The air gap adjustment is made while the vibrator is in operation. Use caution to avoid electrical shock or physical harm to personnel.

The air gap is that area between the vibrator base and the ends of the armature assembly. This setting is determined by an adjustment of the striking block.

These blocks must be adjusted a little at a time and equally so the armature faces remain parallel to the base. The space between the striking block and the armature must be 0.040" - 0.045" (1 mm - 1.15 mm) on 60 cycle units and 0.047" - 0.052" (1.2 mm - 1.32 mm) on 50 cycle units. To adjust this setting, loosen the jam nut below the striking block; adjust the block till the proper setting is obtained. Then tighten the jam nut.

The vibrator must operate on a current draw of 2 amps 115V and 1 amp at 230V. Too wide of an air gap will cause an excessive current draw, too close of an air gap will cause serious damage to springs, etc.

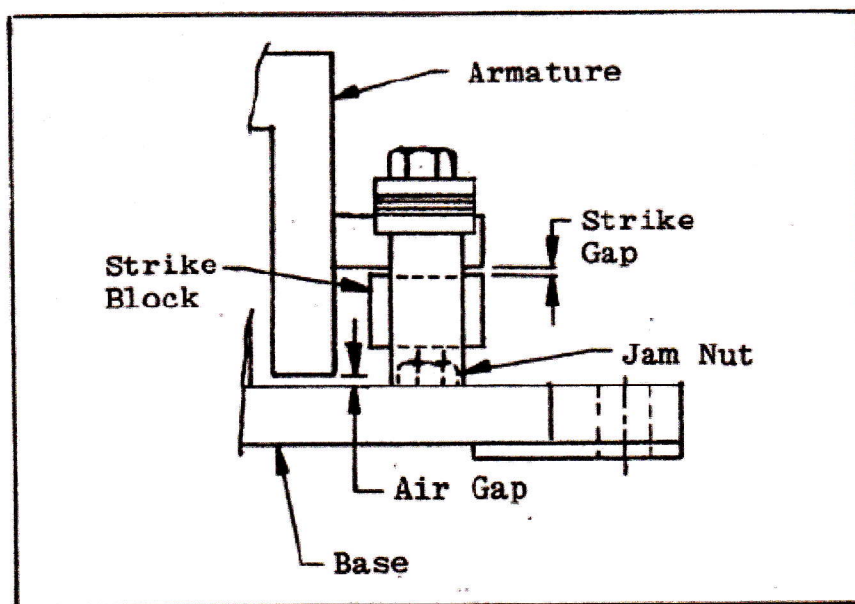


Figure 1 – The strike gap

## **NOISE STATEMENT**

The weighted emission sound pressure level exceeds 70 dBA and is less than 80 dBA.

The measurement of the weighted sound pressure level is carried out at 1 meter from the surface of the machine and at a height of 1.6 meters above the ground.

The values obtained are only broadcast and can not be reliably used to determine whether any additional measures are required.

The parameters that influence the level of disclosure include, among others, the type of installation, transported material, duration of exposure, characteristics of the workplace or other noise sources.



Important: TARNOS recommends the use of hearing protectors as part of approved personal protective equipment.



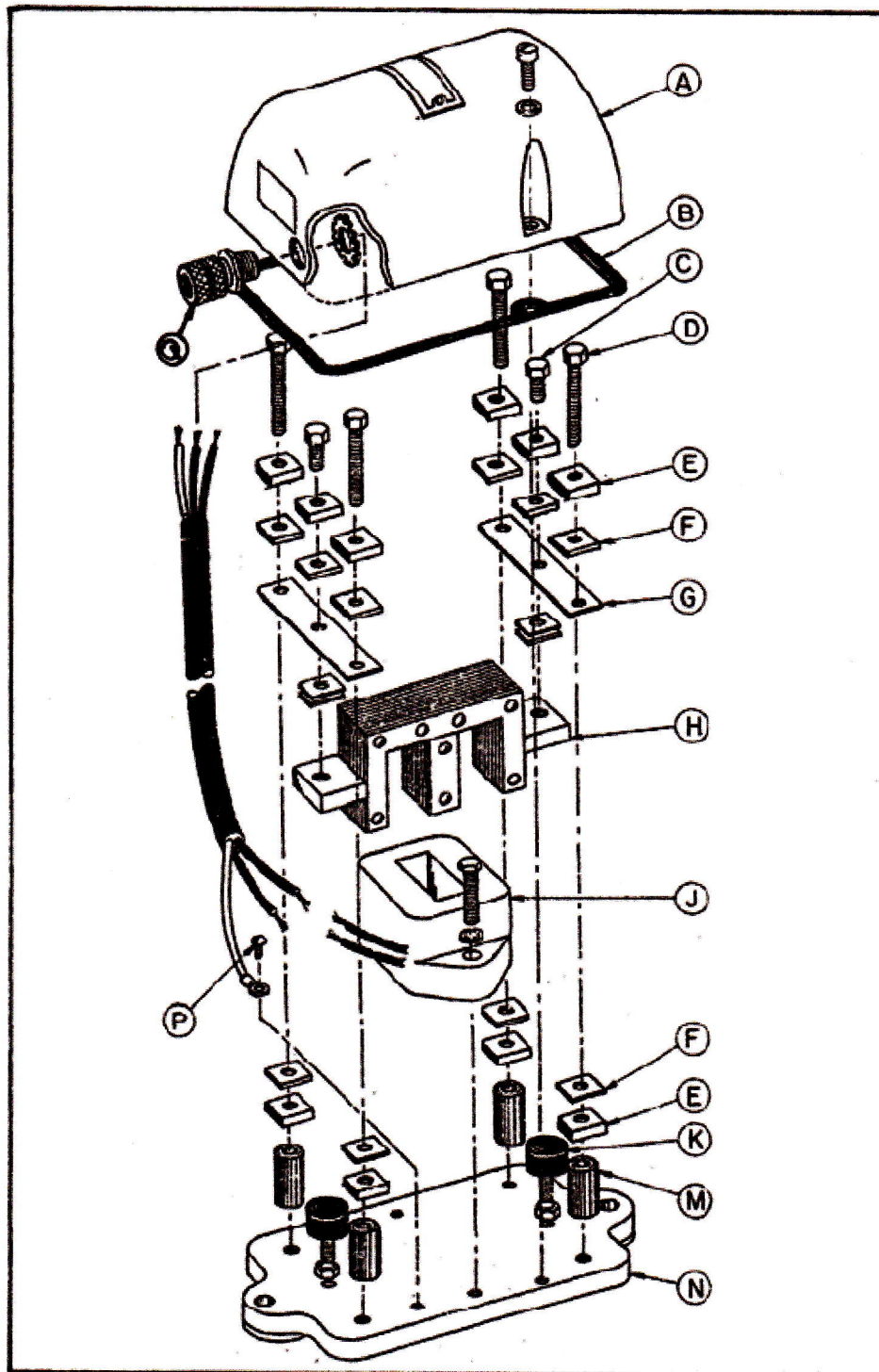


Figure 2 – Model V-20 vibrator assembly

## LIST OF MATERIALS

Item	Description	Quantity	Part no.
A	Cover assembly (115/230V)	1	A-86917
	Lock washer $\phi = 6$ mm	2	DIN 127
	Screw 5D M6x20	2	DIN 86
	Nameplate	1	A-61713/2
	Caution label*	1	X-42506
	Caution label*	1	125694
B	Gasket	1	A-86643
C	Cap screw hex 12K M10x20	2	DIN 933
D	Cap screw hex 12K M10x60	4	DIN 931
E	Spring clamping block	10	A-57112-A
F	Spring spacer	14	A-84738-B
G	Spring (50-60 Hz)	2	A-84737-A
H	Armature assembly	1	B-84735
J	Coil and cable assembly (125 V/50 Hz)	1	B-128436-AT
	Coil and cable assembly (220 V/50 Hz)	1	B-128436-BT
	Coil and cable assembly (380 V/50 Hz)	1	B-128436-CT
	Coil and cable assembly (400 V/50 Hz)	1	B-128436-FT
	Coil and cable assembly (230 V/50Hz)	1	B-128436-ET
	Coil and cable assembly (415 V/50Hz)	1	B-128436-DT
	Coil and cable assembly (230 V/60Hz)	1	B-128436-B
	Lock washer $\phi = 6$ mm	2	DIN 127
	Screw 5D M6x40	2	DIN 933
K	Striking block	2	A-84849
	Jam nut M8	2	DIN 936
M	Spring mounting spacer	4	A-84739
N	Base assembly V-20 (RC)	1	B-85338
P	Lock washer $\phi = 5$ mm	1	DIN 125
	Screw M5x10	1	DIN 86
Q	Cable grip (115/230V)	1	PG 11
	Cable grip (460/550V)	1	PG 11

\* Do not remove or paint over safety labels. Should safety labels require replacement, contact TARNOS.