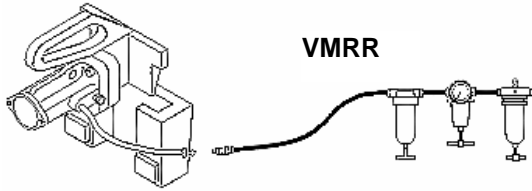
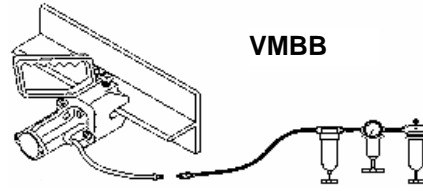


CLEVELAND VIBRATOR COMPANY— VMRR & VMBB

METALLIC-IMPACT OR AIR-CUSHIONED VIBRATOR FOR RAILROAD CARS



VMRR



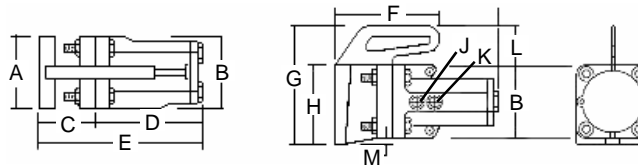
VMBB

INSTALLATION AND OPERATING KITS

VMRR and VMBB air-powered vibrators eliminate the hazards connected with climbing around railroad cars and poking their contents to keep the materials flowing freely. In addition, their use can reduce unloading time by as much as 30%. (These vibrators can be handled by one

man.)
The VMRR for railroad cars is designed for use with covered hopper cars that are equipped with female brackets (available for sale see below). The VMBB for railroad cars is used on all other types of covered hopper railroad cars, as well as portable

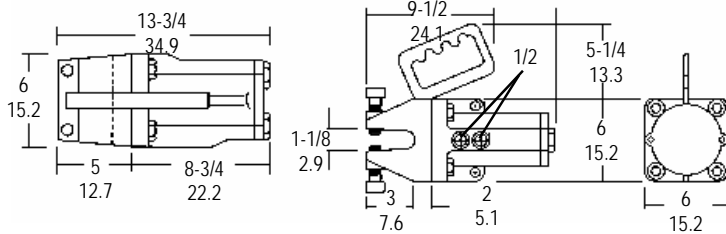
installations on large bins. These units utilize either the VMS (impact) or VMSAC (air-cushion) vibrator with either the male wedge (VMRR) or bolt-bite (VMBB) mounting head. Specify VMRR-AC or VMBB-AC when quiet operating, air-cushioned vibrators are required.



VMRR		Coated vibrators for non-lubricated applications are available.														
MODEL	PISTON DIA. in/cm	A in/cm	B in/cm	C in/cm	D in/cm	E in/cm	F in/cm	G in/cm	H in/cm	J in/cm	K in/cm	L in/cm	M in/cm	WT. lbs/kg	AIR CNSMP scfm/lmp (lmp=liter per min) @ 60 psig 4.1 bar	FREQUENCY* (vibrations per min.) @ 60 psig 4.1 bar
1200	2 5.1	5-1/2 14.0	4-1/2 11.4	3-3/4 9.5	6-1/2 16.5	10-1/4 25.9	7 17.8	7-1/2 19.1	5 12.7	3/8 1.0	1/4 0.6	2-1/2 6.4	-	33 14.9	10.0 311	3000
1300	3 7.6	6 15.2	5-3/4 14.6	5-1/4 13.3	8-5/16 21.1	13-9/16 34.4	7 17.8	11-1/2 29.2	7 17.8	1/2 1.3	3/8 1.0	4-3/4 12.1	1 2.5	83 38	15 425	2500
1350	3-1/2 8.9	6 15.2	6 15.2	5-1/4 13.3	10 25.4	15-1/4 38.7	7 17.8	11-1/2 29.2	7 17.8	1/2 1.3	1/2 1.3	4-1/2 11.4	1 2.5	93 42	23 652	2120
1400	4 10.2	6 15.2	8-5/8 21.9	5 12.7	11-7/8 30.2	17-7/8 45.4	**	**	7 17.8	3/4 1.9	1/2 1.3	**	-	165 75	30 850	2120

*Frequency data obtained through testing under a no-load condition. Frequency will decline as load is increased.
**Handles are extension of top two bolts. Dimension confined by BxBxE.

VMBB TECHNICAL DATA

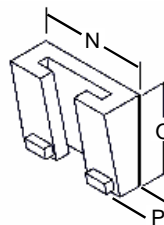


WT. lbs/kg	AIR CONSUMP. scfm/lmp (lmp=liter per min) @60 psig 4.1 bar	Frequency (vibrations per minute) @60 psig 4.1 bar
90 41	23 652	2120

The VMBB is available in two sizes, the 1300 and 1350. Data shown is for the more popular 1350 size (dimensions are in in/

LSRR BRACKET

LSRR-FL are cast steel female brackets that are standard equipment on covered hopper railroad cars. They can be welded or bolted to a structure. LSRR-FS was designed for use with the 2" (1200) vibrator only. It is ideal for portable bins and hoppers.



THE CLEVELAND VIBRATOR COMPANY
2828 CLINTON AVE. CLEVELAND, OHIO 44113
800-221-3298

	LSRR-FL in/cm	LSRR-FS in/cm
N	7-3/4 19.7	7 17.8
O	7 17.8	4-3/4 12.1
P	3-3/8 8.6	2-1/2 6.4
WT. lb/kg	25/11	12/5