HOW TO SELECT PROPER VIBRATOR
- IN THREE EASY STEPS -

A. FIND NEEDED VIBRATOR FORCE FOR YOUR APPLICATION.

B. FIND AVAILABLE VIBRATOR MODELS.

C. SELECT ELECTRIC, PNEUMATIC OR HYDRAULIC OPERATION.

A. FIND NEEDED VIBRATOR CENTRIFUGAL FORCE (IMPACT) FOR YOUR APPLICATION.

1. BINS, HOPPERS.

To move the material in a bin or hopper, the friction between the material and the bin skin has to be broken. Once this is done the material cannot cling to the bin sides and it will flow out through the discharge. The vibrator force needed to accomplish this, is for 80% of all applications, very simply calculated as follows:

Calculate the weight of the material in the transition or sloping part of the bin. Normally this is the only place where the friction between the material and the bin sides has to be broken. - DO NOT CALCULATE THE TOTAL WEIGHT, ONLY WHAT IS IN THE TRANSITION PART.

For CONICAL BINS, calculate as follows: .261 x dia.^{2} x height x material density in lbs/cu. ft.

For RECTANGULAR BINS, length x width, x height x 1/3 x material density.

When the weight has been calculated, divide by 10 - the figure you get is the force or impact needed on your vibrator. _____ lbs. Continue with Para. B.

For example: The conical part of a 25 ton bin contains 7000 lbs. Divide 7000 by 10, you need a vibrator with 700 lbs. of centrifugal force or impact. Find suitable vibrator under Para. B.

NOTE: Additional considerations when sizing vibrator to bins.

1. If bin side angle is below 30°, select next larger vibrator.
2. If bin thickness is extra heavy (see table under section B), select next larger vibrator.
3. On real sticky and hard to move materials, it is better to use two (2) small vibrators instead of a large one (find the smaller one by figuring half the material weight).

2. VIBRATING TABLES.

A. PACKING MATERIAL

Dense materials respond best to high frequency vibration (3600 RPM or more) while light, fluffy or flakey materials respond best to low frequency vibration (1800 RPM or less).

For packing or settling materials, use a vibrator with an impact force of (1.5) to 2 times larger than the weight of the material plus container. Find suitable vibrator under Para. B.

3. VIBRATING SCREENS.

Rule of thumb: For self-cleaning screen use a vibrator with a centrifugal force (impact) four (4) times the weight of the material plus the weight of the screen.

NOTE: Coarse and lumpy materials respond best to 3600 VPM (vibrations per minute), powdery and dry materials, 1800 VPM, sticky and wet materials, over 3600 VPM.

4. CONSOLIDATING CONCRETE.

Rule of thumb: For 3" "slump" concrete use a vibrator with the same force (impact) as the weight of concrete and form. For 1 - 2" slump concrete, an additional 30 -50% impact is needed. For dry mixes (0 - slump) add 100 - 200%.

NOTE: FOR ADDITIONAL SIZING INFORMATION, SEE:
Page 31 & 32 for suitable bracketry.
Find suitable vibrator under Para. B.

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VIBRATOR SELECTION CONT.

B. FIND AVAILABLE VIBRATOR MODELS.

From table below, draw a line across from the force calculated in Para. A, you will find you have a choice of several vibrators, both electric, pneumatic and hydraulic models. List them below and continue with Para. C.

MODEL: ______________________________

To continue with the example - 700 lbs. of vibrator force is needed. Draw a line straight across from 700 lbs. The line will cross the force ranges of suitable vibrators — Electric model 2P-450; 2P-800; 4P-700; 4P-1000; US-900; SCR-1000; — Pneumatic models BVS & VS 380; BV & V380; 50-2L; 50-2LS; PF 800. Now continue with Para. C to make final selection.

Vibrator Force or Impact lbs.	Electric Models — PAGE NO.									Pneumatic Models					Hydraulic Models		
	2P Page 3-6	4P Page 3-6	6P Page 3-6	8P Page 3-6	SPR Page 9-10	US Page 11-12	SFC Page 9-10	FC Page 9-10	SCR Page 7-8	Turbine Page 13-18	Ball Page 19-20	Piston Page 21-22	SVR Page 23-26	Big Buster Page 27-28	Turbine Page 27-28	Big Buster Page 27-28	Bin Skin Thickness Max.
10																	20 Ga.
20					SPR 20&21					BVS60 VS,BVS100	BV60 BB,V100						20 Ga.
40					SPR 40							10-⅜, 10-¾					1/16
60	2P-75				SPR 60				SCR-100	BVS130 VS,BBS130	BV130 BB,V130	10-1, 50-1 50-1¼S					1/8
80	2P-100				SPR 80	US-100	SFC100	FC-100				10-1¼ 50-1¼-1⅓S			B130		3/16
100										BBS160	BB160						1/4
150	2P-150							FC-200				50-1½					5/16
200	2P-200	4P-350	6P-300			US-300			SCR-200	BVS190, VS190	BV190, V190						5/16
300			6P-500	8P-500		US-450	SFC-300	FC-300			BV250 V250	50-1½L or LS 50-2S			B190		3/8
400								FC-400		BVS250, VS250; BVS320					B250		3/8
500	2P-450	4P-700		8P-1000					SCR-500; SCR-1000		BV320, V320	50-2, 50-2LS					7/16
600											BV380 V380				B320		7/16
700						US-900				BVS380 VS380; VS320				PF800			1/2
800		4P-1000								BVS510 FS510		50-2L, 50-3S					1/2
900	2P-800	4P-1400										50-3 or 3LS					1/2
1000										BVS570				PF1200			1/2
1200						US-1600						50-4 50-3L		PF1500		HF800	1/2
1400	2P-1700	4P-2000														HF1200	3/4
1600										CCF-2000							3/4
2000		4P-3000												PC-PF3000		HF1500	3/4
2500	2P-2500												SVRS-SVR3000 SVR4000	PC-PF3500		HF3000 HC3500	3/4
3000																	1
3500													SVRS-SVR5500				1
4000		4P-5000								CCF-5000							1¼
4500		4P-10000															1¼
5000														PC-PF8000; PC-PF8200		HF-HC8000; HF-HC-8200	1¼
6000													SVR-8000				1¼
7000																	1¼
8000																	1¼

VIBRATOR SELECTION CONT.

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Vibrator Force or Impact lbs.	Electric Models: PAGE NO. 2P Page 3-6	4P Page 3-6	6P Page 3-6	8P Page 3-6	SPR Page 9-10	US Page 11-12	SFC Page 9-10	FC Page 9-10	SCR Page 7-8	Pneumatic Models: Turbine Page 13-18	Ball Page 19-20	Piston Page 21-22	SVR Page 23-26	Big Buster Page 27-28	Hydraulic Models: Turbine Page 27-28	Big Buster Page 27-28	Bin Skin Thickness Max.
10										BVS60 VS.BVS100	BV60 BB V100	10-¾, 10-¾					20 Ga.
20					SPR 20&21												20 Ga.
40					SPR 40				SCR-100	BVS130 VS.BBS130	BV130 BB V130	10-1, 50-1 50-1½S					1/16
60	2P-75				SPR 60	US-100		FC-100				10-1¼ 50-1¼, 1½S			B130		1/8
80		2P-100			SPR 80		SFC100										3/16
100										BBS160	BB160						1/4
150	2P-150								FC-200	BVS190 VS190	BV190 V190	50-1½					5/16
200		2P-200	6P-300			US-450		FC-300	SCR-200			50-1½L or LS 50-2S			B250	B190	5/16
300							SFC-300			BVS250 VS250	BV250 V250						3/8
400									FC-400	BVS320	BV320 V320	50-2 50-2LS					3/8
500	2P 450	4P-700	6P-500	8P-500					SCR-500								7/16
600						US-300				BVS380 VS380	BV380 V380			PF800		B320	7/16
700										VS320		50-2L, 50-3S					1/2
800										BVS510 FS510							1/2
900		2P-800		8P-1000		US-900			SCR-1000			50-3 or 3LS		PF1200			1/2
1000										BVS570				PF1500			1/2
1200		4P-1400				US-1600						50-4 50-3L				HF800	1/2
1400	2P-1700									CCF-2000							3/4
1600																	3/4
2000		4P-1000												PC-PF3000		HF1200	3/4
2500		4P-2000												PC-PF3500		HF1500	3/4
3000		4P-3000											SVRS-SVR3000 SVR4000				1
3500										CCF-5000						HF3000 HC3500	1
4000	2P-2500													PC-PF8000			1¼
4500		4P-5000											SVRS-SVR5500				1¼
5000														PC-PF8200		HF-HC8000	1¼
6000																	1¼
7000		4P-10000											SVR 8000			HF-HC 8200	1¼
8000																	1¼