



# DECA VIBRATOR

Division of DECA Products, Inc.

## ROTARY ELECTRIC VIBRATORS



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*When material refuses to flow from a bin, chute, containment or processing system; when material isn't compacting or flowing properly in a form, mold, machine or material handling system; when material blinds a screen or segregating system; Use Deca Vibrators. Deca Rotary Electric Vibrators are the quiet, energy efficient way to create the powerful vibratory forces necessary to move your problem materials.*

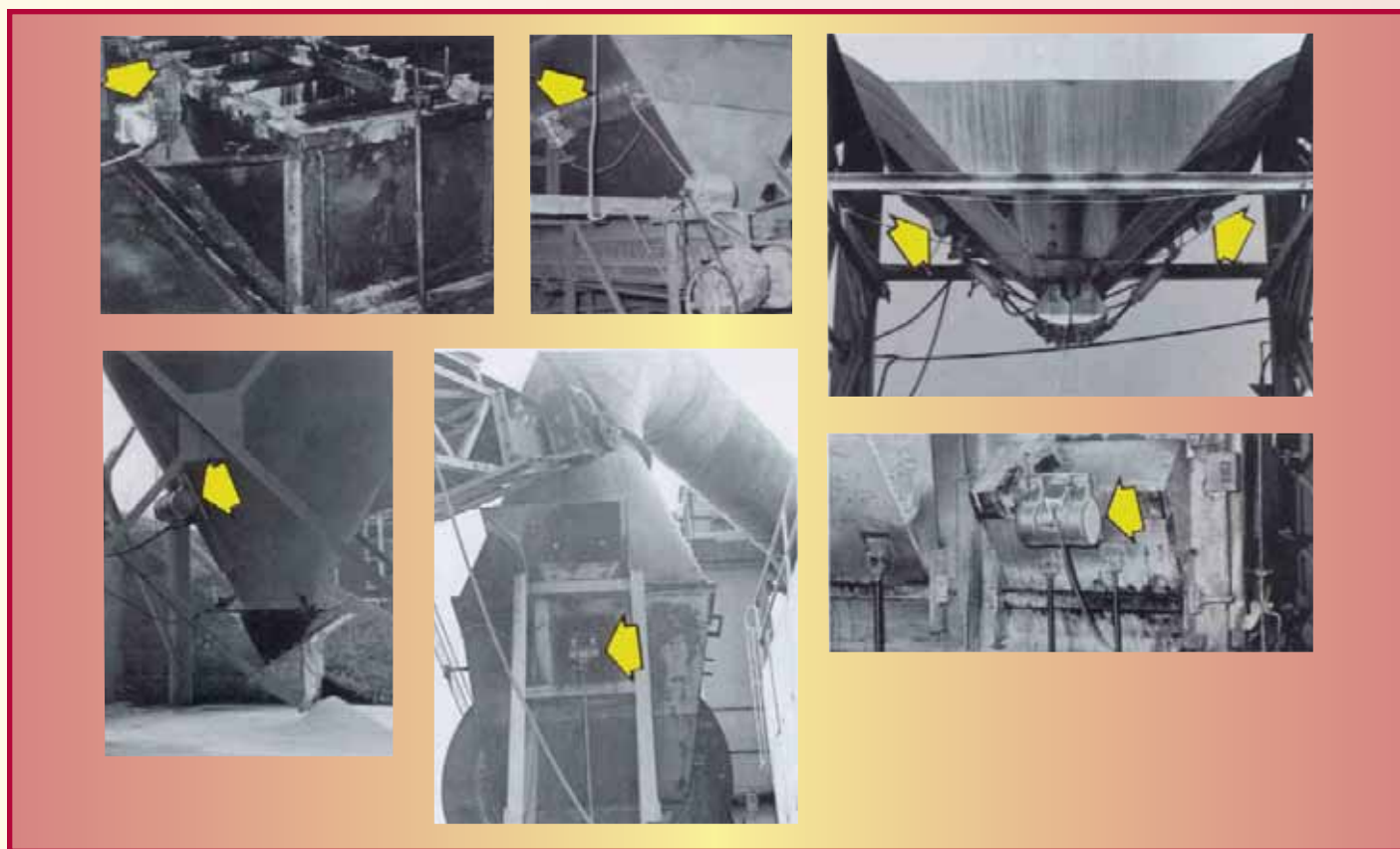
Because there are many times more efficient than air, electromagnetic or hydraulic vibrators; low cost Deca Rotary Electric Vibrators can pay for themselves with dollars made from energy savings. Replace your worn out vibrators with quiet, efficient Deca Vibrators. Easily installed, they're quickly integrated into automated systems.

# ROTARY ELECTRIC VIBRATORS

Deca Vibrator, a pioneer in the rotary electric vibrator field, is dedicated to solving customer problems. This dedication, coupled with continuous research and development, has resulted in the creation of this series of Deca Electric Vibrators to meet any application need.



Single Phase  
Three Phase  
Fixed Speed  
Variable Speed  
Adjustable Force Output  
Single End  
Double End  
Continuous Duty  
Intermittent Duty  
15 to 5400 Centrifugal Force pounds  
50/60 Hz.  
Most foreign voltages available.  
Specs. for 550/575 volts units listed.

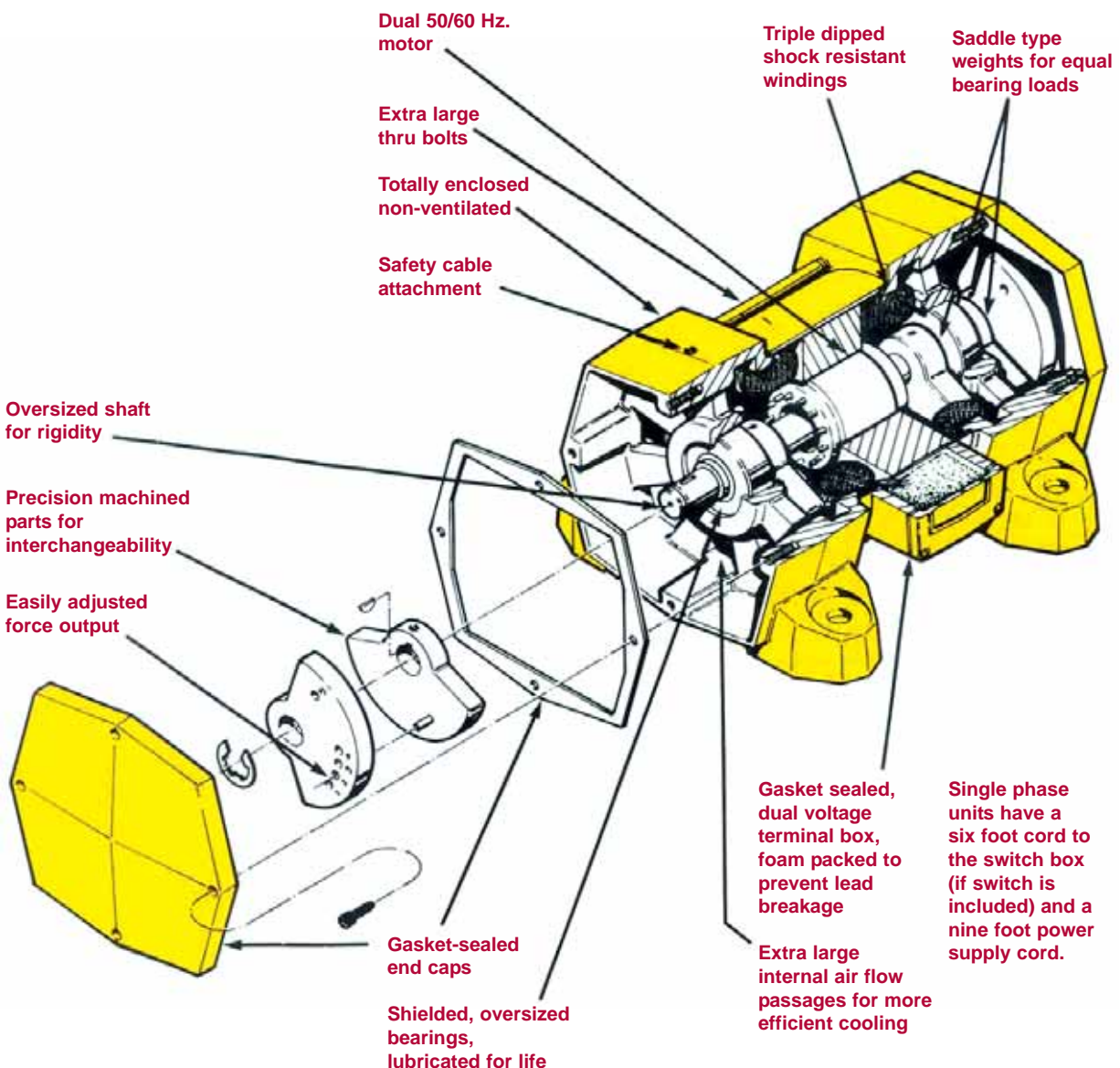


*Deca Vibrators produces a quality series of Rotary Electric Vibrators second to none.*

# Quality Is Engineered Into Each Deca Vibrator

**Did you know that each Deca vibrator you buy has been individually run and tested? Then it is painted and inspected one last time before packing. From inspections of incoming raw material through the tight tolerances of machining, and the rigors of electrical and mechanical testing, into the cleanliness of carefully controlled assembly, Deca quality continues throughout the manufacturing of this fine product.**

## Model D3-3600



# Moving Materials in Industry

## Applications

Asphalt Plants  
Automatic Molding Machines  
Bagging  
Bins  
Blenders  
Boxing  
Bunkers  
Cement Compaction  
Chutes  
Compacting Bulk Materials  
Compacting Poured Plastics  
Compacting Simulated Marble  
Compaction Tables  
Concrete Block Machines  
Concrete Pipe Machines  
Conveyers  
Core Machines  
Crushers

Dust collectors  
Electrostatic Precipitators  
Fatigue Testing  
Feeders  
Filling Machines  
Food Packaging Lines  
Forms  
Foundry Machines  
Foundry Shakeouts  
Grinders  
Hoppers  
Mills  
Packing Tables  
Paving Machines  
Plug Mills  
Pneumatic Conveying Systems  
Portable Forms  
Precast Installations

Precipitators  
Pug Mills  
Railroad Cars  
Ready-Mix Plants  
R R Car Rollovers  
Screeds  
Screens  
Sifting Bulk Materials  
Silos  
Smoke Precipitators  
Tampers  
Test Tables  
Trowels  
Vault Forms  
Vibrating Tables  
Weigh Batcher  
Weigh Bins  
Wood Bins

## Materials

Aggregate  
Asphalt  
Bauxite Ore  
Bolts  
Cake Mix  
Cement  
Chemicals  
Chips  
Cinders  
Clay  
Coal  
Concrete  
Cookie Mix  
Copro  
Cotton Seed  
Detergent  
Dust  
Earth  
Feeds  
Fertilizer  
Fine Bulk Materials  
Flakes

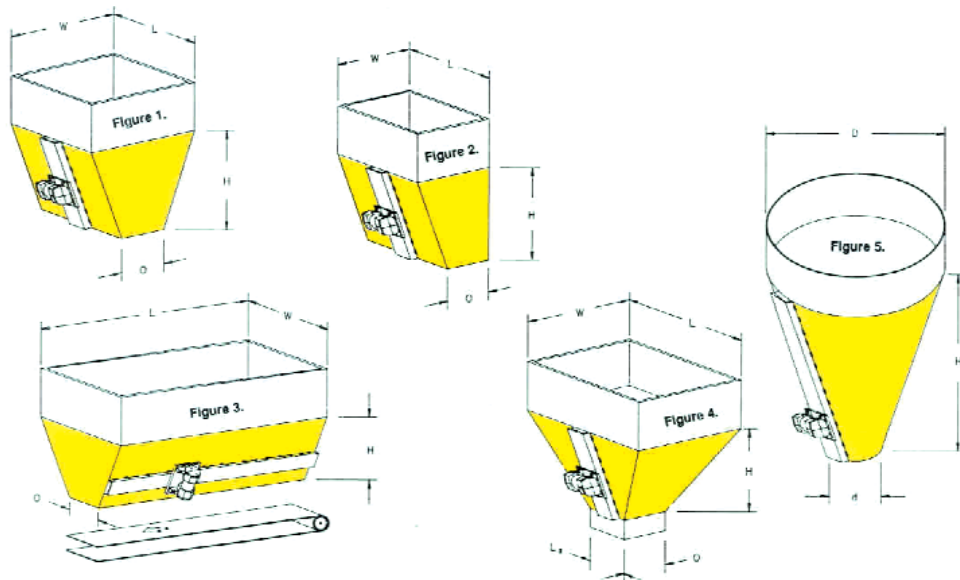
Flour  
Fly Ash  
Foundry Sand  
Garbage  
Grain  
Gravel  
Gypsum  
Iron Ore  
Lime  
Limestone  
Low Slump Concrete  
Manure  
Metals  
Muck  
Nitrogen Fertilizer  
Nut Meats  
Ore  
Ore Concentrates  
Phosphate  
Phosphate Concentrate  
Pigments  
Pill

Plastics  
Polymers  
Potash  
Potato Chips  
Poured Plastics  
Powders  
Powdered Milk  
Resins  
Salt  
Salt Cake  
Sand  
Sawdust  
Simulated Marble  
Snow  
Soap Powder  
Soda Ash  
Soil Cement  
Soybean Mix  
Spices  
Starch  
Sugar  
Tankage  
Woodchips

## Industries

Asphalt Paving  
Baking  
Bottling  
Brewing  
Chemical  
Concrete Paving  
Farming  
Feed  
Fertilizer  
Flour Mills  
Food Processing  
Foundries  
Mining  
Paper  
Petro-Chemical  
Pharmaceutical  
Power Plants  
Precast Concrete  
Plastics  
Quarries  
Railroads

Rendering  
Redimix Concrete  
Steel Mills  
Smelting  
Waste and Water Treatment  
Manufacturing of Clay Products  
Detergent  
Glass  
Ink  
Porcelain  
Salt  
Soap  
Soybean Meal  
Starch  
Sugar  
Synthetic Rubber  
Textile Products  
Tile  
Tobacco  
Wood Products



# How To Select Your Deca Vibrator

To Properly select a Deca Vibrator for your bin, hopper, chuts, etc., follow the steps below:

1. Select the shape on page 4 that matches your bin, hopper, etc. and calculate the maximum weight of material in the sloping section (shaded area only). Using the formulas given below.

Square or rectangular bin with one or two sloped sides	Fig. 1,2,3	$V = M \left[ \frac{L(H)(W + O)}{2} \right]$	V = WEIGHT OF MATERIAL IN SLOPING SECTION (LBS.) M = MATERIAL WEIGHT PER (FT <sup>3</sup> )
Square or rectangular bin with four sloped sides	Fig. 4	$V = M(H) \frac{[O(L_2) + (W)(L) + \sqrt{O}L_2](W)(L)]}{3}$	L = LARGE LENGHT (FT) W = LARGE WIDTH (FT) O = OUTLET WIDTH (FT) H = SLOPE HEIGHT (FT)
Conical bin	Fig. 5	$V = .2618(M)H(D^2 = +Dd + d^2)$	D =LARGE DIAMETER (FT) d = SMALL DIAMETER (FT) L <sub>2</sub> =OUTLET LENGHT (FT)

2. Refer to "max weight in slope of bin" page 6. Select the weight that applies to your calculated total (step 1) and note the vibrator in that row. You may have more than one possibility so consider the following steps and footnote(6) page 6.

You have now arrived at force lb. number. Additional factors to consider before making final selection are as follows:

- A. For each 1% of free moisture, add 5% more centrifugal force.
- B. Bin wall limits

Lbs. of cf maximum	Bin wall thickness
200 LBS.	11 GA.
900 LBS.	1/8"
1300 LBS.	3/16"
2500 LBS.	1/4"
3500 LBS.	5/16"
5500 LBS.	3/8"

- C. Should force requirements exceed recommended bin wall thickness, use 2 or more vibrators equaling your calculated requirement.
- D. Most Deca Vibrators have a wide range of adjustment. Try to match your requirement to the mid-range output of the vibrator. This will allow you adjustment either higher or lower, giving you broad flexibility in sizing.

**REMEMBER: Use only enough vibration to do the job. NEVER OVER VIBRATE.**

Example - you've calculated the total capacity of your bin, but you only need to clean the bin or solve the occasional bridging problem a smaller vibrator may be considered.

3. Select the voltage, phase and be sure the motor enclosure matches your environmental requirements. You should now be able to select the vibrator specifically for your job.

When ordering your Deca Vibrator please specify the part number, model number, voltage and phase.

Order overload protection for all three phase vibrators. Include part number for all mounting plates, motor overloads, safety cables and other accessories required.

Contact your Deca Dealer or call the factory to further assist you in the proper vibrator selection.

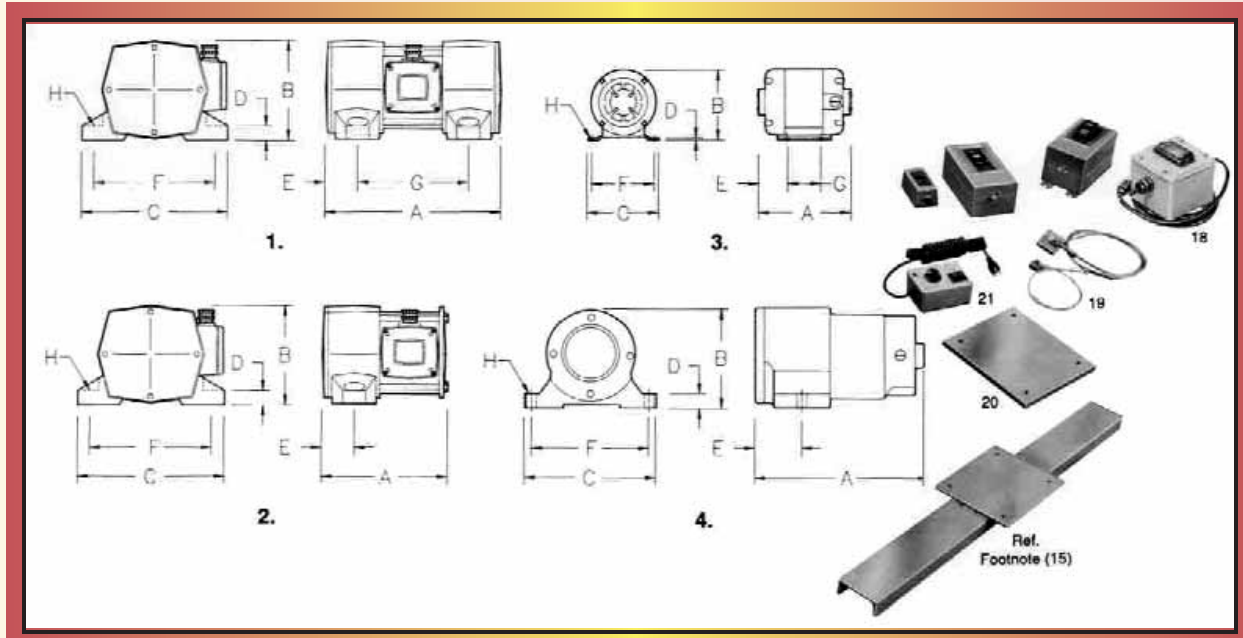
# Heavy Duty Electric Vibrator Specifications



Specifications				See Footnotes (+) (1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12)																		
No.	Model No. (1)	Part No. (7)	AC Voltage 3PH - 60 Hz (7) (8)	Amps	Centrifugal Force lb. (in. lb.) (+) (3) (4) (5)							Max. Weight In Slope Section of Bin (6)	Max. RPM (VPM)	P h a s e	HP	dB (2)	Motor Enclosure (9)	Type Of Motor (10)	Cord Length (11)	Vibrator Weight		
					Max.																Min.	
					8	7	6	5	4	3	2	1										
1	D3-500	205700 205588	230/460 550/575	AC	.8/4 .35/3	475(1.41) 2112N	436(1.29) 1939N	417(1.23) 1845N	354(1.05) 1574N	243(0.72) 1080N	185(0.55) 822N	100(0.23) 444N	37(0.11) 164N	10000 lb. 4536 kg	3450	3	1/3	70	A	A	A	20 lb. 9.1 kg.
2	D3-950	205236 205243	230/460 550/575	AC	1.1/55 .46/44	—	950(2.8) 4225N	850(2.5) 3780N	700(2.1) 3113N	550(1.6) 2446N	400(1.2) 1779N	250(0.74) 1112N*	150(4.4) 667N	19000 lb. 8618 kg	3450	3	1/3	59	A	A	A	45 lb. 20.4 kg.
3	D3-1800	205208 205212	230/460 550/575	AC	3.2/1.6 1.4/1.3	—	—	—	1800(5.3) 8006N	1550(4.58) 6894N	1300(3.8) 5782N	1050(3.1) 4670N*	800(2.4) 3558N	36000 lb. 16329 kg	3450	3	1	71	A	A	A	79 lb. 35.8 kg.
4	D3-3600	205296 205297	230/460 550/575	AC	3.2/1.6 1.4/1.3	—	—	—	3600(10.8) 16013N	3050(9.0) 13567N	2600(7.7) 11565N	2150(6.4) 9563N*	1700(5.0) 7561N	72000 lb. 32658 kg	3450	3	1	73	A	A	A	96 lb. 43.5 kg.
5	D3-5400	205261 205262	230/460 550/575	AC	8.4/4.2 3.6/3.4	—	—	—	5400(16.0) 24020N	4975(14.7) 22129N	4450(13.16) 19794N	3925(11.6) 17459N*	3400(10.1) 15123N	100800 lb. 48987 kg	3450	3	3	75	A	A	A	135 lb. 61.2 kg.
6	S3-300	205233 205234	230/460 550/575	AC	1.1/55 .46/44	—	—	—	300(0.9) 1334N	250(.74) 1112N	200(0.6) 899N	137(0.4) 609N*	75(2.2) 333N	6000 lb. 2721 kg	3450	3	1/3	57	A	A	A	33 lb. 15.0 kg.
7	C3-1100	205252 205254	230/460 550/575	AC	3.4/1.7 1.5/1.4	—	—	—	1100(12.7) 4893N	950(11.0) 4225N	800(9.3) 3558N	675(7.8) 3002N*	550(6.4) 2446N	33000 lb. 14968 kg	1745	3	1	56	A	A	A	98 lb. 44.5 kg.
8	C3-1400	205253 205255	230/460 550/575	AC	4.6/2.3 2.0/1.9	—	—	—	1400(16.2) 6227N	1275(14.7) 5671N	1150(13.3) 5115N	1000(11.6) 4448N*	875(10.1) 3892N	42000 lb. 19050 kg	1745	3	1 1/2	56	A	A	A	107 lb. 48.5 kg.
9	D1-15	205287	115	AC	.5	—	15(.052) 67N*	—	—	—	—	—	—	300 lb. 136 kg	3200	1	1/100	40	D	C	E	3 lb. 1.36 kg.
10	D1-500	205689	115/230	AC	3/1.5	475(1.41) 2112N	436(1.29) 1939N	417(1.23) 1854N	354(1.05) 1574N	243(0.72) 1080N	185(0.55) 822N	100(0.23) 444N	37(0.11) 164N	10000 lb. 4536 kg	3450	1	1/4	62	A	B	B	24 lb. 9.5 kg.
11	D1-950	205520	115	AC	4.3	—	950(2.8) 4225N*	850(2.5) 3780N	700(2.1) 3113N	550(1.6) 2446N	400(1.2) 1779N	250(0.7) 1112N*	150(0.4) 667N	19000 lb. 8618 kg	3450	1	1/3	59	A	B	B	47 lb. 21.3 kg.
12	S1-80	205530	115	AC	2	—	—	—	—	—	80(0.24) 355N	60(0.18) 266N*	30(0.09) 133N	1600 lb. 725 kg	3450	1	1/15	58	B	C	C	11.5 lb. 5.2 kg.
13	S1-300	205521	115	AC	4.3	—	—	—	300(0.9) 21334N	250(.74) 1112N	200(0.6) 899N	137(0.4) 609N*	75(2.2) 333N	6000 lb. 2721 kg	3450	1	1/3	57	A	B	B	35 lb. 15.9 kg.
14	U1-75 (12)	205040	115	AC/DC	.7	—	75(.033) 333N*	—	—	—	—	—	—	750 lb. 340 kg	9000	1	1/15	74	C	D	C	5 lb. 2.2 kg.
15	U1-500 (12)	205636	115	AC/DC	3.7	—	—	—	—	—	500(.22) 2224N*	350(.15) 667N*	150(.07) 667N	5000 lb. 2268 kg	9000	1	1/4	78	A	D	D	14 lb. 6.4 kg.
16	DC2-700	205072	230	DC	1.52	—	700(2.07) 3113N*	—	—	—	—	—	—	14000 lb. 6350 kg	3450	DC	1/3	75	A	E	A	43 lb. 19.5 kg.

- (+) Factory weight setting.
- (1) Mounting bolts and compression washers included with each model and all, except the D1-15, have a drilled and tapped hole(s) for a safety cable or lift eyes.
- (2) Sound produced in decibels - decibel reading taken with the vibrator mounted on a 400 lb. steel plate at a distance of 3 ft. (.9 m) from dB meter - A scale - slow response.
- (3) Centrifugal force lb. = .0000284 x (in. lb.) x RPM<sup>2</sup>.
- (4) N = newtons = (lb. x 4.44822).
- (5) Nm = newton - meter = (in. lb. x 4.4822) : 39.370077.
- (6) Rule of thumb - @ 1745 RPM - 1 lb. (1N) of force to 30 lbs. (3kg) material in slope section of bin.  
@ 3000 to 4500 RPM - 1 lb. (1N) of force to 20 lbs. (2 kg) material in slope section of bin. For each 1% of free surface moisture add 5% more centrifugal force.  
@ 6000 to 9000 RPM - 1 lb. (1N) of force to 10 lbs. (1 kg) material in slope section of bin.
- (7) Specify part no. and voltage when ordering.
- (8) For other voltages and 50 Hz units consult factory.

# Heavy Duty Electric Dimensions & Accessories



Dimensions & Accessories		See Footnotes (7) (8) (13) (14) (15)													
D R A W I N G	No.						Bolt Pattern		Bolt Size / Qty. (Mount Bolts NC Threads)	Motor Overload (7)(8)(13)(14) Heaters Included		Safety Cable	Mounting Plate (15)	Speed Control	No.
		A	B	C	D	E	F	G	H	NEMA 1 230/460 AC 550 AC NO. 17	NEMA 12,4X 115 AC 230/460 AC NO. 18	NO. 19	NO. 20	NO.21	
1	11 1/2" 298.4mm	6" 152.4mm	7 3/4" 196.8mm	1" 25.4mm	3" 76.2mm	5 1/2" 139.7mm	6" 152.4mm	3/8 X 1 1/4" 10mm x 30mm	1/4	194140/194141 194134	194444/194445 194438	—	220523	—	1
1	10 3/4" 273.1mm	6 3/8" 161.9mm	9 7/8" 250.8mm	1" 25.4mm	2 1/8" 54.0mm	8" 203.2mm	6" 152.4mm	1/2 X 1 1/2" 12mm x 35mm	1/4	194113/194112 194135	194414/194415 194439	220311	220521	—	2
1	13 3/8" 339.7mm	8 1/4" 209.6mm	12 3/8" 314.3mm	1 1/2" 38.1mm	2 3/16" 55.6mm	10" 254mm	9" 228.6mm	3/4 X 2 1/2" 20mm x 60mm	1/4	194115/194116 194136	194419/194420 194440	220312	220571	—	3
1	14 1/2" 368.3mm	8 1/4" 209.6mm	12 3/8" 314.3mm	1 1/2" 38.1mm	2 3/4" 69.9mm	10" 254mm	9" 228.6mm	3/4 X 2 1/2" 20mm x 60mm	1/4	194113/194112 194135	194414/194415 194439	220312	220571	—	4
1	20" 508mm	8 1/4" 209.6mm	12 3/8" 314.3mm	1 1/2" 38.1mm	4" 101.6mm	10" 254mm	12" 304.8mm	3/4 X 2 1/2" 20mm x 60mm	1/4	194115/194116 194136	194419/194420 194440	220313	220591	—	5
2	8 1/8" 206.4mm	6 3/8" 161.9mm	9 7/8" 250.8mm	1" 25.4mm	2" 50.8mm	8" 203.2mm	—	1/2 X 1 1/2" 12mm x 35mm	1/2	194113/194112 194135	194414/194415 194439	220311	220512	—	6
1	14 1/2" 368.3mm	8 1/4" 209.6mm	12 3/8" 314.3mm	1 1/2" 38.1mm	2 3/4" 69.9mm	10" 254mm	9" 228.6mm	3/4 X 2 1/2" 20mm x 60mm	1/4	194113/194129 194138	194414/194433 194442	220312	220573	—	7
1	16" 406.4mm	8 1/4" 209.6mm	12 3/8" 314.3mm	1 1/2" 38.1mm	2 3/4" 69.9mm	10" 254mm	10 1/2" 266.7mm	3/4 X 2 1/2" 20mm x 60mm	1/4	194130/194131 194139	194414/194435 194443	220312	220573	—	8
3	4" 101.6mm	3 5/8" 92.1mm	4 1/2" 114.3mm	1/8" 3.2mm	13/16" 20.6mm	3 3/4" 95.3mm	2 3/8" 60.3mm	1/4 X 3/4" 6mm x 16mm	1/4	—	194267	—	—	196751	9
1	11 1/2" 298.4mm	6" 152.4mm	7 3/4" 196.8mm	1" 25.4mm	3" 76.2mm	5 1/2" 139.7mm	6" 152.4mm	3/8 X 1 1/4" 10mm x 30mm	1/4	—	Included	220311	220523	—	10
1	10 3/4" 273.1mm	6 3/8" 161.9mm	9 7/8" 250.8mm	1" 25.4mm	2 1/8" 54.0mm	8" 203.2mm	6" 152.4mm	1/2 X 1 1/2" 12mm x 35mm	1/4	—	Included	220311	220521	—	11
2	6 3/4" 171.5mm	4 5/8" 117.5mm	6 3/4" 171.5mm	7/8" 22.2mm	1 3/4" 44.5mm	5 1/2" 139.7mm	—	3/8 X 1 1/4" 10mm x 30mm	1/2	—	194270	220300	220522	196751	12
2	8 1/8" 206.4mm	6 3/8" 161.9mm	9 7/8" 250.8mm	1" 25.4mm	2" 50.8mm	8" 203.2mm	—	1/2 X 1 1/2" 12mm x 35mm	1/2	—	Included	220311	220512	—	13
3	4 5/8" 117.5mm	3 11/16" 93.7mm	3 1/2" 88.9mm	1/8" 3.2mm	1 3/4" 44.5mm	3" 76.2mm	1 1/4" 31.8mm	1/4 X 3/4" 6mm x 16mm	1/4	—	194269	220300	—	196751	14
2	7 1/2" 190.5mm	4 5/8" 117.5mm	6 3/4" 171.5mm	7/8" 22.2mm	1 5/8" 41.3mm	5 1/2" 139.7mm	—	3/8 X 1 1/4" 10mm x 30mm	1/2	—	Included	220300	220522	196751	15
4	10 7/8" 276.2mm	6 7/8" 174.6mm	9 3/4" 247.7mm	1" 25.4mm	2 7/8" 73mm	8" 203.2mm	—	3/4 X 1 1/2" 20mm x 35mm	1/2	—	On Request	220302	220514	—	16

(9) Motor Enclosure Description (A) = Totally Enclosed Non-Ventilated, (B) = Totally Enclosed Fan Copied, (C) = pen - Fan Cooled, (D) = Enclosed - No Exposed Moving Parts. All vibrators have Class B motor insulation except models D3-1800, D3-3600 which have Class F (consult factory for other class insulations).

(10) Motor Type Description (A) = Induction Motor, (B) = Capacitor Start Induction Motor, (C) = Shaded Pole Motor, (D)=AC/DC Brush Type Motor, (E) = Shuntwound DC Brush Type Motor.

(11) Cord Lengths Furnished with Vibrator (A) = No Cord Included, (B) = 8 ft. (1.8m) to Motor Starter 9 ft. (2.7) to Plug. (C) = 8 ft. (2.4m) to plug, (D) = 7 ft. (.m) to Motor Starter 1 ft. (0.3m) to Plug. (E) = 6 ft. (1.8m) to Plug.

(12) Intermittent duty = Rule of thumb-1/2 duty cycle, 30 minutes on and 30 minutes off in each hour, let vibrator cool to ambient (room) temperature.

(13) All single phase units include motor starter and overload in NEMA 4 enclosure, except models D1-15, S1-80, and U1-75.

(14) NEMA 1 - General purpose enclosure, NEMA 12 - Dust tight enclosure, NEMA 4 - Watertight enclosure.

(15) Mounting plate and channel assemblies are built on special order to fit each installation.

## ATTENTION

The proper APPLICATION, INSTALLATION, and OPERATION of Deca Vibrators is of utmost importance to ensure proper performance and long life. Contact Deca Vibrator or your dealer for further assistance and for information on Deca's limited warranty.

# ROTARY ELECTRIC VIBRATORS



## ***BALL VIBRATORS***

Compact, lightweight, can be used virtually anywhere



## ***TRUCK VIBRATORS***

Dump wet, sticky, and frozen material  
12 and 24 volt; "The Original"



## ***ELECTRIC VIBRATORS***

The highest quality Electric  
Vibrator you can buy



## ***HYDRAULIC VIBRATORS***

Powerful-Quiet-Efficient  
Adjustable weights and frequency



## ***AIR VIBRATORS***

Hardworking-Tough-Dependable  
Permanent or quick change base



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SPECIFICATIONS SUBJECT TO CHANGE

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