

Viber® Power Unit

Operating Instructions

ELECTRIC POWER UNITS FOR
VIBER® INTERNAL CONCRETE VIBRATORS

Models

VMK-1500 120V

VMK-1500 240V

VMK-2500 120V

VMK-2500 240V

*Models come with
or without a Quick
Disconnect Fitting.*



**VMK-1500
without
quick disconnect fitting**



← Quick
Disconnect

**VMK-2500
with
quick disconnect fitting**



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I. Introduction

You have purchased a Viber[®] Electric Power Unit, the center of your Smart!Parts[™] Internal Concrete Vibrator System. The other system components include a Viber[®] vibrator head and a Viber[®] reversible flexible drive.



Power Unit+ Flexible Drive+ Head = Smart!Parts[™] System

You build the right Smart!Parts[™] System for your application by choosing from the wide range of Viber[®] components including many different power options, different flexible drive lengths, and steel and rubber tipped vibrator heads or heads coated completely with polyurethane. These components all use identical fittings so that Viber[®] components are completely interchangeable. Any flexible drive can be used with any of the power units (electric, pneumatic, or gasoline) and any of the heads. See Section VIII for recommendations to select the best Viber[®] power unit, head and flex drive for your application.

When properly used, your Smart!Parts[™] System will effectively compact concrete to remove entrapped air, producing high quality concrete that is dense, strong, durable, and impermeable.

CAUTION

CHECK YOUR EQUIPMENT

1. Inspect the vibrator system for damage. Never use a damaged vibrator.
2. Have all components of the vibrator system received proper maintenance?
VMK Electric Motors: Monitor brushes and bearings. No lubrication required.
Flexible Shafts: Re-grease core after every 50 hours of use or if core rattles excessively.
Vibrator Head: Monitor bearings. Viber[®] heads are permanently lubricated at the factory. No further lubrication required.
3. Are all vibrator system connections tight? Apply Teflon[®] tape to the casing threads, before attaching the head and motor. This gives a water tight connection that will not come loose during operation.
4. Do you have the proper power source?
VMK 1500, 1500L, 1500Q, 1500QL = 120 volt, 10A service.

- VMK 1500, 1500Q = 240 volt, 5A service.
VMK-2500, 2500L, 2500Q, 2500QL = 120 volt, 15A service. VMK-2500, 2500Q = 240 volt, 7.5A service.
5. If using an electric motor, is it properly grounded?
 6. Use the proper size extension cord.

CHECK YOUR FORMS

They need to be well made to withstand the strains of vibration.

1. Use screws instead of nails (nails will back out with vibration).
2. Forms need to be well braced to prevent bulging.
3. Joints need to be closely fit to prevent leaking.
4. Monitor forms during placement of concrete. Tighten as needed.

EXTENSION CORD RECOMMENDATIONS

The voltage drops along the length of an extension cord because of the resistance of the wire. This voltage drop is important to consider because as the voltage drops the motor slows down and has less power, which leads to decreased performance. More importantly, the power drop causes the motor to pull more current. The temperature of the motor windings increases considerably with small increases in current. This combined with the slower speed, which greatly reduces the effect of the cooling fan, causes the winding temperatures to exceed the rating of the insulation. Breakdown of the insulation is cumulative. You may use the motor infrequently, but if it is overloaded each time it will fail after a few uses. A motor can withstand about a 10% voltage drop without too many problems. Unless the supplied voltage is known (it has been measured while motor is running), assume 5% less source voltage than stated. For 120 volts, assume 114 volts. For 240 volts, assume 228 volts.

To protect your motor and maximize its performance, use the proper size extension cord to prevent the voltage from dropping more than 6 volts over the length of the cord (12 volts for 240V systems). The table below shows the gauge of wire to use for various lengths of extension cords. ***The smaller the number the heavier the cord. Never use a lighter weight cord than specified.*** If you connect two or more cords together, the total length of ALL cords must be used to determine proper sized wire.

Motor Model	VMK-1500	VMK-1500	VMK-2500	VMK-2500
Voltage	120V	240V	120V	240V
Cord Length	Wire Size (Gauge)			
Up to 50'	#14	#14	#14	#14
50' to 100'	#14	#14	#12	#14
100' - 150'	#12	#14	#10	#14
150' - 200'	#10	#14	#8	#14
200' - 250'	#10	#14	#8	#14
250' - 300'	#8	#14	#8	#14
300' - 400'	#8	#14	#6	#12
400' - 500'	#6	#12	#4	#12

II. Assembling Internal Concrete Vibrator

All Viber[®] system components are interchangeable. All flexible drives (cores and casings) can be used to attach any head to any power unit (although certain combinations are not recommended). For optimum performance and wear consult your Smart!Parts[™] System Guide on page 17 or the tables on page 16 for the best combination of components.

1. Always be sure the electric power unit is unplugged before assembling or disassembling your system.

IMPORTANT!

The flexible drive includes a casing with a lubricated core installed. If you do not have an assembled flexible drive, the core must be lubricated before installing it in the casing. Run the core through a handful of Viber[®] Core Grease as you insert it into the casing. Attach the end of the casing, where the core was inserted, to the motor. As the system runs the grease will migrate from the motor end towards the head.

2. To attach the Vibrator Head to the flexible drive, apply two layers of Teflon[®] tape to the casing threads before attaching the head. Engage the core in the head drive coupling. Turn the head clockwise to tighten. Use a crescent wrench on the machined flats on the head and channel locks or a small pipe wrench on the casing fitting to make sure the connection is tight.



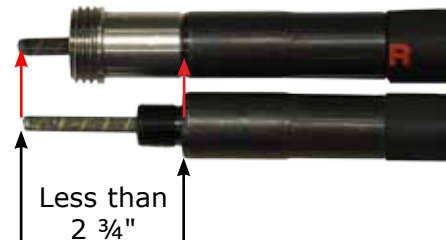
IMPORTANT!

Do NOT leave out the Teflon[®] tape! It is required to provide a watertight seal between the head and casing. If Teflon[®] tape or a similar sealant is not used the Head can be damaged by water that penetrates this connection and the Head may unscrew during operation and fall into the pour.

Also apply Teflon[®] tape to the male threads of the casing before attaching to the motor.



3. Before attaching the power unit, check the length of core extending from the motor end of the flexible drive. Measure from the shoulder on the casing fitting to the end of the exposed core. If this length is greater than 2-3/4", twist the core while pushing it into the casing to make sure it is fully seated in the head. If the exposed core is greater than 2-3/4" when it is fully seated in the head it might bind and cause damage to the core, casing, or head. Do not use the system. Contact your dealer or Global Manufacturing at 1-800-551-3569.

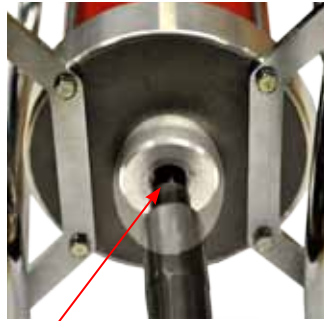


4. Attaching the Flexible Drive to the Power Unit with NO Quick Disconnect on Motor:



Apply two layers of Teflon[®] tape to the casing threads before attaching the flexible drive (casing with lubricated core installed) to the power unit. Engage the core in the motor drive coupling

located in the end of the shaft. Turn the casing clockwise to tighten. Once the threads are engaged let the motor hang vertically from the flexible drive and spin the motor until it cannot be turned by hand.



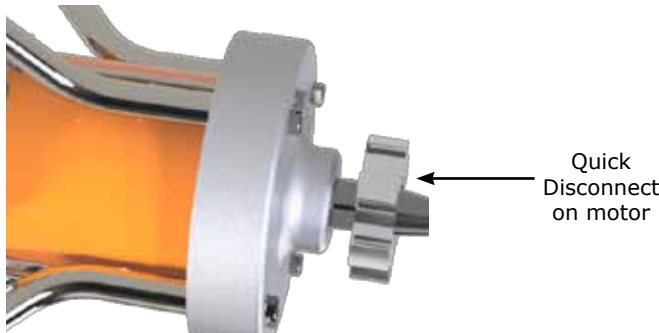
Must apply Teflon[®] tape to the casing threads



Pipe wrench

Use a small pipe wrench or channel locks to tighten the connection.

Attaching the Flexible Drive to the Power Unit with a Quick Disconnect on Motor:



The flexible drive must have a quick disconnect drive fitting on the motor end. If it was not purchased this way attach a quick disconnect drive fitting (pn 414911) to the casing fitting. Apply two layers of Teflon[®] tape to the casing threads before screwing on the drive fitting in a clockwise direction. Tighten the fitting securely with a small pipe wrench. File off any burrs this creates.



Drive Fitting

Engage the core in the motor drive fitting located inside the motor quick disconnect fitting. Press the quick disconnect drive fitting onto the cone of the motor fitting.



Turn the large hand nut clockwise to tighten the connection as viewed from the flexible shaft side. The hand nut has left hand threads to ensure it will remain tight while operating the system. Once the large hand nut feels tight tap the nut with a mallet on one of its wings to be sure the connection is secure.



An o-ring inside the nut helps keep the connection secure. If the connection comes loose during operation make sure the o-ring is not missing.

5. Plug the power unit into the appropriate electrical service:

120 Volt Models	Service
VMK-1500	120-Volt 10 Amp
VMK-2500	120-Volt 15 Amp
240 Volt Models	Service
VMK-1500	240-Volt 5 Amp
VMK-2500	240-Volt 7.5 Amp

If a portable generator is used, the total kilowatt requirements for the generator is determined by multiplying the voltage times the total current requirements (the amps) for the system. VMK power units have the following current requirements:

VMK Maximum Amp Draw	
VMK-1500 / 120V	= 10 amps
VMK-2500 / 120V	= 15 amps
VMK-1500 / 240V	= 5 amps
VMK-2500 / 240V	= 7.5 amps

If two VMK-1500/120 volts, and a VMK-2750/120 volts all run off the same generator, you would calculate the generator requirements as follows:

$$120 \text{ volt} \times (10 \text{ amps} + 10 \text{ amps} + 15 \text{ amps}) = 4,200 \text{ WATTS or } 4.2 \text{ KW.}$$

III. Operation

Follow the guidelines below when using your Viber[®] Internal Concrete Vibrator for consolidating concrete:

1. Do not leave the vibrator running in air. Totally submerge the vibrator head in the concrete. This cools the bearings. Running the vibrator in air without regularly submersing it in the concrete will overheat the bearings.
2. Avoid making sharp bends in the flexible shaft.
3. Make sure you can see the concrete surface. Use lighting if necessary.
4. Place the concrete in layers no deeper than the length of the vibrator head plus 4-6". Layers should not exceed 18-20", otherwise the weight of the concrete can prevent the entrapped air from escaping.
5. Keep the vibrator head at least 3-4" from the forms. It can damage the forms causing surface defects in the concrete.
6. Do not allow the vibrator head to touch reinforcements, such as rebar. Vibration can break the bond between the reinforcement and preceding layers of stiffened concrete.
7. Let the vibrator head penetrate to the bottom of the layer as quickly as possible under its own weight.
8. Keep the vibrator head vertical to minimize voids and enhance the release of entrapped air. For shallow flat slabs, lay the vibrator head horizontally and drag it through the concrete or use our Shallow Pour Head - VH34-SP.
9. Withdraw the vibrator head slowly. Be sure concrete fills in behind leaving no hole. Do not attempt to "stir" the concrete.

10. Use repeated placements of the vibrator in a systematic pattern to be sure the entire surface has been vibrated. The area of action can be observed by noting how far from the vibrator head bubbles appear on the surface. Placements of the head should insure overlapping of the areas of action.

11. When compacting concrete placed on a previously compacted layer, push the vibrator 4-6" into the lower layer. Move the vibrator up & down for 5-15 seconds to "knit" the two layers together.

12. Avoid placing the concrete in "heaps. If it is necessary to flatten a heap, insert the vibrator head around the perimeter of the heap using as many placements as necessary.

13. Consolidation is complete when no new bubbles come to the top, a glistening layer of mortar covers the concrete surface, and the "whine" of the motor indicates that the vibrator speed has leveled off.

14. Clean all vibrator parts immediately following each use.

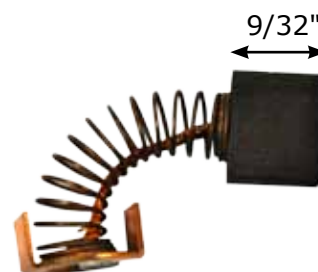
IV. Maintenance

Routine monthly maintenance is recommended unless the power unit is used for multiple shifts per day or in harsh environments (heavy dust, snow, sand, etc.).

CAUTION

Always disconnect the motor from the power source before starting any maintenance or repair.

1. Clean or replace Air Filter.
2. Replace brushes before they are worn to a minimum height of 9/32" (0.285").



3. Bearings are permanently lubricated with special high-speed grease and require no additional lubrication. Replace bearings when shaft rotation appears restricted or if bearings become noisy.

V. Disassembly and Assembly

Required Tools:

1. Flat blade medium screwdriver
2. Phillips head screwdriver
3. 5/16" socket wrench
4. 7/16" socket wrench
5. Mallet
6. 1/4" Drive
7. Wire cutter/strippers/crimpers

Disassembly Procedures - To disassemble the motor proceed in the sequence below:

A. Brush Removal - Using a medium blade screwdriver press in on the bush cap while turning counter-clockwise.



Once the cap is removed pull the brush with attached spring from the brush tube.



Repeat to remove second brush. Measure brushes to check wear and replace if length less than 9/32".

B. Air Filter Removal - Using the 5/16" socket wrench, remove the two screws securing the air filter cover. Remove cover and filter element.



C. Handle Removal - Remove the four 1/4" bolts securing the handle to the front cover using a 7/16" socket wrench.



Pull handle from motor toward the rear.



D. Front Cover Removal - Using the 5/16" socket wrench, remove the 3 draw bolts from the front cover.



With a rubber mallet, tap lightly on the back of the front housing (near the exhaust ports) to help separate the front housing from the rest of the motor. Watch for the wave washer, which might fall out when the bearing releases from the front cover.



Note: The armature might separate from the brush housing and stay with the front cover. To remove front cover from armature, hold armature and continue alternating taps on the front cover until the front bearing releases from the cover.

If the armature stays in the brush housing/field assembly, grasp the shaft and tap the top of the field housing to release the rear shaft bearing from the brush housing.



E. Switch/Power Cord Removal - Remove the four Phillip head screws securing the switch box to the brush housing.



The switch box can be removed from the unit by sliding the blue field lead connectors off of the spades on the power switch.



Note: The green ground wire is secured under one of the switch box mount screws. The power cord can be removed by loosening the cord restraint and pulling the slide connectors (*note their location*) from the switch.

F. Field Removal - Remove the grommet protecting the wires from the edges of the housing. Using a common screwdriver, remove the two screws securing the field to the brush housing.



Tap the brush housing loose from the field housing.



Using your finger or a screwdriver, slide the field connectors loose from brush holders (note their location). This will release brush housing from field/motor housing.



Align the field with the field power leads on the same side of the assembly as the switch box. To do this make sure the seam on the field housing is aligned with the draw bolt lug located on the bottom of the brush housing (opposite side of the brush housing from the switch box mount).



Feed the two field power leads through the grommetted hole in the brush housing. Attach each brush lead to the closest brush tube by sliding the attached clips into the slot on the front side of the brush tube.



Assembly Procedures

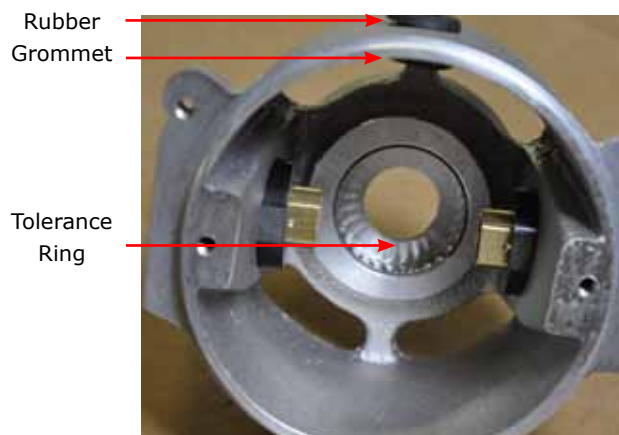
IMPORTANT!

The field and armature windings are covered with a clear insulating coating. Handle the field and armature with care. If the insulation is compromised by rough handling the windings will short out and the motor will fail. **Damage to the insulation caused by rough handling of the armature or field is not covered by the product warranty.**

IMPORTANT!

If the brush leads are reversed the motor will run backwards. Upon reassembly be sure to test the motor to make sure the motor is running in the proper direction – air should be flowing from the exhaust ports.

A. Brush Housing Assembly - Be sure the tolerance ring is properly placed in the brush housing bearing bore. The rubber grommet should be seated properly in the hole in the top of the brush housing.



Seat the field/housing assembly onto the brush housing aligning the field attachment bolt holes with the mounting holes in the brush housing. Check that field and lead wires will clear the armature when it is installed.

All wires are clear of the center of the housing



Install the two field mounting screws to ensure proper field alignment. **Do not tighten at this time.**



Tap the back of the brush housing to seat the field housing onto the brush housing. **Note:** The weld seam on the field housing should align with the bottom draw bolt lug on the brush housing. Tighten the two field mount screws.



Seam-Bolt Lug
Alignment

When properly seated the commutator should be centered in the brush tube opening. You should not see the motor shaft at all when looking into the brush tube.



C. Front Housing Installation - Be sure the tolerance ring is properly seated in the front housing bearing bore. Place the wave finger washer into the bearing bore with fingers facing up. Fingers must contact the outer ring of the bearing once assembled.

Outside of the brush housing, pull all slack out of the field power leads. Be sure the rubber grommet is properly seated in the hole.

B. Armature-Fan-Bearing Installation - Be sure the tolerance ring is properly positioned in the brush housing bearing bore. Check to ensure the field power leads and brush leads will not interfere with the armature commutator.



Tolerance
Ring



Tolerance
Ring
Wave Finger
Washer

Lower the motor assembly so the shaft with bearing enters the bearing bore in the front housing, and the rim of the field/housing assembly seats in the circular groove in the front housing. Rotate the front housing so the one smaller bolt hole that is located equal distance between two of the larger bolt holes is aligned with the seam on the field housing.

Holding the Armature-Fan-Bearing Assembly by the shaft at the fan end, gently lower it, commutator first, into the motor until the rear bearing reaches the brush housing bearing bore. Be careful to guide the rear bearing and commutator between the two brush tubes to prevent damage to these critical components.



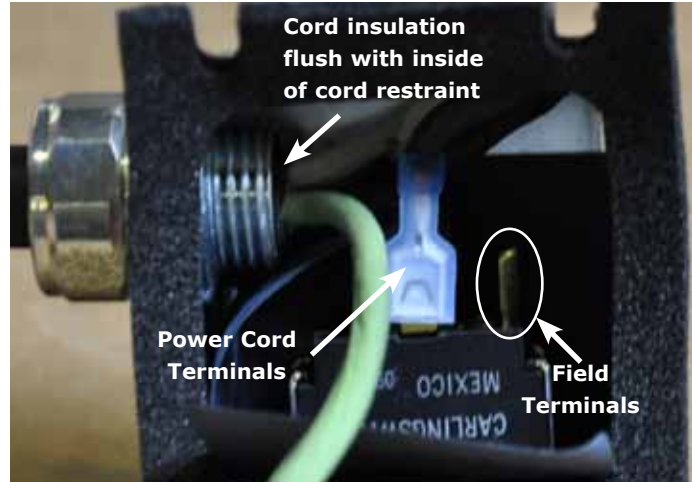
Bearing
Bore
Circular
Groove

With the motor standing vertically on the brush housing, use a rubber mallet to tap the end of the shaft to seat the rear bearing in its bore.



Reposition the motor assembly in a vertical position resting on the brush housing. Insert one of the 10-24 draw bolts with lock washer into the front housing hole that aligns with the seam in the field housing. The bolt should fit into the bottom draw bolt lug on the brush housing (draw bolt lug on side opposite the switch box). **Note:** There is only one draw bolt hole in the front housing, that when aligned with the field housing seam, places the four handle mount holes in the correct position. Start the seam draw bolt but **do not tighten**. While holding the front housing in place, tap the housing firmly with a rubber mallet to seat the bearing in the housing and the housing groove on the field/housing assembly. If a press is available, press the brush housing/field assembly into the front housing using the draw bolt and field housing seam to ensure proper alignment.

D. Switch/Power Cord Connection - When installing a new power cord, slide the cord through the cord restraint until the cord (not just the individual wires) is flush with the inside of the cord restraint. Tighten the cord restraint securely. Connect the black and white power cord leads to the switch by sliding the power lead connectors onto the two switch terminals **closest** to the cord restraint fitting. It does not matter which power lead is placed on which terminal.



Attach the field power lead slide connectors to the switch terminals **furthest** from the cord restraint.

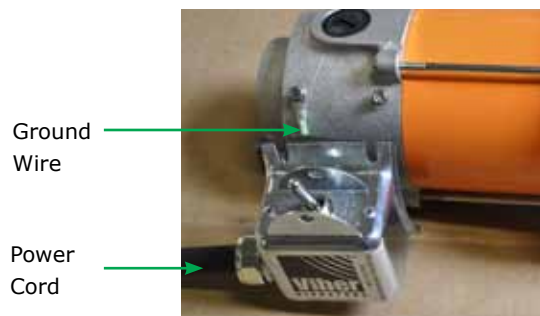
When fully seated, the front housing should no longer rotate. Insert the remaining 2 draw bolts with lock washers. Insert a 1/4" square drive into the armature shaft and confirm that it turns freely.



Fold the switch insulation down to cover the switch terminals. Position the switch box so the cord is oriented towards the back of the motor. Using one of the 10-24 switch box cover mount screws, attach the green ground wire to the rear brush housing switch box mount hole closest to the switch, leaving the screw loose.



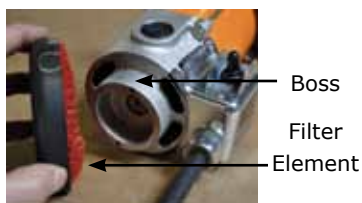
Tighten the 3 10-24 draw bolts evenly and torque to about 3 ft-lb. Re-check that the shaft rotates freely, if not, the alignment is incorrect and must be corrected.



Slip the switch box in place over the ground lead and under the screw head. Align the switch box with the screw holes and install the remaining three screws, tightening all four securely.



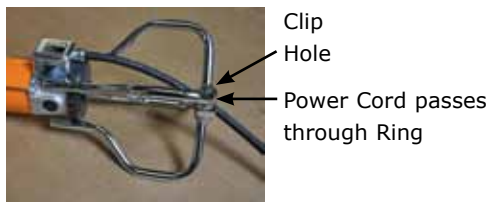
E. Air Filter Installation - Place the filter element in the cover. Place the cover on the end of the brush housing. Be sure the filter element seats on the outside of the boss that supports the filter cover.



Align the filter cover mounting holes with holes in the boss on the brush housing. The "flat" of the filter cover should be aligned with the power cord and cord restraint on the switch box. Use 5/16" wrench to install the two self-tapping screws.



F. Handle Installation - Insert the handle over the motor assembly and feed the power cord through ring in the handle. The clip hole in the ring should be on the switch box side of the motor.



Seat the handle into the milled pockets in the front motor cover. Install the four 1/4 - 20 x 3/4" handle bolts through the front cover and into the threaded holes in the handle. Tighten evenly and securely.



G. Brush Installation - Insert a brush into the brush tube.



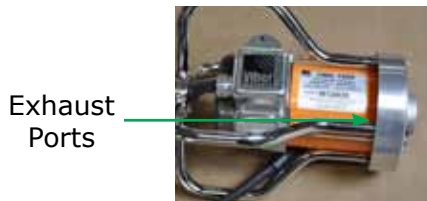
Using the plastic cap compress the spring until the tabs on the metal cap fit into the tube.



Using a wide blade screw driver carefully turn the plastic cap clockwise to tighten. Proceed cautiously to make sure the threads are properly engaged and not cross-threaded. Do not over tighten the plastic cap. It only needs to be snug. The spring pressure will hold it secure. If the cap is too tight it will be difficult to remove, which can result in a damaged or broken cap. Repeat to install the second brush.



When reassembly is complete test the motor to ensure the direction of rotation is correct - Air should be flowing freely from the exhaust area on the back of the front housing. If no air is blowing from the exhaust vents, the field connections (Assembly STEP A) were incorrect. Disassemble the motor and switch the field brush leads to the other brush tube.

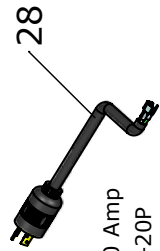
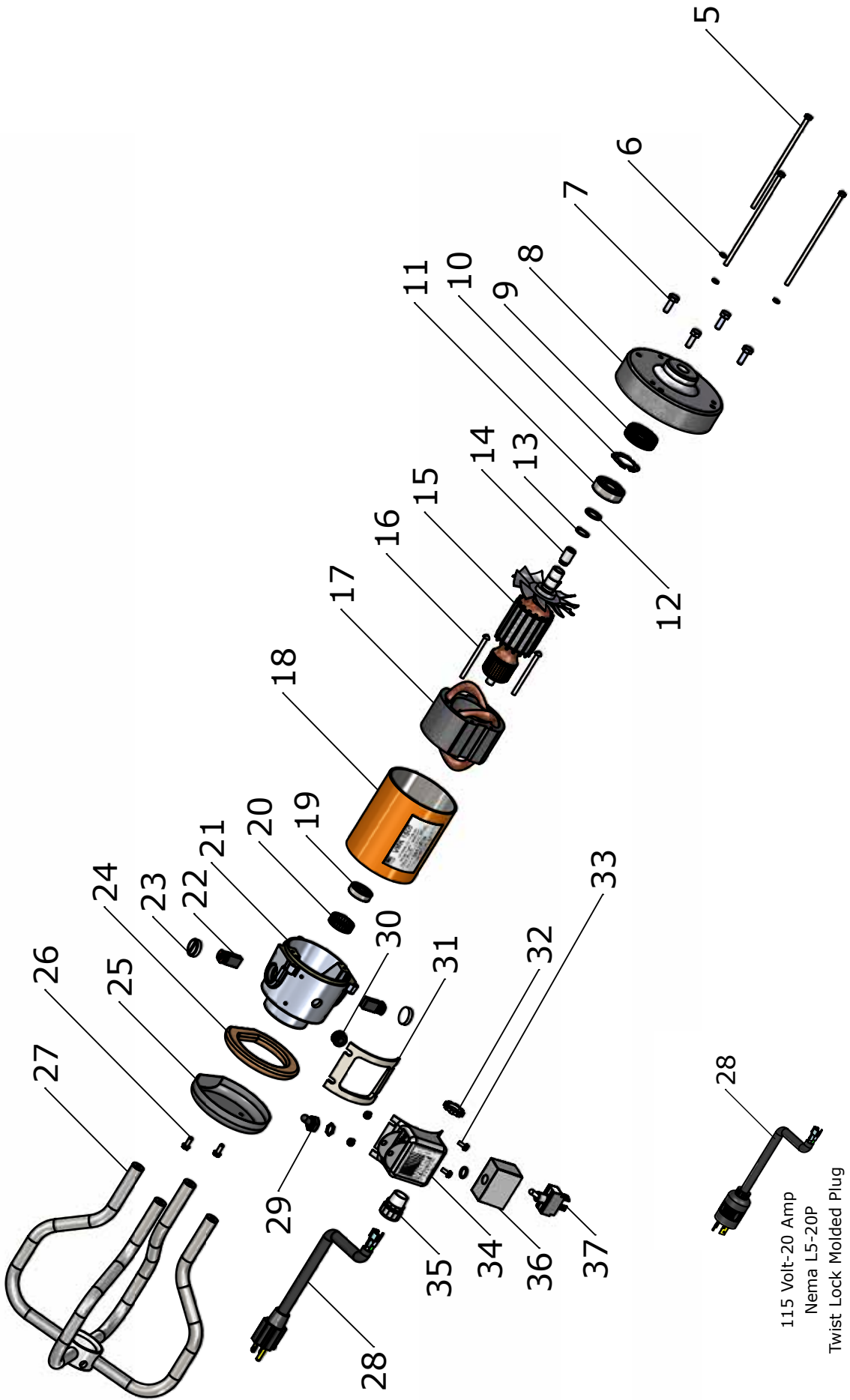


The speed of the motor will vary after new brushes have been installed for the first 5-10 minutes of operation until the brushes are properly seated to the contour of the commutator.

**VMK-1500 - STANDARD
No Quick Disconnect**

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115 Volt-20 Amp
Nema L5-20P
Twist Lock Molded Plug



VI. Parts List

VMK-1500 pn 921100
VMK-1500Q pn 921110

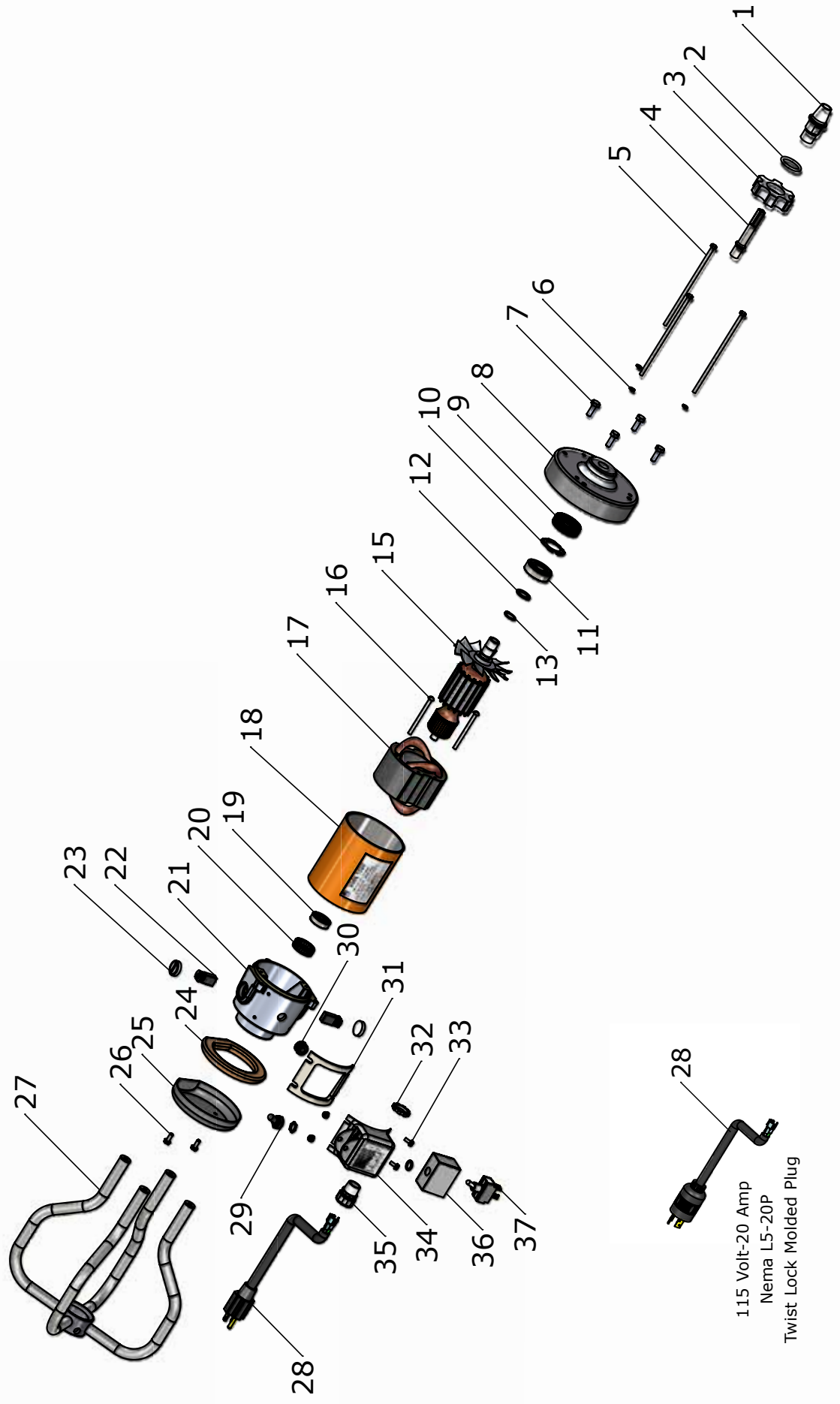
VMK-1500L pn 921101
VMK-1500QL pn 921111

ITEM NO.	PART NUMBER	DESCRIPTION	VMK 1500	VMK 1500L	VMK 1500Q	VMK 1500QL
1	414912	Fitting	-	-	1	1
2	385216	O-Ring Buna 568-216	-	-	1	1
3	414913	Nut	-	-	1	1
4	470023	Insert	-	-	1	1
5	333462	Hex Screw #10-24 x5-5/8"	3	3	3	3
6	338103	Lock Washer #10 Plated	3	3	3	3
7	330007	Hex Bolt 1/4"-20x3/4"	4	4	4	4
8	146102	Front Housing	1	1	1	1
9	389911	Tolerance Ring	1	1	1	1
10	338531	Wave Finger Washer 31/32	1	1	1	1
11	382233	Bearing	1	1	1	1
12	338590	Support Washer	1	1	1	1
13	349062	Retaining Ring 5100-062	1	1	1	1
14	470020	Drive Shaft Insert	1	1	-	-
15	471513	Armature/Fan 115V	1	1	1	1
16	333425	Screw RSH#10-24x2.5"	2	2	2	2
17	471312	Field	1	1	1	1
18	146100	Motor Housing	1	1	1	1
19	382190	Bearing	1	1	1	1
20	389914	Tolerance Ring	1	1	1	1
21	1461065	Brush Housing w/ Holders	1	1	1	1
22	470104	Brush	2	2	2	2
23	470119	Brush Holder Cap	2	2	2	2
24	490510	Air Filter	1	1	1	1
25	490515	Cover	1	1	1	1
26	333342	Screw SHH #10-16x1/2" WF	2	2	2	2
27	490695	Handle	1	1	1	1
28	450391	Cord 115V 15A Std Plug	1	-	1	-
28	450392	Cord 115V 20A TL Plug	-	1	-	1
29	450910	Switch Boot	1	1	1	1
30	490647	Grommet	1	1	1	1
31	450930	Gasket	1	1	1	1
32	450440	Lock Nut 1/2"	1	1	1	1
33	333304	SHH WF Screw #8-32x3/8	4	4	4	4
34	450950	Switch Box	1	1	1	1
35	450439	Cord Restraint .450-.560"	1	1	1	1
36	450920	Switch Box Insulation	1	1	1	1
37	450905	Switch	1	1	1	1

VMK-1500 - QD With Quick Disconnect



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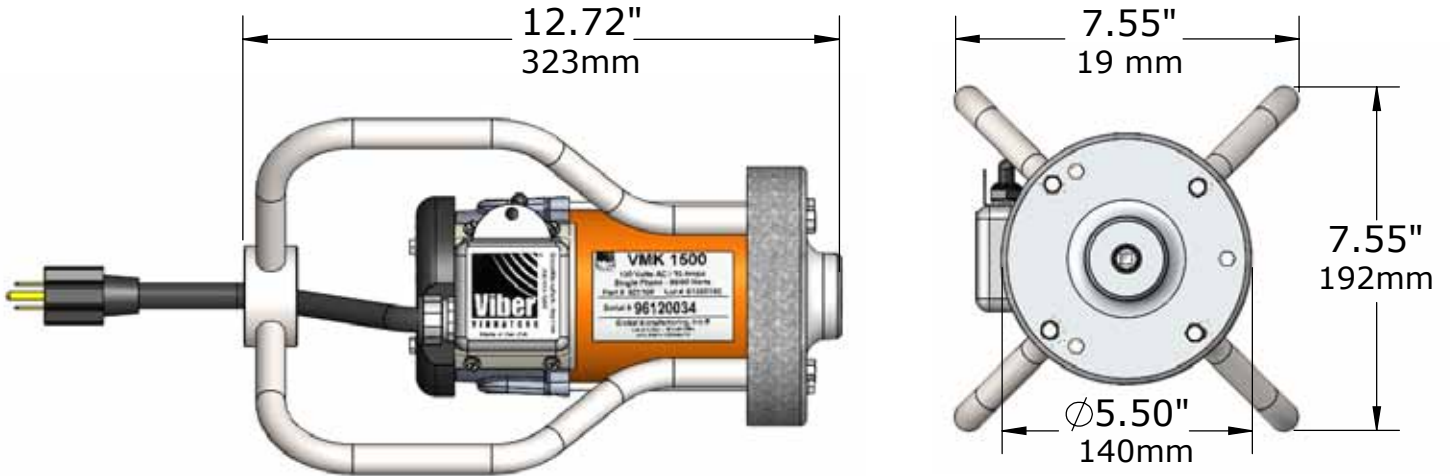


28
 115 Volt-20 Amp
 Nema L5-20P
 Twist Lock Molded Plug

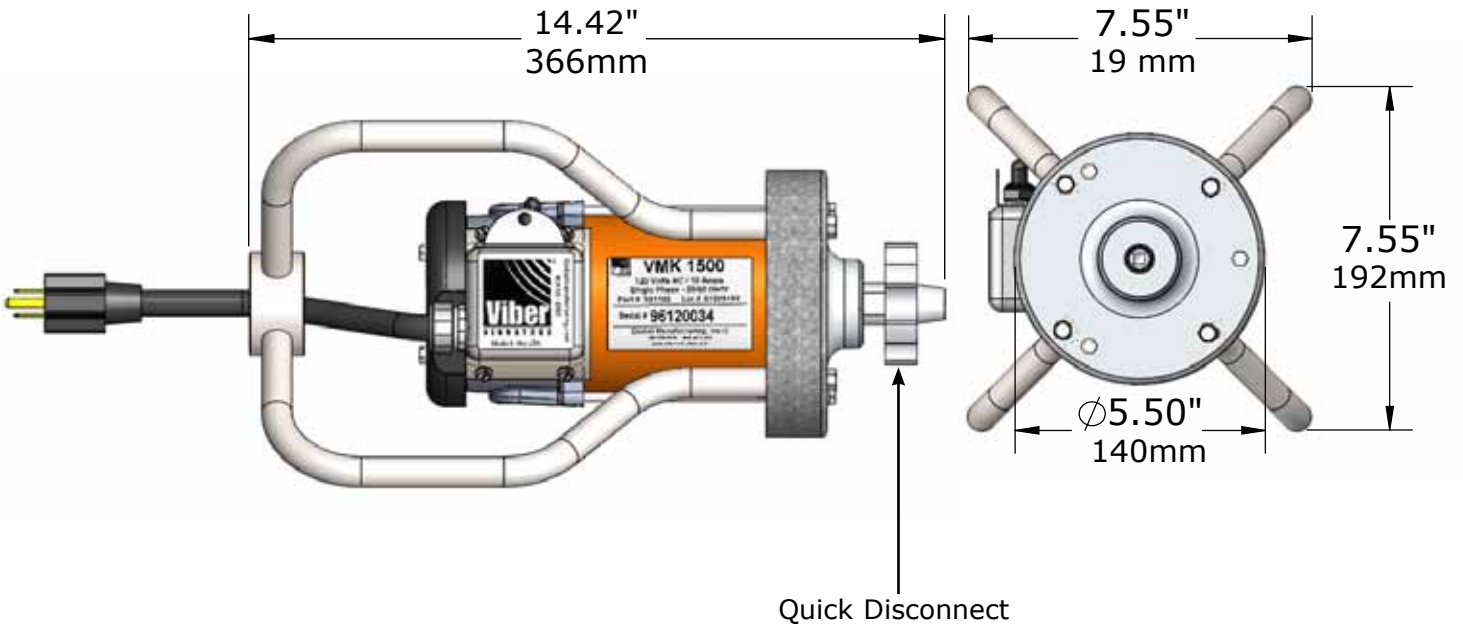
VII. Dimensions for VMK-1500

Dimensions in inches [mm]

VMK-1500 without Quick Disconnect



VMK-1500 with Quick Disconnect

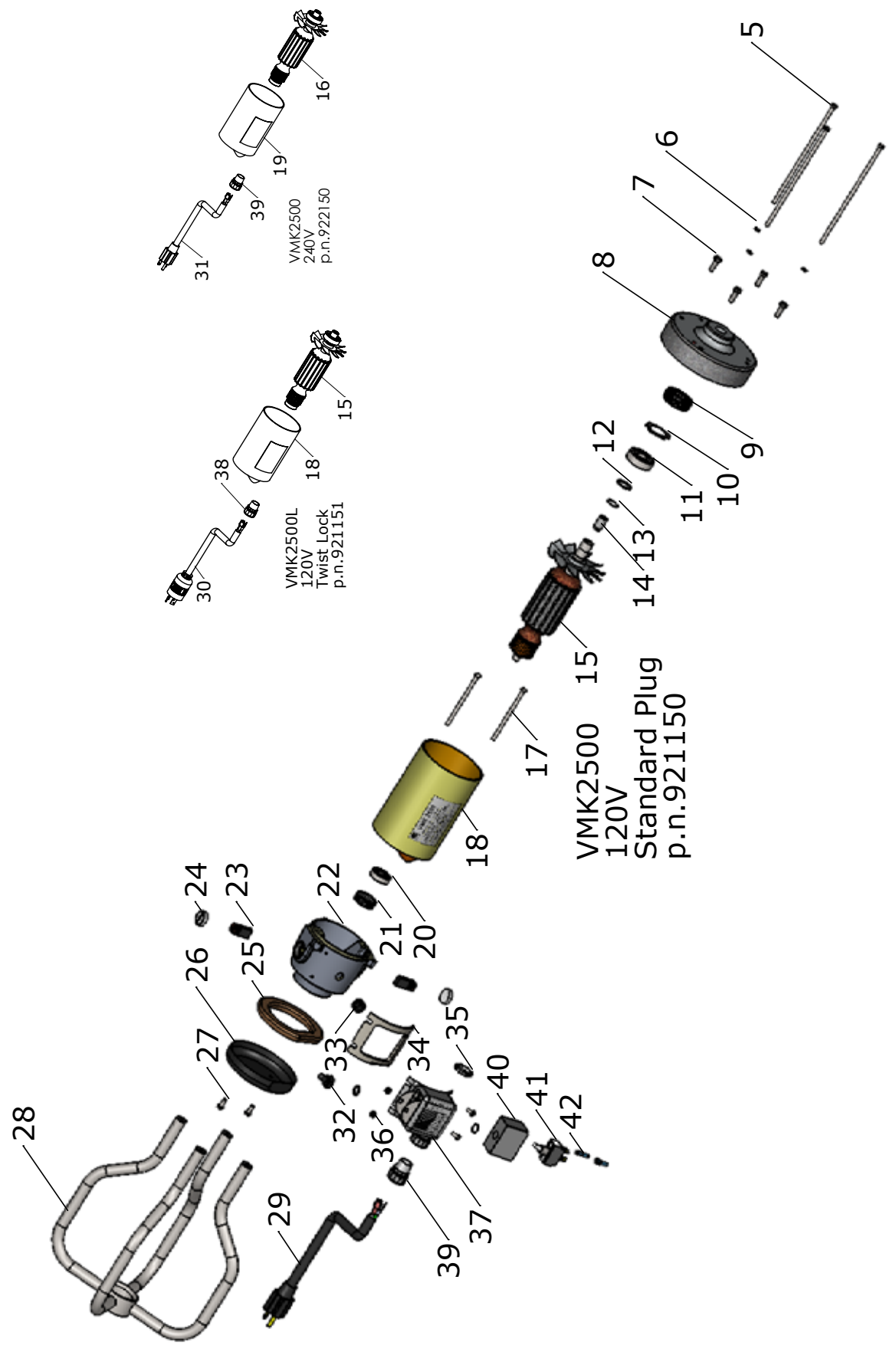


**VMK-2500 - STANDARD
No Quick Disconnect**



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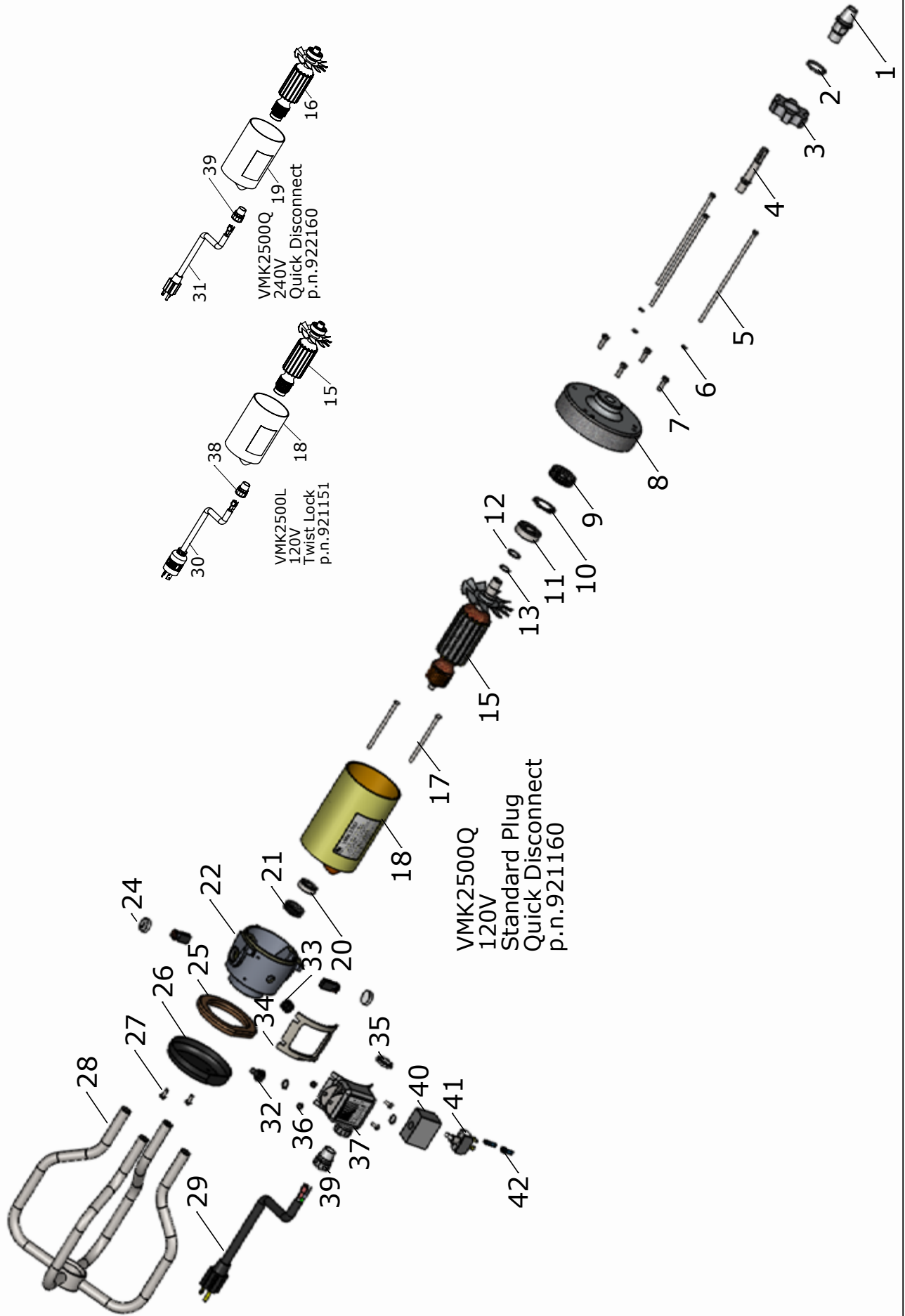
ITEM NO	PART NO	DESCRIPTION	15A-120V										8A-230V	
			VMK-2500 p.n.921150	VMK-2500L p.n.921151	VMK-2500Q p.n.921160	VMK-2500QL p.n.921161	VMK-2500QL p.n.921111	VMK-2500 p.n.922150	VMK-2500Q p.n.922150	VMK-2500Q p.n.922150	VMK-2500Q p.n.922150	VMK-2500Q p.n.922150	VMK-2500Q p.n.922150	
1	414912	Fitting	-	-	-	1	1	1	1	1	-	-	-	1
2	385216	O-Ring Buna 568-216	-	-	-	1	1	1	1	1	-	-	-	1
3	414913	Nut	-	-	-	1	1	1	1	1	-	-	-	1
4	470023	Insert	-	-	-	1	1	1	1	1	-	-	-	1
5	333468	Hex Screw #10 x 6-7/8"	3	3	3	3	3	3	3	3	3	3	3	3
6	338103	Lock Washer #10 Plated	3	3	3	3	3	3	3	3	3	3	3	3
7	330007	Hex Bolt 1/4"-20 x 3/4" GR8	4	4	4	4	4	4	4	4	4	4	4	4
8	146102	Front Housing	1	1	1	1	1	1	1	1	1	1	1	1
9	389911	Tolerance Ring	1	1	1	1	1	1	1	1	1	1	1	1
10	338531	Wave Finger Washer	1	1	1	1	1	1	1	1	1	1	1	1
11	382233	Bearing	1	1	1	1	1	1	1	1	1	1	1	1
12	338590	Support Washer	1	1	1	1	1	1	1	1	1	1	1	1
13	349062	Retaining Ring 5100-062	1	1	1	1	1	1	1	1	1	1	1	1
14	470020	Drive Shaft Insert	1	1	1	1	1	1	1	1	1	1	1	1
15	472514	Armature/Fan VMK2500 120V	1	1	1	1	1	1	1	1	1	1	1	1
16	472714	Armature/Fan VMK2500 240V	-	-	-	-	-	-	-	-	-	-	-	-
17	333435	Screw RSH#10-24 x 3.5"	2	2	2	2	2	2	2	2	2	2	2	2
18	4725235	Field/Housing Subassembly VMK-2500 120V	1	1	1	1	1	1	1	1	1	1	1	1
19	4727235	Field/Housing Subassembly VMK2500 240V	-	-	-	-	-	-	-	-	-	-	-	-
20	382190	Bearing	1	1	1	1	1	1	1	1	1	1	1	1
21	389914	Tolerance Ring	1	1	1	1	1	1	1	1	1	1	1	1
22	1461065	Brush Housing with Holders	1	1	1	1	1	1	1	1	1	1	1	1
23	470104	Brush	2	2	2	2	2	2	2	2	2	2	2	2
24	470119	Brush Holder Cap	2	2	2	2	2	2	2	2	2	2	2	2
25	490510	Air Filter	1	1	1	1	1	1	1	1	1	1	1	1
26	490520	Air Filter Cover	1	1	1	1	1	1	1	1	1	1	1	1
27	333342	Screw SHH #10-16 x 1/2" WF	2	2	2	2	2	2	2	2	2	2	2	2
28	490691	Handle	1	1	1	1	1	1	1	1	1	1	1	1
29	450391	Cord 115V 15A Std Plug	1	1	1	1	1	1	1	1	1	1	1	1
30	450392	Cord 115V 20A TL Plug	-	-	-	-	-	-	-	-	-	-	-	-
31	450395	Cord 230V 15A	-	-	-	-	-	-	-	-	-	-	-	-
32	450910	Switch Boot	1	1	1	1	1	1	1	1	1	1	1	1
33	490647	Grommet	1	1	1	1	1	1	1	1	1	1	1	1
34	450930	Gasket	1	1	1	1	1	1	1	1	1	1	1	1
35	450440	Lock Nut 1/2"	1	1	1	1	1	1	1	1	1	1	1	1
36	333304	SHH WF Screw #8-32 x 3/8	4	4	4	4	4	4	4	4	4	4	4	4
37	450950	Switch Box	1	1	1	1	1	1	1	1	1	1	1	1
38	450438	Cord Restraint .550" - .650"	-	-	-	-	-	-	-	-	-	-	-	-
39	450439	Cord Restraint .450" - .560"	1	1	1	1	1	1	1	1	1	1	1	1
40	450920	Switch Box Insulation	1	1	1	1	1	1	1	1	1	1	1	1
41	450905	Switch	1	1	1	1	1	1	1	1	1	1	1	1
42	450271	Slide Terminal 16-14AWG .250 x .032	2	2	2	2	2	2	2	2	2	2	2	2

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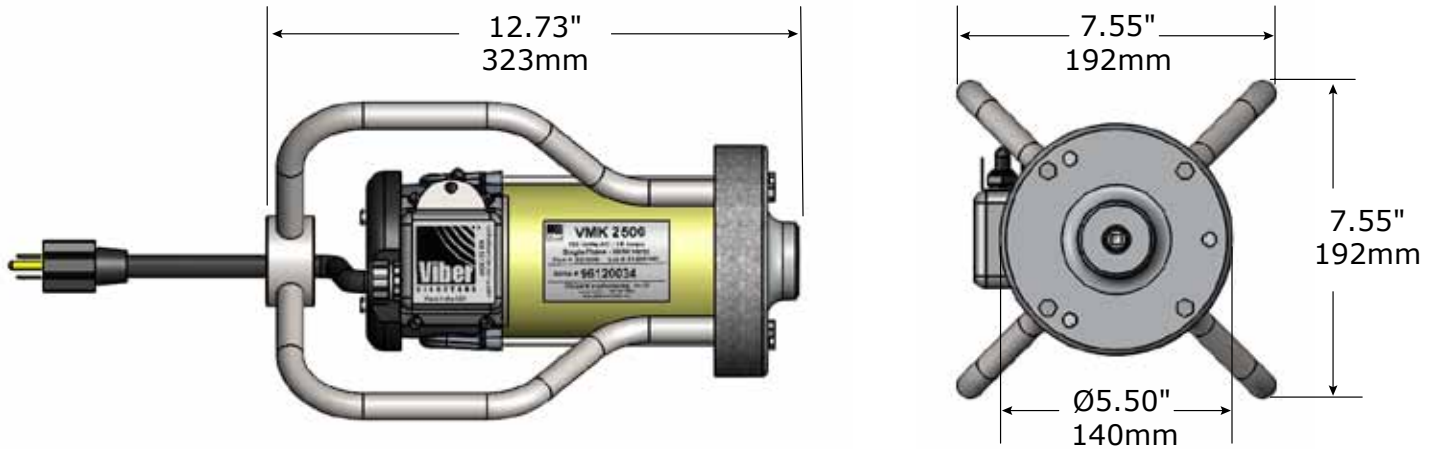
VMK-2500 - QD With Quick Disconnect



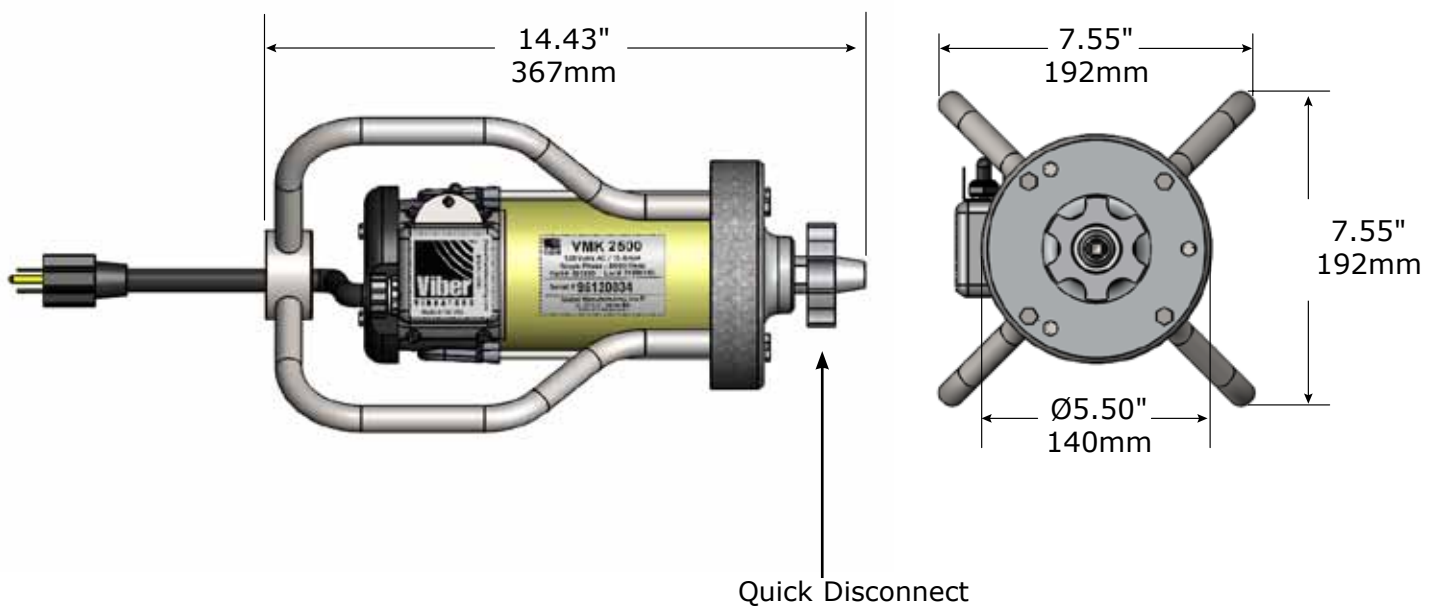
VII. Dimensions for VMK-2500

Dimensions in inches [mm]

VMK-1500 without Quick Disconnect



VMK-1500 with Quick Disconnect



VIII. Performance Specifications

VIBER[®] ELECTRIC POWER UNITS						
Part #	Model #	Voltage	Plug	Amps	Max Head Size	Net wt - lb
921100	VMK-1500	120V	Standard	10	1 ½"	13
921101	VMK-1500 L	120V	Twist Lock	10	1 ½"	13
922100	VMK-1500 240V	240V	240V	6	1 ½"	13
921110	VMK-1500Q	120 V	Standard	10	1 ½"	13.5
921111	VMK-1500QL	120 V	Twist Lock	10	1 ½"	13.5
922110	VMK-1500Q 240V	240 V	240V	6	1 ½"	13.5
921150	VMK-2500	120V	Standard	15	1 ¾"	15.7
921151	VMK-2500 L	120V	Twist Lock	15	1 ¾"	15.9
922150	VMK-2500 240V	240V	240V	8	1 ¾"	15.7
921160	VMK-2500Q	120V	Standard	15	1 ¾"	16.1
921161	VMK-2500QL	120V	Twist Lock	15	1 ¾"	16.2
922150	VMK-2500Q 240V	240V	240V	8	1 ¾"	16.1

"L" indicates the motor comes with a twist lock plug.
 "Q" indicates the motor comes with a quick disconnect.
 "QL" indicates the motor comes with a twist lock plug and a quick disconnect.

PERFORMANCE DATA FOR VIBER[®] ELECTRIC POWER UNITS & INTERCHANGEABLE HEADS											
Part #	Model #	Size Dia.	Head Length	Weight	Unbalance	Amplitude Peak-to-Peak	Radius of Action	VMK-1500		VMK-2500	
		in	in	lb	lb-in	in	in	Speed rpm	Force lb	Speed rpm	Force lb
STANDARD HEADS - STEEL TIP OR RUBBER TIP											
950014	VH14	7/8	11.94	1.4	.029	.041	4.6	14,000	161	15,300	193
950016	VH16	1	12.45	2.1	.029	.028	5.0	14,000	161	15,300	193
950020	VH20	1 ¼	12.19	3.0	.092	.062	7.5	12,600	415	13,300	462
950024	VH24	1 ½	12.04	4.1	.162	.0793	9.5	12,000	663	12,300	859
950028	VH28	1 ¾	13.05	6.2	.236	.077	11.0	11,500	886	11,800	933
950034	VH34	2 ⅛	13.01	9.2	.337	.073	14.0	9,500	864	11,000	1,158
950040	VH40	2 ½	12.52	12.2	.478	.078	18.0	8,900	1,075	10,000	1,358
POLLY HEADS											
950328	VH28-PH	1 ¾	13.25	4.7	.162	.070	10.0	11,500	608	13,000	778
950332	VH32-PH	2	13.40	6.4	.210	.066	12.0	10,750	689	12,900	992
SPECIAL PURPOSE HEADS											
950014	VH14-ST	7/8	11.94	1.4	.029	.041	4.6	14,000	161	15,300	193
951014	VH14-LF	7/8	9.94	1.2	.012	.021	5.6	14,200	69	15,500	82
952034	VH34-SP	2 ⅛	5.84	3.3	.168	.102	14.0	12,200	710	12,500	746

Gray Shaded areas are NOT recommended. Vibrator motor and head performance are reduced because speed is either too fast or too slow. The speed provided is an approximation of the head speed in concrete for the specified motor-head combination. The actual speed will vary depending on temperature, consistency of the concrete, the power unit's condition, the hours on the bearings, etc...

1		2	3		4	5									
Application	Slump	Space Limitations	Head Diameter	Radius of Action	Power Units	Flexible Drive Length (Feet)									
						1	3	5	7	10	14	21	28*	35*	
Block Walls & Small Diameter Fills: Plastic and flowing concrete for very thin members & walls & confined places.	> 3"	2.5" x 2.5"	7/8" VH 14	5"	VMK-1500	X	X	X	X	X	X	X	X	X	X
					VMP TURBO	X	X	X	X	X	X	X	X	X	X
					VMG-1750BP	X	X	X	X	X	X	X	X	X	X
					VMG-2500BP	7' or longer			X	X	X	X	X	X	
Thinnest Prestressed Sections: Plastic and flowing concrete for very thin members & walls & confined places.	>3"	3" x 3"	1" VH 16	5"	VMK-1500	X	X	X	X	X	X	X	X	X	
					VMP TURBO	X	X	X	X	X	X	X	X	X	
					VMG-1750BP	X	X	X	X	X	X	X	X	X	
					VMG-2500BP	7' or longer			X	X	X	X	X	X	
Thin Prestressed Sections: Plastic concrete in thin walls, columns, beams, precast piles, thin slabs, and along construction joints.	3 - 5"	3.25" x 3.25"	1-1/4" VH 20	7"	VMK-1500	X	X	X	X	X	X	X	X	X	
					VMK-2500	X	X	X	X	X	X	X	X	X	
					VMK-2750	X	X	X	X	X	X	X	X	X	
					VMP TURBO	X	X	X	X	X	X	X	X	X	
					VMG-1750BP	X	X	X	X	X	X	X	X	X	
					VMG-2500BP	7' or longer			X	X	X	X	X	X	
Thin Wall Sections and General Use: Plastic concrete in thin walls, columns, beams, precast piles, thin slabs, and along construction joints.	3 - 5"	3.5" x 3.5"	1-1/2" VH 24	13"	VMK-1500	X	X	X	X	X	X	X	X	X	
					VMK-2500	X	X	X	X	X	X	X	X	X	
					VMK-2750-	X	X	X	X	X	X	X	X	X	
					VMP TURBO	X	X	X	X	X	X	X	X	X	
					VMG-1750BP	X	X	X	X	X	X	X	X	X	
					VMG-2500BP	7' or longer			X	X	X	X	X	X	
General Use: Plastic & stiff plastic concrete in general construction such as walls, columns, beams, pre-stressed piles, and heavy slabs.	2 - 4"	3.75" x 3.75"	1-3/4" VH 28	17"	VMK-2500	X	X	X	X	X	X	X	X	X	
					VMK-2750	X	X	X	X	X	X	X	X	X	
					VMK-3500	X	X	X	X	X	X	X	X	X	
					VMP TURBO	X	X	X	X	X	X	X	X	X	
					VMG-1750BP	X	X	X	X	X	X	X	X	X	
					VMG-2500BP	7' or longer			X	X	X	X	X	X	
Stiff Low-Slump Concrete: Stiff plastic concrete in general construction such as walls, columns, beams, prestressed piles, and heavy slabs.	1 - 3"	4" x 4"	2-1/8" VH 34	21"	VMK-2750	X	X	X	X	X	X	X	X	X	
					VMK-3500	X	X	X	X	X	X	X	X	X	
					VMP TURBO	X	X	X	X	X	X	X	X	X	
					VMG-2500BP	7' or longer			X	X	X	X	X	X	
Stiffest Low-Slump Concrete: Mass and structural concrete deposited in relatively open forms.	< 2"	5" x 5"	2-1/2" VH 40	24"	VMK-2750	X	X	X	X	X	X	X	X	X	
					VMK-3500	X	X	X	X	X	X	X	X	X	
					VMP TURBO	X	X	X	X	X	X	X	X	X	
					VMG-2500BP	7' or longer			X	X	X	X	X	X	
Shallow Pours: Plastic & stiff plastic concrete in slabs and other shallow pours less than 12" thick.	2-4"	4" x 4"	2-1/8" VH 34-SP	13"	VMK-1500	X	X	X	X	X	X	X	X	X	
					VMK-2500	X	X	X	X	X	X	X	X	X	
					VMP TURBO	X	X	X	X	X	X	X	X	X	
					VMG-1750BP	X	X	X	X	X	X	X	X	X	
					VMG-2500BP	7' or longer			X	X	X	X	X	X	
ICF Applications: Plastic and flowing concrete for very thin members & walls & confined places where insulated concrete forms are used.	> 4"	2.5" x 2.5"	7/8" VH 14-LF	4"	VMK-1500	X	X	X	X	X	X	X	X	X	
					VMP TURBO	X	X	X	X	X	X	X	X	X	
					VMG-1750BP	X	X	X	X	X	X	X	X	X	
					VMG-2500BP	7' or longer			X	X	X	X	X	X	

- Find description in column 1 that matches your application.
- Use column 2 to adjust for any size restrictions due to reinforcements, such as rebar, or other limiting structures.
- Column 3 gives the diameter of the vibrator head needed.
- Select the power unit desired from column 4. **VMK** units are universal electric motors available in 10 amps (1500), 15 amps (2500 OR 2750), or 20 amps (3500). The VMK-3500 and the models ending with an "L" come with a twist lock plug. The motor with the higher amp rating will consolidate low slump concrete more efficiently. **VMP TURBO** is a 2hp pneumatic motor. **VMG-1750BP** is a 1.6 hp backpack mounted gasoline engine (also available as a handheld unit). **VMG-2500BP** is a 2.5 hp backpack mounted gasoline engine.
- Find the core and casing length desired in section 5. Smart Part Systems with a 7/8" head come with 7/8" diameter flexible drive. All other systems come with a 1-1/16" diameter flexible drive.

*Note: 28' and 35' flex drives require coupling two shorter drives together using a Viber VCP Coupling.