

Viber[®] VMG-1750HH

Operating Instructions

PORTABLE GASOLINE POWER UNIT FOR
VIBER[®] INTERNAL CONCRETE VIBRATORS



Photo shows VMG-1750HH with a Honda motor. The new model uses a Subaru motor, which is yellow.



www.GlobalManufacturing.com

Global Manufacturing Inc.[®]

1801 East 22nd St
Little Rock, Arkansas 72206

501.374.7416 TEL

800.551.3569 TOLL FREE USA & CANADA

501.376.7147 FAX

TABLE OF CONTENTS		PAGE
<i>Safety Precautions</i>		2 - 3
I.	Introduction	4
	The Smart!Parts™ System	4
II.	Assembling the VMG -1750HH	4 - 5
III.	Operation	6 - 8
	Starting the VMG-1750HH Gasoline Power Unit	6
	Guidelines for Consolidating Concrete	7
IV.	Maintenance	8
V.	Disassembly and Assembly	8
VI.	Troubleshooting	8
VII.	Engine Specifications	8
VIII.	Performance Data for Engine and Interchangeable Heads	9
IX.	Parts List and Parts Explosion	10
X.	Smart!Parts System Guide	11



SAFETY PRECAUTIONS

Your safety and the safety of the people around you are very important. Operating the Viber® model VMG-1750HH concrete vibrator system in a safe manner is the duty of every user. Certain sections of this manual will contain such key words as **DANGER**, **WARNING** and **CAUTION**. When you see any of these key words in the manual, please read the information following the key word very carefully and follow the instructions.



CAUTION

Not obeying the instructions following this signal can lead to personal injury or damage to the equipment.

NOISE/SOUND

Sound pressure in operators ear zone is 93.7 average dB(A) under loading. Hearing protection must be worn.



DANGER

This unit creates carbon monoxide gas when operating. Carbon Monoxide is a colorless, odorless gas, which can cause injury or death. Use only outdoors or where fresh air is constantly being introduced into the environment.

WARNING

- >Improperly maintaining the engine, or failing to correct a problem before operation, could cause malfunction in which you could be seriously injured.
- >Always perform an inspection and correct any problems found before starting engine.
- >Always wear ear & eye protection, gloves, and heavy boots when operating the handheld system.

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?

VMG Gasoline Engines: Clean air filter every 25 hours. Change engine oil after 20 hours and then routinely every 50 hours of operation. Refer to Subaru Owner's Manual for complete maintenance schedule.

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 fuel? Use unleaded gasoline with a pump octane rating of 86 or higher.
5. Check oil level in engine.

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.

I. Introduction

You have purchased a Viber[®] Gasoline PowerUnit, 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.

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 X, on page 12, 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.

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



II. Assembling Vibrator

⚠ CAUTION

The ignition switch on engine must be in the "off" position before assembling or disassembling your system.

The VMG-1750HH Gasoline Power Unit comes fully assembled.

All Viber[®] system components are interchangeable. All flexible drives (cores and casings) can be used to attach any head to any power unit. For optimum performance and wear consult your *Smart!Parts[™] System Guide*, on page 12 for the best combination of components.

⚠ WARNING

NEVER attempt to change flexible drives while the engine is running.

1. Remove end cap from the flex drive* and clean the oil from the threads with a shop towel and lacquer thinner.

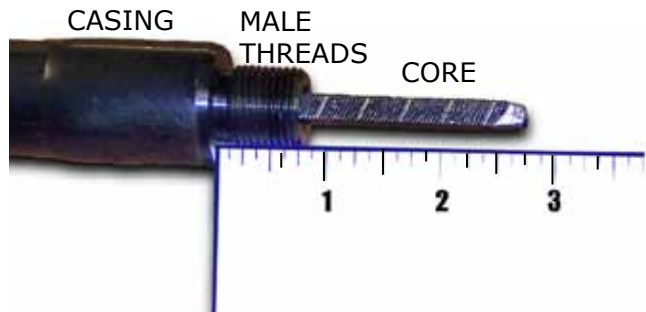


**If you do not have an assembled flexible drive, the core must be lubricated before installing it in the casing. Run the core through a handful of Viber[®] Core Grease as it is inserted into the casing. For drives over 10' in length, pull half the core from the opposite casing end and apply*

additional grease as you reinsert the core from that end. Attach the end of the casing, where the core was inserted, to the engine. As the system runs the grease will migrate from the motor end to the head end of the flexible drive.

2. Place the flexible drive with installed quick disconnect fitting up to the quick disconnect on the motor drive. Be sure the core engages in the motor drive. Turn the large hand nut counter clockwise until tight (hand nut has left hand threads to insure it will remain tight while operating the system).

3. Before attaching the head, check the length of core extending from the head end of the flexible drive. 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 motor. If the exposed core is greater than 2-3/4" when it is fully seated, in the motor, it might bind and cause damage to the core, casing, or head. Do not use the system. Contact your dealer or Global Manufacturing, Inc toll free at 800-551-3569 or at 501-374-7416.



4. Attach the head to the flexible drive. Be sure the core engages the drive coupling in the head. Apply two layers of Teflon[®] tape to the casing threads before screwing the head in a clockwise direction.



5. Align flex core with square coupler in Head and screw Head onto the casing until it contacts the shoulder of the casing.



⚠ CAUTION

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 out into the pour.

6. Tighten very securely. 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.





III. Operation

Refer to the Subaru-Robin Engine owner's manual supplied with your VMG-1750HH for engine maintenance schedules and detailed operating instructions.

⚠ WARNING

Improperly maintaining the engine, or failing to correct a problem before operation, could cause malfunction in which you could be seriously injured. Always perform an inspection and correct any problems found before starting engine. Always wear ear & eye protection, gloves, and heavy boots when operating the handheld system.

⚠ DANGER

This unit creates carbon monoxide gas when operating. Carbon Monoxide is a colorless, odorless gas, which can cause injury or death. Use only outdoors or where fresh air is constantly being introduced into the environment.

How To Start The VMG-1750HH Gasoline Power Unit:

1. Remove any accumulated dirt or debris, especially from around the muffler and recoil starter.
2. Check that all shields and covers are in place and all nuts, bolts, and screws are tight.
3. Inspect the throttle and engine kill switch to make sure they are in working order.
4. Check the engine oil level. Add oil if necessary.
5. Check the air filter. A dirty air filter will restrict airflow to the carburetor, reducing engine performance.

6. Be sure the tank is full with fresh unleaded gasoline with a pump octane rating of 86 or higher. Do not over fill the tank.

7. If the tank has just been filled, press the priming bulb repeatedly until fuel can be seen in the clear plastic fuel-return tube.

8. For a cold engine, move the choke lever upward to the CLOSED position. To restart a warm engine, leave the choke lever in the down or OPEN position.

9. Do not grip the throttle control on the handle. The throttle must be in the idle position to start the engine.

10. Place engine stop switch in "on" position.

⚠ CAUTION

Do NOT start the engine with the throttle lever in the FAST position. This will engage the vibrator head as soon as the engine starts. Running the vibrator head in air without regularly submersing it in the concrete will overheat the bearings.

11. Hold the VMG-1750HH unit in place with one hand. Pull the starter grip lightly until you feel resistance, then pull briskly. Return the starter grip SLOWLY to its initial position.

12. If the choke lever was moved to the CLOSED position to start the engine, gradually move it to the OPEN position as the engine warms up.

IMPORTANT !

To stop the engine at any time, simply turn off the STOP ENGINE switch located on the front left side of the engine housing in front of the air filter and below the throttle cable.

13. You are now ready to vibrate concrete with your VMG-1750HH.

a. Squeeze the black throttle lever on the handle to regulate the vibrator speed. Keep in mind, that when consolidating concrete, faster is not always better. The best performance might be obtained with the throttle lever in a position below FULL throttle, especially when using a small diameter vibrator heads, such as 7/8" through 1-1/2" (22 - 38 mm).

b. The VMG-1750HH is equipped with a centrifugal clutch. By releasing the throttle lever, the engine will slow and the clutch will disengage allowing the vibrator head to stop. Do not leave the vibrator head running in air. Running the vibrator head in air without regularly submersing it in the concrete will overheat the bearings. If the head is to be held out of the concrete, release the throttle lever to the idle position to prolong bearing life.

c. To stop the engine at any time, simply turn off the STOP ENGINE switch located on the front left side of the engine housing in front of the air filter and below the throttle cable.

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" (102 - 152 mm). Layers should not exceed 18-20" (457 - 508 mm), otherwise the weight of the concrete will prevent the entrapped air from escaping.

5. Keep the vibrator head at least 3-4" (76 - 102 mm) from the forms. It can damage them 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.

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" (102 - 152 mm) 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.). Refer to the Subaru-Robin Engine Owner’s Manual provided with your VMG-1750HH for details on performing engine maintenance.

1. **Engine Oil:** SAE10W-30, API SF or higher. Check before each use. Change after the first 20 hours of use and every 50 hours thereafter. Change every 25 hours in high ambient temperatures.

2. **Air Filter:** Check before each use. Clean and re-oil every 25 hours or every 8 hours if used in dusty areas.

3. **Spark Plug:** Clean and adjust gap daily, but at least once each year. Replace every two years.

V. Disassembly and Assembly

Refer to the Subaru-Robin Engine Owner’s Manual provided with your VMG-1750HH for details on performing engine maintenance.

VI. Troubleshooting

Call Factory - Toll free at 1.800.551.3569 or 501.374.7416.

VII. Engine Specifications

Engine:

4-cycle, 2.0 cu.in., 1.6 hp Subaru-Robin Overhead Valve Engine

Fuel:

Standard Unleaded Gasoline, 86 octane or higher. Approximately 3 hours of use per tank of gas.

Oil:

SAE 10W-30, API SJ, 0.11 US quart.

Head Size:

Will drive all size internal concrete vibrator heads up to 1-3/4” in diameter with any flexible drive length up to 14’.

Speed:

Direct Drive transmission provides drive speed of 10,000 rpm with any recommended size vibrator head.

Other Features

The VMG-1750HH also provides the following features:

Centrifugal Clutch allows the operator to stop the vibration simply by releasing the throttle lever to the SLOW position. This prolongs vibrator head bearing life by preventing excess heat build up when the head is not submersed in the concrete.

Multi-Function Throttle Control allows the operator to obtain the best speed of the vibrator for the size of the head and the type of concrete being worked.

Standard Quick Disconnect makes it simple to remove or attach the flexible drive without tools.



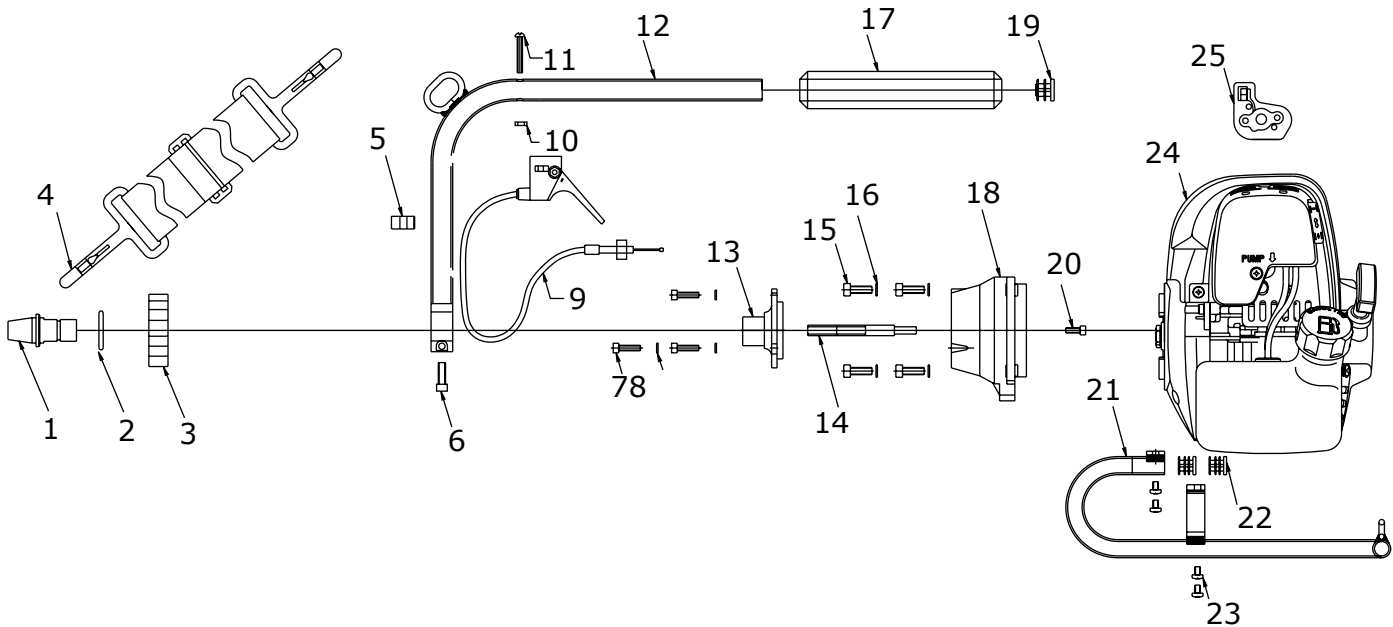
⚠ CAUTION

- >DO NOT place anything on top of the engine or handle.
- >DO NOT stand on the frame or engine.
- >ALWAYS store the unit with its engine upright and the base on a flat level surface.
- >DO NOT store the unit on its side. Oil or gasoline may leak as a result. Leaking oil or gasoline is toxic and a fire hazard.
- >For long-term storage it is recommended that the gasoline tank be drained and the engine operated until the remaining fuel is consumed.

VIII. Performance Data for Viber[®] Gasoline Powered Units and Interchangeable Heads

Performance Data For Viber [®] Gasoline Powered Unit and Interchangeable Heads						VMG-1750HH	
Head Model	Diameter inches	Length inches	Weight pounds	Unbalance lb-in	Avg Amp (Peak-to-Peak)	Speed* rpm	Force pounds
VH14	7/8	11.94	1.4	0.029	0.041	10,000	82
VH16	1	12.45	2.1	0.029	0.028	10,000	82
VH20	1-1/4	12.19	3.0	0.092	0.062	10,000	261
VH24	1-1/2	12.04	4.1	0.162	0.079	10,000	460
VH28	1-3/4	13.05	6.2	0.236	0.077	10,000	670
VH34	2-1/8	13.01	9.2	0.337	0.073	9,600	882
VH40	2-1/2	12.52	12.2	0.478	0.078	9,100	1,124
VH14-LF	7/8 Low Force	11.94	1.2	0.017	0.030	10,000	48
VH34-SP	2-1/8 Shallow Pour	5.84	3.3	0.147	0.089	10,000	417
Unshaded Cells - BEST PERFORMANCE							
Shaded Cells - REDUCED PERFORMANCE because speed is too low.							
* The speed provided above is an approximation of the head speed in concrete with the VMG-1750HH Gasoline Engine Hand Held Power Unit at maximum throttle. Unit operates at a maximum of 10,000 rpm. The actual speed will vary depending on temperature, consistency of the concrete, the hours on the bearings, etc.							

IX. Parts List and Parts Explosion



Parts List for VMG-1750HH - Portable Gasoline Concrete Vibrator Part # 913175

#	Description	Part #	Qty	#	Description	Part #	Qty
1	Quick Disconnect Motor Fitting	414912	1	14	Drive Shaft Adaptor	490729	1
2	O-Ring Buna 568-216	385216	1	15	Screw M6 x 1 x 20 Mm	None ²	4
3	Quick Disconnect Nut	414913	1	16	Spring Washer M6	None ²	4
4	Shoulder Strap	990001	1	17	Grip Foam Handle	491643	1
5	Clip (included in Throttle Assy)	None ¹	1	18	Clutch Housing Kit with fasteners	490750	1
6	Screw SCS 1/4 - 28 x 3/4"	336908	1	19	Plug Polyethylene Black 3/4"	490649	1
7	Screw SCS M5 x .8 x 18 mm	None ²	3	20	Screw SCS #10 - 24 x 1/2"	336705	1
8	Spring Washer M5	None ²	3	21	Base	490645	1
9	Throttle Assembly	490739	1	22	Plug Polyethylene Black 5/8"	490648	2
10	Hex Nut #10 - 24 Plated	334403	1	23	Screw M5 x .8 x 10 mm	333475	4
11	Screw RSH #10 - 24 x 1 1/4"	333414	1	24	Engine Subaru 4 Cycle	490722	1
12	Handle	490641	1	25	Insulator	4907221	1
13	Clutch Housing Cover	490724	1	Notes: ¹ Included in Throttle Assembly			
				² Included in Housing Kit			



System Selection Guide

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
					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
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-2500/2750	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
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-2500/2750	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
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-1500	X	X	X	X	X	X	X	X	X
					VMK-2500/2750	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
Stiff Low-Slump Concrete: Stiff plastic concrete in general construction such as walls, columns, beams, pre-stressed piles, and heavy slabs.	1 - 3"	4" x 4"	2-1/8" VH 34	21"	VMG-1750BP	X	X	X	X	X	X	X	X	X
					VMG-2500BP	7' or longer			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
Stiffest Low-Slump Concrete: Mass and structural concrete deposited in relatively open forms.	< 2"	5" x 5"	2-1/2" VH 40	24"	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
					VMK-2750	X	X	X	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
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

1. Find description in column 1 that matches your application.
2. Use column 2 to adjust for any size restrictions due to reinforcements, such as rebar, or other limiting structures.
3. Column 3 gives the diameter of the vibrator head needed.
4. 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.
5. 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.