



CONCRETE VIBRATORS

INSTRUCTION MANUAL

SAFETY, ASSEMBLY, AND MAINTENANCE INSTRUCTIONS FOR MODELS:

PRO 1.5+

PRO 2+

PRO 3+



NORTHROCK INDUSTRIES, INC.
31 CROSSWAY EAST
BOHEMIA, NY 11716

TEL: 1-800-989-8423
1-631-924-6130
FAX: 1-800-315-1277
1-631-924-6369



General Power Tool Safety Warnings

WARNING Read all safety warnings and all instructions. *Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.*

Save all warnings and instructions for future reference

The term "power tool" in the warnings refers to your corded concrete vibrator.

1) Work area safety

- a) **Keep work area clean and well lit.** *Cluttered or dark areas invite accidents.*
- b) **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.**
Power tools create sparks which may ignite the dust or fumes.
- c) **Keep children and bystanders away while operating a power tool.** *Distractions can cause you to lose control.*



2) Electrical Safety

- a) **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools.**
Unmodified plugs and matching outlets will reduce risk of electric shock.
- b) **Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators.**
There is an increased risk of electric shock if your body is earthed or grounded.
- c) **Do not expose power tools to rain or wet conditions.** *Water entering a power tool will increase the risk of electric shock.*
- d) **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** *Damaged or entangled cords increase the risk of electric shock.*
- e) **When operating a power tool outdoors, use an extension cord suitable for outdoor use.** *Use of a cord suitable for outdoor use reduces the risk of electric shock.*
- f) **If operating a power tool in a damp location is unavoidable, use a residual current device (RCD) protected supply.** *Use of an RCD reduces the risk of electric shock.*



3) Personal Safety

- a) **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.** *A moment of inattention while operating power tools may result in serious personal injury.*
- b) **Use personal protective equipment. Always wear eye protection.** *Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.*
- c) **Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool.** *Carrying power tools with your finger on the switch or energizing power tools that have the switch on invites accidents.*
- d) **Remove any adjusting key or wrench before turning the power tool on.** *A wrench or a key left attached to a rotating part of the power tool may result in personal injury.*
- e) **Do not overreach. Keep proper footing and balance at all times.** *This enables better control of the power tool in unexpected situations.*
- f) **Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts.** *Loose clothes, jewelry or long hair can be caught in moving parts.*
- g) **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.**
Use of dust collection can reduce dust-related hazards.



4) Power tool use and care

- a) **Do not force the power tool. Use the correct power tool for your application.** *The correct power tool will do the job better and safer at the rate for which it was designed.*
- b) **Do not use the power tool if the switch does not turn it on and off.** *Any power tool that cannot be controlled with the switch is dangerous and must be repaired.*
- c) **Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools.** *Such preventive safety measures reduce the risk of starting the power tool accidentally.*
- d) **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** *Power tools are dangerous in the hands of untrained users.*
- e) **Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation.** *If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools.*
- f) **Keep cutting tools sharp and clean.** *Properly maintained cutting tools with sharp edges are less likely to bind and are easier to control.*
- g) **Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed.** *Use of the power tool for operations different from those intended could result in a hazardous situation.*

5) Service

- a) **Have your power tool serviced by a qualified repair person using only identical replacement parts.** *This will ensure the safety of the power tool is maintained.*

Symbol Reference Chart

V _____	volts	W _____	watts	 _____	alternating current
A _____	amperes	kg _____	kilograms	 _____	protective earth
Hz _____	hertz	"o _____	no-load speed	IPX4 _____	IP symbol

Northrock flexible shaft vibrators are built to the highest standards of both quality and function. When properly assembled and maintained you will receive many hundred hours of service from these units. Please take a few minutes to read the assembly, operating, maintenance, and safety instructions before attempting to operating the vibrator.

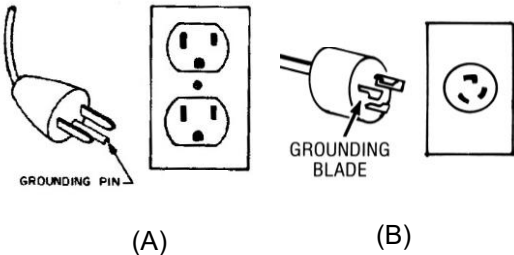
Assembly Instructions:

! Be sure unit is unplugged and switch is in the off position before proceeding.

- 1) Apply an adhesive sealant to threads on the flexible shaft to prevent water from entering the head and to lock the head to the shaft. Secure head to shaft using wrench flats provided on the head and a pipe wrench on the metal coupling of the flexible casing.
- 2) Insert inner flexible core to motor adapter and then screw outer casing on to motor. Tighten securely using wrench flats on motor and an pipe wrench on the metal coupling of the flexible casing.

Grounding Instructions:

This tool should be grounded while in use to protect the operator from electric shock. The tool is equipped with a three conductor cord and three prong grounding type plug to fit the proper grounding type receptacle. The green conductor in the cord is the grounding wire. Never connect the green wire to a live terminal. The plug supplied on model Pro 1.5+ and Pro 2+ look like that shown in sketch (A), and the plug supplied on model Pro 3+ looks like that shown in sketch (B).



Grounding Methods

Extension Cords:

Use only three conductor cords that have three prong grounding type plugs and three pole receptacles that accept the tools plug. Use only extension cords intended for outdoor use, and so marked. For outdoor use extension cords shall be marked with the suffix W-A following the cord type designation, for example SOW-A indicates it is acceptable for outdoor use. Use proper extension cords rated to the tool as shown on the following chart.

Extension cord AWG sizes for 120V motors:				
<u>AMPS</u>	0-25'	26-50'	51-100'	101-150'
12-16	14	12	not recommended	
16 - 20	12	10	not recommended	

Always use an extension cord heavy enough to carry the current the tool will draw, as undersized cords will cause a drop in line voltage resulting in loss of power and overheating. Inspect all extension cords making sure they are in good condition before using, repair or replace damaged extension cords. Extension cords are available from the factory, contact your authorized service representative for details.

Operating Instructions:

- 1) Before turning the power tool on be sure that the head is properly sized to the power unit. The model Pro 1.5+ is rated for use with a maximum 1 1/2" diameter vibrator head. The Pro 2+ and Pro 3+ are rated for a maximum head diameter of 2 1/2"
- 2) Be sure you have a secure footing before starting the power tool.
- 3) Turn the switch to the on position and submerge the vibrator head into the concrete. Do not let the power unit run for more than a few minutes with the head out of the concrete as this will cause overheating.

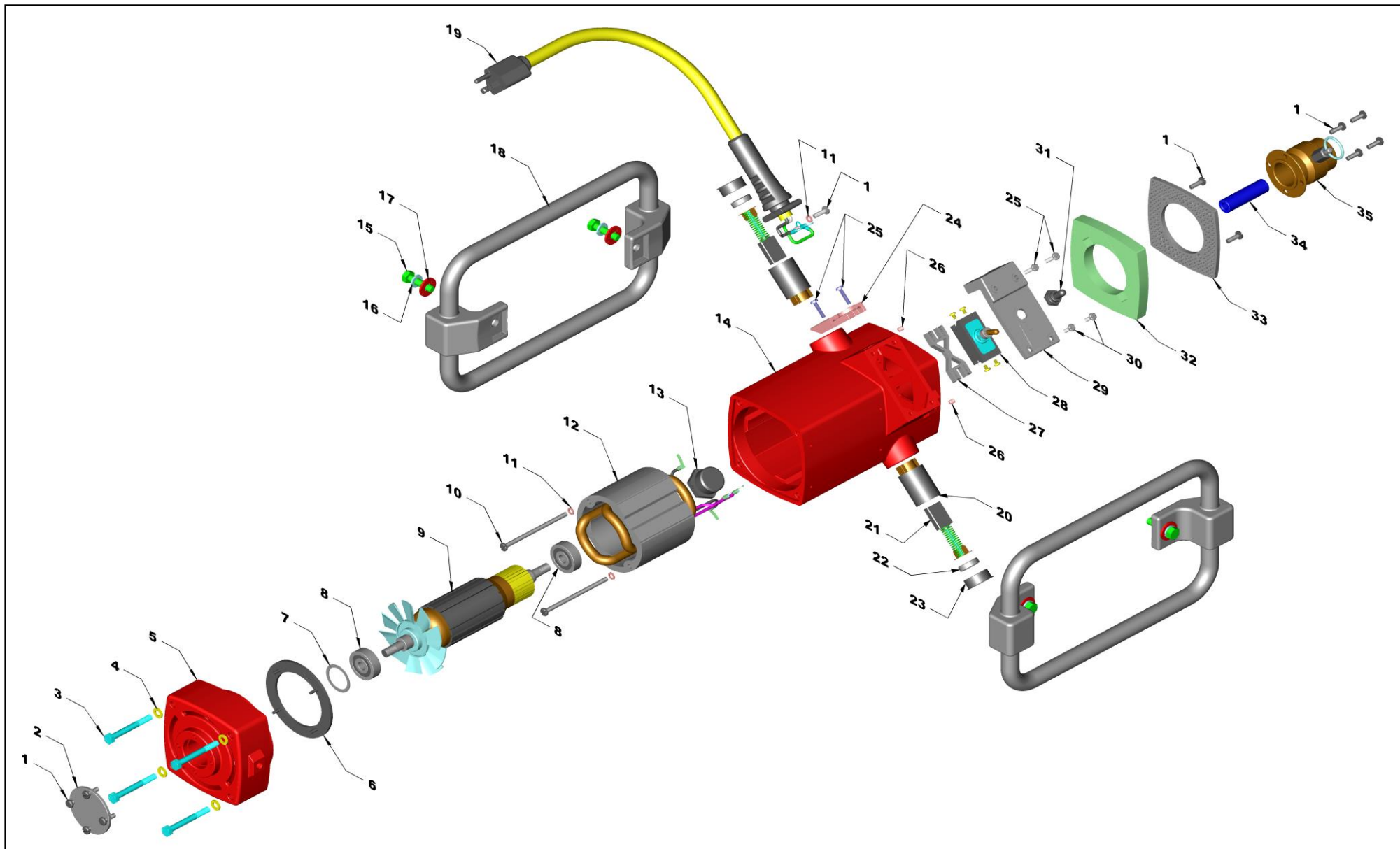
Maintenance Instructions:

- | | |
|---------|---|
| Motor: | <ul style="list-style-type: none">- keep housing and air filter clean to allow for proper cooling- check brushes, switch boot, and electric cord for wear and replace when worn- motor bearings require no additional lubrication, replace when worn |
| Shafts: | <ul style="list-style-type: none">- inspect inner cores for lubrication after approximately 50 hours of operation as follows: remove core on a clean surface free of dirt and grit, inspect core for dry areas, if lubrication is required wipe core with cloth, reinsert core into casing applying approximately 1/16" thick coating of high quality lithium grease. (available in 1lb cans from the factory) Do not over grease the flexible shaft as this will cause excess drag on the motor, and the shaft to get hot. |
| Heads: | <ul style="list-style-type: none">- heads are sealed at the factory, since it is extremely important to keep contaminants out, therefore they require no field maintenance. |

VIBRATOR MOTOR PARTS LIST

NO.	DESCRIPTION	MODEL 1.5+ PART No.	MODEL 2+ PART No.	MODEL 3+ PART No.	QTY. REQ'D
1	SCREW	190F150	190F150	190F150	11
2	END CAP	215M1	215M1	215M1	1
3	BOLT	280A225	280A225	280A225	4
4	LOCK WASHER	285A250	285A250	285A250	4
5	END BELL	420B1	420B1	420D1	1
6	BAFFLE FILTER (END BELL SIDE)	470E1	470E1	470F1	1
7	SPRING WASHER	380A1	380A1	380A1	1
8	BALL BEARING	140C300	140C300	140C300	2
9	ARMATURE	475B1	475A1	475C1	1
10	SCREW	190E127	190E135	190E140	2
11	LOCK WASHER	285A187	285A187	285A187	3
12	FIELD	480B1	480A1	480C1	1
13	CAP FOR COMUTATOR SERVICE PORT	400B1	400B1	400B1	1
14	MOTOR HOUSING	105AC1	105AC1	105AG1	1
15	BOLT	280A312	280A312	280A312	4
16	LOCK WASHER	285A312	285A312	285A312	4
17	WASHER	370A312	370A312	370A312	4
18	FRAME ASSEMBLY	440C1	440C1	440D1	2
19	GROUNDING ELECTRIC CORD	505H1	505H1	505J1	1
20	BRUSH HOLDER	495A1	495A1	495A1	2
21	BRUSH	490A1	490A1	490A1	2
22	BRUSH CAP	500A1	500A1	500A1	2
23	OUTER PROTECTIVE BRUSH CAP	400C1	400C1	400C1	2
24	ELECTRIC CORD MOUNTING PLATE	215CC1	215CC1	215CC1	1
25	SCREW	190F875	190F875	190F875	4
26	SET SCREW	190B125	190B125	190B125	2
27	ELECTRIC WIRE CLIP	467C1	467C1	467C1	1
28	ELECTRIC SWITCH (w / terminal screws)	425B1	425B1	425B1	1
29	SWITCH MOUNTING PLATE	215CB1	215CB1	215CB1	1
30	SCREW	190F850	190F850	190F850	2
31	WATER RESISTANT SWITCH SEAL	430A1	430A1	430A1	1
32	AIR FILTER	470A1	470A1	470B1	1
33	AIR FILTER COVER	215N1	215N1	215X1	1
34	CORE ADAPTER	SEE CHART	SEE CHART	SEE CHART	1
35	CASING ADAPTER	SEE CHART	SEE CHART	SEE CHART	1

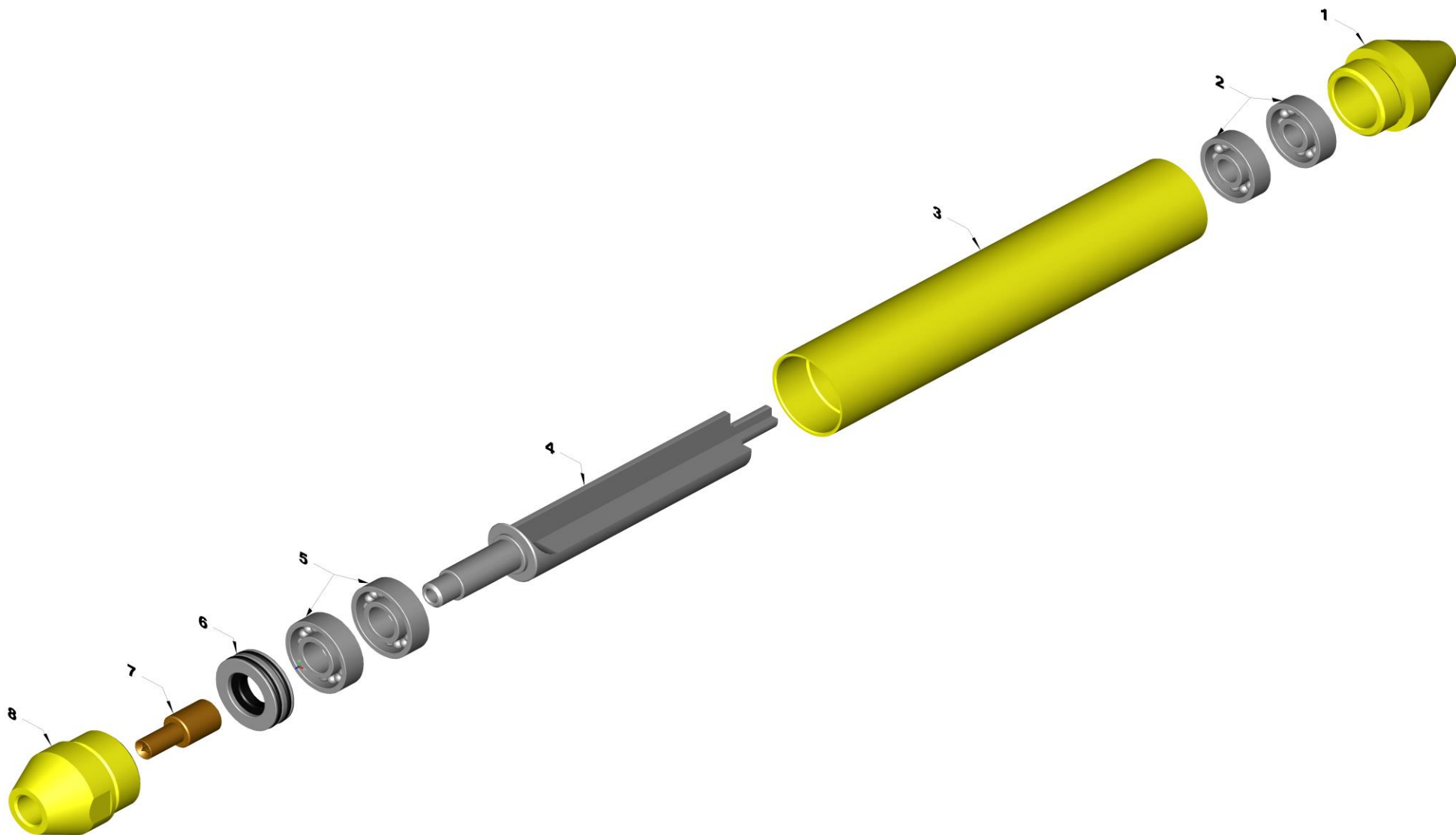
ORIGINAL MFG.	MODEL No.	CORE ADP. PART No.	CASING ADP. PART No.
DENVER	QM500, JM700	160BT1	150DJ1
DREYER	JE	160CX1	150FH1
DYNAPAC	AH15, AH25	160DK1	150FX1
MASTER	CV10, CV15, CV20	160AH2	150DB1
MIKASA	PMA-1, PMA-2, PMA-3	160DD1	150FR1
NORTHROCK	1.5+, 2+, 3+	160AH1	150DW1
NORTHROCK	1.5+, 2+, 3+ W/Q.D.	160CW1	150DE1
OZTEC	1.2, 1.8, 2.4, 3.2	160AH1	150CX1
OZTEC	1.2, 1.8, 2.4, 3.2 W/Q.D.	160CW1	150DE1
REMINGTON	VL	160CT2	150DF1
REMINGTON	1EV, 2EV, 3EV	160BM1	150DF1
STONE	1HP, 1 1/2HP, 2HP, 3HP	160AH3	150DC1
STOW	PENCIL	160BF1	150DD1
STOW	NO Q.D.	160BG1	150CY1
STOW	WITH Q.D.	160BD1	150DE1
VIBER	VME	160AH4	150CW1
WACKER	M1000, M2000, M3000	160BD2	150DE1
WYCO	990, 991, 991 1/2	160CT1	150DG1
WYCO	902, 992	160BP1	150DG1
WYCO	992 1/2	160CT1	150DH1
WYCO	903, 993	160BP1	150DH1



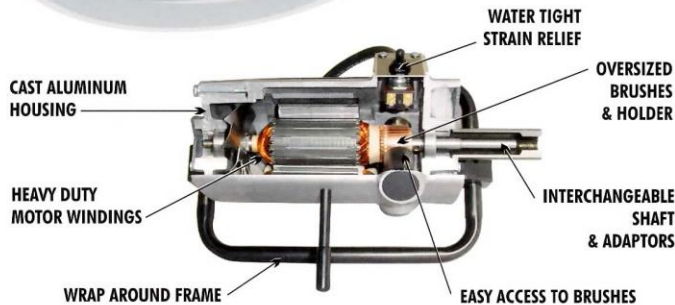
VIBRATOR HEAD PARTS LIST

NO.	DESCRIPTION	3/4" HEAD	1" HEAD	1 1/4" HEAD	1 1/2" HEAD	1 3/4" HEAD	2" HEAD	2 1/2" HEAD	QTY. REQ'D
		PART No.	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.	
1	NOSEPIECE	100A75	100B1	100C12	100D15	100E17	100F2	100G25	1
2	BEARING (NOSE END)	140F4	140A608	140A000	140A201	140A301	140A302	140A205	2
3	SHELL	105A75	105B1	105C12	105D15	105E17	105F2	105G25	1
4	ROTOR	Part no. is dependent on appropriate style and size.*							1
5	BEARING (CASING ADAPTER END)	140F4	140A608	140A000	140A201	140A203	140A204	140A205	2
6	SEAL CARRIER ASEMBLY	110A1	125H1	125J1	125K1	125L1	125M1	125N1	1
7	CORE ADAPTER	Part no. is dependent on appropriate style and size.*							1
8	CASING ADAPTER	Part no. is dependent on appropriate style and size.*							1

* Call for more information.



Pro-1.5, 2+ and 3+ Electric Vibrators



POWER SOURCE INDICATOR

How to select components for your Northrock system:

1 - First determine the diameter of the head based on the radius of influence listed on the vibrator specification chart (above-right).

2 - Determine the length of the shaft needed to reach the bottom of the form.
3 - Using the selections from step 1 & 2, find the motor on the chart below.

	Head Diameter (inches)	Shaft Length (feet)					
		2	5	7	10	14	21
PRO 1.5 1-1/2 hp	3/4						
	1						
	1-1/4						
	1-1/2			*	*	*	*
PRO 2.0 2hp	1-3/4		*	*	*	*	*
	2	*	*	*	*	*	*
	2-1/2	*	*	*	*	*	*
		PRO 3.0 3 hp					

Upgrade to next size power unit if any of the following conditions exist:

- * A larger diameter head may be installed in the future
- * Low-sump concrete or abnormal conditions exist which restrict flow
- * Unit will run continuously as a precast plant

- * Shaft connectors will be used to extend shaft length
 - * Frequency is below 10,000 for any reason whatsoever
- NOTE: Shafts are available in lengths up to 60' with connector

Vibrator Head Specifications

Head Diameter & Length inches / mm	Centrifugal Force pounds / N	Amplitude to side at tip inches / mm	Radius of Influence inches / mm	Capacity y3/hr / m3/hr
3/4 x 12 19 x 305	112 498	.070 1.78	4 102	4 3.64
1 x 13 25 x 330	183 820	.075 1.91	5 127	6 5.46
1-1/4 x 13 32 x 330	430 1,913	.080 2.03	7 178	8 7.28
1-1/2 x 14 38 x 356	760 3,380	.090 2.29	14 356	12 10.92
1-3/4 x 14 44 x 356	1100 4,893	.110 2.79	18 457	24 21.84
2 x 14 51 x 356	1450 6,450	.130 3.30	22 559	35 31.85

Special Heads

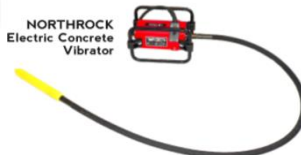
In addition to the standard heads we also offer short heads (1 1/2" to 2" Dia. x 4" long) for use with tilt-up walls, slabs and decks. Coated heads (1 1/2" to 2 1/2" Dia.) to protect epoxy rebar from damage that can cause premature failure and soft tipped heads that save expensive forms from marring.

Flexible Shafts

All NORTHROCK flexible shafts are constructed with rubber coated steel braiding which prevents stretching, and hardened steel inner liners that act as the bearing surface for the inner core. We have both standard duty shafts and pencil shafts. The standard duty shafts are stiffer for better poking control, while the pencil shafts (only used on 3/4" - 1 1/4") are more flexible and used to reach tight areas such as a block wall. Flexible shafts are made from 1' to 30'. Lengths up to 60' are available via a simple shaft connector.



31 Crossway East, Bohemia, NY 11716
PH: 800-989-8423 or 631-924-6130
FAX: 800-315-1277 or 631-924-6369
www.northrockindustries.com



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