

martin®

Martin®
MMX, MIX, & MVX
Electric Vibrators



Operator's Manual
M3882

Important

MARTIN ENGINEERING HEREBY DISCLAIMS ANY LIABILITY FOR: DAMAGE DUE TO CONTAMINATION OF THE MATERIAL; USER'S FAILURE TO INSPECT, MAINTAIN AND TAKE REASONABLE CARE OF THE EQUIPMENT; INJURIES OR DAMAGE RESULTING FROM USE OR APPLICATION OF THIS PRODUCT CONTRARY TO INSTRUCTIONS AND SPECIFICATIONS CONTAINED HEREIN. MARTIN ENGINEERING'S LIABILITY SHALL BE LIMITED TO REPAIR OR REPLACEMENT OF EQUIPMENT SHOWN TO BE DEFECTIVE.

Observe all safety rules given herein along with owner and Government standards and regulations. Know and understand lockout/tagout procedures as defined by American National Standards Institute (ANSI) z244.1-1982, *American National Standard for Personnel Protection - Lockout/Tagout of Energy Sources - Minimum Safety Requirements* and Occupational Safety and Health Administration (OSHA) Federal Register, Part IV, 29 CFR Part 1910, *Control of Hazardous Energy Source (Lockout/Tagout); Final Rule*.

The following symbols may be used in this manual:



Danger: Immediate hazards that will result in severe personal injury or death.



Warning: Hazards or unsafe practices that could result in personal injury.



Caution: Hazards or unsafe practices that could result in product or property damages.



Important: Instructions that must be followed to ensure proper installation/operation of equipment.



Note: General statements to assist the reader.

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Introduction

General

Martin[®] Explosion-Proof Electric Vibrators, Models MMX, MIX and MVX, are designed and manufactured to ensure the best performance and reliability in severe-duty applications. These vibrators have an ambient temperature rating including mounting surface temperature of -13 to 131°F (-25 to 55°C). If operating the vibrator in environments beyond these temperatures, call Martin Engineering, as the vibrator may require rating reduction, more frequent lubrication, or lubrication substitution. Contact Martin Engineering for explosion-proof joint detail.

Safety

All safety rules defined in the above documents and all owner/employer safety rules must be strictly followed when working on the vibrator.

References

The following documents are referenced in this manual:

- *The National Electrical Code (NEC)*, National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy MA 02269-9101.
- American National Standards Institute (ANSI) z244.1-1982, *American National Standard for Personnel Protection - Lockout/Tagout of Energy Sources - Minimum Safety Requirements*, American National Standards Institute, Inc., 1430 Broadway, New York, NY 10018.
- Code of Federal Regulation (CFR) 29, Part 1910, *Control of Hazardous Energy Source (Lockout/Tagout); Final Rule*, Department of Labor, Occupational Safety and Health Administration (OSHA), 32nd Floor, Room 3244, 230 South Dearborn Street, Chicago, IL 60604.
- CFR 29, Part 1910.15, *Occupational Noise Exposure*, Department of Labor, OSHA, 32nd Floor, Room 3244, 230 South Dearborn Street, Chicago, IL 60604.

Storage

Store vibrator in an ambient temperature not less than 41°F (5°C) with a relative humidity not more than 60%. If the vibrator has been stored for 2 or more years, remove bearings, wash them, and repack them with new grease (see “Lubricating Vibrator”).

Before Installing Vibrator

IMPORTANT

The delivery service is responsible for damage occurring in transit. Martin Engineering CANNOT enter claims for damages. Contact your transportation agent for more information.

1. Inspect shipping container for damage. If damage has occurred, report damage to delivery service and fill out delivery service's claim form.
2. Remove vibrator from shipping container.
3. If anything is missing, contact Martin Engineering or a representative.



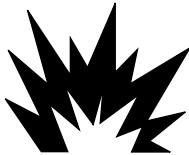
WARNING

Turn off and lock out/tag out all energy sources.

4. Before installing vibrator, turn off and lock out/tag out all energy sources to mounting structure according to ANSI standards (see "References").

WARNING

Gas level or dust content must be tested before using a cutting torch or welding. Using a cutting torch or welding in an area with gas or dust may cause an explosion.



5. If using a cutting torch or welding, test atmosphere for gas level or dust content.
6. Make sure mounting surface is strong and flat, 0.010 in. (0.25 mm) across vibrator feet. (This will minimize internal stress to vibrator casting when tightening mount bolts. Welding in the area of the mounting surface could affect flatness.)
7. Make sure mounting surface and vibrator are clean and free of debris, paint, and oxidation.

Installing Vibrator

Mounting vibrator onto screen frame

IMPORTANT

Read entire section before beginning work. See Appendix for overall dimensions and mounting dimensions.

CAUTION

If installation instructions are not followed, structure and vibrator can be damaged. Abusing or dropping vibrator will accelerate wear and cause bearing damage.

Never weld structure with vibrator mounted and wired. Welding may cause damage to screen vibrator windings and bearings.

Use only new Grade 5 or 8 bolts, nuts, and compression washers. Old fasteners can break and cause damage to vibrator or structure.

Do not use split lock washers to install vibrator onto mount. Damage to vibrator could result.

Tighten mounting bolts in sequence shown in Figure 1. If not tightened in order, vibrator casting could be damaged.

1. Position vibrator mounting holes over mounting holes on screen frame. Use bolts to hold unit in place. Tighten bolts in order given in Figure 1 to avoid damaging vibrator casting.
2. Position vibrators so bolts are free in holes. (There should be no side load on bolts.) While holding unit in position, torque bolts per torque specifications in Table I or contact fastener manufacturer.

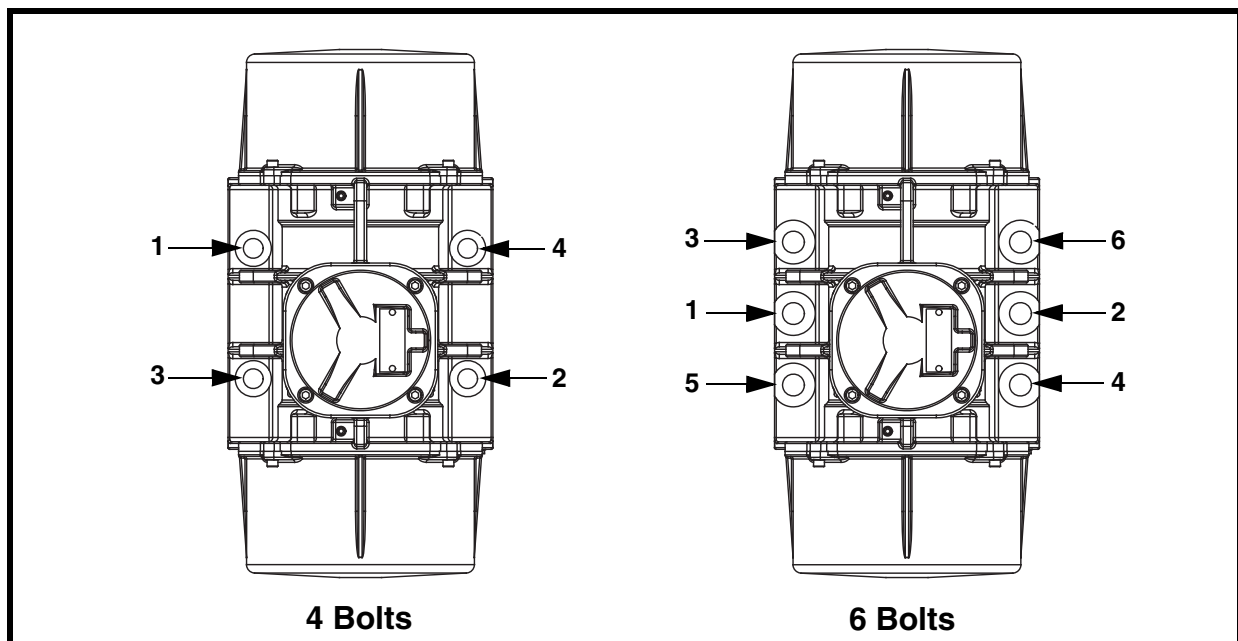


Figure 1. Mounting Bolt Tightening Sequence

3. After the vibrator has been operated for 10 to 20 minutes, check bolt torque. Tighten if necessary.

Table I. Mounting Bolts and Torque Requirements*

| Vibrator Type | Frame Size* | English | | Metric | |
|---------------|-------------|------------------|--------------------|-----------|------------------|
| | | Bolt Size (gr 5) | Dry Torque (ft-lb) | Bolt Size | Dry Torque (kgm) |
| MMX | 65 | 3/4 in. -10NC | 288 | M20 | 38 |
| | 75 | 7/8 in. -9NC | 430 | M22 | 56 |
| MIX | 65 | 5/8 in. -11NC | 137 | M16 | 19 |
| | 75 | 1 in. -8NC | 644 | M25 | 89 |
| MVX | 65, 75 | 3/4 in. -10NC | 288 | M20 | 38 |

*Torque specifications are for reference only. Contact fastener manufacturer for specific information regarding bolt torque.

Nut and cap screw torque

After removing any nuts or cap screws from vibrator assembly, re-install to the torque values specified in Table II.

Table II. Vibrator Nut and Cap Screw Torque Requirements

| Cap Screws | ft/lb (kgm) |
|------------|-------------|
| M6 | 7 (1) |
| M8 | 16.5 (2.3) |
| M10 | 35 (4.8) |
| M12 | 58 (8) |
| M14 | 94 (13) |
| M16 | 137 (19) |
| M18 | 195 (27) |
| M20 | 275 (38) |

| Terminal Block Nuts | ft/lb (kgm) |
|---------------------|-------------|
| M4 | 0.87 (0.12) |
| M5 | 1.45 (0.20) |
| M6 | 2.17 (0.30) |
| M8 | 4.70 (0.65) |
| M10 | 9.80 (1.35) |

Connecting power to vibrator

⚠ WARNING

Wire vibrator in accordance with National Electrical Code (Articles 430, 500, 501 and 502, as appropriate) and all applicable local codes. Have wiring installed by a qualified electrician only.

Wire vibrators according to wiring diagrams in Figure 3.

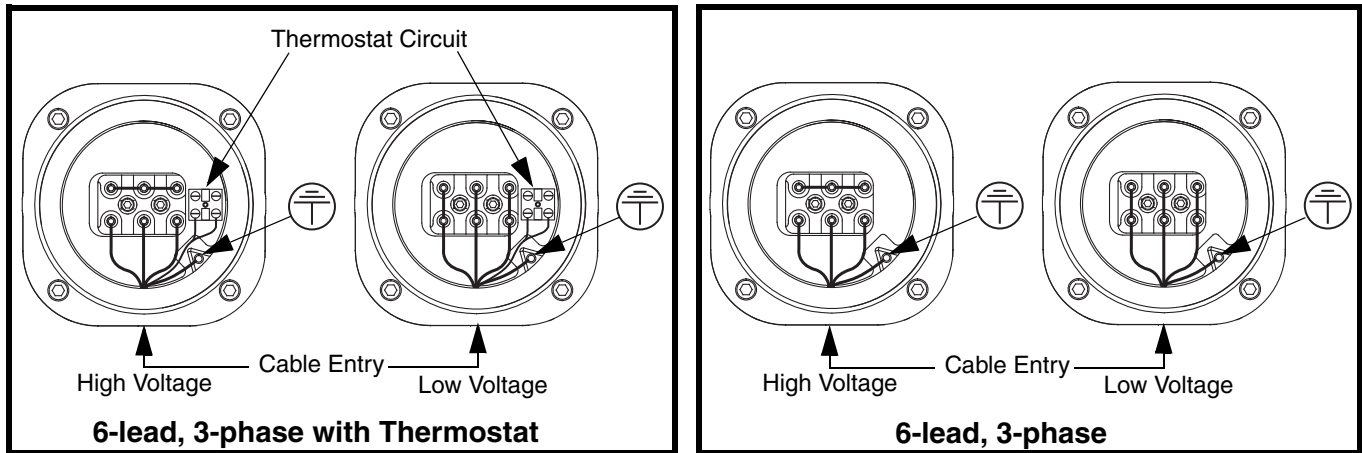


Figure 3. Wiring Diagrams

⚠ CAUTION

Before running cord to vibrator, make sure cord voltage rating equals or exceeds the voltage at which you will be operating the vibrator. It must have a minimum temperature rating of 222°F (105°C).

1. Remove wiring cover, O-ring, and rubber compression block. Install elbow or conduit fitting as appropriate. Install cord so that cord jacket extends into wiring compartment approximately 1 inch. Complete installation of wiring kit in accordance with their installation instructions.

IMPORTANT

When wiring vibrator, leave slack in electrical cable so that cable does not become taut during vibration cycle and cause stress on wire connections. On applications where moisture is present, leave enough slack in power cable to prevent moisture from running down cable into vibrator.

2. Trim conductors and strip insulation approximately 1/4 inch. Wire vibrator according to wiring diagram inside terminal box or see Figure 3. Use closed-loop wire connectors only.

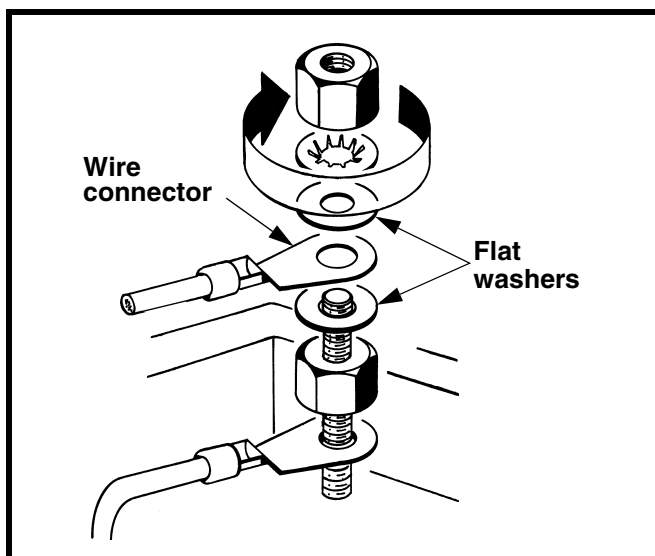


Figure 4. Installing Wire Connector

3. Install wire connector between the two flat washers. See Figure 4.

⚠ WARNING

Vibrator must be grounded using the power supply ground wire (or other if specified in the NEC). Failure to properly ground vibrator can cause severe injury or death.

4. Connect power supply ground wire (or other if specified in the NEC) to ground terminal. Use closed loop wire connector only.

⚠ WARNING

All cable entry devices and blanking elements shall be certified in type of explosion protection flame-proof enclosure ‘d’ and ‘tD’, suitable for the conditions of use and correctly installed.

Unusual apertures shall be closed with suitable blanking elements.

Thermostats

⚠ WARNING

Thermostats are intended for vibrator winding protection or to limit external vibrator surface temperatures. They do not replace overload protection.

NOTE

The thermostat terminals are identified as P1 and P2. The thermostat circuit is rated 600 Vac maximum and 720 VA. A manual momentary start switch must be used.

1. For MXX Vibrators, wire thermostats to control circuit. See Figure 5.
2. Reassemble wiring cover, o-ring, and rubber compression block, taking care not to pinch the o-ring.

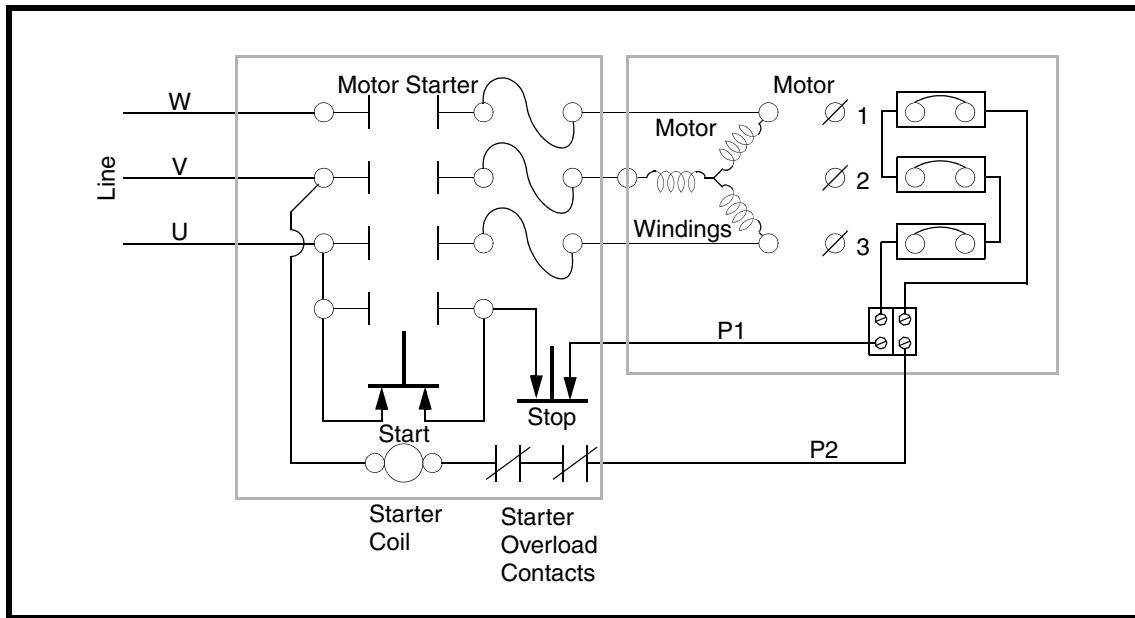


Figure 5. Manual Reset Connections

⚠ CAUTION

Install overload protection for vibrator. If vibrator is not protected from overload, vibrator can be damaged and warranty will be void. Determine size of overload protection according to NEC Article 430, and have it installed by a qualified electrician only.

Installing overload, short-circuit, and ground-fault protection

1. Determine overload, short-circuit, and ground-fault protection according to NEC Article 430.
2. Have qualified electrician install overload, short-circuit, and ground-fault protection.
3. If overload trips during operation, fix problem before resetting.

⚠ CAUTION

For vibratory equipment using two vibrators (such as feeders, screens, and bin dischargers), the two vibrators must be electrically interlocked. If using a single contactor, each vibrator must be provided with separate overload protection. The vibrator control circuit must be arranged so that if one vibrator becomes de-energized, the other vibrator will automatically and immediately become de-energized. Failure to properly interlock vibrators could result in damage to equipment if one vibrator fails.

4. If using two vibrators, interlock the two vibrators and install separate overload protection for each.

After Installing Vibrator

IMPORTANT

Read entire section before beginning work.

Checking shaft rotation

1. Remove one weight cover.

WARNING

Before checking shaft rotation, make sure area is known to be non-hazardous.

CAUTION

DO NOT run vibrator with eccentric weights removed. Running vibrator with eccentric weights removed will damage bearings.

WARNING

When checking shaft rotation with weight cover removed, keep hands away from swinging weights. Weights can crush fingers.

2. Start vibrator(s) only for a few seconds, then stop.
3. Observe direction of vibrator rotation. If vibrator is not rotating in correct direction, lock out/tag out energy source and reverse rotation. To reverse rotation of three-phase vibrator, reverse any two of the three power supply wires.
4. Replace weight cover, taking care not to pinch O-ring.

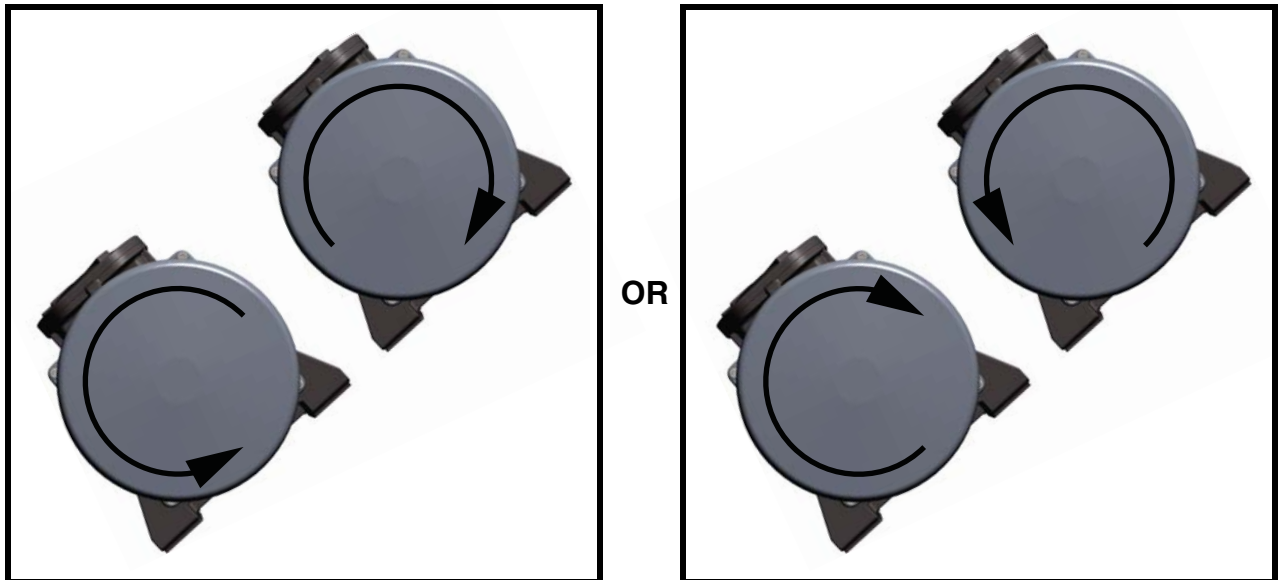
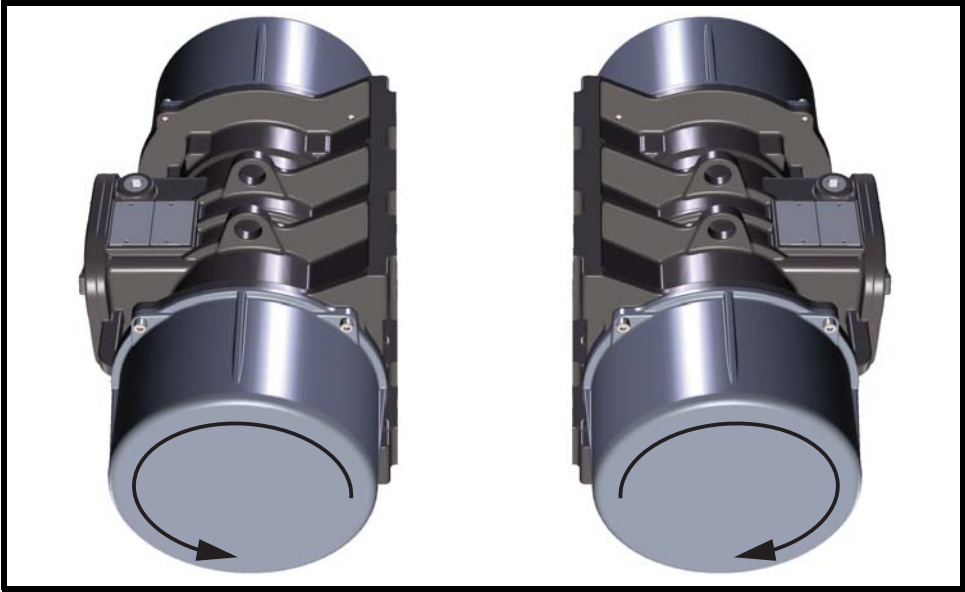


Figure 6. Top-Mounted Shaker



OR

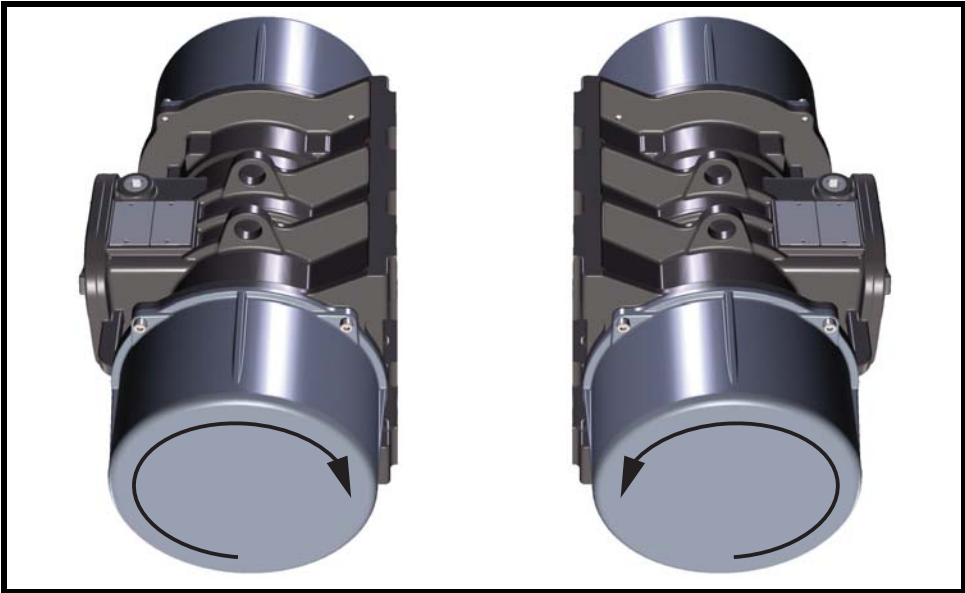


Figure 7. Side-Mounted Shaker

Adjusting eccentric weights

NOTE

All vibrators have one set of eccentric weights on each end of shaft. Eccentric weights are set at 80% at factory. The percentage increments on the weight adjustment disks are percentages of the total force pounds listed on the nameplate. For example, if the nameplate shows 8340 lb, setting the weights to 50% would produce 4170 pounds of force.

IMPORTANT

For the most efficient operation, vibrator eccentric weights should be adjusted to the lowest force setting required to move the material. This will increase vibrator life and reduce energy costs.

⚠ WARNING

Before adjusting eccentric weights, turn off and lock out/tag out energy source to vibrator.

1. Turn off and lock out/tag out energy source to vibrator according to ANSI standards (see “References”).
2. Remove weight cover.
3. Loosen nut or screw (A, Figure 8) so adjustable weight (B) will rotate around shaft (C).

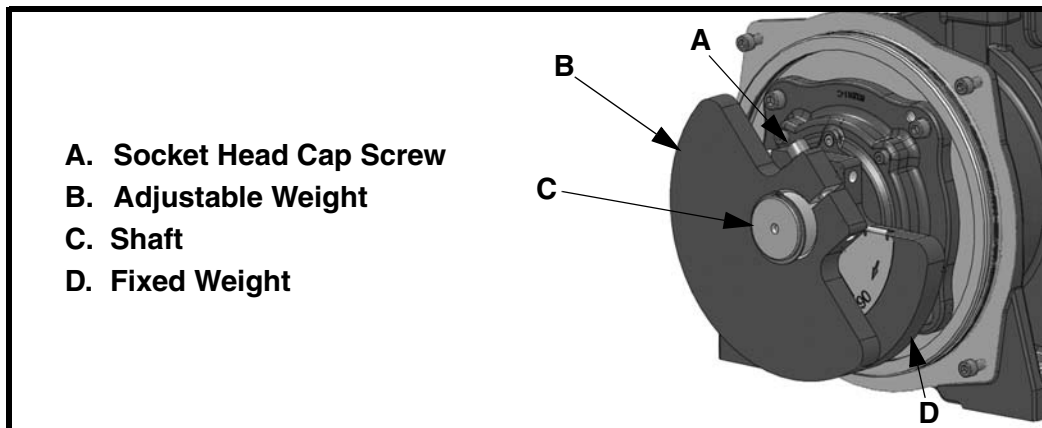


Figure 8. Adjusting Eccentric Weights

NOTE

The fixed weight is attached to the shaft. The adjustable weight rotates around the shaft.

4. See Figure 8. Rotate adjustable eccentric weight to proper setting. To produce more force, move weight to higher setting (i.e., higher number). When set, tighten cap screw or nut according to Table II.

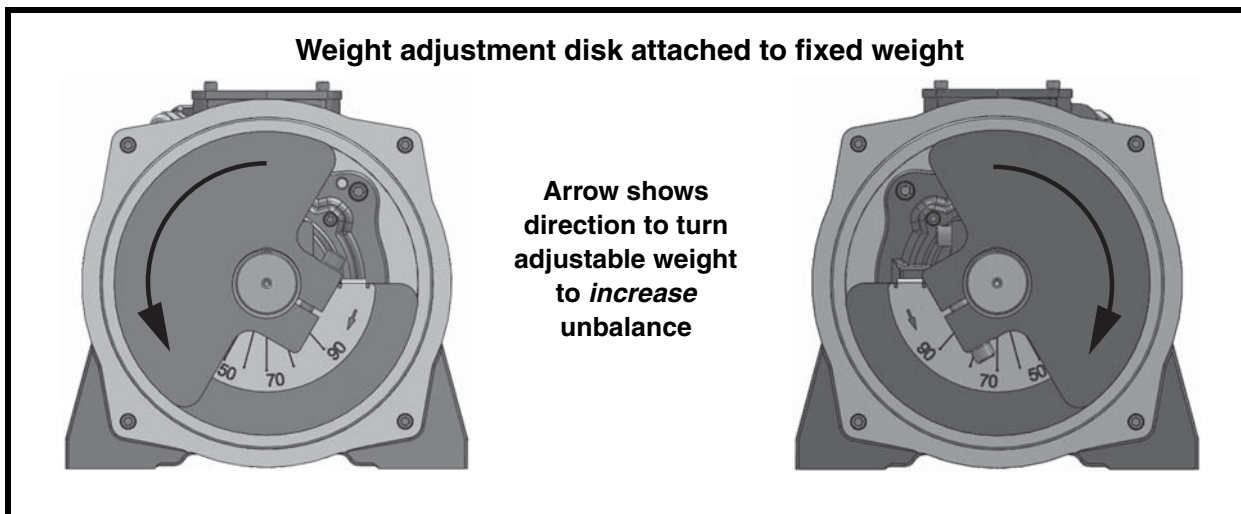


Figure 9. Adjustable Weights Set at 80% (fixed weight shaded)

5. Check O-rings for damage. Replace if damaged.

⚠ CAUTION

Do not operate vibrator with weight covers removed. Dust accumulating around vibrator shaft could cause unit to fail.

6. Replace weight covers.

⚠ CAUTION

Adjust both sets of eccentric weights to same setting number (mirror images), or force output will be uneven and damage vibrator.

7. Repeat steps 2 through 5 for second set of weights. Set both sets of weights to same setting number so they are mirror images, as shown in Figure 10.

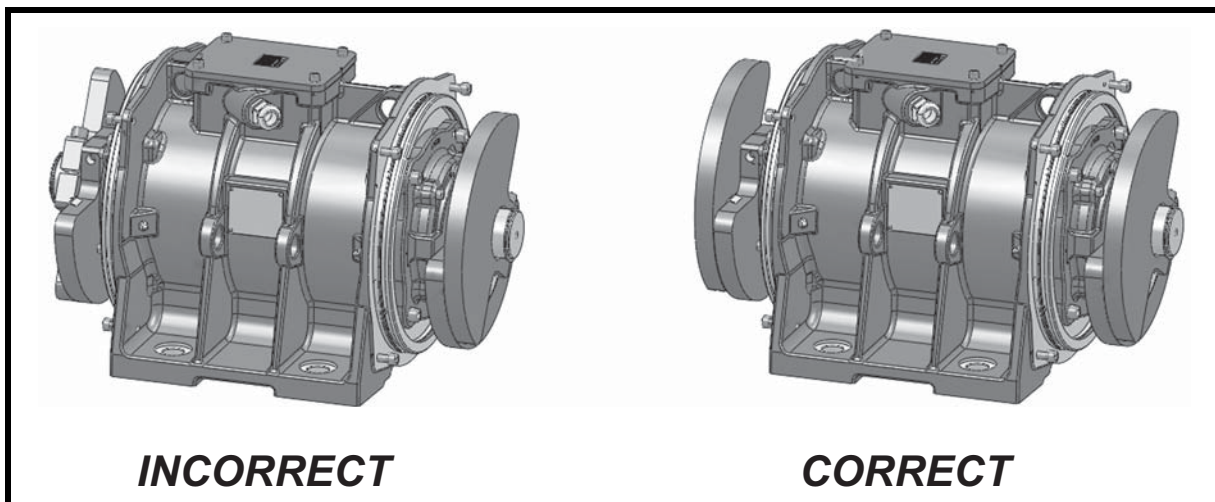


Figure 10. Setting Sets of Eccentric Weights to Mirror Images

***Initial start-up/
checking line
current***

1. Close power supply disconnect switch and allow vibrator(s) to operate.
2. If vibrator makes unusual or excessive noise, make sure mounting bolts are tight and mount welds are not damaged.

⚠ WARNING

Vibrator may produce loud noise during operation when mounted on structure. See OSHA 1910.95 for guidelines. If required, wear ear protection to avoid impairment or loss of hearing.

3. Check decibel level of vibrator noise during operation. See OSHA 1910.95 to determine whether noise exceeds safe limits. If required, wear ear protection to avoid impairment or loss of hearing.

⚠ CAUTION

If vibrator is operated continuously with line current above nameplate rating, vibrator can be damaged.

4. After a few hours of operation, check each line current. If reading is higher than nameplate rating, check for correct phase voltage ensuring that it is correct and balanced. If phase voltages are correct ($\pm 10\%$ of nameplate rating) and balanced, recheck wiring, ensure that mounting bolts are correctly installed, or contact Martin Engineering for assistance. After making adjustments, check line current again to ensure line current does not exceed nameplate rating.
5. After first 8 hours of use and periodically thereafter, check mounting bolt torque and tighten if necessary.

⚠ CAUTION

All vibrators can be supplied with a pulse-width modulated variable frequency inverter. NEVER operate the vibrator at a frequency higher than that specified on the nameplate. Damage to vibrator can result.

***Variable
frequency inverter***

Do not operate vibrator at frequency higher than specified on nameplate. Throughout frequency range, verify that each line current does not exceed current rating on nameplate. If reading is higher than nameplate, consult inverter manual. If necessary, adjust inverter. After making adjustment, check line current again to ensure line current does not exceed nameplate rating.

Lubricating vibrator

IMPORTANT

Read entire section before beginning work. Allow vibrator to cool to ambient temperature before working on it.

NOTE

All vibrators are lubricated at the factory.

CAUTION

Use only prescribed grease in vibrator. If a different grease is used, vibrator can be damaged and warranty will be void.

Use only prescribed amount of grease to lubricate vibrator. Too much grease will cause bearings to overheat and result in premature bearing failure.

1. Lubricate the vibrator with Klüber ISOFLEX TOPAS NB 52 grease from Klüber Lubrication according to Table III.

Table III. Lubrication

| Frame Size | Quantity grams per bearing | Frequency hrs. |
|------------|----------------------------|----------------|
| 65 | 30 | 2000 |
| 75 | 40 | 2000 |

CAUTION

For 3600 rpm machines operating continuously or for long periods of time, reduce lubrication time and amount as described in step 2. Failure to do so could result in premature bearing failure.

2. If vibrator housing temperatures exceed 194°F (90°C), cut lubrication time and amount in half for every 18°F (10°C) increment that meets or exceeds 194°F (90°C).

NOTE

Klüber grease may be purchased from Martin Engineering by calling 800-544-2947 or from Klüber Lubrication by calling 888-455-8237.

3. Lubricate with Klüber ISOFLEX TOPAS NB 52 grease only. Lubricate as follows:
 - a. Clean vibrator at each pipe plug in housing to remove dirt and debris. Remove pipe plug. Insert 1/8 in. NPT grease fitting. Add grease. Remove grease fittings; tightly replace pipe plugs. (Use anti-seize compound on threads.)

Repairing vibrator and replacing bearings



Repairing vibrator yourself during the warranty period may void the warranty. Contact Martin Engineering if motor needs repair.

If vibrator needs repair or if bearings need to be replaced, call your local representative or Martin Engineering at **800-544-2947** for instructions.

Inspecting vibrator

At least quarterly, inspect cable and connections as follows:



Before inspecting vibrator, turn off and lock out/tag out energy source to vibrator.

1. Turn off and lock out/tag out energy source to vibrator according to ANSI standards (see “References”).
2. Inspect cable for damage including cuts and abrasions. Replace if damaged.
3. Inspect ground connection. Make sure resistance from ground connection to vibrator enclosure does not exceed 0.1 ohm. Ensure screw on ground terminal is tightened to proper torque (see Table II).
4. Make sure all nuts on connections on terminal block are tightened to proper torque. Do not overtighten (see Table II).
5. Check mounting bolt torque (see Table I).

Part Numbers

This section provides part numbers for the MMX Series Electric Vibrators.
Please reference part numbers when ordering parts.

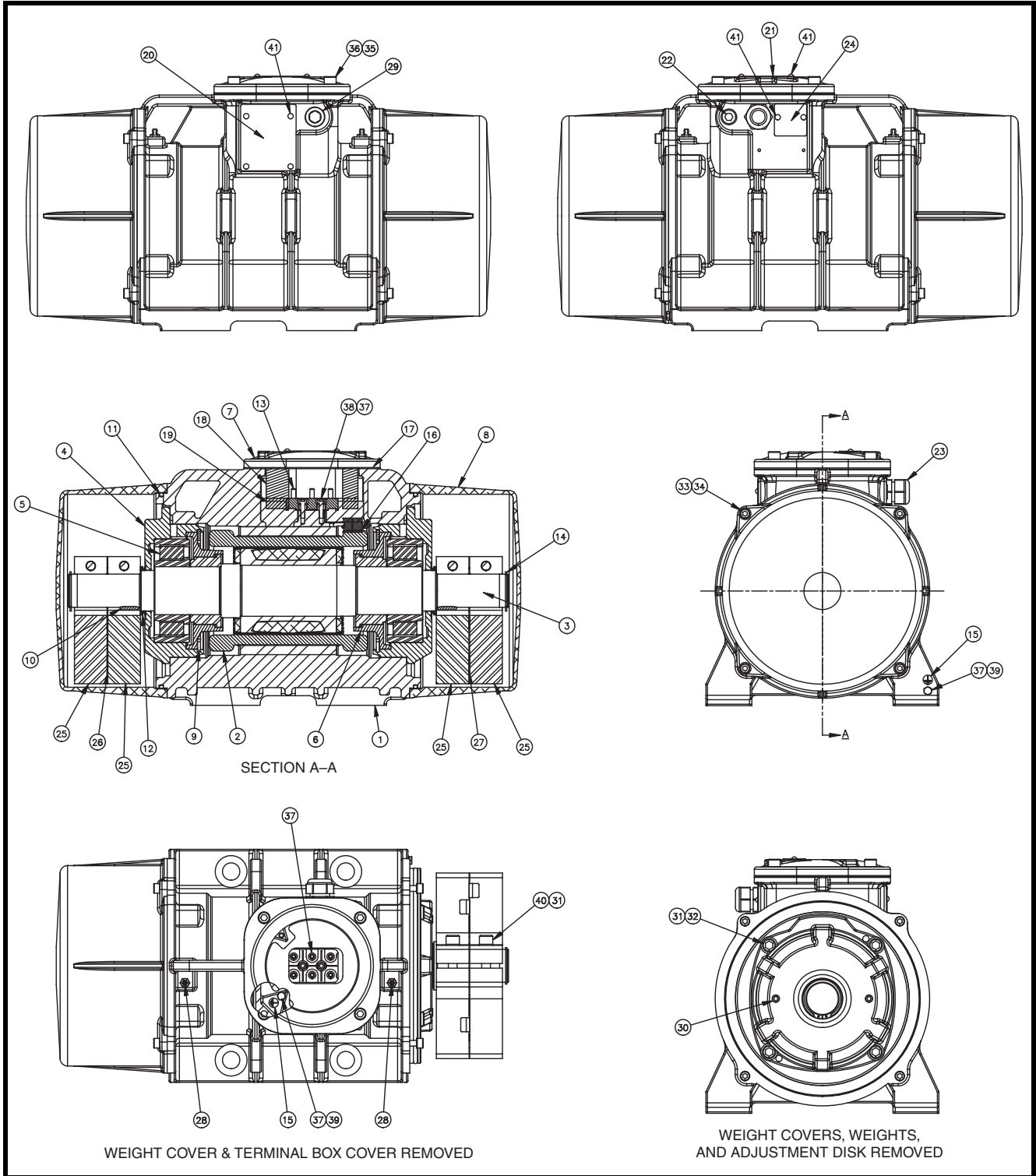


Figure 11. Martin[®] Electric Vibrator, P/N MXX70X06

| Item | Description | Part No. | Qty |
|------|---------------------------------------|------------|-----|
| 1 | Case Casting | Table IV | 1 |
| 2 | Stator | Table IV | 1 |
| 3 | Shaft Assembly | 803005 | 1 |
| 4 | Flange Bearing | 802004 | 2 |
| 5 | Bearing Cylindrical Roller NJ2313ECP | 506551 | 2 |
| 6 | Bearing Cover | 804004 | 2 |
| 7 | Terminal Box Cover | 806001 | 1 |
| 8 | Weight Cover | 805005-AL | 2 |
| 9 | Retaining Ring Internal 6.25 | 816002 | 2 |
| 10 | Key 14 x 9 x 25 mm | 809001 | 2 |
| 11 | O-ring #377 10.00 ID x .210 CS | 818003 | 2 |
| 12 | V-ring Shaft Seal 55mm | 502043 | 2 |
| 13 | Terminal Block | 812001 | 1 |
| 14 | Snap Ring External A45 | 500063 | 2 |
| 15 | Sticker Ground Symbol | 821001 | 2 |
| 16 | Cable Protection Sheath | 814001 | 1 |
| 17 | O-ring #259 6.25 ID x .139 CS | 818002 | 1 |
| 18 | Rubber Block | 813001 | 1 |
| 19 | Rubber Block Small | 813002 | 1 |
| 20 | Nameplate | 820001 | 1 |
| 21 | Nameplate Caution Disconnect | 518147 | 1 |
| 22 | Plug 1/2 NPT Internal Hex | 39268 | 1 |
| 23 | Nylon Cord Grip 3/4 NPT Range .51/.71 | 823001 | 1 |
| 24 | Nameplate SS Warning Conduit Seal | 820008 | 1 |
| 25 | Weight Eccentric Fixed | 807004-50F | 4 |
| 26 | Weight Adjustment Disk | 808001-B | 1 |
| 27 | Weight Adjustment Disk | 808001-A | 1 |
| 28 | Fitting Grease 1/8 NPT ZP | 11814 | 2 |
| 29 | Plug Hex Socket 3/4 NPT SS Dryseal | 514520 | 1 |
| 30 | Plug M10 x 10 mm Socket Head | 509008 | 4 |
| 31 | Washer Schnorr D12 VS Series ZPY | 513006 | 12 |
| 32 | Screw SHC M12 x 1.75 x 30 CL 12.9 BO | 822002 | 8 |
| 33 | Washer Schnorr D8 VS Series ZPY | 513004 | 8 |
| 34 | Screw SHC M8 x 1.25 x 20 CL 12.9 BO | 515507 | 8 |
| 35 | Washer Schnorr D10 VS Series ZPY | 513005 | 4 |
| 36 | Screw SHC M10 x 1.5 x 25 CL 12.9 ZP | 515513 | 4 |

| Item | Description | Part No. | Qty |
|-------------|--------------------------------------|-----------------|------------|
| 37 | Washer Schnorr D6 VS Series ZPY | 513003 | 10 |
| 38 | Screw SHC M6 x 1.0 x 20 CL 12.9 BO | 515504 | 2 |
| 39 | Screw HHC M6 x 1.0 x 12 ZP Green | 516555 | 2 |
| 40 | Screw SHC M12 x 1.75 x 55 CL 12.9 BO | 515588 | 4 |
| 41 | Screw Drive No. 7 x 3/16 LG ZP | 32873 | 8 |
| 42 | Wiring Diagram | 518372 | 1 |
| 43 | Operator's Manual | M3882 | 1 |

Table IV. Martin® Electric Vibrator MXX70X06 Part Numbers

| Part Number | P/N Item 1 |
|--------------------|-----------------------|
| MIX70X06 | 801004-MI |
| MMX70X06 | 801004-MM |
| MVX70X06 | 801004-MV |

| Part Number | P/N Item 2 |
|--------------------|-----------------------|
| MXX70C06 | 810004-06 |
| MXX70F06 | 810004-06F |

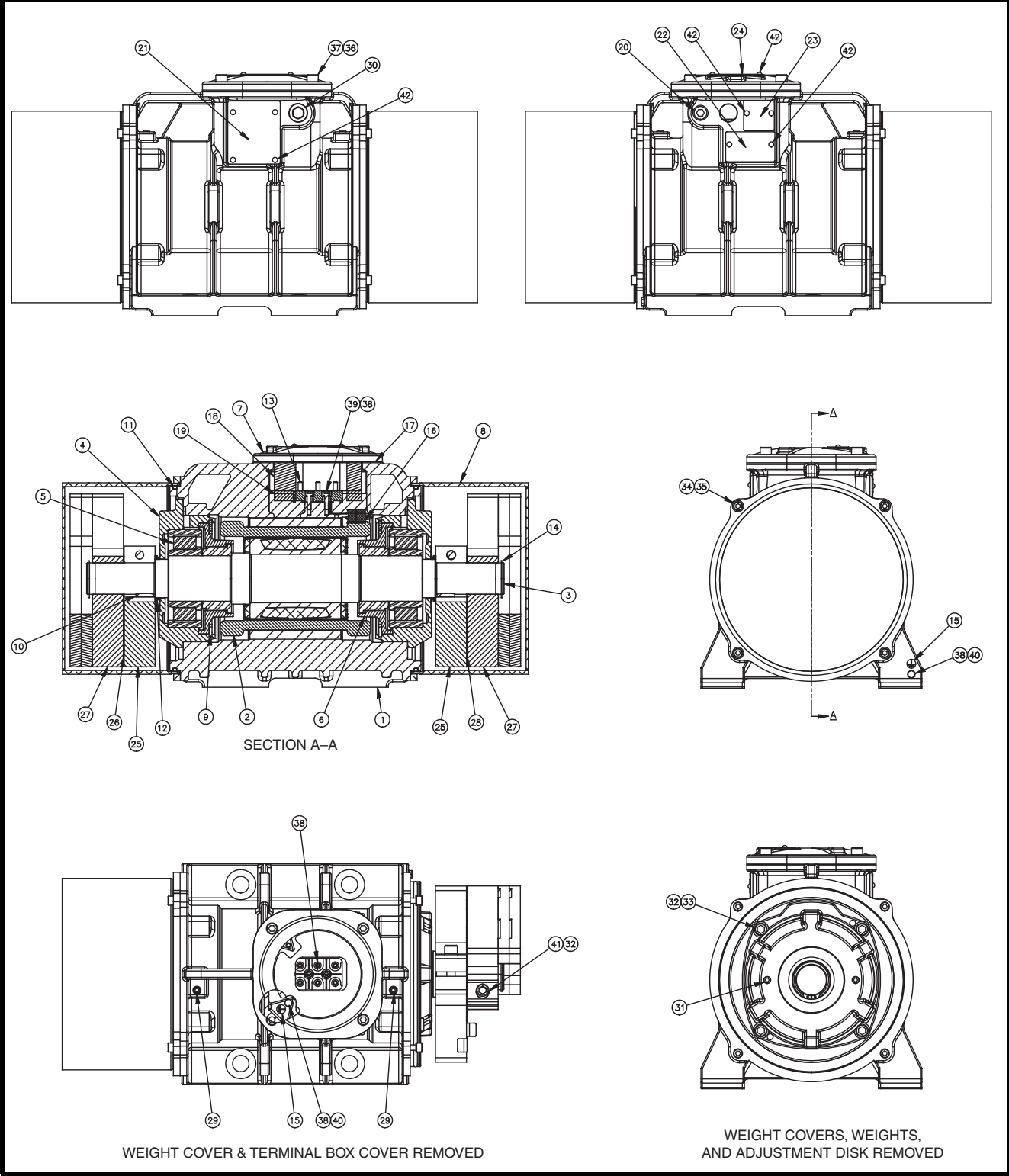


Figure 12. Martin® Electric Vibrator, P/N MXX75X06

Part Numbers

| Item | Description | Part No. | Qty |
|------|--------------------------------------|------------|-----|
| 1 | Case Casting | Table V | 1 |
| 2 | Stator | Table V | 1 |
| 3 | Shaft Assembly | 803005 | 1 |
| 4 | Flange Bearing | 802004 | 2 |
| 5 | Bearing Cylindrical Roller NJ2313ECP | 506551 | 2 |
| 6 | Bearing Cover | 804004 | 2 |
| 7 | Terminal Box Cover | 806001 | 1 |
| 8 | Weight Cover | SP12675-WC | 2 |
| 9 | Retaining Ring Internal 6.25 | 816002 | 2 |
| 10 | Key 14 x 9 x 25 mm | 809001 | 2 |
| 11 | O-ring #377 10.00 ID x .210 CS | 818003 | 2 |
| 12 | V-ring Shaft Seal 55mm | 502043 | 2 |
| 13 | Terminal Block | 812001 | 1 |
| 14 | Snap Ring External A45 | 500063 | 2 |
| 15 | Sticker Ground Symbol | 821001 | 2 |
| 16 | Cable Protection Sheath | 814001 | 1 |
| 17 | O-ring #259 6.25 ID x .139 CS | 818002 | 1 |
| 18 | Rubber Block | 813001 | 1 |
| 19 | Rubber Block Small | 813002 | 1 |
| 20 | Plug 1/2 NPT Internal Hex | 39268 | 1 |
| 21 | Nameplate | 820001 | 1 |
| 22 | Nameplate ETL Class I | 820002 | 1 |
| 23 | Nameplate SS Warning Conduit Seal | 820008 | 1 |
| 24 | Nameplate Caution Disconnect | 518147 | 1 |
| 25 | Weight Eccentric Fixed | 807004-50F | 2 |
| 26 | Weight Adjustment Disk | 808004-06B | 1 |
| 27 | Weight Adjustment Weldment | SP12675-AW | 2 |
| 28 | Weight Adjustment Disk | 808004-06A | 1 |
| 29 | Plug 1/8-27NPTF Dryseal | 509059 | 2 |
| 30 | Plug Hex Socket 3/4 NPT SS Dryseal | 514520 | 1 |
| 31 | Plug M10 x 10 mm Socket Head | 509008 | 4 |
| 32 | Washer Schnorr D12 VS Series ZPY | 513006 | 12 |
| 33 | Screw SHC M12 x 1.75 x 30 CL 12.9 BO | 822002 | 8 |
| 34 | Washer Schnorr D8 VS Series ZPY | 513004 | 8 |
| 35 | Screw SHC M8 x 1.25 x 20 CL 12.9 BO | 515507 | 8 |
| 36 | Washer Schnorr D10 VS Series ZPY | 513005 | 4 |

| Item | Description | Part No. | Qty |
|-------------|--------------------------------------|-----------------|------------|
| 37 | Screw SHC M10 x 1.5 x 25 CL 12.9 ZP | 515513 | 4 |
| 38 | Washer Schnorr D6 VS Series ZPY | 513003 | 10 |
| 39 | Screw SHC M6 x 1.0 x 20 CL 12.9 BO | 515504 | 2 |
| 40 | Screw HHC M6 x 1.0 x 12 ZP Green | 516555 | 2 |
| 41 | Screw SHC M12 x 1.75 x 55 CL 12.9 BO | 515588 | 4 |
| 42 | Screw Drive No. 7 x 3/16 LG ZP | 32873 | 10 |
| 43 | Wiring Diagram | 518372 | 1 |
| 44 | Operator's Manual | M3882 | 1 |

Table V. Martin® Electric Vibrator MXX75X06 Part Numbers

| Part Number | P/N Item 1 |
|--------------------|-----------------------|
| MIX75X06 | 801004-MI |
| MMX75X06 | 801004-MM |
| MVX75X06 | 801004-MV |

| Part Number | P/N Item 2 |
|--------------------|-----------------------|
| MXX75C06 | 810004-06 |
| MXX75F06 | 810004-06F |

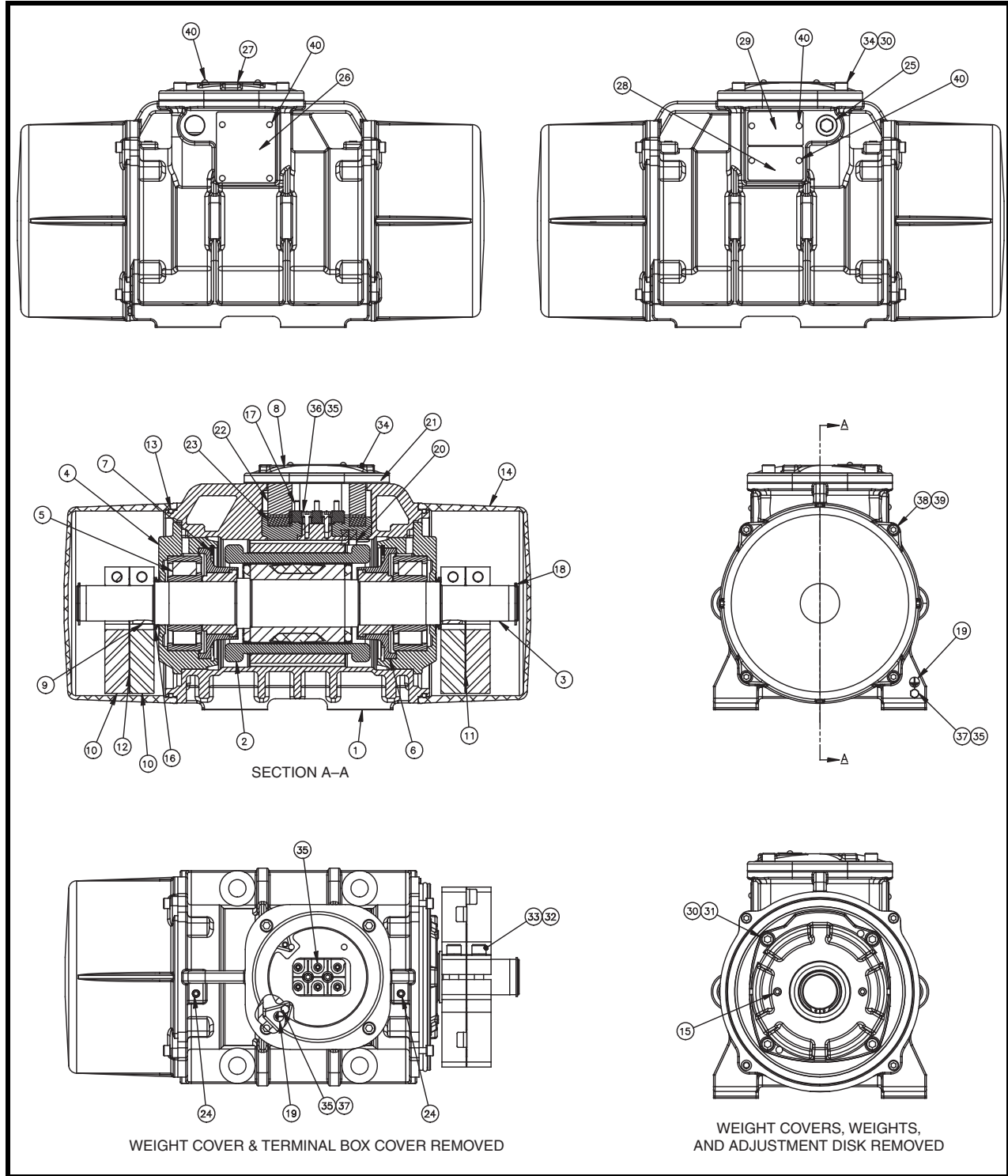


Figure 13. Martin® Electric Vibrator, P/N MXX165X04

| Item | Description | Part No. | Qty |
|------|---------------------------------------|-----------|-----|
| 1 | Case Casting | Table VI | 1 |
| 2 | Stator | Table VI | 1 |
| 3 | Shaft Assembly with Rotor and Bushing | 803001 | 1 |
| 4 | Flange Bearing | 802001 | 2 |
| 5 | Bearing Cylindrical Roller NJ2311ECP | 506536 | 2 |
| 6 | Bearing Cover | 804001 | 2 |
| 7 | Retaining Ring Internal 5.50 Flange | 816001 | 2 |
| 8 | Terminal Box Cover | 806001 | 1 |
| 9 | Key 14 x 9 x 25 mm | 809001 | 2 |
| 10 | Weight Eccentric Fixed | Table VI | 4 |
| 11 | Weight Adjustment Disk | 808001-A | 1 |
| 12 | Weight Adjustment Disk | 808001-B | 1 |
| 13 | O-ring #373 9.00 I.D. x .210 CS | 818001 | 2 |
| 14 | Weight Cover | 805001-AL | 2 |
| 15 | Plug M10 x 10mm Socket Head | 509008 | 4 |
| 16 | V-ring shaft seal 55mm | 502043 | 2 |
| 17 | Terminal Block | 812001 | 1 |
| 18 | Snap Ring External A45 | 500063 | 2 |
| 19 | Sticker Ground Symbol | 821001 | 2 |
| 20 | Cable Protection Sheath | 814001 | 1 |
| 21 | O-ring #259 6.25 I.D. x .139 CS | 818002 | 1 |
| 22 | Neoprene Foam Block | 813001 | 1 |
| 23 | Neoprene Foam Block Small | 813002 | 1 |
| 24 | Plug 1/8-27NPTF Dryseal | 509059 | 2 |
| 25 | Plug Hex Socket 3/4-NPT SS Dryseal | 514520 | 1 |
| 26 | Nameplate | 820001 | 1 |
| 27 | Nameplate Caution Disconnect | 518147 | 1 |
| 28 | Nameplate SS Warning Conduit Seal | 518334 | 1 |
| 29 | Nameplate ETL Class 1 | 820002 | 1 |
| 30 | Washer Schnorr D10 VS Series ZPY | 513005 | 12 |
| 31 | Screw SHC M10 x 1.50 x 30 CL 12.9 DC | 515538 | 8 |
| 32 | Washer Schnorr D12 VS Series ZPY | 513006 | 4 |
| 33 | Screw SHC M12 x 1.75 x 55 CL 12.9 BO | 515588 | 4 |
| 34 | Screw SHC M10 x 1.5 x 25 CL 12.9 ZP | 515513 | 4 |
| 35 | Washer Schnorr D6 VS Series ZPY | 513003 | 10 |
| 36 | Screw SHC M6 x 1.0 x 20 CL 12.9 BO | 515504 | 2 |

| Item | Description | Part No. | Qty |
|------|-------------------------------------|----------|-----|
| 37 | Screw HHC M6 x 1.0 x 12 ZP Green | 516555 | 2 |
| 38 | Washer Schnorr D8 VS Series ZPY | 513004 | 8 |
| 39 | Screw SHC M8 x 1.25 x 20 CL 12.9 ZP | 515507 | 8 |
| 40 | Screw Drive No. 7 x 3/16 LG ZP | 32873 | 10 |
| 41 | Wiring Diagram | 518372 | 1 |
| 42 | Operator's Manual | M3882 | 1 |

Table VI. Martin® Electric Vibrator MXX165X04 Part Numbers

| Part Number | P/N Item 1 |
|-------------|------------|
| MILX165A04 | 801001-MIL |
| MIX165C04 | 801001-MI |
| MMX165F04 | 801001-MM |
| MVX165X04 | 801001-MV |

| Part Number | P/N Item 2 | P/N Item 10 |
|-------------|------------|-------------|
| MMX165A04 | 810002-04 | 807001-50F |
| MMX165C04 | 810002-04 | 807001-60F |
| MMX165F04 | 810002-04F | 807001-60F |

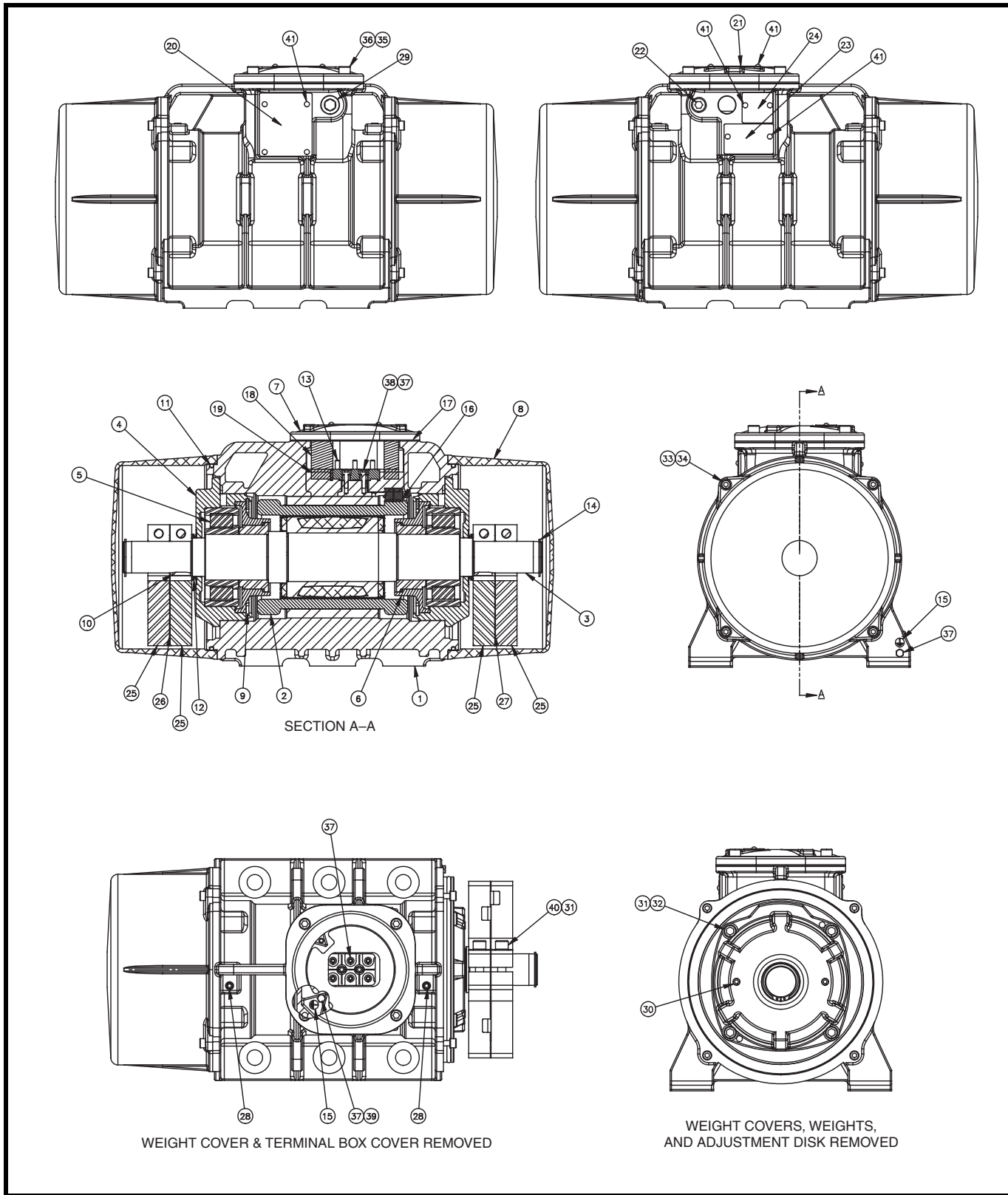


Figure 14. Martin® Electric Vibrator, P/N MXX175X04

Part Numbers

| Item | Description | Part No. | Qty |
|------|----------------------------------------|-----------|-----|
| 1 | Case Casting | Table VII | 1 |
| 2 | Stator 4 Pole | Table VII | 1 |
| 3 | Shaft Assembly | 803005 | 1 |
| 4 | Flange Bearing | 802004 | 2 |
| 5 | Bearing Cylindrical Roller NJ2313ECP | 506551 | 2 |
| 6 | Bearing Cover | 804004 | 2 |
| 7 | Terminal Box Cover | 806001 | 1 |
| 8 | Weight Cover Aluminum | 805005-AL | 2 |
| 9 | Retaining Ring Internal 6.25 | 816002 | 2 |
| 10 | Key 14 x 9 x 25 mm | 809001 | 2 |
| 11 | O-ring #377 10.00 I.D. x .210 CS | 818003 | 2 |
| 12 | V-ring shaft seal 55mm | 502043 | 2 |
| 13 | Terminal Block | 812001 | 1 |
| 14 | Snap Ring External A45 | 500063 | 2 |
| 15 | Sticker Ground Symbol | 821001 | 2 |
| 16 | Cable Protection Sheath | 814001 | 1 |
| 17 | O-ring #259 6.25 I.D. x .139 CS | 818002 | 1 |
| 18 | Neoprene Foam Block | 813001 | 1 |
| 19 | Neoprene Foam Block Small | 813002 | 1 |
| 20 | Nameplate | 820001 | 1 |
| 21 | Nameplate Caution Disconnect | 518147 | 1 |
| 22 | Plug 1/2 NPT Internal Hex Plain Finish | 39268 | 1 |
| 23 | Nameplate ETL Class 1 | 820002 | 1 |
| 24 | Nameplate SS Warning Conduit Seal | 820008 | 1 |
| 25 | Weight Eccentric Fixed | Table VII | 4 |
| 26 | Weight Adjustment Disk | 808001-B | 1 |
| 27 | Weight Adjustment Disk | 808001-A | 1 |
| 28 | Plug 1/8-27NPTF Dryseal | 509059 | 2 |
| 29 | Plug Hex Socket 3/4-NPT SS Dryseal | 514520 | 1 |
| 30 | Plug M10 x 10mm Socket Head | 509008 | 4 |
| 31 | Washer Schnorr D12 VS Series ZPY | 513006 | 12 |
| 32 | Screw SHC M12 x 1.75 x 30 CL 12.9 BO | 822002 | 8 |
| 33 | Washer Schnorr D8 VS Series ZPY | 513004 | 8 |
| 34 | Screw SHC M8 x 1.25 x 20 CL 12.9 ZP | 515507 | 8 |
| 35 | Washer Schnorr D10 VS Series ZPY | 513005 | 4 |
| 36 | Screw SHC M10 x 1.5 x 25 CL 12.9 ZP | 515513 | 4 |

| Item | Description | Part No. | Qty |
|-------------|--------------------------------------|-----------------|------------|
| 37 | Washer Schnorr D6 VS Series ZPY | 513003 | 10 |
| 38 | Screw SHC M6 x 1.0 x 20 CL 12.9 BO | 515504 | 2 |
| 39 | Screw HHC M6 x 1.0 x 12 ZP Green | 516555 | 2 |
| 40 | Screw SHC M12 x 1.75 x 55 CL 12.9 BO | 515588 | 4 |
| 41 | Screw Drive No. 7 x 3/16 LG ZP | 32873 | 10 |
| 42 | Wiring Diagram | 518372 | 1 |
| 43 | Operator's Manual | M3882 | 1 |

Table VII. Martin® Electric Vibrator MXX175X04 Part Numbers

| Part Number | P/N Item 1 |
|--------------------|-------------------|
| MIX175X04 | 801004-MI |
| MMX175X04 | 801004-MM |
| MVX175X04 | 801004-MV |

| Part Number | P/N Item 2 | P/N Item 25 |
|--------------------|-------------------|--------------------|
| MVX175A04 | 810004-04 | 807004-50F |
| MVX175C04 | 810004-04 | 807004-60F |
| MVX175F04 | 810004-04F | 807004-60F |
| MVX175Q04 | 810004-04Q | 807004-50F |

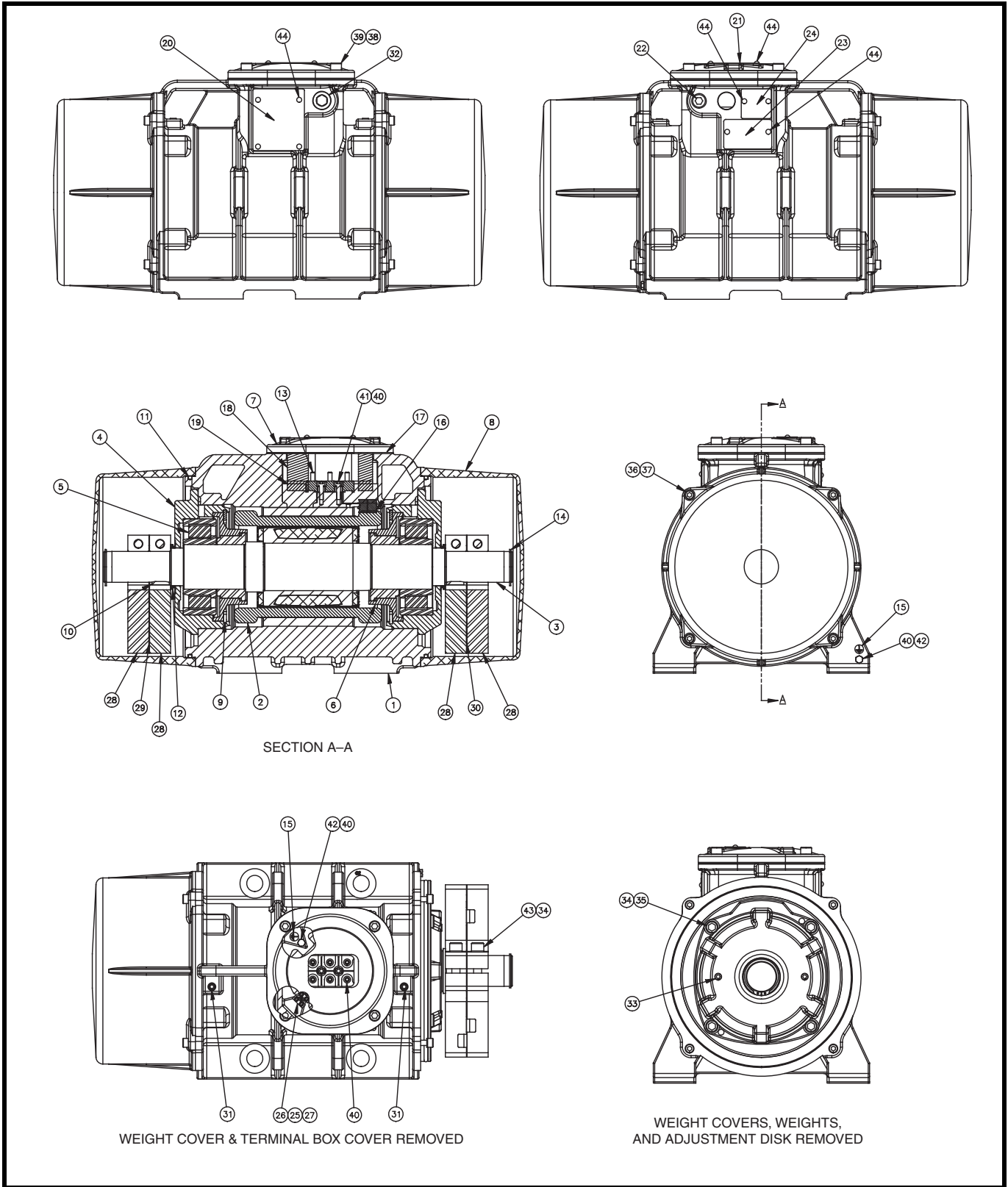


Figure 15. Martin® Electric Vibrator, P/N MXX175X04-T4

| Item | Description | Part No. | Qty |
|------|----------------------------------------------|------------|-----|
| 1 | Case Casting | 801004-MX | 1 |
| 2 | Stator with Thermostat 4 Pole | Table VIII | 1 |
| 3 | Shaft Assembly | 803005 | 1 |
| 4 | Flange Bearing | 802004 | 2 |
| 5 | Bearing Cylindrical Roller NJ2313ECP | 506551 | 2 |
| 6 | Bearing Cover | 804004 | 2 |
| 7 | Terminal Box Cover | 806001 | 1 |
| 8 | Weight Cover Aluminum | 805005-AL | 2 |
| 9 | Retaining Ring Internal 6.25 | 816002 | 2 |
| 10 | Key 14 x 9 x 25 mm | 809001 | 2 |
| 11 | O-ring #377 10.00 I.D. x .210 CS | 818003 | 2 |
| 12 | V-ring shaft seal 55mm | 502043 | 2 |
| 13 | Terminal Block | 812001 | 1 |
| 14 | Snap Ring External A45 | 500063 | 2 |
| 15 | Sticker Ground Symbol | 821001 | 2 |
| 16 | Cable Protection Sheath | 814001 | 1 |
| 17 | O-ring #259 6.25 I.D. x .139 CS | 818002 | 1 |
| 18 | Neoprene Foam Block | 813001 | 1 |
| 19 | Neoprene Foam Block Small | 813002 | 1 |
| 20 | Nameplate | 820001 | 1 |
| 21 | Nameplate Caution Disconnect | 518147 | 1 |
| 22 | Plug 1/2 NPT Internal Hex Plain Finish | 39268 | 1 |
| 23 | Nameplate ETL for MXX Class 1 T4 Vibrator | 820009 | 1 |
| 24 | Nameplate SS Warning Conduit Seal | 820008 | 1 |
| 25 | Adapter Thread Locking Slotted Insert | 509056 | 1 |
| 26 | Terminal Block 2 Position | 510510 | 1 |
| 27 | Screw Slotted PHMS M3.5 x 0.6 x 15 CL 4.8 ZP | 515609 | 1 |
| 28 | Weight Eccentric Fixed | Table VIII | 4 |
| 29 | Weight Adjustment Disk | 808001-B | 1 |
| 30 | Weight Adjustment Disk | 808001-A | 1 |
| 31 | Plug 1/8-27NPTF Dryseal | 509059 | 2 |
| 32 | Plug Hex Socket 3/4-NPT SS Dryseal | 514520 | 1 |
| 33 | Plug M10 x 10mm Socket Head | 509008 | 4 |
| 34 | Washer Schnorr D12 VS Series ZPY | 513006 | 12 |
| 35 | Screw SHC M12 x 1.75 x 30 CL 12.9 BO | 822002 | 8 |
| 36 | Washer Schnorr D8 VS Series ZPY | 513004 | 8 |

| Item | Description | Part No. | Qty |
|-------------|--------------------------------------|-----------------|------------|
| 37 | Screw SHC M8 x 1.25 x 20 CL 12.9 ZP | 515507 | 8 |
| 38 | Washer Schnorr D10 VS Series ZPY | 513005 | 4 |
| 39 | Screw SHC M10 x 1.5 x 25 CL 12.9 ZP | 515513 | 4 |
| 40 | Washer Schnorr D6 VS Series ZPY | 513003 | 10 |
| 41 | Screw SHC M6 x 1.0 x 20 CL 12.9 BO | 515504 | 2 |
| 42 | Screw HHC M6 x 1.0 x 12 ZP Green | 516555 | 2 |
| 43 | Screw SHC M12 x 1.75 x 55 CL 12.9 BO | 515588 | 4 |
| 44 | Screw Drive No. 7 x 3/16 LG ZP | 32873 | 10 |
| 45 | Wiring Diagram | 518372 | 1 |
| 46 | Operator's Manual | M3882 | 1 |

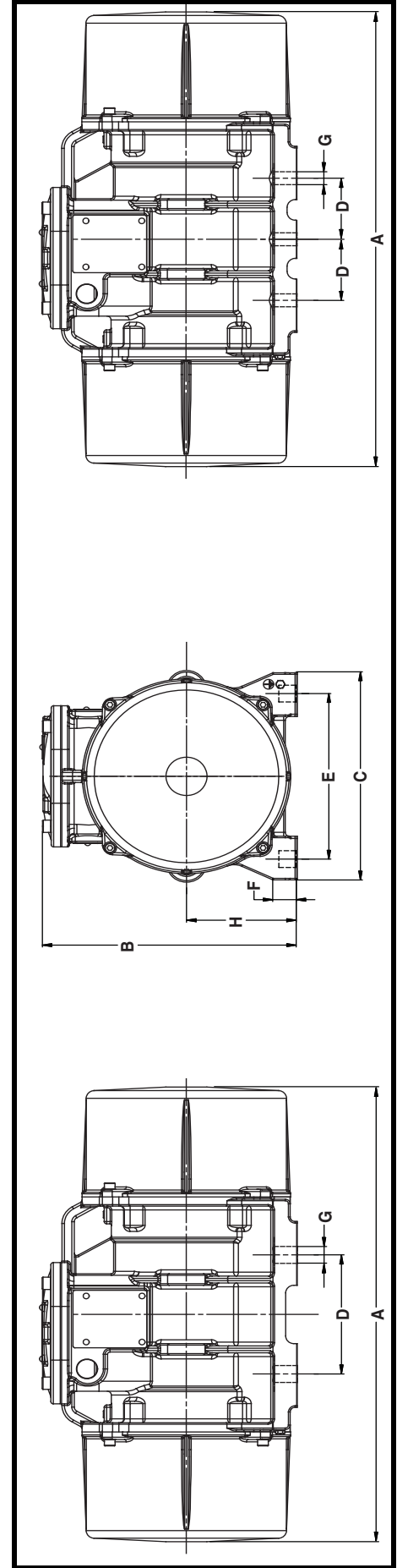
Table VIII. Martin® Electric Vibrator MXX175X04-T4 Part Numbers

| Part Number | P/N Item 2 | P/N Item 28 |
|--------------------|-----------------------|------------------------|
| MXX175A04-T4 | 801004--04-T | 807004-50F |
| MXX175C04-T4 | 801004-04-T | 807004-60F |
| MXX175F04-T4 | 801004-04F-T | 807004-60F |
| MXX175Q04-T4 | 801004-04Q-T | 807004-50F |

Appendix
Martin® Electric Vibrator Dimensions

Martin® Electric Vibrator Dimensions (in. [mm])

| P/N | A | B | C | D | E | F | Foot Holes | | H |
|------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|-----|------------|
| | | | | | | | ØG | No. | |
| MMX70X06 | 24.72 (628) | 13.50 (343) | 12.40 (315) | 6.10 (155) | 10.04 (255) | 1.14 (29) | .93 (23.50) | 4 | 6.10 (155) |
| MIX70X06 | 24.72 (628) | 13.50 (343) | 12.40 (315) | 3.35 (85) | 10.63 (270) | 1.14 (29) | 1.02 (26) | 6 | 6.10 (155) |
| MXV70X06 | 24.72 (628) | 13.50 (343) | 12.40 (315) | 4.13 (105) | 9.76 (248) | 1.14 (29) | .87 (22) | 6 | 6.10 (155) |
| MMX75X06 | 26.14 (664) | 13.50 (343) | 12.40 (315) | 6.10 (155) | 10.04 (255) | 1.14 (29) | .93 (23.50) | 4 | 6.10 (155) |
| MIX75X06 | 26.14 (664) | 13.50 (343) | 12.40 (315) | 3.35 (85) | 10.63 (270) | 1.14 (29) | 1.02 (26) | 6 | 6.10 (155) |
| MXV75X06 | 26.14 (664) | 13.50 (343) | 12.40 (315) | 4.13 (105) | 9.76 (248) | 1.14 (29) | .87 (22) | 6 | 6.10 (155) |
| MMX165X04 | 23.31 (592) | 12.20 (310) | 10.63 (270) | 6.10 (155) | 8.86 (225) | 1.17 (29.6) | .87 (22) | 4 | 5.31 (135) |
| MIX165X04 | 23.31 (592) | 12.20 (310) | 10.63 (270) | 3.15 (80) | 8.27 (210) | 1.17 (29.6) | .67 (17) | 6 | 5.31 (135) |
| MILX165X04 | 23.31 (592) | 12.20 (310) | 10.63 (270) | 3.15 (80) | 8.27 (210) | 1.17 (29.6) | .78 (19.80) | 6 | 5.31 (135) |
| MXV165X04 | 23.31 (592) | 12.20 (310) | 10.63 (270) | 3.27 (83) | 9.02 (229) | 1.17 (29.6) | .87 (22) | 6 | 5.31 (135) |
| MMX175X04 | 24.72 (628) | 13.50 (343) | 12.40 (315) | 6.10 (155) | 10.04 (255) | 1.14 (29) | .93 (23.50) | 4 | 6.10 (155) |
| MIX175X04 | 24.72 (628) | 13.50 (343) | 12.40 (315) | 3.35 (85) | 10.63 (270) | 1.14 (29) | 1.02 (26) | 6 | 6.10 (155) |
| MXV175X04 | 24.72 (628) | 13.50 (343) | 12.40 (315) | 4.13 (105) | 9.76 (248) | 1.14 (29) | .87 (22) | 6 | 6.10 (155) |
| MMX175X04 | 24.72 (628) | 13.50 (343) | 12.40 (315) | 6.10 (155) | 10.04 (255) | 1.14 (29) | .93 (23.50) | 4 | 6.10 (155) |
| MIX175X04 | 24.72 (628) | 13.50 (343) | 12.40 (315) | 3.35 (85) | 10.63 (270) | 1.14 (29) | 1.02 (26) | 6 | 6.10 (155) |
| MXV175X04 | 24.72 (628) | 13.50 (343) | 12.40 (315) | 4.13 (105) | 9.76 (248) | 1.14 (29) | .87 (22) | 6 | 6.10 (155) |



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