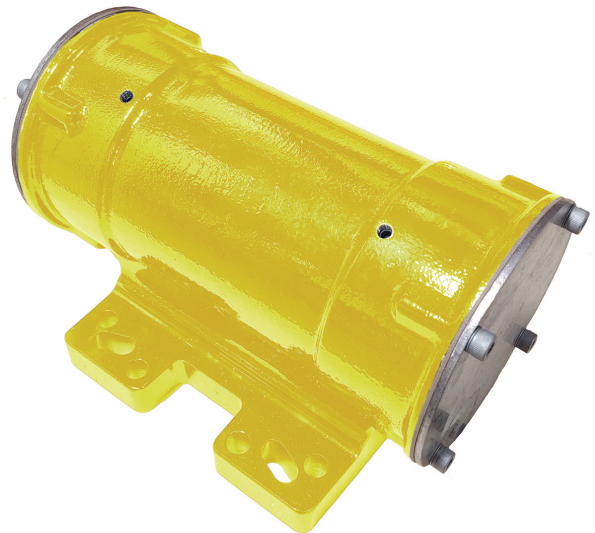
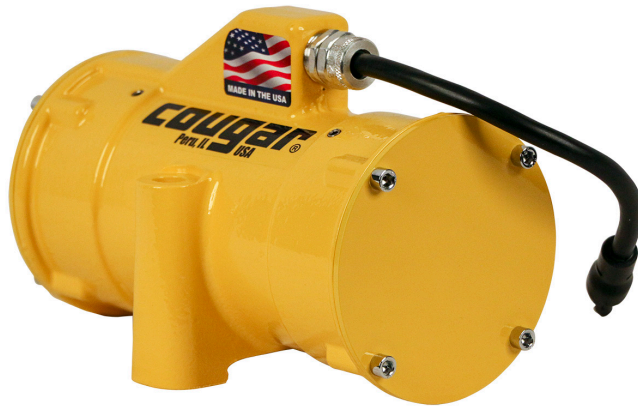


martin®

Cougar®
MDC Vibrators



Operator's Manual
M4146

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

Cougar[®] MDC Truck Vibrators are equipped with motor-driven rotary eccentric weights that are powered by a DC electric motor and deliver rotary vibration. The motor is attached to the head or case assembly containing the eccentric weights and bearings.

Cougar[®] MDC Truck Vibrators are available in 12V and 24V sizes and are available with permanent mounts.

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.
- Federal Register, Volume 54, Number 169, Part IV, 29 CFR Part 1910, *Control of Hazardous Energy Source (Lockout/Tagout); Final Rule*, Department of Labor, Occupational Safety Health Administration (OSHA), 32nd Floor, Room 3244, 230 South Dearborn Street, Chicago, IL 60604.

Safety

All safety rules in the above documents and all owner/employer safety rules must be strictly followed when working with this unit.



Truck must be secured so that it can not be operated during vibrator installation. Failure to do so may result in injury or death.

Materials required

Only standard hand tools are required to install and maintain this equipment.

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. Report damage to delivery service immediately and fill out delivery service's claim form. Keep any damaged goods subject to examination.
2. Remove vibrator from shipping container.
3. If anything is missing or damaged, contact Martin Engineering or a representative.

⚠ CAUTION

Truck must be secured so that it can not be operated during vibrator installation. Failure to do so may result in injury or death.

⚠ WARNING

If equipment will be installed in an enclosed area, 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.

4. If using a cutting torch or welding, test atmosphere for gas level or dust content.
5. Make sure mounting surface is strong and flat, within 1/32 in. (1.2 mm) across vibrator feet. (This will prevent internal stress to vibrator casting when tightening mount bolts.)
6. Make sure mounting surface and vibrator are clean and free of debris.

IMPORTANT

The Cougar® MDC Truck Vibrators are NOT guaranteed for continuous duty. Contact Martin Engineering for continuous duty applications.

⚠ CAUTION

If installation instructions are not followed, structure and vibrator can be damaged. Abusing or handling vibrator carelessly will accelerate wear and shorten bearing life.

⚠ CAUTION

Truck must be secured so that it can not be operated during vibrator installation. Failure to do so may result in injury or death.

Never weld structure with vibrator mounted and wired. Welding may cause damage to motor components and bearings.

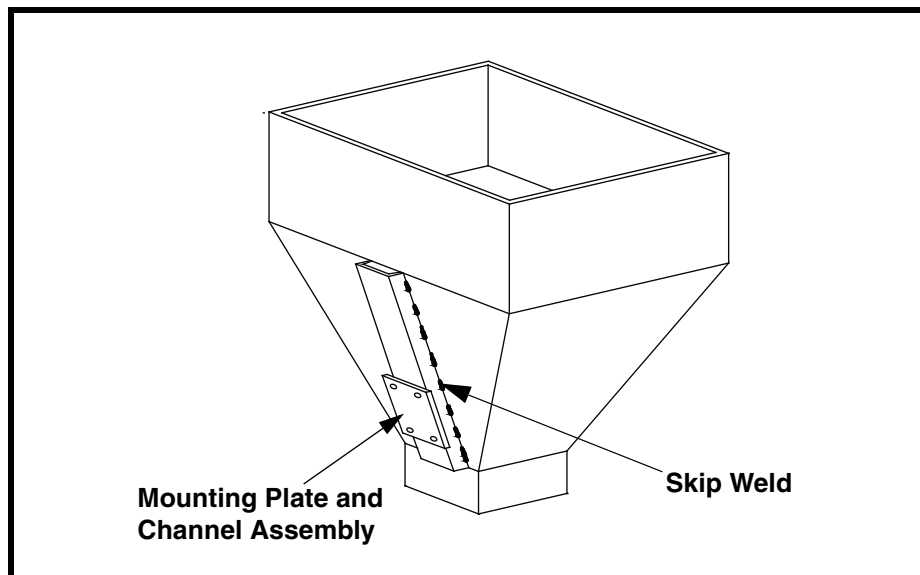


Figure 1. Mounting Plate and Channel Assembly

1. Make sure mounting surface and vibrator are clean and free of debris.
2. See Figure 1. Locate vibrator in lower 1/4 to 1/3 of structure slope length.

NOTE

A reinforcing plate should be used on hopper wall to prevent damage.

⚠ CAUTION

Use only new bolts and compression washers to install vibrator. 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.

Make sure mounting surface is flat and free of dirt, grease, paint, and weld slag.

3. Install vibrator onto mounting plate with new compression washers and bolts. See Table I for specific size and torque requirements. Use liquid thread fastener to help secure bolts.

Table I. Bolt Torque Specifications

Bolt size	Bolt Torque		Bolt Grade
	ft-lbs	N•m	
5/16 in.	15	20	5
3/8 in.	31	42	5
1/2 in.	75	102	5
5/8 in.	150	203	5
3/4 in.	266	361	5
3/4 in.	376	510	8

⚠ WARNING

If vibrator is mounted more than 6 in. (152 mm) above ground, install cable securing vibrator to structure. Without cable, vibrator could fall and cause injury.

4. Secure vibrator to structure by installing safety cable kit, P/N 32271-PR, or equivalent, as follows:
 - a. Weld D-ring onto structure wall above vibrator.
 - b. Make loop to fit around a 3/8" bolt using the cable and cable clamps supplied with kit. Change out a 3/8 -16 x 1-1/4" long bolt to a 3/8 - 16 x 1-1/4 long bolt and a 3/8" flat washer. Tighten securely, then attach to D-ring on structure wall.
 - c. Take up slack within safety restrictions.
 - d. Install four cable clamps (two on each) to secure cable to vibrator handle and D-ring. Torque cable clamps to 15-30 ft-lbs (20-40 N•m).

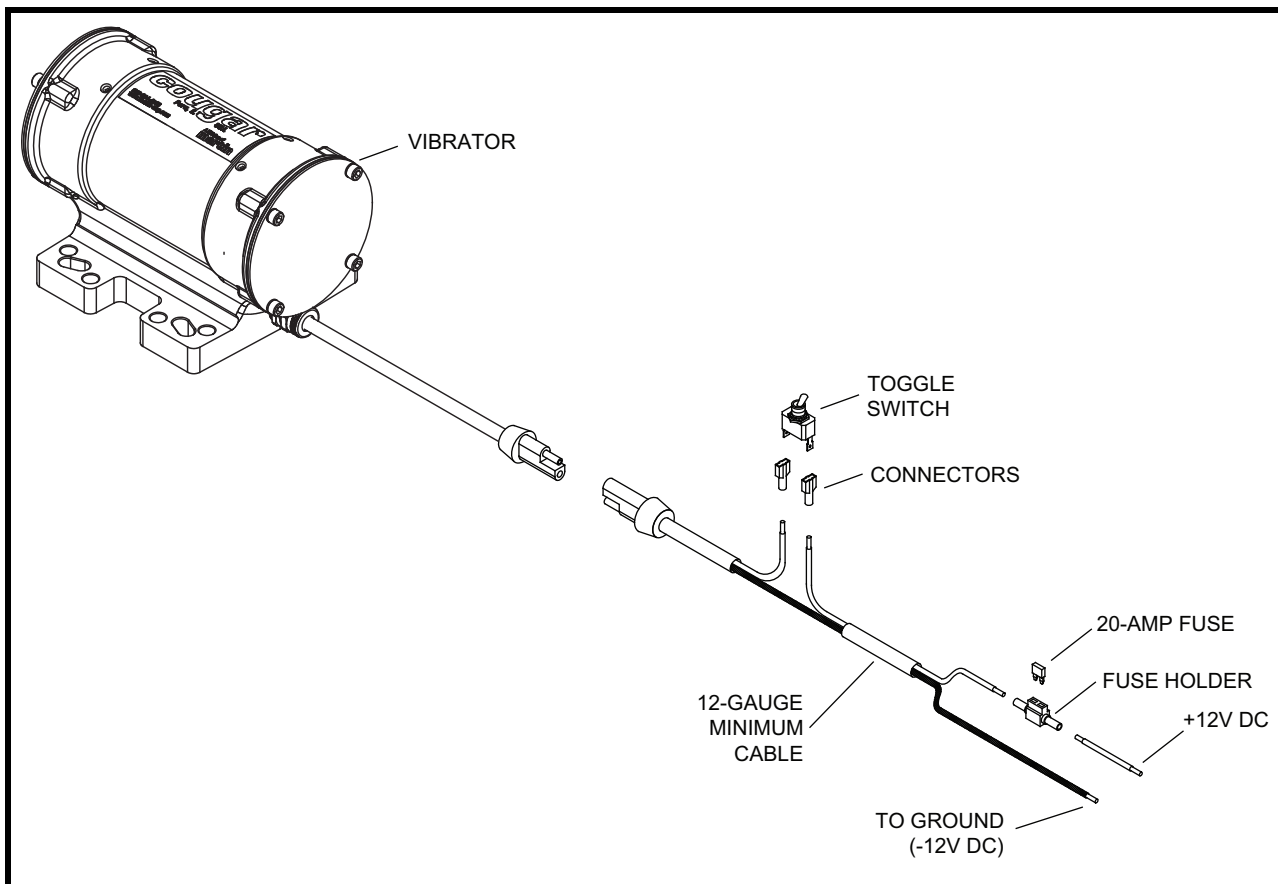


Figure 2. Cougar® MDC Electric Vibrators Wiring Diagram

Electrical connections

WARNING

Use DC voltage only. Protect all connections from moisture. Do not turn on energy source to vibrator until all steps of this procedure have been performed.

1. Use 12-gauge minimum wire or cable for supplying power to vibrator.
2. Install toggle switch on one lead of cable. Place toggle switch where it will be convenient to install and operate.
3. Install inline fuse holder near +12V DC power source. Install fuse.
4. Connect opposite conductor that does not contain fuse and fuse holder to ground.
5. Test run vibrator by briefly pushing the switch.
6. Re-torque the vibrator mounting bolts.

NOTE

For positive ground systems, make connections to the negative battery terminal.

Troubleshooting

Symptom	Corrective Action
Vibrator will not reach required speed.	<ul style="list-style-type: none"> • Check mount. If damaged, replace mount or stiffen mount by lengthening it or reinforcing structure wall. • Check voltage at motor. If voltage is lower than 12V DC, increase wire size or shorten lead length.
Vibrator will not start.	<ul style="list-style-type: none"> • Check for blown fuse, failed power supply, loose or improper connections. • If push button or solenoid is not functioning, replace component. • Check for proper grounding.
Vibrator noisy.	<ul style="list-style-type: none"> • Check for loose mounting bolts and re-torque. • Check mounting assembly and repair any broken welds. • Check for worn motor brushes or bearings. Contact dealer for replacement if necessary.
Vibrator running high amps.	<ul style="list-style-type: none"> • Check for proper grounding. • Check for loose mounting bolts and re-torque. • Check mounting assembly and repair any broken welds. • Check for worn motor brushes or bearings. Contact dealer for replacement if necessary.

⚠ WARNING

Turn off and lock out/tag out energy source before beginning work on any Cougar® MDC Truck Vibrator.

1. Inspect electrical cords for cuts or wear. Replace if wiring is showing through cord.
2. Make sure all fasteners are tight.
3. Inspect structure for cracks or fatigue. If found, repair before operating vibrator again.
4. Re-torque mounting bolts after first week of use, and once a month after to ensure efficient vibrator operation.

NOTE

Sealed ball bearings are permanently lubricated. No added lubrication is needed.

Part Numbers

This section provides product names and corresponding part numbers for Cougar® MDC Truck Vibrator and related equipment. Please reference part numbers when ordering parts:

NOMENCLATURE

MDCV- XX XXX XX XX XX

P/N Prefix ————
DC Voltage ————
Force Output in lbs ————
Housing Version ————
Cord Length ————
Accessory Kit ————

DC VOLTAGE
12: 12 volts
24: 24 volts

FORCE OUTPUT IN LBS
4AJ: Adjustable up to 400 lbs
400: 400 lbs
700: 700 lbs

HOUSING VERSION
MM: Martin Housing

CORD LENGTH
10: 10"
96: 96"

ACCESSORY KIT
 See Table II.

NOMENCLATURE

MDC- XX XXX XX XX XX

P/N Prefix ————
DC Voltage ————
Force Output in lbs ————
Housing Version ————
Cord Length ————
Accessory Kit ————

DC VOLTAGE
12: 12 volts
24: 24 volts

FORCE OUTPUT IN LBS
4AJ: Adjustable up to 400 lbs
400: 400 lbs
700: 700 lbs

HOUSING VERSION
MM: Martin Housing

CORD LENGTH
10: 10"
52: 52"
96: 96"

ACCESSORY KIT
 See Table II.

**Table II. Cougar® MDC Truck Vibrator Accessory Kits,
P/N MDC-KIT-ACC XX XX XX XX**

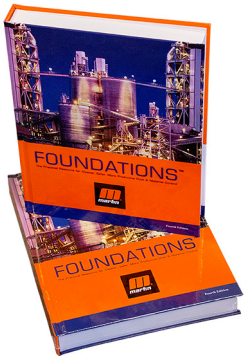
Item	Description	Part No.
1	Inline Fuse Holder	197754
2	Fuse 20 Amp	CG-100454
3	Inline Switch 12V	CG-100451
4	Shrink Tube	196520
5	Mounting Plate Hardware Kit	CG-100459
6	MDC Mount Plate	220505-X
7	Mounting Hardware Kit for MDCV	CG-100475

Kit Number	Qty Items 1 & 2	Qty Items 3 & 4	Qty Items 5 & 6	Qty Item 7
02	0	1	0	0
04	1	0	0	0
05	1	0	1	0
06	1	1	0	0
07	0	1	1	0
08	1	1	1	0
09	0	0	1	0
10	0	0	0	1

Part Numbers

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