

***martin***®

***Martin***®  
***Gate Jack Opener***

[Go to Martin® Gate Jack Opener web page](#)



***Operator's Manual***  
***M3203***

# 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.

# Table of Contents

---

<b>Section</b>	<b>Page</b>
List of Figures .....	ii
List of Tables .....	ii
Introduction .....	1
General .....	1
Safety .....	1
Materials Required .....	1
Before Installing Gate Opener .....	2
Installing Gate Opener .....	3
Troubleshooting .....	4
Part Numbers .....	5

## **List of Figures**

---

<b>Figure</b>	<b>Title</b>	<b>Page</b>
1	Operating Martin® Gate Jack Opener . . . . .	3
2	Martin® Gate Jack Opener Rotation Direction . . . . .	4
3	Martin® Gate Jack Opener, P/N M90 . . . . .	5
4	Martin® Gate Jack Opener Assembly, P/N M950. . . . .	6

## **List of Tables**

---

<b>Table</b>	<b>Title</b>	<b>Page</b>
I	Martin® Gate Jack Opener Specifications . . . . .	1

# Introduction

---

## *General*

The Martin® Gate Jack Opener is an air-powered wrench that opens the most stubborn hopper gates. It comes complete with hoses and hand-held control valve. Martin® Gate Jack Opener specifications are provided in Table I.

**Table I. Martin® Gate Jack Opener Specifications**

<b>Air Pressure</b>	70 cfm at 80 to 125 psi (1982 lpm at 5.5 to 8.5 bar)
<b>Output</b>	above 1750 ft-lb (2373 N-m)
<b>Weight</b>	74 lb (33 kg)

## *Safety*

All safety rules herein and all owner/employer safety rules must be strictly followed when working on this equipment.

## *Material required*

In addition to standard hand tools, a solid steel round bar or heavy wall tube with a 1-3/8 inch maximum diameter and 42 inch minimum length is required to install and operate this equipment.

## **Before Installing Gate Opener**

---

### **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 box for damage. Report damage to delivery service and fill out delivery service's claim form. Keep any damaged goods subject to examination.
2. Remove Martin® Gate Jack Opener from shipping box.
3. If anything is missing, contact Martin Engineering or representative.

# Installing Gate Opener

## IMPORTANT

Read entire section before beginning work.

Air supply must be between 80 and 125 psi (5.5 to 8.5 bar) *at the control valve*, not at the air source, for the unit to operate properly.

## CAUTION

Do not exceed 125 psi (8.5 bar) air pressure. Excessive air pressure may cause damage to the Martin® Gate Jack Opener. Make sure air is filtered and lubricated.

1. See Figure 1. With control valve (A) in closed position, connect filtered and lubricated 80- to 125-psi (5.5- to 8.5-bar) air supply to control valve inlet.
2. Retract the dog (B) by moving the release lever (C) until it stops.
3. Place the Martin® Gate Jack Opener over the capstan (D) on the rail car. With the stirrups (E) pointing down, release the dog into a capstan hole.

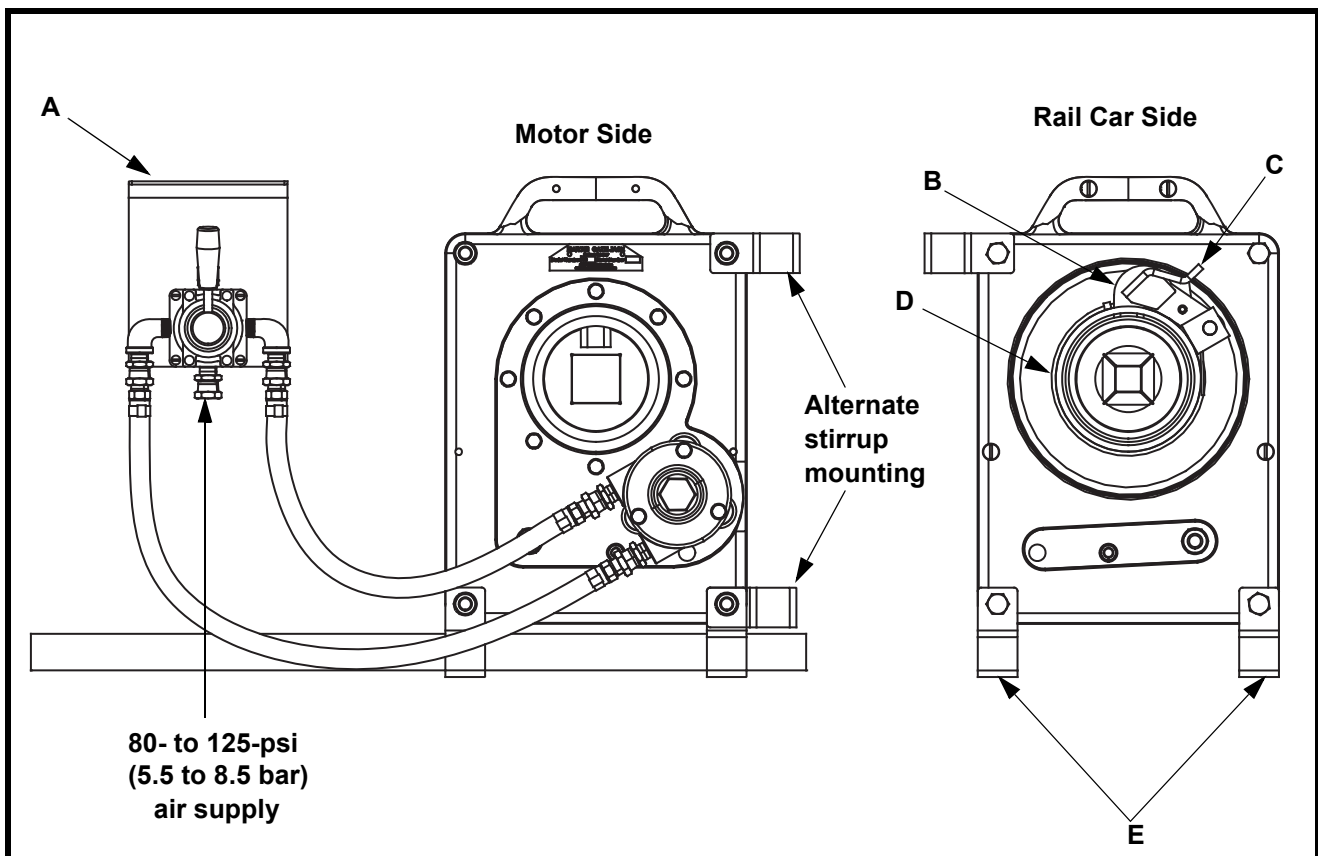
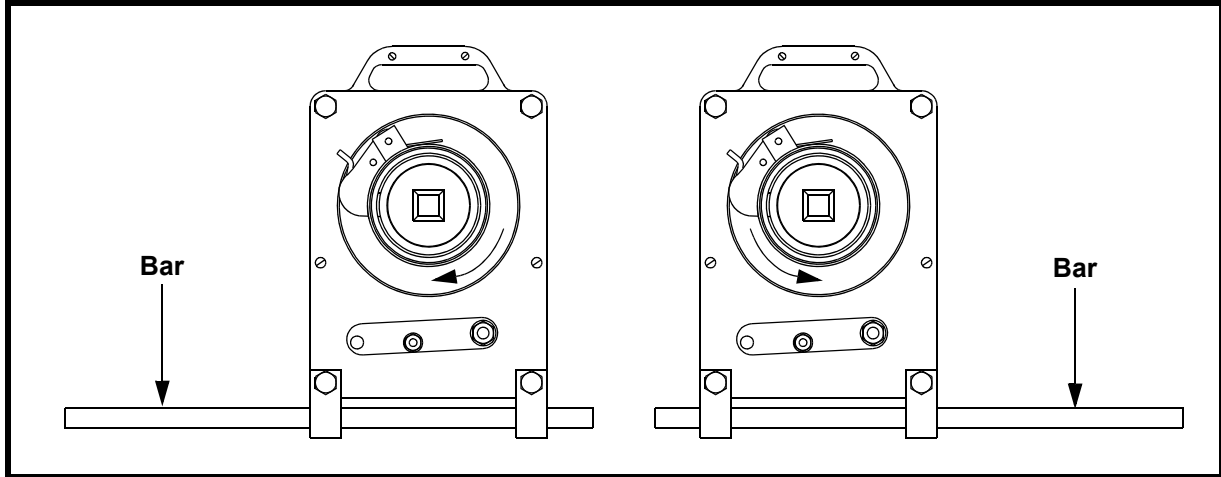


Figure 1. Operating Martin® Gate Jack Opener

**NOTE**

Before inserting the bar, you may need to run the Martin® Gate Jack Opener in either direction to position the gear case with the stirrups pointing down towards the ground.

4. Install a solid steel round bar or heavy wall tube (not provided) with a minimum length of 42 in. into the stirrups. Maximum diameter of the rod or tube can not exceed 1-3/8 in. The longest protruding end of the bar or tube should extend to the opposite side of the Gate Jack that it will be rotating. See Fig 2.



**Figure 2. Martin® Gate Jack Opener Rotation Direction According to Bar Position**

5. Turn the control valve lever in the direction that moves the long end of the bar against the ground. Check for dog engagement and general alignment.
6. Open the control valve fully by turning the lever until it stops. (This applies full force to turn the capstan.)

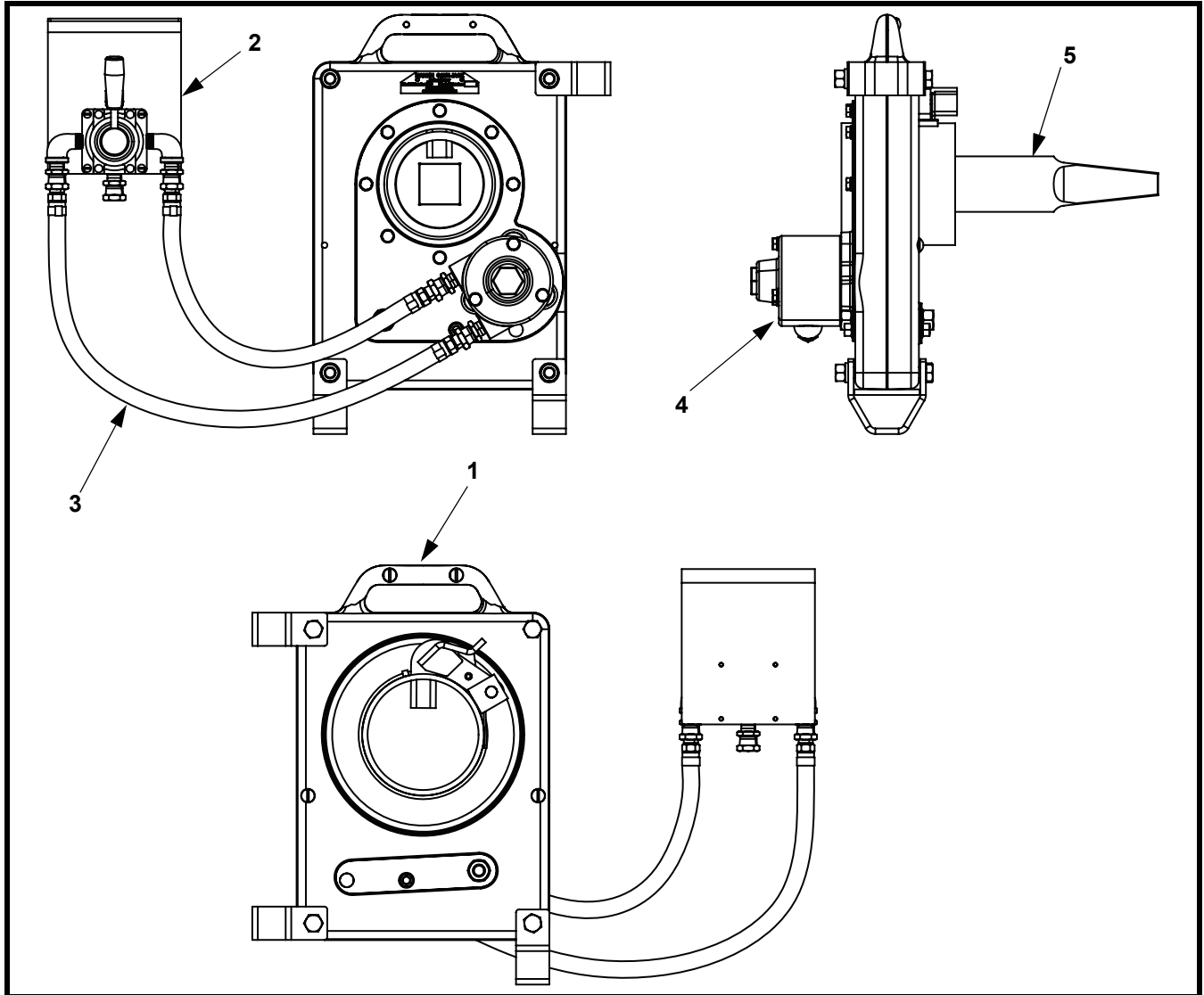
## Troubleshooting

Symptom	Corrective Action
Martin® Gate Jack Opener will not operate.	Muffler in control valve is clogged. Replace muffler.
	Insufficient air pressure. Supply 80 to 125 psi (5.5 to 8.5 bar) <i>at the control valve inlet</i> , not at the air supply source.



# Part Numbers

This section provides product names and corresponding part numbers for Martin® Gate Jack Openers. Please reference part numbers when ordering parts.



Item	Description	Part No.	Qty.
1	Gate Opener Assembly	M950	1
2	Hand Valve	M900	1
3	Hose Assembly	M910	2
4	Air Motor Assembly	M980	1
5	Capstan Extension	31627	1
6	Washer Lock 5/16	M209	3
7	Screw HHC 5/16-18 x 3-1/2	11712	3

Figure 3. Martin® Gate Jack Opener, P/N M90

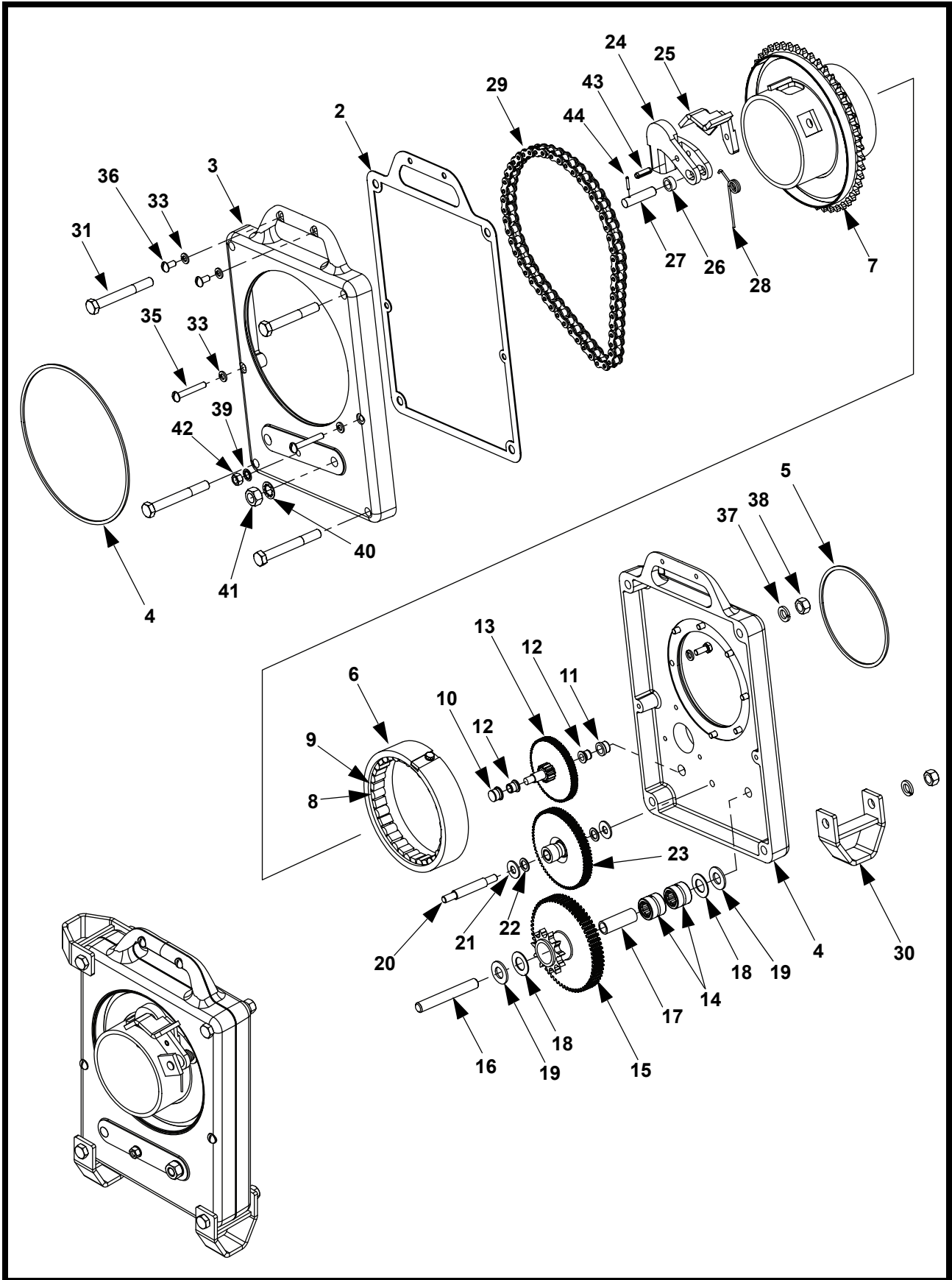


Figure 4. Martin® Gate Jack Opener Assembly, P/N M950-X (Sheet 1 of 2)

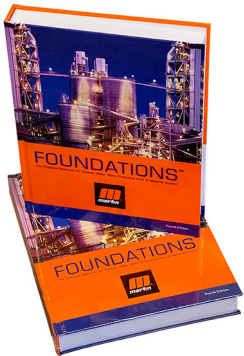
Item	Description	Part No.	Qty.	Item	Description	Part No.	Qty.
1	Case - Motor Side	M951-1	1	24	Pawl	M958	1
2	Gasket	M945	1	25	Dog Release Weldment	M959-MF	1
3	Case - Front	M952	1	26	Spacer	M948	1
4	Seal Noeprene 29.00	M976	1	27	Clevis Pin	M979	1
5	Seal Neoprene 18.00	M977	1	28	Torsion Spring	M978	1
6	Outer Race Assembly	M949	1	29	Chain Roller #50	M960	1
7	Hub Weldment	M953	1	30	Stirrup Weldment	M964	3
8	Brass Spacer	M962	18	31	Screw HHC 1/2-13NC	M920	3
9	Roller	M961	18	32	Screw HHC 1/2-13NC	M921	1
10	Bearing Cap	M974	1	33	Lock Washer	M209	11
11	Bearing Cap	M975	1	34	Screw HHC 5/16-18NC	12250	7
12	Bushing Bronze	M969	2	35	Screw RHMS 5/16-18NC	M925	2
13	Gear Weldment	M956	1	36	Screw RHMS 5/16-18NC	M926	2
14	Needle Bearing	M967A	2	37	Lock Washer	17329	4
15	Gear Cluster	M954	1	38	Hex Nut 1/2-13NC	11771	4
16	Shaft	M965	1	39	Lock Washer	M931	2
17	Roller Tube	M967B	1	40	Lock Washer	M446	2
18	Flat Washer	M970	2	41	Hex Nut 9/16-18NF	M451	2
19	Flat Washer	16814	2	42	Hex Nut 3/8-24NF	13646	2
20	Shaft	M966	1	43	Slotted Spring Pin	M935	1
21	Flat Washer	18007	2	44	Slotted Spring Pin	M518	1
22	Flat Washer	M971	2	45	Nameplate	M947	1
23	Gear Assembly	34237	1	46	Tack Metal	31006-01	2

**Figure 4. Martin® Gate Jack Opener Assembly, P/N M950-X (Sheet 2 of 2)**



*Any product, process, or technology described here may be the subject of intellectual property rights reserved by Martin Engineering Company. Trademarks or service marks designated with the ® symbol are registered with the U.S. Patent and Trademark Office and may be proprietary in one or more countries or regions. Other trademarks and service marks belonging to Martin Engineering Company in the United States and/or other countries or regions may be designated with the “TM” and “SM” symbols. Brands, trademarks, and names of other parties, who may or may not be affiliated with, connected to, or endorsed by Martin Engineering Company, are identified wherever possible. Additional information regarding Martin Engineering Company’s intellectual property can be obtained at [www.martin-eng.com/trademarks](http://www.martin-eng.com/trademarks).*

# **Problem Solved™** ***GUARANTEED!***



*For nearly 30 years, Martin Engineering's Foundations™ Books have taught industry personnel to operate and maintain clean and safe belt conveyors. The Foundations™ Book, fourth edition, focuses on improving belt conveyors by controlling fugitive material. "The Practical Resource for Total Dust and Material Control," is a 576-page hard cover volume that provides information of value to industries where the efficient handling of bulk materials is a key to productivity and profitability.*

*Expanding upon the book, our Foundations™ Training Program addresses the design and development of more productive belt conveyors, and is offered in three customizable seminars. Attendees gain a better understanding of conveyor safety and performance, helping to justify upgrade investments and increase profitability.*



## **Martin Engineering USA**

One Martin Place  
Neponset, IL 61345-9766 USA  
800 544 2947 or 309 852 2384  
Fax 800 814 1553  
[www.martin-eng.com](http://www.martin-eng.com)

**COMPANY WITH  
QUALITY SYSTEM  
CERTIFIED BY DNV GL  
= ISO 9001 =**