
GATE JACK

Railcar Gate Opener



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

Section	Page
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

Figure	Title	Page
1	Operating GATE JACK M90 Gate Opener	3
2	GATE JACK Gate Opener Rotation Direction	4
3	GATE JACK Gate Opener, P/N M90.	5
4	GATE JACK Gate Opener Assembly, P/N M950	6
5	GATE JACK Gate Opener Assembly, P/N M950 (Repair Drawing)	8

List of Tables

Table	Title	Page
I	GATE JACK Gate Opener Specifications	1

Introduction

General

The GATE JACK M90 Railcar Gate Opener is an air-powered wrench that opens the most stubborn hopper gates. It comes complete with hoses and hand-held control valve. GATE JACK Gate Opener specifications are provided in Table I.

Table I. GATE JACK Gate Opener Specifications

Air Pressure	70 cfm at 80 to 125 psi (1982 lpm at 5.5 to 8.5 bar)
Output	above 1750 ft-lb (2373 N-m)
Weight	45 lb (20 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 strong, rigid bar 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 GATE JACK Gate 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® MIMCO™ GATE JACK™ Gate 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 GATE JACK Gate Opener over the capstan (D) on the rail car. With the stirrups (E) pointing down, release the dog into a capstan hole.

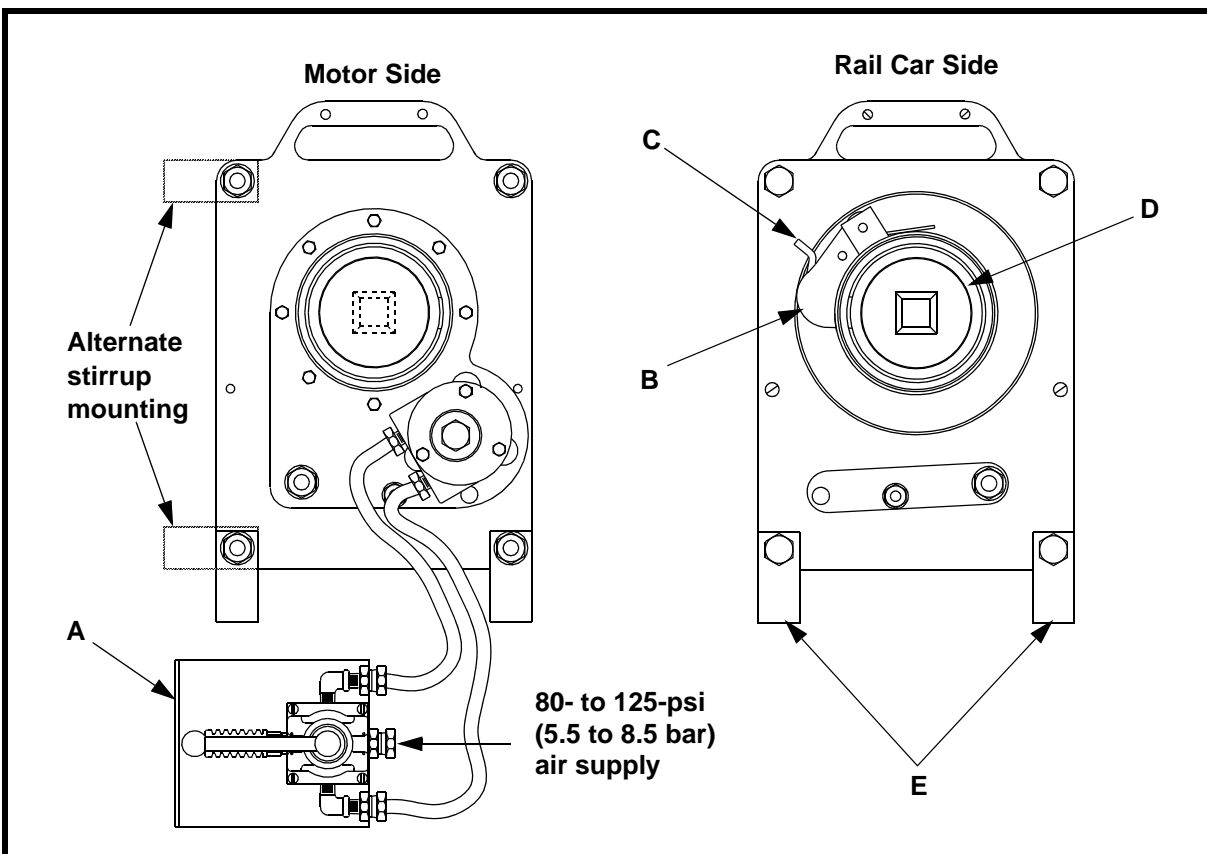


Figure 1. Operating GATE JACK M90 Gate Opener

NOTE

Before inserting the bar, you may need to turn the Gate Opener to make the stirrups perpendicular to the ground.

- 4. Slip a strong, rigid bar (F) through the stirrups, leaving most of the bar length protruding on the force side.

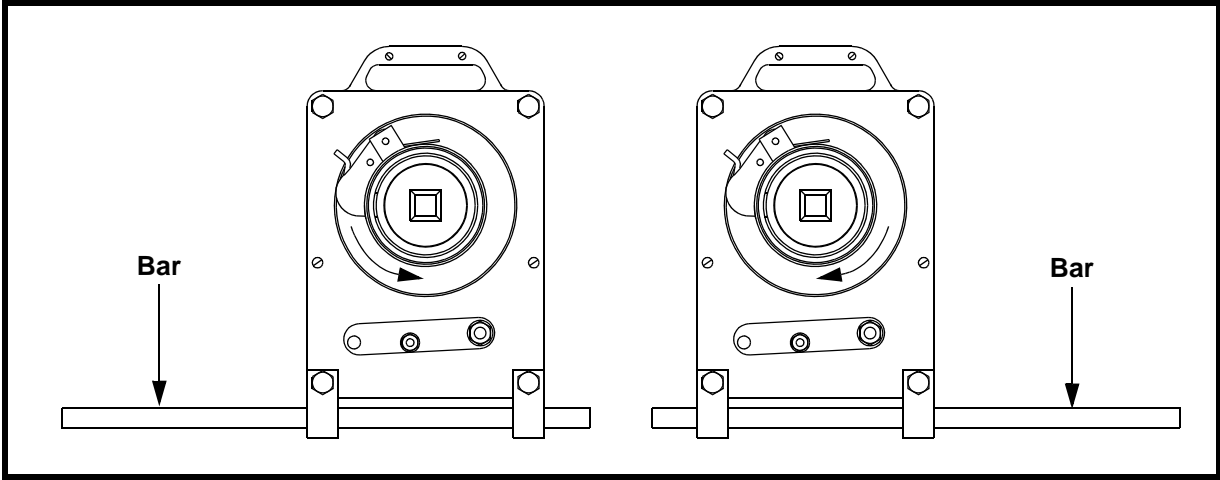


Figure 2. GATE JACK Gate Opener Rotation Direction According to Bar Position

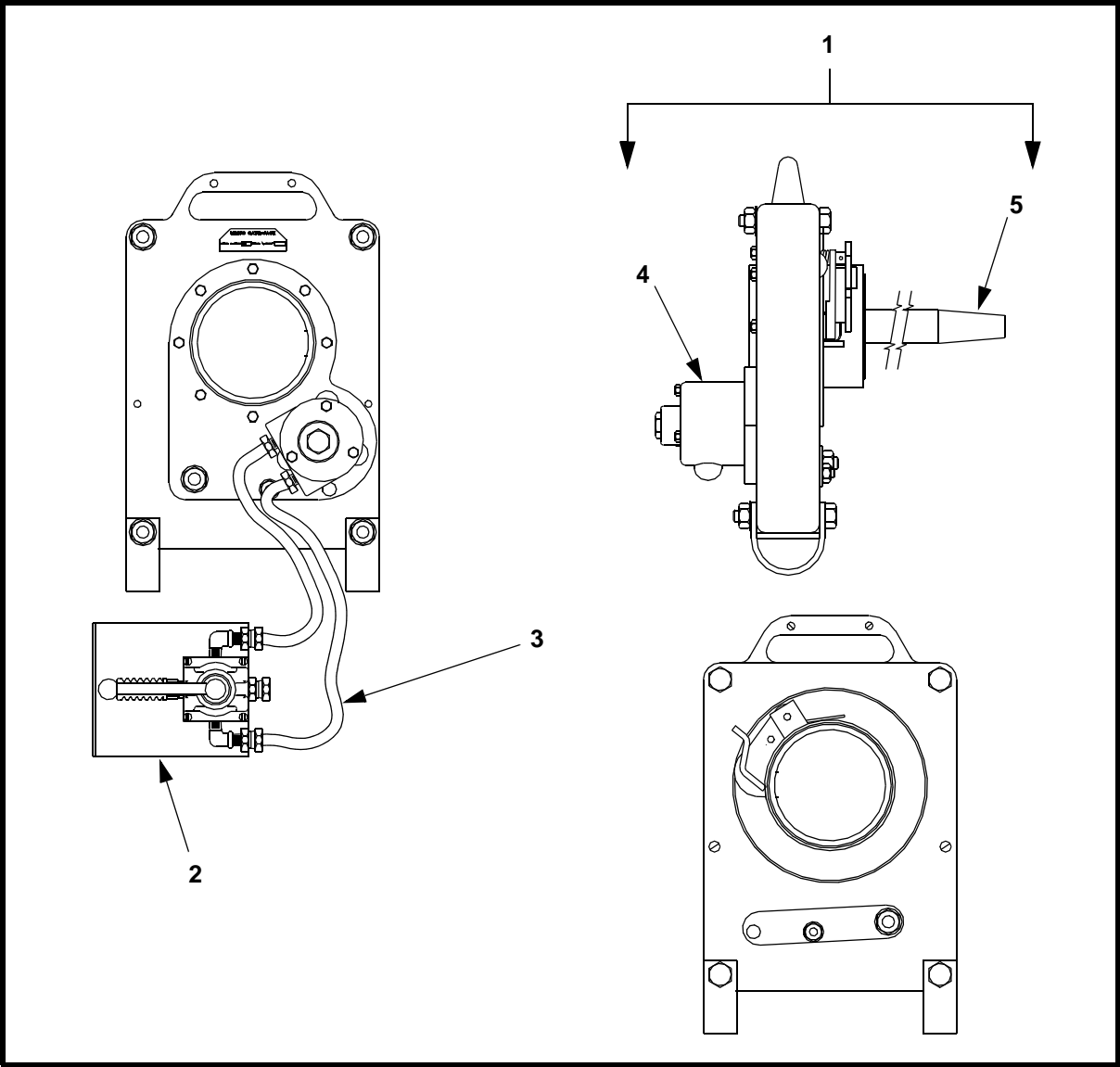
- 5. Turn the control valve lever in the direction that moves the long end of the bar against the ground. Check for dog engagement and general alignment.
- 6. Open the control valve fully by turning the lever until it stops. (This applies full force to turn the capstan.)

Troubleshooting

Symptom	Corrective Action
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 GATE JACK Gate Openers. Please reference part numbers when ordering parts. See Figure 5 for repair assembly drawing.



Item	Description	Part No.	Qty
1	GATE JACK Assembly Primary Seal	M950	1
2	GATE JACK Hand Valve	M900	1
3	Hose Assembly	M910	2
4	Air Motor Assembly	M980	1
5	GATE JACK Capstan Extension	31627	1

Figure 3. GATE JACK Gate Opener, P/N M90

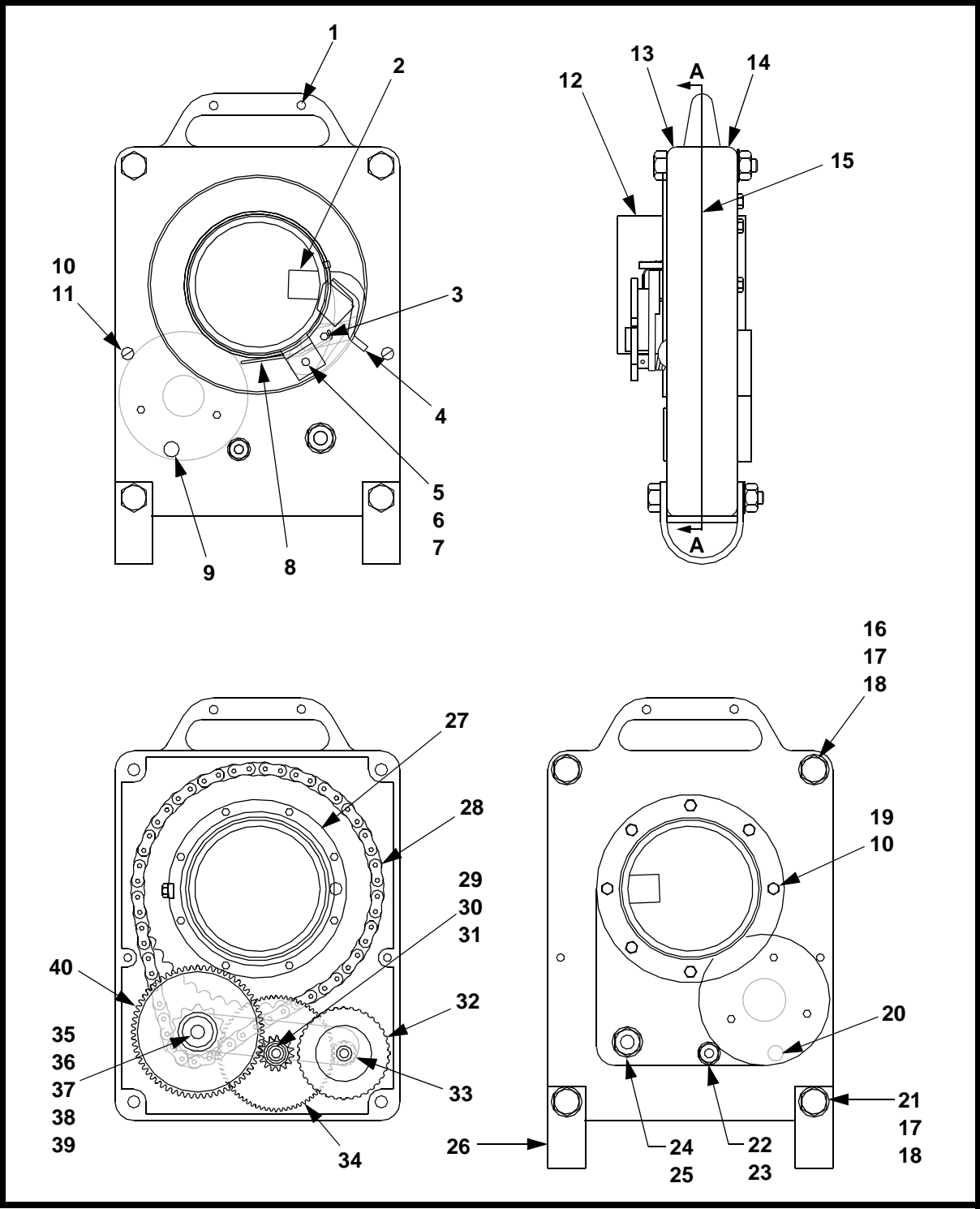


Figure 4. GATE JACK Gate Opener Assembly, P/N M950 (Sheet 1 of 2)

Item	Description	Part No.	Qty.	Item	Description	Part No.	Qty.
1	5/16" -18NC x 5/8" Round Head Screw	M926	2	23	3/8" -24NF Hex Nut	13646	2
2	Pawl	M958	1	24	9/16" Internal Tooth Lock Washer	M446	2
3	Spring Pin 5/16" x 1"	M935	1	25	9/16" -18NC Hex Nut	M451	2
4	Dog Release Weldment	M959	1	26	Stirrup Weldment	M964	2
5	Spacer	M948	1	27	Outer Race Assembly	M949	1
6	Clevis Pin	M979	1	28	No. 50 Chain	M960	1
7	Roll Pin 1/8" x 3/4"	M518	1	29	Shaft	M966	1
8	Spring	M978	1	30	3/8" Flat Washer	18007	2
9	Bushing Cap	M974	1	31	Oilite Washer 3/4" O.D. x 1/2" I.D.	M971	2
10	5/16" Split Lock Washer	M209	11	32	Gear Weldment	M956	1
11	5/16" -18NC x 2" Round Head Screw	M925	2	33	Oilite Bushing	M969	1
12	Hub Weldment	M953	1	34	Gear Assembly	34237	1
13	Case Shell	M952	1	35	Flat Washer 1-3/8" O.D. x 5/8" I.D.	16814	2
14	Case Shell—Motor Side	M951-1	1	36	Oilite Washer 1-3/8" O.D. x 3/4" I.D.	M970	2
15	Gasket	M945	1	37	Roller Tube	M967B	1
16	1/2" -13NC x 3-1/2" Hex Head Cap Screw	M921	2	38	Inner Bearing	M967A	2
17	1/2" -13NC Hex Nut	11771	4	39	Shaft	M965	1
18	1/2" Split Lock Washer	17329	4	40	Gear Cluster	M954	1
19	5/16" -18NC x 3/4" Hex Head Cap Screw	12250	7	NS	Roller Steel	M961	18
20	Bushing Cap	M975	1	NS	Square Spacer	M962	18
21	1/2" -13NC x 4" Hex Head Cap Screw	M920	2	NS	Large Seal	M976	1
22	3/8" Internal Tooth Lock Washer	M931	2	NS	Small Seal	M977	1

Figure 4. GATE JACK Gate Opener Assembly, P/N M950 (Sheet 2 of 2)

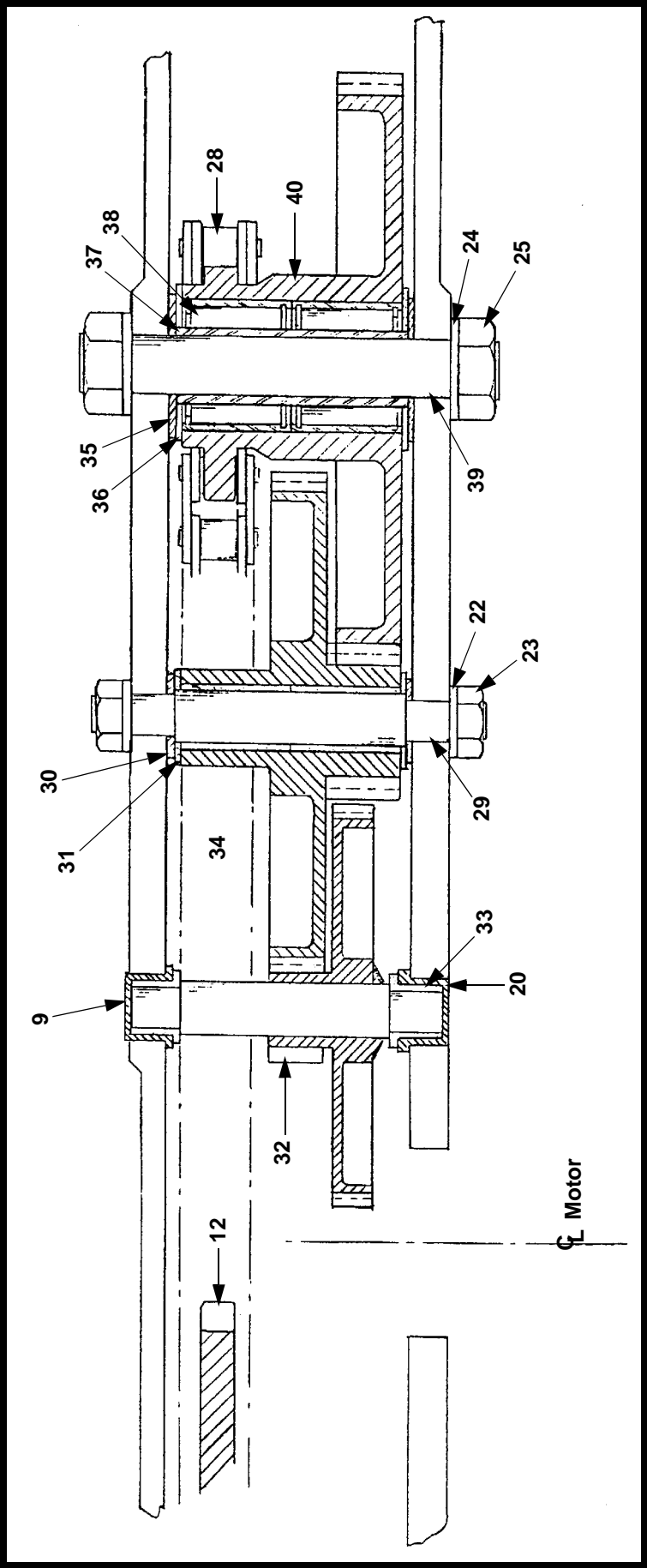


Figure 5. ® GATE JACK Gate Opener Assembly, P/N M950 (Repair Drawing)

