



ABELL-HOWE



J904 Free Standing Pillar Jib Crane

Installation, Operations, &
Maintenance Manual



800.548.2930 | www.AbellHowe.com

INSTALLATION, OPERATION, & MAINTENANCE MANUAL

INTRODUCTION

Thank you for choosing an Abell-Howe Jib Crane. Your new crane was engineered and manufactured in Eureka, IL by Crane Equipment & Service, Inc., a world leader in lifting devices. This manual is primarily intended for the person responsible for the maintenance and operation of the crane. It will supply necessary safety, parts and service information providing you the best experience with your new crane. Also, it will help to give clear and explicit information for spare and renewal parts. This avoids misunderstandings, errors, unnecessary correspondence and delays in delivery.

IMPORTANT

It is important that the Serial No. for this crane is supplied whenever repair parts are required. For your convenience please fill in the Serial No. in the space provided below. The Serial No. may be found on the capacity decal.

JIB CRANE SERIAL NO: _____

CAPACITY: _____ **MODEL NO:** _____

LOCATION: _____ **PURCHASE DATE:** _____

PLEASE NOTE

Abell-Howe jib crane safety procedures are on pages 22-29.

Abell-Howe Jib Cranes are Engineered & Manufactured
in Eureka, IL by Crane Equipment & Service, Inc.

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RECOMMENDED INSTALLATION PROCEDURE
SEE BULLETIN I.I. J-904B INSTALLATION INSTRUCTIONS
FOR BASE MOUNTED PILLAR JIB CRANE MODEL J-904B.

RECOMMENDED FOUNDATION CONCRETE
JIB CRANE FOUNDATION REQUIREMENTS ARE BASED ON
A SOIL PRESSURE OF 2500 LBS. PER SQUARE FOOT.
3000 LBS. P.S.I. (PER SQ. INCH) COMPRESSIVE CONCRETE
(5 BAG MIX-ONE YARD OF CONCRETE).

CAPACITY _____ LBS.
WEIGHT _____ LBS.

A _____
B _____
C _____
D _____
E _____
W _____

MODEL: _____

J-904- _____ - _____ B

JOB NO.:

WORK ORDER NO.

INSTALLATION DRAWING
360° BASE MOUNTED
PILLAR JIB CRANE MODEL J-904B



ABELL-HOWE CRANES
DIVISION OF CRANE, EQUIPMENT & SERVICE, INC.
UNIT 100, 10321 WERCH DRIVE, WOODBRIDGE IL 60517

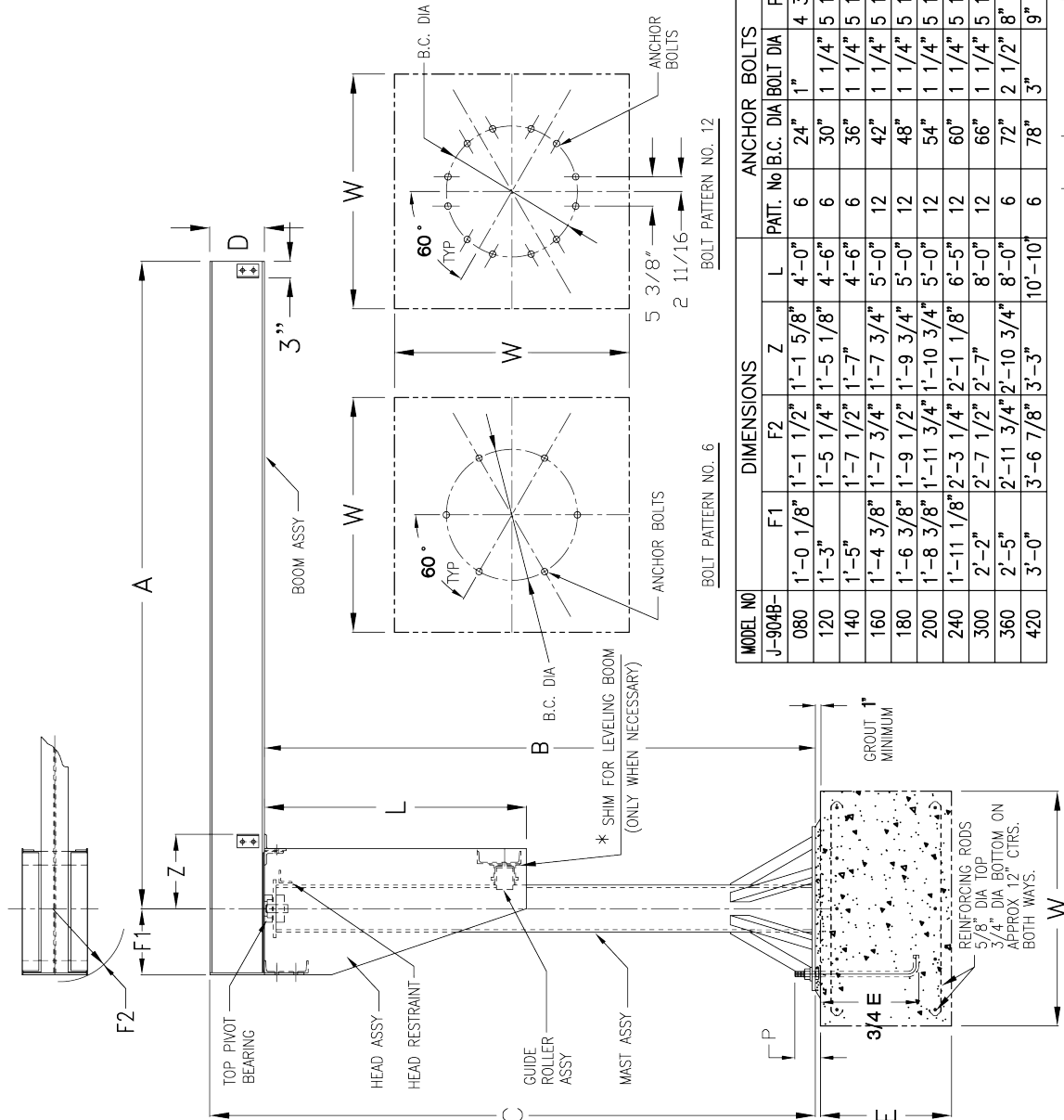
SERIAL NO. _____
CUSTOMER'S NO. _____

DATE BY _____
DRAWN BY _____
DATE _____

SIZE _____
DWG. NO. _____
SHEET NO. _____

A3-J904B

1 OF 1



1. BASE PLATE O.D. 6" LARGER THAN BOLT CIRCLE.
- * 2. MODEL NO. 300 (HEAVY), 360 & 420 HAS SHIMS ON TOP OF HEAD ASSY. UNDER BOOM.

ABELL-HOWE CRANE, ASSUMES NO RESPONSIBILITY FOR
LOADING IMPOSED ON BUILDING STRUCTURE OR FOOTINGS
BY THIS EQUIPMENT. WE SUGGEST THIS BE CHECKED BY A
LICENSED STRUCTURAL ENGINEER AND ANY NECESSARY
PERMITS BE SECURED.

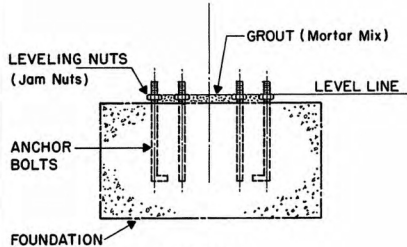


INSTALLATION INSTRUCTIONS FOR BASE MOUNTED PILLAR JIB CRANE MODEL J-904B

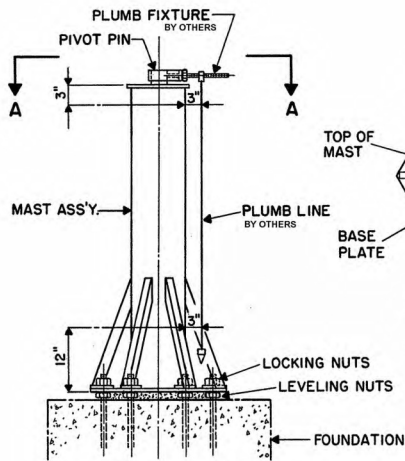
INSTRUCTIONS :

JIB CRANE IS SHIPPED IN 3 SECTIONS, HEAD ASS'Y. - BOOM ASS'Y. - MAST ASS'Y. AND A BOX CONTAINING, TOP BEARING - BOLTS - AND ACCESSORIES.

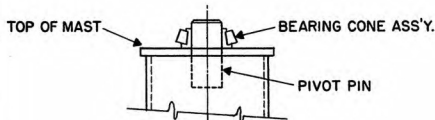
1. After Foundation has hardened with Anchor Bolts set, install Leveling Nuts (Jam Nuts) on Anchor Bolts and level across Nuts. Then fill center of bolt pattern to top of Leveling Nuts with Grout (mortar mix).
2. Set Mast into position on Leveling Nuts, install Locking Nuts on top of Anchor Bolts and Base Plate.
3. Plumb the Mast by using a Plumbing Fixture from Pivot Pin on top of Mast. Then dropping a Plumb Line and adjusting Leveling Nuts to plumb Mast at 120° increments. When Mast is level, tighten Locking Nuts.



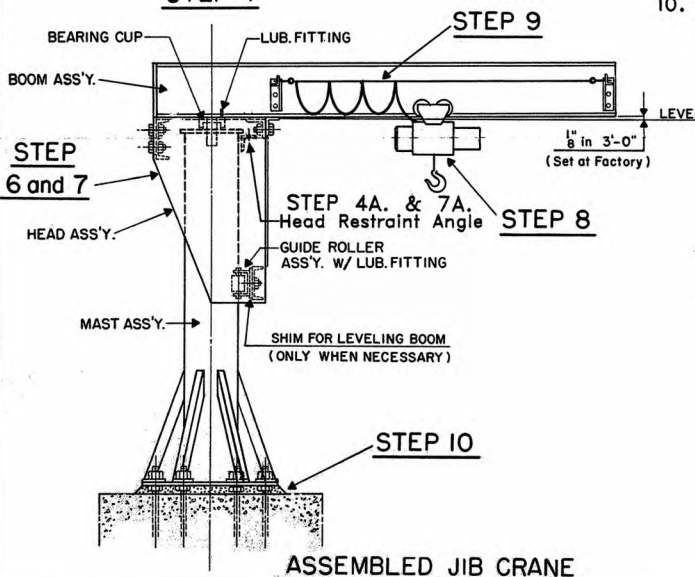
STEP 1



STEP 2 and 3



STEP 4



ASSEMBLED JIB CRANE

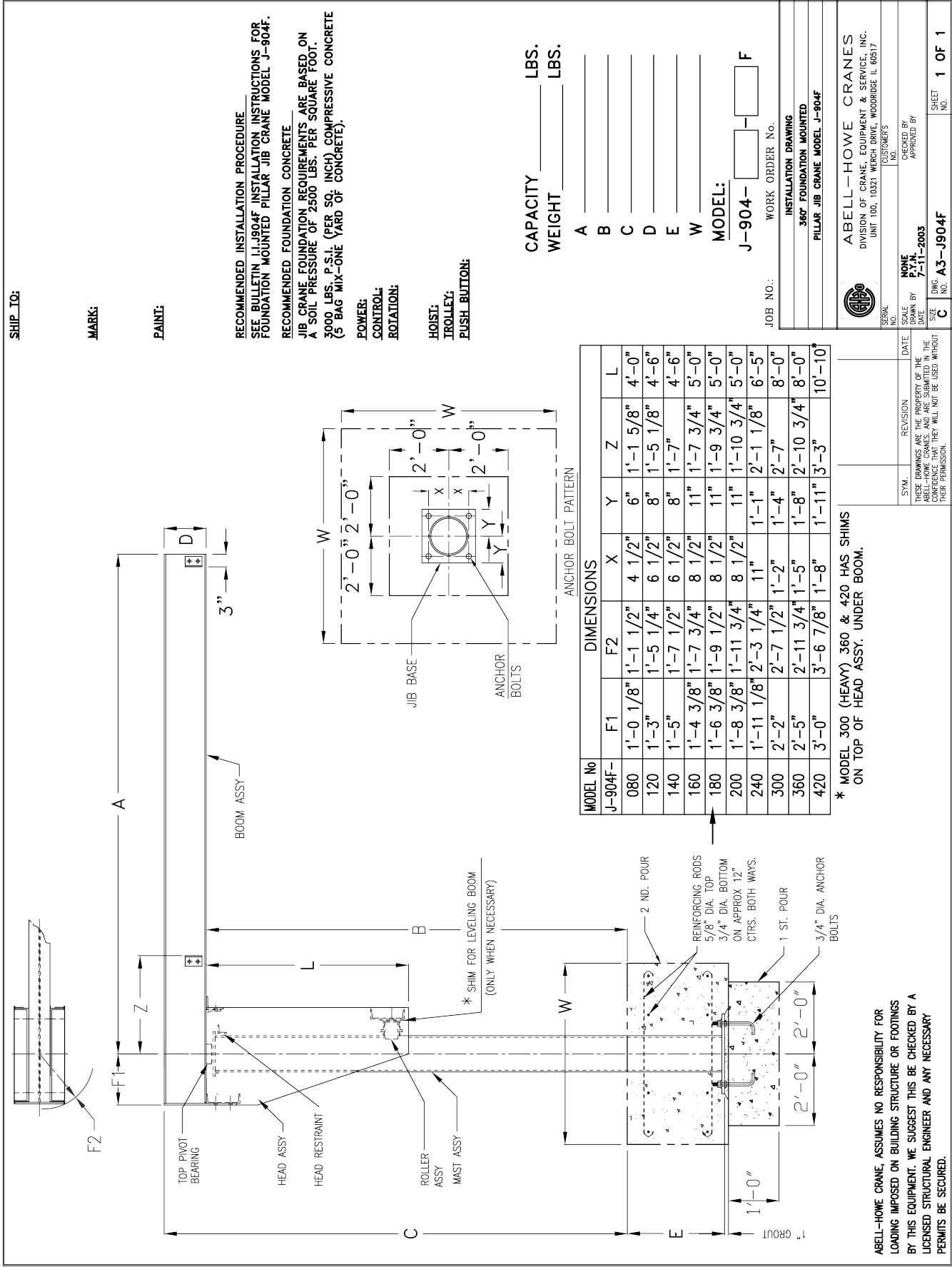
4. Set Top Pivot Bearing Cone over Pivot Pin located on top of Mast.
- 4A. Remove Head Restraint Angle from Head Assembly.
5. Attach Boom Ass'y. to Head Ass'y. using Bolts provided. Check Bearing Housing on bottom of Boom to make sure that Bearing Cup is in place.
6. Raise assembled Head and Boom onto plumbed Mast.
7. After Head and Boom is mounted onto Mast lubricate Top Pivot Pin Bearing thru Grease Fitting (Bottom Roller Ass'y. factory lubricated). Rotate Boom slowly thru Arc of 360° to be sure that rotation is satisfactory. If equipped with Rotation Stops locate Rotation Stops and rotate thru limits of rotation in both directions.
- 7A. Replace Head Restraint Angle back inside the Head Assembly
8. Remove End Stop and install Trolley / Hoist Unit onto Boom (check gauge of Trolley Wheels for proper fit on beam). Replace End Stop.
9. Install electrical Hardware and Accessories on Boom if provided and make all necessary electrical connections.
 - (a) Bottom Entry Collector System for Pillar Jib Cranes - see installation drawing A4-J-904-2.
 - (b) Top Entry Collector Ring - 360° rotation for Pillar Jib Cranes see installation drawing A4-J-904-3.
10. After Jib Crane is operating satisfactorily set final Grout under Base Plate and let harden before putting Jib Crane into service.

NOTE:

For Foundation requirements and Anchor Bolt location refer to drawing A3-AJ-904B.

WARNING:

This equipment is not designed for and should not be used for lifting, supporting or transporting personnel.





ABELL HOWE
DIVISION OF CRANE, EQUIPMENT & SERVICE

INSTALLATION INSTRUCTIONS FOR FOUNDATION MOUNTED PILLAR JIB CRANE MODEL J-904 F

INSTRUCTIONS:

JIB CRANE IS SHIPPED IN 3 SECTIONS, HEAD ASS'Y. - BOOM ASS'Y. - MAST ASS'Y. AND A BOX CONTAINING, TOP BEARING - BOLTS - AND ACCESSORIES.

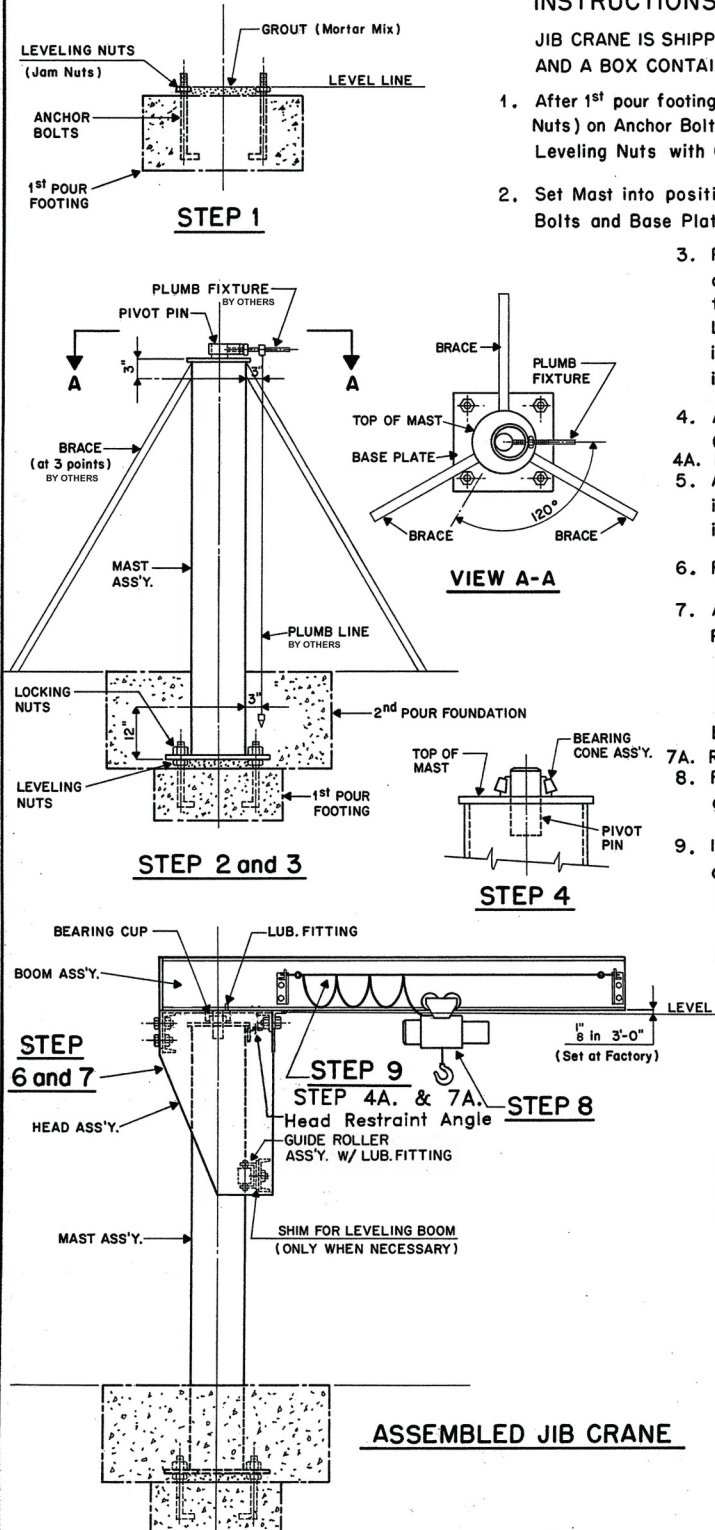
1. After 1st pour footing has hardened with Anchor Bolts set, install Leveling Nuts (Jam Nuts) on Anchor Bolts and level across Nuts. Then fill center of bolt pattern to top of Leveling Nuts with Grout (mortar mix).
2. Set Mast into position on Leveling Nuts, install Locking Nuts on top of Anchor Bolts and Base Plate.
3. Plumb the Mast by using a Plumbing Fixture from Pivot Pin on top of Mast. Then dropping a Plumb Line and adjusting Leveling Nuts to plumb Mast at 120° increments. When Mast is level tighten Locking Nuts. Brace Mast (from top of Mast to ground at 120° increments) to prevent Mast from shifting out of plumb. Then install 2nd pour Foundation.
4. After 2nd pour Foundation has hardened set Top Pivot Bearing Cone over Pivot Pin located on top of Mast and remove Braces.
- 4A. Remove Head Restraint Angle from Head Assembly.
5. Attach Boom Ass'y. to Head Ass'y. using Bolts provided. Check Bearing Housing on bottom of Boom to make sure that Bearing Cup is in place.
6. Raise assembled Head and Boom onto plumbed Mast.
7. After Head and Boom is mounted onto Mast lubricate Top Pivot Pin Bearing thru Grease Fitting (Bottom Roller Ass'y. factory lubricated). Rotate Boom slowly thru Arc of 360° to be sure that rotation is satisfactory. If equipped with Rotation Stops, locate Rotation Stops and rotate thru limits of rotation in both directions.
- 7A. Replace Head Restraint Angle back inside the Head Assembly.
8. Remove End Stop and install Trolley/Hoist Unit onto Boom (check gauge of Trolley Wheels for proper fit on beam). Replace End Stop.
9. Install electrical Hardware and Accessories on Boom if provided and make all necessary electrical connections.
 - (a) Bottom Entry Collector System for Pillar Jib Cranes - see installation drawing A4-J-904-2.
 - (b) Top Entry Collector Ring - 360° rotation for Pillar Jib Cranes see installation drawing A4-J-904-3.

NOTE:

For Foundation requirements and Anchor Bolt location, refer to drawing A3-AJ-904 F

WARNING:

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MODEL No	DIMENSIONS									
	F1	F2	K	H	J	L	X	Y	Z	
J-904FS										
080	1'-0 1/8"	1'-1 1/2"	5"	1 1/2"	1 1/2"	4'-0"	5"	6 1/2"	1'-1 5/8"	
120	1'-3"	1'-5 1/4"	5"	1 1/2"	1 1/2"	4'-6"	6 1/2"	8"	1'-5 1/8"	
140	1'-5"	1'-7 1/2"	5"	1 1/2"	1 1/2"	4'-6"	7 1/2"	9"	1'-7"	
160	1'-4 3/8"	1'-7 3/4"	6"	2"	2 5/8"	5'-0"	8 1/2"	10"	1'-7 3/4"	
180	1'-6 3/8"	1'-9 1/2"	6"	2"	2 5/8"	5'-0"	9 1/2"	11"	1'-9 3/4"	
200	1'-8 3/8"	1'-11 3/4"	6"	2"	2 5/8"	5'-0"	10 1/2"	1'-0"	1'-10 3/4"	
240	1'-11 1/8"	2'-3 1/4"	6"	2"	2 5/8"	6'-5"	1'-0 1/2"	1'-2"	2'-1 1/8"	
300	2'-2"	2'-7 1/2"	6 1/4"	3"	3 1/2"	8'-0"	1'-3 1/2"	1'-5"	2'-7"	
320	2'-5"	2'-11 3/4"	8"	4 1/2"	5 1/2"	8'-0"	1'-6 1/2"	1'-8"	2'-10 3/4"	
360	3'-0"	3'-6 7/8"	10"	4 1/2"	5 1/4"	10'-10"	1'-6 1/2"	2'-0"	3'-3"	

* MODEL NO. 300 (HEAVY), 360 & 420 HAS SHIMS.
ON TOP OF HEAD ASSEMBLY UNDER BOOM.

ABELL-HOWE CRANE, ASSUMES NO RESPONSIBILITY FOR LOADING IMPOSED ON BUILDING STRUCTURE OR FOOTINGS BY THIS EQUIPMENT. WE SUGGEST THIS BE CHECKED BY A LICENSED STRUCTURAL ENGINEER AND ANY NECESSARY PERMITS BE SECURED.



ABELL-HOWE CRANES
DIVISION OF CRANE, EQUIPMENT & SERVICE, INC.
UNIT 100 10321 WERCH DRIVE WOODBRIDGE 1 60517

SERIAL NO.

SCALE
DRAWN BY

DATE	DWG
SIZE	NO

SIZE C	DWG. NO. A3-J904FS
------------------	---------------------------------

SHEET
NO. **1 OF 1**



ABELL HOWE

INSTALLATION INSTRUCTIONS FOR FOUNDATION SLEEVE MOUNTED PILLAR JIB CRANE MODEL J-904FS

INSTRUCTIONS:

JIB CRANE IS SHIPPED IN 4 SECTIONS, HEAD ASS'Y.-BOOM ASS'Y.-MAST ASS'Y.-SLEEVE ASS'Y. and a BOX CONTAINING TOP BEARING-BOLTS- and ACCESSORIES.

After 1st pour footing has hardened with Anchor Bolts set, install Leveling Nuts (Jam Nuts) on Anchor Bolts and level across Nuts. Then fill center of bolt pattern to top of Leveling Nuts with Grout (mortar mix). Set Sleeve into position on Leveling Nuts and securely brace the Sleeve in a plumb position, install Locking Nuts on Sleeve Base Plate. Then install The 2nd pour foundation.

2. After 2nd pour foundation has hardened, insert the Crane Mast into the Sleeve and over Sleeve Aligning Pin, making sure that Aligning Pin is fully engaged with hole in the Bottom Mast Plate.

3. Plumb the Mast by using a Plumbing Fixture from Pivot Pin on top of Mast. Then dropping a Plumb Line. Use Steel Wedges every 120° to properly plumb the Mast.

4. Set Top Pivot Bearing Cone over Pivot Pin located on top of Mast.

4A. Remove Head Restraint Angle from Head Assembly.

5. Attach Boom Ass'y. to Head Ass'y. using Bolts provided. Check Bearing Housing on bottom of Boom to make sure that Bearing Cup is in place.

6. Raise assembled Head and Boom onto plumbed Mast.

7. After Head and Boom is mounted onto Mast lubricate Top Pivot Pin Bearing thru Grease Fitting (Bottom Roller Ass'y. factory lubricated). Rotate Boom slowly thru Arc of 360° to be sure that rotation is satisfactory. If equipped with Rotation Stops locate Rotation Stops and rotate thru limits of rotation in both directions.

7A. Replace Head Restraint Angle back inside the Head Assembly

8. After Jib Crane is plumb and rotation is satisfactory locate Top Split Rings around Mast and weld to top of Sleeve Ring.

9. Remove End Stop and install Trolley/Hoist Unit onto Boom (check gage of Trolley Wheels for proper fit on beam). Replace End Stop.

10. Install electrical Hardware and Accessories on Boom if provided and make all necessary electrical connections.

(a) Bottom Entry Collector System for Pillar Jib Cranes - see installation drawing A4-J-904-2.

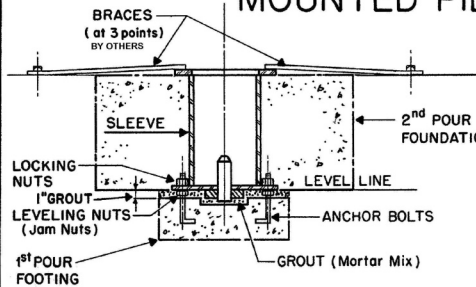
(b) Top Entry Collector Ring - 360° rotation for Pillar Jib Cranes see installation drawing A4-J-904-3.

NOTE:

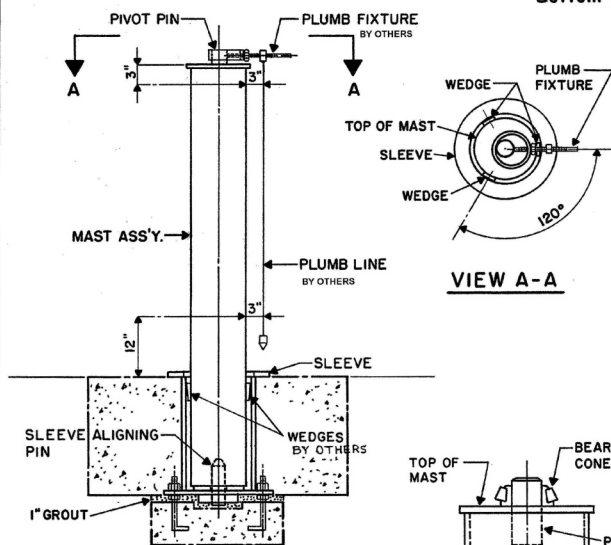
For Foundation requirements and Anchor Bolt location refer to drawing A3-AJ-904FS.

WARNING:

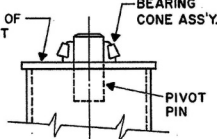
This equipment is not designed for and should not be used for lifting, supporting or transporting personnel.



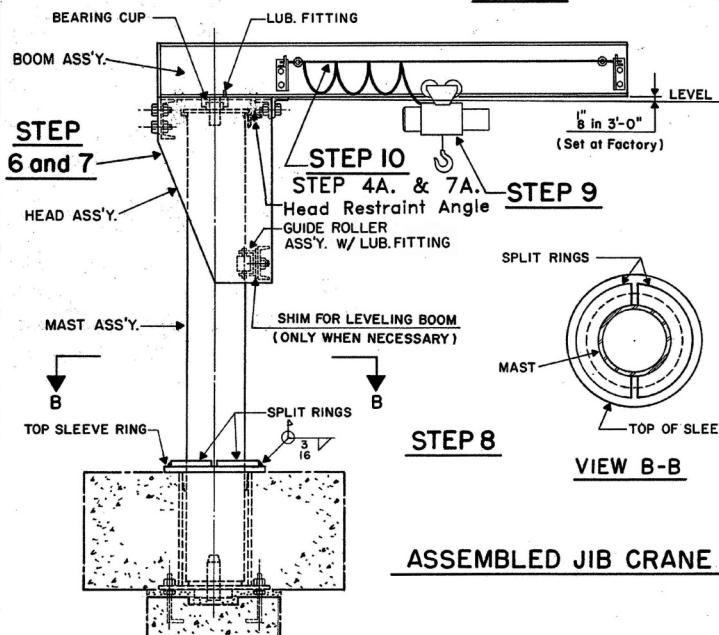
STEP 1



STEP 2 and 3



STEP 4



STEP 6 and 7

STEP 10

STEP 4A. & 7A.

STEP 9

STEP 8

VIEW B-B

ASSEMBLED JIB CRANE

LUBRICATION & MAINTENANCE FOR PILLAR JIB CRANES

The most economical way to maintain a Jib Crane and keep it in good operation condition is to lubricate all moving parts regularly.

Regular inspection of all parts should be made and all loose parts should be adjusted. Parts that become worn should be replaced at once.

The interval of lubrication varies as to the use of the machine. A crane operating twenty-four hours a day seven days a week needs lubricating once a week. Whereas a standard duty crane, operating eight hours a day on a five-day week should be lubricated every two to three weeks. Cranes under standby classification, being used once or twice a month, should be lubricated at least once every six months.

The actual interval from one lubrication too the next depends entirely upon the type and length of operation which the crane is subjected. This, of course, is variable and sometimes cannot be definitely determined. In this case, the crane operator or maintenance engineer would determine when the crane should be lubricated.

There are three bearings that require lubrication. The top pivot and bottom guide roller bearings are serviced by a pressure type Alemite fitting. NLGI 1 and 2 greases are recommended for most applications where the jib's operating temperature range is between 0°F to 350°F (-18°C to 177°C).

STRUCTURAL BOLT TORQUE

1/2"Ø = 80 FT. LBS.

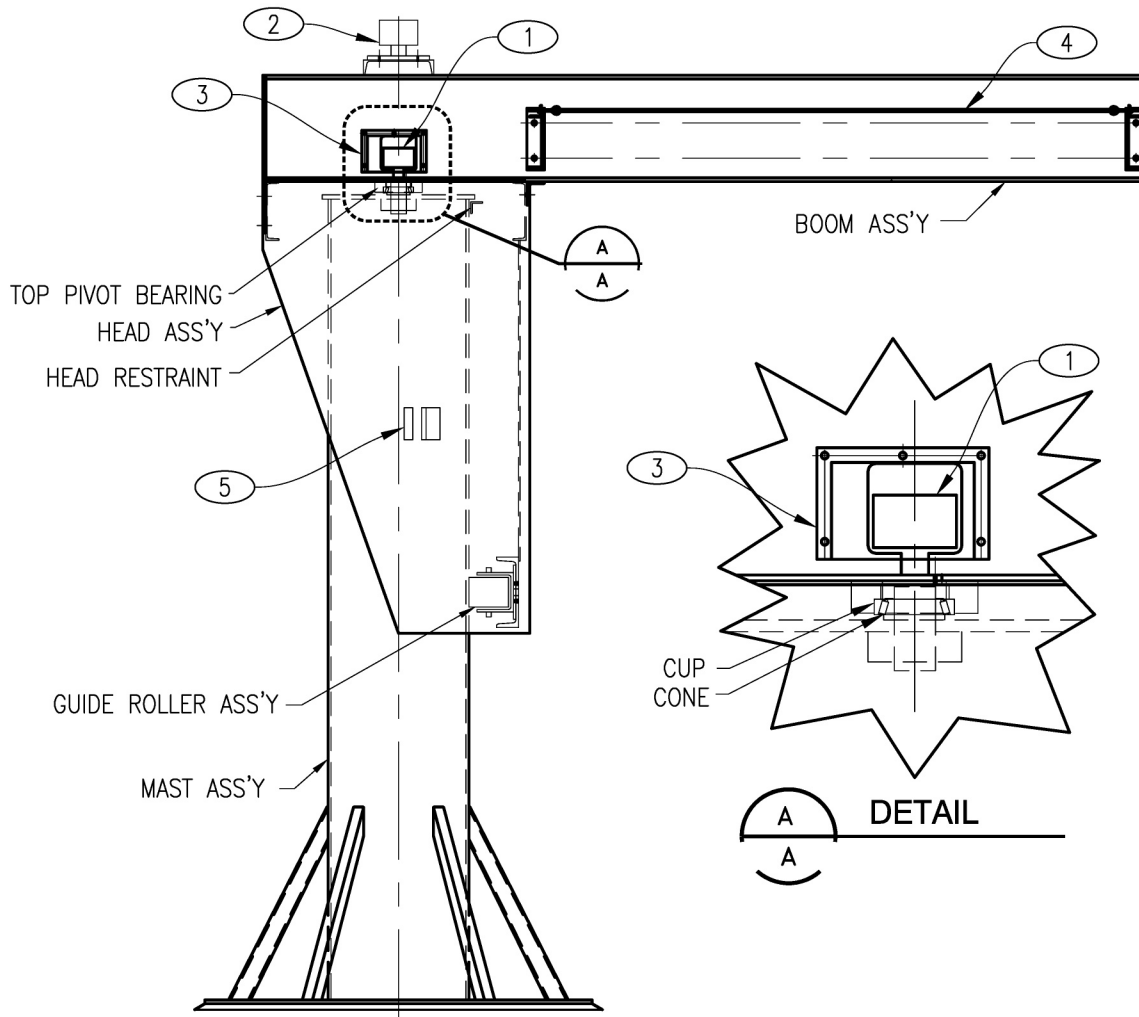
5/8"Ø = 155 FT. LBS.

3/4"Ø = 260 FT. LBS.

7/8"Ø = 345 FT. LBS.

1"Ø = 515 FT. LBS.

PILLAR JIB CRANE



ACCESSORIES, ALL PILLAR JIBS			
FIG NO.	PART NO.	DESCRIPTION	NO. REQ'D
1	506-27	COLLECTOR - BOTTOM ENTRY	1
2	506-29	COLLECTOR - TOP ENTRY	1
3	506-9	COLLECTOR COVER	1
4	---	TAGLINE ASSEMBLY	1
5	505-425	ROTATION STOPS	1

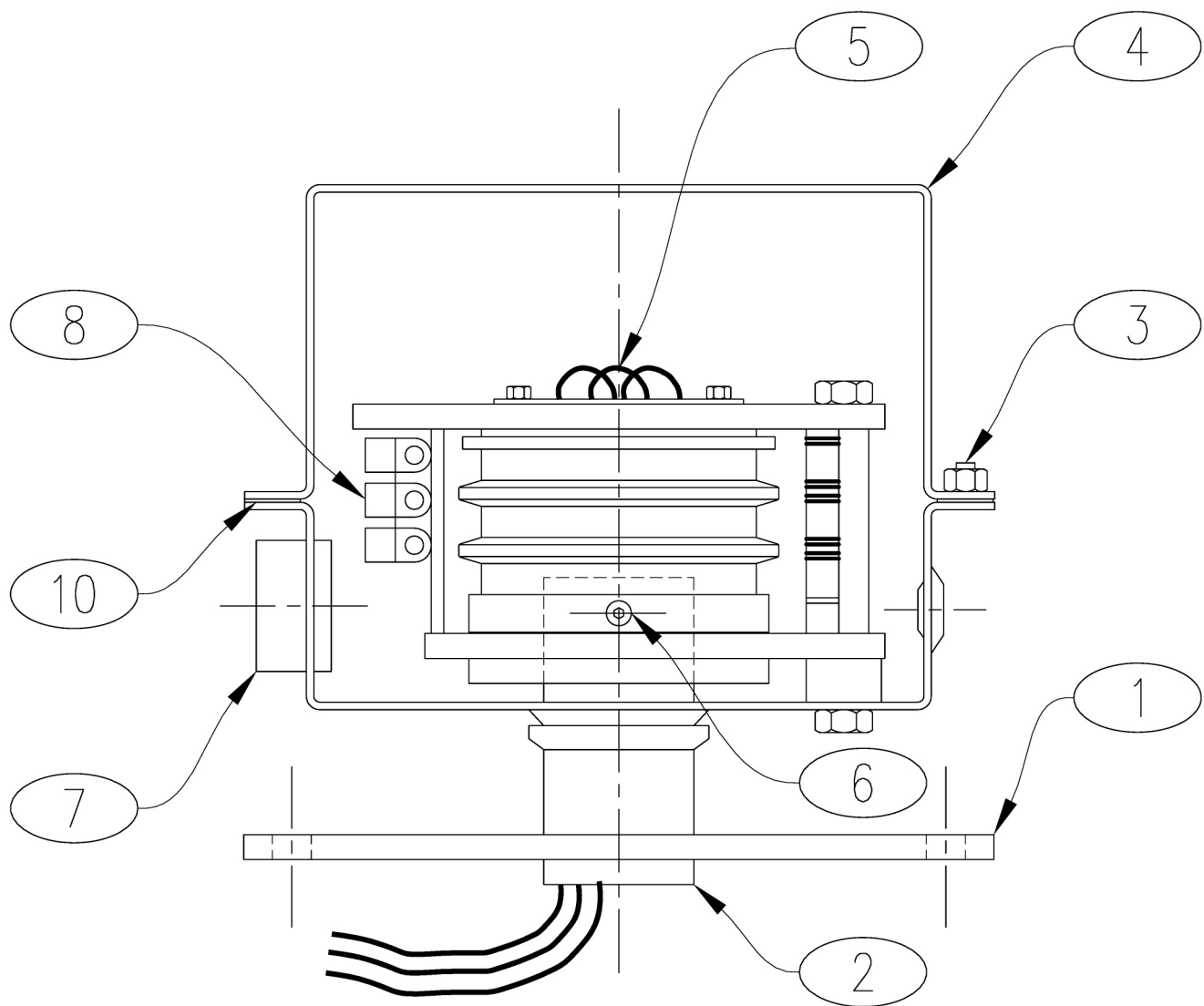
VL SERIES SLIP RING REVOLVING UNIT (VRU) INSTALLATION INSTRUCTIONS

BASIC SAFETY

1) Ring #1 (Next to the driver collar) is grounded to the aluminum drive collar, which is grounded to the shaft, and to the machine the unit is mounted on. All grounding should be done in accordance with NEC and local codes and ordinances.

2) Danger: hazard of electrical shock or burn. Always disconnect or remove power for the slip ring before attempting to perform any service functions.

3) Each conductor is rated at 35 amps / 600 volts maximum. Do not apply greater electrical loads than each conductor is rated for.

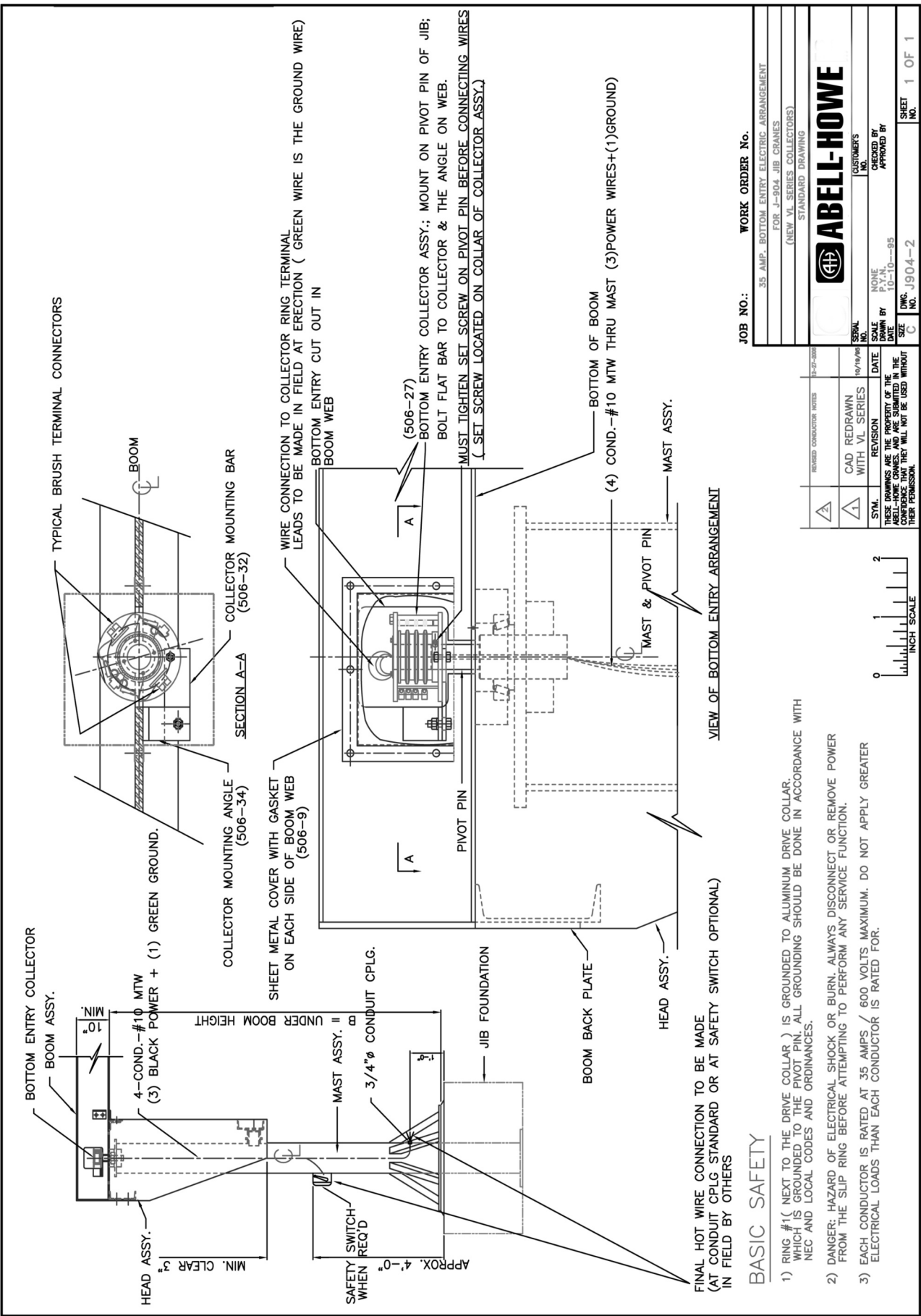


OPERATION

Revolving Slip Ring unit may be installed such that either the cover/bushing housing is held stationary, or made to rotate with the rotating machine element. The cover assembly can be held or rotated with the conduit coming into the 3/4" NPT half coupling on the side of the unit.

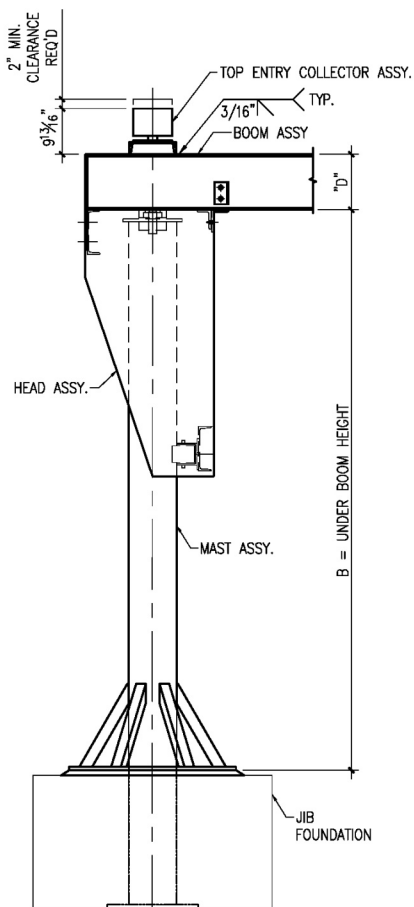
- 1) Bolt the unit (1) on the host machine top entry channel using 3/8" diameter bolts (provided).
- 2) Remove the 6 hex nuts (3) and lift the top cover (4) off. This will expose the slip ring terminal blocks (8). Retain the hex nuts to reinstall the cover when wiring is complete.
- 3) Run lead wires (not provided) from the power supply up through the inside of the shaft and out the top of the slip ring core to point A. For 35 amp operation, 10awg lead wire will be required.
- 4) Strip approximately 1.5" off each lead wire's insulation. Insert each wire into the top terminal block (5) and tighten the screw to hold each wire in securely. Make sure the green ground wire is attached to ring #1 next to the drive collar (6) (Note the green wire coming from the core ring to the terminal block.)
- 5) Insert appropriate fitting into the 3/4" NPT half coupling (7) on the side of the unit to hold incoming brush leads. Possible arrangements include: conduit fitting, watertight connector, or wire clamp. If conduit is used, make sure that it lets the slip ring bearing run true and is not causing the bearing to bind.
- 6) Route lead wire from the apparatus to be powered through the side half coupling and up to the brush terminal blocks (8).
- 7) Strip 1/4" of insulation off each lead wire and insert each into the terminal. Tighten the screws to hold the wire in securely.
- 8) Check all wiring for potential shorted or broken connections. Make sure all brushes and brush holder springs are properly seated in the grooves on the molded brush post and that the brushes are tracking properly.
- 9) Replace the top cover (4) making sure that the rubber gasket (10) is in place. Attach the 6 hex nuts and washers to hold the cover on.

COLLECTOR-BOTTOM ENTRY

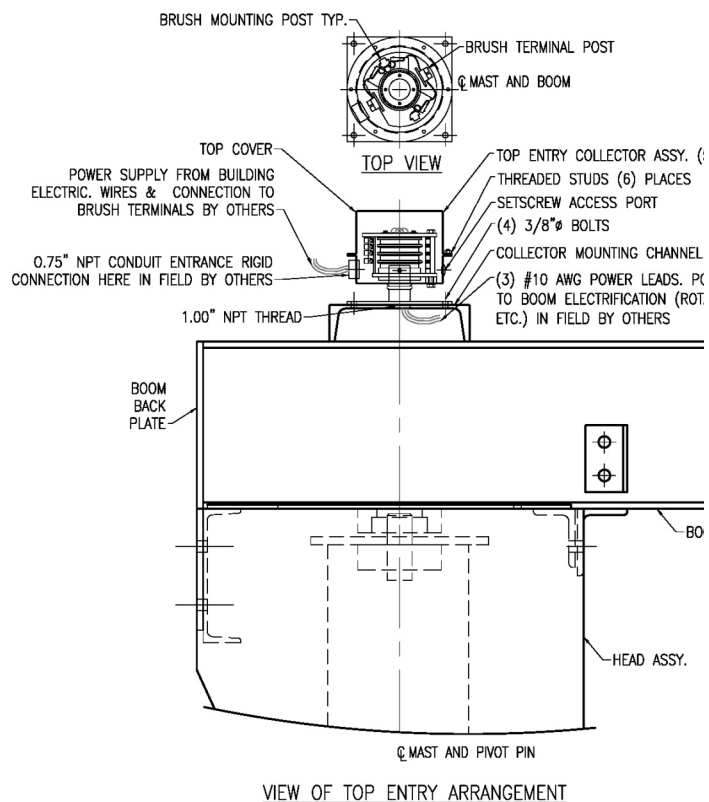


COLLECTOR-TOP ENTRY

C:\Users\jguy\OneDrive\Documents\Drawings\Collector - Top and Bottom Entry\LECTRICAL\REVISED 7-21-2005\J004-Land S08-31 3DMMCS.dwg Mar 28, 2016 - 11:25am



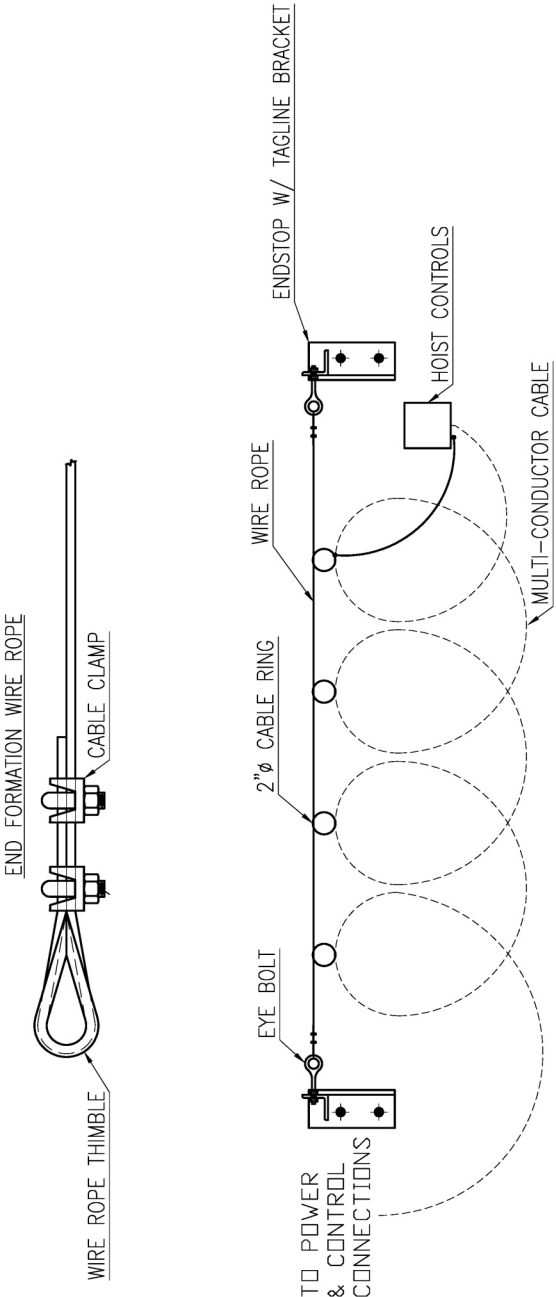
NOTE:
1. SHIPS WITH JIBS ON AND AFTER 2015



SYM.	REVISION
1	UPDATED NOTES & COLLECTOR HEIGHT (INCREASED $\frac{1}{8}$ ")

NOTE: These drawings are the property of Abell-Howe Company and are submitted in the as shown condition. They will not be used without their permission.

TAGLINE ASSEMBLY



NOTE TO INSTALLER:

- 1)INSTALL ENDSTOP/TAGLINE BRACKETS.
- 2)FASTEN EYEBOLTS ON BRACKETS.
- 3)ASSEMBLE WIRE ROPE (AS SHOWN ABOVE) THROUGH EYEBOLT.
- 4)ATTACH OPTIONAL CONDUCTOR CORD TO CABLE RINGS/TROLLEYS- (APPROX 6' SPACING BETWEEN CABLE RINGS/TROLLEYS).
- 5)ADJ EYEBOLTS TO REMOVE SLACK IN WIRE ROPE.
- 6)ATTACH TOW CHAIN (ADJ. TO LENGTH).

TAGLINE PART # (ITEM #950)				BROOM SIZE
SPAN = UP TO 10 FEET	SPAN = 11 TO 15 FEET	SPAN = 16 TO 20 FEET	SPAN = 21 TO 30 FEET	
TAGLINE 10WFS				W6X16 & W8X21
TAGLINE 10W A				W10X26, W12X35 & W16X45
TAGLINE 10W B				W18X55, W21X57, W24X84 & W24X94
	TAGLINE 15WFS			W6X16 & W8X21
	TAGLINE 15W A			W10X26, W12X35 & W16X45
	TAGLINE 15W B			W18X55, W21X57, W24X84 & W24X94
	TAGLINE 20WFS			W6X16 & W8X21
	TAGLINE 20W A			W10X26, W12X35 & W16X45
	TAGLINE 20W B			W18X55, W21X57, W24X84 & W24X94
			TAGLINE 25WFS (UP TO 25')	W6X16 & W8X21
			TAGLINE 30W A	W16X45
			TAGLINE 30W B	W18X55, W21X57, W24X84 & W24X94

SYM.	REVISION	DATE	DRAWING PART #	TAGLINE & CONDUCTOR	
			Customer:		
			ABELL-HOWE		
801 W. CENTER ST. (Rt 24) - BURMA, IL 61530 TELEPHONE (309) 676-6800 - TOLLFREE (800) 467-5118			Description: STANDARD TAGLINES W/ 1/2" 12 CABLE AND ROUND TROLLEYS		
			Drawn By: JES	Scale: ---	Sheet Number
			Checked By: ---	Date: 4/10/2012	File Name: ---
			Approved By: ---	Date: ---	Draw No.: ---
				Revision: ---	Of 1

Rev. b

16

REPLACEMENT PARTS FOR PILLAR JIB CRANES

JIB MODEL	CAPACITY	DESCRIPTION	PART NO.	NUMBER REQ'D
080	UP TO 2,000#	BEARING CONE 1-1/2" PIN DIA.	501-4	1
120		BEARING CUP 1-1/2" PIN DIA.	501-5	1
140		GUIDE ROLLER ASSEMBLY	500-45	1
160	UP TO 4,000#	BEARING CONE 2-5/8" PIN DIA.	501-31	1
180		BEARING CUP 2-5/8" PIN DIA.	501-30	1
200		GUIDE ROLLER ASSEMBLY	500-46	1
240				
160	6,000 TO 10,000#	BEARING CONE 2-5/8" PIN DIA.	501-31	1
180		BEARING CUP 2-5/8" PIN DIA.	501-30	1
200		GUIDE ROLLER ASSEMBLY	500-48	1
240				
300	6,000 TO 10,000#	BEARING CONE 3-1/2" PIN DIA.	501-10	1
		BEARING 3-1/2" PIN DIA.	501-11	1
		GUIDE ROLLER ASSEMBLY	500-48	1
300	10,000#	BEARING CONE 3-1/2" PIN DIA.	501-10	1
		BEARING 3-1/2" PIN DIA.	501-11	1
		GUIDE ROLLER ASSEMBLY	500-22S	2
		BOTTOM ENTRY CONNECTOR ASS'Y	506-27; 506-9	1
		TOP ENTRY CONNECTOR ASS'Y	506-29	1

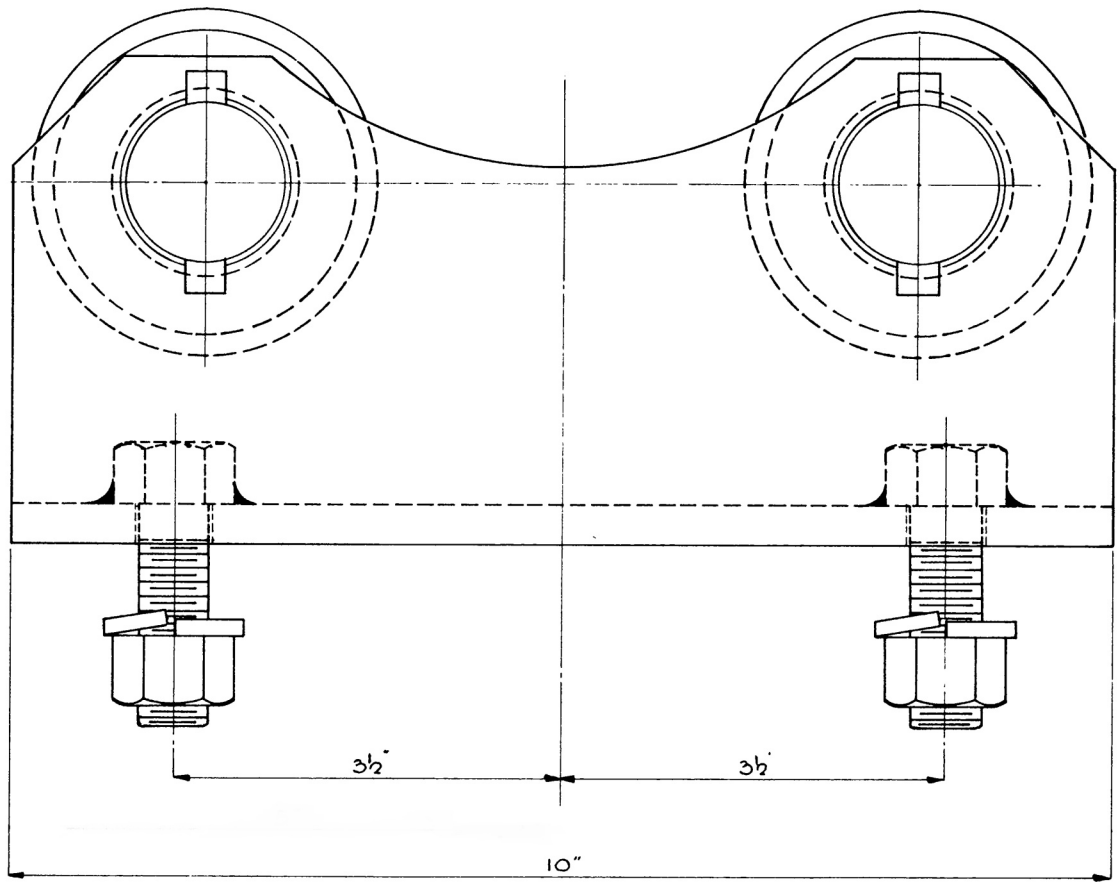
CRANE SERIAL NUMBER REQUIRED FOR PROPERLY IDENTIFYING ABOVE PARTS.

MODEL NUMBERS -080, -120, 140, ETC., REFERS TO THE NOMINAL MAST DIAMETER 8", 12", 14", ETC.

GUIDE ROLLERS AVAILABLE AS COMPLETE ASSEMBLIES ONLY.

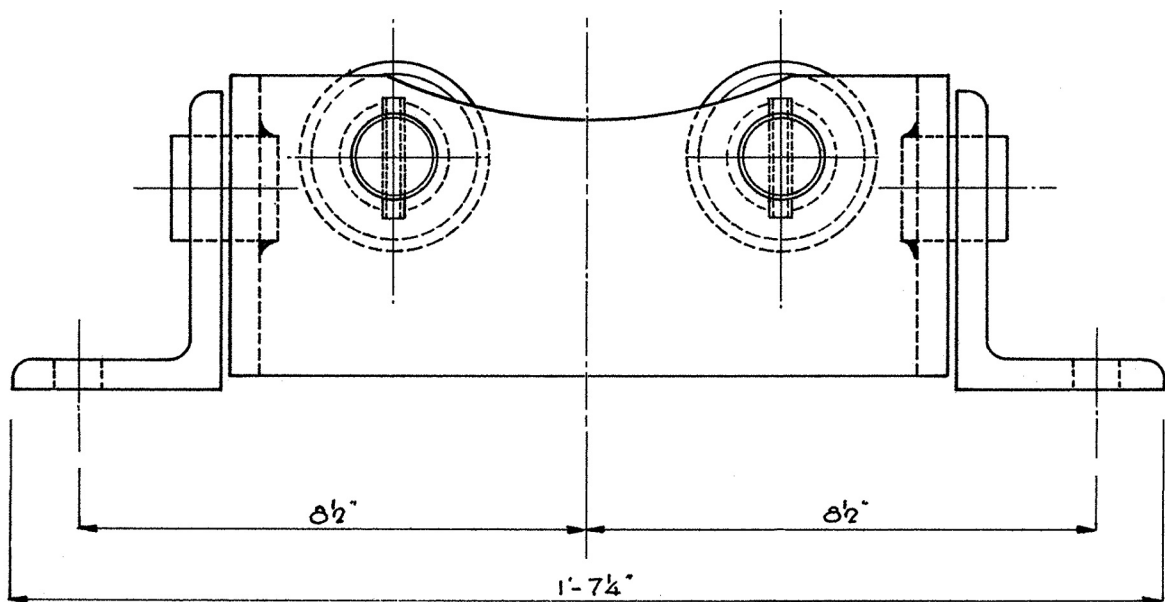
GUIDE ROLLER ASSEMBLY

ASSEMBLY NO. 500-45



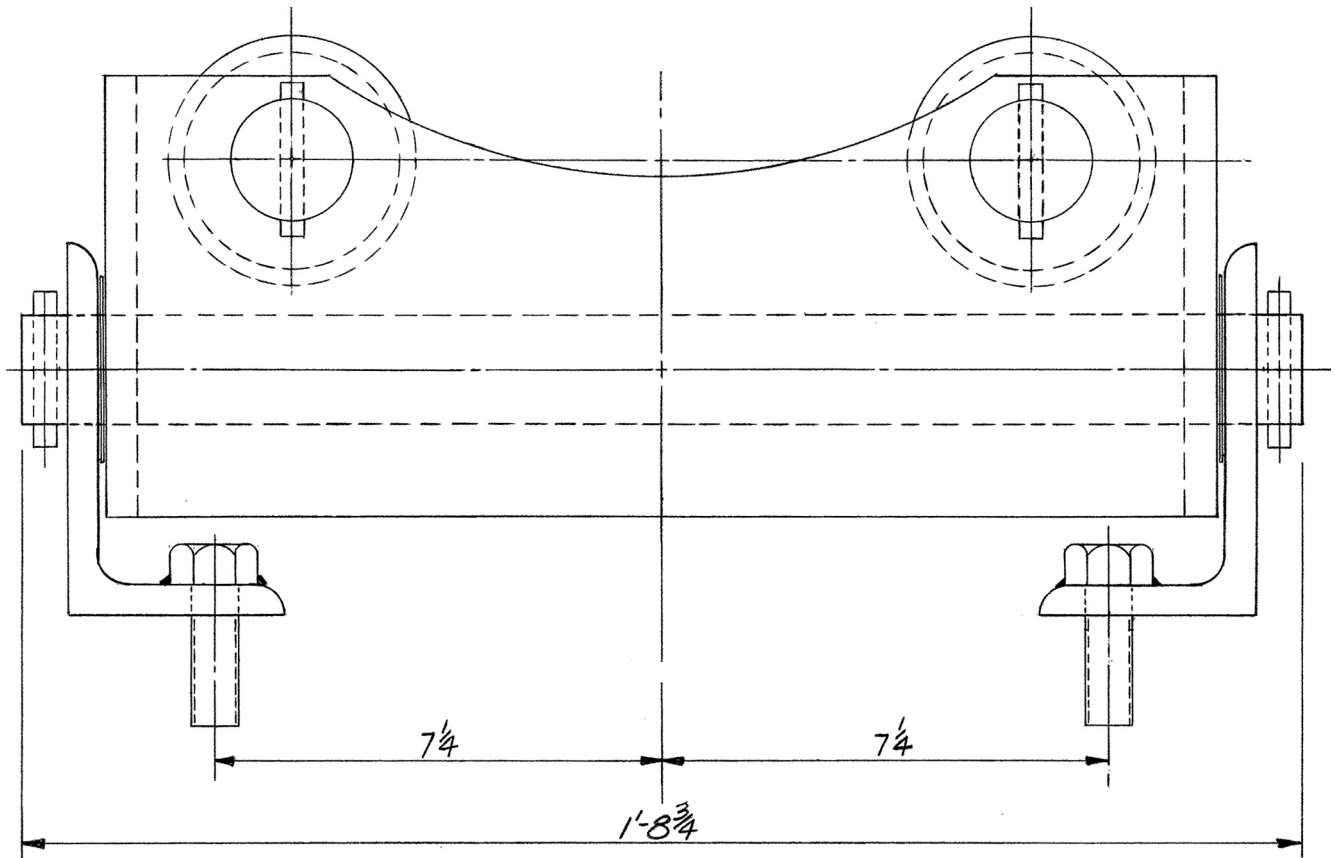
GUIDE ROLLER ASSEMBLY

ASSEMBLY NO. 500-46



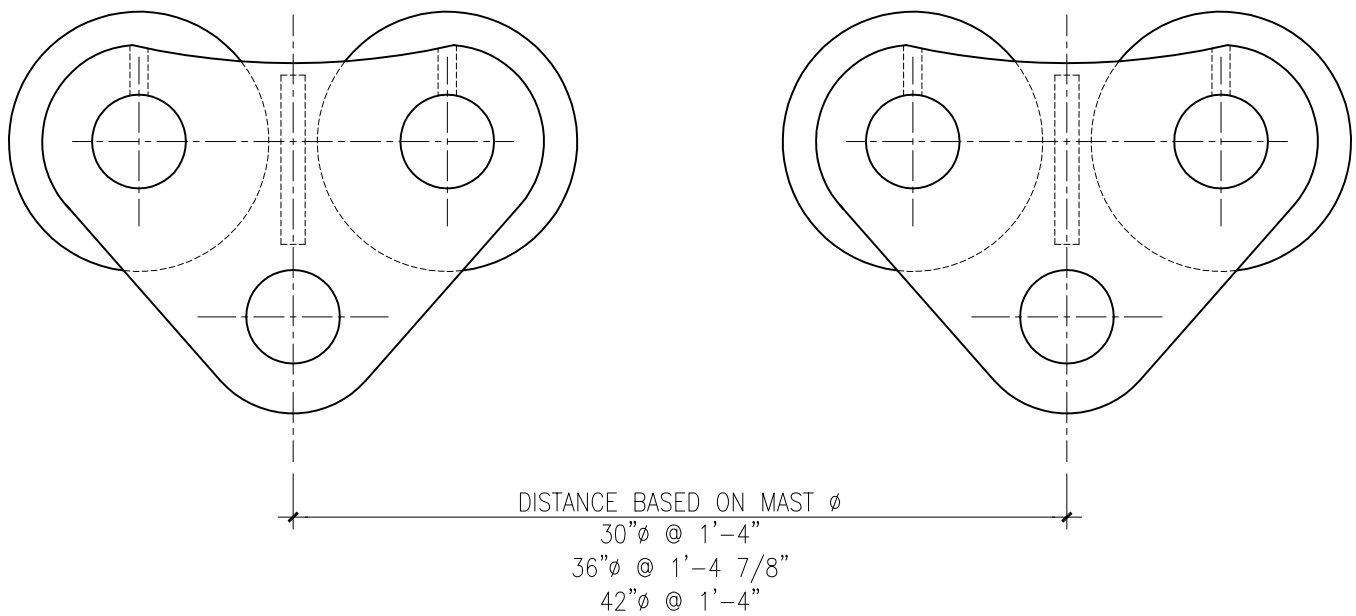
GUIDE ROLLER ASSEMBLY

ASSEMBLY NO. 500-48



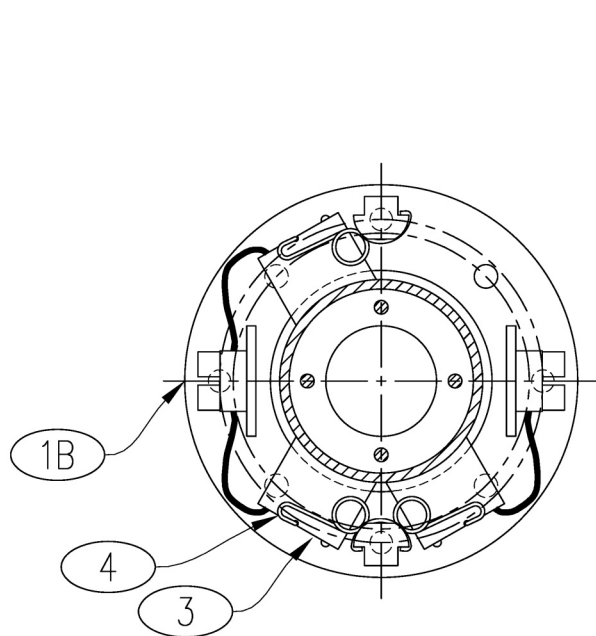
GUIDE ROLLER ASSEMBLY

ASSEMBLY NO. 500-22S (2 SETS REQUIRED)

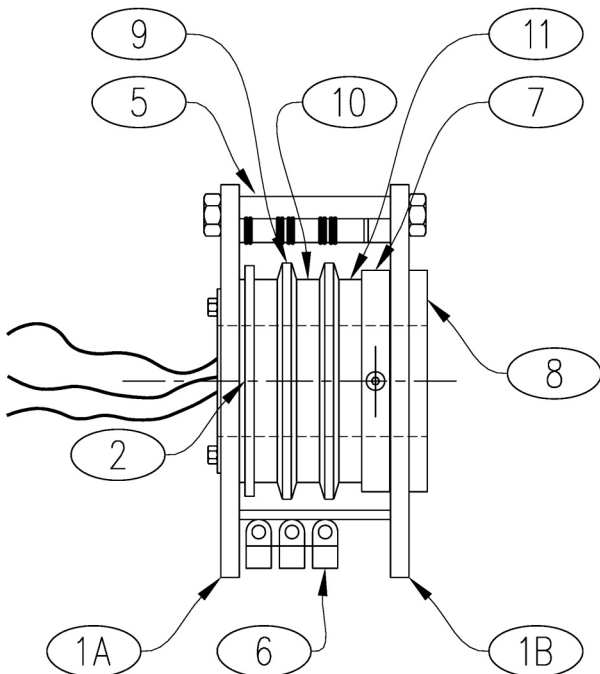


BOTTOM ENTRY COLLECTOR

PART# 506-27



COLLECTOR RING
SECTION VIEW



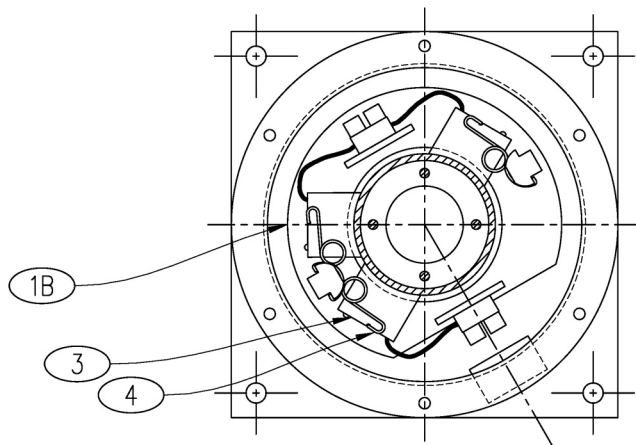
SIDE VIEW

(BRUSHES & HOLDER SPRINGS
ARE NOT SHOWN FOR CLARITY)

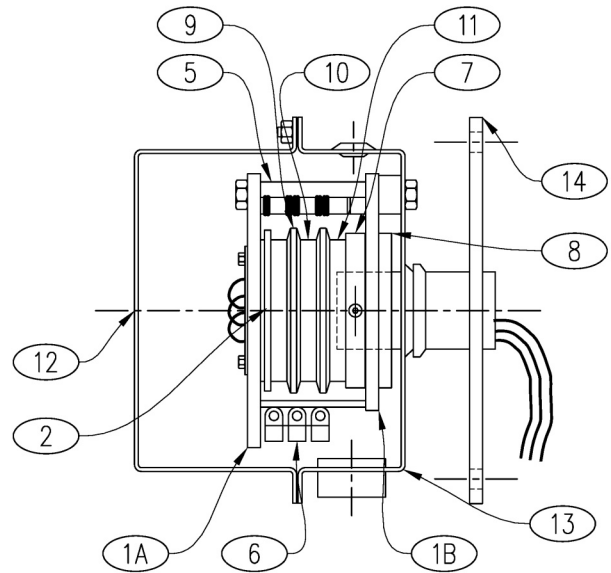
ITEM	QTY	DESCRIPTION
1A	1	BEARING, OUTBOARD, TOP
1B	1	BEARING, OUTBOARD, BOTTOM
2	1	BEARING RACE, INSULATED, TOP
3	4	BRUSH, 35A 1.5B CG VL PR
4	4	BRUSH HOLDER/SPRING, 35A
5	2	BRUSH POST, MOLDED
6	2	BRUSH TERMINAL BLOCK
7	1	DRIVE COLLAR, ALUMINUM
8	1	DRIVE COLLAR RETAINER, ALUMINUM
9	3	INSULATOR, 35A RING
10	3	SLIP RING, 35A BRASS W/ BLACK LEAD
11	1	SLIP RING, 35A BRASS W/ GREEN LEAD

TOP ENTRY COLLECTOR

PART# 506-29



COLLECTOR RING
SECTION VIEW



SIDE VIEW
(BRUSHES & HOLDER SPRINGS
ARE NOT SHOWN FOR CLARITY)

ITEM	QTY	DESCRIPTION
1A	1	BEARING, OUTBOARD, TOP
1B	1	BEARING, OUTBOARD, BOTTOM
2	1	BEARING RACE, INSULATED, TOP
3	4	BRUSH, 35A 1.5B CG VL PR
4	4	BRUSH HOLDER/SPRING, 35A
5	2	BRUSH POST, MOLDED
6	2	BRUSH TERMINAL BLOCK
7	1	DRIVE COLLAR, ALUMINUM
8	1	DRIVE COLLAR RETAINER, ALUMINUM
9	3	INSULATOR, 35A RING
10	3	SLIP RING, 35A BRASS W/ BLACK LEAD
11	1	SLIP RING, 35A BRASS W/ GREEN LEAD
12	1	GASKET RUBBER 7.500 O.D. x 6.218 I.D.
13	1	WASHER THRUST VLRU USED IN UL LISTED
14	1	SEAL V-RING 1.42-1.5 SHAFT DIAMETER

SAFE OPERATING PROCEDURES (S.O.P.) FOR ABELL - HOWE JIB CRANES

Your crane has been given a no-load test of the various drive and control devices and equipment. When your crane is placed into service, Abell-Howe has no further control over its inspection, operation or maintenance. For this reason, safety in the field must remain the responsibility of the user.

Your firm should have safety rules peculiar to your industry and your facilities. Compare your rules with those we suggest and where they differ, adopt the more stringent methods of safe and proper use.

This data is intended to supplement your existing comprehensive operating and maintenance instructions for overhead traveling crane operators.

The following points are important to the safe operation, inspection and maintenance of our cranes.

CRANE OPERATOR

For your protection and that of your workers, assign an operator who is competent, experienced and licensed if required by law. Only properly appointed persons should operate your cranes and hoist. If you do not have an experienced operator we recommend that your trainee read the data herein, noting any special instructions and paying particular attention to the function and operation of each control. In addition to being alert and safety conscious, the operator should:

- 1) Be trained in crane operation.
- 2) Be aware of normal shop area practices and procedure.
- 3) Have good hearing and vision (with or without correction) and good depth perception.
- 4) Be in good health – not afflicted with known heart or other conditions causing loss of his ability to react.
- 5) BE CAREFULLY INSTRUCTED IN HIS DUTIES.
- 6) Have a substantial knowledge of methods of hooking onto loads.
- 7) Be made to understand that he is directly responsible for the safe operation of the crane or hoist. When he feels doubt as to safety, he should stop the crane and refuse to handle loads until safe conditions prevail.
- 8) Like an airline pilot, the crane operator must be at all times capable of handling the controls so as not to endanger the safety of other personnel or plant equipment. An operator must not eat, read, sleep or otherwise divert his attention while operating a crane. Practical jokes should be absolutely forbidden, and the use of alcohol or other intoxicants is not to be tolerated. An operator given a prescription drug by a physician should obtain written assurance it will not prevent him from operating the crane or hoist in a safe manner, before returning to work.

INSPECTION & MAINTENANCE

GENERAL

A periodic inspection, lubrication and maintenance schedule should be established for cranes and hoists, to be carefully followed to prevent minor defects from becoming more dangerous, as well as more costly to repair.

Quite often identical cranes or hoists will operate under widely varying duty cycles. It is therefore, impossible for a manufacturer to set up a definite maintenance time schedule for cranes. We recommend in the following paragraphs minimum safe intervals for average conditions, as there is no substitute for direct knowledge of local operating frequencies. Inspections are recommended at the times outlined in the following paragraphs.

DAILY

At the beginning of each shift, inspection should be made to assure that the crane or hoist is safe for immediate use, and should include, but not be limited to, the following:

- 1) Know that the equipment is adequately lubricated.
- 2) By operating each control, be sure it is working properly. If not, report to your supervisor, and advise the next operator so he can check to see the defect is taken care of.
- 3) Check all brakes for proper adjustment. The electric motor (holding) brakes are tested by lifting a capacity (or near capacity) load a short distance off the floor and suspending it by the brake.
- 4) Visually inspect each component of the crane or hoist normally used in lifting, traveling or lowering the load. Such inspection should include, but not limited to, the following:
 - a. Wire rope. Inspect for kinks or broken wire and replace damaged rope immediately. If chain type hoist, check to make sure chain is not deformed (usually by overload lifts) and replace if necessary.
 - b. Check all basic operating mechanisms such as sheaves, drums and brakes, and all safety devices such as upper and lower limit switches, travel limit switches, main line disconnects, overload cutouts, etc.
 - c. Scan the entire crane for signs of damage which might cause unsafe operation.

The above procedure should take only a few minutes at beginning of the shift and should help prevent "surprises".

MONTHLY

The inspection is intended to determine the need for repairs necessary to keep the crane and hoist in approximately new condition insofar as safety is involved and to find and correct any wear, damage or defect which could affect the safe operation of your crane or hoist. We suggest that results of this inspection be recorded by your maintenance or safety inspector maintaining a "log" on each unit. Such inspection should include the items listed under the daily inspection as well as the following:

- 1) Inspect the entire crane for possible structural damage.
- 2) Inspect for cracked or worn sheaves, drums, wheels and rails.
- 3) Inspect for worn, cracked or distorted components such as pins, bearings, shafts and gears.
- 4) Inspect for excessive wear on brake system parts, linings, pawls, and ratchets. Make sure mechanical load brake parts operate properly, are in good condition, and are properly lubricated.
- 5) Inspect all motors, controls and conductor systems which might in any way affect the safe operation of the equipment.
- 6) Oil or grease on the equipment can cause serious falls, and dirt in mechanical parts will cause excessive wear and possible failure. Keep the crane clean and in good working order.
- 7) Replace protective guards and panels before operating the crane or hoist.

SPECIAL NOTE: OSHA & ASME B30 STANDARDS HAVE SPECIFIC REQUIREMENTS FOR CRANE & HOIST INSPECTIONS. PLEASE ENSURE YOU ARE FOLLOWING THESE REQUIREMENTS.

INSPECTION AS REQUIRED

The third inspection should be made as individual incidents occur, which apply sudden and unusual shock loads, unusual stress, or possible damage of any type to the equipment. Whenever an incident of this type occurs, it is the responsibility of the operator to report such to his supervisor, so an immediate inspection testing and any required repairs can be made.

SAFE OPERATING

Your crane operators should be instructed in the mechanics of operating a crane safely. Some suggestions follow:

- 1) Before leaving the control station of the crane, the following precautions must be observed.
 - a. Stop the crane at the approved location for entering or leaving the crane if cab controlled, or parking location if push button control.
 - b. Lower the load to the ground.

SPECIAL NOTE - NEVER DEPEND ON A HOLDING BRAKE TO SUSPEND A LOAD UNLESS THE OPERATOR IS AT THE CONTROLS, IN A POSITION TO HANDLE THE LOAD.

- c. Raise all hooks to the upper limit switch.
 - d. Place all controls in the OFF position.
 - e. Place the main power switch or button to OFF position.
 - f. Make a visual check for any abnormal or dangerous condition.
- 2) The operator or person in charge should see that:
 - a. Slings are adequate, properly arranged for load and secured before load is lifted.
 - b. All loose items such as tools are removed from both load and crane before lift is made.
 - c. Keep load away from obstructions while lifting or traveling.
 - d. Avoid sudden starts and stops. Bumping into runway stops is prohibited.
 - e. Make sure hoist line is vertical before lifting, slack in the line is to be removed slowly, and all workers are clear before beginning the lift.
 - f. Do not pass load over the heads of workers. Non-operating personnel should be warned to leave the immediate area when making lifts.
 - g. Do not allow anyone to ride the hook.
 - h. ALL stop signals are obeyed, regardless of who gives them.
 - i. Other than emergency stop signals, signals are accepted from only one designated person at a time unless special arrangements are made in advance for a specific lift only.
 - k. Standard crane signals are used and loads are not moved unless the standard signal is given, seen and understood. See Fig. 1.
- 3) Never attempt to adjust, repair or lubricate moving crane.
- 4) Do NOT use a crane for side pulling. It was not designed nor intended for such use. This practice may cause electrical as well as mechanical damage and will endanger personnel.
- 5) If a rope has been allowed to become slack, make sure that the rope is properly seated in the drum grooves and in the sheaves before a load is lifted.
- 6) Never lower the load block to a point where less than two full wraps remain on the drum. If all cable is removed from the drum, be sure it is rewound in the correct direction to prevent cable damage and to insure correct operation of the hoist limit switches.

- 7) Never block out safety devices, such as limit switches, in order to allow operation of the crane in a manner not intended by the manufacturer.

SPECIAL NOTE - LIMIT SWITCHES ARE SAFETY DEVICES, NOT OPERATING CONTROLS. NEVER ACTUATE THEM UNNECESSARILY DURING NORMAL OPERATION.

- 8) The following general procedure should be used when checking limit switches:
- Move crane to an open area, away from personnel and other equipment.
 - Make sure no load is on the hoist.
 - Slowly run the hook block up to about three feet (3') below the limit switch weight (or paddle) and stop hoist motion.
 - Proceed to raise the hook block at lowest speed until it contacts the trip mechanism - if the limit switch device does not cut out the upward travel as it should, lower hook block out of contact and notify your supervisor at once.
- 9) If electrical power fails, place all controllers in the OFF position and keep them there until power is restored. This will prevent sudden and unexpected movement when power is restored.
- 10) Never remove a DO NOT OPERATE card from a control without checking to see that it is safe to do so, even if you have placed the card yourself. Someone else may be depending on that card to prevent the crane from being operated.
- 11) Use fuses of specified size, and NEVER use a "cheater" fuse. Blown fuses are both a sign of trouble and the main protection afforded the electrical system.
- 12) NEVER contact another crane on the same runway. If it is necessary be sure all personnel in the area are so advised and push at slowest possible speed. Never move or bump a crane displaying a warning flag or sign.

IMPORTANT:

NEVER EXCEED THE RATED CAPACITY OF THE CRANE OR HOIST. Be sure to include weight of "below the hook" devices and motorized rotating hook block when figuring weight of load lifted.

IMPORTANT:

While inspecting or work of any kind is being performed on a crane or hoist, a warning flag should be placed where it is readily visible to indicate the crane or hoist must not be moved. The main power source must be LOCKED in the OFF position.

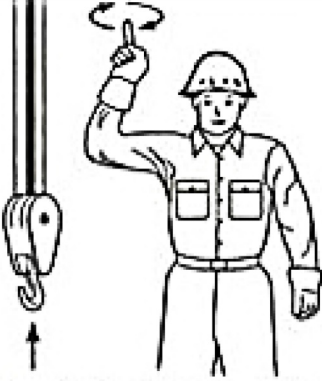
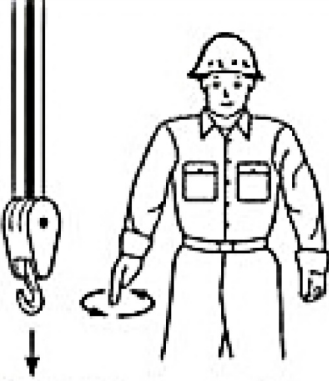
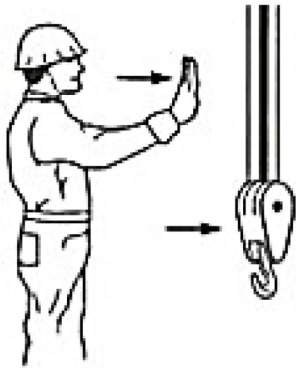
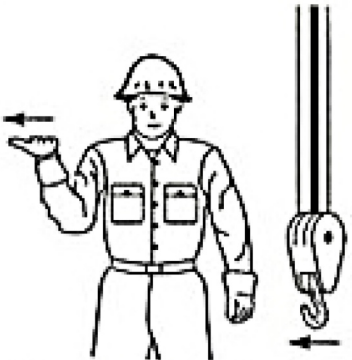

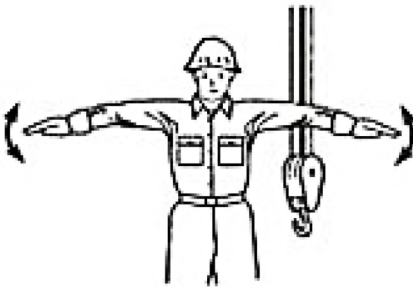
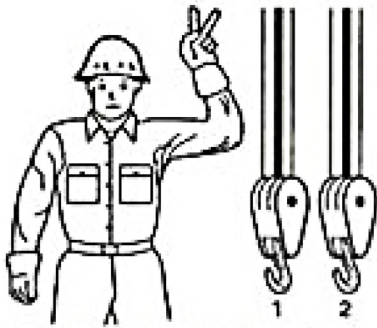
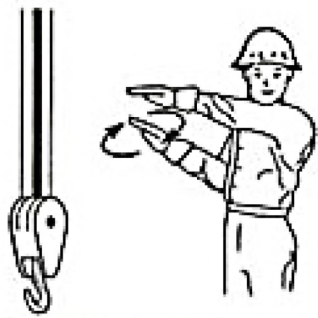
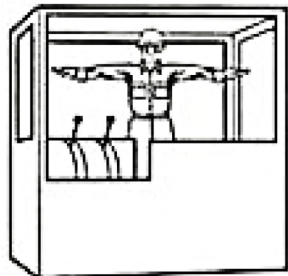
IMPORTANT:

Repairs and adjustments should be made only by properly designated and authorized personnel. When a crane is being repaired, the maintenance person assigned is in charge of all phases of crane movement and operation, and his or her instructions should ordinarily be obeyed without question. Only if the instructions are contrary to safe operating practices should the operator question them. Whenever this occurs, the maintenance supervisor should be contacted at once for a decision.

ABOVE ALL, USE COMMON SENSE!

The manufacturer strives to build safe equipment for your use, but SAFETY MUST BE A FRAME OF MIND WHEN IT COMES TO ACTUAL OPERATION.

STANDARD HAND SIGNALS (FIG. 1)

 <p>HOIST. WITH FOREARM VERTICAL, FOREFINGER POINTING UP, MOVE HAND IN SMALL HORIZONTAL CIRCLE.</p>	 <p>LOWER. WITH ARM EXTENDED DOWNWARD, FOREFINGER POINTING DOWN, MOVE HAND IN SMALL HORIZONTAL CIRCLE.</p>	 <p>BRIDGE TRAVEL. ARM EXTENDED FORWARD, HAND OPEN AND SLIGHTLY RAISED, MAKE PUSHING MOTION IN DIRECTION OF TRAVEL.</p>
 <p>TROLLEY TRAVEL. PALM UP, FINGERS CLOSED, THUMB POINTING IN DIRECTION OF MOTION, JERK HAND HORIZONTALLY.</p>	 <p>STOP. ARM EXTENDED, PALM DOWN, MOVE ARM BACK AND FORTH HORIZONTALLY.</p>	 <p>EMERGENCY STOP. BOTH ARMS EXTENDED, PALMS DOWN, MOVE ARMS BACK AND FORTH HORIZONTALLY.</p>
 <p>MULTIPLE TROLLEYS. HOLD UP ONE FINGER FOR BLOCK MARKED "1" AND TWO FINGERS FOR BLOCK MARKED "2". REGULAR SIGNALS FOLLOW.</p>	 <p>MOVE SLOWLY. USE ONE HAND TO GIVE ANY MOTION SIGNAL AND PLACE OTHER HAND MOTIONLESS IN FRONT OF HAND GIVING THE MOTION SIGNAL. (HOIST SLOWLY SHOWN AS EXAMPLE.)</p>	 <p>MAGNET IS DISCONNECTED. CRANE OPERATOR SPREADS BOTH HANDS APART WITH PALMS UP.</p>

ABELL-HOWE JIB CRANE SAFETY

JIB CRANE SAFETY "DO'S"

- | | | | |
|----|--|----|---|
| DO | Read and follow all Federal, State, Local, and Company safety procedures especially OSHA 1910.179, 1910.181, and ANSI B30.17 and B30.20. | DO | Check to insure the load is properly balanced and will not slip or shift. |
| DO | Read and follow all safety procedures of lifting devices, i.e. Hoist or Winch, Slings, Ropes, Chains, Magnets, Grabs, etc. | DO | Keep work area clear of obstacles. |
| DO | Become familiar with all controls, latches, switches, etc. | DO | Perform regular inspections, maintenance, and lubrication on jib crane. |
| DO | Warn personnel of approaching load. | DO | Understand that most accidents are caused by human error and therefore can be prevented through knowledge training inspection, maintenance, common sense, planning ahead, communication, and attentiveness. |
| DO | Keep all body parts clear of vertical and horizontal pinch or crush points when lifting, lowering, and/or traversing the load. | | |

JIB CRANE SAFETY "DON'TS"

- | | | | |
|-------|--|-------|---|
| DON'T | Exceed rated capacity of Jib Crane. | DON'T | Operate Jib Crane if any parts are bent, cracked, damaged, missing or non-functional. |
| DON'T | Move or suspend the load over people. | DON'T | Operate Jib Crane unless you are qualified. |
| DON'T | Allow people to stand or pass under a load. | DON'T | Place ladders or climbing devices against jib crane without securing boom rotation. |
| DON'T | Move load with people on the hook or on the load. | DON'T | Remove boom end stops without securing trolley travel. |
| DON'T | Allow load to contact any obstructions. | DON'T | Operate Jib Crane without Anti Lift-Off device. |
| DON'T | Leave load suspended in the air unattended. | | |
| DON'T | Side pull or try to lift loads past the span (reach) of the Jib Crane. | | |

NOTES:



ABELL-HOWE



Jib Crane Product Solutions

- J906FC Series – Wall Mounted Full Cantilever Jib Cranes
- J904B Series – Heavy Duty Base Mounted Pillar Jib Cranes
- J904F Series – Heavy Duty Foundation Mount Pillar Jib Cranes
- J904S Series – Light Duty Base Mounted Jib Cranes
- J904L Series – Foundationless Jib Cranes
- J902FC Series – Mast Style Jib Cranes
- J900 Series – Wall Bracket Jib Cranes
- Electric & Hand Geared Motorized Rotation Jib Cranes
- Jib Crane Fittings
- Custom Designed & Engineered Jib Cranes

Abell-Howe Company has been designing, engineering, manufacturing and erecting overhead material handling systems for over 100 years. Known for our extensive product line and engineering skills, Abell-Howe provides both standardized cranes, as well as the expertise to design most any type of crane to meet the ever-changing needs of the end user.

Abell-Howe is a member of CMAA and is on the committee that establishes standards for mechanical, structural, and electrical design of cranes. These engineering innovations and improvements are incorporated into every crane we manufacture, assuring product reliability, safety, efficiency and cost effectiveness.

Crane Equipment & Service, Inc. Manufacturer of Abell-Howe™ Cranes
801 W. Center St, Eureka, IL 61530

800.548.2930 | www.AbellHowe.com

