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Manual # 99906701

Series 4 Telescopic Cranes 12000 25' & 30' Parts & Specifications

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 WARNING
Operating, servicing and maintaining this vehicle or equipment can expose you to chemicals including engine exhaust, carbon monoxide, phthalates, and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. To minimize exposure, avoid breathing exhaust, do not idle the engine except as necessary, service your vehicle or equipment in a well-ventilated area and wear gloves or wash your hands frequently when servicing. For more information go to www.P65Warnings.ca.gov.
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Section - 1

Introduction

Equipment Safety

PERSONNEL REQUIREMENTS

Certain inherent risks are associated with heavy equipment. Personnel working in the area of these vehicles are subject to certain hazards that cannot be guarded against by mechanical means, but only by the exercise of intelligence, care, and common sense. It is therefore essential for the owner of this equipment to have personnel involved in the use and operation of these vehicles who are competent, careful, physically and mentally qualified, and trained in the safe operation of this equipment.

TRAINING

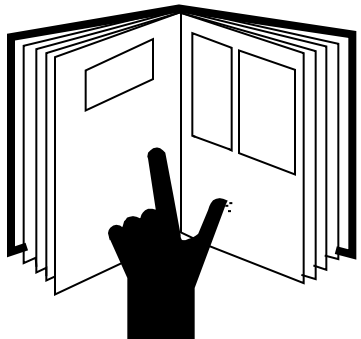
Prior to using any of the equipment installed on or incorporated in the IMT Crane Body Mechanics Truck, you must:

- Have already been fully trained to operate the vehicle and equipment.
- Have demonstrated the effectiveness of your training and the extent of your knowledge.

BEFORE operating this vehicle and any associated equipment, you, the operator or maintainer, must read, understand, and follow the instructions found in the operator and maintenance manuals from the manufacturers of major components used on this vehicle or equipment

Proper tools and service equipment must be used taking appropriate precautions as required by accepted safety practices to prevent personal injury and / or equipment damage

If you are uncertain about the safe operation of any aspect of this vehicle or equipment, stop immediately and seek further training.

⚠ WARNING	
	• Only trained personnel should operate this equipment. • Do not operate or service until you have read and understood the operation and service manual supplied with this equipment. • Manuals can be obtained from manufacturer's website or by contacting customer service. • Operating this equipment without knowledge or training may lead to injury or death for you or others.



www.imt.com/service-manuals

Introduction

This volume includes specifications, installation information, and spare parts drawings applicable to your particular crane. For operating, maintenance and repair instructions, see the *S4 Telescopic Crane Operator's Manual*, part number 99906578.

It is your responsibility to operate and maintain this unit in a manner that will result in the safest working conditions possible. You must be aware of existing Federal, State and Local codes and regulations governing the safe use and maintenance of this IMT crane. The crane was designed and built to meet the standards of ANSI/ASME B30.5, Mobile & Locomotive Cranes. Contact the American Society of Mechanical Engineers (www.asme.org) for more information on ANSI/ASME B30.5.

Misuse of the crane through overloading, abuse, lack of maintenance and unauthorized modifications will void the warranty on any part of the unit subjected to this misuse. No warranty - verbal, written or implied - other than the official, published IMT new machinery and equipment warranty will be valid with this unit. Throughout the manual, NOTE, CAUTION and WARNING are used to draw the attention of personnel. They are defined as follows:

WARNING
A WARNING is used when there is the potential for personal injury or death.

CAUTION
A CAUTION is used when there is the very strong possibility of damage to the equipment or premature equipment failure.

NOTE
A NOTE is used to either convey additional information or to provide further emphasis for a previous point.

For a safe work environment, treat this equipment with respect and service it regularly.

PERSONAL FALL / TIE-OFF PROTECTION

When using IMT products for the purpose of personal fall protection, users shall read, understand, and follow the personal fall protection provisions of OSHA 29 CFR 1926.1423, paragraphs (g) Anchorage criteria; (j) Anchoring to the load line; (k) Training. Note OSHA sections, 1926.502(d)(15)* and 1926.502(e)(2)*, are cross-referenced in this section and is up to the user to read, understand, and follow these regulations. The above-referenced provisions within OSHA address specific personal fall protection requirements; however, users of IMT products are required to read, understand and follow all OSHA, industry, workplace, and employer-created regulations governing the use of this product, which includes, but is not limited to, 29 CFR 1926.1423. The user is also required to read, understand, and follow IMT's warnings and instructions. Nothing within this letter should be interpreted to limit or excuse non-compliance with the above requirements in their entirety.

When using IMT products with personal fall protection as described above, users shall utilize a two-part line with the snatch block installed on the winch load line. The personal fall protection shall be attached to the hook on the snatch block. The personal fall protection device shall be connected to the hook on the snatch block only if the hook has the original safety latch on the hook. At no time shall anyone use the hook on the snatch block for purposes of attaching personal fall protection if the safety latch is not original to the hook, or is missing or damaged, and/or if the safety latch is not properly functioning. At no time shall anyone use the winch wire-rope as a tie-off point for personal fall protection. The failure to follow the above regulations and strict adherence to all applicable OSHA, industry, workplace, employer-created, and IMT warnings and instructions can lead to personal injury or death.

These regulations can be found here: https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=67

* In order to use this method, the hook must have a safety latch, the crane must be capable of supporting 5,000 pounds (refer to the load chart affixed to the crane), limit the fall to less than 6-feet, and not allow a swinging fall. Crane hooks should be used only where there is no other suitable anchor point.

Section - 2

Specifications

POWER SOURCE

PTO DRIVEN - Integral mounted hydraulic pump and PTO application. Other standard power sources may be used. Minimum power required is 23.5* horsepower based on 10 gpm (37.9 L/min) at 3200 PSI (221 Bar)

CYLINDER HOLDING VALVES

The holding sides of all cylinders are equipped with integral-mounted counterbalance valves to prevent sudden cylinder collapse in case of hose failure.

ROTATION SYSTEM

Rotation of the crane is accomplished through a turntable gear bearing powered by a high-torque hydraulic motor through worm gear reduction. Standard rotation is 400°.

HYDRAULIC SYSTEM (PTO DRIVEN)

The hydraulic system is an open-centered, full-pressure system that requires 10 gpm (37.9 L/min.) optimum oil flow at 3200 PSI (221 Bar). It is equipped with a four-section, stack-type, electric, remote control valve with an RF remote-control system with a 40' (12.2 m) radio elimination cable. The system includes a separate hydraulic oil reservoir, return-line filter and control valve.

OVERLOAD PROTECTION SYSTEM

Overloading of the crane is prevented by the overload protection system. A pressure transducer mounted on the lower cylinder senses overload conditions. When in an overload situation, the winch-up, extension-out, and boom-down functions are stopped. To relieve the situation, raise the boom, retract the extensions, or lower the winch.

WINCH

The 7,000 lb (3,175 kg) planetary winch is powered using a high-torque hydraulic motor. The lifting capacity of the winch is 7,000 lb (3,175kg) one-part line. Maximum two-part line capacity is based on the maximum crane capacity. The winch is equipped with 120 ft (36.6 m) of 7/16" (1.1 cm) 6X25 wire rope. A compact, anti-two block device is included to prevent the lower block or hook assembly from coming in contact with the boom sheave assembly. The winch meets ANSI B30.5 standards.

NOTES:

1. THE GROSS VEHICLE WEIGHT RATING (GVW) IS A MINIMUM GUIDELINE. CONTACT IMT IF YOU HAVE QUESTIONS REGARDING YOUR PARTICULAR INSTALLATION.
2. ALL CHASSIS, CRANE AND BODY COMBINATIONS MUST BE STABILITY-TESTED PER ANSI B30.5 REQUIREMENTS.

***ALL FUNCTION SPEEDS (EXCEPT WINCH LINE SPEED) ASSUME 90% HYDRAULIC EFFICIENCY AT 10 GPM.**

IOWA MOLD TOOLING CO., INC. RESERVES THE RIGHT TO CHANGE SPECIFICATIONS AND DESIGN WITHOUT NOTICE.

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General Specifications

GENERAL SPECIFICATIONS		
	12000 25'	12000 30"
CRANE RATING (crane rating (ft-lb) is the rated load (lb) multiplied by the respective distance (ft) from centerline of rotation with all extensions retracted and lower boom in horizontal position.)	81,000 ft-lb (11.2 tm)	
HORIZONTAL REACH - FLIP SHEAVE UP (From centerline of rotation.)	24'- 8" (7.5 m)	30'-10" (9.4 m)
HORIZONTAL REACH - FLIP SHEAVE DOWN (From centerline of rotation.)	24'- 0" (7.3 m)	30'- 0" (9.1 m)
FULLY RETRACTED LENGTH	11'- 6" (3.5 m)	13'- 0" (4 m)
HYDRAULIC EXTENSIONS (2)	75" & 75" (191 cm) & (191 cm)	102" & 102" (259 cm & 259 cm)
LIFTING HEIGHT	25'- 5" (7.7 m)	31'- 5" (9.57 m)
CRANE WEIGHT	2610 lb (1,184 kg)	2720 lb (1,233 kg)
CRANE STORAGE HEIGHT	43.6" (110.7 cm)	
MOUNTING SPACE REQUIRED (Crane base.)	24" x 23.75" (61.0 cm x 60.32 cm)	
OPTIMUM PUMP CAPACITY	10 gpm (221 L/min)	
SYSTEM OPERATING PRESSURE	3200 psi (221 Bar)	
CENTER OF GRAVITY Horizontal from centerline of rotation. Vertical from bottom of crane base.	42.1" (107 cm)	43.8" (111.25 cm)
	24.0" (61 cm)	23.2" (58.9 cm)
TIE-DOWN BOLT PATTERN (4 bolts)		
TIE-DOWN BOLT PATTERN (8 bolts)	Outside: 14.75" x 14.75" (37.5 cm x 37.5 cm) Inside: 13.75" x 6.63" (34.9 cm x 16.8 cm)	
ROTATIONAL TORQUE	10,250 ft-lb (1.6 tm)	

Performance Specifications

PERFORMANCE SPECIFICATIONS		
	12000 - 25'	12000 - 30'
ROTATION SPECS	400°	
ROTATION SPEED	22 Seconds	
LOWER BOOM ELEVATION - SPECIFICATIONS	-10° to +80°	
LOWER BOOM ELEVATION - SPEED	18 Seconds (Raise) 20 Seconds (Lower)	
EXTENSION CYLINDER (2) SPECIFICATIONS	75" & 75" (191 cm & 191 cm)	102" & 102" (259 cm & 259 cm)
EXTENSION CYLINDERS (2) SPEED	21 Seconds (Extend) 12 Seconds (Retract)	28 Seconds (Extend) 23 Seconds (Retract)
WINCH SPEED	50 ft / min 2nd Wrap (15.2 m/min)	
CHASSIS SPECIFICATIONS		
CHASSIS STYLE	Conventional Cab	
BODY STYLE	Dominator™ III Minimum	
CAB-TO-AXLE	75" & 75" (191 cm & 191 cm)	102" & 102" (259 cm & 259 cm)
RBM*	1,200,000 in-lb (138,255 kg-m)	
FRAME SECTION MODULUS (MINIMUM)	14.8 cubic inches (242.5 cc)	
CRANE RATING	81,000 ft-lb (11.2 tm)	
GVW	26,000 lb Minimum (11,793 kg)	33,000 lb Minimum (14,970 kg)

NOTES:

ALL FUNCTION SPEEDS (EXCEPT WINCH LINE SPEED) ASSUME 90% HYDRAULIC EFFICIENCY AT 10 GPM.

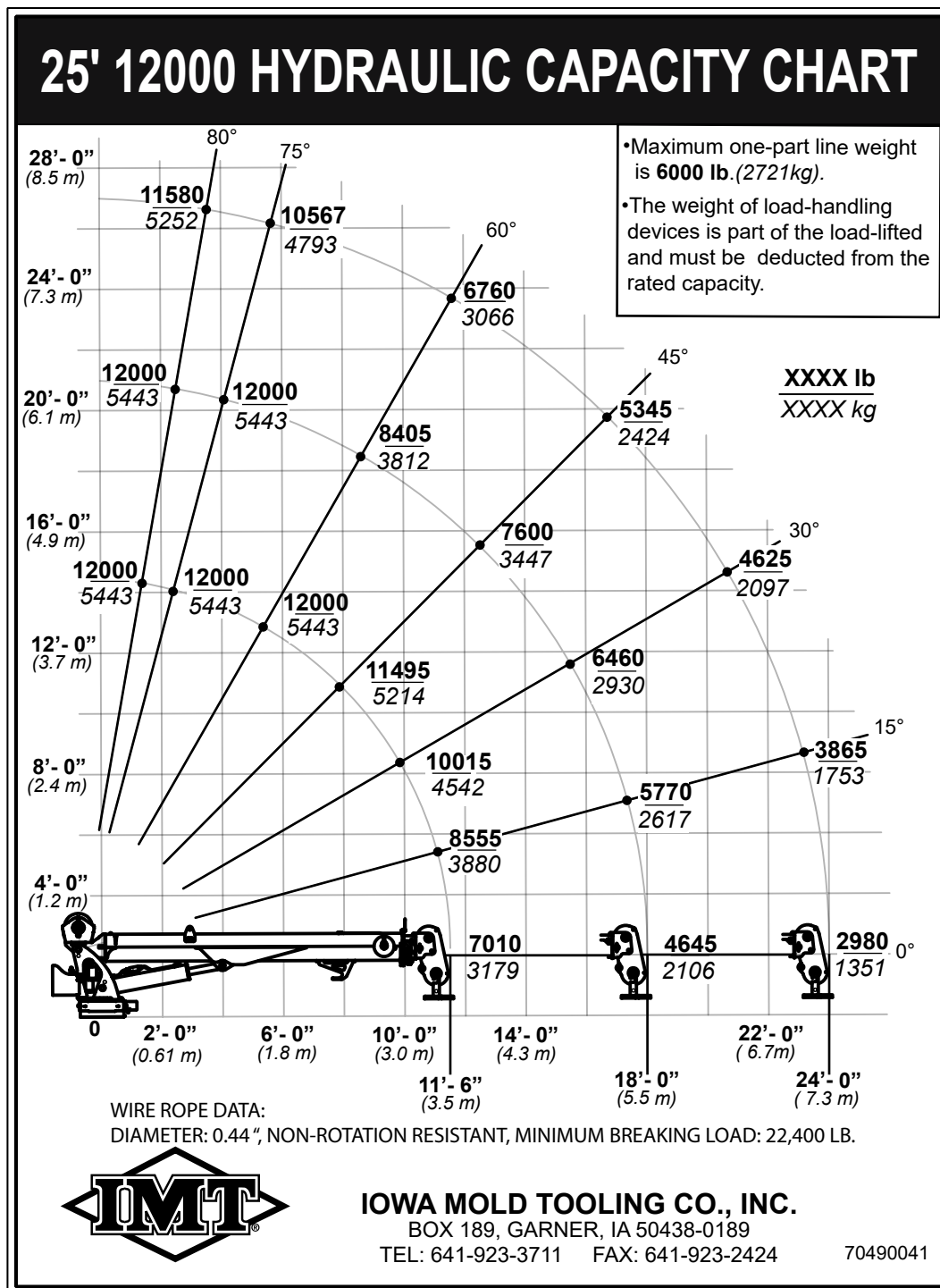
* RESISTANCE TO BENDING MOMENT.

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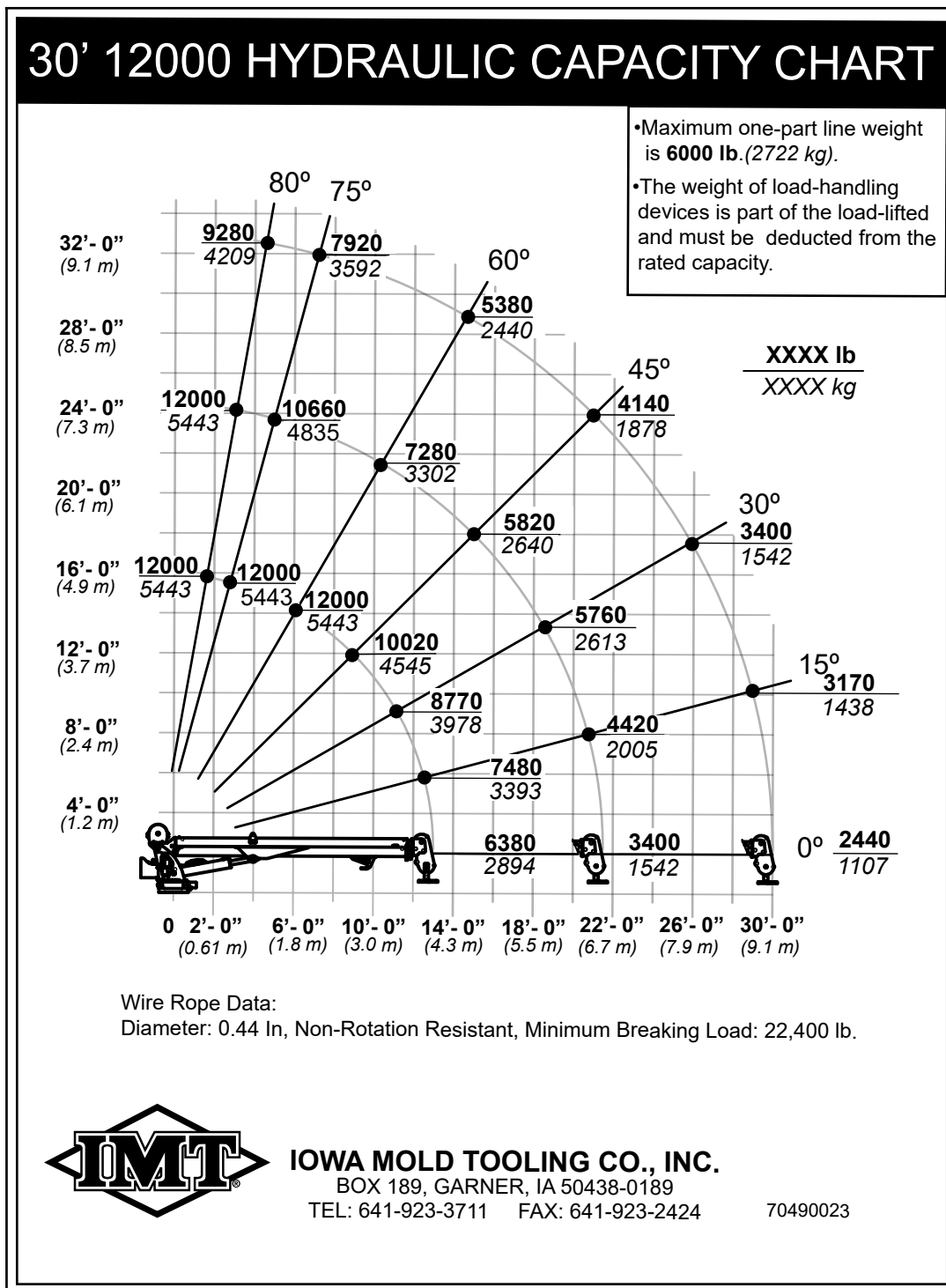
Section - 3

Load Capacity Charts

12000 25' Load Capacity Chart



12000 30' Load Capacity Chart



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Section - 4

Crane Installation

Installation Introduction

GENERAL

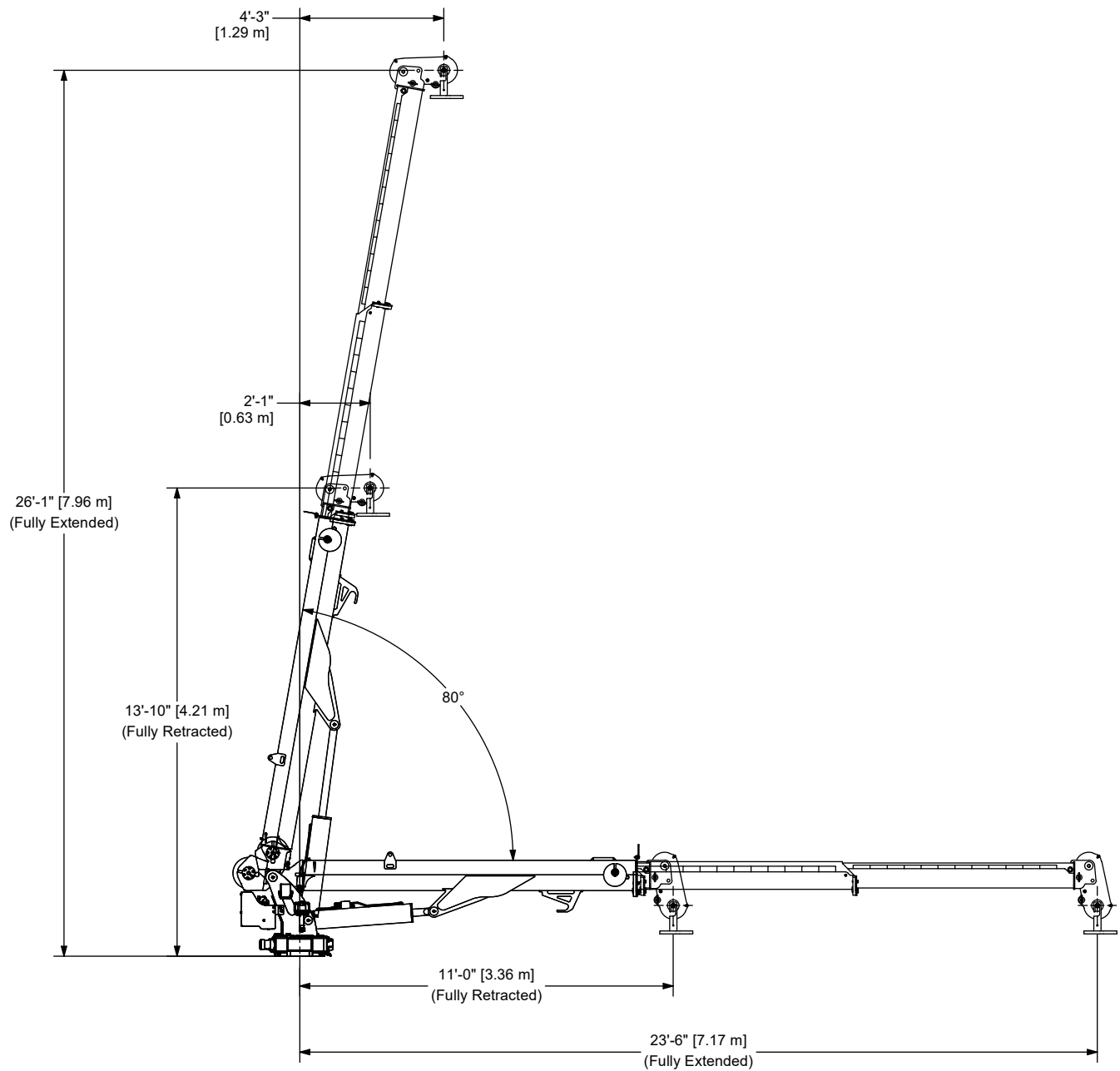
This section contains instructions for the installation of your crane. Prior to installing the crane and hydraulic components, make sure that the chassis is ready to receive the crane. Reinforce the chassis frame, as necessary, and install the PTO and pump.

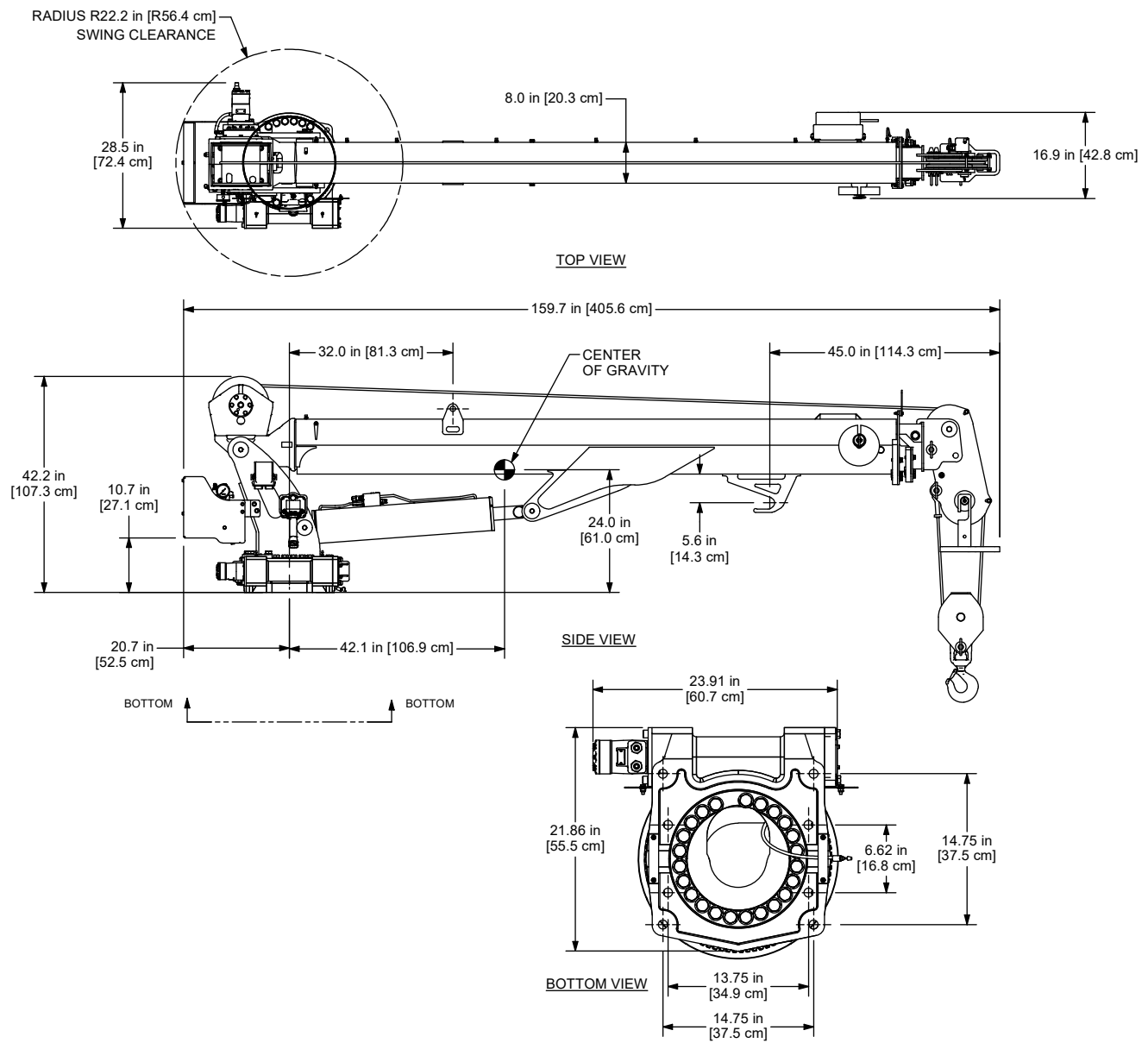
Each installation may vary in components used. It is important to use hoses of proper length, pumps of correct size, and PTO's of adequate speed. Study the applicable installation kit in the parts section before attempting any installation.

CRANE INSTALLATION

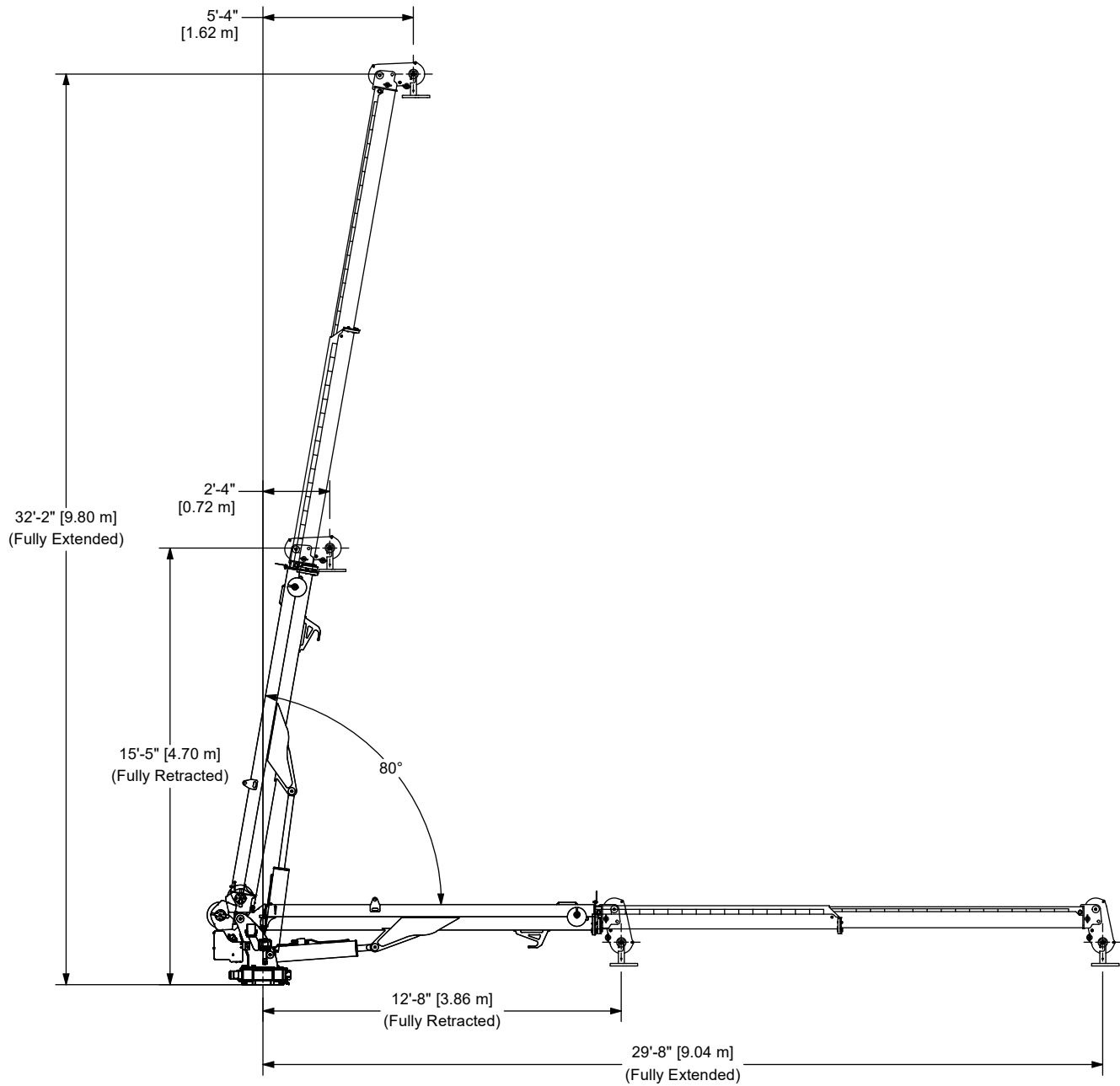
In addition to meeting minimum chassis specifications, there must be sufficient room to mount the crane and the platform must be strong enough to support the crane and rated load. The body must be designed to sustain the forces imposed by the crane when lifting the full rated load. In addition, an IMT body is designed to take full CMD.CTRLantage of the standard reservoir placement. This reservoir is installed in the cargo area of the body. Before attempting to install the crane, the body must be installed on the chassis.

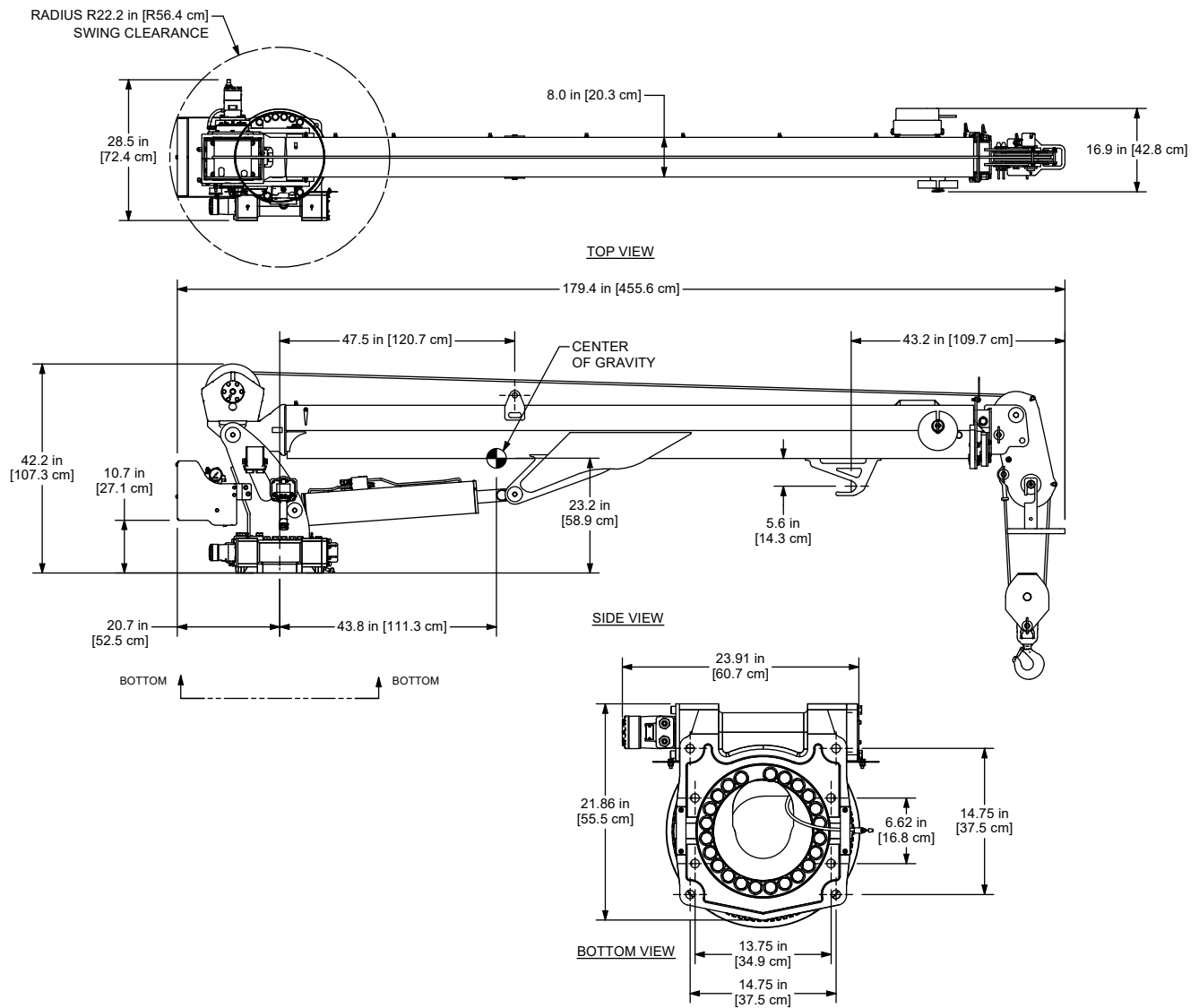
12000 25' Dimensional Drawing (99906625)



12000 25' DIMENSIONAL DRAWING (99906625)

12000 30' Dimensional Drawing (99906626)



12000 30' DIMENSIONAL DRAWING (99906626)

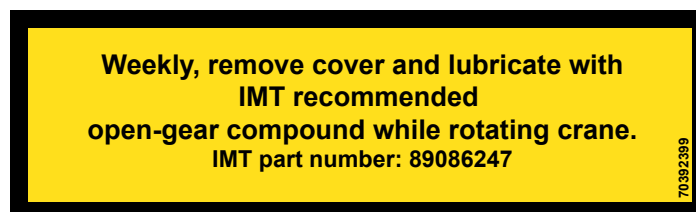
Greasing Instructions

Different lubricants are required for different sections of your crane. Contact your lubricant supplier for specific product information. Follow the grease and lubricant specifications and intervals listed in this manual for best results.

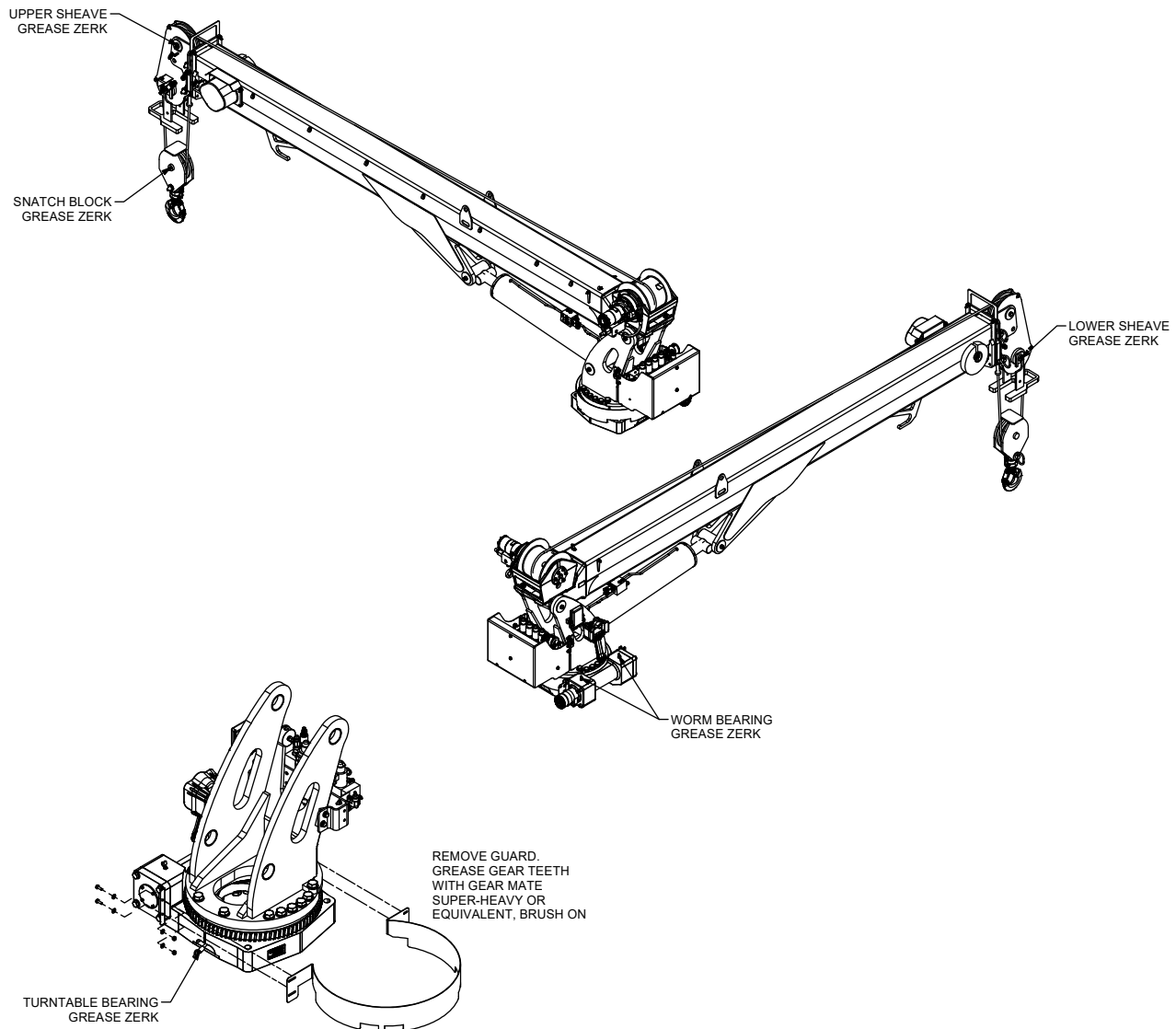
Crane grease zerks must be greased on a weekly basis during normal operating conditions. Under severe operating conditions the zerks must be greased more frequently. Each grease zerk is marked with a decal, "grease weekly", as shown. Rotate the worm gear bearing when greasing the worm gear bearing grease zerks.



Crane worm gear bearing teeth must be lubricated weekly with lubriplate gear mate super-heavy or equivalent, applied with a grease gun, caulk gun or brush. Cover all teeth with grease and leave no exposed metal surfaces showing.



Greasing Locations



LOCATION	LUBRICANT	APPLICATION METHOD	FREQUENCY
Base - Turntable Bearing Grease Zerks	Extreme Pressure Lithium grease such as: Shell Alvania 2EP, Shell Retinax A, Mobilgrease XHP 462, Cenex ML 365®, Xtreme True-Flo EP2 Lithium grease or equivalent	Apply with hand or pneumatic pressure grease gun	Weekly
Snatch Block Pin			
Worm Bearings Grease Zerks (*Rotate crane while greasing)			
Lower Sheave			
Upper Sheave			
Gear Teeth	GearMate® Super Heavy or equivalent	Brush	Weekly
Worm Gear	GearMate® Super Heavy or equivalent	Apply with hand or pneumatic pressure grease gun	

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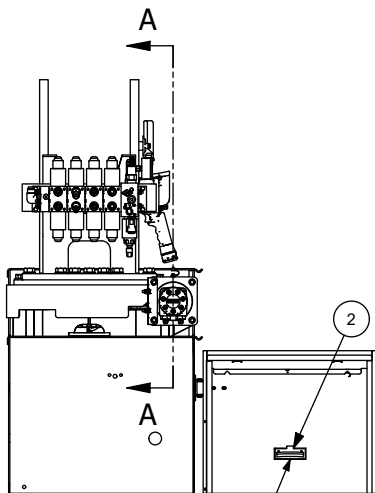
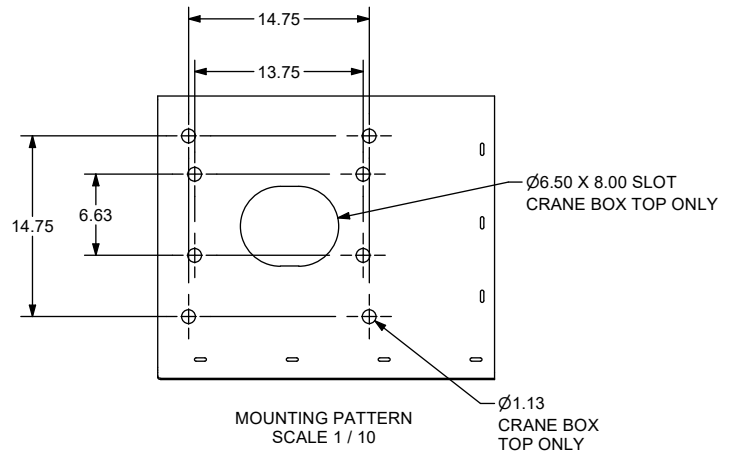
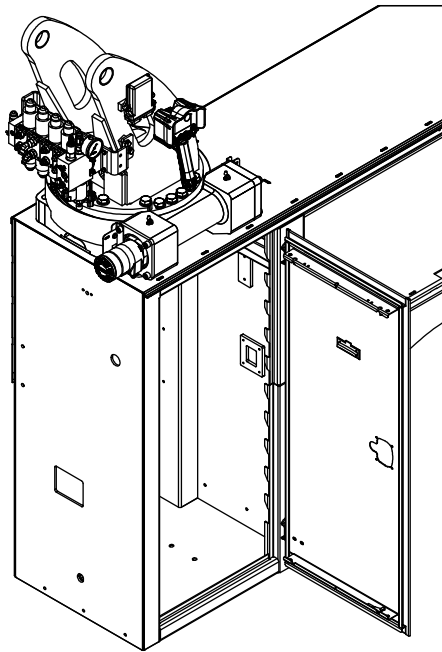
Crane Recommended Spare Parts List

This parts list is intended to provide the user with a stock of parts sufficient to keep the unit operating with the minimal down-time waiting for parts, but it does not indicate these items will fail within a year. In addition, there may be parts failures not covered by this list. Parts not listed are considered as not normal wear items during the first year of operations

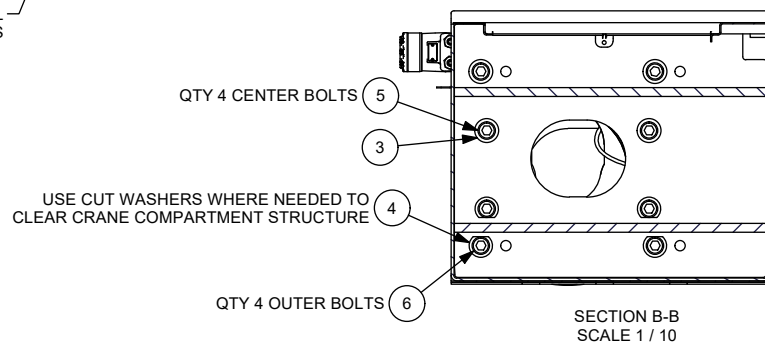
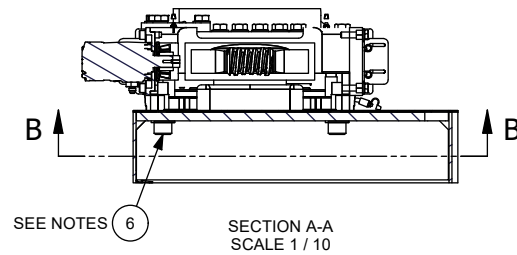
BASE & MAST (99906613)		
PART NO.	DESCRIPTION	QTY
73511391	HYDRAULIC MOTOR	1
72601949	CAP SCREW 0.50-13 X 1.25 SHZC	4
72601330	CAP SCR .25-20X 1.00 HH SS	2
72601629	CAP SCREW .75-10 X 4.00 HEX HEAD GR8 Z	7
72601817	CAP SCREW .75-10 X 3.25 HEX HEAD GR8 Z	12
BOOM ASSEMBLY (99906618 25') (99906619 30')		
60030336	WEAR PAD-RC	1
60030421	WEAR PAD-ROUND	1
60030422	WEAR PAD-ROUND	1
60030423	WEAR PAD-RC	4
60030442	WEAR PAD-RND 0.25X 1.00X .50X .38	2
60030427	WEAR PAD-RND 0.19X 2.00X 1.25X .44	2
60030425	WEAR PAD-RND 0.44X 1.25X .50X .50	2
60030428	WEAR PAD-ROUND	2
60030438	WEAR PAD-ROUND	2
ANTI-TWO-BLOCK ASSEMBLY (99906629 25' & 30')		
77041863	SWITCH-LIMIT DT04-4P CONN	1
RIGGING COMPONENTS (99906625 25' & 99906626 30')		
70735082	HOOK-SWIVEL 7T BBRG	1
60030255	SHEAVE- 9.00 POLYMER	1
70580233	WIRE ROPE ASM-GALV.44 X 100FT XXIPS	1
70580235	WIRE ROPE ASM-GALV.44X120FT XXIPS	1
LOWER CYLINDER (51728234)		
74490054	SEAL KIT	1
70034582	BEARING MRP 2.00X2.25X2.00 POLYGON	4
73540673	VALVE-CBAL SUN CBBB-LAN 3300 PSI	1
EXTENSION CYLINDER (51727882 12000 - 25')		
94490493	SEAL KIT	1
73540565	VALVE-CBAL 15 GPM 4.5:1 T11-A @4000 PSI	1
EXTENSION CYLINDER (51727883 12000 - 30')		
94490494	SEAL KIT	1
73540565	VALVE-CBAL 15 GPM 4.5:1 T11-A @4000 PSI	1
WINCH (70571196)		
94744147	SEAL KIT	1
71734007	VALVE-CBAL BRADEN - CART FOR 70570771	2

VALVE BANK ASSEMBLY (99906279)		
73734472	VALVE BANK-MOD.INLET (PW) 12VDC IP69	1
51728093	KIT-HRDW S4 SP VALVE BANK	1
VALVE BANK (73734472)		
90744198	KIT - COIL REPAIR FOR 73540375 12V	1
77041930	SOLENOID TUBE USED ON 73540375	1

Crane Installation (99906744)



LEVEL INDICATOR INSTALLED PARALLEL
TO DOOR REINFORCEMENTS



CRANE INSTALLATION (99906744) PARTS LIST

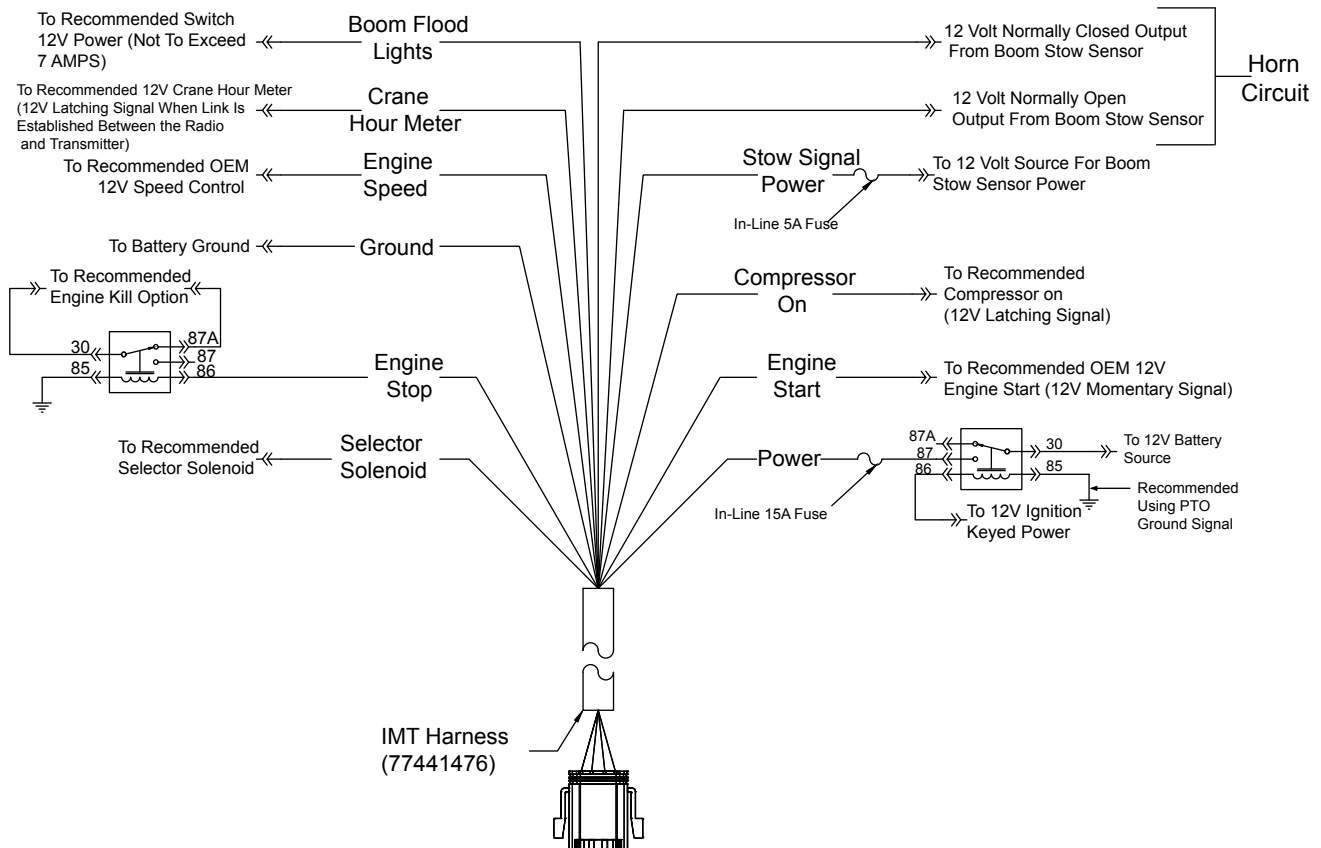
ITEM NO.	PART NO.	DESCRIPTION	QTY.
1.	93728387	INSTL-KIT DS4 -DOM 3-4 12000	1
2.	72042097	LEVEL INDICATOR LEVEL	1
3.	72063066	WASHER 1.00 FLAT HI STR	8
4.	72063286	WASHER-FLAT 1.00 H ASTM F436 Z-CUT	8
5.	72601816	CAP SCR 1.00- 8X 4.00 SH A574	4
6.	72602151	CAP SCR 1.00- 8X 2.50 SH GR8	4
REV. INITIAL RELEASE			

NOTES:

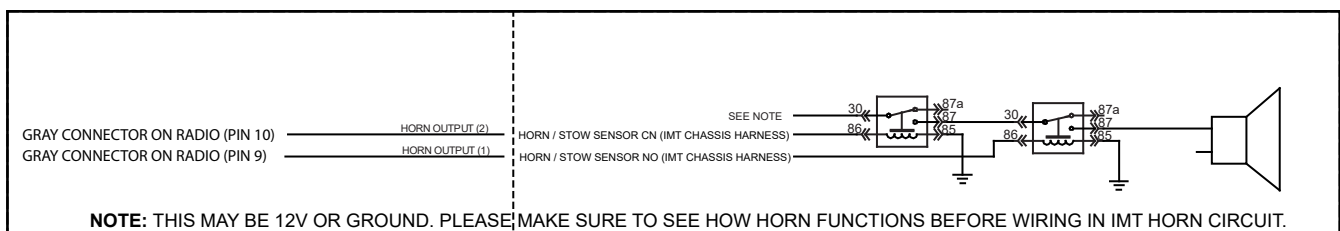
1. THE 2.50" AND 4.00" BOLTS SUPPLIED ARE PART OF THE CRANE INSTALLATION KIT. DETERMINE THE CRANE BOX TOP THICKNESS AND ENSURE THAT THE BOLTS WILL HAVE A MINIMUM THREAD ENGAGEMENT OF 1.50". IF DIFFERENT LENGTH BOLTS ARE REQUIRED THEY MUST BE 1-8, GRADE 8, AND ZINC COATED.
2. TORQUE MOUNTING BOLTS TO 680 FT-LB.

Chassis Wiring Harness (77441476 / 99905212)

Additional installation components, non-IMT body (93713748)

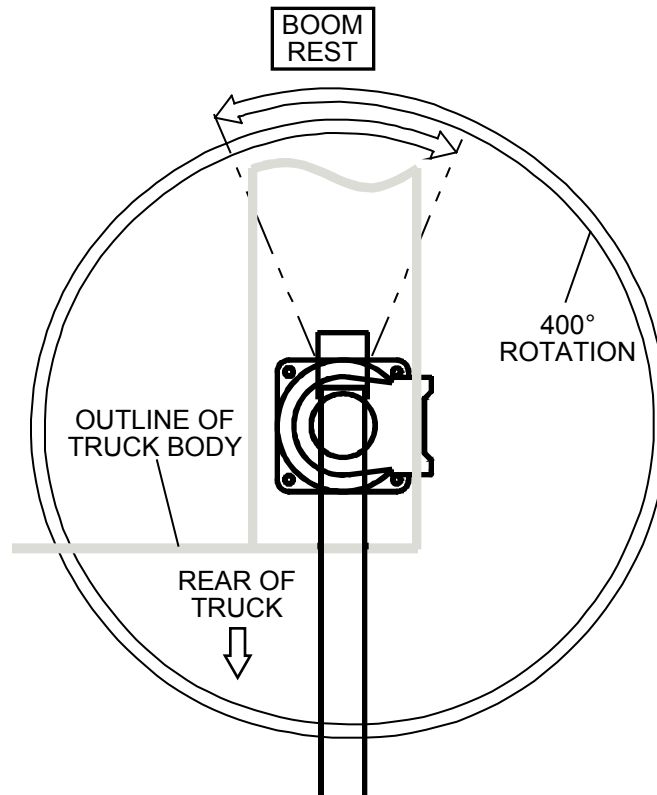


HORN CIRCUIT



Telescopic Crane Orientation

When an IMT telescopic crane is not factory-installed on a body, the crane is packed with the boom oriented as it is built on a test stand to facilitate handling. Install the crane on the body with boom pointing backward. Once the crane is bolted down, it can be rotated 180° to the boom rest.



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Section - 4

Parts

Parts Information

GENERAL

This section contains the exploded parts drawings and accompanying parts lists for the assemblies used on this crane. For optional equipment such as winches and remote controls, refer to the appropriate options manual.

WARNING

Do not attempt to repair any component without reading the information contained in the repair section. Pay particular attention to statements marked **Warning**, **Caution** or **Note** in that section. Failure to comply with these instructions may result in damage to the equipment, personal injury or death.

CRANE IDENTIFICATION

Every IMT crane has an identification placard (see figure below). This placard is attached to the inner boom, mast, or crane base. When ordering parts, communicating warranty information, or referring to the unit in correspondence, always include the serial number and model numbers. Address all inquiries to your authorized IMT distributor or to:

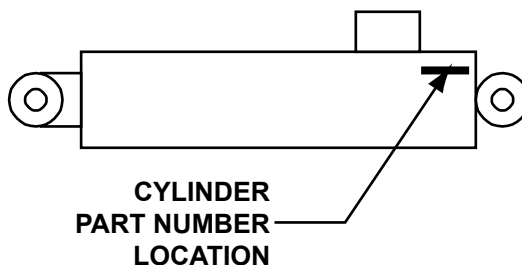
Iowa Mold Tooling Co., Inc.
Box 189, Garner, IA 50438-0189
Telephone: 800-554-4421

IOWA MOLD TOOLING CO., INC. BOX 189, GARNER, IA 50438-0189	
MODEL NUMBER	
SERIAL NUMBER	
MFG DATE	

70029119

CYLINDER IDENTIFICATION

To insure proper replacement parts are received, it is necessary to specify the complete number/letter sequence for any part requested. Part numbers may be cross checked by comparing the stamped identification on the cylinder case (See figure below) against the information contained in the service manual. You must include the part number stamped on the cylinder case when ordering parts.



WELDMENT IDENTIFICATION

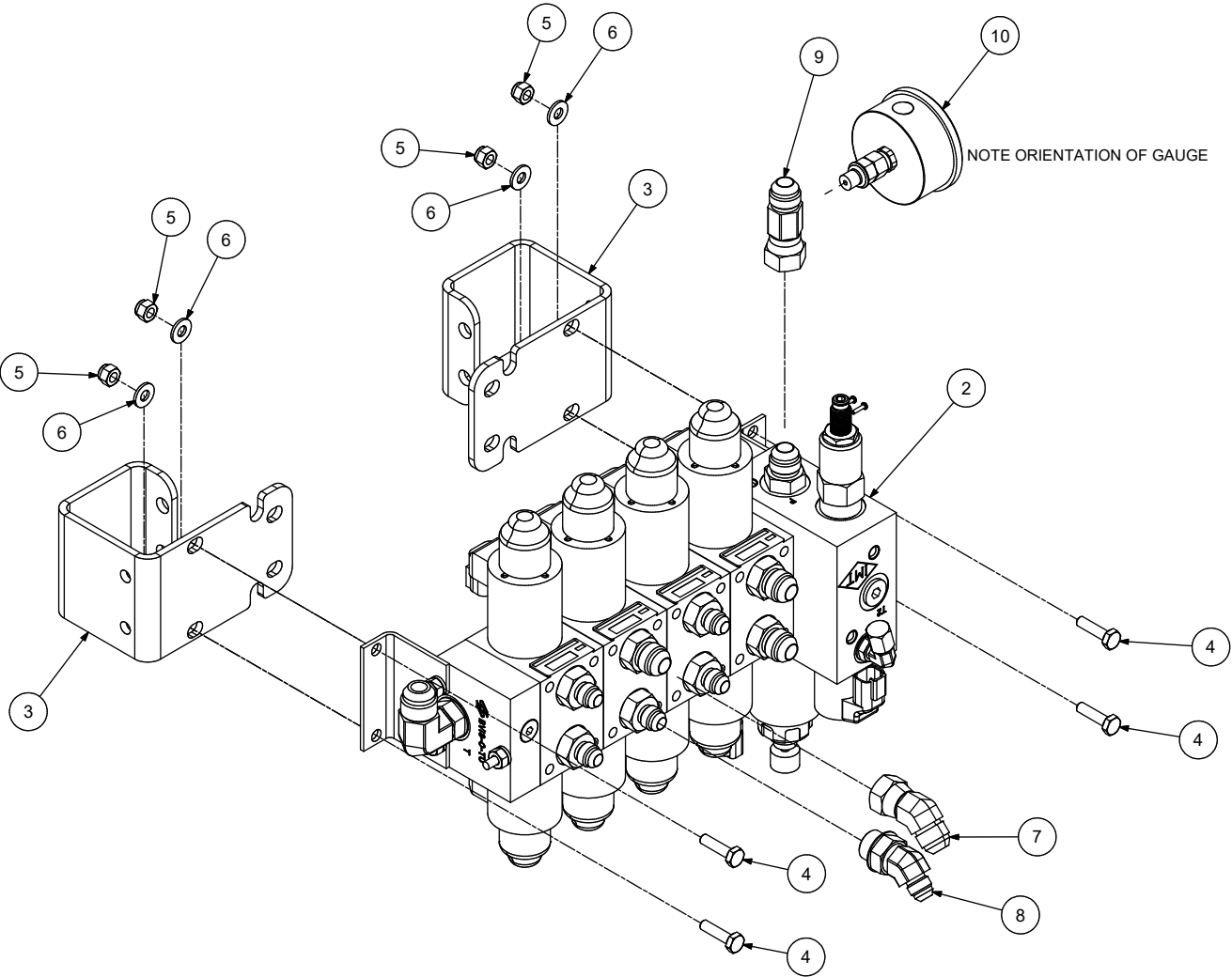
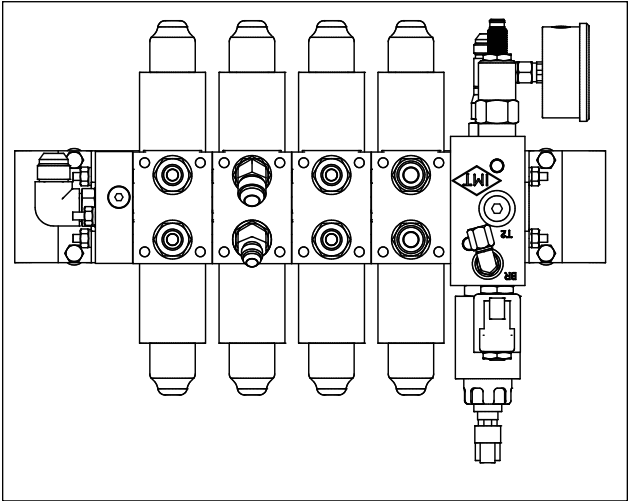
Each of the major weldments, base, mast, inner boom, outer boom, extension boom and stabilizer weldments bear a stamped part number. Any time a major weldment is replaced, you must specify the complete part number as stamped on the weldment. The locations of the part numbers are shown in the Crane Reference Section.

ORDERING REPAIR PARTS:

When ordering replacement parts:

1. Give the model number of the unit.
2. Give the serial number of the unit.
3. Specify the complete part number. When ordering cylinder parts, or one of the main weldments, always give the stamped part number.
4. Give a complete description of the part
5. Specify the quantity required.

Valve Bank Assembly SP (99906279)

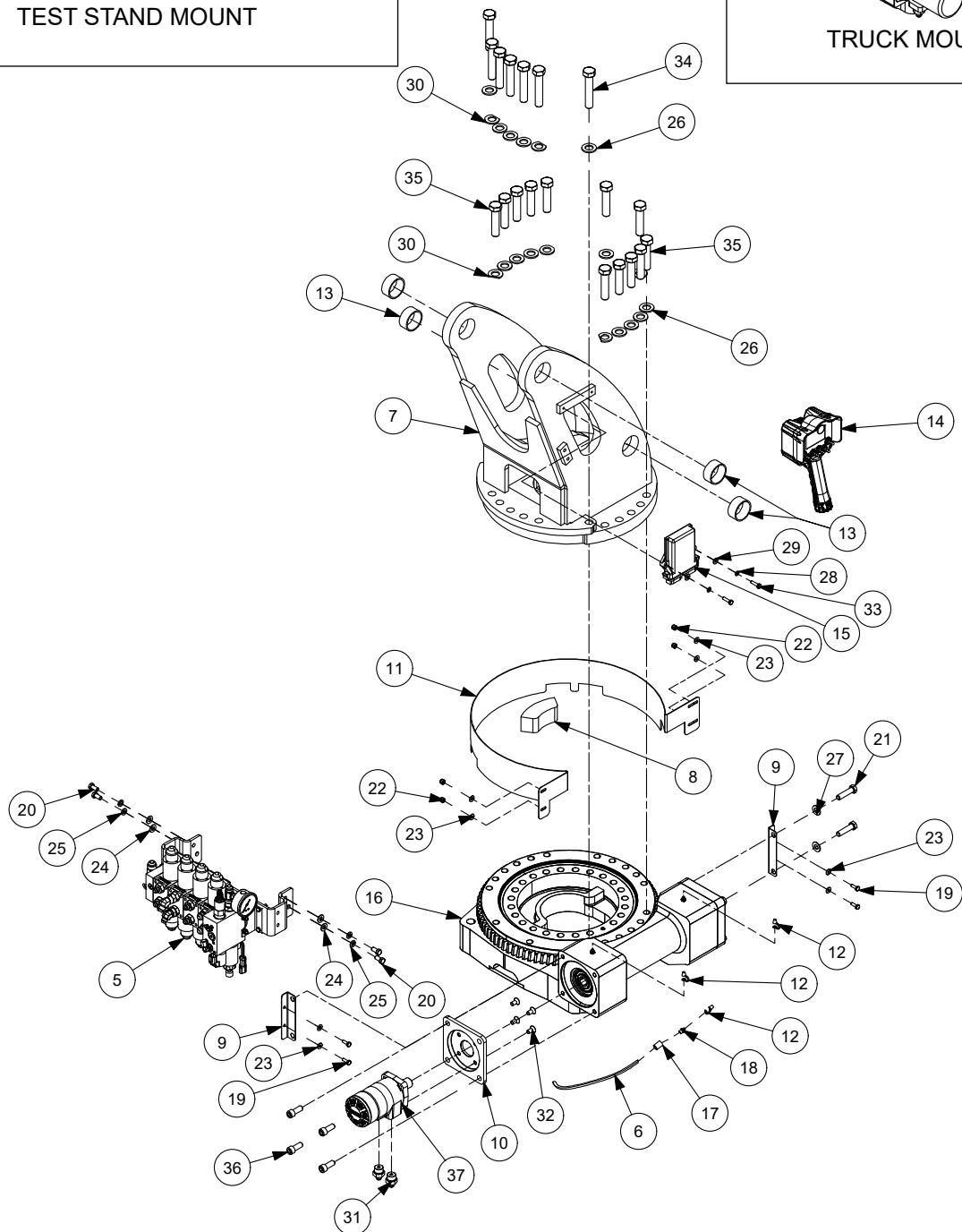
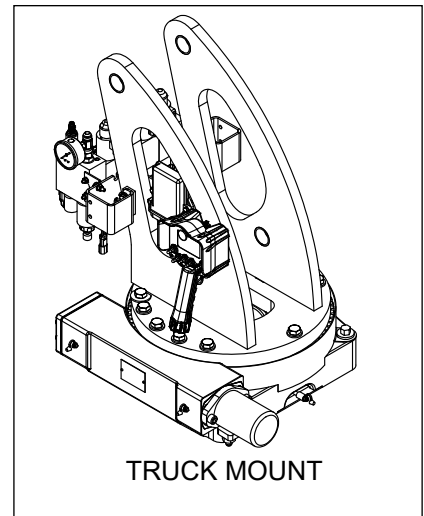
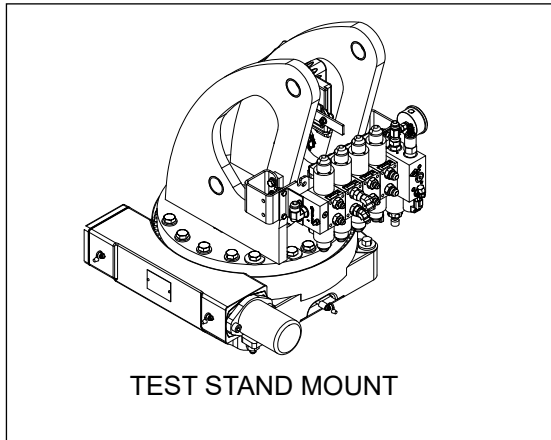


VALVE BANK ASSEMBLY SP (99906279) PARTS LIST

ITEM NO.	PART NO.	DESCRIPTION	QTY.	KIT NO.
1.	51728093	KIT-HRDW S4 SP VALVE BANK	1	
2.	73734472	VALVE BANK-MOD.INLET (PW) 12VDC IP69	1	
3.	60140839	BRKT-MAST VB 6000-8600S	2	
3.	60140840	BRKT-MAST VB 7500-10000L	2	
3.	60140857	BRKT-MAST VB 12000-14000	1	
3.	60251822	BRKT-MAST VB 12000	1	
4.	72060004	CAP SCR .25-20X 1.00 HH GR5 Z	4	1
5.	72062104	NUT .25-20 HEX NYLOCK	4	1
6.	72063001	WASHER .25 FLAT	4	1
7.	72532670	ELBOW-M JIC/45/F JIC 8 8	1	
8.	72533583	ELBOW-M STR/45/M JIC 8 6	1	
9.	72534847	ADPTR-M JIC/F JIC 8 8 DIAGNOSTIC TEE	1	
10.	73050225	GAUGE-5000 PSI 2.5IN CB MOUNT -4 MORB	1	
REV. INITIAL RELEASE				

NOTES:

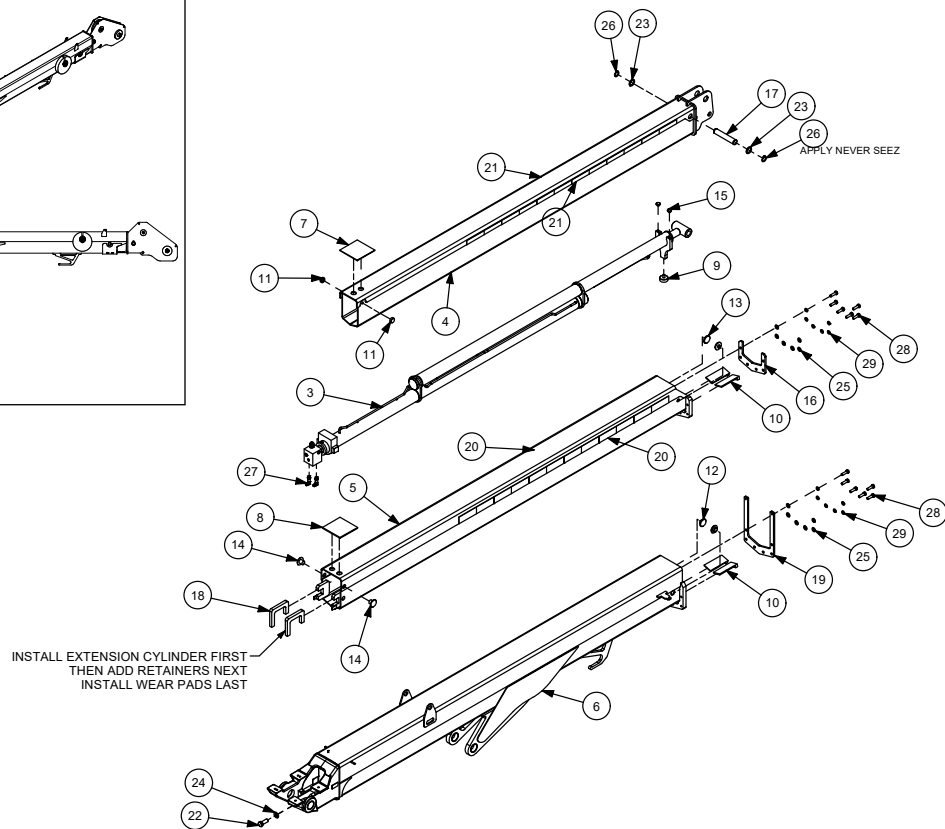
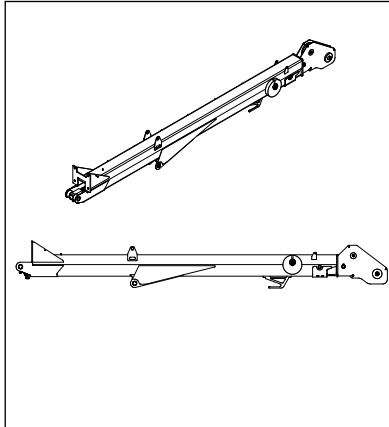
- BRACKET VARIES BY CRANE MODEL, 12000 AND 14000 CRANES RECEIVE QTY 1 BRACKET EACH.

Base Assembly (99906613)

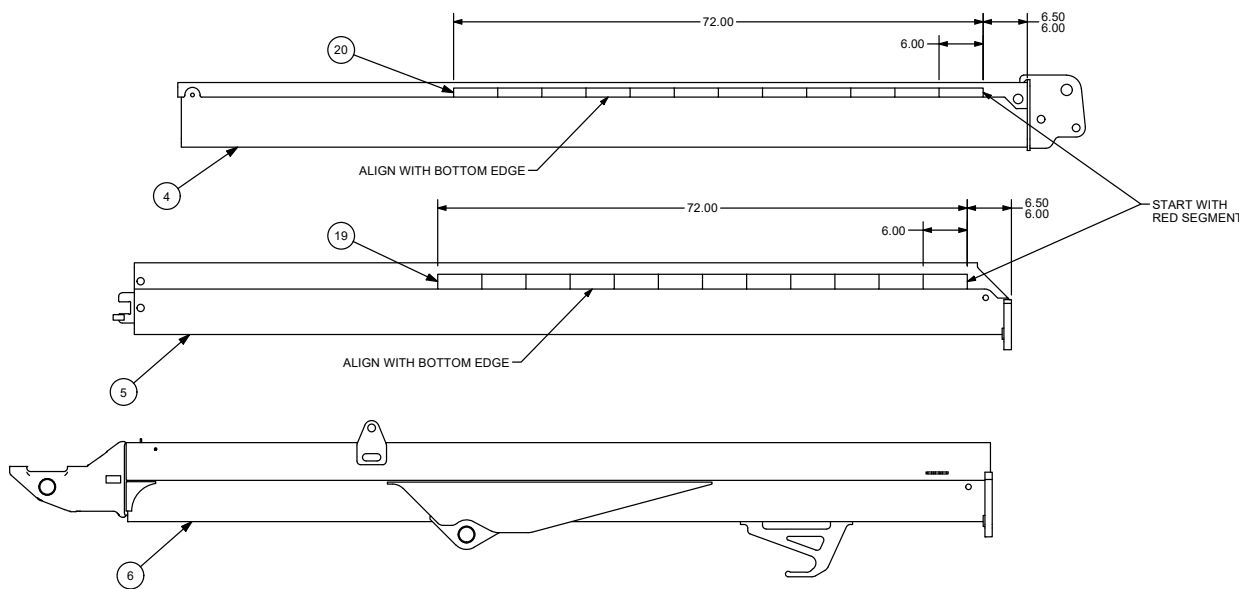
BASE ASSEMBLY (99906613) PARTS LIST

ITEM NO.	PART NO.	DESCRIPTION	QTY.	KIT NO.
1.	51728196	KIT-HDRW 12000 BASE ASM	1	
2.	51728229	KIT-ELEC CRANE SP CMD.CTRL	1	
3.	51728453	KIT-GREASE 7500-14000 S4	1	
4.	91728374	KIT-HYD 12000 SERIES 4 SP BG6	1	
5.	99906279	DWG-VALVE BANK ASSM S3 CRANE SP	1	
6.	51395121	HOSE-AA .13 X 13.50 (2-2) 100R17	1	
7.	52727810	MAST WLDMNT-12000	1	
8.	60120138	SLIDE-ROTATION STOP 3816	1	
9.	60144346	BRKT-GEAR GUARD 12000	2	
10.	60145972	FLANGE ADAPTOR KINEMATICS	1	
11.	60145985	GEAR GUARD 12000 FOR KINEMATICS	1	
12.	70034382	CAP-GREASE PRO20 GC-RED	3	3
13.	70034581	BEARING MRP 2.00X2.25X1.00 POLYGON	4	
14.	70735198	TRANSM-RAD W/ LCD CMD.CTRL	1	2
15.	70735199	RECEIVER-RAD CAN BUS CMD.CTRL	1	2
16.	71056704	GEAR ROTATOR-109000 FTLB 0.75 BOLTS KIN	1	
17.	72053301	COUPLING-GLV .12 SCH 40	1	3
18.	72053508	ZERK-NPT .12	1	3
19.	72060002	CAP SCR .25-20X .75 HH GR5 Z	4	1
20.	72060044	CAP SCR .38-16X .75 HH GR5 Z	4	1
21.	72060118	CAP SCR .50-13X 2.00 HH GR8 Z	4	1
22.	72062104	NUT .25-20 HEX NYLOCK	4	1
23.	72063001	WASHER .25 FLAT	8	1
24.	72063003	WASHER .38 FLAT	4	1
25.	72063051	WASHER .38 LOCK	4	1
26.	72063116	WASHER .75 N FLAT H ASTM F436Z	15	1
27.	72063132	WASHER .50 FLAT ASTM F436	4	1
28.	72063142	WASHER-SS .25 LOCK TYPE 304	2	1
29.	72063166	WASHER-FLAT .25 R WRT 18-8 .62OD SS	2	1
30.	72063285	WASHER-FLAT .75 H ASTM F436 Z-CUT	4	1
31.	72533613	ADPTR-M STR/M JIC 10 6	2	4
32.	72601043	SCR-MACH .38-16X .75 FLH SOCZ	4	1
33.	72601330	CAP SCR .25-20X 1.00 HH SS	2	1
34.	72601629	CAP SCR .75-10X 4.00 HH GR8 Z	7	1
35.	72601817	CAP SCR .75-10X 3.25 HH GR8 Z	12	1
36.	72601949	CAP SCR .50-13X 1.25 SH ZC	4	1
37.	73511391	MOTOR-HYD 101 1013 009	1	
REV. A CN1340 20220525				

12000 25' Boom Assembly (99906618)



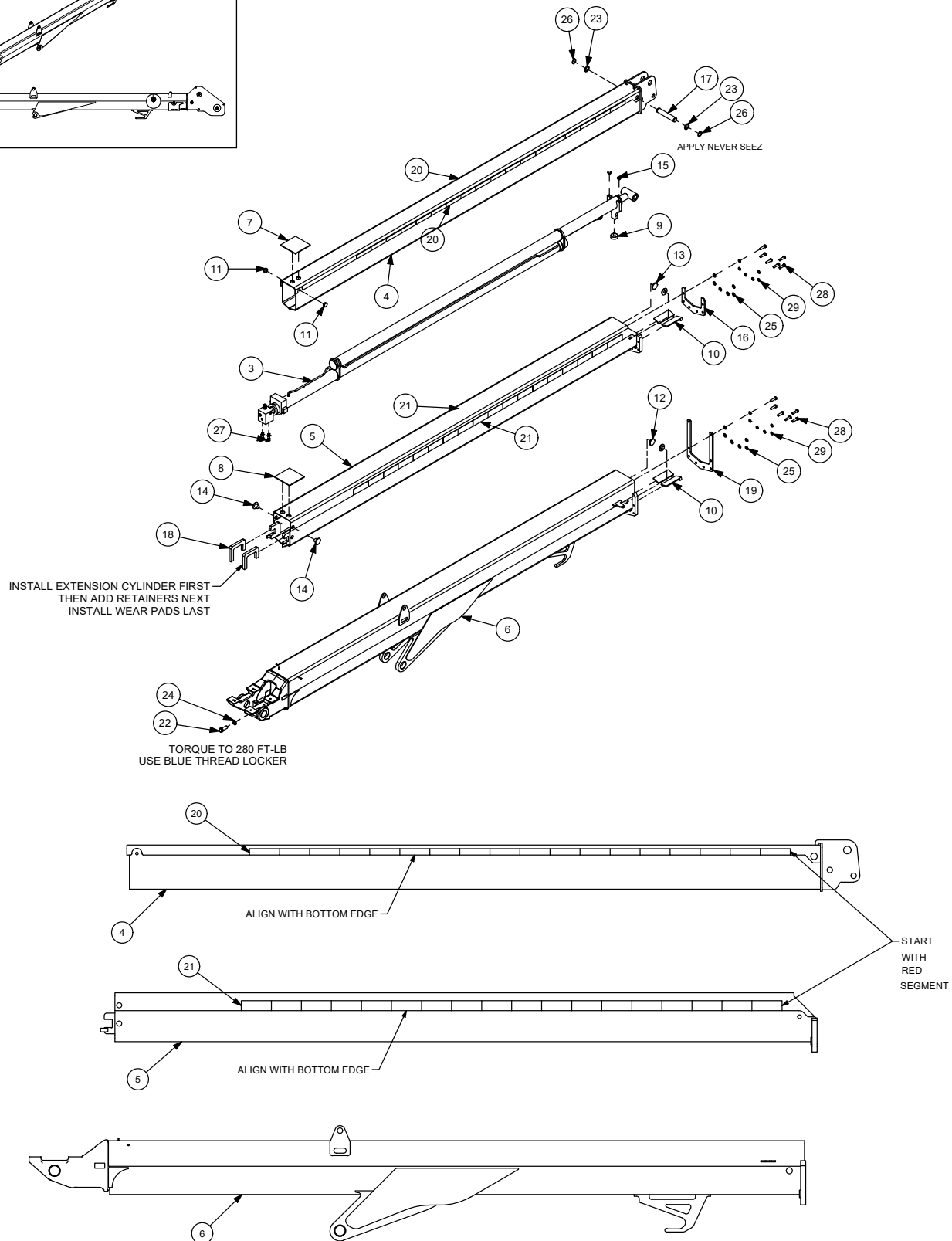
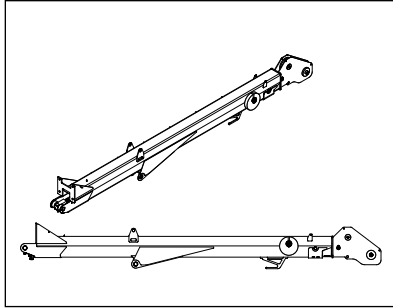
TORQUE TO 280 FT-LB
USE BLUE THREAD LOCKER



12000 25' BOOM ASSEMBLY (99906618) PARTS LIST

ITEM NO.	PART NO.	DESCRIPTION	QTY.	KIT NO.
1.	51728199	KIT-HRDW 7500-14000 S4 BOOM ASM	1	
2.	91727214	KIT-HYD 12000 S4 SP BG6	1	
3.	51727882	CYL-2.75/1.75 2.50/1.75 150.00S 125.00CC	1	
4.	52723221	WLDMNT-2ND STAGE EXT BOOM 9500/10000S	1	
5.	52727229	WLDMNT-1ST STAGE EXT BOOM 12000S	1	
6.	52727816	WLDMNT-LOWER BOOM 12000S	1	
7.	60030336	WEAR PAD-RC .19 X 6.00 X 6.00	1	
8.	60030421	WEAR PAD-RC 0.25X 6.00X 6.00	1	
9.	60030422	WEAR PAD-RND SIII EXT CYL	1	
10.	60030423	WEAR PAD-RC 0.25X 6.00X 2.25	4	
11.	60030425	WEAR PAD-RND 0.44X 1.25X .50X .50	2	
12.	60030427	WEAR PAD-RND 0.19X 2.00X 1.25X .44	2	
13.	60030428	WEAR PAD-RND 0.25X 2.00X .75X .44	2	
14.	60030438	WEAR PAD-RND 0.12X 2.00X 1.00X 1.00	2	
15.	60030442	WEAR PAD-RND 0.25X 1.00X .50X .38	2	
16.	60135668	CAP-FIRST STAGE	1	
17.	60135669	PIN-TYPE A 1.25X 6.89 (6.46)	1	
18.	60135833	RETAINER-1ST STAGE EXT CYL	2	
19.	60140899	CAP-LOWER BOOM CABLE GUIDE 9500-14000	1	
20.	70396734	TAPE-REFLECTIVE RED/SILVER 2.00X72.00	2	
21.	70399053	TAPE-REFLECTIVE RED/SILVER 1.25X72.00	2	
22.	72060206	CAP SCR .75-10X 2.00 HH GR8 Z	1	1
23.	72063035	MACHY BUSHING 1.25X10 GA NR	2	
24.	72063116	WASHER .75 N FLAT H ASTM F436Z	1	1
25.	72063132	WASHER .50 FLAT ASTM F436	12	1
26.	72066129	RETAINING RING-EXT 1.25 HD	2	1
27.	72532700	ELBOW-M STR/90/M JIC XLG 6 6	2	2
28.	72602158	CAP SCR .50-13X 1.75 HH GR5 YZ	12	1
29.	72602160	WASHER- LOCK .50 YZ	12	1
REV INITIAL RELEASE				

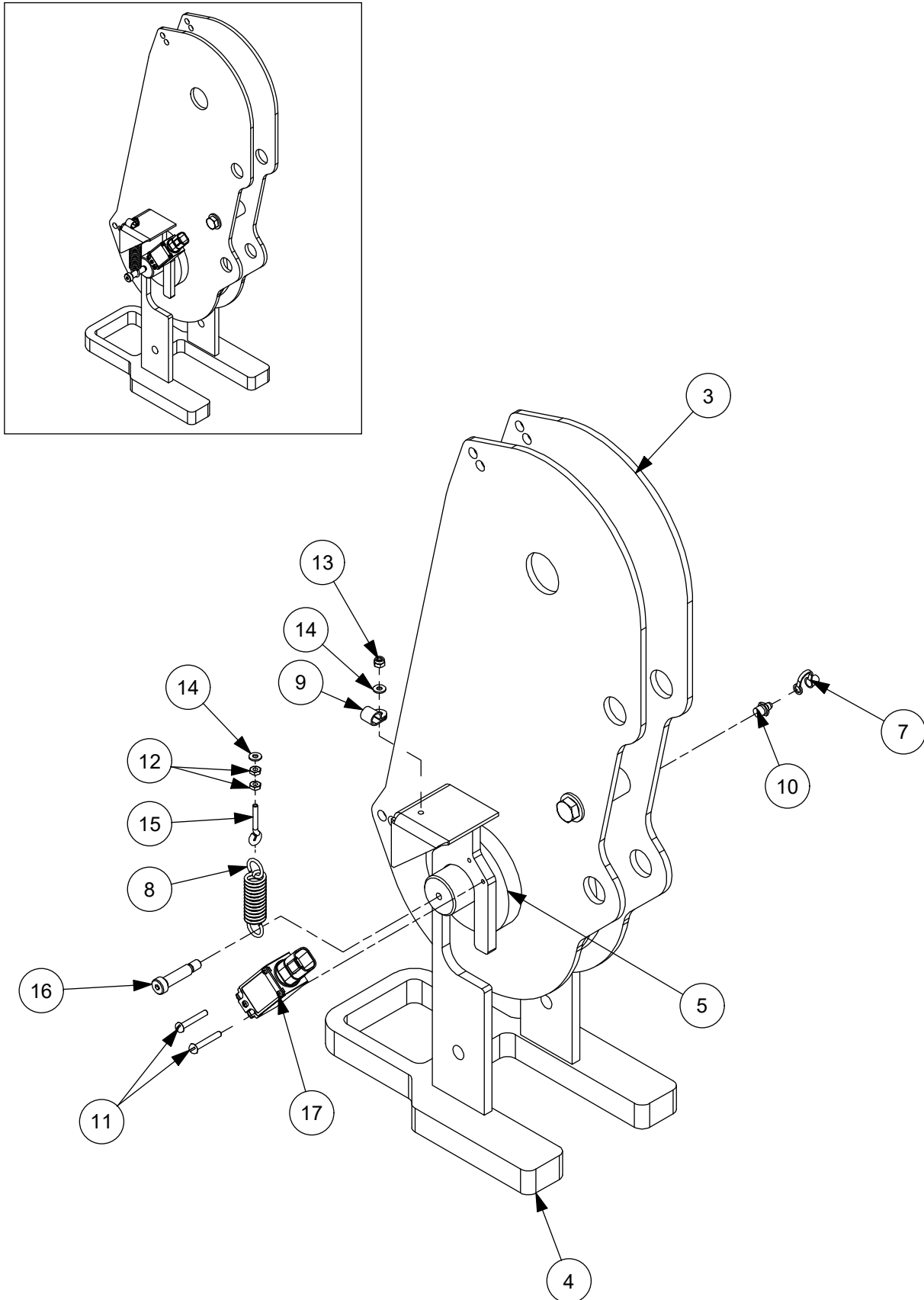
12000 30' Boom Assembly (99906619)



12000 30' BOOM ASSEMBLY (99906619) COMPLETE PARTS LIST

ITEM NO.	PART NO.	DESCRIPTION	QTY.	KIT NO.
1.	51728199	KIT-HRDW 7500-14000 S4 BOOM ASM	1	
2.	91727214	KIT-HYD 12000 S4 SP BG6	1	
3.	51727883	CYL-2.75/1.75 2.50/1.75 204.00S 144.69CC	1	
4.	52723024	WLDMNT-2ND STAGE EXT BOOM 7500/10000	1	
5.	52727068	WLDMNT-1ST STAGE EXT BOOM 12000	1	
6.	52727872	WLDMNT-LOWER BOOM 12000	1	
7.	60030336	WEAR PAD-RC .19 X 6.00 X 6.00	1	
8.	60030421	WEAR PAD-RC 0.25X 6.00X 6.00	1	
9.	60030422	WEAR PAD-RND SIII EXT CYL	1	
10.	60030423	WEAR PAD-RC 0.25X 6.00X 2.25	4	
11.	60030425	WEAR PAD-RND 0.44X 1.25X .50X .50	2	
12.	60030427	WEAR PAD-RND 0.19X 2.00X 1.25X .44	2	
13.	60030428	WEAR PAD-RND 0.25X 2.00X .75X .44	2	
14.	60030438	WEAR PAD-RND 0.12X 2.00X 1.00X 1.00	2	
15.	60030442	WEAR PAD-RND 0.25X 1.00X .50X .38	2	
16.	60135668	CAP-FIRST STAGE	1	
17.	60135669	PIN-TYPE A 1.25X 6.89 (6.46)	1	
18.	60135833	RETAINER-1ST STAGE EXT CYL	2	
19.	60140899	CAP-LOWER BOOM CABLE GUIDE 9500-14000	1	
20.	70399044	TAPE-REFLECTIVE RED/SILVER 1.25X108.00	2	
21.	70399045	TAPE-REFLECTIVE RED/SILVER2.00X108.00	2	
22.	72060206	CAP SCR .75-10X 2.00 HH GR8 Z	1	1
23.	72063035	MACHY BUSHING 1.25X10 GA NR	2	
24.	72063116	WASHER .75 N FLAT H ASTM F436Z	1	1
25.	72063132	WASHER .50 FLAT ASTM F436	12	1
26.	72066129	RETAINING RING-EXT 1.25 HD	2	1
27.	72532700	ELBOW-M STR/90/M JIC XLG 6 6	2	2
28.	72602158	CAP SCR .50-13X 1.75 HH GR5 YZ	12	1
29.	72602160	WASHER- LOCK .50 YZ	12	1
REV. INITIAL RELEASE				

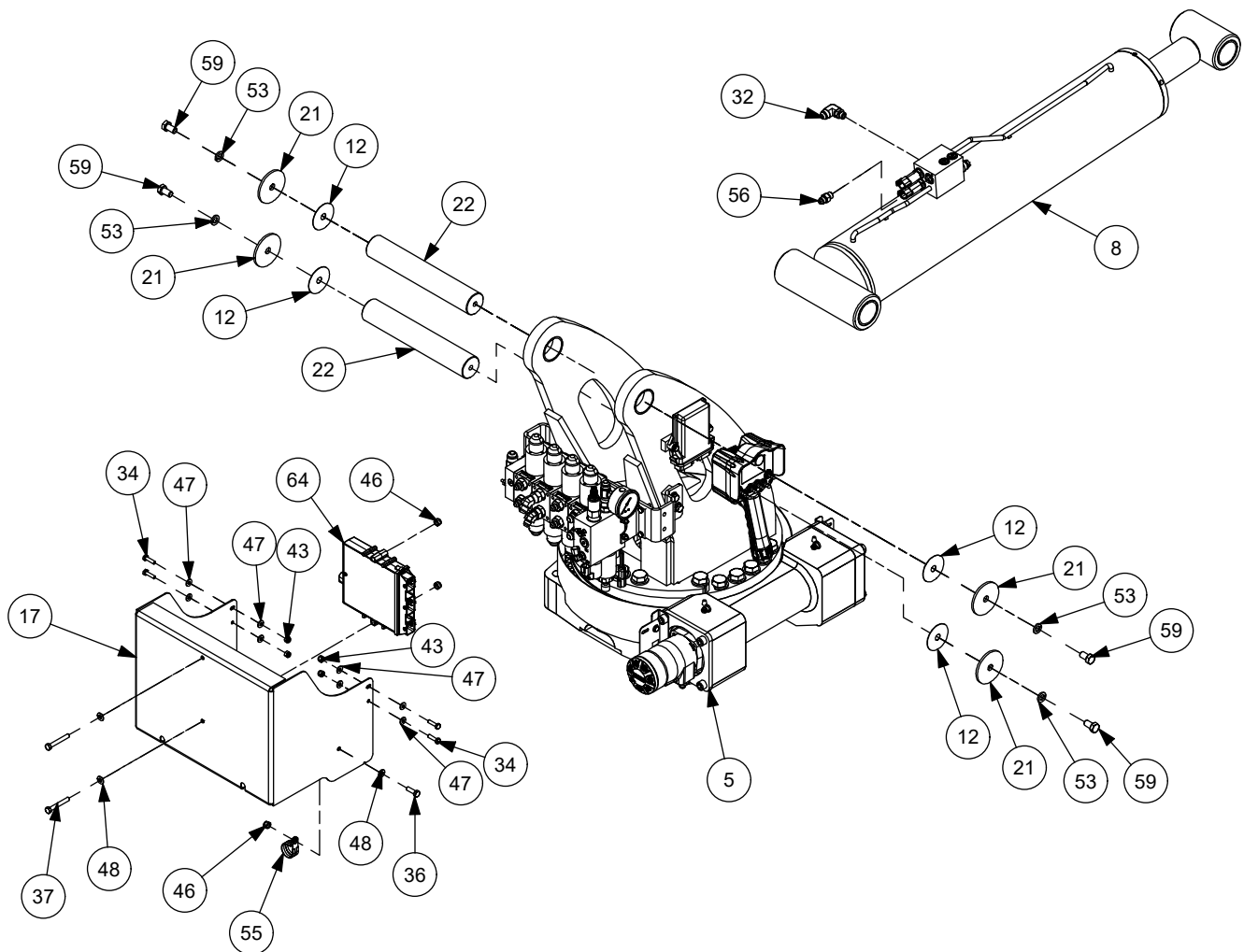
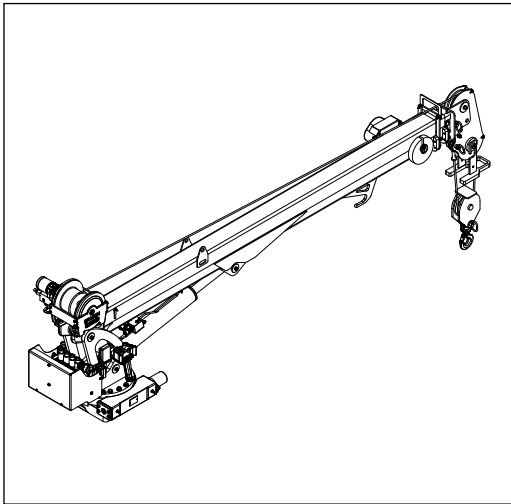
Winch & A2B Assembly (99906629)



WINCH & A2B ASSEMBLY (99906629) PARTS LIST

ITEM NO.	PART NO.	DESCRIPTION	QTY.	MODEL	KIT NO.
1.	51728207	KIT-HDRW SERIES 3 FLIP SHEAVE AND A2B ASM	1		
2.	51728453	KIT-GREASE 7500-14000 S4	1		
3.	51727792	FLIP SHEAVE ASM 6000/8600	1	7500/8600	
	51727744	FLIP SHEAVE ASM 10000/12000	1	10000/12000	
	51727793	FLIP SHEAVE ASM 14000	1	14000	
4.	52725155	WLDMT- A2B BRKT	1		
5.	60030486	SPACER-A2B BRACKET	2	7500-12000	
	60030488	SPACER-A2B BRACKET	2	14000	
6.	60030487	CAP- A2B PIN	2	14000	
7.	70034382	CAP-GREASE PRO20 GC-RED	1		2
8.	71413185	SPRING-.105WIRE 0.75OD 2.875 LG	1		1
9.	72034485	CLAMP-PLASTIC 1/4" CABLE	1		1
10.	72053508	ZERK-NPT .12	1		2
11.	72060639	SCR-MACH 10-24X 1.25 RDH	2		1
12.	72062093	NUT # 8-32 HEX ZINC	2		1
13.	72062207	NUT 8-32 HEX NYLOCK	1		1
14.	72063271	WASHER # 8 W FLAT ANSI B27.2Z	2		1
15.	72601938	BOLT-EYE # 8-32X 1.125	1		1
16.	72602085	BOLT-SHLDR .38X 1.25 (5/16 THDS) SS	1		1
17.	77041863	SWITCH-LIMIT DT04-4P CONN	1		
REV. B CN1348 20220524					

12000 25' Crane Assembly (99906625) Base & Valve Bank View

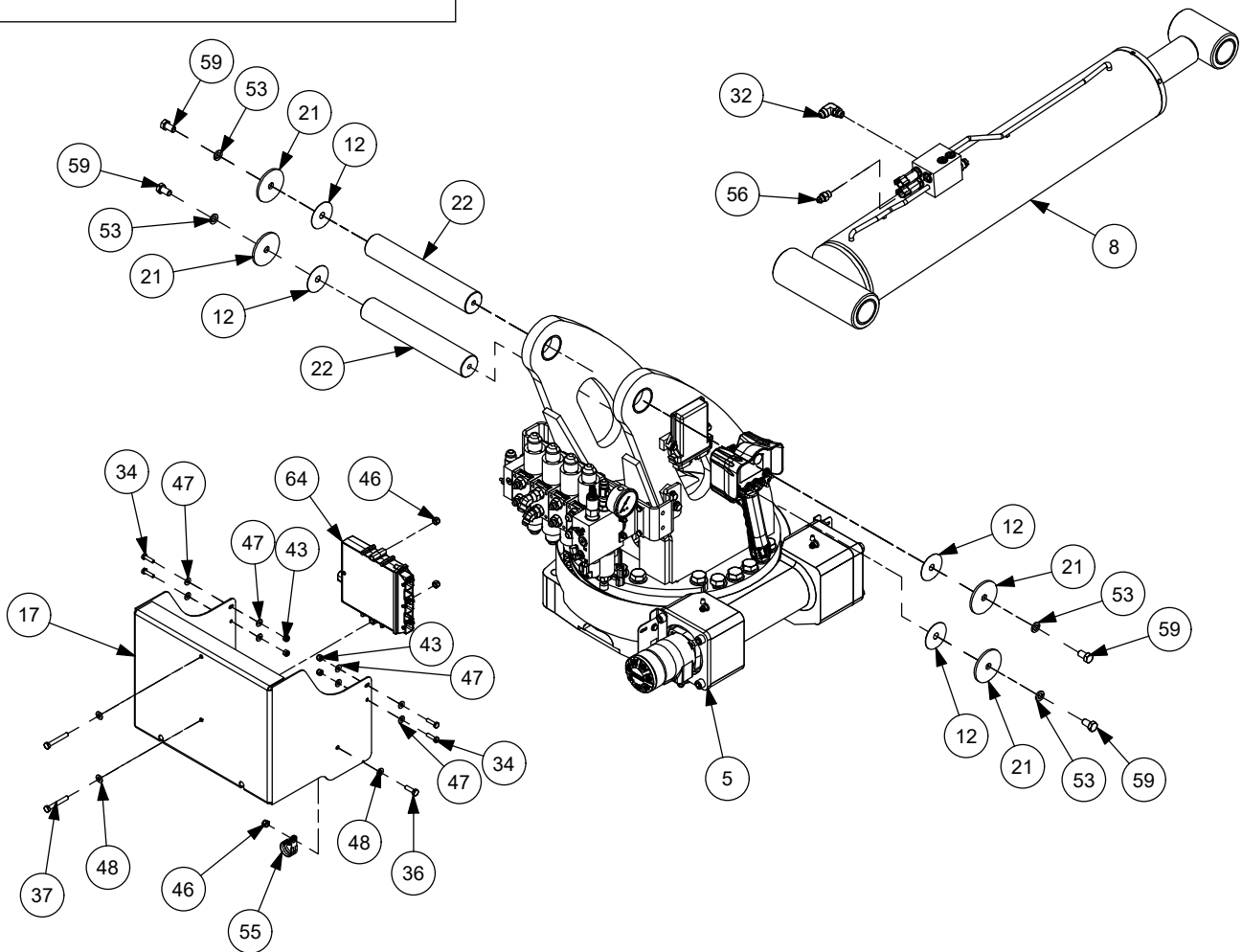
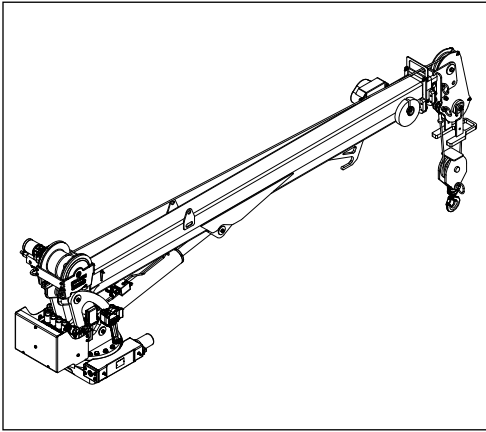


12000 25' CRANE ASSEMBLY (99906625) PARTS LIST

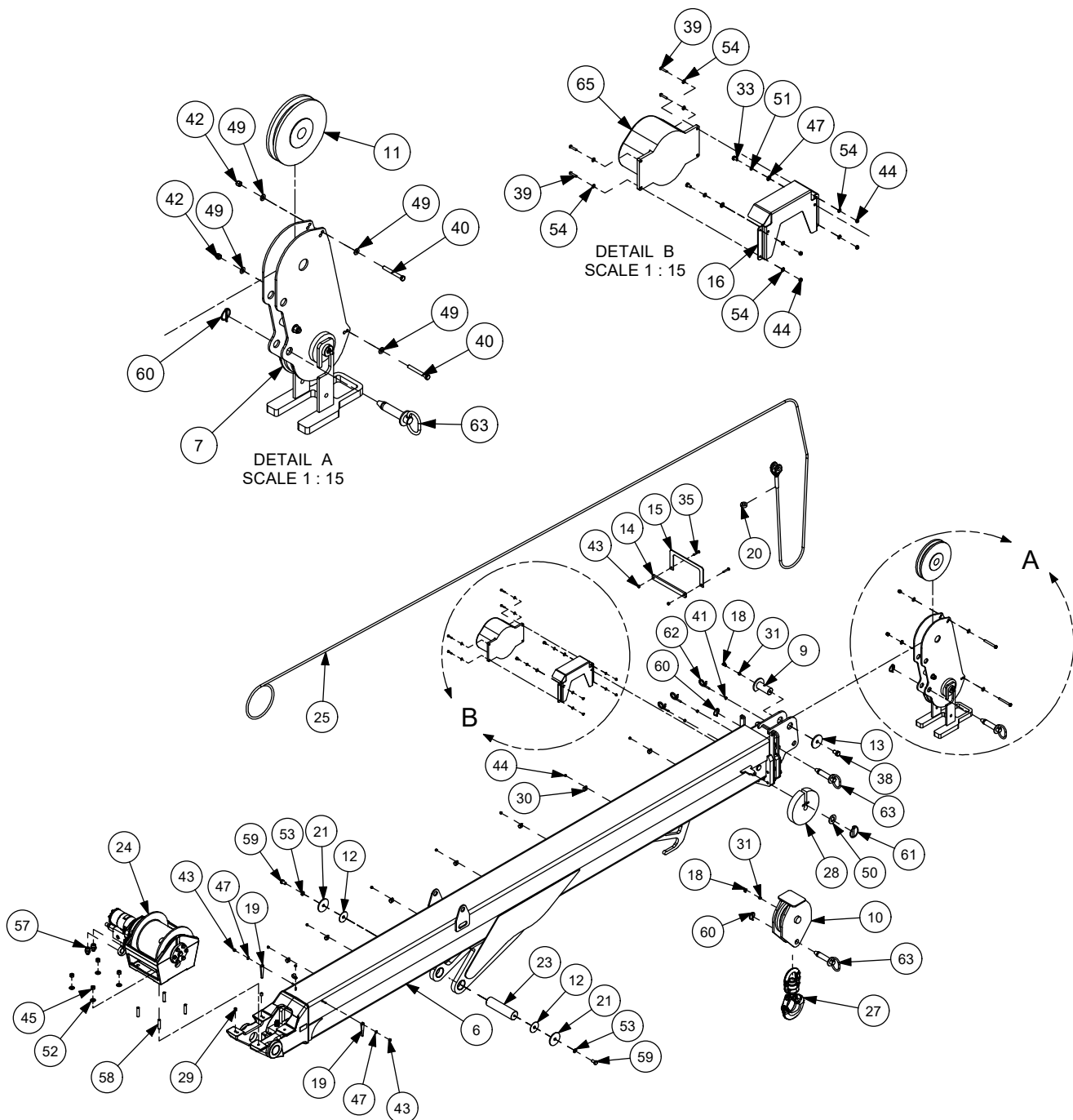
ITEM NO.	PART NO.	DESCRIPTION	QTY.	KIT NO.
1.	51728203	KIT-HRDW 12000S S4 CRANE ASM	1	
2.	51728229	KIT-ELEC CRANE SP CMD.CTRL	1	
3.	51728453	KIT-GREASE 7500-14000 S4	1	
4.	91728374	KIT-HYD 12000 SERIES 4 SP BG6	1	
5.	99906613	DWG-BASE ASM 12000 S4	1	
6.	99906618	DWG-BOOM ASM 12000S S4	1	
7.	99906629	DWG-FLIP SHEAVE AND A2B ASM SERIES 3	1	
8.	51728234	CYL-5.75/2.50 27.86S 42.05CC CMD.CTRL	1	
9.	52723030	PIN-TYPE M 1.50X 3.38	1	
10.	52725066	WLDMT- SNATCH BLOCK 9500/10000	1	
11.	60030255	SHEAVE- 9.00 POLYMER	1	
12.	60030590	WEAR PAD-RND 0.56X 2.44X .03	6	
13.	60109337	RETAINER PLT-PIN 3.00 DIA	1	
14.	60140935	GUIDE - CABLE WEAR (WIDE)	1	
15.	60140938	BRKT - CABLE GUIDE (WIDE)	1	
16.	60146843	BRKT-CORD REEL MNT CMD.CTRL	1	
17.	60146844	COVER-VLV BANK CMD.CTRL	1	
18.	70034382	CAP-GREASE PRO20 GC-RED	2	3
19.	70034490	PLATE-ANGLE PLASTIC 3.50"	2	
20.	70145121	COLLAR-SHAFT 2 PIECE 7/8 IN.	1	
21.	70190004	RETAINER PLT-PIN 0.50 X 3.00 DIA SS	6	
22.	70190007	PIN-TYPE AB 2.00 X 11.88 SS	2	
23.	70190008	PIN-TYPE AB 2.00 X 7.63 SS	1	
24.	70571196	WINCH-PLANETARY 7000 LB LINE PULL	1	
25.	70580233	WIRE ROPE ASM- GALV.44(6X25)X100FT WIPS	1	
26.	70733889	CABLE ASM-33FT BATT & RADIO ELIMINATION	1	
27.	70735082	HOOK-SWVL 7T BBRG	1	
28.	71414205	PLATE-SINGLE SHEAVE (20#) .50 WIRE ROPE	1	
29.	72034479	PLUG-PLSTC .50-13X .50 UNC-2B	2	1
30.	72034572	CLAMP-PLASTIC .38 CABLE	7	1
31.	72053508	ZERK-NPT .12	2	3
32.	72053762	ELBOW-M STR/90/M JIC 6 8	1	4
33.	72060000	CAP SCR .25-20X .50 HH GR5 Z	2	1
34.	72060004	CAP SCR .25-20X 1.00 HH GR5 Z	4	1
35.	72060006	CAP SCR .25-20X 1.50 HH GR5 Z	2	1
36.	72060025	CAP SCR .31-18X 1.00 HH GR5 Z	1	1
37.	72060030	CAP SCR .31-18X 2.25 HH GR5 Z	2	1
38.	72060147	CAP SCR .62-11X 1.00 HH GR5 Z	1	1
39.	72060638	SCR-MACH 10-24X 1.00 RDH ZINC	4	1
40.	72060893	CAP SCR .38-16X 3.25 HH GR5 Z	2	1
41.	72062000	NUT .25-20 HEX	3	1
42.	72062103	NUT .38-16 HEX NYLOCK	2	1
43.	72062104	NUT .25-20 HEX NYLOCK	8	1
44.	72062106	NUT 10-24 HEX NYLOCK	11	1
45.	72062108	NUT .50-20 HEX CENTER LOCKING	4	1
46.	72062109	NUT .31-18 HEX NYLOCK	3	1
47.	72063001	WASHER .25 FLAT	12	1
48.	72063002	WASHER .31 FLAT	3	1
49.	72063003	WASHER .38 FLAT	4	1
50.	72063010	WASHER 1.00 FLAT	1	1
51.	72063049	WASHER .25 LOCK	2	1
52.	72063132	WASHER .50 FLAT ASTM F436	4	1
53.	72063144	WASHER-SS .50 LOCK TYPE 304	6	1
54.	72063268	WASHER #10 W FLAT ANSI B27.2Z	8	1
55.	72066582	CLAMP-LOOP 1.25 CUSHIONED	1	1
56.	72532355	ADPTR-M STR/M JIC 6 6	1	4
57.	72532359	ADPTR-M STR/M JIC 10 8	2	4
58.	72602138	STUD .50-20X 2.25 DBL .50-13 GR8 STL	4	1
59.	72602168	CAP SCR .50-13X .88 HH SS	6	1

ITEM NO.	PART NO.	DESCRIPTION	QTY.	KIT NO.
60.	72661543	PIN-QUICK 316-10QP	3	1
61.	72661641	PIN-QUICK 5/16-2-1/16 ZINC YELLOW	1	1
62.	72661694	BRIDLE RING 1-1/12ID X 1/4-20	3	1
63.	73734565	PIN-LOCK W/HANDLE 1.00 X 3.50 W/HAIRPIN	3	
64.	77040742	CONTROLLER- CRANE MODULE S4	1	2
65.	77040823	CORD REEL ASM- SENSING CMD.CTRL	1	2
66.	77441718	HARNESS-S4 SP CRANE	1	2
REV. A CN1340 20220525				

12000 30' Crane Assembly (99906626) Base & Valve Bank View



12000 30' Crane Assembly (99906626) Boom & Rigging View

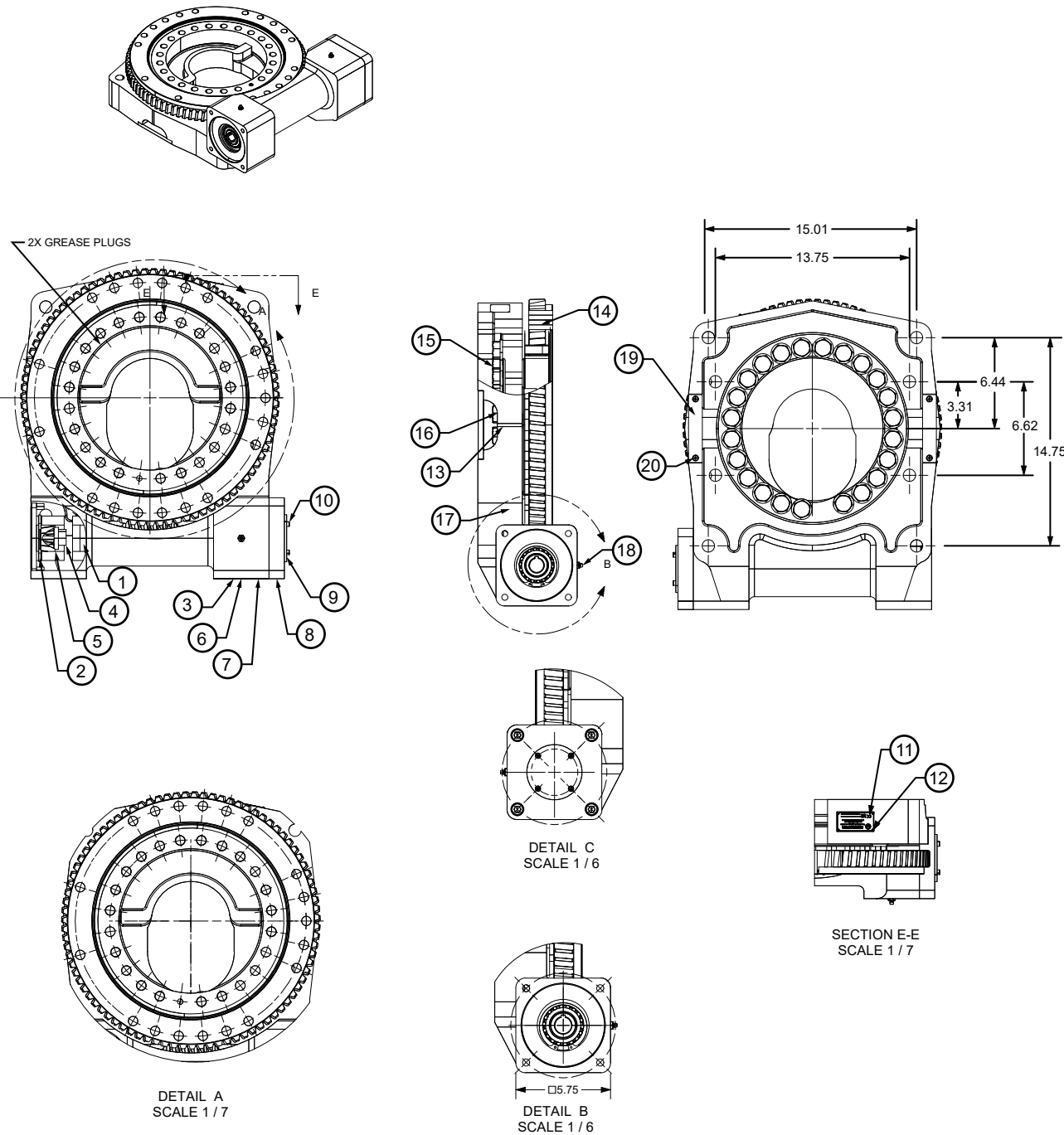


12000 30' CRANE ASSEMBLY (99906626) PARTS LIST

ITEM NO.	PART NO.	DESCRIPTION	QTY.	KIT NO.
1	51728204	KIT-HRDW 12000 S4 CRANE ASM	1	
2	51728229	KIT-ELEC CRANE SP CMD.CTRL	1	
3	51728453	KIT-GREASE 7500-14000 S4	1	
4	91728374	KIT-HYD 12000 SERIES 4 SP BG6	1	
5	99906613	DWG-BASE ASM 12000 S4	1	
6	99906619	DWG-BOOM ASM 12000 S4	1	
7	99906629	DWG-FLIP SHEAVE AND A2B ASM SERIES 3	1	
8	51728234	CYL-5.75/2.50 27.86S 42.05CC CMD.CTRL	1	
9	52723030	PIN-TYPE M 1.50X 3.38	1	
10	52725066	WLDMT- SNATCH BLOCK 9500/10000	1	
11	60030255	SHEAVE- 9.00 POLYMER	1	
12	60030590	WEAR PAD-RND 0.56X 2.44X .03	6	
13	60109337	RETAINER PLT-PIN 3.00 DIA	1	
14	60140935	GUIDE - CABLE WEAR (WIDE)	1	
15	60140938	BRKT - CABLE GUIDE (WIDE)	1	
16	60146843	BRKT-CORD REEL MNT CMD.CTRL	1	
17	60146844	COVER-VLV BANK CMD.CTRL	1	
18	70034382	CAP-GREASE PRO20 GC-RED	2	3
19	70034490	PLATE-ANGLE PLASTIC 3.50"	2	
20	70145121	COLLAR-SHAFT 2 PIECE 7/8 IN.	1	
21	70190004	RETAINER PLT-PIN 0.50 X 3.00 DIA SS	6	
22	70190007	PIN-TYPE AB 2.00 X 11.88 SS	2	
23	70190008	PIN-TYPE AB 2.00 X 7.63 SS	1	
24	70571196	WINCH-PLANETARY 7000 LB LINE PULL	1	
25	70580235	WIRE ROPE ASM-GALV.44X120FT XXIPS	1	
26	70733889	CABLE ASM-33FT BATT & RADIO ELIMINATION	1	
27	70735082	HOOK-SWVL 7T BBRG	1	
28	71414205	PLATE-SINGLE SHEAVE (20#) .50 WIRE ROPE	1	
29	72034479	PLUG-PLSTC .50-13X .50 UNC-2B	2	1
30	72034572	CLAMP-PLASTIC .38 CABLE	8	1
31	72053508	ZERK-NPT .12	2	3
32	72053762	ELBOW-M STR/90/M JIC 6 8	1	4
33	72060000	CAP SCR .25-20X .50 HH GR5 Z	2	1
34	72060004	CAP SCR .25-20X 1.00 HH GR5 Z	4	1
35	72060006	CAP SCR .25-20X 1.50 HH GR5 Z	2	1
36	72060025	CAP SCR .31-18X 1.00 HH GR5 Z	1	1
37	72060030	CAP SCR .31-18X 2.25 HH GR5 Z	2	1
38	72060147	CAP SCR .62-11X 1.00 HH GR5 Z	1	1
39	72060638	SCR-MACH 10-24X 1.00 RDH ZINC	4	1
40	72060893	CAP SCR .38-16X 3.25 HH GR5 Z	2	1
41	72062000	NUT .25-20 HEX	3	1
42	72062103	NUT .38-16 HEX NYLOCK	2	1
43	72062104	NUT .25-20 HEX NYLOCK	8	1
44	72062106	NUT 10-24 HEX NYLOCK	12	1
45	72062108	NUT .50-20 HEX CENTER LOCKING	4	1
46	72062109	NUT .31-18 HEX NYLOCK	3	1
47	72063001	WASHER .25 FLAT	12	1
48	72063002	WASHER .31 FLAT	3	1
49	72063003	WASHER .38 FLAT	4	1
50	72063010	WASHER 1.00 FLAT	1	1
51	72063049	WASHER .25 LOCK	2	1
52	72063132	WASHER .50 FLAT ASTM F436	4	1
53	72063144	WASHER-SS .50 LOCK TYPE 304	6	1
54	72063268	WASHER #10 W FLAT ANSI B27.2Z	8	1
55	72066582	CLAMP-LOOP 1.25 CUSHIONED	1	1
56	72532355	ADPTR-M STR/M JIC 6 6	1	4
57	72532359	ADPTR-M STR/M JIC 10 8	2	4
58	72602138	STUD .50-20X 2.25 DBL .50-13 GR8 STL	4	1
59	72602168	CAP SCR .50-13X .88 HH SS	6	1

ITEM NO.	PART NO.	DESCRIPTION	QTY.	KIT NO.
60	72661543	PIN-QUICK 316-10QP	3	1
61	72661641	PIN-QUICK 5/16-2-1/16 ZINC YELLOW	1	1
62	72661694	BRIDLE RING 1-1/12ID X 1/4-20	3	1
63	73734565	PIN-LOCK W/HANDLE 1.00 X 3.50 W/HAIRPIN	3	
64	77040742	CONTROLLER- CRANE MODULE S4	1	2
65	77040823	CORD REEL ASM- SENSING CMD.CTRL	1	2
66	77441718	HARNESS-S4 SP CRANE	1	2
REV. A CN1340 20220525				

Gear Rotator (71056704)

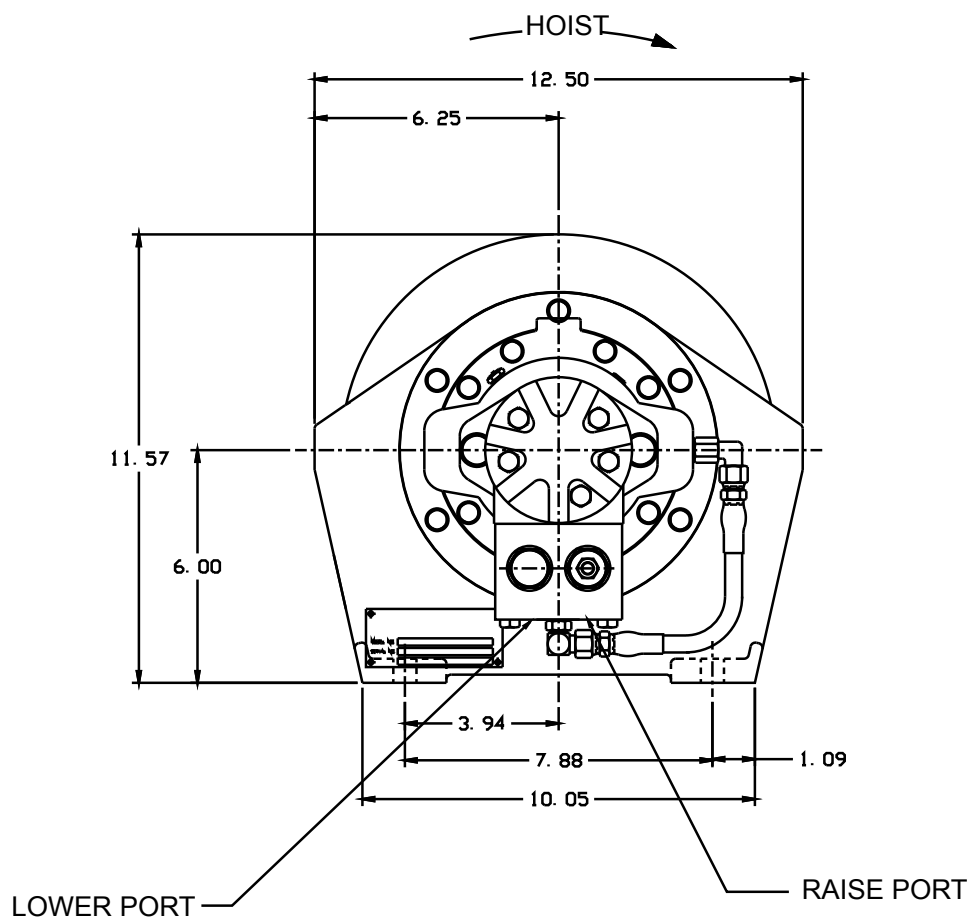
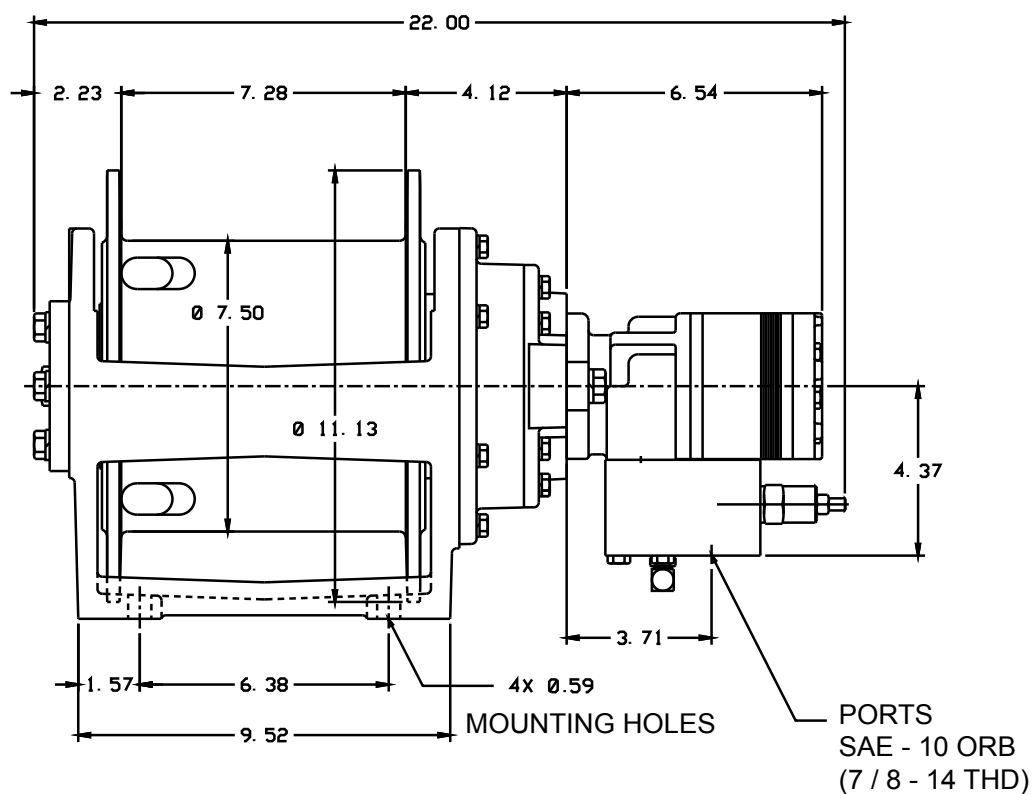


GEAR ROTATOR (71056704) PARTS LIST

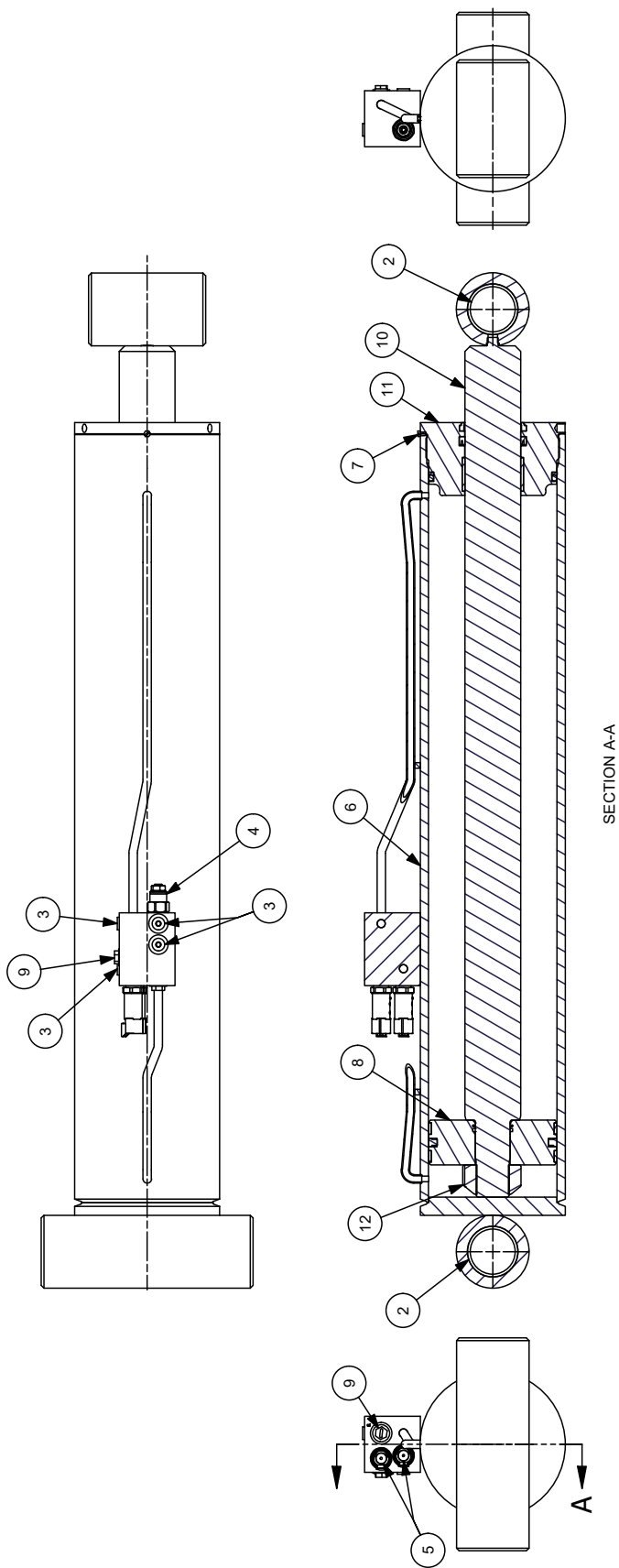
ITEM NO	PART NO.	DESCRIPTION	QTY.
1.	71056717	GEAR-WORM 14 INCH	1
2.	76535109	RETAINING RINGS FOR BOES 80X4	1
3.	76535057	OIL SEAL 40X50X8 FB	1
4.	76535056	OIL SEAL 60X75X8 FB	2
5.	70055410	BEARING-TAPERED ROLLER 33208/Q	2
6.	76490380	O-RING 82.5X2.65	1
7.		END CAP	1
8.		O-RING 54.5X2.65	1
9.		COVER CAP	1
10.		HESAGON SOCKET SREW M5X12	4
11.		NAME PLATE	1
12.		RIVET 2X5	4
13.		SET SCREW 1/4"-20X55	2
14.		14" SLEWING BEARING	1
15.		HEXAGON BOLT 3/4"- 16 UNF X 3	23
16.		HARDENED STEEL WASHERS 3/4"	23
17.		HEXAGON SOCKET SCREW 1/2" -13 UNC X1.25"	4
18.		GREASE FITTING 1/8" 27 NPT	2
19.		COVER CAP	2
20.		COUNTERSUNK FLAT HEAD SCREWS M5X18	4

REV. B CN 1526 20240226

Winch Dimensions (70571196)



Lower Cylinder (51728234)



LOWER CYLINDER (51728234) PARTS LIST

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1.	74490054	SEAL KIT	1
2.	70034582	BEARING MRP 2.00X2.25X2.00 POLYGON	4
3.	72533477	PLUG-STR SOC HD STL 4 (.44 THD)	4
4.	73540673	VALVE-CBAL SUN CBBB-LAN 3300 PSI	1
5.	77041866	TRANSDUCER-HYD 0-5000PSI 4-20MA 2-WIRE	2
6.		BARREL ASSEMBLY	1
7.		LOCKING SCREW	1
8.		PISTON ASSEMBLY	1
9.		PLASTIC PLUG, SAE O-RING #06	2
10.		ROD ASSEMBLY	1
11.		ROD BEARING ASSEMBLY	1
12.		SELF-LOCKING NUT 1.50-12 UNF	1
REV. INITIAL RELEASE			

NOTE:

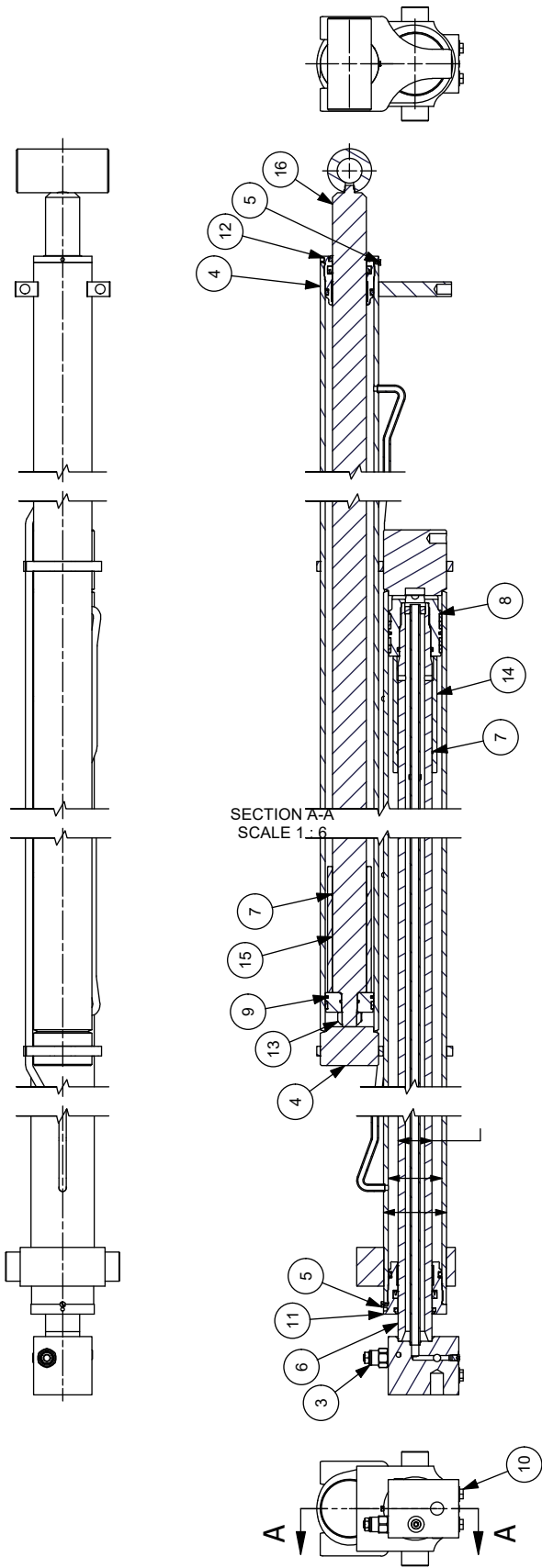
1. SEAL KIT NOT SHOWN. (74490054)

ITEMS SHOWN ARE COMMON SERVICE ITEMS. FOR PART NUMBERS NOT ASSIGNED CONTACT:

IOWA MOLD TOOLING CO., INC.
TECHNICAL SUPPORT TEAM
TELEPHONE: 800-554-4421



12000 25' Extension Cylinder (51727882)



12000 25' EXTENSION CYLINDER (51727882) PARTS LIST

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1.	94490493	SEAL KIT	1
2.			1
3.	73540565	VALVE-CBAL 15 GPM 4.5:1 T11-A @4000 PSI	1
4.		BARREL ASSEMBLY	1
5.		LOCKING SCREW	2
6.		LOWER ROD ASSEMBLY	1
7.		O-RING -031 NITRILE 70A	2
8.		PISTON ASSEMBLY	1
9.		PISTON ASSEMBLY	1
10.		PLASTIC PLUG, SAE O-RING #06	2
11.		ROD BEARING ASSEMBLY	1
12.		ROD BEARING ASSEMBLY	1
13.		SELF-LOCKING NUT 0.75-16 UNF	1
14.		STROKE LIMITER	1
15.		STROKE LIMITER	1
16.		UPPER ROD ASSEMBLY	1
REV. INITIAL RELEASE			

NOTES:

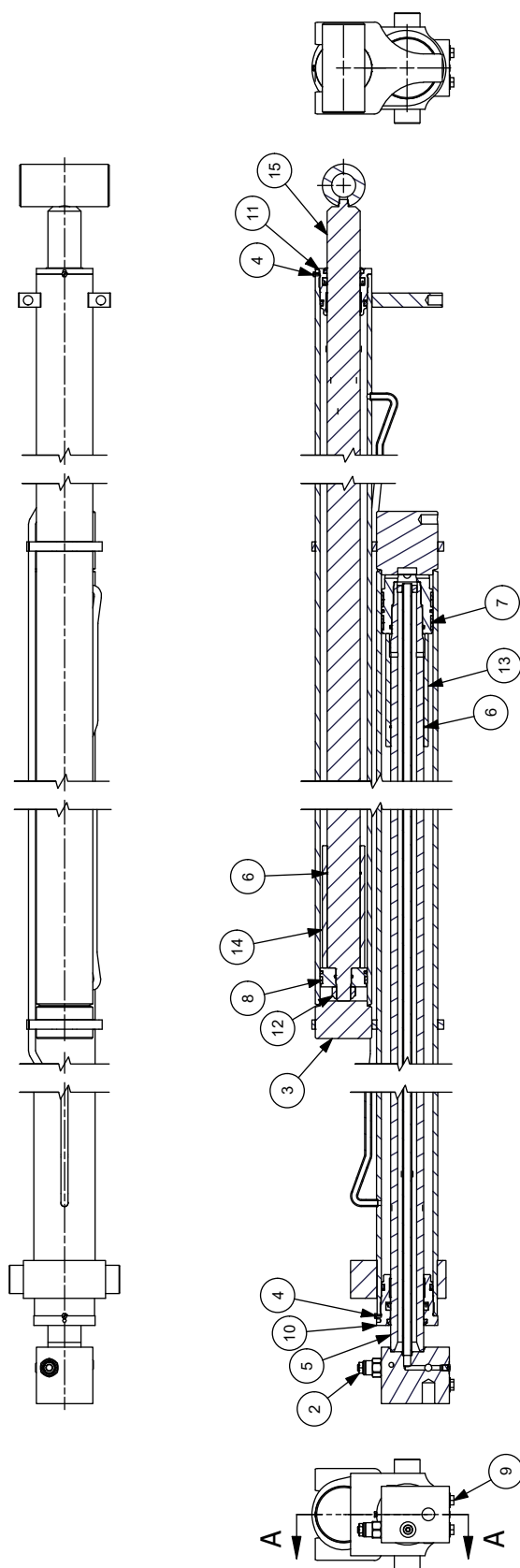
1. SEAL KITS NOT SHOWN. (94490493)

ITEMS SHOWN ARE COMMON SERVICE ITEMS. FOR PART NUMBERS NOT ASSIGNED CONTACT:

IOWA MOLD TOOLING CO., INC.
TECHNICAL SUPPORT TEAM
TELEPHONE: 800-554-4421



12000 30' Extension Cylinder (51727883)



12000 30' EXTENSION CYLINDER (51727883) PARTS LIST

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1.	94490494	SEAL KIT	2
2.	73540565	VALVE-CBAL 15 GPM 4.5:1 T11-A @4000 PSI	1
3.		BARREL ASSEMBLY	1
4.		LOCKING SCREW	2
5.		LOWER ROD ASSEMBLY	1
6.		O-RING -061 NITRILE 70A	2
7.		PISTON ASSEMBLY	1
8.		PISTON ASSEMBLY	1
9.		PLASTIC PLUG, SAE O-RING #06	2
10.		ROD BEARING ASSEMBLY	1
11.		ROD BEARING ASSEMBLY	1
12.		SELF-LOCKING NUT 0.75-16 UNF	1
13.		STROKE LIMITER	1
14.		STROKE LIMITER	1
15.		UPPER ROD ASSEMBLY	1
REV. INITIAL RELEASE			

NOTES:

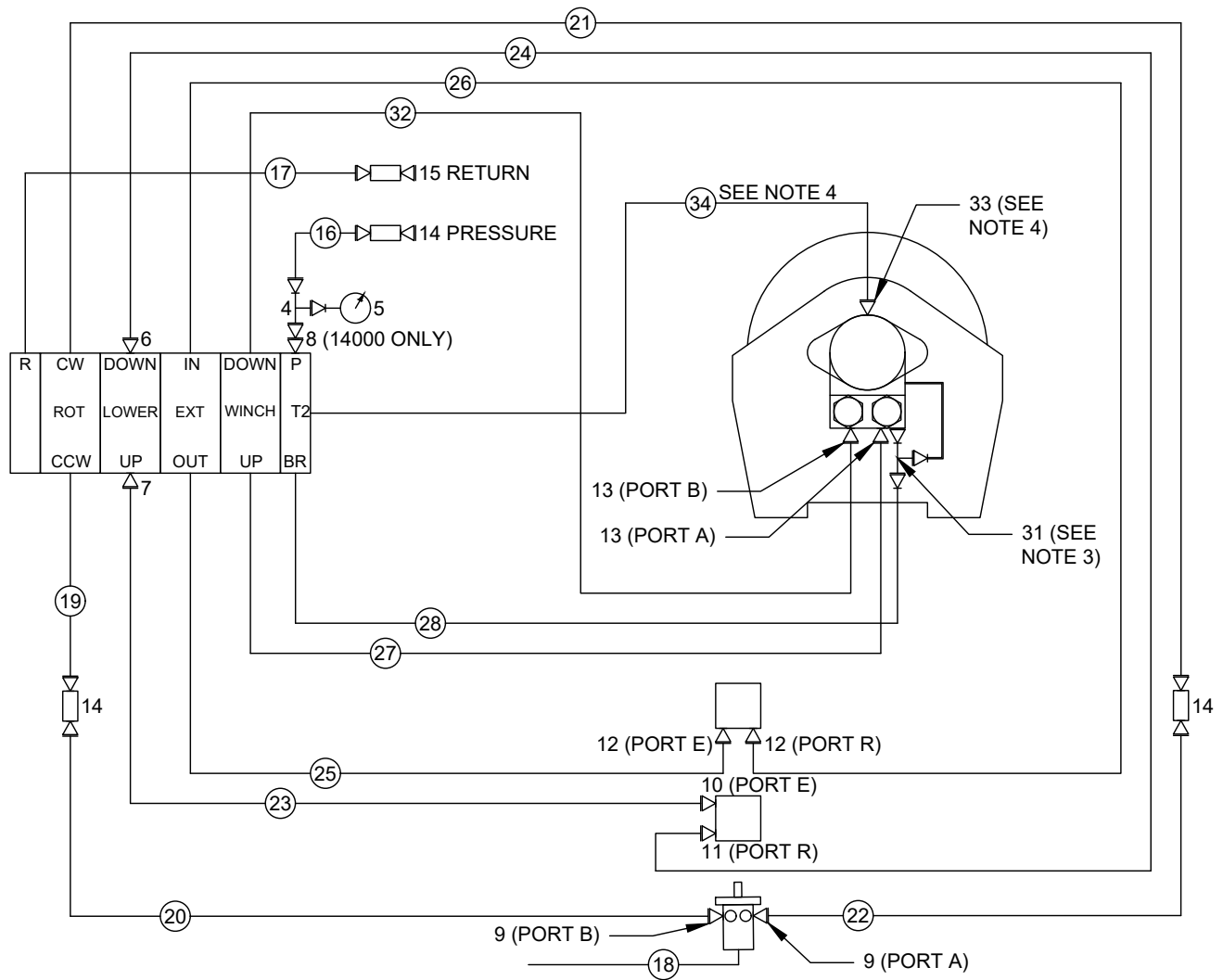
1. SEAL KITS NOT SHOWN. (94490494)

ITEMS SHOWN ARE COMMON SERVICE ITEMS. FOR PART NUMBERS NOT ASSIGNED CONTACT:

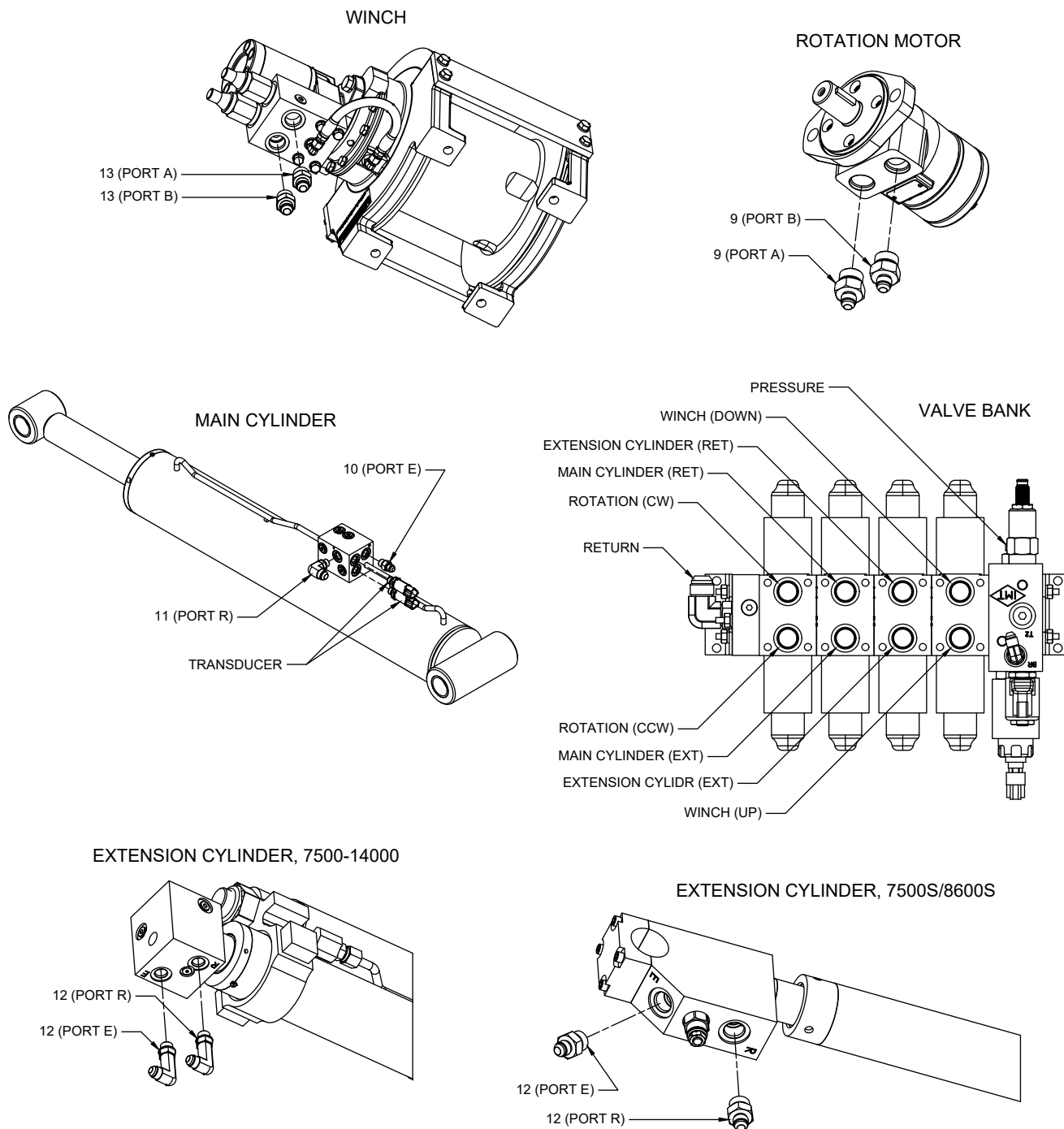
IOWA MOLD TOOLING CO., INC.
TECHNICAL SUPPORT TEAM
TELEPHONE: 800-554-4421



Hydraulic Schematic SP (99906727)

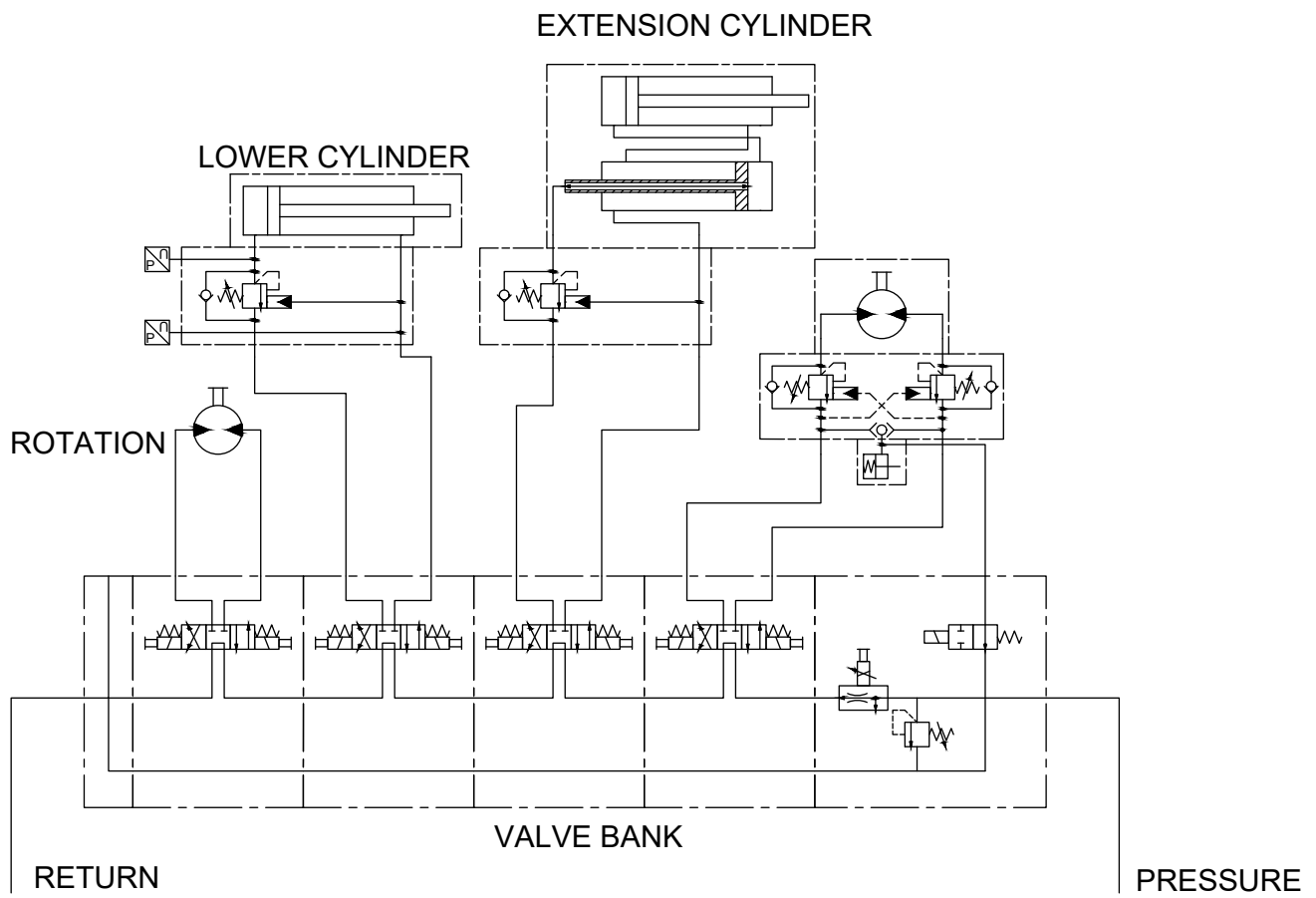


HYDRAULIC SCHEMATIC SP (99906727) CONTINUED



NOTES:

1. INSTALL 60350141 ON EXTENSION CYLINDER, MAIN CYLINDER, AND ROTATION MOTOR HOSES.
2. INSTALL 60350142 ON WINCH AND PRESSURE/RETURN VALVE BANK HOSES.
3. REMOVE BRAKE HOSE FROM FITTING IN WINCH MOTOR BLOCK. REMOVE AND REPLACE FITTING WITH TEE ITEM 31). RE-INSTALL HOSE ONTO TEE.
4. HOIST MOTOR CASE DRAIN ONLY PRESENT ON 14000.

HYDRAULIC SCHEMATIC SP (99906727) CONTINUED

HYDRAULIC SCHEMATIC SP (99906727) PARTS LIST

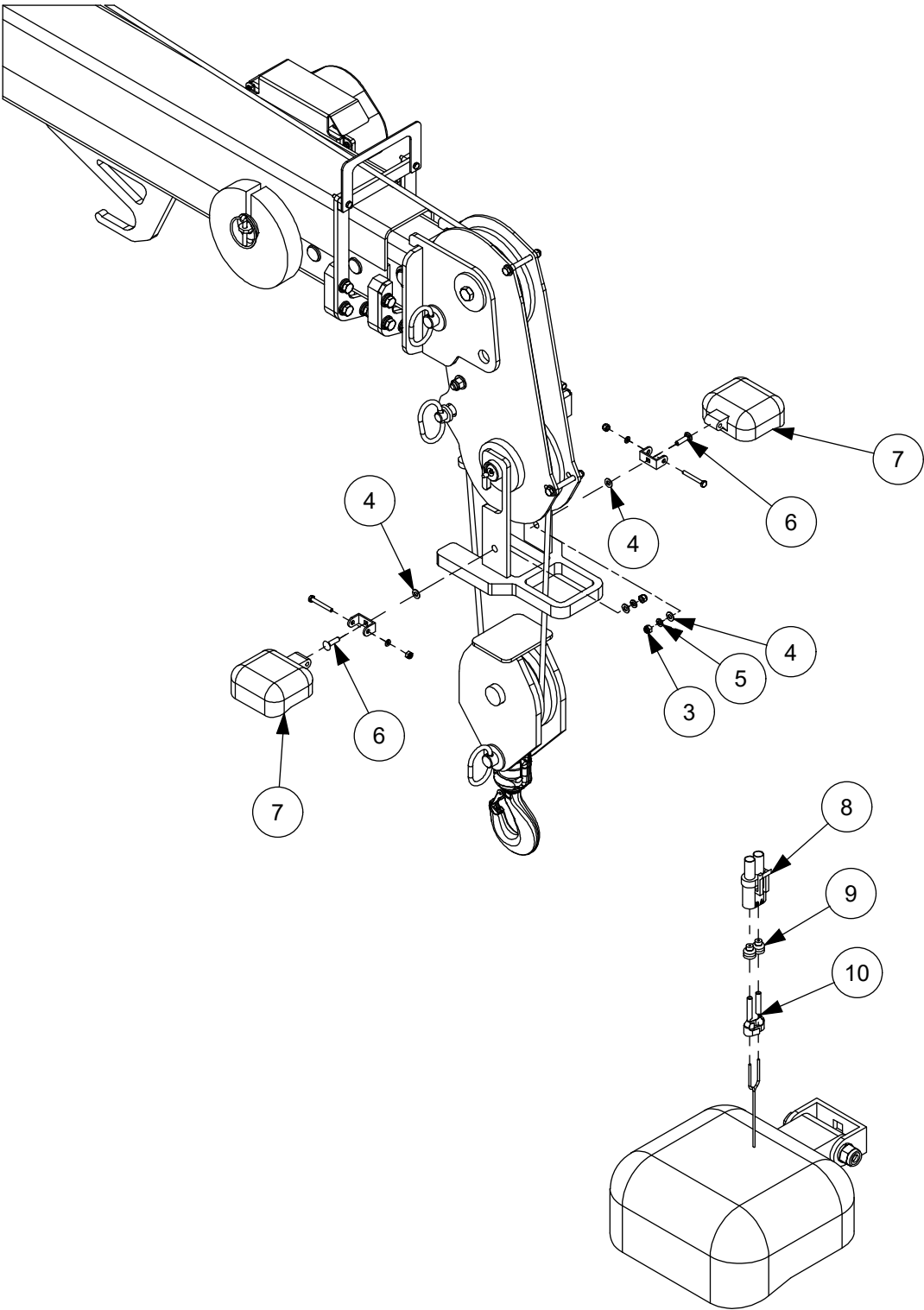
ITEM NO.	PART NO.	DESCRIPTION	KIT NO.	QTY.
1.	91727214	KIT-HYD 12000 S4 SP BG6	REF	1
2.	51726820	KIT-BRADEN WINCH BRAKE RELEASE	REF	1
3.	73734472	VALVE BANK-4-SECT BV18 S4SP 12VDC		1
4.	72534847	ADPTR-M JIC/F JIC 8 8 DIAGNOSTIC TEE		1
5.	73050225	GAUGE-5000 PSI 2.5IN CB MOUNT -4 MORB		1
6.	72532670	ELBOW-M JIC/45/F JIC 8 8	1	1
8.	72533583	ELBOW-M STR/45/M JIC 8 6	1	1
9.	72533613	ADPTR-M STR/M JIC 10 6	1	2
10.	72532355	ADPTR-M STR/M JIC 6 6	1	1
11.	72053762	ELBOW-M STR/90/M JIC 6 8	1	1
12.	72532700	ELBOW-M STR/90/M JIC XLG 6 6	1	2
13.	72532359	ADPTR-M STR/M JIC 10 8	1	2
14.	72533648	SWIVEL-M JIC/90/M JIC 8 8	1	3
15.	72534412	SWIVEL-M JIC/90/M JIC 10 10	1	1
16.	51396017	HOSE-FJ .50 X 30.00 (8-8) 100R16	1	1
17.	51397080	HOSE-FJ .62 X 30.00 (10-10) 100R17	1	1
18.	51395121	HOSE-AA .13 X 13.50 (2-2) 100R17	1	1
19.	51399072	HOSE-FJ .38 X 22.50 (8-6) 100R17	1	1
20.	51399228	HOSE-FJ .38 X 18.00 (8-6) 100R17	1	1
21.	51399073	HOSE-FZ .38 X 25.00 (8-6) 100R17	1	1
22.	51399229	HOSE-FJ .38 X 22.00 (8-6) 100R17	1	1
23.	51396387	HOSE-FJ .38 X 35.00 (6-6) 100R17	1	1
24.	51396878	HOSE-FZ .50 X 37.00 (8-8) 100R17	1	1
25.	51396886	HOSE-FZ .38 X 25.00 (6-6) 100R17	1	1
26.	51396887	HOSE-FJ .38 X 24.50 (6-6) R10017	1	1
27.	51397081	HOSE-FZ .50 X 31.50 (8-8) 100R17	1	1
28.	51397082	HOSE-FJ .50 X 31.00 (8-8) 100R17	1	1
29.	60350141	SLEEVE-HOSE NHS-159 X 12 CUT & SEALED	1	3
30.	60350142	SLEEVE-HOSE NHS-254 X 15 CUT & SEALED	1	2
31.	72534582	TEE-STL STR/JIC/JIC 4 4 4 RUN	2	1
32.	51399908	HOSE-FF .25 X 32.00 (4-4) 100R17	2	1
REV. INITIAL RELEASE				

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Section - 6

Electrical & Lighting

Boom Tip Floodlight Kit (99906730)



WIRING DETAIL
SCALE 1 : 4

BOOM TIP FLOODLIGHT KIT (99906730) PARTS LIST

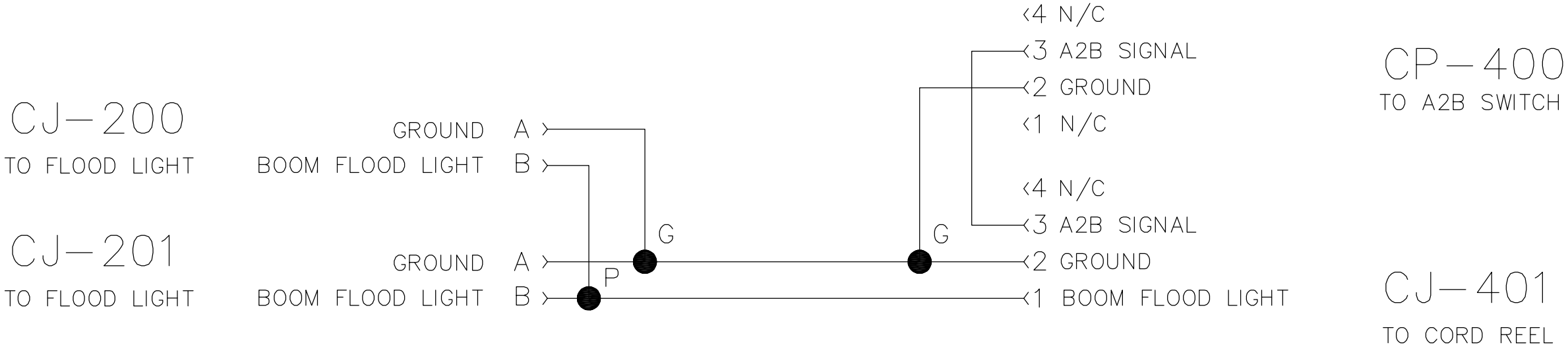
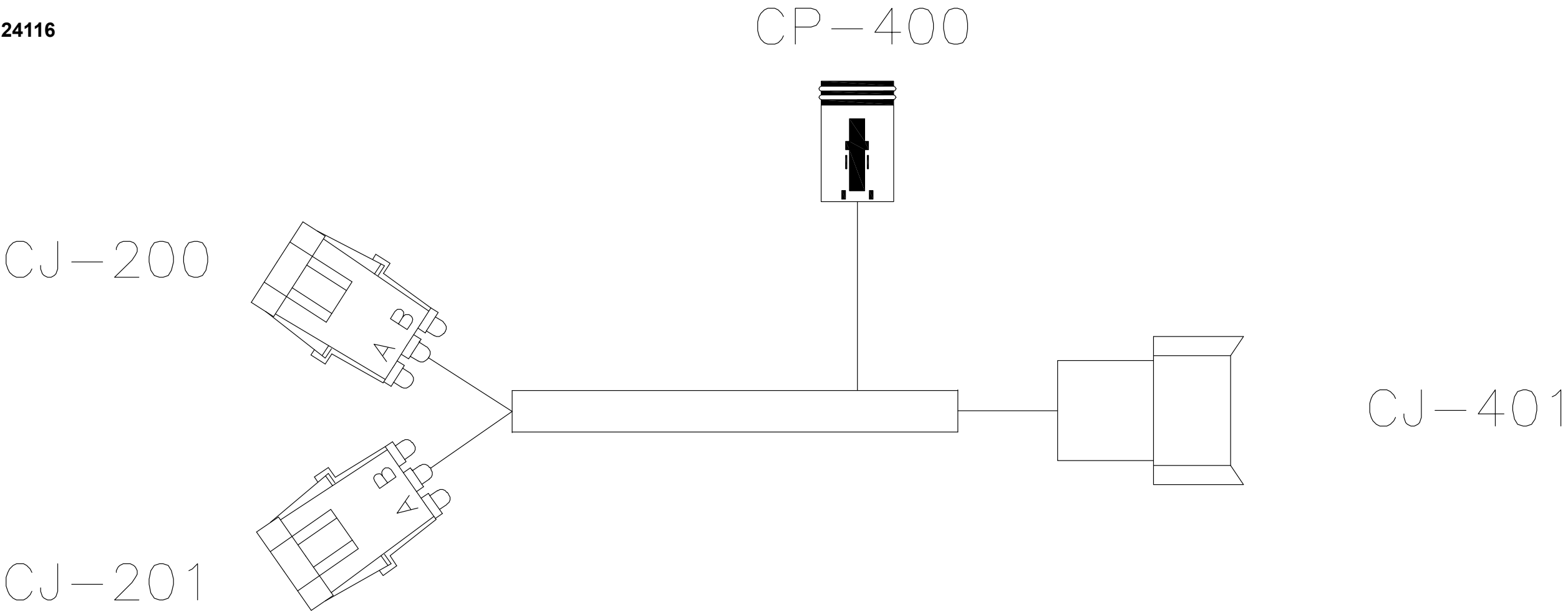
ITEM NO.	PART NO.	DESCRIPTION	QTY.	KIT NO.
1.	51724116	ELECT KIT-S4 BOOM DUAL LED FLOOD LIGHTS	1	
2.	72034572	CLAMP-PLASTIC .38 CABLE	1	1
3.	72062109	NUT .31-18 HEX NYLOCK	2	1
4.	72063002	WASHER .31 FLAT	4	1
5.	72063050	WASHER .31 LOCK	4	1
6.	72602051	BOLT-CRG .31-18X 1.00 SQNK GR2	2	1
7.	77040581	FLOODLIGHT-LED 12-36VDC	2	1
8.	77044574	CONN-PKRD WEATHERPACK 2 CAV FEMALE/TOWER	2	1
9.	77044927	CABLE SEAL-PKRD WP/MP 14 GA GREY	4	1
10.	77045888	TERM-PKRD WEATHERPACK 14-16GA FEMALE	4	1
11.	77441473	HARNESS-S4 BOOM TIP LED FLD LIGHT JUMPER	1	1
REV. INITIAL RELEASE				

NOTE:

PART NUMBERS: 72034572, & 77441473 NOT SHOWN.

Harness-Boom Tip Led Flood Light Jumper (77441473) Nail Board & Schematic Views

Kit Number: 57124116



HARNESS-BOOM TIP LED FLOOD LIGHT JUMPER (77441473) CIRCUIT CHART VIEW

LOCATOR CODE: CJ-200					PACKARD: 12010973	
TERM: 12124582					SEAL: 12015323	
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	YEL/GRN	16	GROUND	TO	SPL G	-
B	BRN	16	BOOM FLD LT	TO	SPL P	-

LOCATOR CODE: CJ-201					PACKARD: 12010973	
TERM: 12124582					SEAL: 12015323	
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	YEL/GRN	16	GROUND	TO	SPL G	-
B	BRN	16	BOOM FLD LT	TO	SPL P	-

LOCATOR CODE: CP-400					DEUTSCH: DT06-4S	
TERM: 0462-201-16141					WEDGE: W4S	PLUG: 114017
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	-	-	-	TO	-	-
2	YEL/GRN	16	GROUND	TO	SPL G	-
3	BLUE	16	A2B SIG	TO	CJ-401	3
4	-	-	-	TO	-	-

LOCATOR CODE: CP-401					DEUTSCH: DT04-4P	
TERM: 0460-202-16141					WEDGE: W4P	
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	BRN	16	BOOM FLD LT	TO	CJ-200	B
2	YEL/GRN	16	GROUND	TO	SPL G	-
3	BLUE	16	A2B SIG	TO	CP-400	3
4	-	-	-	TO	-	-

LOCATOR CODE: -					SPLICE G	
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
-	YEL/GRN	16	GROUND	TO	CJ-200	A
-	YEL/GRN	16	GROUND	TO	CJ-400	A
-	YEL/GRN	16	GROUND	TO	CP-400	2
-	YEL/GRN	16	GROUND	TO	CJ-401	2

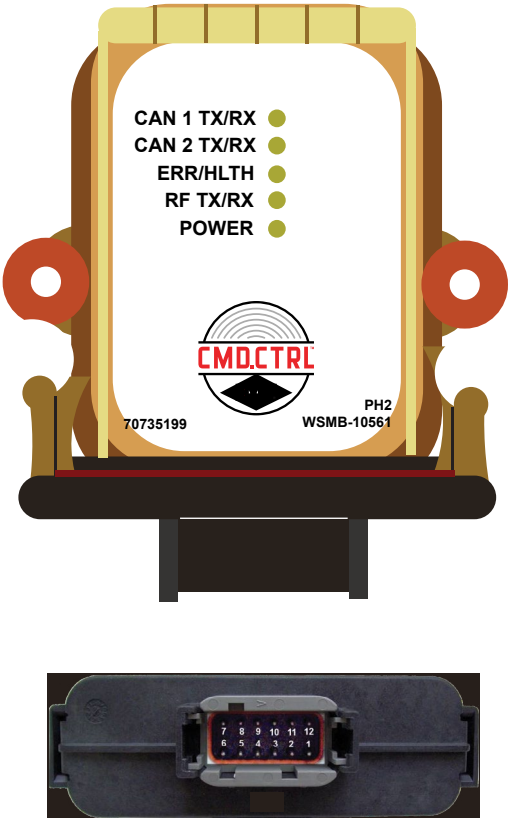
LOCATOR CODE: -					SPLICE P	
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
-	BRN	16	BOOM FLD LT	TO	CJ-200	B
-	BRN	16	BOOM FLD LT	TO	CJ-201	B
-	BRN	16	BOOM FLD LT	TO	CJ-401	1

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Section - 7

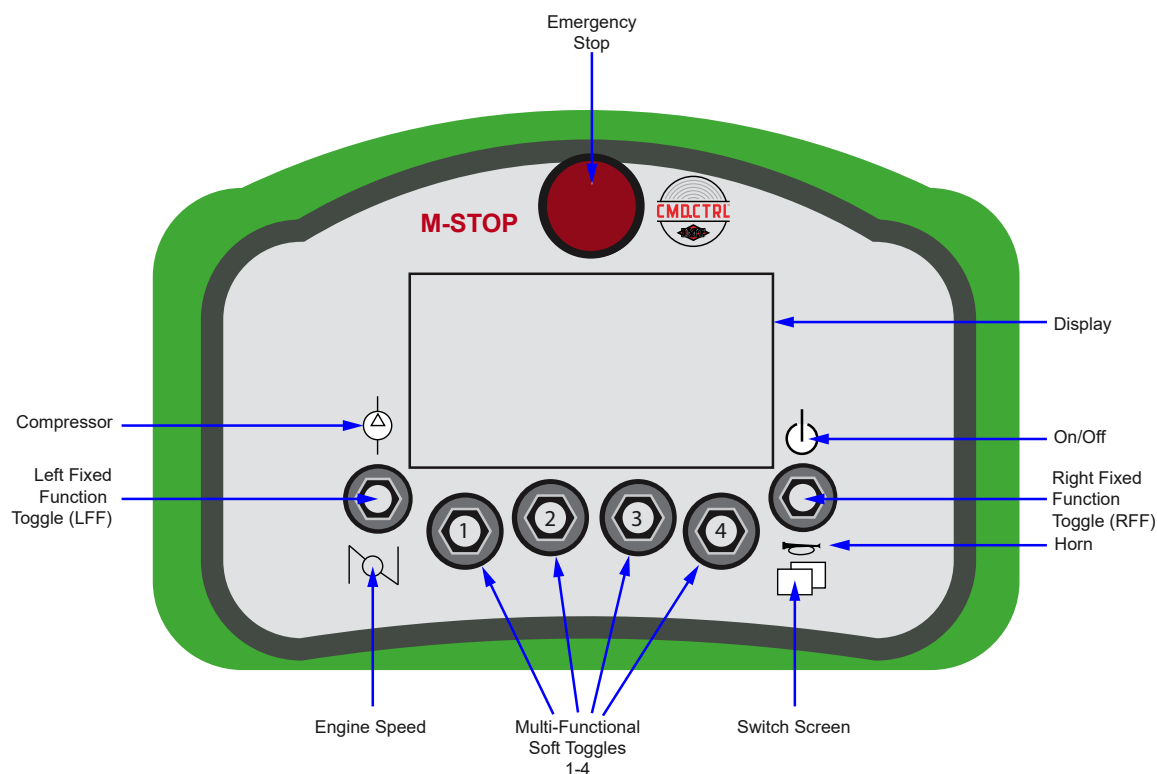
CMD.CTRL

Base Unit (70735199)



BASE UNIT WIRING TABLE	
PIN	SIGNAL NAME
P1:1	+VDC IN
P1:2	UNUSED
P1:3	UNUSED
P1:4	CAN H1
P1:5	CAN L1
P1:6	UNUSED
P1:7	CAN H2
P1:8	CAN L2
P1:9	UNUSED
P1:10	RS-232TX
P1:11	RS-232RX
P1:12	–VDC IN

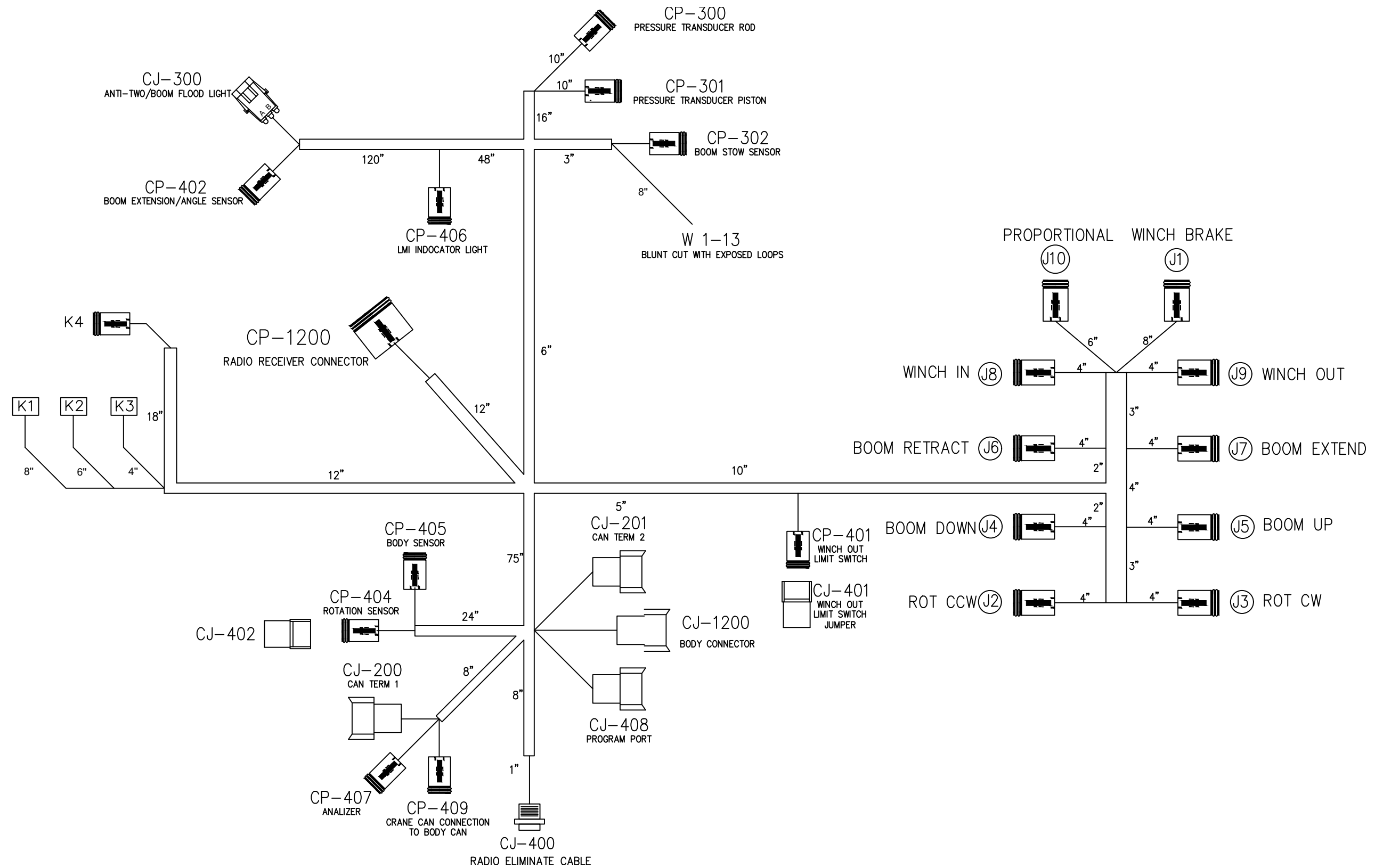
Handheld Remote, Toggles & Icons (70735198)



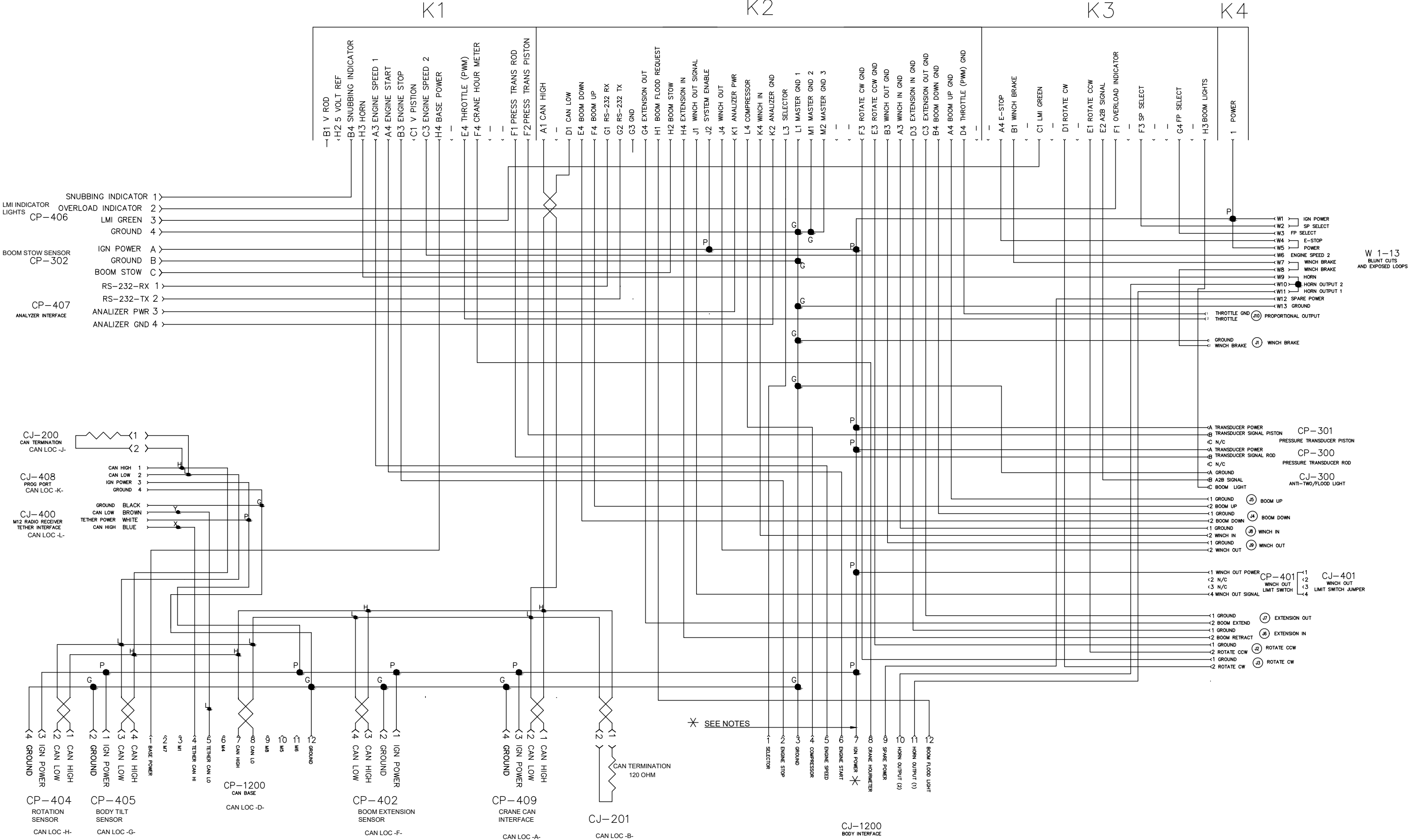
TOGGLE NAME	DESCRIPTION	TOGGLE STYLE
Right Fixed Function (RFF) UP	• TX ON / OFF • Association	Three-Position Momentary
Right Fixed Function (RFF) DOWN	• Horn • Menu	Three-Position Momentary
Soft Toggles 1 – 4	Functions will change based on the icons that are being displayed on the screen	Three-Position Momentary
Left Fixed Function (LFF) UP	• Compressor	Three-Position Momentary
Left Fixed Function (LFF) DOWN	• RPM HI / LO	Three-Position Momentary
Emergency Stop	Machine Stop	Maintained

PLEASE READ AND FOLLOW MANUAL PART NUMBER 99906578, CMD.CTRL OPERATOR'S MANUAL FOR STEP-BY-STEP INSTRUCTIONS ON HOW TO OPERATE THE CMD.CTRL RADIO REMOTE AND BASE.

Harness S4 SP Crane (77441718) Nail Board View



Harness S4 SP Crane (77441718) Schematic View



Harness S4 SP Crane (77441718) Circuit Chart View

LOCATOR CODE: K1				MOLEX:064319-3219 64319-1201		
TERM:0643221029, 0643231039				SEAL: 643251010, 643251023		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A1	-	-	-	TO	-	-
A2	-	-	-	TO	-	-
A3	WHT	20	ENGINE SPEED 1	TO	CJ-1200	5
A4	WHT	20	ENGINE START	TO	CJ-1200	6
B1	-	-	-	TO	-	-
B2	-	-	-	TO	-	-
B3	WHT	20	ENGINE STOP	TO	CJ-1200	2
B4	WHT	20	SNUBBING INDICATOR	TO	CP-406	1
C1	-	-	-	TO	-	-
C2	-	-	-	TO	-	-
C3	WHT	20	ENGINE SPEED 2	TO	W6	-
C4	-	-	-	TO	-	-
D1	-	-	-	TO	-	-
D2	-	-	-	TO	-	-
D3	-	-	-	TO	-	-
D4	-	-	-	TO	-	-
E1	-	-	-	TO	-	-
E2	-	-	-	TO	-	-
E3	-	-	-	TO	-	-
E4	WHT	20	THROTTLE	TO	J10	2
F1	WHT	20	PRESS TRANS ROD	TO	CP-300	B
F2	WHT	20	PRESS TRANS PISTON	TO	CP-301	B
F3	-	-	-	TO	-	-
F4	WHT	20	CRANE HR METER	TO	CJ-1200	8
G1	-	-	-	TO	-	-
G2	-	-	-	TO	-	-
G3	-	-	-	TO	-	-
G4	-	-	-	TO	-	-
H1	-	-	-	TO	-	-
H2	RED	16	5 VOLT REF	TO	SPL R	-
H3	WHT	16	HORN	TO	W9	-
H4	RED	16	BASE POWER	TO	CP-1200	1

LOCATOR CODE: K2				MOLEX:064320-3311, 64320-1301		
TERM:0643221029, 0643231039, *0643221239				SEAL:643251010, 643251023		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A1	YELLOW	*20	CAN HIGH	TO	SPL H	-
A2	-	-	-	TO	-	-
A3	BLK	20	WINCH IN GND	TO	J8	1
A4	BLK	20	BOOM UP GND	TO	J5	1
B1	-	-	-	TO	-	-
B2	-	-	-	TO	-	-
B3	BLK	20	WINCH OUT GND	TO	J9	1
B4	BLK	20	BOOM DOWN GND	TO	J4	1
C1	-	-	-	TO	-	-
C2	-	-	-	TO	-	-
C3	BLK	20	EXTENSION OUT GND	TO	J7	1
C4	-	-	-	TO	-	-
D1	GREEN	*20	CAN LOW	TO	SLP L	-
D2	-	-	-	TO	-	-
D3	BLK	20	EXTENSION IN GND	TO	J6	1
D4	BLK	20	THROTTLE GND	TO	J10	1
E1	-	-	-	TO	-	-
E2	-	-	-	TO	-	-
E3	BLK	20	ROTATE CCW GND	TO	J2	1
E4	WHT	20	BOOM DOWN	TO	J4	2
F1	-	-	-	TO	-	-
F2	-	-	-	TO	-	-
F3	BLK	20	ROTATE CW GND	TO	J3	1
F4	WHT	20	BOOM UP	TO	J5	2
G1	WHT	20	RS-232-RX	TO	CP-407	1
G2	WHT	20	RS-232-TX	TO	CP-407	2
G3	-	-	-	TO	-	-
G4	WHT	20	EXTENSION OUT	TO	J7	2
H1	WHT	20	BOOM FLOOD REQ	TO	CJ-1200	12
H2	WHT	20	BOOM STOW	TO	CP-302	C
H3	-	-	-	TO	-	-
H4	WHT	20	EXTENSION IN	TO	J6	2
J1	WHT	20	WINCH OUT SIGNAL	TO	CP-401	4
J2	RED	20	SYSTEM ENABLE	TO	SPL P	-
J3	-	-	-	TO	-	-
J4	WHT	20	WINCH OUT	TO	J9	2
K1	RED	20	ANALIZER PWR	TO	CP-407	3
K2	BLACK	20	ANALIZER GND	TO	CP-407	4
K3	-	-	-	TO	-	-
K4	WHT	20	WINCH IN	TO	J8	2
L1	BLACK	16	MASTER GROUND 1	TO	SPL G	-
L2	-	-	-	TO	-	-
L3	WHT	16	SELECTOR	TO	CJ-1200	1
L4	WHT	16	COMPRESSOR	TO	CJ-1200	4
M1	BLACK	16	MASTER GROUND 2	TO	SPL G	-
M2	BLACK	16	MASTER GROUND3	TO	SPL G	-
M3	-	-	-	TO	-	-
M4	-	-	-	TO	-	-

LOCATOR CODE: K3				MOLEX:064319-1216 64319-1201		
TERM:0643221029, 0643231039				SEAL: 643251010, 643251023		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A1	-	-	-	TO	-	-
A2	-	-	-	TO	-	-
A3	-	-	-	TO	-	-
A4	WHT	20	E-STOP	TO	W4	-
B1	WHT	20	WINCH BRAKE	TO	W7	-
B2	-	-	-	TO	-	-
B3	-	-	-	TO	-	-
B4	-	-	-	TO	-	-
C1	WHT	20	LMI GREEN	TO	CP-406	3
C2	-	-	-	TO	-	-
C3	-	-	-	TO	-	-
C4	-	-	-	TO	-	-
D1	WHT	20	ROTATE CW	TO	J3	2
D2	-	-	-	TO	-	-
D3	-	-	-	TO	-	-
D4	-	-	-	TO	-	-
E1	WHT	20	ROTATE CCW	TO	J2	2
E2	WHT	20	A2B SIGNAL	TO	CJ-300	B
E3	-	-	-	TO	-	-
E4	-	-	-	TO	-	-
F1	WHT	20	OVERLOAD INDICATOR	TO	CP-406	2
F2	-	-	-	TO	-	-
F3	WHT	16	SP SELECT	TO	W2	-
F4	-	-	-	TO	-	-
G1	-	-	-	TO	-	-
G2	-	-	-	TO	-	-
G3	-	-	-	TO	-	-
G4	WHT	16	FP SELECT	TO	W3	-
H1	-	-	-	TO	-	-
H2	-	-	-	TO	-	-
H3	WHT	16	BOOM LIGHTS	TO	CJ-300	C
H4	-	-	-	TO	-	-

LOCATOR CODE: K4				SUMITOMO: 60984824		
TERM: 8100-3222				SEAL: 7165-1346		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	RED	6	POWER	TO	SPL P	-

Harness S4 SP Crane (77441718) Circuit Chart View

LOCATOR CODE: CP-1200				DEUTSCH: DTM06-12SA		
TERM: 0462-005-20141			WEDGE: WM12S	CAVITY PLUG: 0413-204-2005		
TERM: 0462-005-2031						
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	RED	16	BASE POWER	TO	K1	H4
2	-	-	-	TO	-	-
3	-	-	-	TO	-	-
4	YELLOW	-	TETHER CAN HI	TO	SPL X	-
5	GREEN	-	TETHER CAN LO	TO	SPL Y	-
6	-	-	-	TO	-	-
7	YELLOW	20	CAN HIGH	TO	SPL H	-
8	GREEN	20	CAN LOW	TO	SPL L	-
9	-	-	-	TO	-	-
10	-	-	-	TO	-	-
11	-	-	-	TO	-	-
12	BLK	16	GROUND	TO	SPL G	-

LOCATOR CODE: CJ-1200				DEUTSCH DT04-12PA		
TERM: 0460-202-16141				WEDGE: W12P		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	WHT	16	SELECTOR	TO	K2	L3
2	WHT	20	ENGINE STOP	TO	K1	B3
3	BLK	14	GROUND	TO	SPL G	-
4	WHT	16	COMPRESSOR	TO	K2	L4
5	WHT	20	ENGINE SPEED	TO	K1	A3
6	WHT	20	ENGINE START	TO	K1	A4
7	RED	14	IGN POWER	TO	SPL P	-
8	WHT	20	CRANE HOUR M	TO	K1	F4
9	RED	16	SPARE POWER	TO	W12	-
10	WHT	16	HORN OUTPUT 2	TO	W10	-
11	WHT	16	HORN OUTPUT 1	TO	W11	-
12	WHT	20	BOOM FLOOD REQ	TO	K2	H1

LOCATOR CODE: CJ-400				BRAD/HARRIS: 8R5A00A18A120		
				CAP: 80012 (TIE TO HARNESS) OR EQUIV		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
-	BRN	22	TETHER CAN LO	TO	SPL Y	-
-	WHT	22	TETHER PWR	TO	SPL P	-
-	BLUE	22	TETHER CAN HI	TO	SPL X	-
-	BLK	22	GROUND	TO	SPL G	-

LOCATOR CODE: CP-401				DEUTSCH: DT06-4S		
TERM: 0462-201-16141				WEDGE: W4S	PLUG: 114017	
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	RED	18	WINCH OUT PWR	TO	SPL P	-
2	-	-	-	TO	-	-
3	-	-	-	TO	-	-
4	WHT	20	WINCH OUT SIG	TO	K2	J1

LOCATOR CODE: CJ-401				DEUTSCH: DT04-4P		
TERM: 0460-202-16141				WEDGE: W4P	PLUG: 114017	
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	WHT	18	WINCH OUT SIG	TO	CJ-401	4
2	-	-	-	TO	-	-
3	-	-	-	TO	-	-
4	WHT	18	WINCH OUT SIG	TO	CJ-401	1

LOCATOR CODE: CJ-402				DEUTSCH: DT04-4P		
TERM: -				WEDGE: W4P	PLUG: 114017	
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	-	-	-	TO	-	-
2	-	-	-	TO	-	-
3	-	-	-	TO	-	-
4	-	-	-	TO	-	-

LOCATOR CODE: CP-402				DEUTSCH: DT06-4S		
TERM: 0462-201-16141				WEDGE: W4S	PLUG: 114017	
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	RED	16	IGN POWER	TO	SPL P	-
2	BLK	16	GROUND	TO	SPL G	-
3	YELLOW	18	CAN HIGH	TO	SPL H	-
4	GREEN	18	CAN LOW	TO	SPL L	-

LOCATOR CODE: CP-404				DEUTSCH: DT06-4S		
TERM: 0462-201-16141				WEDGE: W4S	PLUG: 114017	
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	YELLOW	18	CAN HIGH	TO	SPL H	-
2	GREEN	18	CAN LOW	TO	SPL L	-
3	RED	16	IGN POWER	TO	SPL P	-
4	BLK	16	GROUND	TO	SPL G	-

LOCATOR CODE: CP-405				DEUTSCH: DT06-4S		
TERM: 0462-201-16141				WEDGE: W4S	PLUG: 114017	
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	RED	16	IGN POWER	TO	SPL P	-
2	BLK	16	GROUND	TO	SPL G	-
3	GREEN	18	CAN LOW	TO	SPL L	-
4	YELLOW	18	CAN HIGH	TO	SPL H	-

LOCATOR CODE: CP-406				DEUTSCH: DT06-4S		
TERM: 0462-201-16141				WEDGE: W4S	PLUG: 114017	
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	WHT	20	SNUBBING IND	TO	K1	B4
2	WHT	20	OVER LOAD IND	TO	K3	F1
3	WHT	20	LMI GREEN	TO	K3	C1
4	BLK	16	GROUND	TO	SPL G	-

LOCATOR CODE: CP-407				DEUTSCH: DT06-4S		
TERM: 0462-201-16141				WEDGE: W4S	PLUG: 114017	
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	WHT	20	RS-232-RX	TO	K2	G1
2	WHT	20	RS-232-TX	TO	K2	G2
3	RED	20	ANALIZER PWR	TO	K2	K1
4	BLK	20	ANALIZER GND	TO	K2	K2

LOCATOR CODE: CJ-408				DEUTSCH: DT04-4P		
TERM: 0460-202-16141				WEDGE: W4P	PLUG: 114017	
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	YELLOW	18	CAN HIGH	TO	SPL H	-
2	GREEN	18	CAN LOW	TO	SPL L	-
3	RED	16	IGN POWER	TO	SPL P	-
4	BLK	16	GROUND	TO	SPL G	-

LOCATOR CODE: CP-409				DEUTSCH: DT06-4S		
TERM: 0462-201-16141				WEDGE: W4S	PLUG: 114017	
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	YELLOW	18	CAN HIGH	TO	SPL H	-
2	GREEN	18	CAN LOW	TO	SPL L	-
3	RED	14	IGN POWER	TO	SPL P	-
4	BLK	14	GROUND	TO	SPL G	-

LOCATOR CODE: CJ-200				DEUTSCH: DTM04-2P		
TERM: 0460-202-20141				TERMINATION: DTM06-2SP006	WEDGE: WM-2P	
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
2	YELLOW	20	CAN HIGH	TO	SPL H	-
1	GREEN	20	CAN LOW	TO	SPL L	-

LOCATOR CODE: CJ-201				DEUTSCH: DTM04-2P		
TERM: 0460-202-20141				TERMINATION: DTM06-2SP006	WEDGE: WM-2P	
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	YELLOW	20	CAN HIGH	TO	SPL H	-
2	GREEN	20	CAN LOW	TO	SPL L	-

LOCATOR CODE: J1				DEUTSCH: DT06-2S		
TERM: 0462-201-16141				WEDGE: W2S		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	BLK	16	GROUND	TO	SPL G	-
2	WHT	16	WINCH BRAKE	TO	W8	-

LOCATOR CODE: J2				DEUTSCH: DT06-2S		
TERM: 0462-201-16141				WEDGE: W2S		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	BLK	20	ROTATE CCW GND	TO	K2	E3
2	WHT	20	ROTATE CCW	TO	K3	E1

LOCATOR CODE: J3				DEUTSCH: DT06-2S		
TERM: 0462-201-16141				WEDGE: W2S		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	BLK	20	ROTATE CW GND	TO	K2	F3
2	WHT	20	ROTATE CW	TO	K3	D1

LOCATOR CODE: J4				DEUTSCH: DT06-2S		
TERM: 0462-201-16141				WEDGE: W2S		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	BLK	20	BOOM DOWN GND	TO	K2	B4
2	WHT	20	BOOM DOWN	TO	K2	E4

LOCATOR CODE: J5				DEUTSCH: DT06-2S		
TERM: 0462-201-16141				WEDGE: W2S		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	BLK	20	BOOM UP GND	TO	K2	A4
2	WHT	20	BOOM UP	TO	K2	F4

LOCATOR CODE: J6				DEUTSCH: DT06-2S		
TERM: 0462-201-16141				WEDGE: W2S		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	BLK	20	EXTENSION IN GND	TO	K2	D3
2	WHT	20	EXTENSION IN	TO	K2	H4

LOCATOR CODE: J7				DEUTSCH: DT06-2S		
TERM: 0462-201-16141				WEDGE: W2S		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	BLK	20	EXTENSION OUT GND	TO	K2	C3
2	WHT	20	EXTENSION OUT	TO	K2	G4

LOCATOR CODE: J8				DEUTSCH: DT06-2S		
TERM: 0462-201-16141				WEDGE: W2S		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	BLK	20	WINCH IN GND	TO	K2	A3
2	WHT	20	WINCH IN	TO	K2	K4

LOCATOR CODE: J9				DEUTSCH: DT06-2S		
TERM: 0462-201-16141				WEDGE: W2S		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	BLK	20	WINCH OUT GROUND	TO	K2	B3
2	WHT	20	WINCH OUT	TO	K2	J4

LOCATOR CODE: J10				DEUTSCH: DT06-2S		
TERM: 0462-201-16141				WEDGE: W2S		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	BLK	20	THROTTLE GND	TO	K2	D4
2	WHT	20	THROTTLE	TO	K1	E4

LOCATOR CODE: CP-300				DEUTSCH: DT06-3S		
TERM: 0462-201-16141				WEDGE: W3S	PLUG: 114017	
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	RED	18	TRANS POWER	TO	SPL P	-
B	WHT	20	PRESS TRANS ROD	TO	K1	F1
C	-	-	-	TO	-	-

LOCATOR CODE: CJ-300				PACKARD: 12010717		
TERM: 12124582				SEAL: 12015323/12089679		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	BLK	16	GROUND	TO	SPL G	-
B	WHT	20	A2B SIG	TO	K3	E2
C	WHT	16	BOOM LIGHT	TO	K3	H3

LOCATOR CODE: CP-301				DEUTSCH: DT06-3
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Harness S4 SP Crane (77441718) Circuit chart View

LOCATOR CODE: CP-1200			DEUTSCH: DTM06-12SA			
TERM: 0462-005-20141			WEDGE: WM12S	CAVITY PLUG 0413-204-2005		
TERM: 0462-005-2031						
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	RED	16	BASE POWER	TO	K1	H4
2	-	-	-	TO	-	-
3	-	-	-	TO	-	-
4	YELLOW	-	TETHER CAN HI	TO	SPL X	-
5	GREEN	-	TETHER CAN LO	TO	SPL Y	-
6	-	-	-	TO	-	-
7	YELLOW	26	CAN HIGH	TO	SPL H	-
8	GREEN	26	CAN LOW	TO	SPL L	-
9	-	-	-	TO	-	-
10	-	-	-	TO	-	-
11	-	-	-	TO	-	-
12	BLK	16	GROUND	TO	SPL G	-

LOCATOR CODE: CJ-1200			DEUTSCH DT04-12PA			
TERM: 0460-202-16141			WEDGE: W12P			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	WHT	16	SELECTOR	TO	K2	L3
2	WHT	20	ENGINE STOP	TO	K1	B3
3	BLK	14	GROUND	TO	SPL G	-
4	WHT	16	COMPRESSOR	TO	K2	L4
5	WHT	20	ENGINE SPEED	TO	K1	A3
6	WHT	20	ENGINE START	TO	K1	A4
7	RED	14	IGN POWER	TO	SPL P	-
8	WHT	20	CRANE HOUR M	TO	K1	F4
9	RED	16	SPARE POWER	TO	W12	-
10	WHT	16	HORN OUTPUT 2	TO	W10	-
11	WHT	16	HORN OUTPUT 1	TO	W11	-
12	WHT	20	BOOM FLOOD REQ	TO	K2	H1

LOCATOR CODE: CJ-400			BRAD/HARRIS: 8R5A00A18A120			
			CAP: 80012 (TIE TO HARNESS) OR EQUIV			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
-	BRN	22	TETHER CAN LO	TO	SPL Y	-
-	WHT	22	TETHER PWR	TO	SPL P	-
-	BLUE	22	TETHER CAN HI	TO	SPL X	-
-	BLK	22	GROUND	TO	SPL G	-

LOCATOR CODE: CP-401			DEUTSCH: DT06-4S			
TERM: 0462-201-16141			WEDGE: W4S	PLUG: 114017		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	RED	18	WINCH OUT PWR	TO	SPL P	-
2	-	-	-	TO	-	-
3	-	-	-	TO	-	-
4	WHT	20	WINCH OUT SIG	TO	K2	J1

LOCATOR CODE: CJ-401			DEUTSCH: DT04-4P			
TERM: 0460-202-16141			WEDGE: W4P	PLUG: 114017		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	WHT	18	WINCH OUT SIG	TO	CJ-401	4
2	-	-	-	TO	-	-
3	-	-	-	TO	-	-
4	WHT	18	WINCH OUT SIG	TO	CJ-401	1

LOCATOR CODE: CJ-402			DEUTSCH: DT04-4P			
TERM: -			WEDGE: W4P	PLUG: 114017		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	-	-	-	TO	-	-
2	-	-	-	TO	-	-
3	-	-	-	TO	-	-
4	-	-	-	TO	-	-

LOCATOR CODE: CP-402			DEUTSCH: DT06-4S			
TERM: 0462-201-16141			WEDGE: W4S	PLUG: 114017		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	RED	16	IGN POWER	TO	SPL P	-
2	BLK	16	GROUND	TO	SPL G	-
3	YELLOW	18	CAN HIGH	TO	SPL H	-
4	GREEN	18	CAN LOW	TO	SPL L	-

LOCATOR CODE: CP-404			DEUTSCH: DT06-4S			
TERM: 0462-201-16141			WEDGE: W4S	PLUG: 114017		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	YELLOW	18	CAN HIGH	TO	SPL H	-
2	GREEN	18	CAN LOW	TO	SPL L	-
3	RED	16	IGN POWER	TO	SPL P	-
4	BLK	16	GROUND	TO	SPL G	-

LOCATOR CODE: CP-405			DEUTSCH: DT06-4S			
TERM: 0462-201-16141			WEDGE: W4S	PLUG: 114017		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	RED	16	IGN POWER		SPL P	-
2	BLK	16	GROUND	TO	SPL G	-
3	GREEN	18	CAN LOW	TO	SPL L	-
4	YELLOW	18	CAN HIGH	TO	SPL H	
				TO	-	

LOCATOR CODE: CP-406			DEUTSCH: DT06-4S			
TERM: 0462-201-16141			WEDGE: W4S	PLUG: 114017		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	WHT	20	SNUBBING IND	TO	K1	B4
2	WHT	20	OVER LOAD IND	TO	K3	F1
3	WHT	20	LMI GREEN	TO	K3	C1
4	BLK	16	GROUND	TO	SPL G	-

LOCATOR CODE: CP-407			DEUTSCH: DT06-4S			
TERM: 0462-201-16141			WEDGE: W4S	PLUG: 114017		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	WHT	20	RS-232-RX	TO	K2	G1
2	WHT	20	RS-232-TX	TO	K2	G2
3	RED	20	ANALIZER PWR	TO	K2	K1
4	BLK	20	ANALIZER GND	TO	K2	K2

LOCATOR CODE: CJ-408			DEUTSCH: DT04-4P			
TERM: 0460-202-16141			WEDGE: W4P	PLUG: 114017		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	YELLOW	18	CAN HIGH	TO	SPL H	-
2	GREEN	18	CAN LOW	TO	SPL L	-
3	RED	16	IGN POWER	TO	SPL P	-
4	BLK	16	GROUND	TO	SPL G	-

LOCATOR CODE: CP-409			DEUTSCH: DT06-4S			
TERM: 0462-201-16141			WEDGE: W4S	PLUG: 114017		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	YELLOW	18	CAN HIGH	TO	SPL H	-
2	GREEN	18	CAN LOW	TO	SPL L	-
3	RED	14	IGN POWER	TO	SPL P	-
4	BLK	14	GROUND	TO	SPL G	-

LOCATOR CODE: CJ-200			DEUTSCH: DTM04-2P			
TERM: 0460-202-20141			TERMINATION: DTM06-2SP006	WEDGE: WM-2P		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
2	YELLOW	20	CAN HIGH	TO	SPL H	-
1	GREEN	20	CAN LOW	TO	SPL L	-

LOCATOR CODE: CJ-201			DEUTSCH: DTM04-2P			
TERM: 0460-202-20141			TERMINATION: DTM06-2SP006	WEDGE: WM-2P		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	YELLOW	20	CAN HIGH	TO	SPL H	-
2	GREEN	20	CAN LOW	TO	SPL L	-

LOCATOR CODE: J1			DEUTSCH: DT06-2S			
TERM: 0462-201-16141			WEDGE: W2S			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	BLK	16	GROUND	TO	SPL G	-
2	WHT	16	WINCH BRAKE	TO	W8	-

LOCATOR CODE: J2			DEUTSCH: DT06-2S			
TERM: 0462-201-16141			WEDGE: W2S			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	BLK	20	ROTATE CCW GND	TO	K2	E3
2	WHT	20	ROTATE CCW	TO	K3	E1

LOCATOR CODE: J3			DEUTSCH: DT06-2S			
TERM: 0462-201-16141			WEDGE: W2S			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	BLK	20	ROTATE CW GND	TO	K2	F3
2	WHT	20	ROTATE CW	TO	K3	D1

LOCATOR CODE: J4			DEUTSCH: DT06-2S			
TERM: 0462-201-16141			WEDGE: W2S			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	BLK	20	BOOM DOWN GND	TO	K2	B4
2	WHT	20	BOOM DOWN	TO	K2	E4

LOCATOR CODE: J5			DEUTSCH: DT06-2S			
TERM: 0462-201-16141			WEDGE: W2S			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	BLK	20	BOOM UP GND	TO	K2	A4
2	WHT	20	BOOM UP	TO	K2	F4

LOCATOR CODE: J6			DEUTSCH: DT06-2S			
TERM: 0462-201-16141			WEDGE: W2S			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	BLK	20	EXTENSION IN GND	TO	K2	D3
2	WHT	20	EXTENSION IN	TO	K2	H4

LOCATOR CODE: J7			DEUTSCH: DT06-2S			
TERM: 0462-201-16141			WEDGE: W2S			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	BLK	20	EXTENSION OUT GND	TO	K2	C3
2	WHT	20	EXTENSION OUT	TO	K2	G4

LOCATOR CODE: J8			DEUTSCH: DT06-2S			
TERM: 0462-201-16141			WEDGE: W2S			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	BLK	20	WINCH IN GND	TO	K2	A3
2	WHT	20	WINCH IN	TO	K2	K4

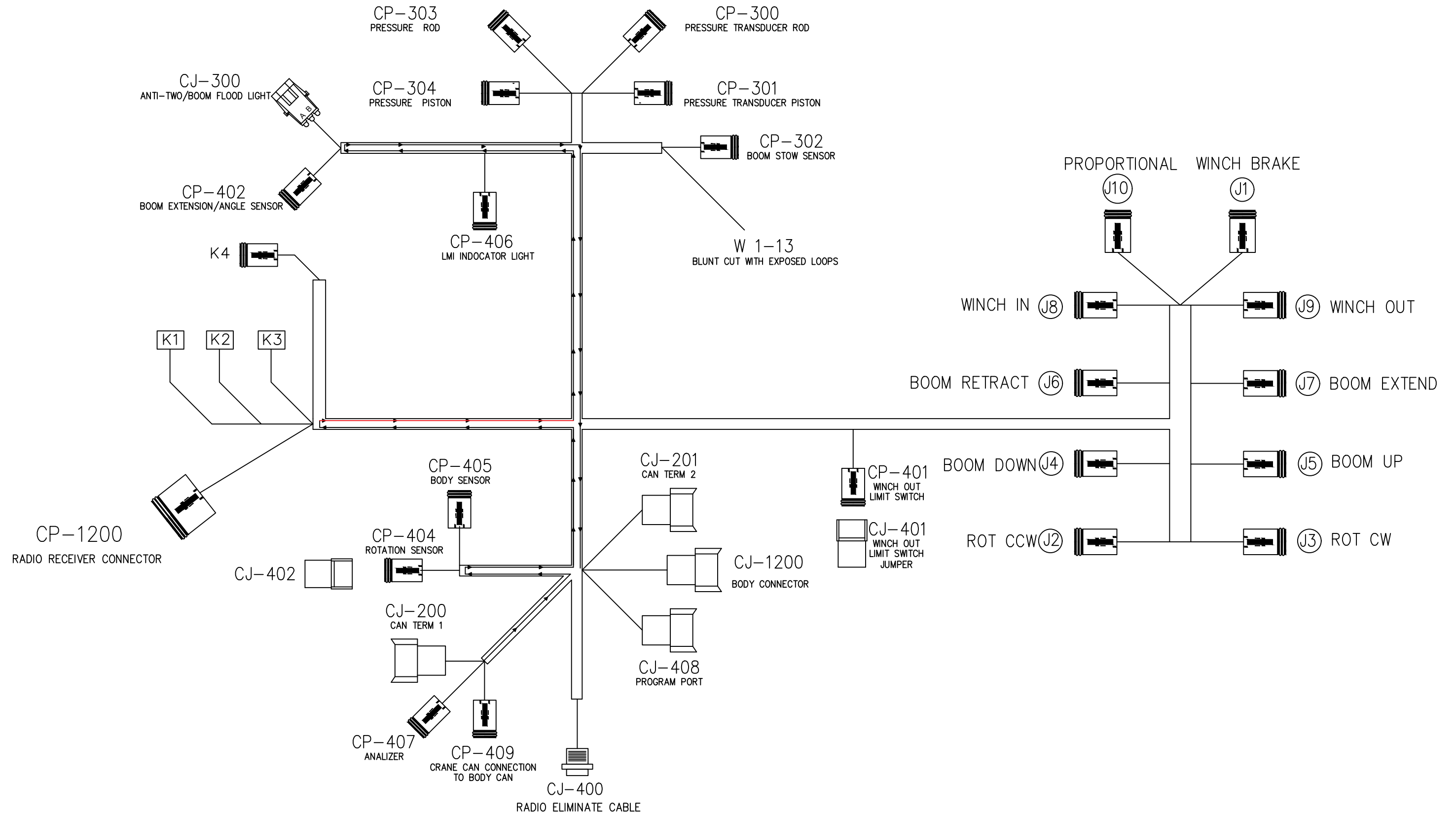
LOCATOR CODE: J9			DEUTSCH: DT06-2S			
TERM: 0462-201-16141			WEDGE: W2S			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	BLK	20	WINCH OUT GROUND	TO	K2	B3
2	WHT	20	WINCH OUT	TO	K2	J4

LOCATOR CODE: J10			DEUTSCH: DT06-2S			
TERM: 0462-201-16141			WEDGE: W2S			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	BLK	20	THROTTLE GND	TO	K2	D4
2	WHT	20	THROTTLE	TO	K1	E4

LOCATOR CODE: CP-300			DEUTSCH: DT06-3S			
TERM: 0462-201-16141			WEDGE: W3S	PLUG: 114017		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	RED	18	TRANS POWER	TO	SPL P	-
B	WHT	20	PRESS TRANS ROD	TO	K1	F1
C	-	-	-	TO	-	-

LOCATOR CODE: CJ-300			PACKARD: 12010717			
TERM: 12124582			SEAL: 12015323/12089679			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY

Harness S4 SP Crane (77441718) Can Bus Routing View



Harness S4 SP Crane (77441718) Circuit Chart View

LOCATOR CODE: -				SPLICE G		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
-	BLK	16	GROUND	TO	CP-1200	12
-	BLK	16	MASTER GROUND 1	TO	K2	L1
-	BLK	16	MASTER GROUND 2	TO	K2	M1
-	BLK	16	MASTER GROUND 3	TO	K2	M2
-	BLK	16	GROUND	TO	CP-302	B
-	BLK	22	GROUND	TO	CJ-400	BLK
-	BLK	16	GROUND	TO	CP-402	2
-	BLK	16	GROUND	TO	CP-404	4
-	BLK	16	GROUND	TO	CP-405	2
-	BLK	16	GROUND	TO	CP-406	4
-	BLK	16	GROUND	TO	CJ-408	4
-	BLK	14	GROUND	TO	CP-409	4
-	BLK	14	GROUND	TO	CJ-1200	3
-	BLK	16	GROUND	TO	W13	-
-	BLK	16	GROUND	TO	CJ-300	A
-	BLK	16	GROUND	TO	J1	1

LOCATOR CODE: -				SPLICE P		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
-	RED	6	POWER	TO	K4	1
-	RED	16	IGN POWER	TO	CP-302	A
-	RED	22	TEATHER POWER	TO	CJ-400	WHT
-	RED	16	IGN POWER	TO	CP-402	1
-	RED	16	IGN POWER	TO	CP-404	3
-	RED	16	IGN POWER	TO	CP-405	1
-	RED	16	IGN POWER	TO	CJ-408	3
-	RED	14	IGN POWER	TO	CP-409	3
-	RED	14	IGN POWER	TO	CJ-1200	7
-	RED	18	WINCH OUT POWER	TO	CP-401	1
-	RED	18	TRANS POWER	TO	CP-300	A
-	RED	18	TRANS POWER	TO	CP-301	A
-	RED	20	SYSTEM ENABLE	TO	K2	J2
-	RED	16	IGN POWER	TO	W1	-
-	RED	16	IGN POWER	TO	W5	-

LOCATOR CODE: -				SPLICE H		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
-	YELLOW	18	CAN HIGH	TO	CP-402	3
-	YELLOW	18	CAN HIGH	TO	CP-404	1
-	YELLOW	18	CAN HIGH	TO	CP-405	4
-	YELLOW	18	CAN HIGH	TO	CJ-408	1
-	YELLOW	18	CAN HIGH	TO	CP-409	1
-	YELLOW	20	CAN HIGH	TO	CJ-200	2
-	YELLOW	20	CAN HIGH	TO	CJ-201	1
-	YELLOW	20	CAN HIGH	TO	K2	A1
-	YELLOW	20	CAN HIGH	TO	CP-1200	7

LOCATOR CODE: -				SPLICE L		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
-	GREEN	18	CAN LOW	TO	CP-402	4
-	GREEN	18	CAN LOW	TO	CP-404	2
-	GREEN	18	CAN LOW	TO	CP-405	3
-	GREEN	18	CAN LOW	TO	CJ-408	2
-	GREEN	18	CAN LOW	TO	CP-409	2
-	GREEN	20	CAN LOW	TO	CJ-200	1
-	GREEN	20	CAN LOW	TO	CJ-201	2
-	GREEN	20	CAN LOW	TO	K2	D1
-	GREEN	20	CAN LOW	TO	CP-1200	8

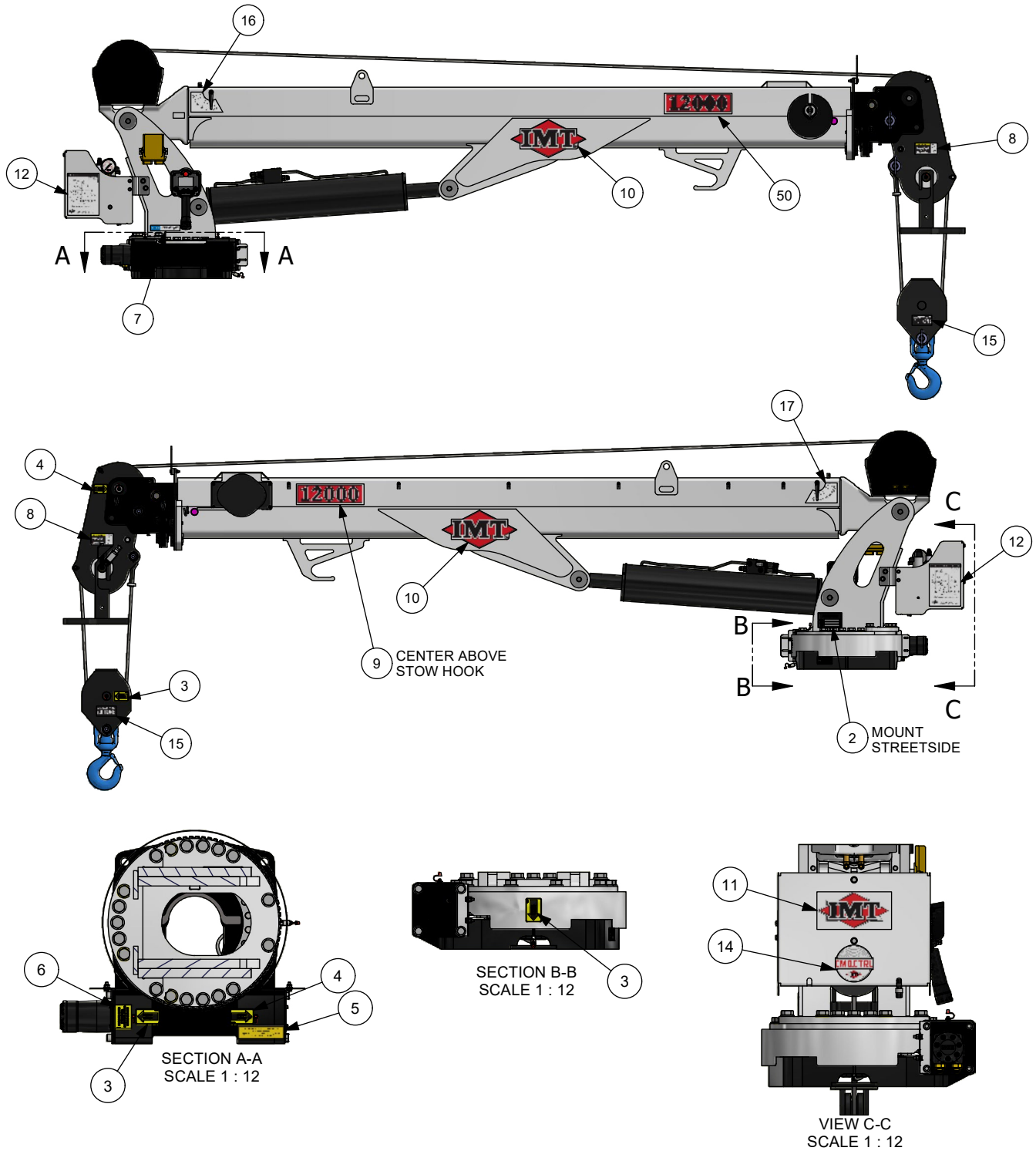
LOCATOR CODE: W-13				BLUNT CUT WITH EXPOSED LOOP		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
W1	RED	16	IGN POWER	TO	SPL P	-
W2	WHT	16	SP SELECT	TO	K3	F3
W3	WHT	16	FP SELECT	TO	K3	G4
W4	WHT	20	E-STOP	TO	K3	A4
W5	RED	16	IGN POWER	TO	SPL P	-
W6	WHT	20	ENGINE SPEED 2	TO	K1	C3
W7	WHT	20	WINCH BRAKE	TO	K3	B1
W8	WHT	16	WINCH BRAKE	TO	J1	2
W9	WHT	16	HORN	TO	K1	H3
W10	WHT	16	HORN OUTPUT 2	TO	CJ-1200	10
W11	WHT	16	HORN OUTPUT 1	TO	CJ-1200	11
W12	RED	16	SPARE POWER	TO	CJ-1200	9
W13	BLK	16	GROUND	TO	SPL G	-

LOCATOR CODE: -				SPLICE X		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
-	YELLOW	20	TETHER CAN HI	TO	CP-1200	4
-	BLUE	22	TETHER CAN HI	TO	CJ-400	A

LOCATOR CODE: -				SPLICE Y		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
-	GREEN	20	TETHER CAN LO	TO	CP-1200	5
-	BRN	22	TETHER CAN LO	TO	CJ-400	A

Section - 6**General Information**

Decal Placement (99906733)



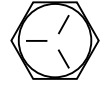
DECAL PLACEMENT (99906733) PARTS LIST

ITEM NO.	PART NO.	DESCRIPTION	QTY.	MODEL	KIT NO.
1.	95728448	DECAL KIT-TELE COMMON 7500-14000 S4	1		
2.	70029119	PLACARD-SERIAL NUMBER	1		
3.	70391612	DECAL-GREASE WEEKLY (LEFT)	3		1
4.	70391613	DECAL-GREASE WEEKLY (RIGHT)	2		1
5.	70392399	DECAL-LUBRICATE WORM	1		1
6.	70392524	DECAL-ROTATE CRANE WHILE GREAS	1		1
7.	70395324	DECAL-ASME/ANSI B30.5-TELESCOP	1		1
8.	70395670	DECAL-CAUTION DOWN HAUL WT	2		1
9.	70399051	DECAL-ID 12000	2		
10.	70399140	DECAL-DIAMOND IMT 6.75X13.50 REFL	2		1
11.	70399195	DECAL-DIAMOND IMT 4.00X8.00 (REFL)	1		1
12.	70490023	DECAL-CP 12000-30 FT	2	12000	
	70490041	DECAL-CP 12000-25 FT	2	12000S	
13.	70490167	DECAL-WARNING-PROP 65	1		1
14.	70490435	DECAL-CMD.CTRL LOGO	1		1
15.	71394082	DECAL-LOAD BLOCK RATING 7.0TON	2		
16.	71399136	DECAL-ANGLE IND RH SIII	1		1
17.	71399137	DECAL-ANGLE IND LH SIII	1		1

NOTE:

1. P/N 70490167 NOT SHOWN. INSTALL IF REQUIRED

Thread Torque Charts - Imperial

FINE THREAD TORQUE CHART (IMPERIAL)						COURSE THREAD TORQUE CHART (IMPERIAL)					
SIZE	BOLT DIA.	GRADE 5		GRADE 8		SIZE	BOLT DIA.	GRADE 5		GRADE 8	
											
		SAE J429 GRADE 5		SAE J429 GRADE 8				SAE J429 GRADE 5		SAE F429 GRADE 8	
(DIA-TPI)	(INCHES)	PLAIN FT-LB	PLATED FT-LB	PLAIN FT-LB	PLATED FT-LB	(DIA-TPI)	(INCHES)	PLAIN FT-LB	PLATED FT-LB	PLAIN FT-LB	PLATED FT-LB
5/16-24	0.3125	19	14	27	20	5/16-18	0.3125	17	13	25	18
3/8-24	0.375	35	26	49	35	3/8-16	0.375	31	23	44	33
7/16-20	0.4375	55	41	78	58	7/16-14	0.4375	49	37	70	52
1/2-20	0.5	90	64	120	90	1/2-13	0.5	75	57	105	80
9/16-18	0.5625	120	90	170	130	9/16-12	0.5625	110	82	155	115
5/8-18	0.625	170	130	240	180	5/8-11	0.625	150	115	220	160
3/4-16	0.75	300	225	420	315	3/4-10	0.75	265	200	375	280
7/8-11	0.875	445	325	670	500	7/8-9	0.875	395	295	605	455
1-12	1	645	485	995	745	1-8	1	590	445	910	680
1 1/8-12	1.125	890	670	1445	1085	1 1/8-7	1.125	795	595	1290	965
1 1/4-12	1.25	1240	930	2010	1510	1 1/4-7	1.25	1120	840	1815	1360
1 3/8-12	1.375	1675	1255	2710	2035	1 3/8-6	1.375	1470	1100	2380	1780
1 1/2-12	1.5	2195	1645	3560	2670	1 1/2-6	1.5	1950	1460	3160	2370
REV. 20210504						REV. 20210504					

NOTES:

1. TIGHTENING TORQUES PROVIDED ARE MID-RANGE.
2. CONSULT BOLT MANUFACTURER'S PARTICULAR SPECIFICATIONS WHEN PROVIDED.
3. USE FLAT WASHERS OF EQUAL STRENGTH.
4. ALL TORQUE MEASUREMENTS ARE GIVEN IN FT-LB
5. TORQUE VALUES SPECIFIED ARE FOR BOLTS WITH RESIDUAL OILS OR NO SPECIAL LUBRICANTS APPLIED. IF SPECIAL LUBRICANTS OF HIGH STRESS ABILITY, SUCH AS NEVER-SEEZ COMPOUND GRAPHITE AND OIL, MOLYBDENUM DISULFIDE, COLLOIDAL COPPER OR WHITE LEAD ARE APPLIED, MULTIPLY THE TORQUE VALUES IN THE CHARTS BY THE FACTOR .90. THE USE OF LOCTITE DOES NOT AFFECT THE TORQUE VALUES LISTED ABOVE.

WARNING

Anytime a gear-bearing bolt is removed, it must be replaced with a new bolt of the identical grade and size. Once a bolt has been torqued to 75% of its proof load and then removed, the torque coefficient may no longer be the same as when the bolt was new thus giving indeterminate clamp loads after torquing. Failure to replace gear-bearing bolts may result in bolt failure due to metal fatigue causing death or serious injury.

Thread Torque Charts - Metric

FINE THREAD TORQUE CHART (METRIC)					
SIZE	BOLT DIA.	GRADE 5		GRADE 8	
					
		SAE J429 GRADE 5		SAE J429 GRADE 8	
(DIA-TPI)	(INCHES)	PLAIN (KG-M)	PLATED (KG-M)	PLAIN (KG-M)	PLATED (KG-M)
5/16-24	0.3125	3	2	4	3
3/8-24	0.375	5	4	7	5
7/16-20	0.4375	8	6	11	8
1/2-20	0.5	12	9	17	12
9/16-18	0.5625	17	12	24	18
5/8-18	0.625	24	18	33	25
3/4-16	0.75	41	31	58	44
7/8-11	0.875	62	45	93	69
1-12	1	89	67	138	103
1 1/8-12	1.125	123	93	200	150
1 1/4-12	1.25	171	129	278	209
1 3/8-12	1.375	232	174	375	281
1 1/2-12	1.5	304	228	492	369
REV. 20210504					

COURSE THREAD TORQUE CHART (METRIC)					
SIZE	BOLT DIA.	GRADE 5		GRADE 8	
					
		SAE J429 GRADE 5		SAE F429 GRADE 8	
(DIA-TPI)	(INCHES)	PLAIN (KG-M)	PLATED (KG-M)	PLAIN (KG-M)	PLATED (KG-M)
5/16-18	0.3125	2	2	3	2
3/8-16	0.375	4	3	6	5
7/16-14	0.4375	7	5	10	7
1/2-13	0.5	10	8	15	11
9/16-12	0.5625	15	11	21	16
5/8-11	0.625	21	16	30	22
3/4-10	0.75	37	28	52	39
7/8-9	0.875	55	41	84	63
1-8	1	82	62	126	94
1 1/8-7	1.125	110	82	178	133
1 1/4-7	1.25	155	116	251	188
1 3/8-6	1.375	203	152	329	246
1 1/2-6	1.5	270	210	438	328
REV. 20210504					

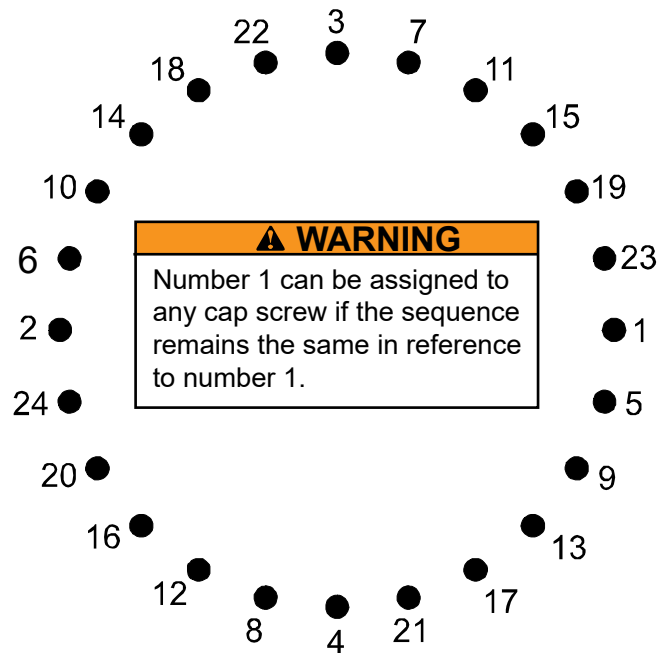
NOTES:

1. TIGHTENING TORQUES PROVIDED ARE MID-RANGE.
2. CONSULT BOLT MANUFACTURER'S PARTICULAR SPECIFICATIONS WHEN PROVIDED.
3. USE FLAT WASHERS OF EQUAL STRENGTH.
4. ALL TORQUE MEASUREMENTS ARE GIVEN IN FT-LB
5. TORQUE VALUES SPECIFIED ARE FOR BOLTS WITH RESIDUAL OILS OR NO SPECIAL LUBRICANTS APPLIED. IF SPECIAL LUBRICANTS OF HIGH STRESS ABILITY, SUCH AS NEVER-SEEZ COMPOUND GRAPHITE AND OIL, MOLYBDENUM DISULFIDE, COLLOIDAL COPPER OR WHITE LEAD ARE APPLIED, MULTIPLY THE TORQUE VALUES IN THE CHARTS BY THE FACTOR .90. THE USE OF LOCTITE DOES NOT AFFECT THE TORQUE VALUES LISTED ABOVE.

WARNING

Anytime a gear-bearing bolt is removed, it must be replaced with a new bolt of the identical grade and size. Once a bolt has been torqued to 75% of its proof load and then removed, the torque coefficient may no longer be the same as when the bolt was new thus giving indeterminate clamp loads after torquing. Failure to replace gear-bearing bolts may result in bolt failure due to metal fatigue causing death or serious injury.

Turntable Bearing Thread Tightening Sequence



TIGHTENING PROCEDURE

1. REFER TO THE TORQUE DATA CHART TO DETERMINE THE PROPER TORQUE VALUE TO APPLY TO THE SIZE OF CAP SCREW USED.
2. FOLLOW THE TIGHTENING SEQUENCE SHOWN IN THE DIAGRAM. **NOTE:** THE QUANTITY OF CAPSCREWS MAY DIFFER FROM THE DIAGRAM, BUT THE SEQUENCE MUST FOLLOW THE CRISS-CROSS PATTERN AS SHOWN IN THE DIAGRAM.
3. TORQUE ALL CAP SCREWS TO APPROXIMATELY 40% OF THE SPECIFIED TORQUE VALUE, BY FOLLOWING THE SEQUENCE.
 - (Example: $.40 \times 265 \text{ ft-lb} = 106 \text{ ft-lb}$)
 - (Example-metric: $.40 \times 36 \text{ kg-m} = 14.4 \text{ kg-m}$)
4. REPEAT STEP 3, BUT TORQUING ALL CAP SCREWS TO 75% OF THE SPECIFIED TORQUE VALUE. CONTINUE TO FOLLOW THE TIGHTENING SEQUENCE.
 - (Example: $.75 \times 265 \text{ ft-lb} = 199 \text{ ft-lb}$)
 - (Example-metric: $.75 \times 36 \text{ kg-m} = 27 \text{ kg-m}$)
5. USING THE PROPER SEQUENCE, TORQUE ALL CAP SCREWS TO THE LISTED TORQUE VALUE AS DETERMINED FROM THE TORQUE DATA CHART.

NOTE: Refer to the turntable bearing thread tightening diagram for proper tightening-torquing sequence of the turntable bearing to the crane base and crane mast. The total quantity of cap screws varies dependent on crane model.



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