

TABLE FOR OPTIONAL I.D. TAG NO. PER SPECIFIC SERIAL NUMBER		
STANDARD I.D. TAG#	OPTIONAL I.D. TAG# PER S/N	SERIAL NUMBERS
81027804	81027805	689535- 799165 1791626-1802759
81027809	81027810	683556- 796718 1780713-1782931
81027812	81027813	757034- 906114 1757058-1757085
81027821	81027822	668416- 797214 1776722-1778448

BILL OF MATERIAL			
ITEM NO.	DESCRIPTION	MATERIAL	QTY
BOOM RIGGING B15:505-500			
1	TOP ASSY #500, 10.0 M		2
2	BUTT ASSY #500 8.00 M		4
NO. REQ'D FOR THE FOLLOWING ITEMS ARE IN THE BOOM LENGTH TABLE			
100	INSERT ASSY 12M H #500	81027803	3
101	INSERT ASSY #500, 12.00M MEDIUM	81027805	5
102	INSERT ASSY 12M ED H #500	81027811	6
103	INSERT ASSY EM #500	81027820	9
104	INSERT ASSY #505 12M H	8404875627	1
105	SUSPENSION WIRE ROPE	8405109511	1
106	INSERT ASSY #505/500 12M H	840479957	7
107	INSERT ASSY 12M H #500/505	84048000	8
110	INSERT ASSY #500/505 12M H	8011376268	1
111	INSERT ASSY #505/500 12M H	8011138029	1
112	INSERT ASSY #505/500 12M H	8012640933	1
113	INSERT ASSY #500/505 12M H	8012641334	1
114	INSERT ASSY #505 12M H	8013701136	1

OPTION 1: HOOK BLOCKS			
210	HOOK BLOCK SHIP LOOSE OPTIONS	80136699	1

OPTION 2: UPPER BOOM POINT			
300	UPPER POINT ASSY FRAME	8102976912	1

BASIC REFERENCE ITEMS			
R1	STRAP ASSY LIVE MAST 1.0M	81042537	
R2	LOAD CELL LINK 145.150 KGS	84038493	
R3	LOAD PIN 120MM D X 145.150KG	84038494	
R4			
R5	STRAP 7.69M #500	81027399	
R6			
R7	LINK #500 BOOM	81028025	
R8	LINK #500 BOOM	81028043	
R9	STRAP 3.400M LG, 40MM THK	81028829	
R10	PIN 120.0 DIA X 86.2 LG	81029568	
R11	PIN WITH HEAD 100.0 DIA X 336.7 LG	84026072	
R12	PIN 1 HOLE W/HD 69.5 DIA X 94.3 LG	81029688	
R13	COLLAR 70.50MM I.D.	81029689	
R14	PIN 2 HOLE 12.7 DIA X 98.0 LG	81029708	
R15	PENDANT 1.12 DIA X 5 FT-10.0 INCH LG	81029688	
R16	HCS 16 X 30 10.9, FULL THREAD	7127241.353	
R17	WASHER 16 ST DIN 127B	7951240220	
R18	COLLAR 101MM I.D.	A12945	
R19	PIN 2 HOLE 12.7 DIA X 128.0 LG	A12946	
R20	PLATE KEEPER 12 MM	A19734	
R21			
R22	POINT #500, LOWER ASSY	810273619	
R23	SHEAVE ASSY #500 LMR PNT DE	8103479420	
R24	SHEAVE ASSY #500 LOWER PNT	8103479521	
R25	PIN 1 HOLE W/HD 100.0 DIA X 94.3 LG	81029670	
R26			

NO. REQ'D FOR THE FOLLOWING REFERENCE ITEMS ARE IN THE BOOM LENGTH TABLE (SHEET 2)			
R100	PIN CUTTER 3/16 DIA X 1.50 LG	562085	
R101	PIN 1 HOLE W/HD 65.0 DIA X 94.3 LG	81024951	
R102	LINK #500 BOOM	81024955	
R103	STRAP 11.78M #500	81027401	
R104	STRAP 5.78M #500	81029621	
R105			
R106			
R107			
R108	STRAP 8.07M #500	81036552	
R109	STRAP 1.69M #500	81036553	
R110	LINK #500 BOOM	81036554	
R111	PIN 2 HOLES 12.7 DIA X 93.0 LG	A11799	
R112	PIN 1 HOLE W/HD 75.8 DIA X 160.4 LG	A13294	
R113	COLLAR 68MM I.D.	A11800	
R114	PIN 1 HOLE W/HD 75.8 DIA X 171.9 LG	84026091	
R115	PIN SAFETY .243 OD X 5.00	563640	
R116	PIN 2 HOLE 75.80 X 171.9 LG	84026091	
R117	LINK SUSPENSION	840511730	

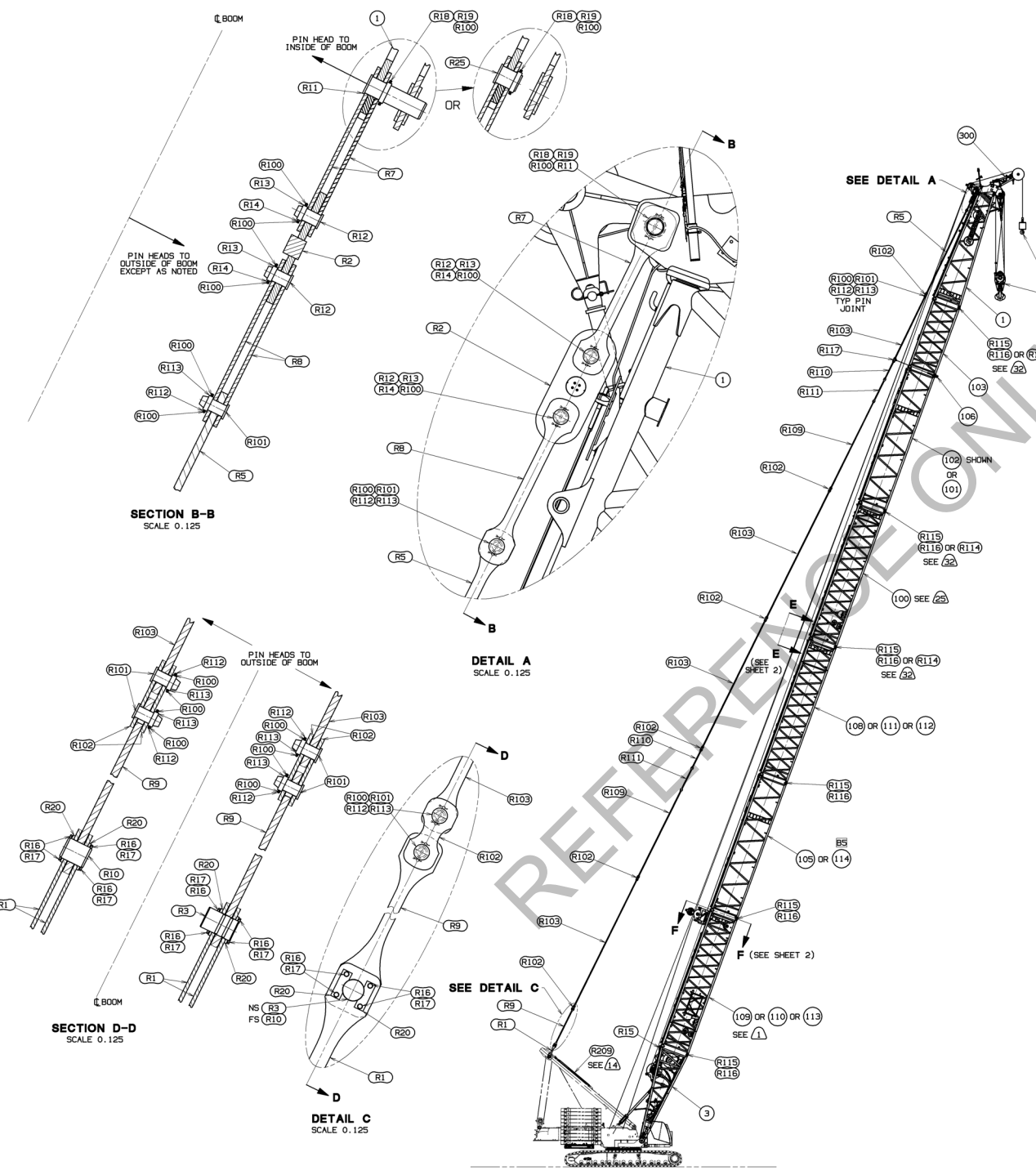
REFERENCE ITEMS FOR ASSEMBLY AND RIGGING PURPOSE ONLY			
R200			
R201			
R202			
R203	LINK SELF ERCT	8404181214	
R204	SLING 13.0 (FT) 4000 (LBS)	8402685515	
R205	SHACKLE 25MT	62475915	
R206			
R207	SLING LIFTING 1 LEG X 4000(LBS) X 9.0(FT)	8103842315	
R208	SHACKLE 20.5T SLING	8104116315	
R209	CYL HYD 139.7 BORE 44.45 ROD	8404181114	
R210			

REFERENCE OPTION 3: SINGLE REEVING			
R300	LINK ASSY DEAD END	8104235616	

REFERENCE OPTION 4: TANDEM REEVING			
R400	LINK ASSY DEAD END	8104235616	
R401	PIN PENDANT DEAD END	8402632722	

- 1 WIRE ROPE GUIDE PARTS IN THIS INSERT ARE REQUIRED FOR USE OF AUXILIARY DRUMS #2, #3 AND #6. WHEN DRUMS #2, #3 AND #6 ARE NOT USED OR ARE NOT PRESENT, GUIDE WIRE MAY REMAIN IN SHIPPING POSITION DURING OPERATION.
- 2 TOP 10.0M I.D. TAG #81027720
- 3 INSERT 12.00M HEAVY I.D. TAG #81027804. I.D. TAG #81027812. SEE OPTIONAL I.D. TAG TABLE. SEE DELTA NOTE 25.
- 4 BUTT 8.0M I.D. TAG #81028037
- 5 INSERT 12.00M MEDIUM I.D. TAG #81027809. SEE OPTIONAL I.D. TAG TABLE.
- 6 INSERT 12.00M MEDIUM W/EQUALIZER I.D. TAG #81027812. SEE OPTIONAL I.D. TAG TABLE.
- 7 INSERT 12.00M HEAVY W/SHEAVES (ITEM 109) I.D. TAG #80126329.
- 8 INSERT 12.00M HEAVY W/SHEAVES (ITEM 109) I.D. TAG #80126330.
- 9 INSERT 6.00M MEDIUM I.D. TAG #81027821. SEE OPTIONAL I.D. TAG TABLE.
- 10 REFER TO CAPACITY CHART IF JIB BACKSTAY STRAPS, LINKS AND RETAINING HARDWARE REMAIN ON BOOM ASSY. (SEE VIEW E-E ON SHEET 2)
- 11 84.0M (275.6 FT) AND 90.0M (295.3 FT) BOOM REQUIRES DROP-DOWN INTERMEDIATE SUSPENSION ITEM 106. REFER TO BOOM LENGTH TABLE (SHEET 2) FOR SUSPENSION PENDANT BUTTON NUMBER. SEE SHEET 7 FOR OPERATIONAL INSTRUCTIONS.
- 12 UPPER POINT ASSY I.D. TAG #81029770. MAY BE EQUIPPED WITH ROLL ASSY 81036265 (CALLED FOR ON UPPER POINT ASSY FRAME ITEM 300 AS OPTION 7).
- 13 FOR BOOM STRAP COMPONENTS ON OPTIONAL INSERT REFER TO BOOM LENGTH TABLE ON SHEET 2.
- | MAST HANDLING CAPACITIES | SERIAL NUMBERS                    |
|--------------------------|-----------------------------------|
| 9340-A                   | 604715-605836,<br>605953 & 606114 |
| 9340-B                   | 605952, 606548<br>AND GREATER     |
- 15 FOR ASSEMBLY AND RIGGING PURPOSE ONLY. STAYS IN PARTS BOX 81028769 AS SELF RIGGING KIT 81038439.
- 16 STAYS IN PARTS BOX 81028769.
- 17 SEE BLOCK REEVING DRAWING 81038141 FOR 1 DRUM RIGGING CONFIGURATION OPTIONS AND INSTRUCTIONS. SEE RIGGING WINCH ASSY 81024072 FOR BLOCK AND WIRE ROPE ASSEMBLY.
- 18 SEE BLOCK REEVING DRAWING 81038142 FOR 2 DRUM RIGGING CONFIGURATION OPTIONS AND INSTRUCTIONS. SEE RIGGING WINCH ASSY 81024072 FOR BLOCK AND WIRE ROPE ASSEMBLY.
- 19 CALLED FOR ON TOP ASSY ITEM 1 AS OPTION 1 EQUIPPED.
- 20 CALLED FOR ON TOP ASSY ITEM 1 AS OPTION 2 EQUIPPED. FOR SHEAVE CONFIGURATION REFER TO VIEW H-H ON SHEET 3.
- 21 CALLED FOR ON TOP ASSY ITEM 1 AS OPTION 3 EQUIPPED. FOR SHEAVE CONFIGURATION REFER TO VIEW H-H ON SHEET 3.
- 22 ITEM R401 (84028327) CONSISTS OF LINK 84028318 AND PENDANT 277436 (UTILIZED FOR TANDEM DRUM REEVING. (SEE REEVING DRAWING 81038142). LINK 84028318 STAYS IN PARTS BOX 81028769 AS OPTION 7. PENDANT 277436 STAYS IN PARTS BOX #500 BUTT ASSY ITEM 3 (81028036).
- 23 SUSPENSION PENDANT MAY APPEAR SLACK DURING RAISING AND OPERATION. CHECK SUSPENSION LOCATION AND PENDANT BUTTON NUMBER AND CONTINUE OPERATION.

(DELTA NOTES CONTINUE ON SHEET 2)



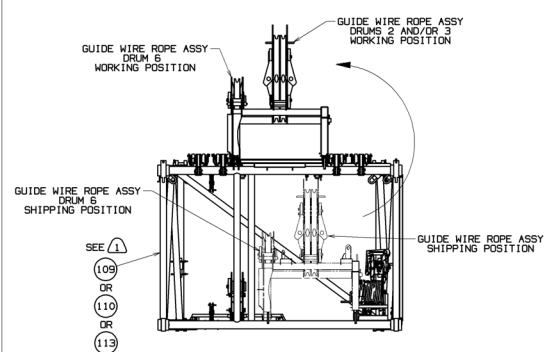
84.0 M (275.6 FT)  
#505-500 BOOM SHOWN

ITEMS REQ'D FOR VARIOUS BOOM LENGTHS - SEE SHEETS 3 & 4 FOR BOOM MAKE-UP

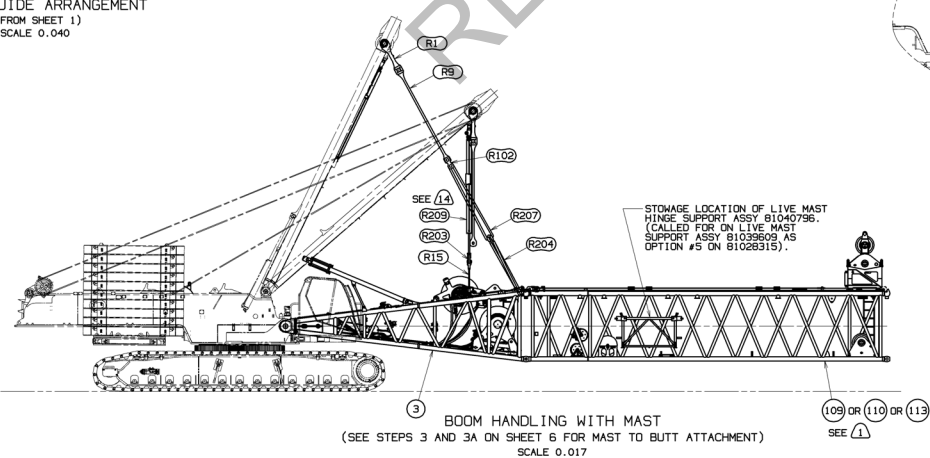
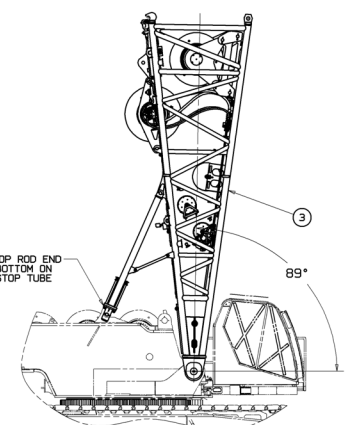
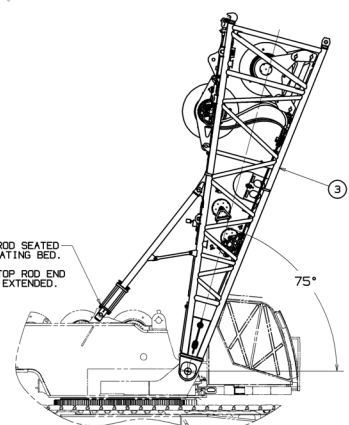
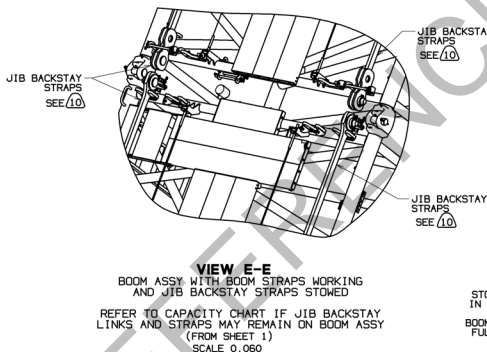
BILL OF MATERIAL			
ITEM NO.	DESCRIPTION	MATERIAL	QUANTITY

ITEM NO.	HEAVY				MEDIUM			STRAP				LINK			PIN		COTTER	COLLAR	SUSPENSION	LOWER CONN PIN	SAFETY PIN
	108 OR 111 OR 112	109 OR 110 OR 113	100	105 OR 114	101	102	103	R103	R104	R109	R110	R102	R111	R117	R101	R112	R100	R113	106 (2A)	R114 AND /OR R116	R115
BOOM LENGTH	INSERT 12M (39.4FT) 505/500	INSERT 12M (39.4FT) 500/505 W/SHEAVE	INSERT 12M (39.4FT) ASSY	INSERT 12M (39.4FT) ED ASSY	INSERT 12M (39.4FT) ASSY	INSERT 12M (39.4FT) ED ASSY	INSERT 6M (19.7FT) ASSY	STRAP 12M (39.4FT)	STRAP 6M (19.7FT)	STRAP LONG W/EQUAL	STRAP SHORT W/EQUAL	LINK SEE (3A)	LINK W/EQUAL	LINK CONNECT W/SUSP	PIN	PIN	COTTER	COLLAR	PENDANT BUTTON NUMBER SEE (11)	PIN SEE (2C)	SAFETY PIN SEE (2B)(2D)
METERS	FEET																				
42	137.8	1	1	0	0	0	0	4	0	0	0	12	0	0	14	14	40	14	-	6	12
48	157.5	1	1	0	0	0	1	4	2	0	0	16	0	0	18	18	48	18	-	8	16
54	177.2	1	1	0	1	0	0	4	0	2	2	16	4	0	22	22	56	22	-	8	16
60	196.9	1	1	0	1	0	1	4	2	2	2	20	4	0	26	26	64	26	-	10	20
66	216.5	1	1	1	1	0	0	6	0	2	2	20	4	0	26	26	64	26	-	10	20
72	236.2	1	1	1	1	0	0	1	6	2	2	24	4	0	30	30	72	30	-	12	24
78	255.9	1	1	1	1	OR 1	1	0	6	0	4	4	8	0	34	34	80	34		12	24
84	275.6	1	1	1	1	OR 1	1	0	6	2	4	4	8	4	38	38	88	38	1	14	28
90	295.3	1	1	1	1	OR 1	1	0	6	0	4	4	8	4	38	38	88	38	1	14	28

- (DELTA NOTES CONTINUED FROM SHEET 1)
- 24 THESE COMPONENTS ON WIRE ROPE SUSPENSION ITEM 106 CAN BE REUSED FROM INSERT ASSY #500 W/SUSPENSION 81027817 IF AVAILABLE.
  - 25 ALL ROPE GUIDE ASSYS IN 12M INSERT ITEM 100 (81027803) MUST BE REMOVED DURING BOOM OPERATION.
  - 26 QUANTITIES OF LOWER CONNECTOR PINS ITEM R114 & R116 AND SAFETY PIN ITEM R115 IN BOOM LENGTH TABLE (SHEET 2) REFLECT THE NON-USE OF THESE COMPONENTS AT JOINT WHERE SUSPENSION WIRE ROPE ITEM 106 IS USED.
  - 27 INSERT 12.00M HEAVY W/EQUALIZER (ITEM 105) I.D. TAG #84051324 OR MODIFICATION I.D. TAG #80136939.
  - 28 INSERT 12.00M HEAVY W/SHEAVES (ITEM 110) I.D. TAG #80126392.
  - 29 INSERT 12.00M HEAVY (ITEM 111) I.D. TAG #80126391.
  - 30 REPLACE (4) EXISTING STRAP LINKS ITEM R102 WITH (4) SUSPENSION LINKS R117 ON SUSPENSION WIRE ROPE ITEM 106. (SEE SUSPENSION ASSEMBLY SEQUENCE ON SHEET 7).
  - 31 QUANTITIES OF LINK (ITEM R102) IN BOOM LENGTH TABLE (SHEET 2) REFLECT REMOVAL OF LINKS ITEM R102 PER DELTA NOTE 30.
  - 32 IF BOOM TOP ITEM 1 AND INSERT ITEMS 100, 101, 102 & 103 ARE SUPPLIED WITH 1 HOLE PIN W/HD (ITEM R114) INSTEAD OF 2 HOLE TAPERED PIN (ITEM R116) THEN ONLY (1) SAFETY PIN (ITEM R115) IS REQUIRED PER PIN ITEM R114.
  - 33 INSERT 12.00M HEAVY (ITEM 112) I.D. TAG #80126410 (POST-MACHINED) OR I.D. TAG #80137641 (PRE-MACHINED).
  - 34 INSERT 12.00M HEAVY W/SHEAVES (ITEM 113) I.D. TAG #80126414 (POST-MACHINED) OR I.D. TAG #80136021 (PRE-MACHINED).
  - 35
  - 36 INSERT 12.00M HEAVY W/EQUALIZER (ITEM 114) I.D. TAG #80135490.



**SECTION F-F**  
12M 3.5M WIDE HEAVY INSERT (ITEM 109 OR 110 OR 113) ROPE GUIDE ARRANGEMENT (FROM SHEET 1) SCALE 0.040



BOOM HANDLING WITH MAST MAXIMUM THAT CAN BE CANTILEVERED IS AS FOLLOWS		
	WITH LIVE MAST CYLINDER ON MAST ATTACHED TO BOOM CLOSING PENDANTS ON BOOM BUTT	WITH LIVE MAST STRAPS/LIFTING SLINGS ATTACHED TO BOOM BUTT TOP CHORDS
LENGTH	12 M (39.4 FT) INSERT 84048000 OR 80111376 OR 80126413	12 M (39.4 FT) INSERT 84048000 OR 80111376 OR 80126413
12M (39.4 FT)	1	1

REVISIONS

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88

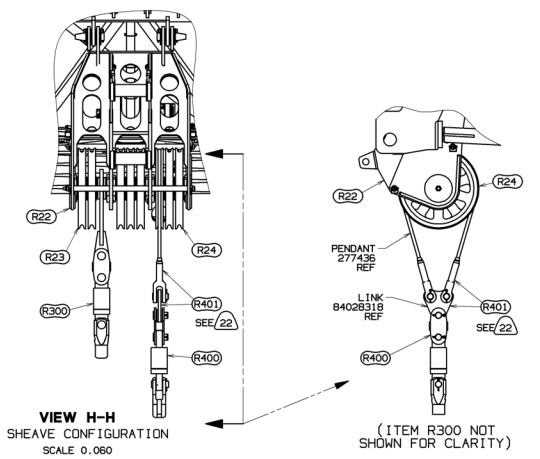
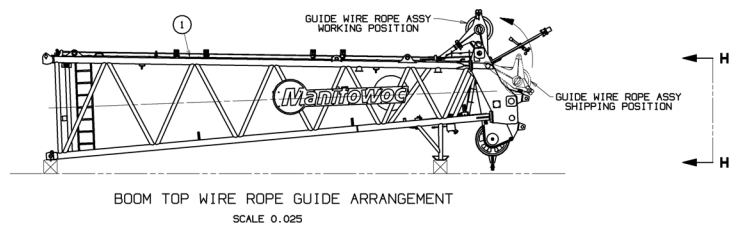
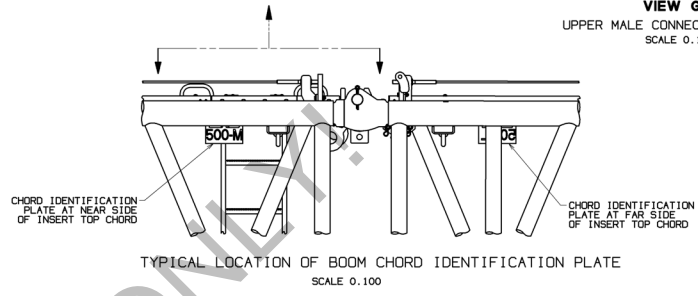
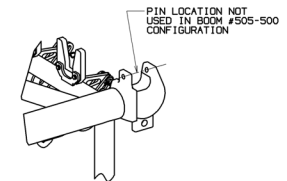
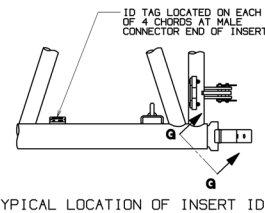
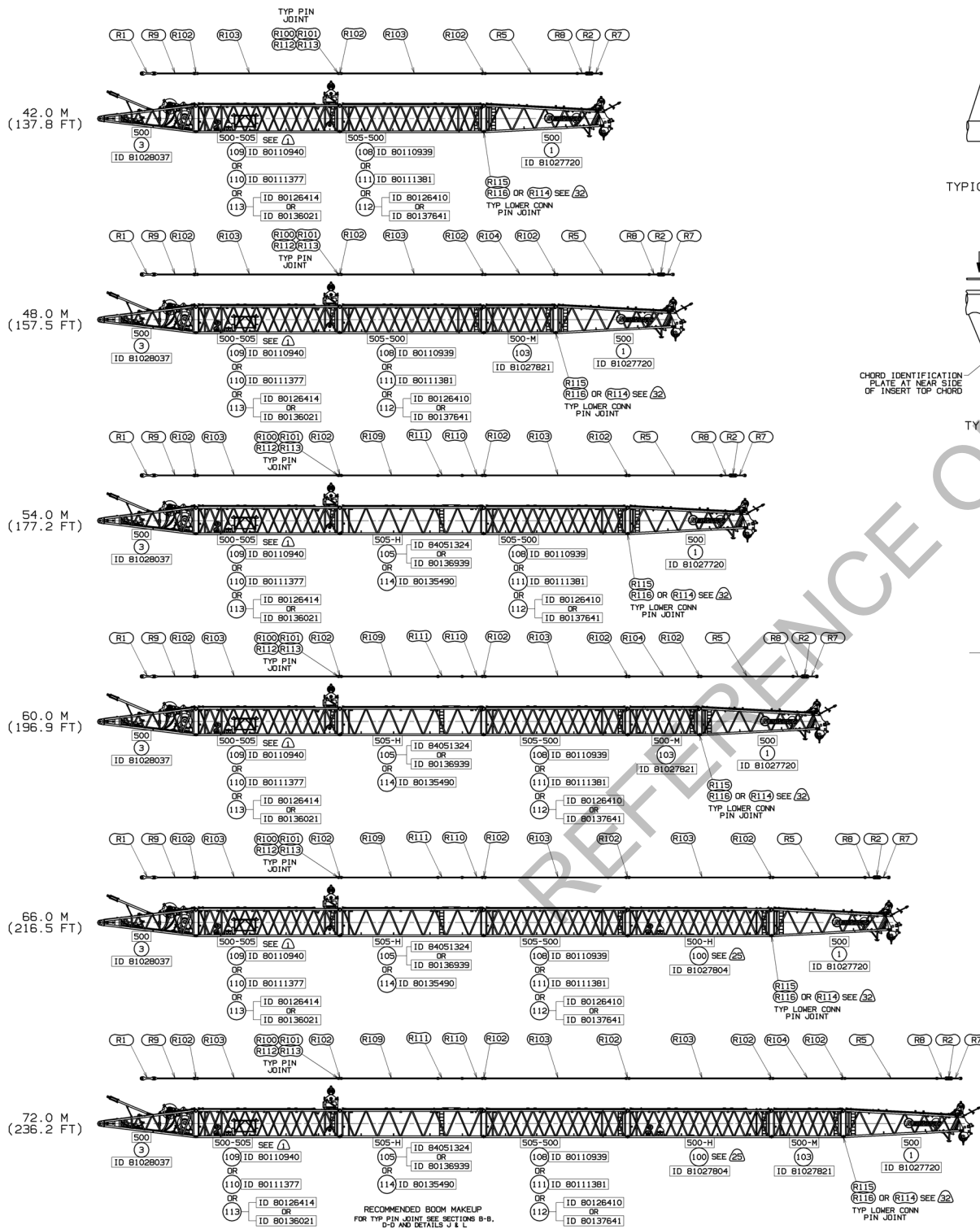
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80109323  
SHT 2 OF 7

80109323  
SHT 2 OF 7

BILL OF MATERIAL				APPROVED BY
ITEM NO.	DESCRIPTION	MATERIAL	QUANTITY	REV.



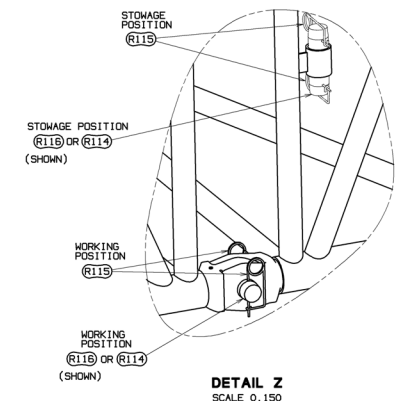
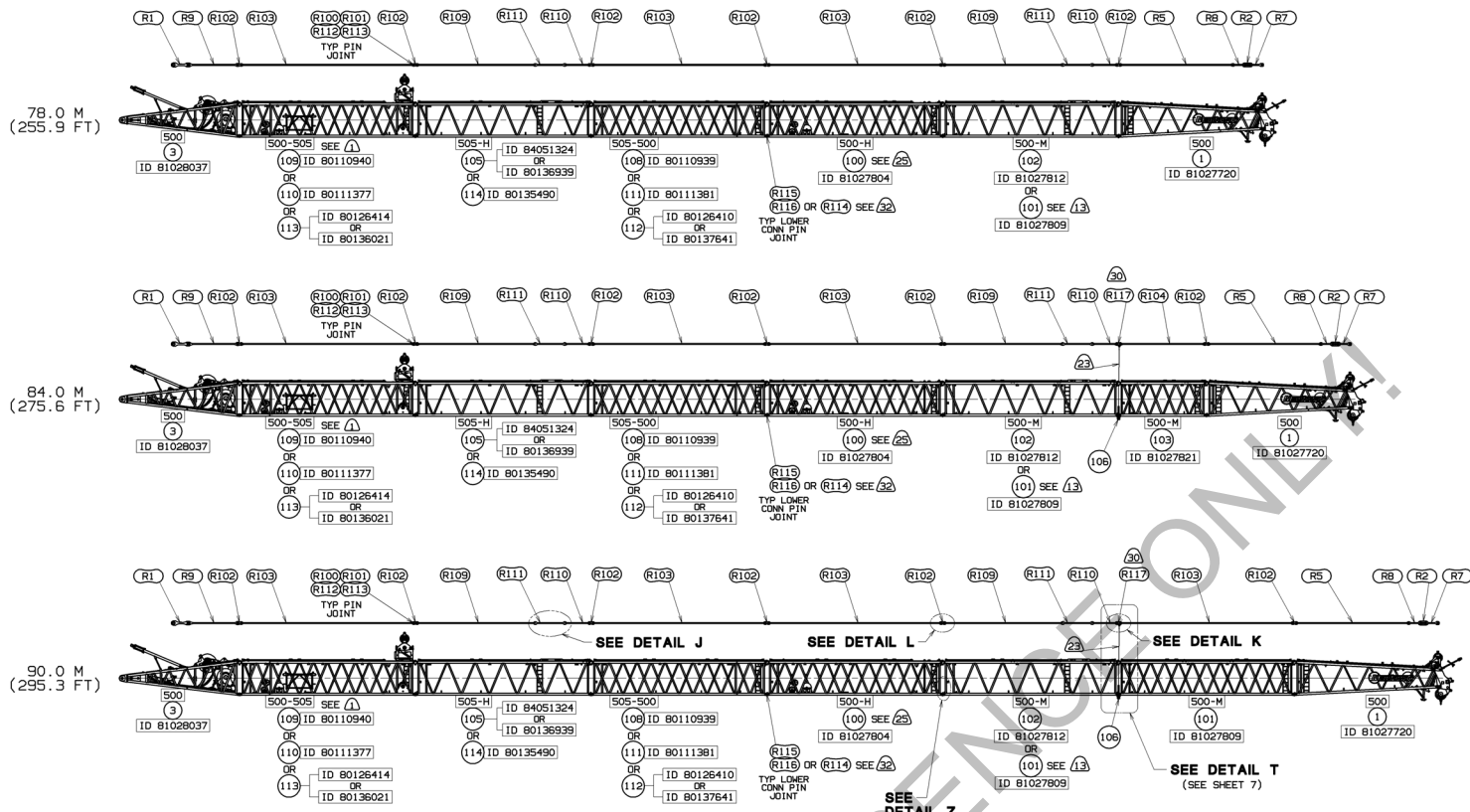
NOTE:  
LOCATION OF SHEAVE ASSY'S ITEMS R23 & R24 MAY VARY BASED ON RECEIVING. REFER TO REEVING DIAGRAM (SEE DELTA'S 17 & 18) AND OPERATOR'S MANUAL FOR GUIDANCE

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ASSEMBLY	DESCRIPTION	UNIT	TOLERANCE	DATE	BY	CHKD.	APPROVED

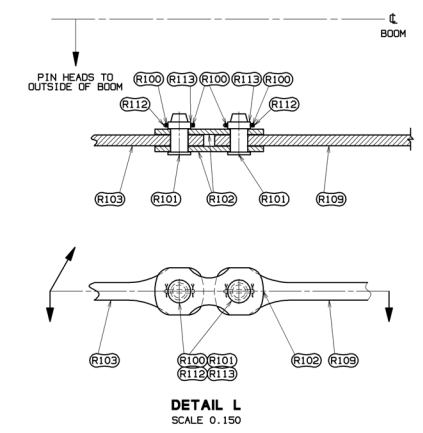
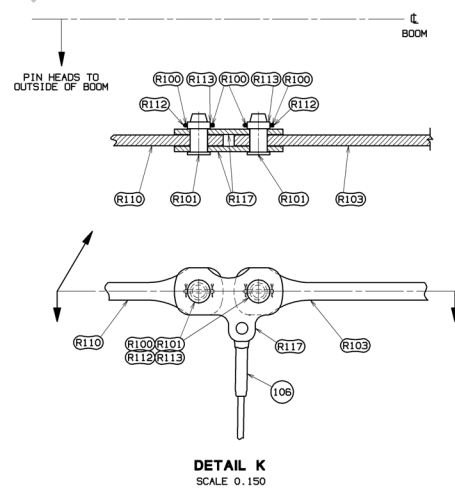
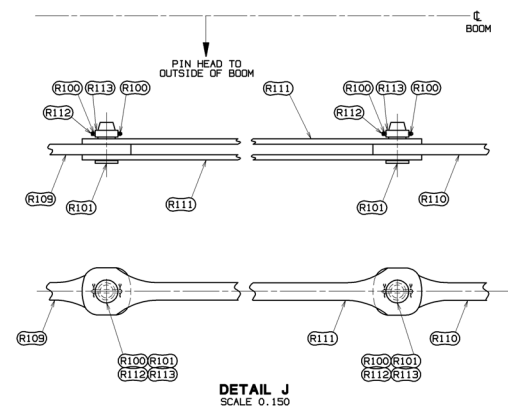
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SHT 3 OF 7

REV. DATE  
03-30-20  
SHT 3 OF 7

BILL OF MATERIAL				ASSEMBLIES USED BY
ITEM NO.	DESCRIPTION	MATERIAL	QUANTITY	



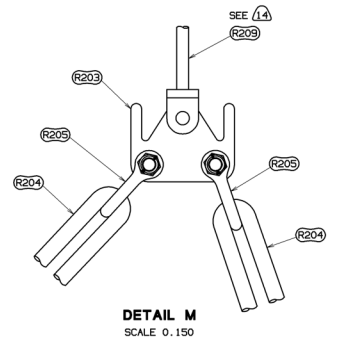
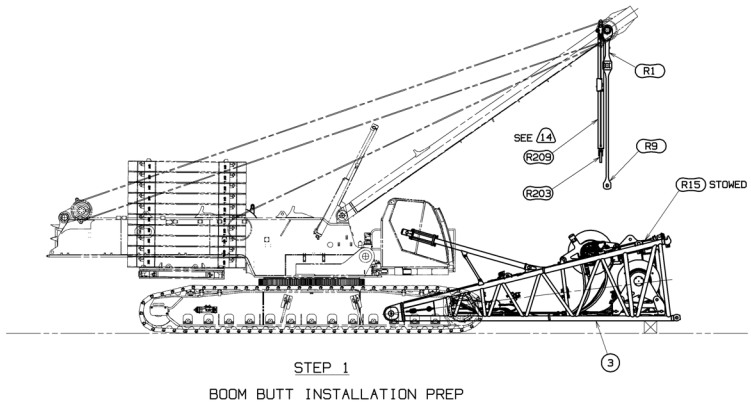
RECOMMENDED BOOM MAKEUP  
FOR TYP PIN JOINT SEE SECTIONS B-B, D-D  
AND DETAILS J, K & L



REFERENCE ONLY!

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	<small>PRIVATE LABELING REQUIREMENT TO CAPTION TO ENGINEERING SPECIFICATION 6603102794 FOR COMPANIES LISTED IN 602600-05-025</small>					
	03-30-20 SHEET NO. <b>80109323</b>					

BILL OF MATERIAL				ASSEMBLY
ITEM NO.	DESCRIPTION	MATERIAL	QUANTITY	REQ. BY



**TO ASSEMBLE BOOM**  
(MAST CAN BE USED TO ASSEMBLE ALL RIGGING COMPONENTS)

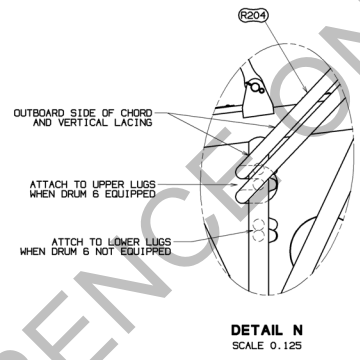
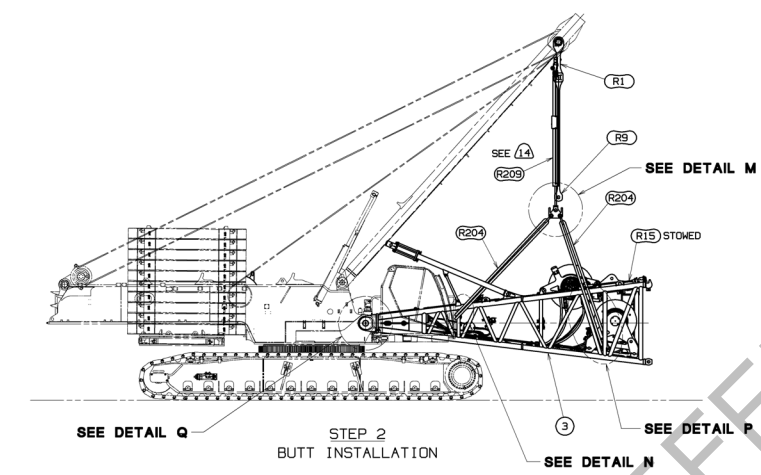
- ASSEMBLE BOOM COMPLETE, WITHOUT BUTT.
- ATTACH ROPE GUIDES, STRAPS, LINKS AND PINS AS REQUIRED (SEE 3 SM WIDE 12M HEAVY INSERT ROPE GUIDE ARRANGEMENT (SECTION F-F) - SHEET 2) (SEE BOOM TOP WIRE ROPE GUIDE ARRANGEMENT - SHEET 3)
- INSTALL BUTT ASSEMBLY WITH MAST AND MAST CYLINDER (OPTIONAL)
 

**BUTT ASSEMBLY INSTALLATION (STEPS 1 AND 2)**

  - POSITION BUTT BETWEEN CRAWLERS.
  - SUPPORT BUTT WITH MAST CYLINDER, LINK, SHACKLE AND SLINGS TO HANG APPROXIMATELY LEVEL. (SEE DETAIL M)
    - ROUTE SLINGS (R204) ON THE INBOARD SIDE OF THE BOOM STOPS.
    - ROUTE SLINGS (R204) NEAREST BOOM HINGE OVER THE OUTBOARD SIDE OF THE BOOM BUTT CHORDS AND THE OUTBOARD SIDE OF THE VERTICAL LACINGS THAT THE SLING LUGS ARE WELDED TO. (SEE DETAIL N).
    - WHEN DRUM 6 EQUIPPED USE UPPER BUTT SLING LUGS NEAREST BOOM HINGE AND LOWER BUTT SLING LUGS TOWARD CONNECTOR END. (SEE DETAILS N & P).
    - WHEN DRUM 6 NOT EQUIPPED USE LOWER BUTT SLING LUGS NEAREST BOOM HINGE AND UPPER BUTT SLING LUGS TOWARD CONNECTOR END. (SEE DETAILS N & P).
  - SET INNER PLATE OF BUTT HINGE ON ALIGNMENT TAB OF ROTATING BED. (SEE DETAIL O)
  - ACTIVATE HINGE PIN CYLINDER TO INSTALL HINGE PIN INTO BUTT
- BOOM CLOSING (STEP 3 AND 3A ON SHEET 6)
  - SEE STEP 3 FOR BOOM LENGTHS LESS THAN OR EQUAL TO 54 METERS FOR MACHINES WITH MAST HANDLING CAPACITIES PER 9340-A (SEE DELTA NOTE 14).  
SEE STEP 3 FOR ALL BOOM LENGTHS FOR MACHINES WITH MAST HANDLING CAPACITIES PER 9340-B (SEE DELTA NOTE 14).
  - SEE STEP 3A FOR BOOM LENGTHS GREATER THAN 54 METERS FOR MACHINES WITH MAST HANDLING CAPACITIES PER 9340-A. (SEE DELTA NOTE 14).  
SEE STEP 3A AS AN ALTERNATE TO STEP 3 FOR ALL BOOM LENGTHS.
  - STOW MAST CYLINDER TO LIVE MAST. (IF NOT PREVIOUSLY DONE PER STEP 3A).
  - BOOM DOWN TO ATTACH BOOM STRAPS ON MAST TO 12M INSERT STRAPS (STEP 4 ON SHEET 6).

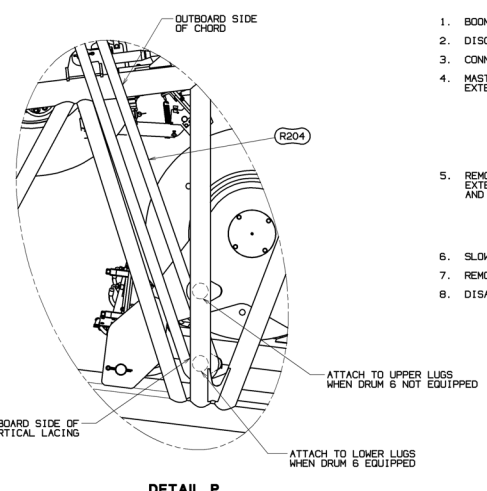
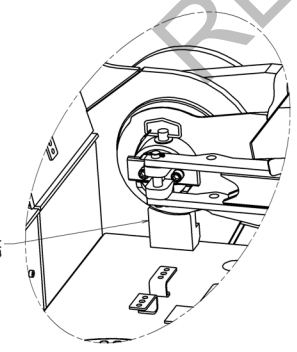
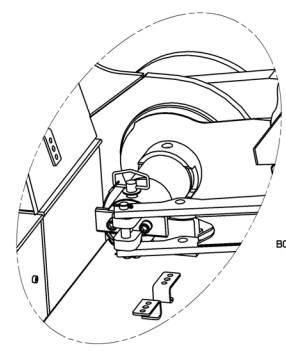
**WARNING:**  
DO NOT BOOM DOWN MAST BEYOND 155° WITHOUT ATTACHING ASSIST CRANE OR MAST CAN FALL.

- BOOM UP TO DESIRED BOOM ANGLE.



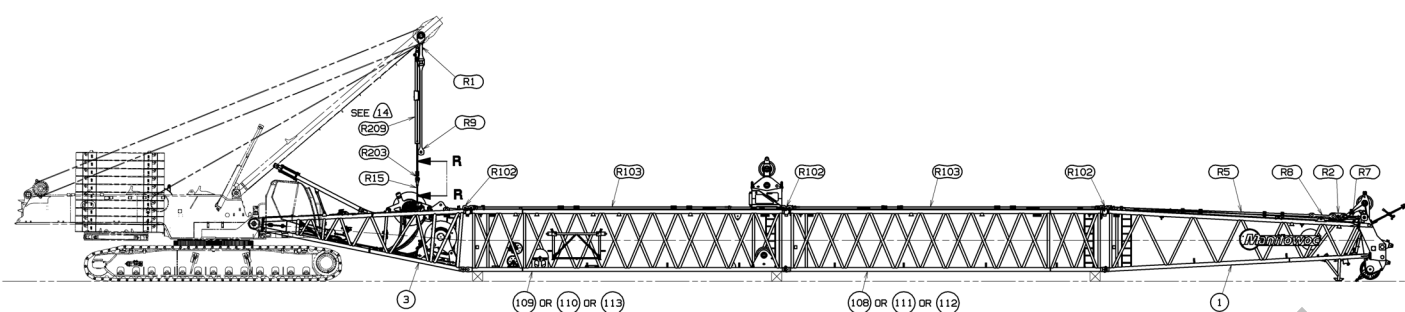
**TO DISASSEMBLE BOOM**

- BOOM DOWN AND SUPPORT BOOM ON BLOCKING.
  - DISCONNECT MAST STRAPS FROM BOOM 12M INSERT STRAPS.
  - CONNECT MAST CYLINDER TO BUTT HANDLING PENDANTS (R15).
  - MAST UP OR DOWN SO MAST CYLINDER HANGS VERTICAL. EXTEND OR RETRACT CYLINDER TO REMOVE SLACK FROM PENDANTS.
- WARNING:**  
DO NOT USE MAST HOIST OR RETRACT THE MAST CYLINDER TO PUT EXCESSIVE TENSION INTO BUTT HANDLING PENDANTS. (ENOUGH TENSION IS REQUIRED TO SUPPORT BUTT WHEN LOWER PINS ARE REMOVED.) LIFTING BOOM WITH HANDLING PENDANTS WILL DAMAGE MAST, CYLINDER AND/OR BOOM BUTT.
- REMOVE LOWER CONNECTOR PINS FROM BUTT TO 12M INSERT W/SHEAVES. EXTEND MAST CYLINDER TO LOWER 12M INSERT W/SHEAVES ONTO BLOCKING AND DISENGAGE UPPER CONNECTOR FROM BUTT TO 12M INSERT W/SHEAVES.
- WARNING:**  
BOOM MUST BE PROPERLY BLOCKED TO PREVENT SHIFTING DURING PIN REMOVAL.
- SLOWLY BACK AWAY FROM BOOM.
  - REMOVE BOOM BUTT FROM ROTATING BED.
  - DISASSEMBLE BOOM WITH SELF ASSEMBLY CYLINDER IF DESIRED.



TOLERANCE UNLESS OTHERWISE SPECIFIED		DATE	BY	APP. FOR
FABRICATION	±0.125 (1/8) (1/16) (1/32)			
MILLING	±0.125 (1/8) (1/16) (1/32)			
DRILLING	±0.125 (1/8) (1/16) (1/32)			
TURNING	±0.125 (1/8) (1/16) (1/32)			
GRINDING	±0.005 (0.001) (0.002) (0.005)			
WELDING	±0.125 (1/8) (1/16) (1/32)			
COLLARS	±0.125 (1/8) (1/16) (1/32)			
ANGLES	±0.125 (1/8) (1/16) (1/32)			

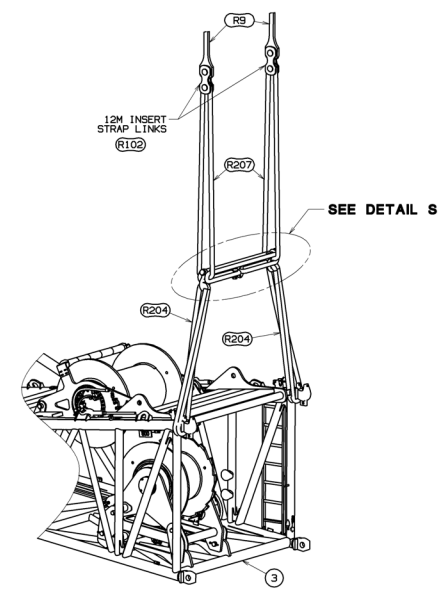
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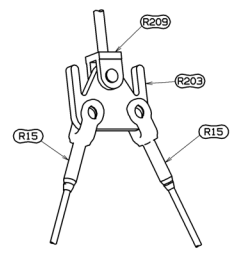
**STEP 3**  
 BOOM CLOSING FOR BOOM LENGTHS LESS THAN OR EQUAL TO 54 METERS USING SELF-ERECT CYLINDER WITH MAST HANDLING CAPACITIES PER 9340-A  
 BOOM CLOSING FOR ALL BOOM LENGTHS USING SELF-ERECT CYLINDER WITH MAST HANDLING CAPACITIES PER 9340-B

1. LOWER BUTT ASSEMBLY OVER END ONLY TO ATTACH MAST CYLINDER (R209) TO BOOM BUTT HANDLING PENDANTS (R15). (SEE VIEW R-R).
2. RAISE LIVE MAST UNTIL MAST CYLINDER (R209) HANGS VERTICALLY. USE CYLINDER TO BOOM UP TO CLEAR GROUND WITH BUTT.
3. POSITION MACHINE TO ALIGN UPPER PIN CONNECTOR ON BUTT WITH UPPER PIN CONNECTOR PINS ON 12M INSERT W/SHEAVES (ITEM 109 OR 110 OR 113) AND ENGAGE PINS.
4. SLOWLY RETRACT THE MAST CYLINDER (R209) TO ALIGN LOWER PIN CONNECTOR HOLES ON BUTT WITH LOWER PIN CONNECTOR HOLES ON 12M INSERT W/SHEAVES. INSTALL CONNECTOR PINS. (SEE DETAIL Z ON SHEET 4).
5. BOOM DOWN TO DISCONNECT BOOM HANDLING PENDANTS (R15) FROM MAST CYLINDER AND STOW PENDANTS ON BUTT.

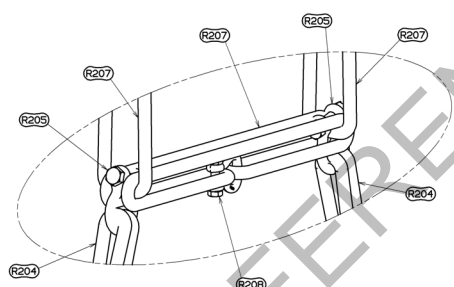
**WARNING:**  
 DO NOT USE MAST HOIST TO CLOSE BOOM. DO NOT RETRACT MAST CYLINDER PAST LOWER CONNECTOR HOLES. IF THE MAST HOIST IS USED OR CYLINDER RETRACTION CONTINUES AFTER CONNECTOR BOTTOM OUT OR AFTER PINS ARE INSERTED, DAMAGE TO MAST, CYLINDER AND/OR BUTT WILL OCCUR.



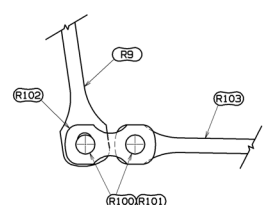
**STEP 3A**  
 BOOM CLOSING FOR BOOM LENGTHS GREATER THAN 54 METERS WITH MAST HANDLING CAPACITIES PER 9340-A OR AS AN ALTERNATIVE TO STEP 3 FOR ALL BOOM LENGTHS USING LIVE MAST AND LIFTING SLINGS AND SHACKLES



**VIEW R-R**  
 SCALE 0.125



**DETAIL S**  
 SCALE 0.125

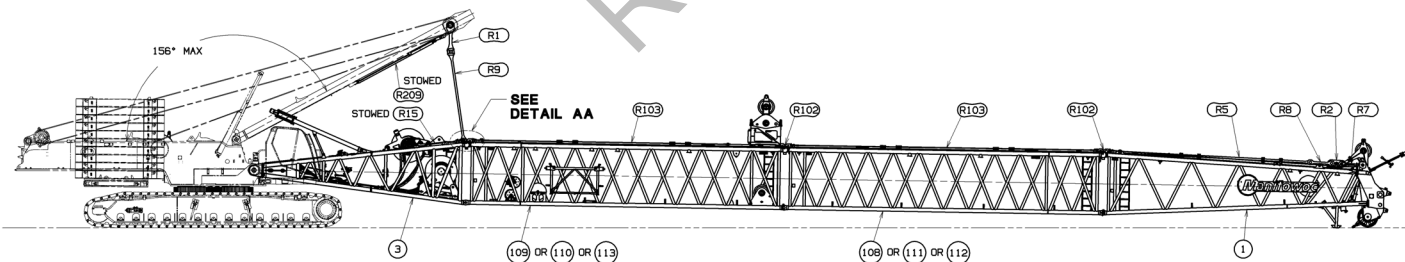


**DETAIL AA**  
 SCALE 0.125

**STEP 3A INSTRUCTIONS**

1. WITH MAST CYLINDER (R209) STOWED, LOWER LIVE MAST. DO NOT EXCEED MAST ANGLE OF 156°. THE MAST COULD FALL SUDDENLY.
  2. DETACH LINKS (R102) FROM 12M INSERT STRAP CLOSEST TO BOOM BUTT.
  3. PIN LINKS TO MAST STRAPS (R9).
  4. PIN (2) LIFTING SLINGS (R207) TO THE LINKS WITH PINS STOWED ON 12M INSERT.
  5. LOOP A HORIZONTAL LIFTING SLING (R207) THRU VERTICAL LIFTING SLING (R207).
  6. CONNECT ENDS OF HORIZONTAL LIFTING SLING (R207) WITH SHACKLE (R206).
  7. LOOP THE ENDS OF DIAGONAL LIFTING SLINGS (R204) AROUND THE TOP CHORDS OF THE BOOM BUTT (ITEM 3).
- CAUTION:** TAKE CARE TO PROTECT LIFTING SLINGS FROM SHARP EDGES ON INBOARD SIDE OF CHORDS.
8. ATTACH SHACKLES (R206) AND DIAGONAL LIFTING SLINGS (R204) BETWEEN THE LEGS OF THE HORIZONTAL LIFTING SLING (R207).
  9. BOOM UP TO LIFT THE BOOM BUTT CLEAR OF THE GROUND.
  10. POSITION MACHINE TO ALIGN UPPER PIN CONNECTOR ON BUTT WITH UPPER PIN CONNECTOR PINS ON 12M INSERT W/SHEAVES (ITEM 109 OR 110) AND ENGAGE PINS.
  11. BOOM UP TO RAISE THE BOOM BUTT UNTIL THE BOTTOM CONNECTOR HOLES ALIGN AND ENGAGE PINS. (SEE DETAIL Z ON SHEET 4)
  12. BOOM DOWN TO DISCONNECT BOOM HANDLING SLINGS AND SHACKLES. STOW IN PARTS BOX 81028769.

**WARNING:**  
 DO NOT BOOM UP PAST LOWER CONNECTOR HOLES. IF BOOMING UP CONTINUES AFTER CONNECTORS BOTTOM OUT OR AFTER PINS ARE INSERTED, DAMAGE TO MAST AND/OR BUTT WILL OCCUR.



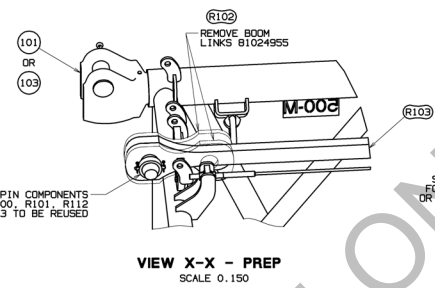
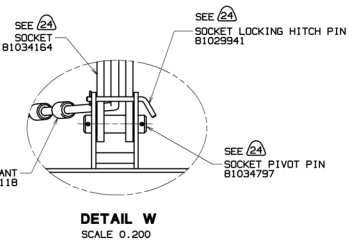
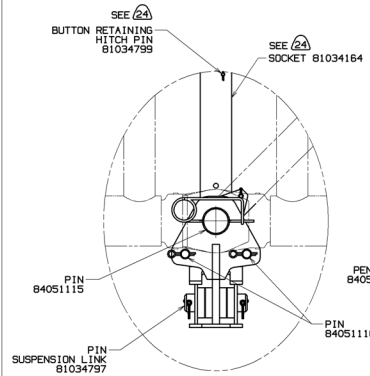
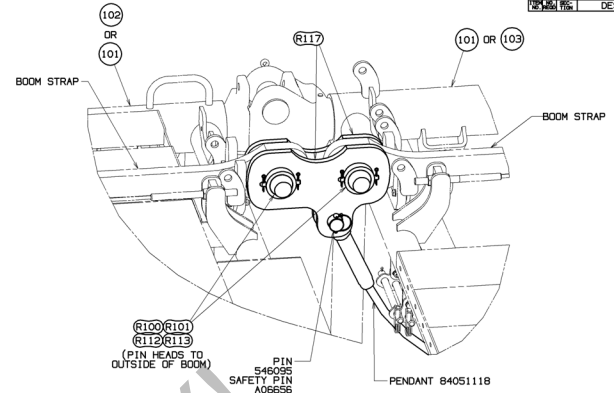
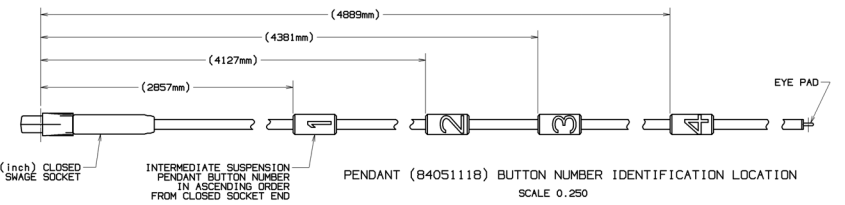
**STEP 4**  
 STRAP HOOKUP

PRIVATE LABELING  
 RESTRICTION TO  
 DISPOSITION TO  
 ENGINEERING  
 SPECIFICATION  
 60010323A FOR  
 COMPANIES LISTED  
 IN 002600-05-035

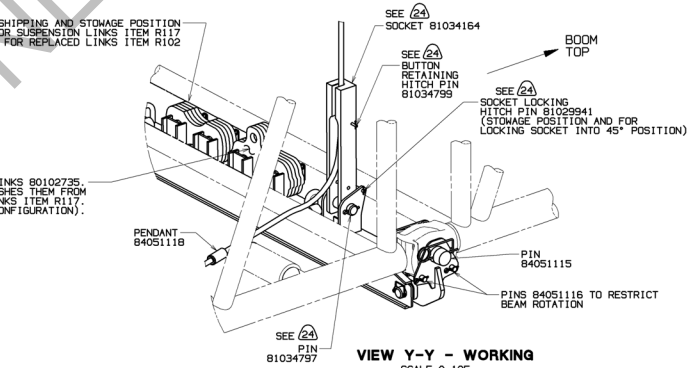
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1. 10.0000	± 0.125	1. 10.0000	1. 10.0000	1. 10.0000	1. 10.0000	1. 10.0000	1. 10.0000
2. 0.0000	± 0.005	2. 0.0000	2. 0.0000	2. 0.0000	2. 0.0000	2. 0.0000	2. 0.0000
3. 0.0000	± 0.002	3. 0.0000	3. 0.0000	3. 0.0000	3. 0.0000	3. 0.0000	3. 0.0000
4. 0.0000	± 0.001	4. 0.0000	4. 0.0000	4. 0.0000	4. 0.0000	4. 0.0000	4. 0.0000
5. 0.0000	± 0.0005	5. 0.0000	5. 0.0000	5. 0.0000	5. 0.0000	5. 0.0000	5. 0.0000
6. 0.0000	± 0.0002	6. 0.0000	6. 0.0000	6. 0.0000	6. 0.0000	6. 0.0000	6. 0.0000
7. 0.0000	± 0.0001	7. 0.0000	7. 0.0000	7. 0.0000	7. 0.0000	7. 0.0000	7. 0.0000
8. 0.0000	± 0.00005	8. 0.0000	8. 0.0000	8. 0.0000	8. 0.0000	8. 0.0000	8. 0.0000
9. 0.0000	± 0.00002	9. 0.0000	9. 0.0000	9. 0.0000	9. 0.0000	9. 0.0000	9. 0.0000
10. 0.0000	± 0.00001	10. 0.0000	10. 0.0000	10. 0.0000	10. 0.0000	10. 0.0000	10. 0.0000

NO. 03-30-20	REV. B
Handbook Cranes, Inc. Manitowish, Wisconsin	
BOOM RIGGING	BIS:505-500
8109323	03-30-20

BILL OF MATERIAL				ASSEMBLY
ITEM NO.	DESCRIPTION	MATERIAL	QTY	REQ. BY



**VIEW X-X - WORKING**  
SCALE 0.200



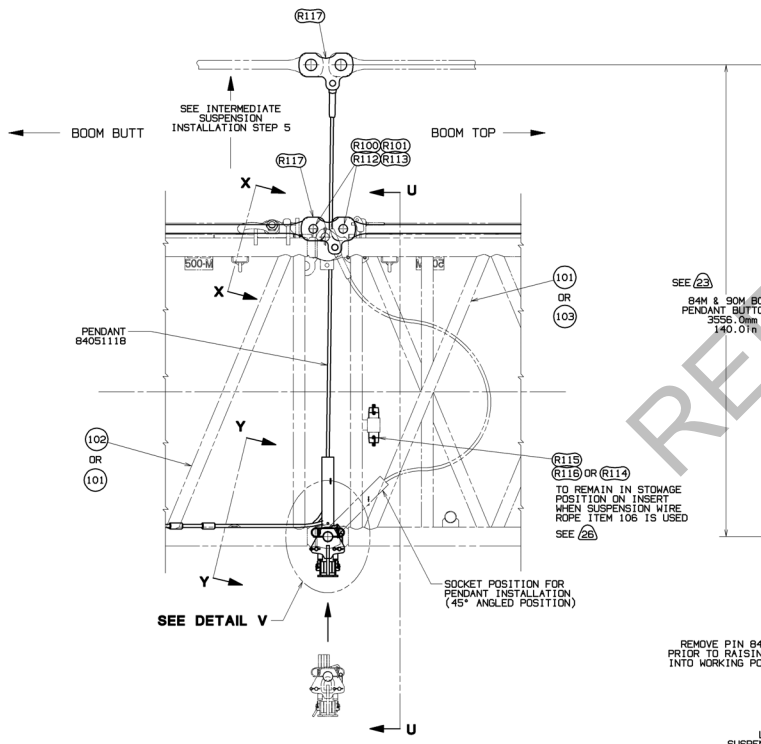
**VIEW Y-Y - WORKING**  
SCALE 0.125

**DETAIL V**  
SCALE 0.200

**VIEW X-X - PREP**  
SCALE 0.150

**VIEW Y-Y - WORKING**  
SCALE 0.125

STORAGE POSITION OF SUSPENSION LINKS 80102735. THE IRREGULAR END PROFILE DISTINGUISHES THEM FROM THE SMOOTH END PROFILE ON LINKS ITEM R117. (80102735 WILL BE USED IN LIFTING JOB CONFIGURATION).



**DETAIL T**  
SUSPENSION WIRE ROPE ITEM 106, 84051095 (FROM SHEET 4)  
SCALE 0.075

LOCATION OF SOCKET LOCKING HITCH PIN (81029941) IN SUSPENSION BEAM DURING SETUP TO ALIGN THE LOWER SUSPENSION LINK

**SECTION U-U**  
SCALE 0.075

**INTERMEDIATE SUSPENSION (ITEM 106) INSTALLATION**

- SEE BOOM MAKEUP VIEWS ON SHEETS 3 & 4 AND BOOM LENGTH TABLE ON SHEET 2 FOR REQUIRED SUSPENSION & WIRE ROPE BUTTON IDENTIFICATION LOCATION. REFERENCE SUSPENSION WIRE ROPE ASSY 84051095 FOR ADDITIONAL INFORMATION. (REFER TO VIEW OF PENDANT 84051118 ON THIS SHEET FOR BUTTON NUMBER I.D. LOCATION).
1. FROM MATING INSERT TOWARD BOOM TOP (ITEM 101 OR 103), REMOVE (4) BOOM LINKS (R102) AND STORE IN PARTS BOX 81028789 OR ON SUSPENSION BEAM AFTER LINKS ITEMS R117 HAVE BEEN REMOVED. (SEE Y-Y - WORKING). PIN/COLLAR/PIN COMPONENTS (ITEMS R100, R101, R112 & R113) WILL BE REUSED WITH SUSPENSION LINK PER STEP 4 BELOW. (SEE VIEW X-X - PREP).
  2. POSITION SUSPENSION BEAM AND LOWER SUSPENSION LINK UNDER APPROPRIATE INSERT AT MALE CONNECTOR END. ASSEMBLE UPPER CONNECTOR OF MATING INSERT AND PIVOT INSERT TO ALIGN LOWER CONNECTOR HOLES. WITH SOCKETS 81034164 AND LOWER CONNECTOR PINS 84051115 REMOVED FROM SUSPENSION BEAM, USE AN ASSISTANT TO RAISE SUSPENSION BEAM ASSY TO ALIGN LOWER CONNECTOR AND LOWER SUSPENSION LINK HOLES. REINSTALL PIN 84051115. (SEE DETAIL T AND SECTION U-U).
  3. REINSTALL SOCKET INTO SUSPENSION BEAM AND PIVOT SOCKET INTO 45° POSITION. REINSTALL SOCKET LOCKING PIN THRU BRACKET AND SOCKET (ANGLED POSITION). (SEE DETAIL T).
  4. ATTACH INSERT BOOM STRAPS WITH DOUBLE LINKS (R117) USING EXISTING PIN/COLLAR/PIN COMPONENTS (ITEMS R100, R101, R112 & R113) REMOVED IN VIEW X-X - PREP. ATTACH CLOSED SOCKET END OF PENDANT 84051118 TO LINKS R117. (SEE VIEW X-X - WORKING).
  5. WITH SOCKET LOCKED IN 45° POSITION, SLOWLY RAISE BOOM. AS THE STRAPS RISE, GUIDE THE INTERMEDIATE SUSPENSION PENDANTS THROUGH THE OPENING BETWEEN THE BOOM INSERTS. STOP THE BOOM RAISING PROCEDURE WHEN THE REQUIRED PENDANT BUTTON NEARS THE SOCKET. REMOVE BUTTON RETAINING HITCH PIN FROM SOCKET POSITION THE IDENTIFIED PENDANT BUTTON OF THE MULTI-BUTTON PENDANT 84051118 INTO SOCKET AND REINSTALL BUTTON RETAINING HITCH PIN INTO SOCKET, LOCKING PENDANT IN POSITION. (SEE DETAIL T).
  6. PRIOR TO CONTINUATION OF BOOM RAISING, REMOVE SOCKET LOCKING HITCH PIN FROM 45° POSITIONED SOCKET AND BRACKET. STOW IN BRACKET HOLE (STORAGE POSITION) ALLOWING SOCKET TO PIVOT AS BOOM STRAPS RAISE. (SEE VIEW Y-Y - WORKING).
  7. BOOM UP SLOWLY AS PENDANT BECOMES TIGHT AND SOCKET PIVOTS INTO WORKING POSITION.
- FOR REMOVAL OF DROP-DOWN INTERMEDIATE SUSPENSION (ITEM 106) REVERSE INSTALLATION STEPS 1 THRU 7, ASSURING SOCKET PIVOTS TOWARD 45° POSITION WHEN LOWERING BOOM STRAPS.

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