

INSERT ASSY'S REQ'D. FOR VARIOUS BOOM LENGTHS

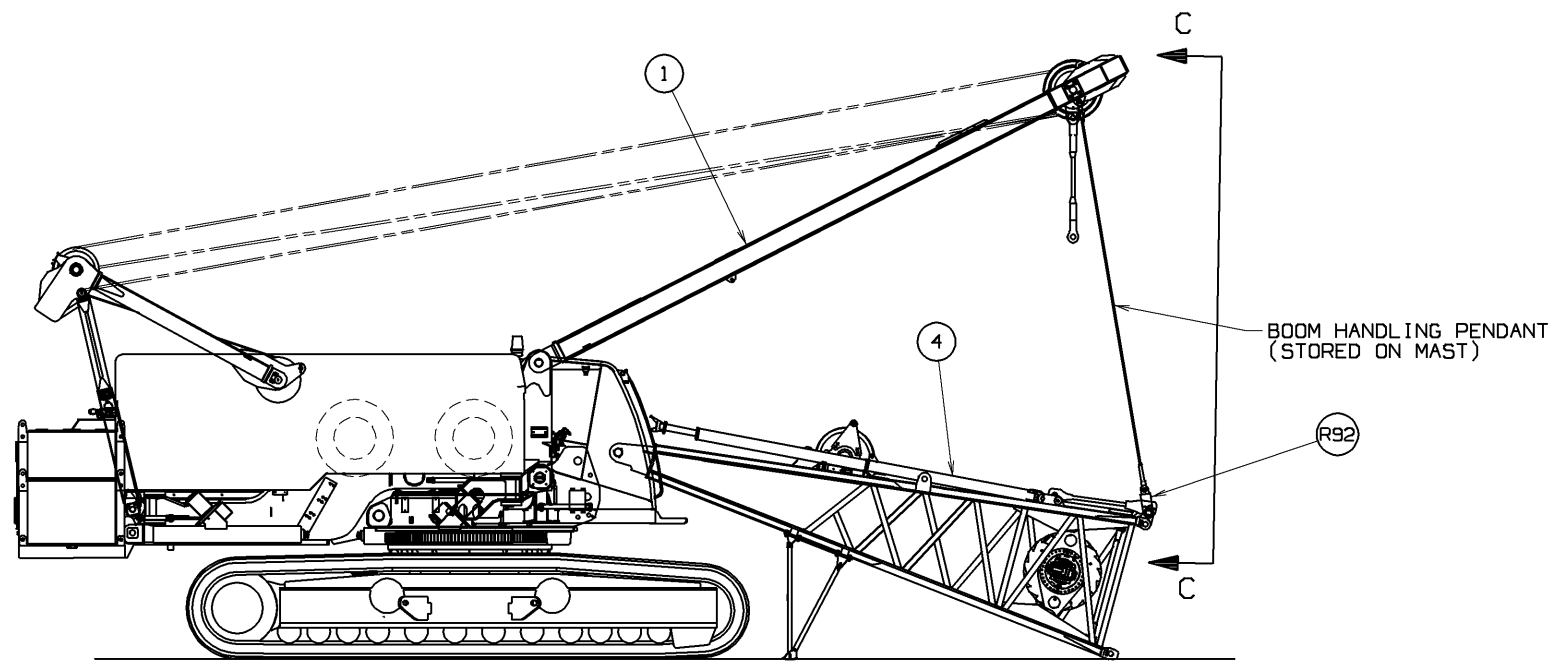
ITEM NO.		5	6	7	R25
BOOM LENGTH		10 FT 3.05 M INSERT ASSEMBLY	20 FT 6.10 M INSERT ASSEMBLY	40 FT 12.19 M INSERT ASSEMBLY	LINK
FEET	METERS				
50	15.2	0	0	0	1
60	18.3	1	0	0	1
70	21.3	0	1	0	1
80	24.4	1	1	0	0
90	27.4	0	2	0	0
		0	0	1	0
100	30.5	0	2	0	0
		1	0	1	0
110	33.5	0	1	1	0
120	36.6	1	1	1	0
130	39.6	0	2	1	0
		0	0	2	0
140	42.7	0	2	1	0
		1	0	2	0
150	45.7	0	1	2	0
160	48.8	1	1	2	0
170	51.8	0	2	2	0
		0	0	3	0
180	54.9	0	2	2	0
		1	0	3	0
190	57.9	0	1	3	0

OPTION 5 (36mm WIRE ROPE)		
R85	1 STEEL WASHER .125	012535
R86	1 WEDGE 1.50 DIA ROPE	015828
R87	1 OPEN WEDGE SOCKET 1.50 DIA ROPE	015865
R88	1 CLIP 1.50 WIRE ROPE	349295
R89	2 SPACER TUBE 9.00 OD X 8.00 ID	A02829
R104	2 SHEAVE WIRE ROPE ASSY 36mm ROPE	A10350
OPTIONAL ASSEMBLY LIST		
10	1 UPPER BOOM POINT ASSEMBLY	A00145
11	1 DRUM SHAFT ASSEMBLY, AUXILIARY	A00146
12	1 GUIDE ASSEMBLY	A00968
13	1 BOOM SUPPORT ASSEMBLY	A00775
14	1 WIRE ROPE GUIDE ASSEMBLY	A10525
15	1 TOP 3 FT ASSY #83 W/36IN SHEAVES	A13281

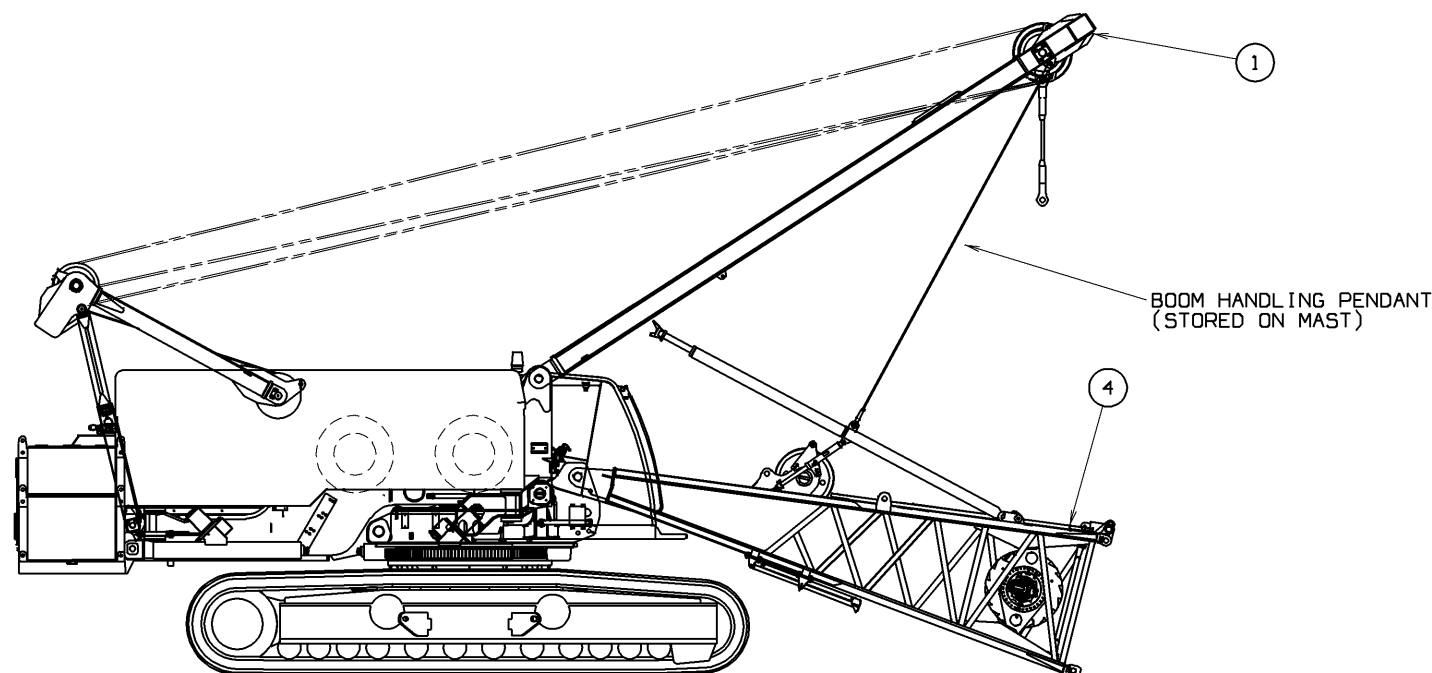
OPTION 3 (32mm WIRE ROPE)		
R79	1 OPEN WEDGE SOCKET 1.25&1.375 DIA	165551
R80	1 WEDGE 1.25 DIA ROPE	165588
R81	1 PIN COTTER 1 HOLE W/HD 2.00 DIA	171214
R82	1 CLIP 1.25 WIRE ROPE	349233
R83	1 PIN COTTER .375 X 3.50	562151
R62	2 SHEAVE WIRE ROPE ASSY 1.25 ROPE	A00493
R84	1 LINK #83 BOOM 32 MM ROPE	A02773
R89	2 SPACER TUBE 9.00 OD X 8.00 ID	A02829
OPTION 4 (34mm WIRE ROPE)		
R79	1 OPEN WEDGE SOCKET 1.25&1.375 DIA	165551
R105	1 WEDGE 1.375 DIA ROPE	165550
R81	1 PIN COTTER 1 HOLE W/HD 2.00 DIA	171214
R106	1 CLIP 1.375 WIRE ROPE	349294
R83	1 PIN COTTER .375 X 3.50	562151
R84	1 LINK #83 BOOM 32 MM ROPE	A02773
R89	2 SPACER TUBE 9.00 OD X 8.00 ID	A02829
R103	2 SHEAVE WIRE ROPE ASSY 34mm ROPE	A10351

25 FT (7.62M) TRANSITION INSERT ASSEMBLY		
8	1 TRANSITION INSERT ASSEMBLY #83	A00143
R38	1 BEARING LOCKWASHER	225100
R39	2 BEARING LOCKNUT	A01427
R32	4 BOLT CARRIAGE .625	244134
R40	20 SCREW MACHINE 5/16-18 X 1-1/4	254555
R41	20 NUT HEX .3125-18 ZC	546053
R5	8 NUT HEX .625-11	546058
R42	4 NUT HEX JAM 2-12	546281
R27	4 PIN COTTER .250 X 1.50	562105
R43	4 PIN COTTER .250 X 1.75	562108
R28	8 PIN COTTER .375 X 4.00	562152
R8	4 PIN COTTER .500 X 4.00	562172
R9	2 PIN SNAP .25 DIA X 1.75	563823
R44	4 SCREW CAP HEX HEAD .625	612691
R45	8 SCREW CAP HEX HEAD .875	613947
R46	20 WASHER LOCK .3125	710303
R17	4 WASHER LOCK .625	710307
R47	1 INSERT TRANSITION 25 FT #83	A00144
R30	4 PIN COTTER 2 HOLE 2.75 DIA X 7.75	A00158
R48	1 GUARD WIRE ROPE	A00490
R49	1 SLEEVE 9.00 OD X 6.25 ID	A00491
R50	1 SHAFT 6.75 OD X 4.75 ID X 30.00	A00494
R51	4 LOCK PLATE	A00495
R52	4 SLEEVE TAPER PIN	A00496
R53	4 CLAMP	A00497
R54	4 PIN THREADED 3.50 DIA X 6.88	A00498
R55	1 PIN 2 HOLE 1.00 OD X 11.00	A00523
R56	2 PIN 2 HOLE .75 DIA X 6.50	A00524
R57	1 TIMBER 4.00 X 3.00 X 68.00	A00525
R58	4 PLATE KEEPER .50 THK	A00526
R59	2 PENDANT	A01867
R60	2 PIN COTTER 2 HOLE 2.75 DIA X 7.25	A02141
R61	2 SIGN BOOM MANITOWOC	81008829
R31	2 PIN COTTER 2 HOLE .75 DIA X 10.25	A02757
R90	4 NUT LOCK NE 0.625-11	548345
R91	4 WASHER FLAT 0.625, 0.108 ZC	709480
OPTION 1 (32mm WIRE ROPE)		
R62	2 SHEAVE WIRE ROPE ASSY 1.25 ROPE	A00493
R89	2 SPACER TUBE 9.00 OD X 8.00 ID	A02829
OPTION 2 (32mm WIRE ROPE)		
R64	1 SHEAVE WIRE ROPE ASSY 1.25 ROPE	631524
R62	2 SHEAVE WIRE ROPE ASSY 1.25 ROPE	A00493
OPTION 3 (30mm WIRE ROPE)		
R65	2 SHEAVE WIRE ROPE ASSY 1.50 ROPE	A00492
R89	2 SPACER TUBE 9.00 OD X 8.00 ID	A02829
OPTION 4 (30mm WIRE ROPE)		
R64	1 SHEAVE WIRE ROPE ASSY 1.25 ROPE	631524
R65	2 SHEAVE WIRE ROPE ASSY 1.50 ROPE	A00492
OPTION 5 (34mm WIRE ROPE)		
R89	2 SPACER TUBE 9.00 OD X 8.00 ID	A02829
R103	2 SHEAVE WIRE ROPE ASSY 34mm ROPE	A10351
OPTION 6 (34mm WIRE ROPE)		
R64	1 SHEAVE WIRE ROPE ASSY 1.25 ROPE	631524
R103	2 SHEAVE WIRE ROPE ASSY 34mm ROPE	A10351
OPTION 7 (36mm WIRE ROPE)		
R89	2 SPACER TUBE 9.00 OD X 8.00 ID	A02829
R104	2 SHEAVE WIRE ROPE ASSY 36mm ROPE	A10350
OPTION 8 (36mm WIRE ROPE)		
R64	1 SHEAVE WIRE ROPE ASSY 1.25 ROPE	631524
R104	2 SHEAVE WIRE ROPE ASSY 36mm ROPE	A10350
OPTION 9 (TIMBERS FOR DUTY CYCLE)		
R98	4 TIMBER	193273
R99	16 NUT LOCK NE .4375-14	548352
R100	16 WASHER FLAT .4375	709746
R101	16 SCREW CAP HEX HEAD .4375	A10539
R102	8 CLAMP TUBE 2.75	A10540
3 FT (0.91M) TOP ASSEMBLY		
9	1 TOP 3 FT ASSEMBLY	A00141
R66	1 PIN COTTER 1 HOLE W/HD 3.00 DIA	163064
R38	1 BEARING LOCKWASHER	225100
R39	2 BEARING LOCKNUT	225101
R67	1 PIN COTTER .50 X 4.50	562174
R83	4 PIN COTTER .375 X 3.50	562151
R69	1 PIN HITCH .375 DIA	563822
R70	4 SCREW CAP HEX HEAD .875	612768
R71	4 WASHER LOCK .875	710309
R72	1 TOP 3 FT MACHINING	A01814
R73	2 PIN COTTER 2 HOLE 2.00 DIA	A02145
R74	1 SHAFT 8.00 DIA X 34.88	A02146
R75	2 SPACER TUBE 8.755 OD X 8.00 ID	A02738
R76	2 PLATE KEEPER .625 THK	A02739
R77	1 PIN COTTER 1 HOLE W/HD 2.28 DIA	A02766
R78	1 LINK #83 BOOM 38 MM ROPE	A02772
OPTION 1 (32mm WIRE ROPE)		
R79	1 OPEN WEDGE SOCKET 1.25&1.375 DIA	165551
R80	1 WEDGE 1.25 DIA ROPE	165588
R81	1 PIN COTTER 1 HOLE W/HD 2.00 DIA	171214
R82	1 CLIP 1.25 WIRE ROPE	349233
R83	1 PIN COTTER .375 X 3.50	562151
R62	3 SHEAVE WIRE ROPE ASSY 1.25 ROPE	A00493
R84	1 LINK #83 BOOM 32 MM ROPE	A02773
OPTION 2 (30mm WIRE ROPE)		
R85	1 STEEL WASHER .125	012535
R86	1 WEDGE 1.50 DIA ROPE	015828
R87	1 OPEN WEDGE SOCKET 1.50 DIA ROPE	015865
R88	1 CLIP 1.50 WIRE ROPE	349295
R65	2 SHEAVE WIRE ROPE ASSY 1.50 ROPE	A00492
R89	2 SPACER TUBE 9.00 OD X 8.00 ID	A02829

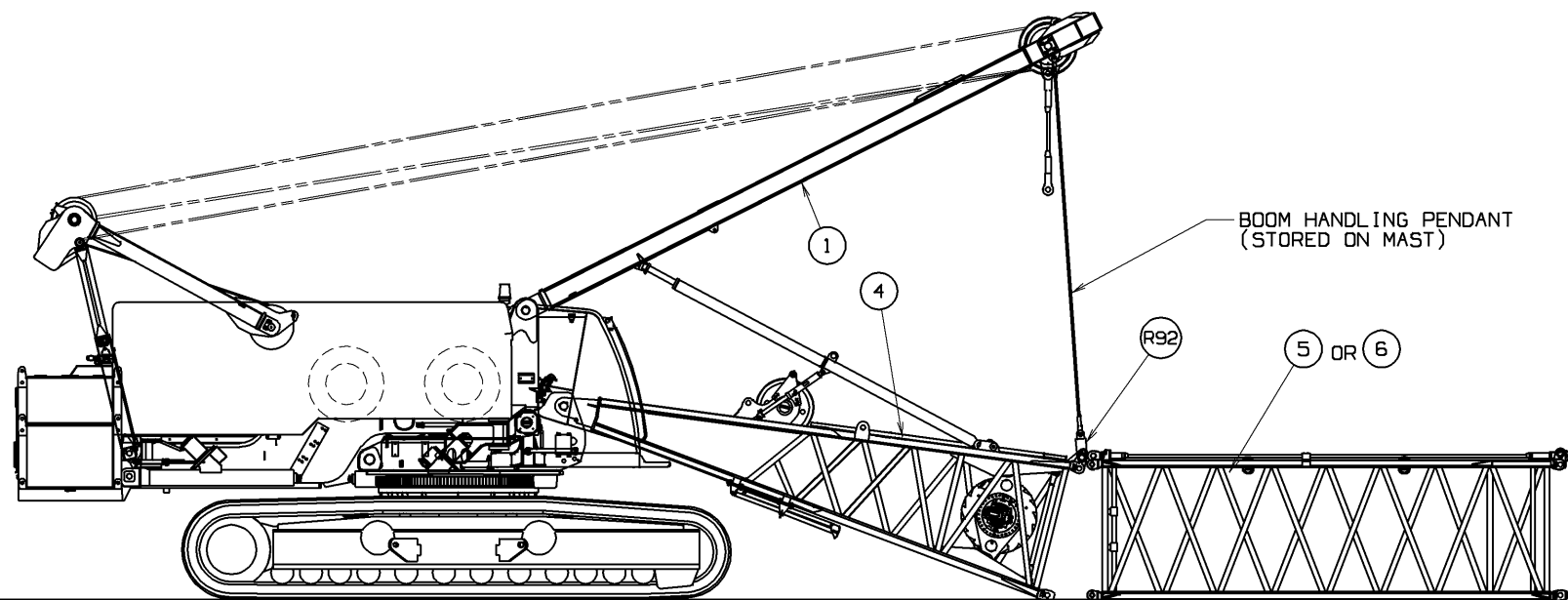
BILL OF MATERIAL					ASSEMBLIES USED IN	
ITEM NO. OR PART NO.	QTY	DESCRIPTION	LENGTH IN	MATERIAL		
#83A BOOM RIGGING ASSEMBLY						
1	1	MAST ASSEMBLY		A00009		
2						
3						
BOOM BUTT ASSEMBLY					REVISIONS 02-06-09 JMS ADDED DELTA 06-10-10 JAS UPDATED BOOM SIGN	
4	1	BUTT 22 FT ASSEMBLY BOOM		A00139		
R1	2	PIN COTTER 2 HOLE 2.75 DIA X 6.50		167075		
R2	1	BOOM ANGLE INDICATOR ASSY		168779		
R3	2	PIN COTTER 1 HOLE W/HD		172415		
R4	7	NUT HEX .375		546054		
R5	16	NUT HEX .625		546058		
R6	2	NUT LOCK NE .5-13		548344		
R7	2	PAD BEARING 3.00 X 3.00 X 1.00		554175		
R8	8	PIN COTTER .50 X 4.00		562172		
R9	2	PIN SNAP .25 DIA		563823		
R10	4	SCREW CAP HEX HEAD .375		612454		
R11	14	SCREW CAP HEX HEAD .625		612661		
R12	2	SCREW CAP HEX HEAD .625		612663		
R13	2	SCREW CAP SOCKET FLAT HEAD		614003		
R14	4	WASHER FLAT .375		709703		
R15	16	WASHER FLAT .625		709747		
R16	7	WASHER LOCK .375		710304		
R17	16	WASHER LOCK .625		710307		
R18	3	SCREW CAP SOCKET BUTTON HEAD .375		970491		
R19	1	BUTT 22 FT #83 BOOM		A00140		
R20	2	BOOM STOP ASSEMBLY #83 BOOM		A00149		
R21	1	LACING REMOVABLE		A00796		
R22	1	FLOOR ASSEMBLY RIGHT PANEL		A00853		
R23	1	FLOOR ASSEMBLY TOP PANEL		A00854		
R24	1	FLOOR ASSEMBLY LEFT PANEL		A00855		
R25	2	LINK		A03459		
R92	2	LINK BOOM HANDLING		A08027		
R93	2	PIN COTTER 2 HOLE 2.75 DIA X 3.75		A08032		
OPTION 1 (WIRE ROPE GUARD)					USE: NR A14196 SHT 1 OF 3	
R94	4	BOLT CARRIAGE .625-11		244136		
R5	8	NUT HEX .625		546058		
R12	4	SCREW CAP HEX HEAD .625		612663		
R15	8	WASHER FLAT .625		709747		
R17	8	WASHER LOCK .625		710307		
R95	2	GUARD WIRE ROPE ASSEMBLY		A08064		
R96	1	TIMBER		A08174		
R97	2	PLATE .25		A08188		
10 FT (3.05M) INSERT ASSEMBLY						
5		INSERT 10 FT ASSEMBLY #83		A00135		4 9
R26	2	PENDANT		277382		
R27	4	PIN COTTER .25 X 1.50		562105		
R28	8	PIN COTTER .375 X 4.00		562152		
R29	1	INSERT 10FT #83		A00136		
R30	4	PIN 2 HOLE 2.75 DIA X 7.75		A00158		
R31	2	PIN 2 HOLE .75 DIA X 10.25		A02757		
OPTION 1 (TIMBERS FOR DUTY CYCLE)						
R98	2	TIMBER		193273	USE: NR A14196 SHT 1 OF 3	
R99	8	NUT LOCK NE .4375-14		548352		
R100	16	WASHER FLAT .4375		709746		
R101	8	SCREW CAP HEX HEAD .4375		A10539		
R102	4	CLAMP TUBE 2.75		A10540		
20 FT (6.10M) INSERT ASSEMBLY						
6		INSERT 20 FT ASSEMBLY #83		A00133	5 9	
R32	4	BOLT CARRIAGE .625-11		244134		
R33	2	PENDANT		277383		
R90	4	NUT LOCK NE 0.625-11		548345		
R27	4	PIN COTTER .250 X 1.50		562105		
R28	8	PIN COTTER .375 X 4.00		562152		
R91	4	WASHER FLAT 0.625, 0.108 ZC		709480		
R34	1	INSERT 20FT. #83		A00134		
R30	4	PIN COTTER 2 HOLE 2.75 X 7.75		A00158		
R35	1	TIMBER 4.00 X 3.0 X 75.00 LG		A00194		
R31	2	PIN 2 HOLE .75 DIA X 10.25 LG		A02757		
OPTION 1 (TIMBERS FOR DUTY CYCLE)					USE: NR A14196 SHT 1 OF 3	
R98	3	TIMBER		193273		
R99	12	NUT LOCK NE .4375-14		548352		
R100	24	WASHER FLAT .4375		709746		
R101	12	SCREW CAP HEX HEAD .4375		A10539		
R102	6	CLAMP TUBE 2.75		A10540		
40 FT (12.19M) INSERT ASSEMBLY						
7		INSERT 40 FT ASSEMBLY #83 HEAVY		A10123	1 9	
R32	8	BOLT CARRIAGE .625-11		244134		
R36	2	PENDANT		277384		
R90	8	NUT LOCK NE 0.625-11		548345		
R27	8	PIN COTTER .250 X 1.50		562105		
R28	8	PIN COTTER .375 X 4.00		562152		
R91	8	WASHER FLAT 0.625, 0.108 ZC		709480		
R37	1	INSERT 40FT #83 HEAVY		A10124		
R30	4	PIN COTTER 2 HOLE 2.75 X 7.75		A00158		
R35	2	TIMBER 4.00 X 3.00 X 75.00 LG		A00194		
R31	4	PIN 2 HOLE .75 DIA X 10.25 LG		A02757		
OPTION 1 (TIMBERS FOR DUTY CYCLE)					USE: NR A14196 SHT 1 OF 3	
R98	7	TIMBER		193273		
R99	28	NUT LOCK NE .4375-14		548352		
R100	56	WASHER FLAT .4375		709746		
R101	28	SCREW CAP HEX HEAD .4375		A10539		
R102	14	CLAMP TUBE 2.75		A10540		
PRIVATE LABELING REQUIREMENT TO CONFORM TO ENGINEERING SPECIFICATION 6629103794 FOR COMPONENTS LISTED IN 6629103794-06-026						
DATE 12-22-08					PATTERN NO.	
Manitowoc Cranes, Inc.						
Manitowoc, Wisconsin				BOOM ASSEMBLY		
MODEL 1015				#83A BOOM		
APP: RL S						
DATE: NR A14196						



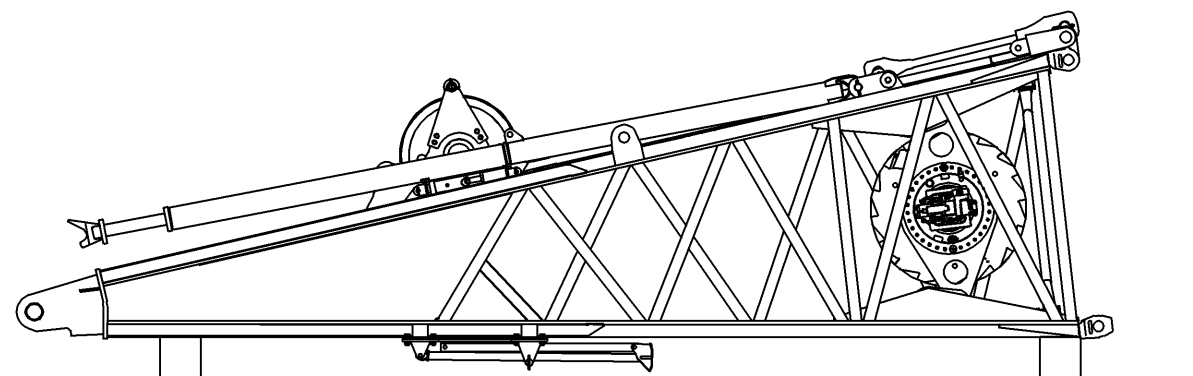
ATTACHING BOOM BUTT TO ROTATING BED
USING OPTIONAL BUTT SUPPORT ASSEMBLY



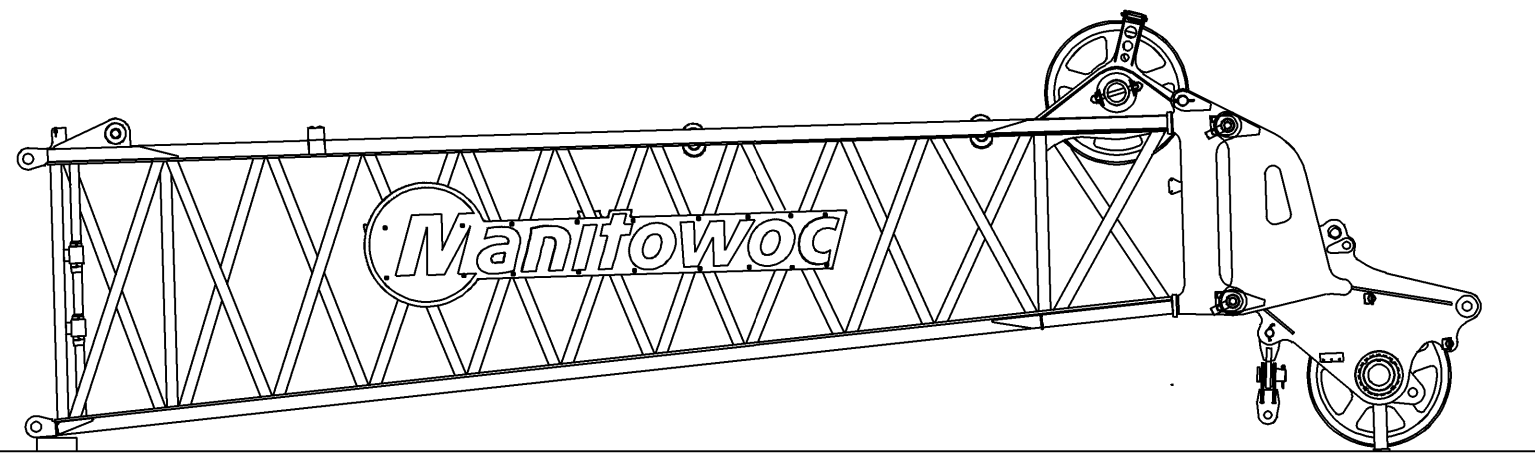
USING MAST PENDANT TO POSITION BOOM STOP
IN WORKING POSITION



BOOM ASSEMBLY WITH MAST



BOOM BUTT SHIPPING ARRANGEMENT



BOOM TOP SHIPPING ARRANGEMENT

BOOM ASSEMBLY PROCEDURE

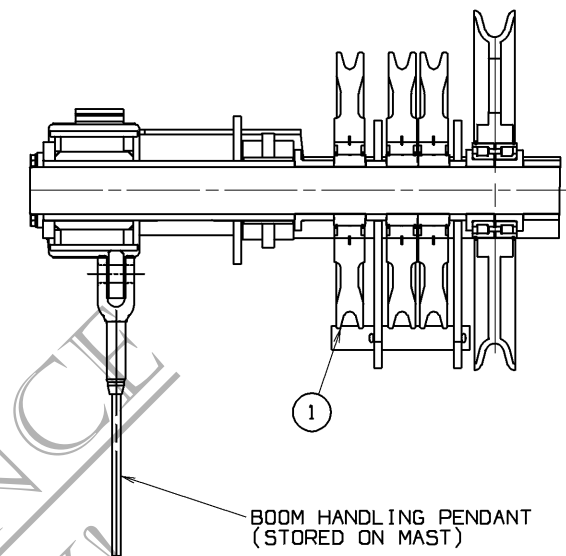
(MAST CAN BE USED TO ASSEMBLE ALL RIGGING COMPONENTS.)

1. ASSEMBLE BOOM COMPLETE. WITHOUT BUTT.
 2. ATTACH PENDANTS AS REQ'D.
 3. ATTACH BOOM HANDLING PENDANT TO BUTT LUGS (R92). SEE APPROPRIATE VIEWS AT LEFT.
 4. INSTALL BOOM BUTT USING THE OPTIONAL BUTT SUPPORT ASSEMBLY.
 5. ATTACH BOOM HANDLING PENDANTS AT LOWER END TO BOOM STOP RAISING LUGS. RAISE AND PIN BOOM STOPS IN WORKING POSITION.
 6. ATTACH BOOM HANDLING PENDANT LOWER END BACK TO BOOM BUTT. BOOM UP TO CLEAR GROUND WITH BUTT.
 7. POSITION MACHINE TO ALIGN UPPER CONNECTORS ON BOOM BUTT WITH UPPER CONNECTORS OF FIRST BOOM INSERT AND INSERT LOCKING PINS (R30).
 8. SLOWLY BOOM UP TO ALIGN LOWER PIN CONNECTOR HOLES ON BOOM BUTT WITH LOWER PIN CONNECTOR HOLES OF FIRST BOOM INSERT AND INSERT PINS.
- WARNING:
DO NOT BOOM UP PAST LOWER CONNECTOR HOLES. IF BOOMING UP CONTINUES AFTER CONNECTORS BOTTOM OUT OR AFTER PINS ARE INSERTED, DAMAGE TO BOOM HANDLING PENDANTS AND BOOM BUTT WILL OCCUR.
9. BOOM DOWN TO DISCONNECT BOOM HANDLING PENDANT AND STORE ON MAST.
 10. ATTACH LINK STORED ON BUTT (R25) TO MAST PENDANT (ONLY FOR 50, 60 AND 70 FT BOOM MAKEUP).
 11. ATTACH MAST PENDANT (OR LINK) TO PENDANT OF FIRST INSERT.
 12. BOOM UP TO DESIRED BOOM ANGLE.

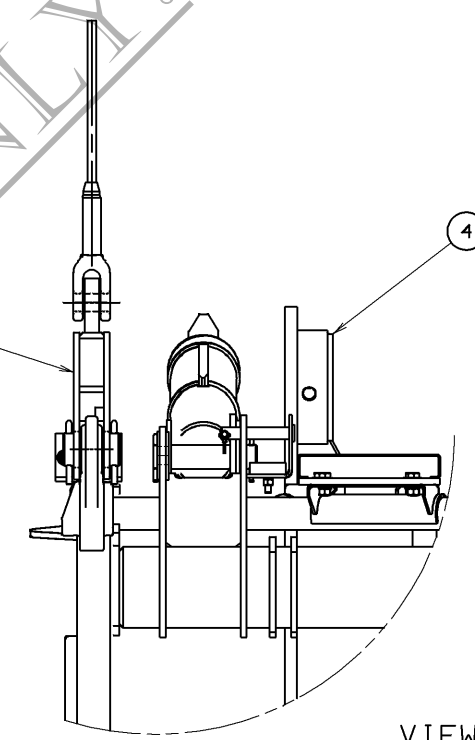
TO DISASSEMBLE BOOM

1. BOOM DOWN AND SUPPORT BOOM ON BLOCKING.
 2. DISCONNECT MAST PENDANT (OR LINK) FROM FIRST INSERT PENDANT.
 3. CONNECT BOOM HANDLING PENDANTS TO MAST.
 4. BOOM UP TO REMOVE SLACK FROM BOOM HANDLING PENDANTS.
- WARNING:
DO NOT BOOM UP TO PUT TENSION INTO BOOM HANDLING PENDANTS. (REMOVE SLACK ONLY) TENSION IN BOOM HANDLING PENDANT WILL DAMAGE PENDANT AND BOOM BUTT.
5. REMOVE LOWER BOOM BUTT TO INSERTS PINS AND BOOM DOWN. REMOVE UPPER PINS.
- WARNING:
BOOM MUST BE PROPERLY BLOCKED TO PREVENT SHIFTING DURING PIN REMOVAL.
6. SLOWLY BACK AWAY FROM BOOM
 7. LOWER BOOM STOPS TO SHIPPING POSITION.
 8. REMOVE BOOM BUTT FROM ROTATING BED AND STOW BOOM HANDLING PENDANTS ON MAST.
 9. DISASSEMBLE BOOM WITH MAST

REFERENCE ONLY

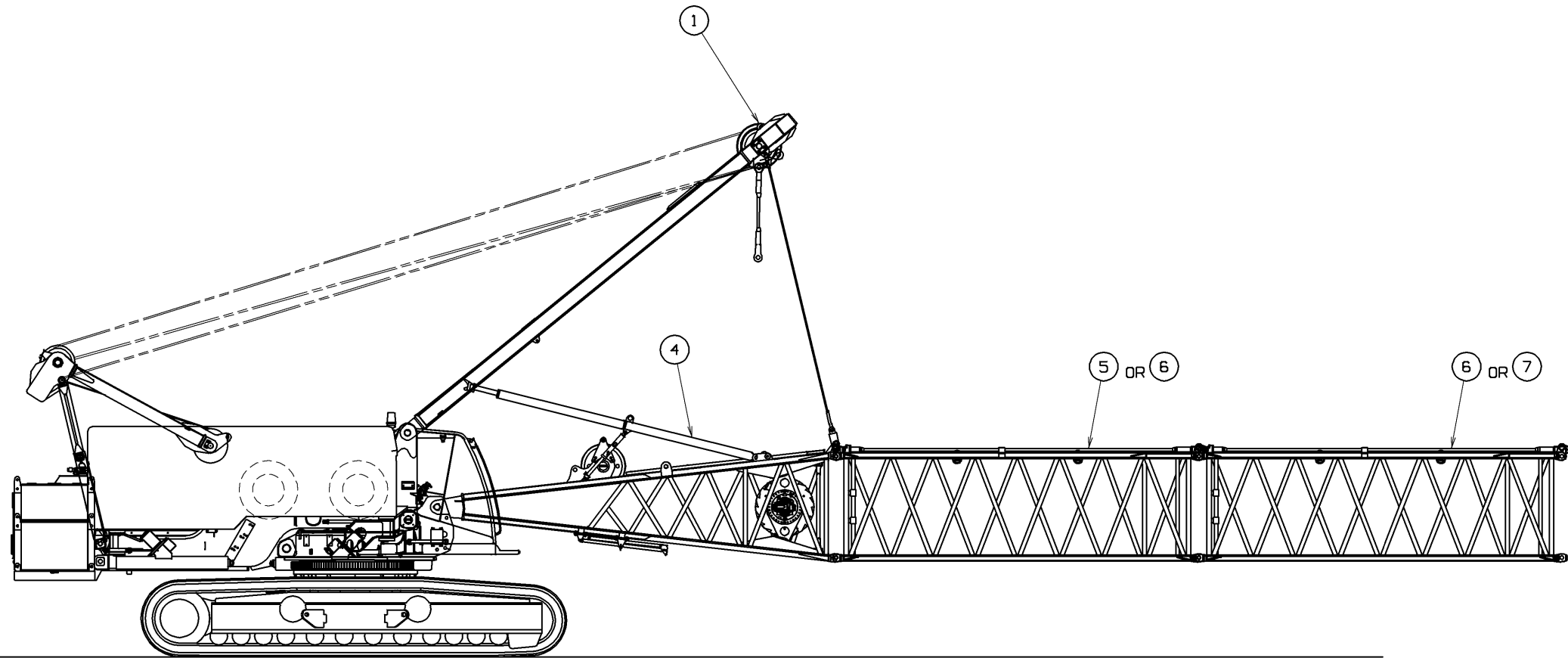


BOOM HANDLING PENDANT
(STORED ON MAST)



VIEW "C" - "C"
SCALE 1.50=1FT.

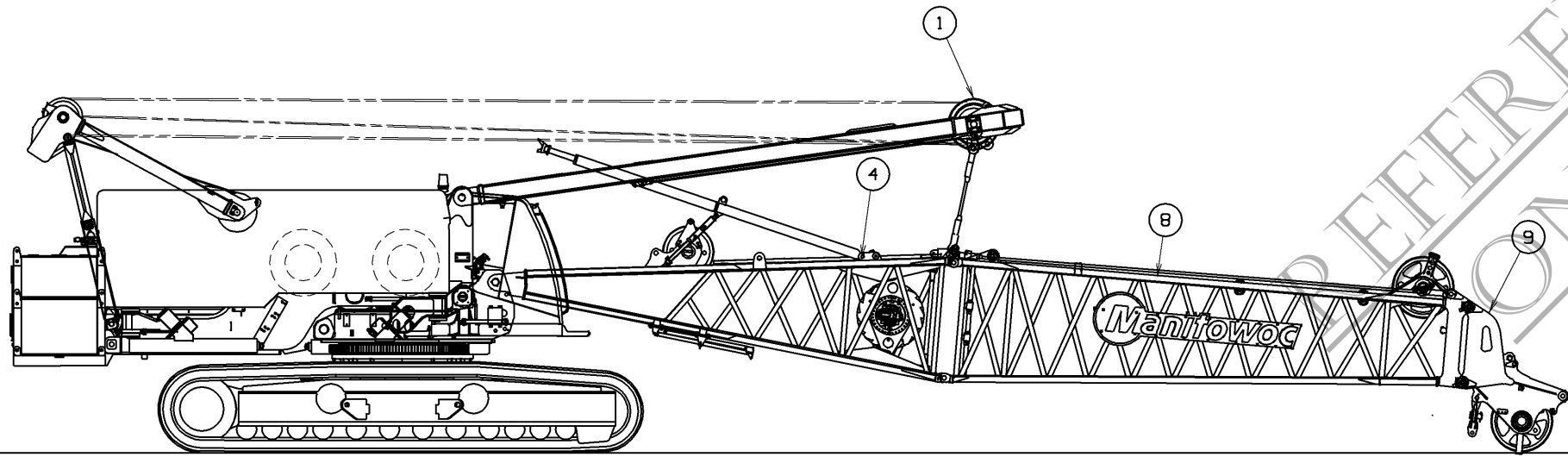
THIS PRINT REMAINS THE PROPERTY OF MANITOWOC CRANES, INC. ALL INFORMATION CONTAINED THEREIN IS CONFIDENTIAL. IT IS LOANED, SUBJECT TO RETURN UPON DEMAND, AND ON EXPRESS CONDITION THAT IT IS NOT TO BE COPIED OR USED DIRECTLY OR INDIRECTLY IN ANY MANNER DETRIMENTAL TO OUR INTERESTS.		TOLERANCE UNLESS OTHERWISE SPECIFIED		FABRICATION		MACHINING		SCALE		Manitowoc Cranes, Inc.		Boom Assembly	
DECIMAL PLACES		1/16	1/8	1/4	1/2	3/4	1	1 1/2	2	3	4	5	6
(1) PLACE	0.0	±.12	±.18	±.25	±.31	±.37	±.43	±.50	±.56	±.63	±.70	±.76	±.83
(2) PLACE	0.00	±.06	±.12	±.15	±.19	±.23	±.28	±.32	±.36	±.40	±.45	±.50	±.56
(3) PLACE	0.000	±.005	±.008	±.010	±.013	±.016	±.019	±.022	±.025	±.028	±.032	±.036	±.040
ANGLES		±1°	±1°	±1°	±1°	±1°	±1°	±1°	±1°	±1°	±1°	±1°	±1°
DR. RAH		CK. TJA		APP. BLS		MODEL 1015		#83A BOOM		DATE		12-22-08	



BOOM HANDLING WITH MAST
WITH MAST PENDANT ATTACHED TO BOOM
MAXIMUM BOOM THAT CAN BE
CANTILEVERED IS AS FOLLOWS:

LENGTH	10 FT. (3.05 M) INSERT	20 FT. (6.10 M) INSERT	40 FT. (12.2 M) INSERT
40 FT. (12.2 M)	0	0	1
50 FT. (15.2 M)	1	0	1
60 FT. (18.3 M)	0	1	1
70 FT. (21.3 M)	1	1	1
80 FT. (24.4 M)	0	0	2

BOOM HANDLING WITH MAST



CONNECTING OR DISCONNECTING
MAST AND INSERT PENDANTS