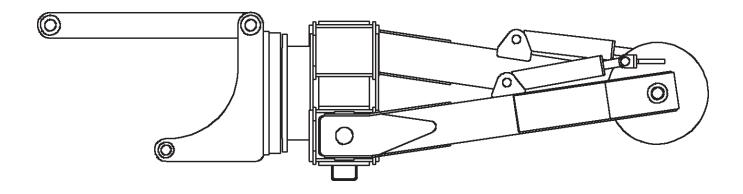


## PARTS AND SPECIFICATIONS

**Section 1 SPECIFICATIONS** 

**Section 2 PARTS** 

**Section 3 REFERENCE** 



## IOWA MOLD TOOLING CO., INC.

BOX 189, GARNER, IA 50438-0189 TEL: 641-923-3711 TECHNICAL SUPPORT FAX: 641-923-2424 MANUAL PART NUMBER 99900763

lowa Mold Tooling Co., Inc. is an Oshkosh Corporation company.

## **REVISIONS LIST**

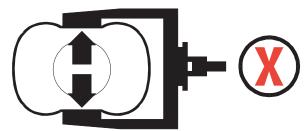
	REVISIONS LIST				
DATE	LOCATION	DESCRIPTION OF CHANGE			
20000901 20020206	2-05 2-5	ECN9000-40715764-REF PART OF 1 ITEMS 9,12-14 ADDED MOBILTAC NOTE			
20020200	3-1,10	WARRANTY			
20050923	2-15 COVER 2.2	ECN 9924 - ADDED HOLDING VALVE TO 91714929 HYD KIT			
20070227 20080212	COVER, 2-3 1-5	UPDATED OWNERSHIP STATEMENT, NEW SERIAL NUMBER TAG ECN 10661 - NEW CAPACITY CHART			
20081104	2-5	ECN 10767 - TURNTABLE BEARING REPLACEMENT (MATL CHANGE)			
20081231 20091210	1-3 2-5	UPDATED TIREHAND SPECS ECN 11151-CHANGES TO 40715764.			
20110209	2-6	ECN 11380 - ADDED FLOODLIGHT KITS TO 40712056 ASSEMBLY			
20110505 20120531	2-8 2-11,12`	ECN 11327-1 - ADDED 41723211 CLAMP ASSEMBLY DRAWING ECN 11615 - UPDATED 3B004940, 3B111870 CYLINDERS			
20140403	2-5, 2-7, 2-10, 2-16 &	ECN 12150 - ADDED 40725636, 40725242 & 40725459. UPDATED SPARE PARTS LIST.			
	3-8				
	I				

# **TIREHAND OPERATING RESTRICTIONS**

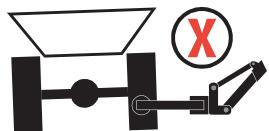


FAILURE TO OBEY THE FOLLOWING WILL RESULT IN DEATH, SERIOUS INJURY. INSTABILITY OR EQUIPMENT DAMAGÉ

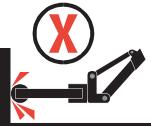
NEVER clamp an uninflated tire and then inflate. Damage or injury WILL result.



NEVER use the unit for any jacking, pulling or dragging operation involving an object or another vehicle.



NEVER impact-load or hammer-push with the unit.



NEVER attempt to handle tires filled with ballast. Stability or structural failure may result if the load limit is exceeded.



NEVER operate the unit while persons not required for operation are in the work area.



NEVER drag the tire-the unit is designed to lift and position.



NEVER sling a load using one arm of the Tirehand.



NEVER use crane functions to break beads using only one arm of the Tirehand.

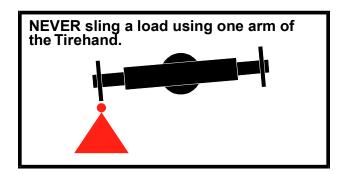


70394272

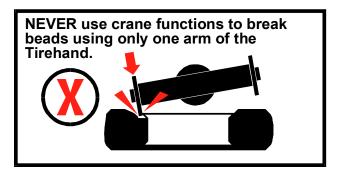
## **TIREHAND OPERATING RESTRICTIONS**

The Tirehand 14 mounted on the 20017 crane is intended to be a tire lifting and positioning device. There are possible misapplications of this machine that can cause serious damage to the Tirehand rotation gears. It is possible to break the teeth on the Tirehand rotation bearing by applying forces with the crane while attempting to break tire beads with one arm of the tire hand, or by slinging a load under one arm of the tire hand.

A load-carrying hook is attached to the outer boom of the 20017 for carrying loads other than tires. There is also an open clevis at the end of the extension boom on the crane that can be used for attaching slings. Use of a single Tirehand arm for lifting or carrying a load will void the tire hand warranty.



The rotation system on the Tirehand is designed to allow the user to manipulate large tires. It is a precision function that was not designed to apply high loads. However, the load holding valves that are built into this system to help control the tire during handling will also prevent the body of the Tirehand from rotating freely when loads are applied to a single Tirehand arm. The crane is capable of producing very large forces in the downward and outward directions. When one arm is used for bead breaking, these forces can translate into torques that attempt to rotate the body of the Tirehand. The load holding valves will not allow this to occur. In this situation, the forces that are created in the Tirehand rotation turntable are well in excess of what the gear teeth can tolerate. Using one arm of the Tirehand for bead breaking will void the warranty of the Tirehand.



A separate bead breaker or a push bar that carries the load to both arms of the Tirehand must be used to separate the tire from the rim. It is acceptable to use the Tirehand for holding the sidewall and flange away from the bead while O-rings and locking rings are being installed.

## **INTRODUCTION - READ CAREFULLY!**

This manual is provided to assist you in the identification and ordering of parts, for your IMT equipment. It contains information such as specifications, parts lists, capacities, and parts identification.

It is the user's responsibility to maintain and operate this equipment in a manner that will result in the safest working conditions possible.

Warranty of this equipment will be void on any part of the unit subjected to overloading, abuse, lack of maintenance and unauthorized modifications. No warranty - verbal, written, or implied - other than the official, published IMT new machinery and equipment warranty will be valid on this unit.

In addition, it is also the user's responsibility to be aware of existing Federal, State, and Local codes and regulations governing the safe use and maintenance of this equipment. Three means are used throughout this manual to gain the attention of personnel. They are NOTE's, CAUTION's, and WARNING's and are defined as follows:

#### **NOTE**

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

## **CAUTION**

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

#### **WARNING**

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

Treat this equipment with respect and service it regularly. These two things can add up to a safer work environment.

0000TH14:99900763: 20140403 vi <b>NOTES</b>

# SECTION 1. TIREHAND 14 SPECIFICATIONS

GENERAL SPECIFICATIONS	

0000TH14:99900763:20140403	1-2 NOTES



## **GENERAL SPECIFICATIONS**

IMT CRANE WHICH TIREHAND IS DESIGNED IMT Model 20017 (truck chassis mounted)

TIREHAND MAXIMUM CAPACITY 8000 lb (3629 kg)

BODY ROTATION 342° (5.96 Rad)

CLAMPING SPAN 64" to 132" (162.6cm - 335.3cm)

METHOD OF CLAMPING Horizontally telescoping

CLAMPING PAD ROTATION 90°

TIREHAND TILT (provided by crane extension boom) +79° to -21° (+1.38 to -.37 Rad.)

CLAMPING LOAD HOLDING VALVES Pilot operated check valves on clamping side

HYDRAULIC CONTROLS Incorporated with crane controls

ROTATION SYSTEM Spur gear drive

TIREHAND WEIGHT 3400 lbs (1542 kg)

ALLOWABLE BEAD BREAKING METHOD Push Bar, ONLY

**CYLINDERS** 

 BORE
 STROKE

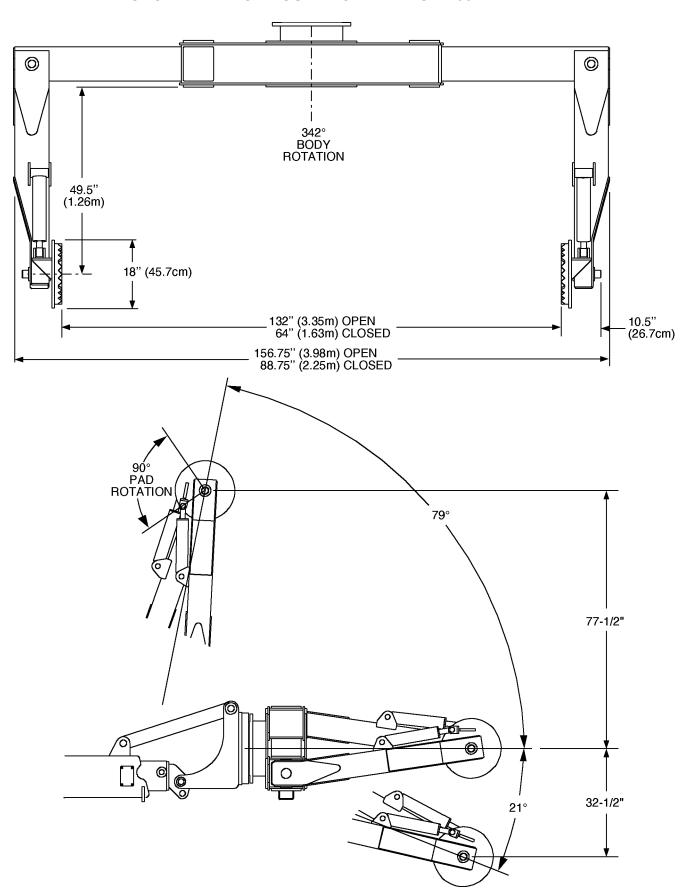
 CLAMPING
 4" (10.16cm)
 34" (86.4cm)

TILT Provided by crane extension boom

IMT reserves the right to change specifications and design without notice. Where applicable, specifications are in accordance with SAE standards.

1-4

## **GEOMETRIC CONFIGURATION-TH 14 ON 20017 CRANE**





# **MAXIMUM CAPACITY**

8,000 LB (3,630 KG)

# **CLAMPING SPAN**

MIN: 64" (162.6 cm)

MAX: 132" (335.3 cm)

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0000TH14:99900763:20140403	1-6	
	NOTES	

# SECTION 2. TIREHAND 14 PARTS

0000TH14: 99900763:20140403	2-2 NOTES

## PARTS INFORMATION

## **GENERAL**

This section contains the exploded parts drawings with the accompanying parts list for the assemblies used on the Tirehand-14. These drawings are intended to be used in conjunction with those in the 20017 Crane manual and the instructions found in the REPAIR section in Volume 1.

#### **WARNING**

DO NOT ATTEMPT TO REPAIR ANY COMPONENT WITHOUT READING THE INFORMATION CONTAINED IN THE REPAIR SECTION IN VOLUME 1. PAY PARTICULAR ATTENTION TO THE WARNING'S, CAUTION'S AND NOTE'S CONTAINED IN THAT SECTION. FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY RESULT IN DAMAGE TO THE EQUIPMENT, INJURY OR DEATH.

## TIREHAND IDENTIFICATION

Every Tirehand has an identification placard, as shown below, attached to the body assembly. When ordering parts, communicating warranty information or referring to the unit in correspondence, always include the assigned serial and model numbers. All inquiries should be addressed to:

Iowa Mold Tooling Company, Inc. Box 189, Garner, Iowa 50438-0189

Telephone: 641-923-3711

Product Support Fax: 641-923-2424

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

SERIAL NUMBER PLACARD

## CYLINDER IDENTIFICATION

To ensure proper replacement parts are received, it is necessary to specify a complete number/letter sequence for any part request. Part numbers may be cross checked by comparing the stamped identification of the cylinder case, as shown below, against the information contained in this manual. You must use the part number stamped on the cylinder case when ordering parts.

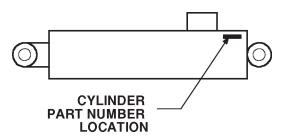
## WELDMENT INDENTIFICATION

Each of the major weldments of the Tirehand bears 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 on the next page.

## ORDERING REPAIR PARTS

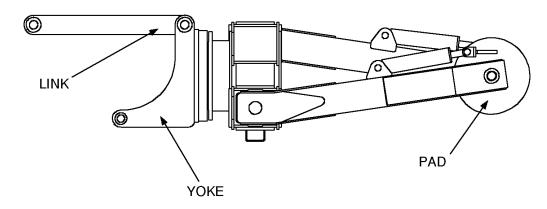
When ordering replacement parts:

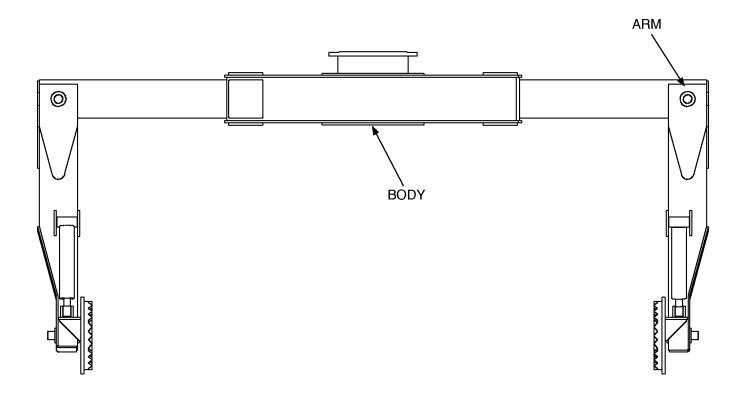
- 1. Give the model number of the unit.
- 2. Give the serial number of the unit.
- Specify the complete part number. When ordering cylinder parts or one of the main weldments, always give the stamped part number.
- 4. Give a complete description of the part.
- 5. Specify the quantity required.



CYLINDER IDENTIFICATION

# WELDMENT PART NUMBER LOCATIONS





## YOKE ASM (40725636)(EFFECTIVE FROM 10/17/13)

TUNEASIN	(40123030)(EFFECTIVE FROM	10/17/13
ITEM PARTNO	DESCRIPTION HOSE-AA .13 X 19.50 (2-2) LINK-WLDMT TH12	OTV
3. 52725241	WLDMT-YOKE TH14	i
4. 60010235	WLDMT-YOKE TH14 COVER-PINION GEAR GREASE PLATE-DRIVE GEAR THRUST WASH-BRZ ITHRUST WASH-BRZ STUD END COVER TOP COVER PIN CLAMP COVER PLATE GEAR GEAR-PINION GEAR TURNTABLE BEARING KEEPER PIN	1
5. 60010844	GREASE PLATE-DRIVE GEAR	1
6. 60020033	THRUST WASH-BRZ	1
7. 60020123	ITHRUST WASH-BRZ	1 2
0. 00100032	END COVED	1
10 60122139	TOP COVER	1
11. 60141212	PIN	1 3
12. 70034402	CLAMP	6
13. 70143829	COVER PLATE	4
14. 71056264	GEAR	1
15. 71056265	GEAR-PINION	1
16. 71056627	GEAR TURNTABLE BEARING	1 1
17. 71710010	KEEPER PIN	1
18. 72066095 20. 72060029	CAR SCR 24 49V2 00	3
21. 72060029	CAP SCR .31-10A2.00	3 2 2
22. 72060091	CAP SCR 50-13X1 00	6
24. 72060207	CAP SCR .75-10X3.00	16
25. 72060833	SCR-THRD .31-18X.75	2
26. 72062080	NUT 1/2-13 LOCK	2 6
	SCR-THRD .31-18X.75 NUT 1/2-13 LOCK WASHER .31 FLAT WASHER .38 FLAT	6
28. 72063003	WASHER .38 FLAT	2

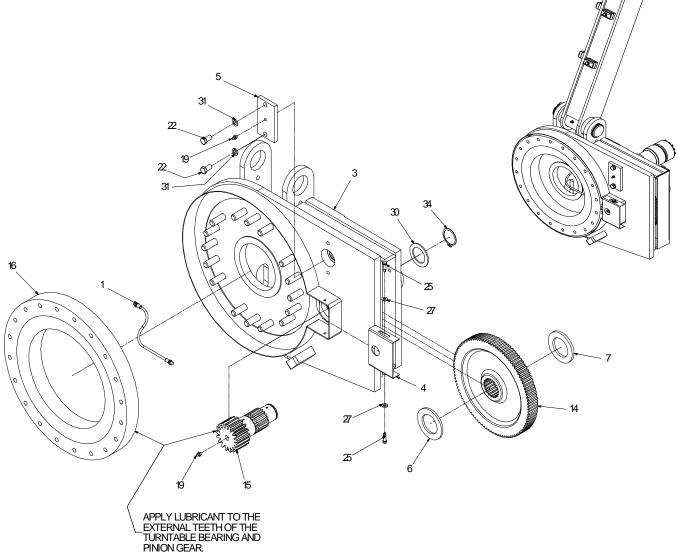
29.	72063005	WASHER .50 FLAT	4
30.	72063039	BUSHING 2.00X10	1
31.	72063053	WASHER .50 LOCK	6
32.	72063116	WASHER .75 FLAT	16
33.	72063119	WASHER .62 FLAT	3
34.	72066095	RETAINING RING	1
35.	73540004	MOTOR ASSEMBLY	1
36.	89044330	LOOM	1
37.	91725637	KIT-HRDW YOKE ASM	1
38.	72066103	RETAINING RING	6

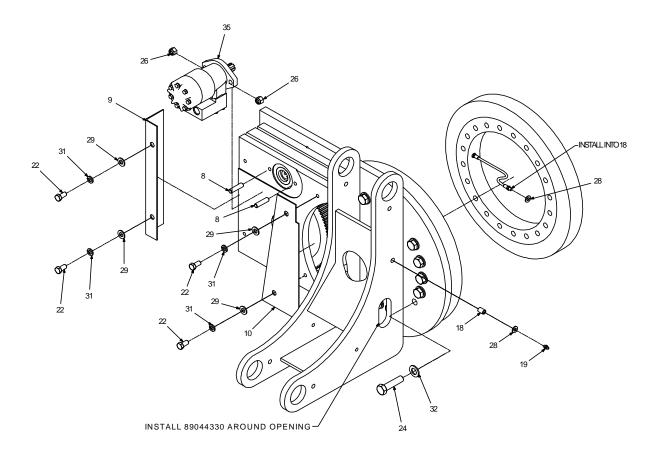
## NOTE

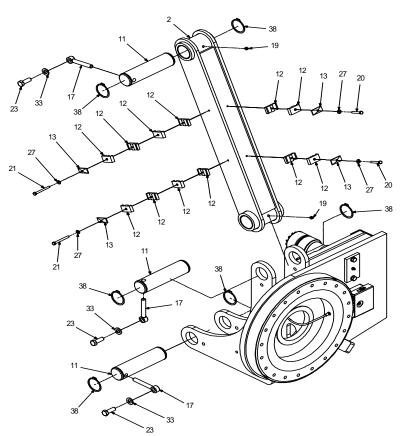
TURNTABLE BEARING BACKLASH = .006"-.010"(.152-.254mm)

#### WARNING

ANYTIME A GEAR-BEARING BOLT IS REMOVED, IT MUST BE REPLACED WITH A NEW BOLT OF THE IDENTICAL GRADE AND SIZE. FAILURE TO REPLACE GEAR-BEARING BOLTS MAY RESULT IN BOLT FAILURE DUE TO METAL FATIGUE, CAUSING SERIOUS INJURY OR DEATH.







## YOKE ASM (40715764)(EFFECTIVE TO 10/16/13)

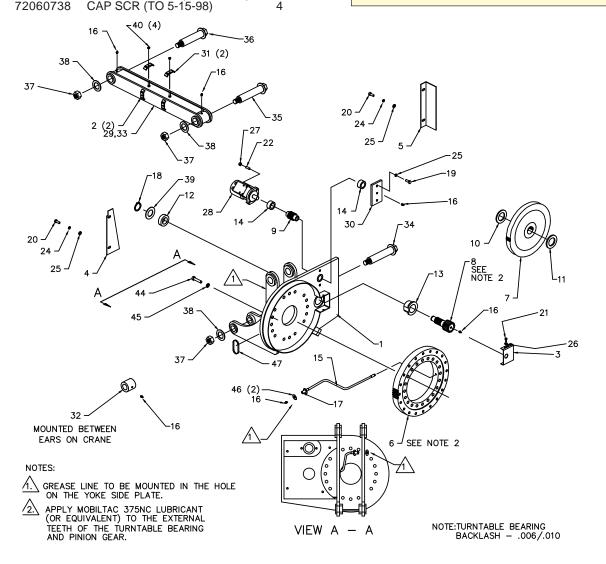
IUNEA		(407 137 04)(EFFECTIVE TO	10/16/13)
ITEM PARTNO		DESCRIPTION	QTY
1. 52715	762	YOKE (INCL:9,12-14)	1
2. 60103	305	CLAMP-HOSE	2
3. 60010	235	PINION COVER	1
4. 60122	140	COVER-GEAR BOX	1
5. 60122	139	COVER-GEAR BOX	1
6. 71056	627	GEAR BEARING	1
7. 71056		INTERMEDIATE GEAR	1
8. 71056	265		1
9. 60106	309	DRIVE GEAR (PART OF 1)	1REF
10. 60020	123	THRUST WASHER	1
11. 60020	033	THRUST WASHER	1
12. 60020	181	BUSHING (PART OF 1)	1REF
13. 60020	182	BUSHING (PART OF 1)	1REF
14. 60020	180	BUSHING (PART OF 1)	2REF
15. 51395	680	HOSE-AA .13X19.5 #2#2	1
16. 72053		ZERK 1/8NPT	6
17. 72053		COUPLING 1/8NPT	1 1
18. 72066		RETAINING RING 2"	1
20. 72060		CAP SCR 1/2-13X1 HHGR5	4
21. 72060		SCR 5/16-18X3/4 HH SLFTP	G 2
22. 60106		STUD 1/2-13X1	G 2 2 4
24. 72063			4
25. 72063		WASHER 1/2 LOCK	4
26. 72063		WASHER 5/16 WRT	2
27. 72062		NUT 1/2-13 LOCK	2
28. 73540			8) 1
73051			2 2 3) 1 1 2 3) 2
7Q072			. 2
73054		C'BALANCE VLV (TO 5-15-98	3) 2
7.20160	1/20	1 1 1 2 2 1 2 1 1 1 1 6 1 6 1 9 1	//

5V151830 29. 52704466 30. 60010844 31. 60107648 32. 60105322 33. 7BF82020	BLOCK (TO 5-15-98) LINK (INCL:33) GREASE PLATE HOSE CLAMP TUBE-REINFORCEMENT BUSHING (PART OF 29) PIN	1 1 2 1 4REF
34. 52704930 35. 52704931		1
36. 52704934		i
37. 72062142	,	3
38. 72063012	WASHER 1-1/4 WRT	3
39. 72063039	MACH BUSHING 2X10GA NR	1
40. 72062103	NUT 3/8-16 LOCK	4
41. 72060147	CAP SCR 5/8-11X1 HH GR5	
	(USED AS PLUGS IN ITEM 2)	7
42. 72063055	WASHER 5/8 LOCK	
	(USED AS PLUGS IN ITEM 2)	7
44. 72060207	CAP SCR 3/4-10X3 HHGR8	16
45. 72063116	WASHER 3/4 FLAT HARD	16
46. 72063003	WASHER 3/8 WRT	2
47. 89044330	LOOM 5/8 ID	12"
	NOTE	

TURNTABLE BEARING BACKLASH = .006"-.010"(.152-.254mm)

## WARNING

ANYTIME A GEAR-BEARING BOLT IS REMOVED, IT MUST BE REPLACED WITH A NEW BOLT OF THE IDENTICAL GRADE AND SIZE. FAILURE TO REPLACE GEAR-BEARING BOLTS MAY RESULT IN BOLT FAILURE DUE TO METAL FATIGUE, CAUSING SERIOUS INJURY OR DEATH.

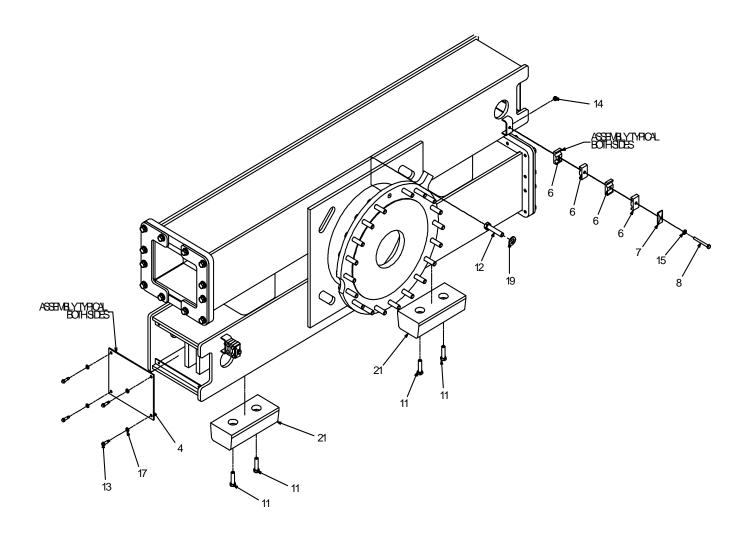


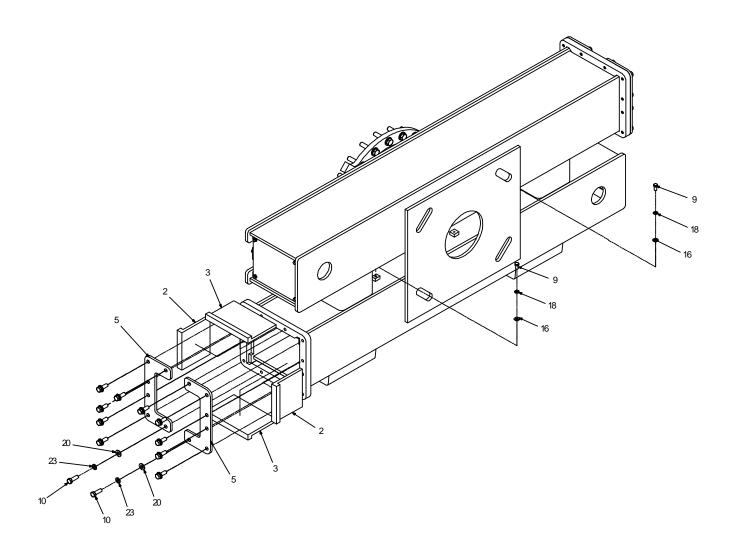
## **BODY ASM (40725242)**(EFFECTIVE FROM 10/17/13)

D	UDI ASIVI	(40/23242)(EFFECTIVE FROM 10/	17/13
ITE	M PART NO.	DESCRIPTION	QTY
1.	52725243	BODY WELDMENT	1
2.	60030492	WEAR PAD	4
3.	60030493	WEAR PAD	4
4.	60110688	END CAP	2
5.	60141241	END CAP	4
6.	70034402	CLAMP	4
7.	70143829	COVER PLATE	2
8.	72060033	CAP SCREW .31-18x3.00HHGR5Z	2
9.	72060044	CAP SCREW .38-16x.75HHGR5Z	2
10.	72060093	CAP SCREW .50-13x1.50HHGR5Z	24
11.	72060095	CAP SCREW .50-13x2.00HHGR5Z	4
12.	72060177	CAP SCR .62-11X 3.00 HH GR8 Z	20
13.	72060833	SCREW .31-18X.75 THD CUT	8
14.	72062109	NUT .31-18 HEX NYLOCK	2
15.	72063002	WASHER .31 FLAT	2
16.	72063003	WASHER .38 FLAT	2
17.	72063050	WASHER .31 LOCK	8
18.	72063051	WASHER .38 LOCK	2
19.	72063119	WASHER .62 FLAT	20
20.	72063132	WASHER .50 FLAT	24
21.	76393209	BUMPER-DOCK	2
22.	91725638	KIT-HARDWARE	1
23.	72063053	WASHER .50 LOCK	24

## WARNING

Anytime a gear-bearing bolt is removed, it must be replaced with a new bolt of the identical grade and size. Failure to replace gear-bearing bolts may result in bolt failure due to metal fatigue, causing serious injury or death.



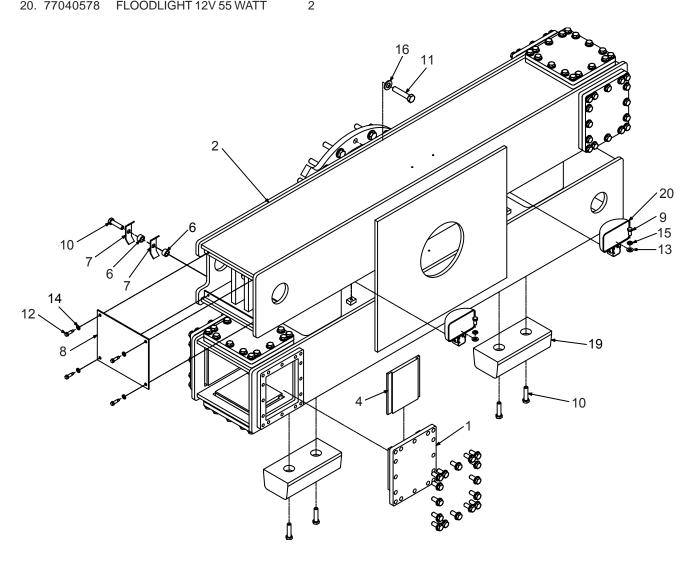


## BODY ASM (40712056)(EFFECTIVE TO 10/16/13)

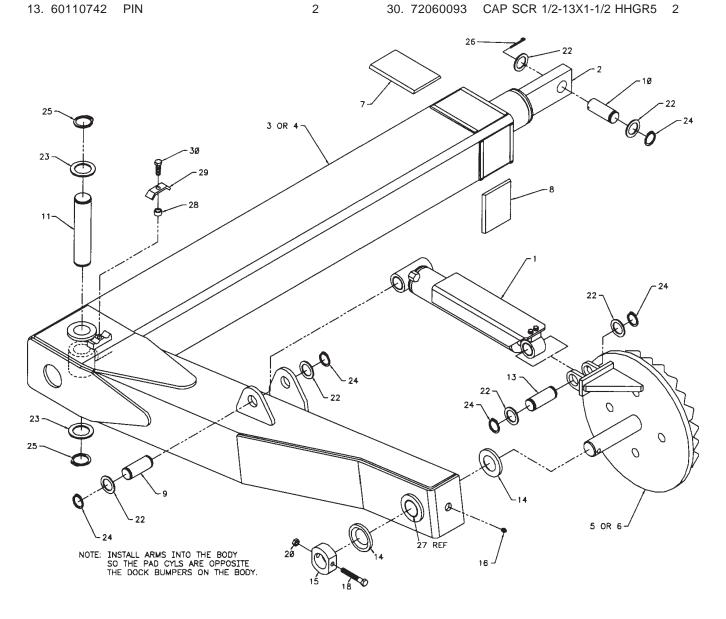
DC	DI ASIVI	(401 12030)(EFFECTIVE TO 10/16/1	13)
ITEM	PART NO.	DESCRIPTION	YTÇ
1.	51707213	WEAR PAD RETAINER	8
2.	52712057	BODY	1
3.	60030125	WEAR PAD	4
4.	60030187	WEAR PAD	8
5.	60030300	WEAR PAD	4
6.	60106742	SLEEVE	4
7.	6010674	HOSE CLAMP .3850 HOSE	4
8.	60110688	END CAP	2
9.	72060044	CAP SCREW .38-16 x .75HHGR5Z	2
10.	72060095	CAP SCREW .50-13 X 2 HHGR5Z	6
11.	72060177	CAP SCR .62-11X 3.00 HH GR8 Z	20
12.	72060833	SCREW .31-18 X .75 THD CUT	8
13.	72060303	WASHER .38 FLAT	2
14.	72063050	WASHER .31 LOCK	8
15.	72063051	WASHER .38 LOCK	2
16.	72063119	WASHER .62 FLAT	20
17.	72063132	WASHER .50 FLAT	128
18.	72601272	CAP SCR .50-13 X 1.25 HHGR5Z	128
19.	76393209	BUMPER-DOCK	2
20.	77040572	FLOODLIGHT 24V 70 WATT	2
20	77040578	FLOODLIGHT 12V 55 WATT	2

## **WARNING**

Anytime a gear-bearing bolt is removed, it must be replaced with a new bolt of the identical grade and size. Failure to replace gear-bearing bolts may result in bolt failure due to metal fatigue, causing serious injury or death.

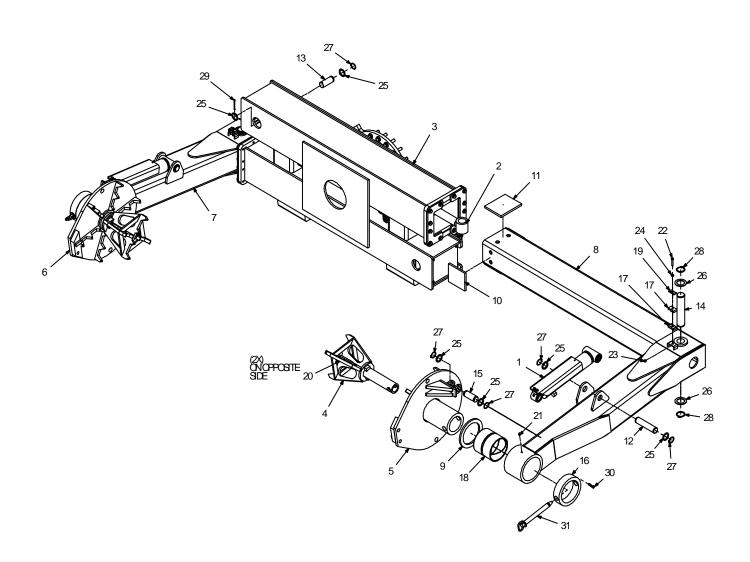


0000TH14:40712089.01:19970728					2-11				
	AR	MASM (	(40712089)			14.	60110744	THRUST WASHER	4
		PART NO.	DESCRIPTION	QTY		15.	60110745	PAD RETAINER	2
	1.	3B111870	PAD ROTATION CYLINDER	2		16.	72053508	ZERK 1/8NPT	2
	2.	3B004940	CLAMP CYLINDER	2		18.	72060098	CAP SCR 1/2-13X3-1/2 HHGR5	2
	3.	52712059	ARM LH (INCL:27)	1		20.	72062107	NUT 1/2-13 CTR LOCK	2
	4.	52712060	ARM RH (INCL:27)	1		22.	72063037	MACH BUSHING 1-1/2X10GANF	R12
	5.	52712061	PAD LH	1		23.	72063039	MACH BUSHING 2X10GA NR	4
	6.	52712062	PAD RH	1		24.	72066132	RETAINING RING 1-1/2 EXT HD	10
	7.	60030125	WEAR PAD	4		25.	72066136	RETAINING RING 2 EXT HD	4
	8.	60030300	WEAR PAD	4		26.	72066197	COTTER PIN .19X2-1/2	2
	9.	60101664	PIN	2		27.	7BF82020	BUSHING (PART OF 3&4)	4REF
	10.	60102096	PIN	2		28.	60106742	CLAMP SPACER	2
	11.	60102097	PIN	2		29.	60106744	CLAMP BAR	2

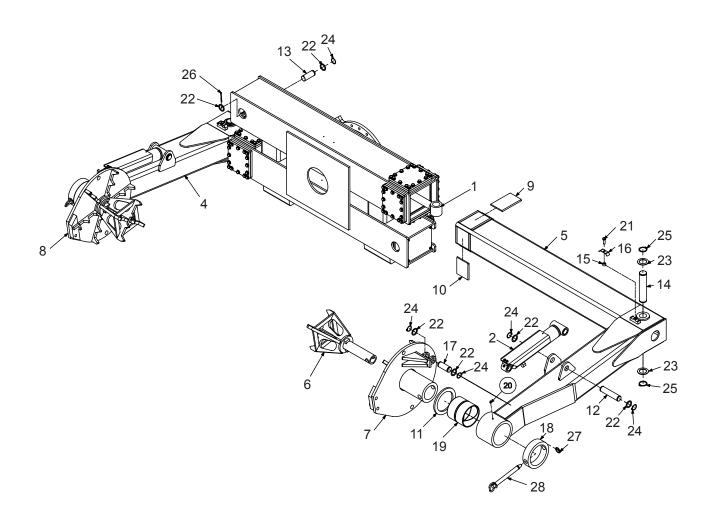


## CLAMP ASSEMBLY (40725459)

(EFFECTIVE FROM 10/17/13)					16. 60121763 LOCKING COLLAR 2
	ITEM	PART NO.	DESCRIPTION	QTY	17. 70034402 CLAMP-TWIN TUBE .62 OD 2
	1.	3B111870	CYL -3.0/ 1.5 11.25S 20.50CC	2	18. 70055332 BEARING-BRONZE 14K160TH 2
	2.	3B004940	CYL -4.0/ 2.0 34.00S 69.50CC S	2	19. 70143829 COVER PLATE 2
	3.	40725242	BODYASSEMBLY	1	20. 70394435 DECAL-MAX TIRE WT 2000 LBS 4
	4.	52723208	PAD EXT WELDMENT	2	21. 72053508 ZERK-NPT .12 2
	5.	52723209	CLAW-WLDMT 14K160TH RH	1	22. 72060029 CAP SCREW .31-18X2.00HHGR5Z 2
	6.	52723210	CLAW-WLDMT 14K160TH RH	1	23. 72062109 NUT .31-18 HEX NYLOCK 2
	7.	52725457	ARM WELDMENT TH14 RH	1	24. 72063002 WASHER .31 FLAT 2
	8.	52725458	ARM WELDMENT TH14 LH	1	25. 72063037 MACHY BUSHING 1.50X10 GANR 12
	9.	60030371	WASHER-THRUST 8.00X6.09X0.44	2	26. 72063039 MACHY BUSHING 2.00X10 GANR 4
	10.	60030490	WEAR PAD	4	27. 72066132 RETAINING RING-EXT 1.50HD 10
	11.	60030494	WEAR PAD	4	28. 72066136 RETAINING RING-EXT 2.00HD 4
	12.	60101664	PIN	2	29. 72066197 COTTER PIN .19X2.50 2
	13.	60102096	PIN	2	30. 72661543 PIN-QUICK 316-10QP 2
	14.	60102097	PIN	2	31. 73733418 PIN-LOCK 1.00X8.88 2
	15.	60110742	PIN-TYPE A 1.50X 3.94 (3.31)	2	32. 91725643 KIT-HARDWARE 1

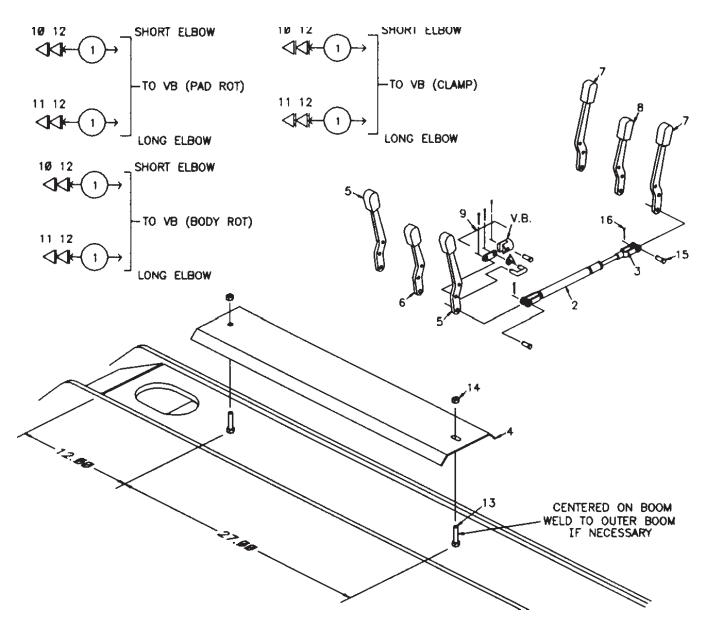


0000TH14: 4172	23211: NEW: 20110505	2-13	3			
CLAMP AS	SEMBLY (41723211)		12. 6010	1664 PIN		2
			13. 6010	2096 PIN		2
(EFFECTIVE TO 1	,	077/	14. 6010	2097 PIN		2
1. 3B004940	DESCRIPTION CYL -4.0/ 2.0 34.00S 69.50 CC S	QTY 2	15. 6010	6742 SLEEVE	E-TYPE C .56X .88X .50	) 6
2. 3B111870	CYL -3.0/ 1.5 11.25S 20.50CC	2	16. 6010	6744 CLAMP-	-HOSE .3850 HOSE	6
3. 52712057	BODY-WELDMENT	1	17. 60110	742 PIN-TY	PE A 1.50X 3.94 ( 3.31 )	) 2
4. 52723195	ARM -WELDMENT	1	18. 6012	1763 LOCKIN	IG COLLAR	2
4. 02/20190	TH14 RH W/CMDR IV PAD	•	19. 7005	5332 BEARIN	IG-BRONZE 14K160Th	H 2
5. 52723196	ARM -WELDMENT TH14 LH	1	20. 7205	3508 ZERK-N	PT .12	2
6. 52723208	WELDMENT-PAD EXTENSION	2	21. 7206	0093 CAP SC	R .50 -13X 1.50 HH GI	R5Z 2
7. 52723209	CLAW-WLDMT 14K160TH LH	1	22. 7206	3037 MACHY	BUSHING 1.50 X10 GA	A NR 12
8. 52723210	CLAW-WLDMT 14K160TH RH	1	23. 7206	3039 MACHY	BUSHING 2.00 X10 G/	ANR 4
9. 60030125	WEAR PAD	4	24. 7206	6132 RETAIN	ING RING-EXT 1.50 H	D 10
10. 60030300	WEAR PAD	1	25. 7206	6136 RETAIN	ING RING-EXT 2.00 H	D 4
11. 60030300	WASHER -THRUST	2	26. 7206	6197 COTTER	R PIN .19X2.50	1
11. 00030371	8.00 DIA X 6.09 ID X 0.44	_	27. 7266	1543 PIN-QUI	ICK 316-10 QP	2
	0.00 DIA A 0.03 ID A 0.44		28. 7373	3418 PIN-LO	CK 1.0 0X 8.88	2



# **INSTALLATION KIT-TH14/20017 CRANE** (93712058)

ITEM	PART NO.	DESCRIPTION	QTY
1.	51706162	HOSE ASM 3/8X300	6
2.	52702016	CONTROL ROD-F	3
3.	52702018	CONTROL ROD-M	3
4.	60118086	HOSE SHROUD	1
5.	70141982	CONTROL HANDLE-VB LONG	2
6.	70141983	CONTROL HANDLE-VB SHORT	1
7.	70141984	CONTROL HANDLE-DVB LONG	2
8.	70141985	CONTROL HANDLE-DVB SHORT	1
9.	94731839	LINK & PIN KIT	3
10.	72533101	<b>DISCONNECT COUPLER 3/8FPT</b>	3
11.	72533102	DISCONNECT NIPPLE 3/8FPT	6
12.	72053670	ADAPTER 3/8MPT 3/4MJIC	2
13.	72060048	CAP SCR 3/8-16X1-1/2 HH GR5	2
14.	72062103	NUT 3/8-16 LOCK	2
15.	72066338	CLEVIS PIN 5/16X1	6
16.	72066168	COTTER PIN .09X3/4	6



## **DECAL KIT (95712090)**

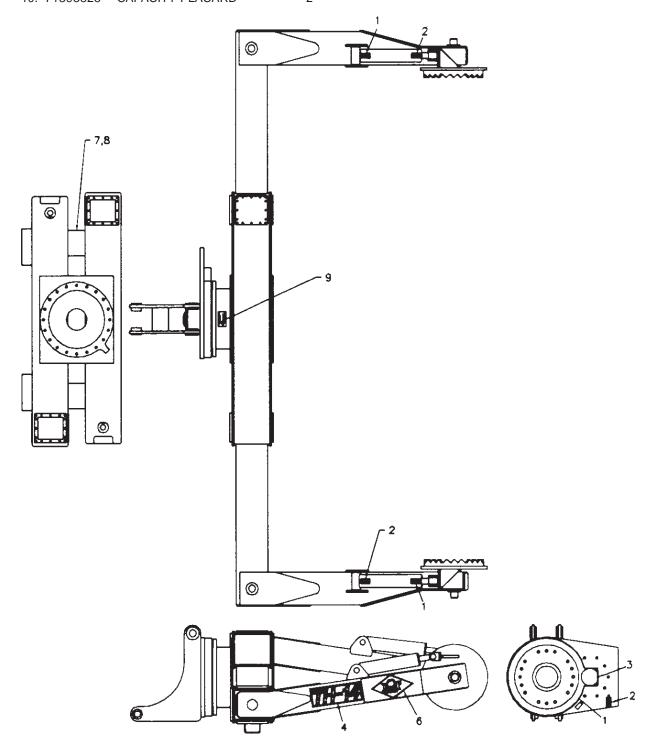
	OAL IXII	(331 12030)	
ITEM	PART NO.	DESCRIPTION	QTY
1.	70391612	DECAL - GREASE WKLY LH	3
2.	70391613	DECAL - GREASE WKLY RH	3
3.	70392524	DECAL - ROTATE/GREASE	1
4.	70393819	DECAL-TH14 IDENTIFICATION	2
5.	70394272	DECAL-OP RESTRICTIONS	2
6.	70029251	IMT DIAMOND	2
7.	70029119	SERIAL NUMBER PLACARD	1REF
8.	72066340	POP RIVET 1/8	2REF
9.	70039261	PLACARD-PATENT	1
10.	71393825	CAPACITY PLACARD	2

## **DECAL PLACEMENT**

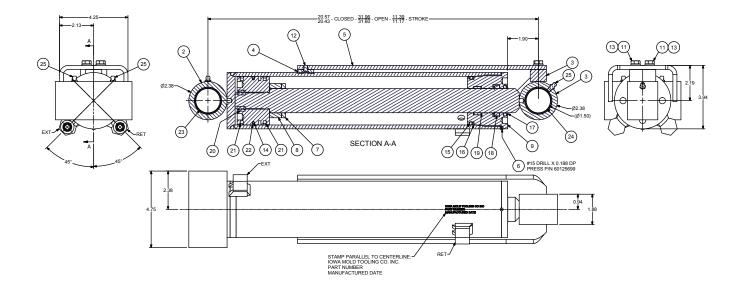
ITEM LOCATION

NEAR EACH CRANE OPERATOR STATION IN CLEAR VIEW OF OPERATOR 5,10





## PAD ROTATION CYLINDER (3B111870) EFFECTIVE: 7/10/2018



ITEM NO.	PART NO.	DESCRIPTION	KIT NO.	QTY.
1.	9C121217	SEAL KIT-IMT 3.00B 1.50R 1.06S		1
2.	4B111870	CASE ASM-3.02 BORE X 18.19 LG		1
3.	4G111870	ROD ASM-1.50 DIA X 18.81 LG 1.06 S 1.50		1
4.	5F022850	WEAR PAD-B1 UHMW .25X1.00X1.00		1
5.	5FF11187	CHANNEL-ROD MTG TH15		1
6.	60125699	PIN - LOCK TUBE 0.19 OD X 0.065 WALL	1	1
7.	60138272	STOP TUBE-1.75 ROD X 0.25 LONG		1
8.	6C075015	STOP TUBE-1.50 ROD X .75 LONG		1
9.	6H030015	HEAD-3.00 BORE X 2.00 ROD		1
10.	6i030106	PISTON-3.00 BORE X 1.06 STGR		1
11.	72060023	CAP SCR .31-18X .75 HH GR5 Z		2
12.	72060868	CAP SCR .25-20X .50 FLH BRS		1
13.	72063050	WASHER .31 LOCK		2
14.	7Q072145	O RING 2.56X 2.75X .09 70	1	1
15.	7Q072334	O RING 2.62X 3.00X .19 70	1	1
16.	7Q10P334	BACKUP RING- 2.62 ID X 3.00 OD	1	1
17.	7R14P015	ROD WIPER TYPE D 1.50 ROD	1	1
18.	7R546015	U-CUP 1.50 ID X 2.00 OD	1	1
19.	7T2N8015	WEAR RING = ROD 1.50 ID x 0.50 W	1	1
20.	7T61N106	LOCK RING NYLON 1.06"	1	1
21.	7T65I030	PISTON RING-3.00 HYD CYL	1	2
22.	7T66P030	PISTON SEAL-DYNAMIC 3.00in)	1	1
23.	7BF81015	BUSHING-STL 1.50 PIN X 1.00 LG	2	4
24.	7BF80715	BUSHING-STL 1.50 PIN X .75 LG	3	2
25.	72053507	ZERK-STR THD .25-28		3
REV. B CN83	9 20180720			

## NOTES:

- 1.) APPLY "NEVER-SEEZ" REGULAR GRADE ANTI-SEIZE AND LUBRICATING COMPOUND TO THREADS ON THE CYLINDER HEAD ONLY. KEEP AWAY FROM ALL SEALS.
- 2.) APPLY "LUBRIPLATE" NO. 630-2 MEDIUM HEAVY, MULTI PURPOSE LUBRICANT, TO ALL PISTON, HEAD GLAND, AND HOLDING VALVE SEALS, NYLON LOCK RING, CAST IRON PISTON RINGS, AND ROD STINGER THREADS.
- 3.) STAMP PARALLEL TO CENTERLINE ON CYLINDER CASE NEAR ROD END:

"IOWA MOLD TOOLING CO. INC."

"PART NUMBER"

"MANUFACTURED DATE"

- 4.) PAINT PER IMT SPECIFICATIONS.
- 5.) NO PAINT ON CHROME ROD. EXCEPTION: 1.00" OR LESS OF ROD EXTENSION FROM THE CYLINDER BODY IS OK TO BE PAINTED.
- 6.) NO PAINT ALLOWED ON ANY INTERNAL PORT SURFACES, BUSHINGS, BEARINGS, INTERNAL THREADS OR INTERNAL SURFACE OF PIN BOSS.

## 0000TH14: 3B004940.01:REV A 20120531

## **CLAMP CYLINDER (3B004940)**

		INTELL (OBOUTSTU)	
ITEM	PART NO.	DESCRIPTION	QTY
1.	4B004940	CASE ASM (INCL:3)	1
2.	4G148870	ROD ASM	1
3.	7PNPXT02	PLUG 1/8NPT (PART OF 1)	3REF
4.	73054004	CHECK VALVE	1
5.	72060708	CAP SCR 1/4-20X1-1/4 SH	6
6.	61402144	PISTON	1
7.	6H040020	HEAD	1
8.	9B015930	SEAL KIT (INCL:9-18)	1
9.	7T66P400	PISTON SEAL (PART OF 8)	1REF
10.	7T2N4040	WEAR RING (PART OF 8)	2REF
11.	7T61N143	LOCK RING (PART OF 8)	1REF
12.	7Q072127	O-RING (PART OF 8)	1REF
13.	7Q10P342	BACKUP RING (PART OF 8)	1REF
14.	7Q072342	O-RING (PART OF 8)	1REF
15.	7T2N8022	WEAR RING (PART OF 8)	1REF
16.	7R546020	U-CUP SEAL (PART OF 8)	1REF
17.	7R14P020	ROD WIPER (PART OF 8)	1REF
18.	60138274	STOP TUBE 0.25" (PART OF 8)	1REF
		(WAS 6A025020)	
19.	6C300020	STOP TUBE 3"	4
20.	60125699	PIN-LOCK TUBE	1

#### NOTE

IT IS RECOMMENDED THAT ALL COMPONENTS OF THE SEAL KIT BE REPLACED WHENEVER THE CYLINDER IS DISASSEMBLED. THIS WILL REDUCE FUTURE DOWNTIME.

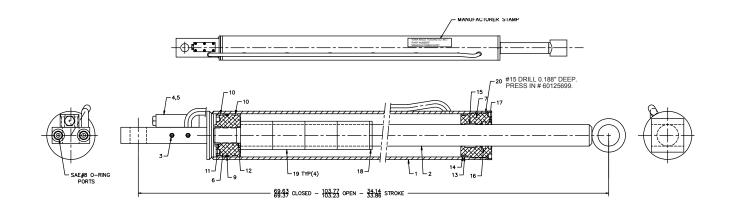
APPLY "LUBRIPLATE #630-2" MEDIUM HEAVY,MULTIPURPOSE LUBRICANT OR EQUIVALENT TO ALL PISTON AND HEAD GLANDS, LOCK RING AND ROD THREADS BEFORE ASSEMBLY.

USE "NEVER-SEEZ" OR EQUIVALENT BETWEEN THE HEAD AND THE CASE WHEN ASSEMBLING THE CYLINDER.

ITEM #18, STOP TUBE, REPLACES 6A025020 WAFER LOCK. USE STOP TUBE INSTEAD OF WAFER LOCK WHEN RESEALING CYLINDER.

PRESS LOCKING PIN (ITEM #20) INTO #15 HOLE DRILLED 0.188" DEEP.

TORQUE PISTON TO 710-740 FT-LB, HEAD TO 400 FT-LB, CARTRIDGE TO 40 FT-LB, LOCKNUT TO 12 FT-LB; AND CAP SCREW TO 16 FT-LB.



## 0000TH14: 3B111870.01:REV A 20120531

## **PAD ROTATION CYLINDER (3B111870)**

PAD ROTATION CYLINDER (3B111870)							
	DESCRIPTION	QTY					
9C121217	SEAL KIT	1					
4B111870	CASE ASSEMBLY	1					
4G111870	RODASSEMBLY	1					
5f022850	WEAR PAD	1					
5ff11187		1					
60125699		1					
60138272	STOP TUBE-1.75 ROD X 0.25 LG	1					
	(WAS 6A025015)						
6C075015	STOP TUBE-1.50 ROD X .75 LG	1					
6H030015	HEAD	1					
6i030106	PISTON	1					
72060023	CAP SCR .31-18X .75 HH GR5 Z	2					
72060868	CAP SCR .25-20X .50 FLH BRS	1					
72063050	WASHER .31 LOCK	2					
7Q072145		1					
7Q072334	O RING 2.62X 3.00X .19 70 (#1)	1					
7Q10P334	BACKUP RING (#1)	1					
7R14P015		1					
7R546015		1					
7T2N8015		1					
7T61N106	LOCK RING NYLON 1.06" (#1)	1					
7T65I030		2					
7T66P030	PISTON SEAL-DYNAMIC 3" (#1)	1					
7BF81015							
7BF80715	BUSHING-STL 1.5 PIN X .75 LG (#	<i>‡</i> 3) 2					
72053507	ZERK-STR THD .25-28 (#2 & #3)	3					
	PARTNO. 9C121217 4B111870 4G111870 5f022850 5ff11187 60125699 60138272 6C075015 6H030015 6i030106 72060023 72060868 72063050 7Q072145 7Q072334 7Q10P334 7R14P015 7R546015 7T2N8015 7T61N106 7T651030 7T66P030	PART NO. DESCRIPTION 9C121217 SEAL KIT 4B111870 CASE ASSEMBLY 4G111870 ROD ASSEMBLY 5f022850 WEAR PAD 5ff11187 CHANNEL-ROD MTG 60125699 PIN - LOCK TUBE (#1) 60138272 STOP TUBE-1.75 ROD X 0.25 LG (WAS 6A025015) 6C075015 STOP TUBE-1.50 ROD X .75 LG 6H030015 HEAD 6i030106 PISTON 72060023 CAP SCR .31-18X .75 HH GR5 Z 72060868 CAP SCR .25-20X .50 FLH BRS 72063050 WASHER .31 LOCK 7Q072145 O RING 2.56X 2.75X .09 70 (#1) 7Q10P334 BACKUP RING (#1) 7R14P015 ROD WIPER (#1) 7R546015 U-CUP 1.50 ID X 2.00 OD (#1) 7T2N8015 WEAR RING (#1) 7T651030 PISTON RING-3.00 HYD CYL (#1) 7T66P030 PISTON SEAL-DYNAMIC 3" (#1) 7BF81015 BUSHING-STL 1.5 PIN X 1 LG (#2 7BF80715 BUSHING-STL 1.5 PIN X .75 LG (#2					

#### **NOTE**

IT IS RECOMMENDED THAT ALL COMPONENTS OF THE SEAL KIT BE REPLACED WHENEVER THE CYLINDER IS DISASSEMBLED. THIS WILL REDUCE FUTURE DOWNTIME.

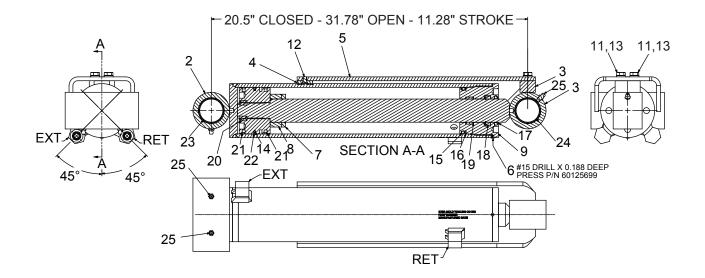
APPLY "LUBRIPLATE #630-2" MEDIUM HEAVY, MULTI-PURPOSE LUBRICANT OR EQUIVALENT TO ALL PISTON AND HEAD GLANDS, LOCK RING AND ROD THREADS BEFORE ASSEMBLY.

USE "NEVER-SEEZ" OR EQUIVALENT BETWEEN THE HEAD AND THE CASE WHEN ASSEMBLING THE CYLINDER.

ITEM#7, STOP TUBE, REPLACES 6A025015 WAFER LOCK. USE STOP TUBE INSTEAD OF WAFER LOCK WHEN RESEALING CYLINDER.

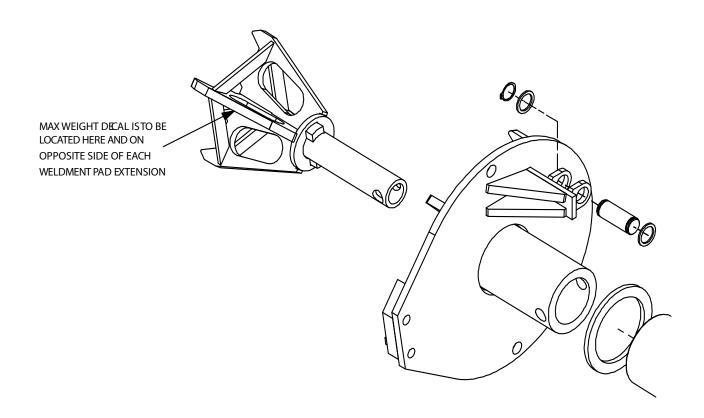
PRESS LOCKING PIN (ITEM #6) INTO #15 HOLE DRILLED 0.188" DEEP.

TORQUE PISTON TO 300-330 FT-LB AND HEAD TO 300 FT-LB.



0000TH14: 3071	3926.01:19970212		2-18				
PAD EXTENSION KIT (30713926)				3. 7	72062137	NUT 1-8 LOCK	6
ITEM PARTNO.	DESCRIPTION	QTY		4. 7	72063010	WASHER 1 WRT	6
1. 52713919	PAD EXTENSION	2		5. 7	72062004	NUT 1/2-13 HEX	24
2. 72601494	CAP SCR 1-8X3	6		6. 7	72062134	NUT 1/2-13 HIGH ACORN	24
				7. 7	72060093	CAP SCR 1/2-13X1-1/2	24

8. 70394435 DECAL-MAX TIRE WEIGHT



MAXIMUM TIRE WEIGHT ALLOWED IS 2000 LBS.

# INSTALLATION INSTRUCTIONS-PAD EXTENSION KIT (30713926)

#### **WARNING**

BEFORE ATTEMPTING INSTALLATION OF THE KIT, LOWER THE TIREHAND TO THE STOWED POSITION ON THE TRUCK BED.

#### **NOTE**

REFER TO DRAWING ON PREVIOUS PAGE FOR REFERENCE AND PARTS LISTING.

This installation can be performed by a single person in approximately 30 minutes. Listed below are tools which are required to perform this installation.

QTY DESCRIPTION

- 2 1-1/2" OPEN END WRENCH OR CRESCENT WRENCH
- 2 3/4" OPEN END WRENCH OR 3/4" SOCKET WRENCH OR CRESCENT WRENCH
- 1. Before attaching the Pad Extensions to the Tirehand, check that the twelve 1/2" cap screws, hex nuts and acorn nuts have been assembled to each pad extension. If not, install the 1/2" cap screws (item 7), 1/2" hex nuts (item 5), and 1/2" acorn nuts (item 6) as shown in the drawing. Tighten firmly.
- 2. Retract the Pad Rotation Cylinders completely.
- 3. While the Pad Rotation Cylinders are retracted completely, place the Pad Extension (item 1) on the existing Pad with the Locating Stud (See drawing) in the Top Hole of the standard pad.
- 4. Once the Pad Extension is positioned on the locating stud, install the front and bottom 1" Cap Screws (item 2), 1" Washers (item 4), and 1" Lock Nuts (item 3).
- 5. Extend the Pad Rotation Cylinders fully.
- 6. With the Pad Rotation Cylinders fully extended, install the remaining 1" Cap Screw, Washer and Nut in each pad. The remaining hole should be in the top position.
- 7. Once the Pad Extensions are firmly attached to the Tirehand 14 pads, be certain to apply the four decals (item 8), positioned as shown in the detail on the drawing.

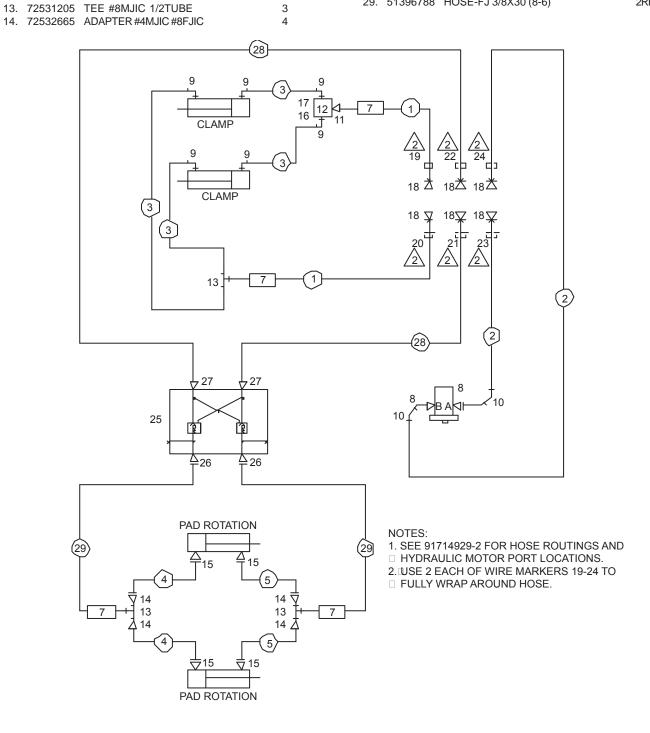
# PRECAUTIONS WHEN USING PAD EXTENSION KIT (30713926)

PAD EXTENSIONS MUST BE USED IN PAIRS.

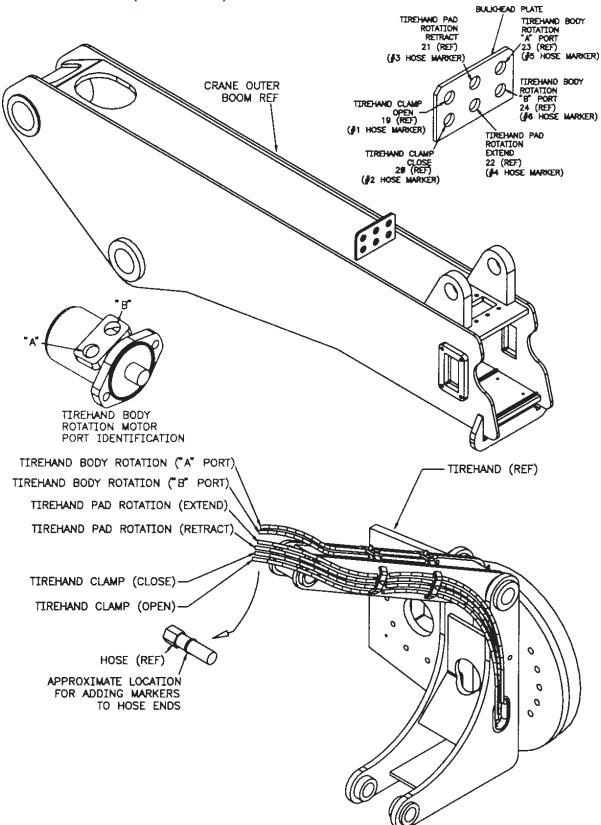
PAD EXTENSIONS ARE DESIGNED FOR LIFTING TIRES AND ARE NOT TO BE USED FOR ANY OTHER PURPOSE.

WHEN USING PAD EXTENSIONS, THE MAXIMUM LOAD IS LIMITED TO 2000 LBS (907 KGS).

000	0TH14: 91	714929.01:REV. A 20050923		2-20				
HY	<b>DRAUL</b>	IC KIT (91714929-1)			15.	72532351	ADAPTER #4MSTR #4MJIC	4
	PART NO.	DESCRIPTION	QTY		16.	72060009	CAP SCR 1/4-20X2-1/4 HHGR5	2
1.		HOSE ASM 3/8X83 #8F#8F	2REF		17.	72063001	WASHER 1/4 WRT	2
2.	51395203	HOSE ASM 3/8X72 #6F#8F	2REF		18.	72532679	PLUG #8JIC HH STL	6
3.	51395204	HOSE ASM 3/8X45 #8F#8F	4REF		19.	70145798	WIRE MARKER 43-001	2
4.	51395205	HOSE ASM 1/4X117-1/2 #4F#4F	2REF		20.	70145831	WIRE MARKER 43-002	2
5.	51395206	HOSE ASM 1/4X129-1/2 #4F#4F	2REF		21.	70145832	WIRE MARKER 43-003	2
6.	51714931	HOSE KIT (INCL:1-5,28,29)	1		22.	70145833	WIRE MARKER 43-004	2
7.		ADAPTER-PR SW INLINE	4		23.	70145834	WIRE MARKER 43-005	2
8.	72532992	ADAPTER #4MSTR #6FSTR	2		24.	70145835	WIRE MARKER 43-006	2
9.		ELBOW #8MSTR #8MJIC 90°	6		25.	5V312990	VALVE BANK, SGL 16 GPM #8SAE	1
10.		ELBOW #6MSTR #6MJIC 90°	2		26.	72053761	ELBOW #8MSTR #6MJIC 90DEG	2
11.		ADAPTER #8MSTR #8MJIC	1		27.	72532358	ADPTR #8MSTR #8MJIC	2
		FLOW DIVIDER VALVE	1		28.	51395082	HOSE-FF 3/8X68 (8-8)	2REF
12.		TEE WOLLDER VALVE	1		29.	51396788	HOSE-FJ 3/8X30 (8-6)	2REF



## **HYDRAULIC KIT (91714929-2)**



## NOTES:

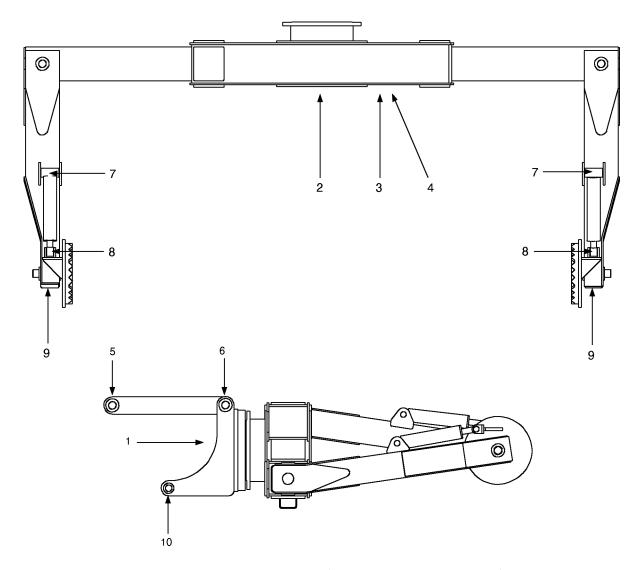
 ON THE TIREHAND BODY ROTATION MOTOR TURN THE COUNTER BALANCE VALVE SETTING SCREWS CLOCKWISE UNTIL THEY SEAT.

## **SECTION 3. REFERENCE**

GREASE ZERK LOCATIONS & LUBRICANT REQUIREMENTS	3-3
TORQUE DATA CHART-DOMESTIC	3-4
TORQUE DATA CHART-METRIC	3-5
TURNTABLE BEARING FASTENER TIGHTENING SEQUENCE	3-6
TURNTABLE BEARING INSPECTION FOR REPLACEMENT	3-7
RECOMMENDED SPARE PARTS LIST	3-8

0000TH14:99900763:20140403	3-2	
	NOTES	
-		
-		
-		
-		

## **GREASE ZERK LOCATIONS & LUBRICANT REQUIREMENTS**



ITEM	LOCATION DESCRIPTION	LUBRICANT	FREQUENCY
		SHELL ALVANIA 2EP	
		OR	WEEKLY
		SHELL RETINAX "A"	

NOTE: All application points must be greased weekly under normal work loads and moderate weather conditions. Under severe operating conditions, lubrication should be performed more frequently. See Volume 1; Operation, Maintenance and Repair for additional lubrication requirements.

# TORQUE DATA CHART - DOMESTIC FINE THREAD BOLTS COARSE THREAD BOLTS

		TIGHTENING TORQUE				l			Т	IGHTENIN	IG TORQI	JE
		SAE		SAE	J429 DE 8				SAE	J429 DE 5	SAE	J429 DE 8
SIZE (DIA-TPI)	BOLT DIA (INCHES)	PLAIN (FT-LB)	PLATED (FT-LB)		PLATED (FT-LB)		SIZE (DIA-TPI)	BOLT DIA (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	0.3750	35	26	49	35		3/8-16	0.3750	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	0.5000	90	64	120	90		1/2-13	0.5000	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	0.6250	170	130	240	180		5/8-11	0.6250	150	115	220	160
3/4-16	0.7500	300	225	420	315		3/4-10	0.7500	265	200	375	280
7/8-11	0.8750	445	325	670	500		7/8-9	0.8750	395	295	605	455
1-12	1.0000	645	485	995	745		1-8	1.0000	590	445	910	680
1 1/8-12	1.1250	890	670	1445	1085		1 1/8-7	1.1250	795	595	1290	965
1 1/4-12	1.2500	1240	930	2010	1510		1 1/4-7	1.2500	1120	840	1815	1360
1-3/8-12	1.3750	1675	1255	2710	2035		1-3/8-6	1.3750	1470	1100	2380	1780
1 1/2-12	1.5000	2195	1645	3560	2670		1 1/2-6	1.5000	1950	1460	3160	2370

When using the torque data in the charts above, the following rules should be observed.

- 1. Bolt manufacturer's particular specifications should be consulted when provided.
- 2. Flat washers of equal strength must be used.
- 3. All torque measurements are given in foot-pounds. To convert to inch-pounds, multiply by 12.
- 4. 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 disulphite, collodial 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.
- 5. Torque values for socket-head capscrews are the same as for Grade 8 capscrews.

#### **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 fatique causing serious injury or DEATH.

# TORQUE DATA CHART - METRIC FINE THREAD BOLTS COARSE THREAD BOLTS

		Т	IGHTENIN	IG TORQI	JE			Т	IGHTENIN	IG TORQI	JE
			J429 DE 5	SAE	J429 DE 8				J429 DE 5		J429 DE 8
SIZE (DIA-TPI)	BOLT DIA (INCHES)	PLAIN (KG-M)	PLATED (KG-M)	PLAIN (KG-M)	PLATED (KG-M)	SIZE (DIA-TPI)	BOLT DIA (INCHES)	PLAIN (KG-M)	PLATED (KG-M)	PLAIN (KG-M)	PLATED (KG-M)
5/16-24	0.3125	3	2	4	3	5/16-18	0.3125	2	2	3	2
3/8-24	0.3750	5	4	7	5	3/8-16	0.3750	4	3	6	5
7/16-20	0.4375	8	6	11	8	7/16-14	0.4375	7	5	10	7
1/2-20	0.5000	12	9	17	12	1/2-13	0.5000	10	8	15	11
9/16-18	0.5625	17	12	24	18	9/16-12	0.5625	15	11	21	16
5/8-18	0.6250	24	18	33	25	5/8-11	0.6250	21	16	30	22
3/4-16	0.7500	41	31	58	44	3/4-10	0.7500	37	28	52	39
7/8-11	0.8750	62	45	93	69	7/8-9	0.8750	55	41	84	63
1-12	1.0000	89	67	138	103	1-8	1.0000	82	62	126	94
1 1/8-12	1.1250	123	93	200	150	1 1/8-7	1.1250	110	82	178	133
1 1/4-12	1.2500	171	129	278	209	1 1/4-7	1.2500	155	116	251	188
1-3/8-12	1.3750	232	174	375	281	1-3/8-6	1.3750	203	152	329	246
1 1/2-12	1.5000	304	228	492	369	1 1/2-6	1.5000	270	210	438	328

When using the torque data in the charts above, the following rules should be observed.

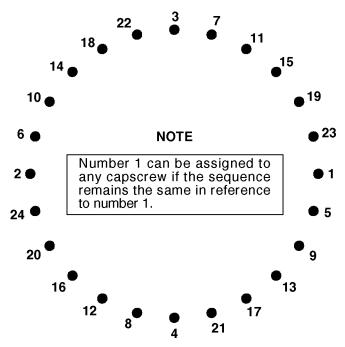
- 1. Bolt manufacturer's particular specifications should be consulted when provided.
- 2. Flat washers of equal strength must be used.
- 3. All torque measurements are given in kilogram-meters.
- 4. Torque values specified are for bolts with residual oils or no special lubricants applied. If special lubricants of high stress ability, such as Never-Seez compound graphite and oil, molybdenum disulphite, collodial 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.
- 5. Torque values for socket-head capscrews are the same as for Grade 8 capscrews.

#### **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 fatique causing serious injury or DEATH.

## **TURNTABLE BEARING FASTENER TIGHTENING SEQUENCE**

Refer to the diagram below for proper tightening/torqueing sequence of the turntable bearing to the crane base and crane mast. The total quantity of cap screws varies dependent on crane model.



## **TIGHTENING PROCEDURE:**

- 1. Refer to the Torque Data Chart to determine the proper torque value to apply to the size of capscrew used.
- 2. Follow the tightening sequence shown in the diagram. Note that 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 capscrews to approximately 40% of the specified torque value, by following the sequence. (EXAMPLE: .40 x 265 FT-LBS = 106 FT-LBS) (EXAMPLE-METRIC: .40 x 36 KG-M = 14.4 KG-M)
- 4. Repeat Step 3, but torqueing all capscrews to 75% of the specified torque value. Continue to follow the tightening sequence.

(EXAMPLE: .75 x 265 FT-LBS = 199 FT-LBS) (EXAMPLE-METRIC: .75 x 36 KG-M = 27 KG-M)

5. Using the proper sequence, torque all capscrews to the listed torque value as determined from the Torque Data Chart.

## TURNTABLE BEARING INSPECTION FOR REPLACEMENT

Before a bearing is removed from a crane for inspection, one of the following conditions should be evident:

- 1. Metal particles present in the bearinglubricant.
- Increased drive power required to rotate the crane.
- 3. Noise emitting from the bearing during crane rotation.
- 4. Rough crane rotation.
- 5. Uneven or excessive wear between the pinion gear and turntable gear.

If none of the above conditions exists, the bearing is functioning properly and need not be replaced. But, if one or more of the above conditions exists, inspection may be required. Limits are measured in "TILT" which is dependent on the internal clearances of the bearing. TILT is the most practical determination of a bearings internal clearance once mounted on a crane.

Periodic readings indicating a steady increase in TILT may be an indicator of bearing wear. Note that a bearing found to have no raceway cracks or other structural irregularities should be reassembled and returned to service.

#### **TEST PROCEDURE**

#### STEP 1.

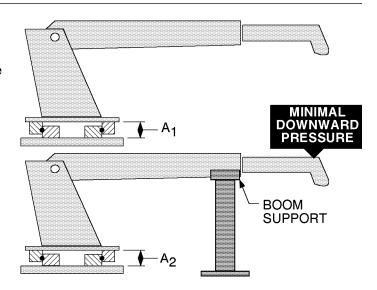
With the crane horizontal and fully extended, measure between the top and bottom mounting surfaces of the turntable bearing (A1), using a dial indicator for accuracy.

## STEP 2.

Reverse the load by applying minimal downward pressure on the boom while the boom is in the boom support or on a solid surface. Again measure A2.

#### STEP 3.

Subtract A1 from A2 to determine tilt and compare the result with the accompanying chart.



СОМ	COMPARISON CHART - MODEL TO MEASURED TILT DIMENSION							
NOTE THE FIGURES LISTED IN THIS CHART ARE SERVICE GUIDELINES AND DO NOT, IN THEMSELVES, REQUIRE THAT THE BEARING BE INSPECTED.  IF THERE IS REASON TO SUSPECT AN EXCESS OF BEARING WEAR AND THE MEASURED TILT DIMENSION EXCEEDS THE DIMENSION	IMT CRANE, LOADER OR TIREHAND MODEL	1007 1014 2015 2015GH 2109 2200 3000 3016 321GH 3816 425 4300 5016 6016 TH7 BODY ROT'N TH1449 BODY ROT'N TH1449 BODY ROT'N TH155 CLAMP TH2551B CLAMP	5200 5200R 5217 5800 7020 7025 7200 7415 9000 TH10 BODY ROT'N TH14 BODY ROT'N	16035 16042 32018 32030 T30 T40	9800 12916 13031 13034 14000 15000 18000 20017 H1200 H1200RR T50 TH2551B BODY ROT'N TH2557B BODY ROT'N TH2557A BODY ROT'N			
LISTED, REMOVE THE BEARING FOR INSPECTION.	BALL DIA. (REF)	.875" (22mm)	1.00" (25mm)	1.18"-1.25" (30-32mm)	1.75" (44mm)			
INOI LOTION.	TILT DIM. (A <sub>1</sub> -A <sub>2</sub> )	.060" (1.524mm)	.070" (1.778mm)	.075" (1.905mm)	.090" (2.286mm)			

## **RECOMMENDED SPARE PARTS LIST**

## 1 YEAR SUPPLY TIREHAND 14 FOR MANUAL: 99900763 EFFECTIVE FROM 10/17/13

This spare parts list does not necessarily indicate that the items can be expected to fail in the course of a year. It is intended to provide the user with a stock of parts sufficient to keep the unit operating with the minimal downtime waiting for parts. There may be parts failures not covered by this list. Parts not listed are considered as not being Critical or Normal Wear items during the first year of operations and you need to contact the distributor or manufacturer for availability.

ASSEMBLY DESIGNATION 40725636		PART NO.	DESCRIPTION	QTY	CODE
	15	71056265	PINION GEAR	1	С
	7	60020123	THRUST WASHER	1	W
	6	60020033	THRUST WASHER	1	W
40725242	<b>BODY ASM</b>				
	2	60030492	WEAR PAD	4	W
	3	60030493	WEAR PAD	4	W
	21	76393209	DOCK BUMPER	2	W
40725459	ARM ASM				
	10	60030490	WEAR PAD	4	W
	11	60030494	WEAR PAD	4	W
	18	70055332	BUSHING	2	W
91714929	HYDRAULIC	KIT			
	12	73054922	FLOW DIVIDER VALVE	1	W
3B004940	CLAMP CYL	INDER			
	4	73054004	CHECK VALVE	2	С
	6	61402144	PISTON	1	W
	7	6H040020	HEAD	1	W
	8	9B015930	SEAL KIT	2	W
3B111870	PAD ROTAT	TION CYLINI	DER		
	10	61030106	PISTON	1	W
	9	6H030015	HEAD	1	W
	1	9C121217	SEAL KIT	2	W
	4	5F022850	WEAR PAD	2	W
	23	7BF81015	BUSHING	8	W
	24	7BF80715	BUSHING	4	W

## **RECOMMENDED SPARE PARTS LIST**

## 1 YEAR SUPPLY TIREHAND 14

FOR MANUAL: 99900763 EFFECTIVE TO 10/16/13

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ASSEMBLY DESIGNATION 40715764	ITEM NO. YOKE ASM	PART NO.	DESCRIPTION	QTY	CODE
	8	71056265	PINION GEAR	1	С
	10	60020123	THRUST WASHER	1	W
	11	60020033	THRUST WASHER	1	W
	12	60020181	BUSHING	1	W
	13	60020182	BUSHING	1	W
	14	60020180	BUSHING	1	W
	33	7BF82020	BUSHING	4	W
40712056	BODY ASM				
	4	60030187	WEAR PAD	8	W
	19	76393208	DOCK BUMPER	2	W
40712089	ARM ASM				
	7		WEAR PAD	4	W
	8	60030300	WEAR PAD	4	W
	27	7BF82020	BUSHING	4	W
91714929	HYDRAULIC	KIT			
	12	73054922	FLOW DIVIDER VALVE	1	W
3B004940	CLAMP CYL	LINDER			
	4		CHECK VALVE	2	С
	6	61402144	PISTON	1	W
	7	6H040020		1	W
	8	9B015930	SEAL KIT	2	W
3B111870	PAD ROTAT	TION CYLINE			
	10	61030106	PISTON	1	W
	9	6H030015		1	W
	1	9C121217		2	W
	4	5F022850	WEAR PAD	2	W
	23	7BF81015		8	W
	24	7BF80715	BUSHING	4	W

The information within this manual has been compiled and checked but errors do occur. To provide our customers with a method of communicating those errors we have provided the Manual Change Request form below. In addition to error reporting, you are encouraged to suggest changes or additions to the manual which would be of benefit to you. We cannot guarantee that these additions will be made but we do promise to consider them. When completing the form, please write or print clearly. Submit a copy of the completed form to the address listed below.

## MANUAL CHANGE REQUEST

	PROBUST	******
DATE	PRODUCT	MANUAL
OUDI WITTED DV	MANUAL	PART NO.
SUBMITTED BY		
COMPANY		
COMI ANT		
ADDRESS		
CITY, STATE, ZIP		
TELEPHONE		
ERROR FOUND		
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LOCATION OF ERROR (page	no.) <u>:</u>	
" 3	,	
DESCRIPTION OF ERROR:		
REQUEST FOR ADDITION TO	) MANUAL	
DESCRIPTION OF ADDITION	: ————	
REASON FOR ADDITION: -		

MAIL TO: IOWA MOLD TOOLING Co., Inc.

Box 189,

Garner IA 50438-0189 ATTN: Technical Publications

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