

4000#WIDE: 99900408: 20111213



INSTALLATION AND REPAIR MANUAL 4000 LB WINCH

CRANES USED ON:

1080
1080A
6425
7200 SERIES
8025
8031
9000 SERIES

IOWA MOLD TOOLING CO., INC.

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MANUAL PART NUMBER 99900408

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

REVISIONS LIST

DATE	LOCATION	DESCRIPTION OF CHANGE
20070323	COVER	UPDATED OWNERSHIP STATEMENT

INSTALLATION

GENERAL INSTALLATION

These instructions are intended for installation of a 4000 lb (1814 kg) capacity winch on either of the following cranes: 1080, 1080a, 6425, 7200 Series, 8025, 8031 or 9000 Series. All cranes are equipped with 8-section valvebanks as standard equipment. Six of the sections are used for crane operating functions with two extra sections for optional equipment such as this winch. These cranes are also provided with the winch mounting plates as part of the outer booms as standard equipment.

CONTROLS

Install the control handles and cross links using the existing crane controls as a guide. Do not remove the plugs from the valvebank.

CAUTION

IF THE PLUGS ARE REMOVED AND THE WINCH CONTROLS ARE ACTUATED WHILE THE PTO IS ENGAGED AND THE ENGINE RUNNING, HIGH-PRESSURE HYDRAULIC OIL WILL BE DISCHARGED FROM THOSE PORTS.

WINCH

Extend and lower the stabilizers. Position the crane with the extension boom retracted, the inner boom horizontal and the outer boom vertical.

1. Install the winch mounting bracket to the outer boom as shown in the parts drawing. The 3/4" washers are used as shims and it may not be necessary to use all of them. Tighten the lock nut until the mounting bolt is held securely.

CAUTION

DO NOT TIGHTEN THE NUT TO THE VALUE SHOWN IN THE TORQUE DATA CHART IN THE CRANE MANUAL. FAILURE TO COMPLY WITH THIS INSTRUCTION MAY RESULT IN DAMAGE TO THE CRANE.

2. Install the studs in the winch mounting bracket using a vise grip or channel lock pliers. Be careful not to damage the threads. Use Loctite to secure the studs.

3. Slide the spacers over the studs.

4. Remove the set screw securing the winch end housing to the winch drum shaft. Slide the end housing and drum off the shaft.

5. Slide the winch over the studs and against the spacers. Install nuts and tighten to 64 ft-lbs (8.8 kg-m).

6. Slide one (1) 2-1/2" washer over the shaft and up against the gear case.

7. Slide the drum over the shaft and then two (2) more washers, if required.

8. Slide the end housing over the shaft and bolt it to the winch mounting bracket with the two (2) socket head screws. Torque to 64 ft-lbs (8.8 kg-m).

9. Tighten the set screw in the end housing.

10. Fill the winch with 2 pints of Bloom N0. 60 Trans-Worm Gear Lube (IMTPart Number 89086059).

HYDRAULICS

1. Remove the plugs from the ports in the valvebank section. Install the elbows in the ports.

2. Install the fittings on the winch as shown in the installation parts list. The check valve is installed on the side of the motor used for lifting the load.

3. Route the hydraulic hoses from the valve section up through the mast and inner boom.

4. Connect the hoses to the valvebank ports and the winch ports.

5. Start the engine, run the crane through all of its motions while checking hose clearances. Once the hose clearances have been checked and there is sufficient clearance, install the hose clamp for the winch hoses on the side of the outer boom.

6. Test operate the winch. Run the winch at least five revolutions in each direction. Check for signs of hydraulic leakage.

ROPE AND HOOK KIT

1. If the winch was shipped without the wire rope wrapped around the winch drum, install the wire rope by operating the winch to wind the rope on the drum. Notice that the wire rope goes over the top of the drum.

CAUTION

KEEP THE WIRE ROPE AS CLEAN AS POSSIBLE WHILE WINDING IT ONTO THE DRUM. WHILE INSTALLING THE WIRE ROPE, HAVE SOMEONE HELP BY WIPING DOWN THE ROPE WITH OIL AS IT IS BEING WOUND ONTO THE DRUM.

2. Install the sheave and snatch block on the tip of the extension boom. Notice how the “dead” end of the rope is doubled back on itself and a cable clamp installed.

CAUTION

DO NOT INSTALL THE CABLE CLAMP COMPLETELY AROUND THE “DEAD” AND THE “LIVE” ENDS OF THE ROPE. CLAMPING THE “LIVE” END OF THE ROPE WILL WEAKEN THE ROPE AND CAUSE PREMATURE ROPE FAILURE.

TEST

1. Test operate the winch by lifting the maximum rated load.

WARNING

BE SURE YOU DO NOT EXCEED THE RATED LOAD OF THE WINCH OR CRANE AND DO NOT CAUSE CHASSIS INSTABILITY. FAILURE TO COMPLY MAY RESULT IN STRUCTURAL FAILURE AND CAUSE AN INJURY.

2. Check the winch mounting bolts for tightness. Check the winch and hydraulic hoses for leaks.

REPAIR

DISASSEMBLY

To disassemble the winch:

1. Drain the oil from the gear case.
2. Position the crane with the inner boom horizontal, the outer boom vertical and the extension boom(s) extended to a point where the boom(s) reach the ground. Remove the winch from the crane.
3. Wash the exterior of the winch with warm, soapy water and blow dry with compressed air
4. Loosen the set screw securing the end housing bearing to the shaft. Slide the end housing off the shaft.
5. Pull the drum off the shaft. It may be necessary to use either a wheel puller or a hydraulic press to remove the drum from the shaft if corrosion or galling has occurred.
6. Slide the washer off the drum shaft.
7. Remove the hydraulic motor and spacer

8. Remove the bearing cup, cone and worm. It may be necessary to use the motor to remove the bearing. Slide the motor shaft into the end of the worm shaft. Have another person keep the drum shaft from turning and rotate the entire motor. This may force the worm to turn, which will push out the bearing.

9. Remove the six screws securing the gear case and remove the cover.

10. Use a bearing puller to remove the bearings from the cover.

11. Slide the worm gear and shaft assembly out of the gear case. Be careful not to damage the oil seal unless you plan to replace the seal.

12. Pull the other set of bearings from the gear case.

13. Clean all parts in a trichloroethane solvent bath. Blow dry with compressed air

WARNING

USE TRICHLOROETHANE IN A WELL-VENTILATED AREA. INCOORDINATION OR IMPAIRED JUDGEMENT MAY OCCUR AT VAPOR EXPOSURES FROM 500-1000 PPM. DIZZINESS, DROWSINESS, LOSS OF CONSCIOUSNESS AND EVEN DEATH CAN OCCUR AT INCREASING LEVELS OF EXPOSURE. WHEN INVOLVED IN A FIRE, TRICHLOROETHANE EMITS HIGHLY TOXIC AND IRRITATING FUMES.

ASSEMBLY

To assemble the winch:

1. Place all bearings in a clean oil bath of SAE 30 oil.
2. If the oil seal is being replaced, press a new seal into position.
3. If the worm gear is being replaced and has been removed from the drum shaft, care should be taken to press the gear onto the shaft squarely. Locate gear in the same position as the gear that was removed. It should be centered on keys. Tighten the set screw securing the gear.
4. Press all of the new bearings into the gear case and gear case cover.

4000#WIDE: 99900408: 19940531

5

5. Inspect the drum shaft for scratches, nicks or gouges. Dress any imperfections with #400 emery paper. Lightly lubricate the drum shaft and ID of the oil seal with SAE 30 oil. Carefully slide the drum shaft through the oil seal.

6. Bolt the cover to the gear case without gaskets. Snug the screws lightly and evenly. This serves two purposes: first, it preloads the bearings and secondly it permits measuring the clearance between the cover and case to determine which gaskets are needed for proper clearance. Measure the clearance between the cover and case. Remove the cover and install the necessary gaskets to obtain a thickness that is .003" to .005" less than the measurement. There are three thicknesses of gaskets: .002", .005" and .010". Use in any combination to obtain the desired thickness.

7. Inspect the worm carefully for any damage. Dress any nicks or gouges that may have occurred with #400 emery paper. Install the worm with bearings and spacer.

8. Install the motor without gaskets. Snug the screws lightly and evenly. Measure the clearance between the motor and case. Remove the motor and install the necessary gaskets. There are three different thicknesses of gaskets: .002", .005" and .010". Use in any combination to obtain a thickness that is .003" to .005" less than the measurement obtained above.

9. Fill the winch with 2 pints of Bloom No. 601 Trans-Worm Gear Lube (IMTPart Number 89086059).

10. Install the winch on the crane and test operate.

MAINTENANCE

GEAR CASE OIL

Every six months, drain and refill the winch oil. Use Bloom N0. 601 Trans-Worm Gear Lube (IMTPart Number 89086059).

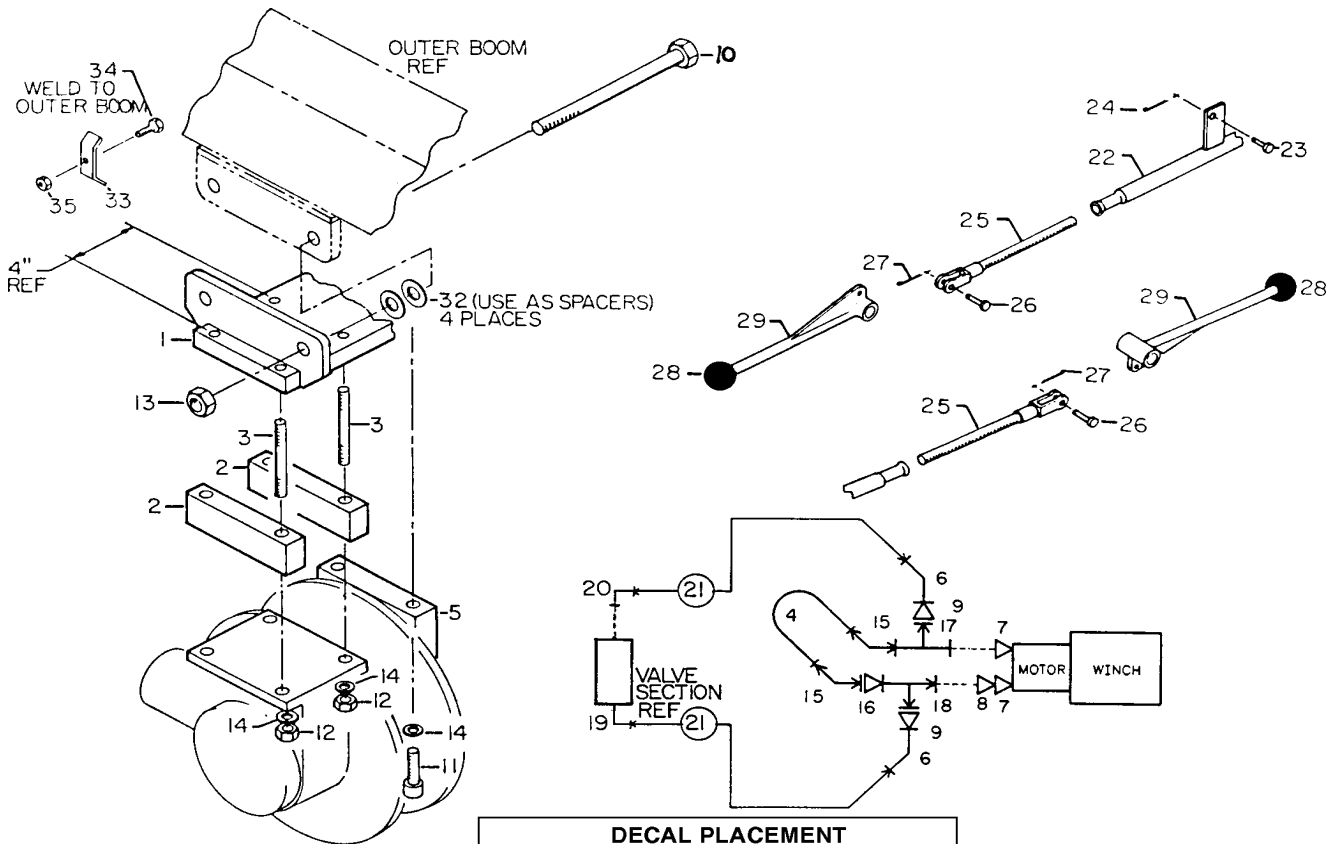
WIRE ROPE INSPECTION

Refer to the IMT Operator's Crane Safety Manual for instructions.

BOLT-ON WINCH KIT (31904003)

- 1. 52705876 BRACKET 1
- 2. 60010868 SPACER 2
- 3. 60010869 STUD 1/2-13X4-1/2 4
- 4. 60101420 TUBE 1
- 5. 71057676 WINCH W/WIDE DRUM 1
- 6. 72532670 ELBOW #8MJIC #8FJIC 45° 2
- 7. 72053744 ADAPTER #10MSTR 1/2FPPT 2
- 8. 72053629 ADAPTER 1/2MPT 3/8MPT 1
- 9. 72053497 ADAPTER 1/2MPT 3/4MJIC 2
- 10. 72060199 CAP SCR 3/4-10X9 HHGR5 2
- 11. 72060797 CAP SCR 1/2-13X2-1/2 SH 2
- 12. 72062004 NUT 1/2-13 HEX 4
- 13. 72062114 NUT 3/4-10 LOCK 2
- 14. 72063053 WASHER 1/2 LOCK 6
- 15. 72533342 FLRLS #4TUBE 1/4MPT 45° 2
- 16. 72532138 RED. BUSHING 3/8MPT-1/4FPPT 1
- 17. 73054006 CHECK VALVE 1
- 18. 72053611 TEE 3/8NPT 1
- 19. 72532666 ELBOW 3/4MSTR 3/4MJIC XLG 1

- 20. 72053763 ELBOW 3/4MSTR 3/4MJIC 1
- 21. 51703948 HOSE ASM 3/8X288 2
- 22. 52705877 CONTROL ROD - FEMALE 1
- 23. 72066337 PIN 1
- 24. 72066336 COTTER PIN 1
- 25. 52704745 CONTROL ROD - MALE 2
- 26. 72066338 CLEVIS PIN 2
- 27. 72066168 COTTER PIN 2
- 28. 71039096 CONTROL KNOB 2
- 29. 70029451 CONTROL HANDLE 2
- 30. 72063030 MACH BUSHING 3/4X10GA 6
- 31. 72053393 PIPE PLUG 3/8NPT SH (NOT SHOWN - IN WINCH COVER) 1
- 32. 72063028 MACH BUSHING 3/4X14GA 4
- 33. 60010118 HOSE CLAMP 1
- 34. 72060047 CAP SCR 3/8-16X1-1/4 HHGR5 1
- 35. 72062103 NUT 3/8-16 LOCK 1
- 36. 70392861 DECAL-DANGER 2-BLOCKING 2
- 37. 70392863 DECAL-DANGER HOIST. PERS 2
- 38. 70392868 DECAL-DANGER LOADLINE 4



DECAL PLACEMENT	
ITEM NO.	LOCATION
36,37	AT OR NEAR NORMAL OPERATING STATIONS.
38	ONE ON EACH SIDE OF CARRIER VEHICLE.

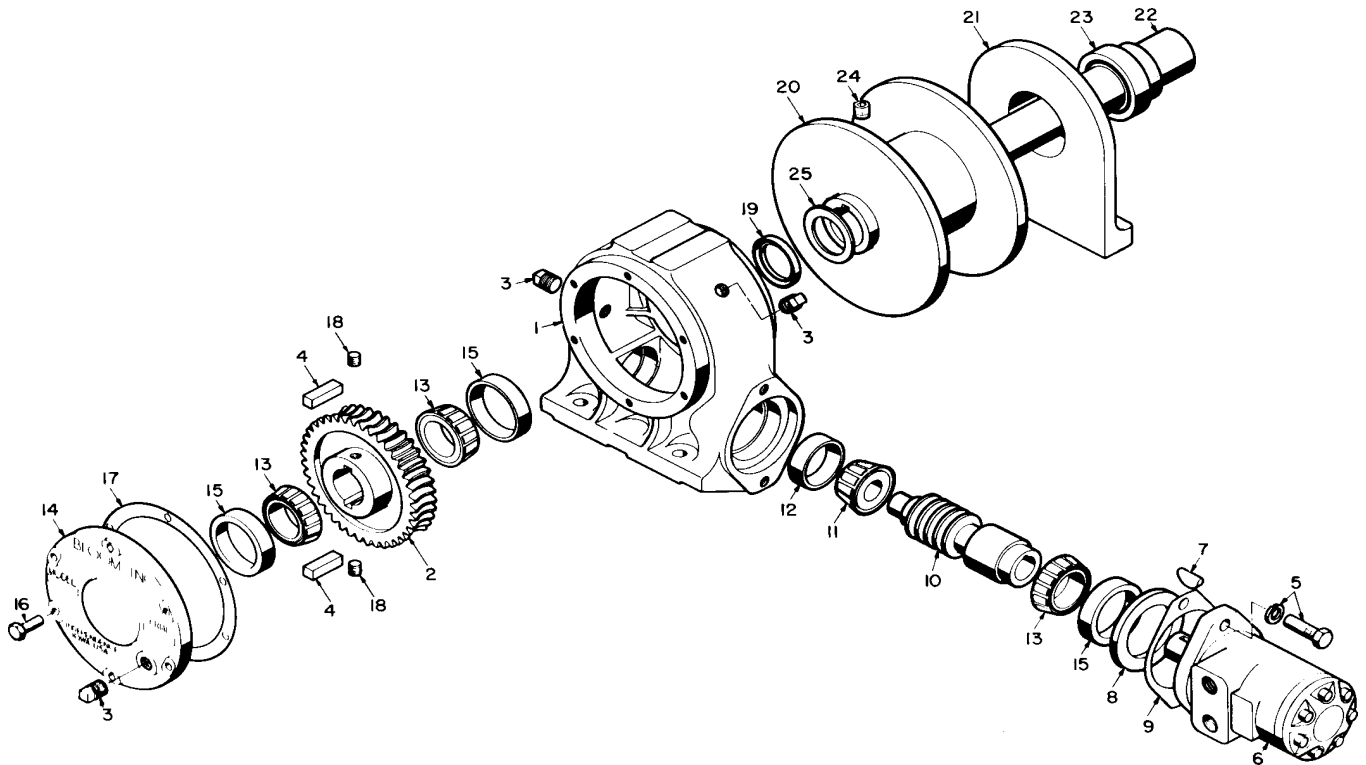
4000#WIDE: 71057676.01: 19940531

4000 LB WINCH (71057676)

- 1. 71014727 GEAR CASE 1
- 2. 70056363 GEAR 1
- 3. 72053413 PIPE PLUG 3/8NPT 3
- 4. 70143148 KEY 3/8X1-7/16 2
- 5. 72601475 SCR 7/16-14X1-1/2 SPECIAL 2
- 6. 73051487 HYDRAULIC MOTOR 1
- 7. 72066283 KEY 1/4X1 WOODRUFF 1
- 8. 71014729 SPACER 1
- 9. 51392354 GASKET KIT 1
- 10. 70056364 WORM SHAFT 1
- 11. 70055034 BEARING CONE 1
- 12. 70055033 BEARING CUP 1
- 13. 70055032 BEARING CONE 3

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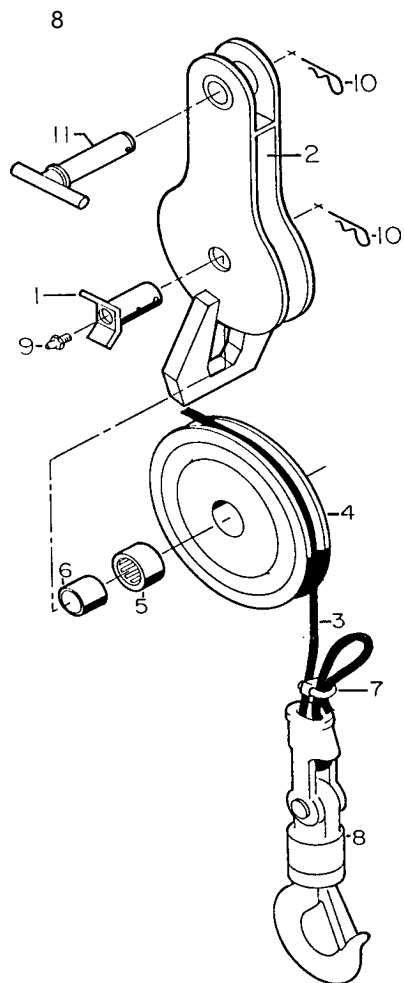
- 14. 71014724 GEAR CASE COVER 1
- 15. 70055031 BEARING CUP 3
- 16. 72601476 SCR 5/16-18X3/4 SPECIAL 6
- 17. 51392353 COVER GASKET KIT (INCL:3 RED-.002, 2 BRN-.010, 1 BLU-.005) 1
- 18. 72601477 SET SCR 3/8-16X3/4 2
- 19. 76392634 OIL SEAL 1
- 20. 70143146 DRUM 13" FLANGE 1
- 21. 71014728 END HOUSING 1
- 22. 70143147 SHAFT 1
- 23. 70055035 END BEARING 1
- 24. 72060596 SET SCR 1/2-13X3/4 1
- 25. 72063018 WASHER 2-1/2 3REF



4000#WIDE: 31705852.01: 19940531

CABLE & HOOK KIT (31705852)

- | | | |
|--------------|--------------------------|---|
| 1. 52070705 | PIN | 1 |
| 2. 52711425 | YOKE | 1 |
| 3. 60108886 | CABLE 3/8X100' | 1 |
| 4. 70034204 | NYLON SHEAVE 10-1/4 | 1 |
| 5. 70055024 | BEARING | 1 |
| 6. 70055025 | RACE | 1 |
| 7. 70058033 | CABLE CLAMP 3/8 | 1 |
| 8. 70731716 | SWIVEL HOOK/WEDGE SOCKET | 1 |
| 9. 72053508 | ZERK 1/8NPT | 1 |
| 10. 72066145 | HAIR PIN | 2 |
| 11. 52070151 | PIN | 1 |



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