IOWA MOLD TOOLING CO., INC.



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Manual # 99905543

TH25K164 PARTS & SPECIFICATIONS

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Introduction

Section - 1

TH25K164 - Introduction

This manual includes operation, safety, and maintenance instructions and replacement parts for your IMT Tirehand.

In addition to reading the manual, it is your responsibility to become familiar with government regulations, hazards, and the specific operation of your equipment. Use caution and common sense while operating and maintaining the equipment and follow all safety procedures and regulations. Treat this equipment with respect and service it regularly.

MODIFICATIONS

Modifications to your equipment must be performed with IMT approved accessories, parts and optional equipment. If in doubt, contact IMT prior to making any modifications. DO NOT alter or modify any safety device! All safety devices must be inspected, tested and maintained in proper working condition.

Decals regarding safety and operation are considered safety equipment, and must be kept clean and legible.

The equipment owner and/or designated employee is responsible for informing all operators, maintenance personnel, and others involved in equipment operation about the safe operation and maintenance of the equipment. If questions arise concerning safe operation, contact IMT or your IMT distributor for clarification.

WARRANTY

Warranty of this unit will be void on any part of the unit subjected to misuse due 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 with this unit.

NOTICE TO THE OWNER / USER

If your equipment is involved in a property damage accident, contact your IMT distributor immediately and provide them with the details of the accident and the serial number of the equipment. If an accident involves personal injury, immediately notify your distributor and IMT Technical Support at:

IOWA MOLD TOOLING CO., INC. 500 HWY 18 WEST GARNER, IA 50438 641-923-3711

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INTRODUCTION, CONTINUED

RESPONSIBILITY

It is the user's responsibility to maintain and operate this unit in a manner that will result in the safest working conditions possible. In addition, it is 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.

MANUAL STRUCTURE

Throughout this manual, four means are used to draw the attention of personnel. They are NOTE, CAUTION and WARNING and DANGER 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.

DANGER

Danger indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. Danger is used in the extreme situations.

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Specifications

Section - 2

TH25K164 - Specifications

GENERAL SPECIFICATIONS			
Tirehand maximum capacity	25,000 lb (11,340 kg)		
Body rotation	100°		
Pad rotation system	360°		
Clamping span	41" - 164" (104 - 416 cm)		
Tirehand weight (forklift mounted)	SHORT ARM	LONG ARM	
	18,500 lb <i>(8391 kg)</i>	18,800 lb <i>(8527 kg)</i>	
Tirehand weight (loader mounted)	18,300 lb <i>(8300 kg)</i>	18,600 lb <i>(8436 kg)</i>	
Center of gravity: forklift-mounted Tirehand with 25,000 lb (<i>11,340 kg</i>) tire & rim assembly at 158" (<i>401 cm</i>) clamp opening.	94" <i>(</i> 238 cm)	103" (261 cm)	
Center of gravity: loader-mounted Tirehand with 25,000 lb <i>(11,340 kg)</i> tire & rim assembly at 158" <i>(401 cm)</i> clamp opening.	92" (233 cm)	98" (248 cm)	
Method of clamping	Parallelogram		
Clamping load holding valves	Counterbalance valve		
Hydraulic control valve	Located on body assembly		
Hydraulic controls	5-Function remote control (radio or cab-mounted)		
Optimum pump capacity (supplied from carrier vehicle)	15 U.S. Gpm (57 <i>Lpm</i>) @ 3000 psi (207 <i>bar</i>) (57 <i>Lpm</i> @ 207 <i>bar</i>)		
Counterweight needed	As required for stabilization		

STANDARD FEATURES:

- 1. Hydraulic fallback protection
- 2. Rim flange hardware on pads
- 3. Forklift or loader mounting

OPTIONAL FEATURES:

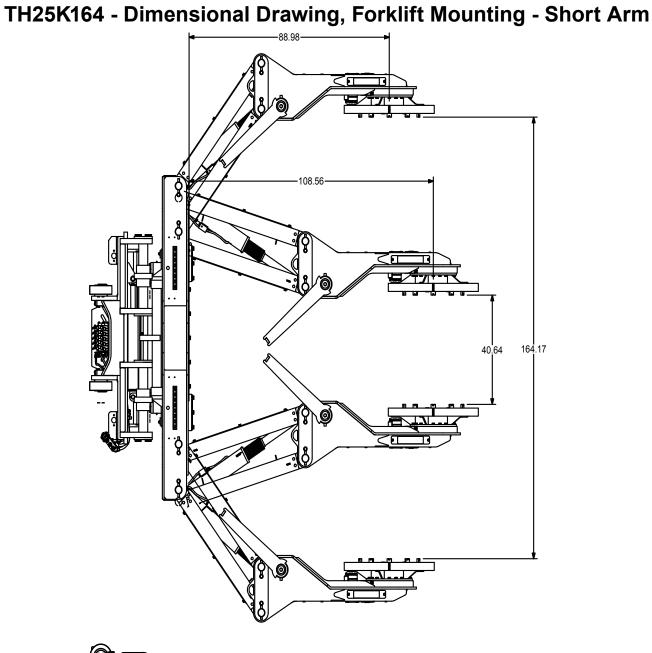
- 1. Electric controls
- 2. Lateral shifting capabilities

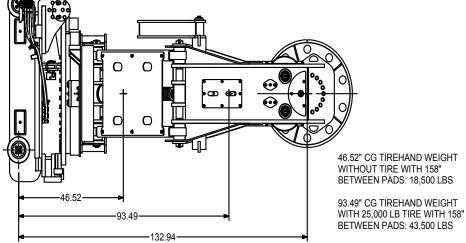
VEHICLE COMPATIBILITY

The Tirehand TH25K164 will permanently adapt to either a forklift truck or a front-end loader. When mounting to a forklift truck, it is recommended that the truck be equipped with a side-shifter. If adapted to a front-end loader, quick couplers are available which enable the disconnection of the Tirehand so that the original bucket can be quickly coupled to the machine for normal operations.

IMT reserves the right to change specifications and design without notice. Where applicable, specifications are in accordance with SAE standard and ISO/DIS 3691-1, the international standard for Industrial Trucks - Safety Requirements and Verification.

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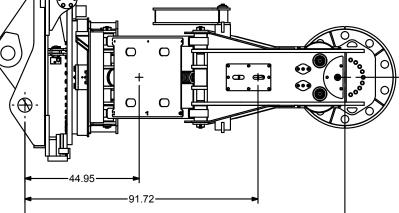




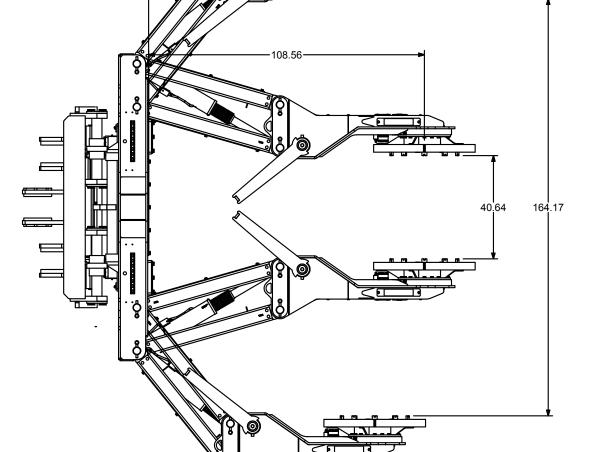
TH25K164 - Manual # 99905543

91.72" CG TIREHAND WEIG WITH 25,000 LB TIRE WITH 158" BETWEEN PADS: 43,300 LBS

44.95" CG TIREHAND WEIG WITHOUT TIRE WITH 158" BETWEEN PADS: 18,300 LB



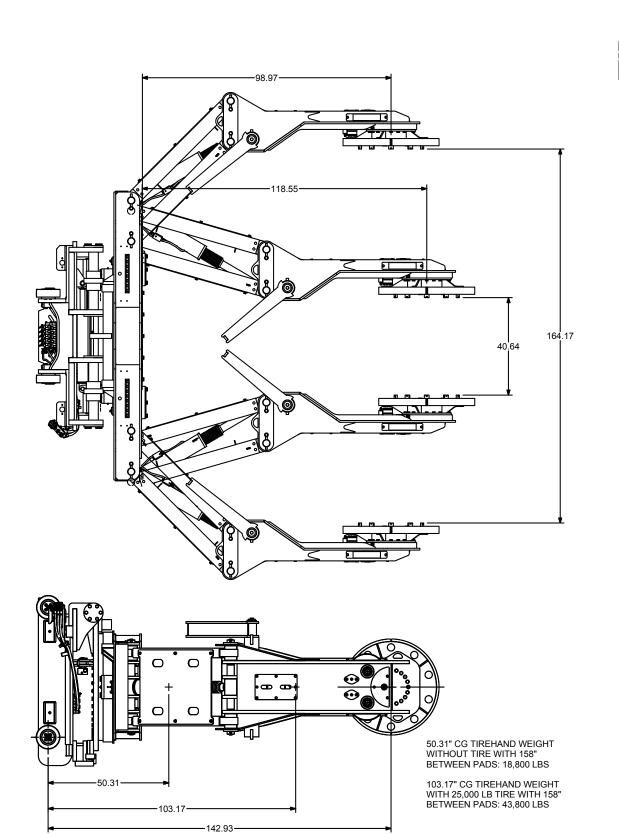
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TH25K164 - Dimensional Drawing, Loader Mounted - Short Arm

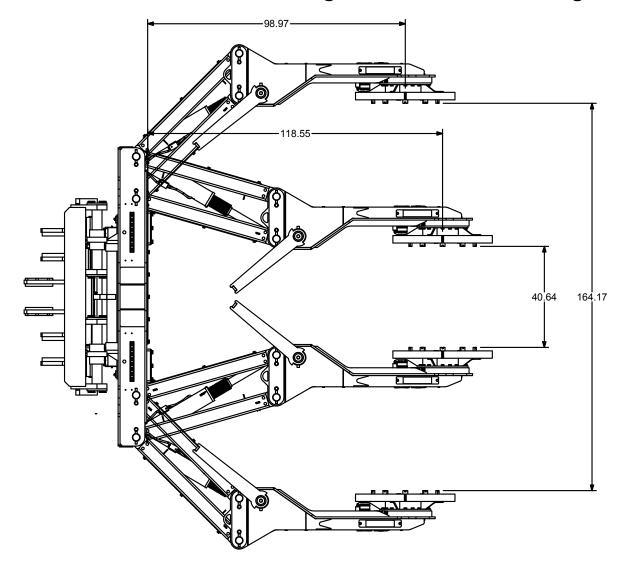
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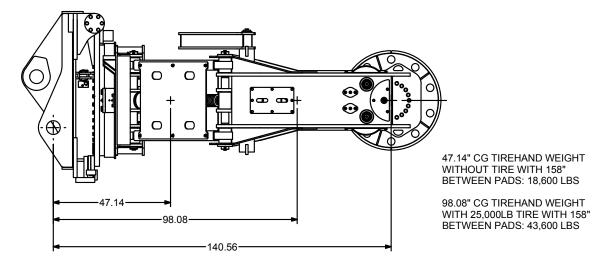


TH25K164 - Dimensional Drawing, Forklift Mounting - Long Arm

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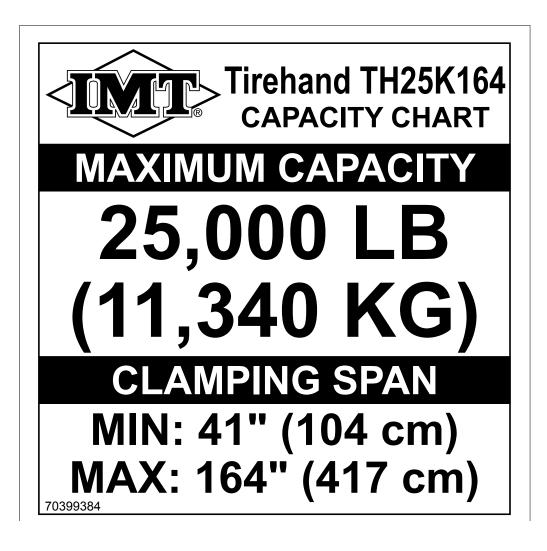
TH25K164 - Dimensional Drawing, Loader Mounted - Long Arm



TH25K164 - Recommended Spare Parts

PART NO.	TH25K164 DESCRIPTION	QTY.
40725222	SPARE PARTS LIST TH25K - TH36k	1
60020116	BUSHING-B148 ROTATION SM CRANE	4
60020179	BUSHING-BRZ 1.50X 2.25X .81	4
60020187	BUSHING-BRZ 1.50X 2.25X .81	4
60020188	BUSHING-BASE 516/6014/8025	4
60020226	THRUST WASH-BRZ 2.50X4.00X .44	4
60020242	BUSHING-BRZ 3.00X 3.50X 2.88	16
60030244	WEAR PAD-RC UHMW 1.00X 8.50X 48.00	1
60106309	GEAR-DRIVE 1.875 PD X 3.75 LG	2
70034441	BEARING-GAR-MAX 3.00X3.50X3.00	8
71056264	GEAR-INTMD 301-10103-1	4
71056265	GEAR-PINION 301-10104-1	4
71056627	GEAR-TRNTBL BRG 44905183-2 INDU HARDENED	2
71415014	KEEPER-PIN .38	4
71415017	KEEPER-PIN .75	12
73054242	VALVE-CBAL 25GPM (5:1)	2
73540565	VALVE-CBAL 15 GPM 4.5:1 T11-A @4000 PSI	2
73511285	MOTOR ASM W/CBAL VALVE	4
9B015930	SEAL KIT-IMT 4.02B 2.00R 1.44S	2
9C222432	SEAL KIT-IMT 5.53B 3.00R 2.00S	2
94399967	SEAL KIT - JARP 432126B	2
60250284	THRUST WASH-BRZ 2.50X4.00X .75	2
71056696	GEAR-TRNTBL BRG-TH36K 451-05145-2	1
73540004	MOTOR ASM W/ CB 103-3085-012	2
60020120	BUSHING-TOP DRIVE GEAR	2
60020121	BUSHING-BTM DRIVE GEAR	2
60250283	BUSHING-BOTTOM PINION GEAR	2
60250285	BUSHING-TOP PINION GEAR TH3565	2

TH25K164 - Capacity Chart



Assemblies & Installations

Section - 3

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TH25K164 - Installation Introduction

VEHICLE COMPATIBILITY

The Tirehand will permanently adapt to either a forklift truck or a front-end loader which has sufficient capacity and stability, per the Tirehand specifications. When mounting to a forklift truck, it is recommended that the truck be equipped with a side shift. If adapted to a front-end loader, quick couplers are available which enable the disconnection of the Tirehand so that the original bucket can be quickly coupled to the machine for normal operations.

Typical Tirehand hydraulic installations include:

- Bulkhead plate hydraulic installation all of the Tirehand hydraulics hoses connect together in a 1. bulkhead plate, which then connects hydraulically to the loader or forklift. With a bulkhead plate installation, the valve bank is part of the forklift or loader rather than the Tirehand. In many cases, bulkhead installations are used on forklifts.
- Valve bank hydraulic installation when the valve bank is part of the Tirehand, rather than the loader or 2. forklift. The forklift or loader must be equipped with a pressure line and a return line which connects the forklift or loader hydraulic system to the valve bank in the Tirehand. In many cases, valve bank hydraulic installations are used on loaders.

Typical Tirehand controls include:

- 1 Hydraulic cab controls, where additional functions in forklift or loader control valves are hydraulically connected to the Tirehand.
- Electric cab controls, which includes a control box with toggles used to control the Tirehand. 2.
- 3. Radio remote controls.

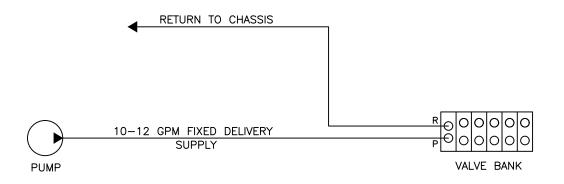
For all installations, the Tirehand requires 15 gpm (57 Lpm) of hydraulic fluid at 3000 psi (207 bar). A flow divider may be required if the forklift or loader pump provides excess flow. Contact IMT for specific installation instructions on any type of installation.

Prior to connecting any electrical connections between the Tirehand and the loader or forklift, check the Tirehand voltage. IMT Tirehand may be 12V or 24V.

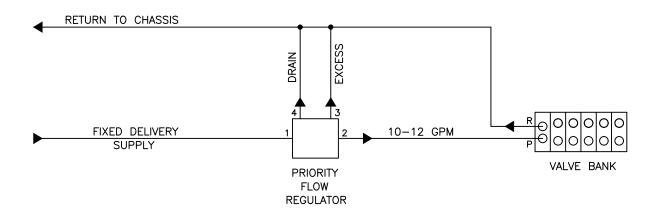
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TH25K164 - Hydraulic Installation

PREFERRED INSTALLATION:



ALTERNATE INSTALLATION:



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TH25K164 - Loader Installation

NOTE: Tirehand installations vary based on the carrier vehicle. Contact IMT for specific installation assistance.

- 1. Mount the Tirehand to loader arms using the original loader pins.
- 2. Splice the flow control divider into the existing pressure line. Continue the original line to its original destination (bucket, etc.), and route the controlled line with 15 gpm (*57 Lpm*) 3000 psi (*207 bar*) to the Tirehand valve bank.
- 3. Locate the control handle inside the cab where convenient to operate.
- 4. Connect the 3-wire power cable to 12-volt power. The green wire connects to 12V positive, the black wire to the coil on the flow divider, and the white wire to ground.
- 5. Route the control cable to the Tirehand and connect.
- 6. Check all hoses and cables for clearances. Make sure that steering or moving the arms will not pinch or over-stress the hoses or cables.
- 7. Fill the reservoir. Start the loader's engine and operate all controls to purge air from the system. With the loader running, check for leaks and repair if necessary.
- 8. Recheck all hoses and cables for clearance.
- 9. Check the reservoir oil level and fill if necessary.
- 10. Test operate the Tirehand.

NOTE

Stop blocks should be welded to the loader arms to limit articulation. If necessary locations and sizes of stops to be determined at time of installation.

- 1. Mount the Tirehand to lift truck using the original carriage pin.
- 2. Splice the flow control divider into the existing pressure line. Continue the original line to its original destination (forklift function, etc.), and route the controlled line with 15 gpm (57 Lpm) at 3000 psi (207 bar) to the Tirehand valve bank.
- 3. Locate the control handle inside the cab where convenient to operate.
- 4. Connect the 3-wire power cable to 12-volt power. The green wire connects to 12V positive, the black wire to the coil on the flow divider, and the white wire to ground.
- 5. Route the control cable to the Tirehand and connect.
- 6. Check all hoses and cables for clearances. Make sure that steering or other movements of the lift truck will not pinch or overstress the hoses or cables.
- 7. Fill the reservoir. Start the lift truck's engine and operate all controls to purge air from the system.
- 8. With the lift truck running, check for leaks and repair if necessary.
- 9. Re-check all hoses and cables for clearance.
- 10. Check the reservoir oil level and fill if necessary.
- 11. Test operate the Tirehand.

TH25K164 - Bulkhead Installation

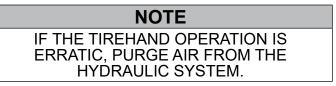
If the forklift on which the Tirehand is installed includes control valves, all of the hydraulic lines from the forklift control valves must culminate at the front of the carriage. The forklift will connect to the Tirehand using a bulkhead plate. The forklift manufacturer must furnish oil for all hydraulic functions. Install the Tirehand with a bulkhead plate as follows:

- 1. Install the Tirehand on the forklift, using the bulkhead plate for hydraulic connections. Use the required hydraulic fluid flow at the correct pressure, per the Tirehand specifications.
- 2. Check lubrication points for adequate lubrication.
- 3. Operate the forklift to check for vertical obstructions.

TESTING

1. Raise the Tirehand to provide adequate clearance for operating all Tirehand functions. Operate all Tirehand functions and check for leaks.

AVOID SERIOUS INJURY! KEEP CLEAR OF ALL PINCH POINTS WHILE OPERATING THIS UNIT.



2. Test the unit at rated capacity. Note any points of instability. Add counterweights if needed.

If the carrier vehicle is articulating, make certain that steering of the vehicle is not hindered by the routing of the hydraulic hoses. Check for wear points and re-route if needed.

TH25K164 - Valve Bank Installation

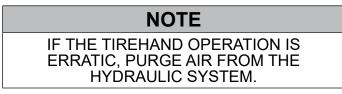
When the Tirehand has a valve bank, connect the valve bank to the forklift or loader hydraulic system using the hydraulic pressure and return line from the forklift or loader

- 1. Install the Tirehand on the loader or forklift, connecting the suction and return lines from the forklift or loader to the Tirehand valve bank. See the hydraulic layout drawing in the parts manual for hydraulic information for a valve bank installation.
- 2. Check lubrication points for adequate lubrication.
- 3. Operate the forklift or loader to check for vertical obstructions. Add stop blocks, if needed, to prevent the Tirehand from contacting the carrier vehicle.

TESTING

1. Raise the Tirehand to provide adequate clearance for operating all Tirehand functions. Operate all Tirehand functions and check for leaks.





2. Test the unit at rated capacity. Note any points of instability. Add counterweights if needed.

If the carrier vehicle is articulating, make certain that steering of the vehicle is not hindered by the routing of the hydraulic hoses. Check for wear points and re-route if needed.

TH25K164 - Operator Training



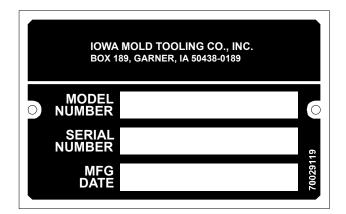
Prior to operating the Tirehand, read and follow the manual and all warning and safety decals. The Tirehand is designed for operator simplicity. Prior to operating this unit, the operator should become thoroughly familiar with the controls, operating procedures, and safety precautions.

TH25K164 - Intended Use and Identification

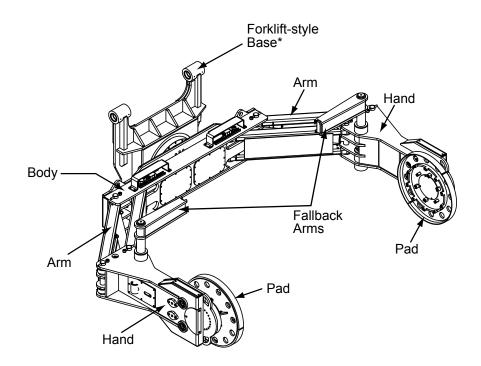
This Tirehand is a tire lifting and positioning device. It should be used to remove, transport, replace, and storage stack tires. It is designed only as a tire handling device and should not be used for any other purposes. It is intended to permanently attach to either a forklift truck or a front-end loader.

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

Iowa Mold Tooling Co., Inc., 500 Highway 18 West, Garner, Iowa 50438, U.S.A.



TH25K164 - Component Identification



NOTE: * Forklift-style base shown. See parts section for all base options.

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TH25K164 - Equipment Inspection

Before using, the operator should inspect as listed:

ITEM	DESCRIPTION	FREQUENCY	
	A DESCRIPTION		WEEKLY
WALK- AROUND INSPECTION	Inspect for hydraulic leaks, loose parts and obvious structural member damage.		
ROTATION SYSTEM	Check for excessive backlash (play) between pinion gear and turntable gear-bearing. If there is excess play, use a feeler gauge to measure the play and service the Tirehand if needed.		
ELECTRICAL	ECTRICAL Check remote controls, auxiliary lighting, etc. for proper		
	Check for deterioration, dirt and moisture.		
HYDRAULIC	Check for leaks on surface and at ends.		
HOSE	Check for blistering, deformation and abrasion.		
CONTROL VALVES	Check for leaks, cracks and slow return to neutral.		
CARRIER VEHICLE	Follow all inspection procedures provided by the carrier vehicle manufacturer.		

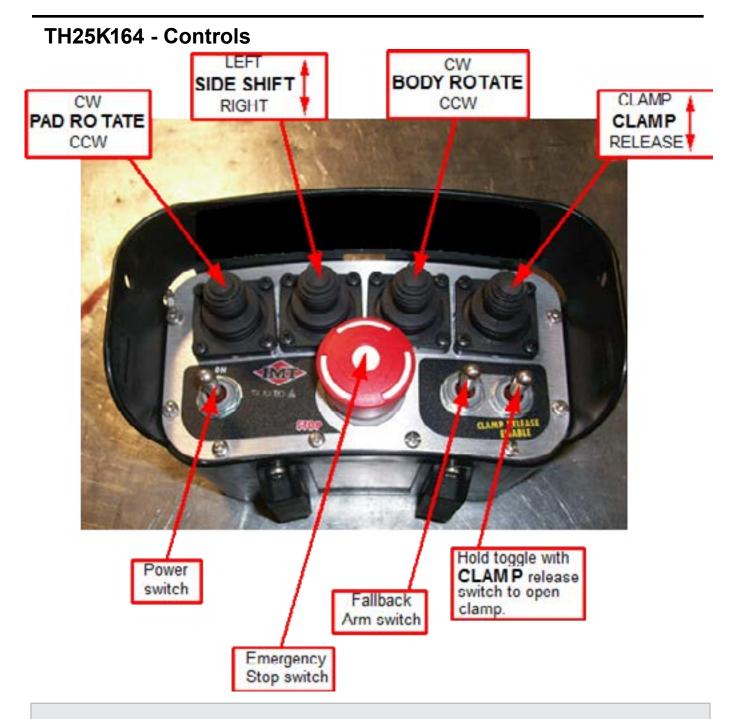
In addition, the Tirehand requires periodic inspection as noted in the maintenance section. Use the inspection chart in the maintenance section to determine critical inspection tasks.

TH25K164 - Work Station Positioning

Before using the Tirehand, set the work area up correctly.

- Operate this equipment on a firm, level, and dry surface.
- Avoid overhead obstructions.
- Keep unauthorized personnel clear of the work area before beginning work.
- When the job site terrain is graded or soft, exercise extra caution.

Avoid injury! The operator is responsible for being aware of unauthorized personnel in the work area. Suspend operations until the work area is cleared.



NOTES: See the Tirehandler, *Radio Remote System*, IMT manual #99905678, for complete radio remote control system instructions. The Tirehand radio remote control is a cab-mounted or tethered remote with a radio option.

TO OPERATE:

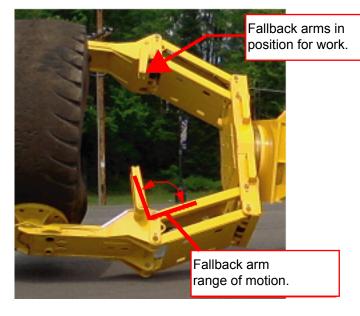
- Power up the remote using the power switch.
- Use the fallback arm switch to activate the fallback arms prior to lifting a tire.
- Use the desired function to manipulate the tire.
- To release a clamped tire, hold the clamp toggle switch while operating the clamp release joystick. This prevents tires from being inadvertently released.

TH25K164 - Fallback Arms

The Tirehand is equipped with fallback arms to prevent tire movement toward the working area between the tire and the back of the Tirehand. When deployed, the fallback arms are positioned perpendicular to the arm assembly to prevent the tire from falling into the work area. They need to be positioned in-line with the arm assembly when rotating the tire.

The hydraulic assembly for the fallback arms includes a holding value to prevent the fallback arm from being forced open in case of an unexpected force from the tire or another object.





A DANGER

DO NOT enter the work area unless the fallback arms are deployed! Use the fallback arms when people are in the work area to create a safe work environment.

To begin operation:

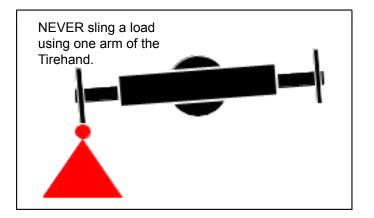
ITEM NO.	OPERATION / DESCRIPTION		
1.	Open Tirehand clamps.		
	Maneuver the vehicle into a position so that the Tirehand can be used to clamp the center of the tire with the Tirehand body parallel to the ground.		
2.	Make certain personnel are clear before continuing the operation.		
	Advance the carrier vehicle and center the clamp pads on the tire. Clamp tire securely.		
3.			
4.	Remove tire and rim hardware, if needed. Following tire and rim manufacturer instructions,		
	 carefully remove the tire and / or rim from the vehicle. To transport tire, rotate so that tire is in horizontal position and close to the ground. If possible 		
5.	keep the lowest part of the tire approximately 12" (<i>305 mm</i>) from the ground.		

ITEM NO.	OPERATION / DESCRIPTION			
	Place tire per tire manufacturer recommendations.			
6.	Avoid equipment damage! Never drag or push tire. Make sure the tire is lifted off the			
	ground before moving it.			
	To reinstall tire, rotate pads so the tire is in a vertical position, perpendicular to the ground and rotate the body so it is parallel to the ground.			
	Clamp pressure can change as the tire			
	rotates and the weight shifts on the clamps. Observe clamp pressure and adjust if			
	needed.			
7.	Watch clamp pressure when body is rotated. As tirehand body rotates, the tire weight will shift to the lower clamp pad. Tirehand body in horizontal position Vertical tire in horizontal position Tire and tirehand in correct position for tire installation.			
8.	Clamp the tire securely. Remember, clamp pressure changes as the weight shifts between the clamps. When the tire is vertical, the fallback arms, a safety device in case of operator error, will prevent the tire from falling into the space between the clamp and the body. Make sure the fallback arms are engaged when the tire is in the vertical position.			
9.	To reinstall a tire, maneuver the forklift or loader so that the Tirehand can be used to position the tire back onto the carrier vehicle. Raise the loader or forklift so the tire is elevated correctly. When the tire is in position and secured properly per the tire, rim, and vehicle manufacturer recommendations, release the Tirehand clamps.			

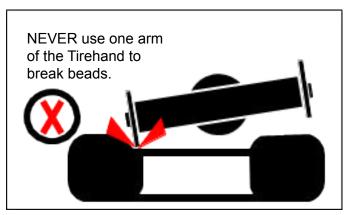
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TH25K164 - Operating Restrictions

The Tirehand 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 while attempting to break tire beads with one arm of the Tirehand, or by slinging a load under one arm of the Tirehand. 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. 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

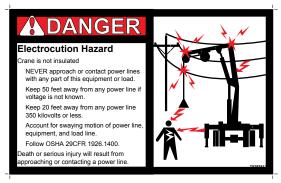


A bead breaker must be used to separate the tire from the rim. It is acceptable to use the Tirehand for holding the sidewall and flange away from the bead while o-rings and locking rings are being installed.

TH25K164 - Electrical Safety

Keep away from power lines! If you must operate the Tirehand near powerlines:

- 1. For lines rated 350 kV or below, keep a minimum clearance of 20' (*6.1 m*) between the lines and any part of the Tirehand or load.
- 2. For lines rated over 350 kV, keep a minimum clearance between 50' (*15.25 m*)
- 3. In transit, keep a minimum clearance of 4' (1.22 m)
- 4. Use a signal person to observe the clearance and give timely warning for all operations where it is difficult for the operator to maintain the desired clearance by visual means.



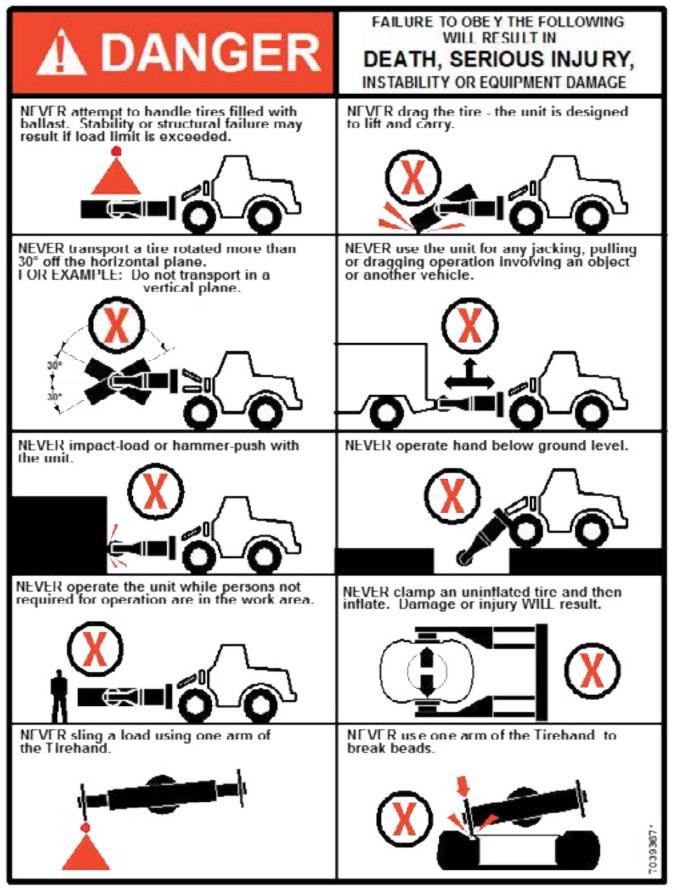
TH25K164 - Warnings

Warning decals are installed on the Tirehand, as well as on the loader or forklift, to give information about possible hazards. All decals must be installed and legible. If decals are damaged, they must be replaced. Refer to the parts section for the decal part numbers and locations on the Tirehand.



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TIREHAND WARNINGS, CONTINUED



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Maintenance

Section - 4

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TH25K164 - Maintenance Introduction

Proper, regularly scheduled maintenance is essential in keeping your Tirehand at peak operating efficiency. This section outlines maintenance information and service intervals. Personnel responsible for Tirehand maintenance should familiarize themselves with the service intervals and maintenance operations described.

Following the designated lubrication procedures is important in providing maximum Tirehand life. The procedures and lubrication charts in this section include information on the types of lubricants used, location of lubrication points and frequency of lubrication. Information concerning the lubrication requirements of the truck chassis is not included. Refer to the appropriate truck manufacturer's manuals for chassis lubrication requirements.

The service intervals specified are for normal operation where moderate temperatures, humidity and atmospheric conditions prevail. In areas of extreme conditions, the service periods and lubrication specifications should be altered to meet those conditions. For information concerning extreme condition lubrication, contact your local service representative.

Note: The service schedule in this manual pertains only to the IMT Tirehand. In addition to Tirehand maintenance, it is your responsibility to follow all inspection and maintenance procedures for the forklift or loader, as defined in the forklift or loader maintenance manual.

TH25K164 - Lubrication Points

LUBRICATION CHART			
APPLICATION POINT	LUBRICATION	APPLICATION	INTERVAL
Side Shift Pins (if applicable)			
Body - Arm Link Pins (Top			
& Bottom, both sides)			
Arm / Hand Link Pins (Top	Shell Alvainia 2EP		
& Bottom, both sides)	or	Hand Grease Gun	
Pad Rotation Gear	Shell Retinax "A"	or	Weekly
Pad Pinion Gear	or Equivalent	Pnuematic Pressure Gun	
Body Rotation Turntable			
Gear			
Body Drive Gear			
Body Pinion Gear			

TH25K164 - Hydraulic System

Whenever disconnecting a hydraulic component:

- 1. ALWAYS relieve internal hydraulic pressure before proceeding with the repair.
- 2. **NEVER** allow foreign matter dirt, water, metal particles, etc. to enter the hydraulic system through the open connection. Seal the connection as tightly as possible. If dirt does get in, a filter change is required after about 50 hours of operation.
- **3. ALWAYS** cycle all of the controls after completing a repair. This will eliminate trapped air and prevent bumpy, erratic behavior during actual working conditions.
- **4. ALWAYS** check for hydraulic leaks after a repair. A high pressure leak is hazardous and must be repaired before putting the unit to work.

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TH25K164 - Purging Trapped Air

Air can be introduced into the system from a leak or when a hydraulic component is disconnected for servicing. Air in the system will cause erratic operation and must be corrected.

To purge air from the system, extend and retract the affected cylinder several times. At the end of the stroke, hold the valve open for a few seconds. Repeat this procedure until operation is smooth and continuous.

TH25K164 - Preventative Maintenance

The Tirehand Inspection Checklist is designed to assist in keeping the Tirehand in peak operating condition. The information in this section refers to the Tirehand only. Items which apply to your Tirehand should be checked before it is put into operation. Inspect to the frequency indicated in the chart. Consult the manufacturer's service guide for information on the carrier vehicle.

REGULAR INSPECTION

Every three months, or more often when the equipment is subjected to heavy use, complete the following inspections in addition to the preventative maintenance checklist.

TIREHAND ARM ASSEMBLIES

- 1. Check for structural defects such as weld cracks, dents, or bends.
- 2. Check cylinder holding valves.
- 3. Check cylinders for leaks.
- 4. Check both internal and external clamping arm bearings for wear and lubrication.
- 5. Check operating timing. Both clamping arms should function together at the same rate of motion.

AXIAL PAD ROTATION

- 1. Check for structural defects.
- 2. Check motors for leaks.
- 3. Check disc bearings located on support shafts.
- 4. Check all pins, and their retainers.

CYLINDERS

- 1. Check rods for damage such as scarring. Check for rust on out of service units.
- 2. Check for weld joint and seal leaks.
- 3. Check for drift, indicating possible leakage around the piston.
- 4. Check cylinder case for cracks and dents.

HYDRAULIC PUMP

- 1. Check for leaks at shaft seal and section joints.
- 2. Check for drop in operating speed.
- 3. Check hydraulic oil for excessive heating.
- 4. Check bolts and fasteners for tightness and note unusual vibration or noise.

HYDRAULIC CONTROL VALVES

- 1. Check spools for sticking and failure to return to neutral position. Inspect for leaks at joints and spools.
- 2. Inspect valve housing for cracks.
- 3. Make certain relief valve reaches the proper relief setting.

HYDRAULIC OIL RESERVOIR AND HOSES

- 1. Check filters for clogged elements.
- 2. Check oil level in the reservoir.
- 3. Check all hoses for damage.



CARRIER BOOM AND CYLINDERS

- 1. Check for structural defects, such as dents, bends, and weld cracks.
- 2. Check all pins and their retainers.
- 3. Check cylinder rods for damage, and check for leaks.

SIDE SHIFT ASSEMBLY

- 1. Check cylinder for leaks and damage.
- 2. Check linear bushings for damage and lubrication.
- 3. Check for structural defects.
- 4. Check cylinder retaining pins.

ROTATION ASSEMBLY

- 1. Check gear box for proper anchoring and bolt torque.
- 2. Check gear-bearing bolt torque.
- 3. Check pinion gear/gear-bearing backlash.

TH25K164 - Inspection Chart

	DESCRIPTION		FREQUENC	Y
ITEM	DESCRIPTION	DAILY	WEEKLY	MONTHLY
WALK-AROUND	Inspect for hydraulic leaks, loose parts and obvious structural member damage.			
*MOUNTING BOLTS	Check torque (power-wrench tight).			
ROTATION SYSTEM	Check for excessive backlash (play) between pinion gear and turntable gear-bearing. If there is excess play, use a feeler. gauge to measure the play and adjust the backlash if needed. See the parts manual for			
*STRUCTURAL	clamp and body backlash specifications. Check for broken welds, fatigue cracks,			
DAMAGE	structural defects, bends and dents.			
CONTROLS	Check for excessive wear and cleanliness.			_
LEAKAGE	Check for hydraulic fluid leaks.			
*ROTATION SYSTEM MOUNTING BOLTS	Check torque of top and bottom gear-bearing bolts. (See Torque Data Chart)			
ELECTRICAL	Check remote controls, auxiliary lighting, etc. for proper function.			
	Check for deterioration, dirt and moisture.			
HYDRAULIC FLUID RESERVOIR	Check for proper oil level. (Carrier Vehicle)			
HYDRAULIC OIL	Check oil quality. (Carrier Vehicle)			
	Check for leakage on surface and at ends.			
HYDRAULIC HOSE	Check for blistering, deformation and abrasion.			
PUMP AND MOTOR	Check for loose bolts, leaks, unusual noises, vibration, reduced operating speed and excessive oil heating.			
HYDRAULIC FILTER	Check vacuum reading with engine running and PTO engaged. A vacuum of 8" of mercury or higher indicates an obstructed filter. (Carrier Vehicle)			
CONTROL VALVES	Check for leaks, cracks and slow return to neutral.			
*CYLINDERS	Check for leaks, scores, nicked or dented rods, dented cases, deformed pin bosses, rust on rod.			
CARRIER VEHICLE	Follow all inspection and maintenance procedures provided by the carrier vehicle manufacturer.			
* INDICATES A CRITIC	ALITEM			

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Parts

Section - 5

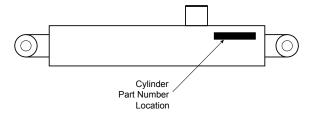
TH25K164 - Parts Ordering Information

GENERAL

This section contains the exploded parts drawings, with accompanying parts lists, for the assemblies used on the Tirehand. These drawings are intended to be used for ordering parts only.

CYLINDER IDENTIFICATION

To ensure proper replacement parts are received, it is necessary to specify the complete number/letter sequence for any part request. You must include the part number stamped on the cylinder case when ordering parts



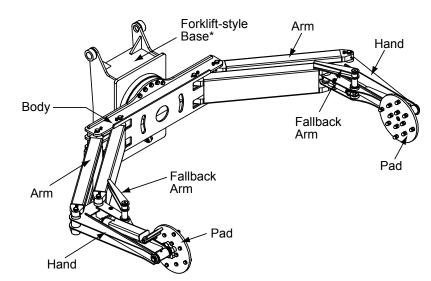
WELDMENT IDENTIFICATION

Each of the major weldments on 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 as shown below.

ORDERING REPAIR PARTS

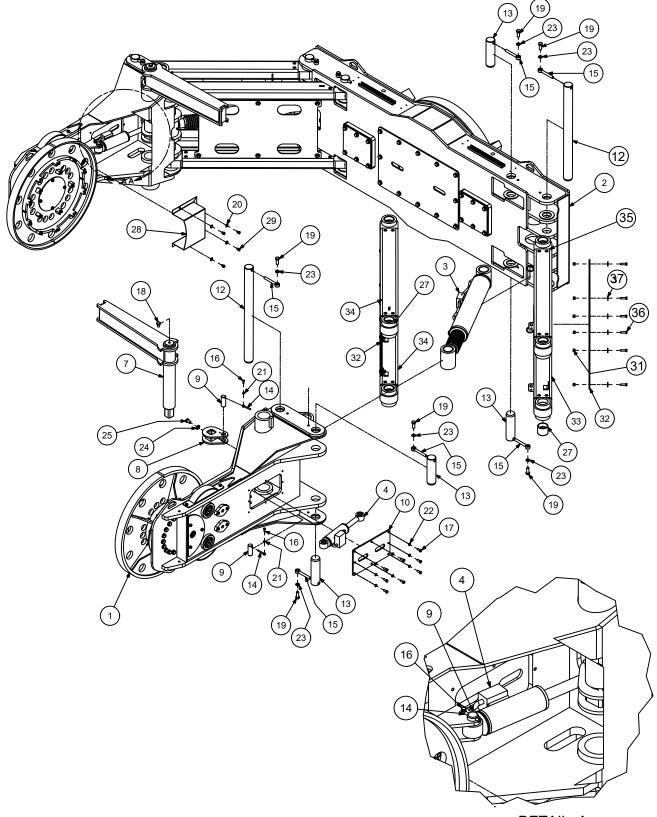
When ordering replacement parts:

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



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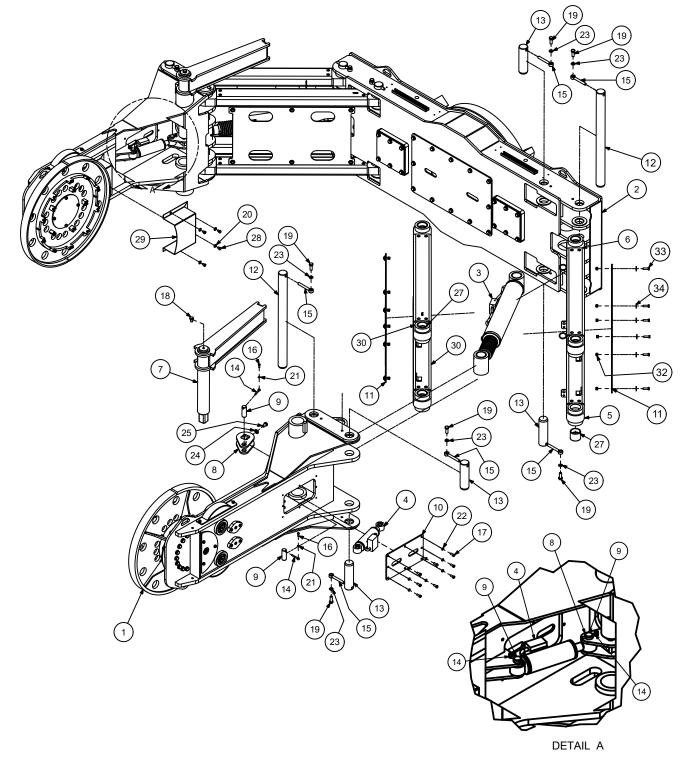




DETAIL A

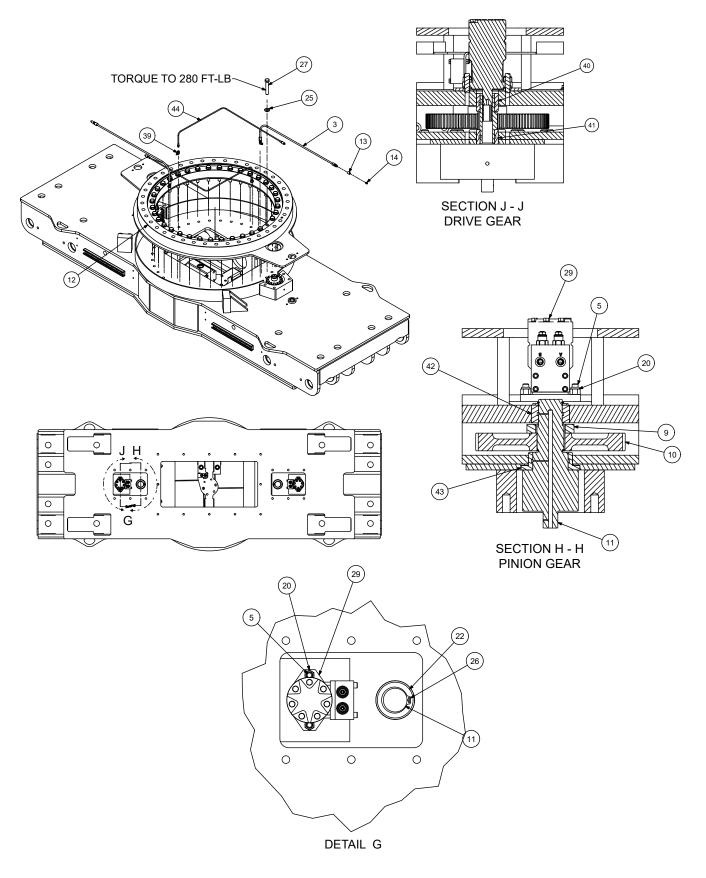
ITEM NO.	PART NO.	DESCRIPTION	KIT NO.	QTY.
1.	40726444	HAND ASM-TH36K SHORT	-	2
2.	40726453	BODY ASM-TH25K MOTOR ROT	-	1
3.	51726489	CYL-5.5/3.0 18.75S 46.62CC C B068CY27	-	2
4.	51726448	CYL-3.0/1.5 5.00S 15.25 CC C	-	2
7.	52725974	FLAG-WLDMT TH25-36K W-FALLBACK	-	2
8.	52725975	WLDMT-PIVOT, FALLBACK ARM	-	2
9.	60139298	PIN-TYPE H 1.50 X 4.00	-	4
10.	60139307	COVER- FALL BACK CYL	-	2
12.	60139381	PIN-TYPE H 3.00X38.75	-	4
13.	60139382	PIN-TYPE H 3.00X10.50	-	8
14.	71415014	KEEPER-PIN .38	-	4
15.	71415017	KEEPER-PIN .75	-	12
16.	72060046	CAP SCR .38-16X 1.00 HH GR5 Z	26	4
17.	72060092	CAP SCR .50-13X 1.25 HH GR5 Z	26	16
18.	72060181	CAP SCR .75-10X 1.00 HH GR5 Z	26	2
19.	72060185	CAP SCR .75-10X 2.00 HH GR5 Z	26	12
20.	72063005	WASHER .50 FLAT	26	8
21.	72063051	WASHER .38 LOCK	26	4
22.	72063053	WASHER .50 LOCK	26	16
23.	72063056	WASHER .75 LOCK	26	12
24.	72063116	WASHER .75 N FLAT H ASTMF436Z	26	2
25.	72601989	CAP SCR .75-10X 1.25 HH GR8 Z	26	2
26.	91726449	KIT-HRDW TH25K-TH36K CLAMP ASM	-	1
27.	60020242	BUSHING-3.00X 3.50X 2.88 (4 PER ARM WLDMT)	5,6	32
28.	60145808	COVER-HYD TH25K		2
29.	72060089	CAP SCR .50-13X .75 HH GR5 Z		8
31.	72062356	NUT .50-13 HEX GR8 YZ NYLOCK		24
32.	60145809	COVER- TH36 ARM		4
33.	52727572	ARM WLDMT OUTER 25K164		2
34.	52727571	ARM WLDMT INNER 25K164		4
35.	52727573	ARM WLDMT OUTER 25K164		2
36.	72602066	CAP SCR .50-13X 1.75 HH GR8 Z	26	24
37.	72063117	WASHER .56 FLAT ASTM F436	26	24





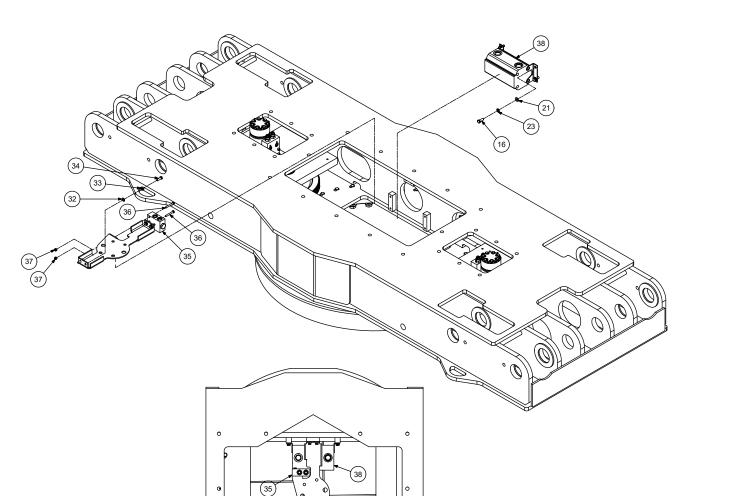
ITEM NO.	PART NO.	DESCRIPTION	KIT NO.	QTY.
1.	40726446	HAND ASM-TH36K LONG	-	2
2.	40726453	BODY ASM-TH25K MOTOR ROT	-	1
3.	51726489	CYL-5.5/3.0 18.75S 46.62CC C B068CY27	-	2
4.	51726448	CYL-3.0/1.5 5.00S 15.25 CC C	-	2
5.	52727572	ARM WLDMT OUTER 25K164	-	2
6.	52727573	ARM WLDMT OUTER 25K164		2
7.	52725974	FLAG-WLDMT TH25-36K W-FALLBACK	-	2
8.	52725975	WLDMT-PIVOT, FALLBACK ARM	-	2
9.	60139298	PIN-TYPE H 1.50 X 4.00	-	4
10.	60139307	COVER- FALL BACK CYL	-	2
11.	60145809	COVER- TH36 ARM	-	4
12.	60139381	PIN-TYPE H 3.00X38.75	-	4
13.	60139382	PIN-TYPE H 3.00X10.50	-	8
14.	71415014	KEEPER-PIN .38	-	4
15.	71415017	KEEPER-PIN .75	-	12
16.	72060046	CAP SCR .38-16X 1.00 HH GR5 Z	26	4
17.	72060092	CAP SCR .50-13X 1.25 HH GR5 Z	26	16
18.	72060181	CAP SCR .75-10X 1.00 HH GR5 Z	26	2
19.	72060185	CAP SCR .75-10X 2.00 HH GR5 Z	26	12
20.	72063005	WASHER .50 FLAT	26	8
21.	72063051	WASHER .38 LOCK	26	4
22.	72063053	WASHER .50 LOCK	26	16
23.	72063056	WASHER .75 LOCK	26	12
24.	72063116	WASHER .75 N FLAT H ASTMF436Z	26	2
25.	72601989	CAP SCR .75-10X 1.25 HH GR8 Z	26	2
26.	91726449	KIT-HRDW TH25K-TH36K CLAMP ASM	-	1
27.	60020242	BUSHING-3.00X 3.50X 2.88 (4 PER ARM WLDMT)	5,6	32
28.	72060089	CAP SCR .50-13X .75 HH GR5 Z		8
29.	60145808	COVER-HYD TH25K		2
30.	52727571	ARM WLDMT INNER 25K164		4
32.	72062356	NUT .50-13 HEX GR8 YZ NYLOCK		24
33.	72602066	CAP SCR .50-13X 1.75 HH GR8 Z	26	24
34.	72063117	WASHER .56 FLAT ASTM F436	26	24
REV. F CN83	30-3	1	1	1

TH25K164 - Body Assembly (40726453)



ITEM NO.	PART NO.	DESCRIPTION	KIT NO.	QTY
1.	52726451	WLDMT-BODY TH25K GEAR ROTATION		1
3.	53000713	GREASE EXT-38.00 OAL 36.00HOSE		4
4.	60010844	GREASE PLATE-DRIVE GEAR		2
5.	60106032	STUD50-13X1.75	30	4
9.	60250284	THRUST WASHER-BRZ 2.50X4.0X.75		2
10.	71056264	GEAR-INTMD 301-10103-1		2
11.	71056486	GEAR-PINION 301-10212-1		2
12.	71056696	GEAR-TRNTBL BRG		1
13.	72053301	COUPLING-GLV .12 SCH 40	30	4
14.	72053508	ZERK-NPT .12	30	9
20.	72062080	NUT .50-13 HEX NYLOCK	30	4
22.	72063039	MACHY BUSHING 2.00X10 GA NR	30	2
26.	72066095	RETAINING RING-EXT 2.00 STD	30	2
27.	72601468	CAP SCR .75-10X 4.50 HH GR8 Z	30	36
29.	73540004	MOTOR ASM W/ CB 103-3085-012		2
30.	91725726	KIT-HRDW TH36K BODY ASM MOTOR ROT		1
39.	72531130	ELBOW-STREET STL .12 X 90 DEG		4
40.	60020120	BUSHING-TOP DRIVE GEAR	1	2
41.	60020121	BUSHING-BTM DRIVE GEAR	1	2
42.	60250283	BUSHING-BOTTOM PINION GEAR	1	2
43.	60250285	BUSHING-TOP PINION GEAR TH3565	1	2
44.	53000716	GREASE EXT-46.00 OAL 44.00HOSE		2
REV. D CN98	8			

40726453-1, BODY ASSEMBLY (CONTINUED)



(31)

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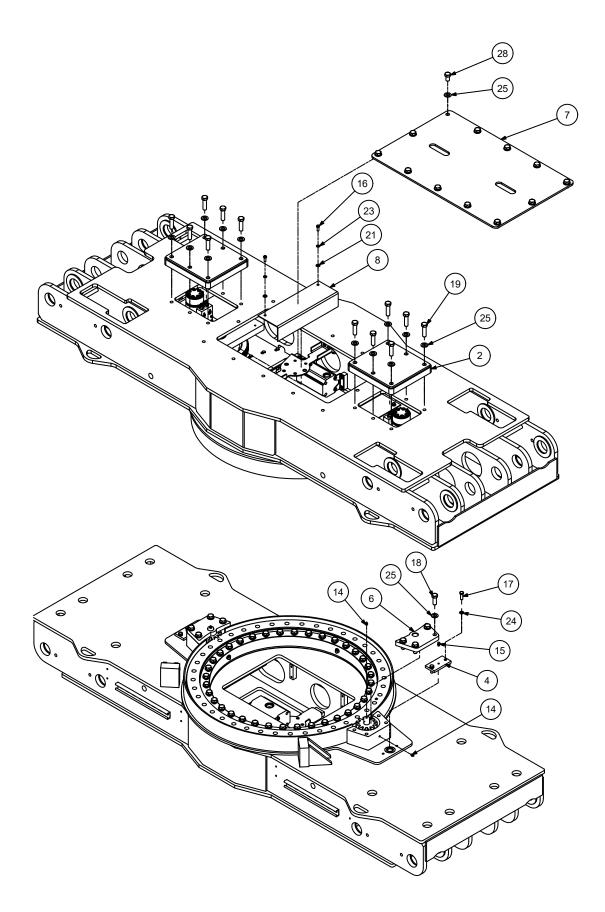
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40726453-1 PARTS LIST

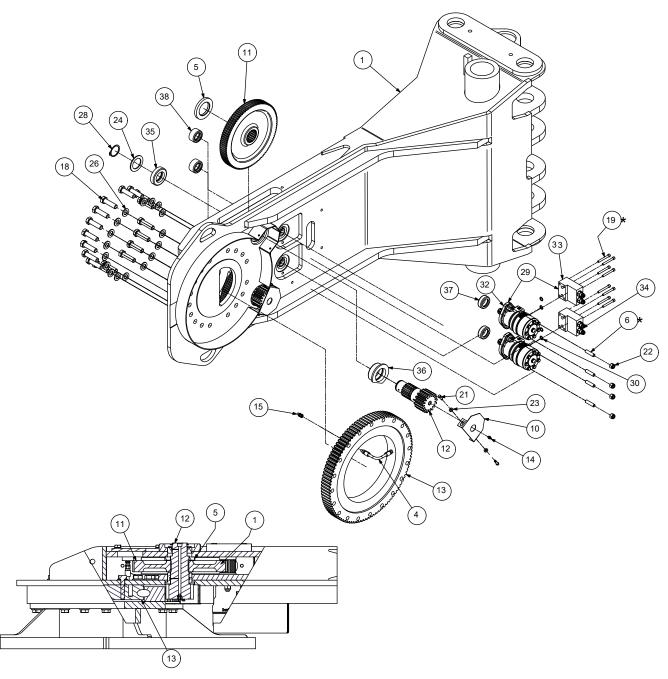
ITEM NO.	PART NO.	DESCRIPTION	KIT NO.	QTY.
16.	72060046	CAP SCR .38-16X 1.00 HH GR5 Z	30	8
21.	72063003	WASHER .38 FLAT	30	8
23.	72063051	WASHER .38 LOCK	30	8
30	91725726	KIT-HRDW TH36K BODY ASM MOTOR ROT		1
32.	72063002	WASHER .31 FLAT	30	4
33.	72063050	WASHER .31 LOCK	30	4
34.	72060025	CAP SCR .31-18X 1.00 HH GR5 Z	30	4
35.	73054614	FLOW DIV-COMB-FD50-45-8DD-N-66		REF
36.	72060008	CAP SCR .25-20X 2.00 HH GR5 Z	30	2
37.	72062104	NUT .25-20 HEX NYLOCK	30	2
38.	73054829	FLOW DIV-ROT GEAR GD-07BB00G0		REF
REV. D CN98	8			

40726453-2, BODY ASSEMBLY (CONTINUED)



40726453-2 PARTS LIST

ITEM NO.	PART NO.	DESCRIPTION	KIT NO.	QTY.
2.	52725706	WLDMT - COVER BODY TH36K		2
4.	60010844	GREASE PLATE-DRIVE GEAR		2
6.	60121379	PINION SUPPORT PLATE		2
7.	60139347	COVER PLATE- BODY TH36		1
8.	60141869	COVER-TH36K ROTATION GEAR		2
14.	72053508	ZERK-NPT .12	30	9
15.	72053561	ZERK-NPT .12X90 DEG	30	2
16.	72060046	CAP SCR .38-16X 1.00 HH GR5 Z	30	8
17.	72060117	CAP SCR .50-13X 1.50 HH GR8 Z	30	4
18.	72060206	CAP SCR .75-10X 2.00 HH GR8 Z	30	8
19.	72060209	CAP SCR .75-10X 2.75 HH GR8 Z	30	12
21.	72063003	WASHER .38 FLAT	30	8
23.	72063051	WASHER .38 LOCK	30	8
24.	72063053	WASHER .50 LOCK	30	4
25.	72063116	WASHER .75 N FLAT H ASTMF436Z	30	68
26.	72066095	RETAINING RING-EXT 2.00 STD	30	2
30.	91725726	KIT-HRDW TH36K BODY ASM MOTOR ROT		1
REV D CN98	38			



TH25K164 - Hand Assembly - Long (40726446)

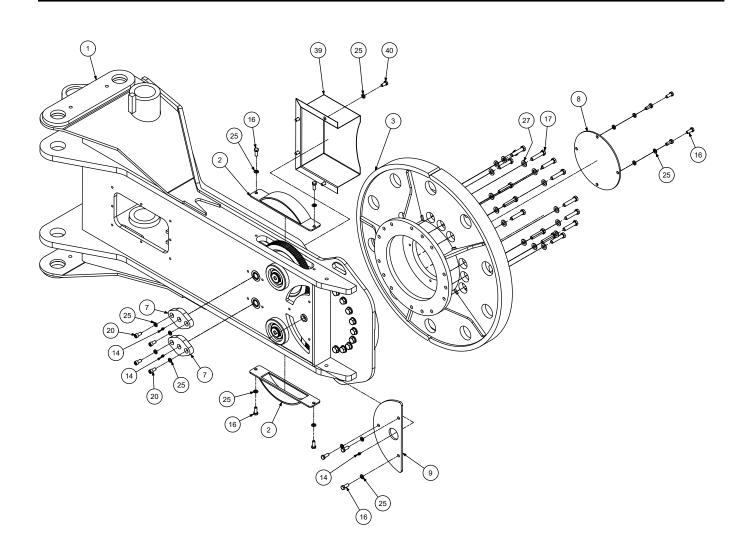
DETAIL: GEAR TRAIN

NOTES:

- 1. USE LOCTITE 277 ON ALL 5/8" AND 3/4" BOLTS
- 2. TORQUE ALL 5/8" BOLTS TO 160 FT LB
- 3. TORQUE ALL 3/4" BOLTS TO 280 FT LB
- 4. APPLY LOCTITE 242 ON BOLTS MARKED WITH *
- 5. INSTALL TURNTABLE BEARING WHERE GREASE ZERK IS LOCATED AT MISSING BOLT MOUNTING LOCATION.

ITEM NO.	PART NO.	DESCRIPTION	KIT NO.	QTY.
1.	52727938	HAND WLDMT-TH25-36K LONG	-	1
4.	53000700	GREASE EXT- 8.00 OAL 6.00HOSE	-	1
5.	60020226	THRUST WASH-BRZ 2.50X4.00X .44	-	2
6.	60106032	STUD50-13X1.75	31	4
10.	60139378	COVER-PINION GEAR TH36	-	2
11.	71056264	GEAR-INTMD 301-10103-1	-	2
12.	71056265	GEAR-PINION 301-10104-1	-	2
13.	71056627	GEAR-TRNTBL BRG 44905183-2 INDU HARDENED	-	1
14.	72053508	ZERK-NPT .12	31	5
15.	72053638	ADPTR-MPT/FPT SWVL .12 .12	-	1
18.	72060209	CAP SCR .75-10X 2.75 HH GR8 Z	31	17
19.	72060738	CAP SCR .31-18 2.50 SH PLAIN	31	8
21.	72060833	SCR-THRD.CUT .31-18X.75 HWH-1	31	4
22.	72062080	NUT .50-13 HEX NYLOCK	31	4
23.	72063002	WASHER .31 FLAT	31	4
24.	72063039	MACHY BUSHING 2.00X10 GA NR	31	2
26.	72063116	WASHER .75 N FLAT H ASTMF436Z	31	17
28.	72066095	RETAINING RING-EXT 2.00 STD	31	2
29.	73511451	MOTOR ASM W/ CB VALVE	-	2
30.	7Q072112	O RING .50X .69X .09 70	31	4
31.	91726445	KIT-HRDW TH36K HAND ASM	-	1
32.	73511450	MOTOR-HYD 11186179	29	2
33.	73540008	VALVE BLK-DBL 15 GPM .44-20SAE	29	2
34.	73051941	VALVE-CBAL 02-371063 (CBCH-LJN)	29	4
35.	60020188	BUSHING-BASE 516/6014/8025	1	2
36.	60020187	BUSHING-BASE 516/6014/8025	1	2
37.	60020179	BUSHING-BRZ 1.50X 2.25X .81	1	2
38.	60020116	BUSHING-B148 ROTATION SM CRANE	1	2
REV. C				

40726446-1, HAND ASSEMBLY - LONG (CONTINUED)

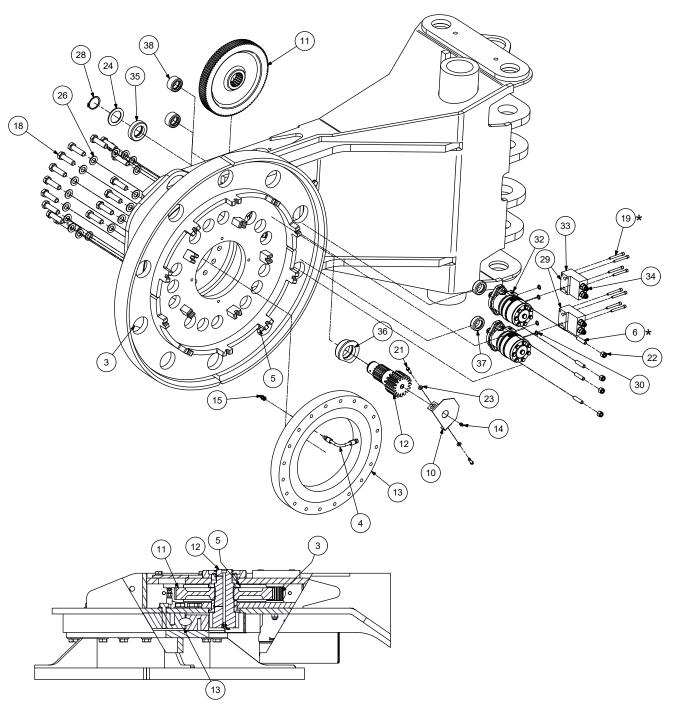


NOTES:

- 1. USE LOCTITE 277 ON ALL 5/8" AND 3/4" BOLTS
- 2. TORQUE ALL 5/8" BOLTS TO 160 FT LB
- 3. TORQUE ALL 3/4" BOLTS TO 280 FT LB
- APPLY LOCTITE 242 ON BOLTS MARKED WITH * 4.
- 5. INSTALL TURNTABLE BEARING WHERE GREASE ZERK IS LOCATED AT MISSING BOLT MOUNTING LOCATION.

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ITEM NO.	PART NO.	DESCRIPTION	KIT NO.	QTY.
1.	52727938	HAND WLDMT-TH25-36K LONG	-	1
2.	52724578	GEAR COVER - WLDMT TH36	-	2
3.	52727937	CLAW-WLDMT TH25-36K	-	1
7.	60139308	PLATE-GREASE	-	2
8.	60139309	COVER-ACCESS HOLE CLAW	-	1
9.	60139377	GEAR GUARD-TH36 TIP	-	1
14.	72053508	ZERK-NPT .12	31	5
16.	72060092	CAP SCR .50-13X 1.25 HH GR5 Z	31	11
17.	72060177	CAP SCR .62-11X 3.00 HH GR8 Z	31	15
20.	72060793	CAP SCR .50-13X 1.00 SH ZINC	31	4
25.	72063053	WASHER .50 LOCK	31	19
27.	72063119	WASHER .62 FLAT ASTM F436	31	15
31.	91726445	KIT-HRDW TH36K HAND ASM	-	1
39.	60146525	COVER-HYD TH25K-TH36K	-	1
40.	72060091	CAP SCR .50-13X 1.00 HH GR5 Z	31	4
REV. C				



TH25K164 - Hand Assembly - Short (40726444)

DETAIL: GEAR TRAIN

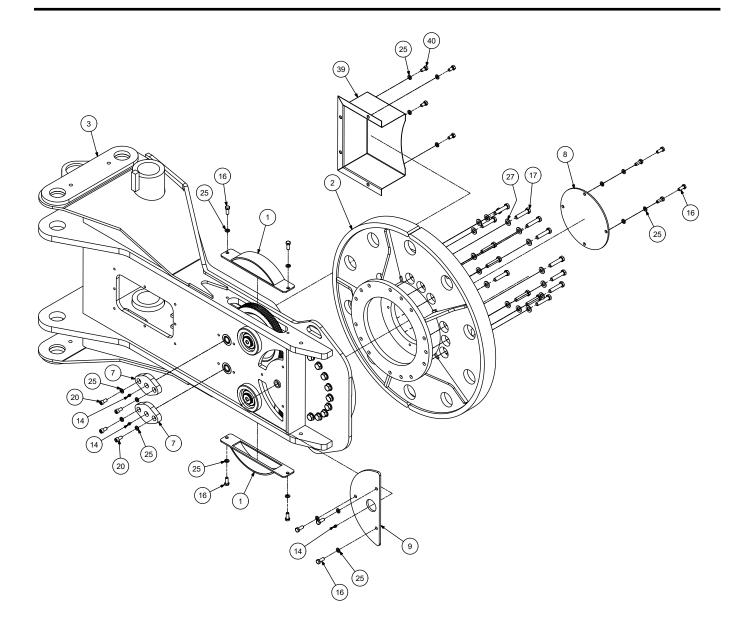
NOTES:

- 1. USE LOCTITE 277 ON ALL 5/8" AND 3/4" BOLTS
- 2. TORQUE ALL 5/8" BOLTS TO 160 FT LB
- 3. TORQUE ALL 3/4" BOLTS TO 280 FT LB
- 4. APPLY LOCTITE 242 ON BOLTS MARKED WITH *
- 5. INSTALL TURNTABLE BEARING WHERE GREASE ZERK IS LOCATED AT MISSING BOLT MOUNTING LOCATION.

ITEM NO.	PART NO.	DESCRIPTION	KIT NO.	QTY.
3.	52727936	HAND WLDMT-TH36K SHORT	-	1
4.	53000700	GREASE EXT- 8.00 OAL 6.00HOSE	-	1
5.	60020226	THRUST WASH-BRZ 2.50X4.00X .44	-	2
6.	60106032	STUD50-13X1.75	31	4
10.	60139378	COVER-PINION GEAR TH36	-	2
11.	71056264	GEAR-INTMD 301-10103-1	-	2
12.	71056265	GEAR-PINION 301-10104-1	-	2
13.	71056627	GEAR-TRNTBL BRG 44905183-2 INDU HARDENED	-	1
14.	72053508	ZERK-NPT .12	31	5
15.	72053638	ADPTR-MPT/FPT SWVL .12 .12	-	1
18.	72060209	CAP SCR .75-10X 2.75 HH GR8 Z	31	17
19.	72060738	CAP SCR .31-18 2.50 SH PLAIN	31	8
21.	72060833	SCR-THRD.CUT .31-18X.75 HWH-1	31	4
22.	72062080	NUT .50-13 HEX NYLOCK	31	4
23.	72063002	WASHER .31 FLAT	31	4
24.	72063039	MACHY BUSHING 2.00X10 GA NR	31	2
26.	72063116	WASHER .75 N FLAT H ASTMF436Z	31	17
28.	72066095	RETAINING RING-EXT 2.00 STD	31	2
29.	73511451	MOTOR ASM W/ CB VALVE	-	2
30.	7Q072112	O RING .50X .69X .09 70	31	4
31.	91726445	KIT-HRDW TH36K HAND ASM	-	1
32.	73511450	MOTOR-HYD 11186179	29	2
33.	73540008	VALVE BLK-DBL 15 GPM .44-20SAE	29	2
34.	73051941	VALVE-CBAL 02-371063 (CBCH-LJN)	29	4
35.	60020188	BUSHING-BASE 516/6014/8025	3	2
37.	60020179	BUSHING-BRZ 1.50X 2.25X .81	3	2
36.	60020187	BUSHING-BASE 516/6014/8025	3	2
38.	60020116	BUSHING-B148 ROTATION SM CRANE	3	2
REV. C				

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40726444-1, HAND ASSEMBLY - SHORT (CONTINUED)



NOTES:

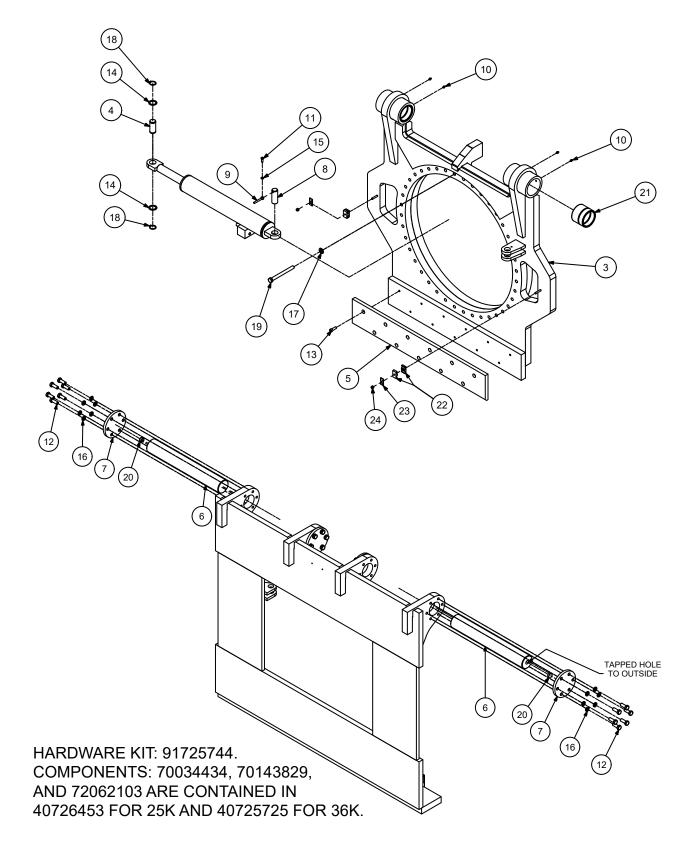
- 1. USE LOCTITE 277 ON ALL 5/8" AND 3/4" BOLTS
- 2. TORQUE ALL 5/8" BOLTS TO 160 FT LB
- 3. TORQUE ALL 3/4" BOLTS TO 280 FT LB
- 4. APPLY LOCTITE 242 ON BOLTS MARKED WITH *
- 5. INSTALL TURNTABLE BEARING WHERE GREASE ZERK IS LOCATED AT MISSING BOLT MOUNTING LOCATION.

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40726444-1 PARTS LIST

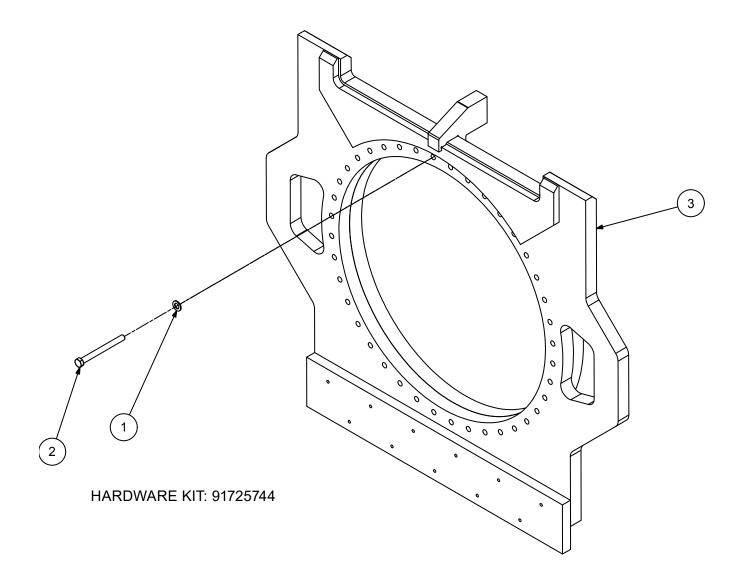
ITEM NO.	PART NO.	DESCRIPTION	KIT NO.	QTY.
1.	52724578	GEAR COVER - WLDMT TH36	-	2
2.	52727937	CLAW-WLDMT TH25-36K	-	1
3.	52727936	HAND WLDMT-TH36K SHORT	-	1
7.	60139308	PLATE-GREASE	-	2
8.	60139309	COVER-ACCESS HOLE CLAW	-	1
9.	60139377	GEAR GUARD-TH36 TIP	-	1
14.	72053508	ZERK-NPT .12	31	5
16.	72060092	CAP SCR .50-13X 1.25 HH GR5 Z	31	11
17.	72060177	CAP SCR .62-11X 3.00 HH GR8 Z	31	15
20.	72060793	CAP SCR .50-13X 1.00 SH ZINC	31	4
25.	72063053	WASHER .50 LOCK	31	19
27.	72063119	WASHER .62 FLAT ASTM F436	31	15
39.	60146525	COVER-HYD TH25K-TH36K	-	1
40.	72060091	CAP SCR .50-13X 1.00 HH GR5 Z	31	4
REV. C				





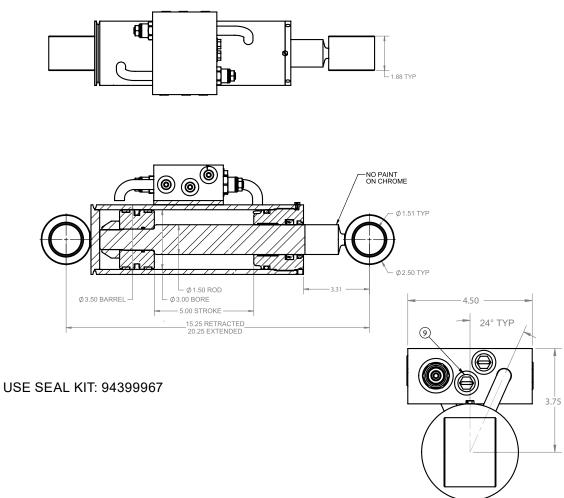
ITEM NO.	PART NO.	DESCRIPTION	QTY.
1.	-	BASE WLDMT TH25-36K	1
2.	51726456	CYL-4.0/2.0 16.00S 36.00CC - B068CY26	1
3.	52725743	SUB BASE WLDMT- TH36 MOTOR ROT	1
4.	60010830	PIN-TYPE A 1.50X 3.44 (2.94)	1
5.	60030244	WEAR PAD	1
6.	60117123	PIN- TYPE F 4.00X27.94	2
7.	60117131	PIN RETAINER	4
8.	60139298	PIN-TYPE H 1.50 X 4.00	1
9.	71415014	KEEPER-PIN .38	1
10.	72053508	ZERK-NPT .12	4
11.	72060046	CAP SCR .38-16X 1.00 HH GR5 Z	1
12.	72060185	CAP SCR .75-10X 2.00 HH GR5 Z	24
13.	72060795	CAP SCR .50-13X 1.50 SH PLAIN	11
14.	72063037	MACHY BUSHING 1.50X10 GA NR	2
15.	72063051	WASHER .38 LOCK	1
16.	72063056	WASHER .75 LOCK	24
17.	72063116	WASHER .75 N FLAT H ASTMF436Z	40
18.	72066132	RETAINING RING-EXT 1.50 HD	2
19.	72601749	CAP SCR .75-10X 8.00 HH GR8 Z	40
20.	70034366	PLUG-PLSTC BUTTON BP-1-1/8	2
21.	60020231	BUSHING- 4.00X 4.75X 4.00 (Part of Item 3)	4
22.	70034432	CLAMP-TWIN TUBE .50 OD	2
23.	70143829	COVER PLT-PAR29 CPT2	2
24.	72062103	NUT .38-16 HEX NYLOCK	2
REV. E CN98	8		





ITEM NO.	PART NO.	DESCRIPTION	QTY.
1.	72063116	WASHER .75 N FLAT H ASTMF436Z	40
2.	72601749	CAP SCR .75-10X 8.00 HH GR8 Z	40
3.		SUB BASE WLDMT	1
REV. A			

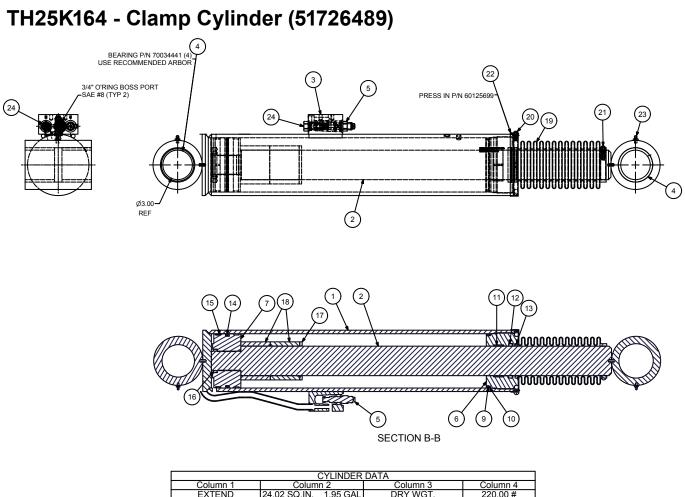
TH25K164 - Fallback Arm Cylinder (51726448)



NOTES:

- Apply never-seez regular grade anti-seez and lubricating compound to threads on the cylinder head only, keep away from all seals.
- 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.

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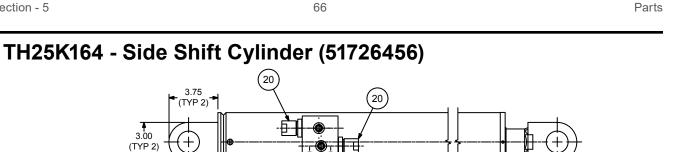
EXTEND	24.02 SQ.IN. 1.95 GAL	DRY WGT.	220.00 #
RETRACT	16.95 SQ.IN. 1.38 GAL	BRG. SPAN:	16 %
CASE	ø6.25 x 5.53B x 31.12LG	TEST PSI:	3000
ROD	ø3.00 x 37.50LG	OPER PSI:	2500
STINGER	ø2.00 x 3.00LG	PISTON TORQUE	710-740 FT-LBS
		HEAD TORQUE	550 FT-LBS
STROKE	18.75	CARTRIDGE TORQUE	30-35 FT-LBS
LOCKNUT TORQUE		CAP SCR TORQUE	•

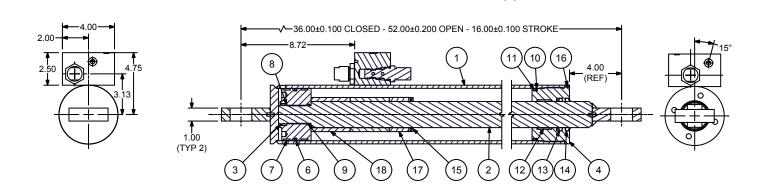
NOTES:

- Apply never-seez regular grade anti-seez and lubricating compound to threads on the cylinder head only, keep away from all seals.
- 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.

ITEM NO.	PART NO.	DESCRIPTION	KIT NO.	QTY.
1.	52726959	CASE ASM-5.53 BORE X 34.25 LG	-	1
2.	52726958	ROD ASM-3.00 DIA X 43.25 LG 2.00 S 3.00	-	1
3.	70145862	PLUG-#4 EPCO HEX SOC HD		2
4.	70034441	BEARING-GAR-MAX-3.00 X 3.50 X 3.00	1, 2	4 REF
5.	73540622	VALVE-CBAL 15 GPM SUN CBCG-LJN-4100	-	1
6.	6hx05530	HEAD-5.50 BORE X 3.00 ROD	-	1
7.	6ix05520	PISTON-5.50 BORE X 2.00 STGR	-	1
8.	9C222432	SEAL KIT-IMT 5.53B 3.00R 2.00S	-	1
9.	7Q072354	O RING 5.12X 5.50X .19 70	8	1 REF
10.	7Q10P354	BACKUP RING-5.62 ID X 6.00 OD	8	1 REF
11.	7T2N8032	WEAR RING-ROD 3.00 ID X 1.00W	8	1 REF
12.	7R546030	U-CUP LOADED 3.00X3.50X.38 B	8	1 REF
13.	7R14P030	ROD WIPER-TYPE D 3.00 ROD	8	1 REF
14.	7T66P550	PISTON SEAL-PSP 550	8	1 REF
15.	7T2N4055	WEAR RING-PISTON 5.50 ODX .50W	8	1 REF
16.	7T61N200	LOCK RING-NYLON 2.00in.	8	1 REF
17.	60138277	STOP TUBE-3.00 ROD X 0.25 LONG	8	1 REF
18.	6C300030	STOP TUBE-3.00 ROD X 3.00 LONG	-	2
19.	70393660	COVER-CYLINDER ROD (GORTITE) 28.75 IN	-	1
20.	72661293	CLAMP-HOSE 5.62-6.50 SAE #96	-	1
21.	72661286	CLAMP-HOSE 2.56-3.50 SAE #48	-	1
22.	60125699	PIN - LOCK TUBE 0.19 OD X 0.065 WALL	8	1 REF
23.	72053507	ZERK-STR THD .25-28	1, 2	2 REF
24.	73054681	VALVE-CHECK PILOT/OPEN NONVENT 100PSI	-	1
REV. B CN73	37			

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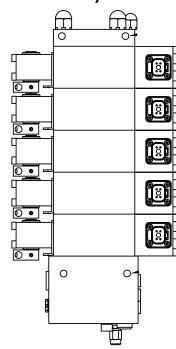
NOTES:

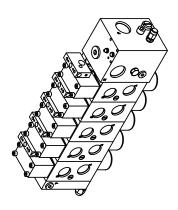
- · Apply never-seez regular grade anti-seez and lubricating compound to threads on the cylinder head only, keep away from all seals.
- Apply lubriplate no. 630-2 Medium heavy, multi-purpose lubricant, to all piston, head gland, and holding valve seals, nylon lock ring, cast iron piston rings, and rod stinger threads.

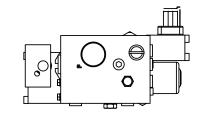
ITEM NO.	PART NO.	DESCRIPTION	KIT NO.	QTY.
1.	52726458	CASE WLDMT - 4.02B X 31.63 (BA-AFGG4QQH)		1
2.	4G083930	ROD ASSEMBLY - 2.00 DIA X 33.12L		1
3.	61402144	PISTON-4.02 BORE X 1.44 STGR		1
4.	6H040020	HEAD-4.02 BORE X 2.00 ROD		1
5.	9B015930	SEAL KIT - 1.00B 2.00R 1.44S		1
6.	7T66P400	PISTON SEAL-DYNAMIC 4.00in CP	5	1
7.	7T2N4040	WEAR RING - PISTON 4.00 O.D. X .50 W	5	2
8.	7T61N143	LOCK RING-NYLON 1.43	5	1
9.	7Q072127	O RING 1.44X 1.62X .09 70	5	1
10.	7Q10P342	BACK-UP RING 3.62 BORE 4 O.D. 0.07 THK	5	1
11.	7Q072342	O RING 3.62X 4.00X .19 70	5	1
12.	7T2N8022	WEAR RING-ROD 2.00 ID X 1.00 W	5	1
13.	7R546020	U-CUP LOADED 2.00 X 2.50 X .38 "B"	5	1
14.	7R14P020	ROD WIPER-TYPE D 2.00 ROD	5	1
15.	60138274	SPACER - IMT 2.00R X 0.25 LONG	5	1
16.	60125699	PIN - LOCK TUBE 0.19 OD X 0.065 WALL	5	1
17.	6C150020	SPACER - IMT 2.00R X 1.50 LONG		1
18.	6C300020	SPACER - IMT 2.00 ROD X 3.00 LONG		2
19.	76399968	SQUARE RING 2.00 ID (A31-7-136)		1
20.	73054242	Valve-CBAL 25GPM (5:1)		2
21.	70145862	ORB PLUG - #4 LOW PROFILE (D13-604017)		2
REV. A				

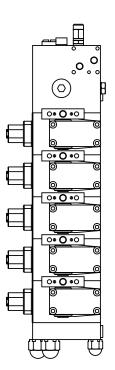


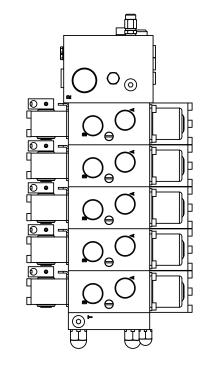
NOTE: Valve bank 73734847 replaces 73734782 and 73734656.

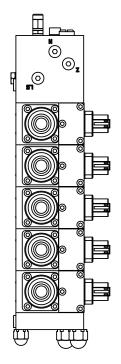






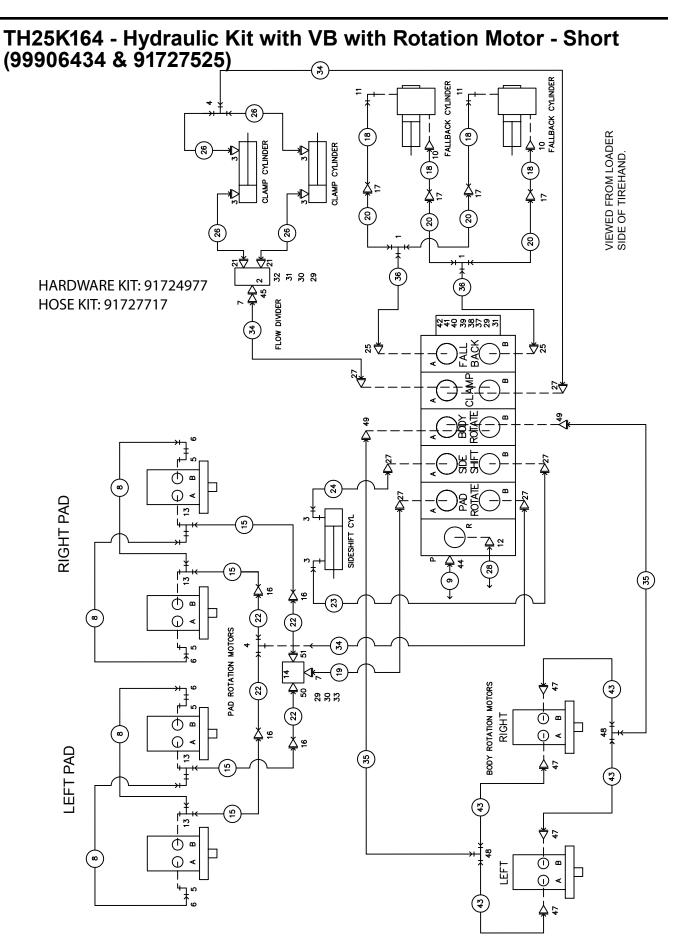






TH25K164 - Manual # 99905543

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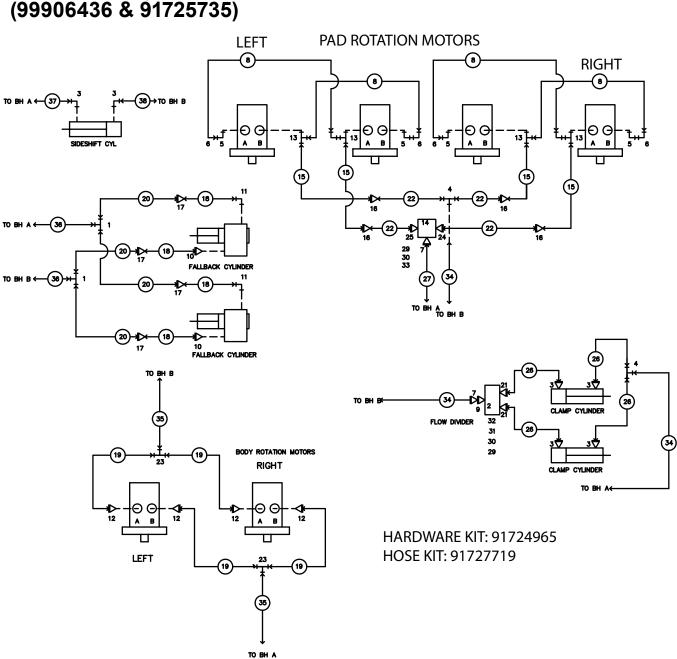


1. 7253492 UNION-BULKHEAD BRANCH TEE JIC 4 2 2. 73054829 FLOW DIVIDER 1 3. 72532358 ADAPTER, #9 MALE STR/#8 MALE JIC 10 4. 72532928 UNION-BULKHEAD BRANCH TEE JIC 8 2 5. 72533934 ELBOW. MIC/90/F JIC SW 6 6 4 6. 72532772 ELBOW. #3 INALE JIC/90/#8 M STR 3 8. 51395893 HOSE-F.7 5X 75.00 (12-12) 100R2 1 10. 72532792 ADAPTER, M STR/M JIC 84 2 11. 72053768 ELBOW. M STR/M JIC 74 2 12. 72533791 ELBOW. M STR/M JIC 74 2 13. 725345861 FLES. SWVL DUT RUN #4 M STR #6 JIC #6 JIC 4 14. 73054614 FLOW DIVIDER 4 15. SYUL DUT RUN #4 M STR #6 JIC #6 JIC 4 16. 72533730 UNION-BULKHEAD 37 JIC #4 4 17. 7253373 UNION-BULKHEAD 37 JIC #4 4 18. 51398974 HOSE-F.7 SX 15.00 (6.4) 100R17 2	ITEM NO.	PART NO.	DESCRIPTION	QTY.
3. 72532366 ADAPTER, #8 MALE STR/#8 MALE JIC 10 4. 72534928 UNION-BULKHEAD BRANCH TEE JIC 8 2 5. 72533594 ELBOW-M JIC/90/F JIC SW 6 6 4 7. 72053763 ELBOW-M JIC/90/F JIC SW 6 6 4 7. 72053763 ELBOW, #8 MALE JIC/90/F#8 M STR 3 8. 51395687 HOSE-FF. 75 X 75.00 (12-12) 100R2 1 10. 72532732 ADAPTER, M STR/M JIC 84 2 11. 72053758 ELBOW, M STR/M JIC 74 2 12. 72533391 ELBOW, M STR/M JIC 74 1 13. 72534858 TEE, SWU, NUT RUN #4/M STR #6 JIC 66 JIC 4 14. 73054614 FLOW DIVIDER 1 1 15. 51393976 HOSE-FF. 25 X 15.00 (8-6) 100R2 4 4 18. 51339376 HOSE-FF. 25 X 15.00 (4-9) 2 2 21. 72533585 LBOW, #12 MALE STR/#8 MALE JIC 2 2 22. 51393970 HOSE-FF. 50 X 15.00 (8-9) 1 2	1.	72534926	UNION-BULKHEAD BRANCH TEE JIC 4	2
4. 72534928 UNION-BULKHEAD BRANCH TEE JIC 8 2 5. 72633994 ELBOW-M STRY0M JIC 4 4 6. 72532772 ELBOW-M STRY0M JIC 4 3 8. 51396687 HOSE-FJ.38 X 17.50 (6-6) 4 9. 51395043 HOSE-FJ.35 X 75.00 (12-12) 100R2 1 10. 72532792 ADAPTER, M STRM JIC 84 2 11. 72033768 ELBOW, M STRN JIC 74 2 12. 7253319 ELBOW, N STRNJOIL 02 16 1 13. 72534858 TEE, SWL NUT RUN #4 MSTR #6 JIC #6 JIC 4 14. 73054614 FLOW DIVIDER 1 15. 51398470 HOSE-FJ.30 X 63.00 (8-6) 100R2 4 16. 7253373 UNION-BULKHEAD 37' JIC. 75 4 17. 7253024 UNION-BULKHEAD 37' JIC. 75 4 18. 51396454 HOSE-FJ.50 X 15.00 (8-9) 100R1 2 20. 51396434 HOSE-FJ.50 X 45.00 (8-9) 100R1 1 21. 7253359 ELBOW, #12 MALE STR#8 MALE JIC 2	2.	73054829	FLOW DIVIDER	1
5. 72533594 ELBOW-M JIC 90F JIC SW 6 4 6. 72552772 ELBOW, M JIC 90F JIC SW 6 4 7. 72053763 ELBOW, M MALE JIC 900/#8 MSTR 3 8. 51395043 HOSE-FJ .38 X 17.50 (6-6) 4 9. 51395043 HOSE-FF .75 X 75.00 (12/12) 100R2 1 10. 72532792 ADAPTER, MSTRM JIC 84 2 11. 72053758 ELBOW, M STR/M JIC 16 1 13. 72534858 TEE, SWU, NUT RUN #4 MSTR #6 JIC #6 JIC 4 14. 73054614 FLOW DIVIDER 1 1 15. 51399470 HOSE-FJ .38 X 65.00 (8-6) 100R2 4 4 16. 72533732 UNION-BULKHEAD 37 JIC .75 4 4 17. 72533024 UNION-BULKHEAD 37 JIC .44 4 4 19. 51398976 HOSE-FF .25 X 15.00 (4-4) 100R2 4 4 20. 51398974 HOSE-FF .25 X 15.00 (4-4) 100R2 4 2 21. 72533594 HOSE-FF .25 X 15.00 (4-9) 4	3.	72532358	ADAPTER, #8 MALE STR/#8 MALE JIC	10
6. 72532772 ELBOW-M JIC/90/F JIC SW 6 6 4 7. 72053763 ELBOW, #9 MALE JIC/90/#8 MSTR 3 8. 51395887 HOSE-FJ 38 X 17.50 (6-6) 4 9. 51395887 HOSE-FJ 38 X 17.50 (6-6) 4 10. 72532792 ADAPTER. M STR/M JIC 8 4 2 11. 72053758 ELBOW, M STR/M JIC 44 2 12. 72533319 ELBOW-M STR/90/M JIC 12 16 1 13. 72534868 TEE, SWVL NUT RUN #4 MSTR #6 JIC #6 JIC 4 14. 73054614 FLOW DIVDER 4 15. 51399470 HOSE-FJ 38 X 6300 (8-6) 100R2 4 16. 72533274 UNION-BULKHEAD 37' JIC #4 4 17. 72533264 UNION-BULKHEAD 37' JIC #4 4 18. 51395976 HOSE-FJ 25 X 15.00 (4-4) 100R2 4 19. 5139565 ELBOW, #12 MALE STR/#8 MALE JIC 2 20. 51395641 HOSE-FJ 5.0 X 45.00 (8-8) 1 21. 72533569 ADPTR-M STR/M JIC 10 4 2	4.	72534928	UNION-BULKHEAD BRANCH TEE JIC 8	2
7. 72053763 ELBOW, #8 MALE JIC/90/#8 M STR 3 8. 51395887 HOSE-FJ J3X 17.50 (6-6) 4 9. 51395943 HOSE-FJ 75X 75.00 (12)21 (1002 1 10. 72532792 ADAPTER, M STR/M JIC 84 2 11. 72053758 ELBOW. M STR/M JIC 84 2 12. 72533485 TEE, SWVL NUT RUN #4 MSTR #6 JIC #6 JIC 4 14. 73054614 FLOW DIVIDER 1 15. 51399470 HOSE-FJ 33 X 15.00 (6-6) 100R2 4 16. 72533373 UNION-BULKHEAD 37 JIC .75 4 17. 72533024 UNION-BULKHEAD 37 JIC .44 4 18. 51393976 HOSE-FF .50 X 16.00 (8-0) 100R1 2 20. 51393978 HOSE-FF .50 X 15.00 (4-4) 100R2 4 21. 7253359 ELBOW, #12 MALE STR/#8 MALE JIC 2 22. 51395431 HOSE-FF .50 X 115.00 (4-9) 100R1 1 24. 51395643 HOSE-FF .50 X 70.00 4 25. 72533589 ADPTR-M STR/M JIC 104 2 26. 513959619 HOSE-FF .50 X 70.00 <	5.	72533594	ELBOW-M STR/90/M JIC 4 6	4
8. 51395887 HOSE-FJ.38 X 17.50 (6-6) 4 9. 51395043 HOSE-FF.75 X 75.00 (12-12) 100R2 1 10. 72533792 ADAPTER, M STR/M JIC 8 4 2 11. 72053758 ELBOW.M STR/M JIC 84 2 12. 72533319 ELBOW.M STR/90/M JIC 12 16 1 13. 72534858 TEE, SWVL NUT RUN #4 MSTR #6 JIC #6 JIC 4 14. 73054614 FLOW DIVIDER 1 15. 51399470 HOSE-FJ 38 X 63.00 (8-6) 100R2 4 16. 72533373 UNION-BULKHEAD 37' JIC .75 4 17. 72533024 UNION-BULKHEAD 37' JIC .75 4 18. 51393976 HOSE-FJ .55 X 15.00 (8-8) 100R17 2 20. 51395645 HOSE-FJ .55 X 15.00 (8-8) 4 21. 72533589 HOSE-FJ .50 X 15.00 (8-8) 1 22. 51396431 HOSE-FJ .50 X 15.00 (8-1) 1 23. 51399644 HOSE-FJ .50 X 45.00 (8-8) 1 24. 72533589 ADPTR-M STR/M JIC 10 4 2<	6.	72532772	ELBOW-M JIC/90/F JIC SW 6 6	4
9. 51395043 HOSE-FF.75 X 75.00 (12.42) 100R2 1 10. 72532792 ADAPTER, M STR/M JIC 8 4 2 11. 72053758 ELBOW, M STR/N JIC 8 4 2 12. 72533319 ELBOW, M STR/N JIC 44 2 13. 72534858 TEE, SWVL NUT RUN #4 MSTR #6 JIC #6 JIC 4 14. 73054614 FLOW DIVIDER 1 15. 51399470 HOSE-FJ 38 X 63.00 (8-6) 100R2 4 16. 72533373 UNION-BULKHEAD 37 JIC 75 4 17. 72533024 UNION-BULKHEAD 37 JIC 74 4 18. 51393976 HOSE-FF 25X 42.00 (4-4) 4 19. 51395645 HOSE-FF 25X 115.00 (4-4) 100R2 4 20. 51395979 HOSE-FF 25X 115.00 (8-8) 4 21. 72533585 ELBOW, #12 MLE ETRFMW MALE JIC 2 22. 51395433 HOSE-FF 5.5X X 15.00 (8-8) 1 23. 5139644 HOSE-FF 5.5X X 45.00 (8-8) 1 24. 51395609 HOSE-FF 1.50 X 76.00 4	7.	72053763	ELBOW, #8 MALE JIC/90'/#8 M STR	3
10. 72532792 ADAPTER, M STR/M JIC 8 4 2 11. 72053758 ELBOW, M STR/M JIC 84 2 12. 72533458 TEE, SWVL NUT RUN 16 21 21 6 1 13. 72534585 TEE, SWVL NUT RUN 14 MSTR #6 JIC #6 JIC 4 14. 73054614 FLOW DIVIDER 1 15. 51399470 HOSE-FJ 38 X 63.00 (8-6) 100R2 4 16. 72533024 UNION-BULKHEAD 37 JIC 75 4 17. 72533024 UNION-BULKHEAD 37 JIC #4 4 18. 51393976 HOSE-FF .25X 42 00 (4-4) 4 19. 51393976 HOSE-FF .50 X 10.0 (8-8) 2 20. 51393979 HOSE-FF .50 X 15.00 (4-9) 100R17 2 21. 72533595 ELBOW, #12 MALE STR/# MALE JIC 2 22. 5139444 HOSE-FF .50 X 15.00 (8-8) 1 23. 5139844 HOSE-FF .50 X 70.0 4 24. 5139500 HOSE-FF .50 X 70.0 4 27. 7253259 ADPTR-M STR/M JIC 10 8 8 <	8.	51395887	HOSE-FJ .38 X 17.50 (6-6)	4
11. 72053758 ELBOW. M STR/M JIC #4 2 12. 72533319 ELBOW-M STR/90/N JIC 12 16 1 13. 72534858 TEE, SWVL NUT RUN #4 MSTR #6 JIC #6 JIC 4 14. 73054614 FLOW DIVIDER 1 15. 61399470 HOSE-FJ.38 X 63.00 (8-6) 100R2 4 16. 72533037 UNION-BULKHEAD 37 JIC. 75 4 17. 7253024 UNION-BULKHEAD 37 JIC. 75 4 18. 51393976 HOSE-FF. 25X 42.00 (4-4) 4 19. 51395645 HOSE-FF.150 X 116.00 (8-8) 100R17 2 20. 51399397 HOSE-FF.50 X 115.00 (4-4) 100R2 4 21. 7253359 ELBOW, #12 MALE STR/#8 MALE JIC 2 22. 5139543 HOSE-FF. 50 X 15.00 (8-8) 1 24. 51396204 HOSE-FF. 50 X 15.00 (8-8) 1 25. 7253358 ADPTR-M STR/M JIC 10 4 2 26. 5139500 HOSE-FF. 100 X 74 00 (6-6) 1 29. 72063051 NUT.38-16 HEX GR5 Z NYLOCK <	9.	51395043	HOSE-FF .75 X 75.00 (12-12) 100R2	1
12. 72533319 ELBOW-M STR/90/M JIC 12 16 1 13. 72534858 TEE, SWVL NUT RUN #4 MSTR #6 JIC #6 JIC 4 14. 73054614 FLOW DIVIDER 1 15. 51399470 HOSE-FJ.38 X 63.00 (6-6) 100R2 4 16. 72533024 UNION-BULKHEAD 37 JIC 75 4 17. 72533024 UNION-BULKHEAD 37 JIC 75 4 18. 51393970 HOSE-FF. 25X 4200 (4-4) 4 19. 51395645 HOSE-FF. 25X 115.00 (4-4) 100R2 4 21. 72533597 HOSE-FF. 25X 115.00 (4-4) 100R2 4 22. 51395433 HOSE-FF. 50 X 115.00 (4-8) 1 23. 51399644 HOSE-FF. 50 X 15.00 (8-8) 4 24. 51396024 HOSE-FF. 50 X 70.00 4 25. 7253259 ADPTR-M STR/M JIC 10 4 2 26. 51395001 HOSE-FF. 50 X 70.00 4 30. 7206055 NUT .38-16 HEX GRS Z NYLOCK 10 30. 72063051 NUT .38-16 HEX GRS Z NYLOCK 6	10.	72532792	ADAPTER, M STR/M JIC 8 4	2
13. 72534858 TEE, SWVL NUT RUN #4 MSTR #6 JIC #6 JIC 4 14. 73054614 FLOW DIVIDER 1 15. 51399470 HOSE-FJ .38 X 63 00 (8-6) 100R2 4 16. 7253373 UNION-BULKHEAD 37 JIC .75 4 17. 72533024 UNION-BULKHEAD 37 JIC .75 4 18. 51393976 HOSE-FF .25X 115.00 (4-4) 4 19. 51395645 HOSE-FF .25X 115.00 (4-4) 100R2 4 20. 5139507 ELBOW, #12 MALE STR/#8 MALE JIC 2 21. 72533595 ELBOW, #12 MALE STR/#8 MALE JIC 2 22. 51395434 HOSE-FF .50 X 45.00 (8-8) 1 23. 5139544 HOSE-FF .50 X 45.00 (8-8) 1 24. 5138659 ADPTR-M STR/M JIC 10 4 2 25. 72533589 ADPTR-M STR/M JIC 10 8 8 28. 51396619 HOSE-FF .50 X 45.00 (8-10) 1 29. 72603051 NUT .38-16 HEX GR5 Z NYLOCK 6 30. 72602103 NUT .38-16 HEX GR5 Z NYLOCK 6 31. 72600505 CAP SCR .38-16X 2.00 HH GR5 Z <td>11.</td> <td>72053758</td> <td>ELBOW, M STR/M JIC #4</td> <td>2</td>	11.	72053758	ELBOW, M STR/M JIC #4	2
14. 73054614 FLOW DIVIDER 1 15. 51399470 HOSE-FJ. 38 X 63.00 (8-6) 100R2 4 16. 72533373 UNION-BULKHEAD 37 JIC. 75 4 17. 72633024 UNION-BULKHEAD 37 JIC. 75 4 18. 51393976 HOSE-FF.25X 42.00 (4-4) 4 19. 51395645 HOSE-FF.25X 115.00 (8-8) 100R17 2 20. 51393979 HOSE-FF.25X 115.00 (4-9) 100R2 4 21. 72533555 ELBOW, #12 MALE STR##8 MALE JIC 2 22. 51395433 HOSE-FF.25X 45.00 (8-8) 1 23. 51399444 HOSE-FF.50 X 115.00 (8-9) 4 24. 5139604 HOSE-FF.50 X 70.00 4 25. 72533589 ADPTR-M STR/M JIC 10 8 8 28. 51396619 HOSE-FF.10X 74.00 (16-16) 1 29. 72063051 NUT.38-16 HEX GR5 Z NYLOCK 10 30. 72060103 NUT.38-16 HEX GR5 Z NYLOCK 6 31. 72600050 CAP SCR.38-16X 2.00 HH GR5 Z 2 34. 51396403 HOSE-FJ.35 X 19.00 (4-4) 100R17 2 <td>12.</td> <td>72533319</td> <td>ELBOW-M STR/90/M JIC 12 16</td> <td>1</td>	12.	72533319	ELBOW-M STR/90/M JIC 12 16	1
15. 51399470 HOSE-FJ. 38 X 63.00 (8-6) 100R2 4 16. 72533373 UNION-BULKHEAD 37 JIC. 75 4 17. 72533024 UNION-BULKHEAD 37 JIC. 75 4 18. 51393976 HOSE-FF. 25X 400 (4-4) 4 19. 51395645 HOSE-FF. 25X 200 (4-4) 4 19. 51395645 HOSE-FF. 25X 10.00 (4-4) 100R2 4 21. 72533595 ELBOW, #12 MALE STR/#8 MALE JIC 2 22. 51395433 HOSE-FF. 50X 15.00 (8-8) 4 23. 51399444 HOSE-FJ.50X 15.00 (8-8) 1 24. 51396204 HOSE-FJ.50X 70.00 4 25. 72533589 ADPTR-M STR/M JIC 10 8 8 26. 51396619 HOSE-FF. 10X 74.00 (16-6) 1 29. 72063051 NUT. 38-16 HEX GR5 Z NYLOCK 10 30. 72060050 CAP SCR 38-16X 2.00 (H-4) 100R17 2 31. 72060050 CAP SCR 38-16X 2.00 (H-4) 100R17 3 32. 72060050 CAP SCR 38-16X 2.00 HH GR5 Z 4 33. 72060050 CAP SCR 38-16X 2.00 HH GR5 Z	13.	72534858	TEE, SWVL NUT RUN #4 MSTR #6 JIC #6 JIC	4
16. 72533373 UNION-BULKHEAD 37 JC .75 4 17. 72533024 UNION-BULKHEAD 37 JC #4 4 18. 51393076 HOSE-FF .25X 42.00 (4-4) 4 19. 51395645 HOSE-FF .25X 115.00 (8-8) 100R17 2 20. 51393979 HOSE-FF .25X 115.00 (8-8) 100R17 2 21. 72533595 ELBOW, #12 MALE STR/#8 MALE JIC 2 22. 51395433 HOSE-FF .50X 115.00 (8-8) 100R17 1 24. 51396204 HOSE-FF .50X 45.00 (8-8) 100R17 1 25. 72533589 ADPTR-M STR/M JIC 104 2 26. 51396619 HOSE-FF .50 X 70.00 4 27. 72532359 ADPTR-M STR/M JIC 108 8 28. 51396619 HOSE-FF .100 X 74.00 (16-16) 1 29. 72063051 NUT .38-16 HEX GR5 Z NYLOCK 10 30. 7206203 NUT .38-16 HEX GR5 Z NYLOCK 6 31. 72660050 CAP SCR .38-16X 3.50 HI GR5 Z 2 34. 51396480 HOSE-FJ .30 X 25.00 (8-8) 100R17 3 35. 51396403 HOSE-FJ .30 X 25.00	14.	73054614	FLOW DIVIDER	1
17. 72533024 UNION-BULKHEAD 37 JIC #4 4 18. 51393976 HOSE-FF. 25X 42.00 (4-4) 4 19. 51395645 HOSE-FJ. 50 X 16.00 (8-8) 100R17 2 20. 51393979 HOSE-FF. 25X 115.00 (4-4) 100R2 4 21. 72533595 ELBOW, #12 MALE STR/#6 MALE JIC 2 22. 51395433 HOSE-FF. 50 X 115.00 (8-8) 4 23. 51399444 HOSE-FJ. 50 X 45.00 (8-8) 100R17 1 24. 51396204 HOSE-FJ. 50 X 45.00 (8-8) 1 25. 72533589 ADPTR-M STR/M JIC 10 4 2 26. 51393500 HOSE-FF. 50 X 70.00 4 27. 72532359 ADPTR-M STR/M JIC 10 8 8 28. 51396619 HOSE-FF. 1.00 X 74.00 (16-16) 1 29. 72063051 NUT. 38-16 HEX GR5 Z NYLOCK 10 30. 72062103 NUT.38-16 HEX GR5 Z NYLOCK 6 31. 72600055 CAP SCR 38-16X 3.00 HI GR5 Z 2 34. 51396403 HOSE-FJ. 30 X 25.00 (8-8) 100R17 3 35. 51399430 HOSE-FJ. 38 X 35.01H	15.	51399470	HOSE-FJ .38 X 63.00 (8-6) 100R2	4
18. 5139376 HOSE-FF.25X 42.00 (4-4) 4 19. 51395645 HOSE-FF.25X 15.00 (8-8) 100R17 2 20. 51393979 HOSE-FF.25X 115.00 (4-4) 100R2 4 21. 72533595 ELBOW, #12 MALE STR/#8 MALE JIC 2 22. 51395433 HOSE-FF.50X 115.00 (8-8) 4 23. 51399444 HOSE-FF.50X 115.00 (8-8) 1 24. 51396204 HOSE-FF.50X 115.00 (8-8) 1 25. 72533589 ADPTR-M STR/M JIC 10 4 2 26. 51935900 HOSE-FF.100 X 74.00 (16-16) 1 27. 72532559 ADPTR-M STR/M JIC 10 8 8 28. 51396619 HOSE-FF 1.00 X 74.00 (16-16) 1 29. 72063051 NUT .38-16 HEX GR5 Z NYLOCK 10 30. 72060105 CAP SCR.38-16X 2.00 HH GR5 Z 2 31. 72060050 CAP SCR.38-16X 3.50 HH GR5 Z 2 34. 51396403 HOSE-FJ .50 X 25.00 (8-8) 100R17 3 35. 51399430 HOSE-FJ .25 X 19.00 (4-4) 100R1	16.	72533373	UNION-BULKHEAD 37" JIC . 75	4
19. 51395645 HOSE-FJ .50 X 16.00 (8-8) 100R17 2 20. 51393979 HOSE-FF .25 X 115.00 (4-4) 100R2 4 21. 72533595 ELBOW, #12 MALE STR/#8 MALE JIC 2 22. 51395433 HOSE-FF .50 X 115.00 (8-8) 4 23. 51399444 HOSE-FJ .50 X 45.00 (8-8) 100R17 1 24. 51396204 HOSE-FF .50 X 70.00 (8-8) 1 25. 72533589 ADPTR-M STR/M JIC 10 4 2 26. 513935900 HOSE-FF .50 X 70.00 4 27. 72532359 ADPTR-M STR/M JIC 10 8 8 28. 51396619 HUT .38-16 HEX GR5 Z NYLOCK 10 30. 72062103 NUT .38-16 HEX GR5 Z NYLOCK 10 30. 72060050 CAP SCR .38-16X 2.00 HH GR5 Z 4 31. 72660050 CAP SCR .38-16X 2.00 HH GR5 Z 2 34. 5139680 HOSE-FJ .50 X 25.00 (8-8) 100R17 3 35. 51399430 HOSE-FJ .50 X 25.00 (8-8) 100R17 2 36. 51396403 HOSE-FJ .38 X 25.00 (8-6) 100R17 2 37. 73734847 V	17.	72533024	UNION-BULKHEAD 37 JIC #4	4
20. 51393979 HOSE-FF.25 X 115.00 (4-4) 100R2 4 21. 72533595 ELBOW, #12 MALE STR/#8 MALE JIC 2 22. 51395433 HOSE-FF.50 X 115.00 (8-8) 4 23. 51399444 HOSE-FF.50 X 15.00 (8-8) 10 24. 51396204 HOSE-FF.50 X 45.00 (8-8) 10 25. 72533589 ADPTR-M STR/M JIC 10 4 2 26. 51935900 HOSE-FF.50 X 70.00 4 27. 72532359 ADPTR-M STR/M JIC 10 8 8 28. 51396619 HOSE-FF.100 X 74.00 (16-16) 1 29. 72063051 NUT .38-16 HEX GR5 Z NYLOCK 6 31. 7266303 WASHER-FLAT .38 W ANSI B27.2 Z 12 32. 72060050 CAP SCR .38-16X 2.00 HI GR5 Z 2 34. 51396430 HOSE-FJ .38 X 25.00 (6-6) 100R17 3 35. 51399430 HOSE-FJ .38 X 25.00 (6-6) 100R17 2 36. 6139317 MOUNTING BRACKET-VALVE BANK 1 37. 73734847 VALVE BANK 1	18.	51393976	HOSE-FF .25X 42.00 (4-4)	4
21. 72533595 ELBOW, #12 MALE STR/#8 MALE JIC 2 22. 51395433 HOSE-FF.50 X 115.00 (8-8) 4 23. 51399444 HOSE-FJ.50 X 45.00 (8-8) 1 24. 51396204 HOSE-FJ.50 X 45.00 (8-8) 1 25. 72533589 ADPTR-M STR/M JIC 10 4 2 26. 51395000 HOSE-FF.50 X 70.00 4 27. 72532359 ADPTR-M STR/M JIC 10 8 8 28. 51396619 HOSE-FF.100 X 74.00 (16-16) 1 29. 72063051 NUT.38-16 HEX GR5 Z NYLOCK 6 30. 72062103 NUT.38-16 HEX GR5 Z NYLOCK 6 31. 72600050 CAP SCR 38-16X 2.00 HH GR5 Z 2 34. 51396800 HOSE-FJ.38 X 25.00 (6-8) 100R17 3 35. 51399430 HOSE-FJ.38 X 25.00 (6-9) 100R17 2 36. 51396403 HOSE-FJ.38 X 25.00 (6-1) 100R17 2 37. 7374847 VALVE BANK 1 38. 60139317 MOUNTING BRACKET-VALVE BANK 1 39. 72060047 CAP SCR 38-16X 1.25 HH GR5 Z 4	19.	51395645	HOSE-FJ .50 X 16.00 (8-8) 100R17	2
22. 51395433 HOSE-FF .50 X 115.00 (8-8) 4 23. 51399444 HOSE-FJ .50 X 45.00 (8-8) 100R17 1 24. 51396204 HOSE-FZ .50 X 45.00 (8-8) 1 25. 72533589 ADPTR-M STR/M JIC 10 4 2 26. 51935900 HOSE-FF .50 X 70.00 44 27. 72532359 ADPTR-M STR/M JIC 10 8 8 28. 51396619 HOSE-FF 1.00 X 74.00 (16-16) 1 29. 72063051 NUT .38-16 HEX GR5 Z NYLOCK 66 31. 7266103 NUT .38-16 HEX GR5 Z NYLOCK 6 31. 72660050 CAP SCR .38-16X 2.00 HH GR5 Z 2 34. 5139680 HOSE-FF .30 X 25.00 (8-8) 100R17 3 35. 51396403 HOSE-FJ .25 X 19.00 (4-4) 100R17 2 36. 51396403 HOSE-FJ .25 X 19.00 (4-4) 100R17 2 37. 73734847 VALVE BANK 1 38. 60139317 MOUNTING BRACKET-VALVE BANK 1 39. 72600047 CAP SCR .38-16X 1.25 HH GR5 Z	20.	51393979	HOSE-FF .25 X 115.00 (4-4) 100R2	4
23. 51399444 HOSE-FJ.50 X 45.00 (8-8) 100R17 1 24. 51396204 HOSE-FZ.50 X 45.00 (8-8) 1 25. 72533589 ADPTR-M STR/M JIC 10 4 2 26. 51935900 HOSE-FF.50 X 70.00 4 27. 72532359 ADPTR-M STR/M JIC 10 8 8 28. 51396619 HOSE-FF 1.00 X 74.00 (16-16) 1 29. 72063051 NUT .38-16 HEX GR5 Z NYLOCK 66 31. 72662103 NUT .38-16 HEX GR5 Z NYLOCK 66 31. 7263003 WASHER-FLAT .38 W ANSI B27.2 Z 12 32. 72060050 CAP SCR .38-16X 2.00 HH GR5 Z 2 34. 51396680 HOSE-FJ .50 X 25.00 (8-8) 100R17 3 35. 51399430 HOSE-FJ .38 X 25.00 (6-6) 100R17 2 36. 51396403 HOSE-FJ .25 X 19.00 (4-4) 100R17 2 37 73734847 VALVE BANK 1 38. 60139317 MOUNTING BRACKET-VALVE BANK 1 39. 72060047 CAP SCR 38-16X 1.25 HH GR5 Z 4 40. 72601797 LOCK WASHER 8 MM	21.	72533595	ELBOW, #12 MALE STR/#8 MALE JIC	2
24. 51396204 HOSE-FZ.50 X 45.00 (8-8) 1 25. 72533589 ADPTR-M STR/M JIC 10 4 2 26. 51935900 HOSE-FF.50 X 70.00 4 27. 72532359 ADPTR-M STR/M JIC 10 8 8 28. 51396619 HOSE-FF 1.00 X 74.00 (16-16) 1 29. 72063051 NUT 38-16 HEX GR5 Z NYLOCK 10 30. 72062103 NUT 38-16 HEX GR5 Z NYLOCK 6 31. 7263003 WASHER-FLAT 38 W ANSI B27.2 Z 12 32. 72060050 CAP SCR 38-16X 2.00 HH GR5 Z 4 33. 72060055 CAP SCR 38-16X 3.50 HH GR5 Z 2 34. 51396800 HOSE-FJ .30 X 25.00 (8-8) 100R17 3 35. 51399430 HOSE-FJ .35 X 25.00 (6-6) 100R17 2 36. 51396403 HOSE-FJ .25 X 19.00 (4-4) 100R17 2 37. 73734847 VALVE BANK 1 38. 60139317 MOUNTING BRACKET-VALVE BANK 1 39. 72060047 CAP SCR 38-16X 1.25 HH GR5 Z 4 40. 72601797 LOCK WASHER 8 MM 3	22.	51395433	HOSE-FF .50 X 115.00 (8-8)	4
25. 72533589 ADPTR-M STR/M JIC 10 4 2 26. 51935900 HOSE-FF.50 X 70.00 4 27. 72532359 ADPTR-M STR/M JIC 10 8 8 28. 51396619 HOSE-FF 1.00 X 74.00 (16-16) 1 29. 72063051 NUT. 38-16 HEX GR5 Z NYLOCK 6 30. 72062103 NUT. 38-16 HEX GR5 Z NYLOCK 6 31. 7263003 WASHER-FLAT.38 W ANSI B27.2 Z 12 32. 72060050 CAP SCR .38-16X 2.00 HH GR5 Z 4 33. 72060055 CAP SCR .38-16X 3.50 HH GR5 Z 2 34 51396800 HOSE-FJ .50 X 25.00 (8-8) 100R17 3 35. 51399430 HOSE-FJ .50 X 25.00 (8-6) 100R17 2 36. 51396403 HOSE-FJ .50 X 25.00 (8-6) 100R17 2 37. 73734847 VALVE BANK 1 38. 60139317 MOUNTING BRACKET-VALVE BANK 1 39. 72060047 CAP SCR .38-16X 1.25 HH GR5 Z 4 40. 72601797 LOCK WASHER 8 MM 3 41. 72601797 LOCK WASHER 8 MM 3	23.	51399444	HOSE-FJ .50 X 45.00 (8-8) 100R17	1
26. 51935900 HOSE-FF.50 X 70.00 4 27. 72532359 ADPTR-M STR/M JIC 10 8 8 28. 51396619 HOSE-FF 1.00 X 74.00 (16-16) 1 29. 72063051 NUT .38-16 HEX GR5 Z NYLOCK 10 30. 72062103 NUT .38-16 HEX GR5 Z NYLOCK 6 31. 7263003 WASHER-FLAT. 38 W ANSI B27.2 Z 12 32. 72060050 CAP SCR .38-16X 2.00 HH GR5 Z 4 33. 72060055 CAP SCR .38-16X 3.50 HH GR5 Z 2 34 5139680 HOSE-FJ .50 X 25.00 (8-8) 100R17 3 35. 51399430 HOSE-FJ .25 X 19.00 (4-4) 100R17 2 36. 51396403 HOSE-FJ .25 X 19.00 (4-4) 100R17 2 37 73734847 VALVE BANK 1 38. 60139317 MOUNTING BRACKET-VALVE BANK 1 39. 72601077 CAP SCR M 8-1.25X 25 HH 10.9 3 41. 72601797 LOCK WASHER 8 MM 3 42. 72601799 WASHER 8 MM 3 <td>24.</td> <td>51396204</td> <td>HOSE-FZ .50 X 45.00 (8-8)</td> <td>1</td>	24.	51396204	HOSE-FZ .50 X 45.00 (8-8)	1
27. 72532359 ADPTR-M STR/M JIC 10 8 8 28. 51396619 HOSE-FF 1.00 X 74.00 (16-16) 1 29. 72063051 NUT .38-16 HEX GR5 Z NYLOCK 10 30. 72062103 NUT .38-16 HEX GR5 Z NYLOCK 6 31. 7263003 WASHER-FLAT .38 W ANSI B27.2 Z 12 32. 72060050 CAP SCR .38-16X 2.00 HH GR5 Z 4 33. 72060055 CAP SCR .38-16X 3.50 HH GR5 Z 2 34 5139680 HOSE-FJ .50 X 25.00 (8-8) 100R17 3 35. 51399430 HOSE-FJ .25 X 19.00 (4-4) 100R17 2 36. 51396403 HOSE-FJ .25 X 19.00 (4-4) 100R17 2 37. 73734847 VALVE BANK 1 38. 60139317 MOUNTING BRACKET-VALVE BANK 1 39. 72601077 CAP SCR .38-16X 1.25 HH GR5 Z 4 40. 7260177 CAP SCR .38-16X 1.25 HH GR5 Z 4 41. 7260177 CAP SCR .38-16X 1.25 HH GR5 Z 4 42. 72601797 LOCK WASHER 8 MM 3 43. 51490073 HOSE-FF .38X 30.00 100R17	25.	72533589	ADPTR-M STR/M JIC 10 4	2
28. 51396619 HOSE-FF 1.00 X 74.00 (16-16) 1 29. 72063051 NUT .38-16 HEX GR5 Z NYLOCK 10 30. 72062103 NUT .38-16 HEX GR5 Z NYLOCK 6 31. 7263003 WASHER-FLAT .38 W ANSI B27.2 Z 12 32. 72060050 CAP SCR .38-16X 2.00 HH GR5 Z 4 33. 72060055 CAP SCR .38-16X 3.50 HH GR5 Z 2 34 5139680 HOSE-FJ .50 X 25.00 (8-8) 100R17 3 35. 51399430 HOSE-FJ .38 X 25.00 (6-6) 100R17 2 36. 51396403 HOSE-FJ .25 X 19.00 (4-4) 100R17 2 37 73734847 VALVE BANK 1 38. 60139317 MOUNTING BRACKET-VALVE BANK 1 39. 72060047 CAP SCR .38-16X 1.25 HH GR5 Z 4 40. 72601677 CAP SCR .38-16X 1.25 HH GR5 Z 4 41. 7260179 LOCK WASHER 8 MM 3 42. 7260179 WASHER 8 MM 3 43. 51490073 HOSE-FF .38X 30.00 100R17 4<	26.	51935900	HOSE-FF .50 X 70.00	4
29. 72063051 NUT .38-16 HEX GR5 Z NYLOCK 10 30. 72062103 NUT .38-16 HEX GR5 Z NYLOCK 6 31. 7263003 WASHER-FLAT .38 W ANSI B27.2 Z 12 32. 72060050 CAP SCR .38-16X 2.00 HH GR5 Z 4 33. 72060055 CAP SCR .38-16X 2.00 HH GR5 Z 2 34 51396880 HOSE-FJ .50 X 25.00 (8-8) 100R17 3 35. 51399430 HOSE-FJ .25 X 19.00 (4-4) 100R17 2 36. 51396403 HOSE-FJ .25 X 19.00 (4-4) 100R17 2 37. 73734847 VALVE BANK 1 38. 60139317 MOUNTING BRACKET-VALVE BANK 1 39. 72060047 CAP SCR .38-16X 1.25 HH GR5 Z 4 40. 72601677 CAP SCR .38-16X 1.25 HH GR5 Z 4 41. 72601797 LOCK WASHER 8 MM 3 42. 72601797 LOCK WASHER 8 MM 3 43. 51490073 HOSE-FF .38X 30.00 100R17 4 44. 72053767 ELBOW-M STR/90/M JIC 12 12 1 45. 72532363 ADPTR-M STR/F STR 16 8	27.	72532359	ADPTR-M STR/M JIC 10 8	8
30. 72062103 NUT .38-16 HEX GR5 Z NYLOCK 6 31. 7263003 WASHER-FLAT .38 W ANSI B27.2 Z 12 32. 72060050 CAP SCR .38-16X 2.00 HH GR5 Z 4 33. 72060055 CAP SCR .38-16X 3.50 HH GR5 Z 2 34 5139680 HOSE-FJ .50 X 25.00 (8-8) 100R17 3 35. 51399430 HOSE-FJ .38 X 25.00 (6-6) 100R17 2 36. 51396403 HOSE-FJ .25 X 19.00 (4-4) 100R17 2 37. 73734847 VALVE BANK 1 38. 60139317 MOUNTING BRACKET-VALVE BANK 1 39. 72060047 CAP SCR .38-16X 1.25 HH GR5 Z 4 40. 72601677 CAP SCR .38-16X 1.25 HH GR5 Z 4 41. 72601797 LOCK WASHER 8 MM 3 42. 72601797 LOCK WASHER 8 MM 3 43. 51490073 HOSE-FF .38X 30.00 100R17 4 44. 72053767 ELBOW-M STR/90/M JIC 12 12 1 45. 72532633 ADPTR-M STR/F STR 16 8 1<	28.	51396619	HOSE-FF 1.00 X 74.00 (16-16)	1
31. 7263003 WASHER-FLAT .38 W ANSI B27.2 Z 12 32. 72060050 CAP SCR .38-16X 2.00 HH GR5 Z 4 33. 72060055 CAP SCR .38-16X 3.50 HH GR5 Z 2 34 51396880 HOSE-FJ .50 X 25.00 (8-8) 100R17 3 35. 51399430 HOSE-FJ .38 X 25.00 (6-6) 100R17 2 36. 51396403 HOSE-FJ .25 X 19.00 (4-4) 100R17 2 37. 73734847 VALVE BANK 1 38. 60139317 MOUNTING BRACKET-VALVE BANK 1 39. 72060047 CAP SCR .38-16X 1.25 HH GR5 Z 4 40. 72601677 CAP SCR .38-16X 1.25 HH GR5 Z 4 41. 7260147 CAP SCR .38-16X 1.25 HH GR5 Z 4 42. 7260147 CAP SCR .38-16X 1.25 HH GR5 Z 4 43. 7260177 CAP SCR .38-16X 1.25 HH GR5 Z 3 41. 72601797 LOCK WASHER 8 MM 3 42. 72601797 LOCK WASHER 8 MM 3 43. 51490073 HOSE-FF .38X 30.00 100R17 4 44. 72053767 ELBOW-M STR/90/M JIC 12 12	29.	72063051	NUT .38-16 HEX GR5 Z NYLOCK	10
32. 72060050 CAP SCR .38-16X 2.00 HH GR5 Z 4 33. 72060055 CAP SCR .38-16X 3.50 HH GR5 Z 2 34 5139680 HOSE-FJ .50 X 25.00 (8-8) 100R17 3 35. 51399430 HOSE-FJ .38 X 25.00 (6-6) 100R17 2 36. 51396403 HOSE-FJ .25 X 19.00 (4-4) 100R17 2 37. 73734847 VALVE BANK 1 38. 60139317 MOUNTING BRACKET-VALVE BANK 1 39. 72060047 CAP SCR .38-16X 1.25 HH GR5 Z 4 40. 72601677 CAP SCR .38-16X 1.25 HH GR5 Z 4 41. 72601677 CAP SCR .38-16X 1.25 HH GR5 Z 4 42. 72601677 CAP SCR .38-16X 1.25 HH GR5 Z 4 43. 72601677 CAP SCR .38-16X 1.25 HH GR5 Z 4 44. 72601797 LOCK WASHER 8 MM 3 42. 72601797 LOCK WASHER 8 MM 3 43. 51490073 HOSE-FF .38X 30.00 100R17 4 44. 72053767 ELBOW-M STR/90/M JIC 12 12 1 45. 72532363 ADPTR-M STR/F STR 16 8	30.	72062103	NUT .38-16 HEX GR5 Z NYLOCK	6
33. 72060055 CAP SCR .38-16X 3.50 HH GR5 Z 2 34 51396880 HOSE-FJ .50 X 25.00 (8-8) 100R17 3 35. 51399430 HOSE-FJ .38 X 25.00 (6-6) 100R17 2 36. 51396403 HOSE-FJ .25 X 19.00 (4-4) 100R17 2 37 73734847 VALVE BANK 1 38. 60139317 MOUNTING BRACKET-VALVE BANK 1 39. 72060047 CAP SCR .38-16X 1.25 HH GR5 Z 4 40. 72601677 CAP SCR M 8-1.25X 25 HH 10.9 3 41. 72601797 LOCK WASHER 8 MM 3 42. 72601797 LOCK WASHER 8 MM 3 43. 51490073 HOSE-FF .38X 30.00 100R17 4 44. 72053767 ELBOW-M STR/90/M JIC 12 12 1 45. 7253263 ADPTR-M STR/F STR 16 8 1 46. 70733889 CABLE ASM-33ft BATT & RADIO ELIMINATION (NOT SHOWN) 1 47. 72532775 ADPTR-M STR/M JIC 4 6 4	31.	7263003	WASHER-FLAT .38 W ANSI B27.2 Z	12
33. 72060055 CAP SCR .38.16X 3.50 HH GR5 Z 2 34 51396880 HOSE-FJ .50 X 25.00 (8-8) 100R17 3 35. 51399430 HOSE-FJ .38 X 25.00 (6-6) 100R17 2 36. 51396403 HOSE-FJ .25 X 19.00 (4-4) 100R17 2 37 73734847 VALVE BANK 1 38. 60139317 MOUNTING BRACKET-VALVE BANK 1 39. 72060047 CAP SCR .38-16X 1.25 HH GR5 Z 4 40. 72601677 CAP SCR M 8-1.25X 25 HH 10.9 3 41. 72601797 LOCK WASHER 8 MM 3 42. 72601797 LOCK WASHER 8 MM 3 43. 51490073 HOSE-FF .38X 30.00 100R17 4 44. 72053767 ELBOW-M STR/90/M JIC 12 12 1 45. 7253263 ADPTR-M STR/F STR 16 8 1 46. 70733889 CABLE ASM-33ft BATT & RADIO ELIMINATION (NOT SHOWN) 1 47. 72532775 ADPTR-M STR/M JIC 4 6 4	32.	72060050	CAP SCR .38-16X 2.00 HH GR5 Z	4
35. 51399430 HOSE-FJ.38 X 25.00 (6-6) 100R17 2 36. 51396403 HOSE-FJ.25 X 19.00 (4-4) 100R17 2 37 73734847 VALVE BANK 1 38. 60139317 MOUNTING BRACKET-VALVE BANK 1 39. 72060047 CAP SCR .38-16X 1.25 HH GR5 Z 4 40. 72601677 CAP SCR M 8-1.25X 25 HH 10.9 3 41. 72601797 LOCK WASHER 8 MM 3 42. 72601797 LOCK WASHER 8 MM 3 43. 51490073 HOSE-FF .38X 30.00 100R17 4 44. 72053767 ELBOW-M STR/90/M JIC 12 12 1 45. 72532363 ADPTR-M STR/F STR 16 8 1 46. 70733889 CABLE ASM-33ft BATT & RADIO ELIMINATION (NOT SHOWN) 1 47. 72532775 ADPTR-M STR/M JIC 4 6 4	33.		CAP SCR .38-16X 3.50 HH GR5 Z	2
35. 51399430 HOSE-FJ.38 X 25.00 (6-6) 100R17 2 36. 51396403 HOSE-FJ.25 X 19.00 (4-4) 100R17 2 37 73734847 VALVE BANK 1 38. 60139317 MOUNTING BRACKET-VALVE BANK 1 39. 72060047 CAP SCR .38-16X 1.25 HH GR5 Z 4 40. 72601677 CAP SCR M 8-1.25X 25 HH 10.9 3 41. 72601797 LOCK WASHER 8 MM 3 42. 72601797 LOCK WASHER 8 MM 3 43. 51490073 HOSE-FF .38X 30.00 100R17 4 44. 72053767 ELBOW-M STR/90/M JIC 12 12 1 45. 72532363 ADPTR-M STR/F STR 16 8 1 46. 70733889 CABLE ASM-33ft BATT & RADIO ELIMINATION (NOT SHOWN) 1 47. 72532775 ADPTR-M STR/M JIC 4 6 4	34	51396880	HOSE-FJ .50 X 25.00 (8-8) 100R17	3
37 73734847 VALVE BANK 1 38. 60139317 MOUNTING BRACKET-VALVE BANK 1 39. 72060047 CAP SCR .38-16X 1.25 HH GR5 Z 4 40. 72601677 CAP SCR M 8-1.25X 25 HH 10.9 3 41. 72601797 LOCK WASHER 8 MM 3 42. 72601799 WASHER 8 MM 3 43. 51490073 HOSE-FF .38X 30.00 100R17 4 44. 72053767 ELBOW-M STR/90/M JIC 12 12 1 45. 72532363 ADPTR-M STR/F STR 16 8 1 46. 70733889 CABLE ASM-33ft BATT & RADIO ELIMINATION (NOT SHOWN) 1 47. 72532775 ADPTR-M STR/M JIC 4 6 4	35.	51399430	HOSE-FJ .38 X 25.00 (6-6) 100R17	2
38. 60139317 MOUNTING BRACKET-VALVE BANK 1 39. 72060047 CAP SCR .38-16X 1.25 HH GR5 Z 4 40. 72601677 CAP SCR M 8-1.25X 25 HH 10.9 3 41. 72601797 LOCK WASHER 8 MM 3 42. 72601799 WASHER 8 MM 3 43. 51490073 HOSE-FF .38X 30.00 100R17 4 44. 72053767 ELBOW-M STR/90/M JIC 12 12 1 45. 7253263 ADPTR-M STR/F STR 16 8 1 46. 70733889 CABLE ASM-33ft BATT & RADIO ELIMINATION (NOT SHOWN) 1 47. 72532775 ADPTR-M STR/M JIC 4 6 4	36.	51396403	HOSE-FJ .25 X 19.00 (4-4) 100R17	2
39. 72060047 CAP SCR .38-16X 1.25 HH GR5 Z 4 40. 72601677 CAP SCR M 8-1.25X 25 HH 10.9 3 41. 72601797 LOCK WASHER 8 MM 3 42. 72601799 WASHER 8 MM 3 43. 51490073 HOSE-FF .38X 30.00 100R17 4 44. 72053767 ELBOW-M STR/90/M JIC 12 12 1 45. 7253263 ADPTR-M STR/F STR 16 8 1 46. 70733889 CABLE ASM-33ft BATT & RADIO ELIMINATION (NOT SHOWN) 1 47. 72532775 ADPTR-M STR/M JIC 4 6 4	37	73734847		1
40.72601677CAP SCR M 8-1.25X 25 HH 10.9341.72601797LOCK WASHER 8 MM342.72601799WASHER 8MM343.51490073HOSE-FF .38X 30.00 100R17444.72053767ELBOW-M STR/90/M JIC 12 12145.7253263ADPTR-M STR/F STR 16 8146.70733889CABLE ASM-33ft BATT & RADIO ELIMINATION (NOT SHOWN)147.72532775ADPTR-M STR/M JIC 4 64	38.	60139317	MOUNTING BRACKET-VALVE BANK	1
41.72601797LOCK WASHER 8 MM342.72601799WASHER 8 MM343.51490073HOSE-FF .38X 30.00 100R17444.72053767ELBOW-M STR/90/M JIC 12 12145.7253263ADPTR-M STR/F STR 16 8146.70733889CABLE ASM-33ft BATT & RADIO ELIMINATION (NOT SHOWN)147.72532775ADPTR-M STR/M JIC 4 64	39.	72060047	CAP SCR .38-16X 1.25 HH GR5 Z	4
42. 72601799 WASHER 8MM 3 43. 51490073 HOSE-FF.38X 30.00 100R17 4 44. 72053767 ELBOW-M STR/90/M JIC 12 12 1 45. 7253263 ADPTR-M STR/F STR 16 8 1 46. 70733889 CABLE ASM-33ft BATT & RADIO ELIMINATION (NOT SHOWN) 1 47. 72532775 ADPTR-M STR/M JIC 4 6 4	40.	72601677	CAP SCR M 8-1.25X 25 HH 10.9	3
43. 51490073 HOSE-FF.38X 30.00 100R17 4 44. 72053767 ELBOW-M STR/90/M JIC 12 12 1 45. 72532363 ADPTR-M STR/F STR 16 8 1 46. 70733889 CABLE ASM-33ft BATT & RADIO ELIMINATION (NOT SHOWN) 1 47. 72532775 ADPTR-M STR/M JIC 4 6 4	41.	72601797	LOCK WASHER 8 MM	3
44. 72053767 ELBOW-M STR/90/M JIC 12 12 1 45. 72532363 ADPTR-M STR/F STR 16 8 1 46. 70733889 CABLE ASM-33ft BATT & RADIO ELIMINATION (NOT SHOWN) 1 47. 72532775 ADPTR-M STR/M JIC 4 6 4	42.	72601799	WASHER 8MM	3
44. 72053767 ELBOW-M STR/90/M JIC 12 12 1 45. 72532363 ADPTR-M STR/F STR 16 8 1 46. 70733889 CABLE ASM-33ft BATT & RADIO ELIMINATION (NOT SHOWN) 1 47. 72532775 ADPTR-M STR/M JIC 4 6 4	43.	51490073	HOSE-FF .38X 30.00 100R17	4
45. 72532363 ADPTR-M STR/F STR 16 8 1 46. 7073389 CABLE ASM-33ft BATT & RADIO ELIMINATION (NOT SHOWN) 1 47. 72532775 ADPTR-M STR/M JIC 4 6 4				1
46. 70733889 CABLE ASM-33ft BATT & RADIO ELIMINATION (NOT SHOWN) 1 47. 72532775 ADPTR-M STR/M JIC 4 6 4				1
47. 72532775 ADPTR-M STR/M JIC 4 6 4				1
				4
		72532769		

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ITEM NO.	PART NO.	DESCRIPTION	QTY.		
49.	72533613	ADPTR-M STR/M JIC 10 6	2		
50.	72532779	ELBOW-M STR/90/M JIC XLG 6 8	1		
51.	72053762	ELBOW-M STR/90/M JIC 6 8	1		
REV. INTIAL RELEASE CN789					

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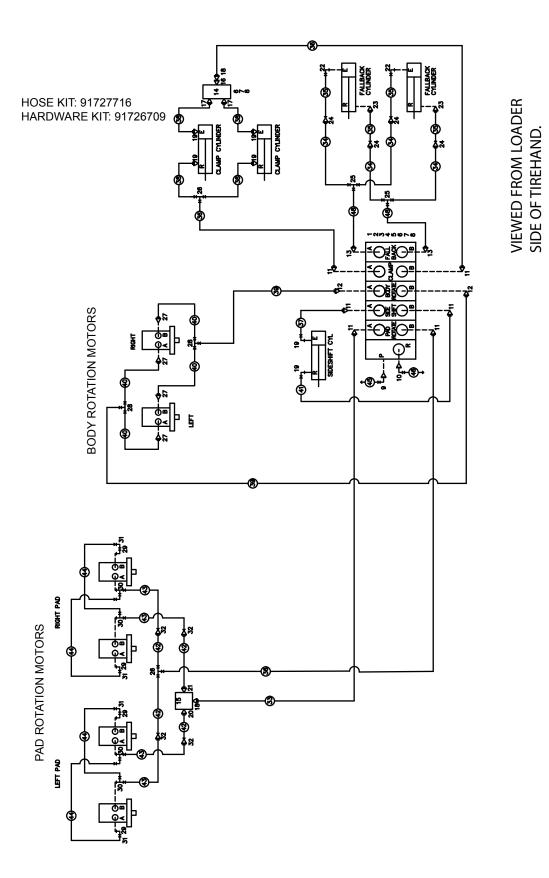


TH25K164 - Hydraulic Kit w/o VB with Rotation Motor - Short (99906436 & 91725735)

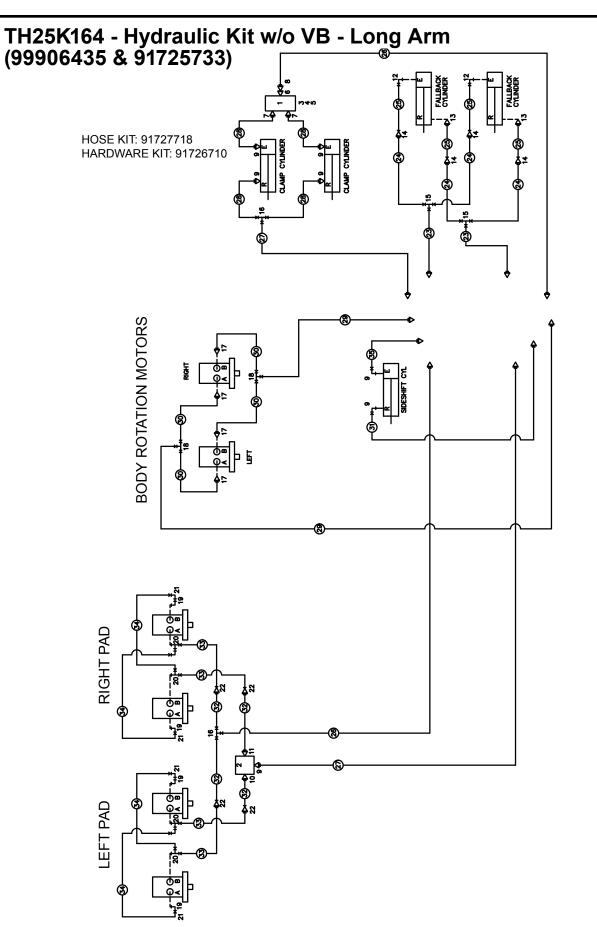
DWG 99906434 PROVIDES A BETTER REPRESENTATION OF THE OVERALL HYDRAULIC SYSTEM FOR A TH25 / TH36 SHORT ARM. VIEWED FROM THE LOADER SIDE OF TIREHAND.

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1.	72534926	UNION-BULKHEAD BRANCH TEE JIC 4	2
2.	73054829	FLOW DIVIDER	1
3.	72532358	ADAPTER, #8 MALE STR/#8 MALE JIC	10
4.	72532358	UNION-BULKHEAD BRANCH TEE JIC 8	2
5.	72534928	ELBOW-M STR/90/M JIC 4 6	4
6.	72533594	ELBOW-M JIC/90/F JIC SW 6 6	4
7.	72532772	ELBOW, #8 MALE JIC/90./#8 M STR	3
8.	72053763	HOSE-FJ .38 X 17.50 (6-6)	4
9.	51395887	ADAPTER, #16 MALE STR/#8 FEMALE STR	1
10.	72532963	ADAPTER, M STR/M JIC 8 4	2
11.	72532792	ELBOW, M STR/M JIC #4	2
12.	72053758	ADAPTER-M STR/M JIC 4 6	4
13.	72532775	TEE, SWVL NUT RUN #4 MSTR #6 JIC #6 JIC	4
14.	72534858	FLOW DIVIDER	1
15.	73054614	HOSE-FF .38 X 63.00 (6-8) 100R2	4
16.	51399470	UNION-BULKHEAD 37" JIC • 75	4
17.	72533373	UNION-BULKHEAD 37 JIC #4	4
18.	72533024	HOSE-FF .25X 42.00 (4-4)	4
19.	51393976	HOSE-FF .38X 30.00 (6-6) 100R17	4
20.	51490073	HOSE-FF .25 X 115.00 (4-4)	4
21.	72533595	ELBOW, #12 MALE STR/ #8 MALE JIC	2
22.	51395433	HOSE-FF .50 X 111.00 (8-8)	4
23.	72534927	UNION-BULKHEAD BRANCH TEE JIC 6	2
24.	72053762	ELBOW-M STR/90/M JIC 6 8	1
25.	72532774	ELBOW-M STR/90/M JIC XLG 6 8	1
26.	51395900	HOSE-FF .50 X 70.00	4
27.	51395645	HOSE-FJ .50 X 16.00 {8-8) 100R17	1
28.			
29.	72063051	NUT .38-16 HEX GR5 Z NYLOCK	6
30.	7262103	NUT .38-16 HEX GR5 Z NYLOCK	6
31.	72063003	WASHER-FLAT .38 W ANSI 827.2 Z	8
32.	72060050	CAP SCR .38-16X 2.00 HH GR5 Z	4
33.	72060055	CAP SCR .38-16X 3.50 HH GR5 Z	2
34.	51396880	HOSE-FJ .50 X 25.00 (8-8) 100R17	3
35.	51399430	HOSE-FJ .38 X 25.00 (6-6) 100R17	2
36.	51396579	HOSE-FJ .25 X 19.50 (4-4) 100R17	2
37.	51399444	HOSE-FJ .50 X 45.00 (8-8) 100F17	1
38.	51396204	HOSE-FZ .50 X 45.00 (8-8) 100R17	1
	RELEASE CN78		

TH25K164 - Hydraulic with VB - Long Arm (99906433 & 91727524)



ITEM NO.	PART NO.	DESCRIPTION	QTY.
1.	73734847	VALVE BANK- 5SEC 5R PRP SIZE 3 24V	1
2.	60139317	MTG BRKT- VALVE BANK HAWE 5 SECT	1
3.	72601677	CAP SCR M 8-1.25X 25 HH 10.9	4
4.	72601797	WASHER-LOCK M 8	4
5.	72601799	WASHER-FLAT M 8 N	4
6.	72060044	CAP SCR .38-16X .75 HH GR5 Z	8
7.	72063051	WASHER-LOCK .38 ZINC	8
8.	72063003	WASHER-FLAT .38 W ANSI B27.2 Z	8
9.	72053767	ELBOW-M STR/90/M JIC 12 12	1
10.	72533319	ELBOW-M STR/90/M JIC 12 16	1
11.	72532359	ADPTR-M STR/M JIC 10 8	6
12.	72533613	ADPTR-M STR/M JIC 10 6	2
13.	72533589	ADPTR-M STR/M JIC 10 4	4
14.	73054829	FLOW DIV-ROT GEAR GD-07BB00G0	1
15.	73054614	FLOW DIV-COMB-FD50-45-8DD-N-66	1
16.	72532963	ADPTR-M STR/F STR 16 8	1
17.	72533595	ELBOW-M STR/90/M JIC 12 8	2
18.	72053763	ELBOW-M STR/90/M JIC 8 8	3
19.	72532358	ADPTR-M STR/M JIC 8 8	7
20.	72532779	ELBOW-M STR/90/M JIC XLG 6 8	1
21.	72053762	ELBOW-M STR/90/M JIC 6 8	1
22.	72053758	ELBOW-M STR/90/M JIC 4 4	2
23.	72532792	ADPTR-M STR/M JIC 8 4	2
24.	72533024	UNION-BULKHEAD JIC 4 (7/16-20)	4
25.	72534926	UNION-BULKHEAD BRANCH TEE JIC 4	2
26.	72534928	UNION-BULKHEAD BRANCH TEE JIC 8	2
27.	72532775	ADPTR-M STR/M JIC 4 6	4
28.	72534927	UNION-BULKHEAD BRANCH TEE JIC 6	2
29.	72533594	ELBOW-M STR/90/M JIC 4 6	4
30.	72534858	TEE-STL STR/JIC/JIC 4 6 6 RUN	4
31.	72532772	ELBOW-M JIC/90/F JIC SW 6 6	4
32.	72533373	UNION-BULKHEAD JIC 8 (3/4-16)	4
33.	51395645	HOSE-FJ .50 X 16.00 (8-8) 100R17	1
34.	51393979	HOSE-FF .25 X 115.00 (4-4) 100R17	4
35.	51393976	HOSE-FF .25 X 42.00 (4-4) 100R17	4
36.	51396880	HOSE-FJ .50 X 25.00 (8-8) 100R17	3
37.	51396204	HOSE-FZ .50 X 45.00 (8-8) 100R17	1
38.	51395900	HOSE-FF .50 X 70.00 (8-8) 100R17	4
39.	51399430	HOSE-FJ .38 X 25.00 (6-6) 100R17	2
40.	51490073	HOSE-FF .38 X 30.00 (6-6) 100R17	4
41.	41399444	HOSE-FJ .50 X 45.00 (8-8) 100R17	1
42.	51395433	HOSE-FF .50 X 115.00 (8-8) 100R17	4
43.	51399471	HOSE-FJ .38 X 72.00 (8-6) 100R17	4
44.	51395887	HOSE-FJ .38 X 17.50 (6-6) 100R17	4
45.	51395043	HOSE-FF .75 X 75.00 (12-12) 100R17	1
46.	51396619	HOSE-FF 1.00 X 74.00 (16-16	1
47.	70733889	CABLE ASM-33ft BATT & RADIO ELIMINATION (NOT SHOWN)	1
48.	51396579	HOSE-FJ .25 X 19.50 (4-4) 100R17	2
REV: INITIAL	RELEASE CN78	39	



VIEWED FROM LOADER SIDE OF TIREHAND.

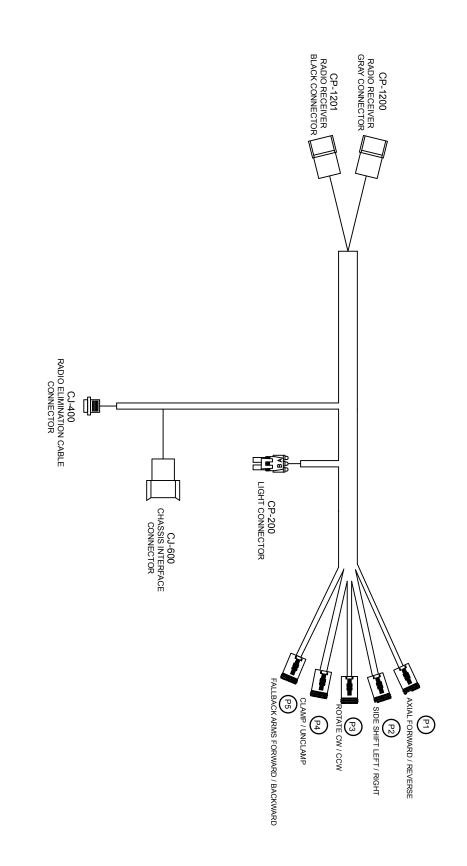
ITEM NO.	PART NO.	DESCRIPTION	QTY.
1.	73504829	FLOW DIV-ROT GEAR GD-07BB00G0	1
2.	73054614	FLOW DIV-COMB-FD50-45-8DD-N-66	1
3.	72060044	CAP SCR .38-16X .75 HH GR5 Z	4
4.	72063051	WASHER-LOCK .38 ZINC	4
5.	72063003	WASHER-FLAT .38 W ANSI B27.2 Z	4
6.	72532963	ADPTR-M STR/F STR 16 8	1
7.	72533595	ELBOW-M STR/90/M JIC 12 8	2
8.	72053763	ELBOW-M STR/90/M JIC 8 8	3
9.	72532358	ADPTR-M STR/M JIC 8 8	2
10.	72532779	ELBOW-M STR/90/M JIC XLG 6 8	1
11.	72053762	ELBOW-M STR/90/M JIC 6 8	1
12.	72053758	ELBOW-M STR/90/M JIC 4 4	2
13.	72532792	ADPTR-M STR/M JIC 8 4	2
14.	72533024	UNION-BULKHEAD JIC 4 (7/16-20)	4
15.	72534926	UNION-BULKHEAD BRANCH TEE JIC 4	2
16.	72534928	UNION-BULKHEAD BRANCH TEE JIC 8	2
17.	72532775	ADPTR-M STR/M JIC 4 6	4
18.	72534927	UNION-BULKHEAD BRANCH TEE JIC 6	2
19.	72533594	ELBOW-M STR/90/M JIC 4 6	4
20.	72534858	TEE-STL STR/JIC/JIC 4 6 6 RUN	4
21.	72532772	ELBOW-M JIC/90/F JIC SW 6 6	4
22.	72533373	UNION-BULKHEAD JIC 8 (3/4-16)	4
23.	51396579	HOSE-FJ .25 X 19.50 (4-4) 100R17	2
24.	51393979	HOSE-FF .25 X 115.00 (4-4) 100R2	2
25.	51393976	HOSE-FF .25 X 42.00 (4-4) 100R2	2
26.	51396880	HOSE-FJ .50 X 25.00 (8-8) 100R17	1
27.	51395645	HOSE-FJ .50 X 16.00 (8-8) 100R17	3
28.	51395900	HOSE-FF .50 X 70.00 (8-8) 100R17	4
29.	51399430	HOSE-FJ .38 X 25.00 (6-6) 100R17	2
30.	51490073	HOSE-FF .38 X 30.00 (6-6) 100R17	4
31.	51399444	HOSE-FJ .50 X 45.00 (8-8) 100F17	2
32.	51395433	HOSE-FF .50 X 115.00 (8-8) 100R17	4
33.	51399471	HOSE-FJ .38 X 72.00 (8-6) 100R2	4
34.	51395887	HOSE-FJ .38 X 17.50 (6-6) 100R17	4
35.	51396204	HOSE-FZ .50 X 45.00 (8-8) 100R17	1
REV. INITIAL	RELEASE CN78	9	

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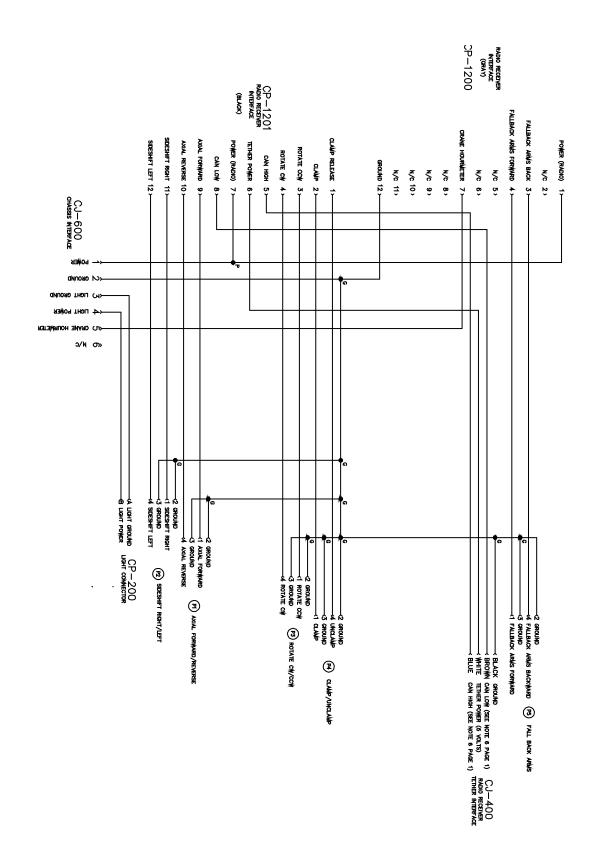
Electrical & Lighting

Section - 6

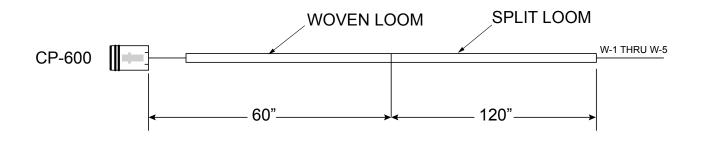
81



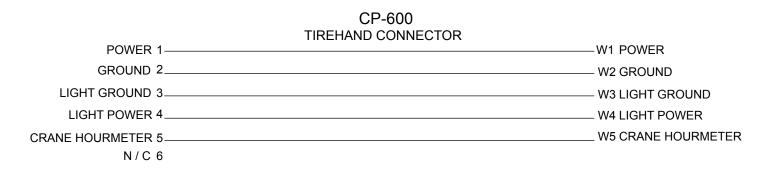
TH25K164 - Radio Remote Harness (77441524)



TH25K164 - Chassis Interface Harness (77441525)



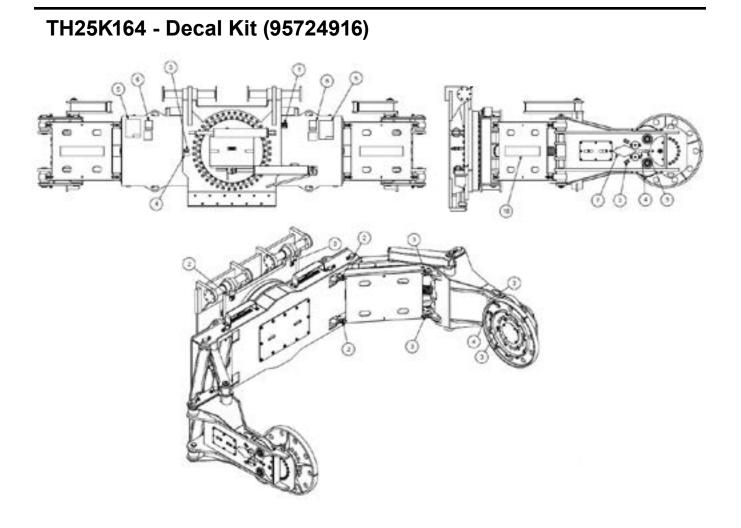
77441525-1 RADIO REMOTE HARNESS



General Information

Section - 7

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NOTE: This drawing denotes the location of the decals only. It does not identify the individual models. The appearance of the Tirehand may be different than shown.

95724916 PARTS LIST

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1.	70029119	PLACARD-SERIAL NUMBER	1
2.	70391612	DECAL-GREASE WEEKLY (LEFT)	15
3.	70391613	DECAL-GREASE WEEKLY (RIGHT)	15
4.	70392524	DECAL-ROTATE CRANE WHILE GREASE	6
5.	70393671	DECAL-TH OPERATION WARNINGS	2
6.	70393672	DECAL-DANGER TH OPERATION	2
7.	70399140	DECAL-DIAMOND IMT 6.75X13.50 REFL	2
8.	72661638	TACK-METAL	2
9.	70399384	DECAL-CP TH25K164	2
10.	70399383	DECAL-IDENT TH25K164	2
REV. C CN98	8		

TH25K164 - Troubleshooting

SYMPTOM	PROBABLE CAUSE
	E-stop on remote pressed in.
	Remote not turned on.
	Pump not engaged - if supplied with electric clutch
	Hydraulic oil supply is low.
Controls fail to respond	Hydraulic pressure line is ruptured.
	Suction line shut-off valve is obstructed.
	Faulty hydraulic pump.
	Incorrectly set relief valve.
	Hydraulic oil supply is low.
	Hydraulic pump is operating at a reduced speed.
	Relief valve is set too low.
	Pump or cylinder is worn.
Operation slows down.	• Pump is slipping due to excessive oil temperature. (This is a factor which will increase with worn components.)
	Dirty filter.
	Inoperative valve spools.
	Obstructed cylinder holding valve.
Rotation control slowed or erratic.	Internal port orifices are clogged.
Rotation control slowed of effatic.	Rotation gears are locked or damaged.
Arms and hads drift when loaded and	Hydraulic oil is bypassing at piston rings.
Arms and pads drift when loaded and controls neutralized.	Cylinder holding valves are defective or contaminated.
	Pump captivation due to low hydraulic oil supply.
	Loading is excessive.
	Restriction or collapse of suction line.
Unusual noise in operation.	Bypass settings on relief valve are too low.
	Relief valve is damaged.
	• Valve closure is obstructed due to particle accumu- lation.
	Bearings need lubrication.
Side step chatters or slows.	Mechanical damage to bracket
	Lower cylinder damaged.
Arm chatter or pains	Arms need both internal and external lubrication.
Arm chatter or noise.	Bearing damaged.

TH25K164 - Cylinders

The Tirehand uses similar cylinders in all functions. Common disassembly and repair instructions apply. Check the Parts section for specific information.

CLAMP CYLINDER REMOVAL & INSTALLATION

To remove the clamp cylinder:

- 1. Rotate the Tirehand until the clamp cylinder is in a horizontal position.
- 2. Extend the cylinder full stroke.
- 3. Shut off the carrier vehicle's engine. Relieve the internal hydraulic pressure by cycling the controls.
- 4. Remove the cover from the body (refer to the appropriate body drawing) and disconnect the hydraulic hoses at the cylinder port block. Cap the hydraulic hoses.
- 5. Support the hand assembly with a lifting device and straps capable of supporting the assembly. Take up slack in the lifting device.
- 6. Disconnect and cap any hydraulic lines leading to the pad rotation mechanism.
- 7. Remove the cylinder rod pin by removing the 3/4-10 cap screws and washer securing the pin. Drive out the pin.
- 8. Support the hand assembly. Remove the two smaller hand/arm pins by removing the 3/4-10 cap screws securing the pins. Drive out the pins.
- 9. Lift the hand assembly away and place on a clean surface. Keep dirt out of the bushing surfaces.
- 10. Support the clamp cylinder with a lifting device and straps capable of supporting the cylinder.
- 11. Remove the cylinder base pin securing screw and washer. Drive the pin only far enough to release the cylinder.
- 12. Lift the cylinder away and repair as necessary.

To install the clamp cylinder:

- 1. Position the cylinder in the slings of the lifting device and line up the base end pin boss and pin. Seat the pin and secure using the 3/4-10 cap screw and washer. Torque to 265 ft-lb (*36.6 kg-m*).
- 2. Lift the hand assembly with the slings and position the pin bosses in line with the pins. Drive in the pins and secure using the 3/4-10 hardware. Torque to 265 ft-lb (*36.6 kg-m*).
- 3. Connect the hydraulic hoses to the clamp cylinder and axial rotation motor.
- 4. Start the engine. Cycle the CLAMP and PAD controls through at least five cycles to purge any air trapped in the system. Check for leaks.
- 5. Check the hydraulic fluid level with all cylinders retracted. Fill if necessary.
- 6. Test the unit with a simulated job operation before proceeding to the job site.

SIDE SHIFT CYLINDER REMOVAL AND INSTALLATION

To remove the side shift cylinder:

- 1. Rotate the Tirehand so that the side shift cylinder is in a horizontal position.
- 2. Disconnect the hydraulic hoses from the cylinder port. Cap the hoses.
- 3. Remove the retaining rings and bushings from the rod end and base end of the cylinder.
- 4. Drive out the pins.
- 5. Disassemble and repair the cylinder.

To install the cylinder:

- 1. Line up the cylinder base-end pin boss with the holes in the base. Drive in the pin and install the machinery bushing and retaining ring.
- 2. Connect the hydraulic hoses to the cylinder port.
- 3. Extend and retract the cylinder until the rod-end pin boss lines up with the holes in the sub- base. Drive in the pin and install the machinery bushing and retaining ring.
- 4. Extend and retract the cylinder until the rod-end pin boss lines up with the holes in the sub-base. Drive in the pin and install the machinery bushing and retaining ring.
- 5. Check the hydraulic reservoir fluid level with all cylinders retracted. Fill if necessary.
- 6. Conduct a simulated job operation before proceeding to the job site.

TH25K164 - Replacement Parts

COUNTER BALANCE VALVES

Counterbalance valves are considered non-repairable and must be replace if defective.

HYDRAULIC PUMP

The installer or manufacturer of the carrier vehicle must supply 15 gpm (57 Lpm) of hydraulic fluid at 3000 psi (207 bar).

TH25K164 - Hydraulic Motors

Six hydraulic motors are used on the Tirehand: two for Tirehand rotation and two each side for pad rotation. These motors are not considered field repairable and should be replaced if defective.

HYDRAULIC MOTOR REMOVAL AND REPLACEMENT

To remove rotation motor:

- 1. Disconnect and cap the hydraulic hoses.
- 2. Remove the two motor mounting bolts.
- 3. Remove the counterbalance block and hose fittings from the old motor.

To install the new motor:

- 1. Install the counterbalance block and hose fittings from the old motor. Do not use the old o-rings, they should be replaced.
- 2. Position the motor on the base and install the two mounting bolts. Torque them to the proper value (See Torque Table).
- 3. Connect the hoses.
- 4. Start the engine, rotate the Tirehand five (5) times in both directions and check for leaks.
- 5. With all cylinders retracted, check the fluid level in the reservoir and fill if necessary.

TH25K164 - Relief Valve Adjustment

The hydraulic system is designed to operate at a pressure requirement of 3000 psi (207 bar) with an optimum oil flow of 15 gpm (57 Lpm). to adjust the relief valve:

- 1. Start the vehicle and engage the pump.
- 2. With the vehicle transmission in neutral, operate any function full stroke, and with function lever still engaged at end of stroke, read the pressure on the gauge at the control valve. It should read between 3000 psi (207 bar).
- 3. If the pressure reading is low, shut off the engine and adjust the relief valve. Loosen the nut on the relief valve adjustment screw, then turn the screw to adjust the pressure. Check the pressure, and continue adjustment if needed.

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TH25K164 - Bearings

This section includes instructions on the removal and installation of turntable gear-bearings and bushings.

TURNTABLE GEAR-BEARING

To remove the Tirehand rotation gear-bearing:

- 1. Disconnect and cap the hydraulic hoses from the valve bank.
- 2. Support the clamp arms with an overhead lifting device capable of supporting the weight of the unit. Take up the slack in the lifting device.
- 3. Remove the cover, then remove the bolts that secure the body to the gear-bearing. Slowly work the hoses out of the rotation adapter while simultaneously withdrawing the body. Set the body carefully to one side.
- 4. Disconnect the grease fitting extension from the turntable gear-bearing.
- 5. Remove the gear-bearing mounting bolts and remove the gear bearing.

WARNING

The lifting device must be fastened to the tirehand in such a manner that will prevent shifting of the load due to slippage.

TO INSTALL THE GEAR-BEARING:

- 1. Position the gear-bearing and torque the mounting bolts (see Torque Table).
- 2. Install the grease fitting extension.
- 3. Carefully position the body and clamp arms until the holes in the body line up with the holes in the gear-bearing. Install the mounting bolts and torque to the proper value (see Torque Table).
- 4. Connect the hydraulic hoses to the valve bank.
- 5. Start the engine and cycle all of the Tirehand controls at least five (5) times in both directions to purge the air in the system.
- 6. Check the system for leaks and repair any that are found.
- 7. With all cylinders retracted, check the fluid level in the reservoir and fill if necessary.

AXIAL ROTATION GEAR-BEARING:

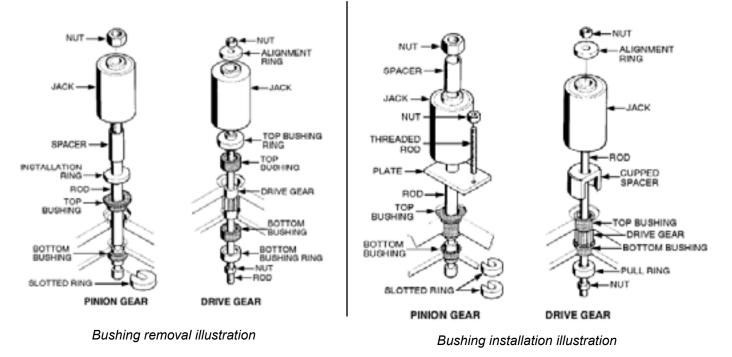
To remove the axial rotation gear-bearing:

- 1. Remove the pad mounting bolts.
- 2. Disconnect the grease fitting extension.
- 3. Remove the gear-bearing mounting bolts and remove the bearing.
- 4. Position the bearing so that the holes align with those in the arm. The grease fitting extension port must be toward the pinion gear. Install and torque the mounting bolts (see Torque Table).
- 5. Install the grease fitting extension.
- 6. Position the pad over the gear-bearing, install and torque the mounting bolts (see Torque Table).

BUSHING REMOVAL AND INSTALLATION

To replace a bushing:

- 1. Remove the weldment containing the bushing.
- 2. Position the bushing removal tool as shown and extract the bushing.
- 3. To install the bushing, assemble the tool as shown and press the bushing in.



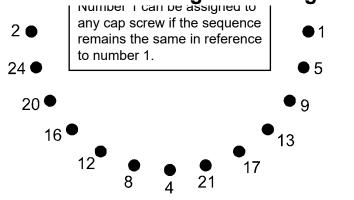
TH25K164 - Turntable Bearing Inspection

Turntable bearings may experience wear. One of the following conditions may indicate turntable bearing wear:

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

If one or more of the above conditions exists, further inspection may be required. Contact IMT for assistance.





TIGHTENING PROCEDURE

- 1. Refer to the torque data chart to determine the proper torque value to apply to the size of cap screw used.
- 2. Follow the tightening sequence shown in the diagram. Note 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 cap screws to approximately 40% of the specified torque value, by following the sequence.
 - (Example: .40 X 265 ft-lb = 106 ft-lb)
 - (Example-metric: .40 X 36 kg-m = 14.4 kg-m)
- 4. Repeat step 3, but torquing all cap screws to 75% of the specified torque value. Continue to follow the tightening sequence.
 - (Example: .75 X 265 ft-lb = 199 ft-lb)
 - (Example-metric: .75 X 36 kg-m = 27 kg-m)
- 5. Using the proper sequence, torque all cap screws to the listed torque value as determined from the torque data chart.

NOTES:

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

TH25K164 - Thread Torque Chart (English)

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

NOTES:

- 1. Tightening torques provided are midrange.
- 2. Consult bolt manufacturer's particular specifications, when provided.
- 3. Use flat washers of equal strength.
- 4. All torque measurements are given in foot-pounds.
- 5. Torque values specified are for bolts with residual oils or no special lubricants applied. If special lubricants of high stress ability, such as never-seez compound graphite and oil, molybdenum disulfide, colloidal copper or white lead are applied, multiply the torque values in the charts by the factor .90. The use of loctite does not affect the torque values listed above.

AWARNING

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 torqueing. Failure to replace gear-bearing bolts may result in bolt failure due to metal fatigue causing death or serious injury.

TH25K164 - Thread Torque Chart (Metric)

FINE THRE	FINE THREAD TORQUE CHART (METRIC)						THREAD TORG	UE CHAR	T (METRIC)			
TIGHTEN	NING TORQ	UE				TIGHTEI		JE				
SIZE (DIA- TPI)		A. CHES)		SAE J429 SAE J429		DIA. (INCHES) SAE J429 SAE J429 (DIA- TPI)	BOLT DIA (INCHES)	SAE J429 GRADE 5		SAE J GRAD	SAE J429 GRADE 8	
		PLAIN (KG-M)	PLATED (KG-M)	PLAIN (KG- M)	PLATED (KG-M)			PLAIN (KG-M)	PLATED (KG-M)	PLAIN (KG-M)	PLA (KG-	
5/16-24	0.3125	3	2	4	3	5/16-18	0.3125	2	2	3	2	
3/8-24	0.375	5	4	7	5	3/8-16	0.375	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	0.5	12	9	17	12	1/2-13	0.5	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	0.625	24	18	33	25	5/8-11	0.625	21	16	30	22	
3/4-16	0.75	41	31	58	44	3/4-10	0.75	37	28	52	39	
7/8-11	0.875	62	45	93	69	7/8-9	0.875	55	41	84	63	
1-12	1	89	67	138	103	1-8	1	82	62	126	94	
1 1/8-12	1.125	123	93	200	150	1 1/8-7	1.125	110	82	178	133	
1 1/4-12	1.25	171	129	278	209	1 1/4-7	1.25	155	116	251	188	
1 3/8-12	1.375	232	174	375	281	1 3/8-6	1.375	203	152	329	246	
1 1/2-12	1.5	304	228	492	369	1 1/2-6	1.5	270	210	438	328	

NOTES:

- 1. Tightening torques provided are mid-range.
- 2. Consult bolt manufacturer's particular specifications, when provided.
- 3. Use flat washers of equal strength.
- 4. All torque measurements are given in kilogram-meters.
- 5. Torque values specified are for bolts with residual oils or no special lubricants applied. If special lubricants of high stress ability, such as never-seez compound graphite and oil, molybdenum disulfide, colloidal copper or white lead are applied, multiply the torque values in the charts by the factor .90. The use of loctite does not affect the torque values listed above.

A 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 torqueing. Failure to replace gear-bearing bolts may result in bolt failure due to metal fatigue causing death or serious injury.

TH25K164 - Radio Remote

For Radio Remote operation instructions, features, specifications, and programming, see the TireHandler[™] Radio Remote System manual P/N 99905678.

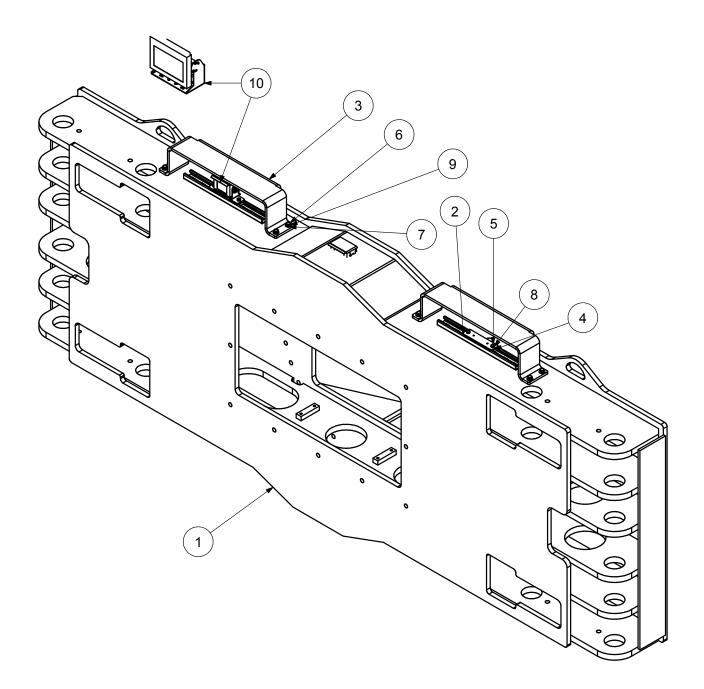


Transmitter P/N 70734590



Receiver P/N 70734591





40724922 PARTS LIST

ITEM NO.	PART NO.	DESCRIPTION	QTY.			
1.		BODY-WLDMT	REF			
2.	60136590	CAMERA MOUNT	2			
3.	60139306	GUARD - CAMERA MNT	2			
4.	71414717	NUT25-20 CHANNEL	4			
5.	72060004	CAP SCR .25-20X 1.00 HH GR5 Z	4			
6.	72060046	CAP SCR .38-16X 1.00 HH GR5 Z	8			
7.	72063003	WASHER .38 FLAT	8			
8.	72063049	WASHER .25 LOCK	4			
9.	72063051	WASHER .38 LOCK	8			
10.	77734564	CAMERA OPTION-DUAL	1			
REV. INITIAL RE	REV. INITIAL RELEASE					



IOWA MOLD TOOLING CO., INC.

P.O. Box 189 Garner, IA 50438 Tel: 641.923.3711 Fax: 641.923.2424 www.imt.com

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Revisions

DATE	LOCATION	DESCRIPTION
8/2018	91725734	CN789
8/2018	91725736	CN241-1
7/3/2019	40726453	CN988
5-28-20	40726455 40726454	CN830-3