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# Operating & Installation Instructions

## Manual Out / Hydraulic Down 40k ft.lbs. Outriggers

### **!ATTENTION!**

KEEP THIS MANUAL WITH THE CRANE. OPERATION INSTRUCTIONS ARE CONTAINED IN A SEPARATE MANUAL. NEW OPERATORS SHOULD READ AND BE FAMILIAR WITH THE OPERATING INSTRUCTIONS BEFORE OPERATING THIS CRANE.

ORDER PARTS USING PART NUMBER, CRANE MODEL NUMBER AND CRANE SERIAL NUMBER TO ASSURE ACCURACY OF ORDERS.

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**P/N 20412**

**MANUAL OUT / HYDRAULIC DOWN OUTRIGGER**  
**40k ft.lbs.**

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## OPERATING INSTRUCTIONS

### MANUAL OUT / HYDRAULIC DOWN OUTRIGGER 40k ft.lbs.

Always keep the truck as level as possible when operating the crane. Set the outriggers on firm ground that will not yield under load.

Check for overhead obstructions and especially for electrical wires. The crane must always be more than 10 Feet away from any electrical wires.

Raise the outrigger detent pin and pull the outrigger out until the pin is engaged in the stop hole. Do not use the outrigger unless this pin is fully engaged. There are only two positions for the pull out section, either fully retracted or fully extended.

Set the truck's parking brake before operating either the outrigger or crane. Insert wheel chocks under the front wheels before setting up the outrigger.

Start the engine and set the pump to supply fluid to the crane and outrigger.

Set the diverter valve to send flow to the outrigger directional control valve.

Next, use the directional valve to extend the jack cylinders. Lower the jack until there is lifting of the truck bed. The higher the truck, the less the truck must tilt to counter-balance the crane and its load. Leave the truck wheels in contact with the ground.

**WARNING:** The jack cylinders will crush anything underneath them. Check that everyone and everything is clear of the jacks before they are lowered.

Do not move the outrigger extension in or out without raising the jack cylinder off the ground. Doing this can damage the jack cylinder.

The outrigger is set and the crane is ready for use. After setting the jack cylinders, shift the diverter valve to supply hydraulic power to the crane. Do not change the diverter valve until crane operation has ceased.

**NOTE:** At no time should the tire on the opposite side from the lifting side be raised off of the ground. If this occurs and you are sure the load is within the rating of the crane's load radius chart, relocate the truck closer to the load.

Do not move the truck with the jack cylinders extended. Bending and breakage may occur. Retract the jack cylinders completely before moving the truck.

Do not operate the crane until you have read and understand the crane's operation as explained in the crane's owner/operator manual.

To store the outrigger, raise the outrigger jack so that the hydraulic cylinders are fully retracted. Then use the directional valve to retract the power extend sections.



## INSTALLATION INSTRUCTIONS

### MANUAL OUT / HYDRAULIC DOWN OUTRIGGER 40k ft.lbs.

Read these instructions completely before starting installation.

This kit includes the outrigger center tube, two hydraulic jack cylinders, one two-spool directional valve, a diverter valve, and hose and fittings needed to connect these items. Hose for the pump to outrigger connection is not included.

Before mounting the outrigger center tube, orient the outrigger so that the manual extend section is on the same side of the truck as the crane. Also, plan the hose routing to the jack cylinders. A gap must be left to allow these hoses to flex whenever the extend sections of the outrigger is moved in or out from the body.

**IMPORTANT:** The outrigger center tube must be supported at the truck frame, at its outer end under the crane's structural support, and at the end opposite the crane. The center tube should not be supported by the body sheet metal.

After the center tube is mounted, position the hydraulic jack cylinders so that they will extend at least 6" below ground level when the truck is level. Stroke of the jack cylinders is 20 inches. Mount the jack cylinders to the power extend sections using the four 1/2-13 x 4.0" Grade 8 Cap Screws supplied.

Refer to Drawing No. 50502 for a hydraulic schematic of this installation. Mount the diverter valve and directional control valves for convenient operation. The diverter valve is used to send hydraulic fluid *either* to the crane *or* to the outrigger. Installation of this valve will prevent inadvertent operation of the jack cylinders when the crane is being used.

Note the "In" and "Out" ports on the directional control valve. Connect the valve "In" port to the pump pressure port. Connect the "Out" port to return flow to the reservoir through a 10 micron filter.

Make up hoses as needed using the hose and reusable hose ends supplied. Hoses may be switched at the valve bank to coordinate the valve lever movement and cylinder direction.

Hydraulic flow to the outriggers should be limited to 2.5 GPM. At this flow rate the jack cylinder will move its 20" stroke in approximately 15 seconds. Higher flows may result in noisy operation.

Fill with hydraulic oil and bleed air out by fully extending the cylinders. We use Chevron AW Hydraulic Oil 46 or equivalent. When operating for the first time, it is best to extend all cylinders completely without stopping. This will evacuate the air from the cylinder's rod end and less air will be trapped in the rod end if this is done.

Place labels on the jack cylinder warning of crushing injury.



**OUTRIGGERS CENTER TUBE  
DIMENSIONS TABLE**

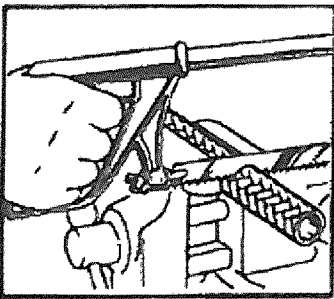
<i>Outrigger Model</i>	<i>Center Tube Size</i>
<i>Outrigger 10K</i>	<i>2.50'' X 5.00''X 0.18'' W</i>
<i>Outrigger 12K</i>	<i>2.50'' X 5.00''X 0.18'' W</i>
<i>Outrigger 18K</i>	<i>4.00'' X 6.00''X 0.25'' W</i>
<i>Outrigger 25K</i>	<i>5.00'' X 7.00''X 0.18'' W</i>
<i>Outrigger 40K</i>	<i>6.00'' X 8.00''X 0.18'' W</i>
<i>Outrigger 50K</i>	<i>7.00'' X 9.00''X 0.18'' W</i>
<i>Outrigger 72K</i>	<i>8.00'' X 10.00''X 0.25'' W</i>



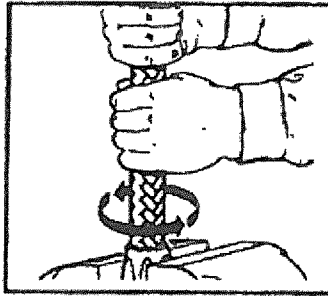
# REUSABLE FITTINGS & HOSE INSTALATION PROCEDURES

## Hose and Reusable Fittings

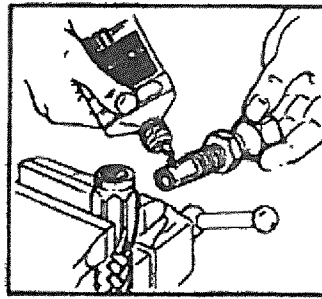
Standard (mandrelless) reusable fittings with single wire braid, multiple textile braid, hydraulic and LPG hose.



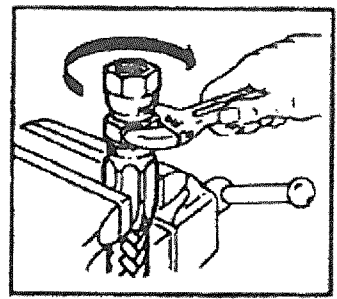
**Step 1**  
Cut hose square with fine-tooth hacksaw or cut-off wheel.



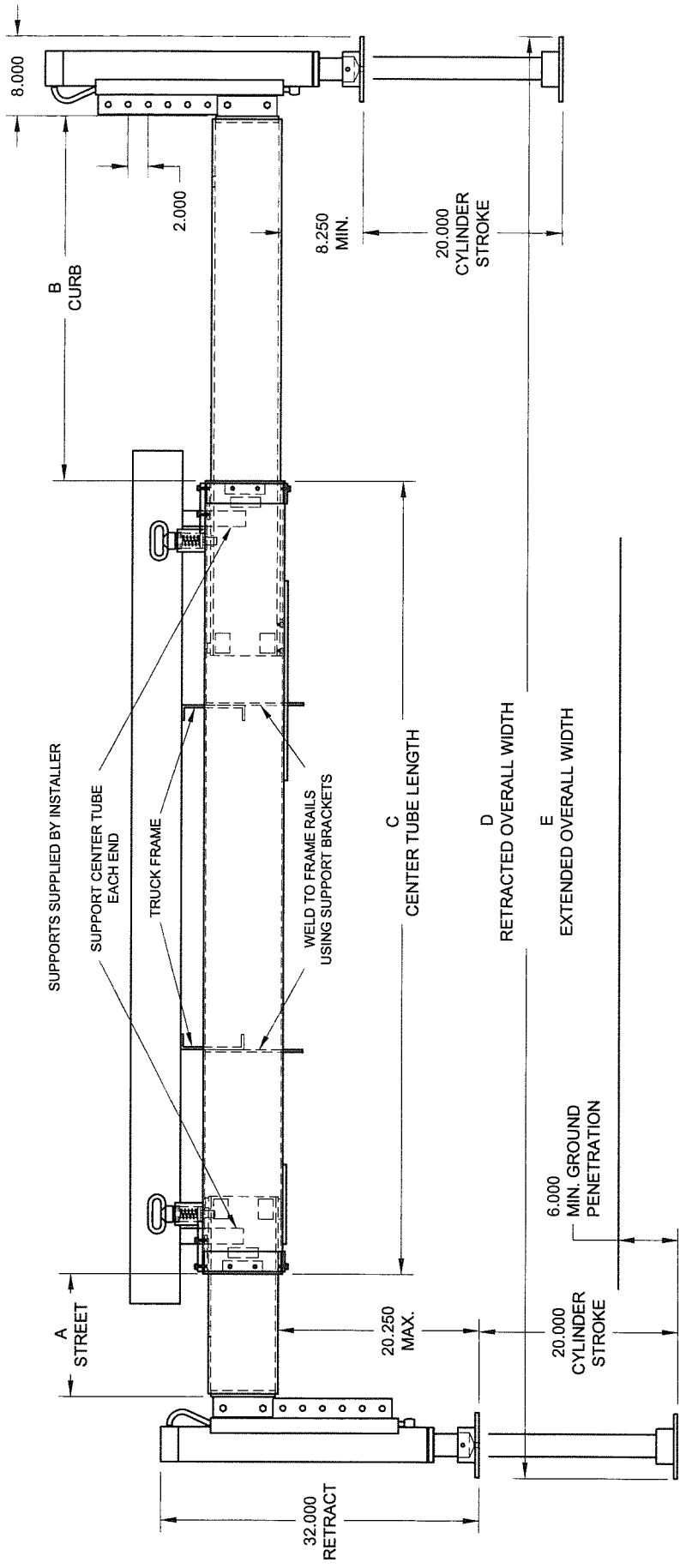
**Step 2**  
Put socket in vise.  
Screw hose counterclockwise into socket until it bottoms.  
Back off  $\frac{1}{4}$  turn.  
When assembling long lengths of hose, it may be preferred to put hose in vise just tight enough to prevent from turning, and screw socket into the hose counterclockwise until it bottoms.  
Back off  $\frac{1}{4}$  turn.



**Step 3**  
Lubricate nipple and threads **LIBERALLY**. Use heavy oil or Aeroquip 222070 hose assembly lube.



**Step 4**  
Screw nipple clockwise into socket and hose. Leave  $\frac{1}{32}$ " to  $\frac{1}{16}$ " clearance between nipple hex and socket.



MODEL	DESCRIPTION	DIMENSION A	DIMENSION B	DIMENSION C	DIMENSION D	DIMENSION E
MODEL 38588	40CMOHD-12SMOHD	12"	36"	79.5"	96.5"	144.5"
MODEL 38611	40CMOHD-12SMOHD	12"	36"	79.5"	96.5"	144.5"
MODEL 38675	40CMOHD-SFXHD	0"	36"	79.5"	96.5"	132.5"
MODEL 38750	20CMOHD-20SMOHD	20"	20"	70.75"	88"	128"
MODEL 38813	40CMOHD-12SMOHD	12"	36"	79.5"	96.5"	144.5"
MODEL 38977	40CFXHD-SFXHD	N/A	N/A	79.5"	95.5"	95.5"
MODEL 38981	40CMOHD-SFXHD	0"	36"	79.5"	96.5"	132.5"

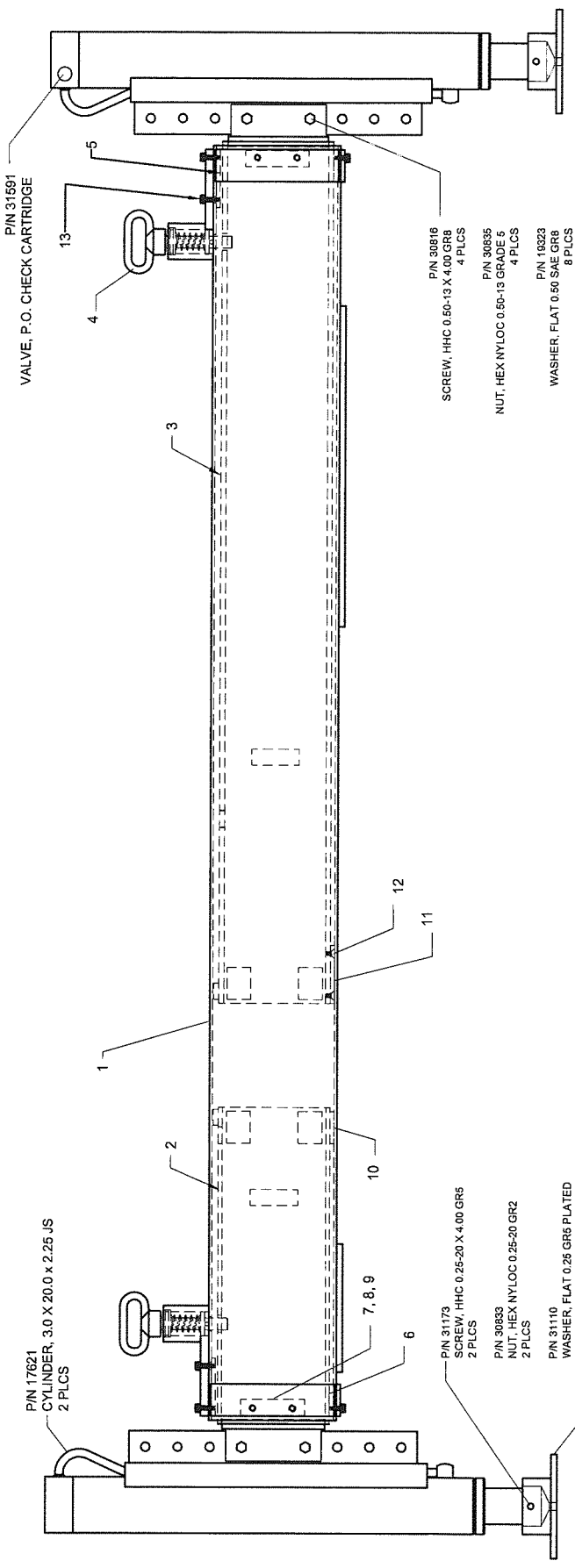
DRAWING NO. 50503-F

OUTRIGGER 40K MOHD INST

DRWN BY: JC  
DATE: 09/18/09

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PIN 17621  
CYLINDER, 3.0 X 20.0 X 2.25 JS  
2 PLCS

PIN 31591  
VALVE, P.O. CHECK CARTRIDGE

PIN 50816  
SCREW, HHC 0.50-13 X 4.00 GR8  
4 PLCS

PIN 30835  
NUT, HEX NYLOC 0.50-13 GRADE 5  
4 PLCS

PIN 19323  
WASHER, FLAT 0.50 SAE GR8  
8 PLCS

PIN 31173  
SCREW, HHC 0.25-20 X 4.00 GR5  
2 PLCS

PIN 30833  
NUT, HEX NYLOC 0.25-20 GR2  
2 PLCS

PIN 31110  
WASHER, FLAT 0.25 GR6 PLATED  
4 PLCS

PIN 17831  
BASE, JACK HYD. 2BK OUTRIGGER  
2 PLCS

\*SEE INSTALLATION DRAWING FOR OUTRIGGER MODEL NUMBER DESCRIPTION

ITEM	DESCRIPTION	OUTRIGGER											
		38588 QTY	38611 QTY	38675 QTY	38750 QTY	38813 QTY	38977 QTY	38981 QTY					
1	CENTER OUTR.	19360	19360	20409	21344	19360	23220	20409					
2	STREET SIDE OUTR.	19364	19364	NONE	21350	19364	NONE	NONE					
3	CURB SIDE OUTR.	19362	19362	19362	21347	19362	NONE	19362					
4	DETENT ASSY	32492	32492	32492	32492	32492	32492	32492					
5	TOP SPACER	33292	33292	33292	33292	33292	33292	33292					
6	BOTTOM SPACER	33951	33951	33951	33951	33951	33951	33951					
7	SIDE SPACER	16820	16820	16820	16820	16820	16820	16820					
8	SCREW	30457	30457	30457	30457	30457	30457	30457					
9	LOCK WASHER	30889	30889	30889	30889	30889	30889	30889					
10	STREET NYLON PAD	NONE	NONE	NONE	33952	NONE	NONE	NONE					
11	CURB NYLON PAD	33950	33950	33950	33950	33950	33950	33950					
12	SCREW	33614	33614	33614	33614	33614	33614	33614					
13	SCREW	30810	30810	30810	NONE	30810	NONE	30810					

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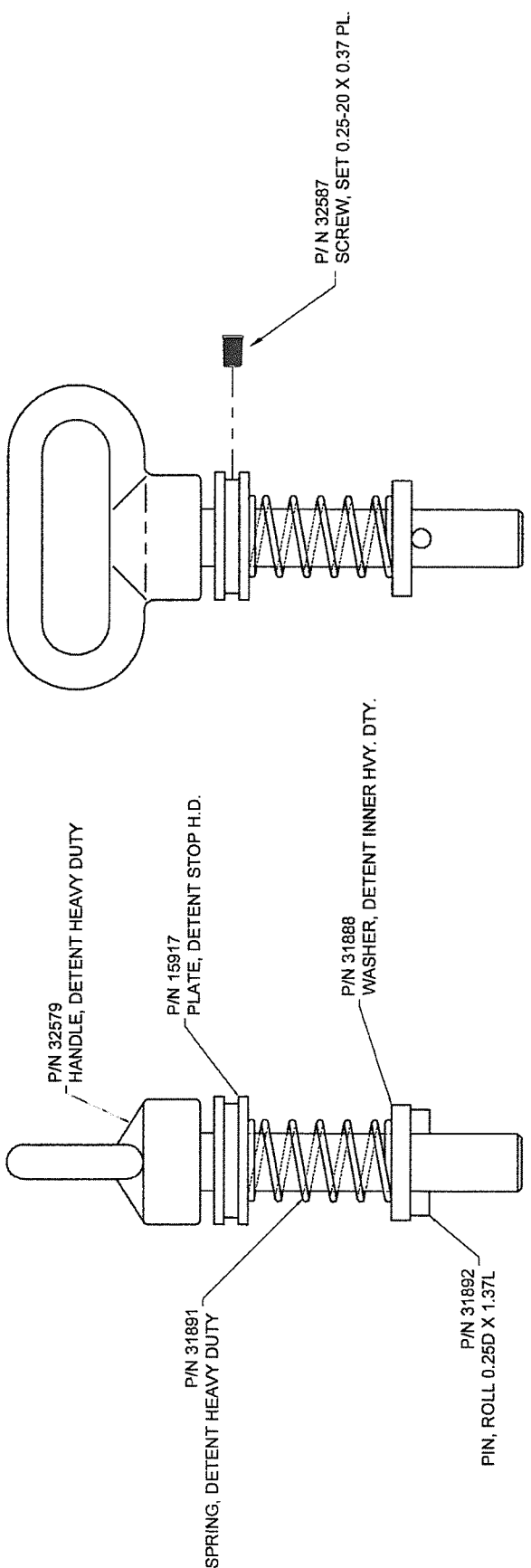
OUTRIGGER 40K MOHD  
PARTS LIST

DRAWING NO.  
**58102-G**

DRWN BY: JC

DATE: 09/18/09





P/N 32579  
HANDLE, DETENT HEAVY DUTY

P/N 15917  
PLATE, DETENT STOP H.D.

P/N 31888  
WASHER, DETENT INNER HVY. DTY.

P/N 31891  
SPRING, DETENT HEAVY DUTY

P/N 31892  
PIN, ROLL 0.25D X 1.37L

P/N 32587  
SCREW, SET 0.25-20 X 0.37 PL.

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DRWN BY: JC

DATE: 01/24/07

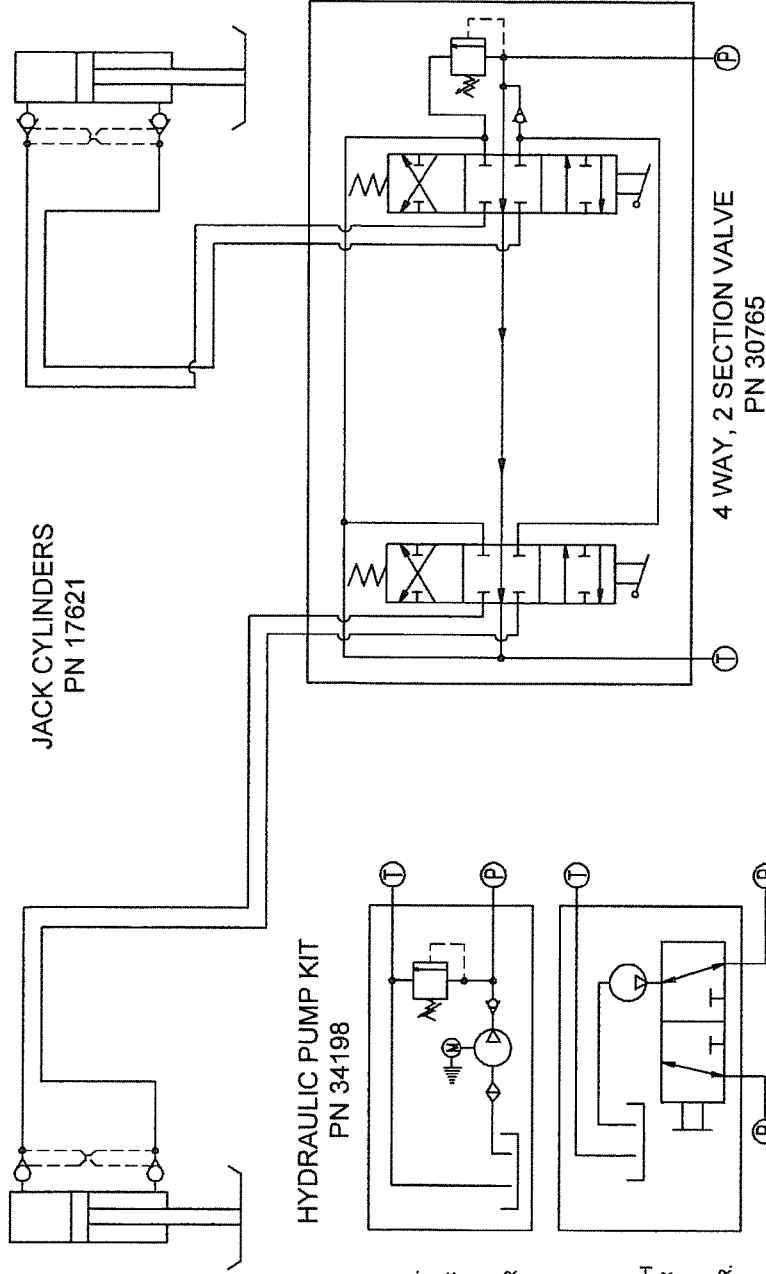
DETENT, INNER ASSEMBLY H.D.

DRAWING NO.

32492-C

STREET SIDE

CURB SIDE



OPTION 2:  
FOR ELECT.  
CRANES;  
HYDRAULIC  
PUMP UNIT  
WITH  
RESERVOIR

OPTION 1:  
FOR HYDR.  
CRANES;  
DIVERTER  
VALVE WITH  
CUSTOMER  
SUPPLIED  
PUMP AND  
RESERVOIR.

NOTES: PLUMB "P" PORTS AND "T" PORTS BETWEEN  
OUTRIGGER SYSTEM AND FLUID POWER SOURCE.



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DRWN BY: SJN  
DATE: 8/12/02

SCHEM, HYD. OUTRIG HD

DRAWING NO.  
50502-0