

# MILLER LOADERS INC.



## PL-2 LOADER

# INSTRUCTIONS & PARTS

**1242 ARIZONA AVE.  
LARCHWOOD, IA 51241  
1-800-570-8205**

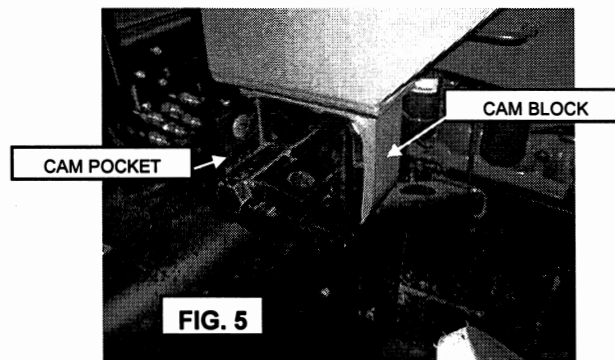
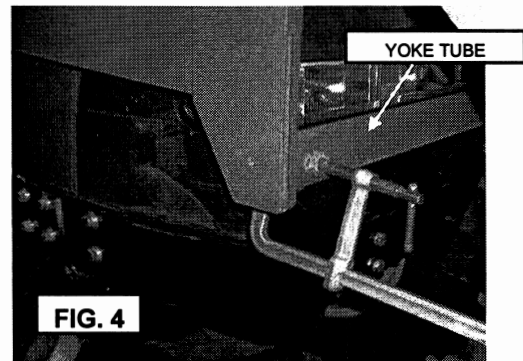
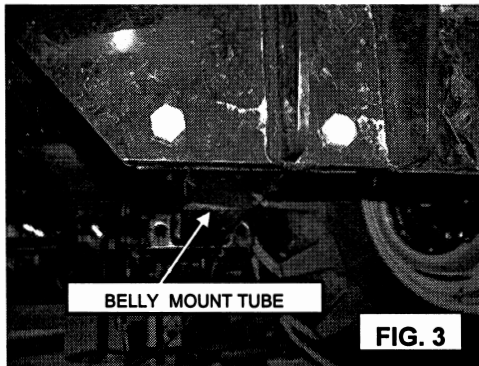
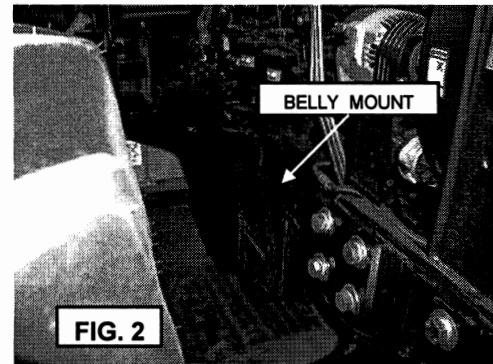
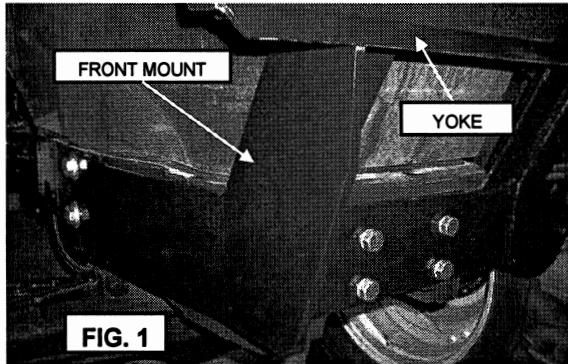
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**SERIAL No.** of Loader Purchased \_\_\_\_\_

Date Purchased \_\_\_\_\_

# INSTALL MOUNTS ON TRACTOR



**STEP 1** Install the front mount onto the front casting of the tractor. Tighten all bolts that secure the front mount. See Figure 1.

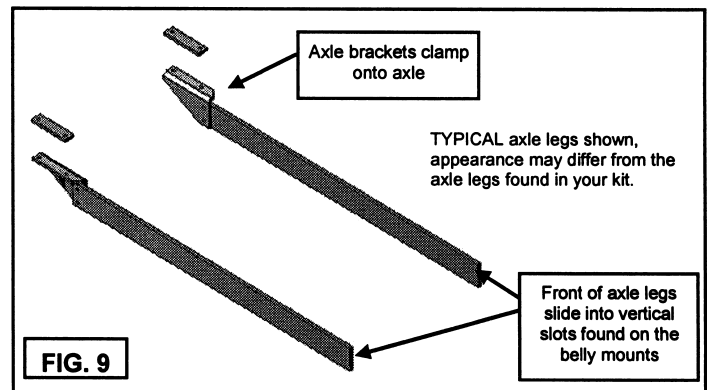
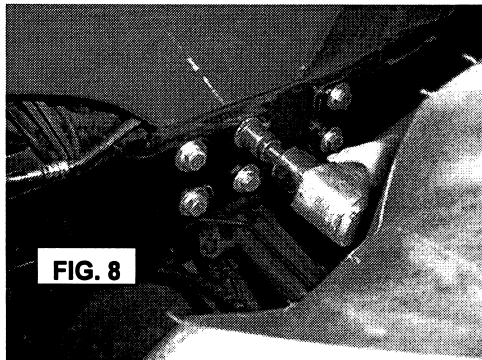
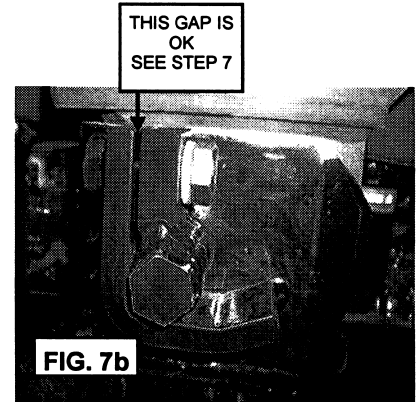
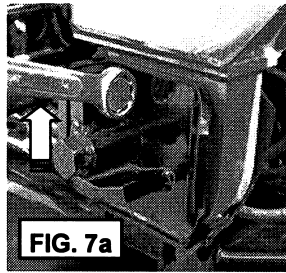
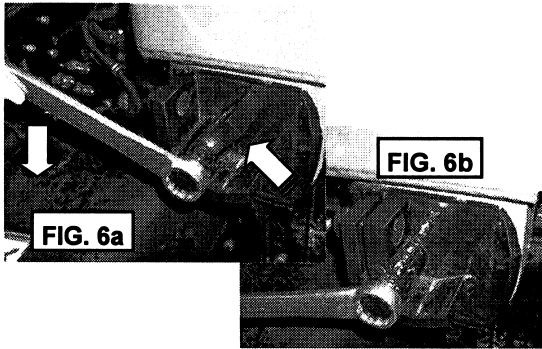
**STEP 2** Install the belly mounts onto the tractor—one on the right side and one on the left side. Install the bolts and washers, but **DO NOT TIGHTEN THEM YET!** The belly mounts must be able to move back and forth in the following steps. See Figure 2.

**STEP 3** Install the belly mount tube that hangs in between the belly mounts. Loosely connect the bolts and nuts, do not tighten these yet either. See Figure 3.

**STEP 4** Drive into the loader so that the yoke tube of the loader slides into the yoke of the front mount. Use (2) C-clamps (one on each side of the yoke tube) to fully seat the tube into the yoke and secure it. See Figure 4.

**STEP 5** The cam blocks of the loader should be positioned in the cam pockets as shown in Figure 5.

# INSTALL MOUNTS ON TRACTOR



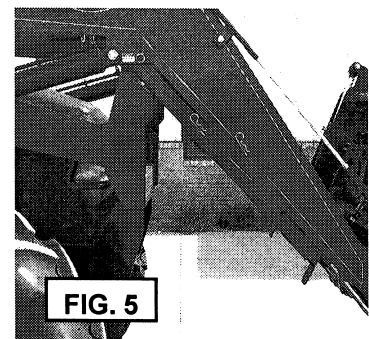
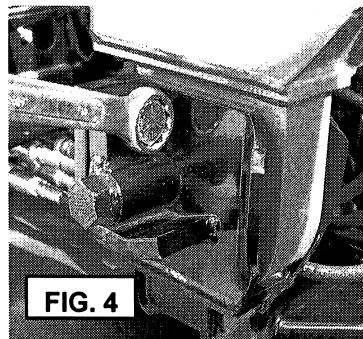
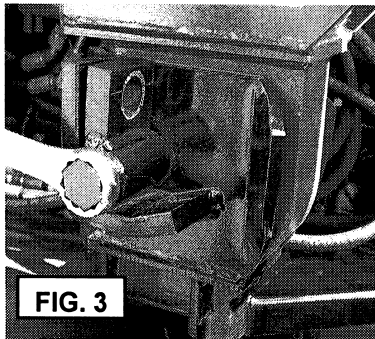
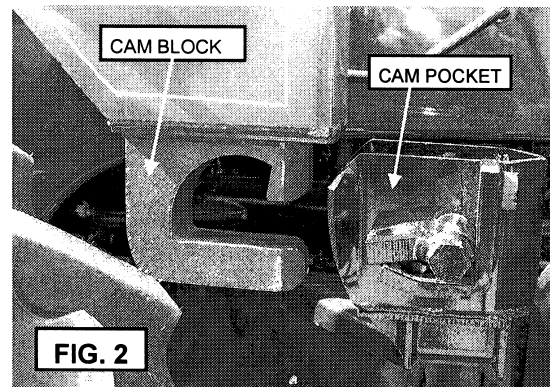
**STEP 6** Use a 1-1/2" wrench to turn the cam which pulls the cam block into the pocket. Since the loader was secured to the front mount with c-clamps in Step 4, the belly mounts will shift slightly as the cam is rotated. This is normal. See Figures 6a and 6b.

**STEP 7** With a 1-1/2" end wrench or socket wrench (**Not** an impact wrench or cheater bar!) tighten the 1" bolt that secures the cam. See Figures 7a and 7b. **Important!** The gap shown in Figure 7b is the proper gap after tightening. The gap is supposed to be this way. Do not think you have to tighten the bolt until the gap is closed.

**STEP 8** Now that the mounts are in the proper position and the cam bolts are tight, all of the belly mount bolts can be tightened. See Figure 8. Remove the c-clamps that were used in Step 4. If your mount kit includes axle legs, proceed to Step 9, otherwise, your mount installation is complete.

**STEP 9** Some mounting kits include axle legs and axle brackets. See Figure 9. Hang the axle brackets from the tractor's axle without tightening the bolts. Usually the narrow end of the bracket is to the rear. Insert the front of the axle legs into the 1" x 5" slots found on the belly mounts. Bolt the rear of the axle legs to the axle brackets. Tighten the bolts that are clamping the brackets to the axle. The final step is to tighten the 5/8 set-screw (bolt) on the belly mount that is pressing down on the very front of the axle leg. The purpose of the axle legs is to protect the bolted connections on the tractor (i.e., motor to tranny, tranny to bull gear) in the event the rear axle is unweighted during loader operation and the rear tires are no longer supporting the tractor. Whether or not your mounting kit included axle legs depends on the construction of the tractor. Most newer tractors do not require axle legs.

# MOUNTING INSTRUCTIONS



**STEP 1** Approach the loader slowly and place the tractor close enough to allow the connection of the hydraulic hoses. Connect the hoses to the tractor so that the loader can be operated. See Figure 1.

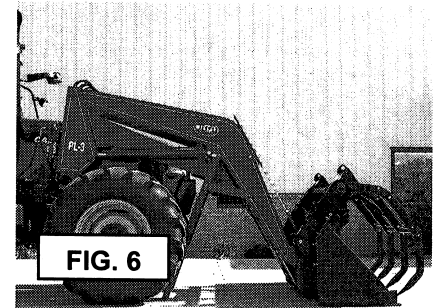
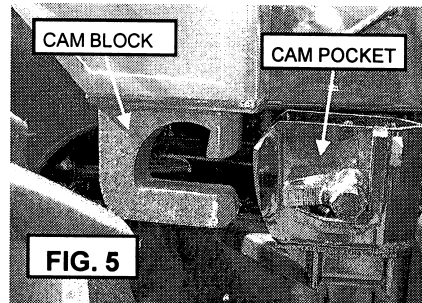
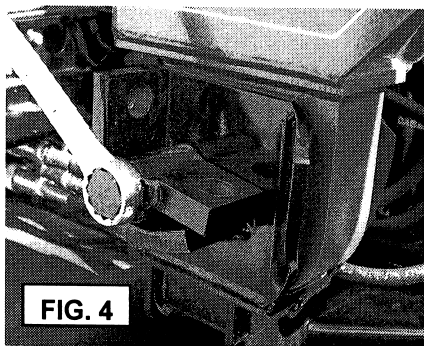
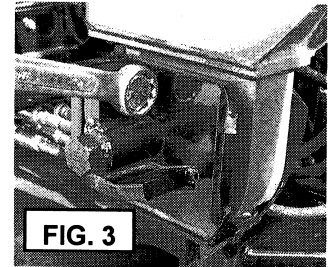
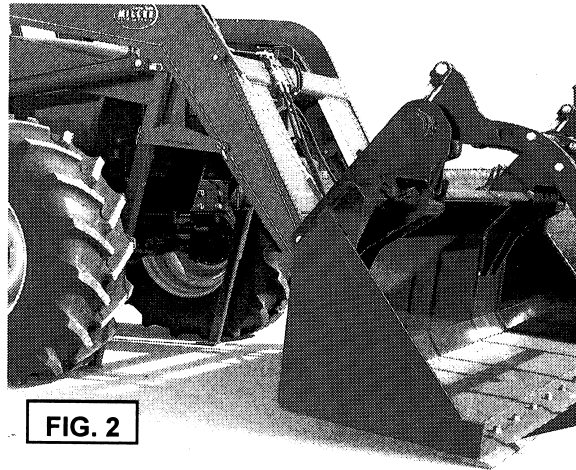
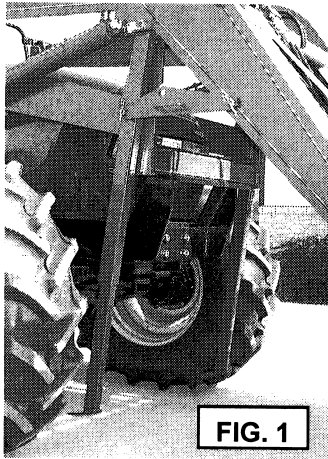
**STEP 2** Tilt the bucket down slowly so that the cam block on the loader aligns with the cam pocket on the mountings. See Figure 2. Slowly drive the tractor forward so that the cam blocks slide into the cam pockets and the front tube slides into the yoke tube on the front of the loader.

**STEP 3** Use a 1-1/2" wrench to turn the cam which pulls the cam block into the pocket. It needs only to be engaged enough so that the 1" bolt can be installed in the hole and the threads started. See Figures 3 and 4.

**STEP 4** Tighten the 1" bolt that secures the cam. See Figure 4.

**STEP 5** Raise the loader off the ground. Retract the stand legs and position them in their stored location. See Figure 5.

# DISMOUNT INSTRUCTIONS



**STEP 1** *DRIVE ONTO FLAT, LEVEL CONCRETE.* Raise the loader and place the stand legs in the position shown in Figure 1.

**STEP 2** Gently lower the loader until the stand legs rest on the ground. Tilt the bucket forward until the cutting edge is also resting on the ground. See Figure 2.

**STEP 3** Loosen and remove the 1" bolts that secure the cams on both sides of the loader. See Figure 3.

**STEP 4** Use a 1-1/2" wrench to turn the cams forward. See Figure 4.

**STEP 5** Slowly back up the tractor until the cam blocks are free from the cam pockets. See Figure 5.

**STEP 6** Slowly roll the bucket until it is flat on the ground. This motion will also tilt the loader up to its stored position. Disconnect the hydraulic hoses and back away from the loader. See Figure 6.

# QUICK-ATTACH INSTRUCTIONS

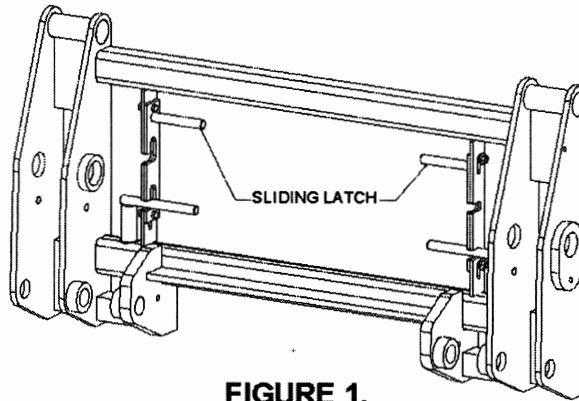


FIGURE 1.

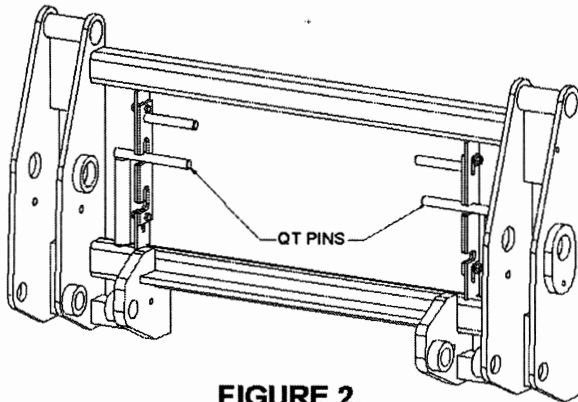


FIGURE 2.

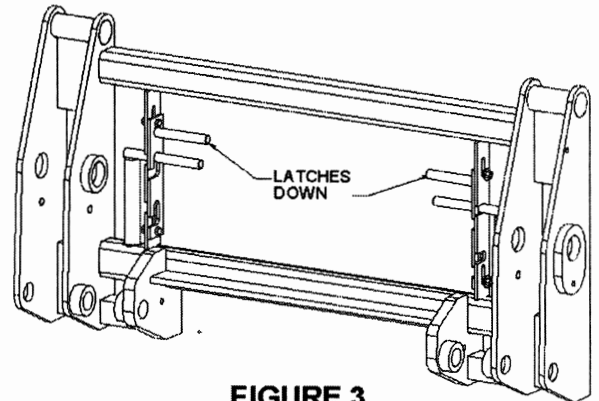


FIGURE 3.

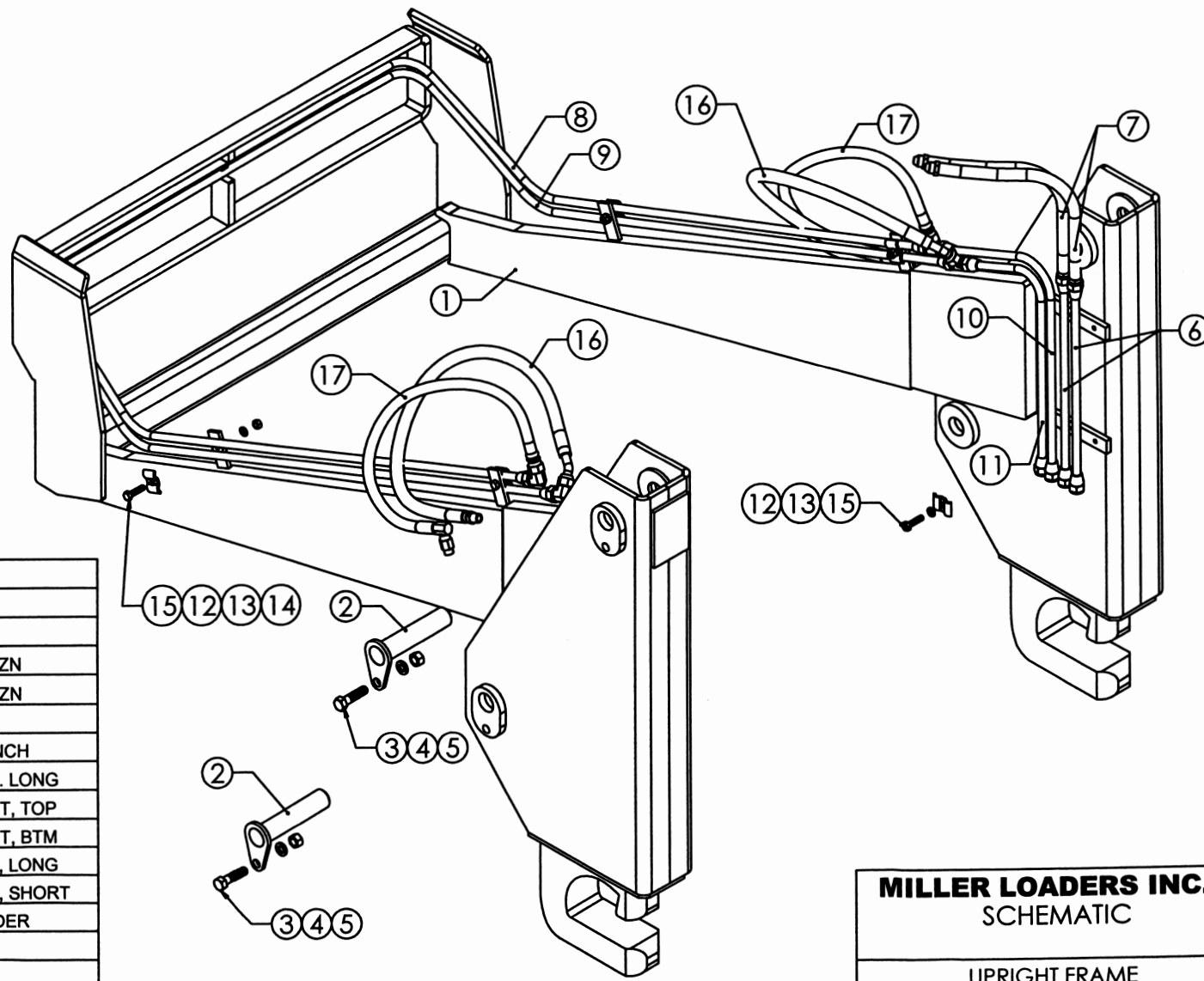
## UNCOUPLING

1. Raise sliding latches as shown in Figure 1.
2. Rotate QT pins out of the lower notches, raise, and then rotate them into the upper notches of the sliding latches as shown in Figure 2.
3. Slide the sliding latches down as shown in Figure 3. This secures the QT pins in the “up” position so they do not interfere when hooking up to the next attachment.

## COUPLING

1. Approach and hook onto the attachment with QT pins secured in the “up” position as shown in Figure 3.
2. When the QT frame is flat against the attachment, raise the sliding latches as shown in Figure 2.
3. Rotate QT pins out of the upper notches, lower, and then rotate them into the lower notches on the sliding latches as shown in Figure 1. **NOTE:** If the QT pins do not easily slide thru the lug on the attachment, do not force them. Simply rotate the attachment back and forth slowly with the bucket cylinders of the loader and the QT pins should fall into place. Periodically grease the QT pins and sliding latches.
4. Secure the QT pins in the “down” position by sliding the latches down.

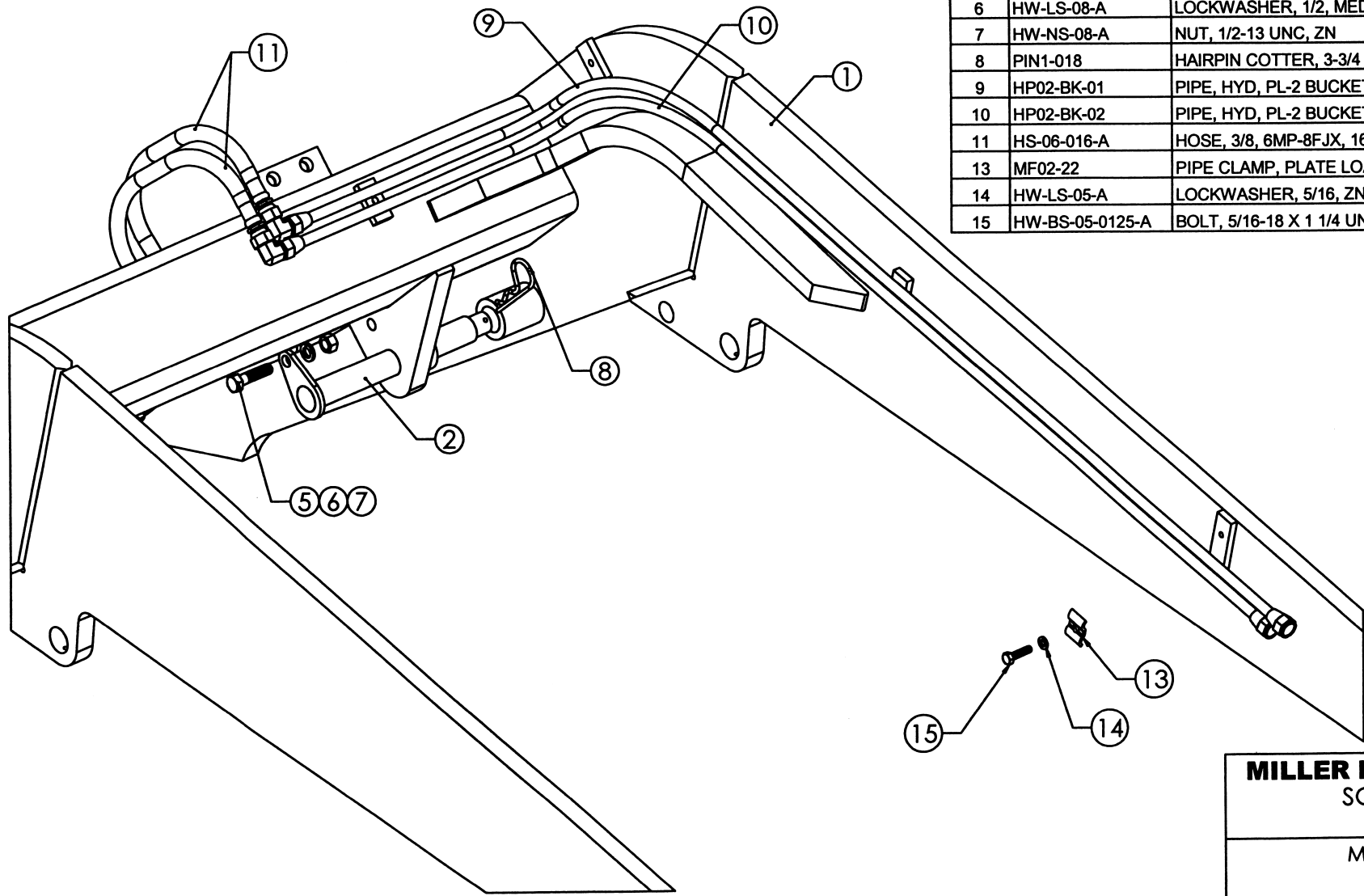




ITEM	PART NO.	DESCRIPTION
1	UR02	UPRIGHT FRAME, PL-2
2	PN-06000-A10	PIN, 6.000 X 1.25, W/RTNR
3	HW-BS-08-0200-A	BOLT, 1/2-13 X 2 UNC, G5 ZN
4	HW-LS-08-A	LOCKWASHER, 1/2, MED, ZN
5	HW-NS-08-A	NUT, 1/2-13 UNC, ZN
6	HP02-UR-01	PIPE, HYD, UPRIGHT 15-INCH
7	HS-06-024-A	HOSE, 3/8, 8MJ-8MJ, 24-IN. LONG
8	HP02-UR-02	PIPE, HYD, PL-2 UR FRONT, TOP
9	HP02-UR-03	PIPE, HYD, PL-2 UR FRONT, BTM
10	HP02-UR-04	PIPE, HYD, PL-2 UR REAR, LONG
11	HP02-UR-05	PIPE, HYD, PL-2 UR REAR, SHORT
12	MF02-22	PIPE CLAMP, PLATE LOADER
13	HW-LS-05-A	LOCKWASHER, 5/16, ZN
14	HW-NS-05-A	NUT, 5/16-18 UNC, ZN
15	HW-BS-05-0125-A	BOLT, 5/16-18 X 1 1/4 UNC, G5 ZN
16	HS-06-028-A	HOSE, 3/8, 6MPX-8FJX45, 28-IN. LONG
17	HS-06-028-B	HOSE, 3/8, 6MPX90-8FJX, 28-IN. LONG

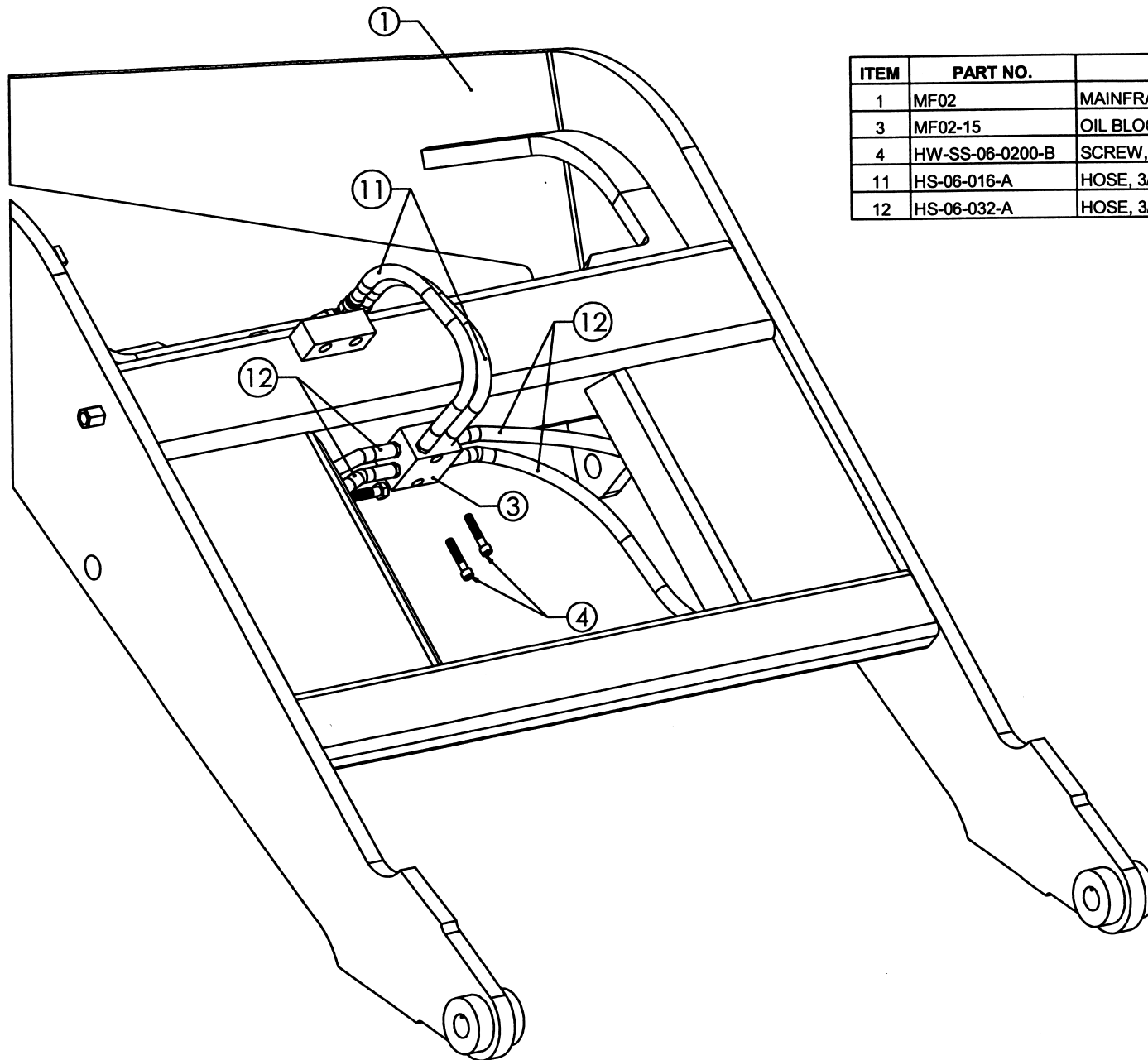
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SCHEMATIC		
UPRIGHT FRAME PL-2		
DWG. NO.	UR	REV. 0
DRAWN BY TDM	DATE 15 JUNE 01	SHEET 1 OF 1





ITEM	PART NO.	DESCRIPTION
1	MF02	MAINFRAME, PL-2
2	PN-11000-B10	PIN, 11 X 1-1/4, MACHINED W/ RETAINER
5	HW-BS-08-0200-A	BOLT, 1/2-13 X 2 UNC, G5 ZN
6	HW-LS-08-A	LOCKWASHER, 1/2, MED, ZN
7	HW-NS-08-A	NUT, 1/2-13 UNC, ZN
8	PIN1-018	HAIRPIN COTTER, 3-3/4 LONG
9	HP02-BK-01	PIPE, HYD, PL-2 BUCKET, TOP, LONG
10	HP02-BK-02	PIPE, HYD, PL-2 BUCKET, BOTTOM, SHORT
11	HS-06-016-A	HOSE, 3/8, 6MP-8FJX, 16-IN. LONG
13	MF02-22	PIPE CLAMP, PLATE LOADER
14	HW-LS-05-A	LOCKWASHER, 5/16, ZN
15	HW-BS-05-0125-A	BOLT, 5/16-18 X 1 1/4 UNC, G5 ZN

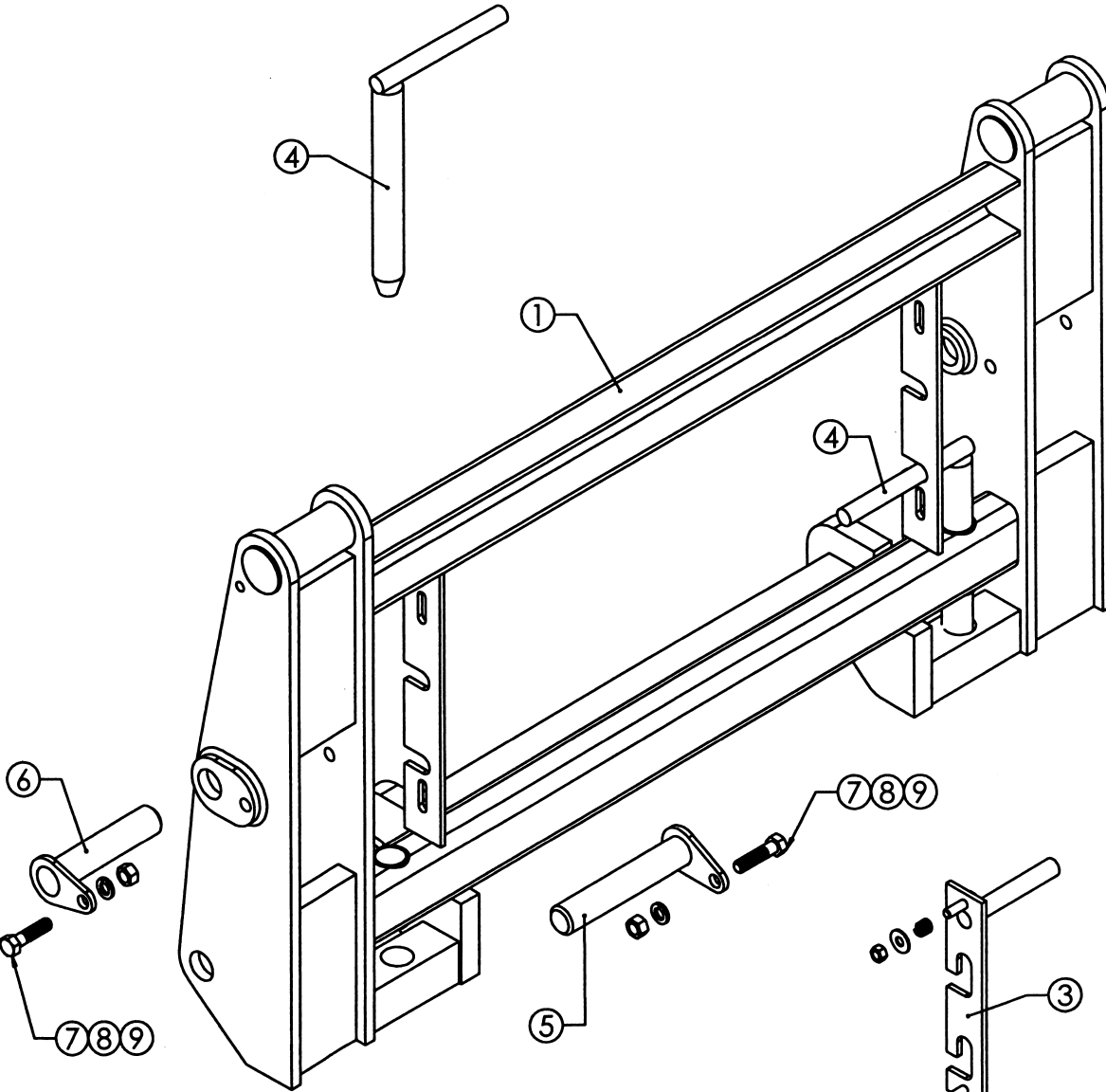
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SCHEMATIC		
MAINFRAME PL-2		
DWG. NO.	MF	REV. 0
DRAWN BY TDM	DATE 13 JUNE 01	SHEET 1 OF 2



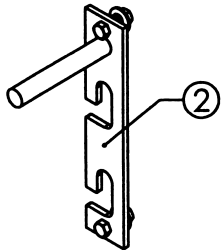
ITEM	PART NO.	DESCRIPTION
1	MF02	MAINFRAME, PL-2
3	MF02-15	OIL BLOCK, BUCKET CYLINDER
4	HW-SS-06-0200-B	SCREW, 3/8-16 X 2 UNC, SKT CAP
11	HS-06-016-A	HOSE, 3/8, 6MP-8FJX, 16-IN. LONG
12	HS-06-032-A	HOSE, 3/8, 6MP-6MPX, 32-IN. LONG

<b>MILLER LOADERS INC.</b>		
SCHEMATIC		
MAINFRAME PL-2		
DWG. NO.	MF	REV. 0
DRAWN BY	TDM	DATE 13 JUNE 01 SHEET 2 OF 2

COMPLETE ASSEMBLY PART NO: QT02



ITEM	PART NO.	DESCRIPTION
1	QT02-W	QT, PL-2 PL-2JR WELDED FRAME
2	QT02-01L	HANDLE-LATCH ASSY, QT, LH
	QT02-W01L	HANDLE-LATCH WELD ASSY, QT, LH
	HW-NS-06-A	NUT, 3/8-16 UNC, CL, ZN
	HW-SP-001	SPRING, QT HANDLE
	HW-WS-06-A	WASHER, 3/8, FLAT, ZN
3	QT02-01R	HANDLE-LATCH ASSY, QT, RH
	HW-WS-06-A	WASHER, 3/8, FLAT, ZN
	HW-SP-001	SPRING, QT HANDLE
	HW-NS-06-A	NUT, 3/8-16 UNC, CL, ZN
	QT02-W01R	HANDLE-LATCH WELD ASSY, QT, RH
4	QT02-14	RETAINING PIN ASSEMBLY, QT
5	PN-07000-A10	PIN, 7.000 X 1.25, W/RTNR
6	PN-06000-A10	PIN, 6.000 X 1.25, W/RTNR
7	HW-BS-08-0200-A	BOLT, 1/2-13 X 2 UNC, G5 ZN
8	HW-LS-08-A	LOCKWASHER, 1/2, MED, ZN
9	HW-NS-08-A	NUT, 1/2-13 UNC, ZN

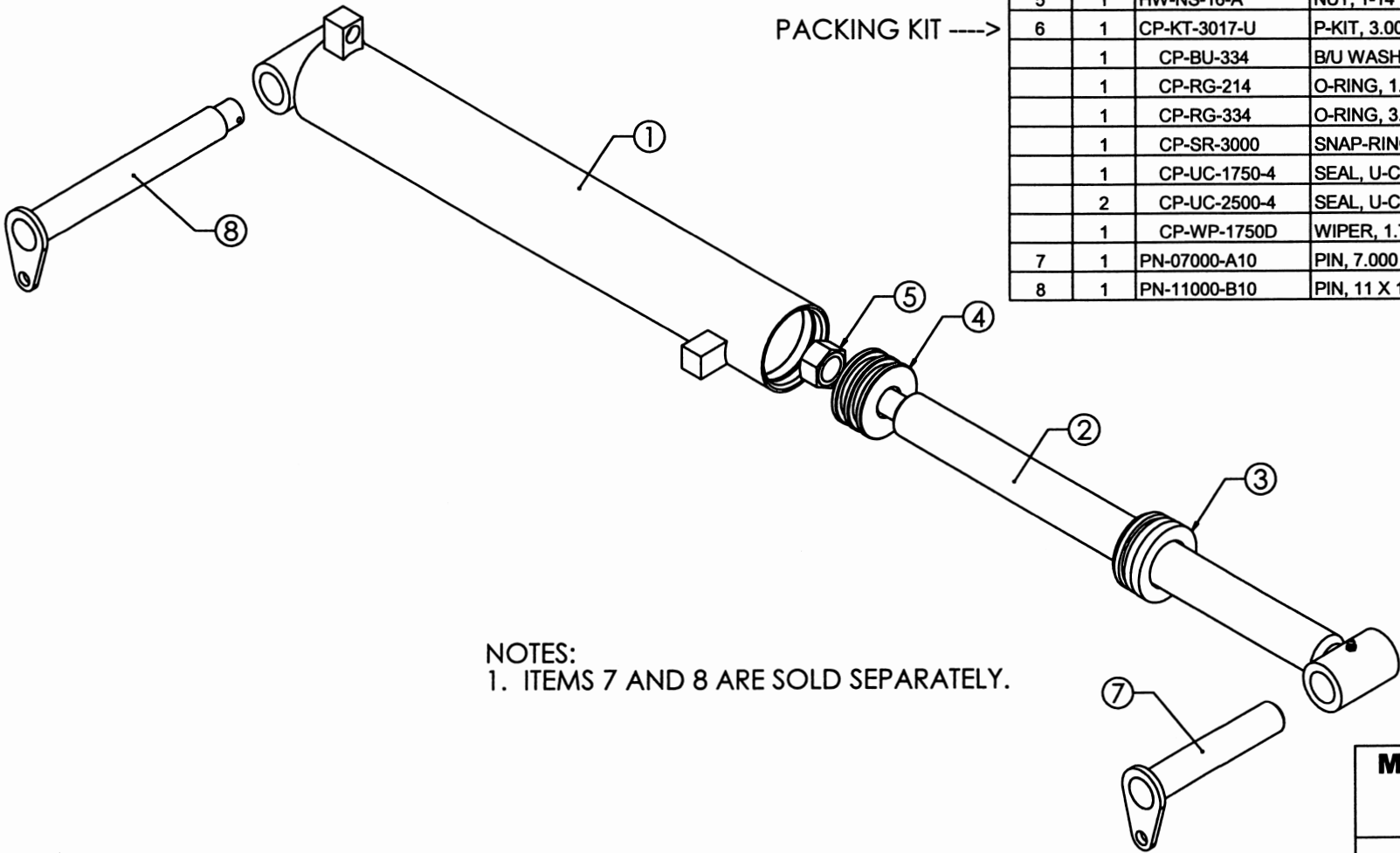


NOTES:  
1. ITEMS 5, 6, 7, 8, AND 9 ARE SOLD SEPARATELY.

<b>MILLER LOADERS INC.</b>		
SCHEMATIC		
QT FRAME PL-2 and PL-2JR PART NO: QT02		
DWG. NO. QT	DATE 29 MAY 01	REV. 0
DRAWN BY TDM	DATE 29 MAY 01	SHEET 1 OF 1

COMPLETE CYLINDER PART NO: CY-004-L

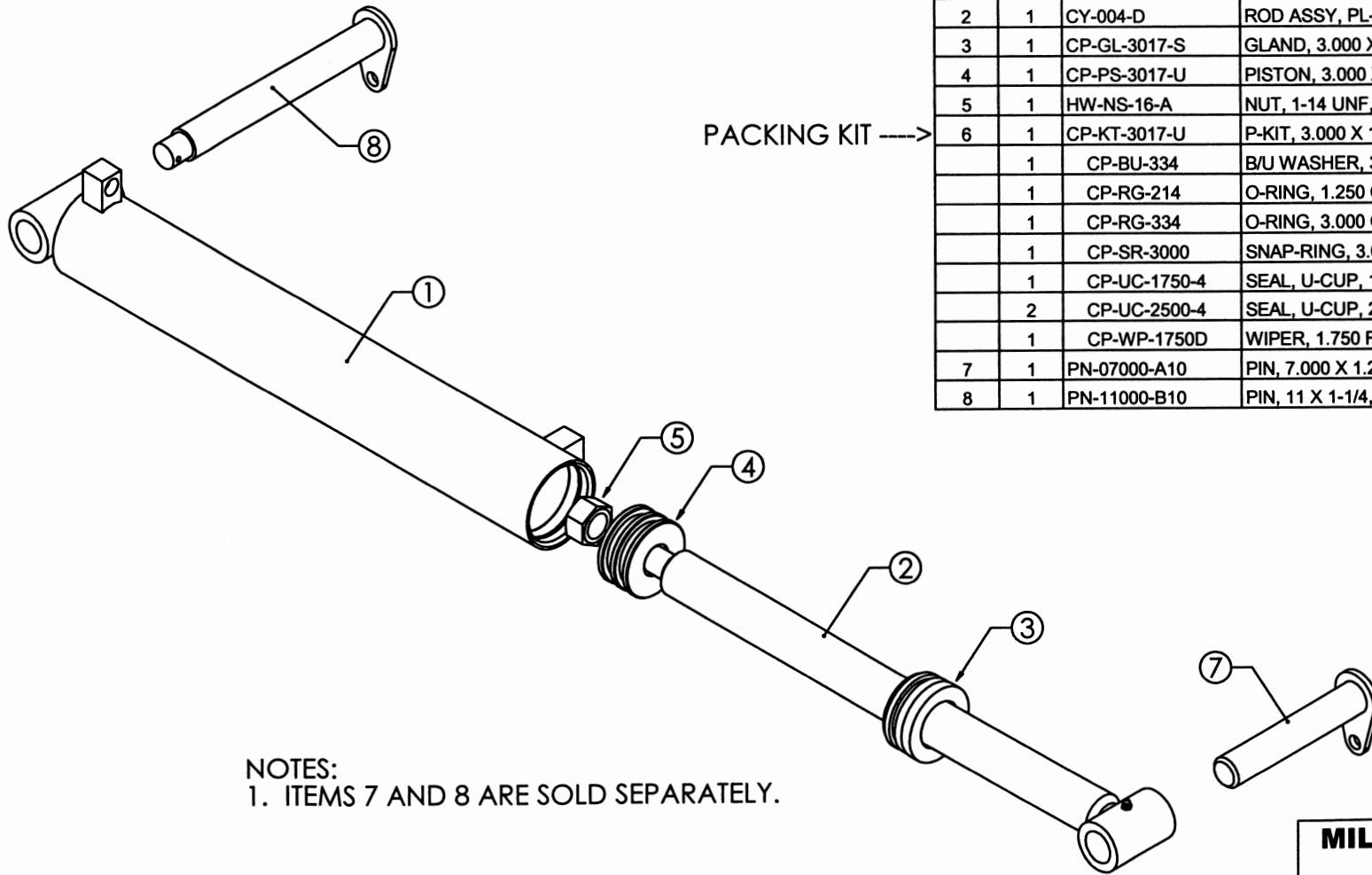
ITEM	QTY.	PART NO.	DESCRIPTION
1	1	CY-004-LT	TUBE ASSY, PL-2/3, LB
2	1	CY-004-D	ROD ASSY, PL-1/2/3 LB/RB
3	1	CP-GL-3017-S	GLAND, 3.000 X 1.750, ST
4	1	CP-PS-3017-U	PISTON, 3.000 X 1.750, UC
5	1	HW-NS-16-A	NUT, 1-14 UNF, GRC, TL, PLAIN
6	1	CP-KT-3017-U	P-KIT, 3.000 X 1.750 UC
	1	CP-BU-334	B/U WASHER, 3.000 OD x .188 x .090
	1	CP-RG-214	O-RING, 1.250 OD x 0.125
	1	CP-RG-334	O-RING, 3.000 OD x 0.188
	1	CP-SR-3000	SNAP-RING, 3.00 BORE
	1	CP-UC-1750-4	SEAL, U-CUP, 1.750 ID x .250 x .375
	2	CP-UC-2500-4	SEAL, U-CUP, 2.500 ID x .250 x .375
	1	CP-WP-1750D	WIPER, 1.750 ROD, TYPE "D"
7	1	PN-07000-A10	PIN, 7.000 X 1.25, W/RTNR
8	1	PN-11000-B10	PIN, 11 X 1-1/4, MACHINED W/ RETAINER



NOTES:  
1. ITEMS 7 AND 8 ARE SOLD SEPARATELY.

<b>MILLER LOADERS INC.</b>		
SCHEMATIC		
LEFT BUCKET CYLINDER PL-2 and PL-3 PART NO: CY-004-L		
DWG. NO.	CY-004-L	REV. 0
DRAWN BY TDM	DATE 22 MAY 01	SHEET 1 OF 1

COMPLETE CYLINDER PART NO: CY-004-R



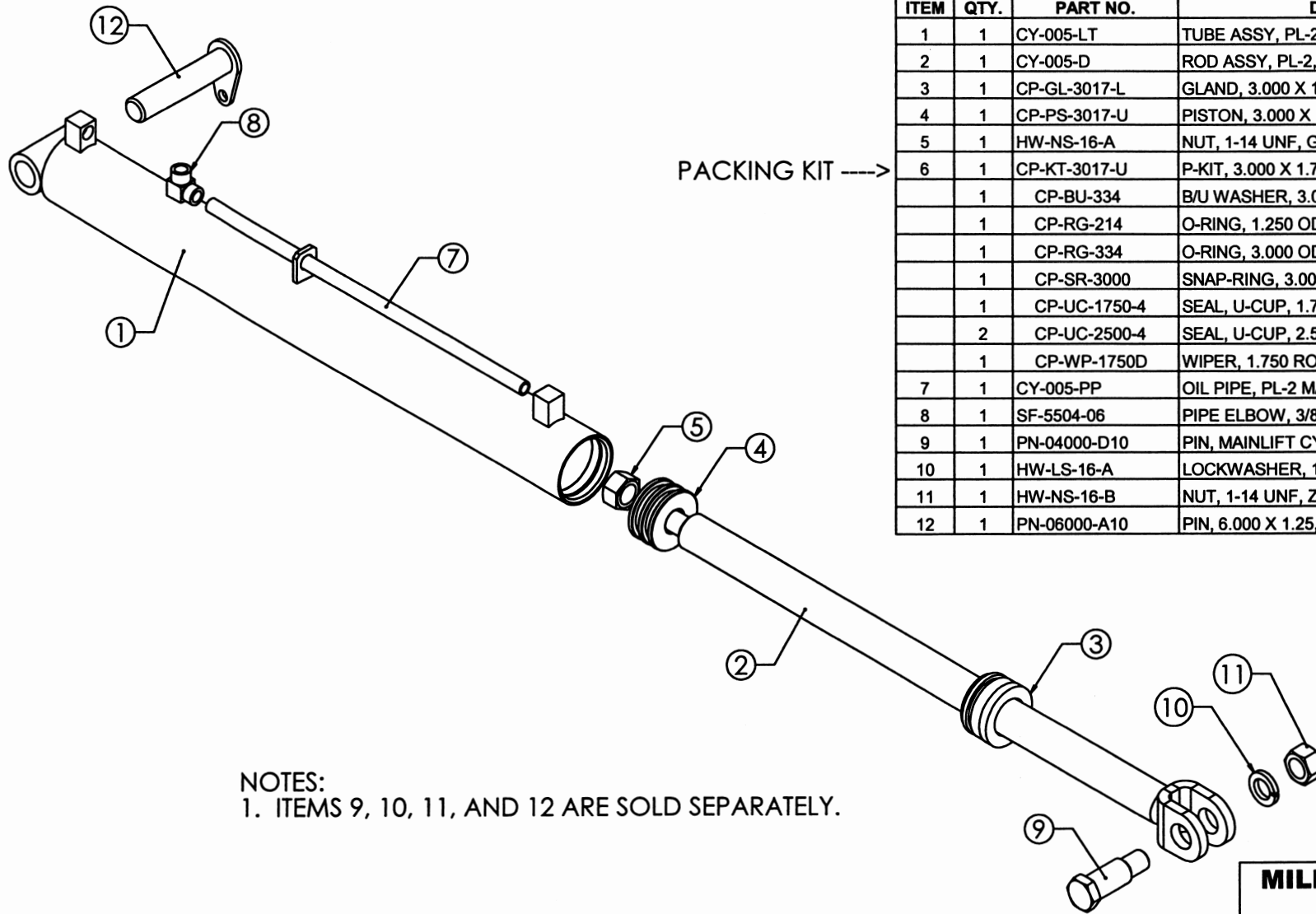
PACKING KIT ---->

ITEM	QTY.	PART NO.	DESCRIPTION
1	1	CY-004-RT	TUBE ASSY, PL-2/3, RB
2	1	CY-004-D	ROD ASSY, PL-1/2/3 LB/RB
3	1	CP-GL-3017-S	GLAND, 3.000 X 1.750, ST
4	1	CP-PS-3017-U	PISTON, 3.000 X 1.750, UC
5	1	HW-NS-16-A	NUT, 1-14 UNF, GRC, TL, PLAIN
6	1	CP-KT-3017-U	P-KIT, 3.000 X 1.750 UC
	1	CP-BU-334	B/U WASHER, 3.000 OD x .188 x .090
	1	CP-RG-214	O-RING, 1.250 OD x 0.125
	1	CP-RG-334	O-RING, 3.000 OD x 0.188
	1	CP-SR-3000	SNAP-RING, 3.00 BORE
	1	CP-UC-1750-4	SEAL, U-CUP, 1.750 ID x .250 x .375
	2	CP-UC-2500-4	SEAL, U-CUP, 2.500 ID x .250 x .375
	1	CP-WP-1750D	WIPER, 1.750 ROD, TYPE "D"
7	1	PN-07000-A10	PIN, 7.000 X 1.25, W/RTNR
8	1	PN-11000-B10	PIN, 11 X 1-1/4, MACHINED W/ RETAINER

NOTES:  
1. ITEMS 7 AND 8 ARE SOLD SEPARATELY.

<b>MILLER LOADERS INC.</b> SCHEMATIC		
RIGHT BUCKET CYLINDER PL-2 and PL-3 PART NO: CY-004-R		
DWG. NO.	CY-004-R	REV. 0
DRAWN BY	TDM	DATE 22 MAY 01
		SHEET 1 OF 1

COMPLETE CYLINDER PART NO: CY-005-L



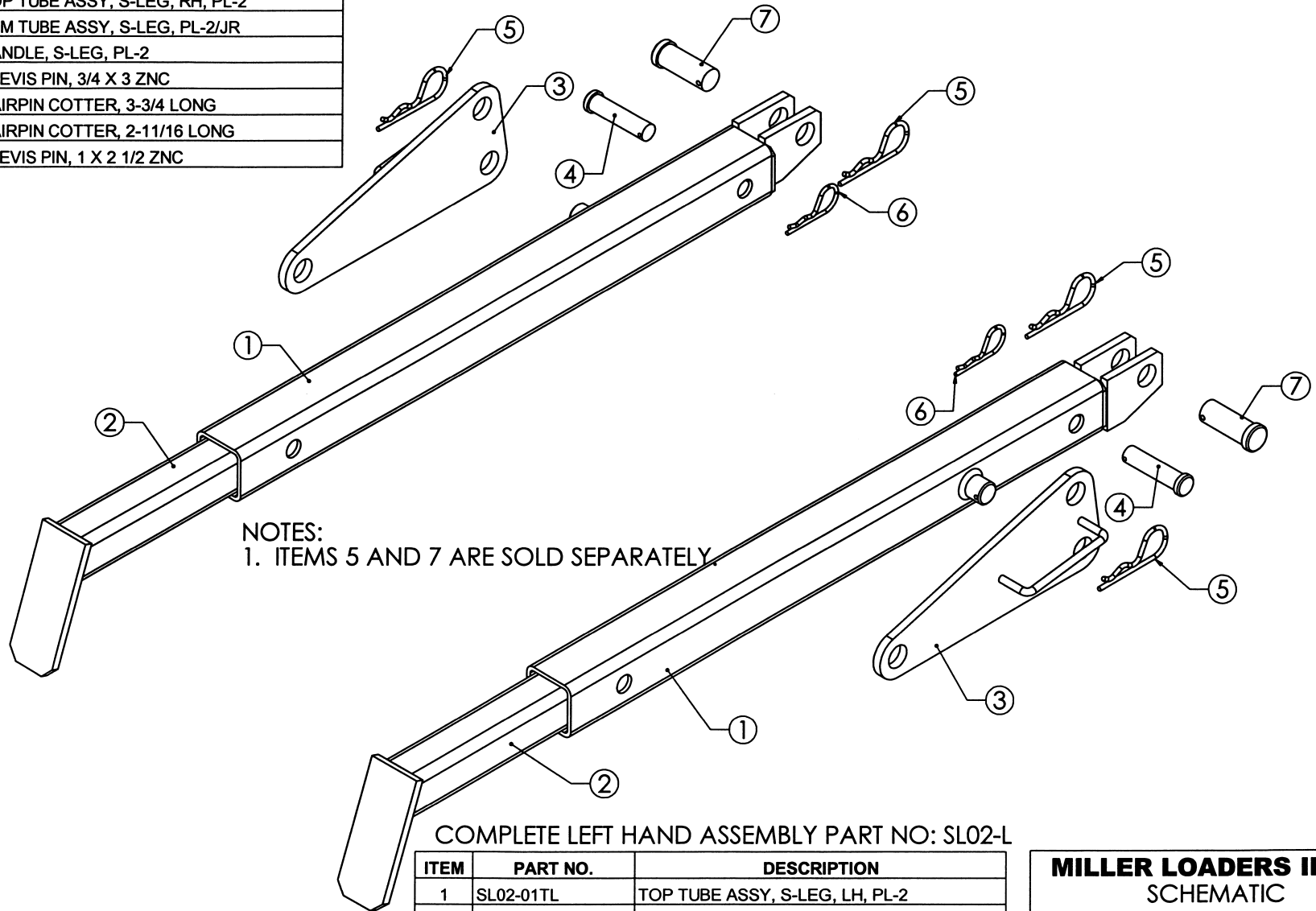
ITEM	QTY.	PART NO.	DESCRIPTION
1	1	CY-005-LT	TUBE ASSY, PL-2, MAINLIFT
2	1	CY-005-D	ROD ASSY, PL-2, LM/RM
3	1	CP-GL-3017-L	GLAND, 3.000 X 1.750, LT
4	1	CP-PS-3017-U	PISTON, 3.000 X 1.750, UC
5	1	HW-NS-16-A	NUT, 1-14 UNF, GRC, TL, PLAIN
6	1	CP-KT-3017-U	P-KIT, 3.000 X 1.750 UC
	1	CP-BU-334	B/U WASHER, 3.000 OD x .188 x .090
	1	CP-RG-214	O-RING, 1.250 OD x 0.125
	1	CP-RG-334	O-RING, 3.000 OD x 0.188
	1	CP-SR-3000	SNAP-RING, 3.00 BORE
	1	CP-UC-1750-4	SEAL, U-CUP, 1.750 ID x .250 x .375
	2	CP-UC-2500-4	SEAL, U-CUP, 2.500 ID x .250 x .375
	1	CP-WP-1750D	WIPER, 1.750 ROD, TYPE "D"
7	1	CY-005-PP	OIL PIPE, PL-2 MAINLIFT
8	1	SF-5504-06	PIPE ELBOW, 3/8 FEMALE 90 DEG, 5504-06
9	1	PN-04000-D10	PIN, MAINLIFT CYLINDER
10	1	HW-LS-16-A	LOCKWASHER, 1-IN., MED, ZN
11	1	HW-NS-16-B	NUT, 1-14 UNF, ZN
12	1	PN-06000-A10	PIN, 6.000 X 1.25, W/RTNR

NOTES:  
1. ITEMS 9, 10, 11, AND 12 ARE SOLD SEPARATELY.

<b>MILLER LOADERS INC.</b>	
SCHEMATIC	
LEFT/RIGHT MAINLIFT CYLINDER PL-2 PART NO: CY-005-L	
DWG. NO. CY-005-L	REV. 0
DRAWN BY TDM	DATE 24 MAY 01
SHEET 1 OF 1	

COMPLETE RIGHT HAND ASSEMBLY PART NO: SL02-R

ITEM	PART NO.	DESCRIPTION
1	SL02-01TR	TOP TUBE ASSY, S-LEG, RH, PL-2
2	SL02-01BA	BTM TUBE ASSY, S-LEG, PL-2/JR
3	SL02-05L	HANDLE, S-LEG, PL-2
4	PIN1-005	CLEVIS PIN, 3/4 X 3 ZNC
5	PIN1-018	HAIRPIN COTTER, 3-3/4 LONG
6	PIN1-017	HAIRPIN COTTER, 2-11/16 LONG
7	PIN1-007	CLEVIS PIN, 1 X 2 1/2 ZNC



NOTES:  
1. ITEMS 5 AND 7 ARE SOLD SEPARATELY.

COMPLETE LEFT HAND ASSEMBLY PART NO: SL02-L

ITEM	PART NO.	DESCRIPTION
1	SL02-01TL	TOP TUBE ASSY, S-LEG, LH, PL-2
2	SL02-01BA	BTM TUBE ASSY, S-LEG, PL-2/JR
3	SL02-05L	HANDLE, S-LEG, PL-2
4	PIN1-005	CLEVIS PIN, 3/4 X 3 ZNC
5	PIN1-018	HAIRPIN COTTER, 3-3/4 LONG
6	PIN1-017	HAIRPIN COTTER, 2-11/16 LONG
7	PIN1-007	CLEVIS PIN, 1 X 2 1/2 ZNC

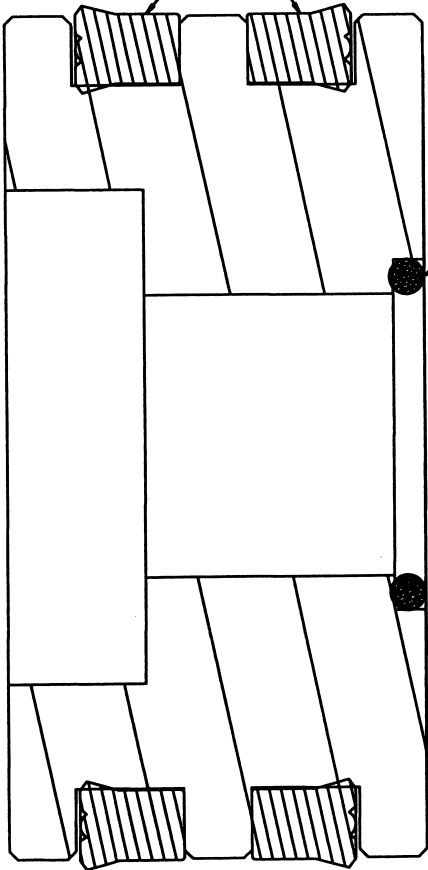
**MILLER LOADERS INC.**  
SCHEMATIC

STAND LEG KIT  
PL-2  
KIT PART NO: SL02

DWG. NO.	SL	REV.	0
DRAWN BY	TDM	DATE	29 MAY 01
		SHEET	1 OF 1



SEAL, U-CUP, LARGE

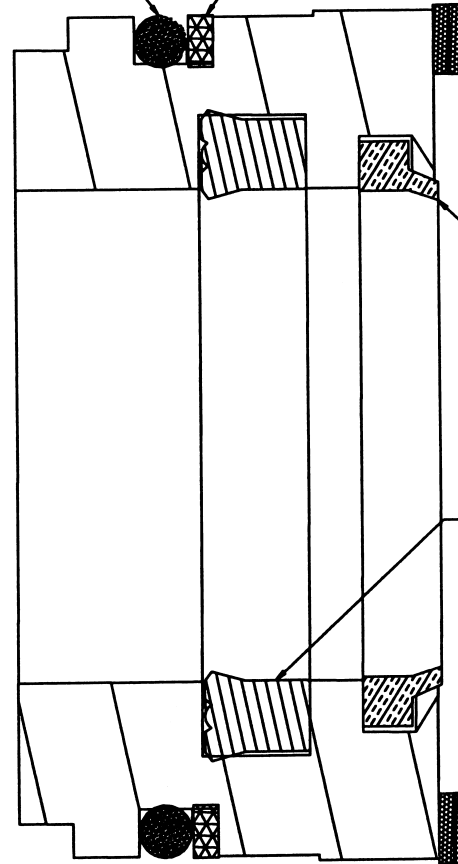


O-RING, SMALL

**PISTON**

O-RING, LARGE

B/U WASHER



ROD WIPER

SEAL, U-CUP, SMALL

SNAP RING

**GLAND**

**MILLER LOADERS INC.**  
SCHEMATIC

PACKING KIT ASSEMBLY  
U-CUP STYLE

DWG. NO. CP-KT-U

REV.  
0

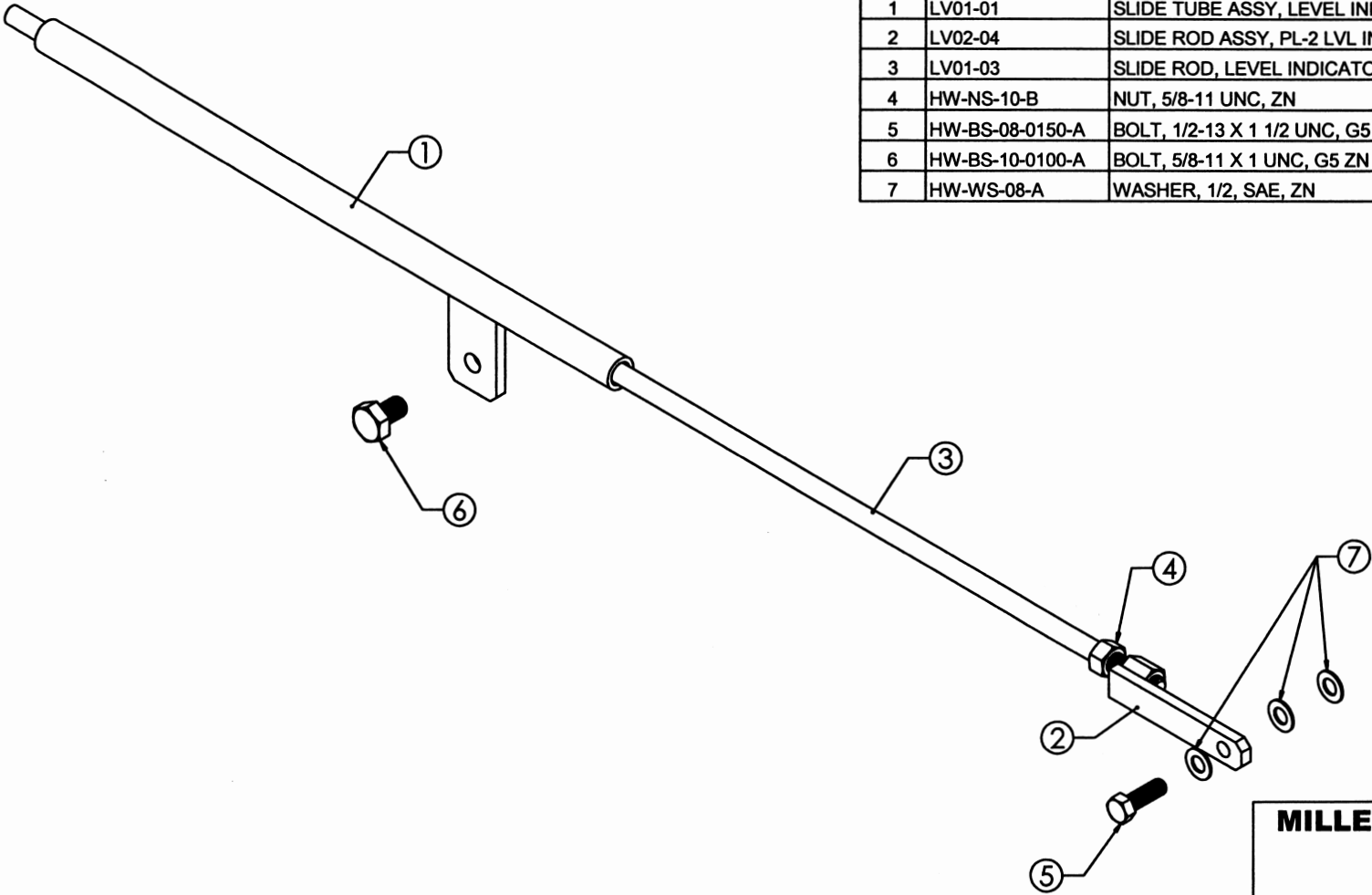
DRAWN BY TDM

DATE 21 MAY 01

SHEET 1 OF 1

COMPLETE ASSEMBLY PART NO: LV02

ITEM	PART NO.	DESCRIPTION
1	LV01-01	SLIDE TUBE ASSY, LEVEL INDICATOR
2	LV02-04	SLIDE ROD ASSY, PL-2 LVL IND.
3	LV01-03	SLIDE ROD, LEVEL INDICATOR
4	HW-NS-10-B	NUT, 5/8-11 UNC, ZN
5	HW-BS-08-0150-A	BOLT, 1/2-13 X 1 1/2 UNC, G5 ZN
6	HW-BS-10-0100-A	BOLT, 5/8-11 X 1 UNC, G5 ZN
7	HW-WS-08-A	WASHER, 1/2, SAE, ZN

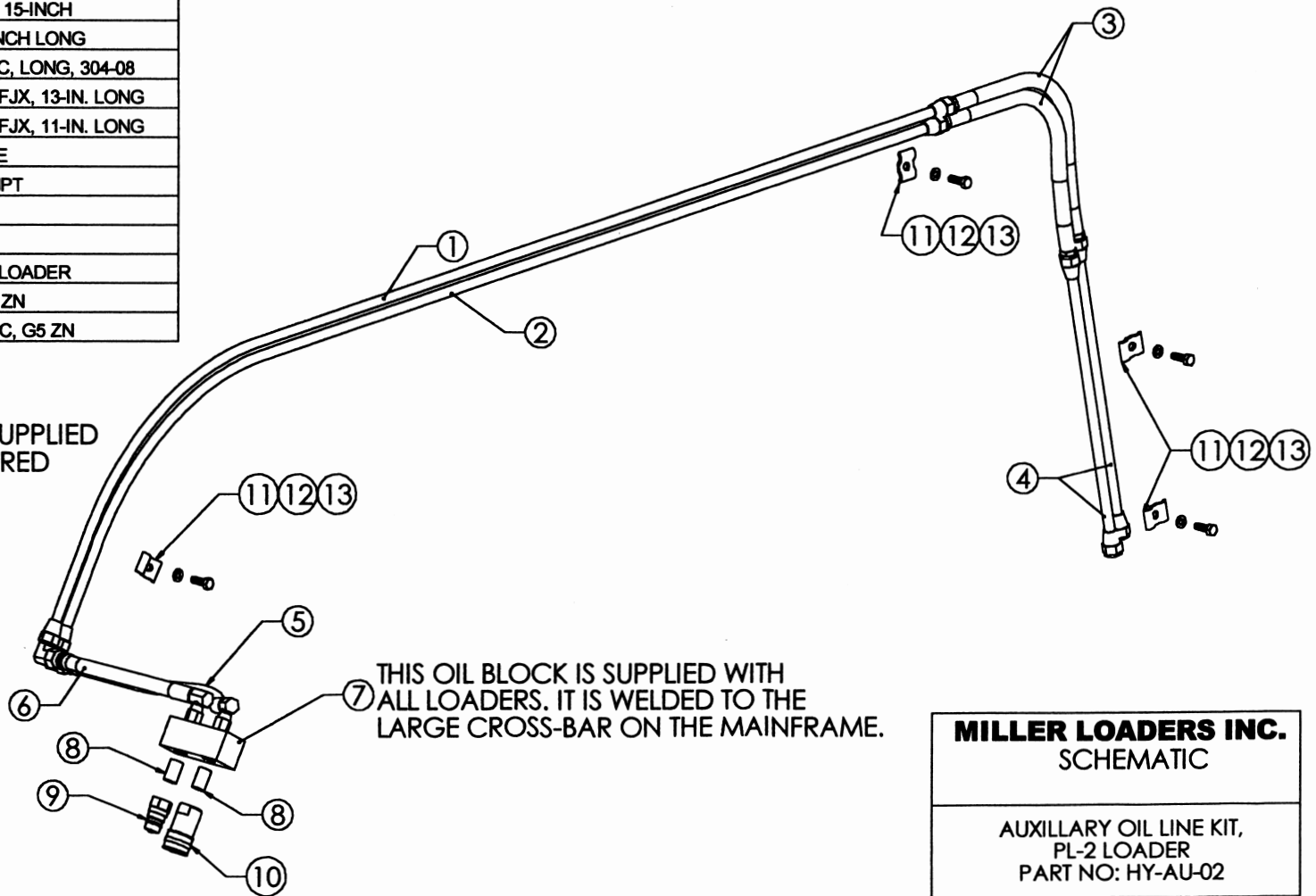


<b>MILLER LOADERS INC.</b>	
SCHEMATIC	
LEVEL INDICATOR PL-2 and PL-2JR PART NO: LV02	
DWG. NO. LV	REV. 0
DRAWN BY TDM	DATE 24 MAY 01
SHEET 1 OF 1	

COMPLETE ASSEMBLY PART NO: HY-AU-02

ITEM	PART NO.	DESCRIPTION
1	HP02-GP-01	PIPE, HYD, PL-2 GRAPPLE, LONG
	HP02-GP-01	PIPE, PL-2 GRAPPLE, 59.50 LONG
	SF-0304-08	FLARE NUT, 1/2-IN JIC, LONG, 304-08
	SF-2500-08-08	UNION ELBOW, 90 DEG, 2500-08-08
2	HP02-GP-02	PIPE, HYD, PL-2 GRAPPLE, SHORT
	SF-2500-08-08	UNION ELBOW, 90 DEG, 2500-08-08
	SF-0304-08	FLARE NUT, 1/2-IN JIC, LONG, 304-08
	HP02-GP-02	PIPE, PL-2 GRAPPLE, 57.00 LONG
3	HS-06-024-A	HOSE, 3/8, 8MJ-8MJ, 24-IN. LONG
4	HP02-UR-01	PIPE, HYD, UPRIGHT 15-INCH
	HP02-UR-01	PIPE, UPRIGHT, 15-INCH LONG
	SF-0304-08	FLARE NUT, 1/2-IN JIC, LONG, 304-08
5	HS-06-013-C	HOSE, 3/8, 6MPX90-8FJX, 13-IN. LONG
6	HS-06-011-A	HOSE, 3/8, 6MPX90-8FJX, 11-IN. LONG
7	MF02-16	OIL BLOCK, GRAPPLE
8	PF-CN06	CLOSE NIPPLE, 3/8 NPT
9	HA-TP-4010-3	TIP, MALE 3/8 NPT
10	HA-TP-4050-3	TIP, FEMALE 3/8 NPT
11	MF02-22	PIPE CLAMP, PLATE LOADER
12	HW-LS-05-A	LOCKWASHER, 5/16, ZN
13	HW-BS-05-0100-A	BOLT, 5/16-18 X 1 UNC, G5 ZN

NOTE:  
TWO SUPPLY HOSES ARE ALSO SUPPLIED  
WITH THE KIT. THE LENGTH REQUIRED  
DEPENDS ON THE TRACTOR.



<b>MILLER LOADERS INC.</b>		
SCHEMATIC		
AUXILLARY OIL LINE KIT, PL-2 LOADER PART NO: HY-AU-02		
DWG. NO.	AU	REV. 0
DRAWN BY TDM	DATE 6 JUNE 01	SHEET 1 OF 1