



OWNER'S MANUAL



FOR MODELS WITH SERIAL
NUMBER 06026 AND LATER

PL-5 LOADER **PARTS and INSTRUCTIONS**

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



The PL-5 loader is very powerful and is capable of lifting 5000+ pounds over 15 feet into the air. This performance can easily create instability with even a 20,000 pound tractor. At a minimum, the general common sense rules of operating a loader must be followed:

- Keep the load as close to the ground as possible
- Lift loads above carrying height ONLY when the tractor is on a flat, hard surface and the front wheels are pointed straight ahead and the tractor is not on an inclined surface
- Avoid traversing an inclined slope with a load.

To minimize the danger of a roll-over with any loader tractor, it is also strongly recommended that the following precautions be performed:

- Keep the wheel spacing as wide as possible
- Add counterweight to the rear of the tractor

The PL-5 is considered a true mid-mount loader and thus becomes very reliant on a strong bolted connection to the frame of the tractor. To preserve the mounting bolts and original strength of the bolted connections, observe the following:

- Regularly check the tightness of all the mounting bolts. Retighten if necessary (200 ft-lbs of torque for $\frac{3}{4}$ or 20mm bolts).

Any replacement bolts must be the same length as the one equipped from the factory. They must also be Grade 8 (metric Grade 10.9) in strength. Grade 8 American bolts are identified by a 5-line marking on the head of the bolt. Grade 10.9 metric bolts typically have "10.9" inscribed on the head of the bolt – do not use Grade 8.8 metric bolts or Grade 5 American bolts.



DANGER



TO PREVENT POSSIBLE ROLLOVER, OBSERVE THE FOLLOWING SAFETY PRECAUTIONS

- ◆ Carry loads as low as possible
- ◆ Drive tractor slowly when turning, operating on hills or inclines, or traversing uneven ground
- ◆ Raise load to full height *only* when tractor is on even ground and front wheels are straight ahead

TO PREVENT POSSIBLE PERSONAL INJURY, OBSERVE THE FOLLOWING SAFETY PRECAUTIONS

- ◆ Never walk or work under a raised loader that is not firmly supported
- ◆ Always relieve the hydraulic system to zero pressure before performing repairs on any component of the loader's hydraulic system

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- Mounting Loader on Tractor
- Dismounting Loader
- Quick-attach Instructions
- Parts Schematics
- Cylinder Packing Detail
- Loader Specifications
- Warranty

SERIAL No. of Loader Purchased _____

Date Purchased _____

COMPOSITE BEARING INFORMATION

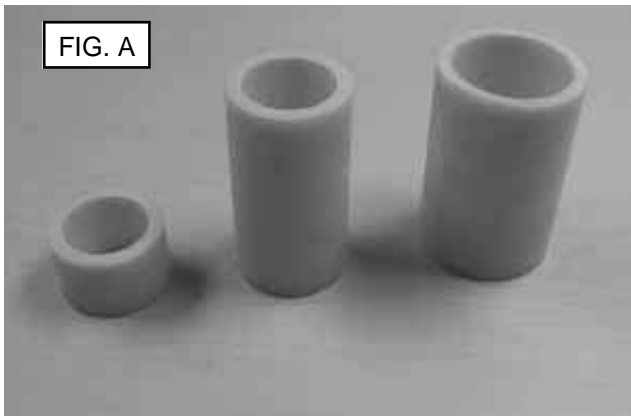


FIGURE A. Your GP/GL-Series loader is equipped with composite, greaseless bearings at all (12) pivot points. These high-quality bearings should not be confused with plastic bushings, sintered bushings, or metal-backed bearings. Composite bearings are made from an ultra-strong fiberglass composite that has twice the compressive yield strength of plain carbon steel. Their greaseless feature is due to a Teflon-impregnated liner that is interwoven to the bearing's inside diameter. The bearings are designed to last the life of the loader and the pins that rotate in the bearings should exhibit practically no wear.

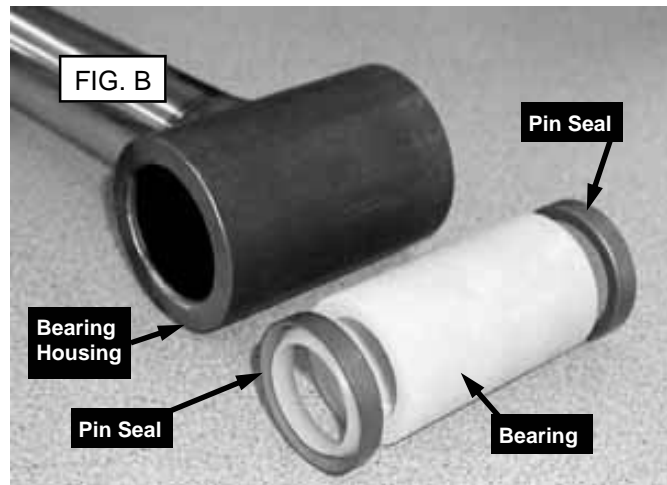


FIGURE B. Even though the composite bearings on your GP/GL-Series loader have excellent resistance to dirt particles, the (4) pivot points on the bucket have an added feature. The two lower bucket cylinder pivots and the two mainframe-to-bucket pivots are equipped with pin seals on each end of the bearing housing. It is these four pivot points that are usually down in the dirt and grime, but with a GP/GL-Series loader, you won't have to worry about pin failures again!

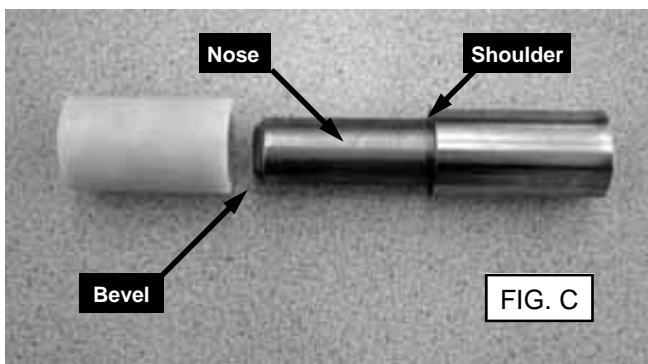


FIGURE C. Should any of your bearings have to be removed, this photo shows the tool that is available to remove and install the bearings properly. They are available for purchase, you just need to tell your dealer or Miller Loaders the model of loader you have. If you'd prefer to make your own, here are a few things to remember:

- The nose should be 1/4" longer than the bearing
- A 1/4" bevel on the end of the nose
- The shoulder must be just slightly smaller than the outside diameter of the bearing
- The diameter of the nose should be about 0.005 less than the inside diameter of the bearing

MOUNTING LOADER



STEP 1 Approach the loader as shown in Figure 1 and connect the hydraulic hoses.

STEP 2 Tilt the bucket forward very slowly. This will lower the upright masts towards the large shafts on the mounting brackets (see Figure 2).

STEP 3 Keep tilting the bucket until the large shafts on the mounts are completely seated into upright masts. You can use the lift cylinders to keep the upright masts vertical (see Figure 3).

STEP 4 Once the masts are seated on the mount shafts, extend the lift cylinders to seat the mast guide onto the guide block (see Figure 4A). Install the mast guide bolt with 1-1/2" wrench or socket and torque to 240 ft-lbs (see Figure 4B).

STEP 5 Raise the bucket and standlegs off the ground. Put the stand legs and the stand legs handles in their stored position as shown in Figure 5.

DISMOUNTING LOADER



STEP 1 *DRIVE THE TRACTOR ONTO FLAT CONCRETE* and place the loader in the position shown in Fig 1.

STEP 2 Lower and extend the stand legs and secure them with the stand leg handles in the down position as shown in Figure 2. Install the hairpin cotters to each of the pins.

STEP 3 Gently lower the loader until the stand legs touch the ground. Please note that the stand legs are not designed to withstand all of the down-force that can be created with the lift cylinders, they are designed to support the weight of the loader only. Rotate the bucket down until the cutting edge is resting on the ground as shown in Fig

STEP 4 Using a 1-1/2" socket or end wrench, remove the mast guide bolts as shown in Figure 4.

CONTINUED ON NEXT PAGE

DISMOUNTING LOADER



STEP 5 Begin tipping the bucket back as shown in Figure 5.

STEP 6 As the bucket is tipped back, the upright masts will lift off of the shafts on the mounts as shown in Fig. 6

STEP 7 When the bucket is tipped back enough to be flat on the ground, it has reached the stored position. See Figure 7.

STEP 8 Disconnect the hydraulic hoses and back the tractor away from the loader.

QUICK-ATTACH INSTRUCTIONS

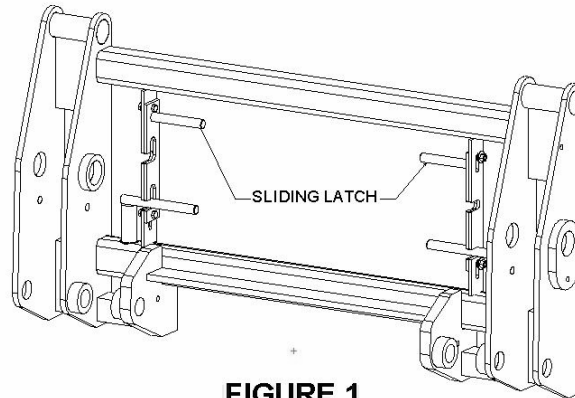


FIGURE 1.

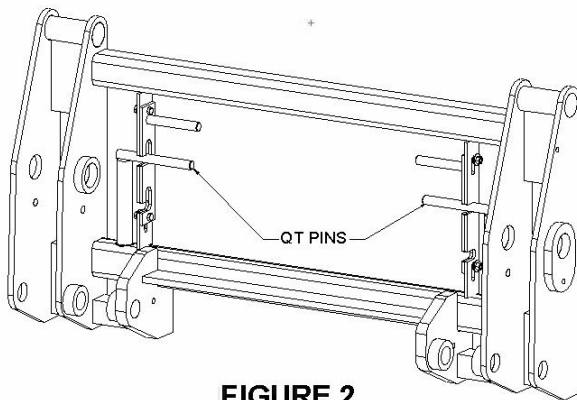


FIGURE 2.

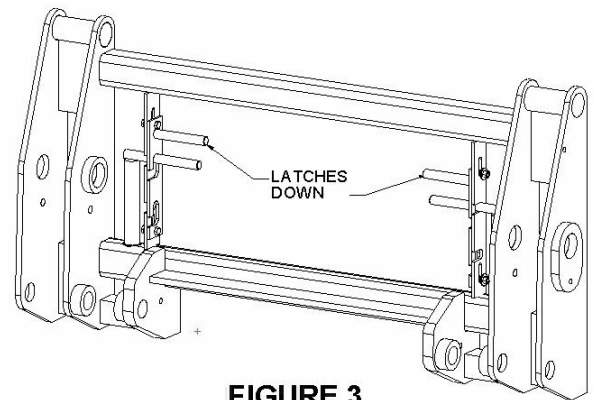


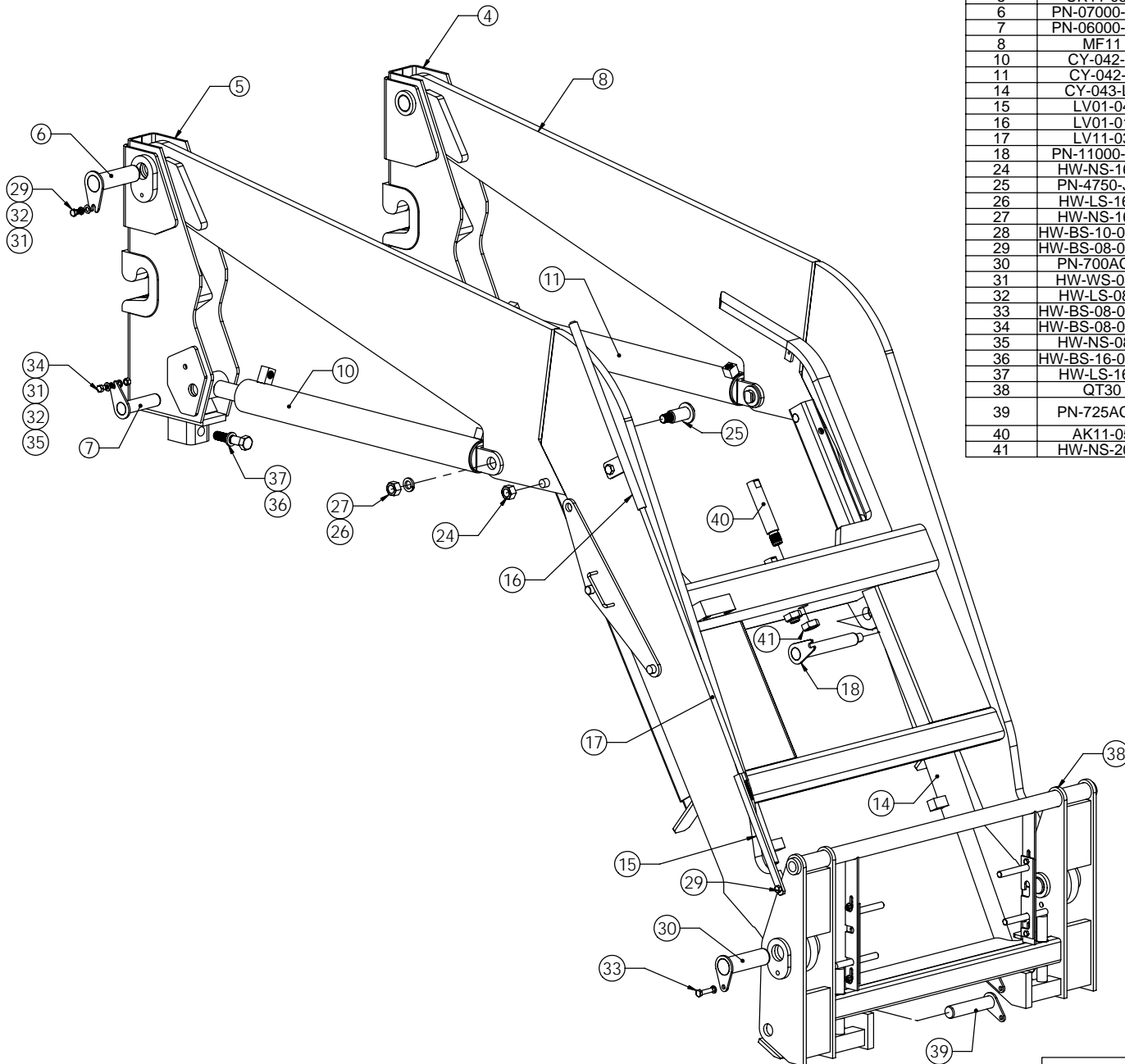
FIGURE 3.

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 NO.	PART NUMBER	DESCRIPTION	QTY.
4	UR11-03L	UPRIGHT LEG, PL-5, LH	1
5	UR11-03R	UPRIGHT LEG, PL-5, RH	1
6	PN-07000-A16	PIN, 2 x 7, WITH RETAINER	2
7	PN-06000-A12	PIN, 1-1/2" x 6, WITH RETAINER	2
8	MF11	MAINFRAME, PL-5	1
10	CY-042-R	CYLINDER, PL-5 MAINLIFT, RIGHT	1
11	CY-042-L	CYLINDER, MAINLIFT, LH	1
14	CY-043-LT	CYLINDER, PL-5 BUCKET, LH	1
15	LV01-04	SLIDE ROD ASSY, LEVEL INDICATOR	1
16	LV01-01	SLIDE TUBE ASSY, LEVEL INDICATOR	1
17	LV11-03	LEVEL INDICATOR ROD, PL-5	1
18	PN-11000-B12	REAR BUCKET CYL PIN, PL-5	2
24	HW-NS-16-E	NUT, 1-14 UNF, GR8, TL, ZN	1
25	PN-4750-J12	LIFT CYLINDER PIN, 1-1/2 CHROME	2
26	HW-LS-16-A	LOCKWASHER, 1-IN., MED. ZN	2
27	HW-NS-16-B	NUT, 1-14 UNF, ZN	2
28	HW-BS-10-0100-A	BOLT, 5/8-11 X 1 UNC, G5 ZN	1
29	HW-BS-08-0150-A	BOLT, 1/2-13 X 1 1/2 UNC, G5 ZN	2
30	PN-700AC16	PIN, CHROME 2" x 7" WITH RETAINER	2
31	HW-WS-08-A	WASHER, 1/2, SAE, ZN	2
32	HW-LS-08-A	LOCKWASHER, 1/2, MED. ZN	3
33	HW-BS-08-0200-A	BOLT, 1/2-13 UNC, GR5 ZN, 2" LONG	2
34	HW-BS-08-0200-A	BOLT, 1/2-13 X 2 UNC, G5 ZN	1
35	HW-NS-08-A	NUT, 1/2-13 UNC, ZN	1
36	HW-BS-16-0475-A	BOLT, 1-8 UNC, GR. 8, ZN, 4-3/4 LONG	1
37	HW-LS-16-B	LOCKWASHER, 1-IN., G8, HI-ALLOY	1
38	QT30	QUICK ATTACH FRAME	1
39	PN-725AC12	PIN, CHROME 1-1/2 x 7-1/4 WITH RETAINER	2
40	AK11-05	PORT PIPE, MAINFRAME CROSS-TUBE	2
41	HW-NS-20-A	JAM NUT, 1-1/4 (-12), PLAIN	2



SCHEMATIC

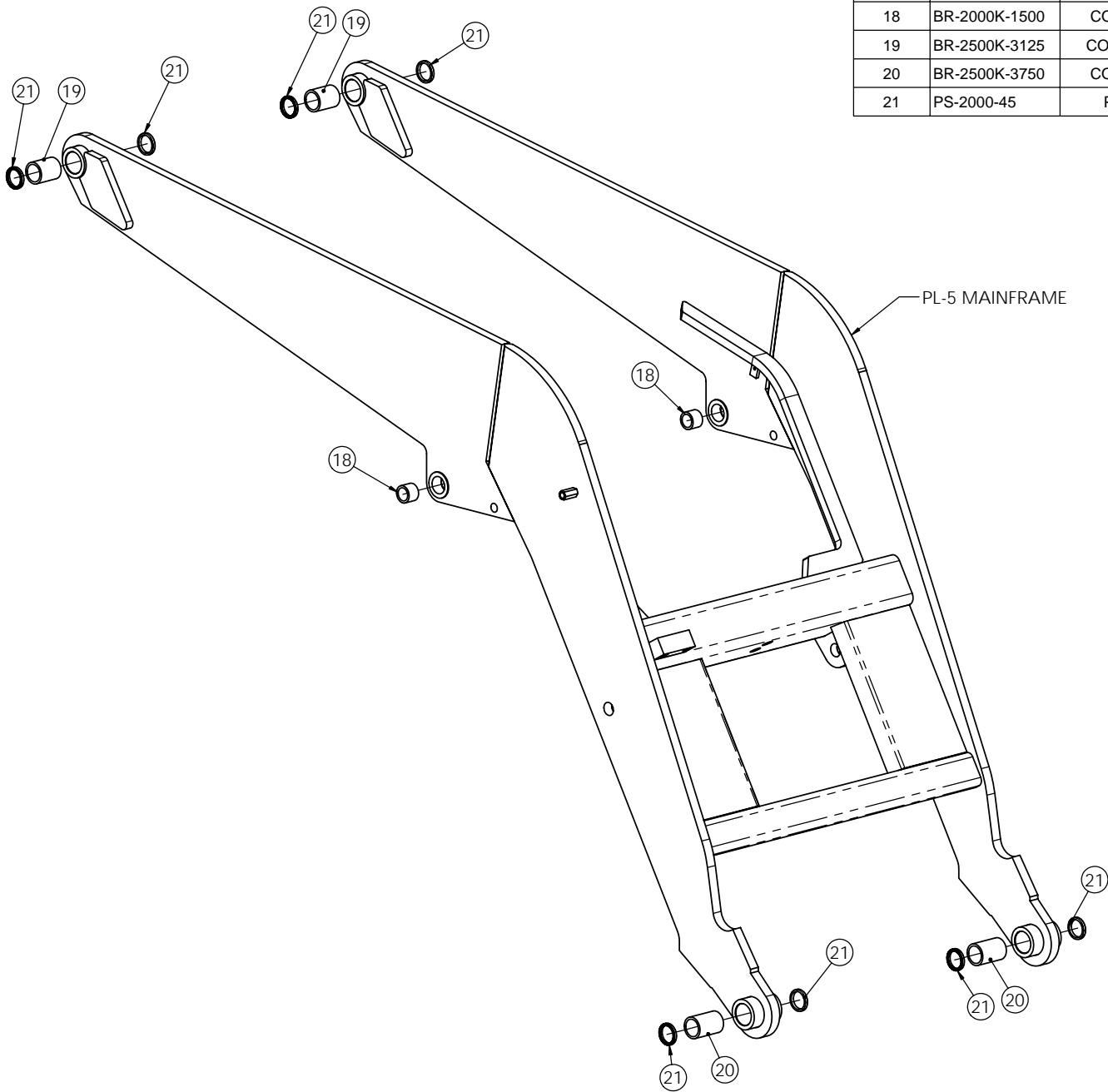
PL-5 LOADER
GENERAL ASSEMBLY

DWG. NO. L11-S


WEIGHT: LB.

DATE Friday, February 08, 2002 10:19:52 AM

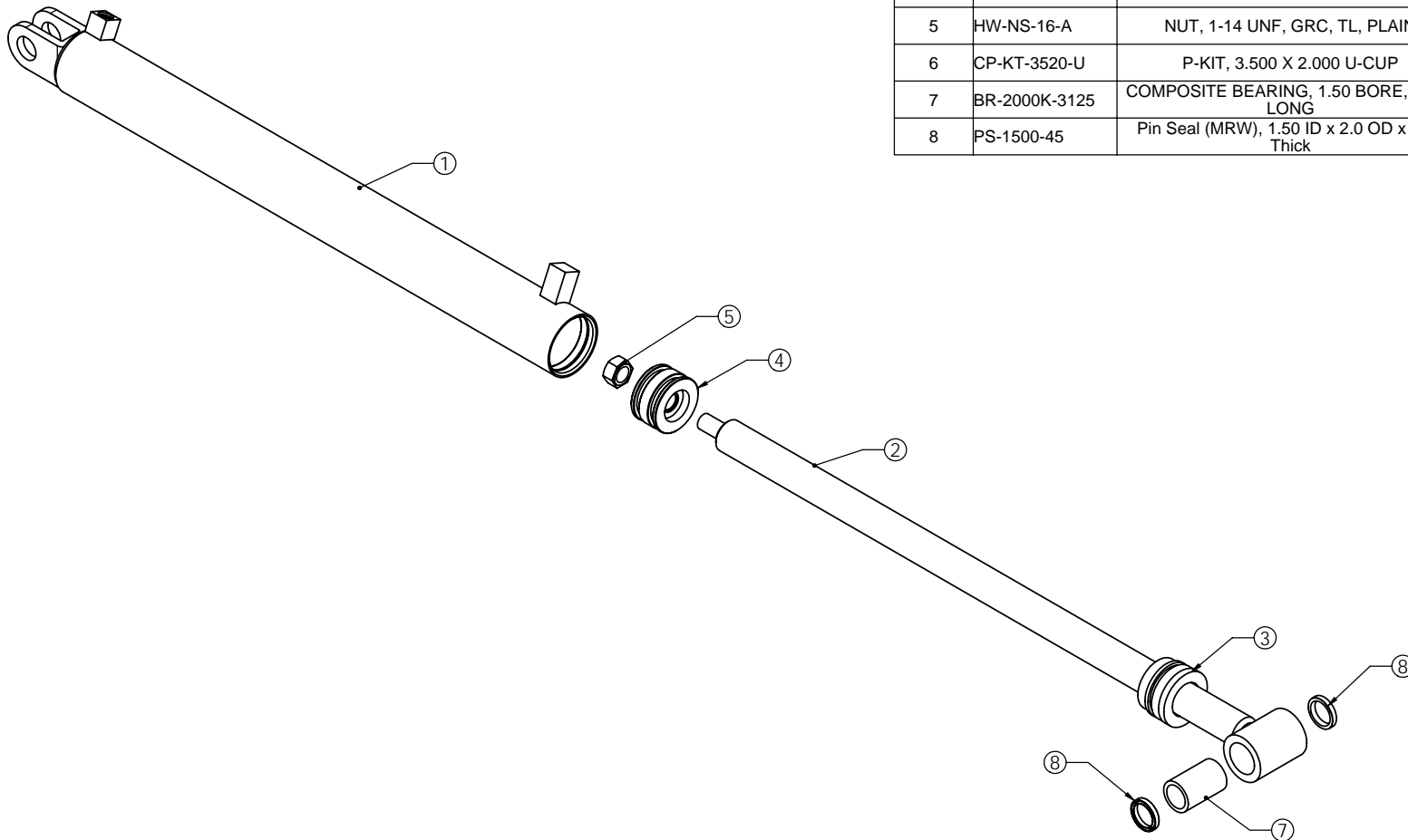
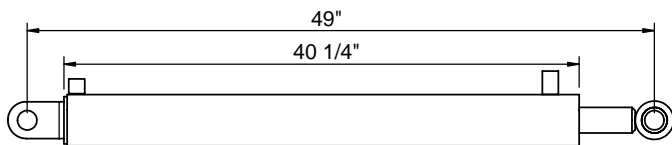
SHEET 1 OF 1



ITEM NO.	PART NUMBER	DESCRIPTION	Rev B with Bearings/QTY.
18	BR-2000K-1500	COMPOSITE BEARING, 1.50 BORE, 1.50 LONG	2
19	BR-2500K-3125	COMPOSITE BEARING, 2.00 BORE, 3.125 LONG	2
20	BR-2500K-3750	COMPOSITE BEARING, 2.00 BORE, 3.75 LONG	2
21	PS-2000-45	Pin Seal (MRW), 2.0 ID x 2.5 OD x 5/16 Thick	8


SCHEMATIC
 MAINFRAME BEARINGS

DWG. NO. MF11-B



ITEM NO.	PART NUMBER	DESCRIPTION	REV A/QTY.
1	CY-042-LT	TUBE ASSY, PL-5 LIFT, LEFT	1
2	CY-042-D	ROD ASSY, PL-5 MAINLIFT	1
3	CP-GL-3520-L	GLAND, 3520 LONG-TAIL	1
4	CP-PS-3520-U	PISTON, 3520 U-CUP	1
5	HW-NS-16-A	NUT, 1-14 UNF, GRC, TL, PLAIN	1
6	CP-KT-3520-U	P-KIT, 3.500 X 2.000 U-CUP	1
7	BR-2000K-3125	COMPOSITE BEARING, 1.50 BORE, 3.125 LONG	1
8	PS-1500-45	Pin Seal (MRW), 1.50 ID x 2.0 OD x 5/16 Thick	2

CY-042-L
 CYLINDER, PL-5 MAINLIFT, LEFT

NOTES:
 1. PACKING KIT SHOWN IN PART LIST, BUT NOT SHOWN IN DRAWING.
 2. BEARING(S) AND SEAL(S) SOLD SEPARATELY.

ALL DIMENSIONS IN INCHES

BORE ϕ	3.500
ROD ϕ	2.000
STROKE	34-1/2"
PORT STYLE	-10 OR
WEIGHT:	89.333 LBS.

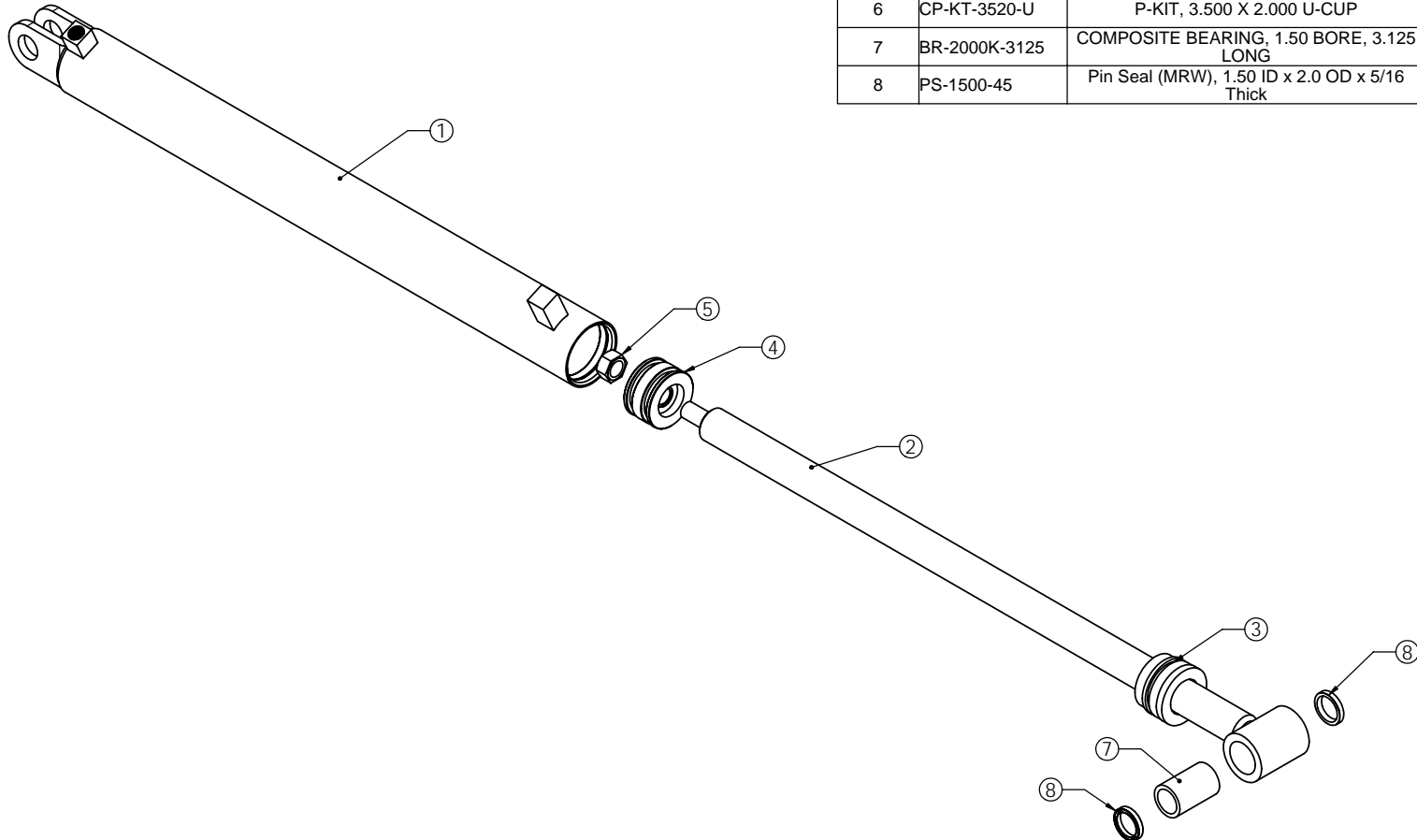
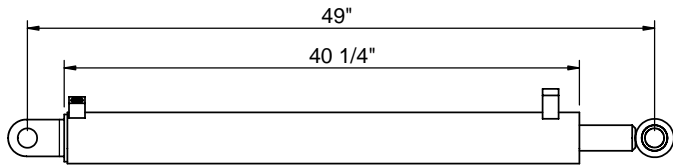


SCHEMATIC

CYLINDER, PL-5 MAINLIFT, LEFT

DWG. NO. **CY-042-L**

DATE Tuesday, May 22, 2001 3:22:17 AM



ITEM NO.	PART NUMBER	DESCRIPTION	REV A/QTY.
1	CY-042-RT	TUBE ASSY, PL-5 LIFT, RIGHT	1
2	CY-042-D	ROD ASSY, PL-5 MAINLIFT	1
3	CP-GL-3520-L	GLAND, 3520 LONG-TAIL	1
4	CP-PS-3520-U	PISTON, 3520 U-CUP	1
5	HW-NS-16-A	NUT, 1-14 UNF, GRC, TL, PLAIN	1
6	CP-KT-3520-U	P-KIT, 3.500 X 2.000 U-CUP	1
7	BR-2000K-3125	COMPOSITE BEARING, 1.50 BORE, 3.125 LONG	1
8	PS-1500-45	Pin Seal (MRW), 1.50 ID x 2.0 OD x 5/16 Thick	2

CY-042-R
 CYLINDER, PL-5 MAINLIFT, RIGHT

NOTES:
 1. PACKING KIT SHOWN IN PART LIST, BUT NOT SHOWN IN DRAWING.
 2. BEARING(S) AND SEAL(S) SOLD SEPARATELY.

ALL DIMENSIONS IN INCHES

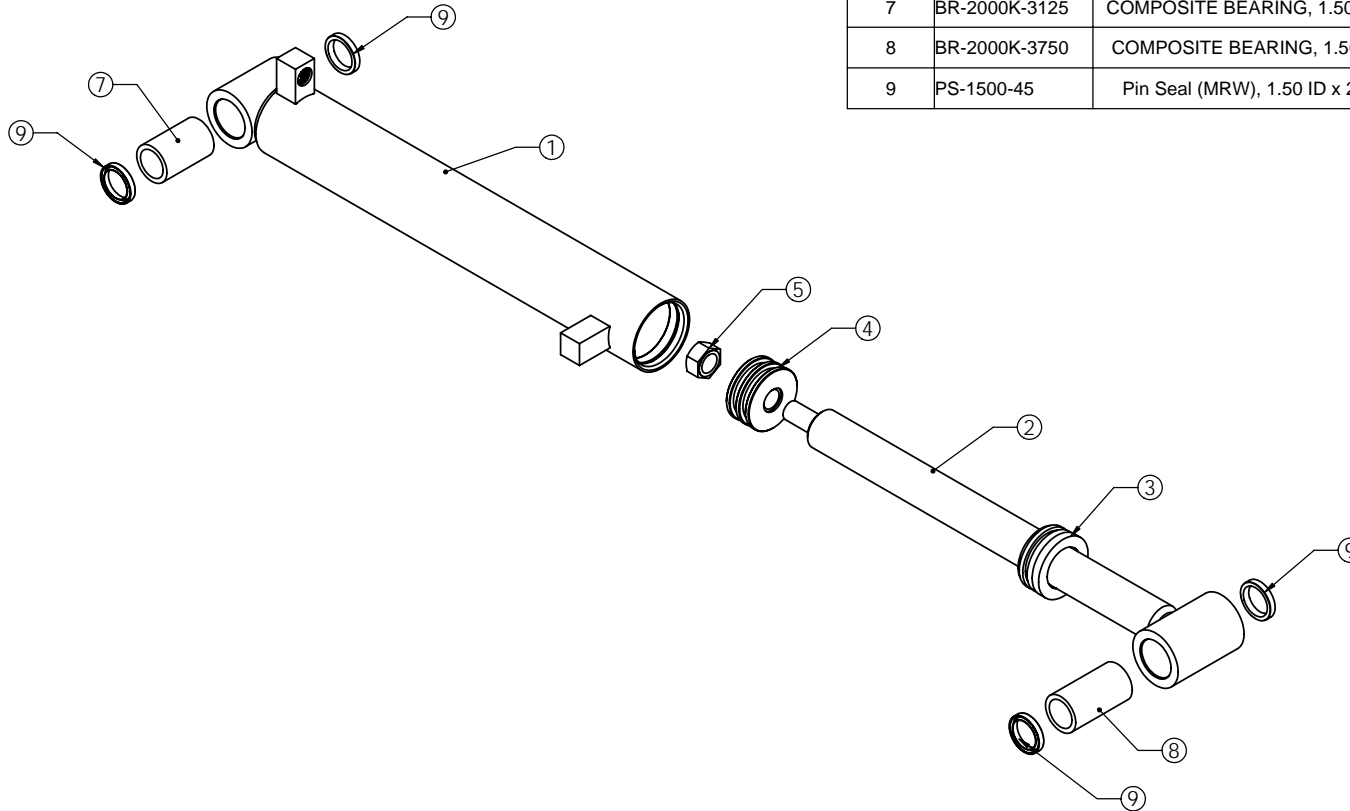
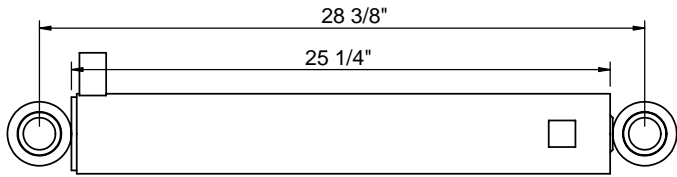
BORE ϕ	3.500
ROD ϕ	2.000
STROKE	34-1/2"
PORT STYLE	-10 O.R.
WEIGHT:	89.333 LBS.

SCHEMATIC

CYLINDER, PL-5 MAINLIFT, RIGHT

DWG. NO. **CY-042-R**

DATE Tuesday, May 22, 2001 3:22:17 AM




ITEM NO.	PART NUMBER	DESCRIPTION	REV A/QTY.
1	CY-043-LT	CYLINDER, PL-5 BUCKET, LH	1
2	CY-043-D	ROD ASSY, PL-5 BUCKET	1
3	CP-GL-3220-S	GLAND, 3220 SHORT-TAIL	1
4	CP-PS-3220-U	PISTON, 3220 U-CUP	1
5	HW-NS-16-A	NUT, 1-14 UNF, GRC, TL, PLAIN	1
6	CP-KT-3220-U	P-KIT, 3.250 X 2.000 U-CUP	1
7	BR-2000K-3125	COMPOSITE BEARING, 1.50 BORE, 3.125 LONG	1
8	BR-2000K-3750	COMPOSITE BEARING, 1.50 BORE, 3.75 LONG	1
9	PS-1500-45	Pin Seal (MRW), 1.50 ID x 2.0 OD x 5/16 Thick	4

CY-043-L
 CYLINDER, PL-5 BUCKET, LEFT

NOTES:
 1. PACKING KIT SHOWN IN PART LIST, BUT NOT SHOWN IN DRAWING.
 2. BEARING(S) AND SEAL(S) SOLD SEPARATELY.

ALL DIMENSIONS IN INCHES

BORE ϕ	3.250
ROD ϕ	2.000
STROKE	20-5/8"
PORT STYLE	-10 OR
WEIGHT:	57.575 LBS.



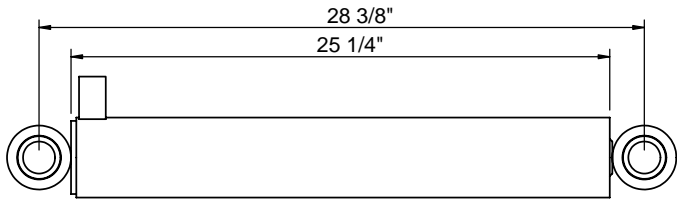
MILLER
farm loaders

SCHEMATIC

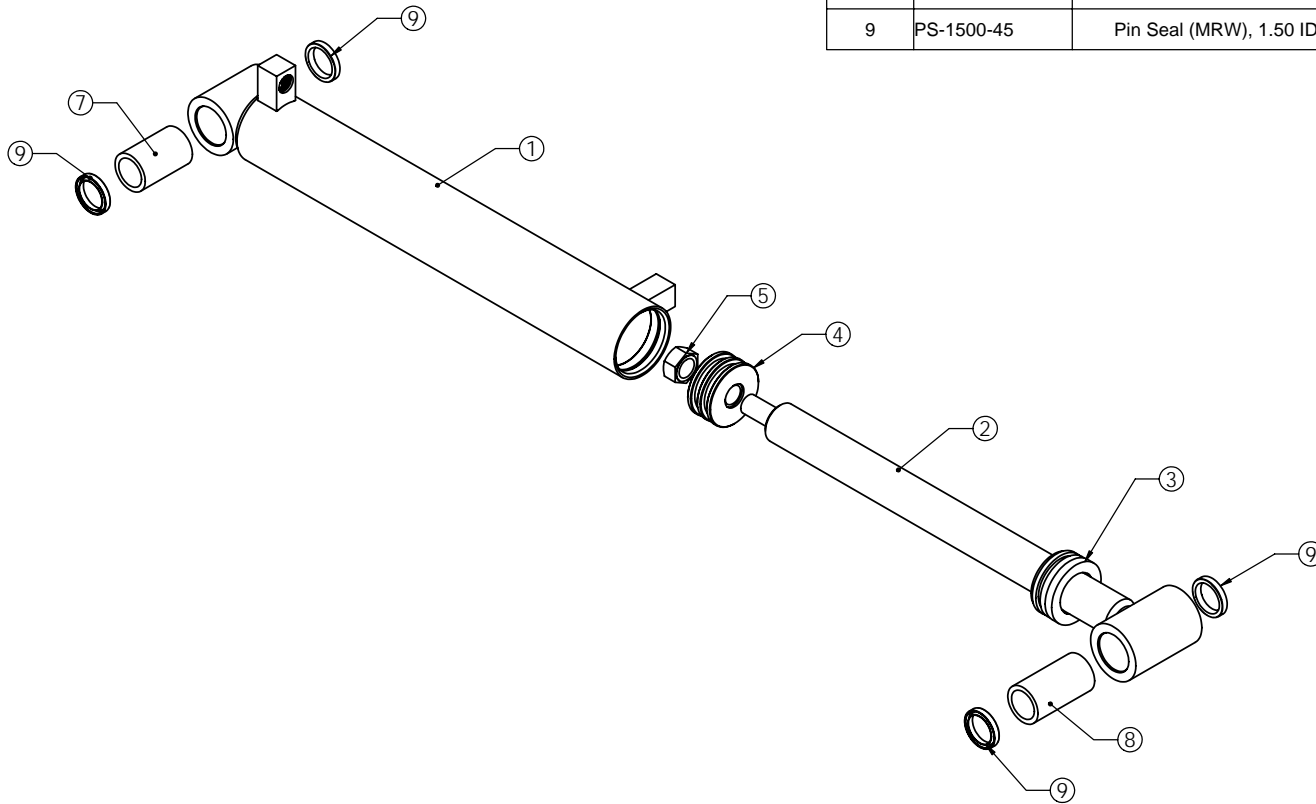
CYLINDER, PL-5 BUCKET, LEFT

DWG. NO. **CY-043-L**

DATE Monday, May 21, 2001 11:21:59 PM



ITEM NO.	PART NUMBER	DESCRIPTION	REV A/QTY.
1	CY-043-RT	TUBE ASSY, PL-5 BUCKET, RIGHT	1
2	CY-043-D	ROD ASSY, PL-5 BUCKET	1
3	CP-GL-3220-S	GLAND, 3220 SHORT-TAIL	1
4	CP-PS-3220-U	PISTON, 3220 U-CUP	1
5	HW-NS-16-A	NUT, 1-14 UNF, GRC, TL, PLAIN	1
6	CP-KT-3220-U	P-KIT, 3.250 X 2.000 U-CUP	1
7	BR-2000K-3125	COMPOSITE BEARING, 1.50 BORE, 3.125 LONG	1
8	BR-2000K-3750	COMPOSITE BEARING, 1.50 BORE, 3.75 LONG	1
9	PS-1500-45	Pin Seal (MRW), 1.50 ID x 2.0 OD x 5/16 Thick	4



CY-043-R
 CYLINDER, PL-5 BUCKET, RIGHT

NOTES:
 1. PACKING KIT SHOWN IN PART LIST, BUT NOT SHOWN IN DRAWING.
 2. BEARING(S) AND SEAL(S) SOLD SEPARATELY.

ALL DIMENSIONS IN INCHES

BORE ϕ	3.250
ROD ϕ	2.000
STROKE	20-5/8"
PORT STYLE	-10 OR
WEIGHT:	57.575 LBS.

SCHEMATIC

CYLINDER, PL-5 BUCKET, RIGHT

DWG. NO. **CY-043-R**

DATE Monday, May 21, 2001 11:21:59 PM

DESCRIPTION	LENGTH	PART NO.	QTY.
Right Lift Cylinder, Short	16	HS-08-016-A	1
Right Lift Cylinder, Long	43	HS-08-043-A	1
Left Lift Cylinder, Short	25	HS-08-025-A	1
Left Lift Cylinder, Long	44	HS-08-044-A	1
Bucket Cylinder	32	HS-08-032-A	4
<i>Optional</i>			
Auxillary Supply, Short	12	HS-08-012-A	1
Auxillary Supply, Long	14	HS-08-014-A	1

NOTE:

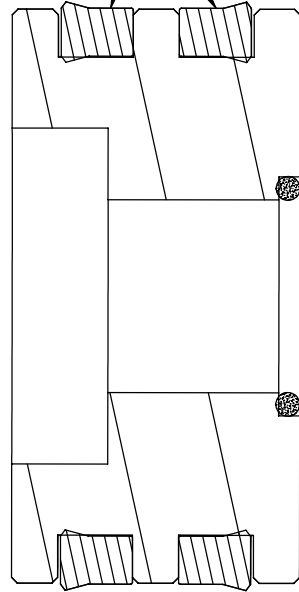
All hoses are rated at 3500 PSI operating pressure and are 1/2" I.D. Male ends are (-10) O-ring or (-10) JIC.

MILLER LOADERS INC. SCHEMATIC			
HOSE LIST, PL-5			
DWG. NO.	HS-S	REV.	0
DRAWN BY	TDM	DATE	05 MAR 02
		SHEET	1 OF 1

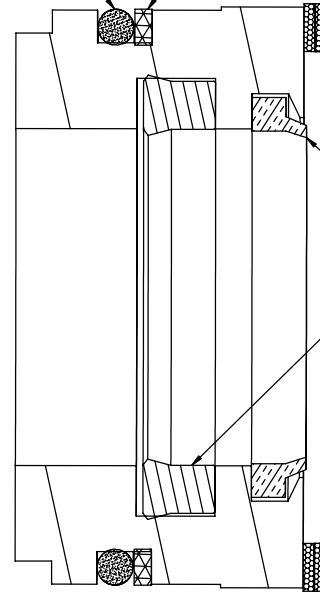
SEAL, U-CUP, LARGE

O-RING, LARGE

B/U WASHER



O-RING, SMALL



ROD WIPER

SEAL, U-CUP, SMALL


SNAP RING

PISTON

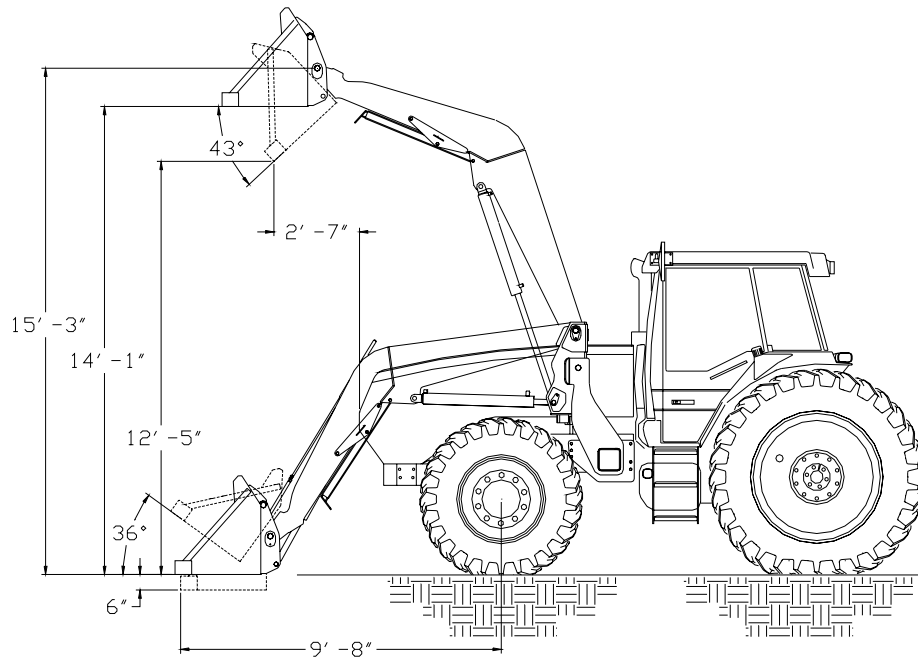
GLAND

FRONT OF CYLINDER



		<p>SCHEMATIC</p> <p>PACKING CONFIGURATION, U-CUP</p>
<p>DWG. NO. CP-KT-U</p>		<p>REV. A</p>
<p>WEIGHT:</p>	<p>DATE 12/8/2005</p>	<p>SHEET 1 OF 1</p>

PL-5 SPECIFICATIONS



SPECIFICATIONS AND PERFORMANCE NUMBERS ARE FOR REFERENCE ONLY

LIFTING CAPACITY:

Breakaway Lift	: 7600 lbs.
Full Height Lift	: 5400 lbs.

With load 800mm (31.5") ahead of bucket pivot
And 2850 psi pressure at lift cylinders

WEIGHTS:

Loader (less bucket and mounts)	: 2650 lbs.
8 FT Bucket	: 800 lbs.
Mounting Kit (Typical)	: 710 lbs.
Total	: 4160 lbs.



WARRANTY

Dec 2004

ALL PRODUCTS MANUFACTURED BY MILLER LOADERS, INCORPORATED (**MLI**) EXCEPT THE CHROME-PLATED PIVOT PINS USED ON GREASELESS LOADERS, ARE GUARENTEED TO THE ORIGINAL PURCHASER FOR A PERIOD OF ONE YEAR FROM THE DAY OF PURCHASE AGAINST ANY DEFECTS IN MATERIALS AND WORKMANSHIP OF FARM LOADERS AND ATTACHMENTS THAT ARE USED IN NORMAL FARM OPERATIONS. THE CHROME-PLATED PIVOT PINS USED ON GREASELESS LOADERS ARE GUARENTEED TO THE ORIGINAL PURCHASER FOR A PERIOD OF FIVE YEARS FROM THE DAY OF PURCHASE AGAINST ANY DEFECTS IN MATERIALS AND WORKMANSHIP OR AGAINST WEAR THROUGH OF THE CHROME FINISH COVERING AT LEAST ONE-QUARTER OF THE PIN SURFACE.

ALL GREASELESS COMPOSITE BEARINGS SOLD BUT NOT MANUFACTURED BY **MLI** ARE GUARENTEED TO THE ORIGINAL PURCHASER FOR A PERIOD OF FIVE YEARS FROM THE DAY OF PURCHASE AGAINST BREAKAGE OR LOSS OF THEIR SELF-LUBRICATING PROPERTY.

THE FIVE YEAR WARRANTY FOR THE CHROME-PLATED PIVOT PINS AND GREASELESS COMPOSITE BEARINGS IS LIMITED TO THE PARTS ONLY. **MLI** IS NOT RESPONSIBLE FOR ANY LABOR NECESSARY FOR THE INSPECTION, REMOVAL, OR REPLACEMENT OF SAID PIVOT PINS AND/OR COMPOSITE BEARINGS.

ALL PARTS SOLD BUT NOT MANUFACTURED BY **MLI** THAT INCLUDE BUT ARE NOT LIMITED TO ZINC-PLATED PINS, HOSES, VALVES, QUICK COUPLERS, PUMPS, TANKS, ETC. ARE COVERED ONLY TO THE EXTENT OF THE MANUFACTURE'S WARRANTY ON THESE ITEMS. **MLI** DOES NOT WARRANTY THESE ITEMS EXPRESSLY OR IMPLIEDLY.

DEFACEMENT OF ANY PART BY WELDING OR OTHERWISE ALTERING, OR EXCESSIVE WEAR ON PINS CAUSED BY LACK OF LUBRICATION, NULLIFIES THE WARRANTY ON THE **MLI** PRODUCT.

MLI ASSUMES NO RESPONSIBILITY AS TO THE PERFORMANCE OR FAILURE OF A TRACTOR'S HYDRAULIC SYSTEM.

THE HYDRAULIC COMPONENTS OF THE **MLI** PRODUCTS ARE GUARENTEED UP TO A PRESSURE OF 3000 POUNDS PER SQUARE INCH AT A MAXIMUM FLOW RATE OF 30 GALLONS PER MINUTE.

MLI ASSUMES NO RESPONSIBILITY FOR THE FAILURE OF THE PURCHASER TO SECURE THE LOADER TO THE TRACTOR PROPER, WHICH INCLUDES PROPER BOLT TIGHTENING AND SECURING OF ALL CONNECTION POINTS.

ALL ITEMS MANUFACTURED BY **MLI** REQUIRING WARRANTY CONSIDERATION MUST BE RETURNED TO **MLI** OR A DESIGNATED REPRESENTATIVE BY THE ORIGINAL PURCHASER. ANY ITEM SO RETURNED BY COMMON CARRIER MUST BE PREPAID FREIGHT.

THE WARRANTIES PROVIDED BY **MLI** AS REFERRED TO ABOVE SHALL BE THE SOLE AND EXCLUSIVE WARRANTIES. THERE SHALL BE NO OTHER WARRANTIES EXPRESS OR IMPLIED INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS OR ANY OTHER OBLIGATION ON THE PART OF **MLI** WITH RESPECT TO PRODUCTS COVERED BY THIS WARRANTY.

IN NO EVENT SHALL THE WARRANTIES OF **MLI** REQUIRE MORE FROM **MLI** THAN THE REPAIR OR REPLACEMENT OF ANY PART OR PARTS WHICH ARE FOUND TO BE DEFECTIVE WITHIN THE EFFECTIVE PERIOD OF THE WARRANTY, **MLI** SHALL HAVE NO LIABILITY FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.

MILLER LOADERS INC, 1242 ARIZONA AVE, LARCHWOOD, IA 51241

PHONE: 1-800-570-8205
Or (712) 477-2795

FAX: (712) 477-2500