

Keep With Operator's Manual

## INSTALLATION MANUAL 1594 LOADERS L3940 KUBOTA TRACTORS

### TRACTOR & LOADER GENERAL INFORMATION

Mounting kit can be installed using tools ordinarily available, including a hoist capable of lifting and supporting the loader for initial mounting, standard and metric wrenches, torque wrench, and hydraulic oil.

Tractor-supplied hydraulic power is required for loader mounting and operation.

The grille guard (4) may be installed with or without the loader. Refer to instructions on page 2.

Check tractor tire pressure. Refer to tractor operator's manual for recommended pressures. With tractor on a firm, level surface, compare tractor rear axle height from left to right, measuring from axle center to ground. Adjust air pressure in rear tires until axle height measures same for both sides.

**NOTE:** *If rear axle on tractor is not level from side to side, cutting edge on loader bucket or similar loader-mounted attachments will not sit flat on ground.*

Tractor steering stops may have to be adjusted to provide clearance between front tire and loader on full left and right turn with front axle fully oscillated. Be sure lift cylinders are fully retracted when checking tire clearances. Refer to tractor operator's manual for steering stop adjustment.

**NOTE:** *Reference to left and right used in these instructions refer to position when seated in the operating position on tractor.*

### PREPARING TRACTOR

Shut off engine, engage brakes, and remove key during installation. If tractor is equipped with front weights, remove weights and weight bracket.

Remove plastic thread protectors from holes on left and right sides of tractor clutch housing and front axle.

**IMPORTANT:** *Clean threaded holes in tractor chassis thoroughly using a tap of proper size. Paint, rust, or debris in the threads may not permit cap screws to be installed and tightened correctly.*

### PALLET COMPONENT REMOVAL (Figure 1)

The loader boom, bucket, left and right mid mounts, hydraulic package, and grille guard come on one pallet. Remove plastic protective cover from pallet. Untie and remove grille guard from pallet. Support mid mounting brackets and untie and remove from pallet. Remove hydraulic box of parts from pallet. Support bucket then remove hold downs and remove from pallet.

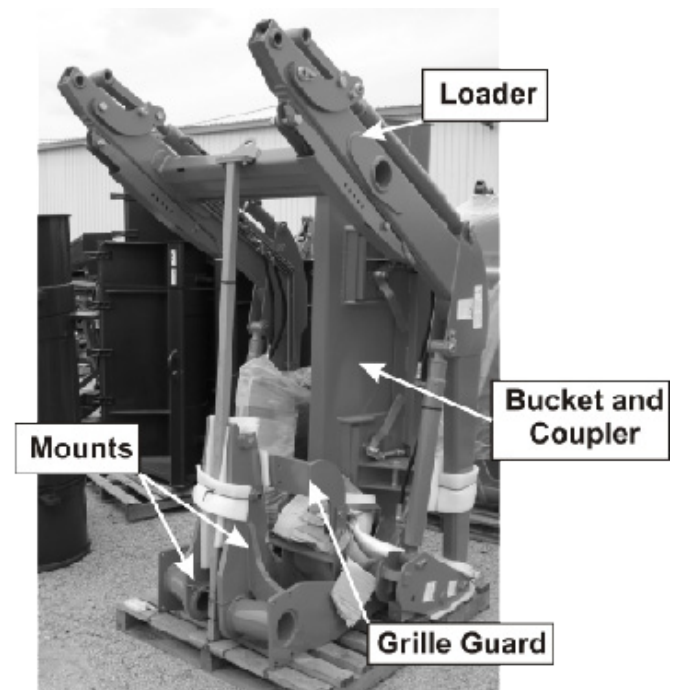


Figure 1 - Loader Shipping Example

**NOTE:** Support mid mounting brackets when removing from shipping materials.



**Warning:** Loader must be supported before removing hardware securing loader to shipping pallet or loader will tip over.

Support loader boom arms with lifting device and nylon straps. Lift loader slightly to remove load from support post and remove it.

Lower loader boom onto ground, positioning scraps of cardboard on floor under loader to prevent loader paint damage. Remove Pallet.

**NOTE:** Do not tighten hardware to full torque until the mounting kit is completely assembled unless otherwise noted. This will allow proper assembly and alignment of parts as they are installed. Before finally tightening all mounting hardware, start the engine and apply downward pressure to the loader bucket, removing the load from the front tires (Do not lift tires off the ground!). Make sure the mounting pins can be rotated easily.

### INSTALLING LEFT AND RIGHT MIDMOUNTING BRACKETS (Figure 2)

1. Unfasten valve mount from right side of tractor frame and remove spacer.
2. Lift right mid mounting bracket (1) with overhead hoist. Fasten right mid mounting bracket and valve mount (1) to tractor casting and front axle housing using HHCS M16x40 (7) and M16 lockwashers (9).
3. Raise left mid mounting bracket (2) with overhead hoist. Fasten left mid mounting bracket (2) to tractor casting and front axle housing using HHCS M16x40 (7) and M16 lockwashers (9).
4. Attach back axle bar (3) to bottom of uprights and to the back axle of the tractor. Repeat on the other side.

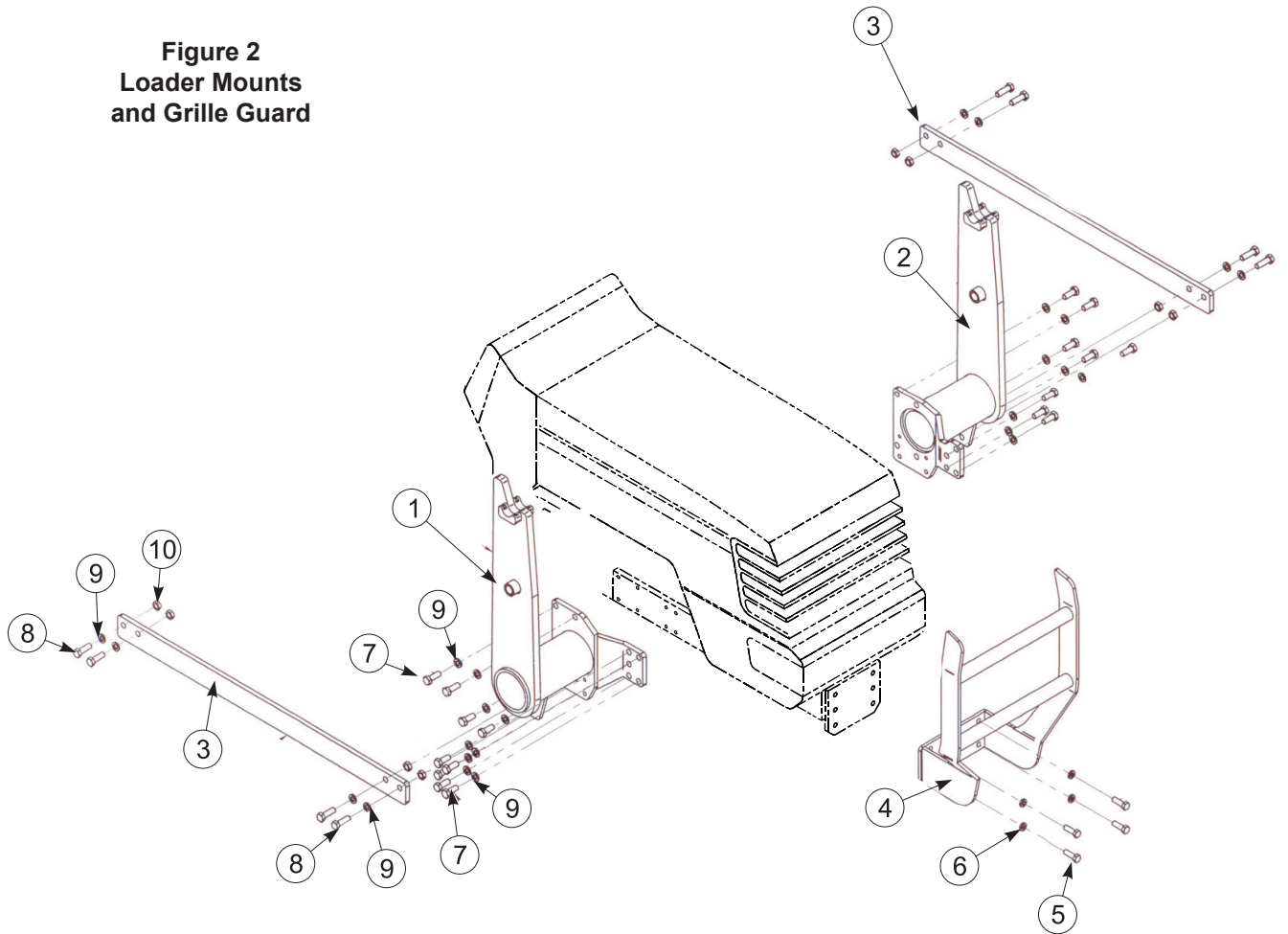
### INSTALLING MANUAL CANISTER TO BOOM ASSEMBLY

1. Use two 1/4"-20 bolts, 1/4" washers, and 1/4"-20 nut to attach canister to bracket.
2. Remove bolts (16) and washers (28) from cover (33). (See Figure 7)
3. Using bolts that were just removed attach bracket and cover to boom assembly.
4. Insure manual is placed in the canister.

### INSTALLING GRILLE GUARD (Figure 2)

1. Position grille guard on front of tractor.
2. Secure with Hex Bolts M14X25MM (5) and M14 Lockwashers (6).
3. Torque bolts after all have been installed using General Torque Specifications. (See page 10)

**Figure 2  
Loader Mounts  
and Grille Guard**



**PARTS LIST - LOADER**

ITEM	PART NO.	DESCRIPTION	QTY.
1	55552	WDMT, RH MID MOUNT	1
2	55553	WDMT, LH MID MOUNT	1
3	55554	BACKAXLE BAR	2
4	55555	WDMT, GRILLE GUARD	1
5	49040-27	BOLT, M14X45LX1.5P	4
6	701514C	M14, SPRING WASHER	4
7	49040-28	M16X40LX1.5P	17
8	49040-1	BOLT, M16X50L	8
9	701615C	SPRING WASHER, M16	25
10	54133-2	NUT, M16	8

## PLUMBING LOADER (Figure 3)

1. Connect hoses (4) to the adapter fittings, starting from the bottom tube (5). (Figure 6)
2. Install dust caps onto the free end of the hoses, making sure that the color codes shown in chart 1 below.
3. Install male quick couplers onto the valve.

## MOUNTING LOADER TO TRACTOR (Figures 3 & 4)



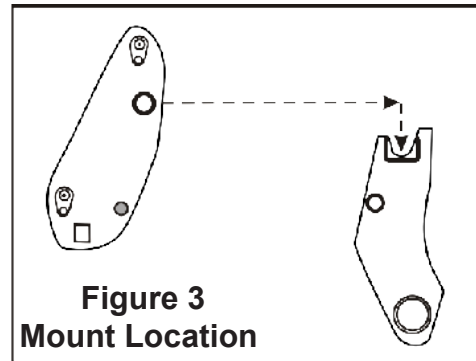
**WARNING:** To avoid injury during installation of quick attach loader, an overhead hoist must be used for initial mounting, do not permit bystanders within ten feet of loader. Parking stands are not operational without bucket or heavy attachment mounted. Bale spear or pallet fork alone do not provide enough weight.

1. Secure a hoist strap around loader upper boom arms and slowly raise loader with overhead hoist until loader uprights are slightly higher than mounts on the tractor. Make sure loader is centered with the tractor.
2. Start tractor, release brakes, and drive tractor forward until mounts are touching. Engage brakes and shut off tractor.
3. With overhead hoist, lower loader until loader upright mounts are seated in saddle of tractor mounts. Connect hydraulic hoses to correct ports. (See Chart 1)

### CHART 1

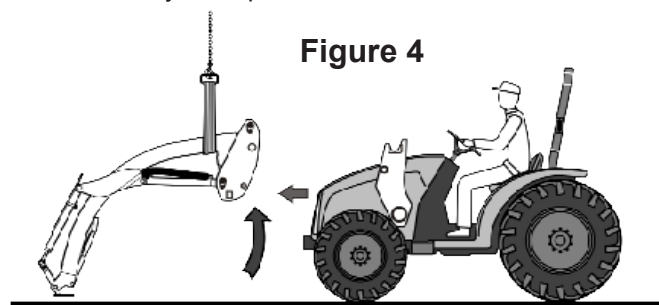
#### Port Identification

Port #1 - Red, Tilt Cylinder Rod End  
 Port #2 - Blue, Tilt Cylinder Base End  
 Port #3 - Black, Lift Cylinder Rod End  
 Port #4 - Yellow, Lift Cylinder Base End



**Figure 3  
Mount Location**

4. Start tractor and extend lift cylinders, rotating the loader upright until the lower connector pin holes line up with holes in tractor mount. Shut off tractor and engage brakes. Insert both lower connection pins and safety lynch pins.



**Figure 4**

## ATTACHING QUICK ATTACH AND BUCKET TO LOADER (Figure 5)

1. Insure bucket is on firm and level ground. Remove pins (13) and retaining hardware (14, 15, & 16) from quick attach.
2. Align boom pivot with bottom hole of quick attach secure with pin and retaining hardware.
3. Align 3 bar linkage bushing with bucket cylinder bushing and secure with pin and retaining hardware.

## ATTACHING BUCKET TO LOADER (Figure 5)



**WARNING:** To avoid injury during installation of bucket, do not allow bystanders within 10 feet of loader and bucket.

1. Locate tractor and bucket on level ground. Lower boom to the ground and extend the bucket cylinders slightly while raising the boom to provide 3" to 5" of ground clearance. Drive tractor forward to the bucket, aligning the loader's quick attach device with the pockets on the back of the bucket.
2. While driving forward slowly to maintain contact with the bucket, lift the bucket and tilt it back until the loader's quick attach device is seated in the bucket pockets. (See Figure 5)

3. Shut off tractor engine, set park brake. Move the bucket latching handles on the loader's quick attach device down to the latch position.
4. Start tractor and activate lift cylinders to raise bucket one or two feet. Tilt the bucket downward so that the latching mechanism is visible and inspect to make sure the pins are engaged through the latch plate on the back of the bucket. Lower the bucket to the ground and back up slowly with slight downward pressure on the bucket to make sure it remains attached.
5. Before finally tightening all mounting hardware, retract the bucket so the bottom is level with the ground and lower the bucket to the ground to apply downward pressure until the load is taken off the tractor's front tires.

**NOTE:** *Do not lift the tractor tires off the ground. While pressure is applied, make sure the loader mounting pins can be rotated easily.*

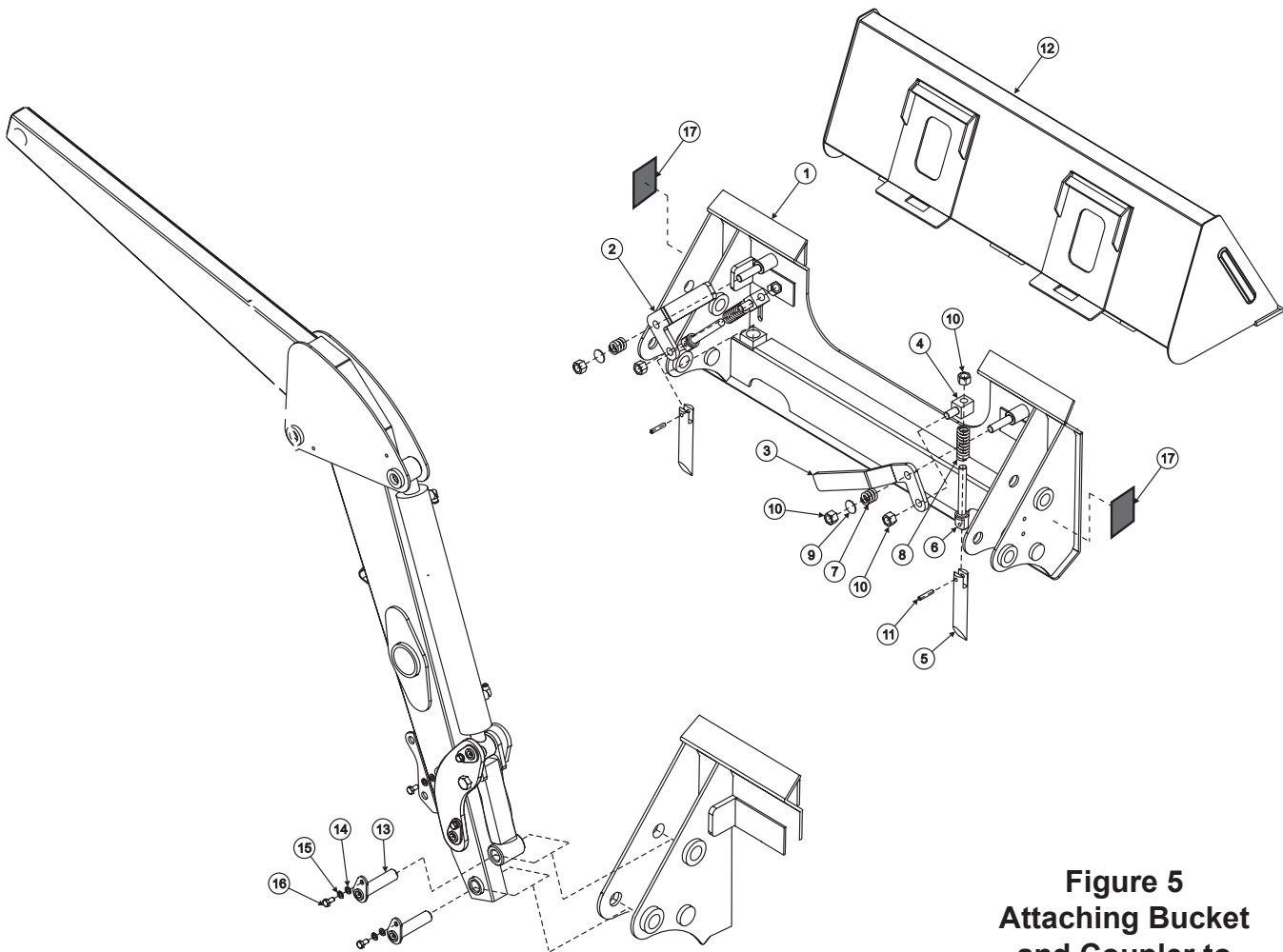
6. Tighten all remaining hardware to the torque level shown in the General Torque Specification Chart at the end of this document.

#### **PRE-OPERATION CHECK**

1. Adjust front wheel tread setting stops, if necessary, to provide a minimum 3/4" clearance between front tires and any part of loader with lift cylinders fully oscillated. Be sure lift cylinders fully retracted. Refer to page 1, under preparing tractor. Refer to tractor operator's manual for tread setting and steering stop adjustment procedures.
2. Lubricate all grease fittings with SAE multipurpose grease.
3. Check hydraulic fluid level in tractor. Fill to recommended level, using oil specified in tractor operators manual.

## PARTS LIST - Coupler &amp; Bucket

ITEM	PART NO.	DESCRIPTION	QTY.
1	55551	WDMT, COUPLER	1
2	54071	LEVER, RH QH	1
3	54072	LEVER, LH QH	1
4	54130	PIN, 30MM DIA X 30MM L	2
5	54131	PIN, 30MM DIA	2
6	54132	PIN, 30MM DIA	2
7	54119	SPRING, 5MM DIA	2
8	54120	SPRING, 4.55MM DIA	2
9	701515C	M16 FLATWASHER	2
10	54134-2	NUT, LOCK MET 16MM-2.0 PL10.9	6
11	54121	PIN, SPRING 8MM DIA X 40MM L	2
12	54797	WDMT, BUCKET	1
13	54216	PIN	4
14	701512C	M10 FLATWASHER	12
15	00755954	M10 LOCKWASHER	12
16	49040-25	HEXB METRIC 10-PI.5-20MM PL10	12
17	55580	SHEET, DECAL (Includes two decals)	1



**Figure 5**  
**Attaching Bucket**  
**and Coupler to**  
**Loader**

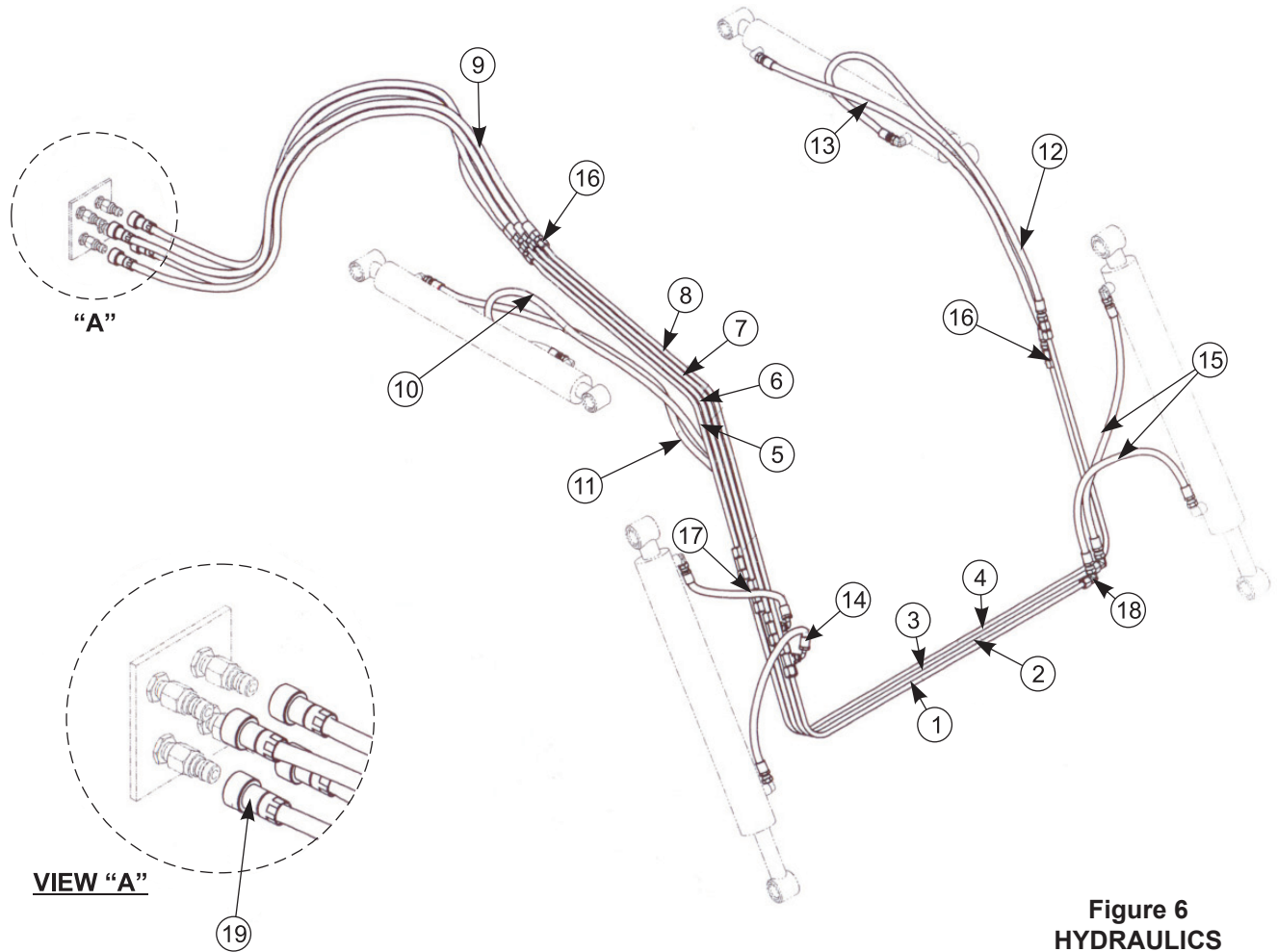


Figure 6  
HYDRAULICS

**PARTS LIST - HYDRAULICS**

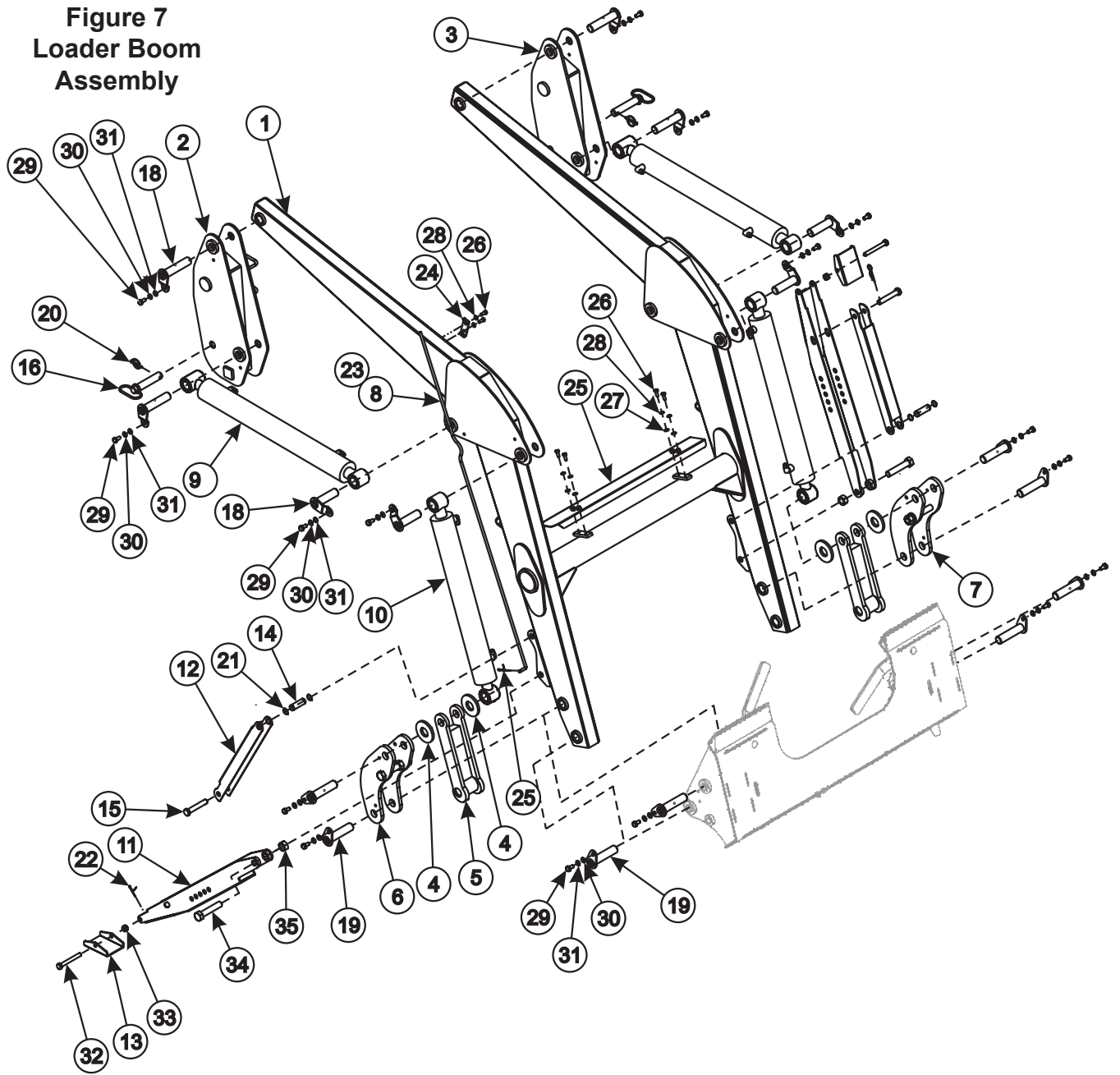
ITEM	PART NO.	DESCRIPTION	QTY.
1	55565	TUBE, HYDRAULIC LINE	1
2	55566	TUBE, HYDRAULIC LINE	1
3	55567	TUBE, HYDRAULIC LINE	1
4	55568	TUBE, HYDRAULIC LINE	1
5	55569	TUBE, HYDRAULIC LINE	1
6	55570	TUBE, HYDRAULIC LINE	1
7	55571	TUBE, HYDRAULIC LINE	1
8	55572	TUBE, HYDRAULIC LINE	1
9	55573	ASY, HOSE	4
10	54795	ASY, HOSE	1
11	55574	ASY, HOSE	1
12	54238	ASY, HOSE	1
13	55635	ASY, HOSE	1
14	54243	ASY, HOSE	2
15	54237	ASY, HOSE	2
16	54113	NIPPLE	6
17	54114	TEE NIPPLE	4
18	54784	ELBOW NIPPLE	2
19	54811	Q-COUPLE (F)	4

## PARTS LIST - BOOM

ITEM	PART NO.	DESCRIPTION	QTY.
1	55545	WDMT, BOOM	1
2	55272	WDMT, RH SIDE FRAME	1
3	55032	WDMT, LH SIDE FRAME	1
4	55033	SPACER	4
5	55546	WDMT, LINKAGE	2
6	55035	WDMT, BUCKET RH	1
7	55036	WDMT, BUCKET LH	1
8	55548	LEVELING ROD	1
9	55549	CYLINDER, BOOM	2
10	55550	CYLINDER, BUCKET	2
11	54764	WDMT, STAND	2
12	54765	LINK, STAND	2
13	54065	BRACKET	2
14	54128	PIN	2
15	54129	PIN	2
16	55040	PIN, LEVEL	2
17	54215	PIN	4
18	54217	WDMT, PIN	8
19	54216	WDMT, PIN	4
20	54123	PIN, LINK	2
21	54122	SNAP RING	4
22	54127	PIN, R	2
23	54218	SPLIT PIN	1
24	54073	COVER	2
25	54219	COVER	1
26	49040-29	HHCS, M10- -20MM	2
27	701511C	M8 PLAIN WASHER	4
28	701611C	M8 SPRING WASHER	8
29	49040-25	HHCS, M10--20	16
30	701512C	M10 PLAIN WASHER	16
31	00755954	M10 SPRING WASHER	16
32	49040-26	HHCS, M12--90MM	2
33	54134-1	M12 LOCKNUT	2
34	49040-45	HEXB METRIC 20-2.5P-80MM	2
35	54134-3	M20 LOCKNUT	2



Figure 7  
Loader Boom  
Assembly



## GENERAL TORQUE SPECIFICATIONS

USE THE FOLLOWING TORQUES WHEN SPECIAL TORQUES ARE NOT GIVEN

### Standard American and Metric Cap Screws

AMERICAN STANDARD CAP SCREWS									METRIC CAP SCREWS										
5				8				Metric Class				8.8				10.9			
Typ. Head Markings				Typ. Head Markings				Typ. Head Markings				Typ. Head Markings							
TORQUE				TORQUE				TORQUE				TORQUE							
Size		FT·LBS		N·m		FT·LBS		N·m		Size		FT·LBS		N·m		FT·LBS		N·m	
Inches	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	
1/4 - 20	6.25	7.25	8.5	10	8.25	9.5	11	13	M6 x 1.00	6	8	8	11	9	11	12	15		
1/4 - 28	8	9	11	12	10.5	12	14	16	M8 x 1.25	16	20	21.5	27	23	27	31	36.5		
5/16 - 18	14	15	19	20	18.5	20	25	27	M10 x 1.50	29	35	39	47	42	52	57	70		
5/16 - 24	17.5	19	23	26	23	25	31	34	M12 x 1.75	52	62	70	84	75	91	102	123		
3/8 - 16	26	28	35	38	35	37	47.5	50	M14 x 2.00	85	103	115	139	120	146	163	198		
3/8 - 24	31	34	42	46	41	45	55.5	61	M16 x 2.50	130	158	176	214	176	216	238	293		
7/16 - 14	41	45	55.5	61	55	60	74.5	81	M18 x 2.50	172	210	233	284	240	294	325	398		
7/16 - 20	51	55	69	74.5	68	75	92	102	M20 x 2.50	247	301	335	408	343	426	465	577		
1/2 - 13	65	72	88	97.5	86	96	116	130	M22 x 2.50	332	404	450	547	472	576	639	780		
1/2 - 20	76	84	103	114	102	112	138	152	M24 x 3.00	423	517	573	700	599	732	812	992		
9/16 - 12	95	105	129	142	127	140	172	190	M27 x 3.00	637	779	863	1055	898	1098	1217	1488		
9/16 - 18	111	123	150	167	148	164	200	222	M30 x 3.00	872	1066	1181	1444	1224	1496	1658	2027		
5/8 - 11	126	139	171	188	168	185	228	251											
5/8 - 18	152	168	206	228	203	224	275	304											
3/4 - 10	238	262	322	355	318	350	431	474											
3/4 - 16	274	305	371	409	365	402	495	544											
7/8 - 9	350	386	474	523	466	515	631	698											
7/8 - 14	407	448	551	607	543	597	736	809											
1 - 8	537	592	728	802	716	790	970	1070											
1 - 14	670	740	908	1003	894	987	1211	1337											

**NOTE:** These values apply to fasteners as received from supplier, dry or when lubricated with normal engine oil. They do not apply if special graphite or moly sulphide greases or other extreme lubricants are used.

### 37° JIC Fittings

Size	Thread Size	Assembly Torque		Tube Connection F. F. F. T.	Swivel Nut or Hose Connection F. F. F. T.
		in.·lb.	ft.·lb.		
-4	7/16 - 20	140 ± 10	12 ± 1	2	2
-5	1/2 - 20	180 ± 15	15 ± 1	2	2
-6	9/16 - 18	250 ± 15	21 ± 1	1 1/2	1 1/4
-8	3/4 - 16	550 ± 25	45 ± 5	1 1/2	1
-12	1 1/16 - 12	1000 ± 50	85 ± 5	1 1/4	1
-16	1 5/16 - 12	1450 ± 50	120 ± 5	1	1
-20	1 5/8 - 12	2000 ± 100	170 ± 10	1	1
-24	1 7/8 - 12	2400 ± 150	200 ± 15	1	1
-32	2 1/2 - 12	3200 ± 200	270 ± 20	1	1

### O-Ring Face Seal Tube/ Hose Swivel Nut

Metric Tube O.D. (mm)	Dash Size	Thread Size (in.)	Swivel Nut Hex Size (in.)	Swivel Nut Torque	
				N·m	lb <sub>r</sub> ·ft
5	-3	--	--	--	--
6	-4	9/16 - 18	11/16	16	12
8	-5	--	--	--	--
10	-6	11/16 - 16	13/16	24	18
12	-8	13/16 - 16	15/16	50	37
16	-10	1 - 14	1-1/8	69	51
20	-12	1-3/16 - 12	1-3/8	102	75
22	-14	1-3/16 - 12	--	102	75
25	-16	1-7/16 - 12	1-5/8	142	105
32	-20	1-11/16 - 12	1-7/8	190	140
38	-24	2 - 12	2-1/4	217	160
50.8	-32	--	--	--	--

### SAE O-Ring Fittings

Size	Swivel Nut or Hose	Assembly Torque		F. F. F. T.
		in.·lb.	ft.·lb.	
2	5/16 - 24	90 ± 5	7.5 ± 0.5	1 ± .25
3	3/8 - 24	170 ± 10	14 ± 1	1 ± .25
4	7/16 - 20	220 ± 15	18 ± 1	1 ± .25
5	1/2 - 20	260 ± 15	22 ± 1	1 ± .25
6	9/16 - 18	320 ± 20	27 ± 2	1.5 ± .25
8	3/4 - 16	570 ± 25	48 ± 2	1.5 ± .25
10	7/8 - 14	1060 ± 50	90 ± 5	1.5 ± .25
12	1 1/16 - 12	1300 ± 50	110 ± 5	1.5 ± .25
14	1 3/16 - 12	1750 ± 75	145 ± 6	1.5 ± .25
16	1 5/16 - 12	1920 ± 125	160 ± 6	1.5 ± .25
20	1 5/8 - 12	2700 ± 150	225 ± 12	1.5 ± .25
24	1 7/8 - 12	3000 ± 150	250 ± 12	1.5 ± .25
32	2 1/2 - 12	3900 ± 200	325 ± 15	1.5 ± .25

# INSTALLATION INSTRUCTIONS