

Keep With Operator's Manual

BACKHOE SUBFRAME KIT 60C & 65A BACKHOE KIOTI CK20 TRACTORS

Reference to left and right used in these installation instructions refer to position when seated in operating position on backhoe.

IMPORTANT: Remove linch pins and disconnect supports to disable three-point hitch arms.

NOTE: Leave all attaching hardware loose until subframe kit is completely assembled to facilitate assembly and proper alignment unless otherwise specified. Tighten all hardware to torques specified in general torque specifications table.

TRACTOR PREPARATION

Backhoe subframe is designed to be compatible Kioti KL120 loader or Rhino or SMC loader. Backhoe may be installed with or without front loader; however, if tractor is not equipped with front loader, it must be equipped with adequate counterweight at front of tractor.

INSTALLING MOUNTING BRACKETS (Figure 3)

With Front Loader:

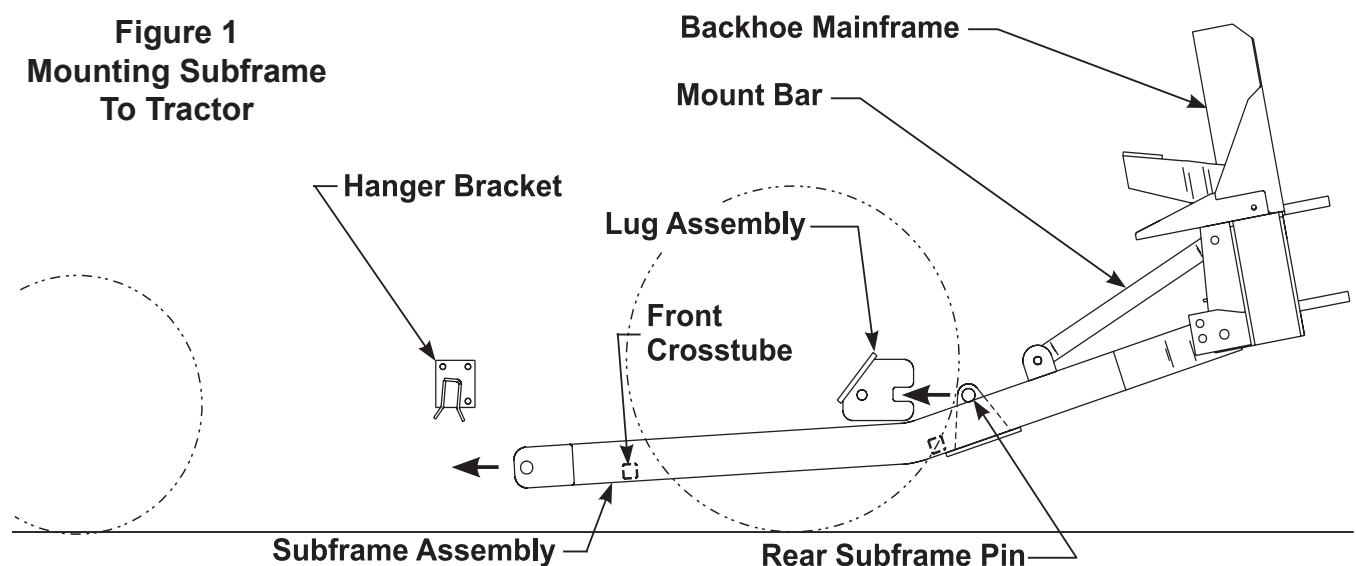
1. Install hanger brackets (4 & 5) to attachment plates of loader mid mounting brackets, on each side of tractor transmission casting, using 1/2 x 1-1/2" cap screws (10) and 1/2" lock nuts (11) in three holes at bottom of plates.

2. Remove six bolts which fasten tractor ROPS bracket and three-point chain bracket to rear axle of tractor. Install lug brackets (2 & 3), between tractor ROPS bracket and three-point chain bracket, using two 14mm x 50mm cap screws (14), one 14mm x 40mm cap screw (13), and three 9/16" lock washers (15) per lug bracket (2 or 3).

Without Front Loader:

1. Fasten support plate (7) to tractor transmission casting using 14mm x 45mm cap screws (12) and 9/16" lock washers (15). Install hanger brackets (4 & 5) to three holes in bottom of support plate (7) using 1/2 x 1-1/2" cap screws (10) and 1/2" lock nuts (11).
2. Remove six bolts which fasten tractor ROPS bracket and three-point chain bracket to rear axle of tractor. Install lug brackets (2 & 3) between tractor ROPS bracket and three-point chain bracket using two 14mm x 50mm cap screws (14), one 14mm x 40mm cap screw (13), and three 9/16" lock washers (15) per lug bracket (2 or 3).

**Figure 1
Mounting Subframe
To Tractor**



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INSTALLING SUBFRAME TO BACKHOE FRAME (Figure 3)

1. Fasten backhoe subframe (1) to backhoe mainframe using $7/8 \times 3$ " cap screws (18), $7/8$ " lock washers (19), and $7/8$ " nuts (21) in rear holes and $3/4 \times 2-1/2$ " cap screws (17) and $3/4$ " lock nuts (20) in front holes.
2. Fasten mounting bars (6) to backhoe mainframe and to attachment lugs on top of backhoe subframe (1) using $3/4 \times 2-3/4$ " cap screws (16) and $3/4$ " lock nuts (22).

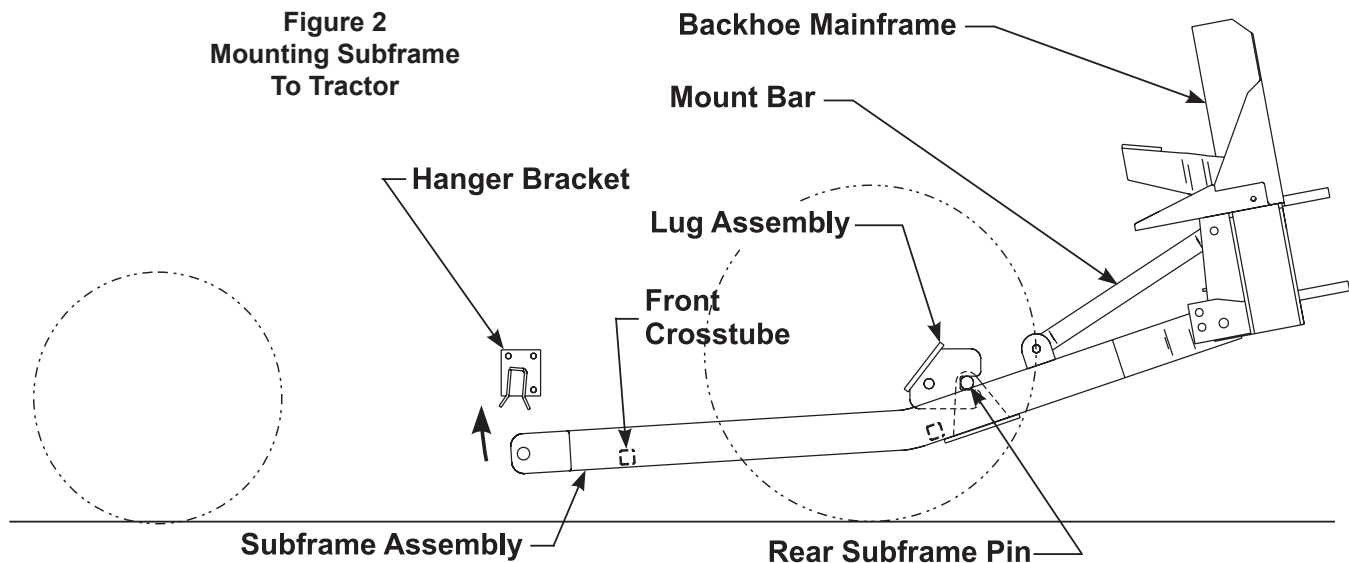
60C ONLY: Use support braces 55886 (24) and 55887 (25).

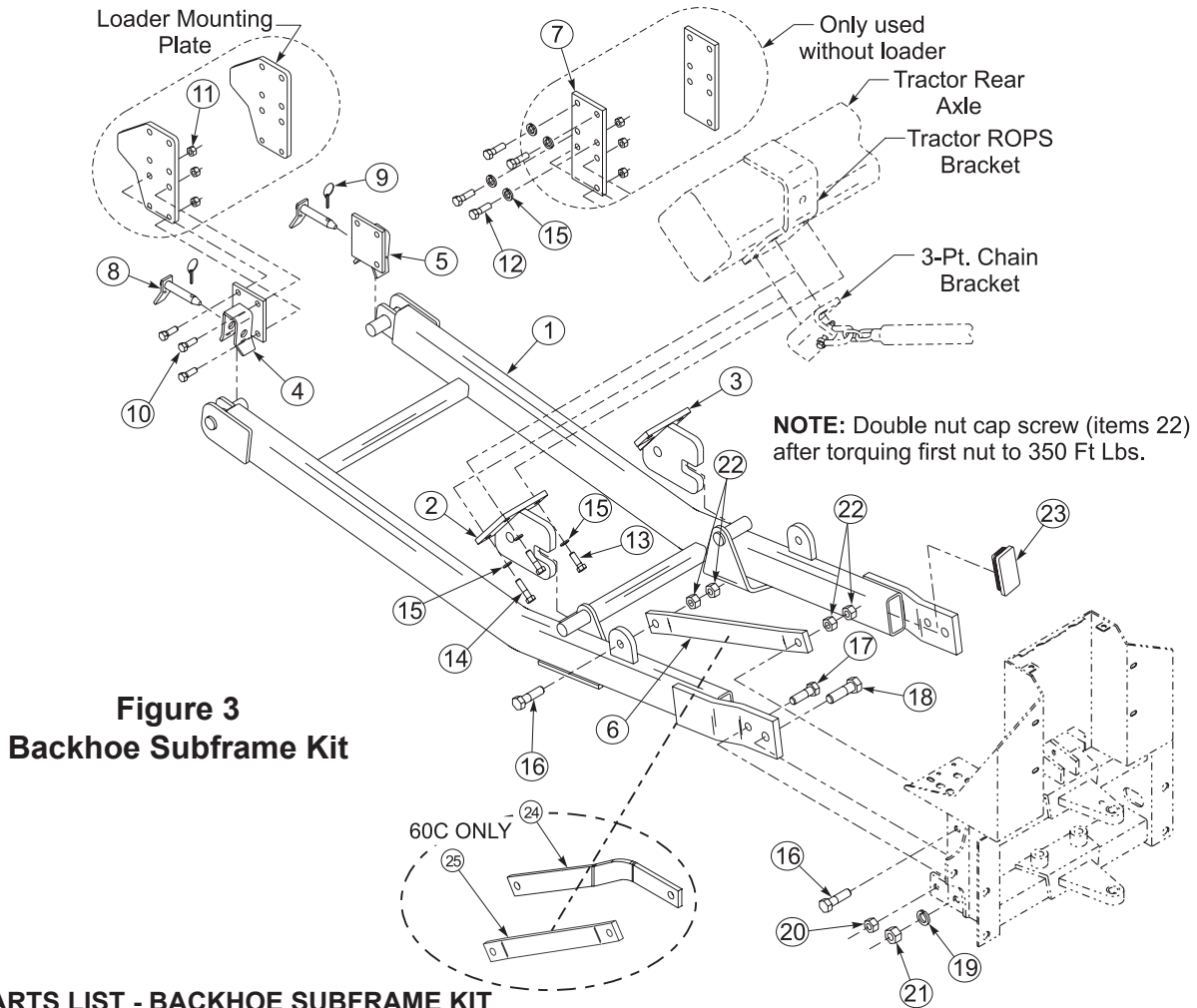
NOTE: Double-nut cap screws (16) after tightening first nut (22) to 350 ft. lbs. of torque.

MOUNTING BACKHOE TO TRACTOR

1. Back tractor over subframe (1) close enough to connect backhoe hydraulic system to tractor hydraulics.
2. Using backhoe hydraulic controls, extend stabilizer cylinders and boom cylinder until attaching pins at rear of backhoe subframe (1) are level with lug brackets (2 & 3) on rear axle, and front of subframe (1) is on ground (see Figure 1).
3. Slowly back tractor until rear subframe pins are seated securely in lug brackets (2 & 3).
4. Retract boom cylinder and stabilizer cylinders so front of subframe (1) swings up until front attachment pins of subframe (1) are seated in hanger brackets (4 & 5, see Figure 2).
5. Secure front attachment pins in place using hitch pins (8) and linch pins (9).

Figure 2
Mounting Subframe
To Tractor





PARTS LIST - BACKHOE SUBFRAME KIT

Item	Part No.	Description	Qty.
1	52091	SUBFRAME, Backhoe	1
2	52102-1	BRACKET, Lug, Left	1
3	52102-2	BRACKET, Lug, Right	1
4	52098-1	BRACKET, Hanger, Left	1
5	52098-2	BRACKET, Hanger, Right	1
6	44836	BAR, Mounting	2
7	52105	PLATE, Support (Use only without loader.)	2
8	44892	PIN, Hitch	2
9	44756-1	PIN, Linch	2
10	41838-33	SCREW, Cap, 1/2-13 x 1-1/2"	6
11	41840-5	NUT, Lock, 1/2-13	6
12	42672-60	SCREW, Cap, 14mm-1.50 x 45mm (only used without loader)	8
13	42672-23	SCREW, Cap, 14mm-1.50 x 40mm	2
14	42672-58	SCREW, Cap, 14mm-1.50 x 50mm	4
15	41837-6	WASHER, Lock, 9/16" (qty. 8 only used without loader)	14
16	42969-4	SCREW, Cap, 3/4-10 x 2-3/4", Grade 8	4
17	41838-7	SCREW, Cap, 3/4-10 x 2-1/2"	2
18	41838-53	SCREW, Cap, 7/8-9 x 3"	2
19	41837-9	WASHER, Lock, 7/8"	2
20	41840-8	NUT, Lock, 3/4-10	2
21	41836-9	NUT, Hex, 7/8-9	2
22	47264-8	NUT, Lock, 3/4-10	8
23	52106-1	PLUG, Plastic	2
24	55886	SUPPORT BRACE, Left	1
25	55887	SUPPORT BRACE, Right	1

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								
SAE Grade	5				8				Metric Class	8.8				10.9				
Typ. Head Markings									Typ. Head Markings									
Cap Screw	TORQUE				TORQUE				Cap Screw	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	Millimeters	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	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.									
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										

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 _f ·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