

Keep With Operator's Manual

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

TRACTOR AND BACKHOE GENERAL INFORMATION

Backhoe is compatible with Rhino and SMC 2407TL or Kioti KL130 loader. A Rhino or SMC 2407TL or Kioti KL130 loader is required to mount backhoe to tractor. PTO-powered hydraulic pump kit 2-7450 is also required to provide hydraulic power to backhoe.



CAUTION: After backhoe is mounted onto tractor, three-point hitch arms must be disabled. Disable hitch by removing pins connecting link arm to lower three-point arms, swinging link arm to side and reinstalling pin to link arm. Lower three-point arms rest on backhoe subframe. Make sure there is clearance between backhoe swing cylinders and three-point arms. Failure to disable three-point arms could result in damage to backhoe if three-point hitch is raised.

Subframe can be installed on tractor and backhoe using tools ordinarily available. Shut off tractor engine and set parking brakes while installing backhoe subframe, mounting kit, and hydraulics.

Read backhoe operator's manual and become familiar with backhoe controls before installing subframe. Knowing how backhoe functions is necessary to attach subframe and backhoe to tractor.

INSTALLING SUBFRAME MOUNTING BRACKETS TO TRACTOR (Figures 1 & 2)

1. Fasten front hanger brackets (4 & 5) to loader left and right mid mounting bracket using 9/16 x 1-1/2" cap screws (9) and lock nuts (10) in three holes in bottom of each mid mounting bracket.
2. Fasten rear hanger brackets (2 & 3) to underside of tractor rear axle, each side. Use 14mm-1.50 x 40mm cap screws (12) and 9/16" lock washers (14) through front of each bracket (2 & 3) into front surface of axle. Use 14mm-2.00 x 40mm cap screws (11) and 9/16" lock washers (14) through bottom of each bracket (2 & 3) into bottom of axle. Use 12mm-1.25 x 40 cap screws (13) and 1/2" lock washers (19) through side of each bracket into rear axle.
3. Tighten hardware to torques specified in general torque specifications table on page 4, or as follows:

CAP SCREW SIZE	TORQUE
14mm-2.00 x 40mm (11)	103ft.·lbs. (140N·m);
14mm-1.50 x 40mm (12)	109ft.·lbs. (148N·m);
12mm-1.25 x 40mm (13)	70ft.·lbs (95N·m).

4. Install hydraulic pump kit. Refer to instructions provided with hydraulic pump kit to install hydraulic pump, hoses and fittings.

INSTALLING BACKHOE SUBFRAME TO BACKHOE FRAME (Figures 1 & 2)

1. Install plastic end plugs (22) into front and rear ends of rectangular tubes, which form longitudinal members of backhoe subframe (1).
2. Fasten subframe (1) to backhoe mainframe using 7/8 x 3" cap screws (17), lock washers (18), and nuts (20) in rear holes, and 3/4 x 2-1/2" cap screws (16) and lock nuts (21) in front holes.
3. Fasten support braces (6) to backhoe main frame and to lugs on subframe (1) using 3/4 x 2-3/4" cap screws (15) and lock nuts (21), with double nuts (21) on 3/4 x 2-3/4 cap screws (15) at both ends of each support brace (6).

60C ONLY: Use support braces 55888 (22) and 55889 (23).

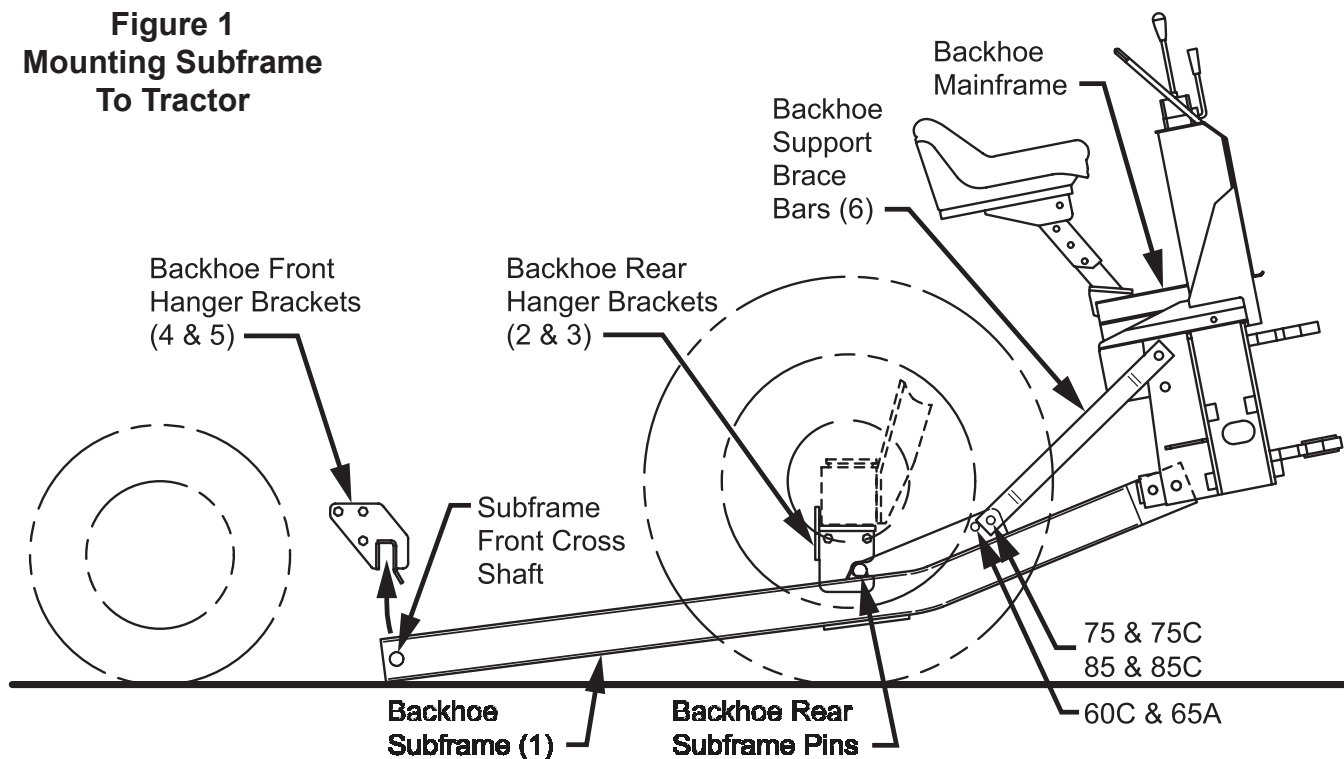
NOTE: For model 75 or 85 backhoe, use rear most set of holes in subframe lugs; for model 65A backhoe, use forward set of holes.

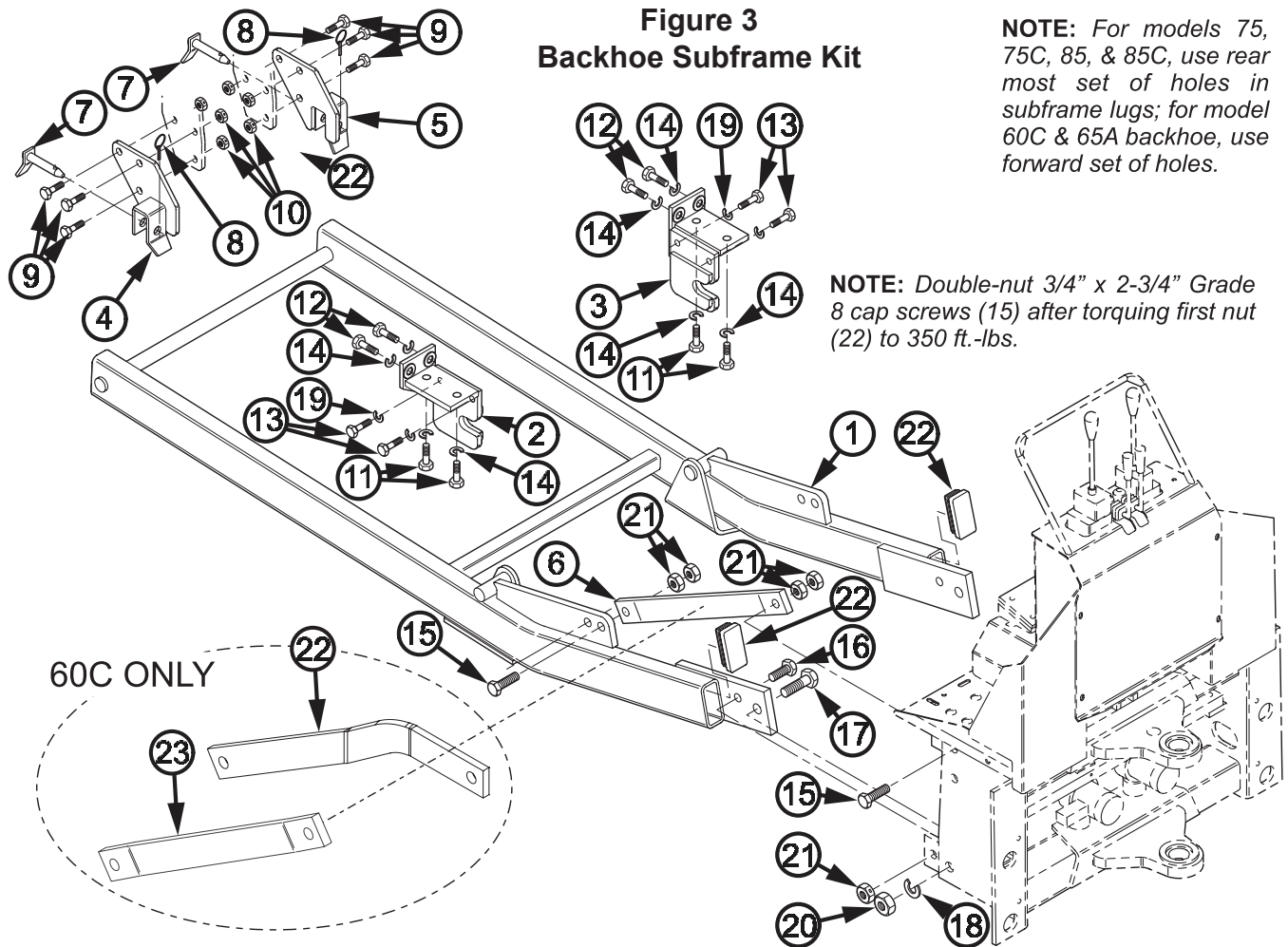
IMPORTANT: Double-nut 3/4 x 2-3/4" cap screws (15) with 3/4" lock nuts (21) after torquing first nut to 350ft.·lbs (475N·m). Tighten all other hardware to torques specified in general torque specifications table on page 4.

MOUNTING BACKHOE TO TRACTOR (Figures 1 & 2)

1. Back tractor toward backhoe, with tractor straddling subframe, until positioned so PTO hydraulic pump kit can be connected to backhoe control valve. Shut off tractor engine, set brakes, and make sure PTO is disengaged. Connect PTO pump to tractor.
2. Start tractor and engage PTO. Tractor should be running at low idle. Using backhoe controls, lower stabilizer and bucket to ground to provide a base for raising subframe. Using backhoe controls, continue lowering stabilizers and backhoe boom to raise subframe to proper level height to connect to tractor.
3. Back tractor and position rear subframe pins so they will engage completely into rear hanger brackets (2 & 3). Gradually lower backhoe mainframe so front cross shaft engages into front hanger brackets (4 & 5).
4. Install hitch pins (7) through front hanger brackets (4 & 5) to secure subframe in place. Secure hitch pins (7) using linch pins (8).

Figure 1
Mounting Subframe
To Tractor



**PARTS LIST - BACKHOE SUBFRAME KIT**

Item	Part No.	Description	Qty.
1	52715	SUBFRAME, Backhoe	1
2	52725-1	BRACKET, Hanger, Rear Left	1
3	52725-2	BRACKET, Hanger, Rear Right	1
4	52719-1	BRACKET, Hanger, Front Left	1
5	52719-2	BRACKET, Hanger, Front Right	1
6	44836	BAR, Backhoe Support Brace	2
7	44892	PIN, Hitch, 3/4" Dia. x 4-13/16" Long	2
8	44756-1	PIN, Linch, 5/16" Dia. x 1-5/8" Long	4
9	41838-52	SCREW, Cap, 9/16-12 x 1-1/2" Grade 5	6
10	41840-6	NUT, Lock, 9/16-12, Type N	6
11	42672-46	SCREW, Cap, 14mm-2.00 x 40mm Class 8.8	4
12	42672-23	SCREW, Cap, 14mm-1.50 x 40mm Class 8.8	4
13	42672-69	SCREW, Cap, 12mm-1.25 x 40mm Class 8.8	4
14	41837-6	WASHER, Lock, 9/16	8
15	42969-4	SCREW, Cap, 3/4-10 x 2-3/4", Grade 8	4
16	41838-7	SCREW, Cap, 3/4-10 x 2-1/2" Grade 5	2
17	41838-53	SCREW, Cap, 7/8-9 x 3" Grade 5	2
18	41837-9	WASHER, Lock, 7/8"	2
19	41837-5	WASHER, Lock, 1/2"	4
20	41836-9	NUT, Hex, 7/8-9	2
21	47264-8	NUT, Lock, 3/4-10, Grade C	10
22	55888	SUPPORT BRACE, Left	1
23	55889	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·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