

# 550 & 575 Versatile Wheel Ag Adapter

# **Scraper Hitch**

## **Assembly Manual**

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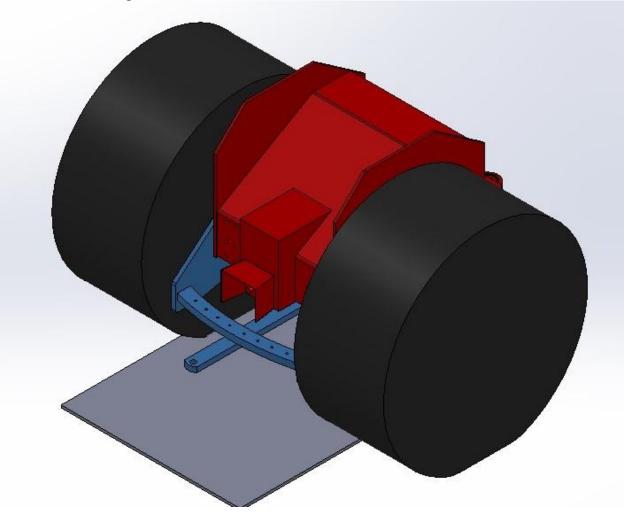
### **1 Introduction**

The following diagrams show the part numbers for ordering any replacement parts on a 550 & 575 Versatile Ag Adapter Scraper Hitch. Some components may not look exactly as shown.

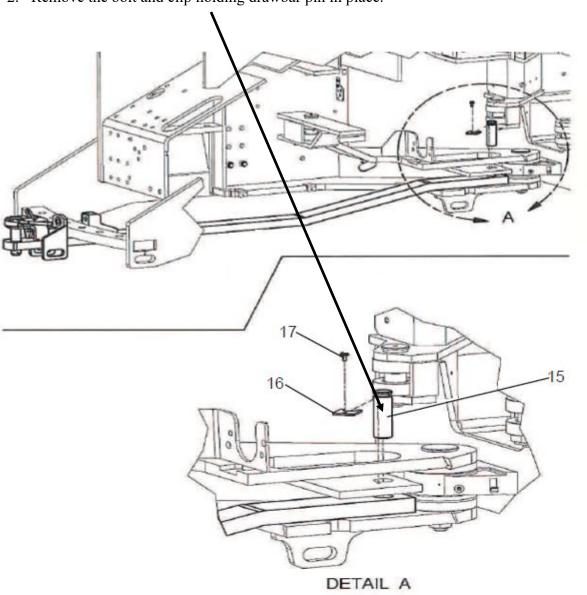
Left and right as used in the parts book is as viewed from the rear of the tractor looking in the direction of travel.

### 1.1 Getting Tractor Equipped for Adapter

1. Remove drawbar cage and drawbar assembly (blue piece in picture) as one piece. Be careful when removing the assembly to ensure the differential and disk brakes on the tractor are not damaged.

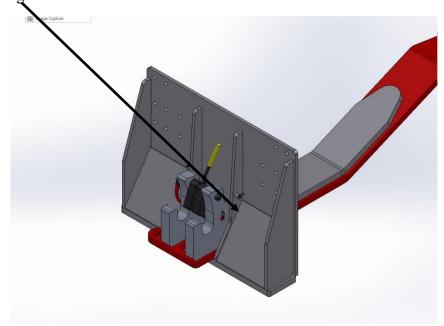


2. Remove the bolt and clip holding drawbar pin in place.



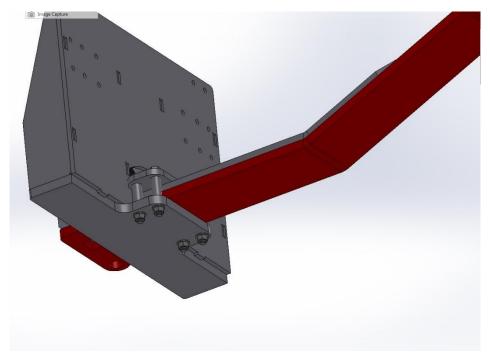
### 2.0 Installation

3.1 Insert the Versatile Drawbar into the Versatile hanger and attach the two chains to the tab on the versatile hanger.

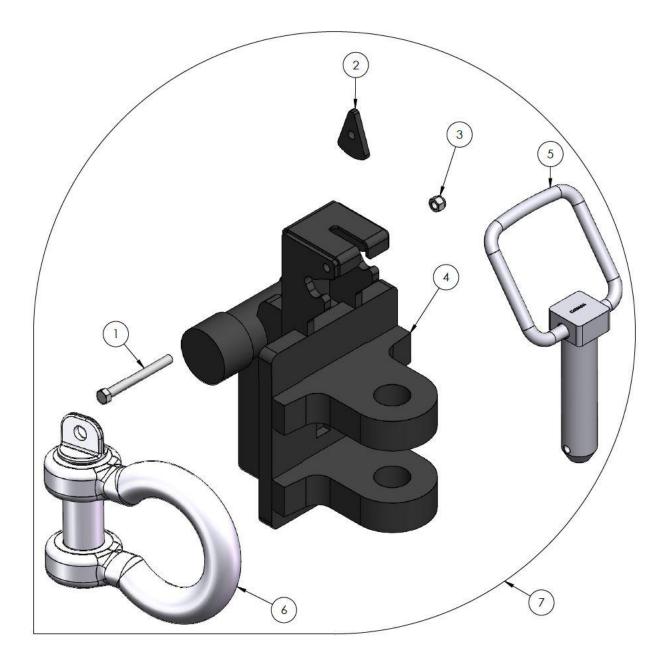


3.2 Attach the Drawbar top plate to the Drawbar hanger with the spacer. The drawbar can float in the Drawbar hanger. When installing the assembly on the tractor, lift as one piece and use caution around the rear differential and disk brake. Ensure that you put the drawbar pin back in

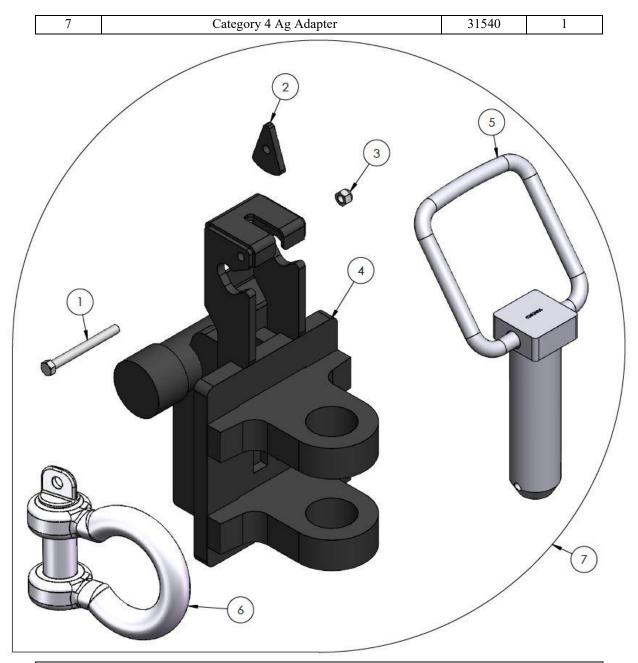
place.



# 3.0 Optional Scraper to Ag Adapter (Category 4 & Category 5)



	Category 4 Adapter Assembly							
	Description	ID#	QTY					
1	Bolt, ½" x 5"	15400	1					
2	Ag Adapter Pin Stopper	31399	1					
3	Nylon Lock Nut, ½"	10241	1					
4	Category 4 Scraper to Ag Adapter	29523	1					
5	Cat 4 Hitch Pin – 2"	31373	1					
6	Shackle – 1-3/4"	29549	1					



Category 5 Adapter Assembly							
	Description	ID#	QTY				
1	Bolt, ½" x 5"	15400	1				
2	Ag Adapter Pin Stopper	31399	1				
3	Nylon Lock Nut, ½"	10241	1				
4	Category 5 Scraper to Ag Adapter	29532	1				
5	Cat 5 Hitch Pin – 2-3/4"	31374	1				
6	Shackle – 1-3/4"	29549	1				
7	Category 5 Ag Adapter	31541	1				

### **FASTENER TORQUE CHARTS**





### **BOLT CLAMP LOADS**

Suggested Assembly Torque Values



B)	USS/SAE GRADE 5						USS/	SAE GRA	DE 8	
DIAMETER & THREADS PER INCH	Tensile Strength Min. PSI	PROOF LOAD LB	CLAMP LOAD LB	TORQUE DRY FT LB	LUBRICATED FT LB	TENSILE Strength Min. PSI	PROOF LOAD LB	CLAMP LOAD LB	TORQUE DRY FT LB	LUBRICATED FT LB
1/4-20	120,000	2,700	2,020	8	6.3	150,000	3,800	2,850	12	9
28	120,000	3,100	2,320	10	7.2	150,000	4,350	3,250	14	10
5/16-18	120,000	4,450	3,340	17	13	150,000	6,300	4,700	24	18
24	120,000	4,900	3,700	19	14	150,000	6,950	5,200	27	20
3/8-16	120,000	6,600	4,950	30	23	150,000	9,300	6,980	45	35
24	120,000	7,450	5,600	35	25	150,000	10,500	7,900	50	35
7/16-14	120,000	9,050	6,780	50	35	150,000	12,800	9,550	70	50
20	120,000	10,100	7,570	55	40	150,000	14,200	10,650	80	60
1/2-13	120,000	12,100	9,050	75	55	150,000	17,000	12,750	110	80
20	120,000	13,600	10,200	85	65	150,000	19,200	14,400	120	90
9/16-12	120,000	15,500	11,600	110	80	150,000	21,800	16,350	150	110
18	120,000	17,300	12,950	120	90	150,000	24,400	18,250	170	130
5/8-11	120,000	19,200	14,400	150	110	150,000	27,100	20,350	210	160
18	120,000	21,800	16,350	170	130	150,000	30,700	23,000	240	180
3/4-10	120,000	28,400	21,300	260	200	150,000	40,100	30,100	380	280
16	120,000	31,700	23,780	300	220	150,000	44,800	33,500	420	310
7/8-9	120,000	39,300	29,450	430	320	150,000	55,400	41,600	600	450
14	120,000	43,300	32,450	470	350	150,000	61,100	45,800	670	500
1-8	120,000	51,500	38,600	640	480	150,000	72,700	54,500	910	680
14	120,000	57,700	43,300	720	540	150,000	81,500	61,100	1,020	760

When using anti-seize, reduce the lubed chart reading by 20% to properly torque. Always lubricate and use lubed torque values.

#### NOTES:

The above recommended assembly torques are offered as a guide only. Torque specifications, especially for critical joints, should be determined under actual assembly conditions due to the many variables involved which are difficult to predict and do affect the torque-tension relationship.

The above recommended clamp loads are based on 75% of the minimum specified proof loads for each grade and size.

Torques for Grades 5 and 8 were calculated based on the following relationship:

Where: T = Torque (ft lb)

D = Nominal Diameter (in)

P = Clamp Load (lb)

R = Tightening Coefficient

The value of R is assumed to be equal to .20 for dry, unplated conditions and equal to .15 for lubricated, including plated, conditions. Actual values of R can vary between .05 and .35 for commonly encountered conditions.

STRENGTH GRADE	Applicable Sizes	PROOF LOAD STRESS (PSI)	YIELD Strength Min. Stress (PSI)	TENSILE STRESS MIN. (PSI)
SAE Gr. 5	1/4 to 1" diameter over 1" diameter to 1-1/2 diameter	85,000 74,000	92,000 81,000	120,000 105,000
SAE Gr. 8	1/4 to 1" diameter	120,000	130,000	150,000

Pounds to Inch Pound Conversion lb x 12 = inch lb

Example: 9 lb x 12 = 108 inch lb

FRACTIONAL INEASUREMENT								
BOLT DIAMETER	CAP SCREW WRENCH SIZE	NUT Wrench Size						
1/4	7/16	7/16						
5/16	1/2	1/2						
3/8	9/16	9/16						
7/16	5/8	11/16						
1/2	3/4	3/4						
9/16	13/16	7/8						
5/8	15/16	15/16						
3/4	1-1/8	1-1/8						
7/8	1-5/16	1-5/16						
1"	1-1/2	1-1/2						
1-1/8	1-11/16	1-11/16						
1-1/4	1-7/8	1-7/8						
1-3/8	2-1/16	2-1/16						
1-1/2	2-1/4	2-1/4						
1-3/4	2-5/8	2-5/8						
2*	3"	3"						
2-1/4	3-3/8	3-3/8						
2-1/2	3-3/4	3-3/4						
2-3/4	4-1/8	4-1/8						
3*	4-1/2	4-1/2						

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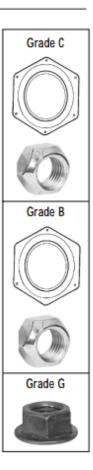


### **FASTENER TORQUE CHARTS**

GUIDE FOR PREVAILING-TORQUE LOCK NUT ASSEMBLY TORQUES (CAD AND WAX, GRADE B, C, AND GRADE G FLANGE NUTS) LOCK NUT STANDARDS FROM IFI-100 REQUIREMENTS

Torque-Tension Requirements

	GRADE B			GRADE C			GRADE G		
Size Threads Per Inch	CLAMP LOAD (LB)		MBLY OUE MIN.	CLAMP LOAD (LB)		MBLY FOUE MIN.	CLAMP LOAD (LB)		MBLY IQUE MIN.
1/4-20	2,000	85**	60**	2,850	125**	85**	2,850	150**	100**
1/4-28	2,300	90**	65**	3,250	125**	85**	3,250	160**	105**
5/16–18	3,350	150**	110**	4,700	190**	130**	4,700	240**	155**
5/16–24	3,700	160**	120**	5,200	200**	140**	5,200	230**	155**
3/8-16	4,950	20	14.5	6,950	28	20	6,950	32	21
3/8-24	5,600	22	16	7,900	29	21	7,900	33	22
7/16–14	6,800	32	23	9,600	43	31	9,600	51	34
7/16–20	7,550	34	24	10,700	43	31	10,700	60	40
1/2-13	9,050	50	37	12,800	62.5	45	12,800	85	55
1/2-20	10,200	52.5	37.5	14,440	70	50	14,440	89	59
9/16–12	11,600	70	50	16,400	95	70	16,400	120	80
9/16–18	13,000	77.5	57.5	18,300	95	70	18,300	132	88
5/8-11	14,500	95	70	20,300	122.5	90	20,300	143	95
5/8-18	16,300	97.5	72.5	23,000	125	90	23,000	175	115
3/4-10	21,300	165	125	30,100	210	155	30,100	240	160
3/4-16	23,800	165	120	33,600	210	155	33,600	270	170
7/8-9	29,500	250	185	41,600	312.5	225	41,600	360	260
7/8-14	32,400	270	200	45,800	312.5	225	45,800	402	247
1-8 1-12	38,700 42,300	375 395	275 290	54,600 59,750	462.5 490	360 360	54,600 59,750	530	410
1-14	43,000 42,100	400 404	300 294	61,100 69,000	500 585	362.5 454	61,100 69,000	645	398
1-1/8-12	47,500 53,500	437 513	327 375	76,800 87,000	622 736	453 573	76,800 87,000	_	_
1-1/4-12	59,700	549	412	96,600	782	570	96,600		=
1-3/8-6 1-3/8-12	63,800 72,900	612 670	445 503	104,000 118,000	880 955	685 696	104,000 118,000	_	=
1-1/2-6 1-1/2-12	77,600 87,700	745 807	545 605	127,000 142,000	1,075 1,150	837 837	127,000 142,000	_	=



- Clamp loads for the Grade B lock nuts equal 75% of the bolt proof loads specified for SAE J-429 Grade 5, and ASTM A-449 bolts.
  Clamp loads for Grade C look nuts equal 75% of the bolt proof loads specified for SAE J-429 Grade 8, and ASTM A-354 Grade BD bolts.
- . IFI-100 does not govern lock nuts above 1". The values shown in the chart are to be used as a mid-range guideline.
- \*\* Torque values for 1/4" and 5/16" sizes are in inch lb. All other torque values are in foot lb.

### METRIC TORQUE CHART FOR HEX HEAD CAP SCREWS

Size	CLASS	NEWTON I	METERS Unplated	FOOT POUNDS ZINC PLATED	(APPROX.)	CLASS
M4 x .70 Pltch M5 x .80 Pltch M6 x 1.00 Pltch M7 x 1.00 Pltch M8 x 1.25 Pltch M10 x 1.50 Pltch M10 x 1.50 Pltch M10 x 1.25 Pltch M10 x 1.25 Pltch M12 x 1.75 Pltch M12 x 1.75 Pltch	88 88 88 88 88 88 88 88 88	3.1 6.1 10.4 17.0 25.0 27.0 51.0 57.0 54.0 87.0 96.0	2.2 5.5 9.5 15.5 23.0 24.5 46.0 52.0 49.0 79.0 87.0	2.30 4.58 7.80 12.75 18.75 20.25 38.25 42.75 40.50 65.25 72.00	1.65 4.13 7.13 11.63 17.25 18.38 34.50 39.00 36.75 59.25 65.25	8.8
M12 x 1.50 Pitch M14 x 2.00 Pitch M14 x 1.50 Pitch M16 x 2.00 Pitch M18 x 2.50 Pitch M20 x 2.50 Pitch M22 x 2.50 Pitch M24 x 3.00 Pitch	8.8 8.8 8.8 8.8 8.8 8.8 8.8	92.0 140.0 150.0 215.0 300.0 430.0 580.0 740.0	83.0 125.0 135.0 195.0 280.0 390.0 530.0 670.0	69.00 105.00 112.50 161.25 225.00 322.50 435.00 555.00	93.75 101.25 146.25 210.00 292.50 397.50 502.50	
M6 x 1.00 Pitch M8 x 1.25 Pitch M10 x 1.50 Pitch M12 x 1.75 Pitch M14 x 2.00 Pitch M16 x 2.00 Pitch	10.9 10.9 10.9 10.9 10.9 10.9	15.5 37.0 75.0 160.0 205.0 310.0	14.0 34.0 68.0 117.0 185.0 280.0	11.63 27.75 56.25 97.50 153.75 232.50	10.50 25.50 51.00 87.75 138.75 210.00	10.9

### TORQUE CHART FOR STAINLESS STEEL CAP SCREWS

Size	316 INCH-LB	18/8 INCH-LB
6-32	10.1	9.6
6-40	12.7	12.1
8-32	20.7	19.8
8-36	23.0	22.0
10-24	23.8	22.8
10-32	33.1	31.7
1/4-20	78.8	75.2
1/4-28	99.0	94.0
5/16-18	138.0	132.0
5/16-24	147.0	142.0
3/8-16	247.0	236.0
3/8-24	271.0	259.0
7/16-14	393.0	376.0
7/16-20	418.0	400.0
1/2-13	542.0	517.0
1/2-20	565.0	541.0
9/16-12	713.0	682.0
9/16-18	787.0	752.0
5/8-11	1,160.0	1,110.0
5/8-18	1,301.0	1,244.0
3/4-10	1,582.0	1,530.0
3/4-16	1,558.0	1,490.0
7/8-9	2,430.0	2,328.0
7/8-14	2,420.0	2,318.0
1"-8	3,595.0	3,440.0
1"-14	3,250.0	3,110.0



