



Installation Instructions for Folding Tongue

for the 706NT, 1006NT, and 1206NT End Wheel No-Till Drills

Before Getting Started

Before you begin installation of your No-Till Drill, read these instructions carefully and check that all parts and tools in kit are accounted for. All hand and specialty tools for installation are provided at owner's expense. Please retain these installation instructions for future reference and parts ordering information.

These installation instructions contain information for assembling the Folding Tongue to a No-Till Drill. Please read all instructions in your No-Till Drill's operator manual thoroughly before proceeding. Instructions contain information for all makes and models of the applicable machines.

General Information

This kit replaces the existing tongue with a folding tongue.

Tools Required

The following tools are required for installation:

- General hand tools.
- Lift or overhead hoist with a minimum lifting capacity of 1000 pounds (454 kg).
- Jack stands or blocks and safety chain.

Refer to page 10 for torque values chart.

Further Assistance

If for any reason you do not understand any part of this manual or are otherwise dissatisfied, please contact:

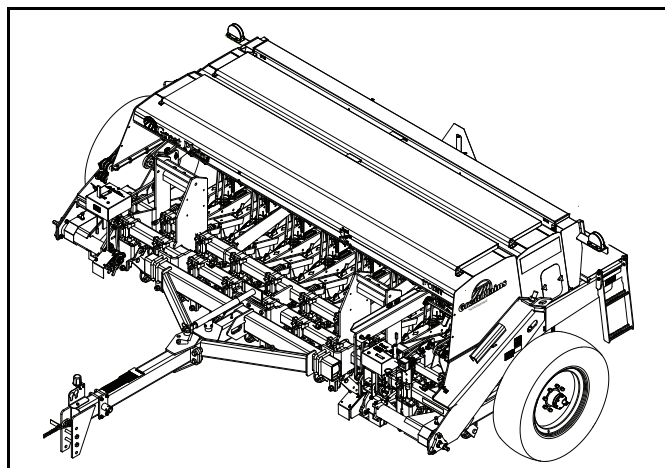
Great Plains Service Department
1525 E. North St.
P.O. Box 5060
Salina, KS 67402-5060

Or go to www.greatplainsag.com and follow the contact information at the bottom of your screen for our service department.



Installation Guide QRC

The QR Code (Quick Response) to the left will take you to a web installation guide. Use your smart phone or tablet to scan the QR Code with an appropriate App to begin viewing.



Recommended Manuals

All manuals related to this kit are available free of charge by visiting www.greatplainsag.com. Have machine model and serial numbers available.

No-Till Drill Parts Manuals

706NT & 1006NT	150-285P
1206NT	150-166P

Folding Tongue Kits

Kit Numbers

706NT	151-114A
1006NT	151-111A
1206NT	151-194A



No-Till Drill QRC

The QR Code (Quick Response) to the left will take you to the No-Till Drill family of manuals. Use your smart phone or tablet to scan the QR Code with an appropriate App to begin viewing.

Installation Instructions

1 Preparation

- The tongue is shipped via flat bed truck. It is the dealer's responsibility to unload the new tongue. Unload all components before beginning installation.

NOTICE

Do not attempt any assembly work while the folding tongue is on the truck.

- If possible, have the tractor that will be used available for measurements.
If the tractor to be used with the drill is not available, obtain a measurement of the hitch height.
- Have at least two people on hand while assembling.
- Make sure assembly area is solid, level, and free of obstructions (preferably an open concrete area).
- Have a copy of the parts manual on hand. If unsure of proper placement or use of any part or fastener, refer to the parts manual.
- Check that all safety decals and reflectors are located correctly and legible. Replace if improperly located or damaged. Refer to "Safety Decals" in the operator's manual.

2 Remove the Folding Tongue From the Truck

1. Connect hoist lines (1) through top hitch holes (2), and around rear tongue tube (3), behind brace tubes (4).
2. Remove the folding tongue from the truck.

WARNING

Crushing hazard. You may be severely injured by frames if they fall. Always support frame sections with jack stands or blocks before working under frames raised off ground.

3. Move the folding tongue to a storage location
4. Make sure all components for the folding tongue are removed from the truck.

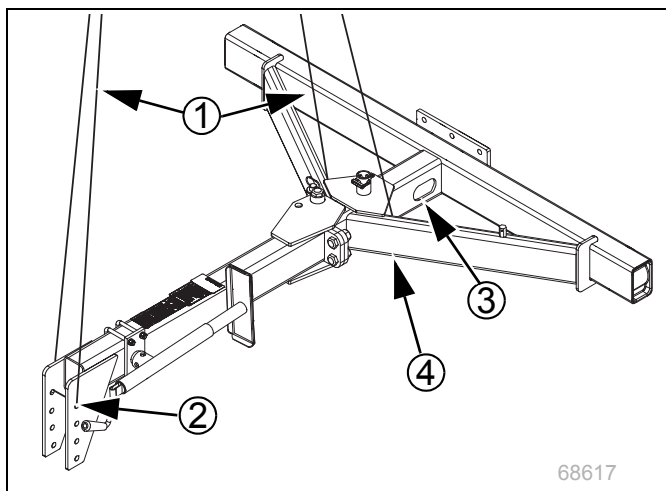


Figure 1
Removing Folding Tongue From Truck

3 Remove the Existing Tongue

1. Park the drill on a solid, level surface.
2. Securely block the tires to prevent rolling.
3. Put stands to support the drill so the drill does not tip when the existing tongue and jack are removed.

WARNING

The drill can tip when the existing tongue is removed. Block the drill to prevent tipping.

4. Remove and keep the color-coded hose grips from the hydraulic hoses. Make sure the hydraulic hoses are clearly marked for correct installation.
5. Pull the hydraulic hoses and the lighting harness out of the existing tongue.
6. Make a record of the location of the hitch components on the existing tongue. Remove the hitch components and set aside for installation on the folding tongue. Store the hardware.

NOTE: All new hardware for mounting the folding tongue is shipped attached to the folding tongue.

7. Connect hoist lines (1) at available hitch holes (2), and around rear tongue tube (3), behind brace tubes (4).
8. Unpin the jack from the side of the tongue and install the jack in the storage position on the top of the tongue.
9. Remove the six center mounting bolts (5), washers, and nuts from the center of the existing tongue. Store the hardware.

NOTE: New mounting hardware is supplied with the folding tongue.

10. Remove the four U-bolts (6) from the tongue. Store the hardware.
11. Remove the existing tongue.

WARNING

Crushing hazard. You may be severely injured by frames if they fall. Always support frame sections with jack stands or blocks before working under frames raised off ground.

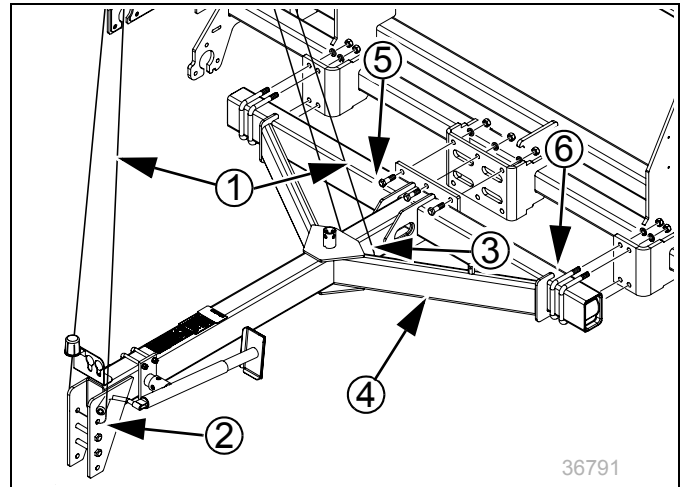



Figure 2
Removing Existing Tongue

Folding Tongue

4 Prepare the Folding Tongue for Installation

 NOTE: The hardware for installing the folding tongue is loosely installed for shipping

1. Remove and save the six mounting bolts (1), lock washers (2), and nuts (3) from the folding tongue.
2. Remove and save the four U-bolts (4), lock washers (2), and nuts (3) from the folding tongue.
3. Connect hoist lines (5) at top hitch holes (6), and around rear tongue tube (7), behind brace tubes (8).
4. Make sure the jack is mounted on the side and is horizontal with the tongue.

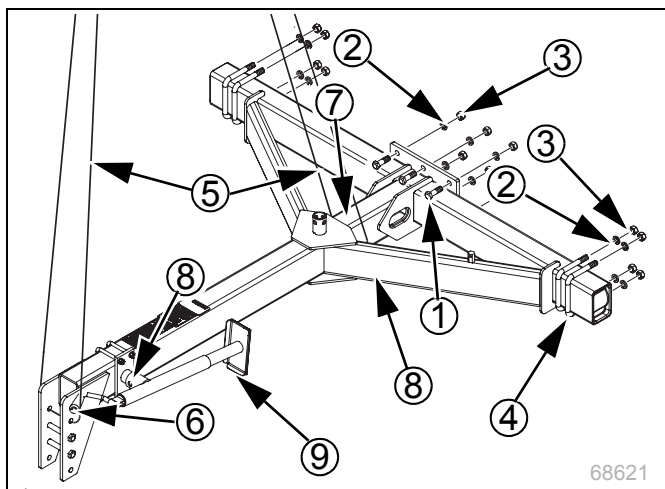


Figure 3
Preparing the Folding Tongue

5 Install the Folding Tongue

Callout	Part No.	Part Description	Qty.
1	802-212C	HHCS 3/4-10x2 1/2 GR5	6
2	804-023C	WASHER, LOCK SPRING 3/4 PLT	14
3	803-027C	NUT HEX 3/4-10 PLT	14
4	806-128C	U-BOLT 3/4-10X6 1/32X5 5/8	4

WARNING

Crushing hazard. You may be severely injured by frames if they fall. Always support frame sections with jack stands or blocks before working under frames raised off ground.

1. Carefully raise the folding tongue.
2. Align the mounting plate (1) on the folding tongue with the mounting plate (2) on the mainframe. Insert a bolt (3) at the top center hole and secure finger tight with a lock washer (4) and nut (5).
3. Level the tongue from side to side relative to the mainframe. Install the remainder of the hardware in the center mounting plate. Fasten finger tight.
4. Insert all four U-bolts (6), lock washers (4), and nuts (5) at each end of the crossmember. Fasten finger tight.
5. Tighten the all of the nuts the on the bolts and U-bolts to 265 ft-lb (350 Nm).

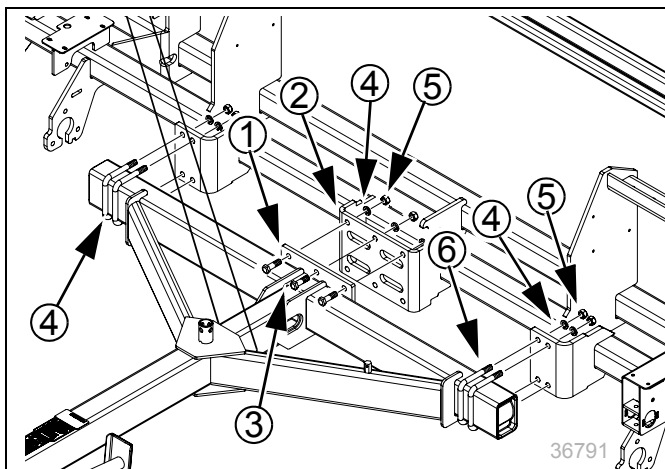


Figure 4
Installing the Folding Tongue

6 Remove the Lifting Equipment

Refer to Figure 5

1. Remove jack (1) from storage mount (2) on top of the tongue (3). Pin the jack on the side of the tongue in the vertical position.
2. Crank the jack foot (4) down until the tongue is supported by the jack.
Some jacks have angle adjustment like the one shown in the illustration. Note the adjustment slots (5). The jack angle must be adjusted after the drill is connected to the tractor.

⚠ WARNING

Do not adjust the jack angle without the drill being hitched and connected to a tractor.

3. Remove the lifting equipment from the tongue.

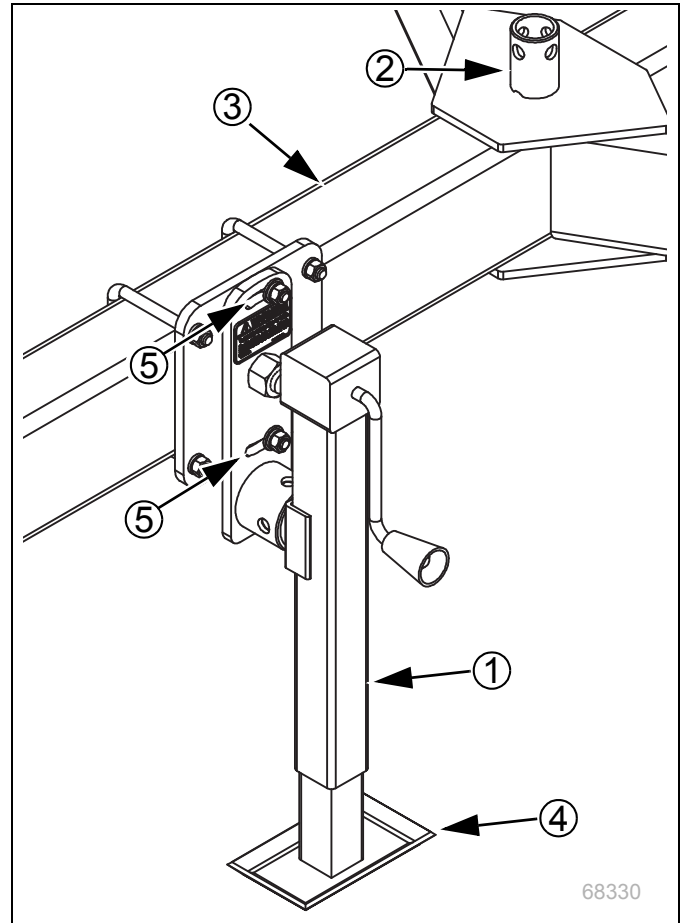




Figure 5
Secure Tongue

7 Routing Hydraulic Hoses and Lighting Harness

1. Fasten the quick-disconnect fittings together for routing through the tongue.

 NOTE: Do not install the color-coded hose grips at this time.

2. Fasten the tractor connector of the lighting harness to the hose bundle near the quick-disconnect fittings.
3. Route the hose and lighting harness bundle (1) through the opening (2) in the rear of the tongue tube. Route the hose and lighting harness bundle out the front of the tongue tube near the hitch.
4. Unfasten the hoses and the lighting harness.
5. Attach color-coded grips to the correct hydraulic hoses.

 NOTE: Retract grip and hose go to the rod end of the cylinder. Extend grip and hose go to the base end of the cylinder.

6. Fasten the lighting connector and hydraulic quick disconnect fittings to the connector plate (3).

8 Installing the Hitch

New hardware and a new safety chain are loosely installed in the end of the folding tongue for shipment. Remove the hardware and safety chain before starting the installation.

If using the drill with the same tractor, install the hitch components in the same location on the folding tongue.

If using a different tractor, see “**Adjust Hitch Height**” on page 9 to determine the correct mounting position.

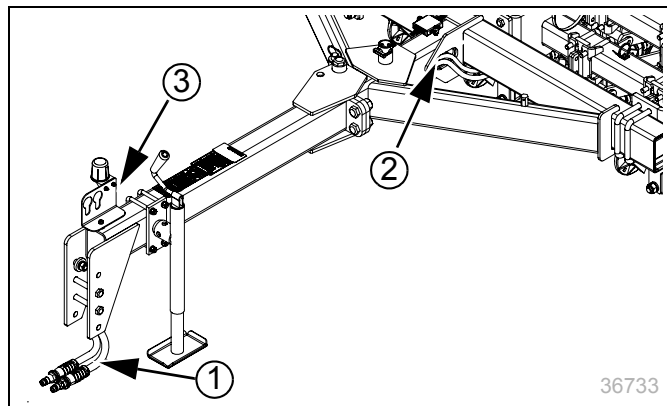


Figure 6
Route Hoses and Harness

8a. Install Pintle Hitch and Safety Chain

Callout	Part No.	Part Description	Qty.
1	802-070C	HHCS 3/4-10X6 GR5	2
2	804-023C	WASHER LOCK SPRING 3/4 PLT	3
3	803-027C	NUT HEX 3/4-10 PLT	3
4	802-212C	HHCS 3/4-10X2 1/2 GR5	1
5	890-182C	SAFETY CHAIN 10000 LB	1
6	177-587D	SAFETY CHAIN WASHER	1

Use the new kit parts listed above to fasten the pintle hitch to the folding tongue.

1. Install the pintle hitch using two HHCS (1), lock washers (2), and nuts (3).
2. Install the mounting bolt (4) for the safety chain in the highest available mounting hole available. Insert the mounting bolt from the outside of the folding tongue.
3. From the inside of the folding tongue, install the safety chain (5), safety chain washer (6), lock washer (2), and nut (3).

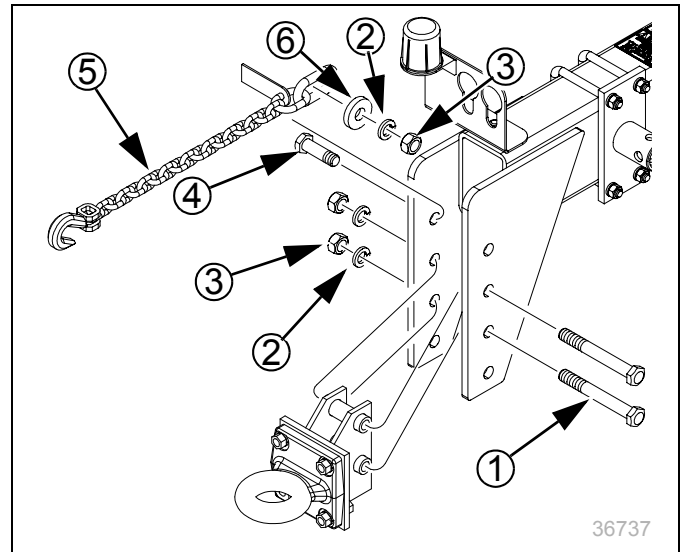


Figure 7
Pintle Hitch and Chain Detail

8b. Install Clevis Hitch and Safety Chain

Callout	Part No.	Part Description	Qty.
1	802-070C	HHCS 3/4-10X6 GR5	2
2	804-023C	WASHER LOCK SPRING 3/4 PLT	3
3	803-027C	NUT HEX 3/4-10 PLT	3
4	802-212C	HHCS 3/4-10X2 1/2 GR5	1
5	890-182C	SAFETY CHAIN 10000 LB	1
6	177-587D	SAFETY CHAIN WASHER	1

Use the new kit parts listed above to fasten the pintle hitch to the folding tongue.

1. Install the pintle hitch using two HHCS (1), lock washers (2), and nuts (3).
2. Install the mounting bolt (4) for the safety chain in the highest available mounting hole available. Insert the mounting bolt from the outside of the folding tongue.
3. From the inside of the folding tongue, install the safety chain (5), safety chain washer (6), lock washer (2), and nut (3).

NOTE: On the clevis hitch, existing hardware is used to fasten all of the parts of the clevis hitch together. See **“Assemble Clevis Hitch, If Equipped”** on page 8

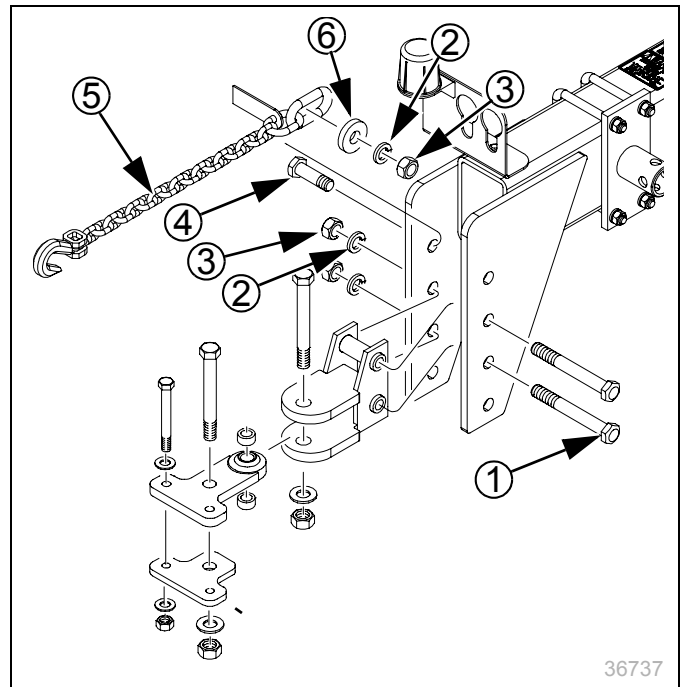


Figure 8
Clevis Hitch and Chain Detail

Folding Tongue

8c. Assemble Clevis Hitch, If Equipped

1. Insert upper hitch plate (1) into clevis hitch (2) with a spacer tube (3) on each side of ball swivel.
2. Bolt in place with 1 x 5-1/2 inch bolt (4), flat washer (5) and Nylock nut (6). Make sure the bolt is installed from the top.

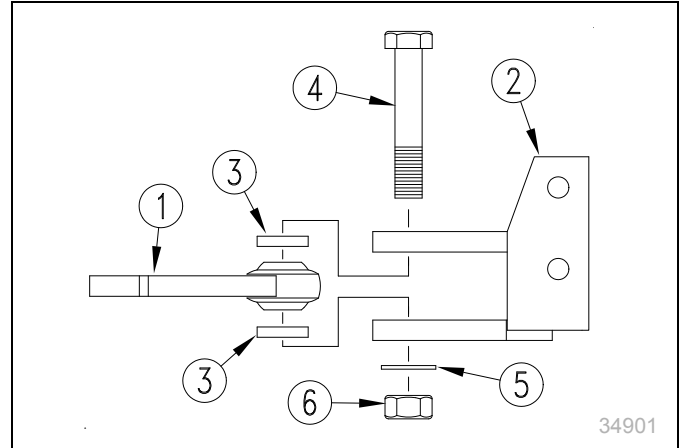


Figure 9
Clevis Hitch Assembly

Adjust Hitch Height

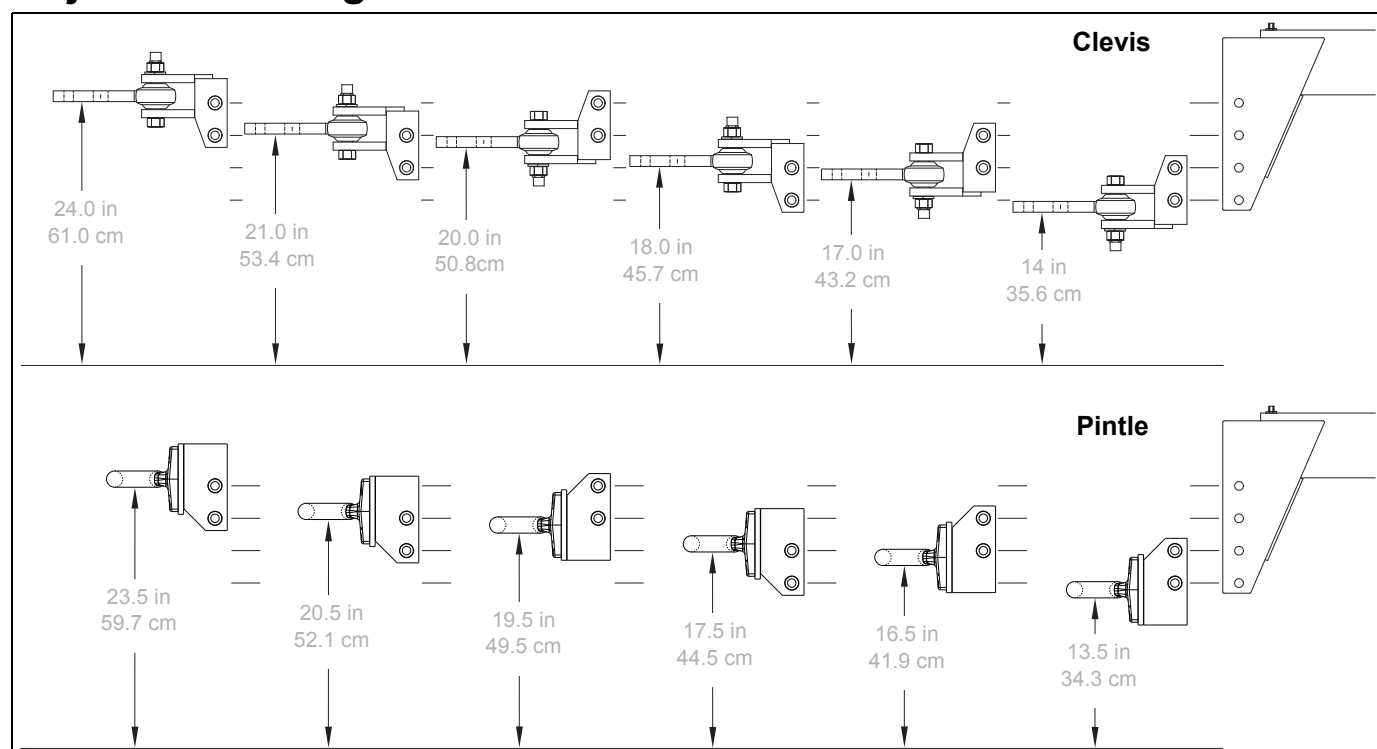


Figure 10
Hitch Heights (Tongue Level in Field Position)

28115




The drill operates more effectively if the tongue is level in field position.




The drill needs to be lowered (in field position) for the following measurements and any adjustments.

1. If the intended tractor is available, and has an adjustable or invertible drawbar, set the drawbar to the operator's preferred height. If the tractor is not available, obtain a measurement of the height:
 - clevis hitch: to the bottom surface of the drawbar
 - pintle hitch: to the top surface of the lower claw.
2. Use the parking jack to adjust the tongue until it is level from front to back. If the work surface itself is level, use a carpenter's level on top of the tongue tube. When level, the top of the tube is approximately $26 \frac{3}{4}$ in. (68cm) above ground at the hitch.
3. Measure from ground to:
 - clevis hitch: to the top surface of lower lug
 - pintle hitch: to the bottom of ring.
4. If adjustment is necessary, adjust the hitch components in the tongue.

Appendix

9 Torque Values Chart

Bolt Size	Bolt Head Identification					
						
	Grade 2		Grade 5		Grade 8	
in-tpi ^a	N-m ^b	ft-lb ^d	N-m	ft-lb	N-m	ft-lb
$\frac{1}{4}$ -20	7.4	5.6	11	8	16	12
$\frac{1}{4}$ -28	8.5	6	13	10	18	14
$\frac{5}{16}$ -18	15	11	24	17	33	25
$\frac{5}{16}$ -24	17	13	26	19	37	27
$\frac{3}{8}$ -16	27	20	42	31	59	44
$\frac{3}{8}$ -24	31	22	47	35	67	49
$\frac{7}{16}$ -14	43	32	67	49	95	70
$\frac{7}{16}$ -20	49	36	75	55	105	78
$\frac{1}{2}$ -13	66	49	105	76	145	105
$\frac{1}{2}$ -20	75	55	115	85	165	120
$\frac{9}{16}$ -12	95	70	150	110	210	155
$\frac{9}{16}$ -18	105	79	165	120	235	170
$\frac{5}{8}$ -11	130	97	205	150	285	210
$\frac{5}{8}$ -18	150	110	230	170	325	240
$\frac{3}{4}$ -10	235	170	360	265	510	375
$\frac{3}{4}$ -16	260	190	405	295	570	420
$\frac{7}{8}$ -9	225	165	585	430	820	605
$\frac{7}{8}$ -14	250	185	640	475	905	670
1-8	340	250	875	645	1230	910
1-12	370	275	955	705	1350	995
1 $\frac{1}{8}$ -7	480	355	1080	795	1750	1290
1 $\frac{1}{8}$ -12	540	395	1210	890	1960	1440
1 $\frac{1}{4}$ -7	680	500	1520	1120	2460	1820
1 $\frac{1}{4}$ -12	750	555	1680	1240	2730	2010
1 $\frac{3}{8}$ -6	890	655	1990	1470	3230	2380
1 $\frac{3}{8}$ -12	1010	745	2270	1670	3680	2710
1 $\frac{1}{2}$ -6	1180	870	2640	1950	4290	3160
1 $\frac{1}{2}$ -12	1330	980	2970	2190	4820	3560

Bolt Size	Bolt Head Identification					
						
	Class 5.8		Class 8.8		Class 10.9	
mm x pitch ^c	N-m	ft-lb	N-m	ft-lb	N-m	ft-lb
M 5 X 0.8	4	3	6	5	9	7
M 6 X 1	7	5	11	8	15	11
M 8 X 1.25	17	12	26	19	36	27
M 8 X 1	18	13	28	21	39	29
M10 X 1.5	33	24	52	39	72	53
M10 X 0.75	39	29	61	45	85	62
M12 X 1.75	58	42	91	67	125	93
M12 X 1.5	60	44	95	70	130	97
M12 X 1	90	66	105	77	145	105
M14 X 2	92	68	145	105	200	150
M14 X 1.5	99	73	155	115	215	160
M16 X 2	145	105	225	165	315	230
M16 X 1.5	155	115	240	180	335	245
M18 X 2.5	195	145	310	230	405	300
M18 X 1.5	220	165	350	260	485	355
M20 X 2.5	280	205	440	325	610	450
M20 X 1.5	310	230	650	480	900	665
M24 X 3	480	355	760	560	1050	780
M24 X 2	525	390	830	610	1150	845
M30 X 3.5	960	705	1510	1120	2100	1550
M30 X 2	1060	785	1680	1240	2320	1710
M36 X 3.5	1730	1270	2650	1950	3660	2700
M36 X 2	1880	1380	2960	2190	4100	3220

a. in-tpi = nominal thread diameter in inches-threads per inch

b. N·m = newton-meters

c. mm x pitch = nominal thread diameter in mm x thread pitch

d. ft-lb = foot pounds

Torque tolerance + 0%, -15% of torquing values. Unless otherwise specified use torque values listed above.

25199

10 Hydraulic Connectors and Torque

Refer to Figure 127 (a hypothetical fitting)

Leave any protective caps in place until immediately prior to making a connection.

NPT - National Pipe Thread

- (1) Note tapered threads, no cone/flare, and no O-ring. Apply liquid pipe sealant for hydraulic applications (do not use tape sealant, which can foul filters).

JIC - Joint Industry Conference (SAE J514)

- (2) Note straight threads (4) and the 37° cone (5) on "M" fittings (or 37° flare on "F" fittings). Use no sealants (tape or liquid) on JIC fittings.

ORB - O-Ring Boss (SAE J514)

Note straight threads (5) and elastomer O-Ring (7). Prior to installation, to prevent abrasion during tightening, lubricate O-Ring with clean hydraulic fluid. Use no sealants (tape or liquid) on JIC fittings.

- (3) ORB fittings that need orientation, such as the ell depicted, also have a washer (8) and jam nut (9) ("adjustable thread port stud"). Back jam nut away from washer. Thread fitting into receptacle until O-Ring contacts seat. Unscrew fitting to desired orientation. Tighten jam nut to torque specification.

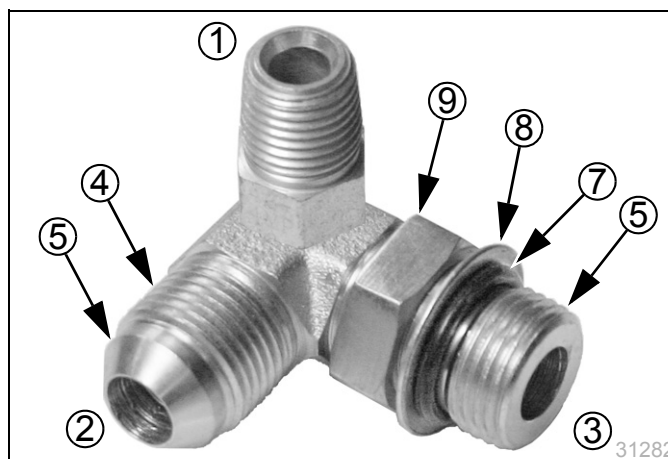


Figure 11
Hydraulic Connector

Fitting Torque Values		
Fitting	Lb•ft	N•m
1/4 NPT	1.5-3.0 turns past finger tight	
9/16 JIC	18-20	24-27
9/16 ORB w/jam nut	12-16	16-22
9/16 ORB straight	18-24	24-32
3/4 JIC	27-39	37-53
3/4 ORB w/jam nut	20-30	27-41
3/4 ORB straight	27-43	37-58



Great Plains, Mfg.
1525 E. North St.
P.O. Box 5060
Salina, KS 67402