

INSTALLATION INSTRUCTIONS

AgGPS® TrueTracker™ Implement Steering System

Orthmann Tracker IV

Version 1.00
Revision A
April 2009
Part Number 54065-20-E04



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- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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Meerheide 45
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Always follow the instructions that accompany a Warning or Caution. The information they provide is intended to minimize the risk of personal injury and/or damage to property. In particular, observe safety instructions that are presented in the following format:



WARNING – This alert warns of a potential hazard, which, if not avoided, can cause severe injury.



CAUTION – This alert warns of a hazard or unsafe practice which, if not avoided, can cause injury or damage.

Note – An absence of specific alerts does not mean that there are no safety risks involved.

Warnings



WARNING – Before you begin work, ensure that the vehicle is parked on a clean, dry, and level surface. An uneven surface could cause the implement to shift or fall, resulting in serious injury or death, as well as implement damage.



WARNING – When you are working with a heavy, raised implement, there is a risk of the implement dropping. This can cause serious injury or even death, or damage to the implement. To ensure safety when installing the Tracker system on the implement, before you begin work ensure that all people are clear of the vehicle. Lower the implement to the ground, place the tractor in park, turn the engine off, and remove the key.



WARNING – If you must raise the primary implement, be aware that the implement can fall, causing serious injury. Use bar stands to support it. Securely support all implement components that must be raised.



WARNING – The Tracker frame is heavy. If it is unsupported, it could fall causing serious injury. To prevent the frame from falling, support it with a lifting mechanism with height adjustment, for example a crane, cherry picker, or forklift.

Cautions



CAUTION – The position of the mounting arms is often determined by vacant area on the planter toolbar. It is imperative that wherever the mounting arms are located, they are equidistant from the center of the primary implement toolbar. Failure to have the mounting arms at equal distances will prevent the TrueTracker system from operating correctly.



CAUTION – Grease, oil, or debris can build up on the implement over time. This can hinder the installation. Ensure that the implement is clean prior to beginning the installation of the Tracker frame.



CAUTION – If operational braces are included with the Tracker, take mounting the braces into consideration before installing the Tracker frame. Before you install the Tracker frame, ensure that there is adequate mounting space available for the additional braces.

Contents

	Safety Information	3
	Warnings	3
	Cautions.	3
1	Introduction	7
	Technical assistance	8
	Your comments	8
2	Tracker IV Frame Assembly	9
	Orthman Tracker IV components	10
	Sensor spindle assembly.	11
	Standard spindle assembly	13
	Tie-rod assemblies	14
	Tracker arm clamp for 7 x 7 toolbar	15
	Tracker arm clamp for 7 x 7 toolbar	16
	Installing the mounting arm clamps	17
	Mounting arm assemblies	21
	Installing the mounting arm	22
	Standard turnbuckle	23
	Cushion turnbuckle.	24
	Installing the turnbuckle	25
	Blade, hub, and yoke assembly	26
	Installing the blade and hub	27
	Installing the yoke to the frame	28
	Installing the blade and hub to yoke	30
	Installing the frame to the arm	31
	Side brace components	32
	Installing the side brace	34
3	Trimble Component Installation	35
	Cable components for the AgGPS 252 GPS receiver	36
	Cable components for the AgGPS 432 GPS receiver and AgGPS 442 GNSS receiver	37
	Cable components for the FmX integrated display with the Autopilot automated steering system and TrueTracker while using RTK corrections.	38
	Installing the AgGPS FieldManager cab harness	40
	Installing the antenna mast, controller, and receiver.	44
	Installing the implement cabling for the AgGPS 252 receiver.	48
	Installing the implement cabling for the AgGPS 432 GPS receiver and the AgGPS 442 GNSS receiver	49
	Connecting the valve and potentiometer cabling.	57
4	Manifold Installation	59
	Manifold components	60

Contents

Manifold layout	61
Installing the manifold.	62
5 Field Settings	65
Preparing the implement for adjustment	66
Adjusting the blade depth.	68
A Bolt Torque Settings	71
Recommended dry bolt torque settings	72
SAE grade 5	72
SAE grade 8	72
Recommended hydraulic fitting torque	72
Straight thread ORB torque	72

Introduction

In this chapter:

- [Technical assistance](#)
- [Your comments](#)

This manual describes how to install the *AgGPS*® TrueTracker™ implement steering system from Trimble®.

Even if you have used other Global Positioning System (GPS) products before, Trimble recommends that you spend some time reading this manual to learn about the special features of this product. If you are not familiar with GPS, visit the Trimble website (www.trimble.com) for an interactive look at Trimble and GPS.

Technical assistance

If you have a problem and cannot find the information you need in the product documentation, contact Trimble technical support:

1. Go to the Trimble website (www.trimble.com).
2. Click the **Support & Training** link at the top of the screen, select *Support* and then select *Support A-Z list of products*.
3. Scroll to the bottom of the list.
4. Click the *submit an inquiry* link. A form appears.
5. Complete the form and then click **Send**.

Your comments

Your feedback about the supporting documentation helps us to improve it with each revision. Email your comments to ReaderFeedback@trimble.com.

Tracker IV Frame Assembly

In this chapter:

- Orthman Tracker IV components
- Sensor spindle assembly
- Standard spindle assembly
- Tie-rod assemblies
- Tracker arm clamp for 7 x 7 toolbar
- Tracker arm clamp for 7 x 7 toolbar
- Installing the mounting arm clamps
- Mounting arm assemblies
- Installing the mounting arm
- Standard turnbuckle
- Cushion turnbuckle
- Installing the turnbuckle
- Blade, hub, and yoke assembly
- Installing the blade and hub
- Installing the yoke to the frame
- Installing the blade and hub to yoke
- Installing the frame to the arm
- Side brace components
- Installing the side brace

This chapter describes how to assemble the Tracker IV frame.



WARNING – Before you begin work, ensure that the vehicle is parked on a clean, dry, and level surface. An uneven surface could cause the implement to shift or fall, resulting in serious injury or death, as well as implement damage.



WARNING – When you are working with a heavy, raised implement, there is a risk of the implement dropping, causing serious injury or damage to the implement. Before you begin work ensure that all people are clear of the vehicle. Lower the implement to the ground, place the tractor in park, turn the engine off, and remove the key.

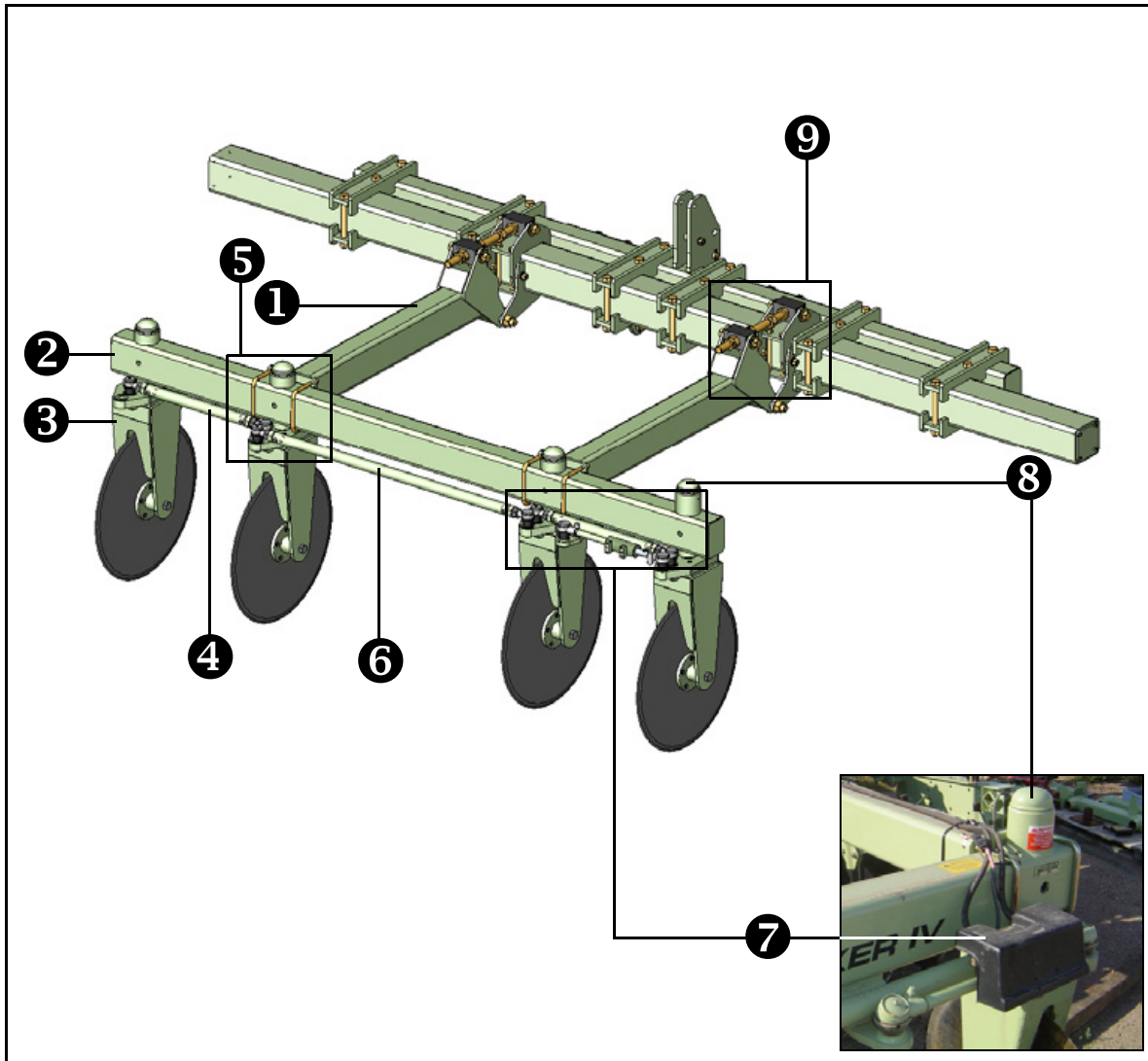


CAUTION – Grease, oil, or debris can build up on the implement and hinder the installation. Ensure that the implement is clean prior to beginning the installation.



CAUTION – If operational braces are included with your Tracker, take mounting the braces into consideration before installing the frame. Ensure that there is adequate mounting space available for the additional braces.

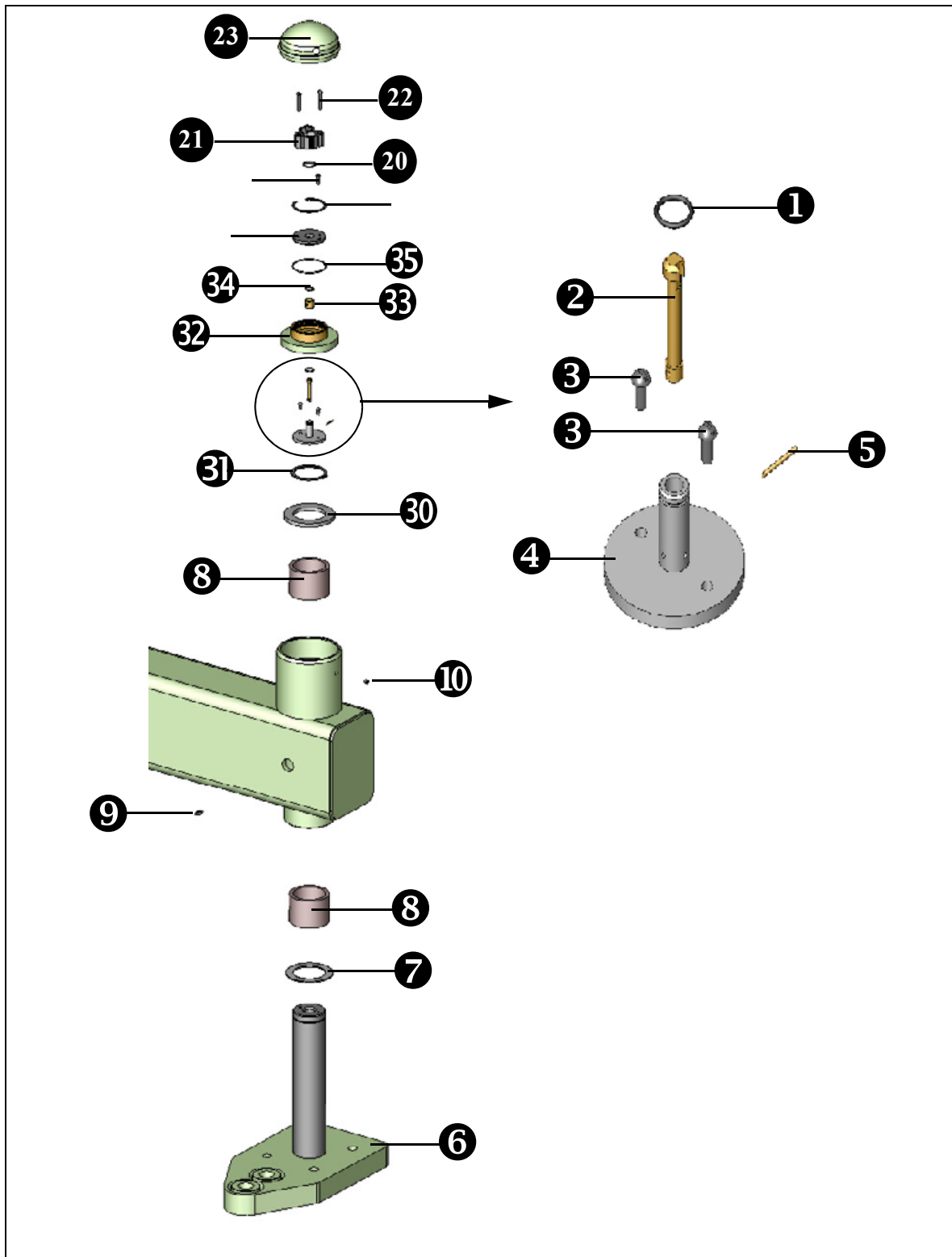
Orthman Tracker IV components



Item	Description
1	Arm mount assembly (2)
2	Frame
3	yoke, blade, and hub assembly (4 pictured)
4	Short tie rod (2 pictured)
5	Spindle (not visible)

Item	Description
6	Long tie rod (1 pictured)
7	Manifold (covered with cowling)
8	Feedback sensor
9	Turnbuckle assembly (steering blade depth adjustment)

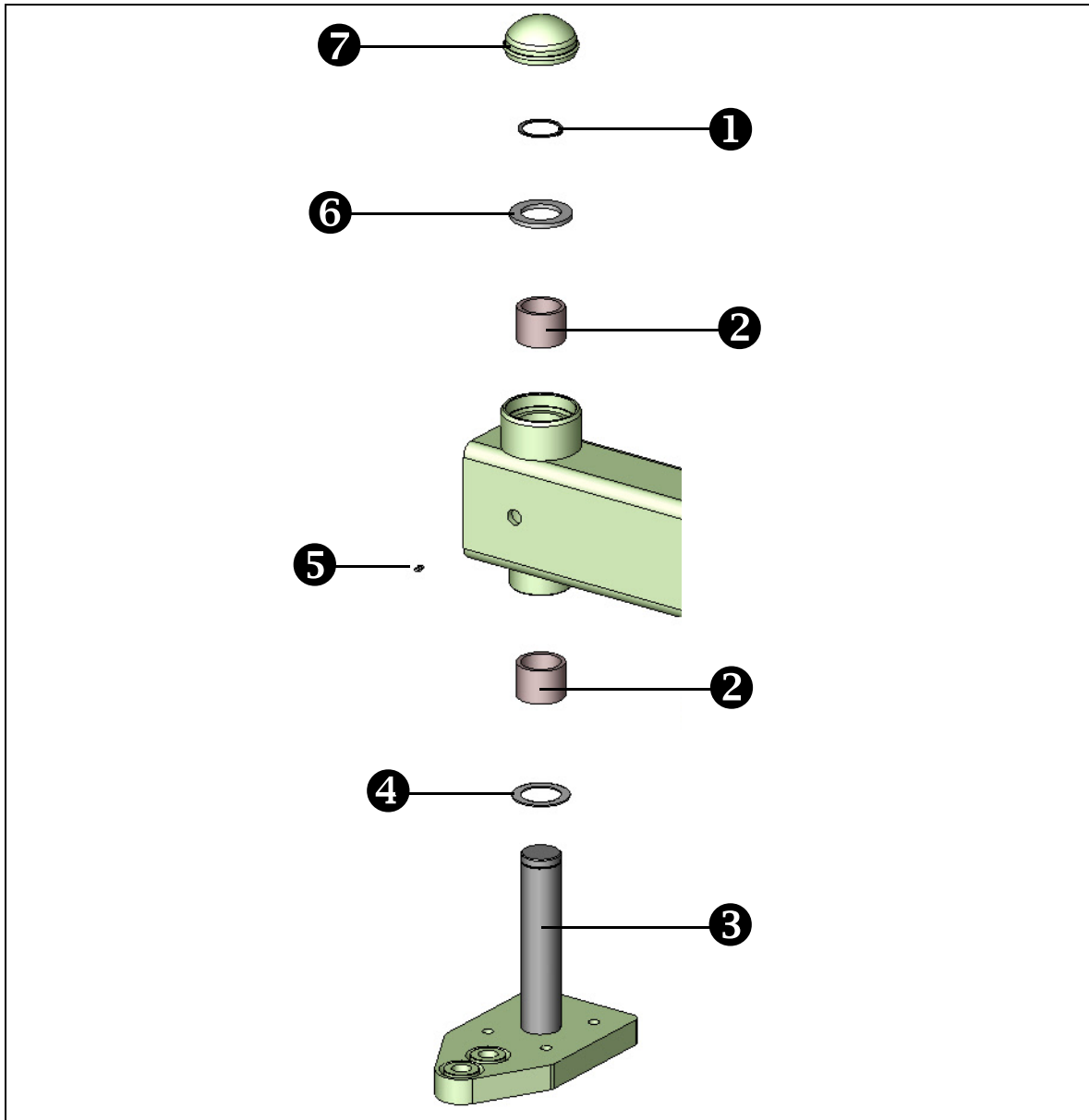
Sensor spindle assembly



Item	Description
1	150-082 O-ring #014 SAE 120R1 Class 1
2	152-413 Sensor driveshaft
3	106-045 Round head machine screw 8 - 32 x 3/8 (2x)
4	333-641 Sensor plate
5	104-069 Roll pin 1-16 x 7/8 spiral
6	373-633 Spindle
7	134-096 Bushing 2 1/4 x 3 1/4 x .080
8	120-134 Bushing 2 1/4 ID x 2 3/4 OD x 2" (x2)
9	110-001 Grease Zerk 1/4 - 28
10	106-177 Set screw 1/4 - 28 x 1/4
30	333-638 Washer - spindle top
31	104-197 Snap ring ext. 2 1/4 shaft

Item	Description
32	333-637 Sensor mount
33	134-051 Bearing 1/2 ID x 1/2 long
34	104-111 Snap ring ext. 1/2
35	150-081 O-ring #035 SAE 120R1 Class 1
	350-066 Sensor mounting plate
	104-113 Ring spiral 2 1/4 bore
	106-141 Round head machine screw 6 - 32 x 3/8"
20	150-079 O-ring #115 SAE 120R1 Class 1
21	154-649 Sensor 45° rotary position
22	106-059 Round head machine screw 8 - 3 x 1 1/4 slotted drive (2x)
23	373-656 Tracker IV sensor cap assembly (includes cable)

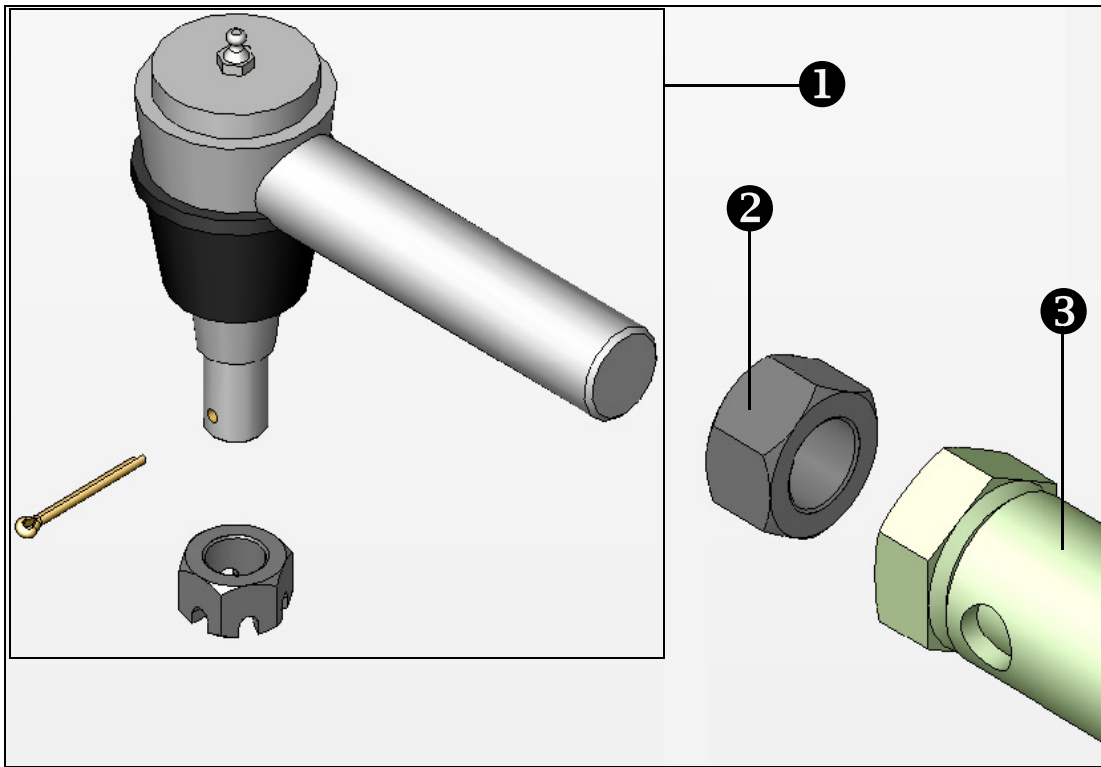
Standard spindle assembly



Item	Description
1	104-197 Snap ring ext. 2 1/4 shaft
2	120-134 Bushing 2 /14 ID x 2 3/4 OD x 2"
3	373-651 Standard spindle
4	134-096 Bushing 2 1/4 x 3 1/4 x .080

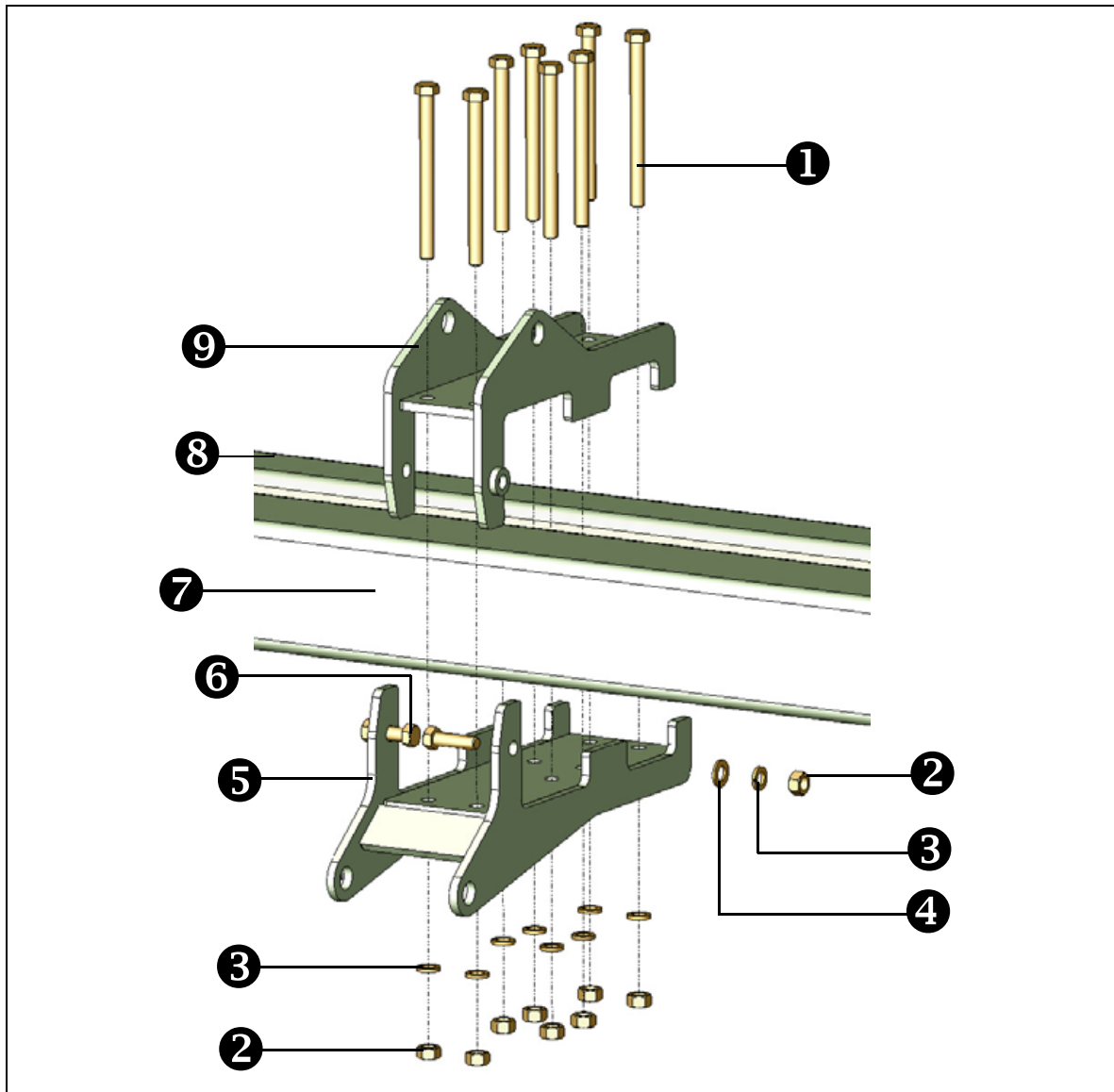
Item	Description
5	110-001 Grease Zerk 1/4 - 28
6	333-638 Washer spindle top
7	104-655 Standard spindle cap

Tie-rod assemblies



Item	Description
①	152-624 Ball joint male - LH 152-441 Ball joint male - RH
②	102-231 Hex nut 1 1/8 - 12 LH threaded 102-086 Hex nut 1 1/8 - 12 RH threaded
③	333-631 Long tie rod tube w/a - 54" total length - 30" row spacing 333-624 Short tie rod tube w/a - 24" total length - 30" row spacing 333-668 Long tie rod tube w/a - 66" total length - 36" row spacing 333-672 Short tie rod tube w/a - 30" total length - 36" row spacing 333-650 Long tie rod tube w/a - 72" total length - 38-40" row spacing 333-647 Short tie rod tube w/a - 33" total length - 38-40" row spacing

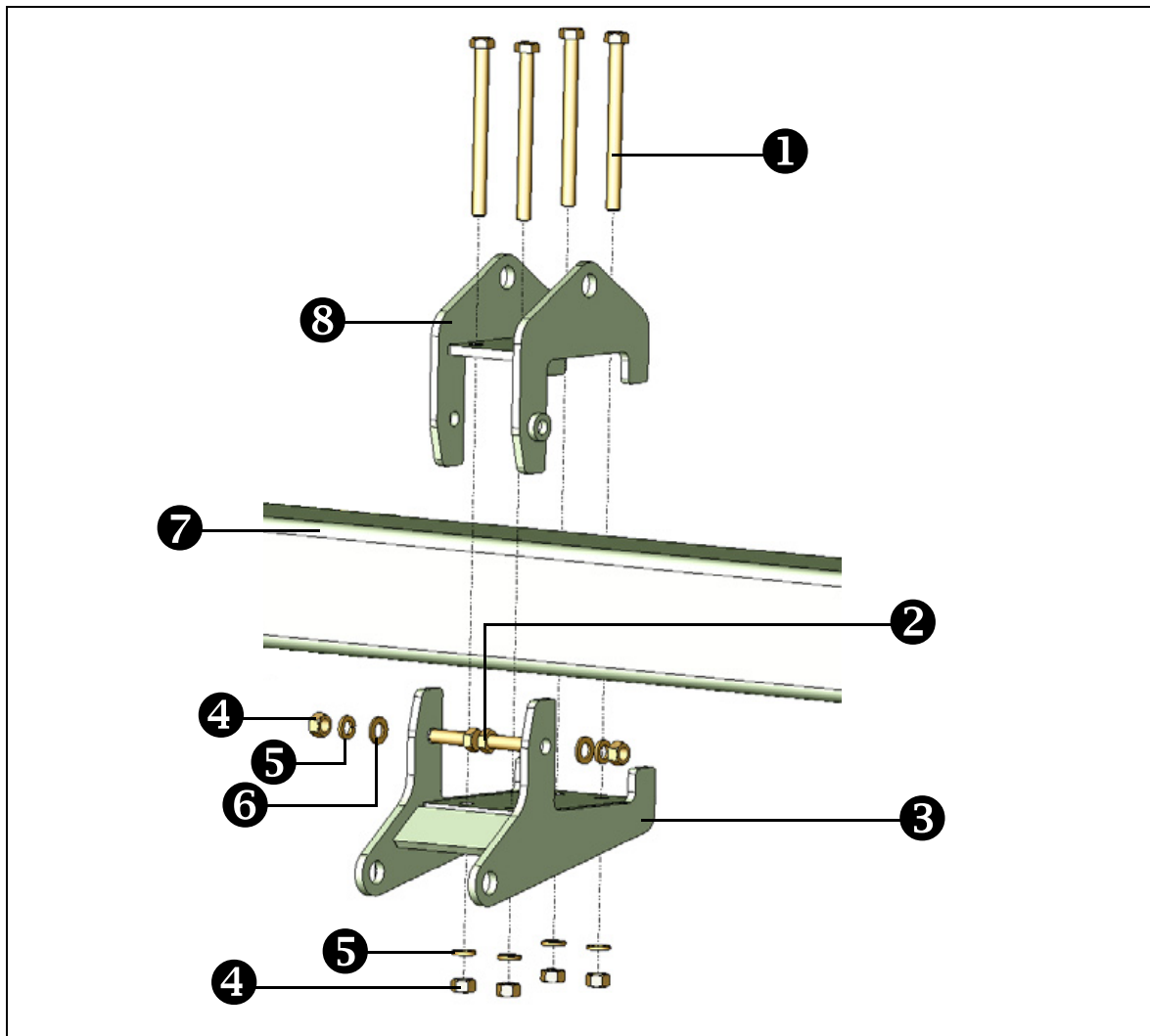
Tracker arm clamp for 7 x 7 toolbar



Item	Description
1	100-309 HHCS Bolt 3/4 - 10 x 9 GR, 8 (8x)
2	102-009 3/4 nut (10x)
3	108-022 3/4 Lock washer (10 x)
4	108-003 3/4 flat washer (2x)
5	373-760 Bottom clamp (weld assembly)

Item	Description
6	100-075 HHCS bolt 10 x 2 1/2 GR 8 (2x)
7	Primary implement 7 x 7 toolbar
8	5 x 7 hitch
9	373-757 Top clamp (weld assembly)

Tracker arm clamp for 7 x 7 toolbar



Item	Description
1	100-309 HHCS bolt 3/4 - 10 x 9 GR 8 (4x)
2	100-075 HHCS bolt 3/4 - 10 x 2 1/2 GR8 (2x)
3	373-753 bottom clamp (weld assembly)
4	102-009 3/4 nut (6x)

Item	Description
5	108-022 3/4 lock washer (6x)
6	108-003 3/4 flat washer (2x)
7	Primary implement 7 x 7 toolbar
8	373-750 top clamp (weld assembly)

Installing the mounting arm clamps



WARNING – If you must raise the primary implement, be aware that the implement can fall, causing serious injury. Use bar stands to support it. Securely support all implement components that must be raised.



WARNING – The Tracker frame is heavy. If it is unsupported, it could fall causing serious injury. To prevent the frame from falling, support it with a lifting mechanism with height adjustment, for example a crane, cherry picker, or forklift.

Step 1

Determine the location of the mounting arms on the primary toolbar. This depends on the size and configuration of the Tracker IV.



LOCATION OF THE MOUNTING ARMS

Step 2

Ensure that the mounting arms are equidistant from the center of the primary implement toolbar.

Ensure that the U-bolts that mount the Tracker frame to the mount arms will not interfere with any of the Tracker spindle caps that protrude upward from the frame.

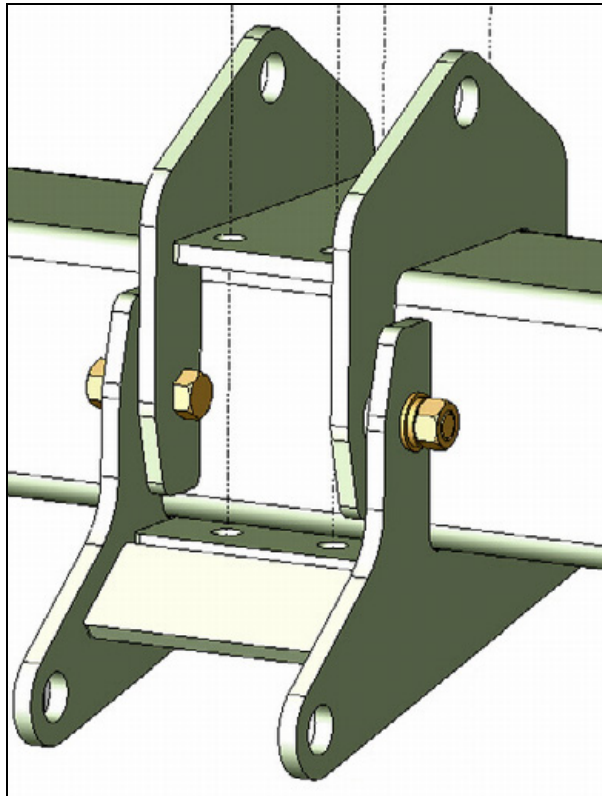
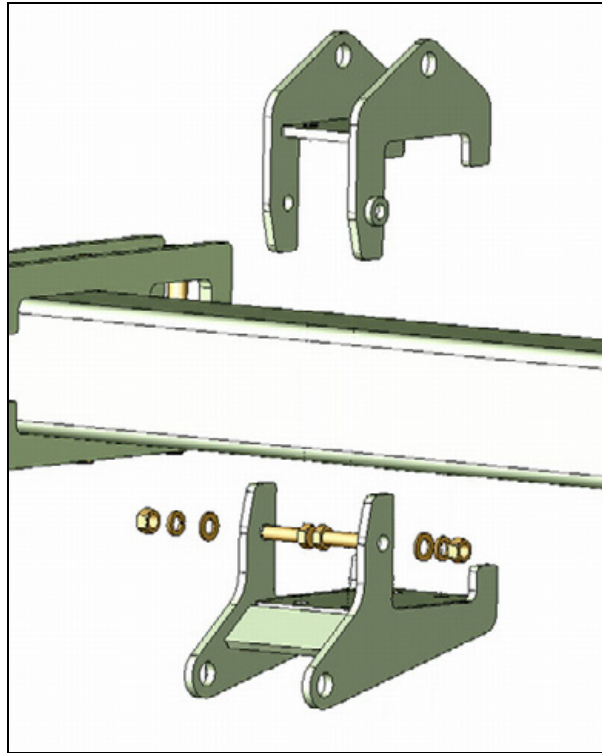


CAUTION – The position of the mounting arms is often determined by vacant area on the planter toolbar. It is imperative that wherever the mounting arms are located, they are equidistant from the center of the primary implement toolbar. Failure to have the mounting arms at equal distances will prevent the TrueTracker system from operating correctly.

Step 3

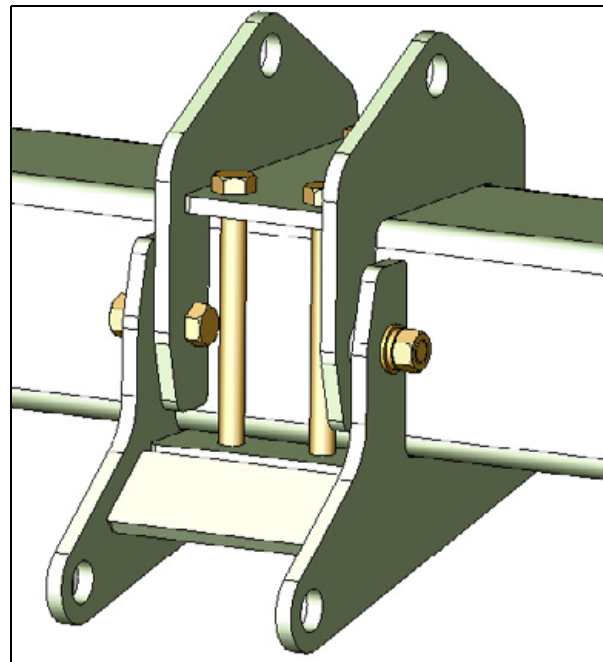
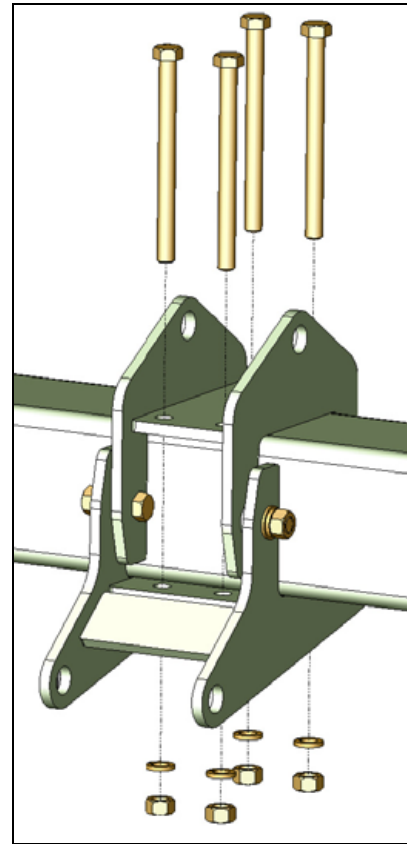
Place the top and bottom clamps onto the toolbar and lightly secure them with two 2½" bolts, flat washers, lock washers, and nuts. Use 1 1/8" wrenches and/or sockets.

Note – Do not fully tighten the bolts yet.



Step 4

Align the top and bottom clamp bolt holes and then secure them with four 9" bolts, lock washers, and nuts.



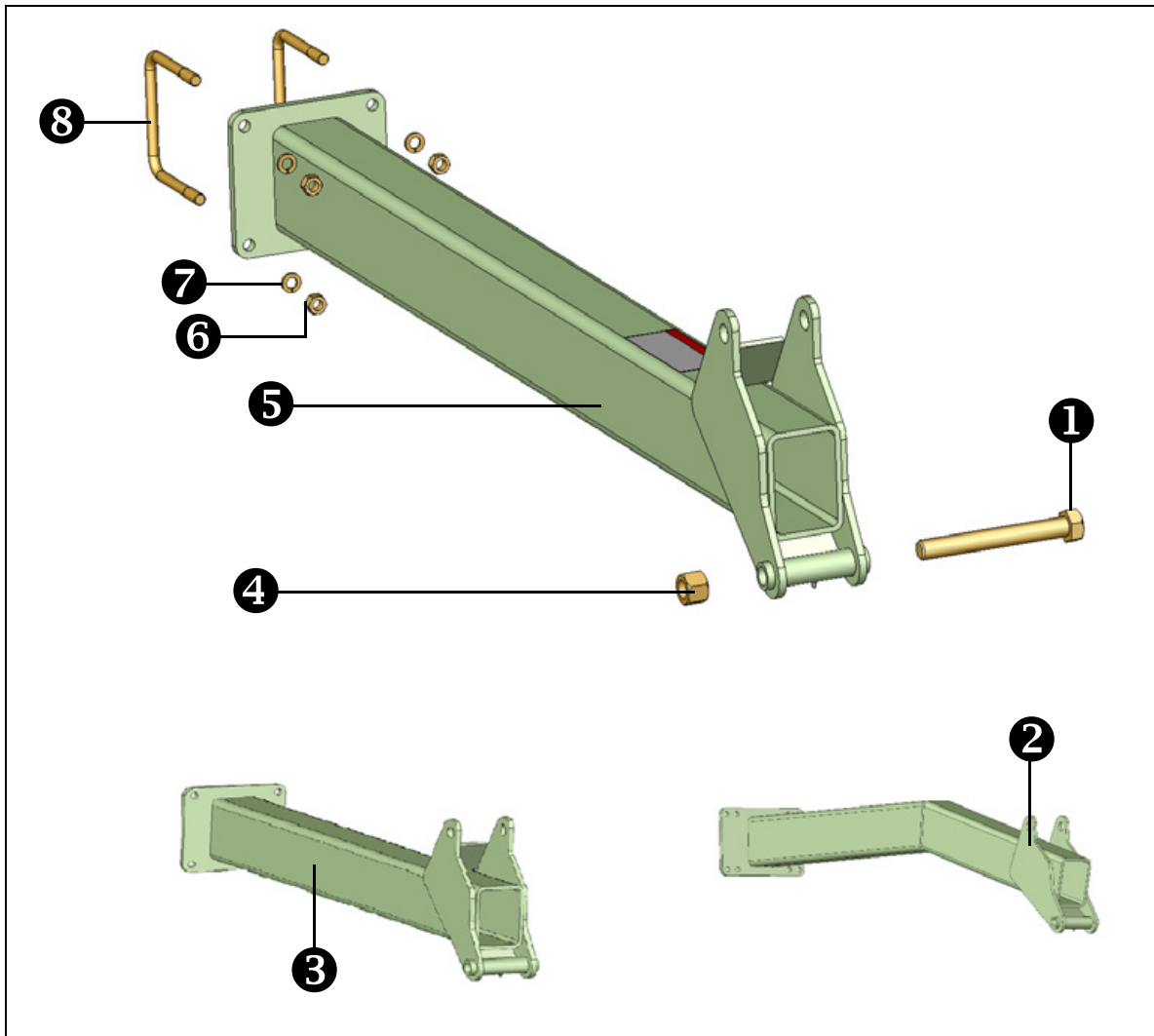
Step 5

Tighten all six bolts and nuts to the proper torque specifications. See [Appendix A, Bolt Torque Settings](#).

Step 6

Repeat this procedure to install the second mounting arm clamp.

Mounting arm assemblies



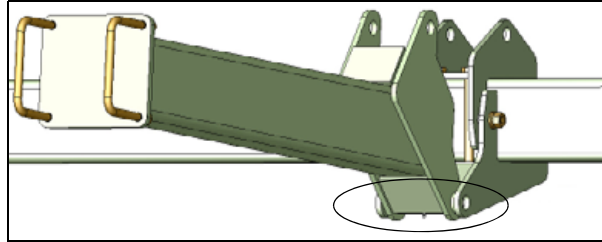
Item	Description
1	100-518 HHCS bolt 1 1/4 - 7 x 10 GR 5 YZ
2	373-772 78" arm for planter
3	373-766 58" arm for 8315 or lister unit
4	102-091 Nylock nut 1 1/4 - 7 GR 2

Item	Description
5	373-748 standard 77" arm for cultivator
6	102-009 3/4 nut (4x)
7	108-022 3/4 lock washer (4x)
8	315-028 U-bolt 3/4 (5 x 7 bar) (21 1/4) (2x)

Installing the mounting arm

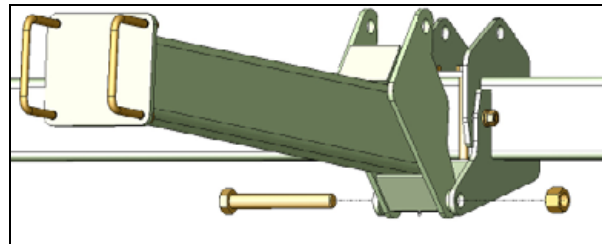
Step 1

Visually align the lower mounting holes of the arm with the lower clamp holes.



Step 2

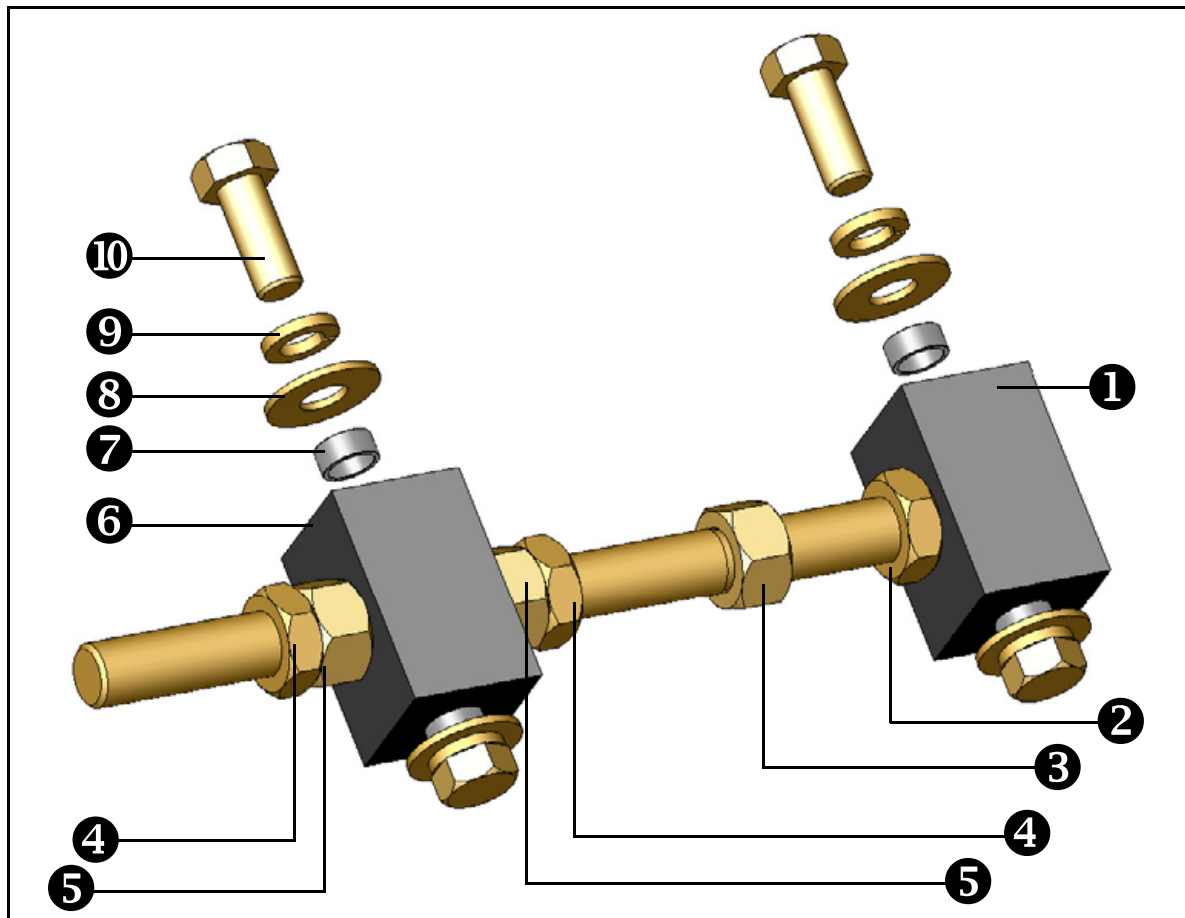
Insert the bolt and tighten the self-locking nut to the point where no slop is present but the arm can still pivot vertically.



Step 3

Repeat this process to install the second mount arm.

Standard turnbuckle

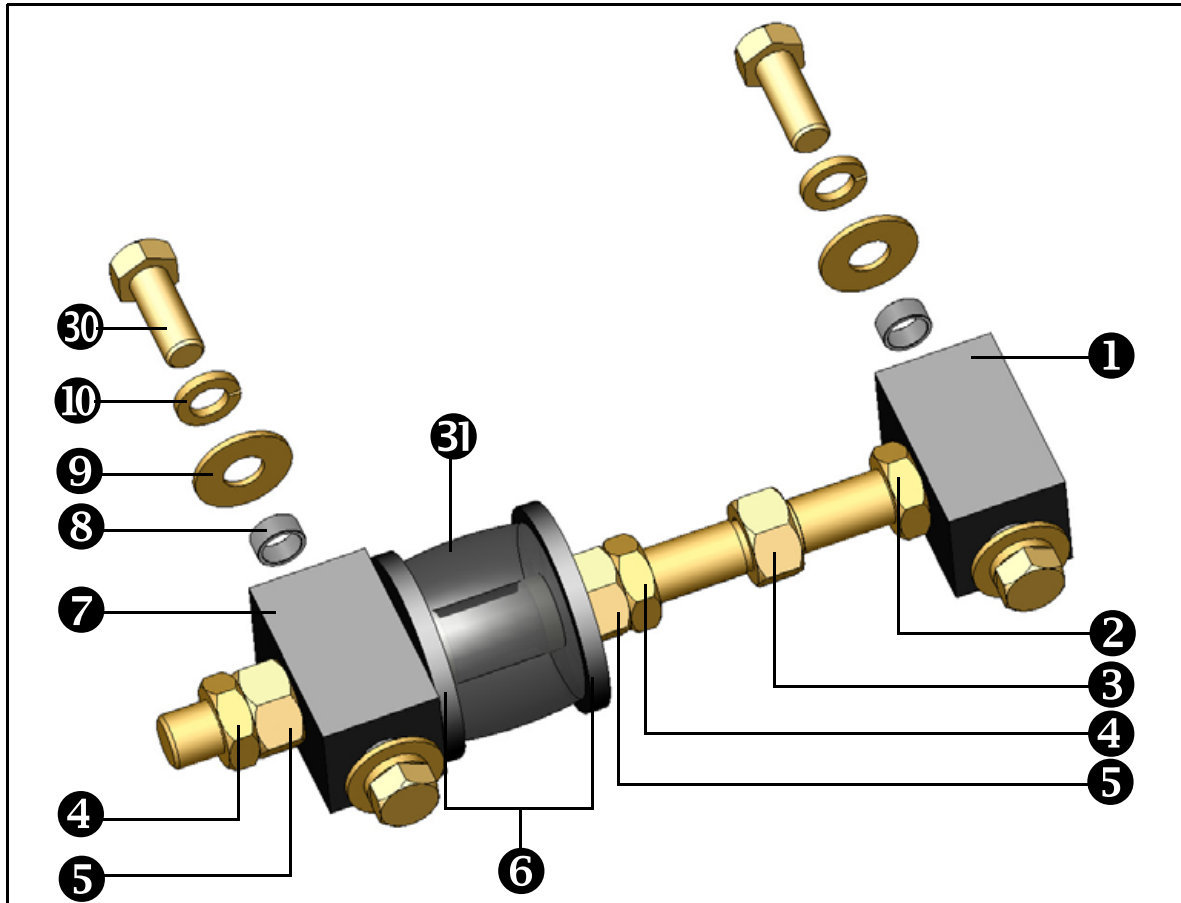


Item	Description
①	401-015 Trunion test fixture 3" Sq-LH threaded
②	102-064 1 3/8 LH thread jam nut GR 2
③	401-012 turnbuckle weld assembly
④	102-063 1 3/8 RH thread jam nut GR2 (2x)
⑤	102-040 1 3/8 - 6 plated hex nut GR 2 (2x)

Item	Description
⑥	401-014 Trunion test fixture 3" sq - RH threaded
⑦	302-658 bushing adj dual bar SP 9/16 (4x)
⑧	108-014 1" flat washer (4x)
⑨	108-025 1" lock washer (4x)
⑩	100-246 HHCS bolt 1 - 8 x 2 1/2 GR, 5 (4x)

Cushion turnbuckle

Note – The cushion turnbuckle is standard equipment on all Trackers utilized on 1800 and 1900 Orthman toolbars. The cushion turnbuckle is optional equipment on all other Trackers.



Item	Description
1	401-015 Trunion test fixture 3" sq LH threaded
2	102-064 1 3/8 LH thread jam nut Gr 2
3	401-012 Turnbuckle weld assembly
4	102-063 1 3/8 RH thread jam nut Gr 2 (2x)
5	102-040 1 3/8 - 6 plated hex nut GR 2 (2x)
6	401-013 plate text fixture slip (2x)

Item	Description
7	401-014 Trunion test fixture 3" sq -RH threaded
8	302-658 bushing adj dual bar SP 9/16 (4x)
9	108-014 1" flat washer (4x)
10	108-025 1" lock washer (4x)
30	100-246 HHCS bolt 1 - 8 x 2 1/2 GR, 5 (4x)
31	333-309 Urethane damper spring

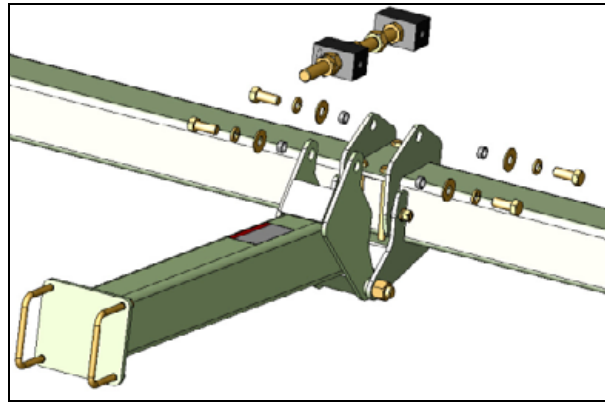
Installing the turnbuckle

Note – Before you install the turnbuckle, ensure that the mount arm is able to pivot vertically. Adjusting the turnbuckle length adjusts the steering blade depth.

Step 1

Place the turnbuckle so the upper mounting holes of the clamp and the upper holes on the mounting arm are aligned with the holes in the turnbuckle.

Note – You may need to adjust the height of the mounting arm.



Step 2

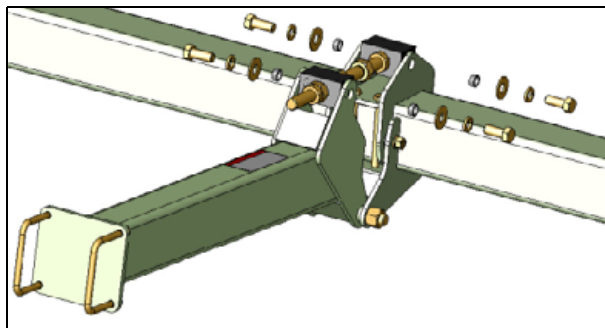
Apply Loctite to the four bolts.

Step 3

Insert the four bushings into the upper clamp and upper arm mounting holes.

Step 4

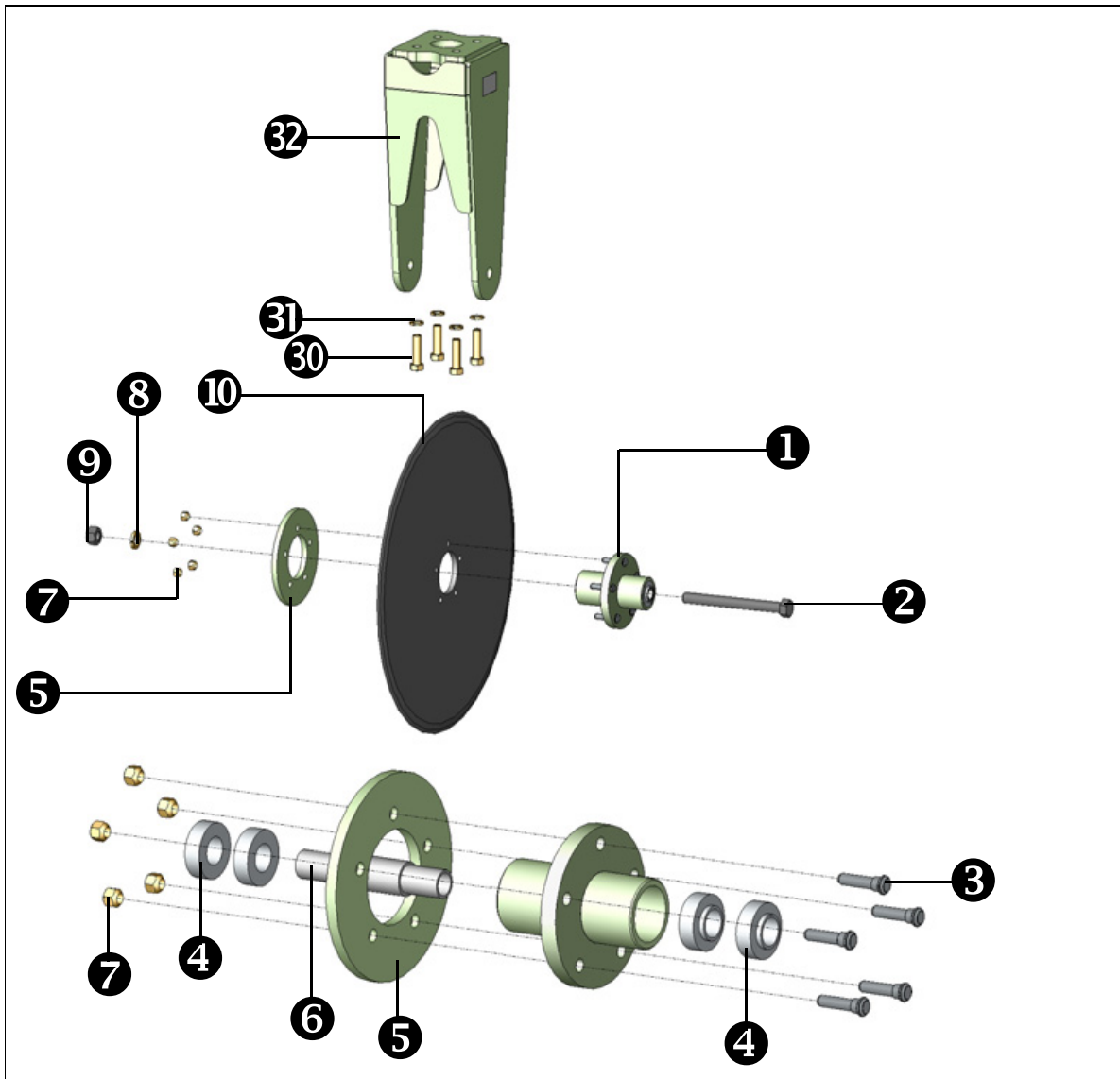
Install four flat washers, lock washers, and bolts as shown. Tighten to the proper torque specifications. See [Appendix A, Bolt Torque Settings](#).



Step 5 Step 5

Repeat this process for the second turnbuckle.

Blade, hub, and yoke assembly



Item	Description
1	331-901 Tracker blade double bearing hub assembly
2	100-199 HCCS bolt 1" - 8 x 10 GR 8
3	100-335 stud bolt 1/2 - 20 x 2 1/8 (x5)
4	120-036 Bearing 1.25 (x4)
5	Plate Tracker hub
6	331-905 Spacer double bearing hub
7	102-039 Nut 1/2 - 20 GR 5 45° (5x)

Item	Description
8	108-025 Lockwasher 1"
9	102-011 Hex nut 1"-8 GR 2
10	166-047 Tracker blade
30	100-159 HHCS Bolt 3/4-10 x 2 3/4 GR 5 (4x)
31	108-022 Lockwasher 3/4" (2x)
32	373-615 Yoke Tracker weld assembly

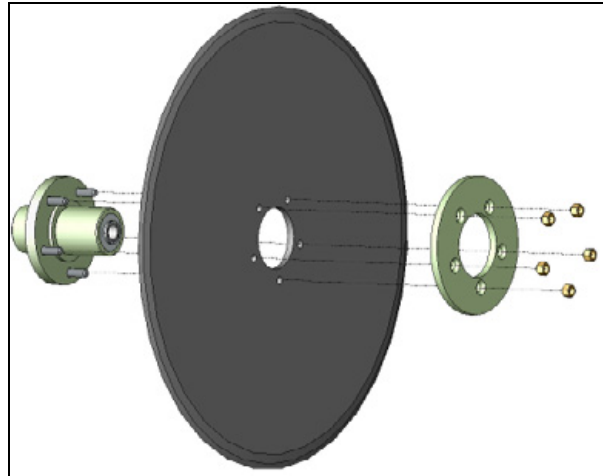
Installing the blade and hub

Step 1

Before you attempt to install the hub, spacer, and nuts, place the blade in a vise to secure it.

Step 2

Align the five holes on the blade and spacer with the five bolts on the hub.



Step 3

Thread the five bolts through the blade and spacer and then secure each bolt with a nut. Tighten the bolts evenly to the proper torque specification. See [Appendix A, Bolt Torque Settings](#).

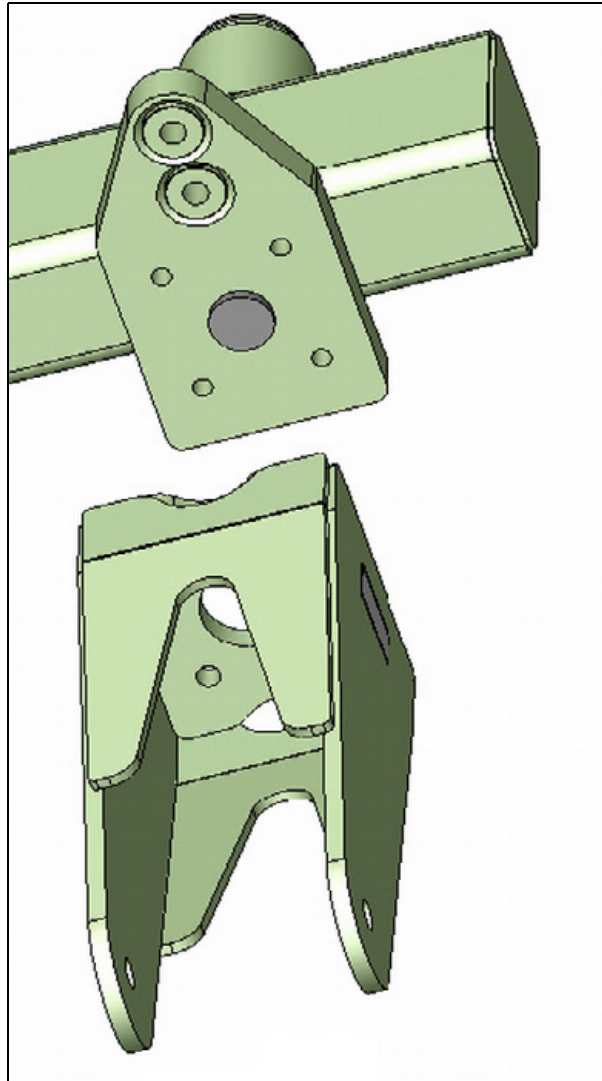
Step 4

Repeat this process for each of the remaining blade and hub assemblies.

Installing the yoke to the frame

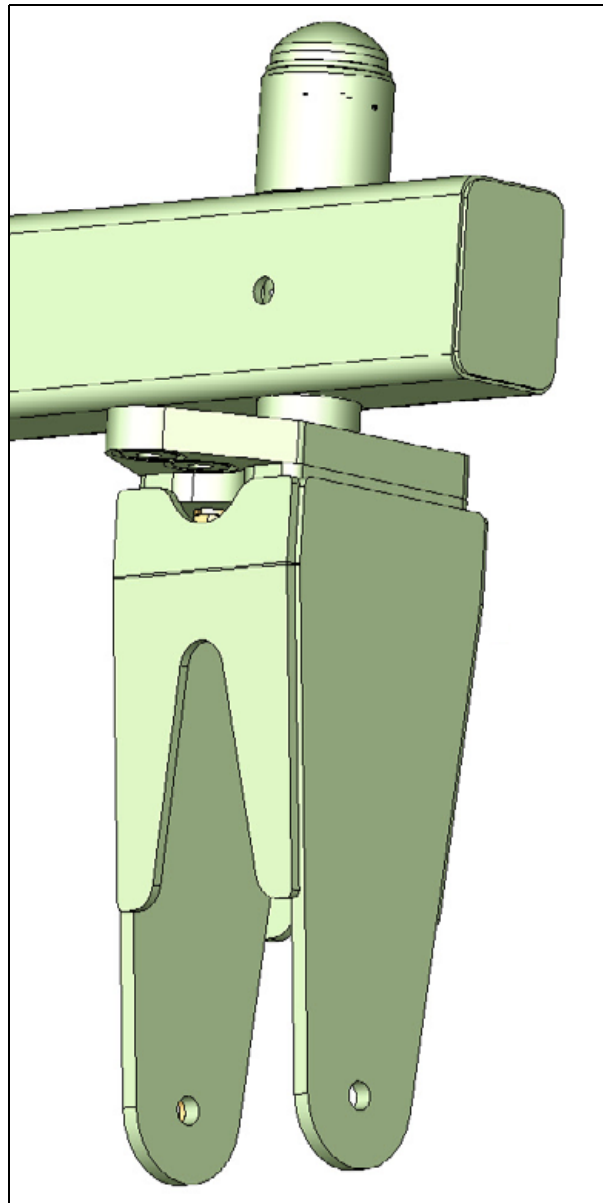
Step 1

Align the yoke assembly bolt holes with the four bolt holes on the bottom of the spindle.



Step 2

Secure the yoke to the spindle mount with four lock washers and bolts. The recommended tools are 1 1/8" wrenches and/or sockets.

**Step 3**

Repeat this process for the remaining yoke assemblies.

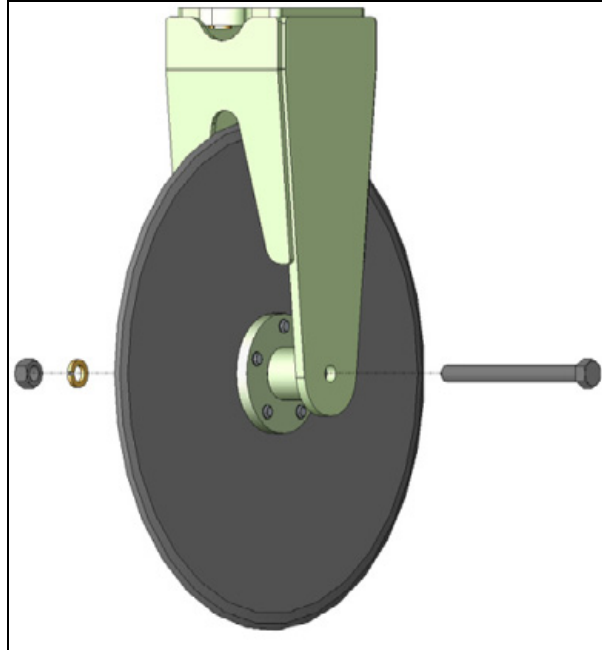
Installing the blade and hub to yoke

Step 1

Align the fork bolt holes with the hole through the center of a hub.

Step 2

Secure the blade and hub assembly to the yoke with a bolt, lock washer, and nut.



Step 3

Tighten the bolt to the proper torque specification. See [Appendix A, Bolt Torque Settings](#).

Step 4

Repeat this process for each of the blade and hub assemblies.

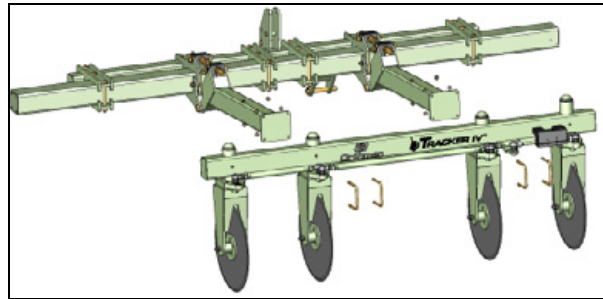
Installing the frame to the arm

Step 1

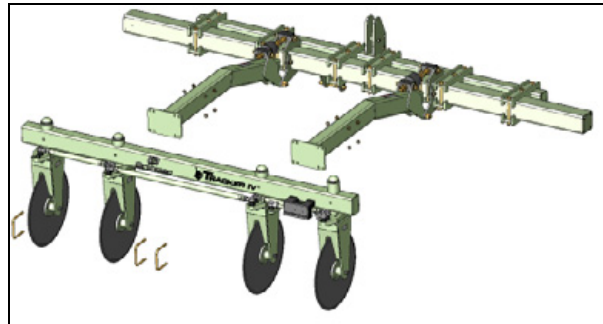
Align each set of bolt holes on the end of the mounting arms with the top and bottom sides of the Tracker frame toolbar.

Step 2

Attach the Tracker frame to the mounting arms with four U-bolts, eight lock washers, and eight nuts.



TYPICAL CULTIVATOR SCENARIO



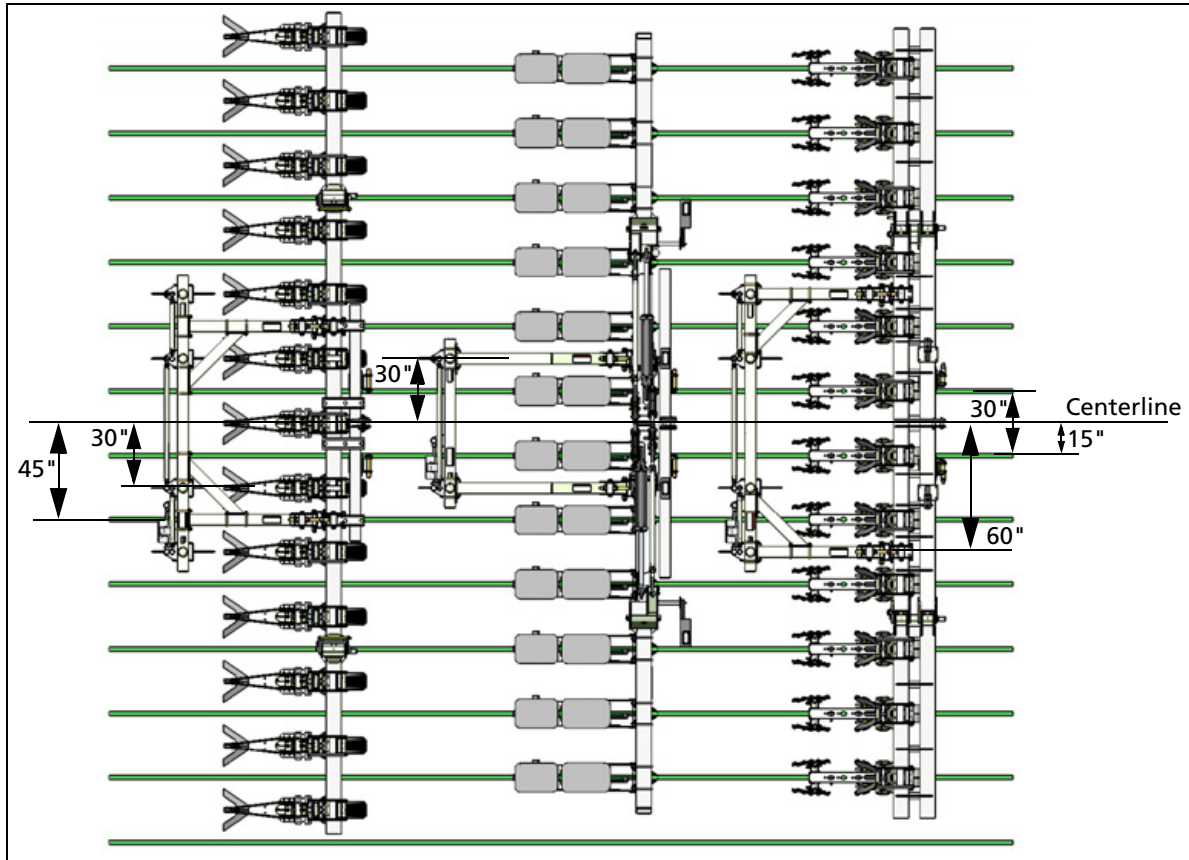
TYPICAL PLANTER SCENARIO

Step 3

Tighten all of the bolts to the proper torque specifications. See [Appendix A, Bolt Torque Settings](#).

Side brace components

The mounting arms for the Tracker IV are the same for the 2 and 4 coultter versions. If you install the 4 coultter version of the Tracker IV, you will need to add side braces during the installation. This image shows how to measure the distance from the Tracker IV centerline to the mounting arm



Cultivator/lister/bedder

- 13 row units.
- Middle units on centerline.
- Outer units on 30" centers 4 blade 30 Tracker IV.
- Mount arms 45" from center.

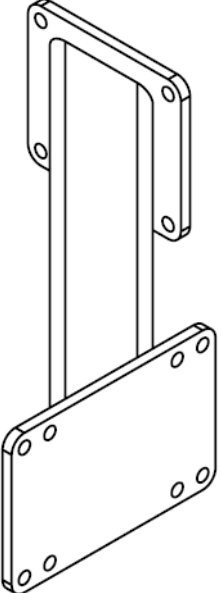
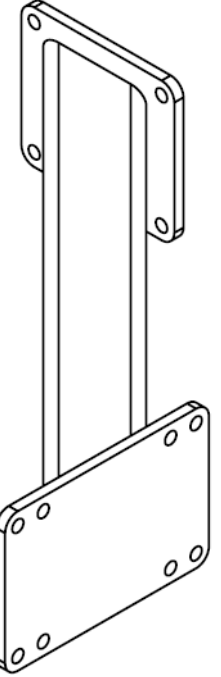
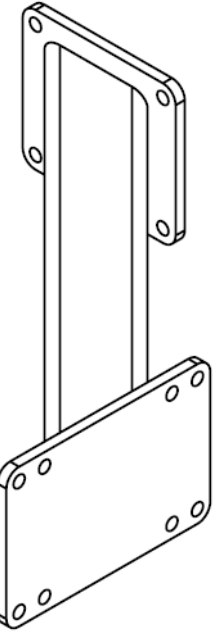
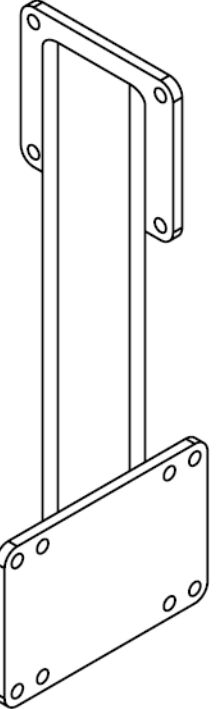
Planter

- 12 row units.
- Middle units each 15" from center.
- Outer units on 30" centers 2 blade 30 Tracker IV.
- Mount arms 30" from center.

Strip tillage

- 12 row units.
- Middle units each 15" from center.
- Outer units on 30" centers 4 blade 30 Tracker IV.
- Mount arms 60" from center.

Below are the optional braces depending on your mounting configuration.

Kit P/N 55035-56	Kit P/N 55035-53	Kit P/N 55035-54	Kit P/N 55035-55
 <p data-bbox="203 1102 454 1228">4-coulter braces for 30" Tracker IV with arms mounted 30" or 60" from the center of the implement.</p>	 <p data-bbox="503 1102 755 1144">4-coulter braces for 38"/40" Tracker IV.</p>	 <p data-bbox="803 1102 1055 1228">4-coulter braces for 30" and 36" Tracker IV with arms mounted 15", 36", or 45" from the center of the implement.</p>	 <p data-bbox="1104 1102 1356 1228">4-coulter braces for 36" Tracker IV with arms mounted 18" or 54" from the center of the implement.</p>

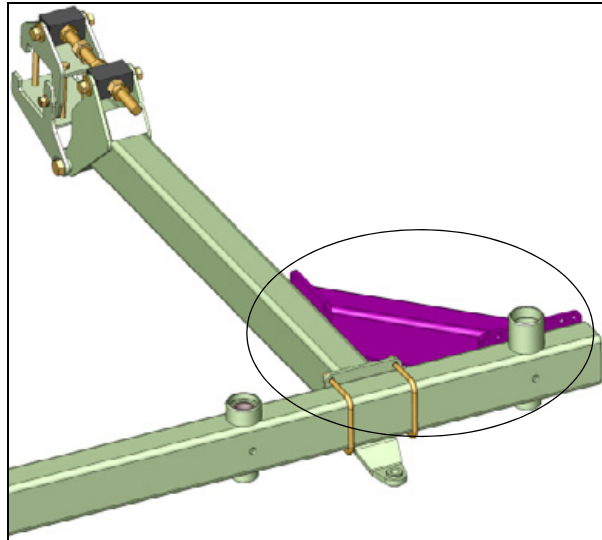
Installing the side brace

Step 1

Attach the side brace to the mounting arm.

Depending on the configuration, clamp the side brace in one of the following locations:

- Around the spindle housing
- Beside the spindle housing



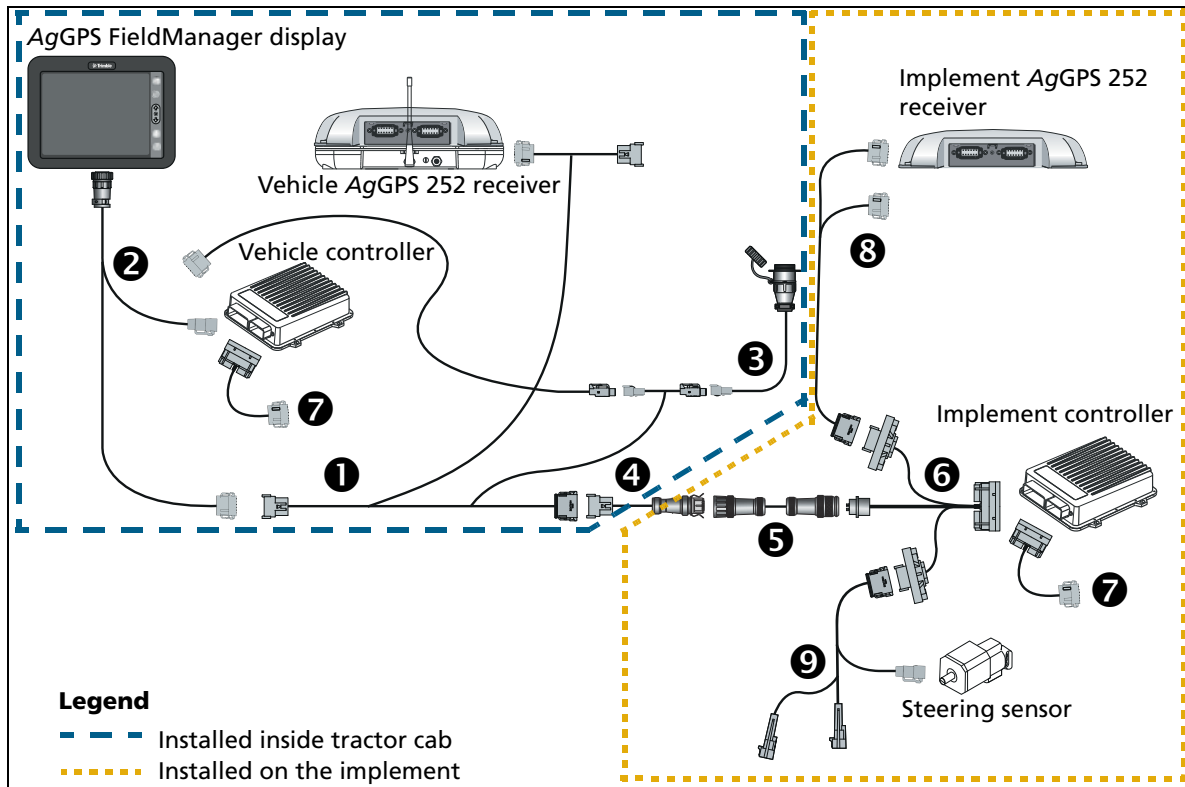
Trimble Component Installation

In this chapter:

- Cable components for the AgGPS 252 GPS receiver
- Cable components for the AgGPS 432 GPS receiver and AgGPS 442 GNSS receiver
- Cable components for the FmX integrated display with the Autopilot automated steering system and TrueTracker while using RTK corrections
- Installing the AgGPS FieldManager cab harness
- Installing the antenna mast, controller, and receiver
- Installing the implement cabling for the AgGPS 252 receiver
- Installing the implement cabling for the AgGPS 432 GPS receiver and the AgGPS 442 GNSS receiver
- Connecting the valve and potentiometer cabling

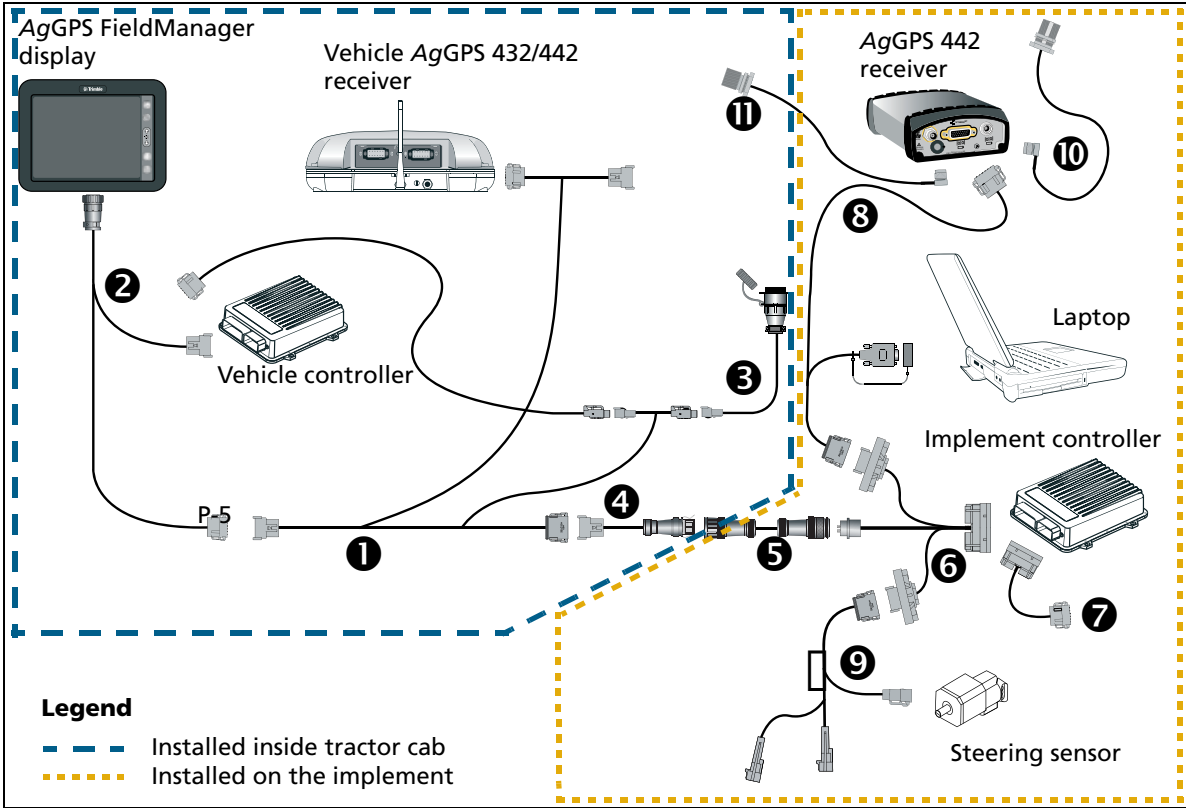
This chapter describes how to install the Trimble components of the TrueTracker system.

Cable components for the AgGPS 252 GPS receiver



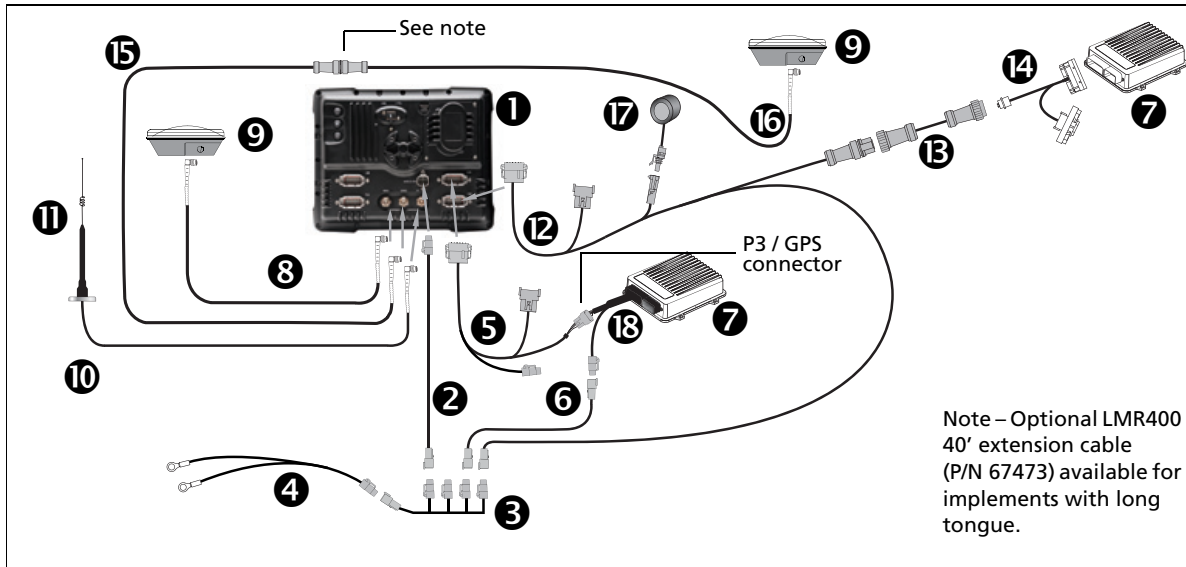
Item	Description
1	Cab interconnect harness (P/N 60630)
2	AgGPS FieldManager display full harness (P/N 59872)
3	Auxiliary power cable (P/N 54630)
4	Quick disconnect jumper (P/N 0395-9150-030)
5	Implement extension cable (P/N 0793-8740-450)
6	Implement main harness (P/N 60724)
7	Auxiliary harness (P/N 54602)
8	AgGPS 252 Implement receiver cable (P/N 60725)
9	Implement valve and steering sensor cable (P/N 60632)

Cable components for the AgGPS 432 GPS receiver and AgGPS 442 GNSS receiver



Item	Description
1	Cab interconnect harness (P/N 60630)
2	AgGPS FieldManager display full harness (P/N 59872)
3	Auxiliary power cable (P/N 54630)
4	Quick disconnect jumper (P/N 0395-9150-030)
5	Implement extension cable (P/N 0793-8740-450)
6	Implement main harness (P/N 60724)
7	Auxiliary harness (P/N 54602)
8	AgGPS 432/442 implement receiver cable (P/N 67046)
9	Implement valve and steering sensor cable (P/N 60632)
10	Radio jumper (P/N 67214)
11	Antenna jumper (P/N 66993)

Cable components for the FmX integrated display with the Autopilot automated steering system and TrueTracker while using RTK corrections



Item	Description	Trimble part number
1	FmX integrated display	93100-02
2	FmX power cable	66694
3	FmX power cable with relay and switch (power bus)	67259
4	Basic power cable	67258
5	FmX to NavController II cable with port replicator	65522
6	2-pin DTM to 2-pin DT power adaptor	67095
7	NavController II (x2)	55563-00
8	8m GPS TNC/TNC RT angle cable	50449
9	Z-Plus GPS antenna (x2)	57200-00
10	NMO to TNC 20ft antenna cable and base	62120
11	900MHz radio antenna kit	22882-10
12	FmX to TrueTracker cable	67092
13	Implement extension cable	0793-8740-450
14	FmX to NavController II and TrueTracker main harness	67612
15	Coaxial 160" N/f + TNC/m-ra cable	68295
16	Coaxial 480" N/m + TNC/m-ra cable	67472

Item	Description	Trimble part number
⑦	Sonalert	43104
⑧	Main NavController II cable	54601

Installing the AgGPS FieldManager cab harness

Step 1

Install a full AgGPS FieldManager™ display harness with P-5 drop.

Note – See the cabling diagram for part numbers.



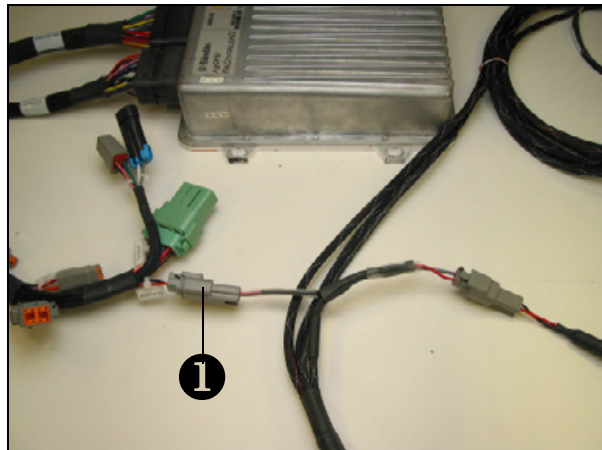
Step 2

Connect the cab interconnect harness pink DTM connector to the P-5 leg of the FieldManager display harness.



Step 3

Insert the power jumper leg ① of the interconnect cable at the tractor controller power connection P-2.



Step 4

Disconnect the radio jumper from port B on the receiver.

Step 5

Route the radio jumper leg of the interconnect cable to the AgGPS 900 radio on the tractor.

**Step 6**

The radio jumper section of the interconnect harness has two connectors:

- Connect one connector to the radio jumper that is connected to the radio.
- Connect the other connector to Port B on the receiver.

**Step 7**

Connect the gray DT implement leg connector to the quick-connect jumper.



Step 8

Attach the sonalert to the extension on the Cab Interconnect cable.

Note – The second Sonalert provides implement feedback separate from the vehicle.



Step 9

Route the jumper out of the cab to the bulkhead at the rear of the tractor.



Step 10

Install the provided bulkhead clamp and quick-disconnect end of the cable to the tractor. To install the aluminum bulkhead, do one of the following:

- Tap 5/16" holes into existing brackets and attach the bulkhead to the tractor.



- Weld the provided bar stock to the tractor and attach the bulkhead to the bar stock.



Installing the antenna mast, controller, and receiver

Step 1

Install the controller/antenna mast to the center of the main member on the steering unit.

Note – if this location is not available, measure the distance from the center line of the implement to the mast and enter that value at roll calibration.



Step 2

Install the mast with the U-bolt provided.



Note – When you secure the mast, use a level.



Step 3

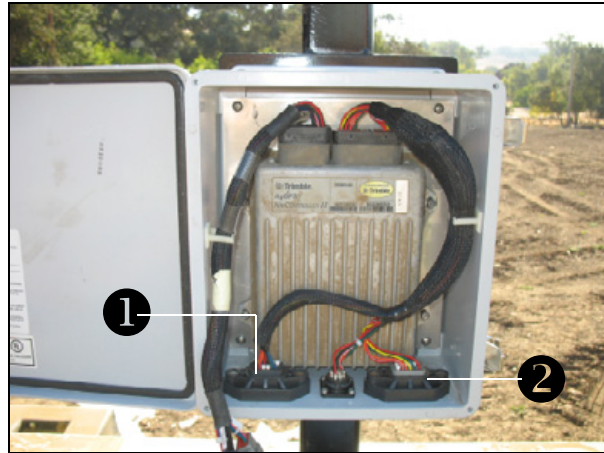
Install the round AMP bulkhead connector on the main harness using #40 screws. Install the provided gasket between the bulkhead and electrical box.



Step 4

Install the bulkheads on the main harness using the provided hardware:

- ❶ Black DT: two 6 mm Phillips head screws
- ❷ Gray DT: two 6 mm Phillips head screws



Step 5

Attach the main harness and auxiliary harness to the controller.



Step 6

Install the controller on the aluminum mounting plate with the connectors pointing up. Use 10-32 screws.



Step 7

Install the AgGPS 252 GPS receiver to the controller/antenna mast. The antenna must be clear of obstructions that can block satellite signals.

***Note** – If you need to reposition the mast, enter the measured distance in the calibration/setup page.*



Installing the implement cabling for the AgGPS 252 receiver

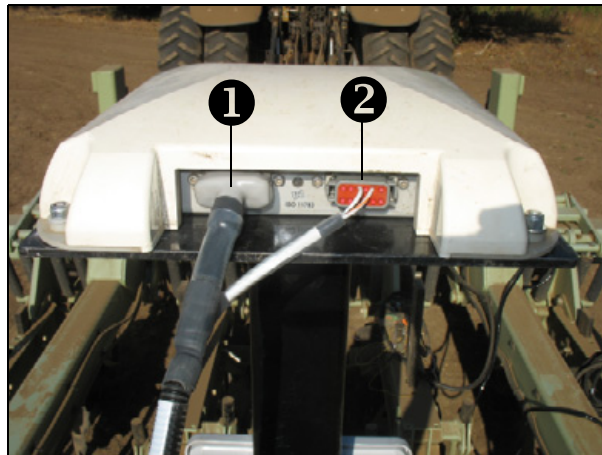
Step 1

Connect the implement receiver cable to the gray DT bulkhead at the controller box.



Step 2

Route the cable to the receiver and connect the A ① and B ② legs.



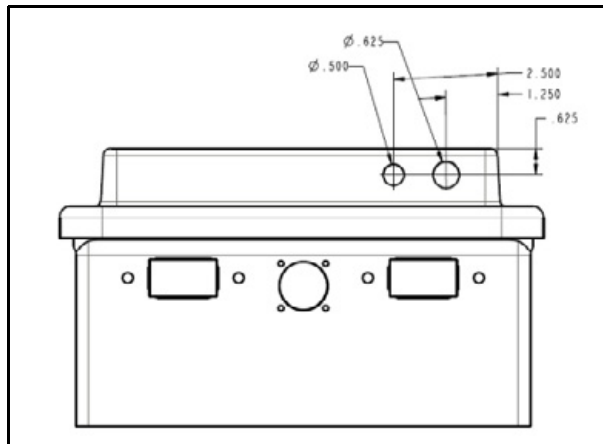
Installing the implement cabling for the AgGPS 432 GPS receiver and the AgGPS 442 GNSS receiver

Step 1

Drill two holes in the cover of the TrueTracker box:

- The smaller hole is a $\frac{1}{2}$ inch hole.
- The larger hole is a $\frac{5}{8}$ inch hole.

It is preferable that you use a step drill to drill the holes.



Step 2

Place the provided decal over the left opening on the TrueTracker box,

Place a decal on the inside of the box covering the same opening.



Step 3

Assemble the provided cables through the holes that were drilled. Tighten the jam nut to hold the bulk head connector in place.



Step 4

Remove the rubber guards from the receiver.



Step 5

Use a Phillips screwdriver to unscrew the screws that hold the metal clip to the receiver.



Step 6

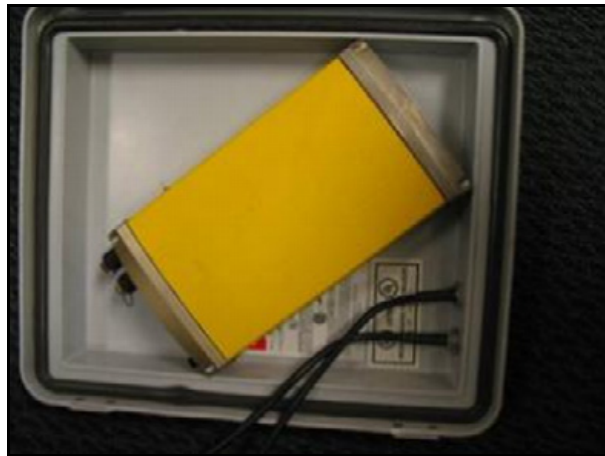
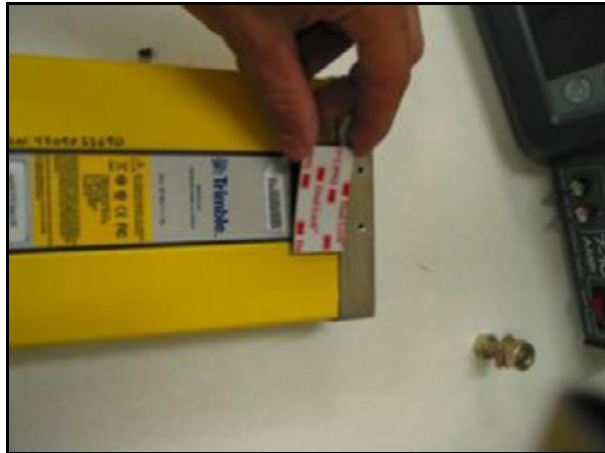
Assemble the provided high-strength Velcro to the receiver in the position shown. Ensure that you press firmly on the Velcro, so that the adhesive bonds to the surface of the receiver.



Step 7

To correctly position the Velcro in the lid of the TrueTracker box, partially attach the two provided mating pieces of Velcro to the receiver, remove the protective film and place the receiver in the box as shown. The adhesive on the Velcro should stick to the cover of the TrueTracker box.

Remove the receiver and press firmly on the Velcro, so that the adhesive bonds to the cover of the TrueTracker box.



Step 8

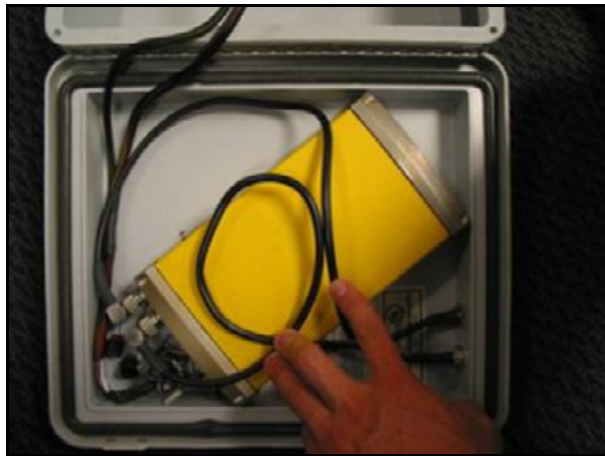
Remove the protective covers from the GPS and antenna ports and assemble the connectors to the receiver.

Assemble the provided cable to the serial port on the receiver.



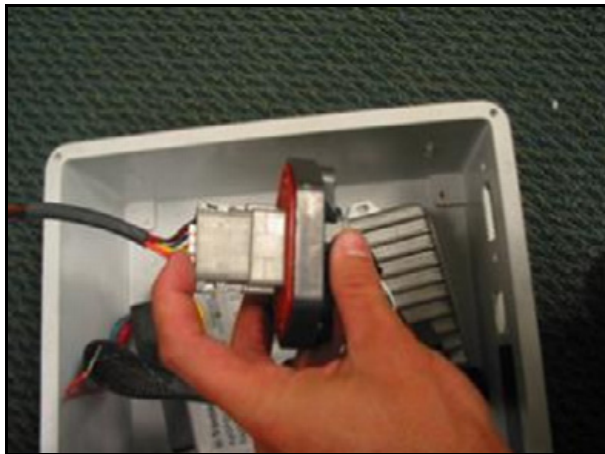
Step 9

Place the receiver in the cover of the TrueTracker box and press firmly. The receiver will snap into the Velcro.



Step 10

Attach the other end of the provided cable to the connector labeled GPS.



Connecting the valve and potentiometer cabling

Step 1

Connect the implement valve and steering cable to the black DT bulkhead at the controller box.



Step 2

Connect the “Valve A” connector to the left valve coil. Connect the “Valve B” connector to the right coil.



Step 3

Connect the steering sensor leg to the sensor.



Step 4

Connect the implement extension cable to the round bulkhead connector at the controller.



Step 5

Route the implement extension cable through the tubing to the quick-connection at the tractor.



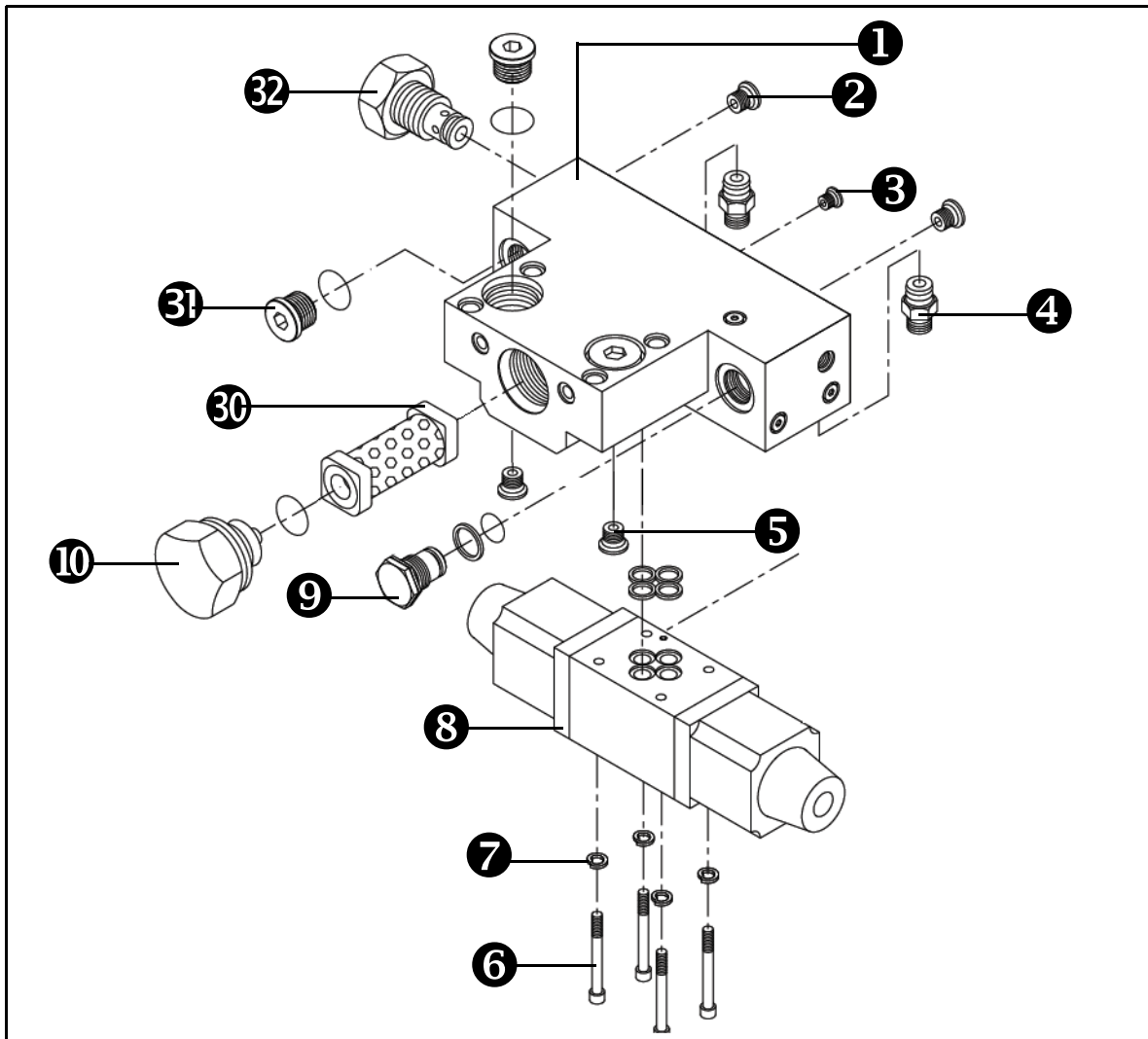
Manifold Installation

In this chapter:

- Manifold components
- Manifold layout
- Installing the manifold

This chapter describes how to install the manifold on the Tracker IV frame.

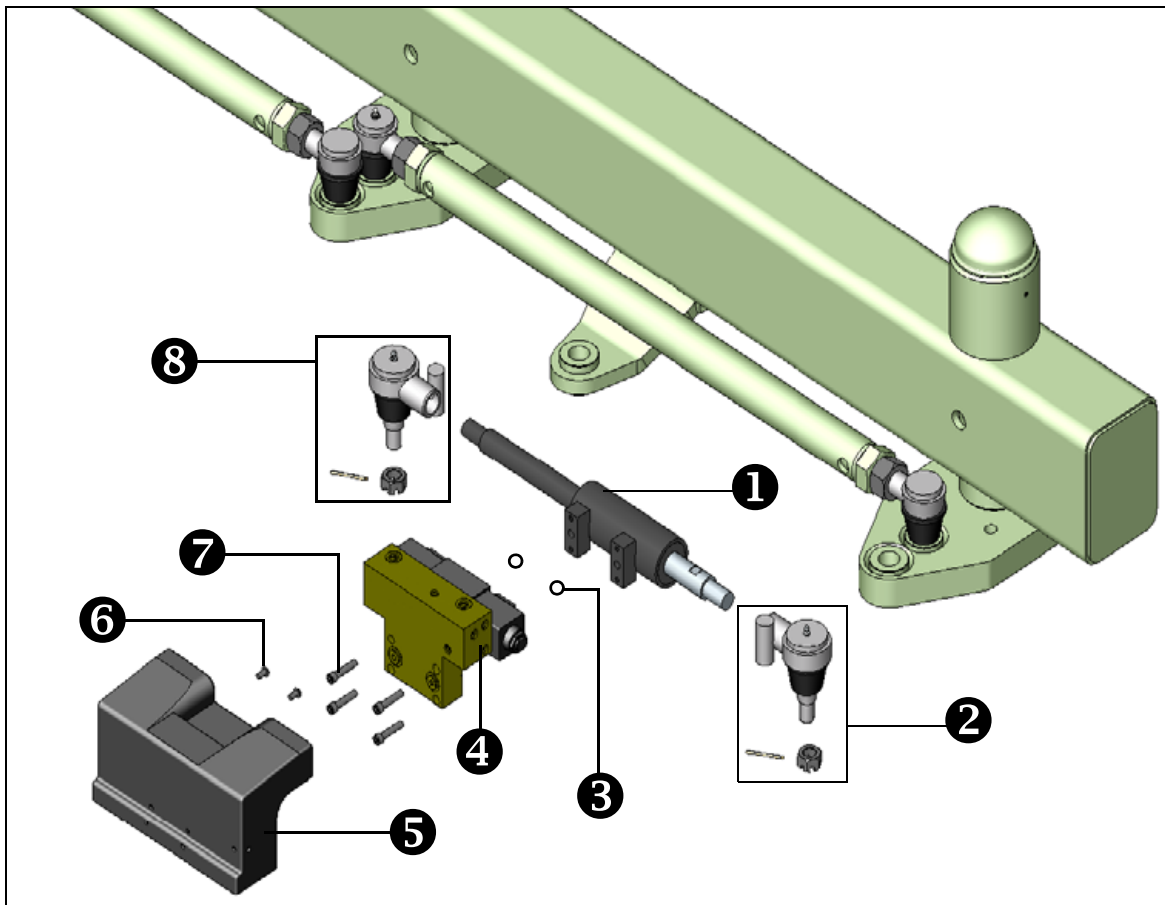
Manifold components



Item	Description
1	180-167 Valve block
2	198-156 Plug 7/16 ORB (2x)
3	198-105 Hollow plug 5/16 - 24 MB (10x)
4	198-157 Adaptor 7/16 ORB (2x)
5	150-041 male plug 7/16 - 20 (2x)
6	160-111 Screw 10-24 x 1.25" (4x)
7	108-048 Lockwasher (4x)

Item	Description
8	180-161 Proportional valve
9	198-286 Cavity plug
10	180-131 Filter bypass
30	180-130 Filter
31	198-135 Hollow plug 9/16 x 18 MB (3x)
32	180-076 Check valve

Manifold layout



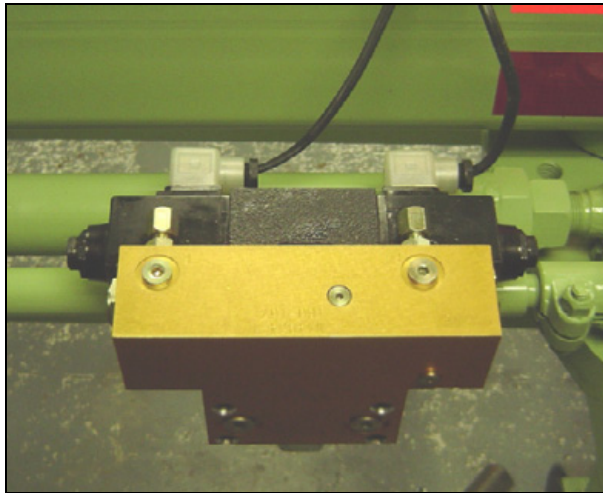
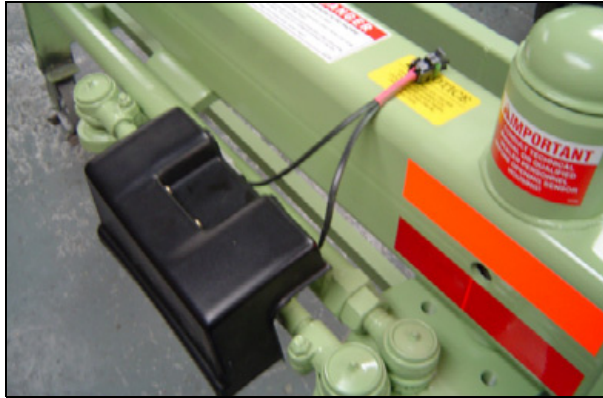
Item	Description
1	194-393 Cylinder 2 x 2 double acting
2	152-440 Ball joint female
3	150-029 O-ring (2x)
4	333-104 Manifold assembly (cable not shown)

Item	Description
5	152-262 Manifold cowling
6	106-057 Machine screw 1/4-20 x 1/2
7	106-087 Socket head screw 5/16 x 1 1/2 (x4)
8	152-440 Ball joint female

Installing the manifold

Step 1

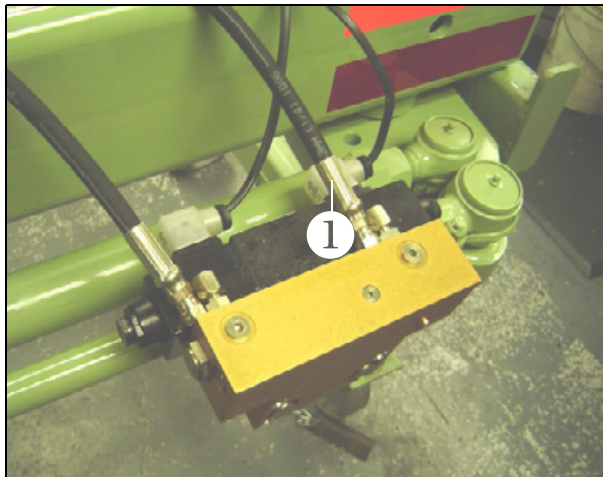
Remove the black cowling with a Phillips screwdriver to access the manifold assembly.



Step 2

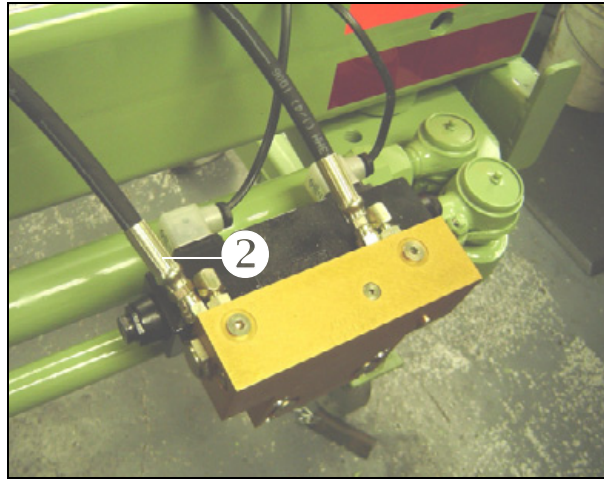
Attach the 7/16 FJX end of one hose to the pressure port ❶ on the manifold assembly.

Note – The ports are marked “P” for pressure and “R” for return.



Step 3

Attach the 7/16 FJX end of the other hose to the return port ② on the manifold assembly.

**Step 4**

Route both hoses to the RH Tracker arm and then secure them.

Step 5

Attach the hose ends to the vehicle's return and pressure outlets.

Step 6

Reinstall the black manifold cowling to protect the manifold.

Field Settings

In this chapter:

- Preparing the implement for adjustment
- Adjusting the blade depth

When the Tracker IV is correctly installed, adjust the blade depth.

Preparing the implement for adjustment

The steering blades must be at a depth that:

- engages the soil enough to adequately steer the implement
- does *not* submerge the blade hub into the soil, which causes premature wear

Step 1

If necessary, move the vehicle with implement to a field.

Step 2

Lower the implement to the ground and check for proper Tracker IV adjustment.

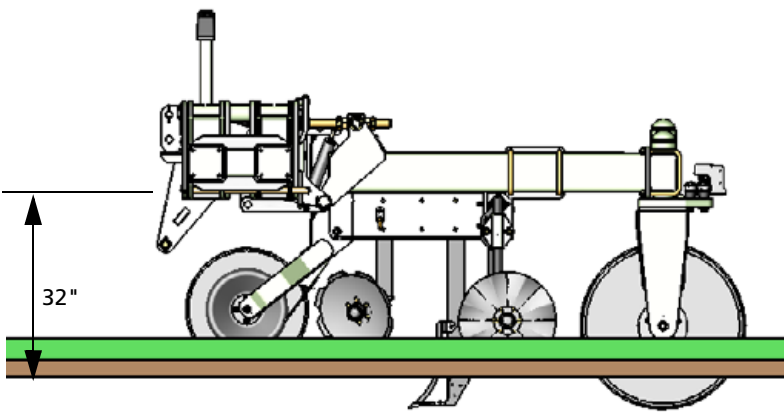
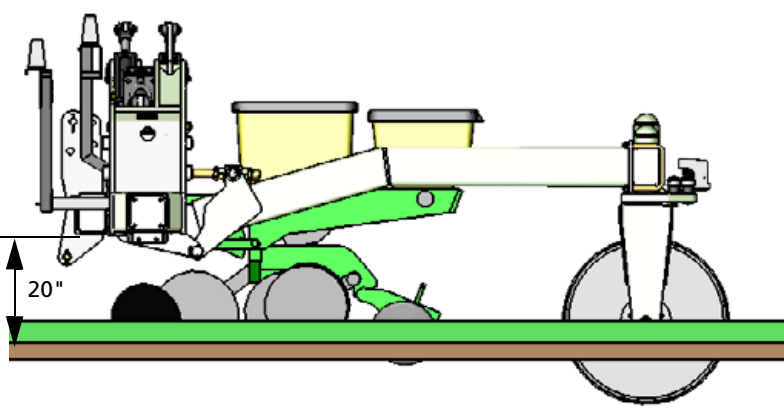
Step 3

Drive the vehicle slowly forward so the implement is pulled into the proper position.

Step 4

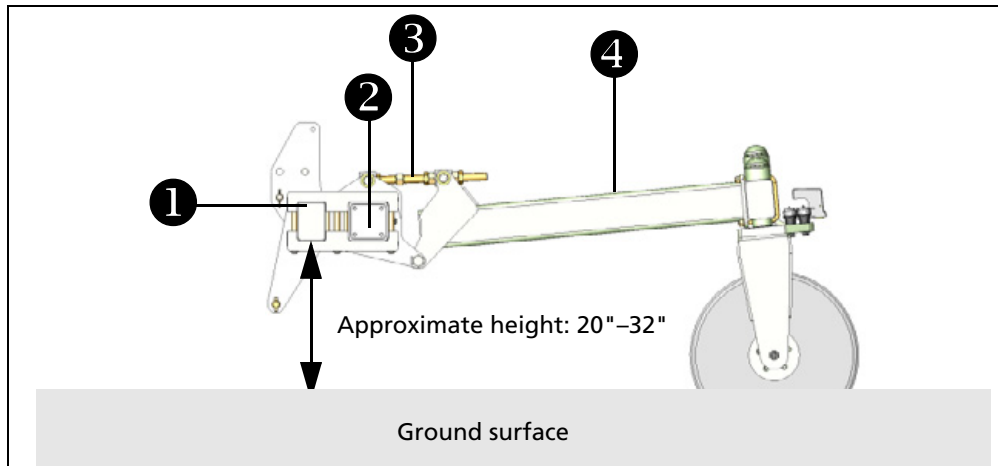
Make any adjustments necessary for the implement to run correctly.

The following table shows implement operating heights:

Description	Example
4-blade Tracker IV with cultivator mount arms	 <p>A side-view technical diagram of a 4-blade Tracker IV implement with cultivator mount arms. The implement is shown in profile, with four blades mounted on a frame. A vertical dimension line on the left indicates the operating height from the ground to the top of the blade assembly, labeled as 32". The ground is represented by a green layer on top of a brown layer.</p>
2-blade Tracker IV with planter mount arms	 <p>A side-view technical diagram of a 2-blade Tracker IV implement with planter mount arms. The implement is shown in profile, featuring two blades and two yellow seed hoppers. A vertical dimension line on the left indicates the operating height from the ground to the top of the blade assembly, labeled as 20". The ground is represented by a green layer on top of a brown layer.</p>

Adjusting the blade depth

Set the turnbuckles so the distance between the bottom of the hitch and the ground is 20"–32". If the field has soft soil, set the blades a little deeper so the Tracker IV has enough contact to steer the implement.



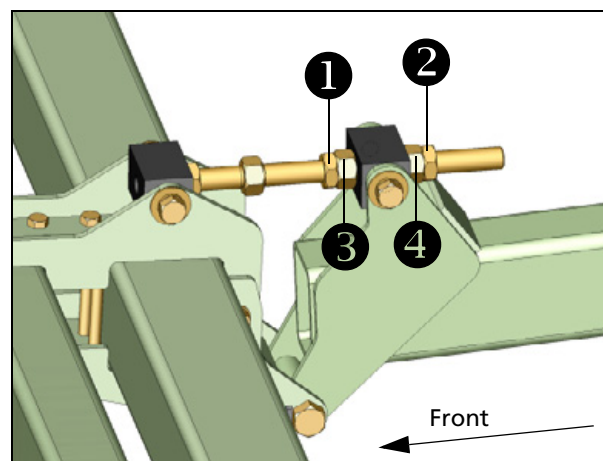
Item	Description
❶	Hitch
❷	Primary implement toolbar
❸	Turnbuckle
❹	Cultivator tracker arms

Note – Try to keep the blade hub above the surface of the soil.

Step 1

Lengthen the turnbuckle to lower the blades, or shorten the turnbuckle to raise the blades.

- To lengthen the turnbuckle, loosen the rear locking nut ❷ and the rear adjustment nut ❹. Then turn the front adjustment nut ❸.
- To shorten the turnbuckle, loosen the front locking nut ❶ and the front adjustment nut ❸. Then turn the rear adjustment nut ❹.



Note – Both turnbuckles must be the same length.

Step 2

Tighten both adjustment nuts to the rear block and then tighten both locking nuts.

Step 3

Repeat this process for the second turnbuckle.

Bolt Torque Settings

In this chapter:

- Recommended dry bolt torque settings
- Recommended hydraulic fitting torque

This appendix list the recommended torque values for the bolts in the installation.

Recommended dry bolt torque settings

SAE grade 5

Bolt size	Torque (ft-lb)
3/8	32
7/16	52
1/2	80
9/16	115
5/8	160
3/4	280
7/8	455
1	680
1 1/8	850
1 1/4	1200

SAE grade 8

Bolt size	Torque (ft-lb)
3/8	36
7/16	59
1/2	88
9/16	130
5/8	175
3/4	315
7/8	510
1	760
1 1/8	1075
1 1/4	1500

Recommended hydraulic fitting torque

Straight thread ORB torque

SAE #	Thread size	Fitting size	Torque (ft-lb)	Wrench size
8	3/4 - 16 UNF - 2B	No. 8	40–43	7/8" (manifold)
10	7/8 - 14 UNF - 2B	No. 10	43–48	1" (iso tips and cylinder)