Knock Down Kit
00HD Series Row Units

Used with models:
- 2S-2600HD, 2S-2600HDF
- 3S-3000HD, 3S-3000HDF
- 3S-4000HD, 3S-4000HDF
- 3S-5000HD, 3S-5000HDF
- CTA4000HD
- BD7600HD 26
- BD7600HD 30
- BD7600HD 40

When you see this symbol, the subsequent instructions and warnings are serious - follow without exception. Your life and the lives of others depend on it!

General Information

These instructions explain how to install a knock down kit on a compatible 00HD Series row unit. See page 2 for compatibility information.

These instructions apply to an installation of:

Kit	Kit Description
122-279A	BRACE MNT KNOCK DOWN KIT 00HD
122-283A	KNOCK DOWN KIT

One kit includes all parts and hardware needed to equip a single row. Order one kit per row.

Refer to Figure 1
Use kit 122-279A on a a drill which lacks tine bases (23). Use kit 122-283A on a drill which already has tine bases (23).

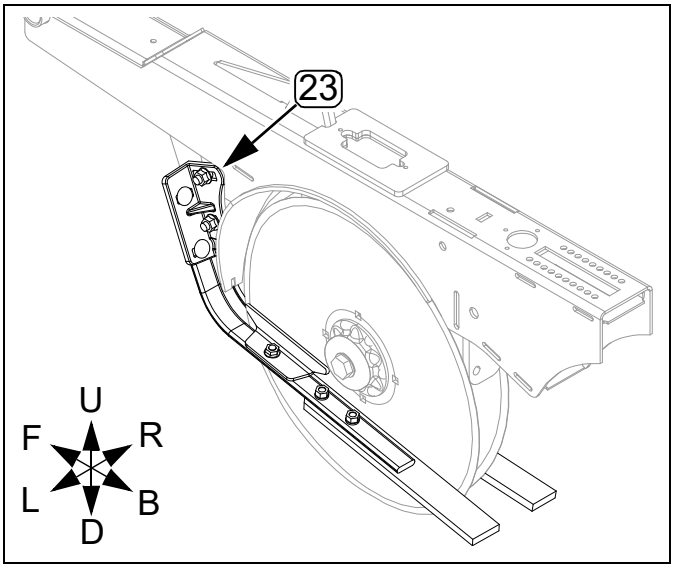


Figure 1 31408
Knock Down Kit Installed

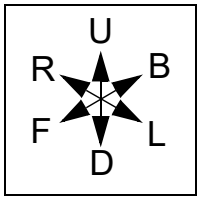
Related Documents

Have the current Operator Manual at hand for drill movements and lift/lower. Have the current Parts Manual at hand for parts ID.

160-037M	CTA4000HD Operator manual
160-037P	CTA4000HD Parts manual
195-067M	3S-4000HD Operator manual
195-067P	3S-4000HD Parts manual
195-068M	3S-3000HD Operator manual
195-068P	3S-3000HD Parts manual
185-069M	2S-2600HD Operator manual
195-069P	2S-2600HD Parts manual
195-325M	3S-5000HD Operator manual
195-325P	3S-5000HD Parts manual
195-612M	BD7600HD 26’ Operator manual
195-612P	BD7600HD 26’ Parts manual
195-613M	BD7600HD 30’ Operator manual
195-613P	BD7600HD 30’ Parts manual
195-614M	BD7600HD 40’ Operator manual
195-614P	BD7600HD 40’ Parts manual

Notations and Conventions

“Left” and “Right” are facing in the direction of machine travel. An orientation rose in the line art illustrations shows the directions of Left, Right, Front, Back, Up, Down.



Call-Outs

① to ⑨ Single-digit callouts identify components in the currently referenced Figure or Figures. These numbers may be reused for different items from page to page.

⑪ to ㉖ Two-digit callouts in the range 11 to 26 reference new parts in kit (see list on page 7).

Tools and Parts Required

- You need a suitable tractor for positioning, raising and lowering the drill.
- Basic hand tools are required.
- On narrow row spacings, a hoist or jack for safely lowering and raising a row unit with the spring rod disconnected.
- If you elect to modify older row units that lack mounting holes, you need a drill and bit size: $^{13}/_{32}$ inch, letter size Z, 10.5 mm and a pilot bit $^{1}/_{3}$ to $^{1}/_{2}$ that size.

Before You Start

Compatibility

Check for 00HD Row Units

1. Check the model number of the drill (found on the serial number plate) against the list at the top of page 1 to ensure it is a compatible model. This kit is compatible only with 00HD Series openers, and not with (non-HD) 00, 07HD and 10HD Series row units.

Check for Mounting Holes

Refer to Figure 2

2. If the drill was manufactured prior to 2010, check that the opener disk shield braces have two 0.41 inch ($^{13}/_{32}$ inch) holes ① in the leading edge.

   If the brace lacks holes, they can be added in the field, called for at step 11, and described in "**Appendix B - Brace Update**" on page 9.

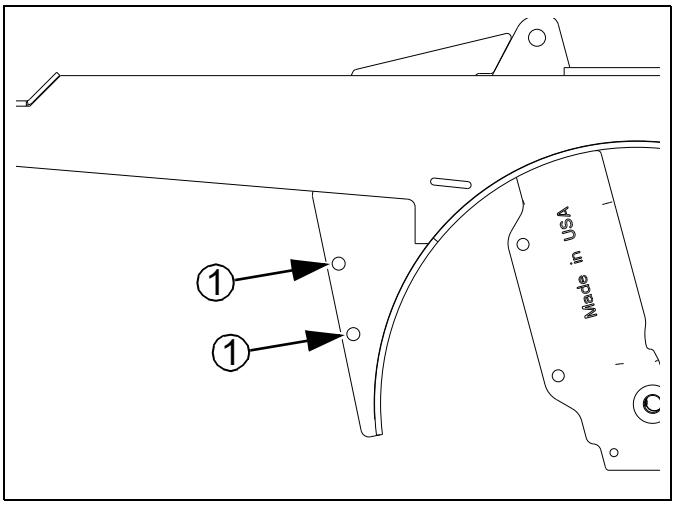


Figure 2 31409
00HD Kit Mounting Holes

Check for Tine Bases

Refer to Figure 3

3. If the kit ordered is part number 122-283A, check that the rows have tine bases ㉓ pre-installed.

Inventory

4. Make sure all parts are present.

Note: One part, bases (㉓, ㉔) is provided in left- and right-hand versions with different part numbers. These are not interchangeable and must be installed on the implement side specified.

Comprehension

5. Review these instructions. Make sure the installers understand where each part or assembly is installed, and what tools are required for the task.

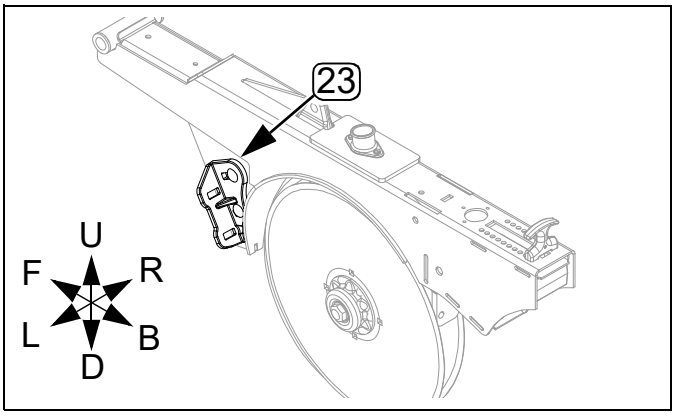


Figure 3 36040
Pre-Installed Tine Base

Pre-Assembly Preparation

Safety

⚠ CAUTION

Sharp Object Hazards:
Be careful working near opener discs. Disc edges may be sharp.

Use a hoist or jack to lower and raise an opener that is disconnected at its spring rod. Do not attempt to lower or raise an opener by hand, even with multiple workers. Openers are too heavy and there is insufficient access. If a grip is lost, the opener will swing down and forward suddenly, and could cause serious injury.

Work Location

6. Move the drill to a location with:
   - room to unfold it;
   - access to tractor or hydraulic power;
   - adequate illumination; and,
   - clear surface beneath for recovery of any falling or dropped parts - if the surface is not clear, have a tarp or drop cloth available.
7. Raise drill. Unfold drill.
8. Use any lift locks or parking stands provided, or use shop supports or jacks to hold the drill at raised. Set tractor remote circuits to Float.
9. For a 3-point drill, unhitch the tractor and move it away to provide access to rows.
10. Shut off the tractor if left hitched.
11. If the opener disk shield brace plate lack mounting holes, drill those holes per “**Appendix B - Brace Update**” on page 9.
12. If the opener disc hubs have hold down weldments instead of round dust covers, replace the weldments with covers per “**EOD**” on page 10.

Install Bases

For kit 122-283A, continue at "**Mount Knock Downs**" below.

Refer to Figure 4

Note: Bases (23, 24) are supplied in left (LH) and right (RH) variants, and are not interchangeable between opener sides.

For a left tine:

13. Select one each:
    23 **812-366C LH KNOCK DOWN TINE BASE**
    24 **812-367C RH KNOCK DOWN TINE BASE**
    and two sets:
    17 **802-155C RHSNB 3/8-16X1 1/4 GR5**
    21 **803-209C NUT FLANGE LOCK 3/8-16 PLT**
14. Position bases (23, 24) on row unit disk shield brace. Secure to snug with bolts 17 and lock nuts 21.

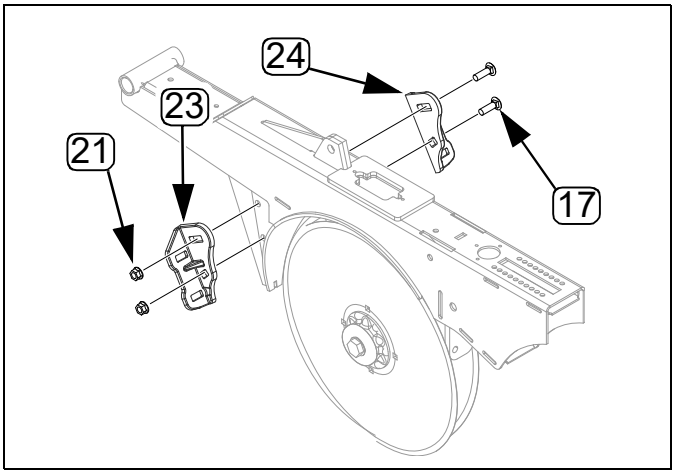


Figure 4 36042
Install Bases

Mount Knock Downs

On a drill with narrow row spacing, there is apt to be insufficient clearance at rear rows for convenient mounting. In that case, connect a hoist to, or install a jack under the row unit. Release a rear row at a spring rod pin, and fully lower it for knock down installation. You may wish to leave all rear rows lowered for knock down adjustment as well.

Refer to Figure 5

15. Select one:
    13 **122-282K KNOCK DOWN TINE ASY LH**
    and two sets:
    17 **802-155C RHSNB 3/8-16X1 1/4 GR5**
    21 **803-209C NUT FLANGE LOCK 3/8-16 PLT**

    Position the left knock 13 down under the left tine base 23. Insert bolts 17, from back, through base and knock down spring. Secure to snug with lock nuts 21.
16. Select one each:
    12 **122-281K KNOCK DOWN TINE ASY RH**
    and two sets:
    17 **802-155C RHSNB 3/8-16X1 1/4 GR5**
    21 **803-209C NUT FLANGE LOCK 3/8-16 PLT**

    Position the right knock 12 down under the right tine base (not visible). Insert bolts 17, from back, through base and knock down spring. Secure to snug with lock nuts 21.

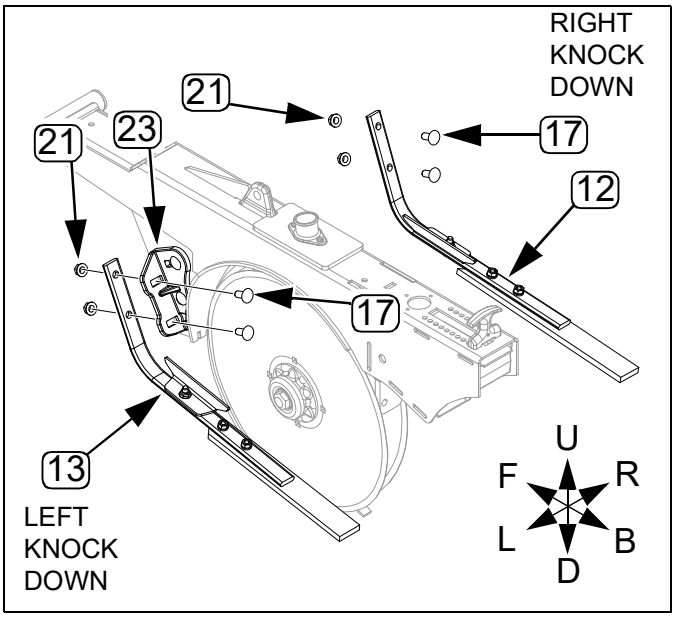


Figure 5 36044
Mount Knock Downs

⚠ WARNING

Crushing and Sharp Object Hazards:

If lowering a row off the spring, use an adequate hoist or jack and secure attachment or lifting point. Stand clear of moving row unit. Opener blades are sharp. The row is heavy and could inflict serious injury if it falls suddenly.

Adjust Knock Downs

Adjust Tine Pitch Angle

Refer to Figure 6

17. Adjust the rear elevation of each tine assembly so that it is as close as possible to level with the opener frame. This tends to place it close to the opener disc hub. Avoid contact with the hub assembly.

    When both sides are adjusted, tighten nuts ① to torque spec.

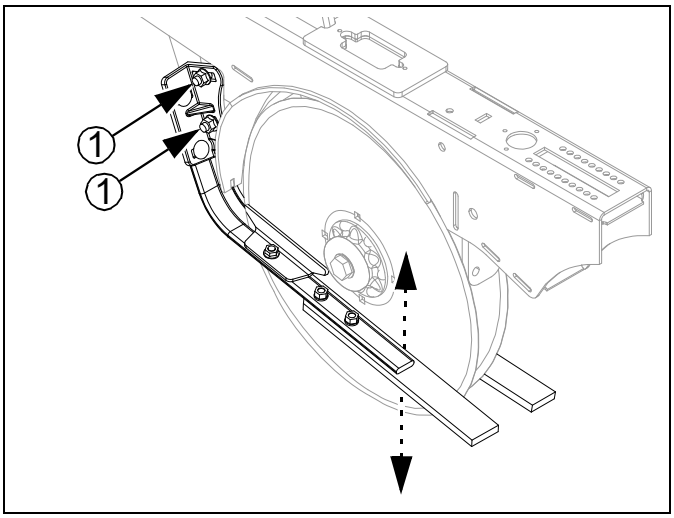


Figure 6 31408
Adjust Tine Pitch

Adjust Tine/Disc Gap

Refer to Figure 7

18. Adjust the lateral position, and the yaw of each tine so that the polymer bar almost contacts the opener disc for the full length of the bar.

    The thickness of a business card (0.01 inch or 0.25 mm) is the ideal gap.

    Tighten nuts ② to torque spec.

    Rotate the disc a full turn or more to ensure that contact is avoided.

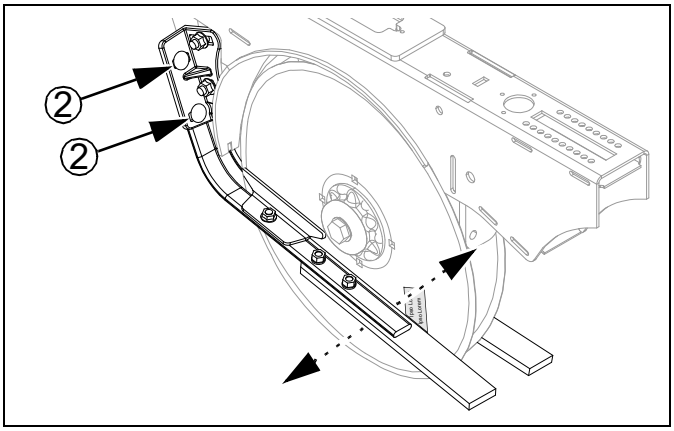


Figure 7 31408
Adjust Tine/Disc Gap

Adjust Scraper/Disc Gap

Refer to Figure 8

19. Slide the scraper until it almost contacts the opener disc.

    The thickness of a business card (0.01 inch or 0.25 mm) is the ideal gap.

    Tighten nut ③ to torque spec.

    Rotate the disc a full turn or more to ensure that contact is avoided.

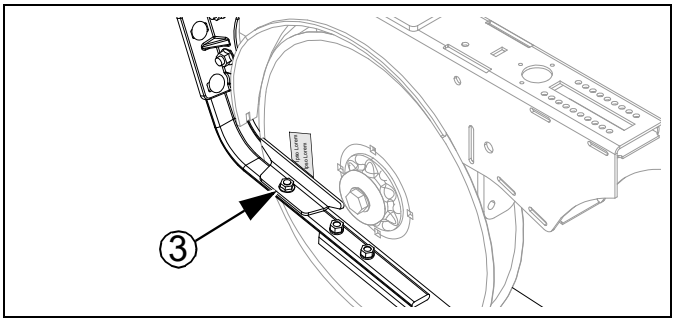


Figure 8 31408
Adjust Scraper

Close-Out

20. Re-pin any spring rods that were disconnected.

Knock Down Operation

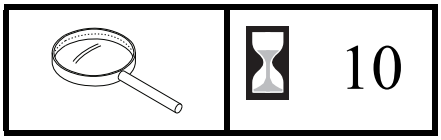
Knock downs require no specific procedures during field operations, other than to periodically check that clearances and gaps remain correct.

NOTICE

Accelerated Wear Risk:
Under no circumstances allow the polymer bar or tine to contact the ground during operation. The knock down kit is not designed for use as a row cleaner, and will wear rapidly if so used.

Knock Down Maintenance

Knock Downs



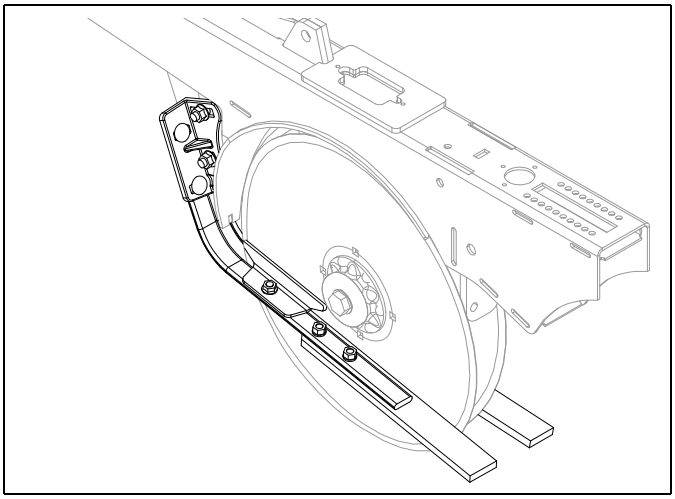
2 tines per row

Clean away any debris that has collected ahead of the opener disc or between the polymer knock down bar and the disc.

Inspect the adjustment bolt/nut settings to ensure desired polymer bar-to-disc gap is being held. Inspect the tine and replace if not flat along the polymer bar.

Inspect polymer bar for wear, chipping and cracks, and replace as necessary.

Check Grade 2 torque on the bolts holding the bar to the tine.



Appendix A - Reference Information

Part List

Quantities are units (“ea”).

The part call-out numbers in this list match all Figures in these installation instructions. Part descriptions match those in your updated Parts Manual.

A single kit order includes one manual. A multiple kit order includes one manual per order. Additional manuals are available from Great Plains, or may be downloaded from the Great Plain web site.

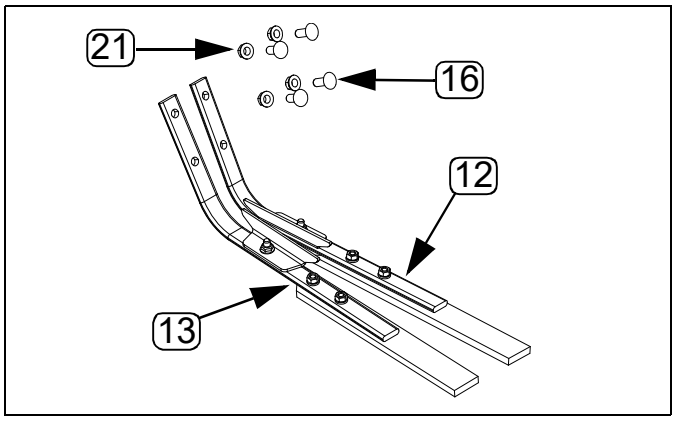


Figure 10 36043
122-283A Kit Exploded

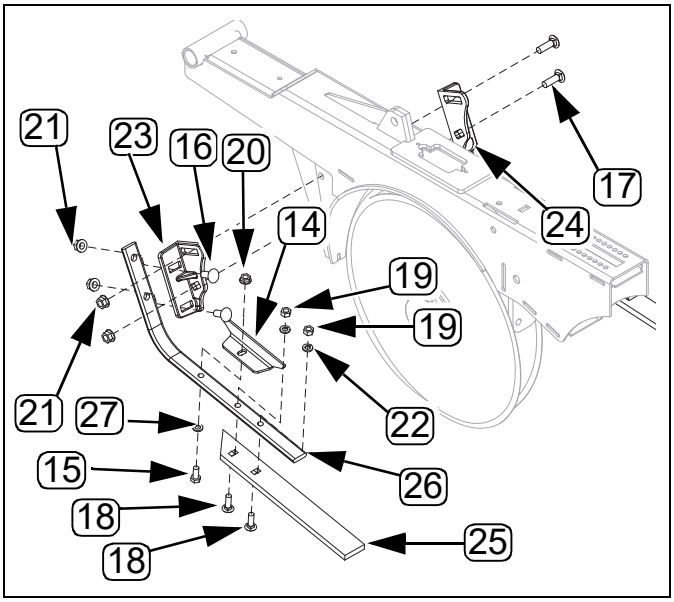


Figure 9 31407
122-279A Kit Exploded

Callout	Quantity		Part No.	Part Description
	122-279A	122-283A		
11	1	1	122-280M	MANUAL KNOCK DOWN KIT ASSEMBLY
12	1	1	122-281K	KNOCK DOWN TINE ASY RH
13	1	1	122-282K	KNOCK DOWN TINE ASY LH
14	2	2	122-178D	KNOCK DOWN DISK SCRAPER
15	2	2	802-007C	HHCS 5/16-18X3/4 GR5
16	4	4	802-015C	RHSNB 3/8-16X1 GR5
17	2	-	802-155C	RHSNB 3/8-16X1 1/4 GR5
18	4	4	802-009C	RHSNB 5/16-18X1 GR5
19	4	4	803-008C	NUT HEX 5/16-18 PLT
20	2	2	803-177C	NUT HEX FLG TP LK 5/16-18ZN
21	6	4	803-209C	NUT FLANGE LOCK 3/8-16 PLT
22	4	4	804-009C	WASHER LOCK SPRING 5/16 PLT
23	1	-	812-366C	LH KNOCK DOWN TINE BASE
24	1	-	812-367C	RH KNOCK DOWN TINE BASE
25	2	2	817-869C	POLY TRASH KNOCK DOWN BAR
26	2	2	820-548C	GRADUAL HOLD DOWN TINE
27	2	2	804-010C	WASHER FLAT 5/16 USS PLT

Torque 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
1/4-20	7.4	5.6	11	8	16	12
1/4-28	8.5	6	13	10	18	14
5/16-18	15	11	24	17	33	25
5/16-24	17	13	26	19	37	27
3/8-16	27	20	42	31	59	44
3/8-24	31	22	47	35	67	49
7/16-14	43	32	67	49	95	70
7/16-20	49	36	75	55	105	78
1/2-13	66	49	105	76	145	105
1/2-20	75	55	115	85	165	120
9/16-12	95	70	150	110	210	155
9/16-18	105	79	165	120	235	170
5/8-11	130	97	205	150	285	210
5/8-18	150	110	230	170	325	240
3/4-10	235	170	360	265	510	375
3/4-16	260	190	405	295	570	420
7/8-9	225	165	585	430	820	605
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 1/8-7	480	355	1080	795	1750	1290
1 1/8-12	540	395	1210	890	1960	1440
1 1/4-7	680	500	1520	1120	2460	1820
1 1/4-12	750	555	1680	1240	2730	2010
1 3/8-6	890	655	1990	1470	3230	2380
1 3/8-12	1010	745	2270	1670	3680	2710
1 1/2-6	1180	870	2640	1950	4290	3160
1 1/2-12	1330	980	2970	2190	4820	3560

Bolt Size	Bolt Head Identification					
	5.8 Class 5.8		8.8 Class 8.8		10.9 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 torquingvalues. Unless otherwise specified use torquevalues listed above. 25199

Abbreviations

00HD	00 Series Heavy Duty
ASY	Assembly
c/o	call out
DD	Double Disc
FLG	Flanged
GA	Gauge
GR5	Grade 5
HEX	Hexagonal
HHCS	Hex Head Cap Screw
LH	Left Hand
LK	Lock

MACH	Machined
MNT	Mount
NYL	Nylock
PLT	Plated
POLY	Polymer
RH	Right Hand
RHSNB	Round Head Shank Neck Bolt
TP LK	Top Lock
X	by
ZN	Zinc plated

Appendix B - Brace Update

The steps in this appendix apply only if the drill is a pre-2010 model that lacks holes in the opener disk shield brace plates.

On a drill with narrow row spacing, there is apt to be insufficient clearance at rear rows for marking and drilling. In that case, mark and drill all front rows first. Then connect a hoist to, or install a jack under a rear row unit. Release the rear row at a spring rod pin, and fully lower it for marking and drilling. You may wish to leave all rear rows lowered for knock down installation and adjustment as well.

Refer to Figure 11

1. Mark and center-punch holes at the following locations relative to the bottom and front edges of the brace plate:

   Ⓐ $^{3}/_{8}$ inch, 0.375 inch, 0.95 cm — Front edge to hole center-lines

   Ⓑ $3^{1}/_{4}$ inch, 3.25 inch, 8.25 cm — Bottom edge to lower hole center-line

   Ⓒ $5^{1}/_{2}$ inch, 5.5 inch, 13.97 cm — Bottom edge to upper hole center-line

2. At each marked location, drill a pilot hole using a bit that is $^{1}/_{3}$ to $^{1}/_{2}$ the size of the finale hole.
3. At each pilot hole, drill a final hole size of: $^{13}/_{32}$ inch, letter size Z, 10.5 mm

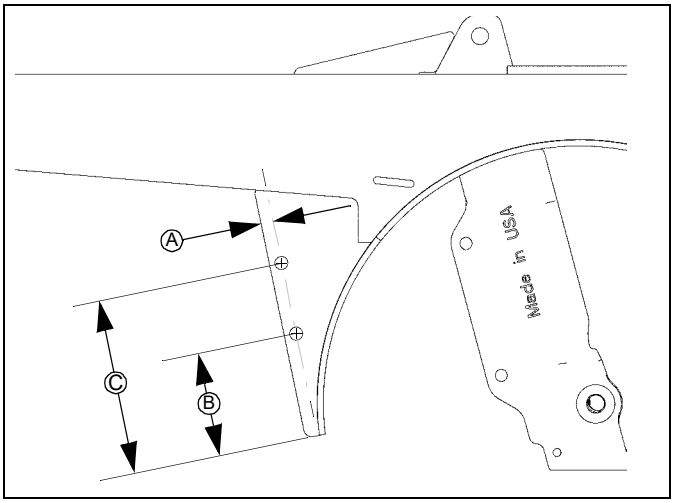


Figure 11 31409
00HD Kit Mounting Holes

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