



Series II Native Grass Agitator Native Grass Drills

Used with:

- Pre-2007 605NT, 3P605NT
- Pre-2007 706, 1006 Native Grass
- Pre-2007 3PNG12, 3PNG15, 2SNG24, 2SNG30, NG12 Grass Seeder

General Information

These instructions explain how to install a Series II Native Grass Agitator. These kits enhance your Great Plains Native Grass Drill for more consistent and efficient seeding of native grass. Kits are supplied for most Great Plains Native Grass Drills. If your drill is not listed above, have your dealer contact the factory, as a kit may be available.

This update is only for drills with $\frac{3}{4}$ in hexagonal agitator shafts in the seed box. If your drill does not have a $\frac{3}{4}$ hex shaft, a shaft update kit may be available.

If your drill is a Series II, you already have this enhancement.

These instructions apply to:

202-600A	6' NG SERIES II AGITATOR KIT
202-601A	706-7 1/2" NG SERIES II AGT.
202-602A	1006-7 1/2" NG SERIES II AGT.
202-603A	NG-12 SERIES II AGITATOR
202-604A	12' 7 1/2" NG SERIES II AGT.
202-605A	12' 10" NG SERIES II AGT.
202-606A	15' 7 1/2" NG SERIES II AGT.
202-607A	15' 10" NG SERIES II AGT.

For a complete Series II enhancement, separately order multiple feeder sprocket kits below:

202-597A	NG CUP ENHANCEMENT KIT (order one of these kits per row)
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Before You Start

Each kit converts an entire drill. You need the correct kit for your machine.

Due to interference with partitions, it may not be possible to install divider agitators at all dividers. Due to partition re-alignments over various model years, you may have divider agitators left over after the upgrade.

.Have the following tools at hand:

- Basic hand tools
- Updated Parts Manual
- Drill Operator's Manual

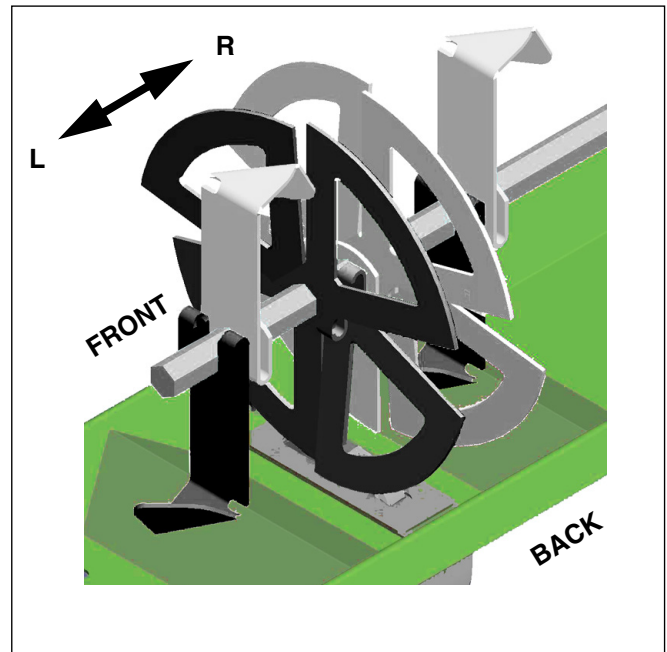


Figure 1
Series II Agitator

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Notations and Conventions

“Left” and “Right” are facing in the direction of machine travel.

- ① callouts identify components in the currently referenced Figure or Figures.
- ⑪ to ⑳ callouts reference new parts from the list on page 8. The descriptions match those on the cartons, bags or item tags, as well as your updated Parts Manual.
- ⑤① to ⑤⑤ callouts reference existing parts. The descriptions match those in your Parts Manual.

Installation

Preparation

0. If performing a complete Series II upgrade, install the cup enhancements first.
1. Inventory the kit contents per the “**Parts List**” on page 8.

Examine the new parts, noting that they are color-coded for left hand (black) and right hand (plated or green) placement. The Left fan-shaped agitators are stamped “L”.

The (fan-shaped) Series II agitators each have two blades; one flat, and one bent out slightly. The bend will be away from the feeder sprocket in a correct installation. In the normal direction of rotation, these blades sweep seed toward the seed cup.

2. If you have just completed the Hex Shaft Update, your shaft has no agitators installed, and the drive chain is already dismounted. Skip to “**Install Partition Bearings**” on page 3.
3. Clean out any seed in box.
4. If necessary, move the drill to a dry well-lighted location suitable for disassembly. Park and secure the drill. Secure the tractor if left connected.

Dismount Drive Chain

For access to all fasteners, old and new, the shaft needs to turn freely.

5. On the left (drive) end of the Native Grass seed box, remove or open any the access panel.
6. Loosen the idlers.
7. Remove the chain from the driven sprocket and let it hang toward the idlers.

Remove Existing Agitators

Refer to Figure 2

8. At each row, remove two each existing:
 - ⑤⑤ NUT HEX NYLOCK 5/16-18 PLT
 - ⑤④ HFSS 1/4-20X2 GR5
 - ⑤② NG AGITATOR PADDLE
 These parts are not re-used.

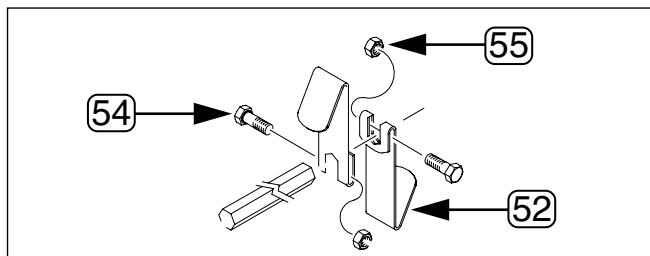


Figure 2
Remove Old Paddles

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Install Partition Bearings

Drill models 3PNG15 and 2SNG30 require additional bearings in their partitions for Series II Native Grass. The kits for these models include partition bearing hardware.

If your kit:

- does not include flangettes and bearings, or
- your drill already has $\frac{3}{4}$ hex partition bearings, skip to step 24.

Withdraw Drive Shaft

To install the partition bearings, the hex shaft must be partly withdrawn.

Note: It is not necessary to remove the drive sprocket from the shaft for this procedure.

It is not necessary to completely remove the shaft as long as the sprocket end is adequately supported to prevent deforming the box end during left partition bearing installation.

Refer to Figure 3 and Figure 4

9. Loosen (but do not remove) two set screws on the **51** LOCK COLLAR $\frac{3}{4}$ HEX BORE at each end of the seed box.
10. Withdraw the shaft a few inches. Remove and save the right end lock collar **51**.

Note: Although the right collar might fit through the partition openings, it is risky to leave it on the shaft, as it must be removed for shaft re-insertion beginning at step 16.

Conversely, leave the left/drive-end collar on the shaft.

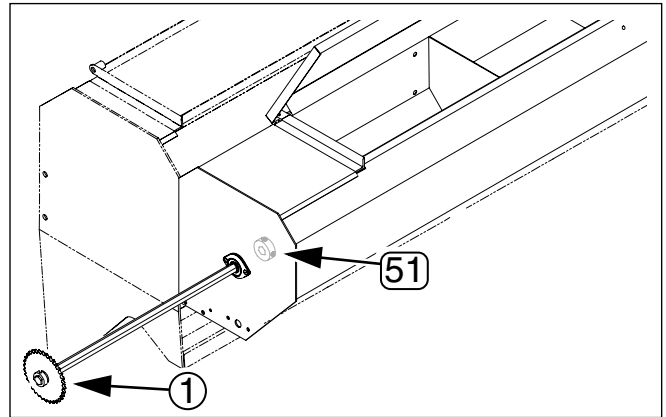


Figure 3
Partial Shaft Removal

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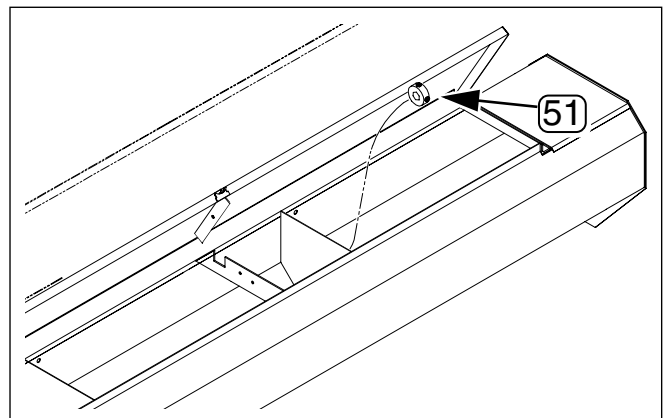


Figure 4
End Lock Collar

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Pre-Assemble Bearings

11. Select one each new:
 - ②4 822-128C BEARING 3/4HEX B 47MM SPHER OD
 - and two each new:
 - ②3 822-041C FLANGETTE 47 MST
 - ①8 802-282C RHSNB 5/16-18X1 GR5
 - ②2 804-009C WASHER LOCK SPRING 5/16 PLT
 - ②0 803-008C NUT HEX 5/16-18 PLT
12. Place the bearings ②4 between a pair of flangette ②3 halves

Bearing Mount Locations

Refer to Figure 5.

13. Inspect each of the three partitions, and determine on which side to mount the bearing. Pick whichever side of the partition places the bearing center furthest from both adjacent row unit seed cups

Note: By keeping the partition bearings clear of seed cups, you minimize the number of agitators that cannot be installed due to interference.

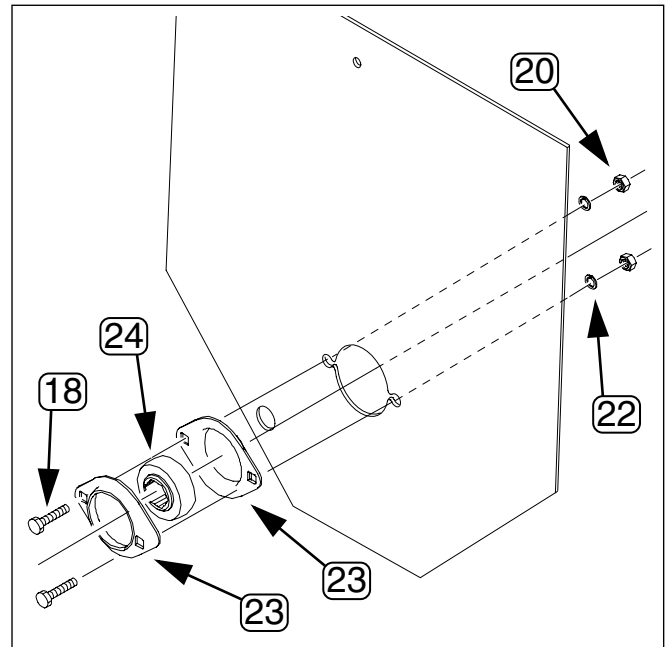


Figure 5
Bearings at Partitions

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Install Bearings

14. Withdraw the shaft to the left of the left-most partition. Support the sprocket end so that the lever action of the weight does not deform the box end.
15. Loosely assemble one bearing on the optimum side of the left-most partition. Insert the screw ①8 from the flangette side. Leave the bearings assemblies loose until after full shaft insertion.
16. Insert the shaft into and a few inches beyond the left-most partition bearing. The sprocket end no longer requires support at this point.
17. Loosely assemble the remaining bearings on the optimum side of their respective partitions.
18. Insert the shaft through all new bearings, and a few inches beyond the right-most partition bearing.

Refer to Figure 3 on page 3

19. Select one saved:
 - ⑤1 LOCK COLLAR 3/4 HEX BORE
 - and slide it onto the free end of the hex shaft.
20. Insert the shaft through the right box end bearing.
21. Adjust the position of the shaft until the teeth of the sprocket are aligned with the driving, driven and idler sprockets of the Native Grass drive.
22. Without disturbing the position of the shaft, slide the left lock collar ⑤1 against the left end bearing. Tighten both set screws and secure the collar.
23. Slide the right collar ⑤1 up against the right end bearing. Tighten both set screws, securing the collar.

Install New Agitators Mount Blades

Refer to Figure 6

24. Pick a starting feeder cup row that is not adjacent to a seed box partition (to assure a starting example using all four blades).
25. Select one each new:
 - ⑬ 202-281D LH NG SERIES 2 AGITATOR
 - ⑲ 802-448C HFSS 1/4-20 X 2 GR5
 - ⑳ 803-088C 1/4-20 FLANGE HEX LOCK NUT
26. Position the (black, fan-shaped) Left Series II agitator ⑬ to the left of a feeder sprocket ①. The slot in the agitator fits over the drive shaft ②. The short side of the "U" bend faces the sprocket.
27. Loosely attach the agitator to the shaft with a screw ⑲ and nut ⑳.
28. Rotate the shaft 180°.
29. Select one each new:
 - ⑫ 202-280D RH NG SERIES 2 AGITATOR
 - ⑲ 802-448C HFSS 1/4-20 X 2 GR5
 - ⑳ 803-088C 1/4-20 FLANGE HEX LOCK NUT
30. Position the (plated, fan-shaped) Right Series II agitator ⑫ to the right of the Left agitator ⑬ just placed. The slot in the agitator fits over the shaft. The short side of the "U" bend faces the sprocket. Align it on the opposite shaft faces from the Left agitator.
31. Loosely attach the agitator to the shaft with a screw ⑲ and nut ⑳.

Refer to Figure 7

32. Select one each new:
 - ⑬ 202-281D LH NG SERIES 2 AGITATOR
 - ⑲ 802-448C HFSS 1/4-20 X 2 GR5
 - ⑳ 803-088C 1/4-20 FLANGE HEX LOCK NUT
33. Rotate the shaft 180°. Position a Left agitator ⑬ to the left of the previous Left agitator ① (away from the sprocket ②). The short side of the "U" bend faces the sprocket. Loosely assemble.
34. Select one each new:
 - ⑫ 202-280D RH NG SERIES 2 AGITATOR
 - ⑲ 802-448C HFSS 1/4-20 X 2 GR5
 - ⑳ 803-088C 1/4-20 FLANGE HEX LOCK NUT
35. Rotate the shaft 180°. Position a Right agitator ⑫ to the right of the previous Right agitator ③ (away from the sprocket ②). The short side of the "U" bend faces the sprocket. Loosely assemble.

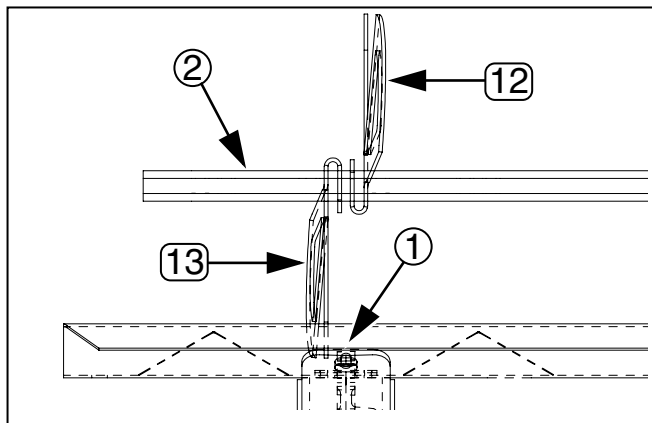


Figure 6
Agitator Inside Blades
(viewed from back of drill)

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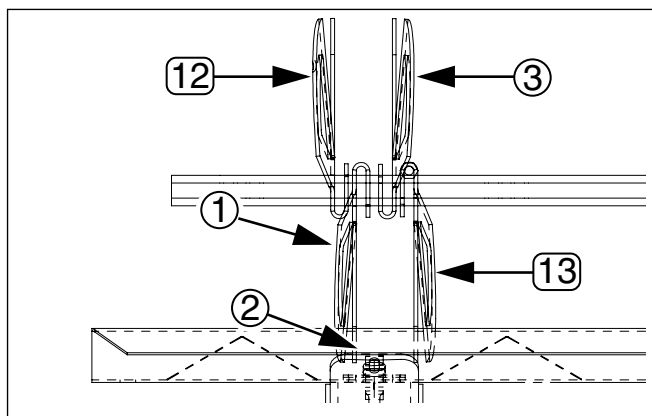


Figure 7
Agitator Outside Blades
(viewed from back of drill)

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Position Blades

Refer to Figure 8

36. Slide the inner-most Left agitator ① so that there is $\frac{1}{4}$ in clearance between the flat blade and the nearest side of the seed sprocket ②. Tighten the screw and nut (not shown).
37. Slide the inner-most Right agitator ③ so that there is $\frac{1}{4}$ in clearance between the flat blade and the nearest side of the seed sprocket ②. Tighten screw & nut (not shown).

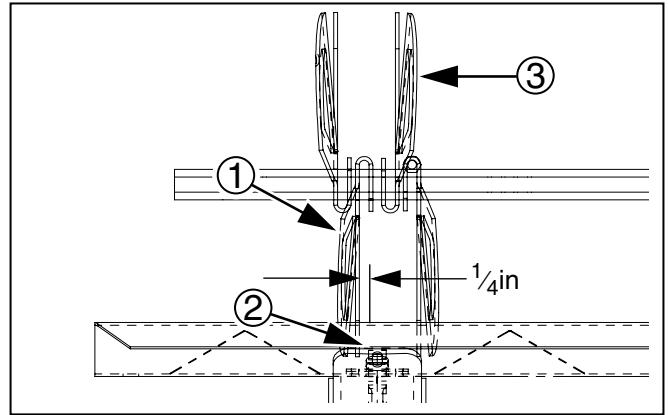


Figure 8
Agitator Blade Placement
(viewed from back of drill)

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Refer to Figure 9

38. Slide the outer-most Left agitator ① close to the inner-most Left agitator ②, leaving $\frac{1}{8}$ in clearance between them (about the thickness of an agitator). Tighten screw and nut (not shown).
39. Slide the outer-most Right agitator ③ close to the inner-most Right agitator ④, leaving $\frac{1}{8}$ in clearance between them (about the thickness of an agitator). Tighten screw and nut (not shown). Spin the shaft for a few turns to check clearances.

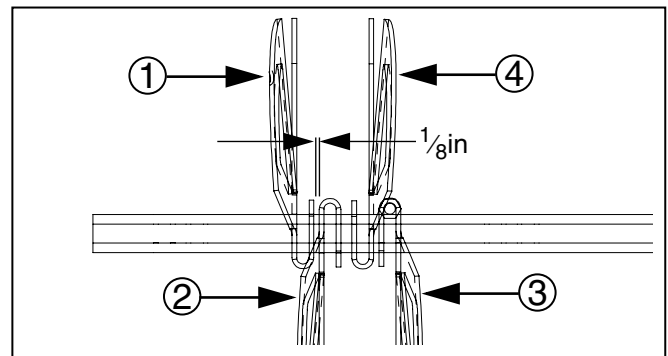


Figure 9
Agitator Spacing
(viewed from back of drill)

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Refer to Figure 10.

40. Position a Right divider agitator ① (plated, paddle-style) to the left of the Series II agitators ② just installed, near the adjacent divider ③ (the "tent"-like rise in the seed box floor) and loosely assemble. The short side of the "U" bend faces away from the peak ③ of the divider.

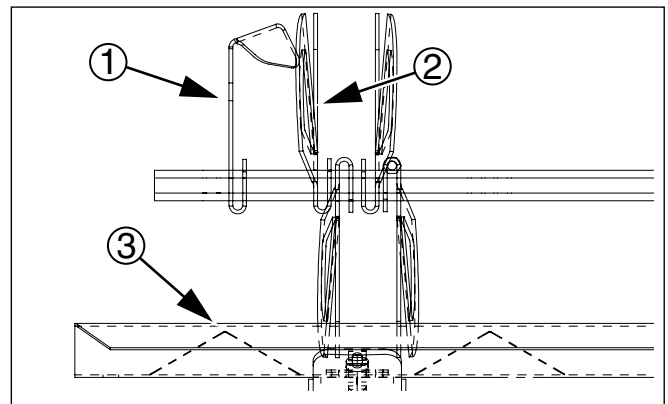


Figure 10
Divider Agitator Placement

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Refer to Figure 11.

41. Position a Left divider agitator ① (black, paddle-style) to the left of the Right divider agitator ② just positioned.
42. Slide the divider agitator pair to center it over the divider ③. Slide them apart to leave the following gap:

Gap	Models
~1/8in	7 1/2in drills
~1/4in	10in drills

This is a starting figure. The objectives are that the divider agitators must not strike the dividers ③, and they must not be in contact with the Series II agitators ④. Spin the shaft to check clearance. Tighten screws and nuts.

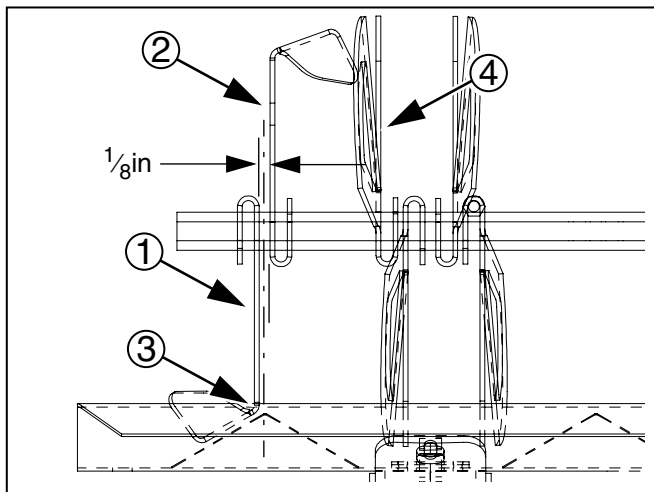


Figure 11 25130
Divider Agitator Spacing

43. Repeat steps 26 through 42 for each seeder row.

Note: On rows adjacent to partitions, it may not be possible to install one or both divider agitators and still have at least 1/8in clearance from the partition. In those cases, do not install the agitator(s).

Refer to Figure 12.

Note: The new Warning decal location is on the stiffener rib on the underside of the Native Grass box lid. Do not cover any existing decals.

If your kit includes one decal, place it near the lid opener.

If your kit includes two decals, place one in each lid on a 2-section drill, or near each ladder on a 2-ladder drill, or a foot or two from each end of a wide drill.

44. Clean the location(s) for the Crush warning decal(s). Peel the release paper backing from the decal, align and apply it. Smooth it with a clean rag to remove bubbles.

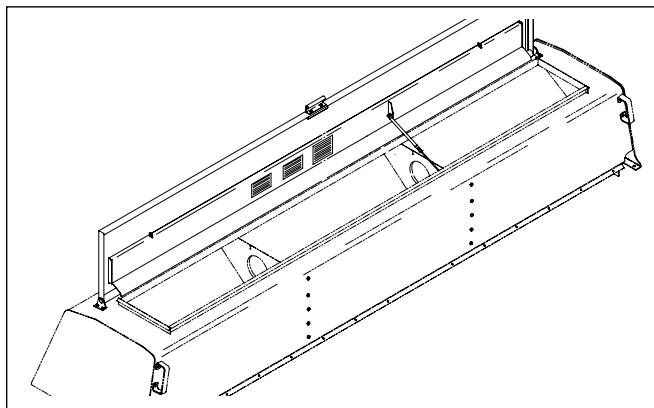


Figure 12 25049
Warning Decal Location

Closeout

45. Re-mount the drive chain on the agitator sprocket.
46. Engage the idlers. Adjust the idlers to remove all but 1/2in of slack in the longest span, and tighten.
47. Install the access panel door and close snaps.

Changing to Series II agitators does not materially change seed rates. Changing to Series II seed sprocket does affect seed rates, and new charts are included in the instructions for that kit.

Parts List

Callout	Kit Part Number 202-	Quantity per Series II Agitator Kit Number								Part Description
		-600A	-601A	-602A	-603A	-604A	-605A	-606A	-607A	
(11)	202-599M	1	1	1	1	1	1	1	1	This Manual
(12)	202-280D	18	20	30	28	38	28	48	36	RH NG SERIES 2 AGITATOR
(13)	202-281D	18	20	30	28	38	28	48	36	LH NG SERIES 2 AGITATOR
(14)	202-283D	7	6	8	0	17	0	18	0	DIVIDER AGITATOR RH
(15)	202-284D	7	6	2	0	17	0	18	0	DIVIDER AGITATOR LH
(16)	202-285D	0	0	2	13	0	13	0	17	10" DIVIDER AGITATOR RH
(17)	202-286D	0	0	2	13	0	13	0	17	10" DIVIDER AGITATOR LH
(18)	802-282C	0	0	0	0	0	0	6	6	RHSNB 5/16-18X1 GR5
(19)	802-448C	50	52	80	82	110	82	132	106	HFSS 1/4-20 X 2 GR5
(20)	803-008C	0	0	0	0	0	0	6	6	NUT HEX 5/16-18 PLT
(21)	803-088C	50	52	80	82	110	82	132	106	1/4-20 FLANGE HEX LOCK NUT
(22)	804-009C	0	0	0	0	0	0	6	6	WASHER LOCK SPRING 5/16 PLT
(23)	822-041C	0	0	0	0	0	0	6	6	FLANGETTE 47 MST
(24)	822-128C	0	0	0	0	0	0	3	3	BEARING 3/4HEX B 47MM SPHER OD
(25)	838-611C	1	2	2	2	2	2	2	2	DECAL WARNING HAND CRUSHING
(26)	838-986C	2	2	2	2	2	2	2	2	DECAL NATIVE GRASS SERIES 2

Reference Information

Abbreviations

GR5	Grade 5
HFSS	Hex Flange Serrated Screw
LH	Left Hand
KP	Knurled cup Point
MST	Metric Spherical Two-hole
NG	Native Grass
OD	Outside Diameter
PLT	Plated
RH	Right Hand
SKT	Socket Head
RHSNB	Round Head Shank Neck Bolt

Torque Values

Fastener/Fitting	N-m	Ft-Lbs
1/4-20 GR5	11	8
5/16-18 GR5	24	17

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