V300 Pivot Lock Upgrade

V300 and V300F Verti-Drills

Used with:

- Model year 2006 and earlier drills

General Information

These instructions explain how to install the V300 Pivot Lock Upgrade. This kit provides more precise pivot lockup for transport and slope drilling.

These instructions apply to:

Option Package	Part Number
V300 PIVOT LOCK UPGRADE	148-773A

Note: Your drill may not need all of the parts in this kit. Some pre-2007 model drills already have extended ear mounts. The instructions show how to determine if parts do not need to be installed.

Due to shipping regulations, this kit cannot contain any touch-up paint to restore welded areas. Your Great Plains dealer can provide it as Great Plains part:

821-001C PAINT GP GREEN SPRAY CAN

If this part is not available in your locale, use a green exterior enamel paint close to Pantone 356.

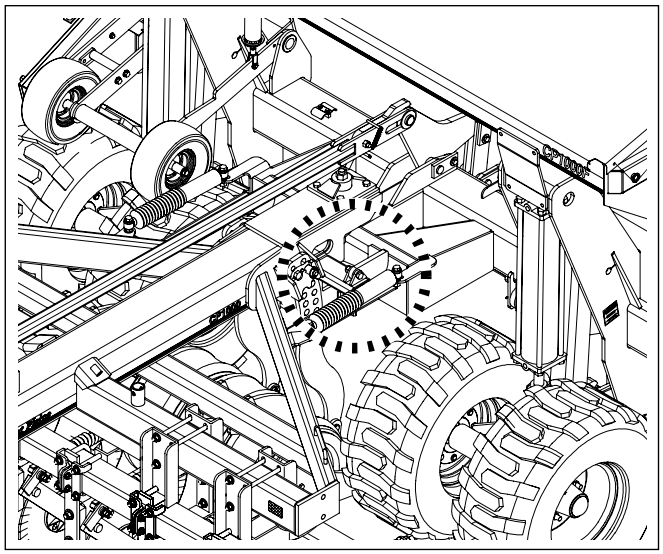


Figure 1 22574
Site of Update on Drill

Before You Start

Each kit converts one drill.

For each kit, inventory the contents per the "**Parts List**" on page 7.

Review the instructions, to make sure the steps are understood and what tools are expected.

Have the following items at hand:

- Wire or stick welder and welding tarps
- Appropriate safety equipment, such welding mask and gloves
- Basic hand tools, including welding clamps
- Original or updated Parts Manual for your implement

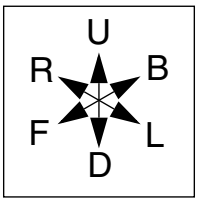
CAUTION

Fire hazard: hydraulic hoses, tires and boots near welding sites must be removed or protected with welding tarps.

Notations and Conventions

Left and Right are facing in the direction of machine travel during planting.

An orientation rose in the line art illustrations shows Left, Right, front, Back, Up and Down.



① callouts identify components in the currently referenced Figure or Figures

11 to 18 callouts reference new parts from the list on page 7

51 to 57 callouts reference existing parts. The descriptions match those in your Parts manual.

Site Preparation

Refer to Figure 2

1. Clear obstructions and hazards at the work sites on the drill.

Note: Some hydraulic hoses can be protected with tarps, do not obstruct access, and may be left in place.

Some cannot be left in place during welding, and must be disconnected. If the drill is equipped with hydraulic down pressure, several hoses on the right side of the drill need to be removed.

Note: Hose disconnection will result in some spillage of hydraulic fluid, and the welding to be performed will create a shower of sparks. Perform hose clearing at a different location than used for welding.

Note: It may also be necessary to remove the forward walkboard, if present, on the left side of the drill.

2. Connect a suitable tractor, raise the drill and install lift cylinder locks.
3. Set each hydraulic circuit to Float to relieve pressure, then disconnect each at the hitch. Leave the tractor hitched to the drill.

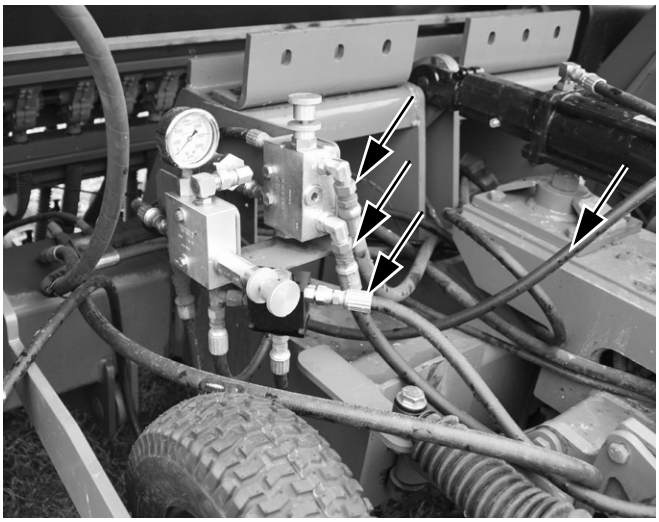
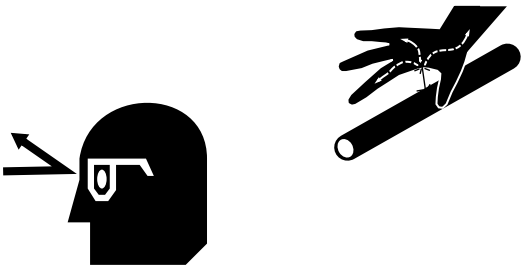


Figure 2 26174
Hydraulic Down-Pressure
Hoses to Disconnect

CAUTION

Some pressure may remain in hoses controlled by valves on the drill.

4. Mark each side of a hose disconnection point to assure correct re-connection later. Disconnect each hose at a JIC or NPT fitting (and not at an O-ring boss fitting). If available, cap or plug open lines. Move the disconnected hoses out of the work area, and tie them to frame parts, away from tires.
5. Engage existing pivot locks. Move the drill to a location suitable for welding. Make sure the ground or floor under the drill is non-flammable.
6. There will be sparks from welding. Dry grass, wood floor, or areas with flammable fluid spills are not suitable locations for installing this upgrade.
7. Before coming to a complete stop, pull drill straight forward with tractor and lower hitch slightly to relieve pressure on existing pivot locks. Raise pivot locks.
8. Block drill transport tires to prevent movement. Disconnect hydraulic and electrical lines to tractor. Unhitch tractor.



Avoid High Pressure Fluids

Escaping fluid under pressure can penetrate the skin, causing serious injury.

▲ *Slowly open fittings before disconnecting hydraulic lines.*

▲ *Wear protective gloves and safety glasses or goggles when working with hydraulic systems.*

▲ *If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.*

Remove Old Pivot Lock

Refer to Figure 3

9. Remove any pin:
   57 PIN WIRE SNAP LOCK 1/2 X 3 1/2
   It is not re-used, but may be saved as a spare.

Note: Pin 57 may not be present on all drills.

10. Remove and save one each on each side:
    53 HHCS 5/8-11X2 1/2 GR5
    55 NUT HEX NYLOCK 5/8-11 PLT

11. Remove one on each side:
    51 FCP1000 PVT LOCK LUG
    and if present, also remove:
    52 PIVOT LOCK LATCH

Note: Although shown disassembled for clarity, the lug 51, and any latch 52, do not require further disassembly. The bolts, washers and nuts that connect them are not re-used.

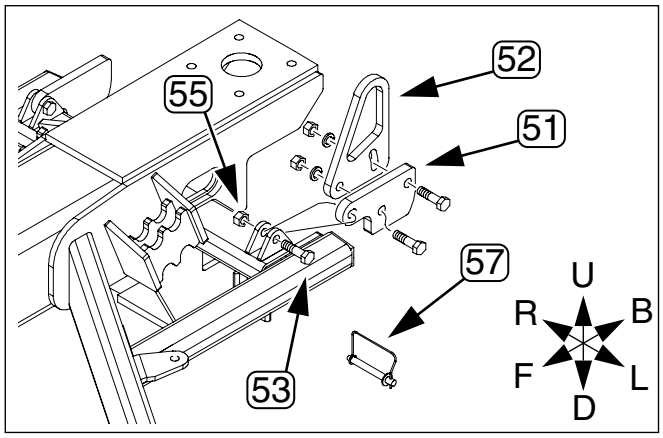


Figure 3 26175
Remove Old Pivot Lock

Installation

Attach Ear Mount Extensions

(If Necessary)

Refer to Figure 4

12. Compare the existing ear mounts on your drill to those illustrated in Figure 4.

    If they are style ①, they need to be extended with the parts in this kit. Continue at step 13.

    If they are style ②, they are already up to date. These kit parts will be unused:
    14 248-509D PIVOT LOCK EAR MNT EXTENSION
    Skip to step 23.

13. Select four each new parts:
    14 248-509D PIVOT LOCK EAR MNT EXTENSION

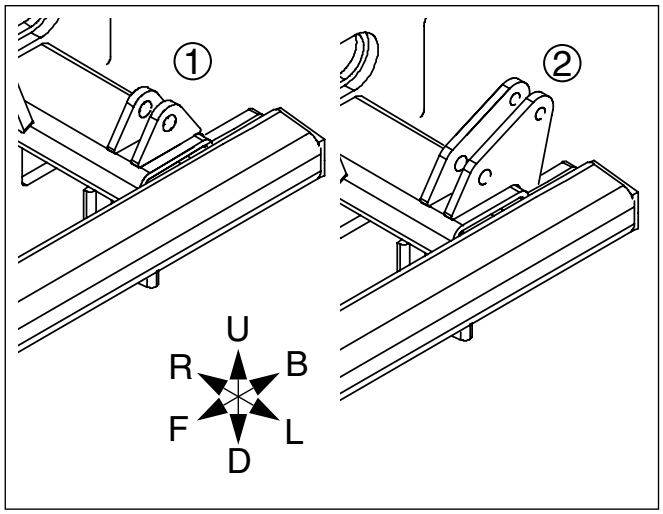


Figure 4 26176 26177
Possible Ear Mounts Present

Weld Ear Mount Extensions

Refer to Figure 5

Note: The channel ① between the ears/extensions must be the same width as the existing ears ②, to allow insertion and pivoting of the new pivot lock. The channel must also be free of weld fillets and splatter.

You may want to clamp the old pivot lock (plus a shim) in the gap to keep the gap clear and sized, as well as to keep each new ear extension [14] aligned with its old ear.

14. Remove paint from the mating surfaces ③, ④, ⑤ of an existing short triangular ear ②, and from 1cm at the edges along the intended weld line ④.
15. Clamp an ear extension [14] to an existing short triangular ear ②.
16. Select two each:
    [57] PIN WIRE SNAP LOCK 1/2 X 3 1/2, or
    [18] 805-232C PIN WIRE SNAP LOCK 1/2 X 3 1/2
17. Insert the pin through both ear extensions to assure hole alignment during welding.
18. Tack weld each new ear at the top/front ③ and bottom/rear ⑤ end. Allow to cool and check alignment.

Note: Do not weld on or along the inside mating lines between the old ear and ear extension.

19. Make a 1cm ($^3/_8$in) finish weld along the outside mating line between the old ear and extension.
20. Make a 1cm ($^3/_8$in) fillet weld along the top/front ③ and bottom/rear ⑤ ends.
21. Repeat step 14 through step 20 for all three additional ear extensions.
22. Sand the weld areas and apply fresh paint.

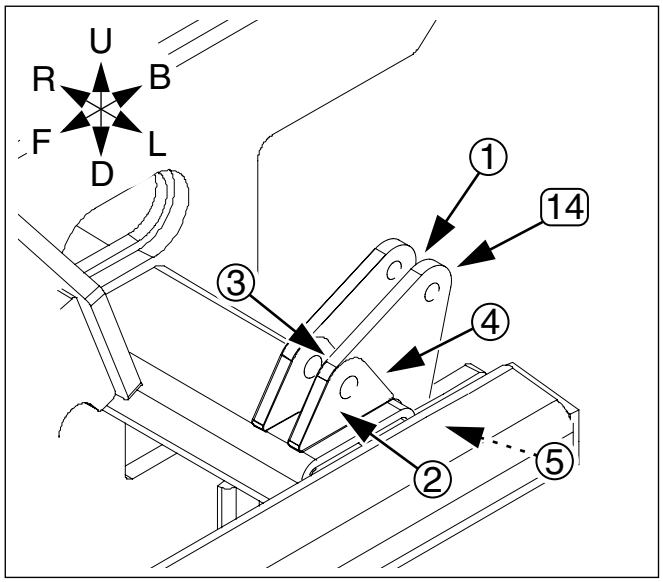


Figure 5 26178
Align Extensions & Weld

Install Pivot Stop Face Plates

Refer to Figure 6

23. Inspect the rear sub-frame pivot assembly (just aft of the hitch sub-frame just worked on). Note whether or not the pivot stop plate ① has a gusset plate ② present. Each case is illustrated separately in the instructions that follow.
24. Remove the paint from the top edge of the stop plate ①, from an area 6cm on either side of a point 11.5cm from the outside edge of the plate (the area to be covered by the stop face plate extension [15] shown in Figure 7). Also remove paint on the front and back of the plate within 1cm of that same area.

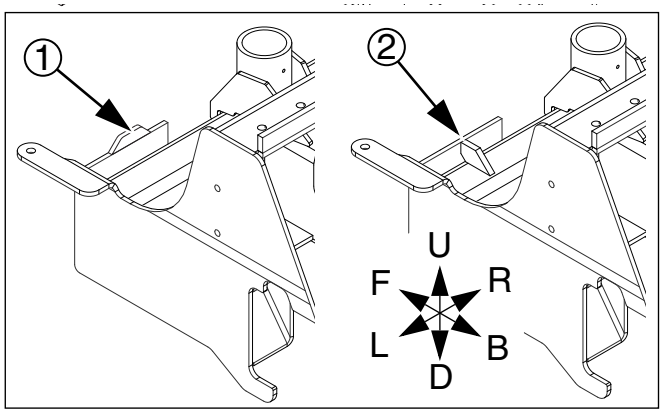


Figure 6 26179 26180
Sub-Frame Pivot Assembly

Weld Face Plate Extensions

Refer to Figure 7

25. Select two new:
    15 248-511D PIVOT STOP FACE PLATE
26. Clamp a face plate extension 15 on top of a pivot stop plate, centered 11.5cm ($4\frac{1}{2}$in) from the outside end of the stop plate.
27. Tack weld the ends ③ of plate extension 15 and let it cool.
28. Make a 1cm ($\frac{3}{8}$in) fillet weld along both front and back lower edges ④ of the plate extension 15, and finish the welding at both ends ③.
29. Grind the front and back weld smooth. This provides a flat surface for the new pivot lock in front, and flat surfaces for the new braces in back.

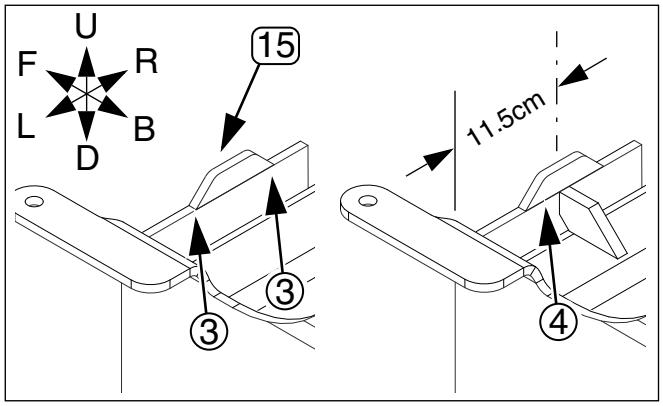


Figure 7
Weld Face Plate Extension

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Install Pivot Stop Braces

Refer to Figure 8

30. Select four new:
    13 248-499D V300 PIVOT STOP PLT BRACE

Note: Where to place the braces depends on whether your drill has no existing gusset (left illustration) or has an existing gusset (right illustration).

No Existing Gusset:
Clamp the new braces 13 together and tack weld them as a unit.

Existing Gusset:
Place the new braces 13 as close as possible to the existing gusset, while avoiding existing weld fillets and maintaining consistent contact at from and bottom edges of braces.

31. Position and tack weld the braces 13. Let cool.

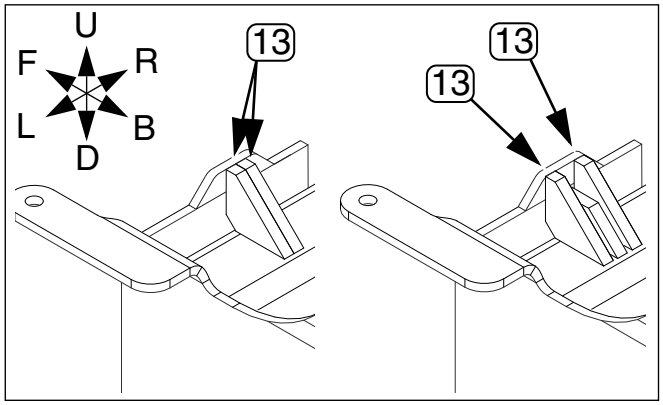

Figure 8
Tack Weld Braces

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Weld Pivot Stop Braces

Refer to Figure 9

32. Make a 1cm ($^3/_8$in) fillet weld along the outside edges ③, and top and bottom ends ③ of both braces.

    If braces were doubled (left illustration), make a 1cm ($^3/_8$in) fillet weld along the joint ③ between them.

    if braces are separate (right illustration), make no further welds.

33. Sand and paint the affected weld areas.

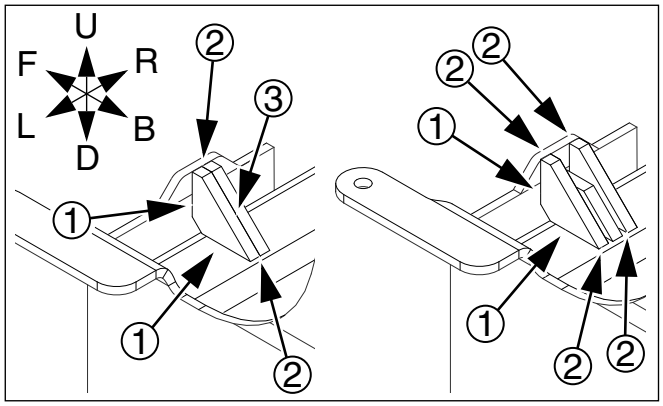

Figure 9
Finish Weld Braces

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Install New Pivot Locks

Assemble Pivot Locks

Refer to Figure 10

34. Select two each new:
    [12] 148-774H PIVOT STOP LUG WLMT
    [16] 802-634C HHCS 1-8X2 GR5
    [17] 803-030C NUT HEX JAM 1-8 PLT

35. Loosely screw the nut [17] all the way up against the head of the bolt [16].

36. Loosely screw the assembled bolt all the way into the pivot stop lug [12].

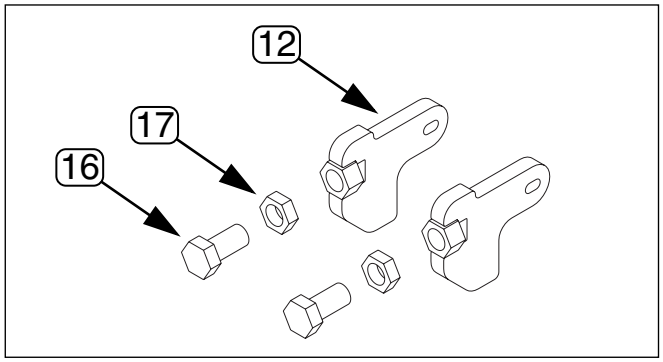

Figure 10
Assemble Pivot Locks

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Install Pivot Locks

Refer to Figure 11

37. Select two each new:
    [18] 805-232C PIN WIRE SNAP LOCK 1/2 X 3 1/2
    and two each saved:
    [53] HHCS 5/8-11X2 1/2 GR5
    [55] NUT HEX NYLOCK 5/8-11 PLT

38. Insert the new pivot lock ① between the mount ears ② and align the hole in the lock ③ with the forward holes ④ in the ears.

39. Insert a saved bolt [53] through the ears ② and pivot lock ①, and secure it with a saved lock nut [55]. Do not fully tighten the lock nut. The bolt needs to rotate in normal use.

40. Make sure hitch is straight forward on frame. Adjust the lug bolts [16] so that they contact the face plates. Secure that position with the jam nuts [17].

41. Insert and secure the pin [18] above the pivot lock.

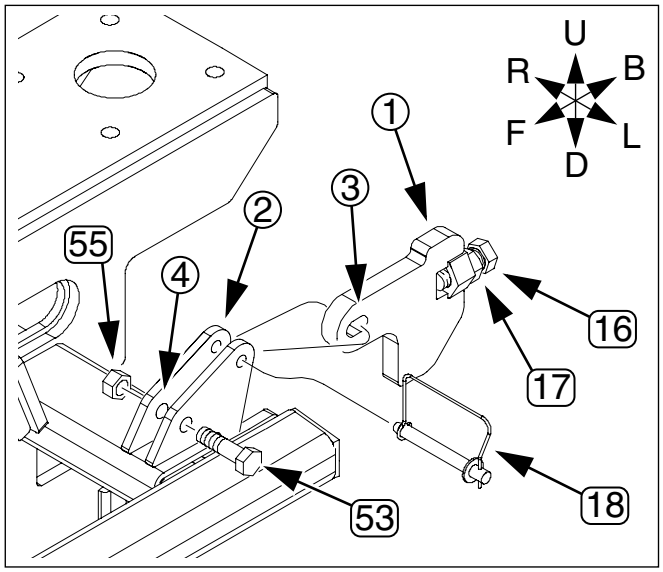

Figure 11
Install Pivot Lock

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Reinstalled Cleared Components

42. Reconnect any hydraulic hoses disconnected at step 4. Recharge them with hydraulic fluid and bleed them per the instructions in the drill Operator's Manual.
43. Re-install any other components removed, such as the walkboard.

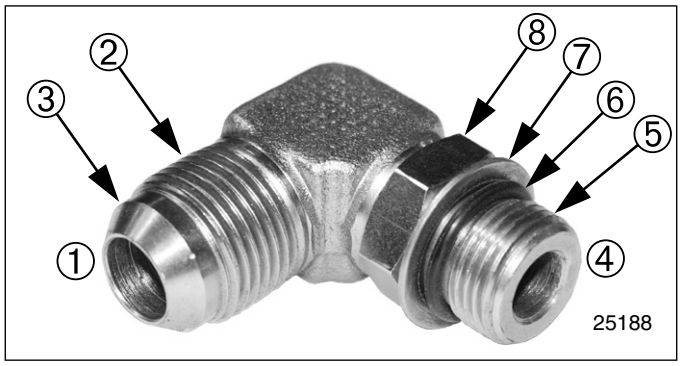
Reference Information

Abbreviations

GR5	Grade 5
HHCS	Hex Head Cap Screw
JIC	Joint Industry Conference 37° flare fitting
MNT	Mount
NPT	National Pipe Thread
ORB	O-Ring Boss
PLT	Plated
PVT	Pivot
WLMT	Weldment

Torque Values		
Fastener/Fitting	**N-m**	**Ft-Lbs**
1/4 NPT	1.5-3.0 turns past finger tight	
5/8-11 GR5	205	150
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
1-8 GR5	875	645

Connector Identification



① **JIC** - Joint Industry Conference (SAE J514)
Note straiight threads ② and the
37° cone ③ on "M" fittings (or 37° flare on "F").

④ **ORB** - O-Ring Boss (SAE J514)
Note the straight threads ⑤ and,
elastomer O-Ring ⑥.
Fittings needing orientation, such as the ell above, also have a washer ⑦ and
jam nut ⑧ ("adjustable thread port stud")

\- **NPT** - National Pipe Thread (not shown)
have tapered threads, no cone/flare, no O-ring.

Parts List

New Parts Included in the 148-773A V300 Pivot Lock Upgrade:

Callout	Quantity	Part No.	Part Description
⑪	1	148-772M	This manual
⑫	2	148-774H	PIVOT STOP LUG WLMT
⑬	4	248-499D	V300 PIVOT STOP PLT BRACE
⑭	4	248-509D	PIVOT LOCK EAR MNT EXTENSION
⑮	2	248-511D	PIVOT STOP FACE PLATE
⑯	2	802-634C	HHCS 1-8X2 GR5
⑰	2	803-030C	NUT HEX JAM 1-8 PLT
⑱	2	805-232C	PIN WIRE SNAP LOCK 1/2 X 3 1/2

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