



IK001712
Date: draft

BC1500 MAIN FRAME/TONGUE WELDMENT UPDATE KIT			
★DEALER INSTALLATION ONLY★			
■ IK01 units also require installation of IK02 or IK03.			
Model	Serial Numbers		Kit # Version
	Including	Excluding	
BC1500	2082 – 2852	1001 – 1599 2000 – 2081 2853 – 3165 5001 – 5005	IK01 ■ See below. Must also order IK02 or IK03
BC1500 Standard tongue weldment	1001 – 1599 2000 – 3165 5001 – 5005	** See below	IK02
BC1500 Australian tongue weldment	*** See below	**** See below	IK03
Mandatory <input checked="" type="checkbox"/>		Recommended <input type="checkbox"/>	Optional <input type="checkbox"/>
Dealer Reference: Service Bulletin No. SVC2012065			



KIT VERSIONS/APPLICABLE SERIAL NUMBERS:

IK01-1712 provides the necessary parts and instructions to add a formed plate to reinforce the area of the front crossmember and outer tongue tube if upon visual inspection it is revealed that frame was incorrectly welded.

■ **Note:** This Kit version is only applicable to S/N 2082 – 2852. For units within this S/N range, also **order and install either IK02** (standard tongue weldment) **or IK03** (Australian tongue weldment).

IK02-1712 provides the necessary parts and instructions to replace the original inner extendable **standard** tongue weldment. **** IK02 Excluded Units (units equipped with Australian tongue weldment):** 2083–2085, 2092, 2093, 2098, 2152–2154, 2176, 2186, 2189, 2192, 2193, 2203–2205, 2213, 2214, 2244, 2247, 2253–2254, 2276–2277, 2283–2288, 2327, 2329, 2330, 2355–2358, 2392, 2393, 2456–2458, 2463–2466, 2477–2481, 2504, 2505, 2521–2523, 2544, 2545, 2557, 2562, 2568, 2571, 2586, 2588, 2590, 2608, 2609, 2623, 2625, 2627, 2629, 2631, 2632, 2668, 2669, 2674, 2675, 2707–2711, 2713–2715, 2721, 2722, 2731–2734, 2739, 2769–2772, 2778–2783, 2792, 2800, 2803, 2809–2811, 2822, 2830–2832, 2841, 2842
**** IK02 Excluded Units (units previously updated):** 1062, 1582, 2662

IK03-1712 provides the necessary parts and instructions to replace the original inner extendable **Australian** tongue weldment. ***** IK03 Included Units (Australian tongue):** 2083–2085, 2092, 2093, 2098, 2152–2154, 2176, 2186, 2189, 2192, 2193, 2203–2205, 2213, 2214, 2244, 2247, 2253, 2254, 2276–2277, 2283–2288, 2327, 2329, 2330, 2355–2358, 2392, 2393, 2456–2458, 2463, 2465–2466, 2477–2480, 2504, 2505, 2522, 2557, 2562, 2586, 2588, 2590, 2609, 2623, 2625, 2627, 2629, 2631, 2632, 2668, 2669, 2674, 2675, 2707–2711, 2713–2715, 2721, 2722, 2731–2734, 2739, 2769–2772, 2778–2783, 2792, 2800, 2803, 2809–2811, 2822, 2830–2832, 2841, 2842
****** IK03 Excluded Units (Australian tongue) – units previously updated:** 2481, 2521, 2523, 2544, 2545, 2464, 2568, 2571, 2608

PURPOSE:

Incorrect welding of the outer tongue tube to the front crossmember may result in higher material stresses during towing which can result in bending and/or fatigue fractures of the main frame weldment. During towing with the inner tongue tube fully extended, the area near the second crossmember of the main frame may experience high material stresses. This material stress may cause bending and/or fatigue fractures.

The failure will result in main frame weldment sag or droop at the location of the failure. No separation of the tongue from the brush chipper is possible.

Sag or droop of the main frame weldment may result in loss of vehicle control while towing on public highway. **Death or serious injury is possible.** Property equipment damage may also occur.

SPECIAL TOOLS AND CONDITIONS:

- **Welder**
- **Grinder/Sander**
- **Vermeer Primer and Vermeer Yellow Gloss Paint**



WARNING: Use the following shutdown procedure before attempting to do any work described in this Kit.

1. Return *Upper Feed Control Bar* to top STOP position.
2. Place *Throttle Switch* in LOW RPM.
3. Wait for cutter drum to slow.
4. Move *Clutch/Throttle Lever* to DISENGAGED/LOW RPM position.
5. Shut off engine and remove key.
6. Wait for cutter drum and belt to stop.

Cutter drum rotation can be checked by looking at end of the shaft on left side of the cutter wheel housing.

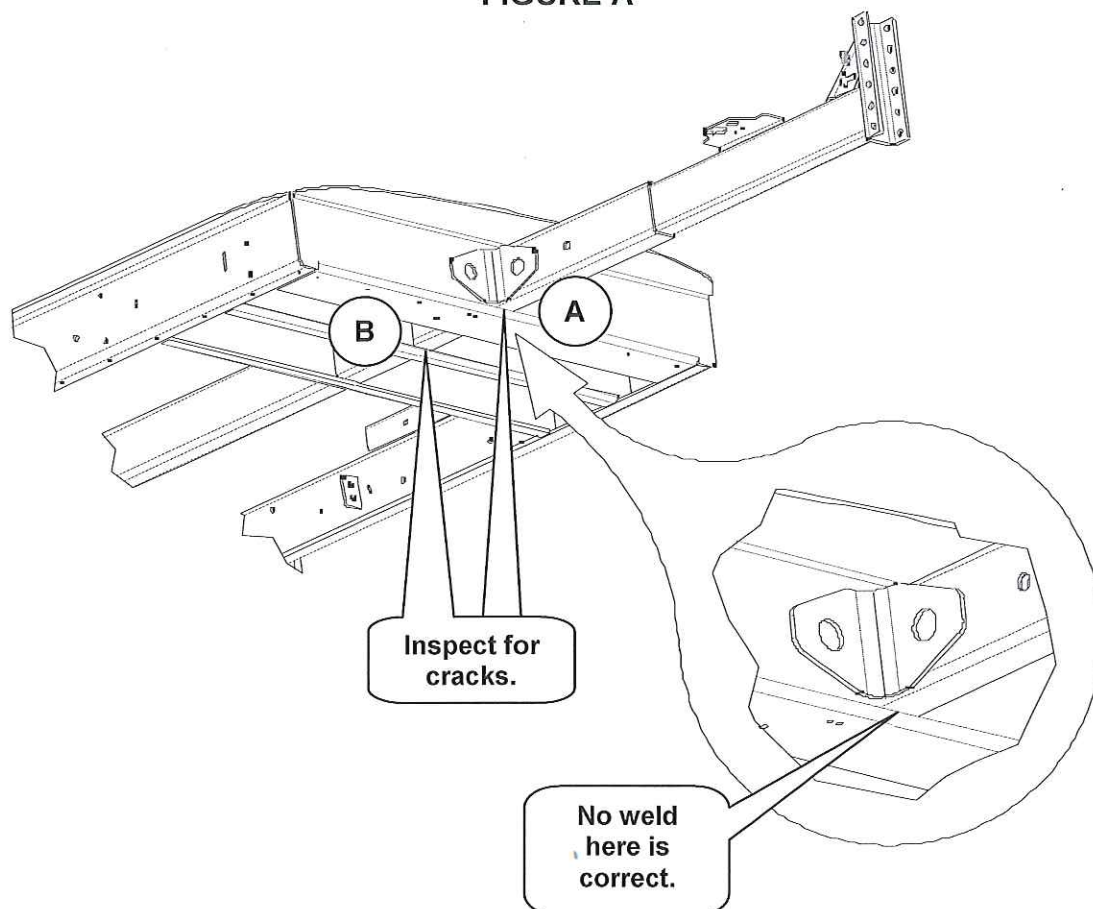
NOTICE: The cutter drum will continue to turn for a short time after the engine has stopped.

7. Remove ignition key.
8. Close and latch feed table.

INSPECTION:

1. Visually inspect frame at locations A and B, Figure A.
 - a. If there are **any** cracks at location A or B, email photos to productsafety@vermeer.com. Further instructions will be provided.
 - b. The frame should **not** be welded across bottom of tube at Location A. If it is welded, install IK01. If it is not welded, do not install and discard P/N 163677823 tube weldment.
2. Install IK02 (standard tongue) or IK03 (Australian tongue).
3. Follow procedure below.

FIGURE A



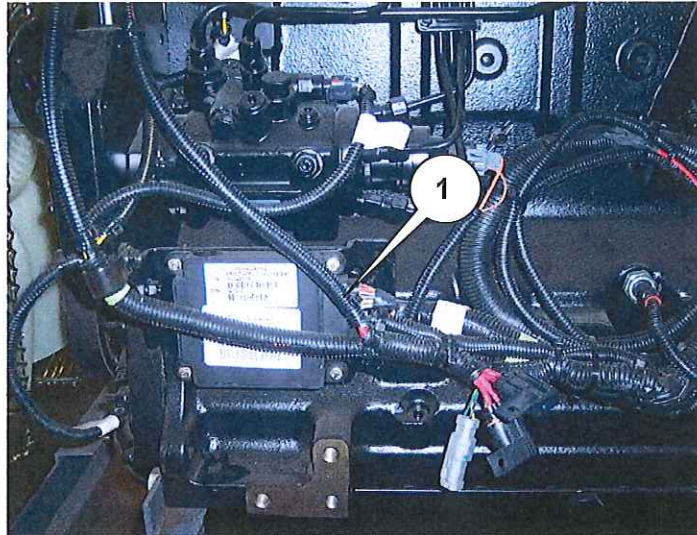
PROCEDURE:

If installing a new tongue only, (IK02 or IK03) skip steps 1–9 and start at step 10.

1. Open engine hood.

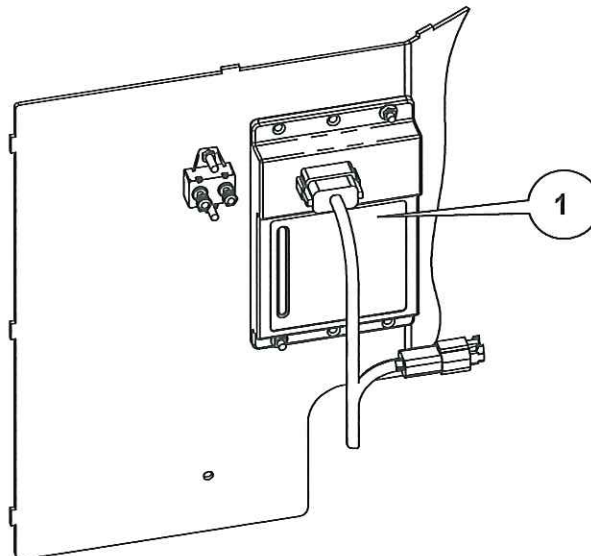
2. Remove negative battery cable and then positive battery cable from battery posts.
3. Unplug wire harness (1) from engine ECU (Figure B).

FIGURE B



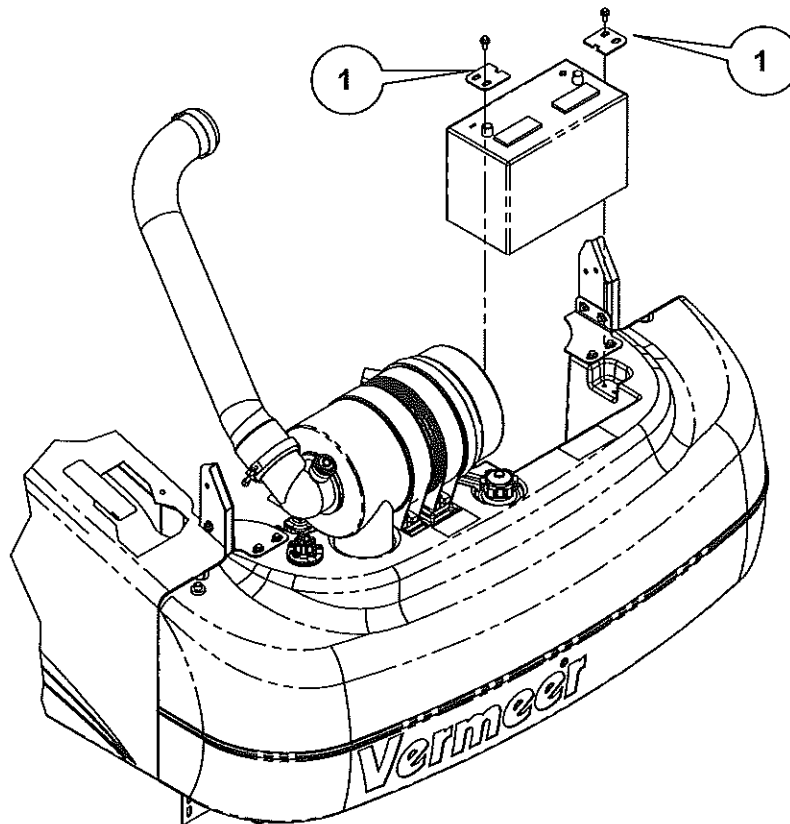
4. Unplug wire harness from SmartFeed control box (1) (Figure C).

FIGURE C



5. Remove four bolts and brackets (1) securing battery to fuel tank. Remove battery (Figure D).

FIGURE D

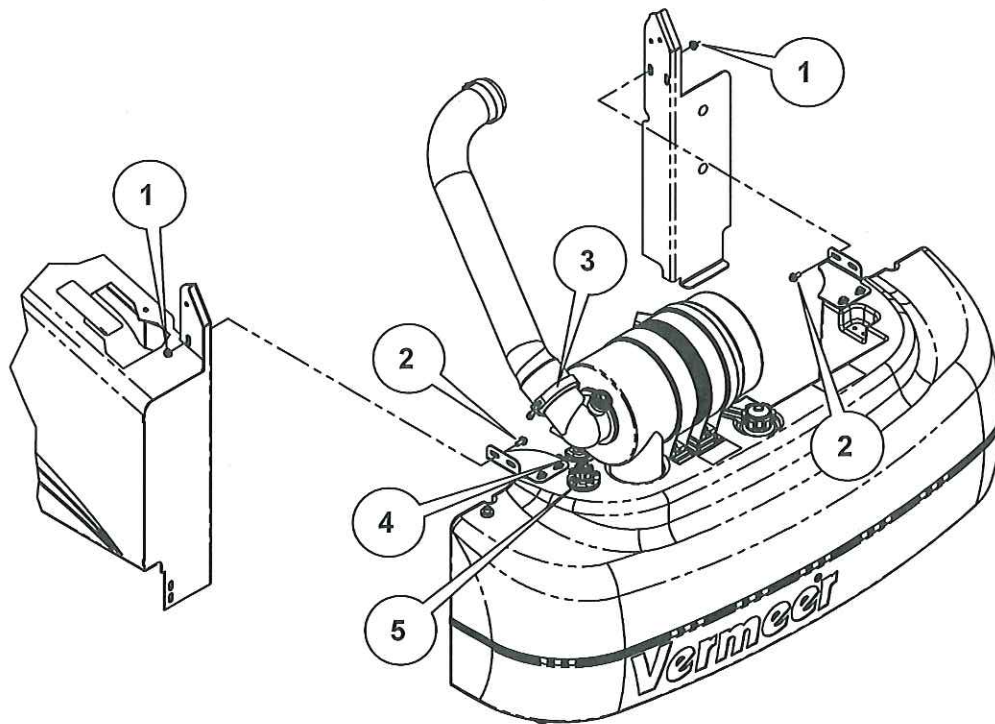


	<p>WARNING: Fuel and fumes can explode and burn. Shut off engine before removing tank. No flame. No smoking.</p>
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6. Using a proper container, drain as much fuel from the tank as possible to lighten it.
7. Disconnect supply and return fuel lines (4) from fittings on tank. Disconnect wires from fuel sending unit (5) (Figure E).
8. Loosen clamp (3) and pull air cleaner intake hose from air cleaner (Figure E).

9. Remove nuts **(1)** and bolts **(2)** securing fuel tank to machine. Remove fuel tank and air cleaner assembly (Figure E).

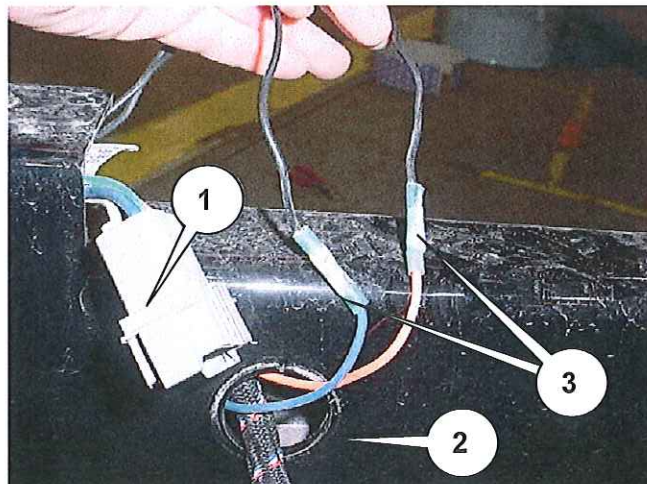
FIGURE E



10. Disconnect wire harness **(1)** at front of tongue, then do the following (Figure F):

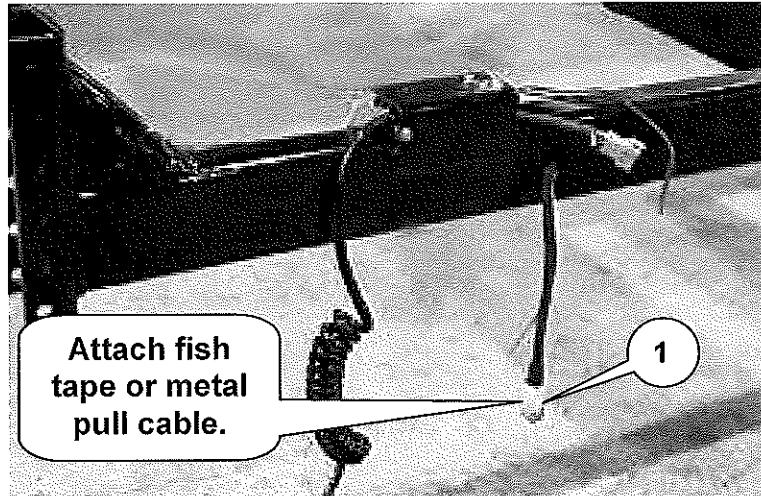
- Cut breakaway switch wires and dispose of connectors **(3)**.
- Remove grommet **(2)** from hole in tongue and retain.

FIGURE F



11. Attach a long metal pull cable or fish tape tool to trailer harness plug **(1)** then push harness and plug inside hole of tongue (Figure G).
12. Pull wire harness through square opening in rear of trailer main frame. This will ensure harness is away from excessive heat when welding.

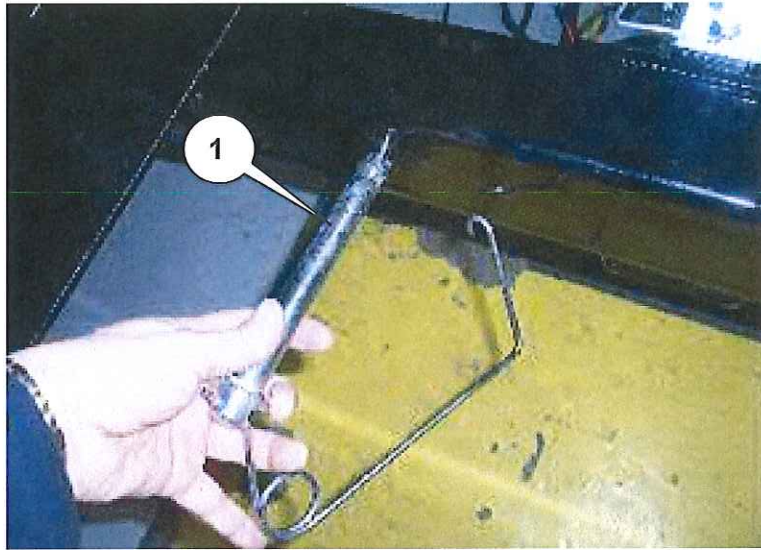
FIGURE G



WARNING: Falling load can crush. Never work under raised equipment unless it is securely supported to prevent it from falling unexpectedly.

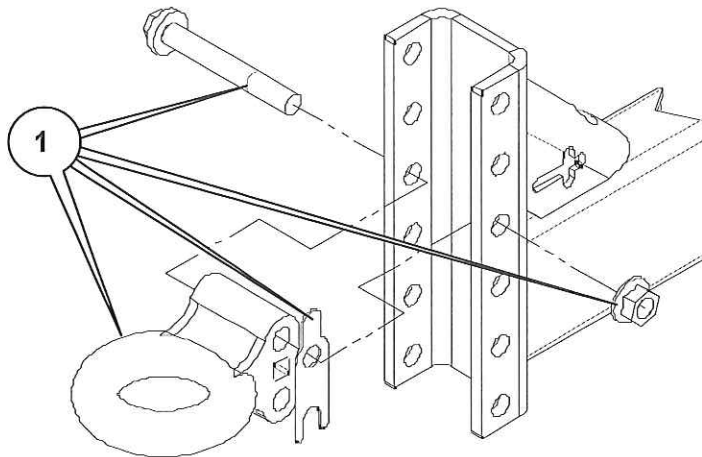
13. Shut off engine before removing tank. No flame. No smoking.
14. Block up machine in all four corners of the frame and remove jack from tongue.
15. Remove the two spring pins **(1)** from tongue and discard. These will be replaced with new hardware (Figure H).

FIGURE H



16. Remove pintle hitch and associated hardware **(1)** from tongue. Retain hitch and hardware (Figure I).

FIGURE I



17. Remove safety chains and associated hardware **(1)**. Retain chains and hardware (Figures J and K).

FIGURE J
Domestic Tongue

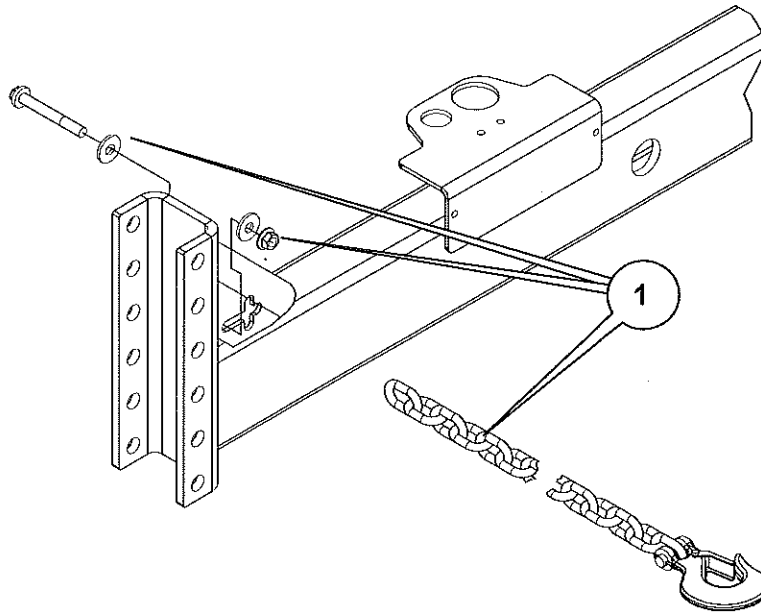
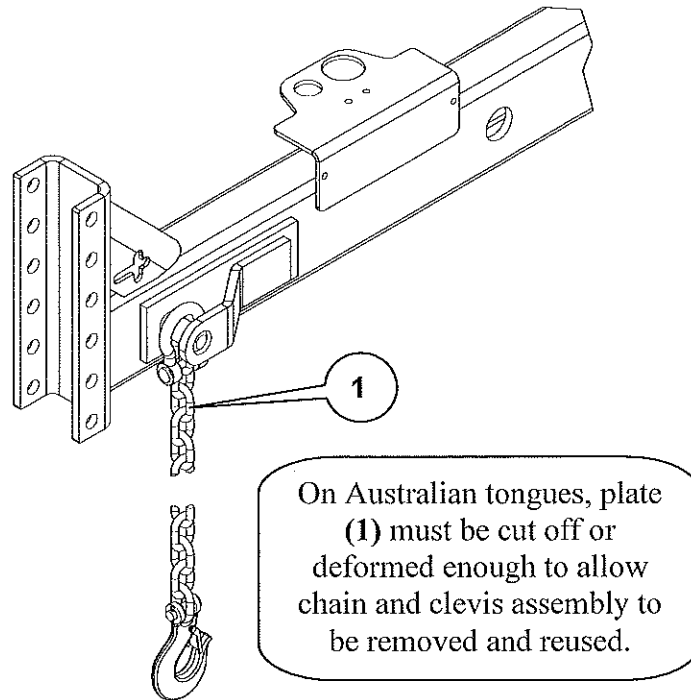
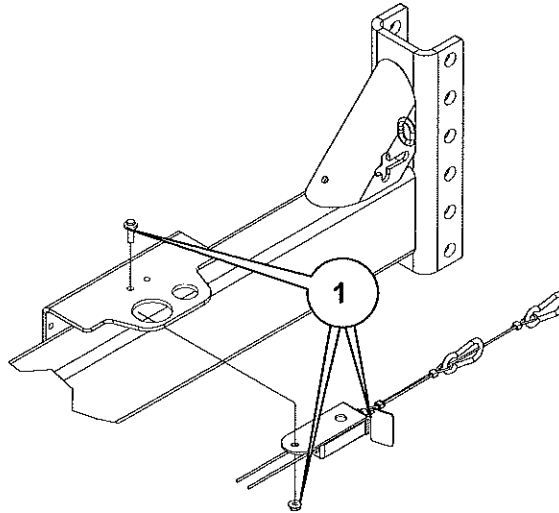


FIGURE K
Australian Tongue



18. Remove safety breakaway switch and associated hardware (1) and retain for reuse (Figure L).

FIGURE L



19. Slide old tongue out of frame. If there is deformation on tongue at pin locations, grind area to allow tongue to be removed.
20. If installing a new domestic standard tongue only (IK02), go to step 27. If installing a formed support plate and/or new Australian tongue (IK01 or IK03 or both) continue below.

NOTICE: All welding must be done by a welder that is qualified to AWS D14.3/D14.3:2010 or previous editions in the welding process to be used. The welder must be qualified as a minimum in the 2G (horizontal groove) position. Welder qualification to AWS D1.1 or ASME section IX are acceptable within the limits of the processes and positions given.

The temperature of the material to be welded must not be below 50°F (10°C).

The welding processes that can be used to make this repair are limited to the following:

- a) Shielded Metal Arc Welding using E7018 electrode following the manufacturers recommendation on welding parameters; or
- b) Gas Metal Arc Welding using ER70S-3 or ER70S-6 electrode and 90% Argon – 10% CO₂ shielding gas following the electrode manufacturers recommendation on welding parameters; or
- c) Flux Core Welding using E71T-1M/9M electrode and the recommended shielding gas by the electrode manufacturer following the electrode manufacturers recommendation on welding parameters.

When using the GMAW or FCAW welding process, winds and drafts shall be limited to avoid affecting gas shielding.

21. Clean all grease, dirt, oil, moisture, paint, or any other foreign material that will adversely affect the quality or strength of the weld from the area to be welded (Figures M – O).

FIGURE M

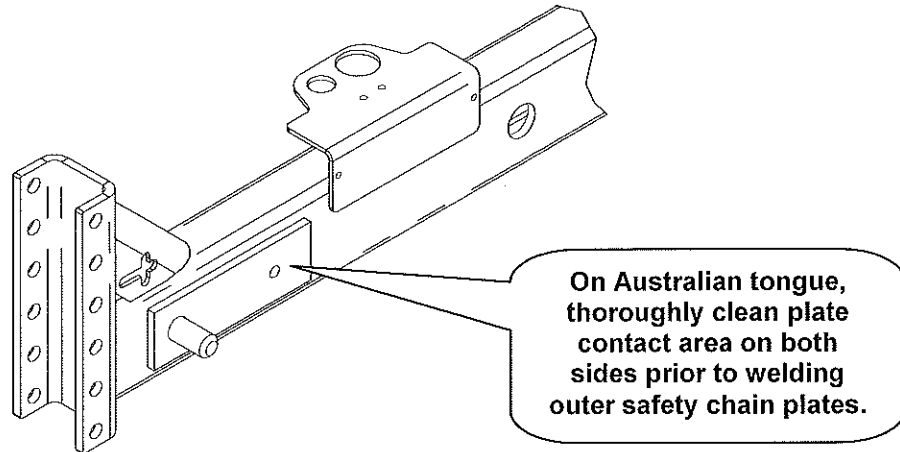


FIGURE N

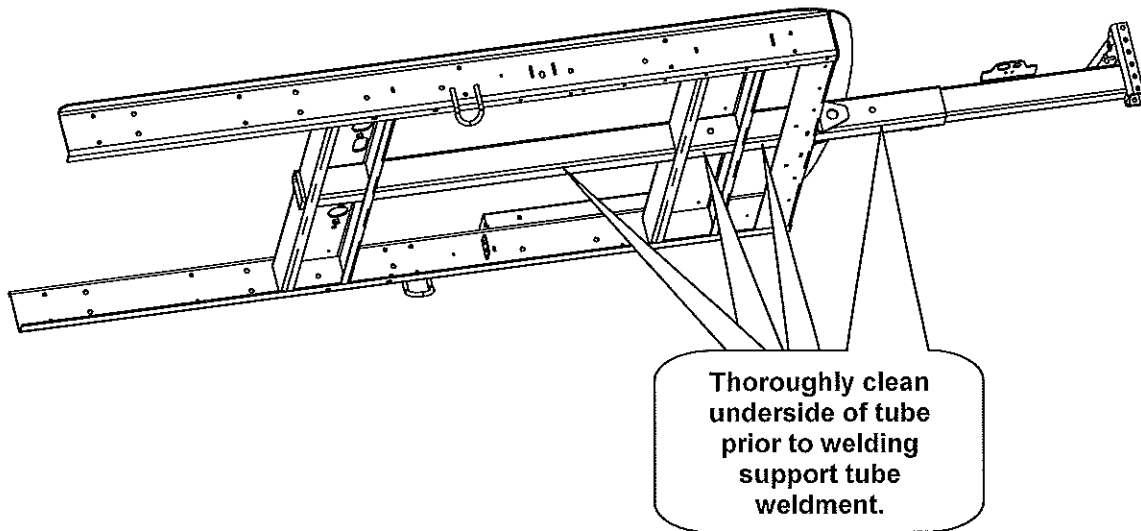
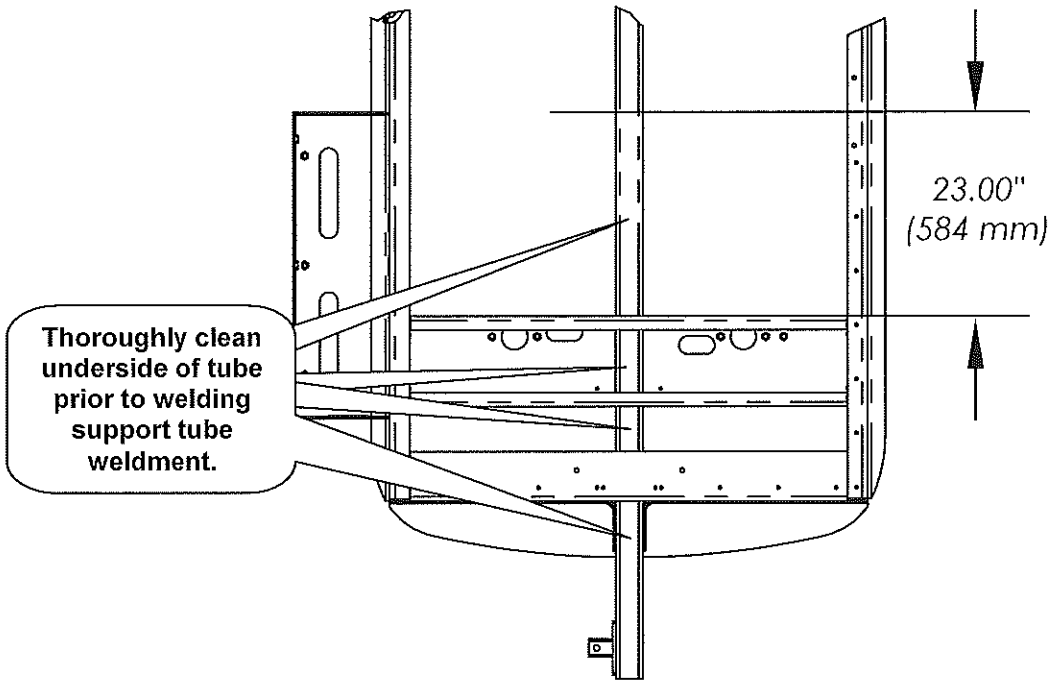


FIGURE O



22. Position new tube **(1)** (Figures P & Q) and weld a .2 flare bevel weld in areas specified in the drawings below. See **(1)** Figure 1 for description of tube.

FIGURE P

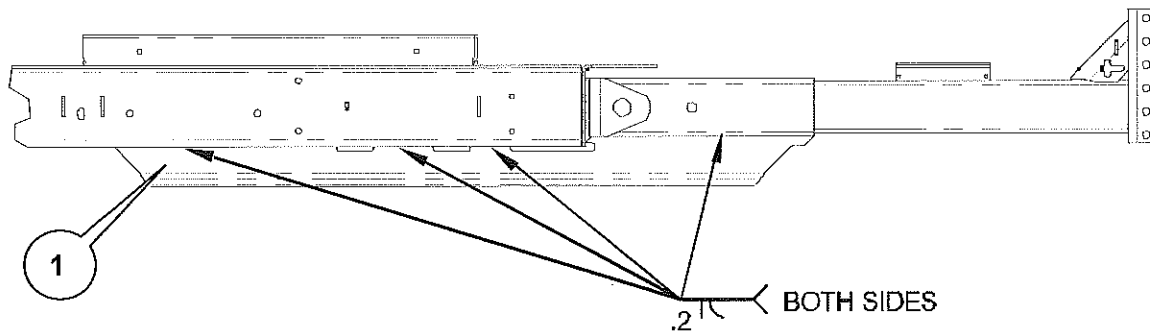
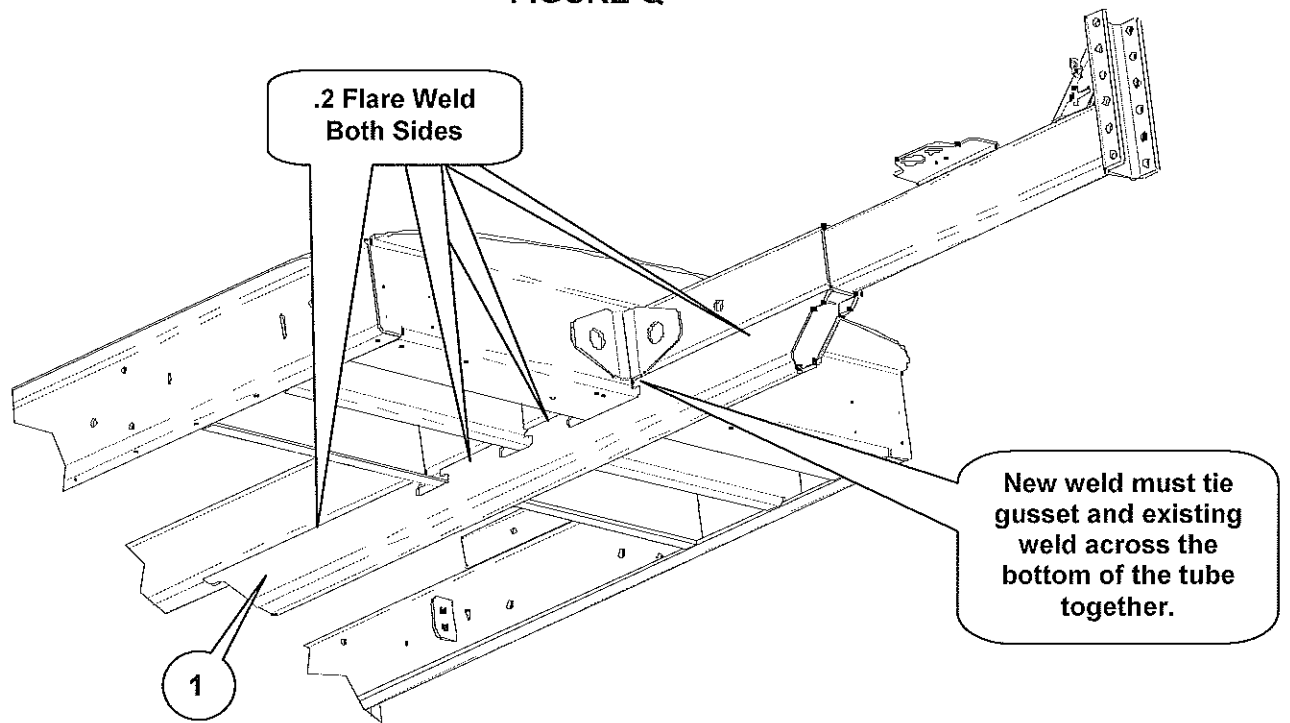
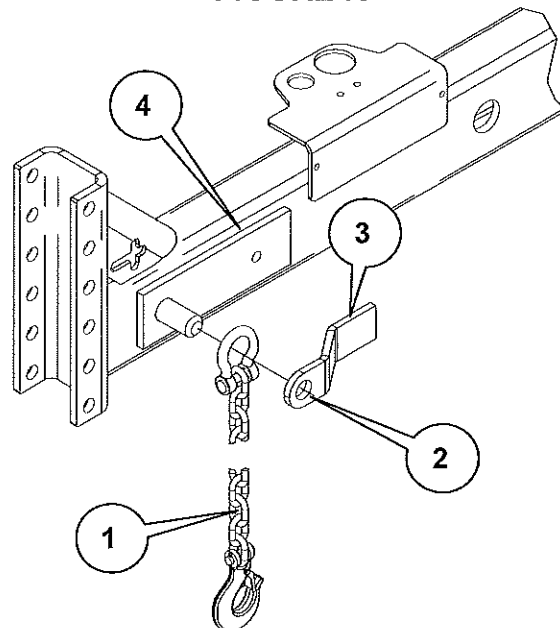


FIGURE Q



23. Position Australian tongue on a work bench (IK03). Install safety chains (1) retained from disassembly over pins on both sides of new tongue (Figure R).
24. Align hole of chain plate (2) onto pin ensuring edge (3) is parallel with edge of plate (4) and tack weld to hold position. Repeat on opposite side.
25. Solid weld all three edges of plate (2) to contacting plate (4).

FIGURE R

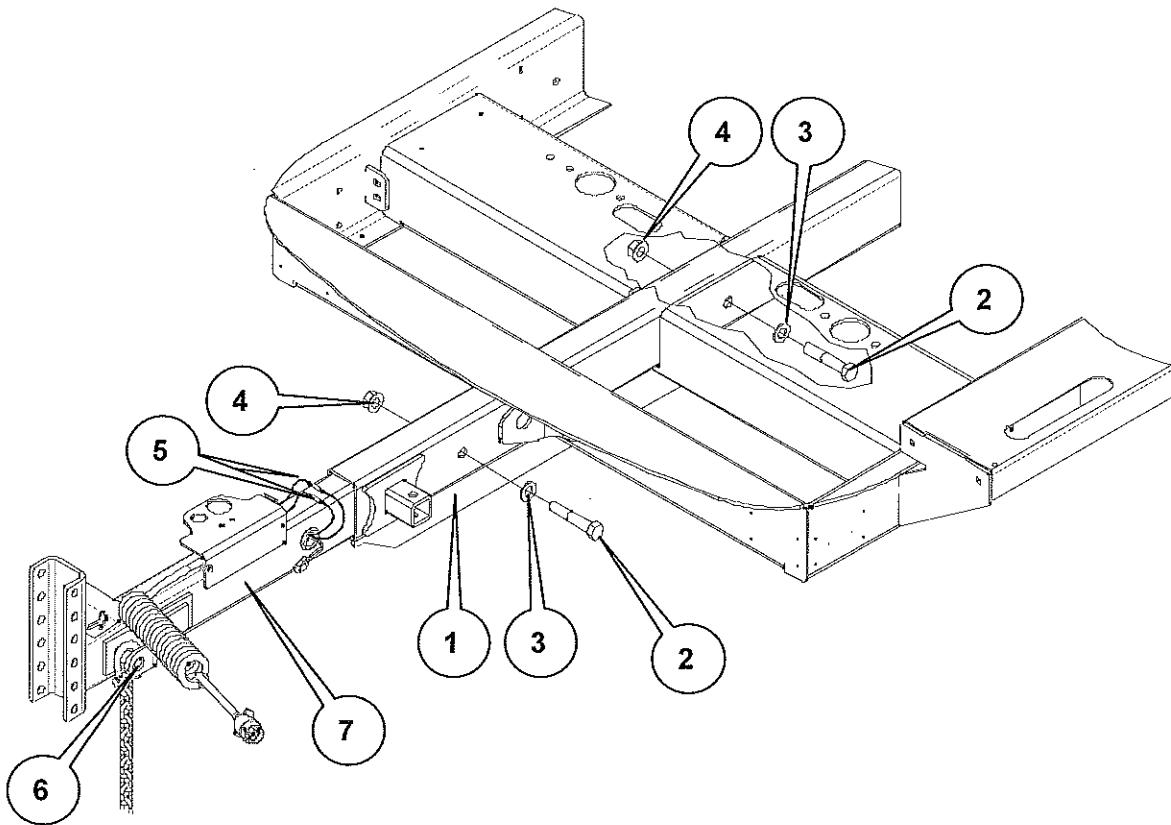


26. Grind any rough welds smooth and remove any splatter caused by the welding.
27. Allow affected areas to cool then thoroughly clean, primer, and paint all affected areas.
28. Insert new tongue **(7)** into tongue frame (Figure 1).
29. Install new bolts **(2)**, washers **(3)**, and nuts **(4)** (Figure 1). Torque bolts **(2)** to 70 ft-lb (95 Nm).
30. Use fish tape to aid in routing the harness through main frame and tongue.
31. Strip 1/4" of insulation from ends of all four wires where connectors were previously removed from breakaway switch.
32. Install grommet that was retained from disassembly in hole in tongue.
33. Slide new connectors **(5)** Figure 1 over ends of wires and crimp tight. Heat connectors to shrink and seal them. See Figure E for reference.
34. Plug harnesses back together. See Figure E for reference.
35. Install pintle hitch and associated hardware retained from disassembly to new tongue. Torque bolts to 210 ft-lb (285 Nm).
36. Install safety chains and associated hardware (domestic tongue) retained from disassembly to new tongue **(7)** (Figure 1).
37. Install safety breakaway switch and associated hardware retained from disassembly to new tongue.
38. Install jack to tongue and remove blocking from machine frame.

Steps 39 – 42 apply to (IK01)

39. Reinstall fuel tank and air cleaner assembly using hardware removed. Fill with fuel saved when removed.
40. Attach supply and return fuel lines, fuel gauge sending unit wires, and air cleaner intake hose.
41. Reconnect wire harnesses to engine ECU and SmartFeed control box.
42. Reinstall positive and negative battery cables to battery. Close engine cover.
43. Fill out work completion certificate (Figure 2) and mail to Vermeer Mfg. Co.
44. Remove Figure 1 and provide to unit owner to place with existing Parts Manual. The delivery of this page to the unit owner can be accomplished by attaching the page to the customer's copy of the Invoice or placing the page in the unit's manual storage box.

FIGURE 1



UNIT OWNER COPY: Insert in Parts Manual for future reference.

FIGURE 1

<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	163677823	TUBE WELDMENT (IK01 ONLY)	1
2	238881001	BOLT - 3/4-10 X 4 HHCS GR8 ZY	2
3	295016001	WASHER - FLAT SAE-.75.81 X 1.50-14-YZ	2
4	510352511	NUT-SMFLGTL-.75-10-G-YZ	2
5	69153001	CONNECTOR, CRIMP-ON BUTT TYPE 14-16 GA	2
6	153870001	PLATE - OUTER SAFETY CHAIN AUSTRALIAN ONLY	2
7	163677874	TONGUE - AUSTRALIAN (SHOWN)	1
	163677866	TONGUE - BC1500 DOMESTIC	1

FIGURE 2

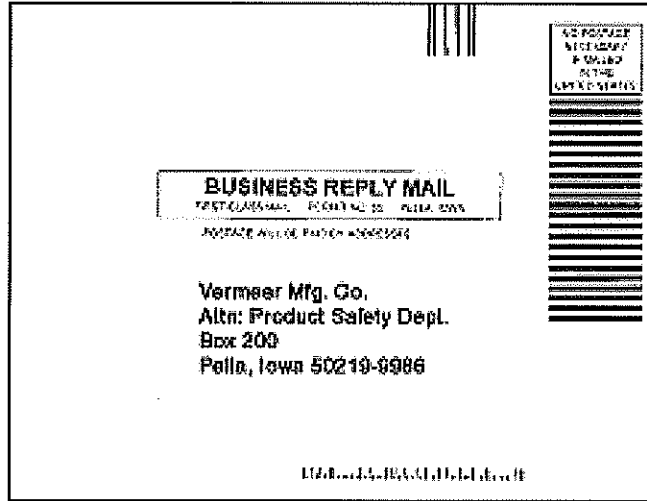


FIGURE 2			
REF. NO.	PART NO.	DESCRIPTION	QTY.
1	296287039	WORK CERTIFICATE	1