FEEDSTORM™

THE BETTER ADJUSTABLE UPPER CROSS AUGER

JOHN DEERE 6/7 SERIES OPERATORS MANUAL

PRIMARY SALES AUSTRALIA

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The instructions contained in this operator's manual are strictly for the John Deere FeedStorm.

SERIAL NUMBER: _____

DATE OF MANUFACTURE: _____

FEEDSTORM™

PRIMARY SALES AUSTRALIA

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1 SAFETY WARNING

The installation and operation instructions contained in this manual must be complied with at ALL times.

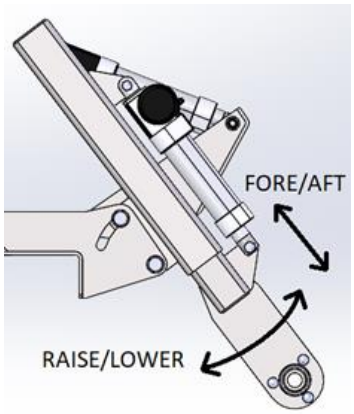
Failure to comply with these instructions may result in compromised machinery operation, possibly causing ineffective operation and machinery damage.

Failure to comply with these instructions may result in compromised personal safety and the safety of others, possibly causing injury or death.

***Primary Sales Australia Pty. Ltd.* is not liable for any damages caused due to incorrect installation or operation.**

Actuation Terminology

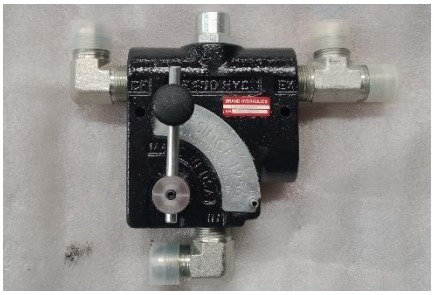
The terminology for the actuators used in this manual is as shown below. This is meant to match the normal terminology for the reel but note that it doesn't necessarily match the direction of movement of the auger as this is dependent on the angle of the bracket.



2 FEEDSTORM KIT CONTENTS

REF #	DESCRIPTION	QTY.	REFERENCE IMAGE (NOT TO SCALE)
	MECHANICAL ASSEMBLY		
1A	Bracket Assembly Left Hand Side (LHS)	1	
1B	Brace LHS	1	
2A	Bracket Assembly Right Hand Side (RHS)	1	
2B	Brace RHS	1	

3	Hydraulic Motor Subassembly	1	
4	Auger Barrel LHS Assembly	1	
5	Auger Barrel Centre	1	
6	Auger Barrel RHS Assembly	1	
7	Universal Joint Assembly	2	
8	Adjustable Actuator Arm Assembly LHS	1	
9	Adjustable Actuator Arm Assembly RHS	1	
10	U-Bolts	8	

HYDRAULIC ASSEMBLY			
11A	Flow Controller Subassembly	1	
11B	Hydraulic Hoses (3 hoses)	1	
11C	Loose Fittings Pack (4 fittings)	1	
11D	Hydraulic Valve Mount	1	
ELECTRICAL ASSEMBLY			
12A	Actuators	4	

12B	**Electrical Harness, Long and Short**	**1**	
12C	**Voltage Converter & Controller Subassembly**	**1**	
12D	**Remote Controller Subassembly**	**1**	
12E	**Actuator Reset Tool**	**1**	
12F	**Actuator Safety Stops**	**2**	
12G	**Electrical Harness Plug Mount**	**1**	

3 INSTALLATION

3.1 MECHANICAL FITMENT

These instructions refer to the diagram attached titled *Mechanical Fitment Diagram*, use for reference upon installation.

Refer to the attached drawing UCA-JD6 as support to the detailed instructions for further information.

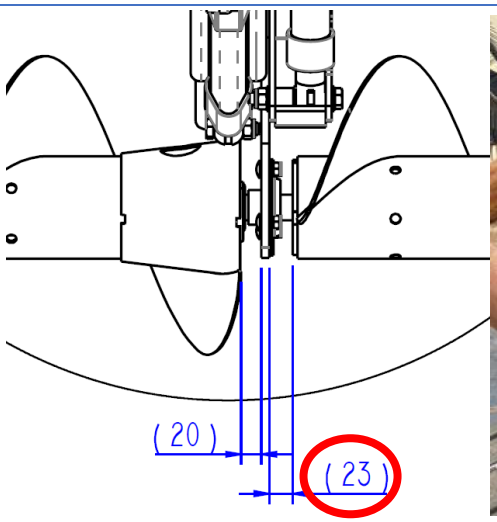
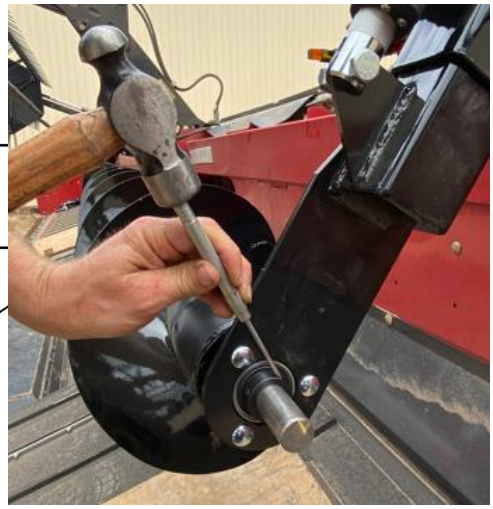
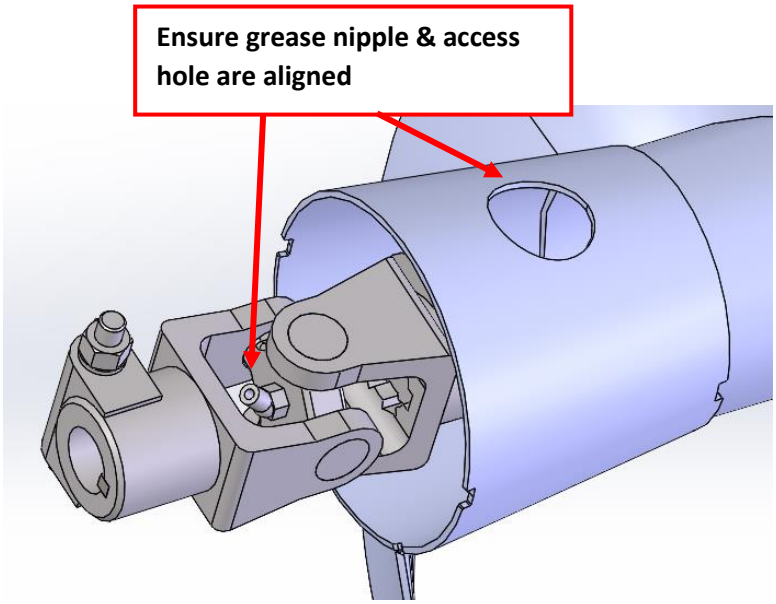
⚠ **Note:**

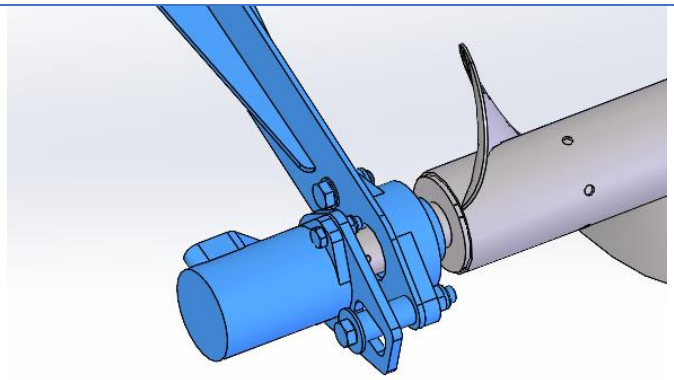
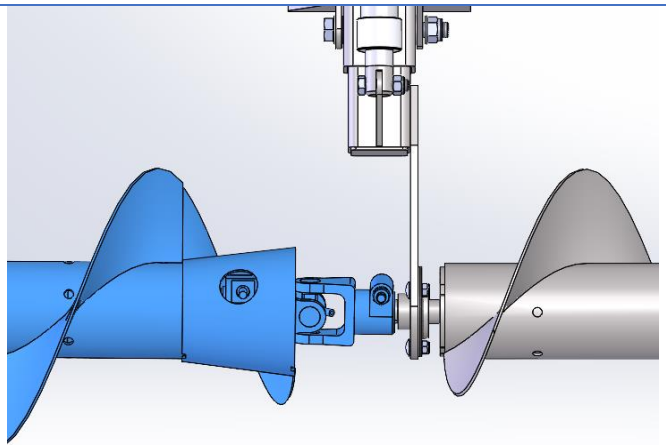
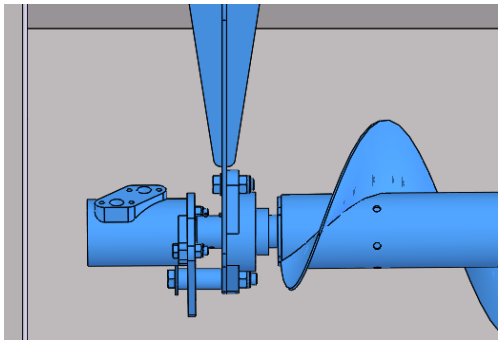
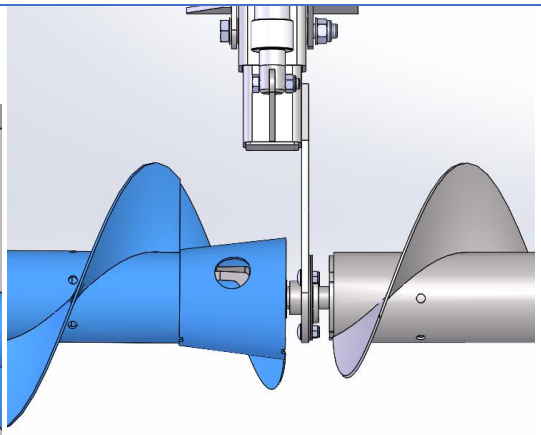
- **Installation process is minimum a two-person task.**
- **Ensure the header front is detached from the header and resting on a flat stable surface for accessibility and safety during installation.**
- **Place boards over draper belt in locations requiring access for installation, to protect the belts from damage and provide a stable surface.**

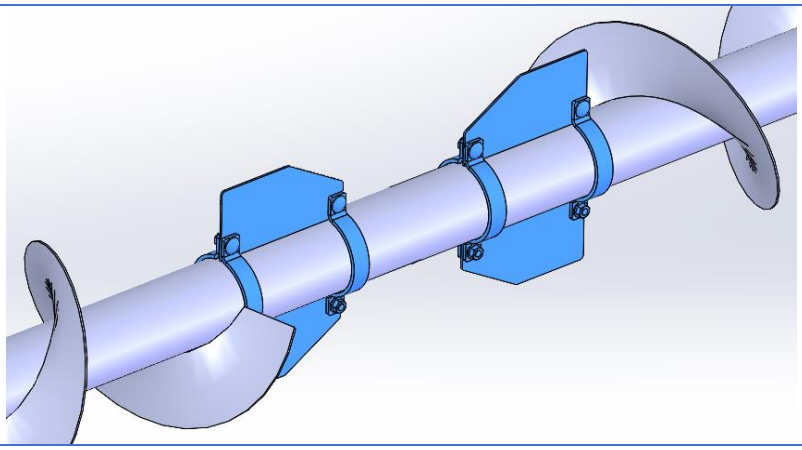
STEP	INSTRUCTION	REFERENCE IMAGE
	MOUNT BRACKETRY	
1	a) Mark locations of fixture points on the header front for Parts 1A, 1B, 2A, 2B, 8 and 9, as per attached drawing UCA-JD6.	
2	a) Align base plates of parts 1A and 1B as per their marked position (shown in drawing UCA-JD6) on the header front. b) Check that the area is clear by loosely fitting the bracket in position. The bracket will need to be fitted to the outer auger before assembly onto the machine.	

3	a) Align base plates of parts 2A and 2B as per their marked position (shown in drawing UCA-JD6) on the header front. b) Check that the area is clear by loosely fitting the bracket in position. The bracket will need to be fitted to the outer auger before assembly onto the machine.	
4	a) Align base plates of parts 8 and 9 as per their marked position (shown in drawing UCA-JD6) on the draper front. b) Insert and hand tighten 2 U-bolts (part 10) for each (part 8 and 9). Do not fully tighten. c) Insert the left and right hand 'Raise and Lower' actuators (part 11A) into their places on the center mounts that have just been put on in step 4(a). Only hand tighten the bolts for now. d) Insert the left and right hand 'Fore/Aft' actuators into their places on the mounts that have just been put on in step 4(a). Only hand tighten the bolts on the outer arms (upper bolts). Do not insert the bolts that attach to the inner arms (lower bolts).	 IMPORTANT The actuators with black painted clevis must be mounted in the Fore/Aft position as shown to avoid creeping down during operation. These have a reversed brake.

AUGER BARRELS AND MOTOR ASSEMBLY		
5	a) Take out the 'Inner Arm Subassembly' from parts 8 and 9 and insert onto the side shafts of the center auger (part 5). (The bearings go onto the side shafts). Keep caution of the right- and left-hand versions. Also take care not to lose the two keys on the ends of the center auger. Leave the bearing locking collars loose for now and also the bearing flanges to allow the bearings to self-align. b) Ensure the auger flighting is at the correct orientation, to feed inwards and downwards from the front orientation, towards the center barrel of the front when in operation. Lift the center auger and the inner arms together, and insert the newly created subassembly into place by putting back the inner arms into their initial places within the outer arms on parts 8 and 9. To hold the center auger (part 5) in place, attach the lower bolts on the 'Fore/Aft' actuators (that were left out in step 4(d)) with the inner arms. Do not fully tighten these bolts yet.	

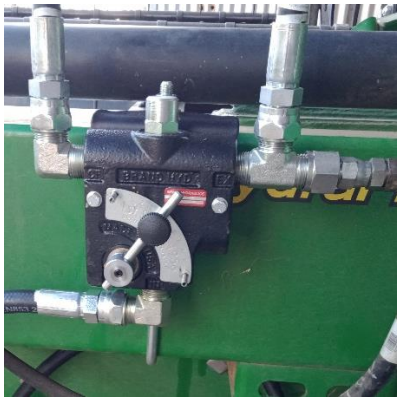
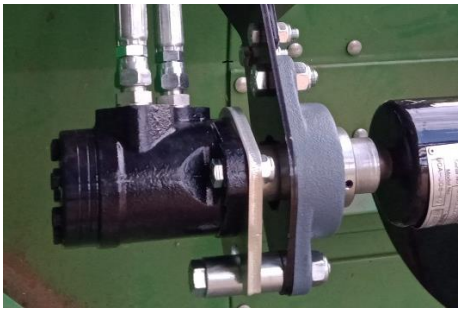
6	  Centralize the barrel between the two sides to achieve close to the 23mm gap as shown above on both sides. Then tighten the bracket clamp bolts and the actuator bolts. Then lock the eccentric bearing collars tight using a punch tangentially striking the collar and then tighten the bearing grub screws.
7	Insert a universal joint assembly into the inside facing end of the RH (drive side) auger barrel. This is the one with the larger boss on the end. For longevity of the adjustable fitment, coat the spline with an anti-seize product prior to inserting. Alternatively the universal joint can be attached to the center shaft first but it can be difficult to align the splines while holding the weight of the barrel. 

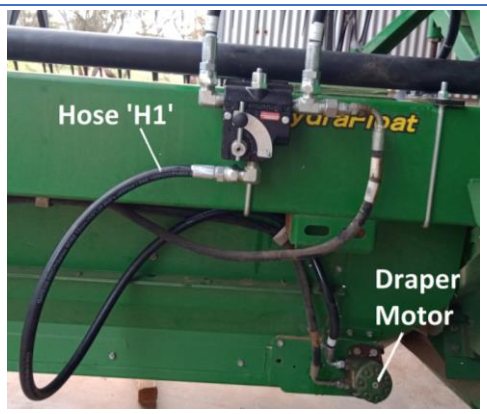
8	 With the RH auger barrel on the ground, attach the drive end mount bracket onto the RH barrel end (ensure the eccentric locking collar is loosely attached to the bearing). Insert the hydramotor shaft into the end of the RH barrel end. Leave locking collars & grub screws loose at this stage.
9	 Attach the RH barrel assembly with the uni-joint yoke onto the center barrel end shaft lining up the key. Tighten the yoke clamp bolt and the grub screw. At this stage the drive end of the barrel may need to stay back to give room to manoeuvre the barrel in.
10	  Move push the RH barrel over fully onto the spline and bolt the drive end bracket onto the machine. Clamp the drive end bracket in position ensuring around 20mm clearance between the uni-joint shroud and the bracket allowing for swivel. Also ensure the hydramotor grub screws are accessible. Tighten the bearing locking collar, grub screws and the bracket u-bolts.

11	Perform the same steps 7-10 on the LH barrel.	
12	Install the clamp-on paddles on the center barrel. Ensure the bolt heads are facing the direction of rotation to reduce catching.	

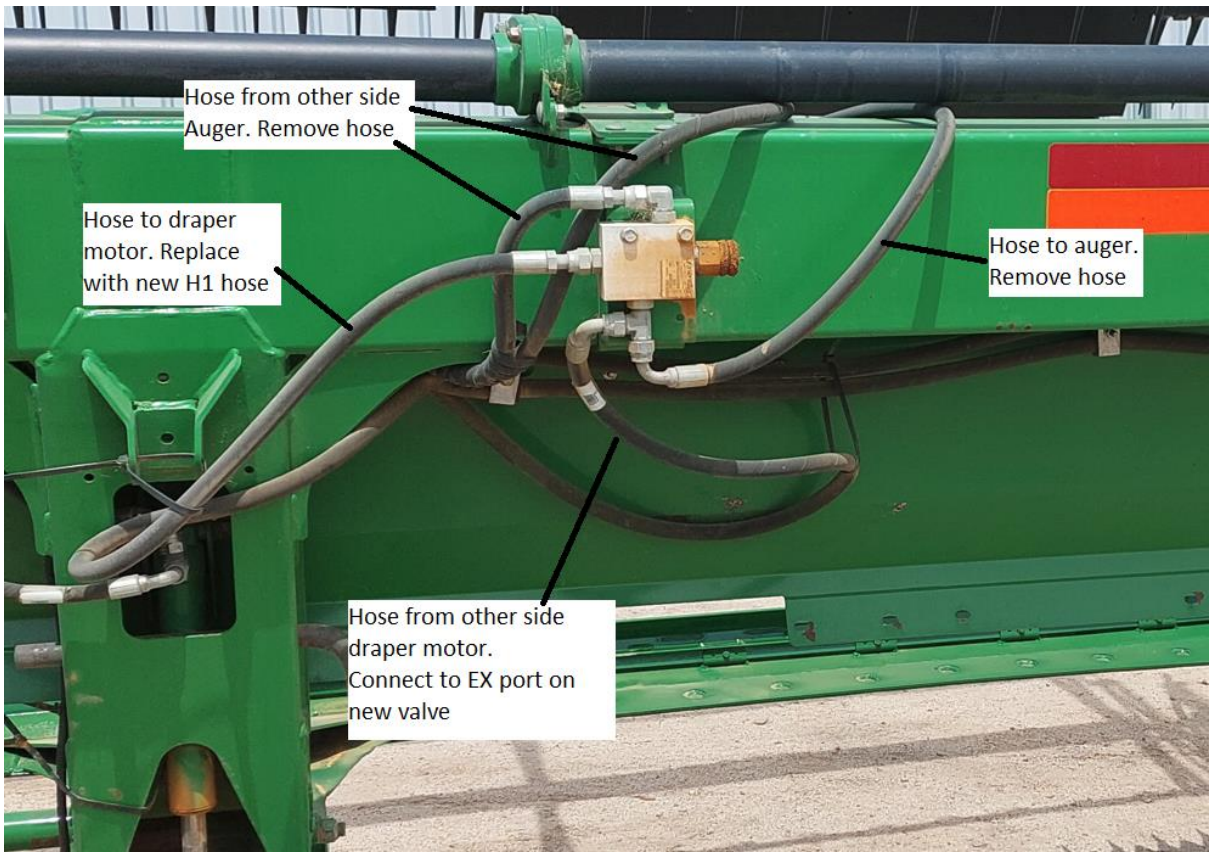
3.2 HYDRAULIC FITMENT

Refer to the attached drawing UCA-H03 as support to the detailed instructions for further information.

STEP	INSTRUCTION	REFERENCE IMAGE
1	a) Attach the 'flow controller' (part 11A) to the 'hydraulic valve mount' (part 11D) with the fasteners supplied loose. b) Loosen the rear nut on the U-bolt of the 'RHS Brace' (part 2B) and attach the hydraulic valve mount (part 11D). Tighten the nut back.	
2	a) Fasten the hydraulic motor fittings (part 11C) to the hydraulic motor as per the attached drawing 'UCA-H03'.	
3	a) Connect the hydraulic motor to the flow controller's excess and control flow ports (marked 'EF' and 'CF') using the two supplied 'H2' hoses (part 11B) as per the attached drawing 'UCA-H03'.	

4	a) Connect one end of the hydraulic line inlet 'H1' (part 11B) of drawing UCA-H03 to the right-hand draper motor (upper port) and the other end to the inlet (marked 'IN') of the flow controller.	
5	a) Connect the existing hose on the front coming from the return filter (hose AH227452) to the remaining end of the tee on the excess flow port of the flow controller.	
6	a) Ensure all connections are sealed and secure. Tighten any loose connections. Note: All connections requiring sealant should have come preinstalled. Only reapply sealant if the fitting has been adjusted or leaks.	

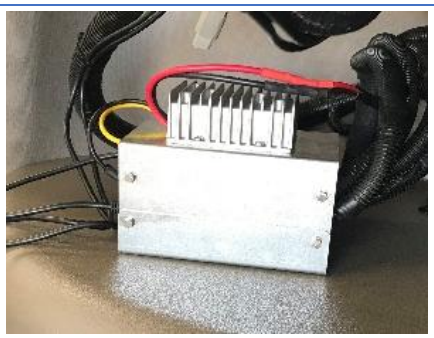
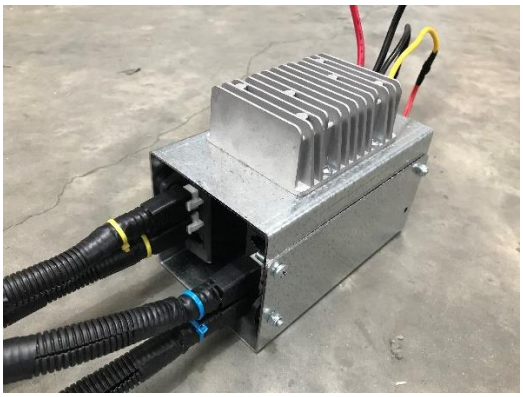
For machines with the existing OEM auger refer to below for determining destination for existing hoses:

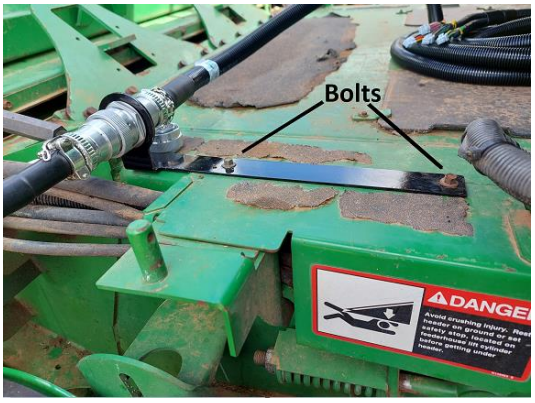
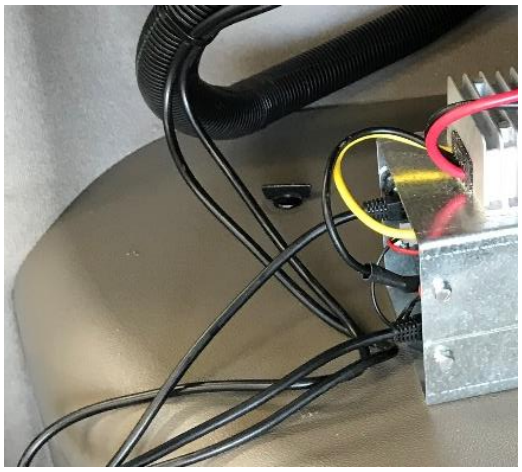


3.3 ELECTRICAL FITMENT

Refer to the attached drawing UCA-E03 as support to the detailed instructions for further information.

STEP	INSTRUCTION	REFERENCE IMAGE
1	a) Ensure that the hydraulic hoses in the middle of the front attaching to the center arm are tied up and restrained, so that they cannot clash with the auger paddles.	

2	a) Connect the shorter portion of Electrical Wiring Harness, 12B to the four Actuators, 12A. The slightly shorter (by approx. 100mm) cables plug into the "RAISE AND LOWER" Actuators. The longer cables plug into the "FORE AND AFT" Actuators. Connections are colour coded with cable ties.	
3	a) Fix the Remote Controller Subassembly, Part 11D, to a preferred location in the header cabin. Choose an accessible location for the operator whilst driving.	
4	a) Fix in a suitable location and hardwire the Voltage Converter, Part 12C, to the header power source. Ensure the power source provides 40 Amps at 12 Volts, to the converter.	
5	a) For permanent fitment, bring the electrical harness into the cab in the desired manner. Sheath the 4 Molex plugs if feeding through a narrow cavity, to protect from possible catchment and damage. Plug the longer portion of the Electrical Wiring Harness, Part 12B, into the Voltage Converter Box, Part 12C. Connections are colour coded with cable ties. b) Take the other ends to the header and front connection point.	

6	a) Unscrew the two hex flange bolts on the top of the left side of the feeder house on the header (shown in the picture on the right). Align the holes on the Harness Plug Mount (part 12F), with the two bolt points and screw the hex flange bolts back on. b) Using the provided nut and washer, fasten the barrel plug on the longer harness to the Harness Plug Mount (part 12F). Plug the shorter portion of Harness onto the plug of the longer portion of the harness.	
7	a) Plug the outlet cables of the Remote Controller (part 12D) into the Voltage Converter (part 12C) inlet ports. Connections are colour coded with cable ties.	
8	a) Fasten electrical harness to the header/front in locations clear of moving parts and potential catchment points, using cable ties, to prevent wear and damage to the harness. Roll up and fasten any excess harness length in an appropriate location. Ensure no portions of the harness are under tension or sagging in any locations.	

3.4 ADDITIONAL FITMENT NOTES

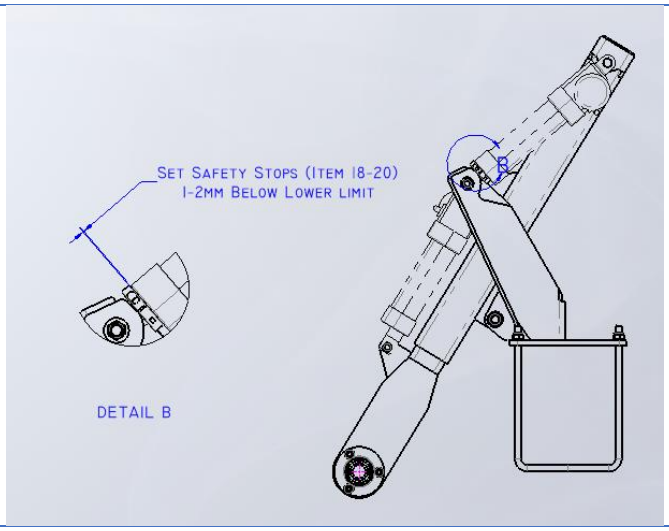
1. Once completed the temporary installation of the FeedStorm Kit, trial the actuators with caution, using the remote controller unit from the cabin. Ensure the range achievable is at the optimum intended.
   Check all clearances paying particular attention to the reel fingers, the reel mount bracket and feed drum fingers and adjust the actuator limits to suit.

2. Recommend using a thread locking adhesive product on all grub screws, to ensure they do not loosen during operation.

DO NOT attempt to harvest produce until the FeedStorm is permanently fixed to the header front.

3.5 SETTING ACTUATOR LIMITS

STEP	INSTRUCTION
1	Once completely assembled, complete the *Reset Procedure* for the actuators, using the remote controller, 11D. Ensure all actuators are completely retracted with no errors once the procedure is complete. Set the limits required in the following steps, using the *Inner and Outer Limits Procedure.* *The "FORE AND AFT" actuators operate in a linear motion, extending and retracting the auger barrel from the header front.* *The "RAISE AND LOWER" actuators operate in a pivoting motion, lifting and lowering the auger barrel relative to the header front.* *To extend the actuators, press and hold the UP Arrow button.* *To retract the actuators, press and hold the DOWN Arrow button.*
2	Set the OUTER limit of the "FORE AND AFT" actuators just before maximum extension. *To prevent an error occurring at maximum extension during operation.*
3	Set the OUTER limit of the "RAISE AND LOWER" actuators just before the end of the curved slot in the bracketry is reached. Removing the bolt from the slot will assist in visually determining this limit. *To prevent unnecessary loading on the actuator, possibly causing an error during operation.*
4	Set the Inner limit of the "FORE AND AFT" actuators just before contacting other components of the header front such as the reel arm. Ensure to provide 10mm clearance from other componentry minimum.
5	Set the inner limit of the "RAISE AND LOWER" actuators ONLY if required, due to contacting other header front componentry, which may be identified as causing an overload error or clause with other objects like the feed drum. Install safety stops on both actuators 1 to 2 mm below the low limit, as seen below. When doing the reset procedure, it will set the new lowest point (0)

	
6	The limits of the actuators are now set and ready to use. To save preferred positions within the limits set, follow the *Saved Positions Procedure.*

4 OPERATION

4.1 ACTUATOR PROCEDURES

4.1.1 Reset Procedure

Reset the actuators upon initial use and in the case of an error.

1. Press and hold the DOWN Arrow button on the Remote Control until the LED display flashes "RST".
2. Release the DOWN Arrow button for 1 second and press and hold the DOWN Arrow button once more until the actuators retract completely then slightly extend before coming to a stop, displaying “0.01”. This signals the end of the reset procedure. Release the DOWN Arrow button and your system is now ready to use.

4.1.2 Inner and Outer Limits Procedure

The limits of the actuators must be set prior to use, to prevent default errors caused due to maximum actuator extension, and the auger barrel clashing with other components of the header front whilst in operation.

Outer Limit:

1. Move the actuator to the required extension length.
2. Press the “M” button.
3. Press the UP Arrow button.
4. Press and hold the “M” button until “999” shows.

Inner Limit:

1. Move the actuator to the required extension length.
2. Press the “M” button.
3. Press the DOWN Arrow button.
4. Press and hold the “M” button until “000” shows.

If unable to successfully set either or both limits, complete the “Reset Inner and Outer Limits to default” procedure detailed below, then attempt to set the limits again.

Reset Inner and Outer Limits to default:

1. Press the “M” button.
2. Wait one second.
3. Press and hold the “M” button until it displays “555”.

Recommended Limits:

1. Raise & Lower: Min 1.2, Max 5.9
2. Fore & Aft: Min 0.2, Max 3.6

These settings would avoid clashing when reel is fully in and are provided as a guide only. Ensure no clashing before use.

4.1.3 Saved Positions Procedure

Saved positions are an optional feature, providing the ability to program the actuators to preferred configurations, to maximise effectiveness during harvest.

1. Move the actuators to the desired location.
2. Press the “M” button followed by a numbered button of choice.
3. The LED display will flash an “S”, followed by the number selected. This indicates the position has been saved.

To use a saved position during operation, press any of the numbered buttons and the actuators will begin to move to the saved position.

4.2 PRIOR TO START UP

1. Ensure to grease all four lubrication points if required via the grease nipples, using high temperature resistant grease.
    1.1. The Bearing of Parts 1A and 2A; two grease points.
    1.2. The Universal Joints, Part 7; two grease points.
2. Familiarise the operator with the actuators, including the operation and reset procedures and the troubleshooting instructions, prior to harvesting.

4.3 AUGER BARREL RPM

1. The recommended rotational speed of the auger barrels is to be operating in sync with the draper belt speed. Note: the linear speed of both the draper belt and the auger screw should be approximately the same, adjust the flow controller to increase or decrease the auger RPM as required.
2. If the auger begins to vibrate noticeably when operating at high RPM, excess of 300 RPM, reduce the operating RPM until this effect subsides.

5 MAINTENANCE

1. The recommendation is to complete a routine check of the FeedStorm at regular intervals, after initial installation at the cautious discretion of the operator. The recommendation hereafter is to complete a routine check every day / 12 hours of operation.

   A routine check includes:

   1.1. Inspect FeedStorm bracketry. Ensure no stressed components. Ensure all components are appropriately fastened.

   1.2. Inspect all FeedStorm electrical cables and hydraulic hoses, for their condition and fastening. Ensure no abrasive wear is occurring and the lines are fastened at regular intervals.

2. Grease all four lubrication points as required via the grease nipples, using high temperature resistant grease.

   2.1. The Bearing of Parts 1A and 2A; two grease points.

   2.2. The Universal Joints, Part 7; two grease points.

3. Grease the Universal Joints', Part 7, splines annually.

6 STORAGE

1. When the header front is not in use, fully retract the actuators so minimal shaft length is exposed to the surrounding environment. This will assist optimum function and longevity of the actuators.

2. Storage of the header front in a protected location from the elements is recommended for the preservation of the FeedStorm.

3. If the header front cannot be stored as recommended and is exposed to wet weather for a duration of time outside of harvest season, such as in a dealership's yard throughout winter, remove the electrical components from the front. If the actuators are to be left on the front, ensure they are fully sealed at electrical joins and are further protected with waterproof coverings.

4. **DO NOT** clean the electrical components with a liquid composition. The electrical components are water resistant, not waterproof. Recommend using compressed air as an alternative to clean the electrical components.

7 TROUBLESHOOTING

7.1 Remote Control Error Code

Actuators do not work, after completing the Reset Procedure, an error code appears on the remote-control LED display.

7.1.1 Error Codes E01 to E04: Actuator Overload Error

1. Ensure no excessive weight is on the FeedStorm actuators, friction on the actuator brackets, or force required by the actuators to overcome an unforeseen obstacle or a mechanical clash point.
2. Repeat the *Reset Procedure*.

7.1.2 Error Codes E07 to E10: Actuator Sensor Error

1. Disconnect and reconnect all cables.
2. Check for inadequate connections and power supply.
3. Repeat the *Reset Procedure*.
4. If actuator/s do not retract, manually retract using the Actuator Reset Tool, 11E. Plug into the connection of the problematic actuator and connect the wires directly to a 12-volt power supply to fully retract. The alternative direction of power will extend the actuators.
5. Repeat the *Reset Procedure*.

7.1.3 Error Code H01: System Overheat Protection

1. Ensure no excessive weight is on the FeedStorm actuators or friction on the actuator brackets. Mitigate unnecessary continuous adjustment of the actuators.
2. Allow the electrical system 16 minutes to cool down before continuing to use.

7.2 Actuators Do Not Extend/Retract

When attempting to engage the actuators using the remote, the columns do not adjust.

1. Ensure all connections are supplying power to the actuators.
2. Ensure enough current is supplied to the actuators from the power source. A maximum of 25 amps at 12 volts is required to operate the FeedStorm actuators simultaneously (when retracting and raising).
3. Increase the amperage of the power source as required.

7.3 Actuator Pair Out of Sync and Not Completely Retracting

An error code does not appear, but the actuators are as stated.

1. Reset the actuators manually using the Actuator Reset Tool, 11E.
2. Plug into the connection of the problematic actuator and connect directly to a 12-volt power supply to fully retract. The alternative direction of power will extend the actuators.
3. Repeat the *Reset Procedure*.

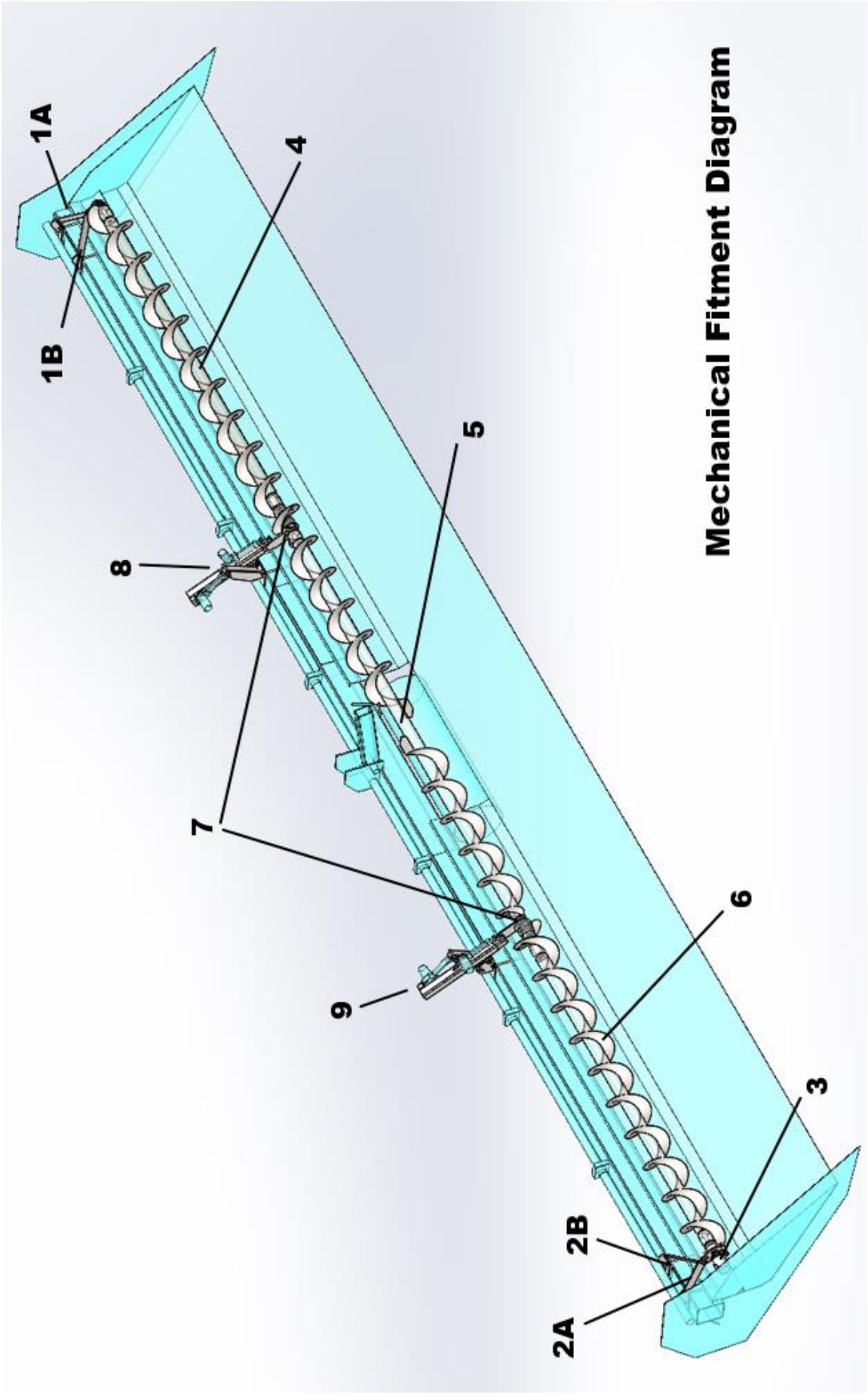
8 REFERENCE DOCUMENTS

Diagrams Attached:

1. **Mechanical Fitment Diagram**

Drawings Attached:

1. **FeedStorm John Deere Assembly & Fitment Drawing: UCA-JD6**
2. **FeedStorm John Deere Hydraulics Diagram Drawing: UCA-H03**
3. **FeedStorm John Deere Electrical Wiring Diagram Drawing: UCA-E03**


Mechanical Fitment Diagram
1A
1B
4
5
8
7
6
9
3
2B
2A