



Straw Harrow – 15m



Operator's Manual and Part's Manual

Original Instructions

Revision 1

Contact Details:

Claydon Yield-O-Meter Ltd
Gaines Hall, Wickhambrook, Newmarket, Suffolk, CB8 8XY
Tel: +44 (0)1440 820 327 Fax +44 (0)1440 820 642
Email: info@claydondrill.com
www.claydondrill.com



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15m Straw Harrow

1.0 Straw Harrow Warranty Registration

In order to activate your Claydon Warranty this page must be completed and returned to:

Claydon Yield-O-Meter Ltd
Gaines Hall,
Wickham Brook,
Newmarket,
Suffolk,
CB8 8YA
Tel: +44 (0) 1440 820 327
Fax: +44 (0) 1440 820 642

IF THE REGISTRATION DOCUMENT IS NOT RETURNED THEN THE STRAW HARROW WARRANTY WILL BE VOID

Straw Harrow Warranty Registration

NAME:

ADDRESS:

CONTACT NUMBER:

DELIVERY DATE:

SERIAL NUMBER:

PLEASE ENSURE:

- The Machine is washed off upon delivery to remove any road salt.

SIGNATURE:



15m Straw Harrow

Commissioning Check Sheet and Conformation Form – 15 Straw Harrow

All points in this form must be completed on the commissioning of a new Claydon machine with the end user. This form along with a filled in Warranty Card (located in the instruction manual) must be, fully completed, signed by the customer and returned to: The Service Department, Claydon Yield-O-Meter Ltd, Gaines Hall, Wickham Brook, Newmarket, Suffolk, CB8 8YA within 7 days of the commissioning of the machine for Warranty to be valid. **It is the customer's responsibility to return these forms.**

Customer Name:	Telephone Number:
Machine serial number:	Date of commissioning:
Address:	
County:	Country:
Postcode:	
Task	Completed
The customer (and any operator of the machine) has been issued with and read the operators manual.	
Customer is aware of all transport locks on the machine and knows how to operate them correctly.	
The customer understands the correct sequence for folding and unfolding the machine.	
The customer understands how to set the machine level (front to rear).	
The customer understands how to set the machine level (left to right).	
The customer understands how to adjust and set the operating height of the machine.	
The customer understands how to adjust and set the operating angle of the tines.	
The customer knows all the lubrication/maintenance points on the machine.	
I (representative name) on behalf of (dealer name) have commissioned the machine above to the best of my ability and have covered all the points in this document as a minimum.	I (end user name) have received the commissioning of my machine from a qualified Claydon representative and am happy with the competence of the representative and the level of service I have received. All the details on this form are correct to the best of my knowledge.
Signed Date	Signed Date

2.0 Safety

Safety stickers can be found located on your Claydon Straw Harrow at numerous locations (Figure 1), these stickers must be observed to ensure your safety and that the machine is operated in a safe manner.

2.1 Warning Symbols

Location of safety stickers – 15m Straw Harrow:

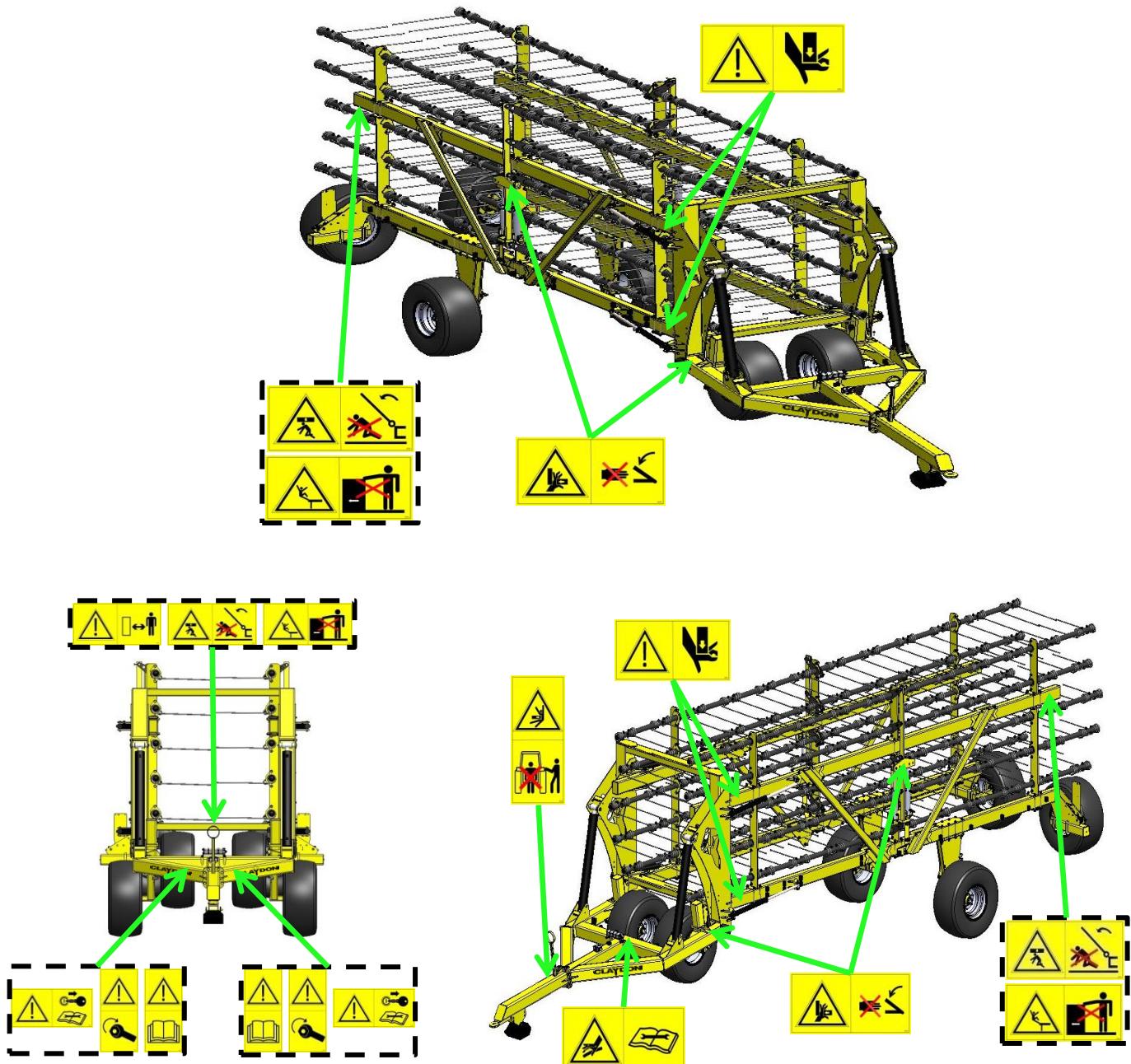


Figure 1: Position of Safety stickers on 15m Straw Harrows.

If any of the stickers become illegible or peel off, new stickers can be ordered and attached in the appropriate position. The stickers must not be removed.

Meaning of warning symbols:

Read the operating manual carefully.

Prior to operating the machine the manual must be read fully and understood. Special attention should be applied to the Warnings and Cautions section.


Do not stand between the tractor and the machine.

Standing between tractor and the Harrow is especially prohibited during coupling and uncoupling.


Retighten all nuts.

All nuts should be checked and retightened after the first 8 hours of operating. Nuts may come loose due to machine vibration.


Consult manual before carrying out maintenance.

Ensure tractor is turned off and key removed before any maintenance work is undertaken.


Riding on the machine is prohibited.

Serious or fatal injury can occur as a result of riding on the machine.


Proceed with care in the event of leaking hydraulic fluid.

Defective hydraulic hoses or incorrectly seated hydraulic couplings can trigger unpredictable machine movements and cause injury.


Keep clear of slewing range.

There is an extreme risk of injury from slewing or folding machine parts.


Risk of Trapping.

Gaps between components may become smaller or disappear completely.


Risk of crushing.

Keep limbs clear of possible crushing area.


Safe working distance.

Ensure a safe distance from the machine is obeyed by spectators whilst the machine is in work.

3.0 Introduction

Thank you for your purchase of a new Claydon Straw Harrow. The Claydon Straw Harrow is a fast and low cost operation which can be used numerous times to create a micro-till, for fast weed germination, hoeing out weeds, killing slugs and levelling out straw prior to drilling. Using the Claydon Straw Harrow will result in a cost effective way of germinating weeds and creating stale seedbeds.

The Claydon Straw Harrow will gather and carry some straw in its tines in the heavier patches, and slowly release it out of the rear of the machine in a steady/even flow through the lighter covered patches. By carrying a small amount of straw at each tine the Harrow acts like a mop dragging along the ground. This mop effect destroys the delicate slug eggs by moving and breaking them or exposing them to UV light at the surface.

Slugs tend to lay their eggs just below the straw layer in the dark damp atmosphere that suits the eggs perfectly, and as a result are right next to a perfect food source (freshly germinated seeds) when they hatch.

The purpose of this Operator's Manual is to comprehensively explain to the operator how to set up, use and maintain the machine. It is important that the operator reads this manual carefully to correctly set up, use and maintain the machine safely. For any further assistance or explanation please contact Claydon Yield-O-Meter using the contact details given on the front cover and quoting the serial number located on the Harrows identification plate.

3.1 Identification of the Machine

The Claydon 15m Straw Harrow offers the following specifications:

Machine	Working Width	Transport Width	Approximate Weight	Number of Tines	Horse Power Requirement (estimated)
15m	15m	2.86m	3850kg	120	250 HP

The serial number of the Straw Harrow can be found located on the machines identification plate (Figure 2). Additional Straw Harrow specifications can be found in Appendix A.

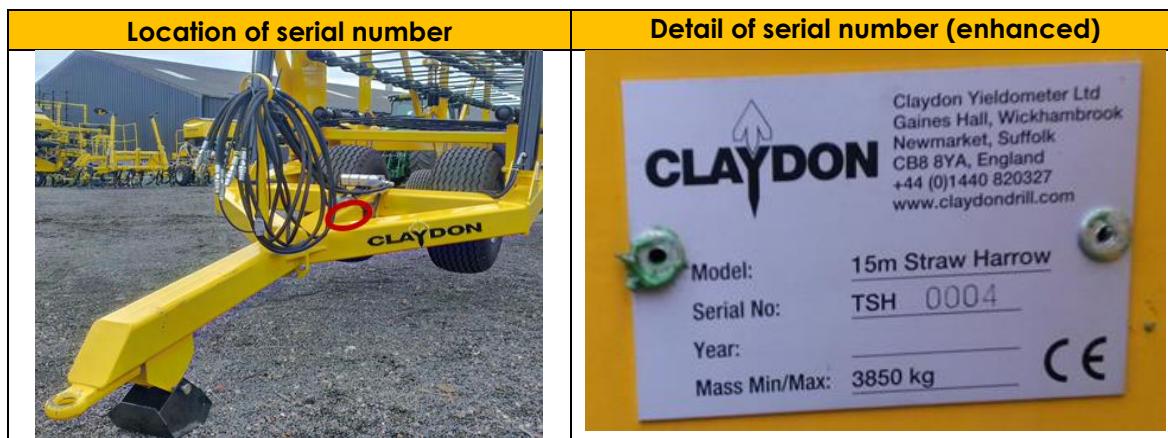


Figure 2: 15m Straw Harrow identification plate.

Record your serial number here:

You may need to quote the serial number of your machine when you order spare parts in the future.

3.2 Warnings and Cautions

These warnings and cautions must be observed when operating the Straw Harrow.

- Observing the warning signs and other notices will serve the operators safety.
- Ensure total weight of tractor/Harrow combination does not exceed permitted limits and the weight of tractor is sufficient for safe field and road use.
- Do not allow anyone to stand between tractor and Harrow during coupling/uncoupling procedures.
- Ensure a safe distance from the machine is obeyed by spectators whilst the machine is in work.
- Pressurised hydraulic oil is dangerous therefore connecting and disconnecting of the harrow must only be undertaken with the tractors engine turned off and the pressure in the hoses released.
- Before operating the machine ensure no-one is standing within range of its turning circle-including when the wings are unfolded.
- Ensure all bolts are retightened after the first eight hours of use.
- Persons are forbidden to ride on the machine.
- Do not work underneath suspended loads; ensure adequate props are positioned before maintenance work is carried out, preventing machine falling under its own weight.
- Take care not to trap body parts within moving pivot points.
- Do not exceed a road speed of 25 km/h.

4.0 Equipment Overview

The terms 'front' 'rear' 'left' and 'right' in this manual refer to the machine as follows:



1. 'Front' indicated the tow hook end of the machine.
2. 'Rear' indicates where the lights are mounted on the machine.
3. 'Left' indicated the left of the machine as you look at the machine from the rear.
4. 'Right' indicates the right of the machine as you look at the machine from the rear.

Figure 3: Straw Harrow overview.

5.0 Connecting the Straw Harrow to the Tractor

The Claydon Straw Harrow is attached to the tractors drawbar via the ring hitch or Scharmüller hitch. There are three sets of hydraulic services required to operate the Straw Harrow which should be colour coded in pairs. The hydraulic services include the main folding cylinders, tine angle adjustment and tine height adjustment (Figure 4).

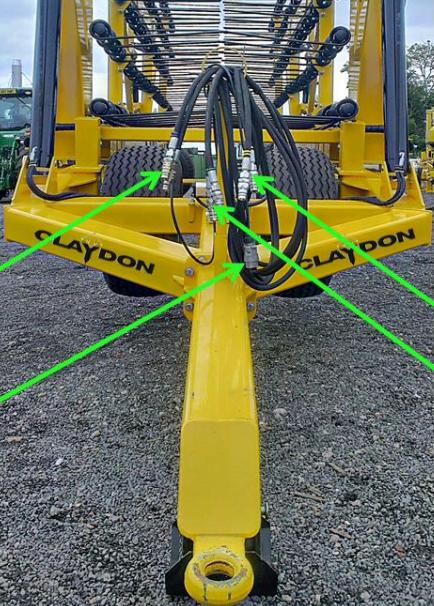
	Connections	Colour
	1. Tine angle 2. Lights 3. Tine Depth Control 4. Folding Cylinder	Blue - Green Yellow

Figure 4: Tractor connections.

The following labels (Figure 5) can be found located on the front of the Straw Harrow, these labels specify the corresponding hydraulic connections and there colour coded indicators.

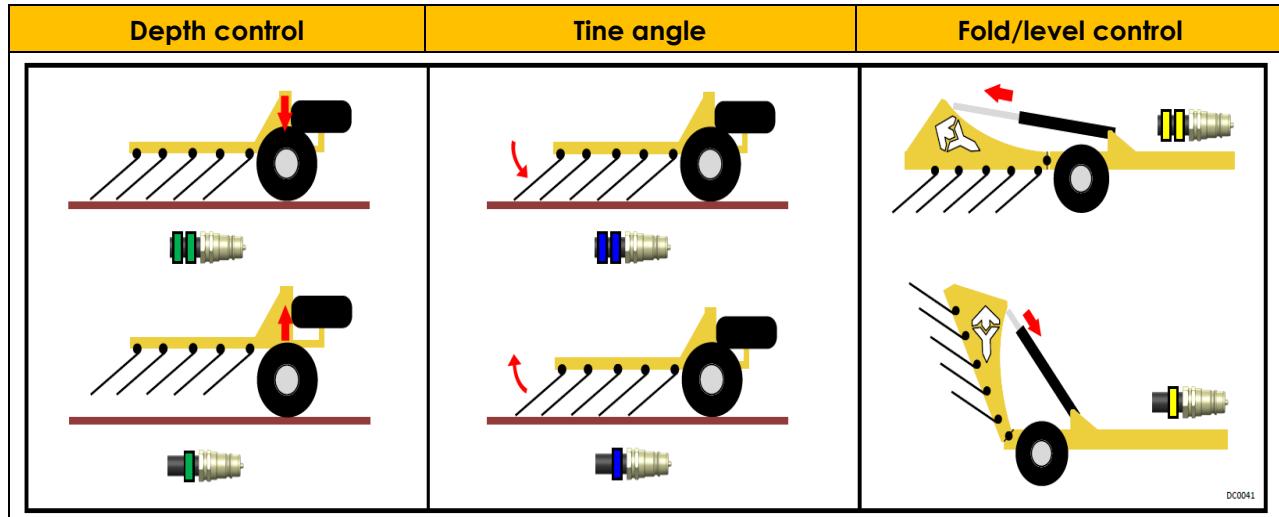


Figure 5: Labels for hydraulic services.

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If a mid-mounted drawbar stand and a Scharmüller hitch is fitted to your machine, then the 15m Straw Harrow should be attached to the tractor using the following method:



1) Firstly, ensure the wheel chocks are situated behind the straw harrows transport wheels and then make all of the necessary hydraulic connections to the tractor.



2) Reverse the tractor up to the harrow, once in the correct position. By extending the main lift cylinders the drawbar will be lowered onto the tractors hitch and the stand shall be raised of the ground. Once the harrow is attached secure the hitch.



3) When the tractor is securely fastened to the harrow, place the stand into park position.



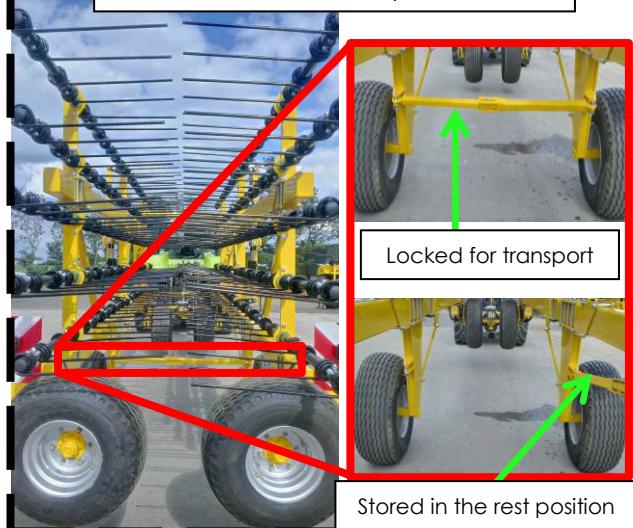
4) Finally, retract the main lift cylinders fully. The frames of the straw harrows wings should now be parallel to the ground. Once the chocks have been stored away the harrow is ready for transport.

Prior to removing the harrow from the tractor, ensure it is parked on level ground and the wheel chocks have been situated behind the transport wheels. To attach the 15m Straw Harrow just reverse the procedure show above.

6.0 Field use

Prior to operating the Straw Harrow in the field the machine must first be unfolded; this procedure is displayed below:

- 1) Remove reversing link bar and store it in the rest position.



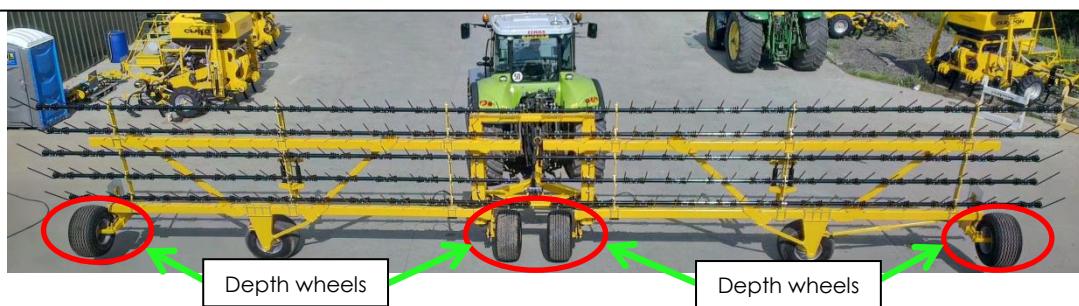
- 2) Once removed start reversing back slowly and the harrow will begin to open.



- 3) Reverse the harrow until it is in the position shown below; ensure both wings do not go past parallel.



- 4) Fold back the tines fully (blue colour coded indicator) and extend the depth wheels (green colour coded indicator).



- 5) Finally, lower the harrow until the frame is parallel/level with the ground



15m Straw Harrow

Once unfolded, the raking height is adjusted on the four hydraulic depth wheels and the raking angle is adjusted using the hydraulic service (highlighted by the blue colour coded indicator). To fold the harrow up, just complete the following procedure in reverse. Makes sure the tines are horizontal before the wings come together.

TIP:

- To ensure the reversing link bar can be removed easily, it is advised to have an estimated distance of about 150–200 mm (6-8 inch's) between the rear tines. The same would apply when the bar is required to be attached (Figure 6).



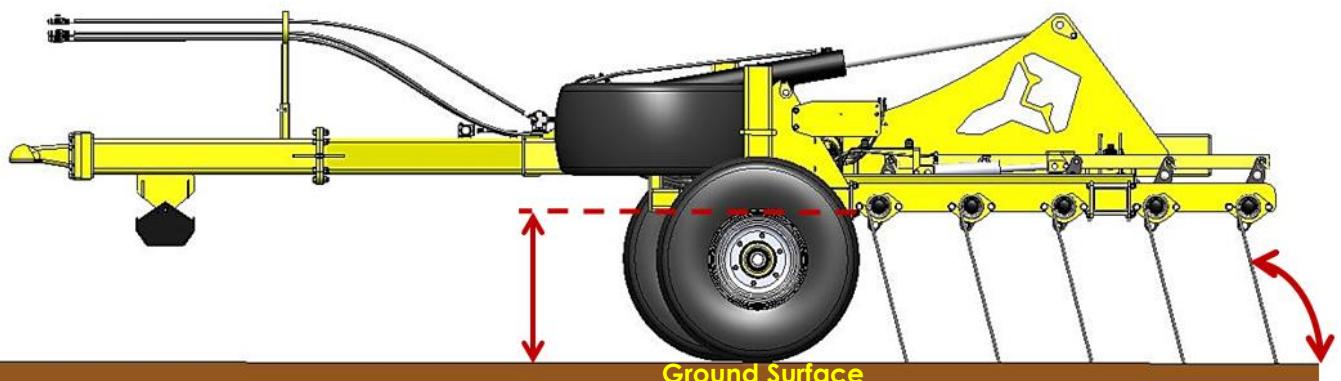
Figure 6: Distance between rear tines.

6.1 Working Height

The Claydon 15m Straw Harrow has been designed to carry all its weight on four depth wheels. If you find that the Harrow is doing more work than you would like the depth wheels can be lifted and the rake angle decreased.

The rake angle and machine height is altered from the cab, operating a combination of the two can either increase or decrease the aggressiveness of the rake. For chopped OSR or Bean stubble the rake angle can be at a maximum if so required (This position is most aggressive and moves the most soil). However, on chopped Wheat or Barley stubble the tines will need to be angled back to allow the straw to flow through the machine without blocking up. Examples of both settings can be seen in Figure 7.

Aggressive Rake Angle – OSR or Beans



*Image showing Scharmüller hitch

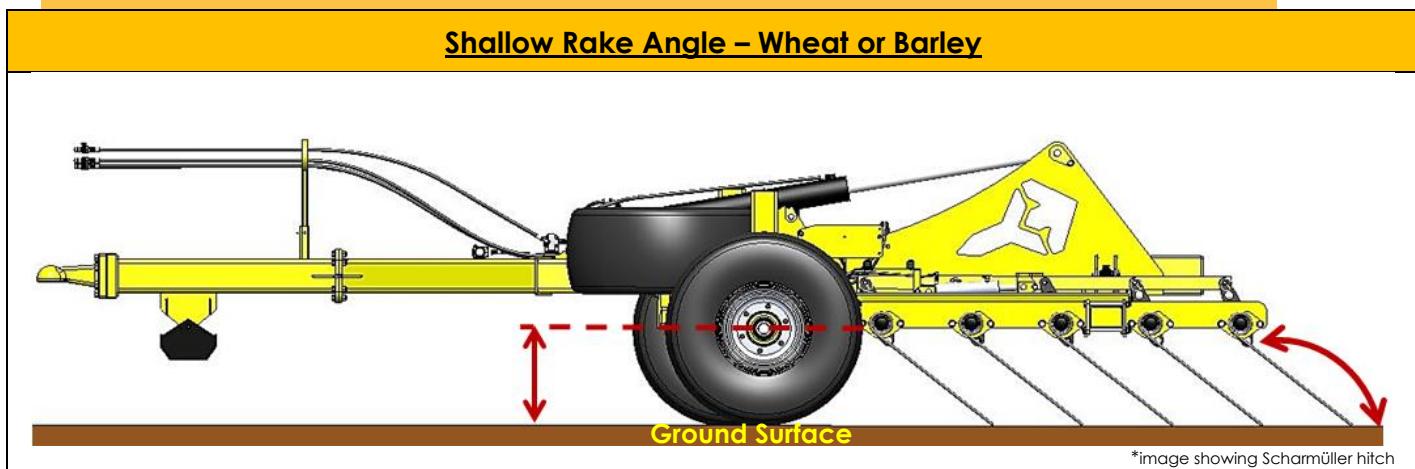
Shallow Rake Angle – Wheat or Barley


Figure 7: Example of different rake angles in various crops.

If one side of the Harrow tines seem to be always seeping back you should check that there are no leaks in the hydraulic system.

For best results it is suggested that the Straw Harrow should be used at an angle of 30° to the direction in which the field was harvested, this will ensure straw and chaff is level across the field. If you are using a Claydon Drill after the harrowing operation, it is advisable to travel in the same direction as you are intending to drill.

Whilst in use the Harrow should be dragging a small amount of straw along the ground and slowly distributing it out of the back of the machine. This will even out the straw and Chaff layer across the entire field (Figure 8).



Figure 8: Straw and chaff being distributed out the back of the Harrow.

The Claydon Straw Harrow can be used on stubble fields where the straw has been bailed, or on OSR/Bean stubble as a method to start weeds chitting and a form of slug control. In this scenario the tines can be set to a very aggressive angle to maximise soil movement.

You should pull the Claydon Straw Harrow as quickly as you can (up to speeds of 25 km/h). From time to time (very rarely) the Straw Harrow can catch a lump or a tramline and start to bounce, in this scenario you should slow down or stop until the machine has settled and then carry on as normal.

When in use the Straw Harrow should be kept on the ground at all times and not lifted up when making headland turns.

TIP:

- **Rape straw should be harrowed in the morning whilst the morning dew is present and Wheat straw should be harrowed in heat of the sun. This will ensure the correct shattering effect is achieved.**
- **When harrowing a field it is recommended that the operator should turn inside the headland tramline, this will avoid pulling grass or weeds into the field from the headland.**

7.0 Care and Maintenance

The Claydon Straw Harrow requires very little maintenance in order to provide reliable service. Prior to using the machine, the Straw Harrow should be checked for any broken tines or hydraulic fluid leaks. Ensure all bolts are retightened after the first eight hours of use.

7.1. Tyre Pressures

It is recommended that the harrows wheels should be inflated to a pressure of 60 psi (4.1 Bar).

7.2 Lubricating Points

Lubrication should be performed using multi-purpose grease on a daily basis. An overview of the 15m Straw Harrow can be seen in Figure 9. Identification numbers correspond to the detail of the lubrication points in Figure 10.

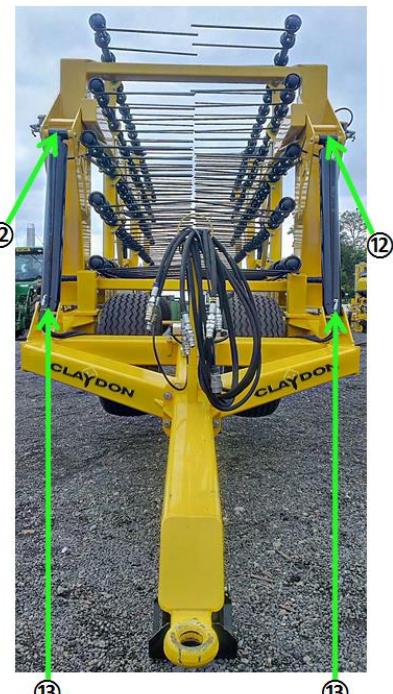
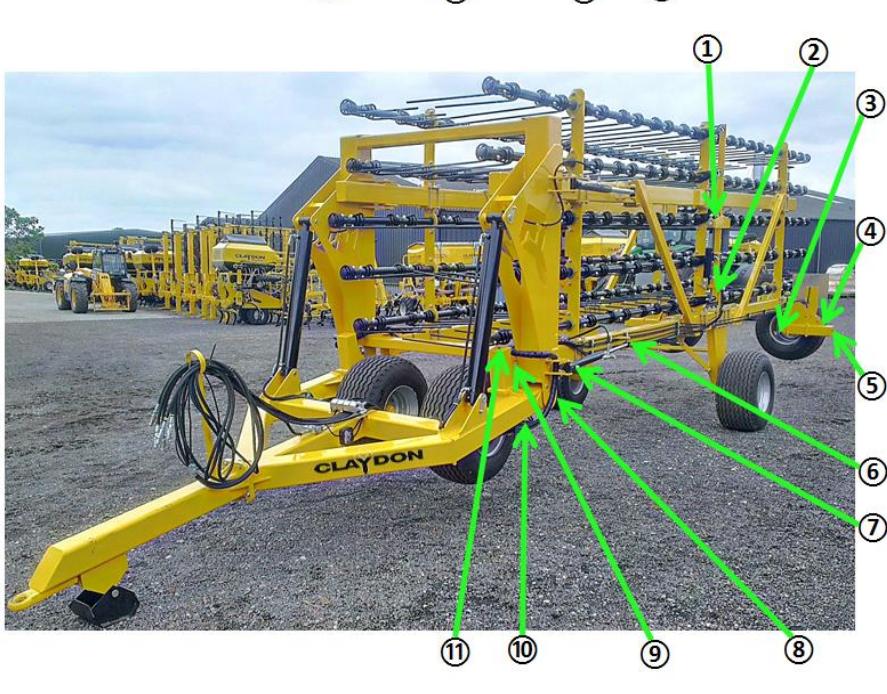
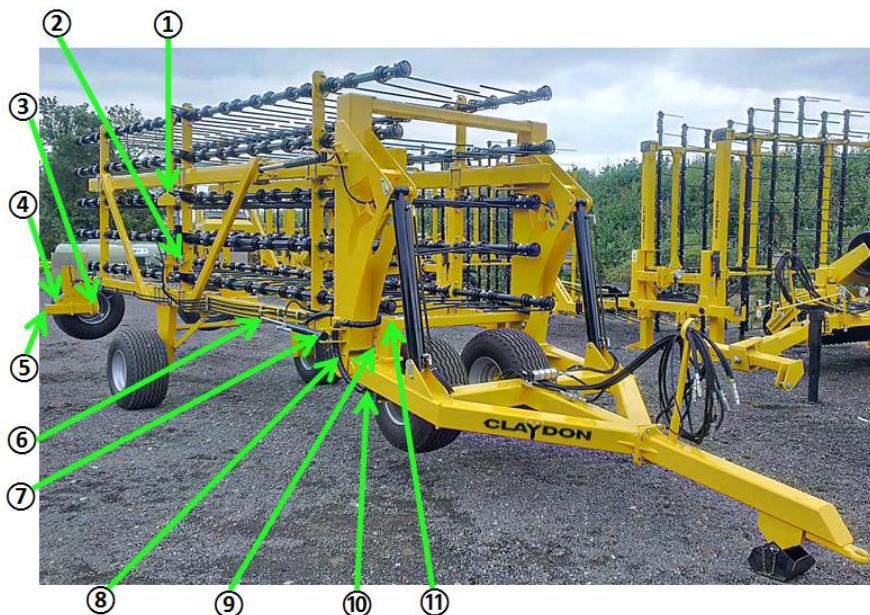
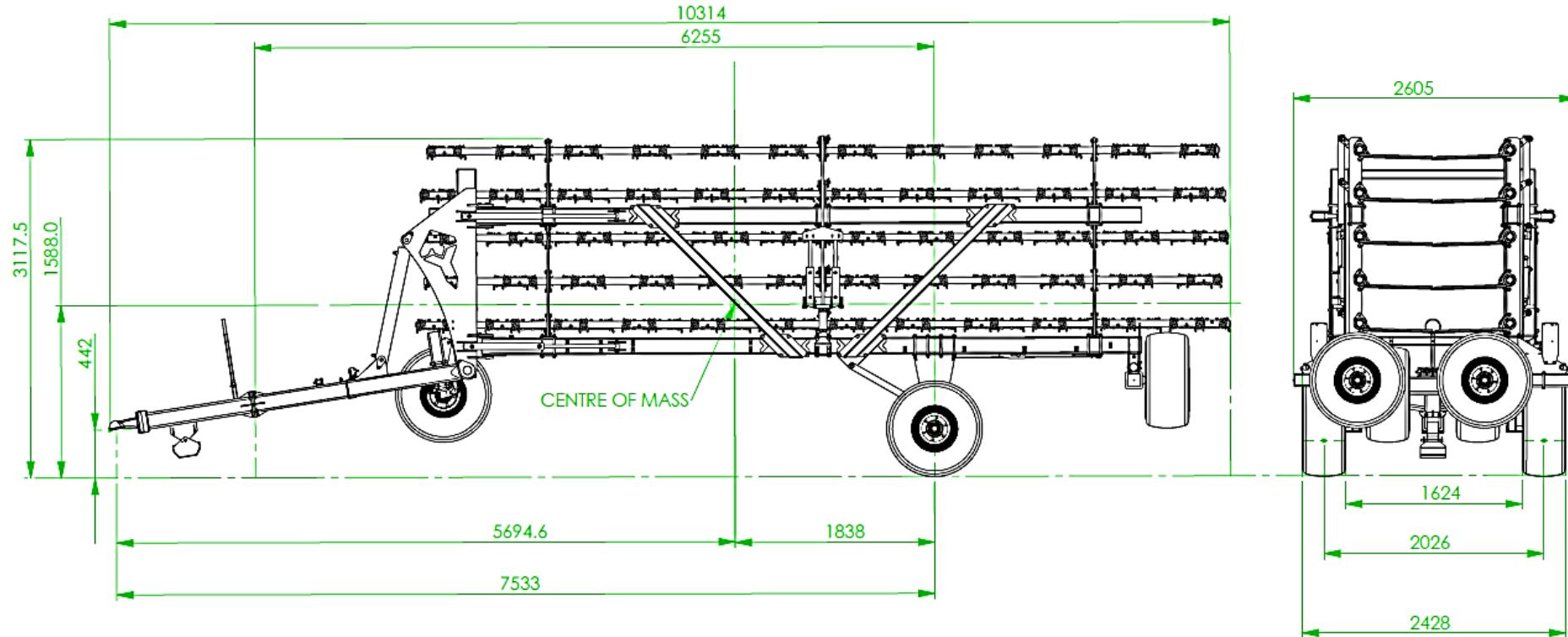


Figure 9: Lubrication points.

Lubrication Points to be Greased Weekly			
			
1. Rake angle cylinders (rod end)		2. Rake angle cylinders (base end)	
			
3. Depth wheel cylinders (base end)	4. Depth wheel cylinder (rod end)	5. Depth adjustment unit	6. Lower folding assist cylinders (rod end)
			
7. Lower folding assist cylinder (base end)	8. Main drawbar pivot	9. Depth wheel cylinder (base end)	10. Depth wheel cylinder (rod end)
			
11. Depth adjustment unit	12. Main folding cylinder (rod end)	13. Main folding cylinder (base end)	

Figure 10: Details of lubrication points

Appendix A – Straw Harrow Specifications



LOAD ON TRANSPORT AXLES: 28057N (2860Kg EQUIVALENT)

DRAW BAR LOAD: 10006.2N (1020Kg EQUIVALENT)

TOTAL MASS: 3880Kg

MAX HEIGHT: 3117.5 mm

MAX WIDTH: 2605 mm

MAX LENGTH: 10314 mm

WHEEL BASE: 2026mm

ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE STATED



15m Straw Harrow

Appendix B – Declaration of Conformity

EC Declaration of Conformity

In accordance with EN ISO 17050-1:2004

We
of
Claydon Yieldometer Ltd
Gaines Hall

in accordance with the following Directive(s):

2006/42/EC The Machinery Directive
hereby declare that:

Equipment	Claydon Harrow
Model number	Straw Harrow
Serial Number	

is in conformity with the applicable requirements of the following documents

Ref. No.	Title	Edition/date
EN ISO 12100-1:2003	Safety of Machinery – Basic Concepts	2003
EN ISO 12100-2:2003	Safety of Machinery – Basic Concepts	2003

I hereby declare that the equipment named above has been designed to comply with the relevant sections of the above referenced specifications and is in accordance with the requirements of the Directive(s).

Ali Haydon

Signed.....

Name: Oliver Claydon

Position: Director of Design and Production

Done at
Gaines Hall
Wickhambrook

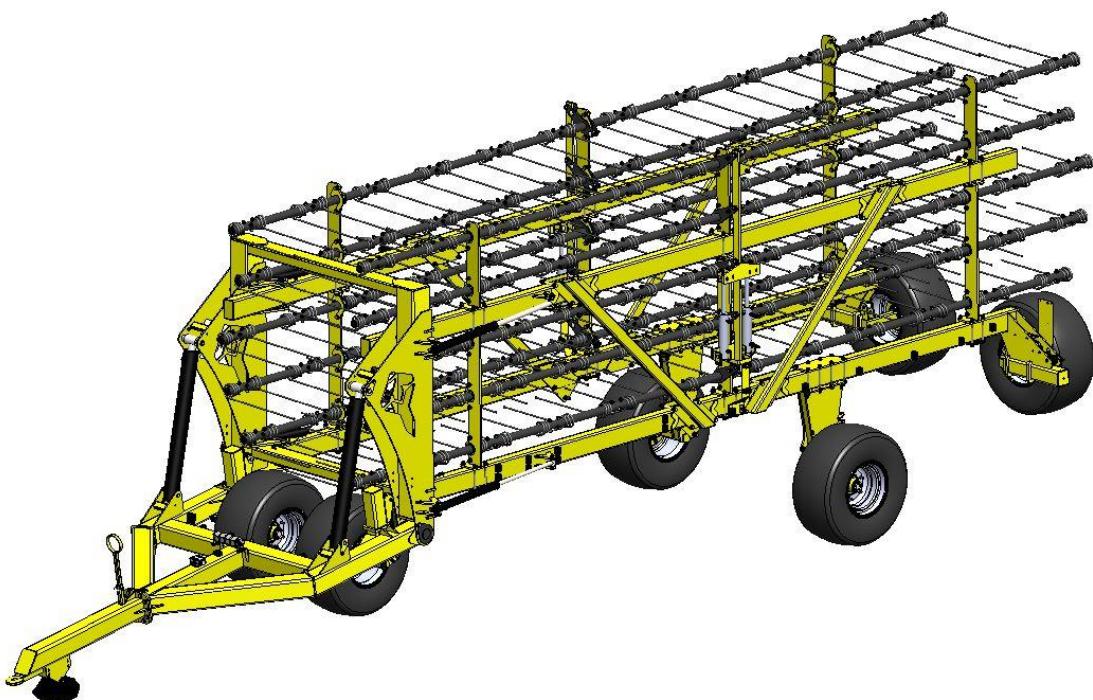
On
21/06/2012

The technical documentation for the machinery is available from:

Name: Claydon Yieldometer Ltd
Address: Gaines Hall
Wickham Brook
Newmarket
Suffolk
CB8 8YA



15m Straw Harrow



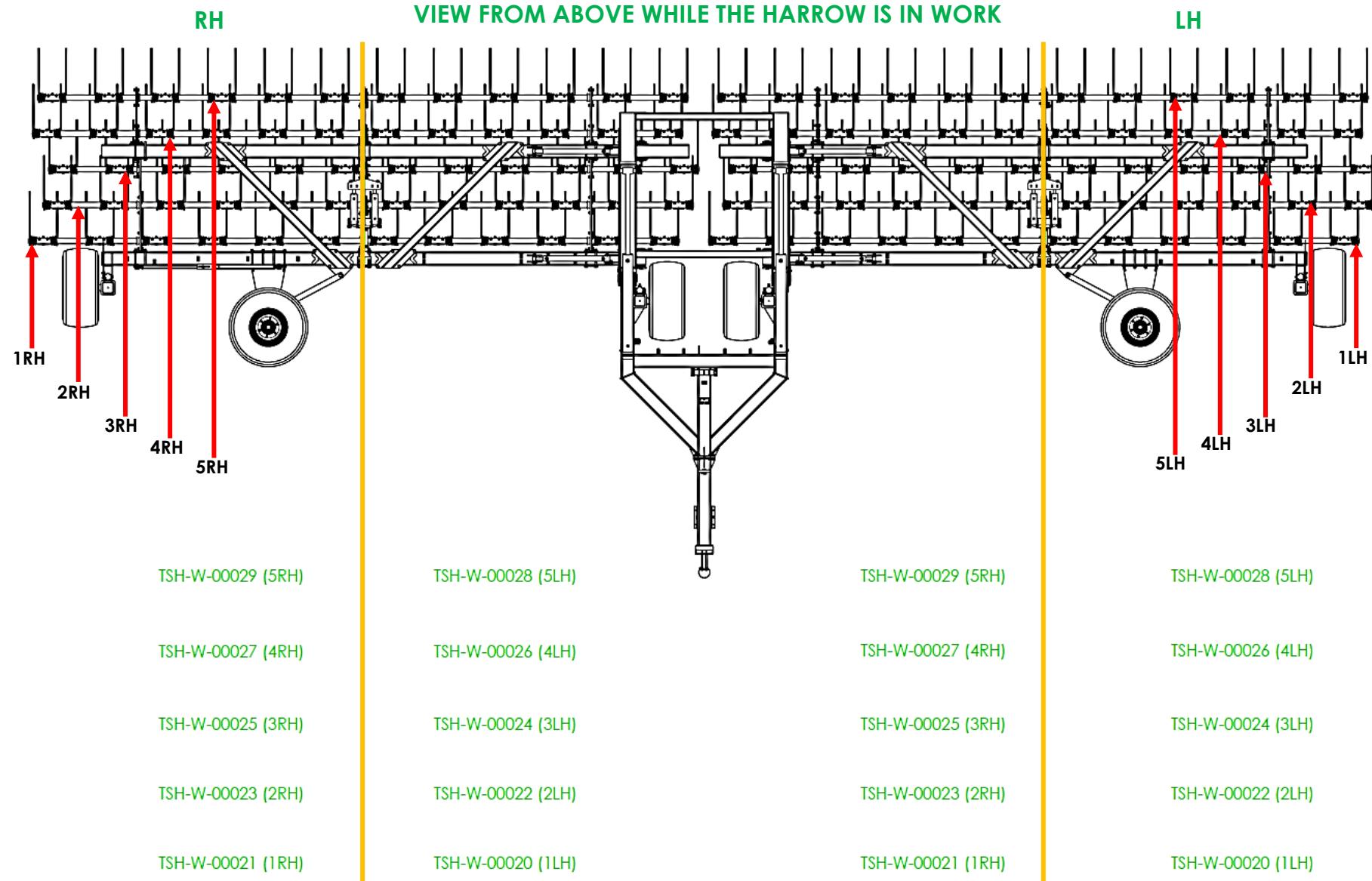
15m Straw Harrow Parts Manual



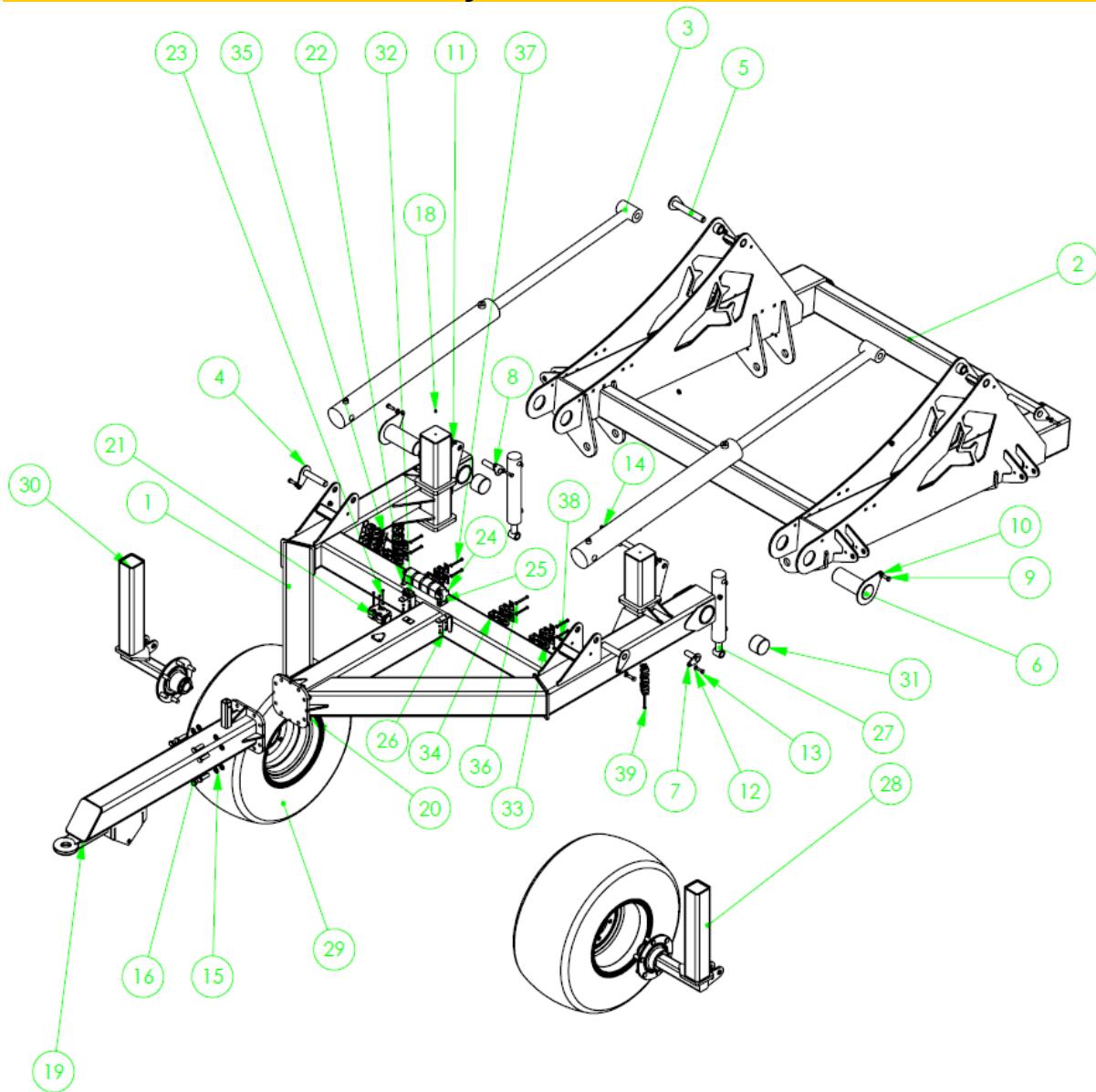
15m Straw Harrow



Pole Assembly



Centre Chassis Assembly



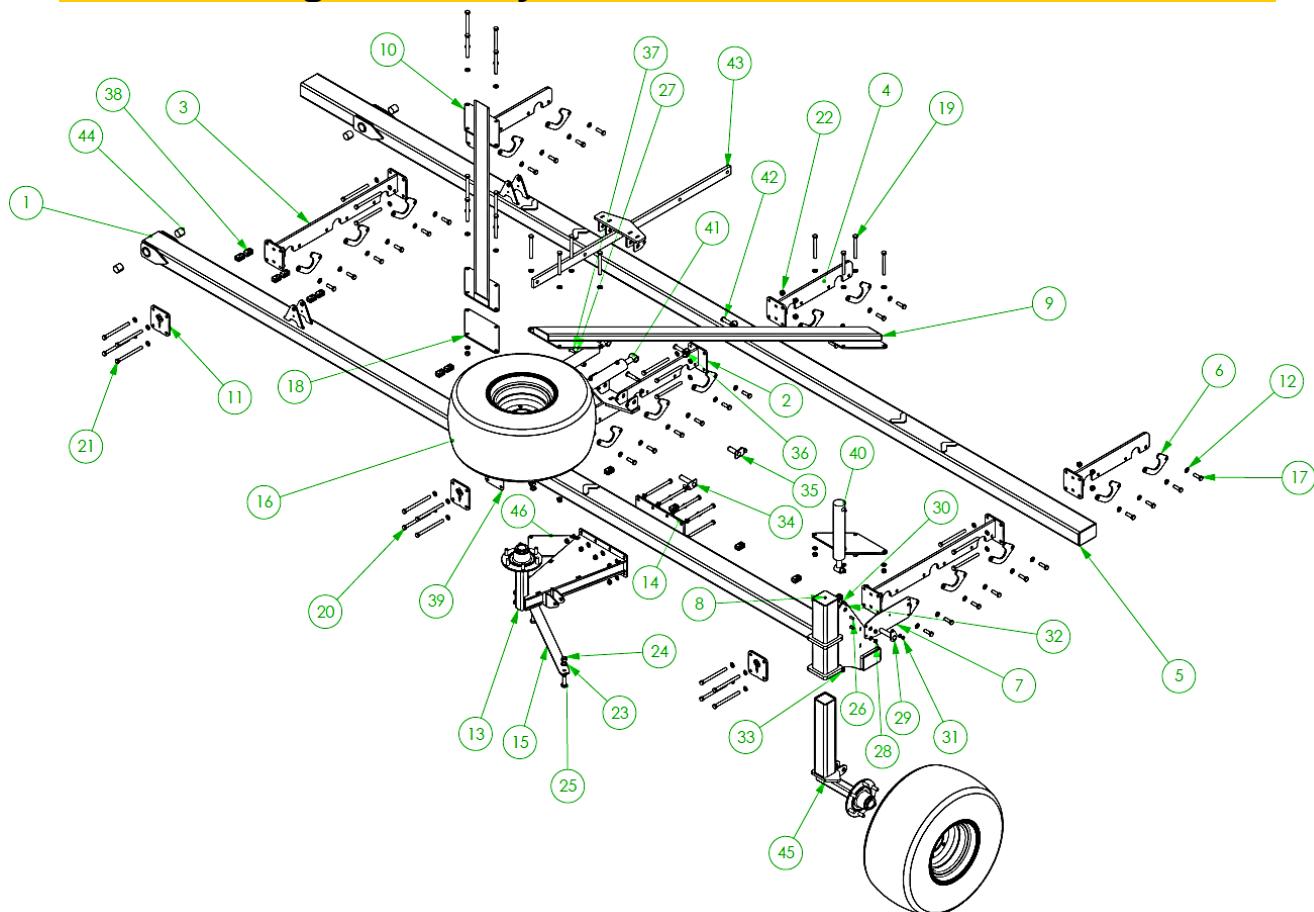
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	TSH-W-00004	TRAILED CHASSIS	1
2	TSH-W-00001	Centre Assembly	1
3	HR650900	SRL Mounted Folding Ram	2
4	TSHA001000	Big Ram Pin	2
5	TSH-W-00009	MAIN FOLDING RAM PIN WELDED ASSEM	2
6	TSH-W-00008	MAIN PIVOT PIN WELDED ASSEMBLY	2
7	SHA14	Small Ram Rod Pin	2
8	TSH-W-00007	DEPTH WHEEL PIN WELDED ASSEMBLY	2
9	HEX HEAD BOLT M12 x 35 10.9 BZP		6
10	PLAIN WASHER M12 FORM A BZP		17
11	NYLOC NUT M12		8
12	PLAIN WASHER M10 FORM A BZP		8



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ITEM	PART NUMBER	DESCRIPTION	QTY.
13	HEX HEAD SCREW M10 x 35 10.9 BZP		4
14	NYLOC NUT M10		4
15	PLAIN WASHER M16 FORM A BZP		16
16	HEX HEAD BOLT M16 x 55 8.8 BZP		8
17	HEX HEAD BOLT M12 x 40 10.9 BZP		1
18	NIPPLE M8 STR	VETSMEERNIPPEL H1 M8x1-RECHT	4
19	TSHA029000	Ring Hitch	1
20	NYLOC NUT M16		8
21	HFD38 5050	SPLITTER VALVE 3/8"BSP	1
22	PLAIN WASHER M6 FORM A BZP		11
23	HEX HEAD BOLT M6 x 65 10.9 BZP	HEX HEAD BOLT M6 x 65 10.9 BZP	3
24	HRFD4	4 Port Rotary Flow Divider	1
25	NYLOC NUT M6		4
26	HEX HEAD BOLT M6 x 20 10.9 BZP	HEX HEAD SCREW M6 x 20 8.8 BZP	4
27	NFR3300250	" "	2
28	TSH-W-00005	DEPTH WHEEL RIGHT HAND WELD ASSEMBLY	1
29	Wheel 400.60.15.5	WHEEL LIMITED SOLUTIONS 400/60-15.5	2
30	TSH-W-00006	DEPTH WHEEL LEFT HAND WELDED ASSEMBLY	1
31	DU808560	DU BUSH 80 X 60	4
32	HC14	1/4" 2 WIRE HOSE CLAMP	1
33	RBPR-214		50
34	RBPR-218		8
35	DP-B2	HOSE CLAMP PLATE	14
36	PLAIN WASHER M8 FORM A BZP		14
37	HEX HEAD BOLT M8 x 60 10.9 BZP		11
38	HEX HEAD BOLT M8 x 30 10.9 BZP		1
39	HEX HEAD BOLT M8 x 80 10.9 BZP		2

Harrow Wing Assembly - RH



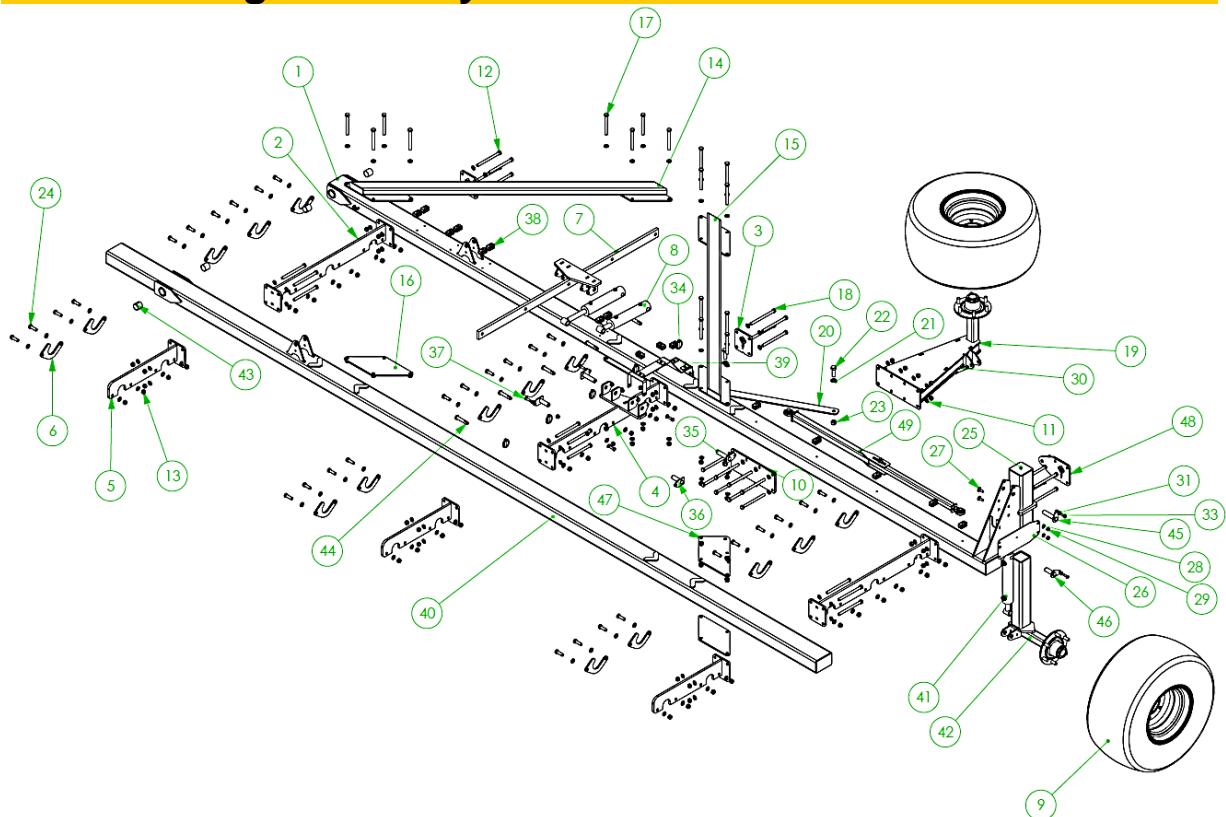
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	TSH-W-00010	FRONT WING BEAM RH WA	1
2	TSH-W-00015	POLE PIVOT AND RAM CARRIER WELD ASSEM	1
3	TSH-W-00013	POLE PIVOT WELD ASSEM FRONT	2
4	TSH-W-00014	POLE PIVOT WELD ASSEMBLY REAR	3
5	TSH-W-00011	REAR WING BEAM WA	1
6	TSH-P-00045	POLE PIVOT BUSH RETAINER	15
7	TSH-P-00037	TRAILED STRAW HARROW TRANSPORT LIGHT BRACKET	1
8	NIPPLE M8 STR	VETSMEERNIPPEL H1 M8x1-RECHT	1
9	TSHA023000	Rigidity Beam 1	1
10	TSHA024000	Rigidity Beam 2	1
11	TSH-P-00046	POLE PIVOT WELD ASSEM CLAMP PLATE LOGO	3
12	PLAIN WASHER M16 FORM A BZP		156
13	TSH-W-00018	TRANSPORT WHEEL WELD ASSEMBLY RH	1
14	TSH-P-00066	TRANSPORT WHEEL UNIT BOLTING PLATE	1
15	TSH-P-00050	TRANSPORT WHEEL TIE BAR	1
16	Wheel 400.60.15.5	Wheel limited solutions 400/60-15.5	2



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ITEM	PART NUMBER	DESCRIPTION	QTY.
17	HEX HEAD BOLT M16 x 50 10.9 BZP	HEX HEAD SCREW M16 x 50 10.9 BZP	30
18	TSH023001	Clamp Plate - Rigidity Beam	3
19	HEX HEAD BOLT M16 x 150 10.9 BZP		16
20	HEX HEAD BOLT M16 x 210 10.9 BZP		4
21	HEX HEAD BOLT M16 x 200 10.9 BZP		28
22	NYLOC NUT M16		78
23	PLAIN WASHER M20 FORM A BZP		4
24	NYLOC NUT M20		2
25	HEX HEAD BOLT M20 x 60 10.9 BZP		2
26	COACH SCREW M12 x 35		2
27	PLAIN WASHER M12 FORM A BZP		14
28	NYLOC NUT M12		8
29	TSH-W-00007	DEPTH WHEEL PIN WELDED ASSEMBLY	1
30	PLAIN WASHER M10 FORM A BZP		4
31	NYLOC NUT M10		2
32	HEX HEAD SCREW M10 x 35 10.9 BZP		2
33	SHA14	Small Ram Rod Pin	1
34	TSH-W-00030	TINE ANGLE ADJUSTMENT RAM BASE END PIN	2
35	TSH-W-00031	TINE ANGLE RAM ANULAR END PIN	2
36	LP11X50	LINCH PIN 11 x 50	4
37	HEX HEAD BOLT M12 x 35 10.9 BZP		6
38	HC14	1/4" 2 WIRE HOSE CLAMP	16
39	TSH-W-00034	TINE ANGLE RAM GUIDE PIPE WELD ASSEMBLY	1
40	NFR3300250	" "	1
41	NFR3300200	Hydraulic Cylinder	2
42	CY60527-0	19x76mm Top Link Pin	5
43	TSH-W-00016	POLE ANGLE ADJUSTMENT BAR WELD ASSEM	1
44	DU4040		4
45	TSH-W-00006	DEPTH WHEEL LEFT HAND WELDED ASSEMBLY	1
46	TSH-P-00049	WING BRACE CLAMP WITH WHEEL TIE BAR TAG PROFILE	1

Harrow Wing Assembly - LH

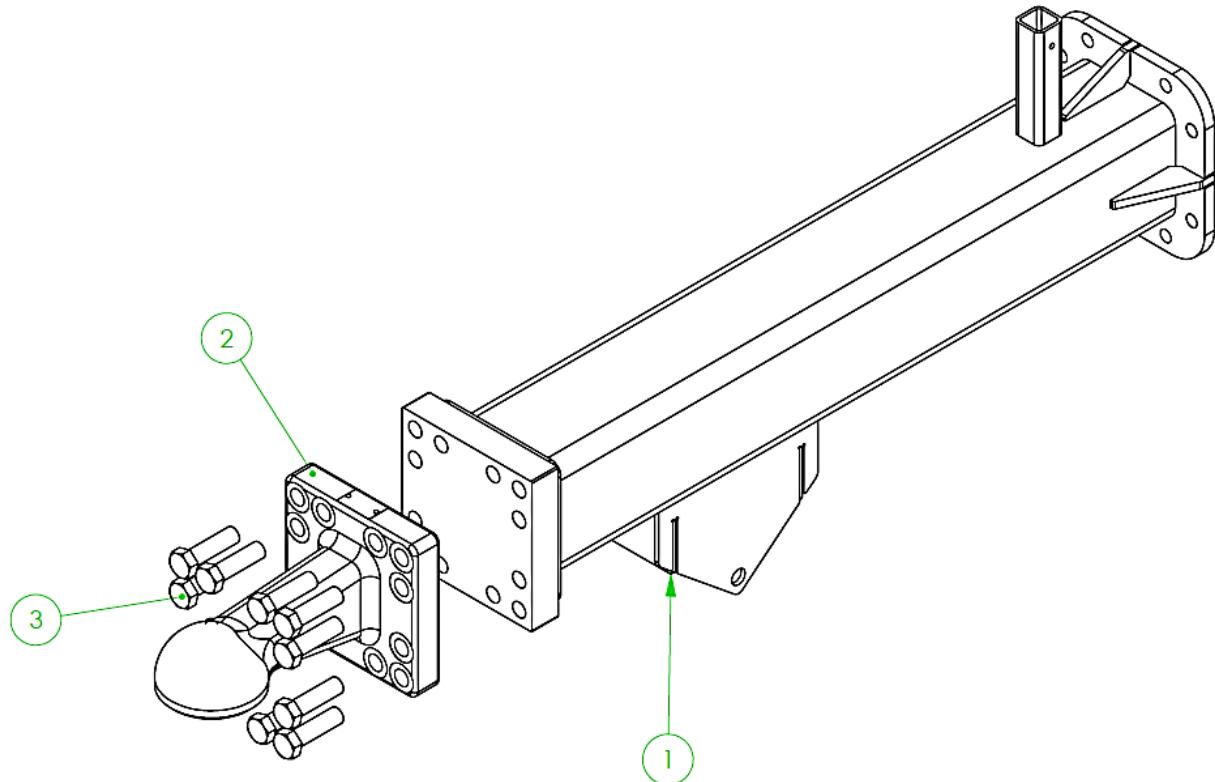


ITEM	PART NUMBER	DESCRIPTION	QTY.
1	TSH-W-00012	WING BEAM LH WELD ASSEMBLY	1
2	TSH-W-00013	POLE PIVOT WELD ASSEM FRONT	2
3	TSH-P-00046	POLE PIVOT WELD ASSEM CLAMP PLATE LOGO	3
4	TSH-W-00015	POLE PIVOT AND RAM CARRIER WELD ASSEM	1
5	TSH-W-00014	POLE PIVOT WELD ASSEMBLY REAR	3
6	TSH-P-00045	POLE PIVOT BUSH RETAINER	15
7	TSH-W-00016	POLE ANGLE ADJUSTMENT BAR WELD ASSEM	1
8	NFR3300200	Hydraulic Cylinder	2
9	Wheel 400.60.15.5	Wheel limited solutions 400/60-15.5	2
10	TSH-P-00066	TRANSPORT WHEEL UNIT BOLTING PLATE	1
11	PLAIN WASHER M16 FORM A BZP		156
12	HEX HEAD BOLT M16 x 200 10.9 BZP		28
13	NYLOC NUT M16		78
14	TSHA023000	Rigidity Beam 1	1
15	TSHA024000	Rigidity Beam 2	1
16	TSH023001	Clamp Plate - Rigidity Beam	3
17	HEX HEAD BOLT M16 x 150 10.9 BZP		16
18	HEX HEAD BOLT M16 x 210 10.9 BZP		4



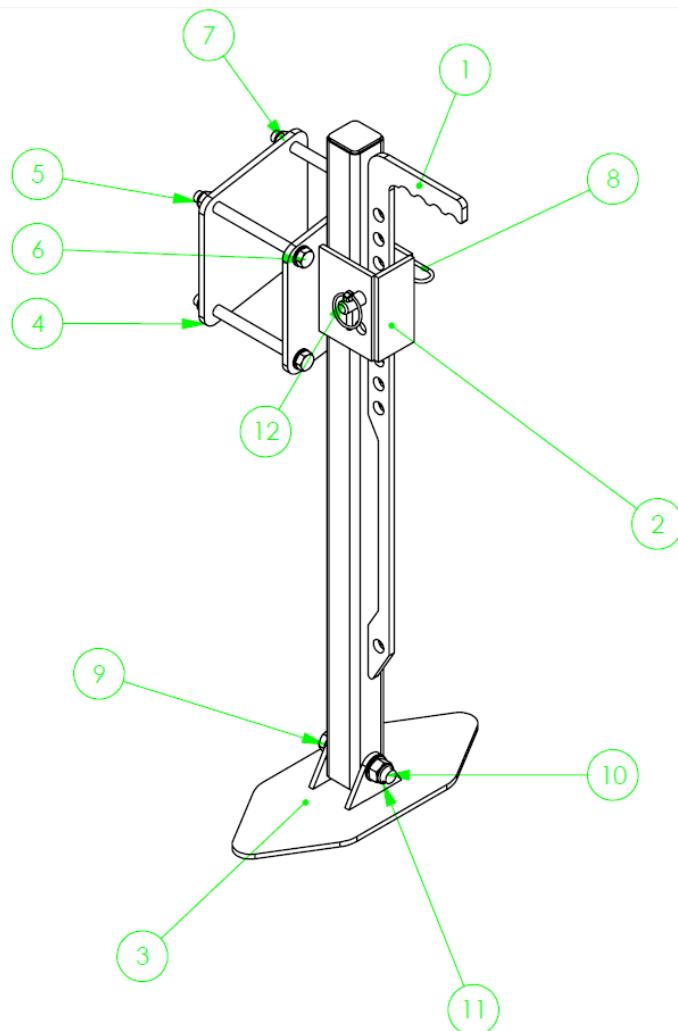
15m Straw Harrow

ITEM	PART NUMBER	DESCRIPTION	QTY.
19	TSH-W-00019	TRANSPORT WHEEL WELD ASSEMBLY LH	1
20	TSH-P-00050	TRANSPORT WHEEL TIE BAR	1
21	PLAIN WASHER M20 FORM A BZP		3
22	HEX HEAD BOLT M20 x 60 10.9 BZP		2
23	NYLOC NUT M20		2
24	HEX HEAD BOLT M16 x 50 10.9 BZP	HEX HEAD SCREW M16 x 50 10.9 BZP	30
25	NIPPLE M8 STR	VETSMEERNIPPEL H1 M8x1-RECHT	1
26	TSH-P-00037	TRAILED STRAW HARROW TRANSPORT LIGHT BRACKET	1
27	COACH SCREW M12 x 35		2
28	PLAIN WASHER M12 FORM A BZP		14
29	NYLOC NUT M12		8
30	PIN19X76	TOP LINK PIN 19 DIA X 76	1
31	PLAIN WASHER M10 FORM A BZP		4
32	NYLOC NUT M10		2
33	HEX HEAD SCREW M10 x 35 10.9 BZP		2
34	LP11X50	LINCH PIN 11 x 50	5
35	TSH-W-00030	TINE ANGLE ADJUSTMENT RAM BASE END PIN	2
36	TSH-W-00031	TINE ANGLE RAM ANULAR END PIN	2
37	HEX HEAD BOLT M12 x 35 10.9 BZP		6
38	HC14	1/4" 2 WIRE HOSE CLAMP	16
39	TSH-W-00034	TINE ANGLE RAM GUIDE PIPE WELD ASSEM	1
40	TSH-W-00011	REAR WING BEAM WA	1
41	NFR3300250	" "	1
42	TSH-W-00005	DEPTH WHEEL RIGHT HAND WELD ASSEM	1
43	DU4040		4
44	CY60527-0	19x76mm Top Link Pin	5
45	TSH-W-00007	DEPTH WHEEL PIN WELDED ASSEM	1
46	SHA14	Small Ram Rod Pin	1
47	TSH-P-00049	WING BRACE CLAMP WITH WHEEL TIE BAR TAG PROFILE	1
48	TSH-W-00035	LINK BAR STORAGE WELD ASSEMBLY	1
49	TSH-B-00013	REVERSING LINK BAR	1

Scharmüller Hitch – Optional Extra


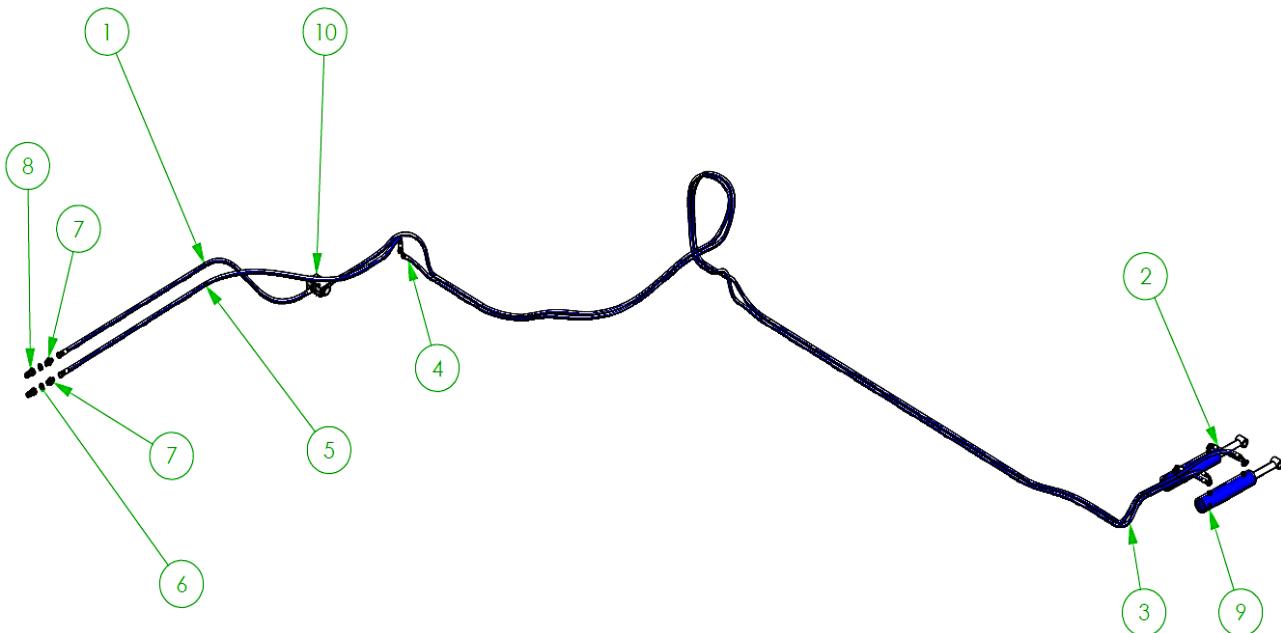
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	TSH-W-00040	SCHARMÜLLER HITCH WELDED ASSEMBLY	1
2	TSH-P-00114	Scharmüller K80, 3000kg Spoon Type 00665900	1
3	HEX HEAD BOLT M20 x 70 10.9 BZP		12

Stand



ITEM	PART NUMBER	DESCRIPTION	QTY.
1	TSH-W-00041	TSH JACK BODY ASSEMBLY	1
2	TSH-W-00042	TSH JACK WELDED BRACKET	1
3	TSH-W-00043	TSH JACK WELDED FOOT PLATE	1
4	TSH-P-00129	TSH JACK BRACKET BACKING PLATE	1
5	HEX HEAD BOLT M16 x 200 10.9 BZP		4
6	PLAIN WASHER M16 FORM A BZP		8
7	NYLOC NUT M16		4
8	PIN0003	Link Pin with pull head 19mm x 115	1
9	PLAIN WASHER M20 FORM A BZP		2
10	HEX HEAD BOLT M20 x 110 10.9 BZP		1
11	NYLOC NUT M20		1
12	LP8X50	LINCH PIN 8 x 45	1

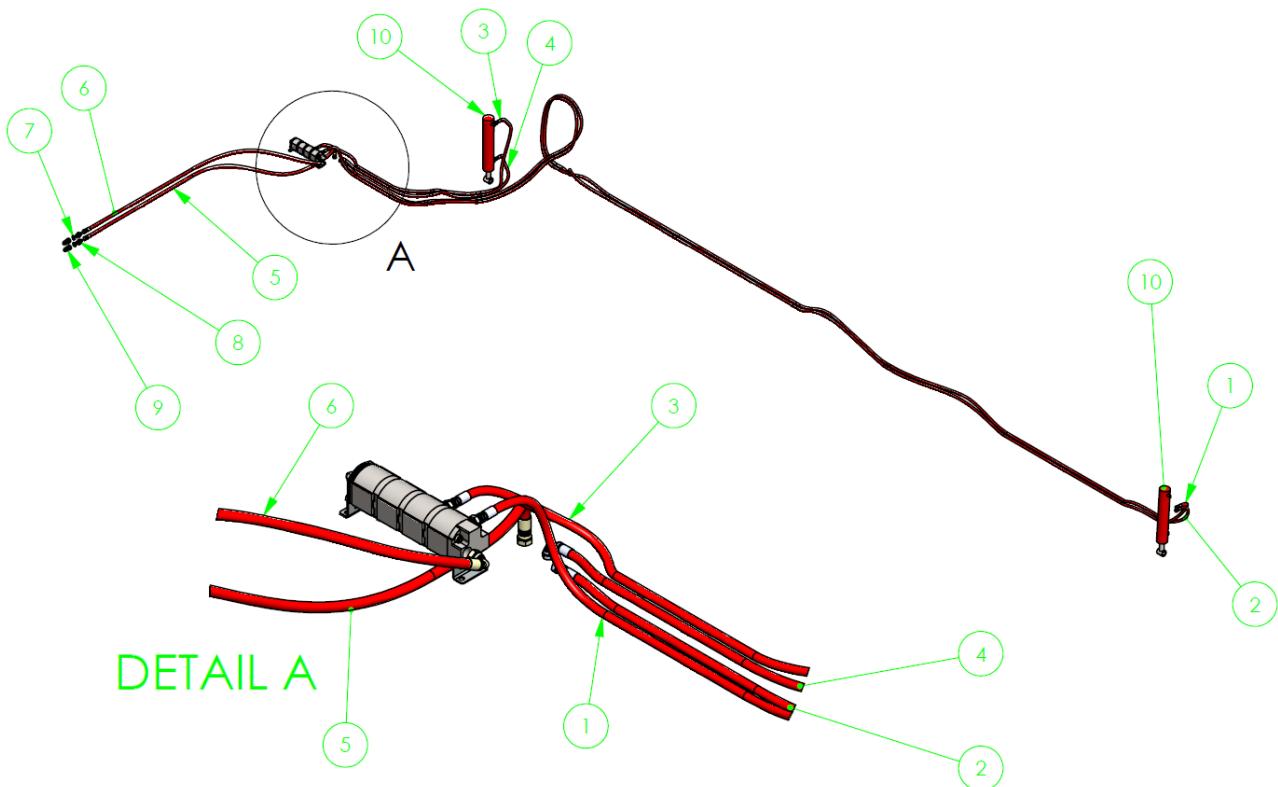
Hydraulics – Rake Angle Circuit



ITEM	PART NUMBER	DESCRIPTION	QTY.
1	TSH-B-00015	TINE ANGLE CIRCUIT-TRACTOR TO SPLITTER HOSE	1
2*	TSH-B-00023	TINE ANGLE CIRCUIT- RAM LINK HOSE	2
3*	TSH-B-00024	TINE ANGLE CIRCUIT- SPLITTER TO RAM BASE	1
4*	TSH-B-00025	TINE ANGLE CIRCUIT- 'TEE' TO RAM ROD	1
5	TSH-B-00026	TINE ANGLE CIRCUIT- TRACTOR TO 'TEE'	1
6	BS12	BONDED SEAL 1/2"BSP	2
7	HA38_12MM	3/8"-1/2"BSP MM ADAPTER	2
8	HCPISO12	ISO PLUG 1/2"	2
9	NFR3300200	Hydraulic Cylinder	2
10	HFD38 5050	SPLITTER VALVE 3/8"BSP	1

(*RH wing – pipes and part numbers are the same)

Hydraulics – Depth Control Circuit



ITEM	PART NUMBER	DESCRIPTION	QTY.
1*	TSH-B-00019	DEPTH CIRCUIT- FLOW DIVIDER TO BASE RAM WING	1
2*	TSH-B-00020	DEPTH CIRCUIT- 'TEE' TO ROD END RAM WING	1
3*	TSH-B-00021	DEPTH CIRCUIT- FLOW DIVIDER TO RAM BASE INNER RAM	1
4*	TSH-B-00022	DEPTH CIRCUIT- 'TEE' TO ROD END INNER RAM	1
5	TSH-B-00028	DEPTH CIRCUIT- TRACTOR TO 'TEE'	1
6	TSH-B-00029	DEPTH CIRCUIT- TRACTOR TO SPLITTER	1
7	BS12	BONDED SEAL 1/2"BSP	2
8	HA38_12MM	3/8"-1/2"BSP MM ADAPTER	2
9	HCPISO12	ISO PLUG 1/2"	2
10*	NFR3300250	" "	2

(*RH wing – pipes and part numbers are the same)