



## Cambridge Rolls – 12.3m



## Operator's Manual and Part's Catalogue

Original Instructions

### Contact Details

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12.3m - Cambridge Rolls

## 1.0. Cambridge Rolls Warranty Registration

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

Claydon Yield-O-Meter Ltd  
Gaines Hall,  
Wickhambrook,  
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 ROLLS WARRANTY  
WILL BE VOID**



### Cambridge Rolls Warranty Registration

NAME:

ADDRESS:

CONTACT NUMBER:

DELIVERY DATE:

SERIAL NUMBER:

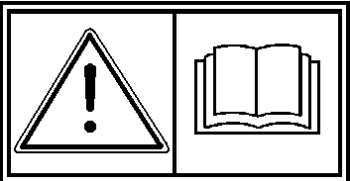
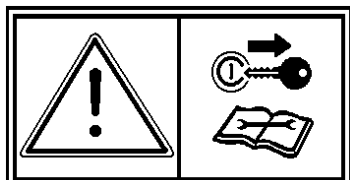

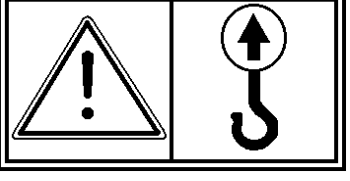
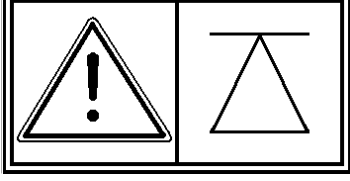
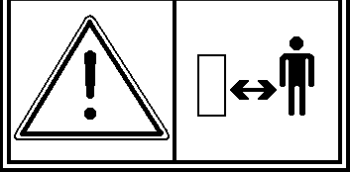
### **PLEASE ENSURE:**

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

SIGNATURE:

**PLEASE RETURN WITH A COPY OF YOUR INVOICE AND THE DELIVERY NOTE.**

## 2.0. Warning Symbols

Warning symbol	Explanation of the symbol	Location
	Read the instruction manual	Roller frame
	Before any repairs or servicing turn off the engine and take out the key	Roller frame
	Crushing	Roller side arms
	Attachment points for lifting equipment	Roller frame
	Supporting points for lifting equipment while wheel exchange	Drive axle
	Keep a safe distance from the machine	Roller frame



### NOTE

The rolls are intended for farming use only any other purposes will be considered as incorrect.  
Do not operate on stony or wet soils.

### **3.0. Introduction**

Thank you for your purchase of a new set of Claydon Cambridge rolls. The rolls are intended for compacting and levelling the soil surface layer before or after sowing, as a result a clod free soil structure shall be achieved. 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. In particular, it is essential that the warnings and cautions section has been read carefully.

If any further assistance or explanation is required please contact Claydon Yield-O-Meter using the contact details given on the front cover, quoting the serial number located on the identification plate.

The Cambridge rolls will provide many years of excellent service with little maintenance due to its robust construction and its small number of moving parts. However, for optimum machine life some maintenance will be necessary.

We reserve the right to make future modifications to the machine that could make some diagrams and descriptions in this manual 'out of date'. While the clarity of the manual should not be affected by this, please bring any concerns to the attention of Claydon Yield-O-Meter Ltd for us to resolve the problem.

## 4.0. Identification of the Machine

The 12.3m Claydon Cambridge rolls offer the following specifications:

Working Width	Transport Width	Transport Length	Approximate Weight
12.30m	2.88m	6.68m	8400kg

The rolls serial number can be found located on the machines identification plate; this may need to be quoted when ordering spare parts in the future.



Location of identification plate



Detail of identification plate

Record serial number here: .....

## 4.1. Warnings and Cautions

- Observing the warning signs and other notices will serve the operators safety.
- Do not allow anyone to stand between the tractor and rolls during coupling/uncoupling procedures.
- Ensure a safe distance from the rolls is obeyed by spectators whilst the machine is in work.
- Pressurised hydraulic oil is dangerous therefore connecting and disconnecting of the rolls 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
- Take care not to trap body parts within moving or pivot points.
- Do not use tractor independent brakes when operating rolls.
- Turn off engine and lower the rolls to the ground before any maintenance is carried out.
- Exercise caution when folding or unfolding the rolls.
- Use original pins for coupling rolls to the tractor.
- Turn off the engine before leaving the tractor unattended.
- Make sure the rolls are stored out the reach of livestock.

**Operation of the rolls by children and unauthorized personnel not familiar with this manual or under the influence of alcohol is forbidden.**

## 5.0. Equipment Overview

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

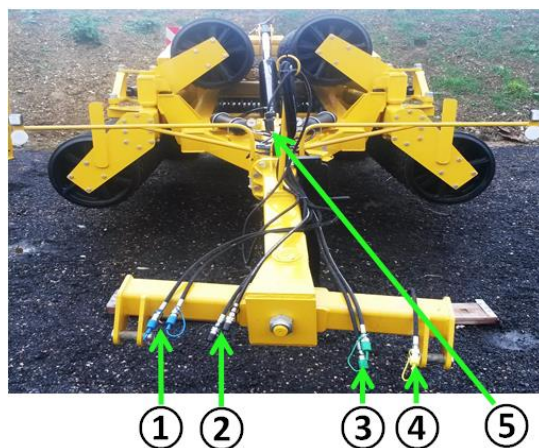


1. 'Front' indicates the three point linkage end of the machine.
2. 'Rear' indicates where the stone box is mounted on the machine.
3. 'Left' indicates the left of the machine as you look at the machine from the rear.
4. 'Right' indicates the right of the machine as you look at the machine from the rear.

Figure 1: Overall view

## 6.0. Connecting the Rolls to the Tractor

The Claydon Cambridge rolls mount to the tractors 3 point linkage on CATIII linkage pins, you will need to use the correct size balls (not supplied) to fit the pins. The hydraulic services should be paired together for the main lift cylinder, the inner folding sections and the outer folding sections cylinders (Figure 2).



### Connections

### Colour

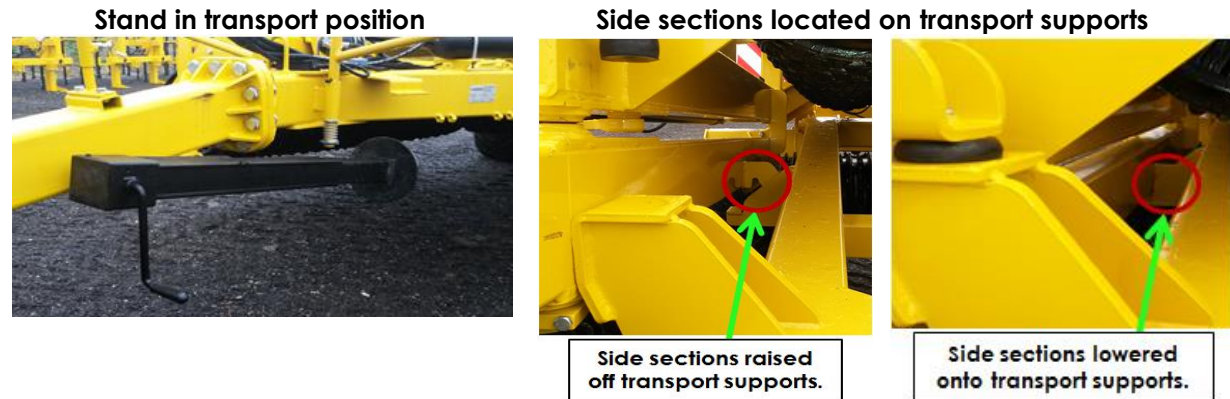
- |                                   |       |
|-----------------------------------|-------|
| 1. Centre lift cylinder           | Blue  |
| 2. Inner rolls hydraulic cylinder | Black |
| 3. Outer rolls hydraulic cylinder | Green |
| 4. Hydraulic Brake                | -     |
| 5. Light cable                    | -     |

Figure 2: Tractor connection



## 6.1. Transportation

Once the rolls are attached, ensure the stand has been secured in the transport position and check the side sections are located in the transport supports (Figure 3).



**Figure 3: Location of stand and side section locking device**

There should be a minimum distance of 25 cm between the bottom of the centre roller to the road. Transport speed should not exceed 25 km/h and exercise caution when overtaking or passing other vehicles.



**CAUTION!**

Exercise caution and check if side rollers are located in transport supports prior to transport.



## 7.0. Field Use

In order to unfold the Cambridge rolls the procedure in Figure 4 should be carried out:

1) Cambridge rolls in transport position.



Side sections positioned on rubber stops.

2) Operate centre hydraulic cylinder (Blue colour coded indicator on hydraulic pipes) to lift side sections over the transport supports.



Side sections raised off stops and transport supports.

3) Operate the second set of hydraulics services (Black colour coded indicator on hydraulic pipes) so the inner rolls unfold to the position shown below.



5) Finally, lower the central hydraulic cylinder slowly (Blue colour coded indicator on hydraulic pipes) until all the sections are positioned on the ground. Ensure the main lift cylinder is in the float position on the tractors spool valve and the hydraulic accumulators on the wings are charged (**see overleaf**).



4) Now operate the third set of hydraulics services (Green colour coded indicator on hydraulic pipes) so the outer rolls unfold to the position shown above.

Figure 4: Unfolding process

Once correctly hitched on and unfolded the central frame should be positioned horizontally in relation to the field's surface. When operating the rolls the tractor's forward speed should not exceed 8 km/h, also ensure the main hydraulic lift cylinder (Blue colour coded indicator) should be located in the float position.

To ensure soil has been compacted the full width of the rolls, the pressure gauges located on the front of the rolls should both read about 80 Bar once the rolls have been unfolded (Figure 5).



Figure 5: Both pressure gauges should read 80 Bar once unfolded



**CAUTION!**

Make sure there are no people in the vicinity and sufficient space is available before unfolding the roller.

Do not stand between the machine and the tractor with the engine running.  
Work on stony soil or wet soil may cause damage to roller components.



## 8.0. Care and Maintenance

The Claydon rolls require very little maintenance in order to provide reliable service. Prior to using the machine the rolls should be checked for hydraulic fluid leaks and all bolts should be retightened after the first eight hours of use.

### 8.1. Lubricating Points

Lubrication should be performed using multi-purpose grease at the designated intervals (displayed in Figure 7). An overview of the lubrication points on the 12.3m rolls can be seen in Figure 6, with the identification numbers corresponding to the details of the lubrication points in Figure 7.

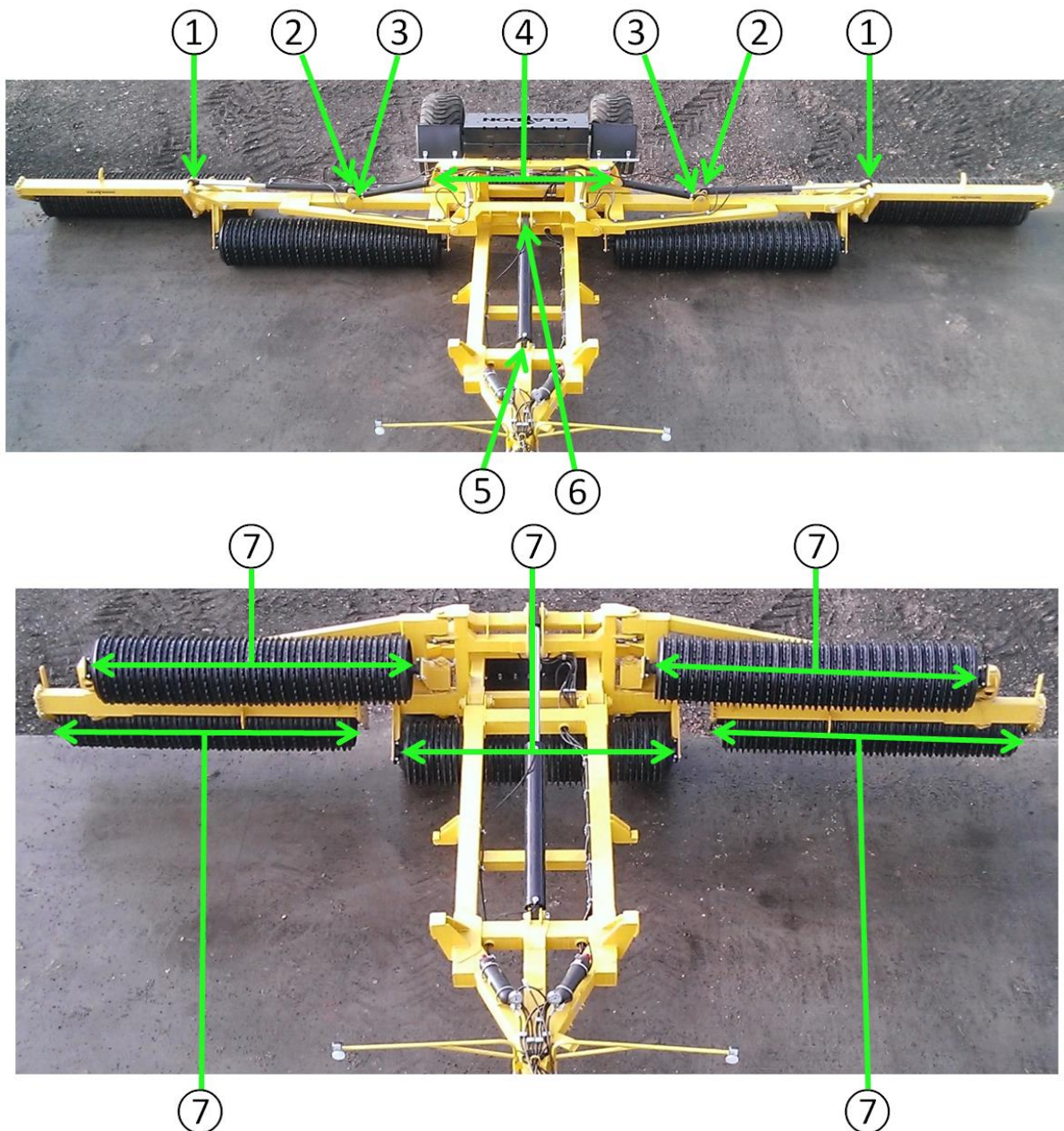









Figure 6: Overview of lubrication points

**Lubrication points – Every 10 hrs.**

		
5. Drawbar cylinder, base end	6. Drawbar cylinder, rod end	7. Roller bearings

**Lubrication points – Seasonal**

		
1. Outer rolls, rod end	2. Outer rolls, base end	3. Inner rolls, rod end
		
	4. Inner rolls, base end	

**Figure 7: Details of lubrication points**

After each day of use, ensure all the rollers are cleaned, this will allow the operator to check all the welds and inspect that all bolts are tight. Any damaged or worn parts should be replaced with new or refurbished ones.

## 8.2. Storage

Prior to storage all parts should be inspected and any damaged or worn components should be replaced. All damaged paint should be cleaned and coated with anti-corrosive top coat paint (available from Claydon Yield-O-Meter). Make sure all working surfaces are protected against corrosion.

## 8.3. Tyre Pressures

It is recommended that the transportation wheels on the Cambridge rolls should be inflated to a pressure of 50 psi (3.5 Bar).

## 9.0. Specifications

**Table 1: Specifications of Cambridge rolls**

Item	Specification	Unit	12.3m - Cambridge Rolls
1.	Working width	mm	12300
2.	Overall dimensions - working position: - length - width - height - transport position: - length - width - height	mm mm mm mm mm mm mm	6550 12560 1480 6680 2880 1750
3.	Weight	kg	8400
4.	No. of roller sections	pcs.	5
5.	Folding method	-	Hydraulic, external tractor hydraulics
6.	No. of rings	pcs	4 folding sections: 25 plain 24 toothed Fixed section: 21 plain 20 toothed
7.	Ring diameter	mm	600
8.	Ring scale	mm	105
9.	Roller section length (between the centres of external rings)	mm	2520 folding sections
10.	Wheel track	mm	2100
11.	Tyre type	-	520/50-R17 IMP
12.	Tyre pressure	Bar	3.5
13.	Transport speed	km/h	25
14.	Brake system: - service brake	-	Hydraulic

**10.0. Appendix A – Declaration of Conformity**

# CE EC DECLARATION OF CONFORMITY CE

## FOR THE MACHINE

According to the Regulation of the Minister of Labour and Social Policy of 10 April 2003 (Polish Journal of Laws Dz. U. No. 91, Item 858) and Directive of the European Union 98/37/EC of 22 June 1998 (as amended) Directive 98/79/EC

„EXPOM” Sp. z o.o.  
ul. Parkowa 2,  
99-340 Krośniewice

*acting as the manufacturer of:*

**WAŁ CAMBRIDGE  
MAXIMUS**

typ / model: 12.3 m

rok produkcji: 2014

nr fabryczny:

hereby declares with full responsibility that the machine:

with operating width of ...12.3...m and rigid/folded frame

to which this declaration pertains, complies with the requirements of:

Regulation of the Ministry of Labour and Social Policy of 10 April 2003 on essential requirements for machines and safety elements (Polish Journal of Laws Dz. U. No. 91, Item 858) and EU Directive: 98/37/EC of 22 June 1998 amended by EU Directive 98/79/EC

The following harmonised standards have been used for conformity assessment:

PN-EN ISO12100-1:2005(U)

PN-EN ISO12100-2:2005(U)

PN-EN 294:1994

PN-EN 1553:2002

and standards:

PN-ISO 3600:1998, PN-ISO 11684:1998, PN-93/R-02001/01 (idt. ISO 4254-1:1989)

**Any changes or modifications of the machine without manufacturer's consent render this EC declaration of conformity null and void.**

Krośniewice 30.04.2005  
*Place and date of issue*

Marek Wietrzyk, M.Sc. Eng. - President  
*Full name and position of an authorised person*

THE INSTRUCTION MANUAL FORMS BASIC EQUIPMENT OF THE MACHINE!!!





## Part's Manual



## Drawbar & Arm Assembly

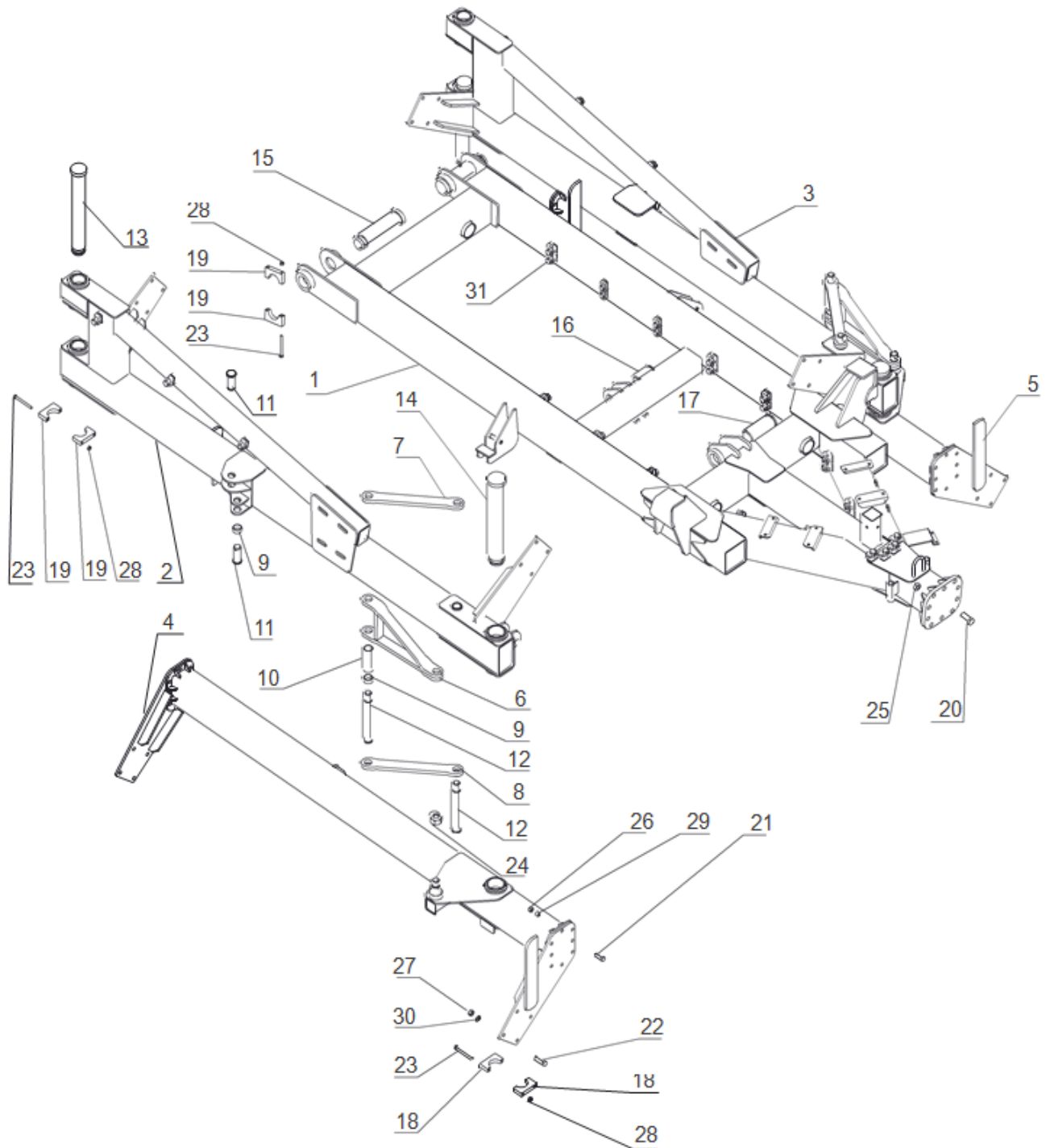
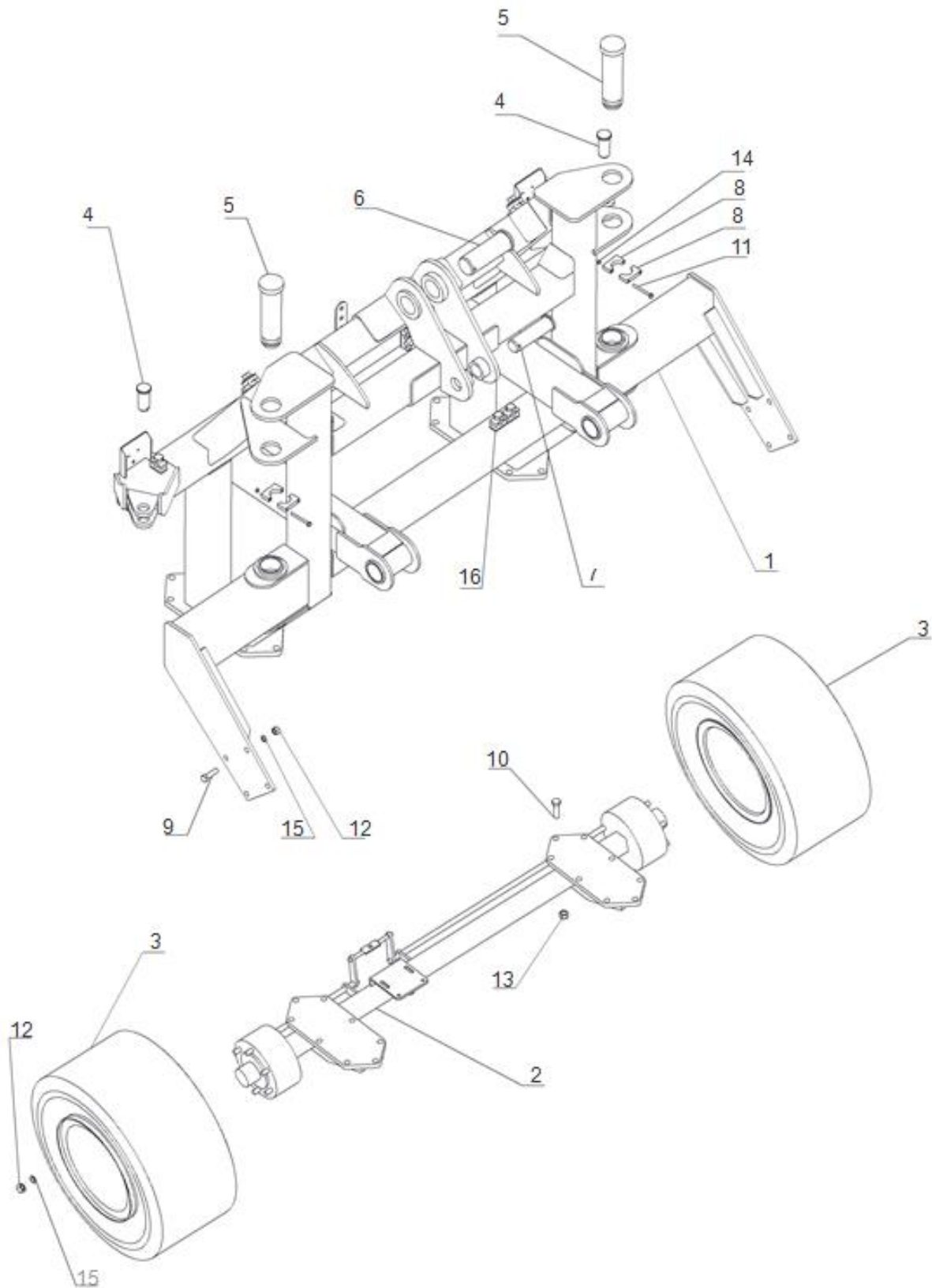


Figure 8: Drawbar & arm assembly

Item	Name	Part Number	Details	QTY.
1.	Drawbar frame	MX12001		1
2.	Right inner arm	MX12002		1
3.	Left inner arm	MX12003		1
4.	Right outer arm	MX12004		1
5.	Left outer arm	MX12005		1
6.	Outer arm folding linkage	MX12006		2
7.	Outer arm top connecting rod	MX12007		2
8.	Outer arm bottom connecting rod	MX12008		2
9.	Outer cylinder short spacer	MX12009		4
10.	Outer cylinder long spacer	MX12010		2
11.	Folding cylinder pin	MX12011	L = 104mm	4
12.	Folding linkage pin	MX12012	L = 333mm	4
13.	Inner arm bottom pin	MX12013	L = 577mm	2
14.	Outer arm pin	MX12014	L = 577mm	2
15.	Central frame pin	MX12015	L = 310mm	2
16.	-	-	-	-
17.	Drawbar cylinder pin	MX12016	L = 183mm	1
18.	Outer arm pin clamp	MX12017	Ø85mm	4
19.	Inner arm pin clamp	MX12018	Ø70mm	8
20.	Bolt M24 x 70	BOLT M24 x 70		10
21.	Bolt M16 x 45	BOLT M16 x 45		32
22.	Bolt M18 x 60	BOLT M18 x 60		32
23.	Bolt M12 x 120	Bolt M12 x 120		12
24.	Nyloc Nut M36	NYLOC NUT M36		2
25.	Nyloc Nut M24	NYLOC NUT M24		10
26.	Full Nut M16	FULL NUT M16		32
27.	Full Nut M18	FULL NUT M18		32
28.	Nyloc Nut M12	NYLOC NUT M12		12
29.	Spring washer M16	SPRING WASHER M16		32
30.	Spring washer M18	SPRING WASHER M18		32
31.	Hose Clamp	HC38-1		34

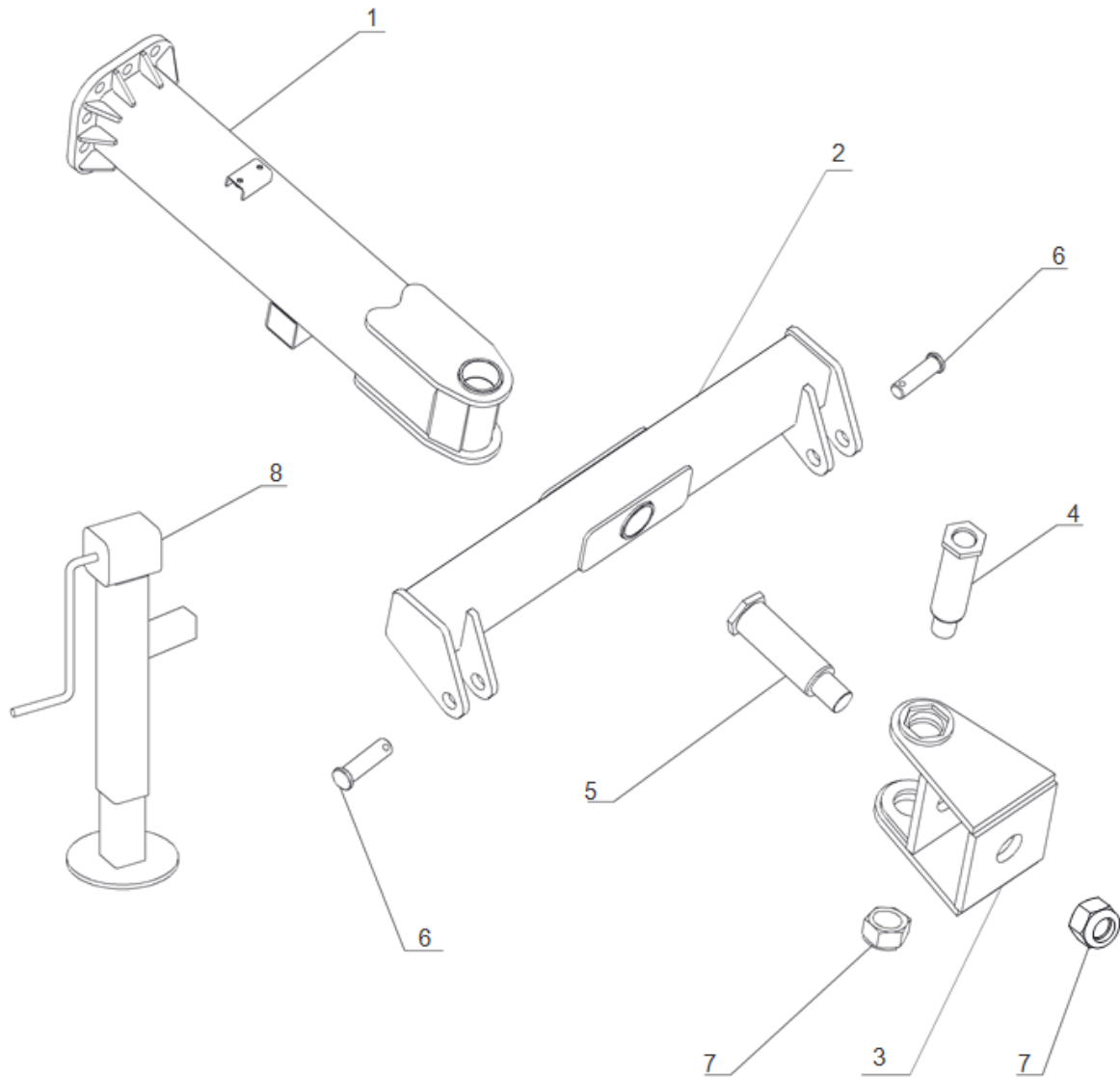
**Centre Frame**



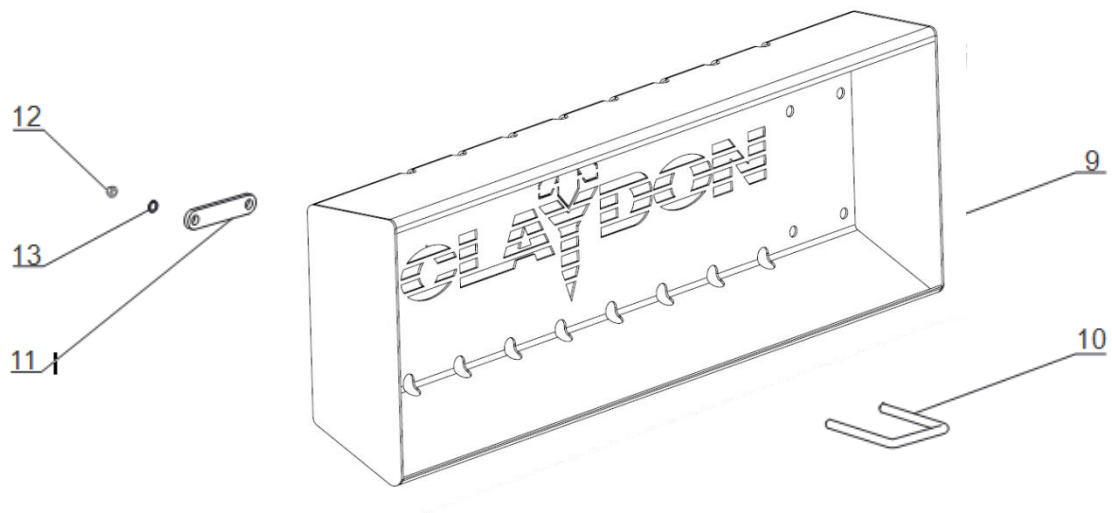
**Figure 9: Centre frame**

Item	Name	Part Number	Details	QTY.
1.	Centre frame	MX12019		1
2.	Transport axel assembly	MX12020		1
3.	Transport wheel and tyre	WTA11.5-80-15.3	520/50 – R17 IMP	2
4.	Folding cylinder pin - centre frame	MX12021	Ø80 L = 96mm	2
5.	Inner arm top pin	MX12022	L = 287mm	2
6.	Drawbar cylinder pin – centre frame	MX12023	Ø140 L = 200mm	1
7.	-	-	-	-
8.	Inner arm pin clamp	MX12018	Ø70mm	4
9.	Bolt M18 x 60	BOLT M18 x 60		8
10.	Bolt M20 x 70	BOLT M20 x 70		16
11.	Bolt M12 x 120	BOLT M12 x 120		4
12.	Full Nut M18	FULL NUT M18		20
13.	Nyloc Nut M20	NYLOC NUT M20		16
14.	Nyloc Nut M12	NYLOC NUT M12		4
15.	Spring washer M18	SPRING WASHER M18		20
16.	Hose Clamp	HC38-1		12

**Towing Assembly & Stone Box**



**Figure 10: Towing assembly**



**Figure 11: Stone box**

Item	Name	Part Number	Details	QTY.
1.	Drawbar beam	MX12024		1
2.	Hitch beam	MX12025		1
3.	Hitch Pivot	MX12026		1
4.	Vertical hitch pin	MX12027	L = 284mm	1
5.	Horizontal hitch pin	MX12028	L = 244mm	1
6.	Linkage Pin	MX12029	L = 135mm	2
7.	Nyloc Nut M48	NYLOC NUT M48		2
8.	Stand Jack	MX12030		1
9.	Stone Box	MX12031		1
10.	U-Bolt M16 – Stone box	U-Bolt M16 – Stone box		4
11.	Stone box clamp plate	MX12032		4
12.	Full Nut M16	FULL NUT M16		8
13.	Spring washer M16	SPRING WASHER M16		8

## Roller Sections

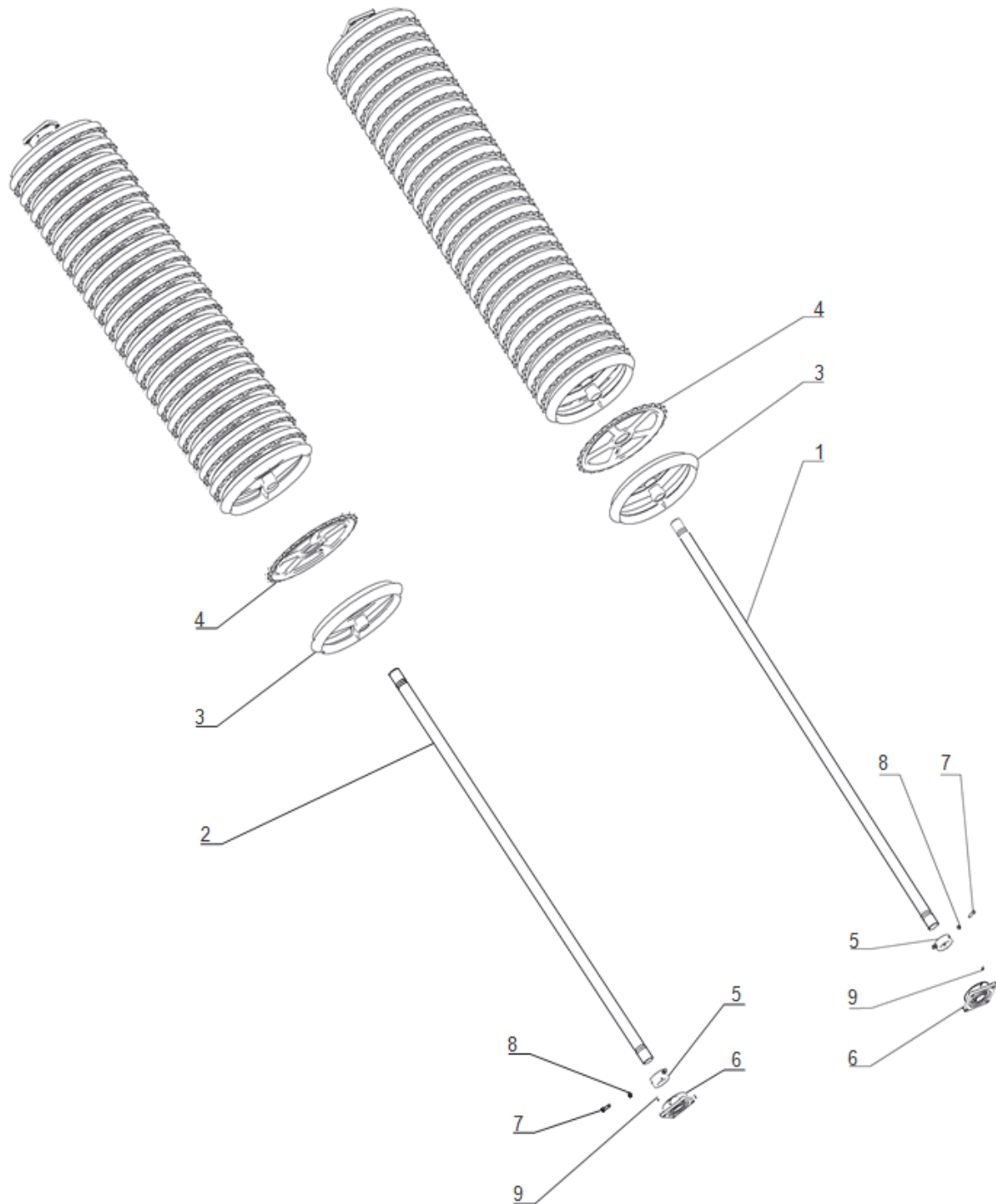
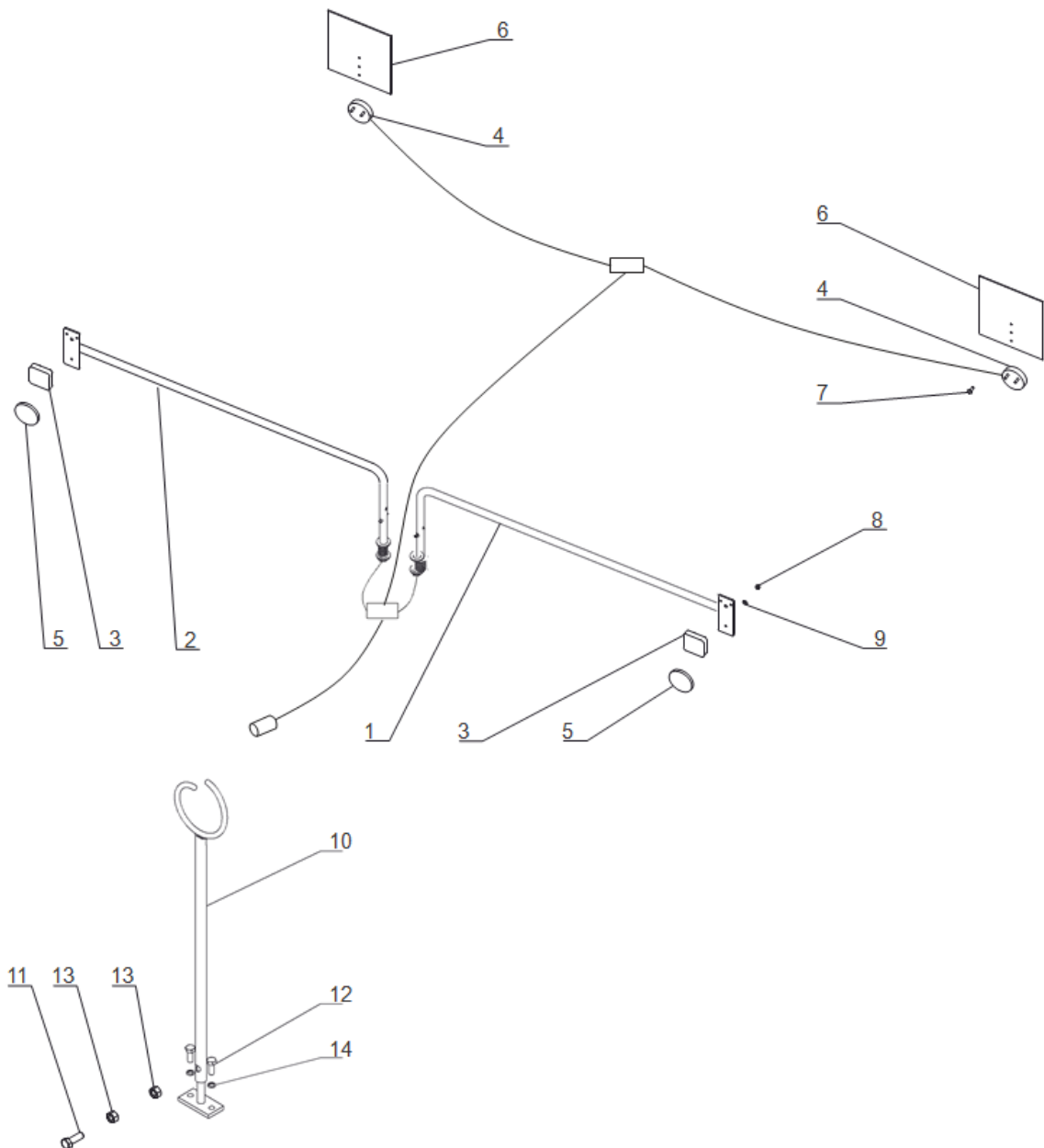


Figure 10: Roller sections



Item	Name	Part Number	Details	QTY.
1.	Wing shaft	MX12033	L = 2831mm 25 x No.3 22 x No.4	4
2.	Centre shaft	MX12034	L = 2522mm 24 x No.3 21 x No.4	1
3.	Cambridge ring – cast iron	MX12035	Ø600mm	124
4.	Breaker ring – cast iron	MX12036	Ø600mm	109
5.	Protection ring	MX12037		10
6.	Bearing Assembly	MX12038		10
7.	Grub screw M12 x 40	GRUB SCREW M12 x 40		30
8.	-	-	-	-
9.	M8 Grease Nipple	NIPPLEM8STR		10

**Hose Guide & Light Arms**



**Figure 11: Hose guide & light arms**

Item	Name	Part Number	Details	QTY.
1.	Left light bracket	MX12039		1
2.	Right light bracket	MX12040		1
3.	Front running light	MX12041		2
4.	Rear combination light	MX12042		2
5.	Front reflector	MX12043		2
6.	Marker Board	MB423X423RW		2
7.	Bolt M5 x 15	BOLT M5 x 15		6
8.	Full nut M5	FULL NUT M5		16
9.	Washer M5	WASHER M5		16
10.	Hose Guide	MX12044		1
11.	Bolt M12 x 35	BOLT M12 x 35		1
12.	Bolt M10 x 25	Bolt M10 x 25		2
13.	Full nut M12	FULL NUT M12		2
14.	Spring washer M10	SPRING WASHER M10		2

Hydraulic Circuit Diagrams

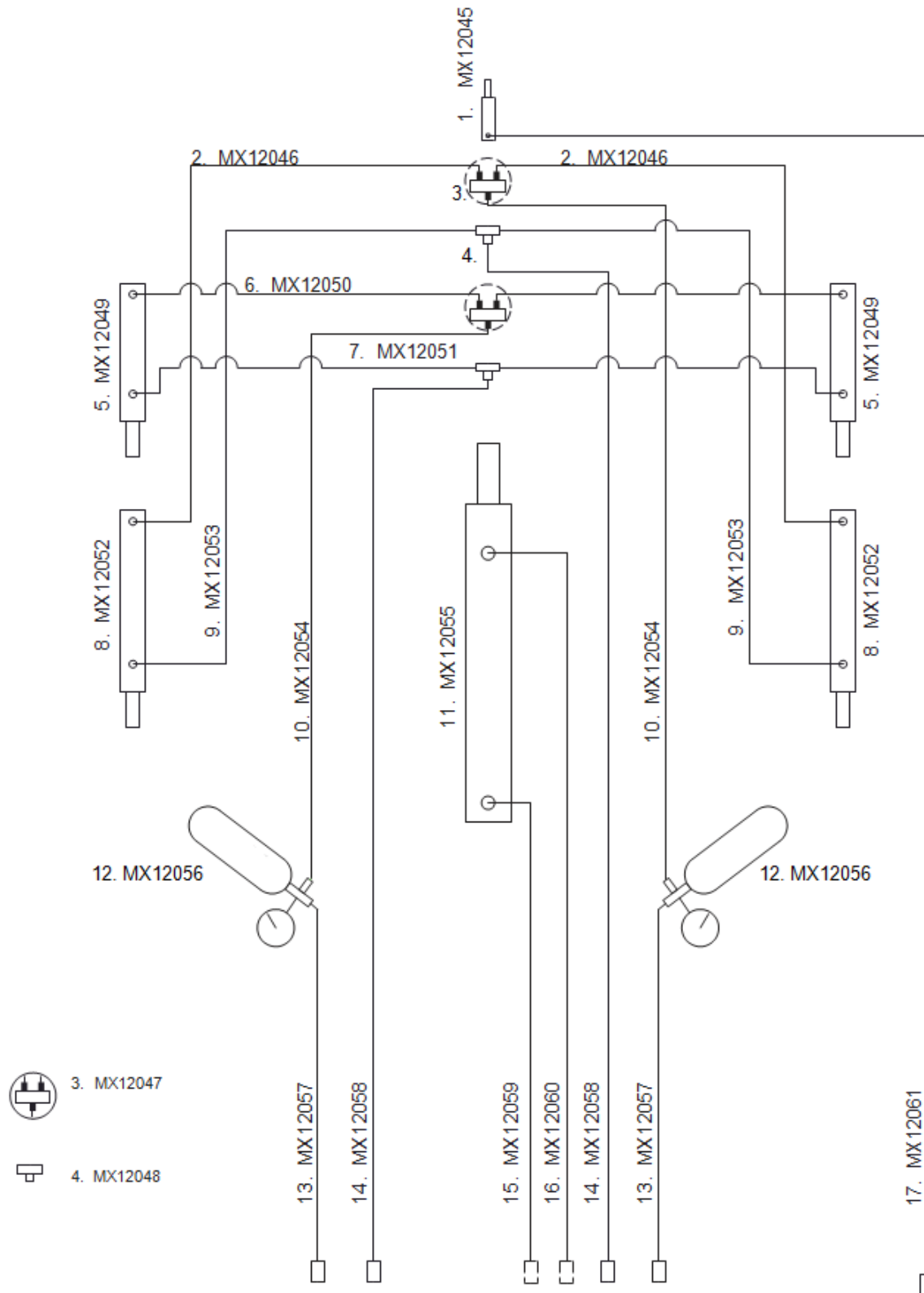


Figure 12: Hydraulic circuit diagram

Item	Name	Part Number	Details (rod/bore/stroke)	QTY.
1.	Brake cylinder	MX12045	16/40/100	1
2.	Hose - flow divider to outer arm	MX12046	3500mm	2
3.	Flow divider	MX12047	10l/min	2
4.	Hydraulic Tee	MX12048	MMM	2
5.	Inner arm cylinder	MX12049	80/45/630	2
6.	Hose - flow divider to inner arm	MX12050	1400mm	2
7.	Hose – inner arm return to tee	MX12051	2100mm	1
8.	outer arm cylinder	MX12052	80/45/800	2
9.	Hose - outer arm return to tee	MX12053	4400mm	2
10.	Hose - accumulator to flow divider	MX12054	5000mm	2
11.	Drawbar cylinder	MX12055	140/80/1250	1
12.	Accumulator	MX12056	70 Bar 3L	2
13.	Hose – tractor to accumulator	MX12057	3300mm	2
14.	Hose – tee to tractor	MX12058	7900mm	1
15.	Hose – tractor to drawbar cylinder	MX12059	4800mm	1
16.	Hose – drawbar cylinder to tractor	MX12060	6300mm	1
17.	Hose – tractor to brake cylinder	MX12061	8550mm	1

## Hydraulic Brake Assembly

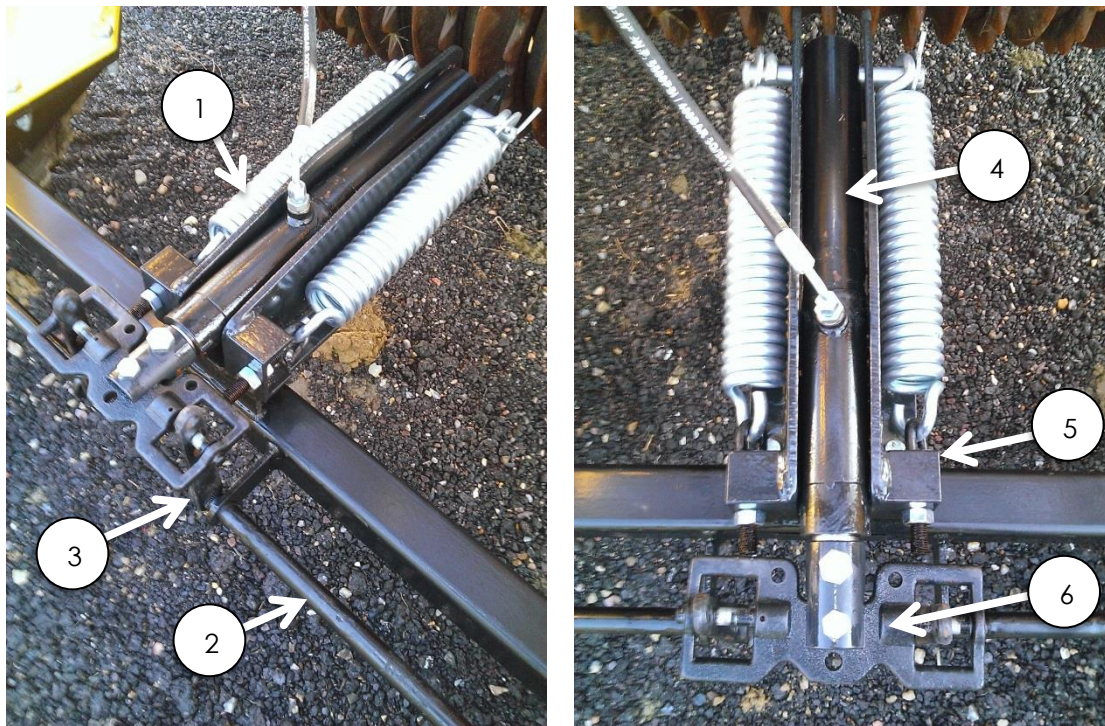


Figure 13: Hydraulic brake

Item	Name	Part Number	Details	QTY.
1.	Pull spring	MX12062		2
2.	Brake push rod	MX12063		2
3.	Brake rod forks	MX12064		2
4.	Brake cylinder	MX12045		1
5.	Brake system base	MX12065		1
6.	Hydraulic cylinder forks	MX12066		1

### Light Wiring Diagram

The basic wiring diagram below displays the cable and components used on the Cambridge rolls.

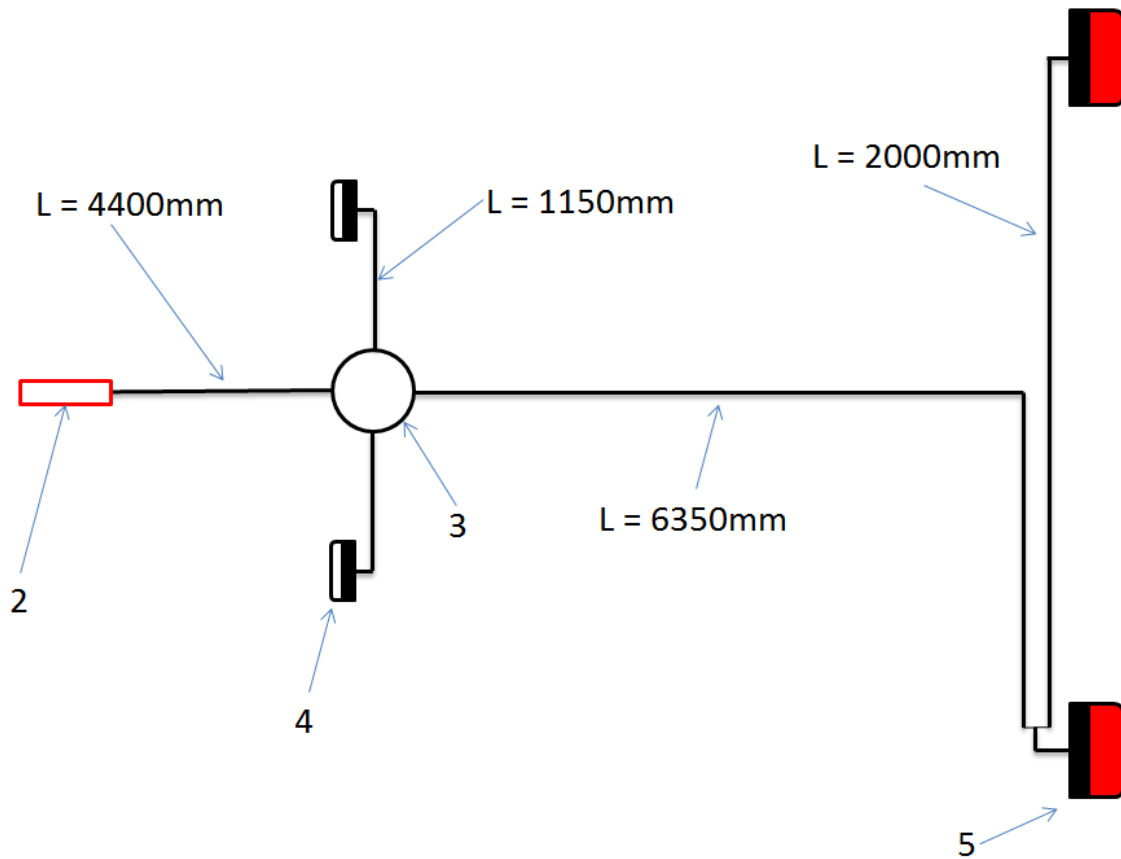


Figure 14: Light wiring diagram

Item	Name	Part Number	Details	QTY.
1.	Cable	KA7065		-
2.	Plug	PS001		1
3.	Junction Box - Rolls	MX12067		1
4.	Front running light	MX12041		2
5.	Rear combination light	MX12042		2