



Automatic 8 Bale Accumulator

Model 1421

**Instruction Manual
& Operating Guide**



EC Declaration of Conformity

in accordance with BS EN ISO/IEC 17050-1:2004



David Ritchie (Implements) Ltd.,
Carseview Road, Forfar, Scotland DD8 3BT

declare that:

Equipment: **Ground Friction Bale Accumulator**

Model No: **1421**

Serial No:

in accordance with the following directive:

2006/42/EC Conforms with the essential requirements of the Machinery Directive and its amending directives

has been designed and manufactured to the following specifications:

BS EN ISO 12100 -1: 2003 Safety of Machinery - Basic concepts, general principals for design - Basic terminology, methodology.

BS EN ISO 12100 -2: 2003 Safety of Machinery - Basic concepts, general principals for design - technical principals and specifications.

BS EN ISO 4254-1:2009
Agricultural machinery - Safety - Part 1: General requirements

BS EN ISO 13857:2008
Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs.

BS EN ISO 14121-1: 2007
Safety of machinery - Risk assessment - Part 1: Principles

Signed:-

Robert Ritchie Al agr E
Agricultural Sales Director

at:- David Ritchie Implements Ltd. Forfar, UK
on:- 20th December 2010

Contents

Automatic 8 Bale Accumulator - Model 1421

	Pages
Foreword	4
Warranty	5
Intended Use	5
Safety Information	6
Features and Specifications	7
Machine Overview	8
Preparation	9, 10, 11
Setting Up and Adjustment	12
Operation	13, 14
Further Adjustments	15
Parts List	16, 17
Lubrication	18



Foreword

The Cook Ground Friction Bale Accumulator has been designed for the grouping together of bales and is not intended for any other use.

David Ritchie Implements shall not be liable for damage resulting from inappropriate use of the machine. The user shall bear all responsibility.

Intended use also comprises adherence to the operating, maintenance and servicing instructions contained in this manual.

The machine must only be used in perfect working condition. Any functional disorders, especially those which affect the health and safety of personnel must be rectified immediately.

The Bale Accumulator must only be used by an experienced, competent operator who has been trained in the use of the machine and who has read the operator's instruction manual.

Following the setting up, operating and maintenance instructions contained in the manual should allow the operator to achieve the best performance from the machine, resulting in increased reliability.

Operators should read carefully all safety notes contained within the manual prior to using the machine in order to help avoid dangerous situations, expensive repairs and prolonged downtime. In addition operator's should also read any relevant legislation regarding health and safety and accident prevention applicable to the country in which the machine is to be used.

The right to alter specifications, equipment and maintenance instructions at any time, without notice is reserved as part of our policy of continuous development and improvement.

No liability can be accepted for inaccuracies or omissions in this manual, although every possible care has been taken to make it as complete and accurate as possible.

Owners who encounter a problem not covered in this manual should contact David Ritchie Implements Ltd at the address given on the rear cover of the manual, or consult their local Ritchie dealership.



Warranty

The machine should be checked over at time of delivery for transport damage. Check also that the specification is complete and that the data plate contains the serial number of the machine. All claims must be delivered to the manufacturer in written form within 48 hours.

David Ritchie Implements Ltd. guarantee subject to certain conditions that the goods supplied will be free of defects both in material and workmanship.

The following conditions apply:-

- The machine should only be used for the purpose indicated in this manual.
- Service and warranty work is carried out only by authorised Ritchie dealers.
- The original specification of the machine has not been subject to unauthorised modification.

Correct operation of the machine and regular maintenance will help to prevent breakdowns. If however operating trouble is experienced during the warranty period the following actions should be adopted:-

Notify the dealer immediately from whom the machine was purchased, quoting the model and serial number.

Do not operated the machine. Damage resulting from failure to report a fault may not be covered by warranty.

The manufacturer cannot accept liability for damage to machines or third party through operational negligence.

Intended Use

The **Cook 'Automatic' Bale Accumulator model 1421**, is designed to work behind most modern balers, where bale sizes are 14" - 16" high and 18" or 19" wide. Bales should be in the region of 36" in length and not more than 42" .

The Bale Accumulator is attached to the Bale Chamber to accept bales via a front chute. Each bale is guided through the Accumulator until 2 rows of 4 bales have been formed. They are then released automatically behind the machine ready for handling with the 'Ritchie Flat Eight Grab'.

The machine is designed to be used by a single operator only (tractor driver).

Inappropriate Use

The machine must not be used for purposes other than those indicated in this manual.



Safety Information

Please read these instructions carefully. Ignoring these instructions could result in personal injury or damage to the machine.

These instructions apply to all personnel involved with the operation, maintenance and servicing of the machine.

General

The machine must only be used by an experienced, competent operator who has been trained to use the machine.

The operator should consult the tractor handbook, and Baler Instruction book for information and instruction on safety issues.

Only operate this machine from the tractor seat (work station).

Never allow personnel to ride on the machine, either on the road or in the field.

Do not modify any part of the machine unless modifications or additions are approved by the manufacturer. This also applies to welding work.

Do not use the machine if a malfunction occurs as this could result in damage to the machine.

Warn bystanders to keep clear of the machine whilst operational.

Hay and Straw are flammable - so always keep the machine in a clean condition away from open fires and smoking materials. Keep a fire extinguisher in the tractor cab!

Before and During Operation

Never leave the tractor cab while the engine is running. Always switch off and remove the ignition key and apply the tractor handbrake.

Take particular care when mounting the implement to the Bale Chamber. Always position the machine on flat level concrete or tarmac.

Never work on ground exceeding 8° in inclination.

Servicing and Maintenance

After servicing is complete check all nuts and bolts have been tightened satisfactorily.

Transportation and Storage

Before travelling on public roads ensure the machine is free of loose material and equipment.

Move the Drawbar from the centre (working position) to the side attachment point (road transport position, page 11).

Road speed should not exceed 20 mph (30 km/h).

When turning or at bends take the width and length of the machine into consideration.

Take extra care when reversing the machine.

When stopped, always use the parking brake.

When storing the machine- clean thoroughly. Position the machine indoors on flat level concrete or tarmac where it presents no hazard to people or animals.



Features

- Proven reliability over many years of service.
- Uncomplicated design and robust construction resulting in trouble free operation.
- Suitable for use with most modern balers including Welgar.
- Automatic release of bales on completion of the pack.
- Easy Adjustment and Maintenance.

Specifications

Length - 4800 mm

Width - 2500 mm

Height - 850 mm

Weight - 336 kg

Wheel size - 4.80/4.00 - 8 6 ply



Machine Overview - Model 1421

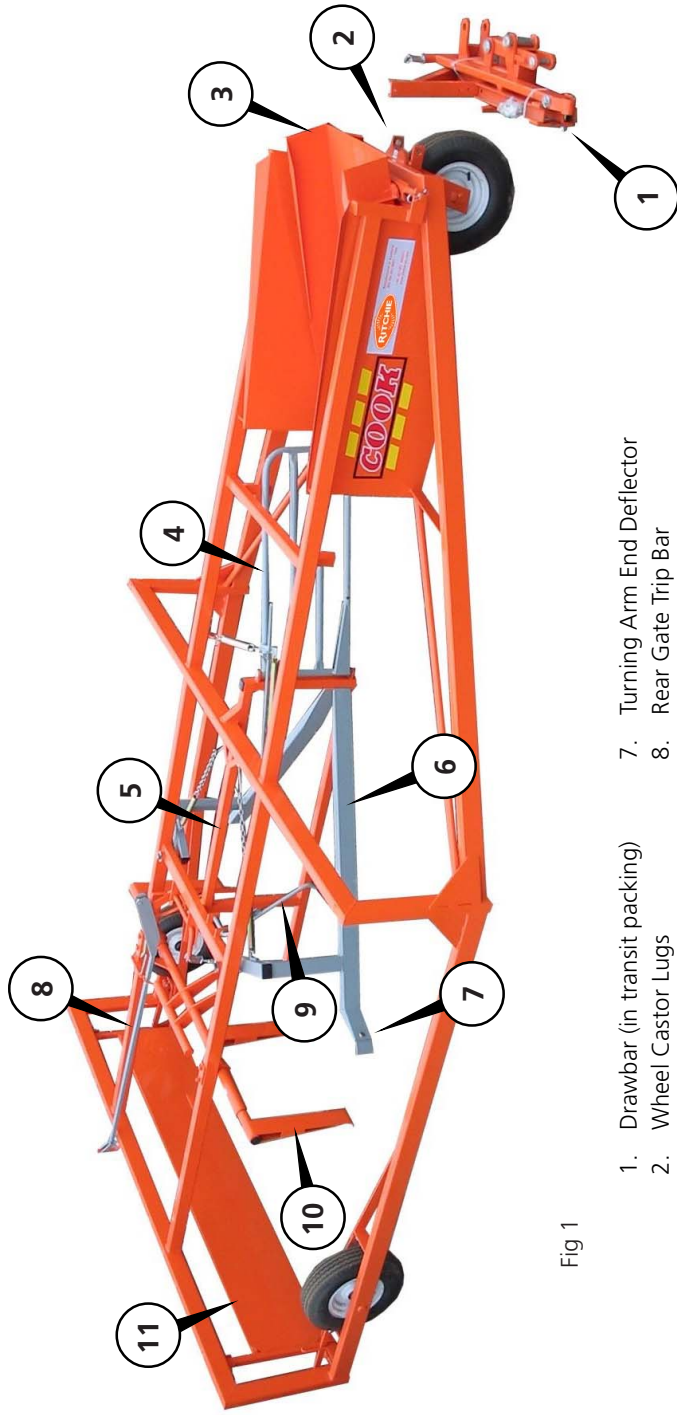


Fig 1

1. Drawbar (in transit packing)
2. Wheel Castor Lugs
3. Chute (in transit position)
4. Transfer Gate
5. Centre Frame
6. Turning Arm (RH)
7. Turning Arm End Deflector
8. Rear Gate Trip Bar
9. Transfer Gate Trip
10. Front Gate
11. Rear Gate

Preparation

When despatched from the factory the Bale Accumulator is partly dismantled to save space on vehicles, After unpacking assemble as follows:-

Drawbar and Chute

Remove the chute from the transport position, Fig 2, by releasing the R-pins at both ends of the swivel (arrowed) and lifting the chute out.

Unpack the drawbar and fit the t-bar, Fig 3, (circled) to the slides on the underside of the chute.



Fig 2

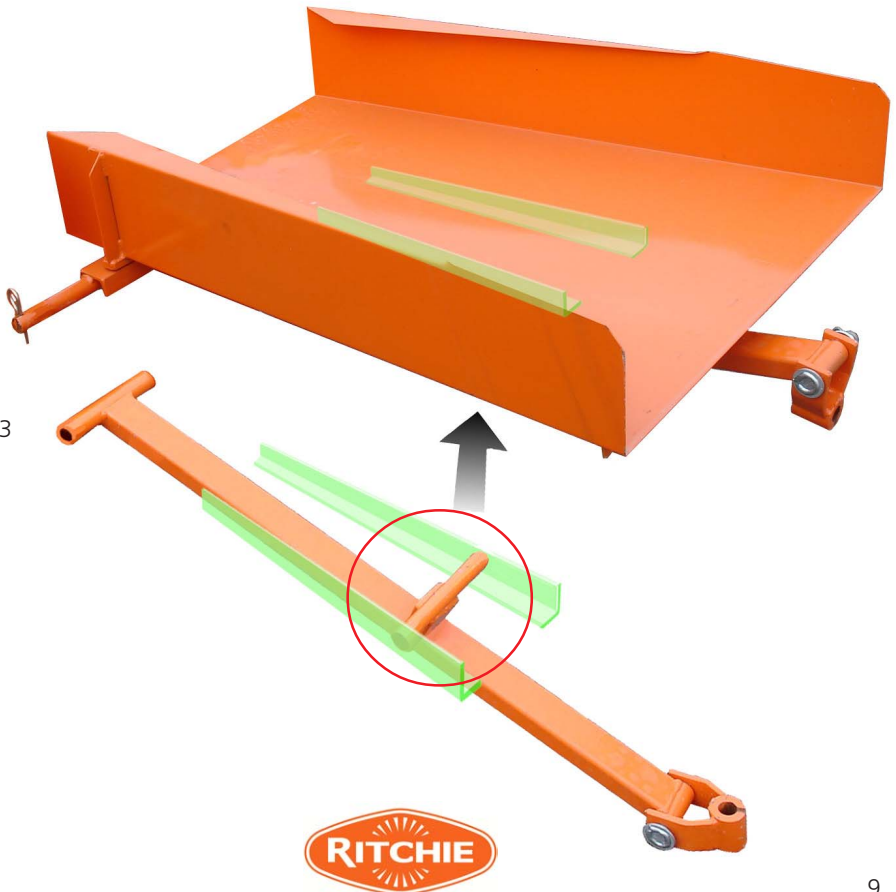


Fig 3

Attach the drawbar to the lugs on the wheel castor, arrowed, Fig 4 - 1.
Refit the Chute swivel to the lugs provided and secure with R-pins, Fig 4 -2.

Fitting of Towing Bracket

Use only the special towing bracket supplied with the Bale Accumulator.

If the Baler to be used is fitted with a manufacturer's bracket - this should be removed.

Remove also the rear delivery tray from the baler before fitting the towing bracket.

Follow the instructions shown on Figs 5 and 6 to fit the bracket correctly.



Fig 4

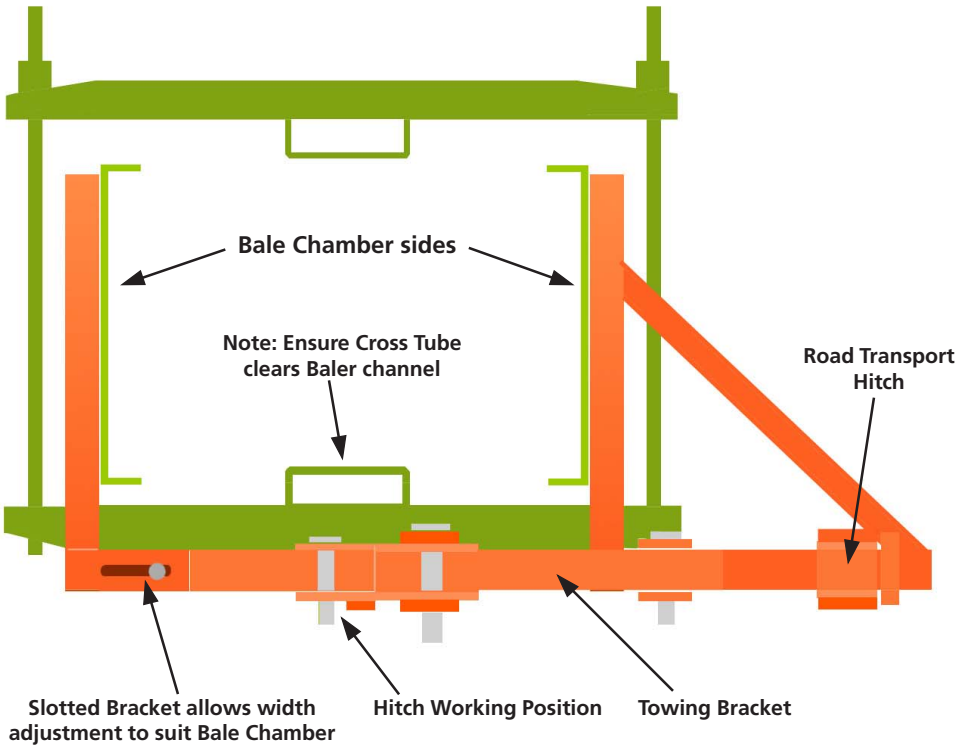


Fig 5



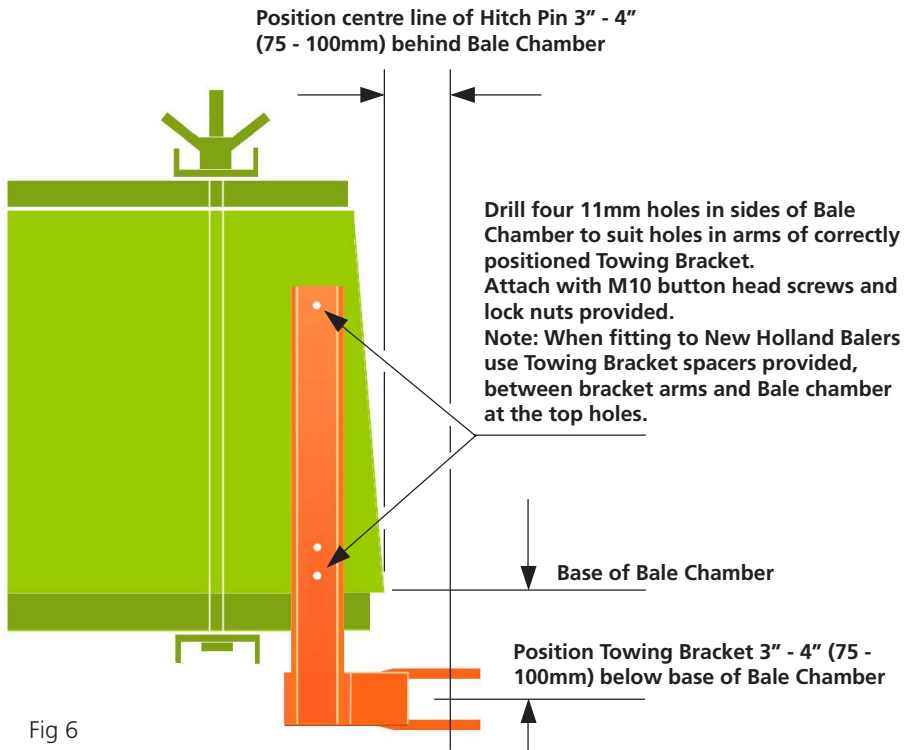


Fig 6

When fitting of Towing Bracket is complete - Hitch Bale Accumulator Drawbar to Towing Bracket in either the working or the transport position as shown, Fig 7.

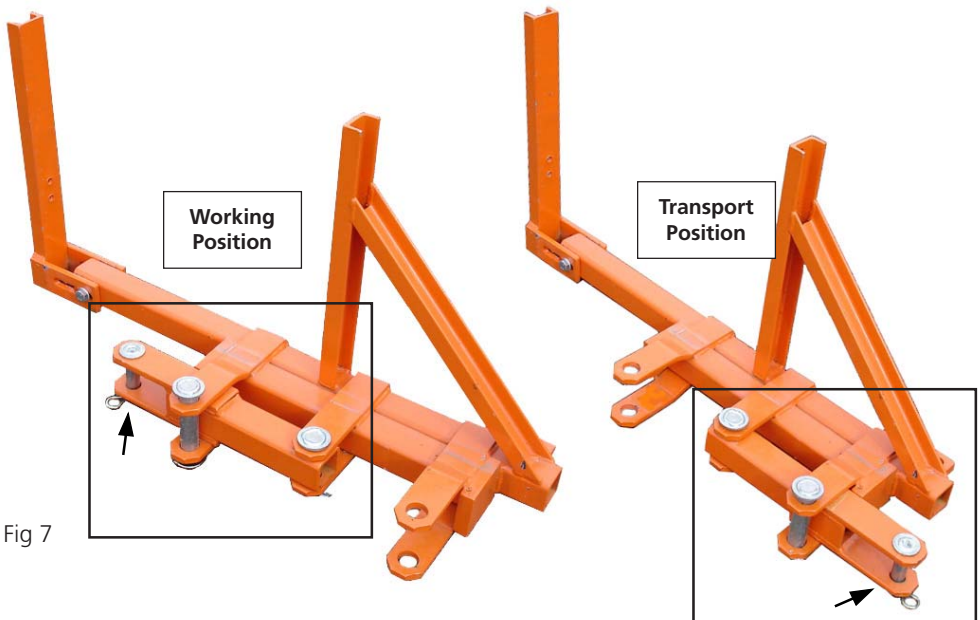


Fig 7

Setting Up and Adjustment

On arrival in the field transfer the drawbar from the side position to the (centre) working position, Fig 7.

Set the baler to produce bales of the required length, preferably 36", and not more than 42".

Transfer Gate trip adjustment

Most Balers make bales which are 14" high, with some producing bales at 16" high.

Set the Transfer Gate trip adjustment according to the height of the bales to be gathered.

It is important that the trip rod is fastened in the upper hole on the trip lever for bales which are 16" high and in the lower hole for 14" high bales, Fig 8.

Bale Guide Supports - Spacers

If working with 19" wide bales it is necessary to remove the RHS spacer blocks - fitted to the Bale Guide Supports to both left and right hand sides of the machine (behind the rear wheels), Fig 9.

The spacers can be re-attached until needed again on the outside of the Bale Guide Supports as shown, Fig 10.

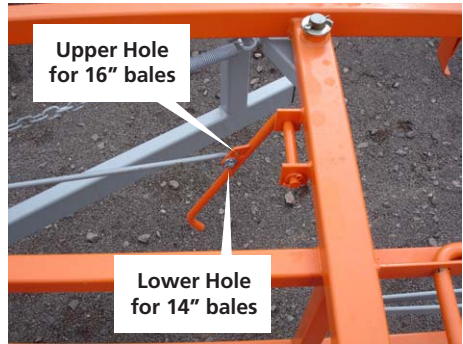


Fig 8



Fig 9

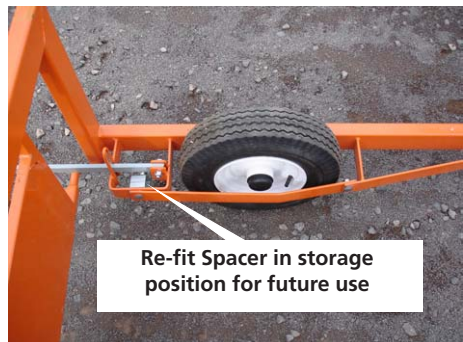


Fig 10



Operation

When baling, the Accumulator operates as follows:-

As bales pass over the chute they are gripped and held to the ground by the inward protruding points at the Accumulator end of the chute. These points should always be approximately 16" apart.

The first bale is guided to the outside of the Accumulator on the right hand side and as it approaches the front gate is rotated by, and itself rotates, the right hand turning arm.

The second bale is guided into the remaining space beside the centre frame, where it moves the transfer gate trip which swings the transfer gate from left to right.

The third bale is guided to the left hand side of the machine, being rotated by and rotating, the left hand turning arm.

The fourth bale is guided into the remaining space beside the centre frame where it operates the front gate trip. This in turn presets the rear gate trip ready to release all eight bales when the cycle is complete.

These operations repeat for bales 5, 6 and 7 and the final eighth bale releases the preset rear gate trip and all eight bales are automatically released.

The sequence is illustrated in the following figures 11 to 20.



Fig 11



Fig 12



Fig 13



Fig 14



Fig 15



Fig 16



Fig 17



Fig 18



Fig 19

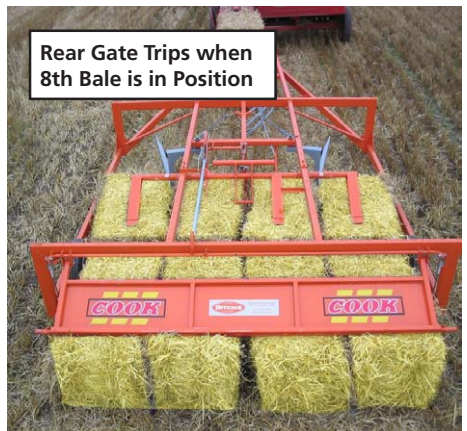


Fig 20

Further Adjustments

Spring Tension

All springs should be adjusted so that there is just sufficient tension to hold the parts they control at the 'at rest' position.

Adjust springs by releasing the chain from the end of the hook bolt and relocating in an alternative link, Fig 21.

Rear Gate Delay

Rear Gate release can be altered by adjustment of the Trip Rod screw.

Increasing the screw length increases the delay on the Rear Gate release.

Turning Arm End Deflector

The Turning Arm End Deflector, Fig 23, is slotted to provide angular adjustment to the turning arm.

Ideally the turning arm should take up a position slightly 'off parallel' with the sides of the accumulator when the first bale is in place, thus providing the correct angle to accept the second bale, see Fig 24.

Note that in Fig 24 - distance **A** should be slightly narrower than distance **B** when the first bale is in position.

The same applies for the left hand arm.

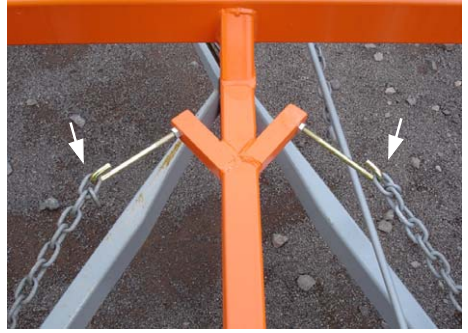


Fig 21



Fig 22



Fig 23

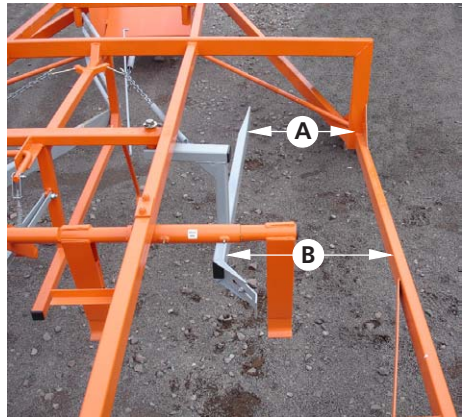
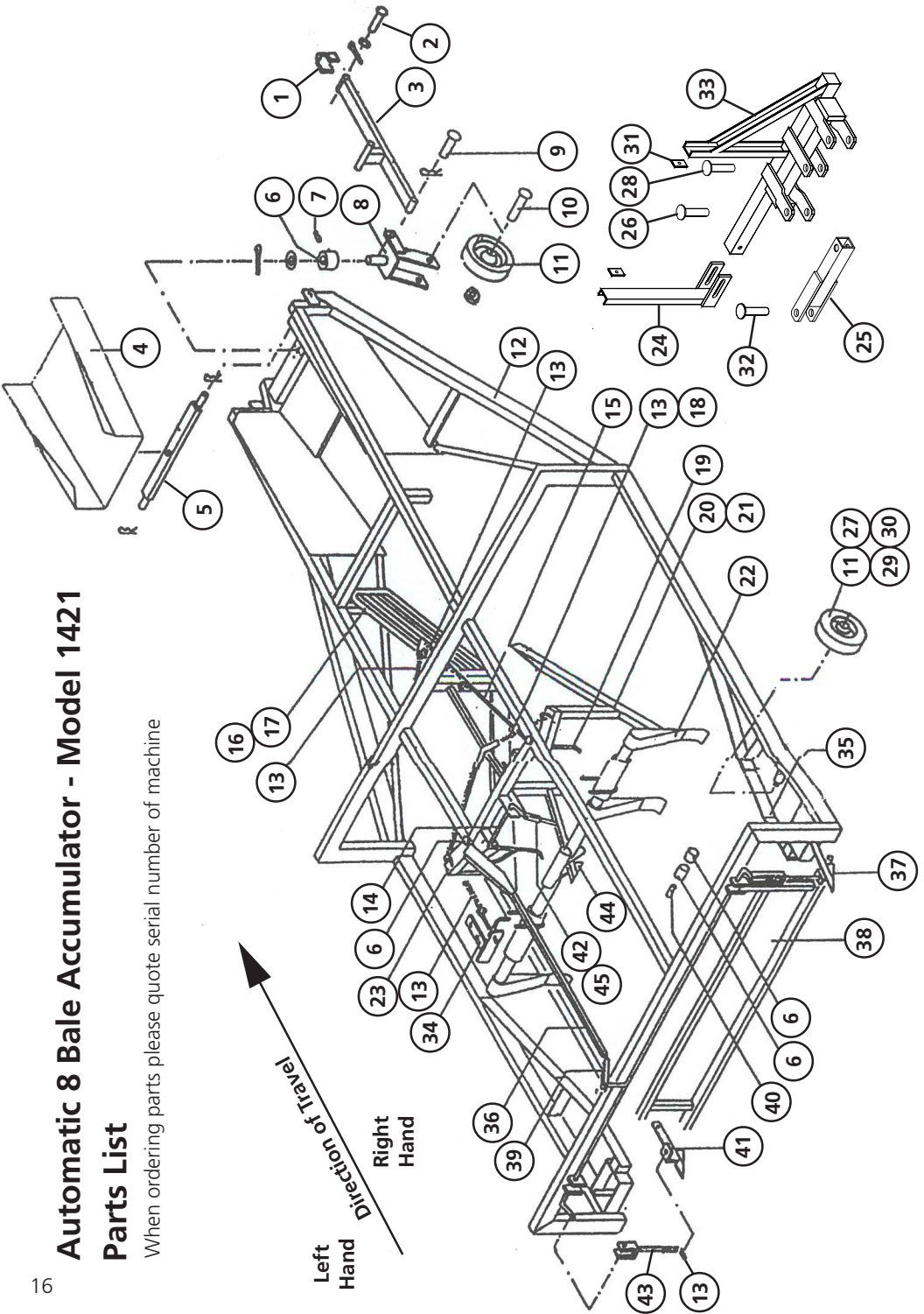


Fig 24



Automatic 8 Bale Accumulator - Model 1421 Parts List

When ordering parts please quote serial number of machine



Ref.	Part No.	Description	Qty
1	1426/112	Drawbar Swivel	1
2	1421/93	Swivel Pin	1
3	1421/97	Drawbar	1
4	1421/109	Bale Chute	1
5	1421/117	Swivel Bar	1
6	1422/600	Bush Kit	1
7		Grease Nipple	5
8	1421/103	Front Wheel Fork Assembly	1
9	1421/91	Drawbar Pin	1
10	1421/206	Front Wheel Spindle	1
11		Wheel	3
12	1421/1	Main Frame	1
13	1422/500	Spring Kit	1
14	1421/43	Front Gate Trip	1
15	1421/131	Transfer Gate Trip Rod	1
16	1421/121	Transfer Gate	1
17	1421/129	Transfer Gate Pivot Pin	1
18		M8 x 130 Hook Bolt	3
19	1421/134	Transfer Gate Trip	1
20	1421/137	Turning Arm - Right Hand	1
21	1421/147	Turning Arm End Deflector	2
22	1421/148	Front Gate	1
23	1421/138	Turning Arm - Left Hand	1

Ref.	Part No.	Description	Qty
24	1421/84	Baler Bracket Adjuster	1
25	1421/80	Switch Bar	1
26	1421/211	Baler Bracket Pin II - (130mm)	1
27		Wheel Bearing	3 pairs
28	1421/209	Baler Bracket Pin I - (105mm)	1
29		Hub Cap (Steel - Press on)	2
30		Hub Cap (Plastic - Press on)	2
31	1421/201	Baler Bracket Spacers	2
32	1421/88	Towing Bracket Pin	1
33	1421/70	Baler Bracket	1
34	1421/164	Rear Gate Trip Bar Stop	1
35	1421/199	Bale Guide Support	2
36	1421/188	Rear Gate Trip Bar	1
37	1421/174	Rear Gate Latch - Right Hand	1
38	1421/179	Rear Gate	1
39	1421/194	Rear Gate Trip Adjuster	1
40		Rear Gate Pins	2
41	1421/175	Rear Gate Latch - Left Hand	1
42	1421/202B	U-bracket	3
43	1421/196	Rear Latch Rod	2
44	1421/168	Front Gate Latch	1
45	1421/204	Latch Rod Front	1

Lubrication

The machine operates mainly by pressure of the bales in contact with the ground and the forward movement of the Bale Accumulator.

All parts should move freely therefore regular oiling of all swivels and gate hinges is recommended to ensure trouble free operation.

Grease the Front Castor bearing, Fig 25, and Front gate Pivots, Fig 26, on a regular basis. Use only good quality grease.

Wheel hubs have sealed bearings which require no lubrication.



Fig 25



Fig 26







the perfect partner

David Ritchie (Implements) Ltd,
Carseview Road, Forfar, Scotland, DD8 3BT
Tel: 01307 462271 fax: 01307 464081
e-mail: agrisales@ritchie-uk.com
www.ritchie-uk.com