



Automatic 8 Bale Accumulator

Model 1426

**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: **High Capacity Super Bale Accumulator**
Model No: **1426**
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 982: 1996
Safety of machinery. Safety requirements for fluid power systems and their components - Hydraulics

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

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Foreword

The Cook Super Bale Accumulator is manufactured using high quality components and has been designed to work behind most conventional balers including the 100 ram stroke high output machines.

The Accumulator has been designed solely 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 misappropriate 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 over many years of service.

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 Super Bale Accumulator model 1426**, 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.



Important

The operator is responsible for the safe working of the machine and is fully responsible for the safety of any other persons present. The manufacturer is not held responsible for such persons.



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.

Check the drive assembly guard is in position and secured prior to operating the machine.

Always test the machine prior to operation to ensure services function correctly. Do not use the machine if a malfunction occurs as this could result in damage to components.

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!

Take care when coupling / uncoupling the hydraulic hoses to the tractor. Hydraulic oil under pressure can damage your skin. Always seek immediate medical advice in such circumstances.

Warning: Hydraulic fluid under pressure can penetrate the skin or eyes and cause serious personal injury or blindness. Fluid leaks, under pressure, may not be visible. Use a piece of cardboard or wood to find leaks. DO NOT use your bare hand. Wear safety goggles for eye protection. If any fluid is injected into the skin, it MUST be surgically removed within a few hours by a doctor familiar with this type of injury.

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 before approaching the working zone of the machine.

The same applies for downtime and standstills.

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.



Never run the machine with the chain guard open!



Servicing and Maintenance

Only use suitably qualified engineers working to the relevant standards and codes of practice when repair work to the hydraulic system is to be undertaken.

Never attempt maintenance or servicing work on the machine when the tractor engine is running. All servicing work should be undertaken with the machine at a standstill. Release any residual hydraulic pressure to the system by operating the spool valves in both directions.

Switch off the tractor engine and remove the ignition key!

After cleaning the machine check all hydraulic hoses for leaking or operational damage. Damaged hoses should be replaced immediately.

If servicing work is required to the underside of the machine always provide adequate support devices to prevent sudden lowering.

Adhere to replacement intervals noted in the manual even if signs of wear to component parts is not evident.

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

Dispose of used oils carefully with due consideration to the environment.

Transportation

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 12).

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

During transportation always be aware of the width of the machine and attempt to keep the wheels out of drain holes. Damage to the wheels and axles can occur if the machine is driven on a narrow road and the off-side wheel continually hits kerbs, drains and other obstructions. Also be aware when towing the machine of the vulnerability of the belt from objects sticking up from the ground. The Super Bale Accumulators have a good height clearance underneath but you must be aware of any obstructions rising out of the ground.

Take extra care when reversing the machine.

When stopped, always use the parking brake on the tractor.

Storage

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.

We recommend that you release the tension from the belt completely when the machine is in storage through the winter period. The belt should also be protected by covering with a material impervious to light.

Do not stand heavy objects on top of the belt.

Lift hoses away from the ground and cover the ends to prevent dirt from penetrating the hydraulic system.



Features

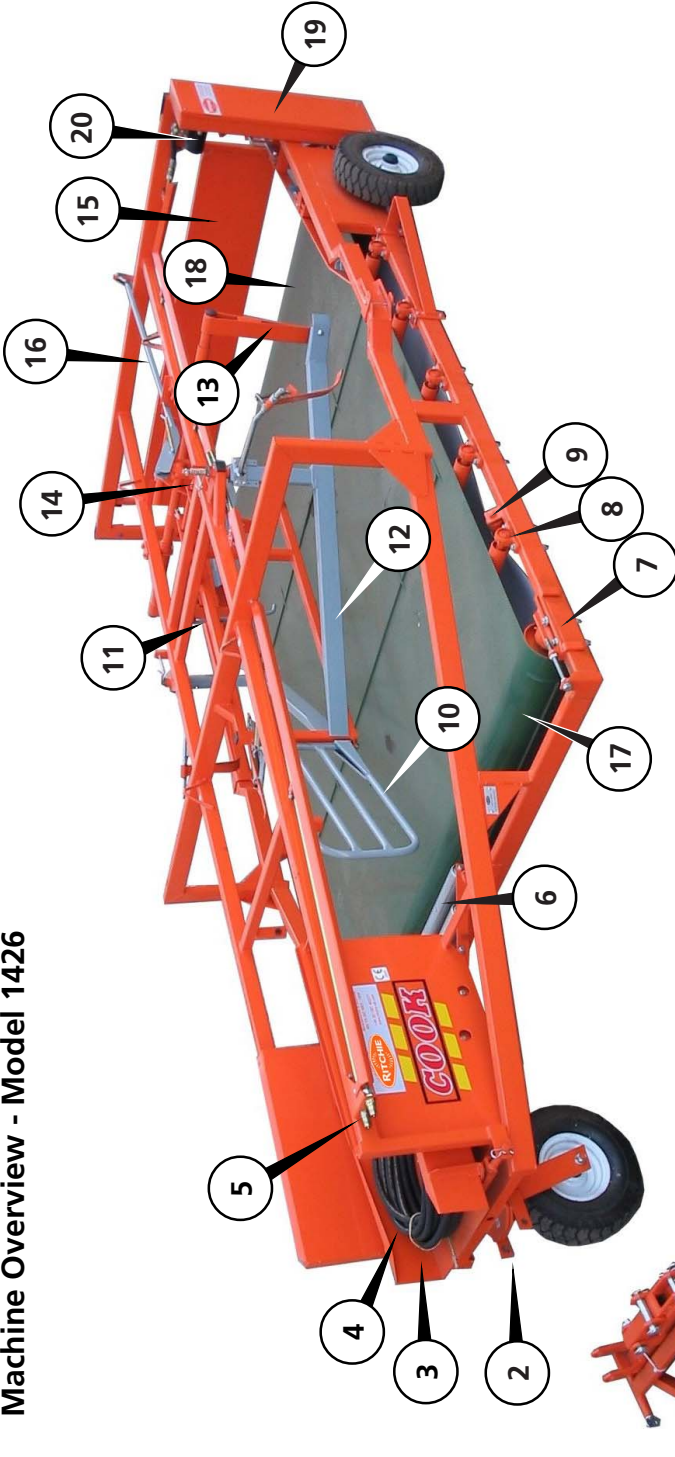
- The Super Bale Accumulator is ideal for the contractor or larger farm requiring maximum output.
- The hydraulically operated floor allows continuous, non-stop operation with high capacity balers in dense crops.
- The design eliminates any soil contamination of the bale and stone damage to the twine.
- Automatic release of bales on completion of the pack.
- Easy Adjustment and Maintenance.

Specifications

Length	(with drawbar)	-	5700 mm
	(without drawbar)	-	4800 mm
Width		-	2840 mm
Height		-	1160 mm
Weight		-	820 kg
Wheel Size		-	500 x 8 - 8 ply



Machine Overview - Model 1426



1. Drawbar (in transit packing)
2. Wheel Castor Lugs
3. Chute (in transit position)
4. Hydraulic hoses (in transit position)
5. Quick Release Couplings
6. Gravity Rollers
7. Idler Roller Slide
8. Belt Carrier Rollers
9. Angled Roller
10. Transfer Gate
11. Transfer Gate Trip
12. Turning Arm (LH)
13. Front Gate
14. Front Gate Trip (Hidden)

15. Rear Gate
16. Rear Gate Trip Rod
17. Belt
18. Main Drive Roller
19. Drive Housing
20. Hydraulic Motor

Fig 1

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

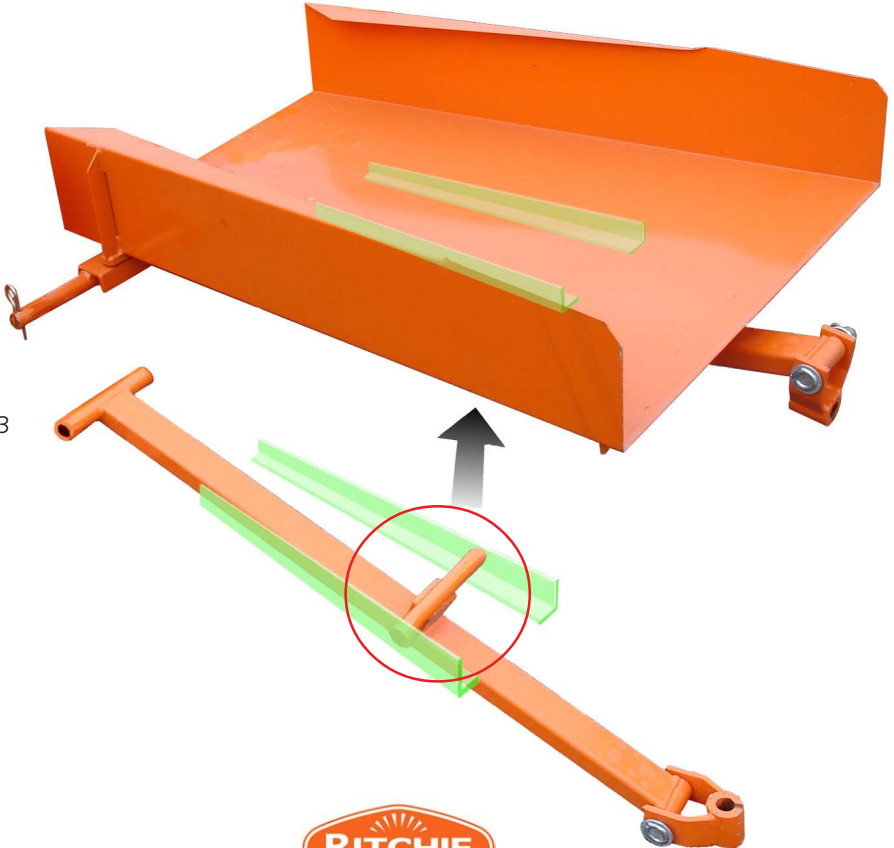


Fig 3



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

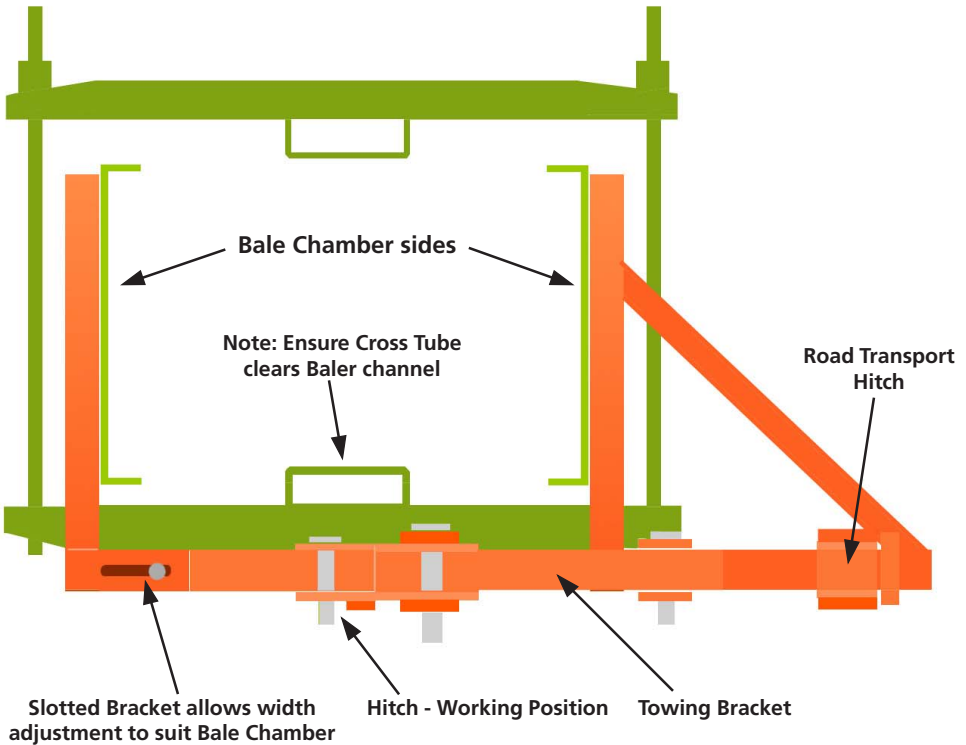


Fig 5



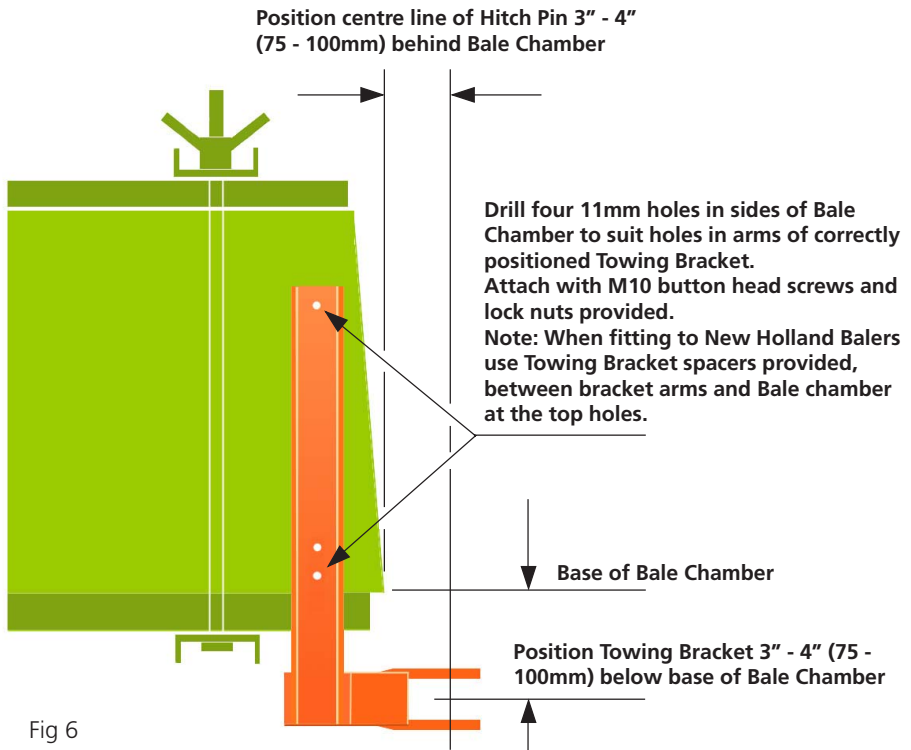


Fig 6

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.

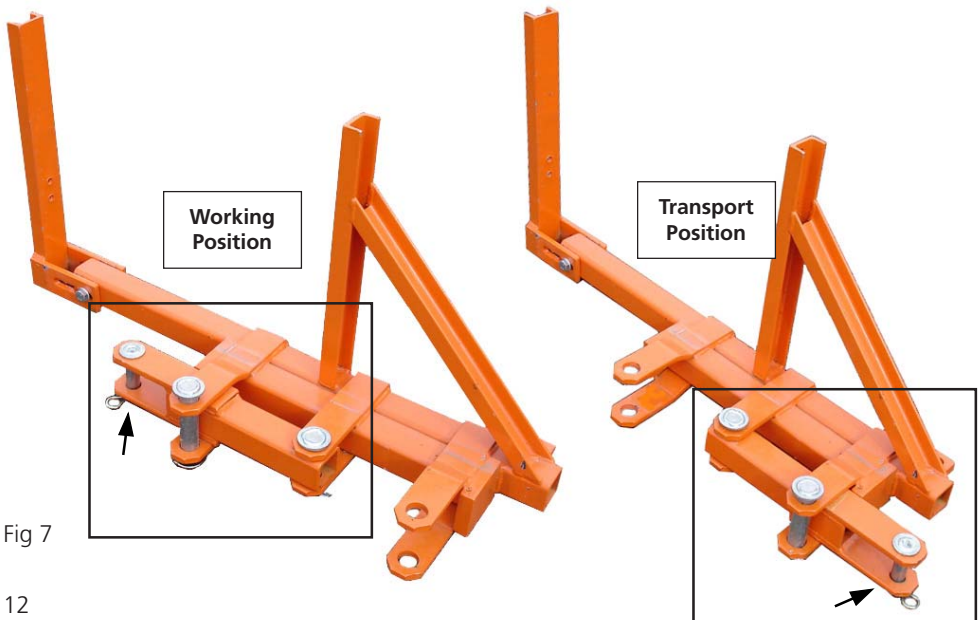


Fig 7

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 Settler Arm adjustment

The same applies for both right and left hand Bale Settler Arms which must also be set for the height of bales being produced.

The Upper 4 holes on the end plates, Fig 8, should be used when gathering 16" bales, and the lower 4 holes used when gathering 14" bales.

Bale Guide Supports - Spacers

If working with 19" wide bales it is necessary to move the Bale Guide Supports on both left and right hand sides of the machine into the alternative holes provided, Fig 9.

The Backing Bracket should also be reversed to face the opposite direction, Fig 9.

Further adjustment is available if required by utilisation of the slots provided on the chassis members.

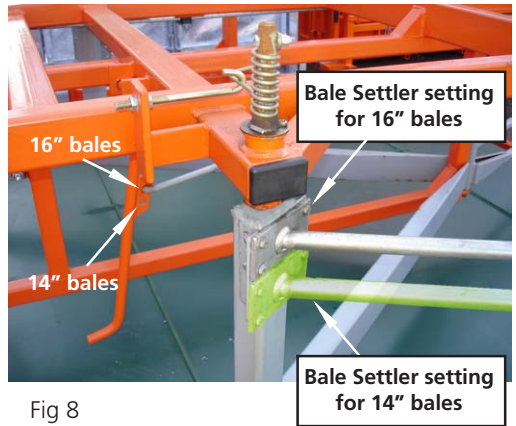


Fig 8

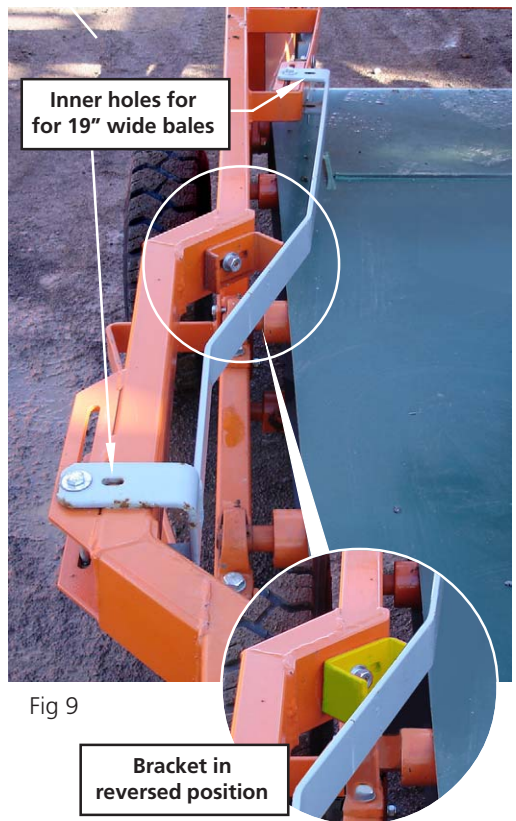


Fig 9



Hydraulic Hoses

The machine comes complete with hoses, which fit to the two extension pipes on the Bale Accumulator. The hoses can then be connected to the external service couplings at the rear of the tractor by means of the quick release couplings. The hoses may be rotated if required to achieve belt direction consistent with the movement of the tractor spool lever.

Once you have connected up the hydraulic hoses, grease all the roller bearings on the ends of the platform belt rollers. The 1426 Automatic Bale Accumulator is fitted with chain drive to the platform belt. The chain tensioner should be checked periodically for correct adjustment. (See page 19).

In setting up the platform belt it is necessary to start up the tractor engine, engage the hydraulics and run the belt slowly making sure that the belt is tracking correctly to the centre.

If the belt does not track correctly you can adjust either the left or the right adjusting bolt on the front idler roller, Fig 10, until the belt tracks to the centre.

It is only necessary to turn each adjusting bolt perhaps one turn and wait for the belt to pass over the same point around ten times

in order to allow time to correct the tracking to the change in adjustment.

Note: Take care not to overtension the adjuster as this may stretch the belt!

In general the belt should just run faster than the forward speed of the baler and bale accumulator combination. However, the belt may be run faster if you have a problem with oil getting excessively hot.

On most modern tractors this is not necessarily a problem. We generally recommend running the belt at the slowest speed necessary to achieve the accumulation of the bales.

If you find the first level of bales and the second level of bales are riding up when they hit the ground then it is possible that you have the belt running too fast, giving the bales too much impetus when they are discharged.

To correct this slow down the belt speed. If you find the first row and the second row of bales have excessive gap between them then you can help to correct this by speeding up the bales a little, so you should end up with a pack of bales leaving the rear gate and resting together on the ground.



Fig 10

Operation

When baling, the Accumulator operates as follows:-

As bales pass over the chute they are gripped and held down 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

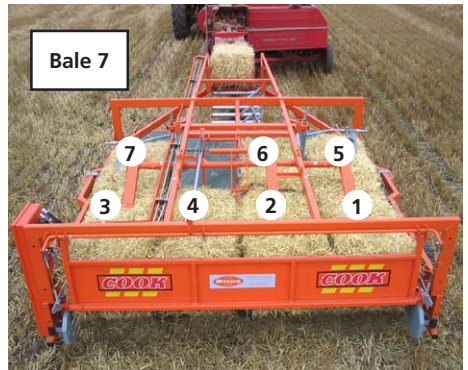


Fig 18



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, Fig 22.

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

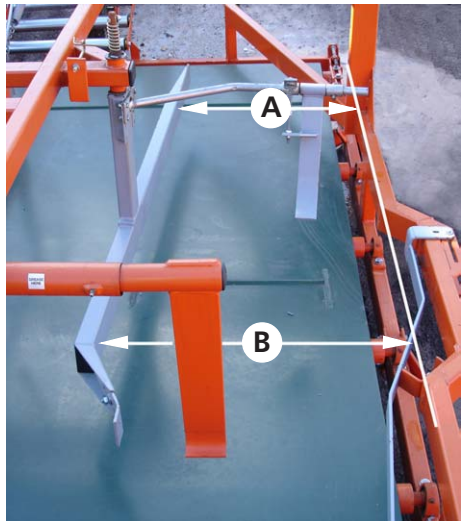


Fig 24



Fig 25

Turning Arm Torsion Spring

The Turning Arm Torsion Spring, Fig 25, can be adjusted if necessary to assist the action of the Turning Arm.

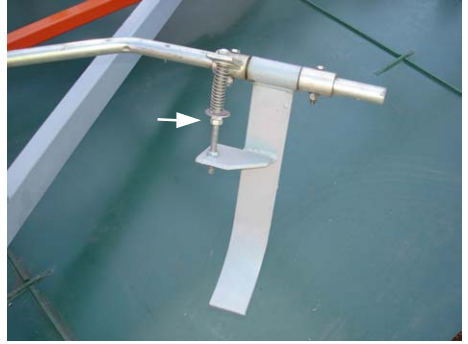


Fig 26

Settler Paddle Tension Spring

The spring tension can be increased on the Settler Paddle, Fig 26, to help turn the bale into position.

Maintenance & Lubrication

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

Grease nipples are provided at various points on the machine for ease of lubrication. These are shown in Figures 27 - 29.

During operational periods - grease once per week using only good quality grease.



Fig 27

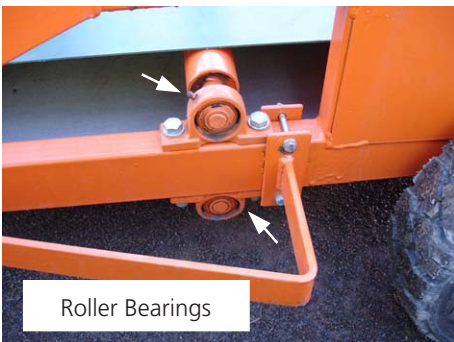


Fig 28



Fig 29

Note: Wheel hubs have sealed bearings which require no lubrication.

Chain Drives

Check the Drive Chain tension regularly by removing the Drive Cover, and measuring the deflection at the centre of the chain, Fig 30. If the deflection is greater than 1/4" (6mm) adjust using the tensioning bolt at the rear of the guard to reduce the deflection **without** putting the chain under tension.

Lubricate the chain weekly using a good quality light oil. Keeping a chain properly lubricated increases the life of a chain significantly.

Hydraulic System

The hydraulic system should be checked for leaks or damage prior to each use of the machine.

Read safety instructions on (page 6 and 7).

The hoses on the machine must be replaced every 5 years even if signs of wear or damage is not apparent. Always use suitable replacements available from Ritchie dealerships according to the rating below:-

Hose Rating - 3/8" and 1/2"
SAE 100 R2 AT • DIN EN 853 2SN
Working Pressure - 330 bar (4800 psi)
Min. Burst Pressure - 1320 bar (19150 psi)

Hose Replacement

It is advisable to wear eye protection when replacing hoses or when working on the hydraulic system.

Before replacing hoses - release any residual pressure in the hydraulic system by operating the tractor spool valves in both directions.



Fig 30

Place a suitable container below the hose to allow the hydraulic oil to be drained. Detach and drain the first hose end followed by the opposite end to ensure any remaining oil is drained completely. Repeat procedure for all hoses to be replaced.

With hose ends reconnected, charge the system with oil via the tractor spool valves putting the service through a few cycles to allow the tractor hydraulic system to bleed out any trapped air.

Always dispose of oil responsibly with due consideration to the environment.

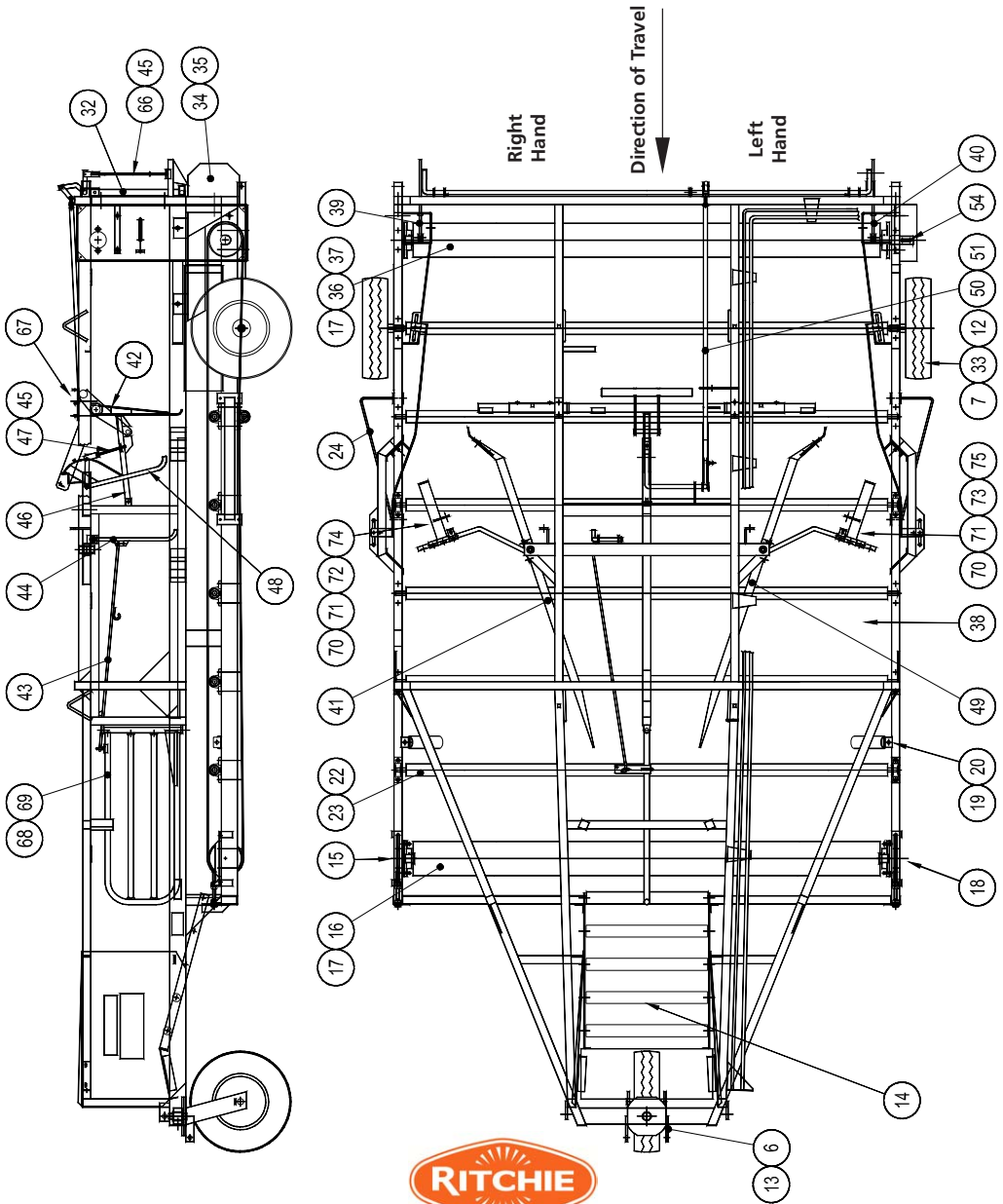
Repair of Belt

Any damage to the belt can be repaired by the belt manufacturer and on application to Ritchie a quotation can be obtained. The belt suppliers have a fairly quick turnaround for belt repair. If you have any questions on this subject please contact our sales department.

Automatic 8 Bale Accumulator - Model 1426

Parts List

When ordering parts please quote serial number of machine



Ref.	Part No.	Description	Qty
1	1426/112	Drawbar Swivel	1
2	1426/110	Drawbar	1
3	1426/187	Swivel Pin	1
4		Bush Kit	1
5	1426/185	Drawbar Pin	1
6	1426/104	Front Wheel Fork	1
7		Wheel	3
8	1421/109	Bale Chute	1
9	1421/117	Swivel Bar	1
10	1422/500	Spring Kit	1
11		Turning Arm Spring	1 pr
12	1426/99	Rear Axle	2
13	1426/182	Front Wheel Spindle	1
14		Gravity Rollers	5
15	1426/150	Idler Roller Slide (RH)	1
16	1426/171	Main Idler Roller	1
17		Main Roller Bearing	4
18	1426/155	Idler Roller Slide (LH)	1
19	1426/178	Angled Roller Bolt	1
20	1426/201	Angled Roller Assembly	2
21			
22		Belt Carrier Roller Bearing	14
23	1426/172	Belt Carrier Roller	7
24	1426/115	Outer Wheel Deflectors	2
25	1421/170	Baler Bracket (only)	1
26	1421/201	Spacers (NH Balers)	2
27	1421/209	Baler Bracket Pin I	1

Ref.	Part No.	Description	Qty
28	1421/211	Baler Bracket Pin II	1
29	1421/84	Baler Bracket Adjuster	1
30	1421/88	Towing Bracket Pin	1
31	1421/80	Switch Bar	1
32	1421/179	Rear Gate	1
33		Hub Cap	2
34	1426/20	Bale Deflector Inner (LH)	1
35	1426/119	Bale Deflector Inner (RH)	1
36	1426/147	Main Roller Bracket	1
37	1426/164	Main Drive Roller	1
38		Belt	1
39	1421/174	Rear Gate Latch (RH)	1
40	1421/175	Rear Gate Latch (LH)	1
41	1426/46	Turning Arm (RH)	1
42	1426/148	Front Gate	1
43	1421/131	Transfer Gate Trip Rod	1
44	1421/134	Transfer Gate Trip	1
45	1421/202B	Latch Rod Fork	3
46	1421/168	Front Gate Latch	1
47	1421/204	Front Gate Latch Rod	3
48	1421/39	Front Gate Trip	1
49	1426/47	Turning Arm (LH)	1
50	1421/188	Rear Gate Trip Rod	1
51	1421/194	Rear Gate Trip Rod Adjuster End	1
52			
53			
54	1426/143	Main Roller Bracket Drive Side	1





the perfect partner

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