MAN-01011

Shelbourne REYNOLDS

Shelbourne Header

Cvs-Rvs-Rsd

OPERATORS & SETUP MANUAL

"Original instructions"

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ISSUE 7 23.2.2010

MACHINE IDENTIFICATION

SHELBOURNE HEADER SERIAL NUMBER _____

SHELBOURNE HEADER MACHINE NUMBER _____

ADAPTOR PLATE ASSEMBLY _____

DRIVE KIT _____

HYDRAULIC FITTING KIT _____

OPTIONAL KITS _____

The following manuals can be ordered from your Shelbourne Reynolds dealer or downloaded from the Support Centre section of the Shelbourne Reynolds website

www.shelbourne.com

SHELBOURNE HEADER PARTS MANUAL		_____
PRE-DELIVERY & SETUP MANUAL		**MAN-01905**
DRIVE & ADAPTOR PLATE MANUALS	**Massey Ferguson**	**MAN-03172**
	Claas / CAT	**MAN-03173**
	John Deere	**MAN-03174**
	New Holland	**MAN-03175**
	Laverda	**MAN-03176**
	Gleaner / Challenger	**MAN-03177**
	Case IH	**MAN-03178**

Use the following procedure to ensure the correct parts are ordered for the machine

ALWAYS QUOTE THE MACHINE AND SERIAL NUMBERS WHEN ORDERING SPARE PARTS

Refer to the front pages of the parts list section (machine assemblies) and select the correct machine assembly, matching the machine number above.

Use the sub assembly numbers and descriptions to find the area of the machine that your part is required. Find the sub assembly parts listing using the sub assembly number. The number will be printed in the top left-hand corner; the sub-assemblies are in numerical order. The year of the machine may determine the correct sub assembly.

Having found the correct parts list, you will find the corresponding drawing by either looking at the facing page or progressing through the manual to the next drawing. The drawings indicate the components by item numbers, which you will find, are repeated in the left-hand side of your parts listing, and therefore referring to the correct part.

Dealer Pre-delivery / Installation and Warranty Registration – Stripper Header

PLEASE TICK APPROPRIATE COLUMN FOR EACH ITEM UNDERTAKEN

Dealer Pre Customer Delivery / Installation / Commissioning	Checks OK	Adjusted
Is the header set correctly for the combine?		
Is combine set up for header?		
Install header onto the combine.		
Install monitor kit into combine.		
Check the auger is adjusted correctly.		
Ensure the auger chain is tensioned correctly.		
Ensure the spare pulley is fitted to right hand end of header (RSD only).		
Remove the transport brackets from the header.		
Check adapter plate.		
Ensure the header is greased.		
Check gearbox oil levels.		
Adjust skids.		
Install crop markers.		
Run up header, adjust rotor speed from minimum to maximum (CVS/RVS only).		
Check monitor works correctly.		
Check marker lights work correctly (if fitted)		
Check crop deflector works correctly, fully up and fully down.		
Check in general the tightness of fasteners.		
Ensure that all safety guards and decals are fitted.		
Check paint work and finish.		
Ensure that an operator's manual is supplied with the machine.		
Additional comments		
Dealers Representatives Name	Date	

Customer Instruction	Actioned
Explain the correct setting & operation of the machine to the customer.	
Ensure the maintenance schedule is explained to the customer.	
Ensure the oil level, lubrication & grease points are indicated to the customer.	
Ensure all safety precautions & warning decals are explained to the customer	
Ensure the warranty policy is explained to the customer.	
Ensure that the operator's manual is handed to the customer.	
Additional comments	
Dealers Representatives Name	Date

For specific details please refer to the operator's manual.

Shelbourne REYNOLDS

Dealer's pre-delivery/installation check

IMPORTANT

All items listed on the left must be checked, and adjusted if necessary. The person conducting the inspection should tick each item in the space provided, indicating whether or not adjustments were required. In event of additional work being needed, details should be given in the additional work / discrepancy box, located at the bottom of this sheet, or on a separate sheet if required.

When the inspection is complete, THIS FORM MUST BE COPIED & RETURNED TO:- Shelbourne Reynolds Engineering within 21 days of delivery to customer, otherwise the invoice date to the dealer will be deemed to be the start date for the warranty period.

Dealer Name:_____

Address:_____

_____**Post / Zip code:**_____

Dealer Salesman Name:_____

Customer Name:_____

Business Name (if different from above):_____

Address:_____

_____

_____Post / Zip code:_____

Email Address:_____

Tel No. Home / Office:_____Cell / Mobile:_____

SERIAL NUMBER:_____MACHINE NUMBER:_____

HEADER MODEL:_____COMBINE MODEL:_____

Dealer Signature:_____

Print Name:_____Date:_____

Customers Signature:_____

Print Name:_____Date:_____

The customer's signature certifies that the machine was delivered in a satisfactory condition and that adequate instruction was received as to its correct operation, safety requirements and maintenance as stated in the operator's manual.

Additional work / discrepancies:

This page must be faxed or emailed to Shelbourne Reynolds Engineering Ltd.
Fax No: +44 (0)1359 250464 Email: warranty@shelbourne.com

EC Declaration of conformity for machinery

(Machinery Directive 2006/42/EC, Annex II., sub. A)

Manufacturer : Shelbourne Reynolds Engineering Ltd.

Address : Shepherds Grove Industrial estate,
Stanton,
Bury St Edmunds,
Suffolk.
England.
IP31 2AR

Name and address of the person *(established in the European Community/EEA)* authorised to compile the technical file *(to the authorities on request)*:

Name : Mr. Neil Smith

Address : As stated above.

Herewith we declare that :	Make :	**Shelbourne Header**
	Model :	
	Serial No.:	

- is in conformity with the relevant provisions of the Machinery Directive (2006/42/EC)
- is in conformity with the relevant provisions of the EMC Directive (2004/108/EC)

Neil Smith
Director

Place : **Stanton, England.** Date :

OPERATORS MANUAL

CONTENTS

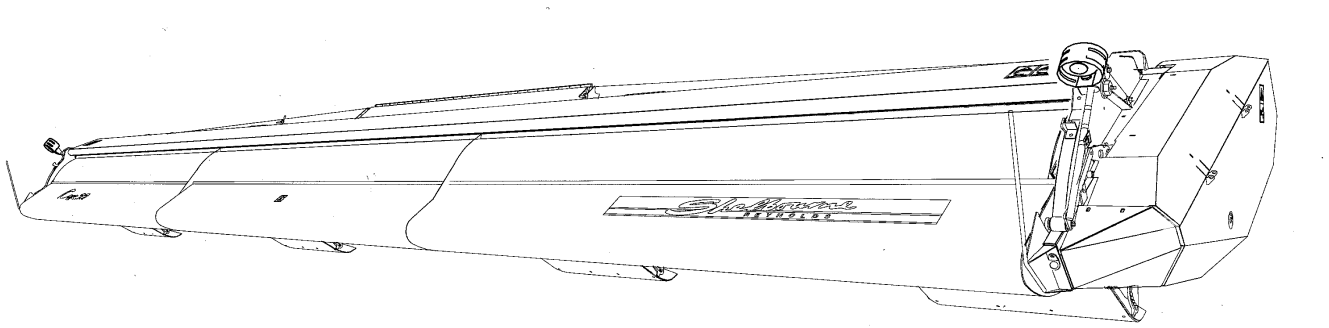
SECTION 1 **I N T R O D U C T I O N**

1.1

FOREWORD

This manual will assist the operator in setting the ***Cvs/Rvs/Rsd*** *Shelbourne* Header and combine combination to give optimum throughputs and loss levels in particular crops and field conditions when used in conjunction with the combine manufacturers operators manual.

The *Shelbourne* Header has been successfully tested in a wide range of crops and crop conditions in terms of throughput and crop recovery with a *Shelbourne* Header and combine combination, when compared against a conventional cutterbar and combine combination of similar size in the same crop and conditions.



PATENTS

The ***Cvs/Rvs/Rsd*** *Shelbourne* Header is protected by world-wide Patents:

Developed jointly with Silsoe Research Institute, and manufactured under licence from British Technology Group under GB patent 2176685, and other British and foreign patents.

U.S Patent Nos. 4790128, 4843806, 4951453, 5044147, 5389038, 5438818, 6315659, 5419107, 5519989 & 5678397
Also counterpart patents in other countries.

1.2

IMPROVEMENTS AND CHANGES

Shelbourne Reynolds Engineering are continually improving their products to meet the farmers needs and therefore reserve the right to make improvements and changes when practical to do so, without incurring any obligation to make changes and additions to equipment which has been sold previously.

1.3

SERVICE PARTS

Use guaranteed and genuine Shelbourne Reynolds Engineering service parts on Shelbourne Reynolds machinery to ensure maximum life and best performance. These are available through your Shelbourne Reynolds Engineering dealer.

When ordering service parts always quote the model, serial number and machine number.

1.4

MACHINE IDENTIFICATION

The serial and machine numbers of the *Shelbourne* Header are located on the top right hand corner of the machine. Later machines have a silver self adhesive sticker (below left), earlier machines have a rigid aluminum riveted plate (below right)

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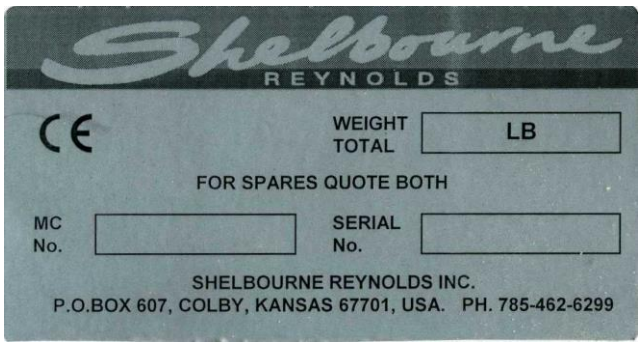
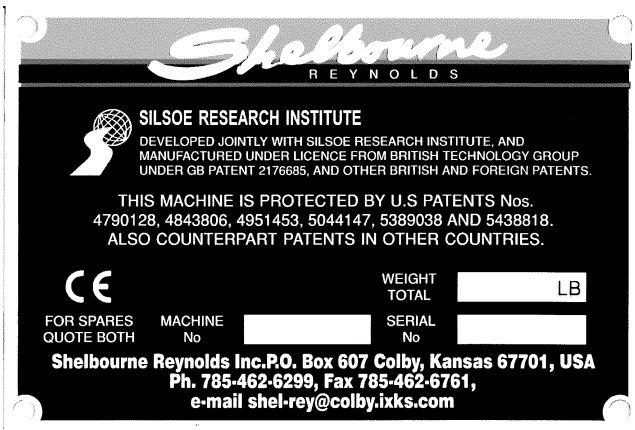




The machine number of the adapter plate is located on the top right hand corner of the adapter plate

1.5

SHELBOURNE REYNOLDS ENGINEERING LTD - WARRANTY TERMS AND CONDITIONS TO THE PURCHASER

GENERAL

1. The warranties described below are provided by Shelbourne Reynolds Engineering Ltd. ("Shelbourne") to the original purchasers of new equipment from Shelbourne or authorised Shelbourne dealers. Under these warranties, Shelbourne will repair or replace, at its option, any covered part which is found to be defective in material or workmanship during the applicable warranty term. Warranty service must be performed by a dealer or service center authorised by Shelbourne to sell and/or service the type of product involved, which will use only new or remanufactured parts or components furnished by Shelbourne.

2. This warranty will become available to you when you have paid for the equipment and returned, duly completed, the delivery and warranty registration forms. It will expire on the 1 year anniversary of the initial pdi/installation date from the dealer. After that date Shelbourne will have no further liability under this warranty to you except in respect of claims already notified.

3. These warranties are transferable, provided the machine is re-registered with Shelbourne and delivered, serviced and inspected in accordance with Shelbourne's recommendations for a new machine.

4. Shelbourne may at their discretion ask for the return of warranty parts for inspection. Warranty will only be available if the machine has been serviced in accordance with Shelbourne Reynolds maintenance schedules

USE AND MAINTENANCE

5. To maintain the benefit of the warranty throughout the twelve month period you must have the machine serviced in accordance with our recommendations and use the machine properly. If on inspection the machine appears to have been either misused, overloaded, improperly operated, neglected, not properly maintained, altered or repaired without our consent this will invalidate the warranty. We shall have no further liability under it to you at all. (If you require any guidance as to use you should contact the dealer.)

6. Our liability under this warranty is dependent upon your making the equipment and facilities available, for inspection and testing.

7. In this warranty the expression, "defective product" means any part of the equipment you have purchased which shows evidence of a defect in the materials, design (due regard being given for the state of the art at the time we designed it) or Shelbourne Reynolds' workmanship. Wearing parts, such as belting, are excluded. Parts not manufactured by Shelbourne Reynolds, for example tyres and alternators, are also excluded.

OUR OBLIGATIONS

8. If you discover a defective product you should contact the dealer from whom your machine was purchased. The dealer will notify us of your claim. Our obligation will

then be to either replace, or if we consider it appropriate, repair the defective product. Alternatively, we may arrange for our dealer to carry out this work.

9. YOU MUST NOTIFY THE DEALER OF THE DEFECT WITHIN SEVEN DAYS OF THE DAY ON WHICH IT IS DISCOVERED AND YOU MUST NOT USE THE EQUIPMENT AFTER DISCOVERY. FAILURE TO OBSERVE EITHER OF THESE OBLIGATIONS WILL INVALIDATE THE WARRANTY AS IS APPLIED TO THAT DEFECT. Any defective products replaced must be returned to SRE for inspection.

NO ADMISSION

10. On occasions we may, to preserve goodwill, replace parts even though they are not in our opinion defective. Accordingly, our agreeing to repair or replace a part cannot in any circumstance be deemed an admission that it was defective.

LIMITATIONS

11. This warranty shall not apply to products made up in accordance with customer originated designs.

12. No warranty, condition or other term implied by statute or common law as to the merchantability or fitness for a particular purpose, is intended or given by this warranty. All such warranties which may apply between Shelbourne Reynolds and yourself are excluded to the fullest extent permitted by law.

13. In any case, except in respect of death or personal injury caused by our negligence, we shall not be liable to you by reason of any representation or implied warranty, condition or other term, or any duty at, law or under the express terms of any contract, for the consequential loss or damage (whether for loss or profit or otherwise and including delay in harvesting, loss of crops, expense incurred for labour, additional or substitute material, rental whatsoever and whether caused by our negligence, the negligence or our employees or agents or otherwise) which arises out of or in connection with the use of the goods by you.

14. Time of repair is not of the essence.

15. No person or persons are authorised to alter, modify or enlarge this warranty on behalf of Shelbourne Reynolds.

16. Shelbourne Reynolds shall not be liable for any failure to comply with any part of the warranty where such failure is due to circumstances beyond their reasonable control, including difficulty in obtaining materials or replacement parts.

CALL OUT CHARGES

17. Shelbourne Reynolds and all dealers reserve the right to make a reasonable charge for call outs made at your request which do not turn out to relate to defective products.

YOUR STATUTORY RIGHTS ARE UNAFFECTED.

SECTION 2 S A F E T Y P R O C E D U R E S

2.1

ACCIDENT PREVENTION

Accident programmes can only prevent accidents with the co-operation of the persons responsible for the operation of the equipment.

For safety of yourself and others, operate equipment with care and do not take unnecessary risks which could cause an accident.

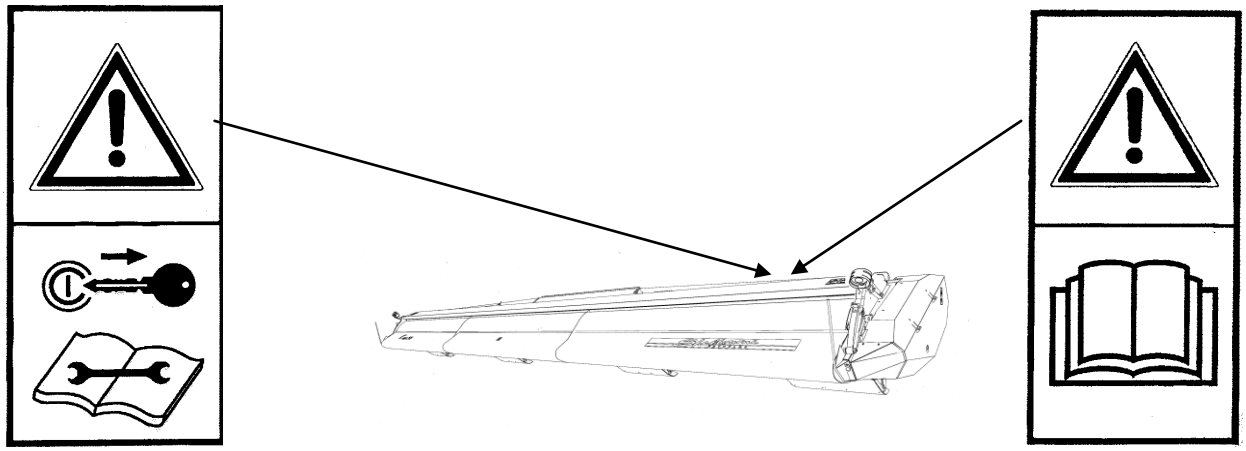
The combine manufacturer operators manual safety precautions should be adhered to along with the following additional safety precautions listed when using a *Shelbourne* Header

CAUTION

In addition to the following list, this symbol will appear throughout this manual whenever your safety is involved.

DANGER SYMBOLS

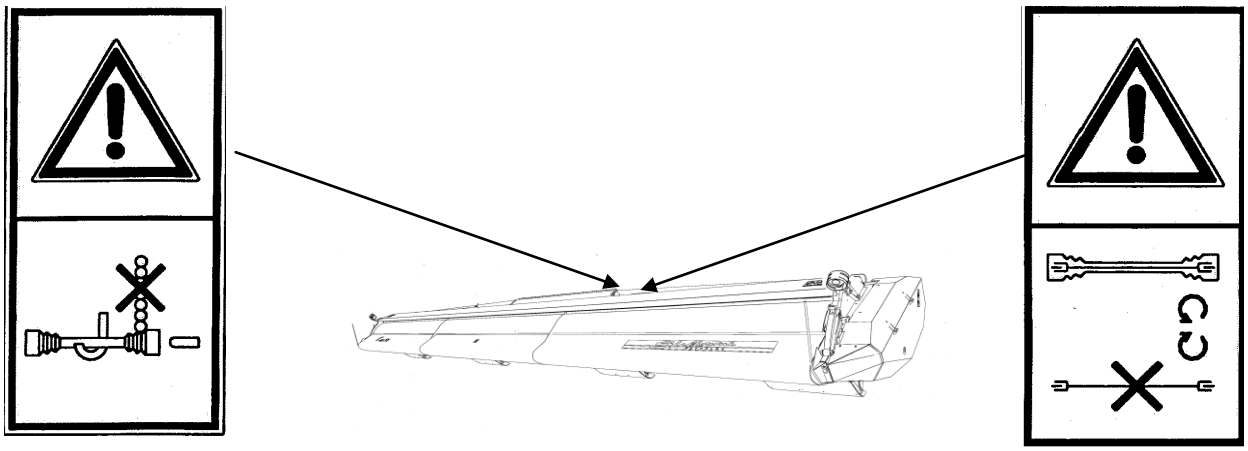
(1) (2)



1) Stop the engine and remove the key from the combine before carrying out any work on the machine.

2) Carefully read the operators manual before handling the machine.

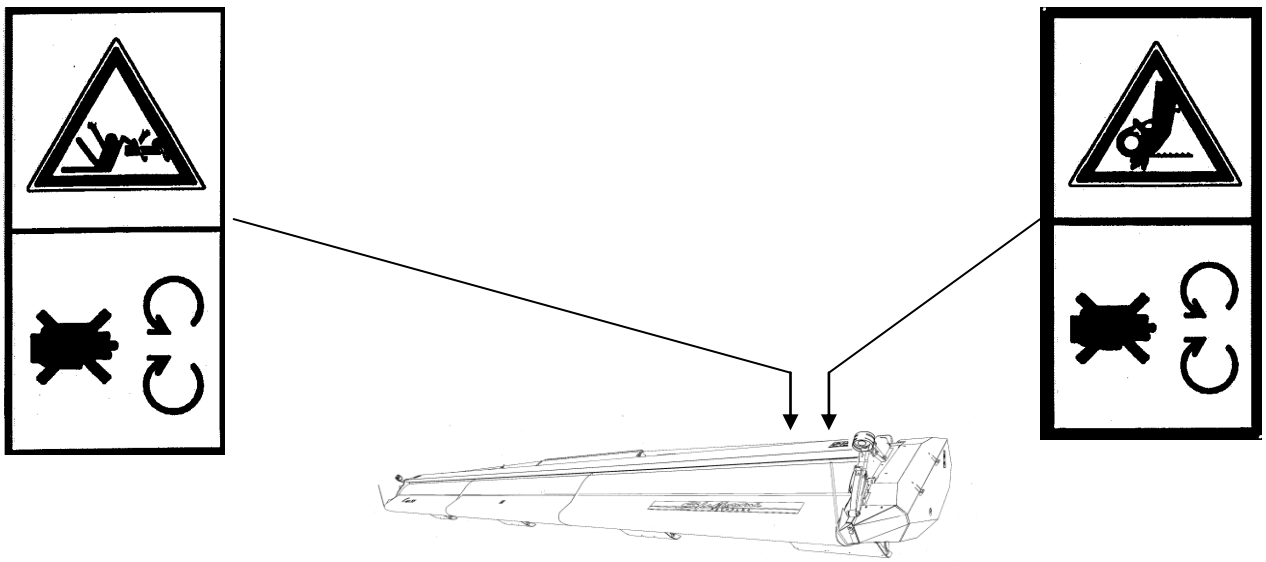
(1) (2)



1) When the PTO drive shaft is connected it must be supported on the correct support. It must never be hung on the chain.

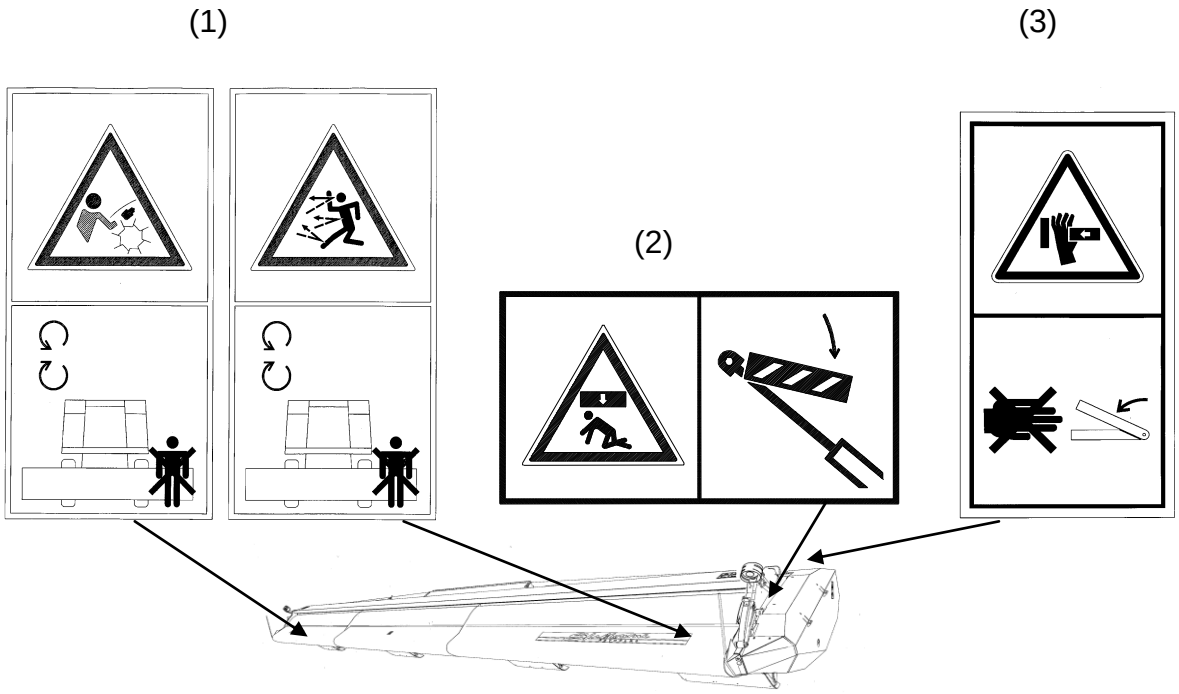
2) All PTO guards must be securely in place before the engine is started. Do not remove any guards whilst the engine is running. Severe injury may result from moving and rotating parts.

(1) (2)



1) Beware of rotating auger and stripping rotor. Severe injury may occur from falling into the rotor or auger.

2) All guards must be secured before engine is started. Do not remove any guard while engine is running. Severe injury may result from moving or rotating parts.



1) Do not stand in front of the header. Stand clear of the header. Disengage the drive, shut off the engine and remove the key before servicing or unplugging the header.

2) When the top hood is raised always secure the lifting cylinder with the locking device, which is stored behind the hand pump, secure locking device with the D pin. From Serial No.100149 the cylinder locking device is located on the lifting cylinder and must be lowered into position and secured with the R clip provided.

3) On machines which have adjustable gearbox do not reach into the crushing/pinching danger area as parts may move

GENERAL SAFETY

Please read all safety instructions contained in this operating manual with the utmost care and also observe all warning signs attached to the Stripper header. These warning signs must be kept in a legible condition and must be replaced if missing or damaged. This is especially the case when whole sections are replaced when making repairs. Warning signs are available from your dealer or importer.

Follow these instructions to prevent accidents. These instructions must also be made available to all other users. You are advised to refrain from any working methods which may be hazardous.

PROPER USE

Shelbourne Reynolds Cvs/Rvs/Rsd Stripper Header is based on state-of-the-art technology and are manufactured in accordance with recognised safety requirements. Nevertheless the use of the header does not preclude the risk of injury to the user or third parties and / or the risk of damage to the header itself or to other materials or items of equipment.

Always make sure that the **Shelbourne Reynolds Cvs/Rvs/Rsd Stripper Header** is in a technically perfect condition and that it is used properly and for it's intended purpose

and entirely in accordance with the instructions given in this manual. Any malfunctions or defects which might affect the safe operation or the header must be immediately eliminated.

The **Shelbourne Reynolds Cvs/Rvs/Rsd Stripper Header** must be used, maintained and repaired only by persons who are familiar with its working and have been made fully conversant with the risks involved.

OEM replacement parts and accessories from Shelbourne Reynolds have been specially designed for use with the **Shelbourne Reynolds Cvs/Rvs/Rsd Stripper Header.** Accessories not supplied by Shelbourne Reynolds have not been tested and approved by us. The installation and/or the use of non-Shelbourne Reynolds products may under certain circumstances have a negative influence on the given design features of your header and may therefore adversely affect it's safe and reliable operation and your safety. Shelbourne Reynolds cannot therefore be held liable for damage or injury caused by the use of non-OEM replacement parts or accessories.

The **Shelbourne Reynolds Cvs/Rvs/Rsd Stripper Header** is intended for use on typical farms and to be employed in harvesting cereal and rice crops. Any uses other than those for which the header is intended, such as transportation, will automatically exempt Shelbourne Reynolds or the supplier from it's/his liability in respect of ensuing damage. Such cases of improper use will therefore be entirely at the user's own risk.

All relevant accident prevention regulations, as well as other generally acknowledged health and safety regulations and road traffic regulations must be strictly observed.

Improper use also comprises failure to observe the instructions given in this operating manual and the manufacturer's maintenance and servicing requirements.

OPERATIONAL SAFETY

The **Shelbourne Reynolds Cvs/Rvs/Rsd Stripper Header** must not be put into operation until the user has been given proper initial instructions either by the dealer or by one of Shelbourne Reynolds' representatives or employees.

The **Shelbourne Reynolds Cvs/Rvs/Rsd Stripper Header** may be used only if all safety devices, e.g. detachable guards, are fitted and in proper working order.

Nuts and bolts should be checked at regular intervals and tightened if necessary.

In the event of a malfunction, immediately cease operation and secure the **Shelbourne Reynolds Cvs/Rvs/Rsd Stripper Header** in its stationary position. Malfunctions must be eliminated immediately.

No liability for consequential damage

Even though your **Shelbourne Reynolds Cvs/Rvs/Rsd Stripper Header** has been manufactured with the utmost care and you are using it properly, fluctuations in performance may still occur.

It is the duty of the operator / user to ensure that foreign objects, e.g. stones, metal objects etc. are not allowed to enter the header. Failure to observe this may result in

damage to the header and / or injury to the operator / user and / or damage to the combine.

Any claims for damages not directly incurred by the **Shelbourne Reynolds Cvs/Rvs/Rsd Stripper Header** cannot be accepted. By the same token, Shelbourne Reynolds cannot be held liable for any consequential damage resulting from incorrect use of the header.

ROAD SAFETY

Road traffic regulations must be observed when taking the **Shelbourne Reynolds Cvs/Rvs/Rsd Stripper Header** on roads, paths and other public places. The header must be in a road-worthy condition.
Observe the maximum permissible width for road transport and fit all necessary warning signs and guards.
Fully secure guards and covers so that they cannot cause injury or damage to other users of the public place.
Use only the approved Shelbourne Reynolds trailer for transporting the **Shelbourne Reynolds Cvs/Rvs/Rsd Stripper Header** and attach it securely to the tow hitch on the towing vehicle.

Ensure that all braking systems and lighting systems on the combine or towing vehicle (if using a trailer) are in full working order and that they can be fully and correctly operated.

Disconnect all hydraulic connections and / or the PTO drive shaft from the header so that it cannot be inadvertently operated if transported on combine.

No person other than the operator may be allowed to ride on the combine.

ACCIDENT PREVENTION

When coupling the Shelbourne Reynolds Cvs/Rvs/Rsd Stripper Header to the combine.

The coupling and uncoupling of the header is the same as for the combine's cutterbar. Follow the procedure outlined in the manufacturer's operator's book also.

When using the PTO shaft

Use only the universal joint shaft, which is supplied with the **Shelbourne Reynolds Cvs/Rvs/Rsd Stripper Header** and is intended for use with it. Ensure that it is fitted with the prescribed protective equipment (protective tube and funnel-shaped PTO shaft guard must be fitted). Make sure that the combine engine and the PTO shaft are switched off before proceeding to fit the universal joint shaft.

Do not modify the length of the supplied PTO shaft, guard cones and tubes.
Ensure the guards are secured in such a way that they cannot rotate with the shaft.

Be absolutely sure that there is nobody standing in dangerous proximity to the header or combine when you switch on the PTO shaft.

2.2 BEFORE STARTING THE MACHINE

1. Read the manual thoroughly.
2. Check that all guards are properly secured.
3. Ensure that no person is working on or inside the machine.
   Check that all observers are clear of the machine. Warn bystanders by sounding the horn several times.

2.3 THE MACHINE IN THE FIELD

5. Do not permit anyone other than the operator to ride on the combine.
6. Always stop the engine and apply handbrake before removing or opening any guards or clearing a blockage.
7. Do not go under the header unless it is securely blocked or the header safety latch is lowered onto the lifting cylinder
8. NEVER go in front of the machine whilst the header is running.
9. Always replace all guards after making any adjustments or lubricating the machine. Replace or repair any damaged or missing guards immediately.
10. Do not work around the machine in loose clothing that might get caught in moving parts.
11. Keep hands away from moving parts.
12. Keep children away from and off the machine at all times.

2.4 LEAVING THE MACHINE

13. Park the machine on reasonably level ground.
14. Apply the parking brake.
15. Lower the header to the ground.
16. Stop the engine and remove ignition key.

2.5 SERVICING THE STRIPPER HEADER

17. Ensure that the header is on the ground or if in the raised position, that it is securely blocked or the header safety latch is lowered onto the lifting cylinder.
18. Stop engine and apply handbrake before performing any adjustments or lubrication and before opening or removing any guard.
19. When raising the top hood, turn the tap on the hand pump fully clockwise. Pump the handle and fully raise the top hood. Secure the lifting cylinder with the locking device, which is stored behind the hand pump, secure the locking device with the D pin. From Serial No.100149 the cylinder the locking device is located on the lifting cylinder and must be lowered into position and secured with the R clip provided.
20. Always re-install all safety guards on completion of servicing.

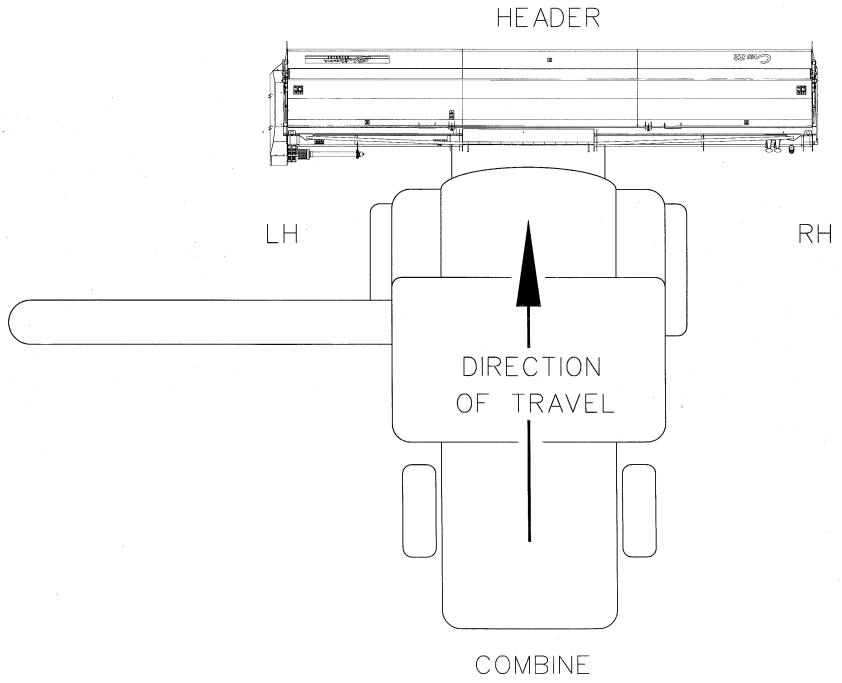
2.6 HEADER ATTACHMENT AND DETACHMENT

21. Follow the procedure described in the combine operators manual for header attachment and detachment.

22. Ensure that the nose is in its lowest position prior to the detachment of the header hydraulics.

SECTION 3 S P E C I F I C A T I O N & D E S C R I P T I O N

RIGHT AND LEFT HAND OF THE MACHINE AS TERMED IN THE MANUAL IS AS VIEWED WHEN IN THE DRIVERS SEAT.



Cvs/Rvs/Rsd SHELBOURNE HEADERS

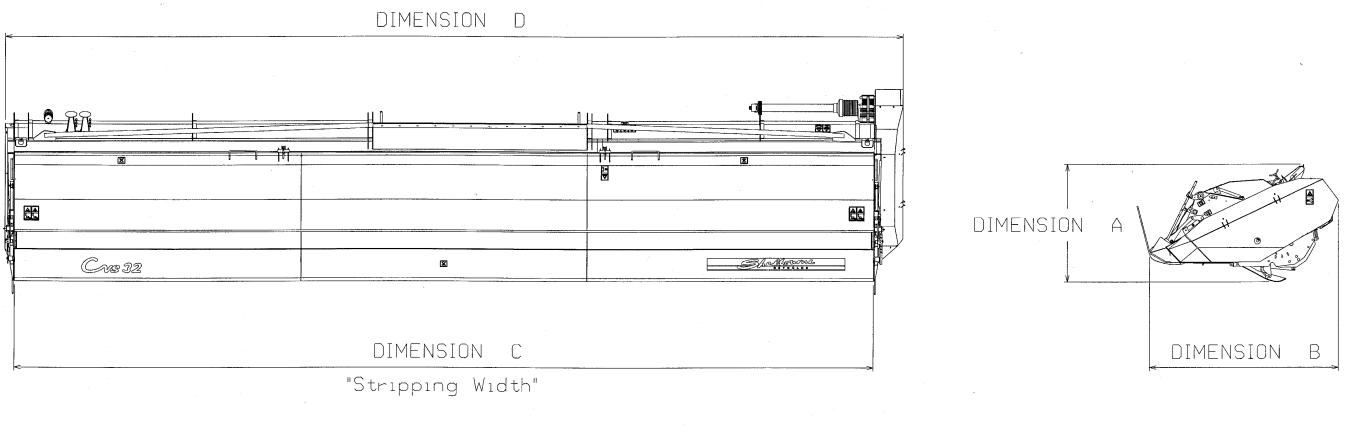
Multi-plate	- Mounts on combine standard mounting points. - Interchangeable adapter plates and drive kits for mounting the *Shelbourne* Header to other popular combine types.
Auger	- Speed fixed, Nom 190 rpm, diameter 610mm (24") over flights - Outside retractable fingers, and removable flight extensions suit various combines. - Auger and drive protected by a slip clutch.
Stripping rotor	- Octagonal construction with 8 rows of seed saver elements with plastic support elements. - All Cvs/Rvs/Rsd headers have a flexible division support plate. - Division plate and rotor ends are fitted with a patented anti wrap system.
Rotor speed	- Infinitely variable between approximately 400 and 800 rpm, actuated electrically from the combine cab.
Rotor drive line	- Drive shaft fitted with a 1600Nm shearbolt type torque clutch.

Rotor and auger speed monitor	- Electronic performance monitor and alarm, with semi-automatic alarm set feature.
Top hood (cowl)	- Access cover with gas strut assistors or hydraulic lifting cylinder operated by a hand pump.
Adjustable crop deflector (nose)	- Operated by combine hydraulics (reel lift). - Visual colour coded position indicator.
Dividers	- Fixed marker rod type divider.
Adjustable skids	- Adjustable throughout range. -.Optional roller system available for wider headers.
Centre Protection pans	- Available for all Cvs/Rvs/Rsd 18-28' models.
Front stands	- Detachable front feet for use only when the header is removed onto the ground.
Side guards	- L.H. guard removable or hinged for ease of access
Header Off Set	- Cvs/Rvs/Rsd 24-32' models are off set to the RH side to improve the balance of the header, the off set is as follows: Cvs/Rvs/Rsd 24 = 200mm (7 $^{7}/_{8}$") Cvs/Rvs/Rsd 28 = 300mm (11 $^{3}/_{16}$") Cvs/Rvs/Rsd 32 = 400mm (15 $^{3}/_{4}$").

RANGE OF SIZES

Sizes are as follows:-

	A	B	C	D	WEIGHT (approx.)
Rsd12	1152mm 3'9"	2260mm 7'5"	3600mm 11'10"	4036mm 13'3"	975 kg 2150lbs
Rvs14 Rsd14	1152mm 3'9"	2260mm 7'5"	4200mm 13'9"	4636mm 15'3"	1183 kg 2608lbs
Rvs16 Rsd16	1152mm 3'9"	2260mm 7'5"	4800mm 15'9"	5236mm 17'2"	1355 kg 2981lbs
Cvs18 Rvs18 Rsd18	1152mm 3'9"	2260mm 7'5"	5400mm 17'9"	5836mm 19'2"	1540 kg 3394lbs
Cvs20 Rvs20 Rsd20	1152mm 3'9"	2260mm 7'5"	6000mm 19'8"	6436mm 21'2"	1712kg 3773lbs
Cvs22 Rvs22 Rsd 22	1152mm 3'9"	2260mm 7'5"	6600mm 21'8"	7036mm 23'1"	1883kg 4150lbs
Cvs24 Rvs24 Rsd24	1152mm 3'9"	2260mm 7'5""	7200mm 23'7"	7636mm 25'1"	2200kg 4851lbs
Cvs28 Rvs28 Rsd28	1152mm 3'9"	2260mm 7'5"	8400mm 27'7"	8836mm 29'	2630kg 5800lbs
Cvs32 Rvs32 Rsd32	1152mm 3'9"	2260mm 7'5"	9600mm 31'6"	10036mm 32'11"	2850kg 6284lbs



For complete details of the correct sizes and fitting for the combine on which the *Shelbourne* Header is intended to be used, please contact your local SHELBOURNE REYNOLDS Dealer or the factory direct.

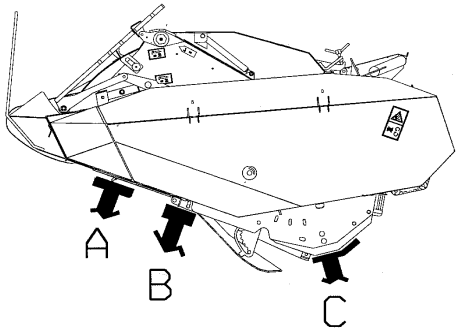
SECTION 4 T R A N S P O R T A T I O N

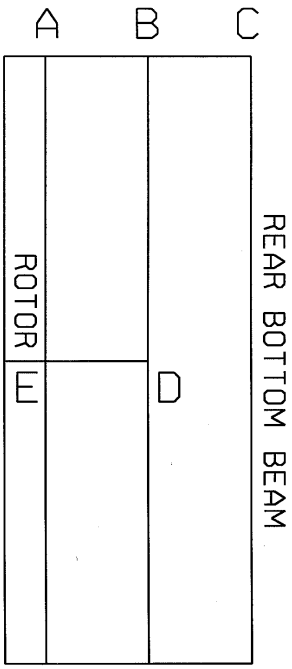
To prevent damage to the *Shelbourne* Header, the machine should be moved either by:

- Attaching to combine
- By slings through the lifting lugs provided for overhead lifting.
- On a trailer which gives suitable support in the correct positions of the header and provides adequate stability.

DO NOT

- Attempt to lift under the header with a forklift, unless the header is fitted with forklift shoes i.e. *Cvs/Rvs/Rsd 18-32 models*, or on an adequately supportive pallet.
- Remove header onto floor without placing the foot stands under the front corners of the machine.





- Never support machines weight on the front beam or front of the skids under the header.

A & B-support on either side.
C-support on either corners, centre or along. beam
D-support in centre on centre division plate.
E-support in centre on skid in line with division plate.

SECTION 5 PREPARATION AND ADJUSTMENTS FOR USE

 Read this section carefully before use.

If in any doubt of adjusting the following, consult your dealer.

When using the *Shelbourne* Header, the following features are required on your combine. (Some of these features may already be fitted as standard to your combine.)

5.1

1. **HEADER DRIVE**
   Due to the extra power required to drive the *Shelbourne* Header compared to the conventional cutterbar, some makes and model of combine require a maize header drive kit which will increase the power available to drive the *Shelbourne* Header.

   Shelbourne Reynolds dealers should be consulted to select the correct drive for your machine.

2. Combine grain loss monitors, mainly on the sieves.

3. De-awner or concave blanking plates.

4. Lights on top corners of cab for night work. The lights which are mounted at the bottom of the cab are designed to throw the light through the cutterbar reel, but as the *Shelbourne* Header has a crop deflector, the light cannot shine through it. The operator will require light at the front of the nose where the crop enters the header.

5. A straw chopper will be useful for dealing with straw intake in laid and lodged crops.

The following adjustments need to be checked and carried out:-

5.2

CONCAVE SETTING - conventional cylinders
As there is less straw intake in most crop conditions, it is necessary to adjust the concave to give a minimum clearance of 3-4mm on the first 5 bars.

This is achieved by putting the concave lever(s) into the top hole to give minimum clearance between the drum and concave.

Refer to the combine manufacturers operators manual to reduce this clearance, which is usually adjusted by threaded studs on each side of the combine supporting the concave. The clearance is normally measured by removing side covers at the end of

the drum on each side of the machine, and using a piece of flat metal to the depth of 3-4mm to check the clearance between the concave bar and drum bars.

CAUTION

After adjusting but before running, check that the concave cannot hit the drum when the concave hand adjusting lever is released from the top notch and pulled up as far as it will go, i.e.. until it hits the stop.

If when this is carried out the concave touches the drum rasp bars, it is necessary to adjust the stop on the concave, adjusting lever to prevent it from going up so high. The stop is often a bolt in the top of the lever ratchet plate.

Cleaning shoe sieves (screens) need to be opened further than usual, the best result is usually achieved by fully opening the top screen and then cleaning on the lower screen.

Higher cleaning fan speeds are also used.

- Axial flow cylinders:
See section 5.9

5.3

HEADER LOWERING SPEED

Beware until set

The *Shelbourne* Header is heavier than most types of conventional cutterbar header, therefore, when on the combine, it may drop at a very fast speed until adjusted.

This is usually adjusted on the hydraulic feeder housing direction control valve which may be mounted under the cab floor, or on the side of the machine. When set correctly, the header will gently lower to the ground without banging on the skids. Header damage can be caused if the drop is to fast.

Refer to the combine manufacturer's operator manual for adjustment of the header lowering speed.

5.4

COMBINE FRONT ELEVATOR DUST COVERS

Most of the *Shelbourne* Header adapter plates for various combine models with the exception of New Holland and John Deere, have an elevator dust cover built into the header adapter plate itself. For this reason it is necessary to remove the dust cover from the combine elevator if fitted. If this cover is not removed, uneven feeding and blockage may occur.
It is not usually necessary to remove the cover on New Holland, Case IH, or John Deere combines, but often feeding will be improved if the centre section of the cover is removed, leaving the outer side deflectors of the cover in place.

5.5

LEVELLING THE HEADER

The header should be parallel with the front axle of the combine, if it is not, then it should be adjusted according to the combine operators manual, as adjustment method is the same as that for the conventional cutterbar.

Note-

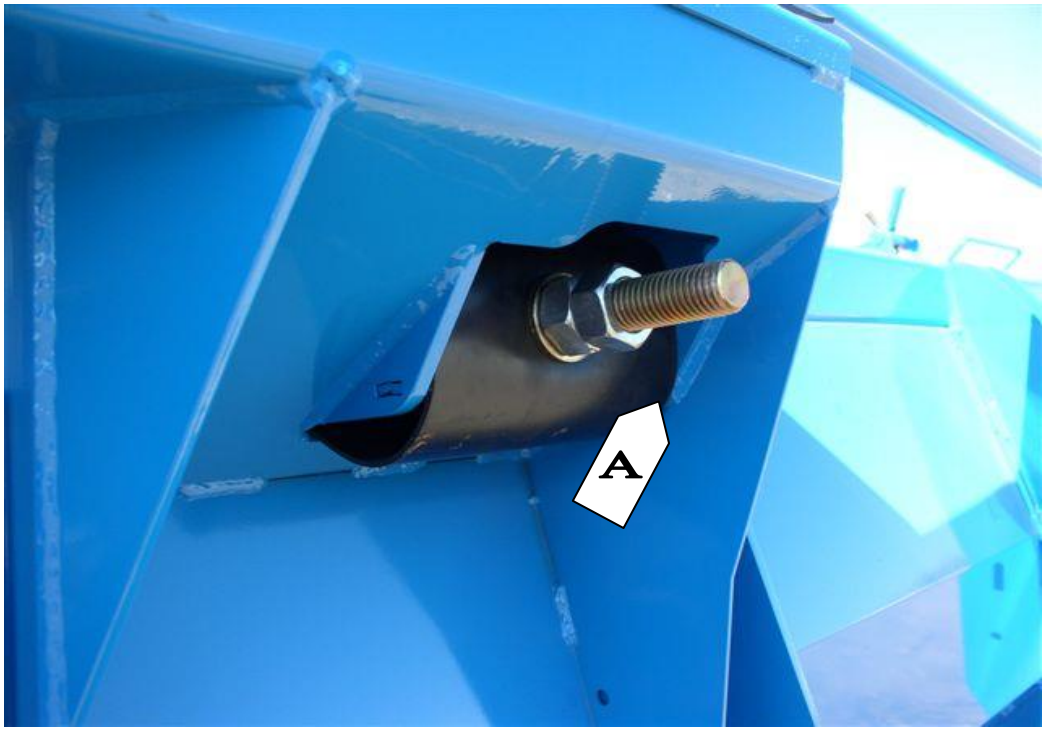
If levelling a USA built John Deere, it is necessary to remove the existing spacer plates from under the pick-up lugs, and put the Shelbourne Reynolds spacer plates (KIT-00804) under the LH side lug if required. One plate may be required for Cvs/Rvs/Rsd18,20,22,24 width models, and two plates for Cvs/Rvs/Rsd28 &32 width models. Put the radii corners of the plates to the outside corner of the feeder. It may be that no plates are required as the header is offset and therefore balanced. **Post 2004 adaptor plates can use the standard JD levelling plates**

5.6

IMPORTANT - TILT ADJUSTMENT AND ROTOR CLEARANCE HEIGHT OF THE *SHELBOURNE* HEADER

The angle of the *Shelbourne* Header is adjustable. There are two fixing bolts between the adapter plate and header (A) Fig.1, located at the rear of the adapter plate (or within the adapter plate top beam). These fixing bolts are adjustable and will therefore change the angle of the *Shelbourne* Header, and hence the auger to feed elevator clearance, and rotor height from the ground.

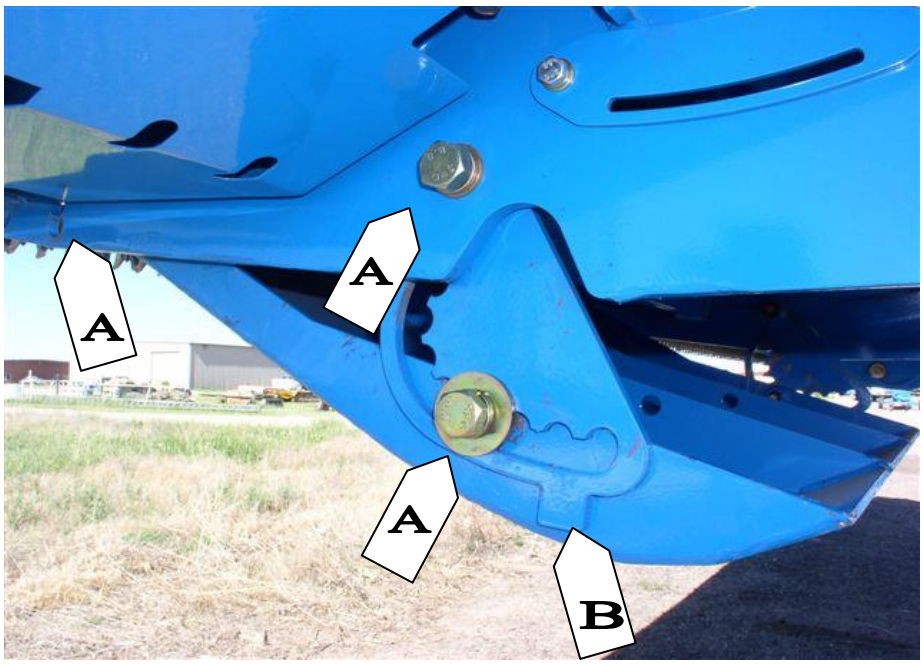
FIG 1



Once having set the angle of your header. It is important that all nuts are locked up tight, but should be checked at least yearly. Ideally at the beginning of each season

SKIDS
The function of the adjustable skids under the header is to prevent the rotor from hitting the ground, and to keep the rotor at a constant height above the ground when working at low levels e.g. laid crops.

FIG 2



The skids under the *Shelbourne* Header are adjustable FIG 2, and can be moved by slackening off the 6 bolts (A) on each skid, and using a 24mm (15/16") open end spanner at point (B) as shown, rotate the cam plates in the slots to the required position. Tighten the bolts. **Always ensure centre skids are two notches higher than the outside skids to prevent header damage.**

CAUTION - Raise the header fully and engage the header safety latch before going under to inspect or adjust.

To correctly set the header tilt and rotor to ground clearance:-

- Set the *Shelbourne* Header skids in the middle position.

- On level concrete lower the *Shelbourne* Header to the ground i.e. so the skids touch the concrete.

- Check tilt adjustment. The side plates of the header should be approximately horizontal to the ground line or tilted back very slightly.

- If adjustment is required, before adjusting the adapter studs, the bolts securing the auger stripper plates on the adapter plate only should be loosened to prevent jamming.

- Adjust the stud's (A) Fig.1 of the adapter plate equal amounts until the setting is approximately correct.

- Lock the adjusting stud nuts.

- In such position the rotor clearance to the ground should be approx 75mm to 125mm(3-5”) for all ***Cvs/Rvs/Rsd*** models.

  This clearance is adjusted by moving the skid cam plates in the slots.

- Re-set the auger stripper plates on the adapter plate, FIG 9 section 7.4, to give approx. 5mm clearance from the auger flights.

NOTE: When making this adjustment the auger to feed elevator clearance will also change. Before operating the machine, check that the auger and feed elevator do not hit each other, re-adjust the auger, or elevator if necessary.

5.7

ALIGNING HEADER DRIVE
Your *Shelbourne* Header is fitted with a ***standard PTO shaft***, no adjustment should be required to align the shaft. Simply press in the button of the coupling and push onto the shaft. Ensure that the coupling seats correctly i.e. when the pin pops out again.
Note - The angle of the rear PTO shaft should not exceed 20 degrees.

JD American combines.

9600 and ***8820.*** To facilitate the use of a direct coupled PTO shaft a drive adaptor has to be fitted to the sprocket output on the feed elevator (KIT-00975).
This simply bolts onto the sprocket and has a 1 & 1/8" A/F hexagonal stub ready to accept a PTO yoke.

9500, CTS *and* ***7720.*** The drive arrangement on the header for these models once again uses a PTO shaft with a 1 & 1/8" A/F hexagonal yoke or 21-spline shaft.
To enable this to couple to the feed elevators header drive shaft the sliding sprocket arrangement has to be removed. This will then expose an 1 & 1/8" A/F hexagonal shaft. A groove then needs to be filed or ground into the shaft to accept the PTO yokes quick release mechanism.
(Ref. Bulletin TSB-01051 and grinding jig kit KIT-00978)

5.8

AUGER FINGERS AND FLIGHT EXTENSIONS (if fitted)

Different combines have different width feed elevators.
To accommodate this the *Shelbourne* Header has removable retractable fingers, and flight extensions available so feed adjustment can be made.
If in doubt about the quantity of retractable fingers required or type of flight extension required contact your dealer before operating the machine as possible damage may occur to both header and combine.

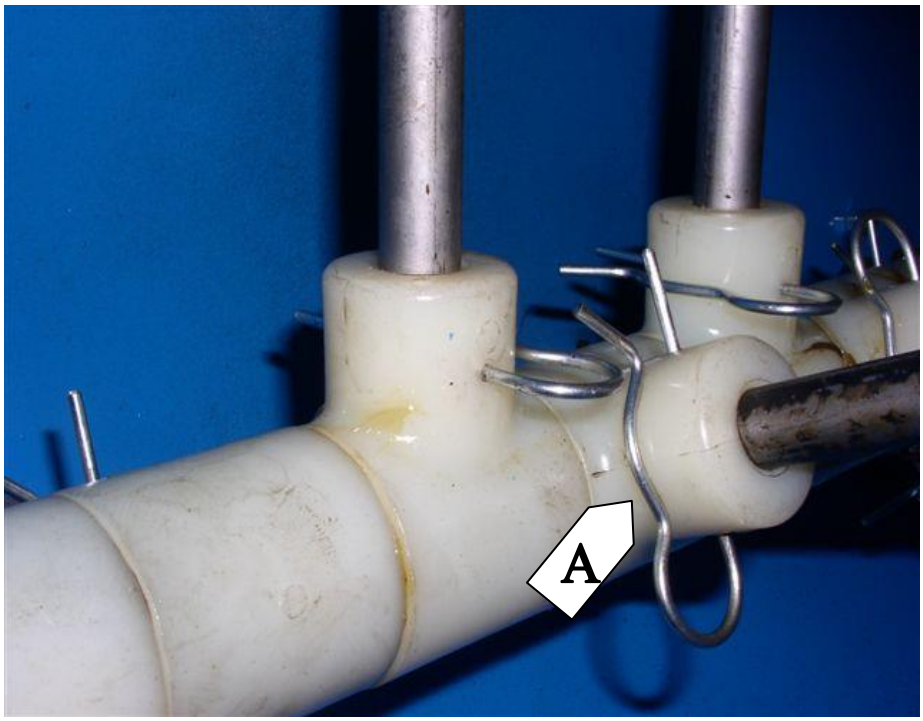
To prevent auger plugging and uneven feed, it is important to ensure that the outer

retractable fingers are not feeding in a position wider than the feed elevator of the Combine.
The outer fingers should be removed until the outermost finger is in board of the feed chain by at least 100mm (4"), otherwise wrap in the ends of the elevator roller may occur.
To remove the fingers;

1. Remove the cover plates near the auger centre FIG 4.
2. Remove the `R' clip FIG 4.(A) securing the finger in the plastic holder, and pull the finger out of the holder.
3. To prevent dust and particles filling the auger tube through the remaining hole, remove the finger guide from the auger tube and replace with filler plate. (Pt No. 190735 01)
4. When enough fingers have been removed, replace the auger cover plates.

The auger flights should pass the end of the combine feeder chain by at least 75mm(3”), if required fit flight extensions (Ref. Bulletin TSB-01010).

FIG 4



5.9

HEADER HEIGHT INDICATOR
This should be set as described in the combine operators manual.

5.10

AXIAL FLOW COMBINES -

All crops except rice:-

When fitting the *Shelbourne* Header to an axial flow combine it will be necessary to adjust the following for efficient separation of stripped material.

The axial flow concave will consist of front concaves, usually in 3 sections and a rear separating grate also usually in 3 sections.

The front concaves will adjust in relation to the rotor, the back separating grate is fixed. For harvesting **most** crops of wheat and barley and other small seed crops, it will be necessary when using the "small wire concaves" to put concave wires in all the holes of the first concave. Second and third concave should have the wires fitted in every other hole. The rear grate which is a welded construction should be of the small hole type. The rotor and concave clearance should be 1mm to 3mm.

If all the crop is not threshed, then it may be necessary to fill the second concave with wires in each hole, or fit blanking plates on the first half of the concave to block it completely.
However, if the crop is damp it may be necessary to remove wires from the concaves, and/or open the rotor to concave clearance to allow the damp crop to flow through. If the drum to concave clearance is opened above 3mm, short straw etc. may block the concaves due to centrifugal force, if this occurs the clearance should be reduced.

The rotor speed settings will be set the same as for a conventional cutterbar.

Cleaning shoe sieves (screens) need to be opened further than usual, the best result is usually achieved by fully opening the top screen and then cleaning on the lower screen.

Higher cleaning fan speeds are also used.

Axial flow combines have a narrow feeder housing, it may be necessary to raise the front roller to the top position and lock the float of the roller to allow even feed. Adjustment method is described in the combine manufacturer operator manual.

RICE

When harvesting rice with axial flow combines it will be necessary to raise the front roller of the feeder housing to the top position, and lock the float of the roller to enable an even feed. Adjustment method is described in the combine manufacturers operators manual.

On Case IH 2388, 2188, 1688, 1680, 1480 combines it is preferred to have 4 ears on the front of the rotor to keep the feed even, ensure smooth operation, and optimum performance.
The front 3 concaves should be of the "large wire" type. The rear grates should be changed to the SRE modified type KIT-00903, and best results are achieved with the speciality rotor fitted with spiked raspbars in the area of the rear grates only.
It is important to ensure that the rotor is adjusted central to the concaves for even material flow. It may be necessary fit an adjustment kit to some of the earlier models. Adjustment method will be explained in the combine manufacturer operator manual.

Best results are usually achieved with an axial rotor speed of 660 rpm.

On smaller Case IH combines i.e. 2166, 1666, 1660, 1460 it will also be necessary to fit the SRE modified grates, consult your dealer for details.

SECTION 6 F I E L D O P E R A T I O N

It is important to read this section of the manual before operating the *Shelbourne* Header.

This section contains tables and other references to the basic settings of certain components of the *Shelbourne* Header and combine in various crops.

As the *Shelbourne* Header does not feed much straw into the combine the settings may vary to those you would normally set with a conventional cutterbar.

It is impractical to give the settings for every crop variety and conditions in the various soil types and weather conditions, so the settings given in the tables are initial settings to be used as a starting point.

This section then follows on to indicate further adjustments which can be made to suit specific conditions.

Read and carry out the procedures in section 5 before attempting to operate the machine.

Field adjustment details are only given for the *Shelbourne* Header. For combine adjustment details use the combine manufacturers operators manual.

6.1

FIELD ADJUSTMENTS

CROP DIVIDERS

Dividers are of the fixed marker type with a rod merely as a visual aid to ensure you harvest with the full width of the header, they are fixed in an optimum position and therefore do not require adjusting.

6.2

HEADER HEIGHT

The height of the header is adjusted from the combine cab by the operator using the header height hydraulic adjusting lever.

6.3

ADJUSTABLE CROP DEFLECTOR

This too is adjusted hydraulically by the operator from the combine cab using the conventional header reel lift lever (if speed of operation is too fast refer to the combine manufacturer's operator manual).

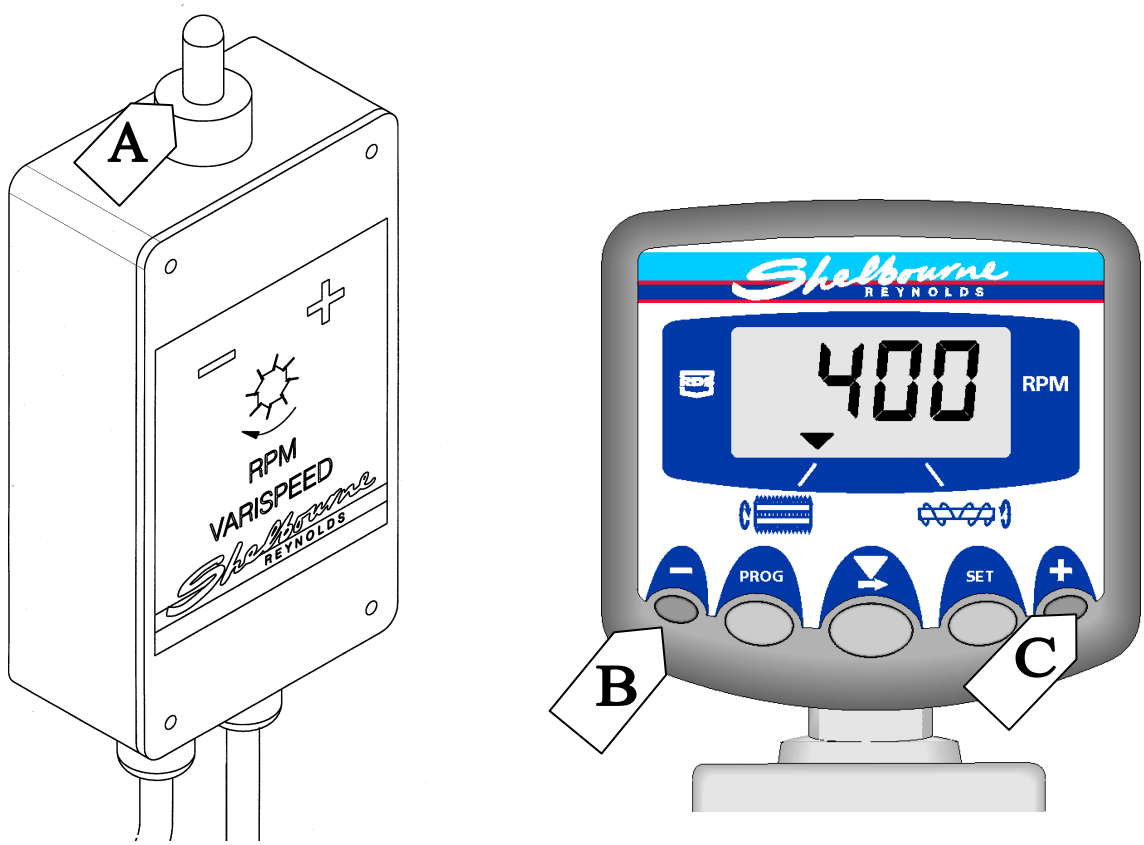
6.4

Stripping Rotor Speed

The rotation speed of the stripping rotor on Cvs & Rvs machines is infinitely variable between approximately 400 and 800 rpm which is operated electrically from the cab by the *Shelbourne Varispeed Control Unit.* The speed may be increased or decreased at any time during field operation to suit the crop conditions by simply moving the toggle switch (A). FIG 6 shows the layout of the control unit (upto & including 2003). Or (B) & (C) to increase or decrease the rotor speed.

On Rsd machines, that have a fixed drive arrangement, the stripping rotor speed can be set at 4 different speeds 450, 550, 660 & 790 rpm. Machines built in 2009 and onwards have two additional speeds of 500 & 720 rpm. The procedure for adjusting the speed can be found in sections 7.9 & 7.10.

FIG 6



6.5

TACHO PERFORMANCE MONITOR

For installation and operation procedures see Shelbourne Header monitor information in Section 10 of this manual.

The tacho performance monitor will monitor the shaft speed of the feed auger and the stripping rotor shaft.
The monitor will need to be ***auto-set*** before use, and reset whenever the rotor speed is changed.

The tacho is fitted with an audible alarm. As the speed of the rotor and or auger reduce due to overload or blockage, the alarm will warn the driver to slow down or to stop. The arrow on the tacho display panel will automatically indicate which shaft has reduced speed during operation.

Auger - This is monitored only to alert the driver that the auger is blocked. The alarm speed should be set at 100rpm.

Rotor speed - Monitoring the rotor speed enables the driver to monitor the effort required by the rotor to strip the crop. By correctly setting the audible alarm speed, the torque limiter shearbolt can be prevented from shearing.
The alarm speed value on this channel only, is adjusted semi-automatically (auto-set feature) using a percentage value.

i.e. If rotor speed with NO LOAD (machine running empty) is 600rpm, and the shearbolt shears in operation when the tacho monitors the rotor speed at 550rpm, by setting the alarm speed above 550rpm the driver can prevent the bolt from shearing by slowing down the forward speed, or raising the header when he hears the alarm, to reduce the load on the rotor.

For ease of operation, the monitor has an Auto-set feature which uses a percentage value set in the monitor, default is 8%. Therefore if the NO LOAD speed is 600rpm, the alarm will sound if the speed goes 8% below this speed, which is 552rpm. This speed value can be seen when auto-setting the monitor.
This percentage default is an approx. setting which will suffice for most circumstances as engine power, and combine drive design to the *Shelbourne* Header will affect the value the alarm needs to be set. The percentage value can therefore be changed if required as described in the above mentioned manual.

6.6 ***BASIC MACHINE SETTING TABLE***

TYPE OF CROP	DIVIDERS	STRIPPING ROTOR SPEED Rpm (APPROX)	CROP DEFLECTOR POSITION. (For standing unless stated)	COMBINE DRUM SPEED Rpm
WHEAT DURAM TRITICALE RYE	MOSTLY	500 WHEN DRY. UPTO 700 WHEN TOUGH	GREEN TO YELLOW. IF TALL LOWER RED	900 to 1000
WINTER / SPRING BARLEY	NOT USUALLY YES IF 4 / 6 ROW BARLEY	500 to 600	YELLOW, GREEN IF SHORT	900 to 1000
OATS	USUALLY	500 to 600	YELLOW	600 to 700
RYE GRASS, ALL TYPES	NO	400 to 700	UPPER RED TO BLUE IF LAID. GREEN IF STANDING.	800 to 900
GRASS FESCUE	YES	600.00	GREEN to YELLOW	800 to 900
RICE	YES	400 to 550	GREEN	RICE DRUM 450 to 700. RASP BAR 550 TO 800.
LINSEED	YES	700.00	YELLOW	MAX
CLOVER	NO	400.00	UPPER RED	MAX
PEAS	NO	400 to 500	UPPER RED	500 to 600

NOTE: When harvesting peas best results are achieved with a soil kit fitted to the combine
Lower red = Adjustable crop deflector up.

Upper red = Adjustable crop deflector down.

CONCAVE CLEARANCE	CONCAVE BLANKING PLATES	COMBINE FAN SETTING	COMBINE SCREEN (SIEVE) OPENNING SETTING
3 - 5 mm	USUALLY BOTH SETS	FULL	TOP: FULLY OPEN BTM: 1/3 OR MORE OPEN
3 - 5 mm	USUALLY BOTH SETS	FULL TO JUST BELOW FULL	TOP: FULLY OPEN BTM: 1/3 OR MORE
7 - 15 mm	YES FRONT SET ONLY	APPROX 3/4 OPEN	TOP: FULLY OPEN BTM: 1/3 TO 1/2 OPEN
6 - 15 mm	NONE OR FRONT SET	1/2 TO 2/3 OPEN	TOP: 1/4 TO 1/2 OPEN BTM: 1/4 OPEN
3 - 10 mm	NONE OR FRONT SET	1/2 TO 2/3 OPEN	TOP: 1/4 TO 1/2 OPEN BTM: 1/4 OPEN OR LESS
RICE DRUM 1 - 3 mm. RASP BAR 3 mm.	N/A NO	FULL	TOP: FULLY OPEN BTM: FULLY OPEN
3 - 5 mm	YES BOTH SETS	3/4 TO FULL	TOP: 3/4 OPEN BTM: 1/4 OPEN
3 mm	YES BOTH SETS	LOW TO 1/4 OPEN	TOP: 1/4 OPEN BTM: ALMOST FULLY CLOSED
15 - 20 mm	NO	3/4 TO FULLY OPEN	TOP: FULLY OPEN BTM: 1/2 TO 3/4 OPEN

6.7

HARVESTING WITH THE *SHELBOURNE* HEADER

To get optimum performance from your *Shelbourne* Header the operator should follow the procedures and checks of operation:

1. **Ensure** that all the necessary procedures of preparation for use described in this manual have been carried out.

2. **Set** the combine and header to the basic setting chart for the particular crop to be harvested.

3. **Engaging the drive:** In order to prevent the rotor drive torque limiter from operating when engaging the header drive follow procedure below:
   - Run combine engine at idle speed.
   - If manual engagement, engage the drum of the combine and then gently operate the lever to engage the *Shelbourne* Header, avoiding snatch in the drive.
   - If your combine is fitted with electric or hydro-electric clutch engagement, the header drive should be engaged before the separator, therefore the separator of the combine and the header will engage at the same time, thus reducing the snatch in the header drive line. Alternatively, hydro-electric clutches maybe fitted with a restrictor (Ref. Bulletin TSB-01025).
   - Increase combine engine speed to the working rpm.

4. **Stripping rotor speed setting:** The minimum speed should be selected to ensure that all grain/seed is stripped from the ear of the crop. It is unnecessary to run the rotor faster than that required to strip all the crop, as this only causes the machine to intake more straw and also will reduce the life of the stripping elements.

5. **Adjustable crop deflector**

   The adjustable crop deflector is usually set first, then the header height is adjusted to suit.

   The adjustable crop deflector setting is an important adjustment to ensure optimum performance of your *Shelbourne* Header.

   When correctly set in standing crop the front nose of the adjustable crop deflector should deflect crop below it, the top of the crop being level to 100mm below the top of the nose. Therefore creating a seal between the crop and the lower edge of the adjustable crop deflector.

   When correctly set in laid crops, the front nose of the adjustable crop deflector should ride over the top of the crop, the aim being not to push the crop down any further but to close the gap at the front to prevent grain losses.

   When harvesting laid and standing crop in the same pass, lower the adjustable crop deflector to recover the laid crop, therefore pushing over the standing crop, so it becomes laid.

The height indicator on the LH or RH side will assist the operator to set the adjustable crop deflector in the best position for various crop conditions as described below -

Upper Red	-	Crop deflector fully down		Laid crops, grass, clover etc
Blue	-		-	Lodged crops.
Green	-		-	Short crops.
Yellow	-		-	Normal operation.
Lower Red	-		-	Very tall crops.
Above		Out of working range	-	Do not use

6. **Header height setting:** This is an adjustment that the operator will have to continually adjust to suit the crop height as the machine travels across the field.

   When correctly set in standing crops the heads of the crop should be approximately level with the top to 100mm(4”) below the top of the adjustable crop deflector.

   When working in laid crops the header should be allowed to float over the ground contours using the header skids and combine header float system. Do not exert too much of the header weight onto the skids as this will cause the skids to dig into the ground.

   The aim is to carry the rotor as high as possible to reduce the amount of straw intake, but it must be low enough to lift and remove heads which maybe attached to stems low down in the crop, E.g.. bent over stems. Be sure that the adjustable crop deflector is set, so that the seal is maintained between the crop and the lower edge of the crop deflector.

7. **Forward speed:**
   The *Shelbourne* Header is capable of very fast forward speeds due to its rotary action, unlike a conventional cutterbar.
   The forward speed will depend on the following:
   1. Crop ripeness
   2. Moisture level
   3. Standing or laid
   4. Levelness of the field
   5. Power available to drive the rotor
   6. Combine capacity
   7. Crop yield

   Normal operating speeds in standing crops are expected to be between 4 - 12 km/hour (2.5 - 7.5 mph).
   In laid crops the speed may be slower.

8. **Harvest** approximately 50 metres (164’) of crop, at a comfortable forward speed.

9. **Stop** the machine and look at the stripped crop for the following:-

- Check that all grain is stripped from the heads.
- Check that there are no heads which have been missed low down in the crop. Note: The *Shelbourne* Header will not recover pre-harvest losses.
- Check combine sieve and straw walker losses.

Note:

Do not do this from behind the combine where you have just stopped. The check should be carried out in an area where there has been continuous crop flow through the machine, whilst it has been on the move.

- Check header losses:
  This should again not be carried out where the machine has just stopped.
  An easy check is to back the combine away from the crop. Look in the area 2 - 3 metres back from where the header stopped, but before you get to the area where the sieves of the combine has blown out unwanted material.

10. **Also** check the grain sample for cleanliness and cracked grains.

11. **Use** adjustment charts to correct the results.

12. **Go** back to step 8 and repeat until satisfactorily set.

13. **Reset performance monitor** if required, see Section 10.

6.8

<u>Useful harvesting tips</u>:-

During Operation:
When operating the machine in the field it is important to keep the *Shelbourne* Header adjustable crop deflector, and header height to the correct settings to suit the crop as it varies across the field. This means the operator will have to raise and lower the header and adjustable crop deflector continually to suit the crop. If the crop is very even then very little adjustment will be necessary. If the crop is very uneven then the operator will have to adjust the header to suit the conditions much more frequently.
Use the combine grain loss monitors to determine the forward speed, unless the field is too rough or if the stripping rotor power requirement is high. This can occur in unripe or damp crops, and should be indicated by the audible alarm on the rotor performance monitor, before the shearbolt shears.

Standing Crops:
The adjustable crop deflector can usually be set in one position, and only the header height will need adjusting to suit slight crop height variations.
When operating in even standing crops the rotor will usually be carried between 150-300mm(6-12”) from the ground.

Laid Crops:
When operating in laid crops it will be necessary to operate with the rotor as close to the ground as possible but without digging up dirt. This is achieved by floating the header on the skids. When set correctly, the skids will prevent the rotor touching the ground. To keep header losses to a minimum, it may be preferred in dry laid cereal crops (not Rice) to approach by harvesting either across or towards the way of lay, losses will increase if harvesting with the way of lay as the rotor is unable to lift the heads of the crop clear of the ground. However, if harvesting standing crop and small patches are laid, E.g.. at headlands, these patches can be harvested with the way of lay providing that the header and adjustable crop deflector are lowered enough. Also see adjustable crop deflector setting 6.3.

When operating in laid crops, forward speed will be limited due to higher straw intake, and higher rotor power requirement.

Harvesting standing and lodged or laid crop in the same pass:
There will be occasions where standing and laid crop will need to be harvested in the same pass. In these situations the header should be lowered down to lift and recover the laid crop,.

PERFORMANCE MONITOR AUDIBLE ALARM SPEED ADJUSTMENT:
When operating the machine it will be noted that the power required to drive the rotor depends mainly on forward speed and the height of the rotor from the ground.

i.e. The closer the rotor to the ground, the more the power requirement and hence the rotor speed will reduce.
The faster the forward speed, the more the power requirement and hence the rotor speed will reduce.

If the shearbolt breaks before the audible warning is heard, then the rpm warning value should be changed (For adjustment method see Section 10, *Shelbourne* Header monitor operating instructions). The setting value is determined by operating the machine in work and, gradually increasing the forward speed, watching closely the rotor rpm, until the shearbolt shears.

Set the rotor rpm warning value about 10rpm above the value the shearbolt sheared. This value is changed as a percentage of the *no load* speed, and you can reduce the percentage value 1% at a time. Then run the machine and auto-set the monitor, the *no load* value is first displayed, then the monitor will flash to **visually display the alarm set value**. If the alarm speed value displayed is still below the speed at which the shearbolt broke, re-adjust percentage value until the speed is above.
Note - The auto-set feature is adjustable in 1% increments, which should be sufficient. If extreme circumstances should require rpm values between whole percentages the manual override feature is used.

The same procedure will apply if the rpm warning value is set too far above the speed at which the bolt shears, only that instead the percentage value will be increased.

Should a fault occur with the monitor, reset the tacho as described in section 10, *Shelbourne* Header monitor operating instructions. If this fails consult your *Shelbourne* Header dealer.

6.9

A D J U S T M E N T C H A R T S

PROBLEM	CAUSE	REMEDY
Grain left in stripped heads.	Rotor rotation speed too slow.	Speed up the rotor. (see section 6.4)
	Stripping elements worn or broken.	Check elements, replace if necessary (see section 7. 8 & 7.9)
	Rotor too high when harvesting crop.	Lower rotor.
	Adjustable crop deflector too low, pushing the crop away from the stripping rotor.	Lift the adjustable. crop deflector
	Rotor torque limiter slipping causing loss of rotor speed.	Reduce forward speed lift the header.
Heads unstripped at division plate between the two rotors.	Rotor clearances and element clearance to the division plate incorrect.	Adjust the stripping element as close as possible to the division plate.
	Stripping fingers broken off at division plate.	Replace the element (see section 7.8 & 7.9)
	Fingers at division plate worn.	Replace the element (see section 7.8)
	Vee strip bent out of shape(rice models)	Straighten strip or replace

PROBLEM	CAUSE	REMEDY
Excessive shedding of seeds at side of machine.		
	Header side crop deflectors badly bent.	Replace or repair
.	Marker dividers are too aggressive	Remove dividers
Crop wrapping around rotor.	Rotor rotation too slow.	Speed up the rotor (see section 6. 4)
Material not feeding to the header auger	Ski slope covered in mud	Remove mud and clean
	Damage to ski slope	Rectify damage & contact your dealer if necessary
Auger torque limiter slipping	Auger blocked by foreign object.	Clear blockage
	Retractable fingers feeding wider than feeder.	Remove outer fingers (see section 5.8, FIG 4).
	Auger not feeding enough to the centre.	Fit auger flight extensions. (see section 5.8).
	Auger to low to auger trough	Adjust the auger clearance. (See section 7.2) FIG7 & 8
	Auger torque limiter spring tension incorrectly set	Re-adjust springs, (see section 7.1)

PROBLEM	CAUSE	REMEDY
Irregular feeding into feed elevator	Elevator feed chain too low at entrance.	Raise chain. (See combine manufacturers manual.
	Elevator feed chain too far away from auger	Move auger back or move elevator chain forward. (see section 7.2)
	Crop building up On dust cover	Remove the centre section
	Retractable fingers feeding wider than feeder.	Remove outer fingers (see section 5.8).
	Auger not feeding enough to the centre.	Fit auger flight extensions. (see section 5.8).
Excessive shelling of seeds at header.	Rotor too high in relation to the ground.	Lower header.
	Adjustable crop deflector too high.	Lower adjustable crop deflector
	Adjustable crop deflector too low.	Lift adjustable. crop deflector
	Crop is laid and leaning away from direction of travel.	Approach crop from different angle.
	Forward speed too slow.	Increase forward speed.

PROBLEM	CAUSE	REMEDY
Grain sample not properly cleaned.	No concave blanking plates fitted.	Fit concave blanking plates. (See C.M.O.M.)
	Concave to drum clearance not close enough.	Adjust clearance (See C.M.O.M.)
	Bottom sieve open too wide.	Close the sieve slightly. (See C.M.O.M.)
	Drive speed too slow.	Increase drive speed (See C.M.O.M.)
Excessive cracked grain in grain sample	Drum speed too fast	Reduce drum speed. (See C.M.O.M.)
	Concave set too close to drum.	Increase drum to concave clearance. (See C.M.O.M.)
	Concave blanking	Remove plates one (See C.M.O.M.)
	Bottom sieve not open enough	Open bottom sieve
Grain loss over the sieves.	Sieves blocked	Increase air blast. (See C.M.O.M.
	Top sieve blocked air blast full.	Close top sieve slightly, (See C.M.O.M.)
	Too much air blast from the cleaning fan.	Reduce air blast or increase forward speed if possible to load more material onto the sieves. (See C.M.O.M.)

cont.

PROBLEM	CAUSE	REMEDY
Grain loss over the sieves	Excessive short straw on the sieves.	1. Reduce drum speed 2. Open concave 3. Remove concave blanking plates. (See C.M.O.M.) For other causes see C.M.O.M.
Stripping rotor shearbolt torque limiter operating excessively	Rotor hitting the ground.	Raise header.
	Forward speed too fast.	Reduce forward speed.
	Crop too unripe.	Allow crop to ripen.
	Rotor rotating too slow.	Increase rotor speed. (See section 6.4)
Stripping rotor torque operating before tacho audible warning heard.	Audible warning device rpm value set too slow.	Check value setting (See section 6.5) Check audible device is switched on. If the above is correct (see section 6.5 & 6.8 performance monitor audible alarm speed adjustment)

PROBLEM	CAUSE	REMEDY
Crop wrapping in rotor ends and centre.	Anti-wrap plates out of adjustment	Adjust (see section 7.8)
	Anti-wrap plates not fitted	Fit plates
	Centre vee strip Worn(rice models)	Replace vee strip Add vee strip(cereal Models) .
Excessive back feed from feed elevator.	Combine feed chain too low.	Raise combine front feed roller. (see C.M.O.M.)
	Auger feed fingers not feeding well.	Adjust (see section 7.2)
	Combine cylinder speed too slow.	Speed up combine cylinder.
	Distance of feed elevator to auger too wide.	Move feed chain forward. (see C.M.O.M.)

SECTION 7 STRIPPER HEADER ADJUSTMENTS AND MAINTENANCE

7.1

AUGER SLIP CLUTCH SETTING

All Cvs/Rvs/Rsd *Shelbourne* Headers have a 8 spring clutch arrangement fitted on 2003 production models (Early models prior to 2003 production were fitted with 6 spring clutches except the Rvs 24/28 which come fitted with a 8 spring clutch). The spring length is pre-set by a spacer to a length of 50mm.

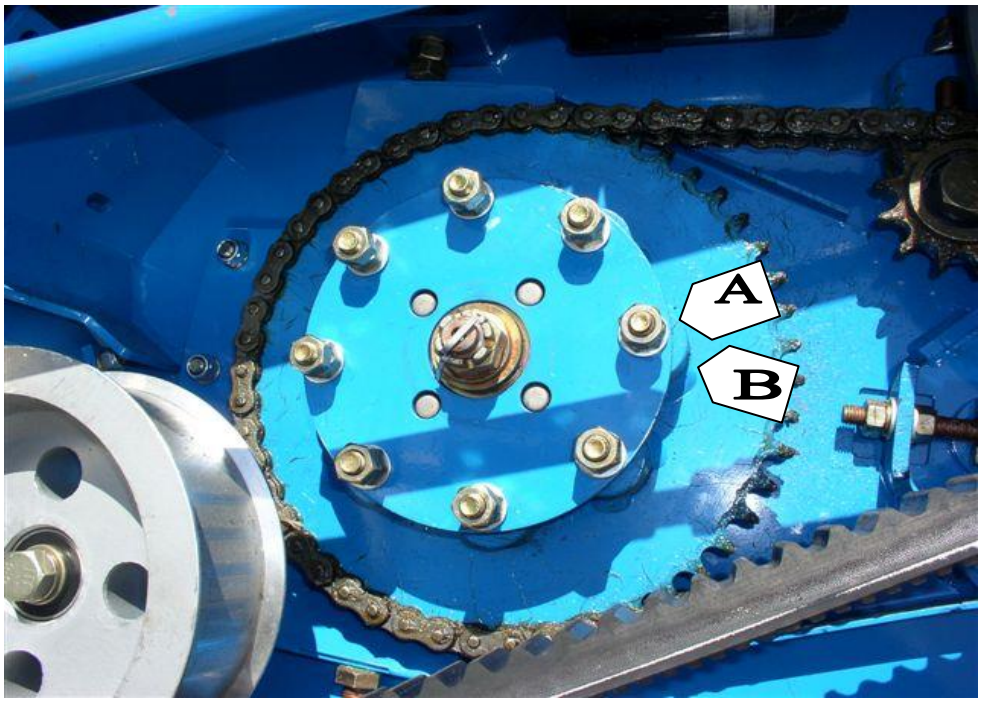
To check the adjustment of the springs:-

1. Loosen the locknut on each stud. See FIG 7.(A).
2. Turn the inner nut (B) until the spring is compressed to the length of the spacer.
3. Tighten the outer locknut.

Replace all guards.

Note;If the clutch has slipped excessively the clutch plate teeth maybe worn, in such case they will need to be replaced.

FIG 7

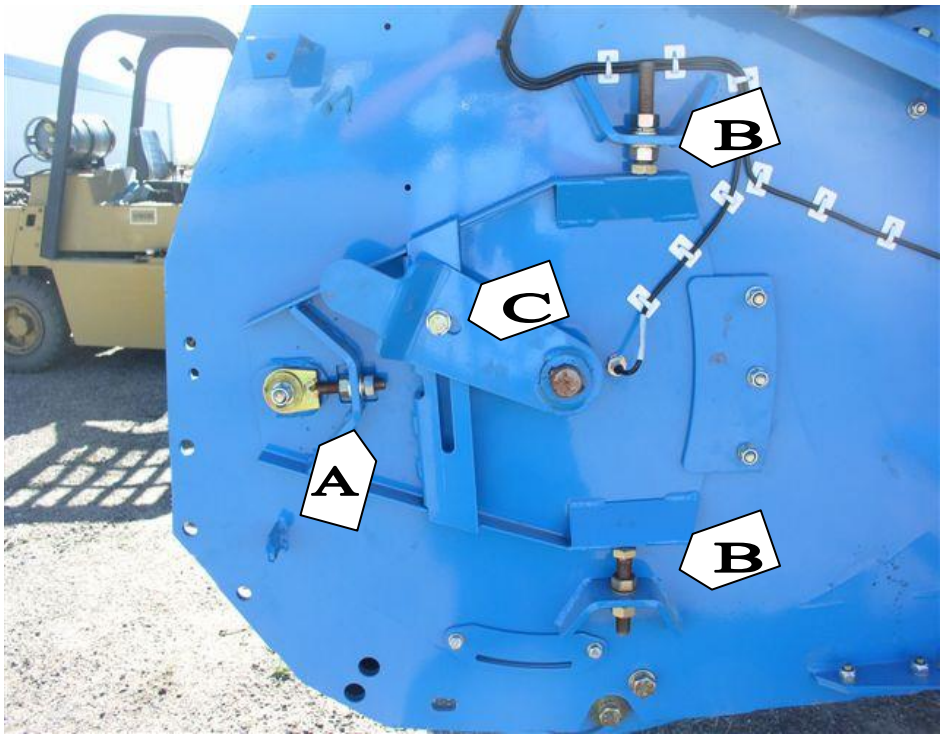


7.2

AUGER POSITION SETTING

The auger position is set at the factory. This pre-set position should be suitable for most crops and conditions, however, if the position needs to be altered the auger can be adjusted up or down FIG 8(B), and fore or aft, FIG 8(A).

FIG 8



NOTE: **When adjusting**, first slacken the drive chains, and all adaptor plate stripper plate securing bolts.

1. To **move up or down** adjust both studs 'B' as indicated. Adjust both ends of the auger equal amounts.
2. For **fore and aft** movements adjust stud 'A' as indicated. Again adjust both sides of the auger equal amounts.
3. Tighten bolts and locknuts when adjustment is complete.
4. Reset auger stripper plates (see section 7.4).

IMPORTANT -

After adjusting the auger, it should be rotated by hand to ensure that nothing on the auger fouls. There is a fixed stripper angle on the frame to the back of the auger, it is not adjustable and the auger may have to be repositioned slightly so the flights do not foul on it.

5. Re-adjust the drive chain to correct tension.

⚠ Replace all guards.

7.3

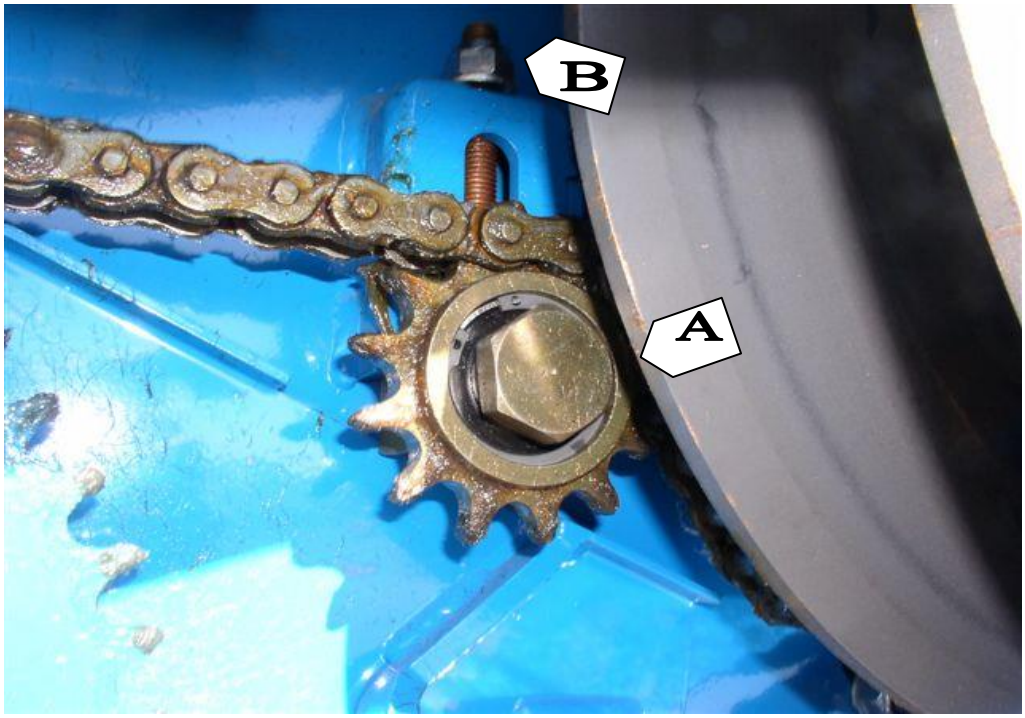
AUGER FINGER ANGLE (If fitted)
The position of the auger finger retraction is pre-set at the factory. It is adjusted by the removing the guard on the right hand side, slacken off the bolt on the handle as shown in FIG 8(C) and move the handle to the required position.

7.4

CHAIN TENSIONING
The auger drive chain is fitted with jockey sprockets and idler adjusters, so that the chain can be correctly tensioned. The position of the adjusting idlers is as shown in FIG 9(A).

To adjust the tension slightly loosen the centre idler support bolt (A). Then turn the nut (B)on the adjusting stud to the correct chain tension. When complete tighten the centre idler support bolt, be sure to check that the chain tension does not increase as the support bolt (A) is tightened.

FIG 9



Over tensioning could result in auger drive shaft failure/damage.

7.5

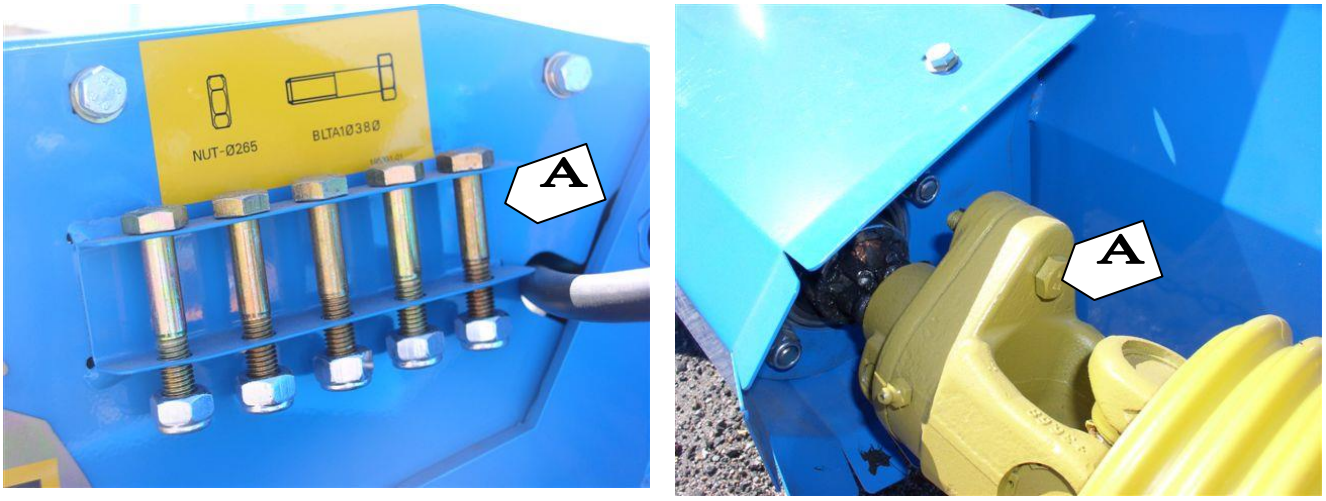
HEADER SHEARBOLT CLUTCH
The shearbolt is located on the header end of the input PTO shaft and protects the whole header from overload and subsequent damage.

If the clutch operates the bolt FIG10(A) must be replaced.

Use only genuine Shelbourne Reynolds shearbolts.

Always stop the combine engine before replacing shearbolts.

Replace any guards that were removed when replacing shearbolt.



FIG'S 10

7.6

Vs DRIVE BELT TENSIONING.
The tensioning system on the *Shelbourne* header *varispeed* rotor drive is achieved by a spring compensated system FIG11(B) coupled with a variable pressure device on the front rotor pulley. This twin system ensures exact tensioning or the belt regardless of operating conditions which will in return prolong belt life.

When at rest sometimes it may appear that there is excessive slack on the top side of the belt, however after running the rotor at idle speed the tension will automatically return, provided the belt maximum and minimum range is set correctly as described in section 7.7

NOTE: Adjusting the idler does not tension the belt. The belt is automatically tensioned by the spring, FIG11(B).

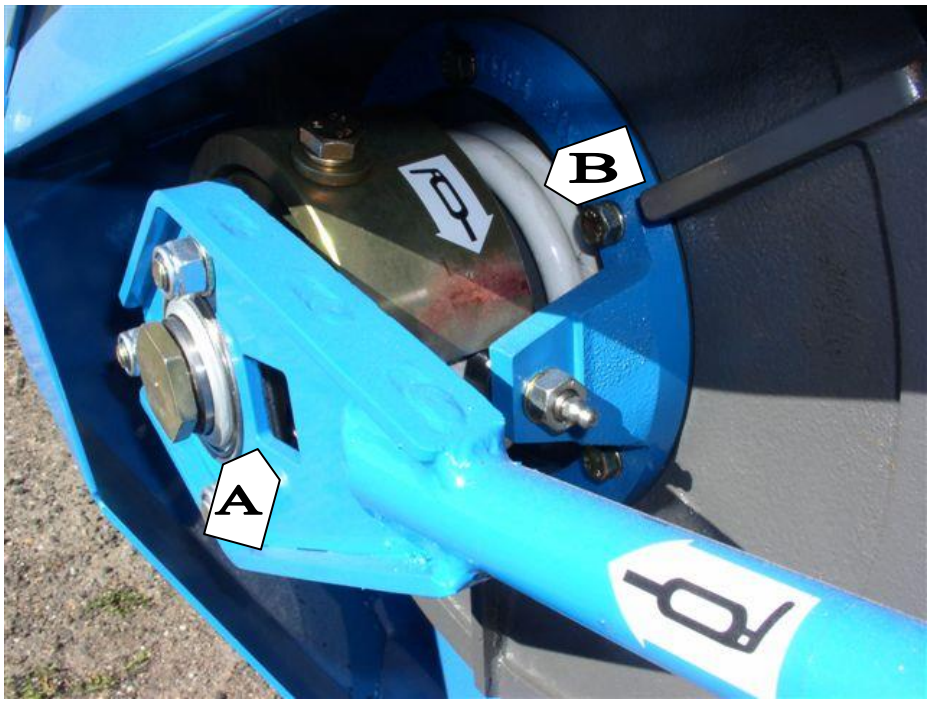


FIG 11

It is **very important** to ensure that the rotor pulley FIG11 is greased as specified in the lubrication section (section 8) as this can have a serious effect on the belt tensioning system if it is not allowed to slide freely.

If you experience belt slip or loss of drive to the rotor contact you *Shelbourne Dealer* immediately as operating the header under these circumstances will damage the drive belt.

FOR PRE-PRODUCTION Cvs & Rvs MACHINES (WITHOUT IDLER) REFER TO MANULAL SUPPLEMEMNT MAN-01013

7.7

Vs DRIVE BELT POSITION ADJUSTMENT.
The maximum and minimum rotor speed is pre-set on delivery with a speed range of approximately 400 to 800 rpm.

The maximum and minimum rotor speeds is altered by moving the idler pulley FIG12 on the slack side of the belt.

As the belt wears during use the idler may need to be adjusted in order to maintain the above speed range. Adjustment may also be required after servicing or maintenance work has been carried out.

The top surface of the drive belt **must never** protrude above the outer diameter of the pulley sheaves.

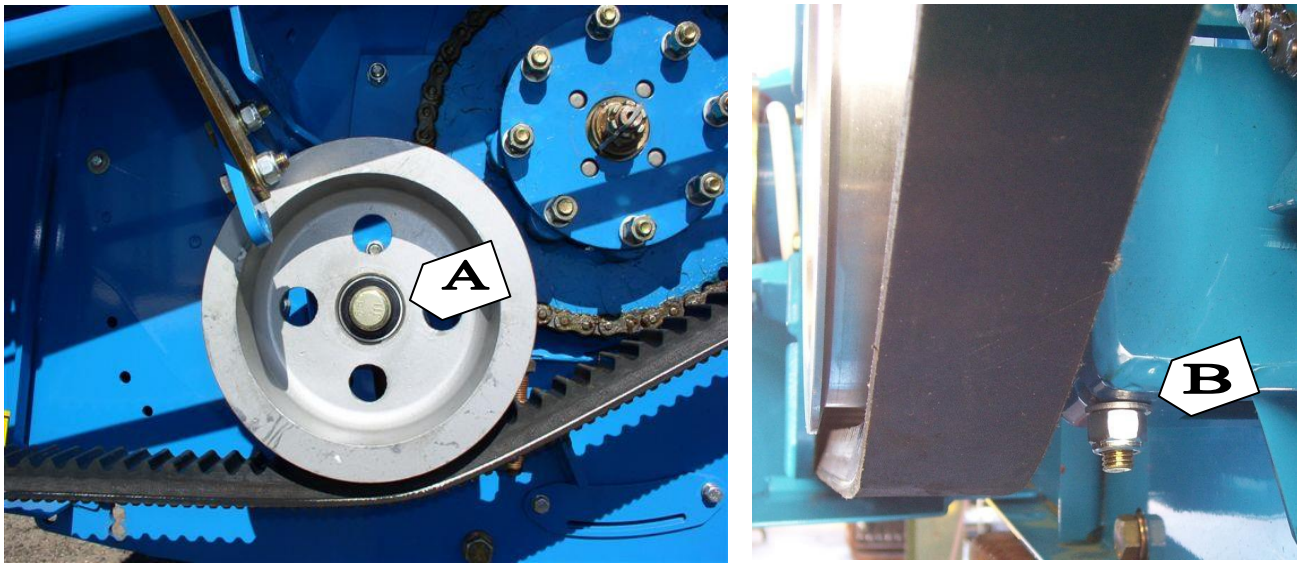


Fig 12

To adjust the position of the belt:-

1. Set actuator rear bracket **(pre 2009 machines only)** to equalise cam movement and set speed range (FIG 13 A). 2009 machines are fixed, adjustment is not necessary

2. Run the machine at idle and open the top pulley sheaves fully, slow rotor speed.

3. **Stop the machine and turn it off.**

4. Measure the gap at the widest part between the rotor pulley sheaves. This should measure 62mm (2 $^{7}/_{16}$") (FIG 14 B).

5. To achieve the correct gap, adjust the idler pulley FIG 12 up or down to allow the rotor pulley to open or close. Tighten nuts A & B FIG's 12.

6. Turn the belt by hand until tension is resumed, then run it at idle speed and operate the variator between min & max speed then return to min speed.

7. **Stop the machine and turn it off.**

8. Repeat steps 4, 5, 6 & 7 until the required gap of 62mm (2 $^{7}/_{16}$") is achieved.

9. Run the machine at idle and operate the variator to maximum speed. The gap between the rotor pulley sheaves should now measure 86mm (3 $^{3}/_{8}$").

10. **Tensioning of the belt is not required.**

11. If you cannot achieve the correct belt position it is possible the belt may have stretched (if so replace with part no:BEL-27357).

⚠ Replace all guards.

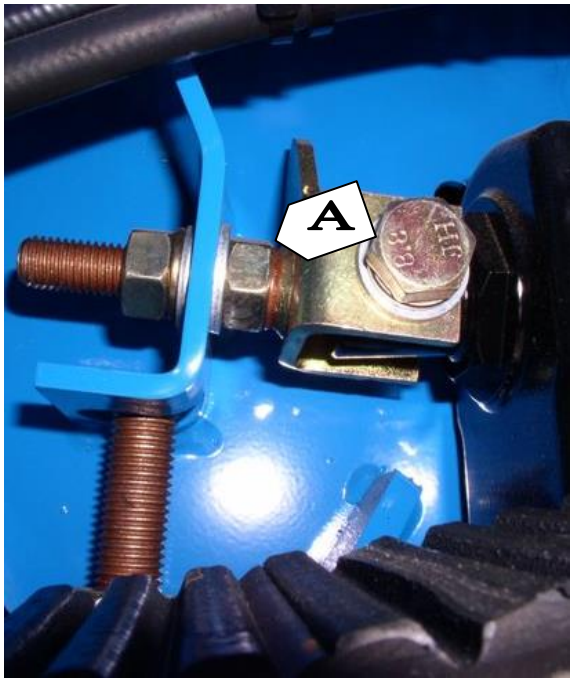


FIG 13

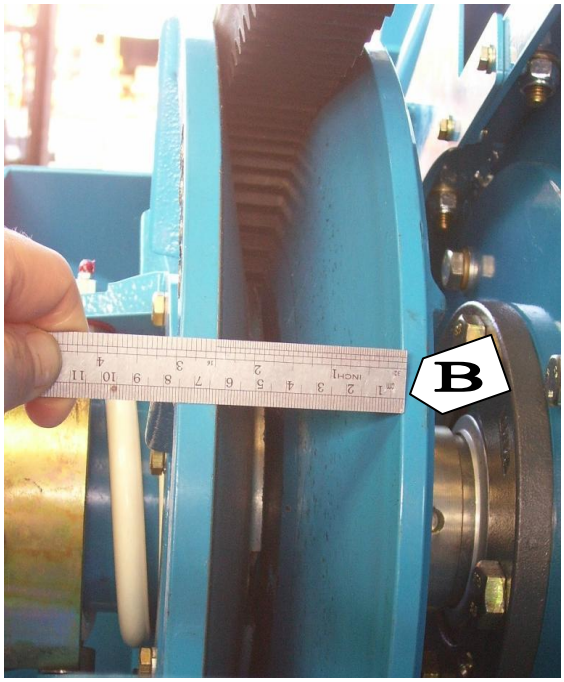


FIG 14

7.8.

CHANGING THE Vs DRIVE BELT.

1. Remove all L.H. side guards.

2. Run the header at idle (slowly) and operate the variator speed adjuster to maximum so that the top pulleys are fully closed (i.e. maximum rotor speed).

3. **Stop the machine**.

4. Between the two flat surfaces on the inside of the rotor pulley sheaves place either a steel or a wooden block 25mm (1”) thick.

5. Slacken the idler pulley as described in section 7.7, Fig 12.

6. ⚠ Turn on the power to the electric variator switch **(Do nut run the header)** and fully open the top pulley sheaves i.e.minimum rotor speed. The belt will now be slack.

7. Remove the belt from the underside of the idler pulley then from the rotor pulley sheaves and then from the top pulley.

8. Fit the new drive belt to the top pulley, rotor pulley and idler pulley**.**

9. **Remove the block placed in the front pulley.**

10. Adjust the idler as described in section 7.7.

⚠ Replace all guards.

7.9

RSD STEP DRIVE MACHINES (2004 – 2008 ONLY)

The Rsd machine has a factory set rotor speed of approximately 550 rpm. This is the optimum speed to suit most crop conditions. The stepped drive machine offers three further speeds, these being approximately 450, 660 & 790 rpm.

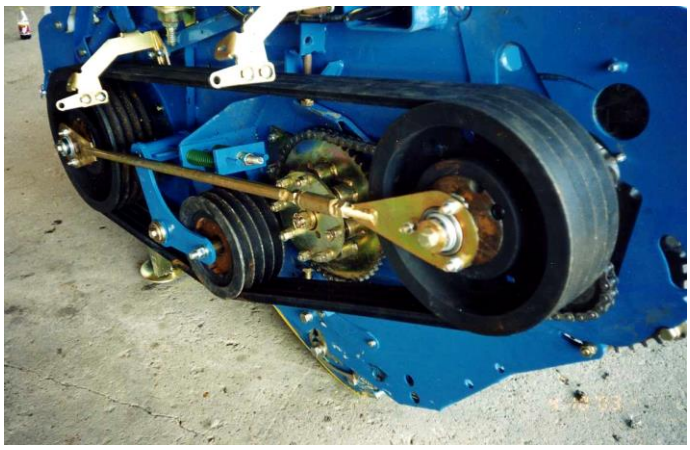
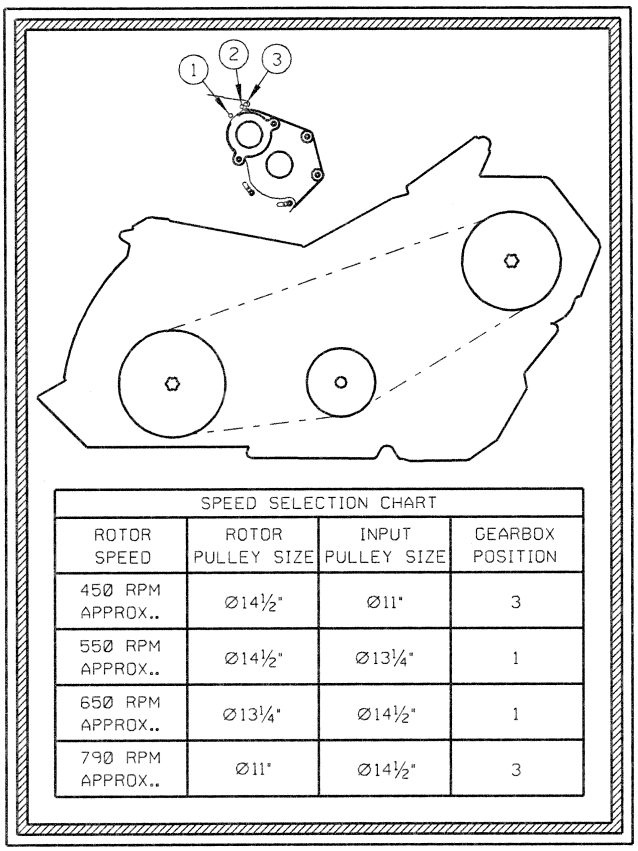


FIG 15

Chart below shows pulley ratios and gearbox position to suit rotor speed. (Decal on machine)



SPEED SELECTION CHART			
ROTOR SPEED	ROTOR PULLEY SIZE	INPUT PULLEY SIZE	GEARBOX POSITION
450 RPM APPROX..	Ø14½"	Ø11"	3
550 RPM APPROX..	Ø14½"	Ø13¼"	1
650 RPM APPROX..	Ø13¼"	Ø14½"	1
790 RPM APPROX..	Ø11"	Ø14½"	3

7.9.1 CHANGING ROTOR SPEED IS DONE BY THE FOLLOWING PROCEDURE;

1. Disconnect PTO shaft from combine and remove debris from within the drive guard area, this will ease dismantling and re-assembly of drive.

2. Remove the following guard's items 5,6 & 7 (ref. to ill.196201 in parts manual) you will also have to remove item 1, if you require the faster 660-rpm speed.

3. Remove the tension from the idler pulley item 25.Plus remove the tie bar assy (ref. to ill.196230 in parts manual) from the machine.

4. With the tension off the belts you can now remove them. Plus you can now remove the top pulley.

5. Once you have removed the all the belts and the pulley you will need to rotate the gearbox (ref. to chart on gearbox position). Remove the top-fixing bolt and loosen the lower fixing bolts. You will then be able to rotate the gearbox, reverse this procedure to secure the gearbox.

6 Repeat steps 1-4 in reverse order to re-assemble machine

7. Tensioning belts is done by item 36 (ref. to ill.196230 parts manual). The correct tension is set adjusting by the compressed springs length. Later machines have a steel spring length guide beside the spring. The length of the compressed spring should measure 130mm (5 $^{1}/_{8}$"), this is the same length as the spring guide.

8. Having altered the drive to the required speed, run machine up to ensure smooth operation prior to commencing harvesting.

7.9.2 BELT TENSIONING;

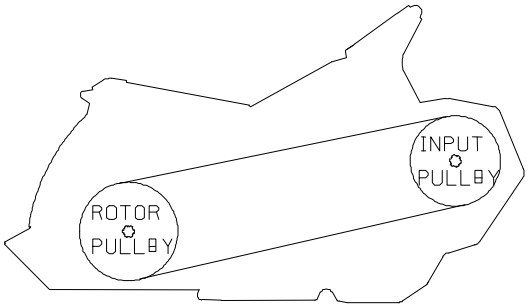
You will need to check the tension on the belts initially after delivery/changing belt(s). This is too facilitate any belt stretch that may occur in the first hours of running, if found to be slack follow above procedure No 7.

7.10

RSD STEP DRIVE MACHINES (2009 ONWARDS)

Machines built from 2009 have a different style of drive. The belt is tensioned by pivoting the gearbox and there is no longer an idler pulley. The drive guard is a one piece and is easily removable. This makes changing the speed much quicker and also offers 6 different rotor speeds.

The speeds and pulley combinations are shown in the chart below. This is displayed as a decal on the machine



SPEED SELECTION CHART		
APPROX ROTOR SPEED	ROTOR PULLEY SIZE	INPUT PULLEY SIZE
460 RPM	Ø14½"	Ø11"
500 RPM	Ø13¼"	Ø11"
550 RPM	Ø14½"	Ø13¼"
660 RPM	Ø13¼"	Ø14½"
720 RPM	Ø11"	Ø13¼"
790 RPM	Ø11"	Ø14½"

7.10.1 TENSIONING THE DRIVE BELTS

1. Loosen the lock nut FIG 16(A), then turn threaded adjuster rod FIG 16(B) clockwise to tension the belt, this will cause the gearbox to pivot and move the input pulley.

2. The belt should be tensioned until the yellow spring FIG 16(C) is compressed to the length of the tensioner guide FIG 16(D), the spring should measure 83mm (3 ¼").

3. DO NOT OVER TENSION THE DRIVE BELTS THIS CAN DAMAGE THE DRIVE SYSTEM

4. Tighten the lock nut FIG 16(A) once the required spring length has been achieved.

5. If problems are encountered with belt slip consult your Shelbourne Reynolds dealer.

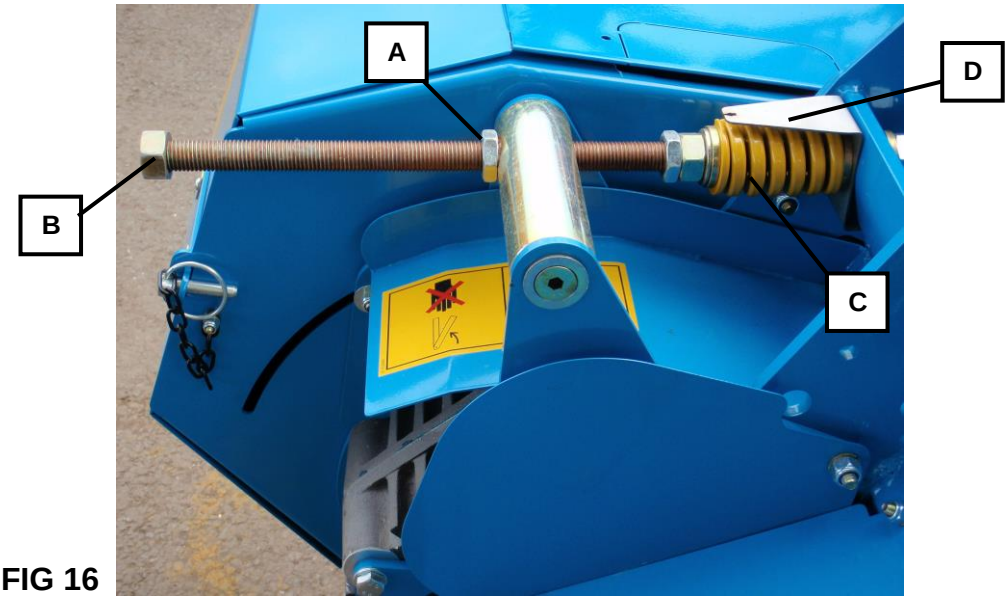


FIG 16

7.10.2 CHANGING THE ROTOR SPEEDS

1. Turn the combine off and disconnect the PTO shaft from the combine, remove the large LH drive guard.

2. Loosen lock nut FIG 16(A), then turn the threaded adjuster FIG 16(B) anti-clockwise this will rotate the gearbox forward and slacken the belts. Remove the belts.

3. To remove the input pulley loosen and remove bolt FIG 18(E), remove the washers and tapered collars FIG 18(F), this may require a light tap with a hammer. Remove the pulley. If the desired speed is obtainable by swapping the input pulley then change the pulley and reassemble.

4. The rotor pulley is removed by removing bolt FIG 17(G), then loosening the grub screws in the tie rod bearing FIG 17(H). The tie rod FIG (17) can then be removed by slackening and removing nut FIG 17(J).

5. Remove the washers and tapered collars FIG 17(K), the rotor pulley can now be removed and the correct pulley fitted in order to get the desired speed.

6. Refit the tapered collars, washer, tie rod and bolts to both the rotor and input pulleys.

7. Refit the belts, when the 14 ½" and 13 ¼" pulleys are fitted the belts will need to be rolled on, ensuring that the gearbox is pivoted all the way forward should aid the fitting of the belts.

8. Re-tension the drive belts as described above

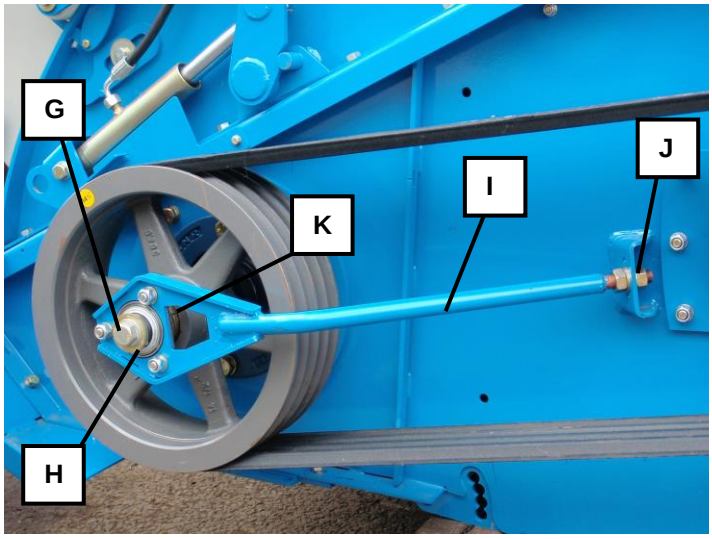


FIG 17

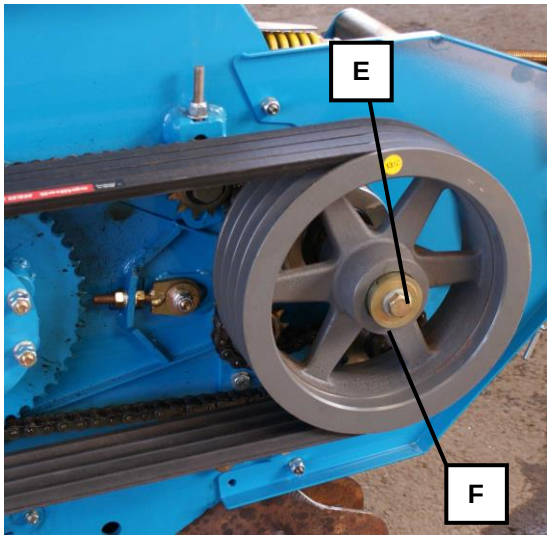


FIG 18

7.11

STRIPPING ROTOR

CAUTION - Block or fit header safety latch before carrying out adjustments on the rotor.
Engage the adjustable crop deflector stop to the left hand side arm.

STRIPPING ELEMENTS

The seed saver stripping elements and plastic backing fingers are sectioned into 600mm (24”) lengths, and secured with 4 bolts to allow replacement of individual sections.
The seed saver stainless steel elements bolt in front of the plastic backing fingers FIG.19 (B) these too are replaceable in sections.

ANTI-WRAP PLATES

The ends of the rotor are fitted with a fixed dividing plate FIG 19(B) just below the rotor, and spring anti-wrap plates around the rotor circumference FIG 19(A) to prevent the crop entering and wrapping in the rotor ends.

The spring anti-wrap plates around the rotor circumference are pre-set at the factory but if they need adjusting, follow the procedure below:

1. Loosen the two screws securing the plate as shown. FIG 19(A)
2. Push the anti-wrap plate to the machine side plate until the tip just touches.
3. Move the anti-wrap plate in a further 2mm, to apply slight spring pressure.
4. Tighten the two securing screws.
5. Repeat for the other plates.

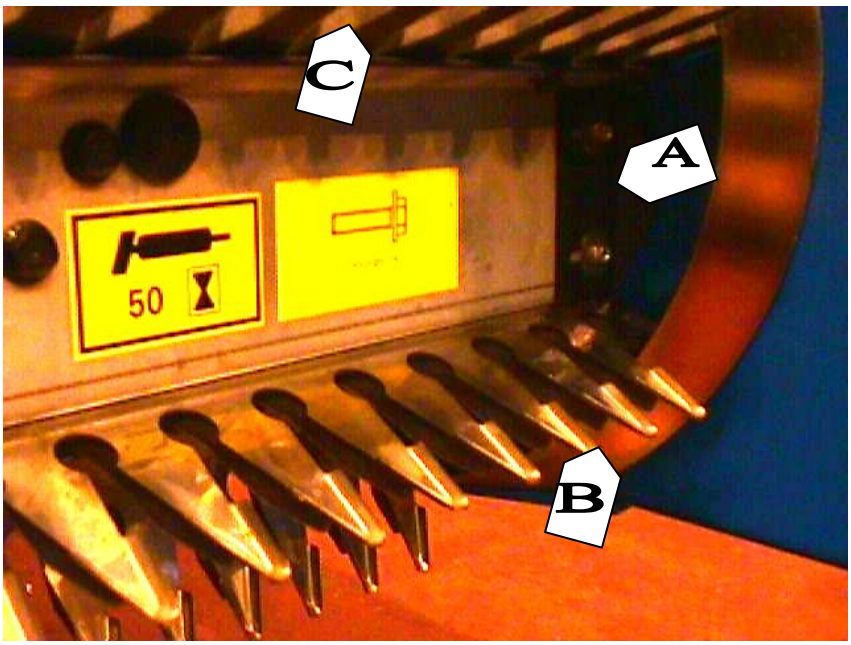


FIG 19

7.12

STRIPPING ELEMENT WEAR ASSESSMENT

With the seed saver elements they will strip efficiently with a predominant amount of wear due to their profile and construction. After a period of time a radius will wear at the end of the finger at the folded up flange. This will begin as a small radius that will become larger, at a certain point the structure and strength of the element will deteriorate and will need to be replaced.
The plastic backing fingers have a memory and will return to their original shape after deflection, however if they are damaged and remain deflected they will need to be replaced.

All rows of elements do not have to be replaced at the same time. However it is important that at least 4 opposing rows have good shaped elements for effective stripping. The **selected rows must be opposite** each other to keep the rotor in balance (180 degrees). This along with the partially worn ones, will give effective stripping.

If a single finger breaks off a section of a stripping element, the other fingers on the other rows around the rotor will compensate for it and stripping will still be just as efficient.

If a few fingers break off in the same area around or along the rotor, then these stripping element sections should be replaced.

Procedure for REPLACING SEED SAVER ELEMENTS:-

1.  If the machine is on the combine, lift header and securely block or engage lift ram safety catch.

2. Lift the adjustable crop deflector with the combine hydraulics and engage safety stop.
3. Each individual stripping element and backing finger is secured to the rotor by 4 bolts. Each section can be clearly seen by the joints.
Remove the 4 bolts FIG 19(C) securing the element and backing finger, and pull from the rotor.

Important:-

To prevent bolt holes becoming mis-aligned and the rotor becoming out of balance, loosen, remove and replace no more than 1 or 2 sections from the rotor at a time, tightening as they are changed.
Sometimes it may be necessary to slacken the first bolt of the neighbouring element to release the one you want to remove.

4. Place the new section in position. If it is difficult to push into the rotor, it may be tapped into place with a small bar in the bottom of the stripping holes.
5. Replace the 4 bolts.

 ***CAUTION*** - Locking bolts or Nut Lock (loctite) must be used on the element section securing bolts.

Important:-

Do not remove the rotors from the header without consulting your dealer.

7.13

INPUTGEARBOX TYPE ROTOR DRIVE

Combine type - There are 2 select gears inside the input gearbox, and an auger drive sprocket which determine the output speeds for the combine type. These must be changed for different combine models. Your dealer should be consulted if you require to change these as the gearbox cover has to be removed.

SECTION 8 L U B R I C A T I O N

Your *Shelbourne* Header is designed to reduce down time and therefore requires the minimum amount of lubrication.

Most of the bearings are of the sealed type, requiring no maintenance.

CAUTION - Stop engine before lubricating.

CHAINS

The auger chain drive should be lubricated daily, and after work so that the oil will adhere to the chain to provide good lubrication.

Use an aerosol chain lubricant or SAE 90 gear oil.

NOTE: If your combine has a maize drive kit, with a chain to drive the header, this too should be lubricated daily.

PIVOT POINTS

It is recommended that all pivot points which may become stiff from corrosion should be occasionally oiled.

INPUT GEARBOX

To check the oil level the machine should be **level** i.e. in the lowered position. In this position the sight glass should be at least half covered in oil. If no oil is visible fill until the sight glass is covered, (FIG 20 A) Fixed position gearbox.

Machines (2010 & onwards only) on which the gearbox pivots to adjust the belt have two sight glasses. View the oil level in the sight glass that is more visible though the viewing area. This will change as the gearbox rotates. Adjust oil as above (FIG 21 A)

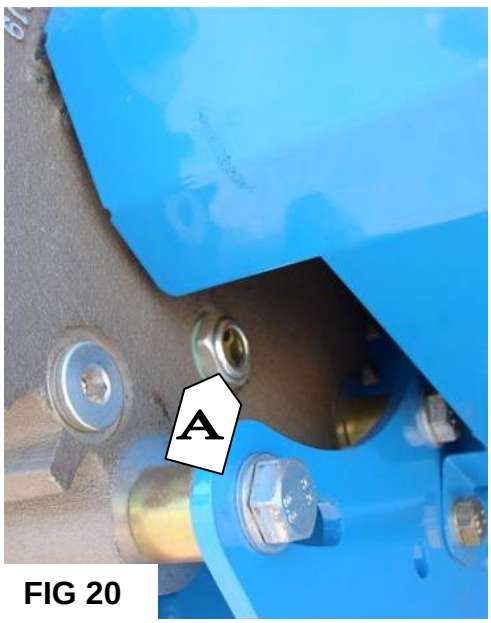


FIG 20

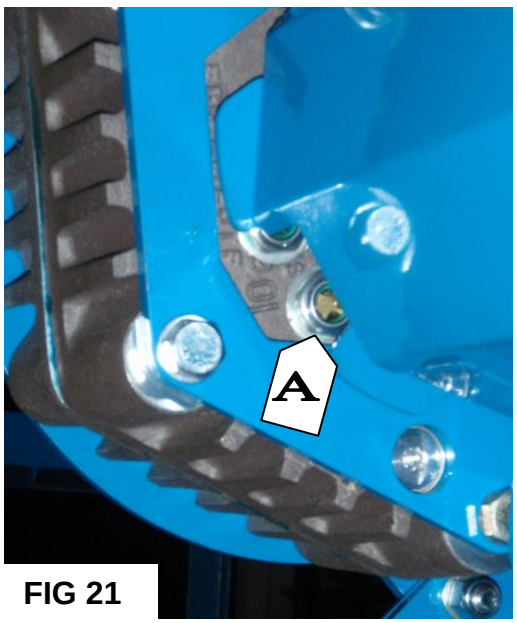


FIG 21

Use Synthetic gear oil, grade SAE 75W-90.
Brands of oil recommended are – Total SYN FE 75W90, BP Energear SHX SAE 75W-90 or Mobilube SHC SAE 75W-90. Shelbourne Reynolds part number OIL-0005A

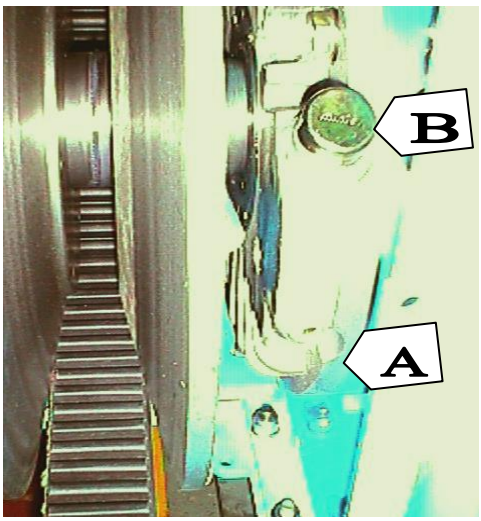
Input Gearbox Capacity	Litres	Pints	Gallons	Quart
Cvs & Rvs without Rotor Gearbox & All Rsd	**0.95**	**1.67 UK 2.00 USA**	**0.21 UK 0.25 USA**	**0.84 UK 1.00 USA**
Cvs & Rvs with Rotor Gearbox	**0.75**	**1.32 UK 1.59 USA**	**0.16 UK 0.20 USA**	**0.66 UK 0.79 USA**

ROTOR GEARBOX (If fitted)
To check the oil level the machine should be level i.e. in the lowered position so the bottom of the mainframe is parallel with the ground. In this position the sight glass (FIG 22 A) should be at least half covered.in oil. If no oil is visible fill until visible in the sight glass. Fill by the removing the filler/breather plug (FIG 22 B).

Use Synthetic gear oil, grade SAE 75W-90.
Brands of oil recommended are – Total SYN FE 75W90, BP Energear SHX SAE 75W-90 or Mobilube SHC SAE 75W-90. Shelbourne Reynolds part number OIL-0005A

For the rotor gearbox capacity refer to chart.

FIG 22



Rotor Gearbox Capacity	Litres	Pints	Gallons	Quart
	0.95	**1.67 UK 2.00 USA**	**0.21 UK 0.25 USA**	**0.84 UK 1.00 USA**

***NOTE* - ALL GEARBOXES (VERY IMPORTANT)**

After the first 20 hours of use the oil should be drained from all gearboxes and replaced with the recommended type.

Oil should then be changed annually.

Only the recommended lubricant oils should be used.

Grease the following points at 10 hour intervals;

1. Rotor and rear variable pulley sheaves.(A, FIG 23, 24 & 25) (NOT Rsd)

   IMPORTANT. On every greasing operate the variator throughout the speed range at idle (slowly) then grease again and repeat. Grease the rotor pulley until fresh grease is expelled into the spring area **ONLY USE HAND GREASE GUN**
2. Universal joints. (FIG 26 & 27, A)

Grease the following at 50 hour intervals;

1. Shearbolt clutch. (FIG 26, B)
2. R.H. Rotor end bearing. (FIG 28, A)
3. Rotor centre ball coupling (FIG 29, A)
4. L.H. end rotor ball coupling.(if fitted with rotor gearbox) (FIG 30, A)
5. L.H. Rotor end bearing.(if rotor gearbox is NOT fitted) (FIG 31, A)
6. Cam follower bearings x2 (FIG 25, B) (NOT Rsd)..
7. Idler pivot (FIG 32, A) (Rsd Only)

NOTE: **USE HIGH TEMPERATURE (230°C / 450°F) FULLY SYNTHETIC GREASE**

FIG 23 (Pre 2009)

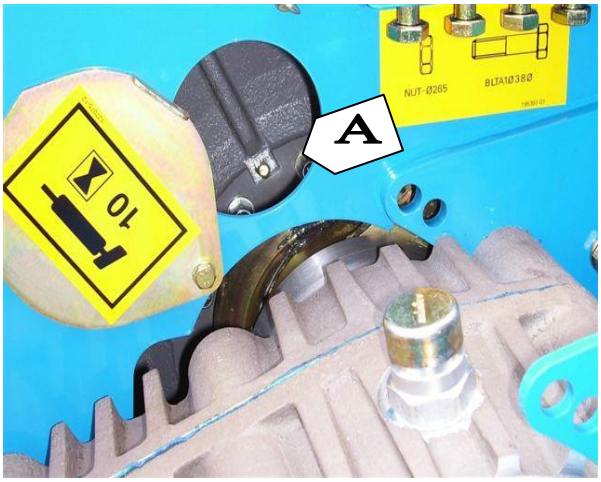


FIG 24 (2009 Onwards)

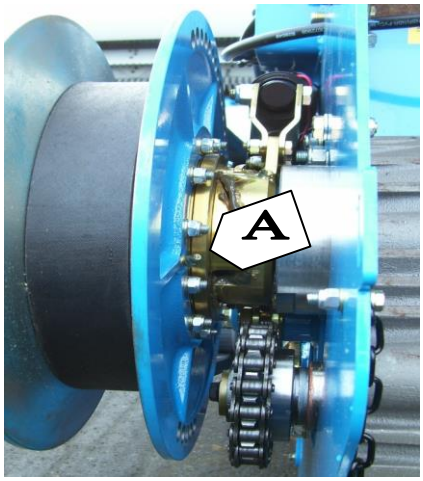


FIG 25 (Not Rsd)

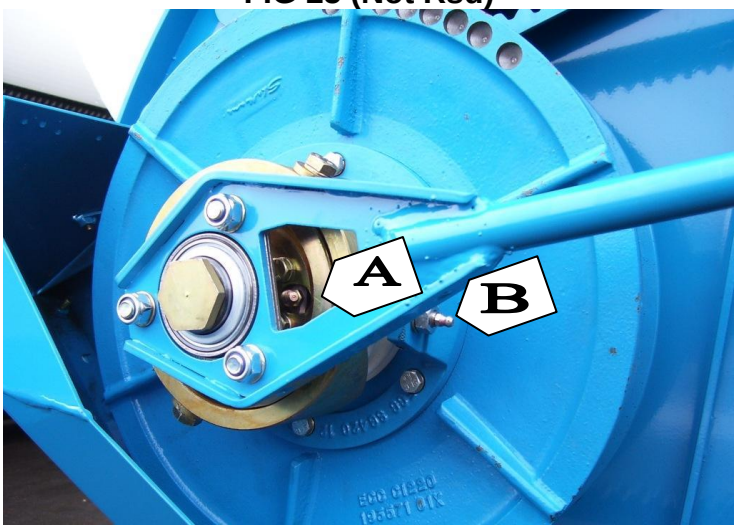


FIG 26
(All machines)

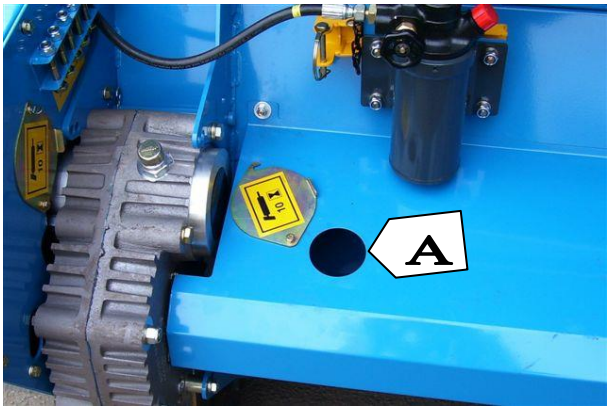


FIG 27 (28’ & 32’ Machine Only)

FIG 28 (All machines)

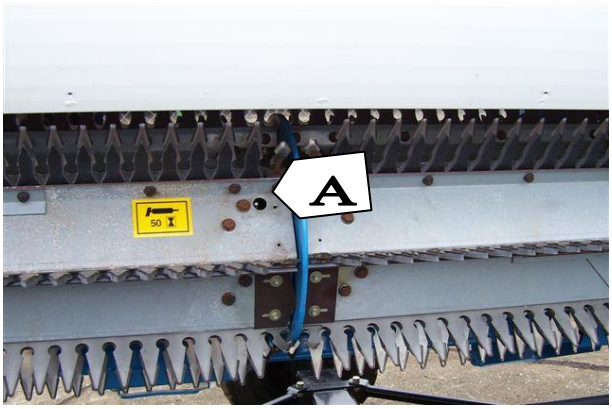


FIG 29 (All machines)

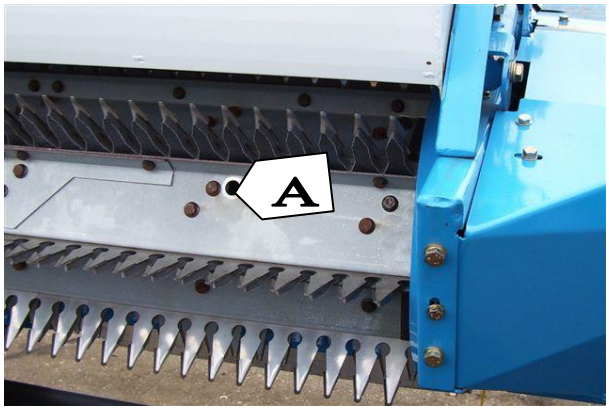


FIG 30 (Rotor gearbox machine only)

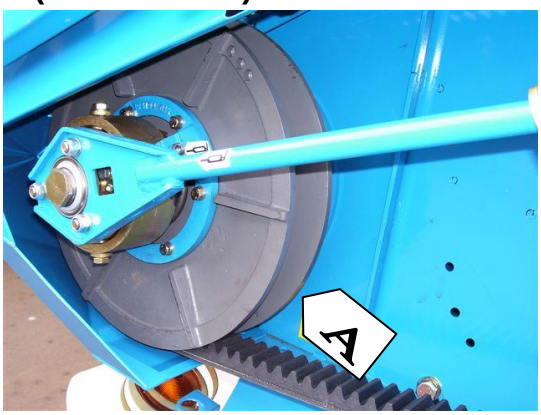


FIG 31 (Not on rotor gearbox machine)

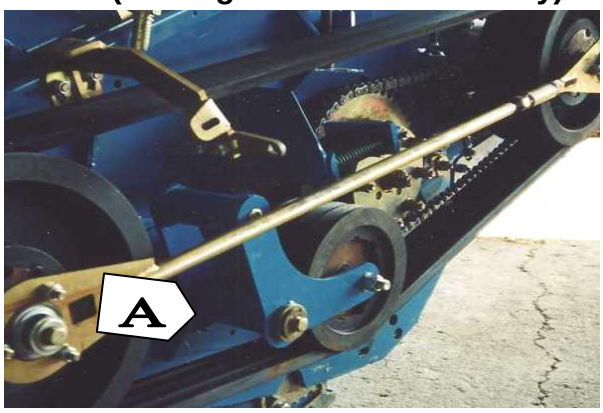


FIG 32 (RSD Only)

HYDRAULIC HAND PUMP

The hydraulic hand pump (used for raising and lowering the top hood) is located on the rear LH side of the Stripper Header.(FIG 33)

The oil reservoir will occasionally need topping up with oil. When filling the reservoir ensure that the top hood is fully lowered, remove the red oil filler cap (A) and fill though the filler hole.

Hand Pump Capacity	Litres	Pints	Gallons	Quart
	1.00	1.76 UK 2.11 USA	0.22 UK 0.26 USA	0.88 UK 1.06 USA

Use hydraulic oil type, TOTAL EQUIVIS ZS 46. or equivalent.

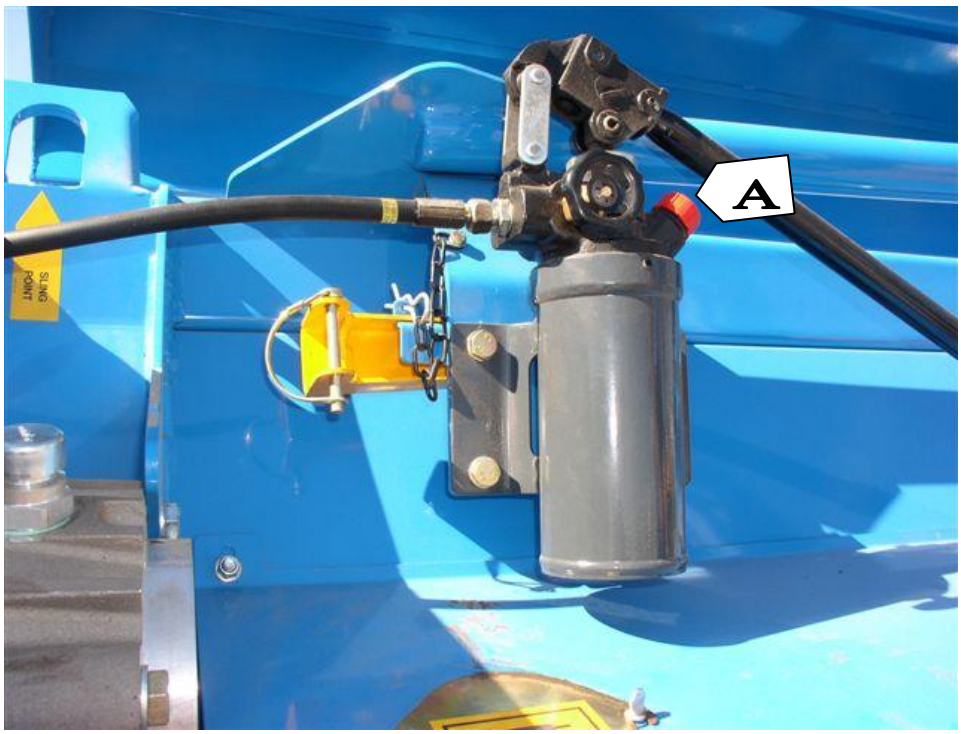


FIG 33

SECTION 9 S T O R A G E O F T H E H E A D E R

The following procedure should be followed prior to off-season storage of your *Shelbourne* Header to preserve and protect your machine.

1. If removing the *Shelbourne* Header from the combine, support on the trailer, or on the back of the skids and the front stands provided to prevent header damage.

2. Thoroughly clean the interior and exterior of the header, as any chaff, straw and dirt left on the machine will draw moisture and cause corrosion.

3. Clean and lubricate the auger drive chain.

4. Dismantle the auger slip clutch, check and lubricate before reassembly. When assembling leave the springs slack for storage, See Section 7.1.

5. Lubricate the machine thoroughly as described in the lubrication section of this manual**.(Pay particular attention to section 8 item 2).**

6. Coat all the bright parts with paint or anti-rust preservative to protect them.

IMPORTANT:
DO NOT PUT ANY OIL, PAINT, PRESERVATIVE ETC. ON THE PLASTIC BACKING FINGERS AS IT MAY DAMAGE THEM.

7. Retract the hydraulic rams of the adjustable crop deflector.

8. Store the header in a dry place protected from the weather and rodents.

9. Use the combine operators manual for storage procedure of your combine.

SECTION 10 **SHELBOURNE HEADER MONITOR INSTRUCTION**

Shelbourne header monitor kit

Upto & including 2003

RDS-0001 & RDS-0005

The *Shelboume Header Monitor* monitors and displays the running speeds of the Stripping Rotor Shaft and the Auger Shaft of the combine header. The speed of either shaft can be displayed at any time.

A suitable running speed under full load, should initially be determined for optimum performance in various crop conditions.

The instrument may be programmed to give an audible and visual warning, if either shaft speed drops below a preset value. The alarm speed may be set either manually or by auto-calibration.

System Components

On the combine:

- The Instrument Head Unit

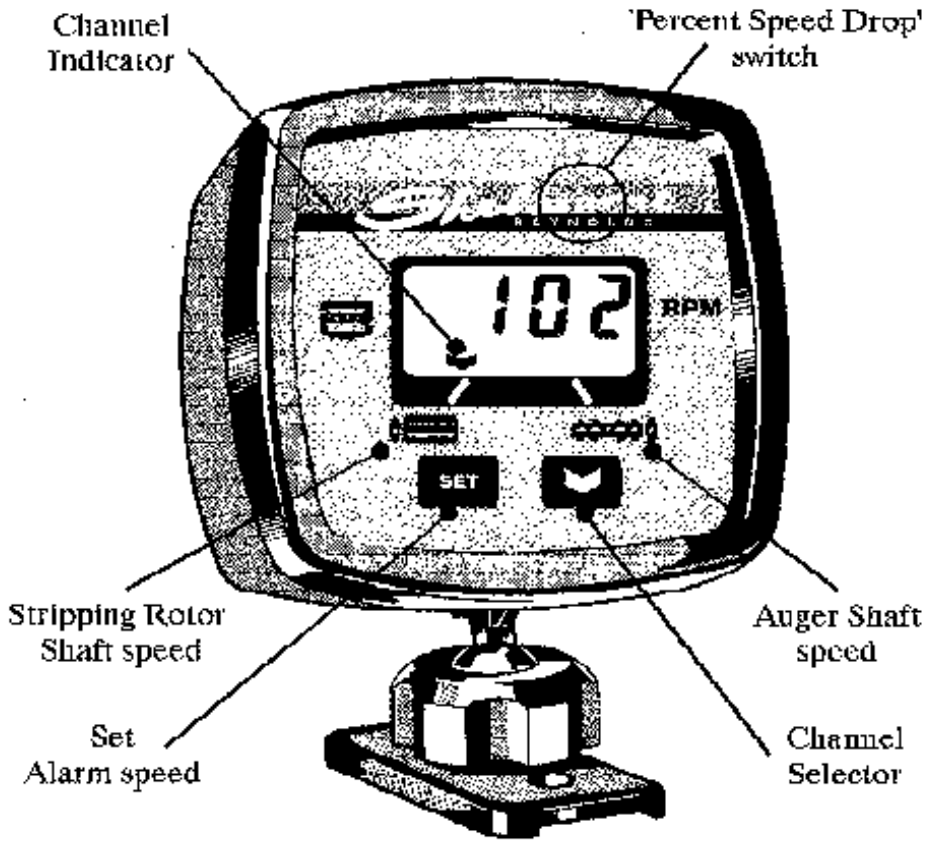
- A connection cable terminating at the header mounting point.

On the header:

- A connection cable from the header mounting point to the right-hand (non-driven) end of the header.

- Two shaft speed sensors and appropriate magnets.

Fig. 1 Shelbourne Header Monitor



Controls

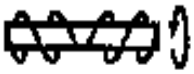
The instrument will normally be powered through the vehicle ignition circuit and will be on whenever the ignition is on. The display is permanently illuminated.

There are three push button switches on the front panel.

Channel Select

Press to select either channel. The channel is indicated by a chevron on the LCD display.

 indicates Stripping Rotor shaft speed.

 indicates Auger shaft speed.

Set

Press to display the alarm speed set on each channel

Press and hold in combination with  to programme the alarm speed.

'Percent Speed Drop' switch

The third switch is located beneath the ***'our'*** of the ***'Shelbourne'*** logo.

Press to display the % speed drop. This is the percentage below the stripping rotor 'no-load' speed at which the alarm sounds.

Normal Operation

Select and display Speed

Select either Auger shaft speed or Stripping Rotor shaft speed.
Shaft speed is displayed continuously.

Speed alarm

If the speed of either shaft drops below the programmed alarm speed, an alarm will sound and the display will default to the appropriate channel and flash.

The alarm will continue until either,

- the correct shaft speed is reached.
- Any switch is pressed to cancel the alarm.

•

Instrument settings

The alarm speeds are factory-set to *450* r.p.m. for the stripping rotor and 100 r.p.m. for the auger. The alarm speed for either shaft may be adjusted manually and for the stripping rotor, with an 'Auto-cal' procedure.

Manually setting alarm speed (either shaft)

NOTE The shafts must be stopped

1 Select the relevant channel.

2 Hold continuously *The lefthand digit will flash.*

3 Hold to cycle to the desired digit, then release,otherwise press onc

The second digit will now flash.

4 Repeat Step 3 for the remaining digits.

'Auto-calibrate' alarm speed (Stripping rotor)

Initially, set a value for the '% speed drop under load'. The value is factory-set to 8(%) and may be adjusted within the range 0- 30(%).

1 Press and hold the 'Percent speed drop' switch (ref. Fig. 1)

Display shows the percentage below the stripping rotor 'no-load' speed at which the alarm sounds.

2 Adjust the value.

NOTE Run the stripping rotor at normal 'no-load' speed.

3 Hold until display changes, then release. *Auto-calibration start.*

Auto-calibration finished.

NOTE It is not necessary to repeat the 'auto-cal' procedure if the speed drop percentage is subsequently re-adjusted. The instrument will automatically re-calculate the new alarm speed, however it will need repeating if the stripping rotor speed is adjusted.

Total reset

If for some reason the data in the instrument is corrupted or the display shows *'PraG'* then the instrument must be totally reset.

1 Switch power off.

2 Press and hold all three control switches.

3 Switch power on.

4 Release all switches.

All instrument settings should be returned to the factory-set values. If the display shows ***'PrDG'*** again, the instrument may be faulty and must be returned to the manufacturer for inspection and repair.

Head Unit

Location in cab

The instrument should be situated in the combine cab in any position convenient to the operator, such as in front of the driver, on the dashboard or suspended from the cab roof or corner pillar.

Do not position the instrument where it may obstruct the operators view or use ''of existing controls.

Fixing the instrument pod

The pod foot can be positioned below, on top of, or on either side of the instrument.

To change the pod orientation,

1 Remove the large 'pozi-drive' 'screw from the rear of the pod.

2 Withdraw the inner head unit and turn through 900 or 1800. It may be necessary to re-route the cable underneath the fixing strap.

3 Re-assemble the pod and head unit, taking care to locate the cable grommet in the cable slot.

To fix the pod foot,

1 Remove the instrument pod completely from the pod foot, by undoing the large nut at the base of the instrument.

2 Fix the foot using two No. 8 x 5/8" countersunk self-tapping screws. These require two 3.5mm *(9/64")* holes.

Do not overtighten the fixing screws.

3 Re-mount the instrument pod to the foot.

Do not overtighten the fixing nut.

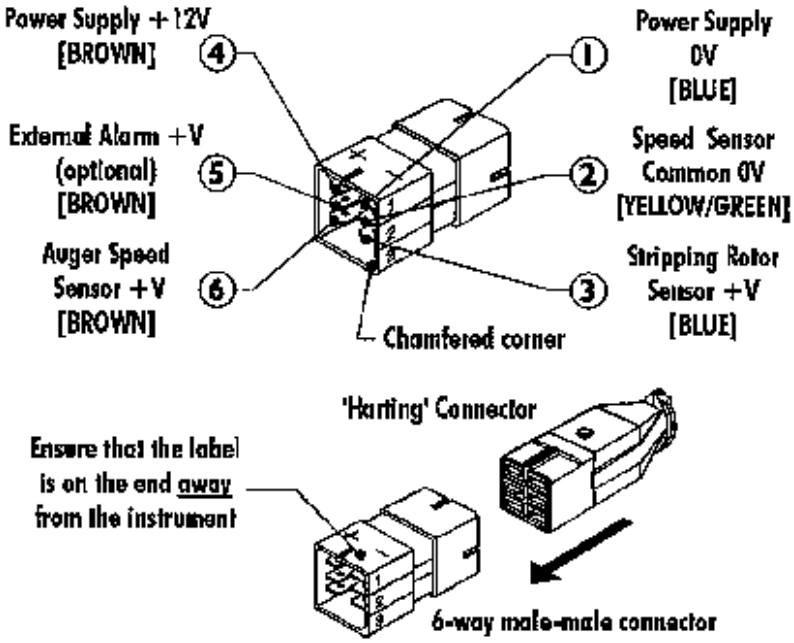
‘Harting’ Connector

The head unit is supplied with a flying lead terminating in a 6-way connector plug. Cables are connected to a mating 6-way male-male connector shell, to create a quick release connection between the instrument and the vehicle. This allows the head unit to be easily transferred to another vehicle.

A label on the connector identifies each terminal. Orientation is identified by a **chamfered corner** and a groove.

NOTE It will be easier to identify the connections by fitting the connector shell onto the flying lead before installation. The labelled end is fitted furthest away from the flying lead.

Fig. 2 Instrument connections



Power supply

Use the two-core cable supplied with female push-on connectors at one end, a ring and a piggyback at the other end.

1 Connect the blue wire to terminal 1 and the brown wire to terminal 4 of the shell connector.

2 Connect the piggyback connector to ci +1 2v terminal at a switched, fused point on the vehicle electrical system. This may be at the fuse box or on the back of the ignition switch.

***5* amp maximum fuse rating.**

3 Fix the ring terminal under any convenient bolt head.

NOTE Ensure a good earth connection. Check the bolt is fixed to an integral part of the vehicle chassis, free of paint, rust, grease etc.

External Alarm (optional)

This can be sited anywhere convenient to the operator, but must be protected from direct rain or hosing. It is secured by a single self-tapping screw.

Connect the brown wire to terminal 5 of the shell connector, and the blue wire, ring terminal under any convenient bolt head.

NOTE Ensure a good earth connection. Check the bolt is fixed to an integral part of the vehicle chassis, free of paint, rust, grease etc.

Shaft speed Sensors

The two shaft speed sensors are identical. They are the black threaded-bodied, cylindrical devices.

They are each operated by a magnet fixed on the rotational part of the machine.

Stripping Rotor Speed Sensor

The Speed Sensor assembly (Fig. 3) is located on the **righthand** end of the header, when viewed from the cab.

Mounting the magnet

The magnet mounts in a *'End-mounted Magnet Carrier'* supplied.

1 Drill and tap a hole M6 x 20mm minimum depth in the end of the shaft.

2 Secure the End-mounted Magnet Carrier to the end of the Stripping Rotor shaft.

Mounting the sensor

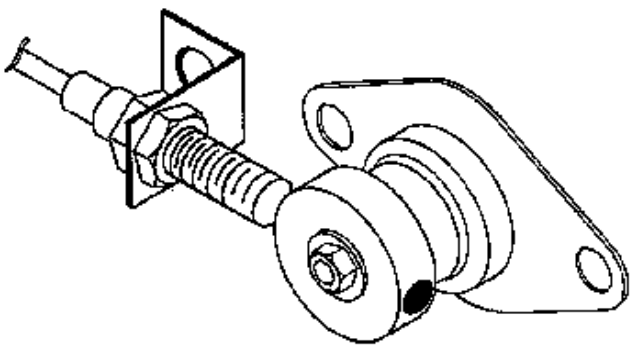
The sensor mounts in a special bracket supplied.

1 Secure and tighten the special bracket in position by fitting behind one of the shaft bearing-housing bolts.

2 Mount the sensor to the special bracket.

3 Adjust the sensor position so that there is a gap of 6 to 10 mm between the magnet carrier and the end face of the sensor.

Fig. 3 Stripping Rotor Sensor assembly



Auger Speed Sensor

The Speed Sensor is mounted on the righthand end of the auger shaft when viewed from the cab.

Mounting the magnet

The magnet is mounted in the end plate of the auger so as to pass the ends of the sensor.

If the magnet is positioned on a 67 mm radius it will sit snugly against the bearing flange plate on the end of the auger.

1 Drill a hole 5.5 mm diameter in the auger end-plate.

2 Fit an M6 fibre washer between the magnet and the end plate.

3 Secure the magnet using an M6 Taptite bolt.

Do not overtighten the fixing bolt.

Mounting the sensor

The sensor mounts directly in the auger bearing mounting plate.

1 Drill a hole 12.5 mm diameter in the auger bearing mounting-plate. This hole should be 55 mm forward of the centre line of the auger.

2 Mount the sensor to the end plate.

3 Adjust the sensor position so that there is a gap of 10 to 20 mm between the magnet and the end face of the sensor.

Sensor cable connection

Sensors are connected using three cable sections,

- **A combine** cable with three shrouded female terminals at one end. Routed from the instrument 'Harting' connector to the combine-header coupling point.
- **A header** cable with four shrouded male terminals at one end. Routed from the combine-header coupling point to the sensor cable terminals.
- **Sensor** cables supplied with the sensor units.

Ensure cables are fixed with adequate clearance from moving parts. Secure both cables to the header with cable ties and self-adhesive clips.

Fixing header cable

I Drill a hole 16mm diameter into the box section at the rear of the header.

2 Feed a length of stiff fencing or welding wire along the box section, to emerge with the hydraulic pipe at the right-hand end of the header.

3 Attach the wire to the end of the cable with the four male terminals.
4 Feed the four male terminals into the box section towards the righthand end of the header and pull the cable through, using the wire.

5 Connect the sensor cables to the four male terminals.

Stripping Rotor Sensor	**Blue**	to Header cable	**Yellow/green**
	Brown	--------¦ ¦---------	**Blue**
Auger Sensor	**Blue**	to Header cable	**Yellow/green**
	Brown	--------¦ ¦---------	**Brown**

6 Loop the three cables into an 'S' shape and secure with a cable tie to act as a strain relief.

7 Feed the connections back into the box section and ensure the cables are secured and tidy.

8 Fit a length of 'Spiroband' to the header cable to protect it from chafing where it passes through the hole in the box section.

9 Ensure the header-combine weatherproof cable connector is positioned adjacent to the other combine-header electrical/hydraulic coupling points.

Fixing combine cable

1 Route the combine lead tidily up the header trunking and into the combine cab, together with existing cables/hydraulic lines.

2 Connect the three female push-on terminals to the 'Harting' connector, following the connection diagram in Fig. 2.

Test The System

1 Ensure that all wiring connections are firmly made.

2 Switch on. The display comes on and the alarm will sound a short single pulse.

3 Run the header mechanism. As soon as the shafts turn, the display will show a shaft speed.

4 Ensure that the speed is displayed correctly.

The instrument is factory set with alarm speeds of *450* r.p.m. for the header and 100 r.p.m. for the auger.

5 Run the machine up to full speed and ensure that both alarm speeds are exceeded.

6 Slow down the machine. As the speed drops below the alarm speed, the audible alarm will sound 6 times and the display will flash.

Shelbourne Header Monitor Kit

2004 Onwards

RDS-0002 & RDS-0003

RDS-0005 & RDS-0007

Overview

The Control Switches - Summary

Normal Operation
Rotor Speed Control
Alarms
Setting the Alarm Thresholds
Set % Speed drop factor (Rotor RPM only)
Auto-calibrating the Alarm speed (Rotor RPM only)
Manually setting the Alarm Speed (Rotor and Auger RPM)
Working Hour Function
Error message: "ProG"

Installation
Head Unit
Pod Mounting
Panel Mounting

Junction Box
Power Supply – 12V Negative Earth Vehicles
Power Supply – 24V Negative Earth Vehicles

External Alarm

Shaft Speed Sensors
Shaft Sensor- Header Cable Connections
Stripping Rotor Speed Sensor
Auger Shaft Speed Sensor

Variable-Speed Control
Cable Routing

Testing the Installation
Power
RPM display
Speed Control
Alarms

Overview

The Stripper Head Monitor performs the following functions,

Manual, variable-speed control of the stripping rotor (via an electric linear actuator).

Monitors and displays the running speeds of the stripping rotor shaft and the auger shaft of the header. The speed of either shaft can be displayed at any time.

Audible and visual low speed alarm for auger shaft and stripping rotor RPM. The alarm speed may be set either manually or by auto-calibration.

A resettable stripping rotor working hours display is include on units with the grey Shelbourne Reynolds logo (mid 2010).

The instrument functions whenever the ignition is switched on and the 4-digit LCD display is permanently illuminated.

The system comprises:

On the combine,

The instrument head unit and mounting bracket kit.

A junction box (with fuses and relays) and cable loom assembly for connecting the power supply, instrument head and header cables.

On the header,

Sensor connection cable Pt No. RDS-0017 from the header mounting point to the right-hand (non-drive) end of the header.

A magnet carrier and reed switch sensor mounted at the end of the stripping rotor shaft.

A magnet /magnet carrier and reed switch mounted at the end of the auger shaft.

Rotor speed control lead Pt. No 195050 01 from the header mounting point to the linear actuator operating the variable speed drive.

An upgrade cable Pt No. RDS-0006 is also available for upgrading an existing installation with the old style instrument head to the new instrument (excluding variable speed control).

The Control Switches - Summary

Channel Indicator

Decrease Stripping Rotor speed

Increase Stripping Rotor speed

PROGRAM
% SPEED DROP FACTOR

PRESS and HOLD to display the % below the "no load" speed, at which the alarm will sound.

Continue HOLDING the **PROG** button and programme the % factor using the button.

SELECT CHANNEL

MANUALLY SET/ AUTO-CALIBRATE ALARM SPEED

Select the channel then PRESS and HOLD to display the alarm speed.

Continue HOLDING the **SET** button and programme the alarm threshold using the button.

Or

PRESS and HOLD for 5 SECONDS to start rotor speed auto-calibration.

Normal Operation

The speed of either shaft is displayed continuously. To change channels, simply press and release the ⇩ button.

Rotor Speed Control

Use the outermost **+** and **–** buttons to increase and decrease the rotor speed.

Alarms

If the **Stripper Rotor** speed drops by more than the programmed % below the "no load" speed, the audible alarm will emit an *intermittent* tone, the instrument will default to the rotor RPM display and the display will flash. The Stripper Rotor alarm speed is factory set at 450rpm

If the **Auger speed** drops below the programmed speed (factory set at 100rpm), the audible alarm will emit a *continuous* tone, the instrument will default to the auger RPM display and the display will flash..

An alarm will continue either until the correct shaft speed is restored, or by pressing either the **PROG**, ⇩ or **SET** buttons.

Setting the Alarm Thresholds

Start by programming the % speed drop factor, and then programme the rotor and auger alarm speeds. The rotor alarm speed can be programmed either by doing an auto-calibration or manually. The auger alarm speed must be programmed manually.

Set % Speed drop factor

This is the % speed drop from the optimum rotor speed before the instrument will alarm.

The factory default setting is 8%. Range: - 0 to 30%.

1. PRESS the ⇩ button to select the rotor speed channel
2. PRESS and HOLD the **PROG** button for 3 seconds to display the % factor currently set.
3. Continue HOLDING the **PROG** button and PRESS ⇩ to select the digit to change.
4. HOLD ⇩ to change the selected digit.
5. RELEASE ⇩ to select the next digit and repeat as above, otherwise simply release both buttons. The instrument will then return to the normal display mode.

Auto-calibrating the Alarm speed (Rotor RPM only)

A suitable running speed under full load should initially be determined for optimum performance in various crop conditions**.**

Alarm speed = “No load” speed minus the Speed Drop factor.

1. PRESS the button to select the rotor speed channel

2. With the rotor running at the normal “no load” speed, PRESS and HOLD the **SET** button for 5 seconds.

3. The display will then show “**AUtO**” and the auto-calibration commences.

4. RELEASE the **SET** button.

5. WAIT for 5 seconds. The display will then show “**DonE**”. The instrument then calculates the appropriate alarm speed and saves it to memory.

NOTE: If you change the rotor speed the above steps will need to be repeated to auto-calibrate the rotor alarm speed.

If you subsequently adjust the % Speed Drop Factor, the alarm speed will be re-calculated automatically.

Manually setting the Alarm Speed (Rotor and Auger RPM)

The rotor must be stopped.

1. PRESS the button to select the appropriate channel to programme.

2. PRESS and HOLD the **SET** button for 3 seconds to display the alarm speed currently set for that channel.

3. Continue to HOLD the **SET** button and PRESS to select the digit to change.

4. HOLD to change the selected digit.

5. RELEASE to select the next digit and repeat as above, otherwise simply release both buttons, and the display will return to the normal mode.

Working Hour Function

Head units that have the new grey Shelbourne Reynolds logo (Mid 2010) can display the Stripping Rotor working hours.

1. PRESS the button to select the h channel, to display the working hours

After 10 seconds the display will default back to the rotor speed channel

The working hours can be reset to zero as follow.

1. PRESS the ▼→ button to select the  channel, to display the working hours

2. PRESS and HOLD the **SET** button for 5 seconds, the unit will beep.

3. The display will reset to **0.0.**

Error message: "ProG"

"**ProG**" on the display indicates the instrument memory has been corrupted. You can attempt a "Power-On Reset".

1. Switch the power supply off.

3. PRESS and HOLD the three middle buttons **(PROG**, ▼→ , **SET)** and switch the power on.

4. If the instrument can recover itself, it will perform a short self-test routine and return to the normal display. If not, then the instrument must be returned for servicing or replacement.

NOTE: All alarm settings will be reset to the factory default values.

Installation

Head Unit

Confirm with the machine operator on where to mount the head unit in the cab. The head unit must not restrict the view out of the cab, nor impede the use of the controls.

The head unit is fitted with a flying lead with a 12-way “Qikmate” connector onto the junction box lead. It is supplied with a separate mounting kit comprising the following parts: (RDS-0029)

1 x Long Bracket
1 x Short Bracket
3 x Clamping Knobs
1 x Cover Plate
1 x Mounting Plate
2 x Self-Tapping Screws

Pod Mounting

The instrument mount is designed to offer maximum flexibility in positioning the head unit, either from the right hand side of the cab, from the dashboard or from an overhead position.

1. Snap the cover plate into the recess of the long bracket (it only fits one way).

2. Assemble the two brackets, and mounting plate with clamping knobs, and attach to the head unit. As you will notice, you can index each pivot point on the mounting bracket to angle the head unit in relation to the mounting plate.

NOTE: Either the long or short bracket can be attached to the head unit, whichever gives the most suitable orientation.

3. Having established the orientation for the bracket, fix the mounting plate to the cab with the self-tapping screws provided.

⚠ **Do not drill into a ROPS or FOPS frame.**

1. If you are fixing the mounting plate to plastic e.g. the dashboard or other cab moulding, it is recommended to use M4 screws with mudwing washers to strengthen the mounting point.

⚠ **Do not attempt to adjust the mounting bracket assembly without first slackening off the clamping knobs sufficiently. You will only succeed in damaging the bracket otherwise.**

Panel Mounting

Follow the instructions printed on the paper template provided in the optional panel mounting kit.

Junction Box

⚠ **The Terminator is not sealed. It must be located where it will be protected from EXCESSIVE MOISTURE AND DIRT**

The junction box can be mounted using the screws provided, or can be left in-line with the cables.

Power Supply – 12V Negative Earth Vehicles

The instrument normally operates from a 12V DC supply. A 15A-blade fuse located on the PCB in the junction box protects the system. A powers supply of 15A minimum is required to operate actuator

⚠ **The fuse in the junction box will only protect the junction box circuitry and the head unit. It will NOT protect the power supply cable.**
Always use a replacement fuse of 15 A maximum rating.

1. Route the power lead back to a switched, fused point, e.g. from the back of the ignition switch or from the fuse box.

2. Connect the brown wire of the power supply lead to +V. If you are not certain of the fused rating, then you should wire an in-line fuse holder fitted with a 15A fuse, to protect the power lead.

2. Connect the 0V terminal (blue) to the bodywork/chassis. Ensure connection onto bare metal and that the connection point gives a good grounding path to the battery.

NOTE: The head unit does not have an integral On-Off switch, and is normally powered on via the ignition circuit. However, a toggle switch (Part No: S/AC/199-2-134: - not supplied) can be wired in-line with the +v supply.

If required, panel-mount the toggle switch at a suitable point (1/2" dia drill required) and connect into the +V (brown) wire of the supply lead. If required, use a suitable length of the same gauge wire.

Power Supply – 24V Negative Earth Vehicles

The head unit will operate satisfactorily over the voltage range 10-30V. However, the changeover relays located in the junction box for driving the speed change actuator, are rated at 12V only.

You must therefore, fit a 24-12V-voltage dropper on combines with a 24V electrical system.

A suitable kit is available ref. RDS Pt No. K/INST/24V. Full instructions are included.

External Alarm

The audible external alarm function can remain operational where an existing installation is upgraded with a new head unit using the upgrade cable RDS-0006.

However on new installations using the junction box, there is no facility to connect an external alarm.

Shaft Speed Sensors

The two reed switch type shaft speed sensors are identical. Each are operated by a magnet on the rotating component.

Shaft Sensor- Header Cable Connections

Stripping Rotor Sensor	**Blue**	to Header cable	**Yellow/green**
	Brown	to Header cable	**Blue**
Auger Sensor	**Blue**	to Header cable	**Yellow/green**
	Brown	to Header cable	**Brown**

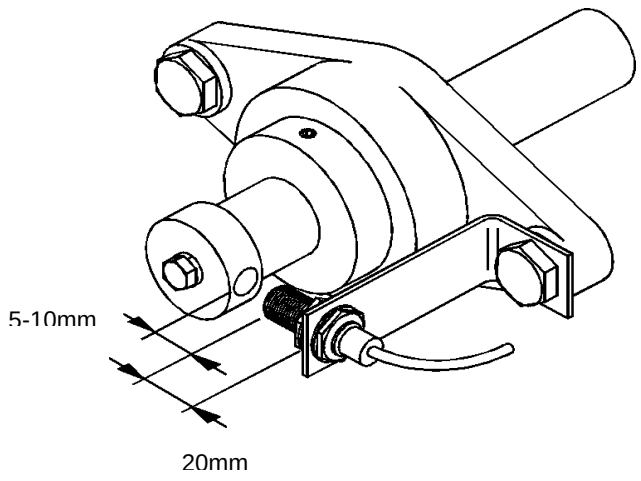
Stripping Rotor Speed Sensor (and Auger Shaft Speed Sensor from Serial No. 100111)

The Stripping Rotor Speed Sensor is mounted on the right hand end of the header (as viewed from the cab).

Drill and tap a hole M6 x 20mm minimum depth in the end of the shaft and secure the End-mounted Magnet Carrier to the end of the Stripping Rotor shaft.

Secure and tighten the Sensor Mounting Bracket onto one of the shaft bearing-housing bolts.

Mount the sensor to the bracket and adjust the sensor position so that there is a gap of 6 to 10 mm between the magnet carrier and the end face of the sensor (see below).



Auger Shaft Speed Sensor (upto Serial No. 100110)

The Auger Shaft Speed Sensor is also mounted on the right hand end of the header.

Mount the blue magnet on the auger end plate. If the magnet is positioned on a 67 mm radius it will sit snugly against the bearing flange plate on the end of the auger.

Drill a 5.5mm dia hole and mount the magnet using the M6 Taptite screw. The fibre washer must be fitted between the magnet and the end plate.

⚠ **Do not overtighten the fixing bolt or the magnet may break.**

The sensor mounts directly through the auger bearing mounting plate so that the magnet will pass in front of it.

Drill a hole 12.5 mm diameter in the plate 55 mm forward of the centre line of the auger.

Mount the sensor through the end plate, adjusting the position so that there is a gap of 5-10mm between the magnet and the end face of the sensor.

Variable-Speed Control

The actuator lead blue wire is connected to the speed control actuator so as to increase the rotor speed, and likewise the brown wire is connected so as to decrease the rotor speed

Cable Routing

Ensure that the cables are fixed with adequate clearance from moving parts. Secure both the header cable and the actuator cable to the header with cable ties and self-adhesive clips.

Drill a hole 16mm diameter into the box section at the rear of the header. Feed a length of stiff fencing or welding wire along the box section, to emerge with the hydraulic pipe at the right-hand end of the header. Attach the wire to the ends of the cables and feed the ends into the box section. Pull the cables through using the wire.

Connect the sensors and actuator as per the attached wiring diagram. Loop excess cable into an 'S' shape and secure with a cable tie. Ensure the cables are secured and tidy. Fit a length of 'Spiroband' to the header cable to protect it from chafing where it passes through the hole in the box section.

Ensure the Weatherpak connectors are positioned alongside the other header-combine connections. Route the leads tidily up the header trunking and into the combine cab, together with existing cables/hydraulic lines.

Testing the Installation

Power

Switch the combine ignition on. The display and illumination will come on, and the audible alarm will give a single beep.

RPM display

Run the header. As soon as the shafts turn, the display will show the speed of either shaft.

Press the  button to select the other shaft speed channel and ensure that the speed is displayed correctly.

Speed Control

Press and hold the "**+**" button and the rotor speed should increase. Press the "**-**" button and the rotor speed should decrease.

If the functions are reversed, then swap over the connections on the actuator lead.

NOTE: The actuator has no limit switches therefore if the rotor speed does not change within a 3-second period, the output will switch off and remain off until the button is released and pressed again. This is designed to prevent the circuit/actuator from being damaged when the limit is reached.

Alarms

The instrument is factory set with alarm speeds of 450rpm for the stripping rotor and 100 rpm for the auger shaft. Run the machine up to full speed and ensure that both these alarms are exceeded, then slow the machine down.

As the speed drops below the alarm speed, the audible alarm will sound six times and the display will flash.