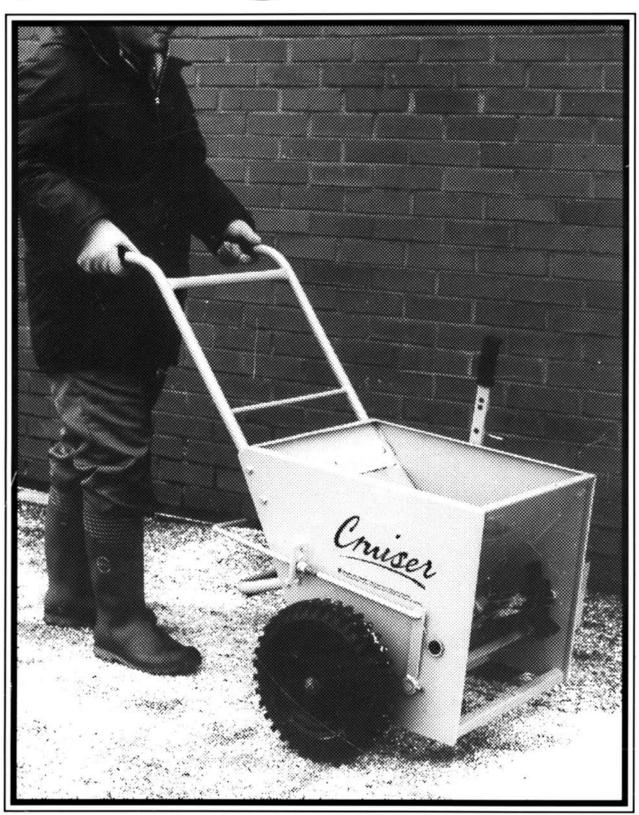




**MANUAL SALT & GRIT SPREADER** 

# **Operating Instructions**





## FOR THE GLASDON "CRUISER MANUAL 50" SALT AND GRIT SPREADER

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#### SPEED RESTRICTION

The tyres and machine have been designed to operate at walking pace, ie from approximately 3 to 5 Kph (2 to 3 Mph) with full pay load.

## General Description

Cruiser gritting machines are available in two sizes with different widths of spread and hopper capacities, the Manual 50 and the Towable 80, which include the patented Minimax spreading machanism. The rate of spread can be adjusted between 0 and 500 gms/M sq and once set the spread remains virtually constant irrespective of the speed. It will spread a wide range of materials such as sand, gravel, grit, salt, calcium chloride, mixtures and others. A large variance in particle size and moisture content will be tolerated. The Cruiser Towable 80 can be coupled to a Mini Tractor using its 3 point hitch. A specification sheet for the Cruiser Towable 80 can be found on Page 13.

The major difference between the larger gritting machines is the fact that the manual Cruiser is pushed rather than towed, so that the paddles and hence spreading occurs at the front (as opposed to the rear) of the machine, thus aiding traction, and comfort by not spreading directly into the operator's shoes. The direction of Paddle Shaft Rotation has also been reversed compared to the towed machines by employing a round hollow section Split Belt in a figure of eight configuration.

## PATENTS: FOR THE GLASDON MINIMAX™ MECHANISM ARE HELD IN THE FOLLOWING COUNTRIES

Austria NR 370160, Belgium 871130, Canada 1121839, Czechoslovakia 219869, Denmark 143292 and 141175, East Germany 139612, France 7828993, Hungary PF3601369, Italy 1099357, Norway 152662, Sweden 78099181, Switzerland P6335998, UK GB 2005973B, USA 4387855, West Germany P2843412-0.

## The Cruiser Spreading Mechanism (See Figure 1)

When pushed one wheel (1) drives a shaft (2) with helically mounted cams (3) which act on leaf springs (4) to produce a ripple motion within the rubber sheet (5) forming one wall of the hopper causing the grit/salt to fall to the hopper bottom and be lifted into the dispensing trough created by the flap (6) where rotating rubber paddles push the material over the edge of the flap (6) from which it falls by gravity to the ground.

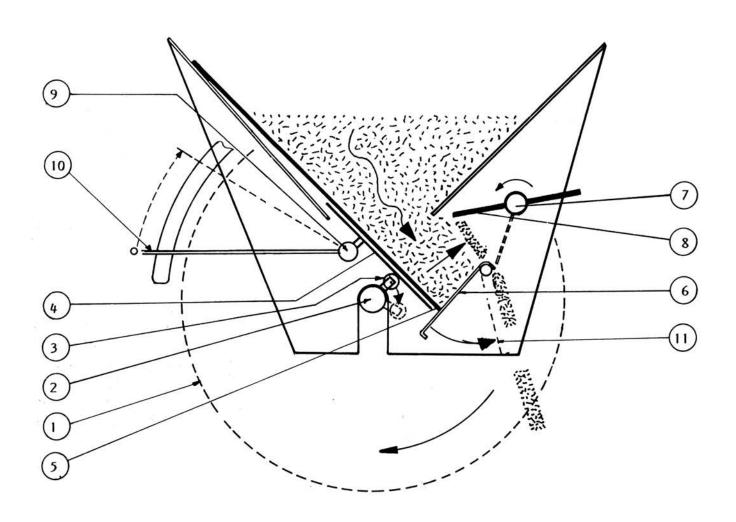
The twin bladed paddles (8) are mounted on the paddle shaft (7) at 45 deg. to one another, resulting in the characteristic chevron pattern of spreading at speeds of up to 6.5 kph (4 mph). The paddle shaft (7) runs in nylon bushes and is driven by a round belt and pulley wheels from the cam shaft (2). The paddles are flexible to allow stones and hard objects to pass through without jamming.

The spreading rate can be adjusted by moving the Spreading Adjustment Lever (10) through one of 6 positions. The Lever (10) rotates the spreading Adjustment Shaft (9) which raises or lowers the leaf springs (4) underneath the Rubber Sheet (5) thus changing the amount of spring movement and consequently the quantity of material lifted above the Flap (6).

## Spreading adjustment

- 1. Stand at the rear of the machine, with the right thigh resting against the rear hopper panel.
- Place one hand on the Adjustment Handle keeping a firm hold. Take particular care when the hopper is completely empty as it may easily tilt forward or back. A small amount of grit salt will overcome this tendency.
- 3. Lift the spring loaded plunger arm with your free hand, until the arm is clear of the notch, then turn it through half a revolution. The Plunger is disengaged and both hands are free to operate the Adjustment Handle.
  - CAUTION: The Adjustment Handle acts on powerful springs, thus the Handle can move with considerable force, if unrestrained, when the Plunger is disengaged.
- 4. Move the Handle to select the appropriate spread rate from one of six settings:
- For maximum spread push the handle towards the front of the machine approximately 500 gms/m2.
   (Max setting)
- ii. For travelling from site to site but NOT gritting, select the off position by pulling the handle towards the rear of the machine (this lifts the springs off the cams and requires a strong pull).
- iii. There are a further 4 spead rate positions. At first we suggest selecting a medium position, such as number 3.
- 5. Turn the Plunger Arm so that it re-enters the Notch. Press firmly down whilst rotating it from side to side until the Peg is securely located in the selected hole and the arm rests at the bottom of the notch.

FIG 1. HOW IT WORKS: A SCHEMATIC DRAWING



- (1) DRIVE WHEEL
- (2) CAM AXLE
- (3) CAM BEARINGS
- (4) LEAF SPRINGS
- (5) RUBBER SHEET
- 6 FLAP (CLOSED)
- 7 PADDLE SHAFT
- 8 RUBBER PADDLES
- SPREAD ADJUSTMENT SHAFT
- 10 SPREAD ADJUSTMENT LEVER
- 11) FLAP 6 OPEN : FOR EASE OF EMPTYING AND CLEANING HOPPER

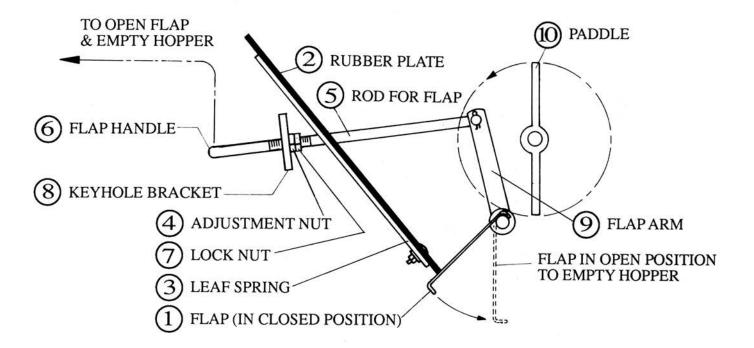


TYPICAL SPREAD PATTERN

## Adjustment of Flap

In order to avoid unnecessary waste of material the Flap (1) must be pressed sufficiently up against the rubber sheet (2) which is 3-4 mm longer than the leaf springs (3). This should be checked every time before use as a stone or foreign object could become wedged causing material loss. Adjustment is made by turning the adjustment nut (4) on the locking rod (5) towards the keyhole bracket (8). The lock nut (7) should be tightened against the adjustment nut (9), using two spanners, to aid security whilst spreading.

#### FIG.3 SCHEMATIC DRAWING SHOWING FLAP CONTROLS AND ADJUSTMENT



## To empty the hopper

#### Standing at the rear of the machine:

- 1. Using the Spread Adjustment Handle, select the EMPTYING Postion (ie allow the handle to rest against the front end of the Adjuster Rail) this lowers the springs and Rubber Sheet.
- 2. Lift the flap handle (located between the hopper and wheel on the right hand side) free of the keyhole and pull towards you. The Flap is now opened, ie it is pointing downwards. See Fig. 3.

#### NOTE:

- **A** Always close the Flap before setting off, by pushing the handle forwards and engaging the nuts against the keyhole bracket. An open flap would cause excessive wear to the paddles.
- **B** When the spreader is empty the spread adjustment lever should always be set in the OFF position (push flap lever forwards) to avoid excessive wear of the leaf springs, cams and flap.
- C Do not forget to empty the hopper each time after use as any material left in the hopper may freeze, causing possible damage and/or corrosion

## Travelling position of the spreader

The upper edge of the hopper must always be horizontal except in the case of especially dry materials when the spreader should lean a little backwards.

#### THE HANDLE

For manoeuvring when not gritting, the handle allows the operator to push or pull by holding either the handgrips or the cross bar. Some operators may prefer to pull the machine in a horse and carriage manner when going up ramps or gradients, however we would strongly recommend that this method is not employed when going down gradients and that the operator always walks behind the machine when going downhill.

#### THE REAR STAND AND FRONT SUPPORTS

The machine is designed so that it may be tilted either:

- 1. Forwards to rest on the front supports or
- 2. Backwards to sit on the rear stand.

It is envisaged that most operators will prefer to allow the machine to come to rest on the front supports.

To set off hold the handgrips, place one foot on the rear stand and press down until the hopper becomes level with the ground.

NOTE: The Rear Stand also acts as a safety stop to prevent the machine from falling onto the operator. The stand has a high ground clearance for mounting kerbs.

#### MOUNTING KERBS

It is recommended that the machine is pulled backwards when mounting kerbs.

#### THE USE OF A SHOVEL

Whilst the machine is highly manoeuvrable and able to gain access to relatively restricted areas, there are occasions when the operator may prefer to use a shovel. For this reason a shovel rest is provided.

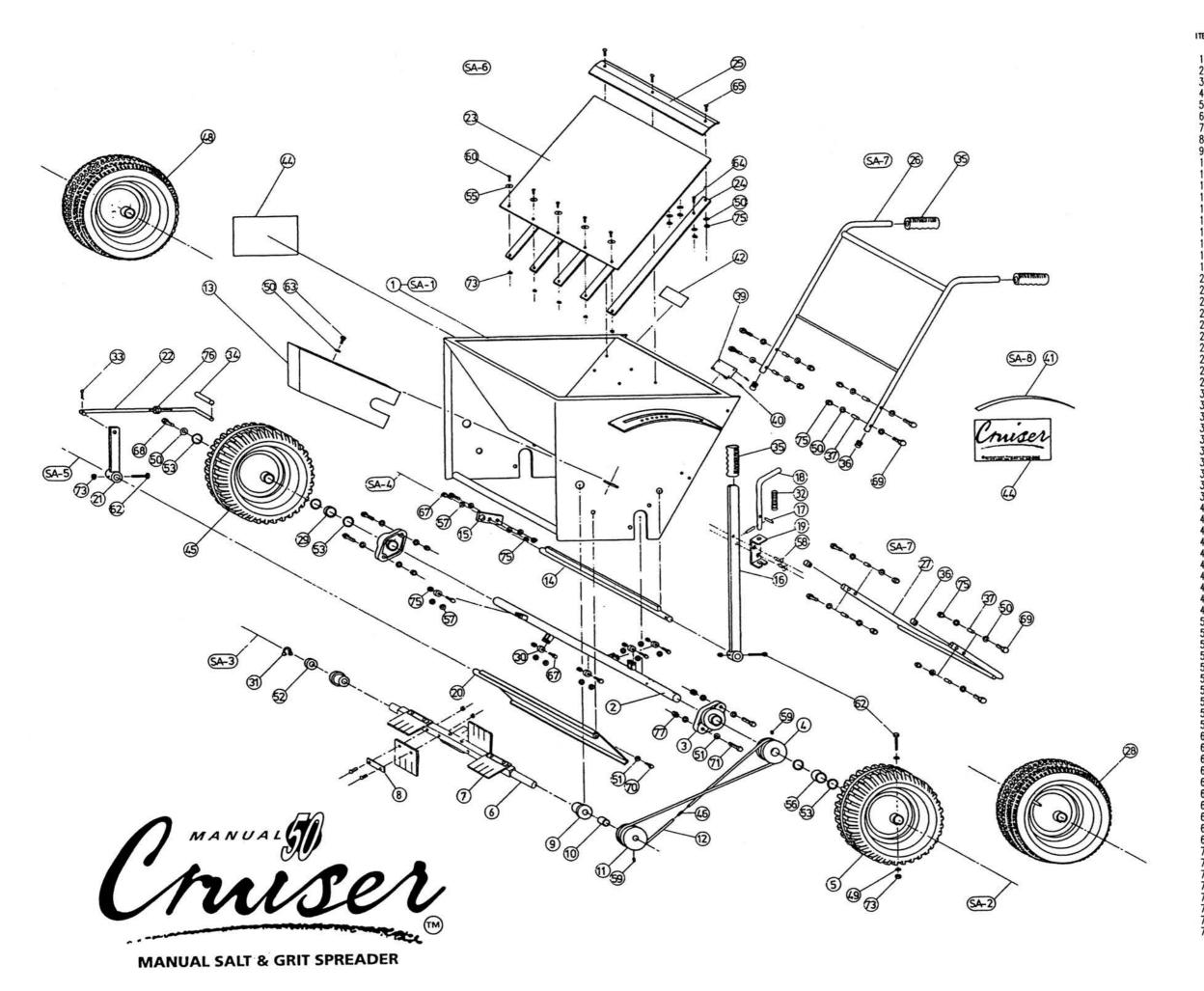
NOTE: We do not recommend the use of a shovel larger than size 4.

#### THE SHOVEL REST

When the hopper is full or part full, a shovel may be simply pushed into the Grit/Salt with its handle resting against the crossbar.

When the hopper is empty, a shovel may be carried by:

- 1. Inserting the blade in between the restraint bar and the hopper (note: the upper face of the shovel should face forwards).
- 2. Allow the blade to jam in between the stand and the stand retention bar.



4	DECRIPTION	No.UFF	MINIMAX
0112334567899012234566789901	SPREAD ADJUSTMENT SHAFT ADJUSTER BRACKET SPREAD ADJUSTMENT HANDLE SPIROL PIN Ø3 x 20 ENGAGEMENT PIN ENGAGEMENT PIN CHANNEL FLAP FLAP ARM FLAP HANDLE RUBBER SHEET LEAF SPRING RETENSION BAR HANDLE STAND PNEUMATIC WHEEL (OPTIONAL FREEWHEEL AXLE SPACER CAM BEARINGS CIRCLIP 020 TYPE D1400 SPRING FOR PLUNGER SPLIT PIN Ø2 x 30 FLAP HANDLE GRIP RUBBER HANDGRIP GP52 END PLUGS METAL SPACERS M6 ROUND HEAD POSI-DRIVE SERIAL NUMBER PLATE POP RIVFT	511115113482	NO NO NO SES YES NO NO NO NO SES SES SES SES SES SES SES SES SES SE
4567890123	CRUISER LABEL CUSHION WHEEL (FREEWHEEL) DRIVE BELT FASTENER PLUNGER HANDGRIP	2 1 1 1 1 2 36 10 2 5	NO NO YES NO NO YES YES YES
4 5 6 7 8 9 0	PENNY WASHER DRIVE WHEEL AXLE SPACER M8 WASHER BZP 'B' FORM M6 x 10 CS SET SCREW M6 x 15 SOCKET SET SCREW M6 x 16 ROOFING BOLT BZP	5 1 10 4 2 5	YES NO YES YES YES YES
2 3 4 5 6	M6 x 50 HEX SET SCREW M8 x 10 HEX SET SLOT NYLO M8 x 20 ROOFING BOLT BZP M8 x 25 ROOFING BOLT BZP	3 ON 1 7	YES NO YES YES
7 8 9 0	M8 x 25 HEX SET SCREW M8 x 25 HEX PATCH BOLT M8 x 40 HEX SET SCREW M12 x 40 HEX SET SCREW M12 x 35 HEX SET SCREW	5 1 8 1 4	YES NO YES YES NO
2 3 4	M6 NYLOC NUT	8	YES
4 5 6 7	M8 NYLOC NUT M12 HEX NUT BZP M12 NYLOC NUT	25 2 4	YES YES NO

#### DRIVE AND BELT

The Cruiser: The Cam axle is directly driven by the Fixed Wheel. The paddle shaft (with rubber paddles) is belt driven via a 'z' section pulley mounted by both the cam axle and paddle shaft.

The belt: is a round hollow section plastic belt, joined with a toothed fastener, similar to the emergency fan belt principle, and is assembled in a figure of eight configuration to reverse the direction of rotation.

#### **BELT SPECIFICATION**

Diameter 8 mm "Redthane" by Fenner.

The belt is cut 7% shorter than the mean circumference to allow for stretch when fitted, eg 687 mm less 7% = 639 mm.

#### **BELT REMOVAL**

The belt is easily removed by one of 2 methods:

A if belt is to be shortened

- 1. Remove the Belt Guard.
- 2. Cut the belt next to the fastener.

or

**B** if the belt to be saved at existing size for refitment

- 1. Remove the Drive wheel.
- 2. Remove the Belt Guard.
- 3. Roll belt over the Paddle Shaft Pulley.
- 4. Remove the belt from the cam Axle Pulley.

#### BELT FITTING

The flexible belt is easily fitted by:

**1A.** Place a joined sized belt over the cam axle pulley (drive wheel removed).

or

- **1B.** Thread one end of a sized belt around the cam axle pulley (drive wheel left insitu) and join with fastener.
- 2. Twist into figure of eight.
- Roll over paddle shaft pulley.
- 4. Replace belt guard.
- 5. Replace drive wheel (if removed).

*NOTE:* When setting off, the belt will stretch, before starting to drive the Paddle Shaft (ie the latter will appear to stick momentarily) after which the belt will resume its normal length.

#### **BELT TENSION**

The flexible round hollow section permits the belt to sit deeper in the pulley giving improved drive through a greater range of tension. If the belt does not drive (assuming both shafts are freely running and the pulleys and drive wheel are secure) then it may be shortened by cutting the belt close to the metal fastener, removing the short stub of belt remaining on the fastener (by slitting horizontally) and reassembling.

Under No circumstances attempt to increase belt tension by making an extra twist in the belt, as this not only reverses the drive making the speading mechanism Virtually inoperable, but grossly increases belt friction to an unacceptable level.

#### WHEELS AND TYRES

**IMPORTANT:** The tyres and machine have been designed to function at walking pace ie 6.5 kph (4 mph) with a maximum load of 300 kg per wheel/rim.

#### RIMS:

Steel Hub: 73 mm deep with 1" Bore Sintered Bearing.

Freewheel Side: Pack with grease and use a gun on grease nipple.

Note: The Slotted hub is placed on the inside.

Drive Wheel Side: The Slotted hub faces outwards.

#### TYRES:

Cushioned:

BWS BAR 330, 330mm Solid Rubber Bar Tread.

Pneumatic:

BWS 350-8 604, 350mm x 95mm Pattern Tread.

Heavy duty 4 Ply Tread. 2 Ply Side Wall.

Maximum Load 170 kg (374 lbs).

TYRE PRESSURES: 2.48 bar (36 PSI) Cold.

#### BEFORE USE CHECK LIST

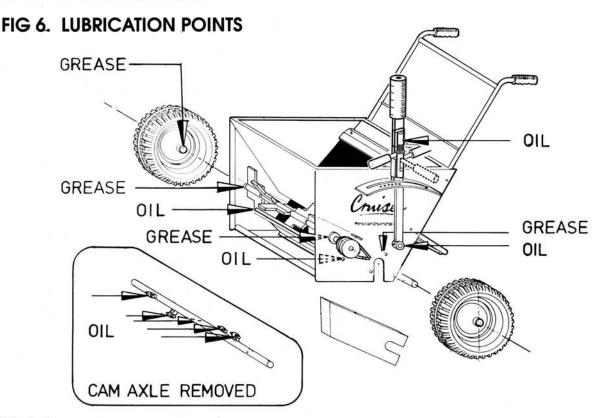
- 1. Tyres Inflated/functional, wheels securely attached.
- 2. Flap fully closed and sealing against the rubber sheet with no stones or obstructions.
- 3. All appropriate parts lubricated and moving freely.
- 4. All fastenings secure.
- 5. Drive belt correctly tensioned and working (ie do paddles turn when the machine is pushed).
- 6. Spread Adjustment lever on the OFF position.

#### Spreading

- 1. Flap fully closed.
- 2. Hopper full of grit/salt.
- 3. Spreading adjustment lever in ON positions with engagement peg employed.

#### Lubrication

All moving joints must be lubricated after every week of operation. Grease nipples are located on the paddle shaft bearings, the free wheel hub, and main axle bearings. Particular attention should be paid to the lubrication of the axle cam bearings.



#### Maintenance

#### After use:

- 1. The spreader should be thoroughly cleaned and any salt removed from the hopper.
- 2. General lubrication of all lubrication points.
- 3. Scratches, if any, in the coating should be treated.
- 4. The spreader should be covered if it is to be kept outdoors.
- 5. When not in use for some time protect by applying a rust inhibitor such as Shell Ensis Fluid 256.

Never use oil or grease on rubber parts (tyres, rubber plate, rubber paddles, etc.)

## **ORDERING SPARES**

Please quote the following:

1. THE MODEL : eg "Cruiser"

2. THE SERIAL NUMBER: To be found on the Serial Number Plate which is located on the rear

nearside of the hopper.

3. THE COMPONENT NAME/S : See Figure 4 page 6 and 7. Also check

AND ITEM NUMBER/S : availability pages 11 to 12.

4. THE QUANTITY : eg Cruiser Serial No 2001

One x Cam bearing Kit No 30 One x Drive Belt Kit No 12

NOTE: Some items, particularly small parts are only available in kits.

	RES FOR THE GLASDON CRUISER MANU I AND GRIT SPREADER	JAL 50  denotes special parts			
ITEM DESCRIPTION		O denotes common parts			
SA-2		<ul> <li>denotes a factored part</li> </ul>			
<b>2</b> Ø25 X	CAM AXLE 782 mm Axle and Cam Axle Lugs				
<b>3)</b> *	AXLE BEARING/HOUSING x 1 PAIR				
•	c/w (71) M12 x 35 Hex Set Screws x 4 off				
99	(51) M12 Split Washers BZP x 8 off				
	M12 Nyloc Nuts x 4 off				
<b>30</b> *	CAM BEARING KIT: x 5 OFF				
•	c/w (57) M8 Washer BZP 'B' form x 10 off				
	67) M8 x 25 Hex Set Screw BZP x 5 off				
	75 M8 Nyloc Nut x 5 off				
	WHEEL KIT: CUSHION TYRE AND RIM x1off				
[	5 DRIVE WHEEL (Slotted) 45 FREE WHEEL				
	c/w 62 M6x50 Hex Set Screw 73 M6 Nyloc Nut 49	M6 BZP Washer 'C' Form x2 off			
	DRIVE WHEEL AXLE SPACER 29 FREE WHEEL AXLE	SPACER			
	68) M8x25 Hex Patch Bolt 60) M8 BZP Washer 'C' Form	x1 off 53 Plastic Washer x5 off			
	WHEEL KIT: PNEUMATIC TYRE VALVE AND RIM x1off				
	28 DRIVE WHEEL (Slotted) 48 FREE WHEEL				
	c/w 62 M6x50 Hex Set Screw 73 M6 Nyloc Nut 49	M6 BZP Washer 'C' Form x2 off			
	56 DRIVE WHEEL AXLE SPACER 29 FREE WHEEL AXLE	SPACER			
	68 M8x25 Hex Patch Bolt 60 M8 BZP Washer 'C' Form	x1 off (53) Plastic Washer x5 off			
4	PULLEY KIT: CAM AXLE PULLEY Ø75 x Ø25 BORE				
11)	PADDLE SHAFT PULLEY Ø75 x Ø20 BORE				
	c/w 59 Socket Hex Set Screw M6 x 15 x 2 off				
SA-	<u>3</u>				
6	PADDLE SHAFT				
	Ø20 x 572 mm c/w 🕖 Inner Paddles x 3 off				
	(8) Outer Paddles x 2 OFF (10) Paddle Shaft Spacer x 1 off				
	M20 Plain Washer BZP x 1 off				
	(3) Circlip 020 Type D1400 x 1 off				
9	PADDLE SHAFT BEARINGS x 2 OFF				
12)*	DRIVE BELT SET: Ø8 x 639 mm Redthane Belt c/w				
	<b>46)</b> * Ø8 Redthane Fastener				
13	BELT GUARD				
	c/w 50 M8 Plainwasher BZP CForm,				
	63 M8 x 10 Nylon Slotted Hex Set Screw				

#### **SA-4**

## 16 SPREAD ADJUSTMENT HANDLE

575 mm x 35 x 20

## (18) PLUNGER KIT

c/w

- 17 Lower Plunger Guide 19 Upper Plunger Guide
- 32) Plunger Spring 58) M6 CS x 10 Set Screws x 4 off
- 62) M6 x 50 Hex Set Screw x 1 off
- 73 M6 Nyloc Nut (35) Rubber Handgrip
- (47) Plunger Handgrip

## <u>SA-5</u>

## 20 FLAP

142 mm x W 525 mm x 19 mm c/w

70 M12 x 40 Hex Set Screw

## **SA-6**

## 23 RUBBER SHEET

W 526 mm x 495 mm x 4.5 mm

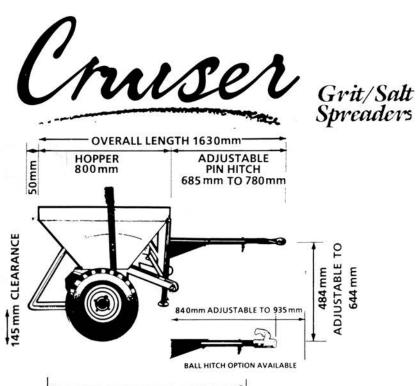
- 24) LEAF SPRING x 50 H C/W
  - 60 M6 x 16 Roofing Bolt BZP x 5 off
  - 55) Penny Washer 025 x 5 off
  - 73 M6 Nyloc Nut x 5 off
  - 64 M8 x 20 Roofing Bolt BZP x 7 off
  - M8 Washers BZP CForm x 13 off
  - 65 M8 x 25 Roofing Bolt BZP x 3 off
  - 75 M8 Nyloc Nuts x 10 off

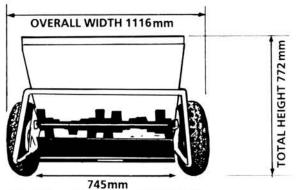
## <u>SA-7</u>

## 27 STAND

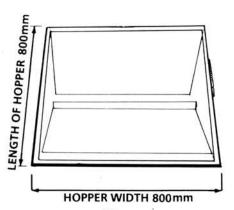
499 mm x 520 mm x 37 mm c/w

- 37 Spacers for M8 OD 11 x 24 mm x 4 off
- 69 M8 x 40 Hex Set Screws x 4 off
- 75 M8 Hex Nyloc Nuts x 4 off
- (50) M8 CForm Washers BZP x 8 off
- 36 End Plugs x 2 off





LENGTH OF SPINNING MECHANISM





For use with 2 and 4 wheel driven tractors, passenger cars etc.

CAPACITY 200 LITRES UNLADEN WEIGHT 85kg

187lbs LADEN WEIGHT 325kg

715lbs

SPREADING WIDTH 800mm NO. OF 50kg BAGS OF DRY ROCK SALT REQUIRED (approx.) 5

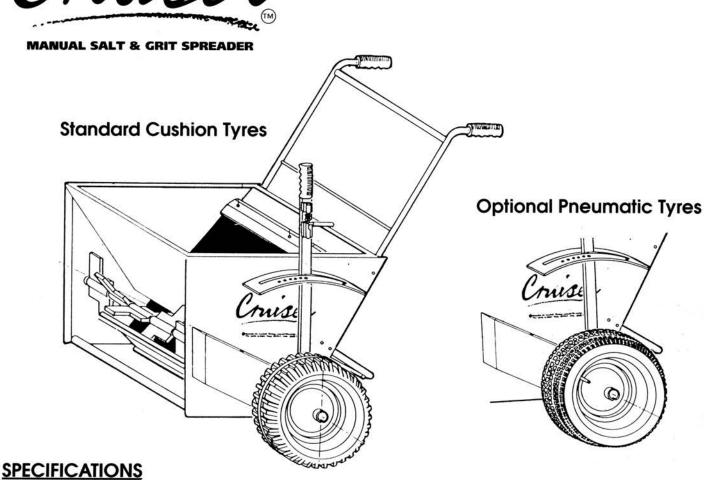
Towbar is available with either a ball or pin hitch. Both can be extended. The Mini 80 can also be mounted on a mini tractor using its 3 point hitch.

WHEELS A5 x 12 pneumatic tyres on steel rims.
FINISH Primer undercoat and 2 coats of bright yellow.

DRIVE The rotating cams are located on the main axle assembly thus are directly driven by the road wheels. The rubber paddles are located on a steel shaft running in nylon bushes driven by a rubber belt and pulley wheels from the main axle.







MODEL:

**CRUISER MANUAL 50** 

**GRITTING SPEED:** 

WALKING PACE 3 to 5 kph (2 to 3 Mph)

With full payload

CAPACITY:

53 LITRES (IN OFF MODE)

SPREADING:

RATE DISTANCE AREA @ 50 GMS/M2 1900 METRES = 950 M2

@ 500 GMS/M2

140 METRES = 70 M2

**UNLADEN WEIGHT:** 

48 KG

**SPREADING WIDTH:** 500MM (0.5 METRES)

WHEELS:

SUPPLIED WITH EITHER 330 MM CUSHIONED

**OR 350 MM PNEUMATIC TYRES** 

PAYLOAD:

VERY DRY SALT: 70 KG VERY WET SALT: 90KG

FINISH:

ZINC PHOSPHATE PRE-TREATMENT, POLYESTER

POWDER COATING

LADEN WEIGHT:

118-138 KG (APPROX.)

COLOUR:

GOLDEN YELLOW NO.356 TO BS 361 C

NO. OF 50 KG BAGS OF DRY ROCK SALT

REQUIRED:

1.5 BAGS

- A planned maintenance schedule of regular inspection is recommended, replacing components as necessary
- Replacement components are available direct from GLASDON.
- GLASDON cannot be held responsible for claims arising from incorrect installation, unauthorised modifications or misuse of the product.

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Glasdon reserve the right to alter specification without prior notice.



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