TURBO JET 8 and 10 WIZARD

REV 11/11

Fitting and Operating Instructions

- Speed related seeding rate controlled by the radar based Wizard system by RDS, with on the move rate change.
- Area meter, speed and rate display, programmed calibration, hopper level, fans and feed motor alarms, remote switch facility.
- Simple, versatile and accurate.
- Meters and spreads most small seeds
- Use independently, or integrate with existing farm machinery.
- Ideal to use with rigid or folding equipment up to 6m wide.
- All electric 12v drive. Closed loop controlled powerful feed motor with integral encoder
- Grass agitator powered by a separate electrical motor.
- Monitoring of motor, fans, agitator and hopper level
- Twin high performance waterproof and dustproof electric fans.
- Supplied with all electrical wires and connectors.
- Selectable hopper agitator powered by a separate electric motor.
- Easy change metering rolls, supplied with small seed and grass rolls.
- Simple calibration procedure. Calibration guide supplied.
- Easy hopper empty facility.
- 30m delivery tube, 8/10 connectors and 16/20 spreader plates supplied as standard.
- 4 x lengths of C rail and brackets, to attach spreaders.
- Semi translucent 240 litre plastic capacity hopper with 400 litre cost option

Dimensions	700mm Wide x 1150mm Long x 1200mm High
Weight	125Kg (TJ8) 135 kg(TJ10)
Hopper Capacity	240 litre standard with optional 400 litre available.
Number of Outlets	Turbo Jet 8.....5 minimum – 16 maximum Turbo Jet 10....7 minimum – 20 maximum

PLEASE RECORD THE SERIAL NUMBER, DATE OF PURCHASE, AND DEALER DETAILS.

DATE.....SERIAL NUMBER.....

DEALER.....

Manufactured by

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STOCKS TURBO JET FITTING GUIDE.

Please read these notes before fitting the Turbo Jet to your implement.

The Turbo Jet can be used for a wide variety of seeding applications in conjunction with a wide variety of parent implements.
It is not practical to supply tailored mounting brackets for every implement on the market, and so the final attachment of the Turbo Jet to the implement is the responsibility of the user.
The positioning of the hopper, the spreader plate, the "C" section mounting rails, etc, will depend upon the type and design of parent implement, but whatever it is, here are a few basic pointers to ensure the Turbo Jet performs correctly.

Hopper
Position the Turbo Jet high enough above the implement to facilitate routing of the flexible tubes to the spreader plates, without severe bends or uphill runs. Try to route all tubes generally downhill. Do not block the air intakes to the fans under the base plate
Ensure the hopper does not foul wing sections when folded, and the tubes are long enough to fold with the implement, without a restriction when in work.
Ensure you can access the hopper to fill, and are able to remove the feed roll cassette, and position the calibration tray underneath to calibrate or empty. Ensure there is room to undo the fan housing catches and lift the housing to clean the fans. **Brush or blow down the fan vanes regularly to prevent build up of debris.**

When filling, emptying or calibrating the Turbo Jet ensure you work safely.
If necessary fabricate and fit a work platform and steps, complete with handrails.

The hopper may face forwards or backwards – whichever offers the easiest mounting and best flexible tube run.
Select a strong, rigid position and use the heavy flat plate bolted to the Turbo Jet base to weld or bolt to your implement.

Spreader Plates

The Turbo Jet has 8 or 10 outlet pipes that can be split into two using the black plastic "Y" connector, to give 16 or 20 spreader plates. Depending on the implement width and if you require a broadcast or band sown effect, use as many outlets as required, with or without the spreaders.

Plan the positioning of the pipes / spreader plates to be equi-distant across the width of your implement, up to a maximum of 6m wide. (8m maximum – please enquire)

The black plastic "Y" connectors are to be fitted above the spreader plate using as short a run of flexible tube to the plates as possible, whilst still providing a smooth flow.

Flexible tube from these connectors then runs to the outlet pipes on the Turbo Jet.

Aim to route all these tubes smoothly and generally downhill from the hopper to the spreader plate, avoiding severe bends and uphill runs.

C Section Rail

The spreader plates themselves are mounted to the "C" section rails, 4 x 2m lengths per machine are supplied. These can be cut down to suit the implement width.

The "C" section rails can be attached to the implement using the supplied straight brackets, two per rail. These can be welded or bolted into position.

The spreader plates slide along the rails to give the planned spacing, and lock into position using the integral bolts.

Note. It is generally better to position the spreader plates facing to the rear of the implement.

This can prevent wet mud or tilth being thrown up into the mouth of the spreader causing blockages, especially if positioned close behind the tractor wheels or a roller, or discs, etc.

Flexible Tubes A 30m reel of flexible tube is supplied with each Turbo Jet. This requires cutting into lengths according to the positioning of the hopper and spreader. Ensure all tube runs are as short as possible whilst giving a smooth downhill route to the spreader plates. Avoid kinks, severe bends or uphill runs.

Note. 30m is more than enough to attach the Turbo Jet – it is generally better to be a little generous when initially fitting each tube and then trim it to its final length.

Plan and measure the individual tube runs before cutting, fit the hose clips to the Y connector tails.

ELECTRIC CONNECTIONS AND CONTROLS

Refer to the RDS Wizard Control System manual for detailed instructions regarding the fitting and installation of the Head Unit, Switch Box and Terminator Assembly. Pages 6-9

Refer to the detailed Radar Fitting Instructions to the rear of this manual. Ensure that the arrow moulded into the housing is pointing downwards. Use the bracket provided to attach the radar at 45 degrees below horizontal, and ensure the radar has a clear view of the ground. Check the diagram showing the spread of the beam, and ensure that the beam does not pick up vibrating tines, moving discs or rollers, or moving soil – all these can give a false speed signal. Attach the radar to a robust mounting point between 30cms and 100cms high, it will work facing rearwards or forwards.
It can be attached to the implement (recommended) or the tractor – if attaching to the tractor the standard wiring must be changed – refer to the RDS manual, page 10-11, section 2.4.

It is strongly recommended that a Radar Autocal procedure is performed after installation to ensure it is calibrated correctly – refer to the RDS manual, page 16, section 4.4. Ensure the implement is in work, at the normal depth and attitude when doing this. The radar must be calibrated correctly for accurate seed application.

Refer to the detailed instructions for the Remote Mounted Cut Out Finger Switch to the rear of this manual. To automatically stop and start the feed motor and area count when the implement is lifted in and out of work, fit the finger switch to an appropriate part of the implement that has moving elements that will trip the switch.
If the machine is mounted, the finger switch can be attached to the tractor and the lift arms or linkage can provide the necessary movement.
If the switch is not used and manual control is preferred, secure the switch to prevent accidental switching on or off (the alarm will activate if this happens)

Battery Cable
The heavy 5m power cable should connect directly to the vehicle battery posts to ensure adequate 12v supply to the fans. The in-line MAXI FUSE is 40 amp (Ensure the fused wire to positive +)
This cable can be hard wired to the battery, and should reach to the back of the tractor.

Power Cable The 6m power cable connects to the battery cable and the Turbo Jet junction box.

Instrument Lead
The 6m multi-core instrument lead connects to the junction box of the Turbo Jet, and runs to the Terminator box in the tractor cab.

Extension power cables and instrument leads are available if required in 4m, 6m, and 10m lengths. Please contact us for details.

Junction Box

This is positioned on the Turbo Jet under a cover above the fans, and houses 2 toggle switches to turn the fans and the agitator ON or OFF as required. The switches are accessible to the side of the cover, and each switch function is designated by the decal. Pushing the spring loaded Prime button will start the feed motor running at a pre-set speed during the calibration routine – see page 21 in the RDS Wizard manual.

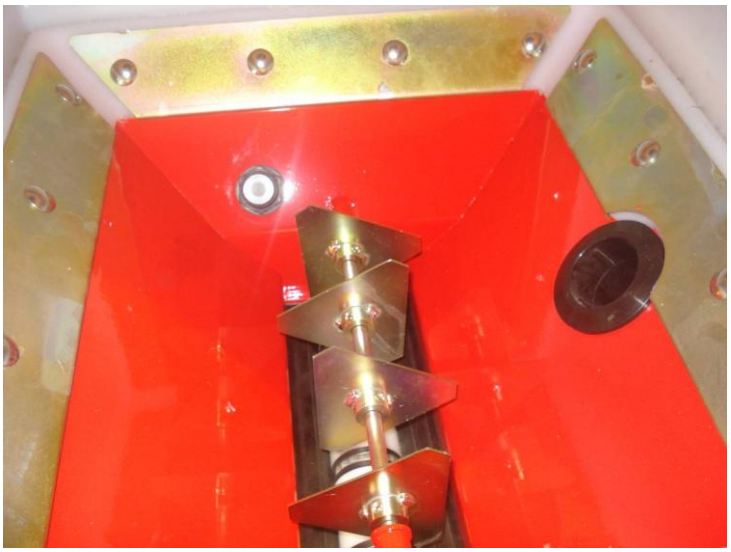
The agitator is only used for grass seed leave it switched on during calibration and whilst seeding.

Switch the fans OFF to prevent product blowing everywhere during calibration. Remember to switch the fan back ON when the calibration is finished.

Note. The feed motor will not run with the fan switched OFF (EXCEPT only in calibration mode via the Prime button) either at the junction box or the head unit. If you forget, and the fan remains switched OFF, the fan alarm will sound and the fan channel will display OFF as soon as you start to move forward with the feed motor switched ON. You must switch the fan ON or the feed motor will not start.

Fans

The fans are positioned inside a hinged meshed cover designed for easy access, and air is drawn through the mesh intakes on the rear, front, and sides of the cover, and underside the mounting base plate. The fan motor is waterproof and dustproof and will give long and reliable life **– lift the cover and use an air line and brush to clean the vanes of the fans regularly to prevent eccentric running.** Keep the air intakes clean. Use the junction box switch to turn the fan OFF when calibrating, and ON ready for work.



Hopper Agitator

The internal agitator is powered independently by its own motor and is turned ON or OFF by the switch on the junction box. Its purpose is to prevent seed becoming compacted in the hopper and bridging (not flowing). We recommend it is used for all grass and grass seed mixes, or other seed that may bridge in the hopper, but it is not required for free flowing seeds such as OSR, clover, stubble turnips or similar. If you use the agitator in the field, also use it when calibrating

Feed Motor

The feed motor can be turned ON or OFF from either manually with the cab hand control, or automatically by the remote mounted spring finger switch which can be fitted to the linkage or the implement. The cab switch must be ON for the spring finger switch to work automatically.

Note. See the separate instructions for the spring finger switch.

FEED ROLLS

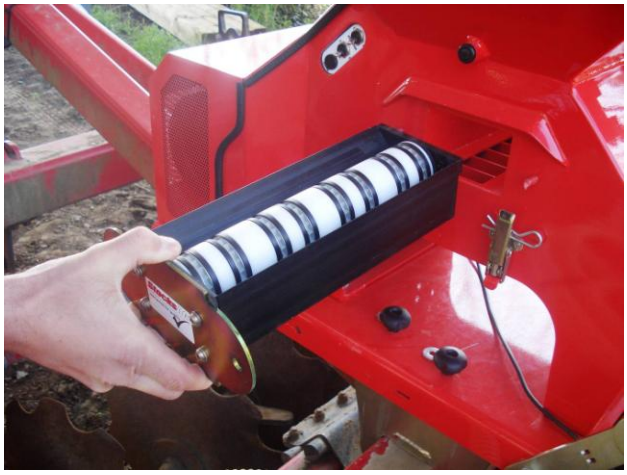
General Description: Two sizes of feed roll are supplied as standard, the Turbo Jet is supplied with both.

Small Seed Rolls –narrow 5mm wide rolls for rape, mustard, turnips, etc. Between 1 and 3 of these are used per outlet, in combination with the 5mm spacers, to provide low rate application of small seeds.

Grass Seed Rolls –wide 8 section rolls for high rate grass seeding. Normally 1 of these is used per outlet to provide high rate grass seeding.

Note: Other seed rolls may be available for different seeds and rates, please contact our office for advice.

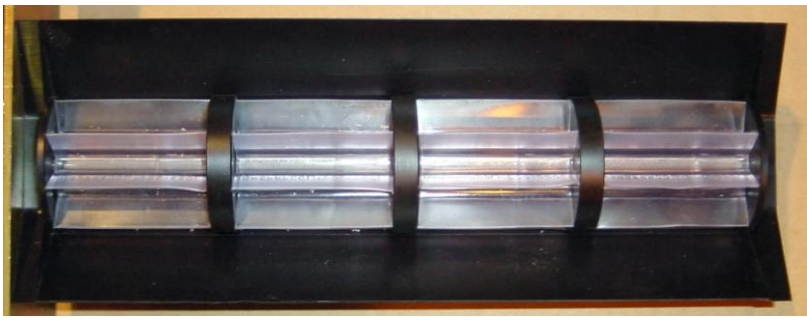
The rolls are easily changed by removing the feed mechanism as follows:
Note. Empty the hopper completely before doing this. A small amount of seed may remain in the rolls, to prevent spillage release the two over-centre catches and drop the hinged panel under the feed rolls and position the plastic collection tray directly underneath to catch any seed.
Undo and remove the 2 black plastic knobs holding the mechanism in place and slide the complete feed block assembly out. Undo and remove the 4 socket head screws on the end of the housing and remove the end plate. Slide the rolls and spacers off the shaft, and replace with the alternative rolls and spacers as shown. Refit the end plates, ensure the drive shaft engages correctly, and slide the completed feed block back into place and secure with the black plastic knobs.



FEED BLOCK REMOVAL

GRASS SEED ROLLS

Use for grass seed and grass seed mixes.
The standard roll is an 8 section roll - use all 8 with the appropriate spacers. Do not fit any stainless steel discs with these.
Remember to use the agitator when calibrating and seeding grass.

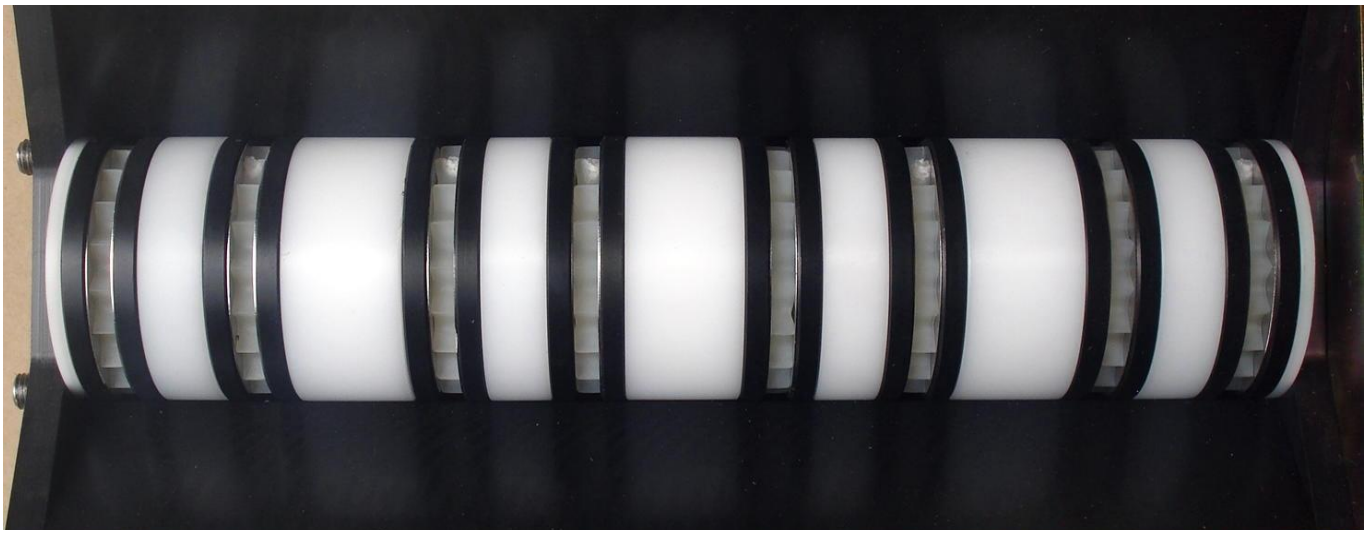


SMALL SEED ROLLS

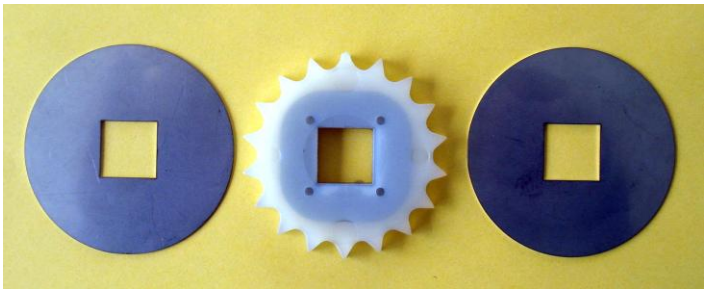
Use for OSR, stubble turnips, mustard, etc.
The standard roll is 5mm wide, 18 tooth polyurethane, with a stainless steel drive disc embedded inside. Enough of these are supplied as standard to use up to 3 per outlet, and depending on the combination of required seeding rate implement width and forward speed, you will use 1, 2 or 3 rolls per outlet in combination with the black roll spacers to achieve the application rate.

Black Roll Spacers - The black roll spacers are the same width as the small seed rolls and are used in combination with the feed rolls to allow 1, 2 or 3 feed rolls per outlet to be used – or to replace the feed rolls and blank off an outlet completely.

White Standard Spacers –There are 2 x 3mm white small end spacers, 4 x white mid spacers, and 3 x white large spacers – these always stay in the same order and position whatever the combination of 5mm Small Seed rolls and black roll spacers.

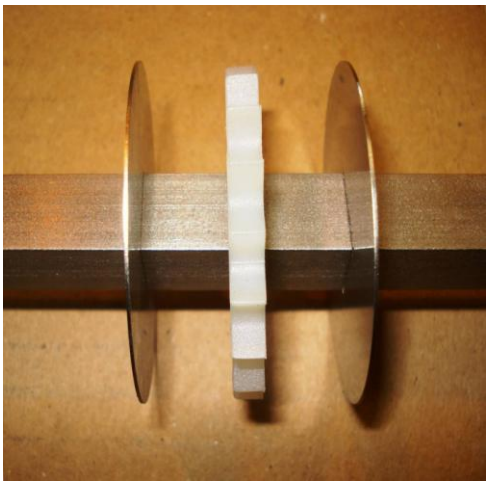


5mm Small Seed Rolls and Stainless Steel Discs.
One stainless disc is fitted to each side of the 5mm small seed rolls. They are used to reduce the friction element between the small seed rolls and the plastic spacers that are to each side of them.
Note. They are not used with grass rolls
The feed rolls have square holes in the middle that locate on the square feed shaft, and rotate with the feed shaft, powered by the 12v electric feed motor. The plastic spacers have round clearance holes through the middle and are not driven and thus do not revolve and an element of friction may occur between the revolving feed roll and the stationary plastic spacer.



To eliminate this friction, the stainless disc also has a square hole and locates on the drive shaft and thus rotates with the feed roll. Any friction is now between the rotating stainless disc and the static plastic spacer.

Note. Always assemble the rolls and spacers with a stainless steel disc on each side of the 5mm feed rolls.
Use 1 stainless disc each side of the feed rolls if a single feed roll is used - if 2 or 3 feed rolls per outlet are used, fit 1 stainless steel disc to each side of the outer feed rolls. Do not fit the steel disc between the feed rolls.
Note. The total bank of rolls and spacers and steel discs should not protrude beyond the end of the feed block.



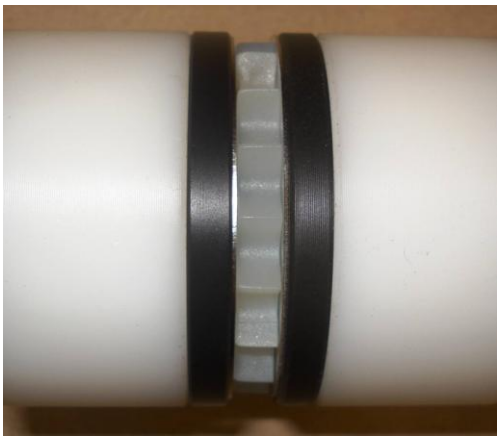


IMAGE 1

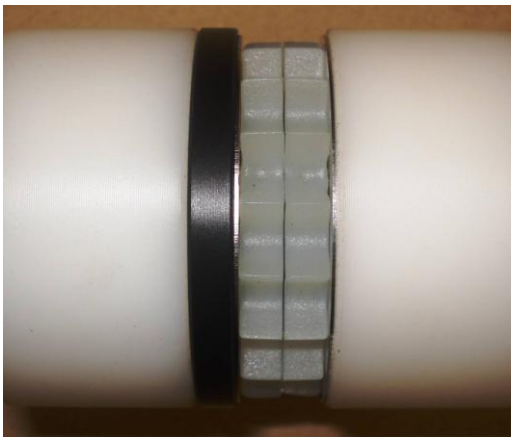


IMAGE 2

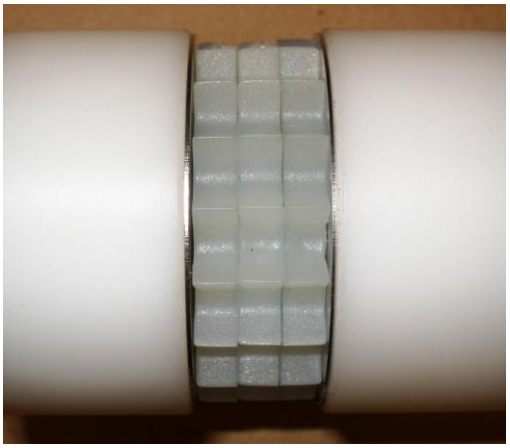


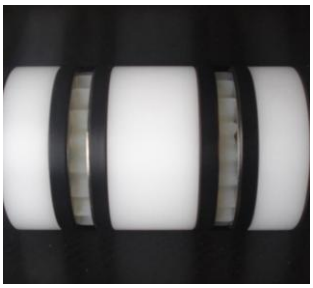
IMAGE 3

IMAGE 4

IMAGE 1: Illustrates 1 x 5mm feed roll with stainless discs to outside + 2 x black spacers.
IMAGE 2: Illustrates 2 x 5mm feed roll with stainless discs to outside + 1 x black spacers.
IMAGE 3: Illustrates 3 x 5mm feed roll with stainless discs to outside + 0 x black spacers.
IMAGE 4: Illustrates Blanked Off outlet with 3 x black spacers with stainless discs to outside.

Blanking Off Outlets.
To completely blank off an outlet, for example if reducing the number of outlets from 8 to 7, 6 or 5 to correspond with subsoiler legs or tines - remove all the feed rolls from that that outlet and replace with 3 x black roll spacers . Remember to blank off the relevant air pipes using the plugs supplied.
Note. It is important to still fit the stainless steel discs to each side of the bank of 3 blanking rollers to maintain the correct spacing overall.
Note. Re-fitting the end plates to the feed block after changing the configuration of the small seed feed rolls – the end plate should be able to fit flush with the feed block by hand, without having to pull it home with the socket head screws. The assembled rolls and spacers should not be under compression.

How Many Small Seed Rolls ?
One feed roll gives the lowest seed rate, but also limits the top speed - 2 feed rolls permits a higher top speed and seed rate, but increases the lower speed, and 3 feed rolls permits the highest top speed and seed rate but also increases the lower speed further.



Note. If it is not possible to achieve the required rate, please contact our office for advice. Alternative seed roll options may be available.

OPERATING AND CALIBRATION INSTRUCTIONS

Safety First - Keep clear when operating.
The moving parts of this machine are powerful and can pull in a finger or clothing. Be especially careful whilst performing calibration tests. To assist filling the hopper, if necessary fabricate and fit a work platform and steps, complete with handrails.
If using agrochemicals, read the label before you buy, use pesticides safely and wear suitable protective clothing and aspirators. Clean spilled product and dispose of containers responsibly.
Use the tank outlet to empty the hopper after use to avoid any risks to humans or wildlife. Run the feed rolls to fully empty into the calibration tray. Dispose of treated seed and agrochemicals responsibly.

HOW TO SET THE APPLICATION RATE

Refer to the Quick Start Guide and the RDS Wizard manual and follow the step by step instructions. You must perform functions 1 – 3, and function 4 is optional but recommended.

Application Rates. A combination of forward speed, implement width, feed roll type and feed roll speed will determine what rates are available.

CALIBRATION PROCEDURE

A simple catch and weigh test will set the rate required. You will need the supplied plastic calibration tray, and an accurate set of scales to weigh kilograms and grams – ideally in single grams.

Using the head Unit and Switch Box in the cab.

- Switch the head unit ON via the toggle switch at the rear – wait until the start-up routine has finished and the cursor moves over the forward speed channel.
- Ensure the correct implement width is entered – refer to the RDS manual, page 18, section 5.3, Set Implement Width.
- Ensure the correct application rate is entered – refer to the RDS manual, page 20, section 6.4, Changing the Target Rate.
- Switch the fan ON and feed motor OFF with the toggle switches on the switch box.

Using the Junction Box.

- Switch the fan OFF at the junction box.
- Switch the (optional) agitator ON or OFF as required (Only required if grass seed being used)
- Release the two over- centre catches and drop the hinged panel under the cassette manifold.
- Position the collection tray directly underneath to catch the seed.
- Place a few kilograms of seed in the hopper.
- Refer to the Quick Start Guide and the RDS manual, page 21, section 6.5, Product Calibration

COMMON ERRORS.

Enter the correct information and work accurately

- Ensure you enter the width and required rate correctly – that the decimal point is in the correct position. If the rate is 2.5 kg/ha -enter 2.5. (not 25 - which is 25kg/ha)
- Ensure your scales are accurate for weighing small amounts. Ideally they will weigh to a single gram - – the nearest 20 or 50 grams is not accurate enough for low rate OSR seeding.
- Remember to deduct the weight of the collection bag or bucket – weigh only the contents.
- Ensure you work in grams – not kilograms.

- Ensure you are working in the mode required – either Kilograms per Hectare or Seeds per Square Metre. The standard default mode for the Wizard is in Kgs/Ha and you will have to reconfigure the display if you want to display Seeds per Square Metre. Refer to the RDS manual, page 22 and 23, sections 6.6, Set TGW, and 6.7, Select Unit.
- Ensure you correct the theoretical weight displayed (in grams) that scrolls up automatically in the head unit (as you perform the calibration test) to equal the actual amount collected. Use the RATE + and RATE – buttons as required to adjust the display - Remember it is in grams.

The Speed Range

- Ensure you press the press the Ha>0 once and note the display which is the minimum forward speed the Wizard can work at (in KPH) – the maximum is not displayed but is approx. 20 times the displayed minimum. This is the speed range that the Wizard can maintain the application rate. This range is calculated by the Wizard and depends on the width of your machine, the application rate required, and the type and configuration of feed rolls fitted.
- Ensure that the speed range will work for you in the field – assuming most seeding operations and cultivations are done at between 8 – 12 kph, the ideal minimum forward speed will be approx. 0.7 – 1.2 kph which gives a maximum speed of 14 – 24 kph. Ensure that your target forward speed will not be close to either the minimum or the maximum of the range, and that you have some reserve of speed range above and below the in-field forward speed. Ideally your forward speed will be in close to the middle of the range.
  If the minimum is too high, for example 4kph then the feed motor will be running too slowly if your forward speed drops towards the minimum as you set in and lift out of work, and this could result in missed patches (although the alarm will trigger when either the minimum or maximum speed is reached)
- If the indicated speed range does not work for your operation, you must change the feed roll configuration or the type of feed roll to apply more or less seed, per revolution of the feed mechanism, as required. Once done, recalibrate and note the new speed range.
  For example, if using the 5mm small seed rolls and there are 3 rolls per outlet fitted and the indicated minimum forward speed is 4kph, then reconfigure the feed roll to use 1 x 5mm roll per outlet and the forward speed will reduce by 66% to 1.3kph, which is much better.

Complete the calibration test

- Ensure you press the Ha>0 button a second time and the display changes to read “donE” This indicates you have finished the calibration procedure and can go to work. Unless this is done the catch test is not completed.
- It is recommended to perform the test at least twice – the second time press the Prime button for longer to weigh out more product for a more accurate result – you need a big enough sample to weigh to be accurate. This is vital for low rates of OSR.

Calibrate the radar

- If you choose to perform the Radar Autocal procedure (recommended) ensure the implement is in the ground at the normal depth and attitude when you run the 100m course. The more accurately this is done, the better the results in the field.
- If the radar is fitted to the implement, and you alter the depth or attitude of the implement after performing the Autocal, you should redo the Autocal for maximum accuracy.
- In the field, ensure your bout matching is accurate.

Ready For Work

- Close the hinged panel and secure with the over centre catches.
- Ensure the fan is running – switch junction box switch to ON.
- Ensure the agitator is running - switch junction box switch to ON (Optional for grass seed).
- Ensure the hopper lid is screwed tightly shut to seal better against air loss.

FIELD OPERATION

In work ensure that you are driving at the correct speed and bout width.
Ensure all alarms are silent and not displayed.
Stop after a few metres – check for even distribution, spread and application rate
Check all outlet pipes are seeding correctly.
Repeat all the above checks at regular intervals until you are certain the job is being done correctly.
Please clean out the machine at the end of the day, use a brush not your hand to sweep out the bottom of the hopper.
Caution. The feed rolls and agitator can pull in hair or loose clothing. The motor is so powerful that you will be unable to stop it.

CLEANING AND STORAGE.

Do not jet wash the machine – use an air-line and brush to blow down and clean.
Brush or blow out the fan vanes on a regular basis to ensure there is no build up of debris on the vanes – this prevents eccentric running and will prolong the life of the fan significantly.
Ensure all seed is removed from the feed rolls and from inside the hoper and the body of the machine.
Store under cover if possible. The cab console is not waterproof – store in dry conditions.
Start the Turbo Jet running BEFORE you need to use for the next season, and check all functions.

WARRANTY.

The warranty period is 12 months from date of invoice.
If the Turbo Jet or controls or wiring are modified in any way this will void any warranty claim.
Please contact your distributor or dealer for help and advice, or in the event of any problem or before attempting any repair.
If you still require assistance, please contact Stocks AG directly.

Introduction

The RDS True Ground Speed Sensor provides a forward speed signal for use with any of the range of RDS instruments or to any other control or logging system. The sensor can be used on agricultural vehicles, on-road vehicles, rail vehicles, and can be used over almost any surface (except a perfectly smooth, reflecting surface). The sensor supplied into the UK is classed as a "Low Power Microwave Device" operating at 24.300 GHz producing 5mW of power. This meets performance specification MPT 1349 and complies with The Wireless Telegraphy (Exemption) Regulations 1991 (S1 1991/1523). No operators Licence is required.

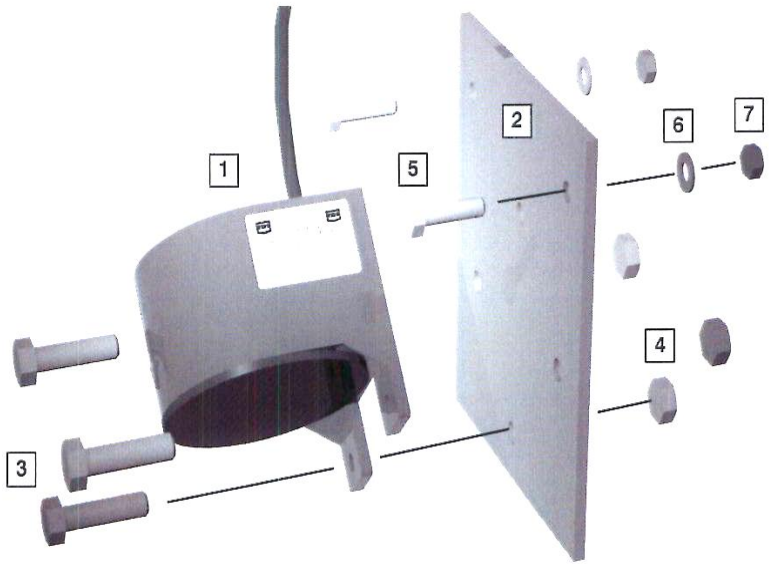
The UK specification sensor is marked 'UK' on the sensor face. The sensor supplied to all other countries operates at 24.125 GHz. Please ensure that you have been supplied with the correct sensor

Kit Contents

The kit contains the following components ("#" - part not illustrated).

Item	Part Number	Description	Qty
1(a)	S/SR/168-12-001	Mk3 Radar Sensor 24.300 GHz (UK)	1
	or		
1(b)	S/SR/168-12-002	Mk3 Radar Sensor 24.125 GHz (Standard)	1
2	S/BK/168-12-010	Mk3 Radar Sensor Bracket	1
3	S/FR/500-6-055	M10 x 35 Hex. Set Screw	3
4	S/FSNR/227	M10 Nyloc Nut	3
5	S/FSNR/940122	M8 x 45 Hex. Set Screw	2
6	S/FR/500-5-006	M8 Plain Washer	2
7	S/FSNR/407	M8 Nyloc Nut	2
#	S/CB/220-1-002	Extension lead	1
#	S/DC/500-10-511	Instruction leaflet	1
#	S/DC/500-10-512	Self-adhesive Mounting Template	1

Figure 1



Installation

The sensor can be mounted directly to the vehicle chassis, or on its mounting bracket, so that it is pointing at a depression angle of 45 degrees (± 2 degrees) from the horizontal. This angle is critical to the accuracy of the instrument.

The sensor should ideally point **backwards** but will work equally effectively if pointing forwards. The mounting position must be chosen to provide a rigid fixing with a clear view of the ground. Anything that moves or vibrates in the radar beam can generate a false speed signal. **Please note the beam spread shown in figure 3.**

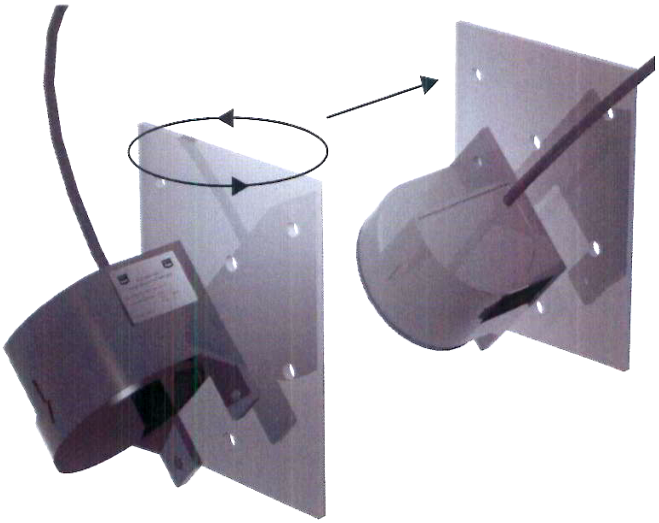
The sensor should ideally be mounted such that the lens is between 30 cm (12") and 100 cm (39") above the ground and is near to the vehicle's centre of gravity. This will minimise the effect of the vehicle roll and pitch.

Installation with the bracket

The correct mounting angle is provided using the bracket provided (#2 -fig.1). By reversing the mounting plate as appropriate (fig. 2), you can mount the sensor facing forwards or rearwards, either to the left hand side or right hand side of the vehicle.

Ensure that the bracket is attached to the vehicle with the top edge parallel to the ground.

Figure 2



Installation without the bracket

If you are mounting the sensor directly to the vehicle, a self-adhesive mounting template is provided in the kit, for drilling the mounting holes at the correct spacing and position.

Ensure that the template is placed with the line marked  *parallel to the ground.*

Wiring Connections

The sensor is fitted with an integral cable and three-pin connector. A mating cable is supplied to join the sensor to the instrument.

Connector Pin	Sensor Lead	Extension Lead	Function
A	Red	Brown	+V
B	White	Yellow/Green	Signal
C	Black	Blue	0V

Please refer to the Product Data Sheet for the complete operating and environmental specification.

Calibration

The sensor output is calibrated at 128.4 pulses per metre travelled, when the sensor is mounted at the correct angle of 45º from the horizontal.

The normal RDS convention is that the "speed sensor factor" is either;

(i) the distance travelled over **one** interval between sensor pulses (all Pro-Series instruments and Wizard instruments with software versions prefixed WZxxx.).

*In this instance set a factor of **0.008** metres (or programme 0.307" if the instrument display is set for Imperial units).*

(ii) the distance travelled over **two** intervals between sensor pulses -(UDM and Wizard instruments instruments with software versions prefixed UDMxxx or UDJxxx).

*In this instance set a factor of **0.016** metres (or programme 0.613" if the instrument display is set for Imperial units).*

The calibration manual supplied with the instrument will confirm the necessary factor.

Many instruments have an "Auto Cal" facility for determining the correct Speed Sensor Factor. This is primarily used where a conventional magnetic sensor is installed, however, note that with the radar sensor, the instrument should accumulate 12,840 pulses over a 100 metre test run (11740 pulses over 100 yards).

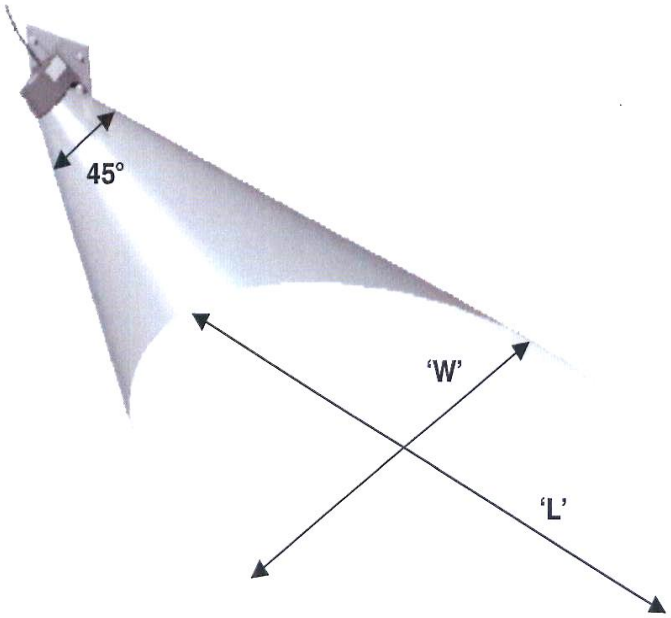
Replacing a Mk 2 TGSS with a Mk 3 TGSS

If you are replacing a Mk 2 TGSS with a Mk 3 TGSS mounted in the same position on the vehicle,

(i) Use Extension Lead Pt No. S/CB/500-1-073 (available on request), to re-connect to the existing sensor lead.

(ii) the calibration factor programmed in the instrument does not need to be changed.

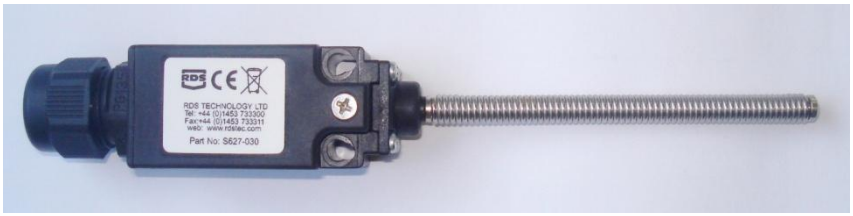
Figure 3: Beam Spread



Height from ground	'L'	'W'
MIN 0.3 m (12")	0.8 m	0.5 m
0.45 m (18")	1.1 m	0.7 m
0.6 m (24")	1.4 m	0.9 m
0.75 m (30")	1.7 m	1.1 m
MAX 0.9 m (36")	2.0 m	1.3 m

Stocks AG Wizard control system.

REMOTE MOUNTED CUT OUT FINGER SWITCH



The environmentally sealed switch simply makes or breaks a connection to the feed motor. It should be mounted to a suitable place on the implement or linkage of the tractor, and the movement of the implement or linkage when lifting a machine in or out of work will deflect the spring, and automatically switch the feed motor off or on accordingly as the circuit is made or broken.

Position the finger switch so that the ***tip*** of the spring comes into contact with the moving part of the implement or linkage when lifted out of work, and ***remains deflected*** until the implement is lowered back into work. **NOTE.** Ensure that there is sufficient and positive deflection on the spring to prevent accidental switching ON or OFF if the implement moves slightly up or down in work.

- The standard wiring as supplied for this switch is when the spring is at rest, the feed motor will run normally and can be controlled by the cab switch-box, using the manual switch to turn ON or OFF as required.

- When the spring is deflected, and the feed motor is switched ON at the cab switch-box, the feed motor will stop automatically and will re-start automatically when the spring returns to rest position. The feed motor will remain stopped for as long as the spring remains deflected.
  NOTE. The area meter also stops when the feed motor stops.

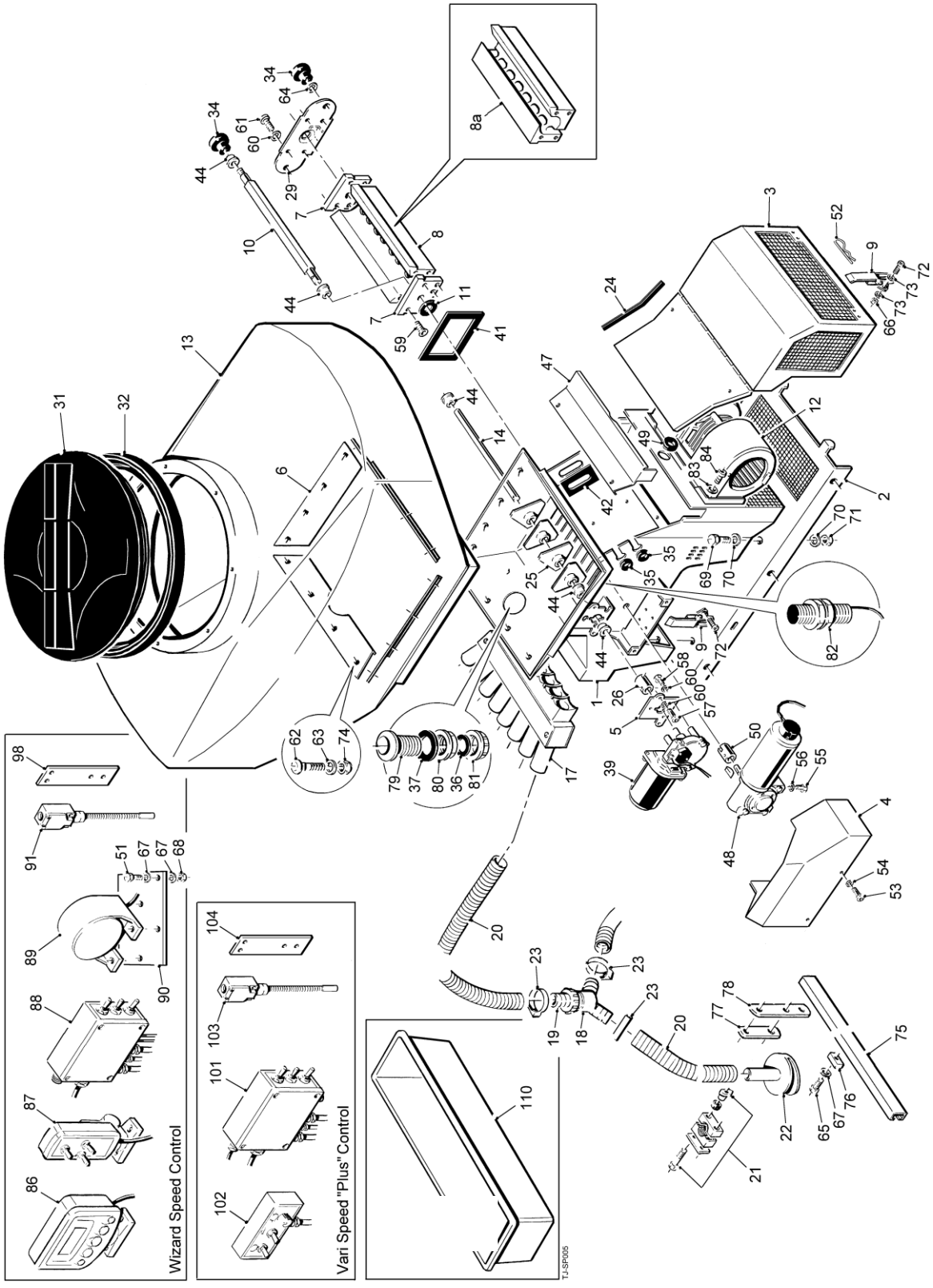
- If required, the switch can work in the opposite mode – the 2 wires inside the switch will need to be connected to the alternative terminals (nearest the gland nut - inside the switch cover) and it will then stop the feed motor when at rest, and turn the feed motor on when deflected. Access the terminals under the switch cover. Refit the cover correctly.

Stocks AG Limited, Cromwell Road, Wisbech, Cambridgeshire, UK, PE14 0SD.

Tel 01945 464 909. Fax 01945 464 985.

TURBO JET SPARE PART 1.1

Turbo Jet Assembly (from 2011)



TURBO JET SPARE PART 1.1a

Turbo Jet Assembly (from 2011)

Item	Part No.	Description	Qty.	Remarks
1	TJ400A	Chassis (8 outlet)	1	
	TJ400B	Chassis (10 outlet)	1	
	TJ400C	Chassis (6 outlet)	1	
2	TJ322	Base Plate	1	
3	TJ425A	Fan Guard (8 outlet)	1	
	TJ425B	Fan Guard (10 outlet)	1	
	TJ425C	Fan Guard (6 outlet)	1	
4	TJ418	Motor Guard (8 outlet)	1	
	TJ459	Motor Guard (10 outlet)	1	
	TJ318	Motor Guard (6 outlet)	1	
5	TJ429	Motor Plate	1	
6	TJ465	Support Plate Kit	1	
7	TJ101	Feed Block End Cap	2	
8	TJ102	Feed Block (8 outlet)	1	
	TJ098	Feed Block (10 outlet)	1	
	TJ100	Feed Block (6 outlet)	1	
8a	TJ102A	Low Rate Feed Block (8 outlet)	1	
	TJ098A	Low Rate Feed Block (10 outlet)	1	
9	TJ103	Fastener Assembly	4	
10	TJ104B	Metering Shaft (8 outlet)	1	
	TJ099B	Metering Shaft (10 outlet)	1	
	TJ097B	Metering Shaft (6 outlet)	1	
11	TJ033	Gasket	1	
12	TJ124	Double Fan Unit (8 & 10 outlet)	1	
	TJ120	Fan (6 outlet)	2	
13	TJ126A-Ass	Hopper (240L)	1	
	TJ125A-Ass	Hopper (400L)	1	Optional (not shown)
14	TJ138	Agitator Shaft (8 outlet)	1	
	TJ138A	Agitator Shaft (10 outlet)	1	
15				
16				
17	TJ218A	Feed Unit Manifold (8 outlet)	1	
	TJ217A	Feed Unit Manifold (10 outlet)	1	
	TJ216	Feed Unit Manifold (6 outlet)	1	
18	TJ220	'Y' Connector	a/r	
19	TJ221	Screw Cap and Hose Tail 1 1/4"	a/r	
20	TJ222	Ø32mm Hose	a/r	
21	TJ223	Clamp Complete	a/r	
22	TJ224	Distributor Head	a/r	
23	TJ227	Ø40mm BZP Hose Clip	a/r	
24	TJ038	Strip Seal	1.5m	
25	TJ021A	Agitator Paddle (8 outlet)	4	
	TJ021A	Agitator Paddle (10 outlet)	5	
26	TJ137	Coupler	1	
27				
28				
29	TJ416	Cassette Mounting Plate	1	
30				
31	TJ128	Hopper Lid	1	
32	TJ129	Neck Ring	1	
33				
34	FJ033A	M8 Fem Knob	3	
35	FJ039D	Rubber Grommet	2	

TURBO JET SPARE PART 1.1b

Turbo Jet Assembly (from 2011)

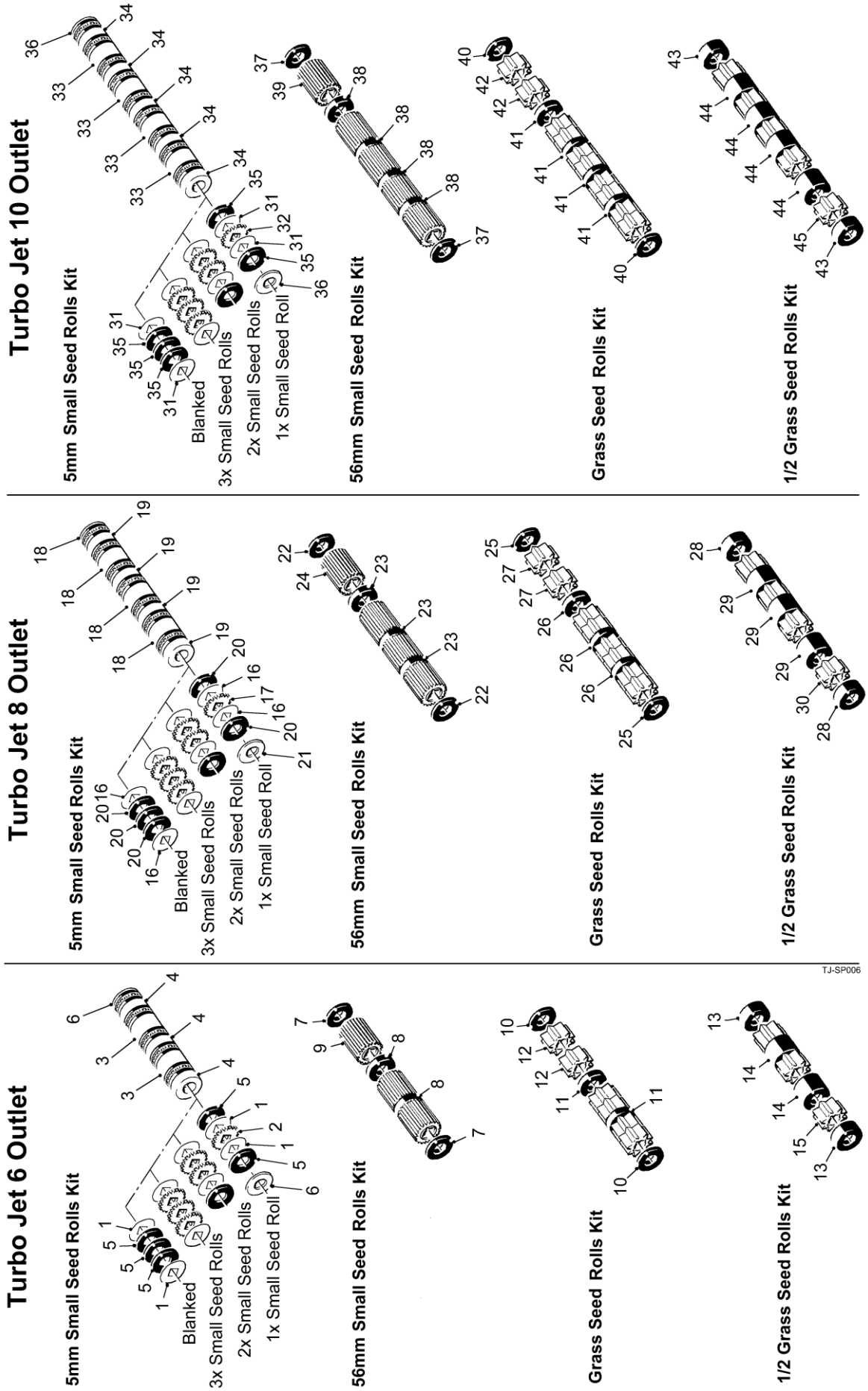
Item	Part No.	Description	Qty.	Remarks
36	TJ053	Rubber Washer	1	
37	TJ054	Rubber Washer	1	
38				
39	GA046	Agitator Motor	1	
40				
41	TJ040	Cassette Seal	1	
42	TJ041	Junction Box Seal	1	
43				
44	GA103	PVC Bush	5	
45				
46				
47	TJ430	Hinge Guard (8 outlet)	1	
	TJ431	Hinge Guard (10 outlet)	1	
	TJ330	Hinge Guard (6 outlet)	1	
48	TJ044	Metering Motor	1	
49	TJ039	Grommet	3	
50	TJ043A	Coupler	1	
51	M10-004	M10x25 Bolt	3	
52	FJ419A	R' Clip	4	
53	M6-003	M6 Setscrew	2	
54	M6-016	M6 Flat Washer	2	
55	M5-011	M5 Setscrew	4	
56	M5-014	M5 Flat Washer	4	
57	M6-004	M6x16 Bolt	2	
58	M6-004	M6x16 Bolt	3	
59	M6-007	M6x20 CSK Setscrew	4	
60	M6-016	M6 Flat Washer	6	
61	M6-008	M6x25 Button Head Setscrew	4	
62	M8-004	M8x20 Dome SQ Bolt	16	
63	M8-010	M8 Flat Washer	16	
64	M8-012	M8 Penny Washer	2	
65	M10-001	M10x16 Bolt	a/r	
66	M4-004	M4 Lock Nut	4	
67	M10-016	M10 Flat Washer	a/r	
68	M10-024	M10 Lock Nut	3	
69	M12-003	M12x35 Bolt	4	
70	M12-008	M12 Flat Washer	8	
71	M12-014	M12 Lock Nut	4	
72	M4-001	M4x6 Socket Head Setscrew	8	
73	M4-006	M4 Flat Washer	8	
74	M8-019	M8 Lock Nut	16	
75	TJ150	'C' Rail	4	
76	TJ151	Channel Nut	a/r	
77	TJ152	Short Clamp Plate	a/r	
78	TJ153	Long Clamp Plate	a/r	
79	TJ050	Tank Outlet	1	
80	TJ051	Nut	1	
81	TJ052	Blanking Cap	1	
82	TJ003S	Hopper Level Sensor	1	
83	M4-006	M4 Flat Washer	8	
84	M4-003	M4 Setscrew	8	
85				

TURBO JET SPARE PART 1.1c

Turbo Jet Assembly (from 2011)

Item	Part No.	Description	Qty.	Remarks
86	TJ117A	Wizard Cab Control Box	1	
87	TJ118A	Wizard Cab On/Off Box & Term Box	1	
88	TJ119A	Wizard Junction/Switch Box	1	
89	TJ233	Wizard Ground Speed Radar	1	
90	TJ231	Wizard Radar Bracket	1	
91	TJ252	Wizard Finger Switch	1	
92	TJ111A	Wizard 4m Extension Cable Kit	1	(not shown)
93	TJ111B	Wizard 6m Extension Cable Kit	1	(not shown)
94	TJ111C	Wizard 10m Extension Cable Kit	1	(not shown)
95	TJ238	Wizard 5m Fused (40A) Power Cable	1	(not shown)
96	TJ242	Wizard 6m Connector Ext Cable	1	(not shown)
97	TJ248	Wizard 6m Power Extension Cable	1	(not shown)
98				
99				
100				
101	TJ260	Vari Speed Junction/Switch Box	1	
102	TJ262	Vari Speed Cab Control Box	1	
103	TJ252	Finger Switch	1	Optional
104	TJ253	Finger Switch Mounting Plate	1	(not shown)
105	TJ264	Vari Speed Plus 4m Power Cable	1	(not shown)
106	TJ266	Vari Speed Plus 6m Power Ext.Cable	1	(not shown)
107	TJ268	Vari Speed Plus 6m Connector Cable	1	(not shown)
108	TJ270	Connector Lead for Cut Out	1	Optional (not shown)
109				
110	TJ130	PVC Calibration Tray	1	(not shown)

TURBO JET SPARE PART 1.2



TURBO JET SPARE PART 1.2a

Feed Rolls (from 2011)

Item	Part No.	Description	Qty.	Remarks
		6 Outlet 5mm Small Seed Rolls Kit Consists Of:		
1	TJ199	Stainless Steel Shim	12	
2	TJ200	5mm Small Seed Roll		
3	TJ203	24.6mm Spacer	18	
4	J204	13.5mm Spacer		
5	TJ205	5mm Spacer		
6	TJ207	3mm Spacer	2	
		6 Outlet 56mm Small Seed Rolls Kit Consists Of:	3	Optional
7	TJ207	3mm Spacer	18	
8	TJ208	10mm Spacer		
9	GA110	56mm Small Seed Roll	2	
		6 Outlet Grass Seed Rolls Kit Consists Of:		Optional
10	TJ207	3mm Spacer		
11	TJ208	10mm Spacer		
12	GA103	Grass Seed Roll		
		6 Outlet 1/2 Grass Seed Rolls Kit Consists Of:		Optional
13	TJ209	16mm Spacer		
14	TJ213	40mm Spacer	2	
15	GA103	Grass Seed Roll		
			2	
		8 Outlet 5mm Small Seed Rolls Kit Consists Of:	3	
16	TJ199	Stainless Steel Shim		
17	TJ200	5mm Small Seed Roll		
18	TJ203	24.6mm Spacer		
19	TJ204	13.5mm Spacer		
20	TJ205	5mm Spacer		
21	TJ207	3mm Spacer		
		8 Outlet 56mm Small Seed Rolls Kit Consists Of:		Optional
22	TJ207	3mm Spacer		
23	TJ208	10mm Spacer	2	
24	GA110	56mm Small Seed Roll		
			2	
		8 Outlet Grass Seed Rolls Kit Consists Of:	6	
25	TJ207	3mm Spacer		
26	TJ208	10mm Spacer		
27	GA103	Grass Seed Roll		

TURBO JET SPARE PART 1.2b

Feed Rolls (from 2011

Item	Part No.	Description	Qty.	Remarks
		8 Outlet 1/2 Grass Seed Rolls Kit Consists Of:		Optional
28	TJ209	16mm Spacer	2	
29	TJ213	40mm Spacer		
30	GA103	Grass Seed Roll	3	
		10 Outlet 5mm Small Seed Rolls Kit Consists Of:	4	
31	TJ199	Stainless Steel Shim		
32	TJ200	5mm Small Seed Roll		
33	TJ203	24.6mm Spacer		
34	TJ204	13.5mm Spacer		
35	TJ205	5mm Spacer		
36	TJ207	3mm Spacer		
		10 Outlet 56mm Small Seed Rolls Kit Consists Of:		Optional
37	TJ207	3mm Spacer	20	
38	TJ208	10mm Spacer		
39	GA110	56mm Small Seed Roll	30	
		10 Outlet Grass Seed Rolls Kit Consists Of:	4	
40	TJ207	3mm Spacer		
41	TJ208	10mm Spacer	5	
42	GA103	Grass Seed Roll	30	
		10 Outlet 1/2 Grass Seed Rolls Kit Consists Of:		Optional
43	TJ209	16mm Spacer	2	
44	TJ213	40mm Spacer		
45	GA103	Grass Seed Roll		
			2	
			4	
			5	