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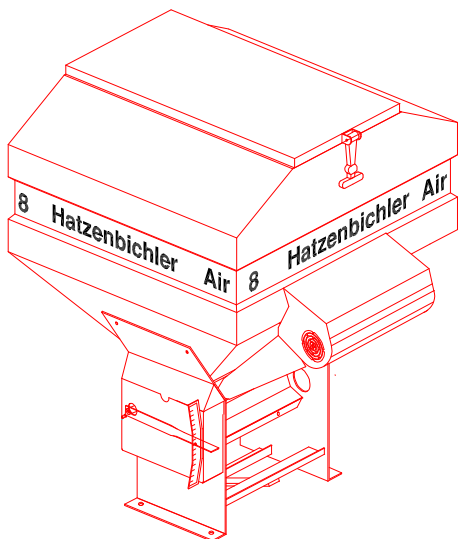
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# *Operating Instruction*

## *Pneumatic seed box AIR 8 ELECTRONIC & PRO*



*Quality from OPICO  
GOOD COMPANY FOR FARMERS  
2007*



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# *Contents for*

## ***Pneumatic seed box***

### ***AIR 8***

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2. Declaration about seed germination
3. Safety instructions
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# *EU-Declaration of Conformity*

We, Thomas Hatzenbichler & Sohn  
Fischering 2  
A-9433 St. Andrä  
Austria

Declare that the new machine described hereafter

Make, model: **Pneumatic Seed box “Air 8”**

---

Serial number:

---

Conforms to the relevant essential health and safety requirements of the  
Directive 89/392/EEC.

- DIN EN 292-1, Safety of machines, tools and equipment
- DIN EN 292-2, Safety of machines, tools and equipment
- DIN EN 294, Safety of machines, tools and equipment
- DIN EN 708, Safety of agricultural machinery and soil tillage equipment
- ÖNORM V 5223, Safety of agricultural trailers
- \_\_\_\_\_
- \_\_\_\_\_

Date \_\_\_\_\_

Thomas HATZENBICHLER  
Director



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OPICO and Hatzenbichler do not take any responsibility for the

## **GERMINATION**

of seed.

Reason:-

We do not know -

1. The condition of the seed
2. The depth at which the seed is planted
3. The treatment of the ground before planting
4. On which implement the seeder is mounted

### **Hints for setting up and operating pneumatic seeders “AIR-Control”, “AIR8” and “AIR16”:**

1. The calibration test has to be done by the operator in the field.
2. With the pneumatic seeder “AIR Control” with **8 outlets**, over-sowing work can be done up to a working width of 6,50m. **Sowing of ploughed land** can be done up to **3,00m**
3. With the pneumatic seeder “AIR8” with **8 outlets**, over-sowing work can be done up to a working width of 6,50m. **Sowing of ploughed land** can be done up to **3,00m**
4. With the pneumatic seeder “AIR16” with **16 outlets**, over-sowing work can be done up to a working width of 12m. **Sowing of ploughed land** can be done up to **6m**.



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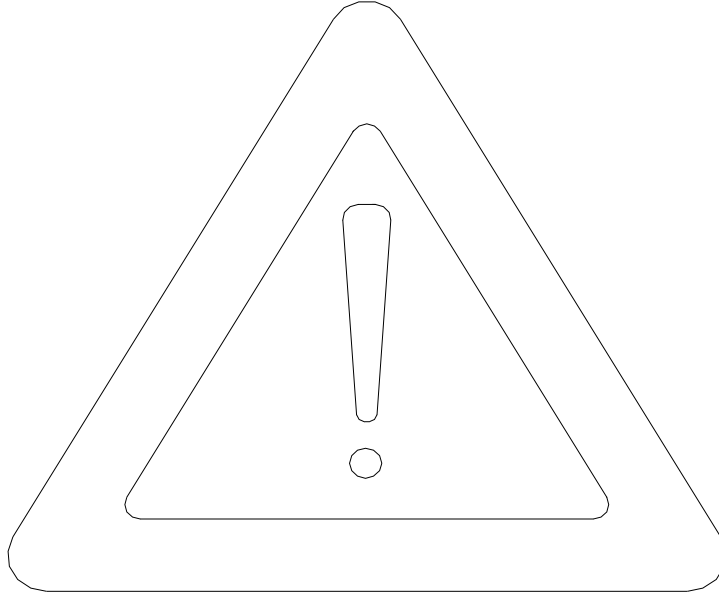
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**ATTENTION!!! Very important!!!**



**Safety instructions**

- Do not remain in the working area of the implement
- It is prohibited to remain in the folding area of the implement during the process of folding – danger of being crushed
- Put a mechanical support to prevent the implement from lowering, if you do repair or maintenance work under the implement in the raised position on the tractor
- Riding on the implement is not allowed, either during transport or during work
- Lower the tractor linkage and machine when leaving the tractor seat (either in folded or unfolded position)
- Take extra care when crossing or driving on slopes



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### **4. Air 8 Fitting Instructions for Grass Harrow (6mtr model)**

#### **4.1) Seed Hopper**

1. The pneumatic seed box should be fitted onto the rear support arm of the Grass Harrow approx. 750mm from the headstock, using mounting bracket and bolts supplied. Position so that the electric fans and seed metering mechanism is located at the back of the harrow, the seed pipes will run forward to the distributor outlets

**NOTE: 4.5m & 5m models require an additional mounting bracket (934825) to allow the seed box to be mounted in the centre of the machine**

2. The Grass Harrow rear support arm must be bolted with two M14 x 90 bolts supplied, removing the two pins previously used. This is to prevent vibration and wear which may occur with the added weight of seed box mounted
3. The optional operator platform should be mounted behind the seed box on the harrow rear support arm, positioned to suit the operator



#### **4.2) Sensor drive wheel**

Mount the sensor drive wheel onto the rear parking stand bottom hole with locating pin supplied. The speed sensor wire should be routed under the platform and wired into the electric junction box on the seeder (see wiring diagram pg39.)





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## **4.3) Distributor outlets**

1. Remove the plastic end caps from the front of each harrow bed carrier and fit the expand clamp into the tube and tighten clamp bolt
2. Fit the C-section distributor carrier (1.5m section 39101) or (2m section 39102) into the clamp holder and set between 20-40cm above ground level
3. Place the distributor outlet onto the C-section carrier bar using bolt supplied, and space evenly to suit the working width e.g. 6m harrow requires 75cm spacing between distributor plates
4. Cut and fit the flexible pipe between seed box outlet and distributor plate, route the pipe allowing for folding wings



Working width	Distributor spacing
3m	37.5cm
4.5m	56.25cm
5m	62.5cm
6m	75cm
6.5m	81.25cm

## **4.4) Stabiliser bars (6mtr model only)**

1. Remove the existing stabiliser bar on both left & right wings and discard.
2. Mount the new stabilising bracket on the wing box section close to the outer section pivot point, the stabiliser will be on the underside of the wing box section.
3. Fit the short stabilising bar and position so that the bed is in the horizontal position.



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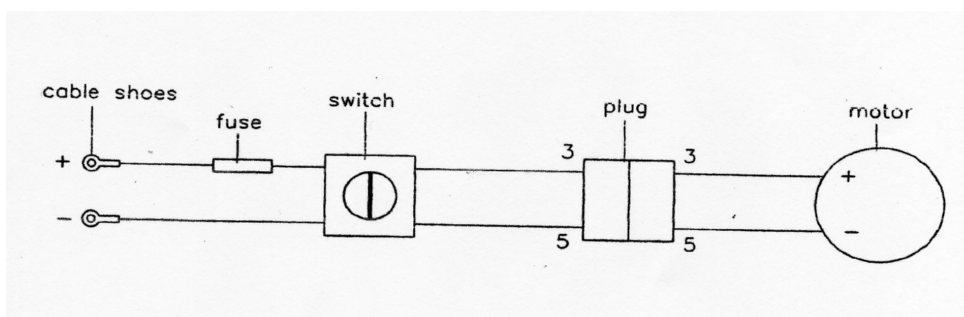
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**4.5) Electric fan power supply**

The air fan units require a 12v 30amp electric supply direct from the tractor battery. The two fans are wired separately to the battery, when connected ensure the fans are running in the correct direction, fan blades turning clockwise as you look at it

1. Connect the power cable supplied Ref. Fig. 1, directly to the tractor battery and locate the on/off switch and male 7-pin plug in the tractor cab
2. The seeders unit power cable is supplied with a female 7-pin socket which connects into the tractor fitted power lead
3. The power cable supplied has two in-line fuses (16amp) on the positive lead at the battery



Blue = positive (+)

Green/yellow = positive (+)

Black = negative (-)

Brown = negative (-)

**Fig. 1**





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#### **4.6) Hydraulic fan**

The hydraulic fan is mounted at the left hand side of the harrow chassis directly behind the l/h lower hitch point. The air pipe (ID 80mm) connects between the fan and seeder air intake with hose clips provided.

The hydraulic fan requires a pressure free return oil supply of 2-16 ltr/min, the oil flow should be set at the tractors hyd spool valve and **must not exceed 16ltr/min** – to do so may damage the motor oil seal, when connected ensure the fan is running in the correct direction, fan blades turning clockwise as you look at the air intake.

4. The ½" supply hose (marked 'P' on the hyd motor casing to indicate pressure) should connect into the tractor spool which suits hydraulic motor service.
5. The ½" return hose (marked 'T' on the hyd motor casing to indicate tank) from motor should be a pressure free return direct to the tractor hydraulic oil reservoir.



#### **Fan speed adjustment**

The fan speed will automatically display on the control box screen, the alarm to indicate the fan is not rotating needs to be activated in the control box menu 140.0. The recommended operating speed for the steel hydraulic fan: min 1600rpm – max 3800rpm. The normal working speed should be set, depending upon working width and seed type. This hydraulic fan is suitable for fine and grass seed types up to 12.5m working width.

Fine seeds: 2000 - 3000 rpm

Grass seeds: 2500 - 3500 rpm

NOTE: It is very important that the seed hopper lid is air tight, properly sealed ensuring air does not flow back through the hopper.



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## **5. Working instructions - AIR 8**

### **5.1) Basic adjustments**

Before filling the hopper, please observe the following points:

#### **1. Is the correct metering roller fitted?**

**Attention:** Choosing the metering roller according to the size of the seed and the quantity to broadcast

Seeds, where the rough-toothed metering roller is used:

Grass-seed mixtures, rye, barley, wheat, oats, etc.  
(normally for large seed rates; 10kg/ha ->)

Seeds, where the fine-toothed metering roller is used:

Pure clover seeds, rape seed, phacelia, granules etc.  
(normally for small seed rates; < 15kg/ha)

#### **2. Seed retaining brush adjustment:**

The distance of the retaining brush from the metering roller can be adjusted by a lever on the right hand side of the hopper. The brush can be adjusted from 1-7mm

The following rules must be observed:

- The distance between brush and metering roller is approx. half the seed size  
i.e.        Oil seed rape, clover        0-1mm  
              Grass-mixtures            1-2mm  
              Game cover mixtures       2-3mm
- The gap on the lower side of the roller should never be more than 1mm (Factory set)

### **5.2) Changing the seed metering roller**

Ensure the seed hopper is completely empty of seed. To change the metering roller, remove the end cap bearing holder on the right hand side of the machine. Slide out the roller, by turning anti-clockwise and pulling at the same time

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email: [ask@opico.co.uk](mailto:ask@opico.co.uk)website: <http://www.opico.co.uk>**When fitting another roller, observe the following:**

1. Slide the replacement roller onto the drive axle
2. Replace the bearing holder
3. Ensure the spring loaded discs on the ends of the metering roller take up any gap when the bearing holder has been fitted, the discs should not be tight
4. Rotate drive wheel and check that the metering roller turns easily

**5.3) Seed roller protection shield**

This is mounted inside the hopper to carry the weight of seed in the hopper. It is designed mainly for heavier seeds ie Oil seed rape, slug pellets, etc. When working with lighter seeds ie grass seed be careful to ensure the plate does not encourage bridging in the hopper. If seed bridging is a problem remove the thumb screws and shield from the hopper and work without it fitted.

**5.4) Sensor Drive Wheel**

Release the drive wheel from transport position onto the ground. Allowing for constant drive wheel contact over undulations, pin under the drive wheel arm to clear ground when harrow is raised out of work

Drive wheel axle should have no side movement to ensure sensor gap is constant. The sensor and drive wheel slots must be clean to provide a good signal to the computer. The gap from sensor to drive wheel should be 5-8mm, this can be adjusted on the sensor mounting nuts.

**5.5) Field operation****Overseeding Grass:**

It is possible to upgrade existing pasture by adding new seed. Harrowing old grass pasture to open up the soil surface before broadcasting new seed is cost effective. The combination of grass harrow and pneumatic seed box will help you get the most from your overseeding programme as it improves weed control, airs the soil and improves conditions for grass seed germination.

**Reseeding Grass:**

The benefits of increased yield and improved forage quality from reseeding are undoubted. Reseeding into cultivated ground is possible with the harrow and pneumatic seed box, cross drilling in a diamond pattern will ensure good ground cover, but there's several points worth considering to ensure success.

1. Always check pH, phosphate and potash levels prior to sowing (aim for pH 6.5, P2, K2)
2. Make certain the seed bed is fine and firm



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3. Roll before as well as after sowing
4. Ensure depth of seed is no more than 15mm
5. Control weeds after establishment
6. Use pesticide control when sowing grass after grass

**Before field work check the following:**

- Check the fan is working & direction of motion is correct. Run the fan to dry any moisture in the seed pipes before starting work, this will minimise risk of seed blockage in the pipes
- There should be a minimum of 20kg of seed in the hopper
- The lid of the seed hopper must close air tight
- Set the distributor outlet between 20-40 cm above ground. Harrow tine setting, crop foliage height and seed type will determine the height required to ensure an even spread pattern
- Check all outlets to ensure even seed coverage across the working width

**5.6) Emptying the seed hopper**

1. Remove the metering roller cover plate.
2. Place the calibration tray into the output roller compartment.
3. Set the seed retaining brush at maximum height and set the control monitor to calibrate mode until the hopper is empty.
4. To empty the seed hopper completely, remove the metering roller (Ref. to 5.2)





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**5.7) Maintenance**

Daily

1. Ensure the hopper is air tight, lid seal and metering cover plate seal are in good condition
2. Check the flexible seed pipe for damage or blockage
3. Check distributor plates are not damaged
4. Check the metering & agitator drive is clean and working
5. Check metering roller including sponge end caps are clean
6. Clean the fan inlet with compressed air, particularly when working in dusty conditions, electric fans can collect dust on the fan vanes – if left to build up this will shorten their working life.

Weekly

1. Check transmission drive belt, remove the two M6 nuts and cover to access the drive and tensioner
2. Lubricate the land drive wheel
3. Lubricate the metering roller end cap bearing
4. Check all nuts and bolts are tight
5. Check air manifold between hyd fan and seeder – this has a built in perforated diffuser plate which can build up a blockage in trashy conditions and may need blowing out.
7. Check hydraulic hoses and connections for oil leaks or damage
8. Check mounting nuts and bolts are tight

**5.8) Storage**

1. Empty seed hopper completely and remove metering roller
2. Clean the unit thoroughly and paint any bare metal
3. Check for any ware or damage and repair as necessary
4. Store the pneumatic seed box under cover to prevent any build-up of moisture in the distributor pipes, seed hopper and metering mechanism.



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## **6. Conversion chart**

kg lb			ac ha			lb/ac kg/ha			kg/ac kg/ha			kg/ha g/m <sup>2</sup>		
0.5	1	2.2	2.5	1	0.4	0.9	1	1.1	0.4	1	2.5	10	1	
0.9	2	4.4	4.9	2	0.8	1.8	2	2.2	0.8	2	4.9	20	2	
1.4	3	6.6	7.4	3	1.2	2.7	3	3.4	1.2	3	7.4	30	3	
1.8	4	8.8	9.9	4	1.6	3.6	4	4.5	1.6	4	9.9	40	4	
2.3	5	11.0	12.4	5	2.0	4.5	5	5.6	2.0	5	12.4	50	5	
2.7	6	13.2	14.8	6	2.4	5.4	6	6.7	2.4	6	14.8	60	6	
3.2	7	15.4	17.3	7	2.8	6.2	7	7.8	2.8	7	17.3	70	7	
3.6	8	17.6	19.8	8	3.2	7.1	8	9.0	3.2	8	19.8	80	8	
4.1	9	19.8	22.2	9	3.6	8.0	9	10.1	3.6	9	22.2	90	9	
4.5	10	22.0	24.7	10	4.0	8.9	10	11.2	4.0	10	24.7	100	10	
5.0	11	24.3	27.2	11	4.5	9.8	11	12.3	4.5	11	27.2	110	11	
5.4	12	26.5	29.7	12	4.9	10.7	12	13.5	4.9	12	29.7	120	12	
5.9	13	28.7	32.1	13	5.3	11.6	13	14.6	5.3	13	32.1	130	13	
6.4	14	30.9	34.6	14	5.7	12.5	14	15.7	5.7	14	34.6	140	14	
6.8	15	33.1	37.1	15	6.1	13.4	15	16.8	6.1	15	37.1	150	15	
7.3	16	35.3	39.5	16	6.5	14.3	16	17.9	6.5	16	39.5	160	16	
7.7	17	37.5	42.0	17	6.9	15.2	17	19.1	6.9	17	42.0	170	17	
8.2	18	39.7	44.5	18	7.3	16.1	18	20.2	7.3	18	44.5	180	18	
8.6	19	41.9	47.0	19	7.7	17.0	19	21.3	7.7	19	47.0	190	19	
9.1	20	44.1	49.4	20	8.1	17.8	20	22.4	8.1	20	49.4	200	20	
9.5	21	46.3	51.9	21	8.5	18.7	21	23.5	8.5	21	51.9	210	21	
10.0	22	48.5	54.4	22	8.9	19.6	22	24.7	8.9	22	54.4	220	22	
10.4	23	50.7	56.8	23	9.3	20.5	23	25.8	9.3	23	56.8	230	23	
10.9	24	52.9	59.3	24	9.7	21.4	24	26.9	9.7	24	59.3	240	24	
11.3	25	55.1	61.8	25	10.1	22.3	25	28.0	10.1	25	61.8	250	25	
11.8	26	57.3	64.2	26	10.5	23.2	26	29.1	10.5	26	64.2	260	26	
12.2	27	59.5	66.7	27	10.9	24.1	27	30.3	10.9	27	66.7	270	27	
12.7	28	61.7	69.2	28	11.3	25.0	28	31.4	11.3	28	69.2	280	28	
13.2	29	63.9	71.7	29	11.7	25.9	29	32.5	11.7	29	71.7	290	29	
13.6	30	66.1	74.1	30	12.1	26.8	30	33.6	12.1	30	74.1	300	30	
14.1	31	68.3	76.6	31	12.5	27.7	31	34.7	12.5	31	76.6	310	31	
14.5	32	70.5	79.1	32	12.9	28.5	32	35.9	12.9	32	79.1	320	32	
15.0	33	72.8	81.5	33	13.4	29.4	33	37.0	13.4	33	81.5	330	33	
15.4	34	75.0	84.0	34	13.8	30.3	34	38.1	13.8	34	84.0	340	34	
15.9	35	77.2	86.5	35	14.2	31.2	35	39.2	14.2	35	86.5	350	35	
16.3	36	79.4	89.0	36	14.6	32.1	36	40.4	14.6	36	89.0	360	36	
16.8	37	81.6	91.4	37	15.0	33.0	37	41.5	15.0	37	91.4	370	37	
17.2	38	83.8	93.9	38	15.4	33.9	38	42.6	15.4	38	93.9	380	38	
17.7	39	86.0	96.4	39	15.8	34.8	39	43.7	15.8	39	96.4	390	39	
18.1	40	88.2	98.8	40	16.2	35.7	40	44.8	16.2	40	98.8	400	40	
18.6	41	90.4	101.3	41	16.6	36.6	41	46.0	16.6	41	101.3			
19.1	42	92.6	103.8	42	17.0	37.5	42	47.1	17.0	42	103.8			
19.5	43	94.8	106.3	43	17.4	38.4	43	48.2	17.4	43	106.3			
20.0	44	97.0	108.7	44	17.8	39.3	44	49.3	17.8	44	108.7			
20.4	45	99.2	111.2	45	18.2	40.1	45	50.4	18.2	45	111.2			
20.9	46	101.4	113.7	46	18.6	41.0	46	51.6	18.6	46	113.7			
21.3	47	103.6	116.1	47	19.0	41.9	47	52.7	19.0	47	116.1			
21.8	48	105.8	118.6	48	19.4	42.8	48	53.8	19.4	48	118.6			
22.2	49	108.0	121.1	49	19.8	43.7	49	54.9	19.8	49	121.1			
22.7	50	110.2	123.6	50	20.2	44.6	50	56.0	20.2	50	123.6			





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## **Electronic Control Box – Operators Guide**



This Section of the Operators Manual deals with the Electronic Control Box which is fitted to Air 8 and Variocast 8 E machines and all Variocast 16 and Air 16 machines.

The Electronic Control box allows operators to set the seeder up for the job it is doing, calibrate it and then operate it. It provides the operator with a variety of different pieces of information about the seeder whilst it is working and will retain these until the operator chooses to delete them.

Information such as the current seed rate being applied and current forward speed is displayed on the screen whilst in work. The control box can also be set to keep a log of the Area covered, distance covered, and time taken as well as monitoring the seed level and the amount of seed used.

There are also a number of warning functions that help keep the operator informed of any potential problems.

- Low Hopper level
- No drive from the Electronic Motor
- No drive to the metering Roller
- The forward speed is too low
- The Forward Speed is too high

The instructions for using the control box that are set out below enable a new operator to maximise the performance of his/her machine, please read through them carefully and take some time to work through them whilst using the control box.

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## SECTION A

### UNDERSTANDING THE CONTROL BOX

#### A1. THE BUTTONS ON THE CONTROL BOX



What each button does



The F1 key lets you enter your desired application rate of seed, in KG per Hectare.



The F2 key takes you into CALIBRATION MODE.



The F3 key is used to access background menus.



The F4 key allows you to scroll around the operator information displayed next door to it - HECTARES WORKED, METRES WORKED, HOURS WORKED.



The F5 key allows you to scroll around the operator information displayed next door to it - BATTERY VOLTAGE, TANK CONTENT, QUANTITY OF SEED SPREAD.



The F6 key is used to access background menus.



The UP and Down arrows let you alter your application rate on the move, and are also used to scroll up and down menus and enter values.



The across arrow lets you start and stop hours worked counter and is also used to move the cursor across one decimal place when entering values.



The OK button stores any value or alteration made to the control box.



The ESCAPE button will always return you to the WORKING SCREEN (shown above).



The AUTO button starts and stops Seeding



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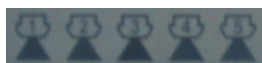
### A2. THE DISPLAY



This displays the actual Seed rate in KG per HECTARE, when seeding. When the Seed rate has been temporarily increased or decreased "on the move" this figure will alternate between the actual seed rate and the % it has been changed by.



This displays Forward Speed Km/H



This displays set spread width – each symbol represents a different width setting.



This indicates which field or job data read out is selected. There is the possibility to store HECTARES WORKED, METRES TRAVELED, HOURS WORKED and QUANTITY SPREAD for 19 different fields or jobs.

Use the F4 key to toggle between Metres Worked, Hectares Worked and Hours Worked.



This displays Meters worked – without seeding.



This displays Hours Worked.

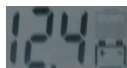


This displays Hectares Worked - seeding.

Use the F5 Key to toggle between Battery Voltage, Content of seed in the tank and Quantity of seed used.



This displays weight of seed in the tank in Kilograms.



This displays Battery Voltage.



This displays weight of seed metered out in Kilograms.



This is air fan rotational speed read out. **NOT USED AS STANDARD**



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## **SECTION B**

### **USING THE CONTROL BOX – CALIBRATION AND SETTING**





#### **B1. ENTERING DESIRED SEED RATE**

To enter desired seed rate (KG/Hectare) :

- PRESS AND HOLD F1 FOR 2 SECONDS



This screen will appear



- ALTER THE FLASHING DIGIT BY PRESSING 
- MOVE TO THE NEXT DIGIT BY PRESSING 
- USE THIS METHOD TO ATTAIN THE DESIRED KG/HECTARE
- STORE THE VALUE BY PRESSING  (TIP: get the decimal in the right place)
- EXIT WORKING SCREEN BY PRESSING 

**The desired seed rate is now stored in the control box. However, on returning to the working screen the previously entered value will not be displayed. It is only displayed when the seeder is working and a forward speed is being achieved.**

The method in which you have entered the seed rate is commonly used through out the control box. Remember:

- When a digit is flashing it can be altered
-  Always stores the entered value
-  Always brings you back to the working screen



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### B2. CALIBRATING THE SEEDER

To calibrate the seeder with the type of seed being applied:

- PRESS AND HOLD  FOR 2 SECONDS

This will take you into **MENU 1.0** which will look like this.




The value next to F4 is how many turns the seed roller will make during the calibration. To alter this figure press F4, the value will start to flash and can then be altered by using the up, down and across arrows and set by pressing Ok.

When using the coarse metering roller FOR GRASS SEEDS 30 - turns is ample

When using the fine metering roller FOR SMALL SEEDS 70 – 80 TURNS IS ADVISED

The Value next to F6 is the weight of seed entered after the previous calibration.

- **AT THE BACK OF THE SEEDER** – SET THE BRUSH SETTING FOR THE TYPE OF SEED BEING USED (SEE AIR8/AIR16 INSTRUCTION MANUAL), REMOVE THE METERING ROLLER COVER AND PLACE THE CALIBRATION TRAY IN THE SEEDER
- TO BEGIN CALIBRATION PRESS 


This will take into **menu 1.1** which will look like this



The seed roller will begin to turn and meter seed into the calibration tray.

The display next to F6 will count the seed roller rotations as it turns.

When the set number of rotations has been achieved the seed roller will automatically stop.

- WEIGH THE SEED METERED OUT BY THE ROLLER – It is important to use a good set of accurate digital scales, any errors will be compounded when working in the field
- PRESS 

ENTER THE SEED WEIGHT IN KILOGRAMS BY USING








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- STORE THE VALUE BY PRESSING 
- BOX AUTOMATICALLY RETURNS TO THE WORKING SCREEN, YOU CAN CHECK YOUR CAL WEIGHT BY GOING BACK TO MENU 1.0

**THE CALIBRATION IS COMPLETE**

### B3. SETTING MACHINE WIDTH

To set a standard working width

- PRESS AND HOLD  FOR 2 SECONDS

- SCROLL DOWN TO **MENU 2.0** USING 

This screen will appear






Each of the symbols next to F3 represents a different standard working width.

To select the correct width of spread setting for your machine

- PRESS AND HOLD  FOR 1 SECOND

The symbols will start flashing and **menu 2.1** will appear

- PRESS  TO SELECT DIFFERENT WORKING WIDTHS.
- PRESS  TO STORE CORRECT WORKING WIDTH.
- PRESS  TO RETURN TO WORKING SCREEN.

When the air seeder is being used as a Variocast for TILLSEEDING the working width required may not be included in the standard working width settings.

To attain the correct working width a background menu needs to be accessed.

This is clearly explained in **section C2**.

### B4. CALIBRATING FORWARD SPEED

This menu lets you calibrate actual forward speed by automatically timing the length in between each sensor pulse on the land wheel. A Standard setting of **4.75** is entered into the box and **doesn't need to be altered** unless:

- The land wheel is running into loose, cultivated land.
- You notice that you are using too much or too little seed on a certain area.



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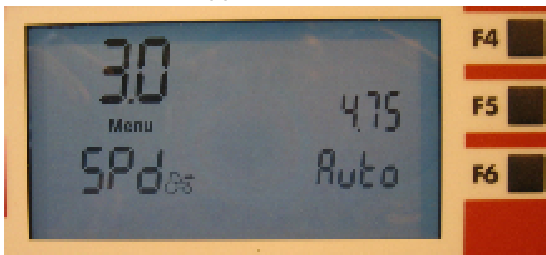
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To carry out the calibration:

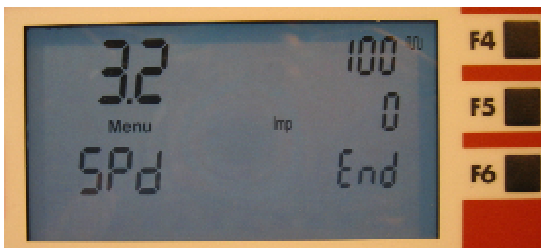
- PRESS AND HOLD  **F2** FOR 2 SECONDS.
- SCROLL DOWN TO **MENU 3.0** USING .

This screen will appear




- MEASURE 100M RUN ON SOME SOIL OR GRASS SIMILAR TO THAT THE MACHINE WILL BE TRAVELING OVER WHEN SEEDING.
- PRESS  **F6** TO START CALIBRATION AND IMMEDIATELY START TO TRAVEL THE 100M RUN.



This screen will appear



Next to F5 the impulses that are being counted at the land-wheel will be displayed.

- TRAVEL AT A SIMILAR SPEED TO THE SPEED AT WHICH YOU WILL BE DRIVING WHEN SEEDING
- WHEN 100M HAVE BEEN TRAVELED IMMEDIATELY PRESS  **F6** TO END CALIBRATION.

A new value will appear next to F5

- PRESS  **Ok** TO STORE.
- PRESS  **Esc** TO RETURN TO WORKING SCREEN.

The Value should not be more than 5.00 or less than 4.20

For the most accurate value carry out the calibration 3 times and then use the average value.

THE CALIBRATION IS COMPLETE



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## **SECTION C**

### **USING THE CONTROL BOX – SETTING THE JOB DATA**

Information from 19 Different “jobs” can be held on the control box, these could apply to different fields on a farm or different customers for a contractor. The control box also stores information about the work done in its total lifetime under Job “0” (this cannot be altered or deleted)

#### **C1 Setting and altering the Job Number**



The Job number can be seen in the top centre of the control box display, it can be altered by pressing and holding



for 1 second, it will then start to flash, use the up and down arrows to scroll through the Job numbers. Press the OK button to select the number desired, it will stop flashing and the control box will then record data under that number until it is changed again.

#### **C2 Resetting a complete Job**



All the records for a selected job can be Zero'd whilst it is flashing by pressing the button which has “DEL” next door to it on the display. (Ha, distance, Time and Seed used will all be set to “0”) Press OK to accept after delete or press Esc to cancel.



To Reset each of the individual counters for a job first press and hold the button for 1 second, the job number will start to flash.

#### **C3 Resetting the Hectare counter**



The Hectare counter for the job selected can be shown in the top right hand corner of the display by pressing F4 to scroll round until the symbol above is shown and flashing. To reset the ha figure to Zero press the



button which has “DEL” next door to it on the display. Then press OK to accept or press Esc to cancel.

#### **C4 Resetting the Distance counter**



The Distance counter for the job selected can be shown in the top right hand corner of the display by pressing F4 to scroll round until the



symbol above is shown and flashing. To reset the figure to Zero press the button which has “DEL” next door to it on the display. Then press OK to accept or press Esc to cancel



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
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### **C5 Setting the time counter**





The Clock  for the job selected can be shown in the top right hand corner of the display by pressing F4 to

scroll round until the symbol above is shown and Flashing. To reset the Time to Zero press the  button which has "DEL" next door to it on the display. Then press OK to accept or press Esc to cancel

### **C6 Setting the Seed used counter**



The Seed used  for the job selected can be shown in the middle right hand side of the display by pressing F4 to




scroll round until the symbol above is shown and Flashing. To reset the weight to Zero press the  button which has "DEL" next door to it on the display. Then press OK to accept or press Esc to cancel

**All Job data has now been reset**

### **C7 Tank Filling**



The amount of seed in the tank shown in the middle right hand side of the display,  can be altered by

pressing and holding  for 1 second. Then Press  which will have FILL next door to it on the display, this will refill the full tank capacity. Press "OK" to accept or press "Esc" to cancel. It is also possible to enter a specific amount of seed, press  and the figure will flash, then use the up and down arrows to enter the correct amount and press "OK" to accept or "ESC" to cancel



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## **SECTION D**

### **D ALARM FUNCTIONS (See symbol diagram page 12)**

There are both optical and acoustic alarms to warn the operator when –

- The Seed in the tank is below the sensor position.
- No impulse is coming from the Electric drive motor.
- No impulse is coming from the metering roller.
- The forward speed is too low (The metering roller cannot be turned slowly enough to attain the required seedrate at such a slow speed)
- The forward speed is too high (The metering roller cannot be turned quickly enough to attain the required seedrate at such a fast forward)
- The fan is not running (possible disconnection – Menu No. 140.0)

### **D1 DESCRIPTIONS OF THE ALARM FUNCTIONS**

#### **LOW HOPPER LEVEL ALARM**

On the display both the symbols for the tank and the number of kg in the tank flash and the acoustic alarm emits a beep every second for the first 20 seconds, after that emits 2 beeps with an interval of 1 second every 20 seconds.

*The following alarms are activated only when seeding is in operation.*

#### **THE ELECTRIC MOTOR IS NOT WORKING**

The symbols "?" and "Metering sensor" will flash on the display and the acoustic alarm will sound 3 beeps per second constantly.

#### **THE METERING ROLLER IS NOT TURNING**

The symbols "?" and "Metering sensor" will flash on the display and the acoustic alarm will sound 2 beeps per second constantly.

#### **THE FORWARD SPEED IS TOO SLOW**

The symbols "?" and "Tortoise" will flash on the display and the acoustic alarm will sound 3 beeps per second constantly.

#### **THE FORWARD SPEED IS TOO HIGH**

The symbols "?" and "Hare" will flash on the display and the acoustic alarm will sound 2 beeps per second constantly.

#### **FAN SPEED ALARM – (IF ACTIVATED)**

The symbols "Shaft" and "RPM" will flash on the display and the acoustic alarm will sound 3 beeps per second constantly.



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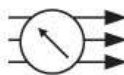
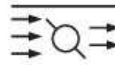
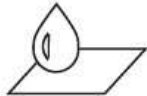





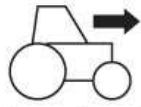








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## Seeder Electronic Control Box Display Symbols

 Printer	GPS	Menu Menu adjustment	<I/O>
 Drive too fast	Mod.	 Drive too slow	% Seed rate correction increase/decrease
 Working width		 Metering roller + agitator sensor	 Sown quantity per ha
 Land wheel sensor	 Seeder on		
 Fault	P1	 Forward speed	Auto
Man	Test	Min	Imp Counting pulse
Max	 Distance - mtr	 Work time - hr	 Area sown - ha
 Tank content - kg + sensor	 Battery amps	 Sown quantity - kg	
 Fan speed	Rpm Fan speed		





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## SECTION E

### E ACCESSING BACKGROUND MENUS - THE USER MENU

#### E1 Altering the number of standard working widths – 10.0

To access the user background menu:

PRESS **Ok** AND **F2** TOGETHER FOR 2 SECONDS.



Menu 10.0 will appear which will look like this



This menu lets you alter the number of pre set standard working widths.

If you are keeping the seeder on the same machine at all times, you only need one working width.



This display indicates how many standard working widths are stored in the box 1-9

To alter the number of pre-set standard working widths:

- PRESS **F4** UNTILL THE DISPLAY STARTS TO FLASH
- USE **▼** **▲** TO ALTER NUMBER OF PRE-SET STANDARD WORKING WIDTHS TO DESIRED AMOUNT.
- PRESS **Ok** TO STORE.
- PRESS **Esc** TO RETURN TO WORKING SCREEN.



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## E2. HOW TO ALTER A PRE-SET STANDARD WORKING WIDTH - 11.0

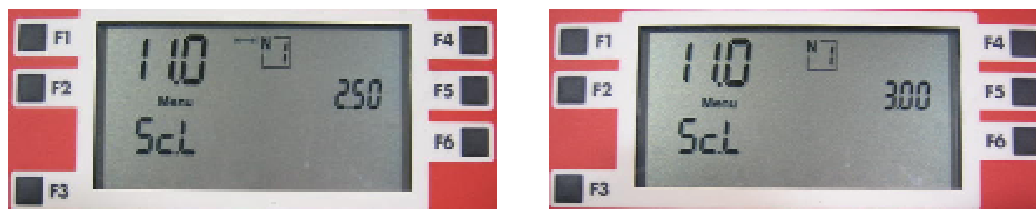
If your desired working width is not one of the preset working widths then you need to manually change one of the pre-sets.

To alter pre-set standard working width to desired working width

- PRESS **Ok** AND **F2** TOGETHER FOR 2 SECONDS.
- SCROLL DOWN TO **MENU 11.0** USING .


Menu 11.0 looks like this

This is an example of changing pre-set 2.5m working width to 3.0m working width



The value shown next to F5 is the working width in metres. The value in the square box is the pre-set number N1.


To alter the pre-set working width (N1):

- PRESS **F5** UNTILL THE VALUE STARTS FLASHING
- ALTER THE VALUE TO YOUR DESIRED WORKING WIDTH USING .
- PRESS **Ok** TO STORE.
- PRESS **Esc** TO RETURN TO WORKING SCREEN.


### PLEASE NOTE

Now you have altered the pre-set working width you need to select it in MENU 2.0 (See below and section B3)

To do this:

- STARTING AT THE NORMAL WORKING SCREEN PRESS AND HOLD **F2** FOR 2 SECONDS
- SCROLL DOWN TO **MENU 2.0** USING .



- PRESS **F3** UNTILL THE SYMBOL STARTS FLASHING
- USE  TO FIND YOUR ALTERED WOKING WIDTH
- PRESS **Ok** TO STORE.
- PRESS **Esc** TO RETURN TO WORKING SCREEN.

**YOUR WORKING WIDTH IS NOW SET**



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## **E3. HOW TO ALTER THE CAPACITY OF THE TANK – 20.0**

To alter the pre-set Tank Capacity


- PRESS **Ok** AND **F2** TOGETHER FOR 2 SECONDS.
- SCROLL DOWN TO **MENU 20.0** USING .

**Menu 20.0** looks like this



The value shown next to F5 is the Tank Capacity in Kg's.

To alter the pre-set Tank Capacity

- PRESS **F5** UNTIL THE VALUE STARTS FLASHING
- ALTER THE VALUE TO YOUR DESIRED CAPACITY USING 
- PRESS **Ok** TO STORE.
- PRESS **Esc** TO RETURN TO WORKING SCREEN.



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### E4 . HOW TO ALTER THE RELATIONSHIP BETWEEN THE MOTOR AND METERING ROLLER – 30.0

To alter the pre-set Number of impulses


- PRESS **Ok** AND **F2** TOGETHER FOR 2 SECONDS.
- SCROLL DOWN TO **MENU 30.0** USING .

Menu 30.0 looks like this



The value shown next to F5 is the number of impulses. **Standard Setting is 750 - DO NOT ALTER THIS SETTING.**

To alter the pre-set Number of Impulses

- PRESS **F5** UNTIL THE VALUE STARTS FLASHING
- ALTER THE VALUE TO YOUR DESIRED CAPACITY USING 
- PRESS **Ok** TO STORE.
- PRESS **Esc** TO RETURN TO WORKING SCREEN.



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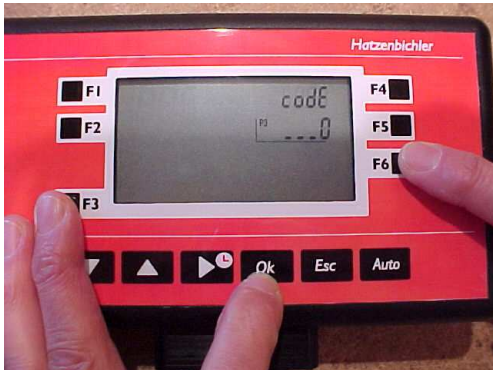
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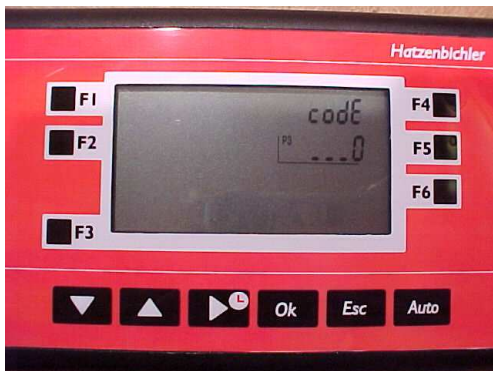
## **SECTION F**

### **SERVICE FUNCTIONS**

To access further special functions press keys "F3, OK AND F6" all at the same time for 2 seconds



The screen below will appear and a code needs to be entered to access the different functions.



The Codes below can then be used to access the different menu's –

### **F1) CODE 50 – How to alter the lighting on the display – 191.0**

Key F4 – (Factory Setting - 0) Light Sensor not fitted

Key F5 – (Factory Setting - 10) Display lighting activation – not in use

Key F6 – (Factory Setting - Yes) Lighting in the display – Yes / No



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**F2) CODE 82 – Settings for the Motor and Metering Roller –**

Scroll around the Menu's using the up and down arrows -

**Menu No. 150.0:** (Factory Setting – 35), The setting will be displayed beside the F5 Key, it is the rotation speed of the Metering roller during calibration (RPM).

**Menu No. 151.0:** (Factory Setting – 5), The setting will be displayed beside the F5 Key, it is the percentage change increment that seed rate is increased or decreased when the up and down arrows are used in seeding mode.

**Menu No. 152.0:** (Factory setting – No), The setting will be displayed beside the F5 Key – It determines what happens to the metering Roller when the forward speed is too low and the alarm is sounding. When driving too slowly the metering roller axle can be set to stop or drive at minimum speed.

No = Metering Roller stops.

Yes = Metering Roller drives at minimum speed.

**Menu No. 153.0** (Factory setting – 30), The setting will be displayed beside the F5 Key – It represents the minimum number of motor pulses the control box can receive per second. (Range = 10 to 99)

**Menu No. 153.1** (Factory setting – 100), The setting will be displayed beside the F5 Key – It represents the maximum number of rotations per minute of the metering roller. (Range = 50 to 250)

**Menu No. 153.2** (Factory setting – 5), The setting will be displayed beside the F5 Key – It represents the number of pulses taken for the average calculation of Rpm. (Range = 2 to 10)

**Menu No. 153.3** (Factory setting – 5), The setting will be displayed beside the F5 Key – It represents the regulation factor. (Range = 1 to 9)

**Menu No. 154.0** (Factory setting – 5), The setting will be displayed beside the F5 Key – It represents the minimum number of boost pulses at the start. (Range = 0 to 250)

**Menu No. 154.1** (Factory setting – 50), The setting will be displayed beside the F5 Key – It represents the minimum number of pulses after the start boost. (Range = 0 to 250)

**Menu No. 154.2** (Factory setting – 50), The setting will be displayed beside the F5 Key – It represents the boost power %. (Range = 1 to 99)

**Menu No. 154.3** (Factory setting – 10), The setting will be displayed beside the F5 Key – It represents time in 10ths of a second between the end of the boost and the start of normal metering. (Range = 1 to 50)

**Menu No. 155.0** (Factory setting – 17000), The setting will be displayed beside the F5 Key – It represents the PWM Frequency. (Range = 5000 to 20000)





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**F3) CODE 166 – Resetting all the Jobs to 0**

This is used to Reset all the Job data including Job No. 0. - (Ha, Distance, Quantity spread, Start/stop time, Travel time and Work time).

Press Ok once the code has been entered

**F4) CODE 169 – Resetting all the Jobs to 0**

This is used to Reset all the Job data but **without including Job No. 0.** - (Ha, Distance, Quantity spread, Start/stop time, Travel time and Work time).

Press Ok once the code has been entered

**F5) CODE 183 – Resetting the Control Box – Type 1**

This is used to reset the Control Box to Standard Settings.

Press Ok once the code has been entered

**F6) CODE 321 – Switching the Fan Alarm on and off – 140.0**

Key F5 - Yes / No – to switch the acoustic alarm for the fan on and off (Only on Hydraulic Fan units – where sensor is fitted)



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## SECTION G

### TEST FUNCTIONS

There is a test menu to enable the operator to simulate working the machine and check sensors and control box functions. To access this menu press keys "F3 and F4" at the same time for 2 seconds.



The Screen below will appear once the buttons above have been pressed. Menu 190 is the test menu and the up and down arrows can be used to scroll around the different menu numbers.

### G1 – Forward speed simulation – 190.0

When static a forward speed impulse can be simulated so that the seeder works as if driving along the field. This is useful when first learning to use the control box and as a check if there is a problem.



The screen above shows a preset forward speed of 6km/h and the no in the right hand corner shows that the forward speed test function is not working. Press F6 twice to select yes. Whilst the forward speed is flashing it is possible to alter the forward speed used In the simulation. Press OK to confirm and Esc to go back to the main working screen. The forward speed will now be displayed on the main screen with a flashing "Test" symbol to show that the control box is in Test mode. Operation of the Seeder can now be simulated by pressing the Auto mode. To exit test mode reverse the process used to enter it.

Whilst in Test Mode and on the normal front screen it is possible to change the simulated forward speed by pressing the "ESC" Key and the up or down arrow at the same time.



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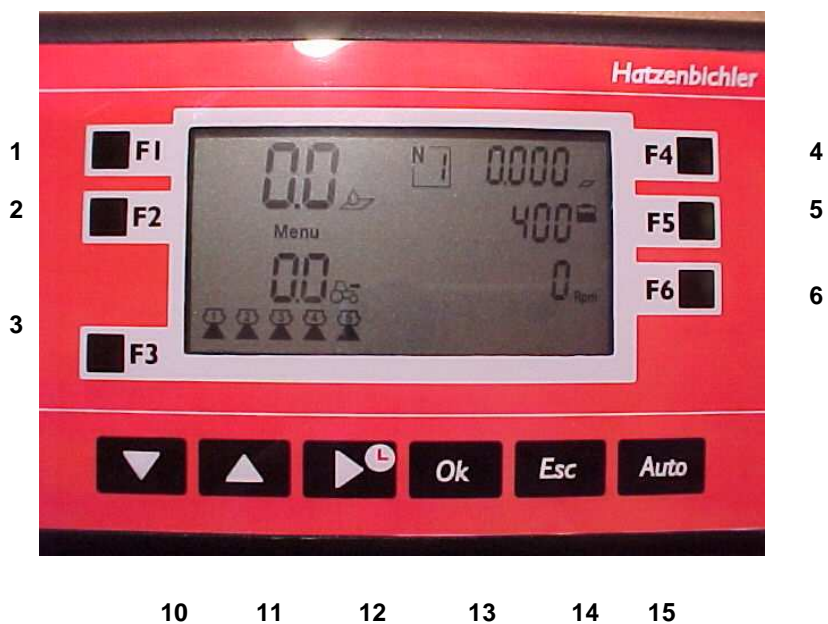
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### G2 – Testing the Keys – 190.1

By entering the test menu and selecting Menu 190.1 the operation of the keys can be checked.



When a key is pressed the number of the key will appear in the top right hand corner of the display near the F4 button. The numbers around the picture below indicate the Number of each Key





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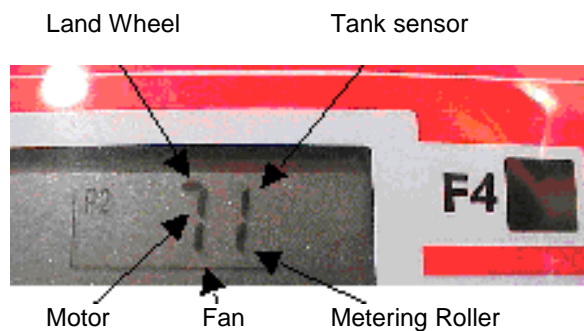
## **G3 – Testing the Sensors – 190.2**

By entering the test menu and selecting Menu 190.2 the operation of the Sensors can be checked.



Each Sensor is represented on the display in the top right hand corner by a line. When the sensor is activated the line will appear and when it is deactivated the line will disappear.

The picture below shows the lines and what they represent.



## **G4 – Testing the Battery Volts – 190.3**

By entering the test menu and selecting Menu 190.3 the Volts being supplied to the Control Box can be seen.



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**G5 – Testing the Motor – 190.4**

By entering the test menu and selecting Menu 190.4 you can check the number of impulses coming from the motor per rotation of the Metering Roller.



When the F6 Key is pressed it activates the motor and the pulses will be counted in the top right hand corner next to the F4 button. The number of pulses per revolution should equal the number of pulses set in Menu 30.0 see section E



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## SECTION H – OPERATING THE SEEDER IN THE FIELD

Once the Seeder has been calibrated and the correct settings for the machine it is mounted on entered in the control box you are ready to go seeding.

The Control Box should be set on the standard working screen, if it is not press the ESC button to return to this screen.



### Remember to switch the Hydraulic or Electric fans on before you start Seeding!!!!

Once the Hopper is Filled with seed and the Fans are switched on you are ready to go seeding. Press the Auto button so that the Drill symbol appears in the middle of the Display. As soon as the machine is in work and the land wheel starts to turn the seeder will start to operate.

In operation the current seed rate will be displayed In the top left hand corner and the forward speed in Km/h will be displayed in the bottom left. The Area, Distance travelled, time taken, and seed used will also begin to count up. At the same time the amount of seed left in the hopper will begin to count down

During operation the up and down arrows can be used to increase and decrease the seed rate being applied in 5% increments.

To stop the seeding operation press the Auto button once more, the drill symbol will disappear from the screen and the seeder will stop seeding.

## I) Weights and Measures

The Control box works in metric and the ranges below show the maximum and minimum figures used by the box.

Kg/Ha	Seed output	0.0 - 199.9 Kg/Ha
Km/h	Speed	0.0 - 99.9 Km/h
Distance	Distance without dosage	0.000 - 9999 Km
Ha	Surface (worked over)	0.000 - 9999 Hectares
Work time	Start/stop Time	0.00 h/min- 9999 hours
Tank content	Quantity in tank	0.0 - 9999.9 Kg
Battery tension	Battery tension measured during control	0.0 - 30.0 volt
Kg spread	Quantity spread	0.0 - 9999.9 Kg
Rpm	Current number of revolutions per minute (fan)	0 - 9999 rpm



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*Spare part list*

*for*

*Pneumatic seeder*

*AIR 8*

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email: [ask@opico.co.uk](mailto:ask@opico.co.uk)website: <http://www.opico.co.uk>**Spare parts list for pneumatic seeder "AIR 8" with toothed-belt drive*****Pos.no.: Order nr.:***

1	930001	seeder base "Air 8"
2	930002	transmission gearbox
3	9300142	toothed-belt roller, Z=20, Drilling hole 15mm
4	930004	transmission protection guard
4.1	9300041	rubber gasket f. transm. protection, straight 700mm
5	930005	output regulation
6	930006	lever long for seed rate
8	9300143	toothed-belt roller, Z=30, Drilling hole 15mm
9	9300238	hexagon socket screw, M10x55
10	9300101	tensioner pulley
11	930011	hex. Axle
11.1	930090	fitting key 5x5x20
12	930012	bearing
13	9300131	extension shaft for transmission
13.1	930096	fitting key 4x4x20
14	9300141	toothed-belt roller, Z=36, Drilling hole 12mm
15	9300081	toothed belt AT5-500
16	931202	adapter plate
16.1	930236	socket screw M10x20
17	930017	agitator
18	930018	seed pipe manifold, PVC piece with 8 holes
19	930019	hose clamp
21	930021	cleaner rubber seal (5x20x300mm)
21.1	9300211	cover plate rubber seal, 90° 300mm long
22	930022	brush "Air 8"
23	930023	rod for brush adjustment
24	94984	divider plate "Air 8"
25	930025	dosage roller rough "Air 8"
25.1	934822	dosage roller fine "Air 8"
26	39475	calibration tray "Air 8"
27	930027	cover
27.1	9300271	rubber seal for cover, straight 160mm long
28	930028	mounting plate "Air 8"
29	94937	mounting clamp
30	930030	seed hopper, "Air 8" 150lt.
30.1	9300301	plexiglas screen and seal
31	39005	hopper lid "Air 8"
32	930032	blower protection guard
32.1	9300320	lever short for brush "Air 8"

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33	930033	adjusting notches small
34	930034	lock complete for cover (bolt with handle) M8x50
35	94985	fan blower
37	930037	plastic clamp 1, size 3
38	930038	plastic clamp 2, size 3
39	930039	socket screw, M8x40
40	930040	tappet
41	930041	threaded pin
42	930042	hex bolt M6x20
43	930043	washer M6
44	930044	stop nut M6
45	930045	coiled spring pin 5x22
46	930046	connection
47	930047	threaded shaft M8x40
48	9316	hex bolt M5x10
48.1	930043	washer M6
48.2	930230	washer M8
48.3	930237	big washer M8
49	70012	stop nut M8
50	930050	hex bolt M8x16
51	930051	hex bolt M12x30
52	70013	stop nut M12
53	930053	nut M6
54	930054	bearing
55	930055	end cap assembly complete with bearing zinc coated
55.1	9300551	plastic disc for bearing zinc coated
56	9300561	lid lock galvanised
57	9300570	bold M5x10
57.1	9300571	nut M5
57.2	9300572	hex bolt M12x130
58	934821	drive shaft
59	930059	seed hose
60	949832	distributor
61	9300611	cable part 1 (from battery, with switch to the plug)
62	930062	cable part 2 (from the plug to the electric motor)
63	930063	clamp for tube 80
64	930064	holder for drive shaft "Air 8"
65	930065	hole plate
66	930066	holder for drive wheel
67	930067	drive wheel
68	9348	bearing
69	930069	distance ring

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70	95128	pin 8x40
71	930224	spring locking pin d=4mm
72	9414	bush 23/20/15
73	412124	washer M12
74	930074	pin d=14
75	930075	pin d=10
76	930076	distance tube l=46
77	93225	hex bolt M12x70
78	930078	hex bolt M16x90
79	80044	washer M16
80	9311ST	stop nut M16
81	949831	bracket 25x70x6
82	39111	c-profile / m
82.1	391011	c-profile l=1,50m
82.2	391022	c-profile l=2,00m
83	80272	holder for c-profile;V6
84	930214	hex bolt M12x20
87	93935	expand bracket 1
88	93934	expand bracket 2
89	930220	allen screw M12x20
90	930219	hex bolt M12x130
91	9316S	hex bolt M8x30 with nut
92	949833	bracket 90x25x6
93	949834	bracket to fit distributor in bed, part 1
94	949835	bracket for distributor in bed
95	70017	stop nut M10
96	930230	washer M8
97	912011	platform grill for „Air 8“
98	912012	platform grill for „Air 8“ with 400lt. hopper





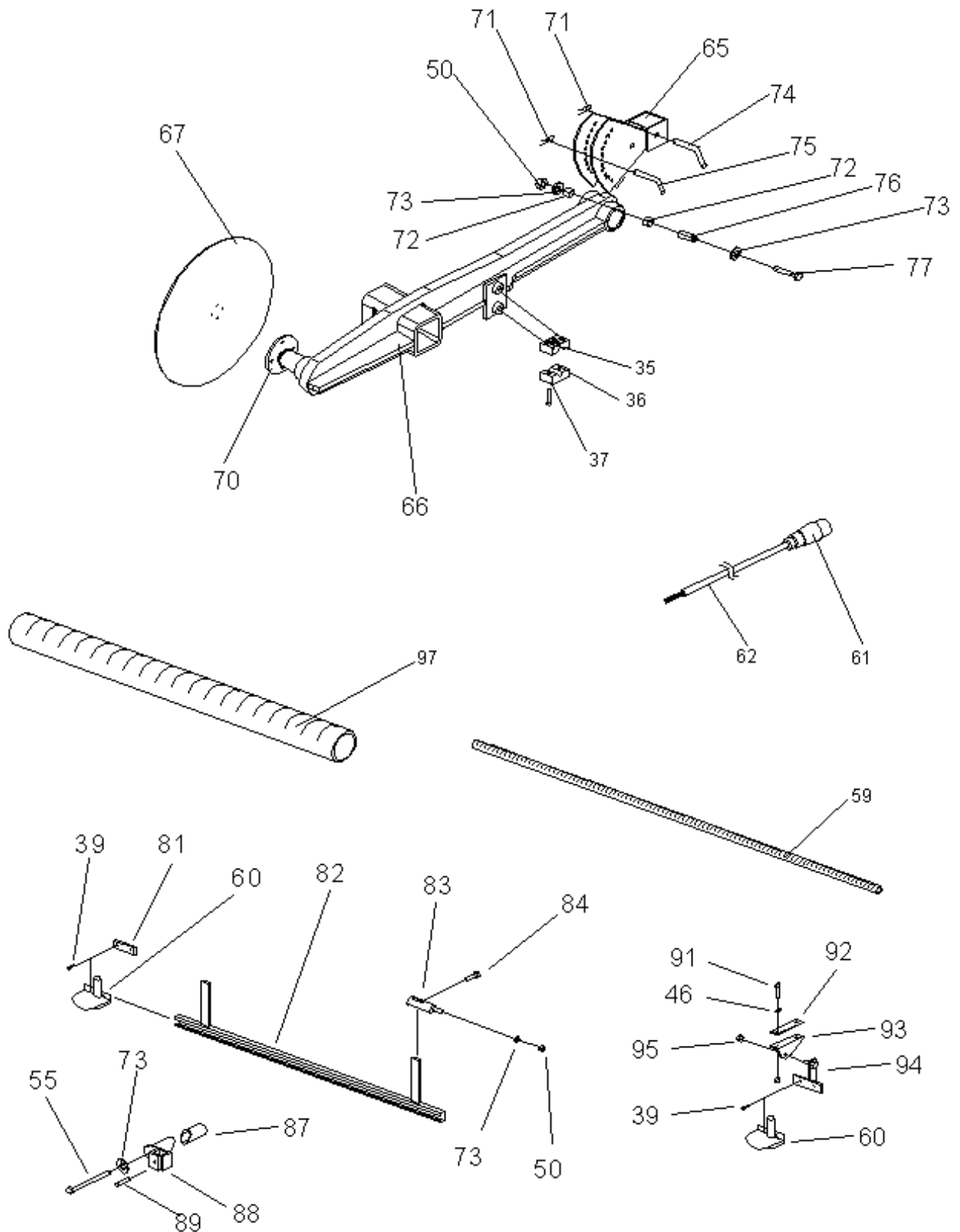
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email: [ask@opico.co.uk](mailto:ask@opico.co.uk)website: <http://www.opico.co.uk>**Spare parts list for hydraulic fan – steel version (2006->)**

<i>Pos.no.:</i>	<i>Order nr.:</i>	Description
1	9300874	Fan cowling, front (air intake)
2	9300873	Fan cowling, back
3	#	Setscrew, M4 x 10
4	#	Setscrew, M6 x 10
5	9301631	Fan impellar
5a	9614	Fan shaft (uses item 7 & 8)
6	9300406	Hyd pipes
7	#	Spring washer, M10
8	#	Nut, M10 (left hand thread)
9	946204	Bearing
10	946204	Bearing
11	9300404	Bearing housing
12	#	Socket Cap Screw, M6 x 30
13	9300403	Mounting bracket
14	#	Nut, M10
15	#	Flat washer, M10
16	#	Rivet
17	93004	Circlip
18	9120071	Hyd motor seal
19	9300405	Hyd fitting
20	9300402	Plastic plug
21a	930084M	Hydraulic motor
21b	9300841	Diverter valve
22	9300310	Intake guard
22a	9311891	Fan speed sensor
23	9300401	Shim
#	9300407	Bolt & rivet set



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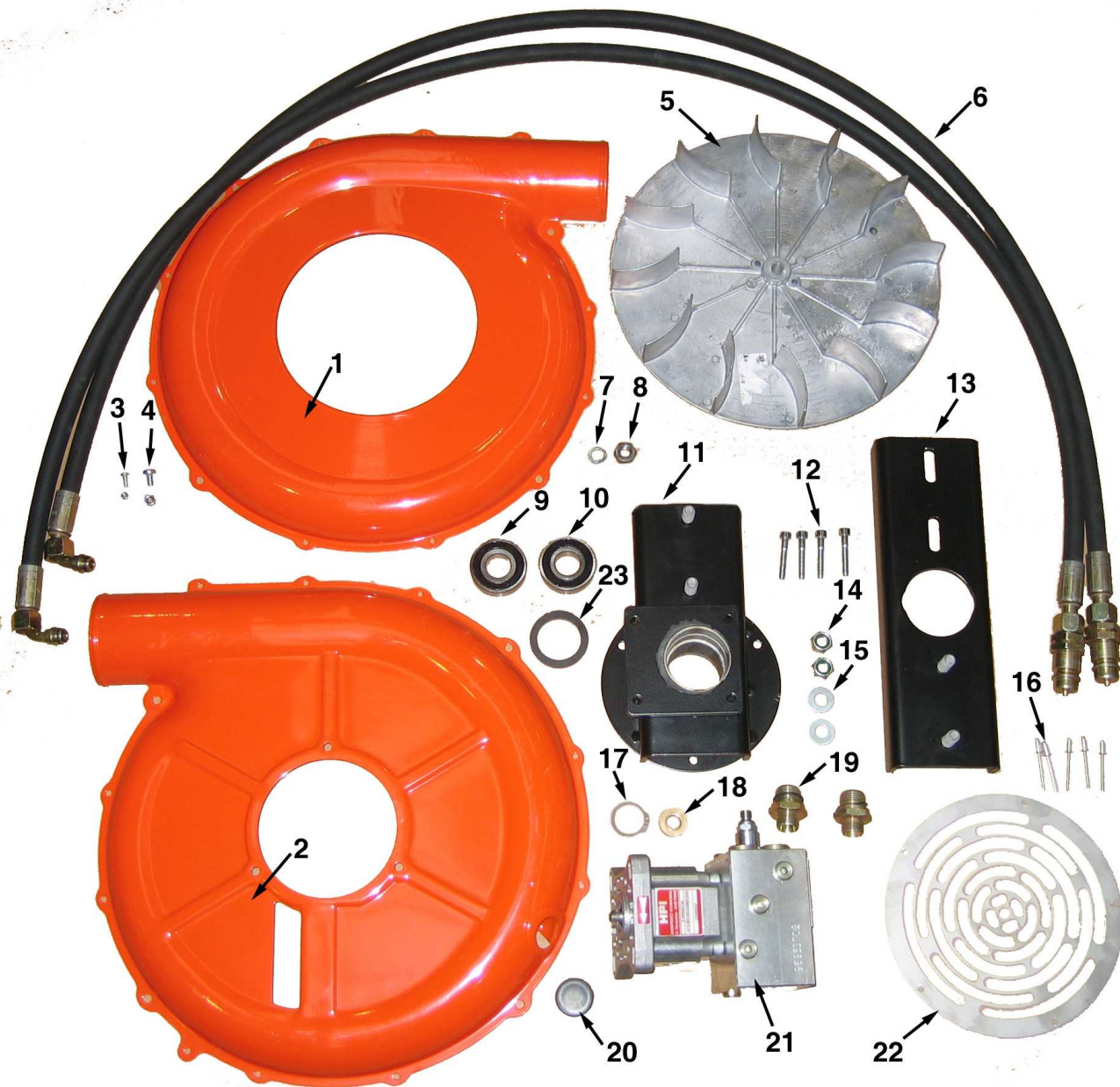
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**Hyd Fan 2006-> steel model**



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email: [ask@opico.co.uk](mailto:ask@opico.co.uk)website: <http://www.opico.co.uk>**Spare part list for electric drive "Air 8"*****Pos.no.: Order nr.:***

1	931186	board computer
2	931187	electric motor
2.1	930193	cylinder head screw M5x16
3	9300141	toothed belt roller 36z, drilling hole d=15mm
4	9300031	toothed belt roller 18z, drilling hole d=12mm
5	931199	adapter for electric-motor
5.1	930041	grub-screw M8x10
6	930062	cable harness
7	930194	motor plate with welded pipe
7.1	930042	hex bolt M6x20
7.2	930044	nut M6
8	930195	adapter plate for e-motor
9	9300081	toothed belt, long AT5-500
10	930168	holder for boardcomputer
11	931190	printer for boardcomputer
12	9300101	tensioner pulley
9#	930016	short belt kit
	9300082	toothed belt, short AT5-375



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*Pos.no.: Order nr.:*

930092      2 x L-part f. seed roller protection shield, 4 x toggle screws  
M8