

# Nematicide Steward- ship Workshop

2015

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## **Nematicide Granule Application Workshop**

This practical workshop is designed for growers and operators to have a better working knowledge about granular nematicide applicators how to calibrate a machine to accurately deliver the recommended rate.

Nematicides are recommended in a range of crops providing proven efficacy on cyst nematodes (PCN), and free-living nematodes (FLN) in potatoes, onions, carrots or sugar beet  
They can be used through a wide range of applicators and may be approved for in-furrow or overall application. They are effective on all soil types

They are only available in closed transfer packs

The course will take place on farm using working farm machinery.

The course is run by Steve Higginbotham, Independent Stewardship; BASIS, NSTS certified Engineer.

Course will be evaluated by discussion and worked example of calibration.

Maintenance of Applicator - 15-20 mins

General maintenance and condition of:

- Drive system
- Pipes
- Hopper
- Fishtail

Replacing Rotors and Metering System - 30 mins

Replacing and fitting rotors

Fitting new metering systems e.g. cartridges

Calibration - 30 mins

How to calibrate a machine, either in-furrow or broadcast application

- Measuring output from outlets with 5% tolerance
- Calibration looking at sprocket and pulley settings
- Worked example of calibration

Operators should be able to calibrate a machine by the end of the course.

## Nematicide 10G - SAFETY PRECAUTIONS

### Operator protection

All nematicides are an anticholinesterase compound. Handle with care. DO NOT USE if under medical advice NOT to work with such compounds.

Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment:

a) Opening container, transferring the contents one from one container to another, filling chemical tank or hopper, adjusting apparatus after filling and dealing with spillages.	Suitable protective clothing (coveralls), suitable protective gauntlet gloves and either face protection (faceshield) or suitable respiratory protective equipment and eye protection (goggles).
b) Washing out containers and/or cleansing granule placement equipment after use.	Suitable protective clothing (coveralls, apron), Suitable protective gloves, rubber boots and face protection (faceshield).
c) During granule placement by tractor	Suitable protective clothing (coveralls)

### Respirator protection

Respirator with combination filter for vapour/particulate (EN 41). Respirator with A2B2-P3 filter.

However, engineering controls may replace personal protective equipment if a COSHH assessment shows that they provide an equal or higher standard of protection.

WEAR SUITABLE PROTECTIVE CLOTHING AND GLOVES.

WASH ALL PROTECTIVE CLOTHING thoroughly after use, especially the inside of gloves.

TAKE OFF IMMEDIATELY heavily contaminated clothing.

WHEN USING DO NOT EAT, DRINK OR SMOKE.

WASH DUST from skin or eyes immediately.

AVOID ALL CONTACT BY MOUTH.

DO NOT BREATHE DUST.

WASH HANDS AND EXPOSED SKIN BEFORE eating, drinking or smoking and after work

IN CASE OF ACCIDENT or if you feel unwell seek medical advice (show the label where possible).

This product must not be applied later than 12 weeks before harvest.

### **Environmental protection**

DANGEROUS TO FISH OR OTHER AQUATIC LIFE. Do not contaminate surface waters or ditches with chemical or used container

DANGEROUS TO GAME, WILD BIRDS AND ANIMALS precautions must be taken to protect them from harm and spillages must be buried or removed.

### **Storage and disposal**

KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDING STUFFS KEEP OUT OF REACH OF CHILDREN

KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place.

RETURN EMPTY CONTAINER TO THE SUPPLIER.

EMPTY CONTAINER COMPLETELY and dispose of safely.

DO NOT RE-USE CONTAINER for any other purpose.

### **SYMPTOMS OF POISONING**

These may include excessive sweating, headache, weakness, faintness and giddiness, nausea, stomach pains, vomiting, tightness of the chest, small pupils, blurred vision, muscle twitching.

### **FIRST AID**

If any of the above symptoms occur, particularly if there is known contamination: STOP WORK. Remove contaminated clothing. Wash exposed skin and hair. Prevent all exertion. Call Doctor AT ONCE and show him this label (See Health and Safety Information Box).

### **GUIDE TO DOCTOR**

This product contains an anticholinesterase carbamate compound.

### **Specific treatment:**

1. IN ALL CASES OF MODERATE AND SEVERE POISONING AND AS EARLY AS POSSIBLE inject atropine sulphate 2mg or pro rata for children and repeat if necessary to maintain full atropinisation.
2. DO NOT USE Pralidoxime.

### **Other measures:**

1. Keep airway clear.
2. Watch respiration – intubation with endotracheal tube or tracheotomy may be necessary in conjunction with artificial ventilation.
3. Put patient at complete rest in hospital for 24 hours at least.

### **Confirmation of diagnosis**

Estimation of cholinesterase activity may be misleading unless special procedures are used to prevent reactivation.

**Further advice from:**

DuPont Emergency Contact number 08456 006640 or nearest National Poisons Information Centre 0870 600 6266 (24 hours).

**Container handling precautions**

OPEN THE CONTAINER ONLY AS DIRECTED.

DO NOT RE-USE THE CONTAINER FOR ANY OTHER PURPOSE.

KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place.

THIS MATERIAL AND ITS CONTAINER MUST BE DISPOSED OF IN A SAFE WAY.

EMPTY CONTAINER and dispose of safely.

DO NOT RINSE OUT THE CONTAINER.

RETURN EMPTY CONTAINER TO DISTRIBUTOR.

Do not use if the RED tamper evident seal is broken.

This container should only be used in conjunction with a hopper lid which has been modified to be used with this container. Empty containers must be handled, transported and stored as if they contain a pesticide.

## Why Service and Calibrate?



Results from an on farm calibration - target rate 90g/100m

Overall target rate achieved

	Tube 1	Tube 2	Tube 3	Tube 4	
Calibration Rate pre-service	120g/100m	60g/100m	110 g/100m	80 g/100m	An average of 90 grams achieved.
Target rate 90g/100m	+30g	-30g	+20g	-10g	Only completing a full calibration would highlight this inaccuracy
Percent error between outlets	+30%	-35%	+19%	-14%	Error guidelines: 5% AEA MOT 5% Industry MOT

Consequences	Over spend of £150/ha	Lack of control = loss of yield	Over spend of £110/ha	Lack of control = loss of yield	Average application cost of a nematocid £500/ha
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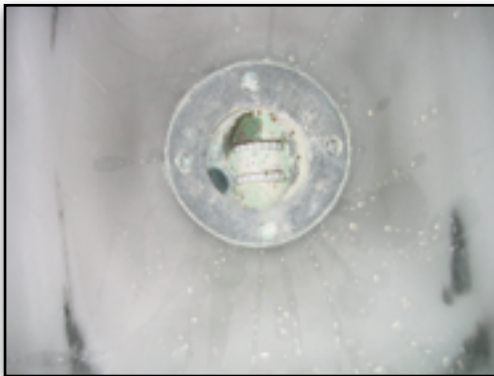


## Applicator Servicing and Maintenance

### End of Season

#### **Cleaning**

- Remove all Granules from the hoppers prior to servicing. This is best done using a brush and in the field of last use.
- Do not wash out the hoppers with water.
- Prop open lids for storage too prevent build up of moisture



#### **Storage**

- Store applicators in a dry place.
- Do not store applicators outside even if hoppers are covered with plastic bags or purpose made covers.
- Do not use oil or diesel on the metering units unless you are intending to strip and rebuild the applicators prior to use.



## **Pre season**

### **Hoppers**

- Check for signs of splits or missing/loose mounting screws.
- Check lid security.
- Look for signs of wear to the hopper adapters.
- Check condition of rubber bungs

## **Pre season contd.**

### **Rotors/metering system**

- Visually check the condition of components.
- Turn the units by hand to assess whether further attention is required.

### **Pipe Work**

- Check pipe security.
- Look for splits/kinks and feed angles to the fishtails or deflector plates.
- Check Hose clips are operational and tight.

### **Fishtail**

- Check condition and blockages.
- Check alignment.

### **Drive system**

- Check metering bar alignment for binding.
- Check belt and chain condition.
- Are all the pulleys/sprockets with the applicator?

### **Land Wheel**

- Check circumference and diameter.
- If land wheel spikes are worn to a point replace prior to use
- Check spikes are fixed firmly in place (spider wheel).
- Check tyres are inflated correctly (i.e. when fitted to drills and planters)

## **Dis-assembly when required**

- Loosen all hex grub screws (spray with penetrating oil if necessary).
- Knock all metering pieces out from one side with a deep socket or plough bolt ensuring enough surface area to avoid damaging the brass insert in the end bearings.
- Remove components and inspect for damage and wear.

## Applicator Maintenance Record

**Tester**  **Date**

Applicator Condition  New  Good  Average  Poor

Applicator Year of Manufact  Rotor size  mm

Applicator  Cassette type

Attached to  Machine Working Width (a)  m

Applicator I.D or serial number  Driving wheel Dia. (a)  cm

Number of Outlets  Applicator Revolutions  per 100m

Applicator product use:  Vydate  Nemethoin  Tenk  Other

1. Landwheel/Drive mechanism	<input type="checkbox"/> OK	<input type="checkbox"/> Poor
2. Metering Bar Alignment	<input type="checkbox"/> OK	<input type="checkbox"/> Poor
3. Metering System	<input type="checkbox"/> OK	<input type="checkbox"/> Poor
4. Pipe Work Condition	<input type="checkbox"/> OK	<input type="checkbox"/> Poor
5. Fishtails	<input type="checkbox"/> OK	<input type="checkbox"/> Poor
6. Hopper Condition	<input type="checkbox"/> OK	<input type="checkbox"/> Poor
7. Hopper Lid Security	<input type="checkbox"/> OK	<input type="checkbox"/> Poor
8. Surefill Adaptor.	<input type="checkbox"/> OK	<input type="checkbox"/> Poor

9. Operator available at service  YES  NO  
Name:

10. Results, recommendations and calibration Explained  YES  NO

### Parts List (This is not an invoice)

Part	Quantity Required	Supplied Yes / No	Fitted Yes / No	Part	Quantity Required	Supplied Yes / No	Fitted Yes / No
5mm Rotor				Surefill adaptor			
8mm Rotor				Fish tail			
8.5mm d-fluted rotor				Fish tail feed pipe			
14mm Rotor				12 mm Spacer			
15mm Rotor				20 mm spacer			
Rotor facing washer				Shaft collar			
Wear Strip				Allen Screw m8 x 8			
Shaft sealing wash.				Clite bush			
Hex Shaft				Adaptor bush			
Hex Sleeve				Bearing Assembly			
HF Vydate Cartridge				Drain Tube			
Apcal				Drain cap			
785 conversion kit							

### Comments:

**If a product other than Vydate is to be used with this applicator please ensure that the correct rotor/cartridge assembly is used and the machine is set for the required output.**

Farmer:

Tel:

Address:



## Microband Fitting Instructions

### FITTING 8.5 mm DEEP FLUTED ROTORS INTO MICROBAND UNITS

#### 2 OUTLET METERING UNIT

1. Check faces of centre spacer and housing bearings for any bruising or sharp edges, remove where necessary by placing face down on a smooth emery cloth and using a circular movement remove any sharp edges.
2. Fit 20 mm centre spacer into the housing with the dimple to the top and slide the wear strip into the machined slot.
3. Fit rotor to either side of centre spacer with the solid face of the rotor to the face of the spacer. Fit washer either side to blank off open side of rotor.
4. Fit both housing bearings with dimples to the top and centralise within the casting. Fit adapter bushes and then hexagon shaft. Fit shaft sealing washers and then shaft collars over the shaft. Ensure that the components are centralised within the casting.
5. Lock off the left hand bearing with screws facing. Then insert 0.008 inch feeler gauge between the left hand rotor and the centre spacer and the centre spacer and the right hand rotor. Gently press on the right hand housing bearing until the feeler gauges are a sliding fit. Lock off the centre spacer and then the right hand housing bearing. **Do not over tighten the locking screws.**

6. Turn the hexagon shaft and visibly check the clearance on the rotors, the shaft should turn freely.



### 3 OUTLET METERING UNIT

Place centre rotor and washer in housing first, then a 20 mm spacer to either side and fit wear strip. Fit the two remaining rotors and washers as above, then fit housing bearings, adaptor bushes and shaft. Lock off housing bearings and spacers as above moving from left to right and allowing the same clearances.



## HORSTINE FARMERY

Instruction Sheet No. **032089**

### Microband Cassettes.



762210 2-outlet 1-off  
13.5mm rotor per outlet

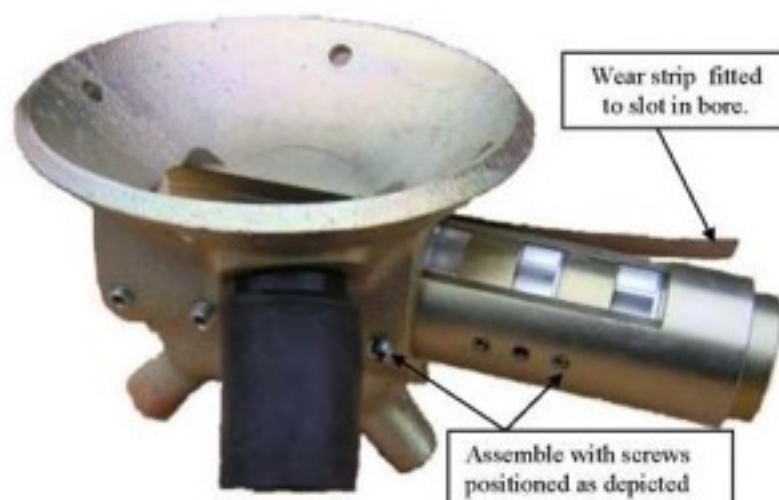


762211 2-outlet 2-off  
13.5mm rotor per outlet



762240 3-outlet 1-off 13.5mm  
rotor per outlet

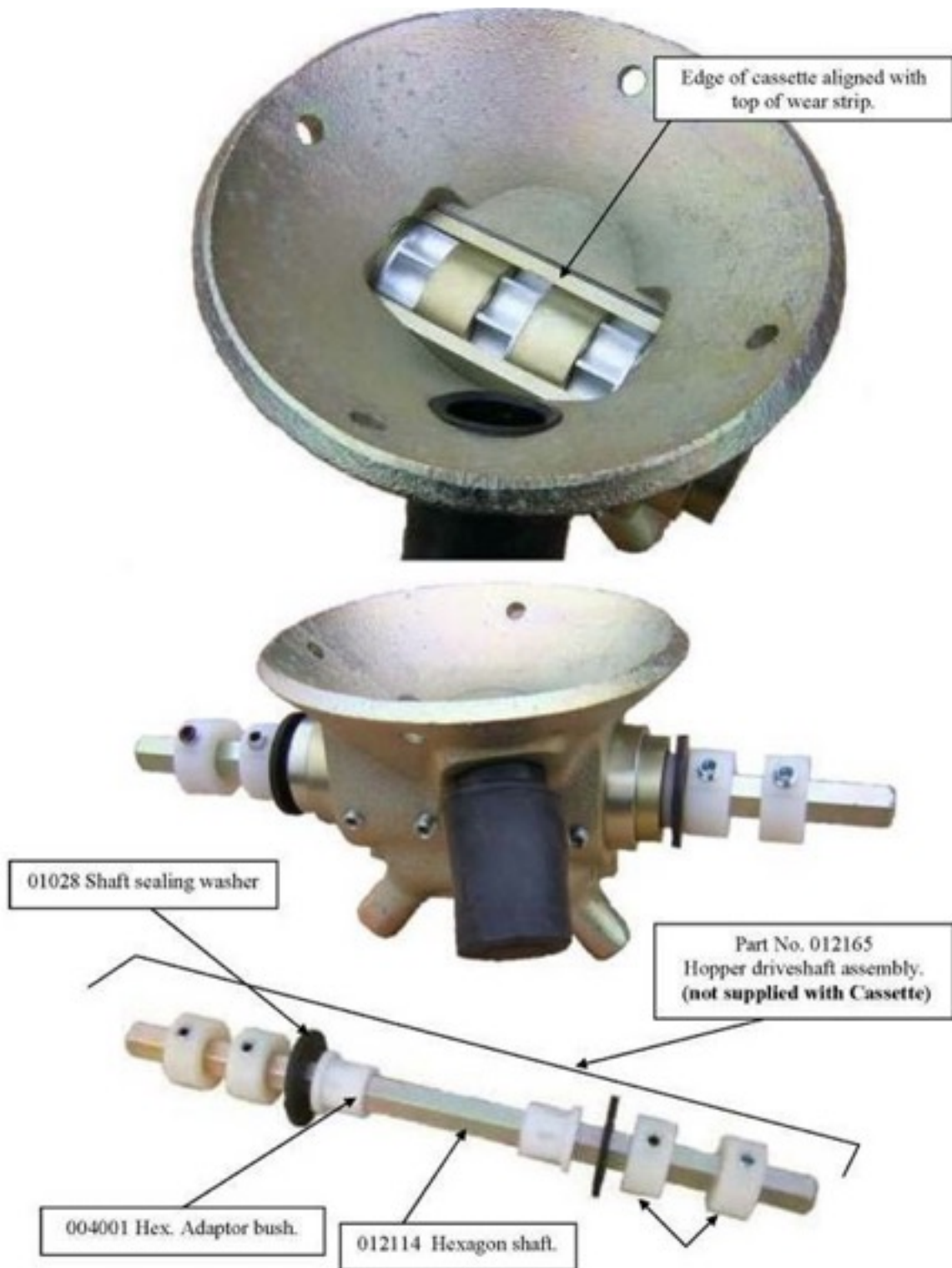
- 1/ Remove the hexagon driveshaft assembly from your existing Microband hopper unit by slackening the allen screws in the hexagon shaft collars retaining it, taking care not to loose the rubber shaft sealing washers and hexagon adaptor bushes which will be re-assembled into the metering cassettes when fitted.
- 2/ Slacken the allen screws in the front of the body housing underneath the drain spout (three screws on two outlet castings and four screws on three outlet castings). Now remove the old metering system components from the bore of the casting. If these are tight use a suitable drift knock the components out one way. Keep the wear strip from the slot inside the bore of the casting, as this is re-fitted with the Microband Cassette to prevent material running out along the slot.
- 3/ Slide the new cassette into the housing along with the wear strip locating it in the slot in the bore of the casting. Note that the screws in the cassette are best assembled in the same plain as the screws in the front of the casting and the top of the cassette is as illustrated below. Centralise the cassette in the casting so that the metering rotors are fully exposed across the inlet. Also turn the cassette in the housing so that the edge of the back of the cassette aligns with the top of the wear strip. Once you have done this clamp the cassette in the housing with the allen screws in the front of the casting, do not over tighten .



- 4/ Re-assemble the driveshaft assembly to the metering cassette by first locating the hexagon adaptor bushes in the bearings at each end of the cassette, then slide the hexagon driveshaft through the unit (turn the driveshaft slightly to align the hexagon through the metering rotors). Fit a rubber sealing washer onto the hexagon shaft at each side and then the two hexagon shaft collars at each side. Rotate the driveshaft to ensure the unit turns freely.







## ***HORSTINE FARMERY***

1 COW LANE, UPTON, GAINSBOROUGH, Lincs. DN21 5PB  
TEL: 01427 838383. FAX 01427 838507

### Calibration Sheet for Broadcast (kg/ha) Application of granule nematocide using HF Microbands

Part 1 . To determine how many times to spin the landwheel / Metering unit for a static 100 meter run

1. Measure Driving Wheel across its diameter and record  cm

2. Multiply figure by 3,142 and record result below in shaded box

3. To work how many times land wheel turns in 100m complete the following sum below.

10,000 divided by  =  turns per 100m

Part 2 . To Collect and weigh product at a 1:1 ratio and convert results to Kg/ha

4. Remove fish tail pipework from applicator units and attach Vycal tubes to outlets.

5. Attach two identical Sprockets/pulleys at microband and metering bar to obtain a 1:1 Ratio (e.g. 22 tooth @ hopper and 22 tooth driver on metering bar below)

6. Turn land wheel once in direction of travel to take up any slack in drive

7. Add Vydate to be calibrated to the hopper and prime ready for full calibration, wearing PPE advised on the label

8. Spin the land wheel the number of turns indicated above, collect and weigh product from each outlet and add results to the tables below.

(check that each outlet is +/- 5%, if out of tolerance check metering unit for correct assembly & rotors for excessive wear)

Outlet	gms
1	
2	
3	

Outlet	gms
4	
5	
6	

Outlet	gms
7	
8	
9	

Outlet	gms
10	
11	
12	

9. Sum outlets above and record figure >

Divided by

10 Machine Width

x 0.1 =

Kg/ha

11. Kg/ha @ 1:1 ratio = Sum of outlets divided by working width multiplied by 0.1

# machine width = working width of planter/bedfitter (m)

Part 3. Working out the correct settings for the required application rates needed.

12. To work out the pulley/sprocket combinations required use tables 1 & 2, and the HF Ratio tables to determine correct setup.

13. In Table 1 - Enter Recommended rate (kg/ha) and divide by 1:1 figure obtained above to get the ratio required.

Table 1. Required Output Table

Rate	1:1'	=	Ratio
	divide		
	divide		
	divide		

Table 2. Required Output Table

Driver	Driven	Ratio

14. Using the HF Ratio tables select the ratio closest to the ratio's calculated in table 1 (Do not exceed the ratio)

15. In Table 2 - Record the 'Driver and Driven' Pulley/Sprocket size (number of teeth) and ratio

Part 4. Convert application rates to a figure in g/100m for using Vycal tubes in field to check application rates

16. Use table below to convert kg/ha to g/100 metre row

\*\*\*Record results in column's 1, 2 and 3 before calculating

1	2	3
Machine Working Width	Outlet Number	Machine Working Width
÷ divided by	÷	÷
	x 10	x
÷ divided by	÷	÷
	x 10	x
÷ divided by	÷	÷
	x 10	x

g/100m

g/100m

g/100m

# machine width = working width of planter/bedfitter (m)

## HF Pulley & Sprocket Combination Chart



<u>PULLEY RATIO</u> Size in inches				<u>SPROCKET RATIO</u> Number of Teeth		
<u>Driver</u>	<u>Driven</u>	<u>Ratio</u>		<u>Driver</u>	<u>Driven</u>	<u>Ratio</u>
4	7	0.57		19	34	0.56
				19	31	0.61
4 1/2	7	0.64		22	34	0.65
			<b>Decrease Rate</b>	19	28	0.68
5	7	0.71		22	31	0.71
				25	34	0.74
				23	31	0.74
				19	25	0.76
				22	28	0.79
4	5	0.80		25	31	0.81
				28	34	0.82
				19	22	0.86
				22	25	0.88
4 1/2	5	0.90		25	28	0.89
				28	31	0.90
				22	23	0.96
<b>4</b>	<b>4</b>	<b>1.00</b>	<b>One To One Drive</b>	<b>22</b>	<b>22</b>	<b>1.00</b>
				23	22	1.05
				31	28	1.11
5	4.5	1.11		28	25	1.12
				25	22	1.14
				22	19	1.16
				34	28	1.21
5	4	1.25		31	25	1.24
				28	22	1.27
				25	19	1.32
				34	25	1.36
7	5	1.40		31	22	1.41
				28	19	1.47
7	4.5	1.56		34	22	1.55
			<b>Increase Rate</b>	31	19	1.63
7	4	1.75		34	19	1.79

## Stanhay/Granyl-Microband Ratios



### **Primary Drive: For Vydate Use**

- 11-17. High-Speed (Carrots/Onions - G40 or 8mm standard rotor in Microband)
- 11-24. Mod-Speed (Carrots/Onions - 15mm or 8.5deep fluted rotor HF or G40)
- 11-48. Low speed (Low rates below 30g/100m e.g. Sugarbeet HF/G40)

<u>Sprocket Settings</u>			<u>Ratio</u>
<u>A</u>	<u>B</u>		
15	25	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="border: 1px solid black; border-radius: 10px; padding: 5px; margin-bottom: 10px;">Decrease Rate</div> <div style="margin-bottom: 10px;">↑</div> <div style="border: 1px solid black; border-radius: 10px; padding: 5px; margin-bottom: 10px;">One To One Drive</div> <div style="margin-bottom: 10px;">↓</div> <div style="border: 1px solid black; border-radius: 10px; padding: 5px;">Increase Rate</div> </div>	0.60
15	24		0.63
17	25		0.68
17	24		0.71
19	25		0.76
19	24		0.79
21	25		0.84
21	24		0.88
19	21		0.90
21	21		1.00
24	24		1.00
25	24		1.04
21	19		1.11
24	21		1.14
25	21		1.19
24	19		1.26
25	19		1.32
24	17		1.41
25	17		1.47
24	15		1.60
25	15	1.67	

**Accord Monopill / Miniair S-Microband Ratios**



<u>Sprocket Settings</u>			<u>Ratio</u>
<u>A</u>	<u>B</u>		
13	28		0.46
16	28	Decrease Rate	0.57
18	28		0.64
20	28		0.71
16	20		0.80
18	20		0.90
<u>20</u>	<u>20</u>	One To One Drive	<u>1.00</u>
20	18		1.11
20	16		1.25
28	20		1.40
28	18	Increase Rate	1.56
28	16		1.75



**Combinaisons possibles des pignons A-B-C-D-E**  
Possible combinations of the sprockets A-B-C-D-E  
Mögliche Hinstellungen mit den Zahnrädern A-B-C-D-E

**Rapports obtenus**  
Ratios obtained  
Mögliche Umdrehungen

**Position ressort (p. 3)**  
Spring position (p. 3)  
Federstellung (S. 3)

A	B	C	D	E								
12	—	30	—	12	—	35	—	12	.....	0.08	.....	n°2
12	—	25	—	12	—	35	—	12	.....	0.1	.....	n°1
12	—	30	—	12	—	35	—	20	.....	0.14	.....	n°2
12	—	25	—	12	—	35	—	20	.....	0.16	.....	n°1
25	—	30	—	12	—	35	—	12	.....	0.17	.....	n°2
12	—	22	—	12	—	35	—	20	.....	0.19	.....	n°1
25	—	25	—	12	—	35	—	12	.....	0.21	.....	n°2
12	—	30	—	23	—	23	—	12	.....	0.24	.....	n°2
12	—	15	—	12	—	35	—	20	.....	0.27	.....	n°1
25	—	30	—	12	—	35	—	20	.....	0.29	.....	n°2 *
12	—	22	—	23	—	23	—	12	.....	0.33	.....	n°1
25	—	25	—	12	—	35	—	20	.....	0.34	.....	n°2
12	—	30	—	23	—	23	—	20	.....	0.4	.....	n°2
25	—	12	—	12	—	35	—	12	.....	0.43	.....	n°1
12	—	25	—	23	—	23	—	20	.....	0.48	.....	n°1
25	—	30	—	23	—	23	—	12	.....	0.5	.....	n°2 *
12	—	22	—	23	—	23	—	20	.....	0.55	.....	n°1
25	—	15	—	12	—	35	—	20	.....	0.57	.....	n°1
25	—	25	—	23	—	23	—	12	.....	0.6	.....	n°2
25	—	22	—	23	—	23	—	12	.....	0.68	.....	n°2
12	—	30	—	35	—	12	—	12	.....	0.7	.....	n°2
25	—	12	—	12	—	35	—	20	.....	0.71	.....	n°1
12	—	15	—	23	—	23	—	20	.....	0.8	.....	n°1
25	—	30	—	23	—	23	—	20	.....	0.83	.....	n°2 *
12	—	22	—	35	—	12	—	12	.....	0.95	.....	n°1
25	—	25	—	23	—	23	—	20	.....	1	.....	n°2
25	—	22	—	23	—	23	—	20	.....	1.14	.....	n°2
12	—	30	—	35	—	12	—	20	.....	1.17	.....	n°2
25	—	12	—	23	—	23	—	12	.....	1.25	.....	n°1
12	—	25	—	35	—	12	—	20	.....	1.4	.....	n°1
25	—	30	—	35	—	12	—	12	.....	1.46	.....	n°2 *
12	—	22	—	35	—	12	—	20	.....	1.59	.....	n°1
25	—	15	—	23	—	23	—	20	.....	1.67	.....	n°1
25	—	25	—	35	—	12	—	12	.....	1.75	.....	n°2
25	—	22	—	35	—	12	—	12	.....	1.99	.....	n°2
25	—	12	—	23	—	23	—	20	.....	2.08	.....	n°1
12	—	15	—	35	—	12	—	20	.....	2.33	.....	n°1
25	—	30	—	35	—	12	—	20	.....	2.43	.....	n°2 *
25	—	25	—	35	—	12	—	20	.....	2.92	.....	n°2

- \* Passer la chaîne sous le galet A (voir p. 2) avec rampe haute
- \* Pass the chain under the roller A (see page 2) with high bracket
- \* Legen die Kette unten den Tragrollen A (Siehe Seite 2) mit Anbau oben

## **VY-CAL User Instructions**

### **Why use a VY-CAL Tube?**

VY-CAL has been developed to enable growers to monitor the application rate of Nematicide® 10G in season for overall applications in potatoes and for in furrow applications in potatoes, sugar beet and carrots. By checking the output of granules from each outlet, operators can ensure that the correct dose is being applied evenly to the soil. Growers are recommended to run the test, and record the findings, before applying product in each field.

### **How to use VY-CAL Tubes**

The tube is pre-calibrated for Nematicide® 10G use only and is not suitable for use with any other product. The increments on the tube show recommended rates of use in both Kilograms per Hectare and Grams per 100 metres to reflect recommended rates for Nematicide® 10G in different crops.

For overall application to potatoes the markings on the tube identify the dose rate in Kilograms per hectare of Nematicide® 10G for specific row widths (i.e. the working distance between each Microband outlet in cms). The tube is calibrated to take account of the two most common set ups based on 30 cm or 46 cm row widths.

The tubes are designed to clip over the outlets of the Microband metering unit with a re-sealable tie. They can be attached directly to the metering unit or attached to the bottom of the delivery tube.

The most accurate method of calibration is to mark out 100 metres and drive over this measured distance, remembering to prime the Microband units first. Attach the tubes to all outlets. In order to prevent spillage please ensure that the tubes are adequately attached, and will not dislodge due to any vibration from the movement of the machine.

An alternative method is to conduct a stationary calibration. This can be done if you know how many revolutions the drive shaft will turn in 100m depending on the gearing and land wheel drive used.

Carefully detach the VY-CAL tubes and level the contents by tilting the tube, tamping is not recommended. Ensure that the tubes are upright and compare the contents with the target rate. If the contents of the tubes are consistent but are either over or under the target rate; adjustment can be made by adjusting the landwheel ratios. If individual outlets give inconsistent results it suggests either worn or badly fitted rotors, and the Microband unit should then be serviced by a suitably qualified person.

VY-CAL is designed to be a simple method of checking Microband outputs of Nematicide® 10G. The production process for granular products can result in some small variation between batches. For ultimate accuracy it is recommended that the tube





- The Vy-Cal™ tube will give a good indication of the rate being applied, however for complete accuracy it is recommended that the tube contents should be weighed and the results checked against the target rate g/100m indicated on the tube.



## Vydate Calibration Request Form

DuPont Representative

Rep: Notes

Farm Details (Trade name and address)

Farm Engineer / Calibration Contact (if different from farm manager)

Agronomy Contact : Contact num. (if known)

Date of first contact

Farm Manager

Contact Number

Contact Number

### Machinery / Applicator details

	App 1	App 2	App 3	App 4	App 5
Applicator Model / Type					
Applicator attached to					
Machinery Manufactories					
Number of Outlets					
Applicator drive type					
Drive Mechanisms					
Crop/Pest Target					
Calibration required by (dd/mm/yy)					

Engineer responsible for Calibration



Engineer Notes



The miracles of science

**Vydate® 10G**  
Stewardship Programme

Calibration Completed : (dd/mm/yy).....

\* Please retain for your records



Use plant protection products safely. Always read the label and product information before use.



