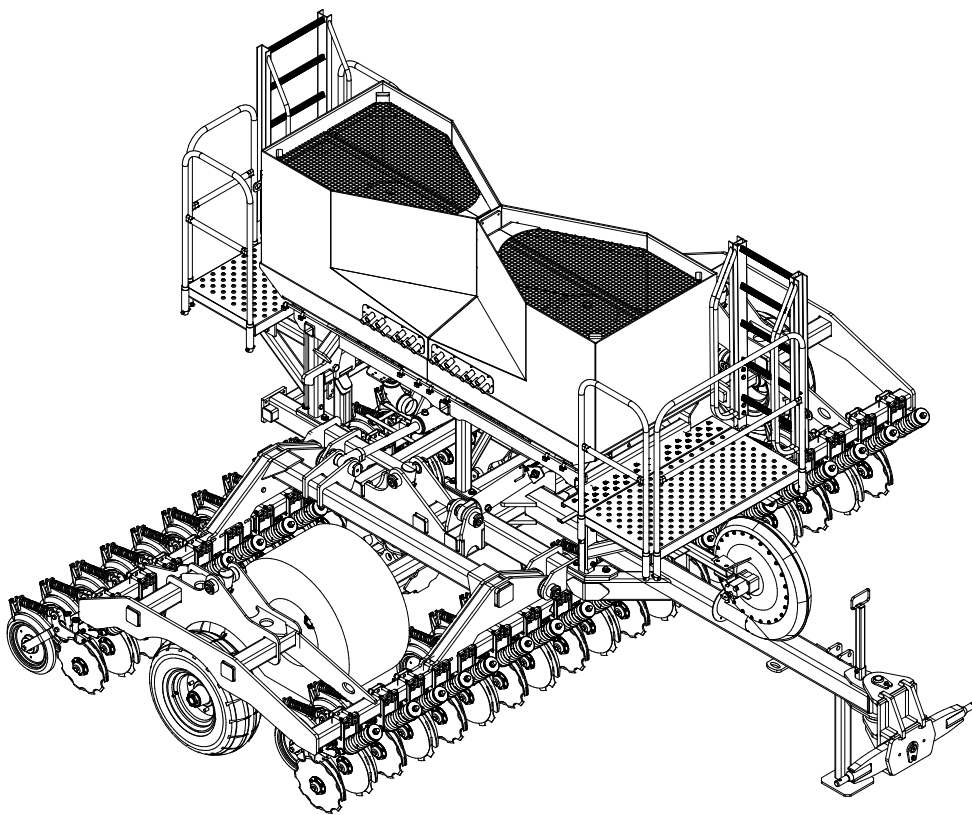


Owners Manual



Enviro DD45 38R 5 inch ORIGINAL INSTRUCTIONS



Head Office:
P.O. Box 2018
Hilton Highway, Washdyke
Timaru, New Zealand
Telephone (03) 688 2029
Facsimile (03) 688 2821

Australian Branch:
Building 2 107-117 Boundary
Road
Laverton North, Melbourne,
Victoria 3026 Australia
Telephone (03) 9369-6548
Facsimile (03) 9314-6810

**Pt. No. 67465
Issue 0922**

Enviro DD45 Contents

	Page
Introduction	2
Acquisition & Warranty	2
Disclaimer	2
Description of Machine Working Principle.....	3
Specification Dimensions & Capacities	4, 5
SAFETY - General Safety Symbols on Machine	6
Operator Safety.....	7
Be Prepared for Emergencies.....	7
Appropriate Dress	8
Transport This Machine Safely	8
Handle Agricultural Chemicals Safely.....	9
Avoid High Pressure Fluids.....	9
Safe Work Practices	9
Practise Safe Maintenance	10
SAFETY - Machine Specific Hazard Points	11
Safety Decals & Safety Guards.....	13
Transport	15
Setup, Calibration & Operating Procedure Setting Depth	16
General Operation.....	16
Read Before Operation	18
Pre-Calibration Setup	23
Sowing Chart.....	24
Calibration	26
Save/Restore>USB.....	29
Maintenance & Care General	30
Lubrication Instructions	31
Maintenance Schedule	32
Storage	33
Parts List Disc Assemblies	34
Bushes-Mainframe Wheels	46
Bushes-Wing Wheels	48
Bushes-Wing Pivot	50
Hose Connection Colours	53

Introduction

Acquisition & Warranty

On delivery of your new Duncan Enviro DD45 please check that the machine is not damaged. In cases of shipping damage, please ask your dealer to arrange for the appropriate claim to be lodged immediately. Assemble any parts supplied loose and inspect your machine with the aid of this manual to familiarise yourself with its features. If you have any queries ask your dealer straight away. The machine is covered by our 12 month warranty on faulty parts, subject to normal use.

Record below the serial number of your machine and keep it in a secure place to help trace the machine and assist us when you order parts.

The Owner's Manual

Model:

Serial No:

Owner:

.....

.....

Delivery Date:

Dealer:

.....

.....

Your new Duncan Enviro DD45 will give long and efficient service if given normal care and operated properly.

This owner's manual is provided so that you can become thoroughly familiar with the design of the machine and to furnish information on correct operation, adjustment and maintenance. **Only persons well acquainted with these guidelines should be allowed to use the equipment.**

A separate illustrated parts section has been provided so that if any parts are required your dealer will be able to supply them by reference to part numbers.

The manual is considered as part of your machine and must remain with the machine when it is sold.

Right and left hand references in this manual are determined by standing behind the machine and facing in the direction of travel.



Built to work.

This Document contains the Original Operating Instructions for this machine and are verified by the Manufacturer.

Signed:.....

Product Development Manager

Disclaimer

Every effort has been made to ensure that the information in this manual was accurate and up to date at the time of going to press. Giltrap AG reserves the right to make subsequent changes to the machine, where necessary, without notification.

The Company will not be responsible for any damage or consequential loss arising out of misinterpretation or failure to follow recommended procedures. Nor will it be liable for any damage caused by or arising out of modification or misuse of its product.

The owner has a responsibility to protect himself and others by observing all safety information and by ensuring all operators are well acquainted with the safety information, trained in the correct use of the machine and applying safe work practices.



Description of Machine

The Duncan 'Enviro DD45' is a Double Disc drill. The large split hopper is mounted on a robust centre frame accommodating wide tyres and a 2 point linkage at the front.

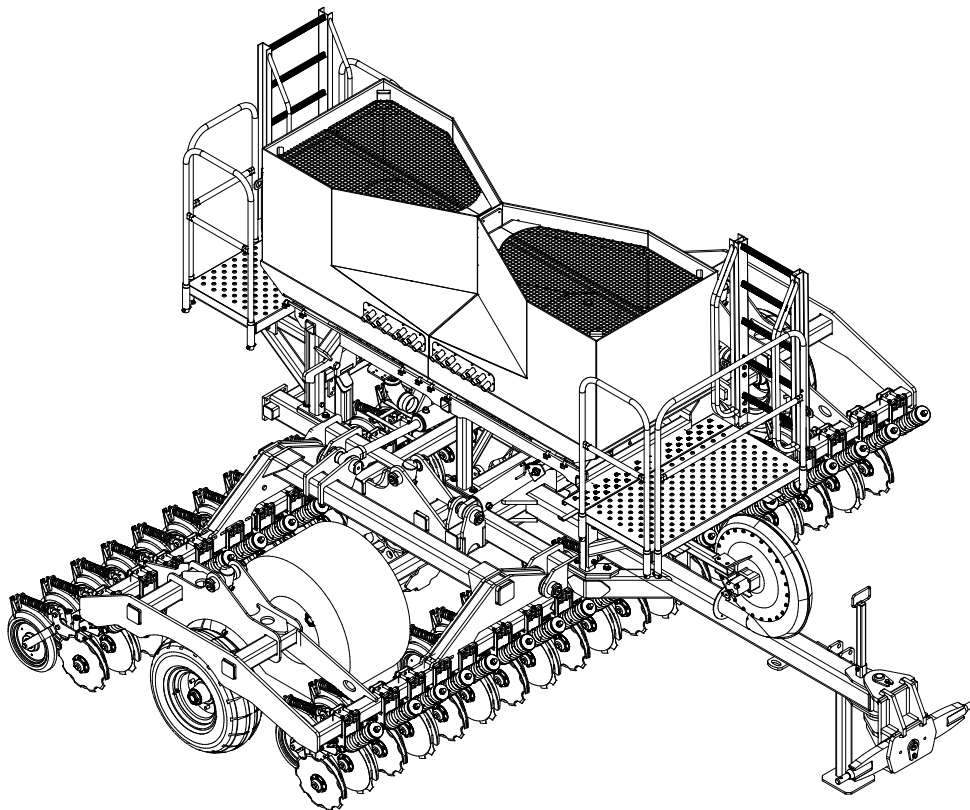
Sowing depth is controlled by depth stop collars on the main wheel leg rams. The quality European air metering units handle all seeds from turnip and rape through to peas and maize and permits easy calibration. The seeders are driven via a ground speed proportional electric drive system. Seeding ceases automatically when the machine is raised into the transport position. The wings may be hydraulically folded up for legal transport width.

Working Principle

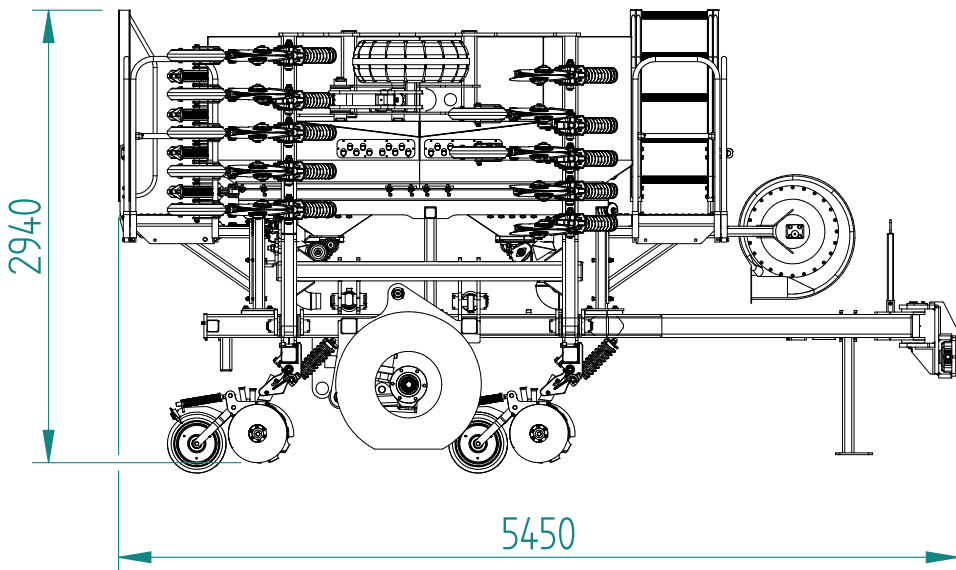
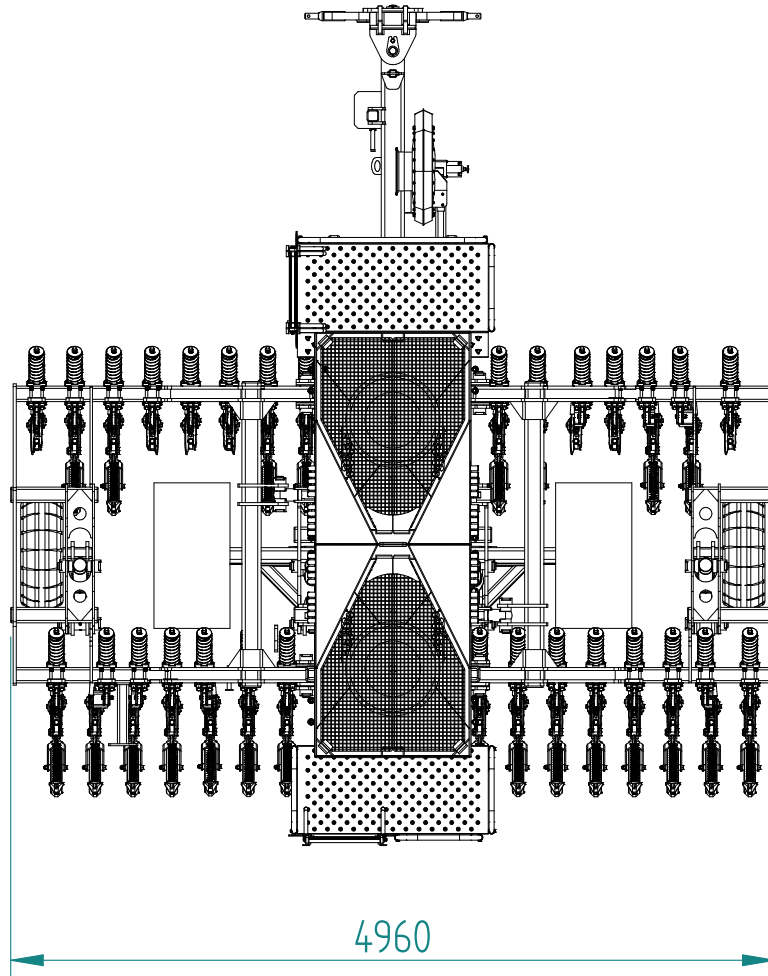
The air flow, metering units and electric drive system are easily set to give the desired sowing and/or fertilizer rate.

The seeding slot is opened by a unique leading scalloped disc and followed by a plain disc.

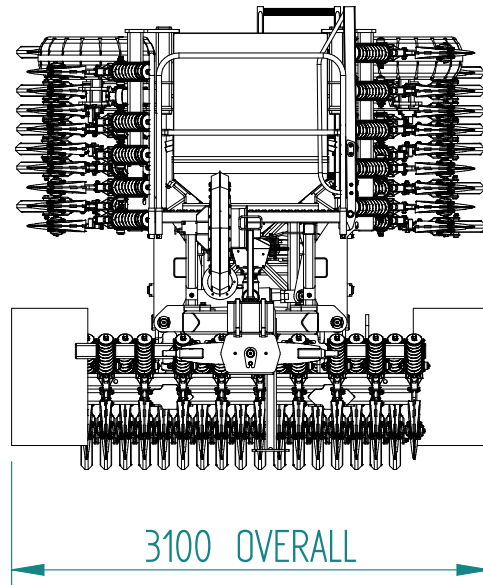
Air delivers seed down the flexible tubes between the vee of each disc unit and drops into the prepared seed slot.



'Enviro DD45' Dimensions & Capacities



'Enviro DD45' Dimensions & Capacities



Dimensions & Capacities	
Enviro DD45 38R 5 inch	38 Run
Width (mm)	3100
Working Height (mm)	2940
Machine Length (mm)	5450
Row Spacing (mm)	125
Sowing Width -effective (mm)	4750



ATTENTION

On the machine important safety information is indicated by these symbols. These highlight general safety aspects in regard to the machine rather than specific hazards.



Do not ride or allow passengers on the machine.

Under no circumstances are passengers to be permitted on the machine while it is in operation or being transported. Any footboards and/or footsteps are provided solely for the purpose of preparing the machine for use.



Keep clothing and body extremities well clear of pinch points while the machine is operating (seeding or calibrating). Keep well clear of moving parts at all times.

These signs typically occur wherever trapping points exist. These include drive chains, sprockets, shafts, wheels, discs, pivot points, etc. Guards are provided with the machine for safety reasons (where practical without compromising machine performance). Ensure these are always fitted during operation.



Always exercise extreme caution in the vicinity of sharp edges and points.

Where possible guards are provided with the machine for safety reasons (where practical without compromising machine performance). Ensure these are always fitted during operation.



Footboards, footsteps, drawbars and other machine surfaces may be slippery when wet.

Apply extra caution in wet conditions and in the early morning when surfaces are wet.

KEEP CLEAR

Keep Clear. (It is dangerous to be in this area when the machine is operating.)

SAFETY - General

N.B. Throughout this manual important safety information is indicated by these symbols in the margin:



NO RIDE

A **prohibition** should be observed under all circumstances.



WARNING

A **warning** indicates a hazard that could cause death or injury if the warning is ignored.



CAUTION

A **caution** indicates a hazard that may cause damage to property if the caution is ignored.

This section of the manual offers general guidelines for the safe operation of machinery. It does not replace local safety regulations. These guidelines were current at the time of publication, but may be superseded by later regulations.

Giltrap AG has made every effort to highlight all risks to personnel or property. Owners and operators have a responsibility to exercise care and safe work practices at all times in the vicinity of the machine.

Owners are advised to keep up to date on safety issues and to communicate these to all users of the machine.

Contact the Occupational Safety and Health Service (OSH) for further information about general safety aspects. If you have safety concerns specifically related to this machine, contact your dealer immediately.

Operator Safety

Read this manual carefully before operating new equipment. Learn how to use this machine safely. Be thoroughly familiar with the controls and the proper use of the equipment before using it.

Take careful note of all safety instructions both in this manual and on the machine itself. Failure to comply with instructions could result in personal injury and/or damage to the machine.

Replace missing or damaged safety signs on the machine and ensure that these remain clearly visible.

It is the owner's responsibility to ensure that anyone who operates, adjusts, lubricates, maintains, cleans or uses the machine in any way has had suitable instruction and is familiar with the information in this manual (particularly with regard to safety aspects).

Operators and other users of the machine should be aware of potential hazards and operating limitations.

Be Prepared for Emergencies

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance, hospital and fire department near your telephone.



WARNING



WARNING

SAFETY - General (Continued)



WARNING

Appropriate Dress

Wear close fitting clothing and avoid rings or other forms of jewellery which could become caught in the machinery.

People with long hair must have it securely fixed and confined close to the head.

Refer to local safety standards for protective clothing and recommended safety equipment.

Adequate protection, such as a face mask, should be worn if operating this machine in dry and dusty conditions.



WARNING

Transport This Machine Safely

Ensure that all linkage pins and security clips are fitted correctly. With trailing machines tow with the drawbar only, as this is the only safe towing point on the machine.

Always check that bystanders (especially children) are well clear (front and rear) before starting and moving the tractor and the machine.

Plan safe routes of travel, and be aware of power lines and other roadside hazards. Take particular care when towing implements on hillsides.

Do not ride or allow passengers on the machine.

This machine is not designed to carry passengers, and no riders are permitted.



NO RIDE

Road transport

On public roads,

- A speed of 40km/h must not be exceeded.
- Do not operate during the hours of darkness unless standard lights are fitted and clearly visible. (This also applies when visibility is limited, e.g., in foggy conditions.)

See the guidelines in the *Vehicle Dimensions and Mass Rule*, issued by the Land & Transport Safety Authority.

Avoid tip-overs

Avoid holes, ditches and obstructions which may cause the machine to tip over, especially on hillsides. Never drive near the edge of a gully or steep embankment - it might cave in. Slow down for hillsides, rough ground and sharp turns.



SAFETY - General (Continued)

Handle Agricultural Chemicals Safely

All farm chemicals should be stored, used, handled and disposed of safely and in accordance with the supplier's/manufacturer's recommendations.



Read the product label before using, noting any warnings or special cautions, including any protective clothing or equipment that may be required, ie. respirator.

Do not eat or smoke while handling sprays, fertilisers, coated seeds, etc. Afterwards, always wash your hands and face before you eat, drink, smoke, or use the toilet.



Store sprays, fertilisers, coated seeds, etc. out of reach of children and pets, and away from food and animal feeds.

Any symptoms of illness during or after using chemicals should be treated according to the supplier's/manufacturer's recommendations. If severe, **call a physician or get the patient to hospital immediately.** Keep the container and/or label for reference.

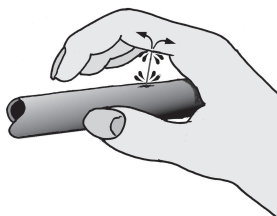
Avoid High Pressure Fluids

Avoid any contact with fluids leaking under pressure, because the fluids can penetrate the skin surface.



Any fluid which penetrates the skin, will need to be **removed immediately by a medical expert.** Seek specialist advice on this type of injury.

Relieve the pressure before disconnecting any hydraulic or other lines. Make all repairs and tighten all fittings before re-connection to pressurised fluid.



Keep your hands and body away from any pinholes or high pressure jets. Search for leaks with a piece of cardboard instead of using your hand directly.

Safe Work Practices

All farm machinery is potentially dangerous and should be treated with caution and respect.

Before starting the machine, ensure that all controls are placed in neutral and that bystanders are well clear. Check that the guards have been securely fitted and that any adjustments have been made correctly.

Where possible, disconnect or isolate the drive mechanism to the implement. Lower the machine onto the ground when not in use.

Do not operate this equipment when severe weather conditions appear imminent.



SAFETY - General (Continued)



Practice Safe Maintenance

Keep the machine in safe working condition. Routine maintenance and regular servicing will help reduce risks and prolong the life of the machine.

General Maintenance

Accidents occur most frequently during servicing and repair. The following general rules must be followed when maintaining or working with machinery:

- All operating and maintenance manuals must be read before and referred to while using or servicing any piece of equipment.
- Turn off all machinery power sources and isolate the machine before making adjustments, doing lubrication, repairs or any other maintenance on the machine.
- Ensure that the machine hydraulics are disconnected from the power source.
- Wear gloves when handling components with cutting edges, such as any ground cutting components.
- Beware of hazards created by springs under tension or compression when dismantling or maintaining the machine.
- It is recommended that you clean the machine with a water blaster or similar apparatus before commencing maintenance.

Make Sure the Machine is Well Supported

When machinery is fitted with hydraulics, do not rely on the hydraulics to support the machine. During maintenance or while making adjustments under the machine, always lock the hydraulics and support the machine securely. Place blocks or other stable supports under elevated parts before working on these.



Electrical Maintenance

Disconnect the electrical supply from the tractor before doing any electrical maintenance.



Welding

With electronic equipment in modern tractors it is advisable to disconnect the machine from the tractor, or at least disconnect the alternator and battery before attempting any welding.



Use Only Genuine Spare Parts

Unauthorised modifications or non-genuine spare parts may be hazardous and impair the safe operation and working life of the machine.

Excess lubricants must be disposed of safely so as not to become a hazard.

SAFETY - Machine Specific

This section of the manual gives specific guidelines for the safe operation of the Enviro DD45.

These guidelines were current at the time of publication, but may be superseded by later circumstances. They do not necessarily cover every possible hazard and must be read in conjunction with the **SAFETY - General** section (Page 7 to 10).

Hazard Points on the Enviro DD45

The lists below are not all-inclusive and serve only to highlight the more obvious areas of risk.



The decals attached to the machine are a general reminder that there are hazardous areas on the machine, rather than specifically highlighting all possible hazards.

For decal locations on machine, refer Page 13.



No Ride

Passengers are not permitted anywhere on the machine.



Pinch Points/Moving Parts

Hazardous areas include:

- Front Tractor Linkage
- Fan Unit
- Disc Units
- Wings
- Electric Drive units
- Roller (where fitted)
- Wheel legs and main frame assemblies
- Finger tine assemblies (where fitted).



**Slippery
When
Wet**

Slippery When Wet

Hazardous areas include:

- Footboards and footstep.
- All smooth surfaces on the frame structure.

KEEP CLEAR

Keep Clear

Hazardous areas include:

- Between the tractor and Enviro DD45.
- Immediately adjacent to the Enviro DD45 side.

'Enviro DD45' Seed Drill Safety

SAFETY - Machine Specific (Continued)



Hazard Points on the Enviro DD45 (Continued)

For guard locations on machine, refer Page 13.



Transport

The wheels located at the centre of the machine are for the purpose of controlling sowing depth. These are also used to support the machine weight.

Important - Refer to safety cautions in the **Transport** section, page 15 of the manual. Ensure that all linkage pins and security clips are fitted correctly.

Maintenance

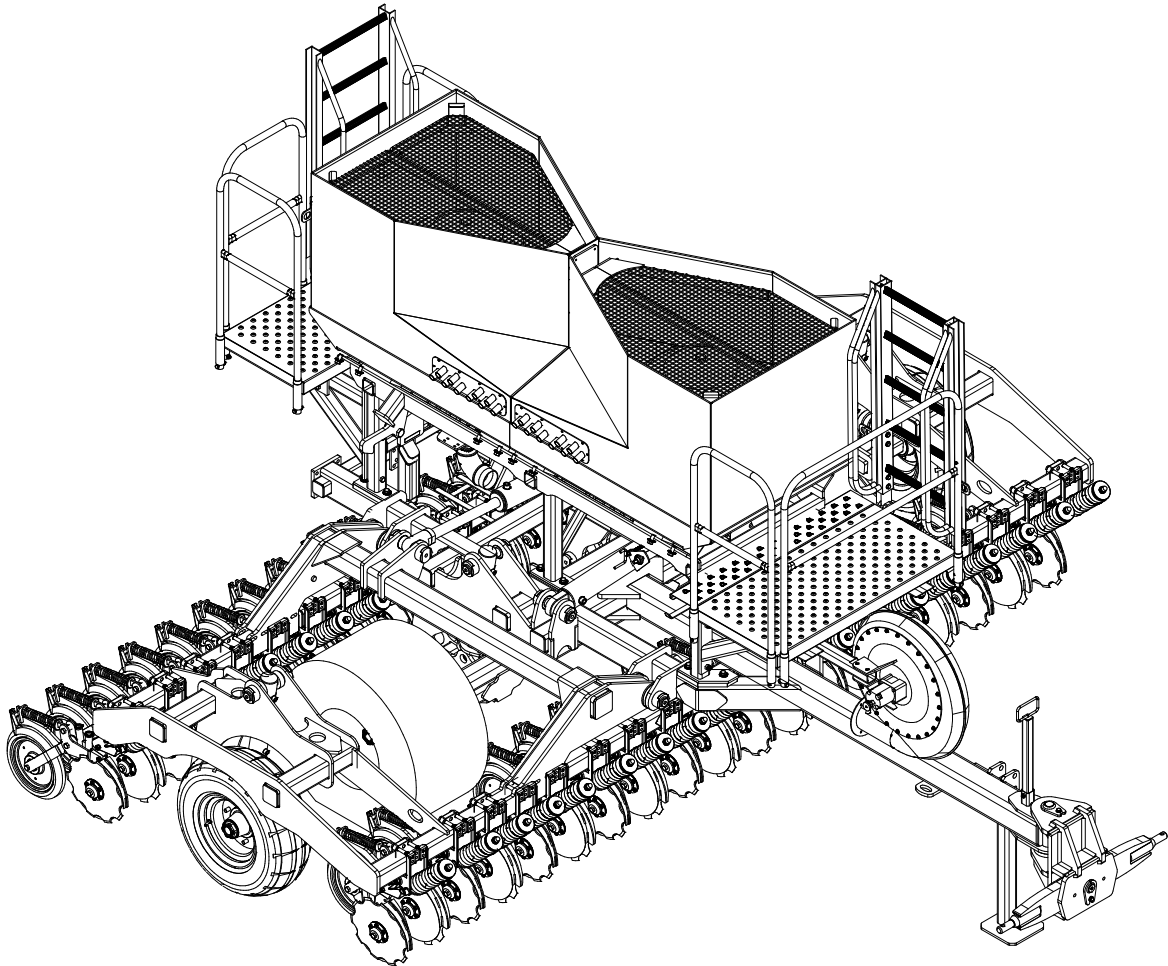
Refer Page 34 for reference to the **Maintenance and Care** section of the manual.

Lubrication

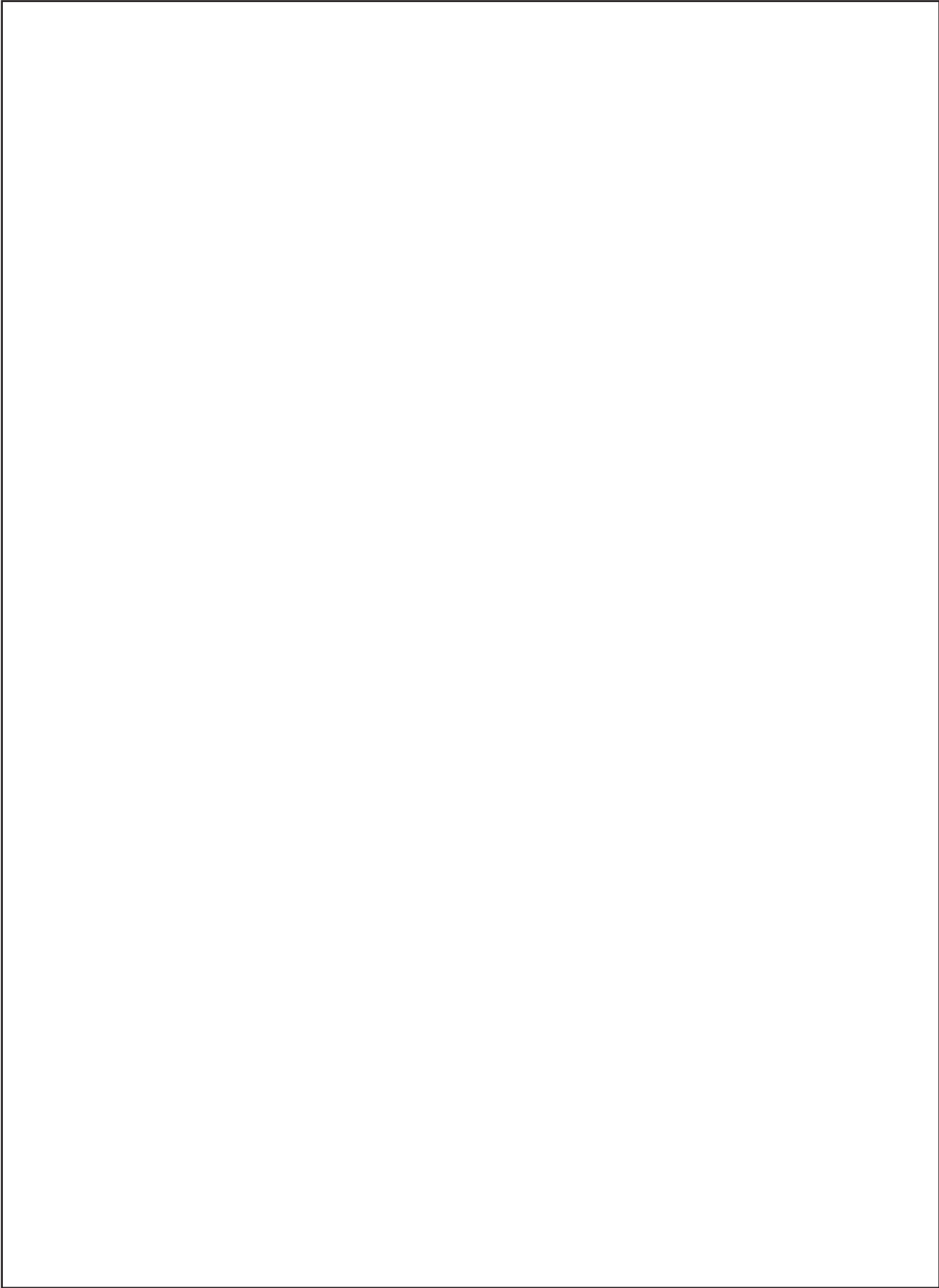
Refer Page 34 for reference to the **Maintenance and Care** section of the manual.

'Enviro DD45' Seed Drill Safety

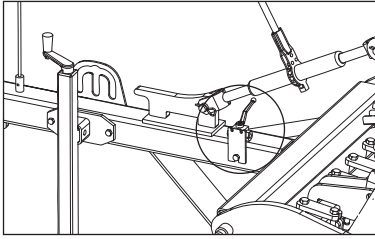
SAFETY - Machine Specific (Continued)



Item	Decal/Guard	Pt. No.
1	'No Ride'	43900
2	'Pinch Point/Moving Parts'	43901
3	'Slippery When Wet'	43902
4	'Keep Clear'	43904
5	'40 km/hr'	43912
6	'Hose Connection Colours'	72818

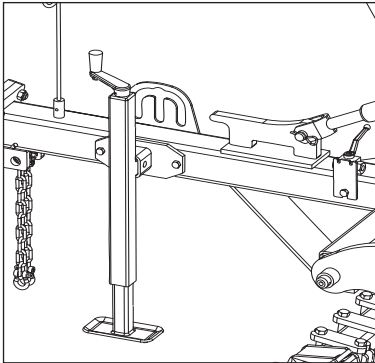


'Enviro DD45' Transport



Transport

- 1 Raise the drill into the transport position.
- 2 **Important** - To avoid machine damage due to drill lowering during transport, always close the hydraulic valve on the drawbar. Move the handle to a position at 90° to the hydraulic line. This applies to the drawbar and disc opener hydraulic valves where fitted.



- 3 Locate jack stand in transport position, if fitted.
- 4 Ensure lighting and oversize warning requirements meet recommendations published by the local Land Transport Authority or equivalent.
- 5 **Maximum towing speed 40 km/hr.**
For countries other than New Zealand other speed restrictions may apply, please refer to your local transport authority.

Ensure towing vehicle requirements are adequate for the towed vehicle e.g. mass, brakes. Refer to recommendations published by the local Land Transport Authority or equivalent.

Braking when towing can cause the load to jackknife. Use extra care when towing in adverse conditions such as mud, inclines and sharp bends.

Lower towing speeds are recommended on farm roads/tracks and where one wheel is on or over a road verge.

'Enviro DD45' General Operation

Operation General Operation Guidelines

1 Hydraulic Fan -connect the hoses in the following order:

First - connect Zero pressure Case Drain 3/8" hose (1/2" BSP Female QR) to hydraulic reservoir * Hose marked with short RED wrap.



Second -connect Motor Return 3/4" hose (3/4" BSP Female QR) to tractor high flow low pressure return port. Hose marked with medium length RED wrap.

Finally - connect High Pressure Motor feed 1/2" hose (1/2" BSP Male QR) to tractor remote. Hose marked with long RED wrap.

Disconnect in the reverse order to prevent motor seal damage.



*The tractor hydraulic reservoir or free drain connection must have zero backpressure.

- 2 Use a sufficiently powerful tractor which is heavy enough to tow the drill safely.
- 3 Operate the drill at a speed of 6-12 km/hr (4-8 mph).
In stony and uneven ground conditions a lower speed is more appropriate
- 4 Check that the drill is level during calibration and while seeding.
- 5 Check tyre pressure before seeding. Refer page 5.
- 6 Double check seed rates before seeding.
- 7 Raise the drill out of the ground when making any turns.
- 8 Raise the drill out of the ground before backing up.
- 9 After prolonged storage, check to see that all drive mechanisms and hydraulic equipment are functioning correctly. Check that the seed tubes are not perished or blocked.

Sowing Speed

Typical travel speeds when sowing range from 6-12 km/hr in good conditions. In stony and uneven ground conditions a lower speed is recommended to minimise rapid part deterioration. Sowing too fast can result in:

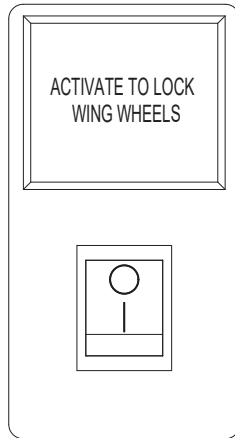
- 1 Poor contour following and uneven sowing depth.
- 2 Impact damage to:
 - a Ground engaging components.
 - b Bearings, housings & axles.
 - c Fasteners & structural components.
- 3 More extreme conditions will result in greater vibration and uneven seed flow at low seeding rates.

'Enviro DD45' General Operation

Sowing Depth Control

The sowing depth is dependent on:

- 1 The wheel height in relation to the chassis
- 2 Tyre pressure
- 3 Ground condition i.e. hard or soft

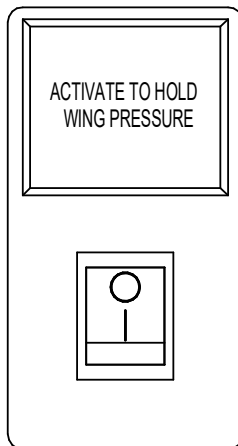


Wing Wheel Lock When Sowing:

1. Set the required sowing depth using the aluminium stop collars. All 4 cylinders need to have the same size collars to maintain an even sowing depth.
2. With the machine in the sowing position, activate the lock wing wheel switch. This will lock the wing wheel hydraulic cylinders at the desired sowing depth. The machine will only use the centre wheels to lift and lower when sowing.
3. To re-activate the wing wheel cylinders lower the drill to the ground then switch the wing wheel lock switch off: Now all 4 cylinders will move in sequence.

Transport Position

It is recommended to raise the drill into the transport position when turning at headlands to avoid damage to the ground engaging components.



Wing Pressure Setting

This is used to keep down pressure onto the wings for even sowing depth across the tool bars: this transfers the centre frame weight to the wings in hard conditions.

The wing hold switch must not be activated when the wings are folded ie when the machine is in transport.

The switch may only be activated when in the drilling position.

All conditions are different so the wing pressure can easily be adjusted to the desired setting by using the gauge on the machine. When the switch is activated, the oil in the wing rams is held in this hydraulic circuit under pressure and can't return to the tractor. Expelled oil from the rams is taken up by the accumulator.

When the tractor remote is positioned into the float position it allows oil in the hoses to flow back into the tractor. On heavily undulating ground and in some other conditions a (factory set) safety pressure relief valve is automatically triggered; this protects the machine from damage.

When this safety feature is triggered, the wing pressure setting will need to be reset.

How to set the wing pressure:

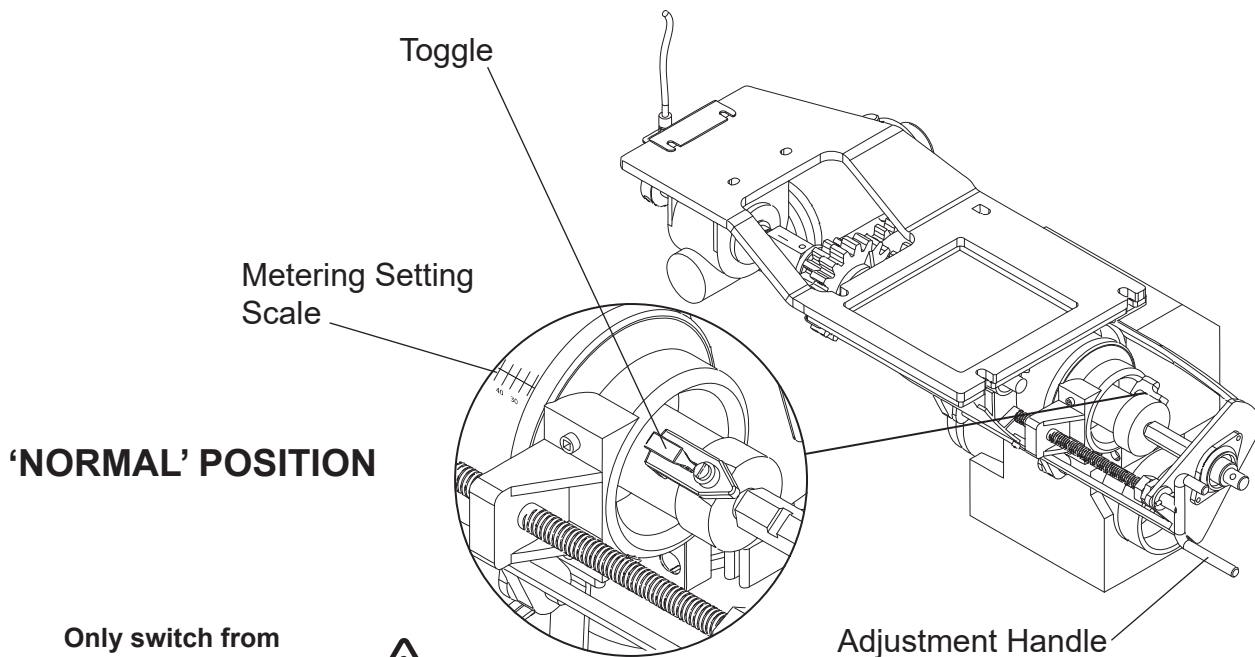
1. Position the pressure switch to ON (in-cab console).
2. Using your tractor remote lever, power up the hydraulic system to the desired level using the gauge on the machine as a guide.
3. Move the tractor hydraulics into the float position for this function. -the system is now set.

'Enviro DD45' Read Before Operation

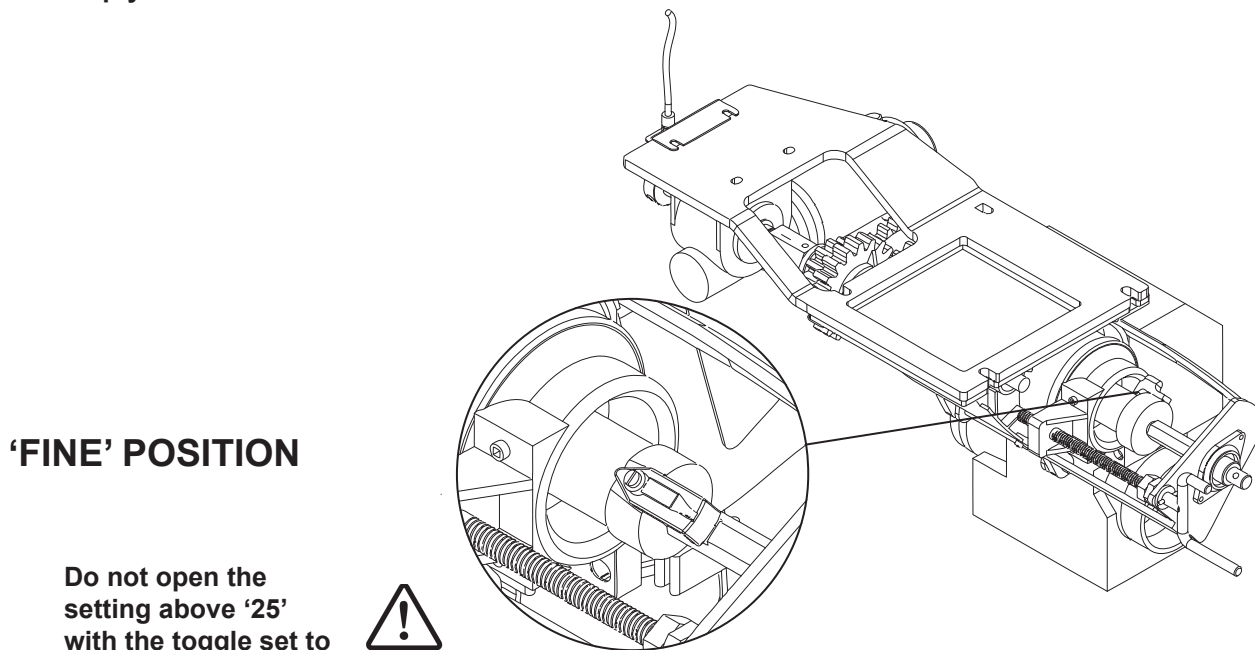
Components Referred to in the Pre-Calibration Setup and Calibration Process

The following pages describe how to set the machine up for calibration, the calibration process and subsequent adjustments to obtain the desired seed and/or fertilizer output.

Terms and words used in those instructions are shown below:-



Only switch from normal to fine seed if the seed hopper is empty



Do not open the setting above '25' with the toggle set to 'fine' as the adjuster will break.

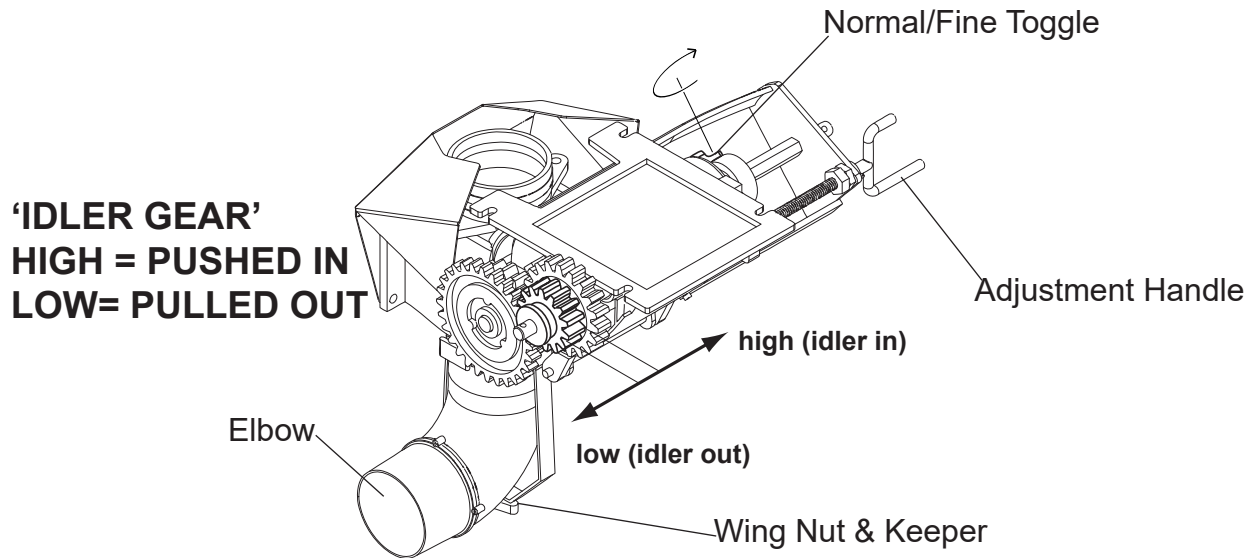


'Enviro DD45' Read Before Operation

Components Referred to in the Pre-Calibration Setup and Calibration Process

The following pages describe how to set the machine up for calibration, the calibration process and subsequent adjustments to obtain the desired seed and/or fertilizer output.

Terms and words used in those instructions are shown below:-



'Enviro DD45' SmartAG Overview

Front Screen - Overview



Front Screen

1 Settings Menu

> Select the Settings tab (looks like a gearwheel) to display the settings menu. This will mostly be used to access the calibration screens which are described in the calibration section of this manual.



2 Display Tiles

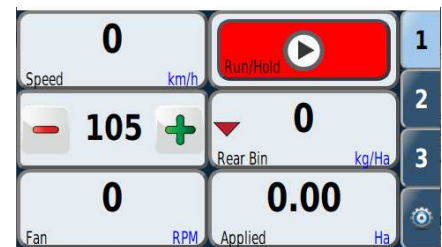
>A display tile shows the data for the name of the tile. This can be any input. In this case the screen is setup to display the data relevant to the seed drill.

>Pressing on a display tile can be used to change the setting (if available) for that tile. eg: Press and hold the Front Bin (or Rear Bin) tile for 1 second and you will see the rate for that bin. Use the - or + to change if needed.

>Pressing on the Applied Ha tile allows you to reset the area to zero to record a new job.

3 Front Screen Tabs

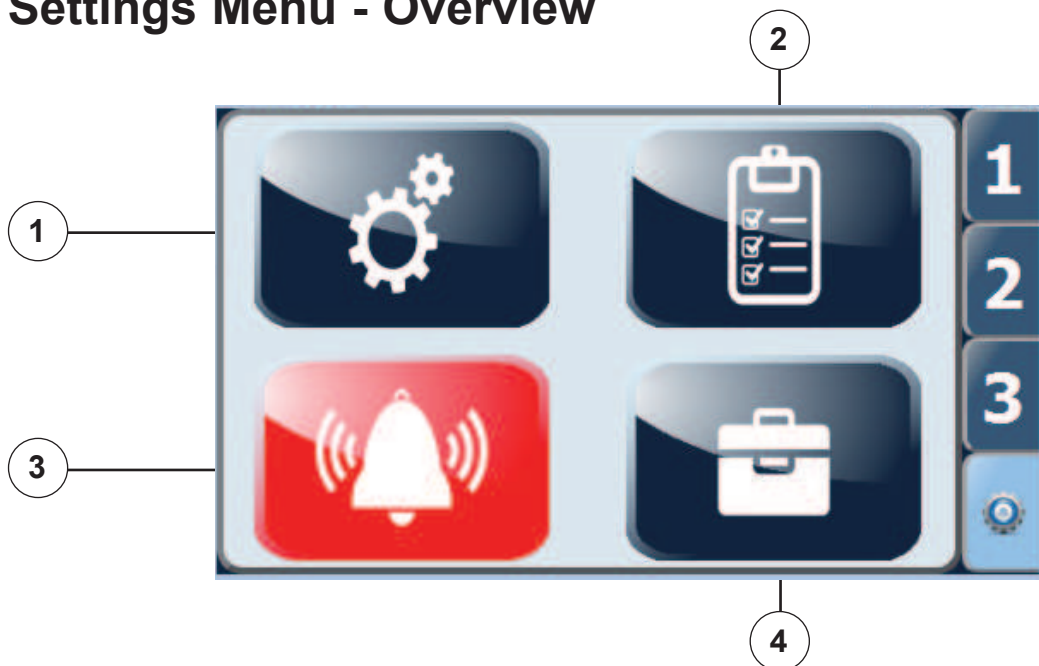
>Different tabs display different sets of display tiles. These are preconfigured but may be customised to your liking. Please refer to the SmartAG Operator's Manual for details.



Note that at any time, the system may be returned to Factory Settings using the supplied USB memory stick.

'Enviro DD45' SmartAG Overview

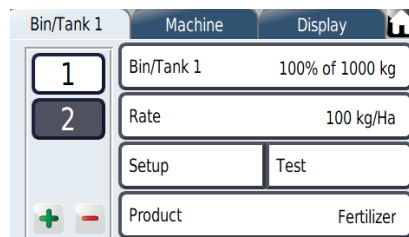
Settings Menu - Overview



Settings Menu

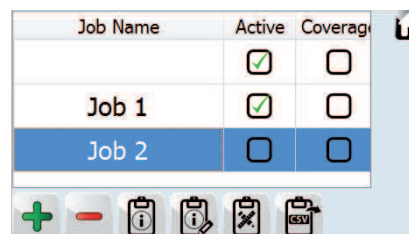
1 Setup Menu

> This opens the Settings and Setup menu. This enables product calibration, machine settings and display options. Note that all the settings for your machine are already set and tested at the factory.



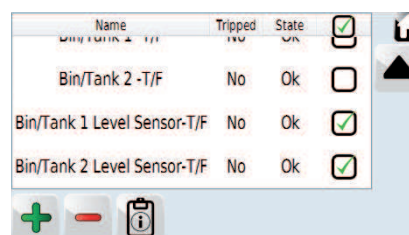
2 Jobs Menu

>This opens the jobs menu.



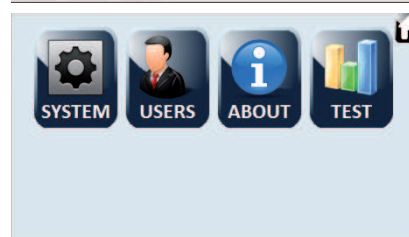
3 Alarms Menu

>This opens the alarms menu.



4 Maintenance Menu

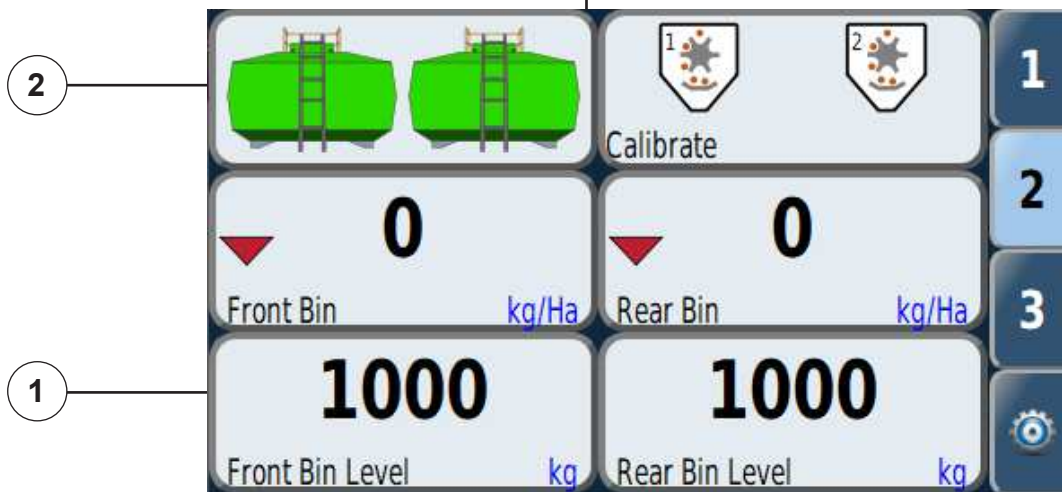
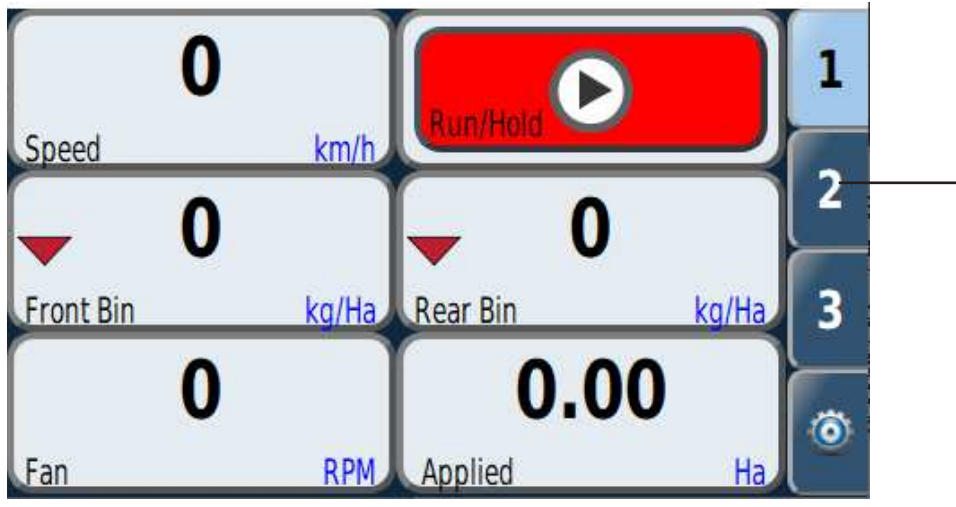
>This opens the maintenance menu.



Note that at any time, the system may be returned to Factory Settings using the supplied USB memory stick.

'Enviro DD45' SmartAG Overview

Screen Tabs - Overview



Tab 2 - Bin Contents and Bin Motor 'ON/OFF'

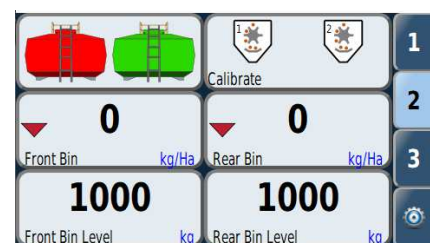
1 Front/Rear Bin Level Estimate

> Each bin capacity is 1200 litres. The value displayed is a continuous calculation made from the density of the product (set in the bin setup menu) and the amount (kg) of product metered out. If setup correctly, this will show the amount (kg) of product remaining in the bin.

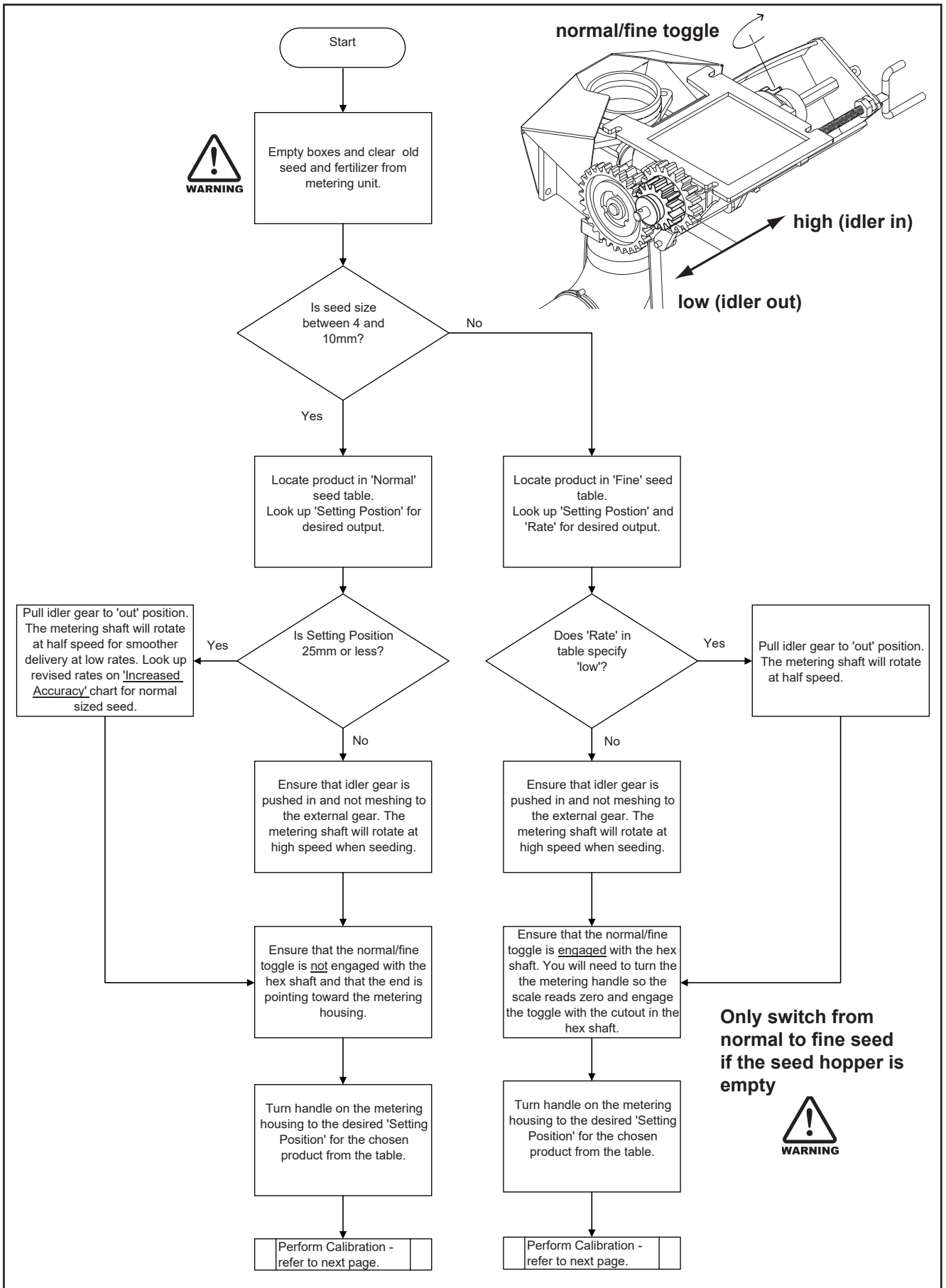
2 Bin Motor ON/OFF

> Quickly touch the bin you wish to toggle ON/OFF. In this picture, the Front Bin is off and is displayed in red.

Note that at any time, the system may be returned to Factory Settings using the supplied USB memory stick.



'Enviro DD45' Pre-Calibration Setup



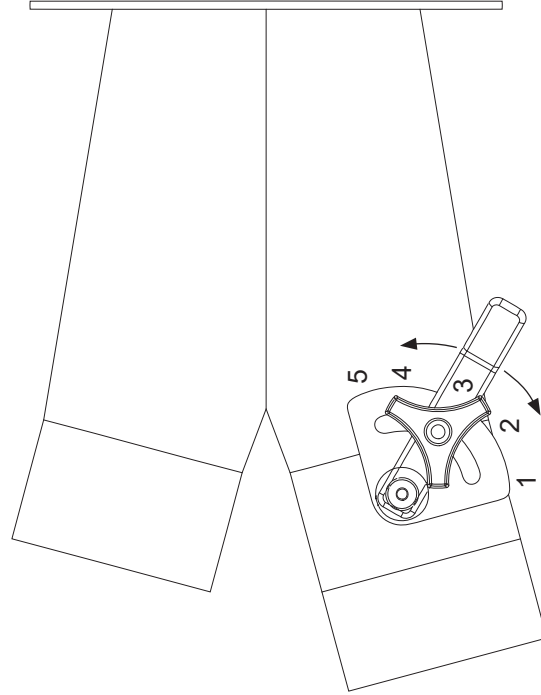
'Enviro DD45 38R 5 inch' Sowing Chart Normal

NORMAL SEED (toggle NORMAL, Butterfly Valve Settings shown on this page)
38R DD45 5"

PRODUCT	SPECIFIC GRAVITY (kg/l)	Setting Position> RATE*	*10*	*15*	*20*	*25*	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110
Wheat	0.77	high	20	30	41	51	62	72	83	93	103	114	125	135	146	157	167	177	188	199	209	220	230
Oats	0.5	high	14	21	28	35	42	49	56	63	70	77	84	91	98	105	112	119	126	133	140	147	154
Barley	0.68	high	19	29	38	47	56	66	75	85	94	103	113	122	132	141	150	159	169	178	188	197	207
Ryecorn	0.74	high	20	29	39	49	59	69	80	90	100	109	119	129	140	150	160	170	179	189	200	210	220
Peas	0.81	high	12	24	35	46	58	69	81	92	103	115	126	138	149	160	172	183	195	206	217	229	240
Grass	0.36	high		11	15	20	25	30															
Pasture Mix	-	high		11	15	20	25	30															
DAP	1.03	high	23	34	46	58	69	80	92	103	115	126	138	149	160	172	183	195	207	218	229	241	252
Superphosphate	1.26	high	20	42	65	82	102	121	140	158	180	200	217	232	250	268	290	311	331	348	369	392	

INCREASED ACCURACY FOR SETTING POSITION<25mm (toggle NORMAL)

PRODUCT	SPECIFIC GRAVITY (kg/l)	Setting Position> RATE*	*10*	*15*	*20*	*25*	30
Wheat	0.77	low	10	15	20	26	31
Oats	0.5	low	7	10	14	18	21
Barley	0.68	low	10	14	19	23	28
Ryecorn	0.74	low	10	15	20	25	30
Peas	0.81	low	6	12	18	23	29
Grass	0.36	low	-	5	8	10	12
Pasture Mix	-	low	-	5	8	10	12



Box contents		Butterfly Position (affects rear box)	Fan Speed/rpm*
FRONT	REAR		
seed (Normal)	seed (Normal)	open - 5	3000
seed (Normal)	seed (Fine)	closed - 1	3000
Fertilizer	seed (Normal)	closed - 2	3000 to 3500
Fertilizer	seed (Fine)	closed - 1	3000 to 3500

*MAXIMUM PERMISSABLE SPEED 4000 RPM

'Enviro DD45 38R 5 inch' Sowing Chart Fine

FINE SEED (toggle 'FINE', Butterfly Valve Settings shown on this page)

38R DD45 5"

PRODUCT	SPECIFIC GRAVITY (kg/l)	Setting Position>	2.5	5	7.5	10	12.5	15	17.5	20	22.5	25
			RATE ONCE SET DO NOT REDUCE/CLOSE WITH SEED IN BIN**									
Lucerne (Alfalfa)	0.77	low	0.7	1.8	2.7	3.9	4.7	5.5	6.7	7.7	8.5	9.2
Turnip	0.65	low	0.7	1.4	2.0	2.7	3.4	4.1	4.7	5.4	6.1	6.8
Kale	0.65	low	0.7	1.4	2.0	2.7	3.4	4.1	4.7	5.4	6.1	6.8
Swedes	0.65	low	0.7	1.4	2.0	2.7	3.4	4.1	4.7	5.4	6.1	6.8
Canola/Rape	0.65	low	0.7	1.4	2.0	2.7	3.4	4.1	4.7	5.4	6.1	6.8
White Clover	0.77	low	0.7	1.6	2.6	3.6	4.5	5.3	6.3	7.1	7.9	8.2
Red Clover	0.77	low	0.7	1.6	2.6	3.6	4.5	5.3	6.3	7.1	7.9	8.2
Grass	0.36	low			0.8	1.5	2.1	2.7	3.3	3.9	4.5	4.8
Millet	0.64	low		0.7	1.4	2.2	2.9	3.4	4.0	4.9	5.5	6.1
Grain Sorghum	0.56	low		0.2	1.7	3.6	4.5	5.0	6.2	7.2	8.1	9.3
Forage Sorghum	0.56	low		0.2	1.7	3.6	4.5	5.0	6.2	7.2	8.1	9.3
Chicory	0.54	low	0.3	1.1	1.7	2.4	3.0	3.7	4.5	5.1	5.7	6.2
Lucerne (Alfalfa)	0.77	high	1.3	3.6	5.5	7.7	9.4	11.1	13.4	15.4	17.1	18.4
Turnip	0.65	high	1.3	2.7	4.0	5.4	6.8	8.1	9.4	10.8	12.2	13.5
Kale	0.65	high	1.3	2.7	4.0	5.4	6.8	8.1	9.4	10.8	12.2	13.5
Swedes	0.65	high	1.3	2.7	4.0	5.4	6.8	8.1	9.4	10.8	12.2	13.5
Canola/Rape	0.65	high	1.3	2.7	4.0	5.4	6.8	8.1	9.4	10.8	12.2	13.5
White Clover	0.77	high	1.4	3.1	5.1	7.1	9.1	10.7	12.6	14.3	15.8	16.3
Red Clover	0.77	high	1.4	3.1	5.1	7.1	9.1	10.7	12.6	14.3	15.8	16.3
Grass	0.36	high			1.7	3.1	4.3	5.5	6.7	7.8	8.9	9.6
Millet	0.64	high		1.3	2.7	4.3	5.7	6.9	8.1	9.7	10.9	12.2
Grain Sorghum	0.56	high		0.4	3.3	7.1	8.9	10.1	12.5	14.5	16.3	18.6
Forage Sorghum	0.56	high		0.4	3.3	7.1	8.9	10.1	12.5	14.5	16.3	18.6
Chicory	0.54	high	0.7	2.2	3.4	4.8	6.0	7.4	8.9	10.2	11.3	12.3

**Setting may only be reduced by a large amount if unit is turning or bin and metering device clear of product else damage will occur. Do not open the setting above '25' with the toggle set to 'fine' as the adjuster will break.

Box contents		Butterfly Position (affects rear box)	Fan Speed/rpm*
FRONT	REAR		
seed (Normal)	seed (Normal)	open - 5	3000
seed (Normal)	seed (Fine)	closed - 1	3000
Fertilizer	seed (Normal)	closed -2	3000 to 3500
Fertilizer	seed (Fine)	closed - 1	3000 to 3500

'Enviro DD45' Calibration

Seed Calibration

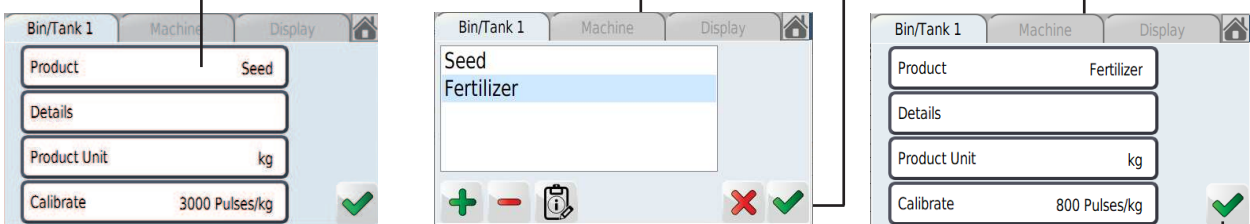
The calibration test should be done to confirm the required seed rate to be sown and is done with the drill stationary and level and the fan off.

Seed Calibration Procedures

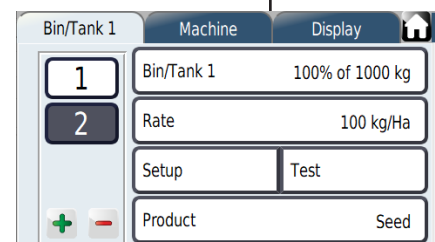
- 1 Prepare a suitable area for weighing and setup the scales. Tare the scales with the same container that will be used to weight the product. **Scales must be accurate to 2 grams**
- 2 Ensure that the metering unit is free from debris. Close the trap-door and the bin emptying gate.
- 3 The metering unit should already be set. If not refer to the pre-calibration flowchart on previous pages. Note that it can be hard to adjust the settings once product is in the bins.
- 4 Fill the appropriate bin. A minimum depth of 300mm is required for calibration with normal seeds.
- 5 Undo the elbow and place the plastic container under the metering unit of the bin to be calibrated.
- 6 Return to the tractor to access the SmartAG screen.
- 7 Go to the Bin/Tank tab as shown below.



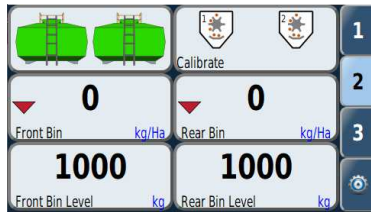
- 8 Select the Bin that you want to calibrate.
- 9 Select Product to change if required, touch the tick to accept.



- 10 Touch tick again to accept and return to the Bin/Tank screen.
- 11 Touch Rate to change the Application Rate if required.



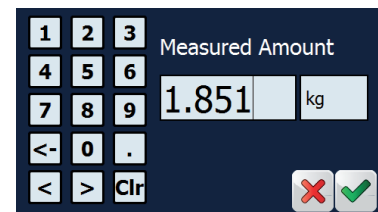
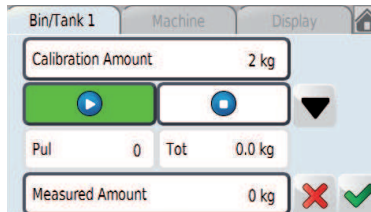
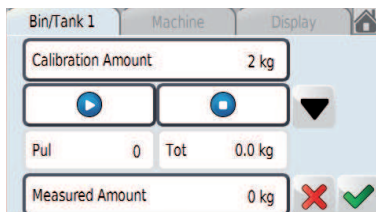
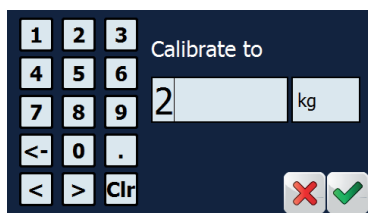
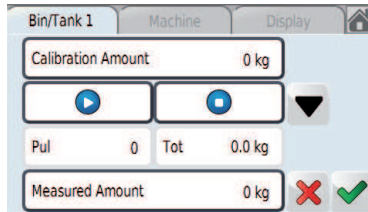
'Enviro DD45' Calibration



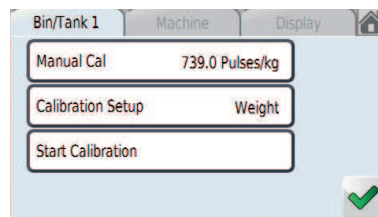
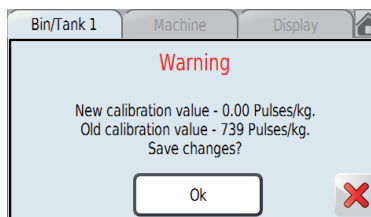
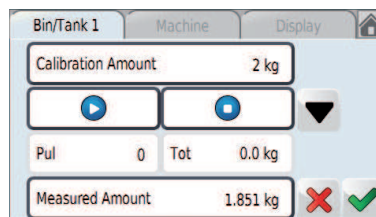
Seed Calibration

With the drill set up for calibration and the display configured for the chosen product we are now ready to calibrate.

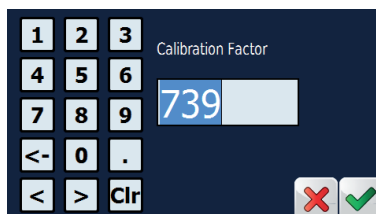
- 1 From the main screen, Touch Tab 2
- 2 Touch Calibrate for the required bin.
- 3 Touch Calibration Amount.
- 4 Enter a value for the amount to calibrate. 2kg is a suggested value. If calibrating small seeds a smaller value may be needed to save waiting too long for the calibration to finish. Tick to accept.
- 5 Check that the calibration tray is in place. Press 'play' to start the calibration.
- 6 When the calibration has stopped running, weigh the seed collected. Weigh to an accuracy of 1 gram (0.001kg).
- 7 Touch Measured Amount and enter the value you weighed. Touch tick. It may not be the same as the amount you asked for especially on a new product.



- 8 Touch tick again. Touch OK. Touch tick to accept to return to the Bin/Tank screen. Touch the 'home' icon to return to the main screen.



- 9 Note that you may manually enter a calibration factor by touching the Manual Cal button. This is used when the wrong factor is entered and a value is needed to get the motor to turn again. Use 2000 for seed and 650 for fertilizer as a starting point. Tick to accept and tick again to return to the Bin/Tank screen.
- 10 Touch the 'home' icon to return to the main screen.



'Enviro DD45' Calibration

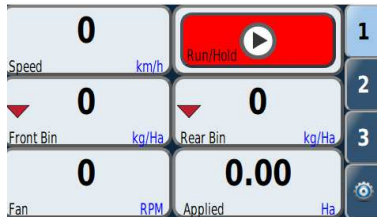
Calibration Deviations

Deviations Between the Calibration Test and the Actual Seed Rate

Changes in the flowing properties of seed during sowing often cause changes in the relationship between the calibration test and the seed rate. These changes in flowing properties generally result from reactions of the dressing agents to temperature, humidity or abrasion.

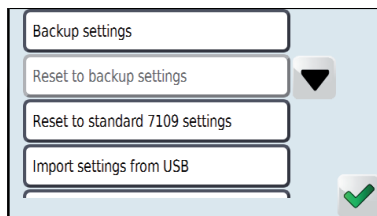
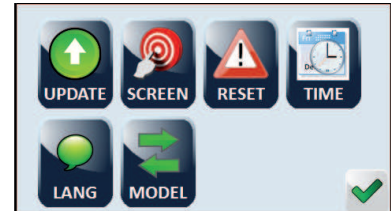
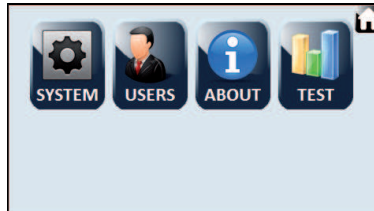
Residues from the seed dressing on the metering wheels can also influence the flowing properties of seed and hence the seed rate. In such cases a balance will occur only after a period of time, and it is recommended that the calibration test be repeated, nominally when the seed box is half empty, to confirm the seed rate after 2-3 seedbox fillings. Only then will a balance occur and the seed rate stabilise.

'Enviro DD45' Save/Restore>USB



Save Settings and Return to Factory Settings

- 1 Navigate to the Setup screen from the Main Screen by touching the gear icon.
- 2 Touch the toolbox icon then the SYSTEM icon.
- 3 Touch RESET icon. (This will take you to a menu and does not change any settings)



Explanation of Reset menu

- 1 This screen allows the user to save the settings to the screen internal storage, export to a USB memory stick and also to restore settings from a previously saved USB stick. Connect a USB stick to the cable from the screen taking care to retain the dust cover.
 - (i) **Backup Settings**- saves current settings to internal memory. This has already been done at the factory.
 - (ii) **Reset to backup settings**- restores from internal memory
 - (iii) **Reset to standard 7500 screen** -full reset, all settings lost. NOT RECOMMENDED.
 - (iv) **Import settings from USB** - import from USB stick if available.
 - (v) **Export settings to USB** - save settings to USB stick
 - (vi) **Reboot** - restart the screen.

'Enviro DD45' Maintenance & Care

Maintenance & Care

General Safety and Accident Prevention Advice

- 1 Make sure that if the tractor remains attached to the drill that the ignition key is removed.
- 2 During maintenance the drill should be supported in such a manner that if hydraulic failure was to occur the machine would still be adequately supported.
- 3 Wear gloves when handling components with cutting edges such as worn discs etc...
- 4 Disconnect the electrical supply from the tractor before doing any electrical maintenance.
- 5 Refer to safety sections for more safety information.



General Cautionary Maintenance Advice

- 1 **Electric Welding** - With the electronic equipment in modern tractors it is advisable to completely disconnect the implement from the tractor, or at the very least disconnect the alternator before attempting any welding.
- 2 **Hydraulics** - Ensure hydraulic couplings (male & female) are clean before connecting. Dirty couplings will result in hydraulic oil contamination and hydraulic cylinder seal and valve damage. This in turn will result in oil leakage.

No filter is fitted to the hydraulic system. If hydraulic fittings and oil supply are not going to be kept clean it is recommended that a filter be fitted to prevent hydraulic cylinder damage.
- 3 **Water Blasting** - Water blasting, steam cleaning or other pressurised cleaning processes can force dirt etc. into undesirable places that may cause damage or rapid part wear to items such as bearings, seals, chains, bushes and electrical items etc.
Caution must be exercised.



'Enviro DD45' Maintenance & Care

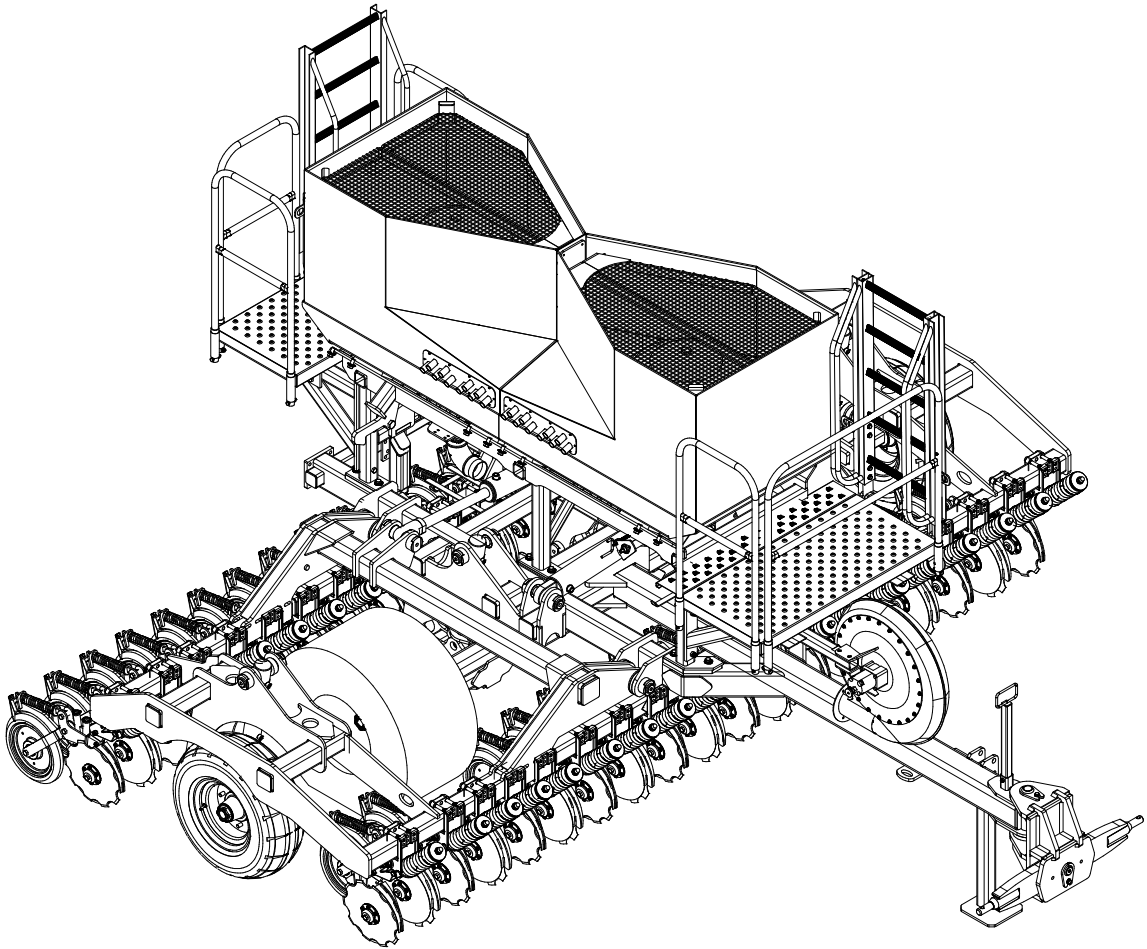
Maintenance & Care - Lubrication Instructions

Precautions with Grease

Greases should not be mixed as the structure may be weakened by the mixes of different types of thickener, which may cause softening and loss of grease from the bearings by running out.



Your new Duncan Enviro DD45 Seed Drill will give long and efficient service if given normal care and maintained properly.



Lubrication Chart

Item	Components	Lubricant	Frequency
1	All Wheel Bearings	Castrol LMX Grease	Annually
2	All Pivot Points, Clevises	Castrol LMX Grease	Weekly
3	Bearing Housings (roller)	Castrol LMX Grease	Weekly
4	Turnbuckle	Castrol LMX Grease	Monthly
5	Coupling	Castrol LMX Grease	Weekly

* The lubrication frequencies are only a guide. Actual frequency will be dependent on extent of use and ground conditions.

'Enviro DD45' Maintenance & Care

Maintenance & Care - Schedule

Components	Daily (or after 20Ha)	Weekly (or after 75Ha)	Pre Season (or 500 Ha)
Depth Adjustment Collar	•	•	•
Wheel Nuts	•	•	•
Pivot Pin Fasteners		•	•
Coupling & Safety Chains		•	•
Roller Chains		•	•
Hydraulics (Oil Leaks)		•	•
Tyre Pressures (58psi /4.0 bar)		•	•
Bolted Connections			•

Maintenance Schedule

(Refer also to Summary Chart, above)

1 Bolted Connections

All bolted connections of the machine should be checked after the first 3 to 5 hours of operation and retightened if necessary and thereafter at regular intervals. It is suggested that this is done every 500 hectares or annually, whichever occurs first.

2 Pivot Pins & Ram Clevis

Pivots must be greased regularly (weekly or after every 75Ha) to provide lubrication and flush out any dirt.

3 Framework

The framework structure should be inspected annually for defects, i.e., cracks in members or welded connections. The framework should be cleaned prior to the inspection.

4 Metering Units

Ensure that the metering units are clean and that the rubber sealing lip is not damaged. The sealing lip is located along the base of the trap door hinge. A damaged sealing lip can cause seed delivery problems.

'Enviro DD45' Maintenance & Care

Maintenance Schedule (continued)

5 Fan Hydraulic Motor

Hydraulic Fan -connect the hoses in the following order:

First - connect Zero pressure Case Drain 3/8" hose (1/2" BSP Female QR) to hydraulic reservoir *
Hose marked with short RED wrap.

Second -connect Motor Return 3/4" hose (3/4" BSP Female QR) to tractor high flow low pressure return port. Hose marked with medium length RED wrap.

Finally - connect High Pressure Motor Feed 1/2" hose (1/2" BSP Male QR) to tractor remote.
Hose marked with long RED wrap.

Disconnect in the reverse order to prevent motor seal damage.

*The tractor hydraulic reservoir or free drain connection must have zero backpressure.

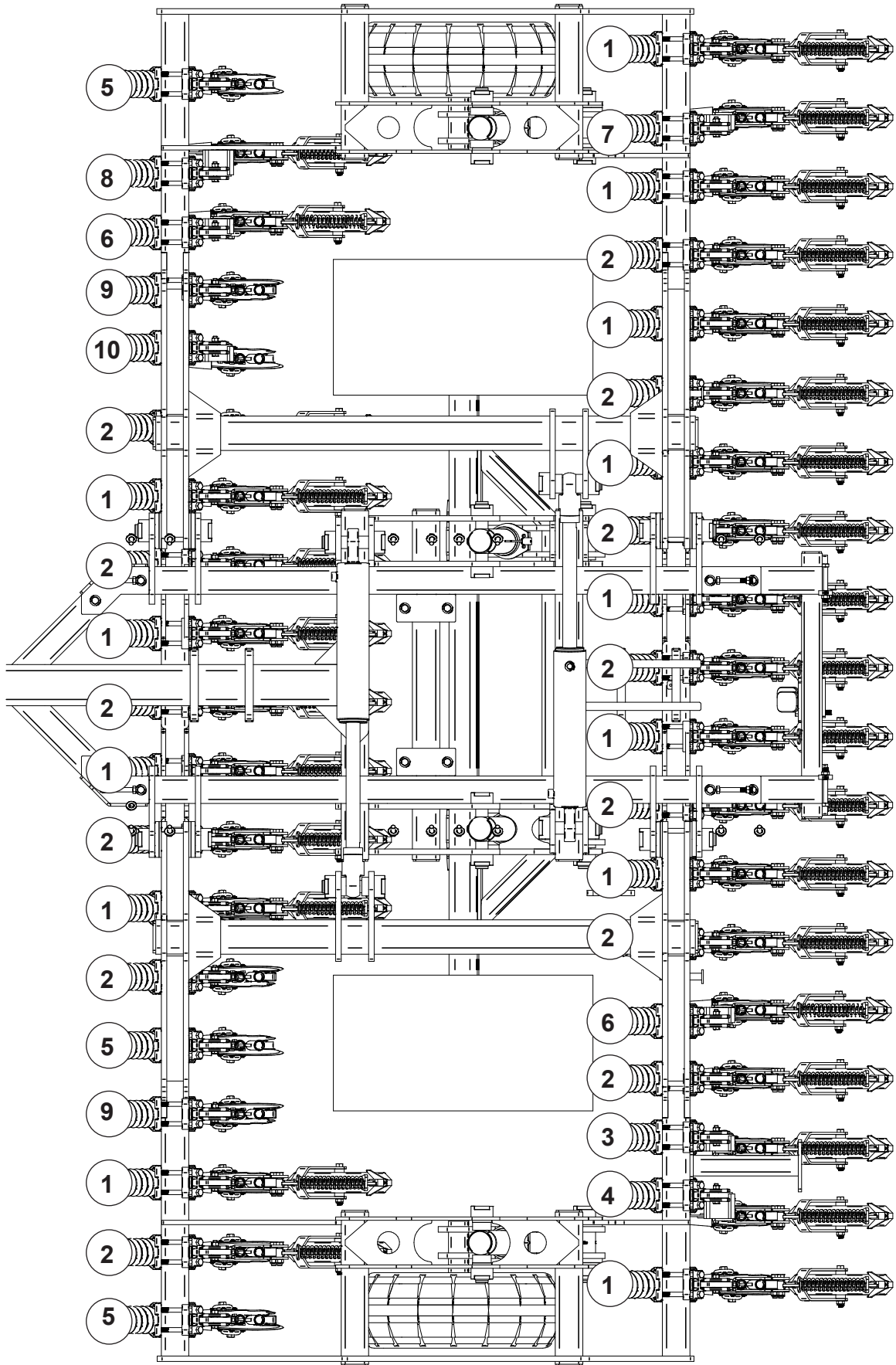
6 Preparing the Machine for Storage.

Locate on a dry level surface. The machine should be stored wherever possible so the rams are not supporting any weight. The drive chains should be lubricated with suitable roller chain lubricant before prolonged periods of storage.

It is recommended that maintenance be carried out at the end of the season, giving sufficient time to obtain spare parts and/or carry out repairs if required. The seed and fertilizer bins must be completely emptied and cleaned.

Fit the cover to the bin.

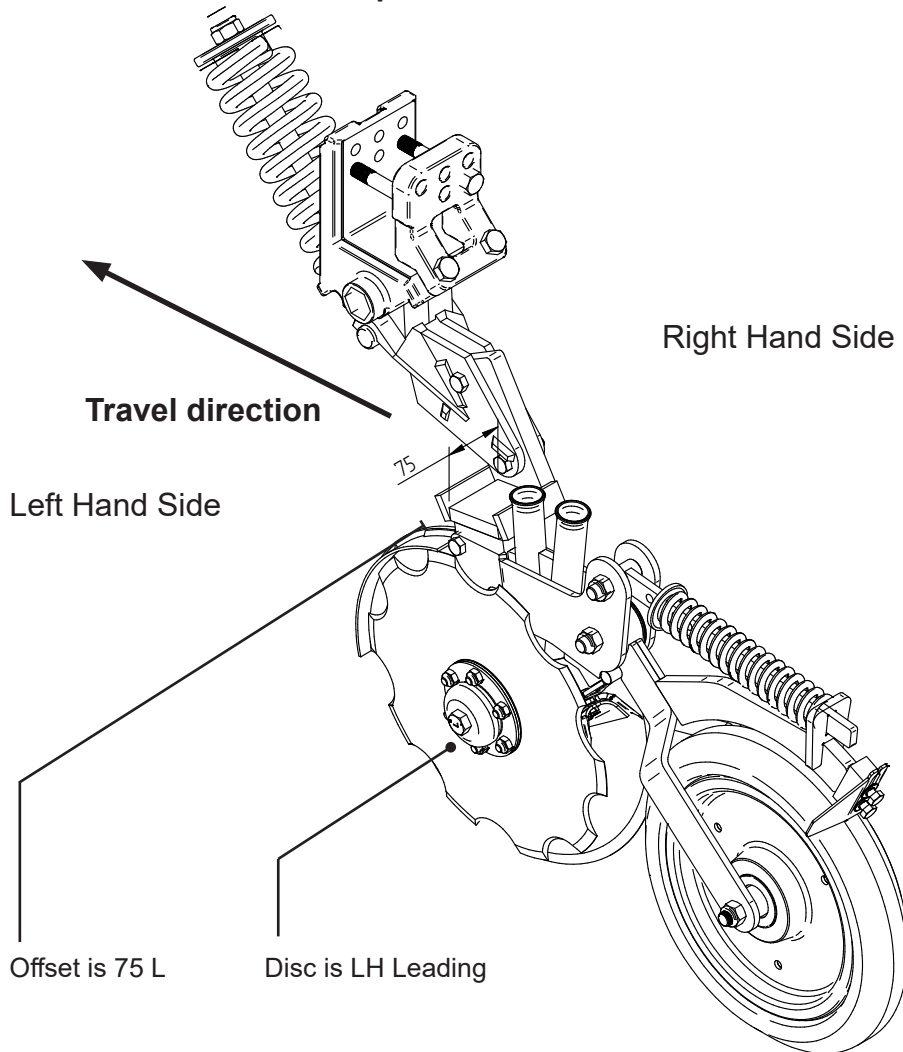
'Enviro DD45' Disc Assemblies



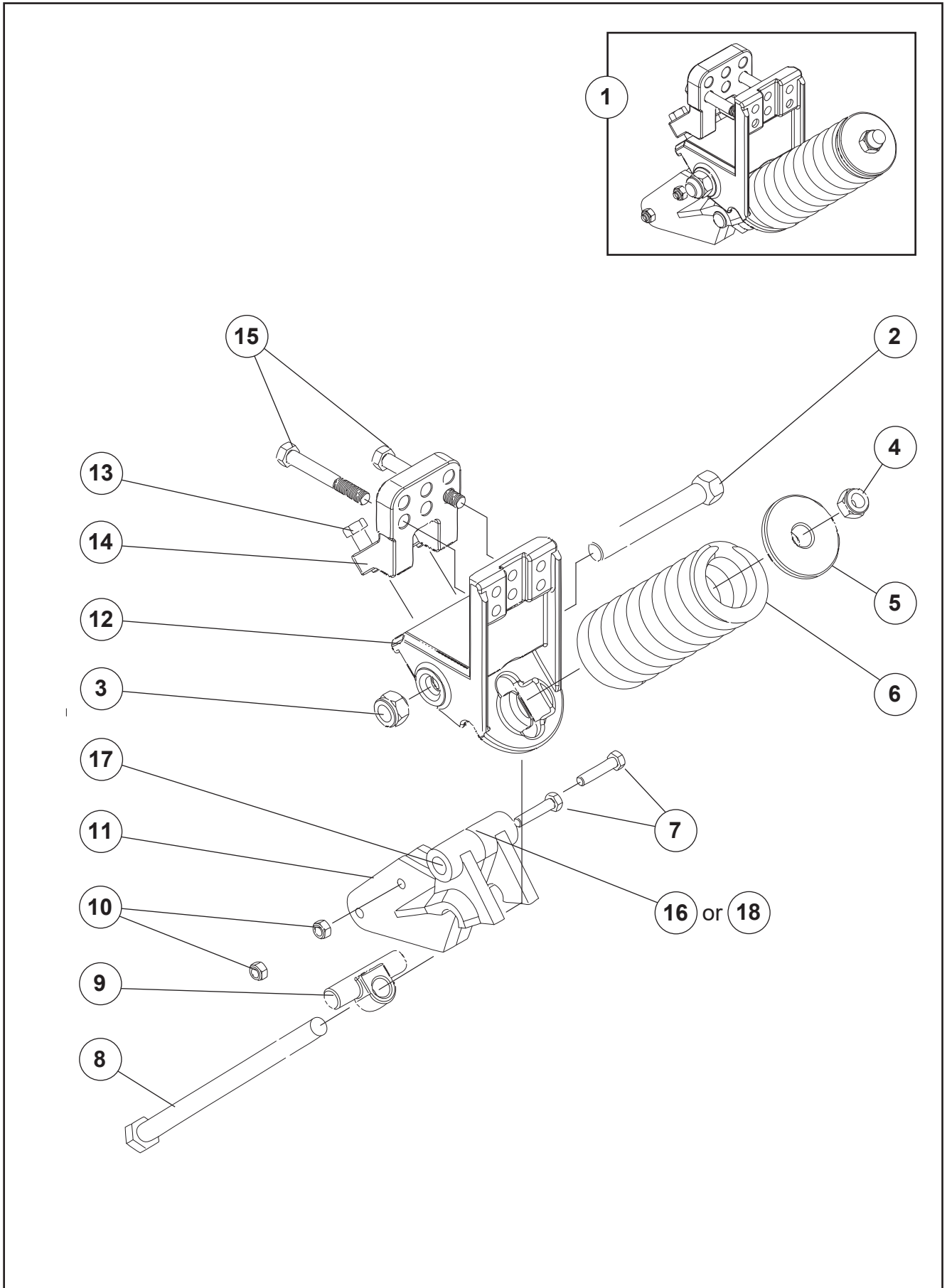
'Enviro DD45' Disc Assemblies

ITEM	DESCRIPTION	QTY
1	Straight Coulter with Press Wheel (RH Leading)	13
2	Straight Coulter with Press Wheel (LH Leading)	13
3	40 L Offset Coulter with Press Wheel (RH Leading)	1
4	75 L Offset Coulter with Press Wheel (LH Leading)	1
5	Straight Coulter no Press Wheel (RH Leading)	3
6	40 R Offset Coulter with Press Wheel (RH Leading)	2
7	40 R Offset Coulter with Press Wheel (LH Leading)	1
8	75 R Offset Coulter with Press Wheel (LH Leading)	1
9	Straight Coulter no Press Wheel (LH Leading)	2
10	40 L Offset Coulter no Press Wheel (RH Leading)	1

Disc Identification example



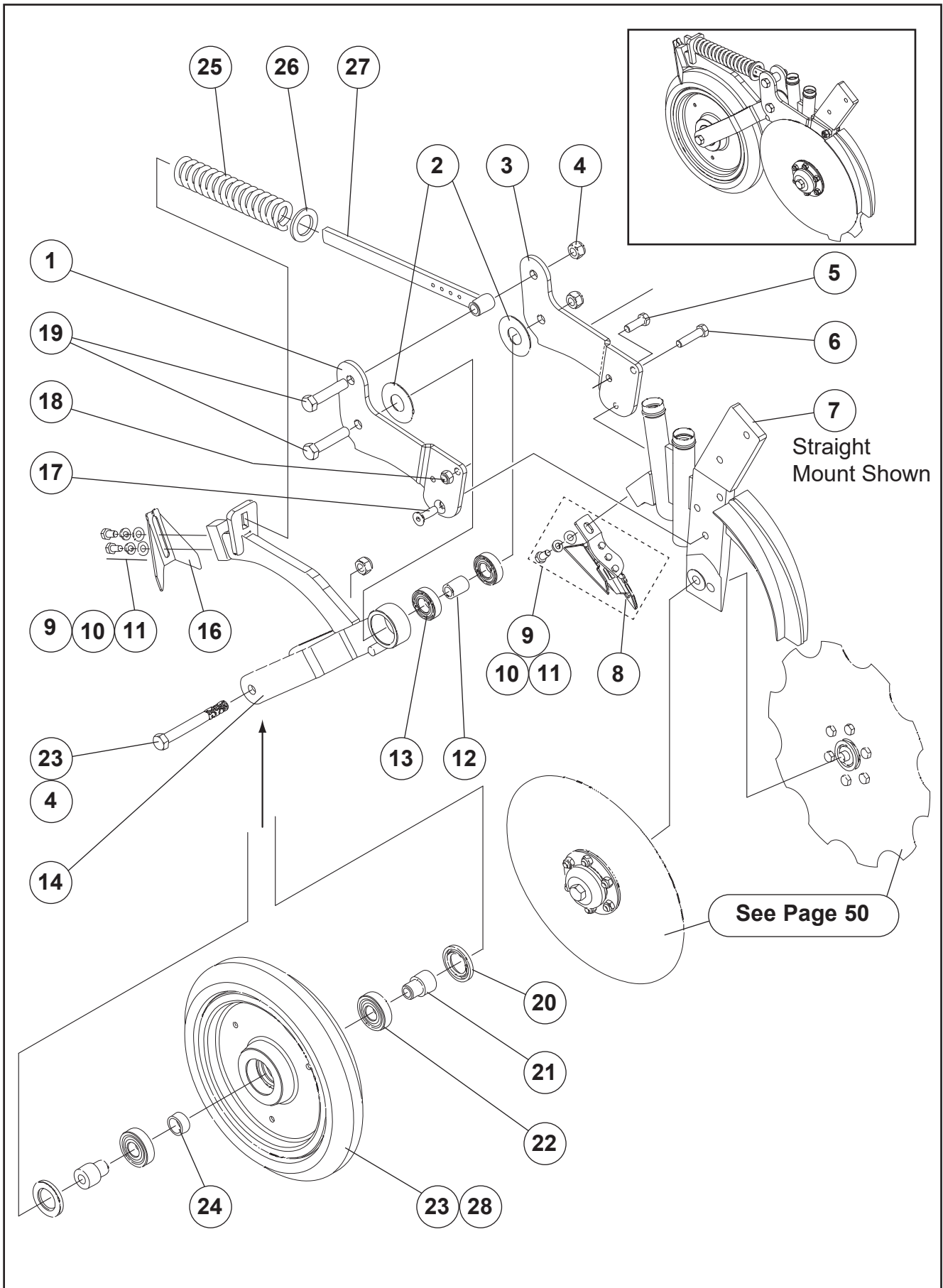
'Enviro DD45' Disc Assemblies



‘Enviro DD45’ Disc Assemblies

ITEM	PART No.	DESCRIPTION	QTY
1	60801k	Duncan Tine Spring Head	-
2	64510	Pivot Bolt (Cone Seat)	1
3	64511	Pivot Nut (Cone Seat)	1
4	45143	M24 Nyloc Nut	1
5	64512	Spring Cap	1
6	64513	Compression Spring	1
7	45095	M14 x 65 Socket Head Capscrew Grade 10.9	2
8	64514	Spring Bolt	1
9	64515	Spring Bar	1
10	45121	M14 Nyloc Nut	2
11	64516	Pivot Arm (20mm Disc Mount)	1
12	64517	Lower Clamp	1
13	45040	M16 x 50 Grade 8.8 Z/P Bolt	2
14	64518	Upper Clamp	1
15	45050	M16 x 120 Grade 8.8 Z/P Bolt	2
16	-	Grease Nipple M8 x 1P	1
17	64536	Pivot Bush	2
18	44173	6X8mm Straight High Pressure (for remote greasing)	1

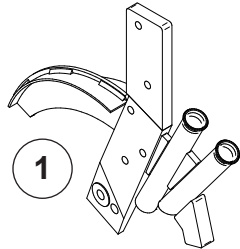
'Enviro DD45' Disc Assemblies



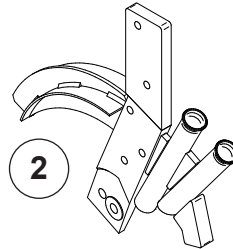
‘Enviro DD45’ Disc Assemblies

ITEM	PART No.	DESCRIPTION	QTY
1	66403	Press Wheel Fixed Plate RH	1
2	43953	Nylon Washer 30 x 70 x 2	2
3	66402	Press Wheel Fixed Plate LH	1
4	45140	M16 Nyloc Nut	3
5	45020	M12 x 35 Grade 8.8 Z/P Bolt	1
6	45023	M12 x 50 Grade 8.8 Z/P Bolt	1
7	Refer Page 56	Disc Mount Sub Assy (Straight shown)	1
8	Refer Page 58	Disc Scraper Assembly	1
9	45152	M10 Light Flat Washer	3
10	45166	M10 Spring Washer Z/P	3
11	45001s	M10 x 20 Grade 8.8 Z/P S/Screw	3
12	63084	Press Wheel Bearing Sleeve	1
13	43939	Bearing 6205	2
14	66407	Press Wheel Arm Welded Assy	1
15	45052	M16 x 140 Grade 8.8 Z/P Bolt	1
16	29267	15"x80mm Wedge P/Wheel Scraper	1
17	45235	M12 x 35 CSK Socket HD Screw	1
18	45139	M12 Nyloc Nut	1
19	45045	M16 x 75 Grade 8.8 Z/P Bolt	2
20	10283	Oil Seal	2
21	61022	Bearing Mount for 6305	2
22	11351	Bearing 6305	2
23	43573	Press Wheel 15"x80 Solid Wedge (Tyre and Rim)	1
24	61021	Bearing Spacer for 6305	1
25	60294	Spring	1
26	63134P	Slide Bar Washer	1
27	66409	Slide Bar W/Assy	1
28	43587	15"X80mm Solid Wedge Tyre (Tyre only)	-

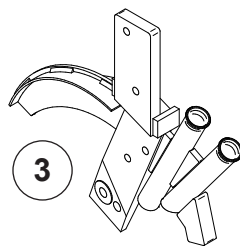
'Enviro DD45' Disc Assemblies



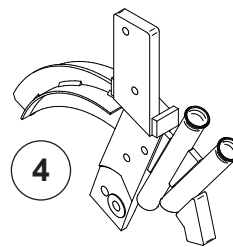
63133



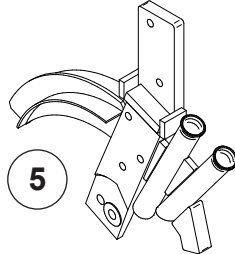
66352



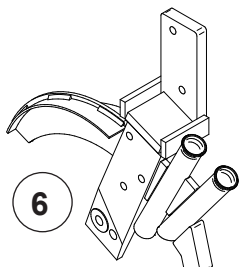
66370



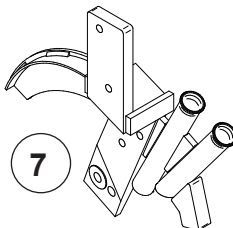
66357



66355



66374

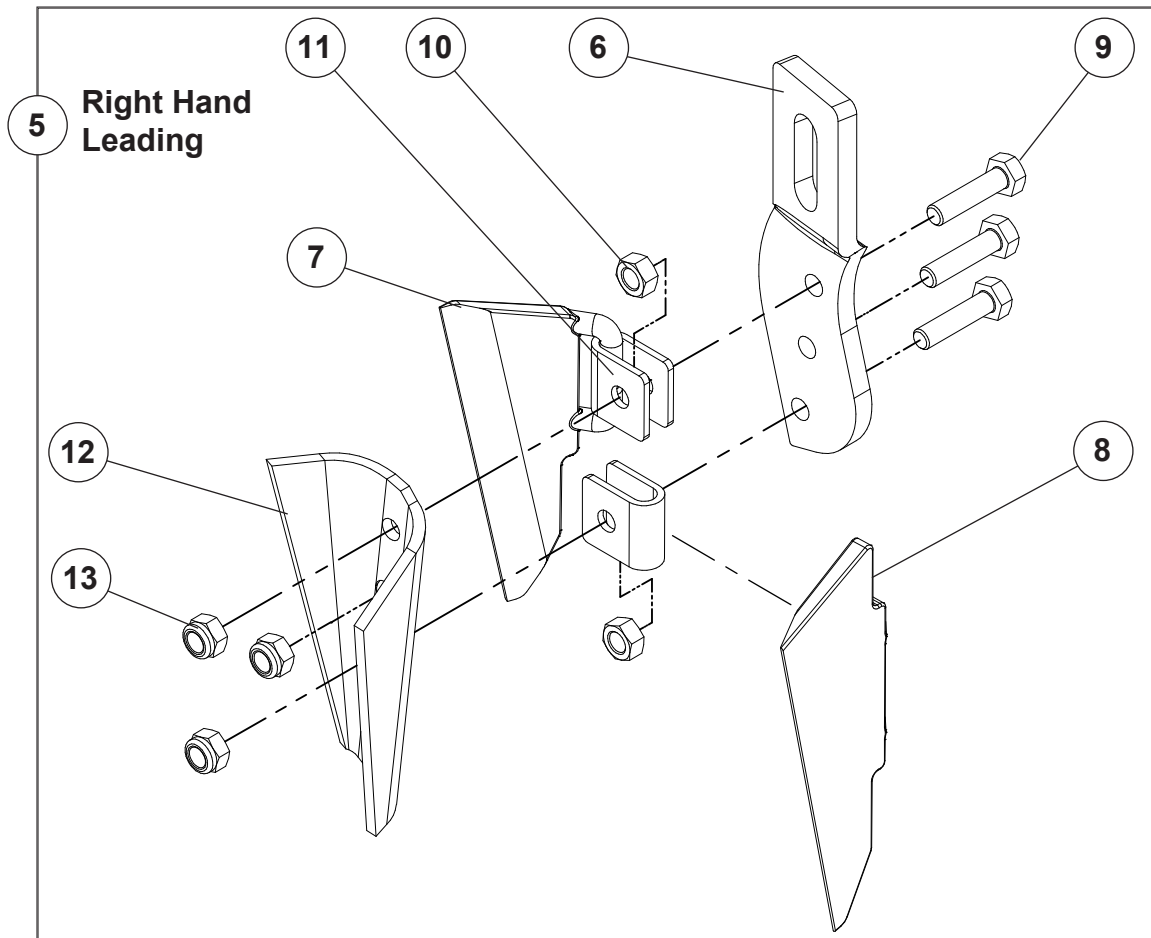
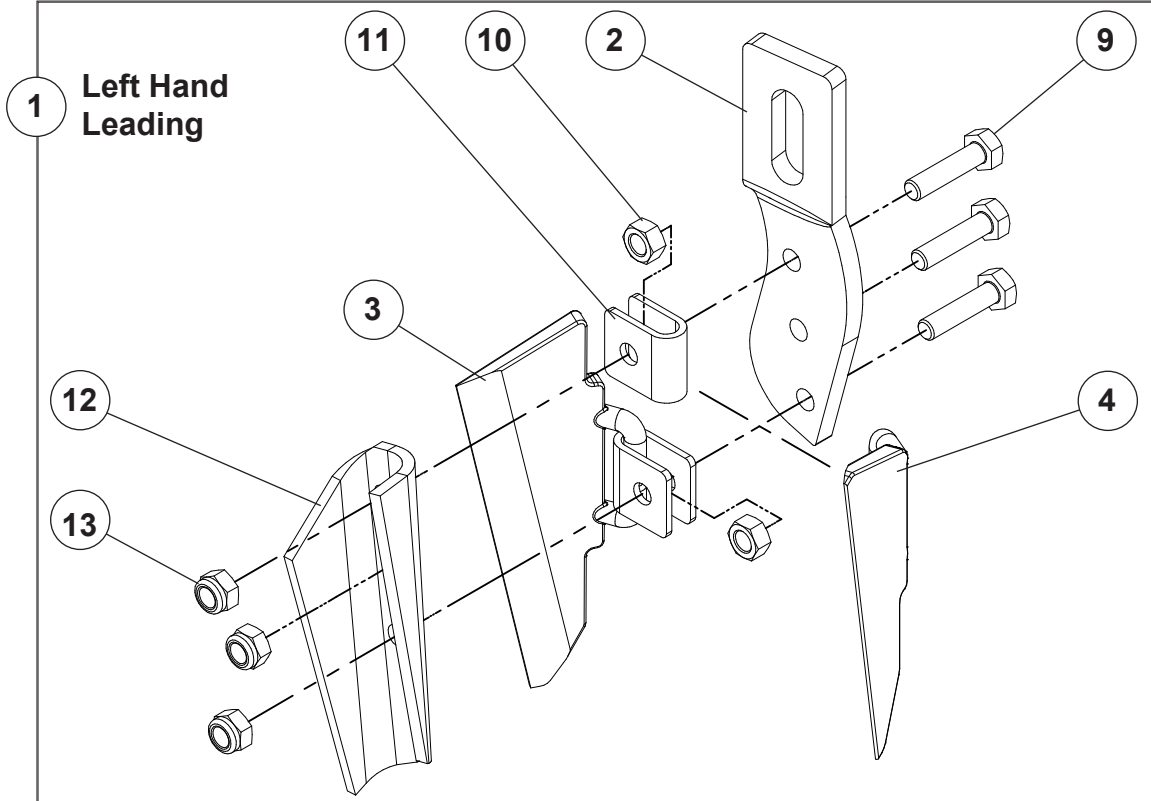


66376

'Enviro DD45' Disc Assemblies

ITEM	PART No.	DESCRIPTION	QTY
1	63133	Straight Coulter (LH Leading)	15
2	66352	Straight Coulter (RH Leading)	16
3	66370	40 R Offset Coulter (LH Leading)	1
4	66357	40 R Offset Coulter (RH Leading)	2
5	66355	40 L Offset Coulter (RH Leading)	2
6	66374	75 L Offset Coulter (LH Leading)	1
7	66376	75 R Offset Coulter (LH Leading)	1

'Enviro DD45' Disc Scrapers

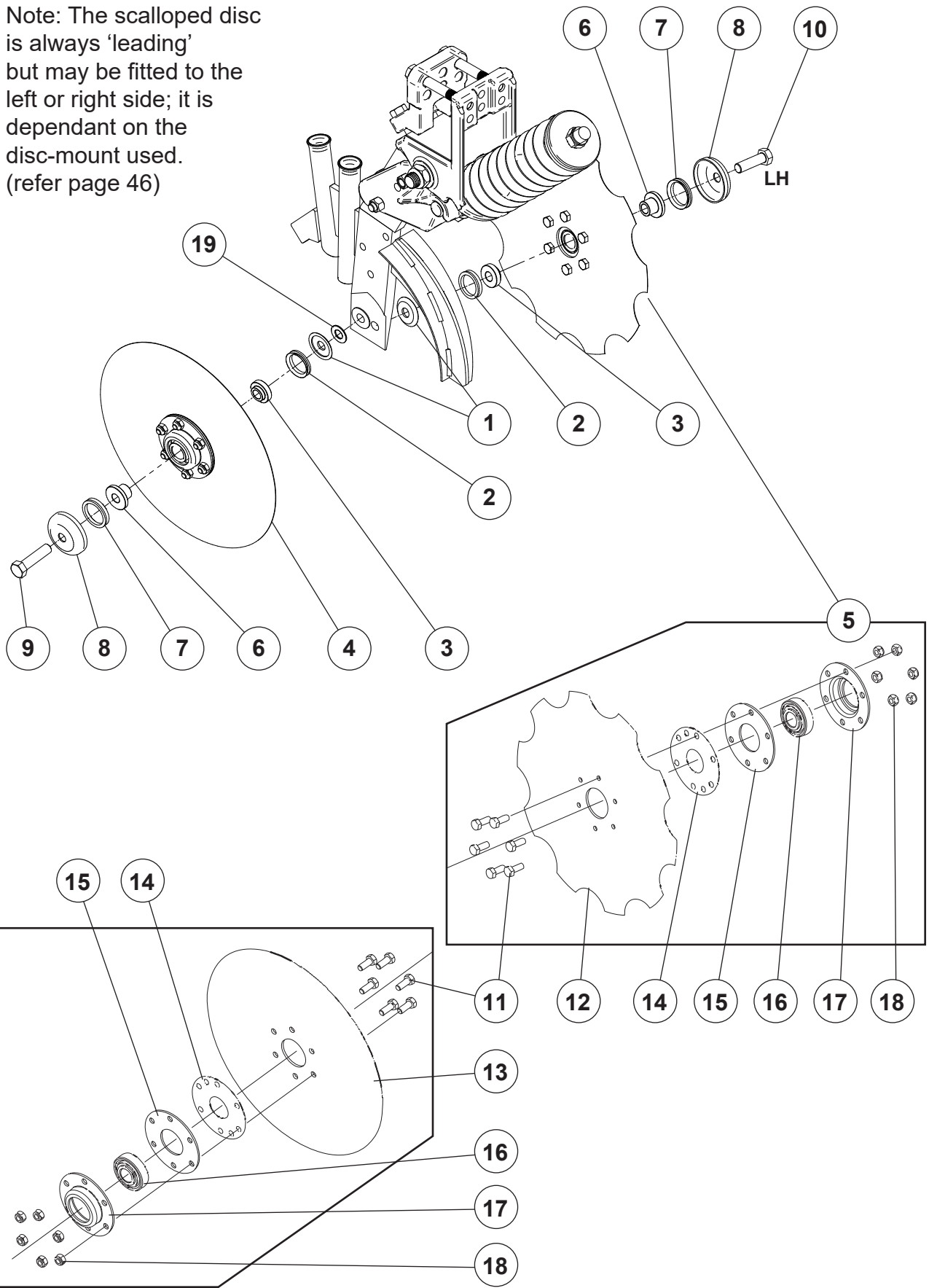


‘Enviro DD45’ Disc Scrapers

ITEM	PART No.	DESCRIPTION	QTY
1	63149	<i>Lhl Dd30 Disc Scraper Assy</i>	-
2	63144	Lhl Scraper Mounting Strap	1
3	63145C	Lh Lhl Scraper Casting	1
4	63146C	Rh Lhl Scraper Casting	1
5	62056	<i>Rhl Dd30 Disc Scraper Assy</i>	-
6	62053	Rhl Scraper Mounting Strap	1
7	62055C	Rhl Scraper Casting (fits to left side)	1
8	62054C	Rhl Scraper Casting (fits to right side)	1
9	44954S	M6 X 25 Grade 8.8 Z/P S/Screw	3 per
10	45122	M6 Grade 8.8 Hex Nut Z/P	2 per
11	63143	Scraper Hinge	2 per
12	63147	Scraper Tensioner	1 per
13	45136	M6 Nylock Nut	3 per

'Enviro DD45' Disc Assemblies

Note: The scalloped disc is always 'leading' but may be fitted to the left or right side; it is dependant on the disc-mount used. (refer page 46)

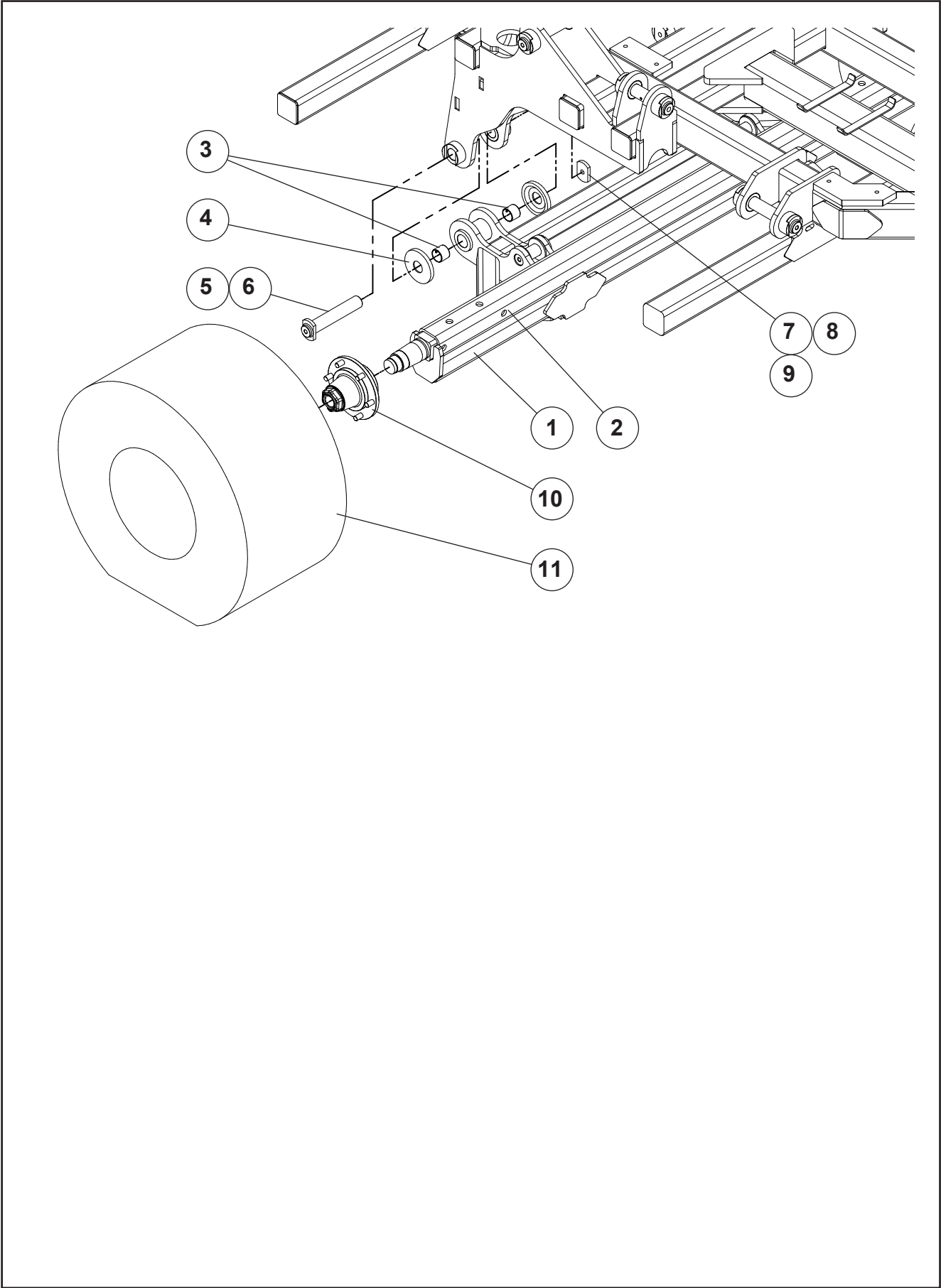


‘Enviro DD45’ Disc Assemblies

ITEM	PART No.	DESCRIPTION	QTY
1	74829	DD Disc Seal Spacer (replaces 45154 & 63102)	2
2	43352	Vee Ring Seal V-40A	2
3	63101	Stepped Spacer	2
4	63071	Plain Disc Sub Assy (includes items 6,7,8,9,10,12,14,15,16,17,18)	1
5	63072	Scalloped Disc Sub-Assy (includes 6,7,8,9,11,12,13,15,16,17,18)	1
6	29241	Bearing and Seal Sleeve	2
7	43891	Vee Ring Seal V-45A	2
8	22077	Dust Cap (16mm Bore)	2
9	45042	M16 x 60 Grade 8.8 Z/P Bolt	1
10	63103*	Disc Retaining Bolt L/H M16x55	1
11	45002s	M10 x 25 Grade 8.8 Z/P Set Screw	12
12	60841	Scalloped Disc 6 Hole One Side	1
13	22002	380 x 4mm Plain Disc 6 Hole	1
14	22081	Seal face Ring	2
15	29244	Bearing Housing Spacer 3mm	2
16	43890	Triple Seal Special Bearing	2
17	29243	Bearing Housing 6 Hole TS	2
18	45138	M10 Nyloc Nut	12
19	45154	M16 Light Flat Washer	1

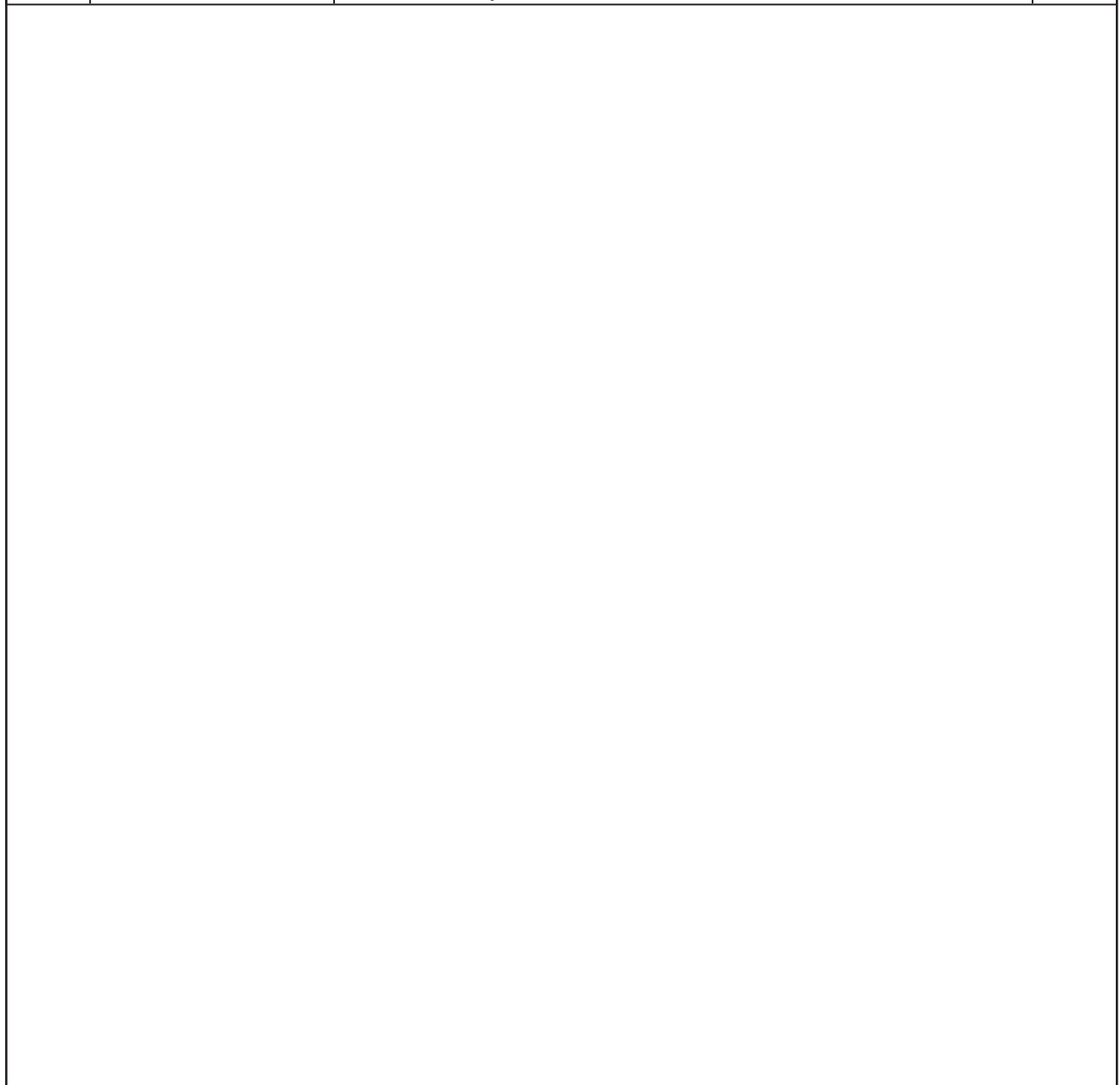
**Left Hand Thread*

'Enviro DD45' Bushes-Mainframe Wheels

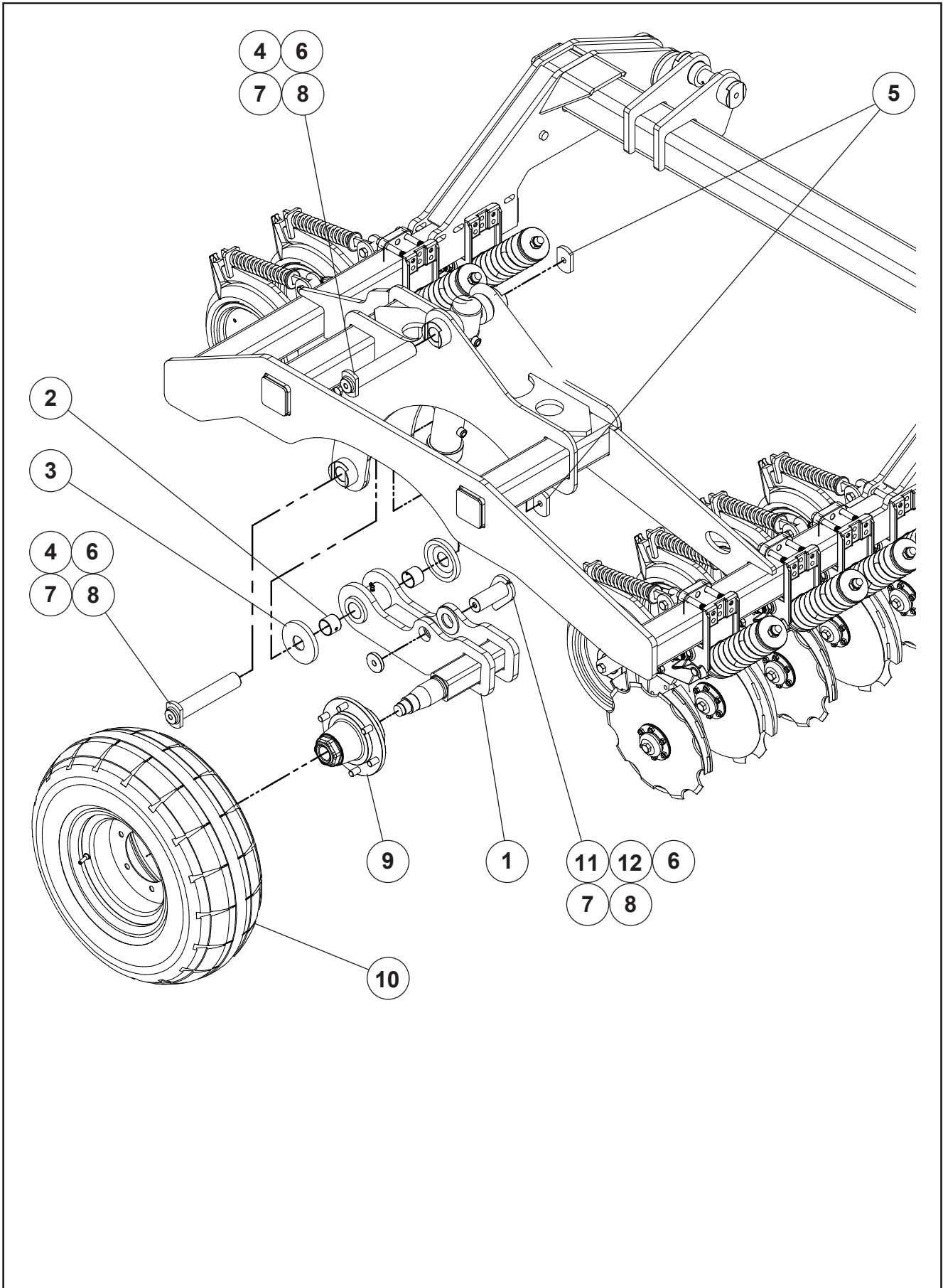


‘Enviro DD45’ Bushes-Mainframe Wheels

ITEM	PART No.	DESCRIPTION	QTY
1	77348	DD45/50/55 Beam Axle W/Assy	1
2	74850	DD45/50/55 Single Axle W/Assy (Beam with welded axle stubs)	1
3	43426	Glacier Bush Ø45	-
4	60065	Wheel Arm Spacer	-
5	72332	Pin Wing Pivot/Whl Leg W/Assy	-
6	72335	Pin Cap Loose Plated	-
7	45154	M16 Light Flat Washer Z/P	-
8	45168	M16 Spring Washer Z/P	-
9	45038s	M16 x 40 Grade 8.8 Z/P S/Screw	-
10	Hub4250kg	Hub and Stub 80mm 6 Stud	-
11	48043	Wheel Assembly Alliance 381 Flotmaster 500/50 R17	-



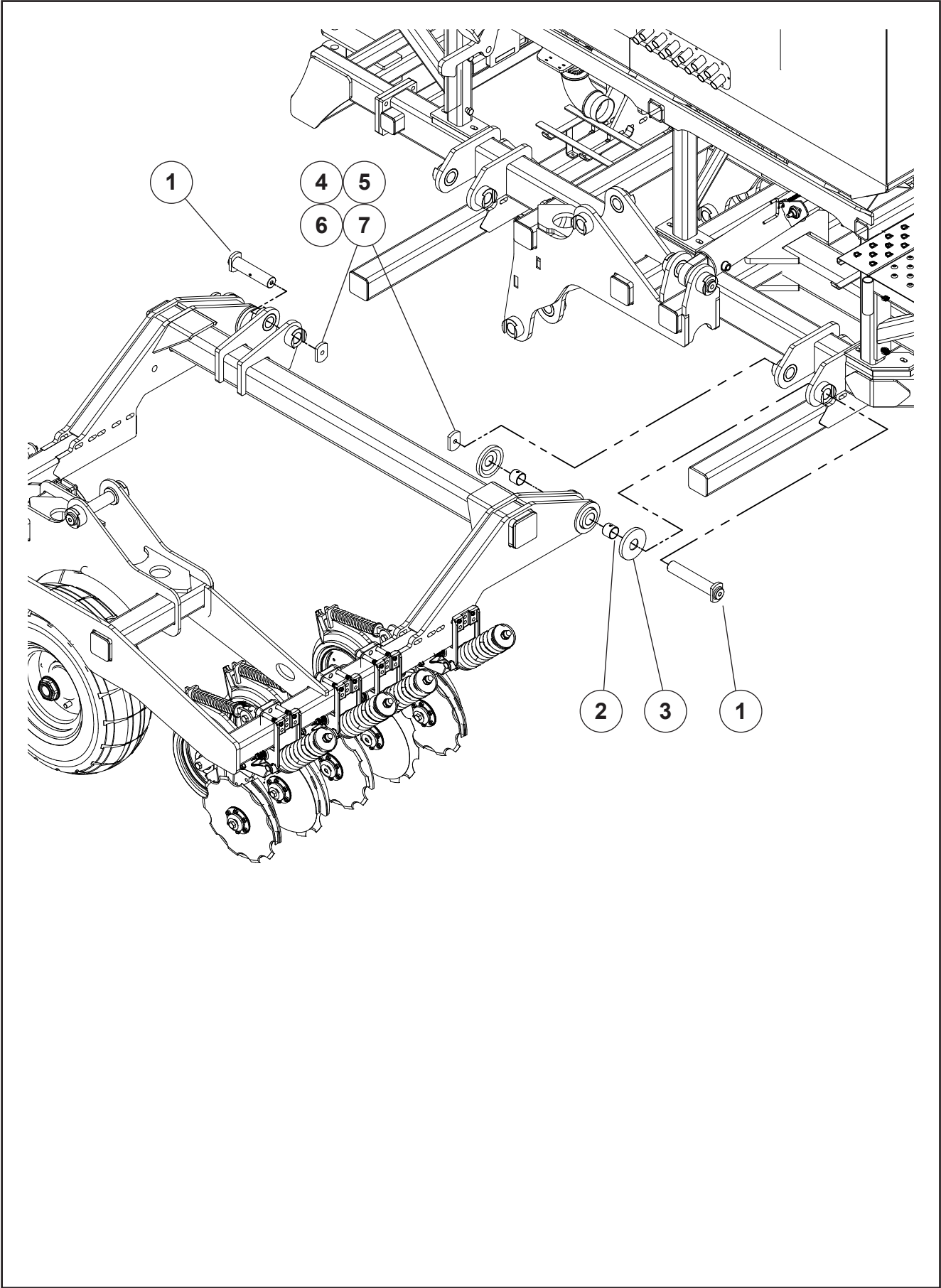
'Enviro DD45' Bushes-Wing Wheels



‘Enviro DD45’ Bushes-Wing Wheels

ITEM	PART No.	DESCRIPTION	QTY
1	74547-C	LH Wing Wheel Leg W/Assy DD45/55 (Not Shown)	1
1	74543-C	RH Wing Wheel Leg W/Assy DD45/55 (Pictured)	1
2	43426	Glacier Bush Ø45	-
3	60065	Wheel Arm Spacer	-
4	72332	Pin Wing Pivot/Whl Leg W/Assy	-
5	72335	Pin Cap Loose Plated	-
6	45154	M16 Light Flat Washer Z/P	-
7	45168	M16 Spring Washer Z/P	-
8	45038s	M16 x 40 Grade 8.8 Z/P S/Screw	-
9	60985	Hub Set 70mm 6 Stud	-
10	45638	Tyre & Rim 10.0/75-15.3 18 Ply	-
11	74620	Main Whl Leg Ram Pin W/Assy	-
12	72777	Pin Cap Plain	

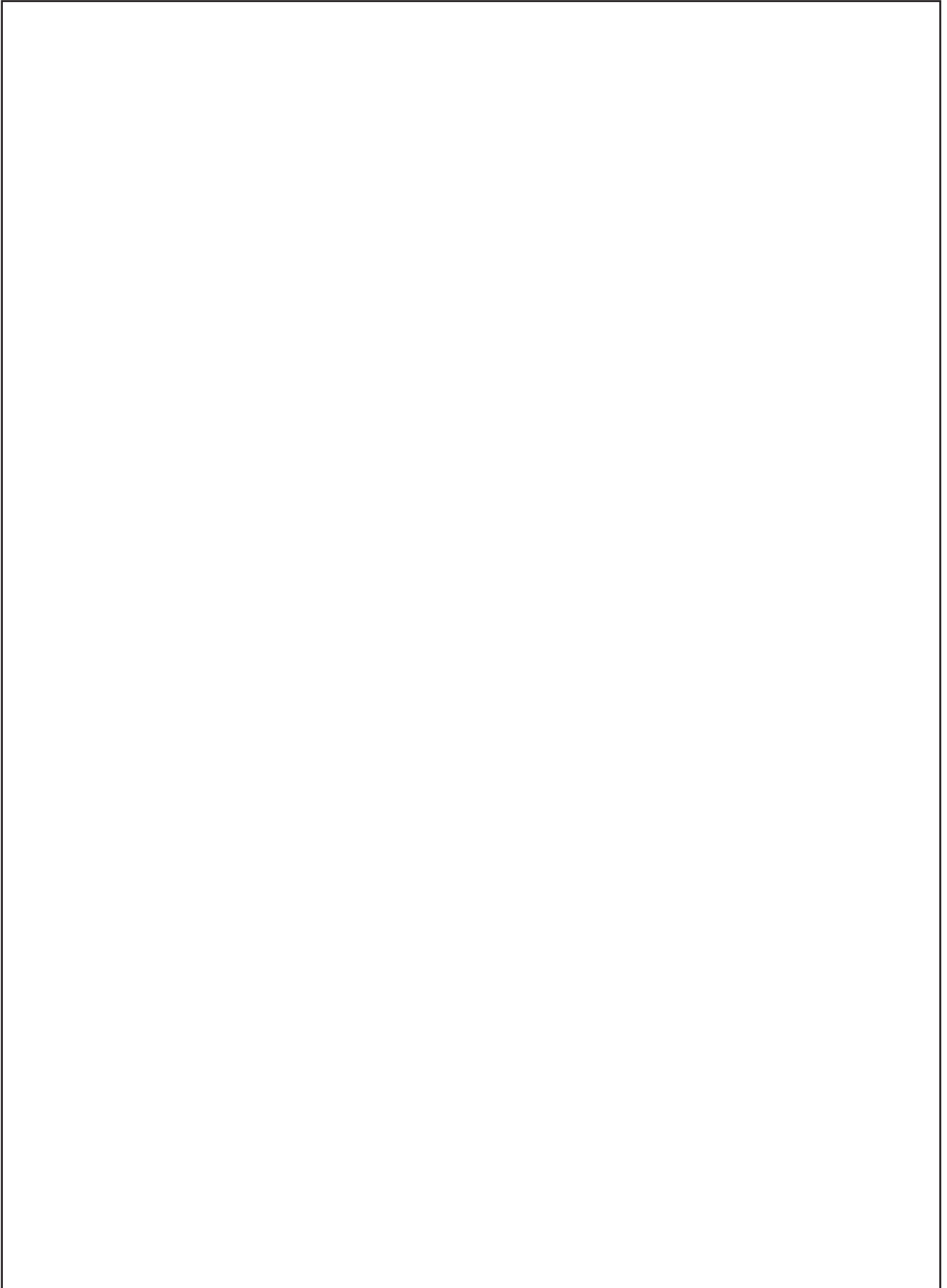
'Enviro DD45' Bushes-Wing Pivot



'Enviro DD45' Bushes-Wing Pivot




ITEM	PART No.	DESCRIPTION	QTY
1	72332	Pin Wing Pivot/Whl Leg W/Assy	-
2	43426	Glacier Bush Ø45	-
3	60065	Wheel Arm Spacer	-
4	72335	Pin Cap Loose Plated	-
5	45154	M16 Light Flat Washer Z/P	-
6	45168	M16 Spring Washer Z/P	-
7	45038s	M16 x 40 Grade 8.8 Z/P S/Screw	-

'Enviro DD45'



'Enviro DD45' Hose Connection Colours

Used On...	Hose Function	Wrap Colour	Length/Diameter (mm)	Material Part No.	Description
AS3000/3500/4000, DD30/35/45/50/55, AS53/61	Blower Pressure	RED	350 long Ø25	48089	25mm Coiled Hose Armour/M (RED)
	Blower Return	RED	250 long Ø32	48091	32mm Coiled Hose Armour/M (RED)
	Blower Case Drain	RED	150 long Ø20	48086	20mm Coiled Hose Armour/M (RED)
AS3000/3500/4000, DD30/35, AS53/61	Wheels Lift	BLUE	250 long Ø20	48085	20mm Coiled Hose Armour/M (BLUE)
	Wheels Lower	BLUE	150 long Ø20	48085	20mm Coiled Hose Armour/M (BLUE)
DD45/50/55	Wheels Lift	BLUE	250 long Ø25	48088	25mm Coiled Hose Armour/M (BLUE)
	Wheels Lower	BLUE	150 long Ø25	48088	25mm Coiled Hose Armour/M (BLUE)
AS53/61	Wings Fold Up	YELLOW	250 long Ø20	48087	20mm Coiled Hose Armour/M (YELLOW)
	Wings Fold Down	YELLOW	150 long Ø20	48087	20mm Coiled Hose Armour/M (YELLOW)
DD45/50/55	Wings Fold Up	YELLOW	250 long Ø25	48090	25mm Coiled Hose Armour/M (YELLOW)
	Wings Fold Down	YELLOW	150 long Ø25	48090	25mm Coiled Hose Armour/M (YELLOW)

	Blower RED	Pressure Return Case Drain		Hose Connection Colours
	Wheels BLUE	Lift Lower		
	Wings YELLOW	Fold Up Fold Down	