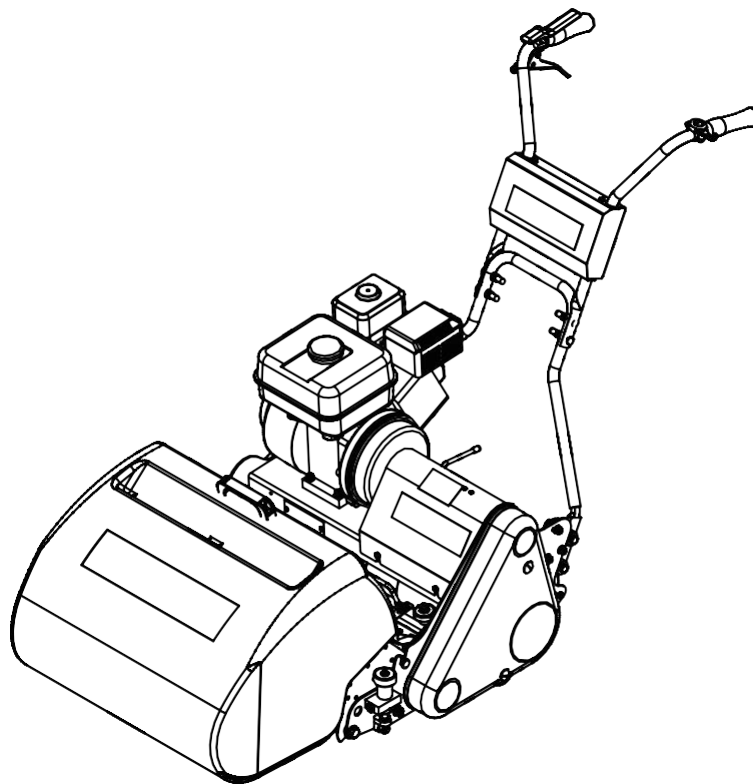




FT & SUPER SIX











FINE TURF CASSETTE MOWER INSTRUCTION MANUAL



sisis

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Product Application Matrix

| | Range | | | | | | | | | | | | | | | | | |
|------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bowls Croquet Tennis |    | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| Football Hockey Rugby |    | | | | | | | | | | | | | | | | | • |
| Cricket | - Wicket | • | • | • | | | | | | | | | | | | | • | |
| | - Square | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| | - Outfield | | | | | | | | | | | | | | | | | • |
| Golf | - Tees | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | |
| | - Greens | • | • | • | | | | | | | | | | | | | | |
| Ornamental/ Lawns |  | • | | | • | • | • | • | • | • | • | • | • | • | • | • | • | • |
| Local Authority/ Contractors |  | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | |



NOTE

THIS INFORMATION IS INTENDED FOR GUIDANCE PURPOSES ONLY. WE RECOMMEND THAT YOU DISCUSS YOUR SPECIFIC REQUIREMENT WITH OUR HEAD OFFICE, SALES MANAGERS OR YOUR LOCAL DENNIS DEALER.

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SERIAL NUMBERS



NOTE:- MAKE A NOTE OF THE SERIAL NUMBER OF YOUR MACHINE AND ALWAYS QUOTE IT IN ANY COMMUNICATION WITH PERSONNEL AT DENNIS

CHASSIS
SERIAL NUMBER

ENGINE
SERIAL NUMBER

| |
|--|
| |
| |

The reliability and quality of performance of the **DENNIS FT** depends upon some simple care maintenance carried out regularly. This manual has been prepared to allow the user to carry out all such work.

It is advisable to read the instructions carefully. Proper care and attention will enable the machine to give a continuous, satisfactory, and reliable service. Failure to carry out regular lubrication and maintenance as outlined in this manual may render any guarantee or warranty invalid.

In the case of any difficulty, or if further information or advice is required, our Service Department is always at your call. In the interests of speed and accuracy of information please quote the serial numbers of the machine and engine when making enquiries.

For the mower, this is to be found on a plate attached to the side frame. The engine number is stamped on either the crank case or the gear casing facing towards the front of the machine. We suggest you write the numbers on the front page of this book.

EU DECLARATION OF CONFORMITY

FT Series Cylinder Mower powered by Honda GX Petrol Engine

Manufacturer:-

- Howardson Ltd, Howardson Works, Kirk Langley, Derby, DE6 4NJ, UK

Owner of Technical Document:-

- Mr I.D. Howard, Howardson Ltd, Howardson Works Kirk Langley, Derby, DE6 4NJ, UK

Notified Body:-

- Vincotte, NB0026, Jan Olieslagerslaan 35, B-1800 Vilvoorde, Belgium

I the undersigned declare that this machine:-

| Model | Cutting Width | Power (Honda) | Measured Sound Power Level | Guaranteed Sound Power Level | Serial Number |
|--------------|---------------|---------------|----------------------------|------------------------------|----------------------|
| FT430 | 430mm | GX120 | 92dB Lwa | 96dB Lwa | See product ID Range |
| SuperSix 430 | 430mm | GX120 | 92dB Lwa | 96dB Lwa | See product ID Range |

Tested at:-

- Howardson Works

Complies with the applicable requirements of:-

- Machine Directive 2006/42/EC
- Noise Directive 2000/14/EC (Annex VI Procedure 1)

Managing Director



Ian Howard



DENNIS **sisis**

Ashbourne Road, Kirk Langley, Derbyshire, DE6 4NJ, England

Tel: +44 (0) 1332 824 777

A division of Howardson Ltd – a proudly British company

www.dennisuk.com www.sisis.com

SP28002_REV2

EU DECLARATION OF CONFORMITY

FT Series Cylinder Mower powered by Honda GX Petrol Engine

Manufacturer:-

- Howardson Ltd, Howardson Works, Kirk Langley, Derby, DE6 4NJ, UK

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Notified Body:-

- Vincotte, NB0026, Jan Olieslagerslaan 35, B-1800 Vilvoorde, Belgium

I the undersigned declare that this machine:-

| Model | Cutting Width | Power (Honda) | Measured Sound Power Level | Guaranteed Sound Power Level | Serial Number |
|--------------|---------------|---------------|----------------------------|------------------------------|----------------------|
| FT510 | 510mm | GX160 | 92dB Lwa | 95dB Lwa | See product ID Range |
| SuperSix 510 | 510mm | GX160 | 92dB Lwa | 95dB Lwa | See product ID Range |
| FT610 | 610mm | GX160 | 92dB Lwa | 95dB Lwa | See product ID Range |
| SuperSix 610 | 610mm | GX160 | 92dB Lwa | 95dB Lwa | See product ID Range |

Tested at:-

- Howardson Works

Complies with the applicable requirements of:-

- Machine Directive 2006/42/EC
- Noise Directive 2000/14/EC (Annex VI Procedure 1)

Managing Director



Ian Howard



DENNIS **sisis**

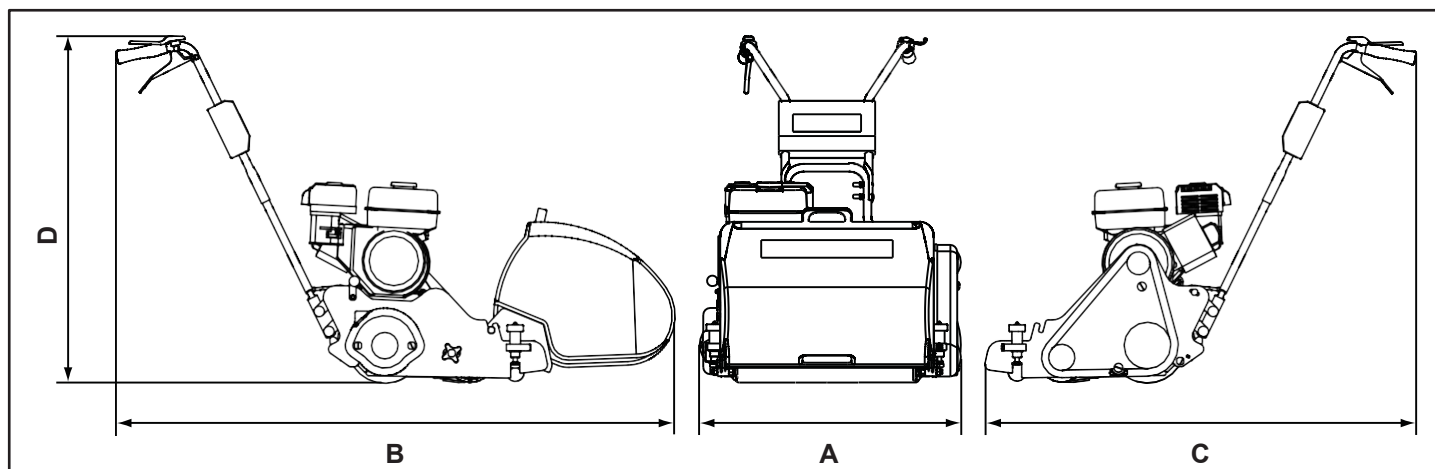
Ashbourne Road, Kirk Langley, Derbyshire, DE6 4NJ, England

Tel: +44 (0) 1332 824 777

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www.dennisuk.com www.sisis.com

SP28003_REV2



| Model | FT430 | FT510 | FT610 |
|--|---|-------------|-------------|
| A - Width (mm) | 675 | 750 | 840 |
| B - Length with Grassbox (mm) | 1592 | 1592 | 1592 |
| C - Length without Grassbox (mm) | 1229 | 1229 | 1229 |
| D - Height (mm) | 971 | 971 | 971 |
| Weight (Kg) | 100 | 110 | 120 |
| Cutting Width (mm) | 430 | 510 | 610 |
| Cylinder | 9 or 5 blade | | |
| Height of Cut (mm) | 2 - 25 | | |
| Cut Performance (9 Blade) | 180 cuts/m (168 cuts/yd) | | |
| Engine | Honda GX120 | Honda GX160 | Honda GX160 |
| Drive System | Brake band for roller and dog drive to disengage cutter for transport | | |
| Final Drive | Poly "V" high performance belts under constant tension | | |
| Hand Arm Vibration (m/sec ²) (EN836) | 2.7 | 2.5 | 2.8 |
| Measured Sound Power Level dB(A) LWA | 91 | 95 | 95 |
| Guaranteed Sound Power Level dB(A) LWA | 94 | 98 | 98 |
| Measured Sound Pressure Level dB LPA | 77 | 81 | 81 |

NOTE:- Mandatory Ear Protection required when Sound Pressure Levels reach 85 dB LPA.

6. MACHINE DESCRIPTION



Manufactured with a 17" (43cm) 20" (51cm) or 24" (61cm) cutting width this mower is powered by a 5.5 h.p. air cooled single cylinder four stroke petrol engine (3.5hp FT430) The rear roller is powered via a slipping brake band clutch mechanism that allows infinite speed control independent of the cutter unit. The drive to the roller is engaged by a lever situated on the right handlebar.

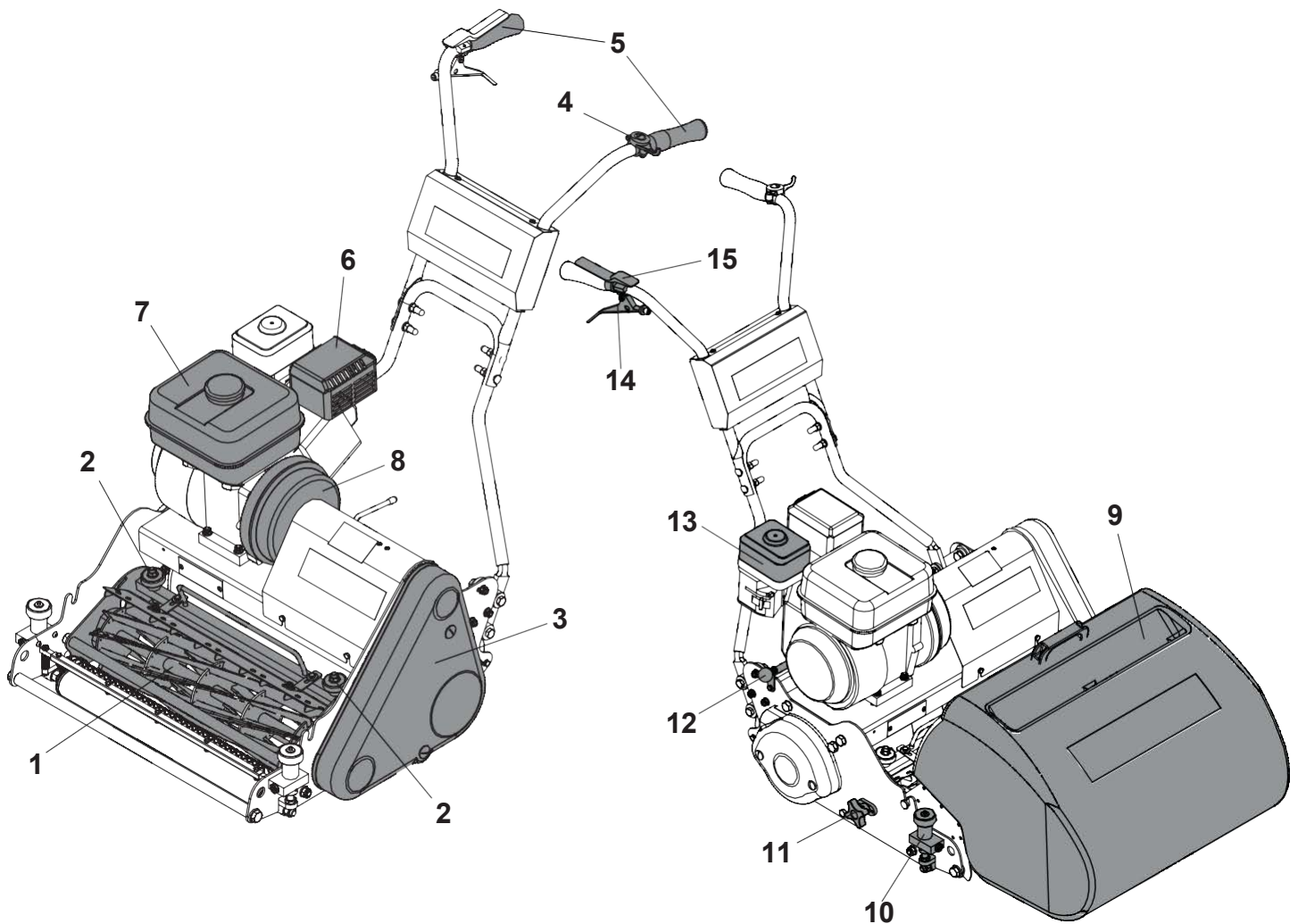
Where possible, steps have been taken during the design of this machinery to reduce noise emission***.

To take full advantage of this, it is essential that the machine only be used when setup correctly and is fully serviceable (see instructions).

*** including fitment of low noise variant Honda engine.

In the design of the machine, special attention has been given to the importance of easy service and maintenance with the construction based on a sectional assembly system. These are the Engine Unit, the Cassette Unit, the Rear Roller Unit, and the Front Roller Unit, each of which can be readily removed individually from the main Frame Chassis Unit.

The interchangeable cassette system allows a variety of cassettes to be used for varying applications.



1. Cassette
2. Bottom Blade Adjuster Knob
3. Belt Guard
4. Throttle Lever
5. Operating Handle
6. Exhaust
7. Fuel Tank
8. Centrifugal Clutch Drum

9. Grassbox
10. Cutting Height Adjustment Knob (FT Only)
11. Cassette Retaining Pin Hand Wheel
12. Cassette Disengage Knob
13. Air Filter
14. Driving Clutch Lever
15. Deadmans Handle



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7. IMPORTANT SAFETY INSTRUCTIONS



In order to operate the machine safely please follow these Health and Safety guidelines.

TRAINING



CAUTION

*READ THE INSTRUCTIONS CONTAINED IN THIS MANUAL WITH CARE. IF YOU ARE IN ANY DOUBT PLEASE ASK YOUR EMPLOYER OR CONTACT US DIRECT AT **DENNIS***

- Be familiar with the controls and the proper use of the equipment.
- Never allow children or people unfamiliar with these instructions to use the mower. Local regulations or insurance restrict the age of the operator.
- Never mow while people, especially children, or pets are nearby.
- Keep in mind that the operator or user is responsible for accidents or hazards occurring to other people or their property.

PREPARATION

- While mowing always wear substantial footwear and long trousers. Do not operate the mower barefoot or in open sandals.
- Thoroughly inspect where the equipment is to be used and remove all stones, sticks, wire, bones and other foreign objects.



WARNING

PETROL IS HIGHLY FLAMMABLE AND WILL DAMAGE GRASS IF SPILT.

- A) Store fuel in containers specifically designed for this purpose.
 - B) Refuel out doors and do not refuel whilst smoking.
 - C) Add fuel before starting the engine. Never remove the cap of the fuel tank or add petrol while the engine is running when the engine is hot.
 - D) If petrol is spilled do not attempt to start the engine but move the machine away from the area of spill and avoid creating any sources of ignition until the vapours have dissipated.
- Replace damaged or faulty silencers.
 - Before using the machine always inspect the safety devices including the cut off switch and the blades for excess wear or damage. Replace if necessary.

OPERATION

- Do not operate the engine in a confined space where dangerous **CARBON MONOXIDE** fumes can collect.
- Mow only in daylight or good artificial light.
- Avoid operating the machine in wet grass where feasible.
- Always be sure of your footing on slopes.
- Walk. Never run.
- Walk across the face of slopes, never up and down.
- Exercise extreme care on slopes when changing direction.
- Do not mow excessively steep slopes.
- Use extreme caution when reversing or pulling the machine towards you.
- Stop the blades if the mower has to be tilted for transportation when crossing surfaces other than grass and when transporting the mower to and from the area to be mown.
- Never operate the mower with defective guards or shields or without the safety devices, for example without the deflector plate or grassbox in place.
- Do not change the engine governor settings or overspeed the engine.
- Disengage all blades and drive clutches before starting.
- Start the engine carefully following the instructions with feet well away from the blades.
- Do not tilt the mower when starting the engine.
- Do not put hands or feet near or under rotating parts. Keep clear of the discharge opening at all times.
- Never pick up or carry the mower while the engine is running.



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8. OPERATING INSTRUCTIONS



CAUTION

BEFORE YOU OPERATE THIS MACHINE YOU MUST READ AND STUDY THIS MANUAL. IF YOU ARE IN ANY DOUBT PLEASE ASK YOUR EMPLOYER OR CONTACT US DIRECT.

PREPARATION FOR USE

- Before commencing ensure the turf is free from stones or other obstructions which may damage the cassette unit.
- Set the height of cut to the required level (see page 9)
- Check the engine.
- Fill the fuel tank 3/4 full with unleaded petrol.
- Always check the oil levels of the machine prior to commencing. Full details are given in the **ENGINE** Manual, which accompanies this book. A daily check is recommended. (Recommended grade oil is SAE 10W-40).
- Disengage the cassette unit. (see next page)
- Set the throttle control on the handle bars to the idle position.
- In the case of deadmans handle control depress the lever onto the handlebar then start the engine as per the manufacturers instructions.



CAUTION

IMPORTANT INFORMATION PLEASE READ ALL THE DETAILS IN THIS SECTION AND FAMILIARIZE YOURSELF AND ALL MACHINE OPERATORS WITH THE CONTENTS.

GENERAL

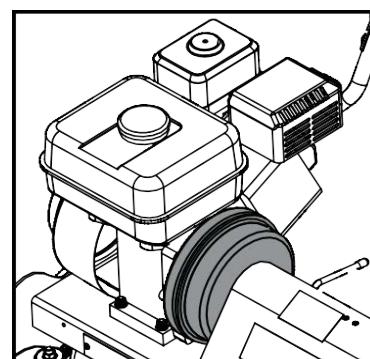
A centrifugal clutch is fitted in the primary drive system. When the engine revs are at tickover the clutch disengages and neither the cutter nor the rear roller controls will function. Under these conditions the Deadmans Control can be released and the engine will continue to tick over.

On increasing the revs of the engine with the throttle control the clutch engages thus allowing cutter and roller to operate.



NOTE

THE DEADMANS LEVER MUST BE DEPRESSED WHEN INCREASING THE ENGINE REVS OR THE MACHINE WILL STOP



The drive to the cutter unit can be engaged or disengaged in one of two ways:-

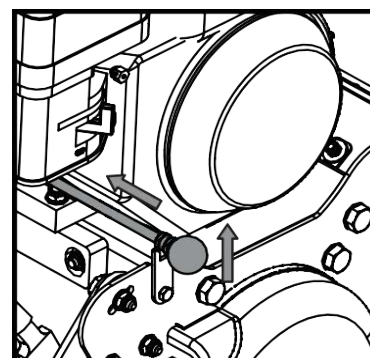
- A) By reducing the engine revs to tickover the centrifugal clutch will disengage. This method will be performed when emptying the grassbox.
- b) By having the dog drive disengaged. Use this method when transporting the machine.

When the centrifugal clutch is engaged the rear roller drive can be activated by the brake band lever.

TRANSPORT (Disengaging the Cassette Drive)

To ensure the safety of operator and machine we strongly recommend disengaging the cassette drive when transporting under power between sites. Do not operate any cassettes with dog drive disengaged except for the sorrel roller, ironing roller and slitter. This is achieved by performing the following procedure:

- 1) Reduce engine revs to tickover. This will cause the black clutch drum to cease rotating.
- 2) Lift the red ball knob (attached to horizontal rod behind engine) and push towards the machine. Locate the rod between the two nuts in the slotted catch plate.
- 3) Once in position the dog drive is disengaged.



To re-engage the dog clutch:

- 1) Reduce engine revs to tickover as above (1).
- 2) Lift control rod clear of the locating slot and allow it to spring back towards you.
- 3) Slowly increase engine revs until an audible click is heard when the dogs engage. Alternatively rotate the black clutch drum about half a turn by hand and the same click will be heard. Do not rev the engine until the rod has moved right across and fully engaged.



NOTE

TO ASSIST THE SLOWING OF THE BLACK CENTRIFUGAL CLUTCH DRUM APPLY THE BRAKE BAND LEVER.



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STARTING THE ENGINE

Once the preparatory steps have been completed as outlined on page 7 the engine may be started. (See manufacturer operating manual for full details).

- 1) Switch on the fuel tap.
- 2) Switch the handlebar cut off switch to **ON**, or depress deadmans handle (Item 1)
- 3) Set the throttle control to a half open position.
- 4) Shift the choke lever to the appropriate position (Kubota engine set to **START** : Honda engine set to the **CLOSE** position). The choke is not required if the engine is warm or the air temperature high.
- 4) Grasp the recoil start handle until resistance is felt, then pull it with force.
- 5) Do not allow the starter grip to snap back against the engine. Return it gently to prevent damage to the starter.
- 6) Once the engine is started gradually 'open' the choke lever (move the lever towards the **RUNNING**, or **OPEN** position). Warm-up running of 3-5 minutes is recommended.

STOPPING THE ENGINE

- 1) Set the throttle control to the **CLOSED** position.
- 2) Switch the handlebar cut off to **OFF** or switch off at engine.
- 3) Close the fuel tap.

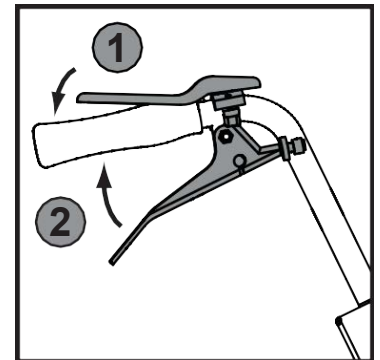
TO COMMENCE MOWING

With the starting preparations completed and all of the adjustments from the 'General Adjustments' section made, the machine can be put into motion.

Firstly ensure the dog clutch is engaged. Open the throttle control on the left handlebar which will engage the inertia clutch and spin the cassette reel. The engine speed controls the rotational velocity of the cassette. Set the throttle to an approximately half open position.

To engage the rear roller drive, gently raise the driving clutch lever on the right handle bar (Item 2). The amount of depression on the lever dictates the speed of travel giving the operator total control over the speed and handling of the mower.

When the handle is released the machine will stop. To stop the unit head rotating, reduce the throttle to tick over and this will disengage the inertia clutch.



9. GENERAL ADJUSTMENTS

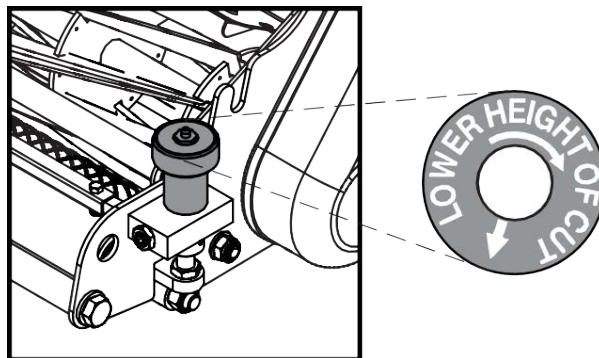
SETTING FOR HEIGHT OF CUT

Always stop the engine before adjusting the height of cut. Failure to do this may result in severe injury.

The length of grass after cutting, or depth of scarification / dethatching / brushing, depends on the setting of the front roller in relation to the main frame of the machine.

FT

The Click system allows easy adjustment of the front roller position each click representing a change of 0.5mm (0.020"). The roller is set to be equal on leaving the factory so when the arrows point forward on both decals the roller is level.

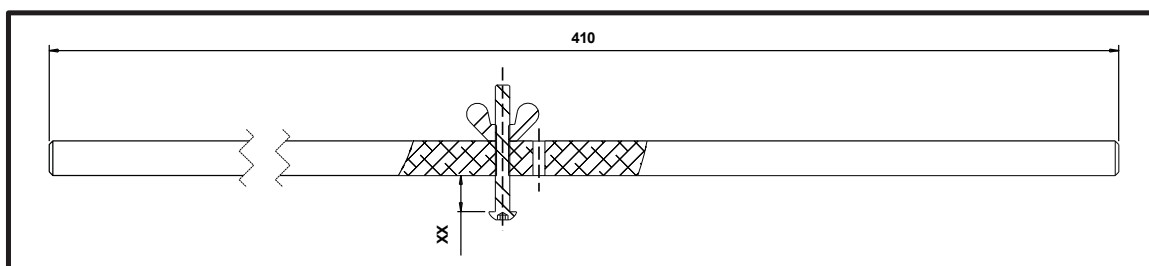


SUPER SIX

Adjustment to the height of the front roller is on the quadrant brackets at each end of the roller outside the main frame assembly. Undo the adjuster knob on each side of the mower and move the roller up or down and then re-tighten the knobs. There are notches in the quadrant plates which must correspond with the hole in the side plate on both sides of the mower to ensure the roller is level.

Check it is level using the setting bar between the front and rear roller with the underside of the screw leading on the bottom blade.

Either a ruler or pile of coins can be used to set the setting bar to the correct position. You are measuring the distance between the bar and the underside of the button head screw ('XX' in the Image below).



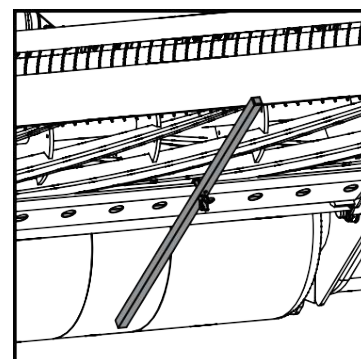
As an indication coins measure the following:-

- | | | |
|-----------------------|-----------------------|-------------------------|
| - 1p 1.58mm (0.063") | - 2p 1.80mm (0.071") | - 5p 1.73mm (0.067") |
| - 10p 1.84mm (0.072") | - 50p 1.84mm (0.072") | - £1.00 3.14mm (0.124") |

Remember height of cut is effected by moisture of turf , weight of machine and the thatch density. Different makes of machine cut at different heights when set to the same position with the setting bar. We suggest you set it to a couple of mm above your planned height and then come down in height by trial.

If on setting the height of operation you find it needs altering once on the green simply click the adjusters up or down the same on each side until the desired height of operation is achieved.

Always check height of cut/operation with the setting bar provided. Check in two positions i.e. one at either end of the cassette. Failure to do this could result in an uneven cut.



NOTE

DO NOT ATTEMPT TO USE THE DETHATCHER CASSETTE OR BRUSH CASSETTE ON TOO LOW A SETTING AS THIS WILL DAMAGE THE BLADES AND BRUSH. DO NOT ATTEMPT TO SCARIFY ON A LOW SETTING WHEN GROUND CONDITIONS ARE DRY AS THIS MAY CAUSE THE CENTRIFUGAL CLUTCH TO SLIP.

HANDLEBAR ADJUSTMENT

The height of the Handle Bars can be adjusted to suit various operators. Follow the below instructions:-

1. Remove Bolt (Item 1) on both sides of the machine.
2. Select the require position out of the 3 available.
3. Replace the Bolt on both sides of the machine.

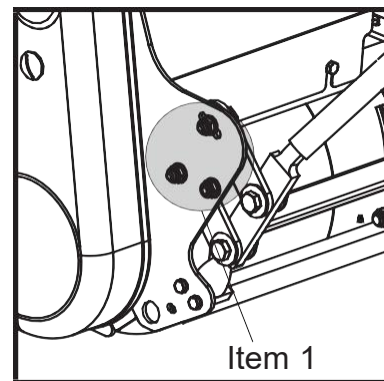
GRASS BOX

If using the grass box, place the two locating tabs (projecting from the grass box support plates) into the slots on the machine side plate. Lower the front of the box until the box support plate's rest on the front cross bar of the machine. Ensure both box support plates are properly located before proceeding.

Always disengage the cassette drive before removing the grass box for emptying or access by reducing the engine revs to tick over. Wait for the cutter to stop before removing.

Always keep fingers away from the cassette when the engine is running. Stop the machine before making any adjustments.

Hold the grass box firmly on the lip of the aperture and place the other hand in the handle on the front edge of the box.



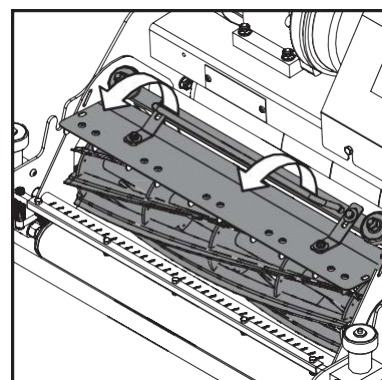
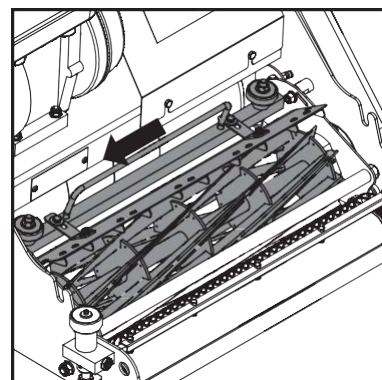
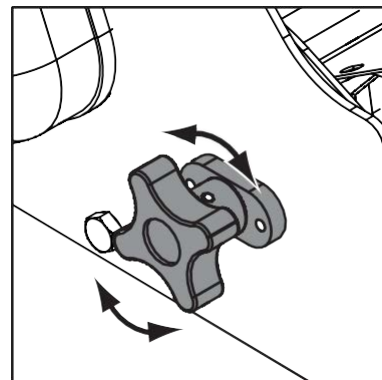
10. REMOVING THE CASSETTE UNIT

To remove the cassette unit for maintenance or to exchange cassettes the following procedure should be followed:-

- 1) Unscrew the hand wheel of the retaining pin for about half-an-inch (13mm) until the pin end is inside the nut on the side frame.
- 2) Slide the cassette unit along the tie bars as far as it will go until the cutter nut and coupling is clear of the three pins in the driving coupling.
- 3) Remove the unit from the chassis by lifting in a swinging motion from the back.

To replace the cassette unit :-

- 1) Place the front slots of the cassette unit frames on the two front retaining pins seen projecting from inside each frame.
- 2) Carefully lower the unit in a downward swinging motion until the rear slots of the cassette unit frame rest on the cross tie bar.
- 3) Move in a lateral direction away from the retaining pin until the three holes of the cassette nut and coupling are in full engagement with the three pins of the driving coupling.
- 4) Screw up the hand wheel with the retaining pin, engaging the hole in the side frame on the opposite side. Do not over tighten.



11. ROUTINE MAINTENANCE

ENGINE

The FT is fitted with a Honda GX160 (GX120 on FT 430) petrol engine. All are single cylinder, overhead valve, 4 stroke, forced air cooled engines. For full specifications please refer to the manufacturers instruction manual included.

| Area | Maintenance | First 4 Hours | First Month / 20 Hours | 3 Months / 50 Hours | 6 Months / 100 Hours |
|------------|----------------------------|---------------|------------------------|---------------------|----------------------|
| Engine Oil | Check Level | ✓ | | | |
| Engine Oil | Change | | ✓ | | ✓ |
| Air Filter | Check Condition / Clean | | ✓ | | ✓ |
| Spark Plug | Change | | | | ✓ |

OIL / FUEL TYPE & QUANTITY - SPARK PLUG TYPE

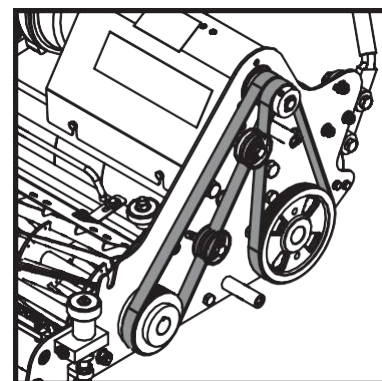
| Engine Model | Oil Type | Quantity (Ltr) | Fuel Type | Capacity (Ltr) | Spark Plug Type | Electrode Gap (mm) |
|----------------------------|------------|----------------|-----------|----------------|-----------------|--------------------|
| Honda GX120 & GX160 Petrol | SAE 10W-40 | 0.6 | Unleaded | 2.5 | BM6ES or BPR6ES | 0.7 - 0.8 |

DRIVING BELTS

The main drive to both rear roller and cassette is via hard wearing TBA poly-V type belts which provide for smooth trouble free operation. To ensure the best performance the following instructions should be carefully followed.

Belt tension is the single most important factor necessary for long, satisfactory service life of any belt drive.

Under-tensioning leads to belt slip causing rapid wear; over tensioning means excessive strain on belt and bearings. Between these two extreme conditions is a reasonable range of tension within which the belt will operate. Belt tension can be assessed by the 'deflection' method.



NOTE

CORRECTION CAN BE MADE BY ADJUSTMENT OF THE BELT TENSIONERS. REMOVE THE DRIVING BELT COVER. THE BELT TENSIONERS ARE RETAINED IN A SLOTTED HOLE ALLOWING ADJUSTMENT TO BE MADE ONCE THE HOLDING HEXAGON HEADED BOLTS HAVE BEEN LOOSENED. WHEN ADJUSTED CORRECTLY THE TENSIONERS SHOULD STILL ROTATE EASILY WITH FINGER PRESSURE. ENSURE THE TENSIONER BOLTS ARE SECURE BEFORE REPLACING THE COVER.

"Belts will be sufficiently tensioned if the deflection force applied at mid span to produce a deflection equal to 16mm per meter of span distance falls between 5 and 9 Newtons per Rib" (TBA Belting).

In practical terms this relates to about 5mm of deflection under moderate finger pressure on the non tensioner side.

If fitting new belts it is advisable to observe the drive for the first 20-30 minutes. It may be necessary to make an adjustment to compensate for the normal drop in tension during the run-in period.

FOR BELT DETAILS, REF. 1.02 (Pg. 19)

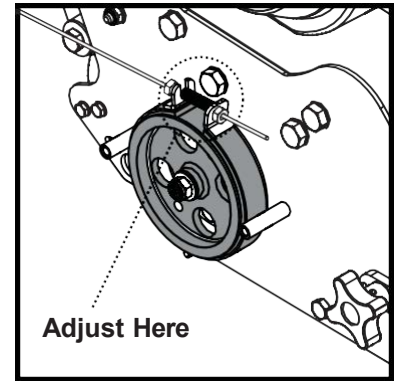
Do not overtighten belts as this may cause excessive wear on the dog clutch.

BRAKE BAND ADJUSTMENT (Rear Axle Drive)

The brake band assembly is mounted on the end of the rear axle spindle on the right hand side of the machine. The assembly comprises a cast iron drum inner member, which is stopped or braked with a lined steel brake band. This operates dry and no lubrication of any kind is required.

Adjustment is provided for tightening the band on the inner member should this be necessary through wear. The procedure to take up any slack is as follows :-

1. Remove the clutch cover by unscrewing the two hexagon headed screws seen on the outside of the cover.
2. Unscrew the lock nut on the adjuster screw situated between the two clutch band lugs.



NOTE

ENSURE THE LOCK NUTS ARE TIGHT AND SECURE AND CHECK OPERATION IS SATISFACTORY BEFORE REPLACING THE CLUTCH COVER AND SCREWS.

Adjustment of the brake band can be set to suit your preference but always ensure that there is sufficient free play so that when the engine revs are increased the machine does not move in any way until the lever is pulled up.

On some models there is adjustment on the handle grip itself to allow any wear to be taken up.

REAR ROLLER

The centre section gear case chamber of the rear roller is an assembly in two halves and contains the epicyclic gear system, which runs in an oil bath.

The chamber is charged with gear oil EP 90 before the machine leaves the works and should require no further filling during the cutting season. If in every day use then a topping up charge of about one egg cup full every two months may be appropriate.



WARNING ***DO NOT OVERCHARGE.** AT NO TIME SHOULD THERE BE MORE THAN 100CC OF OIL IN THE CHAMBER.*

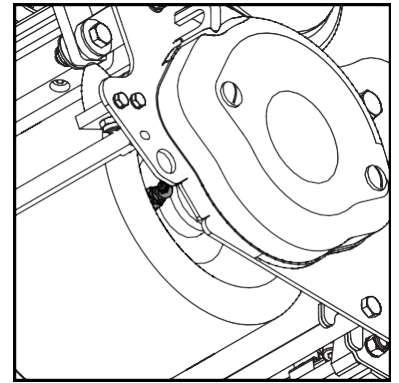
Access to the chamber is gained by unscrewing the hexagon screw found in the recess of the centre section of roller. Clean away all dirt and grit before removing this screw. On replacing the screw, make sure it is tight and secure.

Recommended grade gearbox oil EP90.

RATCHET PAWLS AND DRUM HUBS OF THE REAR ROLLER (Every 2 Months)

Projecting from the side face towards the centre of each outer drum will be seen two grease nipples which provide access for lubrication to the rear roller driving pawls and the drum hub bearing sleeve.

A small charge of light grease should be applied every two months.



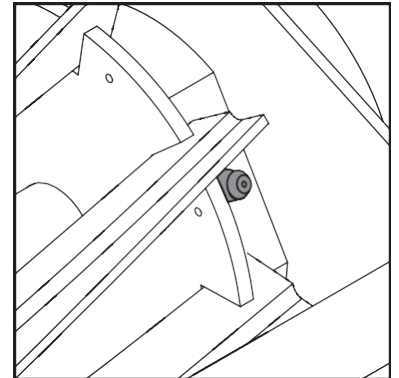
FRONT ROLLERS

The bearings used on the front rollers are pre packed with grease and rubber shielded, therefore requiring no additional greasing.

CYLINDER CASSETTE BEARINGS (Every Day)

To apply lubrication to the cylinder cassette bearings it is first necessary to remove the cassette unit from the chassis as described on page 9.

Projecting from each bearing cover will be seen a grease nipple through which a small charge of grease should be applied using the grease gun



MEDIUM GREASE = GOOD QUALITY

SCARIFIER / DE-THATCHER / BRUSH CASSETTES

No grease or oiling is required.

DOG DRIVE (Every Day) - VERY IMPORTANT

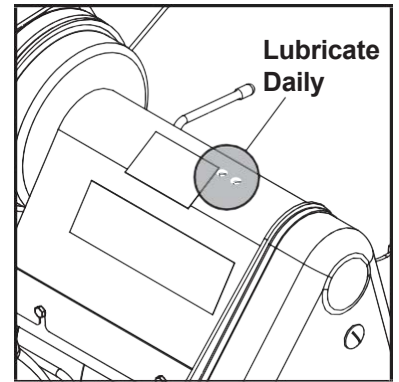
Apply a small squirt of lubricating oil (2-3 drops) directly into each hole in the top of the drive shaft cover. This keeps the clutch slippers lubricated.

CONTROL LEVERS AND CABLES (Every 2 Months)

To keep the controls free from rust and corrosion apply a small charge of oil to the throttle and clutch control levers every two months. Oil flow can be assisted by working the levers open and closed a few times after the lubrication is applied.

FRONT ROLLER ADJUSTERS (Every 2 Months)

Apply a small quantity of copper grease or similar to the adjuster studs to prevent corrosion and ease adjustment.



Storage

The machine should always be kept in a clean dry place, free from condensation. After use ensure that the machine is thoroughly clean, dry and free from grass and mud. Before off season storage smear a thin layer of grease on to the cutter blades and the shear blade.

Under no circumstances must the machine be steam cleaned as this may remove grease from the pre packed bearings.

Because of the nature of lead free petrol we recommend that if the machine is being left unused for more than 2 weeks the carburetor is run dry. Allow the engine to run out of fuel with the fuel tap switched off.

Guide To Replacement Parts



NOTE

WHEN ORDERING PARTS PLEASE QUOTE YOUR MACHINE SERIAL NUMBER AND ENGINE NUMBER. A BOX TO ENTER THESE FOR EASY REFERENCE IS AT THE BEGINNING OF THE MANUAL.

This manual contains listing of parts for the Dennis FT430, FT510 and FT610 machines. An illustration of the parts as an assembly is shown above the list.

Where parts are given a description of LH or RH (left hand or right hand) this is as viewed from the users position.

The Parts Listings for FT Range can be found in this manual from page 18 onwards.

9 BLADE CYLINDER

- For cutting fine turf areas.
- Three bottom blade options.
- Comb active or passive.

5 BLADE CYLINDER

- For general purpose cutting.
- Comb active or passive.

Settings - Expressed as above and below ground level i.e. by placing the setting bar between the front and rear rollers, the top of the bar represents ground level.

VERTICUTTER

Used from ground +3mm to ground -3mm to control thatch, cutting lateral growths and standing up lying grasses ready for cutting and lifting with the comb. Good for removing mosses. Start on the green at (say) +3mm.



NOTE ***NOT FOR CUTTING SOIL, ONLY THATCH.***

RESULT - Speed improvement on greens, reduced end of season maintenance. Promotes healthy plant growth, promotes strong roots, and maximizes fertilizer penetration.

SCARIFIER

Used for ground to ground -10mm controlling thatch, removing thatch, cutting lateral growth, pruning roots, removing moss, aerating top layer for ingress of water, air, fertilizer and seed. Choice of 1mm or 2mm thick blades (generally 1mm used in summer, 2mm used in winter). Do not try to cut too deep - must be adjusted to suit conditions. Keep engine revs reasonably high with a slow forward movement to remove as much material as possible. The machine may tend to walk along on its own in some conditions.

RESULT - Speed increase of playing surface. Maximizes fertilizer penetration & promotes strong healthy plant growth and strong roots.

BRUSH

Used for light scarifying, brushing, removing debris, cigarette ends, pine needles moss, excess top dressing etc. Set at +3mm to +1mm for ground debris depending on conditions. Remove comb.

IRONING ROLLER NON DRIVEN

Ballastable for extra weight. Used for ironing greens. Set level or lift up front roller.

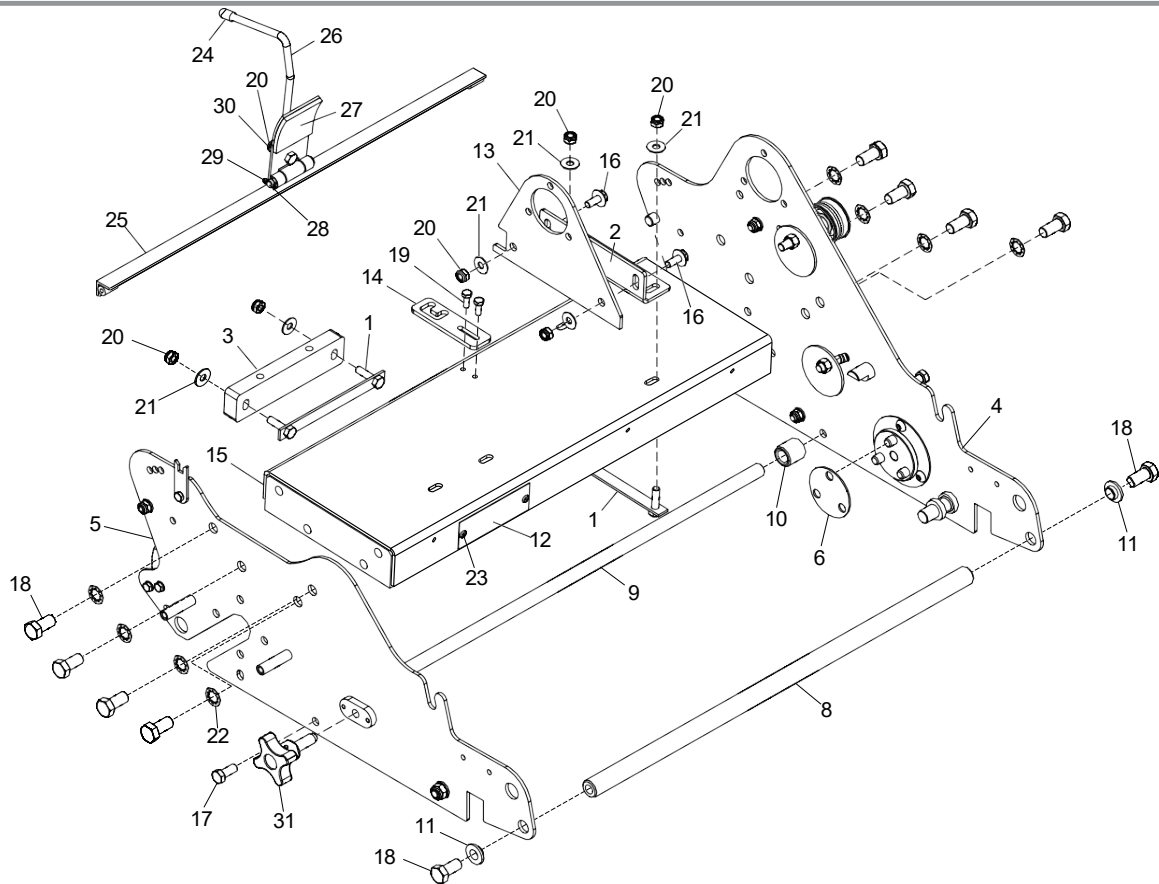
SORREL ROLLER NOT DRIVEN

Used for surface pricking. Lets air, water, fertilizer into the root zone. Good for over seeding and preparing damaged areas for repair. Reduces surface tension.

| | Bowls | Cricket | Golf |
|----------------|--------------|----------------------------------|----------------------------------|
| Verticutter | Monthly | Fortnightly | Monthly |
| Scar fier | 1 - 2 Months | 1 - 2 Months | 1 - 2 Months |
| Brush | As Required | As Required | As Required |
| Ironing roller | Match Days | Pre-Season | As Required |
| Sorrel Roller | 1 - 2 Weeks | Monthly (As Required for Repair) | Monthly (As Required for Repair) |



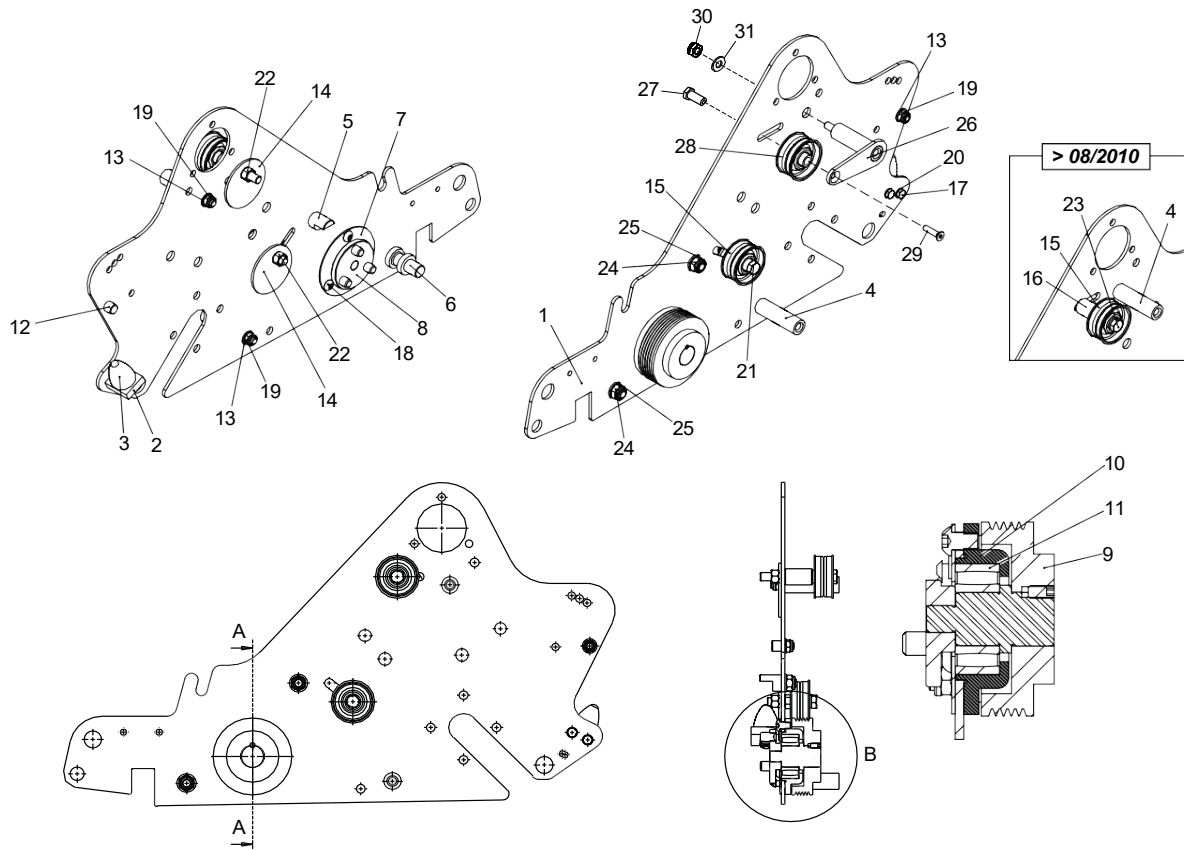
World class turf maintenance equipment



1.01

Chassis - Main Assembly

| Item No. | Part No. | Description | Quantity | Item No. | Part No. | Description | Quantity |
|----------|----------|-------------------------------|----------|----------|----------|--------------------------|----------|
| 1 | 229492 | Retaining Plate Assy | 2 | 29 | SP05010 | Split Pin 1/8" x 1" | 1 |
| 2 | 230004 | Support Bracket | 1 | 30 | SP03008 | Washer M8 Form A | 1 |
| 3 | 230006 | Support Plate Engine | 1 | 31 | 800104 | Cassette Retaining Screw | 1 |
| 4 | See 1.02 | FT L.H. Side Plate Assembly | 1 | | | | |
| 5 | See 1.03 | FT R.H. Side Plate Assy | 1 | | | | |
| 6 | J20222 | Cork Buffer | 1 | | | | |
| 7 | 800104 | Stop Pin Assy | 1 | | | | |
| 8 | J17235 | Front Cross Bar (17") | 1 | | | | |
| 8 | J20235 | Front Cross Bar (20") | 1 | | | | |
| 8 | J24235 | Front Cross Bar (24") | 1 | | | | |
| 9 | J17236 | Lower Unit Tie Bar (17") | 1 | | | | |
| 9 | J20236 | Lower Unit Tie Bar (20") | 1 | | | | |
| 9 | J24236 | Lower Unit Tie Bar (24") | 1 | | | | |
| 10 | J20263 | Front Stud Spacer | 1 | | | | |
| 11 | J20292 | Collar Front Tie Bar | 2 | | | | |
| 12 | J20297 | Serial Number Plate | 1 | | | | |
| 13 | J209053 | Support Plate | 1 | | | | |
| 14 | J209059 | Gate | 1 | | | | |
| 15 | J179215 | Engine Bed (17") | 1 | | | | |
| 15 | J209215 | Engine Bed (20") | 1 | | | | |
| 15 | J249215 | Engine Bed (24") | 1 | | | | |
| 16 | SP01009 | Hex Set Screw M8 x 20 | 2 | | | | |
| 17 | SP01011 | Hex Set Screw 3/8" UNF x 3/4" | 2 | | | | |
| 18 | SP01053 | Hex Set Screw 1/2" UNF x 1" | 10 | | | | |
| 19 | SP01055 | Hex Taptite Screw M6 x 16 | 2 | | | | |
| 20 | SP02006 | Nut M8 Nyloc | 7 | | | | |
| 21 | SP03015 | Washer M8 Form C | 8 | | | | |
| 22 | SP03023 | Washer 1/2" Toothed | 8 | | | | |
| 23 | SP05001 | Rivet 4.8 x 10 | 2 | | | | |
| 24 | 228094 | End Tip 5/16" | 1 | | | | |
| 25 | J17251 | Rear Scraper Bar Assy (17") | 1 | | | | |
| 25 | J20251 | Rear Scraper Bar Assy (20") | 1 | | | | |
| 25 | J24251 | Rear Scraper Bar Assy (24") | 1 | | | | |
| 26 | J209056 | Hand Brake Lever | 1 | | | | |
| 27 | J209057 | Brake | 1 | | | | |
| 28 | SP05014 | Clevis Pin 3/8" x 2 1/2" | 1 | | | | |



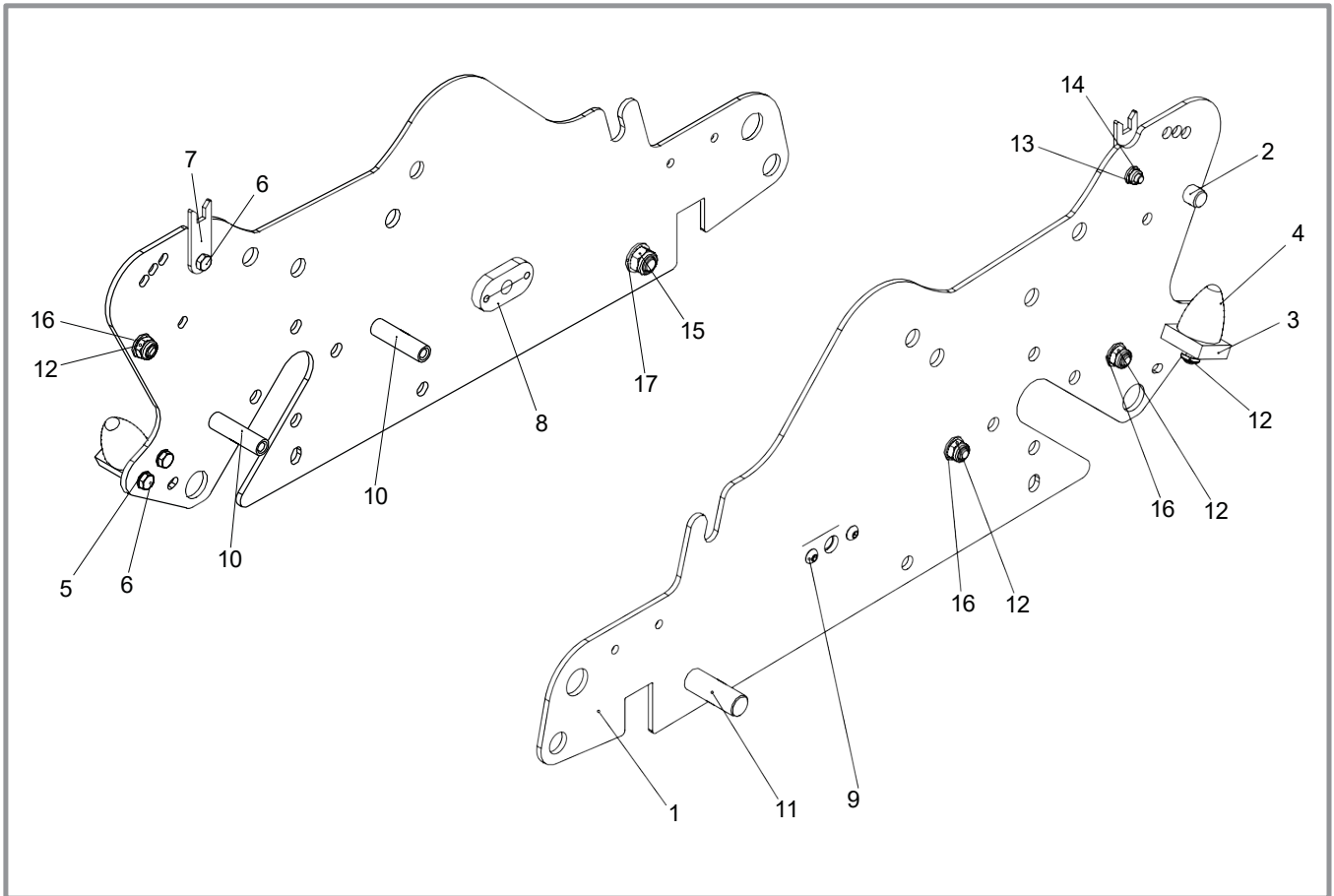
1.02

Chassis - LH Side Plate (800020)

| Item No. | Part No. | Description | Quantity | Not Shown | | | |
|----------|----------|---|----------|-----------------------------------|---------|--|---|
| 1 | J209253 | Side Plate LH (FT) | 1 | - | J209003 | 3 Groove Drive Belt (Rear Roller) (> 08/2010) | 1 |
| 1 | J209218 | Side Plate LH (Super Six) | 1 | - | J209005 | 5 Groove Drive Belt (Cylinder) | 1 |
| 2 | 229741 | Buffer Block | 1 | - | SP11023 | 3 Groove Drive Belt (Cylinder) (08/2010 >) | 1 |
| 3 | 229742 | Buffer | 1 | | | | |
| 4 | J209072 | Chain Case Stud (> 08/2010) | 2 | Note | | | |
| 5 | J20216 | Unit Limiting Stud | 1 | SP11023 must be used with Item 26 | | | |
| 6 | J20238 | Shoulded Bearing Stud (FT) | 1 | | | | |
| 6 | J209110 | Unit Bearing Stud (Super Six) | 1 | | | | |
| 7 | J20008 | Back Plate With Hole | 1 | | | | |
| 8 | J20221 | Male Coupling | 1 | | | | |
| 9 | J209203 | Cassette Driven Pulley / Shaft | 1 | | | | |
| 10 | J209206 | Cassette Drive Bearing Housing | 1 | | | | |
| 11 | J20255 | Bearing 5205 - 3205 2RS | 1 | | | | |
| 12 | J20023 | Unit Limiting Stud | 1 | | | | |
| 13 | SP03008 | Washer M8 Form A | 3 | | | | |
| 14 | J209043 | Tensioner Back Plate | 2 | | | | |
| 15 | J209047 | Tensioner Pulley (> 08/2010) | 2 | | | | |
| 16 | J209049 | Spacer Roller Tensioner (> 08/2010) | 1 | | | | |
| 17 | SP01008 | Hex Set Screw M6 x 16 | 2 | | | | |
| 18 | SP01012 | Button Head M8 x 12 | 3 | | | | |
| 19 | SP02006 | Nut M8 Nyloc | 4 | | | | |
| 20 | SP03003 | Washer M6 Toothed | 2 | | | | |
| 21 | SP01013 | Hex Set Screw 3/8" UNF x 2" | 1 | | | | |
| 22 | SP02015 | Nut 3/8" UNF | 3 | | | | |
| 23 | SP01057 | Screw 3/8" UNF x 3 1/4" (> 08/2010) | 1 | | | | |
| 24 | SP02008 | Nut M10 Nyloc | 2 | | | | |
| 25 | SP03011 | Washer M10 Form A | 2 | | | | |
| 26 | 230490 | Belt Tensioner (< 08/2010) | 1 | | | | |
| 27 | 230493 | Pulley Retainer (< 08/2010) | 1 | | | | |
| 28 | J209047 | Tensioner Pulley (< 08/2010) | 1 | | | | |
| 29 | SP01056 | CSK Cap Head M6 x 25 (< 08/2010) | 1 | | | | |
| 30 | SP02006 | Nut M8 Nyloc (< 08/2010) | 1 | | | | |
| 31 | SP03008 | Washer M8 Form A (< 08/2010) | 1 | | | | |
| 32 | 800222 | Belt Tensioner Assembly (< 08/2010) | 1 | | | | |
| | | (Includes Items 26, 27, 28, 29, 30, 31) | | | | | |

Note

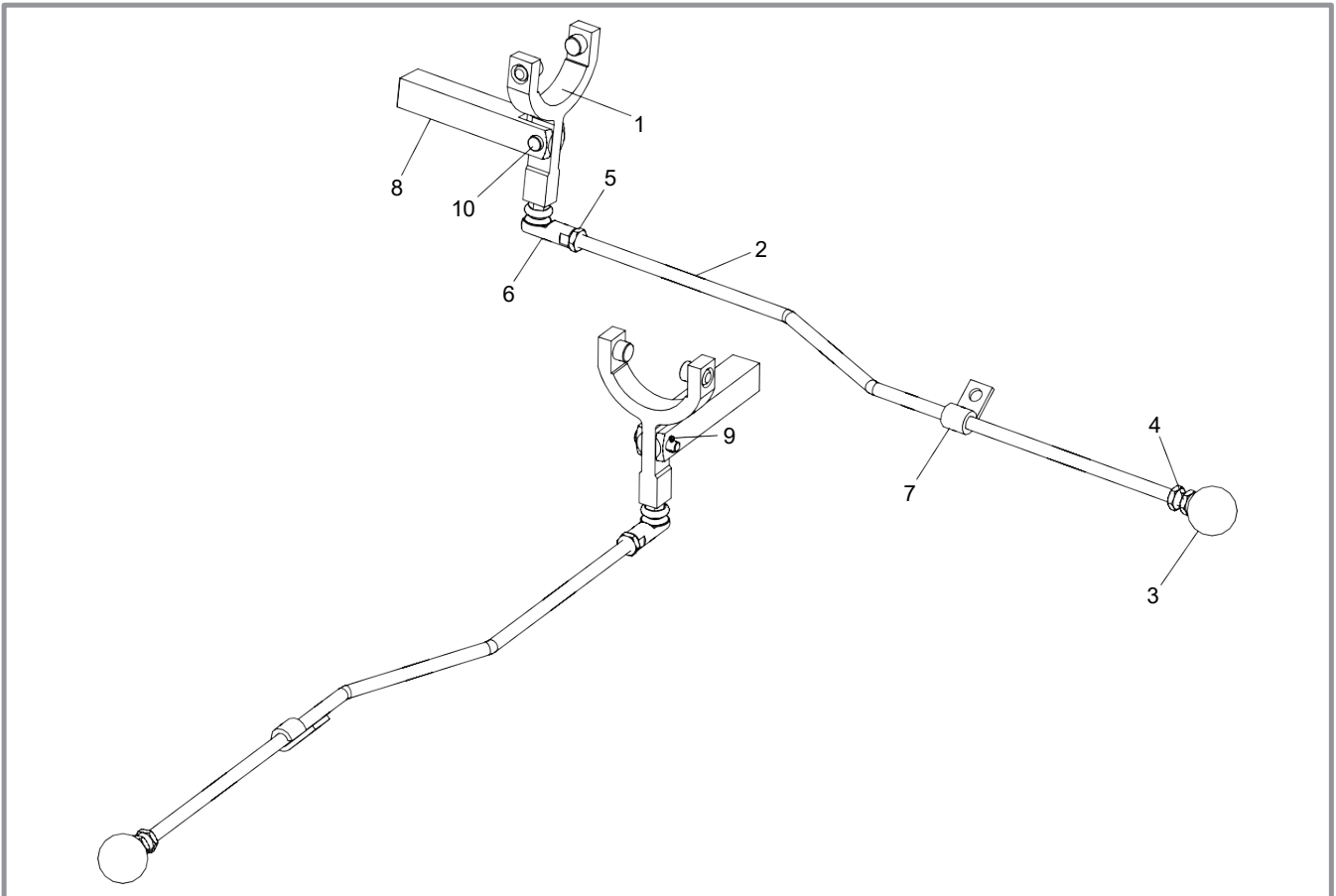
SP11023 must be used with Item 26



1.03

Chassis - RH Side Plate (800021)

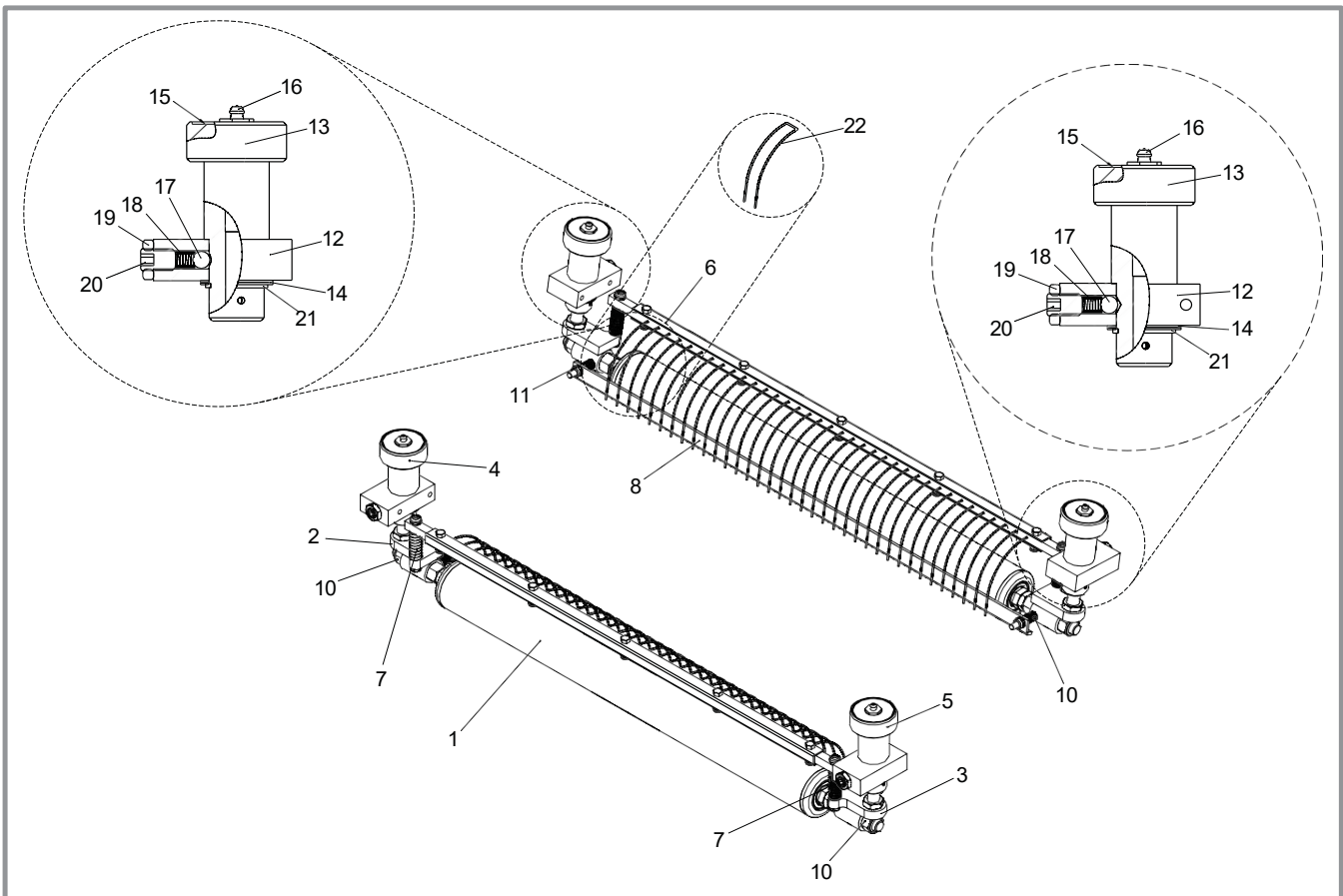
| Item No. | Part No. | Description | Quantity |
|----------|----------|-------------------------------|----------|
| 1 | J209254 | Side Plate RH (FT) | 1 |
| 1 | 209219 | Side Plate RH (Super Six) | 1 |
| 2 | J20023 | Unit Limiting Stud | 1 |
| 3 | 229741 | Buffer Block | 1 |
| 4 | 229742 | Buffer | 1 |
| 5 | SP03003 | Washer M6 Toothed | 2 |
| 6 | SP01008 | Hex Set Screw M6 x 16 | 3 |
| 7 | J209229 | Clutch Rod Stop | 1 |
| 8 | J209078 | Retaining Screw Plate | 1 |
| 9 | SP01016 | Button Head M6 x 12 | 2 |
| 10 | J20207 | Stud Brake Band Cover | 2 |
| 11 | J20237 | Unit Bearing Stud (FT) | 1 |
| 11 | J209110 | Unit Bearing Stud (Super Six) | 1 |
| 12 | SP02006 | Nut M8 Nyloc | 4 |
| 13 | SP02004 | Nut M6 Nyloc | 1 |
| 14 | SP03010 | Washer M6 Form A | 1 |
| 15 | SP02008 | Nut M10 Nyloc | 1 |
| 16 | SP03008 | Washer M8 Form A | 3 |
| 17 | SP03011 | Washer M10 Form A | 1 |



2.01

Cutter Engagement - Main Assembly

| Item No. | Part Number | Description | Quantity |
|----------|-------------|----------------------------|----------|
| 1 | J209230 | Dog Clutch Fork Assy. | 1 |
| 2 | J179231 | 17" Clutch Control Rod | 1 |
| 2 | J209231 | 20" Clutch Control Rod | 1 |
| 2 | J249231 | 24" Clutch Control Rod | 1 |
| 3 | J20017 | Knob - Red | 1 |
| 4 | J209024 | Nut 5/16 BSF Lock (Thin) | 2 |
| 5 | J209026 | Nut 5/16 UNF Lock (Thin) | 1 |
| 6 | J209019 | Rod End | 1 |
| 7 | J209232 | Bracket Control Rod | 1 |
| 8 | J209226 | Clutch Fork Pivot Mounting | 1 |
| 9 | J209021 | Split Pin 1/16" x 1/2" | 1 |
| 10 | J209020 | Pin Clevis | 1 |



3.01

FT Front Roller - Main Assembly

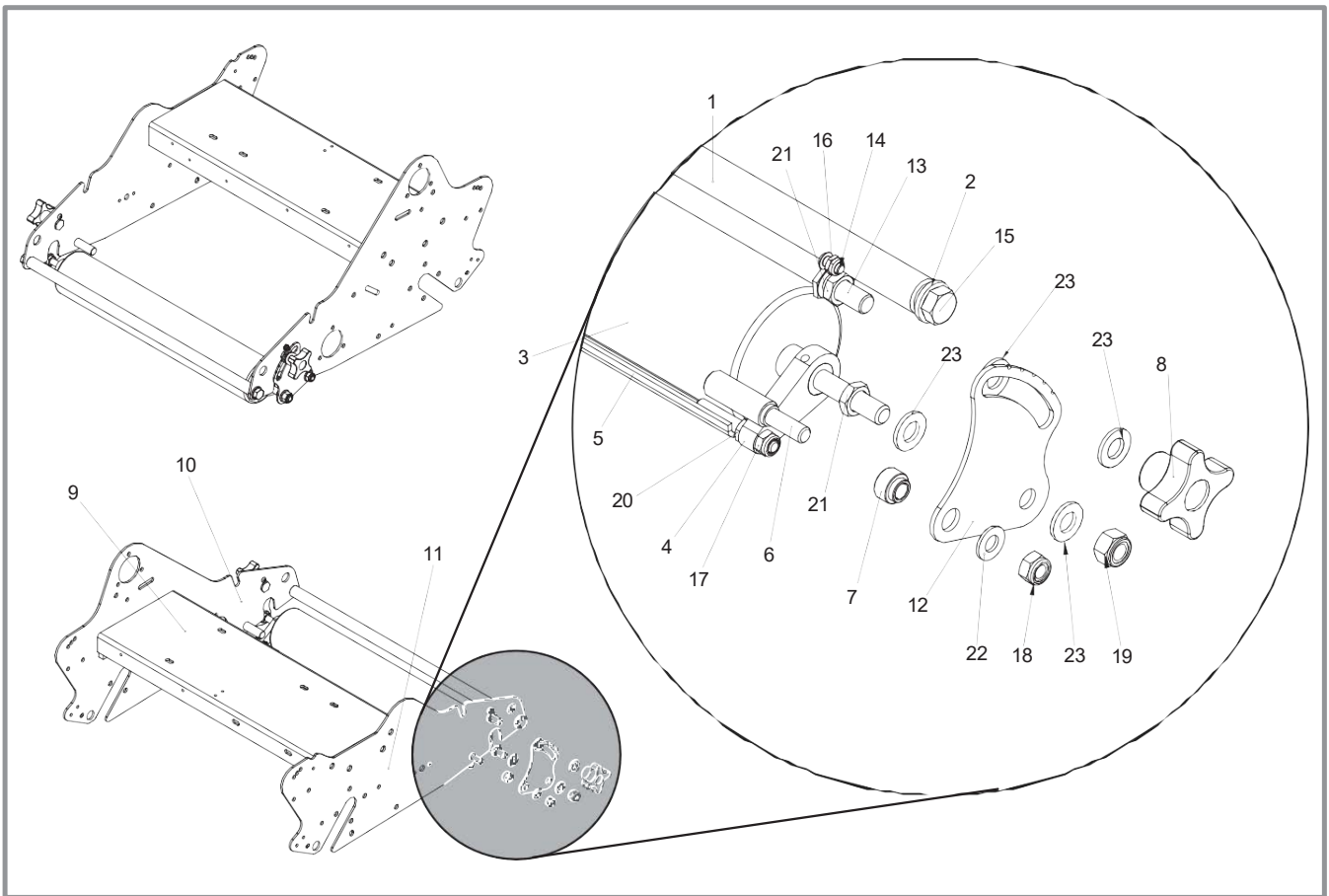
| Item No. | Part No. | Description | Quantity | Not Shown | | | |
|----------|----------|----------------------------------|----------|-----------|--------|------------------------|---|
| 1 | 800002 | Front Roller Assy 17" | 1 | - | J17502 | Front Roller Shaft 17" | 1 |
| 1 | 800502 | Front Roller Assy 20" | 1 | - | J20502 | Front Roller Shaft 20" | 1 |
| 1 | 800503 | Front Roller Assy 24" | 1 | - | J24502 | Front Roller Shaft 24" | 1 |
| 2 | J20522 | End Block RH | 1 | | | | |
| 3 | J20521 | End Block LH | 1 | | | | |
| 4 | 800149 | Click Height Adjuster RH | 1 | | | | |
| 5 | 800148 | Click Height Adjuster LH | 1 | | | | |
| 6 | 800182 | Comb Bar Sub Assy 17" | 1 | | | | |
| 6 | 800180 | Comb Bar Sub Assy 20" | 1 | | | | |
| 6 | 800181 | Comb Bar Sub Assy 24" | 1 | | | | |
| 7 | J20510 | Spring Comb Bar | 2 | | | | |
| 8 | J17250 | Front Roller Scraper Bar 17" | 1 | | | | |
| 8 | J20250 | Front Roller Scraper Bar 20" | 1 | | | | |
| 8 | J24250 | Front Roller Scraper Bar 24" | 1 | | | | |
| 9 | J20505 | Spring Scraper | 2 | | | | |
| 10 | SP02010 | Nut M12 Nyloc | 2 | | | | |
| 11 | SP02004 | Nut M6 Nyloc | 4 | | | | |
| 12 | J20517 | Ht. Adjuster Block | 1 | | | | |
| 13 | J20518 | Height Adjuster Knob | 1 | | | | |
| 14 | 228092 | Shim Id 25.8 x 1 Thk | 2 | | | | |
| 15 | J20519 | Decal Height Of Cut (> 12/2012) | 1 | | | | |
| 15 | 230516 | Decal Height Of Cut (01/2013 >) | 1 | | | | |
| 16 | J20528 | Grease Nipple 1/4" Bsp | 1 | | | | |
| 17 | J20525 | Steel Ball 8mm | 1 | | | | |
| 18 | J20526 | Spring | 1 | | | | |
| 19 | SP02013 | Nut M10 Lock (Thin) | 1 | | | | |
| 20 | SP01018 | Grub Screw M10 x 16 | 1 | | | | |
| 21 | SP07007 | Circlip D1460 - 25 | 1 | | | | |
| 22 | J20509 | Comb Tine | AR | | | | |

Not Shown

| | | | |
|---|---------|---------------------------|---|
| - | SP01016 | Button Head Screw M6 x 12 | 4 |
| - | J209105 | Front Roller Bearings | 2 |
| - | J209073 | Front Roller Oil Seal | 2 |



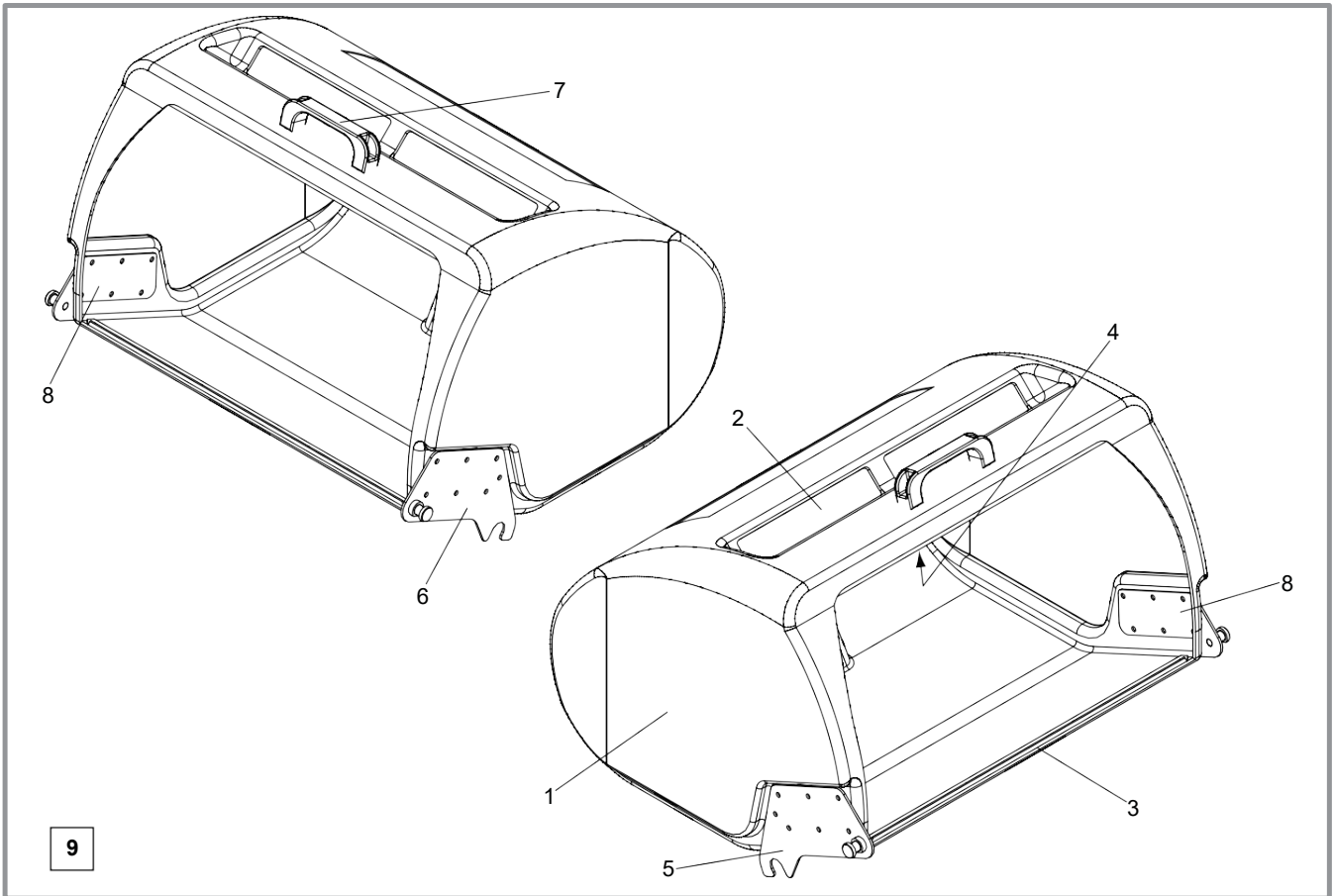
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3.02

Super Six Front Roller - Main Assembly

| Item No. | Part No. | Description | Quantity |
|----------|----------|-----------------------------|----------|
| 1 | J20235 | 20" Front Cross Bar | 1 |
| 1 | J24235 | 24" Front Cross Bar | 1 |
| 2 | J20292 | Collar Front Tie Bar | 2 |
| 3 | J20550 | 20" Front Roller | 1 |
| 3 | J24550 | 24" Front Roller | 1 |
| 4 | J20551 | Scraper Bar Ear | 2 |
| 5 | J20552 | 20" SS Scraper Bar | 1 |
| 5 | J24552 | 24" SS Scraper Bar | 1 |
| 6 | J209110 | Unit Bearing Stud | 2 |
| 7 | J209111 | Bush Quadrant | 2 |
| 8 | J209112 | Knob Plastic | 2 |
| 9 | J179215 | Engine Bed 17" | 1 |
| 9 | J209215 | Engine Bed 20" | 1 |
| 9 | J249215 | Engine Bed 24" | 1 |
| 10 | J209218 | Side Plate L.H. S.S. | 1 |
| 11 | J209219 | Side Plate R.H. S.S. | 1 |
| 12 | J209225 | Roller Quadrant S.S. | 2 |
| 13 | J209252 | Lock Screw | 2 |
| 14 | SP01016 | Button Head M6 x 12 | 2 |
| 15 | SP01053 | Hex Set Screw 1/2" UNF x 1" | 2 |
| 16 | SP02004 | Nut M6 Nyloc | 2 |
| 17 | SP02006 | Nut M8 Nyloc (T) | 2 |
| 18 | SP02008 | Nut M10 Nyloc (T) | 2 |
| 19 | SP02010 | Nut M12 Nyloc (T) | 2 |
| 20 | SP02012 | M10 Thin Lock Nut | 2 |
| 21 | SP02014 | Nut M12 Lock (Thin) | 4 |
| 22 | SP03011 | Washer M10 Form A | 2 |
| 23 | SP03012 | Washer M12 Form A | 8 |



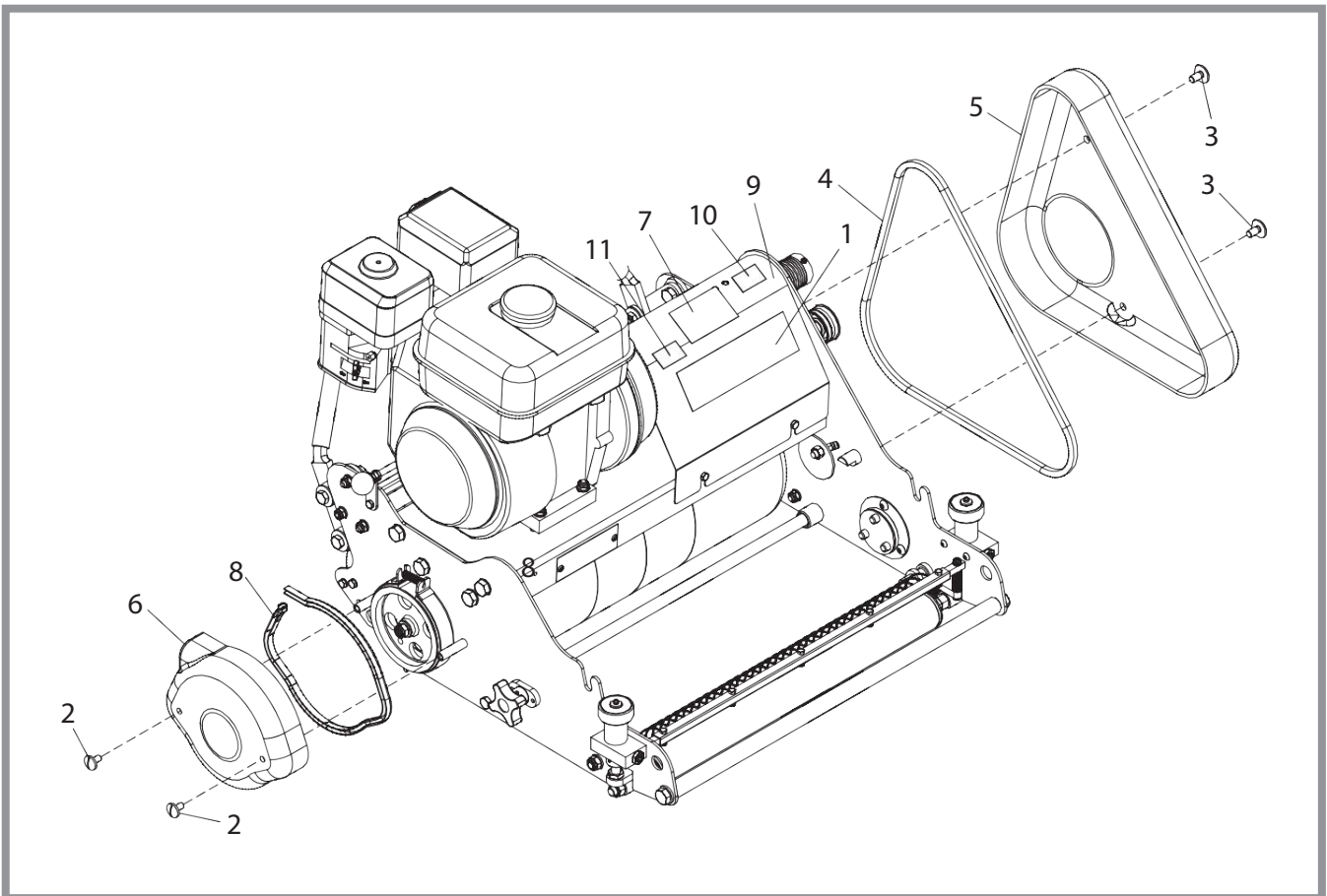
4.01

Grassbox - Main Assembly

| Item No. | Part No. | Description | Quantity |
|----------|----------|---------------------------|----------|
| 1 | J179237 | FT430 Grassbox Moulding | 1 |
| 1 | J209237 | FT510 Grassbox Moulding | 1 |
| 1 | J249237 | FT610 Grassbox Moulding | 1 |
| 2 | J209062 | Mesh (FT510) | 1 |
| 2 | J249062 | Mesh (FT610) | 1 |
| 3 | J17257 | 17" Grassbox Edging Strip | 1 |
| 3 | J209063 | 20" Grassbox Edging Strip | 1 |
| 3 | J249063 | 24" Grassbox Edging Strip | 1 |
| 4 | J209064 | Handle Plate Grass Box | 1 |
| 5 | J209222 | LH Grassbox Wing | 1 |
| 6 | J209224 | RH Grassbox Wing | 1 |
| 7 | J209243 | Handle Grassbox | 1 |
| 8 | J209060 | Grassbox Support Plate | 2 |
| 9 | 800008 | 17" Grassbox Complete | 1 |
| 9 | 800017 | 20" Grassbox Complete | 1 |
| 9 | 800042 | 24" Grassbox Complete | 1 |

Not Shown

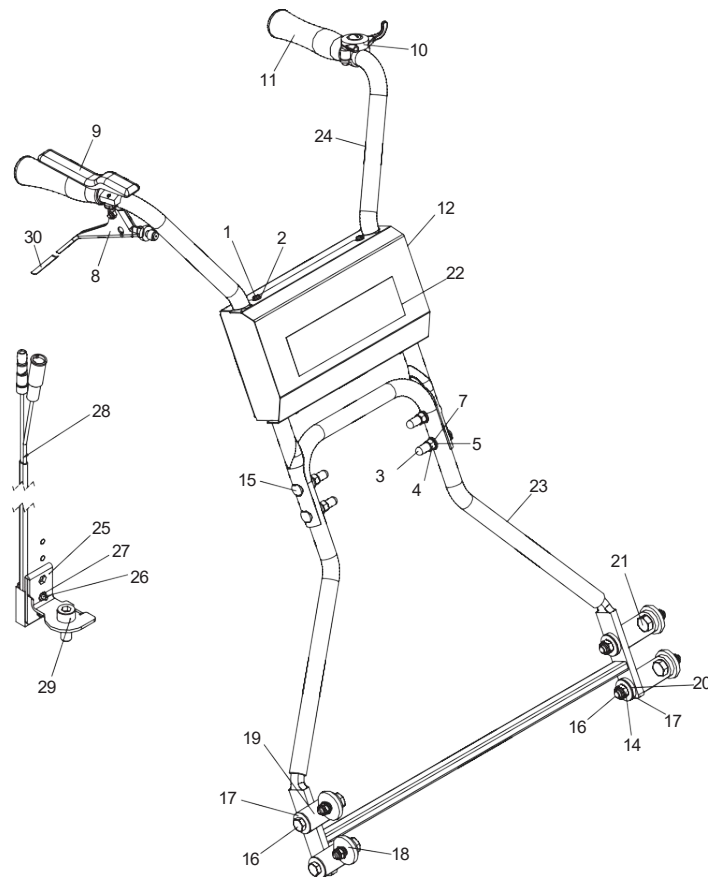
| | | |
|---------|--|---|
| SP04002 | Screw M6 x 16 Slotted (To it Item 5 & 6) | 8 |
| SP02004 | Nut M6 Nyloc (To it Item 5 & 6) | 8 |
| SP01008 | Hex Set Screw M6 x 16 (To it Item 7) | 2 |
| SP03007 | Washer M6 x 20 (To it Item 7) | 2 |



5.01

Guards - Main Assembly

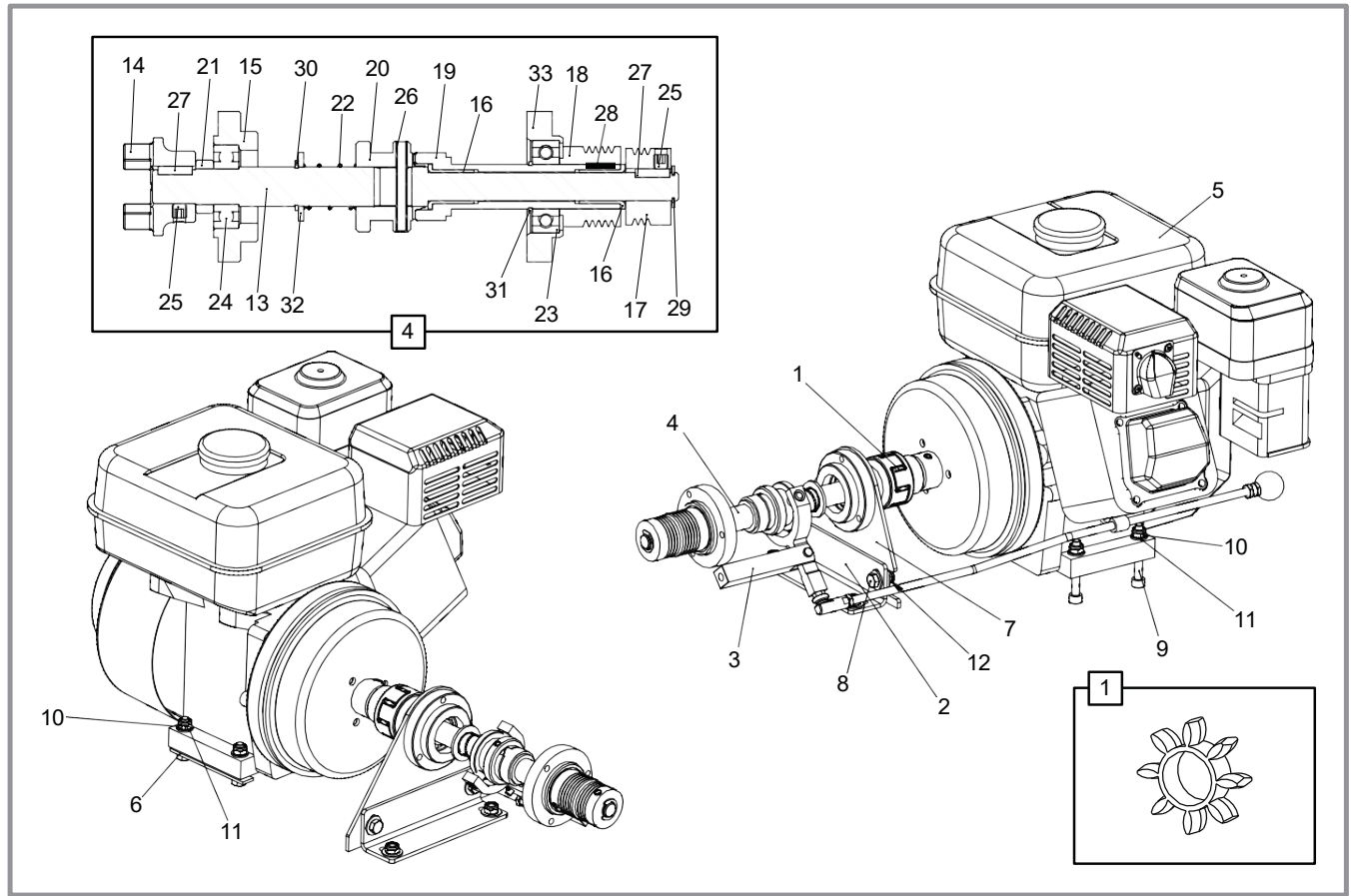
| Item No. | Part No. | Description | Quantity |
|----------|----------|------------------------|----------|
| 1 | B32902 | Decal Dennis | 2 |
| 2 | J209074 | Brake Band Cover Screw | 2 |
| 3 | 194946 | Chain Case Screw | 2 |
| 4 | 228031 | Belt Guard Seal | 1.23m |
| 5 | J20712 | Belt Guard | 1 |
| 6 | J20206 | Brake Band Cover | 1 |
| 7 | B32903 | Decal Union Jack | 1 |
| 8 | 228031 | Brake Band Seal | 0.62m |
| 9 | J179221 | Transmission Cover 17" | 1 |
| 9 | J209221 | Transmission Cover 20" | 1 |
| 9 | J249221 | Transmission Cover 24" | 1 |
| 10 | B32904 | Oil Daily Decal | 1 |
| 11 | 229605 | 98dB Decal | 1 |



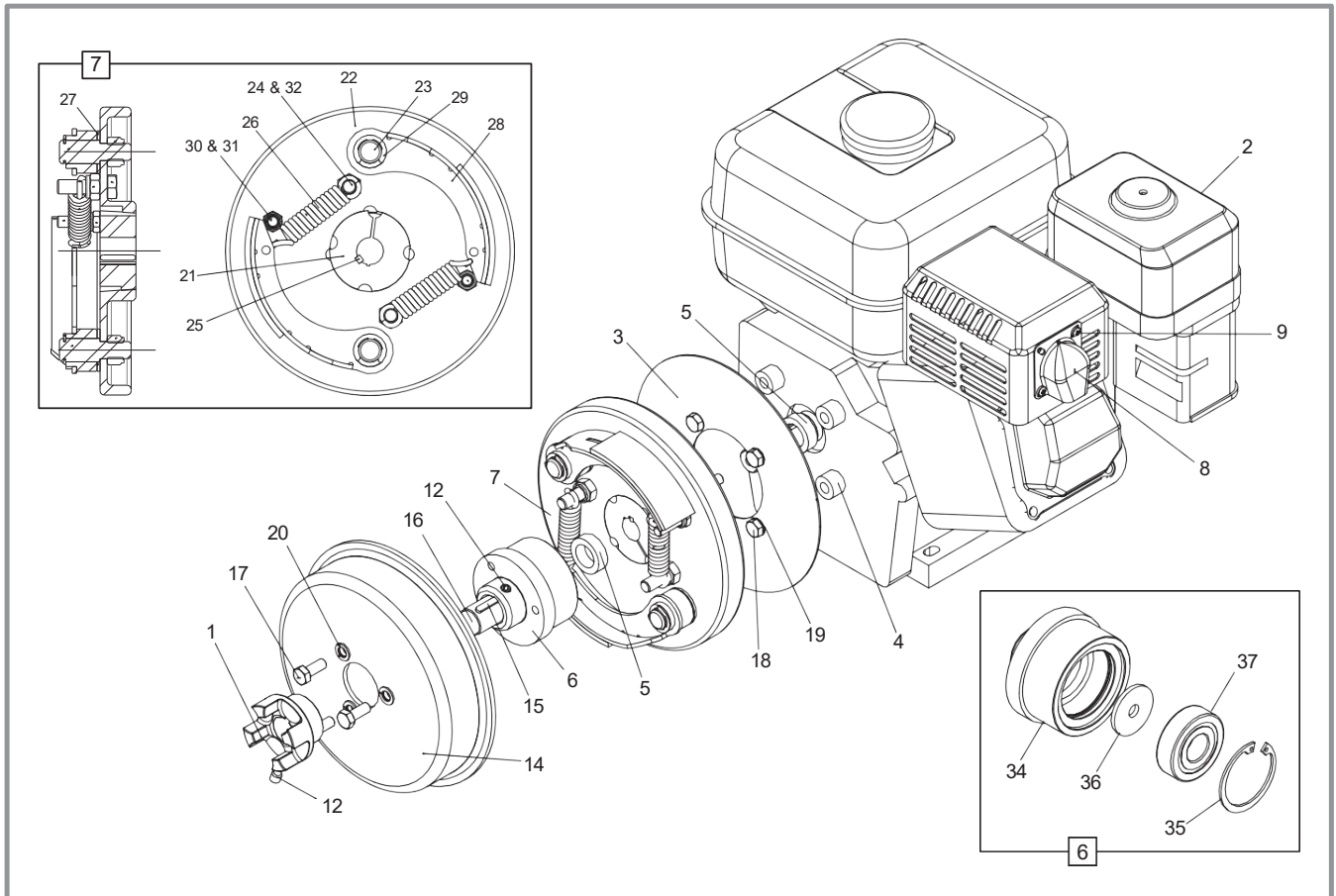
6.01

Handle - Main Assembly

| Item No. | Part No. | Description | Quantity | Not Shown | |
|----------|----------|---------------------------------|----------|-----------|---|
| 1 | SP04001 | Screw M5 x 16 Slotted | 4 | - | J20112 Throttle Cable (Honds MKII & Kubota MKI) 1 |
| 2 | SP03009 | Washer M5 Form A | 4 | - | J20113 Brake Band Cable 1 |
| 3 | 228094 | End Tip 5/16" | 4 | - | J20123 Electric Loom (Deadmans) (> 02/2012) 1 |
| 4 | SP02005 | Nut M8 STD | 4 | - | SP12021 Electric Loom (Deadmans) (< 03/2012) 1 |
| 5 | SP03004 | Washer M8 Toothed | 3 | - | J20110 Brake Band Lever Grip 1 |
| 6 | SP03004 | Washer M8 Toothed | 1 | | |
| 7 | SP03008 | Washer M8 Form A | 8 | | |
| 8 | J20109 | Brake Band Lever | 1 | | |
| 9 | 800514 | Deadmans Handle Kit (> 02/2012) | 1 | | |
| 9 | SP12010 | Deadmans Lever (< 03/2012) | 1 | | |
| 10 | J20108 | Throttle Control Lever | 1 | | |
| 11 | J20107 | Handle Grip Rubber | 2 | | |
| 12 | 230013 | Console Cover (No Switch) | 1 | | |
| 13 | SP02006 | Nut M8 Nyloc | 4 | | |
| 14 | SP02008 | Nut M10 Nyloc | 4 | | |
| 15 | 228093 | Bolt Saddle M8 x 43 | 4 | | |
| 16 | SP01020 | Hex Set Screw M10 x 40 | 4 | | |
| 17 | SP03018 | Washer M10 Form G | 8 | | |
| 18 | 229724 | Arm Pivot Bush | 4 | | |
| 19 | 229725 | Pivot Arm Lower Handle | 4 | | |
| 20 | 229726 | Bush Handle Pivot | 4 | | |
| 21 | 229736 | Pivot Bolt | 4 | | |
| 22 | B32902 | Decal Dennis | 1 | | |
| 23 | 230035 | Handle Lower 17" W.A. | 1 | | |
| 23 | 230020 | Handle Lower 20" W.A. | 1 | | |
| 23 | 230030 | Handle Lower 24" W.A. | 1 | | |
| 24 | 230040 | Handle Upper W.A. | 1 | | |
| 25 | 230487 | Micro Switch Bracket | 1 | | |
| 26 | SP01070 | Cap Head M2 x 12 | 1 | | |
| 27 | SP02032 | Nut M2 STD | 1 | | |
| 28 | SP012022 | Electrical Loom Micro Switch | 1 | | |
| 29 | SP01081 | Cap Head M5 x 12 | 1 | | |
| 30 | J20110 | Lever Grip | 1 | | |



| Item No. | Part No. | Description | Quantity | Item No. | Part No. | Description | Quantity |
|----------|----------|--------------------------------------|----------|----------|-----------|---|----------|
| 1 | 228103 | Coupling Element | 1 | 28 | J209029 | Key 3/16" x 3/16" x 7/8" Rd End | 1 |
| 2 | 230004 | Support Bracket | 1 | 29 | J209106 | E Clip 16mm | 1 |
| 3 | See 2.01 | Cutter Engagment Assy (FT430) | 1 | 30 | 228104 | Circlip N1460-0087 | 1 |
| 3 | See 2.01 | Cutter Engagment Assy (FT510) | 1 | 31 | SP07007 | Circlip D1460-25 | 1 |
| 3 | See 2.01 | Cutter Engagment Assy (FT610) | 1 | 32 | 228106 | Washer M22 Form A | 1 |
| 4 | 800007 | 17" Top Drive Assembly | 1 | 33 | J209245 | Top Drive Bearing Housing (FT430) | 1 |
| 4 | 800016 | 20" Top Drive Assembly | 1 | 33 | J209211 | Top Drive Bearing Housing (FT510 & 610) | 1 |
| 4 | 800041 | 24" Top Drive Assembly | 1 | | | | |
| 5 | 800024 | Engine Assembly | 1 | | Not Shown | | |
| 6 | J209050 | Fixing Plate Assy | 1 | - | J209040 | Bearing (6005) (FT430) | 2 |
| 7 | J179051 | Support Plate (17") | 1 | | | | |
| 7 | J209053 | Support Plate (20" & 24") | 1 | | | | |
| 8 | SP01009 | Hex Set Screw M8 x 20 | 2 | | | | |
| 9 | SP01026 | Cap Head M8 x 60 | 2 | | | | |
| 10 | SP02006 | Nut M8 Nyloc | 8 | | | | |
| 11 | SP03008 | Washer M8 Form A | 4 | | | | |
| 12 | SP03015 | Washer M8 Form C | 6 | | | | |
| 13 | J179240 | Top Drive Shaft 17" | 1 | | | | |
| 13 | J209240 | Top Drive Shaft 20" | 1 | | | | |
| 13 | J249240 | Top Drive Shaft 24" | 1 | | | | |
| 14 | 228011 | Coupling Half (3/4") | 1 | | | | |
| 15 | J20051 | Bearing Housing (6204) (FT510 & 610) | 1 | | | | |
| 16 | J209039 | Bush Flanged | 2 | | | | |
| 17 | J209200 | 3 Groove Top Drive Pulley | 1 | | | | |
| 18 | J209202 | 5 Groove Top Drive Pulley | 1 | | | | |
| 19 | J209212 | Inner Dog Tube | 1 | | | | |
| 19* | 800217 | Inner Dog Tube c/w Bushes | 1 | | | | |
| 20 | J209214 | Sliding Dog | 1 | | | | |
| 21 | J209241 | Bearing Spacer | 1 | | | | |
| 22 | J209246 | Top Drive Spring | 1 | | | | |
| 23 | 62662 | Bearing 6205-2RS 3 | 1 | | | | |
| 24 | J20052 | Bearing 6204-2RS 3 | 1 | | | | |
| 25 | J20467 | Grub Screw M8 x 8 | 3 | | | | |
| 26 | J209104 | Pin Spirol M6 x 50 | 1 | | | | |
| 27 | J209030 | Key 3/16" x 3/16" x 3/4" Rd End | 2 | | | | |



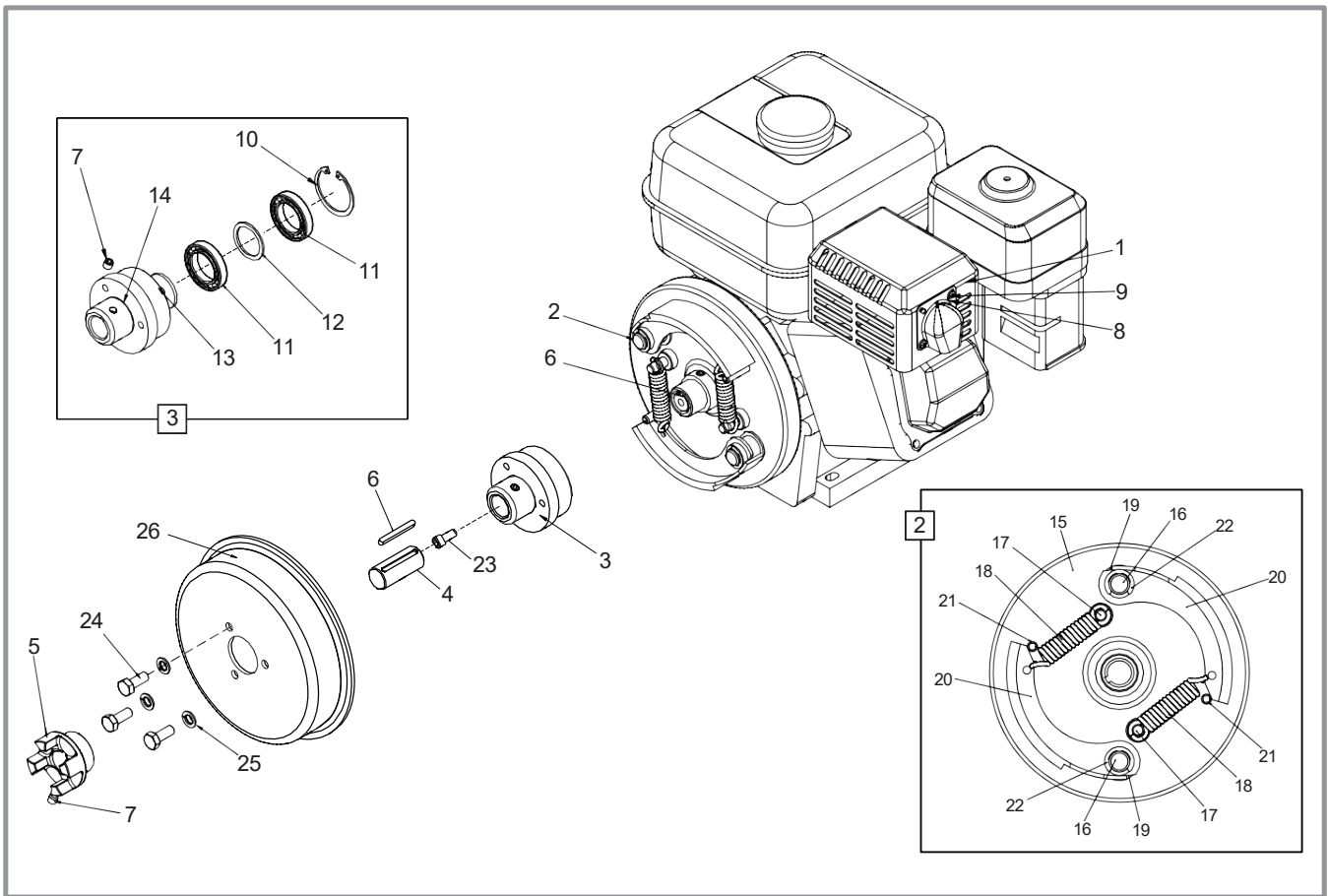
7.02

Engine & Drive Kit - Centrifugal Clutch 06/2013 >

| Item No. | Part No. | Description | Quantity | Item No. | Part No. | Description | Quantity |
|----------|----------|-----------------------------------|----------|----------|----------|-----------------------|----------|
| 1 | 228102 | Coupling Half (7/8") | 1 | 34 | 230534 | Bearing Hub Clutch | 1 |
| 2 | 229901 | Engine 5.5 Hp Honda Gx160 Q9 | 1 | 35 | J209006 | Circlip 47 M1308-0470 | 1 |
| 3 | 230530 | Backing Plate Flywheel | 1 | 36 | J209249 | Washer 9 X 35 X 3 | 1 |
| 4 | 230531 | Spacer Back Plate | 4 | 37 | Sp06020 | Bearing RLS6-2RS | 1 |
| 5 | 230535 | Shaft Spacer | 2 | | | | |
| 6 | 800026 | Clutch Hub Assembly | 1 | | | | |
| 7 | 800027 | Fly Wheel Assembly | 1 | | | | |
| 8 | J20367 | Exhaust Deflector | 1 | | | | |
| 9 | J20368 | Screw M4 Exhaust Deflector | 2 | | | | |
| 10 | J20369 | E Clip 5Mm | 1 | | | | |
| 11 | J20376 | Throttle Clamp | 1 | | | | |
| 12 | J20467 | Grub Screw M8 X 8 | 2 | | | | |
| 13 | J209007 | Cap Head 5/16" X 3/4" | 1 | | | | |
| 14 | J209017 | Clutch Drum Machined | 1 | | | | |
| 15 | J209025 | Key 3/16" X 3/16" X 1 3/4" Rd End | 1 | | | | |
| 16 | J209233 | Stub Shaft | 1 | | | | |
| 17 | Sp01009 | Hex Set Screw M8 X 20 | 3 | | | | |
| 18 | Sp01093 | Hex Set Screw 5/16" Unf X 1" | 4 | | | | |
| 19 | Sp03004 | Washer M8 Toothed | 4 | | | | |
| 20 | Sp03029 | Washer M8 Spring Lock | 3 | | | | |
| 21 | 228001 | Tapered Bush 1610 - 3/4" | 1 | | | | |
| 22 | 230532 | Flywheel | 1 | | | | |
| 23 | 230533 | Clutch Shoe Pivot | 2 | | | | |
| 24 | E1-1119 | Hex Set Screw M10 X 35 | 2 | | | | |
| 25 | J20457 | Key 3/16" X 3/16" X 1" Rd End | 1 | | | | |
| 26 | J209011 | Tension Spring | 2 | | | | |
| 27 | J209012 | Washer M16 Form B | 2 | | | | |
| 28 | J209013 | Clutch Shoe Assy | 2 | | | | |
| 29 | J209106 | E Clip 16Mm | 2 | | | | |
| 30 | Sp01036 | Hex Set Screw M8 X 35 | 2 | | | | |
| 31 | Sp02006 | Nut M8 Nyloc (T) | 2 | | | | |
| 32 | Sp02008 | Nut M10 Nyloc (T) | 2 | | | | |
| 33 | Sp02010 | Nut M12 Nyloc (T) | 2 | | | | |

Note

For Throttle Cable, See Section 6.01



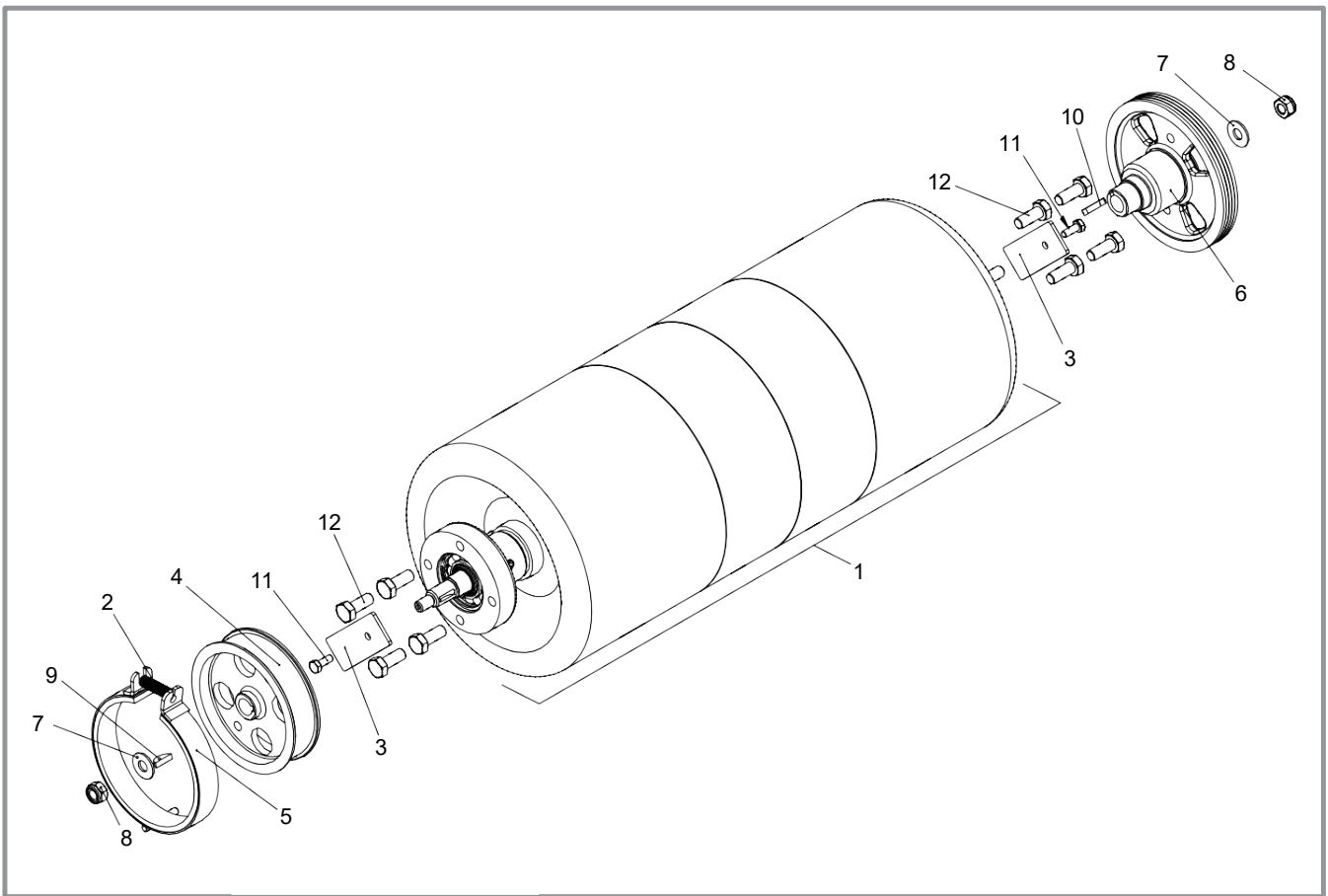
7.03

Engine & Drive Kit - Centrifugal Clutch > 06/2013

| Item No. | Part No. | Description | Quantity |
|----------|----------|------------------------------|----------|
| 1 | 229900 | Engine (Honda GX120) | 1 |
| 1 | 229901 | Engine (Honda GX160) | 1 |
| 2 | 800027 | Flywheel Assembly | 1 |
| 3 | 800026 | Clutch Hub Assembly | 1 |
| 4 | J209233 | Stub Shaft | 1 |
| 5 | 228102 | Coupling Shaft (7/8") | 1 |
| 6 | J209025 | Key (3/16" x 3/16" x 1 3/4") | 2 |
| 7 | J20467 | Grub Screw (M8 x 8) | 3 |
| 8 | J20367 | Exhaust Deflector | 1 |
| 9 | J20368 | Exhaust Deflector Screw (M4) | 2 |
| 10 | J209006 | Circlip (47 M1308-0470) | 1 |
| 11 | J209247 | Bearing 6906 2RS | 2 |
| 12 | J209248 | Brg Spacer | 1 |
| 13 | J209249 | Washer (9 x 35 x 3) | 1 |
| 14 | J209004 | Bearing Hub Clutch | 1 |
| 15 | J209100 | Flywheel | 1 |
| 16 | J209101 | Clutch Shoe Pivot | 2 |
| 17 | J209102 | Shoe Spring Anchor | 2 |
| 18 | J209011 | Tension Spring | 2 |
| 19 | J209012 | Washer M16 Form B | 2 |
| 20 | J209013 | Brake Shoe | 2 |
| 21 | J209103 | Pin Slotted (M8 x 50) | 2 |
| 22 | J209106 | E Clip 16mm | 2 |
| 23 | J209007 | Cap Screw | 1 |
| 24 | SP01009 | Hex Set Screw M8 x 20 | 3 |
| 25 | SP03029 | Washer M8 Spring Lock | 3 |
| 26 | J209017 | Clutch Drum | 1 |

NOTE

For Throttle Cable, see Section 6.01



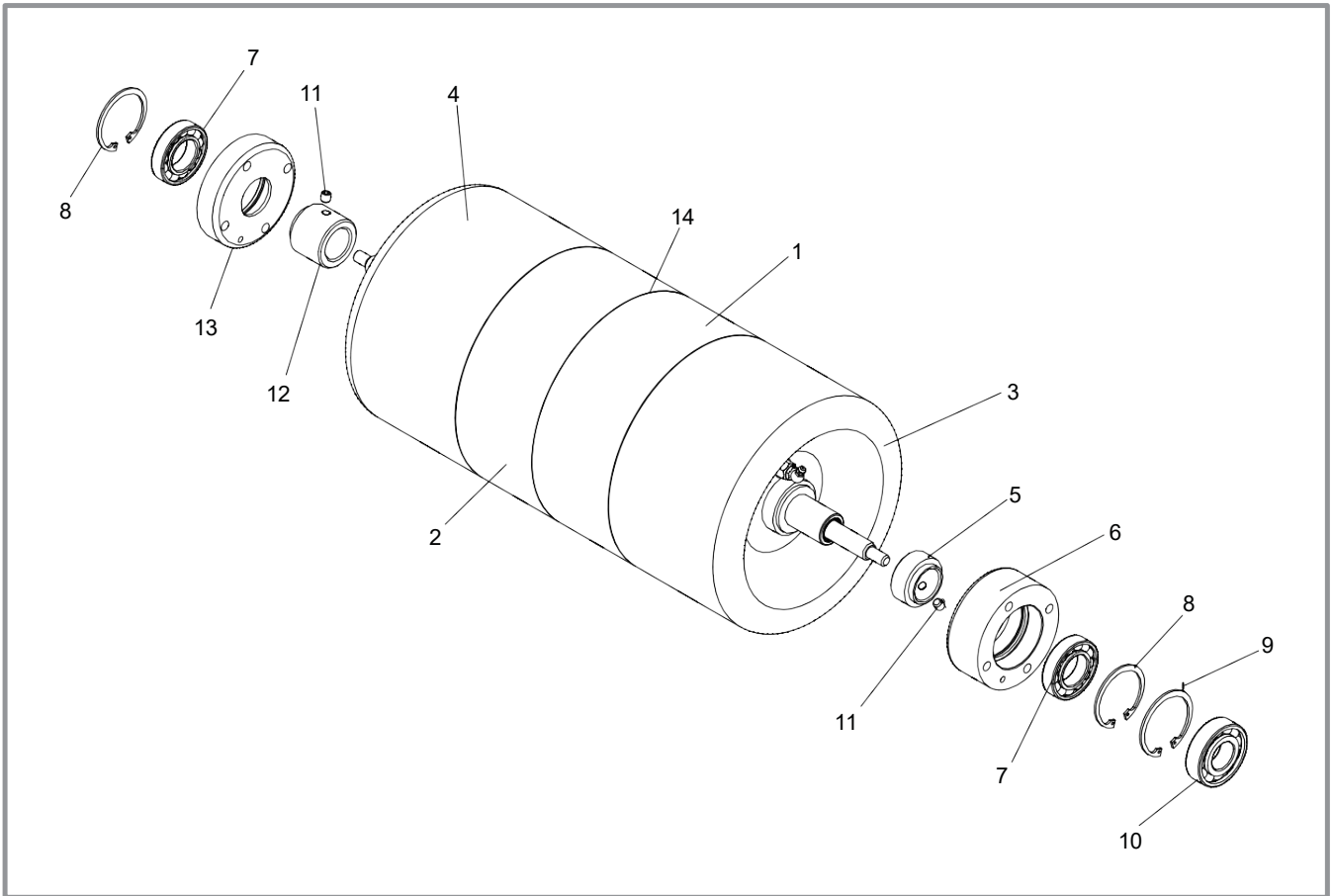
8.01

Rear Roller - Main Assembly

| Item No. | Description | Part Number | Quantity |
|----------|-------------|---------------------------------|----------|
| 1 | See 8.02 | Rear Roller Assy | 1 |
| 2 | J20119 | Spring Scraper Brake Band | 1 |
| 3 | J20256 | Roller Slot Cover Plate | 2 |
| 4 | J20461 | Brake Drum | 1 |
| 5 | J20463 | Brake Band Assy | 1 |
| 6 | J209201 | Rear Roller Driven Pulley | 1 |
| 7 | SP03016 | Washer M10 Form C | 2 |
| 8 | SP02008 | Nut M10 Nyloc | 2 |
| 9 | J20462 | Key Woodruff (606) 3/16" x 3/4" | 1 |
| 10 | J20457 | Key 3/16" x 3/16" x 1" Rd End | 1 |
| 11 | SP01008 | Hex Set Screw M6 x 16 | 2 |
| 12 | SP01035 | Hex Set Screw M10 x 25 | 8 |

NOTE

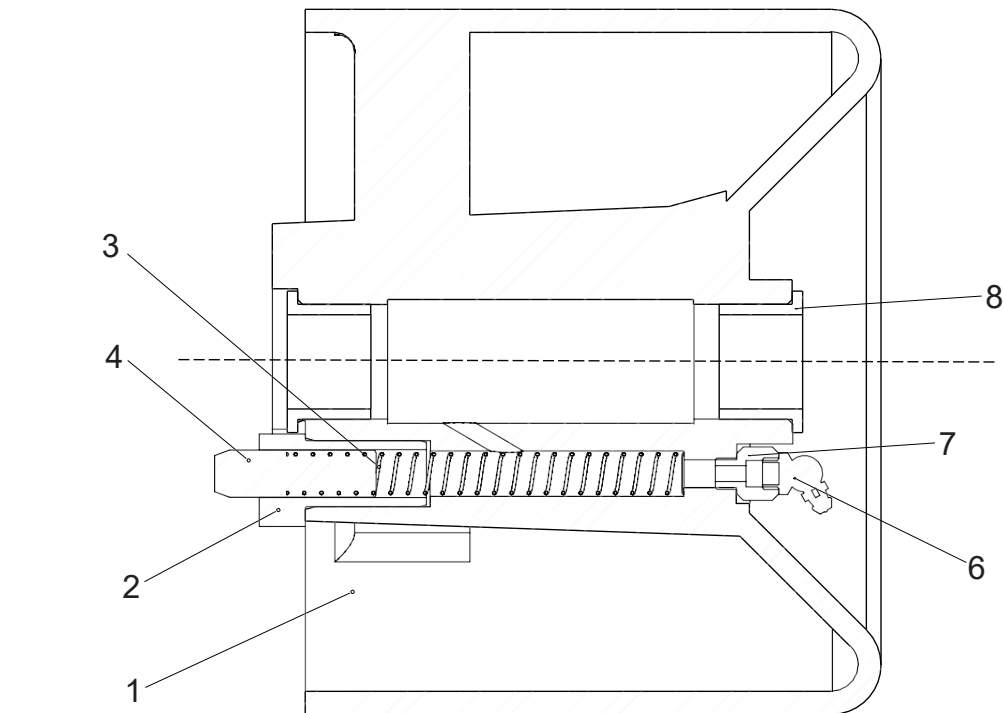
For Brake Band Cable, see Section 6.01



8.02

Rear Roller - Roller Assembly

| Item No. | Description | Part Number | Quantity |
|----------|-------------|-------------------------|----------|
| 1 | See 8.05 | RH Differential Assy | |
| 2 | See 8.04 | LH Differential Assy | |
| 3 | See 8.03 | Outer Roller Assy | |
| 4 | See 8.03 | Outer Roller Assy | |
| 5 | J20477 | LH Spacer Collar | 1 |
| 6 | J20450 | LH Bearing Housing | 1 |
| 7 | J20454 | Bearing R18 2RS | 2 |
| 8 | J20475 | Circlip Internal 54 x 2 | 2 |
| 9 | J20474 | Circlip Internal 57 x 2 | 1 |
| 10 | J20455 | Bearing RLS8 2RS | 1 |
| 11 | J20467 | Grub Screw M8 x 8 | 2 |
| 12 | J20464 | RH Spacer Collar | 1 |
| 13 | J20453 | RH Bearing Housing | 1 |
| 14 | J20494 | Gasket Rear Roller | 1 |



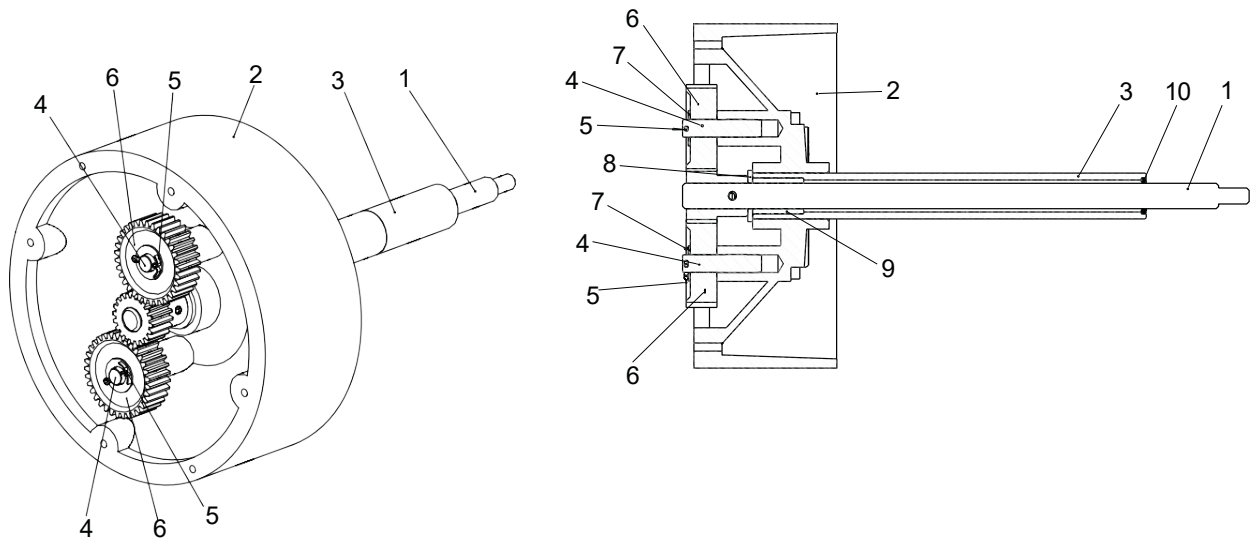
8.03

Rear Roller - Outer Roller Assembly

| Item No. | Part Number | Description | Quantity |
|----------|-------------|------------------------------------|----------|
| 1 | J179540 | 17" LH Outer Roller c/w Bush | 1 |
| 1 | J179541 | 17" RH Outer Roller c/w Bush | 1 |
| 1 | 800019L | 20" LH Outer Roller c/w Bush | 1 |
| 1 | 800019R | 20" RH Outer Roller c/w Bush | 1 |
| 1 | 800044L | 24" LH Outer Roller c/w Bush | 1 |
| 1 | 800044R | 24" RH Outer Roller c/w Bush | 1 |
| 2 | J20476 | Plunger Bush | 1 |
| 3 | J20435 | Spring Plunger | 1 |
| 4 | J20437 | Plunger Pawl | 1 |
| 6 | J20480 | Grease Nipple 67 Deg 1/8" Bsp T | 1 |
| 7 | J20481 | Grease Nipple Extension 1/8" Bsp T | 1 |
| 8 | J20473 | Roller Bush | 2 |

Not Shown

| | | | |
|---|--------|--------------------|---|
| - | J20404 | Pin Spirol M5 x 24 | 1 |
|---|--------|--------------------|---|



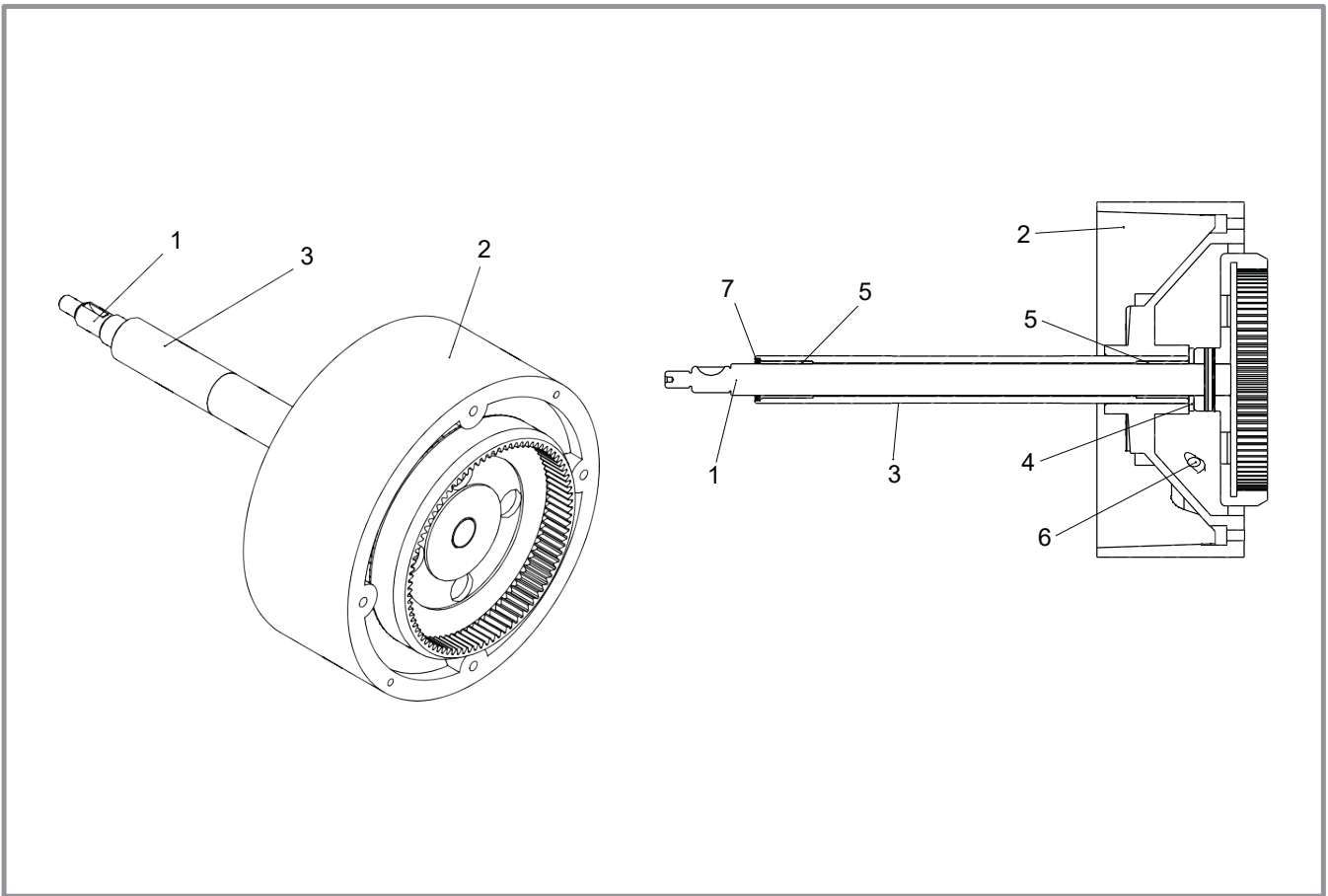
8.04

Rear Roller - LH Differential Assembly

| Item No. | Part No. | Description | Quantity |
|----------|----------|----------------------------|----------|
| 1 | 800005 | Pinion Shaft Assy (FT430) | 1 |
| 1 | 800014 | Pinion Shaft Assy (FT510) | 1 |
| 1 | 800039 | Pinion Shaft Assy (FT610) | 1 |
| 2 | J20400 | Planet Gear Case | 1 |
| 3 | J17401 | 17" Pinion Gear Case Tube | 1 |
| 3 | J20401 | 20" Pinion Gear Case Tube | 1 |
| 3 | J24401 | 24" Pinion Gear Case Tube | 1 |
| 4 | J20405 | Planet Gear Pin | 2 |
| 5 | J20406 | Split Pin 3/32" x 1" | 2 |
| 6 | J20407 | Planet Gear (33t) | 2 |
| 7 | J20408 | Washer Planet 7/16" | 2 |
| 8 | J20409 | Pinion Washer | 1 |
| 9 | J20410 | Pinion Gear Tube Bush | 1 |
| 10 | J20484 | Seal Single Lip W087.62.12 | 1 |

Not Shown

| | | | |
|---|--------|---|---|
| - | J20430 | Caphead M6 x 30 (For Assy with 8.05) | 4 |
| - | J20494 | Gasket Rear Roller (For Assy with 8.05) | 1 |



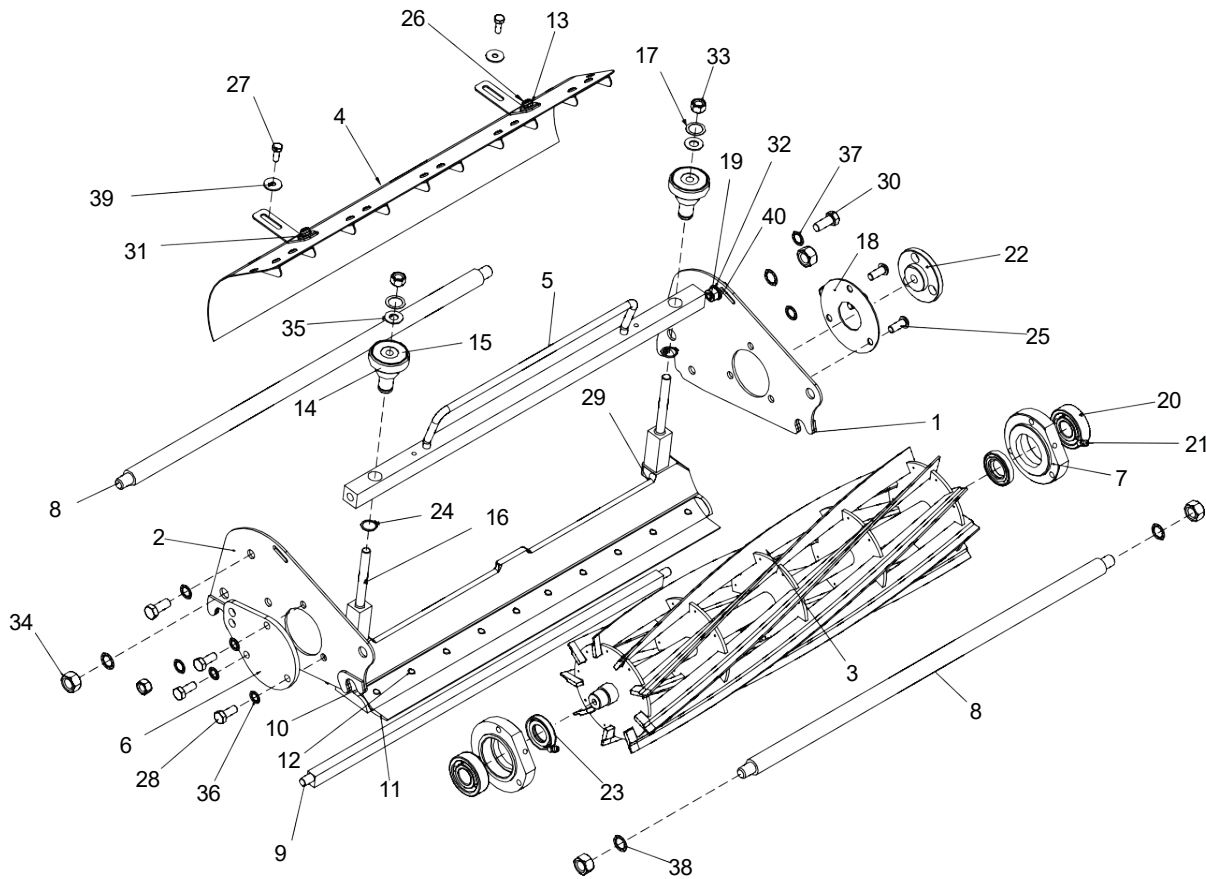
8.05

Rear Roller - RH Differential Assembly

| Item No. | Part No. | Description | Quantity |
|----------|----------|-----------------------------|----------|
| 1 | 800006 | 17" Annular Gear Shaft Assy | 1 |
| 1 | 800015 | 20" Annular Gear Shaft Assy | 1 |
| 1 | 800040 | 24" Annular Gear Shaft Assy | 1 |
| 2 | J20420 | Annular Gear Case | 1 |
| 3 | J17421 | 17" Annular Gear Case Tube | 1 |
| 3 | J20421 | 20" Annular Gear Case Tube | 1 |
| 3 | J24421 | 24" Annular Gear Case Tube | 1 |
| 4 | J20424 | Washer Annular | 1 |
| 5 | J20426 | Bush Annular Gear Tube | 2 |
| 6 | J20432 | Oil Plug (14" BSP) | 1 |
| 7 | J20482 | Seal Single Lip R21 | 1 |

Not Shown

| | | | |
|---|--------|---|---|
| - | J20430 | Caphead M6 x 30 (For Assy with 8.04) | 4 |
| - | J20494 | Gasket Rear Roller (For Assy with 8.04) | 1 |



9.01

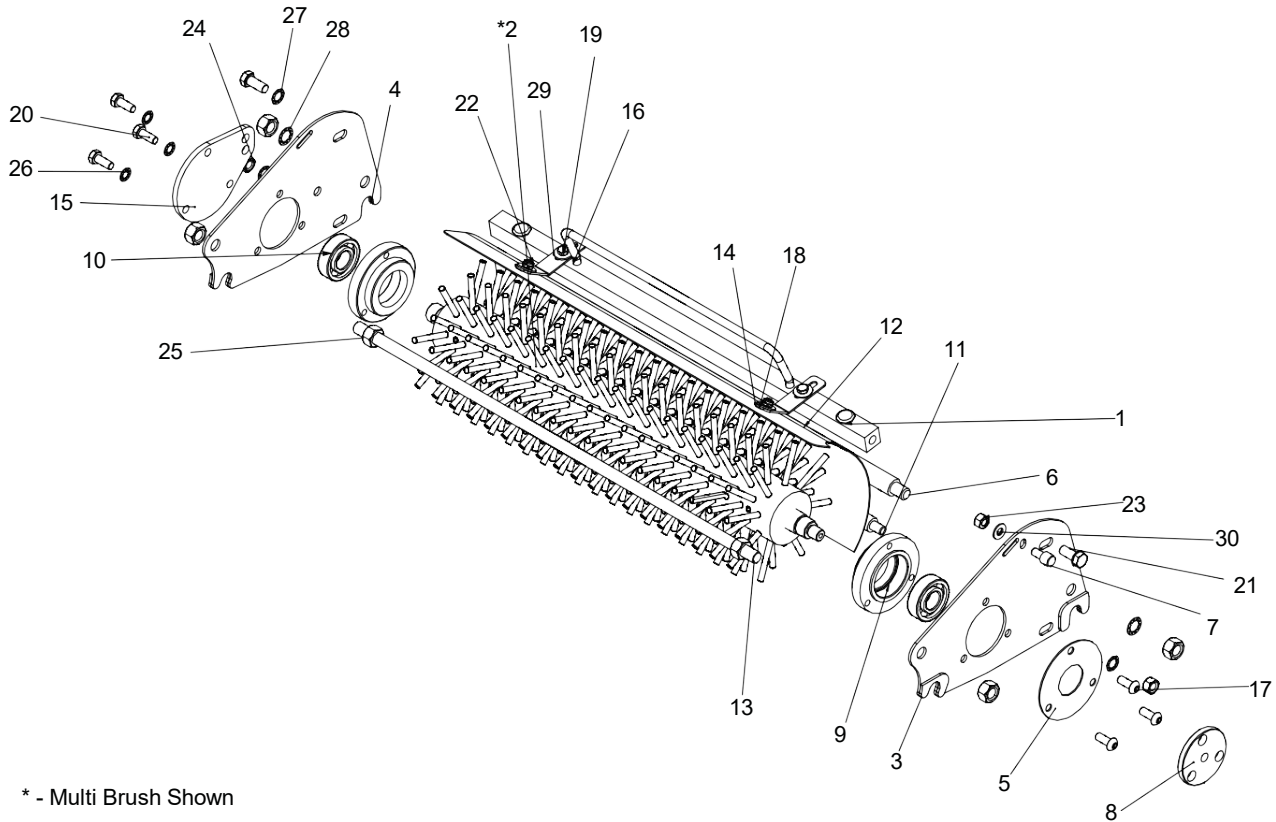
Cassette - Cutter

| Item No. | Part No. | Description | Quantity | Item No. | Part No. | Description | Quantity |
|----------|----------|------------------------------------|----------|----------|----------|---------------------------------|----------|
| 1 | J19998 | Cassette Side Plate W.A. L.H. | 1 | 15 | J209302 | Decal Cut On / Off (> 12/2012) | 2 |
| 2 | J19999 | Cassette Side Plate W.A. R.H. | 1 | 15 | 230517 | Decal Cut On / Off (01/2013 >) | 2 |
| 3 | J17040 | Cylinder 5 Blade 17" | 1 | 16 | J209303 | Adjuster Rod | 2 |
| 3 | J20040 | Cylinder 5 Blade 20" | 1 | 17 | J209304 | Shim Od: 22 Id:16 THK 0.3 | 2 |
| 3 | J24040 | Cylinder 5 Blade 24" | 1 | 18 | J20008 | Back Plate With Hole | 1 |
| 3 | J17039 | Cylinder 9 Blade 17" | 1 | 19 | J20023 | Unit Limiting Stud | 1 |
| 3 | 230481 | Cylinder 10 Blade 20" | 1 | 20 | J20004 | Bearing Self-aligning RI6 | 2 |
| 3 | 230482 | Cylinder 10 Blade 24" | 1 | 21 | J20064 | Grease Nipple 1/4" UNF | 2 |
| 4 | J17033 | Deflector Plate \$\$\$y 17' (9aQe) | 1 | 22 | J20041 | Female Coupling | 1 |
| 4 | J20033 | Deflector Plate \$\$\$y 20' (9aQe) | 1 | 23 | J20063 | Seal Single Lip 22 x 40 | 2 |
| 4 | J24033 | Deflector Plate \$\$\$y 24' (9aQe) | 1 | 24 | J209301 | Circlip N1460 / 0062 (5/8 EXT) | 2 |
| 5 | J179305 | 17" Shear Blade Adj Bar Assy | 1 | 25 | SP01006 | Button Head M8 x 20 | 3 |
| 5 | J209305 | 20" Shear Blade Adj Bar Assy | 1 | 26 | SP01007 | Coach Bolt M6 | 2 |
| 5 | J249305 | 24" Shear Blade Adj Bar Assy | 1 | 27 | SP01008 | Hex Set Screw M6 x 16 | 2 |
| 6 | J209076 | Bearing Blank Plate | 1 | 28 | SP01009 | Hex Set Screw M8 x 20 | 3 |
| 7 | J20003 | Cutter Bearing Housing | 2 | 29 | SP01010 | Cap Head M10 x 30 (Low Hd) | 2 |
| 8 | J17011 | 17" Cassette Tie Bar | 2 | 30 | SP01011 | Hex Set Screw 3/8" UNF x 3/4" | 2 |
| 8 | J20011 | 20" Cassette Tie Bar | 2 | 31 | SP02004 | Nut M6 Nyloc | 2 |
| 8 | J24011 | 24" Cassette Tie Bar | 2 | 32 | SP02005 | Nut M8 STD | 1 |
| 9 | J17012 | 17" Rectangular Bar | 1 | 33 | SP02015 | Nut 3/8" UNF | 4 |
| 9 | J20012 | 20" Rectangular Bar | 1 | 34 | SP02016 | Nut 1/2" UNF | 4 |
| 9 | J24012 | 24" Rectangular Bar | 1 | 35 | SP03002 | Washer 3/8" | 4 |
| 10 | J17025 | Shear Blade Carrier 17" | 1 | 36 | SP03004 | Washer M8 Toothed | 4 |
| 10 | J20025 | Shear Blade Carrier 20" | 1 | 37 | SP03005 | Washer M10 Toothed | 4 |
| 10 | J24025 | Shear Blade Carrier 24" | 1 | 38 | SP03006 | Washer M12 Toothed | 4 |
| 11 | J20065 | Shear Blade 20" x 0.060" | 1 | 39 | SP03007 | Washer M6 x 18 | 4 |
| 11 | J24065 | Shear Blade 24" x 0.060" | 1 | 40 | SP03008 | Washer M8 Form A | 1 |
| 11 | J17030 | Shear Blade 17" x 0.090" | 1 | | | | |
| 11 | J20030 | Shear Blade 20" x 0.090" | 1 | | | | |
| 11 | J24030 | Shear Blade 24" x 0.090" | 1 | | | | |
| 11 | J20031 | Lipped Blade 20" | 1 | | | | |
| 11 | J24031 | Lipped Blade 24" | 1 | | | | |
| 12 | J20032 | Screw Bottom Blade | 8/10/12 | | | | |
| 13 | J209061 | Deflector Bracket | 2 | | | | |
| 14 | J209300 | Adjuster Knob Cylinder | 2 | | | | |

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* - Multi Brush Shown

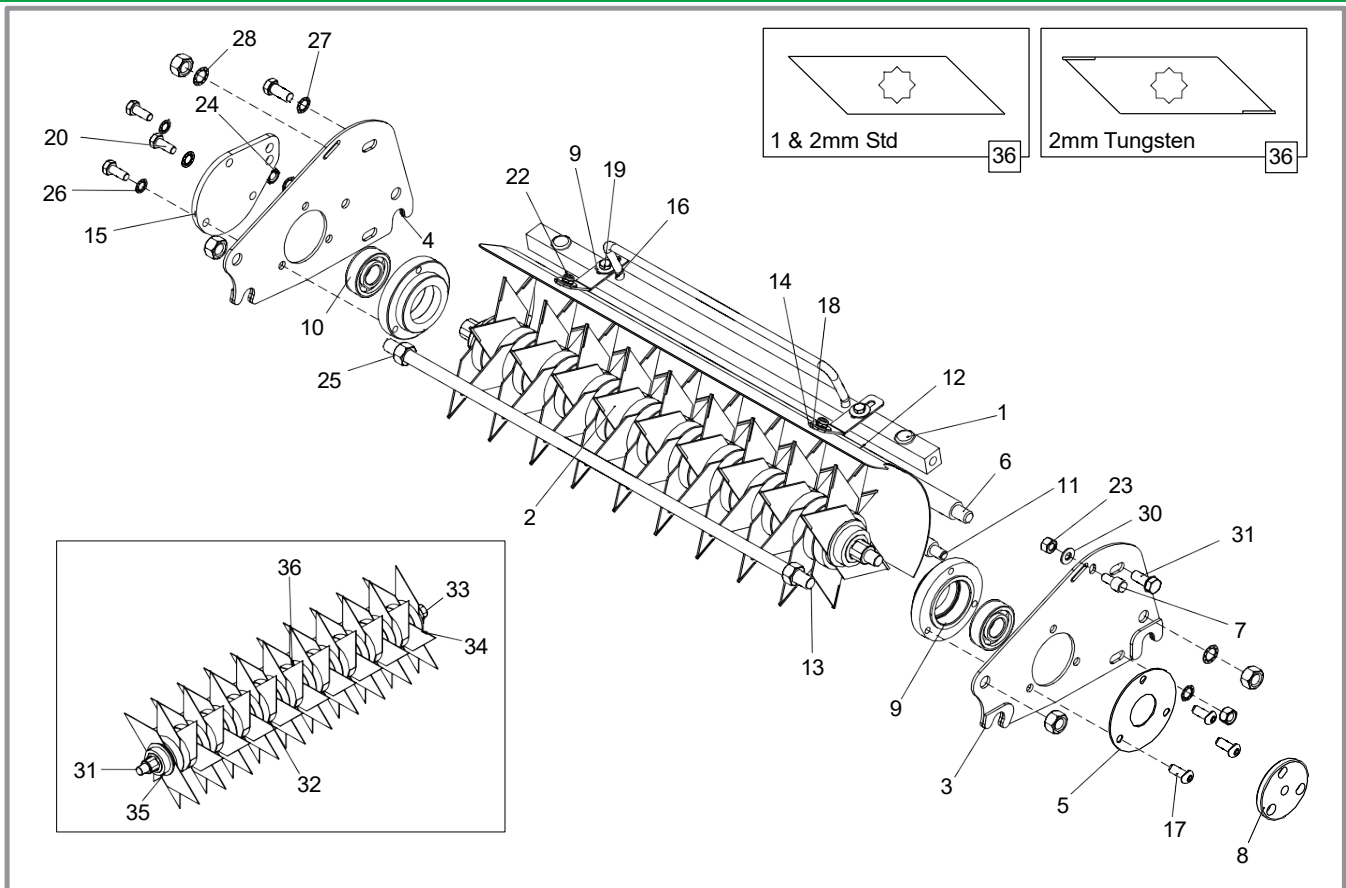
9.02

Cassette - Brush

| Item No. | Part No. | Description | Quantity | Item No. | Part No. | Description | Quantity |
|----------|----------|-------------------------------------|----------|----------|----------|---------------------------------|----------|
| 1 | 228062 | 3/4" Tube Bung (3132) | 2 | 21 | SP01011 | Hex Set Screw (3/8" UNF x 3/4") | 2 |
| 2 | 800174 | Brush Shaft Assembly (17" Multi) | 1 | 22 | SP02004 | Nut Nyloc (M6) | 2 |
| 2 | 800186 | Brush Shaft Assembly (20" Multi) | 1 | 23 | SP02005 | Nut Std (M8) | 1 |
| 2 | 800185 | Brush Shaft Assembly (24" Multi) | 1 | 24 | SP02015 | Nut (3/8" UNF) | 2 |
| 2 | 800175 | Brush Shaft Assembly (17" Standard) | 1 | 25 | SP02016 | Nut (1/2" UNF) | 6 |
| 2 | 800187 | Brush Shaft Assembly (20" Standard) | 1 | 26 | SP03004 | Washer (M8 Toothed) | 4 |
| 2 | 800177 | Brush Shaft Assembly (24" Standard) | 1 | 27 | SP03005 | Washer (M10 Toothed) | 4 |
| 3 | J20001 | Cassette Side Plate WA NC LH | 1 | 28 | SP03006 | Washer (M12 Toothed) | 2 |
| 4 | J20002 | Cassette Side Plate WA NC RH | 1 | 29 | SP03007 | Washer (M6 x 18) | 4 |
| 5 | J20008 | Back Plate With Hole | 1 | 30 | SP03008 | Washer (M8 Form A) | 1 |
| 6 | J17011 | Cassette Tie Bar (17") | 1 | | | | |
| 6 | J20011 | Cassette Tie Bar (20") | 1 | | | | |
| 6 | J24011 | Cassette Tie Bar (24") | 1 | | | | |
| 7 | J20023 | Unit Limiting Stud | 1 | | | | |
| 8 | J20041 | Female Coupling | 1 | | | | |
| 9 | J20051 | Bearing Housing (6204) | 2 | | | | |
| 10 | J20052 | Bearing 6204-2RS 3 | 2 | | | | |
| 11 | J17053 | Tie Bar (17") | 1 | | | | |
| 11 | J20053 | Tie Bar (20") | 1 | | | | |
| 11 | J24053 | Tie Bar (24") | 1 | | | | |
| 12 | J17054 | Deflector Plate Assy (17") | 1 | | | | |
| 12 | J20054 | Deflector Plate Assy (20") | 1 | | | | |
| 12 | J24054 | Deflector Plate Assy (24") | 1 | | | | |
| 13 | J17061 | Front Tie Bar All Cassettes (17") | 1 | | | | |
| 13 | J20061 | Front Tie Bar All Cassettes (20") | 1 | | | | |
| 13 | J24061 | Front Tie Bar All Cassettes (24") | 1 | | | | |
| 14 | J209061 | Deflector Bracket | 2 | | | | |
| 15 | J209076 | Bearing Blank Plate | 1 | | | | |
| 16 | J179305 | Shear Blade Adj Bar Assy (17") | 1 | | | | |
| 16 | J209305 | Shear Blade Adj Bar Assy (20") | 1 | | | | |
| 16 | J249305 | Shear Blade Adj Bar Assy (24") | 1 | | | | |
| 17 | SP01006 | Button Head (M8 x 20) | 3 | | | | |
| 18 | SP01007 | Coach Bolt (M6) | 2 | | | | |
| 19 | SP01008 | Hex Set Screw (M6 x 16) | 2 | | | | |
| 20 | SP01009 | Hex Set Screw (M8 x 20) | 3 | | | | |

NOTE

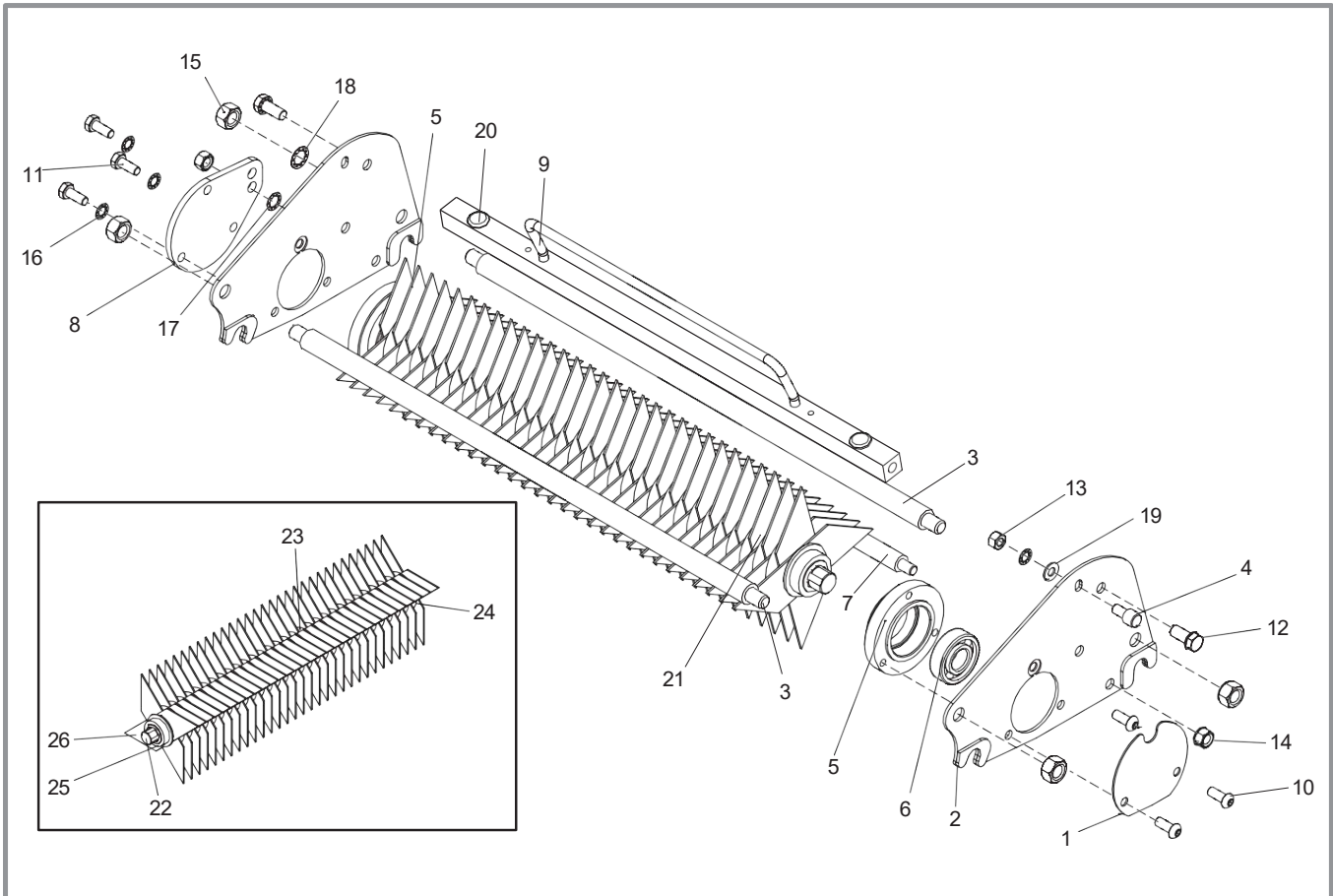
Multi Brush shown in diagram (Item 2)



9.03

Cassette - Scarifiers

| Item No. | Part No. | Description | Quantity | Item No. | Part No. | Description | Quantity |
|----------|----------|-------------------------------------|----------|----------|----------|---------------------------------|----------|
| 1 | 228062 | 3/4" Tube Bung (3132) | 2 | 19 | SP01008 | Hex Set Screw (M6 x 16) | 2 |
| 2 | 800047 | 1mm ScarLier HoE Assy (17")) | 1 | 20 | SP01009 | Hex Set Screw (M8 x 20) | 3 |
| 2 | 800052 | 1mm ScarLier HoE Assy (20")) | 1 | 21 | SP01011 | Hex Set Screw (3/8" UNF x 3/4") | 2 |
| 2 | 800057 | 1mm ScarLier HoE Assy (24")) | 1 | 22 | SP02004 | Nut (M6 Nyloc) | 2 |
| 2 | 800048 | 2mm ScarLier HoE Assy (17")) | 1 | 23 | SP02005 | Nut (M8 Std) | 1 |
| 2 | 800053 | 2mm ScarLier HoE Assy (20")) | 1 | 24 | SP02015 | Nut (3/8" UNF) | 2 |
| 2 | 800058 | 2mm ScarLier HoE Assy (24")) | 1 | 25 | SP02016 | Nut (1/2" UNF) | 6 |
| 2 | 800207 | 2mm TT ScarLier HoE Assy (17")) | 1 | 26 | SP03004 | Washer (M8 Toothed) | 4 |
| 2 | 800206 | 2mm TT ScarLier HoE Assy (20")) | 1 | 27 | SP03005 | Washer (M10 Toothed) | 4 |
| 2 | 800208 | 2mm TT ScarLier HoE Assy (24")) | 1 | 28 | SP03006 | Washer (M12 Toothed) | 2 |
| 3 | J20001 | Cassette Side Plate WA NC LH | 1 | 29 | SP03007 | Washer (M6 x 18) | 4 |
| 4 | J20002 | Cassette Side Plate WA NC RH | 1 | 30 | SP03008 | Washer (M8 Form A) | 1 |
| 5 | J20008 | Back Plate With Hole | 1 | 31 | J17055 | Square Shaft (17") | 1 |
| 6 | J17011 | Cassette Tie Bar (17") | 1 | 31 | J20055 | Square Shaft (20") | 1 |
| 6 | J20011 | Cassette Tie Bar (20") | 1 | 31 | J24055 | Square Shaft (24") | 1 |
| 6 | J24011 | Cassette Tie Bar (24") | 1 | 32 | J20056 | Spacer | AR |
| 7 | J20023 | Unit Limiting Stud | 1 | 33 | J20059 | Nut 7/8" UNF Lock (Thin) | 1 |
| 8 | J20041 | Female Coupling | 1 | 34 | J20060 | Lock Washer (Small) | 1 |
| 9 | J20051 | Bearing Housing (6204) | 2 | 35 | J209080 | Flange Stop | 1 |
| 10 | J20052 | Bearing 6204-2RS 3 | 2 | 36 | J20058 | Scarifer Blade 1mm | AR |
| 11 | J17053 | Tie Bar (17") | 1 | 36 | J20057 | Scarifer Blade 2mm | AR |
| 11 | J20053 | Tie Bar (20") | 1 | 36 | 230105 | Scarifer Blade TT | AR |
| 11 | J24053 | Tie Bar (24") | 1 | | | | |
| 12 | J17054 | Deflector Plate Assy (17")) | 1 | | | | |
| 12 | J20054 | Deflector Plate Assy (20")) | 1 | | | | |
| 12 | J24054 | Deflector Plate Assy (24")) | 1 | | | | |
| 13 | J17061 | Front Tie Bar All Cassettes (FT430) | 1 | | | | |
| 13 | J20061 | Front Tie Bar All Cassettes (FT510) | 1 | | | | |
| 13 | J24061 | Front Tie Bar All Cassettes (FT610) | 1 | | | | |
| 14 | J209061 | Deflector Bracket | 2 | | | | |
| 15 | J209076 | Bearing Blank Plate | 1 | | | | |
| 16 | J179305 | Shear Blade Adj Bar Assy (17") | 1 | | | | |
| 16 | J209305 | Shear Blade Adj Bar Assy (20") | 1 | | | | |
| 16 | J249305 | Shear Blade Adj Bar Assy (24") | 1 | | | | |
| 17 | SP01006 | Button Head (M8 x 20) | 3 | | | | |
| 18 | SP01007 | Coach Bolt (M6) | 2 | | | | |



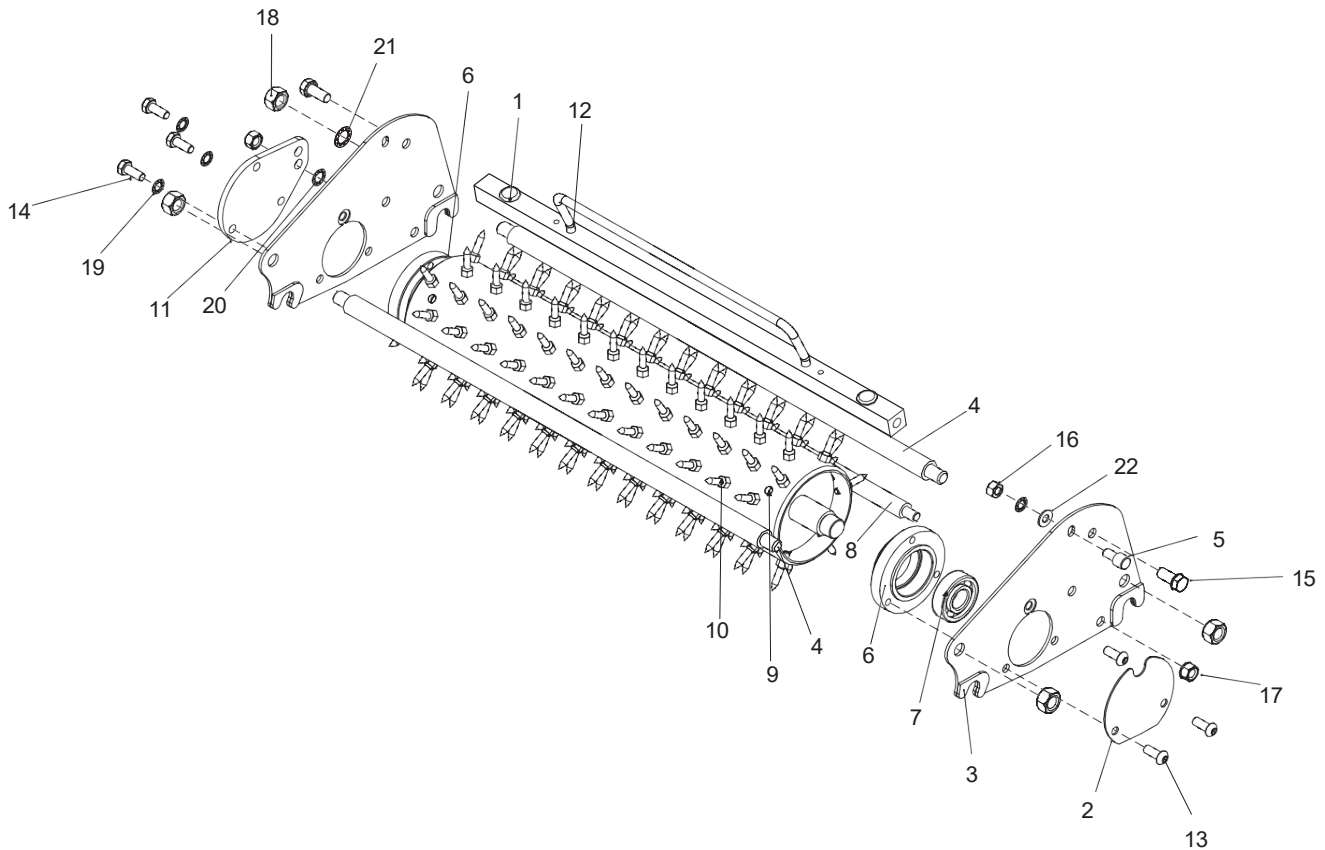
9.04

Cassette - Slitter

| Item No. | Part No. | Description | Quantity | Item No. | Part No. | Description | Quantity |
|----------|----------|---------------------------------|----------|------------------|----------|--------------------------|----------|
| 1 | 230318 | Blanking Plate | 1 | 26 | J20057 | Scarifer Blade 2mm | AR |
| 2 | J20000 | Cassette Side Plate WA ND | 2 | Not Shown | | | |
| 3 | J17011 | Cassette Tie Bar (17") | 2 | - | J20059 | Nut 7/8" UNF Lock (Thin) | 1 |
| 3 | J20011 | Cassette Tie Bar (20") | 2 | | | | |
| 3 | J24011 | Cassette Tie Bar (24") | 2 | | | | |
| 4 | J20023 | Unit Limiting Stud | 1 | | | | |
| 5 | J20051 | Bearing Housing (6204) | 2 | | | | |
| 6 | J20052 | Bearing 6204-2RS 3 | 2 | | | | |
| 7 | J17053 | Tie Bar (17") | 1 | | | | |
| 7 | J20053 | Tie Bar (20") | 1 | | | | |
| 7 | J24053 | Tie Bar (24") | 1 | | | | |
| 8 | J209076 | Bearing Blank Plate | 1 | | | | |
| 9 | J179305 | Shear Blade Adj Bar Assy (17") | 1 | | | | |
| 9 | J209305 | Shear Blade Adj Bar Assy (20") | 1 | | | | |
| 9 | J249305 | Shear Blade Adj Bar Assy (24") | 1 | | | | |
| 10 | SP01006 | Button Head (M8 x 20) | 3 | | | | |
| 11 | SP01009 | Hex Set Screw (M8 x 20) | 3 | | | | |
| 12 | SP01011 | Hex Set Screw (3/8" UNF x 3/4") | 2 | | | | |
| 13 | SP02005 | Nut (M8 Std) | 1 | | | | |
| 14 | SP02015 | Nut (3/8" UNF) | 2 | | | | |
| 15 | SP02016 | Nut (1/2" UNF) | 4 | | | | |
| 16 | SP03004 | Washer (M8 Toothing) | 4 | | | | |
| 17 | SP03005 | Washer (M10 Toothing) | 4 | | | | |
| 18 | SP03006 | Washer (M12 Toothing) | 2 | | | | |
| 19 | SP03008 | Washer (M8 Form A) | 1 | | | | |
| 20 | 228062 | 3/4" Tube Bung (3132) | 2 | | | | |
| 21 | 800051 | Slitter Hob Assy (17") | 1 | | | | |
| 21 | 800056 | Slitter Hob Assy (20") | 1 | | | | |
| 21 | 800061 | Slitter Hob Assy (24") | 1 | | | | |
| 22 | 230334 | Slitter Shaft FT (17") | 1 | | | | |
| 22 | 230335 | Slitter Shaft FT (20") | 1 | | | | |
| 22 | 230336 | Slitter Shaft FT (24") | 1 | | | | |
| 23 | J20056 | Spacer | AR | | | | |
| 24 | J20060 | Lock Washer (Small) | 1 | | | | |
| 25 | J209080 | Flange Stop | 1 | | | | |



World class turf maintenance equipment



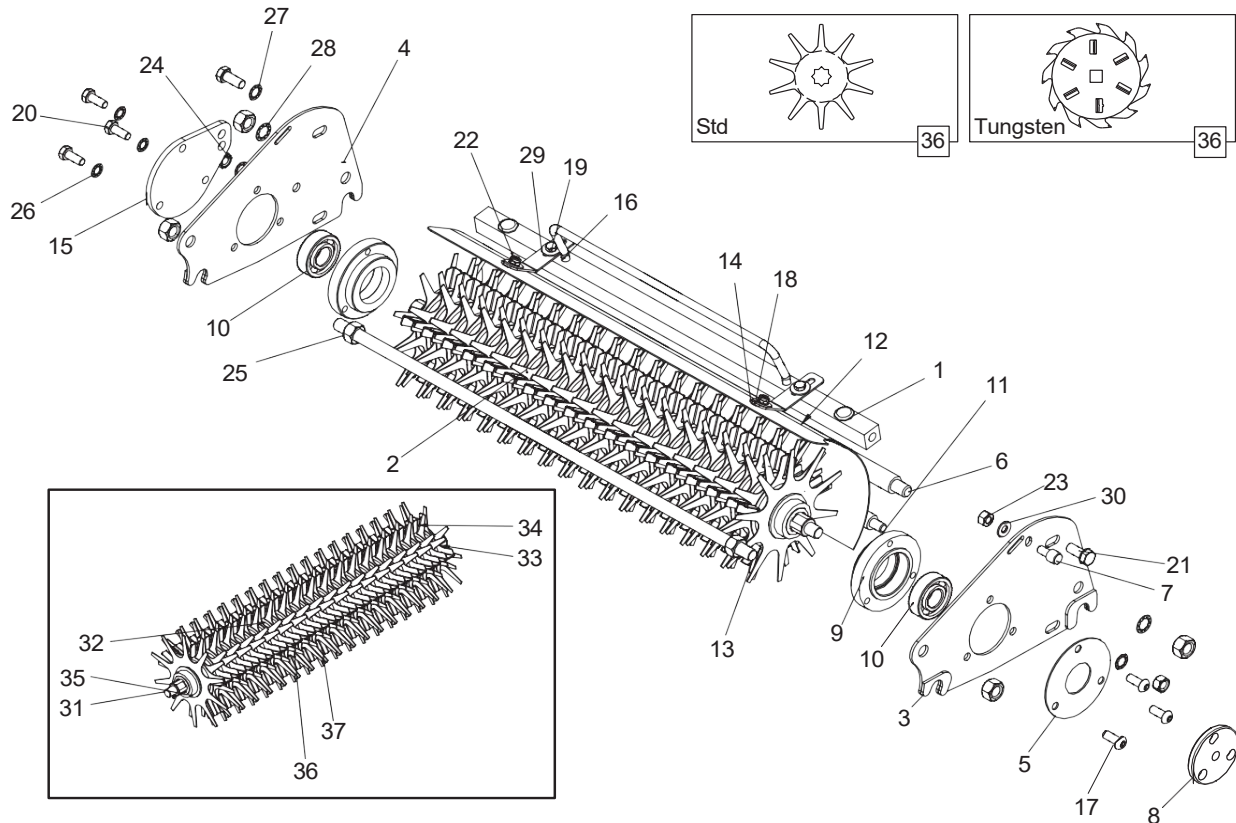
9.05

Cassette - Sorrel

| Item No. | Part No. | Description | Quantity |
|----------|----------|---------------------------------|-------------|
| 1 | 228062 | 3/4" Tube Bung (3132) | 2 |
| 2 | 230318 | Blanking Plate | 1 |
| 3 | J20000 | Cassette Side Plate WA ND | 2 |
| 4 | J17011 | Cassette Tie Bar (17") | 2 |
| 4 | J20011 | Cassette Tie Bar (20") | 2 |
| 4 | J24011 | Cassette Tie Bar (24") | 2 |
| 5 | J20023 | Unit Limiting Stud | 1 |
| 6 | J20051 | Bearing Housing (6204) | 2 |
| 7 | J20052 | Bearing 6204-2RS 3 | 2 |
| 8 | J17053 | Tie Bar (17") | 1 |
| 8 | J20053 | Tie Bar (20") | 1 |
| 8 | J24053 | Tie Bar (24") | 1 |
| 9 | J17810 | Sorrel Roller (17") | 1 |
| 9 | J20810 | Sorrel Roller (20") | 1 |
| 9 | J24810 | Sorrel Roller (24") | 1 |
| 10 | J20811 | Spike Sorrel Roller | 126/150/186 |
| 11 | J209076 | Bearing Blank Plate | 1 |
| 12 | J179305 | Shear Blade Adj Bar Assy (17") | 1 |
| 12 | J209305 | Shear Blade Adj Bar Assy (20") | 1 |
| 12 | J249305 | Shear Blade Adj Bar Assy (24") | 1 |
| 13 | SP01006 | Button Head (M8 x 20) | 3 |
| 14 | SP01009 | Hex Set Screw (M8 x 20) | 3 |
| 15 | SP01011 | Hex Set Screw (3/8" UNF x 3/4") | 2 |
| 16 | SP02005 | Nut (M8 Std) | 1 |
| 17 | SP02015 | Nut (3/8" UNF) | 2 |
| 18 | SP02016 | Nut (1/2" UNF) | 4 |
| 19 | SP03004 | Washer (M8 Toothed) | 4 |
| 20 | SP03005 | Washer (M10 Toothed) | 4 |
| 21 | SP03006 | Washer (M12 Toothed) | 2 |
| 22 | SP03008 | Washer (M8 Form A) | 1 |

Not Shown

| | | | |
|---|--------|----------------|---|
| - | J17816 | Weight Bar 17" | 1 |
| - | J20816 | Weight Bar 20" | 1 |
| - | J24816 | Weight Bar 24" | 1 |



9.06

Cassette - Verticutters

| Item No. | Part No. | Description | Quantity | Item No. | Part No. | Description | Quantity |
|----------|----------|-------------------------------------|----------|----------|----------|---------------------------|----------|
| 1 | 228062 | 3/4" Tube Bung (3132) | 2 | 25 | SP02016 | Nut (1/2" UNF) | 6 |
| 2 | 800049 | Verticutter Hob Assy (17") | 1 | 26 | SP03004 | Washer (M8 Toothed) | 4 |
| 2 | 800054 | Verticutter Hob Assy (20") | 1 | 27 | SP03005 | Washer (M10 Toothed) | 4 |
| 2 | 800059 | Verticutter Hob Assy (24") | 1 | 28 | SP03006 | Washer (M12 Toothed) | 2 |
| 2 | 800050 | Tungsten Verticutter Hob Assy (17") | 1 | 29 | SP03007 | Washer (M6 x 18) | 4 |
| 2 | 800055 | Tungsten Verticutter Hob Assy (20") | 1 | 30 | SP03008 | Washer (M8 Form A) | 1 |
| 2 | 800060 | Tungsten Verticutter Hob Assy (24") | 1 | 31 | J17055 | Square Shaft (17") | 1 |
| 3 | J20001 | Cassette Side Plate WA NC LH | 1 | 31 | J20055 | Square Shaft (20") | 1 |
| 4 | J20002 | Cassette Side Plate WA NC RH | 1 | 31 | J24055 | Square Shaft (24") | 1 |
| 5 | J20008 | Back Plate With Hole | 1 | 32 | J20056 | Spacer | AR |
| 6 | J17011 | Cassette Tie Bar (17") | 1 | 33 | J20059 | Nut 7/8" UNF Lock (Thin) | 1 |
| 6 | J20011 | Cassette Tie Bar (20") | 1 | 34 | J20060 | Lock Washer (Small) | 1 |
| 6 | J24011 | Cassette Tie Bar (24") | 1 | 35 | J209080 | Flange Stop | 1 |
| 7 | J20023 | Unit Limiting Stud | 1 | 36 | J20072 | Dethatcher Blade | AR |
| 8 | J20041 | Female Coupling | 1 | 36 | 229538 | Tungsten Tipped Blade 11T | AR |
| 9 | J20051 | Bearing Housing (6204) | 2 | 37 | 229533 | Fan Blade Small | AR |
| 10 | J20052 | Bearing 6204-2RS 3 | 2 | | | | |
| 11 | J17053 | Tie Bar (17") | 1 | | | | |
| 11 | J20053 | Tie Bar (20") | 1 | | | | |
| 11 | J24053 | Tie Bar (24") | 1 | | | | |
| 12 | J20054 | Deflector Plate Assy (20") | 1 | | | | |
| 13 | J17061 | Front Tie Bar All Cassettes (FT430) | 1 | | | | |
| 13 | J20061 | Front Tie Bar All Cassettes (FT510) | 1 | | | | |
| 13 | J24061 | Front Tie Bar All Cassettes (FT610) | 1 | | | | |
| 14 | J209061 | Deflector Bracket | 2 | | | | |
| 15 | J209076 | Bearing Blank Plate | 1 | | | | |
| 16 | J179305 | Shear Blade Adj Bar Assy (17") | 1 | | | | |
| 16 | J209305 | Shear Blade Adj Bar Assy (20") | 1 | | | | |
| 16 | J249305 | Shear Blade Adj Bar Assy (24") | 1 | | | | |
| 17 | SP01006 | Button Head (M8 x 20) | 3 | | | | |
| 18 | SP01007 | Coach Bolt (M6) | 2 | | | | |
| 19 | SP01008 | Hex Set Screw (M6 x 16) | 2 | | | | |
| 20 | SP01009 | Hex Set Screw (M8 x 20) | 3 | | | | |
| 21 | SP01011 | Hex Set Screw (3/8" UNF x 3/4") | 2 | | | | |
| 22 | SP02004 | Nut (M6 Nyloc) | 2 | | | | |
| 23 | SP02005 | Nut (M8 Std) | 1 | | | | |
| 24 | SP02015 | Nut (3/8" UNF) | 2 | | | | |

NOTE

Item 37 is not required on Tungsten Tipped option.



DENNIS, Ashbourne Road, Kirk Langley, Derbyshire, DE6 4NJ, England

Tel: +44 (0) 1332 824 777

Fax: +44 (0) 1332 824 525

Email: sales@dennisuk.com
Email: spares@dennisuk.com

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