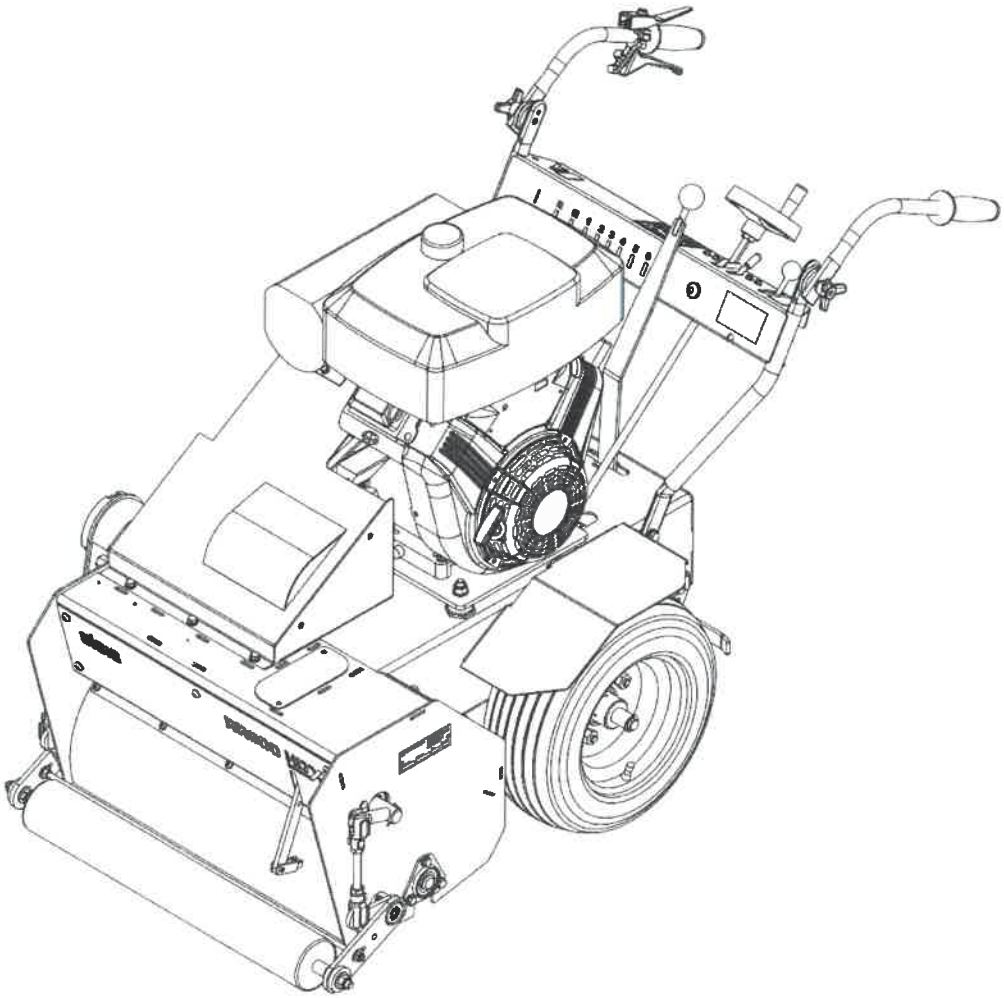
sisis®

ROTORAKE RR600HDX

INSTRUCTION MANUAL



CERTIFICATE OF CONFORMITY

RR600HDX **CN Code: 84322910**

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

I the under signed Declare that these machines:-

Tested at:- Howardson Works test site September 2011

Complies with the applicable requirements of:-

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

Managing Director

Ian Howard

SERIAL NUMBERS

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

MACHINE SERIAL NUMBER

INTRODUCTION

The reliability and quality of performance of the **ROTORAKE 600HDX** depends upon some simple care maintenance carried out regularly. This manual has been prepared to allow the user to carry out all such work.

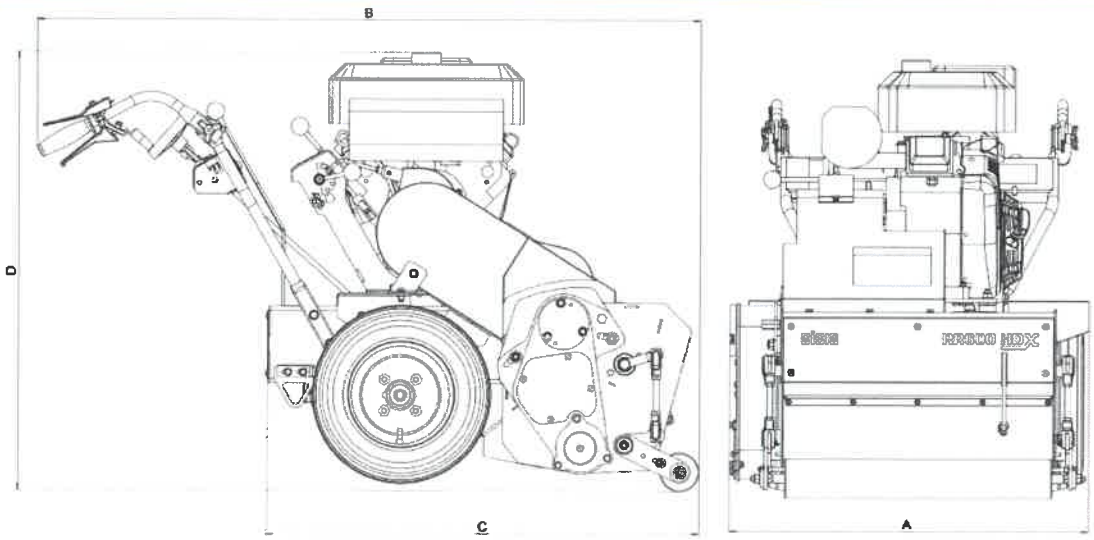
It is advisable to read the instructions carefully. Proper care and attention will enable the machine to give a continuous, satisfactory, and reliable service. Failure to carry out regular lubrication and maintenance as outlined in this manual may render any guarantee or warranty invalid.

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 machine, 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.

CONTENTS

TECHNICAL DATA



MODEL		ROTORAKE RR600HDX
WIDTH (mm)	A	820
LENGTH (mm)	B	1514
HEIGHT (mm)	D	999
MAIN BODY LENGTH	C	987
WEIGHT (Kg)		210
WORKING WIDTH (mm)		910mm (24")
CUTTING RANGE (mm)		50
APPROX GROUND COVERAGE - LIGHT / MEDIUM (m^2/hr) - DEEP (m^2/hr)		 1250 750
TYRE PRESSURE (PSI/BAR)		30/2
HAND ARM VIBRATION (m/sec^2)		4.5
MEASURED SOUND POWER LEVEL (dB (A))		98
GUARANTEED SOUND POWER LEVEL (Db (A))		103
ENGINE		Briggs &Stratton 16HP TWIN
ENGINE TYPE		Air Cooled 4-stroke OHV Petrol Engine
DISPLACEMENT		479
GROSS POWER		12kW @ 3600Rpm 16HP
FUEL TANK CAPACITY (Ltr)		8 Ltr

* Ref. to engine manual for further details.

CAUTION:- *READ THE INSTRUCTIONS. We want you to obtain the best performances from this machine. If you have any difficulty in carrying out the following instructions please contact your local SISIS dealer.*

NEVER

- Carry out adjustments whilst the machine is running.
- Allow any unauthorised person to handle machines in any way at any time.

ALWAYS

- Read the operating instructions carefully and understand the controls before commencing work.
- Before starting work always visually check machine for damage or wear to parts.
- Look behind before starting to reverse and watch out for children or pedestrians.
- Switch off the power before making adjustments or repairs and never lift or carry a machine whilst any parts are moving.

Assembly

CAUTION – *READ THE INSTRUCTIONS CAREFULLY AND ALSO THE SEPARATE INSTRUCTION DETAILSON THE ENGINE*

Keep in mind that the operators / users of the machinery are responsible for accidents or hazards occurring to themselves, other people and property. People who are unfamiliar with these instructions should not use this machinery. Local regulations or insurance may restrict the age of the operator. Children should not use this machinery.

Take note of the following:

- Do not put hands or feet near or under the rotating parts.
- Always wear substantial footwear and long trousers. Do not operate the machine barefoot or in sandals.
- Only operate the engine in a confined space where dangerous CARBON MONOXIDE fumes can collect.
- Only operate in daylight or good artificial light.
- Avoid operating the machine in wet grass where possible.
- Do not operate on excessively steep slopes.
- Always be sure of your footing on slopes.
- Exercise extreme care when changing direction on slopes.
- Walk across the face of slopes never up and down.
- Walk, never run.
- Exercise extreme caution when reversing or pulling the machine towards you.
- Stop the reel if the machine has to be tilted for transportation of manoeuvring.
- Never operate the machine with defective guards or safety device.
- Do not change the engine governor settings or over speed the engine
- Keep clear of the discharge opening at all times
- Never operate the machine while people, especially children, or pets are nearby.

OVERVIEW

We want you to obtain the best performance from this machine. If, after reading the following instructions, you have any problems please contact SISIS or your local area manager or SISIS dealer.

DESCRIPTION

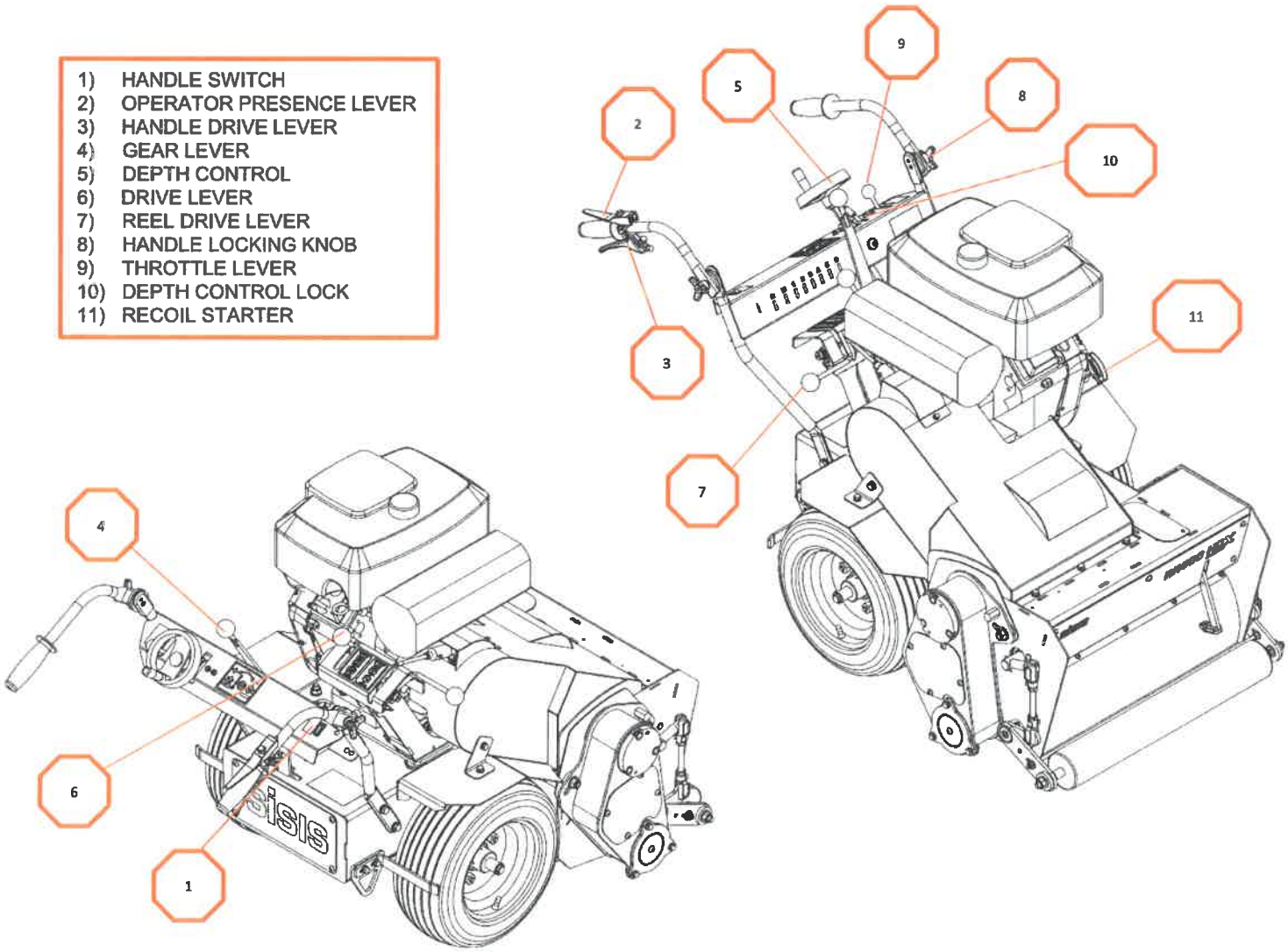
The name "ROTORAKE" has become synonymous with the effective thatch removal and control. However the new SISIS rotorake, RR600HDX is more than a scarifier.
A superb thatch remover for regular routine use when used at a shallow setting, but with the capacity to work deeper where severe thatch problems occur. These conditions are becoming more common with climatic changes and with some of the newer species of grass. A range of interchangeable blades are available for year round use.

The RR600HDX incorporates the well proven SISIS rotorake contra-rotation principle, whereby the reel rotates at high speed against the direction of travel. The blades therefore cut upwards continuously throwing the thatch forwards rather than pushing it into the surface. This action also holds the machine to the ground, maintaining regular working depth.

As well as thatch removal the RR600HDX also aids aeration. The clean continuous slits assist water and air absorption through the thatch layer. These characteristic slits also improve the integration of top dressing into the surface.

The RR600HDX is ideal to improve all fine turf areas such as golf greens, bowling greens, cricket squares, lawn tennis courts etc.

1) HANDLE SWITCH
2) OPERATOR PRESENCE LEVER
3) HANDLE DRIVE LEVER
4) GEAR LEVER
5) DEPTH CONTROL
6) DRIVE LEVER
7) REEL DRIVE LEVER
8) HANDLE LOCKING KNOB
9) THROTTLE LEVER
10) DEPTH CONTROL LOCK
11) RECOIL STARTER



CAUTION – *READ THESE OPERATING INSTRUCTIONS CAREFULLY BEFORE COMMENCING WORK.*

PREPERATION (Ref. Machine Description)

- Thoroughly inspect where the equipment is to be used and removed all hazards and foreign objects including stones, sticks, wire and bones etc.
- Thoroughly inspect the machine for missing components, damage and wear. Replace components where necessary. This must include:
- All safety switches / operator presents devices.
- All guards
- Engine components.
- Check engine oil level and top up in accordance engine manufactures recommendations. (ref. engine manual supplied with the machine.
- Check fuel level, fill if necessary. NOTE:
- Store fuel in containers specifically designed for this purpose.
- Refuel outdoors only.
- Do not smoke while refuelling.
- Do not refuel while the engine is running or hot.
- If fuel is spilled, do not attempt to start the engine. Move the machine away from the area of the spillage to avoid creating any source of ignition.
- Petrol is highly flammable and will damage grass if spilt.
- Adjust the reel blades to be clear of the ground (Machine Description, Item 5) NOTE: there is a lock on this lever (Item 10), this will need to be lifted before the handle can be rotated.
- Check the machine is in Neutral (Item 4)
- Check the Reel Drive Lever (Item 7) is disengaged.
- Check the Drive Lever (Item 6) is disengaged.

STARTING / STOPPING THE ENGINE (Ref. Machine Description)

- Switch the Handle Switch to "ON" position (Item 1)
- Switch the fuel on at the engine.
- Switch on the choke if required. NOTE: often only required for a few seconds.
- Set the Throttle Lever (Item 9) to half open.
- Pull the Recoil (Item 11) to start the engine. Repeat until engine runs.
- Switch off the choke so the engine ticks over.
- The engine can be stopped by returning the Handle Switch to "OFF" (Item 1)
- Close fuel tap when transporting.

ENGAGING DRIVE TO THE WHELS (Ref. Machine Description)

- With the engine running, select appropriate gear (Item 4). For those unfamiliar with the machine, select gear 1.
- Adjust the Throttle Lever (Item 9) to half revs.
- Depress Operator Presence Lever (Item 2).
- Engage the Handle Drive Lever (Item 3) and the machine will start to move.
- To increase speed, release Handle Drive Lever (Item 3), select a higher gear. DO NOT change gear when the machine is moving.
- Drive can also be engaged using Drive Lever (Item 6). Using this lever eliminates the need to continually hold the Handle Drive Lever (Item 3). NOTE: Releasing the Operator Presence Lever (Item 2) while the Drive Lever (Item 6) is engaged will cause the machine to stop.

CAUTION – *READ THESE OPERATING INSTRUCTIONS CAREFULLY BEFORE COMMENCING WORK.*

ENGAGING DRIVE TO THE REEL (Ref. Machine Description)

- Ensure the blades are clear of the ground. This is achieved by adjusting the Depth Control (Item 5)
- With the engine running, depress Operator Presence Lever (Item 2)
- Engage the Reel Drive Lever (Item 7) NOTE: Releasing the Operator Presence Lever (Item 2) while the Reel Drive Lever (Item 7) is engaged will cause the engine to stop.

TO START SCARIFYING (Ref. Machine Description)

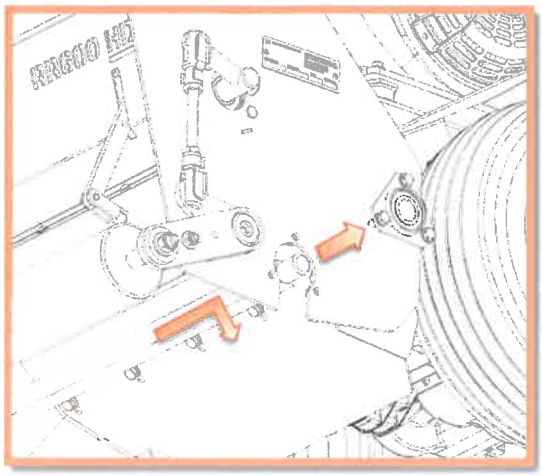
- With the Engine Running at full power (Item 9 – Throttle fully open) and the Drive Reel engaged as above, start to lower the blades using the Depth Control (Item 5)
- Engage drive to wheels as above.
- The Depth can be adjusted as the machine is moving.
- When finished, lift the blades clear of the ground (Item 5)

STORAGE (Ref. Machine Description)

- Ensure the machine is cool before storing inside.
- DO NOT power wash machine.
- Always switch the fuel "OFF" at the engine.

CAUTION – *READ THESE OPERATING INSTRUCTIONS CAREFULLY BEFORE COMMENCING WORK.*

REMOVING / REPLACING THE REEL



- Raise the blades to the maximum clearance from the ground.
- Removing the bearing (2 x 13mm spanner)
- Lower the reel and pull to disengage if from the square drive.

NOTE: Caution should be take when handling the reel as the blades are sharp. Wear gloves.

- Replace the reel in the same way, ensuring that the square end Is securely located in the drive socket and the bearing bolts are tight.

REPLACING BLADES ON THE SHAFT

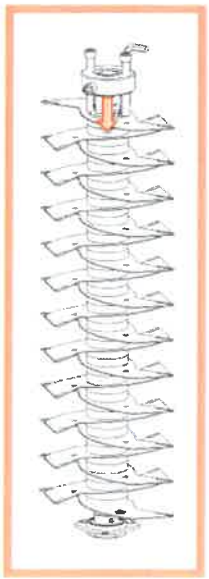
- Remove shaft from machine
- Remove split pin from square end of shaft
- Remove square bore washer
- Remove old blades and spacers.

NOTE: The direction of rotation of the blade.

- Rebuild the reel with the new blade, and square bore washer.
- With the Allen key provided (8mm), tighten the M10 x 25 bolts to clamp the Tine Compression tool to the shaft as shown.
- With the same Allen key, tighten the M10 x 80 bolts. This will compress the assembly of tines and spacers until the split pin hole is revealed.
- Replace the split pin
- Remove the Tine Compression Tool.

NOTE: Tine Compression Tool part number: FS0966.

Tine Compression Tool

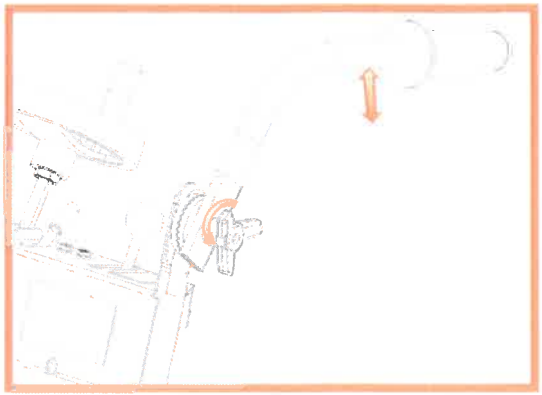


AVAILABLE REELS

- 1mm light scarifying reel (FS1156)
- 2mm scarifying / thatch removal reel (2-tip) (FS1155)
- 2mm scarifying / thatch removal reel (6-tip) (FS1253)
- Verticutting Reel (Triangular blade) (FS1252)
- Brush Reel Std (FS1157)
- Rolaspike (FS1158)
- Faze-Mo (FS1159)

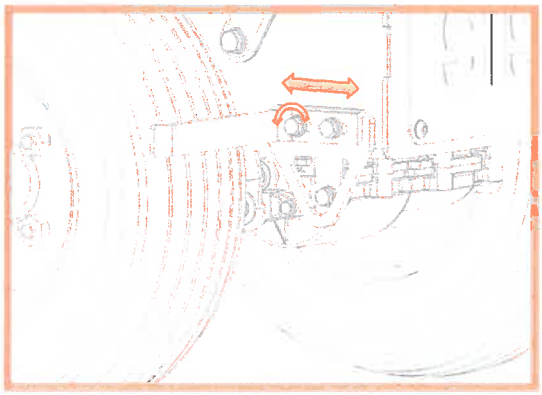
Handle Bar Adjustments

- Slacken the locking knob
- Rotate the handle around the toothed disk
- Select the required position and retighten the locking knob
- Repeat for other handle.



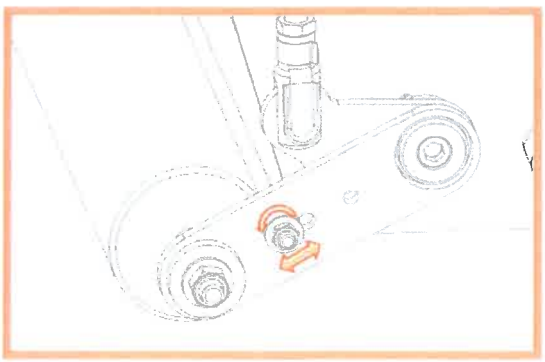
Rear Wheel Scraper

- Slacken the M8 bolts (13mm spanner) retaining the scraper.
- Slide the scraper to the desired position.
- Retighten the M8 bolts.



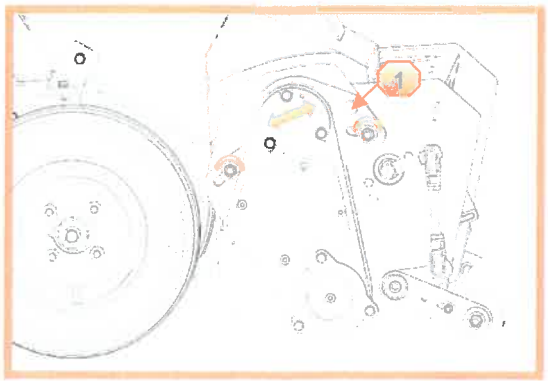
Front Roller Scraper

- Slacken the M8 nuts (2 X 13mm spanner), on both sides of the scraper
- Slide the scraper to the desired position.
- Retighten the M8 nuts.

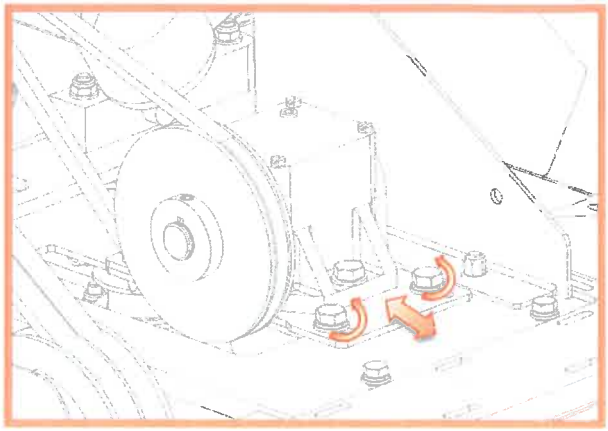


Belt Tension

- Slacken 3 internal M8 x 25mm bolts.
- Slacken 2 external M12 nuts
- Apply a 19mm spanner to point 1. This is to crank the belt box towards The front of the machine and apply belt tension.
- Once the correct tension is applied, retighten the loose nuts and bolts whilst maintaining tension.



F21440 A SECTION BELT TENSIONING



This is tensioned by sliding the 90 degree gearbox.

- Slacken the 4x M10 x 30 bolts (17mm spanner)
- Slide the gearbox to the desired position .
- Retighten the M10 x 30 bolts.

SP11036 BELT TENSIONING

This is located under the machine, driving the axle from the 90 degree gear box.

- Tensioner, push up to the belt and lock off using 17mm socket. NOTE: the nut is captive.

CABLES

There are 2-off cables on the machine:

SP12002 THROTTLE CABLE

- This is adjusted at the connection to the engine.

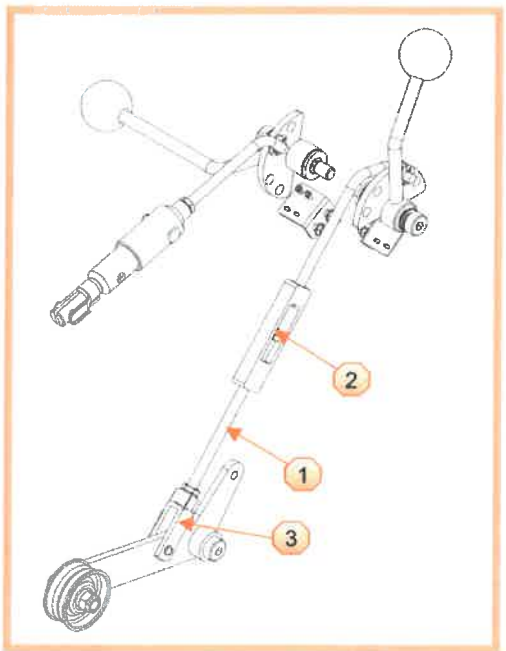
SP12053 CABLE DRIVE

- This can be adjusted at the connection to the drive lever and chassis.
- Remove rubber boot
- Slacken lock nut (13mm spanner)
- Adjust the tensioner screw
- Retighten the lock nut (13 spanner)

DRIVE LEVER

- Remove guard
- Remove clevis pin (item 3)
- Rotate clevis rod assembly (item 1) This will adjust M8 nut (item 2)
- Reassembly clevis pin and try
- Repeat if necessary.

NOTE: The drive must not engage without the lever being operated.



TINE DRIVE LEVER

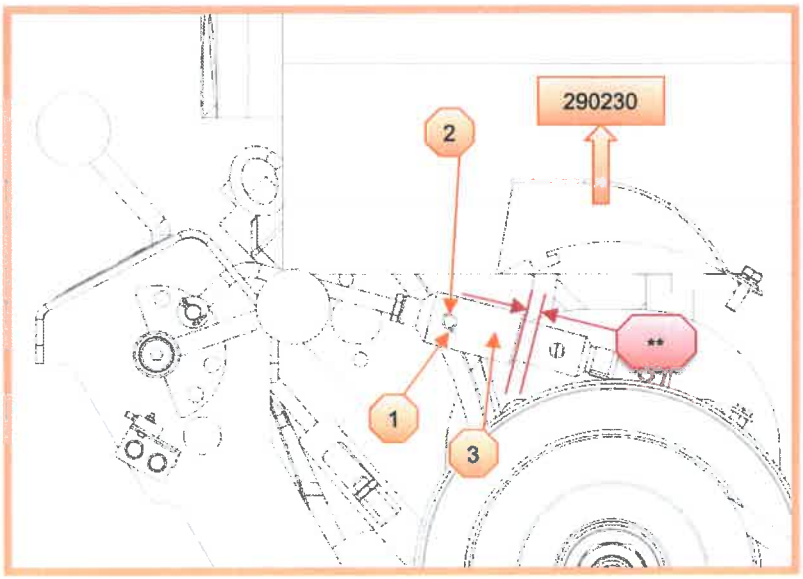
- Remove part 290230 from the guard. (10mm spanner)
- Remove split pin and clevis pin (Item 1 & 2)
- Slacken lock nuts (13mm spanner)
- Rotate spring cup to adjust the tension (Item 3).

NOTE: When operated the spring must extend between 5mm and 5.5mm this applies approximately 22kgf

- Reassembly the split pin and clevis pin, measure the spring extension
- Repeat if necessary. NOTE: lever on the clutch must be fully returned

When the drive lever is not operated. This is to ensure the brake is fully engaged.

**** Spring must extend between 5mm and 5.5mm**

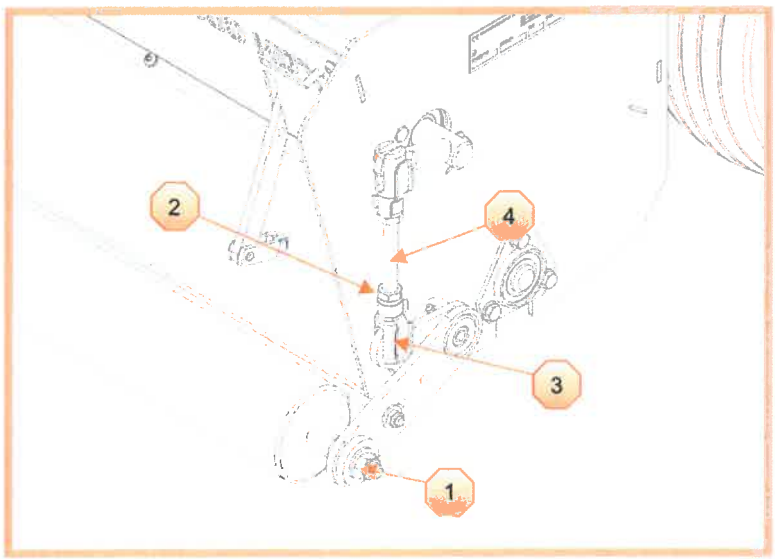


Front Roller

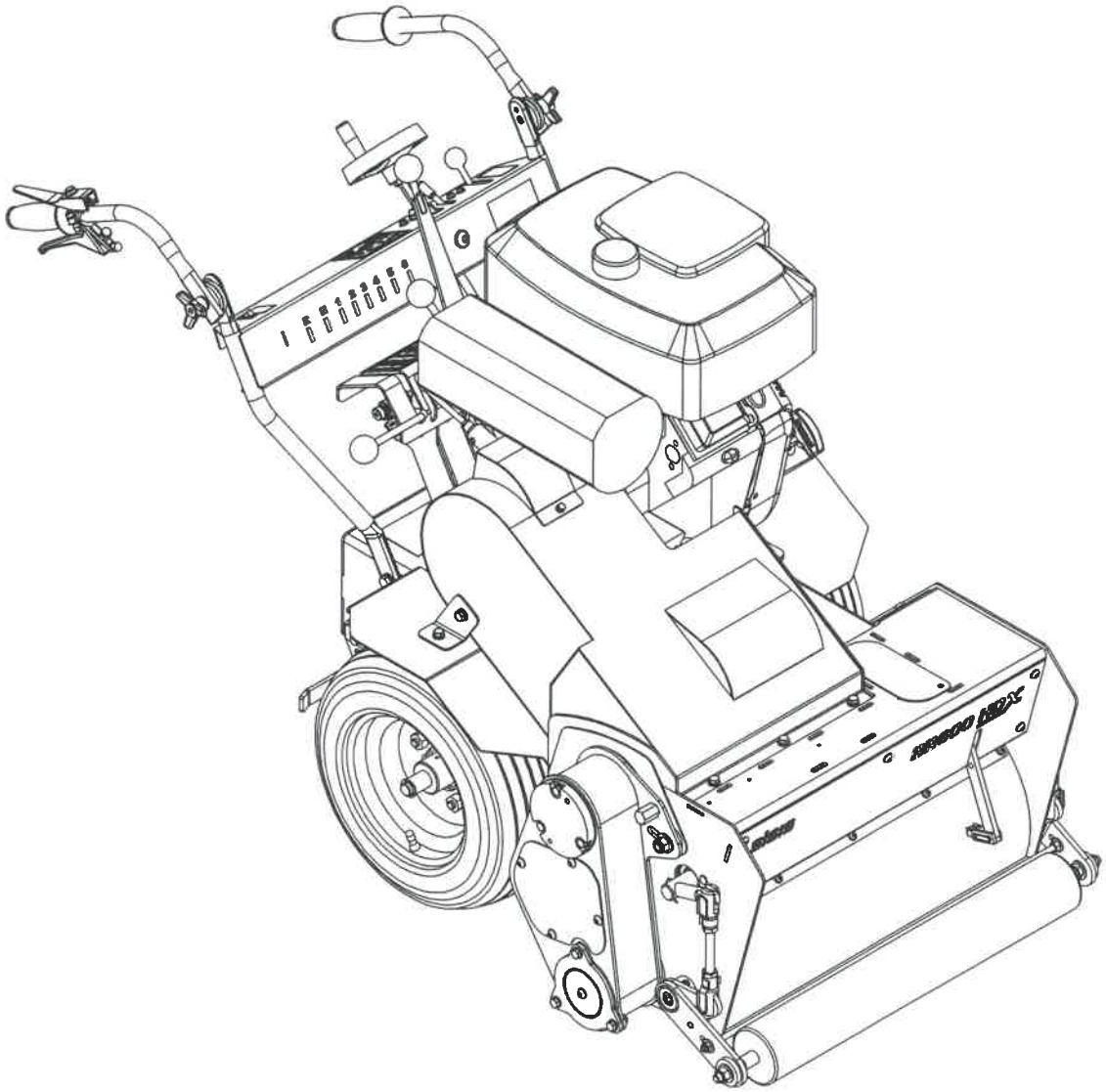
To ensure a level cut, the RR600HDX has a Fully independent front roller adjustment mechanism. There is a threaded rod (Item 4) on both sides of the machine, these can be adjusted independently to set the blades level to the surface.

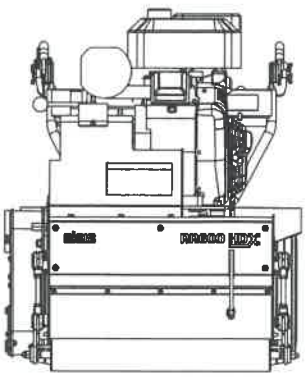
NOTE: Before levelling, ensure the rear tyres are inflated to the same pressure.

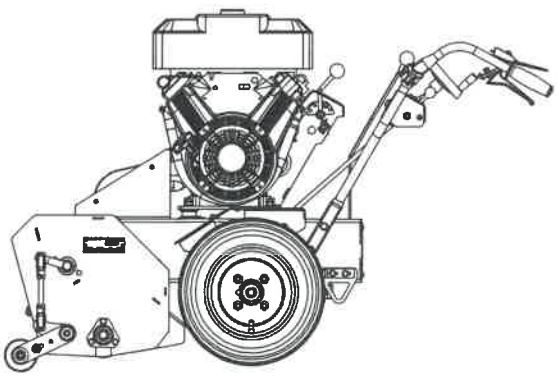
- Slacken the 2-off M12 nuts on the roller (Item 1)
- Slacken the M12 lock nut (Item 2)
- Remove clevis pin (Item 3)
- Check if the blades are level with the ground surface.
- Repeat if necessary
- Tighten the M12 lock nut. (Item 2)
- Tighten the 2-off M12 nuts on the roller. (Item 1)

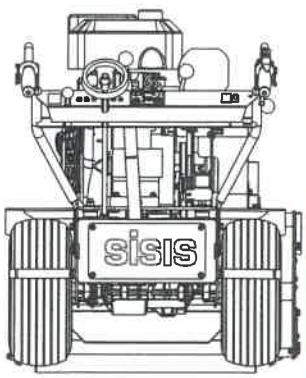


ROTORAKE RR600HDX - PARTS BOOK

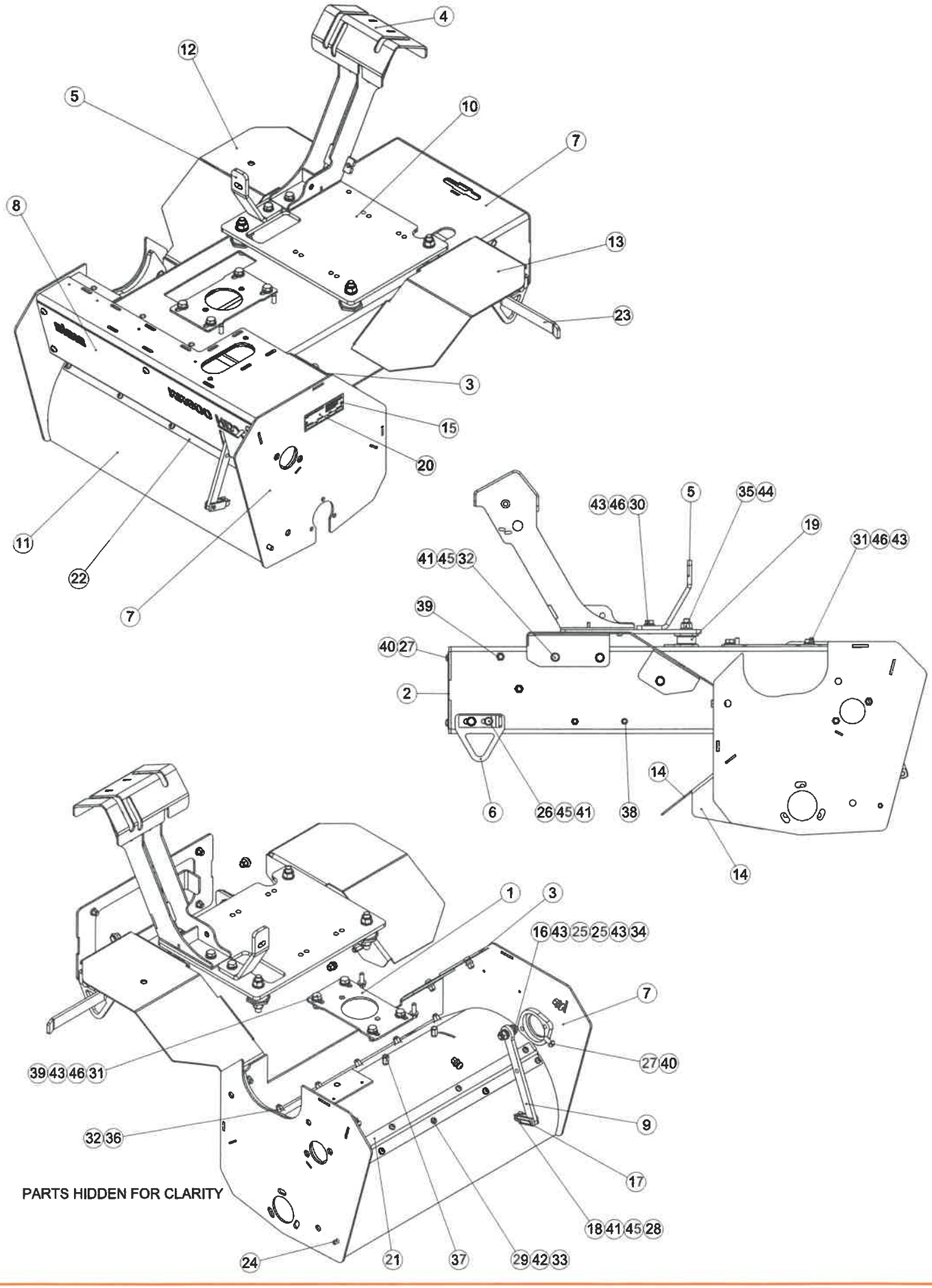








CHASSIS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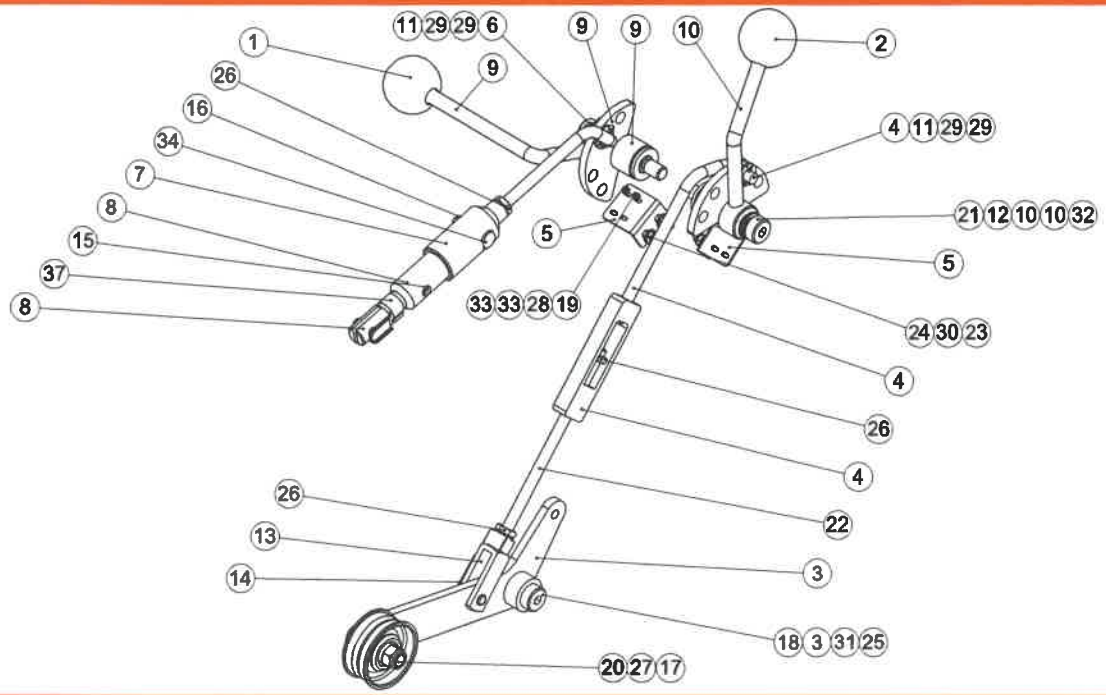
PARTS HIDDEN FOR CLARITY

CHASSIS BOM

ITEM NO.	PART NUMBER	DESCRIPTION	CHASSIS/QTY.
1	290021_REV0	GEARBOX PLATE	1
2	290024_REV0	COVER PLATE REAR	1
3	290025_REV0	COVER PLATE SIDE	1
4	290030_REV0	CONTROL COLUMN	1
5	290051_REV0	CLUTCH SUPPORT PLATE	1
6	290126_REV0	ANCHOR POINT	2
7	290180_REV1	CHASSIS RR600 HDX	1
8	290191_REV0	COVER PLATE	1
9	290192_REV0	LINK ARM	1
10	290195_REV0	ENGINE BASE PLATE	1
11	290196_REV0	DEFLECTOR FLAP	1
12	290212_REV1	WHEEL GUARD R.H.	1
13	290213_REV0	WHEEL GUARD L.H.	1
14	290215_REV1	DEFLECTOR	1
15	D1871_REV1	RIVET 3.2 X 6	2
16	E1-1119_REV0	HEX SET SCREW M10 X 35	1
17	F21463_REV1	CLEVIS 8MM LONG	1
18	F21464_REV1	CLEVIS CLIP M8 LONG	1
19	F21922_REV1	VIBRATION MOUNT (METALASTIK NO 17/1386/01)	4
20	F36000_REV2	SERIAL NO PLATE (SISIS)	1
21	F37422_REV3a	HINGE 602	1
22	F37422_REV3b	HINGE 602	1
23	F37704_REV2	SCRAPER	2
24	J20023_REV2	UNIT LIMITING STUD	2
25	J209068_REV2	NUT LOCKING	1
26	SP01005_REV0	HEX SET SCREW M8 X 30	4
27	SP01006_REV0	BUTTON HEAD M8 X 20	11
28	SP01009_REV0	HEX SET SCREW M8 X 20	1
29	SP01019_REV0	BUTTON HEAD M6 X 16	9
30	SP01034_REV0	HEX SET SCREW M10 X 20	2
31	SP01035_REV0	HEX SET SCREW M10 X 25	4
32	SP01045_REV0	HEX SET SCREW M8 X 25	15
33	SP02004_REV0	NUT M6 NYLOC	9
34	SP02008_REV0	NUT M10 NYLOC (T)	1
35	SP02010_REV0	NUT M12 NYLOC (T)	8
36	SP02044_REV0	RIVNUT HEX M8 (0.5-3.0) [NO HEAD]	6
37	SP02045_REV0	RIVNUT HEX M8 (4.0-6.0) [NO HEAD]	9
38	SP02045_REV0	RIVNUT HEX M8 (4.0-6.0) [NO HEAD]	21
39	SP02047_REV0	RIVNUT HEX M10 (3.0-6.0) [NO HEAD]	8
40	SP03004_REV0	WASHER M8 TOOTHED	11
41	SP03008_REV0	WASHER M8 FORM A	20
42	SP03010_REV0	WASHER M6 FORM A	18
43	SP03011_REV0	WASHER M10 FORM A	8
44	SP03012_REV0	WASHER M12 FORM A	8
45	SP03029_REV0	WASHER M8 SPRING LOCK	20
46	SP03034_REV0	WASHER M10 SPRING LOCK	6

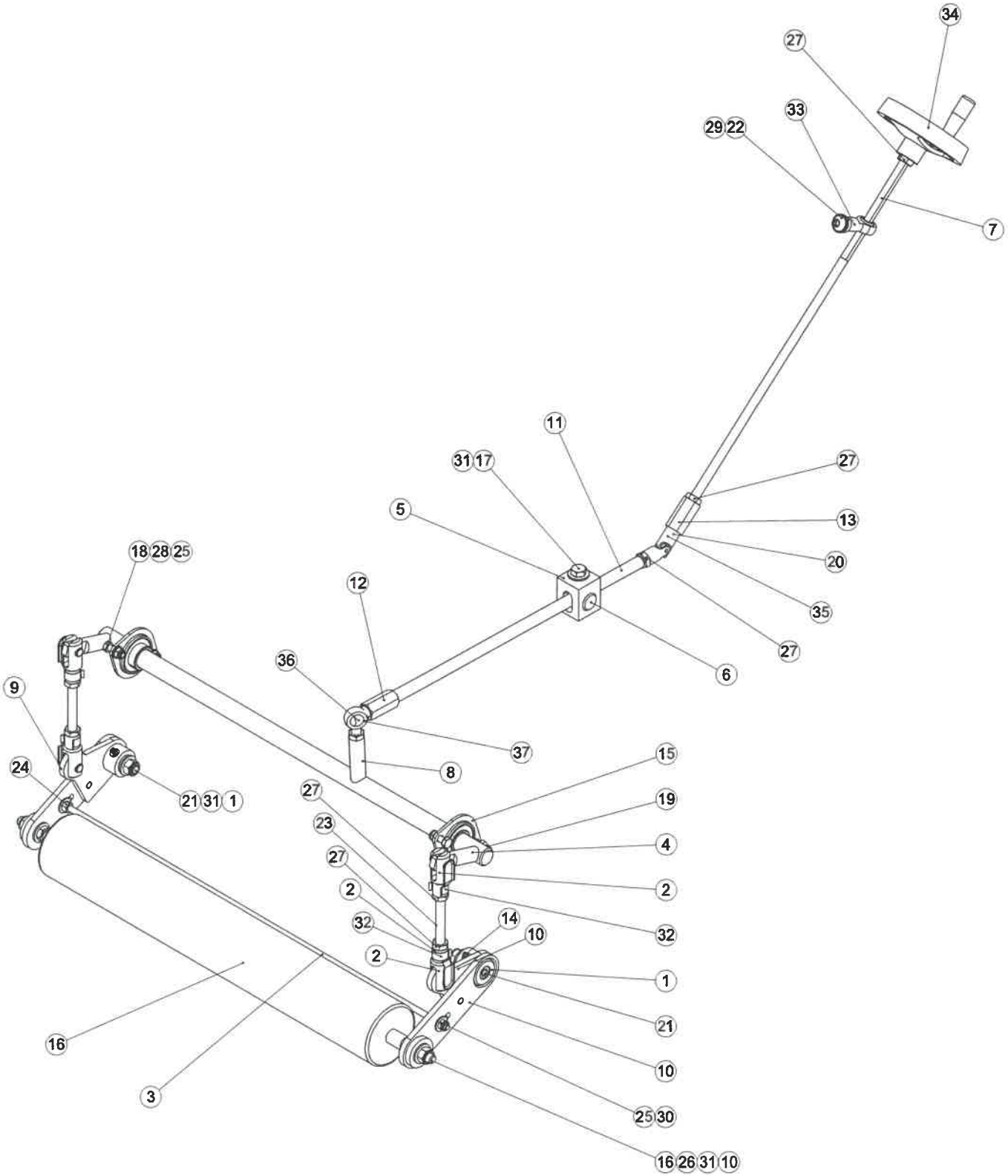
CONTROLS



ITEM NO.	PART NUMBER	DESCRIPTION	CONTROLS/QTY.
1	127434_REV1	RED KNOB M10	1
2	176457_REV1	BLACK KNOB M10	1
3	290055_REV0	DRIVE ACTUATOR ASSY	1
4	290060_REV0	DRIVE LEVER ASSY	1
5	290103_REV0	SENSOR ANGLE PLATE	2
6	290121_REV0	OVER CENTRE ROD	1
7	290130_REV0	CLUTCH ENGAGMENT OUTER	1
8	290131_REV0	CLUTCH ENGAGMENT INNER	1
9	290135_REV0	CONTROL LEVER REEL	1
10	290138_REV0	CONTROL LEVER DRIVE	1
11	D1040_REV0	SPLIT PIN 3/32" X 3/4""	4
12	D1887_REV1	THACKERY WASHER M12	2
13	F21463_REV1	CLEVIS 8MM LONG	1
14	F21464_REV1	CLEVIS CLIP M8 LONG	1
15	J209011_REV0	TENSION SPRING	1
16	J209021_REV0	SPLIT PIN 1/16" X 1/2"	1
17	J209047_REV0	TENSIONER PULLEY	1
18	SP01029_REV0	SHOULDER BOLT 12 X 25 M10	1
19	SP01070_REV0	CAP HEAD M2 X 12	4
20	SP01071_REV0	HEX SET SCREW 3/8" UNF X 1 1/2"	1
21	SP01126_REV0	SHOULDER BOLT 12 X 50 M10	2
22	SP01128_REV0	ROD M8 X 160	1
23	SP01135_REV0	HEX SET SCREW M5 X 16	4
24	SP02002_REV0	NUT M5 NYLOC (T)	4
25	SP02008_REV0	NUT M10 NYLOC (T)	1
26	SP02012_REV0	NUT M8 LOCK (THIN)	3
27	SP02018_REV0	NUT 3/8" UNF NYLOC (T)	1
28	SP02032_REV0	NUT M2 STD	4
29	SP03008_REV0	WASHER M8 FORM A	5
30	SP03009_REV0	WASHER M5 FORM A	8
31	SP03011_REV0	WASHER M10 FORM A	1
32	SP03012_REV0	WASHER M12 FORM A	3
33	SP03027_REV0	WASHER M2	8
34	SP05006_REV0	CLEVIS PIN 8 X 30	1
35 **	SP12002_REV1	THROTTLE CABLE G860 / G760	1
36 **	SP12053_REV0	CABLE DRIVE	1
37	SP14028_REV0	CLEVIS CLIP M8 SHORT	1

** PARTS NOT SHOWN

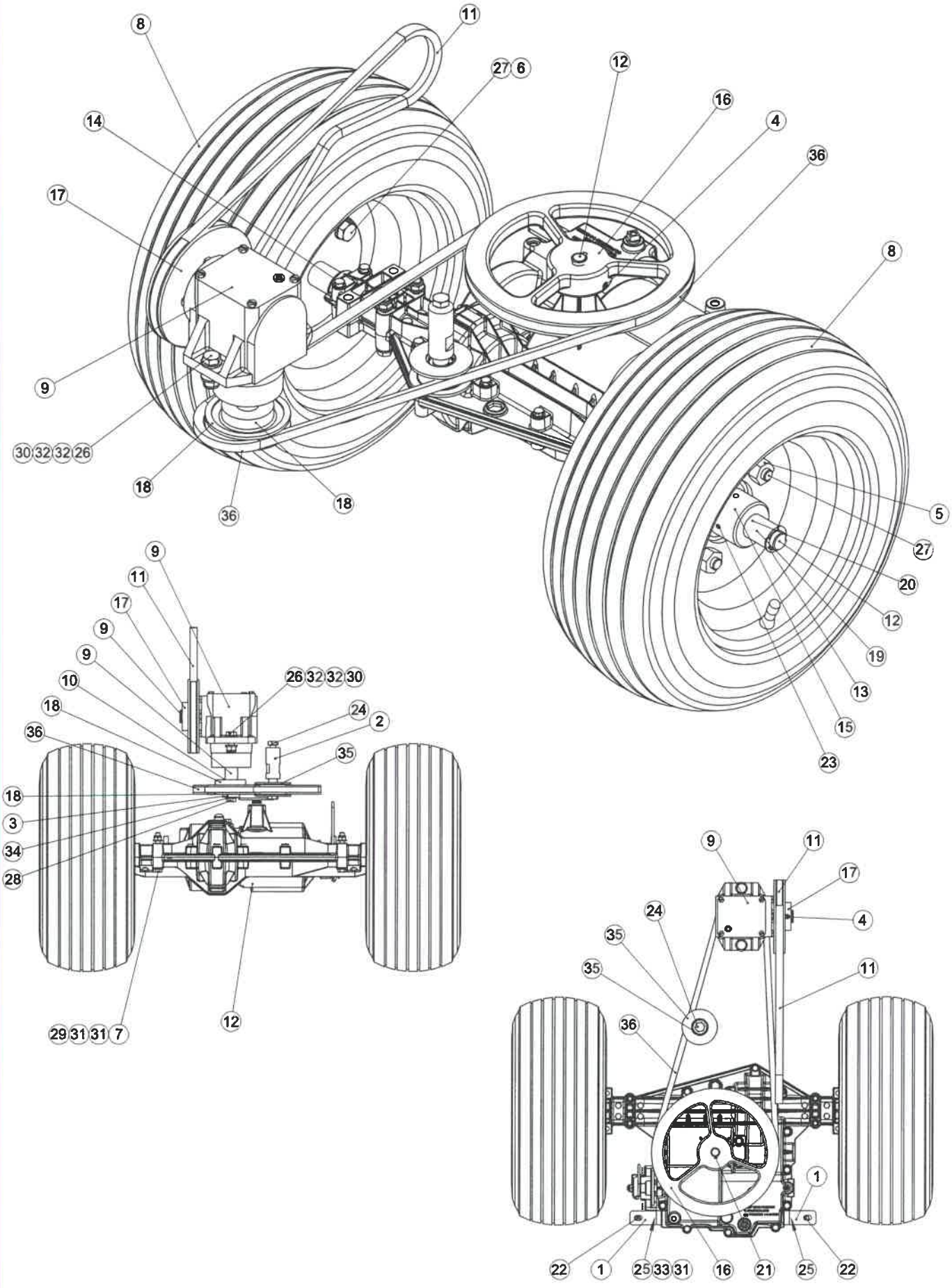
ROLLER ASSEMBLY



ROLLER ASSEMBLY BOM

ITEM NO.	PART NUMBER	DESCRIPTION	ROLLER ASSEMBLY/QTY.
1	290039_REV0	ROLLER PIVOT BUSH	2
2	290048_REV0	BRACE END	4
3	290049_REV0	ROLLER SCRAPER	1
4	290053_REV0	ROLLER TORSION ARM	2
5	290081_REV0	ROLLER ADJ BLOCK	1
6	290083_REV0	ROLLER ADJ NUT	1
7	290084_REV1	ROLLER ADJ ROD	1
8	290197_REV0	TORSION BAR ASSY	1
9	290200_REV0	ROLLER ARM ASSY R.H.	1
10	290201_REV0	ROLLER ARM ASSY L.H.	1
11	290203_REV0	ADJUSTER BAR	1
12	290204_REV0	ADJUSTER BAR ADAPTER	1
13	290207_REV0	ADJUSTER ROD EXTENSION	1
14	D1947_REV1	GREASE NIPPLE M6	2
15	D8032_REV0	BEARING BPFL5-25	2
16	J24550_REV1	FRONT ROLLER 24"	1
17	SP01021_REV0	HEX SET SCREW M12 X 20	1
18	SP01045_REV0	HEX SET SCREW M8 X 25	4
19	SP01052_REV0	CAP HEAD M10 X 35	1
20	SP01125_REV0	ROD M12 X 40	1
21	SP01130_REV0	CAP HEAD M12 X 45	2
22	SP01132_REV0	BUTTON HEAD M12 X 20	1
23	SP01146_REV0	ROD M12 X 120	2
24	SP02005_REV0	NUT M8 STD	2
25	SP02006_REV0	NUT M8 NYLOC (T)	6
26	SP02010_REV0	NUT M12 NYLOC (T)	4
27	SP02014_REV0	NUT M12 LOCK (THIN)	10
28	SP03008_REV0	WASHER M8 FORM A	4
29	SP03012_REV0	WASHER M12 FORM A	1
30	SP03015_REV0	WASHER M8 FORM C	4
31	SP03017_REV0	WASHER M12 FORM C	7
32	SP14020_REV0	CLEVIS CLIP M12 SHORT	4
33	SP14022_REV0	ROD END M12 FEMALE	1
34	SP14023_REV0	HANDWHEEL	1
35	d7907a	UNI JOINT	2
36	f21064a-jw	ROD END MJ-12-M-STS	1
37	f21064b-jw	ROD END MJ-12-M-STS	1

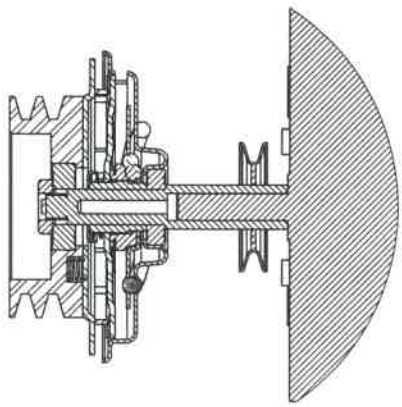
DRIVE AXLE ASSEMBLY

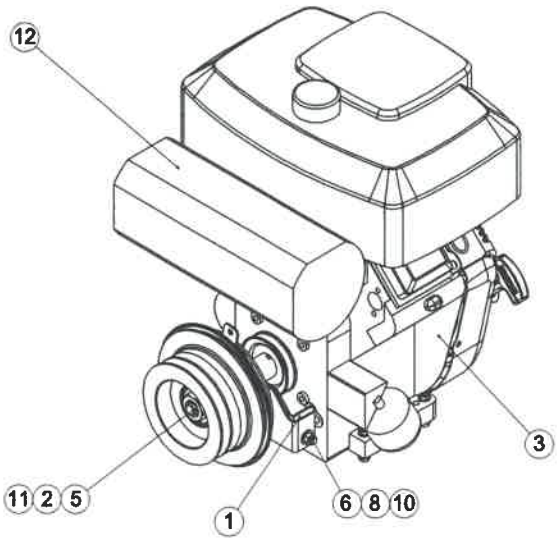


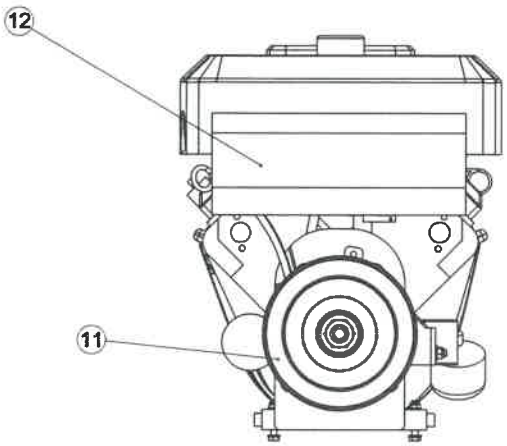
DRIVE & AXLE BOM

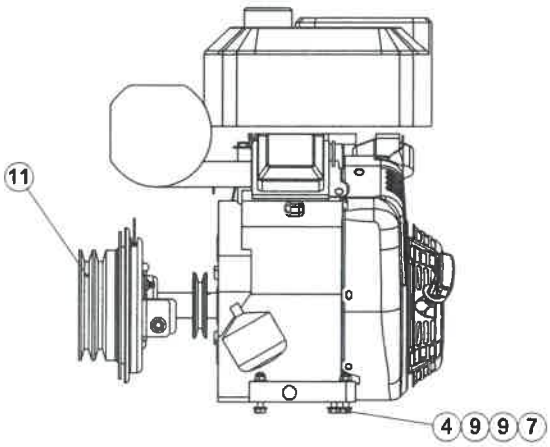
ITEM NO.	PART NUMBER	DESCRIPTION	DRIVE & AXLE ASSEMBLY/QTY.
1	290062_REV0	TORQUE STRAP	2
2	290079_REV0	BELT TENSIONER POST	1
3	290080_REV1	SPACER PULLEY	1
4	D8154_REV1	GRUB SCREW M8 X 16	6
5	D8360_REV1	WHEEL NUT M12	8
6	E1-1065_REV0	SPRING WASHER M12 SQUARE SECTION	8
7	E1-1114_REV0	HEX BOLT M8 X 65	4
8	F20171_REV0	WHEEL ASSY 16X650-8 04 PLY 4 STUD 4" PCD	2
9	F20527_REV0	GEARBOX ANGLE DRIVE R.H.	1
10	F20558_REV1	WOODRUFF KEY NO6 (505)	1
11	F21440_REV1	BELT 'V' A 37 COTTON	1
12	F21629_REV1	AXLE	1
13	F21722_REV1	E-CLIP 5/8" 0.584" DIA AM1500/75	2
14	F21782_REV1	WASHER NYLON 003 1805 000 01	1
15	F35773_REV1	WHEEL HUB	2
16	F36029_REV1	PULLEY V SPZ 224 PCD	1
17	F36030_REV1	PULLEY V SPA 125 PCD	1
18	F36031_REV1	PULLEY GEARBOX DRIVEN	1
19	F36169_REV1	WHEEL SPACER	4
20	J20457_REV1	KEY 3/16" X 3/16" X 1" RD END	2
21	J20462_REV0	KEY WOODRUFF (606) 3/16" X 3/4"	2
22	SP01009_REV0	HEX SET SCREW M8 X 20	2
23	SP01017_REV0	GRUB SCREW M6 X 12	4
24	SP01034_REV0	HEX SET SCREW M10 X 20	1
25	SP01086_REV0	HEX SET SCREW 5/16" UNF X 5/8"	2
26	SP01105_REV0	HEX SET SCREW M10 X 30	3
27	SP01111_REV0	HEX SET SCREW M12 X 35	8
28	SP01138_REV0	HEX SET SCREW 3/8" UNF X 1 1/4"	1
29	SP02006_REV0	NUT M8 NYLOC (T)	4
30	SP02008_REV0	NUT M10 NYLOC (T)	2
31	SP03008_REV0	WASHER M8 FORM A	12
32	SP03011_REV0	WASHER M10 FORM A	4
33	SP03029_REV0	WASHER M8 SPRING LOCK	4
34	SP03034_REV0	WASHER M10 SPRING LOCK	2
35	SP11035_REV0	PULLEY IDLER 19MM	1
36	SP11036_REV0	BELT Z51	1

ENGINE & CLUTCH ASSEMBLY



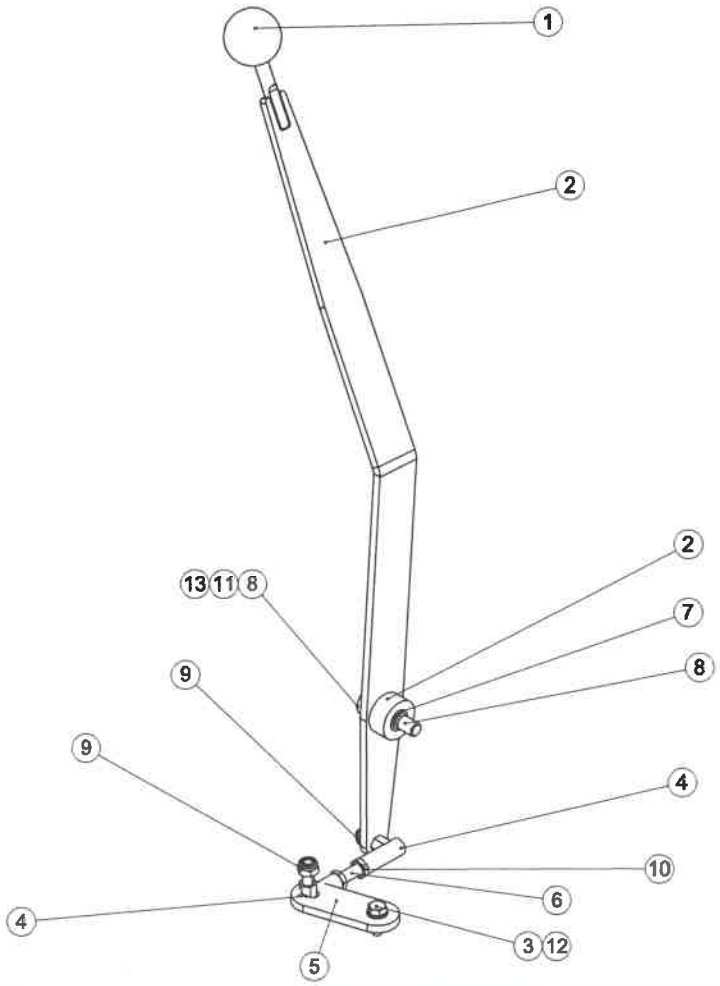






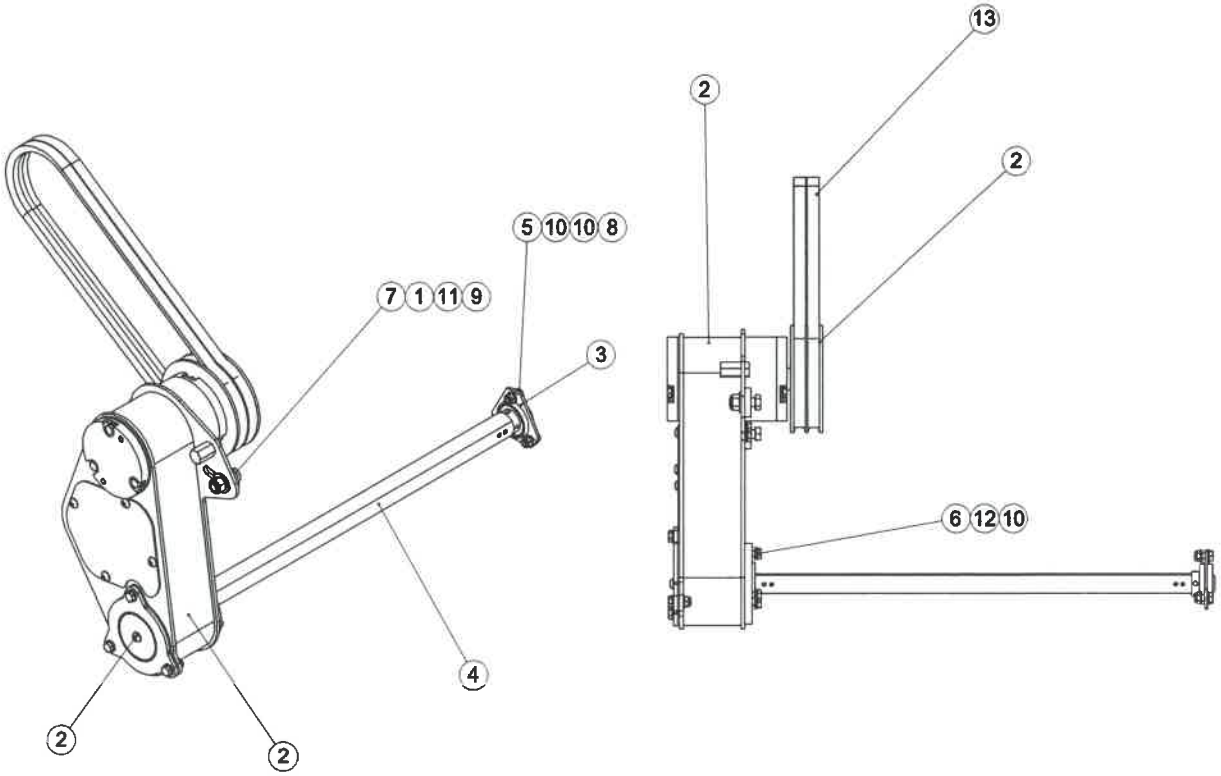
ITEM NO.	PART NUMBER	DESCRIPTION	ENGINE AND CLUTCH ASSEMBLY/QTY.
1	290127_REV0	SECURING PLATE	1
2	290133_REV0	CLUTCH COLLAR	1
3	F22412_REV1	ENGINE B&S 16HP TWIN	1
4	SP01022_REV0	HEX SET SCREW M8 X 50	4
5	SP01133_REV0	HEX BOLT 3/8" UNF X 4 3/4"	1
6	SP01138_REV0	HEX SET SCREW 3/8" UNF X 1 1/4"	1
7	SP02006_REV0	NUT M8 NYLOC (T)	4
8	SP02018_REV0	NUT 3/8" UNF NYLOC (T)	1
9	SP03008_REV0	WASHER M8 FORM A	8
10	SP03011_REV0	WASHER M10 FORM A	2
11	SP11051_REV0	CLUTCH CB257	1
12	SP15101_REV0	EXHAUST (995003) B&S 16HP V TWIN	1

GEAR LEVER ASSEMBLY



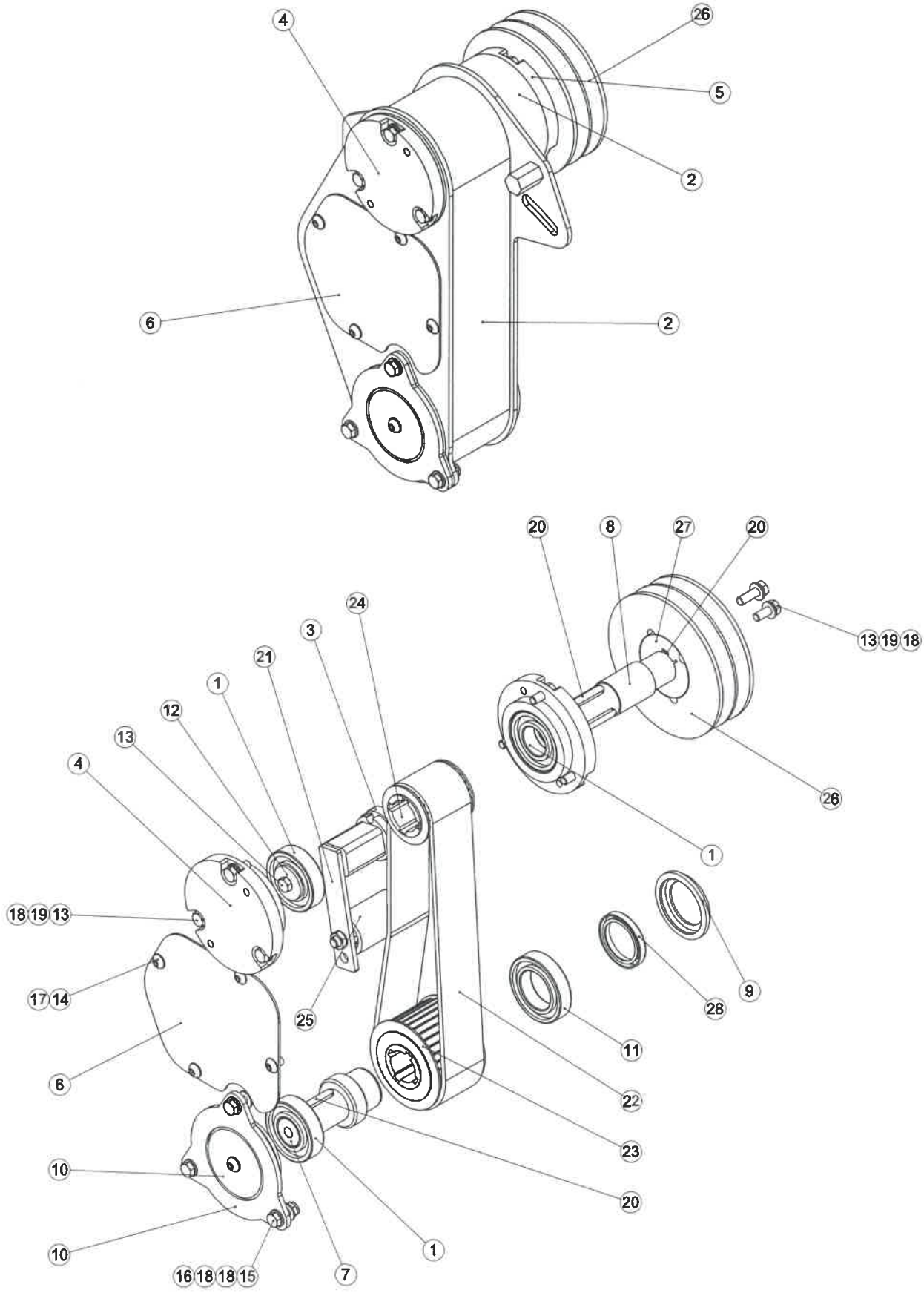
ITEM NO.	PART NUMBER	DESCRIPTION	GEAR LEVER ASSEMBLY /QTY.
1	176457_REV1	BLACK KNOB M10	1
2	290110_REV0	GEAR LEVER ASSY (600HD)	1
3	D1239_REV0	HEX SET SCREW 1/4" UNF X 3/4"	1
4	D8485_REV1	ROD END R108-M8.	2
5	F37454_REV2	GEAR SHIFT LEVER	1
6	J20553_REV1	ROD M8 X 60	1
7	J209085_REV1	BUSH AM1216 - 20	1
8	SP01029_REV0	SHOULDER BOLT 12 X 25 M10	1
9	SP02006_REV0	NUT M8 NYLOC (T)	2
10	SP02012_REV0	NUT M8 LOCK (THIN)	2
11	SP03012_REV0	WASHER M12 FORM A	1
12	SP03014_REV0	WASHER M6 FORM C	1
13	SP03019_REV0	WASHER M12 WAVE	1

TINE DRIVE ASSEMBLY



ITEM NO.	PART NUMBER	DESCRIPTION	TINE DRIVE ASSEMBLY/QTY.
1	290174_REV0	DRIVE SPACER	2
2	800232_REV1	BELT BOX ASSY	1
3	F21150_REV1	BEARING BPFT5-25	1
4	F37410_REV4	TINE SHAFT	1
5	SP01009_REV0	HEX SET SCREW M8 X 20	3
6	SP01045_REV0	HEX SET SCREW M8 X 25	3
7	SP01111_REV0	HEX SET SCREW M12 X 35	2
8	SP02006_REV0	NUT M8 NYLOC (T)	3
9	SP02010_REV0	NUT M12 NYLOC (T)	2
10	SP03008_REV0	WASHER M8 FORM A	9
11	SP03017_REV0	WASHER M12 FORM C	2
12	SP03029_REV0	WASHER M8 SPRING LOCK	3
13	SP11037_REV1	BELT B45 ARAMID CORED	2

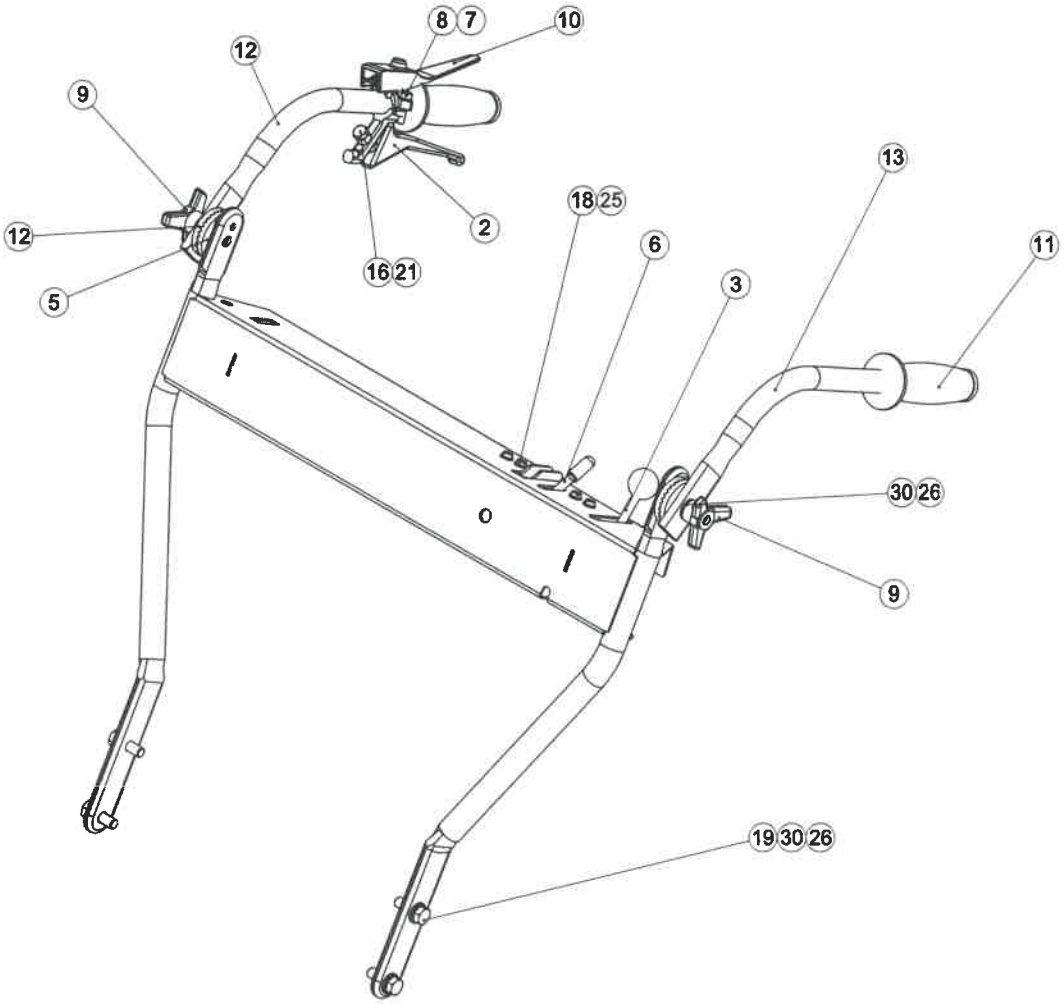
TINE DRIVE BELT BOX

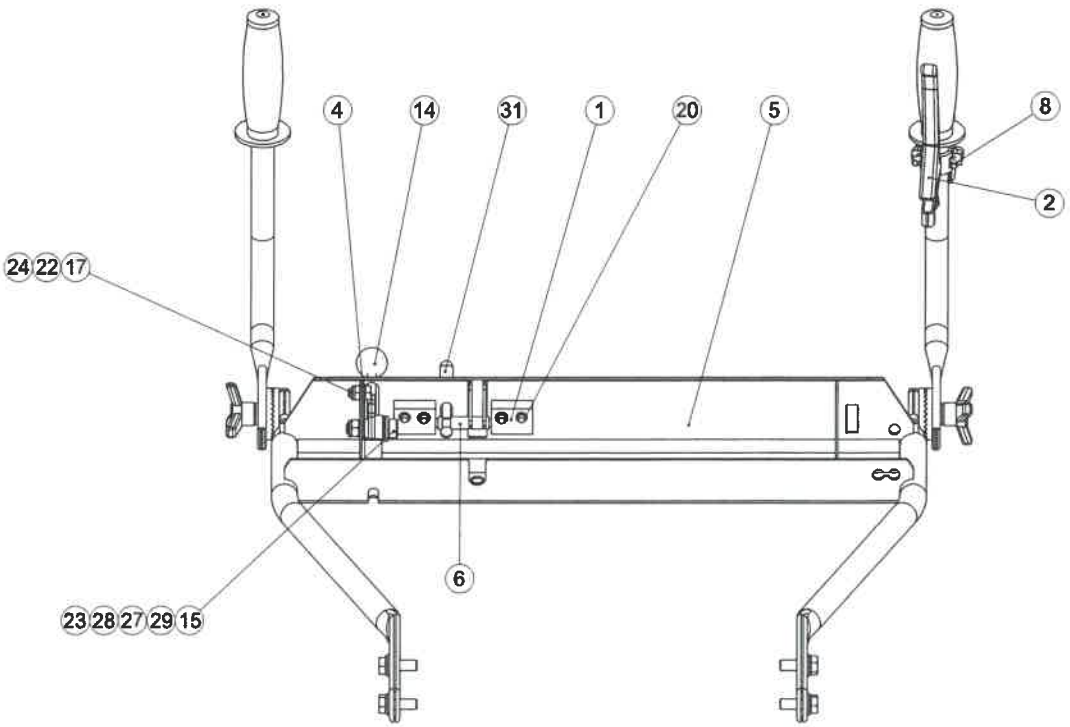


TINE DRIVE BELT BOX

ITEM NO.	PART NUMBER	DESCRIPTION	Default/QTY.
1	065696_REV0	BEARING 6206-2RS 3	3
2	290150_REV1	BELT BOX W.A.	1
3	290156_REV0	TENSIONER SPACER	1
4	290159_REV1	BRG HOUSING BLANK (BELT BOX)	1
5	290160_REV0	BRG HOUSING THRU (BELT BOX)	1
6	290161_REV1	COVER PLATE (BELT BOX)	1
7	290162_REV1	DRIVE SHAFT (SQUARE)	1
8	290163_REV1	TOP SHAFT	1
9	290166_REV1	BELT BOX PIVOT RING	1
10	290170_REV0	BEARING HOUSING ASSY	1
11	F22418_REV1	BEARING 6008 2RS	1
12	J209249_REV0	WASHER 9 X 35 X 3	1
13	SP01009_REV0	HEX SET SCREW M8 X 20	8
14	SP01012_REV0	BUTTON HEAD M8 X 12	5
15	SP01045_REV0	HEX SET SCREW M8 X 25	4
16	SP02006_REV0	NUT M8 NYLOC (T)	3
17	SP03004_REV0	WASHER M8 TOOTHED	5
18	SP03008_REV0	WASHER M8 FORM A	14
19	SP03029_REV0	WASHER M8 SPRING LOCK	8
20	SP10002_REV0	KEY 8 X 7 X 40 RD END	5
21	SP11008_REV0	TENSIONER ARM SE15	1
22	SP11043_REV0	BELT OMEGA HP 8M 50 800	1
23	SP11045_REV0	PULLEY 34-8M-50 32MM BORE	1
24	SP11047_REV0	PULLEY 22-8M-50 32MM BORE	1
25	SP11048_REV0	TENSIONER ROLLER ASSY 50MM	1
26	SP11049_REV0	PULLEY 2SPB 140 2012	1
27	SP11050_REV0	TAPER BUSH 2012 - 30MM	1
28	SP08004_REV0	SEAL 40 X 55 X 7	1

HANDLES ASSEMBLY

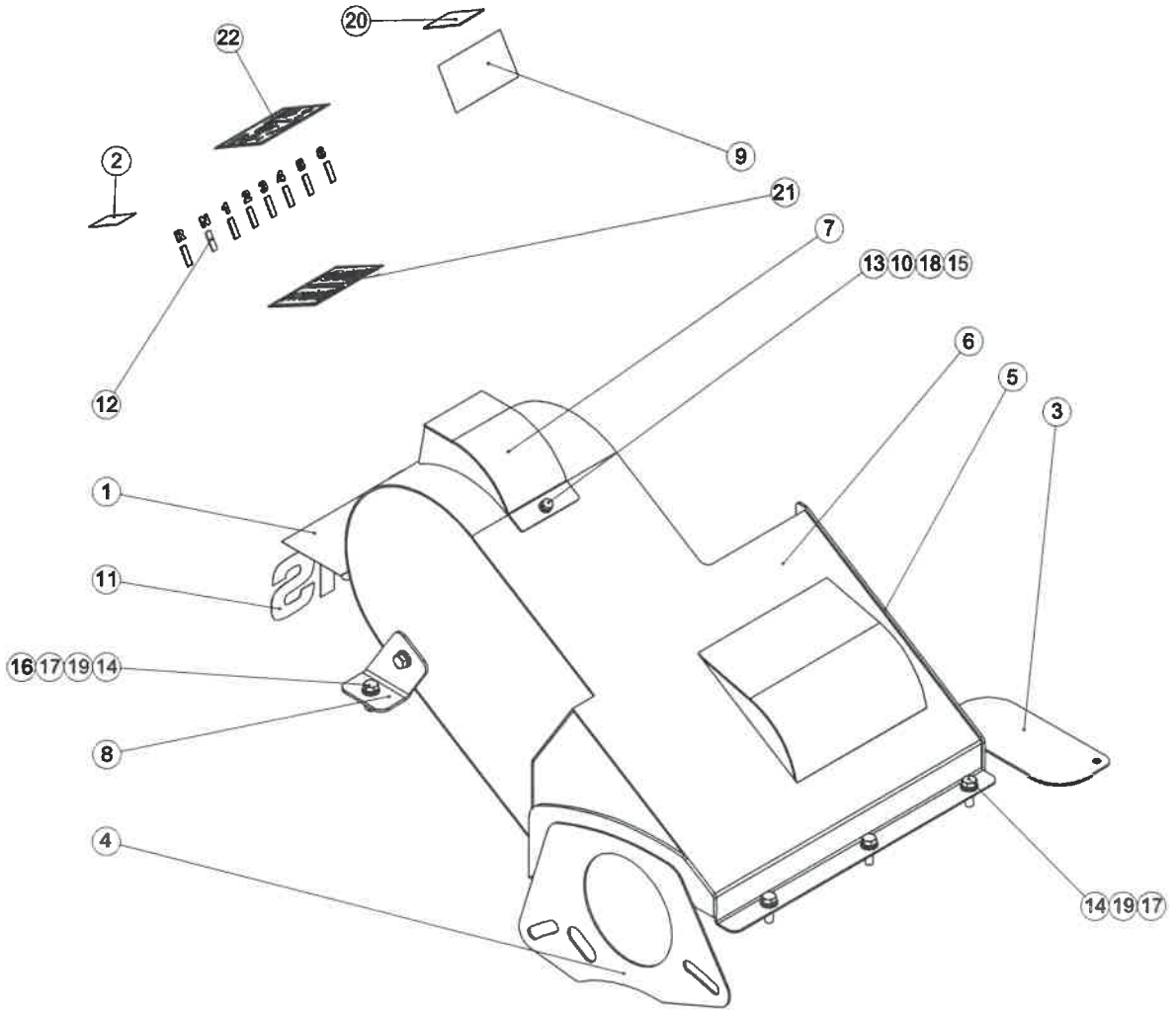




HANDLES ASSEMBLY BOM

ITEM NO.	PART NUMBER	DESCRIPTION	HANDLES ASSEMBLY/QTY.
1	229585_REV1	PIVOT BLOCK	2
2	229754_REV0	CLUTCH LEVER LEVER	1
3	230190_REV1	THROTTLE LEVER W.A.	1
4	230196_REV1	THROTTLE PLATE	1
5	290100_REV0	LOWER HANDLE ASSY (600HD)	1
6	290115_REV0	ADJUSTER LOCK W.A.	1
7	E1-1061_REV0	WASHER M6 SPRING	2
8	E1-1669_REV0	CAP HEAD M6 X 25	2
9	F21063_REV1	LOCK KNOB	2
10	F21905_REV0	DEADMAN LEVER	1
11	F22019_REV1	HANDLE GRIP	2
12	F36639_REV3	UPPER HANDLE R.H.	1
13	F36640_REV3	UPPER HANDLE L.H.	1
14	J20017_REV1	KNOB - RED	1
15	SP01029_REV0	SHOULDER BOLT 12 X 25 M10	1
16	SP01045_REV0	HEX SET SCREW M8 X 25	1
17	SP01076_REV0	HEX SET SCREW M8 X 16	1
18	SP01101_REV0	SCREW M6 X 25 SLOTTED	4
19	SP01105_REV0	HEX SET SCREW M10 X 30	4
20	SP02004_REV0	NUT M6 NYLOC	4
21	SP02005_REV0	NUT M8 STD	1
22	SP02006_REV0	NUT M8 NYLOC (T)	1
23	SP02008_REV0	NUT M10 NYLOC (T)	1
24	SP03008_REV0	WASHER M8 FORM A	1
25	SP03010_REV0	WASHER M6 FORM A	4
26	SP03011_REV0	WASHER M10 FORM A	6
27	SP03012_REV0	WASHER M12 FORM A	1
28	SP03019_REV0	WASHER M12 WAVE	1
29	SP03020_REV0	SHIM 12 X 18 X 1	2
30	SP03034_REV0	WASHER M10 SPRING LOCK	6
31	SP14003_REV0	SLEEVE PLASTIC 7.95MM X 25.4	1

GUARDS & DECALS



ITEM NO.	PART NUMBER	DESCRIPTION	GUARDS AND DECALS/QTY.
1	229375_REV1	DECAL WARNING	1
2	229599_REV1	DECAL ENGINE ON / OFF	1
3	290190_REV1	COVER INSPECTION	1
4	290205_REV1	GUARD SLIDING SIDE	1
5	290206_REV0	GUARD END PLATE	1
6	290220_REV0	GUARD MAIN RR600HDX	1
7	290230_REV0	GUARD CLUTCH LINK	1
8	290234_REV0	GUARD BRACKET 1	1
9	B32903_REV0	DECAL UNION JACK	1
10	E1-1061_REV0	WASHER M6 SPRING	1
11	F35993_REV1	DECAL SISIS ORANGE	1
12	F37466_REV2	SPEED LABEL	1
13	SP01028_REV0	HEX SET SCREW M6 X 20	1
14	SP01045_REV0	HEX SET SCREW M8 X 25	5
15	SP02042_REV0	RIVNUT HEX M6 (0.5-3.0) [NO HEAD]	1
16	SP02044_REV0	RIVNUT HEX M8 (0.5-3.0) [NO HEAD]	4
17	SP03008_REV0	WASHER M8 FORM A	5
18	SP03010_REV0	WASHER M6 FORM A	1
19	SP03029_REV0	WASHER M8 SPRING LOCK	5
20	SP18001_REV0	DECAL THROTTLE (RAZOR)	1
21	SP18016_REV0	DECAL DRIVE TINE	1
22	SP18018_REV0	DECAL DEPTH RR600HDX	1

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

Tel: +44 (0) 1332 824 777
Fax: +44 (0) 1332 824 525

Email: info@sisis.com

www.sisis.com

A division of Howardson Ltd – a proudly British company
Company reg No: 641526 – Vat No GB 345 9918 12