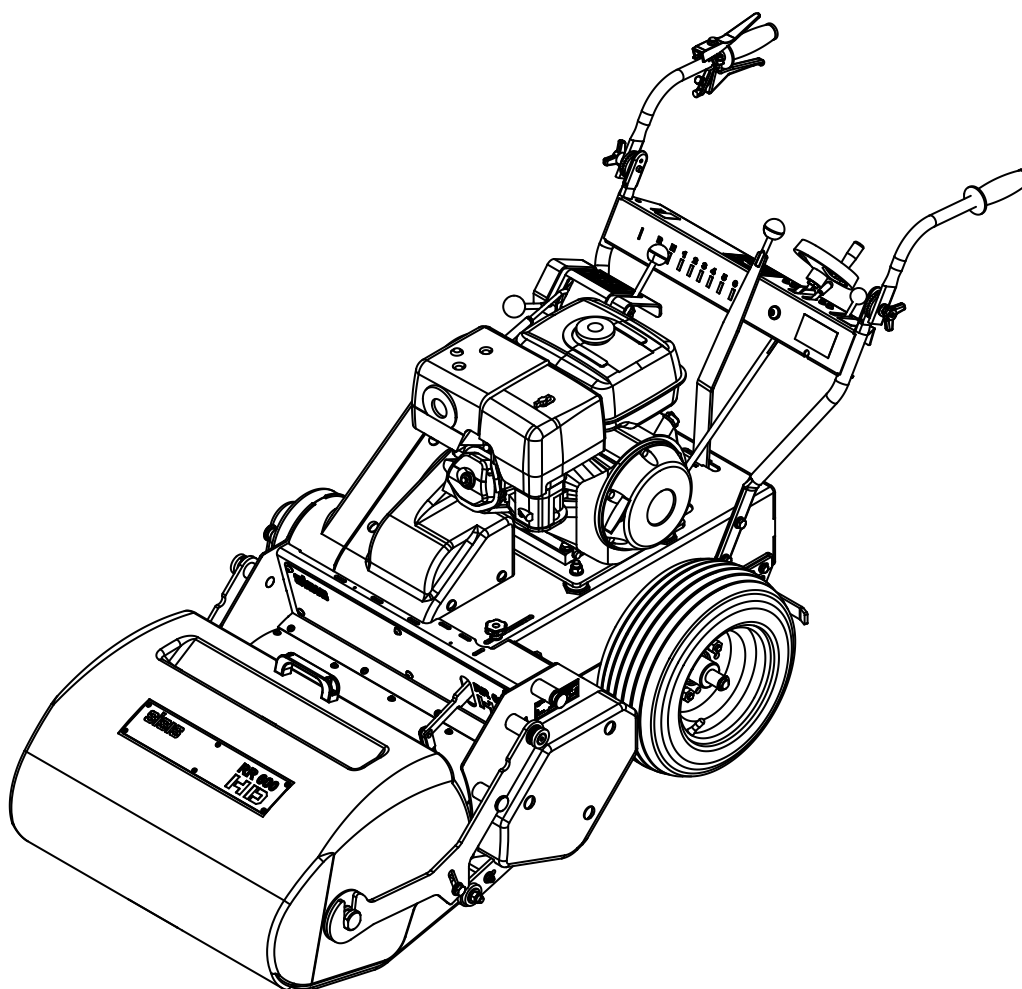




ROTORAKE RR600HD

INSTRUCTION MANUAL



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

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Company reg no 641526 - Vat No GB 345 9918 12

SP20035_REV_0
06/13

Certificate of Conformity

RR600HD CN Code: 8432 29 10

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:-

Model	Operating Width	Power (Honda)	Measured Sound Power Level	Guaranteed Sound Power Level	Serial Number
RR600HD	24" (610mm)	GX390	94dB Lwa	103dB Lwa	See Product ID range

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 NUMBERS OF YOUR MACHINE & ENGINE AND ALWAYS QUOTE THEM IN ANY COMMUNICATION WITH PERSONNEL AT DENNIS.

MACHINE SERIAL NUMBER

ENGINE SERIAL NUMBER

Introduction

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

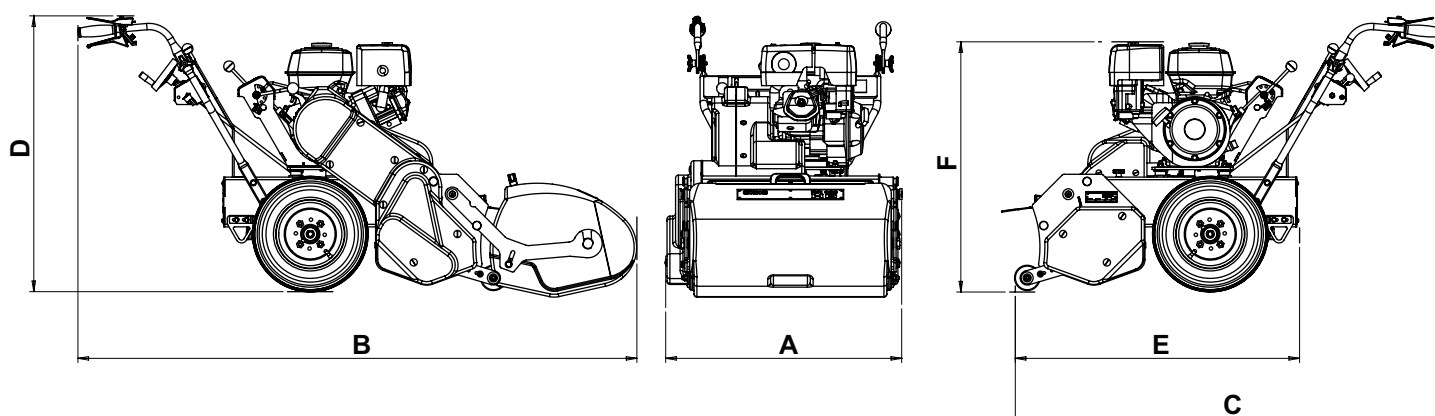
It is advisable to read the instructions carefully. Proper care and attention will enable the machine to give a continuous, satisfactory, and reliable service. Failure to carry out regular lubrication and maintenance as outlined in this manual may render any guarantee or warranty invalid.

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.

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Technical Data



Model	Rotorake RR600HD
A - Width (mm)	830
B - Length inc. Collector (mm)	1966
C - Length (mm)	1500
D - Height (mm)	970
E - Main Body Length (mm)	1000
F - Main Body Height (mm)	880
Weight (Kg)	180
Operating Width (mm)	610mm (24")
Cutting Range (mm)	50
Approx Ground Coverage	
- Light / Medium (m ² /hr)	1250
- Deep (m ² /hr)	750
Tyre Pressures (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	Honda GX390
Engine Type	Air Cooled 4-stroke OHV Petrol Engine
Displacement (cm ³)	389
Net Power	8.7 kW (11.7 Hp) @ 3600rpm
Cont. Rated Power	6.4 kW (8.6 Hp) @ 3000rpm
Max. Net Torque	7.0 kW (9.4 Hp) @ 3600rpm
Fuel Tank Capacity (Ltr)	26.5 Nm / 2.7 kgfm @ 2500rpm
Fuel Cons (Cont. Rated Power)	6.1
Engine Oil Capacity (Ltr)	3.5Ltr / hr
*Oil Type	1.1
	SAE10W-30

* Ref. to engine manual for further details.

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

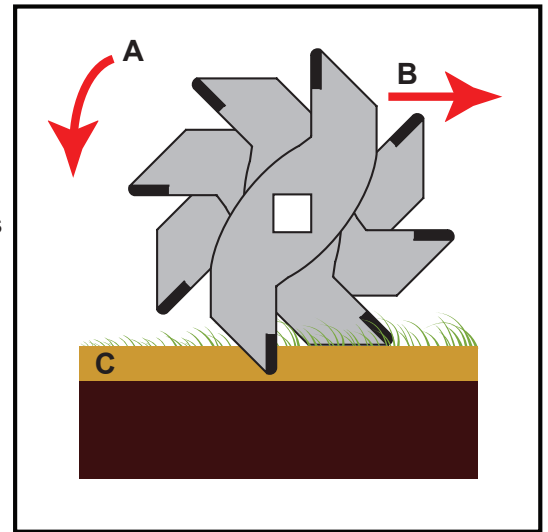
The name "ROTORAKE" has become synonymous with effective thatch removal and control. However the new SISIS rotorake, RR600HD is more than a scarifier.

A superb thatch remover for regular routine use when used at a shallow setting, but with the capability 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.

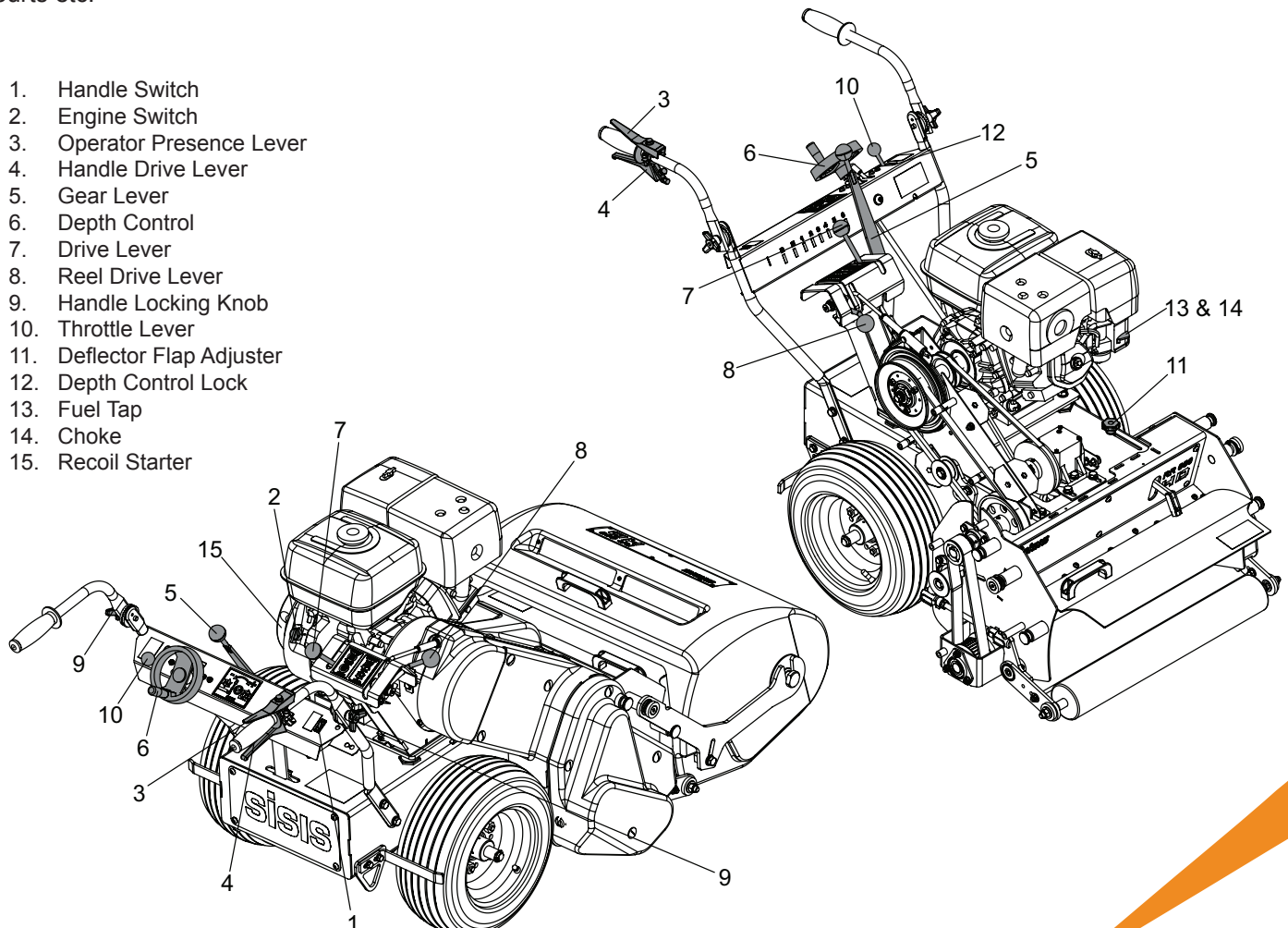
The RR600HD incorporates the well proven SISIS rotorake contra-rotation principle, whereby the reel rotates at high speed against the direction of travel. The blades therefore cut upwards continuously throwing the thatch forwards rather than pushing it into the surface. This action also holds the machine to the ground, maintaining a regular working depth.

As well as thatch removal the RR600HD 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 etc. into the surface

The RR600HD is ideal to improve all fine turf areas such as golf greens, bowling greens, cricket squares, lawn tennis courts etc.



1. Handle Switch
2. Engine Switch
3. Operator Presence Lever
4. Handle Drive Lever
5. Gear Lever
6. Depth Control
7. Drive Lever
8. Reel Drive Lever
9. Handle Locking Knob
10. Throttle Lever
11. Deflector Flap Adjuster
12. Depth Control Lock
13. Fuel Tap
14. Choke
15. Recoil Starter





CAUTION

READ THE INSTRUCTIONS CAREFULLY AND ALSO THE SEPARATE INSTRUCTION DETAILS ON 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 and feet near or under the rotating parts.
- Always wear substantial footwear and long trousers. Do not operate the machine barefoot or in open sandals
- Do not 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 on slopes when changing direction.
- Walk across the face of slopes, never up and down.
- Walk, never run.
- Exercise extreme caution when reversing or pulling the machine toward you.
- Stop the reel if the machine has to be tilted for transportation or manoeuvring.
- Never operate the machine with defective guards or safety devices.
- 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.



CAUTION

PLEASE READ THESE OPERATING INSTRUCTIONS CAREFULLY BEFORE COMMENCING WORK.

PREPARATION (Ref. Machine Description)

- Thoroughly inspect where the equipment is to be used and remove all hazards and foreign objects including stones, sticks, wire, bones etc.
- Thoroughly inspect the machine for missing components, damage and wear. Replace components where necessary. This check must include:
 - All safety switches / operator presence devices
 - All guards
 - Engine components.
- Check Engine oil level and top up in accordance with engine manufacturer's recommendations. (ref. engine manual supplied with the machine. [SAE 10W-30])
- 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 engine is running or hot.
 - If fuel is spilled, do not attempt to start the engine. Move the machine away from the area of spillage to avoid creating any source of ignition.
 - Petrol is highly flammable and will damage grass if spilled.
- Adjust the reel blades to be clear of the ground (Machine Description, Item 6). Note: there is a lock on this lever (item 12), this will need to be lifted before the handle can be rotated.
- Adjust the deflector flap to the required position (item 11)
- Check the machine is in Neutral (item 5)
- Check the Reel Drive Lever (item 8) is disengaged.
- Check the Drive Lever (item 7) is disengaged.

STARTING / STOPPING THE ENGINE (Ref. Machine Description)

- Switch the Engine Switch and Handle Switch to ON position (items 1 and 2).
- Switch the fuel ON at the engine (item 13)
- Switch the choke ON if required (item 14). Note: often only required for a few seconds.
- Set the Throttle Lever (item 10) to half open.
- Pull the Recoil (item 15) 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 (item 13)

ENGAGING DRIVE TO THE WHEELS (Ref. Machine Description)

- With the engine running, select the appropriate gear (item 5). For those unfamiliar with the machine, select 1st gear.
- Adjust the Throttle Lever (item 10) to half revs
- Depress Operator Presence Lever (item 3).
- Engage the Handle Drive Lever (item 4) and the machine will start to move.
- To increase speed, release Handle Drive Lever (item 4), select a higher gear. DO NOT change gear when the machine is moving.
- Drive can also be engaged using Drive Lever (item 7). Using this lever eliminates the need to continually hold the Handle Drive Lever (item 4). NOTE: Releasing the Operator Presence Lever (item 3) while the Drive Lever (item 7) is engaged will cause the engine to stop.



CAUTION

PLEASE 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 6).
- With the engine running, depress Operator Presence Lever (item 3).
- Engage the Reel Drive Lever (item 8) NOTE: Releasing the operator presence lever (item 3) while the Reel Drive Lever (item 8) is engaged will cause the engine to stop.

TO START SCARIFYING (Ref. Machine Description)

- With the engine running at full power (Throttle [item 10] fully open) and the Drive Reel engaged as above, start to lower the blades using the Depth Control (item 6)
- Engage drive to the wheels as above.
- The Depth can be adjusted as the machine is moving.
- When finished, lift the blades clear of the ground (item 6)

STORAGE (Ref. Machine Description)

- Ensure the machine is cool before storing inside.
- DO NOT power wash the machine.
- Always switch the fuel OFF at the engine (item 13)

The RR600HD has a quick change reel system. This not only allows damaged or worn blades to be changed easily and quickly, but also makes the machine multi-purpose.

REMOVING / REPLACING THE REEL (Ref. Figure 2)

- Raise the blades to the maximum clearance from the ground.
- Remove the cover on the non-drive side of the machine.
(large flat screw driver)
- Remove the bearing (2 x 13mm spanner)
- Lower the Reel and pull to disengage it from the square drive.

NOTE: Caution should be taken when handling the Reel shaft as the blades are very 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.

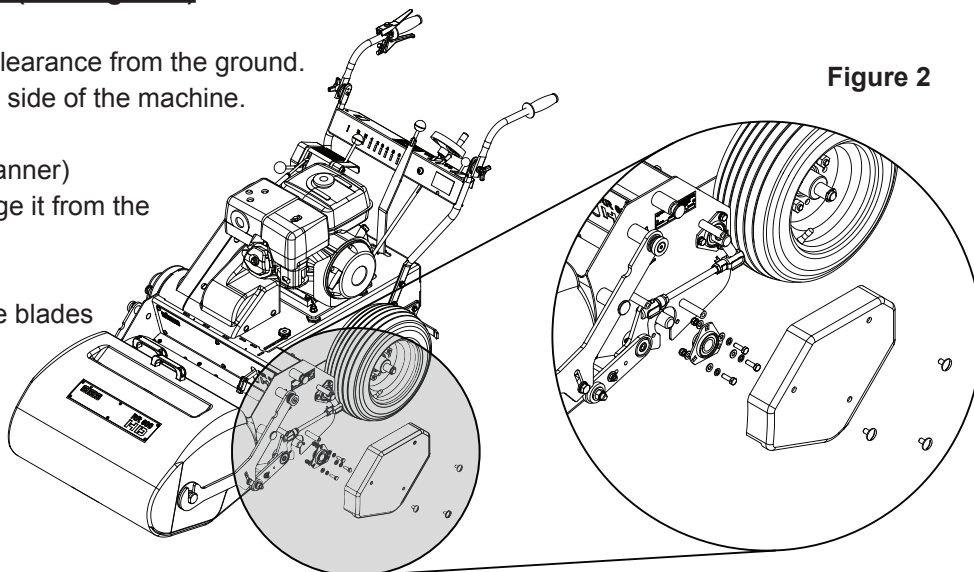


Figure 2

REPLACING BLADES ON THE SHAFT (Ref. Figure 3)

- Remove shaft from machine
- Remove split pin from square end of shaft (item 2)
- Remove square bore washer (item 4)
- Remove old blades and rubber 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 (item 9) to clamp the Tine Compression tool to the shaft as shown.
- With the same Allen key, tighten the M10 x 80 bolts (item 10). 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.

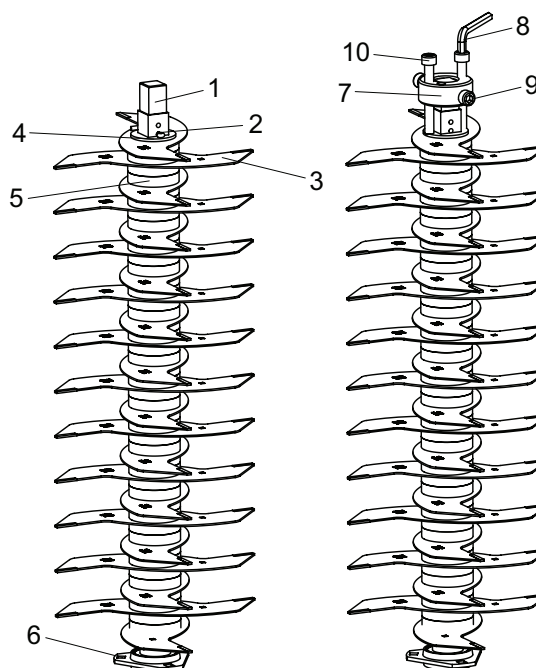
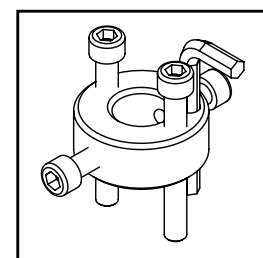


Figure 3



Tine Compression Tool

NOTE: Tine Compression Tool part number, FS0966

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) |
| • Rolaspikes | (FS1158) |
| • Faze-Mo | (FS1159) |

HANDLE BARS (Ref. Figure 4)

- Slacken the locking knob (item 9)
- Rotate the handle around the toothed disc.
- Select the required position and retighten the locking knob (item 9)
- Repeat for the other handle.

COLLECTOR BOX (Ref. Figure 4)

- Slacken the M12 bolts (item 14) (19mm spanner)
- Slide to achieve correct position for collector box
- Tighten the M12 bolts (item 14) (19mm spanner)

REAR WHEEL SCRAPER (Ref. Figure 4)

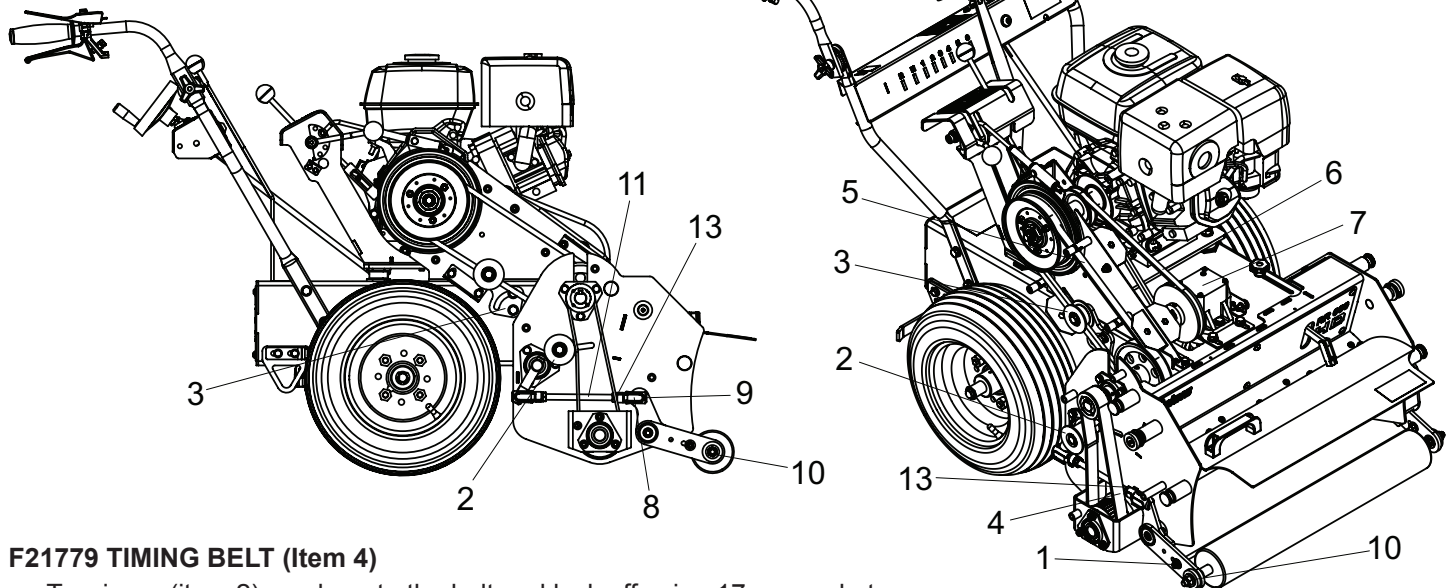
- Slacken the M8 bolts (13mm spanner) retaining the scraper (item 11)
- Slide the scraper to the desired position.
- Retighten the M8 bolts (13mm spanner)

FRONT ROLLER SCRAPER (Ref. Figure 5)

- Slacken the M8 nuts (2 x 13mm spanner) (item 1), on both sides of the scraper bar.
- Slide the scraper to the desired position.
- Retighten the M8 nuts (13mm spanner)

BELT TENSION (Ref. Figure 5)

There are 4-off belts on the machine:



F21779 TIMING BELT (Item 4)

- Tensioner (item 2), push up to the belt and lock off using 17mm socket.
NOTE: the nut is captive

SP11037 BELT B46 (Item 5)

- Tensioner (item 3), push up to the belt and lock off using 17mm socket.
NOTE: the nut is captive.

F21440 A SECTION (Item 6)

This is tensioned by sliding the 90 degree gearbox (item 7)

- Slacken the M10 x 30 bolts (17mm spanner) that retain the gearbox (item 7)
- Slide the gearbox to the desired position.
- Retighten the M10 x 30 bolts (17mm spanner)

SP11036 BELT Z51 (ref. parts section Wheel and Axle)

This is located under the machine driving the axle from the 90 deg gearbox

- Tensioner (item 32 , 2), push up to the belt and lock off using 17mm socket. **NOTE:** the nut is captive

CABLES (ref. Parts Section Controls)

There are 2-off cables on the machine:

SP12002 THROTTLE CABLE

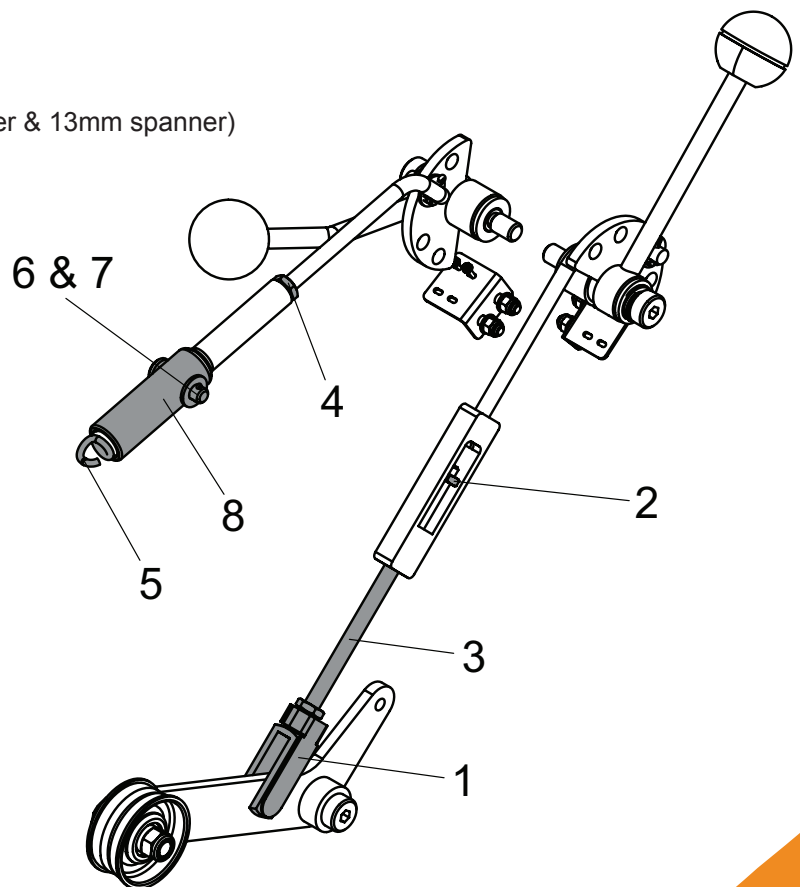
- This is adjusted at the connection to the engine.

SP12053 CABLE DRIVE (from drive lever on handle)

- 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 (13mm spanner)

DRIVE LEVER (ref. fig 4 and fig 6)

- Remove guard (item 12, fig 4) (large flat screw driver & 13mm spanner)
- Remove clevis pin (item 1 fig 6)
- Rotate clevis rod assy (item 3 fig 6).
This will adjust M8 nut (item 2 fig 6)
- Reassembly clevis pin, and try
- Repeat if necessary. **NOTE:** The drive must not engage without the lever being operated.



TINE DRIVE LEVER (ref. fig 4 and fig 6)

- Remove guards (item 12 and 13, fig 4) (large flat screw driver & 13mm spanner)
- Remove split pin and clevis pin (item 6 and 7 fig 6)
- Slacken lock nut (13mm spanner) (item 4)
- Rotate spring cup (item 8 fig 6) to adjust the tension.
NOTE: When operated the spring (item 5) must extend between 5mm and 5.5mm (see fig 6.1) this applies approximately 22kgf
- Reassembly the split pin and clevis pin, measure the spring extension (see fig 6.1)
- Repeat if necessary. **NOTE:** The lever on the clutch must be fully returned when the Drive Lever (item 8 fig 4) is not operated. This is to ensure the brake within the clutch is fully engaged.

**** SPRING MUST EXTEND BETWEEN 5MM & 5.5MM**

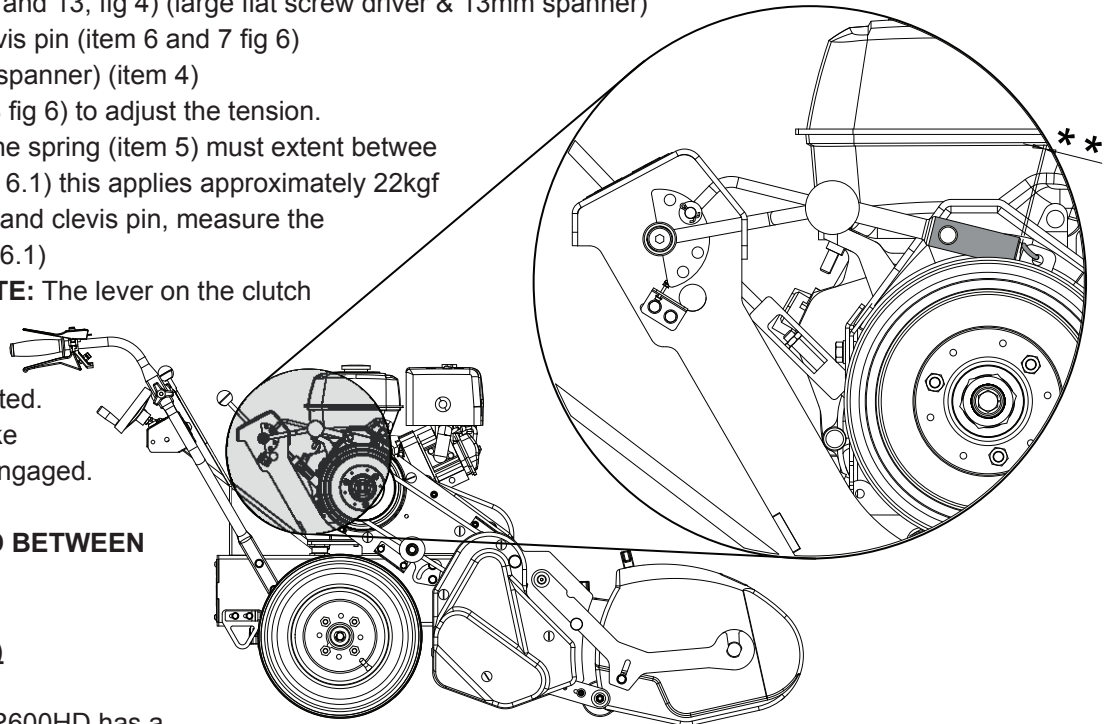
FRONT ROLLER (ref. fig 5)

To ensure a level cut, the RR600HD has a fully independent Front Roller adjustment mechanism. Item 11, fig 5 shows a threaded connection rod. There is a rod 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 pressures.

- Remove both side guards (large flat screw driver)
- Slacken the 2-off M12 nuts on the Roller (item 10)
- Slacken the M12 lock nut (item 13)
- Remove the clevis pin (item 8)
- Screw the clevis end to achieve the correct adjustment.
- Replace the clevis pin (item 8)
- Check if the blades are level with the surface.
- Repeat if necessary
- Tighten the M12 lock nut (item 13)
- Tighten the 2-off M12 nuts on the Roller (item 10).

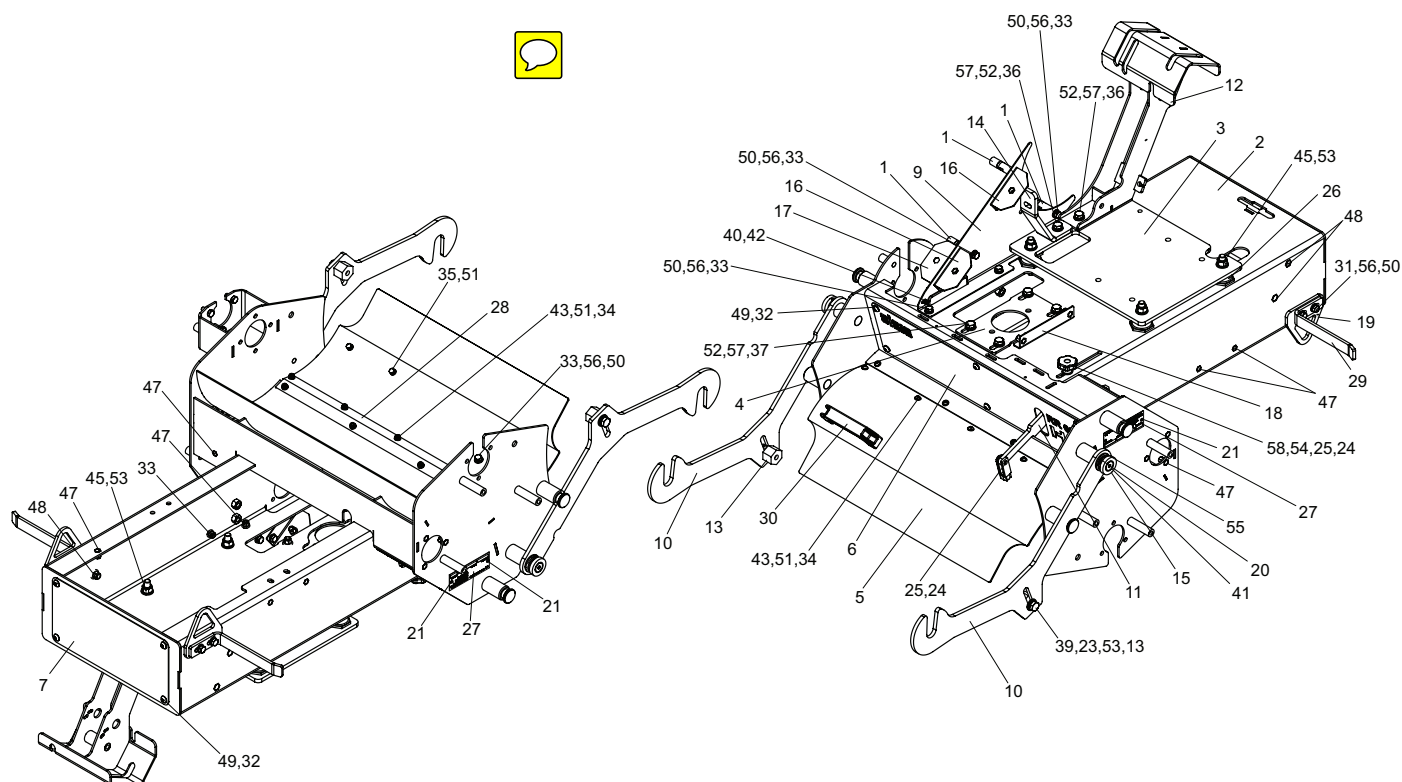
Figure 6.1



1.01

Common Spares

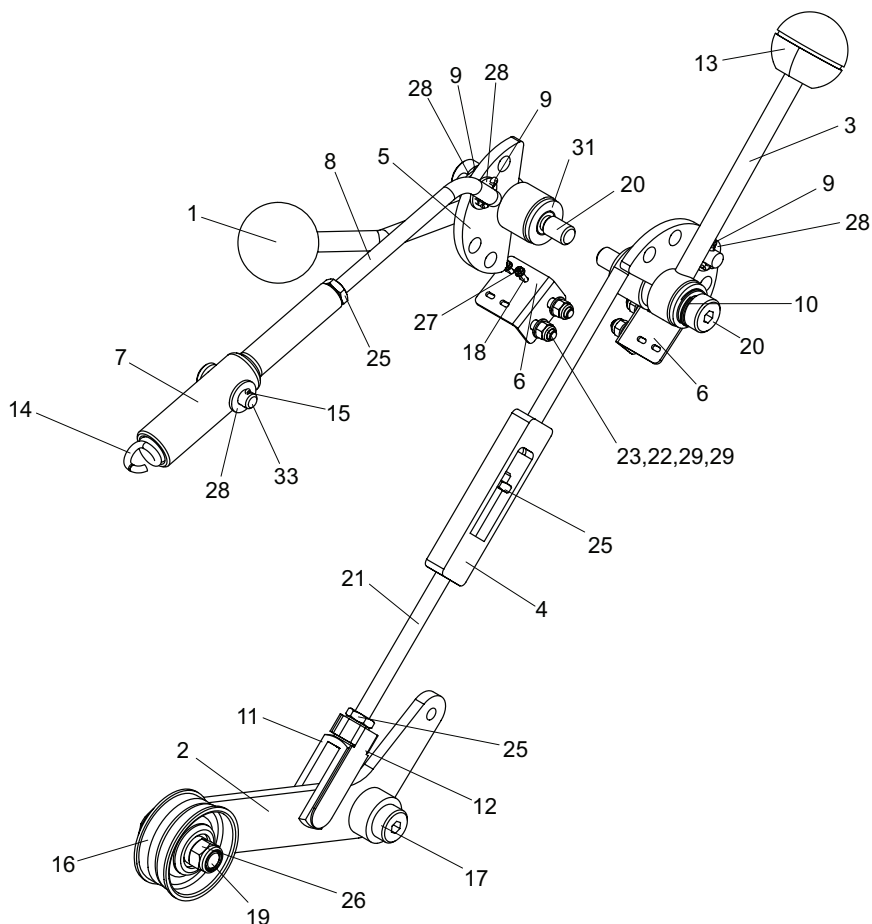
Item No.	Part No.	Description	Quantity
-	SP12002	Throttle Cable G860 / G760	1
-	SP12053	Cable Drive	1
-	SP12052	Wiring Harness	1
-	F21440	Belt V A37 Cotton (See Drive Axle)	1
-	SP11036	Belt Z51 (See Drive Axle)	1
-	F21779	Belt Timing (See Tine Drive)	1
-	SP11037	Belt B46 Aramid Cored (See Tine Drive)	1



2.01

Chassis Assembly

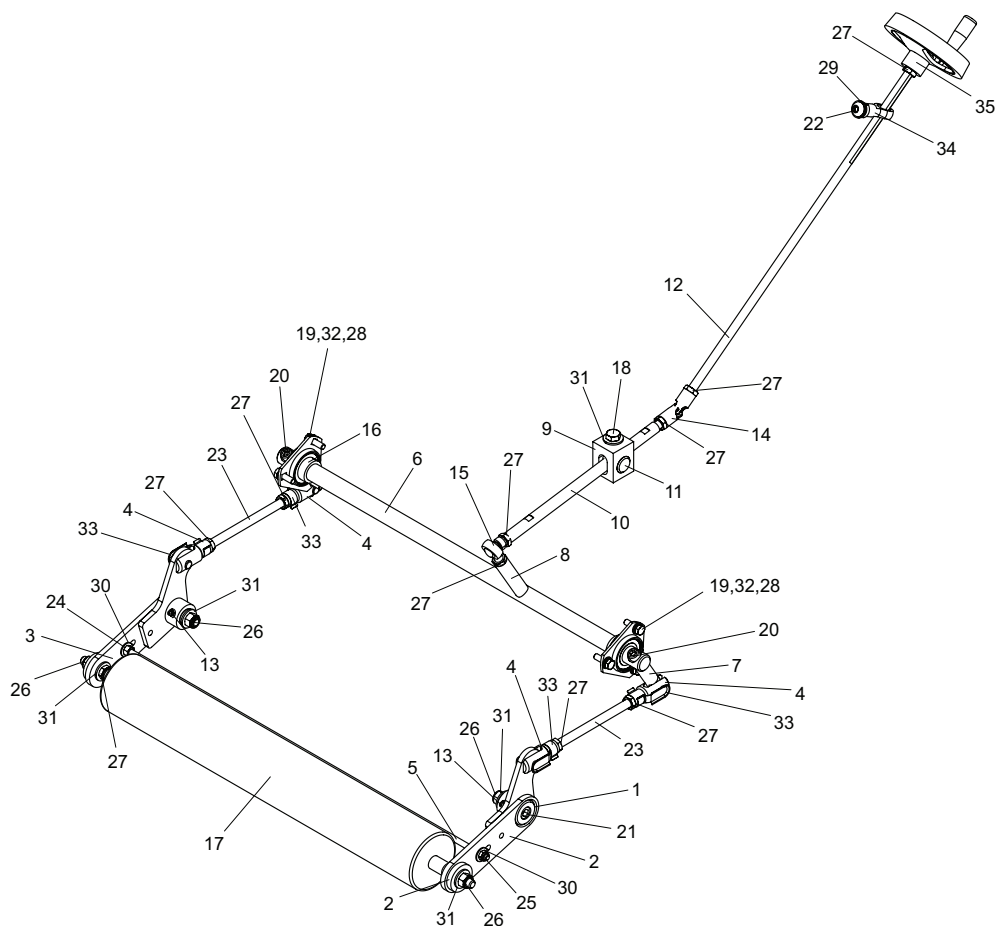
Item No.	Part No.	Description	Quantity	Item No.	Part No.	Description	Quantity
1	240188	Belt Guard Stud	3	39	SP01065	Hex Set Screw M12 x 30	2
2	290000	Chassis (RR600)	1	40	SP01074	Hex Set Screw M5 x 12	1
3	290020	Engine Base Plate	1	41	SP01136	Csk Cap Head M10 x 40	2
4	290021	Gearbox Plate	1	42	SP02002	Nut M5 Nyloc (T)	1
5	290022	Deflector Flap	1	43	SP02004	Nut M6 Nyloc	9
6	290023	Cover Plate Front	1	44	SP02006	Nut M8 Nyloc (T)	3
7	290024	Cover Plate Rear	1	45	SP02010	Nut M12 Nyloc (T)	8
8	290025	Cover Plate Side	1	46	SP02044	Rivnut Hex M8 (0.5-3.0) [No Head]	1
9	290026	Cover Plate Guard	1	47	SP02045	Rivnut Hex M8 (4.0-6.0) [No Head]	32
10	290027	Grassbox Arm	2	48	SP02047	Rivnut Hex M10 (3.0-6.0) [No Head]	8
11	290028	Deflector Arm	1	49	SP03004	Washer M8 Toothed	12
12	290030	Control Column	1	50	SP03008	Washer M8 Form A	20
13	290050	Grassbox Arm Stop	2	51	SP03010	Washer M6 Form A	20
14	290051	Clutch Support Plate	1	52	SP03011	Washer M10 Form A	6
15	290073	Arm Pivot	2	53	SP03012	Washer M12 Form A	10
16	290095	Guard Bracket Assy 1	2	54	SP03015	Washer M8 Form C	2
17	290096	Guard Bracket 1	2	55	SP03022	Washer M20 Form A	2
18	290097	Guard Bracket Assy 2	1	56	SP03029	Washer M8 Spring Lock	14
19	290126	Anchor Point	2	57	SP03034	Washer M10 Spring Lock	6
20	604761	Thackery Washer	2	58	SP14009	Knob Plastic M8 Male	1
21	D1871	Rivet 3.2 x 6	2				
22	E1-1061	M6 Spring Washer	2				
23	E1-1065	Spring Washer M12 Square Section	2				
24	F21463	Clevis 8mm GKML 832	2				
25	F21464	Spring Clevis Pin 8mm	2				
26	F21922	Vibration Mount (Metalastik No 17/1386/01)	4				
27	F36000	Serial No Plate (SISIS)	1				
28	F37422	Hinge 602	1				
29	F37704	Scraper	2				
30	J209243	Handle Grassbox	1				
31	SP01005	Hex Set Screw M8 x 30	4				
32	SP01006	Button Head M8 x 20	12				
33	SP01009	Hex Set Screw M8 x 20	11				
34	SP01019	Button Head M6 x 16	9				
35	SP01028	Hex Set Screw M6 x 20	2				
36	SP01034	Hex Set Screw M10 x 20	2				
37	SP01035	Hex Set Screw M10 x25	4				
38	SP01045	Hex Set Screw M8 x 25	2				



3.01

Controls Assembly

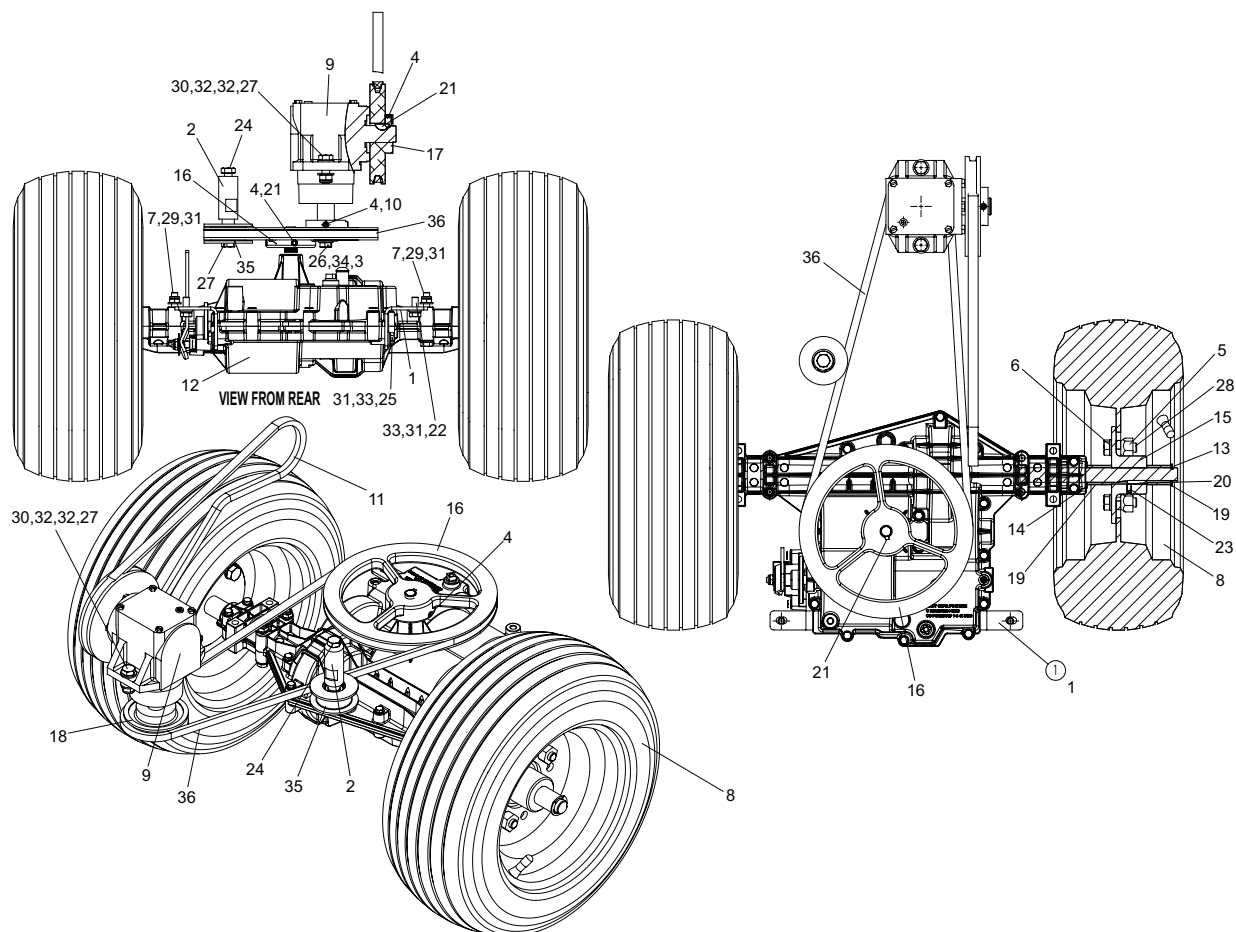
Item No.	Part No.	Description	Quantity
1	127434	Red Knob M10	1
2	290055	Drive Actuator Assy	1
3	290058	Control Lever Assy	1
4	290060	Drive Lever Assy	1
5	290063	Control Lever Assy 30 Deg	1
6	290103	Sensor Angle Plate	2
7	290120	Spring Cup	1
8	290121	Over Centre Rod	1
9	D1040	Split Pin 3/32" x 3/4"	4
10	D1887	Thackery Washer M12	2
11	F21463	Clevis 8mm GKML 832	1
12	F21464	Spring Clevis Pin 8mm	1
13	176457	Knob	1
14	J209011	Tension Spring	1
15	J209021	Split Pin 1/16" x 1/2"	1
16	J209047	Tensioner Pulley	1
17	SP01029	Shoulder Bolt 12 x 25 M10	1
18	SP01070	Cap Head M2 x 12	4
19	SP01071	Hex Set Screw 3/8" UNF x 1 1/2"	1
20	SP01126	Shoulder Bolt 12 x 50 M10	2
21	SP01128	Rod M8 x 160	1
22	SP01135	Hex Set Screw M5 x 16	4
23	SP02002	Nut M5 Nyloc (T)	4
24	SP02008	Nut M10 Nyloc (T)	1
25	SP02012	M8 Thin Lock Nut	3
26	SP02018	Nut 3/8" UNF Nyloc (T)	1
27	SP02032	Nut M2 Std	4
28	SP03008	Washer M8 Form A	5
29	SP03009	Washer M5 Form A	8
30	SP03011	Washer M10 Form A	1
31	SP03012	Washer M12 Form A	2
32	SP03027	Washer M2	8
33	SP05006	Clevis Pin 8 x 30	1
-	SP12002	Throttle Cable G860 / G760	1
-	SP12053	Cable Drive	1
-	SP12052	Wiring Harness	1



4.01

Roller Assembly

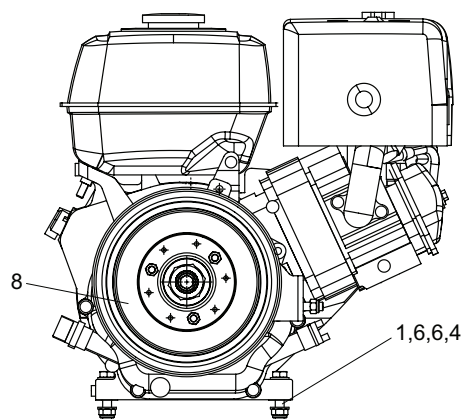
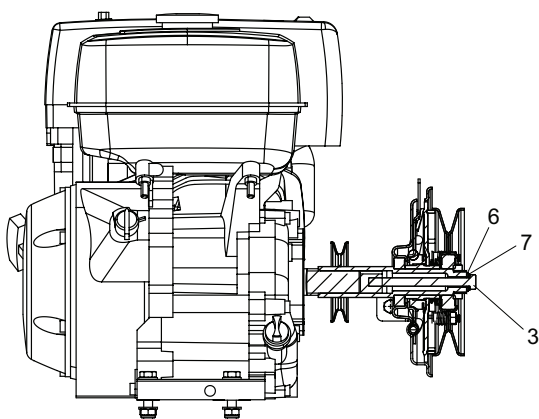
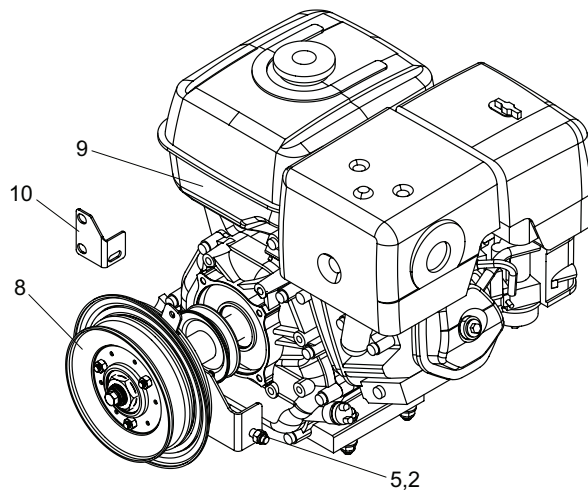
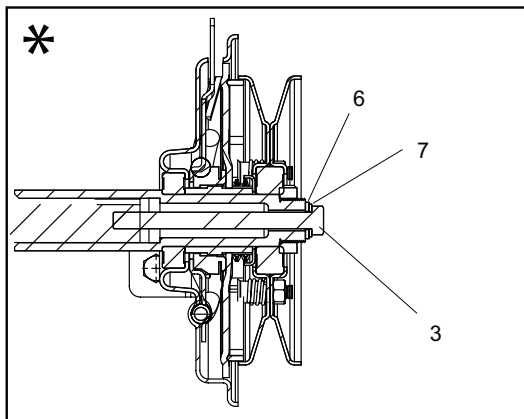
Item No.	Part Number	Description	Quantity
1	290039	Roller Pivot Bush	2
2	290040	Roller Arm Assy L.H.	1
3	290045	Roller Arm Assy R.H.	1
4	290048	Brace End	4
5	290049	Roller Scraper	1
6	290052	Roller Torsion Bar	1
7	290053	Roller Torsion Arm	2
8	290054	Torsion Bar Arm	1
9	290081	Roller Adj Block	1
10	290082	Roller Adjuster Bar	1
11	290083	Roller Adj Nut	1
12	290084	Roller Adj Rod	1
13	D1947	Grease Nipple M6	2
14	D7907	Universal Joint	2
15	F21064	Swivel Joint	1
16	F21150	Bearing Ref. BPFT-5 (25mm Bore)	2
17	J24550	Front Roller 24"	1
18	SP01021	Hex Set Screw M12 x 20	1
19	SP01045	Hex Set Screw M8 x 25	6
20	SP01052	Cap Head M10 x 35	3
21	SP01130	Cap Head M12 x 45	2
22	SP01132	Button Head M12 x 20	1
23	SP01134	Rod M12 x 190	2
24	SP02005	Nut M8 Std	2
25	SP02006	Nut M8 Nyloc (T)	2
26	SP02010	Nut M12 Nyloc (T)	4
27	SP02014	Nut M12 Lock (Thin)	11
28	SP03008	Washer M8 Form A	6
29	SP03012	Washer M12 Form A	1
30	SP03015	Washer M8 Form C	4
31	SP03017	Washer M12 Form C	7
32	SP03029	Washer M8 Spring Lock	6
33	SP14020	Clevis Clip M12 Short	4
34	SP14022	Rod End M12 Female	1
35	SP14023	Handwheel	1



5.01

Drive & Axle Assembly

Item No.	Part No.	Description	Quantity
1	290062	Torque Strap	2
2	290079	Belt Tensioner Post	1
3	290080	Spacer Pulley	1
4	D8154	Grub Screw M8 x 16	6
5	D8360	Wheel Nut M12	8
6	E1-1065	Spring Washer M12 Square Section	8
7	E1-1114	Hex Bolt M8 x 65	4
8	F20171	Wheel Assy 16x650-8 04 Ply 4 Stud 4" PCD	2
9	F20527	Gearbox Angle Drive R.H.	1
10	F20558	Woodruff Key No6 (505)	1
11	F21440	Belt 'V' A 37 Cotton	1
12	F21629	Axle	1
13	F21722	E-Clip 5/8" 0.584" Dia Am1500/75	2
14	F21782	I.D19.2 x 34 O/D x 1.5 Thk	2
15	F35773	Nylon Washer Skiffy	2
16	F36029	Wheel Hub	2
17	F36029	Pulley V SPZ 224 PCD	1
18	F36030	Pulley V SPA 125 PCD	1
19	F36031	Pulley Gearbox Driven	1
20	F36169	Wheel Spacer	4
21	J20457	Key 3/16" x 3/16" x 1" Rd End	2
22	J20462	Key Woodruff (606) 3/16" x 3/4"	2
23	SP01009	Hex Set Screw M8 x 20	2
24	SP01017	Grub Screw M6 x 12	4
25	SP01034	Hex Set Screw M10 x 20	1
26	SP01086	Hex Set Screw 5/16" UNF x 5/8"	2
27	SP01095	Hex Set Screw 3/8" UNF x 1"	1
28	SP01105	Hex Set Screw M10 x 30	3
29	SP01111	Hex Set Screw M12 x 35	8
30	SP02006	Nut M8 Nyloc (T)	4
31	SP02008	Nut M10 Nyloc (T)	2
32	SP03008	Washer M8 Form A	12
33	SP03011	Washer M10 Form A	4
34	SP03029	Washer M8 Spring Lock	4
35	SP03034	Washer M10 Spring Lock	2
36	SP11035	Pulley Idler 19mm	1
	SP11036	Belt Z51	1

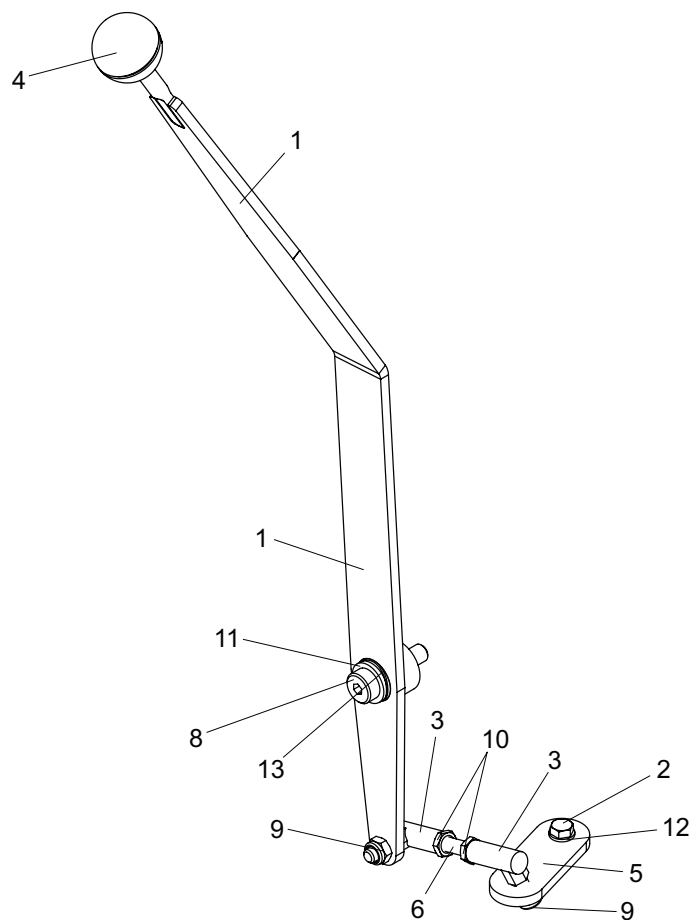


5.02

Engine & Clutch Assembly

Item No.	Part Number	Description	Quantity
1	SP01031	Hex Set Screw M10 x 50	4
2	SP01138	Hex Set Screw 3/8" UNF x 1 1/4"	1
3	SP01133	Hex Bolt 3/8" UNF x 4 3/4"	1
4	SP02008	Nut M10 Nyloc (T)	4
5	SP02018	Nut 3/8" UNF Nyloc (T)	1
6	SP03011	Washer M10 Form A	9
7	SP03034	Washer M10 Spring Lock	1
8	SP11033	Clutch CB228	1
9	SP15004	GX390 UT2-QX-Q4	1
10	290127	Securing Plate	1

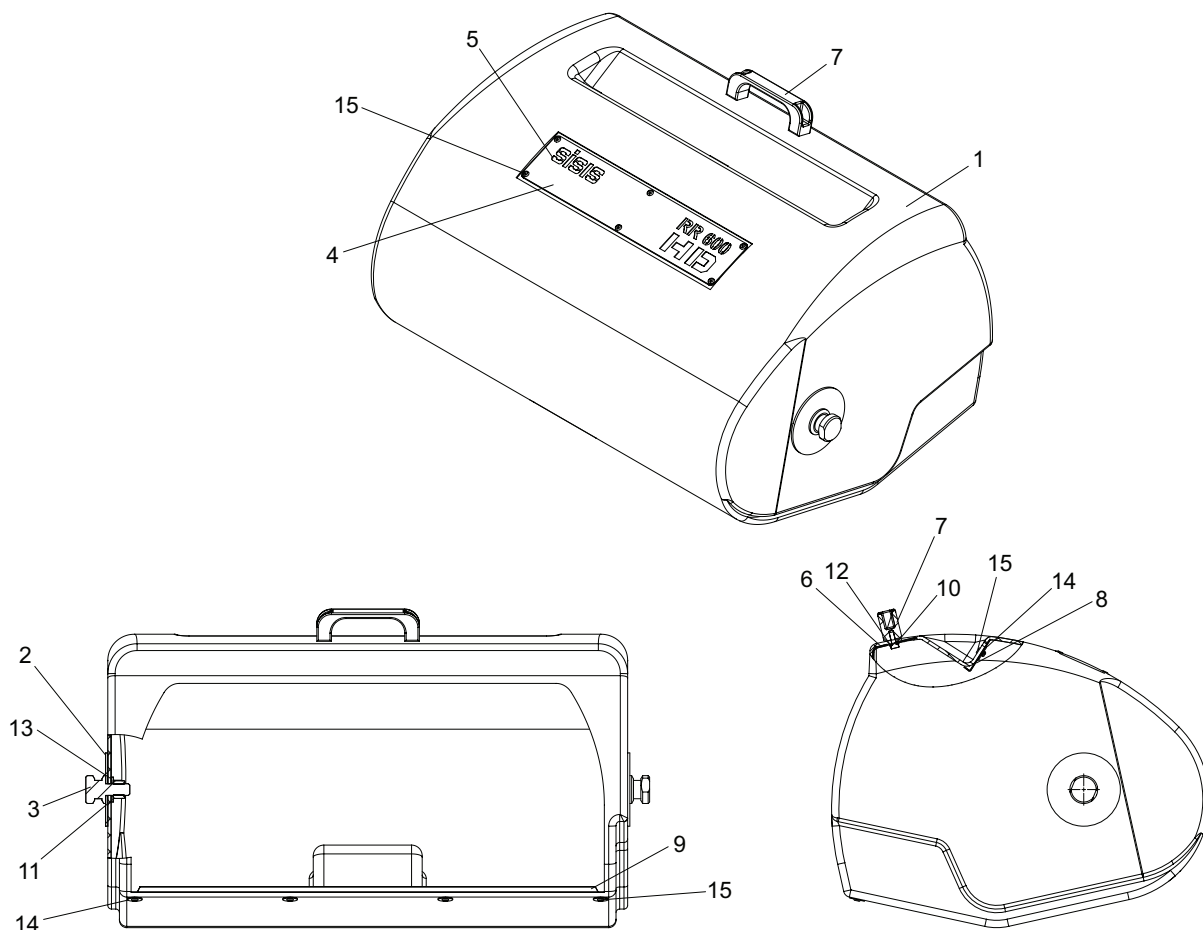
* **NOTE:-** This is a sealed unit, **DO NOT** open.



6.01

Gear Lever Assembly

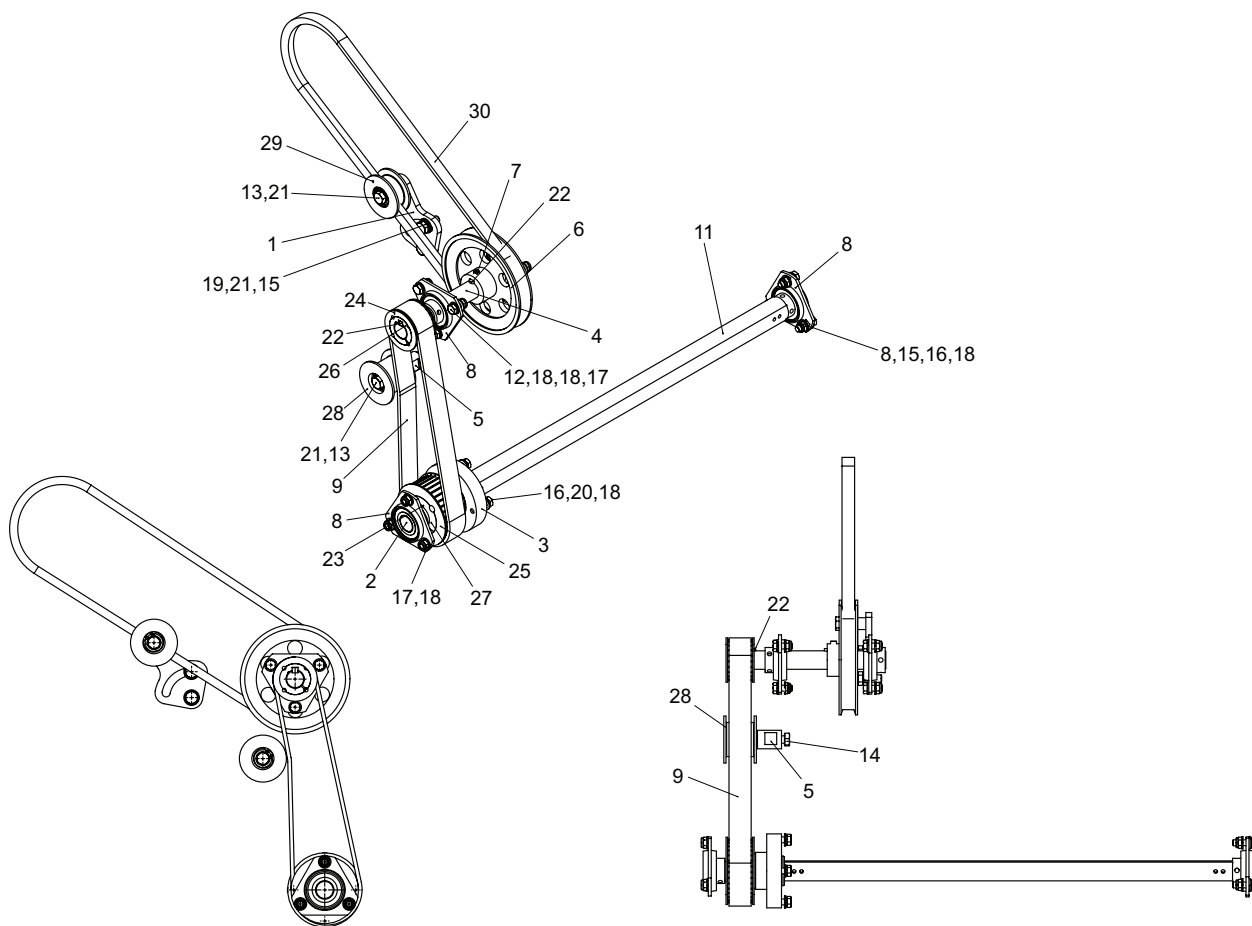
Item No.	Part No.	Description	Quantity
1	290110	Gear Lever Assy (600Hd)	1
2	D1239	Hex Set Screw 1/4" UNF x 3/4"	1
3	D8485	Ball Joint M8 Ref.R108-M8.	2
4	F21772	Knob	1
5	F37454	Gear Shift Lever	1
6	J20553	Rod M8 x 60	1
7	J209085	Bush Oilite AM1216 - 20	1
8	SP01029	Shoulder Bolt 12 x 25 M10	1
9	SP02006	Nut M8 Nyloc (T)	2
10	SP02012	M8 Thin Lock Nut	2
11	SP03012	Washer M12 Form A	1
12	SP03014	Washer M6 Form C	1
13	SP03019	Washer M12 Wave	1



7.01

Grassbox Assembly

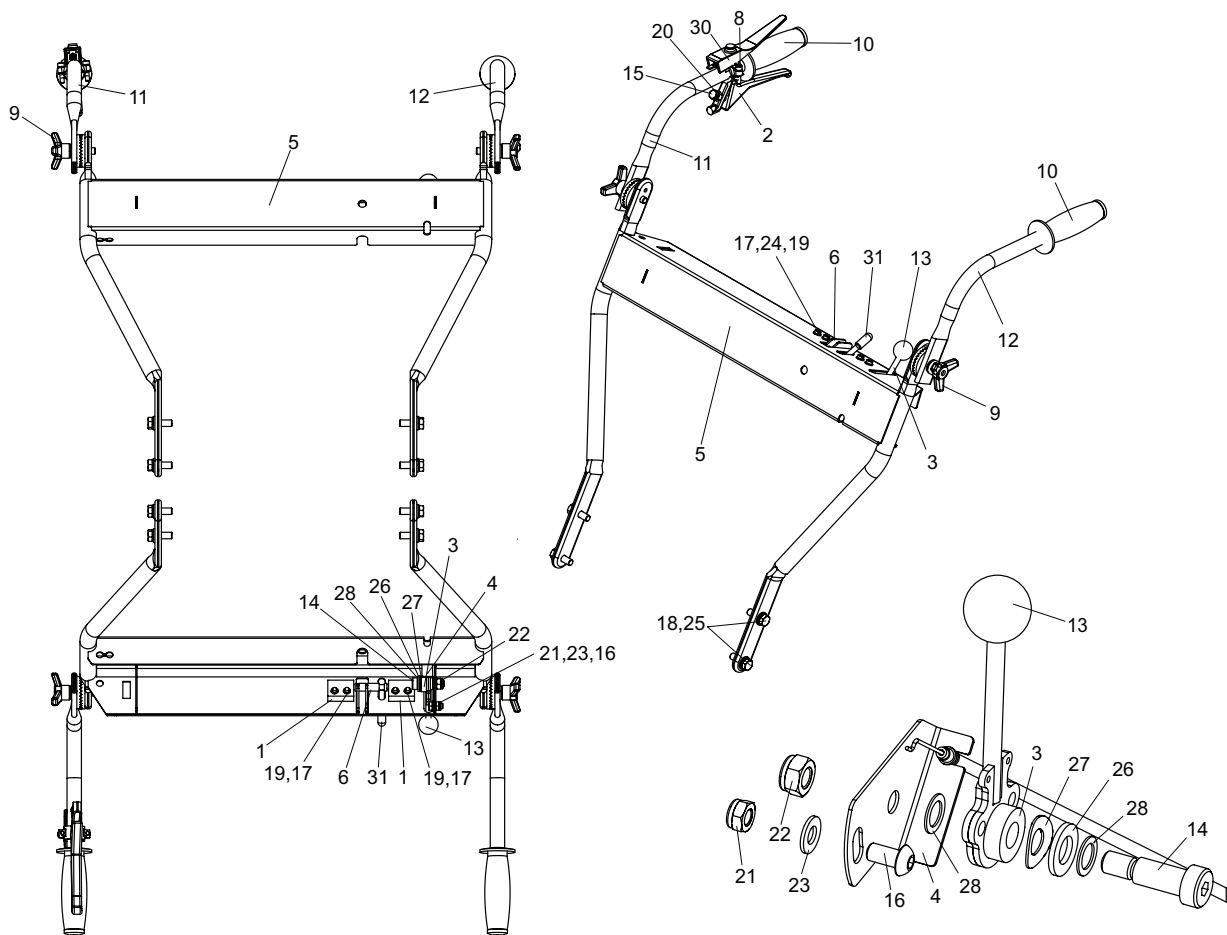
Item No.	Part Number	Description	Quantity
1	290070	Grass Collector 24"	1
2	290071	Washer 16 x 100 x 3	2
3	290072	Grassbox Pivot	2
4	290123	Grassbox Decal Plate	1
5	290124	Grassbox Front Plate	1
6	J209064	Handle Plate Grass Box	1
7	J209243	Handle Grassbox	1
8	J249062	Mesh	1
9	J249063	24" Grassbox Edging Strip	1
10	SP01028	Hex Set Screw M6 x 20	2
11	SP02028	Nut M16 Nyloc (T)	2
12	SP03010	Washer M6 Form A	2
13	SP03021	Washer M16 Form C	2
14	SP03032	Washer M5 Repair	13
15	SP05018	Rivet 4.8 x 18	13



8.01

Tine Drive Assembly

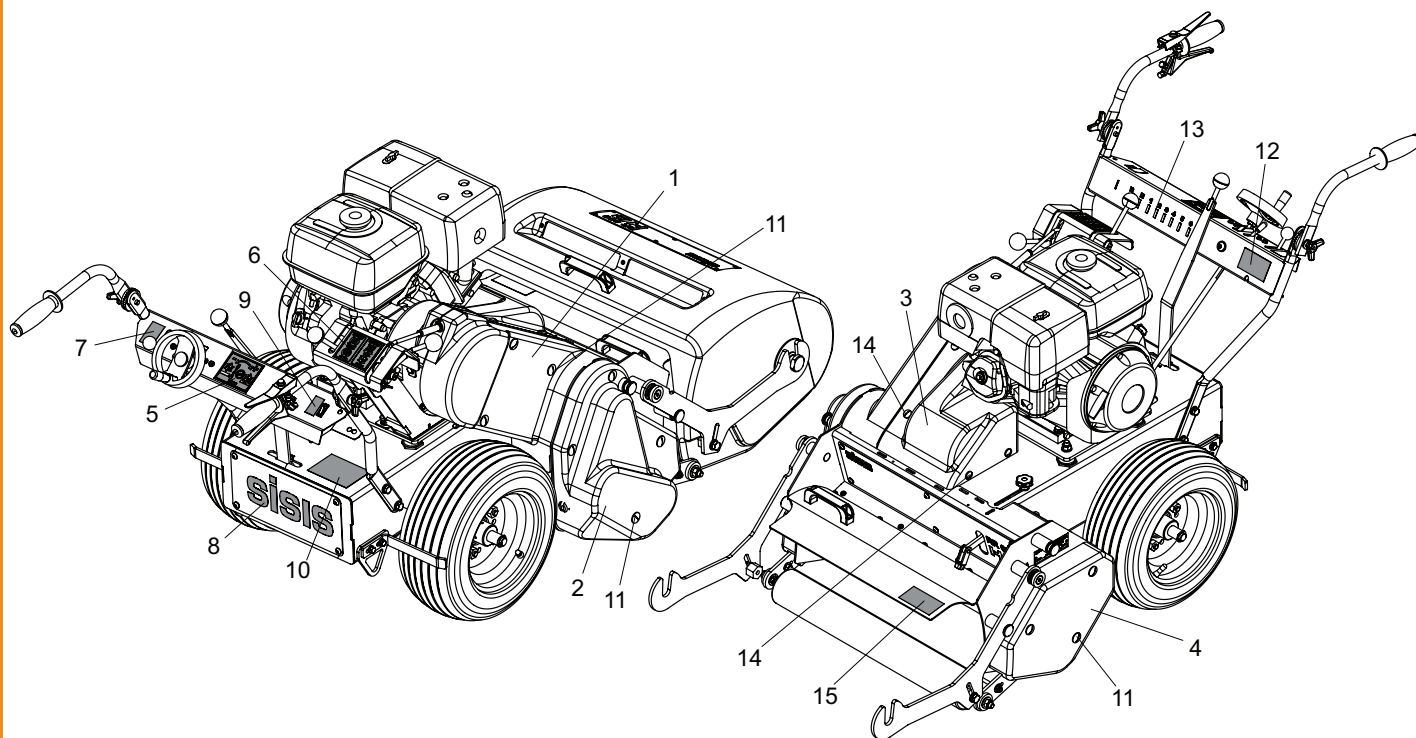
Item No.	Part No.	Description	Quantity
1	290065	Belt Tensioner Assy	1
2	290074	Stub Quick Release	1
3	290075	Stub Bearing Housing	1
4	290076	Layshaft	1
5	290077	Belt Tensioner Bush	1
6	290078	Pulley Layshaft	1
7	D8153	Grub Screw M8 x 10	2
8	F21150	Bearing Ref. Bpft-5 (25mm Bore)	4
9	F21779	Timing Belt	1
10	F22418	Bearing 6008 2RS	1
11	F37410	Tine Shaft	1
12	SP01009	Hex Set Screw M8 x 20	6
13	SP01020	Hex Set Screw M10 x 40	2
14	SP01034	Hex Set Screw M10 x 20	1
15	SP01035	Hex Set Screw M10 x 25	2
16	SP01045	Hex Set Screw M8 x 25	7
17	SP02006	Nut M8 Nyloc (T)	12
18	SP03008	Washer M8 Form A	25
19	SP03011	Washer M10 Form A	2
20	SP03029	Washer M8 Spring Lock	7
21	SP03034	Washer M10 Spring Lock	4
22	SP10002	Key 8 x 7 x 40 Rd End	2
23	SP10006	Key 8 x 7 x 30	1
24	SP11002	Pulley 22-8M-30 Htd (Tapered)	1
25	SP11003	Pulley 34-8M-30 Htd (Tapered)	1
26	SP11005	Tapered Bush 1108 - 25	1
27	SP11007	Tapered Bush 1615 - 25	1
28	SP11034	Pulley Idler 38mm	1
29	SP11035	Pulley Idler 19mm	1
30	SP11037	Belt B46 Aramid Cored	1



9.01

Handles Assembly

Item No.	Part Number	Description	Quantity
1	229585	Pivot Block	2
2	229754	Clutch Lever Lever	1
3	230190	Throttle Lever W.A.	1
4	230196	Throttle Plate	1
5	290100	Lower Handle Assy (600HD)	1
6	290115	Adjuster Lock W.A.	1
7	E1-1061	M6 Spring Washer	2
8	E1-1669	Cap Head M6 x 25	2
9	F21063	Lock Knob	2
10	F22019	Handle Grip	2
11	F36639	Upper Handle R.H.	1
12	F36640	Upper Handle L.H.	1
13	J20017	Knob - Red	1
14	SP01029	Shoulder Bolt 12 x 25 M10	1
15	SP01045	Hex Set Screw M8 x 25	1
16	SP01076	Hex Set Screw M8 x 16	1
17	SP01101	Screw M6 x 25 Slotted	4
18	SP01105	Hex Set Screw M10 x 30	4
19	SP02004	Nut M6 Nyloc	4
20	SP02005	Nut M8 Std	1
21	SP02006	Nut M8 Nyloc (T)	1
22	SP02008	Nut M10 Nyloc (T)	1
23	SP03008	Washer M8 Form A	1
24	SP03010	Washer M6 Form A	4
25	SP03011	Washer M10 Form A	6
26	SP03012	Washer M12 Form A	1
27	SP03019	Washer M12 Wave	1
28	SP03020	Shim 12 x 18 x 1	2
29	SP03034	Washer M10 Spring Lock	6
30	SP12010	Deadman Lever	1
31	SP14003	Sleeve Plastic 7.95mm x 25.4	1



10.01

Guards & Decals

Item No.	Part No.	Description	Quantity
1	290091	Guard Clutch	1
2	290090	Guard Tine Drive	1
3	290092	Guard Axle Drive	1
4	290093	Guard Roller Mech	1
5	SP18017	Decal Depth RR600	1
6	SP18016	Decal Tine Drive	1
7	SP18001	Decal Throttle	1
8	F35993	Decal Sisis Orange	1
9	229599	Decal On / Off	1
10	229375	Decal Warning	1
11	194946	Chain Case Screw	1
12	B32903	Decal Union Jack	1
13	F37466	Decal Gears	1
14	J209074	Cover Screw	1
15	F34003	Decal Safety	1

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