

Operating instructions and parts manual
for

Kubota Mulching Mower 1.5m (F60 Series)

autoguide equipment

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Mulching grass the Autoguide way



The aim of both the professional groundsman and the domestic gardener is to produce a lawn, which looks neatly trimmed with the minimum of labour. The introduction of the mulching mower, a method of recycling grass back into the sward, has revolutionised lawn-care.

The majority of grass is water, in fact 85%, so the traditional methods of grass clipping removal results in a vast amount of water carrying. The disposal of clippings in both an urban and a commercial environment is becoming increasingly difficult with concerns regarding landfill, pollution and available space. The time taken to empty grass boxes is both onerous and tiring. Mulching mowers improve output by up to 38% and save back strain from attempting to empty poorly designed grass boxes.

When a mulching mower is used correctly, the clipped grass passes up into the underside of the mulching deck where it is retained using unique inner rings. As it falls back down, it is chopped a second time as it passes through the revolving cutting blades back into the sward. The clippings are pulverised, thus separating the fibre from most of the water. The fibrous material decays very quickly, resulting in rapid water loss and nutrient deposition. The water helps the sward during periods of drought and the nutrients provide a valuable plant food for the growing lawn. The clippings provide an excellent mulch which helps reduce moisture loss during hot dry summers.

Good preparation is the key to successful gardening; the same applies to lawn-care. Mulching mowers work best when there is sufficient stubble for the clippings to fall into. To ensure a good mulch, long grass should be cut at half the required stubble height on the first pass and the subsequent pass should be at the desired height. This ensures sufficient stubble for good burial. Once the lawn is established at the desired height, regular mowing of the top 1" of grass will result in a desirable lawn. Mulched grass also helps prevent the ingress of weeds and moss, resulting in a lush, high quality lawn.

The Autoguide mulching mower, designed and built to high engineering standards in England, will cut heavy, wet and long grass and can reduce grass length considerably in one pass. Each rotary cutting blade, based on a patented European design, is individually belt driven, enabling the mower to handle the heaviest of crops without stalling.

INSTRUCTIONS

To ensure optimum results when operating this machine it is very important to read this manual carefully, the information will prepare you to do a better, safer job.

Before operating the machine you should familiarise yourself with the instructions in this manual. Incorrect use can lead to damage, which is not covered by the Warranty Conditions. This may create a dangerous situation or lead to unsatisfactory results.

These operating instructions **MUST** always be made available to the person or persons operating this machine.

To assist in the ordering of spares or other communication with our company, the serial number of the relevant equipment supplied have been recorded below for your information.

Model No:-

Serial No:-

Date of delivery:-

Your mower has been individually built with great emphasis on quality, strength and simplicity of design, and with routine care will give many years of trouble free operation.

The following instructions have been written to cover the mower. Care should be taken to ensure that you are referring to the correct section of your machine before carrying out any adjustments, or when ordering spare parts.

Reference to Right and Left direction is determined by standing behind the equipment and facing in the direction of forward travel.

Like all mechanical products, regular cleaning, lubrication and maintenance will ensure a longer trouble free life. These instructions make no attempt to go beyond routine maintenance, and it is strongly advised that you contact your dealer should any major repairs become necessary.

Use only genuine service parts: non-genuine parts may not meet standards required for safe and satisfactory operation.

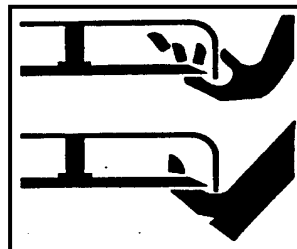
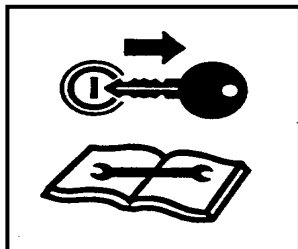
Observe all safety information in the manual and on decals fitted on the mower and the power unit.

SAFETY INSTRUCTIONS

1. Read and understand this operator's manual prior to operating the machine and keep it in a convenient place for future reference.
2. Keep untrained personnel away from the machine whilst it is in operation.
3. Keep all guards and safety devices in place.
4. Do not operate machine with guards removed. There is a grave danger from flying stones and foreign objects.
5. Keep hands, feet and loose clothing away from moving parts.
6. Always switch off the machine before making any adjustments or when carrying out lubrication and servicing.
7. Keep all nuts, bolts and fasteners tightened.
8. Check machine regularly for damaged or worn parts.
9. If the machine is left unattended ensure that it is locked or disabled to prevent use by untrained personnel.

NOTE:-

PLEASE CONSULT THE SPECIFIC SAFETY INSTRUCTION RELATING TO THE RELEVANT EQUIPMENT IN THE INDIVIDUAL MANUALS ENCLOSED.



Daily check list

1. Check that the mower is properly and securely attached to the power unit.
2. Check that all nuts and bolts are secure, clevis pins are properly cotter-pinned and that all safety shields are in place.
3. Check the condition of the blades and security of attachment.
4. Lubricate grease nipples and drive shaft.
5. Check belt tension. (See section on belt tensioning).

OPERATION

The safe operation of the machine is the responsibility of the operator, who should be familiar with the mower and tractor and all safety practices before starting operations.

Recommended mowing speed for most conditions is up to 5mph (7km/hr). Operate the power unit at maximum engine speed.

Attaching the mower to the power unit

SWITCH OFF the power unit! Attach the mower deck to the lift arms located at the front of the Power unit.

The power unit should have the necessary stabiliser equipment to prevent the mower from swinging from side to side.

Raise and lower the mower to make sure there is no interference, and that the deck is set parallel to the ground when at the working height.

When raised ensure that there is sufficient weight on the power unit rear wheels to maintain adequate steering and control during travel.

Lower the mower to the ground when not in use!

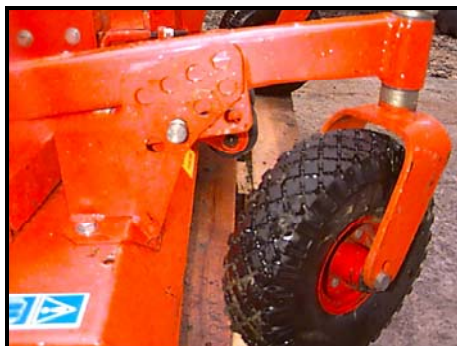
Cutting height adjustment

(The cutting height is the distance between the blade tip and the ground.)

Place the power unit and mower on a level surface. Set the required cutting height by moving the two deck castor wheels either up or down. Ensure both wheels are set the same. Adjust rear links to correspond to wheel settings, see instruction decal,

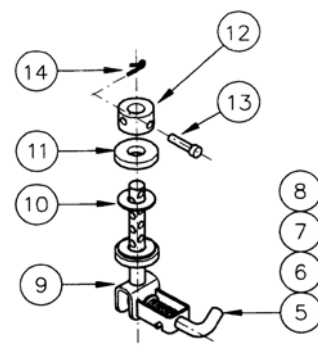
Best mowing results will be obtained when the mower is parallel to the ground.

Avoid very low cutting heights. Striking the ground with the blades can cause shock loads, and may damage the mower and its drive.



Front height adjustment

To adjust: insert pin into the holes at the desired height, place lynch pin into the pin hole.



Rear height adjustment

To adjust: insert pin into the collar (12) at the desired height, place R-clip into the pin.

Drive belt tension

It is important to keep the drive belts correctly tensioned at all times to ensure optimum cutting performance. An indicator of belt slip, (assuming that the blades are sharp), is if the mower leaves tufts or stripes of unmown grass.

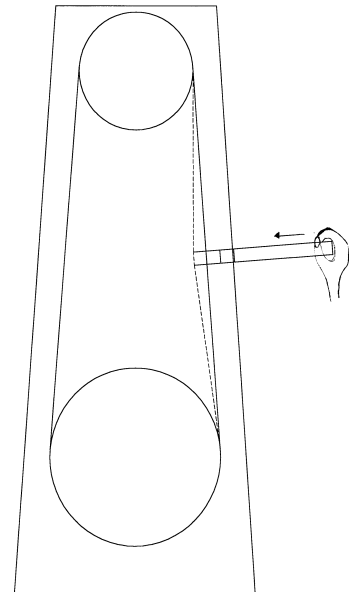
Locate the belt tensioning slots (24mm x 36mm) in the sides of the belt guards.

Insert a steel rod into the slot and push inwards until it touches the belt. Scribe or mark the rod adjacent to the slot, and make a second mark 5mm outwards from the original mark.

Push the rod into the slot applying a pressure of approximately 3kg until the second mark is level with the slot in the guard. This is the correct tension for the belt.

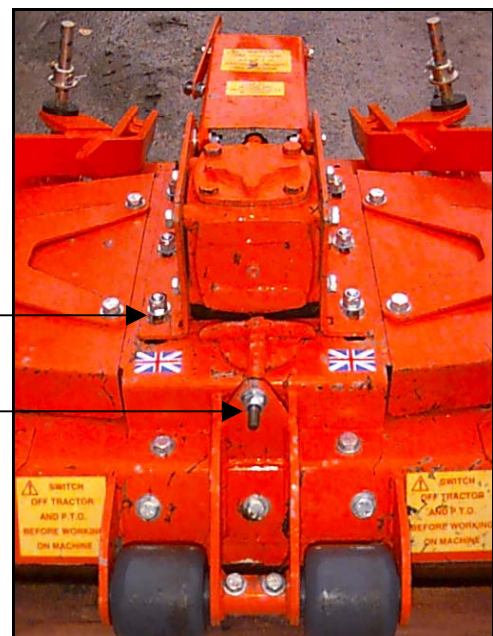
If the belt is too easily deflected, ie the force of 3Kg is not maintained, then the belt tension is inadequate. To tighten the belts refer to the parts diagram on the main gearbox drive assembly and photographs:

- a) Loosen the gearbox bolts, or idler bracket bolts.
- b) Turn the adjuster nut on the anchor plate at the front of the deck until the correct belt tension is achieved.
- c) Insert the metal rod to re-check the correct tension as above.
- d) Re-tighten the Gearbox or Idler bracket bolts referred to in a)



Gearbox bracket bolt

Belt Tensioning Bolt



Pre-operation check list

Check to ensure the blades are sharp, secure and the cutting edge is positioned in the direction of the blade rotation.

Check that the gearbox is half full of a good quality SAE 90 gear lubricant. The oil level plug is situated on the front face of the gearbox. Check to ensure the PTO shaft, universal joints and tubes are lubricated.

Check to ensure all safety shields are properly installed and in good condition. Be sure discharge protective strips are in place (if supplied).

Clear the area to be mowed of any debris that could be picked up and thrown by the mower.

Check cutting height adjustment and mower attitude. **STOP ENGINE**, place power unit, PTO and transmission in neutral, and apply the handbrake before making ANY adjustments.

Mowing

Once ready to start mowing, raise the engine speed to maximum rpm and maintain proper blade speed to produce a clean cut.

Should the mower become blocked, causing the drive belt to slip for more than 2 seconds, raise the mower (no higher than necessary) to clear the grass slug and continue running for at least 2 minutes to allow the pulleys time to cool down.

Normally, ground speed will vary up to five miles per hour. Tall dense grass should be mown at low speeds, while fine medium height grass can be cut at a faster ground speed.

Under certain seasonal conditions, tractor and or mower tyres may roll some grasses down and prevent them from being cut to the same height as the surrounding area. When this occurs, reduce the tractor ground speed. This will permit grass to at least partially rebound and be cut, with fewer tendencies to leave tyre tracks.

Extremely tall grass should be mown at least twice. Raise the mower and cut half the desired height. Cut the second time at the desired height 90 degrees to the first pass.

When operating a mulching mower, the essence of good mulching is frequent cutting. If an area of grass is to be cut infrequently then it may require two passes, as there must be enough stubble to bury the cut grass. Very long grass cannot be cut to a short height in one pass, as there isn't enough stubble to bury the grass clippings (trash). Two or more passes, at progressive heights, will be required to ensure satisfactory burial of the trash.

Sharp blades produce cleaner cuts, use less power and extend machine life. Travel straight ahead whenever possible.

In extremely uneven terrain, rear wheel weights, front tractor weights and/or front tyre ballast should be used to improve stability.

Pass diagonally through sharp dips and avoid sharp drops to prevent hanging up of the power unit and the mower.

Oil lubrication and greasing

The mower has been designed for low maintenance.

Every 8 hours: STOP engine, remove ignition key:

Grease nipples are provided at the following locations and should be greased frequently using a lever type high-pressure grease gun. Use a medium grade general purpose grease.

- a) Apply grease to driveline U joints, telescopic tubes and to plastic fittings in the driveline guards if applicable
- b) Grease anti-scalp rollers
- c) Grease castor wheel pivots and axles
- d) Check oil level in the gearbox. The correct level is achieved when the oil reaches the bottom of the vent hole in the side of the gearbox.

SPECIFICATION

MOWING	<p>Heavy-duty mower developed specifically for 'out front' on Kubota Power units.</p> <p>The drive is taken from the Power unit via heavy duty V-belts to each rotor. The mowing spindles are 30mm diameter with bearings lubricated via grease nipples accessible from above.</p> <p>The deck unit is of bolted construction for ease of service.</p> <p>Two castor wheels, one on each front corner, together with the rear mounting links, control the cutting height. This is adjustable in eight stages from 25 – 110mm using a simple but rugged pin system.</p> <p>Four anti scalp rollers are standard.</p>
CONSTRUCTION	All steel
FRONT WHEELS	Smooth tyres, 4.00 x 4, either pneumatic or solid, are mounted on split rims with re-greaseable ball bearings

1.5m Mower

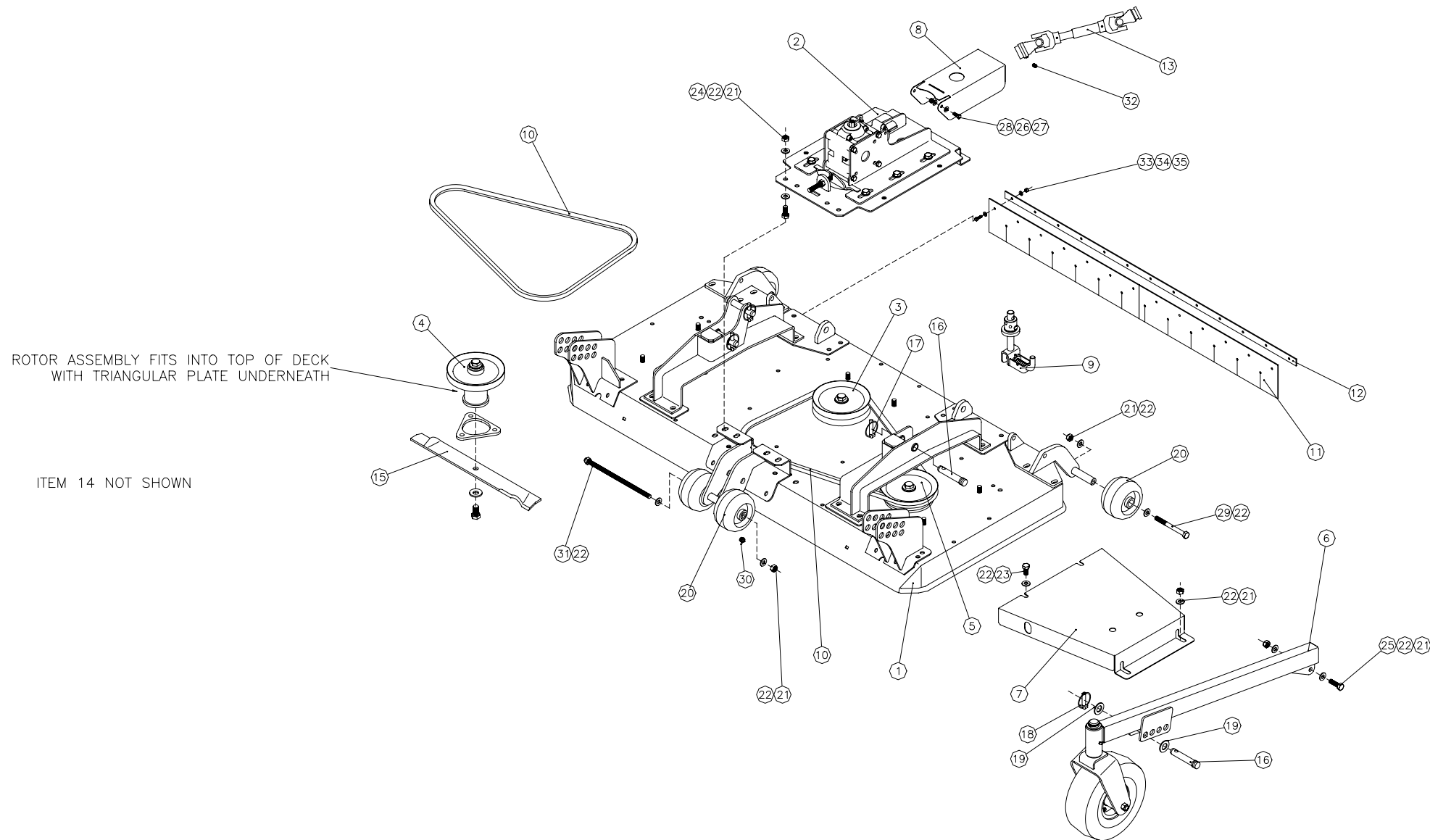
DIMENSIONS (for Shipping)	Overall width	1.54m
	Overall Length	1.1m
	Overall Height	0.47m
	Overall Width	1.54m
	Overall Length	1.1m
	Overall Height	0.53m (For 2 mowers 1m)
	Overall Weight	250kg (For 2 mowers 470kg)

Normally shipped two units per pallet. These can be stacked maximum three pallets high.

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Spare Parts



Parts List

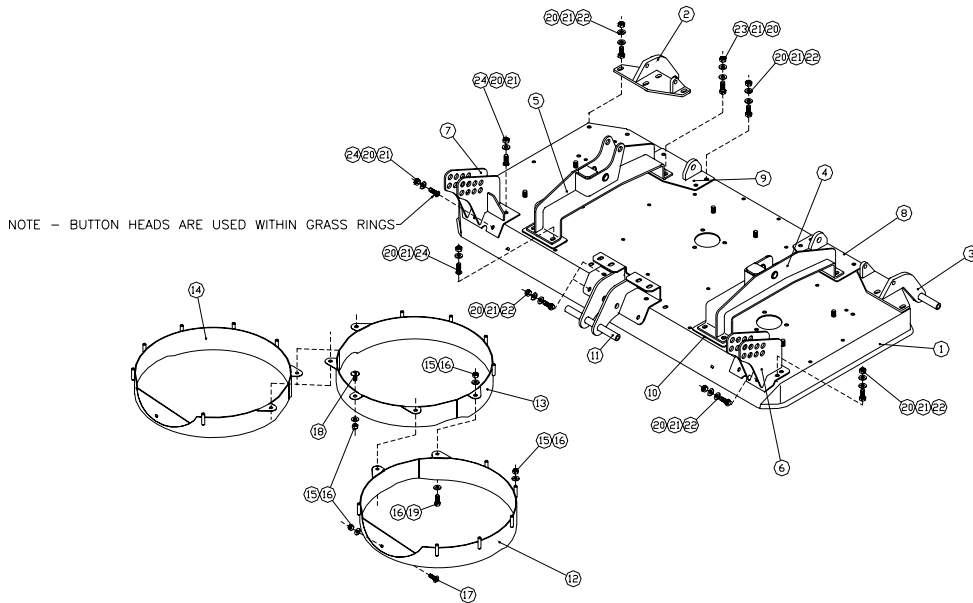
Code

Description

28330

GA 1.5M MULCH DECK KUB 2005

No.	Code	Description	QTY	Drawing
1	28347	MULCH DECK ASSY 1.5 2005	1	sp4091
2	31705	GEARBOX ASSY 1.5M DECK	1	sp4093
3	31713	CENTRAL ROTOR ASSY	1	sp4094
4	31714	RH ROTOR ASSY	1	sp4095
5	31715	LH ROTOR ASSY	1	sp4096
6	28346	CASTOR WHEEL ASSY	2	sp4097
7	25871	BELT GUARD - 1.5M	2	
8	28267	PTO GUARD	1	
9	25881	LIFT ARM ASSY	2	sp4008
10	06511	BELT	2	
11	22195	GUARD STRIP	2	
12	32038	BACKING STRIP	1	
13	28381	PTO SHAFT	1	
14	29208	DECAL GROUP	1	sp4014
15	25622	MULCHING BLADE	3	
16	01963	LINK PIN	5	
17	05410	LYNCH PIN	3	
18	03431	LYNCH PIN WITH LOCKING GROOVE	2	
19	03868	M20 WASHER	4	
20	31762	NYLON DECK WHEEL C/W GREASER	4	
21	02774	M12 NYLOC NUT	14	
22	02105	M12 WASHER	26	
23	02885	BOLT M012 X 025 SET	4	
24	02291	BOLT M012 X 030 SET	4	
25	03816	BOLT M012 X 040	2	
26	02977	M8 WASHER	4	
27	02496	M8 NYLOC NUT	2	
28	02449	BOLT M008 X 020 SET	2	
29	05078	BOLT M012 X 125	2	
30	04782	1/4" BSP GREASE NIPPLE	4	
31	31771	FRONT DECK WHEEL STUD W/A	1	
32	08043	SOCKET SCREW 3/8IN UNC X 1/2IN	1	
33	03411	BOLT M006 X 020 SET	13	
34	02350	M6 WASHER	26	
35	02513	M6 NYLOC NUT	13	



sp4091

Parts List

Code

Description

Drawing No

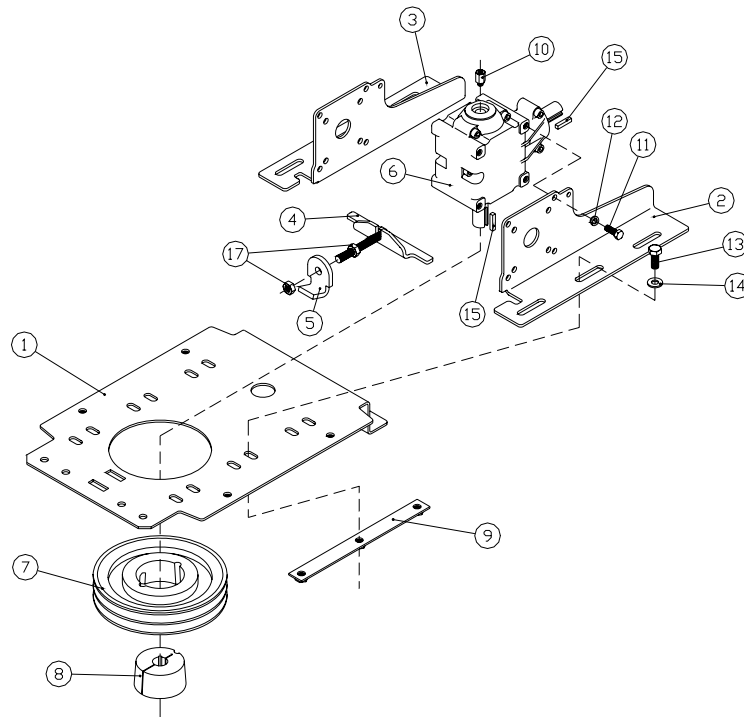
28347

MULCH DECK ASSY 1.5 2005

sp4091

No.	Code	Description	QTY
1	28328	1.5m Deck W/A	1
2	28320	RH Wheel Bracket W/A	1
3	28319	LH Wheel Bracket W/A	1
4	28505	LH Bridging Bracket W/A	1
5	28476	RH Bridging Bracket W/A	1
6	27441	LH Wheel Mounting	1
7	27442	RH Wheel Mounting	1
8	27446	LH Rear Lift W/A	1
9	27447	RH Rear Lift W/A	1
10	27481	Washer Plates	2
11	28304	Front Roller Bracket Extension	1
12	31720	LH Mulching Ring	1
13	31721	Mid Mulching Ring	1
14	31747	RH Mulching Ring	1
15	02523	M10 Nyloc Nut	23
16	02702	M10 Washer	27
17	06282	M10 x 30 Cup Sq Head Bolt	2
18	09471	M10 x 25 Socket Button Allen Key	1
19	01158	M10 x 30 Set Screw	4
20	02774	M12 Nyloc Nut	35
21	02105	M12 Washer	62

22	02291	M12 x 30 Set Screw	23
23	05832	M12 X 35 Set Bolt	4
24	09501	M12 x 35 Button Head Allen Socket	8



sp4093

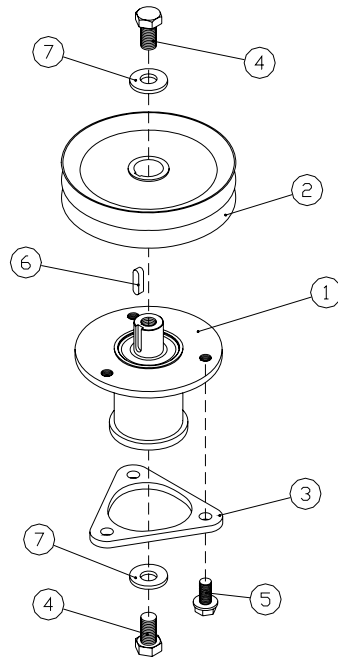
Parts List

Code
31705

Description
GEARBOX ASSY 1.5M DECK

Drawing No
sp4093

No.	Code	Description	QTY
1	25836	Gearbox Mounting Plate	1
2	31706	LH Gearbox Support Plate	1
3	31707	RH Gearbox Support Plate	1
4	26755	Pull Angle	1
5	25872	Anchor Plate	1
6	07593	200 Series Gearbox	1
7	05061	Taper Lock Pulley	1
8	26760	1" Taper Lock Bush	1
9	25827	Nut Plate	2
10	28395	Gearbox Breather Extension	1
11	02274	3/8" UNC x 1" Set Screw	8
12	02525	M10 Spring Washer	8
13	02291	M12 x 30 Set Screw	6
14	02105	M12 Washer	6
15	28275	Key	2
16	-		0
17	02966	M12 Nut	2



sp4094

Parts List

Code

Description

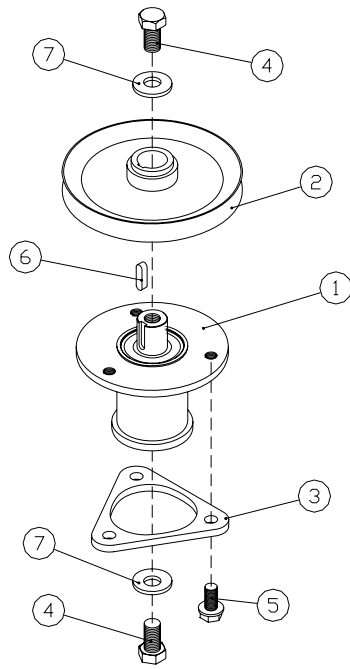
Drawing No

31713

ROTOR ASSY CENTRE %%C160

sp4094

No.	Code	Description	QTY
1	28467	Rotor Assy	1
2	31710	W/A Double Pulley	1
3	28506	8mm Spacer Plate	1
4	01365	M16 x 30 Set Screw	2
5	08483	M12 x 25 Durlok Bolt	3
6	03137	Key	1
7	05760	Belleville Washer	2



sp4095

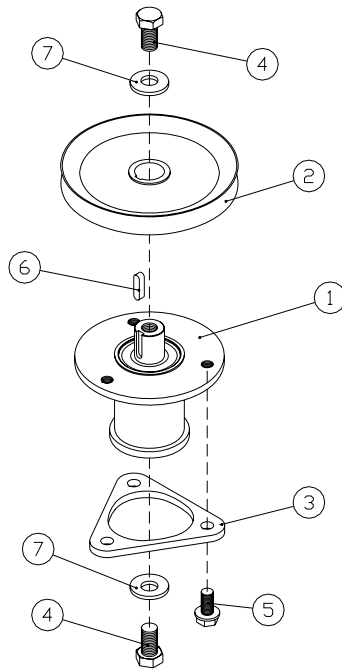
Parts List

Code
31714

Description
ROTOR ASSY RH %%C160

Drawing No
sp4095

No.	Code	Description	QTY
1	28467	Rotor Assy	1
2	31712	W/A Single Low Pulley	1
3	28506	8mm Spacer Plate	1
4	01365	M16 x 30 Set Screw	2
5	08483	M12 x 25 Durlok Bolt	3
6	03137	Parallel Key	1
7	05760	Belleville Washer	2



sp4096

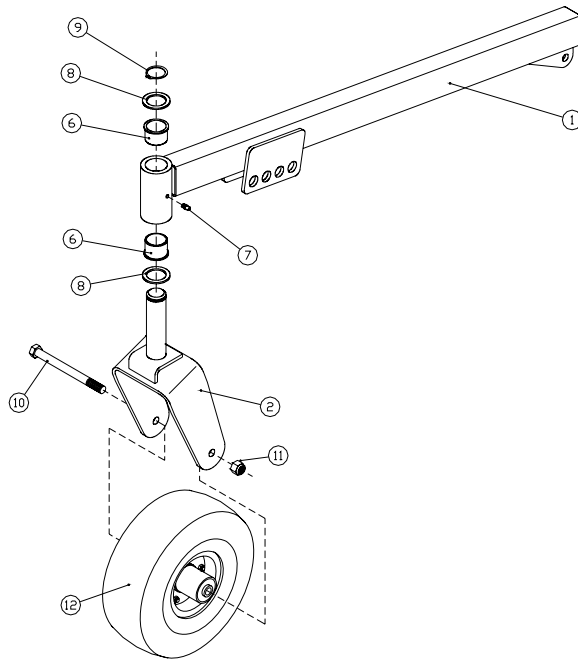
Parts List

Code
31715

Description
ROTOR ASSY LH %%C160

Drawing No
sp4096

No.	Code	Description	QTY
1	28467	Rotor Assy	1
2	31711	W/A Single Top Pulley	1
3	28506	8mm Spacer Plate	1
4	01365	M16 x 30 Set Screw	2
5	08483	M12 x 25 Durluk Bolt	3
6	03137	Parallel Key	1
7	05760	Belleville Washer	2



sp4097

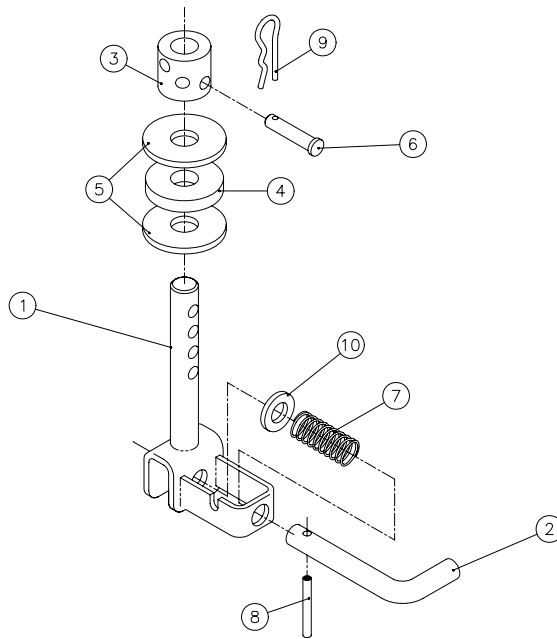
Parts List

Code
28346

Description
CASTOR WHEEL ASSY

Drawing No
sp4097

No.	Code	Description	QTY
1	28321	Wheel Arm W.A	1
2	25854	Castor Wheel Bracket	1
5	05411	Igus Bush	2
6	02137	M6 Grease Nipple	1
7	09747	Support Washer	2
8	09746	Circlip	1
9	02796	1/2" UNC x 6" Bolt	1
10	02558	1/2" UNC Nyloc Nut	1
11	05393	Castor Wheel	1



sp4008

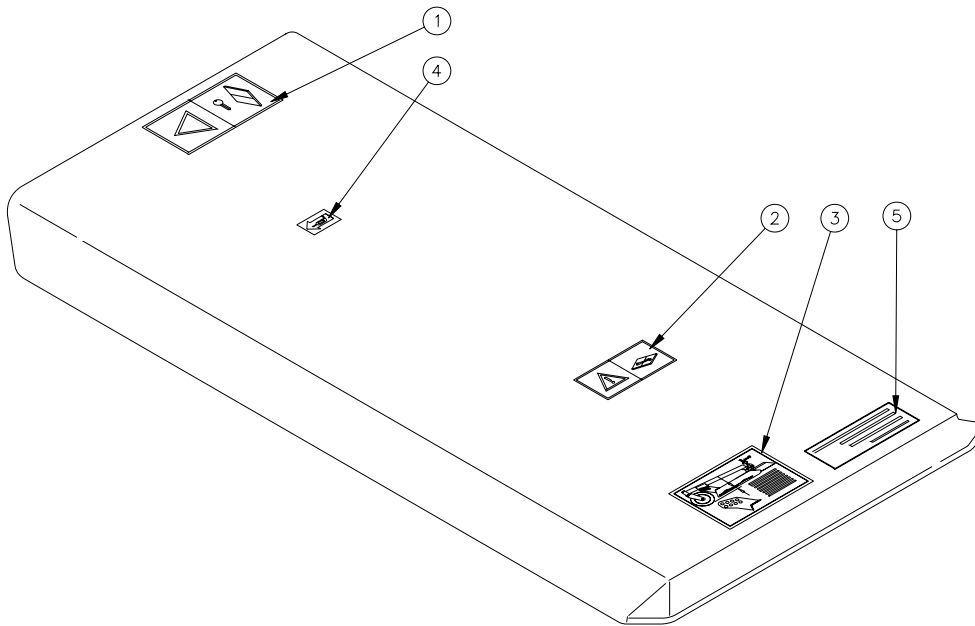
Parts List

Code
25881

Description
LIFT ARM ASSY

Drawing No
sp4008

No.	Code	Description	QTY
1	25882	Lift Arm	1
2	25884	Handle	1
3	25883	Collar	1
4	23489	M56 Rubber Neoprene Washer	1
5	05414	M20 Washer	2
6	05415	Clevis Pin	1
7	05380	Compression Spring	1
8	03471	Roll Pin	1
9	02798	R Clip	1
10	02104	M16 Washer	1



sp4014

Parts List

Code

Description

Drawing No

29208

DECAL GROUP 1.5/1.8 MOWERS

sp4014

No.	Code	Description	QTY
1	08318	Hazard Decal	1
2	05480	Safety Decals	1
3	28472	Cutting Height Decal General	1
4	08317	Grease Decal	1
5	03743	AG Aluminium Nameplate	1