

Operating instructions and parts manual
for

Kubota Mulching Mowers 1.3m

(For G2160 Tractors)

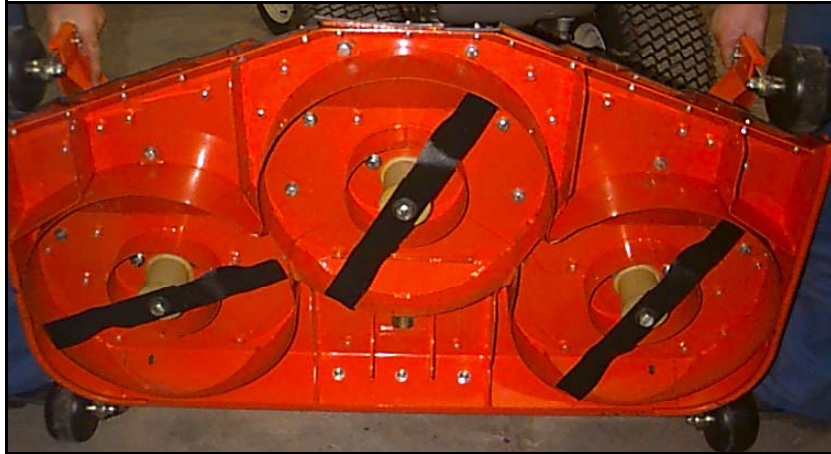
autoguide equipment

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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 is 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 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.

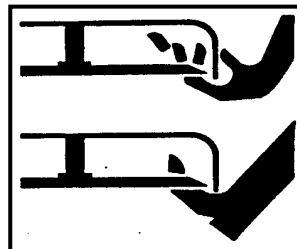
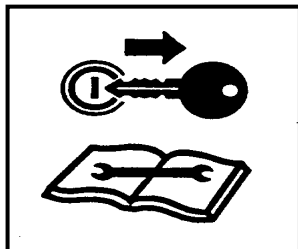
Observe all safety information in the manual and on decals fitted on the mower and the power unit.

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 very 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 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

G2160 (Mid mounted machine)

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 arms located under the Power unit. Attach the front 'pulling' frame to the hook points at the front of the deck and lock into the front location hooks on the Power unit. If the effort required to lock the 'pulling frame is excessive, adjust the two front nuts accordingly. Likewise if the effort is too low then the nuts may need tightening.

Raise and lower the mower to make sure there is no interference, and the deck remains essentially parallel with the ground. If the front of the deck appears low, tighten the above nuts further. If the deck is high at the front slacken the adjuster nuts. Ensure deck appears secure after such adjustments.

Always lower the mower to the ground when not in use!

G2160 - Fit the telescopic drive shaft to the deck and power unit. Check that the shaft has at least 12mm ($\frac{1}{2}$ ") clearance before it "bottoms out". Grease the shaft before use. The shaft length can be adjusted by sawing the telescopic tube and carefully deburring the ends.

Cutting height adjustment

(The cutting height will be 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 adjusting the tractor lift control situated below the drivers seat. The four corner deck wheels are fixed and act as anti-scalp rollers.

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.

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.

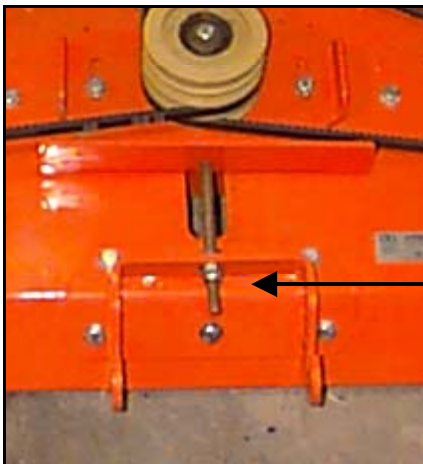
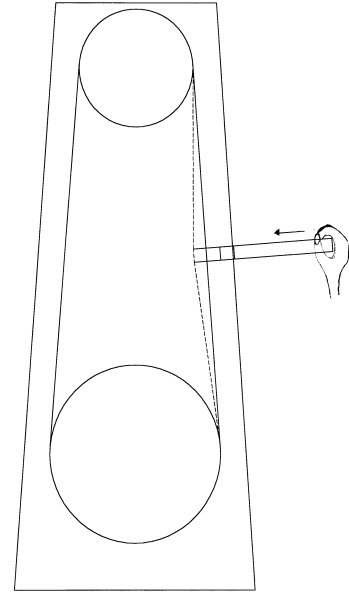
Locate the belt tensioning slots (24mm x 36mm) in the sides of the belt guards (G2160)

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:

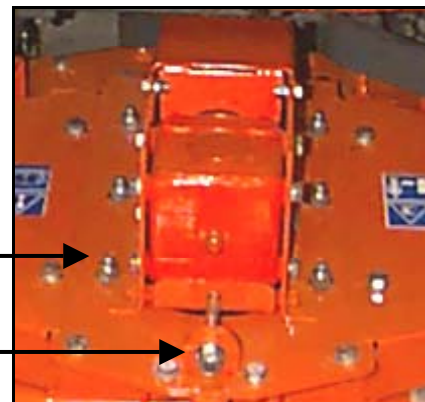
- Loosen the gearbox bolts, or idler bracket bolts.
- Turn the adjuster nut on the anchor plate at the front of the deck until the correct belt tension is achieved.
- Insert the metal rod to re-check the correct tension as above.
- Re-tighten the Gearbox or Idler bracket bolts referred to in a)



Idler bracket bolt (TG1860)

Gearbox bracket bolt

Belt tensioning bolt (F1900)



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

This 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) Check oil level in the gearbox which should be half full with good quality SAE 90 gear oil. The correct oil level is when the oil is at the bottom of the filler hole when the machine is level.

SPECIFICATION

Mowing Deck to fit **KUBOTA G2160**

MOWING

Heavy-duty mower developed specifically for mid mounting on Kubota Power units.

A rear discharge mower that can be converted to mulching to patent DE 44 34 272 using additional parts.

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.

The deck unit is of bolted construction for ease of service.

A single anti scalp roller is standard, protecting the front of the unit in undulating conditions.

CONSTRUCTION All steel

DECK WHEELS **G2160** – Moulded rollers with plain bearings

DIMENSIONS	Overall width	1.31m
	Overall Length	0.86m
	Overall Height	0.23m
	Weight	96kg

autoguide equipment

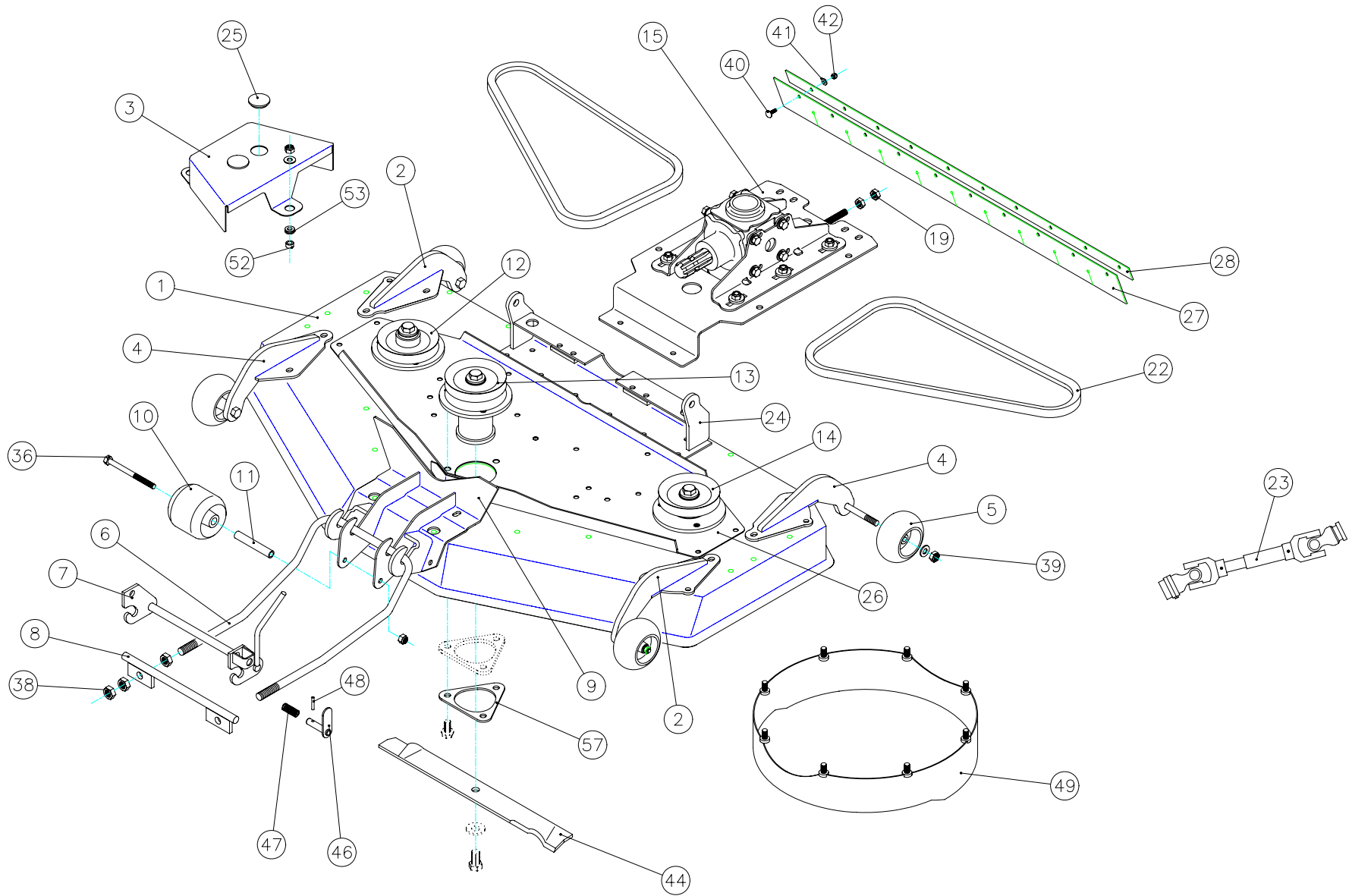
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Spare Parts

for G2160



Parts List

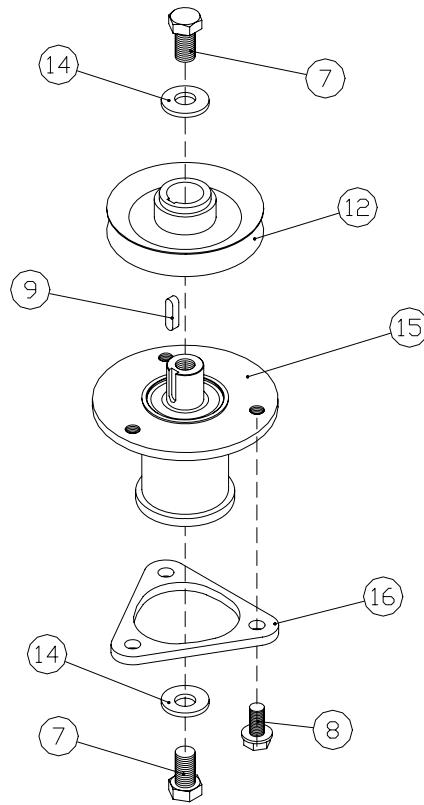
Code

Description

28392 GA KUBOTA G2160 1.3M MUL-DECK

No.	Code	Description	QTY	Drawing
1	28077	1.3M MID DECK W/A	1	
2	28596	WHEEL SUPPORT BRKT LH	2	
3	28601	BELT GUARD - 1.3M DECK	2	
4	28595	WHEEL SUPPORT BRKT RH	2	
5	06032	DECK WHEEL	4	
6	26236	FRONT SUPPORT HOOP	1	
7	26238	MOUNTING LATCH W/A - FRONT	1	
8	28108	CROSS BRACE W/A - KUBOTA 2	1	
9	28093	FRONT BRACKET W/A	1	
10	05684	ANTI-SCALP ROLLER	1	
11	24824	SPACER - ANTISCALP ROLLER	1	
12	26240	ROTOR ASSY RH (50IN DECK)	1	SP4098
13	26239	ROTOR ASSY REAR (50IN)	1	SP4099
14	26241	ROTOR ASSY LH (50IN DECK)	1	SP4100
15	32040	GT65/G2160 GEARBOX ASSY	1	SP4102
17	-	-	0	
18	-	-	0	
19	02966	M12 FULL NUT	2	
20	-	-	0	
21	-	-	0	
22	06902	V-BELT	2	
23	28135	PTO	1	
24	28099	REAR MOUNTING BRKT W/A	1	
25	26595	PLASTIC PLUG	4	
26	28290	DECK REINFORCEMNT W/A	1	
27	22195	PLASTIC REAR GUARD	2	
28	28107	BACKING STRIP 1.3M DECK	1	
29	-	-	0	
30	-	-	0	
31	-	-	0	
32	02702	M10 PLAIN WASHER FORM C	74	
33	-	-	0	
34	01398	M10 X 30 HEX HD BOLT	4	
35	-	-	0	
36	02468	M10 X 130 HEX HD BOLT	1	
37	02523	M10 NYLOC NUT	58	
38	02537	M16 FULL NUT	6	
39	02774	NUT M012 NYLOC	4	
40	03650	M6 X 20 CUP SQ SETSCREW	10	

No.	Code	Description	QTY	Drawing
41	07245	M6 FLAT WASHER FORM C	10	
42	02513	M6 NYLOC NUT	10	
43	02105	WASHER M12 PLAIN FORM C PLTD	4	
44	24772	MULCHING BLADE 447 LG RH	3	
45	26798	DECAL GROUP MID MOUNT DECK	1	
46	26299	LATCH PIN W/A	1	
47	26492	SPRING COMP 3/4IN X 1 1/4IN	1	
48	08112	SPIROL PIN DIA 5 X 30 LG	1	
49	31210	MULCHING RING - 2004	3	
52	28605	SPACER DIA 16 X 10.5 X 8	6	
53	08605	BLACK OPEN GROMMET RB3453	6	
54	09471	SCREW M010X25 SOCKET BUTTON	11	
55	09472	SCREW M010X30 SOCKET BUTTON	2	
56	06912	NUT M010 LOCK	2	
57	28509	3-BOLT SPACER PLATE 4MM	3	



SP4098

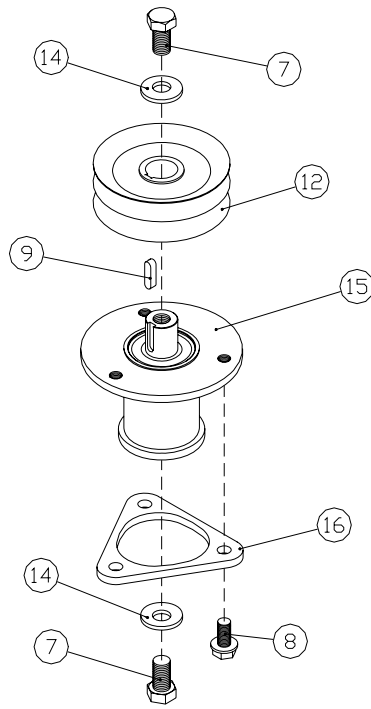
Parts List

Code
26240

Description
ROTOR ASSY

Drawing No
SP4098

No.	Code	Description	QTY
7	01365	M16 x 30 Set Screw	2
8	08483	M12 x 25 Durlok Bolt	3
9	03137	M7 x 8 x 30 Parallel Key	1
11	-		0
12	24849	W/A Pulley	1
14	05760	39mm x 17 x 4BW Belleville Washer	2
15	28467	Rotor Assy	1
16	28506	8mm Spacer Plate	1
17	-		0



SP4099

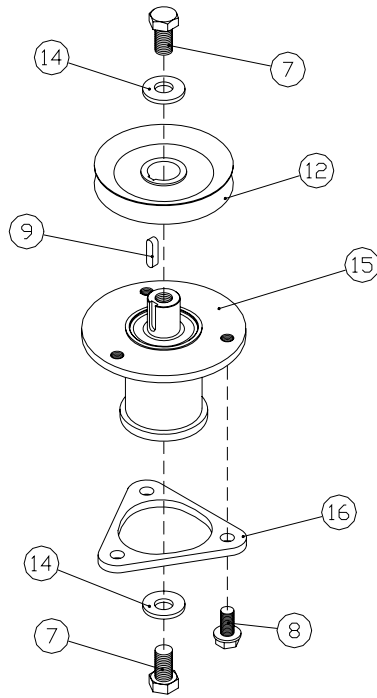
Parts List

Code
26239

Description
ROTOR ASSY

Drawing No
SP4099

No.	Code	Description	QTY
7	01365	M16 x 30 Set Screw	2
8	08483	M12 x 25 Durlok Bolt	3
9	03137	M7 x 8 x 30 Parallel Key	1
11	-		0
12	24847	W/A Twin SPA Pulley	1
14	05760	39mm x 17 x 4BW Belleville Washer	2
15	28467	Rotor Assy	1
16	28506	8mm Spacer Plate	1
17	-		0



SP4100

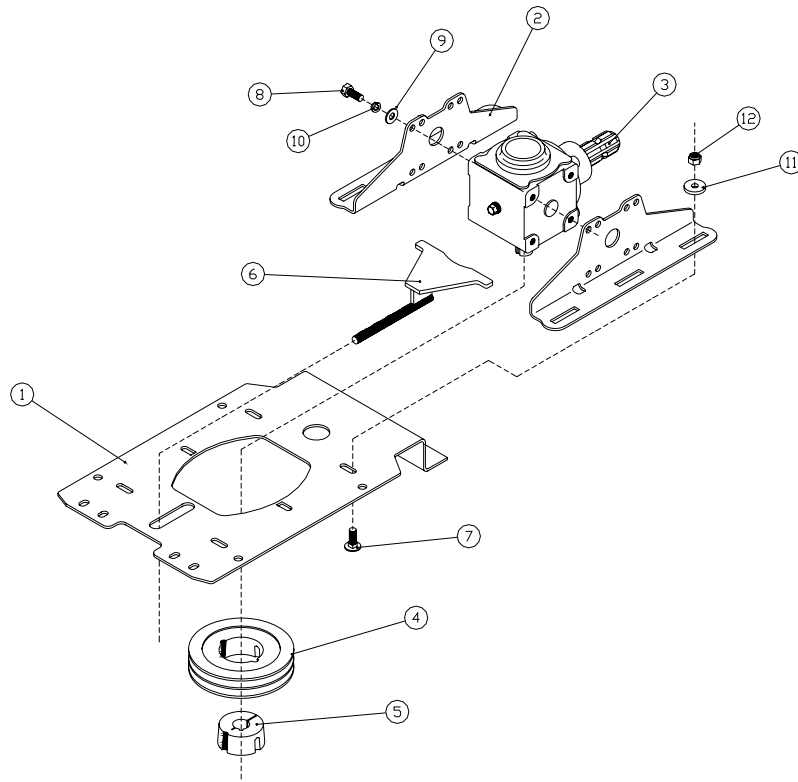
Parts List

Code
26241

Description
ROTOR ASSY

Drawing No
SP4100

No.	Code	Description	QTY
7	01365	M16 x 30 Set Screw	2
8	08483	M12 x 25 Durlok Bolt	3
9	03137	M7 x 8 x 30 Parallel Key	1
11	-		0
12	24848	W/A Pulley	1
14	05760	39mm x 17 x 4BW Belleville Washer	2
15	28467	Rotor Assy	1
16	28506	8mm Spacer Plate	1
17	-		0



SP4102

Parts List

Code
32040

Description
GT65/G2160 GEARBOX ASSY

Drawing No
SP4102

No.	Code	Description	QTY
1	28097	W/A Saddle Plate	1
2	28057	Gearbox Mounting Plate	2
3	104-483	Spiral Gear L5A Gearbox	1
4	03481	Taper Lock Pulley	1
5	01460	Taper Lock Bush	1
6	26568	Tension Adjuster	1
7	06282	M10 x 30 Cup Sq Head	6
8	02329	M10 x 25 Set Screw	8
9	02702	M10 Form C Flat Washer	8
10	02525	M10 Rec Spring Washer	8
11	26276	M10 Retainer Washer	6
12	02523	M10 Nyloc Nut	6