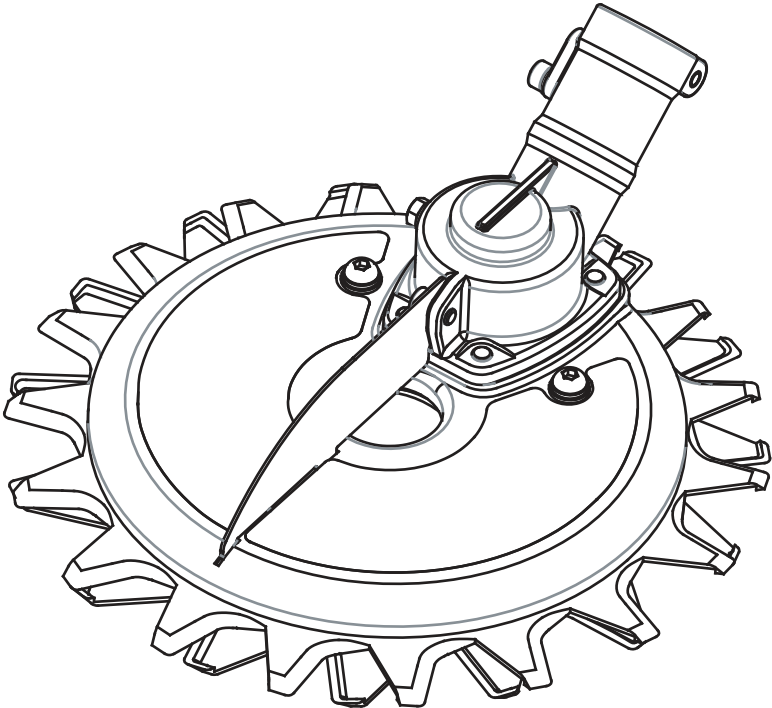


*Brushcutter
Attachment*

Power Rotary Scissors

**ASK-VW23
ASK-MW23**

Service Manual



Contents	
I . Product features	P-1
II Fits the Trimmers	P-2
III. Usage and Maintenance Method	P-3
IV. Troubleshooting	P-5
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I . Product features

(1) Solution of the danger of mowing

① Prevent scattering



② Prevent Kick back



Prevent accidents



Stones flicking up

Before this happens



Smashing windows

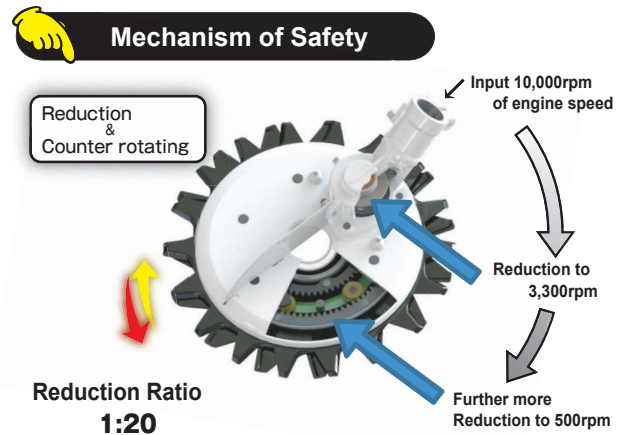


Power Rotary Scissors can stop flying stones.



(2) Braking function of Blade

It is a gear structure that can stop the turning blade, when the engine is stopped.



(3) Easy edge trimming

Having less counter force by hitting obstacles, Power Rotary Scissors allows easy edge trimming.



Grass in a water area



Grass close to a soft seat



Edge of the road



Edge cutting of lawn

This product can reduce a flying stones. It does not mean not to fly at all. Make sure the safety confirmation to the surroundings and wear safety glasses while using.

II . Fits the Trimmers!!

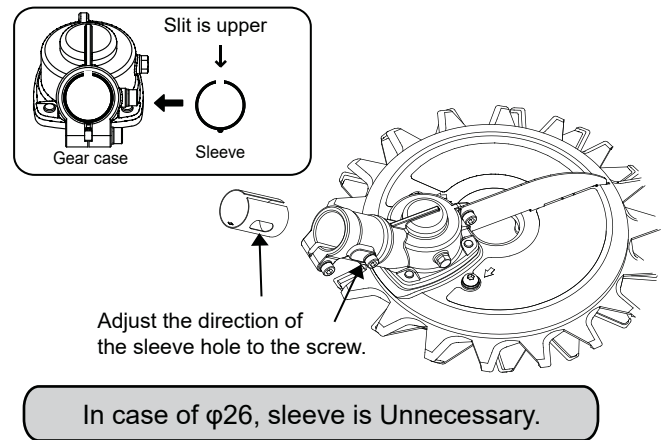
(1) Mounting Method

It is possible to mount Power Rotary Scissors on the commercial trimmers with adapters.

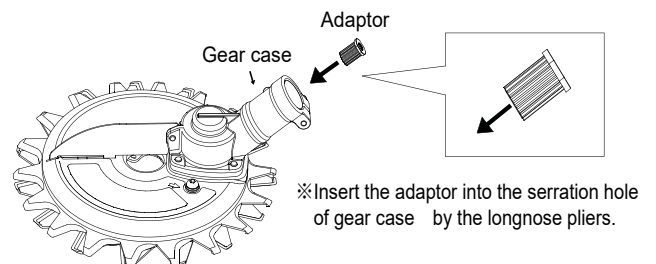
- 24mm, 25mm, 25.4mm, 26mm outer tube are available.
- Select the adaptor

Diameter	6mm	7mm	7mm	8mm	5.2mm
No. of teeth	10	13	7	9	square

① Insert the sleeve into the gear case



② Insert the adaptor into the gear case



(2) Failure examples during installation

① Drive shaft has not reached deeply of the gear case.

Solution : Insert Power Rotary Scissors all the way regardless the hole position of Fit screw on the outer tube.

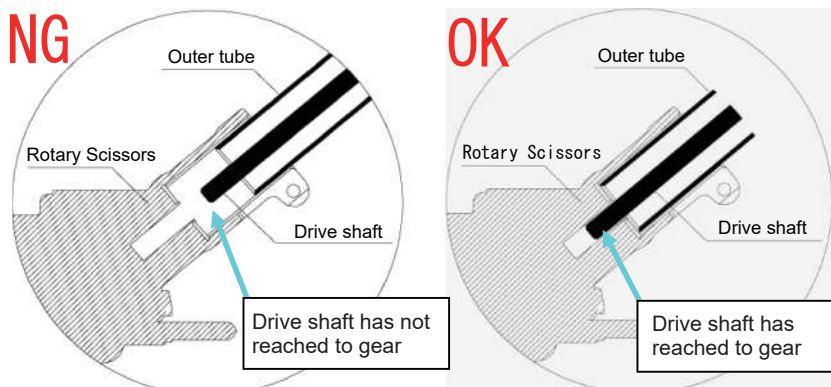
② It is not properly attached due to mistake of adaptor and sleeve selection.

Solution : Please reconfirm adaptable sleeve and adaptor.

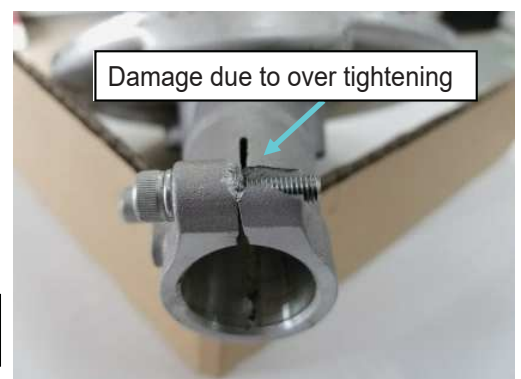
③ The sleeve which is not conforming was fitted and it was excessively fastened, so the gear case was damaged.

Solution : Please install the correct sleeve.

※Installation failure examples



※Gear case damage example



III. Usage and Maintenance Method

(1) Point of usage

① Just place on the Ground



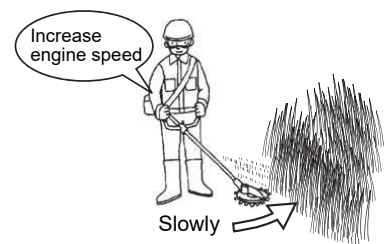
It can work comfortably by using placed on the ground.

② Balance adjustment of the trimmer



Adjust handle position and shoulder band length so that the blade is parallel to the ground.

③ Adjust engine speed



Adjust engine rotation for grass type and thickness. If the grass is concentrate, adjust the engine speed higher and move slowly.

(2) 3 types Blade

Use the blade fits the place

(SK-1815NW)



Diameter 230mm
Standard Blade

(SK-2824NW)



Diameter 220mm
Suitable for cutting thinner softer grasses or lawn

(SK-2118VW)



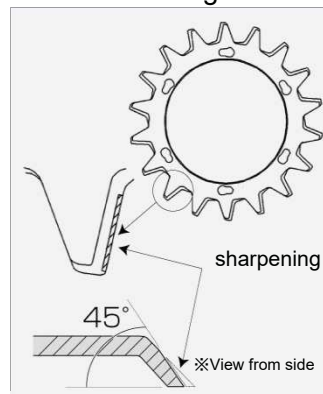
Diameter 280mm
Suitable for edge trimming increase work efficiency

(3) Sharpening of blade

Blade sharpness has decreased will cause the fall working efficiency.



Using worn blades has a bad influence on unit durability.



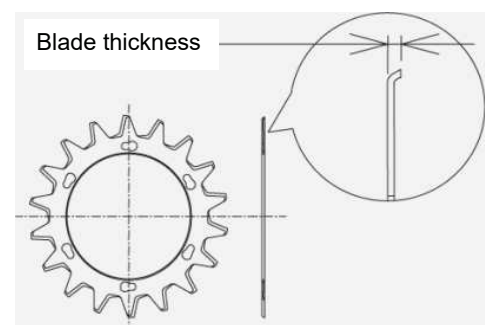
※ Use grinders and diamond sharpener for sharpening

① Timing of sharpening blade

For grass cutting and mowing : Every 10 hours
Places with many obstacles : Every 2hours

② Timing of replace blade

About 30~40 hours use or when the thickness of the upper or lower blade wears to 2.7 mm or less.



(4) Check the bottom disc

It is necessary to replace the broken bottom disc



Using worn bottom disc has a bad influence on unit durability.

(5) Grease injection

Maintenance for long use

Effect

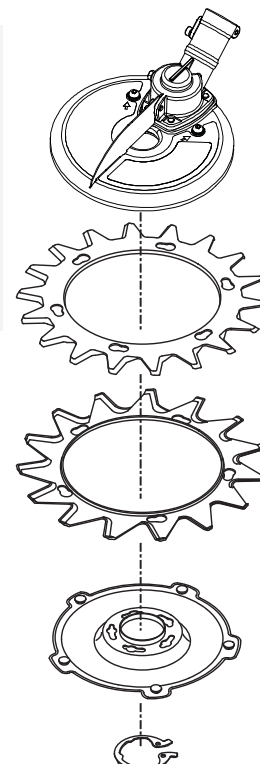
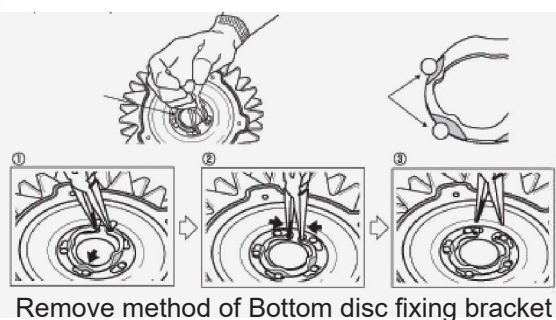
- ① Gear lubrication
- ② Cooling
- ③ Emission of foreign matter

Estimated injection	
<p>Injection hole</p> <p>Gear unit 20cc every 10 hours</p>	<p>Injection hole</p> <p>Gear case 10cc every 25 hours</p>

※Grease : Lithium grease

(6) Removal foreign matter Regularly

Remove the bottom disc and blades, Check the inside regularly.



(7) Gear unit can be disassembled

- ① If you are stocking spare parts, you can repair immediately as gear wears out on site.
- ② Even if a foreign object enters the gear unit, you can disassemble and clean.



Disassembly



Cleaning



Grease up

IV. Troubleshooting

(1) Blade does not turn or does not turn properly.

① Grease is hardening due to temperature change.

Solution Remove the upper and lower blade and the bottom disc, reduce the load and start trial operation. (check the right picture)

② The rotation of the trimmer is insufficient.

Solution Using the rotation at full throttle.

③ The output power of the trimmer is small.

Solution Using at 23cc or more engine.

④ When the rotation speed increases, the engine stops.

Solution Warm up the engine for a while.

⑤ The drive shaft is not properly attached to the adapter.

Solution Check the mounting.

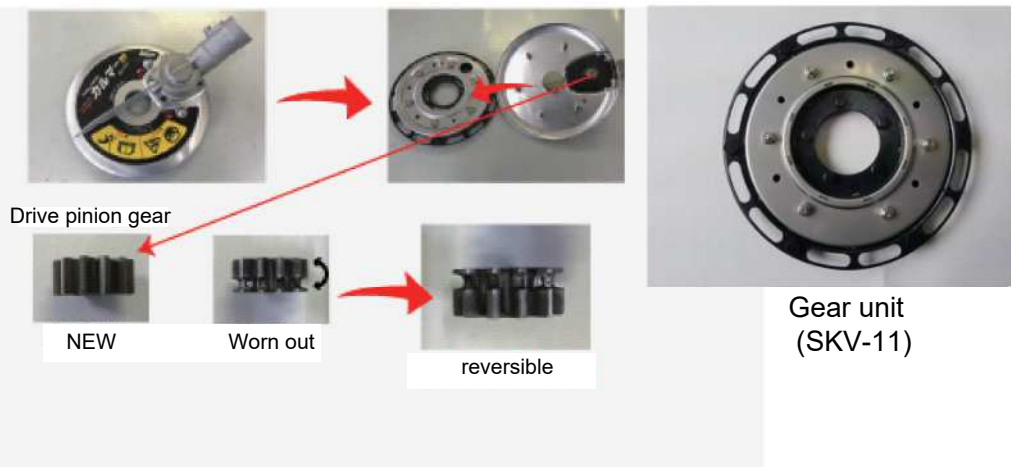


(2) The blade suddenly stopped during use.

① Drive pinion gear is worn out.

Solution Replace the drive pinion gear.

Even if the Drive pinion gear wears, it can be used again if it is installed in the reverse direction.



② Gear unit (SKV-11) is worn out or broken.

Solution Replace the damaged part or Gear unit (SKV-11).

Cause of gear wear

- ① Injection short of grease.
- ② Foreign matter intruded into the Gear unit (SKV-11).
- ③ Gear absorbed heavy impact.

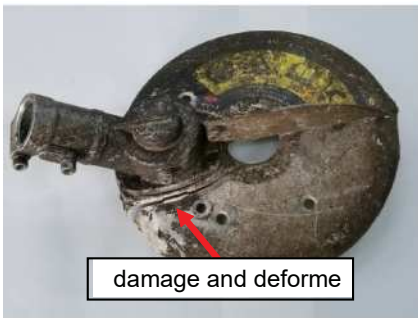


Exploded view of gear unit

(3) Examples of damage and wear

Cases due to shock during use and lack of maintenance.

① Body case damaged and deformed



Gear engagement worsens

Solution Replace the body case

② Deformation of the stabilizer



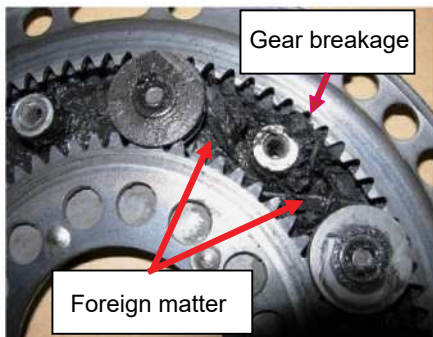
The rigidity will be weakened, it will cause breakage of the Body case.

Solution Replace the stabilizer

③ Lost of the stabilizer



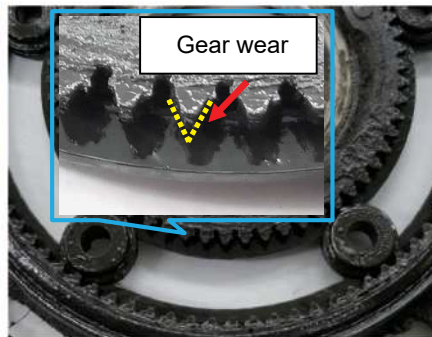
④ Foreign matter intruding into gear unit and gear is broken



It does not rotate because the power is not transmitted.

Solution Replace the part of gear unit.

⑤ Gear wear in the gear unit



⑥ Wear and breakage of oil seal



Foreign matter will enter the inside.

Solution Replace parts with oil seal.

⑦ Depletion due to insufficient injection of grease



Oil seal and gear will be damaged.

Solution Inject grease periodically. (20cc every 10 hours)

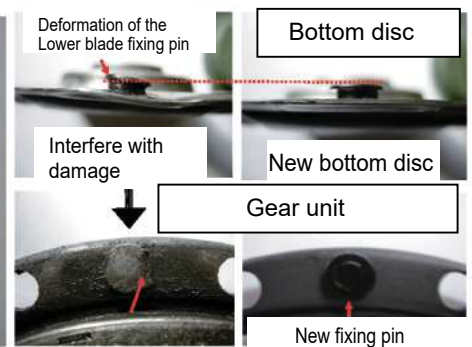
⑧ Deformation of the bottom disc fixing bracket



There is a possibility that the blade and the bottom disc may come off.

Solution Replace the bottom disc fixing bracket.

⑨ Fixing pin breakage and deformation



Damage of the lower blade fixing pins

Fixed pins interfere due to blade wear.

Solution Replace the bottom disc and blade.

V. Assembly and repair

(1) Assemble Gear Case

<p>SKR-10</p> <p>Fastening torque 4.9 ~ 6.4N · m</p> <p>SKR-38</p> <p>Apply silicone</p> <p>SKR-06AJ</p>	<p>What to do</p> <p>Put Gear Case assembly (SKR-06AJ) and Body Case (SKR-38) together with Low Head Cap Screw M6×8 (SKR-10).</p> <p>⚠ Caution</p> <ul style="list-style-type: none"> Do not forget to apply silicone on Gear Case assembly. (Three-bond 1530C or equivalent) Wipe off the overflow silicone. Make it sure to apply adhesive to Low Head Cap Screw M6×8. (three-bond 1342 or equivalent) <p>【Fastening torque : 4.9 ~ 6.4 N · m】</p> <p>Tool to use</p> <p>Hex Wrench (3mm) or LX3 Wrench Torque driver / Torque wrench Silicone (three-bond 1530C or equivalent) Adhesive (three-bond 1342 or equivalent)</p>
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(2) Assemble Drive Pinion Gear

<p>SKR-13</p> <p>SKAN-14</p> <p>SKR-15</p> <p>Output shaft</p> <p>Securely fit E-Ring 4 with E-ring pliers or long nose pliers.</p>	<p>What to do</p> <p>Insert Output Shaft Spacer (SKR-15) and Drive Pinion Gear (SKAN-14) in output shaft and fix them with E-Ring 4.</p> <p>⚠ Caution</p> <ul style="list-style-type: none"> Use E-ring pleyer or long nose pleyer to properly seat E-Ring 4 (SKR-13) in the groove on output shaft. Use E-ring pleyer or flat head screw driver to take E-Ring 4 off. <p>Tool to use</p> <p>E-ring pleyer or long nose pleyer / flat head screw driver</p> <p><Maintenance check point></p> <p>Check Drive Pinion Gear wear.</p> <p>※ Depending on level of wear, turn Drive Pinion Gear over or replace with new Drive Pinion Gear.</p>
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(3) Assemble Stabilizer

<p>Fastening torque 3.0 ~ 3.5N · m</p>	<p>What to do</p> <ul style="list-style-type: none"> • Insert Stud Screw M5×18 (SKR-36) through holes on Body Case and put Type label V (SKVW-26) and Caution label V (SKVW-27) over the bolts. • Slide Stabilizer (SKR-07) in Body Case and fasten it to Gear Case with Cap Screw M5×8 (SKAN-05) and Spring Washer (SKAN-04). <p>⚠ Caution</p> <ul style="list-style-type: none"> • Check deformation of Body Case and Stabilizer before assembling. (Insert bent tip of Stabilizer to Body Case first.) 【Fastening torque 3.0 ~ 3.5N · m】 <p>Tool to use</p> <p>Hex Wrench (4mm) Torque driver / Torque wrench</p>
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(4) Installation of Gear Unit

<p>Fastening torque 4.9 ~ 6.4N · m</p> <p>Fastening torque 3.7 ~ 4.4N · m</p> <p>NG Gap</p> <p>OK</p> <p>Marking</p> <p>Can remove it as a gear Unit by removing the 5 nut of the mark.</p>	<p>What to do</p> <ul style="list-style-type: none"> • Put Body Case assembly and Gear Unit (SKV-11) together with Sems Cap Screw M6×10 (SKR-12) and U-Nut M5 (SKR-27). <p>【To take Gear unit assembly off】 In order to take Gear Unit (SKV-11) off, take Sems Cap Screw M6×10(SK-12) and 5 marked U-Nut M5 at the bottom of Lower Oil Case V Assy (SKV-28).</p> <p>⚠ Caution</p> <ul style="list-style-type: none"> • It is very important to fasten Sems Cap Screw M6×10 (SKR-12) with correct torque as Body Case will be deformed and become a cause of unexpected trouble if they become loose. 【Fastening torque 4.9 ~ 6.4N · m】 • Fasten U-Nut M5 (SKR-27) diagonally and retighten to the proper fastening torque. 【Fastening torque 3.7 ~ 4.4N · m】 • Check correct gear teeth engagement between Drive Pinion Gear (SKAN-14) and Gear Unit (SKV-11) . In case it is difficult to purchase correct engagement, turn Gear case shaft by screw driver and fit the gears. <p>Tool to use</p> <p>Hex Wrench (4mm) Spanners / Box wrench (8mm) Torque driver / Torque wrench</p>
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(5) Assemble Gear unit ①

Body Case assembly

SKV-35



Apply grease to 11 bolts and spacers.



What to do

- Install Upper Oil Case V Assy (SKV-35) on Body case assembly.
- Insert Spacer RA (SKRA-34) into 11 bolts of oil case.

⚠ Caution

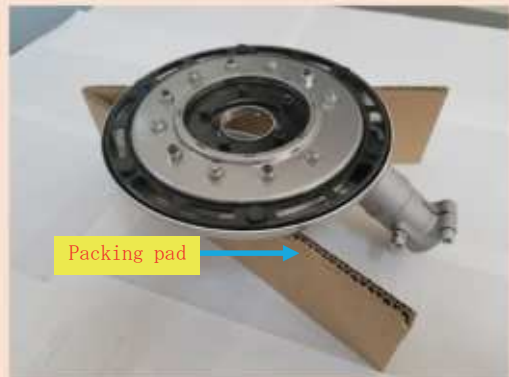
- Do not forget to apply grease on Specer RA (SKRA-34).
- Make it sure to put Type Label V (SKVW-26) and Caution Label V (SKVW-27) in advance so as to prevent Stud Screw M5×18 (SKR-36) coming off during assembling work.

Tool to use

Grease (Lithium grease)

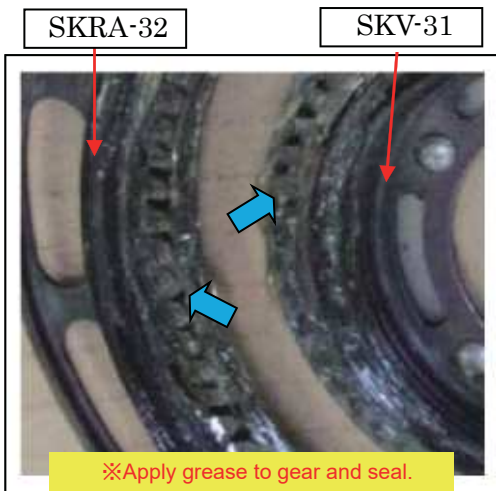
<Maintenance check point>

- Check deformation or crack of Upper Oil Case V Assy (SKV-35) as it will affect sealing ability.
- Check deformation or crack of Body Case (SKV-38) as it will affect gear engagement.
- Check wear of Spacer RA (SKRA-34).



Working is easy if you use the included packing pad as the base of the main unit.

(5) Assemble Gear unit ②



What to do

- Apply grease to Sun Gear V Assy (SKV-31) and Outer Gear RA Assy (SKRA-32).
- Collect 6 Free rollers C (SKV-33) in one place in the Outer Gear RA Assy (SKRA-32) and install Sun Gear V Assy (SKV-31), then expand Free rollers C (SKV-33) as shown on the picture while checking their direction.
- Attention to the direction of the gear assembly and install it on the main case.

⚠ Caution

- Apply grease to the entire gear and seal part.
- Free roller C (SKV-33) has a mounting direction.
- For the location of Free roller C (SKV-33), see the picture below.



Tool to use

Grease (Lithium grease)

<Maintenance check point>

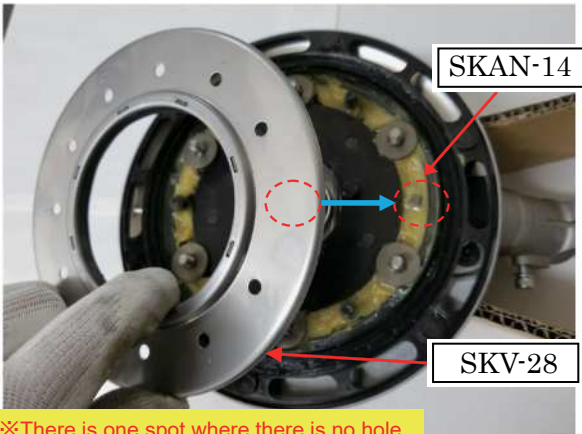
- Make it sure that there is no dust or dirt in the gear unit. if there is any, clean them up and apply proper amount of grease.
- Check excess wear or crack of gears or existence of foreign object on gears as they will disturb gear movement and performance.
- Check deformation or breakage of seals.
- Check wear of Free roller C (SKV-33).



(5) Assemble Gear unit ③



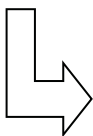
※ Apply grease to seal



※There is one spot where there is no hole.



Fastening torque 3.7 ~ 4.4N · m



Fastening torque 4.9 ~ 6.4N · m

※Put 15-20g grease through grease hole and fasten (SKR-12).

What to do

- Fill the grease inside the Gear unit.
Appropriate amount of grease is 35-40g.
- Insert Lower Oil Case V Assy (SKV-28) into bolts and fasten with U-Nut M5 (SKR-27).
- Fasten Sems Cap Screw M6×10 (SKR-12).

⚠ Caution

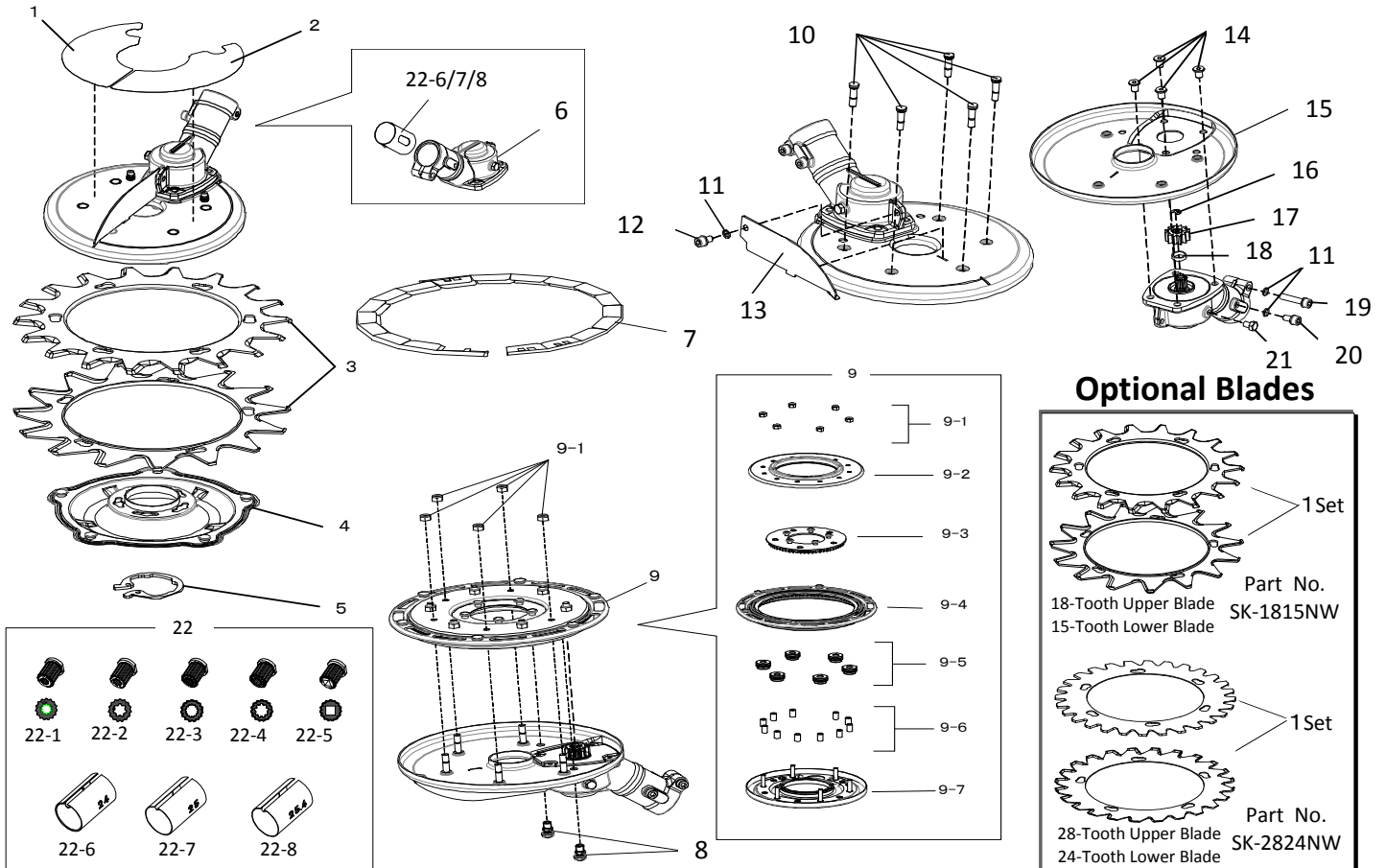
- Apply grease to the entire seal part.
- Diagonally fasten U-Nut M5 (SKR-27) and make it sure that there is no gap of deformation on Lower Oil Case V Assy (SKV-28).
【Fastening torque : 3.7 ~ 4.4N · m】
- Securely fasten Sems Cap Screw M6×10 (SKR-12), or Body Case maybe deformed and unexpected mechanical trouble will occur.
【Fastening torque : 4.9 ~ 6.4N · m】

Tool to use

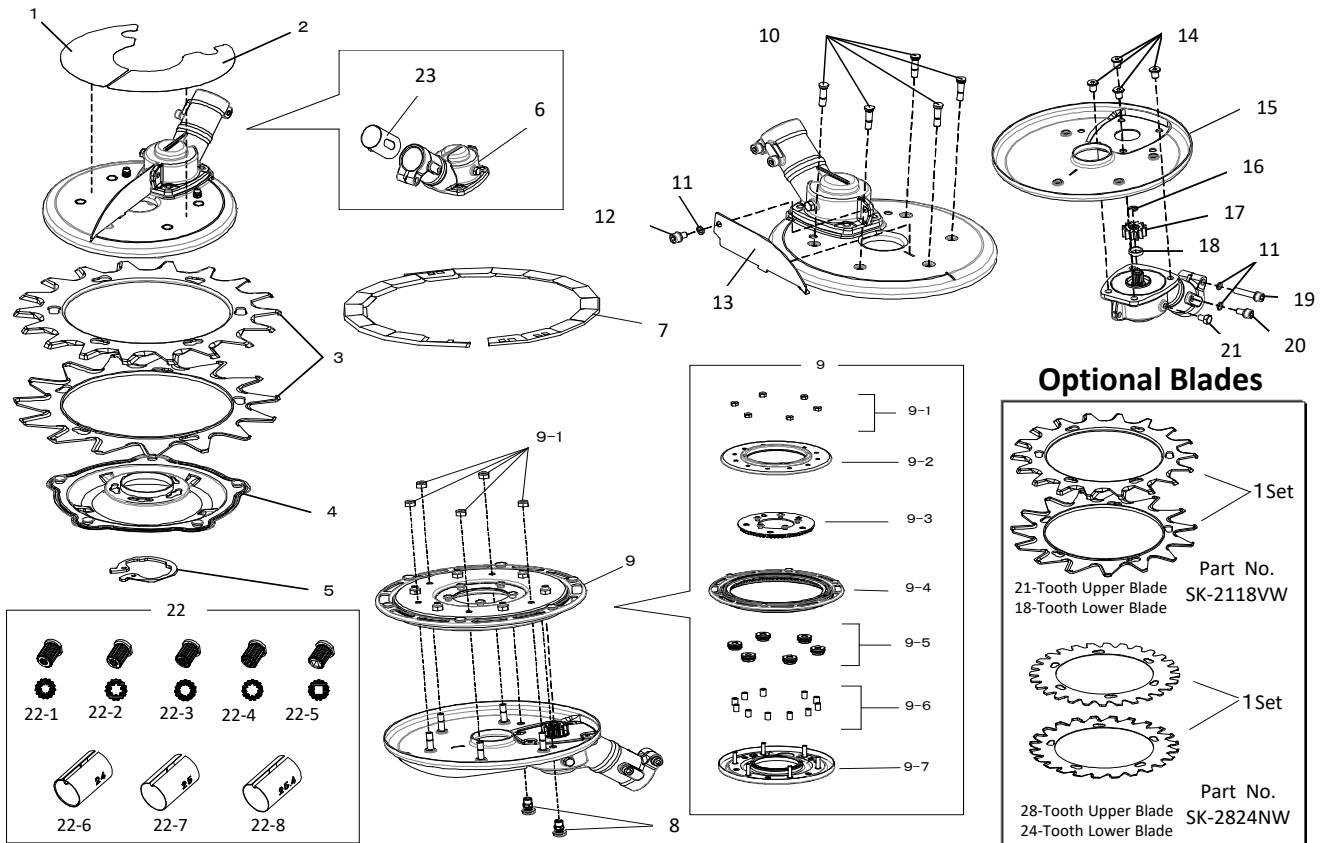
- Spanners / Box wrench (8mm)
- Grease (Lithium grease)

<Maintenance check point>

- Make it sure that there is no dust or dirt in the gear unit. if there is any, clean them up and apply proper amount of grease.
- Do not use deformed or broken Lower Oil Case V Assy (SKV-28), or seal ability will be affected.
- After several time of use, locking ability of U-Nut M5 (SKR-27) will become deteriorated; therefore it is strongly suggested to replace them with new one.
- ※ It does not matter with a commercially available Grease Nipple instead of Sems Cap Screw M6×10 (SKR-12).
【Grease Nipple fastening torque : 2.8 ~ 3.2N · m】



No.	Part No.	Part Name	Part Quantity
1	SKVW-26	Type Label V	1
2	SKVW-27	Caution Label V	1
3	SK-1815NW	Upper Blade18/Lower Blade15	1Set
4	SKNW-19	Bottom Disk	1
5	SKN-22	Bottom Disk Fixing Bracket	1
6	SKR-06AJ	Gaer Case AJR	1
7	SKAN-21	Blade Protection Cover	1
8	SKN-12	Sems Cap Screw M6 × 10	2
9	SKV-11	Gear Unit V	1
9-1	SKR-27	U-Nut M5	11
9-2	SKV-28	Lower Oil Case V Assy	1
9-3	SKV-31	Sun Gear V Assy	1
9-4	SKRA-32	Outer Gear RA Assy	1
9-5	SKV-33	Free Roller C	6
9-6	SKRA-34	Spacer RA	11
9-7	SKV-35	Upper Oil Case V Assy	1
10	SKR-36	Stud Screw M5 × 18	5
11	SKAN-04	Spring Washer M5	3
12	SKAN-05	Cap Screw M5 × 8	1
13	SKR-07	Stabilizer	1
14	SKR-10	Low Head Cap Screw M6 × 8	4
15	SKR-38	Body Case + Rubber Seal	1
16	SKR-13	E-Ring 4	1
17	SKAN-14	Drive Pinion Gear	1
18	SKR-15	Output Shaft Spacer	1
19	SKAN-02	Cap Screw M5 × 25	1
20	SKAN-01	Fit Screw M5 × 12	1
21	SKAN-03	Hex Screw M5 × 6	1
22	TK-01	Mounting Kit	1
22-1	TKA-01	Adapter 6-10	1
22-2	TKA-02	Adapter 7-7	1
22-3	TKA-03	Adapter 7-13	1
22-4	TKA-04	Adapter 8-9	1
22-5	TKA-05	Adapter SQ	1
22-6	TKS-24	Sleeve φ 24	1
22-7	TKS-25	Sleeve φ 25	1
22-8	TKS-254	Sleeve φ 25.4	1
OPTION	SK-2824NW	Upper Blade28/Lower Blade24	1Set



No.	Part No.	Part Name	Part Quantity
1	SKVW-26	Type Label V	1
2	SKVW-27	Caution Label V	1
3	SK-1815NW	Upper Blade18/Lower Blade15	1Set
4	SKNW-19	Bottom Disk	1
5	SKN-22	Bottom Disk Fixing Bracket	1
6	SKM-06AJ	Gaer Case AJM	1
7	SKAN-21	Blade Protection Cover	1
8	SKR-12	Sems Cap Screw M6 × 10	2
9	SKV-11	Gear Unit V	1
9-1	SKR-27	U-Nut M5	11
9-2	SKV-28	Lower Oil Case V Assy	1
9-3	SKV-31	Sun Gear V Assy	1
9-4	SKRA-32	Outer Gear RA Assy	1
9-5	SKV-33	Free Roller C	6
9-6	SKRA-34	Spacer RA	11
9-7	SKV-35	Upper Oil Case V Assy	1
10	SKR-36	Stud Screw M5 × 18	5
11	SKAN-04	Spring Washer M5	3
12	SKAN-05	Cap Screw M5 × 8	1
13	SKR-07	Stabilizer	1
14	SKR-10	Low Head Cap Screw M6 × 8	4
15	SKR-38	Body Case + Rubber Seal	1
16	SKR-13	E-Ring 4	1
17	SKAN-14	Drive Pinion Gear	1
18	SKR-15	Output Shaft Spacer	1
19	SKAN-02	Cap Screw M5 × 25	1
20	SKAN-01	Fit Screw M5 × 12	1
21	SKAN-03	Hex Screw M5 × 6	1
22	TKWB-01	Mounting Kit	1
22-1	TKA-01	Adapter 6-10	1
22-2	TKA-02	Adapter 7-7	1
22-3	TKA-03	Adapter 7-13	1
22-4	TKA-04	Adapter 8-9	1
22-5	TKA-05	Adapter SQ	1
22-6	TKS-24	Sleeve φ 24	1
22-7	TKS-25	Sleeve φ 25	1
22-8	TKS-254	Sleeve φ 25.4	1
23	SKM-26	Sleeve φ 26	1
OPTION	SK-2824NW	Upper Blade28/Lower Blade24	1Set
OPTION	SK-2118VW	Upper Blade21/Lower Blade18	1Set