

Models No. ▶ DA4000LR

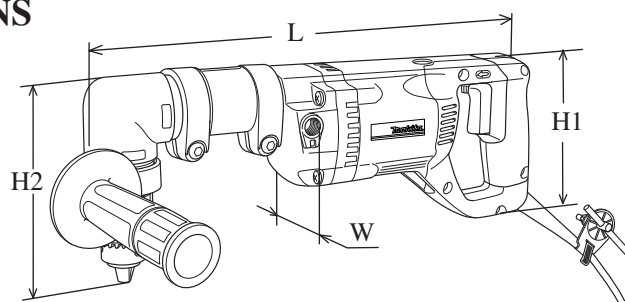
Description ▶ 13mm (1/2") Angle Drill

CONCEPTION AND MAIN APPLICATIONS

This model is the higher power version of the existing Model 6300LR.

Its brief benefits and features are

1. Easier upsetting angle attachment for change of working mode (high / low speed) thanks to the new formed drill chuck.
2. More durable gears in the angle attachment.
3. Light weight and easy to operate.
4. D - formed handle for easy gripping.



Dimensions : mm (")	
Length (L)	413 (16-1/4)
Height (H1)	153 (6)
Height (H2)	144 (5-5/8)
Width (W)	83 (3-1/4)

► Specification

Voltage (V)	Current (A)	Cycle (Hz)	Continuous Rating (W)		Max. Output(W)
			Input	Output	
120	7.5	50 / 60	850	440	600
220	3.4	50 / 60	710	300	600
230	3.2	50 / 60	710	300	600

No load speed : (min - max rpm)		(High)	0 - 900 with angle attachment		0 - 600 without angle attachment
		(Low)	0 - 400 with angle attachment		
Chuck ability : mm (")			2- 13 (1/16 - 1/2)		
Drilling capacity : mm (")	in Steel		13 (1/2)		
	in Wood	(High)	Auger bit : 38 (1-1/2)	Selffeed bit : 65 (2-9/16)	Hole saw : 114 (4-1/2)
		(Low)	Auger bit : 38 (1-1/2)	Selffeed bit:118 (4-5/8)	Hole saw : 152 (6)
Reverse switch			Yes		
Variable switch			Yes		
Protection from electric shock			by double insulation		
Cord length : m (ft)			2.5 (8.2)		
Net weight :Kg (lbs)			3.7 (8.1)		

► Standard equipment

- * Side grip for DA4000LR 1 pc.
- * Side grip for angle attachment 1 pc.
- * Chuck key 1 pc.
- * Hex wrench 1 pc.
- * Plastic carrying case 1 pc.

< Note > The standard equipment for the tool shown may differ from country to country.

► Optional accessories

- * Angle attachment
- * Extension attachment
- * Depth guide assembly
- * Side grip (for DA4000LR)
- * Side grip (for Angle attachment)
- * Drill chuck
- * Chuck key

Model DA4000LR

Increased durability of gear in the angle attachment

Swivel side grip can be attached on angle attachment

Switch is not only durable and high dust proof, but also comfortable to operate with big trigger.

Palm fitting soft handle

Tough cord guard in ideal assembling position

Excellent in flexibility to protect the cord from disconnection. And its ideal assembling position as per the illustration does not interfere with the operator's action.

For speedy upsetting the angle attachment for changing (high / low speed), drill chuck can be removed faster than the existing one.

After unscrewing this screw you can **only pull out the drill chuck** with your hand.

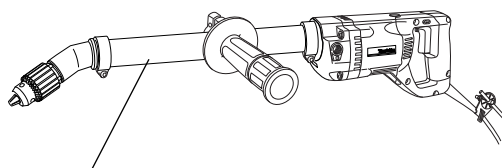
After removing this screw, remove the drill chuck by turning.

DA4000LR

The existing model

You can enjoy comfortable work due to **lighter weight than the competitors.**

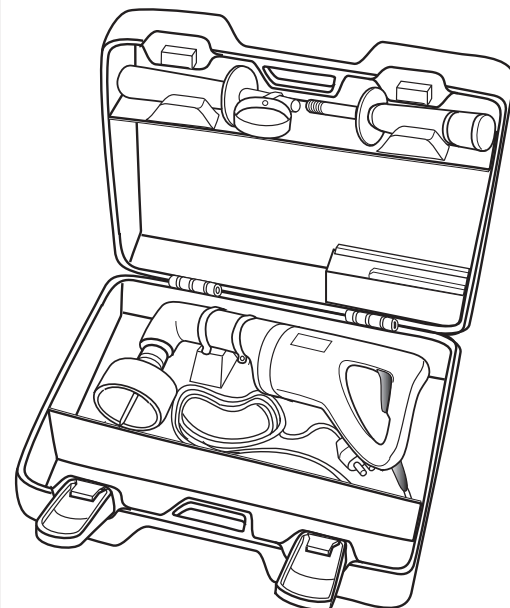
Superiority to competitors in drilling performance as shown in the next page.



Extension attachment can be used with Model DA4000LR.

< Note > This accessory is an optional accessory.

Come with so big plastic carrying case that you can put the machine into it without detaching 4" hole saw or selffeed bit.



Comparison of products in drilling capacity

Numbers in graph below are relative values when setting competitor A's capacity as 100.

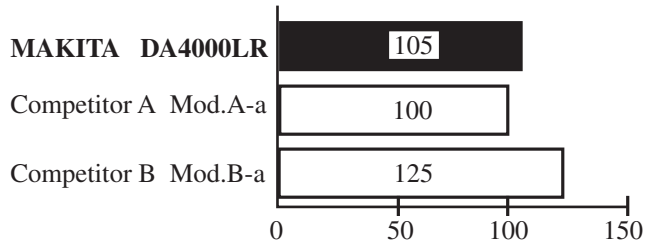
From the following graph you can understand


1. Superiority to competitor A's product
2. Tougher than competitor B's product especially in the drilling large hole, or in the drilling with heavy load.

< Operation as an angle drill with high speed mode >

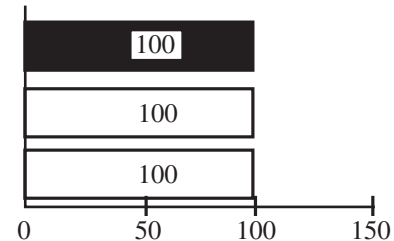
The equipped bit : Auger bit ϕ 1" 

The work piece : Spruce 38mm (1-1/2") in thickness with 3 layers



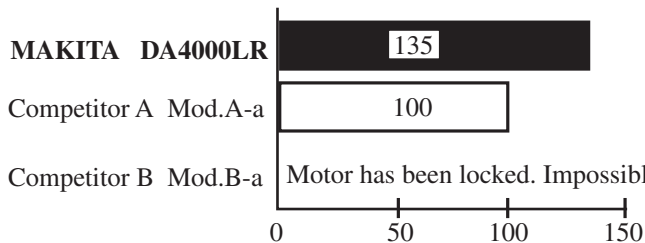
The equipped bit : Auger bit ϕ 1-1/2" 

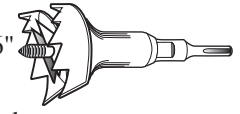
The work piece : Spruce 38mm (1-1/2") in thickness with 3 layers



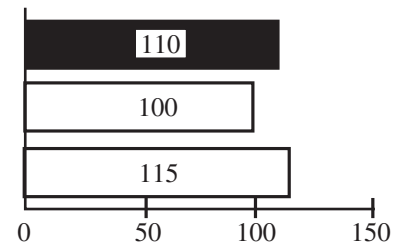
The equipped bit : Auger bit ϕ 1/2" 

The work piece : Douglas fir 90mm (3-1/2") in thickness



The equipped bit : Selfeed bit ϕ 2-9/16" 

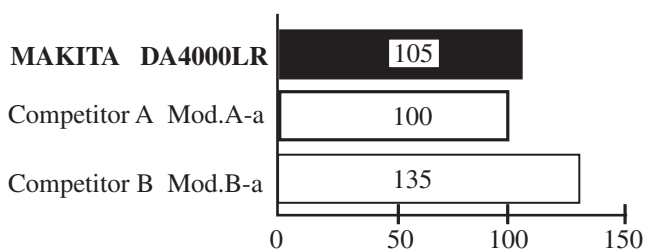
The work piece : 1 pc.of Spruce 38mm (1-1/2") in thickness

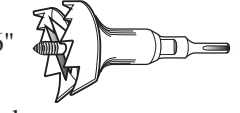


< Operation as an angle drill with low speed mode >

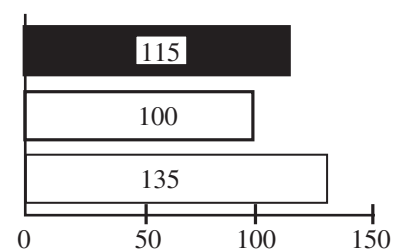
The equipped bit : Auger bit ϕ 1-1/2" 

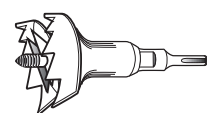
The work piece : Spruce 38mm(1-1/2") in thickness with 3 layers



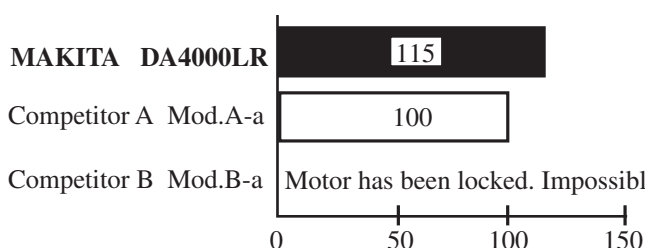
The equipped bit : Selfeed bit ϕ 2-9/16" 

The work piece : 1 pc.of Spruce 38mm (1-1/2") in thickness



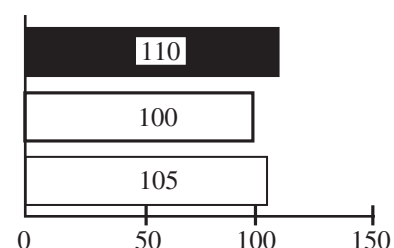
The equipped bit : Selfeed bit ϕ 4-5/8" 

The work piece : 1 pc. of Spruce 38mm (1-1/2") in thickness



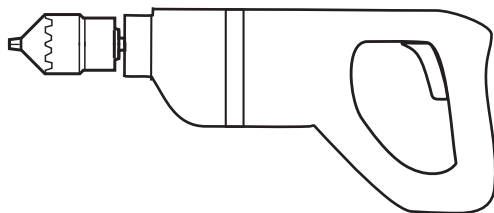
The equipped bit : Hole saw ϕ 150mm 

The work piece : 1 pc.of Spruce 38mm (1-1/2") in thickness

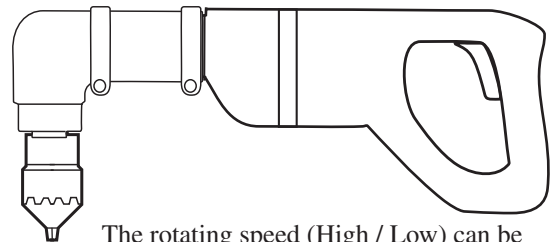


Model No. Specifications			MAKITA		Competitor A	Competitor B	
			DA4000LR	6300LR	Mod.A-a	Mod.B-a	
Chuck ability : mm (")			13 (1/2)	13 (1/2)	13 (1/2)	13 (1/2)	
Rated Ampere under 120V (A)			7.5	5.2	7.0	7.0	
No load speed without angle attachment : (min -1= rpm)			0 - 600	550	0 - 550	600	
No load speed with angle attachment : (min -1= rpm)	(High)		0 - 900	800	0 - 750	900	
	(Low)		0 - 400	350	0 - 335	400	
* Drilling capacity : mm (")	in Wood	Auger bit	38 (1-1/2)	30 (1-3/16)	38 (1-1/2)	38 (1-1/2)	
		Selffeed bit	(High)	65 (2-9/16)	——	65 (2-9/16)	65 (2-9/16)
			(Low)	118 (4-5/8)	——	118 (4-5/8)	
		Hole saw	(High)	114 (4-1/2)	——	114 (4-1/2)	100 (4)
			(Low)	152 (6)	——	152 (6)	
	in Metal		13 (1/2)	13 (1/2)	13 (1/2)	13 (1/2)	
Max. torque (N.m)	without angle attachment		87	62	63	53	
	with angle attachment	(High)	55	44	43	38	
		(Low)	123	93	94	86	
Reverse switch			Yes	Yes	Yes	Yes	
Soft grip			Yes	No	No	No	
Protection from electric shock			by double insulation		by grounding	by double insulation	
Cord length : m (ft)			2.5 (8.2)	2.5 (8.2)	2.3 (7.5)	2.3 (7.5)	
Dimensions : mm(")		Length	413 (16-1/4)	380 (15)	422 (16-5/8)	423 (16-5/8)	
		Height	144 (5-5/8)	153 (6)	158 (6-1/4)	149 (5-7/8)	
		Center height	26 (1)	27.5 (1-1/16)	25.5 (1)	31.0 (1)	
		Angle height	144 (5-5/8)	153 (6)	142 (5-5/8)	143 (5-5/8)	
Net weight :Kg (lbs)			3.7 (8.1)	3.7 (8.1)	4.0 (8.8)	4.4 (9.75)	
Carrying case			Yes (Plastic)	No	Yes (Steel)	Yes (Plastic)	
Standard equipments	Side grip		○ (2 pcs.)	○	○	○ (2 pcs.)	
	Chuck key		○	○	○	○	
	Key holder				○		
	Depth guide (Stopper pole)			○			
	Hex wrench		○	○		○	
	Wrench			○			

Without angle attachment



With angle attachment



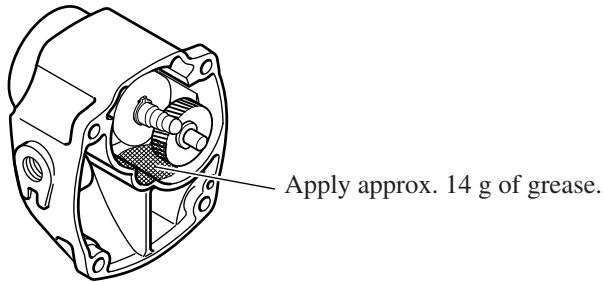
The rotating speed (High / Low) can be shifted by upsetting the angle attachment.

* Drilling capacity with selffeed bit and hole saw is based on the above illustrated condition.

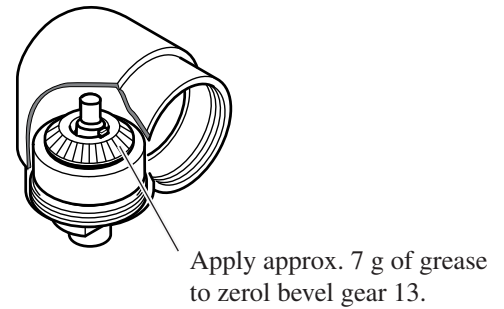
< 1 > Lubrication

Apply MAKITA grease N No.1 to the parts illustrated below.

A. Gear housing



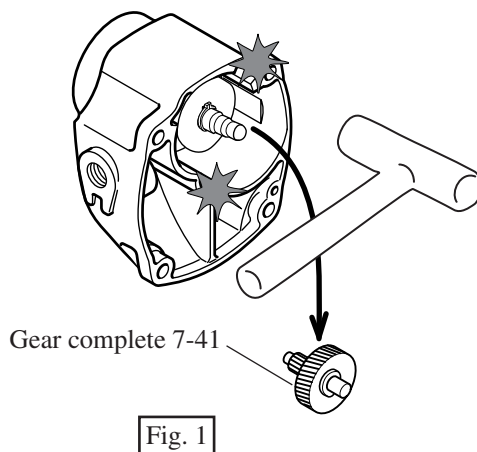
B. Angle attachment



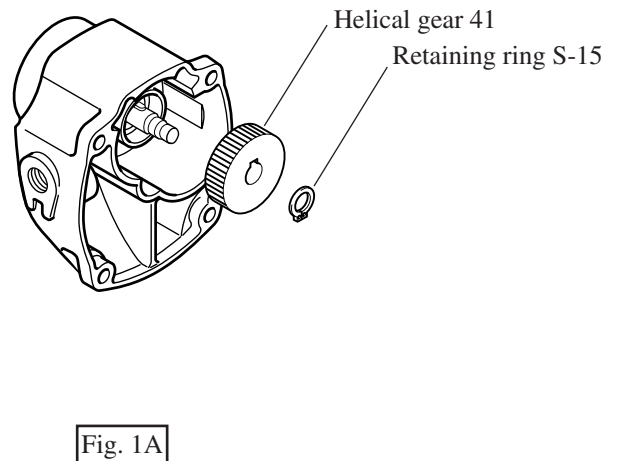
< 2 > Assembling and disassembling

(1) Disassembling gear housing

Hit the marked portion of gear housing with plastic hammer as illustrated in Fig. 1. So gear complete 7-41 can be disassembled from gear housing.



Remove retaining ring S-15 with retaining ring plier. Then, helical gear 41 can be disassembled from gear housing as illustrated in Fig. 1A.



When further disassembling spindle, remove sleeve 15 as illustrated in Fig. 2, and then, detach bearing retainer 25-36 with No.1R043 "Wrench for Bearing Retainer" as illustrated in Fig. 2A. Spindle can be separated from gear housing as illustrated in Fig. 2B.

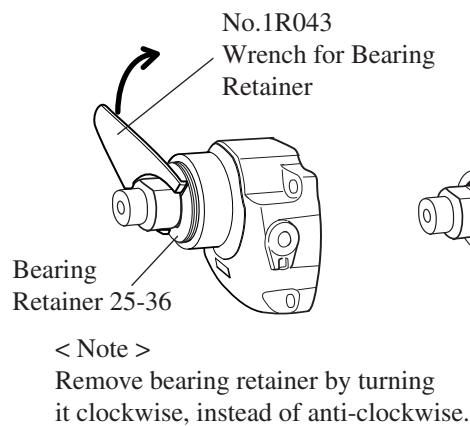
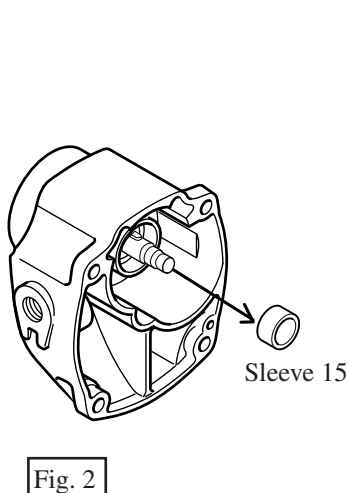


Fig. 2A

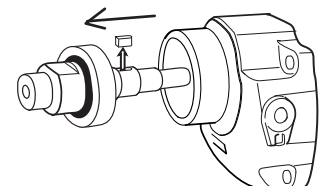
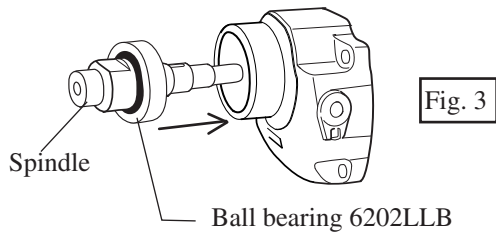


Fig. 2B

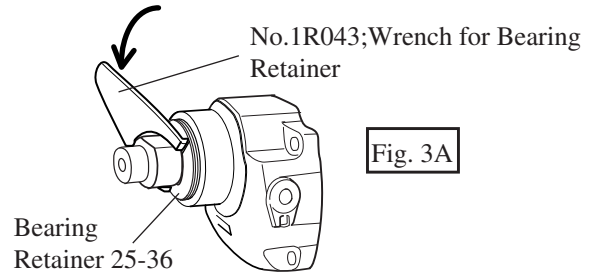
(2) Assembling gear housing

Assemble gear housing as per the following order.

1. Assemble spindle with ball bearing 6202LLB into gear housing.



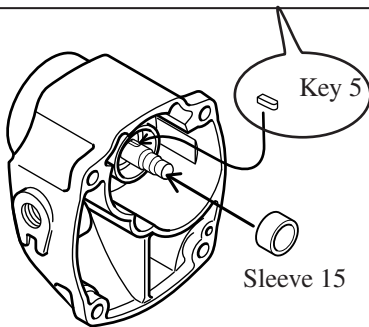
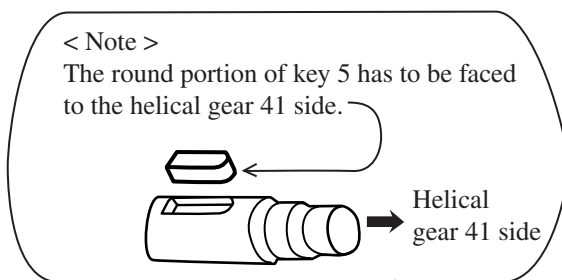
2. Assemble bearing retainer 25-36 by turning it anti-clockwise.



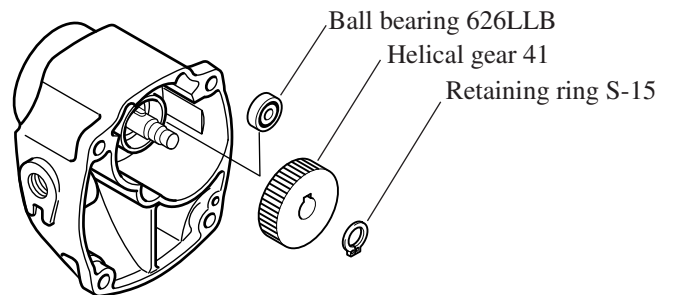
< Note >

The fastening torque for it is 12 - 16 N.m.

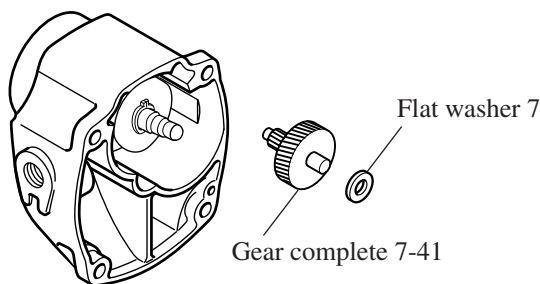
3. After assembling sleeve 15, attach key 5.



4. Assemble ball bearing 626LLB for easy mounting gear complete 7-41, And then, assemble helical gear 41 to spindle. Fix it with retaining ring S-15.



5. Assemble gear complete 7-41 and flat washer 7.



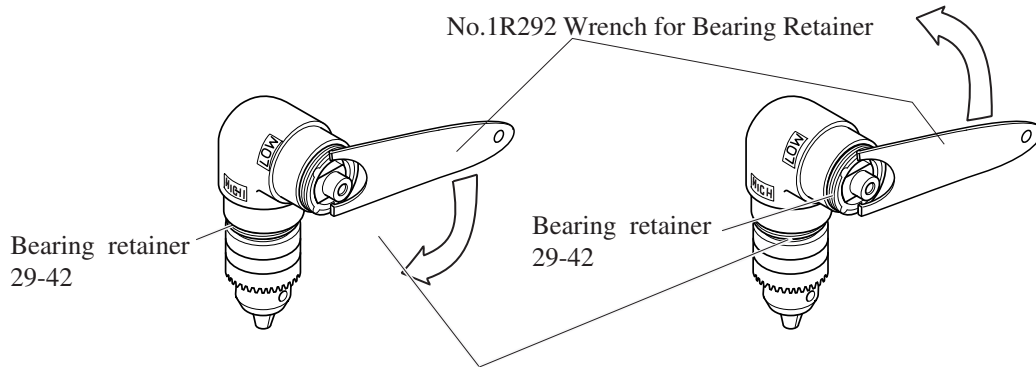
< 2 > Disassembling and assembling angle attachment (Standard equipment for DA4000IR, optional accessory for 6304LR)

(1) Disassembling bearing retainer 29-42

Bearing retainer 29-42 can be disassembled by turning it with No.1R292 "Wrench for Bearing Retainer" clockwise, instead of anti-clockwise as illustrated in Fig. 4.

(2) Assembling bearing retainer 29-42

Bearing retainer 29-42 can be assembled by turning it with No.1R292 "Wrench for Bearing Retainer" anti-clockwise as illustrated in Fig. 4A. The fastening torque for bearing retainer 29-42 is 21 - 16 N.m (120 - 160 Kgf.cm).



The same bearing retainer has been assembled on this side. Take the above mentioned step, when assembling and disassembling.

Fig. 4

Fig. 4A

(3) Disassembling gear section

After removing bearing retainer 29-42 hit the marked portion of angle housing with plastic hammer as illustrated in Fig. 5 and Fig. 5A. So, bevel gears come out from high speed mode side and low speed mode side respectively.

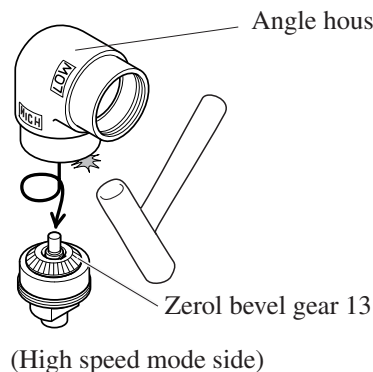


Fig. 5

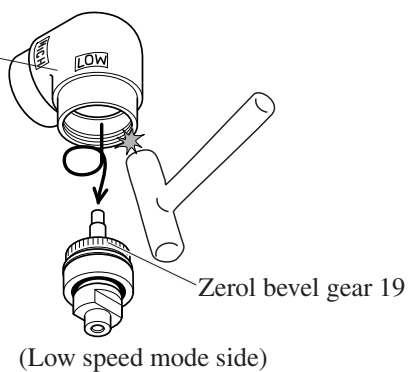


Fig. 5A

(4) Disassembling gear section

Put the gear assembly on the turn base of arbor press, and press gear shaft with arbor press. So, zerol bevel gears can be separated from gear shafts. See Fig. 6 and Fig 6A.

Whenever zerol bevel gears are replaced, ball bearings 6203DDW have to be replaced with fresh ones.

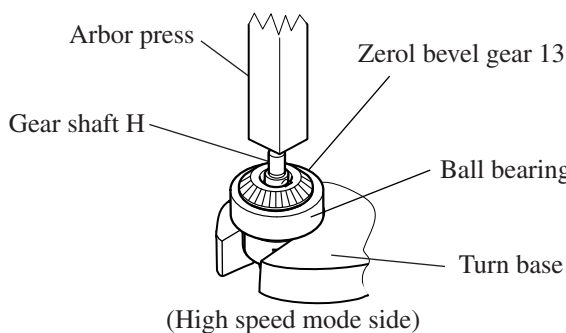


Fig. 6

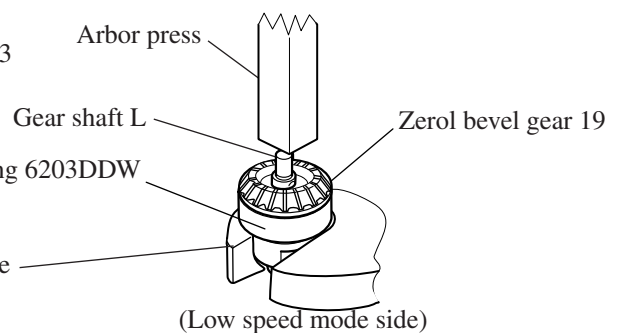
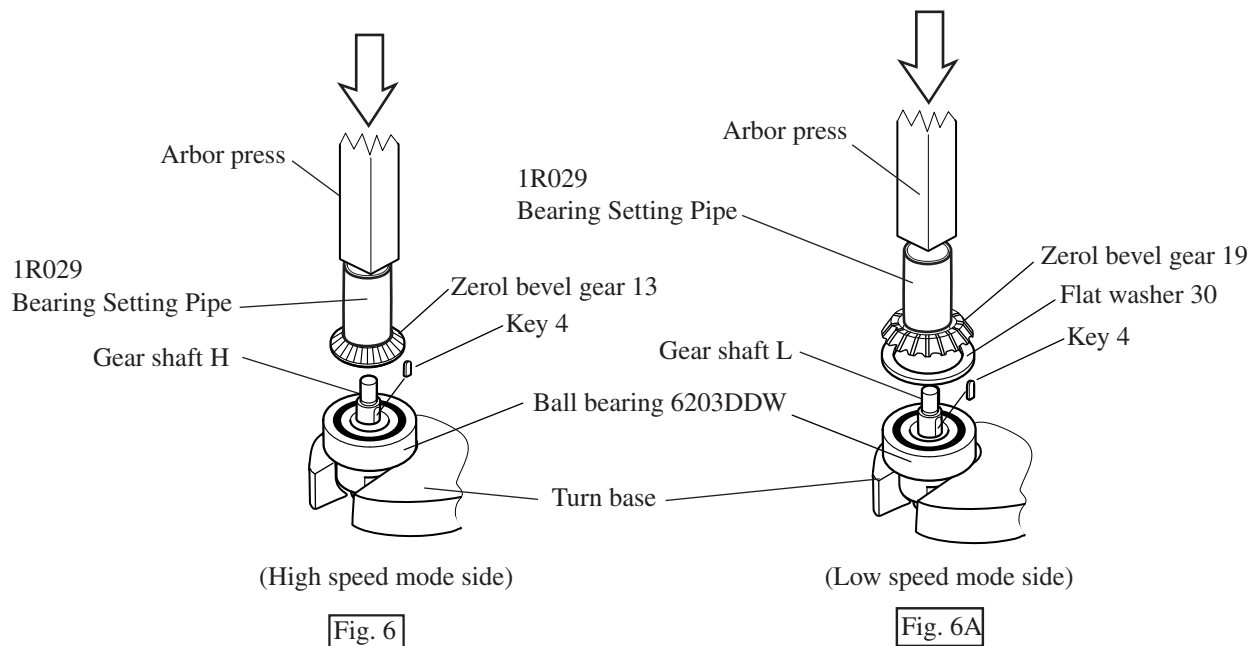


Fig. 6A

(5) Assembling gear section

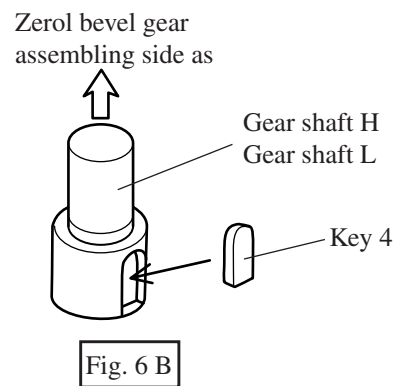
After assembling ball bearings 6203DDW to gear shafts by pressing them, assemble zerol bevel gears to gear shafts by pressing them with arbor press. See Fig. 7 and Fig 7A.



< Note in assembling >

A. Use No. 1R029 "Bearing Setting Pipe" as illustrated in Fig. 6 and Fig. 6 C, when assembling zerol bevel gears.

B. The round portion of key 4 has to be faced to the zerol bevel gear assembling side as illustrated in Fig. 6 B.



C. Do not forget to assemble flat washer 30 between zerol bevel gear 19 and ball bearing 6203DDW as illustrated in Fig. 6 A.

< 3 > Disassembling and assembling drill chuck S-13

(1) Disassembling

Open the jaws of drill chuck. Pressing the end of hex socket head bolt M6 x 25 with your finger, unscrew it anti-clockwise with hex wrench as illustrated in Fig. 7.

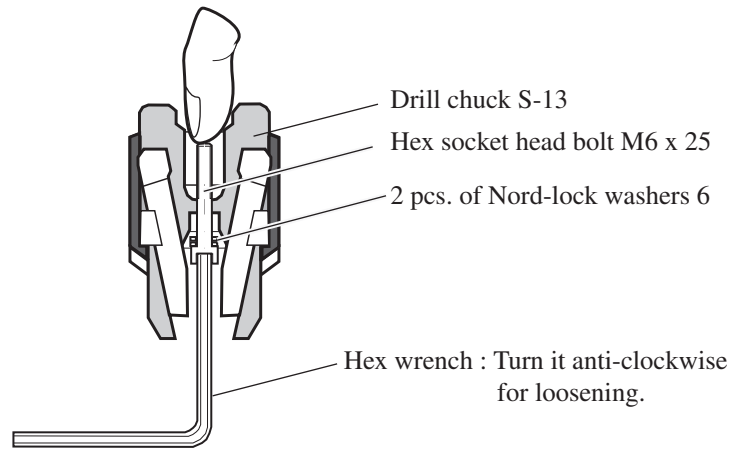


Fig. 7

(2) Assembling

Put 2 pcs. of nord-lock washers 6 on the neck of hex socket head bolt M6 x 25 as illustrated in Fig. 7A. And screw the hex socket head bolt together with nord-lock washer into drill chuck as illustrated in the above Fig. 7.

< Correct Assembling >

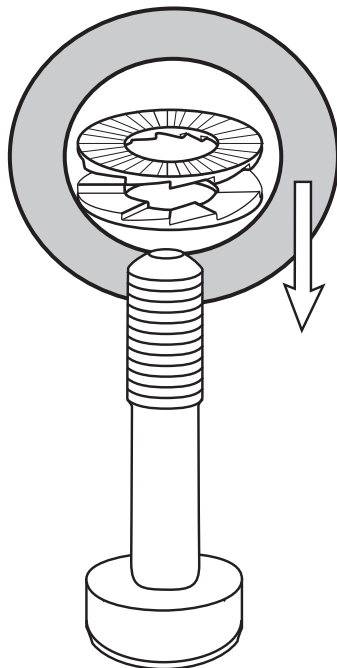


Fig. 7 A

< Wrong Assembling >

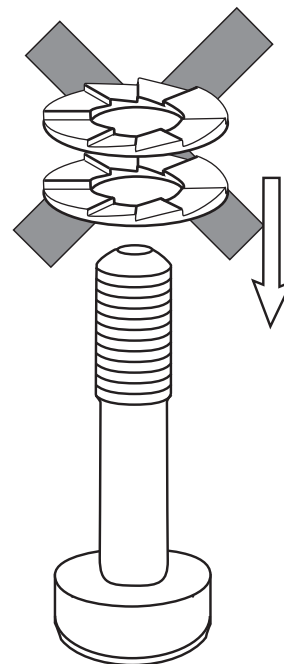









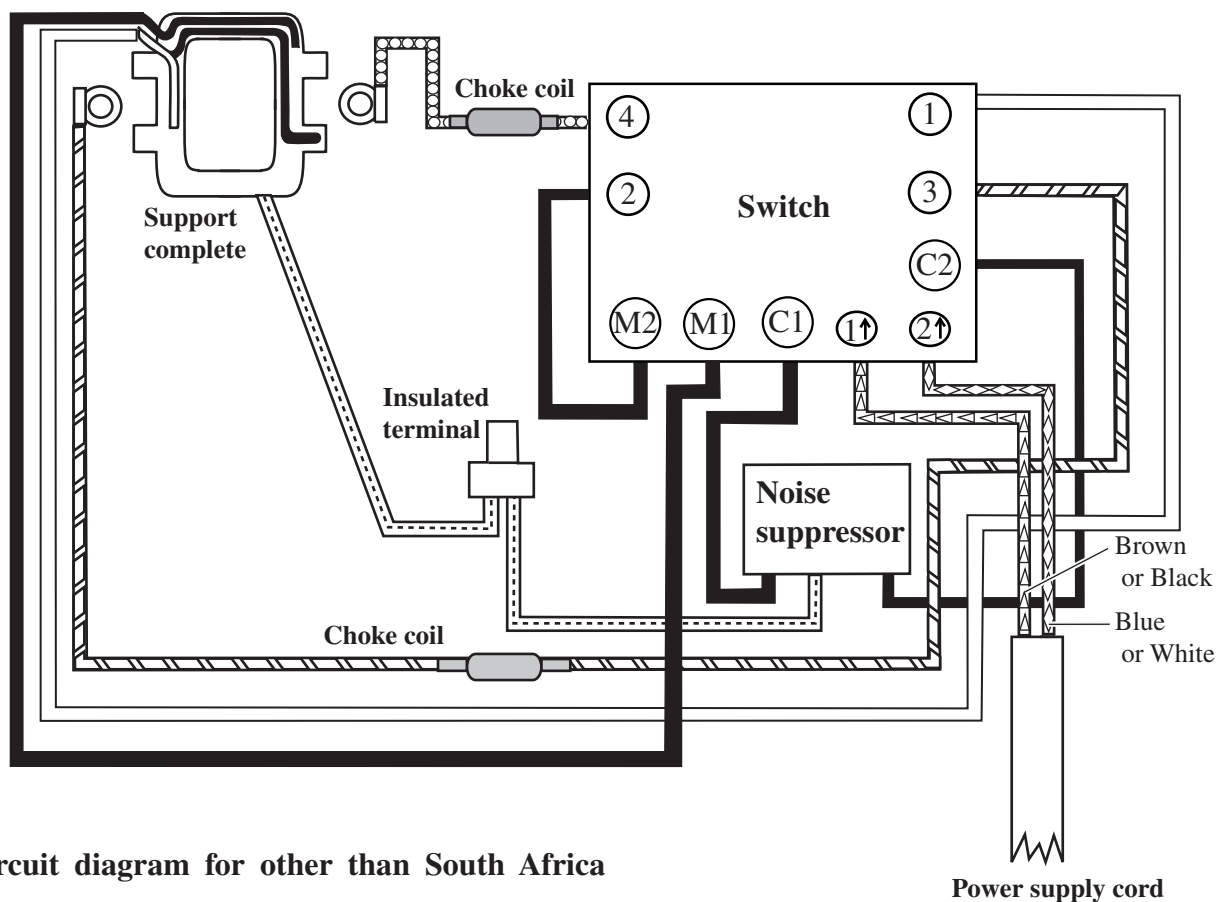
Fig. 7 B

< Note in assembling nord-lock washer >

The wave formed portions of nord-lock washers have to be faced each other as illustrated in Fig. 7A.

► **Circuit diagram for South Africa**

Color index of lead wires			
Black		Purple	
White		Brown	
Orange		Transparent	
Blue			



► **Circuit diagram for other than South Africa**

