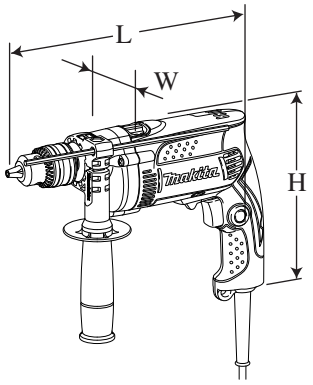
TECHNICAL INFORMATION

Models No. ► HP1630, HP1631

Description ► Hammer Drill 16 mm (5/8")



Dimensions: mm (")	
Length (L)	296 (11-5/8)
Width (W)	75 (2-15/16)
Height (H)	204 (8)

CONCEPT AND MAIN APPLICATIONS

Models HP1630 and HP1631 have been developed to surpass the competitors in wattage, no load speed and impacts per minute.
Cylinder-shaped motor housing and aluminum gear housing cover provide high performance.

► Specification

Voltage (V)	Current (A)	Cycle (Hz)	Continuous Rating (W)		Max. Output (W)
			Input	Output	
110	6.8	50/60	710	420	630
120	6.2	50/60	---	420	630
220	3.4	50/60	710	420	630
230	3.3	50/60	710	420	630
240	3.1	50/60	710	420	630

		HP1630 / HP1631
No load speed: min -1= rpm		0 - 3,200
Impacts per min: min -1= ipm		0 - 48,000
Drill chuck type		Keyed chuck / Keyless Chuck
Chuck capacity: mm (")		1.5 - 13 (1/16 - 1/2)
Capacities: mm (")	Concrete	16 (5/8)
	Steel	13 (1/2)
	Wood	30 (1-3/16)
Reversing switch		Yes
Protection against electric shock		Double insulation
Variable speed control by trigger		Yes
Power supply cord: m (ft)		2.0 (6.6)
Net weight: kg (lbs)		1.9 (4.2)

► Standard equipment

Chuck key S-13 ..... 1 (HP1630 only)
Key holder ..... 1 (HP1630 only)
Depth gauge 1
Side grip 1
Plastic carrying case ..... 1 (K model only)

Note: The standard equipment for the tool shown above may differ by country.

► Optional accessories

TCT drill bits
HSS metal drill bits
Wool bonnet 100
Rubber pad ass'y
Foam polishing pad 125

Repair

CAUTION: Unplug the tool and remove the bit from the machine for safety before repair/ maintenance in accordance with the instruction manual!

[1] NECESSARY REPAIRING TOOLS

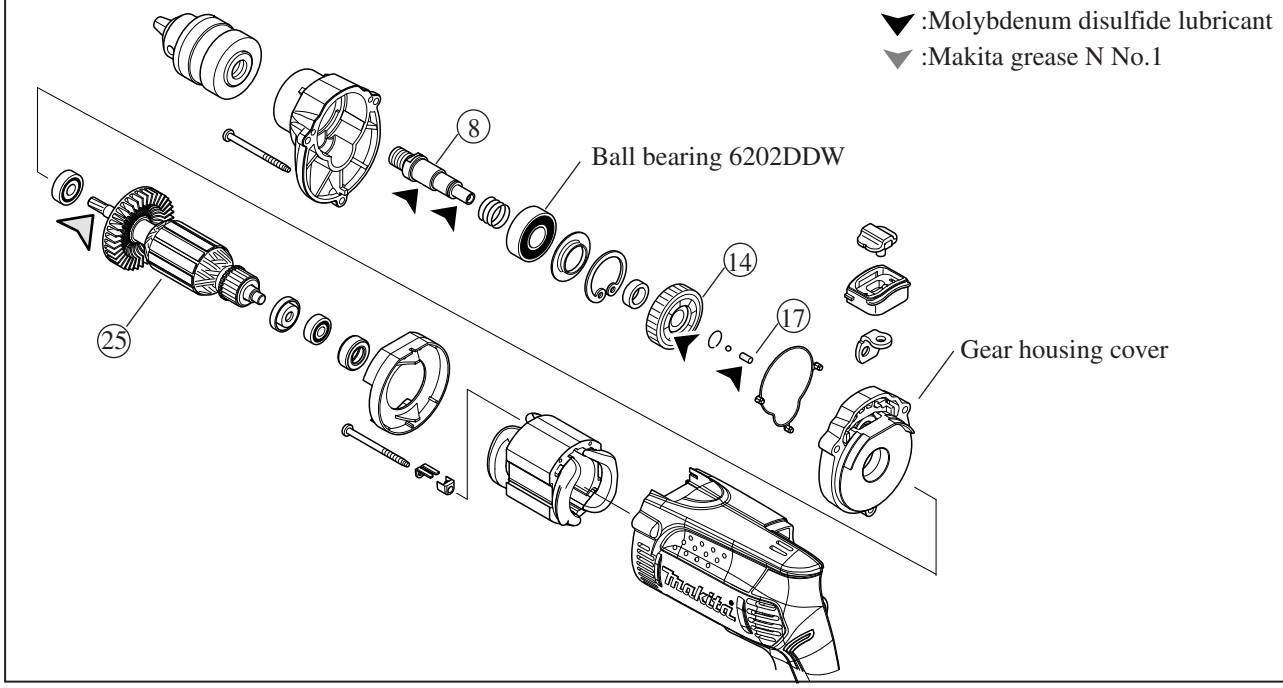
Code No.	Description	Use for
1R005	Retaining ring pliers RT-2N	Removing Retaining ring R-35
1R026	Bearing Setting Pipe 16-8.2	Removing Helical gear 37
1R028	Bearing setting pipe 20-12.2	Installing Helical gear 37
1R035	Bearing setting plate 15.2	
1R037	Bearing setting plate 20.2	Removing Helical gear 37
1R045	Gear extractor (large)	Removing/ Installing Armature
1R139	Drill chuck extractor	Removing / Installing Drill chuck
1R223	Torque wrench shaft 20-90N.m	
1R224	Ratchet head 12.7	
1R269	Bearing extractor	Removing Ball Bearings 607LLB and 608LLB
1R283	Round bar for arbor 9-50	Removing Helical gear 37
1R298	Hex. bar 10 with square socket	Removing / Installing Drill chuck
1R346	Center Attachment for 1R045	Removing/ Installing Armature
781024-2	Wrench 43	Removing / Installing keyed Drill chuck
781007-2	Wrench 14	Removing / Installing keyless Drill chuck

[2] LUBRICATION

Apply a little amount of **molybdenum disulfide lubricant** to the portions designated with **the black triangle**, and apply **Makita grease N. No.1** to the portion designated with the **gray triangle** to protect parts and product from unusual abrasion.

Fig. 1

Item No.	Description	Portion to lubricate
⑧	Spindle	Drum portion where Ball bearing 6202DDW contacts
		Drum portion where Gear housing cover contacts
⑭	Helical gear 37	Cam portions
⑰	Pin 4	Drum portion
㉕	Armature	Gear teeth where ⑫ Helical gear 37 contacts: 3g in total



Repair

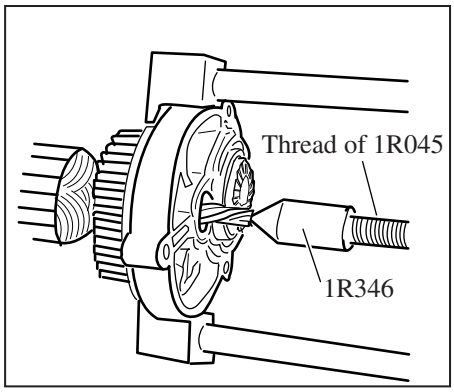
[3] DISASSEMBLY/ASSEMBLY (cont.)

[3] -1. Armature

DISASSEMBLY

1) Remove Handle cover by loosening 4x18 Tapping screws, and then remove Carbon brushes with Brush holders.
2) Remove Armature, Gear housing cover and Gear housing by loosening 4x30 Tapping screws and striking Motor housing with plastic hammer.
3) Drive the thread of 1R045 into 1R346 tightly, and set them to Gear housing cover. (**Fig. 2**)
4) Remove Armature from Gear housing cover by turning the handle of 1R045.
5) Remove Ball bearings 607LLB and 608LLB of Armature with 1R269.

Fig. 2



[3] DISASSEMBLY/ASSEMBLY

[3] -2. Drill Chuck

DISASSEMBLY

1) Hold 1R139 in vise.
2) Hold 1R298 with Drill chuck.
3) Fit the flat portions of Spindle to 1R139. (**Fig. 3**)
4) Turn Drill chuck counterclockwise with 1R298, 1R224 and 1R223. (**Fig. 4**)

Note: If **Keyed** drill chuck does not work, use 781024-2 to remove it.
If **Keyless** drill chuck does not work, hold the flat portions in vise and fit 781007-2 into the flat portions of Spindle (**Fig. 5**), and then turn Spindle clockwise.

Fig. 3

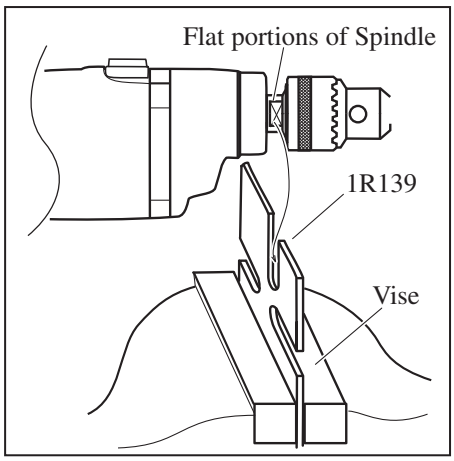


Fig. 4

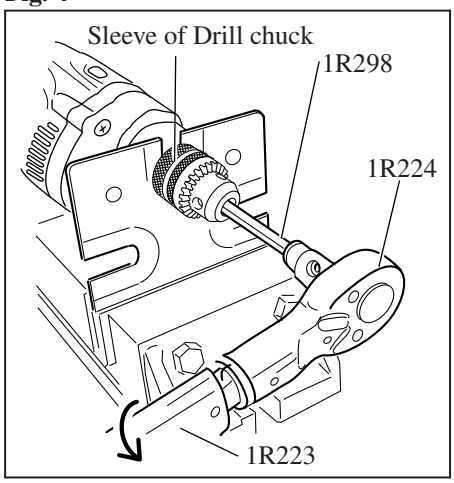
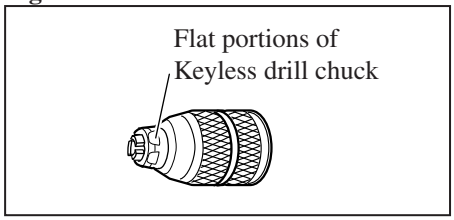


Fig. 5



DISASSEMBLY

Turn 1R223 clockwise to tighten Drill chuck to fastening torque 34.3 to 44.1 N.m.

Repair

[3] DISASSEMBLY/ASSEMBLY

[3] -3. Helical Gear 37 and Ball Bearing 6202DDW

DISASSEMBLY

1) Remove Gear housing. Refer to **page 3**.
2) Remove Pin 4 and Steel ball 3.5 from Spindle to prevent missing and breaking. (**Fig. 6**)
3) Hook awl to inner periphery of Ring spring 12 and remove Ring spring 12. (**Fig. 7**)
4) Put Gear housing section on 1R037 and fit 1R026 to Spindle. And then press Spindle slightly with arbor press. (**Fig. 8**)
5) Put 1R283 on Spindle and push out Spindle from Helical gear 37 with arbor press. (**Fig. 9**)

Note: When Helical Gear 37 is removed from Spindle, a heavy load arises in Ball bearing 6202DDW in Gear housing section. Therefore, be sure to replace Ball bearing 6202DDW.

6) Remove Retaining ring R-35 in Bearing room, and remove Ring 12 and Ring 19.
7) Remove Compression spring 16 from Spindle and insert Compression spring in Ball bearing 6202DDW. Strike Spindle top with plastic hammer, and Ball bearing 6202DDW can be removed from Gear housing.

Fig. 6

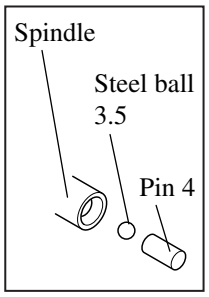


Fig. 7

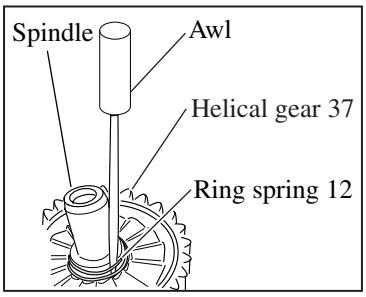


Fig. 8

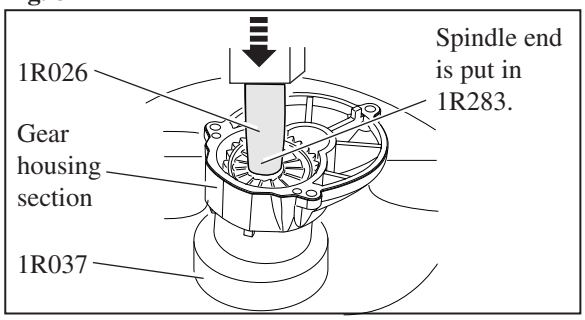
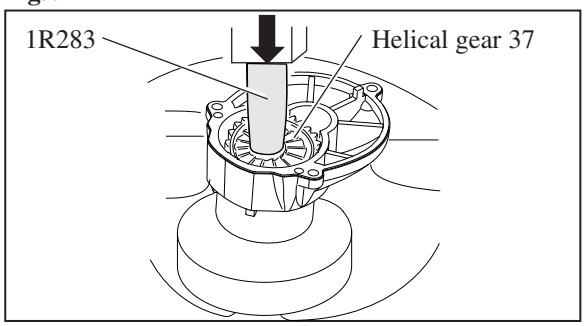


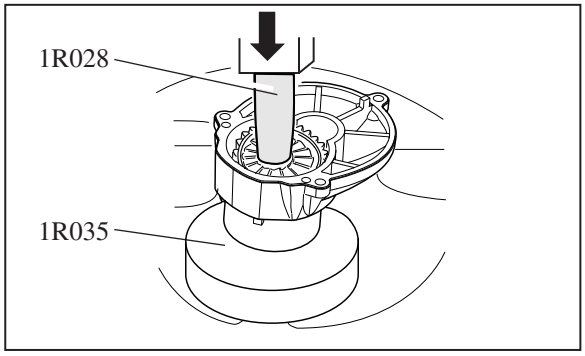
Fig. 9



ASSEMBLY

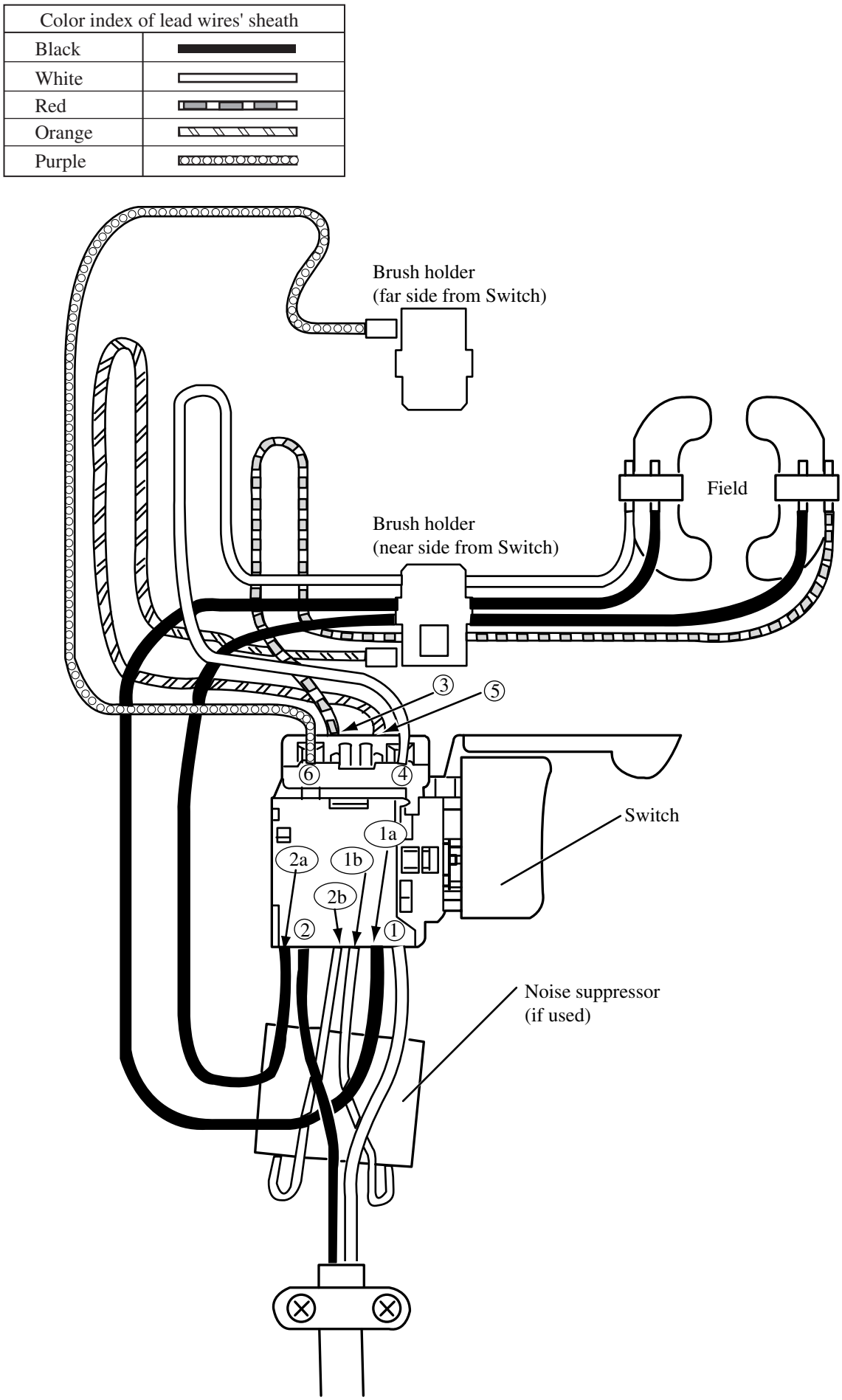
1) Complete assembling work to installation of Retaining ring R-35 in the reverse order of the disassembling steps.
2) Mount Compression spring 16 on Spindle and put a little amount of Molybdenum disulfide lubricant to Compression spring 16, and then install them to Ball bearing 6202DDW.
3) Put Spindle on 1R035 and set 1R028 on Helical gear 37, and then Press-fit Helical gear 37. (**Fig. 10**)

Fig. 10



Circuit diagram

Fig. 11



Wiring diagram

Fig. 12

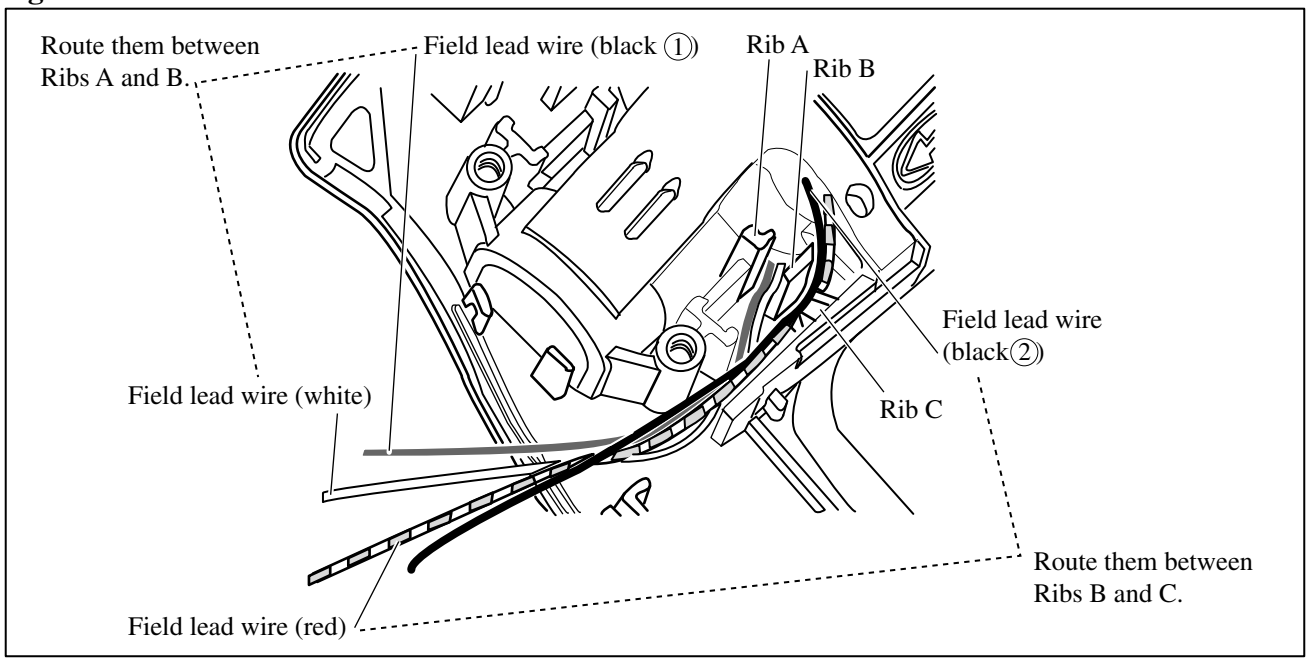


Fig. 13