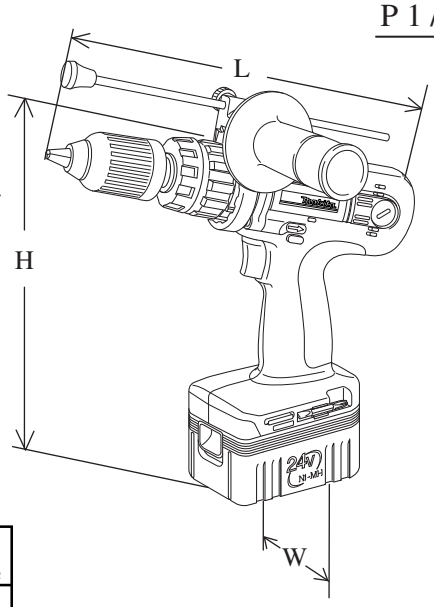
Models No. ► BDF460
BHP460

Description ► 24 V Cordless Driver Drill
24 V Cordless Percussion Driver Drill



CONCEPTION AND MAIN APPLICATIONS

Models BDF460 and BHP460 are now released in Makita's new line-up of 24V cordless tools powered by newly developed 24V Nickel-Metal Hydride battery.
Taking over the benefits of our existing 18V Models 6343D/ 8443D, yet, this machine is more powerful thanks to the new 24V battery.
Features easy bit change thanks to the following equipments.

* Shaft lock : locks spindle automatically when the machine is switched off.
* One-sleeve keyless chuck : with only one hand, bits can be removed.

The variations of these models are as follows.

Model	Battery		Charger	Plastic carrying case
BDF460SF	B2430 /1pc.	Ni-MH, 3.0Ah	DC24SA	Yes
BDF460SH	B2417 /1pc.	Ni-MH, 1.7Ah	DC24SA	Yes
BHP460SF	B2430 /1pc.	Ni-MH, 3.0Ah	DC24SA	Yes
BHP460SH	B2417 /1pc.	Ni-MH, 1.7Ah	DC24SA	Yes

Ni-MH; Nickel-Metal Hydride battery

Dimensions : mm (")		
Model No.	BDF460	BHP460
Width (W)	86 (3-3/8)	86 (3-3/8)
Height (H)	267 (10-1/2)	267 (10-1/2)
Length (L)	259 (10-3/16)	267 (10-1/2)

► Specification

Model No.		BDF460	BHP460
Battery	Voltage (V)	24	
	Capacity (Ah)	1.7 for SH-series / 3.0 for SF-series	
	Energy capacity (Wh)	40.8 for SH-series / 72.0 for SF-series	
No load speed (min-1=rpm)	Low	0 - 460	
	High	0 - 1,500	
Blows per minute (min-1=bpm)	Low	———	0 - 6,900
	High	———	0 - 22,500
Max. fastening torque: N.m		46 (470 kgf.cm, 34.0 ft.lbs)	
Torque range for screwdriver mode: N.m		1 - 6 (10 Kgf.cm, 0.7ft.lbs) - (60 Kgf.cm, 4.4ft.lbs)	
Torque adjustment		16 stage + Drill mode	
Chuck ability : mm (")		1.5 (1/16) - 13 (1/2)	
Drilling	in Steel : mm (")	13 (1/2)	13 (1/2)
	in Wood: mm (")	38 (1-1/2)	38 (1-1/2)
	in Stone: mm (")		16 (5/8)
Net weight (kg)		2.6 (5.7 lbs)	2.7 (6.0 lbs)

► Standard equipment

* Grip assembly ..... 1 pc.
* Stopper pole assembly ..... 1 pc.
* + - Bit 2-45 ..... 2 pcs.

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

► Optional accessories

* Battery B2417 (1.7 Ah)
* Battery B2430 (3.0 Ah)
* Charger DC24SA

< 1 > Disassembling

(1) Removing drill chuck

Drill chuck has to be removed as follows.

1. Take off flat head screw M6x32 by turning it clockwise. See Fig.1.
   (In case of disassembling housing, it is not necessary to take off the drill chuck.)
2. Hold the flat part of spindle with spanner or drill chuck extractor No.1R139. See Fig.1.
3. Turn the hex wrench fastened with drill chuck anti-clockwise.

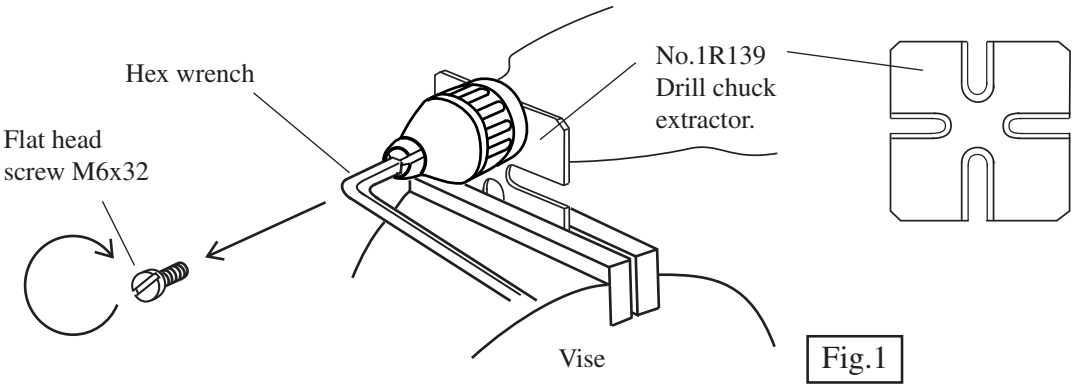


Fig.1

(2) Disassembling housing

1. In disassembling, be careful not to lose compression spring 4 in speed change lever, because the spring jump out very often.

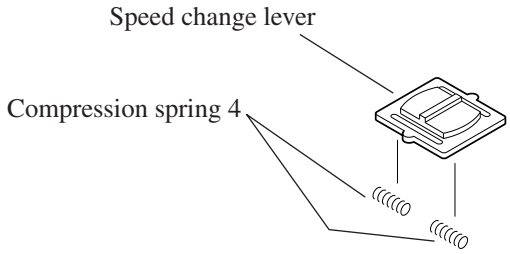


Fig.2

2. When removing housing bumper set from housing set, push the hook part of housing bumper with such a tool as hex wrench 4 in direction of the arrow illustrated in Fig.3.

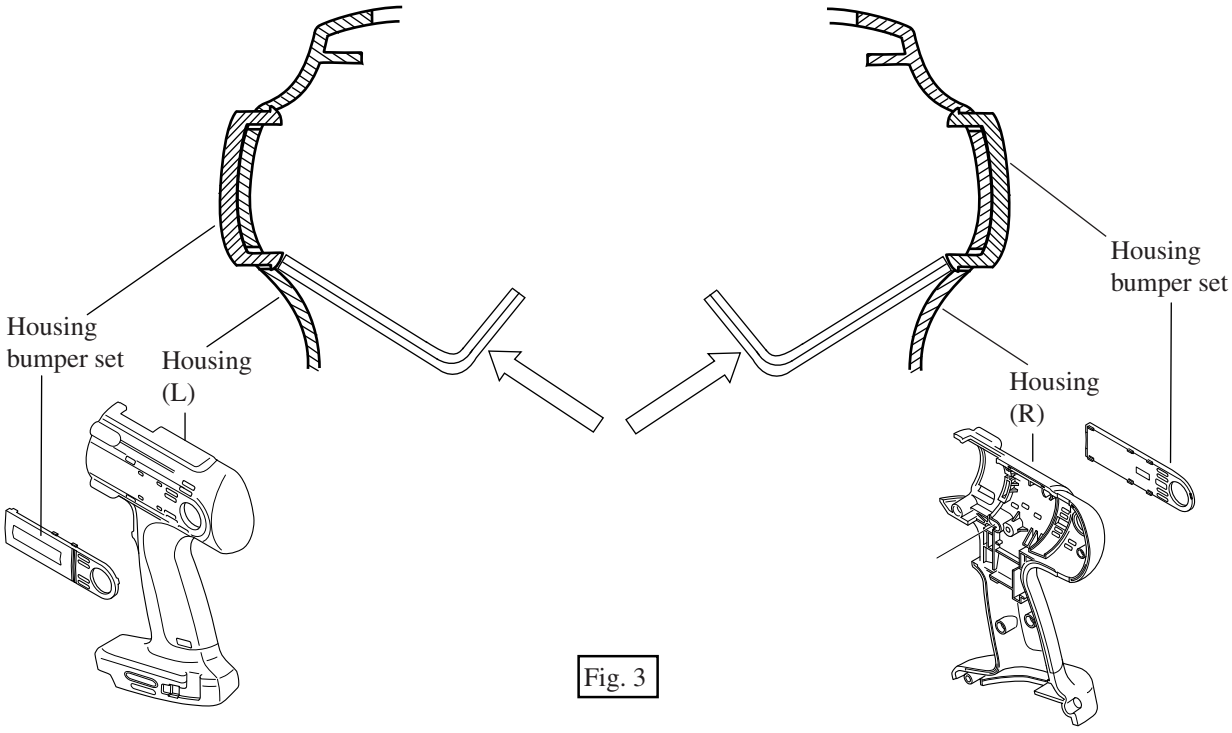


Fig. 3

< 2 > Assembling

(1) Assembly of Motor and Gear assembly

1 Gear assembly as a spare part comes with motor bracket. First take off motor bracket.
Be careful that the inner parts do not come out from gear assembly, when taking off motor bracket.

2 Fasten the above motor bracket to motor with screw. See Fig.4A.

3 Assemble the motor equipped with motor bracket to gear assembly.

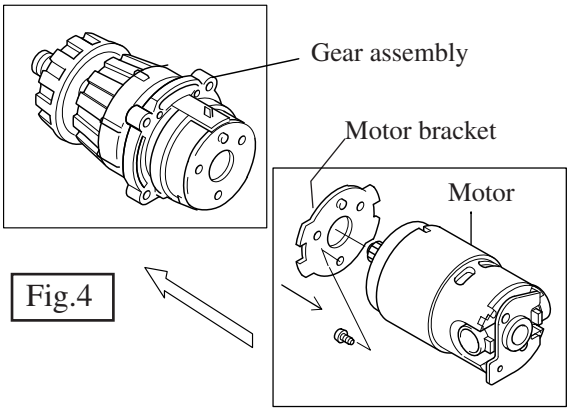


Fig.4

Fig.4A

(2) Assembling housing bumper set

Housing bumper sets have to be attached to housing sets before mounting gear assembly.
The order for assembling is as illustrated in Fig.5.

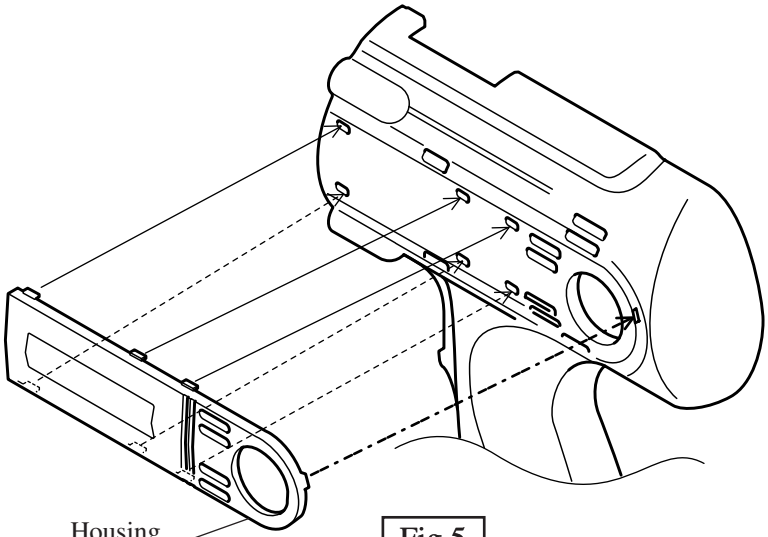


Fig.5

(1) Hook the convex of housing bumper set to the punched hole near the hole for brush holder.

(2) Hook the convex of lower part of housing bumper set to the punched hole.

(3) Hook the convex of upper part of housing bumper set to the punched hole.

(4) Press the center of housing bumper set to assemble it to housing set without gap as illustrated in Fig.6.

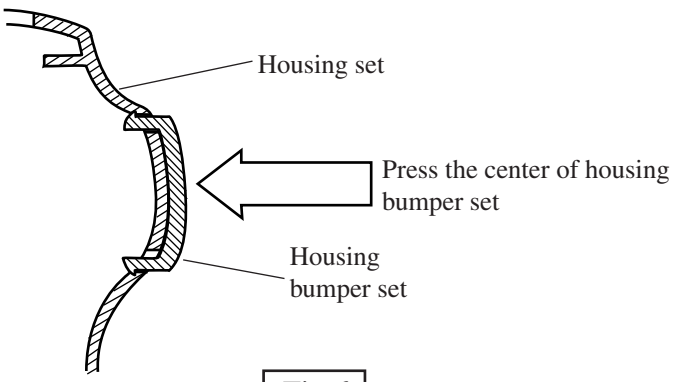


Fig.6

(3) Assembling speed change lever

1 Place two Compression spring 4s into speed change lever.

2 Be careful that compression spring 4 may not comes out. Install speed change lever assembly on the projection of change lever as shown in Fig. 7.

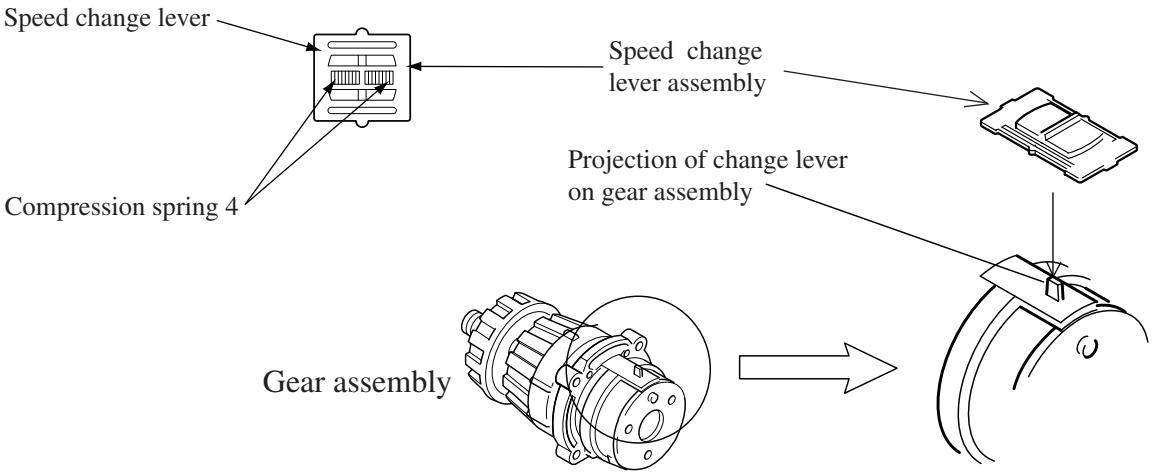


Fig. 7

3 Attaching to Housing

When attaching a unit of gear assembly and motor, etc. to housing L, place speed change lever in the position as shown in Fig. 5.

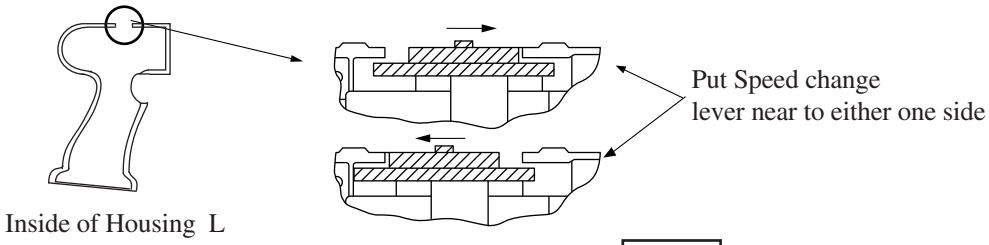


Fig.8

(4) Assembling chuck

1 Tighten short cut hex wrench with drill chuck and hold the flat part of spindle with drill chuck extractor No.1R139 as illustrated in Fig.9.

2 Tighten drill chuck with ratchet head No.1R224 and torque wrench No.1R223 as illustrated in Fig.9.

< Note > The fastening torque of torque wrench No.1R223 has to be adjusted to 50 - 60 Nm in advance.

In case of smaller than 50Nm, drill chuck will fall, damaging flat head screw M6x32.

3 Take off short cut hex wrench by loosening drill chuck. And fasten flat head screw M6x32 by turning it anti-clockwise

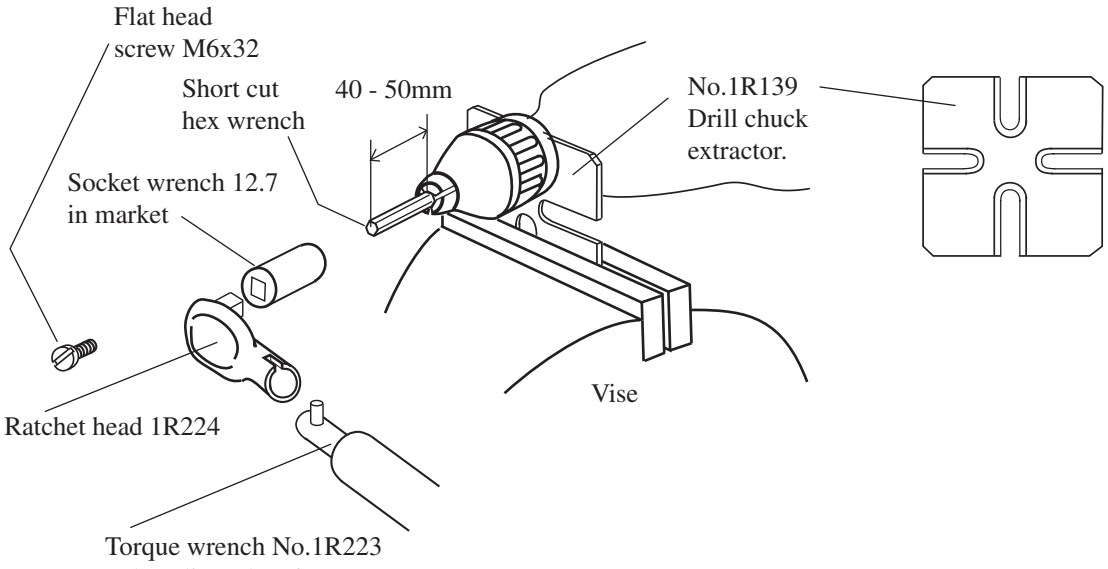
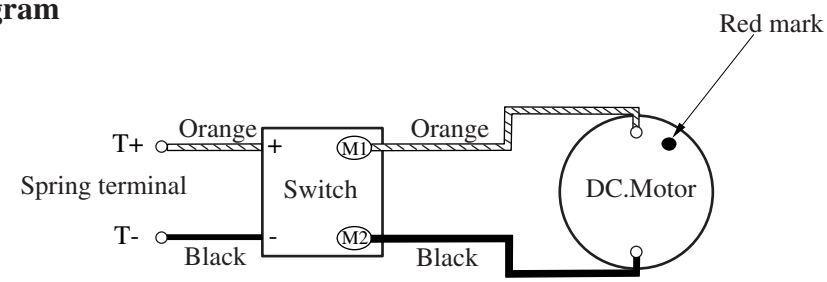


Fig.9

Circuit diagram



Wiring diagram