Original instruction

GENERAL SAFETY INSTRUCTIONS

⚠ **WARNING! Read all instructions.** Failure to follow all instructions listed below may result in electric shock, fire and or serious injury. The term "power tool" in all of the warnings listed below refers to your mains operated power tool.

SAVE THESE INSTRUCTIONS.

1) **WORK AREA**
a) **Keep work area clean and well-lit.** Cluttered and dark areas invite accidents.
b) **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Power tools create sparks which may ignite the dust or fumes.
c) **Keep children and bystanders away while operating a power tool.** Distractions can cause you to lose control.

2) **ELECTRICAL SAFETY**
a) **Power tool plugs must match the outlet. Never modify the plugs in any way. Do not use any adapter plugs with earthed (grounded) power tools.** Unmodified plugs and matching outlets will reduce risk of electric shock.
b) **Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is earthed or grounded.
c) **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool.
d) **Keep cord away from heat, oil, sharp edges or moving parts.** Damaged or entangled cords increase the risk of electric shock.
e) **When operating a power tool outdoors, use an extension cord suitable for outdoor use.** Use of a cord suitable for outdoor use reduces the risk of electric shock.
f) **If operating a power tool in a damp location is unavoidable, use a residual current device (RCD) protected supply.** Use of an RCD reduces the risk of electric shock.

3) **PERSONAL SAFETY**
a) **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.** A moment of inattention while operating power tools may result in serious personal injury.
b) **Use personal protective equipment. Always wear eye protection.** protective equipment such as dust mask, no-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.
c) **Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool.** Carrying power tools with your finger on the switch or energizing power tools that have the switch on invites accidents.
d) **Remove any adjusting key or wrench before turning the power tool on.** A wrench or a key left attached to a rotating part of the power tool may result in personal injury.
e) **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.
f) **Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts.** Loose clothes, jewelry or long hair can be caught in moving parts.
g) **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of these devices can reduce dust related hazards.

SAFETY

Read these instructions before operating this power tool. They contain information which will enable you to use the tool safely and help protect those around you. A copy of this instruction leaflet should be kept with the tool so that you can refer to it quickly when undertaking work. Another copy should be made and safely stored.

- Please use protective earplug if using the tool continuously.
- Please use protective eyeglasses when operating the cutter.
- Please check if there's any fissure or damage of the cutter carefully before operation, if yes, please replace the cutter without fissure or damage at once.
- Please hold the tool firmly with both hands during the operation and get rid of all the nails.
- Always keep hands and body far away from the rotating part in operation.
- Holding the tool tightly by the hand in operation.
- Please confirm that the cutter has not any touch with the object before switching on the tool.
- Please make the tool to empty run before working on the object with the tool to observe if there is any abnormal vibration, if yes, please stop working.
- Please pay attention to the rotating direction and inlet direction of the cutter in work.
- Do not make the tool to empty run. Only start up the tool only when holding it in hand.
- Please switch off the tool firstly, and don't take the tool from the object until the cutter stops running completely.
- Do not touch the cutter or the parts around at once when finishing the operation; These parts may be very hot to scald your skin.
- Don't use solvent, gasoline, oil, etc. to wipe the base of tool to avoid fissure of the base.

We declare under our sole responsibility that the product described under "Technical Data" fulfills all the relevant provisions of the directives 2006/42/EC and the following harmonized standards documents have been used: EN 60745-1, EN 60745-2-17.

Wenxendn, 2012-06-06

Rainer Rauch
Director Product Development
Shanghai KEN Tools CO.,Ltd.
No.5 Xinrong Rd., Xinqiao Town,Songjiang District, Shanghai China

CE

SYMBOL

V Volts		Double insulation
Hz Hertz		Please eye protection
W Watts	CE	CE conformity.
Safety alert		No load Speed
~ Alternating Current		
min⁻¹/Revolutions or reciprocations per minute		

Please read the instructions carefully before starting the machine.

Waste electrical products should not be disposed of with household waste. Please recycle where facilities exist. Check with your Local Authority or retailer for recycling advice .

Code	D	A1	A2	L1	L2	L3	A
140610	M7	1/4	20 (25/32")	9 (3/64")	46 (1x1/16")	31 (1 15/16")	8 (5/64")	30°
140615	M7	1/4	20 (25/32")	9 (3/64")	46 (2")	31 (1 15/16")	8 (5/64")	45°
140620	M7	1/4	20 (25/32")	9 (3/64")	45 (1x25/32")	30 (1 29/64")	5 (3/64")	60°

Code	D	A1	L1	L2	R
140622	M8	1/4	25 (25/32")	42 (1x1/16")	8 (5/64")	90°
140623	M8	1/4	25 (63/64")	40 (1x57/64")	11 (29/64")	8 (5/64")	45°

Code	D	A1	A2	L1	L2	L3	A
140625	45°	3/4	26 (1x3/32")	8 (5/16")	42 (1x23/32")	32 (1 5/32")	45°
140626	60°	3/4	26 (25/32")	8 (5/16")	41 (1x3/4")	31 (1 7/16")	60°

■OPERATION

◆ Assemble or Disassemble the Cutting Blade

Insert the cutting blade into the body of roller, press the locking pin to fix the axes, and then use the wrench to tighten the screw board firmly. When using small cutting blade, insert the cutting blade into the body of roller to the fix ring, and then assemble the cutting blade according to the above-said order (Picture One).

It just needs to disassemble the cutting blade according to the above-said order oppositely.

Picture 1

◆ Adjust Milling and Cutting Depth

Put the tool on smooth surface, release the locking knob, decrease the tool height to make the cutting blade just touches the plan perfectly, press the locking wrench to fix the tool main body, and then drop down the feet silk rod to make it touch the locator. Rotate the fast silk rod to the demanding milling and cutting depth, then lock the wrench and the hexagonal bolt pressing the feet silk rod firmly. Adjust the depth through rotating the fast silk rod, each turn is 1.5 MM). Milling and cutting depth is equal to the distance between the feet silk rod and locator, the course of the feet silk rod can be inspected by the scale of the tool main body. Release the locking button can attain the predetermined milling and cutting depth (Picture Two).

The upper limit of the tool main body can be adjusted through rotating the hand wheel, if the tip of cutting blade exceeds the surface of base when it returns, rotate the hand wheel to decrease the upper limit (Picture Two).

Picture 2

Code	D	A	L1	L2	L3	A
140611	6	1/4	20 (25/32")	9 (3/64")	46 (1x1/16")	8 (5/64")	30°
140612	6	1/4	20 (25/32")	9 (3/64")	45 (1x25/32")	30 (1 29/64")	5 (3/64")	45°
140613	6	1/4	20 (25/32")	9 (3/64")	45 (1x25/32")	30 (1 29/64")	5 (3/64")	60°

Code	D	A1	L1	L2	R
140621	M8	1/4	25 (25/32")	42 (1x1/16")	8 (5/64")	90°
140622	M8	1/4	25 (63/64")	40 (1x57/64")	11 (29/64")	8 (5/64")	45°

◆ Depth Locator

Depth locator has three hexagonal bolts. These bolts' rotating one turn will raise or drop down 0.8mm. Do not need to adjust fast silk rod but only use these adjusting hexagonal bolt to get three kinds of milling and cutting depth. Combine the method of adjust milling and cutting depth with fast silk rod, put the locator on the locator, and then it can get the deepest milling and cutting depth. Adjusting other two hexagonal bolts can get more shallow milling and cutting depth. The height difference of these bolts is equal to the distance of the milling and cutting depth. Do use wrench to rotate hexagonal bolt, rotate the fast silk rod, and then rotate the hexagonal bolt when adjusting hexagonal bolt. Adjust the hexagonal bolt to the location required and then tighten it. When cutting deep grooves, use the depth adjustment, mill and cut it in three times and deepen the setting depth of the cutting blade little by little (Picture Three).

Picture 3

◆ Switch Operation

Please check the switch extracting rod to the position "ON", the tool switches on.

Please pluck the switch extracting rod to position "OFF", the tool switches off (Picture Four).

Picture 4

◆ Milling and Cutting Operation

Put the base plate of the tool on the object to make the cutting blade doesn't touch the object, and then switch on the tool and await the cutting blade to attain maximum speed, then move the tool to the object to be cut. In the processing object, it demands to keep the protective board of the tool base smooth and move forward uniformly until finishing the cutting (Picture Five).

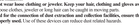
When undertaking edge cutting, please make the processing object to be on the left of the cutting blade (looking from the inlet direction).

Picture 5

Code	D	A	L1	L2
140611	6	1/4	20 (13/16")	35(2-5/32")	4(5/64")
140612	8	1/4	20 (13/16")	35(2-5/32")	3(1/8")

Code	D	A1	A2	L1	L2	L3	R
140613	6	1/4	26 (1x3/32")	37(1x15/16")	6(1/4")	30(5/8")	8 (5/64")
140614	8	1/4	26 (1x3/32")	36(1x59/64")	6(1/4")	30(5/8")	8 (5/64")
140617	M8	1/4	26 (1x3/32")	40 (1x5/8")	10 (25/64")	4 (5/32")	8 (5/64")

Code	D	A	L1	L2	L3	A
140609	12R	1/4	12(15/32")	50(1-31/32")	32(1-1/4")	8(5/16")	30°
140610	12R	1/4	12(15/32")	48(2-1/8")	30(1-1/16")	
140611	12R	1/4	14(1-9/16")	48(2-1/8")	32(1-1/4")	
140612	8R	1/4	8(5/16")	50(1-31/32")	18(5/8")	
140613	8R	1/4	8(5/16")	50(1-31/32")	18(5/8")	



Code	D	A	L1	L2	L3	L4
140610	12R	1/2	12(15/32")	48(1-53/64")	28(1-7/32")	25(63/64")
140611	8R	1/4	8(5/16")	48(1-53/64")	32(1-9/32")	28(1-1/32")	25(63/64")
140612	8R	1/4	8(5/16")	50(2-1/64")	34(1-11/16")	32(1-15/32")	18(5/8")

◆ Straight Line Guide Object

Straight line guide object is very effective for straight line cutting when milling the chamfer and groove.

Use the butterfly screw B to fix the straight line guide object on the floor, then insert the floor into the hole of the tool base, use butterfly screw A to fix the floor on the base, the distance between the adjusting cutting blade and straight line guide object can be adjusted through the micro adjusting screw (Each turn is 1.5mm). Tighten the screw B to fix the straight line guide object at the ideal distance, keep the straight line guide object and the edge of the object to be on one line to move the tool during milling and cutting (Picture Six).

Picture 6

◆ Trimming Guide Socket

The trimming guide socket can be easily used for trimming at curved milling and cutting on the furniture surface or other similar objects, keep the jockey pulley go ahead along the curve to guarantee precise milling and cutting.

Use the butterfly screw B to fix the trimming guide socket on the floor, then insert the floor into the hole of the tool base, use butterfly screw A to fix the floor on the base, the distance between the adjusting cutting blade and trimming guide socket can be adjusted by rotating the micro adjusting screw (Each turn is 1.5mm) Tighten the screw B to fix the trimming guide socket at the ideal distance, please release the butterfly screw C when adjusting the trimming guide socket up and down, tighten the butterfly screw again after adjusting it to the demanding position (Picture Seven).

Please keep the jockey pulley rolls along the edge of the processing object when milling and cutting and at the same time of moving the tool.

Picture 7

◆ Sample Gauge Guide Plate

Sample gauge guide plate offers an overdevice of the cutting blade. Thus, the line of sample gauge guide plate is the line.

When equipping the sample gauge guide plate, release the screw on the base plate, insert the sample gauge guide plate, and then tighten the screw.

Fix the sample gauge guide plate on the work piece, put the tool on the sample gauge guide plate, move the tool at the same time (Picture Eight).

Picture 8

◆ Dust Protector

When the protector of inversion operating, this device can prevent the chipping into the tool. It is better not to use it when operating the tool in a normal location.

When performing the inversion operating, please try to use this accessory and equip it according to the picture shown (Picture Nine).

Picture 9

◆ Replace the Electric Brush

The tool has set the electric brush limited position equipment especially, please replace the electric brush if there's big sparks or the rotation stops during the running. Please use screwdriver to screw the lid of the electric brush and take out the wearing electric brush and install the new ones, and please use hands to screw the electric brush lid after the new ones and then install and screw the lid of the electric brush. Please replace two brushes at the same time, and use the specified "KEN" brand electric brush (Picture Ten).

Picture 10

■ Reamer Item

Code	D	A	L1	L2
140601	6R	1/4	20 (25/32")	50(1-31/32")	32(1-9/32")
140602	12R	1/2	12(15/32")	48(2-1/8")	30(1-1/16")
140603	8R	1/2	16(25/64")	48(2-1/8")	25(63/64")
140604	8R	1/4	8(5/16")	50(1-31/32")	18(5/8")
140605	8R	1/4	8(5/16")	50(1-31/32")	18(5/8")

Code	D	A	L1	L2	R
140606	12R	1/2	12(15/32")	50(1-31/32")	6(1/4")
140607	8R	1/4	12(15/64")	50(1-31/32")	18(5/64")	3(1/8")

Code	D	A	L1	L2	R	°
140608	20R	3/4	20(25/32")	50(1-31/32")	20(25/32")	6(1/64")	90°

■PRACTICAL TIPS

- Please do confirm the tool is under switching off condition and the plug is drawn out from the current source before assembling or disassembling the cutting blade.
- Under the condition that the cutting blade is not inserted or insert the small cutting blade without using cylinder chuck, don't tighten the screw head, both conditions are possible to damage the expansion sheath.
- Please note that the milling and cutting will cause the motor overloads or operate the tool difficultly, one milling and cutting depth shall not exceed 20 MM during milling and cutting, if it exceeds 20 MM, please mill and cut it in several times, deepen the setting depth of the cutting blade little by little. Don't drop down the hand-wheel too low, thus the cutting blade will stretch out, and it's very dangerous.
- Do confirm the axes lock has released before switching on the tool; grip the tool firmly when switching off the tool to avoid tool jolt.
- Before performing the milling and cutting operation, make sure that the tool main body can rise to the upper limit. And the cutting blade will not run out of the tool base plate when releasing locking wrench.
- Do confirm that the safety guard is equipped properly before performing the operation.
- Moving the tool too quickly will cause badness of milling and cutting quality and damage of cutting blade or electric engine. Moving it too slowly will make the tool heat and lead to badness of milling and cutting quality. Proper sumping speed depends on the size of cutting blade, the kind of work-piece and milling and cutting depth.
- When using the straight line guide object and trimming guide socket, please make them to be on the right (looking from the inlet direction), this will be in favor of keeping the edge of the object to be on one line.

■MAINTENANCE AND CARE

- Unplug the tool from the socket before performing any works on the tool!
- Tool requires no special maintenance, but after some time you must control the parts that are submitted to wear-and-tear under normal operating conditions. This includes the control and replacement of carbon brushes and grease in reducing gear housing. Take the tool to an authorized service centre.
- Keep the tool and supply cord clean. Keep ventilation slots clean and open. Wipe the surface of the tool with a soft cloth!
- It is not allowed to use household cleaning agents that contain petrol, trichloroethylene, ammonia and chlorides. These substances corrode and damage plastic parts of the tool.
- Excessive sparking generally indicates the presence of dirt in the motor or abnormal wear on the carbons.
- In case of electric or mechanical failure, send the tool to a KEN authorized service centre for repair.

■SERVICING AND REPAIRS

If servicing is required, contact one of our listed service centers. It is not allowed and dangerous to perform any individual work on the tool.

- Have the tool repaired by authorized persons.
- Any repairs of the tool in unauthorized service centers is performed at own responsibility.
- The owner of the tool is responsible for all works on the tool that were not performed in authorized service center, and therefore he loses the claim for guarantee.

■WASTE DISPOSAL AND ENVIRONMENT PROTECTION

The machine, accessories and packing should be sorted for environmental-friendly recycling.

Only for EC countries:

◆ Do not dispose of power tools into household waste!

According the European Guideline 2002/96/EC for Waste Electrical and Electronic Equipment and its implementation into national right, power tools that are no longer usable must be collected separately and disposed of in an environmentally correct manner.

■TECHNICAL DATA

Type	M1R-SH01-12	3912BS
Maximum Chuck Diameter	Φ12mm(CE)	Φ12.7mm(SAA)
Current Source	220-240V~ 50/60Hz	
Rated Input Power	1850W	
Idling Rotational Speed	25000 r/min	
Weight	5.8kg	
Noise	L_{pA} 89.37dB(A)	L_{WA} 101.73dB(A) K:3dB(A)
Vibration	a_h:2.32m/s²(stone handle)	a_h:1.510m/s²(stem handle) K:1.5m/s
Standard Spare Parts	24 Opening Wrench 1PC 8 Opening Wrench 1PC Trimming Guide Socket 1PC Straight Line Guide Object 1PC Fixer 1PC	Sample Gauge Guide Plate 1PC 1/4" Cylinder Clamp 3/8" Cylinder Clamp Carbon Brush 2PCS Operating Handbook 1PC

PARTS LIST of the Mod.3912BS ELECTRIC ROUTER

No.	Code	Name	Remark	No.	Code	Name	Remark
1	313030	Motor housing		47	411024	Pressed cord	
2	441019	Stator		48	310511	Adjusting gear	
3	441018	Rotor assembly		49	310512	Rack gear	
4	331019	Bearing sleeve		50	227001	Pin	
5	311021	Bearing	6292-ZZ	51	310110	Plastic screw nut	
6	313004	Retainer		52	144030	Pin	
8	442039	Rotor		53	153018	Spring	
9	313005	Bearing clamp		54	310109	Left handle pipe	
10	310402	Bearing	MR-17	55	1040061	Spring	
11	211037	Bearing	6004-DDW	56	272003	Screw	2×5
12	182013	Shell decor		57	223011	Lead	
13	314024	Left handle		58	251024	Screw	M5×10
14	314025	Left Handle cap		59	311078	Plastic disc	
15	1620163A	Front cover		60	149008	Locater pool	
16	153017	Spring		61	1620162A	Locater rod	
17	227007	Screw		62	310108	Guarding sleeve	
18	153015	Spring		63	1040163A	Rotating disc	
19	146007	Screw board		64	153015	Spring	
20	146006	Collet		65	237013	Screw	
21	183002	Steel sleeve		66	261005	Screw nut	M5
22	314022	Right handle		67	234010	Screw	M5×80
23	314023	Right cap		68	234009	Screw	M5×60
24	231045	Screw	M6×45	69	234005	Screw	M5×30
25	262004	Washer	5	70	130901	Right leading pool	
26	130014	Insulated sheet		71	131041	Spring	
27	153001	Spring		72	139004	Screw	M4×16
28	153007	Locking pin		73	227004	Pin	
29	153002	Retainer	Φ12	74	152021	Pin	4×20
30	412001	Switch cap		75	139003	Screw	
31	134006	Screw	M3×12	76	230603	Screw	M3×10
33	110066	Locking spanner		77	273004	Pin	3×32
33	272010	Screw		78	182025		
34	154009	Spring		79	623020	Big wrench	
35	154010	Spring		80	623030	Small wrench	
36	147008	Pad		81	629034	Hexagonal Cover	
37	433012	Brush cap		82	629032	Fixing Lock Solid	
38	433009	Brush holder		83	629042	Block	
39	4133323A	Carbon brush		84	629031	Insight Lin Guide Object	
40	443007	Capacitor		85	629035	Insight Gap Guide Plate	
41	443014	Switch		86	139005	Screw	MR×14
42	110065	Screw	MR-16	87	1040165	Trimming Guide Socket	
43	1160063A	Switch cap		88	1040103	Cylinder Clamp	1/4"
44	231010	Screw	MR-14	89	312047	Left handle connector	
45	311001	Cord Clamp		90	312048	Right handle connector	
46	232006	Cord sleeve		91	221009	Screw	ST4×16