

ELECTRIC MIXER MACHINES



INSTRUCTION MANUAL

Original instructions

For your personal safety,

READ and **UNDERSTAND** before using.

**SAVE THESE INSTRUCTIONS FOR
FUTURE REFERENCE.**



www.MACTOOL.co.za

Version:20121008

SPECIFICATIONS

Power Input	800W	1100W	1300W
Voltage	See machine nameplate		
N-m (Low Gear / High Gear)	6.0	11.0	27.4/17.3
Number of Gears	1	1	2
No Load min ⁻¹	750	250-700	150-400 / 250-700
Protection	Double Insulation / Class II		
Coupling Thread	M14 - 2.0	M14 - 2.0	M14 - 2.0
Mixing Paddle Max. Diameter	105mm	120mm	140mm
Electronic Speed Control	—	√	√
Weight	2.9kg	3.6kg	4.1kg

Power Input	1600W	Twin Paddle (1600W)
Voltage	See machine nameplate	
N-m (Low Gear / High Gear)	42.7/29.9	28
Number of Gears	2	1
No Load min ⁻¹	180-350 / 280-550	200-450
Protection	Double Insulation / Class II	
Coupling Thread	M14 - 2.0	Hex. Quick-Release
Mixing Paddle Max. Diameter	160mm	140mm per paddle
Electronic Speed Control	√	√
Weight	5.6kg	10.0kg

GENERAL SAFETY INSTRUCTIONS



WARNING! Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference. The term "power tool" in the warnings refers to your mainsoperated (corded) power tool or battery-operated (cordless) power tool.

1) WORK AREA SAFETY

a) Keep work area clean and well lit. Cluttered or 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 plug 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.

d) Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. 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 an earth leakage circuit breaker. Use of an earth leakage circuit breaker 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, non-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 energising 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 dust collection can reduce dust-related hazards.

4) POWER TOOL USE AND CARE

- a) Do not force the power tool. Use the correct power tool for your application.** The correct power tool will do the job better and safer at the rate for which it was designed.
- b) Do not use the power tool if the switch does not turn it on and off.** Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
- c) Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools.** Such preventive safety measures reduce the risk of starting the power tool accidentally.
- d) Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** Power tools are dangerous in the hands of untrained users.
- e) Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use.** Many accidents are caused by poorly maintained power tools.
- f) Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- g) Use the power tool, accessories and tool bits etc., in accordance with these instructions, taking into account the working conditions and the work to be performed.** Use of the power tool for operations different from those intended could result in a hazardous situation.

5) SERVICE

a) Have your power tool serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the power tool is maintained.

Symbols used in this manual

V.....volts

A.....amperes

Hz.....hertz

W.....watt

~.....alternating current

n_0no load speed

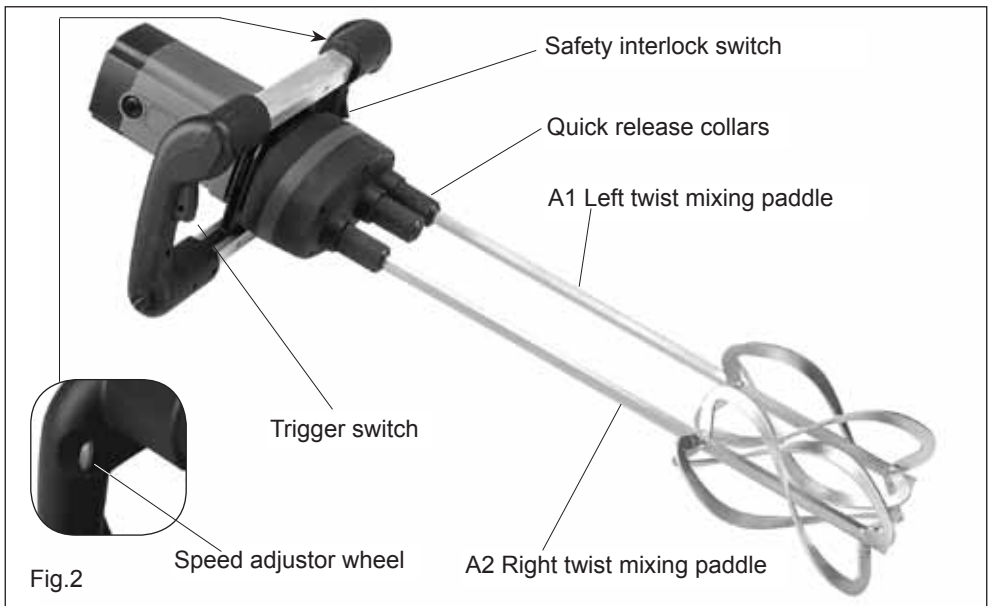
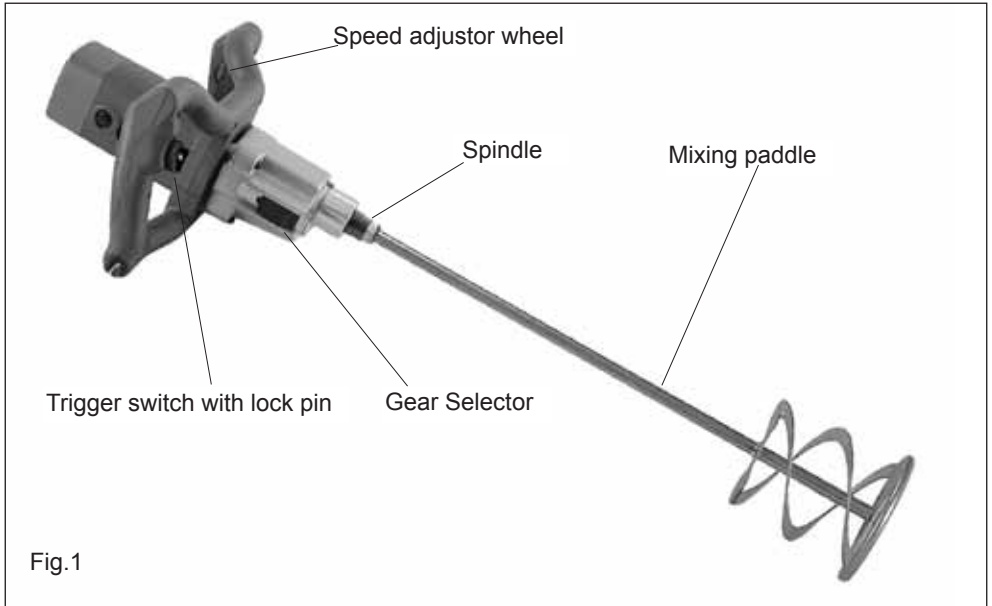
min^{-1}revolutions or reciprocation per minute

class II tool

SPECIFIC SAFETY RULES AND SYMBOLS

1. Keep hands away from mixing paddle. Keep both hands on the handles. If both hands are holding the machine, they cannot be hurt by the paddle.
2. Use only recommended mixing paddle
3. Tighten mixing paddle securely before operation.
4. Secure workpiece properly. Workpiece should be stable and firmly in position to avoid danger
5. Allow the paddle to come to a complete stop before removing from the medium.
6. Check the paddle for cracks, bent shaft or other damage before operation. Replace bent, cracked or damaged paddle immediately.
7. Never start the tool with the paddle laying on the floor or any dangerous position.
8. Important: After completing mixing medium, release power switch and wait for coasting paddle to stop completely before removing from medium or putting the machine down.
9. Never operate the tool in an area with flammable solids, liquids, or gases. Sparks or hot fragments could cause a fire or explosion.
10. Some mediums can be toxic. Take extra care to prevent inhalation and skin contact when working with these materials. Request, and follow, any safety information available from your material supplier.
11. There are certain applications for which this tool was designed.
The manufacturer strongly recommends that this tool NOT be modified and/or used for any application other than for which it was designed. If you have any questions relative to its application DO NOT use the tool until you have written the manufacturer and have been advised.

FUNCTIONAL DESCRIPTION



These machines are electric stirrers designed to Mix various mediums.

UNPACKING

Carefully remove the tool and all loose items from the shipping container.

Retain all packing materials until after you have inspected and satisfactorily operated the machine.

NOTE: An appropriate paddle must be mounted to the machine before operating.

Refer the section of this manual: “INSTALLING THE PADDLE”

CAUTION: Ensure that the paddle diameter does not exceed the machine’s maximum rated capacity as listed on the machine nameplate and that the thread of the coupling is correct.

CARTON CONTENTS

1. Mixing machine
2. Wrench (single paddle models only)

DO NOT OPERATE THIS TOOL UNTIL YOU READ AND UNDERSTAND THE ENTIRE INSTRUCTION MANUAL.

INSTALLING THE PADDLE- DISCONNECT TOOL FROM POWER SOURCE.

Double paddle models only:

1. Pull outwards the knurled quick release collar (65) line up the hex of the mixing paddle shaft and push the mixing paddle fully home, then release the collar and pull the paddle outwards slightly and the paddle will audibly snap in place. See Fig.3.
2. Note that the two paddles are opposite twist and the left and right side spindles are counter-rotating, so the mixing effect will be different with the paddles on opposite sides (in one orientation, the machine will tend to pull downwards, in the opposite orientation, the machine will tend to push upwards).

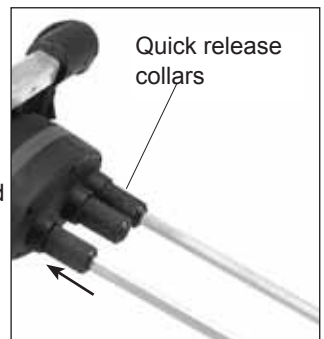


Fig.3

All other models:

Screw the mixing paddle (41) (optional) with thread M14 x 2 onto the spindle and tighten with the open end wrench (40). See Fig.1.

REMOVING THE PADDLE-

ENSURE THAT TOOL IS DISCONNECTED FROM POWER SOURCE.

Double paddle models only:

Pull outwards the knurled quick release collar (65) and pull the paddle outwards to remove the paddle. See Fig.2.

All other models:

Using the open-end wrench (40) on the flats on the spindle (01) and stabilizing the mixing paddle (41), loosen and then unscrew the paddle from the spindle. See Fig.1.

STARTING AND STOPPING TOOL

Make sure that the power circuit voltage is the same as that shown on the specification plate of the machine and that switch is “OFF” before connecting the tool to the power circuit.

Double paddle models only:

WARNING: Before starting, always first place the paddles in or above the mixing medium before starting. Never start the mixer outside of the media.

First squeeze the safety interlock switch (93) on the left handle, then squeeze the trigger switch (34) on the right handle to start the machine. Since it is very dangerous for the hand to be caught between the double paddles, the safety interlock switch ensures that both hands are always on the handles. See Fig.4.

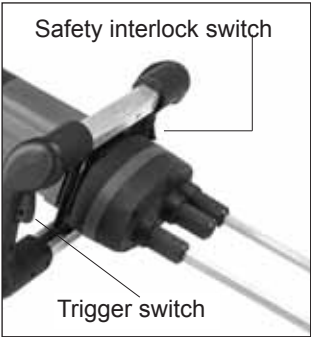


Fig.4

All other models:

To start the machine, squeeze the trigger switch. Release the trigger switch to stop the motor. See Fig.5.

This machine is equipped with a lock-on arrestor pin. If continuous operation is required, squeeze the trigger and press the arrestor pin. To stop, squeeze and release the trigger switch.



Fig.5

Speed Adjustment (Variable speed control models only):

By turning the thumb operated adjustor wheel (45), the speed may be adjusted electronically for best mixing performance in a given medium. See Fig.6.

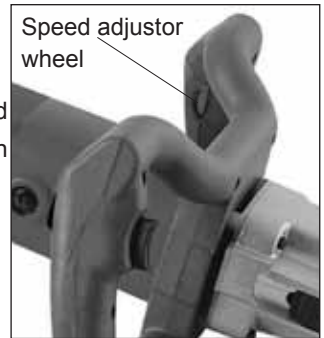


Fig.6

Gear Changes (Two speed range models only):

On 2 speed range models, there is a gear selector slider (48) on the gearbox housing. Use low speed range for best torque in extremely viscous media. To select a gear range, first shut down the machine. Push in on the selector slider against spring tension and slide up or down to select the desired range. Ensure that the gears engage fully. It is sometimes helpful to turn the arbor slightly to allow the gears to fully engage. See Fig.7.



Fig.7

CAUTION: Never attempt to change gears on a running machine!

CAUTION: Improper use may damage the machine. Only use mixing paddles up to the specified diameter.

When operating, take care not to overload the machine in a way that the speed would stop or slow considerably.

WARNING:Double paddle machines: The double counter rotating paddles are extremely hazardous as they tend to pull objects in between them. **NEVER** operate the machine with the paddles outside of the mixing media where they may be able to pull in outside objects or people causing possible severe injury or death.

WARNING:Never operate a mixer outside of the mixing media. The spinning mixing paddle is extremely hazardous and may easily catch on and outside objects or people causing possible severe injury or death.

HOW TO USE THE TOOL

Effective control of this machine requires **two-handed** operation for maximum protection and resistance to the start-up and operating torque.

Place the work properly and to hold the machine firmly **WITH BOTH HANDS** to prevent loss of control which could cause personal injury.

Protect your eyes from injury with safety glasses or goggles.

WARNING: Keep the cord behind the operator and away from mixing area to prevent it from becoming entangled in the paddle.

After completing the mixing operation, release the power switch and wait for the coasting paddle to stop completely before putting the machine down.

KEEP TOOL CLEAN

Periodically blow out all air passages with dry compressed air every 100 hours of use. All plastic parts should be cleaned with a soft damp cloth. NEVER use solvents to clean plastic parts. They could possibly dissolve or otherwise damage the material. Wear safety glasses while using compressed air. Every 200 hours, have the lubricant in the gearbox replaced by a qualified service center.

MAINTENANCE

THE CARBON BRUSHES

The carbon brushes are a normal wearing part and must be replaced when they reach their wear limit. See Fig.8.

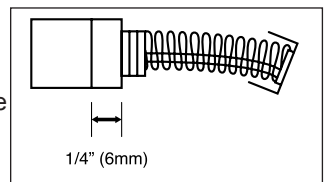


Fig.8

To replace: simply remove the brush caps and withdraw the old brushes. Replace with new brushes (always replace as a pair) ensuring that they align properly and slide freely. Then replace the brush caps. See Fig.9.

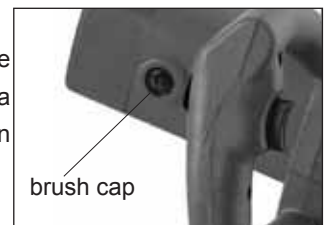
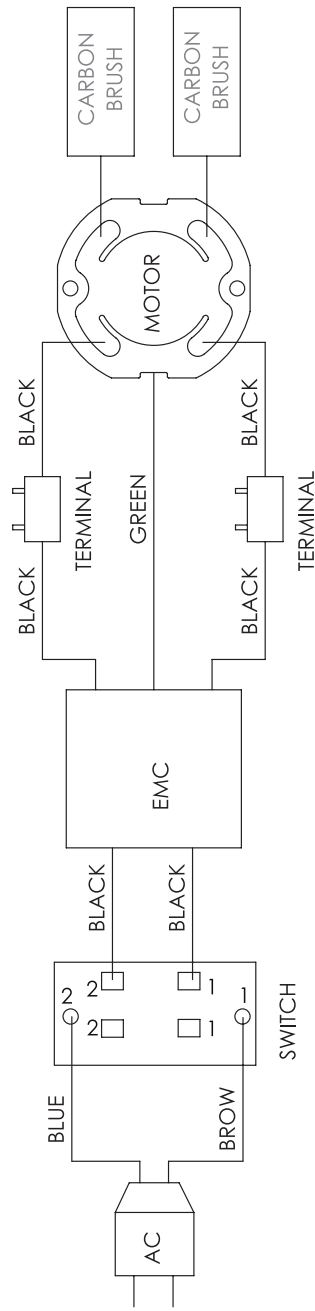


Fig.9

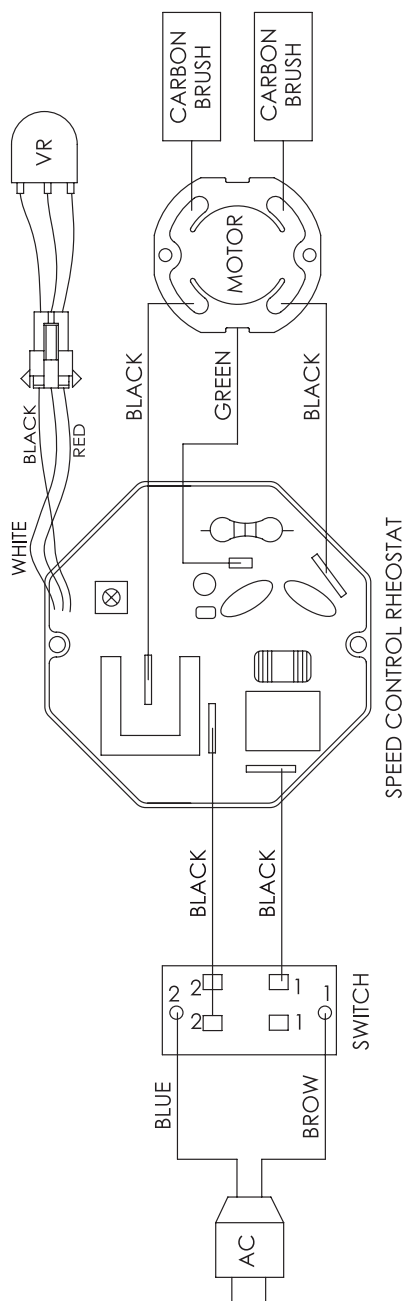
STANDARD ACCESSORIES

Open end wrench (Single paddle models only)

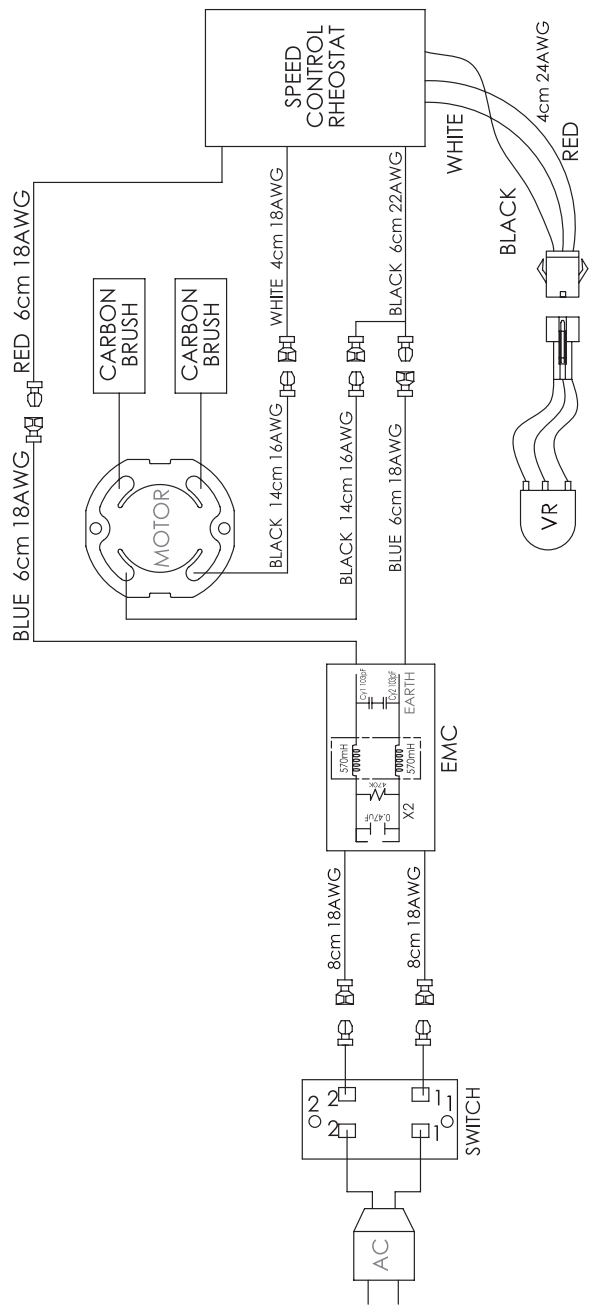
800W WIRING



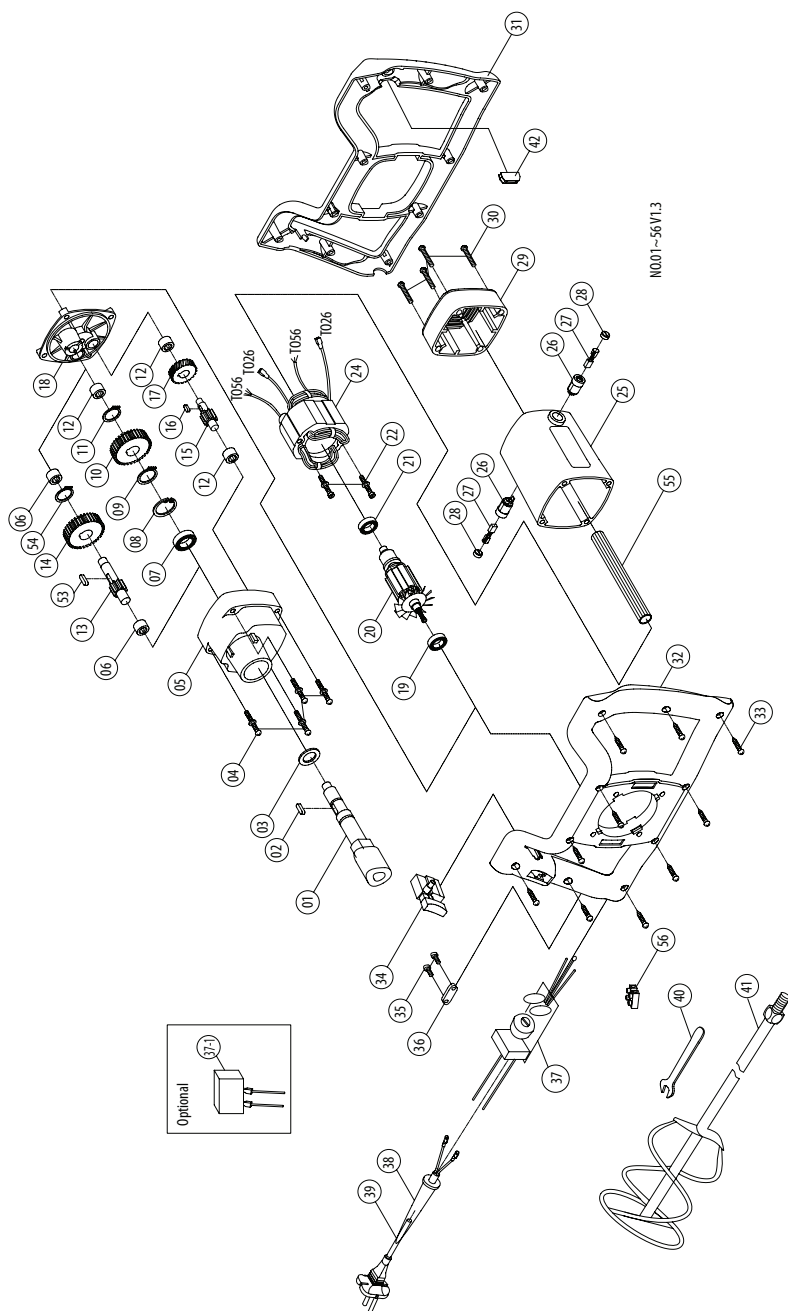
1100W, 1300W WIRING



1600W, Twin Paddle(1600W) WIRING



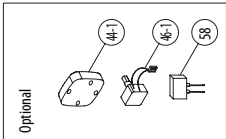
800W EXPLODED VIEW



800W PARTS LIST

NO.	Parts Name	Q'TY
1	SPINDLE M14 x P2.0	1
2	PARALLEL KEY 5 x 5 x 12	1
3	OIL SEAL Ø22 x Ø32 x 7	1
4	SCREW M5 x 60	4
5	GEAR HOUSING	1
6	NEEDLE BEARING HK 1010	2
7	BEARING 6003 zz	1
8	INTERNAL CIRCLIP R-35	1
9	EXTERNAL CIRCLIP S-17	1
10	OUTPUT GEAR 34T	1
11	EXTERNAL CIRCLIP S-15	1
12	NEEDLE BEARING HK 0810	3
13	IDLER PINION 10T	1
14	IDLER GEAR 30T	1
15	INPUT PINION 14T	1
16	PARALLEL KEY 4 x 4 x 8	1
17	INPUT GEAR 37T	1
18	GEAR PLATE	1
19	BEARING 609-2RS	1
20	ARMATURE 7T	1
20	ARMATURE 7T	1
21	BEARING 608-2RU	1
22	SCREW M5 x 45	2
23	N/A	-
24	STATOR	1
25	MOTOR HOUSING	1
26	BRUSH HOLDER 7 x 11	2
27	CARBON BRUSH 7 x 11 x 17	2
28	BRUSH CAP 7 x 11	2
29	TAIL COVER	1
30	SCREW M5 x 12	4
31	HANDLE BODY (TOP)	1
32	HANDLE BODY (BOTTOM)	1
33	SCREW M4 x 16	10
34	TRIGGER SWITCH8301	1
35	SCREW M4 x 14	2
36	CORD CLIP	1
37	EMC CAPACITOR	1
37	EMC CAPACITOR	1
37-1	ELECTRONIC FILTER (OPTIONAL)	1
38	CORD ARMOR	1
39	POWER SUPPLY CABLE	1
40	WRENCH M22 22mm	1
41	PADDLE TT10514575	1
42	BLANKING PLUG	1
43~52	N/A	-
53	PARALLEL KEY 5 x 5 x 10	1
54	EXTERNAL CIRCLIP S-12	1
55	CABLE SHEATH M6 x 20CM	1
56	CONNECTOR BLOCK	2/12

1100W EXPLODED VIEW

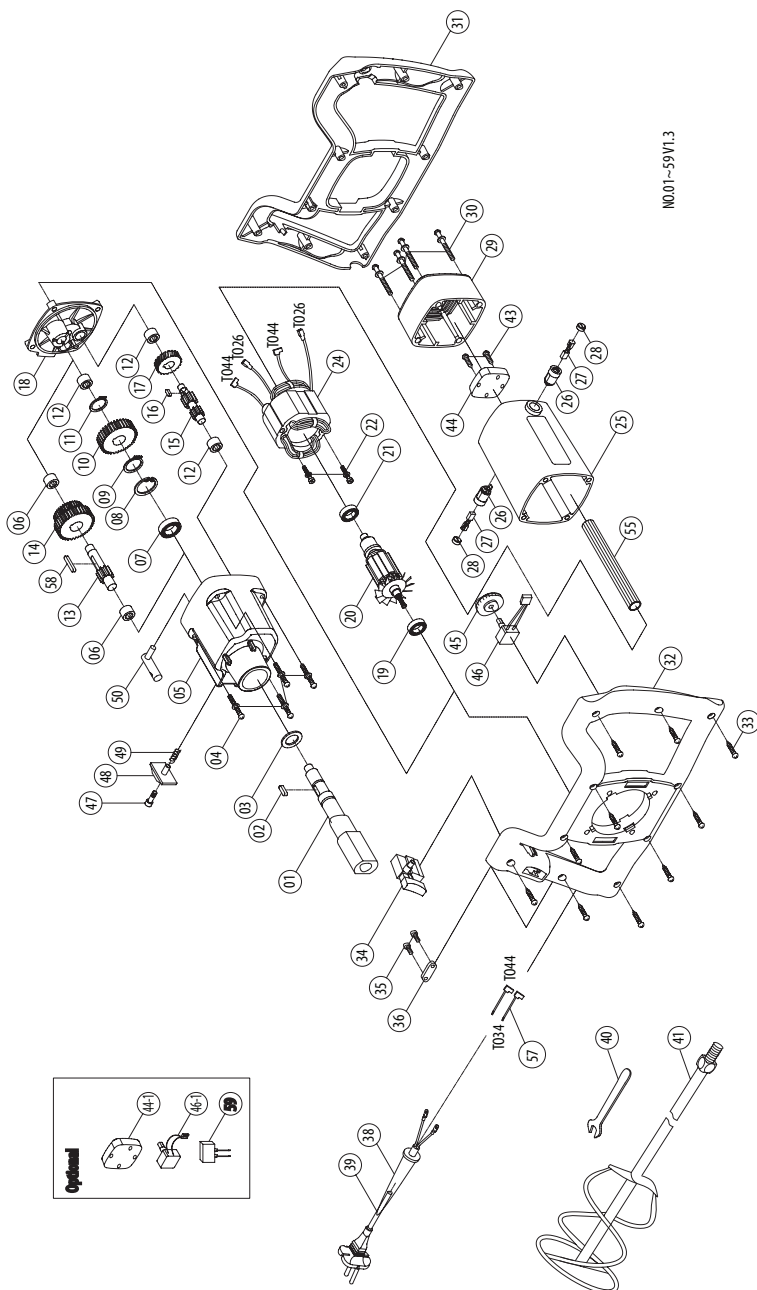


NO.01~58V1.3

1100W PARTS LIST

NO.	Parts Name	Q'TY	NO.	Parts Name	Q'TY
1	SPINDLE M14 x P2.0	1	30	SCREW M5 x 45	4
2	PARALLEL KEY 5 x 5 x 12	1	31	HANDLE BODY (TOP)	1
3	OIL SEAL Ø22 x Ø32 x 7	1	32	HANDLE BODY (BOTTOM)	1
4	SCREW M5 x 60	6	33	SCREW M4 x 20	10
5	GEAR HOUSING	1	34	TRIGGER SWITCH 8301	1
6	NEEDLE BEARING HK 1010	2	35	SCREW M4 x 14	2
7	BEARING 6003 zz	1	36	CORD CLIP	1
8	INTERNAL CIRCLIP R-35	1	37	N/A	-
9	EXTERNAL CIRCLIP S-17	1	38	CORD ARMOR	1
10	OUTPUT GEAR 34T	1	39	POWER SUPPLY CABLE 0.75 x 2C x 3M	1
11	EXTERNAL CIRCLIP S-15	1	40	WRENCH M22 22mm	1
12	NEEDLE BEARING HK 0810	3	41	MIXING PADDLE(OPTIONAL) TT12014575	1
13	IDLER PINION 10T	1	42	N/A	-
14	IDLER GEAR 30T	1	43	SCREW M3 x 25 (1/8" x 1")	2
15	INPUT PINION 14T	1	44	ELECTRONICS BOARD -110V	1
16	PARALLEL KEY 4 x 4 x 8	1	44	ELECTRONICS BOARD -220V	1
17	INPUT GEAR 37T	1	44-1	(OPTIONAL) 110V W/O EMC	1
18	GEAR PLATE	1	44-1	(OPTIONAL) 220V W/O EMC	1
19	BEARING 609-2RS	1	45	THUMB WHEEL	1
20	ARMATURE 7T	1	46	RHEOSTAT	1
21	BEARING 608-2RU	1	46-1	(OPTIONAL) W/O EMC	1
22	N/A	-	47~51	N/A	-
23	N/A	-	53	PARALLEL KEY 5 x 5 x 10	1
24	STATOR	1	54	EXTERNAL CIRCLIP S-12	1
25	MOTOR HOUSING	1	55	CABLE SHEATH M6 x 20CM	1
26	BRUSH HOLDER 7 x 11	2	56	N/A	-
27	CARBON BRUSH 7 x 11 x 17	2	57	WIRE LEAD 16AWG x 50CM + 759	2
28	BRUSH CAP 7 x 11	2	58	(OPTIONAL) ELECTRONIC FILTER	1
29	TAIL COVER	1			

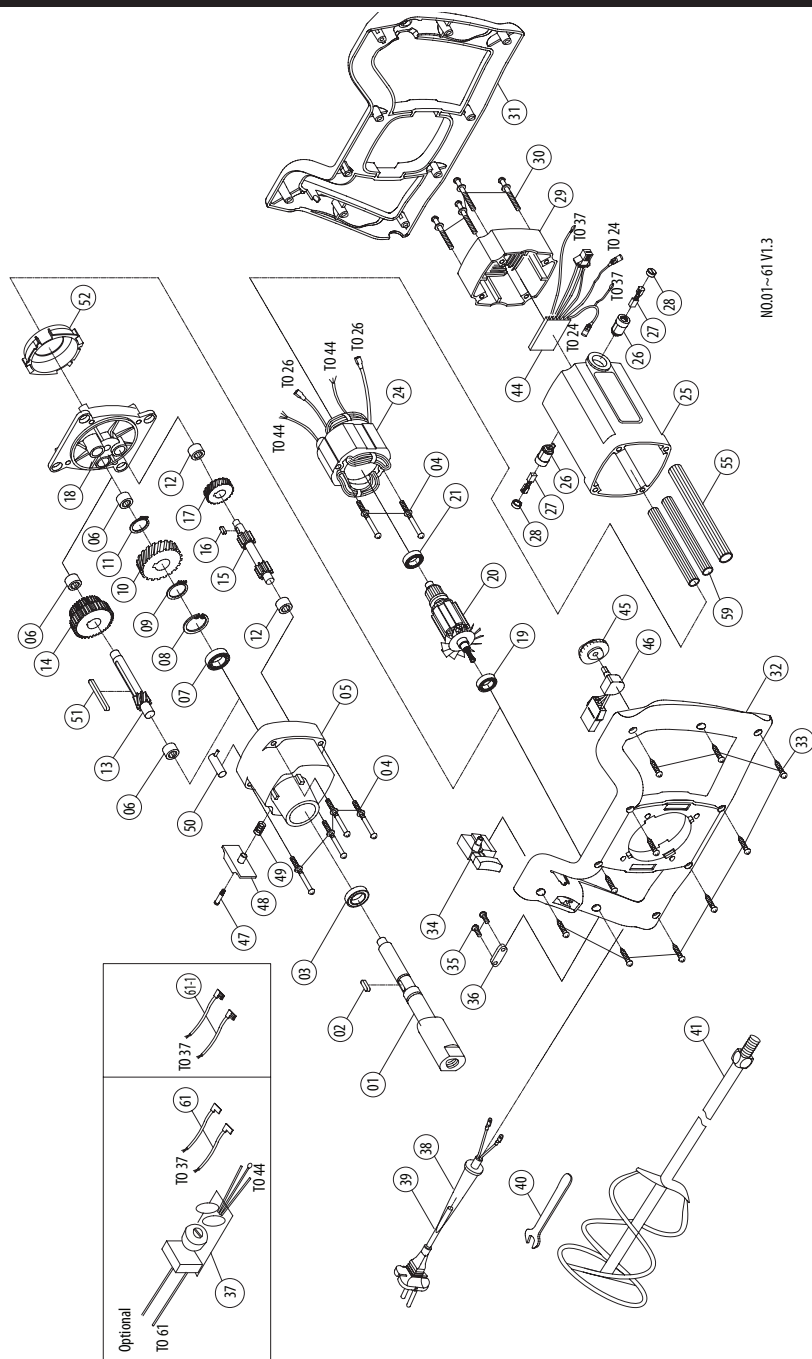
N0.01~59V1.3



1300W PARTS LIST

NO.	Parts Name	Q'TY	NO.	Parts Name	Q'TY
1	SPINDLE M14 x P2.0	1	31	HANDLE BODY (TOP)	1
2	PARALLEL KEY 5 x 5 x 12	1	32	HANDLE BODY (BOTTOM)	1
3	OIL SEAL Ø22 x Ø32 x 7	1	33	SCREW M4 x 20	10
4	SCREW M5 x 60	4	34	TRIGGER SWITCH 8301	1
5	GEAR HOUSING	1	35	SCREW M4 x 14	2
6	NEEDLE BEARING HK 1010	2	36	CORD CLIP	1
7	BEARING 6003 zz	1	37	N/A	-
8	INTERNAL CIRCLIP R-35	1	38	CORD ARMOR	1
9	EXTERNAL CIRCLIP S-17	1	39	POWER SUPPLY CABLE	1
10	OUTPUT GEAR 34T	1	40	WRENCH M22 22mm	1
11	EXTERNAL CIRCLIP S-15	1	41	MIXING PADDLE(OPTIONAL) TT14014590	1
12	NEEDLE BEARING HK 0810	3	42	N/A	-
13	IDLER PINION 10T	1	43	SCREW M3 x 25 (1/8" x 1")	2
14	IDLER GEAR 30T x 34T	1	44	ELECTRONICS BOARD -110V	1
15	INPUT PINION 14T x 10T	1	44	ELECTRONICS BOARD -220V	1
16	PARALLEL KEY 4 x 4 x 8	1	44-1	(OPTIONAL) 110V W/O EMC	1
17	INPUT GEAR 37T	1	44-1	(OPTIONAL) 220V W/O EMC	1
18	GEAR PLATE	1	45	THUMB WHEEL ABS	1
19	BEARING 609-2RS	1	46	RHEOSTAT	1
20	ARMATURE 7T	1	46-1	(OPTIONAL) W/O EMC	1
21	BEARING 608-2RU	1	47	SLOT-HEAD SHOULDER SCREW	1
22	SCREW M5 x 65	2	48	GEAR SELECTOR SLIDER	1
23	N/A	-	49	SPRING Ø0.6 x Ø4.4 x Ø5.6 x 5T x 13L	1
24	STATOR	1	50	SELECTOR FORK	1
25	MOTOR HOUSING	1	51~54	N/A	-
26	BRUSH HOLDER 7 x 11	2	55	WIRE SHEATH M6 x 20CM	1
27	CARBON BRUSH 7 x 11 x 17	2	56	N/A	-
28	BRUSH CAP 7 x 11	2	57	WIRE LEAD 16AWG x 50CM + 759	2
29	TAIL COVER	1	58	PARALLEL KEY 5 x 5 x 45	1
30	SCREW M5 x 45	4	59	(OPTIONAL) ELECTRONIC FILTER	1

1600W EXPLODED VIEW

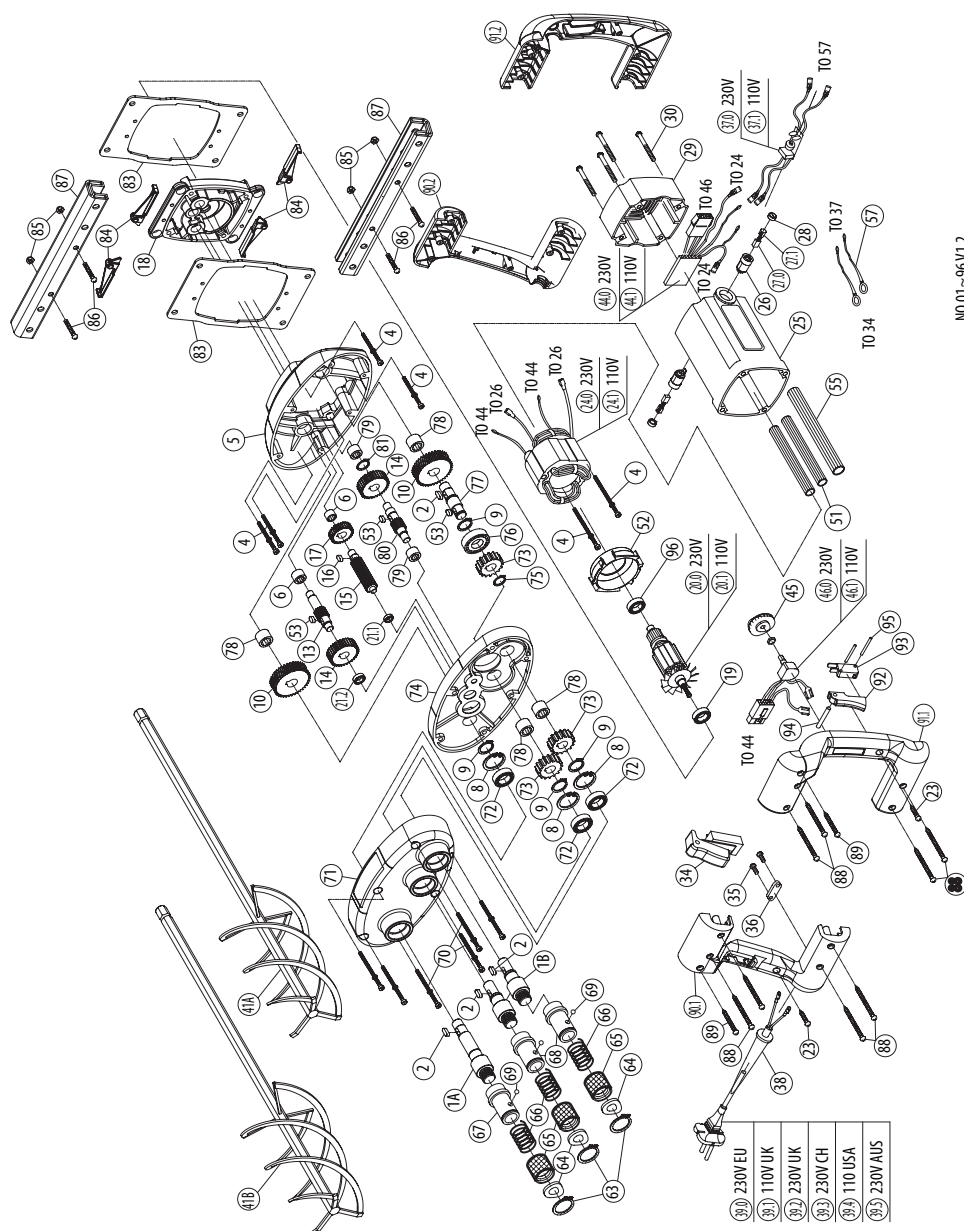


NO.01-61V1.3

1600W PARTS LIST

NO.	Parts Name	Q'TY	NO.	Parts Name	Q'TY
1	SPINDLE M14 x P2.0	1	33	SCREW M4 x 20	10
2	WOODRUFF KEY 5 x 5 x 12	1	34	TRIGGER SWITCH8301	1
3	SEAL Ø22 x Ø32 x 7	1	35	SCREW M4 x 14	2
4	SCREW M5 x 60	6	36	CORD CLIP	1
5	GEAR HOUSING	1	37	EMC CAPACITOR(OPTIONAL)	1
6	NEEDLE BEARING HK 1010	3	37	EMC CAPACITOR(OPTIONAL)	1
7	BALL BEARING 6204 zz	1	38	CORD ARMOR	1
8	SNAP RING R-47	1	39	POWER SUPPLY CORD	1
9	SNAP RING S-20	1	40	WRENCH 22mm	1
10	SPINDLE GEAR 39T	1	41	PADDLE TT16014590	1
11	SNAP RING S-15	1	42	N/A	-
12	NEEDLE BEARING HK Ø810	2	43	N/A	-
13	GEAR PINION 10T	1	44	ELECTRONICS UNIT 110V	1
14	COUNTERSHAFT 30T x 33T	1	44	ELECTRONICS UNIT 220V	1
15	GEAR PINION 10T x 13T	1	45	THUMB WHEEL	1
16	WOODRUFF KEY 5 x 5 x 8	1	46	RHEOSTAT -110V B100K	1
17	COUNTERSHAFT 29T	1	46	RHEOSTAT -220V B100K	1
18	GEARING COVER	1	47	SLOT-HEAD SHOULDER SCREW	1
19	BALL BEARING 6202-2RS	1	48	GEAR SELECTOR SLIDER	1
20	ARMATURE M1.0 x 7T	1	49	SPRING Ø0.6 x Ø4.4 x Ø5.6 x 5T x 12L	1
21	BALL BEARING 6200LLU	1	50	SELECTOR FORK	1
22	N/A	-	51	PARALLEL KEY 5 x 5 x 50	1
23	N/A	-	52	FAN BAFFLE	1
24	STATOR	1	53	N/A	-
25	MOTOR HOUSING	1	54	N/A	-
26	BRUSH HOLDER 7 x 17	2	55	WIRE SHEATH M6 x 20CM	1
27	CARBON BRUSH 7 x 17 x 17	2	56~58	N/A	-
28	BRUSH CAP 7 x 17	2	59	WIRE SHEATH M4 x 8CM	2
29	TAIL COVER	1	60	N/A	-
30	SCREW M5 x 45	4	61	WIRE LEAD(OPTIONAL) 16AWG x 50CM	2
31	HANDLE BODY (TOP)	1	61-1	WIRE LEAD(OPTIONAL) 16AWG x 50CM	2
32	HANDLE BODY (BOTTOM)	1			

Twin Paddle(1600W) EXPLODED VIEW



NO.01~96V1.2

Twin Paddle(1600W) PARTS LIST

NO.	Parts Name	Q'TY	NO.	Parts Name	Q'TY
1A	SPINDLE-LONG M18 x P2.5 - R	1	46.0	SPEED ADJUSTOR 220V	1
1B	SPINDLE-SHORT M18 x P2.5 - L	2	46.1	SPEED ADJUSTOR 110V	1
2	WOODRUFF KEY 5 x 5 x 12	4	47~50	N/A	-
3	N/A	-	51	WIRE SHEATH M4 x 8CM	0.08
4	SCREW M5 x 60	6	52	FAN SHROUD	1
5	GEAR CASE	1	53	WOODRUFF KEY 5 x 5 x 10	3
6	NEEDLE BEARING HK 1010	2	54	N/A	-
7	N/A	-	55	WIRE SHEATH M6 x 20CM	0.2
8	INTERNAL CIRCLIP R-47	3	56	N/A	-
9	EXTERNAL CIRCLIP S-17	4	57	WIRE LEADS 16AWG x 37CM	2
10	OUTPUT GEAR 39T	2	58~62	N/A	-
11	N/A	-	63	EXTERNAL CIRCLIP S-22	3
12	N/A	-	64	RETAINER RING Ø31 x Ø22.1 x 1.6	3
13	INTERMEDIATE PINION-R 10T	1	65	QUICK RELEASE COLLAR	3
14	INTERMEDIATE GEAR 33T	2	66	SPRING Ø2 x Ø23.5 x Ø27.5 x 5T x 22L	3
15.	COUNTERSHAFT PINION 10T	1	67	QUICK RELEASE BARREL-RH M18 x P2.5 - R	1
16	WOODRUFF KEY 5 x 5 x 8	1	68	QUICK RELEASE BARREL-LH M18 x P2.5 - L	2
17	INPUT GEAR 29T	1	69	CHECK BALL Ø5	3
18	GEAR PLATE	1	70	SCREW M5 x 60	6
19	BEARING 6202-2NSE	1	71	OUTER SPINDLE HOUSING	1
20.0	ARMATURE M1.0 x 7T	1	72	BEARING 6303-LLU	3
21.1	BEARING 608 zz	1	73	TRANSFER GEAR 16T	3
21.2	BEARING 6200 zz	1	74	SPINDLE PLATE	1
22	N/A	-	75	EXTERNAL CIRCLIP S-14	1
23	SCREW M4 x 16	2	76	BEARING 6203 zz	1
24.0	STATOR 94 x 54 x 45	1	77	TRANSFER PINION	1
25	MOTOR HOUSING	1	78	NEEDLE BEARING HK 1412	4
26	BRUSH HOLDER 7 x 17	2	79	NEEDLE BEARING HK 1012	2
27	CARBON BRUSH 7 x 17	2	80	INTERMEDIATE PINION-L 10T	1
28	BRUSH CAP 7 x 17	2	81	EXTERNAL CIRCLIP S-13	1
29	TAIL COVER	1	82	N/A	-
30	SCREW M5 x 45	4	83	HANDLE SUPPORT PLATE	2
31~33	N/A	-	84	HANDLE BRACKET	4
34	TRIGGER SWITCH	1	85	DOVE NUT M4	4
35	SCREW M4 x 14	2	86	SCREW M4 x 30	4
36	CORD CLIP	1	87	HANDLE BAR 350mm	2
37.0	EMC CAPACITOR 220V	1	88	SCREW M4 x 38	8
37.1	EMC CAPACITOR 110V	1	89	SCREW M4 x 30	2
38	CORD ARMOR	1	90.1	HANDLE GRIP-RIGHT FRONT	1
39	POWER SUPPLY CABLE	1	90.2	HANDLE GRIP-RIGHT REAR	1
40	N/A	-	91.1	HANDLE GRIP-LEFT FRONT	1
41A	MIXING PADDLE Ø125mm x M14 x 650mm	1	91.2	HANDLE GRIP-LEFT REAR	1
41B	MIXING PADDLE Ø125mm x M14 x 650mm	1	92	SAFETY SWITCH TRIGGER	1
42	N/A	-	93	SAFETY INTERLOCK SWITCH	1
43	N/A	-	94	SWITCH PIVOT PIN Ø5 x 26	1
44.0	SPEED CONTROL UNIT 220V	1	95	SWITCH MOUNT PIN Ø3 x 26	2
44.1	SPEED CONTROL UNIT 110V	1	96	BEARING 6200-LLU	1
45	ADJUSTOR WHEEL	1			

