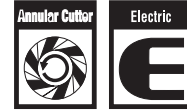


# Portable Fully Automatic Drilling Machine

# ATRAACE

Quick Auto



# ATRAACE QA-4000 Max. 1-9/16"

**QUICK AUTO** Drills Increase Productivity and Reduce Hole Drilling Cost



## Features

- 1-9/16" x 1-3/8" hole drilling capacity
- Fully automatic feed mechanism with power return
- Step feed feature optimizes cutter penetration
- Load detection system monitors and regulates motor speed and cutting feed
- Overload stop detection system helps prevent motor and cutter damage
- Sealed arbor system with through spindle coolant
- Built-in motion detection sensor
- Powerful 750 watt motor
- One-Touch arbor system "No tools required for cutter installation and removal"
- Precision machined die cast aluminum mainframe, motor, motor slide and arbor support bracket
- Chip breaker prevents schwarf and chip nesting
- One year limited warranty



## Specifications

<b>Model</b>	QA-4000		
<b>Power Source (Single Phase)</b>	115 V AC 50 / 60 Hz		
<b>Electric Drill</b>	<b>Rated Power Consumption W</b>	680	
	<b>Rated Current A</b>	6.1	
	<b>No load Speed min<sup>-1</sup>(rpm)</b>	750	
<b>Magnet Power Consumption W</b>	50		
<b>Hole-cutting capacity</b>	<b>Cutter</b>	<b>Hole Diameter</b>	<b>Plate Thickness</b>
	One-touch type Jetbroach 1-3/8" D.O.C.	11/16" to 1-9/16"	3/8" to 1-3/8"
<b>Magnet Holding Power</b>	lbs (kgf)	1,498 (680)	
<b>Magnet Dimensions</b>	inch (mm)	3-1/4"x6-13/16" (82x172)	
<b>Mass (Weight)</b>	lbs (kg)	41 (18.5)	

## Standard Accessories

- 1-3/8" pilot pin #UEA0835-0
- Sample cutting fluid
- 3 mm allen wrench
- 4mm allen wrench
- Motor-side handle
- 8 x 10 mm combination wrench
- Safety chain
- Tool box

## Load Detection System

Optimizes Hole Drilling

- **Load Detector Display**  
Our load detector clearly shows the amount of resistance on the cutter at anytime.
- **Automatic Microcomputer Feed Rate Adjustment**  
The feed speed on our automatic machines is controlled by an on board microcomputer. The feed rate begins slowly and then increases to the appropriate speed for the cutter size and load condition.
- **Automatic Stop Feature**  
When an abnormally large load is placed on the cutter, the feed motor stops automatically to prevent the cutter from becoming overloaded and breaking.

# Portable Fully Automatic Drilling Machine

**BORING**

# ATRAACE

Quick Auto



# ATRAACE QA-5000

Quick Auto Max. 2"



### Features

- Large \*2" x 2" hole drilling capacity
- Fully automatic feed mechanism with power return
- Step feed feature optimizes cutter penetration
- Load detection system monitors and regulates motor speed and cutting feed
- Sealed arbor system with through spindle coolant
- Built-in motion detection sensor
- Powerful 1010 watt motor with two speed 400/750 rpm gear box
- One-Touch arbor system "No tools required for cutter installation and removal"
- Precision machined die cast aluminum mainframe, motor, motor slide and arbor support bracket
- Chip breaker prevents schwarf and chip nesting
- One year limited warranty

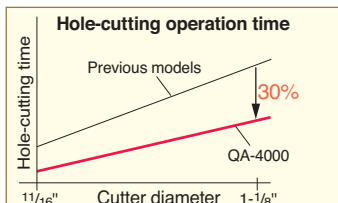
### Specifications

<b>Model</b>		QA-5000	
<b>Power Source (Single Phase)</b>		115 V AC 50 / 60 Hz	
<b>Electric Drill</b>	<b>Rated Power Consumption W</b>	1,010	
	<b>Rated Current A</b>	9.0	
	<b>No load Speed min<sup>-1</sup>(rpm)</b>	400 / 750	
<b>Magnet Power Consumption W</b>		75	
<b>Hole-cutting capacity</b>	<b>Cutter</b>	<b>Hole Diameter</b>	<b>Plate Thickness</b>
	One-touch type Jetbroach 2" D.O.C.	11/16" to 2"	3/8" to 2"
	One-touch type Jetbroach 1-3/8" D.O.C.	11/16" to 1-9/16"	3/8" to 1-3/8"
<b>Magnet Holding Power lbs (kgf)</b>		2,200 (1,000)	
<b>Magnet Dimensions inch (mm)</b>		3-15/16"x7-15/16" (100x200)	
<b>Mass (Weight) lbs (kg)</b>		57 (26)	

\*Can be modified to accept 3" Depth of Cut cutters. Consult factory.

### Quick Autos Reduce Drilling Time!

Because of our exclusive automatic-feed mechanism, total drilling time is 30% less than older style manual feed magnetic drills. Our automatic drills constantly monitor resistance on the cutter and adjust feed rates accordingly. Ultimately holes are cut as quickly and efficiently as possible while maintaining cutter life.



### Standard Accessories

- 1-3/8" Pilot pin #UEA0835-0
- 2" Pilot pin #UEA0850-0
- Sample cutting fluid
- 3 mm Allen wrench
- 8 x 10 mm Combination wrench
- Motor-side handle
- Molded plastic carrying case
- Safety chain

# Portable Fully Automatic Drilling Machine

## Applications:

On-site hole-cutting in steel plates H-Beams, shapes, shaped bars, framework, and other machinery, shipbuilding, bridges and structures, etc. steel reinforcements and construction materials (ASTM A36 equivalent).



# ATRAACE QA-6500 Max. 2-9/16"

Quick Auto



## Features

- Extra large \*2-9/16" x 2" hole drilling capacity
- Fully automatic feed mechanism with power return
- Step feed feature optimizes cutter penetration
- Load detection system monitors and regulates motor speed and cutting feed
- Sealed arbor system with through spindle coolant
- Built-in motion detection sensor
- Powerful 220 volt motor with two speed 400/750 rpm gear box
- One-Touch arbor system "No tools required for cutter installation and removal"
- Precision machined die cast aluminum mainframe, motor, motor slide and arbor support bracket
- Chip breaker prevents schwarf and chip nesting
- One year limited warranty



## Specifications

<b>Model</b>	QA-6500		
<b>Power Source (Single Phase)</b>	220 V - 240 V AC 50 / 60 Hz		
<b>Electric Drill</b>	<b>Rated Power Consumption W</b>	1,010	
	<b>Rated Current A</b>	4.5	
	<b>No load Speed min<sup>-1</sup>(rpm)</b>	400 / 750	
<b>Magnet Power Consumption W</b>	75		
<b>Hole-cutting capacity</b>	<b>Cutter</b>	<b>Hole Diameter</b>	<b>Plate Thickness</b>
One-touch type Jetbroach 2" D.O.C.		11/16" to 2-9/16"	3/8" to 2"
One-touch type Jetbroach 1-3/8" D.O.C.		11/16" to 1-9/16"	3/8" to 1-3/8"
<b>Magnet Holding Power</b>	lbs (kgf)	2,200 (1,000)	
<b>Magnet Dimensions</b>	inch (mm)	3-15/16"x7-15/16" (100 x 200)	
<b>Mass (Weight)</b>	lbs (kg)	57 (26)	

\*Can be modified to accept 3" Depth of Cut cutters. Consult factory.

## Standard Accessories

- 1-3/8" Pilot pin #UEA0835-0
- 2" Pilot pin #UEA0850-0
- Safety chain
- 3 mm Allen wrench
- 4 mm Allen wrench
- 8 x 10 mm Combination wrench
- Sample cutting fluid
- Tool box

## Exclusive Automatic Emergency Stop Feature!

Nitto Kohki was the first company to introduce the automatic stop feature onto magnetic base drills. This feature automatically stops the drill from operating when sudden lateral force is detected.



Built-in acceleration sensor inside

# Portable Semi-Automatic Drilling Machine

**BORING**

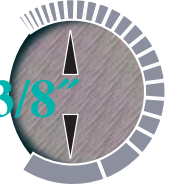
# ATRAACE

Quick Auto



# ATRAACE WA-3500 Max. 1-3/8"

Advanced Technology Reducing Hole Drilling Cost



### Features

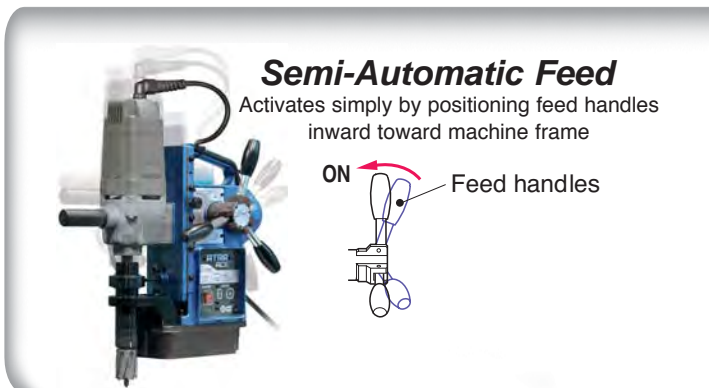
- 1-3/8" x 2" hole drilling capacity
- Semi-automatic feed mechanism
- Powerful 1100 watt double insulated motor
- Overload stop detection system helps prevent motor and cutter damage
- Load detection system monitors and regulates motor speed and cutting feed
- Sealed arbor system with through spindle coolant
- Built-in motion detection sensor
- One-Touch arbor system "No tools required for cutter installation and removal"
- Accepts Jetbroach carbide tipped and Hibroach HSS annular cutters
- Precision machined die cast aluminum mainframe, motor slide and arbor support bracket
- One year limited warranty

### Specifications

Model		WA-3500	
Power Source (Single Phase)		110 - 120 V AC 50 / 60 Hz	220 - 240 V AC 50 / 60 Hz
Electric Drill	Rated Power Consumption W	1100	
	Rated Current A	10.2	5.1
	No load Speed min <sup>-1</sup> (rpm)	950	
Magnet Power Consumption W		34	
Hole-cutting capacity		Cutter	Hole Diameter Plate Thickness
One-touch type Jetbroach		11/16" to 1-3/8"	3/8" to 2"
One-touch type Hibroach		7/16" to 1"	3/8" to 1"
Magnet Holding Power		7,056 (720) N (kgf) / 1583 lbs.	
Magnet Dimensions		3-5/8" x 8-1/2"	
Mass (Weight)		44 lbs.	

### Semi-Automatic Feed

Activates simply by positioning feed handles inward toward machine frame



### Standard Accessories

- 1-3/8" pilot pin #UEA0835-0
- Safety chain
- Motor-side handle
- 3 mm allen wrench
- 8 x 10 mm combination wrench
- Oil cap assembly
- Sample cutting fluid
- Molded plastic carrying case

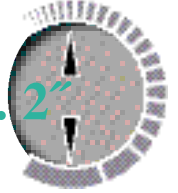


# ATRAACE

Quick Auto



# ATRAACE WA-5000 Max. 2"



Advanced Technology Reducing Hole Drilling Cost



### Features

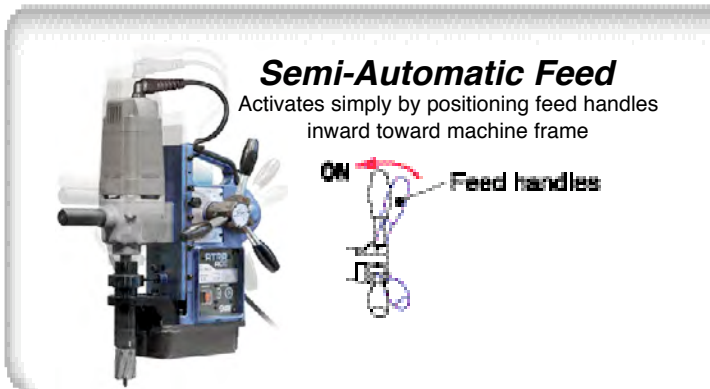
- 2" x 3" hole drilling capacity
- Semi-automatic feed mechanism
- Powerful 1100 watt double insulated motor
- Overload stop detection system helps prevent motor and cutter damage
- Load detection system monitors and regulates motor speed and cutting feed
- Sealed arbor system with through spindle coolant
- Built-in motion detection sensor
- One-Touch arbor system "No tools required for cutter installation and removal"
- Accepts Jetbroach carbide tipped and Hibroach HSS annular cutters
- Precision machined die cast aluminum mainframe, motor slide and arbor support bracket
- One year limited warranty

### Specifications

Model		WA-5000	
Power Source (Single / Phase)		110 → 120 V AC 50 / 60 Hz	220 → 240 V AC 50 / 60 Hz
Electric Drill	Rated Power Consumption	W 1100	
	Rated Current	A 10.8 5.4	
	No Load Speed	rpm (r/min) 350 / 850	
Magnet Power Consumption		W 70	
Hole-Drilling Capacity	Cutter	Hole Diameter	Plate Thickness
	One-touch type JETBROACH TBL	17.5 to 50 mm (1 1/8" to 2")	8 to 75 mm (3/8" to 3")
	One-touch type HIBROACH HSL	14 to 50 mm (9/16" to 2")	8 to 50 mm (5/8" to 2")
Magnet Holding Power		N (kg) (Lbs) 5,800 (1,000) (9,200)	
Magnet Dimensions		mm (Inches) 101 x 201 (4" x 8")	
Mass (Weight)		kg (Lbs) 28 (61)	

### Semi-Automatic Feed

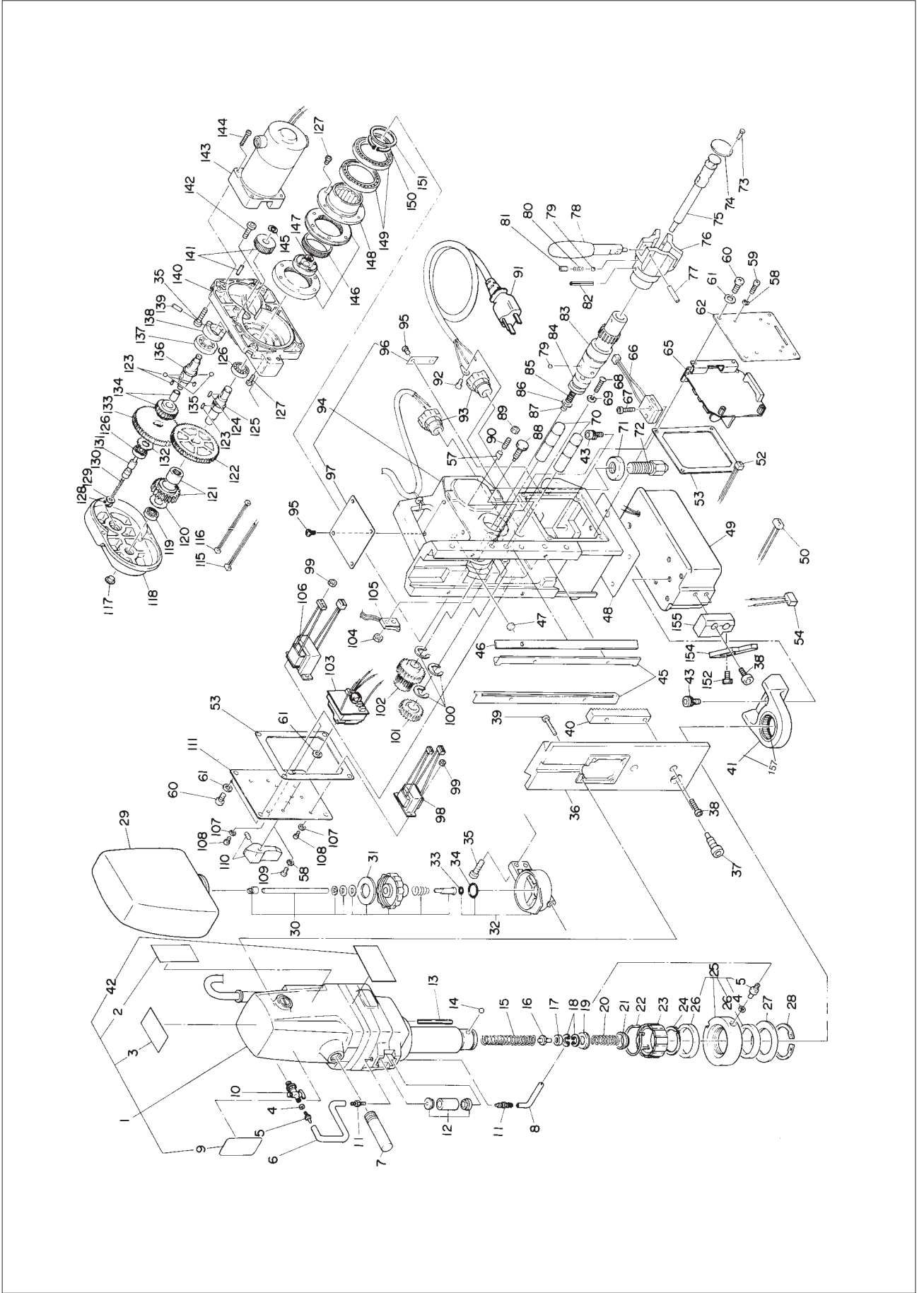
Activates simply by positioning feed handles inward toward machine frame



### Standard Accessories

- 2" pilot pin #UEA0850-0
- Safety chain
- Motor-side handle
- 3 mm allen wrench
- 8 x 10 mm combination wrench
- Sample cutting fluid
- Molded plastic carrying case

# ATRA ACE QA-4000 (110-120V) ASSEMBLY AND PARTS LIST



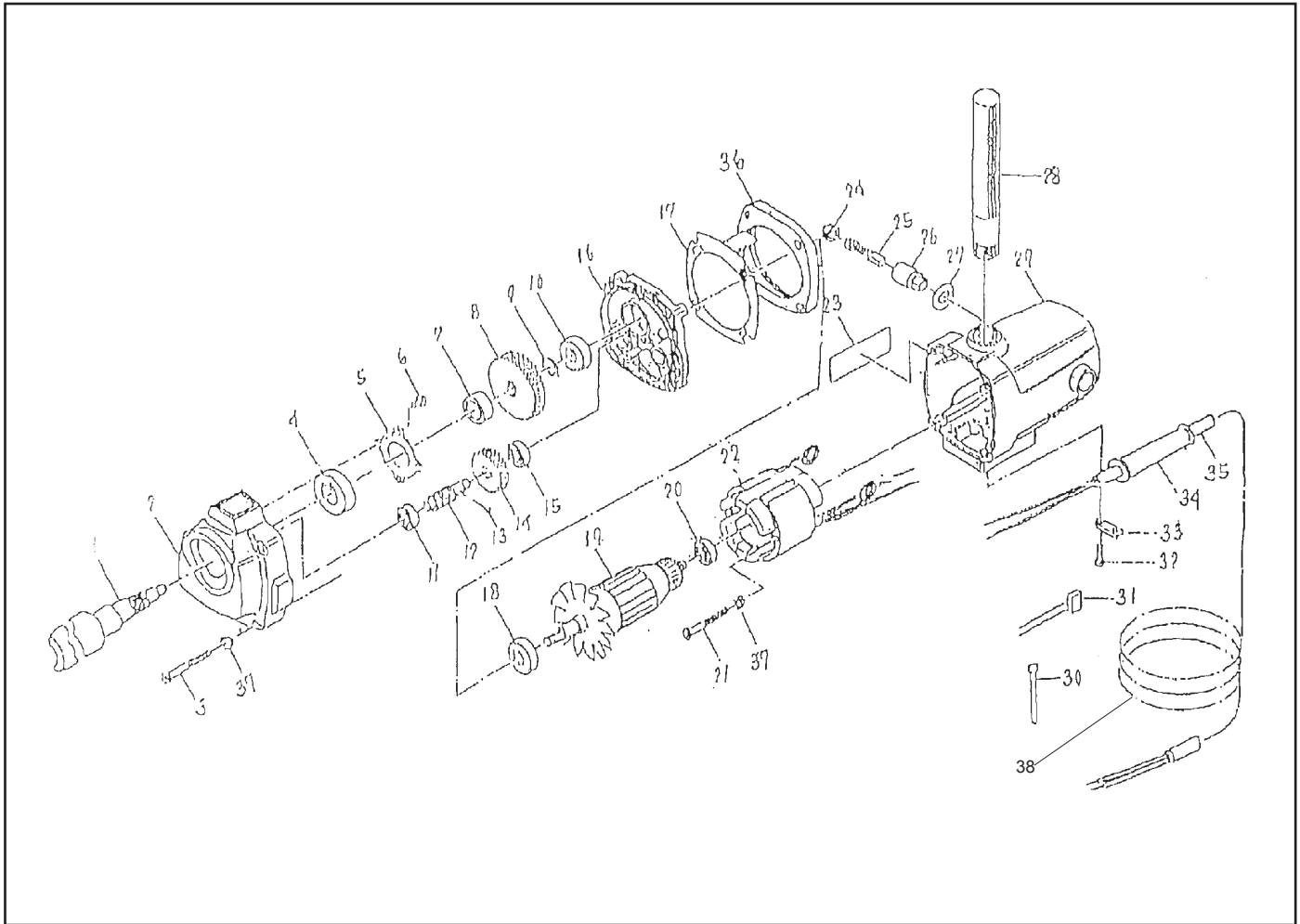
The parts numbers with ( ) are included in the Assy parts written above them.

No.	Part No.	Part Name	Q'ty	Price	No.	Part No.	Part Name	Q'ty	Price	No.	Part No.	Part Name	Q'ty	Price
1	TB04072	Drill Motor Assy (115V)	1 set		60	TP02419	+ Screw 6 X 10	8		121	TB01360	Spur Gear 30 M1 Assy	1 set	
2	(TB00598)	Carbon Brush (2 pcs/set)	1 set		61	TQ01331	Seal Washer M6	9		122	TQ02435	Spur Gear 70M1B	1	
3	(TQ05066)	Cutter Caution Label	1		62	TQ06040	Circuit Board	1		123	TQ01913	Sunk Key 4 X 4 X 7 Round-end	2	
4	(TQ05063)	Cutter Mounting Label	1		65	TB05290	Control Board Assy	1 set		124	TP10130	Sunk Key 3 X 3 X 10	1	
9	(TQ05064)	Cutter Label	1		66	TQ01363	Slide Detection Device	1 set		125	TQ01923	Gear Shaft B	1	
42	(CP21947)	Seal Packing	2		67	TP14471	Hex. Socket Bolt 4 X 20	2		126	TQ01916	Ball Bearing 6801ZZ	2	
5	TP14500	Hose Nipple	2		68	FS00315	+ Pan Head Screw 2 X 20	2		127	TP04715	Hex. Bolt 4 X 8	12	
6	TP15821	Tube 4 X 7 X 240	1 set		69	TQ00729	Spring Washer M2	2		128	TQ01920	Retaining Ring RTW-9	1	
7	TB02534	Side Handle Assy	1 set		70	TQ00707	Shaft	2		129	TQ01912	Spring Stopper	1	
8	TP15820	Tube 4 X 7 X 120	1 set		71	TQ03914	Hex. Nut Type 3 M16	1		130	TQ01911	Spring 0.6 X 3 X 35	1	
10	TP14495	Petcock Valve 1/8(PT)	1		72	TQ01954	Stabilizer Shaft	1		131	TQ01919	Spool	1	
11	TQ00672	Dropper Nipple	2		73	TP08598	+ Screw 3 X 5	3		132	TQ01963	Washer 14.5 X 25 X 0.6	1	
12	TB00503	Oil Dropper Assy	1 set		74	TQ00844	Mounting Plate	1		133	TQ02434	Spur Gear 70M1A	1	
13	TP03261	Spring Pin 4 X 26 AW	1		75	TQ01903	Inner Shaft	1		134	TB01358	Clutch Gear Sub Assy	1 set	
14	TB01672	Ball 5/16 Assy	1 set		76	TQ01901	Handle Boss	1		135	TP15428	Ball 5mm Dia.	2	
15	TP15998	Spring 1.6 X 16.2 X 120	1		77	TP12821	Spring Pin 5 X 26	3		136	TQ01915	Gear Shaft A	1	
16	TQ01895	Pilot Spacer	1		78	TQ00680	Rod Handle	3		137	TQ01917	Ball Bearing 6803ZZ	1	
17	TP15848	Spacer 10.5 X 19 X 5	1		79	CP01123	Ball 3/16	7		138	TQ01918	Shift Ring	1	
18	TP13905	Retaining Ring RTW-19	2		80	TP06396	Spring	3		139	TQ01960	Roll Pin 4 X 22	1	
19	TB01348	Washer Assy	1 set		81	TP06397	Hex. Screw 6 X 8	3		140	TQ01909	Gear Box	1	
20	TQ01898	Spring 0.8 X 12 X 31	1 set		82	TP13891	Spring Pin 5 X 38	1		141	TB01356	Plain Gear 41 Assy	1 set	
21	TB01349	Push Ring Assy	1		83	TQ01902	Clutch Shaft	1		142	TP04197	Hex. Bolt 6 X 30	2	
22	TQ01896	Twist Spring	1		84	TQ01904	Clutch Ring	1		143	TB02681	Feed Motor Assy (115V)	1 set	
23	TQ01897	Sleeve	1		85	TQ00682	Spring 1.2 X 8 X 17	1		144	(TB00599)	Carbon Brush Assy (2 pcs/set)	1 set	
24	TP15239	Retaining Ring C-28	1		86	TP00093	Plain Washer M6	1		145	TP18619	Hex. Socket Head Cap Screw 4 X 30	4	
25	TB00713	Oil Ring Assy	1 set		87	TQ00683	Grip Ring GS-6.0	1		146	TB00510	Harmonic Assy	1 set	
26	(TP14499)	Oil Seal GD38 X 48 X 4	2		88	TP02931	Set Screw	1		147	TP12328	Retaining Ring STW-9	1	
27	TP12773	Washer 38.5 X 54 X 1	1		89	TP07419	Hex. Nut Type 3 M6	5		148	TQ01952	Clutch	1	
28	TP14969	Retaining Ring ISTW-38	1		90	TQ04781	Hex. Socket Set Screw 6 X 14	5		149	TQ00725	Ball Bearing 6809 ZZ	2	
29	TQ04779	Oil Tank	1		91	TA9A757	Cable Assy	1 set		150	TP17384	Retaining Ring C-32	1	
30	TB03785	Cap Assy	1 set		92	LP08489	+ Screw 4 X 6	1		151	TP14412	Retainer Holder	1	
31	(TQ00701)	Packing Cap	1		93	TP13889	Connector SC4-3	2		152	TP01945	Hex. Bolt 5 X 12	1	
32	TB01380	Oil Tank Bracket Sub Assy	1 set		94	TB04377	Body Sub Assy A	1 set		154	TQ04949	Blade	1	
33	(TP11994)	O-Ring P-4	1		95	(TP05136)	Rivet No.2 X 4.8	6		155	TQ04950	Blade Base	1	
34	(CP20180)	O-Ring P-18	1		96	(TP04769)	Plate Serial Number	1						
35	TP03086	Hex. Bolt 6 X 20	6		97	(TQ05610)	Plate Warning	1						
36	TQ01899	Slide Board	1		98	TB03912	Transformer Sensor Assy	1 set						
37	TP14717	Hex. Socket Bolt 10 X 20	1		99	TP00067	Hex. Nut M3	3						
38	TP14178	Hex. Bolt 6 X 10	2		100	TP04126	Snap Ring E-12	3						
39	TP08013	Hex. Bolt 5 X 25	4		101	TQ00708	Spur Gear 24 M1.5	1						
40	TP15111	Rack	1		102	TQ00706	Spur Gear 16 X 24	1						
41	TB02694	Bracket Assy	1 set		103	TB03702	Switch Assy	1						
157	(TQ03444)	Needle Bearing B-2410	1		104	TP02627	Hex. Nut M2	2						
43	TQ03344	Hex. Socket Bolt 8 X 20	6		105	TQ00703	Limit Switch DC3A-D3RB	1						
44	TQ01905	Jib	2		106	TB03911	Trans. Power Supply Assy (115V)	1 set						
46	TQ01905	Jib	1		107	TQ01330	Seal Washer M3	3						
47	TQ00394	Seal Bushing	1		108	TP00056	+ Screw 3 X 6	3						
48	TB02687	Square Pole Assy (115V)	1		109	TP12819	+ Pan Head Screw 4 X 6	2						
49	TB00578	H Cord Assy	1 set		110	TB01381	Switch Knob Assy	1 set						
50	TB00577	F Cord Assy	1 set		111	TQ05061	Switch Plate	1						
52	TQ01933	Packing for Body	2		115	TB00573	D Cord Assy	1 set						
53	TQ04783	Supporter	5		116	TB03809	Cord Assy M-M	1 set						
58	TQ00258	Seal Washer M4	6		117	TQ01962	Collar Cap K-100 16CSBL	1						
59	TQ01526	Pan Head Screw 4 X 10	4		118	TQ04982	Gear Box Cover	1						
					119	TQ01924	Ball Bearing 688ZZ	1						
					120	TQ01926	Washer 10.2 X 20 X 0.6	1						

**ACCESSORIES**

No.	Part No.	Part Name	Q'ty	Price
	TP04696	Hex. Wrench Key 3	1	
	TP01939	Hex. Wrench Key 4	1	
	TP17014	Spanner 8 X 10	1	
	UEA0835	Pilot Pin 5/16" X 1-3/8" DOC	1	
	TA99027	Safety Chain Assy	1 set	
	TB02145	Cutting Oil 0.5L	1	
	TQ05611	Instruction Manual	1	
	TP10198	Tool Box 285 X 125 X 62	1	
	TQ03060	Label Combination	1	

# QA-3500/QA-4000 MOTOR ASSEMBLY AND PARTS LIST

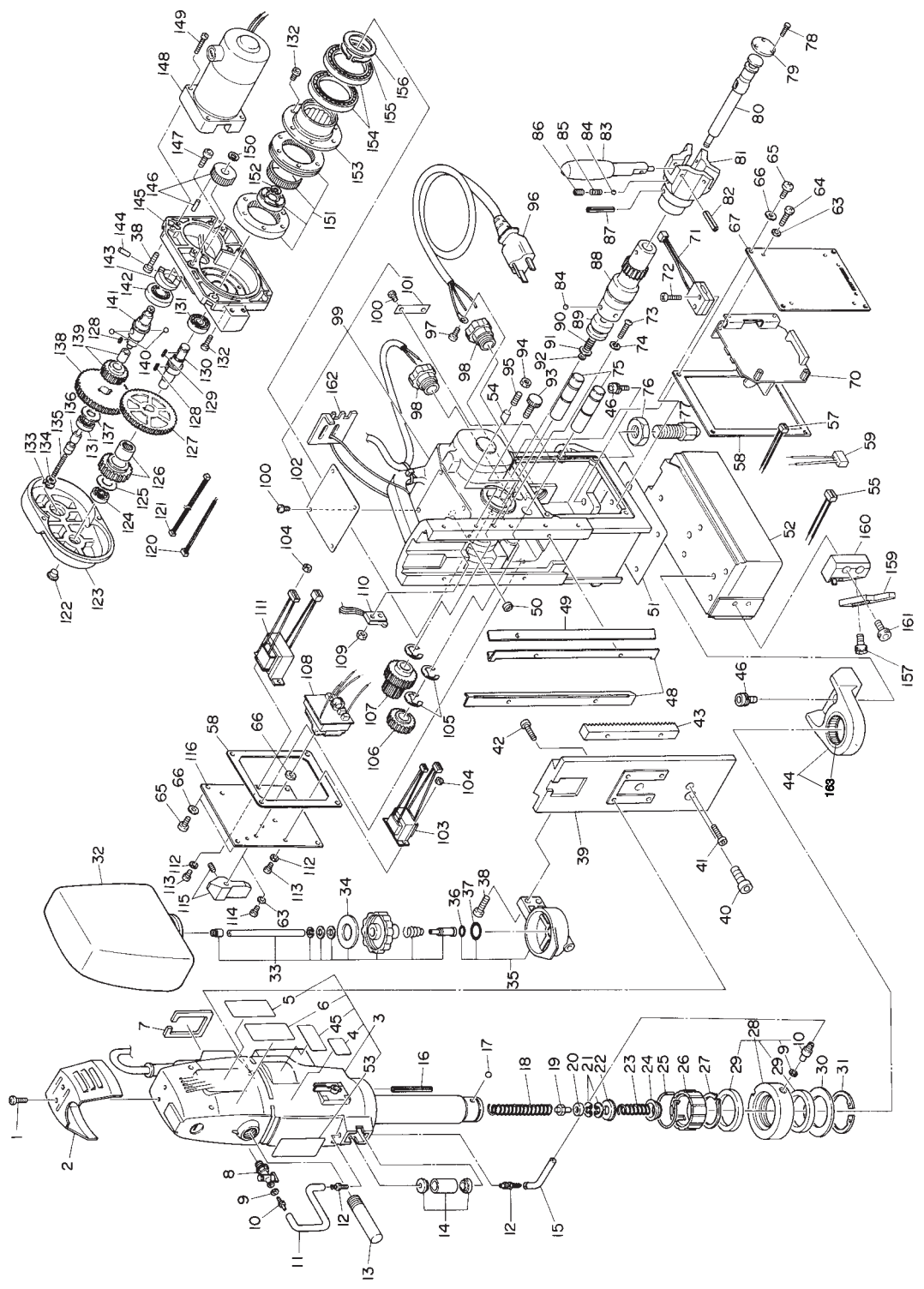


The Part Numbers with ( ) are included in the Ass'y parts written above them.

No.	Part No.	Part Name	Q'ty	Price
1	TQ01959	Spindle Arbor	1	
2	TQ01137	Gear Case	1	
3	TP17449	+ Screw 5 X 60	4	
4	TP04160	Ball Bearing 6203 ZZ	1	
5	TP00858	Bearing Stopper	1	
6	TP11492	+ Screw 5 X 10	4	
7	TQ00860	Collar	1	
8	TQ00861	Spiral Gear (B)	1	
9	TP18356	Retaining Ring C-14	1	
10	TP17438	Ball Bearing 6200Z	1	
11	TP00468	Ball Bearing 608Z	1	
12	TQ00862	Pinion	1	
13	TP06393	Sunk Key 3 X 3 X 5	1	
14	TQ00863	Spiral Gear (A)	1	
15	TQ00468	Ball Bearing 608ZZ	1	
16	TQ00864	Bearing Bracket	1	
17	TQ00865	Wind Shield Plate	1	
18	TP17438	Ball Bearing 6200Z	1	
19	TB00820	Armature Ass'y (115V)	1 set	

No.	Part No.	Part Name	Q'ty	Price
20	TP00468	Ball Bearing 608Z	1	
21	TP17449	+ Screw 5 X 60	4	
22	TB00822	Field Ass'y (115V)	1 set	
23	TQ04417	Name Plate (115V)	1	
24	TQ00867	Brush Cap	2	
25	TB00598	Carbon Brush (2 pcs/set)	1 set	
26	TQ00868	Brush Holder	2	
27	TB00869	Insulation Washer	1	
28	TB02534	Side Handle Ass'y	1 set	
29	TQ00870	Motor Housing	1	
30	LP13171	Cable Band	1	
31	TP16481	Condenser SM-37R8291	1	
32	LP30251	+ Screw 4 X 16	2	
33	TP13362	Cord Clamp	1	
34	TP13363	Cord Armor	1	
35	TQ01440	Cord for Electric Motor	1	
36	TQ00866	Spacer	1	
37	TP00513	Spring Washer M5	6	
38	TQ01440	Cord for Electric Motor	1	

# ATRA ACE QA-5000 (110-120V) ASSEMBLY AND PARTS LIST



The parts numbers with ( ) are included in the Assy parts written above them.

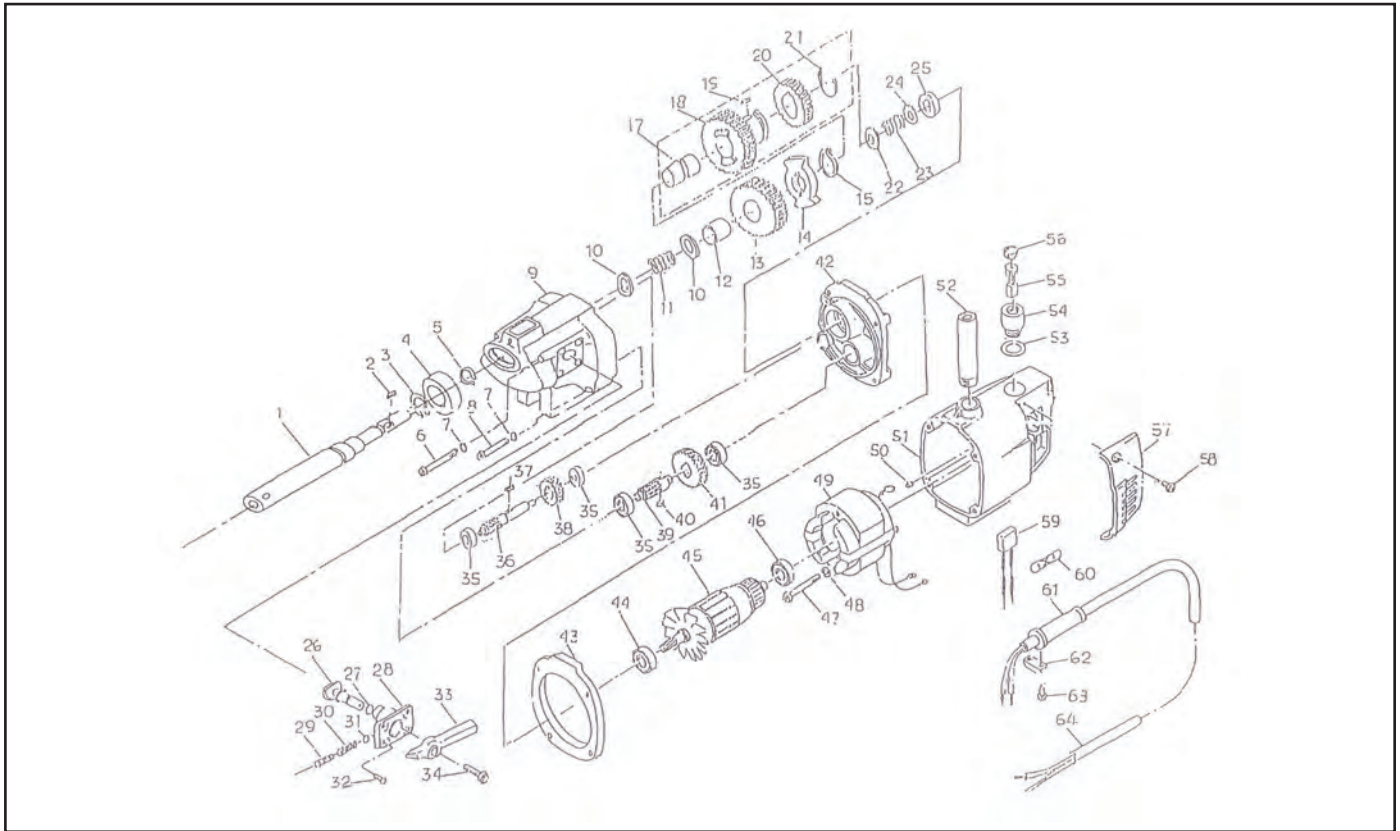
No.	Part No.	Part Name	Q'ty	Price	No.	Part No.	Part Name	Q'ty	Price
1	LP30156	Pan Head Screw 4 X 6	2		58	TQ00932	Packing Body	2	
2	TQ00926	Protection Cover	1		59	TP02639	Hex. Nut M4	9	
3	TB04020	Drill Motor Assy for QA-5000	1 set		60	TQ00258	Seal Washer M4	6	
4	TA9A028	Brush Assy (2 pcs/set)	1 set		64	TQ01526	Pan Head Screw 4 X 10	4	
45	TQ05077	Label - Drill rpm	1		65	TP02419	+ Screw 6 X 10	8	
5	TQ05065	Label - Cutter Insertion	1		66	TQ01331	Seal Washer M6	9	
6	TQ05064	Cutter - Mounting Label	1		67	TQ06041	Mounting Plate	1	
54	TQ05066	Cutter - Caution Label	1		70	TB05298	Control Board Assy	1 set	
7	TQ00927	Drill Motor Packing	1		71	TB01363	Slide Detection Device	1 set	
8	TP14495	Petcock Valve 1/8(PT)	2		72	TP14471	Hex. Socket Bolt 4 X 20	2	
9	CP21947	Seal Packing	2		73	FS00315	+ Pan Head Screw 2 X 20	2	
10	TP14500	Hose Nipple	2		74	TQ00729	Spring Washer M2	2	
11	TP15821	Tube 4 X 7 X 240	1 set		75	TQ00707	Shaft	2	
12	TQ00672	Dropper Nipple	2		76	TP03914	Hex. Nut Type 3 M16	1	
13	TB02534	Slide Handle Assy	1 set		77	TQ00720	Stabilizer Shaft	1	
14	TB00503	Oil Dropper Assy	1 set		78	TP08598	+ Screw 3 X 5	3	
15	TP15820	Tube 4 X 7 X 120	1 set		79	TQ00844	Name Plate -Auto Feeder	1	
16	TP03261	Spring Pin 4 X 26 AW	1		80	TQ01903	Inner Shaft	1	
17	TB01672	Ball 5/16 Assy	1 set		81	TQ01901	Handle Boss	1	
18	TP15998	Spring 1.6 X 16.2 X 120	1		82	TP12821	Spring Pin 5 X 26	3	
19	TQ01895	Pilot Spacer	1		83	TQ00680	Rod Handle	3	
20	TP15848	Spacer 10.5 X 19 X 5	2		84	CP01123	Ball 3/16	7	
21	TP13905	Retaining Ring RTW-19	1		85	TP06396	Spring	3	
22	TB01348	Washer Assy	1 set		86	TP06397	Hex. Screw 6 X 8	3	
23	TQ01898	Spring 0.8 X 12 X 31	1		87	TP13891	Spring Pin 5 X 38	1	
24	TB01349	Push Ring Assy	1 set		88	TQ01902	Clutch Shaft	1	
25	TQ01896	Twist Spring	1		89	TQ01904	Clutch Ring	1	
26	TQ01897	Sleeve	1		90	TQ00682	Spring 1.2 X 8 X 17	1	
27	TP15239	Retaining Ring C-28	1		91	TP00092	Plain Washer M6	1	
28	TB00713	Oil Ring Assy	1 set		92	TQ00683	Grip Ring GS-6.0	1	
29	(TP14499)	Oil Seal GD38 X 48 X 4	2		93	TP02931	Set Screw	1	
30	TP12773	Washer 38.5 X 54 X 1	1		94	TP07419	Hex. Nut Type 3 M6	5	
31	TP14969	Retaining Ring ISTW-38	1		95	TQ04781	Hex. Socket Set Screw 6 X 14	5	
32	TQ04779	Oil Tank	1		96	TA9A757	Cable Assy	1 set	
33	TB03785	Cap Assy	1 set		97	LP08489	+ Screw 4 X 6	1	
34	(TQ00701)	Packing Cap	1		98	TP13889	Connector SC4-3	2	
35	TB01380	Oil Tank Bracket Sub Assy	1 set		99	TB04376	Body Sub Assy A	1 set	
36	(TP11994)	O-Ring P-4	1		100	(TP05136)	Rivet No. 2 X 4.8	6	
37	(CP20180)	O-Ring P-18	1		101	(TP04769)	Plate Serial Number	1	
38	TP03086	Hex. Bolt 6 X 20	6		102	(TQ05610)	WARNING Plate	1	
39	TQ02497	Slide Board	1		103	TB03912	Transformer Sensor Assy	1 set	
40	TP14717	Hex. Socket Bolt 10 X 20	1		104	TP00067	Hex. Nut M3	3	
41	TP07118	Hex. Bolt 6 X 16	2		105	TP04126	Snap Ring E-12	3	
42	TP04532	Hex. Socket Bolt 5 X 30	4		106	TQ00708	Spur Gear 24 M1.5	1	
43	TQ02496	Rack	1		107	TQ00706	Spur Gear 16 X 24	1	
44	TB02694	Bracket Assy	1 set		108	TB03702	Switch Assy	1 set	
163	(TQ03444)	Needle Bearing B-2410	1		109	TP02627	Hex. Nut M2	2	
46	TQ03344	Hex. Socket Bolt 8 X 20	6		110	TQ00703	Limit Switch DC3A-D3RB	1	
48	TP12777	Slide Plate	2		111	TB03911	Trans. Power Supply Assy (115V)	1 set	
49	TQ01905	Jib	1		112	TQ01330	Seal Washer M3	3	
50	TQ00394	Seal Bushing	1		113	TP00153	+ Screw 3 X 12	3	
51	TQ01928	Packing for Pole	1		114	TB12819	Pan Head Screw 4 X 6	2	
52	TB04022	Square Pole Assy	1 set		115	TB01381	Switch Knob Assy	1 set	
54	TQ04783	Supporter	5		116	TQ05073	Switch Plate	1	
55	TB00578	H Cord Assy	1 set		120	TB00573	D Cord Assy	1 set	
57	TB00577	F Cord Assy	1 set		121	TB03809	Cord Assy M-M	1 set	
					122	TQ01962	Collar Cap K-100 16CSBL	1	

No.	Part No.	Part Name	Q'ty	Price	No.	Part No.	Part Name	Q'ty	Price
123	TQ04982	Gear Box Cover	1		137	TQ01963	Washer 14.5 X 25 X 0.6	1	
124	TQ01924	Ball Bearing 688ZZ	1		138	TQ02434	Spur Gear 70M1A	1	
125	TQ01926	Washer 10.2 X 20 X 0.6	1		139	TB01358	Clutch Gear Sub Assy	1 set	
126	TB01360	Spur Gear 30 M1 Assy	1 set		140	TP15428	Ball 5mm Dia.	2	
127	TQ02435	Spur Gear 70 M1B	1		141	TP01915	Gear Shaft A	1	
128	TQ01913	Sunk Key 4 X 4 X 7 Round-end	2		142	TQ01917	Ball Bearing 6803ZZ	1	
129	TP10130	Sunk Key 3 X 3 X 10 Round-end	1		143	TQ01918	Shift Ring	1	
130	TQ01923	Gear Shaft B	1		144	TQ01960	Roll Pin 4 X 22	1	
131	TQ01916	Ball Bearing 6801ZZ	2		145	TQ01909	Gear Box	1	
132	TP04715	Hex. Bolt 4 X 8	12		146	TB01356	Plain Gear 41 Assy	1 set	
133	TQ01920	Retaining Ring RTW-9	1		147	TP04197	Hex. Bolt 6 X 30	2	
134	TQ01912	Spring Stopper	1		148	TB04014	Feed Motor Assy	1 set	
135	TQ01911	Spring 0.6 X 3 X 35	1		-	(TB00599)	Carbon Brush Assy (2 pcs/set)	1 set	
136	TQ01919	Spool	1		149	TP18619	Hex. Socket Head Cap Screw 4 X 30	4	
140	TQ01963	Washer 14.5 X 25 X 0.6	1		150	TQ01961	Grip Ring GS-8	1	
142	TQ01917	Ball Bearing 6803ZZ	1		151	TB00510	Harmonic Assy	1	
143	TQ01918	Shift Ring	1		152	TP12328	Retaining Ring STW-9	1	
144	TQ01960	Roll Pin 4 X 22	1		153	TQ01952	Clutch	1	
145	TQ01909	Gear Box	1		154	TQ00725	Ball Bearing 6809 ZZ	2	
146	TB01356	Plain Gear 41 Assy	1 set		155	TP17384	Retaining Ring C-32	1	
147	TP04197	Hex. Bolt 6 X 30	2		156	TP14412	Retainer Holder	1	
148	TB04014	Feed Motor Assy	1 set		157	TP01945	Hex. Bolt 5 X 12	1	
-	(TB00599)	Carbon Brush Assy (2 pcs/set)	1 set		159	TQ04949	Blade	1	
149	TP18619	Hex. Socket Head Cap Screw 4 X 30	4		160	TB03863	Blade Base Assy	1 set	
150	TQ01961	Grip Ring GS-8	1		161	TP14178	Hex. Bolt 6 X 10	2	
151	TB00510	Harmonic Assy	1		162	TQ04952	Chip Stopper	1	

**ACCESSORIES**

No.	Part No.	Part Name	Q'ty	Price
	TP04696	Hex. Wrench Key 3	1	
	TP01939	Hex. Wrench Key 4	1	
	TP17014	Spanner 8 X 10	1	
	UEA0850	Pilot Pin 5/16" X 2" DOC	1	
	UEA0835	Pilot Pin 5/16" X 1-3/8" DOC	1	
	TA99027	Safety Chain Assy	1 set	
	TB02145	Cutting Oil 0.5L	1	
	TQ05611	Instruction Manual	1	
	TP10198	Tool Box 285 X 125 X 62	1	
	TQ05186	Label Combination	1	

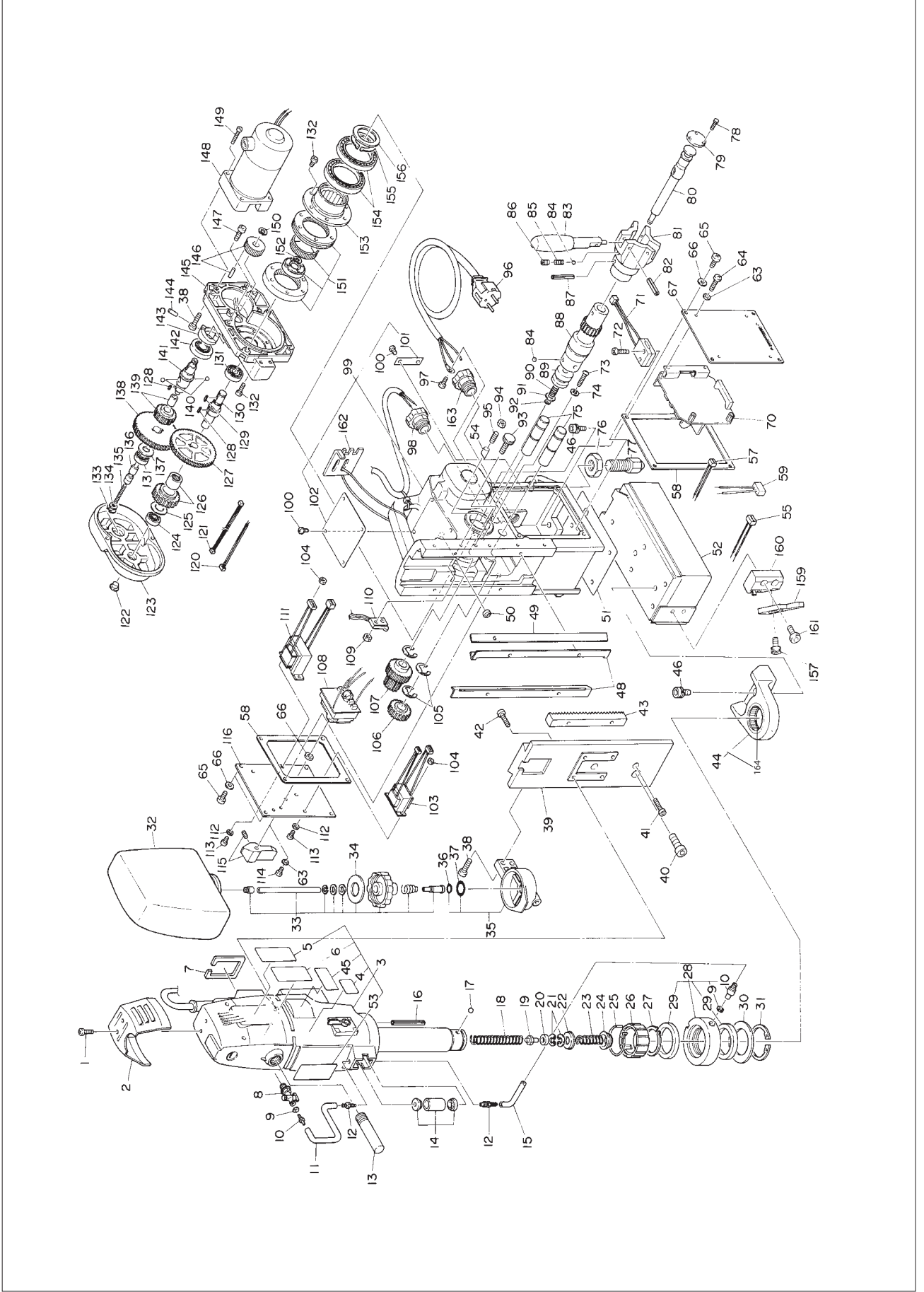
# QA-5000 MOTOR ASSEMBLY AND PARTS LIST



The part numbers with ( ) are included in the Ass'y parts written above them.

No.	Part No.	Part Name	Q'ty	Price	No.	Part No.	Part Name	Q'ty	Price
1	TQ02521	Spindle Arbor	1		33	TP16489	Lever SM-378284-1	1	
2	TQ00979	Sunk Key 4 X 4 X 7	1		34	TP09693	Hex Bolt 4 X 14	1	
3	CP20569	Retaining Ring C-47	1		35	TP17380	Ball Bearing 629	4	
4	TP17382	Ball Bearing 6005Z	1		36	TQ00985	Pinion (L)	1	
5	CQ02200	Retaining Ring C-25	1		37	TP16506	Sunk Key 4 X 4 X 10	1	
6	TQ00980	+ Round Head Screw 5 X 145	2		38	TQ00986	Spiral Gear (S)	1	
7	TP00513	Spring Washer M5	4		39	TQ00987	Pinion (H)	1	
8	TQ00981	+ Round Head Screw 5 X 80	2		40	TP13351	Sunk Key 3 X 3 X 7	1	
9	TQ00982	Gear Case	1		41	TP16516	Spiral Gear (A)	1	
10	TP16502	Plain Washer	2		42	TQ00662	Bearing Bracket	1	
11	TP16501	Spring (L)	1		43	TP16488	Spacer	1	
12	TP06503	Bush	1		44	TP06718	Ball Bearing 6201Z	1	
13	TA9A584	Spiral Gear B-L Ass'y	1		45	TB03381	Armature Ass'y (115V)	1 set	
14	TP16505	Boss	1		46	TP06242	Ball Bearing 629ZZ	1	
15	CP03040	Retaining Ring C-20	1		47	TQ00988	+ Round Head Screw 5 X 75	2	
16	TB00750	Spiral Gear B-H Ass'y	1 set		48	TP00513	Spring Washer M5	2	
17	TQ00976	Needle Bearing HK2012	2		49	TB03380	Field Ass'y (115V)	1 set	
18	TB01087	Spiral Gear	1		50	TP13355	Rubber Packing	1	
19	TP16497	Sunk Key 5 X 5 X 7	1		51	TQ00989	Motor Housing	1	
20	TQ00983	Spur Gear	1		52	TB02534	Side Handle Ass'y	1 set	
21	TP17384	Retaining Ring C-32	1		53	TP13359	Insulation Washer	2	
22	TP16507	Plain Washer 20.2 X 26 X 1	1		54	TP13358	Brush Holder	2	
23	TP16508	Spring (H)	1		55	TA9A028	Brush Ass'y (2 pcs/set)	1 set	
24	TP16509	Plain Washer 15.2 X 24.2 X1	1		56	TP13357	Brush Cap	2	
25	TP17383	Ball Bearing 6202	1		57	TP13360	Cover	1	
26	TQ00984	Cam Shaft	1		58	TP11245	+ Screw 4 X 10	1	
27	TQ09421	O Ring P-6	1		59	TP16481	Condenser SM-37R8291	1	
28	TP16490	Guide Boss	1		60	TQ00990	Insulated Connector FNCE-2	2	
29	TP18684	Hex Socket Set Screw 4 X 8	1		61	TP13363	Cord Armor	1	
30	TP16493	Coil Spring	1		62	TP13362	Cord Clamp	1	
31	TP16492	Steel Ball	1		63	TP17453	+ Screw 4 X 20	2	
32	TP17385	+ Screw 4 X 12	4		64	TQ00991	Cable from Motor	1	

# ATRA ACE QA-6500 (220-240V) ASSEMBLY AND PARTS LIST



The parts numbers with ( ) are included in the Assy parts written above them.

No.	Part No.	Part Name	Q'ty	Price
1	LP30156	Pan Head Screw 4 X 6	2	
2	TQ00926	Protection Cover	1	
3	TB03986	Drill Motor Sub Assy B	1 set	
4	TA9A028	Brush Assy (2 pcs/set)	1 set	
45	TQ05078	Label Drill rpm	1	
5	TQ05063	Caution Label	1	
6	TQ05065	Label - Cutter Insertion	1	
6	TQ05064	Cutter Mounting Label	1	
54	TQ05066	Cutter Caution Label	1	
7	TQ00927	Drill Motor Packing	1	
8	TP14495	Petcock Valve 1/8(PT)	1	
9	CP21947	Seal Packing	2	
10	TP14500	Hose Nipple	2	
11	TB01098	Tube 4 X 7 X 240	1 set	
12	TP15821	Dropper Nipple	2	
13	TB02534	Side Handle Assy	1 set	
14	TB00503	Oil Dropper Assy	1 set	
15	TP15820	Tube 4 X 7 X 120	1 set	
16	TP03261	Spring Pin 4 X 26 AW	1	
17	TB01672	Ball 5/16 Assy	1 set	
18	TP15998	Spring 1.6 X 16.2 X 120	1	
19	TQ01895	Pilot Spacer	1	
20	TP15848	Spacer 10.5 X 19 X 5	2	
21	TP13905	Retaining Ring RTW19	1 set	
22	TB01348	Washer Assy	1 set	
23	TQ01898	Spring 0.8 X 12 X 31	1	
24	TB01349	Push Ring Assy	1 set	
25	TQ01896	Twist Spring	1	
26	TQ01897	Sleeve	1	
27	TP15239	Retaining Ring C-28	1	
28	TB00713	Oil Ring Assy	1 set	
29	(TP14499)	Oil Seal GD38 X 48 X 4	2	
30	TP12773	Washer 38.5 X 54 X 1	1	
31	TP14969	Retaining Ring ISTW-38	1	
32	TQ04779	Oil Tank	1	
33	TB03785	Cap Assy	1 set	
34	(TQ00701)	Packing Cap	1	
35	TB01380	Oil Tank Bracket Sub Assy	1 set	
36	(TP11994)	O-Ring P-4	1	
37	(CP20180)	O-Ring P-18	1	
38	TP03086	Hex. Bolt 6 X 20	6	
39	TQ02497	Slide Board	1	
40	TP14717	Hex. Socket Bolt 10 X 20	1	
41	TP07118	Hex. Bolt 6 X 16	2	
42	TP04532	Hex. Socket Bolt 5 X 30	4	
43	TQ02496	Rack	1	
44	TB02694	Bracket Assy	1 set	
164	(TQ03444)	Needle Bearing B-2410	1	
46	TQ05344	Hex. Socket Bolt 8 X 20	6	
48	TP12777	Slide Plate	2	
49	TQ01905	Jib	1	
50	TQ00394	Seal Bushing	1	
51	TQ01928	Packing for Pole	1	
52	TB04022	Square Pole Assy	1 set	
54	TQ04783	Supporter	5	
55	TB00578	H Cord Assy	1 set	
57	TB00577	F Cord Assy	1 set	

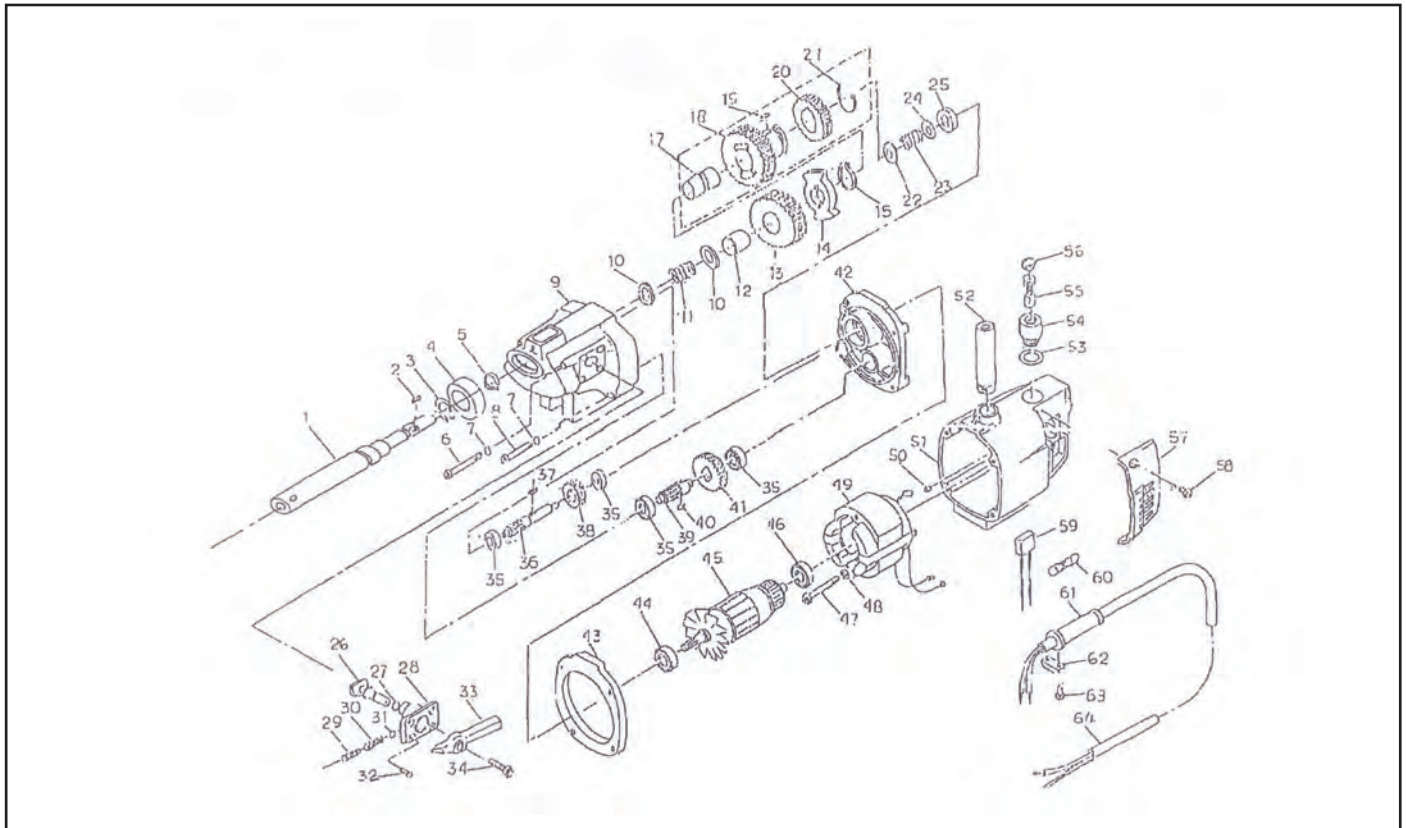
No.	Part No.	Part Name	Q'ty	Price
58	TQ00932	Packing Body	2	
56	TP02639	Hex. Nut M4	9	
63	TQ00258	Seal Washer M4	6	
64	TQ01526	Pan Head Screw 4 X 10	4	
65	TP02419	+ Screw 6 X 10	8	
66	TQ01331	Seal Washer M6	9	
67	TQ06042	Mounting Plate	1	
70	TB05293	Control Board Assy	1 set	
71	TB01363	Slide Detection Device	1 set	
72	TP14471	Hex. Socket Bolt 4 X 20	2	
73	FS00315	+ Pan Head Screw 2 X 20	2	
74	TQ00729	Spring Washer M2	2	
75	TQ00707	Shaft	2	
76	TP03914	Hex. Nut Type 3 M16	1	
77	TQ00720	Stabilizer Shaft	1	
78	TP08598	+ Screw 3 X 5	3	
79	TQ00844	Name Plate -Auto Feeder	1	
80	TQ01903	Inner Shaft	1	
81	TQ01901	Handle Boss	1	
82	TP12821	Spring Pin 5 X 26	3	
83	TQ00680	Rod Handle	3	
84	CP01123	Ball 3/16	7	
85	TP06396	Spring	3	
86	TP06397	Hex. Screw 6 X 8	3	
87	TP13891	Spring Pin 5 X 38	1	
88	TQ01902	Clutch Shaft	1	
89	TQ01904	Clutch Ring	1	
90	TQ00682	Spring 1.2 X 8 X 17	1	
91	TP00092	Plain Washer M6	1	
92	TQ00683	Grip Ring GS-6.0	1	
93	TP02931	Set Screw	1	
94	TP07419	Hex. Nut Type 3 M6	5	
95	TQ04781	Hex. Socket Set Screw 6 X 14	5	
96	TB01286	Cable Card Assy	1 set	
97	LP08489	+ Screw 4 X 6	1	
98	TP13889	Connector SC4-3	1	
163	TQ01838	Cable Connector SC4-1	1	
99	TB04376	Body Sub Assy A	1 set	
100	(TP05136)	Rivet No. 2 X 4.8	6	
101	(TP04769)	Plate Serial Number	1	
102	(TQ05610)	Warning Plate	1	
103	TB03968	Transformer Power Supply Assy	1 set	
104	TP00067	Hex. Nut M3	3	
105	TP04126	Snap Ring E-12	3	
106	TQ00708	Spur Gear 24 M1.5	1	
107	TQ00706	Spur Gear 16 X 24	1	
108	TB03702	Switch Assy	1 set	
109	TP02627	Hex. Nut M2	2	
110	TB00703	Limit Switch DC3A-D3RB	1	
111	TB03967	Transformer Sensor Assy	1 set	
112	TQ01330	Seal Washer M3	3	
113	TP00153	+ Screw 3 X 12	3	
114	TP12819	Pan Head Screw 4 X 6	2	
115	TB01381	Switch Knob Assy	1 set	
116	TQ05073	Switch Plate	1	
120	TB00573	D Cord Assy	1 set	
121	TB03809	Cord Assy M-M	1 set	

No.	Part No.	Part Name	Q'ty	Price
122	TQ01962	Collar Cap K-100 16CSBL	1	
123	TQ04982	Gear Box Cover	1	
124	TQ01924	Ball Bearing 688ZZ	1	
125	TQ01926	Washer 10.2 X 20 X 0.6	1	
126	TB01360	Spur Gear 30 Mt Assy	1 set	
127	TQ02435	Spur Gear 70 M1B	1	
128	TQ01913	Sunk Key 4 X 4 X 7 - Round-end	2	
129	TP10130	Sunk Key 3 X 3 X 10	1	
130	TQ01923	Gear Shaft B	1	
131	TQ01916	Ball Bearing 6801ZZ	2	
132	TP04715	Hex. Bolt 4 X 8	12	
133	TQ01920	Retaining Ring RTW-9	1	
134	TQ01912	Spring Stopper	1	
135	TQ01911	Spring 0.6 X 3 X 35	1	
136	TQ01919	Spool	1	
137	TQ01963	Washer 14.5 X 25 X 0.6	1	
138	TQ02434	Spur Gear 70M1A	1	
139	TB01358	Clutch Gear Sub Assy	1 set	
140	TP15428	Ball 5mm Dia.	2	
141	TQ01915	Gear Shaft A	1	
142	TQ01917	Ball Bearing 6803ZZ	1	
143	TQ01918	Shift Ring	1	
144	TQ01960	Roll Pin 4 X 22	1	
145	TQ01909	Gear Box	1	
146	TB01356	Plain Gear 41 Assy	1 set	
147	TP04197	Hex. Bolt 6 X 30	2	
148	TB02952	Motor Assy	1 set	
	(TB00599)	Carbon Brush Assy (2 pcs/set)	1 set	
149	TP18619	Hex. Socket Head Cap Screw 4 X 30	4	
150	TQ01961	Grip Ring GS-8	1	
151	TB00510	Harmonic Assy	1 set	
152	TP12328	Retaining Ring STW-9	1	
153	TQ01952	Clutch	1	
154	TQ00725	Ball Bearing 6809 ZZ	2	
155	TP17384	Retaining Ring C-32	1	
156	TP14412	Retainer Holder	1	
157	TP01945	Hex. Bolt 5 X 12	1	
159	TQ04949	Blade	1	
160	TB03863	Blade Base Assy	1 set	
161	TP14178	Hex. Bolt 6 X 10	2	
162	TQ04952	Chip Stopper	1	

**ACCESSORIES**

No.	Part No.	Part Name	Q'ty	Price
	TP04696	Hex. Wrench Key 3	1	
	TP01939	Hex. Wrench Key 4	1	
	TP17014	Spanner 8 X 10	1	
	UEA0850	Pilot Pin 5/16" X 2" DOC	1	
	UEA0835	Pilot Pin 5/16 X 1-3/8" DOC	1	
	TA9027	Safety Chain Assy	1 set	
	TB02145	Cutting Oil 0.5L	1	
	TQ05612	Instruction Manual	1	
	TP10198	Tool Box 285 X 125 X 62	1	
	TQ05186	Label Combination	1	

# QA-6500 MOTOR ASSEMBLY AND PARTS LIST

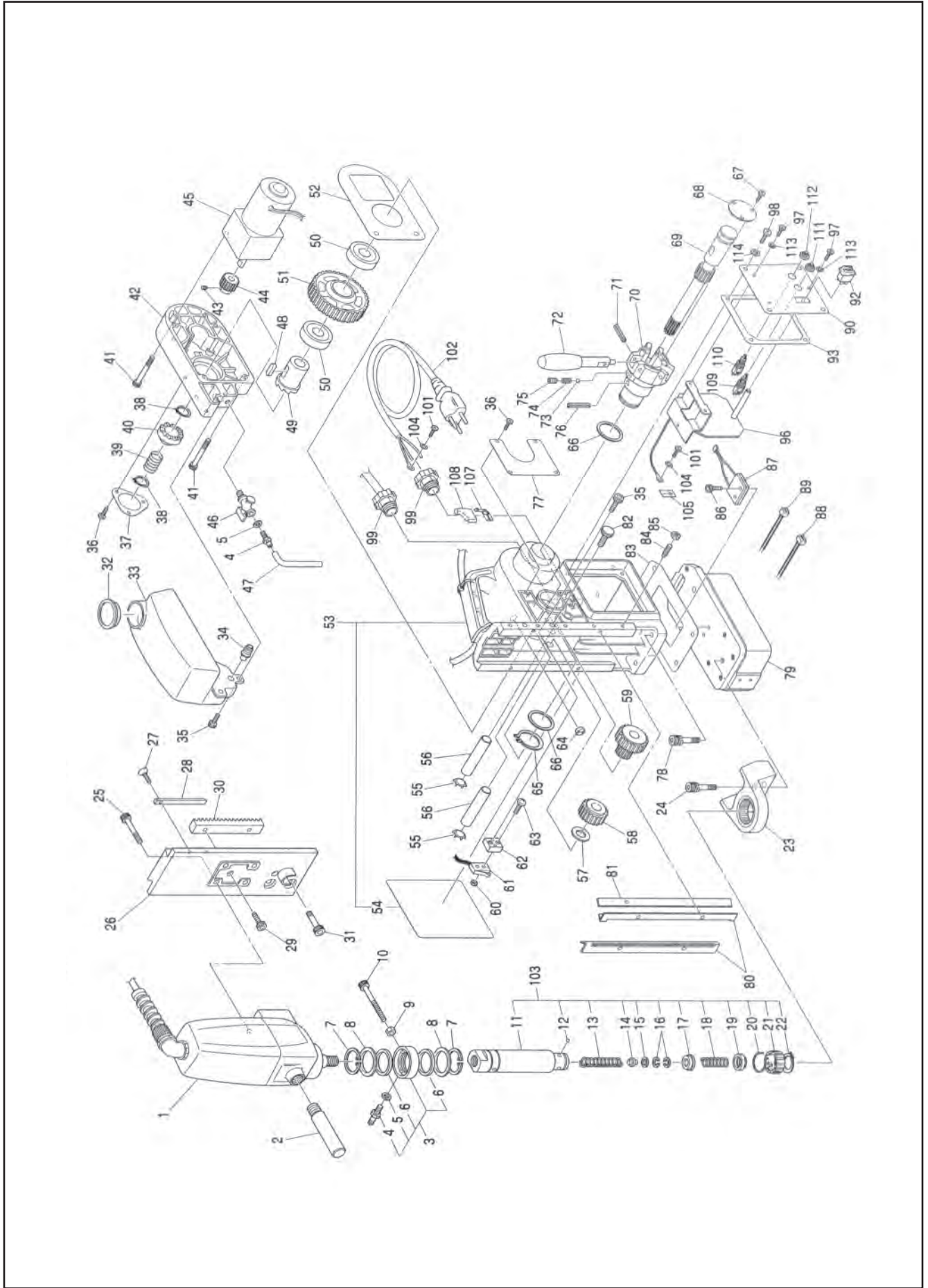


The part numbers with ( ) are included in the Ass'y parts written above them.

No.	Part No.	Part Name	Q'ty	Price
1	TQ02521	Spindle Arbor	1	
2	TQ00979	Sunk Key 4 X 4 X 7	1	
3	CP20569	Retaining Ring C-47	1	
4	TP17382	Ball Bearing 6005Z	1	
5	CQ02200	Retaining Ring C-25	1	
6	TQ00980	+ Round Head Screw 5 X 145	2	
7	TP00513	Spring Washer M5	4	
8	TQ00981	+ Round Head Screw 5 X 80	2	
9	TQ00982	Gear Case	1	
10	TP16502	Plain Washer 25.2 X 32 X 1	2	
11	TP16501	Spring (L)	1	
12	TP06503	Bush	1	
13	TA9A584	Spiral Gear B-L Ass'y	1	
14	TP16505	Boss	1	
15	CP03040	Retaining Ring C-20	1	
16	TB00750	Spiral Gear B-H Ass'y	1 set	
17	TQ00976	Needle Bearing HK2012	2	
18	TB01087	Spiral Gear	1	
19	TP16497	Sunk Key 5 X 5 X 7	1	
20	TB01087	Spiral Gear	1	
21	TP17384	Retaining Ring C-32	1	
22	TP16507	Plain Washer 20.2 X 26 X 1	1	
23	TP16508	Spring (H)	1	
24	TP16509	Plain Washer 15.2 X 24.2 X1	1	
25	TP17383	Ball Bearing 6202	1	
26	TQ00984	Cam Shaft	1	
27	TQ09421	O Ring P-6	1	
28	TP16490	Guide Boss	1	
29	TP18684	Hex Socket Set Screw 4 X 8	1	
30	TP16493	Coil Spring	1	
31	TP16492	Steel Ball	1	
32	TP17385	+ Screw 4 X 12	4	

No.	Part No.	Part Name	Q'ty	Price
33	TP16489	Lever	1	
34	TP09693	Hex Bolt 4 X 14	1	
35	TP17380	Ball Bearing 629	4	
36	TQ00985	Pinion (L)	1	
37	TP16506	Sunk Key 4 X 4 X 10	1	
38	TQ00986	Spiral Gear (S)	1	
39	TQ00987	Pinion (H)	1	
40	TP13351	Sunk Key 3 X 3 X 7	1	
41	TP16516	Spiral Gear (A)	1	
42	TQ00662	Bearing Bracket	1	
43	TP16488	Spacer	1	
44	TP06718	Ball Bearing 6201Z	1	
45	TB01035	Armature Ass'y (230V)	1 set	
46	TP06242	Ball Bearing 629ZZ	1	
47	TQ00988	+ Round Head Screw 5 X 75	2	
48	TP00513	Spring Washer M5	2	
49	TB01036	Field Ass'y (230V)	1 set	
50	TP13355	Rubber Packing	1	
51	TQ00989	Motor Housing	1	
52	TB02534	Side Handle Ass'y	1 set	
53	TP13359	Insulation Washer	2	
54	TP13358	Brush Holder	2	
55	TA9A028	Brush Ass'y (2 pcs/set)	1 set	
56	TP13357	Brush Cap	2	
57	TP13360	Cover	1	
58	TP11245	+ Screw 4 X 10	1	
59	TP16481	Condenser SM-37R8291	1	
60	TQ00990	Insulated Connector FNCW-2	2	
61	TP13363	Cord Armor	1	
62	TP13362	Cord Clamp	1	
63	TP17453	+ Screw 4 X 20	2	
64	TQ00991	Cable from Motor	1	

# WA-3500 ASSEMBLY AND PARTS LIST (new)



The parts numbers with ( ) are included in the Assy parts written above them.

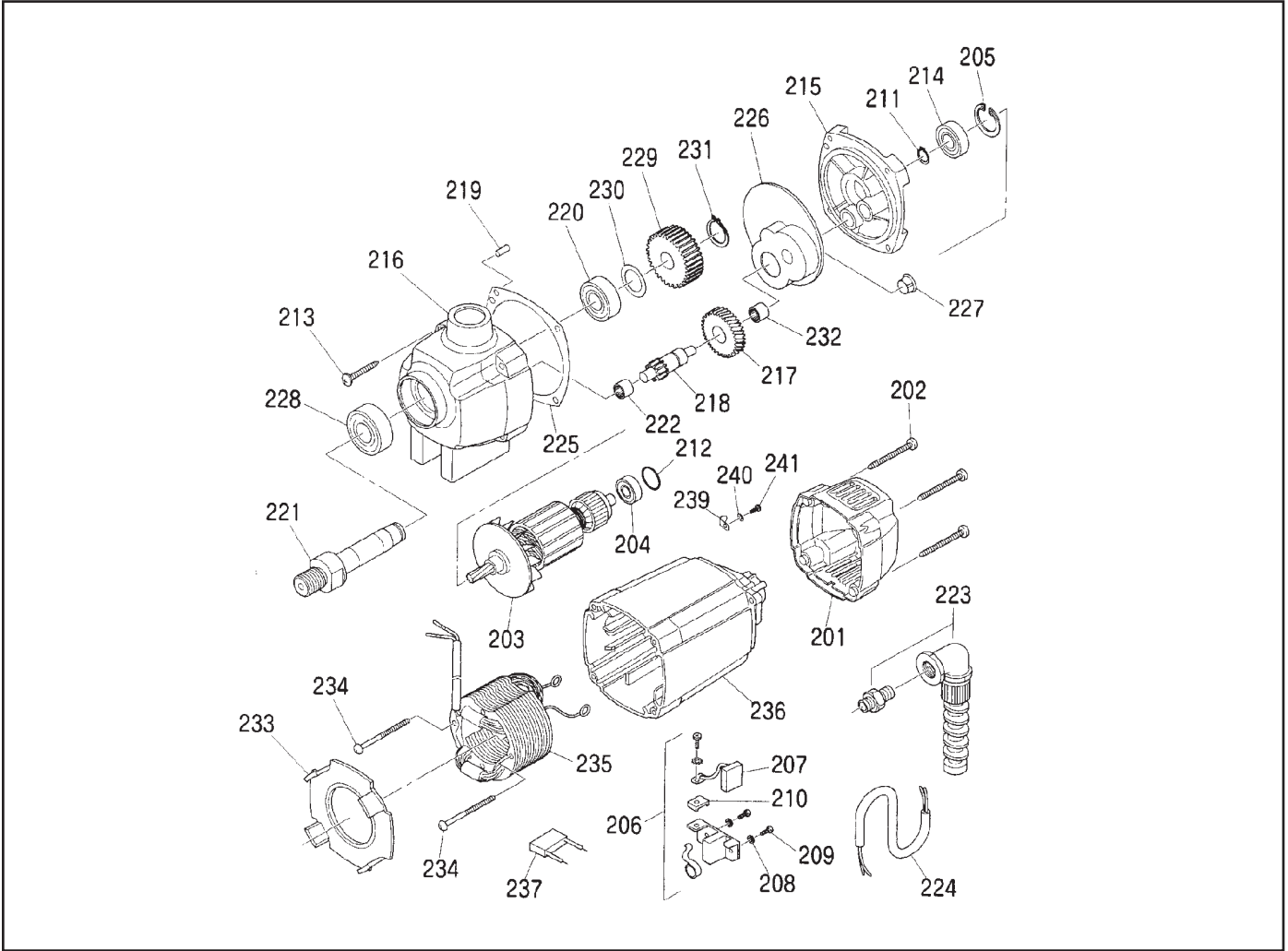
No.	Part No.	Part Name	Q'ty	Price
1	TB05117	Drill Motor Assy (115V)	1 set	
2	(TB05187)	Carbon Brush Assy (2 pcs/set)	1 set	
2	TB02534	Side Handle Assy	1 set	
3	TB00496	Oil Ring Sub Assy	1 set	
4	(TP14500)	Hex. Nut M6	2	
5	(CP21947)	Seal Packing	2	
6	(TP14499)	Oil Seal GD38 X 48 X 4	2	
7	TP14969	Retaining Ring ISTW-38	2	
8	TP12773	Washer 38.5 X 54 X 1	2	
9	LP10496	Hex. Nut M6	1	
10	TP05469	Hex. Bolt 6 X 45	1	
103	TP05121	Arbor Body Assy One-Touch	1 set	
11	(TO06755)	Arbor Body	1	
12	(TB01672)	Ball 5/16 Assy	1 set	
13	(TP15998)	Spring 1.6 X 16.2 X 120	1	
14	(TO01895)	Pilot Spacer	1	
15	(TP15848)	Spacer 10.5 X 19 X 5	1	
16	(TP13905)	Retaining Ring RTW-19	2	
17	(TB01348)	Washer Assy	1 set	
18	(TO01898)	Spring 0.8 X 12 X 31	1	
19	(TB01349)	Push Ring Assy	1 set	
20	(TO01896)	Twist Spring	1	
21	(TO01897)	Sleeve	1	
22	(TP15239)	Retaining Ring C-28	1 set	
23	TB02694	Bracket Assy	1 set	
24	TO03344	Hex. Socket Bolt 8 X 20	3	
25	TP08013	Hex. Bolt 5 X 25	4	
26	TO06753	Slide Board (Motor Slide)	1	
27	TP00112	+ Screw 4 X 10	1	
28	TO06754	Pointer	1	
29	TP14178	Hex. Bolt 6 X 10	2	
30	TO02496	Rack	1	
31	TP14174	Hex. Bolt 10 X 25	1	
32	TO06785	Rubber Cap	1	
33	TO06784	Oil Tank	1	
34	TO06786	Rubber Plug	1	
35	TP04715	Hex. Bolt 4 X 8	5	
36	TP12819	+ Pan Head Screw 4 X 6	7	
37	TO06777	Cover Plate	1	
38	TP06387	Retaining Ring GV-16	2	
39	TP06374	Spring	1	
40	TP12325	Clutch A	1	
41	TO06770	Hex. Head Cap Screw 4 X 35	8	
42	TO06769	Gear Box (Feed)	1	
43	CP26427	Hex. Socket Set Screw 5 X 6	1	
44	TO06768	Spur Gear 1 X 23 Feed Motor Pinion	1	
45	TO06767	Gear Motor (Feed)	1	
46	TP14495	Petcock Valve 1/8(PT)	1	
47	TB01098	Tube 4 X 7 X 3000 Assy	1 set	
48	TO06765	Parallel Key 8 X 7 X 20 (Keyway)	1	
49	TO06763	Clutch B	1	
50	TO06766	Ball Bearing 6906ZZ	2	
51	TO06764	Spur Gear 1 X 88	1	
52	TO06782	Packing for Gear Box (Gasket)	1	
53	TB05500	Body Sub Assy	1 set	
54	(TO06758)	Label -Warning	1	
105	(LP13557)	Earth Label	1	

**ACCESSORIES**

No.	Part No.	Part Name	Q'ty	Price
	TP04696	Hex. Wrench Key 3	1	
	TP17014	Spanner 8 X 10	1	
	UEA0835	Pilot Pin 5/16" X 1-3/8" DOC	1	
	TA99027	Safety Chain Assy	1 set	
	TB02145	Cutting Oil 0.5L	1	
	TB05203	Chip Guard	1 set	
	TO06799	Instruction Manual	1	

No.	Part No.	Part Name	Q'ty	Price
55	TO04715	Internal Retaining Ring CRTW-12	2	
56	TO06776	Shaft	2	
57	TO06779	Washer 12.2 X 28 X 1	1	
58	TO06775	Spur Gear 1.5 X 26	1	
59	TO06774	Spur Gear 1.5 X 14 X 29	1	
60	TP08139	Hex. Nut M2.3	2	
61	TO06771	Limit Switch ABS5634318	1	
62	TO06772	Fixture for Limit Switch	1	
63	TP07784	+ Screw 2.3 X 15	2	
64	TO00394	Seal Bushing	1	
65	TO06781	External Retaining Ring ISTW-32	1	
66	TO06780	Washer 32.2 X 42 X 2	2	
67	TP08598	+ Screw 3 X 5	3	
68	TO06762	Plate Auto Feed (ID Plate)	1	
69	TO06760	Gear Shaft	1	
70	TO06761	Handle Stem (Feed Hub)	1	
71	TP12821	Spring Pin 5 X 26	3	
72	TO00680	Rod Handle	3	
73	CP01123	Ball 3/16	7	
74	TP06396	Spring	3	
75	TP06397	Hex. Screw 6 X 8	3	
76	TO06759	Spring Pin 8 X 40 AW	1	
77	TO06778	Spec. Plate (115V)	1	
78	TO03345	Hex. Socket Bolt 8 X 25	1	
79	TB05129	Square Pole Assy (Magnet Assy)	1 set	
80	TP12777	Slide Plate	2	
81	TO06773	Gib	1	
82	TP02931	Set Screw	1	
83	TO06794	Packing Pole (Gasket/Magnet)	1	
84	TO00730	Hex. Socket Set Screw 6 X 20	5	
85	TP07419	Hex. Nut Type 3 M6	5	
86	TP14471	Hex. Socket Bolt 4 X 20	2	
87	TB01363	Slide Detection Device	1 set	
88	TB00573	D Cord Assy	1 set	
89	TB05154	F Cord Assy	1 set	
90	TO10469	Switch Plate (3rd)	1 set	
92	TO07306	Rocker Switch 6.3 1935.31 (New Bigger Type)	1	
93	TO06787	Packing Body (Gasket)	1	
96	TB05849	Control Board Assy (110-120V)	1 set	
97	TP02618	+ Screw 4 X 8	3	
98	TP02419	+ Screw 6 X 10	4	
99	TO06795	Cable Connector AC4-2	2	
101	LP08489	+ Screw 4 X 6	2	
102	TB05877	Cable Cord Assy (Power Cord)	1 set	
104	TP04464	Washer M4 - Toothed Locking	2	
107	TO07308	Terminal #250 42232-3	2	
108	TO07309	Sleeve 170891-1	2	
109	TB07055	Switch SW3 Assy	1 set	
110	TB07054	Switch SW2 Assy	1 set	
111	TO10085	Switch Cover (Black Rubber Cap)	1	
112	TO10467	Switch Cover (Red Rubber Cap)	1	
113	TO00258	Seal Washer M4	3	
114	TO01331	Seal Washer M6	4	

# WA-3500 MOTOR ASSEMBLY AND PARTS LIST

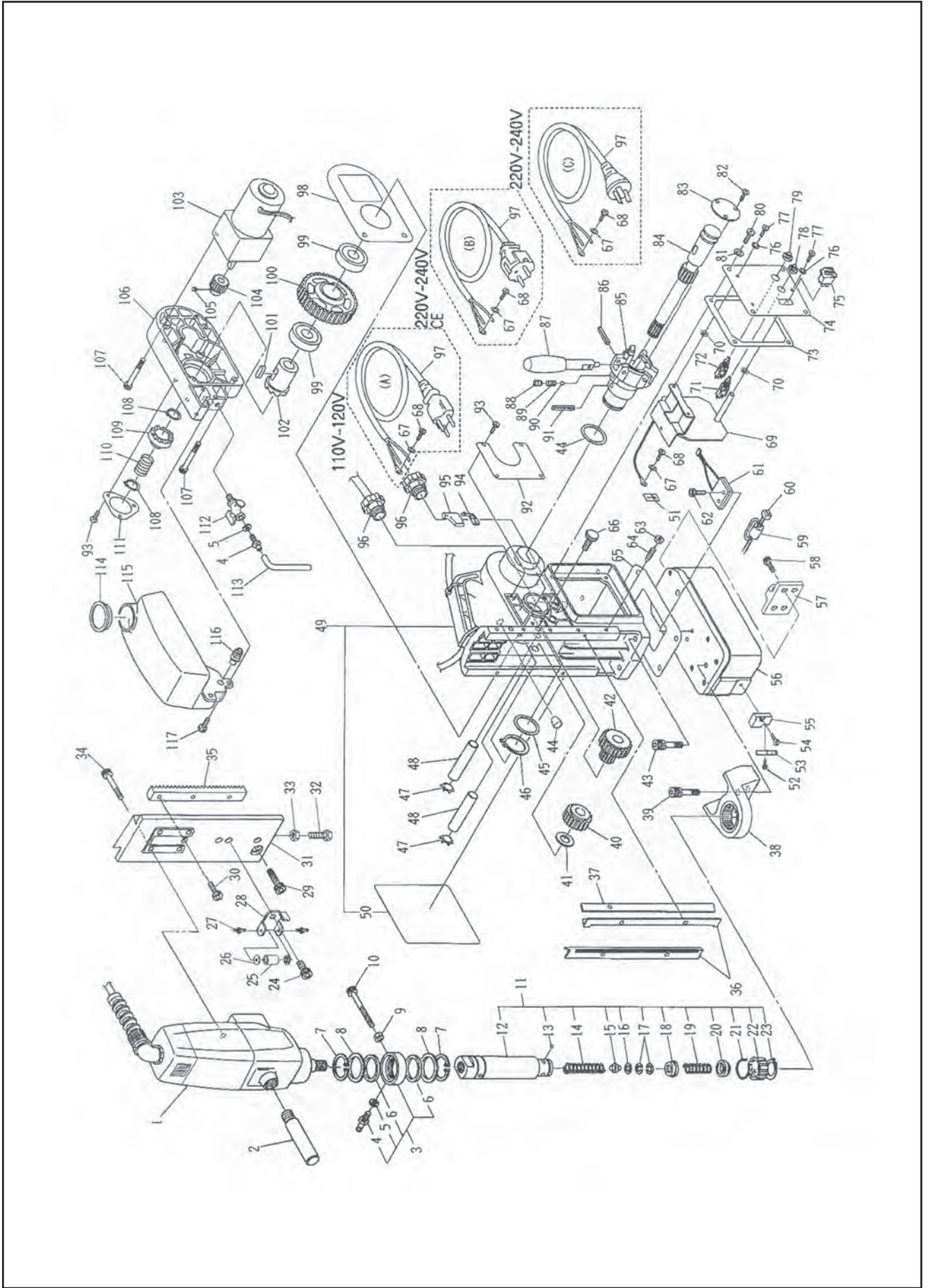


The part numbers with ( ) are included in the Ass'y parts written above them.

No.	Part No.	Part Name	Q'ty	Price
201	TQ06818	Cap for Drill Motor Housing	1	
202	TQ06819	Self Tapping Screw HC4.8 X45	4	
203	TB05194	Armature Ass'y 115V	1 set	
	TB05195	Armature Ass'y 220-230V	1 set	
204	TP00468	Ball Bearing 608Z	1	
205	TP01036	Retaining Ring C28	1	
206	TB05193	Brush Holder Ass'y (no brushes)	2 sets	
207	(TB05187)	Carbon Brush Ass'y (2 pcs/set)	1 set	
208	(TQ06820)	Spring Washer B4	2	
209	(TQ06828)	Screw ZM 4 X 12	2	
210	(TQ06838)	Contact Washer	1	
211	TP04595	Retaining Ring C10	1	
212	TQ06839	O-Ring 22 X 2.5	1	
213	TQ06840	Self Tapping Screw HC4.8 X 50	4	
214	TP00498	Ball Bearing 6001ZZ	1	
215	TQ06841	Bearing Bracket	1	
216	TQ06827	Gear Case	1	
217	TQ06821	Intermediate Gear 34Z	1	
218	TQ06822	Pinion Shaft 10Z	1	
219	TQ06842	Notched Pin 4 X 12	1	
220	TQ06829	Ball Bearing 6003LLU	1	

No.	Part No.	Part Name	Q'ty	Price
221	TQ06823	Spindle	1	
222	LQ02395	Needle Roller Bearing HK1010	1	
223	TQ06824	Cord Protector (Strain Relief)	1	
224	TQ06843	Connecting Cable (Motor Cord)	1	
225	TQ06844	Gear Case Seal	1	
226	TQ06825	Grease Chamber (Reservoir)	1	
227	TQ06845	Plug	1	
228	TQ06830	Ball Bearing 6203LLU	1	
229	TQ06826	Spindle Gear 43Z	1	
230	TQ06846	Fitting Washer 17 X 24 X 0.2	1	
231	TQ06847	External Retaining Ring C17	1	
232	TQ00754	Needle Roller Bearing HK0810	1	
233	TQ06848	Air Guiding Ring (Fan Shroud)	1	
234	TQ06849	Self Tapping Screw HC3.9 X 60	2	
235	TB05191	Field Ass'y 115V	1 set	
236	TQ06850	Motor Housing	1	
237	TQ06851	Condenser	1	
238	TQ06852	Insulated Tubing	1	
239	TQ06853	Mounting Clip	1	
240	TQ06854	Disk 3.2	1	
241	TQ06855	Self Tapping Screw HC2.9 X 9.5	1	

# WA-5000 ASSEMBLY AND PARTS LIST



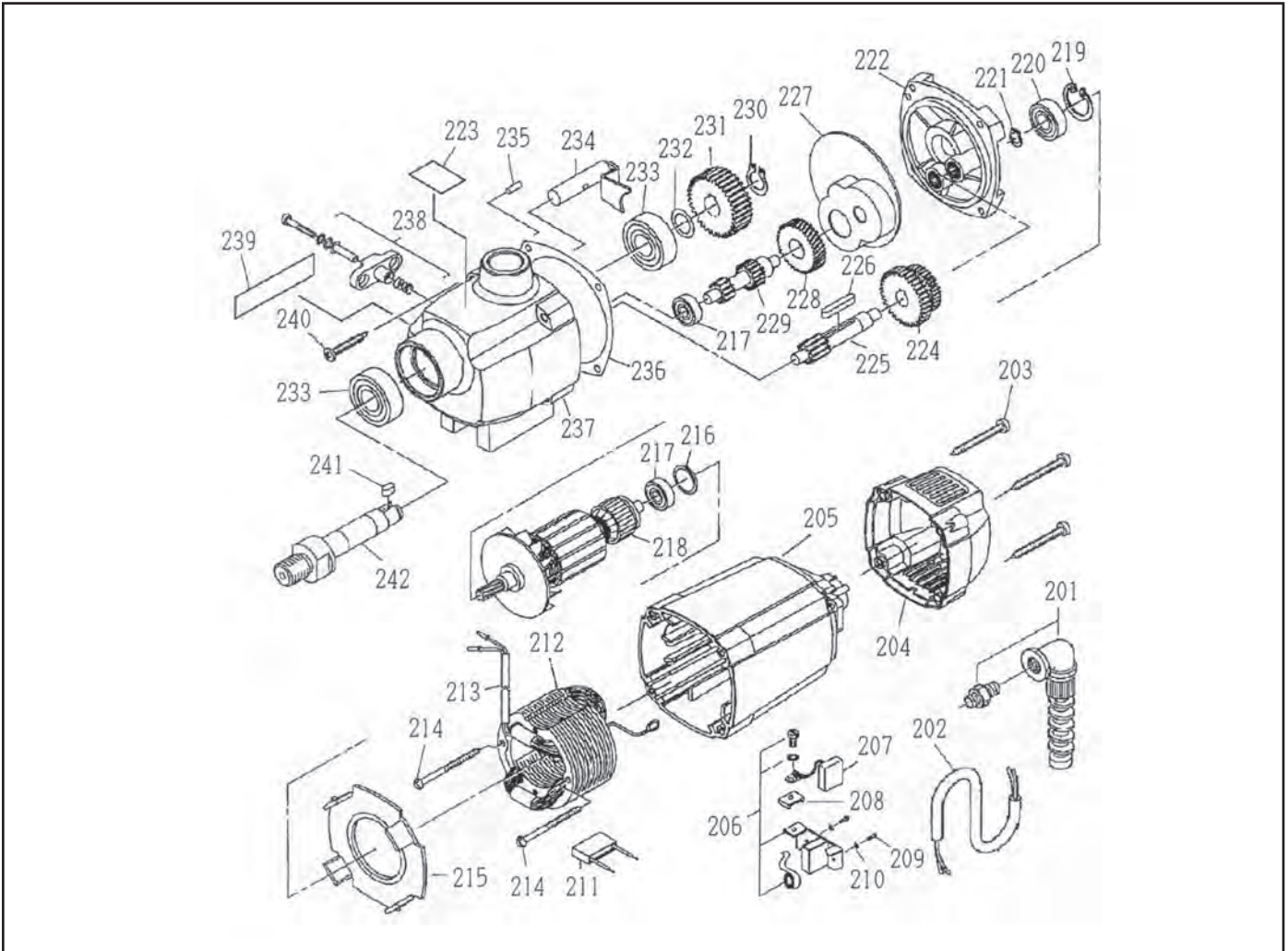
The parts numbers with ( ) are included in the Assy parts written above them.

No.	Part No.	Part Name	Q'ty	Price	No.	Part No.	Part Name	Q'ty	Price
1	TB07169	Drill Motor Assy (115V)	1 set		56	TB07174	Square Pole (Magnet) Assy (115V)	1 set	
	TB07184	Drill Motor Assy (230V)	1 set		57	TB07185	Square Pole (Magnet) Assy (230V)	1 set	
2	(TB05187)	Carbon Brush Assy (2 pcs/set)	1 set		58	TP17985	Chain Guide	1	
3	TB02534	Slide Handle Assy	1 set		59	TP01644	Hex. Socket Head Bolt 6 X 12	4	
4	TB00496	Oil Ring Sub Assy	1 set		60	TB00864	Hinged-Clamp Core	1	
5	(CP21947)	Hose Nipple	2		61	TB00573	D Cord Assy	1 set	
6	(TP14499)	Seal Packing	2		62	TB01363	Slide Detection Device	1	
7	TP14969	Oil Seal GD38 X 48 X 4	2		63	TP14471	Hex. Socket Bolt 4 X 20	2	
8	TP12773	Washer 38.5 X 54 X 1	2		64	TP07419	Hex. Nut Type 3 M6	5	
9	LP10496	Hex. Nut M6	1		65	TB00730	Hex. Socket Set Screw 6 X 20	5	
10	TP05469	Hex. Bolt 6 X 45	1		66	TB00794	Packing Pole (Gasket/Magnet)	1	
11	TB07172	Arbor Body Assy	1 set		67	TP02931	Set Screw	1	
12	(TQ10650)	Arbor Body	1		68	TP04464	Toothed Locking Washer M4	2	
13	(TB01672)	Ball 5/16 Assy	1 set		69	LP08489	+ Screw 4 X 6	2	
14	(TQ10649)	Spring 1.4 X 16.2 X 135	1		70	TB07214	Control Board Assy (115V)	1 set	
15	(TQ01895)	Pilot Spacer	1		71	TB07215	Control Board Assy (230V)	1 set	
16	(TP15848)	Spacer 10.5 X 19 X 5	1		72	TP11994	O-Ring P-4	3	
17	(TP13905)	Retaining Ring RTW-19	2		73	TB07055	Switch "ON" SW3 Assy	1 set	
18	(TB01348)	Washer Assy	1 set		74	TB07054	Switch "OFF" SW2 Assy	1 set	
19	(TQ01898)	Spring 0.8 X 12 X 31	1		75	TQ06787	Packing Body (Gasket)	1	
20	(TB01349)	Push Ring Assy	1 set		76	TQ10654	Switch Plate	1	
21	(TQ01896)	Twist Spring	1		77	TQ07306	Rocker Switch 6.3 1935.31	1	
22	(TQ01897)	Sleeve	1		78	TQ00258	Seal Washer M4	3	
23	(TP15239)	Retaining Ring C-28	1		79	TQ01526	Pan Head Screw 4 X 6	3	
24	TP03247	Hex. Socket Bolt 10 X 15	1		80	TQ10085	Switch Cover (Black Rubber Cap)	1	
25	TQ00670	Dropper Pipe	1		81	TQ10467	Switch Cover (Red Rubber Cap)	1	
26	TQ00671	Dropper Packing	2		82	TP02419	+ Screw 6 X 10	4	
27	TQ00672	Dropper Nipple	2		83	TQ01331	Seal Washer M6	4	
28	TQ10785	Dropper Plate	1		84	TP08598	+ Screw 3 X 5	3	
29	TP14174	Hex. Bolt 10 X 25	1		85	TQ06762	Plate-Auto Feed (ID Plate)	1	
30	TP01945	Hex Bolt 5 X 12	3		86	TQ06760	Gear Shaft	5	
31	TQ10646	Slide Board	1		87	TQ06761	Handle Stem (Feed Hub)	1	
32	TP04857	Hex. Bolt 8 X 25	1		88	TP12821	Spring Pin 5 X 26	3	
33	TP08584	Hex. Nut M8	1		89	TQ00680	Rod Handle	3	
34	TP04532	Hex. Socket Bolt 5 X 30	4		90	TP06397	Hex. Screw 6 X 8	3	
35	TP12776	Rack	1		91	TP06396	Spring	3	
36	TP12777	Slide Plate	2		92	CP01123	Ball 3/16	3	
37	TQ06773	Gib	1		93	TQ06759	Spring Pin 8 X 40 AW	1	
38	TB05407	Bracket Assy	1 set		94	TQ10651	Plate Specifications (115V)	1	
39	TQ03346	Hex. Socket Set Screw 8 X 30 w/washer	3		95	TP12819	+ Pan Head Screw 4 X 6	7	
40	TQ06775	Spur Gear 1.5 X 26	1		96	TQ07308	Terminal #250 42232-3	2	
41	TQ06779	Washer 12.2 X 28 X 1	1		97	TQ07309	Sleeve 1708	2	
42	TQ06774	Spur Gear 1.5 X 14 X 29	1		98	TQ07097	Cable Connector	2	
43	TQ03345	Hex. Socket Bolt 8 X 25	4		99	TB05877	Cable Cord (Power Cord - 115V)	1 set	
44	TQ10791	Rubber Stopper	1		100	TQ06782	Packing for Gear Box (Gasket)	1	
45	TQ06780	Washer 32.2 X 42 X 2	2		101	TQ06766	Ball Bearing 6906ZZ	2	
46	TQ06781	External Retaining Ring (ISTW-32)	1		102	TQ06764	Spur Gear 1 X 88	1	
47	TQ04715	Internal Retaining Ring CRTW-12	2		103	TQ06765	Parallel Key 8 X 7 X 20 (Keyway)	1	
48	TQ06776	Shaft	2		104	TQ06763	Clutch B	1	
49	TB05500	Body Sub Assy	1 set		105	TQ06767	G geared Motor (Feed)	1	
50	(TQ06758)	Warning Label	1		106	TQ06768	Spur Gear 1 X 23 Feed Motor Pinion	1	
51	(LP13557)	Earth Label	1		107	CP26427	Hex. Socket Set Screw 5 X 6	1	
52	TP01945	Hex. Bolt 5 X 12	1		108	TQ06769	Gear Box (Feed)	1	
53	TQ10787	Blade	1		109	TQ06770	Hex. Head Cap Screw 4 X 35	8	
54	TP14178	Hex. Bolt 6 X 10	1		110	TP06387	Retaining Ring GV-16	2	
55	TQ10695	Blade Base (Chip Breaker)	1		111	TP12325	Clutch A	1	
					112	TP06374	Spring	1	

**ACCESSORIES**

No.	Part No.	Part Name	Q'ty	Price
	TP04696	Hex. Wrench Key 3	1	
	TP01939	Hex. Wrench Key 4	1	
	TP17014	Spanner 8 X 10	1	
	UEA0850	Pilot Pin 5/16" X 2" DOC	1	
	TA99027	Safety Chain Assy	1 set	
	TB02145	Cutting Oil 0.5L	1	
	TB05418	Chip Guard Assy	1 set	
	TQ01658	Instruction Manual	1	

# WA-5000 MOTOR ASSEMBLY AND PARTS LIST



The part numbers with ( ) are included in the Ass'y parts written above them.

No.	Part No.	Part Name	Q'ty	Price
201	TQ06824	Cord Protector (Strain Relief)	1	
202	TQ06843	Connecting Cable (Motor Cord)	1	
203	TQ06819	Self Tapping Screw HC 4.8 X 38	4	
204	TQ06818	Cap for Drill Motor Housing	1	
205	TQ06850	Motor Housing	1	
206	TB05193	Brush Holder Ass'y (no brushes)	2 sets	
207	(TB05187)	Carbon Brush Ass'y (2 pcs/set)	1 set	
208	TQ06838	Contact Washer	1	
209	TQ06828	Screw ZM 4 X 12	2	
210	TQ06820	Spring Washer B4	2	
211	TQ06851	Condenser	1	
212	TB07200	Stator Ass'y (115V)	1	
	TB07201	Stator Ass'y (230V)	1	
213	TQ06852	Insulated Tubing	1	
214	TQ06849	Self Tapping Screw HC4.8 X 60	2	
215	TQ06848	Air Guiding Ring (Fan Shroud)	1	
216	TQ06839	O Ring 22 X 2.5	1	
217	TP00468	Ball Bearing 608ZZ	2	
218	TB07202	Armature Ass'y (115V)	1 set	
219	TP01036	Retaining Ring C-28	1	
220	TP00498	Ball Bearing 6001ZZ	1	

No.	Part No.	Part Name	Q'ty	Price
221	TP06390	Retaining Ring C-11	1	
222	TB05479	Bearing Bracket Ass'y	1 set	
223	TQ10648	Caution - Change Label	1	
224	TQ07076	Gear Block 34/40Z	1	
225	TQ07075	Pinion Shaft 13Z	1	
226	TQ07077	Key A5 X 5 X 28	1	
227	TQ06825	Grease Chamber	1	
228	TQ07069	Intermediate Gear 34Z	1	
229	TQ07070	Pinion Shaft 11/17Z	1	
230	CP04989	External Retaining Ring C15	1	
231	TQ07073	Spindle Gear 45Z	1	
232	TQ07074	Fitting Washer 15 X 22 X 0.2	1	
233	TQ06830	Ball Bearing 6203LLU	2	
234	TB05399	Coupling Bolt Ass'y	1 set	
235	TQ06642	Notched Pin 4 X 12	1	
236	TQ06844	Gear Case Seal	1	
237	TB05478	Gear Case Ass'y	1 set	
238	TB03598	Gear Changer Ass'y	1 set	
239	TQ10647	Change Knob Label	1	
240	TQ06840	Self Tapping Screw HC2.9 X 9.5	4	
241	TQ07072	Key A5 X 5 X 12	1	
242	TQ07071	Spindle	1	