HARE&FORBES
MACHINERYHOUSE

Established 1930
Distributors of new & used workshop Equipment

HAFCO
METALMASTER

D163 D163A

RF-19 Drill

INSTRUCTION & PARTS MANUAL

21-5-12

12 SPEEDS DRILL PRESS

19TM

19

MODEL 19 / 19TM
INSTRUCTION MANUAL

19-110913-R0

⚠ WARNING !

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reprodrctive harm. Some examples of these chemical are:

- Lead from lead-based paints.
- Crystalline silica from bricks, cement and other masonry products.
- Arsenic and chromium from chemically-treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: Work in a well ventilated area, and word with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

Table Of Contents Page No

WARNING: FAILURE TO FOLLOW THESE RULES
MAY RESULT IN SERIOUS PERSONAL INJURY

As with all machinery there are certain hazards involved with operation and use of the machine. Using the machine with respect and caution will considerably lessen the possibility of personal injury. However, if normal safety precautions are overlooked or ignored, personal injury to the operator may result.

This machine was designed for certain applications only. We strongly recommends that this machine 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 machine until you contact with us and we have advised you.

Your machine might not come with a power socket or plug. Before using this machine, please Do ask your local dealer to install the socket or plug on the power cable end.

SAFETY RULES FOR ALL TOOLS

A. USER:

1. **WEAR PROPER APPAREL.** No loose clothing, gloves, rings, bracelets, or other jewelry to get caught in moving parts.
Non-slip foot wear is recommended. Wear protective hair covering to contain long hair.
2. **ALWAYS WEAR EYE PROTECTION.** Refer to ANSLZ87.1 standard for appropriate recommendations.
Also use face or dust mask if cutting operation is dusty.
3. **DON'T OVERREACH.** Keep proper footing and balance at all times.
4. **NEVER STAND ON TOOL.** Serious injury could occur if the tool is tipped or if the cutting tool is accidentally contacted.
5.**NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.** Don't leave tool until it comes to a complete stop.
6. **DRUGS, ALCOHOL, MEDICATION.** Do not operate tool while under the influence of drug, alcohol or any medication.

B. USE OF MACHINE:

1. **DON'T FORCE TOOL.** It will do the job better and be safer at the rate for which it was designed.
2. **USE RIGHT TOOL.** Don't force tool or attachment to do a job for which it was not designed.
3. **SECURE WORK.** Use clamps or a vise to hold work when practical. It's safer than using your

hand frees both hands to operate tool.

4. **USE RECOMMENDED ACCESSORIES.** Consult the owner's manual for recommended accessories. The use of improper accessories may cause hazards.

5. **AVOID ACCIDENTAL STARTING.** Make sure switch is in "**OFF"** position before plugging in power cord.

C. ADJUSTMENT :

MAKE all adjustments with the power off. In order to obtain the machine. precision and correct ways of adjustment while assembling, the user should read the detailed instruction in this manual.

D. WORKING ENVIRONMENT:

1. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.

2. **DON'T USE IN DANGEROUS ENVIRONMENT.** Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well-lighted.

3. **KEEP CHILEREN AND VISITIORS AWAY.** All children and visitors should be kept a safe distance from work area.

E. MAINTENANCE

1. **DISCONNECT** machine from power source when making repairs.

2. **CHECK DAMAGED PARTS.** To read every details of trouble shooting, repair it very carefully and make sure the operator won't get injure and damage the machine.

2.TRANSPORTATION OF MACHINE:

Unpacking

1. Transportation to desired location before unpacking, please use lifting jack.(Fig. B)
2. Transportation after unpacking, please use heavy fiber belt to lift up the machine.

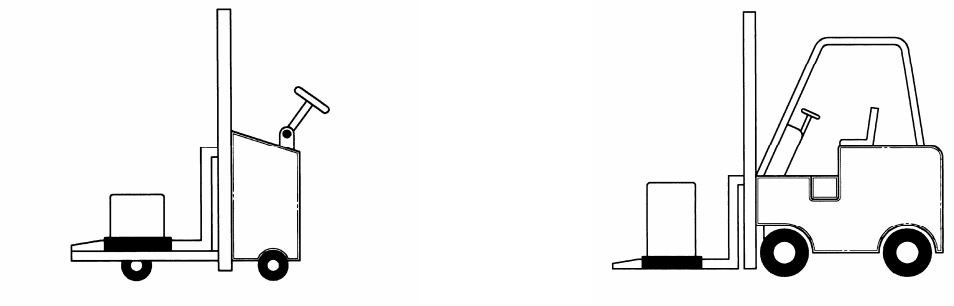


Fig. B

ALLWAYS KEEP PROPER FOOTING & BALANCE WHILE MOVING THIS MACHINE.

Installation:

As this machine weights 200 kgs. It is recommended that the machine shall be transported, with help of lifting jack.

Transportation Recommendation:

(1) Tighten all locks before operation.

(2) **ALWAYS** Keep proper footing & balance while moving this 200 kgs machine, and only use heavy duty fiber belt to lift the machine as Fig. A

(3) **TURN OFF** the power before wiring, & be sure machine in proper grounding, Overload & circuit breaker is recommended for safety wiring.

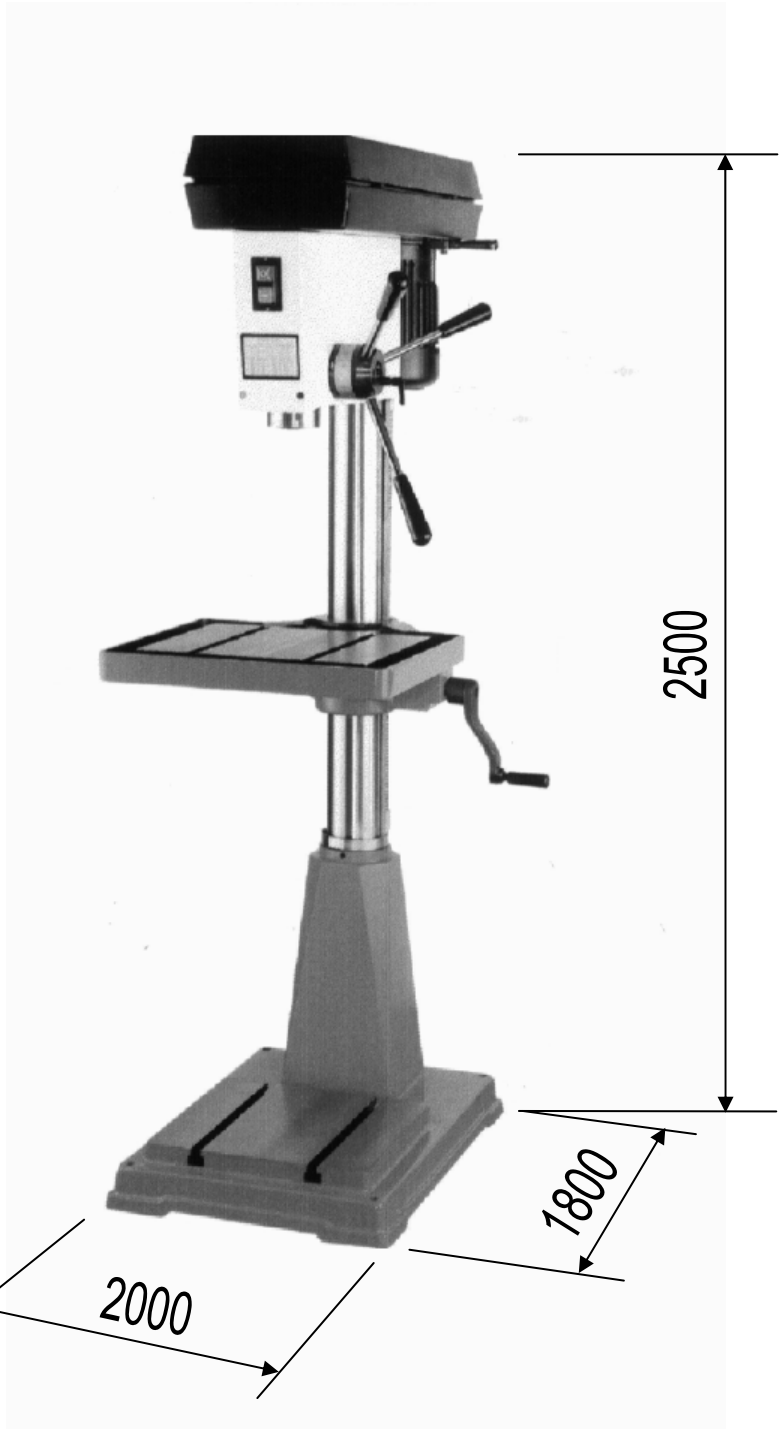
(4) Fix machine on the floor by fixing 4 screws to base holes, after machine is balanced.

(5) **CHECK** carefully if main shaft in clockwise direction while running test, if not, reverse the wiring per circuit diagram, then, repeat the test till spindle direction is correct.

(6) **KEEP** machine always out from sun, dust, wet, raining area.

Fig.A

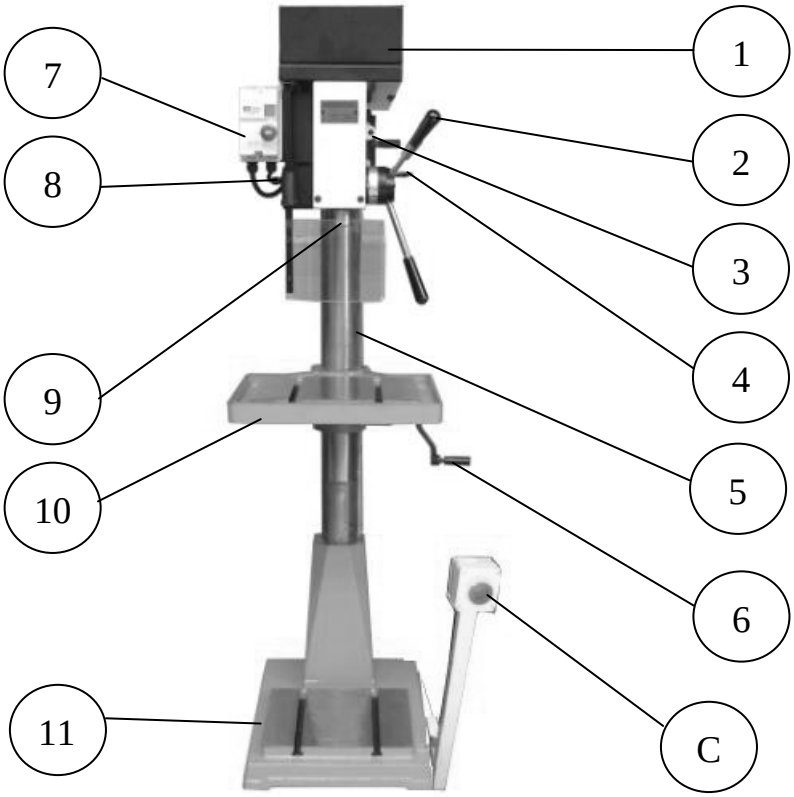
MINLMUM ROOM SPACE FOR MACHINE OPERATION



MAIN PARTS:

1. Belt & pulley safety guard
2. Handle
3. Motor
4. Graduated base fixed grip
5. Column
6. Lifting rocker
7. Switch
8. Spring adjusting knob
9. Graduated scale
10. Main table
11. Base

Switch button function description

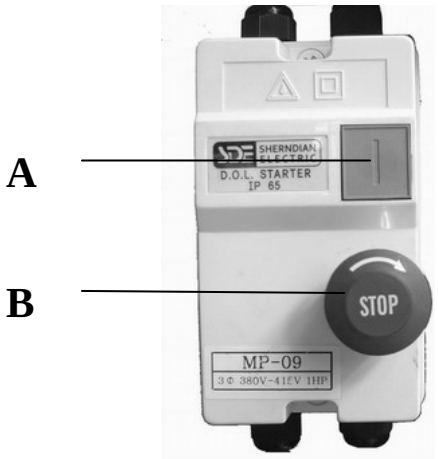


1.Magnetic switch

(1) Push button (A) to start the machine.

(2) Push button (B) to stop the machine.

(3) When in emergency push button (C) to stop the machine. after clearing the trouble, release emergency button, re-start the machine by pushing the start button.

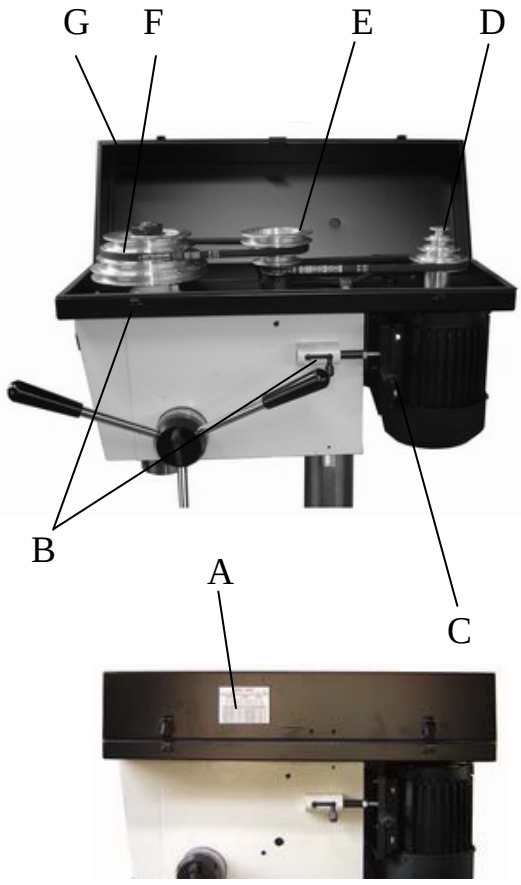


SPECIFICATIONS:

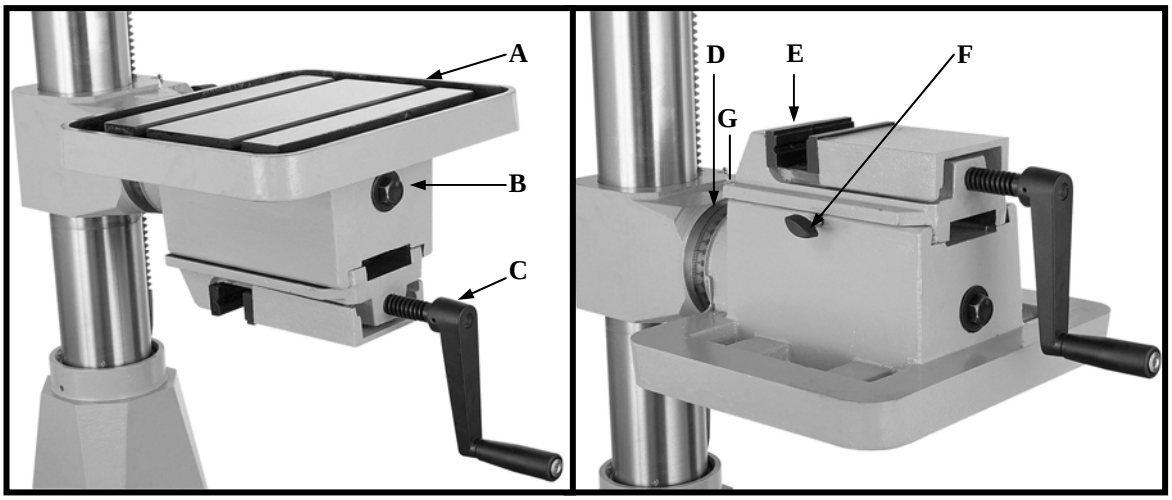
TYPE		20” 12 speeds
CENTER OF SPINDLE TO COLUMN		250 mm
DRILLING CAPACITY		32 mm
SPINDLE TRAVEL		120 mm
TAPER OF SPINDLE		MT3
MAX.DISTANCE SPINDLE NOSE TO TABLE		670 mm
MAX.DISTANCE SPINDLE NOSE TO BASE		1224 mm
SURFACE SIZE OF TABLE		420×470 mm
SPINDLE SPEEDS(R.P.M) 12 SPEEDS	50Hz	100, 160, 190, 220, 305, 365 540, 815 , 1040, 1130, 1575, 2000
	60Hz	120, 190, 230, 265, 365, 440 650, 980, 1245, 1355, 1890, 2400
MOTOR		1HP
MACHINE HEIGHT		1775 mm
MACHINE WEIGHT(N.W./G.W.)		200 kgs/230kgs
PACKING MEASUREMENT: L×W×H		940×750×1867
20’ CONTAINER Q’TY		18 SETS

1. HOW TO HANDLE THE SPINDEL SPEED

(1) Open belt cover (G), release fixed grip (B) Pull motor plate (C) towards you release belt.
(2) Refer to speed chart (A) select proper speed adjust spindle belt (F) and motor belt (D) step position.
(3) Push motor plate (C) far from you until spindle belt and motor belt are tightened Fix grip (B).
(4) Close belt cover (G).



SWIVEL VISE TABLE FUNCTION



A. Swivel vise Table : Working with clamping.
B. Lock Blot : After Swivel to fix working table & vise.
C. Vise Table Handle : Move vise and clip workpiece.
D. Swivel Scale : Swivel Angle & Index.
E. Vise : Clip workpiece.
F. T-Screw : Fix position for complete vise.
G. Position Pin : Index Fixed.

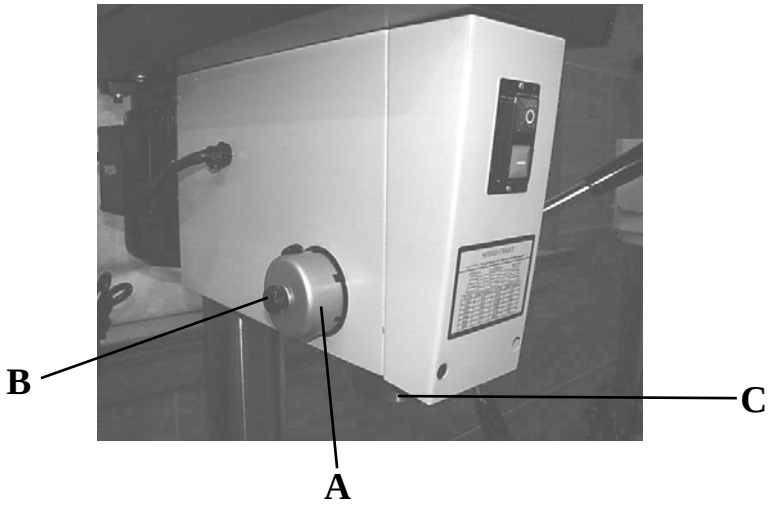
RETURN SPRING ADJUSTMENT

The return spring is adjusted at the factory and should not need adjustment. If it does, follow These steps.

1. Disconnect drill press from power source.

2. Loosen plum screw approximately 5mm, Do not remove.

3. Firmly hold coil spring cover (A); pull out and rotate until pin on return spring plate engages with next notch in coil spring cover (A). Turn counterclockwise to increase tension and clockwise to decrease tension.



4. Adding lubricating oil frequently to keep the machine operating smoothly.

5. Closing the safety guard when in operation to ensure safety.

Trouble Shooting:

(1) No running after switch on:

(a) Main switch interruption while volts irregular - Adjust input voltage and draw back the main switch.

(b) In case of too much current, the overload relay jumps away automatically - Press the overload relay, and it will return to the correct position.

(2) Motor overheat and no power:

(a) Overload - Decrease the load of feed.

(b) Lower voltage - Adjust to accurate voltage.

(c) Spoiled contact point of magnetic switch - Replace with new one.

(d) Break down of overload relay - Connect it or replace with new one.

(e) Motor is poor - Replace with new one.

(f) Break down of fuse or poor contact with wire (it is easily to spoil motor while short circuit)- Switch off power source at once and replace fuse with new one.

(3) The temperature of spindle bearing is too hot:

(a) Grease is insufficient- Fill the grease.

(b) The spindle bearing is fixed too tight - Turning with no speed and feel the tightness with hand.

(c) Turning with high speed for a long time - Turn it to lightly cutting.

(4) Lack of power with main spindle revolving:

(a) Motor has burned out - Change a new motor.

(b) Fuse has burned out - Replace with new one.

(5) Shake of spindle and roughness of working surface has taken place during performance:

(a) The gap of spindle bearing too wide - Adjust the gap in proper or replace bearing with new one.

(b) Spindle loosening up and down - Make two of inner bearing covers on the top tight each other. Do not over-tighten two inner bearing covers with the taper bearing; it is ok as long as no gap between them.

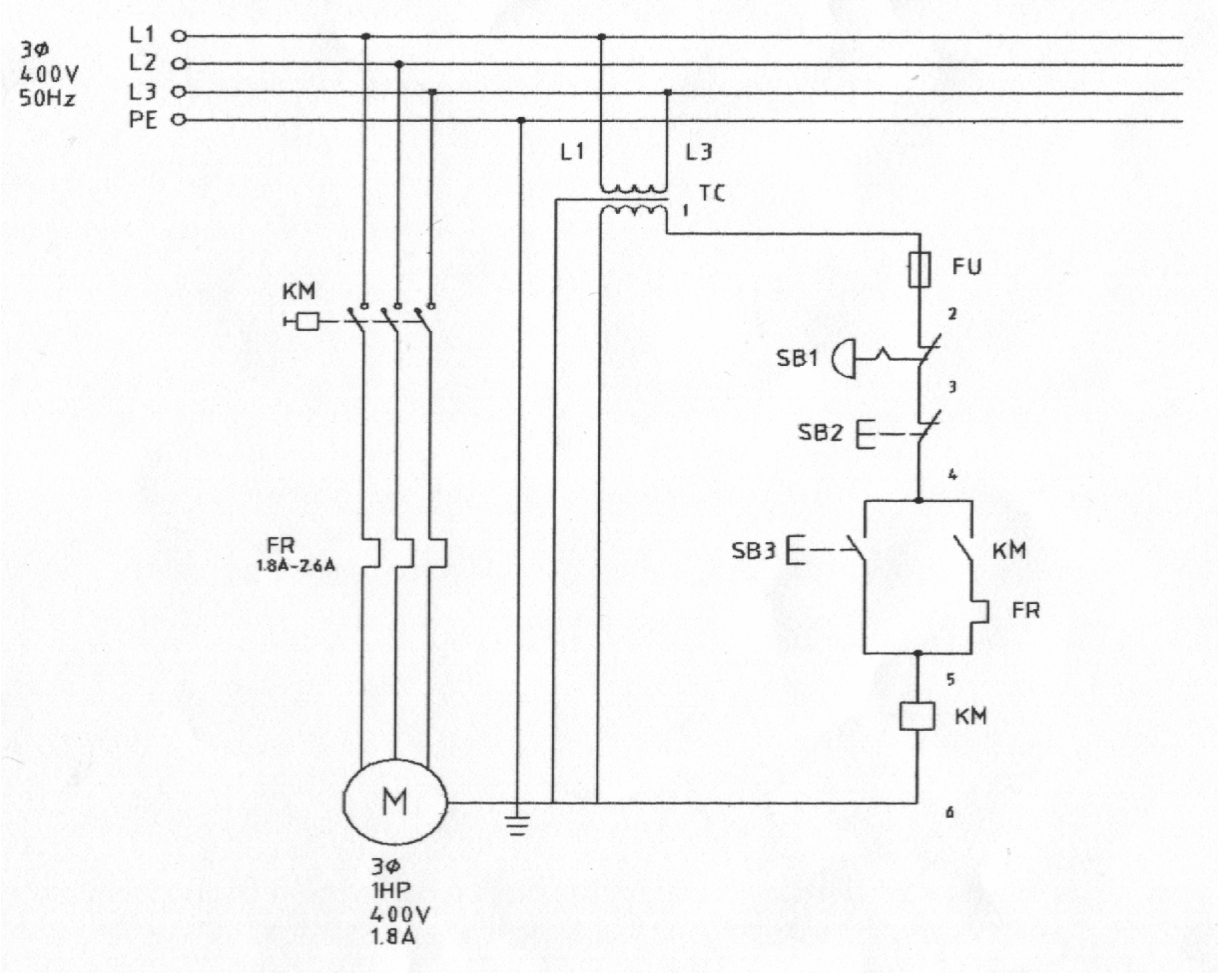
(c) The gap of taper sliding plate too wide - Adjust the tension of bolt in proper.

(d) Loosening of chuck - Fasten chuck.

(e) Cutter is dull – Reshape it.

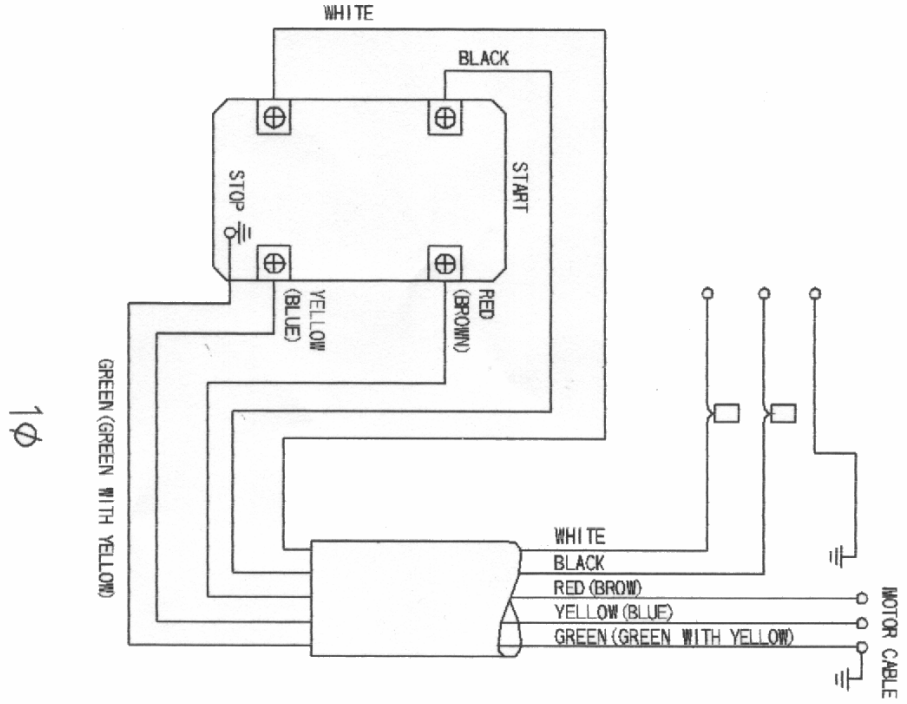
(f) Workpiece has not hold firmly - Be sure to tighten workpiece.

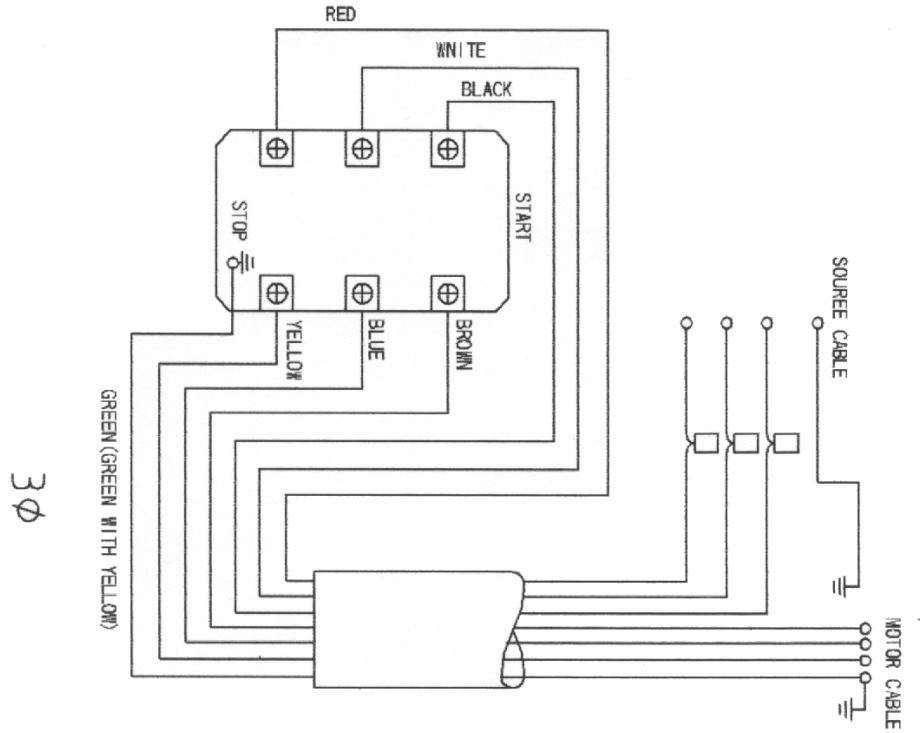
CIRCUIT DIAGRAM

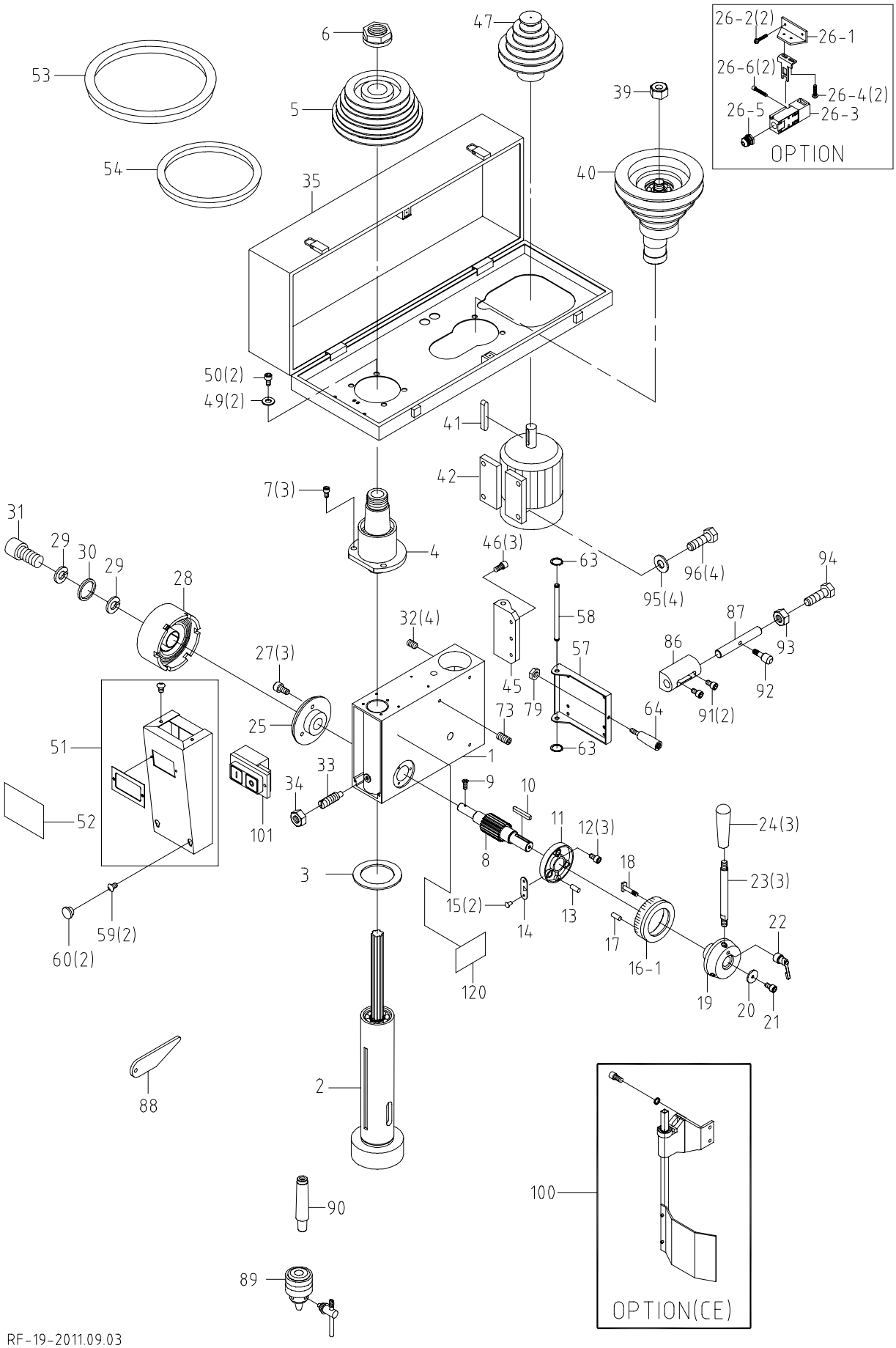


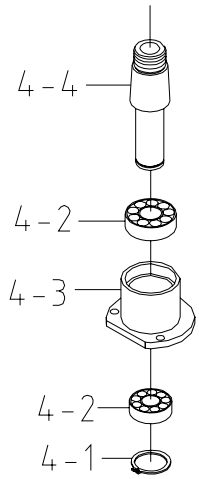
20" 12 SPEEDS		SCHEDULE OF ELECTRICAL EQUIPMENT				Sheet:
Item.	Designation and function	Technical data	QTY	Suppiler	Suppilerg reference	REMARK
KM	CONTACTOR	LCIK 0910 B7	1	TE		CE
M	MOTOR	400V 1HP 50Hz 1.8A	1			
SB1 SB2	EMERGEN CY STOP OFF SWITCH	XB2-ES542 XB2-EA142	1 1	TE		CE
SB3 TC	START SWITCH TRANSFORMER	XB2-EA131 400V / 24V	1 1	TE SUENN LIANG		CE
FU	FUSE	800V 4mm	1	WAGO		CE
FR	OVERLOAD	CR7 K0308 1.8~2.6A	1	TE		CE

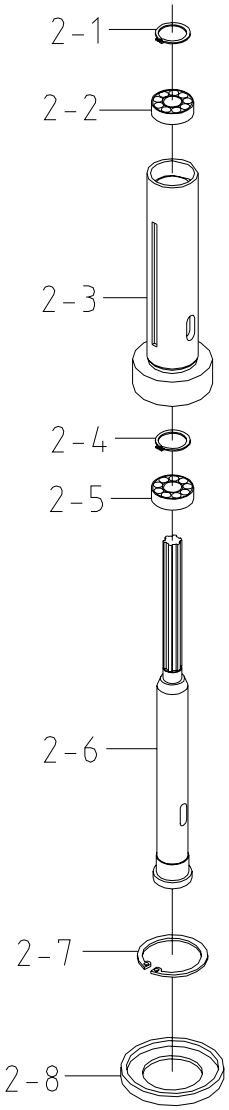
CIRCUIT DIAGRA



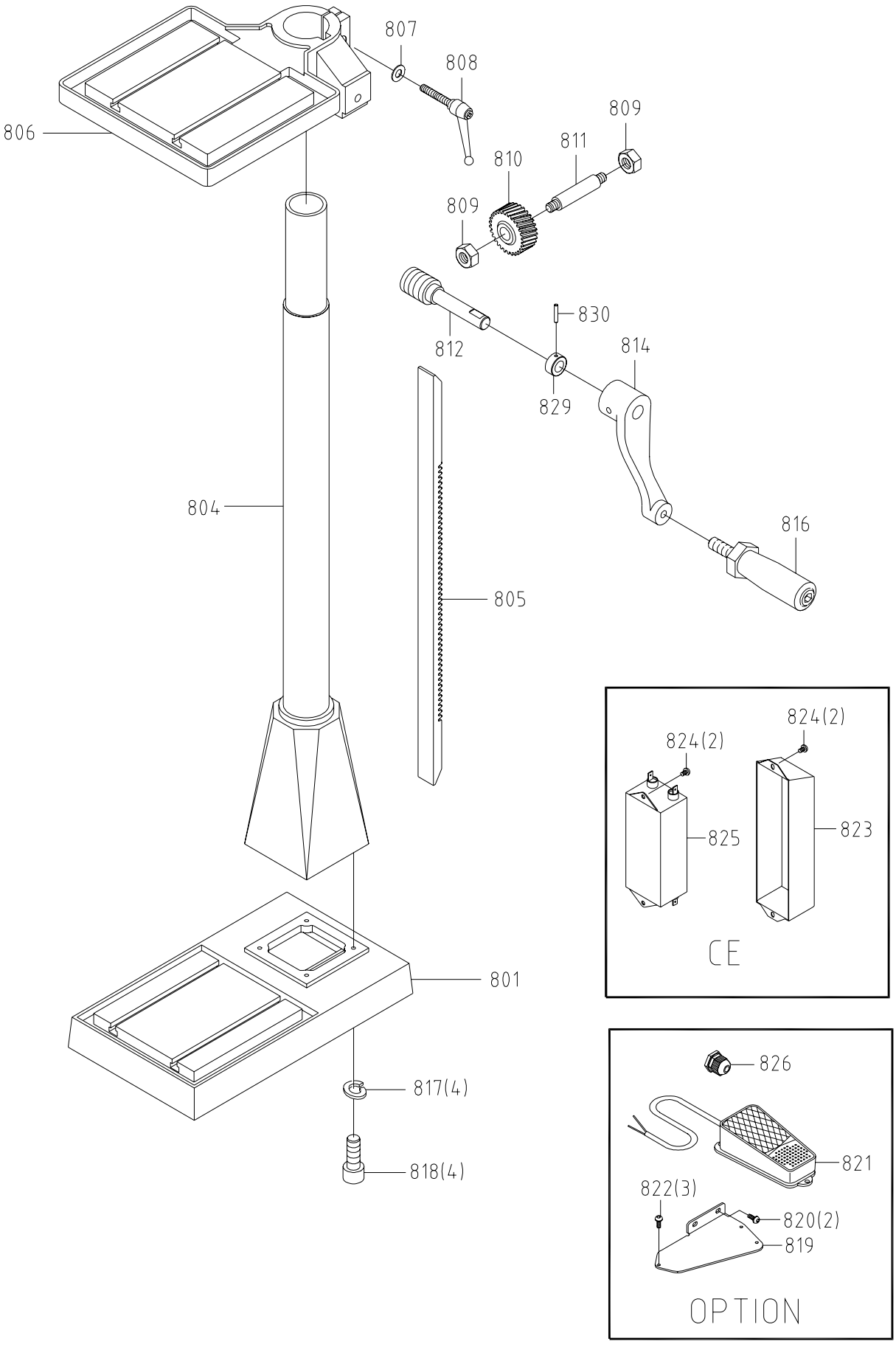



OPTION
OPTION(CE)
RF-19-2011.09.03





19/19TM|AC|-070720-R2


807
808
809
806
811
810
809
830
812
814
829
804
816
805
824(2)
824(2)
825
823
CE
801
826
817(4)
821
822(3)
820(2)
818(4)
819
OPTION

19-2011.09.13

PARTS LIST

MODEL NO. 19

CODE NO	PART NO	DESCRIPTION	SPECIFICATION	QTY	NOTE
1	668001D	Head Body		1	
2	668003S	Rack Sleeve Set	MT3	1	
2	668003AS	Rack Sleeve Set	MT4	1	
2-1	HCS09	C-Retainer ring		1	
2-2	CA6204ZZ	Bearing	6204ZZ	1	
2-3	668003	Rack Sleeve	MT3	1	
2-3	668003A	Rack Sleeve	MT4	1	
2-4	HCS20	C-Retainer ring		1	
2-5	CA6207ZZ	Bearing	6207ZZ	1	
2-6	668014	Spindle Shaft	MT3	1	
2-6	668014A	Spindle Shaft (For Special Request)	MT4	1	
2-7	HCR10	C-Retainer ring		1	
2-8	6119	Bearing Cap	MT3	1	
2-8	668068	Bearing Cap (For Special Request)	MT4	1	
3	668037	Rubber Flange		1	
4	668035S	Spindle Taper Sleeve Set		1	
4-1	HCS17	C-Retainer ring		1	
4-2	CA6006ZZ	Bearing	6006ZZ	2	
4-3	668036	Bearing Base		1	
4-4	668035	Spindle Taper Sleeve		1	
5	668051D	Spindle Pulley		1	
6	7102B	Spindle Locknut		1	
7	HS242	Hex. Socket Head Screw	M8x20L	3	
8	668016	Pinion Shaft		1	
9	HS610	Flat Cross Head Screw	M5x10L	1	
10	HK029	Key	6x6x40L	1	
11	668022	Pinion Support		1	
12	HS229	Hex. Socket Head Screw	M6x15L	3	
13	2450051	Pin	§ 4x13L	1	
14	61121	Limit Plate		1	
15	HH001	Rivet	§ 2	2	
16	668033AS	Graduated Dial Set	Metri	1	
16	668033BS	Graduated Dial Set	Inch	1	
17	2450051	Pin	§ 4x13L	1	
18	2450033A	Scale Base Set Screw		1	
19	668018	Handle Body		1	
20	668024	Bushing		1	
21	HS231	Hex. Socket Head Screw	M6x25L	1	
22	2450063	Graduated Base Fixed Grip		1	
23	623121	Handle		3	

PARTS LIST

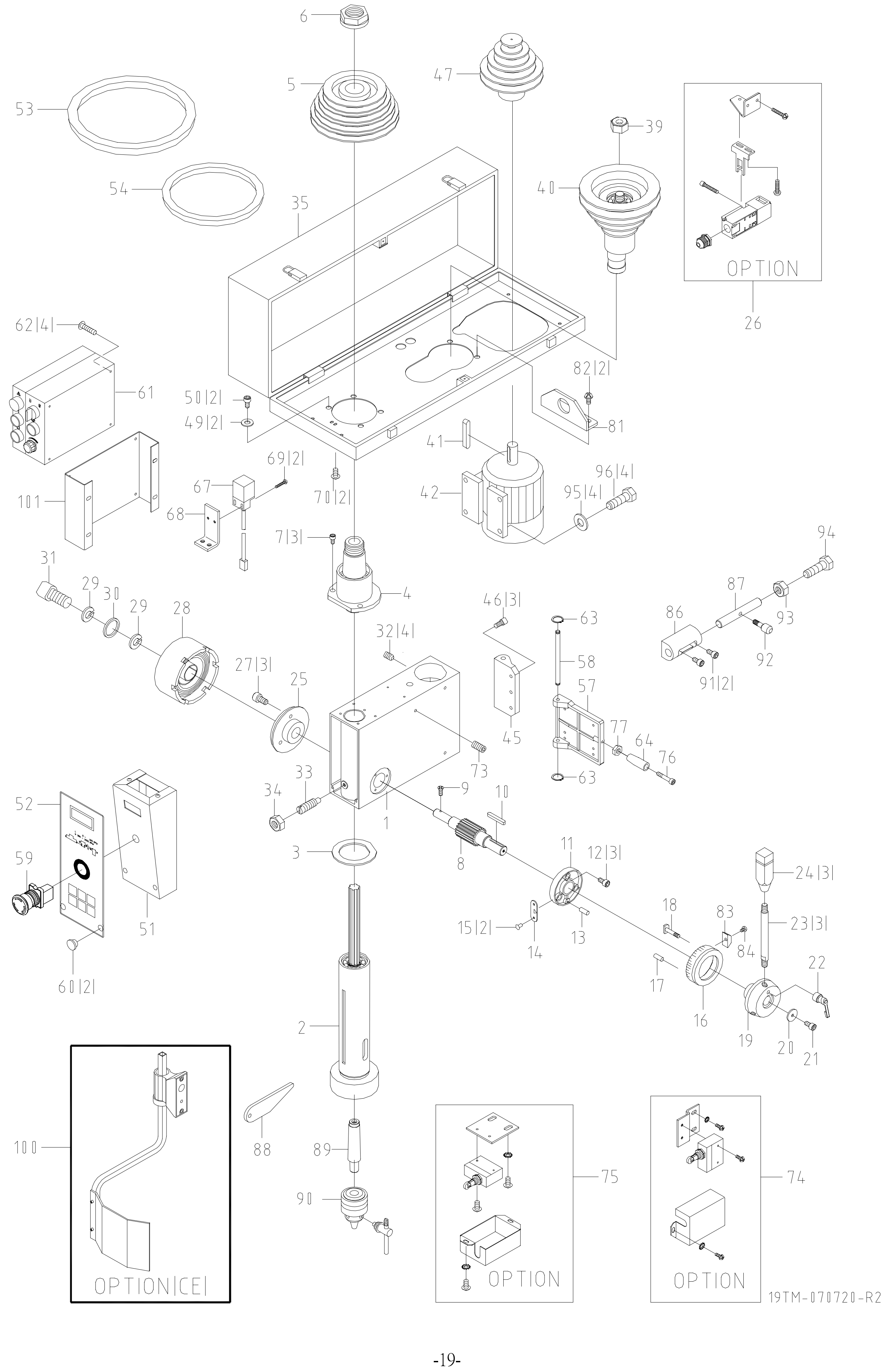
MODEL NO. 19

CODE NO	PART NO	DESCRIPTION	SPECIFICATION	QTY	NOTE
24	623122	Knob		3	
25	61105S	Spring Base Set		1	
26	690078S	Pinion Support Set		1	For CE Only
27	HS520	Cross Round Head Screw	M5x15L	3	
28	61103S	Spring Cover Set		1	
29	HW104	Spring Washer	M6	2	
30	HW004	Washer	M6	1	
31	HS229	Hex. Socket Head Screw	M6x15L	1	
32	HS430	Hex. Socket Headless Screw	M8x8L	2	
33	668042	Screw Key		1	
34	HN006	Hex. Nut	M10	1	
35	668004CS	Motor Pulley Cover Assembly		1	
39	N008	Hex. Nut	5/8"	2	
40	668052FS	Inter Pulley Set		1	
41	HK029	Key	6x6x40L	1	
42		Motor		1	
45	668062A	Motor Base		1	
46	HS242	Hex. Socket Head Screw	M8x20L	3	
47	668045FS	Motor Pulley Assembly		1	
49	HW004	Washer	M6	2	
50	HS229	Hex. Socket Head Screw	M6x15L	2	
51	668041S	Front Cover Set		1	
52	668049	Speed Chart		1	
53	BA033	Belt	A33	1	
54	BA031	Belt	A31	1	
57	668061B	Motor Mount Plate		1	
58	668063A	Fixed Shaft		1	
59	HT003	Round Head Screw	M6-1.0P*10L	2	
60	HD104	Plug		2	
63	HCS02	C-Retaniner Ring	S12軸用	2	
64	668109	Knob		1	
73	HS435	Round Head Screw	M8x35L	1	
79	HN005	Hex. Nut	M8	1	
86	668088	Pinion Support		1	
87	668064A	Fixed Shaft		1	
88	6168	Punch Key		1	
89	6187	Drill Chuck	1/2"-JT6	1	
89	6187-1	Drill Chuck	1/2-B16	1	
90	668050	Chuck Arbor	MT3-JT6	1	
90	668050A	Chuck Arbor	MT3-B16	1	

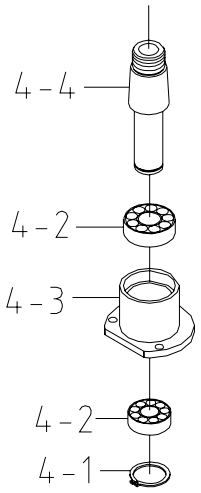
PARTS LIST

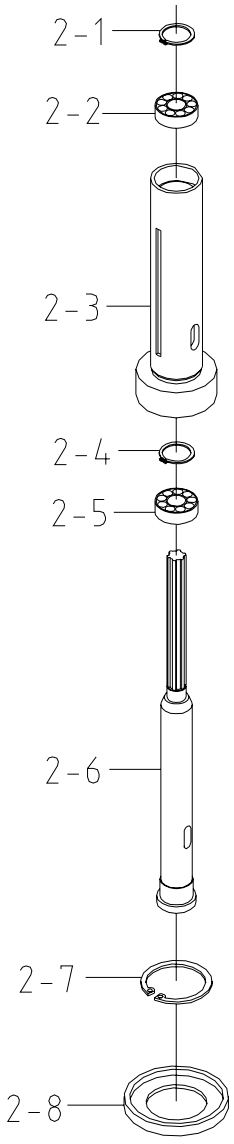
MODEL NO. 19

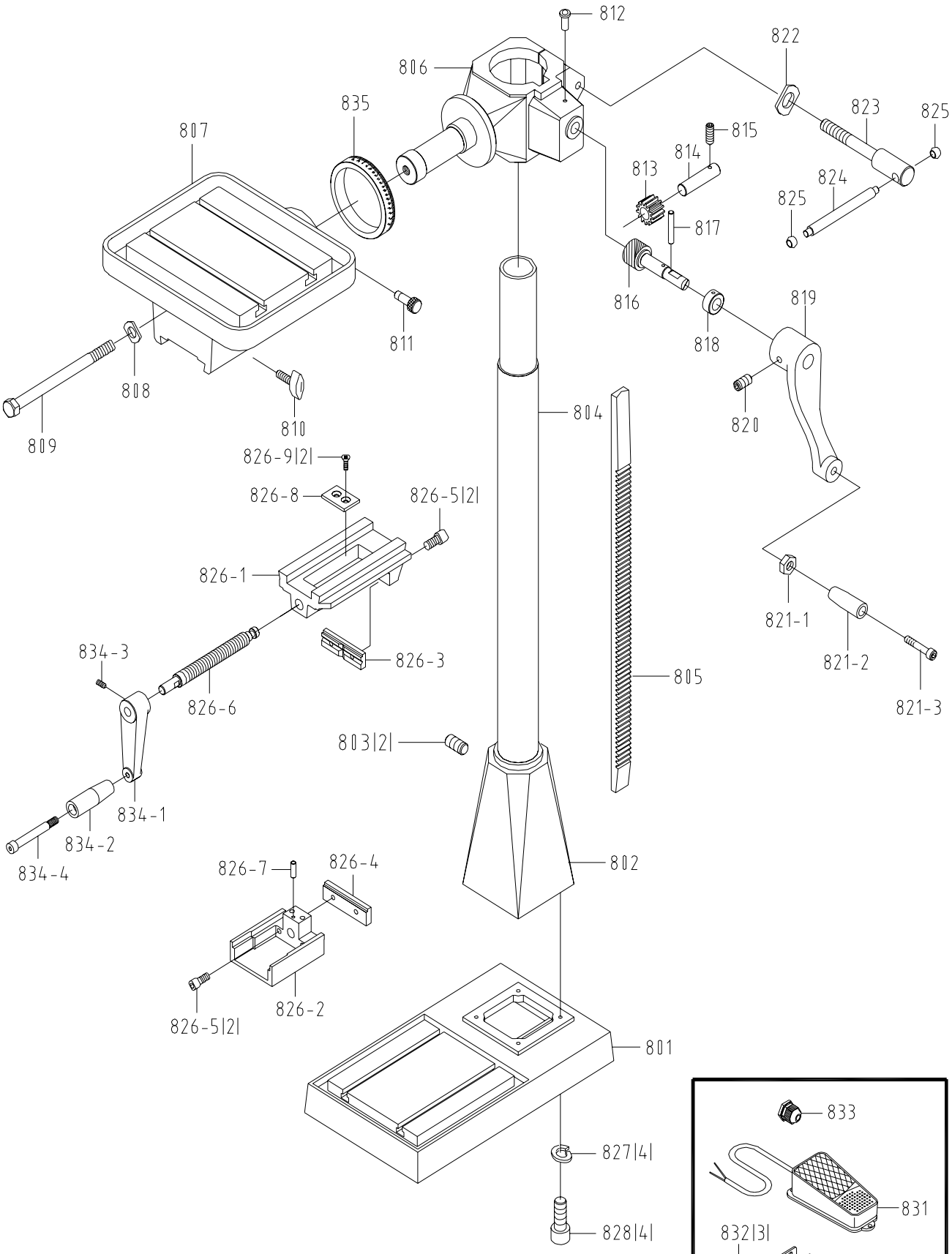
CODE NO	PART NO	DESCRIPTION	SPECIFICATION	QTY	NOTE
91	HS229	Hex. Socket Head Screw	M6x15L	2	
92	668087	Shaft		1	
93	HN006	Hex. Nut	M10	1	
94	HS059	Hex. Head Screw	M10x25L	1	
95	W017	Washer	5/16"X18Xt1.5	4	
96	HS242	Hex. Head Screw	M8x20L	4	
100	668090S	Chuck Guard Asbly		1	For CE only(Option)
101		Switch		1	
120		Name Plate		1	
801	668012	Swivel Base		1	
804	668007A	Column		1	
805	668011B	Rack		1	
806	668002	Square Working Table		1	
807	HW007	Washer	M12	1	
808	668046	Lock Handle		1	
809	HN007	Hex. Nut	M12	2	
810	668026	Worm Gear		1	
811	668023	Worm Shaft		1	
812	668010	Worm Shaft		1	
814	6158S	Up-Down Handle		1	
816	6027-1S	Clamp Handle		1	
817	HW107	Spring Washer	M12	4	
818	HS286	Hex. Socket Head Screw	M12x60L	4	
819	668080	Switch Base		1	Optional
820	HT001	Round Head Screw	M5x8L	2	Optional
821	ET1626	Foot Switch		1	Optional
822	HT001	Round Head Screw		3	Optional
823	668079	Wave Filter Protector		1	For CE Only
824	HT001	Round Head Screw	M5x8L	4	For CE Only
825	ET2510	Wave Filter		1	For CE Only
826	ET2111	Wire Nipple	PG13.5	1	Optional
829	668107	Bearing Spacer		1	
830	HP047	Spring Pin	§ 5X34L	1	



6
5
47
53
39
54
40
35
OPTION
26
62(4)
61
82(2)
50(2)
49(2)
81
41
69(2)
67
101
68
70(2)
42
96(4)
95(4)
7(3)
94
31
29
30
29
28
4
87
46(3)
63
93
86
32(4)
92
27(3)
58
25
91(2)
57
45
77
64
73
76
33
63
34
9
10
52
1
3
11
12(3)
59
8
24(3)
51
18
83
15(2)
14
13
84
23(3)
60(2)
17
16
22
2
19
20
21
100
88
89
75
74
90
OPTION
OPTION
OPTION(CE)
19TM-070720-R2


4-4
4-2
4-3
4-2
4-1


2-1
2-2
2-3
2-4
2-5
2-6
2-7
2-8



19TM-070720-R2

PARTS LIST

MODEL NO. 19 TM

CODE NO	PART NO	DESCRIPTION	SPECIFICATION	QTY	NOTE
1	668001A	Head Body		1	
2	668003S	Rack Sleeve Set	MT3	1	
2	668003AS	Rack Sleeve Set	MT4	1	
2-1	HCS09	C-Retainer ring		1	
2-2	CA6204ZZ	Bearing	6204ZZ	1	
2-3	668003	Rack Sleeve	MT3	1	
2-3	668003A	Rack Sleeve	MT4	1	
2-4	HCS20	C-Retainer ring		1	
2-5	CA6207ZZ	Bearing	6207ZZ	1	
2-6	668014	Spindle Shaft	MT3	1	
2-6	668014A	Spindle Shaft (For Special Request)	MT4	1	
2-7	HCR10	C-Retainer ring		1	
2-8	6119	Bearing Cap	MT3	1	
2-8	668068	Bearing Cap (For Special Request)	MT4	1	
3	668037	Rubber Flange		1	
4	668035S	Spindle Taper Sleeve Set		1	
4-1	HCS17	C-Retainer ring		1	
4-2	CA6006ZZ	Bearing	6006ZZ	2	
4-3	668036	Bearing Base		1	
4-4	668035	Spindle Taper Sleeve		1	
5	668051D	Spindle Pulley		1	
6	7102	Spindle Locknut		1	
7	HS241	Hex. Socket Head Screw	M8x15L	3	
8	668016	Pinion Shaft		1	
9	HS610	Flat Cross Head Screw	M5x10L	1	
10	HK029	Key	6x6x40L	1	
11	668022	Pinion Support		1	
12	HS229	Hex. Socket Head Screw	M6x15L	3	
13	2450051	Pin	§ 4x13L	1	
14	61121	Limit Plate		1	
15	HH001	Rivet	§ 2	2	
16	668033S	Graduated Dial Set		1	
17	2450051	Pin	§ 4x13L	1	
18	2450033	Scale Base Set Screw		1	
19	668018	Handle Body		1	
20	668024	Bushing		1	
21	HS231	Hex. Socket Head Screw	M6x25L	1	
22	2450063	Graduated Base Fixed Grip		1	
23	623121	Handle		3	
24	670010	Knob		3	

PARTS LIST

MODEL NO. 19 TM

CODE NO	PART NO	DESCRIPTION	SPECIFICATION	QTY	NOTE
25	61105S	Spring Base Set		1	
26	690078S	Pinion Support Set		1	For CE Only
27	HS520	Cross Round Head Screw	M5x15L	3	
28	61103S	Spring Cover Set		1	
29	W202	Spring Washer	1/4"	2	
30	W004	Washer	1/4"	1	
31	HS229	Hex. Socket Head Screw	M6x15L	1	
32	HS430	Hex. Socket Headless Screw	M8x8L	4	
33	668042	Screw Key		1	
34	N005	Hex. Nut	3/8"	1	
35	668004CS	Motor Pulley Cover Assembly		1	
39	N008	Hex. Nut	5/8"	1	
40	668052FS	Inter Pulley Set		1	
41	HK029	Key	6x6x40L	1	
42	MFH1029-2	Motor		1	
42		Motor		1	
45	668062A	Motor Base		1	
46	HS242	Hex. Socket Head Screw	M8x20L	3	
47	668045FS	Motor Pulley Assembly		1	
49	HW004	Washer	M6	2	
50	HS229	Hex. Socket Head Screw	M6x15L	2	
51	668041HS	Front Cover Set		1	
52	668069C	Speed Chart		1	
53	BT035	Belt	17-350	1	
54	BT031	Belt	17-310	1	
57	668061A	Motor Mount Plate		1	
58	668063A	Fixed Shaft		1	
59	HT001	Round Head Screw	M5x10L	2	
60	HD104	Plug	§ 12	2	
61	EA0803S	Electrical Box		1	
61	EA0804S	Electrical Box		1	
62	S706	Cross Round Head Screw	3/16"x1/2"L	4	
63	HCS02	C-Retaniner Ring	S12	2	
64	668109	Knob		1	
73	HS435	Round Head Screw	M8x35L	1	
74	668054S	Switch (For CE Only)		1	
75	668055S	Limit Switch Support Set		1	
81	668077	Hanger		1	
82	HS536	Cross Round Head Screw	M8x16L	2	
83	668075	Bracket		1	

PARTS LIST

MODEL NO. 19 TM

CODE NO	PART NO	DESCRIPTION	SPECIFICATION	QTY	NOTE
84	S708	Cross Round Head Screw	3/16"x3/8"L	1	
86	668088	Pinion Support		1	
87	668064A	Fixed Shaft		1	
88	6168	Punch Key		1	
89	668083	Drill Chuck	KEYLESS1/2"-JT6	1	
89	6187	Drill Chuck	1/2"-JT6	1	
89	6187-1	Drill Chuck	1/2-B16	1	
90	668050	Chuck Arbor	MT3-JT6	1	
90	668050A	Chuck Arbor	MT3-B16	1	
91	HS227	Chuck Arbor	M6x5L	2	
92	668087	Shaft		1	
93	HN006	Hex. Nut	M10	1	
94	HS059	Hex. Head Screw	M10x25L	1	
95	W017	Washer		4	
96	HS242	Hex. Head Screw	M8x20L	4	
100	690045ES	Chuck Guard Asbly(For CE Only)		1	
101	668073A	Switch Plate		1	
801	668012	Swivel Base		1	
802	668008	Column Base		1	
803	HS431	Hex. Socker Headless Screw	M8x15L	2	
804	668007A	Column		1	
805	690014	Rack		1	
806	668092	Square Working Table		1	
807	668093A	Square Table		1	
808	HW008	Washer		1	
809	HS153	Hex. Head Screw		1	
810	690071	T Screw		1	
811	690026	Position pin		1	
812	HB503	Oil Ball		1	
813	690029A	Gear		1	
814	690028	Worm Shaft		1	
815	690056	Fiexed Screw		1	
816	668010A	Worm Shaft		1	
817	690037	Pin		1	
818	690031	Bushing		1	
819	6158S	Head Handle Set		1	Optional
822	HW007	Washer		1	Optional
823	690032	Screw		1	For CE Only
824	690035	Handle Rod		1	For CE Only
825	690036	Knob		2	For CE Only

PARTS LIST

MODEL NO. 19 TM

CODE NO	PART NO	DESCRIPTION	SPECIFICATION	QTY	NOTE
826	690054S	Vise Assembly		1	Optional
827	HW107	Spring Washer		4	Option
828	HS286	Hex. Socket Head Screw		4	Option
829	668080	Switch Base (Optional)		1	
830	HT001	Round Head Screw (Optional)		2	
831	ET1626	Foot Switch (Optional)		1	
832	HT001	Round Head Screw (Optional)		3	
833	ET2110	Wire Nipple (Optional)		1	
834	668100S	Vise Handle Set		1	
835	668106	Graduated Dial		1	

MANUFACTURER:
ADDRESS:
SERIAL No.:

PLEASE WRITE DOWN THE SERIAL NO. ON THIS BLOCK FROM THE NAME PLATE AFTER YOU RECEIVE THIS MACHINE.

⚠WARNING

General Machinery Safety Instructions

Machinery House
requires you to read this entire Manual before using this machine.

1. **Read the entire Manual before starting machinery.** Machinery may cause serious injury if not correctly used.
2. **Always use correct hearing protection when operating machinery.** Machinery noise may cause permanent hearing damage.
3. **Machinery must never be used when tired, or under the influence of drugs or alcohol.** When running machinery you must be alert at all times.
4. **Wear correct Clothing.** At all times remove all loose clothing, necklaces, rings, jewelry, etc. Long hair must be contained in a hair net. Non-slip protective footwear must be worn.
5. **Always wear correct respirators around fumes or dust when operating machinery.** Machinery fumes & dust can cause serious respiratory illness. Dust extractors must be used where applicable.
6. **Always wear correct safety glasses.** When machining you must use the correct eye protection to prevent injuring your eyes.
7. **Keep work clean and make sure you have good lighting.** Cluttered and dark shadows may cause accidents.
8. **Personnel must be properly trained or well supervised when operating machinery.** Make sure you have clear and safe understanding of the machine you are operating.
9. **Keep children and visitors away.** Make sure children and visitors are at a safe distance for you work area.
10. **Keep your workshop childproof.** Use padlocks, Turn off master power switches and remove start switch keys.
11. **Never leave machine unattended.** Turn power off and wait till machine has come to a complete stop before leaving the machine unattended.
12. **Make a safe working environment.** Do not use machine in a damp, wet area, or where flammable or noxious fumes may exist.
13. **Disconnect main power before service machine.** Make sure power switch is in the off position before re-connecting.
14. **Use correct amperage extension cords.** Undersized extension cords overheat and lose power. Replace extension cords if they become damaged.
15. **Keep machine well maintained.** Keep blades sharp and clean for best and safest performance. Follow instructions when lubricating and changing accessories.
16. **Keep machine well guarded.** Make sure guards on machine are in place and are all working correctly.
17. **Do not overreach.** Keep proper footing and balance at all times.
18. **Secure workpiece.** Use clamps or a vice to hold the workpiece where practical. Keeping the workpiece secure will free up your hand to operate the machine and will protect hand from injury.
19. **Check machine over before operating.** Check machine for damaged parts, loose bolts, Keys and wrenches left on machine and any other conditions that may effect the machines operation. Repair and replace damaged parts.
20. **Use recommended accessories.** Refer to instruction manual or ask correct service officer when using accessories. The use of improper accessories may cause the risk of injury.
21. **Do not force machinery.** Work at the speed and capacity at which the machine or accessory was designed.
22. **Use correct lifting practice.** Always use the correct lifting methods when using machinery. Incorrect lifting methods can cause serious injury.
23. **Lock mobile bases.** Make sure any mobile bases are locked before using machine.
24. **Allergic reactions.** Certain metal shavings and cutting fluids may cause an ellergic reaction in people and animals, especially when cutting as the fumes can be inhaled. Make sure you know what type of metal and cutting fluid you will be exposed to and how to avoid contamination.
25. **Call for help.** If at any time you experience difficulties, stop the machine and call you nearest branch service department for help.

⚠WARNING

Drilling Machine Safety Instructions

Machinery House
requires you to read this entire Manual before using this machine.

1. **Maintenance.** Make sure the Drill is turned off and disconnect from the main power supply and make sure all moving parts have come to a complete stop before any inspection, adjustment or maintenance is carried out.

2. **Drill Condition.** Drill must be maintained for a proper working condition. Never operate a Drill that has damaged or worn parts. Scheduled routine maintenance should performed on a scheduled basis.

3. **Leaving a Drill Unattended.** Always turn the Drill off and make sure all moving parts have come to a complete stop before leaving the Drill. Do not leave Drill running unattended for any reason.

4. **Avoiding Entanglement.** Remove loose clothing, belts, or jewelry items. Never wear gloves while machine is in operation. Tie up long hair and use the correct hair nets to avoid any entanglement with the Drill spindle or moving parts.

5. **Chuck key & wrench safety.** Always remove chuck keys, wrenches and any service tools immediately after use. Chuck keys left in the chuck can cause serious injury.

6. **Understand the machines controls.** Make sure you understand the use and operation of all controls.

7. **Drill bit selection.** Always use the correct Drill bit for the job you are Drilling. Make sure you use the correct shank drill bit for you drilling machine.

8. **Secure the Drill Bit.** Properly tighten and securely lock the drill bit in the chuck.

9. **Cutting Tool inspection.** Inspect Drill for sharpness, chips, or cracks before use. Replace any cutting tools immediately if dull, chipped or cracked. Handle new cutting tools with care. Cutting edges are very sharp and can cause lacerations.

10. **Reversing the spindle.** Make sure the spindle has come to a complete stop before changing the direction of the spindle.

11. **Stopping the spindle.** Do not slow or stop the spindle by using you hand.

12. **Speed selection.** Select the appropriate speed for the type of work, material, and tool bit. Allow the Drill to reach full speed before beginning a cut.

13. **Changing Belts for speed selection.** Always allow the machine to come to a complete stop and turn power off before changing belts. Not turning power off when changing belts can cause serious injury.

14. **Clearing chips.** Always use a brush to clear chips. Never clear chips when the drill is running.

15. **Power outage.** In the event of a power failure during use of the drill, turn off all switches to avoid possible sudden start up once power is restored.

16. **Clean work area.** Keep the area around the drill clean from oil, tools, chips.

17. **Surface/workpiece area.** Before turning the drill on, make sure the table is clear of any objects (tools, scraps, off-cuts etc.) Do not drill material that does not have a flat surface. unless a suitable support is used.

18. **Table Lock.** Make sure the table is tightened before starting the drill.

19. **For - Radial Drill Arm Lock.** Make sure the arm is locked before leaving or starting a radial arm drill. An unlocked radial drill arm can swing and cause serious injury.

20. **Drilling Sheet metal.** All sheet metal should be clamped to the table before drilling.

21. **Mounting workpieces.** Use clamps or vices to secure workpiece before drilling. Position work so you avoid drilling into table.

22. **Guarding.** Do not operate the drill when chuck guard is removed.

23. **Eye and hand protection.** A face shield with safety glasses is recommended. Always keep hands and fingers away from the drill bit. Never hold a work[piece in your hand while drilling. Do not wear gloves while operating the drill.

24. **Drill operation.** Never start the drill with the drill bit pressed against the workpiece. Feed the drill evenly into the workpiece. Back the drill out of deep holes. Turn the machine off and clear chips and scrap pieces with a brush. Turn power off, remove drill bit, and clean the table before leaving the machine.

25. **Call for help.** If at any time you experience difficulties, stop the machine and call you nearest branch service department for help.

PLANT SAFETY PROGRAM

NEW MACHINERY HAZARD IDENTIFICATION, ASSESSMENT & CONTROL

Drilling Machine

Developed in Co-operation Between A.W.I.S.A and Australia Chamber of Manufactures
This program is based upon the Australian Worksafe Standard for Plant(NOHSC:1010-1994)

Item No.	Hazard Identification	Hazard Assessment	Risk Control Strategies (Recommended for Purchase / Buyer / User)
A	ENTANGLEMENT	HIGH	Eliminate, avoid loose clothing / Long hair etc.
B	CRUSHING	LOW	Secure & support work material on drill table.
C	CUTTING, STABBING, PUNCTURING.	MEDIUM	Isolate power to machine prior to any checks or maintenance being carried out. Do not adjust or clean until the machine has fully stopped.
D	SHEARING	MEDIUM	Isolate power to machine when changing speeds or maintenance is being carried out. Make sure all guards are secured shut when machine is on.
F	STRIKING	MEDIUM	Ensure workpieces are tightly secured on machine. Wear safety glasses. For Radial Arm Drills ensure that arm is locked before drilling. Ensure correct spindle direction when drilling..
H	ELECTRICAL	MEDIUM	All electrical enclosures should only be opened with a tool that is not to be kept with the machine. Never clean or dust machine when power is on. Machine should be installed & checked by a Licensed Electrician.
M	HIGH TEMPERATURE	LOW	Wear appropriate protective clothing to prevent hot swarf.
O	OTHER HAZARDS, NOISE.	LOW	Wear hearing protection as required.
Plant Safety Program to be read in conjunction with manufactures instructions			

HARE&FORBES MACHINERYHOUSE

www.machineryhouse.com.au

MACHINERYHOUSE

www.machineryhouse.co.nz

Authorised and signed by:
Safety officer: .....
Manager: .....

Revised Date: Aug-08