

Operation Manual

Model: DTS-12F

About this Manual

This manual is provided by KENT USA, covering the safe operation and maintenance procedures for a Model **DTS-12** Drill Press. This manual contains instructions on installation, safety precautions, general operating procedures, maintenance instructions and parts breakdown. The drill press has been designed and constructed to provide consistent, long-term operation if used in accordance with the instructions as set forth in this document.

Retain this manual for future reference. If the machine transfers ownership, the manual should accompany it.

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1.0 IMPORTANT SAFETY INSTRUCTIONS

READ ALL INSTRUCTIONS BEFORE USING THIS DRILL PRESS.



– To reduce risk of injury:

1. Read and understand entire owner's manual before attempting assembly or operation of this drill press.
2. Read and understand the warnings posted on the machine and in this manual.
3. Replace warning labels if they become obscured or removed.
4. This drill press is designed and intended for use by properly trained and experienced personnel only. If you are not familiar with the proper and safe operation of a drill press, do not use until proper training and knowledge have been obtained.
5. Do not use this drill press for other than its intended use. If used for other purposes, BOLTON KENT USA disclaims any real or implied warranty and holds itself harmless from any injury that may result from that use.
6. Always wear approved safety glasses or face shield while using this drill press. (Everyday eyeglasses only have impact resistant lenses; they are *not* safety glasses.)
7. Before operating this drill press, remove tie, rings, watches and other jewelry, and roll sleeves up past the elbows. Remove loose clothing and confine long hair. Non-slip footwear or anti-skid floor strips are recommended. Do **not** wear gloves.
8. Wear hearing protection (plugs or muffs) during extended periods of operation.
9. Some dust created by power sanding, sawing, grinding, drilling and other construction activities contains chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:
 - Lead from lead based paint.
 - Crystalline silica from bricks, cement and other masonry products.
 - Arsenic and chromium from chemically treated lumber.Your risk of exposure 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 work with approved safety equipment, such as face or dust masks that are specifically designed to filter out microscopic particles.
10. Do not operate this machine while tired or under the influence of drugs, alcohol or any medication.
11. Make certain the switch is in the **OFF** position before connecting the machine to the power supply. Turn off all controls before unplugging.
12. Make certain the machine is properly grounded. Connect to a properly grounded outlet only. See Grounding instructions.
13. Make all machine adjustments or maintenance with the machine unplugged from the power source.
14. Remove adjusting keys and wrenches. Form a habit of checking to see that keys and adjusting wrenches are removed from the machine before turning it on.
15. Keep safety guards in place at all times when the machine is in use. If removed for maintenance purposes, use extreme caution and replace the guards immediately after maintenance is complete.
16. Check damaged parts. Before further use of the machine, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
17. Provide for adequate space surrounding work area and non-glare, overhead lighting.
18. Keep the floor around the machine clean and free of scrap material, oil and grease.
19. Keep visitors a safe distance from the work area. **Keep children away.**
20. Make your workshop child proof with padlocks, master switches or by removing starter keys.
21. Give your work undivided attention. Looking around, carrying on a conversation and "horse-play" are careless acts that can result in serious injury.
22. The drill press is intended for indoor use. To reduce the risk of electric shock, do not use outdoors or on wet surfaces.
23. Do not handle plug or machine with wet hands.
24. Use recommended accessories; improper accessories may be hazardous.
25. Maintain KENT USA with care. Follow instructions for lubricating and changing accessories.
26. Turn off machine and disconnect from power before cleaning. Use a brush or compressed air to remove chips or debris; do not use bare hands.
27. Never leave the machine running unattended. Turn the power off and do not leave the machine until it comes to a complete stop.
28. Pull the mains plug if the machine is not in use.
29. Keep an ergonomic body position. Maintain a balanced stance at all times.
30. Do not stand on the machine.

31. Make sure the workpiece is securely attached or clamped to the table. Never use your hand to hold the workpiece – the bit may seize in the workpiece and rotate, causing injury.

32. Secure the drill press to the floor to avoid tipping.

33. The drill press is intended for industrial use.

Familiarize yourself with the following safety notices used in this manual:



WARNING: This means that if precautions are not heeded, it may result in serious, or possibly even fatal, injury.



CAUTION: This means that if precautions are not heeded, it may result in minor injury and/or possible machine damage.

SAVE THESE INSTRUCTIONS



WARNING:

These symbols below advise that you follow the correct safety procedures when using this machine.



Read and understand entire user manual before machine use



Wear gloves when handling sharp KENT USA



Keep hands clear from moving parts



Wear approved working outfit, confine long hair



Attention high voltage



Keep an ergonomic body position



Attention cutting hazard



Attention crushing hazard

1.1 Designated use and limitations to use

The machine is for industrial use and has been designed for drilling and tapping machinable metal and plastic materials. With a suitable dust collection, wood and wood derived materials may be machined also.

The workpiece must allow safely be loaded, supported and clamped for machining.

The machine is intended for indoor use. The protection rating of the electrical installation is IP 54.

If used for other purposes, BOLTON KENT USA disclaims any real or implied warranty and holds itself harmless from any injury that may result from that use.



WARNING:

The machine is not suitable for cutting magnesium...high danger to fire !

The machine may not be used in explosive environments.

1.2 Remaining hazards

When using the machine according to regulations some remaining hazards may still exist.

The rotating drill bit can cause injury.

Thrown workpieces and workpiece parts can lead to injury.

Tipping of the workpiece due to insufficient support can lead to injury.

Dust, chips and noise can be health hazards. Be sure to wear personal protection gear such as safety goggles, ear protection and dust mask.

Assure good ventilation. Use a suitable dust collection or air filtration system.

The use of incorrect mains supply or a damaged power cord can lead to injuries caused by electricity.

2.0 Specifications

Model numberDTS-12

Motor and electricals:

Motor type DC brushless
Motor output power 0.9 kW
Power supply 1PH. 220V 60Hz or 3PH. 220V 60Hz
Protection class I
Listed load amps 5 A
Power transfer directly

Head and Capacities:

Swing ¹ 460mm
Chuck arbor taper B16- MT2
Spindle taper MT2
Spindle travel, maximum 80 mm
Quill diameter 52 mm
Speed range variable 100 -1800 / min
Maximum distance, spindle to table 430 mm
Maximum distance, spindle to base 630 mm

Drilling capacity, mild steel 22 mm
Tapping capacity, mild steel M12

¹ Swing is twice the distance from column to spindle center (i.e. the diameter of workpiece that can be drilled to its center).

Table:

Table size Ø350 mm
Table tilt 360°
Table rotation around column 360°
Table elevating system worm gear with rack
Recommended maximum weight on table..... 30 kg

Base and Column:

Base size (LxWxH) 490 x 280 x 70 mm
Base working surface 205 x 255 mm
Column diameter 80 mm

Materials:

Head Aluminum
Table surface-ground, cast iron
Column steel
Base cast iron

Sound emissions:

Sound emission in idle (measured in 1m distance, 1.6m above ground) ...70 dB (LpA)

Dimensions and Weights:

Overall dimensions, assembled 600 x 400 x 1150 mm
Shipping dimensions 620 x 420 x 1250 mm
Net weight (approximate) 80 kg
Shipping weight (approximate) 125 kg

L = length; W = width; H= height; D= depth

The specifications in this manual were current at time of publication, but because of our policy of continuous improvement, BOLTON KENT USA reserves the right to change specifications at any time and without prior notice, without incurring obligations.

3.0 Machine Description

3.1 Base mounting hole pattern

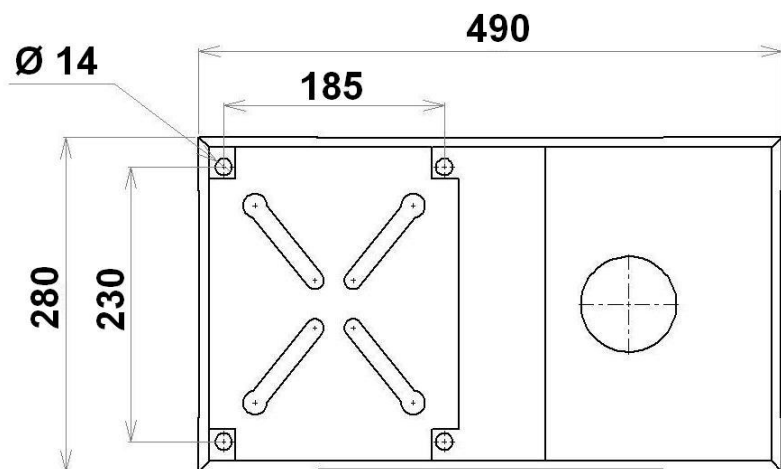


Figure 3-1: Base mounting hole pattern



WARNING:

To avoid tipping, the machine must be bolted down with four lag screws (not provided).

4.0 Setup and Assembly



WARNING:

Read and understand the entire contents of this manual before attempting assembly or operation. Failure to comply may cause serious injury.

4.1 Unpacking and cleanup

Remove all contents from shipping crate and compare parts to the contents list in this manual. If shipping damage or any part shortages are identified, contact your distributor. Do not discard crate or packing material until drill press is assembled and running satisfactorily.

Clean all rust protected surfaces with kerosene or a light solvent. Do not use lacquer thinner, paint thinner or gasoline, as these can damage plastic components and painted surfaces.

4.2 Shipping contents

- 1 Drill press
- 1 Crank handle
- 3 Feed handles
- 1 Arbor
- 1 Drift key
- 1 Owner's manual

4.3 Crank handle Assembly

1. Install 3 feed handles into hub (D, Fig. 4-2).
2. Install crank handle on shaft of table bracket, and tighten set screw with 3mm hex wrench. (Fig. 4-1)

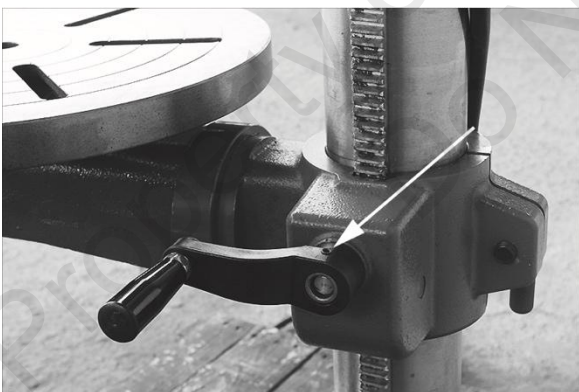


Figure 4-1: Installing crank handle

4.4 Chuck and arbor installation

1. Thoroughly clean arbor (A, Fig. 4-2), chuck (B) and spindle (C). Any grease or residue in these areas can cause the pieces to separate and create a safety hazard as well as damage to the tool.

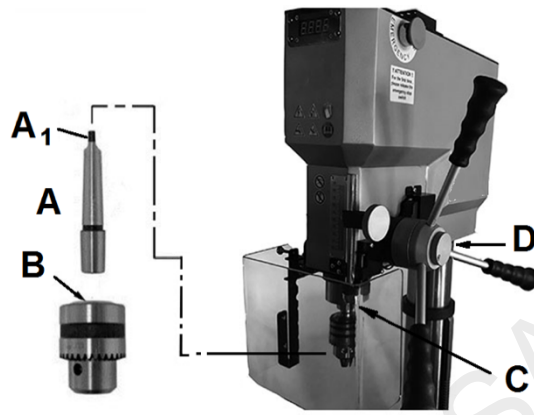


Figure 4-2: Installing chuck and arbor

2. Twist chuck to retract chuck jaws if they are exposed.
3. Push chuck (B) by hand onto arbor (A), and slide assembly firmly up into spindle (C).
4. Turn arbor and chuck assembly until tang (A1) on arbor engages slot at end of spindle.
5. Use one or two sharp taps from a rubber mallet, or a hammer and a block of wood, against bottom of chuck to seat chuck securely onto arbor.



CAUTION:

Do not use a steel hammer directly against chuck, as this may damage chuck.

4.5 Chuck and arbor removal:

1. Unplug machine from power source.
2. Raise table until it is about 200mm below chuck.
3. Place a piece of scrap wood on table, and lower quill (Figure 4-3) using feed handles.

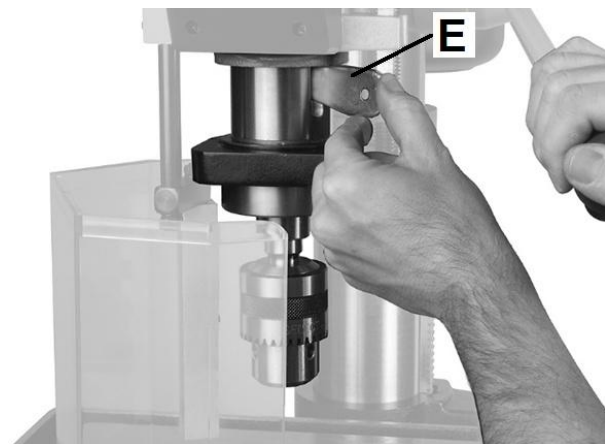


Figure 4-3: Drift key insertion

4. Rotate spindle to align keyhole in spindle with keyhole in quill.
5. Insert drift key (E, Fig. 4-3) into aligned slots and tap lightly. The chuck and arbor assembly should fall from the spindle.



CAUTION:

Catch chuck as it is released; allowing it to fall to floor may damage it.

Wrench and key storage:

Wrenches, chuck key, and drift key can be stored on fixture on right side of drill press head.

5.0 Electrical Connections



WARNING:

All electrical connections must be done by a qualified electrician in compliance with all local codes and ordinances. Failure to comply may result in serious injury.

The DTS-12 Drill Presses are rated at 1PH. 220V 60Hz or 3PH. 220V 60Hz (switchable) power supply, the drill press comes with a plug designed for use on a circuit with a grounded outlet.

Mains connection and any extension cords and plugs used must comply with the information on the machine license plate.

The mains connection must have a 16A surge-proof fuse.

Only use extension cords marked H07RN-F, with wires 1.5mm² or more.

The total length of cord may not exceed 18 Meter

Power cords and plugs must be free from defects.

Connections and repairs to the electrical equipment may only be carried out by qualified electricians.

The machine is equipped with 1.8m power cord and plug.

Before connecting to power source, be sure switch is in *off* position.

5.1 Grounding instructions

This tool must be grounded. In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be inserted into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.



WARNING:

Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or service person if you are in

doubt as to whether the outlet is properly grounded. Do not modify the plug provided with the tool.

The green/yellow conductor is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

Use only 3-wire extension cords with grounding plugs.

Repair or replace damaged or worn cord immediately.

5.2 Extension cords

The use of extension cords is discouraged; try to position machines near the power source. If an extension cord is necessary, make sure it is in good condition.

An undersized cord will cause a drop in line voltage resulting in loss of power and overheating.

Only use extension cords marked H07RN-F, with wires 1,5mm² or more.

The total length of cord may not exceed 18 Meter

Extension cords and plugs must be free from defects.

6.0 Adjustments

6.1 Depth stop adjustment

To drill multiple holes at the same preset depth, use the depth stop:

1. Make a pencil mark on edge of work piece to indicate depth of hole.
2. With drill bit in chuck, lower down feed handle to advance bit to your mark.
3. With your other hand, advance lock knob (H, Fig. 6-1) on the depth stop rod until they are snug to the seat (J).
4. The drill bit will now advance to this point.

To release, move knob to top of depth stop.

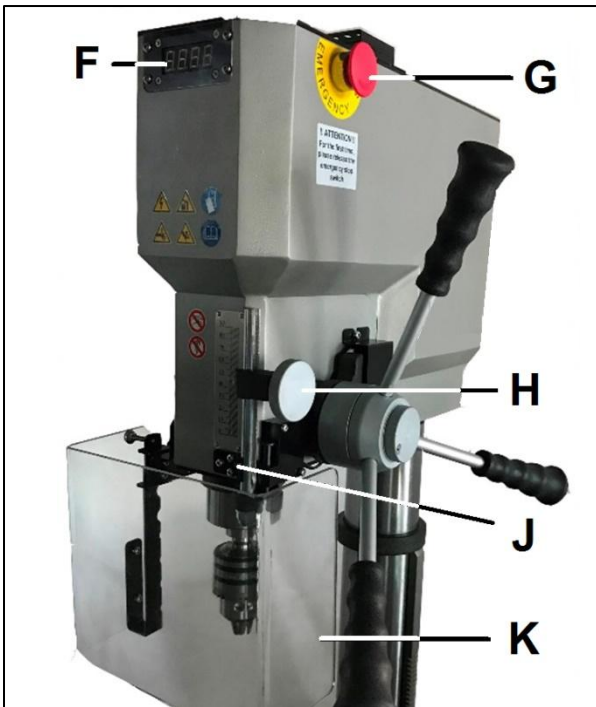


Figure 6-1: Depth stop adjustment

6.2 Changing spindle speeds

The spindle is variable from 100 to 1800 rpm.

Rotate the Variable Speed Selector (L, Figure 6-2) to adjust.

The Digital Readout (F, Fig. 6-1) displays the actual speed while spindle is rotating.



Figure 6-2: Spindle speed adjustment

6.3 Return spring adjustment

The return spring is adjusted by the manufacturer and should not require attention. If adjustment is deemed necessary, follow the steps below while referring to Figure 6-3:

1. Unplug machine from power source.
2. Loosen lock nut (O, Fig. 6-3). Do not remove.
3. Firmly hold coil spring cover (N).
4. Pull out cover and rotate until pin (M) on housing engages the next notch in coil spring cover.

Turn the cover clockwise to decrease tension and counter-clockwise to increase tension.

5. Tighten lock nut (O). Do not over-tighten or force nut too strongly against spring cover.

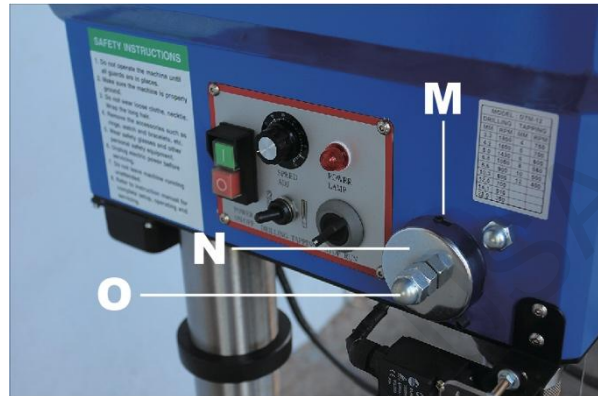


Figure 6-3: Return spring adjustment

6.4 Table tilt adjustment

Table tilt adjustments are made on the table bracket beneath the table.



CAUTION:

In the following steps do not over-loosen the nuts. This could cause table assembly to separate from column, fall and cause injury.

1. Loosen hex screw (P) with 5/8" inch.
2. Tilt table to desired angle, referring to scale.
3. Tighten hex screw (P).

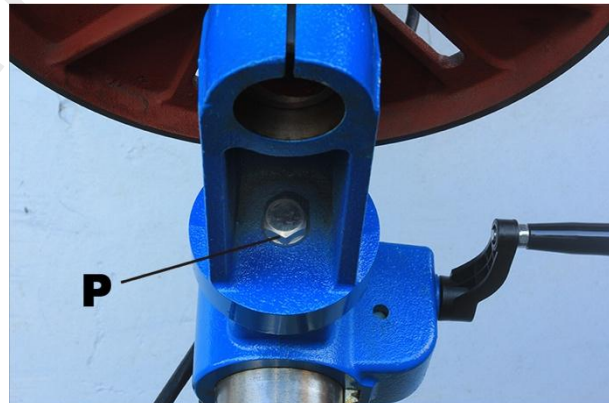


Figure 6-4: Table tilt adjustment

7.0 Operating Controls

First press Green Button (R, Fig. 7-1) of Main Power Switch.



Figure 7-1: Main Power ON

1. Choose between Drilling and Tapping via Select Switch (U, Fig. 7-2).
2. Turn the black knob (S, Fig.7-2) to run to start spindle rotation.
3. Rotate the Variable Speed Selector (L) to adjust the spindle speed.

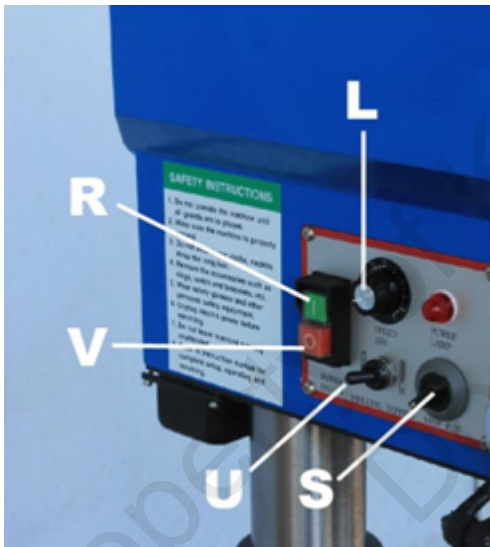


Figure 7-2: Switch panel

In case of emergency, operate the Emergency Stop button (G, Figure 6-1).

Note: The chuck guard is electrically interlocked. It must be lowered to one of the indexing positions, otherwise the machine will not run.

The work lamp operates independently; ON/OFF button is on top of lamp housing.

8.0 Machine Operation

1. Insert drill bit into chuck jaws about 25mm deep. When using a small bit, do not insert it so far that the jaws touch the flutes of the bit. Make sure bit is centered in chuck before tightening chuck with key.
2. For a small workpiece that cannot be clamped to the table, use a drill press vise. The vise must be clamped or bolted to the table. Always use a back-up piece of scrap wood to cover the table. This protects both table and drill bit.



WARNING:

Workpiece must be clamped to table or secured in a vise that is securely fastened to table. Failure to comply may cause serious injury.

3. Feed the bit into the material with only enough force to allow the drill bit to work. Feeding too slowly may cause burning of the workpiece. Feeding too quickly may cause the motor to stop and/or the drill bit to break.

The drill press is overload protected. The motor will stop automatically when you over force the drill press.

When motor overload has reacted, cycle the Main Power switch (R) to restart the machine again.

Push main power OFF-Switch (V).

Push the main power ON-Switch (R).

8.1 Recommended Speeds

ATTENTION:

Generally speaking, the smaller the drill bit, the greater the RPM required. Soft materials require higher speeds; hard metals slower speeds.

Metal is usually drilled at slower speeds and cutting oil is applied.

Recommended speeds for a 10mm HSS drill bit:

Soft Wood:	1800 RPM
Hard Wood:	1500 RPM
Plastic:	1800 RPM
Aluminium:	1800 RPM
Brass:	1000 RPM
Cast iron:	1000 RPM
Mild steel:	800 RPM
High carbon steel:	600 RPM
Stainless steel:	300 RPM

Use the speed chart (Fig. 8-1) provided on the machine as a general guideline for drilling and tapping mild steel.



			
mm	1 / min	M	1 / min
3.3	1800	4	750
4.2	1800	5	700
5.0	1430	6	600
6.8	1050	8	560
8.5	900	10	500
10.3	800	12	400
12.0	700		
14	510		
22	350		

Figure 8-1: Speed Chart for Mild Steel

The DTS-12 drill press is equipped with a highly efficient Brushless DC Motor.

With direct drive design, low moment of inertia, no belt transmission losses.

Direction changes are quick, allowing high speed tapping.

High torque (M) and power (P2) are available over a wide spindle speed range (n).

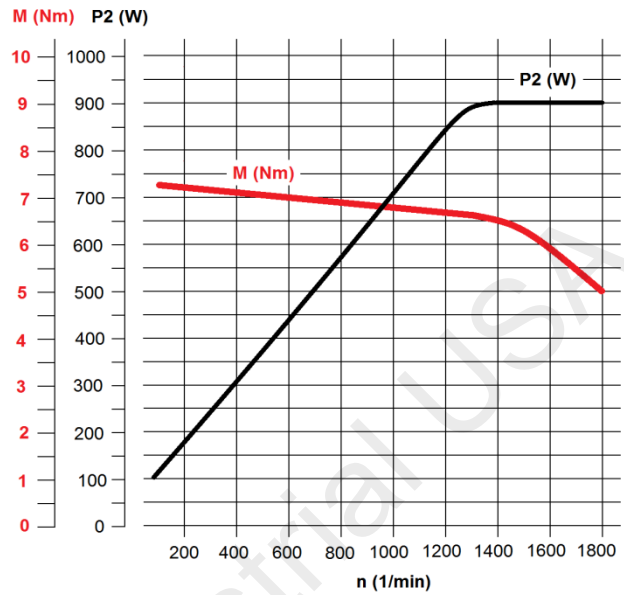


Figure 8-2: Spindle Speed, Torque and Power Chart

9.0 User-Maintenance



WARNING:

Before any intervention on the machine, disconnect it from electrical supply by pulling out plug or turning off main switch at electrical source. Failure to comply may cause serious injury.

A coat of automobile-type wax applied to table and column will help keep surfaces clean.

Check that bolts are tight and electrical cords are in good condition. If an electrical cord is worn, cut, or damaged in any way, have it replaced immediately.

9.1 Lubrication

All ball bearings are pre-lubricated and sealed, and require no further lubrication.

Periodically apply grease to:

- Rack.
- Table elevating mechanism, including worm gear.
- Teeth of quill.

Periodically apply light coat of machine tool oil to quill and column.

The quill return spring should receive SAE 20 oil once yearly. Apply the oil beneath spring cover (N, Fig. 6-3) using a squirt can.

10.0 Troubleshooting

Symptom	Possible Cause	Correction *
Drill press will not start.	Drill press's power plug is not connected.	Check all plug connections.
	Fuse blown, or circuit breaker tripped.	Replace fuse, or reset circuit breaker.
	Cord damaged.	Replace cord.
	Starting capacitor bad.	Replace starting capacitor.
	Spindle guard did not closed	Re close the guard
Drill press does not come up to speed.	Extension cord too light or too long.	Replace with adequate size and length cord.
	Low current.	Contact a qualified electrician.
Drill Press vibrates excessively.	Base on uneven surface.	Locate drill press on even floor.
Noisy operation	Dry quill.	Lubricate quill.
Workpiece burns or smokes.	Incorrect Speed.	Change to appropriate speed.
	Chips not clearing from hole or bit.	Retract drill bit frequently to remove chips.
	Dull drill bit.	Re-sharpen, or replace drill bit.
	Feeding too slowly.	Increase feed rate.
Drill bit wanders.	Bit sharpened incorrectly.	Re-sharpen bit correctly.
	Bent drill bit.	Replace drill bit.
	Bit, or chuck not installed properly.	Reinstall the chuck, or bit properly.
Drill bit binds in workpiece.	Workpiece pinching the bit.	Support or clamp work piece.
	Excessive feed rate.	Decrease feed rate.
	Chuck jaws not tight.	Tighten chuck jaws.
Excessive drill bit runout, or wobble.	Bent drill bit.	Replace drill bit.
	Arbor not properly installed	Reinstall the arbor.
	Bit, or chuck not properly installed.	Reinstall the bit, or chuck properly.
Quill returns too slow, or too fast.	Improper spring tension.	Adjust spring tension.
Chuck or arbor does not stay in place.	Dirt, grease, etc. on arbor, chuck, or spindle.	Clean all mating surfaces thoroughly with a cleaner-degreaser.

* **WARNING:** Some corrections may require a qualified electrician.

Table 10-1

11.0 Environmental Protection

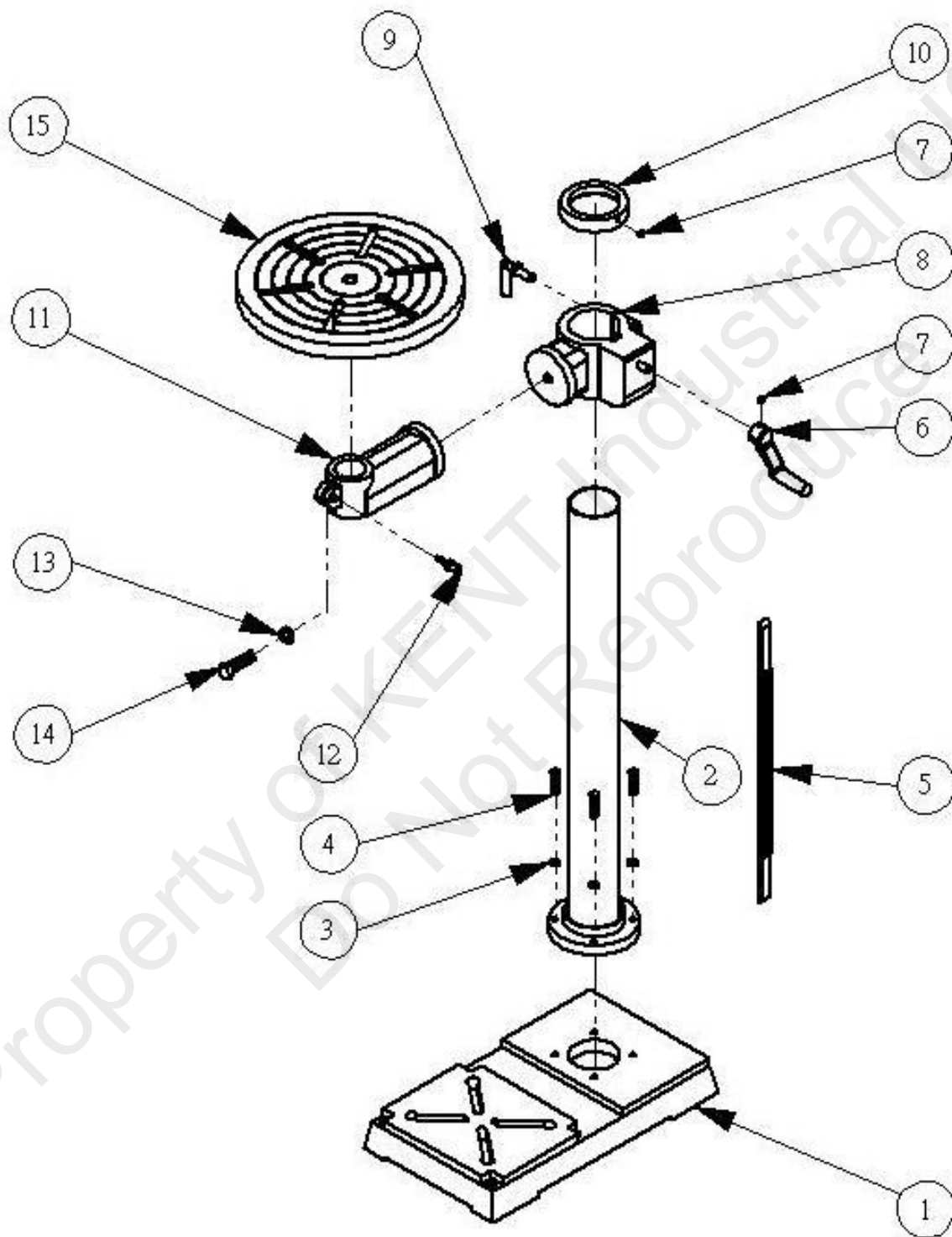
Protect the environment.

Dispose all packaging material in an environmental friendly manner.

Your appliance contains valuable materials which can be recovered or recycled. Please leave it at a specialized institution.

12.0 Structure Decomposition

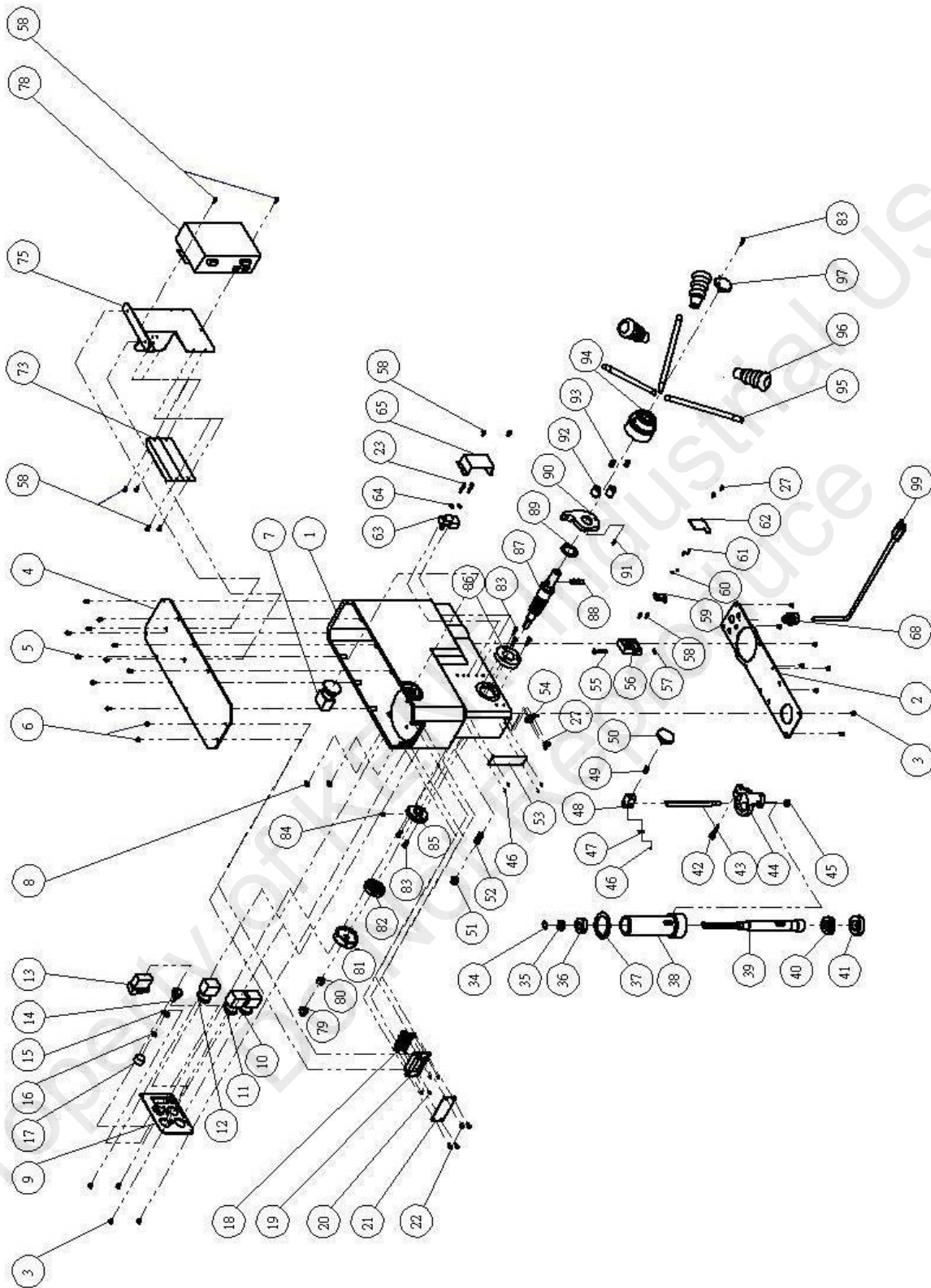
DTS-12 Table/ Base Assembly breakdown



DTS-12 Parts List for the Table/ Base Assembly

Index No.	Part No.	Description	Size	Q'ty
1	DTS-B-01	Base	490 x 280 x 70mm	1
2	DTS-B-02	Column	Ø80mm	1
3	DTS-B-03	Spring Washer	3/8"	4
4	DTS-B-04	Hex Cap Screw	3/8" x 1.5"	4
5	DTS-B-05	Rack		1
6	DTS-B-06	Shafting Rod		1
7	DTS-B-07	Set Screw	1/4" x 1/4"	2
8	DTS-B-08	Table Bracket		1
9	DTS-B-09	Clamp Bolt	1/2" x 45 mm	1
10	DTS-B-10	Rack Collar	Ø80	1
11	DTS-B-11	Arm	5/16" x 26 mm	1
12	DTS-B-12	Clamp Bolt	5/16" x 26 mm	1
13	DTS-B-13	Spring Washer	5/8"	1
14	DTS-B-14	Hex Cap Screw	5/8" x 2"	4
15	DTS-B-15	Work Table	Ø350mm	1

DTS-12 Headstock Assembly Breakdown



DTS-12 Part List for Headstock Assembly (1/2)

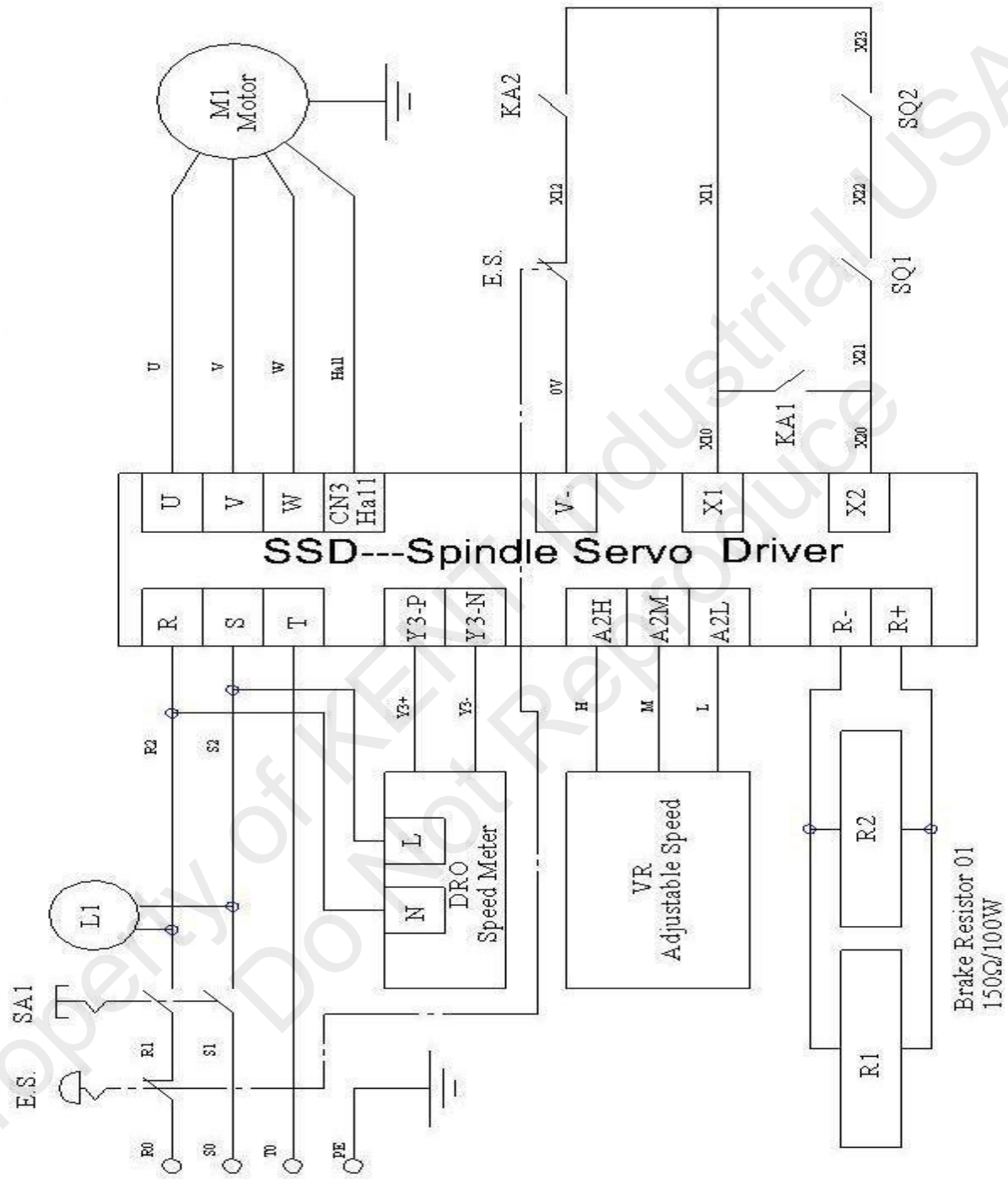
Index No.	Part No.	Description	Size	Q'ty
1	DTS12-01	Head Casting		1
2	DTS12-02	Lower Cover		1
3	DTS12-03	Screw	M5 x 8 mm	12
4	DTS12-04	Top Cover		1
5	DTS12-05	Screw	M5 x 10 mm	10
6	DTS12-06	Screw	M5 x 6 mm	2
7	DTS12-07	Emergency Switch		1
8	DTS12-08	Set Screw	M10 x 8 mm	2
9	DTS12-09	Switch Board		1
10	DTS12-10	Start / Stop Switch		1
11	DTS12-11	Power Lamp		1
12	DTS12-12	Tapping / Drilling Switch		1
13	DTS12-13	Magnetic On/ Off Switch		1
14	DTS12-14	Variable Resistor (VR)	5K	1
15	DTS12-15	Washer For VR		1
16	DTS12-16	Hex Nut For VR		1
17	DTS12-17	Cap For VR		1
18	DTS12-18	Digital Speedometer		1
19	DTS12-19	Cover For Digital Speedometer		1
20	DTS12-20	Screw	M3 x 6 mm	4
21	DTS12-21	Acrylic Cover For Digital Speedometer		1
22	DTS12-22	Screw	M4 x 10 mm	4
23	DTS12-23	Screw	M4 x 25 mm	2
26	DTS12-26	Base B For Guard Limit Switch		1
27	DTS12-27	Screw	M4 x 8 mm	11
34	DTS12-34	External Retaining Ring	Ø16 mm	1
35	DTS12-35	Hex Nut	5/8"-L	1
36	DTS12-36	Ball Bearing	6203	1
37	DTS12-37	Rubber Washer	Ø52 mm	1
38	DTS12-38	Quill		1
39	DTS12-39	Spindle		1
40	DTS12-40	Thrust Bearing	2905	1
41	DTS12-41	Ball Bearing	6205	1
42	DTS12-42	Screw	M6 x 35 mm	1
43	DTS12-43	Depth Setting Column		1
44	DTS12-44	Depth Setting Base		1
45	DTS12-45	Cap Nut	3/8"	1
46	DTS12-46	Rivet		5
47	DTS12-47	Scale Index		1
48	DTS12-48	Scale Index Base		1
49	DTS12-49	Scale Set Column		1
50	DTS12-50	Scale Set Screw		1
51	DTS12-51	Cap Nut	M10	1
52	DTS12-52	Set Screw	M10 x 35 mm	1
53	DTS12-53	Scale (mm)		1
54	DTS12-54	Depth Stop Base		1

DTS-12 Part List for Headstock Assembly (2/2)

Index No.	Part No.	Description	Size	Q'ty
55	DTS12-55	Lower Limit Trip		1
56	DTS12-56	Lower Limit Box		1
57	DTS12-57	E-Type Buckles		1
58	DTS12-58	Screw	M5 x 10 mm	4
59	DTS12-59	Lower Limit Switch		1
60	DTS12-60	Washer For M3 Screw		2
61	DTS12-61	Screw	M3 x 15 mm	2
62	DTS12-62	Lower Limit Box Cover		1
63	DTS12-63	Top Limit Switch		1
64	DTS12-64	Washer For M4 Screw		2
65	DTS12-65	Lower Limit Switch Cover		1
68	DTS12-66	Cable Glands		1
73	DTS12-73	Braking Resistor		2
75	DTS12-75	Control Panel		1
78	DTS12-78	BLDC Driver		1
79	DTS12-79	Cap Nut	1/2"	1
80	DTS12-80	Hex Nut	1/2"	1
81	DTS12-81	Coil Spring Cover		1
82	DTS12-82	Coil Spring		1
83	DTS12-83	Screw	M5 x 20 mm	5
84	DTS12-84	Hollow Pin	Ø5 x 10 mm	1
85	DTS12-85	Left Bushing For Feed Pinion		1
86	DTS12-86	Right Bushing For Feed Pinion		1
87	DTS12-87	Feed Pinion		1
88	DTS12-88	Solid Pin		1
89	DTS12-89	Thrust Bearing	51106	1
90	DTS12-90	Top Limit Trip		1
91	DTS12-91	Hollow Pin	Ø5 x 15 mm	1
92	DTS12-92	Push Cap		2
93	DTS12-93	Push Spring		2
94	DTS12-94	Feed Hub		1
95	DTS12-95	Handle		3
96	DTS12-96	Knob		3
97	DTS12-97	Push Screw		1
98	DTS12-98	Push Setting Screw		1
99	DTS12-99	Power cable		1

13.0 Wiring Diagrams

DTS-12..... 1 Ø 220V (3 Ø 220V) , 60Hz



DTS-12 Electrical Parts List

ITEM	DESCRIPTION	TYPE	SPECIFICATION
ES	Emergency Stop	R9C01VN	10A-600V
KA1	Drilling/Tapping Switch		
KA2	Spindle Run and Stop	R9C10VN	10A-600V
SA1	Magnetic On/ Off Switch	KJD17	16A / 250V
M1	Motor		BLDC, 3P, 310V, 2A, 1800/min
SQ1	Top Limit Switch	TM-1703	15A/250V
SQ2	Lower Limit Switch	V-155-1A5	15A/250V
VR	Variable Resistor for Speed Adjustment	R16R2S-401	B5K
R1, R2	Brake Resistor		150Ω/ 100 W
SSD	Spindle Servo Driver	TRUMMAN	BLDC A04, CE
DRO	Spindle Speed Meter	R04A	230V/ DC5V
PE	Grounding		
L1	Power Lamp		220V