BSD

OPERATION AND MAINTENANCE MANUAL

- TKS-1300
- TKS-1500
- TKS-1500LS
- TKS-2500LS
- TKS-3500LS
- TKS-4500LS
- TKS-2500LSF

LOW VOLTAGE
METAL ASSEMBLY SCREWDRIVER

KILEWS INDUSTRIAL CO., LTD.
http://www.kilews.com

Y21003-5-001

NOTICE

Metal Assembly Screwdrivers are designed for installing threaded fasteners in light industrial and appliance manufacturing applications.

KILEWS is not responsible for customer modification of tools for applications on which KILEWS was not consulted.

WARNING

Important safety information enclosed.
Read all these instructions before placing tool in service or operation this tool and save these instructions. It is the responsibility of the employer to place the information in this manual into the hands of the operator. Failure to observe the following warnings could result in injury. When using electric tools, Basic safety precautions should always be followed to reduce the risk of fire, electric shock and personal injury, including the following:

1. Important Safety Instructions

1) **Keep work area clean**
   Cluttered areas and benches invite injuries.
2) **Consider work area environment**
   Do not expose power tools to rain. Do not use power tools in damp or wet locations. Keep work area well lit. Do not use power tools where there is risk to cause fire or explosion.
3) **Guard against electric shock**
   Avoid body contact with earthed or grounded surfaces (e.g. pipes, radiators, ranges, refrigerators).
4) **Keep children away**
   Do not let visitors touch the tool or extension cord. All visitors should be kept away from work area.
5) **Store idle tools**
   When not in use, tools should be stored in a dry, high or locked up place, out of reach of children.
6) **Do not force the tool**
   It will do the job better and safer at the rate for which it was intended.
7) **Use the right tool**
   Do not force small tools or attachments to do the job of a heavy duty tool. DO not use tools for purposes not intended; for example, do not use circular saws to cut tree limbs or logs.
8) **Dress properly**
   Do not wear loose clothing or jewellery, they can be caught in moving parts. Rubber gloves and non-skid footwear are recommended when working outdoors. Wear protecting hair covering to contain long hair.
9) **Use safety glasses**
   Also use face or dust mask if the cutting operation is dusty.
10) **Connect dust extraction equipment**
    If devices are provided for the connection of dust extraction and collection facilities ensure these are connected and properly used.
11) **Do not abuse the cord**
    Never carry the tool by the cord or yank it to disconnect it from the socket, Keep the cord away from heat, oil and sharp edges.
12) **Secure work**
    Use clamps or a vice to hold the work. It is safer than using your hand and frees both hands to operate the tool.
13) **Do not overreach**
    Keep proper footing and balance at all times.
14) **Maintain tools with care**
    Keep cutting tools sharp and clean for better and safer performance. Follow instructions for lubrication and changing accessories. Inspect tool cord periodically and if damaged have it repaired by an authorized service facility. Inspect extension cords periodically and replace, if damaged. Keep handles dry, clean and free from oil and grease.
15) **Disconnect tools**
    When not in use, before servicing and when changing accessories such as blades, bits and cutters.
16) **Remove adjusting keys and wrenches**
    Form the habit of checking to see that keys and adjusting wrenches are removed from the tool before turning it on.
17) **Avoid unintentional starting**
    Do not carry a plugged-in tool with a finger on the switch. Ensure switch is off when plugging in.
18) **Use outdoor extension leads**
    When tool is used outdoors, use only extension cords intended for outdoor use.
19) **Stay alert**
    Watch what you are doing. Use common sense. Do not operate tool when you are tired.

20) Check damaged parts

Before further use of use the tool, a guard or other part is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, free running 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 by an authorized service center unless otherwise indicated in this instruction manual. Have defective switches replaced by an authorized service facility. Do not use the tool if the switch does not turn it on and off.

21) Warning

The use of any accessory or attachment, other than those recommended in this instruction manual, may present a risk of personal injury.

22) Have your tool repaired by a qualified person

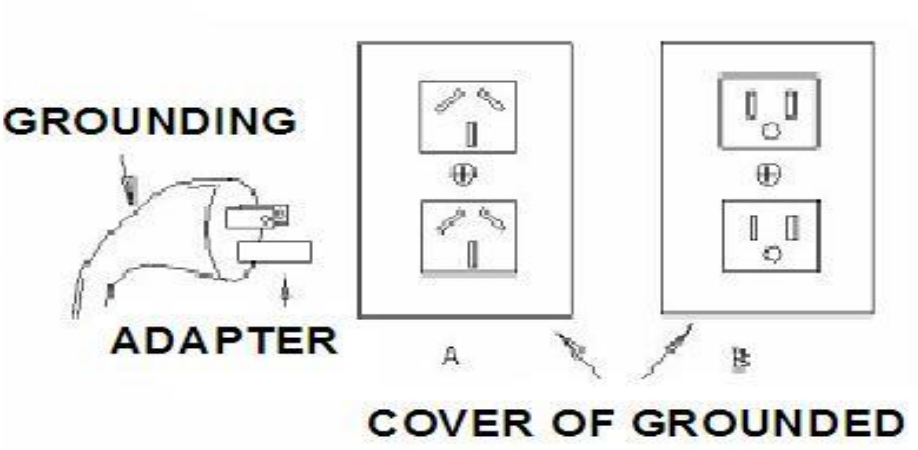
This electric tool is in accordance with the relevant safety requirements. Repairs should only be carried out by qualified persons using original spare parts, otherwise this may result in considerable danger to the user.

WARNING！

DO NOT OPERATE THIS TOOL WITHOUT PROTECTIVE EARTH CONNECTED

2. Grounding Instructions

1. This tool should be grounded while in use to protect the operator from electric shock. NOTICE ! To ensure the grounding result, the grounding conductor of the power cord must be well connected with the grounding terminal of power facility. This tool is equipped with grounding conductors. The Green(or Green and Yellow)conductor in the Power Cord is the grounding wire. Never connect Green (or Green and Yellow) to a live terminal. The grounding wires in this tool can not only earth the electric leakage safely, but also can eliminate ESD-the electrostatic that tool occurred while in use.
2. The grounding is the most important task a user. Periodically, depends on the working condition and circumstance, for maintaining a good function the user has to check the grounding condition every 3~6 months by an electric meter and following simple steps; Set the Ohm meter to level R*100(Ohm). Touching 2 test rods (“＋”&”－”) together and reset the meter to “0”. Using the Red(“＋”) rod to touch the Grounding wire on the Plug of controller’s cord, and the Black(“－”) rod to the end of Bit Head. It stands for the grounding is normal if the meter is read as close as to “0”. For getting a normal indication on the meter while in testing, need to press the test rods firmly to the testing objects.
3. The instrument QC of the tool is performed before the tool ex-factory. The grounding continuity test is conducted by input 26A voltage to the end of earth terminal, and subject to the resistance value lower than 0.3Ohm.



3. Operations Cautions

1) Whenever changing a bit, make certain the Forward / Reverse Switch is in the “OFF” position and tool is unplugged.
2) Do not allow chemicals such as acetone, benzene, thinner, trichloroethylene ketene, or other similar chemicals to come in contact with the screwdriver housing as damage will result.
3) Do not drop or abuse the screwdriver.
4) Do not adjust the torque setting higher than 8 on the torque scale.
5) There should be a tool rest interval when cycles three seconds or longer. This tool is intended for a duty cycle of 0.8 sec on, 2.4 sec off.
6) Do not use this screwdriver for tightening wood screws. This is “ Metal Assembly Screw Driver ”.
7) Do not operate the Forward / Reverse Switch the motor is running.
8) Whenever a tool is not being used, move the Forward / Reverse Switch to the “OFF” position and unplug the screwdriver.

CAUTION

- Do not drop or abuse the tool.
- Whenever a tool is not being used, position the Power Switch to the “OFF” position and unplug the power cord.

4. Description of Operation

Attaching / detaching bit and bit type
Push up the holder clamp by finger tip, and it will be unlocked. Thus, the bit can be freely attached and detached (single finger notion type) select such a bit whose shank is equal to the size shown below.

- ☑ insert the power plug into a receptacle and set the changeover switch to "**F**" position.
- ☑ Apply the bit to the screw head and press the lever or push main body to, then the switch will be turned ON to start the motor running.
- ☑ When the screw is tighten and reach the torque that you had set, The tool will stopped automatically.
- ☑ To reset the tool by releasing the lever to the original position or releasing the bit From the screw head.
- ☑ To return the screw, set the changeover switch to "**R**" position.

5. Servicing

Maintenance and Inspection:

1. The screw driver must be operated in top condition, one day working hour must be not more than eight hours.
2. Periodically check for wear of motor 、Carbon brush, one day for eight hours use is normal, replace it after every five to six months.
3. Please note don't let the motor get over heated, every minute use 10~15 screws to operate.
4. The frequency use of this electric screw driver is over than eight hours a day, still it needs periodically testing and treatment. Every 5-6 months.
5. Inspect tool cords periodically and if damaged, have them repaired by an authorized service facility. Inspect extension cords periodically and replace if damaged.
6. Do not remove any labels. Replace any damaged label.

CAUTION

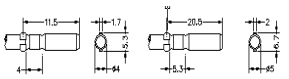
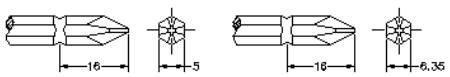
1. The use of other than genuine KILEWS replacement parts may Result in decreased tool performance and increased maintenance, and may invalidate all warranties.
2. All repairs and maintenance of this tool and its word must be performed by an authorized service center.
3. KILEWS is not responsible for customer modification of tools for applications on which KILEWS was not consulted.
4. Repairs should by made only by authorized, trained personnel. Consult your nearest KILEWS authorized service center.
5. It is the responsibility of the employer to place the information in this manual into the hands of the operator.

DO NOT ATTEMPT TO REPAIR THIS ELECTRIC SCREW DRIVER

CAUTION

SAVE THESE INSTRUCTIONS DO NOT DESTROY

※Specifications

MODEL(TKS-)		1300	1500	1500LS	2500LS	3500LS	4500LS	2500LSF
Input voltage(AC)		220VAC 50/60Hz						
Rated input		48W		50W				
Bit torque	Kgf.cm	0.5-7	2-15	2-15	5-25	10-35	15-45	5-18
	Lbf.in	0.44-6.10	1.68-13.01	1.68-13.01	4.34-21.68	8.67-30.36	13.01-39.03	4.34-15.58
	N.m	0.05-0.69	0.19-1.47	0.19-1.47	0.49-2.45	0.98-3.43	1.47-4.41	0.49-1.76
Torque Adjustment		Stepless						
Unloaded Rotation Speed (R.p.m) ±10%		1000				700	500	2000
Metal assembly screw	Machine screw(mm)	1.4-2.6	2.0-4.0	2.0-4.0	2.6-4.0	3.0-5.0	4.0-6.0	2.6-4.0
	Tapping screw(mm)	1.4-2.0	2.0-3.0	2.0-3.0	2.6-3.5	3.0-4.0	4.0-5.0	2.6-3.5
Weight (g)		480		600				
Length (mm)		230		264				
Model of Torque Fixing Ring		KC-3		KC-2				
Model of Suspension Rack		KH-4(KC&KH-2)		KH-2(KC&KH-1)				
Bit Type		 Ø4mm Ø5mm		HEX 5mm 6.35mm 				HEX

* 1N.m=10.2Kgf.cm 1N.m=8.85Lbf.in

※Accessories

1. BIT Type ： No. 00 . . Bit use in dia 1.3-1.8mm screw

No. 0. . . . Bit use in dia 1.6-2.0mm screw

No. 1. . . . Bit use in dia 2.0-2.6mm screw

No. 2. . . . Bit use in dia 3.0-4.0mm screw

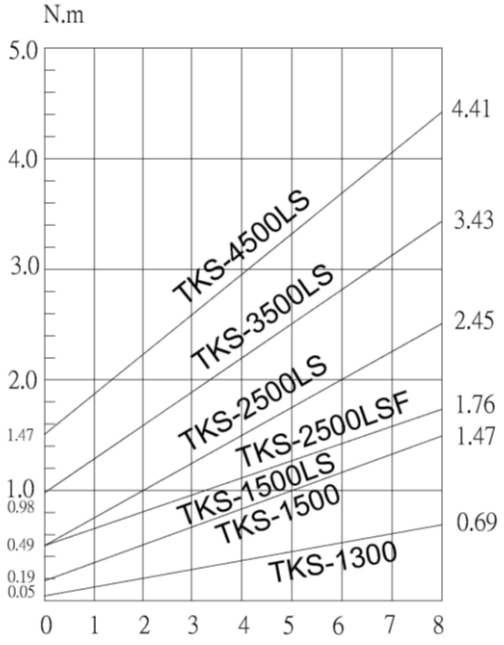
TKS-1300	with BIT	1# & 2#	1 Pce. Each
TKS-1500	with BIT	1# & 2#	1 Pce. Each
TKS-1500LS	with BIT	1# & 2#	1 Pce. Each
TKS-2500LS	with BIT	1# & 2#	1 Pce. Each.
TKS-3500LS	with BIT	2#	2 Pcs
TKS-4500LS	with BIT	2#	2 Pcs.
TKS-2500LSF	with BIT	1# & 2#	1 Pce. Each.

2.Suspension rack and Torque fixing ring acceptable for use with the tool are available from KILEWS catalogue.

※Torque Adjustment Operation

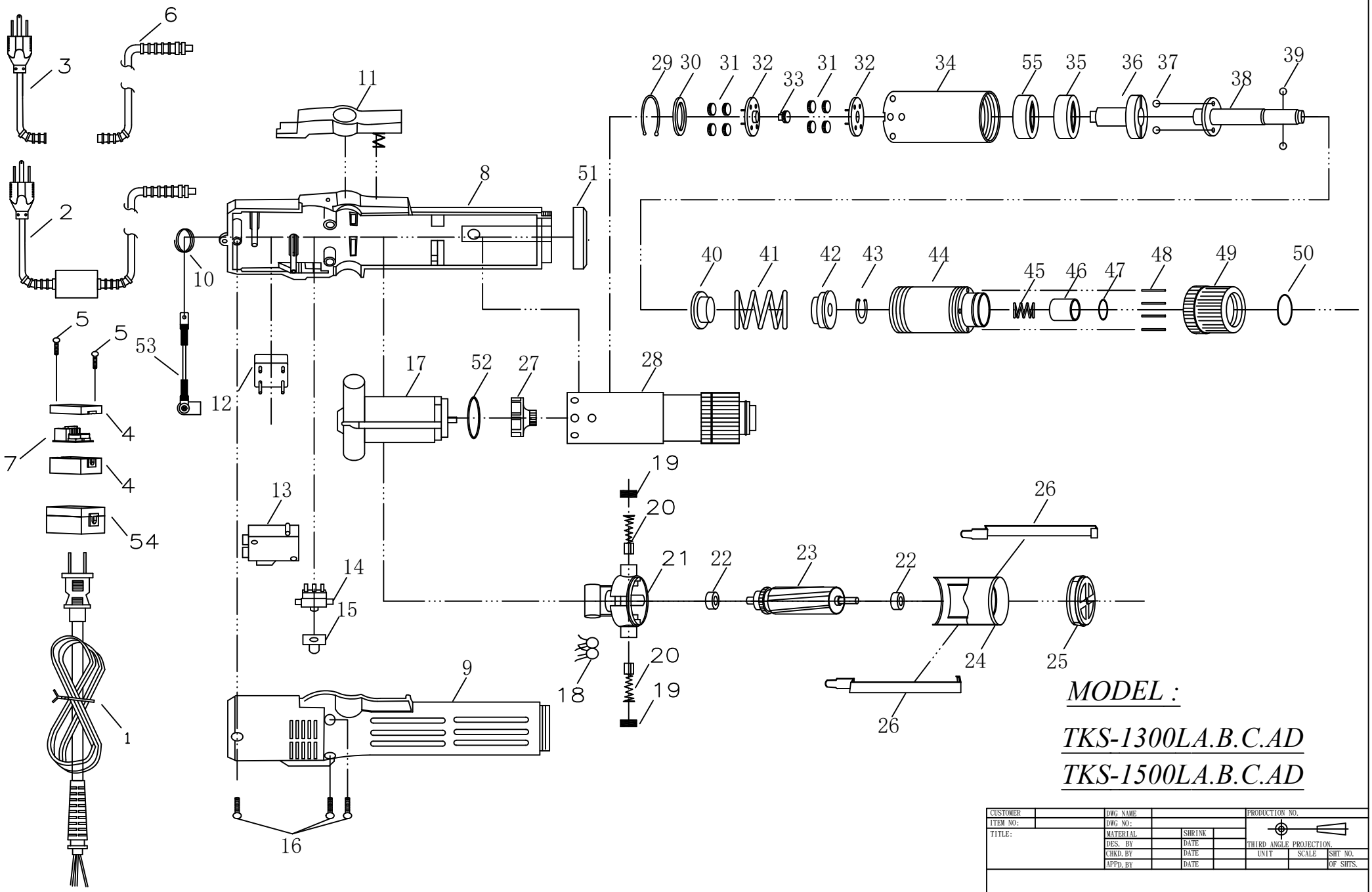
To adjust the torque on these screwdrivers. Proceed as follows :

1. Determine the torque output of the tool by checking a tightened Fastener with a torque wrench.
2. Increase or decrease the torque by rotating the Spring Adjusting Ring. Rotating the Ring clockwise to a higher number on the torque Scale increase torque output while rotating the Ring counterclockwise to a lower number decreases the torque output.
3. Check the adjustment with a torque wrench. A number of factors will affect torque output from one job to another. Final torque adjustment should be made at the job through a of series of gradual increase. Always start below the desired torque and work upward.
4. Adjust the bit torque by changing the driving in length of the adjust ring at the end.
5. The relationship between torque scale and bit torque is as shown Ring, in the torque diagram. The figures of torque scale do not indicate bit torque values. However, the clamping torque of screw itself is different form type, size, material of the screw and the material of its mating part. Use it as standard to obtain an appropriate clamping torque.
6. The (Return torque method) in which once-clamped screw is returned with torque wrench or the like is available as one of torque control methods however, note that the measured values by the return torque method generally appear in 10%-30% lower than the actually clamping torque.
7. The torque checker measures the torque of screwdriver. The clamping torque of screw itself is different from the clamped conditions. Understand the correlation between clamping torque values and the torque checker values perform the torque control properly.



CAUTION

1. Also in reverse rotation, the clutch is turned off in such manner as in normal rotation, stopping the motor running. Accordingly, when the screw tightened at a large torque, set it to a higher torque scale.
2. The number from zero to eight on the Torque Scale are reference number only and not an indication of actual torque output.



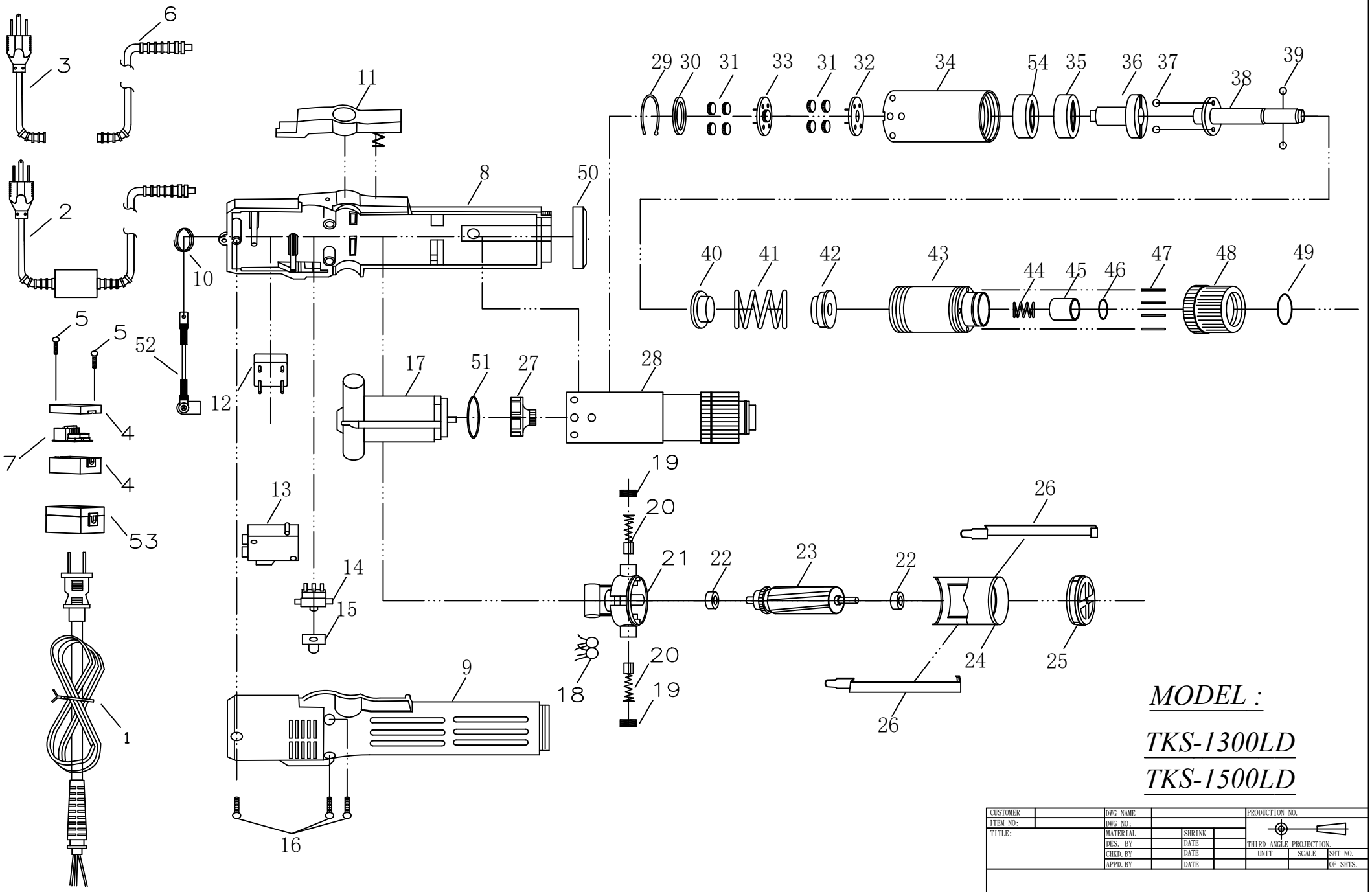
MODEL :

TKS-1300LA.B.C.AD

TKS-1500LA.B.C.AD

CUSTOMER		DWG NAME			PRODUCTION NO.		
ITEM NO:		DWG NO:					
TITLE:		MATERIAL		SHRINK	THIRD ANGLE PROJECTION.		
		DES. BY		DATE			
		CHKD. BY		DATE	UNIT	SCALE	SHT NO.
		APPD. BY		DATE			OF SHTS.

No	PARTS NO	PARTS NAME-E	Q'ty	No	PARTS NO	PARTS NAME-E	Q'ty
1	AB30001-1	CORD	1		GZ22141-2A	CLUTCH ASSY 1500LA	1
2	AD30001-4	CORD American	1		GZ22141-2B	CLUTCH ASSY 1500LB	1
	AD30001-2Y	CORD Chinese	1		GZ22141-2C	CLUTCH ASSY 1500LC	1
	AD30001-5	CORD Europe	1		GZ22141-2AD	CLUTCH ASSY 1500LAD	1
	AD30001-1G	CORD UK	1	29	GK20231	“C” RING	1
	AD30001-1I	CORD India	1	30	GI20251-1	IRON WASHER	1
3	AA30007	CORD 1Ft	1	31	GH20241	GEAR PLANET	8
	AA30007-1	CORD American 1Ft	1	32	GG20271	GEAR SEAT	2
	AA30007-3	CORD Chinese 1Ft	1	33	G20101	GEAR OF CENTER	1
	AA30007-2	CORD Europe 1Ft	1	34	GA30311-5	GEAR CASE	1
	AA30007-5	CORD UK 1Ft	1	35	GN30321	MAIN BEARING	1
	AA30007-5E	CORD India 1Ft	1	36	GC20301	CAM	1
4	EC30006	EMC-BOX CASE ONLY	1	37	GP30351	STEEL BALL-4MM	2
5	CH90152-1F	SCREW	2	38	GD30381A	SHAFT A-TYPE	1
6	AA30008-1	CORD 9FT	1		GD20321-3	SHAFT B-TYPE	1
	AA30009-8	CORD 9FT	1		GD20321-2	SHAFT C-TYPE	1
7	EG30005-4F	PCB	1		GD20321	SHAFT AD-TYPE	1
8	CB22021-2	HOUSING UNDERSIDE FOR 220V	1	39	GP20331	STEEL BALLS FOR "A&AD" TYPE	2
9	CA22101-2	HOUSING UPSIDE FOR 220V	1		GP21291B	STEEL BALLS FOR "B&C" TYPE	2
10	CJ20011	SUSPENSION RING	1	40	GF20341	WARRING PLATE FOR A,C,AD TYPE	1
11	CC20031-5	TRIGGER	1		GF20341B	WARRING PLATE FOR B TYPE	1
12	E31203-1	BIRDGE DIODE	1	41	GE20351-1	WARRING SPRING FOR 1300L	1
13	HB50072	START SWITCH	1		GE20351	WARRING SPRING FOR 1500L	1
14	HA15091F	CHANGEOVER SWITCH	1	42	GY30421	WARRING SPRING BASE FOR A,C,AD	1
15	CI30211	SWITCH CAP FOR 1300L	1		GY30421B	WARRING SPRING BASE FOR B TYPE	1
	CI30212	SWITCH CAP FOR 1500L	1	43	GK20231B	C-RING FOR B TYPE	1
16	CH20102	SCREW	3	44	GB30441-10	CLUTCH CASE FOR A,C,AD TYPE	1
17	MO15121-2	MOTOR ASSEMBLY 220V	1		GB30441-7A	CLUTCH CASE FOR B TYPE	1
18	EB33610-2	CERAMICS CAPACITOR	1	45	GO30452	BIT SPRING FOR A,C,AD TYPE	1
19	MD20151	BRUSH CAP	2		GO20391B-J	BIT SPRING FOR B TYPE	1
20	MC20161	BRUSH	2	46	GJ30461	BIT SLEEVE FOR A,C,AD TYPE	1
21	ML33571	MOTOR TOP COVER 220V	1		GJ3046B	BIT SLEEVE FOR B TYPE	1
22	ME21481	ARMATURE BEARING 220V	2	47	GQ30471	“C” RING FOR A,C,AD TYPE	1
23	MH23601	ARMATURE FOR 1300L 1500L	1		GQ21361	“C” RING FOR B TYPE	1
24	MJ33631	MOTOR YORK ASSEMBLY FOR 1300L 1500L	1	48	GL30481-5	TORQUE ADJ PINS	4
25	MB33651A	MOTOR END COVER 220V	1	49	GM20431-1	TORQUE ADJ RING	1
26	MA33621B	ASSEMBLY SPRING 220V	2	50	GS30501	“C” RING FOR GM21381	1
27	MK33091	FAN 220V	1	51	CD20111	COUPLER	1
28	GZ22141-1A	CLUTCH ASSY 1300LA	1	52	MF30101	INSULATING WASHER	1
	GZ22141-1B	CLUTCH ASSY 1300LB	1	53	P12104	8cm RETAINING CLIP	1
	GZ22141-1C	CLUTCH ASSY 1300LC	1	54	EJ30002-3	CE Box Ass'y-220V	1
	GZ22141-1AD	CLUTCH ASSY 1300LAD	1	55	GN30435	MAIN BEARING	1



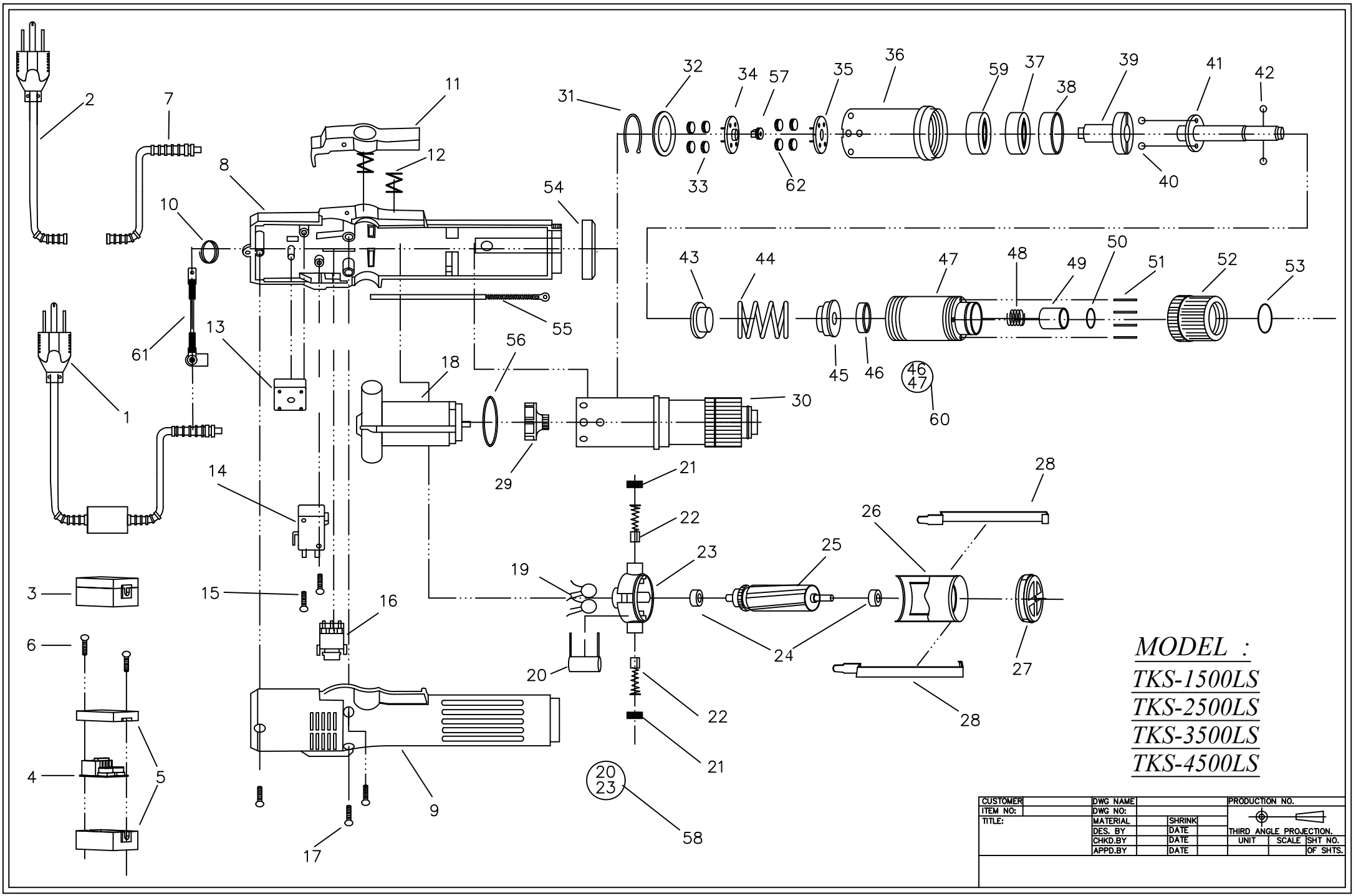
MODEL :

TKS-1300LD

TKS-1500LD

CUSTOMER		DWG NAME				PRODUCTION NO.	
ITEM NO:		DWG NO:					
TITLE:		MATERIAL		SHRINK			
		DES. BY		DATE		THIRD ANGLE PROJECTION.	
		CHKD. BY		DATE		UNIT / SCALE	SHT NO.
		APPD. BY		DATE			OF SHTS.

No	PARTS NO	PARTS NAME-E	Q'ty	No	PARTS NO	PARTS NAME-E	Q'ty
1	AB30001-1	CORD	1	24	MJ33631	MOTOR YORK ASSEMBLY	1
2	AD30001-4	CORD American	1	25	MB33651A	MOTOR END COVER 220V	1
	AD30001-2Y	CORD Chinese	1	26	MA33621B	ASSEMBLY SPRING 220V	2
	AD30001-5	CORD Europe	1	27	MK33091	FAN 220V	1
	AD30001-1G	CORD UK	1	28	GZ22141-1D	CLUTCH ASSY 1300LD	1
	AD30001-1I	CORD India	1		GZ22141-2D	CLUTCH ASSY 1500LD	1
3	AA30007	CORD 1Ft	1	29	GK20231	“C” RING	1
	AA30007-1	CORD American 1Ft	1	30	GI20251-1	IRON WASHER	1
	AA30007-3	CORD Chinese 1Ft	1	31	GH20241	GEAR PLANET	8
	AA30007-2	CORD Europe 1Ft	1	32	GG20271	GEAR SEAT	1
	AA30007-5	CORD UK 1Ft	1	33	GG20261	GEAR SEAT	1
	AA30007-5E	CORD India 1Ft	1	34	GA30311-5	GEAR CASE	1
4	EC30006	EMC-BOX CASE ONLY	1	35	GN30321	MAIN BEARING	1
5	CH90152-1F	SCREW	2	36	GC20301	CAM	1
6	AA30008-1	CORD 9FT	1	37	GP30351	STEEL BALL-4MM	2
	AA30009-8	CORD 9FT	1	38	GD20321-1	SHAFT D-TYPE	1
7	EG30005-4F	PCB	1	39	GP20331	STEEL BALLS FOR "D" TYPE	2
8	CB22021-2	HOUSING UNDERSIDE FOR 220V	1	40	GF20341	WARRING PLATE FOR D TYPE	1
9	CA22101-2	HOUSING UPSIDE FOR 220V	1	41	GE20351-1	WARRING SPRING FOR 1300LD	1
10	CJ20011	SUSPENSION RING	1		GE20351	WARRING SPRING FOR 1500LD	1
11	CC20031-5	TRIGGER	1	42	GY30421	WARRING SPRING BASE FOR D	1
12	E31203-1	BIRDGE DIODE	1	43	GB30441-10	CLUTCH CASE FOR D TYPE	1
13	HB50072	START SWITCH	1	44	GO30452	BIT SPRING FOR D TYPE	1
14	HA15091F	CHANGEOVER SWITCH	1	45	GJ30461	BIT SLEEVE FOR D TYPE	1
15	CI30211	SWITCH CAP FOR 1300LD	1	46	GQ30471	“C” RING FOR D TYPE	1
	CI30212	SWITCH CAP FOR 1500LD	1	47	GL30481-5	TORQUE ADJ PINS	4
16	CH20102	SCREW	3	48	GM20431-1	TORQUE ADJ RING	1
17	MO15121-2	MOTOR ASSEMBLY 220V	1	49	GS30501	“C” RING FOR GM21381	1
18	EB33610-2	CERAMICS CAPACITOR	1	50	CD20111	COUPLER	1
19	MD20151	BRUSH CAP	2	51	MF30101	INSULATING WASHER	1
20	MC20161	BRUSH	2	52	P12104	8cm RETAINING CLIP	1
21	ML33571	MOTOR TOP COVER 220V	1	53	EJ30002-3	CE Box Ass'y-220V	1
22	ME21481	ARMATURE BEARING 220V	2	54	GN30435	MAIN BEARING	1
23	MH23601	ARMATURE FOR 1300LD 1500LD	1				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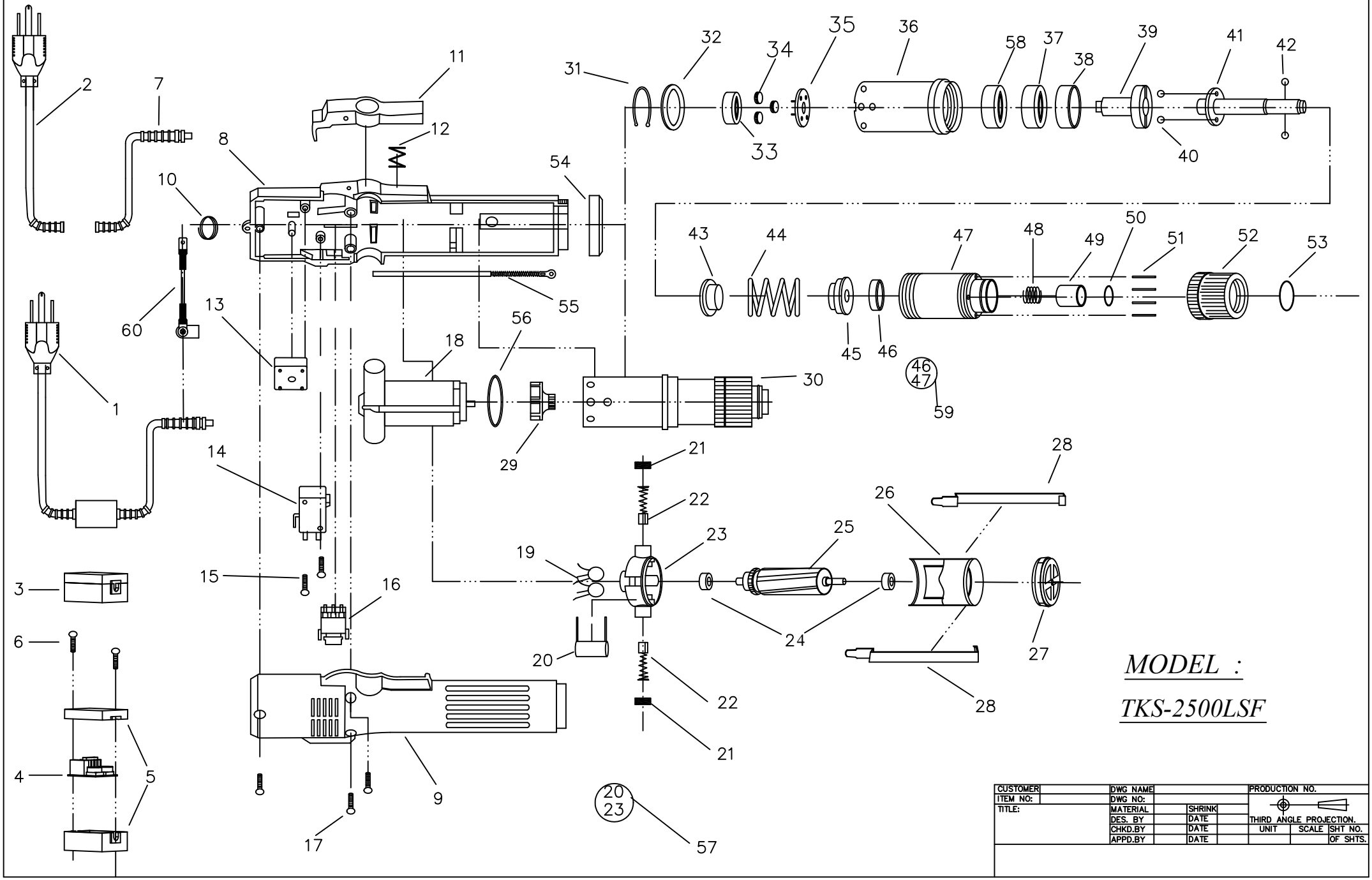
MODEL :
TKS-1500LS
TKS-2500LS
TKS-3500LS
TKS-4500LS
CUSTOMER
ITEM NO:
TITLE:
DWG NAME
DWG NO:
MATERIAL
SHRINK
DES. BY
DATE
CHKD.BY
DATE
APPD.BY
DATE
PRODUCTION NO.
THIRD ANGLE PROJECTION.
UNIT
SCALE
SHT NO.
OF SHTS.

No.	Parts No.	Parts Name-E	Q'ty	No.	Parts No.	Parts Name-E	Q'ty
1	AD30001-4	CORD American	1	31	GK21181	"C" ring for GI21191	1
	AD30001-2Y	CORD Chinese	1	32	GI21191	Iron Washer	1
	AD30001-5	CORD Europe	1	33	GH92231	Gear Planet-4500LS	4
	AD30001-1G	CORD UK	1		GH91232	Gear Planet-3500LS	3
	AD30001-1I	CORD India	1		GH20241	Gear Planet 1500LS & 2500LS	3
2	AA30007-1	CORD American 1Ft	1	34	GG92241-1	Gear Seat-4500LS	1
	AA30007-3	CORD Chinese 1Ft	1		GG91242-1	Gear Seat-3500LS	1
	AA30007-2	CORD Europe 1Ft	1		GG21231-2	Gear Seat-1500LS & 2500LS	1
	AA30007-5	CORD UK 1Ft	1	35	GG92271-1	Gear Seat-4500LS	1
	AA30007-5E	CORD India 1Ft	1		GG91272-1	Gear Seat-3500LS	1
3	EJ30002-3	CE Box Ass'y	1		GG21231-2	Gear Seat-1500LS & 2500LS	1
4	EG30005-4	PCB,CE SemiAuto	1	36	GA35241-1	Gear Case-4500LS & 3500LS	1
5	EC30006	EMC-BOX CASE ONLY	1		GA21241-1	Gear Case-1500LS & 2500LS	1
6	CH90152-1F	SCREW	2	37	GN21251	Main Bearing	1
7	AA30009-8	CORD 9FT	1	38	GW21531	Iron Ring	1
8	CB25041-2	Houing Underside	1	39	GC31321	Cam	1
9	CA25161-2	Houing Upside	1	40	GP30351	Steel Ball-4mm	2
10	CJ20011	Suspension Ring	1	41	GD21281A	Shaft-5mm Hex	1
11	CC21011-4	Trigger	1		GD21281B	Shaft-6.35mm Hex	1
12	CK28031-1	Trigger Spring	1	42	GP21291A	Steel Ball-3mm	2
13	E31203-1	Birdge Diode	1		GP21291B	Steel Ball-2.5mm	2
14	HB50072	Start Switch	1	43	GF21301	Warring Plate	1
15	CH30003F	Screw	4	44	GE92382	Warring Spring-4500LS	1
16	HA92051F	ChangeOver Switch-4500LS	1		GE35311	Warring Spring-3500LS	1
	HA91042F	ChangeOver Switch-3500LS	1		GE21311	Warring Spring-2500LS	1
	HA91041F	ChangeOver Switch-1500LS & 2500LS	1		GE20351-2	Warring Spring-1500LS	1
17	CH20102	Screw	3	45	GY21321	Warring Spring Base	1
18	MO22091-3	Motor Assembly-4500LS	1	46	GR20801	Copper Ring	1
	MO22091-2	Motor Assembly-3500LS	1	47	G20202	Clutch Case	1
	MO22091-1	Motor Assembly-1500LS & 2500LS	1	48	GO21341	Bit Spring	1
19	EB33610-2	CERAMICS CAPACITOR	1	49	GJ21351	Bit Sleeve	1
20	EA21431	Capacitor	1	50	GQ21361	"C" ring for GJ21351	1
21	MD91531-1	Brush Cap	2	51	GL21371	Torque Adj Pins	4
22	MC20161	Brush	2	52	GM21381	Torque Adj Ring	1
23	M10303-1	Motor Top Cover	1	53	GS21391	"C" ring for GM21381	1
24	ME21481	Armature Bearing	2	54	CD21031	Coupler	1
25	MH22471	Armature	1	55	CH30681	GROUNDING MEANS	1
26	MJ90601	Motor York Assembly	1	56	MF90061	Insulating Washer	1
27	MB21521A	Motor End Cover	1	57	G20102	Gear Seat-2500LS	1
28	MA21491B	Assembly Spring	2	58	ML22421-1	Motor Top Cover Assembly	1
29	MK92091	Fan-4500LS	1	59	GN30442	Main Bearing	1
	MK91091	Fan-3500LS	1	60	GB21331	Clutch Case Assembly	1
	MK21111	Fan-1500LS 2500LS	1	61	P12104	8cm RETAINING CLIP	1
30	GZ21541-2A(B)	Clutch Assy-4500LSA(B)	1	62	GH92231-1	Gear Planet-4500LS	4
	GZ21135-2A(B)	Clutch Assy-3500LSA(B)	1		GH91232-1	Gear Planet-3500LS	3
	GZ21125-2A(B)	Clutch Assy-2500LSA(B)	1		GH20241	Gear Planet 1500LS & 2500LS	3
	GZ21115-2A(B)	Clutch Assy-1500LSA(B)	1				


MODEL :
TKS-2500LSF
CUSTOMER
ITEM NO:
TITLE:
DWG NAME
DWG NO:
MATERIAL
SHRINK
DES. BY
DATE
CHKD.BY
DATE
APPD.BY
DATE
PRODUCTION NO.
THIRD ANGLE PROJECTION.
UNIT
SCALE
SHT NO.
OF SHTS.

No.	Parts No.	Parts Name-E	Q'ty	No.	Parts No.	Parts Name-E	Q'ty
1	AD30001-4	CORD American	1	28	MA21491B	Assembly Spring	2
	AD30001-2Y	CORD Chinese	1	29	MK21111PF	Fan-2500LSF	1
	AD30001-5	CORD Europe	1	30	GZ21125-2AF(BF)	Clutch Assy-2500LSFA(B)	1
	AD30001-1G	CORD UK	1	31	GK21181	"C" ring for GI21191	1
	AD30001-1I	CORD India	1	32	GI21191	Iron Washer	1
2	AA30007-1	CORD American 1Ft	1	33	G21301	WASHER,HIGH SPEED	1
	AA30007-3	CORD Chinese 1Ft	1	34	GH21221-1	Gear Planet -2500LSF	3
	AA30007-2	CORD Europe 1Ft	1	35	GG21231-1	Gear Seat-2500LSF	1
	AA30007-5	CORD UK 1Ft	1	36	GA21241-1	Gear Case	1
	AA30007-5E	CORD India 1Ft	1	37	GN21251	Main Bearing	1
3	EJ30002-3	CE Box Ass'y	1	38	GW21531	Iron Ring	1
4	EG30005-4	PCB,CE SemiAuto	1	39	GC31321	Cam	1
5	EC30006	EMC-BOX CASE ONLY	1	40	GP30351	Steel Ball-4mm	2
6	CH90152-1F	SCREW	2	41	GD21281A	Shaft-5mm Hex	1
7	AA30009-8	CORD 9FT	1		GD21281B	Shaft-6.35mm Hex	1
8	CB25041-2	Houing Underside	1	42	GP21291A	Steel Ball-3mm	2
9	CA25161-2	Houing Upside	1		GP21291B	Steel Ball-2.5mm	2
10	CJ20011	Suspension Ring	1	43	GF21301	Warring Plate	1
11	CC21011-4	Trigger	1	44	GE21312	Warring Spring-2500LSF	1
12	CK28031-1	Trigger Spring	1	45	GY21321	Warring Spring Base	1
13	E31203-1	Birdge Diode	1	46	GR20801	Copper Ring	1
14	HB50072	Start Switch	1	47	G20202	Clutch Case	1
15	CH30003F	Screw	2	48	GO21341	Bit Spring	1
16	HA91041F	ChangeOver Switch-2500LSF	1	49	GJ21351	Bit Sleeve	1
17	CH20102	Screw	3	50	GQ21361	"C" ring for GJ21351	1
18	MO22091-1F	Motor Assembly	1	51	GL21371	Torque Adj Pins	4
19	EB33610-2	CERAMICS CAPACITOR	1	52	GM21381	Torque Adj Ring	1
20	EA21431	Capacitor	1	53	GS21391	"C" ring for GM21381	1
21	MD91531-1	Brush Cap	2	54	CD21031	Coupler	1
22	MC20161	Brush	2	55	CH30681	GROUNDING MEANS	1
23	M10303-1	Motor Top Cover	1	56	MF90061	Insulating Washer	1
24	ME21481	Armature Bearing	2	57	ML22421-1	Motor Top Cover Assembly	1
25	MH22471	Armature	1	58	GN30442	Main Bearing	1
26	MJ90601	Motor York Assembly	1	59	GB21331	Clutch Case Assembly	1
27	MB21521A	Motor End Cover	1	60	P12104	8cm RETAINING CLIP	1