OPERATION AND MAINTENANCE MANUAL

BSD-6200P
BSD-6600P
BSD-6600PF
BSD-8000P
BSD-8200P
BSD-8800P
BSD-8800PF

LOW VOLTAGE
METAL ASSEMBLY SCREWDRIVER

KILEWS INDUSTRIAL CO., LTD.

http://www.kilews.com

Y20032L-4-001

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. General Safety Rules

2. Operations Cautions

3. Specifications

4. Description Of Operation

5. Torque Adjustment Operation

6. Accessories

7. Servicing

1. General Safety Rules

WARNING! Read all instructions Failure to follow all instructions listed below may result in electric shock fire and/or serious injure. The term “power tool” in all of the warning listed below refer to your mains operated (corded) power tool or battery operated (cordless) power tool.

SAVE THESE INSTRUCTIONS

1) Electrical Safety

a) **Keep work area clean and well lit.** Cluttered and dark areas invite accidents.

b) **Do not operate power tools in explosive atmosphere, such as in the presence of flammable liquids, gases or dust.** Power tools creat sparks which may ignite the dust of fumes.

c**) Keep children, and bystanders away while operating a power tool.** Distractions can cause you to lose control.

2) Electrical Safety

a) **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools**. Unmodified plugs and matching outlets will reduce risk of electric shock.

b) **Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is earthed or grounded.

c) **Don’t expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.

d) **Do not abuse the cord. Never use the cord to carry, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** Damaged or entangled cords increase the risk of electric shock.

e) **When operating a power tool outdoors, use an extension cord suitable for outdoor use.** □□Use of cord suitable for outdoor use reduces the risk of electric shock.

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3) Personal Safety

a) **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use power tool while you are tired or under the influence of drugs, alcohol, or medication.** A moment of inattention while operating power tools may result in serious personal injury.

b) **Use safety equipment. Always wear eye protection.** Safety equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.

c) **Avoid accidental starting. Ensure the switch is in the off position before plugging in.** Carrying power tools with your finger on the switch or plugging in power tools that have the switch on invites accidents.

d) **Remove any adjusting keys or wrench before turning the power tool on.** A wrench or a key that is left attached to a rotating part of the power tool may result in personal injury.

e) **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.

f) **Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing, and gloves away from moving parts.** Loose clothes, jewelry, or long hair can be caught in moving parts

g) **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.

h) **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of these devices can reduce dust related hazards.

i) **Use a safety device.** Wear protective earmuffs to reduce personal injury.

Noise:
The typical A-weighted noise level acc. To EN62841-2-2
. Sound pressure level (LpA): 53.6 dB(A)
. Sound power level (LwA): 64.6 dB(A)

Vibration:
The vibration total valoue acc. EN62841-2-2
. Vibration emission value ah (m/s^2): 0.17 m/s^2
. Uncertainty K (m/s^2): 0.02 m/s^2

4) Power tool Use and Care

a) **Do not force the power tool. Use the correct power tool for your application.** The correct power tool will do the job better and safer at the rate for which it was designed.

b) **Do not use power tool if switch does not turn it on or off.** Any power tool that cannot be controlled with the switch is dangerous and must be repaired.

c) **Disconnect the plug from the power source before making any adjustments, changing accessories, or storing the power tools.** Such preventive safety measures reduce the risk of starting the power tool accidentally.

d) **Store idle power tools out of reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** Power tools are dangerous in the hands of untrained users.

e) **Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tools operation. If damaged, have the power tool repaired before use.** Many accidents are cause by poorly maintained power tools.

f) **Keep cutting tools sharp and clean**, properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.

g) **Use the power tools, accessories and tool bits etc., in accordance with these instructions and in the manner intended for the particular type of power tool, taking into account the working conditions and the work to be performed.** Use of the power tool for operations different from intended could result in a hazardous situation.

5) SERVICE

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

Additional information shall be provided

a) Instruction for putting into use
1. Setting-up or fixing power tool in a stable position as appropriate for power tools which can be mounted on a support.
2. Assembly
3. Connection to power supply, cable, fuse, socket type and earthing requirements.
4. Illustrated description of functions.
5. Limitations on ambient conditions.
6. List of contents.

b) Operating Instructions.
1. Setting and testing.
2. Tool changing.
3. Clamping of work.
4. Limits on size of work piece.
5. General instructions for use.

c) Maintenance and servicing.
1. Regular cleaning, maintenance, and lubrication.
2. Servicing by manufacture or agent, list of addresses.
3. List of user-replaceable parts.
4. Special tools which may be required.

6) Clamp fixed position for 3cm Nylon Fixed-Wire

The clamp fixed position for 3cm Nylon Fixed-Wire is at 390mm start count from the top of the screwdriver flat surface (for Iron ring socket type), as shown in Figure 3.

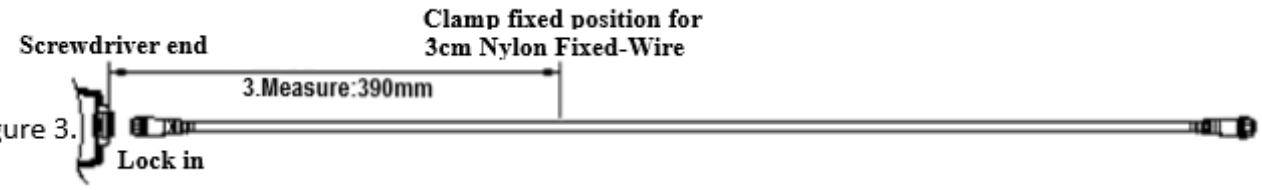


Figure 3.

2. 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 ketone, 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

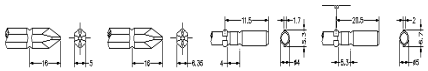
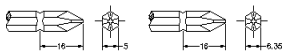
- Do not drop or abuse the tool.
- Whenever a tool is not being used, position the Power Switch to the "OFF" position and unplug the power cord.

3. Specifications

REQUIREMENTS

This tool requires an power controller :

BSP-32HL-60W (input：100-240VAC 50/60Hz output：32/24VDC)
BSP-32VR-60W (input：100-240VAC 50/60Hz output：24-32VDC)
BSP-32HL (input：100-240VAC 50/60Hz output：32/24VDC)

MODEL		BSD-6200P	BSD-6600P	BSD-6600PF	BSD-8000P	BSD-8200P	BSD-8800P	BSD-8800PF
Input voltage (DC)		32VDC						
Rated input		48W			50W			
Bit torque	Kgf.cm	2-12	3-16	2-8	5-18	7-24	8-30	2-10
	Lbf.in	1.77-10.44	2.57-13.89	1.77-6.9	4.34-15.58	6.11-20.8	6.9-26.02	1.77-8.67
	N.m	0.19-1.18	0.29-1.57	0.19-0.78	0.49-1.76	0.69-2.35	0.78-2.94	0.2-0.98
Unloaded Rotation Speed (R.p.m) ±10%	HI	1000	1000	2000	1000	750	530	2000
	LO	700	700	X	700	520	350	×
Metal assembly screw （mm）	Machine screw	1.6-3.0	2.3-3.5	1.6-3.0	2.0-3.5	2.6-4.0	3.0-5.0	2.0-3.0
	Tapping screw	1.6-2.6	2.3-3.0	1.6-2.6	2.0-3.0	2.6-3.5	3.0-4.0	2.0-2.6
Torque Accuracy (%)		±3%						
Torque Adjustment		Stepless						
Weight (g)		480			600			
Length(mm)		230			260			
Model of Torque Fixing Ring		KC-3			KC-2			
Model of Suspension Rack		KH-3(KC&KH-3)			KH-3(KC&KH-1)			
Bit Type		 HEX 5mm, HEX 6.35mm, Ø4mm, Ø5mm			 HEX 5mm HEX 6.35mm			
Power controller		BSP-32HL-60W BSP-32VR-60W			BSP-32HL			

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

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 changecover 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. 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.

6. 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

BSD-6200P	with BIT	1#&2#	1 Pcs. Each
BSD-6600P	with BIT	1#&2#	1 Pcs. Each
BSD-6600PF	with BIT	1#&2#	1 Pcs. Each
BSD-8000P	with BIT	1#&2#	1 Pcs. Each
BSD-8200P	with BIT	1#&2#	1 Pcs. Each
BSD-8800P	with BIT	2#	2 Pcs.
BSD-8800PF	with BIT	1#&2#	1 Pcs.. Each

2.Carbon Brush :2 Pcs, Those 2 Pcs brush are spare parts.

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

7. 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.cording to operating frequency and torque loaded, we suggest adding lubricating oils in clutch per 3-6 months, and kindly contact with distributor when product's maintenance .
2. Please note don't let the motor get over heated, every minute use 10~15 screws to operate.
3. 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.
4. Inspect tool cords periodically and if damaged, have them repaired by an authorized service facility. Inspect extension cords periodically and replace if damaged.
5. Do not remove any labels. Replace any damaged label.

CAUTION

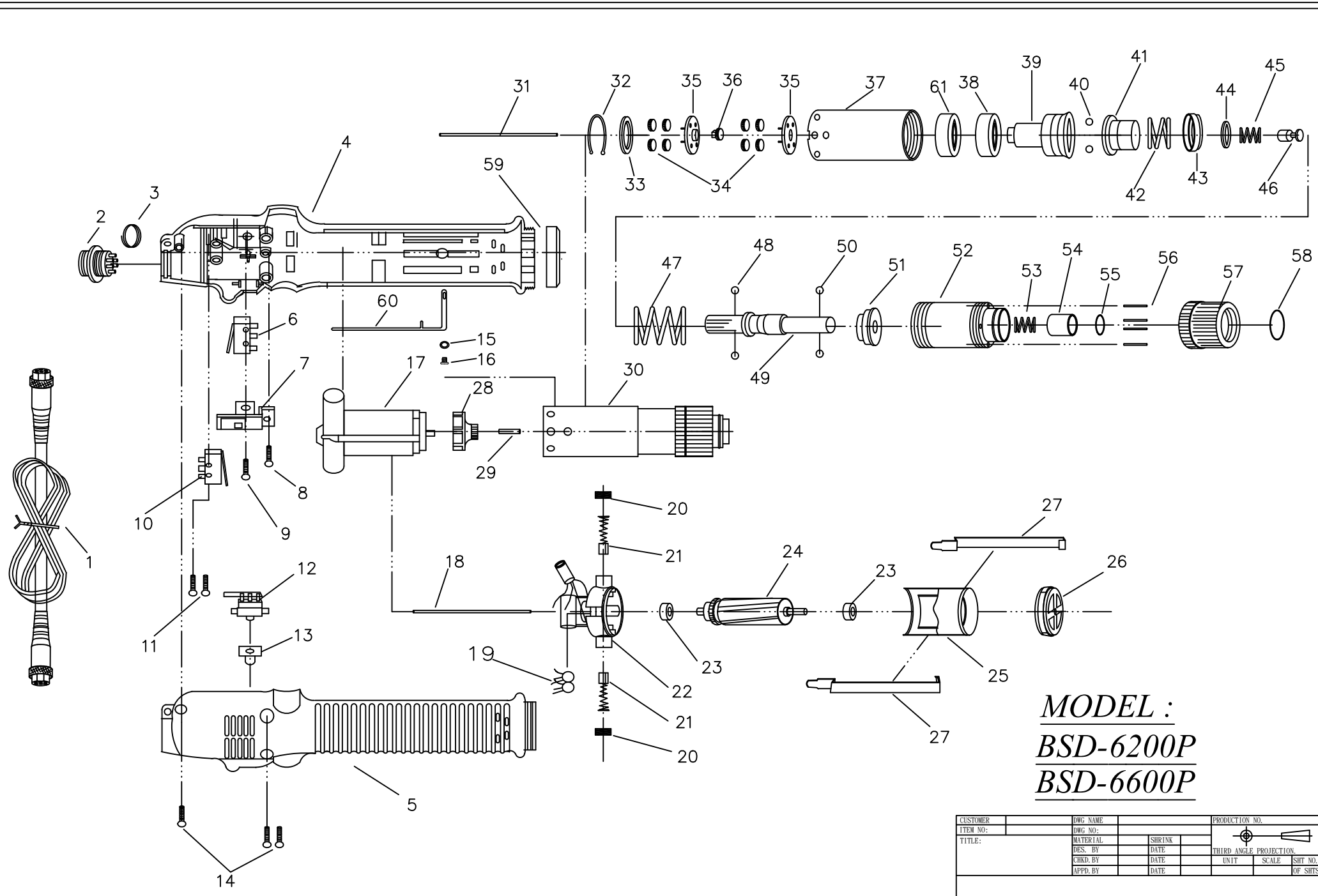
1. The use of other than genuine KILEWS replacement parts may Result in decreased tool performance and increased maintenance, and may invalidate all warranties.
2. All repairs and maintenance of this tool and its word must be performed by an authorized service center.
3. KILEWS is not responsible for 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 SCREWDRIVER

CAUTION

SAVE THESE INSTRUCTIONS DO NOT DESTROY

Our company reserves the right to modify the product without prior notice.



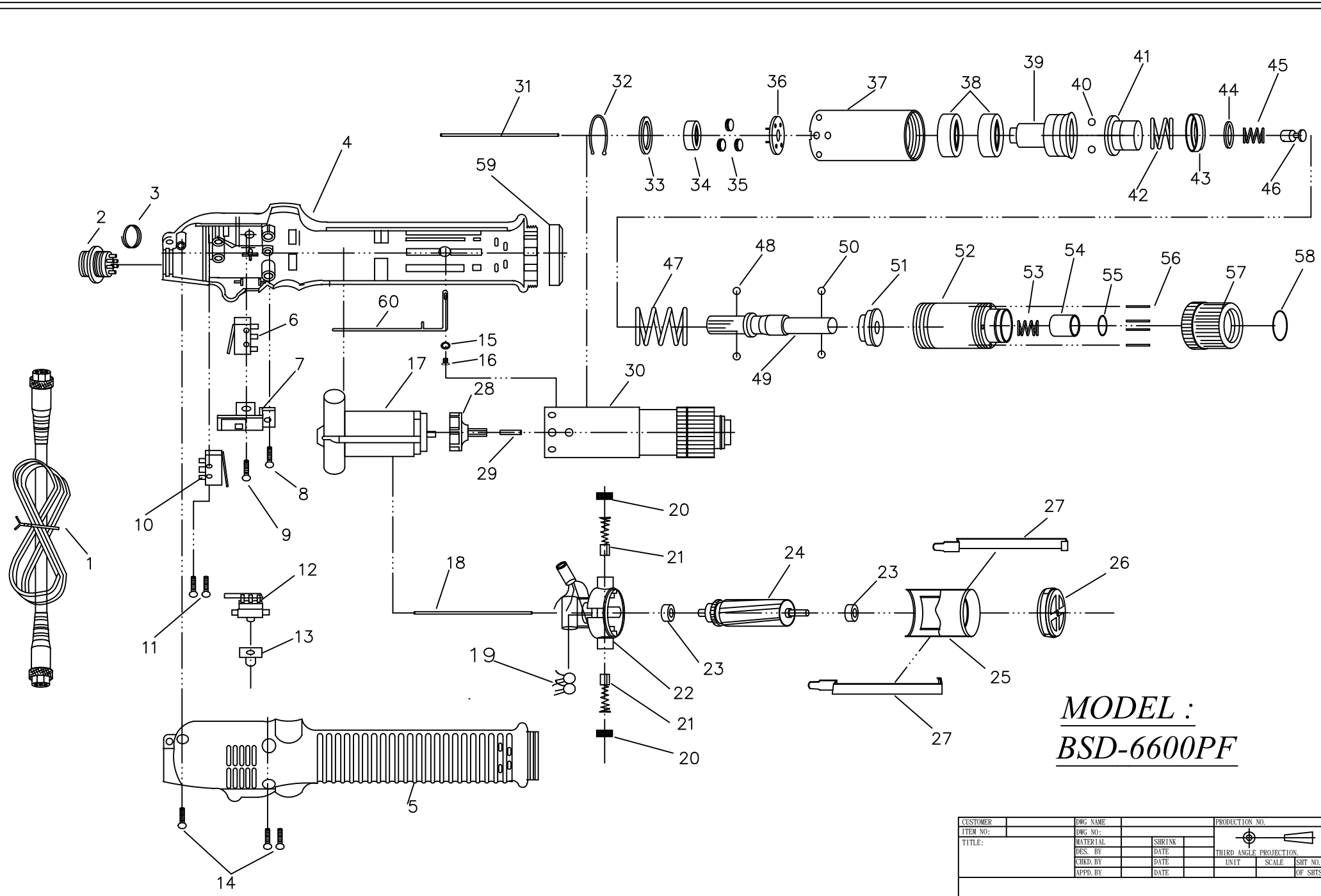
MODEL :

BSD-6200P

BSD-6600P

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	AA50005A-D6P-2N	CORD ASSEMBLY	1	32	GK20231	"C" RING FOR CH20241	1
2	PZ50160	CONNECTOR	1	33	GI20251-1	IRON WASHER	1
3	CJ20011	SUSPENSION RING	1	34	GH20241	IDLE GEAR	8
4	CB33401-4	HOUSING-UNDERSIDE	1	35	GG20271	GEAR SEAT	2
	CB33401-8	HOUSING-UNDERSIDE(ESD)	1	36	G20101	CENTRAL GEAR	1
5	CA33402-4	HOUSING-UPSIDE	1	37	GA30311-7	GEAR CASE	1
	CA33402-8	HOUSING-UPSIDE(ESD)	1	38	GN30321	MAIN BEARING	1
6	H10201	START SWITCH	1	39	GX33319-4	SHAFT GUIDE FOR "6200P"	1
7	CE90101-1	SWITCH BASE	1		GX33318-2	SHAFT GUIDE FOR "6600P"	1
8	CH90121	SCREW	1	40	GP30351	STEEL BALLS	2
9	CH90131	SCREW	1	41	GF33317	WARING PLATE	1
10	H10201	SHUT OFF SWITCH	1	42	GO30541-3	PRING FOR 6200P	1
11	CH90151-1	SCREW	2		GO30541-2	PRING FOR 6600P	1
12	HA28071-4	CHANGEOVER SWITCH	1	43	GO30531	SPRING CAP	1
13	CI60214	CHANGEOVER SWITCH CAP FOR "6200P"	1	44	GV33316	INNER SPRING CAP	1
	CI60212	CHANGEOVER SWITCH CAP FOR "6600P"	1	45	GO33315-2	INNER SPRING FOR 6200P	1
14	CH20102	SCREW	3		GO33315	INNER SPRING FOR 6600P	1
15	CH20102-18	WASHER	1	46	GU30361	STOP PILOT	1
16	CH30192	SCREW	1	47	GE30414-3	WRING SPRING FOR 6200P	1
17	MO50111	MOTOR ASSEMBLY FOR "6200P"	1		GE30413-70	WRING SPRING FOR 6600P	1
	MO50111-1	MOTOR ASSEMBLY FOR "6600P"	1	48	GP30371	STELL BALLS	2
18	MI33511-1	PILOT ROD	1	49	GD33319D	SHAFT FOR "D" TYPE	1
19	EB33610-2	CERAMICS CAPACITOR	1		GD33319A	SHAFT FOR "A" TYPE	1
20	MD20151	BRUSH CAP	2		GD33319B	SHAFT FOR "B" TYPE	1
21	MC71411-1	CAPBON BRUSH	2		GD33319C	SHAFT FOR "C" TYPE	1
22	ML50571	MOTOR TOP COVER	1		GD33319AD	SHAFT FOR "AD" TYPE	1
23	ME20181	BALL BEARING	2	50	GP20331	BIT PILOT FOR "A&D&AD"	2
24	MH50601	ARMATURE FOR "6200P"	1		GP21291B	BIT PILOT FOR "B&C"	2
	MH50601-1	ARMATURE FOR "6600P"	1	51	GY33313	WRING SPRING BASE	1
25	MJ50631	MOTOR YOKE ASSEMBLY FOR "6200P"	1	52	GB20381-8	CLUTCH CASE FOR "A.C.D.AD"TYPE	1
	MJ30631	MOTOR YOKE ASSEMBLY FOR "6600P"	1		GB20381-9	CLUTCH CASE FOR "B"TYPE	1
26	MB20221	MOTOR END COVER	1	53	GO30452	BIT SPRING FOR 6200P 6600PA,C,D,AD	1
27	MA20211B	ASSEMBLING SPRING	2		GO20391B-J	BIT SPRING FOR 6200PB	1
28	MK20131-1	FAN	1		GO20391B	BIT SPRING FOR 6600PB	1
29	MG30081	PILOT ROD	1	54	GJ30461	BIT SLEEVE FOR "A,C,D,AD"	1
30	GZ33371-2A	CLUTCH ASSEMBLY FOR 6200PA	1		GJ3046B	BIT SLEEVE FOR "B"	1
	GZ33371-2B	CLUTCH ASSEMBLY FOR 6200PB	1	55	GQ30471	"C" RING FOR "A,C,D,AD"	1
	GZ33371-2C	CLUTCH ASSEMBLY FOR 6200PC	1		GQ21361	"C" RING FOR "B"	1
	GZ33371-2D	CLUTCH ASSEMBLY FOR 6200PD	1	56	GL30481-5	TORQUE ADJUST PING	4
	GZ33371-2AD	CLUTCH ASSEMBLY FOR 6200PAD	1	57	GM30491	TORQUE ADJUST RING	1
	GZ33371-3A	CLUTCH ASSEMBLY FOR 6600PA	1	58	GS30501	"C"RING	1
	GZ33371-3B	CLUTCH ASSEMBLY FOR 6600PB	1	59	CD20111	COUPLER	1
	GZ33371-3C	CLUTCH ASSEMBLY FOR 6600PC	1		CD20111-3	COUPLER(ESD)	1
	GZ33371-3D	CLUTCH ASSEMBLY FOR 6600PD	1	60	CH50671-4	GROUNDING MEANS	1
	GZ33371-3AD	CLUTCH ASSEMBLY FOR 6600PAD	1	61	GN30435	MAIN BEARING	1
31	MI33241	PILOT ROD	1				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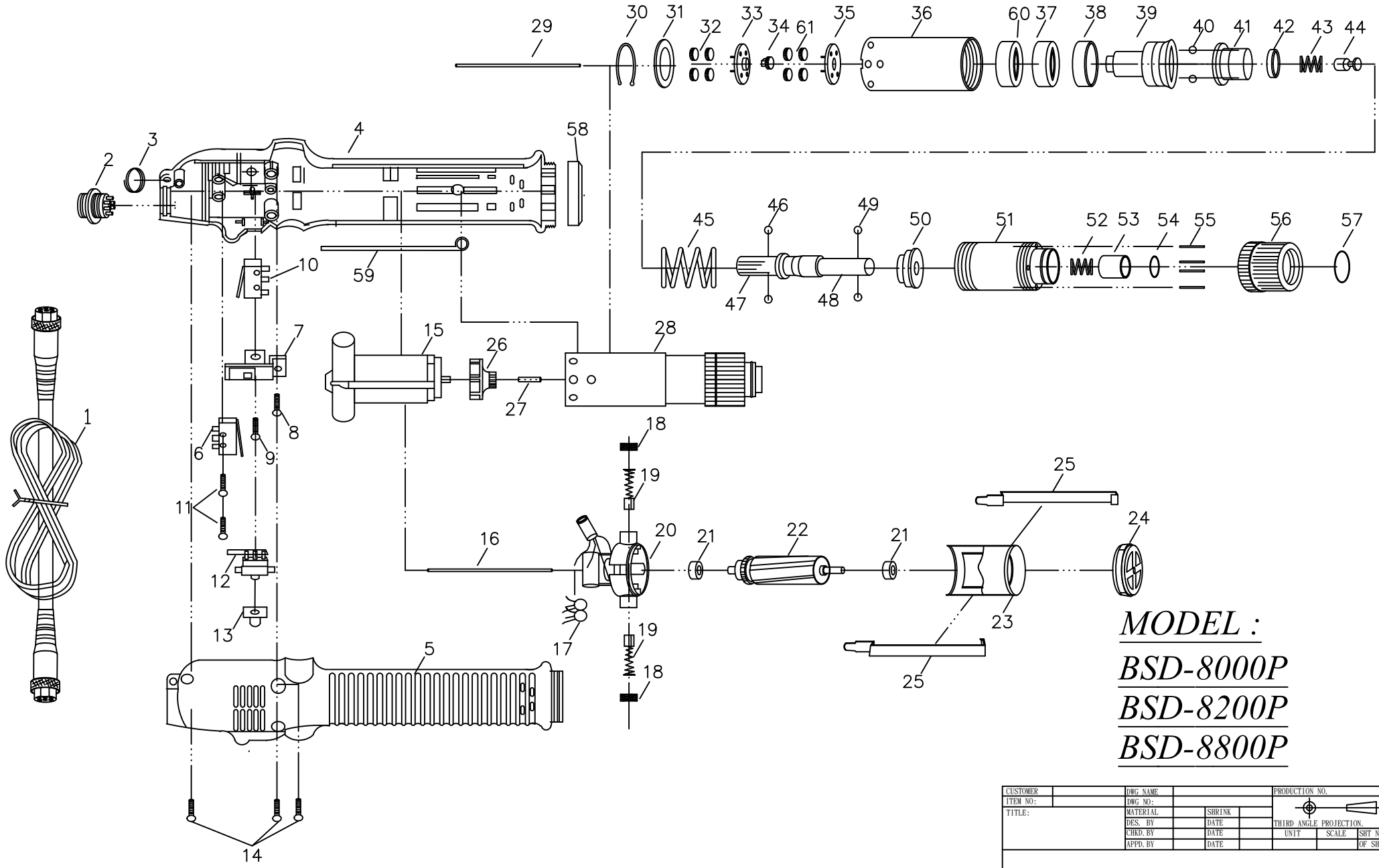
MODEL :
BSD-6600PF
CUSTOMER
ITEM NO:
TITLE:
DWG NAME
DWG NO:
MATERIAL
DES. BY
CHKD. BY
APPD. BY
SHRINK
DATE
PRODUCTION NO.
THIRD ANGLE PROJECTION.
UNIT
SCALE
SHT NO.
OF SHTS.

NO	PARTS NO	PARTS NAME-E	Q'ty	NO	PARTS NO	PARTS NAME-E	Q'ty
1	AA50005A-D6P-2N	CORD ASSEMBLY	1	33	GI20251-1	IRON WASHER	1
2	PZ50160	CONNECTOR	1	34	G21302	SPACER	1
3	CJ20011	SUSPENSION RING	1	35	GH20241-1	IDLE GEAR	3
4	CB33401-4	HOUSING-UNDERSIDE	1	36	GG20271-1	GEAR SEAT	1
	CB33401-8	HOUSING-UNDERSIDE(ESD)	1	37	GA30311-8	GEAR CASE	1
5	CA33402-4	HOUSING-UPSIDE	1	38	GN30321	MAIN BEARING	2
	CA33402-8	HOUSING-UPSIDE(ESD)	1	39	GX33319-4	SHAFT GUIDE	1
6	H10201	START SWITCH	1	40	GP30351	STEEL BALLS	2
7	CE90101-1	SWITCH BASE	1	41	GF33317	WARING PLATE	1
8	CH90121	SCREW	1	42	GO30541	PRING	1
9	CH90131	SCREW	1	43	GO30531	SPRING CAP	1
10	H10201	SHUT OFF SWITCH	1	44	GV33316	INNER SPRING CAP	1
11	CH90151-1	SCREW	2	45	GO33315-2	INNER SPRING	1
12	HA28071-4	CHANGEOVER SWITCH	1	46	GU30370	STOP PILOT	1
13	CI60212	CHANGEOVER SWITCH CAP	1	47	GE30411-14	WRING SPRING	1
14	CH20102	SCREW	3	48	GP30371	STELL BALLS	2
15	CH20102-18	WASHER	1	49	GD33319A	SHAFT FOR "A" TYPE	1
16	CH30192	SCREW	1		GD33319B	SHAFT FOR "B" TYPE	1
17	MO50111-2	MOTOR ASSEMBLY	1		GD33319C	SHAFT FOR "C" TYPE	1
18	MI33511	PILOT ROD	1		GD33319D	SHAFT FOR "D" TYPE	1
19	EB33610-2	CERAMICS CAPACITOR	1		GD33319AD	SHAFT FOR "AD" TYPE	1
20	MD20151	BRUSH CAP	2	50	GP20331	BIT PILOT FOR "A&D&AD"	2
21	MC50161-1	CAPBON BRUSH	2		GP21291B	BIT PILOT FOR "B&C"	2
22	ML50571-3	MOTOR TOP COVER	1	51	GY33313	WRING SPRING BASE	1
23	ME21481	BALL BEARING	2	52	GB20381-8	CLUTCH CASE FOR "A.C.D.AD"TYPE	1
24	MH50601-5	ARMATURE	1		GB20381-9	CLUTCH CASE FOR "B"TYPE	1
25	MJ33631F	MOTOR YOKE ASSEMBLY	1	53	GO30452	BIT SPRING FOR A,C,D,AD	1
26	MB20221-1	MOTOR END COVER	1		GO20391B-J	BIT SPRING FOR "B"	1
27	MA33621B	ASSEMBLING SPRING	2	54	GJ30461	BIT SLEEVE FOR "A,C,D,AD"	1
28	MK33091LF	FAN	1		GJ3046B	BIT SLEEVE FOR "B"	1
29	MG30081-1	PILOT ROD	1	55	GQ30471	"C" RING FOR "A,C,D,AD"	1
30	GZ33371-4AF	CLUTCH ASSEMBLY-6600PFA	1		GQ21361	"C" RING FOR "B"	1
	GZ33371-4BF	CLUTCH ASSEMBLY-6600PFB	1	56	GL30481-5	TORQUE ADJUST PING	4
	GZ33371-4CF	CLUTCH ASSEMBLY-6600PFC	1	57	GM30491	TORQUE ADJUST RING	1
	GZ33371-4DF	CLUTCH ASSEMBLY-6600PFD	1	58	GS30501	"C"RING	1
	GZ53373-4ADF	CLUTCH ASSEMBLY-6600PFAD	1	59	CD20111	COUPLER	1
31	MI33241	PILOT ROD	1		CD20111-3	COUPLER (ESD)	1
32	GK20231	"C" RING FOR CH20241	1	60	CH50671-4	GROUNDING MEANS	1



MODEL :

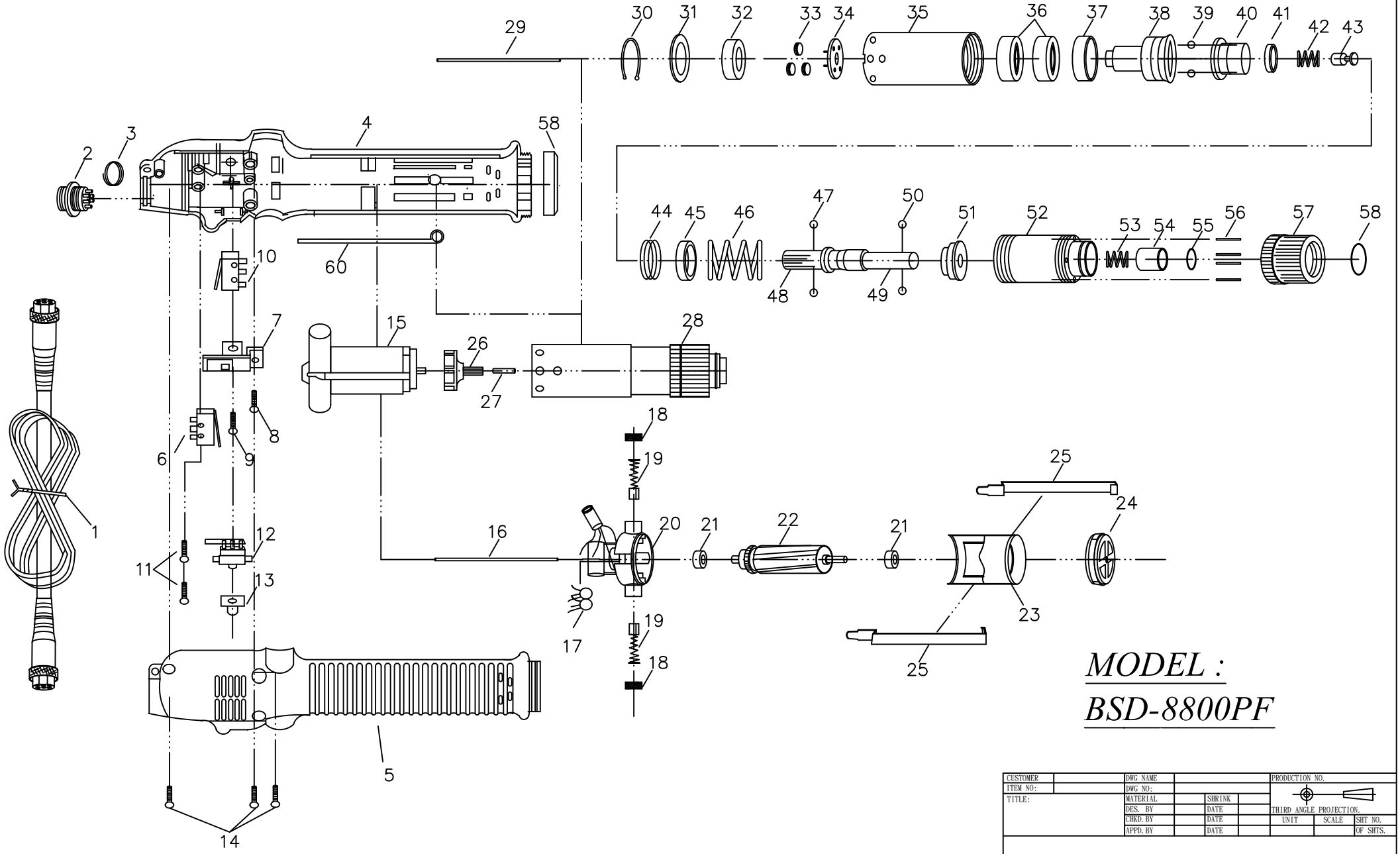
BSD-8000P

BSD-8200P

BSD-8800P

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	AA50005A-D6P-2N	CORD ASSEMBLY 2M	1	31	GI21191	IRON WASHER	1
2	PZ50160	CONNECTOR	1	32	GH20241	IDLE GEAR FOR "8000P"	3
3	CJ20011	SUSPENSION RING	1		GH91232	IDLE GEAR FOR "8200P"	3
4	CB70011-1	HOUSING-UNDERSIDE	1		GH92231	IDLE GEAR FOR "8800P"	4
	CB70011-3	HOUSING-UNDERSIDE-ESD	1	33	GG21231	GEAR SEAT FOR "8000P"	1
5	CA70181-1	HOUSING-UPSIDE	1		GG91242-1	GEAR SEAT FOR "8200P"	1
	CA70181-3	HOUSING-UPSIDE-ESD	1		GG92241-1	GEAR SEAT FOR "8800P"	1
6	H10201	SHUT OFF SWITCH	1	34	G20102	CENTRAL GEAR	1
7	CE90101-1	SWITCH BASE	1	35	GG21231	GEAR SEAT FOR "8000P"	1
8	CH90121	SCREW	1		GG91272-1	GEAR SEAT FOR "8200P"	1
9	CH90131	SCREW	1		GG92271-1	GEAR SEAT FOR "8800P"	1
10	H10201	START SWITCH	1	36	GA21241	GEAR CASE FOR "8000P"	1
11	CH90151-1	SCREW	2		GA35241	GEAR CASE FOR "8200P&8800P"	1
12	HA28071-4	CHANGEOVER SWITCH	1	37	GN21251	MAIN BEARING	1
13	CI60213	CHANGEOVER SWITCH CAP-8000P	1	38	GW21532	IRON RING	1
	CI60214	CHANGEOVER SWITCH CAP-8200P	1	39	GX90303	SHAFT GUIDE	1
	CI60212	CHANGEOVER SWITCH CAP-8800P	1	40	GP30351	STELL BALLS	2
14	CH20102	SCREW	3	41	GF90321-1	WARING PLATE	1
15	MO71051	MOTOR ASSEMBLY FOR 8000P	1	42	GV90331	INNER SPRING CAP	1
	MO71051-3	MOTOR ASSEMBLY FOR 8200P	1	43	GO90341	INNER SPRING	1
	MO71051-4	MOTOR ASSEMBLY FOR 8800P	1	44	GU30370	STOP PILOT	1
16	MI90481	PILOT ROD	1	45	GE90361-8	WARING SPRING FOR "8000P"	1
17	EB33610-2	CERAMICS CAPACITOR	1		GE90361-8B	WARING SPRING FOR "8200P"	1
18	MD20151	BRUSH CAP	2		GE90361-8E	WARING SPRING FOR "8800P"	1
19	MC71411-1	CARBON BRUSH	2	46	GP30351	STELL BALLS	2
20	ML70531	MOTOR TOP COVER	1	47	GD91402-1	SHAFT	1
21	ME21481	BALL BEARING	2	48	GT91401A-1	BIT HOLDER FOR "A"TYPE	1
22	MH70571-1	ARMATURE	1		GT91401C-1	BIT HOLDER FOR "B"TYPE	1
23	MJ90601	MOTOR YOKE ASSEMBLY	1		GT91401AD-1	BIT HOLDER FOR "AD"TYPE	1
24	MB21521A	MOTOR END COVER	1	49	GP21291A	BIT PILOT FOR HEX 5.0mm	2
25	MA21491B	ASSEMBLING SPRING	2		GP21291B	BIT PILOT FOR HEX 6.35mm	2
26	MK21111	FAN FOR "8000P"	1	50	GY21321	WARING SPRING BASE	1
	MK91091	FAN FOR "8200P"	1	51	GB21331-1	CLUTCH CASE	1
	MK92091	FAN FOR "8800P"	1	52	GO21341	BIT SPRING	1
27	MG91081	PILOT ROD	1	53	GJ21351	BIT SLEEVE	1
28	GZ70091A	CLUTCH ASSEMBLY FOR "8000PA"	1	54	GQ21361	"C"RING	1
	GZ70091B	CLUTCH ASSEMBLY FOR "8000PB"	1	55	GL21371	TORQUE ADJUSTING PINS	4
	GZ70091AD	CLUTCH ASSEMBLY FOR "8000PAD"	1	56	GM21381	TORQUE ADJUSTING RING	1
	GZ70091-2A	CLUTCH ASSEMBLY FOR "8200PA"	1	57	GS21391	"C"RING	1
	GZ70091-2B	CLUTCH ASSEMBLY FOR "8200PB"	1	58	CD21031	COUPLER	1
	GZ70091-2AD	CLUTCH ASSEMBLY FOR "8200PAD"	1		CD21031-1	COUPLER-(ESD)	1
	GZ70091-8A	CLUTCH ASSEMBLY FOR "8800PA"	1	59	CH30671-2	GROUNDING MEANS	1
	GZ70091-8B	CLUTCH ASSEMBLY FOR "8800PB"	1	60	GN30442	MAIN BEARING	1
	GZ70091-8AD	CLUTCH ASSEMBLY FOR "8800PAD"	1	61	GH20241	IDLE GEAR FOR "8000P"	3
29	MI90201	PILOT ROD	1		GH91232-1	IDLE GEAR FOR "8200P"	3
30	GK21181	"C"RING	1		GH92231-1	IDLE GEAR FOR "8800P"	4

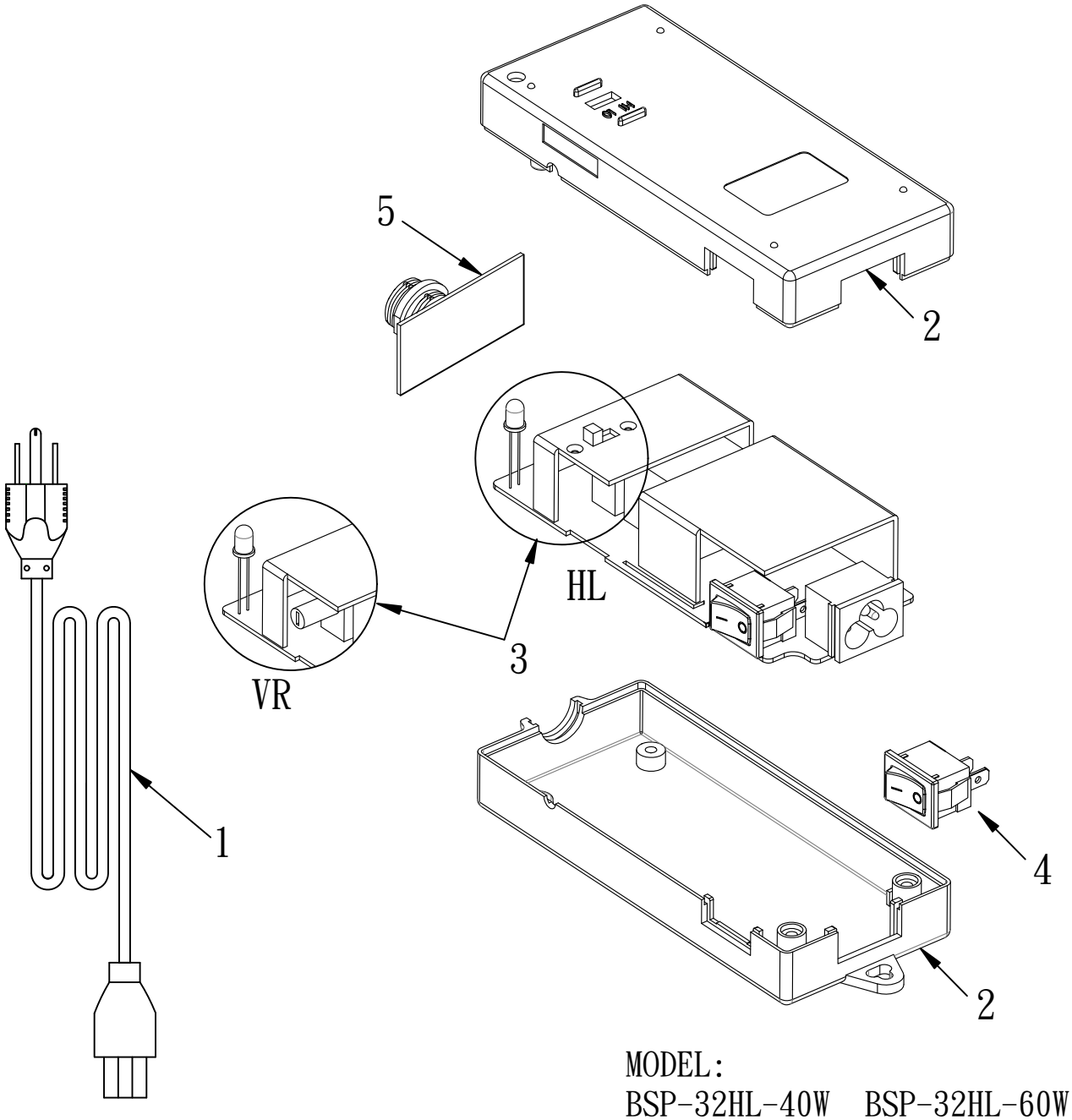


MODEL :

BSD-8800PF

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	AA50005A-D6P-2N	CORD ASSEMBLY 2M	1	31	GI21191	IRON WASHER	1
2	PZ50160	CONNECTOR	1	32	G21301	SPACER	1
3	CJ20011	SUSPENSION RING	1	33	GH21221-1	IDLE GEAR	3
4	CB70011-1	HOUSING-UNDERSIDE	1	34	GG21231-1	GEAR SEAT	1
	CB70011-3	HOUSING-UNDERSIDE-ESD	1	35	GA21241	GEAR CASE	1
5	CA70181-1	HOUSING-UPSIDE	1	36	GN21251	MAIN BEARING	2
	CA70181-3	HOUSING-UPSIDE-ESD	1	37	GW21532	IRON RING	1
6	H10201	SHUT OFF SWITCH	1	38	GX90303-1	SHAFT GUIDE	1
7	CE90101-1	SWITCH BASE	1	39	GP30351	STELL BALLS	2
8	CH90121	SCREW	1	40	GF90321-1	WARING PLATE	1
9	CH90131	SCREW	1	41	GV90331	INNER SPRING CAP	1
10	H10201	START SWITCH	1	42	GO90341	INNER SPRING	1
11	CH90151-1	SCREW	2	43	GU30370	STOP PILOT	1
12	HA28071-4	CHANGEOVER SWITCH	1	44	GO30532-1	SPRING	1
13	CI60212	CHANGEOVER SWITCH CAP	1	45	GO30532	SPRING CAP	1
14	CH20102	SCREW	3	46	GE90361-9	WARING SPRING	1
15	MO71051-5	MOTOR ASSEMBLY	1	47	GP30351	STELL BALLS	2
16	MI90481	PILOT ROD	1	48	GD91402-1	SHAFT	1
17	EB33610-2	CERAMICS CAPACITOR	1	49	GT91401A-1	BIT HOLDER FOR "A"TYPE	1
18	MD20151	BRUSH CAP	2		GT91401C-1	BIT HOLDER FOR "B"TYPE	1
19	MC71411-1	CARBON BRUSH	2		GT91401AD-1	BIT HOLDER FOR "AD"TYPE	1
20	ML70531	MOTOR TOP COVER	1	50	GP21291A	BIT PILOT FOR HEX 5.0mm	2
21	ME21481	BALL BEARING	2		GP21291B	BIT PILOT FOR HEX 6.35mm	2
22	MH70571-1	ARMATURE	1	51	GY21321	WARING SPRING BASE	1
23	MJ90601	MOTOR YOKE ASSEMBLY	1	52	GB21331-1	CLUTCH CASE	1
24	MB21521A	MOTOR END COVER	1	53	GO21341	BIT SPRING	1
25	MA21491B	ASSEMBLING SPRING	2	54	GJ21351	BIT SLEEVE	1
26	MK21111PF	FAN	1	55	GQ21361	"C"RING	1
27	MG30081-1	PILOT ROD	1	56	GL21371	TORQUE ADJUSTING PINS	4
28	GZ70091-8AF	CLUTCH ASSEMBLY FOR "8800PFA"	1	57	GM21381	TORQUE ADJUSTING RING	1
	GZ70091-8BF	CLUTCH ASSEMBLY FOR "8800PFB"	1	58	GS21391	"C"RING	1
	GZ70091-8ADF	CLUTCH ASSEMBLY FOR "8800PFAD"	1	59	CD21031	COUPLER	1
29	MI90201	PILOT ROD	1		CD21031-1	COUPLER-(ESD)	1
30	GK21181	"C"RING	1	60	CH30671-2	GROUNDING MEANS	1



MODEL:

BSP-32HL-40W BSP-32HL-60W

BSP-32VR-40W BSP-32VR-60W

NO	PARTS NO	PARTS NAME-E	Q'ty
1	AA60005	CORD NS-26 1.5M-Chinese	1
	AA60005-D	CORD NS-26 1.5M-Australia	1
	AA60005-A	CORD NS-26 1.5M-American	1
	AA60005-E	CORD NS-26 1.5M-Europe	1
	AA60005-I	CORD NS-26 1.5M-India	1
	AA60005-U	CORD NS-26 1.5M-UK	1
2	P11011-3	HOUSING 32V 60W HI/LO	1
	P11012-3	HOUSING 32V 40W HI/LO	1
	P11011-4	HOUSING 32V 60W VR	1
	P11012-4	HOUSING 32V 40W VR	1
3	EG50101-22	PCB-POWER SUPPILY FOR 40W HI/LO	1
	EG50101-22I-CE	PCB-POWER SUPPILY FOR 60W HI/LO	1
	EG50101-22E	PCB-POWER SUPPILY FOR 40W VR	1
	EG50101-22F-CE	PCB-POWER SUPPILY FOR 60W VR	1
4	P11401-7	POWER SWITCH BR-12C-11L	1
5	EG50101-3G-A	PCB	1