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Government of India
Ministry of Railways

MODERN TOOLS FOR ARTISAN STAFF OF CIVIL ENGINEERING DEPARTMENT



CAMTECH/2003/C/ARTISAN-TOOLS/1.0
APRIL - 2003

Centre
for
Advanced
Maintenance
TECHnology

Excellence in Maintenance

Maharajpur, GWALIOR - 474 020

Modern tools for Artisan Staff of Civil Engineering Department

FOREWORD

Presently the artisan staff of Engineering department is working with old and obsolete tools. This is affecting the productivity of artisans. It is a well-known fact the portable electric power tools are productivity aids. With selection of proper accessories and attachments, these tools improve productivity of worker manifold. Based on the studies conducted in the field and experience suggestions of manufacturers this handbook has been prepared.

I am happy to note that Indian Railway Centre for Advanced Maintenance Technology, Maharajpur, Gwalior has brought out the handbook covering modern tools for various trades of Civil Engineering.

This handbook will be quite useful for improving the efficiency of artisan staff of Civil Engineering department.

M S Ekbote

New Delhi
Date : 12.05.2003

M.S.Ekbote
Additional Member
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PREFACE

The productivity of artisan staff of Civil Engineering department of Indian Railways, can be improved by providing the better tools and equipment. Under the direction of the Railway Board, this handbook on modern tools for artisan staff of Engineering department has been prepared. It comprises of the study of modern power operated hand tools, their applications, accessories, spares, sales and service networks and prices. The user may further explore for more brand of tools of similar uses for adoption in their units.

By using power tools the per capita output increases; the rejection or rework is practically eliminated; the quality of workmanship is improved; and worker safety is enhanced, resulting in reduction in cost of maintenance and increased job efficiency/productivity as well as availability.

Officers/incharge of field units are requested to search and select suitable manufacturers/tools/pricing tag from the large fray of manufacturers and suppliers, while indenting/ordering for a supply. As success or failure of using power tool depends upon identifying the end user's need correctly. A wrong selection of tool and/or incorrect working procedure can result in the tool not delivering the expected performance, frequent problems in tool, increased cost of operation, maintenance and ultimately in abandoning the tool and idea. Therefore before ordering/indenting, do a little effort with following steps :

(i) **Identify the end user's need and select the correct tool.**

(ii) **Familiarise the artisan to handle the tool to get the best out of a tool by proper "Training and induction program in consultation with suppliers".**

(iii) **Ensure need based after sales service, availability of spares within the workshop or at a nearby locality.**

(iv) Do a comparison of financial implications and cost benefit ratio of power tools with existing tools for various types of jobs done by artisan staff.

(v) The prices given in the report are tentative and taken for only budgetary purpose.

Manufacturers and supervisors/artisan staff of Sr. Section Engineer (Works) Main Line, Gwalior, North Central Railway have been involved in the study. Shri Sunil Gupta, STA/Civil/ IRCAMTECH, was involved in collecting data, information and arranging seminar_cum_workshop. Data entry and composing has been done by Shri Ramesh Bhojwani, Console Operator/ IRCAMTECH.

We sincerely acknowledge the valuable guidance, suggestions and support given by Shri Pramod Kumar, EDCE (G), Railway Board. He has gone through the entire text, thus enabling us in updating the contents of the handbook.

Though every care has been taken in preparing this handbook. any error or omission may please be brought to the notice of IRCAMTECH/Gwalior

We welcome suggestions for addition and improvement in the contents from all offices and units of Indian Railways.

J.K.Nandanwar
Director / Civil
IRCAMTECH/Gwalior

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Executive Director
IRCAMTECH/Gwalior

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ISSUE OF CORRECTION SLIPS

The correction slips to be issued in future for this handbook will be numbered as follows:

CAMTECH/2003/C/ARTISAN-TOOLS/1.0/CS.# XX date ….....

Where "XX" is the serial number of the concerned correction slip (starting from 01 onwards).

CORRECTION SLIPS ISSUED

Sr. No. of C.Slip	Date of issue	Page no. and Item No. modified	Remarks

Chapter – 1

INTRODUCTION

Indian Railway is one of the largest state owned Railway system. Vary large work force is available to keep the system working efficiently. However, the productivity of artisan staff has been rather poor due to various reasons and one of the reason has been their working with conventional and obsolete tools.

The present tools are being used since time immemorial. The modern tools are available in the market to suit the specific requirement and this can be of immense help in improving the productivity of artisan staff.

Considering above, Railway Board, vide their letter no. 2001/CE-I/GNS/2 Benchmarking dtd. 18.09.2001, Board directed for conducting the study to improve the efficiency and productivity of the artisan staff. Under the direction of board, the study was taken up. Manufacturers have also been involved in the study. The efforts have been made to list out modern tools trade-wise and the same has been presented in the form of a handbook.

It is hoped that handbook will be of immense use to the field officials for procurement of right tool for right job and this would achieve the objective of improving the efficiency of artisan staff.

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Chapter – 2

Brief guidelines for preparation of the handbook and procurement of artisan tools

2.1 Preparation of handbook :

Presently the artisan staff of Civil Engineering department is working with old conventional and obsolete tools, which is affecting the efficiency and output of the artisans. The culture of using power driven tools on the Indian Railway has not been started so far. The uniform guidelines have to be issued to all the divisions of Indian Railway regarding procurement, repairs, service and replacement. The studies have been conducted to laydown the guidelines. The manufacturers and suppliers were invited for giving the demonstration. The live demonstration was conducted in Sr. Section Engineer (Works)'s workshop at Gwalior. The artisans were given to handle all the modern tools. On getting the feedback from then the tools have been selected and included in this handbook. During the actual use of modern tools by the field staff of various division, they may suggest the modifications/additions of the modern tools. Availability of spares, service centres, training facilities etc. have been discussed with manufacturers and same is available in the handbook.

2.2 Procurement of tools :

Most of these tools can be procured within the powers delegated to Divisional Railway Manager as per Board's letter dated 05.9.1995 (Annexure-B). The list of standard makes and approved list of probable supplier to get the quality product should be prepared. These lists will have to be updated every year.

2.3 Repair and Service :

It should be possible to undertake the repairs of the tools at Divisional level. Presently SSE/SE has been posted at Divisional level to take care of all the small track machines available on division, who is attached with track machine base depot. Therefore he can also be assigned the duty of maintaining the power driven tools. Frequently required spares should be listed out and the minimum quantity of those spares should be kept in depot. The idle period for each tool should be minimum.

Codal life of power tools :

As per Indian Railway finance code Volume-I 1982, para 219- F-I, Sr. no. 18, the average life of "General purpose light machinery e.g. hand saws, nibbling, air compressors, floor grinders etc. is 15 years.

Note : This life span of 15 years is for single shift. For round the clock working, the recommended life is 15 x 0.6= 9 years.

Spares

The firms have given their sales and service centre. The rate contract with the firms for supply of spares can be fixed up and Assistant Engineer/Senior Engineer (Track Machine) may be authorised by competent authority to place the order on the firms (as Direct Demand Officer).

Training

Senior Section Engineer /Section Engineer (Track Machine), incharge for repairs of the modern tools will have to be given training in training centres of manufacturers and suppliers. Similarly, the artisan staff should also be given training periodically. This has been discussed with the manufacturers. They have training centres to cater the training to the client's representatives on specific demand.

Consumables

The consumables needed while using the equipment to be arranged depending on the nature of work. Availability of consumables for each tool has to be decided based on work load on each trade.

Accessories

The list of accessories required for use of each tool is listed alongwith tool details, given in this handbook. The scale of availability of accessories for each tool has to be defined by Assistant Engineer/ Assistant Divisional Engineer, based on the workload.

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CHAPTER - 3

DESCRIPTION OF TOOLS

1. NAME OF TOOL : MULTI PURPOSE ROTARY DRILL

2. USEFUL FOR ARTISAN TRADE : MASON/FITTER/PLUMBER/CARPENTER





3. SPECIFICATIONS

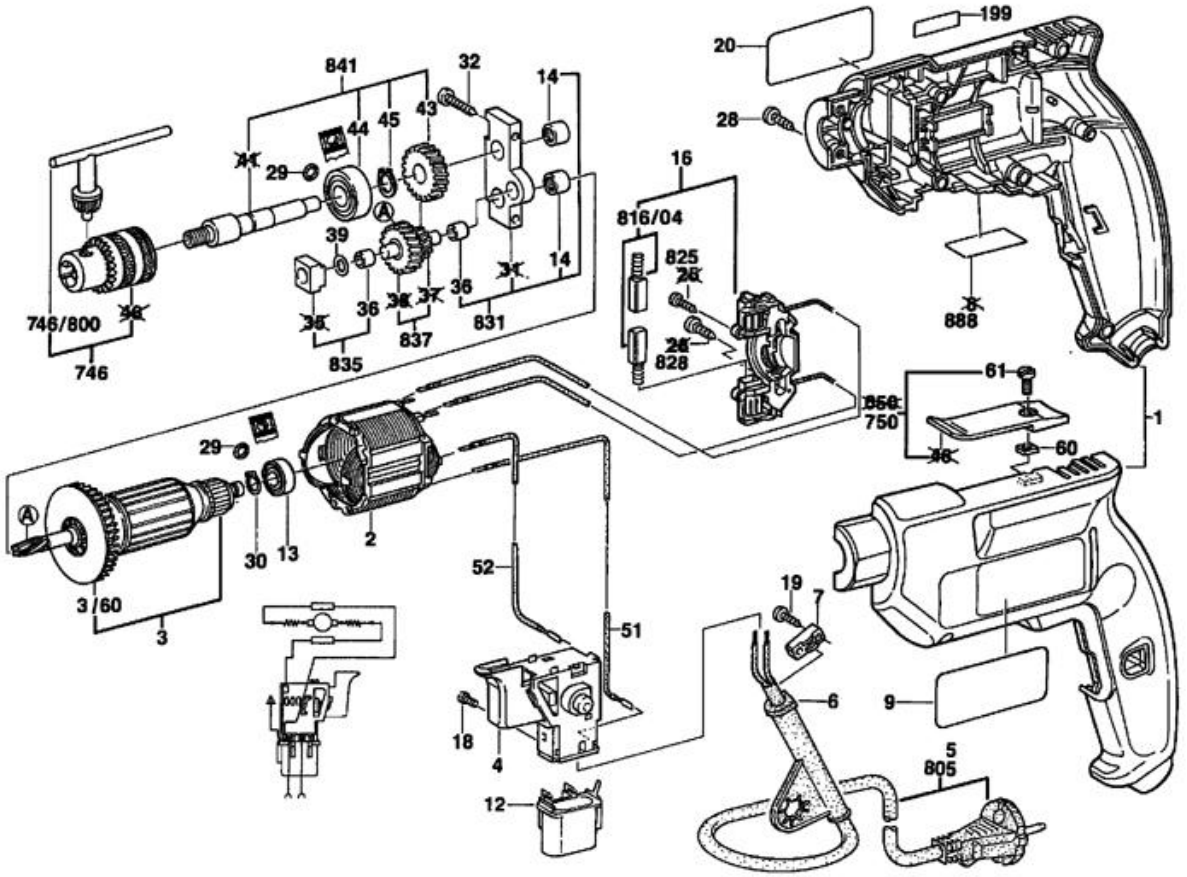
Sr. No.	Details	Manufacturer wise tool details		
		KPT Ltd.	**Consortech Ltd.**	**Bosch Ltd.**
1	Tool Code Name	KPT KD3C (10 mm Handle Drill)	420 BME	GBM-10
2	Specification (which are applicable)			
	Power input	550 W	420 W	400 W
	Impact rate			44800 / min.
	R.P.M.	2200-2800 RPM	3000 RPM	2200/2800 RPM
	Rated speed			
	Weight	3.2 Kg.	1.1 Kg.	1.4 Kg
	Volt/amp./watts	230 V/NL 0.8A-1.1 A, FL 2.5 A/550 W	230 V	230V
	Dia. in concrete	10 MM	10MM	10 MM
	Dia. in metal	8 MM	-	8 MM
	Dia. in wood	20 MM	16 MM	20 MM
	These may be changed depending on tools type & artisan trade.			
3	Approx. cost of tool in Rupees	6560	5500	5000

4. Application :

- Drilling in wood for fixing tower bolts, hinges, pad locks etc. to fix and maintain.
- Drilling in doors to fix locks.
- Metal drilling.
- Drilling in walls for fixing bathroom fittings, wash basins, mirror etc., in quarters and service buildings.

5. Accessories : Chuck key, Side handle.

6. Spares and Approximate Price (in Rupees) :



POS No.	Qty.	Part No.	Description	List Price (Rs.)
1	1	2605104316	HOUSING SECTION	484
2	1	2604220392	POLE SHOE	469
3	1	2604010780	ARMATURE	893
3/60	1	1606610116	FAN	54
4	1	2607200260	ON-OFF SWITCH	235
6	1	2600707059	GROMMET	20
7	1	2601035001	CABLE CLIP	20
12	1	2607329138	SUPPRESSION CAP	87
13	1	2600905032	DEEP-GROOVE BALI	189
14	2	2600917003	NEEDLE BUSHING	49

16	1	2605807052	BRUSH PLATE	296
18	2	2603410001	CHEESE HEAD SCRI	20
19	2	2910611019	SHEET METAL	50
20	1	2601118572	REFERENCE PLATE	70
29	2	2600210036	O-RING	20
30	1	2600209004	SPACER RING	20
32	2	2914201710	TORX OVAL HEAD	42
36	2	2600917004	NEEDLE BUSHING	59
39	2	2600100627	SHIM	20
43	1	2606320046	CYLINDERICAL GEAR	406
44	1	1900905232	DEEP-GROOVE BALI	411
45	1	2916650001	C-CLIP	13
51	1	2604448129	CONNECTING CABLE	20
52	1	2604448060	CONNECTING CABLE	20
60	1	2915121004	SQUARE NUT	18
61	1	2910091120	SLOTTED PAN-HEAD	15
746	1	1608571054	KEY CHUCK	-
746/800	1	1607950045	CHUCKWRENCH	-
750	1	2608040050	CHANNEL END-PLATE	-
780	1	2602025032	AUXILIARY HANDLE	-
805	1	1604460163	MAINS CONNECTION	345
816/04/1	1	2604321905	CARBON BRUSH	90
816/060	2	2601329051	RATCHET CAP	20
816/060	2	2601322013	RATCHET CAP	20
825	2	2914201668	TORX OVAL HEAD	17
828	10	2912401420	SHEET METAL SCRE	20
831	1	2605807920	BEARING BRACKET	370
835	1	2600917903	BEARING ELEMENT	127
837	1	2606311906	TOOTHED SHAFT	397
841	1	2606135912	DRILLING SPINDLE	997

7. Operational Guidance : As per operation manual supplied by manufacturer.





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1. NAME OF TOOL : IMPACT DRILL

2. USEFUL FOR ARTISAN TRADE : MASON/FITTER/PLUMBER



3. SPECIFICATIONS

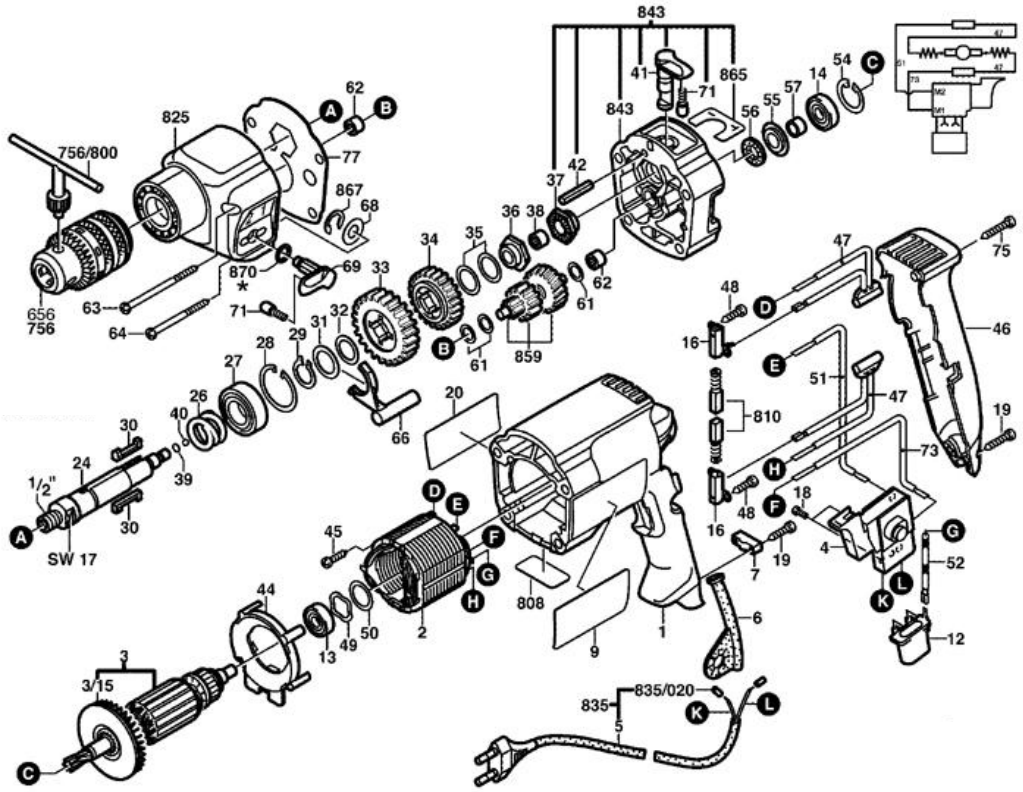
Sr. No.	Details	Manufacturer wise tool details		
		KPT Ltd.	**Consortech Ltd.**	**Bosch Ltd.**
1	Tool Code Name	KPT 563 (13 mm Hammer Drill)	PS 550	GSB –20-2 Drill
2	Specification (which are applicable)			
	Power input	550 W	550 W	701 W
	Impact rate	18000 BPM	4700 Impact nos.	-
	R.P.M.	1200 RPM	2000 RPM	1900 RPM
	Rated speed	1200 RPM	2000 RPM	1900 RPM
	Weight	1.8 Kg.	2.78 Kg.	2.2 Kg
	Volt/amp./watts	230 V/ 2.3 A/550 W	-	-
	Dia. in concrete	13 MM	22 MM	13 MM
	Dia. in metal	10 MM	13 MM	13 MM
	Dia. in wood	25 MM	35 MM	40 MM
	These may be changed depending on tools type & artisan trade.			
3	Approx. cost of tool in Rupees	8000	8000	8000

4. Application :

- To drill holes for fixing sanitary fittings, anchoring various hooks and also for electrical fixings.

5. Accessories : Auxiliary handle, depth stopper, Chuck key.

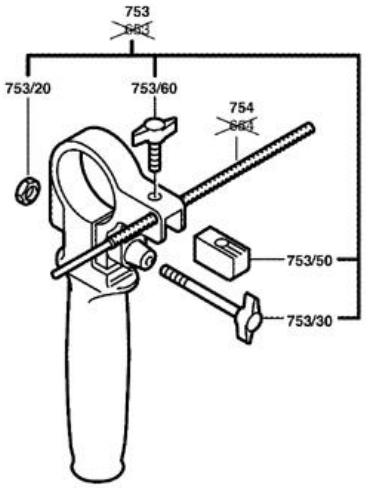
6. Spares and Approximate Price (in Rupees) :



POS No.	Qty.	Part No.	Description	List Price (Rs.)
753/50	1	2608040014	CLAMPING PLATE	47
753/60	1	1613480008	WING SCREW	20
754	1	1613001005	DEPTH-GAUGE	-
756	1	1608571048	KEY CHUCK	-
798	1	2605438286	TOOLCASE	-
810	1	2604321905	CARBON BRUSH	90
814	1	2600905039	BALL BEARING	215
825	1	2605806990	GEAR HOUSING	620
835	1	1604460163	MAIN CONNECTION	345
843	1	2605700936	INTERMEDIATE DIS.	1239
859	1	2606100903	TOOTHED SHAFT	599
865	1	2601110076	STICKER	20
867	1	2916080007	LOCKING WASHER	13
870	1	2607010226	PARTS SET	20

POS No.	Qty.	Part No.	Description	List Price (Rs.)
1	1	2605104309	CRANK SHAFT HOUSE	620
2	1	1614220102	POLE SHOE	872
3	1	2604010744	ARMATURE WITH	1103
3/15	1	2606610029	FAN	20
4	1	2607200365	ON-OFF SWITCH	184
6	1	2600707059	GRAOMMET	20
7	1	2601035001	CABLE CLIP	20
12	1	2607329114	SUPPRESSION CAP.	132

13	1	1900905018	BALL BEARING	335
16	2	2604337003	BRUSH HOLDER	36
18	2	2603410001	CHEESE HEAD	20
19	4	2914201705	TORX OVAL HEAD	22
24	1	2606135013	DRILLING SPINDLE	425
26	1	2604616002	COMPRESSION SPR	20
27	1	1900905163	BALL BEARING	969
28	1	2916660014	C-CLIP	61
29	1	2916650008	C-CLIP	30
30	2	2602300028	FLAT KEY	66
31	1	2600101671	RETAINING WASHER	20
32	1	2600101515	SHIM	20
33	1	2606317045	CYLINDERICAL GEAR	363
34	1	2606317037	CYLINDERICAL GEAR	363
35	2	2600101616	SHIM	20
35	1	2600101617	SHIM	20
36	1	2600190052	LOCATING WASHER	168
37	1	2600190057	LOCATING WASHER	234
38	1	2600917003	NEEDLE BUSHING	49
39	1	2600000014	SHIM RING	20
39	2	2600000012	SHIM RING	20
40	1	1903230010	BALL	17
41	1	2602026017	ROTARY KNOB	120
42	1	2917780105	SLOTTED SPRING	13
44	1	2601328033	AIR-DEFLECTOR	35
45	4	2603435015	RECESSED HEAD	20
46	1	2605132049	HOUSING COVER	138
47	2	2604465068	SUPPRESSOR BOX	138
48	4	2914201664	TORX OVAL HEAD	18
49	1	2600150004	SPRING WASHER	20
50	1	2600101027	SHIM RING	20
51	1	2604448005	CONNECTING CABLE	20
53	1	2604448133	COONECTOR CABLE	20
54	1	2916660008	C-CLIP	30
55	1	2600500002	GUIDE SLEEVE	20
56	1	2600108077	FELT WASHER	20
57	1	2600400008	SLEEVE TYPE	20
61	3	2600100607	SHIM	20
62	2	2600914010	NEEDLE BUSHING	49
63	2	2603435070	HEADLESS SCREW	-
64	2	2603435071	HEADLESS SCREW	25
66	1	2602033006	ADJUSTING SLIDE	28
68	1	2600100618	SHIM RING	20
69	1	2602026038	ROTARY KNOB	69
71	2	2600590006	RATCHET CAP	20
75	1	2914201709	TORX OVAL HEAD	22
76	2	2914201707	TORX OVAL HEAD	17
77	1	2601073012	FLAT GASKET RING	20
203	4	2600409014	SHRINKAGE TUBE	20
750	1	2605438286	TOOLCASE	-
750	1	2605438283	CARRYING CASE	-
753	1	1612025024	AUXILIARY HANDLE	-
753/20	2	2915011007	HEXAGON NUT	-
756/30	1	1613480007	WING SCREW	20



7. Operational Guidance : As per operation manual supplied by manufacturer.



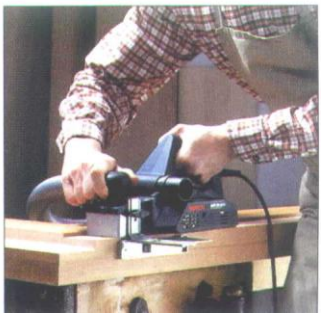
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1. NAME OF TOOL : ALL PURPOSE PLANNER

2. USEFUL FOR ARTISAN TRADE : CARPENTER







3. SPECIFICATIONS

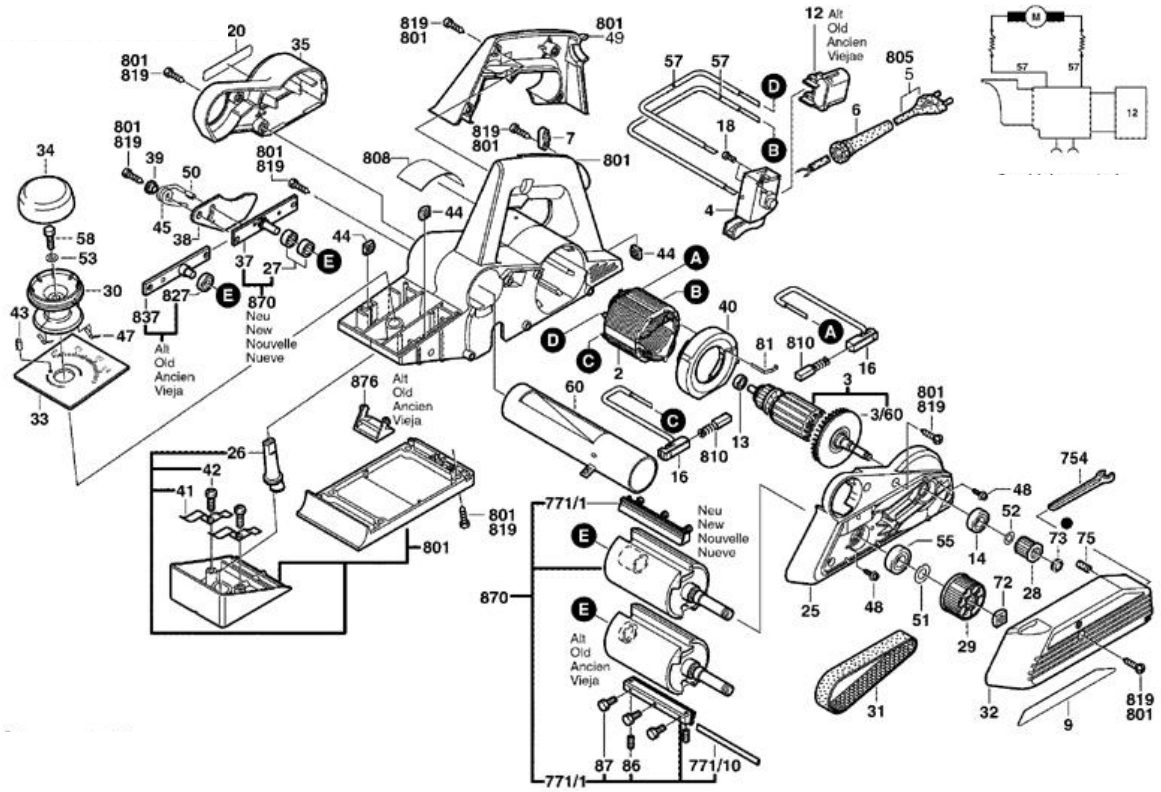
Sr. No.	Details	Manufacturer wise tool details		
		KPT Ltd.	Consortech Ltd.	Bosch Ltd.
1	Model	Not available	Not available	GHO 31-82
2	Shaving thickness adjustment	-do-	-do-	0-3.1 MM
3	Planing width	-do-	-do-	82 MM
4	Power input	-do-	-do-	750 W
5	No load speed	-do-	-do-	13000 RPM
6	Weight	-do-	-do-	2.8 Kgs.
7	Price (Rupees)	-do-	-do-	10,800

4. Application :

- For planing wood work and other interior repairs and to make planing an effortless task for wood workers.

5. Accessories : Reversible Carbide blades, rebate width stop, rebate depth stop.

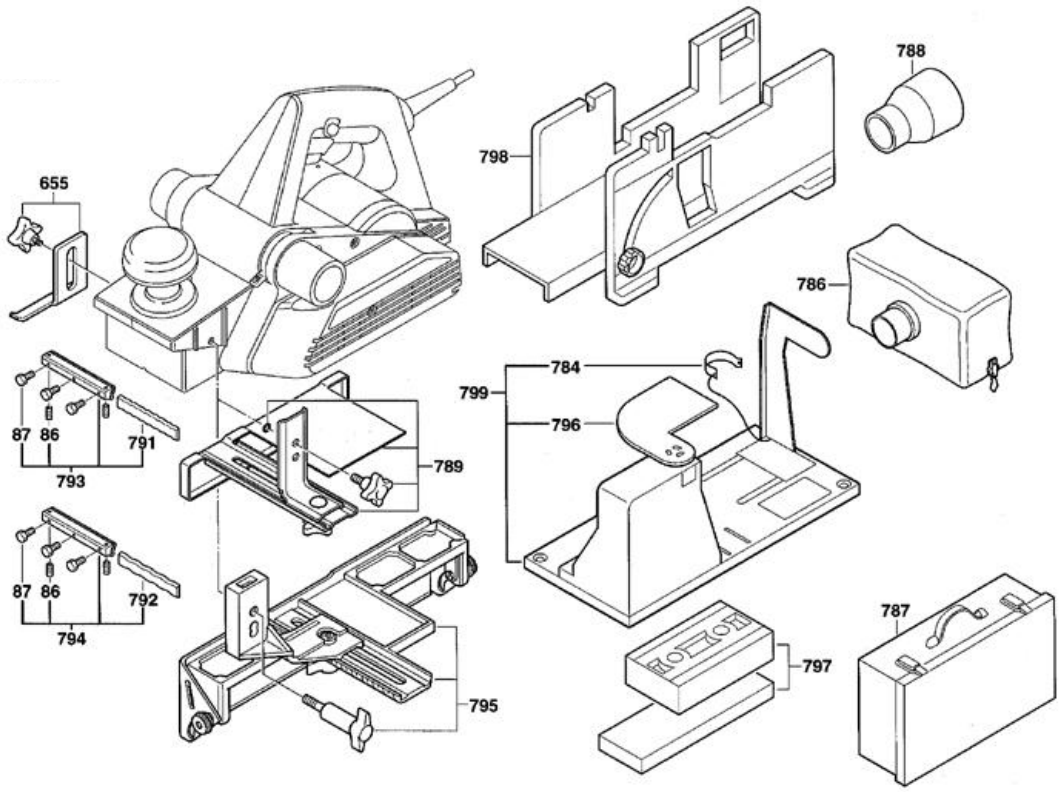
6. Spares and Approximate Price : Details to be supplied by manufacturers.



POS No.	Qty.	Part No.	Description	List Price (Rs.)
789	1	2607000072	PARALLEL GUIDE	-
793	1	2607000131	CHANGE OVER SET	-
794	1	2607000132	CHANGE OVER SET	-
795	1	2607001077	WIDTH STOP	-
796	1	2607001106	KNIFE GUARD	-
797	1	2608133001	BLADE SHARPENING	-
798	1	0603095000	STRAIGHTENING DEVICE	-
799	1	0603095002	BASE	-
801	1	2605190914	HOUSING	1536
805	1	1607000227	MAIN CONNECTION	607
808	1	1601106999	NAME PLATE	70
810	1	2604321905	CARBON BRUSH SET	90
819	19	2914201705	TORXOVAL HEAD	22
827	1	2600905037	DEEP GROOVE BALI.	162
837	1	2605819004	BEARING BRACKET	171
870	1	2603204908	PLANER HEAD	2263
876	1	2601329055	KNIFE GUARD	70

POS No.	Qty.	Part No.	Description	List Price (Rs.)
2	1	2604220480	POLE SHOE	546
3	1	2604010763	ARMATURE	1092
3/60	1	2606610049	FAN	28
4	1	2607200367	ON-OFF SWITCH	165
6	1	1600703026	GROMMET	28

7	1	2601035001	CABLE CLIP	20
12	1	1607328028	SUPPRESSION CAP	60
13	1	2600905051	DEEP-GROOVE BALI	126
14	1	2600905052	DEEP-GROOVE BALI	132
16	2	2604449027	BRUSH HOLDER	20
18	2	2603410001	CHEESE HEAD SCRI.	20
20	1	1601110481	MANUFACTURER'S	20
25	1	2605719003	BEARING FLANGE	171
26	1	2606110001	ADJUSTING ECCEN.	54
27	2	2600917003	NEEDLE BUSHING	49
28	1	2600324009	TOOTHED BELT	51
29	1	2606625009	TOOTHED BELT	101
30	1	2602026004	ROTARY HANDLE	52
31	1	2604736004	TOOTHED BELT	171
32	1	2605510064	GEAR COVER	92
33	1	2601120000	SCALE PLATE	117
34	1	2605500105	CAP-HANDLE	28
35	1	2605510063	BRUSH COVER	107
37	1	2605819011	BEARING BRACKET	128
38	1	2601098036	COVER SHEET	34
39	1	2600324008	GUIDE BUSHING	20
40	1	2600290009	AIR-DEFLECTOR RIM	54
41	2	2601290016	SPRING PLATE	28
42	2	2603435027	THREADED-FURRO	20
43	1	2917800053	COILED SPRING PIN	13
44	3	2603320004	SQUARE NUT	20
45	1	2604651007	TORSION SPRING	20
47	2	2601254000	STOP SPRING	20
48	4	2603433000	WASHER AND ACREW	20
49	1	2605133009	HANDLE COVER	169
50	1	2917800303	COILED SPRING PIN	13
51	1	2600100041	PLAIN WASHER	20
52	1	1600100632	SHIM	20
53	1	2916011010	PLAIN WASHER	-
55	1	2600905064	DEEP GROOVE BALI	200
57	2	2604448062	CONNECTING CABLE	20
58	1	2914201707	TORX OVAL HEAD	17
60	1	2600409022	DEFLECTOR PIPE	206
72	1	2603320003	SQUARE NUT	20
73	1	2603342006	ROUND NUT	20
75	1	2603100053	RUBBER BUFFER	20
81	1	2601329053	CONTACT STRAP	20
86	2	2603400014	HEADLESS SETSCR	20
87	3	2603450005	HEXAGON SCREW	20
655	1	2607001045	DEPTH-GAUGE	128
754	1	1907950502	SINGLE HEAD ENG.	-
771/1	2	2608040039	GRIPSPRING TENDS.	477
771/2	1	2607000130	CHANGE OVER SET	-
771/10	1	2608635350	PLANING KNIFE	-
771/20	1	2607000127	SET OF BLADES	-
771/30	1	2607000128	SET OF BLADES	-
771/40	1	2607000129	SET OF BLADES	-
784	1	1601290004	PICKUP CLIP	-
785	1	1607000182	PLANING KNIFE	-
786	1	2605411035	CHIPS BAG	-
787	1	2605438119	CARRYING CASE	-
788	1	2605702022	SUCTION CONNECT	-



7. Operational guidance : As per working manual supplied by manufacturer.

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1. NAME OF TOOL : JIG SAW

2. USEFUL FOR ARTISAN TRADE : CARPENTER



3. SPECIFICATIONS

Sr. No.	Details	Manufacturer wise tool details		
		KPT Ltd.	**Consortech Ltd.**	**Bosch Ltd.**
1	Model	KJS – 60	CST 6286 E	GST 85 PBE
2	Cutting depth in wood	60 MM	85 MM	85 MM
3	In non-ferrous metal	-	6 MM	10 MM
4	In steel	-	6 MM	4 MM
5	Power input	400 W	600 W	580 W
6	Stroke rate at no load	3000 RPM	500-3200 RPM	500-3100 RPM
7	Weight	1.5 Kgs.	2.1 Kg.	2.5 Kgs.
8	Length of stroke	-	19 MM	-
9	Price (app.) in Rupees	9030	10290	11500

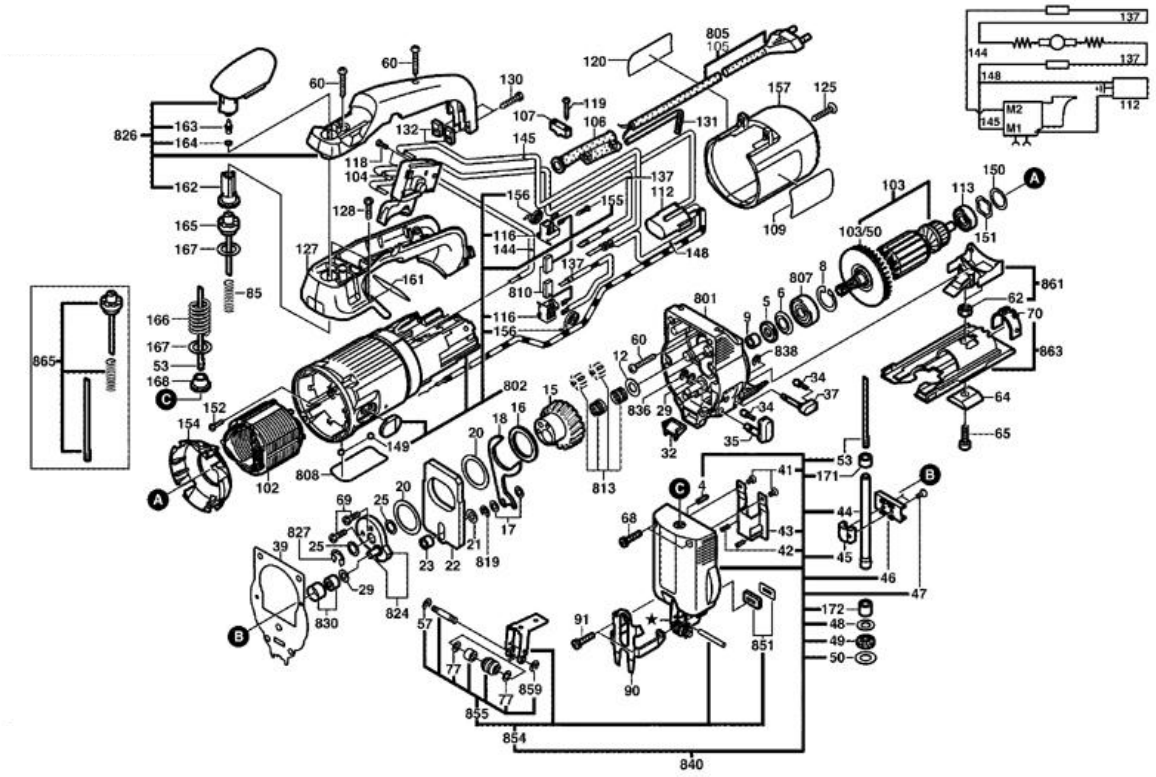
4. Application :

- For all purpose wood cutting in curves and straight directions. It is a reliable tool of craftsmen for straight and especially curve cutting in wood and even aluminium, plastic and steel.

5. Accessories & Features :

- Extensive range of saw blades for different surfaces.
- Adjustable 4 step pendulum action for faster cutting in all materials.
- SDS system for quick saw blade change.
- Adjustable pivoting for angle cuts upto 45 and for cutting close to edges.
- Anti splintering device for clean cuts.
- Roller guide for precise cutting.
- Adjustable chip blower for clear view of cutting line.

6. Spares and Approximate Price : To be supplied by manufacturers.



POS No.	Qty.	Part No.	Description	List Price (Rs.)
4	2	1903201042	NEEDLE ROLLER	27
5	1	2600108077	FELT WASHER	20
6	1	2600500002	GUIDE SLEEVE	20
8	1	2916660008	C-CLIP	30
9	1	2600400008	SLEEVE TYPE TERM	20
12	1	2600101616	SHIM	20
15	1	2606320048	ECCENTRIC COG	765
16	1	2600102653	SHIM	20
17	2	2600100515	PLAIN WASHER	20
17	1	2600100516	PLAIN WASHER	20
18	1	2601923004	FORK LEVER	42
20	2	2600102652	SHIM	20
21	1	2600100625	SHIM	20
21	1	2600100626	SHIM	20
21	1	2600100627	SHIM	20
21	1	2600100628	SHIM	20
22	1	2601098003	COUNTER WEIGHT	171
23	1	2600309009	SPACER SLEEVE	20
25	1	2600100575	PLAIN WASHER	20
25	1	2600100576	PLAIN WASHER	20
25	1	2600100577	PLAIN WASHER	20
29	2	2600100568	SHIM	20
29	1	2600100569	SHIM	20
29	1	2600100607	SHIM	20
32	1	2602305042	AIR ELIMINATOR	20
34	2	2600590006	RATCHET CAP	20
35	1	2602026036	ROTARY KNOB	37
37	1	2602026037	ROTARY KNOB	20
39	1	2601015050	SEAL	20
41	2	2603410048	THREADED FURRO	20
42	2	2604613000	COMPRESSION SPR.	20
43	1	2601322010	GUIDE BRACKET	47
44	1	2600780012	LIFTING ROD	340
45	1	2602329011	RETAINING BRACKET	54
46	1	2601321017	SLIDING PIECE	120
47	2	2603421040	COUNTERSUNK-HE	20
48	1	2600112031	COVER DISC	20
49	1	2600290017	SEAL	20
50	1	2600101612	SHIM	20
53	1	2603490011	CLAMP SCREW	139
57	1	2600116011	LOCKING WASHER	20
60	6	2914201709	TORX OVAL HEAD	22
62	2	2915011007	HEXAGON NUT	-
64	1	2601030019	PROFILE BEADING	37
65	1	2910141197	HEX SOCKET HEAD	15
68	2	2914501012	WASHER AND SCREW	15
69	2	2914551176	MICROENCAPSULAT	30
70	1	2601328044	SCALE PLATE	20
77	2	2600100032	SHIM	20
85	1	2604610040	COMPRESSION SPR.	20
90	1	2601322021	SAFETY DEVICE	86
91	2	2910011128	CHEESE HEAD SCREW	14
102	1	2604220447	POLE SHOE	588
103	1	2604010578	ARMATURE	1397
130/50	1	2606610049	FAN	28

104	1	2607200245	ON-OFF SWITCH	1200
106	1	2600703027	GROMMET	20
107	1	2601035001	CABLE CLIP	20
112	1	2607329129	SUPPRESSION CAP.	207
113	1	1900905018	BALL BEARING	335
116	2	2601323021	BRUSH HOLDER	47
116	2	2601323022	BRUSH HOLDER	46
118	2	2603410001	CHEESE HEAD SCRI.	20
119	2	2914201705	TORX OVAL HEAD	22
125	1	2910601321	TAP SCREW W.SUN	13
127	1	2602025060	STRAP SHAPTED	270
128	2	2910640158	OVAL HEAD SCREW	34
130	2	2914501021	WASHER AND SCREW	18
131	1	1907950006	OFFSET SCREW DRIVER	63
132	2	2603320001	SQUARE NUT	20
137	2	2604465106	INTERFERENCE	86
144	1	1614431010	CONNECTING CABLE	20
145	1	2604448160	CONNECTING CABLE	20
148	1	2600409017	INSULATION TUBING	20
149	1	2603231032	PLUG	20
150	1	2600101027	SHIM RING	20
151	1	2600150004	SPRING WASHER	20
152	2	2603435015	RECESSED HEAD	20
154	1	2601328045	COVER DISC	28
155	4	2914201664	TORX OVAL HEAD	18
156	2	2604652009	SPIRAL SPRING	20
157	1	2600508038	HOUSING COVER	152
162	1	2606491011	RATCHET	20
163	1	2600423006	CARRIER BRACKET	20
164	1	1600210034	O-RING	20
165	1	2606491014	COUPLING HALF	121
166	1	2604617004	COMPRESSION SPR.	28
167	2	1600101603	SHIM	28
168	1	2600421001	GUIDE SLEEVE	20
171	1	2600301046	BUSHING	20
172	1	2600301045	BUSHING	28
801	1	2605808917	GEAR HOUSING	1827
802	1	2605108904	CRANK SHAFT HOUSE	546
805	1	1604460163	MAIN CONNECTION	345
807	1	2600905039	DEEP-GROOVE BALI.	215
810	1	2604320912	CARBON BRUSH	150
813	1	2607001130	PARTS SET	49
819	1	2916080007	LOCKING WASHER	13
824	1	2601072901	ECCENTRIC DISC	54
826	1	2602025901	STRAP SHAPED HAI	237
827	1	2916080010	LOCKING WASHER	18
830	1	2600917900	NEEDLE BUSHING	151
836	1	2916080008	LOCKING WASHER	13
838	1	2600116006	C-CLIP	20
840	1	2605808921	GEAR COVER	192
851	1	2601015901	GASKET	20
854	1	2601321902	ROLLER LEVER	463
855	1	2600326903	ROLLER SET	234
859	1	2916080005	LOCKING WASHER	-
861	1	2605500900	FAN COVER	51
863	1	2601016903	BASE PLATE	463
865	1	2606491917	MODIFICATION SET	333

7. Operational guidance : As per working manual supplied by manufacturer.





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1. NAME OF TOOL : ROUTER

2. USEFUL FOR ARTISAN TRADE : CARPENTER



3. SPECIFICATIONS

Sr. No.	Details	Manufacturer wise tool details		
		KPT Ltd.	Consortech Ltd.	Bosch Ltd.
1	Model	Not available	OF 6990 E Set	GOF 1200 A
2	Maximum plunger depth	-	30 MM	60 MM
3	Tool holder	-	40 MM	¼"
4	Power input	-	900 W	1200 W
5	No load speed electronic	-	8000 to 26000 RPM	23000 RPM
6	Weight	-	3.3 Kgs.	4.70 Kgs.
7	Price (app.) in Rs.	-	16900	17400

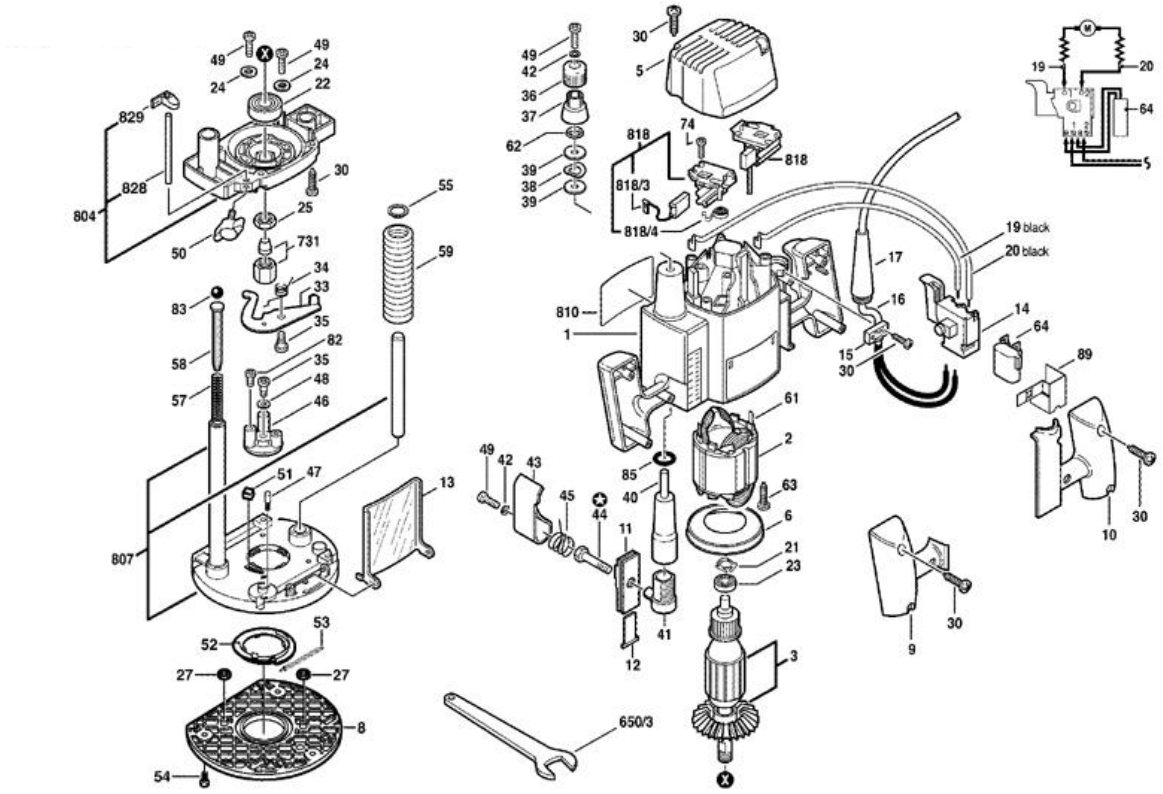
4. Application :

- For all edge routing works and also jointing works in wood, Nuwood panels etc. Also for making exquisite patterns and shaping wood and furniture.

5. Accessories & Features :

- Precise routing with exact depth setting in 1/10 mm increments.
- Spindle lock for simple router bit changes.
- Light and rust proof, stable aluminium base plate.
- Rubber sleeves for protection against dust.
- Over 100 types of router bits are also available.
- Router arrangement FE 6962 for Rs. 4220/- is also available with Consortech Tool Ltd.

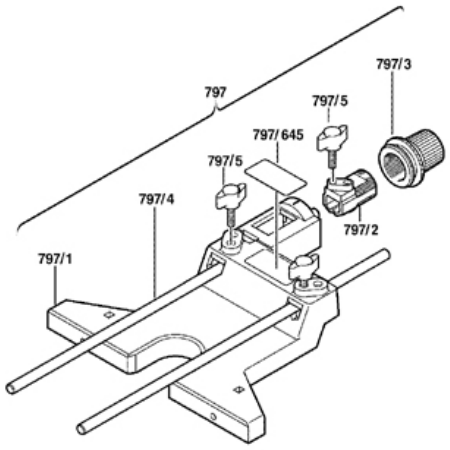
6. Spares and Approximate Price : To be supplied by manufacturers.



POS No.	Qty.	Part No.	Description	List Price (Rs.)
731	1	2608570105	COLLET CHUCK	-
731	1	2608570104	COLLET CHUCK	-
731	1	2608570103	COLLET CHUCK	-
731	1	2608570125	COLLET CHUCK	-
804	1	2610907863	FAN HOUSING	1015
807	1	3605702598	BASE PLATE	2321
818	1	3604336506	BRUSH HOLDER	348
818/3	1	3604321514	CARBON BRUSH SE	184
818/4	1	3604652501	SPIRAL SPRING	61
828	1	2601907864	ROD	-
829	1	2610907865	POINTER	-

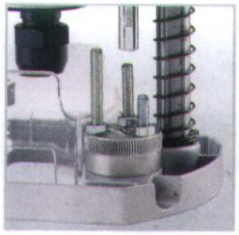
POS No.	Qty.	Part No.	Description	List Price (Rs.)
1	1	3605108583	CRANK SHAFT HOUSING	798
2	1	3604220564	POLE SHOE	1575
3	1	3604011612	ARMATURE WITH F	4410
5	1	3605500597	HOUSING COVER	183

6	1	3600590508	AIR-DEFLECTOR RIM	70
8	1	3600190521	INTERMEDIATE PLATE	546
9	1	3605133531	HANDLE COVER	183
10	1	3605133530	HANDLE COVER	183
11	1	3601010519	COVER	54
12	1	3601010521	INSERT	54
13	1	3605510547	CHIP DEFLECTOR	51
14	1	1607000231	ON-OFF SWITCH	263
15	1	2601035001	CABLE CLIP	20
16	1	1607000228	MAIN CONNECTION	500
17	1	3600703508	GROMMET	66
19	1	3604445518	CONNECTING CABLE	70
20	1	3604445519	CONNECTING CABLE	70
21	1	3600150501	SPRING LOCK WASHER	46
22	1	3600905512	BALL BEARING	321
23	1	3600905513	BALL BEARING	215
24	1	3600034506	RETAINING PLATE	54
25	1	3603300502	HEXAGON NUT	93
27	2	2915011005	HEXAGON NUT	-
30	15	2610910566	SHEET METAL SCREW	-
33	1	3601021510	SWING PLATE	108
34	1	3604651502	TORSION SPRING	33
35	3	3603415556	SLOTTED PAN-HEAD	33
36	1	3603231539	KNOB	37
37	1	3600209500	INDICATOR RING	84
38	1	3600100528	SHIM	28
39	2	3600100527	SHIM	47
40	1	3600360507	ADJUSTING SLEEVE	267
41	1	3600400507	LOCKING PIECE	101
42	2	2916690003	SPRING LOCK WASHER	-
43	1	3602000510	LOCKING LEVER	37
44	1	3603450504	LOCK BOLT	93
45	1	3604651503	COMPRESSION SPR.	33
46	1	3600232504	DEPTH GAUGE	402
47	1	2600590006	RATCHET CAP	20
48	1	3916060500	SPRING WASHER	15
49	4	2910641122	OVAL-HEAD SCREW	47
50	1	1613480009	WING SCREW	28
51	1	3603211501	KNOB	37
52	1	3600240500	LOCKING RING	54
53	1	3604643504	EXTENSION SPRING	47
54	3	2914461402	THREADED FURRO	19
55	1	2916650003	C-CLIP	15
57	1	3604613508	COMPRESSION SPR.	33
58	1	3603120502	GUIDE PIECE	54
59	2	3605510548	BELLOWS	121
61	2	1604477005	BLADE TERMINAL	20
62	1	3604680502	RETAINING RING	37
63	2	2610991306	SCREW	30
64	1	1617328025	SUPPRESSION CAP	88
74	4	2914201664	TORX OVAL HEAD S	18
82	3	3603410504	SCREW	47
83	1	1903230007	BALL	17
85	1	3600210507	O-RING	37
89	1	2610996090	RETAINER	27
650/3	1	1907950513	SINGLE HEAD ENG.	-
731	1	2608570107	COLLET CHUCK	-
731	1	2608570106	COLLET CHUCK	-



7. Operational guidance : As per working manual supplied by manufacturer.







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1. NAME OF TOOL : CIRCULAR SAW

2. USEFUL FOR ARTISAN TRADE : CARPENTER, FITTER/PLUMBER



3. SPECIFICATIONS

Sr. No.	Details	Manufacturer wise tool details		
		KPT Ltd.	**Consortech Ltd.**	**Bosch Ltd.**
1	Model	W 652 AP	CHKS 6066	GKS 7 ¼"
2	Cutting depth at 90^0	62 MM	66 MM	62 MM
3	Cutting depth at 45^0	Not available	Not available	49 MM
4	Saw blade diameter	190 MM	190 MM	7 ¼"
5	Power input	1050 W	1400 W	1400 W
6	No load speed	4500 RPM	4700 RPM	4800 RPM
7	Weight	5.1 Kgs.	5.2 Kgs.	4.1 Kgs.
8	Price (app.) in Rs.	7440	10680	9000

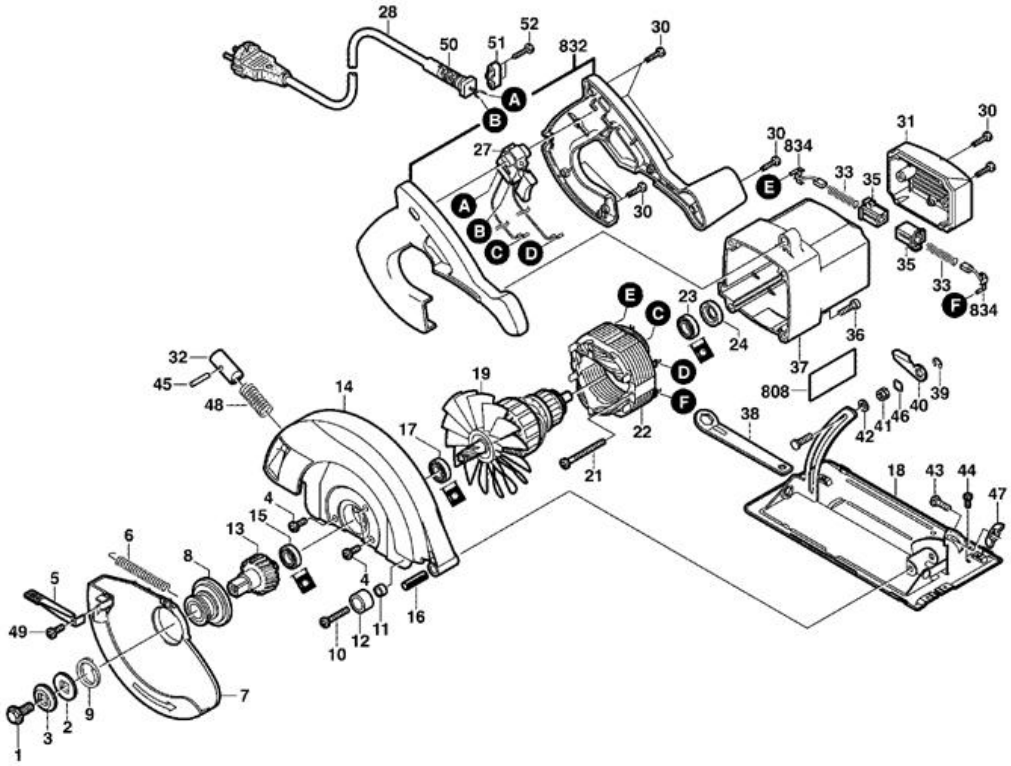
4. Application :

- Used for straight cutting applications in wood works. Circular saw is ideal if thickness and cutting lengths are more.

5. Accessories & Features :

- Different cutting blades available with varying nos. of teeth for woods of different thickness.
- Exact setting of cutting depth possible.
- Adjustable cutting depth angle upto 45^0.
- Parallel cut guide.
- Automatic spring locked safety guard.
- Spindle lock for fast and easy blade change.

6. Spares and Approximate Price : To be supplied by manufacturers.



POS No.	Qty.	Part No.	Description	List Price (Rs.)
1	1	2610346554	HEXAGON SCREW	47
2	1	2610903184	SUPPORTING DISC	186
3	1	2610903186	CONICAL SPRING	63
4	6	2610341365	SCREW	28
5	1	2610351898	LEVER	206
6	1	2610347486	EXTENSION SPRING	47
7	1	2610341268	PIVOTING BLADE	788
8	1	2610341347	BEARING FLANGE	270
9	1	2610341359	RETAINING RING	28
10	1	2610347100	CHEESE HEAD SCRI.	28
11	1	2610341366	SPACER BOLT	54
12	1	2610341394	STOP	28
13	1	2610902896	GEAR SHAFT	903
14	1	2610903180	PROTECTIVE COVER	872
15	1	2610010409	BALL BEARING	119
16	1	2610341332	COILED SPRING PIN	28
17	1	2610350311	BALL BEARING	215
18	1	2610904202	BASE PLATE	861
19	1	2610908382	ARMATURE	1659
21	2	2610347104	HEADLESS SCREW	33
22	1	2610910185	POLE SHOE	788
23	1	2610993520	BALL BEARING	113
24	1	2610326023	BUSHING	28
25	1	2610350683	C-CLIP	28
27	1	2610348399	SWITCH	210
28	1	2610904249	MAINS CONNECTION	546
30	8	2610341364	SHEET METAL SCREW	28

31	1	2610350662	CLOSING COVER	101
32	1	2610351295	LOCKING BOLT	201
33	2	2610320418	SPRING	28
35	2	2610341257	BRUSH HOLDER	47
36	4	2610341335	SCREW	28
37	1	2610903196	CRANKSHAFT HOUSE	425
38	1	2610341299	BOX WRENCH	186
39	1	2610341354	C-CLIP	28
40	1	2610901987	LEVER	33
41	1	2610901988	ROUND NUT	20
42	1	2610068566	WASHER	28
43	1	2610017262	ROUND-HEAD BOLT	28
44	1	2610347892	GUIDE PIECE	68
45	1	2610020656	SLOTTED SPRING F	28
46	1	2610068183	SPRING WASHER	28
47	1	2610029562	WING NUT	28
48	1	2610350667	SPRING	28
49	1	2610328924	SCREW	47
50	1	2610360176	GROMMET	20
51	1	2610364033	CABLE CLIP	36
52	2	2610352373	CLAMP SCREW	28
832	1	2610907535	HANDLE	184
834	1	2610992427	CARBON BRUSH SE	166

7. Operational guidance : As per working manual supplied by manufacturer.





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1. NAME OF TOOL : MARBLE/TILE/CONCRETE CUTTER

2. USEFUL FOR ARTISAN TRADE : MASON





3. SPECIFICATIONS

Sr. No.	Details	Manufacturer wise tool details		
		KPT Ltd.	Consortech Ltd.	Bosch Ltd.
1	Model	KM-4SA	Not available	GMS 34
2	Diamond wheel diameter	110 MM	-	110 MM
3	Maximum cutting depth	34 MM	-	34 MM
4	Power input	1050 W	-	850 MM
5	No load speed	12000 RPM	-	12000 RPM
6	Weight	2.7 Kgs.	-	2.7 Kgs.
7	Bore diameter	Angular Base plate version (K-100 A) also available	-	20 MM
8	Price (app.) in Rs.	3750	-	4000

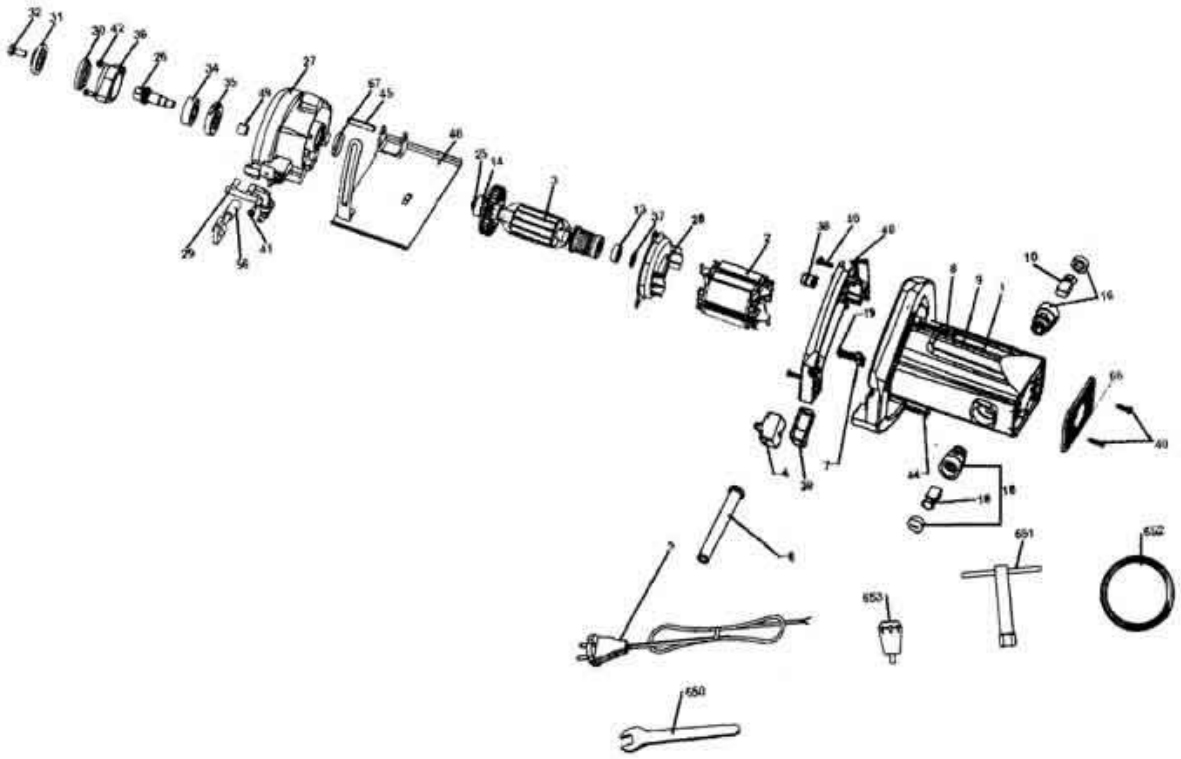
4. Application :

- For precision cutting of marble, tile and concrete etc. in flooring and tiling work.

5. Accessories & Features : To be supplied by manufacturers as part of standard supply list. Some of the features are as under.

- Water cooling system controlled through self locking tap lever.
- Variable adjustable cutting depth up to 34 mm for effortless cutting even in thick materials.
- Clear view of cutting line, for accurate in all positions.
- For wet and dry cutting both useful.

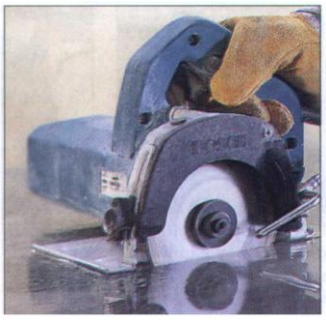
6. Spares and Approximate Price : To be supplied by manufacturers.



POS No.	Qty.	Part No.	Description	List Price (Rs.)
046	1	F002G30013	BASE PLATE	100
048	1	F002G31045	HANDLE COVER	60
049	1	F002G30014	NEEDLE BEARING	45
056	1	F002G30021	PEACOCK ASSEMBLY	15
066	1	F002G31051	BACK COVER	15
067	1	F002G31052	GASKET	5
650	1	F002G31053	SPANNER	-
651	1	F002G30022	BOX SPANNER	-
652	1	F002G31076	HOSE	-
653	1	F002G30024	NIPPLE	-

POS No.	Qty.	Part No.	Description	List Price (Rs.)
001	1	F002G31022	MOTOR HOUSING	400
002	1	F002G30004	STATOR	400
003	1	F002G30005	ARMATURE	650
004	1	F002G30006	SWITCH	100
005	1	F002G30007	CABLE WITH PLUG	60
006	1	F002G31081	CABLE PROTECTOR	5
007	1	F002G31082	CLAMP	5
010	1	F002G30008	CARBON BRUSH SE	38
013	1	F002G30009	BEARING	70
014	1	F002G30010	BEARING	79
016	2	F002G30011	BRUSH HOLDER AS	35
019	2	F002G31025	SCREW	2
025	1	F002G31026	PINION	65
026	1	F002G31027	SPINDLE	45
027	1	F002G31029	DIE CAST COVER	300
028	1	F002G31031	AIR DEFLECTOR	40
029	1	F002G30032	WATER TAP	20
030	1	F002G31033	SUPPORT DISC	20
031	1	F002G31034	PRESSURE DISC	20
032	1	F002G31035	L H BOLT	5
034	1	F002G30012	BEARING	80
035	1	F002G31036	GEAR	80
036	1	F002G31037	BEARING FLANGE	30
037	1	F002G31038	WAVE WASHER	5
038	1	F002G31039	SWITCH LOCKER	5
039	1	F002G31040	SWITCH RUBBER	10
040	5	F002G31041	SCREW	2
041	1	F002G31042	SCREW	2
042	2	F002G31043	SCREW	2
044	3	F002G31044	SCREW	3
045	1	2917760253	PIN	2

7. Operational guidance : As per working manual supplied by manufacturer.



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1. NAME OF TOOL : BLOWER/DUST EXTRACTOR

2. USEFUL FOR ARTISAN TRADE : BLACK SMITH/PLUMBER/FITTER



3. SPECIFICATIONS

Sr. No.	Details	Manufacturer wise tool details		
		KPT Ltd.	**Consortech Ltd.**	**Bosch Ltd.**
1	Model	KB-20	Not available	GBL 550
2	Power input	360 W	-	550 W
3	Pressure	-	-	800 MMAQ
4	Air volume	2.3 M^3/Min.	-	2.7 M^3/Min.
5	Weight	-	-	1.7 Kgs.
6	Price (app.) in Rs.	2780	-	3500

4. Application :

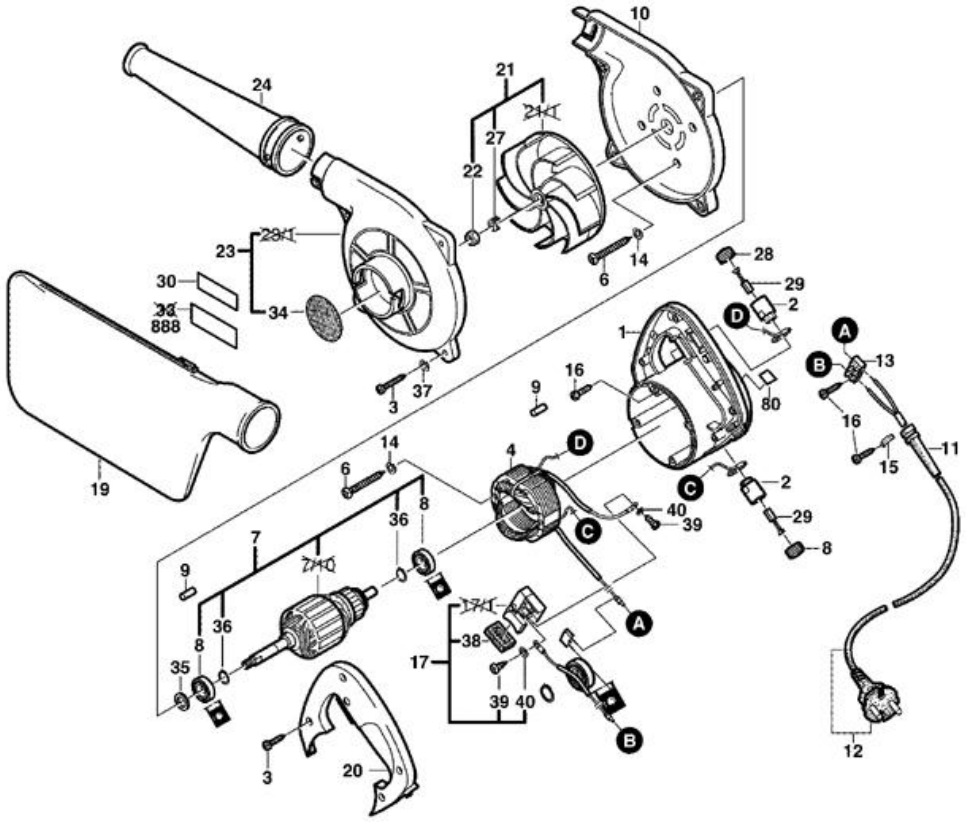
- It is versatile blower and used for smithy blowing purposes. Suction mode is also possible. It can also be used for cleaning of pipe joints, valves etc.

5. Accessories & Features :

- Blowing and suction, both operations can be done. Lock on switch for continuous operations is provided. Dust bag for use in suction mode as standard accessory provided.

6. Operational guidance : As per working manual supplied by manufacturer.

7. Spares and Approximate Price :



POS No.	Qty.	Part No.	Description	List Price (Rs.)
1	1	1609203379	CRANKSHAFT HOUSE	214
2	2	1609203380	BRUSH HOLDER	92
3	8	1609203381	SHEET METAL SCREW	20
4	1	1609203382	POLE SHOE	536
6	6	1609203383	SHEET METAL SCREW	20
7	1	1609203480	ARMATURE	1166
8	2	1609203385	BALL BEARING	215
9	2	1609203386	HOLDING PIN	66
10	1	1609203387	BLOWER CASING	152
11	1	1609203388	GROMMET	53
12	1	1609203389	MAINS CONNECTION	407
13	1	1609203390	TERMINAL	54
14	6	1609203391	SPRING LOCK WASHER	20
15	1	1609203392	CABLE CLIP	20
16	5	1609203393	SHEET METAL SCREW	20
17	1	1609203479	ON-OFF SWITCH	213
19	1	1609203396	DUST BAG	303
20	1	1609203397	HANDLE COVER	53
21	1	1609203483	FAN WHEEL	240
22	1	1609203399	HEXAGON NUT	63
23	1	1609203484	BLOWER CASING	152
24	1	1609203401	NOZZLE	247
27	1	1609203402	PLAIN WASHER	20

28	2	1609203403	SCREW CAP	20
34	1	1609203406	PROTECTIVE GRILL	69
35	1	1609203407	FRICTION WASHER	66
36	2	1609203408	GRIP RING	70
37	4	1609203409	SPRING WASHER	35
38	1	1609203410	FOAM PLASTICS	37
39	2	1609203411	COUNTERSUNK-HEA	20
40	2	1609203412	SPRING WASHER	35
829	1	1609203405	CARBON BRUSH SE	137

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1. NAME OF TOOL : HOT AIR GUN/HOT AIR BLOWER (UP TO 600^0 CENTIGRADE)

2. USEFUL FOR ARTISAN TRADE : BLACK SMITH/FITTER



3. SPECIFICATIONS

Sr. No.	Details	Manufacturer wise tool details		
		KPT Ltd.	**Consortech Ltd.**	**Bosch Ltd.**
1	Model	KHG	HLG 2000 E	GHG 600CE
2	Rated power consumption	2000 W	160-1600 W	550 W
3	Temperature range	480-600^0 C	80-600^0 C	100-600^0 C
4	Air flow rate	350-550 Lit/min	400 Lit/min	350-550 Lit/min
5	Stepless temp. control	-	-	Yes
6	Airflow regulation	-	-	2 stage
7	Weight	0.9 Kg.	0.7 Kg.	0.7 Kgs.
8	Price (app.) in Rs.	4500	4600	6500 * built in tool stand

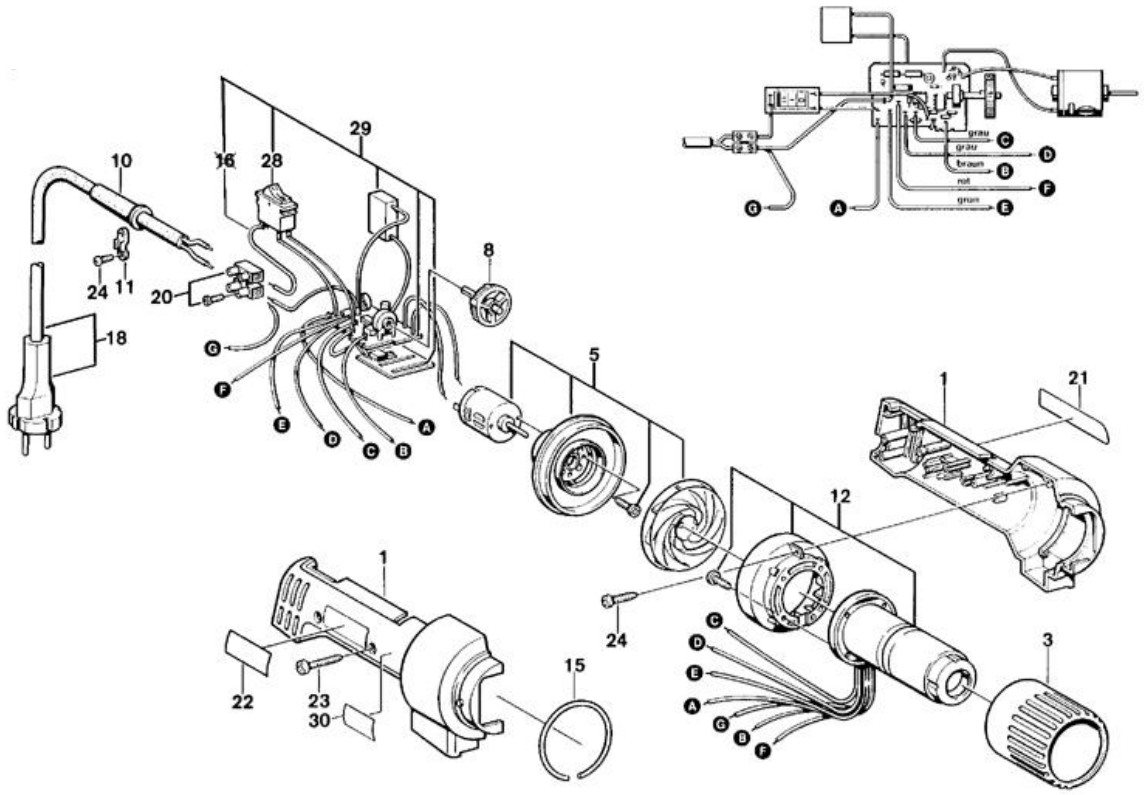
4. Application :

- Hot air blower is used for smithy purposes and can be used by Blacksmith and Fitter also.

5. Accessories & Features :

- It is for all purpose use. BOSCH make tool is having 2-stage airflow regulation and stepless temperature control with rotary knob. Also having removal heat protector for working in tight places.

6. Spares and Approximate Price (in Rupees) : For blower and Heat gun/Hot air blower.



POS No.	Qty.	Part No.	Description	List Price (Rs.)
1	1	1609202271	CRANKSHAFT HOUSE	704
3	1	1609201484	PROTECTIVE TUBE	202
5	1	1609202269	DIRECT CURRENT	934
8	1	1609202272	THUMB WHEEL	103
10	1	1609202793	GROMMET	69
11	1	1609201487	FASTENING CLAMP	18
12	1	1609202261	HEATING ELEMENT	2050
15	1	1609201490	RETAINER	26
18	1	1609202270	ELEC. CABLE	546
20	1	1609390042	TERMINAL	70
21	1	1601110596	MANUFACTURERS	86
22	1	1601110597	NAMEPLATE	86
23	2	2910615507	SHEET METAL SCREW	12
24	3	2910614506	SHEET METAL SCREW	12
28	1	1609202264	ON-OFF SWITCH	313
29	1	1609202266	PRINTED BOARD	1770
30	1	1601110265	STICKER	18
700	1	1609201797	REDUCTION NOZZLE	-
701	1	1609201798	WELDING NOZZLE	-
702	1	1609201799	FLAT SUCTION NOZZLE	-
703	1	1609201800	CUTTING NOZZLE	-
704	1	1609201801	WELDING NOZZLE	-
705	1	1609201802	WELDING NOZZLE	-
706	1	1609201807	WELDING ROD	-

707	1	1609201808	WELDING ROD	-
708	1	1609201809	WELDING ROD	-
709	1	1609201810	WELDING ROD	-
710	1	1609201811	WELDING ROD	-
711	1	1609201812	SHRINKABLE TUBE	-
712	1	1609201813	SHRINKABLE TUBE	-
715	1	1609390450	PARTS SET	630
715/10	1	1609201745	SCRAPER	-
715/20	1	1609201746	SCRAPER	-
715/30	1	2916011015	PLAIN WASHER	25
715/40	1	2915011009	HEXAGON NUT	51
716	1	1609390451	WIDE ANGLE NOZZLE	-
717	1	1609201795	FLAT SUCTION NOZZLE	-
718	1	1609390452	FLAT SPRAY NOZZLE	-
719	1	1609201796	FLAT SPRAY NOZZLE	-
720	1	1609390453	CYLINDRICAL SPRAY	-
722	1	1609201751	ANGULAR JET NOZZLE	-

7. Operational guidance : As per working manual supplied by manufacturer.





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1. NAME OF TOOL : MINI GRINDER

2. USEFUL FOR ARTISAN TRADE : BLACK SMITH/FITTER/MASON



3. SPECIFICATIONS

Sr. No.	Details	Manufacturer wise tool details		
		KPT Ltd.	**Consortech Ltd.**	**Bosch Ltd.**
1	Model	KR-100	WS 6380	GWS 6-100
2	Grinding & cutting discs	100 MM	125 MM	100 MM DIA
3	Rubber packing pad	100 MM	-	100 MM DIA
4	Cup brushes	-	-	60 MM DIA
5	No load speed	12000 RPM	11000 RPM	11000 RPM
6	Power input	670 W	800 W	670 W
7	Weight	1.5 Kg.	1.65 Kg.	1.4 Kgs.
8	Price (app.) in Rs.	3750	4000	4200

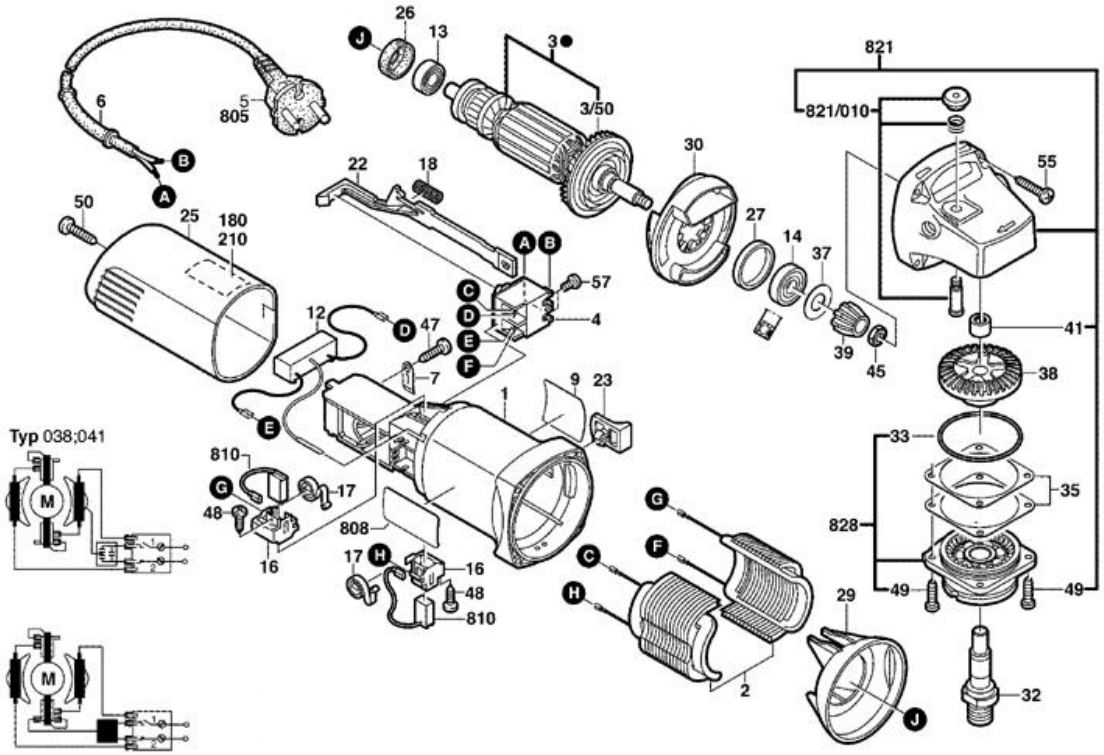
4. APPLICATION :

- Used for multipurpose metal grinding and sanding work on concrete and metals also can be used for cutting works by fitting discs. Also can be use for rigorous concrete applications like wall chasing, chamfering marble, granite tiles/stone grinding works.

5. Accessories & Features :

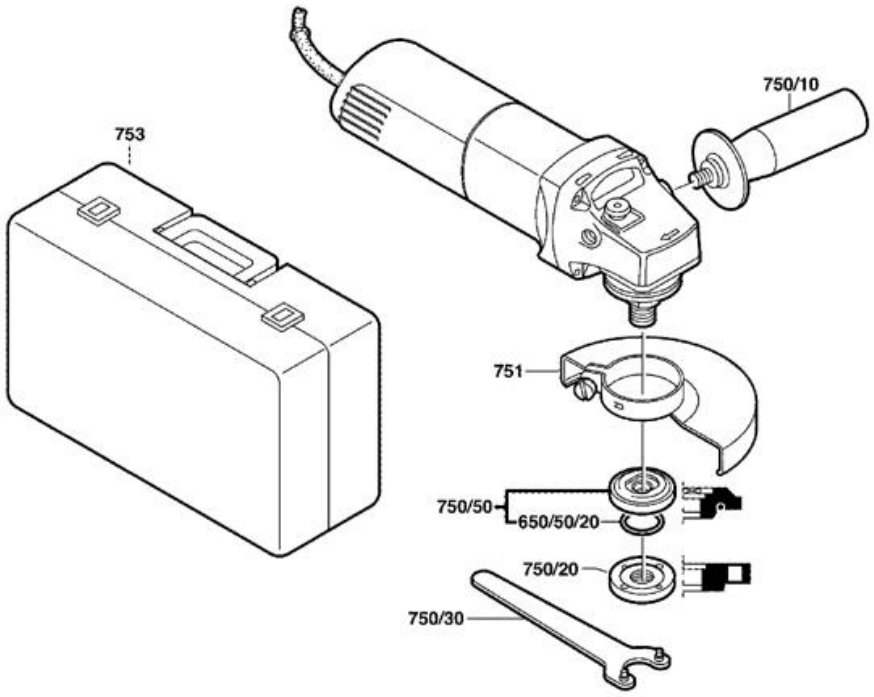
- Protective guard, grinding wheel, cutting disc, two pin spanner, wire cup brush, rubber backing pads with nuts with flat gear housing. Provision of auxiliary handle.
- Spindle lock for easier disc changing.

6. Spares and Approximate Price (in Rupees) : For blower and Heat gun/Hot air blower.



POS No.	Qty.	Part No.	Description	List Price (Rs.)
1	1	1605108174	CRANKSHAFT HOUSE	363
2	1	2609160011	POLE SHOE	588
3	1	1604010626	ARMATURE WITH F	882
3/50	1	1606610141	FAN	206
4	1	1607200146	ON-OFF SWITCH	210
5	1	2604460146	MAINS CONNECTION	171
6	1	2600703012	GROMMET	28
7	1	1601302017	FASTENING CLAMP	20
9	1	1601118462	MANUFACTURER'S	20
13	1	2600905072	DEEP GROOVE BALI	113
14	1	2609110094	DEEP GROOVE BALI	-
16	2	1604336035	BRUSH HOLDER	59
17	2	1604652013	SPIRAL SPRING	20
18	1	1604611031	COMPRESSION SPR	33
22	1	1602316009	ADJUSTING SLIDE	35
23	1	1602026068	SWITCH HANDLE	37
25	1	1605500194	HOUSING COVER	214
26	1	1600502024	INTERMEDIATE RIN	20
27	1	1600206025	INTERMEDIATE RIN	20
29	1	1600591023	AIR-DEFLECTOR	70
30	1	1600591024	AIR DEFLECTOR	86
32	1	1603523111	GRINDING SPINDLE	400
33	1	1600210041	O-RING	37
35	1	1600136016	SHIM	33
35	1	1600136017	SHIM	33
37	1	1600100033	COVER DISC	36
38	1	2609110150	CROWN GEAR	225

39	1	2609110149	BEVEL GEAR	112
41	1	1600910018	NEEDLE BUSHING	47
45	1	2915011007	HEXAGON NUT	-
47	1	2609110052	SPECIAL SCREW	-
48	2	2910611005	SHEET METAL SCREW	18
49	4	1603435026	THREADED FURRO	20
50	1	2912401420	SHEET METAL SCREW	20
55	4	2914201709	TORX OVAL HEAD SCREW	22
57	2	2910641081	OVAL HEAD SCREW	18
650/10	1	2902025067	AUXILIARY HANDLE	75
650/20	1	1603340037	ROUND NUT	96
750/10	1	1602025024	AUXILIARY HANDLE	-
750/10	1	1602025026	AUXILIARY HANDLE	402
750/20	1	2603340018	ROUND NUT	-
750/30	1	1607950040	PIN TYPE FACE-WRI	-
750/50	1	2605703030	CLAMPING FLANGE	-
751	1	2605510155	PROTECTIVE COVER	-
753	1	2605438343	CARRYING CASE	-
810	1	1607014145	CARBON BRUSH	100
821	1	1605806466	GEAR HOUSING	651
821/010	1	1607000298	PUSH BUTTON	120
828	1	1605805090	BEARING FLANGE	394



7. Operational guidance : As per working manual supplied by manufacturer.





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1. NAME OF TOOL : STRAIGHT GRINDER

2. USEFUL FOR ARTISAN TRADE : BLACK SMITH/FITTER/PLUMBER







3. SPECIFICATIONS

Sr. No.	Details	Manufacturer wise tool details		
		KPT Ltd.	**Consortech Ltd.**	**Bosch Ltd.**
1	Model	P44-01	FM 6955	GGS-27
2	Grinding points	100 MM	-	MAX. 25 MM DIA
3	No load speed	6000	28000 RPM	27000 RPM
4	Power input	750 W	550 W	500 W
5	Tool holder	-	-	Collet-Cap Max.8 MM DIA
6	Spindle collar dia	-	43 MM	43 MM
7	Weight	3.2 Kg.	1.6 Kg.	1.3 Kgs.
8	Price (app.) in Rs.	7000	7200	8800

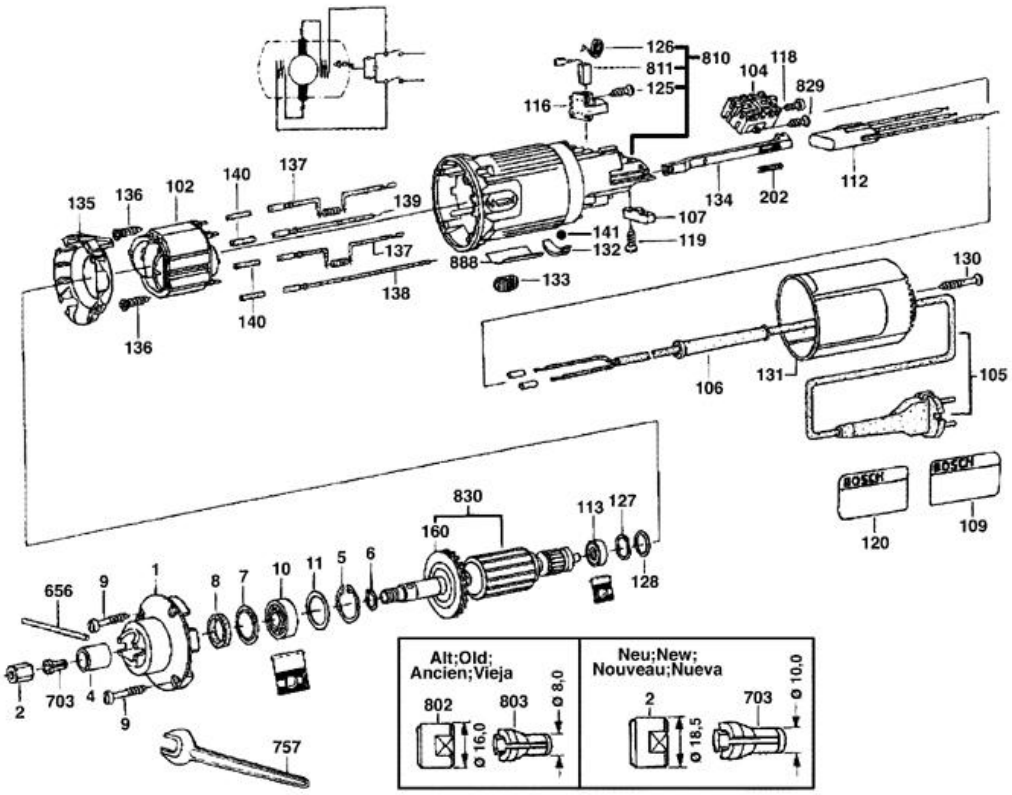
4. Application :

- Used for precision grinding in metal and internal portion of die etc. and pipes & pipe joints. Very useful for fitter as it facilitates one hand operation.

5. Accessories & Features :

- Very handy and one handed operation. Protected switch avoids unintentional switching on.
- Cooling vents are not covered by the operator hand.

6. Spares and Approximate Price (in Rupees) :



POS No.	Qty.	Part No.	Description	List Price (Rs.)
1	1	2605806375	SPINDLE HOUSING	484
2	1	2603312006	UNION NUT	35
4	1	2600300073	SEAL BUSHING	37
5	1	2916660013	C-CLIP	33
6	1	2916650006	C-CLIP	33
7	1	2600500033	PLATE WASHER	20
8	1	2600108033	FLET DISC	20
9	4	2914201707	TORX OVAL HEAD	17
10	1	2600905017	BALL BEARING	162
11	2	1600102626	SHIM	15
102	1	2604220445	POLE SHOE	704
104	1	2607200093	ON-OFF SWITCH	301
105	1	2604460163	MAIN CONNECTION	277
106	1	2600703012	GROMMET	28
107	1	2601035001	CABLE CLIP	20
109	1	2601118609	MANUFACTURERS	70
112	1	2607329118	SUPRESSION CAP	60
113	1	2600905018	BALL BEARING	215
116	2	2601323021	BRUSH HOLDER	47
118	4	2603410001	CHEESE HEAD SCREW	20
119	2	2914201705	TORX OVAL HEAD SWITCH	22
120	1	2601118610	MANUFACTURERS	70
125	5	2914201664	TORX OVAL HEAD SWITCH	18
126	2	2604652009	SPIRAL SPRING	20
127	1	2600150033	SHIM	26
128	1	2600101027	SHIM RING	20
128	1	2600101667	SHIM RING	-

128	1	2600101665	SHIM RING	-
130	1	2910601321	TAP SCREW W.SUN	13
131	1	2600508036	HOUSING COVER	183
133	1	2602026015	SWITCH HANDLE	20
134	1	2602319005	CONTROL LEVER	20
135	1	2601328045	COVER DISC	28
136	2	2603435015	RECESSED HEAD S	20
137	2	2604465106	INTERFERENCE SL	86
138	1	2604448078	CONNECTING CABLE	20
139	1	2604448044	CONNECTING CABLE	20
140	4	1610712034	SHRINKABLE TUBE	20
141	2	2603230002	BALL	-
160	1	2606610050	FAN	54
656	1	2603101035	STRAIGHT PIN	20
703	1	2608570047	COLLET CHUCK	-
703	1	2608570048	COLLET CHUCK	-
703	1	2608570049	COLLET CHUCK	-
757	1	1607950525	SINGLE HEAD ENG.	-
802	1	2603321001	UNION NUT	84
803	1	2608570065	COLLET CHUCK	-
803	1	2608570066	COLLET CHUCK	-
810	1	2605108904	CRANK SHAFT HOUSE	546
811	1	2604320912	CARBON BRUSH SE	150
829	1	2910611006	SHEET METAL SCREW	15
830	1	2604010915	ARMATURE	1911
888	1	1601106999	NAME PLATE	70

7. Operational guidance : As per working manual supplied by manufacturer.

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1. NAME OF TOOL : ALL PURPOSE SAW

2. USEFUL FOR ARTISAN TRADE : BLACK SMITH/FITTER/PLUMBER/CARPENTER



3. SPECIFICATIONS

Sr. No.	Details	Manufacturer wise tool details		
		KPT Ltd.	**Consortech Ltd.**	**Bosch Ltd.**
1	Model	Not available	Not available	PFX –550
2	Saw depth	**Chain operated Duo saw are available**	**Chain operated Duo saw is available**	-
3	Saw in wood	-	-	150 MM
4	Saw in steel	Chain operated	1400 W	12 MM
5	Power input	CSN410N	-	550 W
6	No load stroke rate	1400 W	-	2600 stroke/min.
7	Saw stroke length	-	-	26 MM
8	weight	5.0 Kgs.	6.1/5.2 Kg.	3.0 Kg.
9	Price (app.) in Rs.	15000	16610	10000

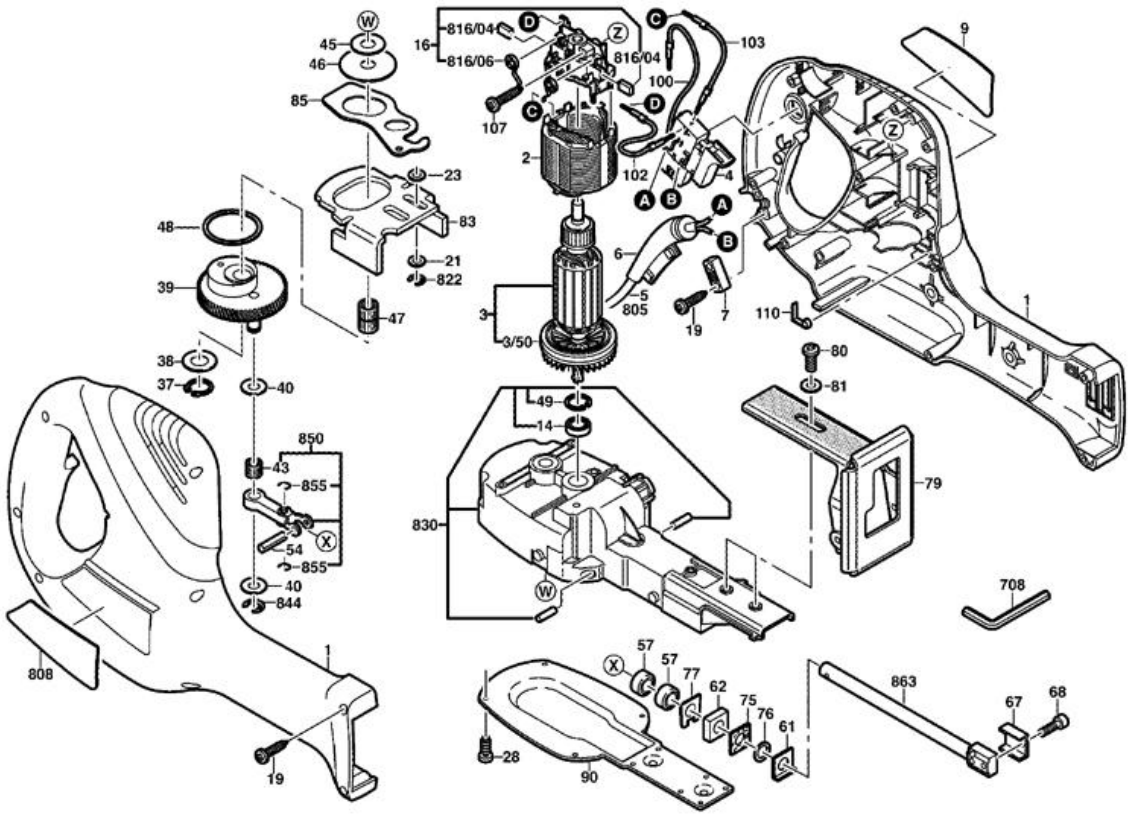
4. Application :

- Very useful for cutting metal, as well as in wood also. Can be used by carpenters for small cutting/finishing work in wood/plywood etc.

5. Accessories & Features :

- Blades of different sizes.

6. Spares and Approximate Price : To be supplied by manufacturer.



POS No.	Qty.	Part No.	Description	List Price (Rs.)
1	1	2605104604	HOUSING SECTION	672
2	1	2604220647	POLE SHOE	465
3	1	2604011219	ARMATURE WITH F	1460
3/50	1	2606610093	FAN	34
4	1	2607200532	ON-OFF SWITCH	339
6	1	2600703064	GROMMET	56
7	1	2601035001	CABLE CLIP	20
16	1	2605807082	BRUSH PLATE	519
19	11	2914201705	TORX OVAL HEAD	22
21	1	2600100103	SHIM	43
23	1	2600100525	SHIM	43
28	10	2603410049	THREADED FURRO	25
37	1	2916650903	C-CLIP	16
38	1	2600105001	SHIM	43
39	1	2606320062	ECCENTRIC COG WI	1166
40	1	2600100623	SHIM	25
43	1	1610910057	NEEDLE BUSHING	54
45	1	2600105109	SHIM RING	56
46	1	2600105013	SHIM	43
47	1	2600913008	NEEDLE ROLLER	177
48	1	2600105004	SHIM	43
54	2	2600105065	PIVOT PIN	56
57	2	2600302022	SINTERED METAL	65
61	1	2601334011	GASKET	43
62	1	2600108078	FELT DISC	30
62	1	2600108078	FELT DISC	30
63	1	2600780910	LIFTING ROD	746

67	1	2601321012	CLAMPING SADDLE	28
68	1	2910405154	CHEESE HEAD SCREW	32
75	1	2601015082	RUBBER GASKET	85
76	1	2600101038	SCRAPER	25
77	1	2601334012	GUIDING PLATE	25
79	1	2608000236	BASE PLATE	516
80	2	2603414007	OVAL HEAD SCREW	34
81	2	3600100002	PLAIN WASHER	20
83	1	2608012009	COUNTER WEIGHT	306
90	1	2605500142	GEAR COVER	123
100	1	2604448217	EARTH CONDUCTOR	65
102	1	2604448127	CONNECTING CABLE	25
103	1	2604448220	CONNECTING CABLE	43
107	2	2914201709	TORX OVAL HEAD	22
110	1	2601329057	CONTACTS STRAP	20
708	1	1907950005	HEXAGON SOCKET	-
805	1	1604460163	MAINS CONNECTION	345
816/04	1	2604320914	CARBON BRUSH SE	123
816/06	2	1604652013	SPIRAL SPRING	20
822	1	2916080909	LOCKING WASHER	-
830	1	2605806897	GEAR HOUSING	2037
844	1	2916080010	LOCKING WASHER	18
850	1	2602130903	CONNECTING ROD	641
855	1	2916080007	LOCKING WASHER	13

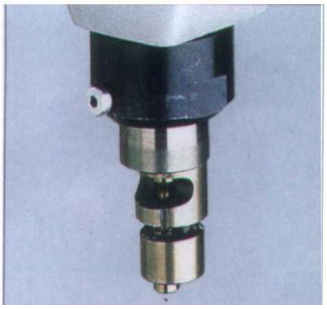
7. Operational guidance : As per working manual supplied by manufacturer.

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1. NAME OF TOOL : NIBBLERS

2. USEFUL FOR ARTISAN TRADE : BLACK SMITH/FITTER/PLUMBER







3. SPECIFICATIONS

Sr. No.	Details	Manufacturer wise tool details		
		KPT Ltd.	**Consortech Ltd.**	**Bosch Ltd.**
1	Model	Not available	Not available	GNA-2.0 – GNA 3.5
2	Maximum cutting depth - in Steel upto 400 N/mm^2 - in Aluminium upto 200 N/mm^2 - in Steel up to 600n/mm^2	Not available	Not available	 2.0 MM - 3.25 MM 2.5 MM - 4.0 MM 1.4 MM - 2.4 MM
3	Cutting width	Not available	Not available	6 MM - 6 MM
4	Pre-drilling for internal cutouts.	Not available	Not available	16 MM - 16 MM
5	Smallest curve radius	Not available	Not available	3 MM - 60 MM
6	Power input	Not available	Not available	500 W - 620 W
7	No-load stroke rate	Not available	Not available	2400 - 1000 Strokes/min. Strokes/min.
8	Weight	Not available	Not available	-
9	Price (app.) in Rs.	Not available	Not available	20150 - 25000

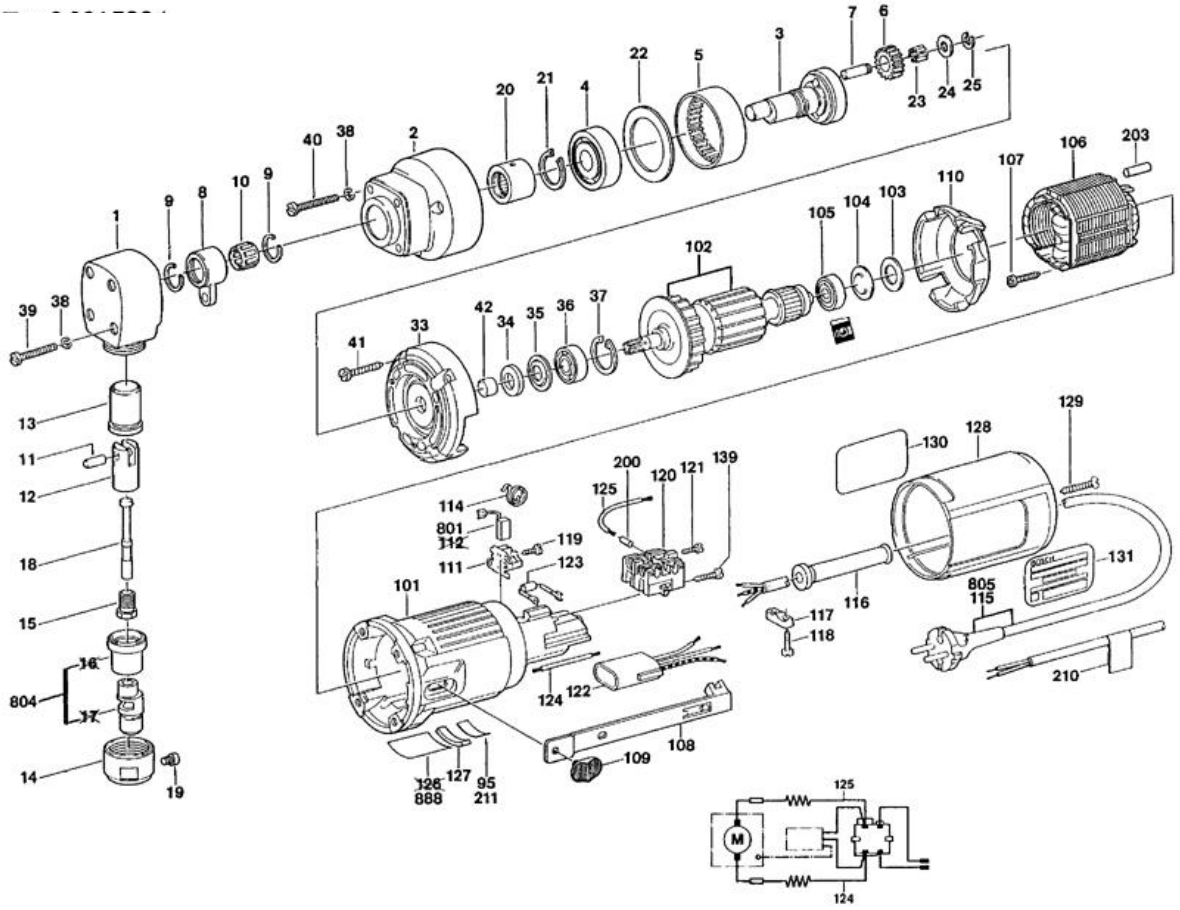
4. Application :

- It is used for cut-outs in all types of sheet metal. Well suited for high-alloy steels and stainless steel sheets also. Can be used by Black smith also. By this tools cutting is simple even in the middle of the sheet.
- **Attention -** Cutting line must be lubricated to avoid the cutters burning out.

5. Accessories & Features :

- Punch, die etc.
- Handy equipment.
- Protected slide switch prevents unintentional start-up.
- Pivoting die automatically turning upto $360^{0.}$
- Cutting tools may be easily changed. One can easily work along scribing line and template guides.

6. Spares and Approximate Price : To be supplied by manufacturer.



POS No.	Qty.	Part No.	Description	List Price (Rs.)
130	1	3601110385	REFERENCE PLATE	70
131	1	3601110373	REFERENCE PLATE	70
139	1	2910211006	SHEET METAL SCREW	13
140	1	1600712027	SHRINKAGE TUBE	20
655	1	1907950003	HEXAGON SOCKET	-
718	1	2608639013	NIBBLING PUNCH	-
801	1	2604320912	CARBON BRUSH SE	150
804	1	2608639900	LOWER DIE	-
804	1	2608639902	LOWER DIE	-
804	1	2608639021	LOWER DIE	-
804	1	2608639022	NIBBLING PUNCH	-
805	1	1607000227	MAINS CONNECTION	607
888	1	1601106999	NAME PLATE	70

POS No.	Qty.	Part No.	Description	List Price (Rs.)
1	1	2605500042	GEAR COVER	1229
2	1	2605806312	GEAR HOUSING	1376
3	1	2606122001	ECCENTRIC SHAFT	3402
4	1	1900900274	BALL BEARING	621
5	1	2606334040	RING GEAR	693
6	2	3606316057	CYLINDRICAL GEAR	154
7	2	2603105021	BEARING PIN	35
8	1	2602001001	CONNECTING ROD	1712
9	2	2600224009	RETAINER	20
10	1	2600913035	NEEDLE ROLLER	200
11	1	2603100003	PISTON PIN	33
12	1	2603104001	CONTROL PLUNGER	1712
13	1	2600422005	BUSHING	370
14	1	2603314001	UNION NUT	397
15	1	2603455006	HOLLOW BOLT	33
17	1	1607031143	LOWER DIF	625
18	1	2608639013	NIBBLING PUNCH	-
19	1	2603414003	HEX SOCKET HEAD	79
20	1	2600914011	NEEDLE ROLLER BE	400
21	1	2916650011	C-CLIP	65
22	1	2600550017	DISC SPRING	108
23	20	1903201020	NEEDLE ROLLER	17
24	2	1600100611	SHIM	20
25	2	2916080908	LOCKING WASHER	14
33	1	3605700042	INTERMEDIATE FLA	2384
34	1	2600108002	FELT DISC	20
35	1	2600500002	GUIDE SLEEVE	20
36	1	2600905021	BALL BEARING	137
37	1	2916660008	C-CLIP	30
38	7	2916690003	SPRING LOCK WASHER	25
39	4	2910021138	CHEESE HEAD SCREW	54
40	3	2910021134	CHEESE HEAD SCREW	13
41	4	2910211021	SHEET METAL SCREW	18
42	1	2600400008	SLEEVE TYPE TERMINAL	20
101	1	2605108051	CRANKSHAFT HOUSE	484
102	1	2604010608	ARMATURE	1785
102/60	1	2606610049	FAN	28
103	1	2600101023	PLAIN WASHER	20
103	1	2600101022	PLAIN WASHER	20
103	1	2600101020	PLAIN WASHER	20

104	1	2600150004	SPRING WASHER	20
105	1	1900905018	BALL BEARING	335
105	1	1900905018	BALL BEARING	335
106	1	2604220445	POLE SHOE	704
107	2	2603435015	RECESSED HEAD	20
108	1	2602319005	CONTROL LEVER	20
109	1	2602026015	SWITCH HANDLE	20
110	1	2601328045	COVER DISC	28
111	2	2601323021	BRUSH HOLDER	47
114	2	1604652013	SPIRAL SPRING	20
116	1	2600703011	GROMMET	20
117	1	2601035001	CABLE CLIP	20
118	2	2910211019	SHEET METAL SCREW	13
119	4	2910211005	SHEET METAL SCREW	19
120	1	2607200093	ON-OFF SWITCH	307
121	4	2603410001	CHEESE HEAD SCREW	20
122	1	2607329104	SUPRESSION CAP	176
123	2	3604465000	SUPRESSION BOX	-
124	1	2604448039	CABLE	20
125	1	2604448040	CABLE	20
128	1	2600508036	HOUSING OCER	183
129	1	2914201707	TORX OVAL HEAD S	17

7. Operational guidance : As per working manual supplied by manufacturer.

***

1. NAME OF TOOL : BATTERY OPERATED CORDLESS DRILL/ DRIVER.

2. USEFUL FOR ARTISAN TRADE : CARPENTER/MASON/ FITTER/PLUMBER
NOTE : BATTERY OPERATED JIGSAW, GRINDER, DIFFERENT TYPE OF SCREW DRIVERS, ROTARY HAMMER ARE ALSO AVAILABLE WITH THE MANUFACTURERS.





3. SPECIFICATIONS

Sr. No.	Details	Manufacturer wise tool details		
		S.S.Tools Ltd.	**Consortech Ltd.**	**Bosch Ltd.**
1	Model	Singer 9.6 V – D8109	ASX 132/1	GSR 9.6 VES-1
2	Dia in Steel (drill)	10 MM	10 MM	10 MM
3	Dia in wood (drill)	16 MM	16 MM	15 MM
4	Max. screw dia.	5 X 30 MM	06 MM in wood	06 MM in wood
5	Rated speed	0-300, 0-900 RPM	0-470, 0-1600	0-480 RPM
6	Battery voltage	9.6 VDC Ni-Cd. Battery	V/AH:13.2/1.5	9.6 Volt
7	Torque	65 Kg./Cm., 160 Kg./Cm.	14 Nm	2-7 Nm
8	Weight	Not available	1.75 Kg.	Not available
9	Price (app.) in Rs.	9000	8240	12000

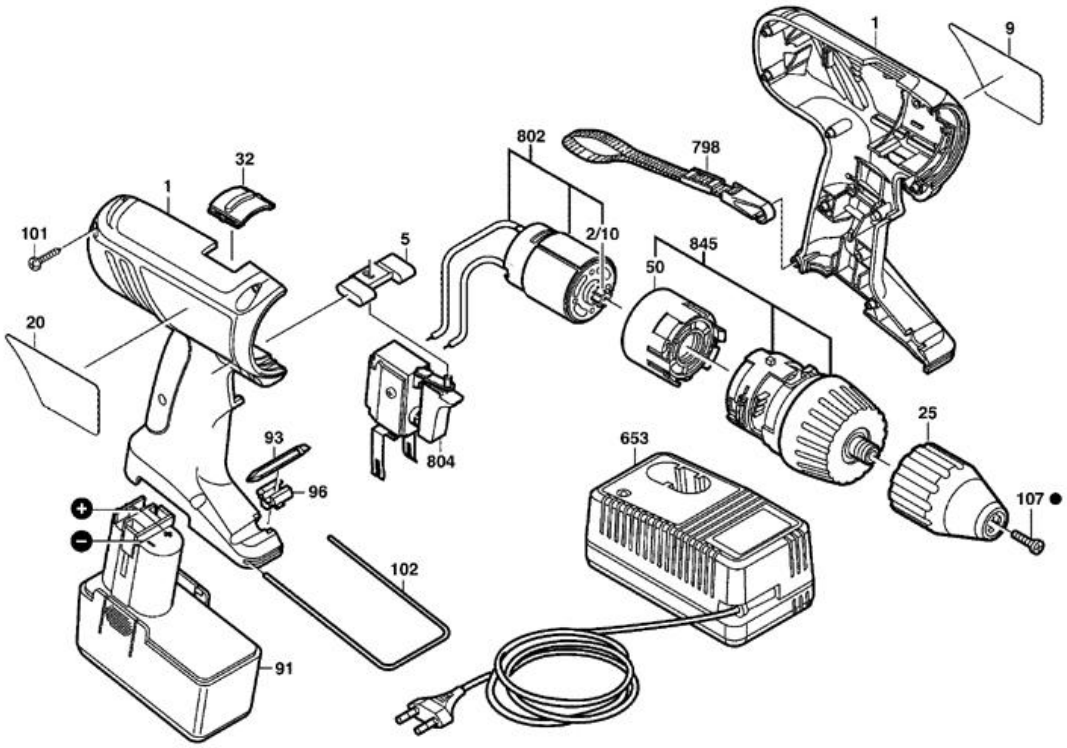
4. Application :

- It can be used by above all three artisan trade during emergency and where there is no any power supply exist. Also can be used at remote and typical locations. It can be used as for drilling in metal, wood and for screw driving purposes (in both directions).

5. Accessories & Features :

- Interchangeable 132 V battery pack. 11 No. –cells with 1.5 AH
- Electronic switch for soft start-up.
- Quick-action stop for flush screwing.
- Reversible function.
- 2-speed planetary gear with high torque in 1st year for screwing operations, high speed in 2nd gear for drilling.
- 7-stage torque setting for constant screwing operation results.
- Drilling stage with max. torque of up to 18 Nm.
- Auto-spindle-lock for convenient change.
- Quick-action clamping ∅10 mm.
- Set includes : 1-hour changer, PH screwdriver bit size-2.

6. Spares and Approximate Price : To be supplied by manufacturer.



POS No.	Qty.	Part No.	Description	List Price (Rs.)
1	1	2605104652	HOUSING SECTION	387
2/10	1	2606316182	PINION	20
5	1	2601099085	ADJUSTING SLIDE	27
9	1	2601119746	MANUFACTURERS	-
20	1	2601119747	REFERENCE PLATE	-
25	1	2608572091	KEYLESS CHUCK	1890
32	1	2601099086	ADJUSTING SLIDE	28
50	1	2605719027	INTERMEDIATE FLA.	33
60	1	2605190130	SETTING RING	48
96	1	2608040131	SUPPORT	20
101	8	2914201668	TORX OVAL HEAD S	17
102	1	2601329041	RETAINING BRACKET	20
107	1	2603421222	COUNTER SUNK HEAD	25
753	1	2607224276	FAST CHARGER	-
790	1	2605438407	CARRYING CASE	-
791	1	2607335152	SLIDE IN ACCU PACI.	-
793	1	2608521019	SCREW DRIVER BLADE	-
795	1	2607000334	SCREW DRIVER BLADE	-
796	1	2607000345	SET OF TWIST DRILL	-
797	1	2607000348	SET OF TWIST DRILL	-
798	1	2601398013	CARRY LOOP	-
802	1	2607022918	DIRECT CURRENT	819
804	1	2907200421	ON-OFF SWITCH	1117
845	1	2606200908	EPICYCLOIDAL GEAR	1932
899	1	0601948627	BAT OPER SCREW	-

7. Operational guidance : As per working manual supplied by manufacturer.

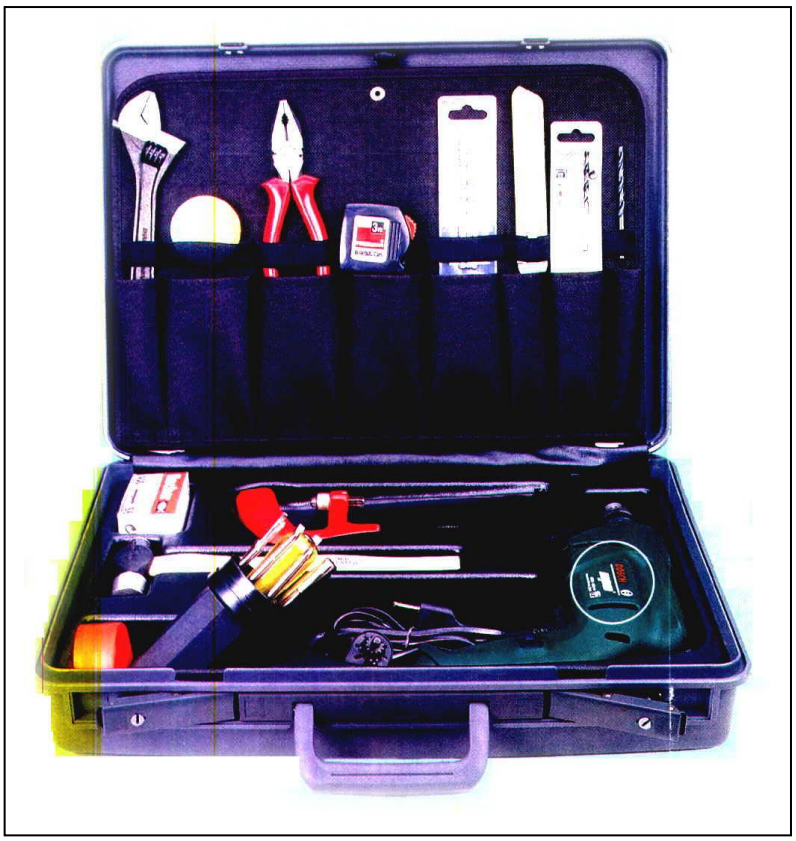
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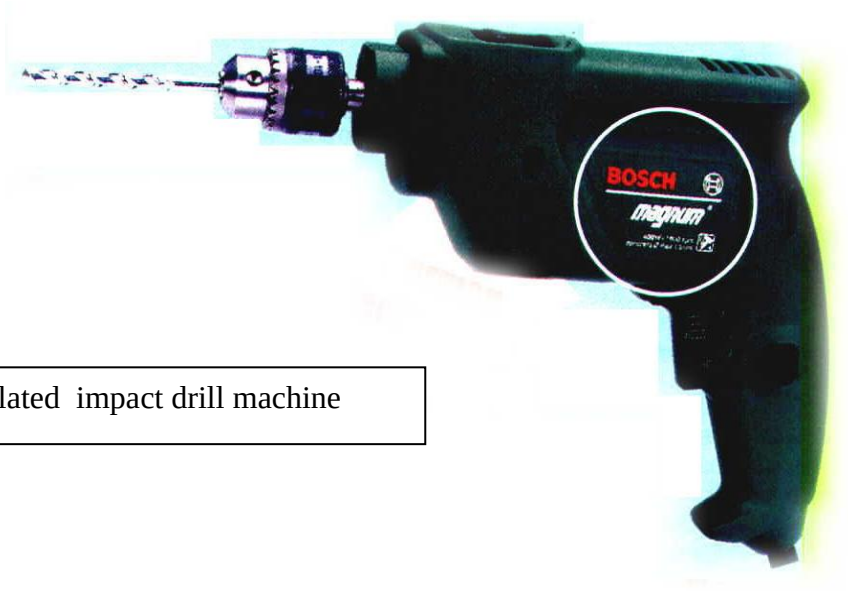
PORTABLE HOME KIT

The **HOME KIT** comes with a impact Drill plus a range of accessories and hand tools, all in a tough durable multipurpose tool kit. Now, you will be ready to tackle most jobs around your home. Jut position the drill bit on concrete, wood, metal or plastic for greatest accuracy.

Home kit contents

(1) Fully insulated impact drill machine
(2) Drill bit set (5-6-8 mm)
(3) Wood Drill bit
(4) Hack Saw
(5) HSS Drill Bit
(6) Measuring tape
(7) Fischer Nylon Fixings
(8) Screwdriver Set
(9) Hammer 200 g.
(10) Combination Pliar – 7"
(11) Adjustable Wrench – 8"
(12) Insulation Wonder Tape
(13) Triangular File – 16 cms.
(14) Adjustable Knife
(15) Case (moulded to suit the requirements)





Fully insulated impact drill machine

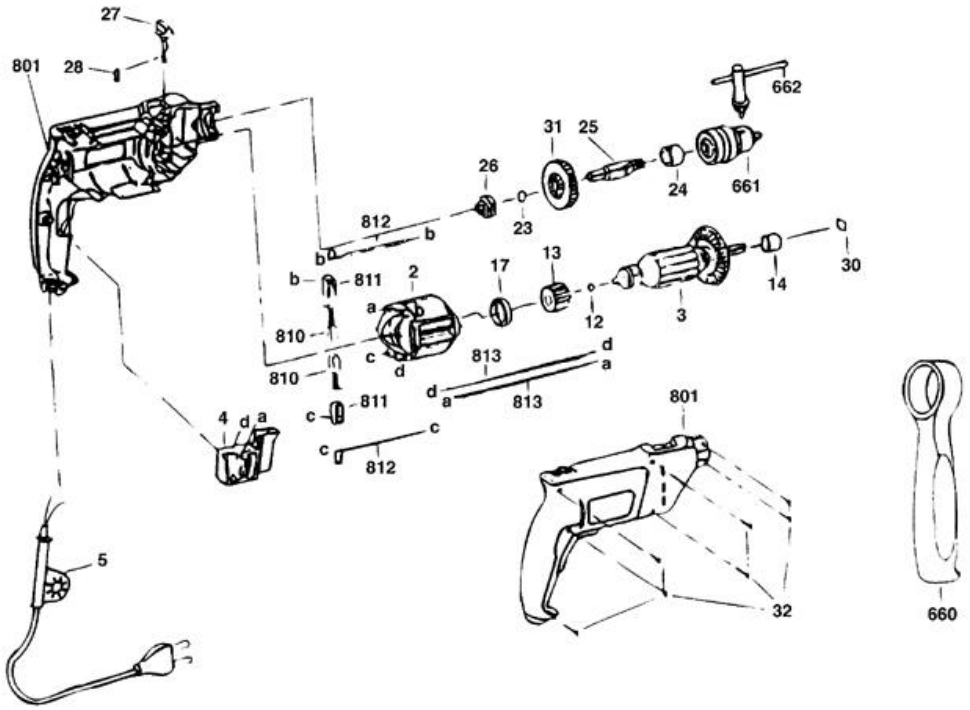
Magnum Drill Contents :

(1)	Dia. in Concrete	: 10 mm
(2)	Dia. in Metal	: 8 mm
(3)	Dia. in wood	: 20 mm
(4)	Power input	: 400 Watt/230 Volt
(5)	Impact rate	: 44800 / min.
(6)	Rated Speed	: 2200/2800 rpm
(7)	Weight	: 1.4 Kg.

Application :

- Drilling in wood and plastic for fixing tower bolts, hinges, pad locks etc. to fix and maintain.
- Drilling in doors to fix locks.
- Metal drilling and to work with thin metal sheets.
- Drilling in walls for fixing bathroom fittings, wash basins, mirror etc., in quarters and service buildings.
- To drill holes for fixing sanitary fittings, anchoring various hooks and also for electrical fixtures.
- And other petty works related to carpenter, fitter, plumber etc.

Spares and Approximate Price of Drill machine : To be supplied by manufacturer.



POS No.	Qty.	Part No.	Description	List Price (Rs.)
2	1	9618086806	POLE SHOE	386
3	1	9618087196	ARMATURE WITH F	474
4	1	9618087097	ON-OFF SWITCH	193
5	1	9618086866	MAINS CONNECTION	140
12	1	1903230005	BALL	13
13	1	9618086693	SINTERED METAL B	37
14	1	2600910003	NEEDLE BUSHING	66
17	1	1600205032	FELT WASHER	20
23	1	9618083800	BALL	20
24	1	9618086698	SINTERED METAL B	39
25	1	9618087174	DRILLING SPINDLE	166
26	1	9618087166	SCREEN DISC	41
27	1	9618086705	ADJUSTING SLIDE	37
28	1	F000623005	STOP PLATE	17
30	1	1601000013	PRESSURE PLATE	20
31	1	9618086704	CYLINDRICAL GEAR	116
32	7	9618087099	SHEET METAL SCREW	20
660	1	9618086864	HANDLE	-
661	1	9617085002	KEY CHUCK	659
662	1	9617081894	CHUCK WRENCH	-
801	1	9618086968	CRANKSHAFT HOUSE	254
810	1	9618086870	CARBON BRUSH	85
811	2	9618086695	BRUSH HOLDER	33
812	2	2604448018	CONNECTING CABLE	27
813	1	9618087197	CONNECTING CABLE	-

1. NAME OF TOOL : FIBREGLASS/ ALUMINIUM LADDERS

2. USEFUL FOR ARTISAN TRADE : CARPENTER/MASON/ FITTER/PLUMBER/BLACK SMITH/PAINTER



3. SPECIFICATIONS

Sr.No.	Type	Details
1	Side Rails	Pultruded Fiberglass rails from fiberglass of various types & polyester resin.
2	Steps	Non Skidding Aluminium/Pultruded FRP Section.
3	Length	4 Ft. to 18 Ft. for step & shelf Ladders & 35 Ft. for extensible Ladder.
4	Width	300 mm. and above.
5	Benefits and qualities	Non conducting eliminates risk of shock hazards in electrical application.
6	Corrosion Resistance	Will not rust and is immune to other electrolytic corrosion and to a wide range of acids, salts & chemicals that attack steel.
7	High Strength	High strength to weight ratio (that surpass equivalent-Steel product)
8	Flame Retardant	It is self extinguishing as per requirement of IS : 6746-1994.
9	UV Inhabited	Protection against degradation due to Ultraviolet rays.
10	Light weight	It is light in weight and hence it is easy to handle. It is provided with moulded tops for greater impact resistance & improves durability.

4. Application :

- Un-doubtfully, these lightweight, versatile ladders will be various types of Civil Engg. maintenance works etc. and very easy to handle/work with at various heights.

5. Accessories & Features : As mentioned in specification para.

- Ladders are manufactured as per international standard lime, NEMA, ANSI.
- Ladders are tested for mechanical & electrical strength at CIPET, ERDA etc.

6. Spares and Approximate Price : To be supplied by manufacturer.

7. Operational guidance : As per working manual supplied by manufacturer.

7. Likely manufacturer/Supplier –

M/s. Sumip Composites Pvt. Ltd.
39/A, Panchratna Industrial Estate,
P.O.Changodar,
Distt. Ahmedabad – 382210
Tele : 079-3750133, 6760272
Fax : 079-3751043

***

1. NAME OF TOOL : PORTABLE GENERATOR

2. USEFUL FOR ARTISAN TRADE : ALL TYPES OF ARTISAN TRADES USING POWER TOOLS IN REMOTE AREAS/LOAD SHADING AREAS AS A POWER BACKUP.



3. SPECIFICATIONS

Sr. No.	Details	Manufacturer wise tool details	
		Greaves Limited	
	ALTERNATOR		
1	Type	GD300 Brushless, Self exciting, 2 Pole Single phase.	GD300 EP Brushless, Self exciting, 2 Pole Single phase.
2	A.C.Voltage/ Frequency	220 Volts/50 HZ.	240 Volts/50 HZ.
3	Rated output	2000 VA	2500 VA
4	Rated current	9.1 Amp.	10.5 Amp.
5	Power factor	UPF	0.8 UPF
6	RPM	3000	3000
	DIESEL ENGINE		
8	Model & Type	Greaves 2520, 4 Stroke Aircooled	Greaves 2520, 4 Stroke Aircooled
9	Displacement	325 C.C.	325 C.C.
10	Fuel Tank Capacity	10 Litres	10 Litres
11	Fuel consumption	1 Litre per hour	1 Litre per hour
	GENERATOR SET		
12	Weight	84 Kg. without battery	89 Kg. without battery
13	Dimension in mm	610X420X522 (LXWXH)	610X420X522 (LXWXH)
14	Price App. in Rs.	65,000/-	65,000/-

4. Application :

- It can be used as a power backup for operation of power tools at any location where no electricity/load shading is available. Various models with different fuel options and rated capacities of various makes are also available in the market. It can be lifted by two to three persons. Compact in size, so movements through doors & passage of train is easy and may be easily transported by pickup Jeep, Autoloader, Cycle Rickshaw, manual Cart/Trolley.

5. Accessories & Features :

- **Instant start :** Start the set with the push of a button. No ropes to pull. No knobs to fumble with in the darkness as in petrol/kerosene generators. Just push a button and it is on.
- **Diesel :** Fuel is easily available even in remote areas. Gensets are also available in different fuel options i.e. Petrol start & running, Petrol start Kerosene running, Diesel-Petrol mixture (80%+20%).
- **Economical performance :** Well known diesel economy. Fuel consumption is about half of petrol/kerosene generators. Running cost is about ¼ of petrol and ½ of kerosene generators.
- **Compact and light weight :** The combination of a brush-less alternator and Greaves diesel engine make the generator very compact in size and light in weight.
- **Rugged reliable Greaves diesel engine :** The generator is powered by the trusted Greaves lightweight air-cooled diesel engine, known for its trouble free performance.
- **Brushless alternator :** The brushless alternator with a condenser type voltage regulator ensure stable voltage output and requires no maintenance.
- Extra large fuel tank : A 10 litres capacity fuel tank ensures continuous non-stop operation.
- **Minimal maintenance :** The prime mover being a diesel engine there is no carburettor and no spark plug. The generator works continuously for hour without maintenance.
- **Options :** Rope start. Trolley kit for easy transportation.

6. Spares and Approximate Price : Spare and service : Spare parts are easily available. The superior Greaves quality is backed by the efficient Greaves after sales service at 19 branches and dealer network spread all over the country.

7. Likely manufacturers :

- M/s. Greaves Limited, 1, Dr. V.B.Gandhi Marg, Mumbai –1
  Tele : 022-2671524, 2674913, Fax : 022-2652853
- Himalaya Gensets, Indian Casting Company, Balkeshwar Road, Agra – 282004 (UP)
  Tele : 0562-346830, 346831, 352100, Fax : 0562-346832, 352645
- Other brands like Birla Yamaha, Shri Ram Honda etc. are also available in the market.

8. Operational guidance : As per working manual supplied by manufacturer.

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1. NAME OF TOOL : BENCH GRINDER.

2. USEFUL FOR ARTISAN TRADE : BLACK SMITH/WELDER/ FITTER-PLUMBER



3. SPECIFICATIONS

Sr. No.	Details	Manufacturer wise tool details		
		KPT Ltd.	Consortech Ltd.	Bosch Ltd.
1	Model	KG-6 (Phase I/III)	--	-
2	Power input	400 W	-	-
3	R.P.M	3000 RPM	-	-
4	Weight	16 Kg.	-	-
5	Price (app.) in Rs.	I Phase – 8530/- III Phase – 8110/-	-	-

4. Application :

- It is very useful for various grinding operations. To be placed in the workshops. Very useful for sharpening/grinding of drill bits, other handy tools etc. for above categories of artisan staff.

5. Accessories & Features : As per working manual supplied by manufacturer.

6. Spares and Approximate Price : To be supplied by manufacturer.

SR NO	PART NO	PART NAME	PRICE (RS.)
1.	728373	ARMATURE	1105/-
2.	728372	FIELD (1 PHASE)	3474/-
3.	728387	FIELD (3 PHASE)	3297/-

7. Operational guidance : As per working manual supplied by manufacturer.

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Chapter – 4

READY – RECKONER

Sr. No.	Name of tool	KPT Ltd.		Consortech Ltd.		Bosch Ltd.		Useful for artisan trade
		Model No.	Price (App.) in Rs.	Model No.	Price (App.) in Rs.	Model No.	Price (App.) in Rs.	
1	Multi purpose Rotary drill	KPT-KD3C	6560	420BME	5500	GBM-10	5000	**M,F/P & C**
2	Impact drill	KPT 563	8000	PSX 550	8000	GSB-20-2	8000	**M, F/P**
3	All purpose planer	Not available	-	Not available	-	GHO31-82	10800	**C**
4	Jig saw	KJS-60	9030	CST6286E	10290	GST85PBE	11500	**C**
5	Router	Not available	-	OF6990E Set	16900	GOF1200A	17400	**C**
6	Circular saw	W652 AP	7440	CHKS 6066	10680	GKS 7 ¼	9000	**C, F/P**
7	Marble/Tile/Concrete cutter	KM-4SA	3750	Not available	-	GMS34	4000	**M**
8	Blower/Dust extractor	KB-20	2780	Not available	-	GBL 550	5600	**B, F/P**
9	Hot air gun/Hot Air Blower (upto 600^0C)	KHG		HLG2000E	4600	GHG 600 CE	6500	**B, F/P**
10	Mini Grinder	KR-100	4500	WS6380	4000	GWS-6-100	4200	**B, F/P**
11	Straight Grinder	P44-01	3750	FM6955	7200	GGS 27	8800	**F/P, B**
12	All purpose saw	Not available	7000	Not available	-	PFZ 550	10000	**F/P, B, C**
13	Nibblers	Not available	-	Not available	-	GNA 2.0 GNA 3.5	20150 55000	**F/P, B**
		S.S.Tools Ltd.	-	Consortech Ltd.	-	Bosch Ltd.	-	-
14	Battery operated cordless drill/driver	Singer 9.6 V-D 8109	9000	ASX 132/1	8240	GSR 9.6 VES-2	11300	**C, M, F/P**
15	Portable home/work kit	KPT Home user kit	4000	-	-	Bosch Home kit	3700	**C, M, F/P**
16	Fiberglass/ ALU Ladders	M/s Sumip Composites.	-	-	-	-	-	**C, M, F/P, B, PT**
17	Portable Gen. Set.	Greaves Ltd.	-	-	-	-	-	**C, M, F/P, B, PT**
18	Bench Grinder	KPT Ltd.	8200	-	-	-	-	**C, F/P, B,**

Abbr. : M-Mason, F/P- Fitter/Plumber, B-Black smith, C-Carpenter, PT-Painter

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CHAPTER – 5

RECOMMENDED POWER TOOLS FOR ARTISAN CATEGORIES

Abbr. : M-Mason, F/P- Fitter/Plumber, B-Black smith, C-Carpenter, PT-Painter, ES- Essential tool, OP-Optional tool

S.N	Name of tool	Ave. App. wt (kg.)	Mason		Fitter/Plumber		Black Smith		Carpenter		Remarks
			ES	OP	ES	OP	ES	OP	ES	OP	
1	Multi purpose Rotary drill	2	√		√			•	√		For B depends on nature of job.
2	Impact drill	2.5	√			•		•		•	
3	All purpose planer	2.8							√		
4	Jig saw	2.25				•		•		•	May be used at site also for wood/metal
5	Router	4								•	May be used in workshop
6	Circular saw	4.5							√		
7	Marble/Tile/ Concrete cutter	2.7		•							As and when required
8	Blower/Dust extractor	1.7				•	√				Can be used for other allied jobs.
9	Hot air gun/Hot Air Blower (upto 600^0C)	0.8				•	√				
10	Mini Grinder	1.5				•	√				Can be used as a disc. Cutter by putting cutting wheel
11	Straight Grinder	1.75				•		•			
12	All purpose saw	5		•	√		√		√		For M depends on nature of job
13	Nibblers	4.5				•		•			
14	Battery operated cordless drill/driver	1.75		•		•		•		•	For working at remote locations and in emergency in power cuts.
15	Portable home/work kit	-	√		√		√		√		Weight as per artisan trade and nature of job. No. & type of tools are as per requirement.
16	Fibre glass/ ALU Ladders	Light wt.		•		•		•		•	As, when & where required
17	Portable Gen. Set.	100		•		•		•		•	At remote locations and when power not exists.
18	Bench Grinder	16		•	√		√			•	To be kept & use in workshop

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CHAPTER – 6

A study regarding availability and weight of tools in the kits of artisan staff

(Study conducted in the SSE (Works), Mainline, Central Railway, Gwalior)

Details are as under :

- Very few tools are supplied by department. Most of the tools were procured/made by their own by artisan staff.
- Kit bags are of Jute gunny bags/PVC sheet cloth locally made. Some artisan staff having their own wooden box for carrying tools etc.
- Any portable power tools is not found.
- Normally every artisan is attached by one Helper/Khalasi.

Name of Artisan trade : Black Smith (B)

S. No.	Name of tool	Approx. weight in kgs.	Remarks
1	Hammers of different weights	1.80 + 0.50	
2	Sledge hammers	8.00	
3	Different type of locally made chiesels, drifts, chennies, scrapers & centre punch.	5.00	
4	Spanners, plier, holding tongue of different sizes.	3.00	
5	Shaping mould (steel)	0.40	
6	Tommy bar	4.00	
7	Outside/Inside callipers	0.30	
8	Blower with stand		Available in workshop (weight not included in the list) & supplied by department.
9	Anvils		
10	Jim crow (Screw type)		
11	Pan small	1.00	
12	Fork	0.30	
13	Measuring tap & Steel scale & template making arrangement	0.10	
14	Files of different sizes	1.50	
15	Powrah small	1.00	
16	Consumables – Coal, Binding wire, Non std. Long nails & drifts etc.	2.00	
	Total	28.90 Kgs. say 29.00 Kgs.	

Name of Artisan trade : Carpenter (C)

S. No.	Name of tool	Approx. weight in kgs.	Remarks
1	Planner of various sizes (suitable for various types of jobs.	1.35 + 1.10 + 0.60	
2	Saws (Cross-cut, Tenon, Rip saw etc.) of different sizes	0.25 + 0.80 + 0.50	
3	ADZES	1.80	
4	Hammers & Mallet	1.80 + 0.50 + 0.25	
5	Chisels of various sizes (1 ½", 4 soot, 2 ½", 3 Soot etc.)	1.10	
6	Brace & ratchet with bits set	0.60	Supplied by department.
7	Square, steel scale, measuring tap etc.	0.40	
8	Nail puller cum hammer & nail pulling tongue	0.50	
9	Files of various sizes	1.25	
10	3 nos. screw drivers of different sizes.	0.60	
11	Locally made chisels, drifts & chennies.	0.30	
12	Tommy bar (locally made)	0.60	
13	Marking knife and marker (khasra)	0.10	
14	Side cut planner and frame offset planner (small, sleek)	0.50	
15	Augers (3 sizes of ¾", 1", 3 soot)	1.25	Supplied by department.
16	Glass cutter	0.05	
17	Consumables – Nails, screws, tower bolts, hinges, aldrop, handle, wooden beads, batten pieces etc.)	2.60	
	Total	17.85 Kgs. say 18.00 Kgs.	

Name of Artisan trade : Fitter/Plumber (F/P)

S. No.	Name of tool	Approx. weight in kgs.	Remarks
1	Hacksaw with blade	0.60	
2	Pipe wrenches of different sizes	3.80 + 1.60 + 1.50 + 1.10 + 0.75	Chain pipe wrenches of different sizes are available in W/shop. Weight not included. Used only when required.
3	Spanner set	0.60	
4	Thread making die (with accessories) upto 1" size	4.25	Die sets of 1 ¼ ", 1 ½ , 2" are available in workshop. Weight not included.
5	Caulking tools for C.I. pipe line	0.75	
6	Chisels, drifts, pipe anchors, chennies, centre punch	0.50	
7	Hammer	1.10	
8	Screw driver sets.	0.35	
9	Holding tongue set	0.80	
10	Tommy bar (small)	0.50	
11	Measuring tap, steel scale	0.50	
12	Pliar	0.15	
13	Powrahs, pick-axe, bucket, mug set.	5.00	For attending pipeline leakage.
14	Files, edging stone	0.30	
15	Consumables – Lead, waste cotton, glen-dori, binding wire, screws, pipe anchors, M-seal, tap washers, wooden drifts, pipe fixtures i.e. Tee, Elbow, Nipple, Union, Bib cock, Stop cock, PVC connection, Gaskets, Nut-bolts, White paint, GI/PVC clamps.	2.00	Weight depends upon their availability and nature of job to be done. (Consumable supplied by departmentally/ local purchase)
	Total	26.00 Kgs.	

Name of Artisan trade : Mason (M)

S. No.	Name of tool	Approx. weight in kgs.	Remarks
1	Wooden floats of various sizes	2.75	
2	Powrahs, Pick-Axe, Bucket, mug, pan mortar, broom	8.00	Powrah, pick-axes, bucket, pan supplied by dept.
3	Different size concrete chisels set	5.00	
4	Tommy bar (long)	3.00	
5	Trowels (3 sizes)	0.60	
6	Hammers	1.80	
7	Hammer (for making brick bats)	0.40	
8	Square (big), plumb-bob, sprit level, PVC pipe (5 mts.), measuring tape, round calliper	2.00	
9	Scratcher (locally made)	0.20	
10	Raking needle	0.20	
11	Sand sieve small	0.50	
12	Iron claw for aggregates	0.60	Supplied by dept.
13	Consumables – Cement, sand, aggregates, tiles etc.		Weight not included. These items are transported to work site by suitable means/head load as the situation demands.
	Total	24.50 Kgs. say 25.00 Kgs.	

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Chapter – 7

The List of recommended tools for different category of artisan staff in base workshop and line-tool-kit

Name of Artisan trade : Black Smith (B)

Tool/plants in the Base workshop

S. No.	Name of existing tool/ small plants	Remarks
1	Jim crow (screw type)	
2	Blower with stand and heating pan.	Fixed in Workshop
3	Powrah/showel	Taken to site when required
4	Long tommy bar	Taken to site when required
5	Anvils	Fixed in workshop
6	Leg vice (10 and 15 cms. Jaw)	In workshop
7	Blow-lamp	May be replaced by hot air blower, where electricity is available.
8	Ladders (adjustable)	
Recommended plants		
9	Portable Gen-set. Ave. Approx. weight – 85 Kgs. Approx. cost (Rs.) – 65,000/-	It is recommended for the workshops and field works. May be used by all category of artisan staff.
10	Bench Grinder Approx. weight – 16 Kgs. Approx. cost (Rs.) – 8,200/-	It is very useful for all category of artisan staff for sharpening the edges of tools.

Tool kit for line work :

(a) Modern tools

Sr. No.	Name of tool	ES	OP	Average App. cost of power tool (Rs.)	Ave. Approx. Weight in Kgs.	Remarks
1	Multi purpose rotary drill (with bit set)		•	5500	2.0	
2	Impact drill (with bit set)		•	8000	2.5	
3	Straight grinder		•	7000	1.75	
4	Mini grinder	√		4000	1.50	
5	All purpose saw.	√		8500	5.00	
6	Nibblers		•	20150	4.50	
7	Battery operated cordless drill /driver		•	9000	1.75	
8	Blower/dust extractor	√		4000	1.70	
9	Hot Air-gun/ Hot air blower	√		5000	0.80	

Abbr. : ES- Essential tool, OP-Optional tool

(b) Conventional tools

S. No.	Name of tools	Remarks
1	Hammers of different weights	
2	Sledge hammers	Presence in the toolkit depends on nature of job.
3	Different type of locally made chiesels, drifts, chennies, scrapers & centre punch.	
4	Spanners, plier, holding tongue of different sizes.	
5	Shaping mould (steel)/Levelling block	
6	Outside/Inside callipers	
7	Pan small	
8	Fork	
9	Measuring tap & Steel scale & template making arrangement	
10	Files of different sizes	
11	Hacksaw frame 30 cms.	May be replaced by All purpose saw.
12	Mallet wooden (0.66 kg.)	
Note : Goggles, gloves, apron leather & safety boot etc. presently not in workshop, but may be supplied to enhance worker safety. The weight of conventional tools of kit will be approx.23.00 Kgs (with sledge hammers) and 15.00 Kgs (without sledge hammers)		

Name of Artisan trade : Carpenter (C)

Tool/plants in the Base workshop

S. No.	Name of existing tool/ small plants	Remarks
1	Cutting table	For cutting, planning & routing work.
2	Carpenter vice (long)	In workshop, to be taken to site.
3	Tommy bar	
4	Brace & ratchet with bit set	
5	Planer of various sizes	
6	Saws (Cross cut, Tenon, Rip Saw etc.)	May be taken in tool kit where circular saw (power operated not feasible)
7	Auger (three sizes ¾", 1", 3 soot)	May be used where drills etc. can not be operated.
8	Ladders (adjustable)	
Recommended plants		
9	Portable Gen-set. Ave. Approx. weight – 85 Kgs. Approx. cost (Rs.) – 65,000/-	It is recommended for the workshops and field works. May be used by all category of artisan staff.
10	Bench Grinder Approx. weight – 16 Kgs. Approx. cost (Rs.) – 8,200/-	It is very useful for all categories of artisan staff for sharpening the edges of tools.

Tool kit for line

(a) Modern Tools

Sr. No.	Name of tools	ES	OP	Average App. cost of power tool (Rs.)	Ave. Approx. Weight in Kgs. without consumables	Remarks
1	Multipurpose rotary drill (with bit set)	√		5500	2.0	
2	Impact drill (with bit set)		•	8000	2.5	
3	All purpose planer	√		8500	5.0	
4	Circular Saw	√		9000	1.50	
5	All purpose saw.	√		8500	5.00	
6	Jig saw		•	10500	2.25	
7	Router		•	17,000	4.00	
8	Battery operated cordless driver		•	9000	1.75	

Abbr. : ES- Essential tool, OP-Optional tool

(b) Conventional tools

S. No.	Name of tools	Remarks
1	ADZES	
2	Hammers & mallet	
3	Cheisels of various sizes (1 ½", 4 soot, 2 ½", 3 soot)	
4	Square steel scale measuring tap etc.	
5	Nail puller cum hammer & nail pulling tongue	
6	Files of various sizes.	
7	3 nos. screw drivers of different sizes.	
8	Locally made chisels, drifts & chennies.	
9	Marking knife and marker (khasra).	
10	Glass cutter.	
11	Side cut planner and frame offset planer (small sleek).	
12	Scale, measuring tape etc.	
Total weight of conventional tool (without consumables app. 9.0 Kgs.)		

Name of Artisan trade : Fitter/Plumber (F/P)

Tool/plants in the Base workshop

S. No.	Name of existing tool/ small plants	Remarks
1	Chain pipe wrenches of various sizes	
2	Thread making die sets of 1 ¼", 1 ½", 2")	
3	Powrahs, pick-axe, bucket mug set.	To be carried to site for attending pipe leakage etc.
4	Hand blower	May be replaced by power Hot air blower.
8	Ladders (adjustable)	
Recommended plants		
9	Portable Gen-set. Ave. Approx. weight – 85 Kgs. Approx. cost (Rs.) – 65,000/-	It is recommended for the workshops and field works. May be used by all category of artisan staff.
10	Bench Grinder Approx. weight – 16 Kgs. Approx. cost (Rs.) – 8,200/-	It is very useful for all category of artisan staff for sharpening the edges of tools.

Tool kit for line

(a) Modern tools

Sr. No.	Name of tools	ES	OP	Average App. cost of power tool (Rs.)	Ave. Approx. Weight in Kgs. without consumables	Remarks
1	Multipurpose rotary drill	√		5500	2.0	
2	Impact drill (with bit set)		•	8000	2.5	
3	All purpose saw.	√		8500	5.00	
4	Jig saw		•	10500	2.25	
5	Blower/dust extractor		•	4000	1.70	
6	Battery operated cordless driver		•	9000	1.75	
7	Mini grinder		•	4000	1.50	
8	Straight grinder		•	7000	1.75	
9	Nibblers		•	20150	4.5	
10	Hot air gun/hot air blower		•	5000	0.80	

Abbr. : ES- Essential tool, OP-Optional tool

(b) Conventional tools

S. No.	Name of tools	Remarks
1	Hacksaw with blades	
2	Pipe wrenches of different sizes for day to day petty work.	
3	Spanner set	
4	Thread making die set (up to 1" size)	
5	Caulking tool for C.I.pipe lines.	
6	Chisel, drifts, pipe anchors, chennies, centre punch	
7	Hammer	
8	Screw driver set.	
9	Holding tongue set	
10	Tommy bar (small)	
11	Plier, files, edging stone, spirit level, scissors	
12	Scale, measuring tape etc.	
Total weight of conventional tool (without consumables) app. 13.0 Kgs. (Weight of 2 nos. pipe wrenches only included, which may increase if carry additional pipe wrenches as per requirement of work)		

Name of Artisan trade : Mason (M)

Tool/plants in the Base workshop

S. No.	Name of existing tool/ small plants	Remarks
1	Pick-axes, buckets	Supplied by deptt.
2	Mortar pans, powrahs	Supplied by deptt.
3	Heavy size concrete chisels	
4	Long tommy bar	
5	Iron claw for aggregates	
6	Sand sieve (big)	
7	Axe	
8	Ladders (adjustable)	
Recommended plants		
9	Portable Gen-set. Ave. Approx. weight – 85 Kgs. Approx. cost (Rs.) – 65,000/-	It is recommended for the workshops and field works. May be used by all category of artisan staff.
10	Bench Grinder Approx. weight – 16 Kgs. Approx. cost (Rs.) – 8,200/-	It is very useful for all category of artisan staff for sharpening the edges of tools.

Tool kit for line

(a) Modern tools

Sr. No.	Name of tools	ES	OP	Average App. cost of power tool (Rs.)	Ave. Approx. Weight in Kgs. without consumables	Remarks
1	Multi purpose rotary drill	√		5500	2.0	
2	Impact drill (with bit set)	√		8000	2.5	
3	All purpose saw.		•	8500	5.00	
4	Battery operated cordless driver		•	9000	1.75	
5	Marble/tile/cutter		•	4000	2.70	

Abbr. : ES- Essential tool, OP-Optional tool

(b) Conventional tools

S. No.	Name of tools	Remarks
1	Wooden floats of different sizes.	
2	Powrah, bucket, mug, pan mortar, broom	
3	Trowels (3 sizes)	
4	Hammer & small chisels	
5	Brick hammer (for making brick bats)	
6	Square (big), plum bob, spirit level, PVC pipe 5 mts., measuring tape	
7	Round caliper	
8	Scratcher (locally made), scrapes	
9	Raking needle	
10	Sand sieve (handy/small)	
Total weight of conventional tool (without consumables) app. 12.0 Kgs.		

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Chapter – 8

MULTI SKILLLING ASPECT

A discussion with field artisan staff of SSE (Works), Main Line, Central Railway, Gwalior has been done and outcome is the multi-skilling aspect of various field jobs, which can be carried out by different category of artisans putting special quality tools and consumables, training/persuasion perks and other allied working facilities as an input; will result into increased output of work with increased level of productivity and availability of manpower/resources. A honest motivational and resourceful supervision and administrative effort with positive approach will be the key factor to achieve this aspect useful and result-orientated.

Following are some examples of multi-skilling aspect given in tabulated form –

Sr. No.	Job	To be done by artisan category at present	Also can be done by artisan category	If provided by suitable tools & accessories	Remarks	
					Training required	Only induction required
1	Fixing of G.I. sheet over roof of P.F., FOB Godowns, Building etc. by drilling holes & putting J bolts, washers, nuts etc.	C, B	F/P	Multi purpose drill with bit set	-	For drill machine
2	Fixing of corrugated cement (ACC) sheets over roof of PF, FOB, godowns and building.	C (Black-Smiths are excusing that they are not having drilling tools as carpenter have i.e. brace-ratchet resulting in breakage of ACC sheets.	B, F/P	Multi purpose drill with bit set		For drill machine
3	Fixing of GI (plain sheet, aluminium sheet on the doors to prevent rusting due to water or some where else. Operation involves : • Cutting of sheets to the size • Putting sheet in position by nails/ screws.	C (Sometimes by F/P for other than wooden items)	F/P, B	• For instant cutting nibbler of suitable capacity. • For thin sheets manual cutters are sufficient. • Nailing/ screwing can be done by F/P, B. • For thick/ hard surfaces small holes can be drilled by multi purpose drill.	For using Nibbler and drill	-

4	Changing of Bib-cocks, stop cock, fitting new showers, PVC connections in bathroom/WC/ Kitchen & changing of washer of existing bib-cock & replacing pillar taps of W/b etc.	F/P	C	Only a medium size pipe wrench and spanner set with holding tongue and soot is required, which can be issued to C from store or on loan from F/P as & when required.	Suitable training required at W/shop/ DTS.	-
5	• Fixing of mirror, towel rail, soap tray at tiled/non tiled surfaces. • Fixing of notice board, photo frames hanging hoardings etc. at Rly. stations and desired locations.	C	F/P, M	Multi purpose drill with bit set and rovel plugs with different size screws, hooks. Measurement tape (3 m), steel scale, marking tool, pencil etc. (which most of the artisans are having.)	Suitable training for operating drill machine	Suitable induction is also required.
6	Fixing/replacing wash basin and its attachments near non tiled/tiled surface.	M (for fixing W/basin bracket) F/P to put W/basin & its attachments.	F/P – alone M, C – alone (can fit atleast W/Basin pot) (No need to fix bracket which is having a compliment ary & time taking activity by M & F/P.	• Multi purpose drill for brick walled surfaces. • Impact drill for concreted walled surfaces. • Long rovel plug with especially designed long screws. One has to drill holes putting inside and tightening screws after putting WB in place, by drill m/c using driving bit.	For operation of drill m/c and for fixing of waste coupling and drain pipe (PVC) steel/ steel for M & C only.	-
7	Fixing/replacing of Aldrops, tower bolts, handles etc. in doors/windows/ ventilators.	C	F/P	Multi purpose drill with bits and suitable consumable i.e. screws, nut bolts washers.	For operation of drill machine.	For F/P
8	Making thread on GI pipes using die-set.	F/P	B	-	Training required.	-
9	Cutting of GI/PVC pipes.	F/P	B, C	• Using all purpose saw. • Using hacksaw.	For operating of power polysaw for F/P, B, C.	For B & C
10	Grinding of welded/extruded sections.	B	F/P		For operation of mini grinder.	For F/P

11	Cutting of steel section i.e. bar, angle, channel etc.	B, F/P	C	• Using all purpose saw. • Using mini grinder fitting with cutting disc.	For operation of power tools	-
12	Fitting of electric geyser on tiled/non-tiled surface.	M (for fixing bolts in wall and F/P for pipe & fixture fittings. Electrician for electric connections.	Bolts can be fixed by using drill machine & long rovel bolts etc. by electrician and pipe & fixtures by F/P	• Using rotary/ impact drill as impact drill with long rovel bolts etc. which are now available in the market.	For operation of drills etc. (Electrician of Elec. Deptt. already have drills)	-

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Chapter - 9

TRANSPORTATION OF TOOLS/EQUIPMENT AND TOOLKITS

At present Artisans are carrying their tools etc. in a canvas bag/Jute bag and locally made wooden box and moving/reaching to the workplace/site whether in colonies, offices, open lines, railway stations either by foot, bus, auto, tempos & Rickshaws, own cycle etc. Some of them are having their own mopeds/scooters/motorcycles. Similarly they are transporting consumables, cement, sand, aggregates & other maintenance materials by handcarts/trollies etc. Very limited number of Sr.Section Engineer (Works) units are having a trucks/ tractor/ pickup/ autoloader type vehicles.

Points :

1. Requirement of Mahindra's pickup Jeep type or Autoloader type vehicle for transportation of man, material, tools, equipment at bigger stations.

2. Rationalisation of supply of building materials etc. at pre-determined locations to minimise transportation of materials.

3. Out of turn cycle/scooter/motorcycle advances to skilled artisan/supervisors category from Railways and suitable contingency to be paid to them.

4. Suitable hand carts/trollies etc. to be provided for transportation of material/equipment etc. to nearby station area or colony etc.

5. Cycle Rickshaw is also a good option for transporting equipment /material etc. as it doesn't cost very much. Good quality Rickshaw is available in price ranges from Rs. 7000/- to Rs.10,000/- (depending upon their make, capacity & body build-up).

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Chapter – 10

SAFETY INSTRUCTIONS AND TROUBLE SHOOTING

Warning ! When using power tools, ALWAYS comply with the following basic safety precautions to prevent electric shock and reduce the risk of personal injury and fire.

Before you use the power tool, read and comply with these instructions. Keep the safety instructions in a safe place.

1. Keep the work area tidy.

An untidy work area is an accident hazard.

2. Consider environmental influences.

Never expose power tools to rain. Do not use power tools in damp or wet environment. Provide good lighting. Do not use power tools near flammable liquids or gases.

3. Guard against electric shock.

Components / appliances (e.g. pipes, radiators, cookers, refrigerators), when working outdoors or if humidity or conductive dust can penetrate the tool, we recommend that the tool is connected via residual current operated circuit breaker (FI, RCD, PRCD) with a max. 30 mA tripping current.

4. Keep children/passengers away.

Do not let children touch the power tool or cable. Keep children/passengers away from the work area.

5. Store your power tools securely.

When not in use, tools should be stored in a dry, locked room and out of the reach of children.

6. Do not overload your power tool.

The tool performs better and more reliably if used within the indicated performance range.

7. Use the correct power tool.

Do not subject low-powered tools or attachments to heavy loads. Only use tools for the purpose for which they are intended, e.g. do not use portable circular saws for felling trees or cutting off branches.

8. Wear suitable clothing

Do not wear loose clothing or jewellery. They could get caught in moving parts. When working outdoors, it is recommended to wear protective gloves and safety non-slip footwear. Cover long hair with a hairnet.

9. Wear eye protection

Ensure safety glasses / goggles are worn at all times.

10. Do not misuse the cable

Do not carry the tools by the cable and do not use the cable to pull the plug out of the socket. Protect the cable from heat, oil and sharp edges. Check condition of cable and plug before every use.

11. Secure the work piece

Secure the work piece with clamps or a vice (the work piece cannot be held securely with your hand). Both hands are then free to operate the power tool.

12. Do not over reach

Avoid abnormal posture. Ensure a secure footing and always keep your balance.

13. Look after your power tool attachments

To ensure good and reliable performance, keep your power tool attachments sharp and clean. Comply with the maintenance instructions and with the instructions for changing power tool attachments. Inspect the plug and cable regularly and, if damaged, have them replaced by a qualified technician. Inspect extension leads regularly and replace any damaged ones. Keep handles dry and free of oil and grease.

14. Pull out the main plug.

When not using or before servicing the power tool or when changing an attachment, e.g. saw blade, drill bit and all types of tools, always disconnect plug from power supply.

15. Remove keys /wrenches from the power tools.

Before switching ON the power tool, remove any keys and wrenches.

16. Prevent unintentional starting.

Do not carry the plugged in power tools with your finger on the trigger / switch. Before plugging in the power tool, ensure that the trigger / switch is OFF.

17. Outdoor use of extension leads.

Extension leads may be used outdoors only if they are authorised and identified for outdoor use.

18. Be alert.

Watch what you are doing. Use common sense. If you are tired, do not operate the power tool.

19. Check your power tool for possible damage.

Before using your tool again, carefully check guards or slightly damaged parts to ensure that they will function properly and as intended. Check that moving part function correctly, that they do not jam and that there are no damage parts. To ensure proper operation of the power tool, all parts must be correctly installed and satisfy all the required conditions. Any damage guards and / or parts should be properly replaced by an authorised service centre, unless otherwise indicated in the operating instructions. Defective switches should be replaced by an authorised service centre. Do not use power tools which cannot be turned ON or OFF with the switch.

20. Warning ! for your safety

Use power tools, accessories, attachments, 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. The power tool must only be used for the purpose for which it is intended. The use of attachments or accessories other than those recommended in the operating instructions or catalogues may result in personal injury.

21. Repair to power tools should be carried out only by an electrical engineer/representative of authorized service centre.

Standard power tools have been constructed in accordance with the relevant safety regulations. Repairs may be carried out only by an electrician, otherwise the user may be put in considerable danger.

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TROUBLE SHOOTING CHART

Sr. No.	Problems	Cause & location	Trouble shooting & remedies
1	Motor does not work.	• Power failure, blown off fuse, Breaker off. • Poor contact in live parts area. • Carbon brush wear. • Cord lead wires broken poor switch(s). • Armature winding shorted. • Armature winding or field coil wire break.	• Check your power source. • Check visually or by tester switches closed end connections. • Ring terminals, carbon brushes repair or replace. See manual • For wear level replace as required upon visual inspection check continuity tester. • Check continuity with tester. Replace as needed. • Check with armature layer tester. Replace needed. • Check visually or with tester. Replace if required.
2	Fuse blows when switch on	• Mistaken wire connection. • Armature winding shorted. • Shafts, bearing gears wrongly assembled.	• Check visually or with tester. Replace if needed. • Check with tester (Armature layer) & replace if needed. • Disassemble & check. Repair as required.
3	Inconsistent starting.	• Poor connections of live parts. • Switch failure. • Armature winding shorted.	• Inspect, repair using tester or naked eyes. • Check continuity with tester. Replace if needed. • Check visually or with tester. Replace if needed.
4	Electric shock	• Cord/lead wire covering damaged, terminals off connecting case; chip build up (wood, metal, dust) in live parts.	• Repair or replace after visual inspection. Disassemble and clean.

5	Large sparks from carbon brushes.	• Surface of commutator is rough or deformed. • Poor contact in carbon brushes. • Armature wire break.	• Inspect visually. Clean the commutator with light skimming, polishing. • Replace carbon. Check movement of carbon brush in the brush holder and adjust spring tension. Replace if needed. • Check visually with tester. Replace if needed.
6	Slow, irregular motor rotation.	• Short in armature winding or field coil. • Poor assembly of shafts bearings, gears etc.	• Check with armature layer or field layer tester. Replace if needed. • Disassemble, check, realign, and repair.
7	No power	• Power voltage too low. • Extension cord too thin and long. • Using low power source for high power source machine.	• Check power source voltage. • Use standard cord of suitable diameter in relation to the length of extension wire. • Using machine with matching nameplate voltage.
8	Overheating	• Overload due to improper application. • Cutting tool worn out. • Shorting of armature winding or field coil. • Poor connections of live parts.	• Apply correct speed and feed. • Sharpen tool. • Use armature layer tester or field layer tester. Replace as required. • Check visually or with tester. Replace as needed.
9	Strange Sound	• In proper gearing or worn out gears. • Needs greasing. • Loose fixing.	• Disassemble, inspect. Replace as required. • Disassemble and apply grease. • Rectify.
10	Considerable vibrations.	• Poor balancing of revolving parts. • Gear wear. • Bearing failure.	• Correct im-balancing. Replaced parts if needed. • Disassemble, inspect and replace as required. • Disassemble, inspect and replace as required.

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Chapter – 11

SALES AND SERVICE NETWORK OF COMPANIES

1. KULKARNI POWER TOOLS LTD. : SHIROL – 416103 DIST. KOLHAPUR (MAHARASHTRA)

Tel : 00-91-2322-21506/7/8, Fax : 00-91-2322-21510 e-Mail : kptl@giaspn01.vsnl.net.in
Website : www.kptindia.com

KPTSALES AND SERVICE LTD. : REGISTERED OFFICE :
309, Vasant Vihar Commercial Complex, Dr. C.Gidwani Road, Chembur,
Mumbai – 400 074, Maharastra, India

Branch Offices/Company Offices/Company Operated service centres

WESTERN REGION	
Bhandup	43/44, Ground Floor, Nahar & Seth Industrial Estate, Pannalal Compound, L.B.S.Marg, Bhandup (W) Mumbai – 400078 Tel : 5624472
Mumbai	11/13 Botawala Building, Room No. 10, 3rd floor, Horniman Circle, Fort, Mumbai – 400 023 Tel: 2662664, 265 6955
Pune	½ Mula Road, next to Kohinoor Estate, Pune- Mumbai Road, Wakdewadi, Pune – 411 003, Tel : 581 2724/25
Jaysingpur	Plot No. 110, L.K.Akiwate Industrial Estate, Jaysingpur – 416 144, Dist. Kolhapur Tel : 02322-21165
Ahmedabad	Khemchand Dayalji Building, 11 'Kaycrest' 41 Parimal, Ellisbridge, Ahmedabad – 380 006 Tel : 6465444
Nagpur	65, Lanjewar Bhawan, Central Avenue Road, Nagpur – 440018 Tel : 811 094
NORTHERN REGION	
Delhi	26-A, Local Shopping Centre, Ring Road, Naraina, New Delhi – 110028 Tel : 579882/3
Ludhiana	18-A, Rohan Market, Near Vishwakarma Chowk, Ludiana – 141 003 Tel : 541 730
Kanpur	23/414-A, Opp. Gurudwara, Gurunanak Motor Market, Daderian Purva, Kanpur Tel : 582 096
SOUTHERN REGION	
Chennai	49, 1st floor, Nugambakkam High Road, Chennai – 600 034 Tel : 828 2402
Banglore	No.30/31, M.B.Chambers, S.P.Road, Banglore – 560 002 Tel : 222 0611/ 2245028
EASTERN REGION	
Kolkata	50E, Hazra Road, 1st floor, Near Hazra Law College, Kolkata – 700 019 Tel : 4765386

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2. BOSCH POWER TOOLS LTD. :

REGISTERED OFFICE : MOTOR INDUSTRIES CO. LTD. POWER TOOL DIVISION, HOSUR ROAD ADUGODI, BANGLORE - 560 030

Tel : 080-299 2956 / 299 2880, Fax : 080-221 3706
Central Ware House : P. Box 6802, 49, Ethiraj Salai, Egmore, Chennai – 600 105
Tel : 044 – 8221842

Demo Centres :

Bangalore - Mission Road,– 560 627 Tel : 2270041 Fax : 2225101
Channai – 49, Ethiraj Salai, Egmore, Chennai – 600 008 Tel : 8231946, Fax : 8279355
Delhi : Rishyamook, 85-A, Panchkuin Road, 110001 Tel : 3347801, Fax : 3348264
Mumbai : 41, 41A, Appa Baug Building, Maharshi Karve Marg, (Opp. Charni Road Station)
Pin Code – 400 002 Tel : 2084005

Bosch Service Centres :

Mumbai : 41, 41A, Appa Baug Building, Maharshi Karve Marg, (Opp. Charni Road Station)
Pin Code – 400 002 Tel : 2084005
Delhi : Rishyamook, 85-A, Panchkuin Road, Pin Code-110001 Tel : 3347801, Fax : 3348264

Sales Office :

Ahmedabad	31/32, Level 3, JMC House, Ellis Bridge, Ahmedabad – 380 006 Tel : 079-6420401 Fax : 079-6420523
New Delhi	Rishyamook, 85-A, Panchkuin Road, 110001 Tel : 3347801, Fax : 3348264
Chandigarh	Showroom no. 17, Sector 26, Madhya Marg – Chandigarh - 160019 Tel : 0172 – 790124 Fax : 0172 - 792285
Chennai	Post Box no. 6802, 49, Ethiraj Salai, Egmore Chennai – 600 008 Tel : 8231946, Fax : 8279355
Bangalore	22/1, Mission Road, Bangalore – 560 027 Tel : 080-2270041 Fax : 080-2225101
Ernakulam	P.B.no. 3601, XL/6942 & 6943, MG Road, 682035 Tel : 0484-360823, Fax : 0484 – 370006
Ghaziabad	1st floor, C-19, Lohia Nagar – 201001 Tel : 0575-4718553, Fax: 0575-4781967
Gwalior	R.V.Associates, Jain Market, Shinde ki Chhawani, Gwalior - 474009
Indore	Modern mansion, 20/2, South Tukoganj, Mumbai Agra Road – 452001 Tel : 0731-512985, Fax :0731-512983
Jaipur	F-104, Sangam Tower, Church Road, Off. MI Road – 302001 Tel : 0141-379137, Fax :0141-366109
Kolkata	Post Box No. : 9044, 91 A, Park Street – 700 016, Tel : 033-2497475, Fax :033-2497482
Lucknow	4th floor, YMCA Complex, 13 Rana Pratap Marg – 226001 Tel : 0522-206780, Fax : 0522-209363
Mumbai	79, Dr. Annie Basant Road, Worli – 400 018 Tel : 022-4980763, Fax : 022-4914643/4973924
Pune	814/A/2, Bhandarkar Road, Shivaji Nagar, - 411004 Tel : 020-5650387, Fax : 020-5658171
Secunderabad	Post Box No. : 1655, 1-7-241/11, Sarojini Devi Road – 500003 Tel : 040-7819874, Fax : 040-7841879

3. CONSORTECH TOOL (INDIA) LTD. :

CORPORATE OFFICE : **CONSORTECH TOOL (INDIA) LTD., 306, PATIL PLAZA, MITRANANDAL CORNER, PUNE – 411 009 (MAHARASTRA)**
Tel : 020-4445576/4002414, Fax : 020-4445884/4443838,
E-Mail : Constech@pn2.vsnl.net.in
Visit us at : WWW.constechtoolsindia.com

CENTRAL WARE HOUSE : **CONSORTECH TOOL (INDIA) LTD., S.NO. 97, TRIMURTI HOTEL, PUNE – SATAR HIGHWAY, AT – BHILAREWADI, POST KATRAJ, TAL – HAVELI DIST. – PUNE (MAHARASTRA)**

APPLICATION ENGINEERING AND TRAINING CENTRE :
CONSORTECH TOOL (INDIA) LTD., D-3, 71, MIDC, CHINCHWAD - PUNE – 411 019 (MAHARASTRA)

REGIONAL MANAGERS AT : **NEW-DELHI, MUMBAI, CHENNAI, BANGALORE, KOLKATA**

AREA SALES MANAGERS AT : **NEW-DELHI, MUMBAI, BARODA, COAIMBATORE, INDORE, KANPUR, JAMSHEDPUR, CHANDIGARH, HYDERABAD, VISAKHAPATNAM, COCHIN, AHMEDABAD, PUNE, RAIPUR**

***

4. S.S.TOOLS (INDIA) PVT. LTD. : VARIOUS MANUFACTURER'S REPRESENTATIVE, DISTRIBUTOR, IMPORTER & EXPORTER.

ADDRESS : **234, IIND FLOOR, AJMERI GATE, DELHI – 6 (INDIA)**
Tel : 91-11-3238333, 3221144, Tele. Fax : 3234333,
Mobile : 9810092197
E.mail : sstools@mantraonline.com
Visit : sstimpex.com

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Chapter – 12

Annexure - A

Government of India
Ministry of Railways
(Railway Board)

NO. 2001/CE-I/GNS/2 Benchmarking **New Delhi : 18.09.2001**

The Addl. Director General,
R.D.S.O.
Lucknow

Sub : Productivity of Artisan staff.

CRB has observed that the productivity of our Artisan Staff has been poor and one of the reasons has been their working with obsolete tools. CAMTECH, Gwalior, did some work in the direction of standardizing tools and equipment for artisan working under Section Engineer (Works). They published a **"Handbook (No. CAMTECH/99/C/Tools/1-September, 1999) on Standard tools and Small Equipments for Artisan working under Section Engineer (Works)"**. However, as seen from this book, it only gives the details of design, their dimension etc. but generally these tools are the conventional ones which are being used since time immemorial. Nowadays, modern power driven tools are available in the market. For example, electric drill can be used by Masons/Plumbers/Carpenters very effectively. Similarly, electric Torque Spanners and screw drivers are also available and can be of immense help in improving the productivity of Artisan Staff.

It is also desired that a small study be conducted by CAMTECH to make improvements in the existing tools being used by Artisan Staff which can also help in improving the productivity. This study can be one the same lines as has been done for P.Way tools.

Urgent necessary instructions be issued to CAMTECH/Gwalior in this connection to submit the report within 3 months time.

Sd/- 18.9.01
(Arvind Kumar)
Addl. Member (Civil Engineering)
Railway Board

Annexure - B

Government of India (Bharat Sarkar)
Ministry of Railways (Rail Mantralaya) (Railway Board)

NO. F(X)/II/95/ALC/2/Pt.I **New Delhi : 05.9.95**

The General Managers,
All Indian Railways including Production Units.

Sub : Procurement and replacement of small items of equipment – allocation of cost.

In partial modification of letter nos. F(X) II/78/ALC/3 dt. 28.6.78 further amended vide letter no. F(X) II/78/ALC/3 dt.30.4.85, it has been decided that the monetary limit of Rs.50,000 laid down in paras A & B (ii) thereof may be raised to Rs.1,00,000.

Furthermore, it has been decided that in cases where (I) cost of an item of medical equipment exceeds Rs.20,000 and (ii) cost of an item other than medical equipment exceeds Rs. 10,000, the powers under the aforementioned paras A & B (ii) should not be redelegated below the lavel of Heads of Department who should exercise them in consultation with their Financial Adviser. Hence para 2 of the aforementioned letter dt. 28.6.78 stands modified accordingly.

2. Necessary code corrections will follow.
3. Please acknowledge receipt.
4. Hindi version will follow.

Sd/-
(Shankar Banerajee)
Director Finance (Exp.) Railway Board

No. F(X)/II/96/ALC/2/Pt.I New Delhi : dt.5.8.95

Copy to :

i) ADAI (Railways) with 45 spares.
ii) FA&CAO/All Indian Railways including production units.

Sd/-
(Shankar Banerajee)
Director Finance (Exp.) Railway Board

Annexure - C

Government of India (Bharat Sarkar)
Ministry of Railways (Rail Mantralaya) (Railway Board)

NO. F(X)II-78/ALC/3 **New Delhi : 30.4.85**

The General Managers,
All Indian Railways,
Including CLW, DLW & ICF.

Sub : Procurement and replacement of small items of equipment – allocation of cost.

Ref : Board's letter no. F(X) II-78/ALC/3 dated 28.6.1978.

In partial modification of the orders contained in Board's letter referred to above it has been decided that the monetary limit of Rs.20,000 laid down in paras A & B (ii) thereof may be raised to Rs.50,000/-. The Board have also agreed that the instructions contained in their letter dated 28.6.1978, with the revised monetary limits as now indicated may apply to catering equipment, like utensils, metal crockery/cutlery, etc. also.

2. Necessary code corrections will follow.
3. Please acknowledge receipt.
4. Hindi version will follow.

Sd/-

(R.SIVADASAN)
Joint Director Finance (Exp.) I,
Railway Board

C/- ADAI (Railways) with 45 spares.
C/- FA&CAO/All Indian Railways including production units.
W & AP, COFMOW.
C/- Health, W-2, M (M&P), F(S)I,II, E(W), F(X)I, Code revision, R.C.C., TG-III and Budget branches of Railway Board.

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NOTES

OUR OBJECTIVE

To upgrade Maintenance
Technologies and Methodologies
and achieve improvement in
productivity and performance
of all Railway assets and manpower
which inter-alia would cover
Reliability, Availability,
and Utilisation.

If you have any suggestion & comments, please write to us :

Contact person	:	Director (Civil)
Postal Address	:	Centre for Advanced Maintenance Technology, Maharajpur, Gwalior (M.P.) Pin code – 474 020
Phone	:	(0751) - 2470869, 2470803
Fax	:	(0751) - 2470841