



GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS

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**HANDBOOK ON ARTISANS TOOLS
FOR
TRACTION DISTRIBUTION DEPOTS**

CAMTECH/E/2002/TOOLS(TRD)/1.0

JULY, 2002

**Centre
for
Advanced
Maintenance
TECHnology**



Excellence in

Maharajpur, GWALIOR - 474 020

**HANDBOOK
ON
ARTISANS TOOLS
FOR
TRACTION DISTRIBUTION DEPOTS**

PREFACE

It is necessary that proper tools are available with the artisans to increase productivity as well as quality of work. However proper tools are not available with artisan staff in the field. Therefore this handbook has been prepared which include the list of conventional as well as modern tools which should be available for use of artisans. It is recommended that all Railways should make available these tools to artisan staff in all TRD depots.

Details of modern tools have been given separately in annexure. Make, price and supplier name given in the handbook are for guidance only. If better tools with reasonable price or tools of same quality with lesser price is available in market, then Railways should procure the same. Information regarding manufacturers, suppliers and prices of modern tools given in annexure of this handbook was collected by staff of this centre from the market. CAMTECH could collect only limited information regarding manufacturers, suppliers, models, specifications and price due to time constraints and other limitations. Therefore Railways/Indentors/Users should explore the market to find out more manufacturers, suppliers, models, specifications and exact price.

This handbook does not supercede any instructions issued from Railway board and RDSO.

Technological upgradation and learning is a continuous process. Hence feel free to write to us for any addition/modification in this handbook. I shall highly appreciate your contribution in this direction.

CAMTECH/ GWALIOR
Date : 31.7.02

RANDHAWA SUHAG
DIRECTOR/ ELECTRICAL

FOREWORD

Availability of proper tools with artisan staff is necessary to enhance their productivity. CAMTECH has prepared this hand book which covers the list of conventional as well as modern tools for traction distribution branch. Details of modern tools like make, model, specification, sources of supply and budgetary cost is also included.

It is recommended that Railways may supply these tools/ similar tools to artisan staff so that they can perform their assigned work efficiently

CAMTECH GWALIOR
31.07.2002

M.L. GUPTA
EXECUTIVE DIRECTOR

ISSUE OF CORRECTION SLIPS

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

CAMTECH/2002/E/TOOLS(TRD)/1.0/C.S. # XX date-----

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

CORRECTION SLIPS ISSUED

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

Introduction

Indian Railways is one of the largest state owned railway system. Very large work force is available to keep the system working efficiently. However the productivity and quality of work has been poor and one of the reason has been that proper tools are not available with them. Therefore availability of proper tools with artisan staff is very necessary to enhance the productivity and quality of work. CAMTECH has prepared this handbook which list out conventional as well as modern tools which should be available with artisan staff of traction distribution branch. The information was collected by visiting various depots, interaction with field staff, various tools manufacturers and market survey. A seminar was also conducted at CAMTECH in which field personnel from various railways participated and their views and suggestions were considered. It is hoped that this handbook will be very useful in improving the productivity of field staff.

CAMTECH could locate only limited manufacturers/ suppliers due to time constraints and other limitations. Therefore the list of manufacturers/ suppliers indicated for any tool provided in the handbook is no way exhaustive and the Railways/ indenters/ users are free to explore the availability of more manufacturers/ suppliers in the open market. The budgetary estimated cost for the tools is subjected to variation on account of market factors and/ or number of units purchased.

1. TOOL KIT FOR LINEMAN (OHE)

S. No.	Description of Tool	Reqd. Qty.	Remarks
1.	Ball pen hammer 1 kg	1No	
2.	Swivel clip opener	1No	
3.	Screw driver 8"	1No	
4.	Adjuster spanner 8"	1No	
5.	Measuring tap 5 m	1No	
6.	Ring spanner set (14 x 15, 16 x 17, 18 x 19, 20 x 22, 21 x 23, 24 x 26, 25 x 27, 30 x 32)	1Set	
7.	Double open end spanner set (14 x 15, 16 x 17, 18 x 19, 20 x 22, 21 x 23, 24 x 26, 25 x 27, 30 x 32)	1Set	
8.	Combination pliers 8"	1No	
9.	Nose pliers 6"	1No	
10.	Plumb bob	1No	

2. TOOLS TO BE KEPT IN TOWER WAGON

S. No	Description of Tool	Reqd. Qty.	Remarks
1.	Pulling and lifting machine 2.5 tonne, 1.5 tonne with 20m rope	2 No each	
2.	Pulling and lifting machine 5 tonne, 3 tonne	1 No each	
3.	Ratchet lever hoist 3 tonne,	1 No	
4.	Come along clamps for catenary wire 19/2.108 mm conductor	4 No	
5.	Come along clamp for contact wire 107mm ²	4 No	
6.	Come along clamps for aluminium spider conductor (20mm)	4 No	
7.	Earthing discharge rod	6 No	
8.	D.O. fuse operating rod	1 No	
9.	Aluminium straight ladder (8m) long	1 No	
10.	Aluminium Extension ladder (11m) long	1 No	
11.	Aluminium ladder (3m)	1 No	
12.	Bolt cutter (36")	1 No	
13.	Catenary/Dropper wire cutter 12".	1 No	
14.	Single sleeve pulley block 3½ x ½" groove steel	4 No	
15.	Single sleeve pulley block 6" x 1" groove steel	2 No	

S. No	Description of Tool	Reqd. Qty.	Remarks
16.	Single pulley block 3½ x ½" groove fibre for drawal of contact, catenary wire	4 No	
17.	Double sleeve pulley block	4 No	
18.	Metric tap 30m, 15m	1No each.	
19.	Ring spanner set (8 to 42)	2 Set	
20.	Double open end spanner set (8 to 42)	2 Set	
21.	Adjustable spanner (8", 12")	2 No Each	
22.	Pipe wrench 18", 12"	1 No Each	
23.	Screw driver (12")	2 No	
24.	Cutting pliers 160mm	2No	
25.	Nose pliers 8"	1No	
26.	Combination pliers	1No	
27.	'D' shackles set (1", 3/4", 5/8", 1/2")	4 No Each	
28.	Torch light (4 cell)	4 No	
29.	Spirit level 6", 12"	1 No Each	
30.	Hacksaw frame	2 No	
31.	Plumb bob	1No	
32.	Swivel clip openers	2 No	

S. No	Description of Tool	Reqd. Qty.	Remarks
33.	Slewing gadget (std. BT and large BT)	1No each	
34.	Contact wire twister cum bender 6"	3 No	
35.	Walkie Talkie sets (2 W output)	4 No.	
36.	Steel Slings with eye each end 19mm dia a. 1 m long b. 2 m long c. 3 m long d. 4 m long e. 10 m long	4 No each	
37.	Hammer sludge 1kg, 5kg	1No each	
38.	Bench vice 6".	1No	
39.	Contact wire splicing jig	2 No	
40.	Pick axe	2No	
41.	Phawara	2No	
42.	Bucket	2No	
43.	Crow bar	4 No	
44.	Panja	2 No	
45.	Shawal	2 No	
46.	Colour signal lamp	2No	
47.	Grease gun	2 No	
48.	Bond twister	2 No	

S. No	Description of Tool	Reqd. Qty.	Remarks
49.	Digital micrometer	1 No	For detail refer page no. 51
50.	Thermometer	1 No	
51.	Digital vernier callipers	1 No	For detail refer page no. 49
52.	Auto ranging Digital multimeter	1 No	For detail refer page no. 58
53.	Kink remover	2No	
54.	Wooden hammer	2No	
55.	Flat chiesel 10"	1No	
56.	Half round file	1No	
57.	Flat file	1No	
58.	Round file	1No	
59.	Triangular file	1No	
60.	Screw jack (20 tonne capacity)	1No	
61.	Copper hammer 1 Kg	1No	
62.	1/2" Square drive socket set containing 19 socket with 6 attachment	1 Set	
63.	Dynamometer(0-5 t)	1 No	
64.	Portable power rock drilling machine	1 No	For detail refer page no. 35

S. No	Description of Tool	Reqd. Qty.	Remarks
65.	Manila rope 15mm dia, 25mm dia	20 m each	
66.	Nylon rope 15mm dia, 25mm dia, 40mm dia	20 m each	
67.	All purpose saw	1 No	For detail refer page no. 45
68.	Round cable and wire cutter	1 No	For detail refer page no. 64
69.	Portable emergency telephone	2 No	
70.	Axe	4 No	
71.	Motor pan	2 No	
72.	Digital sprit level	1 No	For detail refer page no. 37

3. TOOLS TO BE KEPT IN TRUCK/LORRY FOR LADDER GANG

S. No	Description of Tool	Reqd. Qty.	Remarks
1.	Straight Ladder 8 m	1No	
2.	Extension Ladder 11m	1No	
3.	Pulling and lifting machine 3tonne, 1.5 tonne	2 No each	
4.	Ratchet level hoist 3/4 tonne, 1.5 tonne, 3 tonne	2No	
5.	Earthing discharge rod	6No	
6.	D.O. fuse operating rod	1 No	
7.	Come along clamp for contact wire 107mm ²	4No	
8.	Come along clamp for catnery wire 19/2.108 conductor	4No	
9.	Contact wire cutter 12"	1No	
10.	Bolt cutter 36"	1No	
11.	Single sleeve pulley block 3½ x ½" groove steel	2No	
12.	Double sleeve pulley block 3½ x ½" groove steel	2No	
13.	Swivel clip opener	2No	
14.	Metric tape 5m, 15m	1No Each	
15.	Ring spanner (14 to 41)	1set	
16.	Double open end spanner(14to41)	1set	

S. No	Description of Tool	Reqd. Qty.	Remarks
17.	Adjustable Spanner 12"	1each	
18.	Screw Driver 12"	2No	
19.	Cutting Pliers 12"	2No	
20.	Combination pliers	1 No	
21.	Nose pliers 6"	1 No	
22.	D.Shackel 1",1/2",3/4",5/8"	4 No Each	
23.	Contact wire splicing jig	1No	
24.	Pick axe	1No	
25.	Bond twister	1No	
26.	Hack saw frame	2 No	
27.	Plumb bob	1No	
28.	Hammer sludge 1kg, 5kg	1No each	
29.	Wooden hammer	1 No	
30.	Contact wire twister cum bender	2 No	
31.	Panja	2 No	
32.	Powrah	1 No	
33.	Crow bar	2 No	
34.	Bucket	1 No	
35.	Motor pan	2 No	
36.	Axe	2 No	

S. No	Description of Tool	Reqd. Qty.	Remarks
37.	Round cable and wire cutter	1 No	For detail refer page no 64
38.	Manila rope 15mm, 25mm	20 m each	
39.	Nylon rope 15, 25, 40mm	20 m each	
40.	Wire rope sling 1, 2, 3, 4, 10m	4 No each	
41.	Emergency telephone set	1 No	
42.	Thermometer	1 No	

4. TOOLS TO BE KEPT IN BREAK DOWN TRAIN

S. No	Description of Tool	Reqd. Qty.	Remarks
1.	Ratchet lever 3 tonne, 1.5 tonne	2 No Each	
2.	Come along clamps for catenary wire 19/2.108mm conductor	4No	
3.	Come along clamp for contact wire 107mm ²	4No	
4.	Come along clamps for aluminium spider conductor (20mm ²)	4No	
5.	Earthing discharge rod	6No	
6.	D.O fuse operating rod	2No	
7.	Aluminium straight ladder (8m) long	2No	
8.	Aluminium Extension ladder (11m) long	1No	
9.	Bolt cutter (36")	1No	
10.	Catenary/Dropper wire cutter 12".	1No	
11.	Single sleeve pulley block 3½ x ½" groove steel	4No	
12.	Single sleeve pulley block 6" x 1" groove steel	2No	

S. No	Description of Tool	Reqd. Qty.	Remarks
13.	Single pulley block 3½ x ½" groove fibre for drawal of contact, catenary wire	10 No	
14.	Double sleeve pulley block	4No	
15.	Metric tap 30m, 15m	1No each.	
16.	Ring spanner (14 to 42)	2 set	
17.	Double open ended spanner (14 to 42)	2 set	
18.	Swill clip opener	2 No.	
19.	Contact wire splicing jig	2 No	
20.	Screw driver (12")	2 No	
21.	Cutting pliers 12"	2 No	
22.	'D' shackles set (1", 3/4", 5/8", 1/2")	6 no. each	
23.	Adjustable wrench 12"	1 No	
24.	Pick axe	2 No	
25.	Walkie Talkie sets (2W)	2 No	
26.	Hacksaw frame	2 No	
27.	Plumb bob	1 No	
28.	Crow bar	2 No	
29.	Panja	1 No	
30.	Shawal	2 No	
31.	Wire rope sling (1,2,3,4,10, each)	6 No Each	
32.	Slewing gadget	2 No	

S. No	Description of Tool	Reqd. Qty.	Remarks
33.	Contact wire twister cum bender 6"	2 No	
34.	Pulling and lifting machine 2.5 tonne, 1.5 tonne	2 No Each	
35.	Pulling and lifting machine 5 tonne, 3 tonne	1 no Each	
36.	Contact wire splicing jig	1No	
37.	Hammer sludge 1kg, , 5kg	1No Each	
38.	Bench vice 6".	1No	
39.	Nose pliers 6"	1No	
40.	Combination pliers	1No	
41.	Phawarah	2No	
42.	Colour signal lamp	2No	
43.	Torch light (4 cell)	4 No	
44.	Sprit level 12"	1 No	
45.	Pipe wrench 18", 12"	1 No	
46.	Bond twister	2 No	
47.	Kink remover	2 No	
48.	Wooden hammer	2 No	
49.	Flat chiesel10"	1 No	
50.	Half round file	1 No	
51.	Flat file	1 No	
52.	Round file	1 No	

S. No	Description of Tool	Reqd. Qty.	Remarks
53.	Triangular file	1 No	
54.	1/2" Square drive socket set containing 19 socket with 6 attachment	1 Set	
55.	Manila rope 15mm dia, 25mm dia	20 m each	
56.	Nylon rope 15, 25, 40mm dia	20 m each	
57.	Motor pan	2 No	
58.	Axe	4 No	

5. TOOLS TO BE KEPT IN OHE DEPOT/ WORKSHOP

S. No.	Description of Tool	Reqd. Qty.	Remarks
1.	Electric power drilling machine	1No	
2.	Electric welding machine	1No	
3.	Bench voice 6"	2No	
4.	Dropper making jig 5m	2 No	
5.	Dropper making jig 7mm	1 No	
6.	Hacksaw frame	1No	
7.	Black smith hammer 10kg	2No	
8.	Black smith anvil 2"	1No	
9.	Portable electric grinder	1No	
10.	Ring spanner set (6-41)	1 No	
11.	Double open ended spanner set (6-41)	1 No	
12.	Grease gun	2No	
13.	Set of screw driver	1No	
14.	Crow bar	4No	
15.	Bench grinder(double end) pedestal motor driven	1 No	
16.	Pipe wrench 12"	1 No.	
17.	Adjustable spanner 8", 12"	2 No	
18.	Dynamo meter 0- 10 t	1No	
19.	Bond making jig	1No	
20.	Bond twister	2No	
21.	Blower/Dust Extractor	1No	Refer Page No. 66
22.	Flat file	1No	

S. No.	Description of Tool	Reqd. Qty.	Remarks
23.	Round file	1No	
24.	Triangular file	1No	
25.	Half round file	1No	
26.	Flat chiesel	1No	
27.	Centre punch	1No	
28.	Pin punch	1No	
29.	1/2" socket set containing 19 socket with 6 attachment	1No	
30.	Earthing discharge rod	6 No	
31.	D.O. operating rod	2 No	
32.	Torque Wrench	1No	
33.	Rail hole drilling machine	1 No	For detail refer page no. 70
34.	Hydraulic crimping machine	1 No	
35.	Portable tree cutting machine	1 No	For detail refer page no. 28
36.	Manila rope 15, 25mm dia	20 m each	
37.	Nylon rope 15, 25, 40mm dia	20 m each	
38.	Slings 1, 2, 3, 4, 10	4 No each	
39.	'D' shackles 1/2", 3/4", 1", 5/8"	4 No each	
40.	Single sleeve pulley block 3½ x ½"	2 No	

S. No.	Description of Tool	Reqd. Qty.	Remarks
41.	Double sleeve pulley block 3½ x ½"	2 No	
42.	Measuring tape 60 m	1 No	
43.	Rail road equipment	1 No	For detail refer page no. 73
44.	Demolition hammer	1 No	For detail refer page no. 72
45.	Infra red camera	1 No	For detail refer page no. 32
46.	Multi purpose portable power drilling machine	1 No	For detail refer page no. 41
47.	Digital vernier caliper	1 No	For detail refer page no. 49
48.	Digital Micrometer	1 No	For detail refer page no. 51
49.	Motor operated meggar	1 No	For detail refer page no. 53
50.	Infra red heat tracer	1 No	For detail refer page no. 56
51.	Round cable and wire cutter	1 No	For detail refer page no. 64
52.	Binocular	1No	For detail refer page no. 69
53.	Rail hole drilling machine	1No	For detail refer page no. 70

6. TOOL KIT FOR PSI FITTER

S. No	Description of tool	Reqd Qty	Remarks
1.	Screw driver Set	1No	
2.	Cutting pliers 8"	1No	
3.	Line tester	1No	
4.	Auto ranging Digital multi meter	1No	For detail refer page no. 58
5.	Torch Light 4 cell	1No	
6.	Nose Pliers 6"	1No	
7.	Double open ended Spanner (6 to 32)	1 set	
8.	Measuring Tape 5m	1 No	
9.	Adjustable wrench 8"	1 No	
10.	Ball pen Hammer 500gm	1 No	
11.	Flat chiesal	1No	
12.	Soldering iron 60 watt	1No	
13.	Combination plier	1No	
14.	Allen key 2 to 16mm	1 set	
15.	Flat file 10"	1 No	

7 TOOLS TO BE KEPT IN PSI DEPOT

S. No	Description of Tool	Reqd. Qty.	Remarks
1.	Portable electric grinder	1No	
2.	Portable hand drilling machine	1No	
3.	Motor operated megger	2No Each	For detail refer page no. 53
4.	Insulation tester 500 V	2 No	
5.	Pulling and lifting machine 3tonne, 1.5 tonne	2 No Each	
6.	D shackles 1", 5/8", 3/4"	6No	
7.	Chain pulley block 3 tonne, 1.5 tonne capacity	3 No	
8.	Pulling and lifting machine 5 tonne	1 No	
9.	1/2" Socket set containing 19 socket with 6 attachment	2 Set	
10.	Screw driver 6",8",10"	4 NoEach	
11.	Earth tester	2No	
12.	Auto ranging Digital Multimeter	2No	For detail refer page no. 58
13.	Crimping tool up to 16mm ² size	2 No	
14.	Auto transformer 2A capacity	1No	
15.	Oil testing kit	1No	

S. No	Description of Tool	Reqd. Qty.	Remarks
16.	Digital Clamp meter	2No	For detail refer page no. 61
17.	Hydrometer	4No	
18.	Pulley single sleeve 3 ton	2 No	
19.	Pipe wrench 8", 12"	1 No Each	
20.	Contact less thermo meter	4 No	
21.	Adjustable spanner 8", 12"	1 No	
22.	Ring spanner (6 - 41)	1set	
23.	DE spanner (6- 41)	1 set	
24.	Single sleeve pulley block 3½ x ½" groove steel	3No	
25.	Double sleeve pulley block 3½ x ½" groove steel	3 No	
26.	Desoldering iron	1 No	For detail refer page no. 68
27.	Soldering iron 60 W	1 No	
28.	Wire stripping pliers	1 No	For detail refer page no. 47
29.	Earthing discharge rod	10 No	
30.	D.O. operating rod	4 No	
31.	Line tester	2 No	
32.	Torque Wrench	1No	
33.	Micro ohm meter	1 No	

S. No	Description of Tool	Reqd. Qty.	Remarks
34.	Electronic timer	1 No	
35.	Acidity test kit	1 No	
36.	Circclip plier	1 No	
37.	Capacitance meter	1 No	
38.	Hydraulic crimping machine up to 300mm ²	1 No	
39.	SF6 gas detector	1 No	
40.	Distilled water plant	1 NO	
41.	Aluminium extension ladder 11m	2 No	
42.	Step ladder	1 No	
43.	Manila rope 15, 25mm dia	20 m Each	
44.	Nylon rope 15, 25, 40mm dia	20 m Each	
45.	Digital spirit level	1 No	For detail refer page no. 37
46.	Hot air gun/ Hot air blower	1 No	For detail refer page no. 43
47.	All purpose saw	1 No	For detail refer page no. 45
48.	Wire stripping plier	1 No	For detail refer page no. 47

S. No	Description of Tool	Reqd. Qty.	Remarks
49.	Digital vernier caliper	1 No	For detail refer page no. 49
50.	Digital micrometer	1 No	For detail refer page no. 51
51.	Infra red heat tracer	1 No	For detail refer page no. 56
52.	Blower/ Dust extractor	1 No	For detail refer page no. 66
53.	Multi purpose portable power drill machine	1No	For detail refer page no. 41
54.	Round cable and wire cutter	1 No	For detail refer page no. 64

8. TOOLS TO BE KEPT IN CENTRAL REPAIR SHOP (PSI)

S. No.	Description of tools	Reqd Qty	Remarks
1.	Auto transformer 2,8 Amp capacity	1No each	
2.	Auto ranging digital multimeter	2No	For detail refer page no. 58
3.	Spray painting machine	1No	
4.	A.C. voltmeter	2No	
5.	Insulation tester 500 V,250V	2 No	
6.	Motor operated megger	1 No each	For detail refer page no. 53
7.	Oil testing kit	1 No	
8.	Hydraulic jack 50 ton cap	6Nos	
9.	Portable clip on tester (0-5/25A), (0-150V/300V/600 V)	1No	
10.	Drill machine	1No	
11.	Electric bench grinder double end pedestal	1No	
12.	Criming tool upto 16mm ² size	2 No	
13.	Portable electric grinder	1 No	
14.	Screw driver 6", 8", 12"	6No	
15.	DE spanner 6 - 32	2set	
16.	Ring spanner 6- 32	2set	
17.	Cutting pliers 6", 8", 12",	6No	
18.	Nose pliers 6"	5No	
19.	Combination pliers	2No	

S. No.	Description of tools	Reqd Qty	Remarks
20.	Allen key 2 - 16 mm	1set	
21.	Grease gun	2No	
22.	Digital thermometers 0 - 100°C	2No	
23.	Crow bar	4No	
24.	Chain pully block 5 to 10 tonne capacity	2No	
25.	Pulling and lifting machine 1½ , 3 , 5 tonne	2 No	
26.	Ammeter	2 No	
27.	Voltmeter	2 No	
28.	Hydrometer	4 No	
29.	1/2" square drive Socket set containing 19 socket with 6 attachment	2 No	
30.	Barrel pump	2 No	
31.	Multi purpose portable power drilling machine	1 No	For detail refer page no. 41
32.	Vacuum pump	1No	
33.	Electric welding machine	1No	
34.	Blow lamp	1No	
35.	Bolt cutter 12", 36"	1No	
36.	Spirit level 6"	1No	
37.	Steel Tape (3m, 5m, 15m)	2No	
38.	Sludge hammer 1kg, 5kg	2 No each	
39.	Hacksaw frame	2 No	

S. No.	Description of tools	Reqd Qty	Remarks
40.	Soldering Iron (60 W)	1No	
41.	De-soldering iron	1No	For detail refer page no. 68
42.	Rope pulley with 3 sleeves 3 ton	2No	
43.	Rope pulley with 2 sleeves 1.5 ton	2No	
44.	Rope pulley with 2 sleeves 5ton	1No	
45.	Flat file	1No	
46.	Round file	1No	
47.	Triangular file	1No	
48.	Half round file	1No	
49.	Flat Chiesel 10"	1No	
50.	Pin punch	2No	
51.	Centre punch	2No	
52.	Blower/ dust extractor	1No	For detail refer page no. 66
53.	Hot air gun / Hot air blower	1No	For detail refer page no. 43
54.	Load cell tester	2No	
55.	Earthing discharge rod	4No	
56.	D.O. operating rod	4No	
57.	Digital Micrometer	2No	For detail refer page no. 51
58.	Digital Vernier caliper	2No	For detail refer page no. 49
59.	Line tester	2No	

S. No.	Description of tools	Reqd Qty	Remarks
60.	Adjustable spanner 8"	2No	
61.	Pipe wrench	2No	
62.	Inner circlip pliers straight nose	1No	
63.	Inner circlip pliers bent nose	1No	
64.	Torque Wrench	1No	
65.	Wire stripping plier	2 No	For detail refer page no. 47
66.	Transformer oil filtration machine 3000 (LPH) capacity	1 No	
67.	Primary injection kit	1 No	
68.	Secondary injection kit	1 No	
69.	Hydraulic crimping machine upto 300 mm ²	1 No	
70.	Infra red heat tracer	1 No	For detail refer page no. 56
71.	Round cable and wire cutter	1 No.	For detail refer page no. 64

ANNEXURE

Details of Modern Tools

1. PORTABLE TREE CUTTING MACHINE



Name of Tool	:	Portable Power Driven Tree Cutting Machine (Chain Saw)
Application	:	Trimming of tree branches
I. Make	:	M/s ECHO
Model	:	ECO - 3050
Budgetary Cost	:	Rs.18500/

Specification :

Dimension	L x W x H	380 x 230 x 245 mm
Weight	Power head, dry	3.3 kg
Engine	Type	Air cooled two stroke single cylinder
	Displacement	30.1 cc
	Carburetor	Diaphragm type
	Magneto	Flywheel magneto. CDI (Capacitor Discharge Ignition) system
	Spark plug	NGK BPM 7A
	Starter	Recoil starter
	Power transmission	Automatic centrifugal clutch
	Handles	Conventional handle
Fuel	Mixture Ratio	Regular grade gasoline 25 parts :ECHO brand motor oil 1 part (4%) (or an air cooled 2 cycle engine oil of a reputable brand name)
	Tank capacity	0.25 litre
Chain oil	Tank capacity	Motor oil 0.15 litre
Guide bar and chain	Lubrication	Automatic
	Chain pitch	3/8
	Gauge	.050 in
	Guide bar length	30 cm
Other devices		Throttle control lockout. Chain catcher Chain brake

Sources of Supply : Marketed by :
M/s Paramount Tools
Company
5, Narayan Dhurv/Cross land,
P.O.Box.No.3402, Mumbai-3.

II. Make : M/s Oleo-MAC/ Itali

Model : E-1700/160F-931

Budgetary Cost : Rs.22000/-

Specification :

Displacement cc	30.1 cc
Power	1.5 K Watt
Fuel	4% mixture of petrol & 2T Oil
Fuel Tank Capacity	0.22 Litre
Chain Oil Tank	0.13 Litre
Weight	3.4 kg

Sources of Supplier : Marketed by :
M/s S.S.Tools (India) Pvt.
Ltd.
234, IInd Floor, Ajmeri Gate,
Delhi - 110 006.

III. Make : M/s Mc-CULLOCH

Model : MS-1435

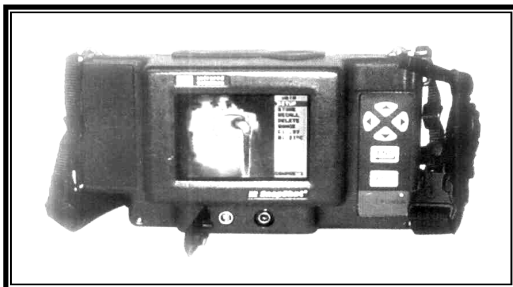
Budgetary Cost : Rs.25000/

Specification :

Engine Displacement	2.1 cu. inch
Bar Length	14 inch
Chain pitch	35 cm
Chain gauge	1.3 mm
Ideal speed RPM	2800 - 3300
Fuel Capacity	10.0 OZ
Net Weight	4.7 kg

Sources of Supplier : Marketed by :
M/s S.S.Tools (India) Pvt.
Ltd.
234, IInd Floor, Ajmeri Gate,
Delhi - 110 006.

2. INFRA RED CAMERA



Name : Infra Red Camera

Application : Detection of hot spots in OHE and power supply installations

The Infrared Solutions IR SnapShot[®] camera is a precision portable uncooled infrared imaging radiometer based on the Honeywell thermoelectric (TE) sensor. The thermoelectric sensor is inherently radiometric and exhibits excellent dynamic range. Accurate temperature measurement makes it suitable for applications such as predictive and preventive maintenance.

Specification :

Detector	Preferably uncooled focal plane array, 50 μm square pixels.
Temperature range	0 to 350 degree C or higher
Field of view	Min. 15 degree horizontal Min 15 degree vertical
Focus	10" to infinity
Spectral Band	Min. 8 μm to 12 μm
Video Update	30 Hz, real time or higher
Emissivity setting	user selectable from 0.1 to 1.0
Accuracy	\pm 2% of reading or better
Gain	Auto or manual
Display	Not less than 100 mm active matrix color LCD with high luminance
Video output	Selectable NTSC/PAL
Image storage	Minimum 300 images
power input	230 Volts, 50 Hz, AC and/or Battery
Battery Operating time	More then 4 hours
communication	RS-232
Image analysis & Report generation software	Windows compatible
Operating functions	Menu operated
Weight	less than 3 kgs.
Operating temperature	0 to 50 degree C
Operating Humidity	0 to 100%
Accessories	3 nos. battery, AC power adopter PCMCIA card-5 nos., battery charger, carrying case and user manual.

- Make** : M/s Infra red solution/ IR Snap Shot
- Budgetary Cost** : Rs.9,98,000/-
- Source of Supply** :
1. M/s PCI Limited, 19, Rajender park, New-Delhi -60
(They are representing M/s FLIR, USA)
 2. M/s United Technology, 6 Sisodia building, Hind Samachar Stree, Jalandhar - 1
(They are representing M/s Infrared Solutions INC)

3. PORTABLE POWER ROCK DRILLING MACHINE



Name : Portable power rock drilling machine
(Rotary Hammer)

Application : To make holes in rocks for erection of
emergency mast

Specification :

Drilling Ø in concrete with SDS-max bits	12-52 mm
SDS-max core cutter in masonry/breakthrough drill bits	40-150 mm/45-80 mm
Recommended drilling range	30-52 mm

Drilling performance in concrete of medium hardness (30 mm Ø)	approx. 400 cm ³ /min or approx. 320 mm/min
Chiselling performance in concrete of medium hardness (flat chisel)	approx. 225 kg/h.
Torque at drill bit	approx. 200 Nm.
Power input	1500 W
Power output	920 W
Rated speed	120-250 rpm
Impact rate at rated speed	1100-2250 rpm
Single impact rate	5-18 J
Weight	approx. 11.1 kg.

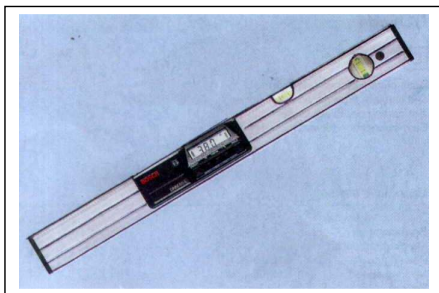
Make : M/s BOSCH

Model : GBH-11 DE

Budgetary Cost : Rs. 71,000/-

Source of Supply : M/s BOSCH Motor Industries
Co. LTD., Power tool division,
Hosur Road, Adugodi,
Bangalore - 560030

4. DIGITAL SPIRIT LEVEL



Name : Digital Spirit Level

Application : Checking of alignment of section insulator assembly, checking of contact wire level at overlaps and other applications which require accurate level.

Make : M/s BOSCH

Model : DNM 60L

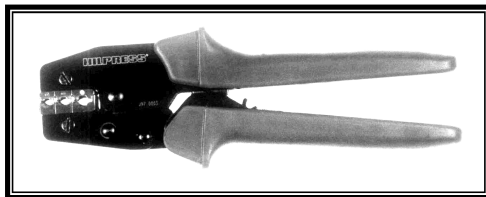
Specification :

Length	600mm
Measuring Accuracy at 0°/ 90°	max. $\pm 0, 05^\circ$
Measuring Accuracy at 1°to 89°	max. $\pm 0, 2^\circ$
Battery	9V DC6 LR 61

Budgetary cost : Rs. 8650/-

Source of supply : M/s BOSCH
Motor Industries Co. Ltd.,
Power tool division,
Hosur road, Adugodi,
Bangalore - 560030

5. CRIMPING TOOL



Name	:	Crimping Tool
Application	:	Crimping of lugs.
I. Make	:	M/s JAINSON
Model	:	SMART 16
Crimping range	:	0.5 - 16 mm ²
Budgetary cost	:	550/
Source of supply	:	M/s Jainson Pvt. Ltd. Shree Gadia Engg. Works, Mumbai - 400068
II. Make	:	M/s DOWELLS
Model	:	SYT-2
Crimping range	:	1.5 - 16 mm ²

	Budgetary cost	:	Rs.700/-
	Source of supply	:	M/s Dowells Pvt. Ltd. Satguru Estate, Ist Floor, Goregaon(E), Mumbai-400063
III.	Make	:	M/s HIL PRESH
	Model	:	11731
	Crimping range	:	0.5 - 1.5mm ² 1.5 - 2.5mm ² 4.0 - 6.0mm ²
	Budgetary cost	:	6,500/-
	Source of supply	:	Sold and serviced by M/s Sumitron exports Pvt. Ltd. P.O. Box 10227, Naraina Phase - I, New Delhi - 110 028

6. MULTI PURPOSE PORTABLE POWER DRILL MACHINE



- Name** : Multi purpose portable power drill machine
- Application** : Drilling of holes in metal, concrete and wood.
- I. Make** : M/s BOSCH
- Model** : GBM 10

Specifications :

Power input	400 W
Impact rate	44800 / min.
R.P.M.	2200/2800 RPM
Weight	1.4 Kg
Battery backup in min.	NA
Volt/amp./watts	230V
Dia. in concrete	10 MM
Dia. in metal	8 MM
Dia. in wood	20 MM

Budgetary cost : Rs. 3885/-

Source of supply : M/s BOSCH
Motor Industries Co. Ltd.,
Power tool division,
Hosur road, Adugodi,
BANGALORE - 560030

II. Make : M/s KPT

Model : PR 110

Specifications :

Power input	400 W
R.P.M.	2800 RPM
Weight	1.4 Kg
Volt	230V
Dia. in concrete	10 MM
Dia. in metal	10 MM
Dia. in wood	25 MM

Budgetary cost : Rs. 3200/-

Source of supply : M/s KPT Sales and Service
Ltd_309, Vasant Vihar
Commercial Complex,
Dr. C.Gidwani Road,
Chembur, Mumbai – 400074,
Maharashtra (India)

7. HOT AIR GUN/ HOT AIR BLOWER



Name : Hot Air Gun/Hot Air Blower

Application : Drying of moisture of silica jel, drying of varnish of motors coil, drying of moisture of control panels, relays CTs, PTs etc.

I. Make : M/s BOSCH

Model No : GHG 600 CE

Specifications :

Rated power consumption	2000 W
Temperature range	100-600 ⁰ C
Air flow rate	350-550 Lit/min
Stepless temp. control	Yes
Airflow regulation	2 stage
Weight	0.7 Kgs.

Budgetary cost : Rs. 4250/-

Source of supply : M/s BOSCH
Motor Industries Co. Ltd.,
Power tool division,
Hosur road, Adugodi,
BANGALORE - 560030

II. Make : M/s KPT

Model No : KHG

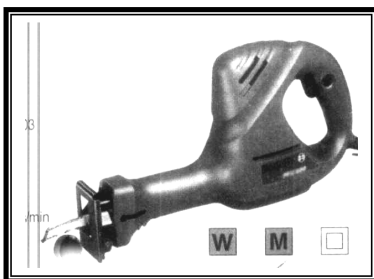
Specifications :

Rated power consumption	2000 W
Temperature range	480-600 ⁰ C
Air flow rate	250-380 Lit/min
Weight	0.9 Kgs.

Budgetary cost : Rs. 2845/-

Source of supply : M/s KPT Sales and Service
Ltd.,
309, Vasant Vihar
Commercial Complex,
Dr. C.Gidwani Road,
Chembur, Mumbai – 400074,
Maharashtra (India)

8. ALL PURPOSE SAW



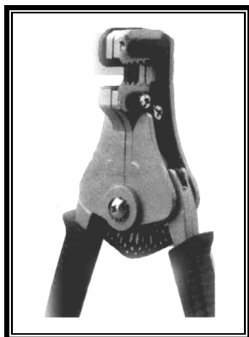
- Name** : All Purpose Saw
- Application** : Cutting work of sheet metal, iron angles, pipes etc.
- I. Make** : M/s BOSCH
- Model No.** : PFZ 600
- Specifications** :

Saw in wood	130 MM
Saw in steel	20 MM
Power input	600 W
No load stroke rate	2600 stroke/min.
Saw stroke length	28 MM
Weight	3.1 Kg.

Budgetary cost : Rs. 10,000/-

Source of supply : M/s BOSCH
Motor Industries Co. Ltd.,
Power tool division,
Hosur road, Adugodi,
BANGALORE - 560030

9. WIRE STRIPPING PLIER

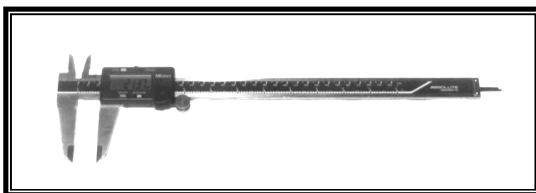


Name	:	Stripping Plier
Application	:	Removing of wire insulation for termination.
I. Make	:	M/s AVEN
Model	:	10.105
Size	:	Strips wire up to 7/8".
Features	:	Automatic feature holds jaws open to remove wire without crushing ends. Practically eliminates all nicking, cutting, or fraying. Strips teflon,

silicon and PVC wire. Made of aluminium with plastic molded handles.

Budgetary cost	:	Rs.900/-
Source of supply	:	Sold and serviced by M/s Sumitron Exports Pvt. Ltd. P.O. Box 10227, Naraina Phase I, New Delhi - 110 028
II. Make	:	JAINSON
Size	:	Stripping upto 4mm ²
Budgetary cost	:	Rs. 200/-
Source of supply	:	M/s Jainson Pvt. Ltd. Shree Gadia Engg. Works Mumbai - 400068

10. DIGITAL VERNIER CALIPERS



Name : Digital Vernier Calipers

Application : Measurement of depths, gaps, thickness, outside and inside diameters etc.

Make : M/s Mitutoyo/ Japan

Model : 500-197

Specification :

Measuring range	0 - 200 mm
Resolution	0.01 mm
Instrumental error	± 0.03 mm or $\pm .0015''/+0.03$ mm
Repeatability	0.01 mm or .0005''/0.01 mm
Maximum response speed	Not particularly provided (No counting error due to scale speed)
Power supply	SR44 (silver oxide cell, 1 pc
Battery life	3.5 years under normal use
Operation temperature	0 ⁰ C to 40 ⁰ C
Storage temperature	-10 ⁰ C to 60 ⁰ C

Budgetary Cost : Rs. 7700/-

Source of supply : Marketed by
M/s Industrial Consultants & Traders
B-345, Nehru Ground,
Opposite, PNB, Faridabad
(Generally available in local
market also)

II. Make : M/s General

Model : 400 PR 209

Description : Measuring range, 0-150 mm.
Outside, inside & depth measurement. Read
out on the high contrast LCD display.
Floating zero checks deviation from
reference size. True inch/ metric conversion
without re-zeroing. Switching inch/metric
selector with resolution to .0005 inch or
.01mm.

Budgetary Cost : Rs. 10,000/-

Source of supply : Marketed by
M/s Sumitron Exports Pvt. Ltd.
P.O. 10227 Naraina,
New Delhi 110 028

11. DIGITAL MICROMETER



Name : Digital Micrometer

Application : Measurement of contact wire diameter, conductor thickness etc.

I. Make : M/s Mitutoyo/ Japan

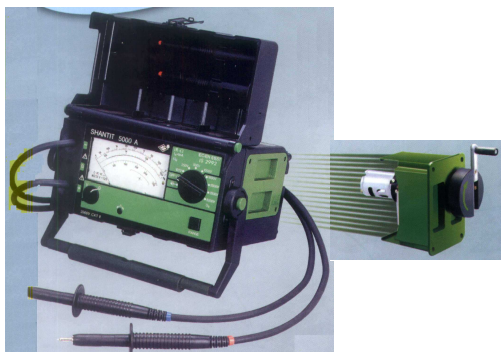
Model : 293-811

Specification :

Measuring range	0 - 25 mm
Instrumental error (20°C)	± (L/75)
Resolution	0.001 mm (.0005")
Quantizing error	± 1 count
Measuring force	5 to 10N
Display	LCD (6 digits and a minus sign)
Power Supply	SR44x1
Battery life	1.2 years
Operation temperature	5 ⁰ C to 40 ⁰ C
Storage temperature	-10 ⁰ C to 60 ⁰ C

- Budgetary Cost** : Rs. 5500/-
- Source of supply** : M/s Industrial Consultants & Traders
B-345, Nehru Ground,
Opp., PNB, Faridabad
- II. Make** : M/s Central
- Model** : 66-811
- Description** : Measure diameter
and thickness between 0 - 1 inch
(0-25 mm) with 0.0001 inch
(0.001 mm) resolution. Ratchet
spindle clicks when contact
pressure is correct or measuring
- Budgetary Cost** : Rs. 7000/-
- Source of supply** : Marketed by
M/s Sumitron Export Pvt. Ltd.
P.O. 10227, Naraina,
New Delhi - 110028

12. MOTOR OPERATED MEGGAR



Name : Motor Operated Meggar
Application : Insulation measurement of cables, motors, transformers etc.

I. Make : M/s Shanti Electronic
Model : 5000 AK

Specification :

Selectable Voltage Range	100/250/500/1000/1500/ 2000/2500/5000 V
Measuring Range	10 K Ω - 1 T Ω
Supply Voltage	6 x 1.5 V
Voltage measurement	2000 V (AC or DC)
Dimension	290x250x140mm
Weight	3.4 kg

Budgetary Cost : Rs.27000/-

Source of Supply : M/s Shanti Electronic Instrument
A 54, MIDC, Andheri East
Mumbai - 400 093

II. Make : M/s Motwane

Model : B50K

Specification :

Resistance indicating device	Analog Moving coil meter
Scale length	89 mm
Effective Range of measurement	0 - 50 GΩ and ∞
First effective range	50 MΩ to 5 GΩ
Second effective range	5 GΩ to 50 GΩ
Accuracy - <ul style="list-style-type: none"> • First effective range • Second effective range • Max. deviation of pointer from any marked position • Zero and infinity marks 	<ul style="list-style-type: none"> ± 5% of reading ± 10% of reading <± 1mm ± 0.7 % of scale length
Terminal voltage (DC) <ul style="list-style-type: none"> • Rated terminal voltage • Accuracy 	2500 V and 5000 V <± 10% at infinity scale mark. More than 90% at centre scale mark.

Comment [Ca1]:

Budgetary Cost : Rs.24000/-

Source of Supply : M/s Motwane Mfg. Co. Ltd.
Gyan Baug, Nasik Road- 422 101
Maharashtra

13.. INFRARED HEAT TRACER



Name : Infra Red Heat Tracer
Application : Measurement of temperature of joints, connectors and electrical equipment etc.

I. Make : M/s Raytek
Model : Raynger ST 60 ProPlus

Specification :

Battery operated non contact thermometer suitable to read -32 to 600° C with circular laser beam and LED display.

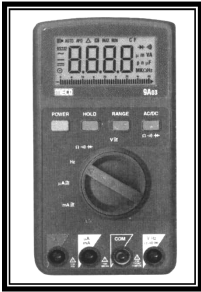
Temperature range	-32-600° C (-25-1100°F)
Repeatability	$\leq \pm 0.5 \%$ or $\leq \pm 1^{\circ}\text{C}$ ($\pm 2^{\circ}\text{F}$), whichever is greater
Response time	≤ 0.5 Sec, 95% response
Ambient operating range	0 to 50 °C
Power	9 v Alkaline or Ni Cd Battery

Weight	320 gms.
Distance to spot	30 : 1
Laser Sighting	Offset 8 Point circular
Data logging	12 point
Display resolution	0.1 °C/ F

Budgetary Cost : Rs. 22000/-

Source of Supply : Marketed by
M/s Electronics Instrument
Company 2nd Floor,
62- Prashant Building,
Janmbhumi Marg,
Fort, Mumbai 400 001

14. AUTO RANGING DIGITAL MULTIMETERS



Name : Auto Ranging Digital Multimeter
Application : Measurement of voltage, current resistance, checking of continuity

I. Make : M/s MECO
Model : 9A₀₂

Specification :

Display	Auto/ Manual ranging, 3 ^{3/4} Digit 3400 count LCD with Analog bargraph
DC Voltage	340mV/3.4/34/340/1000V ± (0.5%rdg + 4 dgt) on 340mV/ 3.4V ± (0.7%rdg + 4 dgt) on 34/340V ± (1.0%rdg + 4 dgt) on 1000V
AC Voltage	3.4/34/340/750V ± (1.0%rdg + 8 dgt) on all ranges except ± (1.5%rdg + 8 dgt) on 750V

DC Current	340 μ A/3.4/34/340mA/3.4/20A \pm (1.5%rdg + 8 dgt)
AC Current	340 μ A/3.4/34/340mA/3.4/20A \pm (2.2%rdg + 4 dgt)
Resistance	340 Ω /3.4/34/340k Ω /3.4/34M Ω \pm (0.7%rdg + 4 dgt) on all ranges except \pm (1.2rdg + 4 dgt) on 3.4M Ω \pm (2.5%rdg + 4 dgt) on 34M Ω
Diode	Yes
Continuity Buzzer	Yes
Full Icon Display	Yes
Auto power off/ Steep mode	Yes
Low battery display	"BATT" is indicated
Input impedance (Voltage)	10 M Ω
Power	One 9V battery
Battery life	200 hours typical
LCD digit size	17 mm

Budgetary Cost : Rs. 18,00/-

Source of supply : M/s. MECO Instruments Pvt.Ltd.
P.O. Box 6388, 301
Bharat Industrial Estate
TJ road, Sewree (West),
Mumbai - 400 015

II. Make : M/s Motwane

Model : DM 3750

Specification :

DC Voltage	400mV - 1000V
AC Voltage	400mV - 750V
Resistance	400 Ω -40 M Ω
ACA/DCA	40 μ A to 10 A
Frequency	4 KHz to 4 MHz
Capacitance	4 nF to 400 μ F
Diode and continuity check	Yes

Budgetary Cost : Rs. 2800/-

Source of supply : M/s Modwane Mfg.Co.Pvt.Ltd.
Gyan Baug, Nasik Road-422101
Maharashtra

15. DIGITAL CLAMPMETERS



Name : Digital Clamp meter

Application : On line measurement of current, voltage, resistance, frequency

Make : M/s MECO

Model : 2250F

Specification :

AC Current	20A, 200A, 1000 A
Accuracy	$\pm (2\% \text{rdg} + 4 \text{dgt})$ on 200/1000A $\pm (3\% \text{rdg} + 4 \text{dgt})$ on 20A
Over load	1000 A AC max. for 1 min.
AC Voltage	200v, 750V (50-500 Hz)
Accuracy	$\pm (1.2\% \text{rdg} + 4 \text{dgt})$ on 200V $\pm (1.5\% \text{rdg} + 4 \text{dgt})$ on 750V

DC Voltage	2V(in 2250 only), 200V, 1000V
Accuracy	$\pm (0.5\% \text{rdg} + 1 \text{ dgt})$ on all ranges
Resistance	200 Ω , 200K Ω
Frequency	10 Hz - 34 MHz ($\pm 1\% \text{rdg} + 2 \text{ dgt}$)
Accuracy	$\pm (1\% \text{rdg} + 1 \text{ dgt})$ on all ranges in 2250 and $\pm (1.5\% \text{rdg} + 3 \text{ dgt})$ on all ranges in 2250F
Audible continuity diode test function power	One 9 V battery
Battery life	200 hours typical
Low battery	"BATT" is indicated in 2250
Dimension	250(H)x98(W)x35(D)mm
Weight	400 gms approx.
Accuracy	Supplied with a pair of test leads, carrying case, battery and instruction manual
Jaw opening	55mm max.

Budgetary Cost : Rs. 2,000/-

Source of supply : M/s MECO Instruments Pvt. Ltd.
P.O. Box 6388, 301
Bharat Industrial Estate
TJ road, Sewree (West),
Mumbai - 400 015

II. Make : M/s Motwane

Model : DCM 30A

Specification :

Jaw size	50 mm
AC Current	20 A, 200 A, 1000A
DC Voltage	200V, 1000 V
AC Voltage	200 V, 700 V
Frequency	2KHz to 20 MHz
Resistance	2 K Ω to 20 M Ω
Diode continuity check	Yes

Budgetary Cost : Rs. 2600/-

Source of supply : M/s Motwane Mfg.Co. Pvt.Ltd
Gyan Baug, Nasik Road-422101
Maharashtra

16. ROUND CABLE AND WIRE CUTTER

Name : Round Cable and Wire Cutter

Application : Cutting of cables, wires

I. Make : M/s JAINSON

Size : Cut round cable and wire cutter to multi conductor cable Up to 10 mm²

Budgetary cost : Rs.200/-

Source of supply : M/s Jainson Pvt. Ltd.
Shree Gadia Engg. Works
Mumbai-400068

II. Make : M/s AVEN

Model : 10.102

Size : - Cut round cable and wire cutter to multi conductor cable up to 12.7mm
- Cut solid or stranded wire up to 10mmsq.

Budgetary cost : Rs.500/-

Source of supply : Marketed by
M/s Sumitron Export Pvt.
Ltd.
P.O. Box 10227, Naraina
New Delhi - 110 028

III. Make/ Model : M/s HILPRESS

Model : 11800

Size : Cut round cable and wire cutter to multi conductor cable up to 16mm²
Weight 0.12 kg
Length 160 mm

Budgetary cost : Rs.550/-

Source of supply : Marketed by
M/s Sumitron Export Pvt. Ltd.
P.O. Box 10227, Naraina
New Delhi - 110 028

17. BLOWER/DUST EXTRACTOR



Name : BLOWER/DUST EXTRACTOR
APPLICATION : Blowing of dust from equipment.

I. Make : M/s BOSCH

Model No : GBL 550

Specifications :

Power input	550 W
Pressure	800 mm Aq
Air volume	2.7 M ³ /Min.
Weight	1.7 Kgs.

Budgetary cost : Rs. 3,500/-

Source of supply : M/s BOSCH
 Motor Industries Co. Ltd.,
 Power tool division,
 Hosur road, Adugodi,
 BANGALORE - 560030

II. Make : M/s KPT

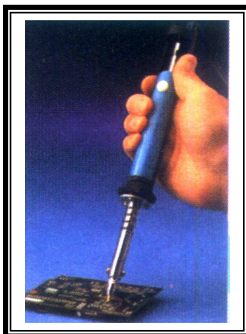
Model No : KB-20

Specifications :

Power input	360 W
Air volume	2.3 M ³ /Min.
No load speed	13000 rpm
Net weight	1.6 kg
Overall length	428 mm

Budgetary cost : Rs. 2,780/-

Source of supply : KPT Sales and Service Ltd,
309, Vasant Vihar
Commercial Complex,
Dr. C.Gidwani Road,
Chembur, Mumbai – 400074,
Maharashtra (India)

18. DE- SOLDERING IRON

Name : De-Soldering Iron

Applications : Removal of solder joint

I. Make : M/s AVEN

Model : 17.522-220

Description :

Rugged, manual loading tool for volume de-soldering. High vacuum heavy-duty plastic, fully enclosed shaft for safety. Plunger locks for compact storage.

Budgetary cost : Rs.2000/-

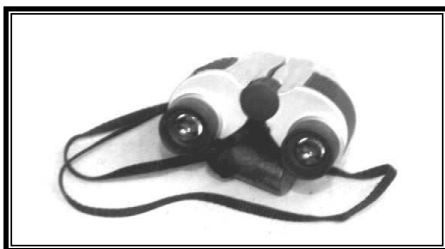
Source of Supply : Marketed by

M/s Sumitron Exports Pvt. Ltd.

P.O. Box - 10227, Naraina

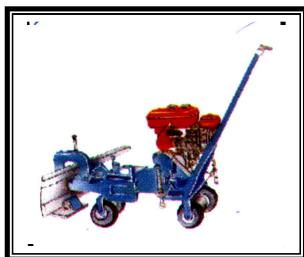
Phase - I, New Delhi - 110 028

19. BINOCULAR



Name	:	Binocular
Application	:	Inspection of overhead lines, insulators, and OHE gantry.
I. Make	:	M/s Samsung
Model	:	B-8 x 25N
Description	:	Binocular having magnifying power of 10 times Lens diameter, 25mm adjustable focusing
Budgetary cost	:	Rs. 5,000/-
Source of supply	:	Authorised dealers of M/s. Samsung.

20. RAIL HOLE DRILLING MACHINE



Name : Rail Hole Drilling Machine

Application : Drilling of holes in rail for fixing bonds.

I. Make : M/s BOSCH

Model : GBM 23-2

Description : Drilling machine Model GBM 23-2 along with suitable track drilling stand. Drilling range up to 30 mm dia. in steel.

Budgetary Cost : Rs. 35,000/-

Source of Supply : M/s BOSCH
Motor Industries Co. Ltd.
Power Tool Division
Hosur Road, Adugodi
Bangalore - 560 030

II. Make : M/s. HONDA

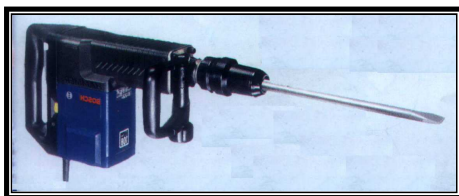
Specification :

Engine Model	GK 200
Rated HP	3 HP/ 3600 rpm.
Maximum Torch	0.8 kgm per 2500 rpm
Fuel	Petrol start/ Kerosene run
Dry weight	18 kg
Fuel tank capacity	3.9 litre K-oil, 0.4 petrol
Starting	Re-coil start
Drilling Range	Up to 32 mm dia. in steel
Attachment	i. Movable trolley ii. Track drilling stand

Budgetary Cost : Rs. 32,000/-

Source of Supply : M/s Primco
Electric and Machinery Co.
48, Shardhanand Marg,
(GB road) Delhi - 110006

21. DEMOLITION HAMMER



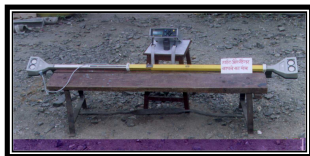
Name : Demolition Hammer
Application : Breaking of foundation for reclamation of OHE mast.

I. Make : M/s BOSCH
Model : GSH 11A
Specification :

Power input	1500 W
No load impact rate	900 - 1890 (strokes/minute)
Impact force	6 - 25 J
Weight	10.1 kg

Budgetary Cost : Rs.70,700/-
Source of Supply : M/s BOSCH
 Motor Industries Co. Ltd.
 Power Tool Division
 Hosur Road, Adugodi
 Bangalore - 560 030

22. RAIL ROD EQUIPMENT



Name : Rail Rod Equipment

Application : Measurement of height of contact wire and stragger.

I. Make : M/s CSS Ltd, Ireland

Model : TOC Ver. 3.8

Description :

Rail Rod equipment for 1.675 M Track Gauge, variable 1 M to 1.9 M along with battery charger high speed 1 hour recharge, connecting cable, full software disc, full integrated stand off fitted with rail rod, micro controller version 3.8 and display unit.

Budgetary cost : Rs. 3,65,000/-

Source of supply : Marketed by,
M/s Sam International Pvt. Ltd.
158/160, Narayan Dhuru Street
3rd Floor, Mumbai - 400 003.

OUR OBJECTIVE

To upgrade maintenance technologies and methodologies and achieve improvement in productivity, performance of all Railway assets and manpower which inter-alia would cover reliability, availability, utilisation and efficiency.

If you have any suggestions and any specific Comments please write to us.

Contact person : Director (Elect.)

**Postal address : Indian Railways,
Centre for Advanced
Maintenance Technology,
Maharajpur, Gwalior.
Pin code - 474 020**

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0751- 470803**

Fax : 0751- 470841