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22488-0220

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ELECTRIC TUBE ROLLER



OPERATING INSTRUCTIONS & SERVICE MANUAL

Rev: A, 8/20/2007

TO REDUCE THE RISK OF INJURY AND EQUIPMENT DAMAGE
USER MUST READ AND UNDERSTAND OPERATOR'S MANUAL.

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SAFETY INSTRUCTIONS



WARNING!

READ AND UNDERSTAND ALL INSTRUCTIONS

Failure to follow all instructions listed below, may result in accident, fire and/or personal injury.

SAVE THESE INSTRUCTIONS

1. **KNOW YOUR POWER TOOL.** Read this service manual carefully.
2. **GROUNDING INSTRUCTIONS.** This product is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.
3. **KEEP GUARDS IN PLACE** and in working order.
4. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.
5. **AVOID DANGEROUS ENVIRONMENT.** Keep work areas well lit.
6. **STORE IDLE TOOLS.** When not in use, tools should be stored in dry, high or locked-up place – out of reach of children.
7. **DON'T FORCE TOOLS.** It will do the job better and safer at the rate for which it was designed.
8. **USE RIGHT TOOLS.** Don't force small tool or attachment to do the job of a heavy-duty tool.
9. **WEAR PROPEL APPAREL.** No loose clothing or jewelry to get caught in moving parts. Rubber gloves and footwear are recommended when working outdoors.
10. **USE SAFETY GLASSES** with most tools. Also face or dust mask if cutting operation is dusty.
11. **DON'T ABUSE CORD.** Never carry tool by cord or yank it to disconnect from receptacle. Keep cord from heat, oil and sharp edges.
12. **SECURE WORK.** Use clamps or a vise to hold work. It's safer than using your hands to operate tool.
13. **DON'T OVERREACH.** Keep proper footing and balance at all times.
14. **MAINTAIN TOOL WITH CARE.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
15. **DISCONNECT TOOLS:** When not in use; before servicing; when changing accessories such as blades, bits, cutters, etc.
16. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking that keys and adjusting wrenches are removed from tool before turning it on.
17. **AVOID ACCIDENTAL STARTING.** Don't carry plugged-in tool with finger or switch.
18. Remove the plug from the socket before carrying out any adjustment, servicing or maintenance.
19. Do not use unit with combustible fluids or where combustible fluids or fumes may be present.

TECHNICAL DATA

Type of Current: ~ A.C. single phase

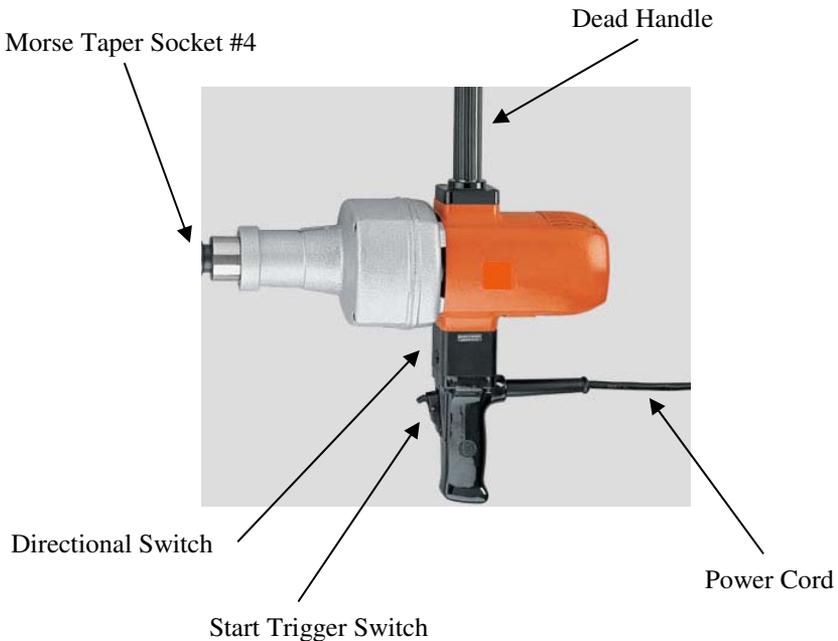
Double Insulated without earth wire. Double Insulated tools have a special double insulation system which satisfies OSHA requirements and complies with the applicable standards of Underwriters Laboratories, Inc.

OPERATION

Main voltage must correspond to the operating voltage marked on the rating plate. The tool can be plugged into plain or safety sockets.

Switch must be in the "OFF" position when connecting.

The change-over switch for right- and left-hand rotation, which is built in the handle switch, must not be operated, when the machine is running.



MAINTENANCE

Before carrying out any maintenance work always remember to pull out the plug.

Every 300 duty hours clean air openings on the motor housing. Blow out motor with dry pneumatic air and renew gear grease.

After 900 duty hours the machine should be completely dismantled and thoroughly cleaned. Rinse ball bearing and gears in clean solvent and pack with fresh grease.

The space between inner and outer ring is to be one third filled with grease in order that the bearings do not overheat.

Make sure that all the electric and plastic parts are only cleaned dry.

For good and adequate lubrication and to avoid overheating it is important to pack gearing and bearing with the grades and quantities of grease given.

Worn carbon brushes automatically switch off the machine after reaching their minimum length. Use only original carbon brushes.

After checking the carbon brushes make sure to refit them in their original position and check that they move easily in their holder. After fitting new brushes, run toll unloaded for about 15 minutes to allow brushes to bed in.

Check cable at regular intervals for cuts and wear.

DISASSEMBLY

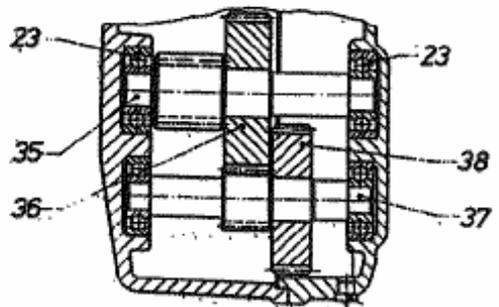
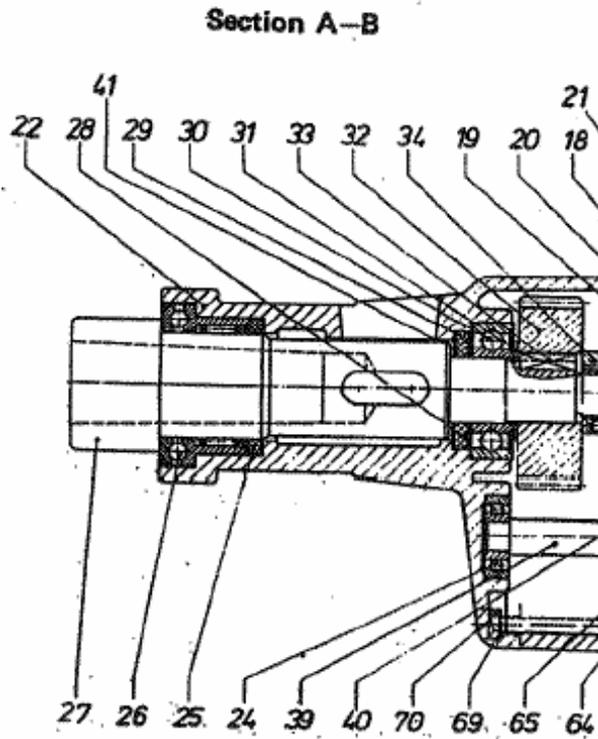
1. Take off motor housing cover (4) and carbon holder covers (9) and take out carbon brushes (8).
2. Take off handle cover (78). Loosen supply cable and inner connection cables. Take out switch and clamp off cable (85) together with protecting sleeve (83) from clamping bridge (81).
3. Remove lower handle (77), draw out change-over switch (86-90), from the housing (73), and loosen cable connection.
4. Unscrew four screws (70), take off outer bearing (22), unscrew screws (20) from intermediate bearing (18), then take off intermediate bearing with armature (13) from motor housing (1).
5. Draw pinions (35,37,39) out of outer bearing (22).
6. Unscrew hexagon nut (34), draw off spur wheel (32), take out fitting key (33), push out drill shaft (27).
7. Unscrew screws (68) from intermediate bearing, push out armature (13) with fan and ball bearing (62).
8. Only in case of damage take out insulator (6) together with pole housing (10), pull supply cable through lateral boring into the housing and unscrew hexagon socket screw (3).

Re-assemble in reverse sequence.

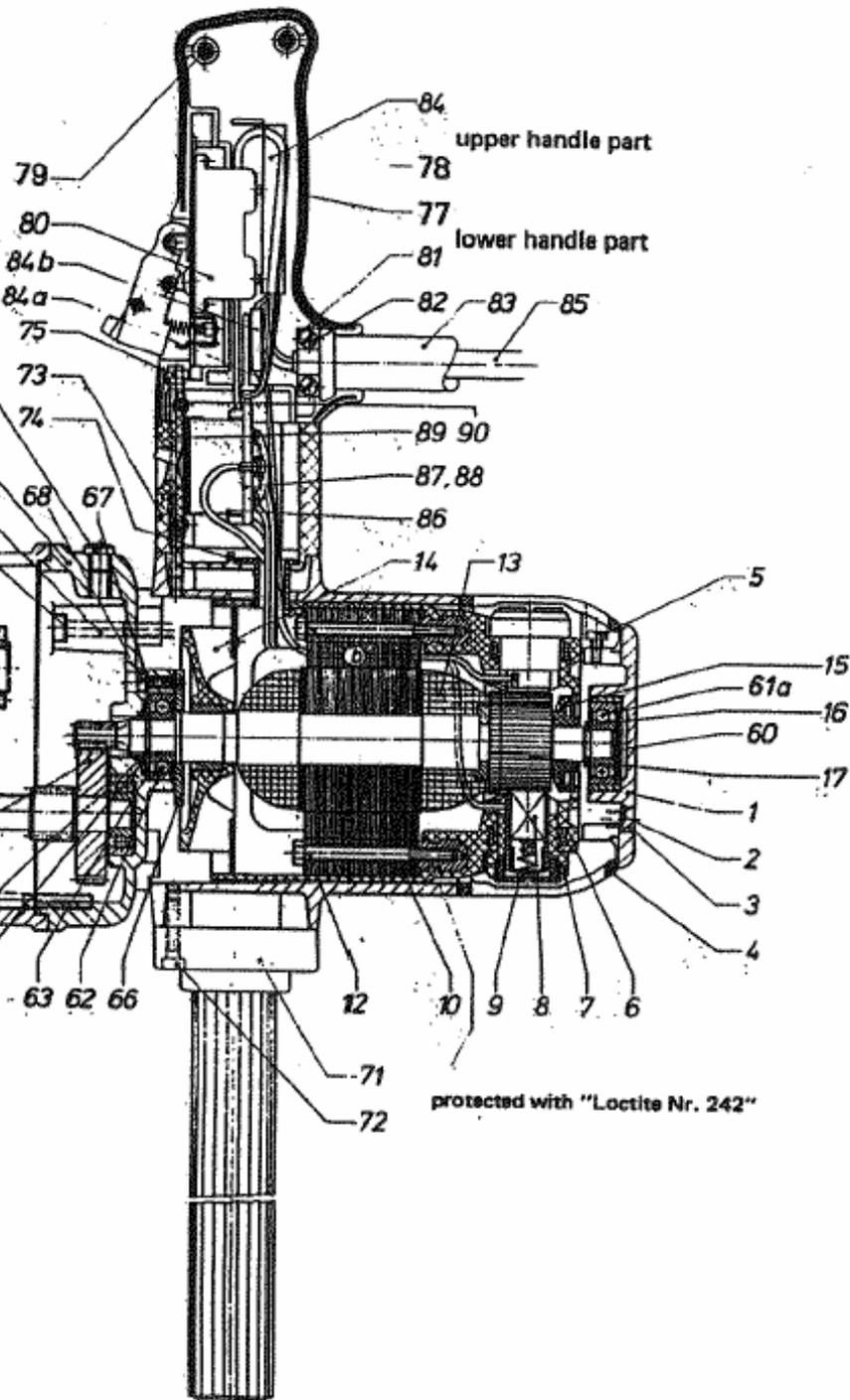
PARTS LIST - 22488 MODEL

NO.	PART NO.	DESCRIPTION	QTY.	NO.	PART NO.	DESCRIPTION	QTY.
1	22488-0001	Motor Housing	1	38	22488-0038	Spur Wheel, 40 Teeth	1
2	22488-0002	Securing Plate	2	39	22488-0039	Spur Wheel, 13 Teeth	1
3	22488-0003	Fillister Head Screw	2	40	22488-0040	Spur Wheel, 46 Teeth	1
4	22488-0004	Cover	2	41	22488-0041	Disc	1
5	22488-0005	Fillister Head Screw	4	60	22488-0060	Cup Spring	2
6	22488-0006	Insulator Housing	1	61	22488-0061	Grooved Ball Bearing	1
7	22488-0007	Carbon Holder Assy.	2	62	22488-0062	Grooved Ball Bearing	1
8	22488-0008	Carbon Brush 42-120V	2	63	22488-0063	Covering Disc	1
8	22488-0228	Carbon Brush 121-240V	2	64	22488-0064	Locking Ring	1
9	22488-0009	Carbon Holder Cover	2	65	22488-0065	Felt Ring	1
10	22488-1110	Pole Housing w/Winding, 110V	1	66	22488-0066	End Cover	1
10	22488-1220	Pole Housing w/Winding, 230V	1	67	22488-0067	Securing Plate	3
12	22488-0012	Hex Screw	2	68	22488-0068	Fillister Head Screw	3
13-16	22488-1113	Armature w/Winding, 110V	1	69	22488-0069	Securing Plate	4
13-16	22488-1223	Armature w/Winding, 230V	1	70	22488-0070	Fillister Head Screw	4
14	22488-0014	Fan Wheel	1	71	22488-0071	Flange of the Handle	1
16	22488-0016	Gripping Ring	1	72	22488-0072	Fillister Head Screw	4
18	22488-0018	Intermediate Bearing	1	73	22488-0073	Housing	1
19	22488-0019	Securing Plate	4	74	22488-0074	Insulating Sleeve, 43-240V	1
20	22488-0020	Fillister Head Screw	4	75	22488-0075	Fillister Head Screw	4
21	22488-0021	Pan Head Screw	1	77	22488-0077	Lower Handle Part	1
22	22488-0022	Outer Bearing	1	78	22488-0078	Upper Handle Part	1
23	22488-0023	Grooved Ball Bearing	2	79	22488-0079	Pan Head Screw	2
24	22488-0024	Grooved Ball Bearing	4	80	22488-0080	On/Off Switch Assy.	1
25	22488-0025	Felt Ring	1	81	22488-0081	Cable Clamping Bridge	1
26	22488-0026	Needle Bearing	1	82	22488-0082	Pan Head Screw	2
27	22488-0027	Drill Shaft	1	83	22488-0083	Cable Protecting Sleeve	1
28	22488-0028	Felt Ring	1	84	22488-0084	Capacitor	1
29	22488-0029	Covering Disc	1	84a	22488-9984	Connection Cable	1
30	22488-0030	Grooved Ball Bearing	1	84b	22488-9884	Cable Protecting Sleeve	1
31	22488-0031	Disc	1	85	22488-0085	Power Cord w/Plug	1
32	22488-0032	Spur Wheel, 32 Teeth	1	85	22488-0285	Power Cord w/Plug	1
33	22488-0033	Fitting Key	1	86	22488-8691	Forward/Reverse Switch	1
34	22488-0034	Two Slot Nut	1	89	22488-0089	Switch Insert	1
35	22488-0035	Spur Wheel, 11 Teeth	1	76	22488-0092	Drift	
36	22488-0036	Spur Wheel, 36 Teeth	1	76	22488-0093	Tube Handle	
37	22488-0037	Spur Wheel, 13 Teeth	1	76	22488-0094	Ring Bolt	
				77-84	22488-7784	Handle Assembled	

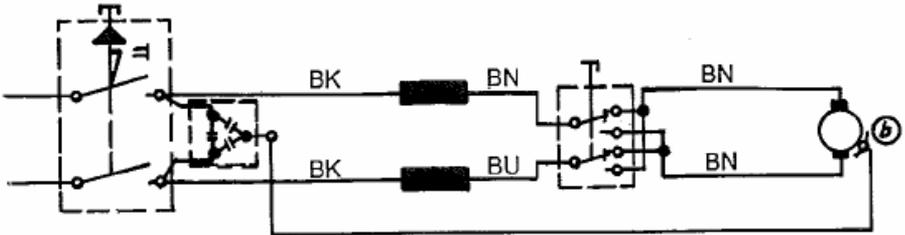
PARTS LIST - 22488 MODEL



Section C-D



WIRING SCHEMATIC - 22488 & 22487 MODEL



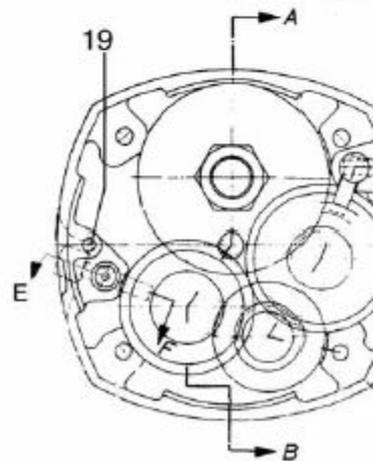
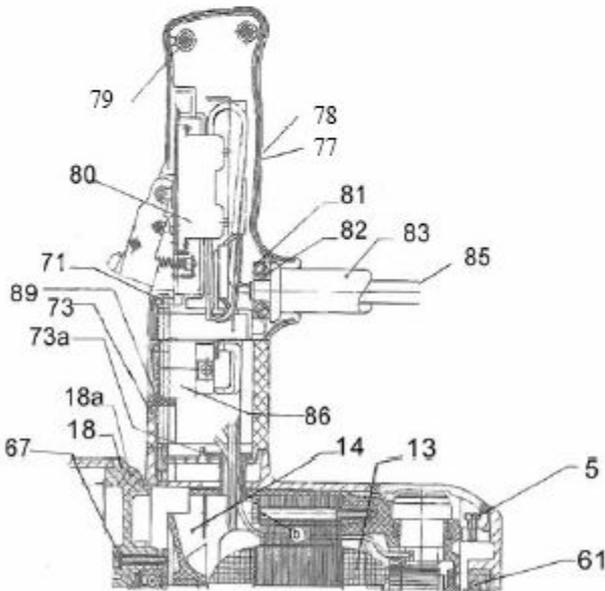
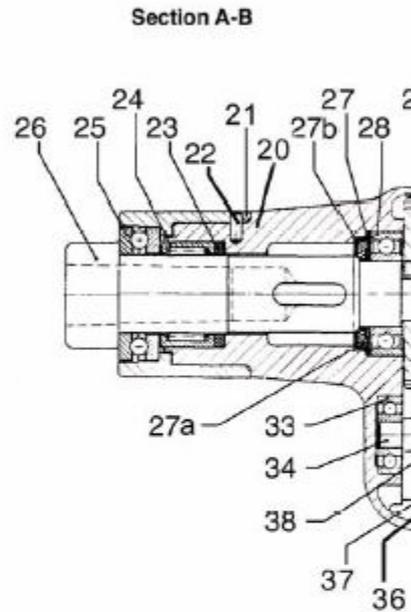
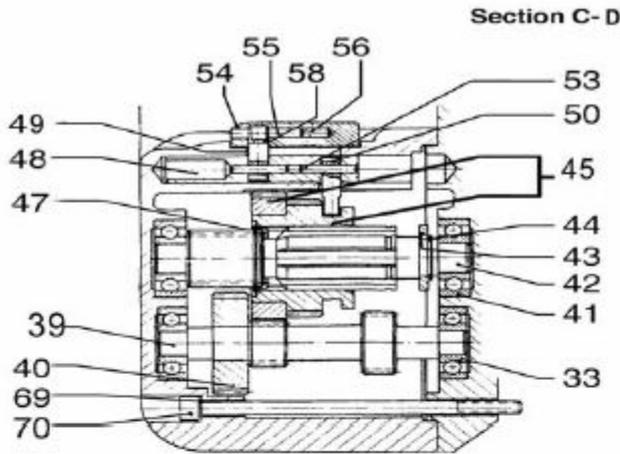
PARTS LIST - 22487 MODEL

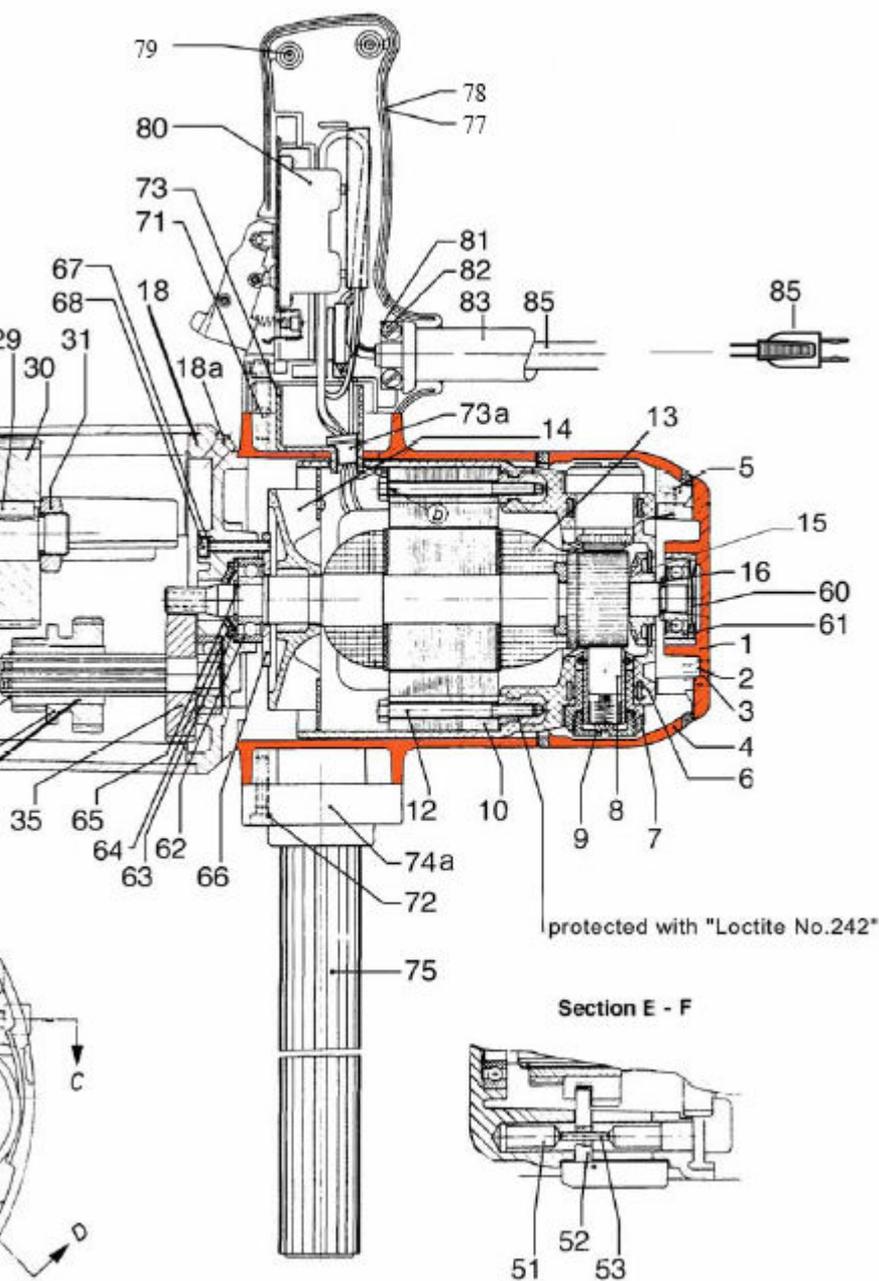
NO.	PART NO.	DESCRIPTION	QTY.
1	22488-0001	Motor Housing	1
2	22488-0002	Securing Plate	2
3	22488-0003	Fillister Head Screw	2
4	22488-0004	Cover	2
5	22488-0005	Fillister Head Screw	4
6	22488-0006	Insulator Housing	1
7	22488-0007	Carbon Holder Assy.	2
8	22488-0008	Carbon Brush 42-120V	2
8	22488-0228	Carbon Brush 121-240V	2
9	22488-0009	Carbon Holder Cover	2
10	22488-1110	Pole Housing w/Winding, 110V	1
10	22488-1220	Pole Housing w/Winding, 230V	1
12	22488-0012	Hex Screw	2

PARTS LIST - 22487 MODEL

NO.	PART NO.	DESCRIPTION	QTY.	NO.	PART NO.	DESCRIPTION	QTY.
13-16	22488-1113	Armature w/Winding, 110V	1	53	22487-0053	Clamping Sleeve	3
13-16	22488-1223	Armature w/Winding, 230V	1	54	22487-0054	Switch Handle	2
14	22488-0014	Fan Wheel	1	55	22487-0055	Bolt	1
16	22488-0016	Gripping Ring	1	56	22487-0056	Pressure Ring	2
18	22487-0018	Intermediate Bearing	1	58	22487-0058	Clamping Sleeve	2
18a	22487-0021	Greaser	1	60	22488-0060	Cup Spring	2
19	22487-0019	Cylindrical Pin	1	61	22488-0061	Grooved Ball Bearing	1
20-22	22487-0020	Outer Bearing	1	62	22488-0062	Grooved Ball Bearing	1
23	22487-0023	Sealing Ring	1	63	22488-0063	Covering Disc	1
24	22487-0024	Needle Bearing	1	64	22488-0065	Felt Ring	1
25	22487-0025	Grooved Ball Bearing	1	65	22488-0064	Locking Ring	1
26	22487-0026	Drill Shaft	1	66	22487-0066	Cover Plate	1
27	22487-0027	Cover Plate	1	67	22488-0067	Securing Plate	3
27a	22487-0022	Felt Ring	1	68	22487-0068	Fillister Head Screw	3
27b	22487-0016	Cover Plate	1	69	22488-0069	Securing Plate	4
28	22487-0028	Grooved Ball Bearing	1	70	22487-0070	Fillister Head Screw	4
29	22487-0029	Fitting Key	1	71	22487-0071	Fillister Head Screw	4
30	22487-0030	Gear Wheel, 43 Teeth	1	72	22488-0072	Fillister Head Screw	4
31	22487-0031	Hex Nut	1	73	22488-0073	Housing	1
33	22487-0033	Grooved Ball Bearing	4	73a	22487-0073	Plug	1
34	22487-0034	Switch Shaft	1	74	22488-0074	Insulating Sleeve, 43- 240V	1
35	22487-0035	Gear Wheel, 46 Teeth	1	74a	22487-0074	Handle Flange	1
36, 37	22487-0036	Gear Wheel, 17/33 Teeth	1	80	22488-0080	On/Off Switch Assy.	1
38	22487-0038	Securing Ring	1	81	22488-0081	Cable Clamping Bridge	1
39	22487-0039	Double Pinion, 12/19 T	1	82	22488-0082	Pan Head Screw	2
40	22487-0040	Gear Wheel, 26 Teeth	1	83	22488-0083	Cable Protecting Sleeve	1
41	22487-0041	Grooved Ball Bearing	2	84	22488-0084	Capacitor	1
42	22487-0042	Pinion, 13 Teeth	1	84a	22488-9984	Connection Cable	1
43	22487-0043	Disc	1	84b	22488-9884	Cable Protecting Sleeve	1
44	22487-0044	Circlip	1	85	22488-0085	Power Cord w/Plug	1
45, 46	22487-0045	Gear Wheel, 35/37 T	1	85	22488-0285	Power Cord w/Plug	1
47	22487-0047	Securing Ring	1	86	22488-8691	Forward/Reverse Switch	1
48	22487-0048	Bolt	1	89	22488-0089	Switch Insert	1
49	22487-0049	Bolt	1	76	22488-0092	Drift	
50	22487-0050	Bolt	1	76	22488-0093	Tube Handle	
51	22487-0051	Bolt	1	76	22488-0094	Ring Bolt	
52	22487-0052	Bolt	1	77-84	22488-7784	Handle Assembled	

PARTS LIST - 22487 MODEL





SPECIFICATIONS

ROLLER MODEL	22488-0000	22488-0220	22487-0220
TUBE OD SIZE	2" - 3" (50.8mm - 76.2mm)	2" - 3" (50.8mm - 76.2mm)	1" - 2 1/2" (25.4mm - 63.5mm)
VOLTAGE	110	220	220
FREQUENCY	60	50	50
AMPERAGE	7.5	4	4
FREE LOAD RPM	100	100	250
DRIVE SPINDLE	# 4 Morse Taper	# 4 Morse Taper	# 3 Morse Taper
WEIGHT	23.5 LBS (10.6kgs)	23.5 LBS (10.6kgs)	22.7 LBS (10.3kgs)
LENGTH (OAL)	16.75" (425mm)	16.75" (425mm)	15.62" (400mm)

ACCESSORIES

For 22488	3/4" SQUARE SOCKET x 4 M.T.	20212-0000
For 22488	1" SQUARE SOCKET x 4 M.T.	20213-0000
For 22487	1/2" SQUARE SOCKET x 3 M.T.	41237-0000
For 22487	3/4" SQUARE SOCKET x 3 M.T.	20211-0000
For 22487	1" SQUARE SOCKET x 3 M.T.	20497-0000
For 22488 & 22487	FORWARD/REVERSE SWITCH	22488-8691
For 22488 & 22487	ON/OFF SWITCH	22488-0080
For 22488 & 22487	SET OF MOTOR BRUSHES (must order 2 sets)	22488-0008

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