



## PRIME MULTICOLOR POWDER COATING UNIT and GUN



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The characteristics given in this instruction manual are not binding and **ESTA/OMEGA A.Ş.**  
Reserve the right to modify its models.



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## **OPERATION AND CONTROL**

The powder in the powder hopper is fluidised by the admission of air under the fluidised bed plate.

The turbulence air regulator , above which the control manometer is positioned, allows fluidisation control.

Suction plunger (Injector) fitted to the top of the hopper sucks in the turbulence powder and transfer it to the gun.

- Air regulator for the plunger injection air. This air controls the quantity of powder projected.
- Air regulator for the plunger dilution air. This air enables the powder transported correctly.
- Each air regulator is fitted with a control manometer.

When switching on the power pack the high voltage in the **PRIME MULTICOLOR** gun is activated at the same time the powder and air supply to the gun are set free. The high voltage builds up on electrical field between the gun and the earthed work piece.

The outcoming powder / air mixture is electrostatically charged by the high electrical potential at the electrode . The deflector plate and the atomizing air produce an adjustable powder cloud.

Power pack the mains supplies **220 V 50 Hz** an input transformer which is connected to a medium frequency oscillator.

The Low Voltage cable from the power pack **0-12 V** connected to the gun.

**PRIME MULTICOLOR** apowder coating installations are built according to the highest safety requirements. There is a short – circuit protection when the electrode approaches the work piece, the control module automatically reduces the amount of high voltage to a nondangerous valve

## ADVICE ON USE

### \***Earthing**

Perfect earthing of the work pieces is premise for perfect powder coating incorrect earthing leads to:

- Very lean wrap-around
- Non - uniform coating
- Back - spraying of powder on gun operator.
- Dangerous electrical charging

### \***Premises for perfect earthing and coating**

- The works-pieces to be coated should be connected to the earth terminal of the electrostatic generator. It is therefore advisable to clean the hangers for the parts regularly so as the assure good contact.
- The earthing resistance of the work-piece must not exceed **1 MegaOhm**.
- Perfect earthing of the coating booth with **10 mm<sup>2+</sup>** copper line.

### \***Powder booth**

The PRIME MULTICOLOR powder unit is used with a powder with a suction system and a powder recovery system.

Ventilation of the spraying booth ensure correct air throughput:

The powder / air mixture concentration of **10 g/m<sup>3</sup>** for unproved powder may not exceeded in any part of booth.

- The floor of working area must be electrostatically conductive. (**5 m**) around of booth must be earthed)
- All persons within the working range must wear electrostatically conductive shoes.
- If the person use gloves ensure that the palm areas are cut out.

### \***Powder**

A powder which binds causes blocking up take sample of powder and compress it in the palm of hand. If it binds together tightly, the powder is likely to block the pipe the or the nozzle.

So concern humidy in powder and ensure recovery powder should be sieved.

\*The plunger, hose and gun should be cleared with blowing air after each shift.

\*The venturi pieces of injector may wear out after a certain time owing to abrasion by the powder. The wear depends on the powder used. Change the venturi once the wear obvious to the eye.

\*Inspect the compressed air filter daily In particular verify that the elimination of water is carried out correctly If water appears in the hoses we recommend using an air dryer.

## **PRİME MULTICOLOR POWDER COATING CONSIST FOLLOWING COMPONENTS**

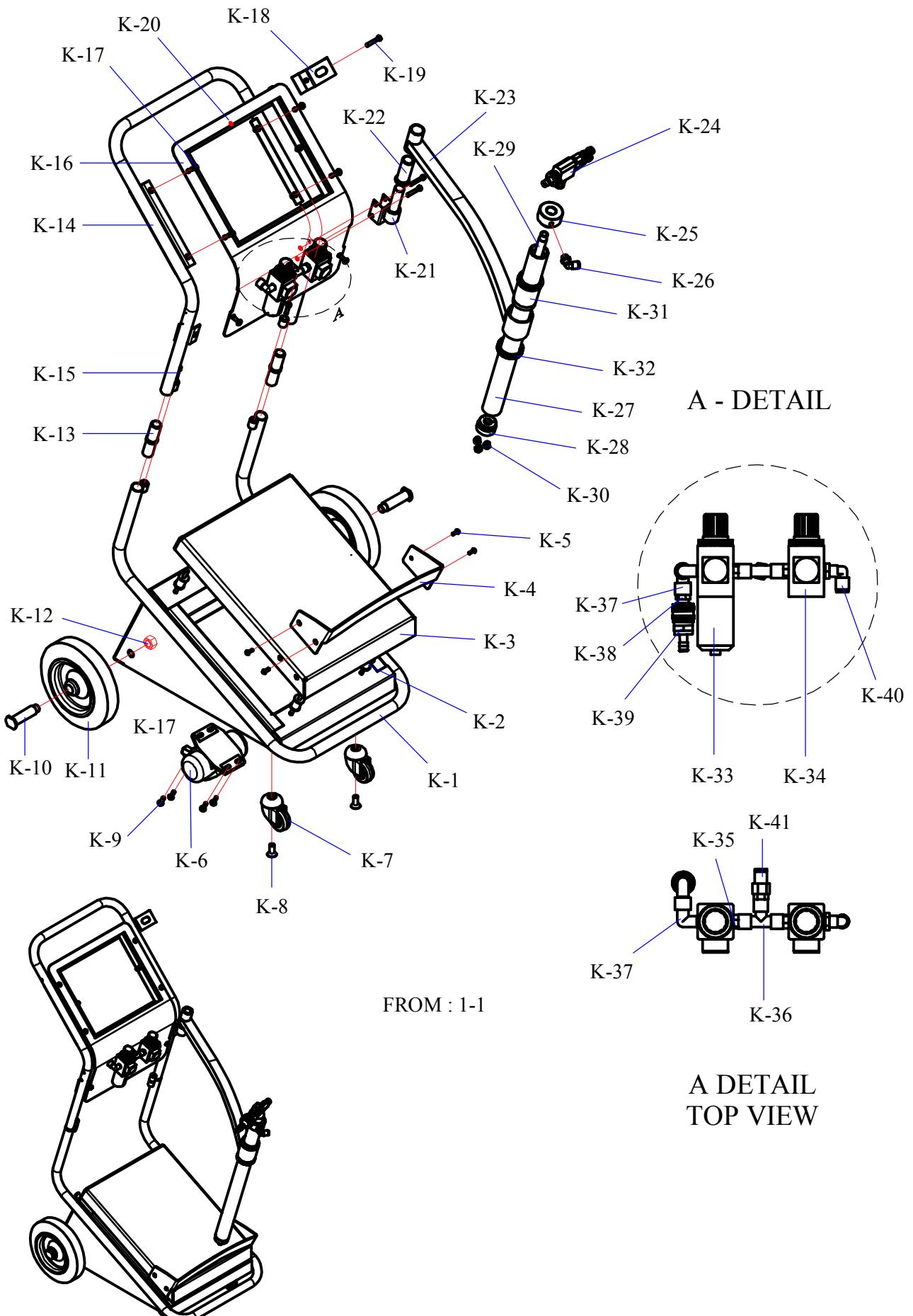
- 1 ) PRİME MULTICOLOR CONTROL MODULE
- 2 ) CONSOLE ASSEMBLY
- 3 ) GROUP OF INJECTOR PUMP
- 4 ) MANUAL POWDER GUN
- 5 ) POWDER HOSE
- 6 ) PNEUMATIC HOSES
- 7 ) SPARE PARTS SET

7.1 – Small Size Deflector	Ø 17	- 1 pcs
7.2 – Big Size Deflector	Ø 26	- 1 pcs
7.3 – Injector o-ring		- 5 pcs
7.4 – Fuse	3 A	- 2 pcs
7.5 – Hose clamp	Ø 19	- 1 pcs
7.6 – Flat Spray Head Group		- 1 pcs
7.7 – Power Cable		- 1 pcs
7.8 – Cable Tie		- 20 pcs
7.9 – Female Jack		- 1 pcs

## **PUTTING INTO SERVICE**

- The following should be carried out;
- Compressed air connection should be done with inside diameter 8 mm air hose to main air regulator inlet.
- Compressed air inlet pressure should be min. **4 bar** max.**6 bar**, dry , oil free .
- Main electrical connection **220 V - 50 Hz** single phase + earth mains +/- 7,5 V change from main is acceptable otherwise extra voltage regulator should be recommended.
- Set the main air regulator **max. 5 bar**.
- Connect the earthing cable to earthing main.
- Before open main air supply pull regulator **05, 06, 07** (Page8)and turn anti clockwise set zero
- Start main switch on from rear of the control module. Pull the trigger and adjust **HV** (high voltage). It should be max. **80 kV** (duty of supply voltage change digital display should give +/- 10 kV difference.)
- Adjust the turbulence air, using air regulator to a pressure **0,3-1** bar.
- Please concern humidity and foreign material inside of powder.
- Turbulence air connected main trigger so put the gun direction to powder booth and pull the trigger, meanwhile put the lid on the hopper.
- Adjust injection air **1 to 2,5 bar** to give powder output requested level.
- Adjust dilution air **0,3** to **1,5** bar to prevent the powder from arriving in bursts when the powder flow is low.
- You should spray the powder the distance is about **10-20 cm** between gun and work pieces. you should set **(HV)** High Voltage max. level.
- If you make repaint of rejected work pieces, adjust **HV 30-40 kV**

**PRİME MULTICOLOR  
CONSULE GROUP INSTALLATION SCHEME**

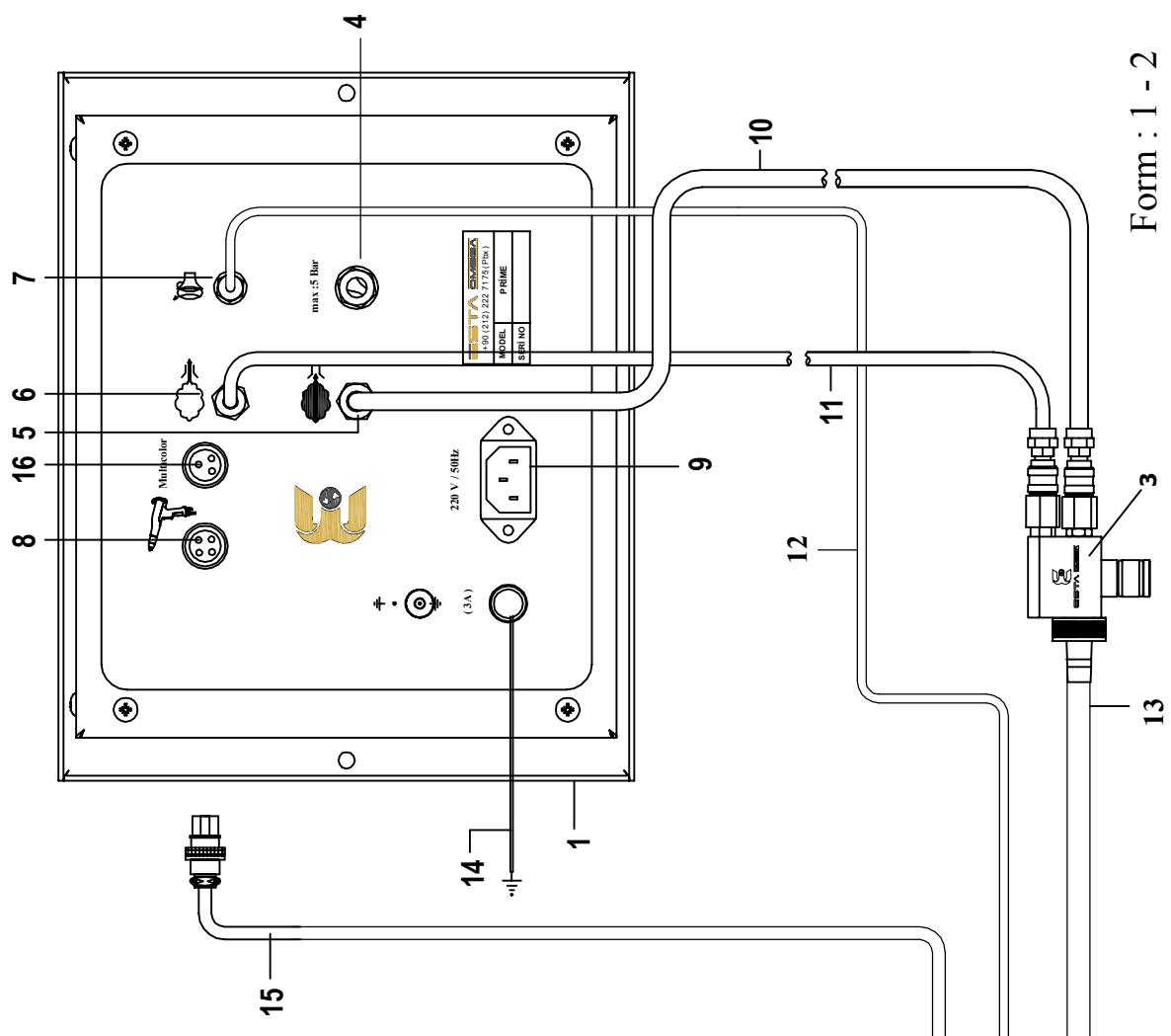


**PRİME MULTICOLOR  
CONSULE GROUP STOCK NUMBER**

<b>NO</b>	<b>ORDER NO</b>	<b>DESCRIPTION</b>	<b>QUAN.</b>
K-1	-----	PIPE CONSOLE BOTTOM	1
K-2	-----	VIBRATION GUIDE	4
K-3	-----	TOP TABLE	1
K-4	-----	FRONT FIXING SHEET	1
K-5	-----	M5 x 15 mm YSB BOLT	4
K-6	-----	VIBRATION MOTOR	1
K-7	-----	SMALL WHEEL	2
K-8	-----	M10 x 25 BOLT	2
K-9	-----	M6 x 20 mm YSB BOLT	4
K-10	-----	WHEEL SHAFT	2
K-11	-----	Ø200 x 50 mm WHEEL	2
K-12	-----	M16 NUT	2
K-13	-----	PIPE INTERFACE	2
K-14	-----	UPPER PIPE	1
K-15	-----	M6 x 25 mm BOLT	2
K-16	-----	FRONT PANEL	1
K-17	<b>M-08-K-20007</b>	M6 x 15 mm YSB BOLT	6
K-18	-----	GUN HANGER	1
K-19	<b>M-YS-10059</b>	M6 x 35 mm BOLT	3
K-20	<b>M-08-K-20012</b>	M6 NUT	7
K-21	-----	ARM CONNECTION PARTS	1
K-22	-----	CONNECTION CAP	1
K-23	-----	ADJUSTMENT HANDLE	1
K-24	<b>M - EPRM - 001</b>	INJECTOR GROUP ( COMPLETE )	1
K-25	-----	SUCTION PIPE TOP COVER	1
K-26	-----	1/8" 4-6 ROTATING DIRECTION	1
K-27	-----	Ø40 SUCTION PIPE	1
K-28	-----	SUCTION PIPE LOWER COVER	1
K-29	-----	INNER PIPE	1
K-30	-----	1/8" MUFFLER	3
K-31	-----	PIPE INTERNAL CONNECTION PARTS	1
K-32	-----	PIPE INSERT PART NUT	1
K-33	-----	1/4" AIR REGULATOR ( BOTTLED )	1
K-34	-----	1/4" AIR REGULATOR ( BOTTLE )	1
K-35	-----	1/4" NIPPLE	3
K-36	-----	1/4" FEMALE T RACCORD	1
K-37	-----	1/4" ELBOW	2
K-38	-----	1/4" RACCORD HOLDER ( MALE )	1
K-39	-----	FEMALE JACK	1
K-40	-----	1/4" , 4-6 ROTATING DIRECTION	1
K-41	-----	1/4" 6-8 FEMALE RACCORD	1

**ESTA** **OMEGA**

**PRIME MULTICOLOR POWDER COATING UNIT  
ASSEMBLY SKETCH**

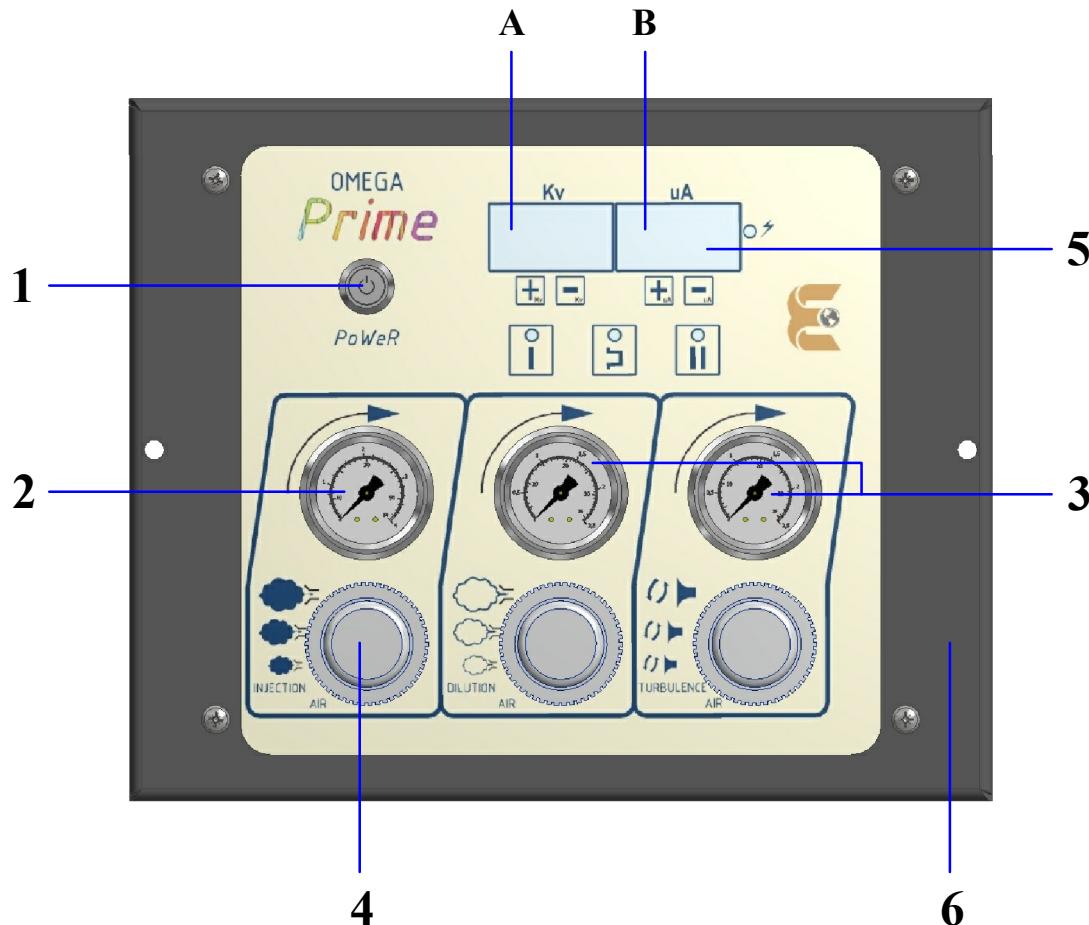


NO	DESCRIPTION
1	PRIME MULTICOLOR POWDER COATING UNIT
2	PRIME MULTICOLOR MANUEL POWDER GUN
3	INJECTOR
4	MAIN AIR INLET ( 1/4" , 6-8 - 5 m )
5	INJECTION AIR OUTLET(1/8",6-8 STRAIGHT)
6	DILUTION OUTLET(1/8",4-6 STRAIGHT)
7	TURBULENCE AIR OUTLET(1/8",2-4 STRAIGHT)
8	GUN CABLE CONNECTION
9	MAIN ELECTRICITY ( 220V / 50Hz. )
10	INJECTION AIR HOSE ( 5 m )
11	DILUTION AIR HOSE ( 4-6 , 5 m )
12	TURBULENCE AIR HOSE ( 2-4 , 5 m )
13	POWDER HOSE ( 5 m )
14	EARTHING CABLE ( 3 m )
15	GUN VOLTAGE CABLE ( 5,5 m )
16	MULTICOLOR ENTRY

EDITION : A - 24.01.2019

Form : 1 - 2

**PRİME MULTICOLOR POWDER COATING UNIT  
FRONT VIEW**



*A - KV DISPLAY*

*B - UA DISPLAY*



1. FLOOR



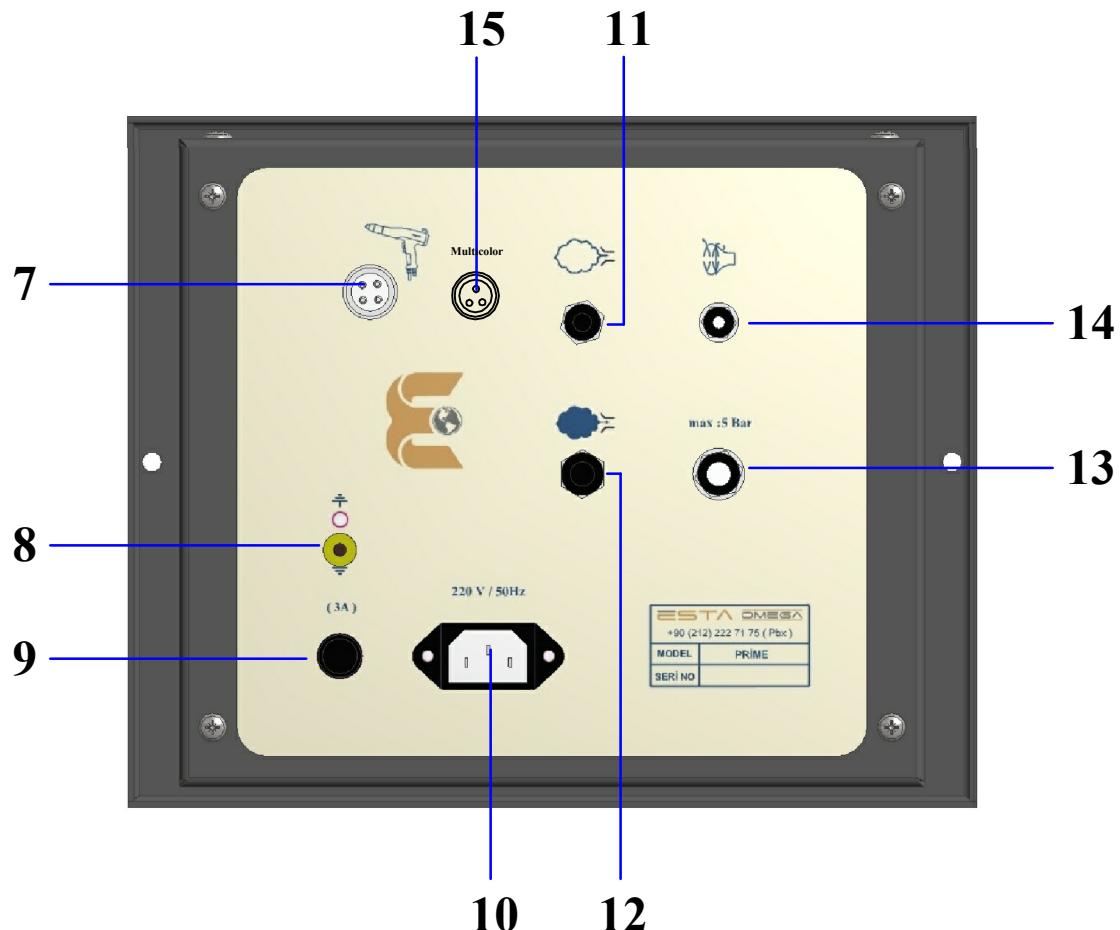
OPAQUE



2. FLOOR

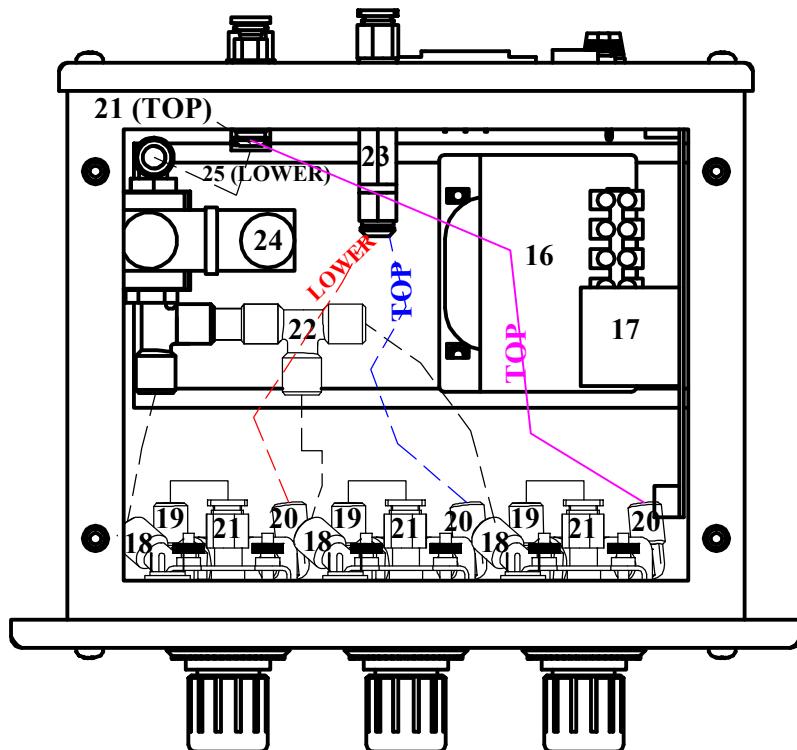
NO	STOCK NO	DESCRIPTION	QUANT.
1	<b>M-PRM-001</b>	POWER BUTTON	1
2	<b>M-01-GK-20010</b>	MANOMETER ( 4 Bar. )	1
3	<b>M-01-GK-20008</b>	MANOMETER ( 2,5 Bar. )	2
4	<b>M-PRM-401</b>	1/4" AIR REGULATOR ( BOTTLE OUTSIDE )	3
5	<b>M-PRM-002</b>	DIJITAL DISPLAY	1
6	-----	PRİME MULTICOLOR CONTROL UNIT	1

**PRİME MULTICOLOR POWDER COATING UNIT  
REAR VIEW**



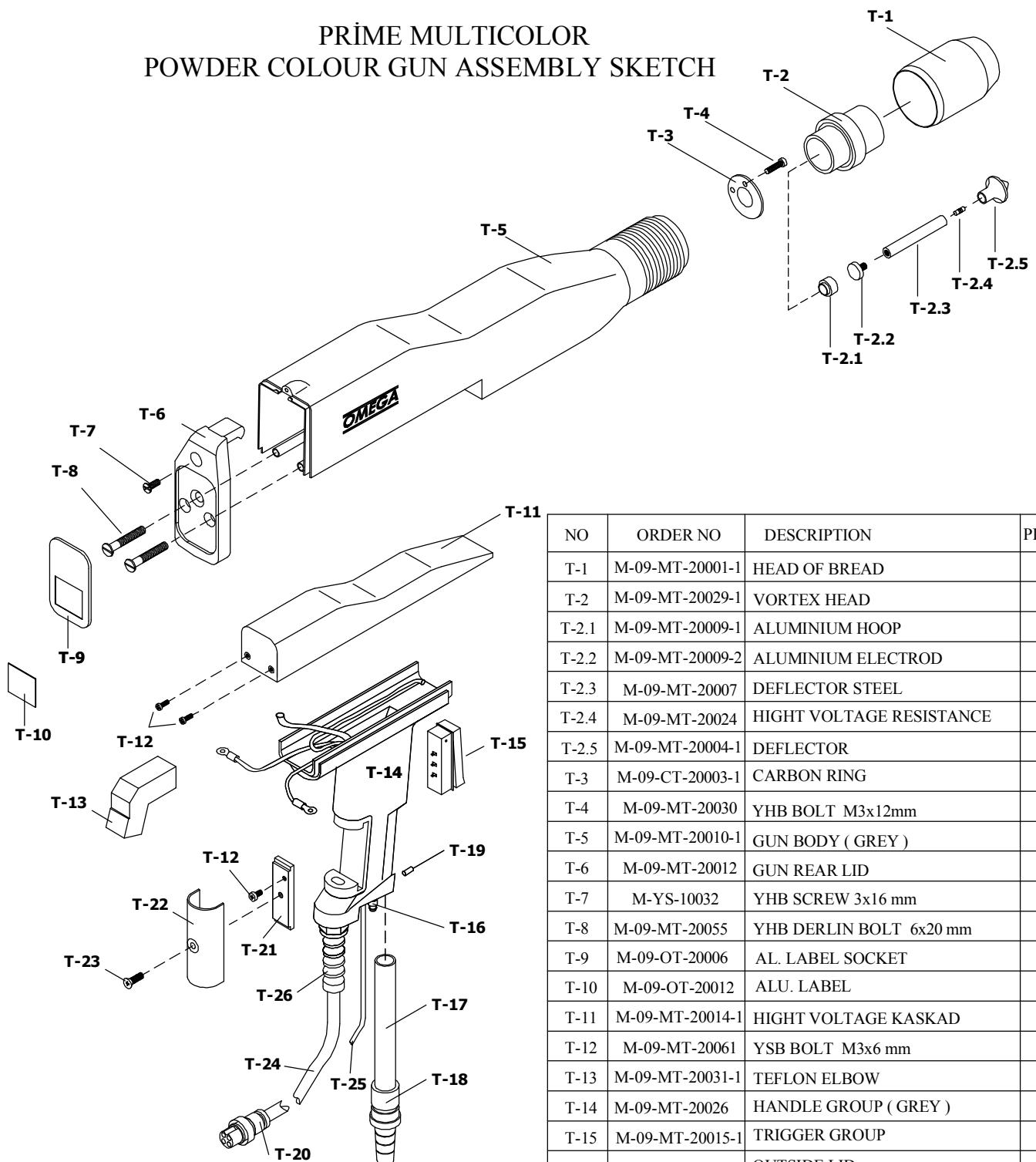
NO	STOCK NO	DESCRIPTION	QUANT.
7	M-01-GK-20020	GUN SOCKET ( MALE )	1
8	M-PRM-201	EARTHING NUT	1
9	M-01-GK-20021	FUSE ( 3A.. )	1
10	M-01-GK-20075	UNITY SOCKET	1
11	M-YS-40001	DILUTION AIR OUTLET ( 1/8",4-6 STRAIGHT MALE RACCORD )	1
12	M-YS-40002	INJECTION AIR OUTLET ( 1/8",6-8 STRAIGHT MALE RACCORD )	1
13	-----	MAIN AIR INLET ( 1/4",6-8 FEMALE RACCORD )	1
14	M-YS-40011	DILUTION AIR OUTLET ( 1/8",4-6 STRAIGHT MALE RACCORD )	1
15	-----	MULTICOLOR ENTRY	1

**PRIME MULTICOLOR POWDER COATING UNIT  
INSIDE VIEW**

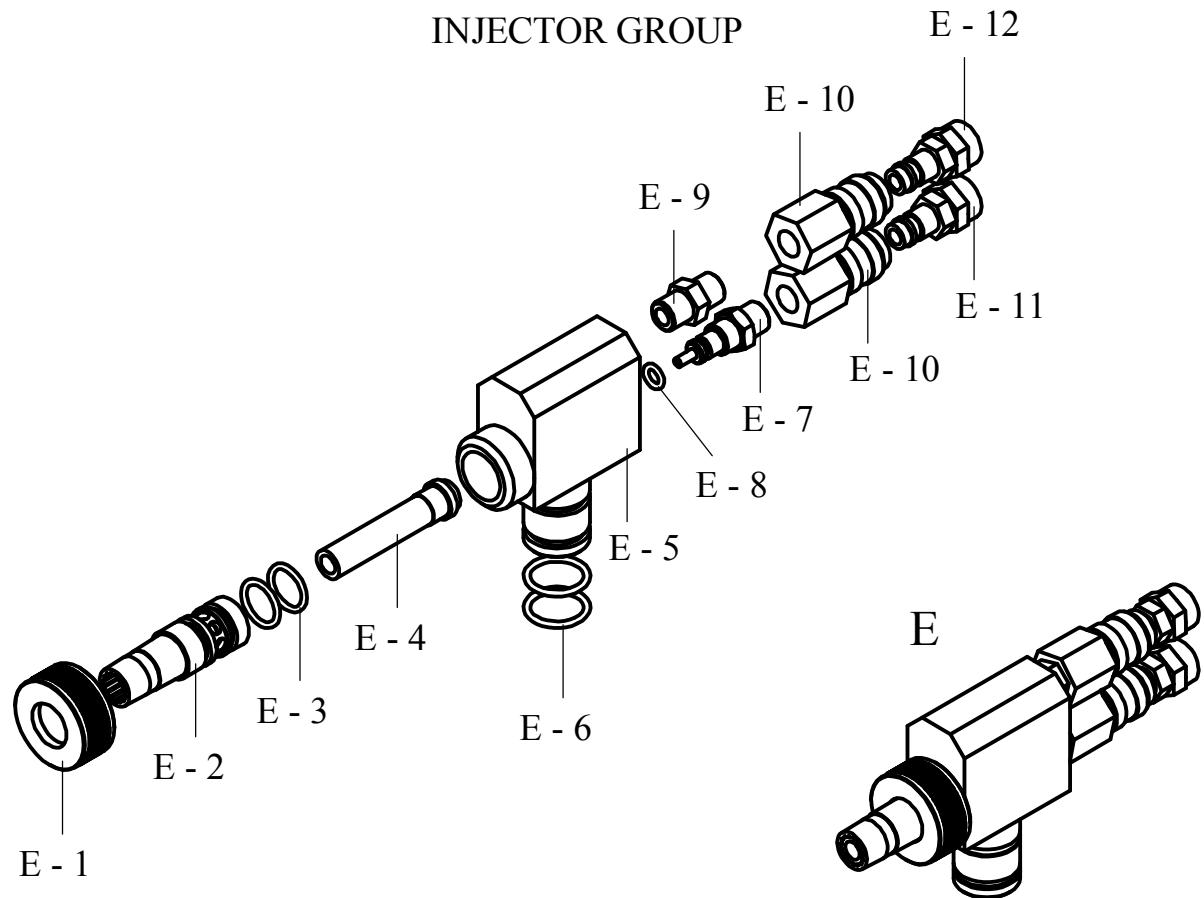


NO	STOCK NO	DESCRIPTION	QUANT.
16	<b>M-PRM-004</b>	PRIME MAIN TRANSFORMER	1
17	<b>M-PRM-003</b>	ELECTRONIC PC BOARD	1
18	<b>M-YS-40008</b>	1/4", 6-8 ROTATED ELBOW	3
19	<b>M-YS-40007</b>	1/4", 4-6 ROTATED ELBOW	3
20	<b>M-YS-40005</b>	1/8", 4-6 ROTATED ELBOW	3
21	<b>M-YS-40003</b>	1/8" , 4-6 FEMALE STRAIGHT RACCORD	4
22	<b>M-YS-40266</b>	ROTATED " T " CONNECTION 1/4", 6-8 ( SIDE)	1
23	<b>M-PRM-202</b>	CHECK VALVE + 1/8" , 4/6 MALE RACCORD	2
24	<b>M-01-GK-20013</b>	SELENOID VALVE ( 24 DC COMPLETE WITH REEL)	1
25	<b>M-YS-40062</b>	1/4" , 6-8 FEMALE RACCORD	1

**PRIME MULTICOLOR  
POWDER COLOUR GUN ASSEMBLY SKETCH**



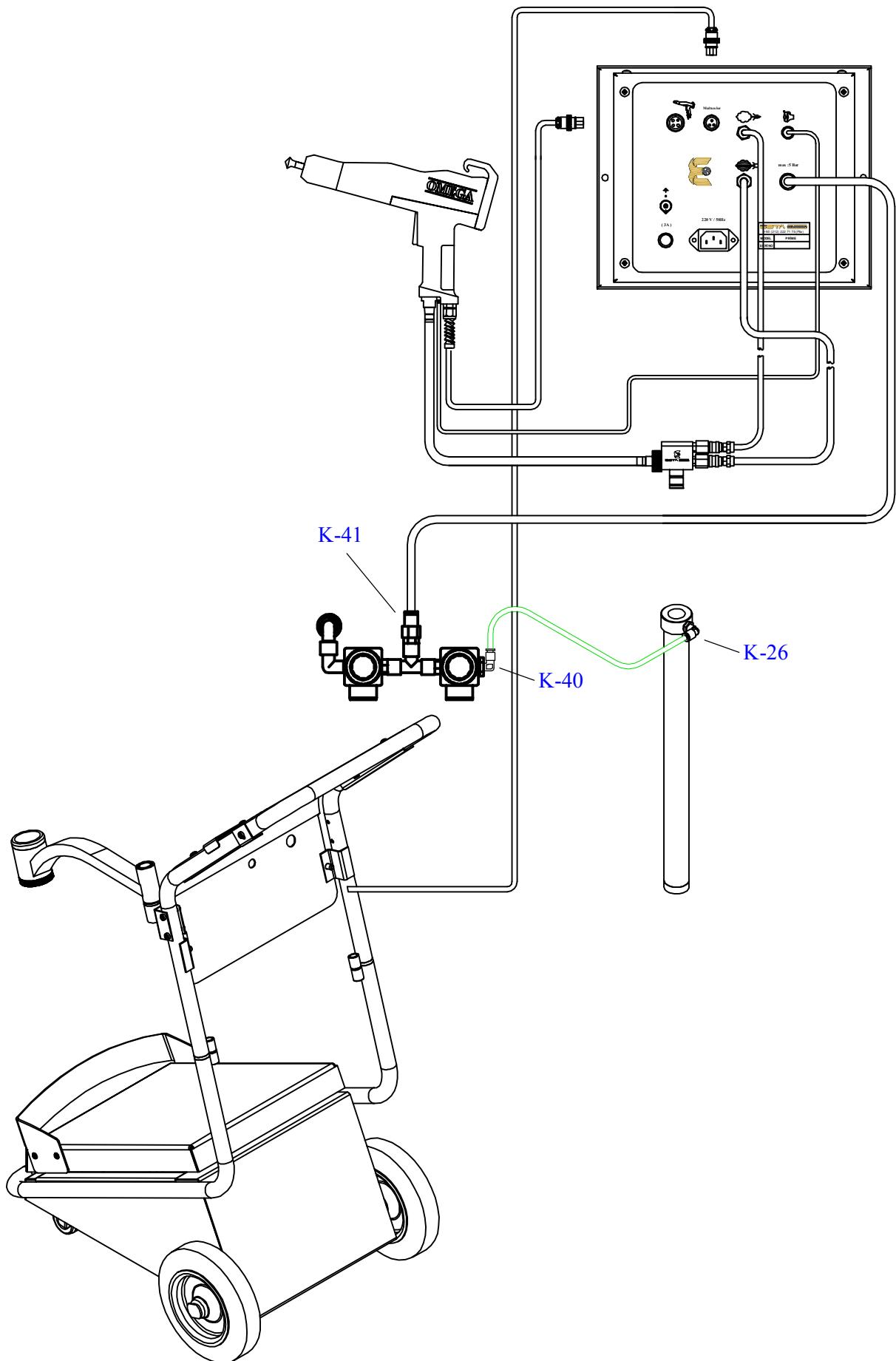
NO	ORDER NO	DESCRIPTION	PIECE
T-1	M-09-MT-20001-1	HEAD OF BREAD	1
T-2	M-09-MT-20029-1	VORTEX HEAD	1
T-2.1	M-09-MT-20009-1	ALUMINIUM HOOP	1
T-2.2	M-09-MT-20009-2	ALUMINIUM ELECTROD	1
T-2.3	M-09-MT-20007	DEFLECTOR STEEL	1
T-2.4	M-09-MT-20024	HIGHT VOLTAGE RESISTANCE	1
T-2.5	M-09-MT-20004-1	DEFLECTOR	1
T-3	M-09-CT-20003-1	CARBON RING	1
T-4	M-09-MT-20030	YHB BOLT M3x12mm	1
T-5	M-09-MT-20010-1	GUN BODY ( GREY )	1
T-6	M-09-MT-20012	GUN REAR LID	1
T-7	M-YS-10032	YHB SCREW 3x16 mm	1
T-8	M-09-MT-20055	YHB DERLIN BOLT 6x20 mm	2
T-9	M-09-OT-20006	AL. LABEL SOCKET	1
T-10	M-09-OT-20012	ALU. LABEL	1
T-11	M-09-MT-20014-1	HIGHT VOLTAGE KASKAD	1
T-12	M-09-MT-20061	YSB BOLT M3x6 mm	3
T-13	M-09-MT-20031-1	TEFLON ELBOW	1
T-14	M-09-MT-20026	HANDLE GROUP ( GREY )	1
T-15	M-09-MT-20015-1	TRIGGER GROUP	1
T-16	M-09-MT-20040	OUTSIDE LID	1
T-17	M-09-MT-20080	GUN INSIDE HOSE ( Ø10xØ14x105 mm )	1
T-18	M-09-MT-20016	POWDER HOSE INLET	1
T-19	M-09-MT-20105	SET - SAREW M4	1
T-20	M-09-MT-20020	GUN SOCKET	1
T-21	M-09-MT-20041	EARTH NUMBERPLATE	1
T-22	M-09-MT-20042	EARTH SHEET IRON	1
T-23	M-09-MT-20068	YHB SCREW ( M4x12 mm )	1
T-24	M-09-MT-10019	GUN CABLE	5,5 m
T-25	M-09-MT-20025	VORTEX HOSE	5,5 m
T-26	M-09-MT-20023-1	PG - 7 RACCORD	1



NO	ORDER NO	DESCRIPTION	PIECE
E	<b>M - EPRM - 001</b>	INJECTOR GROUP ( COMPLETE )	1
E - 1	<b>M - EPRM - 01</b>	INJECTOR NUT	1
E - 2	<b>M - EPRM - 02</b>	POWDER HOSE INLET OF PLUNGER	1
E - 3	<b>M - EPRM - 03</b>	POWDER HOSE INLET OF PLUNGER - O RING	2
E - 4	<b>M - EPRM - 04</b>	VENTURI	1 <span style="float: right;">★</span>
E - 5	<b>M - EPRM - 05</b>	INJECTOR BODY	1
E - 6	<b>M - EPRM - 06</b>	INJECTOR BODY O - RING	2
E - 7	<b>M - EPRM - 07</b>	INJECTOR NOZZLE	1
E - 8	<b>M - EPRM - 08</b>	INJECTOR NOZZLE O - RING	1
E - 9	<b>M - EPRM - 09</b>	AUXILIARY AIR INTRODUCTION PART	1
E - 10	<b>M - EPRM - 10</b>	AIR AUTOMATIC JACK RECORD	1
E - 11	<b>M - EPRM - 11</b>	HOSE HOLDER ( 6 - 8 )	1
E - 12	<b>M - EPRM - 12</b>	HOSE HOLDER ( 4 - 6 )	1

\* RECOMMENDED SPARE PARTS LIST

# PRIME MULTICOLOR PNEUMATIC CONNECTION SCHEME



## TROUBLE SHOOTING

### SYMPTOM

Main switch-on but indicator display doesn't light on

When pulling trigger, indicator display on, but there is no increase on High Voltage

When pulling trigger, indicator display on, but air regulator gauge doesn't work.

When pulling trigger, indicator display on, air regulator gauge on, but there is no powder

There is no fluidisation

The gun is powder spraying, without triggering

Powder doesn't stick to object static shocked on user

### PROBABLE CAUSE AND REMEDY

- Check the fuses **9,14** from rear part of power pack.
- Check the mains supply if electricity is exist.

- Check the gun cable plug sockets.
- Check the fuses **9,14** (3A)
- If it still doesn't work call the our technical service

- Electro valve connection socket should be checked.
- Electronic control module repaired.

- Run out of powder in the hopper.
- Adjust fluidisation air.
- Clean plunger and plunger air circuit.
- Check plunger suction pipe.
- Check if plunger is properly fixed.
- Clogged hose or gun inside section (Clean or change)

- Check the fluidising air regulator
- Check the connection fluidisation air hose if it is broken
- Fluidising bed should be clogged duty of humidity and oil contamination

- Trigger should be remained open (Clean with air)
- Electro valve remained open

- Unit main connection earth should be checked
- Check earthing cable of unit.
- Check hangers cleaning.