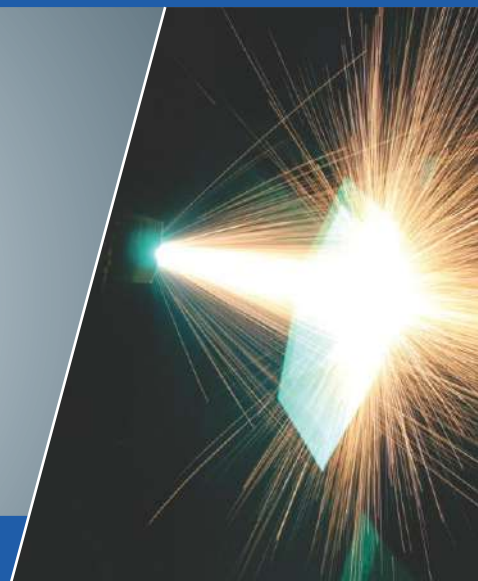


**METAL COAT**

## **ARC SPRAY SYSTEM**



**ARC SPRAY GUN (AIR DRIVE)**



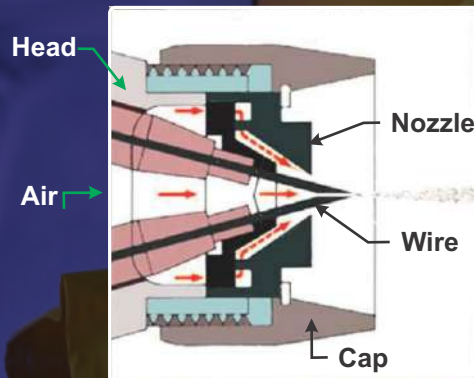
**POWER SOURCE  
WITH CONTROL CONSOLE**

# ARC SPRAY PROCESS

The arc spraying process involves melting of two like or unlike wires (the coating material) in an arc and accelerating them towards the prepared work surface by means of an atomising gas such as compressed air. Arc spraying is a high-performance wire spraying process, but the coating material must be electrically conductive. Twin wires are fed via electric driven motor or air motor.

Electric arc spray coatings are normally denser and stronger than their equivalent combustion spray coatings. Low running costs, high spray rates and efficiency make it a good tool for spraying large areas and high production rates.

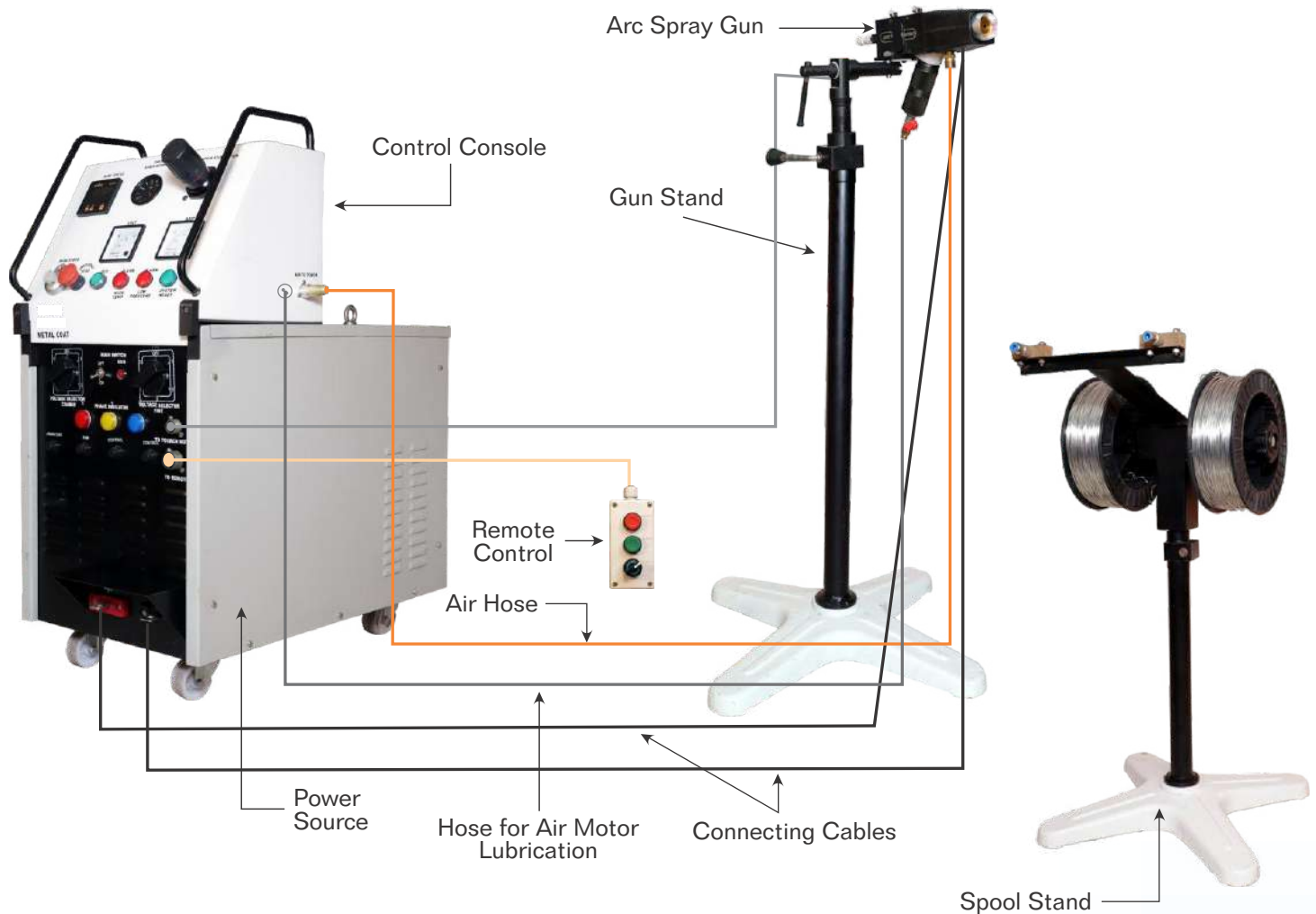
Electric arc spraying has the advantage of not requiring the use of oxygen and/or a combustible gas. In this process only electrically, conductive wires can be sprayed. The main applications of the arc spray process are anti-corrosion coatings of zinc, aluminium and machine element work on large components.



## Features:

- Our advanced technology for the power supply in combination with the highly accurate wire feed which results in unbeatable coatings.
- Allows controlled and uniform energy transfer onto the wire material
- This enables the energy transfer to be adapted to the needs of the needs of the applications.
- Our Arc Spray Systems are designed to process all conductive wires, cored wires and flexible cords.
- Our Control Consul suitable for both Air and Electric Drive Gun

## ARC SPRAY SYSTEM (LAYOUT)



- Arc Spray Gun with Air-Cooled Arc Head provide great quality coatings.
- Power Source: It is a DC current rectifier working on a 3-Phase, 380/415/440V, 50/60Hz power supply providing a voltage between 18 to 50 Volts
- Control Console: Mounted above the power source, carries the regulators and pressure gauges for the air supply to the gun. One remote control with the help of cable is attached with the control unit which helps the operator turn the unit ON/OFF as required.
- Twin Wire Spool Stand: The two wires for the two electrodes for the arc are supplied from two insulated wire spools mounted on the stud.
- Gun Stand: It is for mounting and positioning of gun in the required direction.
- Spool Stand: It is for mounting of Spool.
- Interconnecting Hoses and Cables: Standard length of 5 meters (extra length optional)

# ARC SPRAY SYSTEM

## ARC SPRAY GUN (AIR DRIVE)

Model: 100AD/8830



- Arc is an extremely light and easy to use gun. Minimal maintenance is required because of simple adjustments.
- “Pull” wire feed design
- Air motor driven
- 1.6 mm to 3.17mm wire feed capability
- Robust construction
- Designed for handheld operations
- Closed Nozzle System ensures a fine spray with extremely high bond strength.
- The Wire Pull Feed System is through Air Motor; 1000 RPM for high melting wires and 2500 RPM for low melting wires.
- The defined particle size and small spray diameter increase both the quality and efficiency of the metal deposition.
- Compressed Air requirement is 35 CFM FAD at 60-80 psi (5 bar).
- Weight of the gun is only 3.6 Kg. It can be handheld or installed in a wide variety of automated equipment.



### Specification:

Size	: 310mm (L) 80mm (W) 260mm (H)
Drive	: Pneumatic Motor
Net Weight	: 3.6 Kg.



# ARC SPRAY SYSTEM

## POWER SOURCE WITH CONTROL CONSOLE

### Brief

The control console works for two operating modes called as Pneumatic and electric driven for supplying metallizing wire to the spray nozzle. In the first mode the spray gun is hand held and pulls the wire into the nozzle to get atomized. Where as in second mode the Arc Spray Gun (DC Drive) is attached to an electric driven motor to pull the wire into the spray system.

When there is a need to operate the spray gun in Lathe Tool post or robot Arc Spray Gun (Air Drive) is recommended for manual operation as it is light in weight.

The system is completely mobile and is mounted with trolley wheels for the ease of movement according to the need of operation, A high velocity air facility is inbuilt in the control panel to increase the velocity of the particle for enhanced deposition efficiency, bond strength and fine spray.

### Features

- The system can switch over between electric driven and pneumatic motor driven spray gun (just by a selector switch).
- The control panel inbuilt with power source is tiltable, thus causing easy repairing and maintenance when needed.
- The system is a diode based with no complex electronic circuit involved. Rugged design perfectly suits for continuous production work.
- In 600Amp. the Control Console is detachable and movable from Power Source.
- The system is available in 250, 400 , 600 Amp. Capacities.
- Fitted with moisture separator for dry and clean air.



# ARC SPRAY SYSTEM

## POWER SOURCE WITH CONTROL CONSOLE

Arc Spray System	POWER SOURCE WITH CONTROL CONSOLE		
	Model: 250 AMP	Model: 400 AMP	Model: 600 AMP
Max. Melting Output (Kg./hr)			
Zinc	15.00	30.00	45.00
Aluminium	4.30	8.60	12.90
Cr-Ni-Steel	6.60 - 7.15	13.20 - 14.30	19.80 - 21.45
Al-Bronze	7.50 - 7.95	15.00 - 15.90	22.50 - 23.85
Maximum Coverage (m <sup>3</sup> /100m/hr)			
Zinc	13.05	26.10	39.15
Aluminium	13.03	26.06	39.10
Cr-Ni-Steel	7.29	14.58	21.87
Al-Bronze	10.90	21.78	32.67
High Velocity option installed	No	Yes	Yes
Wire Size (Diameter)	1.6mm to 2mm	1.6mm to 3.17mm	2mm to 3.17mm
Wire Feed	Both Pneumatic & Electric Drive	Both Pneumatic & Electric Drive	Both Pneumatic & Electric Drive
Power Source with Control Console Weight	117 Kgs. (approx.)	156 Kgs. (approx.)	333 Kgs. (approx.)
Dimension	37" x 18" x 39"	40" x 22" x 43"	36" x 26.5" x 45"
Power Requirement	7KW / 9.5 HP	15KW / 20 HP	25KW / 33.5 HP
Power Source INPUT			
Voltage (V)	415V±10%	415V±10%	415V±10%
Phase (Nos)	3	3	3
Frequency (Hz)	50	50	50
Rating @60% Duty Cycle	14 (KVA)	22.5 (KVA)	39 (KVA)
@100% Duty Cycle	10 (KVA)	18 (KVA)	31 (KVA)
Power Source OUTPUT			
Static Characteristics	Constant Potential	Constant Potential	Constant Potential
Open Circuit Voltage Range	18-40	18-54	18-65
Max. Output Current			
@ 60% Duty Cycle	250 (Amp.)	400 (Amp.)	600 (Amp.)
@ 100% Duty Cycle	190 (Amp.)	310 (Amp.)	465 (Amp.)



## SPARE PARTS LIST OF ARC SPRAY GUN (AIR DRIVE) Model: 100AD/8830

PART NO.	DESCRIPTION	ITEM
100-01	CLOSE HEAD	
100-01-ASSY.	CLOSE HEAD ASSEMBLY	
100-02	NOZZLE POSITIONER LONG SLOT	
100-02	NOZZLE POSITIONER LONG CROSS SLOT	
100-02-S	NOZZLE POSITIONER SHORT SLOT	
100-02-S	NOZZLE POSITIONER SHORT CROSS SLOT	
100-03	NOZZLE CAP GOLDEN (Extra Fine/Medium)	
100-03	NOZZLE CAP GREEN (Medium / Coarse)	
100-03	NOZZLE CAP BLUE (Medium / Coarse)	
100-03	NOZZLE CAP RED (Extra Fine Spray)	
100-04	PROTECTIVE CAP	
100-05	TERMINAL ASSEMBLY	
100-06	INSULATOR SHEET	
100-06A	MOUNTING PLATE	
100-07	CONTACT TUBE	
100-07A	CONTACT TIP 1.6MM (BRASS)	
100-07A	CONTACT TIP 2.0MM (BRASS)	
100-07A	CONTACT TIP 2.5MM (BRASS)	
100-07A	CONTACT TIP 3.17MM (BRASS)	

PART NO.	DESCRIPTION	ITEM
100-07B	CONTACT TIP 1.6MM (COPPER)	
100-07B	CONTACT TIP 2.00MM (COPPER)	
100-07B	CONTACT TIP 2.5MM (COPPER)	
100-07B	CONTACT TIP 3.17MM (COPPER)	
100-08	MOTOR GEAR MOUNTING SCREW	
AM4-10	SIDE COVER PLATE SCREW	
AM4-10	DRIVE GEAR SCREW	
100-11	BEVEL GEAR DRIVE BOX (AIR DRIVE)	
100-12	MOTOR MOUNTING SCREW	
AM4-12	SCREW FOR GEAR BOX ASSEMBLY	
100-12	WORM SHAFT (Standard Speed)	
100-12	WORM SHAFT (High Speed)	
101-13	REAR BEARING WARM SHAFT	
100-14	YOKE SUPPORT TUBE DOWEL	
100-15	YOKE SUPPORT TUBE	
SM5-15	HEAD FIXING SCREW	
AM4-16	HEAD MOUNTING SCREW	
100-16	INNER YOKE	



## SPARE PARTS LIST OF ARC SPRAY GUN (AIR DRIVE) Model: 100AD/8830







PART NO.	DESCRIPTION	ITEM
100-17	OUTER YOKE	
100-18	YOKE BEARING	
100-19	ROLLER SHAFT	
AM4-19	LEVER LOCKING SCREW	
100-20	WIRE ROLLER ASSEMBLY	
AM5-20	TERMINAL FIXING SCREW	
100-21	WORM WHEEL (Standard Speed)	
100-21	WORM WHEEL (High Speed)	
100-21A	WORM WHEEL RETAINING SCREW	
100-22	LEVER CAM SHAFT	
100-24	ROLLER OPENING LEVER	
100-24A	LEVER LOCATING PIN	
100-24B	ASSEMBLY ROLLER OPENING (Incl. Part No. 22/24/24A)	
100-25	TENSION SCREW	
100-26	PLAIN SPRING SUPPORT	
100-27	TENSION SPRING	
100-28	THREADED SPRING SUPPORT	
100-29 R	RIGHT HAND SIDE COVER PLATE	
100-29 L	LEFT HAND SIDE COVER PLATE	

PART NO.	DESCRIPTION	ITEM
100-30-AD	SHORT REAR WIRE GUIDE	
100-31-AD	LONG REAR WIRE GUIDE	
100-32	SHORT FRONT WIRE GUIDE	
100-33	LONG FRONT WIRE GUIDE	
100-34	FLEXIBLE WIRE GUIDE (TEFLON)	
AM4-35	SCREW FOR HOLDING DRIVE UNIT	
100-35	GAS KET	
100-36	AIR CONNECTOR	
100-42	FIXING NUT FOR WIRE ROLLER	
100-43	GUN HOLDING PLATE	
100-43A	MOUNTING STUD	
100-43B	MOUNTING STUD LOCK WASHER	
100-43C	NUT	
100-44	CLAMP FIXING SCREW	
100-50	HOOD	
100-51	HOOD SCREW	
100-56	BEARING FRONT (WORM SHAFT)	
100-57	WASHER FOR GEAR	
100-60	ROLLER COVER	





## SPARE PARTS LIST OF ARC SPRAY GUN (AIR DRIVE) Model: 100AD/8830

PART NO.	DESCRIPTION	ITEM
100-84	DRIVEN BEVEL GEAR (STEEL)	
100-85	DRIVEN BEVEL GEAR (BRASS)	
100-86	MOTOR EXHAUST RING	
100-86	AIR MOTOR (SLOW SPEED 1000 RPM)	
100-86	AIR MOTOR (HIGH SPEED 2500 RPM)	
100-87	DRIVEN GEAR RETAINING SCREW	
100-88	AIR BALL VALVE	

PART NO.	DESCRIPTION	ITEM
100-95	CURRENT CABLE	
100-96	REMOTE CONTROL	
100-97	CONNECTING AIR HOSE (STD. LENGTH - 5 MTR.)	
100-98	TEFLON TUBE WITH FITTING (3 MTR. LENGTH)	
100-99	HOSE FOR CONTROL CONSOLE TO AIR MOTOR (STD. LENGTH - 5 MTR.)	
100-100	ARC SMC FITTING	

# ARC SPRAY SYSTEM

## Portable Wire Feed & Gun Stand

- Portable Gun Stand for mounting of gun.
- Portable Spool Stand for mounting of wire spool.
- Can be moved near to job, away from power source.
- Swivel type stand takes the direction of wire feed towards operator's side.



## Hoses & Cables

- The hose package consists of two current cables and an air hose & two insulated wire guide tube and one hose for motor lubrication.
- Cable & hose set has a standard length of 5 mtrs. (other lengths as optional)
- The insulated wire guide tubes have a standard length of 2.5 meters and are made from a special low resistance material.



## Gun Extension

- ID arc spray extension has been a major leap in improving process technology.
- Enables spraying in bore or difficult-to-reach-at place.
- Deflector Nozzle: 90deg.
- Straight Nozzle: 0 deg.
- Available in length of: 315 mm(1 ft)/ 630 mm(2 ft) / 945mm(3ft)
- Allows coating in internal diameter of 70mm & above.
- Highly engineered nozzles, tips and positioners have been designed for applications that demand maximum durability.



# ARC SPRAY PROCESS

## HIGH VELOCITY SYSTEM

### What is High Velocity System

The High Velocity option is a revolutionary technology that has allowed the arc spray process to rival the coating quality of higher-end processes like plasma spray. The High Velocity attachment increases particle velocities and concentrates the spray pattern to produce dramatically improved coating quality. Coatings are similar to plasma-sprayed coatings; however, with the High Velocity option, these plasma-like coatings can be produced in much less time and at a fraction of the cost. Other advantages that the High Velocity

### Attachment has over conventional arc spray are:

- Higher particle velocities & deposition efficiency
- Denser coating & superior bond strength.
- Focused, narrow spray pattern
- Smoother as sprayed coating

Standard Pattern



Arc Spray Pattern



### Solid and Cored Arc Spray Wires

We recognize that high quality spray equipment without compatible, first-rate coating material can lead to less than desirable coatings. For arc spray, only wires designed and produced for thermal spraying ensure trouble free application and superior, consistent coatings. Standard materials include Aluminium, Aluminium Alloy, Tin, Tin Alloy, Nickel, Nickel Alloy, Zinc, Stainless

Steel, Brass, Monel, Copper & many more wires are available. We also able to fulfil the requirement of Cored Wires, the latest development in coating consumables. Metal Coat can assist in the selection of the correct material for all applications and can supply to suit all thermal spraying needs.



# ARC SPRAY PROCESS APPLICATION

## Wear Resistance

Cored wire technology has broadened the spectrum of arc spray applications. With a tailored chemistry of materials, including carbide-bearing compositions. It is possible to produce coatings with excellent sliding wear resistance as well as abrasion resistance at a lower cost than Plasma & HVOF.



## Corrosion Protection

Arc sprayed coatings are used widely to fight both high and low temperature corrosion. These coatings have proven their excellence in challenging environments such as boilers, by providing oxidation and heat resistance. Arc sprayed coatings also provide excellent resistance to atmospheric corrosion and are used on bridges and other infrastructural components.



## Part Restoration

The forgiving nature and flexibility of the arc spray process enables economical application of thick coatings without significant loss to bond strengths. For this reason, arc spray has become the process of choice for part restoration in applications where the replacement costs are high or the part has to be refurbished on-site.



## Electrical Conductivity and resistivity

Arc sprayed aluminium, tin, zinc and other metals are used in applications requiring good electrical conductivity. Arc sprayed coatings are used for both electrical conductivity and resistivity. In the electronics industry, coatings such as tin are often used on non metallic parts because of their ability to accept solders.



## Aircraft Component Repair

Most major aircraft engine manufacturers specify the use of the arc spray process for repairs of many aircraft engine components. Coatings are applied to various components for dimensional restoration, high temperature erosion resistance, and as bond coats.



## Heavy Equipment

The heavy duty equipment industry uses arc spray to restore worn components as well as new components surface defects.





**SAFETY WEARS****Metallizing Helmet**

Light weight & comfortable with excellent vision. Supplied from a separate air supply which should be filtered by Helmet Air Conditioner.

**Air Breather**

This is installed in between compressed air line originating from fitting to the operators helmets. Activated charcoal is contained in the breather unit which separates the oil traces from the compressed air and clean compressed air is fed to the operator's helmet.

**Helmet Air Conditioner**

Air from the air breather is fed to the helmet air conditioner and air is contained before it is fed to the helmet for breathing. It has also a regulator knob so that the operator can regulate the temperature of air fed to the helmet. It is self driven and doesn't need external power.

**Ear Muff**

Light weight & comfortable. Operator & other personnel close to the spray operation must wear. Protect the operator from noise originating during thermal spray.

**Protective Glass**

Light weight & comfortable with excellent vision. Operator & other personnel close to the spray operation must wear.

**Operator Safety Mask**

Ensure clean breathing air at all times. Conforms to current legislation on breathing air quality.

**Hand Gloves**

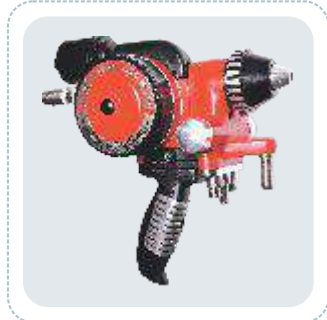
These are made of rubber and have anti-static properties. Hand gloves protect the operators' hand against flying abrasive and static charge if any.



## OTHER PRODUCT RANGE & CONSUMABLES



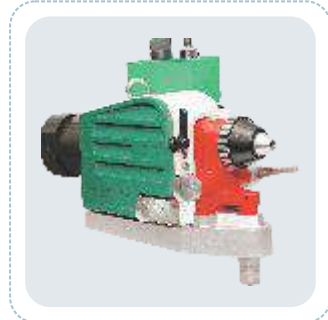
**WIRE FLAME SPRAY GUN**  
12M



**WIRE FLAME SPRAY GUN**  
11M



**WIRE FLAME SPRAY GUN**  
14M



**WIRE FLAME SPRAY GUN**  
5KM



**FLAME SPRAY POWDER GUN**  
5PM-II



**FLAME SPRAY POWDER GUN**  
6PM-II



**SPRAY & FUSE**  
ST-100



**HVOF**  
**CONTROL CONSOLE**



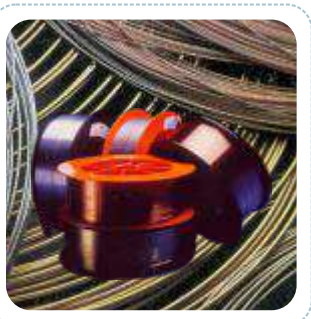
**POWDER FEEDER**



**TWIN POWDER FEEDER**



**SPRAY BOOTH**



**WIRES**



**POWDER**



**TURN TABLE**



H.O. & Works:

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