PF-50
Powder Feeder

Introduction

The FST Powder Feeder model PF-50 is an open-loop pressurized unit specifically designed for thermal spray applications. Based on the proven volumetric feed technology, the PF-50 is an economical powder feeder for all powder-based thermal spray processes. A high pressure version [PF-50/HP] is available for high pressure processes such as Diamond Jet® and Jet Kote®. The PF-50’s proven design has become a standard in the thermal spray industry and offers unparalleled powder feeding accuracy and repeatability. Utilizing proven technology and electrical controls, the PF-50 is inexpensive and reliable. The heart of the electrical controls is the digital closed-loop controller, offering precise and consistent wheel speed. To set the wheel speed, simply enter the desired speed into the controller. When the PF-50 is switched to Feed Mode, the powder wheel will ramp up to the set speed, holding that speed very accurately. Speed is displayed in revolutions per minute (rpm).

The PF-50 offers a variety of other features, including:

- Heater blanket on/off
- Plasma/HVOF mode
- Remote/local feed on/off
- Digital display
- Variable powder wheel speed
- High-capacity powder canister
- Powder canister pressure gauge
- Powder canister pressure-relief valve

Operating Principle

The feeder operates on a volumetric principle that directly controls the powder feed rate by the speed of the powder wheel. During operation the slots in the powder wheel fill with powder. Gravity, carrier gas, and rotation of the variable-speed powder wheel deliver the powder to the powder hose. An inert carrier gas provides canister pressurization then transports the powder through the hose to the thermal spray gun. The feeder is not backpressure sensitive and can operate with backpressures of up to 90 psi (6.2 bar). A high pressure 150 psi version is also available. The high pressure version (PF-50HP) is used for those processes operating with a higher back pressure such as Jet Kote or Diamond Jet.
Optional

Powder wheels: The feeder is supplied with a standard powder wheel. Fine, high-volume and 120-hole powder wheels are available upon request.

Specifications

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>44 kg (97 lbs)</td>
</tr>
<tr>
<td>Dimensions</td>
<td>775 mm (30.5&quot;) high</td>
</tr>
<tr>
<td></td>
<td>325 mm (12.8&quot;) wide</td>
</tr>
<tr>
<td></td>
<td>818 mm (32.2&quot;) deep</td>
</tr>
<tr>
<td>Electrical input</td>
<td>220/115 VAC, 3 A, 50/60 Hz</td>
</tr>
<tr>
<td>Powder Wheel Speed</td>
<td>15 rpm (32 rpm available)</td>
</tr>
<tr>
<td>Canister Capacity</td>
<td>3360 cm³</td>
</tr>
<tr>
<td></td>
<td>205 in³</td>
</tr>
<tr>
<td>Heat Blanket</td>
<td>50 °C (125 °F)</td>
</tr>
</tbody>
</table>

Pressure Gauge
Monitors and maintains even gas pressure

Feed-on Pilot Light for better feeding
Illuminates whenever the unit is commanded to feed

Feed-on/Clean-on Switch
A three way switch: Feed-on/off/Clean-on

Digital Wheel Speed On/Off Switch
Controller and Display
With the drive, motor and encoder, this controller offers excellent wheel speed regulation (0.05% off set speed)

Wheel Speed Local/Remote
When switched on Remote, Feed-on may be controlled remotely with an isolated 0-10 VDC signal

Various
Electrical Connection for remote access
Powder Connector
Hour Meter

Heater Bracket
Heats powder to keep powder dry for better feeding

Heater Bracket Pilot Light
Illuminates whenever heater blanket is switched on

Heater Bracket On/Off Switch

Plasma/HVOF Switch
When in Plasma mode, the canister is pressurized only in Feed-on mode. In HVOF mode the pressure in the canister is maintained constantly to prevent back flow of the combustion gas from the gun

Feed-on Local/Remote
When switched on Remote, Feed-on may be engaged by a remote device

Note: for more technical details about our systems, please contact your local FST sales contact.