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**TYPICAL SPECIFICATION FOR MODEL VMF-90WT**

**VOLUMETRIC SCREW FEEDER**

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**GENERAL FEATURES**

**Overview:** Volumetric screw feeder shall be a Model VMF-90WT as manufactured by Scaletron Industries Ltd., Plumsteadville, PA. Feeder must be a rugged, automatic metering screw feeder that is specifically designed for dispensing dry powdered or pelletized materials into a secondary process.

**Operation:** The feeder shall employ a heavy duty, concentric material conditioning overwind auger metering mechanism that produces uniform product density for accurate and continuous material feed without flooding, bridging or voids.

**Feed Rate**: The feed rate shall be \_\_\_\_\_\_\_\_\_\_\_\_ (0.07 to 60) cubic feet per hour.

**Accuracy**: The feeder shall have a metering accuracy of ± 1% of volume and ± 3% by weight.

**Environment:** Feeder must operate with an ambient temperature limit of 10°C - 40°C.

**Power:** Power requirement shall be 115/230 VAC, 50-60 Hz, 4 Amps.

**CONSTRUCTION**

**Materials of Construction:** To provide reliable operation, feeder shall feature rugged, corrosion resistant \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (304 or 316) stainless steel construction. Minimum sheet metal thickness shall be 12 gauge (.105) and 7 gauge (.188) and all welds shall be continuous TIG. All chemical contact areas of the feeder including the auger, drive shafts, seal assembly, discharge cylinder and piping shall be constructed of stainless steel; the seals shall be synthetic.

**HOPPER**

**Capacity:** The feeder shall be supplied with a built-in, \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (304 or 316) stainless steel gravity fed hopper with a minimum of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (1.5) cubic feet of storage capacity. A hopper extension with adapter flange shall provide seamless integration with an existing Wallace & Tiernan Volumetric feeding system and an additional \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (0.5) cubic feet of storage capacity. An

**Features:** Hopper shall have a 4” auger opening with sanitary flange for quick auger tube removal and a maintenance clean-out port. Hopper shall have mount for an optional vibratory agitator to ensure smooth flow of powder, an integrated load cell attachment point plus a flange for the attachment of hopper extensions, delumpers, bag loaders, etc.

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**AUGER**

**Type:** Feeder shall employ a heavy-duty, quick change \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (0.50″, 0.75″, 1.0″, 1.5″, 2.5″ or 3.75″) diameter solid auger to draw material out of the built-in storage hopper. An overwind helix, concentric to the auger, shall condition the material and serve as an agitator. Both auger and overwind helix shall be constructed in \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (304 or 316) stainless steel. Auger shall feature “bayonet” lug style attachment, threaded is not acceptable. Auger shall have (2) sealed R12-2RS ball bearings for driveshaft support and acetal dust seal plus a reducer mount that allows four positions of the motor.

**Discharge:** Discharge tube shall be a 6” long \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (304 or 316) stainless steel sanitary tube, polished inside and outside with all connections made with sanitary clamps and gaskets for quick disassembly without tools.

**CONTROLS**

**Motor Controller:** To ensure accurate feed rates, feeder must include a (check one):

o Variable speed DC NEMA 4X, SCR motor control.

o SCADA programmable controller.

o HMI PLC programmable controller.

SCADA and HMI PLC controllers must be capable of being programmed to automatically adjust the feed rates of the material being added must be available. These controllers must be capable of communicating with the existing SCADA systems including all alarms, statuses and remote operations. Controller shall be housed in a water and dust proof NEMA 4X enclosure and must be capable of remote installation. A 4-20 mA control input shall be standard.

**MOTOR**

**Motor Type**: Feeder shall feature a heavy-duty, variable speed motor with direct drive mechanism for reliable operation. Motor shall offer 1/2 HP at 83 RPM with a right-angle drive and gearing. Motor type shall be (check one):

o TENV 90 VDC Washguard®.

o TENV 90 VDC Explosion proof.

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**OPTIONAL WETTING CONE**

o Feeder must include a high-volume wetting cone and mixing eductor. Wetting cone and eductor shall be constructed of \_\_\_\_\_\_\_\_\_\_\_\_\_ (304 or 316) stainless steel. Wetting cone shall feature a full cover with overflow connection to prevent spills. Wetting cone shall generate a swirling water vortex that provides a large amount of surface area for proper wetting of chemical without clumping. A 1.5" eductor shall be standard and ensure complete mixing and transport of the solution or slurry to the point of application.

**OPTIONAL MIXING TANK**

o Feeder must include a \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (35, 50 or 75) gallon mixing tank. Mixing tank shall be constructed of:

o Rugged, corrosion resistant \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (304 or 316) stainless steel. Minimum sheet metal thickness shall be 12 gauge (.105) and 7 gauge (.188) and all welds shall be continuous TIG.

o UV stabilized LLDPE polymer with heavy, durable and impact resistant walls. Tank shall be translucent for viewing level of liquid and feature a \_\_\_\_\_\_\_\_\_\_\_\_ (304 or 316) stainless steel lid.

Tank shall have two 3/4” NPT female fill ports, one with a float valve. It shall also offer 1 1/2” NPT female ports for overflow, drain at bottom and upper water level. Tank lid shall have a small, covered port that is easily removed and a quick disconnect mount for a mixer.

**OPTIONAL GRAVIMETRIC FEEDING**

o Feeder shall incorporate an integrated “Loss in Weight” system with four (4) load cells and Model AccuPro 5000 Digital Controller that allows measurement of dispensed amounts via “loss in weight” providing operators with constant real time assessment of the total mass of additive being used.

**OPTIONAL EQUIPMENT**

To enhance the overall feeding process and improve productivity, feeder shall feature the following optional equipment (check all that apply):

o Vibratory Agitator: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (electric or pneumatic) style.

o Dust collector.

o Particle crusher.

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o Programmable controller module stand.

**WARRANTY**

Volumetric feeder shall carry a full two (2) year factory warranty. “Limited” warranties shall not be accepted.

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