

ENGINEERING DATA



Smith &
Loveless, Inc.®

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PISTA® Grit Removal
System
Selection Chart
August 2012
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Selecting PISTA® Grit Removal System

	Grit Removal Efficiency	Internal Flow Control Feature	Internal Inlet Channel Velocity Control	Smaller Footprint	Rotation
PISTA® 270™ Grit Chamber	<ul style="list-style-type: none"> • 95% of 50 Mesh (300 Microns) and Larger • 85% of 70 Mesh (210 Microns) and Larger, but less than 50 Mesh (300 Microns) • 65% of 100 Mesh (150 Microns), but less than 70 Mesh (210 Microns) 				270°
PISTA® 360™ Grit Chamber with Weir	<ul style="list-style-type: none"> • 95% of 50 Mesh (300 Microns) and Larger • 85% of 70 Mesh (210 Microns) and Larger, but less than 50 Mesh (300 Microns) • 65% of 100 Mesh (150 Microns), but less than 70 Mesh (210 Microns) 				360°
PISTA® 360™ Grit Chamber with V-FORCE BAFFLE™	<ul style="list-style-type: none"> • 95% of 140 Mesh (105 Microns) and Larger 	✓	✓	✓	360°

Inlet Channel

Controls velocity of influent and draws grit to the grit chamber floor.

Bull Gear Drive

Provides minimum service 5.0 factor and trouble-free operation.

PISTA® TURBO™ Grit Pump
[Top Mounted & Flooded Suction, Remote Mounted Options]

Removes grit from storage hopper to washing and dewatering. Available in vacuum-primed and flooded suction arrangements. Now available with **SONIC START® STREAMLINE™** prime sensing.

Outlet Channel

S&L's design criteria optimizes performance.

Coanda Ramp

Engineered entry facilitates laminar flow so that it takes a steady tangential direction as it enters the grit chamber and properly conditions the grit for entrapment.

Exclusive Flat-Bottom Basin Floor

Facilitates the forced vortex flow pattern inside the chamber. Minimizes organic capture while hydraulically directing grit into lower hopper. Patented, 360-degree inline design.

PISTA® V-FORCE BAFFLE™

New, patented innovation is custom-engineered specific to project hydraulics.

Hopper Cover Plate

Stationary and recessed, it removes for quick access to storage hopper.

PISTA® Grit Fluidizer

Patented blade exclusive to S&L design. Loosens collected grit, preventing compacting.

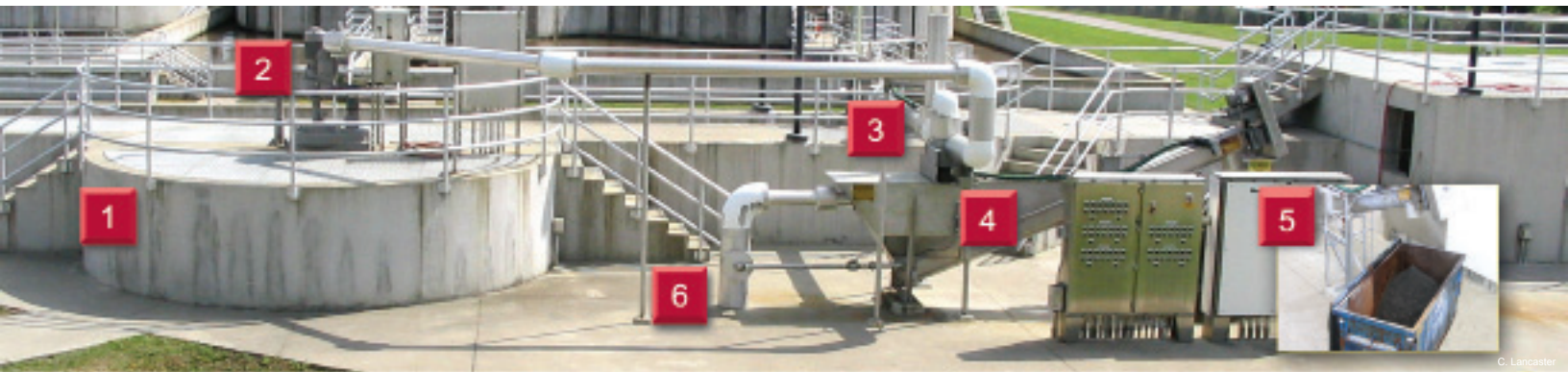
Storage Hopper

Stores removed grit prior to dewatering.

Axial-Flow Propeller

Aids in directing organic-free grit into lower hopper by enhancing flow patterns. Rounded edges prevent solids buildup, thus ensuring high efficiency.

95% GRIT REMOVAL
DOWN TO 140 MESH
(105 MICRON) PARTICLE SIZE



Grit Removal, Handling & Dewatering System Flow Scheme

1 PISTA® Grit Chamber — Influent enters flat-floor grit chamber hydraulically guided by coanda ramp, internal baffles and central, low-speed propeller. Forced vortex drives grit particles to center chamber floor and into lower grit hopper while organics and flow continue to plant.

4 PISTA® TURBO™ Grit Washer or PISTA® Grit Screw Conveyor — Grit from the concentrator deposits into the parallel (lamella) plate section of the S&L dewatering equipment, which aids in retaining finer grit and reducing the stream's turbulence and overflow rate.

2 PISTA® TURBO™ Grit Pump — Top mounted or flooded suction, remote mounted unit pumps collected grit slurry (kept fluid by the PISTA® Grit Fluidizer) to the PISTA®'s second-stage grit washing and dewatering system while also providing proper head.

5 Dewatered Grit Discharges from the top of the inclined screw into a container for disposal.

3 PISTA® Grit Concentrator — Specifically engineered for the PISTA® system, this abrasion-resistant unit washes grit further. It positions on the grit discharge line.

6 The Flow and any Residual Organics are Returned to the inlet channel prior to the grit chamber.

(Model A)

Inlet Channel

Controls velocity of influent and draws grit to the grit chamber floor.

Bull Gear Drive

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[Top Mounted & Flooded Suction (Remote Mounted) Options]

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Outlet Channel

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PISTA® Grit Fluidizer

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Storage Hopper

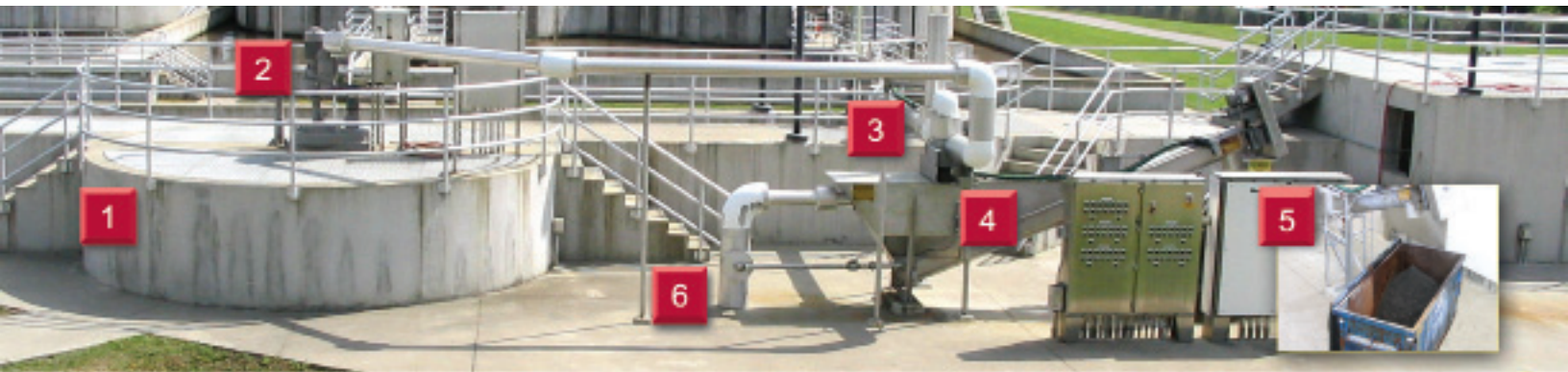
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Hopper Cover Plate

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Grit Removal, Handling & Dewatering System Flow Scheme

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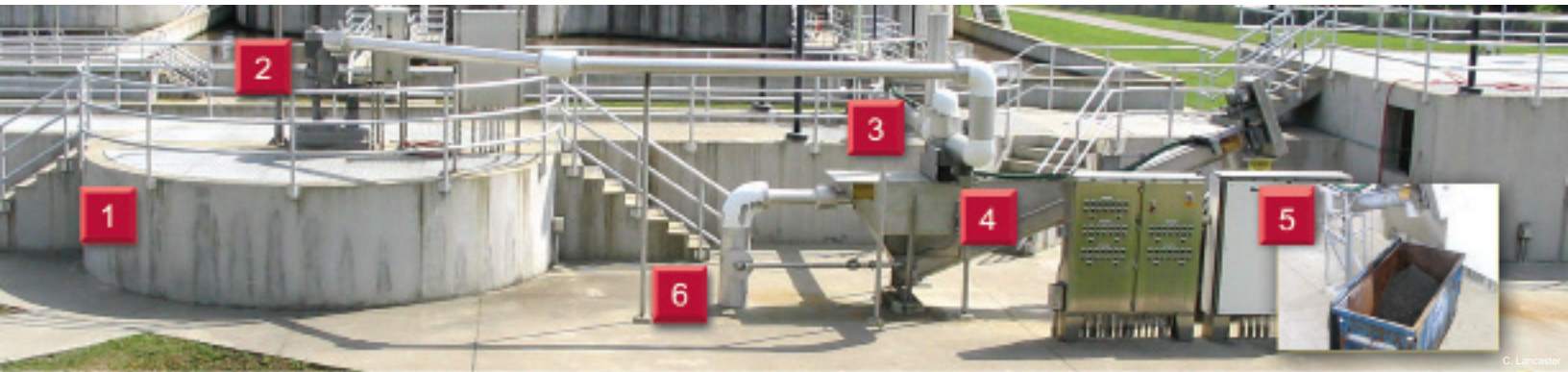
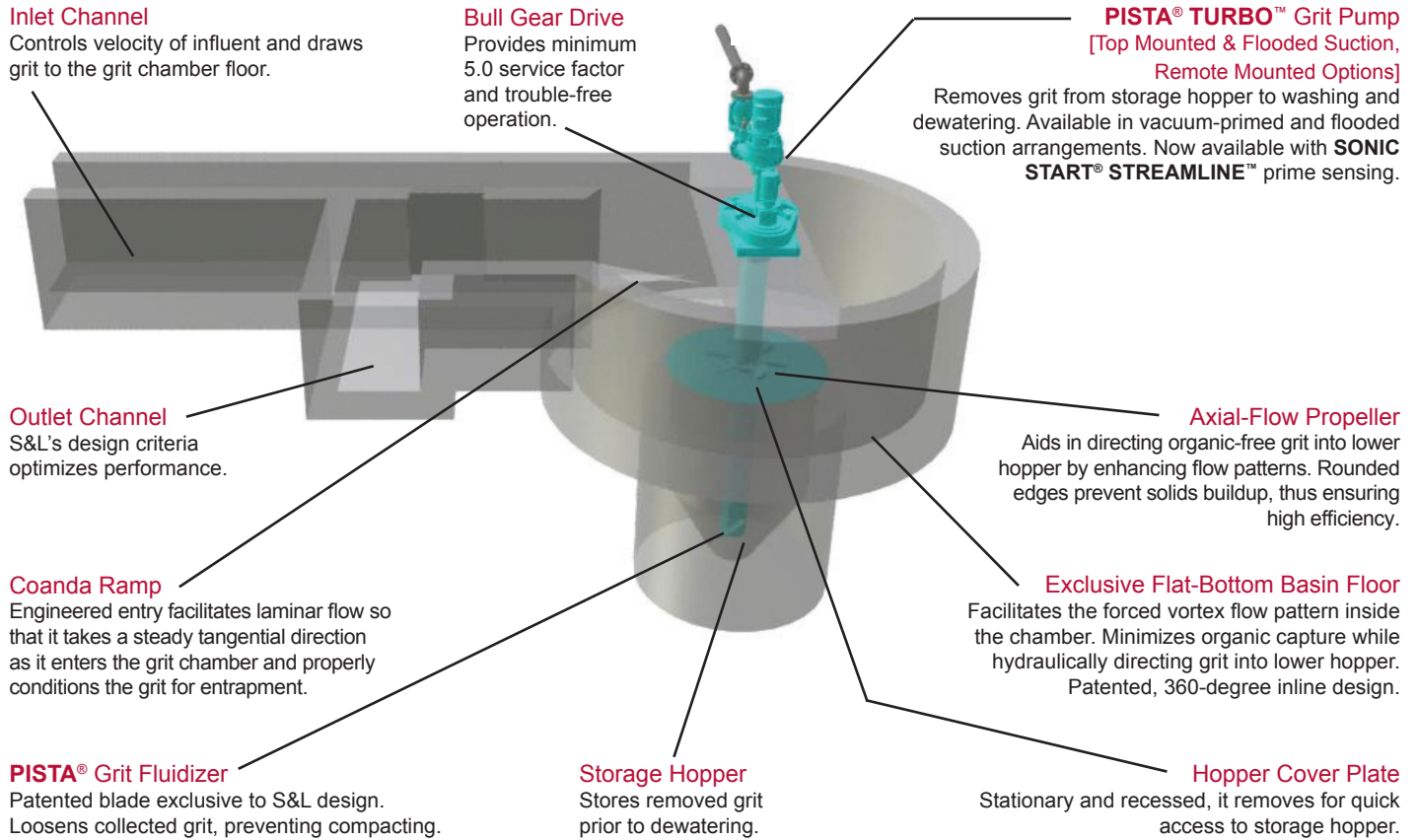
2 PISTA® TURBO™ Grit Pump — Top mounted or flooded suction, remote mounted unit pumps collected grit slurry (kept fluid by the PISTA® Grit Fluidizer) to the PISTA®'s second-stage grit washing and dewatering system while also providing proper head.

3 PISTA® Grit Concentrator — Specifically engineered for the PISTA® system, this abrasion-resistant unit washes grit further. It positions on the grit discharge line.

4 PISTA® TURBO™ Grit Washer or PISTA® Grit Screw Conveyor — Grit from the concentrator deposits into the parallel (lamella) plate section of the S&L dewatering equipment, which aids in retaining finer grit and reducing the stream's turbulence and overflow rate.

5 Dewatered Grit Discharges from the top of the inclined screw into a container for disposal.

6 The Flow and any Residual Organics are Returned to the inlet channel prior to the grit chamber.



PISTA[®] Grit Removal, Handling & Dewatering System Flow Scheme

- 1** **PISTA[®] Grit Chamber** — Influent enters flat-floor grit chamber hydraulically guided by coanda ramp, internal baffles and central low-speed propeller. Forced vortex drives grit particles to center chamber floor and into lower grit hopper while organics and flow continue to plant.
- 2** **PISTA[®] TURBO™ Grit Pump** — Top mounted or flooded suction, remote mounted unit pumps collected grit slurry (kept fluid by the **PISTA[®] Grit Fluidizer**) to the **PISTA[®]**'s second-stage grit washing and dewatering system while also providing proper head.
- 3** **PISTA[®] Grit Concentrator** — Specifically engineered for the **PISTA[®]** system, this abrasion-resistant unit washes and separates grit further. It positions on the grit discharge line.
- 4** **PISTA[®] TURBO™ Grit Washer or PISTA[®] Grit Screw Conveyor** — Grit from the concentrator deposits into the parallel (lamella) plate section of the S&L dewatering equipment, which aids in retaining finer grit and reducing the stream's turbulence and overflow rate.
- 5** **Dewatered Grit Discharges** from the top of the inclined screw into a container for disposal.
- 6** **The Flow and any Residual Organics are Returned** to the inlet channel prior to the grit chamber.