

# DESIGN AND SUPPLY OF INLET DUCT DISTRIBUTION GRID

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**Vogt Power**  
International

A BABCOCK POWER INC. SUBSIDIARY

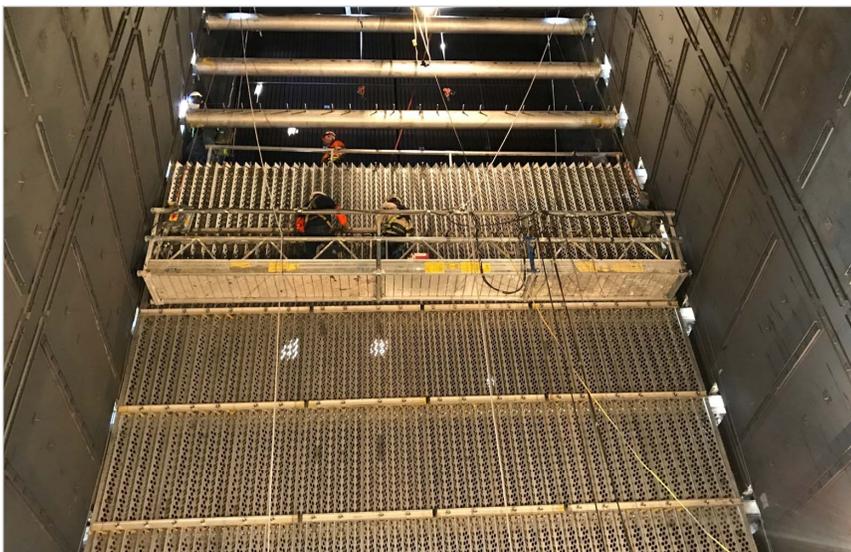
## FEATURES / BENEFITS

- Corrugated plate design for the distribution grid greatly improve the ability of the grid to normalize a flow pattern that may not be 100% perpendicular to the face of the grid compared to a flat plate design.
- Bends in the plates are not located where the plates have been perforated. Vogt Power will start from a blank plate and laser cut the holes for the perforations to a customized size and location, which can be determined via CFD analysis. This prevents cold working a ligament between holes.
- The distribution grid's perforated plates are bolted to the structural pipe supports. The connections at these bolted locations are slotted on both ends to accommodate thermal movements in two directions.
- The bolted connections of the perforated plates to the structural pipe supports utilize C-channels instead of an oversized washer to reinforce the connection in multiple dimensions.



## OVERVIEW

Vogt Power International, a Babcock Power Inc.® company, can design, supply, and deliver a new distribution grid (flow straightener) to perform per the customer's GT exhaust conditions and the inlet duct geometry. Vogt Power's distribution grid is made of corrugated plate, pipe structural supports, landing boxes, and attachment hardware.



Distribution Grid Layout  
(looking downstream of gas flow)



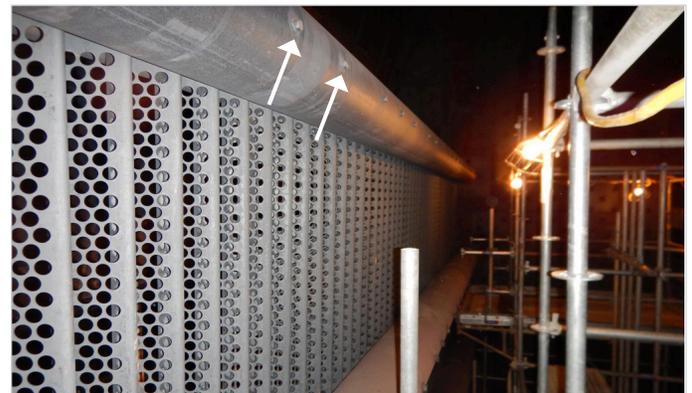
## FEATURES / BENEFITS

- Vogt Power’s design uses many small overlapping components with sliding connections in lieu of a welded, one-piece design. This design feature limits the length of thermal growth, and thus reduces the magnitude of stress that can build up. The lower stress levels improve both creep and fatigue characteristics.
- The corrugations provide a natural spring to increase the flexibility of the panels and keep thermal stresses low.
- Vogt Power’s design has robust reinforcement of the distribution grid’s perforated plates. The plates are supported by large bore pipe. The nominal size and schedule of the pipes is customized to the specific conditions dictated by the GT exhaust flow profile and duct geometry.
- The structural pipe supports in Vogt Power’s design are connected back to the external structural steel of the inlet duct by the use of landing boxes. Vogt Power will not use distribution grid supports connected directly to the casing’s skin plate. The supports will always be either directly connected to a column or Vogt Power will add structural steel to the outside of the inlet duct to prevent any vibrations.
- The landing boxes are both flexurally and torsionally rigid, capable of withstanding substantial loads in any direction. The large bore pipes can slide on the landing box to prevent significant thermal stresses from developing, but the landing box is strong enough to handle all required loads even accounting for possible load concentrations.
- The connection of the structural pipe supports to the landing boxes will be visible for inspection on the interior of the inlet duct.

Contact Vogt Power International Aftermarket products at **1.888.VOGTPWR** or email: **aftermarket@vogtpower.com**.



Box 1 column line which will support new grid



Bolts tacked to the backside of the support pipes



Close up of plate and channel interface, illustrating the sliding connections and range of movement

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