



## PROPULSION 400 AREA SMALL ALTITUDE SIMULATION SYSTEM

### SUMMARY

The 400 Area Small Altitude Simulation System (SASS) is designed to provide altitude to the 400 Area test chambers to test rocket engines up to 1000 lbf.

### 400 AREA SMALL ALTITUDE SIMULATION SYSTEM

Three boilers power small two-stage ejector sets of the altitude simulation system. The number of boilers fired, the selection of the ejector combination, and the interchangeable diffusers allow optimization of the entire steam system to engine requirements.

- Altitude Capability
  - Provides start altitude of approximately 35,000 m (115,000 ft)
  - Maintains test stands (TS) 401, 403, or 405 at greater than 30,500 m (100,000 ft) during rocket engine firing up to 4.4 kN (1000 lbf) for up to 8 h
- Steam Generation
  - Produces 3.4 kg/s (7.5 lb/s), 1.7 MPa (250 psig), 230 °C (400 °F) steam
  - Includes three 7.9 MW (800 bhp) fuel-oil fired boilers
- Steam Ejectors
  - Two 61-cm (24-in.) diameter vacuum header ejectors located in the 400 Area
  - Can be operated individually or in parallel
  - Large set consumes 16,000 kg/h (36,000 lb/h) steam
  - Small set consumes 8,000 kg/h (18,000 lb/h) steam
- Currently available diffuser sizes
  - 13.5 in. horizontal (1)
  - 17.25 in. vertical or horizontal (1)

### MECHANICAL VACUUM PUMPS

Oil-sealed rotary mechanical pump, Roots<sup>®</sup> blower

- Maintains TS- 401, 403, or 405 at greater than 45,700 m (150,000 ft) during test article coast periods
- Can be used “stand-alone” for short-duration firings.

Each set delivers up to 141 L<sup>3</sup>/s (5,000 scfm)

- 61-cm (24-in.) diameter vacuum header provides connection option for 400 Area test stands to manifold of all five sets together with any selected altitude test stand

### CONTACT

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