

**Armstrong® Armstrong Steam Harness****Description**

A properly sized and engineered steam harness solution providing you with real-time monitoring and notification of up to 15 key thermal and operating parameters that can impact the reliability of your feed production and system performance. The Armstrong Steam Harness includes industry 1st critical components capable of measuring steam quality (% dryness fraction) and flow rate (no straight run requirement) in a compact footprint. Designed with best in class system knowledge and best practices piping, the steam harness is targeted towards improving steam quality and overall production efficiencies.

Maximum Operating Conditions

Designed to accept inlet steam pressures of up to 150 psig, deliver the required steam flow (lb/hr) and reduce pressures to the desired minimums based upon plant specifications for a given product/formula.

Materials

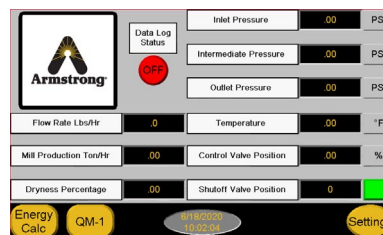
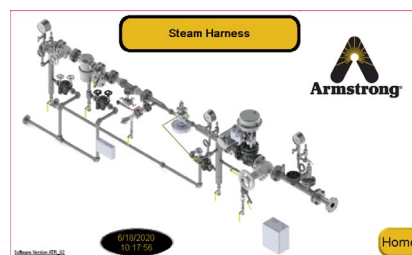
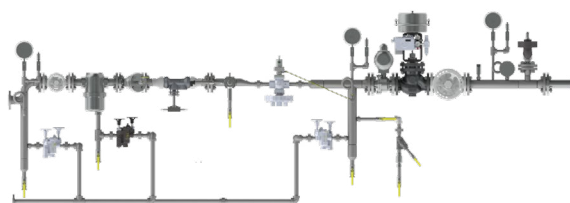
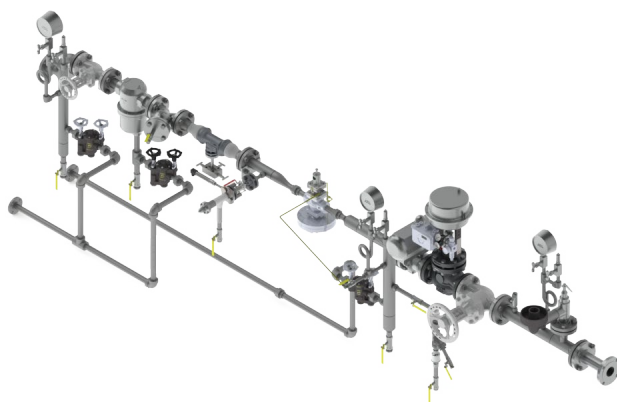
- Steam quality meter (Steam QM®-1)
- Steam flow meter (VERIS Accelabar®)
- PLC/HMI, Steam pressure & temperature transducers
- Pressure gauges
- Automatic on/off full port isolation valve with visual and electrical indication of position
- Carbon steel Phyton control valve with multilingual intelligent positioner
- Trap valve stations (TVS), Isolation valves
- T-design drain separator,
- Thermostatic steam trap
- Pressure reducing valve (PRV)
- Safety relief valve with stainless steel internals
- Manual butterfly valve

Features

- Properly sized for the thermal operating requirements of each application (Not a one-size fits all approach)
- Up to 15 K.O.P.'s (Key Operating Parameters) of the thermal system and production via a PLC/HMI
 - Steam Pressure upstream of Steam Harness
 - Steam Quality
 - Steam Quality [AVG] per tonne Feed
 - kg of water added by steam per tonne Feed
 - Steam consumption per hour
 - Steam consumption per tonne Feed
 - Accumulated Steam consumption (lb or kg)
 - Thermal Energy Input (MMBtu/h or kW)
 - Thermal Energy per tonne Feed (MMBtu or kWh)
 - Steam cost per hour (local currency/h)
 - Steam cost per tonne Feed (local currency)
 - Motor Amps per tonne Feed (amp/tonne Feed)
 - Motor Amps per steam flow
 - Reduced Steam Pressure for feed conditioning
 - Customization of Steam Harness Parameter per Formula
- Production rate (4-20mA electrical signal) from pellet mill or extruder is required for tonnage
- Real time monitoring and notifications of any steam related parameter and/or alarm condition
- Capable of communicating directly to facility BAS/DCS via Modbus TCP/IP
- 24/7 Steam Dryness Fraction monitoring/recording
- Accurate flow measurement with zero-straight run requirement delivering 50:1 turndown

Options

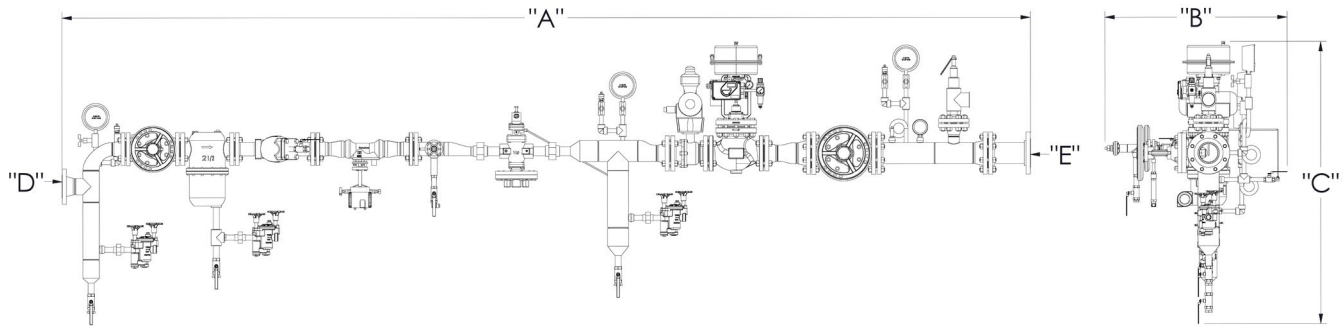
- Customizable to fit your specific site requirements without compromising the quality of the delivered steam
- Siemens PLC/HMI
- Float & Thermostatic steam traps
- Critical components pack (separator, steam quality meter, flow meter & data collection) available for optimized, value engineered applications

**How to Order**

- Can order based on standard p/n configurations
- Can order customized harness based upon site visit measurements of physical space available for proper installation and performance OEM can order full, partial or components of harness

For questions regarding Turnkey installation of the Armstrong Steam Harness, contact Armstrong direct or your local Armstrong factory authorized representative.

Armstrong Steam Harness - Standard Model Dimensions and Weights



Note: Image shown above is a generic representation; Actual components and specific parts will vary per location.

| Standard ASH Model | North America | | | | | |
|------------------------|--|--|---|---|---|---------------------------------------|
| | ASH5 TPH 85-100psi (5.9-6.9barg) | ASH5 TPH 115-145psi (7.9-10barg) | ASH10 TPH 85-100psi (5.9-6.9barg) | ASH10 TPH 115-145psi (7.9-10barg) | ASH15 TPH 85-115psi (5.9-6.9barg) | ASH15 TPH 130-145psi (9-10barg) |
| Inlet Connection Size | 1-1/2 | 1-1/2 | 2-1/2 | 2 | 3 | 2-1/2 |
| Outlet Connection Size | 2 | 2 | 3 | 3 | 4 | 4 |
| "A" Length, in (mm) | 165 (4191) | 165 (4191) | 181 (4597) | 178 (4521) | 207 (5258) | 205 (5207) |
| "B" Width, in (mm) | 38 (965) | 38 (965) | 39 (991) | 39 (991) | 39 (991) | 39 (991) |
| "C" Height, in (mm) | 52 (1321) | 52 (1321) | 58 (1473) | 56 (1422) | 61 (1549) | 59 (1499) |
| Weight, lb (kg) | 1225 (555) | 1240 (562) | 2060 (934) | 2010 (912) | 2630 (1193) | 2730 (1238) |

| Standard ASH Model | India-PacRim-China | | | | | |
|------------------------|------------------------------------|--------------------------------------|-------------------------------------|---|-------------------------------------|---------------------------------------|
| | ASH5 TPH 87-101psi (6-7barg) | ASH5 TPH 116-145psi (8-10barg) | ASH10 TPH 87-116psi (6-8barg) | ASH10 TPH 130-145psi (8.9-10barg) | ASH15 TPH 87-101psi (6-7barg) | ASH15 TPH 116-145psi (8-10barg) |
| Inlet Connection Size | 1-1/2 | 1-1/4 | 2-1/2 | 2 | 3 | 2-1/2 |
| Outlet Connection Size | 2 | 2 | 2-1/2 | 2-1/2 | 3 | 3 |
| "A" Length, in (mm) | 213 (5410) | 248 (5245) | 232 (5890) | 239 (6070) | 244 (6200) | 255 (6475) |
| "B" Width, in (mm) | 40 (1000) | 40 (1000) | 40 (1000) | 40 (1000) | 40 (1000) | 40 (1000) |
| "C" Height, in (mm) | 74 (1880) | 79 (2006) | 80 (2032) | 80 (2032) | 81 (2057) | 82 (2082) |
| Weight, lb (kg) | 1275 (578) | 1295 (587) | 2150 (975) | 2125 (964) | 2690 (1220) | 2825 (1281) |

| Standard ASH Model | Europe | | | |
|------------------------|--------------------------------------|-------------------------------------|---------------------------------------|--------------------------------------|
| | ASH5 TPH 116-145psi (8-10barg) | ASH10 TPH 87-116psi (6-8barg) | ASH10 TPH 130-145psi (9-10barg) | ASH5 TPH 116-145psi (8-10barg) |
| Inlet Connection Size | DN32 PN25 | DN50 PN25 | DN50 PN25 | DN65 PN25 |
| Outlet Connection Size | DN50 PN25 | DN80 PN25 | DN100 PN25 | DN80 PN25 |
| "A" Length, in (mm) | 87.41 (2220) | 87.41 (2220) | 87.41 (2220) | 87.41 (2220) |
| "B" Width, in (mm) | 35.9 (911.9) | 35.9 (911.9) | 35.9 (911.9) | 35.9 (911.9) |
| "C" Height, in (mm) | 70.27 (1785) | 72.24 (1835) | 76.81 (1951) | 74.44 (1891) |
| Weight, lb (kg) | 1074 (487) | 1106 (502) | 1160 (525) | 1135 (515) |

*All models indicated w/ total TPH size as well inlet pressure range of ASH.

Designs, materials, weights and performance ratings are approximate and subject to change without notice. Visit armstronginternational.com for up-to-date information.