






Maximize Output With TraceBOOST™

TraceBOOST™ maximizes heat transfer from conventional tube tracing. **TraceBOOST** is an ideal application anywhere multiple tube tracings are used.

TraceBOOST™ makes tube tracing work with maximum efficiency—*at a much lower cost*. Improve thermal performance while reducing tracing circuits!

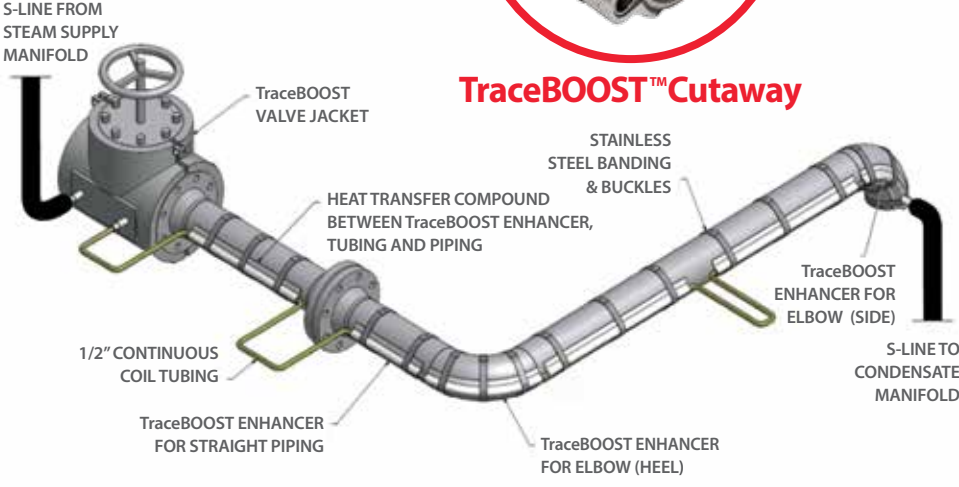


TraceBOOST™ Cutaway

Completed TraceBOOST™ System

A recent case study delivered the following savings for our customer:

- *Reduced number of tracing circuits by 58% (768 conventional vs. 322 TraceBOOST)*
- *CapEX Cost Savings of 46.3% (\$2.59M conventional estimate vs. \$1.39M TraceBOOST system)*
- *OpEX 25 Year Cost Savings of 45% (\$5.01M conventional estimate vs. \$2.78M TraceBOOST system)*
- *Steam Consumption Savings of 45% (4,162 Kg/hr conventional estimate vs. 2,312 Kg/hr TraceBOOST system)*



S-LINE FROM STEAM SUPPLY MANIFOLD

TraceBOOST VALVE JACKET

HEAT TRANSFER COMPOUND BETWEEN TraceBOOST ENHANCER, TUBING AND PIPING

1/2" CONTINUOUS COIL TUBING

TraceBOOST ENHANCER FOR STRAIGHT PIPING

TraceBOOST ENHANCER FOR ELBOW (HEEL)

TraceBOOST ENHANCER FOR ELBOW (SIDE)

S-LINE TO CONDENSATE MANIFOLD

STAINLESS STEEL BANDING & BUCKLES

TraceBOOST system includes:

- Aluminum Heat Transfer Enhancer
- Heat Transfer Compound
- Installation Banding and Tools
- Long Continuous Coiled Steam Tubing
- Pre-insulated Tubing for Steam Supply and Condensate Return
- Bolt-on Heating Jackets for Valves and Equipment
- Purpose Built Equipment for Safe Handling and Straightening Coiled Tubing

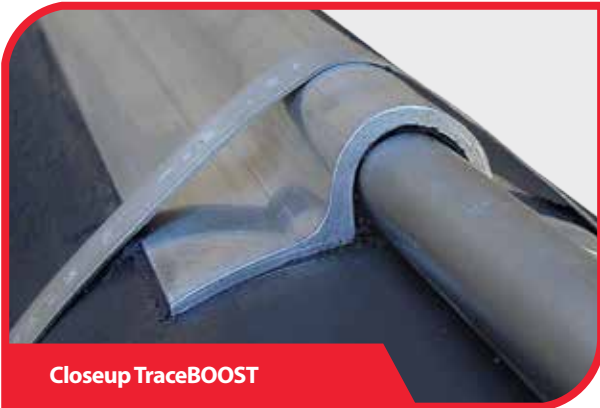
Applications:

- Any Pipe Heating Application where more than One Tube Tracer is Required
- Single Traced Process Lines Exhibiting Poor Performance

Process Examples:

- | | |
|-------------------|----------------------------|
| • Heavy Oil | • Delayed Cokers |
| • SDS & FCC Units | • Visbrakers |
| • Acrylic Acid | • Chocolate and Other Food |
| • Asphalt | |
| • Caprolactam | |

Superior Advantages



Closeup TraceBOOST

Maximizes heat transfer from conventional tube tracing, transforming it from convective to conductive heat transfer and increasing the efficiency by 5-10X.

TraceBOOST tracing is typically suited for pipe heating applications with a minimum temperature difference of 70°F (40°C) between the heating medium (steam) & the process. Consult factory for other requirements.

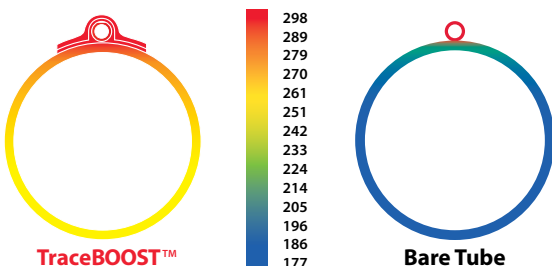
TraceBOOST provides heating for freeze protection of liquid process and temperature maintenance of process gas. **TraceBOOST** results in fewer required tracing circuits to maintain process temperature, fewer steam traps and fewer supply/condensate return manifolds.

The **TraceBOOST** system with coiled tubing also reduces capital maintenance cost by eliminating potential leak points at frequent tube unions.

TraceBOOST™ Advantages:

- Reduced Capital Cost (Typically 30-70%)
- Reduced Installation Time
- Increased Energy Efficiency
- Reduced Annual Operating Cost
- Increased System Reliability

TraceBOOST and Bare Tube temperature contour comparison.



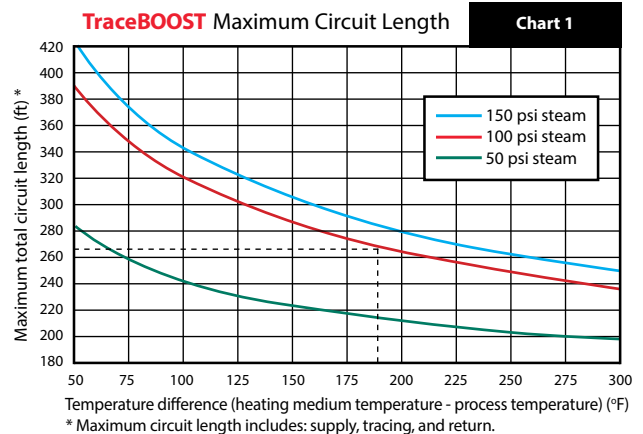
TraceBOOST Selection & Sizing

Determine the number of tracers from existing plant specifications or tracer schedules and look up the corresponding number of **TraceBOOST** tracers using Table 1 below. If no plant standard exists consult the factory.

Specified Conventional Tube Tracers		Suggested TraceBOOST Tracers	Infrastructure Savings
Carbon Steel Process Pipe	Stainless Steel Process Pipe		
2-3	2	1	50-65%
4-7	3-5	2	30-70%
8-10	6-8	3	50-70%
11-14	9-11	4	55-70%

Circuit Length Determination

Subtract the process maintain temperature from the steam temperature. Find the result along the bottom. Follow it up to the intersection with the appropriate steam pressure. The maximum total circuit length is found on the left to determine the maximum circuit length with a 10% pressure drop.



Example:

If your plant standard to maintain a 150°F process line with 100 psig steam with five ½" tube tracers then:

- From Table 1 use two **TraceBOOST** tracers.
- Knowing 100 psi steam has a saturation temperature of 338°F, use Chart 1 to find the delta between the steam and process (338°F-150°F = 188°F) on bottom axis. Therefore, the total circuit length is 265'.
- In this example, the supply and return lines were 80' each, so the tracing would be 105' (265' - 80' steam supply line - 80' condensate return line = 105' **TraceBOOST**).



Tracing Tubing



Tracer Tubing

is provided in long continuous coils to eliminate potential leak points from intermediate fittings between stick tubes. Purpose built equipment safely handles and straightens tubing for installation.

Part Number	Description
BCA4	½" OD x 0.035 wall welded 316SS
BCE4	½" OD x 0.049 wall welded 316SS
BCF4	½" OD x 0.035 wall seamless 316SS
BCB4	½" OD x 0.049 wall seamless 316SS
BCD4	½" OD x 0.035 wall copper
BCM4	½" OD x 0.049 wall copper

Tubing Data:

(for bare coiled tubing and S-Line pre-insulated tubing)

Tube	Description	Max Pressure*	Max Cont. Length
A4	½" OD x 0.035 wall welded 316SS	2,080 psig	2,000 ft
E4	½" OD x 0.049 wall welded 316SS	2,975 psig	1,000 ft
F4	½" OD x 0.035 wall seamless 316SS	2,600 psig	1,000 ft
B4	½" OD x 0.049 wall seamless 316SS	3,700 psig	750 ft
D4	½" OD x 0.035 wall copper	800 psig	1,000 ft
M4	½" OD x 0.049 wall copper	1,100 psig	1,000 ft

* Maximum pressure @ 72°F, calculated using S values specified in ANSI B31.3

Temperature Correction Factors:

Process Temperature	316SS	Copper
200°F	1.00	0.80
300°F	1.00	0.78
400°F	0.97	0.49

S-LINE® Pre-Insulated Tubing

S-LINE® is the ideal complement to complete the **TraceBOOST™** system. It is used for steam supply lines from the supply manifold to the **TraceBOOST™** tracer and for removing condensate from the **TraceBOOST™** tracer to the condensate manifold.



S-Line Insulated Tubing

Applications:

- Steam Supply Lines
- Condensate Return Lines

Advantages: (cont'd.)

- Non-hygroscopic Insulation
- UV Resistant Weatherproof SV47 Jacket
- Less Expensive Than Fabricated Pipe

Advantages:

- Personal Protection
- Energy Conservation

Model Number:

Part Number	Description
SA4	½" OD X 0.035 wall welded 316SS
SE4	½" OD X 0.049 wall welded 316SS
SF4	½" OD X 0.035 wall seamless 316SS
SB4	½" OD X 0.049 wall seamless 316SS
SD4	½" OD X 0.035 wall copper
SM4	½" OD X 0.049 wall copper

Accessories:

- TPKHS-E1 – Heat shrink and seal



Tools & Installation (Equipment)

Part Number	Description
BAND-SS-07-100	0.75" Stainless Steel Banding (100 ft/box) <i>Note 1</i>
BUCKLE-SS-07-100	Stainless Steel Buckles (100 pcs) <i>Note 2</i>
BANDTOOL	Banding Installation Tool (each) <i>Note 3</i>
HTC-C-GAL	Heat Transfer Compound (Gallon) <i>Note 4</i>
TB-PTYKNIFE	Heat Transfer Compound Applicator <i>Note 5</i>
CSS-UNN-316-05TBX05TB	316 Stainless Steel Tube Union: ½" tube x ½" tube <i>Note 6</i>
TPMJST4614	Combination coiled tubing payout and straightener. It accommodates tracer tubing spools up to 14" in width. The five roll tube straightener can also be used hand held. Features no-lift loading and backlash brake.
TPMJST6036	Spool stand and straightener for S-Line bundle. It accommodates bulk spools up to 36" in width. Features no-lift loading and backlash brake.
TPKHS-E1	Heat shrink end seal boots for S-Line pre-insulated bundle. Must be used at every fitting.

Estimating Notes:

Note 1 Number of Boxes for straight enhancer =
 $\text{pipe length (ft)} \times [(\text{pipe OD (in)} \times 0.16) + 1.2] \div 100$

Number of Boxes for elbow enhancer =
 $\text{qty elbows} \times [(\text{pipe OD (in)} \times 0.2) + 1.17] \div 100$

Note 2 One box per 170 ft of straight enhancer
 One box per 30 elbows.

Note 3 One per five boxes of banding

Note 4 One gallon per 75 linear feet of straight enhancer
 One gallon per 15 elbows

Note 5 One per five boxes of banding

Note 6 One per expansion loop & two per circuit

TPMJST4614 shown here.



Straightening Technology

Ordering Instructions

Easy Steps:

1. Determine **TraceBOOST** coverage needed (see page 2)
2. Estimate bill of material needed (**TraceBOOST**, bare tubing, install materials and tools, pre-insulated supply/condensate return tubing, unions)
3. Contact the factory or your local representative for pricing and ordering

TraceBOOST Straight Enhancers	
Part Number	Description
TB-010-Box	Straight Enhancer for 0.75" - 1.25" Pipe. (100'/Box)
TB-020-Box	Straight Enhancer for 1.5" - 2.5" Pipe. (100'/Box)
TB-040-Box	Straight Enhancer for 3" - 5" Pipe. (100'/Box)
TB-080-Box	Straight Enhancer for 6" and Larger Pipe. (100'/Box)
TraceBOOST Elbow Enhancers	
TB-XXX-YY-Z	XXX = Pipe Size (X09 = 1", X15 = 1.5", X20 = 2", X25 = 2.5", X30 = 3", X40 = 4", X60 = 6", X80 = 8", 100 = 10", 120 = 12", etc.) YY = Type of Fitting (45 = 45deg, 90 = 90deg) Z = Orientation on Fitting (S = Side, H = Heel, T = Throat)
Tracer Tubing (feet)	
BCA4	½" OD X 0.035" wall welded 316SS Bare Tracer Tubing
BCE4	½" OD X 0.049" wall welded 316SS Bare Tracer Tubing
BCF4	½" OD X 0.035" wall seamless 316SS Bare Tracer Tubing
BCB4	½" OD X 0.049" wall seamless 316SS Bare Tracer Tubing
BCD4	½" OD X 0.035" wall copper Bare Tracer Tubing
BCM4	½" OD X 0.035" wall copper Bare Tracer Tubing
S-Line Pre-insulated Tubing	
SA4	½" OD X 0.035" wall welded 316SS S-Line Insulated Tubing
SE4	½" OD X 0.049" wall welded 316SS S-Line Insulated Tubing
SF4	½" OD X 0.035" wall seamless 316SS S-Line Insulated Tubing
SB4	½" OD X 0.049" wall seamless 316SS S-Line Insulated Tubing
SD4	½" OD X 0.035" wall copper S-Line Insulated Tubing
SM4	½" OD X 0.049" wall copper S-Line Insulated Tubing



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