



Spraying Systems Co.
Experts in Spray Technology



U.S. PATENT 8,820,663

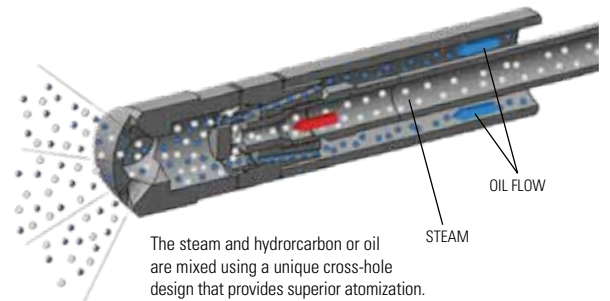
NEW OPTIMAX™ INJECTOR

SUPERIOR MIXING, SUPERIOR ATOMIZATION

Now there is a better option for torch oil, slurry backflush, quench, and other similar injection operations – the OptiMax injector from Spraying Systems Co. The OptiMax injector is specially designed to produce a uniform spray pattern for quick vaporization. The OptiMax injector mixes steam with the oil, hydrocarbons or chemicals using a unique, patented atomization process. This process ensures thorough mixing of the steam and fluid prior to injection. The mixed fluid that exits the injector consists of small drops in a uniform spray pattern.

BENEFITS

- Thoroughly mixed fluid and uniform spray coverage optimize the effectiveness of the chemical reaction
- Fast vaporization of the hydrocarbon for quicker reaction in the process stream
- Better control of drop size over a wide flow rate range provides more operating flexibility
- Durable, dependable design for long wear life
- Uses available plant steam instead of costly compressed air – better for the environment and the bottom line



The steam and hydrocarbon or oil are mixed using a unique cross-hole design that provides superior atomization. All mixing is done prior to exiting the nozzle orifice.

SPECIFICATIONS

Flow rate range: Wide range to accommodate any amount of barrels per day

Steam utilization rate: 2% to 5% by weight depending on hydrocarbon density

Spray angle: 90° standard; others available upon request

Materials: 316 stainless steel standard; others available upon request. Special alloying process available for components subject to erosive wear

Customized dimensions for all installations

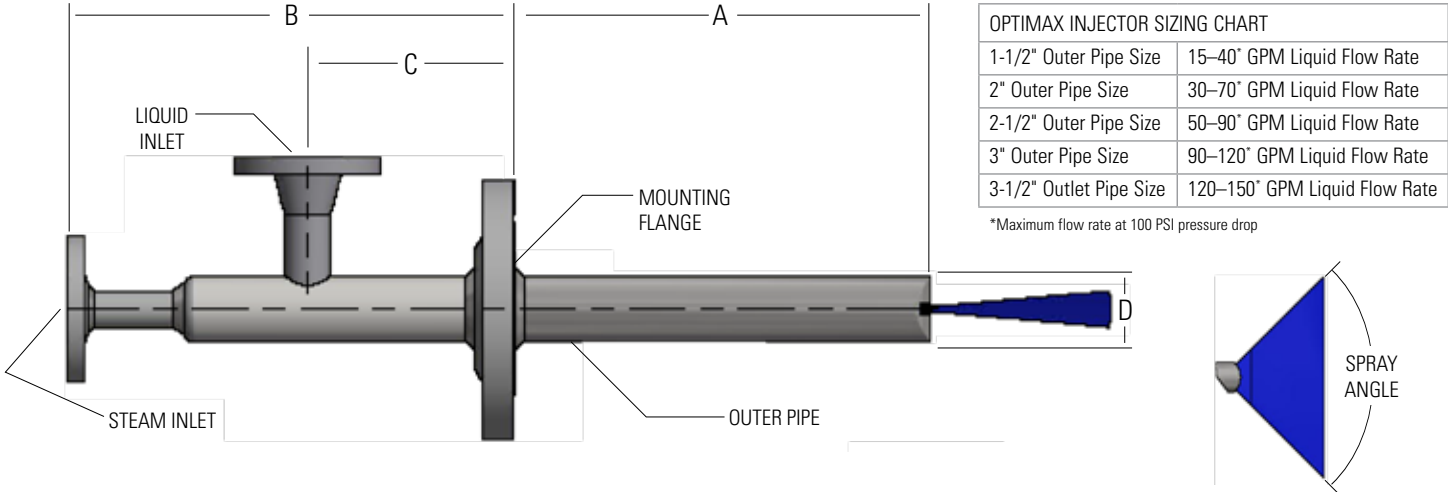
Can be manufactured to ASME® B31.3

IDEAL FOR

- Additive injection
- Torch oil injection
- Hydrocarbon atomization
- Slurry backflush
- Quench



OPTIMAX™ INJECTOR SPECIFICATIONS



1-1/2" Outer Pipe Size	15–40* GPM Liquid Flow Rate
2" Outer Pipe Size	30–70* GPM Liquid Flow Rate
2-1/2" Outer Pipe Size	50–90* GPM Liquid Flow Rate
3" Outer Pipe Size	90–120* GPM Liquid Flow Rate
3-1/2" Outlet Pipe Size	120–150* GPM Liquid Flow Rate

*Maximum flow rate at 100 PSI pressure drop

CUSTOMER SPECIFICATIONS:

Process Line Size/Sch: _____

A: _____ (in. or mm)

B: _____ (in. or mm)

C: _____ (in. or mm)

Mounting Flange size: _____

Liquid Inlet Flange size: _____

Steam Inlet Flange size: _____

Max. Liquid Flow Rate: _____ (PSIG or BARG)

Min. Liquid Flow Rate: _____ (PSIG or BARG)

Liquid Density (@ operating temp): _____

Spray Angle: _____

Injected Liquid Flow Rate: _____ (gph or lph)

PROCESS FLUID INFO:

Temperature: _____ (°F or °C)

Pressure: _____ (PSIG or BARG)

Dynamic Viscosity: _____ (cP)

Velocity: _____ (ft/s or m/s)

Process Fluid Density (@ operating temp.): _____ (lb/ft³ or kg/m³)

Process Fluid Flow Rate: _____ (ft³/min or m³/min)

MATERIAL OF CONSTRUCTION:

Spray Nozzle: _____

Inlet Flanges: _____

Injector Mounting Flange: _____

Pipe: _____

ASME® B31.3-2016 CODE REQUIRED?

Yes No (Includes VT, PT, 10% RT, LT, MTR)

PROVIDE DESIGN CONDITIONS:

Injector Design Temp: _____ (°F or °C)

Injector Design Pressure: _____ (PSIG or BARG)

Vessel Design Temp: _____ (°F or °C)

Vessel Design Pressure: _____ (PSIG or BARG)

Corrosion Allowance: _____ (in. or mm)

OPTIONAL NON-DESTRUCTIVE EXAMINATIONS:

100% Radiographic Examination (RT) PMI

Certified Material Test Reports (CMTRs) NACE MR0175

MR0103



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