

CHAPTER 7

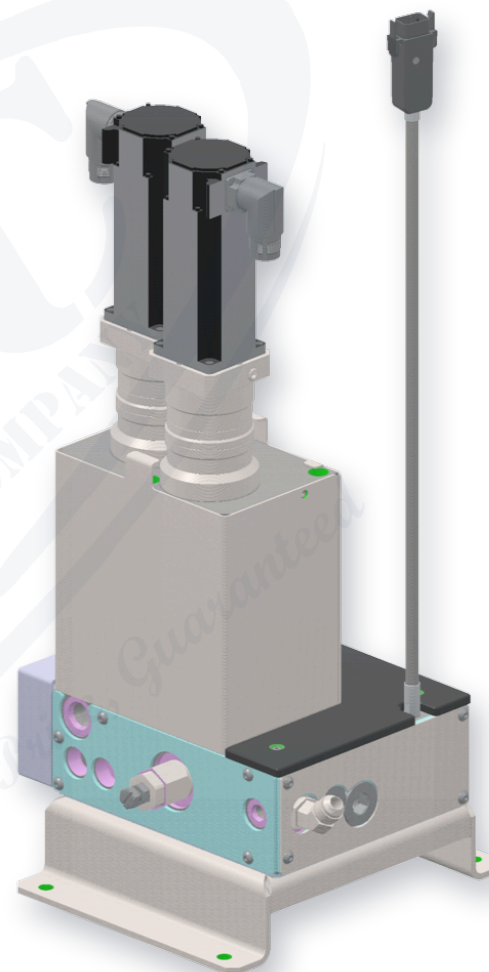
DeltaMix Foam System

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The HMSC tankless gas injection foam system: how it works, specifications, troubleshooting and spares.

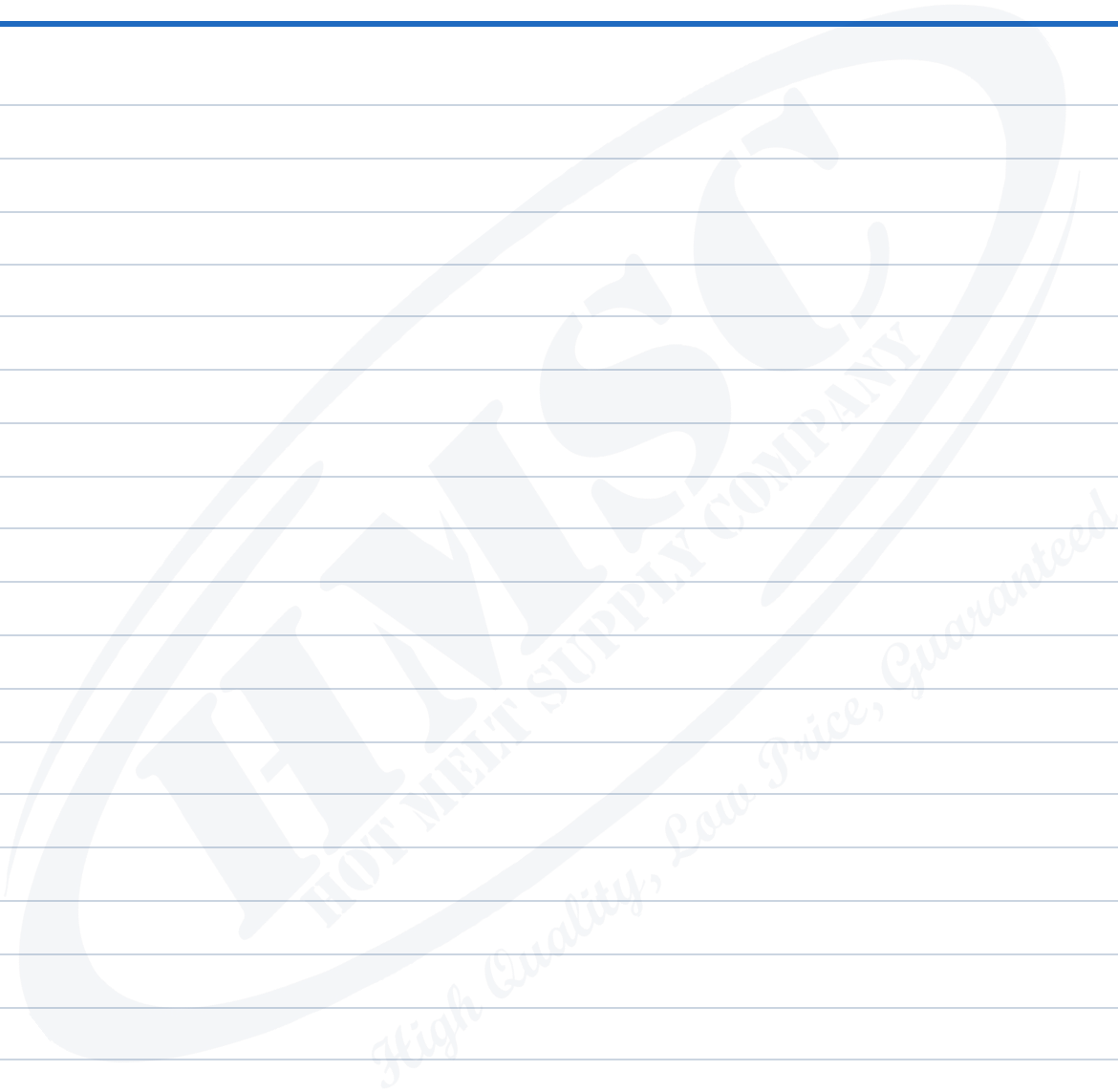
Revision 10/2026

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Notes





DeltaMix Foam System

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TANKLESS GAS INJECTION FOAM SYSTEM

DeltaMix™

Precision foam in place density reduction, without the tank. DeltaMix generates a vacuum between two servo driven positive displacement pumps and draws in nitrogen at low pressure, then homogenizes the blend through a proprietary internal static mixing element, delivering 30 to 70% density reduction with repeatable, programmable control.

**30 to
70%**

DENSITY
REDUCTION

0

MELT TANKS

2

SERVO METERING
PUMPS

2,000

PSI CAPABILITY

6

PID HEAT ZONES

Tankless by design

Fed directly from your existing melter or feed source. No reservoir to char material, no long changeovers, a smaller footprint and faster startup. Foam only where and when you need it.

Few moving parts

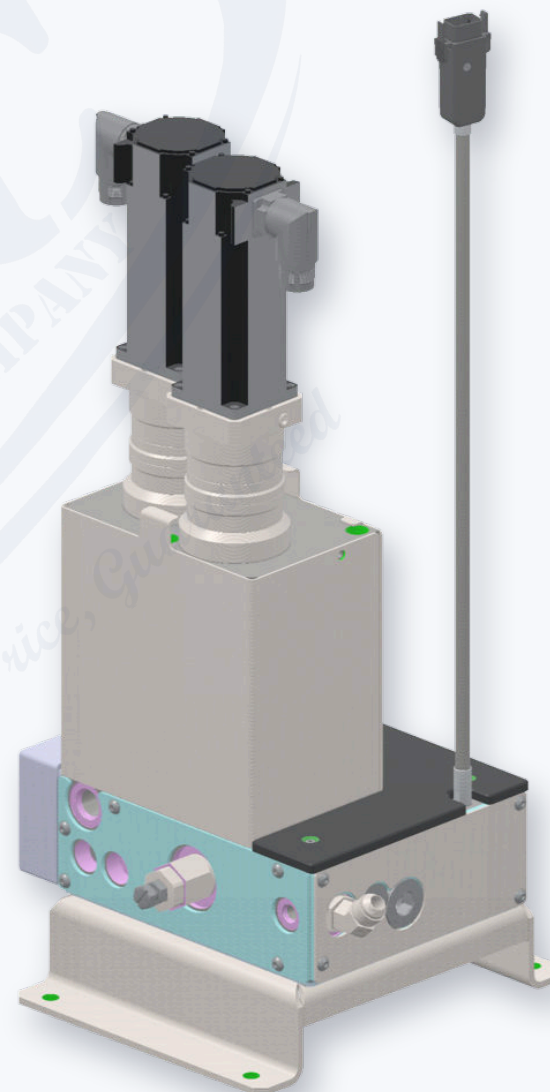
Two positive displacement gear pumps on independent servo drives do the work. No complex mechanical foaming head: less to wear, less to fail, less to stock.

Built to be serviced

Remove and replace the entire hydraulic section with four bolts. Mobile cart on locking casters, replaceable inlet filter and a manifold pressure drain / prime valve.

Proprietary mixing

A vacuum between the two pumps draws in nitrogen at low pressure; a proprietary internal static mixing element homogenizes the blend for a fine, consistent closed cell structure.





FEED, INJECT, METER, MIX, DISPENSE

How DeltaMix Works

DeltaMix Foam System

01

Feed

Pump 1 draws molten adhesive from your existing melt source at a steady inlet pressure.

02

Inject

A vacuum generated between the two pumps draws in nitrogen at low pressure.

03

Meter

Pump 2 runs at a programmable 180 to 220% speed ratio to set the gas fraction.

04

Mix

The blend is homogenized through the internal static mixing element at 800 to 1,500 psi.

05

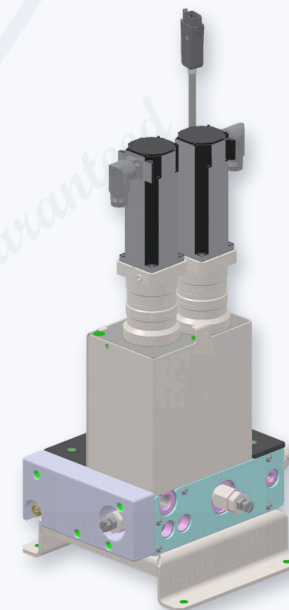
Dispense

The mixture expands at the nozzle into a stable, low density closed cell foam bead.

DeltaMix compared with tank based foam systems

	DeltaMix	Tank based foam mix systems
Material handling	Tankless, fed from your existing melt source	Integrated melt tank to fill and maintain
Density reduction	30 to 70%, programmable	Typically up to about 50%*
Mixing method	Vacuum assisted nitrogen injection between dual servo pumps, plus static mixing	Mechanical or gear pump gas mixing
Moving parts	Two gear pumps on servo drives	More complex mechanical assemblies
Control	Programmable ratio and six PID zones	Varies by platform
Serviceability	Hydraulic section swaps with four bolts	Often tank and heater service
Pressure	Up to 2,000 psi	Varies

**General industry figure for conventional inert gas foam dispensing. A modern, serviceable alternative to tank based systems such as Nordson Ultra FoamMix and FoamMelt, and Meler foam units.*



Compact two pump mixer: the hydraulic section removes with four bolts

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Specifications and Service

At a glance

Density reduction	30 to 70% (adhesive dependent)
Metering pumps	2 x 7.73 cc/rev gear pumps, servo driven, 25:1 gearbox
Speed ratio (pump 2 : pump 1)	100 to 250% (typically 180 to 220%)
Process gas	Nitrogen, 25 to 35 psi injection
Outlet pressure	800 to 1,500 psi target; 2,000 psi maximum
Adhesive inlet	Under 400 psi, constant pressure and volume
Heat zones	Up to 6, independent PID (tank, grid, 2 hoses, 2 guns)
Controls	Allen-Bradley Micro850, PanelView 800 7 in touchscreen
Power	240 V AC, 3 phase, 40 A
Size	24.1 x 43.1 x 47.1 in (W x D x H), mobile cart
Materials	Thermoplastic hot melt adhesives
Build	Built in a UL listed environment; UL and CE on request

Recommended spares

Part	Use	HMSC
Filter service kit	Replace on adhesive change or per service interval	T3N42P0S
RTD service kit	Per heated zone	T10B83B0S
Thermostat service kit	Tank / grid over temperature	T10B83B1S
Gear pump	Critical spare, longer lead	T7B91P7S
Pressure control valve	Critical spare	T3A01F9S

Troubleshooting

Symptom	Likely cause	Action
No or low density reduction	Gas off or too low, speed ratio too low, gas leak	Confirm gas on and in range; raise ratio or gas pressure in small steps; leak check.
Inconsistent density, poor mixing	Wrong ratio or gas pressure, unstable gas, contamination	Re-verify ratio and gas set point; stabilize gas; flush; recalibrate.
Low or erratic hydraulic pressure	Empty supply, clogged filter, worn seals, air in the adhesive	Refill supply; replace filter; purge air; replace pump seals.
Pumps will not start	Interlock or enable missing, drive fault, obstruction	Check enables and HMI alarms; clear the drive fault; check for obstruction.
Zone not reaching set point	Heater, RTD or wiring	Check heater resistance and RTD reading; replace the failed part.
Nitrogen pressure low alarm	Gas supply or regulator	Confirm the supply and regulator pressure.
Pump 2 overspeed alarm	Speed or ratio past the pump limit	Reduce the speed or ratio setting.
Adhesive or gas leak	Worn seal, O-ring or fitting	Relieve pressure; replace the seal or fitting; call HMSC for service kits.

Before service: stop gas injection and bleed the gas line, stop the pumps, open the pressure drain valve slowly into a heat resistant container, lock out power and let the unit cool below 120°F (50°C).



See DeltaMix run on your line

Ask about a demonstration or process trial: 1-888-202-1788, sales@hotmeltsupplyco.com. Scan for the DeltaMix savings and settings calculator.



Notes

