



# Komax Systems

municipal sludge heating



JACKETED HEAT EXCHANGER

DIRECT STEAM HEATER

NON-CLOGGING LOW PRESSURE DROP

MIXING BY DESIGN

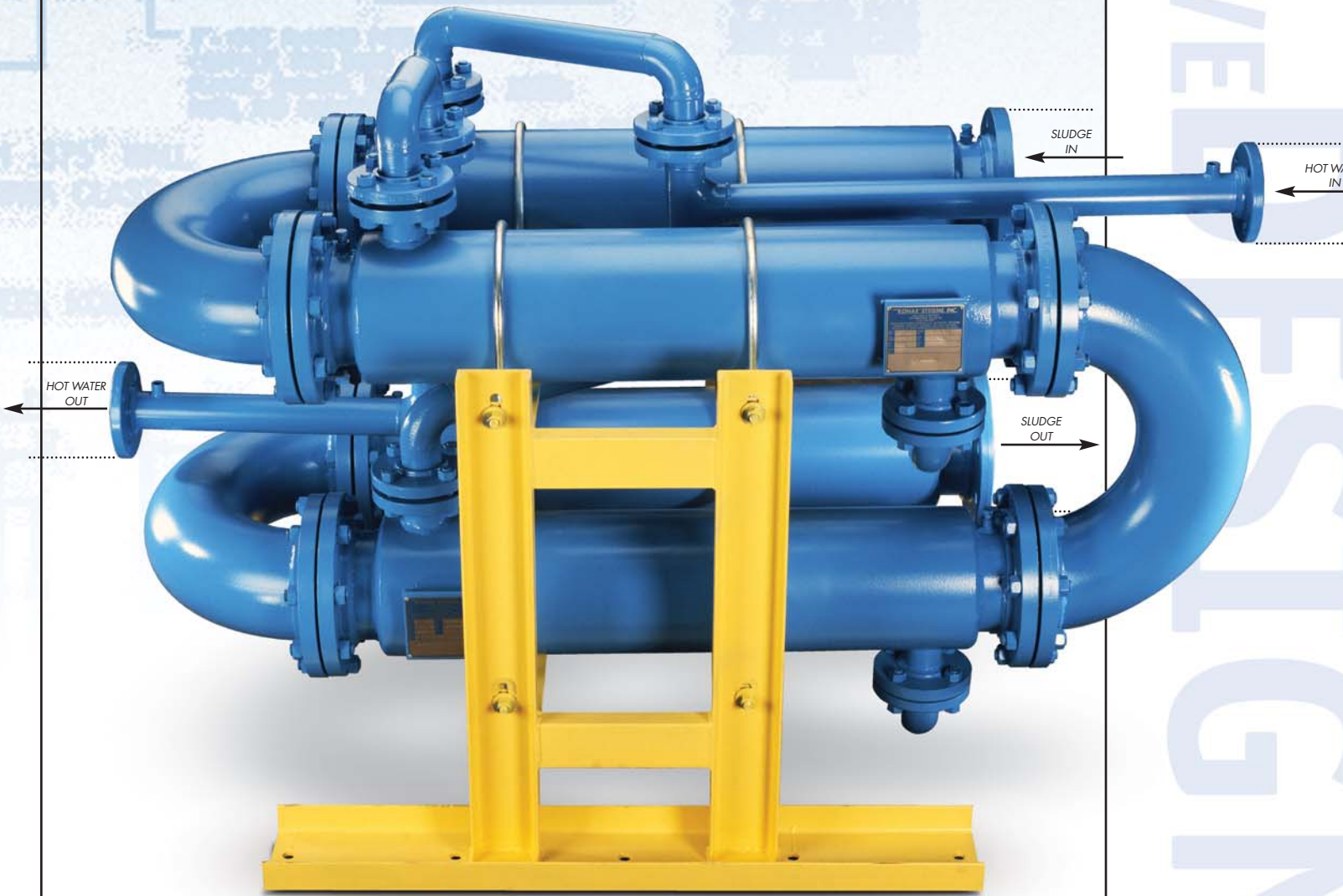
# Komax Static Mixer Jacketed Heat Exchanger for Municipal Sludge Heating

Komax Systems Municipal Sludge Heat Exchangers utilize the Komax patented non-clogging Hi-Pass™ static mixer. The jacketed heat exchanger transfers heat from one media to another by utilizing hot water or hot sludge. The internal Hi-Pass™ mixing elements create high turbulence at the pipe wall, removing the internal film coefficient that prevents high heat transfer.

Komax static mixers can increase heat transfer four to six times more than a straight-jacketed pipe heat exchanger. Komax offers substantially lower costs and higher performance than spiral or shell and tube heat exchangers.

Manufactured in carbon or stainless steel, in horizontal or vertical mounting configurations, Komax Systems Municipal Sludge Heat Exchangers can heat sludge flow rates from 100 gpm to 10,000 gpm.

- Incorporates Komax patented Hi-Pass™ non-clogging static mixing elements
- Maintenance free due to the non-clog design
- Higher heat transfer performance
- More efficient than spiral type heat exchangers
- Up to 4 times more efficient than conventional shell and tube exchangers
- Pre-heats sludge from sludge thickener to digester
- Utilizes boiler hot water
- Recovers and uses heat from centrate/filtrate of Thermophilic digester sludge



INNOVATIVE  
DESIGN

# The Komax Direct Steam Heater

has a well-earned, worldwide reputation for solving difficult in-line heating requirements.



## Komax Systems Delivers Precise, Direct Steam Heating of Sludge

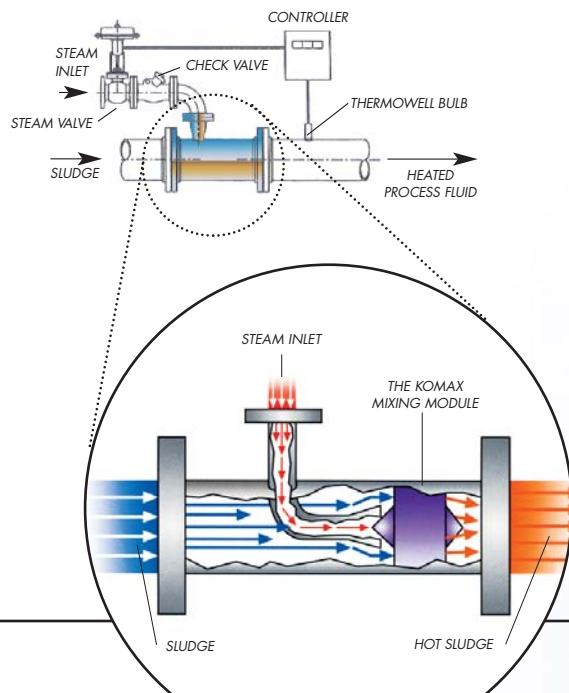
Komax Systems Direct Steam Heaters deliver heated municipal sludge at the precise preset temperature required. The compact Komax Steam Heater, which has no moving parts, is 25% more efficient than shell and tube or spiral-type heat exchangers and costs 60% less. Designed to handle sludge flow rates from 50 gpm up to 5,000 gpm, Komax Steam Heaters flange directly into sludge feed lines.

### Increased Digester Temperatures

Komax Direct Steam Heaters can be installed in the main digester feed line or in a circulation loop for heating large digesters. Proven to increase digester temperatures to 130° F or higher, Komax Direct Steam Heaters produce Class A biosolids at half the retention time of conventional Anaerobic Digesters.

*Komax Direct Steam Heaters are installed at the City of Los Angeles Hyperion and Terminal Island WWTP.*

### KOMAX STEAM HEATER



## High Efficiency, Non-Clogging Komax Low Pressure Drop Static Mixers

The highly efficient, Komax-patented low pressure drop, non-clogging static mixers were developed to meet the requirements of mixing polymers into municipal sludge.

Komax large-scale static mixers are designed for installation in water treatment channels of any cross section, including open and closed ducts.

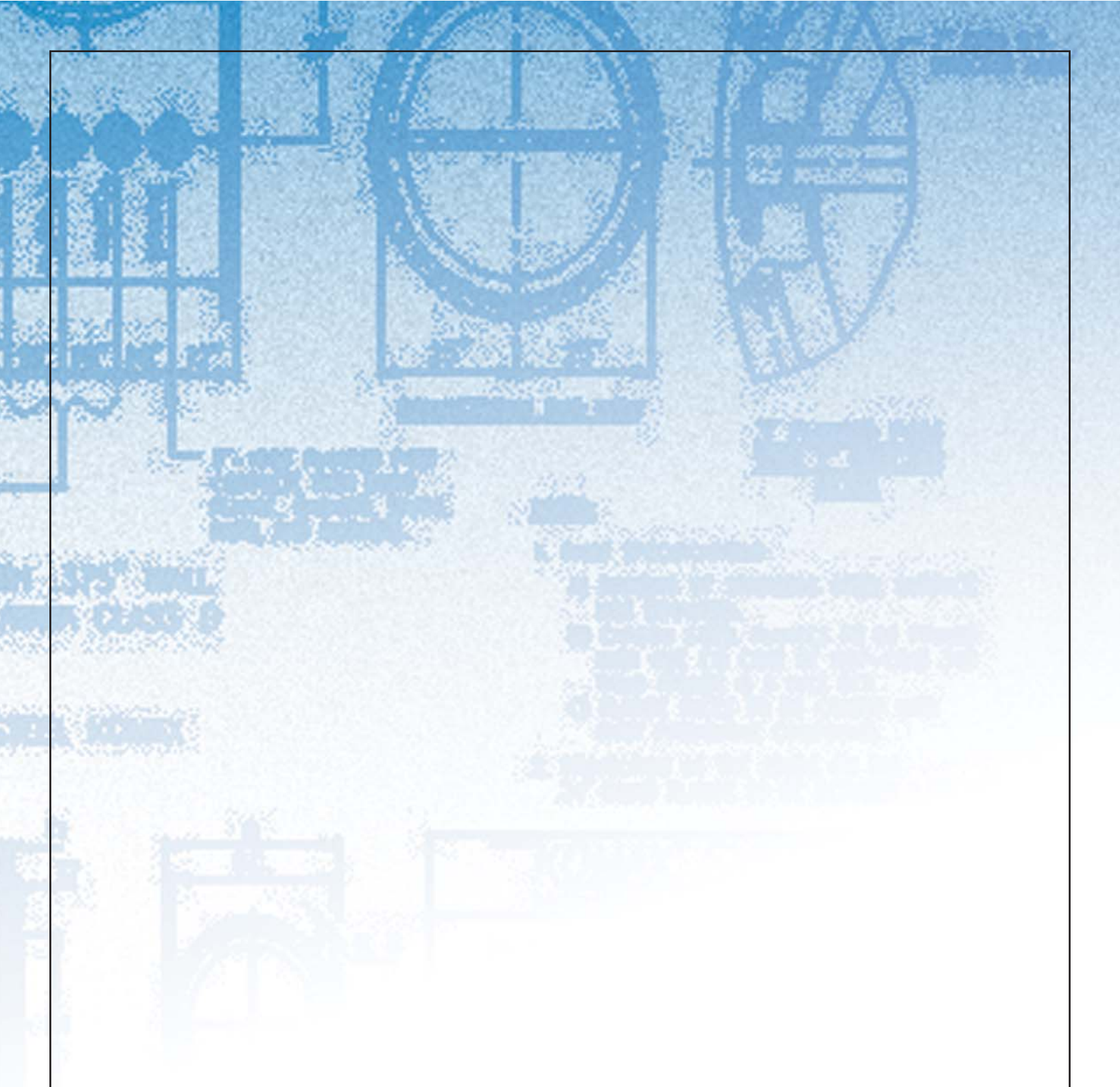
In side by side tests at Duke University Engineering Department against eight competitive static mixer designs, including tab types, the Komax Hi-Pass™ Mixer was rated the number one in mixing while having the lowest pressure drop.

Remarkably clog free from foreign debris in water bearing conduits, they can be used in water treatment applications for mixing chlorine, alum, polymer and chemicals for pH control.

Komax Hi-Pass™ mixers are available in most construction materials including metals, FRP, and PVC in diameters ranging from 3" to 96". Low pressure drop designs for chlorinating can be supplied as complete assemblies, or in component form, for onsite assembly where access is difficult. They can also be supplied as completely integrated flanged mixing systems with removable spargers for the introduction of additives.

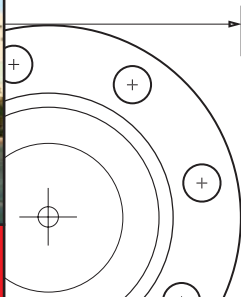


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