

# Boiler Feed Pump

## Liqui-Mover® Pump

### Applications

The float-free Liqui-Mover boiler feed pump can be used as the main boiler feed pump or for returning high pressure condensate from process equipment with minimal flash loss.

### Features

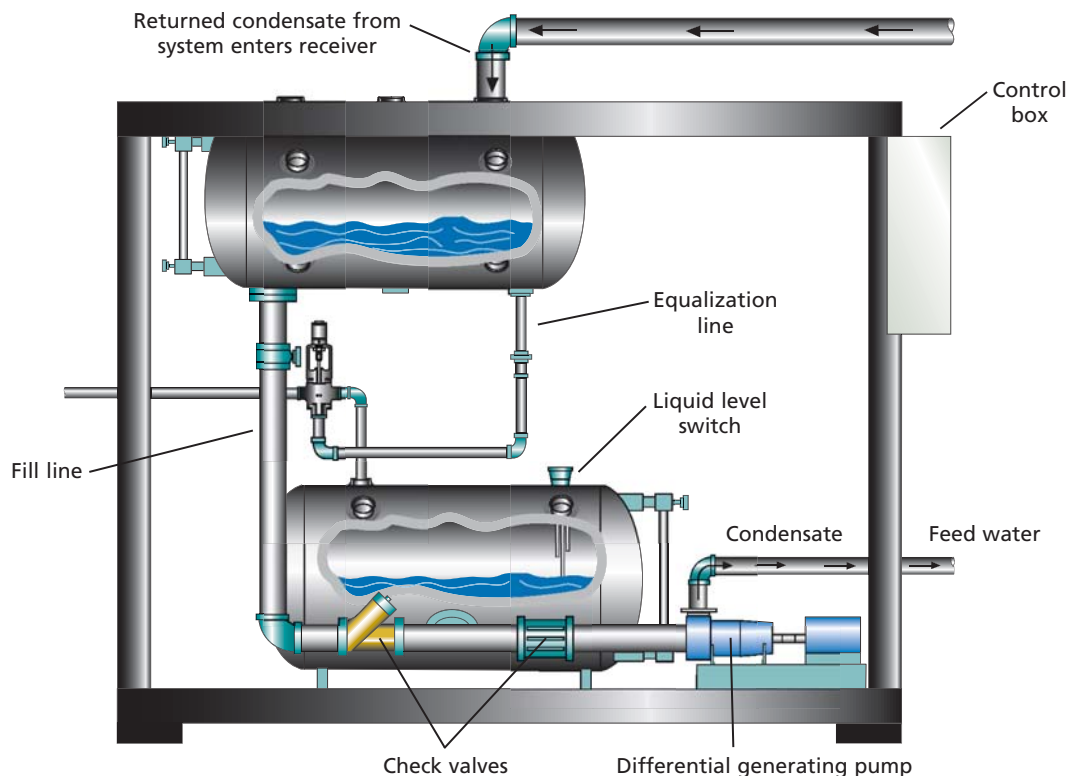
- ▶ Designed for high pressure condensate
- ▶ Small horsepower differential generating pump
- ▶ ASME labeled tanks
- ▶ Pre-piped and wired pump for installation ease

### Benefits

- ▶ Reduced operating cost
- ▶ Trouble-free, proven technology
- ▶ Minimal flash steam loss
- ▶ Quick return on investment



First introduced in the 1930s, the Kadant Johnson Liqui-Mover boiler feed pump has provided a revolutionary way to boost thermal efficiency and reduce operating costs of boiler feedwater pumps. The pressure-equalizing chamber of the Liqui-Mover boiler feed pump permits high temperature condensate to return to the boiler. This improves operating efficiency and reduces fuel consumption up to 25%. Capable of feeding boilers up to 500 HP with one unit, the proven Liqui-Mover boiler feed pump provides long-term reliability and cost savings.



# LIQUI-MOVER BOILER FEED PUMP

## Typical application and savings

### BEFORE

#### OPERATING DATA

Incoming pressure (psig)	100
Flash pressure (psig)	0
Flow rate (pph)	17,250
Steam cost (\$/1000 lb)	6.02
Hours/day operation	24
Operating days/year	250
Water and chemical cost (\$/1000 gal.)	3.25

#### FLASH LOSS CALCULATIONS

Heat of liquid at incoming pressure (BTU/lb)	309
Heat of liquid at flash pressure (BTU/lb)	180
Flash loss	13.3%
Flash loss (pounds/hour)	2,294
Flash loss (pounds/day)	55,000
Flash loss (pounds/year)	13,750,000

#### Estimated annual cost

Steam (\$6.02 x 13,750)	\$82,700
Water (\$3.25 x 13,750/8.43)	\$ 5,300
Chemical and heating costs	\$88,000

Conventional boiler feed pump electrical cost	\$2,030/year
Annual boiler feed operational cost	\$90,030/year

### AFTER

#### OPERATING DATA

Incoming pressure (psig)	100
Flash pressure (psig)	60
Flow rate (pph)	17,250
Steam cost (\$/1000 lb)	6.02
Hours/day operation	24
Operating days/year	250
Water and chemical cost (\$/1000 gal.)	3.25

#### FLASH LOSS CALCULATIONS

Heat of liquid at incoming pressure (BTU/lb)	309
Heat of liquid at flash pressure (BTU/lb)	277
Flash loss	3.5%
Flash loss (pounds/hour)	606
Flash loss (pounds/day)	14,500
Flash loss (pounds/year)	3,625,000

#### Estimated annual cost

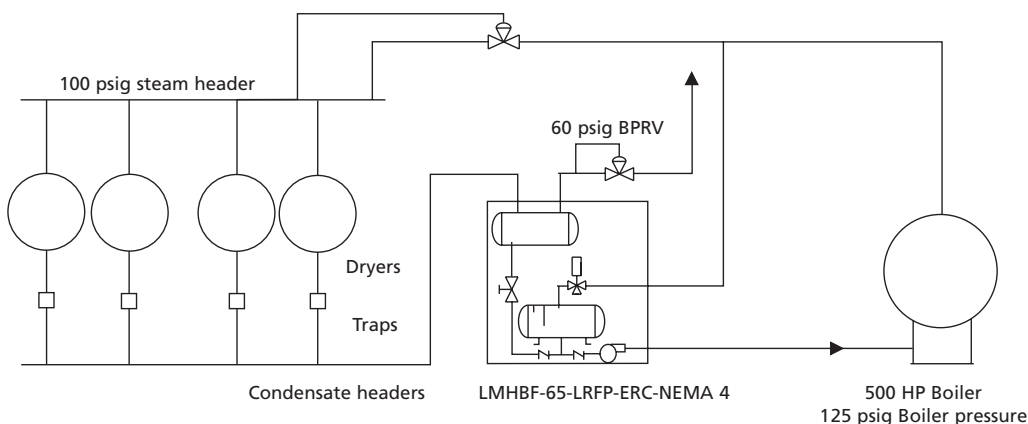
Steam (\$6.02 x 3,625)	\$21,800
Water (\$3.25 x 3,625/8.43)	\$ 1,400
Chemical and heating costs	\$23,200

Kadant Johnson boiler feed pump electrical cost	\$162/year
Annual boiler feed operational cost	\$23,362/year

Note: Boiler feed water temperature increased 77°F

### TOTAL BOILER FEED SAVINGS

**\$66,462/YEAR**



### Boiler feed units available

Boiler HP-max	100	175	225	375	500
LMHBF Model	10	20	40	50	65

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