COMPACT DESIGN
FLUID HEAT TRANSFER SYSTEMS

KM AND KMS SERIES

SPECIFICATIONS

- Electrically operated
- Temperatures to 550°F
- 9 to 120 kW and higher
- Centrifugal pump
- 150 lb. flanged construction
- 208 volts thru 575 volts, 3 phase
- NEMA 12, 4 or 7

DESCRIPTION

The KM Series of heat transfer systems is designed for closed loop temperature control of common heat transfer fluids. The KMS Series is similar in design, but includes a parallel cooling circuit. These units are completely packaged systems designed for a maximum operating temperature of 550°F. KM Series standard components include an electric heater, centrifugal oil circulation pump with air cooled mechanical seal, system isolation valves thermal expansion tank (shipped separately), and a control center all mounted on a drip proof base. The KMS Series is constructed using all of the above components with the addition of a shell and tube heat exchanger and three way diverting valve. Each unit is furnished completely piped and wired and includes foam glass insulation on internal piping and heater chamber. The system is given an operating test prior to shipment. KM and KMS Series are available with a variety of options, some of which are listed on page 4 of this bulletin.

FEATURES

- All welded construction
- Closed cell insulation
- Drip proof base
- Discharge pressure gauge
- Air cooled mechanical seal on pump
- Digital temperature controller
- High limit device with manual reset on heater circuit
- Expansion tank shipped loose for mounting at the highest point in the piping system
- Isolation valve
- SCR on each heater circuit
- Operating test of system prior to shipment

HEAT

HEAT EXCHANGE AND TRANSFER, INC.

500 Superior Street • Carnegie, PA 15106
Phone 412-276-3388 • Fax 412-276-3397

KM SERIES

STANDARD MODEL SPECIFICATIONS

kW	BTU/Hr Output	Total Amps† @480 v 3 ph	Centrifugal Pump Data			Piping Con-nection (150# flange)	Expansion Tank		Overall Dimensions (inches)			Approx. Weight (lbs.)	Model No.
			gpm	hp	Total Delivery Head (feet**)		Size (gal.)	Line Size (in.)	W	D	H*		
9	30,717	16	35	3	120	1 1/2	18	3/4	24	42	60	650	KM550-9
18	61,434	27	35	3	120	1 1/2	18	3/4	24	42	60	650	KM550-18
27	92,151	37	35	3	120	1 1/2	18	3/4	24	42	60	650	KM550-27
36	122,868	48	35	3	120	1 1/2	18	3/4	24	42	60	650	KM550-36
48	163,824	62	50	3	110	1 1/2	18	3/4	24	42	60	650	KM550-48
60	204,780	77	60	5	130	2	30	3/4	36	48	84	1500	KM550-60
80	273,040	101	80	5	125	2	30	3/4	36	48	84	1600	KM550-80
100	341,300	125	100	5	120	2	40	3/4	36	48	84	1700	KM550-100
120	409,560	149	100	5	120	2	40	3/4	36	48	84	1700	KM550-120

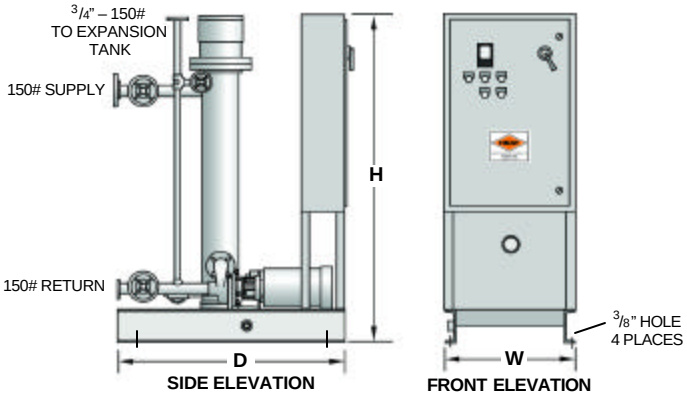
* Height dimension does not include expansion tank.

** TDH (Ft.) = (psi x 2.31) / SG

† Amps are approximately doubled for 240 volts, 3 phase

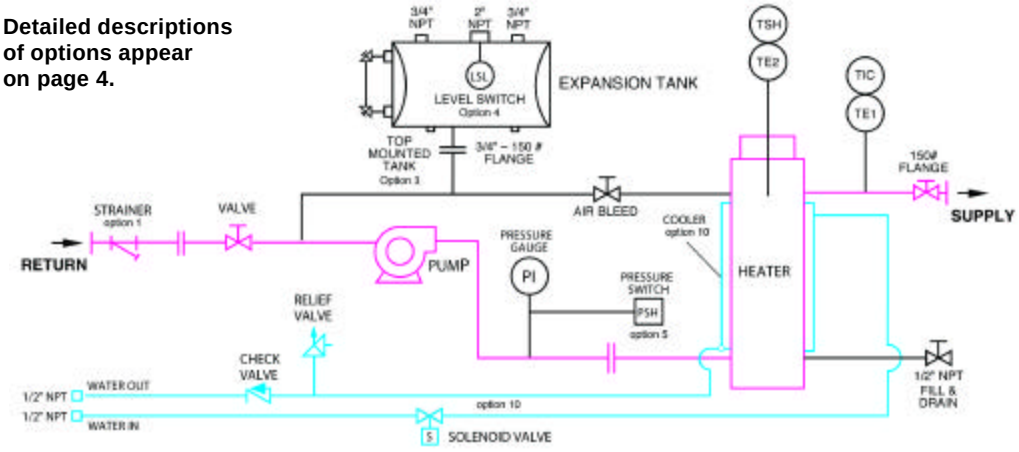
DIMENSIONS

- Mesh guard over moving parts of pump
- Foamglass insulation with aluminum jacket
- Expansion tank shipped loose for customer mounting at system high point
- Sides, back and top of skid open, front enclosed
- No valves or restrictions permitted in expansion line



PIPING AND INSTRUMENT DIAGRAM

Detailed descriptions of options appear on page 4.



KMS SERIES

STANDARD MODEL SPECIFICATIONS

kW	BTU/Hr Output	Total Amps† @480 v 3 ph	Centrifugal Pump Data			Piping Con-nection (150# flange)	Expansion Tank		Heat Exch. Surface Area (sq. ft.)	Overall Dimensions (inches)			Approx. Weight (lbs.)	Model No.
			gpm	hp	Total Delivery Head (feet**)		Size (gal.)	Line Size (in.)		W	D	H*		
9	30,717	16	35	3	120	1 1/2	18	3/4	10.0	30	54	60	850	KMS550-9
18	61,434	27	35	3	120	1 1/2	18	3/4	10.0	30	54	60	850	KMS550-18
27	92,151	37	35	3	120	1 1/2	18	3/4	10.0	30	54	60	850	KMS550-27
36	122,868	48	35	3	120	1 1/2	18	3/4	10.0	30	54	60	850	KMS550-36
48	163,824	62	50	3	110	1 1/2	18	3/4	10.0	30	54	60	850	KMS550-48
60	204,780	77	60	5	130	2	30	3/4	23.5	36	60	84	1700	KMS550-60
80	273,040	101	80	5	125	2	30	3/4	23.5	36	60	84	1800	KMS550-80
100	341,300	125	100	5	120	2	40	3/4	23.5	36	60	84	1900	KMS550-100
120	409,560	149	100	5	120	2	40	3/4	23.5	36	60	84	1900	KMS550-120

* Height dimension does not include expansion tank.

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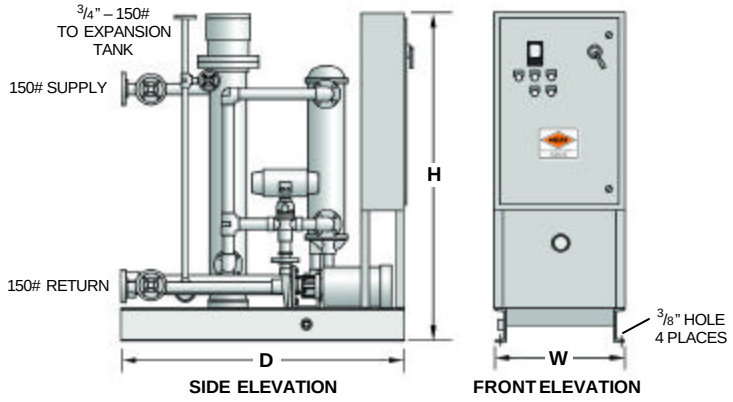

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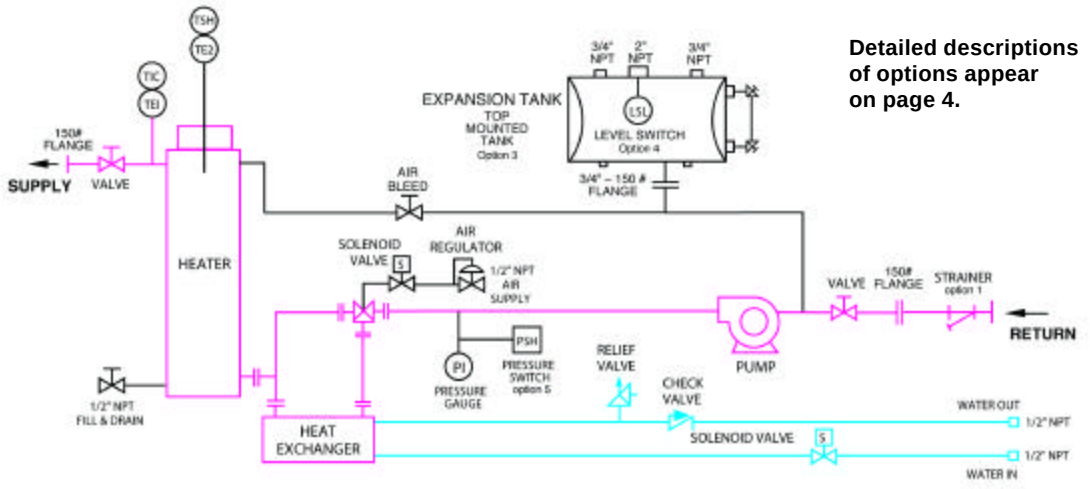
PIPING AND INSTRUMENT DIAGRAM



Detailed descriptions of options appear on page 4.

OPTIONS AND CUSTOM DESIGNS

The numbered options listed below are indicated on the KM Series Piping and Instrument Diagrams on pages 2 & 3 of this bulletin.

1. **RETURN LINE STRAINER** will remove coarse particles of rust, millscale and organic debris.
2. **SIDE ENCLOSURES** with sheet metal panels (not shown on diagrams) which are removable for access.
3. **TOP MOUNTED EXPANSION TANK** is installed on top of the system frame when remote mounting is undesirable. Note: Refer to Service Manual SM–100 for additional information needed for reliable operation.
4. **LOW LEVEL FLUID ALARM** is mounted in the expansion tank, automatically shuts the system down and turns an alarm light "ON", if the expansion tank fluid drops below the desired level.
5. **HIGH PRESSURE ALARM** automatically shuts the system down and turns an alarm light "ON", if the system's pressure rises above the desired level.
6. **HEAT TRANSFER FLUID LOW FLOW ALARM** automatically turns the heater "OFF" and turns an alarm light "ON" if the heat transfer fluid flow drops below the alarm limit. (Not shown on diagrams)
7. **HAZARDOUS AREA DESIGNS** are available using a cast NEMA-7 enclosure or with an air purge, which is normally less expensive. X purge is used in Division 1 areas. Z purge is used in Division 2 areas. (Not shown on diagrams)
8. **ASME DESIGN & STAMP –** The heating chamber and expansion tank can be built in accordance with requirements of the ASME Boiler and Pressure Vessel Code. (Not shown on diagrams)
9. **MODEL PFS-1 PORTABLE PUMPING AND FILTERING OIL SYSTEM** is a compact, self contained, portable unit. It is equipped with high efficiency, high capacity disposable elements capable of removing both particulate contaminants and water from oils. Maximum fluid temperature is 200° F. Request Bulletin SO-1. (Not shown on diagrams)
10. **COOLING** can be used to lower the temperature at the end of the production run, or to remove excess heat generated by friction or an exothermic reaction.

    Cooling is available as an option on KM systems up to 80 kW. This internal or "wrap" cooler is designed to lower the oil temperature at the end of the production run.

    As a standard feature, KMS systems have a shell and tube exchanger and a three way diverting valve for cooling. This on/off cooling design can be modified for proportional cooling if required by the process.
11. **CUSTOM DESIGNS** for special applications are available.

APPLICATIONS

- REACTORS
- KETTLES
- DRYERS
- PLATENS
- MOLDS
- DIES
- EXTRUDERS
- TANKS
- EXCHANGERS
- LINE TRACING
- ROLLS
- PRESSES