

Robertshaw

INDUSTRIAL PRODUCTS DIVISION

Heating capacities: 2 to 130 gpm in single units and unlimited in multiple parallel units.

GENERAL DESCRIPTION

The HA-361 Series fluid heating system provides all the advantages of the "instantaneous" type water heater such as low initial cost, continuous energy savings, small space requirements, etc., plus dependable temperature control. These units can be moved through a standard door frame.

The "Instantrol" temperature regulator bulb is an exclusive, patented feature ... provides "heat anticipating" effect that assures exceptionally close control of hot water temperature even with widely varying loads. This feature, plus the use of the type "MA" single-seated regulator valve, prevents serious temperature build-up during long "no load" stand-by periods. Fluid is in the 4-pass copper coils and steam is in the heater shell ... for heat transfer efficiency. For table of heating capacities, see other side.

Self-Actuated Temperature Regulator

Robertshaw temperature regulators equipped with internally finned "Instantrol" bulb with anticipator loop and single-seated, stainless steel trimmed type "MA" valve provides positive control and shutoff. The quick-disconnect type valve stem has self-lubricating Teflon* chevron, spring-loaded packing ... assuring long life and trouble-free service. See Robertshaw RT-711 Series catalog page for additional details.

**Registered trademark of DuPont Company*

Setpoint Adjustment Range

Adjustable for setpoints within ranges of 90° - 160° F., 110° - 180° F., and 145° - 210°F. Normal desired outlet control temperature should be located in the upper third of range span selected. Setpoints outside of above ranges are available on special order.

Steam Supply Pressure

40 psig maximum. If available steam pressure is greater than 40 psig or greater than is required to heat the desired fluid capacity, a pressure reducing valve, such as Robertshaw's RP-1070-C, RP-1073-C or RP-1065 -1066 Series, must be installed ahead of the temperature regulator valve.

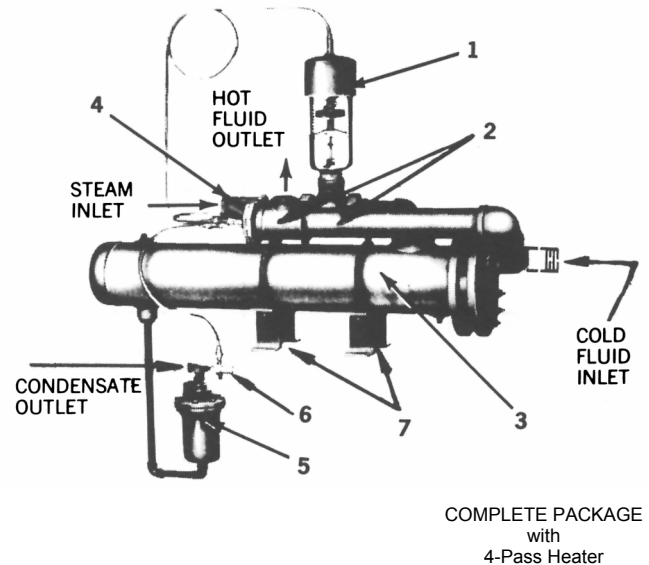
Condensate Load

The approximate condensate load can be figured as follows: One pound of steam will be required for every 100 gallons of water heated 1° F. This method provides a small safety factor of excess trap capacity.

Sales Manual Section 180
PRODUCT SPECIFICATION HA-361
Controlled Temperature Self-Actuated

Instantrol Steam-Fluid Heater Package HA-361 Series

No External Power Source Required. Almost No Heat Loss During Operation or Standby.



Includes:

1. Reliable Robertshaw Self-Actuated Temperature Regulator.
2. Sized sensing bulb housing.
3. ASME "code" (150 lbs. unfired pressure vessel) heater.
4. Steam strainer.
5. Inverted bucket type steam trap.
6. Action adjustment valve.
7. Adjustable mounting feet.
8. All required fittings supplied.

Mounting

Floor or wall mounting is possible. Rotatable adjustable feet provided on heater shell for base bracket attachment.

Safety Notes

Damage to or failure of the thermal element results in the valve going wide open.

For maximum safety, an over-temperature shutdown or alarm system should be used in conjunction with the package. See Robertshaw ZT-100 "High Temperature Shutdown System."

**Invensys**
An Invensys company

Heating Capacities and Shipping Weights

Steam Supply Pressure				5	10	15	20	25	30	35	40
Dwg. No.	Heater No.	Shipping Wt., Lbs. (Approx.)	Typical Temperature Rise, Deg. F.	Capacity in Gallons Per Minute*							
1-1361-EI	HA-361-A 3/4"	190	40° (140° - 180° F.)	8	11	Not Recommended					
			100° (40° - 140° F.)	4	5-1/2	6-1/4	7	7-3/4	8-1/2	9-1/4	10
			140° (40° - 180° F.)	2	2-1/2	2-3/4	3	3-1/2	3-3/4	4-1/4	4-3/4
1-1361-FI	HA-361-B 1"	268	40° (140° - 180° F.)	14-1/2	18-1/2	22-3/4	27	31	Not Recommended		
			100° (40° - 140° F.)	6-1/2	8	9-3/4	11-1/4	12-3/4	14-1/2	16	17-3/4
			140° (40° - 180° F.)	3	4-1/2	5-1/2	6-1/2	7-1/2	8-1/2	9-1/2	10-1/2
1-1361-GI	HA-361-C 1-1/4"	320	40° (140° - 180° F.)	21	27	Not Recommended					
			100° (40° - 140° F.)	9	11-1/2	14	16-1/4	18-1/2	20-3/4	23	25-1/4
			140° (40° - 180° F.)	5-3/4	7	8-1/4	9-3/4	11	12-1/2	13-3/4	15-1/4
1-1361-HI	HA-361-D 1-1/2"	400	40° (140° - 180° F.)	29	38-1/2	47-3/4	55	Not Recommended			
			100° (40° - 140° F.)	15	18	21	24	27	30	33	36
			140° (40° - 180° F.)	Not Recom	10-1/2	11-1/2	12-1/2	13-1/2	14-1/2	15-1/2	16-1/2
1-1361-JI	HA-361-E 2"	600	40° (140° - 180° F.)	50	64	79	92	106	117	125	130
			100° (40° - 140° F.)	21	27	32	37	42	47	52	57
			140° (40° - 180° F.)	11	13	15	18	21	24	27	30

* Due to maximum allowable velocity through heater, flow rates should not exceed the following: HA-361-A - 12.6 gpm; HA-361-B & C - 31 gpm; HA-361-D - 60 gpm; and HA-361-E - 130 gpm.

DIMENSIONS (Approximate)

Heater No.	Overall Height, Ins.	Overall Length, Ins.	Width, Inches
HA-361-A	43	44	10
HA-361-B	50	46	13
HA-361-C	51	58	13
HA-361-D	56	47	15
HA-361-E	60	50	16

Pipe Connection Sizes, Inches

Heater No.	Steam Inlet	Condensate Outlet	Cold Water Inlet	Heated Water Outlet
HA-361-A	3/4	1/2	1	1
HA-361-B	1	1/2	1-1/2	1-1/2
HA-361-C	1-1/4	1/2	1-1/2	1-1/2
HA-361-D	1-1/2	1	2	2
HA-361-E	2	1	2-1/2	2-1/2

HOW TO ORDER

Specify:

- Quantity.
- Package number.
- Steam inlet size.
- Desired heated fluid temperature setpoint and/or setpoint adjustment range.
- Steam supply pressure, PSIG.
- Required capacity, GPM.
- Full invoicing and shipping instructions.

Robertshaw

U.S.A. and CANADA

Robertshaw Industrial Products Division
1602 Mustang Drive
Maryville, TN 37801
Phone: (865) 981-3100 Fax: (865) 981-3168
<http://www.robertshawindustrial.com>

Exports

Invensys Appliance Controls
2809 Emerywood Parkway
P.O. Box 26544
Richmond, Virginia 23261-6544
Phone: (804) 756-6500 Fax: (804) 756-6561



Robertshaw

INDUSTRIAL PRODUCTS DIVISION

Heating capacities 2 to 130 GPM in single units and unlimited in multiple parallel units.

GENERAL DESCRIPTION

A complete fluid heating system provides all the advantages of the "instantaneous" type water heater such as low initial cost, continuous energy savings, small space requirements, etc., plus dependable temperature control. The package can be moved through a standard door frame.

The "Instantrol" temperature regulator bulb is an exclusive, patented feature ... provides "heat anticipating" effect that assures exceptionally close control of hot water temperature even with widely varying loads. This feature, plus the use of the type "MA" single-seated regulator valve, prevents serious temperature build-up in the heater on long "no load" stand-by periods. Fluid is in the 4-pass copper bundle and steam is in the heater shell . . . for heat transfer efficiency. For table of heating capacities, see other side.

Self-Actuated Temperature Regulator

Robertshaw temperature regulator equipped with internally finned "Instantrol" bulb with anticipator loop and single-seated, stainless steel trimmed type "MA" valve provides positive control and shutoff. The quick-disconnect type valve stem has self-lubricating Teflon* chevron, spring-loaded packing ... assuring long life and trouble-free service. See Robertshaw RT-711 Series catalog page for additional details.

Setpoint Adjustment Range

Adjustable for setpoints within ranges of 90° - 160° F., 110° -180° F., and 145° - 210°F. Normal desired control temperature should be located in the upper third of range span selected. Setpoints outside of above ranges are available on special order.

Steam Supply Pressure

40 psig, maximum. If available steam pressure is greater than 40 psig or greater than is required to heat the desired fluid capacity, a pressure reducing valve such as Robertshaw RP-1070-C, RP1073-C, or RP-1066 Series must be installed ahead of the temperature regulator valve.

Condensate Load

The approximate condensate load can be figured as follows: One pound of steam will be required for every 100 gallons of water heated 1° F. This method provides a small safety factor of excess trap capacity.

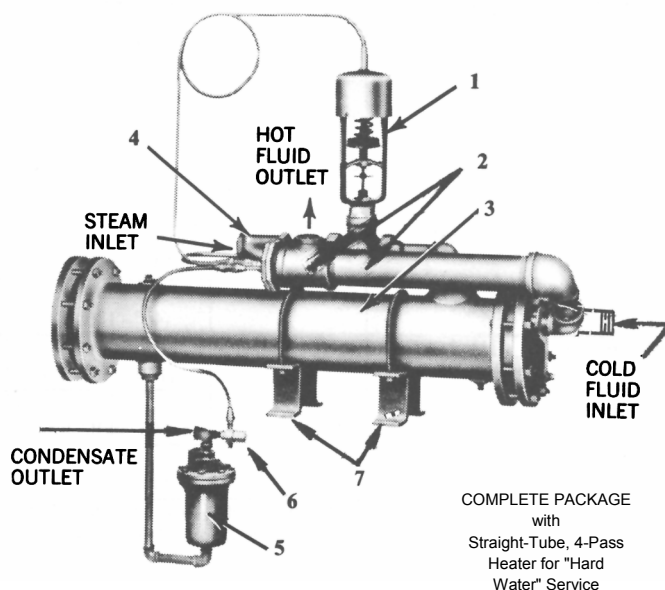
*Trademark of DuPont Company.

Self-Actuated Controlled Temperature

Instantrol Steam-Fluid Heater Package HA-364 Series

No External Power Source Required.

Almost No Heat Loss During Operation or Stand-by.



Includes:

1. Reliable Robertshaw Self-Actuated Temperature Regulator.
2. Sized sensing bulb housing.
3. ASME "code" (150 lbs. unfired pressure vessel) heater.
4. Steam strainer.
5. Inverted bucket type steam trap.
6. Action adjustment valve.
7. Adjustable mounting feet.
8. All required fittings supplied.

Mounting

Floor or wall mounting is possible. Rotatable, adjustable feet provided on heater shell for base or bracket attachment.

Safety Notes

Damage to or failure of the thermal element results in the valve going wide open.

For maximum safety, an over-temperature shutdown or alarm system should be used in conjunction with the package. See Robertshaw ZT-100 "High Temperature Shutdown System."

Heating Capacities and Shipping Weights

Steam Supply Pressure				5	10	15	20	25	30	35	40
Dwg. No.	Heater No.	Shipping Wt., Lbs. (Approx.)	Typical Temperature Rise, Deg. F.	Capacity in Gallons Per Minute*							
I-1361-T1	HA-364-A 3/4"	190	40° (140° - 180° F.)	8	11	Not Recommended					
			100, (40° - 140° F.)	4	5-1/2	6-1/4	7	7-3/4	8-1/2	9-1/4	10
			140° (40° - 180° F.)	2	2-1/2	2-3/4	3	3-1/2	3-3/4	4-1/4	4-3/4
I-1361-T2	HA-364-B 1"	268	40° (140° - 180° F.)	14-1/2	18-1/2	22-3/4	27	31	Not Recommended		
			100° (40° - 140° F.)	6-1/2	8	9-3/4	11-1/4	12-3/4	14-1/2	16	17-3/4
			140° (40° - 180° F.)	3	4-1/2	5-1/2	6-1/2	7-1/2	8-1/2	9-1/2	10-1/2
I-1361-T3	HA-364-C 1-1/4"	320	40° (140° - 180° F.)	21	27	Not Recommended					
			100° (40° - 140° F.)	9	11-1/2	14	16-1/4	18-1/2	20-3/4	23	25-1/4
			140° (40° - 180° F.)	5-3/4	7	8-1/4	9-3/4	11	12-1/2	13-3/4	15-1/4
I-1361-T4	HA-364-D 1-1/2"	400	40° (140° - 180° F.)	29	38-1/2	47-3/4	55	Not Recommended			
			100° (40° - 140° F.)	15	18	21	24	27	30	33	36
			140° (40° - 180° F.)	Not Recom	10-1/2	11-1/2	12-1/2	13-1/2	14-1/2	15-1/2	16-1/2
I-1361-T5	HA-364-E 2"	600	40° (140° - 180° F.)	50	64	79	92	106	117	125	130
			100° (40° - 140° F.)	21	27	32	37	42	47	52	57
			140° (40° - 180° F.)	11	13	15	18	21	24	27	30

* Due to maximum allowable velocity through heater, flow rates should not exceed the following:
HA-364-A - 12.6 gpm; HA-364-B & C - 31 gpm; HA-364-D - 60 gpm; and HA-364-E - 130 gpm.

DIMENSIONS (Approximate)

Heater No.	Overall Height, Ins.	Overall Length, Ins.	Width, Inches
HA-364-A	43	44	10
HA-364-B	50	46	13
HA-364-C	51	58	13
HA-364-D	56	47	15
HA-364-E	60	50	16

Pipe Connection Sizes, Inches

Heater No.	Steam Inlet	Condensate Outlet	Cold Water Inlet	Heated Water Outlet
HA-364-A	3/4	1/2	1	1
HA-364-B	1	1/2	1-1/2	1-1/2
HA-364-C	1-1/4	1/2	1-1/2	1-1/2
HA-364-D	1-1/2	1	2	2
HA-364-E	2	1	2-1/2	2-1/2

HOW TO ORDER

Specify:

- Quantity.
- Package number.
- Size steam inlet.
- Desired heated fluid temperature setpoint and/or setpoint adjustment range.
- Steam supply pressure, PSIG.
- Required capacity, GPM.
- Full invoicing and shipping instructions.

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Robertshaw Industrial Products Division
1602 Mustang Drive
Maryville, TN 37801
Phone: (865) 981-3100 Fax: (865) 981-3168
<http://www.robertshawindustrial.com>

Exports

Invensys Appliance Controls
2809 Emerywood Parkway
P.O. Box 26544
Richmond, Virginia 23261-6544
Phone: (804) 756-6500 Fax: (804) 756-6561

