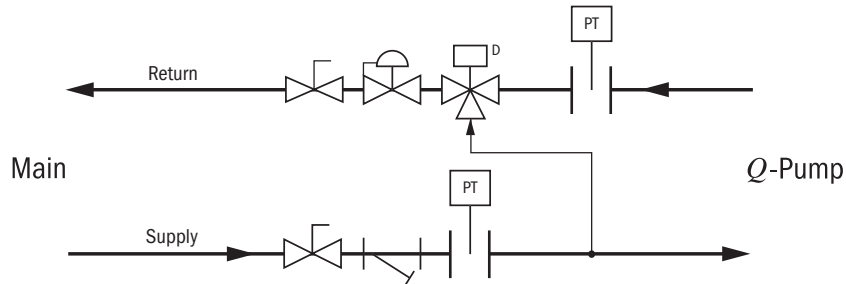


## 3-WAY FLOW CONTROL PACKAGE

# 3-WAY FLOW CONTROL PACKAGE OPTION



### Package Components

- **Y-Ball Strainer (20 Mesh)**
- **Automatic balancing control valve**
- **Blowdown valve**
- **Automatic 3-way control valve w/actuator**
  - **Transformer and signal from Q-Pump**
- **PT plugs on inlet / outlet**

Maintaining proper, constant flow through water-source heat pump equipment optimizes efficiency and capacity. In today's larger, dynamic loops that include many valves, branches, and variable speed pumps, maintaining this constant flow can be challenging. A simple ball valve or circuit setter may not be sufficient to regulate the flow in these situations. The result may be lower efficiency, nuisance alarm trips, or even possible long-term equipment damage.

Desert Aire has selected Hays Fluid Controls as its partner for its flow regulation control package vendor because of the importance of maintaining precise flow through our Q-Pump. These flow control packages dynamically regulate water flow during changing conditions to allow the heat pumps to achieve the highest energy efficiency in both heating and cooling while eliminating the nuisance alarms so typical of unregulated loop piping systems.

The Hays Mesurflo™ flow regulation valve provides a constant flow rate over a wide range of pressure differentials (2 to 80 psid). As the pressure drop increases, the rubber diaphragm will flex into the contoured orifice plate to decrease the flow path. Both the rubber diaphragm and the contoured orifice plate are rigidly controlled to provide a constant flow rate. The "flexing" action of the rubber diaphragm against the fixed orifice plate makes the Mesurflo™ difficult to clog and resistant to cavitation damage.

The Hays Mesurflo™ is a constant flow rate device. Since it is a variable orifice that changes to govern the flow, it cannot be described with the  $C_v$  or a pressure drop at a given flow for piping systems design purposes. The designer may assume a constant flow rate over the differential pressure.

The three way flow package includes an integral actuator to terminate the flow to the Q-Pump™ when the DOAS system is commanded to the unoccupied mode for those water loops with variable speed drives on the water pumps.

The control packages simplify the selection and installation of the piping system. Each component in the package has been predefined to work with the corresponding Desert Aire system. All of the recommended accessories for typical loops are included in the package. The packages for models QS 02 through 15 further reduces installation time by including a flexible hose with NPT unit connections. The control package and equipping the unit with optional NPT connections allows for quick, leak-free connections, vibration isolation, and fewer issues with misalignment.

## Standard Features of Package

- Operating range 32°F to 225°F
- ± 10% flow accuracy
- Valve body suitable for 400 psig
- Pipe Type
  - 15 ton and less – 24 inch Flexible Hose Kits for connection to the unit and 12 inch flexible bypass hose provided by Desert Aire
  - 20 ton and larger – Hard pipe provided by others
- Extended Pressure / Temperature Ports
- Material Specifications
  - Ball – chrome plated brass
  - P/T ports – brass
  - O-rings – EPDM
  - Orifice – Polyphenylsulfone
- Actuator
  - 24VAC
  - 2 position
  - Manual operating lever / position indicator
  - Location - NEMA 2. IEC IP31

## Package Specifications

Tons	DA Part #	GPM	Connection Size		Valve Body	Connection Type
			Main (In. FNPT)	Q-Pump (In. MNPT)		
02	DFQ02FT	7	3/4"	3/4"	Brass	Flex Hose
03	DFQ03FT	11	3/4"	3/4"	Brass	Flex Hose
05	DFQ05FT	19	1"	1"	Brass	Flex Hose
08	DFQ08FT	26	1-1/4"	1-1/4"	Gray Iron	Flex Hose
10	DFQ10FT	34	1-1/4"	1-1/4"	Gray Iron	Flex Hose
15	DFQ15FT	49	1-1/2"	1-1/2"	Gray Iron	Flex Hose

Tons	DA Part #	GPM	Connection Size		Valve Body	Connection Type
			Main (In. FLGT)	Q-Pump (In. FLGT)		
20	DFQ20PT	69	2-1/2"	2-1/2"	Carbon Steel	Flanged
25	DFQ25PT	84	2-1/2"	2-1/2"	Carbon Steel	Flanged
30	DFQ30PT	102	2-1/2"	2-1/2"	Carbon Steel	Flanged
36	DFQ36PT	118	2-1/2"	2-1/2"	Carbon Steel	Flanged
40	DFQ40PT	137	3"	3"	Carbon Steel	Flanged
46	DFQ46PT	153	3"	3"	Carbon Steel	Flanged
50	DFQ50PT	168	3"	3"	Carbon Steel	Flanged
56	DFQ56PT	186	4"	4"	Carbon Steel	Flanged
60	DFQ60PT	203	4"	4"	Carbon Steel	Flanged

Q-Pump is a U. S. Registered trademark of Desert Aire Corp. and Mesurflo is a Registered trademark of Hays Fluid Controls. The automatic balancing valves are protected by U. S. Patent 6,311,712


## OPTIMIZING SOLUTIONS THROUGH SUPERIOR DEHUMIDIFICATION TECHNOLOGY

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PACKAGE SPECIFICATIONS

 **WARNING:** Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)