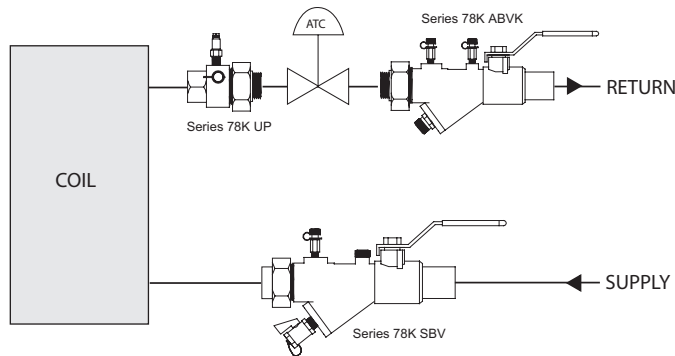


# TA Series 78K

## Automatic Balancing Koil-Kit®

### 400 psig at 250° F (2758 kPa at 120° C)

#### KIT DESCRIPTION



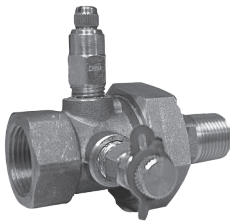
The TA Series 78K Automatic Balance Koil-Kit® provides a simplified, quality coil circuit installation while ensuring optimal hydronic system design requirements are met. Suitable for hot, cold, treated and untreated systems, the Automatic Balance Koil-Kit® is a reliable 3-component package featuring:

**TA Series UP Union Port Fitting**  
**TA Series 78K ABVK Automatic Balancing Valve**  
**TA Series SBV Y-Strainer Ball Valve Combination**

All components are Ametal® dezincification-resistant copper alloy construction with brass and bronze components to improve valve life.

#### PRODUCT DESCRIPTIONS

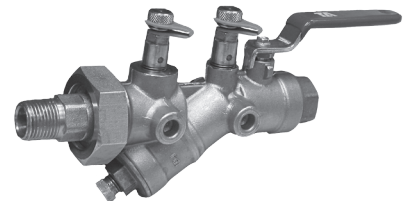
UP



#### TA Series UP Union Port Fitting

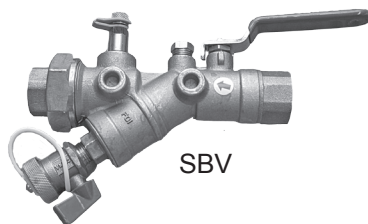
The TA Series UP Union Port Fitting provides a simplified, quality terminal hookup for installation at coil outlet. The UP Union features a port section equipped standard with a manual air vent on top allowing for optimal positioning at coil outlet and effective venting together with an EDPM SuperSeal™ Pressure / Temperature port on the side. The union is equipped with an EDPM "O"-ring.

ABVK



#### TA Series 78K ABVK Automatic Balancing Valve

The TA Series 78K ABVK Automatic Balancing Valve eliminates the need for manual balancing. The 78K ABVK Auto Balancing Valve features the AutoFlow regulating cartridge and spring. The cartridge is removable from the valve body to provide access for flow range changes, inspection, and cleaning without breaking the line. Equipped standard with two EDPM SuperSeal™ Pressure / Temperature ports for flow measurement.



SBV

#### TA Series SBV Y-Strainer Ball Valve Combination

The TA Series SBV Y-Strainer Ball Valve Combination provides a simplified, quality terminal hookup that protects both coil and modulating valve from pipe scale, sand, or weld slag. The SBV Y-Strainer Ball Valve Combination features a stainless steel strainer (removable without breaking the line), a blow-out proof valve stem, Teflon® packing, plated ball, and a strainer-blowdown & drain valve with hose thread, cap & retainer. Equipped standard with an EDPM SuperSeal™ Pressure / Temperature port and extra plugged port on top with a union end.

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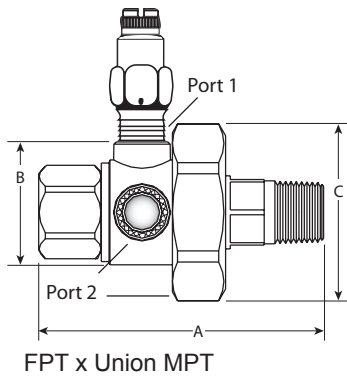
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 TEFLON® IS A REGISTERED TRADEMARK OF DUPONT



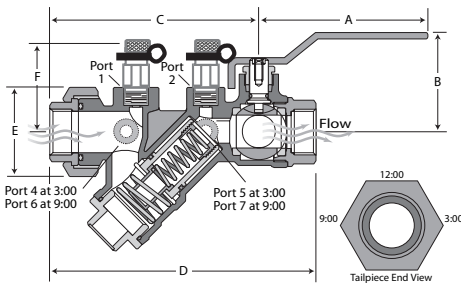
## DIMENSIONS

### Series 78K UP Union Port Fitting



Dimensions - Inches/millimeters					
FPT x Union MPT Nominal Diameter In./mm	Part Number	A	B	C	Aprx. Wgt. Ea Lbs./kg
$\frac{1}{2}$ X $\frac{1}{2}$ 15 x 15	K00478KUP1	3.5 89	0.8 20	1.6 41	0.6 0,3
$\frac{3}{4}$ X $\frac{1}{2}$ 20 x 15	KA5978KUP1	3.7 94	0.9 23	2.2 56	1.0 0,5
$1$ X $\frac{3}{4}$ 25 x 20	KA8378KUP1	4.1 104	1.0 25	2.4 61	1.2 0,5
$1\frac{1}{4}$ X $1$ 32 x 25	KB0578KUP0	4.3 109	1.2 30	2.9 74	2.8 1,3
$1\frac{1}{2}$ X $1\frac{1}{4}$ 40 x 32	KB3178KUP0	4.4 112	1.3 33	3.5 89	3.5 1,6
$2$ X $1\frac{1}{2}$ 50 x 40	KB6778KUP0	4.6 117	1.7 43	3.9 99	5.9 2,7

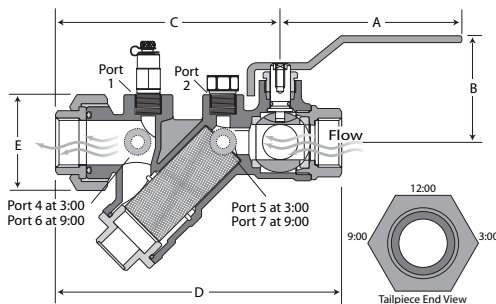
### Series 78K ABVK Automatic Balancing Valve



Dimensions - Inches/millimeters								
Union MPT x FPT Nominal Diameter In./mm	Part Number	A	B	C	D	E	F	Aprx. Wgt. Ea Lbs./kg
$\frac{1}{2}$ X $\frac{1}{2}$ 15 x 15	K00478KV - -*	3.9 99	2.0 51	4.8 122	6.2 157	2.1 53	2.1 53	2.0 0,9
$\frac{3}{4}$ X $\frac{1}{2}$ 20 x 15	KX8778KV - -*	3.9 99	2.0 51	4.8 122	6.2 157	2.1 53	2.1 53	2.1 1,0
$1$ X $\frac{3}{4}$ 25 x 20	KA6178KV - -*	4.7 119	2.6 66	6.8 173	8.6 218	2.8 71	2.4 61	4.5 2,0
$1\frac{1}{4}$ X $1$ 32 x 25	KZ9078KV - -*	4.7 119	2.6 66	6.8 173	8.6 218	2.8 71	2.4 61	4.6 2,1
$1\frac{1}{2}$ X $1\frac{1}{4}$ 40 x 32	KZ9178KV - -*	5.5 140	3.5 89	7.9 201	10.0 254	3.8 97	2.5 64	9.3 4,2
$2$ X $1\frac{1}{2}$ 50 x 40	KJ8678KV - -*	5.5 140	3.5 89	7.9 201	10.0 254	3.8 97	2.5 64	9.5 4,3

\* Code determined by selection of spring and cartridge.

### Series 78K SBV Y-Strainer Ball Valve Combination



Dimensions - Inches/millimeters							
Nominal Dia. In./mm	Part Number	A	B	C	D	E	Aprx. Wgt. Ea Lbs./kg
$\frac{1}{2}$ 15	K00478KSBV	3.9 99	2.0 51	4.8 122	6.2 157	2.1 53	2.0 0,9
$\frac{3}{4}$ 20	K00678KSBV	3.9 99	2.0 51	4.8 122	6.2 157	2.1 53	2.0 0,9
$1$ 25	K01078KSBV	4.7 119	2.6 66	6.8 173	8.6 218	2.8 71	4.5 2,0
$1\frac{1}{4}$ 32	K01278KSBV	4.7 119	2.6 66	6.8 173	8.6 218	2.8 71	4.5 2,0
$1\frac{1}{2}$ 40	K01478KSBV	5.5 140	3.5 89	7.9 201	10.0 254	3.8 97	9.3 4,2
$2$ 50	K02078KSBV	5.5 140	3.5 89	7.9 201	10.0 254	3.8 97	9.3 4,2

## PERFORMANCE AND SELECTION

### Series 78K ABVK Automatic Balancing Valve

#### Selecting the AutoFlow Valve Spring Range

Two spring ranges are available for all AutoFlow valves: 2 to 32 psi and 5 to 60 psi. The first number is the differential pressure (D.P.) needed to achieve design flow. The second is the maximum D.P. where the design flow will be maintained. Following are some general rules on the selection of the spring range. **In most cases the amount added to the calculated pump head is 4.6 feet (2 psi x 2.3 feet/psi).**

- For direct return systems, if the total pump head is less than 110 feet, the 2-32 range can generally be used of all units.
- On reverse return systems the 2-32 range can be used for all units.
- For direct return systems with a total pump head exceeding 110 feet, the 5-60 range should be used only on units close to the pump to maintain control.

#### To calculate the spring range required for a specific terminal unit:

##### Estimate the losses due to -

- pump accessories such as suction diffusers, check valves, etc.
- distribution pipe loss to the terminal unit

c) terminal coil, ATC, and Y-Strainer drops at design flow

#### Add a, b, and c and then subtract from the total pump head.

If less than 74 feet, use the 2-32 range. If greater than 74 and less than 138 feet, use the 5-60 range.

#### Example:

The total pump head is 132 feet and the total of a, b, and c is 35 feet. **132 - 35 = 97.** Use the 5-60 range since the remaining pump head is greater than 74 feet (32 psi).

#### Selecting the AutoFlow Cartridge Flow Rate

Using the chart below, find the available flow according to the size valve required and the system design flow. If the required flow falls between two available flows, round to the nearest flow listed.

Nominal Dia. In./mm	Spring Range PSID	AutoFlow Cartridge Flow Rate (USGPM)
$\frac{1}{2}$ - $\frac{3}{4}$ 15 - 20	2-32	0.5, 0.75, 1.0, 1.25, 1.5, 1.75, 2.0, 2.25, 2.5, 2.75, 3.0, 3.5, 4.0, 4.5, 5.0, 6.0, 7.0, 8.0
	5-60	1.0, 1.5, 2.0, 2.5, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10, 11, 12
1 - $1\frac{1}{4}$ 25 - 32	2-32	0.5, 0.75, 1.0, 1.25, 1.5, 1.75, 2.0, 2.25, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0, 6.0, 7.0, 8.0, 9.0, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19
	5-60	1.0, 1.5, 2.0, 2.5, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27
$1\frac{1}{2}$ - 2 40 - 50	2-32	5.0, 6.0, 7.0, 8.0, 9.0, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50
	5-60	8.0, 9.0, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70

Specify spring range and flow rate for each Series 78K ABVK Auto Balancing Valve.

### Series 78K SBV Y-Strainer Ball Valve Combination

Flow Coefficients - C <sub>v</sub>		
Nominal Dia. In./mm	Part Number	C <sub>v</sub>
$\frac{1}{2}$ 15	K00478KSBV	7.6
$\frac{3}{4}$ 20	K00678KSBV	8.1
1 25	K01078KSBV	18.9
$1\frac{1}{4}$ 32	K01278KSBV	20.0
$1\frac{1}{2}$ 40	K01478KSBV	43.5
2 50	K02078KSBV	44.3

C<sub>v</sub>'s based on a clean 20 mesh stainless steel strainer.

## MATERIAL SPECIFICATIONS

### Series 78K UP Union Port Fitting

**Body:** Ametal® dezincification-resistant copper alloy

**Union:** Brass with EPDM O-ring

### Series 78K ABVK Automatic Balancing Valve

**Body:** Ametal® dezincification-resistant copper alloy

**Union:** Brass with EPDM O-ring

**Flow Cartridge:** Series 300 Stainless Steel Wear surfaces with Stainless Steel spring

**Ball Valve:** Teflon® packing, brass packing nut, plated ball, steel handle with vinyl grip.

**Accuracy:** ±5%

### Series 78K SBV Y-Strainer Ball Valve Combination

**Body:** Ametal® dezincification-resistant copper alloy

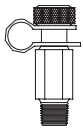
**Union:** Brass with EPDM O-ring

**Ball Valve:** Teflon® packing, brass packing nut, plated ball, steel handle with vinyl grip.  
Blowout-proof stem end connection available FPT.

**Strainer:** 20 Mesh Stainless Steel

## OPTIONS

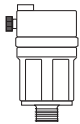
### Pressure/Temperature Probe Port



**Part No. K00178KPTP**

¼" MPT. Brass with cap and strainer. EPDM seal.

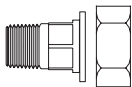
### Automatic Air Vent



**Part No. K00178KAAV**

¼" MPT. Brass automatic air vent. Polypropylene float material with a nylon cap.

### Union Tailpiece with Nut



Brass MPT tailpiece and union.  
Nut, EPDM O-ring.

Union Tailpiece			
Nominal Dia. In./mm	Part No.	Nominal Dia. In./mm	Part Number
½ 15	K00478KTPM	1¼ 32	K00478KTPM
¾ 20	K00678KTPM	1½ 40	K00678KTPM
1 25	K01078KTPM	2 50	K01078KTPM



WCAS-6LMQ24