



HVAC METRIC PRODUCT CATALOG

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www.haysfluidcontrols.com



HVAC Automatic Balance Index

<i>Mesurflo® Automatic Balance Valves</i>				
Y-Ball Models	Flow Rate LPM(GPM)	Connection Size DN	Connection Size Inch	Page
2519	1.9 - 19 (0.5-5.0)	DN 15 to DN 20	1/2" - 3/4"	ABV-SPEC-MTK-2519-001
				ABV-HTO-MTK-2519-001
2517	1.9 - 34 (0.5-9.0)	DN 15 to DN 20	1/2" - 3/4"	ABV-SPEC-MTK-2517-001
				ABV-HTO-MTK-2517-001
2516	1.9 - 34 (0.5-9.0)	DN 15 to DN 25	1/2", 3/4", 1"	ABV-SPEC-MTK-2516-001
				ABV-HTO-MTK-2516-001
2514	1.9 - 34 (0.5-9.0)	DN 15 to DN 25	1/2", 3/4", 1"	ABV-SPEC-MTK-2514-001
				ABV-HTO-MTK-2514-001
2524	1.9 - 95 (0.5 - 25.0)	DN 20 to DN 25	3/4", 1"	ABV-SPEC-MTK-2524-001
				ABV-HTO-MTK-2524-001
Inline Models	Flow Rate LPM(GPM)	Connection Size DN	Connection Size Inch	Page
2513	1.9 - 34 (0.5-9.0)	DN 15 to DN 25	1/2", 3/4", 1"	ABV-SPEC-MTK-2513-001
				ABV-HTO-MTK-2513-001
2510	1.9 - 34 (0.5-9.0)	DN 15 to DN 25	1/2", 3/4", 1"	ABV-SPEC-MTK-2510-001
				ABV-HTO-MTK-2510-001
2520	1.9 - 95 (0.5 - 25.0)	DN 20 to DN 25	3/4", 1"	ABV-SPEC-MTK-2520-001
				ABV-HTO-MTK-2520-001
2530	34 - 284 (9.0 - 75.0)	DN 25	1"	ABV-SPEC-MTK-2530-001
				ABV-HTO-MTK-2520-001
Copper Sweat Models	Flow Rate LPM(GPM)	Connection Size DN	Connection Size Inch	Page
2511	1.9 - 34 (0.5-9.0)	DN 15 to DN 20	1/2" - 3/4"	ABV-SPEC-MTK-2511-001
				ABV-HTO-MTK-2511-001
2521	34 - 91 (9.0 - 24.0)	DN 20 to DN 25	3/4", 1"	ABV-SPEC-MTK-2521-001
				ABV-HTO-MTK-2521-001



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Mesurflo® Automatic Balance Valve Hose Kits			
Size	Type Y-Ball	Flow Rate LPM (GPM)	Page
DN 15 (1/2")		1.9 - 19.0 (0.50-5.00)	ABHK-SPEC-MTK-2519-001
			ABHK-HTO-MTK-2519-001
			ABHK-SD-MTK-2519-001
DN 15 (1/2")		20.8 - 34.0 (5.50-9.00)	ABHK-SPEC-MTK-2516-001
			ABHK-HTO-MTK-2516-001
			ABHK-SD-MTK-2516-001
DN 20 (3/4") , DN 25 (1")		1.9 - 34.0 (0.50-9.00)	ABHK-SPEC-MTK-2516-002
			ABHK-HTO-MTK-2516-002
			ABHK-SD-MTK-2516-002
DN 20 (3/4") , DN 25 (1")		38.0 - 95.0 (10.0-25.0)	ABHK-SPEC-MTK-2524-001
			ABHK-HTO-MTK-2524-001
			ABHK-SD-MTK-2524-001
Size	Type Inline	Flow Rate LPM (GPM)	Page
DN 15 (1/2") , DN 20 (3/4") , DN 25 (1")		1.9 - 34.0 (0.50-9.00)	ABHK-SPEC-MTK-2510-001
			ABHK-HTO-MTK-2510-001
			ABHK-SD-MTK-2510-001
DN 20 (3/4") , DN 25 (1")		38.0 - 95.0 (10.0-25.0)	ABHK-SPEC-MTK-2520-001
			ABHK-HTO-MTK-2520-001
			ABHK-SD-MTK-2520-001
Automatic Balance Valve Technical Information			
Balancing Valve Tech Data			ABV-TECH1-R01-001
Recommendation & Application			ABV-TECH2-R01-001
Installation-Operation-Manual			
Inline Automatic Flow Control Valves			ABV-IOM-INLINE-R01-001
Flow Cartridge Installation Instructions			ABV-IOM-INLINE-R01-002
Y-ball Automatic Flow Control Valves			ABV-IOM-Y-BALL-R01-001
			ABV-IOM-Y-BALL-R01-002
Flow Cartridge Installation Instructions			ABV-IOM-Y-BALL-R01-003
Flow Cartridge Installation Instructions			ABV-IOM-Y-BALL-R01-004



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<i>Installation-Operation-Manual</i>	
<i>Inline Automatic Copper Sweat Valves</i>	<i>ABV-IOM-COPPER SWEAT-R01-001</i>
	<i>ABV-IOM-COPPER SWEAT-R01-002</i>
<i>Balance Valve Performance Specifications Summary</i>	<i>BV-SPEC-SUM-R01-001</i>
	<i>BV-SPEC-SUM-R01-002</i>
	<i>BV-SPEC-SUM-R01-003</i>
<i>Automatic Balance Hose Kits</i>	<i>IOM-HOSE KITS-R01-001</i>
	<i>IOM-HOSE KITS-R01-002</i>
<i>Hose Kit Performance Specifications Summary</i>	<i>HOSE KITS-SPEC-SUM-R01-001</i>
	<i>HOSE KITS-SPEC-SUM-R01-002</i>
	<i>HOSE KITS-SPEC-SUM-R01-003</i>
<i>Weights</i>	<i>WEIGHTS</i>
<i>Terms & Conditions</i>	<i>TERMS & CONDITIONS-001</i>
	<i>TERMS & CONDITIONS-002</i>



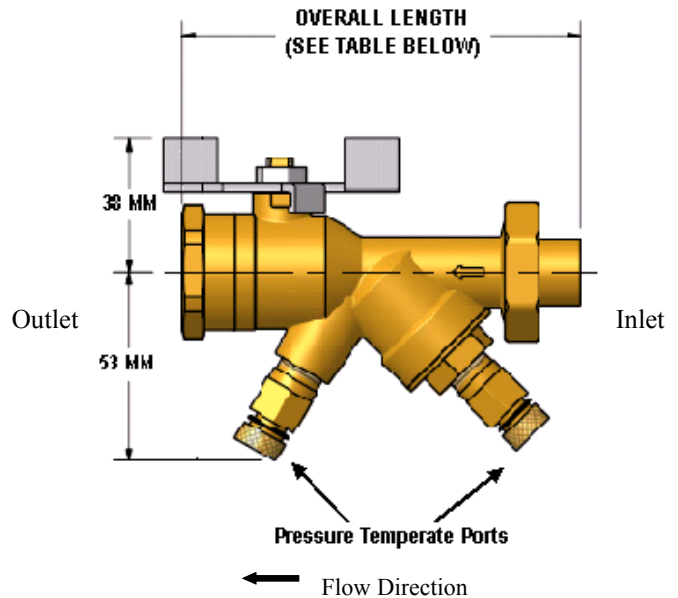
Name: Mesurflo®

Sizes: DN15 (1/2") & DN20 (3/4")

LPM (GPM): 1.9-19 (0.5-5.0)

**Type: Y-Ball Automatic
Balancing Valve**

Model: 2519



Standard Features:

- **Metric Adapters per ISO 7-1 Standards**
- Female, Male and Sweat Outlet / Inlet Connections
- DN 20 Union Ends
- Changeable Flow Cartridges
- Differential Operating Pressure Range:
14 - 552 kPa (2-80 PSID) 1.9-11.4 LPM (0.50-3.00 GPM)
21 - 552 kPa (3-80 PSID) 13.3-19 LPM (3.50-5.00 GPM)
- ± 10% Accuracy
- Operating Temperature Range 0°C to 107° C (32°F to 225° F)
- Pressure / Temperature Ports
- Inlet and Outlet Port Options
- Short Handle (Shown)
- Valves Labeled with Model No., Size & Flow Rate
- Weighs between 0.25 - 0.32 kg (0.55-0.7 lbs)
- Suitable for 4137 kPa (600 PSIG)

Options:

- Plugged (Ports Machined w/Plug)
- Pressure Taps
- Extended Handles
- Extended Pressure / Temperature Ports
- Stainless Steel Tag-Chain Upon Request

MATERIAL SPECIFICATIONS	
Valve Body	Brass
Short Handle (Standard)	Zinc Plated Steel
Ball	Chrome Plated Brass
Pressure / Temperature Ports	Brass
O-Rings	EPDM
Ball Seat	Teflon
Stem	Brass
End Cap	Brass
Diaphragm	EPDM
Ball Valve End Fitting	Brass
Orifice	Polyphenylsulfone

OVERALL LENGTH (All length calculations are machined union end fittings)						
Outlet	DN15 Female	DN15 Male	DN15 Sweat	DN20 Female	DN20 Male	DN20 Sweat
Inlet	MM/IN	MM/IN	MM/IN	MM/IN	MM/IN	MM/IN
DN15 Female	132/5.2	130/5.1	117/4.6	122/4.8	132/5.2	117/4.6
DN15 Male	145/5.7	140/5.5	127/5	132/5.2	142/5.6	127/5
DN15 Sweat	132/5.2	130/5.1	114/4.5	122/4.8	132/5.2	114/4.5
DN20 Female	142/5.6	140/5.5	124/4.9	130/5.1	142/5.6	124/4.9
DN20 Male	145/5.7	142/5.6	127/5	135/5.3	145/5.7	127/5
DN20 Sweat	137/5.4	135/5.3	119/4.7	124/4.9	137/5.4	119/4.7



**Mesurflo® Y-Ball Automatic
Balancing Valve 2519
Order Form**

- 1) A separate sheet is required for each configuration change
- 2) Make a check mark by each option and list quantities by each Flow Rate
- 3) Make as many copies as needed for each order

Outlet Connection Size / Type	
DN15 (1/2) MALE	
DN15 (1/2) FEMALE	
DN20 (3/4) MALE	
DN20 (3/4) FEMALE	
1/2 (SWEAT)	
3/4 (SWEAT)	
Inlet Connection Size / Type	
DN15 (1/2) MALE	
DN15 (1/2) FEMALE	
DN20 (3/4) MALE	
DN20 (3/4) FEMALE	
1/2 (SWEAT)	
3/4 (SWEAT)	

Handle Options *	
Lever	
Short	
Extended	

Port Options*	Outlet	Inlet
8MM (1/4") Plug (Ports Machined)		
Pressure Taps		
Pressure/Temperature Ports		
Extended Pressure/Temperature Ports		
Tagging*		
Stainless Steel Tag-Chain (SS TAG-CHAIN)		

LPM (GPM)	Qty	LPM (GPM)	Qty	LPM (GPM)	Qty
1.9 (0.50)		6.6 (1.75)		15.1 (4.00)	
2.3 (0.60)		7.6 (2.00)		17.0 (4.50)	
2.8 (0.75)		8.5 (2.25)		19.0 (5.00)	
3.3 (0.88)		9.5 (2.50)			
3.8 (1.00)		10.4 (2.75)			
4.3 (1.13)		11.4 (3.00)			
4.7 (1.25)		12.3 (3.25)			
5.7 (1.50)		13.3 (3.50)			
6.2 (1.63)		14.1 (3.75)			



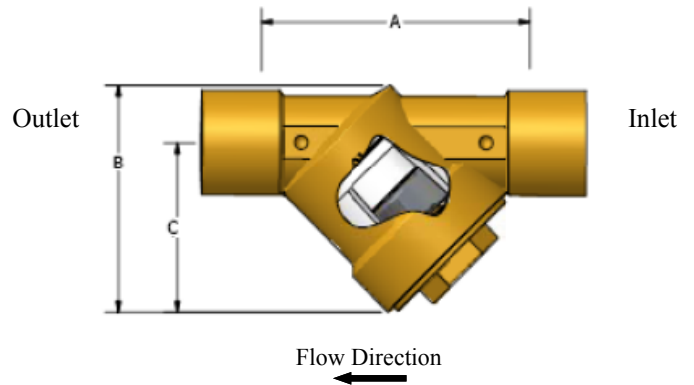
Name: Mesurflo®

Sizes: DN15 (1/2") & DN20 (3/4")

LPM (GPM): 1.9-34 (0.5-9.0)

**Type: Y-Ball Automatic
Balancing Valve**

Model: 2517



Standard Features:

- Sweat Outlet / Inlet Connections
- Changeable Flow Cartridges
- Differential Operating Pressure Range:
**14 - 552 kPa (2-80 PSID) 1.9-19 LPM
(0.50-5.00 GPM)**
**21 - 552 kPa (3-80 PSID) 23-34 LPM
(5.50-9.0 GPM)**
- ± 10% Accuracy
- Operating Temperature Range
 0°C to 107°C (32°F to 225° F)
- Valves Labeled with Model No., Size
& Flow Rate
- Valve Body Suitable for 4137 kPa (600
PSIG)

MATERIAL SPECIFICATIONS	
Valve Body	Brass
End Cap	Brass
O-Rings	EPDM
Diaphragm	EPDM
Orifice	Polyphenylsulfone

Dimensions		
Size	DN15	DN20
	MM/IN	MM/IN
A	52/2.04	60/2.36
B	54/2.12	54/2.11
C	40/1.58	40/1.58

Drawing & Tables Represent Dimensions with US Threads. Added Metric Adapter Dimensions Not Shown. Consult Factory For Additional Information.



**Mesurflo® Y-Ball Automatic
Balancing Valve 2517
Order Form**

- 1) A separate sheet is required for each configuration change
- 2) Make a check mark by each option and list quantities by each Flow Rate
- 3) Make as many copies as needed for each order

Inlet / Outlet Connection Size / Type	
1/2 SWEAT	
3/4 SWEAT	

LPM (GPM)	Qty	LPM (GPM)	Qty	LPM (GPM)	Qty
1.9 (0.50)		7.6 (2.00)		21.0 (5.50)	
2.3 (0.63)		8.5 (2.25)		23.0 (6.00)	
2.8 (0.75)		9.5 (2.50)		25.0 (6.50)	
3.8 (1.00)		11.4 (3.00)		27.0 (7.00)	
4.3 (1.13)		12.3 (3.25)		28.4 (7.50)	
4.7 (1.25)		13.3 (3.50)		30.3 (8.00)	
5.7 (1.50)		15.1 (4.00)		34.1 (9.00)	
6.2 (1.63)		17.0 (4.50)			
6.6 (1.75)		19.0 (5.00)			



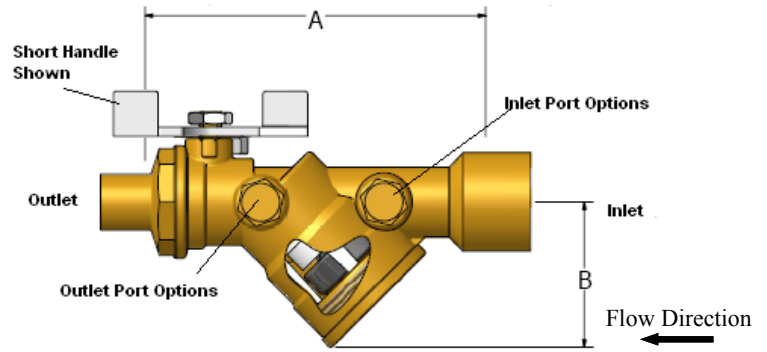
Name: Mesurflo®

**Sizes: DN15 (1/2"), DN20 (3/4")
& DN25 (1")**

LPM (GPM): 1.9-34 (0.5-9.0)

**Type: Y-Ball Automatic
Balancing Valve**

Model: 2516



Standard Features:

- Metric Adapters per ISO 7-1 Standards
- Female, Male and Sweat Outlet / Inlet Connections
- Changeable Flow Cartridges
- Differential Operating Pressure Range:
14 - 552 kPa (2-80 PSID) 1.9-19 LPM
(0.50-5.00 GPM)
21 - 552 kPa (3-80 PSID) 23-34 LPM
(5.5-9.0 GPM)
- ± 10% Accuracy
- Operating Temperature Range
0°C to 107°C (32°F to 225°F)
- Pressure / Temperature Ports
- Short or Lever Handle
- Inlet and Outlet Port Options
- Valves Labeled with Model No., Size & Flow Rate
- Valve Body Suitable for 4137 kPa (600 PSIG)

Options:

- Extended Handles
- Extended Pressure / Temperature Ports
- Stainless Steel Tag-Chain Upon Request

MATERIAL SPECIFICATIONS	
Valve Body	Brass
Ball	Chrome Plated Brass
Pressure / Temperature Ports	Brass
O-Rings	EPDM
Ball Seat	Teflon
Stem	Stainless Steel
End Cap	Brass
Diaphragm	EPDM
Ball Valve End Fitting	Brass
Short Handle	Zinc Plated Steel
Orifice	Polyphenylsulfone

Dimensions			
Size	DN15	DN20	DN25
	MM/IN	MM/IN	MM/IN
A	132/5.2	132/5.2	132/5.2
B	38/1.5	38/1.5	38/1.5

Drawing & Tables Show Dimensions of US Threads. Metric Adapter Dimensions Not Shown. Consult Factory For Additional Information.



**Mesurflo® Y-Ball Automatic
Balancing Valve 2516
Order Form**

- 1) A separate sheet is required for each configuration change
- 2) Make a check mark by each option and list quantities by each Flow Rate
- 3) Make as many copies as needed for each order

Outlet Connection Size / Type	
DN15 (1/2) MALE	
DN15 (1/2) FEMALE	
DN20 (3/4) MALE	
DN20 (3/4) FEMALE	
DN25 (1) FEMALE	
1/2 (SWEAT)	
3/4 (SWEAT)	
1 (SWEAT)	
Inlet Connection Size / Type	
DN15 (1/2) FEMALE	
DN20 (3/4) FEMALE	
1/2 (SWEAT)	

Handle Options *	
Lever	
Short	
Extended	

Port Options*	Outlet	Inlet
Pressure/Temperature Ports		
Extended Pressure/Temperature Ports		
Tagging*		
Stainless Steel Tag-Chain (SS TAG-CHAIN)		

LPM (GPM)	Qty	LPM (GPM)	Qty	LPM (GPM)	Qty
1.9 (0.50)		7.6 (2.00)		21.0 (5.50)	
2.3 (0.63)		8.5 (2.25)		23.0 (6.00)	
2.8 (0.75)		9.5 (2.50)		25.0 (6.50)	
3.8 (1.00)		11.4 (3.00)		27.0 (7.00)	
4.3 (1.13)		12.3 (3.25)		28.4 (7.50)	
4.7 (1.25)		13.3 (3.50)		30.3 (8.00)	
5.7 (1.50)		15.1 (4.00)		34.1 (9.00)	
6.2 (1.63)		17.0 (4.50)			
6.6 (1.75)		19.0 (5.00)			



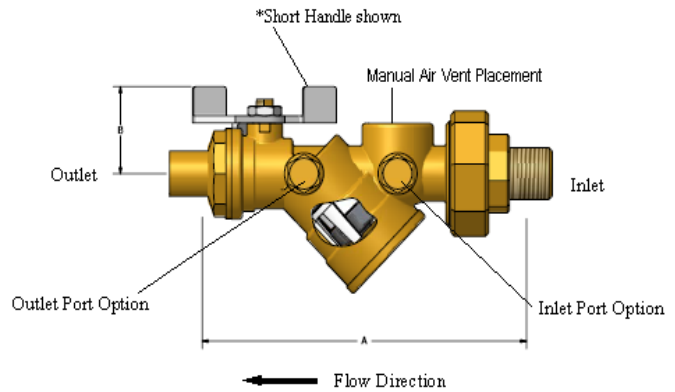
Name: Mesurflo®

**Sizes: DN15 (1/2"), DN20 (3/4")
& DN25 (1")**

LPM (GPM): 1.9-34 (0.5-9.0)

**Type: Y-Ball Automatic
Balancing Valve**

Model: 2514



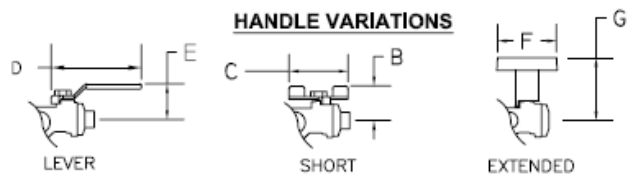
Standard Features:

- **Metric Adapters per ISO 7-1 Standards**
- Female, Male and Sweat Outlet / Inlet Connections
- Changeable Flow Cartridges
- Differential Operating Pressure Range:
14 - 552 kPa (2-80 PSID) 1.9-19 LPM (0.50-5.00 GPM)
21 - 552 kPa (3-80 PSID) 23-34 LPM (5.50-9.00 GPM)
- ± 10% Accuracy
- Operating Temperature Range 0°C to 107°C (32°F to 225° F)
- Pressure / Temperature Ports
- Short* (See Drawing) or Lever Handle
- Right or Left Hand Porting
- Inlet and Outlet Port Options
- Valves Labeled with Model No., Size & Flow Rate
- Valve Body Suitable for 4137 kPa (600 PSIG)

Options:

- None (Ports Not Machined)
- Plugged (Ports Machined w/Plug)
- Pressure Taps
- Extended Handles
- Extended Pressure / Temperature Ports
- Manual Air Vent (Placed in Top Port)
- Stainless Steel Tag-Chain Upon Request

MATERIAL SPECIFICATIONS	
Valve Body	Brass
Union End	Brass
Ball	Chrome Plated Brass
Pressure / Temperature Ports	Brass
O-Rings	EPDM
Ball Seat	Teflon
Stem	Brass
End Cap	Brass
Diaphragm	EPDM
Ball Valve End Fitting	Brass
Short Handle	Zinc Plated Steel
Coupling Nut	Brass
Orifice	Polyphenylsulfone



Dimensions			
	MM/IN		MM/IN
A	149/5.9	E	41/1.6
B	38/1.5	F	61/2.4
C	66/2.6	G	64/2.5
D	102/4		

Drawing & Tables Show Dimensions of US Threads. Metric Adapter Dimensions Not Shown. Consult Factory For Additional Information.



**Mesurflo® Y-Ball Automatic
Balancing Valve 2514
Order Form**

- 1) A separate sheet is required for each configuration change
- 2) Make a check mark by each option and list quantities by each Flow Rate
- 3) Make as many copies as needed for each order

Outlet Connection Size / Type	
DN15 (1/2) MALE	
DN15 (1/2) FEMALE	
DN20 (3/4) MALE	
DN20 (3/4) FEMALE	
DN25 (1) FEMALE	
1/2 (SWEAT)	
3/4 (SWEAT)	
1 (SWEAT)	
Inlet Connection Size / Type	
DN15 (1/2) MALE	
DN15 (1/2) FEMALE	
DN20 (3/4) MALE	
DN20 (3/4) FEMALE	
DN25 (1) MALE	
1/2 (SWEAT)	
3/4 (SWEAT)	
1 (SWEAT)	

Port Options*	Outlet	Inlet
Pressure/Temperature Ports		
Extended Pressure/Temperature Ports		
Tagging*		
Stainless Steel Tag-Chain (SS TAG-CHAIN)		

LPM (GPM)	Qty	LPM (GPM)	Qty	LPM (GPM)	Qty
1.9 (0.50)		7.6 (2.00)		21.0 (5.50)	
2.3 (0.63)		8.5 (2.25)		23.0 (6.00)	
2.8 (0.75)		9.5 (2.50)		25.0 (6.50)	
3.8 (1.00)		11.4 (3.00)		27.0 (7.00)	
4.3 (1.13)		12.3 (3.25)		28.4 (7.50)	
4.7 (1.25)		13.3 (3.50)		30.3 (8.00)	
5.7 (1.50)		15.1 (4.00)		34.1 (9.00)	
6.2 (1.63)		17.0 (4.50)			
6.6 (1.75)		19.0 (5.00)			

Handle Options *	
Lever	
Short	
Extended	



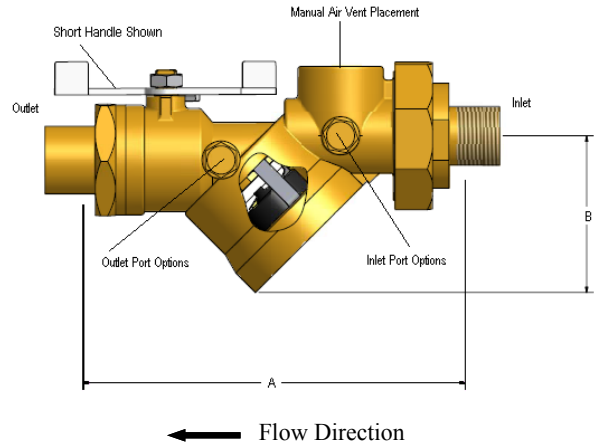
Name: Mesurflo®

Sizes: DN20 (3/4") & DN25 (1")

LPM (GPM): 1.9-95 (0.5-25.0)

**Type: Y-Ball Automatic
Balancing Valve**

Model: 2524



Standard Features:

- **Metric Adapters per ISO 7-1 Standards**
- Female, Male and Sweat Outlet / Inlet Connections
- Changeable Flow Cartridges
- Differential Operating Pressure Range:
14 - 552 kPa (2-80 PSID) 1.9-19 LPM (0.50 - 5.00 GPM)
21 - 552 kPa (3-80 PSID) 23-64 LPM (5.50 - 17.0 GPM)
34 - 552 kPa (5-80 PSID) 68-95 LPM (18.0 - 25.0 GPM)
- ± 10% Accuracy
- Operating Temperature Range 0°C to 107°C (32°F to 225°F)
- Pressure / Temperature Ports
- Short (See Drawing) or Lever Handle
- Right or Left Hand Porting
- Inlet and Outlet Port Options
- Valves Labeled with Model No., Size & Flow Rate
- Valve Body Suitable for 4137 kPa (600 PSIG)

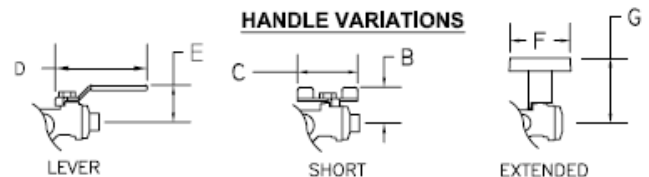
Options:

- Plugged (Ports Machined w/Plug)
- Pressure Taps
- Extended Handles
- Extended Pressure / Temperature Ports
- Manual Air Vent (Placed in Top Port)
- Stainless Steel Tag-Chain Upon Request

MATERIAL SPECIFICATIONS	
Valve Body	Brass
Union End	Brass
Ball	Chrome Plated Brass
Pressure / Temperature Ports	Brass
O-Rings	EPDM
Ball Seat	Teflon
Stem	Brass
End Cap	Brass
Diaphragm	EPDM
Ball Valve End Fitting	Brass
Short Handle	Zinc Plated Steel
Coupling Nut	Brass
Orifice	Polyphenylsulfone
Orifice Holder	Brass

Dimensions						
	MM	IN		MM	IN	
A	175	6.9		E	41	1.6
B	84	3.3		F	69	2.7
C	66	2.6		G	64	2.5
D	102	4				

Drawing & Tables Show Dimensions of US Threads. Metric Adapter Dimensions Not Shown. Consult Factory For Additional Information.





**Mesurflo® Y-Ball Automatic
Balancing Valve 2524
Order Form**

- 1) A separate sheet is required for each configuration change
- 2) Make a check mark by each option and list quantities by each Flow Rate
- 3) Make as many copies as needed for each order

Outlet Connection Size / Type	
DN15 (1/2) MALE	
DN15 (1/2) FEMALE	
DN20 (3/4) MALE	
DN20 (3/4) FEMALE	
DN25 (1) FEMALE	
3/4 (SWEAT)	
1 (SWEAT)	
Outlet Connection Size / Type	
DN15 (1/2) MALE	
DN15 (1/2) FEMALE	
DN20 (3/4) MALE	
DN20 (3/4) FEMALE	
DN25 (1) MALE	
3/4 (SWEAT)	
1 (SWEAT)	

Handle Options *	
Lever	
Short	
Extended	

Port Options*	Outlet	Inlet
Pressure/Temperature Ports		
Extended Pressure/Temperature Ports		
Tagging*		
Stainless Steel Tag-Chain (SS TAG-CHAIN)		

LPM (GPM)	Qty	LPM (GPM)	Qty	LPM (GPM)	Qty
1.9 (0.50)		11.4 (3.00)		34.1 (9.00)	
2.3 (0.63)		12.3 (3.25)		37.9 (10.0)	
2.8 (0.75)		13.3 (3.50)		41.6 (11.0)	
3.8 (1.00)		15.1 (4.00)		45.4 (12.0)	
4.3 (1.13)		17.0 (4.50)		49.2 (13.0)	
4.7 (1.25)		19.0 (5.00)		53.0 (14.0)	
5.7 (1.50)		21.0 (5.50)		56.8 (15.0)	
6.2 (1.63)		23.0 (6.00)		60.6 (16.0)	
6.6 (1.75)		25.0 (6.50)		64.3 (17.0)	
7.6 (2.00)		27.0 (7.00)		68.1 (18.0)	
8.5 (2.25)		28.4 (7.50)		71.9 (19.0)	
9.5 (2.50)		30.3 (8.00)		75.7 (20.0)	



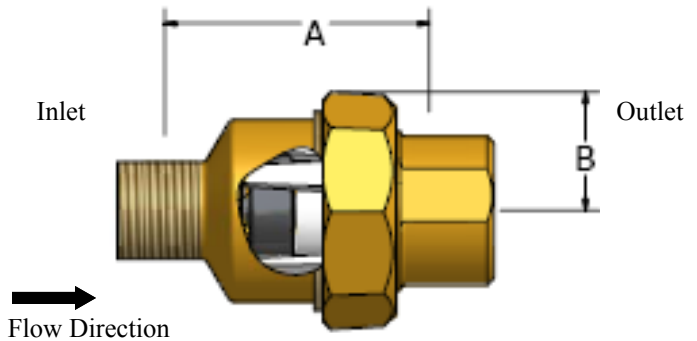
Name: Mesurflo®

**Sizes: DN15 (1/2"), DN20 (3/4")
& DN25 (1")**

LPM (GPM): 1.9-34 (0.5-9.0)

**Type: Automatic
Balancing Valve**

Model: 2513



Standard Features:

- **Metric Adapters per ISO 7-1 Standards**
- Female, Male, & Sweat Inlet / Outlet Connections
- Changeable Flow Cartridges
- Differential Operating Pressure Range:
**14 - 552 kPa (2-80 PSID) 1.9-19 LPM
(0.50-5.00 GPM)**
**21 - 552 kPa (3-80 PSID) 23-34 LPM
(5.5-9.0 GPM)**
- ± 10% Accuracy
- Operating Temperature Range 0°C to 107°C (32°F to 225°F)
- Valves Labeled with Model No., Size & Flow Rate
- Valve Body Suitable for 4137 kPa (600 PSIG)

MATERIAL SPECIFICATIONS	
Valve Body	Brass
Tailpiece	Brass
Coupling Nut	Brass
O-Rings	EPDM
Diaphragm	EPDM
Orifice	Polyphenylsulfone

Dimensions	
A	B
MM/IN	MM/IN
48/1.9	32/1.25

Drawing & Tables Show Dimensions of US Threads. Metric Adapter Dimensions Not Shown. Consult Factory For Additional Information.



**Mesurflo® Automatic
Balancing Valve 2513
Order Form**

- 1) A separate sheet is required for each configuration change
- 2) Make a check mark by each option and list quantities by each Flow Rate
- 3) Make as many copies as needed for each order

Outlet Connection Size / Type	
DN15 (1/2) MALE	
DN15 (1/2) FEMALE	
DN20 (3/4) MALE	
DN20 (3/4) FEMALE	
1/2 (SWEAT)	
3/4 (SWEAT)	
1 (SWEAT)	
Inlet Connection Size / Type	
DN15 (1/2) MALE	
DN15 (1/2) FEMALE	
DN20 (3/4) MALE	
DN20 (3/4) FEMALE	
1/2 (SWEAT)	
3/4 (SWEAT)	
1 SWEAT	

LPM (GPM)	Qty	LPM (GPM)	Qty	LPM (GPM)	Qty
1.9 (0.50)		7.6 (2.00)		21.0 (5.50)	
2.3 (0.63)		8.5 (2.25)		23.0 (6.00)	
2.8 (0.75)		9.5 (2.50)		25.0 (6.50)	
3.8 (1.00)		11.4 (3.00)		27.0 (7.00)	
4.3 (1.13)		12.3 (3.25)		28.4 (7.50)	
4.7 (1.25)		13.3 (3.50)		30.3 (8.00)	
5.7 (1.50)		15.1 (4.00)		34.1 (9.00)	
6.2 (1.63)		17.0 (4.50)			
6.6 (1.75)		19.0 (5.00)			



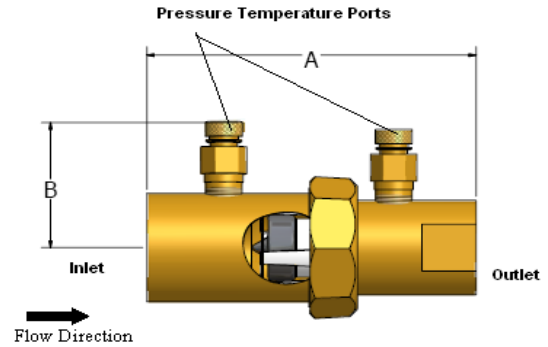
Name: Mesurflo®

Sizes: DN15 (1/2"), DN20 (3/4") & DN25 (1")

LPM/GPM: 1.9-34 (0.5-9.0)

Type: Automatic Balancing Valve

Model: 2510



Standard Features:

- Metric Adapters per ISO 7-1 Standards
- Female and Male Inlet / Outlet Connections
- Changeable Flow Cartridges
- Differential Operating Pressure Range:
 14 - 552 kPa (2-80 PSID) 1.9-19 LPM (0.50-5.00 GPM)
 21 - 552 kPa (3-80 PSID) 23-34 LPM (5.5-9.0 GPM)
- ± 10% Accuracy
- Operating Temperature Range 0°C to 107°C (32°F to 225°F)
- Pressure / Temperature Ports
- Valve Body Suitable for 4137 kPa (600 PSIG)
- Valves Labeled with Model No., Size & Flow Rate

Options:

- Pressure Taps
- Plugged (Ports Machined w/Plug)
- Extended Pressure / Temperature Ports
- Stainless Steel Tag-Chain Upon Request

MATERIAL SPECIFICATIONS	
Valve Body	Brass
Union Nut	Brass
Tailpiece	Brass
Pressure / Temperature Ports	Brass
O-Rings	EPDM
Diaphragm	EPDM
Retainer Ring	Stainless Steel
Orifice	Polyphenylsulfone

Dimensions	
A	B
MM/IN	MM/IN
78/3.07	51/2

Drawing & Tables Show Dimensions of US Threads. Metric Adapter Dimensions Not Shown. Consult Factory For Additional Information.



**Mesurflo® Automatic
Balancing Valve 2510
Order Form**

- 1) A separate sheet is required for each configuration change
- 2) Make a check mark by each option and list quantities by each Flow Rate
- 3) Make as many copies as needed for each order

Outlet Connection Size / Type	
DN15 (1/2) MALE	
DN15 (1/2) FEMALE	
DN20 (3/4) MALE	
DN20 (3/4) FEMALE	
DN25 (1) FEMALE	
Inlet Connection Size / Type	
DN15 (1/2) MALE	
DN15 (1/2) FEMALE	
DN20 (3/4) MALE	
DN20 (3/4) FEMALE	
DN25 (1) MALE	

LPM (GPM)	Qty	LPM (GPM)	Qty	LPM (GPM)	Qty
1.9 (0.50)		8.5 (2.25)		25.0 (6.50)	
2.3 (0.63)		9.5 (2.50)		27.0 (7.00)	
2.8 (0.75)		11.4 (3.00)		28.4 (7.50)	
3.8 (1.00)		12.3 (3.25)		30.3 (8.00)	
4.3 (1.13)		13.3 (3.50)		34.1 (9.00)	
4.7 (1.25)		15.1 (4.00)			
5.7 (1.50)		17.0 (4.50)			
6.2 (1.63)		19.0 (5.00)			
6.6 (1.75)		21.0 (5.50)			
7.6 (2.00)		23.0 (6.00)			

Port Options*	Outlet	Inlet
Pressure/Temperature Ports		
Extended Pressure/Temperature Ports		
Tagging*		
Stainless Steel Tag-Chain (SS TAG-CHAIN)		



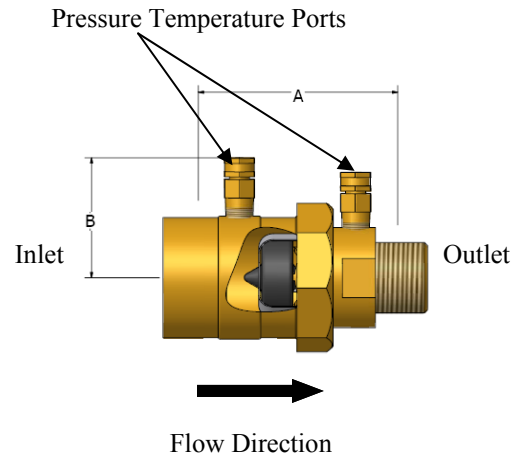
Name: Mesurflo®

Sizes: DN20 (3/4"), DN25 (1")

LPM/GPM: 1.9-95 (0.50 - 25.0)

Type: Automatic Balancing Valve

Model: 2520



Standard Features:

- **Metric Adapters per ISO 7-1 Standards**
- Female and Male Inlet Connections
- Female, Sweat and Male Outlet Connections
- Changeable Flow Cartridges
- Differential Operating Pressure Range:
14 - 552 kPa (2-80 PSID) 1.9-19 LPM (0.50 - 5.00 GPM)
21 - 552 kPa (3-80 PSID) 23-64 LPM (5.50 - 17.0 GPM)
34 - 552 kPa (5-80 PSID) 68-95 LPM (18.0 - 25.0 GPM)
- ± 10% Accuracy
- Operating Temperature Range 0°C to 107°C (32°F to 225° F)
- Pressure / Temperature Ports
- Valves Labeled with Model No., Size & Flow Rate
- Valve Body Suitable for 4137 kPa (600 PSIG)

Options:

- Plugged (Ports Machined w/Plug)
- Pressure Taps
- Extended Pressure / Temperature Ports
- Stainless Steel Tag-Chain Upon Request

MATERIAL SPECIFICATIONS	
Valve Body	Brass
Union Nut	Brass
Tailpiece	Brass
Pressure / Temperature Ports	Brass
O-Rings	EPDM
Diaphragm	EPDM
Retainer Ring	Stainless Steel
Orifice	Polyphenylsulfone

Dimensions	
A	B
MM/IN	MM/IN
99/3.9	29/1-1/8

Drawing & Tables Show Dimensions of US Threads. Metric Adapter Dimensions Not Shown. Consult Factory For Additional Information.



**Mesurflo® Automatic
Balancing Valve 2520
Order Form**

- 1) A separate sheet is required for each configuration change
- 2) Make a check mark by each option and list quantities by each Flow Rate
- 3) Make as many copies as needed for each order

Outlet Connection Size / Type	
DN20 (3/4) MALE	
DN20 (3/4) FEMALE	
DN25 (1) MALE	
DN25 (1) FEMALE	
Inlet Connection Size / Type	
DN20 (3/4) MALE	
DN20 (3/4) FEMALE	
DN25 (1) MALE	
DN25 (1) FEMALE	
1 (SWEAT)	

Port Options*	Outlet	Inlet
Pressure/Temperature Ports		
Extended Pressure/Temperature Ports		
Tagging*		
Stainless Steel Tag-Chain (SS TAG-CHAIN)		

LPM (GPM)	Qty	LPM (GPM)	Qty	LPM (GPM)	Qty	LPM (GPM)	Qty
1.9 (0.50)		11.4 (3.00)		34.1 (9.00)		79.5 (21.0)	
2.3 (0.63)		12.3 (3.25)		37.9 (10.0)		83.3 (22.0)	
2.8 (0.75)		13.3 (3.50)		41.6 (11.0)		87.1 (23.0)	
3.8 (1.00)		15.1 (4.00)		45.4 (12.0)		90.8 (24.0)	
4.3 (1.13)		17.0 (4.50)		49.2 (13.0)		94.6 (25.0)	
4.7 (1.25)		19.0 (5.00)		53.0 (14.0)			
5.7 (1.50)		21.0 (5.50)		56.8 (15.0)			
6.2 (1.63)		23.0 (6.00)		60.6 (16.0)			
6.6 (1.75)		25.0 (6.50)		64.3 (17.0)			
7.6 (2.00)		27.0 (7.00)		68.1 (18.0)			
8.5 (2.25)		28.4 (7.50)		71.9 (19.0)			
9.5 (2.50)		30.3 (8.00)		75.7 (20.0)			



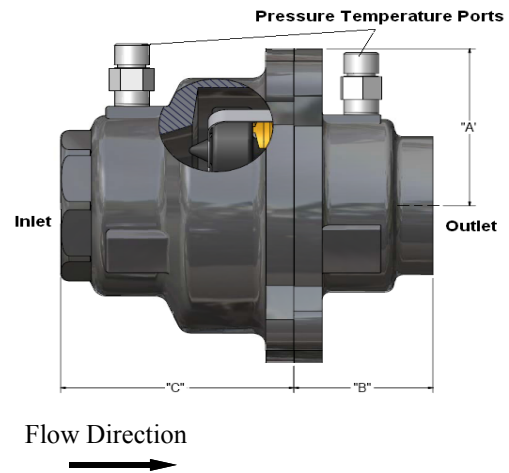
Name: Mesurflo®

Sizes: DN25 (1")

LPM/GPM: 34 - 284 (9.0 - 75)

Type: Automatic Balancing Valve

Model: 2530



Standard Features:

- **Metric Adapters per ISO 7-1 Standards**
- Female Inlet/Outlet Connections
- 3.8 LPM (1 GPM) Increments
- Changeable Flow Cartridges
- Differential Operating Pressure Range:
21 - 552 kPa (3-80 PSID) 34-64 LPM (9.00 - 17.0 GPM)
34 - 552 kPa (5-80 PSID) 68-246 LPM (18.0 - 65.0 GPM)
- ± 10% Accuracy
- Operating Temperature Range 0°C to 107°C (32°F to 225°F)
- Pressure / Temperature Ports
- Valves Labeled with Model No., Size & Flow Rate
- Valve Body Suitable for 2758 kPa (400 PSIG)

Options:

- Extended Pressure / Temperature Ports
- Pressure Taps
- Stainless Steel Tag-Chain Upon Request

MATERIAL SPECIFICATIONS

Valve Body	Gray Iron
Tailpiece	Gray Iron
Pressure / Temperature Ports	Brass
O-Rings	EPDM
Retainer Cage	Stainless Steel
Diaphragm	EPDM
Orifice	Polyphenylsulfone
Orifice Holder	Brass
Bolt & Nut	Steel
Plug	Brass
Laser Cut Center Plate	Carbon Steel

Dimensions

	A	B	C
Size	MM/IN	MM/IN	MM/IN
DN25	86/3.3/8	38/1.48	72/2.84

Drawing & Tables Show Dimensions of US Threads. Metric Adapter Dimensions Not Shown. Consult Factory For Additional Information.



**Mesurflo® Y-Ball Automatic
Balancing Valve 2530 Order Form**

- 1) A separate sheet is required for each configuration change
- 2) Make a check mark by each option and list quantities by each Flow Rate
- 3) Make as many copies as needed for each order

Outlet Connection Size / Type	
DN25 (1) FEMALE	
Inlet Connection Size / Type	
DN25 (1) FEMALE	

Port Options*	Outlet	Inlet
Pressure/Temperature Ports		
Extended Pressure/Temperature Ports		
Tagging*		
Stainless Steel Tag-Chain (SS TAG-CHAIN)		

LPM (GPM)	Qty	LPM (GPM)	Qty	LPM (GPM)	Qty	LPM (GPM)	Qty
34.1 (9.00)		98.4 (26.0)		163 (43.0)		227 (60.0)	
37.9 (10.0)		102 (27.0)		167 (44.0)		231 (61.0)	
41.6 (11.0)		106 (28.0)		170 (45.0)		235 (62.0)	
45.4 (12.0)		110 (29.0)		174 (46.0)		238 (63.0)	
49.2 (13.0)		114 (30.0)		178 (47.0)		242 (64.0)	
53.0 (14.0)		117 (31.0)		182 (48.0)		246 (65.0)	
56.8 (15.0)		121 (32.0)		185 (49.0)		250 (66.0)	
60.6 (16.0)		125 (33.0)		189 (50.0)		254 (67.0)	
64.3 (17.0)		129 (34.0)		193 (51.0)		257 (68.0)	
68.1 (18.0)		132 (35.0)		197 (52.0)		261 (69.0)	
71.9 (19.0)		136 (36.0)		201 (53.0)		265 (70.0)	
75.7 (20.0)		140 (37.0)		204 (54.0)		269 (71.0)	
79.5 (21.0)		144 (38.0)		208 (55.0)		273 (72.0)	
83.3 (22.0)		148 (39.0)		212 (56.0)		276 (73.0)	
87.1 (23.0)		151 (40.0)		216 (57.0)		280 (74.0)	
90.8 (24.0)		155 (41.0)		220 (58.0)		284 (75.0)	
94.6 (25.0)		159 (42.0)		223 (59.0)			



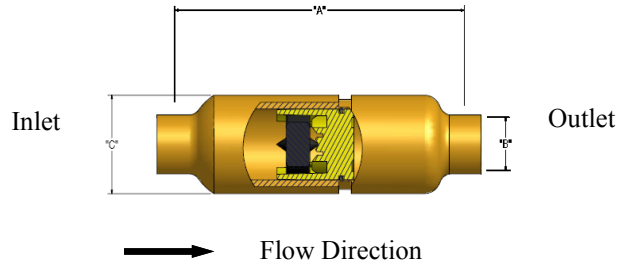
Name: Mesurflo®

Sizes: DN15 (1/2") & DN20 (3/4")

LPM (GPM): 1.9-34 (0.5-9.0)

Type: Automatic Balancing Valve

Model: 2511



Standard Features:

- Sweat Inlet / Outlet Connections
- Differential Operating Pressure Range:
14 - 552 kPa (2-80 PSID) 1.9-19 LPM (0.50-5.00 GPM)
21 - 552 kPa (3-80 PSID) 23-34 LPM (5.5-9.0 GPM)
- ± 10% Accuracy
- Operating Temperature Range 0°C to 107°C (32°F to 225°F)
- Available in 101.6 MM (4") or 139.7 MM (5-1/2") Lengths
- Valve Body Suitable for 3599 kPa (522 PSIG)
- Valves Labeled with Model No., Size & Flow Rate

MATERIAL SPECIFICATIONS	
Valve Body	Copper
O-Rings	EPDM
Retainer	Stainless Steel
Diaphragm	EPDM
Orifice	Polyphenylsulfone

Dimensions				
Size	DN15		DN20	
Length	114 (4")	140 (5-1/2")	114 (4")	140 (5-1/2")
	MM/IN	MM/IN	MM/IN	MM/IN
A	76/3.0	114/4.5	76/3.0	114/4.5
B	16/0.63	16/0.63	22/0.88	22/0.88
C	36/1.4	36/1.4	36/1.4	36/1.4



**Mesurflo® Automatic
Balancing Valve 2511
Order Form**

- 1) A separate sheet is required for each configuration change
- 2) Make a check mark by each option and list quantities by each Flow Rate
- 3) Make as many copies as needed for each order

Inlet / Outlet Connection Size / Type	
1/2 SWEAT	
3/4 SWEAT	

LPM (GPM)	Qty	LPM (GPM)	Qty	LPM (GPM)	Qty
1.9 (0.50)		7.6 (2.00)		21.0 (5.50)	
2.3 (0.63)		8.5 (2.25)		23.0 (6.00)	
2.8 (0.75)		9.5 (2.50)		25.0 (6.50)	
3.8 (1.00)		11.4 (3.00)		27.0 (7.00)	
4.3 (1.13)		12.3 (3.25)		28.4 (7.50)	
4.7 (1.25)		13.3 (3.50)		30.3 (8.00)	
5.7 (1.50)		15.1 (4.00)		34.1 (9.00)	
6.2 (1.63)		17.0 (4.50)			
6.6 (1.75)		19.0 (5.00)			



Name: Mesurflo®

Dn Sizes: DN 20 & DN 25

Inch Sizes: 3/4" & 1"

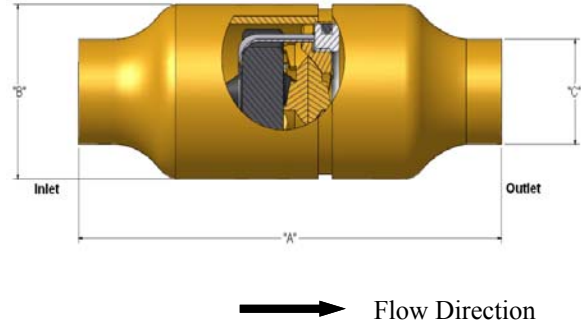
LPM (GPM): 7.2-91.0 (9.0-24.0)

Type: Automatic Balancing Valve

Model: 2521

Standard Features:

- Sweat Inlet / Outlet Connections
- Differential Pressure Operating Range:
21 - 552 kPa (3-80 PSID) 34-64 LPM
(9.00 - 17.0 GPM)
34 - 552 kPa (5-80 PSID) 68-95 LPM
(18.0 - 25.0 GPM)
- ± 10% Accuracy
- Operating Temperature Range 0°C to 107°C
(32°F to 225° F)
- Valve Length 152.4 MM (6")
- Valves Labeled with Model No., Size & Flow Rate
- Valve Body Suitable for 3599 kPa (522 PSI)



MATERIAL SPECIFICATIONS	
Valve Body	Copper
O-Rings	EPDM
Retainer Cage	Stainless Steel
Diaphragm	EPDM
Orifice	Polyphenylsulfone
Orifice Holder	Brass
Cartridge Holder	Brass

Dimensions		
Size	DN 20	DN 25
	MM/IN	MM/IN
A	152/6.0	152/6.0
B	53/2.1	53/2.1
C	22/.88	29/1.13

Drawing & Tables Show Dimensions of US Threads.
Consult Factory For Additional Information.



**Mesurflo® Y-Ball Automatic
Balancing Valve 2521
Order Form**

- 1) A separate sheet is required for each configuration change
- 2) Make a check mark by each option and list quantities by each Flow Rate
- 3) Make as many copies as needed for each order

Inlet / Outlet Connection Size / Type	
3/4 SWEAT	
1 SWEAT	

LPM (GPM)	Qty
34.1 (9.00)	
37.9 (10.0)	
41.6 (11.0)	
45.4 (12.0)	
49.2 (13.0)	
53.0 (14.0)	
56.8 (15.0)	
60.6 (16.0)	
68.1 (18.0)	
75.7 (20.0)	
83.3 (22.0)	
90.8 (24.0)	



Name: Mesurflo®

Sizes: DN15 (1/2")

LPM (GPM): 1.9 - 19 (0.5-5.0)

**Type: Y-Ball Automatic
Balancing Valve Hose Kits**

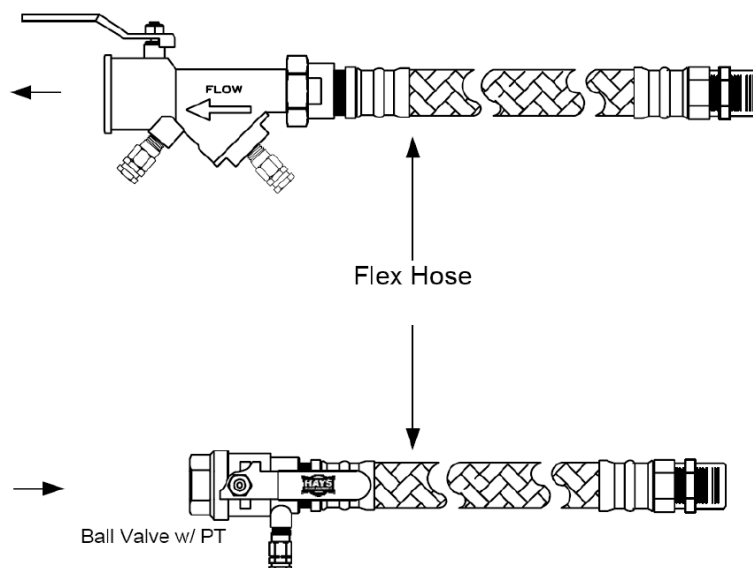
Model: 2519

Standard Features:

- **Metric Adapters per ISO 7-1 Standards**
- Y-Ball Mesurflo® with Pressure/ Temperature Ports
- Lever Handle
- Stainless Steel Braided Hose (2)
- Hose Lengths 0.3m, 0.45m, 0.6m and 0.9m (12", 18", 24" & 36")
- Ball Valve with Pressure/Temperature Port
- Each Complete Hose Kit Banded Together with a White Plastic Tie Wrap

Options:

- Y-Ball Strainer with Pressure/ Temperature Port & Blowdown Valve w/ Hose Connector (Replaces Ball Valve with Pressure/Temperature Port)
- Custom Tagging Upon Request
- Stainless Steel Tag-Chain Upon Request
- Custom Hose Lengths Available (Consult Factory)





**Mesurflo® Y-Ball Automatic
Balancing Hose Kits 2519
Order Form**

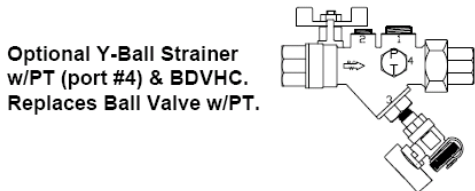
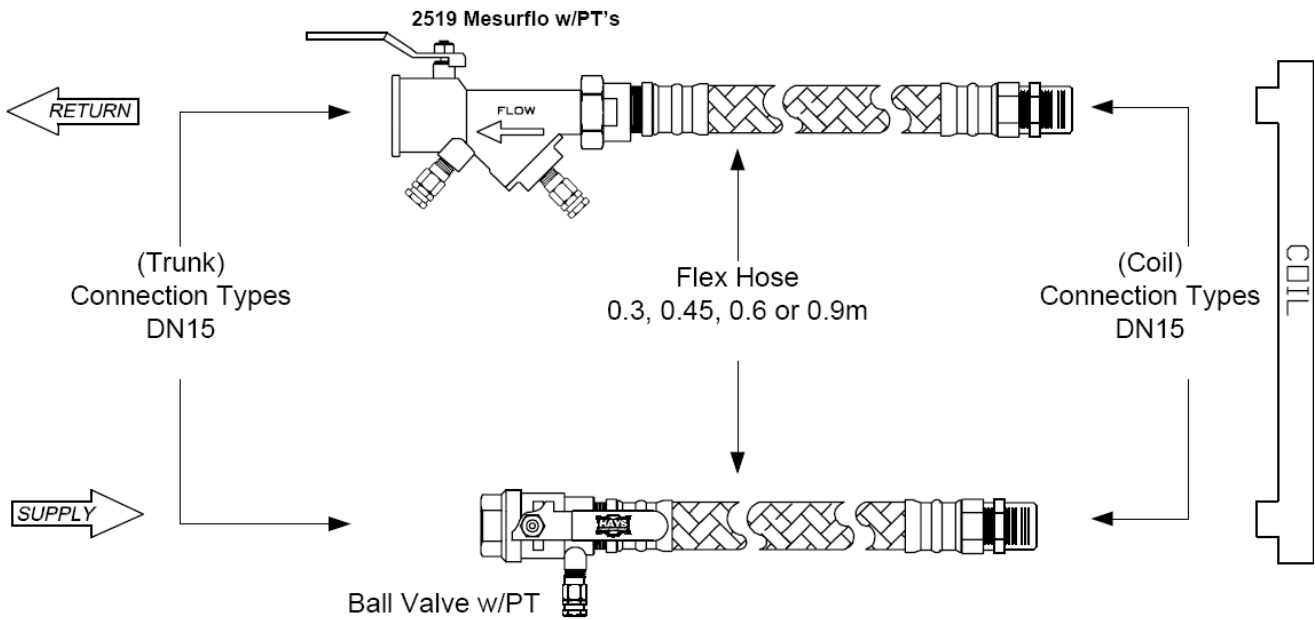
- 1) A separate sheet is required for each configuration change
- 2) Make a check mark by each option and list quantities by each Flow Rate
- 3) Make as many copies as needed for each order

Hose Kit Type	
Y-Ball Mesurflo®	
Hose Kit Connection Size	
DN15 (1/2)	
Hose Length (Other Lengths Available. Contact Factory)	
0.3M (12")	
0.45M (18")	
0.6M (24")	
0.9M (36")	
Strainer Options* (Supply Side)	
No Strainer	
Y-Ball Combination Strainer & Ball Valve with Pressure/Temperature Port, Blowdown Valve with Hose Connector	
Ball Valve* (Supply Side)	
Ball Valve with Pressure/Temperature Port (If no strainer ordered)	
Ball Valve (Return Side)	
Y-Ball Combination Mesurflo® & Ball Valve with Pressure/Temperature Ports	

LPM (GPM)	Qty	LPM (GPM)	Qty
1.9 (0.50)		8.5 (2.25)	
2.3 (0.60)		9.5 (2.50)	
2.8 (0.75)		10.4 (2.75)	
3.3 (0.88)		11.4 (3.00)	
3.8 (1.00)		12.3 (3.25)	
4.3 (1.13)		13.3 (3.50)	
4.7 (1.25)		14.1 (3.75)	
5.7 (1.50)		15.1 (4.00)	
6.2 (1.63)		17.0 (4.50)	
6.6 (1.75)		19.0 (5.00)	
7.6 (2.00)			



Mesurflo® 2519
Automatic Balance Hose Kit
Flow Rates Available: 1.9 - 19 LPM
(0.5 - 5.0 GPM)



DWG. NUMBER _____
 DWG. APPROVAL _____
 DWG. SUBMITTAL DATE _____
 DWG. SUBMITTED BY _____
 QUOTE # _____

- DRAWING NOT TO SCALE
- IMPORTANT: HAYS FLUID CONTROLS CANNOT GUARANTEE THAT ALL PIPING PACKAGES FIT WITHIN THE CONFINES OF A SPECIFIC INSTALLATION AREA.
- FOR NONLIKE SIZE COMPONENTS, TRANSITION FITTINGS MAY BE REQUIRED THAT ARE NOT SHOWN ON THE DRAWING.

ALL HAYS PIPING PACKAGES ARE ASSEMBLED AND LEAK TESTED



Name: Mesurflo®

Sizes: DN15 (1/2")

LPM (GPM): 20.8 - 34 (5.5-9.0)

**Type: Y-Ball Automatic
Balancing Valve Hose Kits**

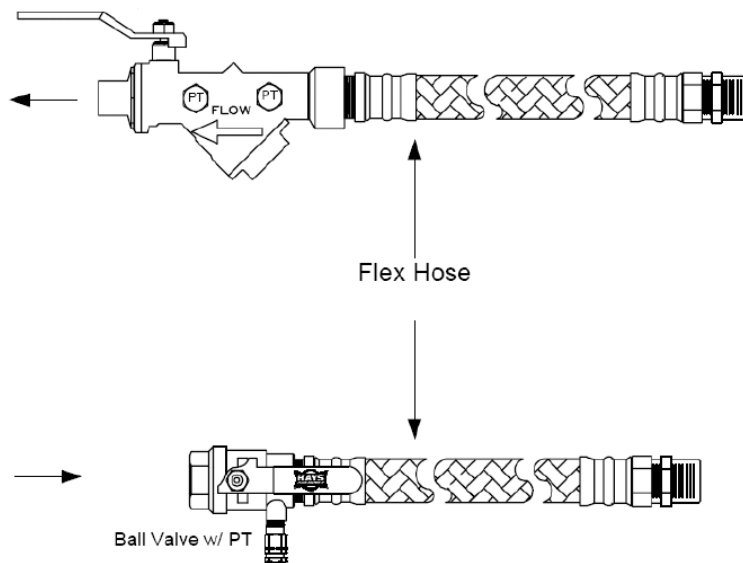
Model: 2516

Standard Features:

- **Metric Adapters per ISO 7-1 Standards**
- Y-Ball Mesurflo® with Pressure/ Temperature Ports
- Lever Handle
- Stainless Steel Braided Hose (2)
- Hose Lengths 0.3m, 0.45m, 0.6m and 0.9m (12", 18", 24" & 36")
- Ball Valve with Pressure/Temperature Port
- Each Complete Hose Kit Banded Together with a White Plastic Tie Wrap

Options:

- Y-Ball Strainer with Pressure/ Temperature Port & Blowdown Valve w/ Hose Connector (Replaces Ball Valve with Pressure/Temperature Port)
- Custom Tagging Upon Request
- Stainless Steel Tag-Chain Upon Request
- Custom Hose Lengths Available (Consult Factory)





**Mesurflo® Y-Ball Automatic
Balancing Hose Kits 2516
Order Form**

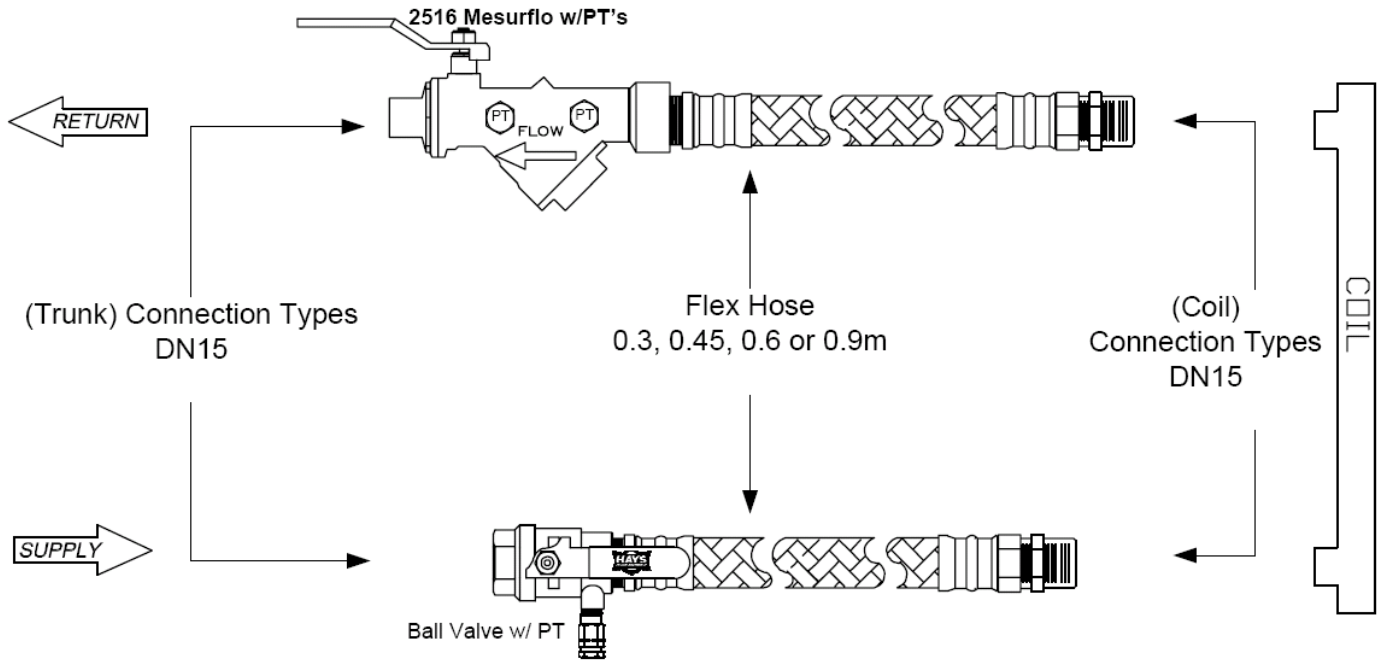
- 1) A separate sheet is required for each configuration change
- 2) Make a check mark by each option and list quantities by each Flow Rate
- 3) Make as many copies as needed for each order

Hose Kit Type	
Y-Ball Mesurflo®	
Hose Kit Connection Size	
DN15 (1/2)	
Hose Length (Other Lengths Available. Contact Factory)	
0.3M (12")	
0.45M (18")	
0.6M (24")	
0.9M (36")	
Strainer Options* (Supply Side)	
No Strainer	
Y-Ball Combination Strainer & Ball Valve with Pressure/Temperature Port, Blowdown Valve with Hose Connector	
Ball Valve* (Supply Side)	
Ball Valve with Pressure/Temperature Port (If no strainer ordered)	
Ball Valve (Return Side)	
Y-Ball Combination Mesurflo® & Ball Valve with Pressure/Temperature Ports	

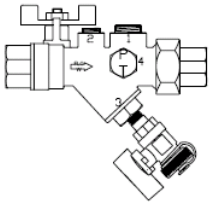
LPM (GPM)	Qty
21.0 (5.50)	
23.0 (6.00)	
25.0 (6.50)	
27.0 (7.00)	
28.4 (7.50)	
30.3 (8.00)	
34.1 (9.00)	



Mesurflo® 2516
Automatic Balance Hose Kit
Flow Rates Available: 21 - 34.1 LPM
(5.5 - 9.0 GPM)



Optional Y-Ball Strainer w/PT (port #4) & BDVHC replaces Ball Valve w/PT



DWG. NUMBER _____
DWG. APPROVAL _____
DWG. SUBMITTAL DATE _____
DWG. SUBMITTED BY _____
QUOTE # _____

- DRAWING NOT TO SCALE
- IMPORTANT: HAYS FLUID CONTROLS CANNOT GUARANTEE THAT ALL PIPING PACKAGES FIT WITHIN THE CONFINES OF A SPECIFIC INSTALLATION AREA.
- FOR NONLIKE SIZE COMPONENTS, TRANSITION FITTINGS MAY BE REQUIRED THAT ARE NOT SHOWN ON THE DRAWING.

ALL HAYS PIPING PACKAGES ARE ASSEMBLED AND LEAK TESTED



Name: Mesurflo®

Sizes: DN20 (3/4"), DN25 (1")

LPM (GPM): 1.9 - 34 (.5-9.0)

**Type: Y-Ball Automatic
Balancing Valve Hose Kits**

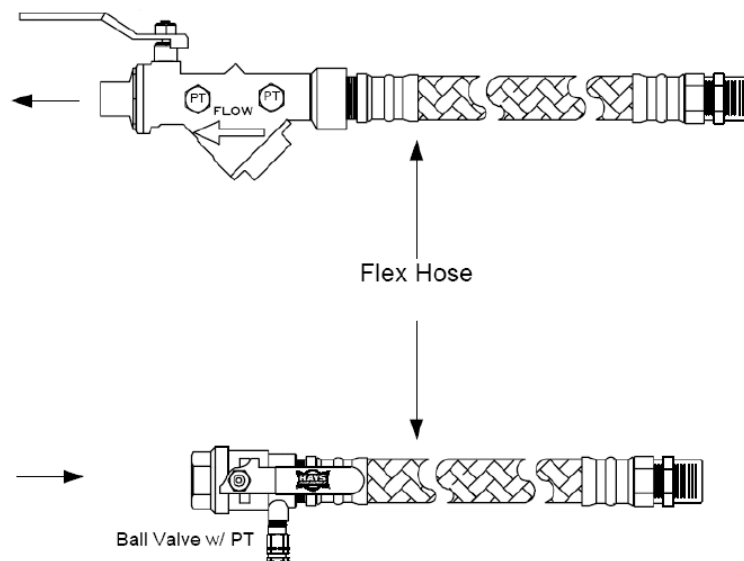
Model: 2516

Standard Features:

- **Metric Adapters per ISO 7-1 Standards**
- Y-Ball Mesurflo® with Pressure/ Temperature Ports
- Lever Handle
- Stainless Steel Braided Hose (2)
- Hose Lengths 0.3m, 0.45m, 0.6m and 0.9m (12", 18", 24" & 36")
- Ball Valve with Pressure/Temperature Port
- Each Complete Hose Kit Banded Together with a White Plastic Tie Wrap

Options:

- Y-Ball Strainer with Pressure/ Temperature Port & Blowdown Valve w/ Hose Connector (Replaces Ball Valve with Pressure/Temperature Port)
- Custom Tagging Upon Request
- Stainless Steel Tag-Chain Upon Request
- Custom Hose Lengths Available (Consult Factory)





**Mesurflo® Y-Ball Automatic
Balancing Hose Kits 2516
Order Form**

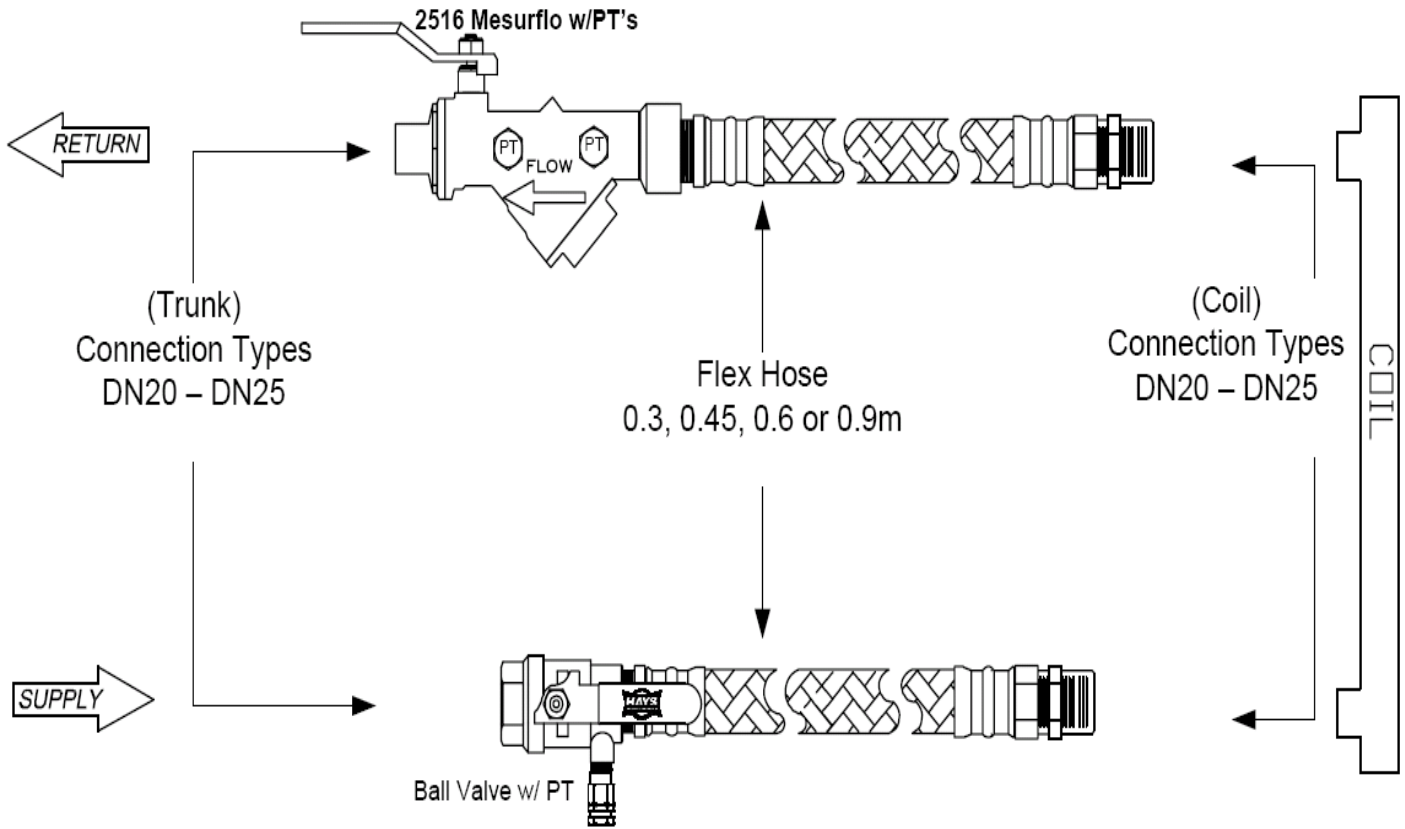
- 1) A separate sheet is required for each configuration change
- 2) Make a check mark by each option and list quantities by each Flow Rate
- 3) Make as many copies as needed for each order

Hose Kit Type	
Y-Ball Mesurflo®	
Hose Kit Connection Size	
DN20 (3/4)	
DN25 (1)	
Hose Length (Other Lengths Available. Contact Factory)	
0.3M (12")	
0.45M (18")	
0.6M (24")	
0.9M (36")	
Strainer Options* (Supply Side)	
No Strainer	
Y-Ball Combination Strainer & Ball Valve with Pressure/Temperature Port, Blowdown Valve with Hose Connector	
Ball Valve* (Supply Side)	
Ball Valve with Pressure/Temperature Port (If no strainer ordered)	
Ball Valve (Return Side)	
Y-Ball Combination Mesurflo® & Ball Valve with Pressure/Temperature Ports	

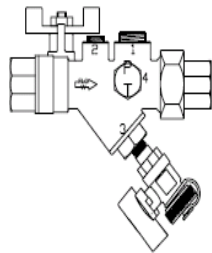
LPM (GPM)	Qty	LPM (GPM)	Qty	LPM (GPM)	Qty
1.9 (0.50)		7.6 (2.00)		21.0 (5.50)	
2.3 (0.63)		8.5 (2.25)		23.0 (6.00)	
2.8 (0.75)		9.5 (2.50)		25.0 (6.50)	
3.8 (1.00)		11.4 (3.00)		27.0 (7.00)	
4.3 (1.13)		12.3 (3.25)		28.4 (7.50)	
4.7 (1.25)		13.3 (3.50)		30.3 (8.00)	
5.7 (1.50)		15.1 (4.00)		34.1 (9.00)	
6.2 (1.63)		17.0 (4.50)			
6.6 (1.75)		19.0 (5.00)			



Mesurflo® 2516
Automatic Balance Hose Kit
Flow Rates Available: 1.9 - 34.1 LPM
(0.5 - 9.0 GPM)



Optional Y-ball Strainer with PT (Port 4) with Blowdown Valve & Hose Connector. Replaces Ball Valve w/PT





Name: Mesurflo®

Sizes: DN20 (3/4"), DN25 (1")

LPM (GPM): 38.0 - 95.0* (10.0-25.0)

**Type: Y-Ball Automatic
Balancing Valve Hose Kits**

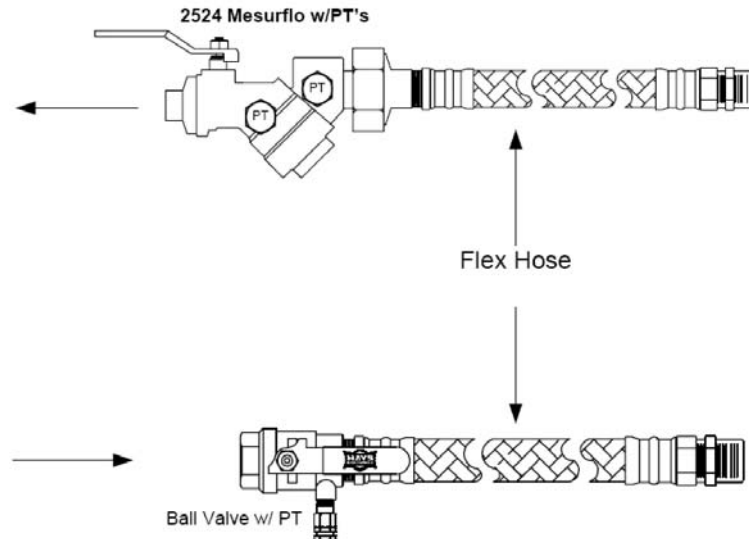
Model: 2524

Standard Features:

- **Metric Adapters per ISO 7-1 Standards**
- Y-Ball Mesurflo® with Pressure/ Temperature Ports
- Lever Handle
- Stainless Steel Braided Hose (2)
- Hose Lengths 0.3m, 0.45m, 0.6m and 0.9m (12", 18", 24" & 36")
- Ball Valve with Pressure/Temperature Port
- Each Complete Hose Kit Banded Together with a White Plastic Tie Wrap

Options:

- Y-Ball Strainer with Pressure/ Temperature Port & Blowdown Valve w/Hose Connector (Replaces Ball Valve with Pressure/Temperature Port)
- Custom Tagging Upon Request
- Stainless Steel Tag-Chain Upon Request
- Custom Hose Lengths Available (Consult Factory)



***Flow Rates Less than 38 LPM are available. Consult Factory for More Information.**



**Mesurflo® Y-Ball Automatic
Balancing Hose Kits 2524
Order Form**

- 1) A separate sheet is required for each configuration change
- 2) Make a check mark by each option and list quantities by each Flow Rate
- 3) Make as many copies as needed for each order

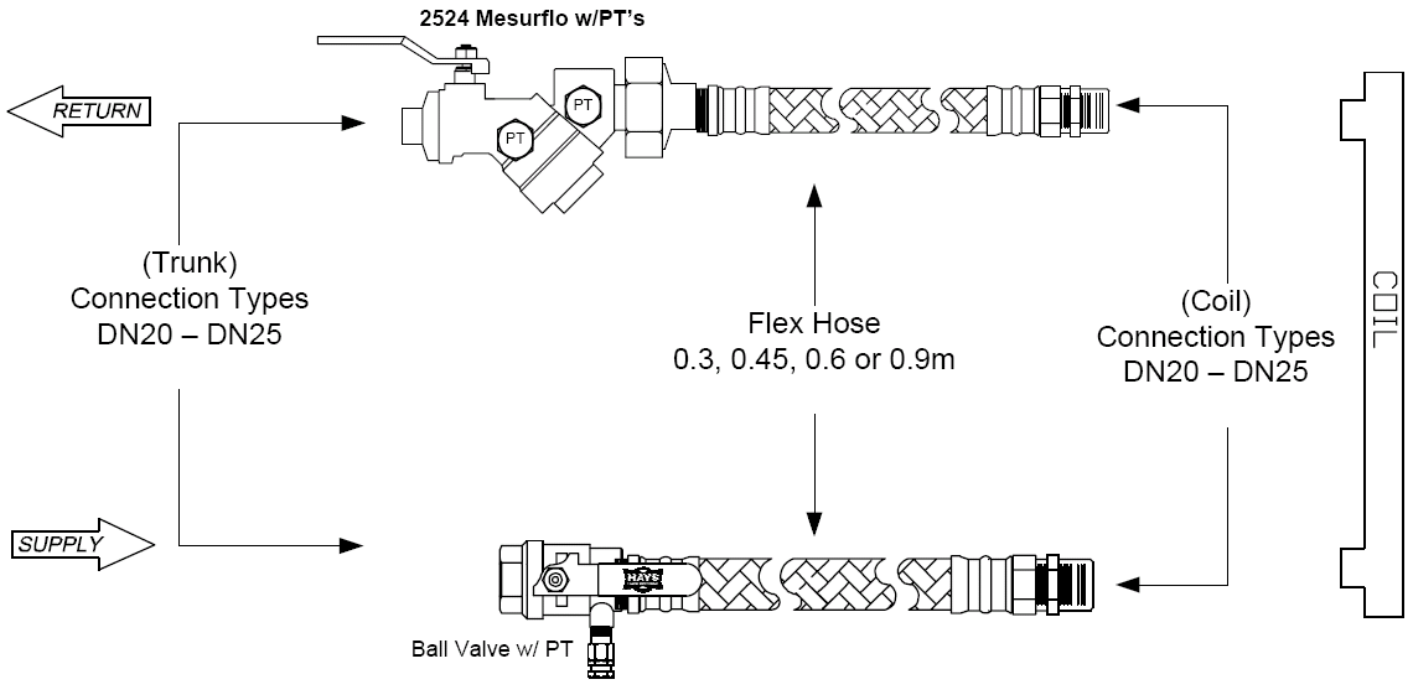
Hose Kit Type	
Y-Ball Mesurflo®	
Hose Kit Connection Size	
DN20 (3/4)	
DN25 (1)	
Hose Length (Other Lengths Available. Contact Factory)	
0.3M (12")	
0.45M (18")	
0.6M (24")	
0.9M (36")	

Strainer Options* (Supply Side)	
No Strainer	
Y-Ball Combination Strainer & Ball Valve with Pressure/Temperature Port, Blowdown Valve with Hose Connector	
Ball Valve* (Supply Side)	
Ball Valve with Pressure/Temperature Port (If no strainer ordered)	
Ball Valve (Return Side)	
Y-Ball Combination Mesurflo® & Ball Valve with Pressure/Temperature Ports	

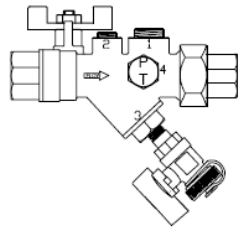
LPM (GPM)	Qty	LPM (GPM)	Qty	LPM (GPM)	Qty	LPM (GPM)	Qty
1.9 (0.50)		11.4 (3.00)		34.1 (9.00)		79.5 (21.0)	
2.3 (0.63)		12.3 (3.25)		37.9 (10.0)		83.3 (22.0)	
2.8 (0.75)		13.3 (3.50)		41.6 (11.0)		87.1 (23.0)	
3.8 (1.00)		15.1 (4.00)		45.4 (12.0)		90.8 (24.0)	
4.3 (1.13)		17.0 (4.50)		49.2 (13.0)		94.6 (25.0)	
4.7 (1.25)		19.0 (5.00)		53.0 (14.0)			
5.7 (1.50)		21.0 (5.50)		56.8 (15.0)			
6.2 (1.63)		23.0 (6.00)		60.6 (16.0)			
6.6 (1.75)		25.0 (6.50)		64.3 (17.0)			
7.6 (2.00)		27.0 (7.00)		68.1 (18.0)			
8.5 (2.25)		28.4 (7.50)		71.9 (19.0)			
9.5 (2.50)		30.3 (8.00)		75.7 (20.0)			



Mesurflo® 2524
Automatic Balance Hose Kit
Flow Rates Available: 1.9 - 95 LPM
(0.5 - 25.0 GPM)



Optional Y-Ball Strainer w/PT (port #4) & BDVHC. Replaces Ball Valve w/PT.



DWG. NUMBER _____
 DWG. APPROVAL _____
 DWG. SUBMITTAL DATE _____
 DWG. SUBMITTED BY _____
 QUOTE # _____

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ALL HAYS PIPING PACKAGES ARE ASSEMBLED AND LEAK TESTED



Name: Mesurflo®

Sizes: DN15 (1/2"), DN20 (3/4") & DN25 (1")

LPM (GPM): 1.9 - 34 (0.5-9.0)

**Type: Inline Automatic
Balancing Valve Hose Kits**

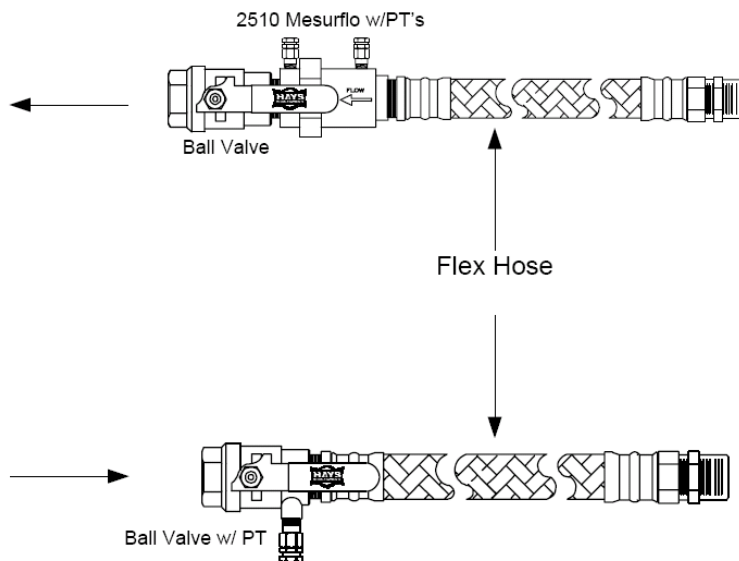
Model: 2510

Standard Features:

- Metric Adapters per ISO 7-1 Standards
- Inline Mesurflo® with Pressure/ Temperature Ports
- Lever Handle
- Stainless Steel Braided Hose (2)
- Hose Lengths 0.3m, 0.45m, 0.6m and 0.9m (12", 18", 24" & 36")
- Ball Valve with Pressure/Temperature Port
- Each Complete Hose Kit Banded Together with a White Plastic Tie Wrap

Options:

- Y-Ball Strainer with Pressure/ Temperature Port & Blowdown Valve w/Hose Connector (Replaces Ball Valve with Pressure/Temperature Port)
- Custom Tagging Upon Request
- Stainless Steel Tag-Chain Upon Request
- Custom Hose Lengths Available (Consult Factory)





**Mesurflo® Inline Automatic
Balancing Hose Kits 2510
Order Form**

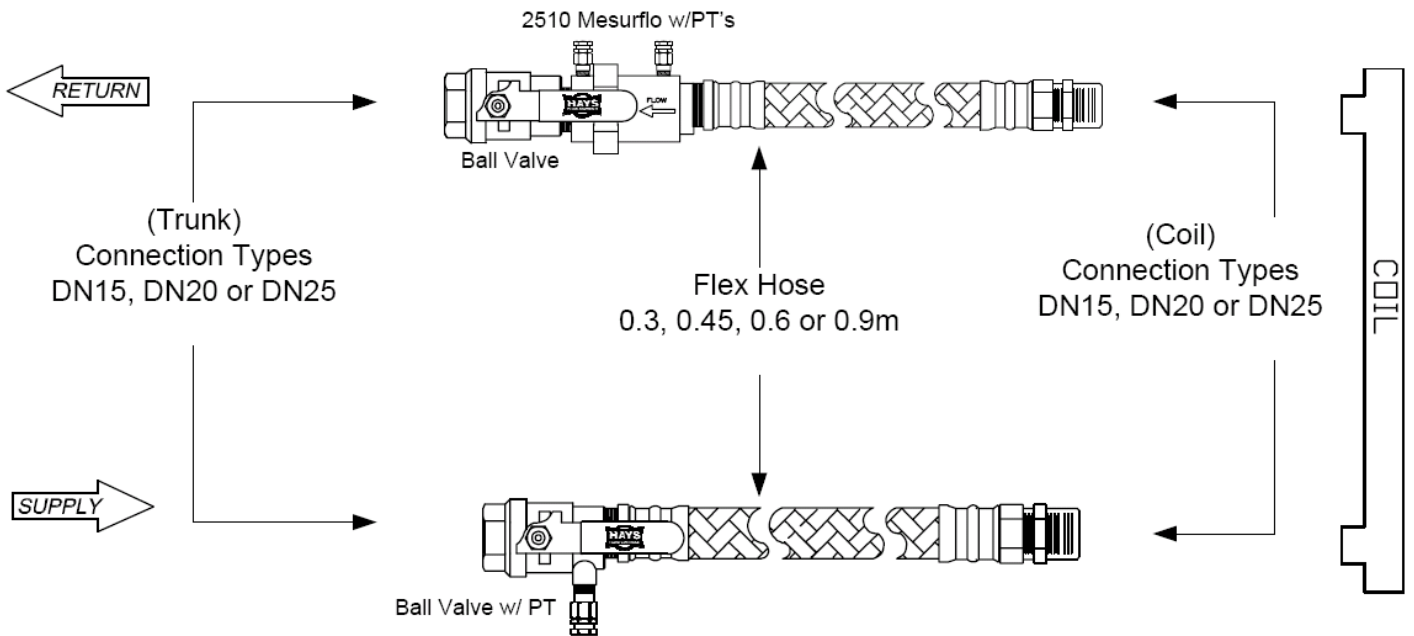
- 1) A separate sheet is required for each configuration change
- 2) Make a check mark by each option and list quantities by each Flow Rate
- 3) Make as many copies as needed for each order

Hose Kit Type	
Inline Mesurflo®	
Hose Kit Connection Size	
DN15 (1/2)	
DN20 (3/4)	
DN25 (1)	
Hose Length (Other Lengths Available. Contact Factory)	
0.3M (12")	
0.45M (18")	
0.6M (24")	
0.9M (36")	
Strainer Options* (Supply Side)	
No Strainer	
Y-Ball Combination Strainer & Ball Valve with Pressure/Temperature Port, Blowdown Valve with Hose Connector	
Ball Valve* (Supply Side)	
Ball Valve with Pressure/Temperature Port (If no strainer ordered)	
Ball Valve (Return Side)	
Y-Ball Combination Mesurflo® & Ball Valve with Pressure/Temperature Ports	

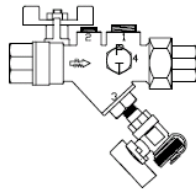
LPM (GPM)	Qty	LPM (GPM)	Qty
1.9 (0.50)		12.3 (3.25)	
2.3 (0.63)		13.3 (3.50)	
2.8 (0.75)		15.1 (4.00)	
3.8 (1.00)		17.0 (4.50)	
4.3 (1.13)		19.0 (5.00)	
4.7 (1.25)		21.0 (5.50)	
5.7 (1.50)		23.0 (6.00)	
6.2 (1.63)		25.0 (6.50)	
6.6 (1.75)		27.0 (7.00)	
7.6 (2.00)		28.4 (7.50)	
8.5 (2.25)		30.3 (8.00)	
9.5 (2.50)		34.1 (9.00)	
11.4 (3.00)			



Mesurflo® 2510
Automatic Balance Hose Kit
Flow Rates Available: 1.9 - 34 LPM
(0.5 - 9.0 GPM)



Optional Y-Ball Strainer
w/PT (port #4) & BDVHC.
Replaces Ball Valve w/PT



DWG. NUMBER _____

DWG. APPROVAL _____

DWG. SUBMITTAL DATE _____

DWG. SUBMITTED BY _____

QUOTE # _____

ALL HAYS PIPING PACKAGES ARE ASSEMBLED AND LEAK TESTED

- DRAWING NOT TO SCALE
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Name: Mesurflo®

Sizes: DN20 (3/4"), DN25 (1")

LPM (GPM): 38.0 - 95.0* (10.0-25.0)

**Type: Inline Automatic
Balancing Valve Hose Kits**

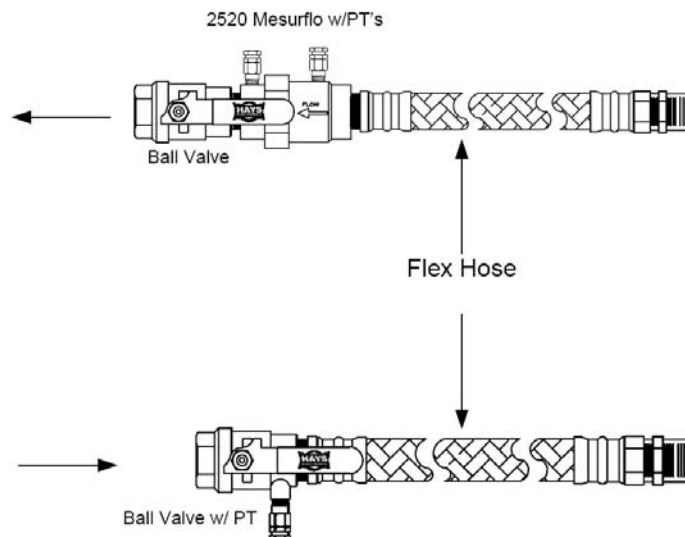
Model: 2520

Standard Features:

- **Metric Adapters per ISO 7-1 Standards**
- Inline Mesurflo® with Pressure/ Temperature Ports
- Lever Handle
- Stainless Steel Braided Hose (2)
- Hose Lengths 0.3m, 0.45m, 0.6m and 0.9m (12", 18", 24" & 36")
- Ball Valve with Pressure/Temperature Port
- Each Complete Hose Kit Banded Together with a White Plastic Tie Wrap

Options:

- Y-Ball Strainer with Pressure/ Temperature Port & Blowdown Valve w/ Hose Connector (Replaces Ball Valve with Pressure Temperature Port)
- Custom Tagging Upon Request
- Stainless Steel Tag-Chain Upon Request
- Custom Hose Lengths Available (Consult Factory)



***Flow Rates Less than 38 LPM are available. Consult Factory for More Information.**



**Mesurflo® Inline Automatic
Balancing Hose Kits 2520
Order Form**

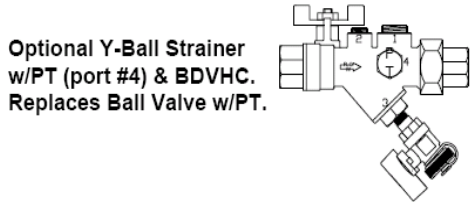
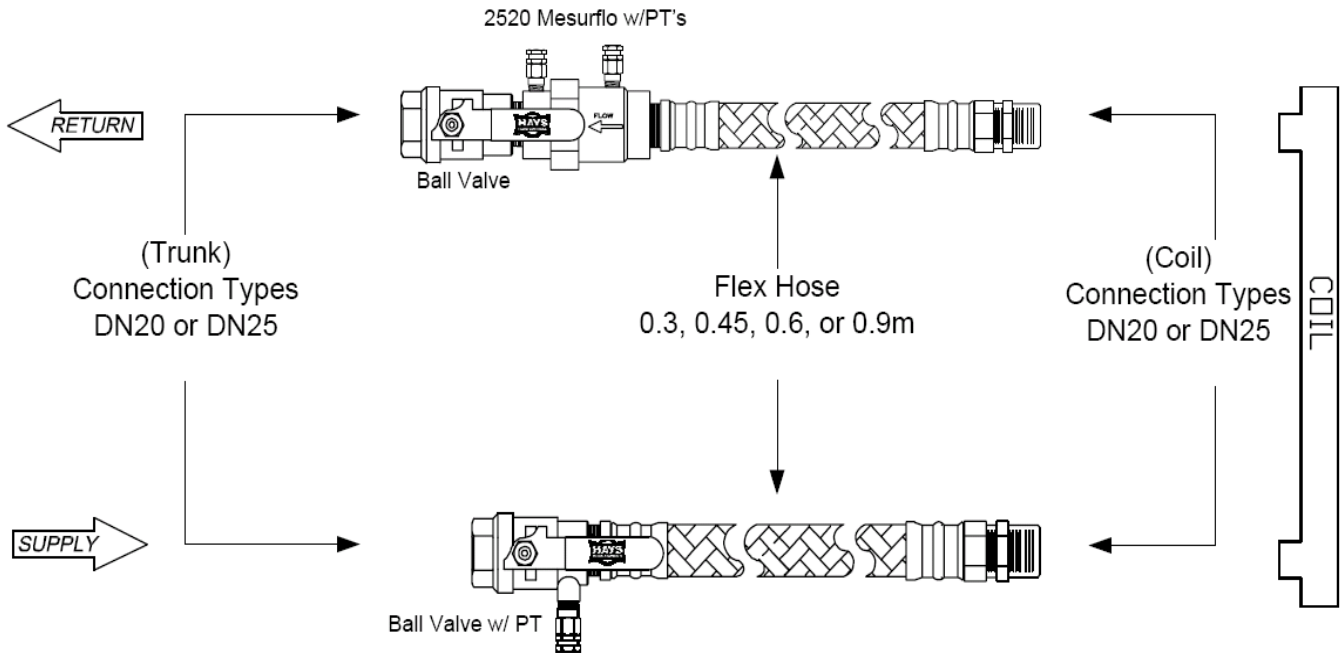
- 1) A separate sheet is required for each configuration change
- 2) Make a check mark by each option and list quantities by each Flow Rate
- 3) Make as many copies as needed for each order

Hose Kit Type	
Inline Mesurflo®	
Hose Kit Connection Size	
DN20 (3/4)	
DN25 (1)	
Hose Length (Other Lengths Available. Contact Factory)	
0.3M (12")	
0.45M (18")	
0.6M (24")	
0.9M (36")	
Strainer Options* (Supply Side)	
No Strainer	
Y-Ball Combination Strainer & Ball Valve with Pressure/Temperature Port, Blowdown Valve with Hose Connector	
Ball Valve* (Supply Side)	
Ball Valve with Pressure/Temperature Port (If no strainer ordered)	
Ball Valve (Return Side)	
Y-Ball Combination Mesurflo® & Ball Valve with Pressure/Temperature Ports	

LPM (GPM)	Qty	LPM (GPM)	Qty
1.9 (0.50)		23.0 (6.00)	
2.3 (0.60)		25.0 (6.50)	
2.3 (0.63)		27.0 (7.00)	
2.8 (0.75)		28.4 (7.50)	
3.3 (0.88)		30.3 (8.00)	
3.8 (1.00)		34.1 (9.00)	
4.3 (1.13)		37.9 (10.0)	
4.7 (1.25)		41.6 (11.0)	
5.7 (1.50)		45.4 (12.0)	
6.2 (1.63)		49.2 (13.0)	
6.6 (1.75)		53.0 (14.0)	
7.6 (2.00)		56.8 (15.0)	
8.5 (2.25)		60.6 (16.0)	
9.5 (2.50)		64.3 (17.0)	
10.4 (2.75)		68.1 (18.0)	
11.4 (3.00)		71.9 (19.0)	
12.3 (3.25)		75.7 (20.0)	
13.3 (3.50)		79.5 (21.0)	
14.1 (3.75)		83.3 (22.0)	
15.1 (4.00)		87.1 (23.0)	
17.0 (4.50)		90.8 (24.0)	
19.0 (5.00)		94.6 (25.0)	
21.0 (5.50)			



Mesurflo® 2520
Automatic Balance Hose Kit
Flow Rates Available: 1.9 - 95 LPM
(0.5 - 25.0 GPM)



DWG. NUMBER _____

DWG. APPROVAL _____

DWG. SUBMITTAL DATE _____

DWG. SUBMITTED BY _____

QUOTE # _____

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MESURFLO® AUTOMATIC BALANCING VALVE TECHNICAL DATA

How the Mesurflo® Controls Flow



Figure 1
0 kPa
0 PSID

Figure 2
14-552 kPa
2-80 PSID

Figure 3
Reverse Flow

For a pressure differential range of **14-552 kPa** (2 to 80 psid), as the pressure drop increases, the rubber diaphragm will flex into the contoured orifice plate to decrease flow path. Both the rubber diaphragm and the contoured orifice plate are rigidly controlled to provide a constant flow rate over the pressure differential range. The “flexing” of the rubber diaphragm against the fixed orifice plate makes the Mesurflo® difficult to clog and resistant to cavitation damage. The “flexing” action actually chews up debris preventing clogging. Outside of the pressure drop window, the controller performs similar to a fixed orifice.

NOTE TO PIPING DESIGNERS:

The Hays Mesurflo® is a constant flow rate device. Since it is a variable orifice that changes to govern the flow, it can not be described with the Cv or a pressure drop at a given flow for piping system design purposes. Conversely, the designer may assume a constant flow rate over the differential pressure.

HAYS, HVAC, Hydronic System Automatic Balancing Valves are protected by U.S. Patent 6,311,712. Mesurflo®, U.S. Registered Trademark of Hays Fluid Controls.



Recommendation & Application Information

Water Source Heat Pump Hose Kits are recommended for flow velocities ranging from 0.6 m/s (2.0 f/s) minimum, to 2.1 m/s (7.0 f/s) maximum. Velocities below 0.6 m/s (2.0 f/s) will result in flow stratification and entrainment of air. Velocities above 2.1 m/s (7.0 f/s) will be noisy and lead to premature heat exchanger failure due to erosion. Values are for "Reference" only. Refer to the Pressure Drop Calculator located on our FTP site for actual values. You will be asked to enter in your user name and password. If you don't have a user name and password or have forgotten yours, please consult the customer service to obtain this information. [ftp://www.haysfluidcontrols.com](http://www.haysfluidcontrols.com)

Minimum Bend Radii for Water Source Heat Pump Hose Kits

Size MM (Inch):	12.7 (1/2")	19.5 (3/4")	25.4 (1")
Stainless Steel: Meters (Inches)	.064 (2-1/2")	.102 (4")	.140 (5-1/2")

Hose Kits Pressure Drop (PSID)

Hose Kits Selection vs Heat Pump Tonnage				
Tonnage (Tons)	Closed Loop Applications		Closed Loop Applications (50-55° F)	
	Flow (LPM)	Pipe Size (Dn)	Flow (LPM)	Pipe Size (Dn)
3/4	8.5	15	3.8	15
1	11.4	15	5.7	15
1-1/4	13.3	15	7.6	15
1-1/2	17	15	7.6	15
2	23	20	9.5	15
2-1/2	27	20	13.3	15
3	30.3	20	15.1	15
3-1/2	37.9	25	17	15
4	45.4	25	19	20

* Note: Consult Heat Pump Manufacture for other temperature applications.*

Flow Rate	Kit w/ATC, 1 Ball Valve, Y-Ball Strainer & Mesurflo Automatic Flow Control Valve, 24" hose					
	Size (In)	1/2	3/4	1	1-1/4	1-1/2
	Cv	3.5	4.7	6.5	41.1	41.3
1.9	2.08	2.02				
3.8	2.34	2.09	2.04			
5.7	2.76	2.2	2.10	2.01	2.01	
7.6	3.34	2.35	2.18	2.01	2.01	
9.5	4.01	2.54	2.28	2.02	2.01	
11.4	5.02	2.78	2.4	2.03	2.02	
13.3	6.12	3.06	2.55	2.04	2.03	
15.1	7.37	3.39	2.72	2.05	2.04	
17	8.8	3.76	2.91	2.07	2.05	
19	10.4	4.17	3.12	2.08	2.06	
23	15.09	6.12	4.62	3.12	3.08	
27	21.46	9.25	7.2	3.16	3.11	
30.3	26.5	10.55	7.88	3.21	3.15	
34.1		12.03	8.64	3.27	3.19	
37.9		11.68	7.49	3.33	3.23	
45.4		15.49	9.47	3.48	3.33	
53		20.01	11.81	3.65	3.45	
60.6		25.21	14.51	3.86	3.59	
63.1		31.11	17.56	4.08	3.74	
75.7		37.71	20.97	4.34	3.92	
94.6		57.23	31.08	5.09	4.43	

Flow (LPM)	Kit w/1 Ball Valve, Y-Ball Strainer & Mesurflo Automatic Flow Control Valve, 24" hose			
	Size (In)	1/2	3/4	1
1.9		2.06	2.01	
3.8		2.25	2.04	2.02
5.7		2.57	2.09	2.05
7.6		3.02	2.17	2.09
9.5		3.59	2.26	2.13
11.4		4.29	2.37	2.19
13.3		5.12	2.51	2.26
15.1		6.07	2.66	2.34
17		7.15	2.84	2.43
19		8.36	3.04	2.53
21		12.15	4.49	3.77
23		17.46	7.03	6.04
27		21.27	7.66	6.36
30.3			8.36	6.72
34.1			7.15	11.9
37.9			8.98	6.06
45.4			11.13	7.17
53			13.62	8.44
60.6			16.45	9.89
68.1			19.6	11.5
75.7				16.29
94.6				23.14



INLINE AUTOMATIC FLOW CONTROL VALVE INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS

GENERAL INFORMATION

- ⇒ Clean the lines of all foreign material, (welding slag, pipe scale, dirt, thread chips etc.). Upstream installation of a strainer may be necessary in dirty systems.
- ⇒ Air should be eliminated from the system prior to startup to assure quiet operation and freedom from water hammer.
- ⇒ Hays Automatic Flow Control Valves may be installed in the pipe line horizontally, vertically or any angle in between. Straight sections of pipe upstream or downstream of the Hays valve are unnecessary for proper operation. Standard reducing bushings or flanges may be directly connected to the Hays valve if required.
- ⇒ All Hays Automatic Flow Control Valves are marked with direction of flow and rate of flow.
- ⇒ THE FLOW ARROW MUST POINT IN THE DIRECTION OF FLOW FOR PROPER OPERATION.
- ⇒ Hays Flow Control Valves are factory assembled, individually calibrated and are tamperproof once installed in the pipe. The valves are warranted to be accurate within +/-10% of rated flow when properly installed.
- ⇒ Hays Mesurflo® Automatic Flow Control Valves LPM(GPM) may be modified by purchasing a Hays Service Kit. Contact Factory for details. 1-800-354-4297.

OPERATION

- ⇒ For optimum operation, air entrainment in the system must be eliminated. The flow control valve must remain filled with fluid. The system must be clean and free of foreign materials.
- ⇒ Hays Mesurflo® Automatic Flow Control Valves must only be used with fluids that are compatible with Brass and EPDM materials. The temperature during operation must be limited to the range of 0°C to 107°C (32 ° F to 225 ° F).
- ⇒ The use of fluids having a specific gravity different from that of water will require adjustment. Valves specified for fluids other than water will be so marked and the factory calibration will take the specific fluid's properties into consideration.
- ⇒ The use of fluids having a viscosity different from that of water will require adjustment. Valves specified for fluids other than water will be so marked and the factory calibration will take the specific fluid's properties into consideration. Operation at a temperature other than the rated temperature may require a correction.

INSTALLATION

- ⇒ Valves terminate with threads in accordance with ISO 7-1 tapered threads and are intended for use in Building Services Piping meeting the requirements of ASME B 31.9.
- ⇒ Apply thread sealant to male pipe threads, starting with the second or third thread from the end, and torque the connection to 5kgm per cm (75 ft pounds per cm) of pipe size minimum.

MAINTENANCE

- ⇒ General maintenance is not required for Hays Flow Control Valves, however if the system experiences large amounts of pipe scale due to poor water conditions, as sometimes is found in older or retrofit systems, some may be required. Provisions should be made to keep the system clean. Proper water treatment is also recommended.
- ⇒ When assembling Mesurflo® Valves after changing flow cartridges, always use new O'Rings, and tighten the Union Nut to 58-92 kg cm (50-80 In Lbs) on the 2513, 92kg cm (80 In Lbs) on the 2510 and 150kg cm (130 In Lbs) on the 2520.

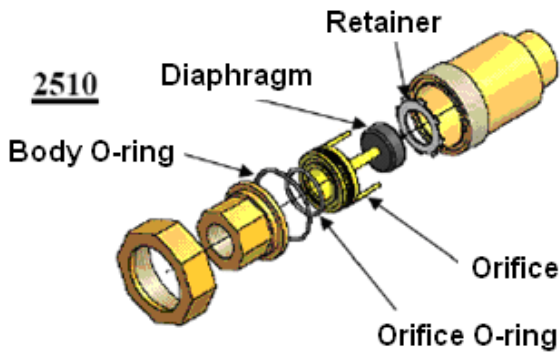
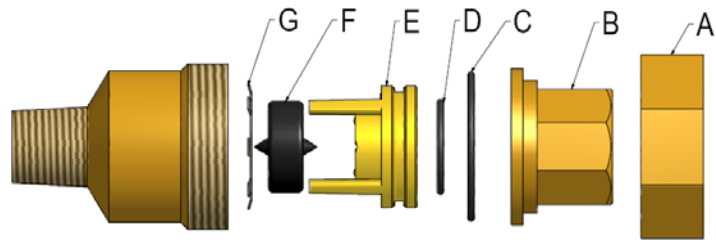
LIMITED WARRANTY- See Hays Fluid Controls current Terms & Conditions.



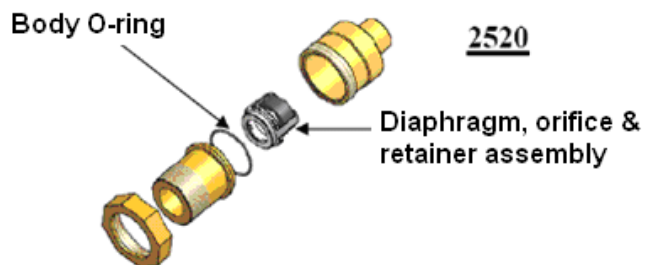
Flow Cartridge Replacement Instructions Inline Models

Removal and Installation of Flow Cartridge:

Turn off the supply and return shut-off valves. Using a wrench, remove the Union End Nut (A). Next remove the Union End Fitting (B). Extract the Diaphragm (F), Orifice (E) and Retainer (G). Place the new O-ring (D) into the groove end of the Orifice (E) and O-ring (C) in the Union End Fitting (B). Install the Retainer (G) into the valve. Insert the diaphragm (F) into the Orifice (E) and Torque the Union End Fitting (B) & Nut (A) to 58-92kg cm (50-80 In Lbs) using a 3/4" open wrench. Turn on the supply & return valves to check for leaks. (Model 2513 shown)



Torque the Union End Fitting & Nut 92kg cm (80 In Lbs) on the 2510. Diagram illustrates the placement of parts using the Service Kit "F"



Torque the Union End Fitting & Nut 150kg cm (130 In Lbs) on the 2520. Diagram illustrates the placement of parts using the Service Kit "G"

Please note: Diaphragms and orifices may vary in size and shape based on the flow rate and valve model. Consult Factory for additional information.



Y-BALL AUTOMATIC FLOW CONTROL VALVE INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS

GENERAL INFORMATION

- ⇒ Clean the lines of all foreign material, (welding slag, pipe scale, dirt, thread chips etc.). Upstream installation of a strainer may be necessary in dirty systems.
- ⇒ Air should be eliminated from the system prior to startup to assure quiet operation and freedom from water hammer.
- ⇒ Hays Automatic Flow Control Valves may be installed in the pipe line horizontally, vertically or any angle in between. Straight sections of pipe upstream or downstream of the Hays valve are unnecessary for proper operation. Standard reducing bushings or flanges may be directly connected to the Hays valve if required.
- ⇒ All Hays Automatic Flow Control Valves are marked with direction of flow and rate of flow.
- ⇒ THE FLOW ARROW MUST POINT IN THE DIRECTION OF FLOW FOR PROPER OPERATION.
- ⇒ Hays Flow Control Valves are factory assembled, individually calibrated and are tamperproof once installed in the pipe. The valves are warranted to be accurate within +/-10% of rated flow when properly installed.
- ⇒ Hays Mesurflo® Automatic Flow Control Valves LPM(GPM) may be modified by purchasing a Hays Service Kit. Contact Factory for details. 1-800-354-4297.

OPERATION

- ⇒ For optimum operation, air entrainment in the system must be eliminated. The flow control valve must remain filled with fluid. The system must be clean and free of foreign materials.
- ⇒ Hays Mesurflo® Automatic Flow Control Valves must only be used with fluids that are compatible with Brass and EPDM materials. The temperature during operation must be limited to the range of 0°C to 107°C (32 ° F to 225 ° F).
- ⇒ The use of fluids having a specific gravity different from that of water will require adjustment. Valves specified for fluids other than water will be so marked and the factory calibration will take the specific fluid's properties into consideration.
- ⇒ The use of fluids having a viscosity different from that of water will require adjustment. Valves specified for fluids other than water will be so marked and the factory calibration will take the specific fluid's properties into consideration. Operation at a temperature other than the rated temperature may require a correction.

INSTALLATION

- ⇒ Valves terminate with threads in accordance with ISO 7-1 tapered threads and are intended for use in Building Services Piping meeting the requirements of ASME B 31.9.
- ⇒ Apply thread sealant to male pipe threads, starting with the second or third thread from the end, and torque the connection to 10kgm (75 foot pounds) per 2.5cm (inch) of pipe size minimum.

INSTALLATION FOR VALVES WITH FS WT CONNECTIONS

- ⇒ Sweat fitting valves have their end connections formed to ANSI STD B16.22 requirements and are intended for use in Building Services Piping meeting the requirements of ASME B 31.9.
- ⇒ The Temperature/Pressure rating of the Solder Joint is dependent upon the type of solder used. ANSI STD B16.22 Pressure Ratings should be reviewed prior to selecting a solder and sweating.
- ⇒ Union end pieces on the valves are shipped loose, and should be removed for sweating.
- ⇒ The O'ring must be removed and stored during the operation.



Y-ball AUTOMATIC FLOW CONTROL VALVE INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS

- ⇒ The outside of the tubing, and the inside of the fitting are to be mechanically cleaned and then lightly coated with solder flux. The tube is then inserted one diameter into the fitting, and the **CENTRAL PORTION OF THE VALVE BODY WRAPPED WITH A WET RAG.**
- ⇒ Heat may be applied, either to the tubing or to the end of the fitting so as to achieve solder flow. When the parts have achieved the necessary temperature, solder is to be added to the joint and the joint allowed to cool.
- ⇒ The heat is to be applied for the shortest time possible.
- ⇒ The internal parts of Mesurflo® are capable of continuous use at 149° C (300° F) but will be quickly damaged at higher temperatures.
- ⇒ When soldering vertical assemblies care must be taken not to permit excess solder to drip into the valve.
- ⇒ Heat discoloration from the sweating operation should not extend to the major diameter of the valve body.

MAINTENANCE

- ⇒ General maintenance is not required for Hays Flow Control Valves, however if the system experiences large amounts of pipe scale due to poor water conditions, as sometimes is found in older or retrofit systems, some may be required. Provisions should be made to keep the system clean. Proper water treatment is also recommended.
- ⇒ When assembling Mesurflo® Valves after changing flow cartridges, always use new O'Rings, and tighten the Union Nut to 58-92kg cm (50-80 In Lbs) on the Y-Ball Models except for 2524 which should be 150kg cm (130 In Lbs).

LIMITED WARRANTY- See Hays Fluid Controls current Terms & Conditions.



Flow Cartridge Replacement Instructions Y-Ball Models

Removal and Installation of Flow Cartridge:

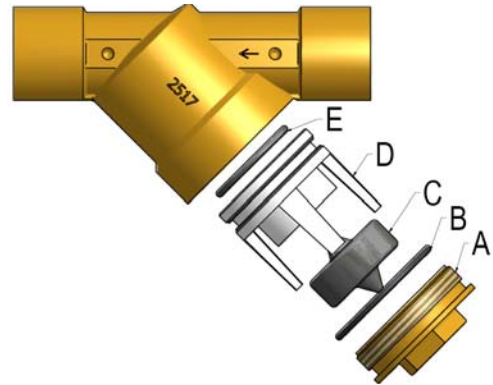
Turn off the supply and return shut-off valves. Using a wrench, remove the angled side port Cap (A). Extract the Diaphragm (C) and the Orifice (D). Place the new O-ring (E) in the end groove of the orifice and insert into the cavity. Replace the O-ring (B) on the side port Cap (A). Install the diaphragm (C) into the Orifice (D), and the side port Cap (A) into the angled cavity. Torque the side port Cap (A) to 58-92kg cm (50-80 In Lbs) using a 3/4" open wrench. Turn on the supply & return valves to check for leaks.

Installation of the Mesurflo® Valve:

Sweat fitting valves have their end connections formed to ANSI STD B16.22 requirements and are intended for use in Building Services Piping meeting the requirements of ASME B 31.9. The Temperature/Pressure rating of the Solder Joint is dependent upon the type of solder used. ANSI STD B16.22 Pressure Ratings should be reviewed prior to selecting a solder and sweating. The outside of the tubing, and the inside of the fitting are to be mechanically cleaned and then lightly coated with solder flux. The tube is then inserted one diameter into the fitting, and the **CENTRAL PORTION OF THE VALVE**

BODY WRAPPED WITH A WET RAG. Heat may be applied, either to the tubing or to the end of the fitting so as to

achieve solder flow. When the parts have achieved the necessary temperature, solder is to be added to the joint and the joint allowed to cool. The heat is to be applied for the shortest time possible. *The internal parts Mesurflo® are capable of continuous use at 149° C (300° F) but will be quickly damaged at higher temperatures.* When soldering vertical assemblies care must be taken not to permit excess solder to drip into the valve. Heat discoloration from the sweating operation should not extend to the major diameter of the valve body. If disassembled, the valve must be reassembled in the reverse order, with all of the parts returned to their original positions. If chlorinated flux has been used, all parts are to be flushed thoroughly to avoid premature corrosion failure.





2519 / 2518 Flow Cartridge Changing Instructions

INSTALLATION

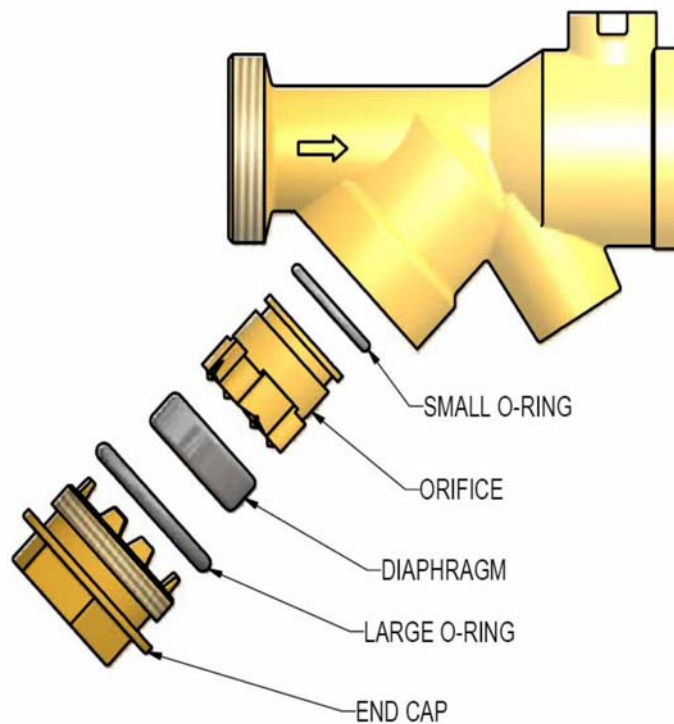
Turn off the supply and return isolation valves. Using a wrench, remove the angled End Cap fitting cap. Extract the Polymer diaphragm and the Polyphenylsulfone orifice. Place the new o-ring in the circumferential groove of the orifice and insert the orifice into the cavity. Replace the o-ring on the cap. Either, place the polymeric diaphragm onto the center of the orifice or into the center of the prongs on the cap. Then screw the End Cap fitting cap into the angled cavity. Torque the End Cap fitting to 40 Ft Lbs. Turn on the supply and return valves and check for leaks.

MAINTENANCE

General maintenance is not required for Hays Flow Control Valves, however if the system experiences large amounts of pipe scale due to poor water conditions, as sometimes is found in older or retrofit systems, provisions should be made to keep the system clean. Proper water treatment is also recommended. Spare Cartridge Assemblies, factory calibrated may be ordered.

LIMITED WARRANTY

All goods sold hereunder are warranted to be free from defects in material and factory workmanship. We warrant the goods for a period of five years from the date of purchase and will repair or replace at no cost, goods that prove defective. WE SHALL NOT BE RESPONSIBLE FOR ANY LABOR CHARGES OR ANY LOSS, INJURY OR DAMAGES WHATSOEVER, INCLUDING INCIDENTAL OR CONSEQUENTIAL DAMAGES. The sole exclusive remedy shall be limited to the replacement of defective goods, which must be returned to us with written notice before replacement is made. Before installation and use, the ultimate purchaser shall determine the suitability of the product for their intended use and ultimate purchaser assumes all risk and liability whatever in connection therewith. Where permitted by law, THE IMPLIED WARRANTY OF MERCHANTABILITY IS EXPRESSLY EXCLUDED.



Please note: Models 2514 & 2516 have the same basic installation or cartridge change instructions. Diaphragms and orifices may vary in size and shape based on the flow rate and valve model. Consult Factory for additional information.



COPPER SWEAT AUTOMATIC FLOW CONTROL VALVE INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS

GENERAL INFORMATION

- ⇒ Clean the lines of all foreign material, (welding slag, pipe scale, dirt, thread chips etc.). Upstream installation of a strainer may be necessary in dirty systems.
- ⇒ Air should be eliminated from the system prior to startup to assure quiet operation and freedom from water hammer.
- ⇒ Hays Automatic Flow Control Valves may be installed in the pipe line horizontally, vertically or any angle in between. Straight sections of pipe upstream or downstream of the Hays valve are unnecessary for proper operation. Standard reducing bushings or flanges may be directly connected to the Hays valve if required.
- ⇒ All Hays Automatic Flow Control Valves are marked with direction of flow and rate of flow.
- ⇒ **THE FLOW ARROW MUST POINT IN THE DIRECTION OF FLOW FOR PROPER OPERATION.**
- ⇒ Hays Flow Control Valves are factory assembled, individually calibrated and are tamperproof once installed in the pipe. The valves are warranted to be accurate within +/-10% of rated flow when properly installed.

OPERATION

- ⇒ For optimum operation, air entrainment in the system must be eliminated. The flow control valve must remain filled with fluid. The system must be clean and free of foreign materials.
- ⇒ Hays Mesurflo® Automatic Flow Control Valves must only be used with fluids that are compatible with Brass and EPDM materials. The temperature during operation must be limited to the range of 0°C to 107°C (32 ° F to 225 ° F).
- ⇒ The use of fluids having a specific gravity different from that of water will require adjustment. Valves specified for fluids other than water will be so marked and the factory calibration will take the specific fluid's properties into consideration.
- ⇒ The use of fluids having a viscosity different from that of water will require adjustment. Valves specified for fluids other than water will be so marked and the factory calibration will take the specific fluid's properties into consideration. Operation at a temperature other than the rated temperature may require a correction.

INSTALLATION

- ⇒ Sweat fitting valves have their end connections formed to ANSI STD B16.22 requirements and are intended for use in Building Services Piping meeting the requirements of ASME B 31.9.
- ⇒ The Temperature/Pressure rating of the Solder Joint is dependent upon the type of solder used. ANSI STD B16.22 Pressure Ratings should be reviewed prior to selecting a solder and sweating.
- ⇒ The outside of the tubing, and the inside of the fitting are to be mechanically cleaned and then lightly coated with solder flux. The tube is then inserted one diameter into the fitting, and the **CENTRAL PORTION OF THE VALVE BODY WRAPPED WITH A WET RAG.**
- ⇒ Heat may be applied, either to the tubing or to the end of the fitting so as to achieve solder flow. When the parts have achieved the necessary temperature, solder is to be added to the joint and the joint allowed to cool. The heat is to be applied for the shortest time possible. The internal parts of Mesurflo® are capable of continuous use at 149° C (300° F) but will be quickly damaged at higher temperatures.



COPPER SWEAT AUTOMATIC FLOW CONTROL VALVE INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS

- ⇒ When soldering vertical assemblies care must be taken not to permit excess solder to drip into the valve. Heat discoloration from the sweating operation should not extend to the major diameter of the valve body.

MAINTENANCE

- ⇒ General maintenance is not required for Hays Flow Control Valves, however if the system experiences large amounts of pipe scale due to poor water conditions, as sometimes is found in older or retrofit systems, some may be required. Provisions should be made to keep the system clean. Proper water treatment is also recommended.
- ⇒ When assembling Mesurflo® Valves after changing flow cartridges, always use new O'Rings, and tighten the Union Nut to 58-92kg cm (50-80 In Lbs) on the Y-Ball Models except for 2524 which should be 150kg cm (130 In Lbs).
- ⇒ **LIMITED WARRANTY**- See Hays Fluid Controls current Terms & Conditions



BALANCING VALVE PERFORMANCE SPECIFICATIONS SUMMARY

AUTOMATIC BALANCING VALVES

Automatic Flow Control Valves shall be factory set to a rated flow, and shall automatically control the flow to within $\pm 10\%$ of the rated value over a 276 to .07 (40 to 1) differential pressure, operating range, 14 - 552 kPa (2-80 PSID). For flow velocities exceeding 7.0 feet per second, pressure drop will be proportionally higher. Valves shall have the capabilities and pressure ratings as indicated and conform to this specification.

FLOW CONTROL

Hays Automatic Balance Assembly shall include one or more precision sculptured brass or polyphenylsulfone orifici with an elastomeric diaphragm. Each automatic balancing valve will automatically control the flow rate to within $\pm 10\%$ of its rated flow, over a temperature range of 0°C to 107°C (32 to 225°F), and a pressure differential range of 14 - 552 kPa (2-80 PSID). Flow rates available from 1.9-284 LPM (.50 to 75 GPM). For flow velocities exceeding 7.0 feet per second, pressure drop will be proportionally higher. Flow rates vary by model number and size.

Noise created by the valve shall not exceed the following limits at a Reynolds number of 5,000 and inlet velocity of 1.4 m/s (1.4 ft/s) when tested per Hays Fluid Controls Specification Number 10020505: Below 55kPa (8 psi) the noise generated by the valve shall be less than 24dBA pressure level, 35 dBA power level. Unit sound pressure levels at the 1/3 octave band level shall not exceed ambient sound pressure levels by more than 3 dBA.

Above 55kPa (8 psi) and at or less than 110kPa (16 psi) the overall sound power level when A-weighted shall not exceed 35 dBA, the overall sound pressure level shall not exceed 25 dBA.

Maximum 1/3 octave sound pressure levels shall not exceed those of line A in Figure 1.

Above 110kPa (16 psi) and less than 220kPa (32 psi) the overall sound power level when A-weighted shall not exceed 35 dBA, the overall sound pressure level shall not exceed 25 dBA.

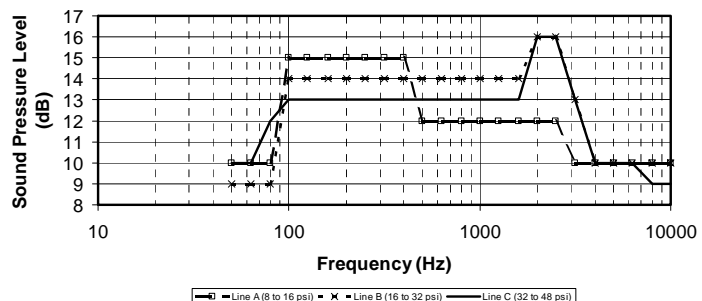
Maximum 1/3 octave sound pressure levels shall not exceed those of line B in Figure 1.

Above 220kPa (32 psi) and less than 330kPa (48 psi) the overall sound power level when A-weighted shall not exceed 35 dBA, the overall sound pressure level shall not exceed 25 dBA.

Maximum 1/3 octave sound pressure levels shall not exceed those of line C in Figure 1.

Hays Fluid Controls specification 10020505 requires that testing is conducted in accordance with ANSI (American National Standards Institute) S12.51-2002, "Acoustics – Determination of Sound Power Levels of Noise Sources Using Sound Pressure – Precision Method for Reverberation Rooms". The laboratory facility shall have been qualified in accordance with ANSI Standard S12.51-2002. The measurement space shall be qualified in accordance with the test standard. Equipment shall be mounted using isolators on rigid base. The rigid base shall be at least four times the weight of the test specimen and all attached hard plumbing. All plumbing not part of the device under test shall be installed and treated to minimize acoustic contribution. The connection from the inlet tube to the water source shall be a hose made from a resilient material such that vibrations from the flow/pressure source to the device under test are minimized.

**Figure 1 - Specification Requirements Flow Control
Device Noise Generation**





BALANCING VALVE PERFORMANCE SPECIFICATIONS SUMMARY

BODY STYLES

Y-BALL MESURFLO®

Ball valve, combination automatic flow control valves, shall be made of hot forged brass UNS C37700 per ASTM B-283 latest revision, using full port balls, blowout proof stems, and shall be rated for 4137kPa (600 psig). Sweat fittings 1/2, 3/4, & 1 inch shall be suitable for 4137kPa (600 psig). Working pressure rating per ASME B31.9 Building Services Piping. Fittings 1/2 through 1 shall be suitable for 4137kPa (600 psig). Working pressure rating per ASTM A53B for threaded joint, type extra weight, of the pipe size indicated (For most Building Services Applications, ANSI Class 125 rating). Flow rates from 1.9 to 34.1 LPM (0.5 to 25.0 gpm) will have a differential pressure operating range of 14-552kPa (2 to 80 psid). Flow rates shall be field changeable without breaking the piping connections.

INLINE

Threaded Valves sizes DN 15, 20 & 25 shall be constructed of hot forged brass UNS C37700 per ASTM B-283 latest revision, or UNS C36000 per ASTM B 16 latest revision and will terminate with **ISO 7-1 tapered threads**. These valve bodies are suitable for 4137kPa (600 psig).

Threaded valves size DN25, valve body may be constructed of gray iron per ASTM 126-84 and terminates with threads in accordance with **ISO 7-1 tapered threads**. These valve bodies are suitable for 2827kPa (400 psig). Working Pressure rating per ASTM A53B for threaded joint type, standard weight, of the pipe size indicated. (For most applications, ANSI Class 125 rating.)

Flow rates from 1.9 to 584 LPM (0.50 to 75 gpm) will have a differential pressure operating range of 14-552 kPa (2 to 80 psid). For flow velocities exceeding 7.0 feet per second, pressure drop will be proportionally higher.

COPPER SWEAT

Inline copper sweat valves 1/2, 3/4, & 1 shall consist of a wrought copper (ASTM B88-83a) housing. Valve bodies are suitable for 3599kPa (522 psig). Working pressure rating per ASME B31.9 Building Services Piping. Flow rates from 1.9 to 94.6 LPM (0.5 to 25 gpm) will have a differential pressure operating range of 14-552 kPa (2 to 80 psid).

Y-ball style serviceable sweat valves (1/2, 3/4) shall consist of hot forged brass UNS C37700 per ASTM B-283 latest revision, or UNS C36000 per ASTM B 16 latest revision. Valve bodies are suitable for 4137kPa (600 psig). Working pressure rating per ASME B31.9 Building Services Piping. Flow rates from 1.9 to 34.1 LPM (0.5 to 9.00 gpm) will have a differential pressure operating range of 14-552 kPa (2 to 80 psid).

PT EXTENSION ADAPTER

Extension adapter shall include either a pressure or pressure/temperature test port for measuring the temperature and/or pressure differential across the terminal unit.

Valves may be mounted in any attitude, and do not require straight sections of pipe, either upstream or down stream for proper operation.



BALANCING VALVE PERFORMANCE SPECIFICATIONS SUMMARY

IDENTIFICATION TAG

All valves labeled with model no., size & flow rate. Additional stainless steel metal tags are available for purchase if needed.

MARKING

All valves are marked showing the direction of flow, flow rate, manufacturer and model number.

MOUNTING

Valves may be mounted in any attitude, and do not require straight sections of pipe, either upstream or down stream for proper operation.

LIMITED WARRANTY- See Hays Fluid Controls current Terms & Conditions.



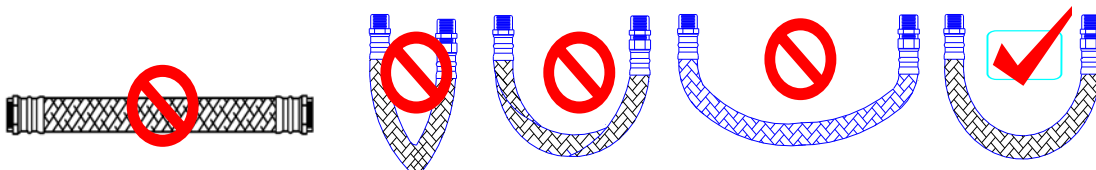
WATER SOURCE HEAT PUMP HOSE KIT INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS

GENERAL INFORMATION

- ⇒ Clean the lines of all foreign material, (welding slag, pipe scale, dirt, thread chips etc.). Upstream installation of a strainer may be necessary in dirty systems.
- ⇒ Air should be eliminated from the system prior to startup to assure quiet operation and freedom from water hammer.
- ⇒ Flow control valves may be installed horizontally, vertically or any angle in between. Pressure/ Temperature Ports should be pointed down, as they may become clogged. Additional straight sections of pipe upstream or downstream of the Automatic flow control valves are **unnecessary** for proper operation. Straight sections of pipe approximately 10 inside pipe diameters upstream and 5 diameters downstream of Manual Balance Valves is **recommended** for maximum flow reading accuracy.
- ⇒ Standard reducing bushings or flanges may be directly connected to the hose ends if required.
- ⇒ An ATC Actuator or Isolation Valve may be mounted above or along side of piping but must never be mounted where condensation can accumulate or come in contact with electrical or mechanical components. ATC valves marked Stem Up, must be mounted with stem up.
- ⇒ All Hays Automatic Flow Control Valves are marked with direction of flow. Automatic valves will be labeled with the GPM. **THE FLOW ARROW MUST POINT IN THE DIRECTION OF FLOW FOR PROPER OPERATION.**
- ⇒ Flow Control Valves must be located in the RETURN Line.
- ⇒ Hays Hose kits must be free of kinks, contact with other objects, sharp bends, tension or torsion.

INSTALLATION

- ⇒ Hoses terminate with threads in accordance with **ISO 7-1 tapered threads** and are intended for use in Building Services Piping meeting the requirements of ASME B 31.9.
- ⇒ Determine which is the Supply Hose and which is the Return Hose. The Strainer is only on the Supply Side. Flow controls are only on the Return Side. The electric valve can be on either side.
- ⇒ Swivels are usually mounted closest to the heat pump, but one may be on the strainer to facilitate flushing.
- ⇒ Check application for proper hose length, so as to prevent Kinks, Twists, Sharp Bends, Stretching and Chaffing.
- ⇒ Hoses have a removable adapter. There should be a fiber gasket inside the female swivel end of the hose to prevent leaking when the adapter is connected to the end of the hose. **This gasket must be in place to prevent leaking.** Do Not use any type of tape or compound on the adapter or female swivel connection. These are straight threads and require a gasket to form a proper seal. Use of any sealant material will not prevent leaking and will **void any warranty** that may be expressed or implied.
- ⇒ Apply thread sealant to male pipe threads, starting with the second or third thread from the end. (CAUTION, If factory applied thread sealant is present, DO NOT ADD ADDITIONAL SEALANT) Torque the connection to 5kgm (75 ft pounds) per cm (inch) of pipe size minimum.
- ⇒ Rotate the components having Pressure/Temperature Ports or Pressure Taps so they are Not Pointing Down.
- ⇒ Inspect installation or Leaks, Kinks, Twists, Sharp Bends, Stretching and Chaffing.





WATER SOURCE HEAT PUMP HOSE KIT INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS

OPERATION

- ⇒ For optimum operation, air entrainment in the system must be eliminated. The flow control valve must remain filled with fluid. The system must be clean and free of foreign materials.
- ⇒ The Hays Hose Kits and Piping Packages must only be used with fluids that are compatible with, Iron, Brass, Santoprene and EPDM materials.
- ⇒ The temperature during operation must be limited to the range of 0°C to 107°C (32 ° F to 225 ° F).

MAINTENANCE

- ⇒ General maintenance is not required for Hays Hose Kits or Piping Packages, however if the system experiences large amounts of pipe scale due to poor water conditions, as sometimes is found in older or retrofit systems, some maintenance may be required. Provisions should be made to keep the system clean. Proper water treatment is also recommended.
- ⇒ Periodically check to make sure the hoses are free from strain or damage.

LIMITED WARRANTY- See Hays Fluid Controls current Terms & Conditions.



WATER SOURCE HEAT PUMP HOSE KIT PERFORMANCE SPECIFICATIONS SUMMARY

AUTOMATIC BALANCING HOSE KITS

Contractor shall provide and install Hays Hose Kits. Each kit, shall include a Hays 2500 Series Mesur-flo® Automatic Flow Control Valve, along with two flexible hoses, one non-ported ball valve, a ball valve with Pressure/Temperature Port and may include a high flow "Y-Ball" strainer for sizes DN 15, 20 & 25 and various other accessories.

FLOW CONTROL VALVES

Automatic flow control valves shall be factory set to rated flow, and shall automatically control the flow to within $\pm 10\%$ of the rated value, over an operating range of 14-552 kPa (2-80 PSID) 2 to 80 psid. Operational temperature shall be rated from fluid 0°C to 107°C (32° F to 225 °F).

Hays Automatic Balance Assembly shall include one or more precision sculptured brass or polyphenyl-sulfone orifi with an elastomeric diaphragm. Each automatic balancing valve will automatically control the flow rate to within $\pm 10\%$ of its rated flow, over a temperature range of 0°C to 107°C (32 to 225°F), and a pressure differential range of 14 - 552 kPa (2-80 PSID). For flow velocities exceeding 7.0 feet per second, pressure drop will be proportionally higher. Flow rates available from 1.9-284 LPM (.50 to 75 GPM). Flow rates vary by model number and size.

Noise created by the valve shall not exceed the following limits at a Reynolds number of 5,000 and inlet velocity of 1.4 m/s (1.4 ft/s) when tested per Hays Fluid Controls Specification Number 10020505: Below 55kPa (8 psi) the noise generated by the valve shall be less than 24dBA pressure level, 35 dBA power level. Unit sound pressure levels at the 1/3 octave band level shall not exceed ambient sound pressure levels by more than 3 dBA.

Above 55kPa (8 psi) and at or less than 110kPa (16 psi) the overall sound power level when A-weighted shall not exceed 35 dBA, the overall sound pressure level shall not exceed 25 dBA.

Maximum 1/3 octave sound pressure levels shall not exceed those of line A in Figure 1.

Above 110kPa (16 psi) and less than 220kPa (32 psi) the overall sound power level when A-weighted shall not exceed 35 dBA, the overall sound pressure level shall not exceed 25 dBA.

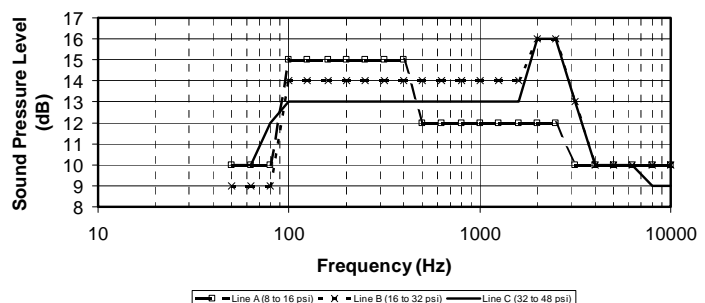
Maximum 1/3 octave sound pressure levels shall not exceed those of line B in Figure 1.

Above 220kPa (32 psi) and less than 330kPa (48 psi) the overall sound power level when A-weighted shall not exceed 35 dBA, the overall sound pressure level shall not exceed 25 dBA.

Maximum 1/3 octave sound pressure levels shall not exceed those of line C in Figure 1.

Hays Fluid Controls specification 10020505 requires that testing is conducted in accordance with ANSI (American National Standards Institute) S12.51-2002, "Acoustics – Determination of Sound Power Levels of Noise Sources Using Sound Pressure – Precision Method for Reverberation Rooms". The laboratory facility shall have been qualified in accordance with ANSI Standard S12.51-2002. The measurement space shall be qualified in accordance with the test standard. Equipment shall be mounted using isolators on rigid base. The rigid base shall be at least four times the weight of the test specimen and all attached hard plumbing. All plumbing not part of the device under test shall be installed and treated to minimize acoustic contribution. The connection from the inlet tube to the water source shall be a hose made from a resilient material such that vibrations from the flow / pressure source to the device under test are minimized.

Figure 1 - Specification Requirements Flow Control Device Noise Generation





WATER SOURCE HEAT PUMP HOSE KIT PERFORMANCE SPECIFICATIONS SUMMARY

MESURFLO®

The Automatic Flow Control Valve body shall be constructed of hot forged brass UNS C37700 per ASTM B-283 latest revision, UNS C36000 per ASTM B 16 latest revision, ductile iron per ASTM A 395-80, valve grade cast iron per ASTM 126-84 Class B, or UNS C84400 Cast Semi-Red Brass. Valves terminate with threads in accordance with **ISO 7-1 tapered threads**. UNS C37700 and UNS C 36000 Valve bodies are suitable for 4137kPa (600 PSIG). Iron, and Cast Brass, Valve bodies are suitable for 2758kPa (400 PSIG). Working Pressure rating per ASTM A53B threaded joint type.

Y-BALL MESURFLO®

Combination Ball valve and Automatic Flow Control Valves, shall be made of hot forged brass UNS C37700 Per ASTM B-283 Latest Revision blowout proof stems, and shall be rated for 4137kPa (600 psig) WOG. Working Pressure Rating shall be per ASME B31.9 Building Services Piping. Valves terminate with threads in accordance with **ISO 7-1 tapered threads**. Working Pressure Rating shall be per ASTM A53B for threaded joint type, extra weight of the pipe size indicated (For most Building Services applications, ANSI Class 125 rating.). Flow rates from 1.9 - 95 LPM (0.5 to 25.0 GPM) will have a differential pressure operating range of 14-552 kPa (2 to 80 psid). For flow velocities exceeding 7.0 feet per second, pressure drop will be proportionally higher. Flow rates shall be field changeable without breaking the piping connections.

Valve internal control mechanism shall be of a quiet, clog resistant design and consist of one or more high temperature elastomeric diaphragms and precision orifices with sculptured orifice seat. Dual pressure/temperature test ports for verifying the pressure differential and temperature shall be standard. All valves shall show as a minimum controlled flow direction, flow rate, manufacturer and model number.

STAINLESS STEEL BRAIDED HOSES WITH BRASS FITTINGS, DN 15, 20 & 25

Hose materials shall be reinforced, bonded, EPDM rubber. Working pressure meet or exceed Hays Fluid controls specifications of 2068KpA (300 psig). Minimum burst pressure shall be four(4) times the working pressure at maximum rated temperature.

Hose materials shall be stainless steel braid over an EPDM liner. Hoses meet or exceed Hays Fluid controls temperature specifications of 0°C to 107°C (32° F to 225° F).

Hose swivels shall use self actuating fiber gaskets (DN 15, 20 & 25). All ferrules shall be 300 Series Stainless steel. Hose connections will be Brass UNSC36000, with National Pipe Threads per ANSI B1.20.3, Type 1 class 1 and terminate with threads in accordance with **ISO 7-1 tapered threads**.

BALL VALVES WITH & WITHOUT UNION END

Ball valves shall be made of forged brass and meet or exceed Hays specifications. WOG of 4137KpA (600 psig) and temperature range of 0°C to 107°C (32° F to 225° F), and terminate with threads in accordance with **ISO 7-1 tapered threads**. Ball valves may be provided with an optional pressure/temperature ports, or pressure taps. Also features a double O-ring, blow-out proof stem design, and PTFE seats and plated brass ball.



WATER SOURCE HEAT PUMP HOSE KIT PERFORMANCE SPECIFICATIONS SUMMARY

STRAINER

Strainers shall be Y-ball type configuration made of bronze with a brass cap. Cap shall be sealed with a non-asbestos gasket or o-ring. Y-ball Strainer shall be offered with a one or more pressure/temperature ports, lever handle and blowdown valve with hose connector. Options include extended handles and extended pressure/temperature ports. Strainer bodies shall be suitable for 4137kPa (600) WOG at a minimum temperature of 0°C to 107°C (32 °F to 225 °F). Working Pressure Rating shall be Class 125. The strainer shall have solder sockets to ANSI B16.18. Strainer screen shall be stainless steel, with 20 mesh, and easily accessible for cleaning without disconnecting hoses. Strainers meet or exceed Hays specifications.

PT EXTENSION ADAPTER

Extension adapter shall include either a pressure or pressure/temperature test port for measuring the temperature and/or pressure differential across the terminal unit.

IDENTIFICATION TAG

All valves labeled with model no., size & flow rate. Additional stainless steel metal tags are available for purchase if needed.

MARKING

All valves are marked showing the direction of flow, flow rate, manufacturer and model number.

LIMITED WARRANTY- See Hays Fluid Controls current Terms & Conditions.



Weights (kg)

Size:	DN 15	DN 20	DN 25
Inch Size:	1/2	3/4	1
Model:			
2514	1.4	1.4	1.4
2516	0.9	0.9	
2517	1.0	1.0	
2519	0.55	0.55	
2524		2.3	2.7
2510	1.0	1.0	1.0
2511	0.2	0.2	
2513	0.7	0.7	.08
2520		0.9	0.9
2521		0.45	0.45
2530			8.0
Ball Valves	0.20	0.9	0.9
Y-Ball Strainer w/Union	0.7	0.95	0.95
Hose 30.48 cm (12")	0.45	0.7	0.9
Hose 45.72 cm (18")	0.45	0.7	0.9
Hose 60.96cm (24")	0.45	0.7	1.1
Hose 91.44cm (36")	0.7	0.9	1.1

Note: Weights listed do not include metric adapters.

NOTE: The weights listed above are *estimated* and do not include packaging. Consult Factory for additional weights not listed.



Int'l Terms & Conditions

SPECIFICATIONS

Specifications, as set forth in all printed matter, are subject to change without notice. HAYS' reserves the right to substitute material or components when necessary without written notice.

FREIGHT ALLOWANCE

All sales are F.O.B. manufacturer's point of shipment. Full freight will be prepaid to the freight forwarder and shipped ground for all sales of **\$3,500.00**, based on the net price, provided the orders are shipped to the same destination within the Continental U.S.A., except Alaska and Hawaii. All shipments under **\$3,500.00** net will be billed to the customer using their freight company & account number collect, or shipped prepaid and add cost to your invoice.

Fumigated pallets are used for International shipments.

Terms of Payment

All items quoted and to be paid in ***US Funds Only***. Payments required in advance until sufficient credit history has been established with Hays. A wire transfer fee will be added to each invoice. A service charge of 1-1/2% per month will be added to all past due accounts (equivalent to 18% annually). Purchaser is liable for all legal costs if the account is placed for collection.

Returns

Returns will be Accepted for Product that is Defective or Due to a Hays Processing Error within forty-five (45) days of order ship date. If a return is accepted for reasons other than defects or other Hays errors, a service charge of 30% of the invoice price will be charged for restocking of items received in new and unused condition. All returns require a preapproved returned merchandise authorization (RMA). All shipments must be freight prepaid F.O.B. manufacturers' point of acceptance. Merchandise returned because of defects, in material or workmanship will be at seller's expense.

Cancellations

Cancelled orders of manufactured product will be subject to a thirty percent (30%) cancellation charge for the production, testing and quality assurance time associated with the order.

Order Changes

Changes to orders of assembled product whether additions, deletions, changes in size or fittings will be subject to a rate of \$95.00/hour plus the costs of additional components reflecting engineering and production time associated with the changes.

RECONSIGNMENT OF FREIGHT

All freight or reconsignment charges issued by the carrier, relevant to undeliverable, redirected or refused product, shall be invoiced to the buyer regardless of Hays Fluid Controls published freight allowance.

OBSOLESCENCE

No returns will be accepted because of design changes or new products in the company line. HAYS' retains the right to change design without prior notice.

DAMAGED MERCHANDISE

The responsibility for items lost or damaged in transit is that of the buyer. These claims should be filed with the transportation company.

CONDITIONS OF SALE

Changes in the price of items sold by HAYS may be executed without notice. The minimum amount of any sale is \$50.00 net.

SUITABILITY

Conditions and applications vary to such a large extent throughout the world, the purchaser must determine the suitability of HAYS' products for his application.



Int'l Terms & Conditions

Special Testing

The purchaser shall pay the cost of any special inspection or testing, over and above standard factory procedures.

Acceptance of Orders

All orders are subject to the acceptance of Hays, a Division of Romac Industries, Inc. at the general office address: 400 East Fields Street, Dallas NC 28034.

Limited Warranty

All Hays goods sold hereunder are warranted to be free from defects in material and factory workmanship for a period of (1) year from the **original date of purchase**. **Automatic flow control diaphragm and orifi** used in Mesurflo® 2300, 2500, & 3500 series Automatic Balancing valves, shall be warranted for the life of the HVAC system in which it was originally installed, provided only water based hydronic fluids are used at usual HVAC temperatures and installed in accordance to product installation & operation specifications. We will repair or provide a replacement, at no cost, goods that prove to be defective. Any evidence of tampering, abuse, neglect, excessive adjusting, improper installation or servicing, operating conditions beyond product specifications, or malfunctions due to other equipment, will result in the automatic void of the Hays Fluid Controls Limited Warranty.

WE SHALL NOT BE RESPONSIBLE FOR ANY LABOR CHARGES OR ANY LOSS, INJURY OR DAMAGES WHATSOEVER, INCLUDING INCIDENTAL OR CONSEQUENTIAL DAMAGES AND COSTS RELATED TO REMOVAL OR INSTALLATION.

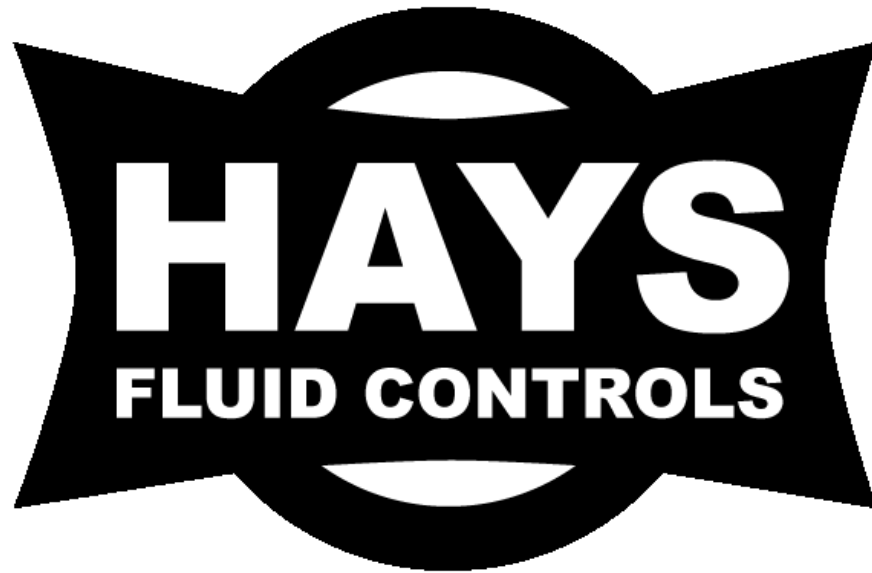
The sole and exclusive remedy shall be limited to providing the replacement of the defective goods, which must be returned to Hays by obtaining a Return Material Authorization referencing the **Original Purchase Order** number items were purchased on.

Before installation and use, the ultimate purchaser shall determine the suitability of the product for his intended use and the ultimate purchaser assumes all risk and liability whatever in connection therewith. Where permitted by law, THE IMPLIED WARRANTY OF MERCHANT LIABILITY IS EXPRESSLY EXCLUDED. If the product(s) sold hereunder are "consumer product(s)". THE IMPLIED WARRANTY OF MERCHANTABILITY IS LIMITED TO A PERIOD OF ONE(1) YEAR AND SHALL BE LIMITED SOLELY TO PROVIDING THE REPLACEMENT OF THE DEFECTIVE GOODS.

WARNING: When a Hays Fluid Controls Product is used to control a process of equipment where personal injury or property damage might occur as a result of failure to function properly, install safeguards which protect persons and/or equipment in the event of any unexpected operation of the equipment.

Claims for shortages must be made within thirty (30) days of receipt of shipment. If a shipment arrives appearing to have damaged cartons, and/or shrink wrapping has been removed from the pallet or crate, it must be noted to the carrier prior to the signing or acceptance of the shipment. HAYS FLUID CONTROLS will not be responsible for damages due to freight carrier's mishandling. The claim must be made with the freight carrier direct.

Hays Fluid Controls Representatives or Distributors are not authorized to make any modifications, extension or addition to this warranty without the express written consent of Hays.



**114 Eason Road
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Dallas, NC 28034**