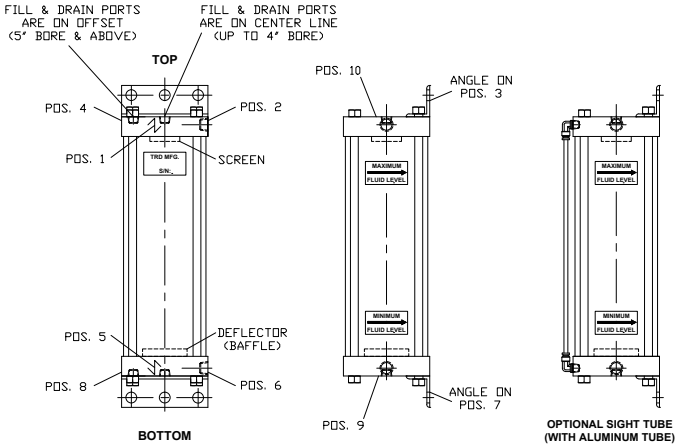
AT – Air/Oil Tanks

– The Bimba air/oil system gives you the smooth operation typically associated with hydraulic systems but without the expense. Uses shop air, two air/oil tanks and a cylinder equipped with "TH" (hydraulic seals). Low initial investment and low maintenance to operate.

– Tanks need to be mounted above the cylinder but not necessarily by the cylinder. This will create a self-purging oil circuit. It is advisable to size tanks 30-50% larger than cylinder volume in order to prevent the tanks from running dry and to allow for heat expansion.

Features

- 250 PSI operating pressure
- Aluminum end caps
- Internal baffles to reduce aeration and foaming
- Fiber wound translucent tube
- Optional aluminum tube with sight glass
- Side lug mount (MS2) optional
- Fill port located in top, drain port in bottom cap



Sizing Your Air/Oil Tank:

1. Determine the cylinder volume by multiplying the square inches of piston area by the inches of stroke (see Table B). Add 30-50% to determine actual tank size.
2. Find the volume closest to your tank volume requirement in Table C. Note: Tanks of smaller diameters with greater lengths are generally less expensive than larger diameter, short tanks of equal volume.

How To Order:

Specify bore and internal length required.

Example 1: AT250 x 14 (2.50" bore, 14" internal tank length with a usable volume of 52 cubic inches)

Plus Internal Length

Example 2: AT250 x 14 - Aluminum tube and sight glass (Example 1 with optional sight glass and aluminum tube)

AT - 250 x 36

Air Tank
Bore Size
250 (2.50" Bore)
325 (3.25" Bore)
400 (4.00" Bore)
500 (5.00" Bore)
800 (8.00" Bore)

Internal Length
1" to 120"

Part Number & Volume				Plus Internal Length	Tank Dimensions						
Part No.	Bore	Area	Gals Per Inch Tank*	B	AH	C	D	E	F	G	H
AT250	2.50	4.91	.0213	4.000	1.625	3.000	2.250	1.125	0.438	0.375	0.375
AT325	3.25	8.29	.0359	5.000	1.938	3.750	2.750	1.375	0.563	0.500	0.375
AT400	4.00	12.56	.0544	5.000	2.250	4.500	3.500	1.750	0.563	0.500	0.375
AT500	5.00	19.64	.085	5.250	2.750	5.500	4.250	2.125	0.688	0.500	0.375
AT800	8.00	50.26	.2175	6.625	4.250	8.500	7.125	3.563	0.688	0.750	0.750

* This is total internal volume, not recommended usable oil capacity.
** Fill and drain ports located at top & bottom of air oil tank.
! On the AT500 & AT800 the fill & drain ports are not on centerline.
Note: When torquing Air/Oil Tank tie rods, refer to page 280 for specifications.

TYPICAL AIR-OIL CIRCUIT

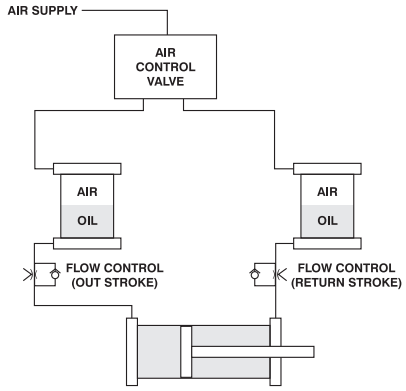


Table B - Cylinder Piston Area	
Cylinder Bore (in.)	Piston Area (sq. in.)
1.50	1.77
2.00	3.14
2.50	4.91
3.25	8.30
4.00	12.57
5.00	19.64
6.00	28.27
8.00	50.27

Table C - Recommended Usable Tank Volume (Cubic Inches) With 30% Safety Factor																	
		Actual Internal Length Of Tank															
Bore	Area	5	6	7	8	9	10	12	14	16	18	20	25	30	35	40	45
2.50	4.91	17	20	24	27	31	34	41	48	55	61	68	86	103	120	137	154
3.25	8.30	29	34	40	46	52	58	69	81	93	104	116	145	174	203	232	261
4.00	12.57	44	52	61	70	79	88	105	123	140	158	176	220	264	308	352	396
5.00	19.64	68	82	96	110	123	137	165	192	220	247	275	343	412	481	550	618
8.00	50.27	176	211	246	281	317	352	422	493	563	633	704	880	1056	1232	1408	1584

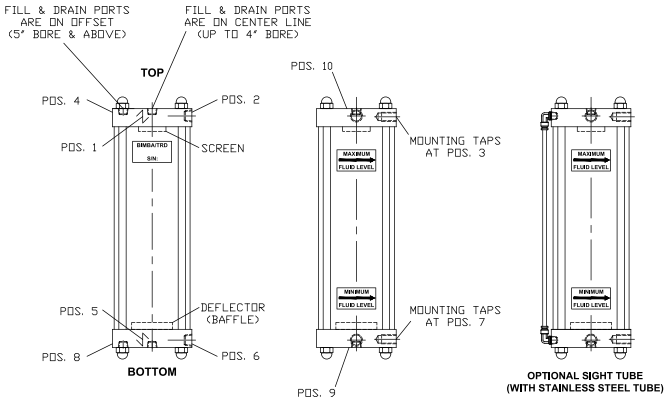
SS-AT – Air/Oil Tanks

– The Bimba air/oil system gives you the smooth operation typically associated with hydraulic systems but without the expense. Uses shop air, two air/oil tanks and a cylinder equipped with "TH" (hydraulic seals). Low initial investment and low maintenance to operate.

– Tanks need to be mounted above the cylinder but not necessarily by the cylinder. This will create a self-purging oil circuit. It is advisable to size tanks 30-50% larger than cylinder volume in order to prevent the tanks from running dry and to allow for heat expansion.

Features

Features:
300 series stainless steel hardware
250 PSI operating pressure
Internal steel baffles to reduce aeration and foaming
Fiber wound translucent tube (non-FDA material)
Optional stainless steel tube with sight glass (FDA approved materials)
Standard mount (MS4; four-tapped mounting holes back side)
Side lug mount (MS2) optional
Fill port located in top, drain port in bottom cap
Optional oversized ports for high flow applications or SAE and BSP ports



Sizing Your Air/Oil Tank:

1. Determine the cylinder volume by multiplying the square inches of piston area by the inches of stroke (see Table B). Add 30-50% to determine actual tank size.
2. Find the volume closest to your tank volume requirement in Table C. Note: Tanks of smaller diameters with greater lengths are generally less expensive than larger diameter, short tanks of equal volume.
3. To order, specify bore and internal length required. Example: SS-AT250 x 14 (2.50" bore, 14" internal tank length, with a usable volume of 52 cubic inches).

How To Order:

Specify bore and internal length required.

Example 1: SS-AT250 x 10
(2.50" bore, 10" internal tank length with a usable volume of 52 cubic inches)

Example 2: SS-AT800 x 25
(8" bore, 25" internal tank length with a usable volume of 92 cubic inches)

SS-AT - 250 x 36

Stainless Steel Air Tank
Bore Size
250 (2.50" Bore)
325 (3.25" Bore)
400 (4.00" Bore)
500 (5.00" Bore)
800 (8.00" Bore)

Internal Length
1" to 120"

SS-AT Model			Plus Internal Length	Tank Dimensions					
Part No.	Bore	Gals Per Inch Tank*	B	C	D	F	G	EE	EE1
SS-AT250	2.50	0.0213	2.000	3.000	1.250	0.438	3/8-16 x 0.625 DEEP	0.375	0.375
SS-AT325	3.25	0.0359	2.500	3.750	1.500	0.563	1/2-13 x 0.750 DEEP	0.500	0.375
SS-AT400	4.00	0.0544	2.500	4.500	2.063	0.563	1/2-13 x 0.750 DEEP	0.500	0.375
SS-AT500	5.00	0.0850	2.500	5.500	2.688	0.688	5/8-11 x 1.000 DEEP	0.500	0.375
SS-AT800	8.00	0.2175	3.000	8.500	4.500	0.688	3/4-10 x 1.125 DEEP	0.750	0.750

* This is total internal volume, not recommended usable oil capacity.
** Fill and drain ports located at top & bottom of air oil tank.
⚠ On the SS-AT500 & SS-AT800 the fill & drain ports are not on centerline.
Note: When torquing Air/Oil Tank tie rods, refer to page 280 for specifications.

TYPICAL AIR-OIL CIRCUIT

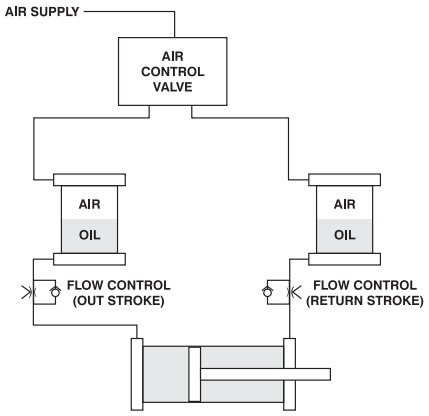


Table B - Cylinder Piston Area	
Cylinder Bore (In.)	Piston Area (Sq. In.)
1.50	1.77
2.00	3.14
2.50	4.91
3.25	8.30
4.00	12.57
5.00	19.64
6.00	28.27
8.00	50.27

Table C - Recommended Usable Tank Volume (Cubic Inches) With 30% Safety Factor

		Actual Internal Length Of Tank															
Bore	Area	5	6	7	8	9	10	12	14	16	18	20	25	30	35	40	45
2.50	4.91	17	20	24	27	31	34	41	48	55	61	68	86	103	120	137	154
3.25	8.30	29	34	40	46	52	58	69	81	93	104	116	145	174	203	232	261
4.00	12.57	44	52	61	70	79	88	105	123	140	158	176	220	264	308	352	396
5.00	19.64	68	82	96	110	123	137	165	192	220	247	275	343	412	481	550	618
8.00	50.27	176	211	246	281	317	352	422	493	563	633	704	880	1056	1232	1408	1584

AR Series Air Reservoir

Stand-alone Air Reservoir from 2.50" to 10.00" bore size. Anodized Aluminum Tube and End Cap, Steel Mounting Bracket construction.

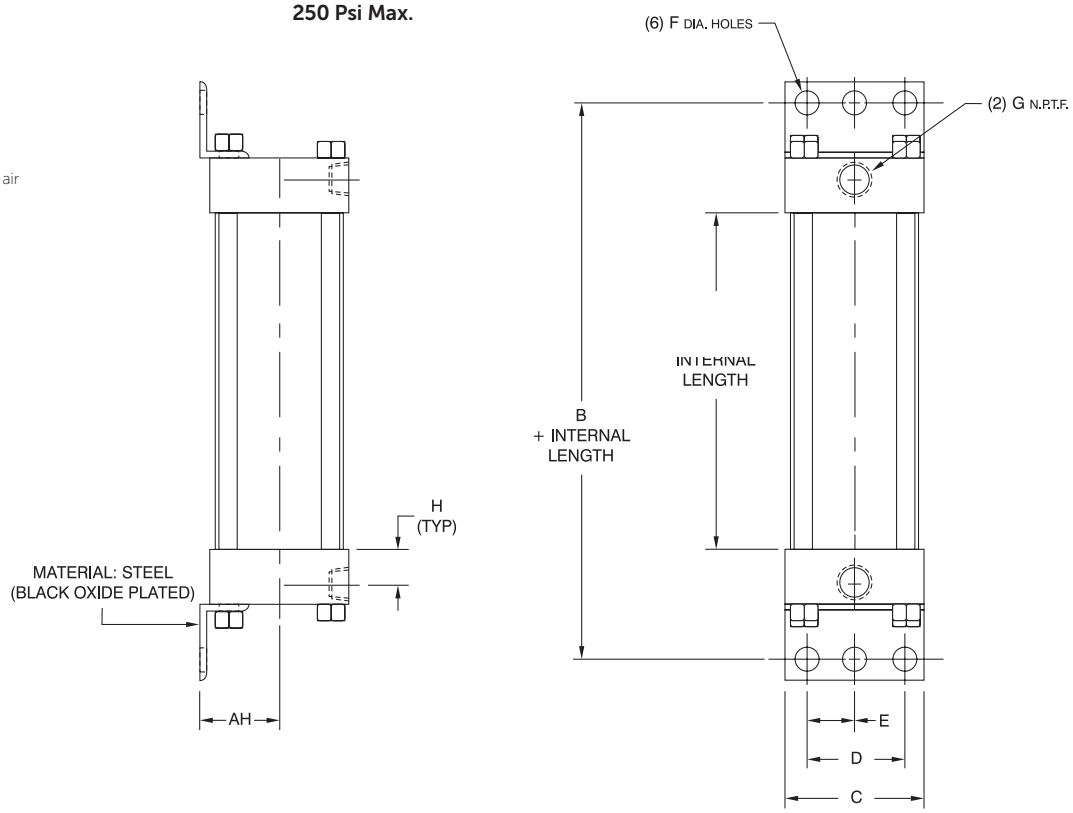
AR - 250 x 36

Air Reservoir
Bore Size
250 (2.50" Bore)
325 (3.25" Bore)
400 (4.00" Bore)
500 (5.00" Bore)
600 (6.00" Bore)
800 (8.00" Bore)
1000 (10.00" Bore)

Internal Length
1" to 120"

Note: Air reservoir is supplemental to existing air only. It is not a long-term storage vessel.

Pressure Rating
250 Psi Max.



Part Number & Volume					Dimensions						
Part Number	Bore	Area	Gallon Per Inch of Reservoir*	Plus Internal Length B	AH	C	D	E	F	G	H
AR-250	2.50	4.909	.0213	4.000	1.625	3.000	2.250	1.125	0.438	0.375	0.625
AR-325	3.25	8.29	.0359	5.000	1.938	3.750	2.750	1.375	0.563	0.500	0.625
AR-400	4.00	12.56	.0544	5.000	2.250	4.500	3.500	1.750	0.563	0.500	0.750
AR-500	5.00	19.64	.085	5.250	2.750	5.500	4.250	2.125	0.688	0.500	0.750
AR-600	6.00	28.27	.122	5.750	3.250	6.500	5.250	2.625	0.813	0.750	0.875
AR-800	8.00	50.26	.2175	6.625	4.250	8.500	7.125	3.563	0.813	0.750	0.875
AR-1000	10.00	78.54	.340	7.625	5.313	10.625	8.625	4.313	0.813	1.000	1.125

*Internal Volume of reservoir.