

Series: Air To Air Intensifier/Air To Hydraulic Intensifiers

Air-to-Air or Air-to-Hydraulic intensifiers are single-shot, one output per stroke design.

Benefits of Air to Air Intensifiers:

- Quick Response
- High Volume Outputs Available
- Simple Design
- Heavy-Duty Construction

Benefits of Air to Hydraulic Intensifiers:

- Quick Response
- High Volume Outputs Available
- Intensified Material Can Be Oil or Other Media
- Can Be Used For Measuring and Dispensing



Cyl. #1

AI - TA - MS4 - 5 x 10 - MPR

Air Intensifiers	
Series	
250 PSI Air	TA
250 PSI Air	TD
Stainless Steel (300 Series)	SS
NFPA Mounts	
No Mount (1.50" - 12.00" Bore)	MX0
Front Flange (1.50"-6.00" Bore)	MF1
Side Lug (1.50"- 4.00") Bore Std., 5.00" & Above (Consult Factory)	MS2
Bottom Tapped Holes (1.50"- 12.00" Bore)	MS4

Substitute

Options (Cyl. #1 or Cyl. #2)	Substitute
Adjustable Stroke - Retract (Specify Length, Example: AS = 4")	AS
.25" Urethane Bumper Both Ends	B
.25" Urethane Bumper Cap Only	BC
.25" Urethane Bumper Head Only	BH
BSPP/BSPT Ports - Bumper Piston Seals (1.50" - 8.00" Bore)	BP
British Standard Pipe Taper	BSPP
British Standard Pipe Parallel	BSPT
Head Cushion	H
Cap Cushion	C
Micro-Adjust (12" Max. Stroke) Available On Double Rod End Models	MA
Micro-Adjust With Sound Dampening Bumper (12" Max. Stroke)	MAB
Magnetic Piston For Reed Or Solid State Switches (Models: R10, RAC, and MSS)	MPR
Optional Port Location (Example: OP=3,7)	OP
SAE Ports (Specify Size, Example: SAE #10)	SAE
Stainless Steel Piston Rod, Tie Rods & Nuts, and Fasteners	SSA
Stainless Steel Fasteners	SSF
Stainless Steel Tie Rod Nuts	SSN
Solid Stainless Steel Piston	SSP
Stainless Steel Piston Rod	SSR
Stainless Steel Tie Rods	SST
400 PSI Hydraulic Non-Shock	TH
Fluorocarbon Seals	VS
Special Variation (Specify)	XX
Stroke (Cyl. #1)	Substitute
0" to 50" Made-To-Order	
Bore	Substitute
Cyl. 1	Cyl. 2
3.25	1.50
4.00	2.00
5.00	2.50
6.00	3.25
8.00	4.00
10.00	5.00
12.00	6.00
-	8.00

About our Part Number System

- Simple, easy to understand
- No excessive codes!
- Eliminates mistakes when ordering

Example: Cyl. 1 is a standard 'TA' series, MS4 mount, 5" bore X 10" stroke, with a magnet (for Reed Switches), Air-to-Hydraulic Cylinder.

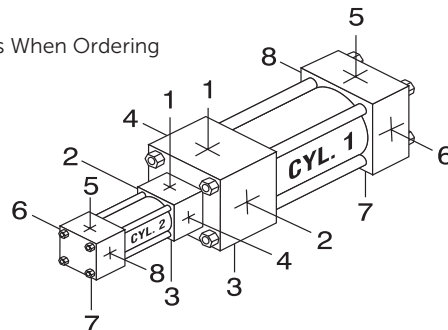
Cyl. 2 is a 'TA' series, MX0 (no mount), 2.50" bore X 10" stroke with "TH" option.

Part Number:

AI - TA - MS4 - 5 x 10 - MPR with TA - MX0 - 2.50 x 10 - TH

Standard Port and Cushion Adjustment Positions

- Ports - Positions 1 and 5 (both cylinders)
- Cushion Adjustment - Positions 2 and 6 (Cyl. #1), Positions 4 and 8 (Cyl. #2)
- Specify Non-Standard Positions When Ordering



Cyl. #2

MX0 - 2.50 x 10 - TH

Cylinder #2 Series

Note: Refer to Options for specifications.

**Bumpers add .25" per end to cylinder length.

» Adds Length To Cylinder - See "Option Length Adder" Chart Below.

Air To Air and Air To Hydraulic Intensifier Cylinders

Two (2) strokes must be the same, rods are connected.

Air To Air Intensifiers – Standard Combinations

Cyl. #1		Cyl. #2		Intensifier Ratio	Output (PSI) of Cyl. #2 @ Input Pressure Of:			
Bore	Area	Bore	Area		50	80	100	120
3.25	8.296	1.50	1.767	4.69	235			
		2.00	3.142	2.64	132	211	264	
4.00	12.566	2.00	3.142	4	200			
		2.50	4.909	2.56	128	205	256	
5.00	19.635	2.50	4.909	4	200			
		3.25	8.296	2.37	119	190	237	
6.00	28.274	3.25	8.296	3.41	171			
		4.00	12.566	2.25	113	180	225	
8.00	50.265	4.00	12.566	4	200			
		5.00	19.635	2.56	128	205	256	
		6.00	28.274	1.78	89	143	178	214
10.00	78.54	5.00	19.635	4	200			
		6.00	28.274	2.78	139	223		
12.00	113.10	6.00	28.274	4	200			
		8.00	50.265	2.25	113	180	225	

Note: Cyl. #2 Output Not To Exceed 250 PSI.

Intensifier Ratio = $\frac{\text{Cyl. \#1 Area}}{\text{Cyl. \#2 Area}}$

Output Pressure = Input Pressure X Intensifier Ratio

Note: Usable volume of air-to-air output will not match cylinder #2 volume due to compressibility of air.

Air To Hydraulic Intensifiers – Standard Combinations

Cyl. #1		Cyl. #2		Intensifier Ratio	Output (PSI) of Cyl. #2 @ Input Pressure Of:			
Bore	Area	Bore	Area		50	80	100	120
3.25	8.296	1.50	1.767	4.69	235	375		
		2.00	3.142	2.64	132	211	264	317
4.00	12.566	1.50	1.767	7.11	356			
		2.00	3.142	4	200	320	400	
		2.50	4.909	2.56	128	205	256	307
5.00	19.635	2.00	3.142	6.25	313			
		2.50	4.909	4	200	320	400	
		3.25	8.296	2.37	119	190	237	284
6.00	28.274	2.50	4.909	5.76	288			
		3.25	8.296	3.41	171	273	341	
		4.00	12.566	2.25	113	180	225	270
8.00	50.265	3.25	8.296	6.06	303			
		4.00	12.566	4	200	320	400	
		5.00	19.635	2.56	128	205	256	307
		6.00	28.274	1.78	89	143	178	214
10.00	78.54	4.00	12.566	6.25	313			
		5.00	19.635	4	200	320	400	
		6.00	28.274	2.78	139	223	278	334
12.00	113.10	5.00	19.635	5.76	288			
		6.00	28.274	4	200	320	400	
		8.00	50.265	2.25	113	180	225	270

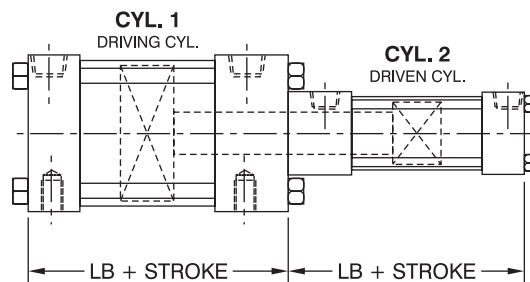
Note: Cyl. #2 Output Not To Exceed 400 PSI Non-Shock.

Intensifier Ratio = $\frac{\text{Cyl. \#1 Area}}{\text{Cyl. \#2 Area}}$

Output Pressure = Input Pressure X Intensifier Ratio

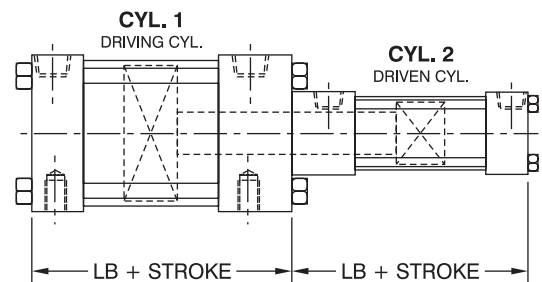
For complete dimensions, refer to 'TA' section of catalog.

Air To Air Intensifiers – Basic Dimensions



Bore	LB	Bore	LB	Bore	LB
1.50	3.625	4.00	4.250	10.00	6.375
2.00	3.625	5.00	4.500	12.00	6.875
2.50	3.750	6.00	5.000		
3.25	4.250	8.00	5.125		

Air To Hydraulic Intensifiers – Basic Dimensions



Bore	LB	Bore	LB	Bore	LB
1.50	3.625	4.00	4.250	10.00	6.375
2.00	3.625	5.00	4.500	12.00	6.875
2.50	3.750	6.00	5.000		
3.25	4.250	8.00	5.125		

Cylinder Volumes (Per Inch Of Cylinder Stroke)

Bore	Area	Gal. Per In. Of Stroke	Bore	Area	Gal. Per In. Of Stroke	Bore	Area	Gal. Per In. Of Stroke
1.50	1.767	.0076	4.00	12.566	.0054	10.00	78.54	.340
2.00	3.142	.0136	5.00	19.635	.085	12.00	113.10	.4896
2.50	4.909	.0213	6.00	28.274	.122			
3.25	8.296	.0359	8.00	50.265	.2175			

Notes: (To Figure Volumes) Cubic Inches = Area X Stroke Gallons = $\frac{(\text{Area} \times \text{Stroke})}{231}$

Example: 3.25" Bore X 16" Stroke Cylinder = 8.296 X 16 = 132.736 Cu. In. Or .575 Gallons

Cylinder Volumes (Per Inch Of Cylinder Stroke)

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1.50	1.767	.0076	4.00	12.566	.0054	10.00	78.54	.340
2.00	3.142	.0136	5.00	19.635	.085	12.00	113.10	.4896
2.50	4.909	.0213	6.00	28.274	.122			
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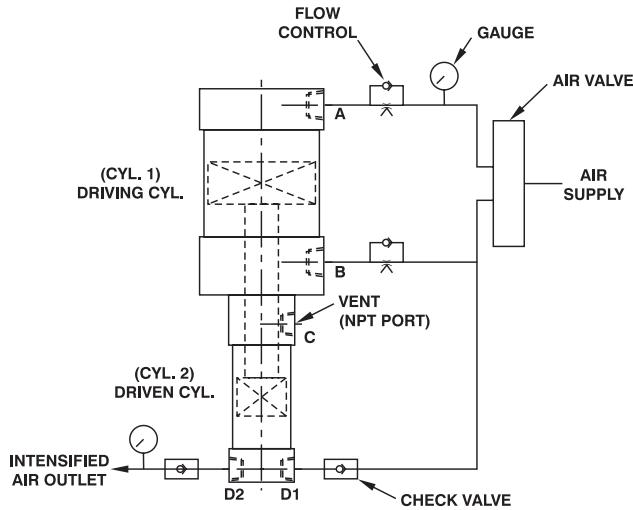
Example: 3.25" Bore X 16" Stroke Cylinder = 8.296 X 16 = 132.736 Cu. In. Or .575 Gallons

Air to Air Intensifiers – Schematics

- Same Stroke In Each Cylinder
- Rods Are Connected

Actuation Sequence:

- Pressure To Ports 'A' Extends Cylinder
- Pressure To Ports 'B' Retracts Cylinder



Example:

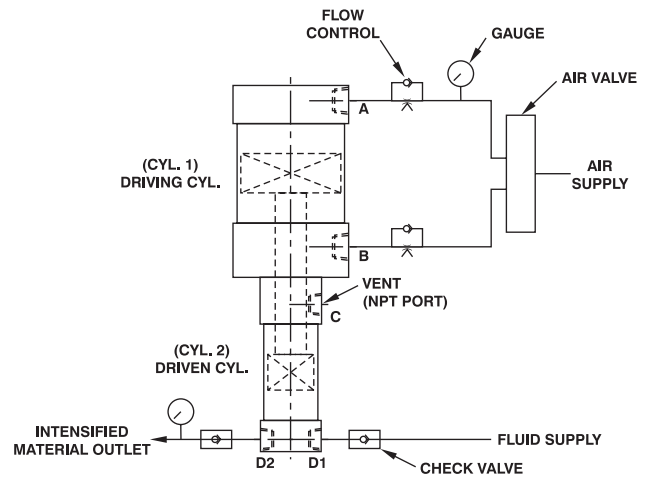
Shown is an air to air intensifier for applications requiring supply to be intensified. Supply air to port 'A' will stroke cylinder and intensified air will exit port 'D2'. To return cylinder supply air to port 'B' two (2) flow controls used to regulate cylinder speed.

Air to Hydraulic Intensifiers – Schematics

- Same Stroke In Each Cylinder
- Rods Are Connected

Actuation Sequence:

- Pressure To Ports 'A' Extends Cylinder
- Pressure To Ports 'B' Retracts Cylinder



Example:

Shown is an air to hydraulic intensifier for applications requiring fluid supply to be intensified. Supply air to port 'A' will stroke cylinder and intensified material will exit port 'D2'. To return cylinder supply air to port 'B' two (2) flow controls used to regulate cylinder speed.