

# 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

## HOW TO ORDER: INTENSIFIERS

CYL. #1

**AI - TA - MS4 - 5 x 10 - MPR**

AIR INTENSIFIERS

WITH

CYL. #2

**MXO - 2.50 X 10 - TH**

SERIES	
TA	250 PSI AIR
TD	250 PSI AIR
SS	STAINLESS STEEL (303, 304)

NFPA MOUNTS	
MXO	NO MOUNT (1.50" - 12.00" BORE)
MF1	FRONT FLANGE (1.50" - 6.00" BORE)
MS2	SIDE LUG (1.50" - 4.00" BORE STD., 5.00" & ABOVE CONSULT FACTORY)
MS4	BOTTOM TAPPED HOLES (1.50" - 12.00" BORE)

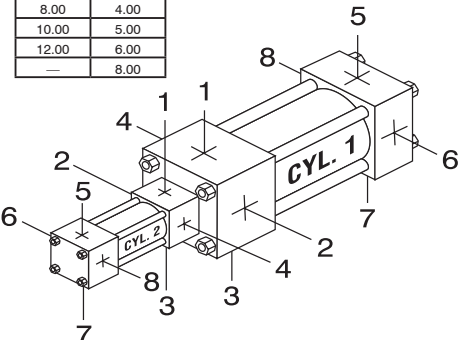
BORE	
CYL. #1	CYL. #2
3.25	1.50
4.00	2.00
5.00	2.50
6.00	3.25
8.00	4.00
10.00	5.00
12.00	6.00
—	8.00

STROKE (CYL. #1)	
0" TO 50"	
MADE-TO-ORDER	

OPTIONS (CYL. #1 or CYL. #2)	
* ADDS LENGTH TO CYLINDER - SEE "OPTION LENGTH ADDER" CHART BELOW.	
AS	ADJUSTABLE STROKE - RETRACT (SPECIFY LENGTH, EXAMPLE: AS = 4")
X B	.25" URETHANE BUMPER BOTH ENDS
X BC	.25" URETHANE BUMPER CAP ONLY
X BH	.25" URETHANE BUMPER HEAD ONLY
BP	BUMPER PISTON SEALS (1.50" - 8.00" BORE)
H	HEAD CUSHION
C	CAP CUSHION
EN	ELECTROLESS NICKEL PLATED
MA	MICRO-ADJUST (12" MAX. STROKE) AVAILABLE ON DOUBLE ROD END MODELS
MAB	MICRO-ADJUST WITH SOUND DAMPENING BUMPER (12" MAX. STROKE)
MPR	MAGNETIC PISTON FOR REED OR SOLID STATE SWITCHES - TRD MODELS: R10, RAC, AND MSS
MPH	MAGNETIC PISTON FOR HALL SWITCHES
OP	OPTIONAL PORT LOCATION (EXAMPLE: PORTS @ 3 & 7)
SAE	SAE PORTS (SPECIFY SIZE, EXAMPLE: SAE #10)
SSA	STAINLESS STEEL PISTON ROD, TIE RODS & NUTS, AND FASTENERS
SSF	STAINLESS STEEL FASTENERS
SSN	STAINLESS STEEL TIE ROD NUTS
SSP	SOLID STAINLESS STEEL PISTON
SSR	STAINLESS STEEL PISTON ROD
SST	STAINLESS STEEL TIE RODS
TH	400 PSI HYDRAULIC NON-SHOCK
VS	FLUOROCARBON SEALS
XX	SPECIAL VARIATION (SPECIFY)



**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

**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, MXO (no mount), 2.50" bore x 10" stroke with "TH" option.

**Part Number:**  
 AI - TA - MS4 - 5 x 10 - MPR with  
 TA - MXO - 2.50 x 10 - TH

## AIR TO AIR/AIR TO HYDRAULIC INTENSIFIER CYLINDERS: TWO (2) STROKES MUST BE THE SAME, RODS ARE CONNECTED

### AIR TO AIR INTENSIFIERS TRD STANDARD COMBINATIONS

### AIR TO HYDRAULIC INTENSIFIERS TRD STANDARD COMBINATIONS

CYL. #1	CYL. #2		INTENSIFIER RATIO	OUTPUT (PSI) OF CYL. #2 @ INPUT PRESSURE OF:			
	BORE	AREA		50	80	100	120
	BORE	AREA		BORE	AREA		
3.25	8.296	1.50	1.767	4.69	235		
		2.00	3.142	2.64	132	211	264
	12.566	2.00	3.142	4	200		
		2.50	4.909	2.56	128	205	256
4.00							
	19.635	2.50	4.909	4	200		
		3.25	8.296	2.37	119	190	237
5.00							
	28.274	3.25	8.296	3.41	171		
		4.00	12.566	2.25	113	180	225
6.00							
	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
8.00							
	78.54	5.00	19.635	4	200		
		6.00	28.274	2.78	139	223	
10.00							
	113.10	6.00	28.274	4	200		
		8.00	50.265	2.25	113	180	225

CYL. #1	CYL. #2		INTENSIFIER RATIO	OUTPUT (PSI) OF CYL. #2 @ INPUT PRESSURE OF:			
	BORE	AREA		50	80	100	120
	BORE	AREA		BORE	AREA		
3.25	8.296	1.50	1.767	4.69	235	375	
		2.00	3.142	2.64	132	211	264
	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
4.00							
	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
5.00							
	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
6.00							
	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
		6.00	28.274	1.78	89	143	178
8.00							
	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
10.00							
	113.10	5.00	19.635	5.76	288		
		6.00	28.274	4	200	320	400
12.00							
		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: 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

# SERIES: AIR TO AIR INTENSIFIER AIR TO HYDRAULIC INTENSIFIERS

## BASIC DIMENSIONS: (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		

### 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 =  $\frac{\text{AREA X STROKE}}{231}$

**Example:**  
3.25" BORE X 16" STROKE CYLINDER = 8.296 X 16 = 132.736 CU. IN. OR .575 GALLONS

### 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)  
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**Example:**  
3.25" BORE X 16" STROKE CYLINDER = 8.296 X 16 = 132.736 CU. IN. OR .575 GALLONS

## SCHEMATICS:

### AIR TO AIR INTENSIFIER:

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 AIR 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 INTENSIFIER:

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.