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 — WITH — CYL. #2 — MXO - 2.50 X 10 - TH

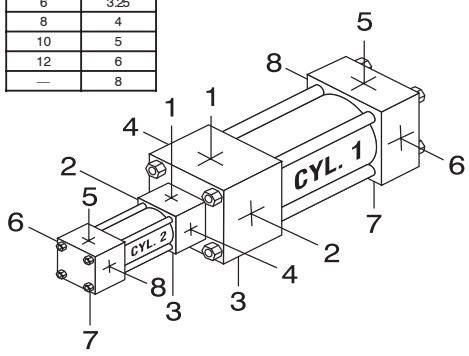
AIR INTENSIFIERS

SERIES	
TA	250 PSI AIR
TD	250 PSI AIR
SS	STAINLESS STEEL (303, 304) (Refer to Cat. # CAT-TRDSS-704 for ordering information)

NFPA MOUNTS	
MXO	NO MOUNT (1.50" - 12" Bore)
MF1	FRONT FLANGE (1.50"-6" Bore)
MS2	SIDE LUG (1.50"- 4" Bore STD., 5" & ABOVE CONSULT FACTORY)
MS4	BOTTOM TAPPED HOLES (1.50" - 12" Bore)

BORE	
CYL. 1	CYL. 2
3.25	1.50
4	2
5	2.50
6	3.25
8	4
10	5
12	6
—	8

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" Bore)
	H	HEAD CUSHION
	C	CAP CUSHION
	EN	**ELECTROLESS NICKEL PLATED** *(Refer to page 84 for specifications)*
	MA	MICRO-ADJUST (6" MAX. STROKE) *Available on Double Rod End Models*
	MAB	MICRO-ADJUST WITH SOUND DAMPENING BUMPER (6" MAX. STROKE)
	MPR	MAGNETIC PISTON FOR REED OR SOLID STATE SWITCHES - TRD MODELS: R10, RAC, AND MSS *(Refer to pages 107-113 for selection)*
	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
	SSP	SOLID STAINLESS STEEL PISTON
	SSR	STAINLESS STEEL PISTON ROD
	SST	STAINLESS STEEL TIE RODS & NUTS
	TH	**400 PSI HYDRAULIC NON-SHOCK** *(Refer to page 90 for specifications)*
	VS	FLUOROCARBON SEALS
	WB	PISTON WEAR BAND
	XX	SPECIAL VARIATION (SPECIFY)

**BUMPERS ADD .25" PER END TO CYLINDER LENGTH.

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

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

AIR TO AIR / AIR TO HYDRAULIC INTENSIFIER CYLINDERS:

(2) STROKES MUST BE THE SAME, RODS ARE CONNECTED

AIR TO AIR INTENSIFIERS
TRD 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	3.142	2.64	132	211	264	
4	12.566	2	3.142	4	200			
		2.50	4.909	2.56	128	205	256	
5	19.635	2.50	4.909	4	200			
		3.25	8.296	2.37	119	190	237	
6	28.274	3.25	8.296	3.41	171			
		4	12.566	2.25	113	180	225	
8	50.265	4	12.566	4	200			
		5	19.635	2.56	128	205	256	
		6	28.274	1.78	89	143	178	214
10	78.54	5	19.635	4	200			
		6	28.274	2.78	139	223		
12	113.10	6	28.274	4	200			
		8	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

AIR TO HYDRAULIC INTENSIFIERS
TRD 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	3.142	2.64	132	211	264	317
4	12.566	1.50	1.767	7.11	356			
		2	3.142	4	200	320	400	
		2.50	4.909	2.56	128	205	256	307
5	19.635	2	3.142	6.25	313			
		2.50	4.909	4	200	320	400	
		3.25	8.296	2.37	119	190	237	284
6	28.274	2.50	4.909	5.76	288			
		3.25	8.296	3.41	171	273	341	
		4	12.566	2.25	113	180	225	270
8	50.265	3.25	8.296	6.06	303			
		4	12.566	4	200	320	400	
		5	19.635	2.56	128	205	256	307
		6	28.274	1.78	89	143	178	214
10	78.54	4	12.566	6.25	313			
		5	19.635	4	200	320	400	
		6	28.274	2.78	139	223	278	334
12	113.10	5	19.635	5.76	288			
		6	28.274	4	200	320	400	
		8	50.265	2.25	113	180	225	270

Note: CYL. #2 output not to exceed 400 PSI Non-Shock.

Intensifier ratio = $\frac{\text{CYL. \#1 AREA}}{\text{CYL. \#2 AREA}}$

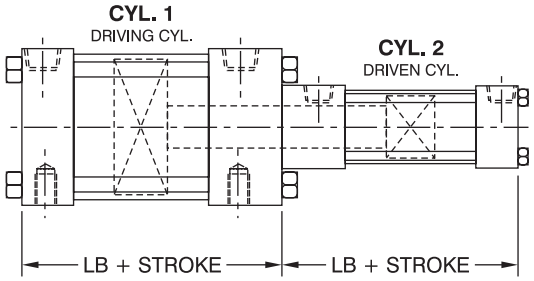
Output pressure = INPUT PRESSURE X INTENSIFIER RATIO

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 DIMESIONS



BORE	LB
1.50	3.63
2	3.63
2.50	3.75
3.25	4.25

BORE	LB
4	4.25
5	4.50
6	5
8	5.13

BORE	LB
10	6.38
12	6.88

CYLINDER VOLUMES
(PER INCH OF CYLINDER STROKE)

BORE	AREA	GAL. PER IN. OF STROKE
1.50	1.767	.0076
2	3.142	.0136
2.50	4.909	.0213
3.25	8.296	.0359

BORE	AREA	GAL. PER IN. OF STROKE
4	12.566	.0054
5	19.635	.085
6	28.274	.122
8	50.265	.2175

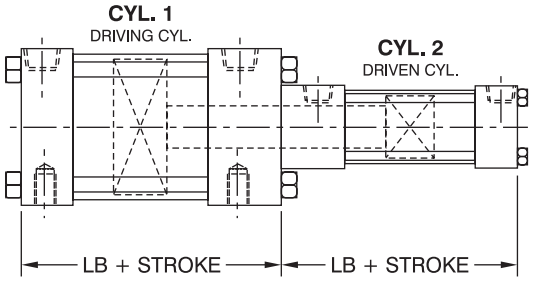
BORE	AREA	GAL. PER IN. OF STROKE
10	78.54	.340
12	113.10	.4896

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 DIMESIONS



BORE	LB
1.50	3.63
2	3.63
2.50	3.75
3.25	4.25

BORE	LB
4	4.25
5	4.50
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8	5.13

BORE	LB
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Example:
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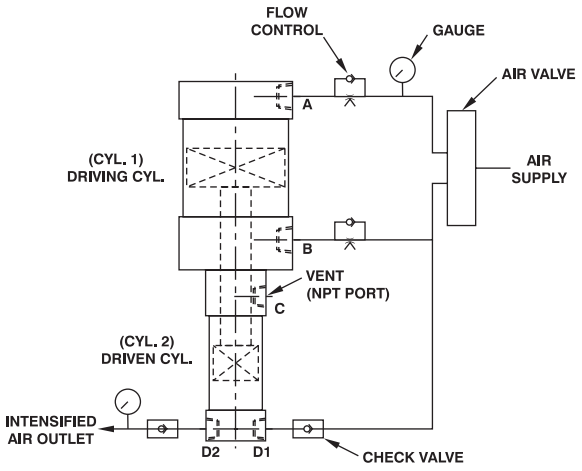
SCHEMATICS:

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

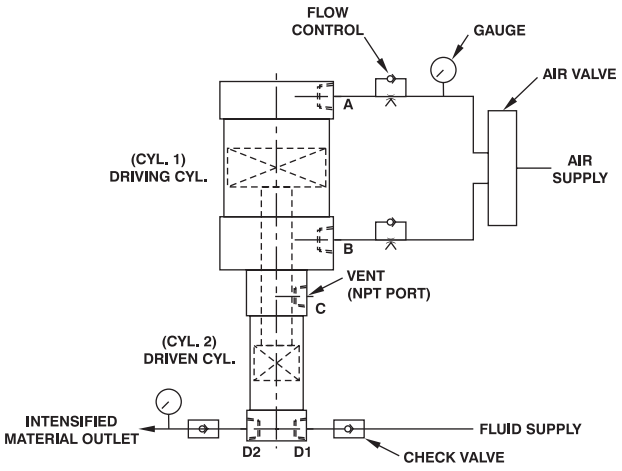


EXAMPLE:

SHOWN IS AN AIR TO AIR INTENSIFIER FOR APPLICATIONS REQUIRING SUPPLY 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' (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' (2) FLOW CONTROLS USED TO REGULATE CYLINDER SPEED.