

"A" SERIES SOLIDS FLOWMETERS

Instruction Manual

PL-393

June 1993



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Milltronics has been designing and manufacturing process equipment since 1954. Our fields of expertise include ultrasonic and capacitance level measurement, in-line weighing of dry bulk solids and motion sensing.

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For more details on our products and service, please contact us and we will provide you with a listing of the offices or representatives nearest you.



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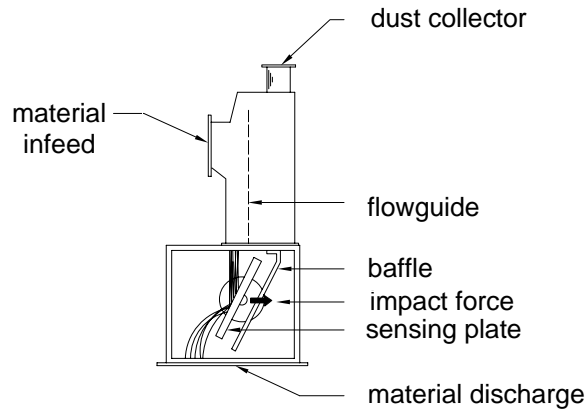
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ABOUT THE "A" SERIES FLOWMETER

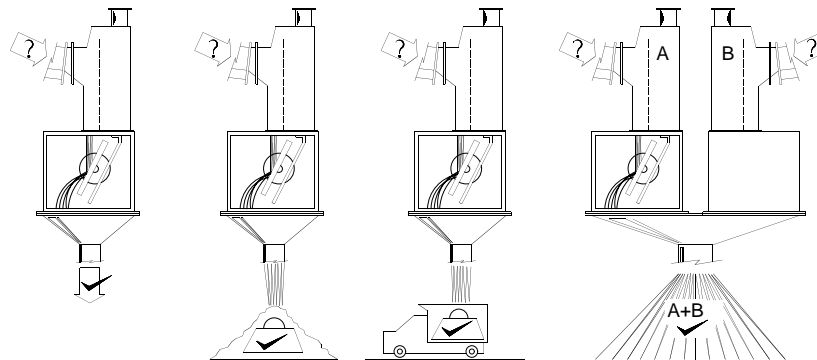
The Milltronics "A" Series Flowmeter is used for continuous in-line weighing of powdered or granular dry bulk solid materials. This flowmeter is designed specifically for use with aerated gravity conveyors. The flowmeter diverts the conveyor discharge air to provide repeatable material impact force against the sensing plate.

The A-40 flowmeter is equipped with an ILE-37 sensing head and is suitable for material flowrates up to 40 TPH. The A-300 flowmeter, with an ILE-61 sensing head, is suitable for up to 300 TPH.



The LVDT output signal is processed by the flowmeter integrator (ordered separately) to:

- » monitor material flow
- » maintain accurate material inventory
- » provide batch control for process or loadout purposes *
- » control the ratio of materials in continuous blending processes *



***additional equipment required**

The following components are included with each Milltronics "A" Series flowmeter system.

- » "A" series flowmeter housing and flowguide
- » ILE-37 or ILE-61 sensing head
- » stainless steel sensing plate
- » electronic flowmeter integrator
- » installation kit (wrenches, spare damping fluid and filler bottle, mounting bolts)

SPECIFICATIONS

MILLTRONICS "A" SERIES FLOWMETER

Model:	» A-40
	» A-300
Product:	» fine powder to fine granular
Product Temperature:	» -40° to 232°C (-40° to 450°F)
Ambient Temperature:	» -40° to 60°C (-40° to 140°F)
Accuracy:	» ± 1% of full scale
Repeatability:	» ± 0.2%
Operating Range:	» A-40 » 0 to 0.5 TPH min, 0 to 40 TPH max (to suit application)
	» A-300 » 0 to 20 TPH min, 0 to 300 TPH max (to suit application)
Construction:	» painted mild steel flowguide and housing
	» sensing plate (to suit application)
	» A-40 » ILE-37 sensing head (base mount)
	» A-300 » ILE-61 sensing head
Classification:	» CSA certified, general purpose
Options:	» 304 or 316 stainless steel housing
	» Teflon or Abrasion Resistant flowguide lining
	» Class I - groups C & D, Class 2 - groups E, F, & G

INSTALLATION

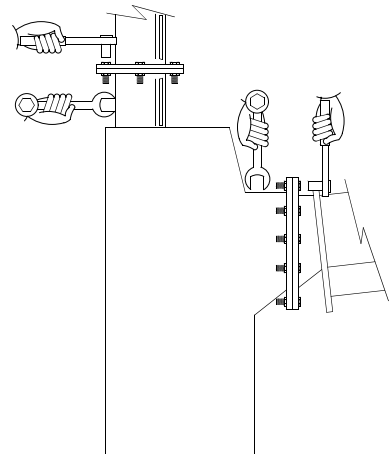
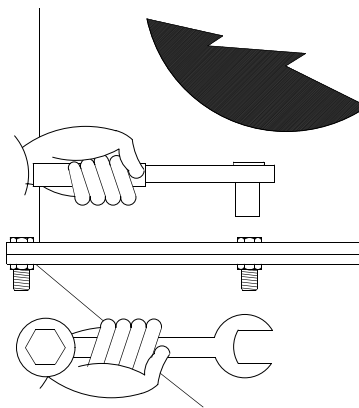
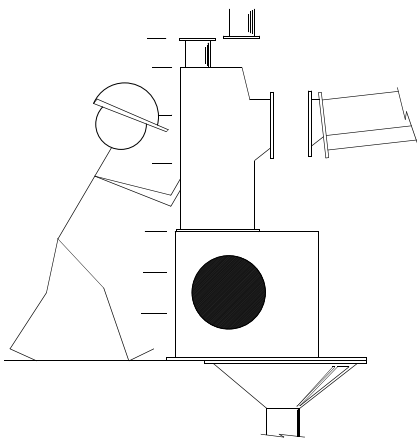
GENERAL

The Milltronics "A" Series Flowmeter should be installed in an area that is suitable for the system classification rating. Maintain sufficient clearance to permit:

- » opening the housing door for sensing plate access
- » removing the sensing head rear cover for calibration purposes

1. Position the flowmeter into the desired location.
2. If necessary, shim the housing base to establish level in both horizontal planes.
3. Fasten the housing discharge to the downstream material chute.
4. Fasten the flowguide to the conveyor/flowguide transition chute.
5. Fasten the dust collector port to the dust collector pipe.
6. Refer to PL-374 for ILE-37 or PL-376 for ILE-61 sensing head installation, sensing plate installation, and integrator interconnection instructions.
7. Tune the dust collector port air volume to match that of the aerated gravity conveyor exhaust port, and the downstream dust collector port.

Ensure sufficient mechanical support is provided for the flowmeter and chutework, for all operating conditions.



APPLICATIONS

Experience dictates, the operational performance and maintenance requirements of a flowmeter application are directly related to the care and consideration given to material compatibility and flow patterns.

MATERIALS

The following material characteristics are considered ideal:

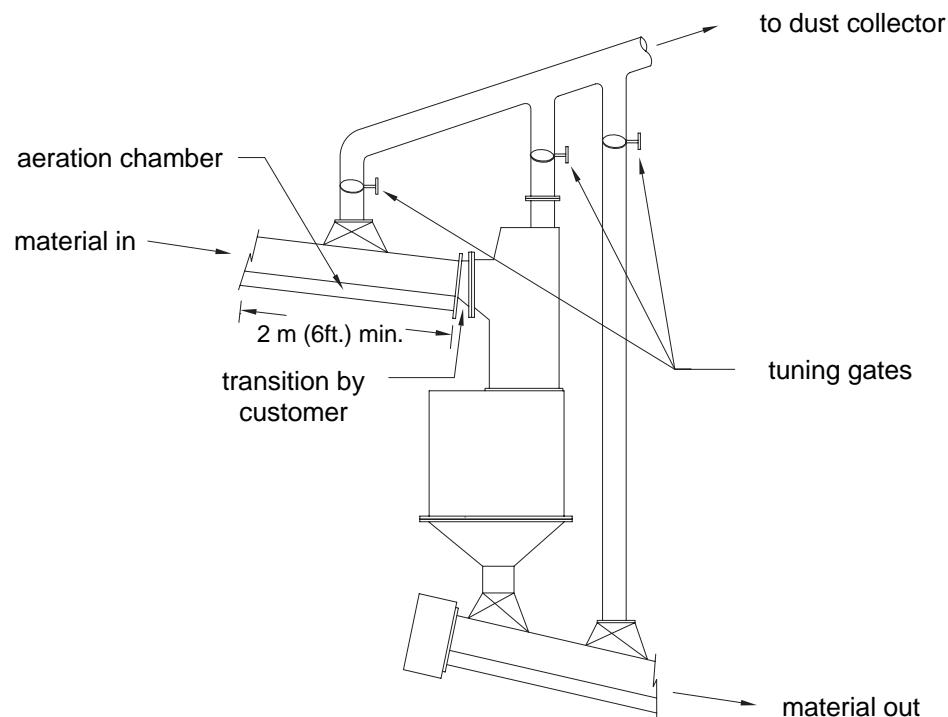
- » low cohesion (flows well in aerated state, similar to a liquid)
- » low adhesion (does not stick to surfaces)
- » low abrasion (will not wear out chutes, flowguide or sensing plate)
- » low causticity (will not damage internal flowmeter components)

Materials such as powdered alumina, limestone, and finished cement are ideally suited to aerated gravity conveyor and "A" Series flowmeter application.

MATERIAL FEED

The constant velocity, non pulsing material discharge characteristics of an aerated gravity conveyor are considered ideal for accurate, repeatable "A" Series flowmeter performance. The conveyor discharge/flowmeter infeed transition chute should be as short as possible and at the same angle as the flowmeter flowguide. The transition chute must be fabricated such that the conveyor aeration chamber is not vented directly into the flowmeter.

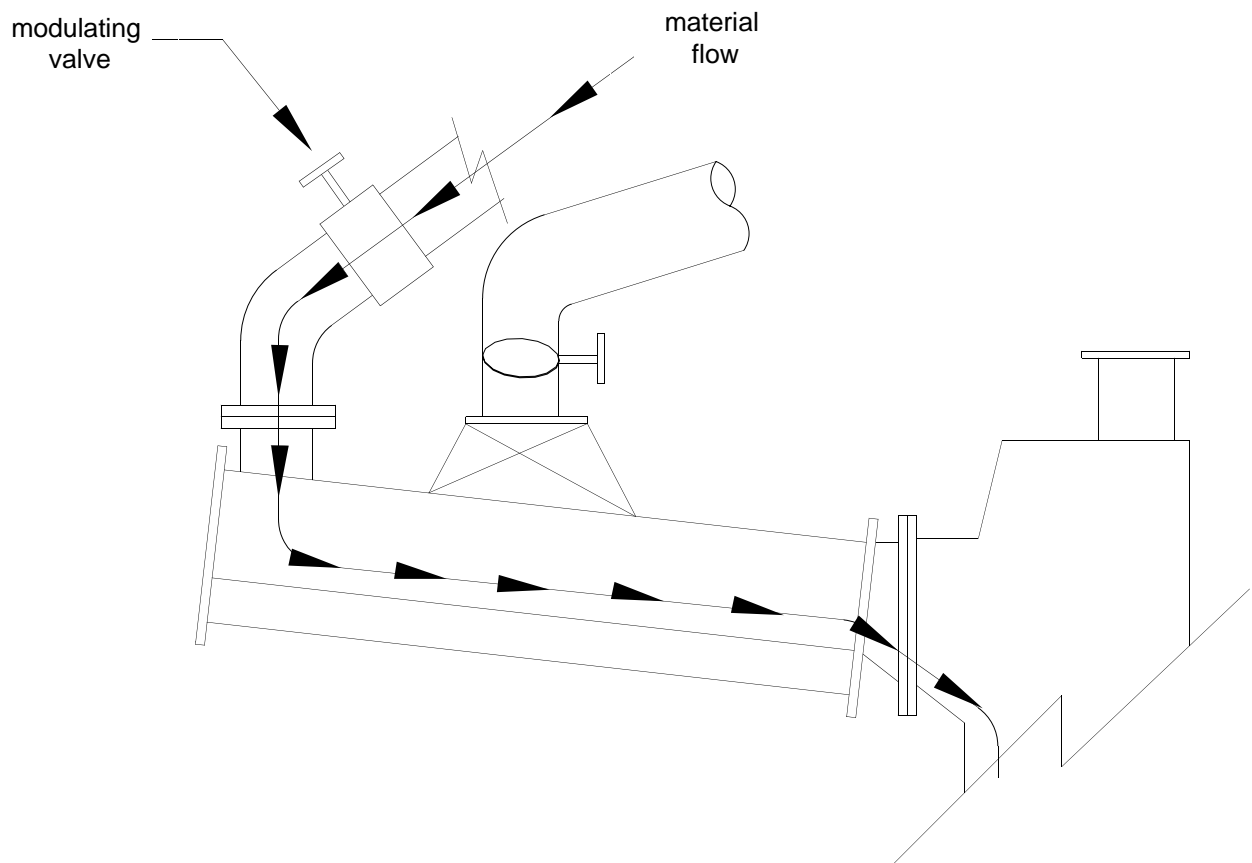
The flowmeter discharge chute must be of sufficient size to prevent material from backing up into the flowmeter.



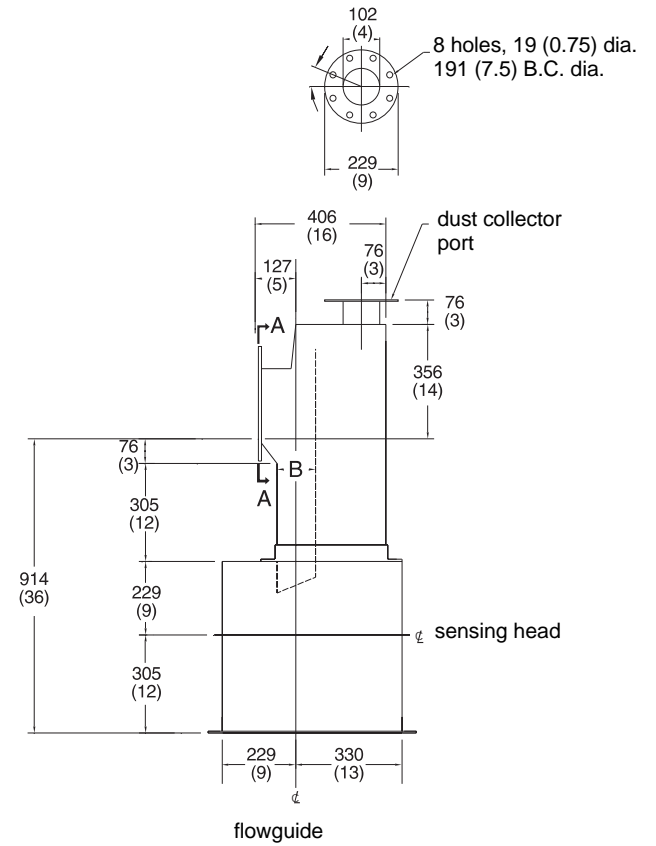
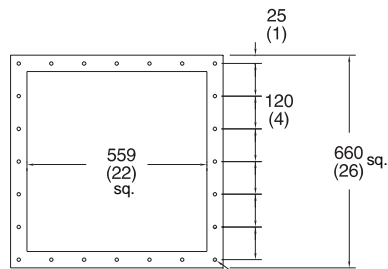
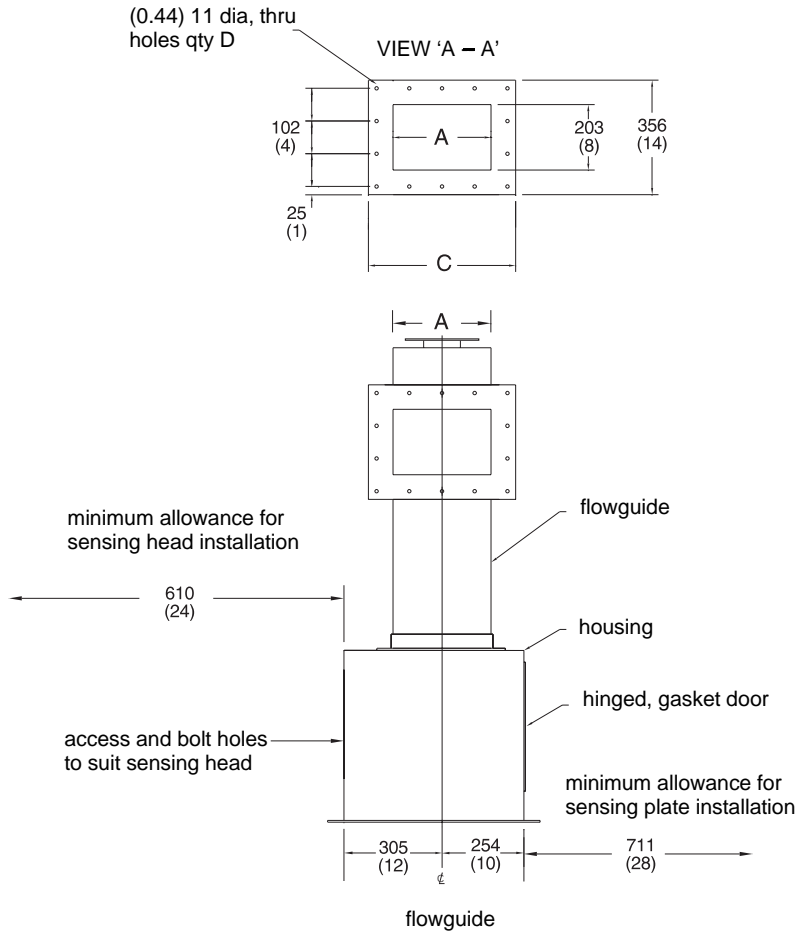
A mechanical or automatic modulating valve may be required for:

- » material flowrate control
- » pulsing conveyor infeed damping

If a modulating valve is used, reverse the direction of material flow after the valve and before the material enters the aerated gravity conveyor.



A-40 OUTLINE & MOUNTING

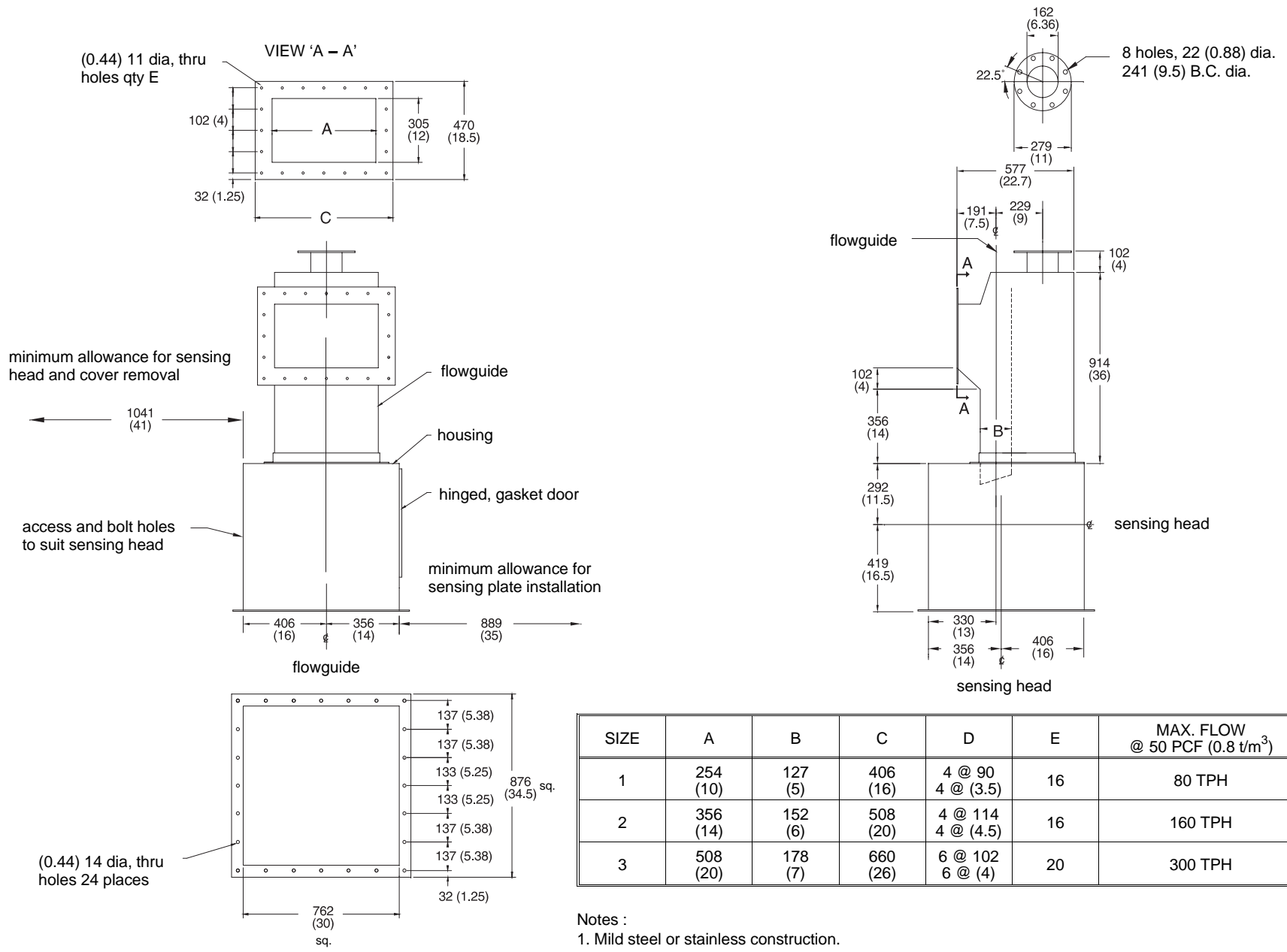


SIZE	A	B	C	D	MAX. FLOW @ 50 PCF (0.8 t/m ³)
1	203 (8)	76 (3)	356 (14)	12	20 TPH
2	305 (12)	102 (4)	457 (18)	14	40 TPH

- Notes :
1. Mild steel or stainless construction.
 2. Sensing head support should be rigid and independent of housing.
 3. All dimensions in millimeters () denotes dimensions in inches.

Fig. 1

A-300 OUTLINE & MOUNTING



SIZE	A	B	C	D	E	MAX. FLOW @ 50 PCF (0.8 t/m ³)
1	254 (10)	127 (5)	406 (16)	4 @ 90 4 @ (3.5)	16	80 TPH
2	356 (14)	152 (6)	508 (20)	4 @ 114 4 @ (4.5)	16	160 TPH
3	508 (20)	178 (7)	660 (26)	6 @ 102 6 @ (4)	20	300 TPH

- Notes :
1. Mild steel or stainless construction.
 2. Sensing head support should be rigid and independent of housing.
 3. All dimensions in millimeters () denotes dimensions in inches.

Fig. 2