



**ATM: Acoustic Tube Mount**



**ATM: ACOUSTIC TUBE MOUNT**  
for optimal attenuation of structureborne noise,  
vibrations and shock

**ATM is a registered trade mark**

Date: Feb. 2004

S2T Sebert Trillingstechniek B.V. Weg en Land 18 2661 DB Bergschenhoek NL	Tel. no.: +31-10-5240606 Fax no.: +31-10-5240605 E-mail: info@sebert.nl Chamber of Comm. Rotterdam no.: 24346465	Bank: Rabobank - Bergschenhoek NL Bankaccount: 1076.74.467 VAT no.: NL8121.08.553.B01
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## **CHARACTERISTICS**

- A few models cover a wide range of pipe sizes.
- Optimal attenuation of structureborne noise and vibrations.
- Well proven design in full service.
- No additional mounting parts needed.
- Meet all known shock specifications.
- Minimal installation or other error possibilities.
- Non-magnetic.
- Oil, grease and solvent resistant polymer.
- High temperature resistant.

The above advantages reduce cost for spare parts and logistics.

## **AVAILABLE TYPES**

### **Standard series:**

ATM 0610 tube diameters: 6 – 10 mm  
ATM 1015 tube diameters: 11 – 15 mm  
ATM 1520 tube diameters: 16 – 20 mm  
ATM 2025 tube diameters: 21 – 25 mm  
ATM 2530 tube diameters: 26 – 30 mm  
ATM 3035 tube diameters: 31 – 35 mm  
ATM 3545 tube diameters: 36 – 45 mm  
ATM 4560 tube diameters: 46 – 60 mm  
ATM 6580 tube diameters: 65 – 80 mm

### **Customised series:**

- ATMs with diameters up to 400 mm have been realised.
- Standard, non-standard and tailor made pipe clamps are possible.
- CAD- and CIM-technologies allow very short delivery time.
- ATMs can be adjusted to fulfil your requirements and wishes.

### **Various types:**

ATM .... CC: square version for minimal space (= standard).  
ATM .... : special version on request.

On request other versions can be easily made available. Due to CAD and CIM-technology, the shape and size of the ATM can be adjusted to the customer's wish. However, the noise, vibration and also the shock performances can be impaired. Requirements with respect to these aspects shall be discussed prior to production.

### **Materials:**

Polymer part: Perbunan 55 ± 5° Shore A.  
Clamp: Stainless steel material no. 1.4571.

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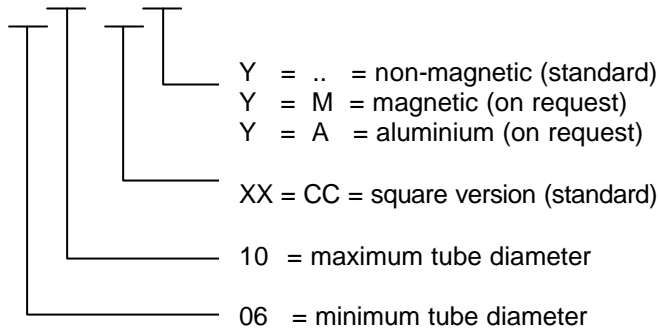
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## ORDER INFORMATION

ATM 0610 XX Y



Examples for ordering:

- You want to order an ATM for a 2" pipe, non-magnetic. The ATM 4560 meets your requirements, because 2" = 50,8 mm.  
Your order reference is: ATM 4560 CC.
- You want to order an ATM for a 0,5" pipe, no need for non-magnetic and circle version. The ATM 1015 meets your requirements, because 0,5" = 12,7 mm.  
Your order reference is: ATM 1015 C M.

## MEASUREMENTS

Various tests have proven the excellent performance of the ATMs. See test results on pages 6 and 7 of measurements carried out in our facility at Kirchheim.

The German Navy uses ATMs for all pipe systems transmitting structureborne noise of machinery.


Measurements on ships show that the structure- and airborne noise and under water radiated noise are reduced significantly. See the enclosed test results of MTG, Hamburg (pages 4 and 5). Be aware that the levels

shown in the graph include all structureborne noise of the ship in full service.

Prof. Dr. Ing. Stühler of the Institute of Mechanical Engineering and Vibration control (IMCVC) of Berlin has carried out extensive tests on ATMs. He has also compared their performance with other available tube mounts. These tests clearly show the superior noise attenuation performance of ATMs.

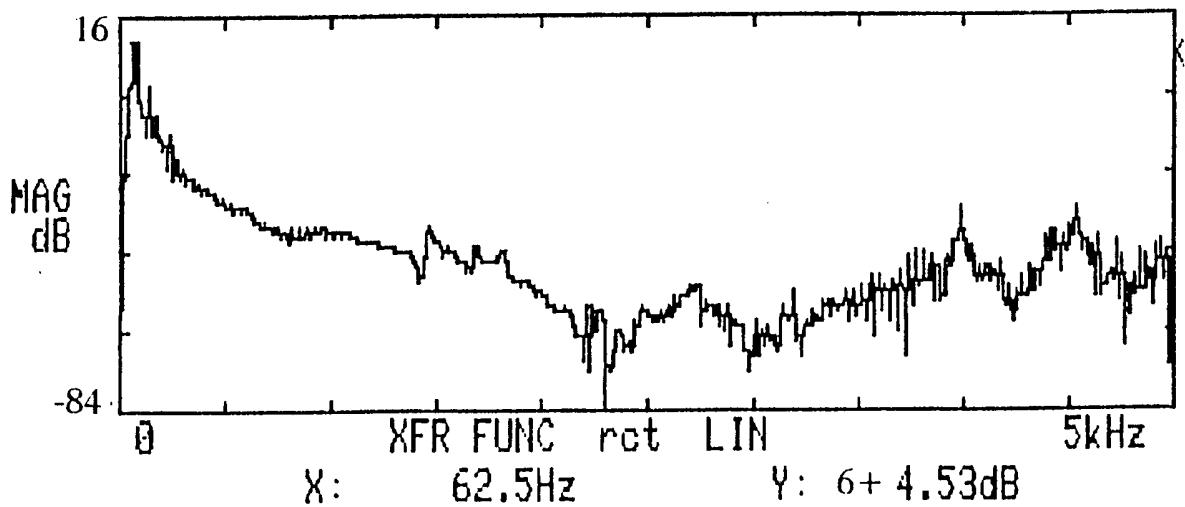
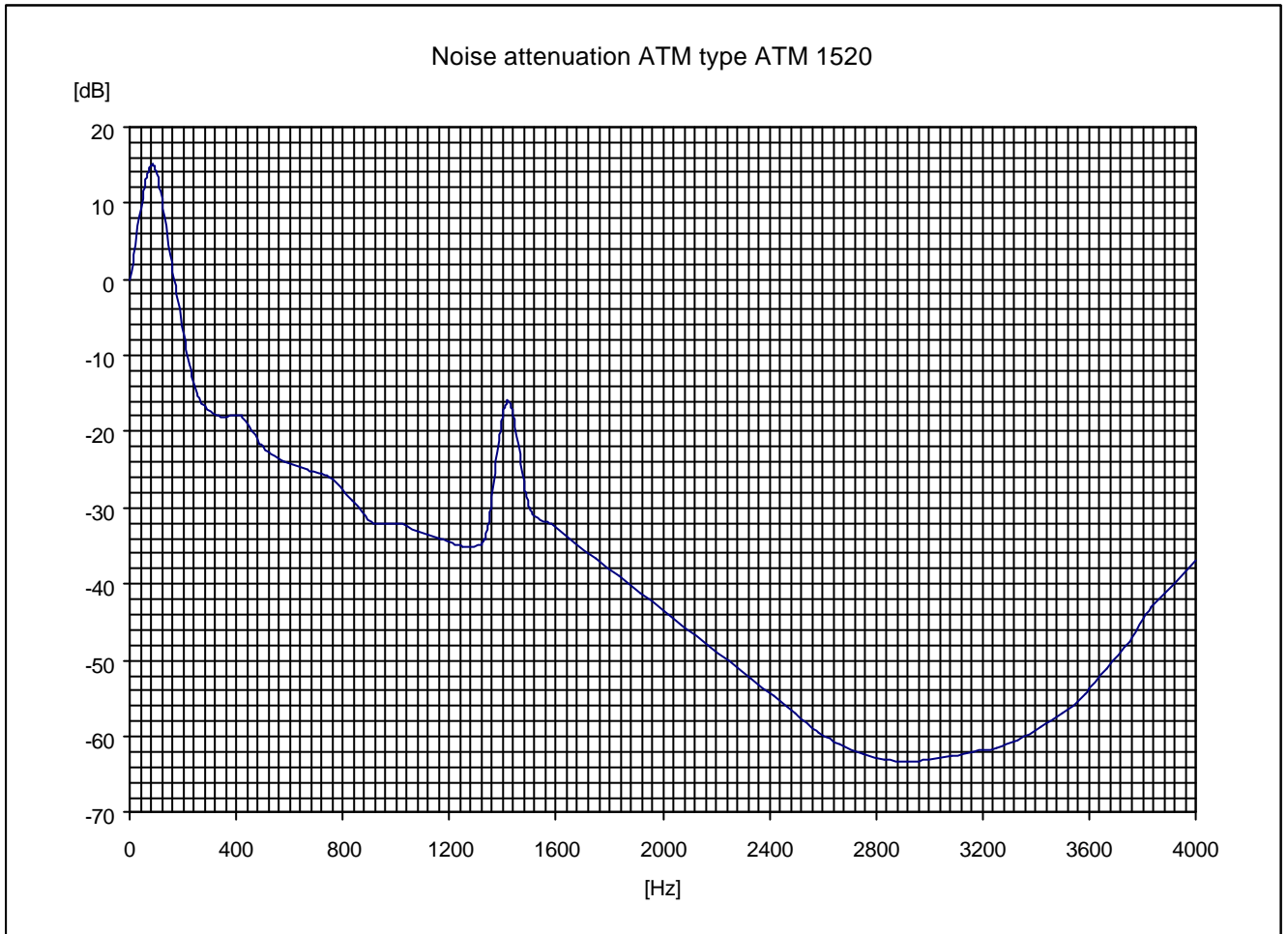
The insertion loss shown in the graph and the frequency response curve on the next page are some of the IMCVC's test results.

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**MTG Marinetechnik GmbH**

**MTG**

Wandsbeker Königstrasse 62 D-22041 Hamburg

## Structureborne Noise Measurements

of

ATM Mounts

for

Fuel line system

EDIMOT

– on board conditions –

( ship in full service )

**MTG**

### ATM Mounts

Level of Body Structure Noise Velocity

Stb-Side category 111 fuel line EDIMOT 1111

full speed :  $N_{Mot} = 1030 \text{ min}^{-1}$  ;  $N_{Wave} = 203 \text{ min}^{-1}$

————— MP101 on fuel line beside ATM mount at bulkhead III/IV

----- MP 102 on bulkhead III/IV beside ATM mount  
(including structureborne noise from the ship in full service)

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## ATM: Acoustic Tube Mount

ATM – Rohrlager

Körperschallepegel

Stb-Seite Abt. 111 Kraftstoffleitung EDIMOT 1111

Freifahrt:  $n_{\text{mot}} = 1030 \text{ min}^{-1}$  ;  $n_{\text{welle}} = 203 \text{ min}^{-1}$



—— MP 101 auf Kraftstoffleitung neben ATM-Rohrlager am Schott III / IV

- - - - MP 102 auf Schott III / IV neben ATM-Rohrlager  
(Einschliesslich Störschall aus Schiffstechnik)

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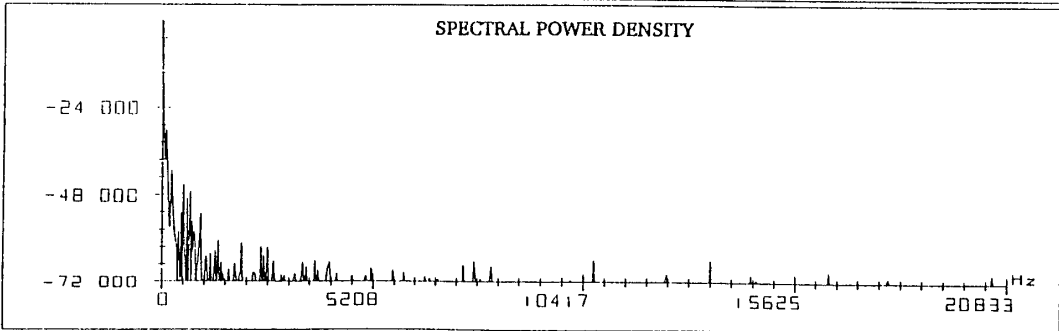
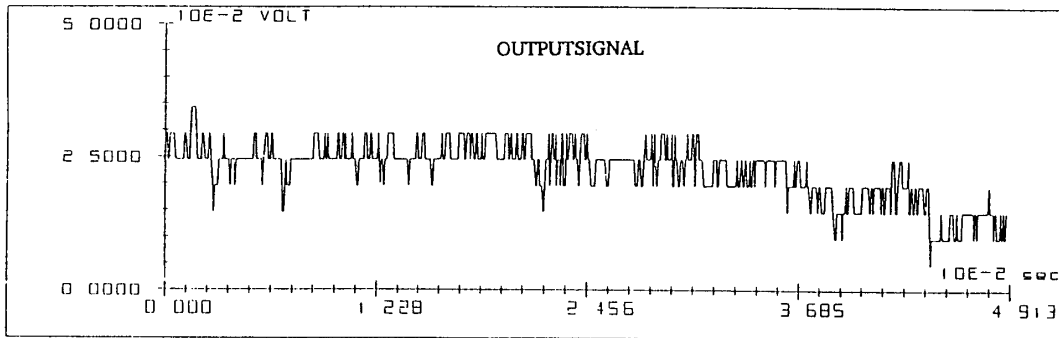
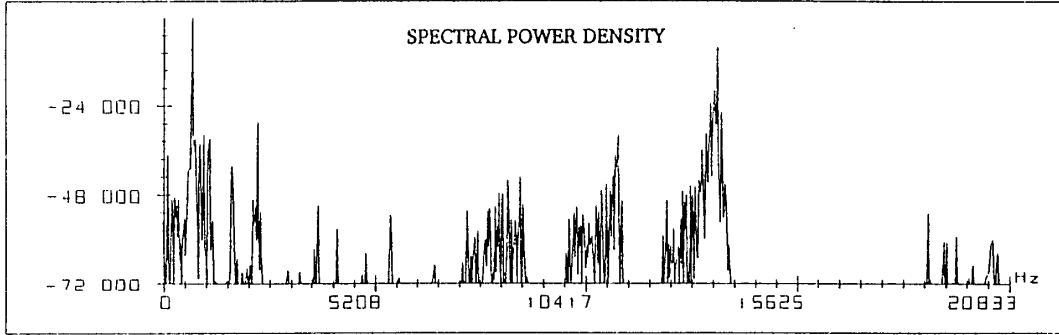
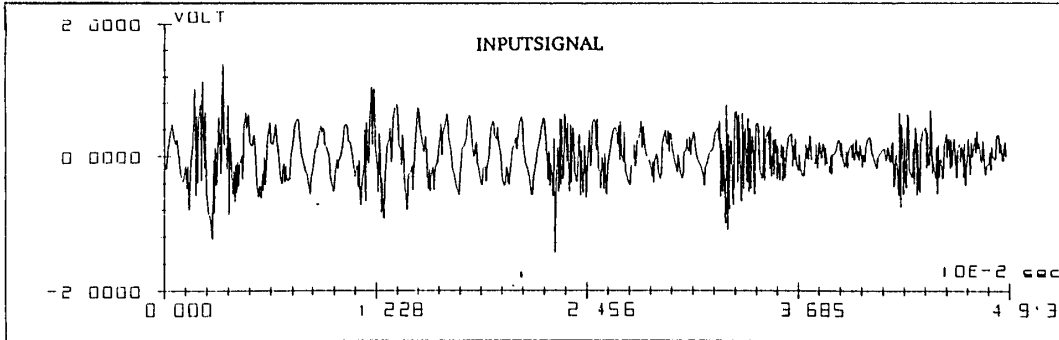
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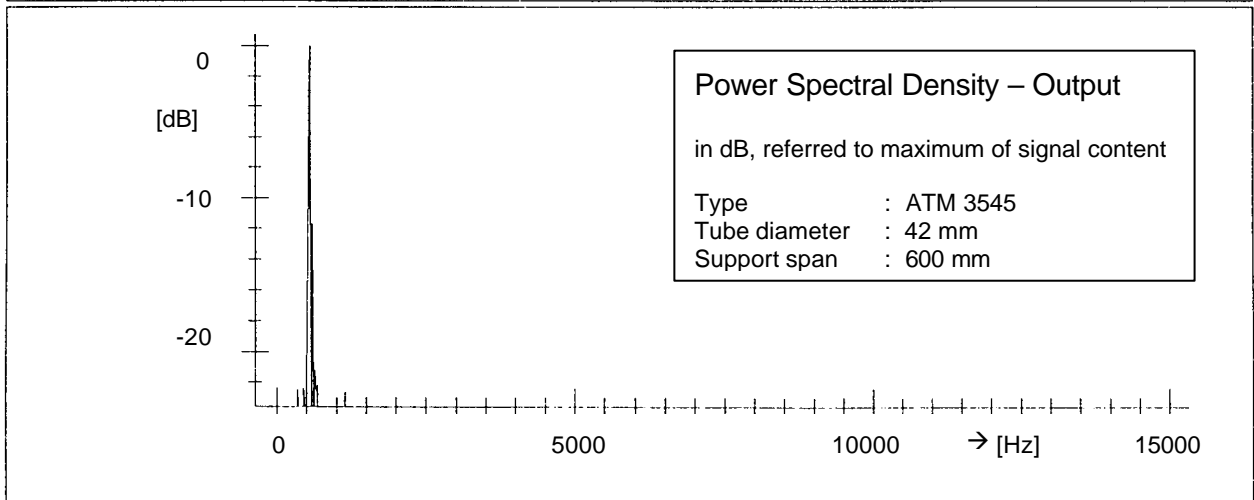
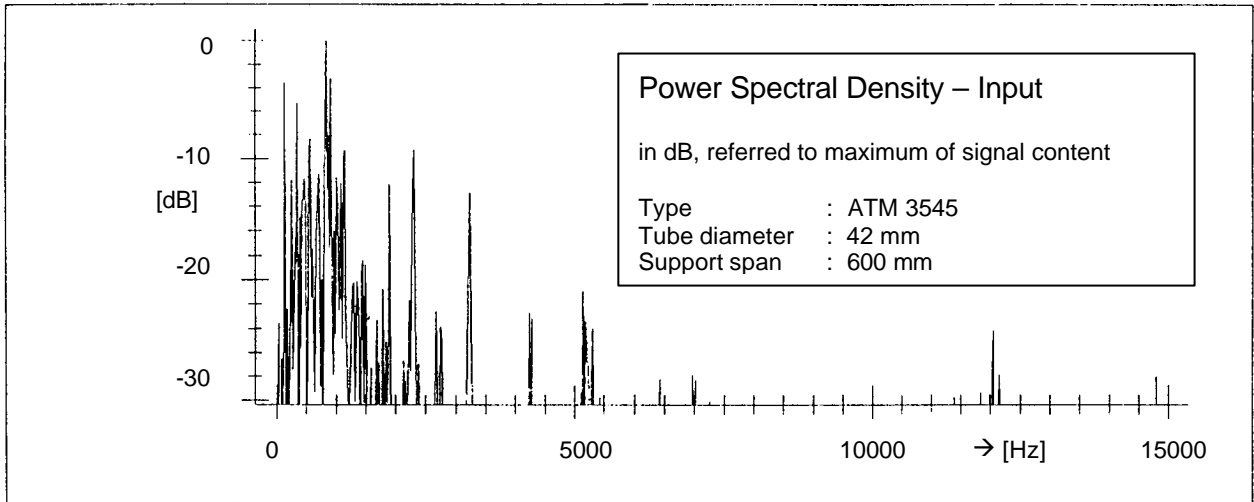
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### APPLICATION

- The ATMs are designed for simple installation and in general without maintenance.
- The ATM's (stainless) steel clamp or housing shall not be loaded by bending moments.
- The support span for the ATM varies with the pipe diameter and is calculated with the following formulae: support span  $150 \times D$ . In which  $D$  = the average diameter of the ATM type.
- In principle, for shock application the support span shall be 600 mm. However, this is subject to the required shock motion, the allowable free sway space and allowable stresses
- To achieve the highest possible insertion loss, ATMs shall be positioned on stiff ship' structures. I.e. not on deck-, bulkhead- or hull- plating, but only on stiffeners.

### INSTALLATION

- For shock there must be enough free sway space in radial direction of the pipe. At elbows or bends this free sway space remains equal at right angles to the pipe's centre line. The sway space required depends on the shock load. In principle the free sway space around the pipe shall be at least:  $S = 0,5 \times (F - A)$ . For  $F$  and  $A$  see dimensions of ATM.
- For standard applications (no shock requirements), the free sway space depends on the vibration excitation by the ship and/or machinery, the vibrational behaviour of the pipe system and the static load on the ATM. Some amplification can occur due to the ship or machinery's excitation. The possible related pipe deflection might range between 3 – 8 mm.
- For installation take the rubber part out of the clamp and slide it over the pipe.
- The opening in the rubber part shall always be orientated downwards. Also when mounting the ATM underneath a deck.
- Position the rubber parts at the correct support span and opposite the (two) holes in the structure to which the ATM will be mounted.
- Slide the steel clamp over the rubber.
- Bolt the ATM to the structure always using both mounting holes.

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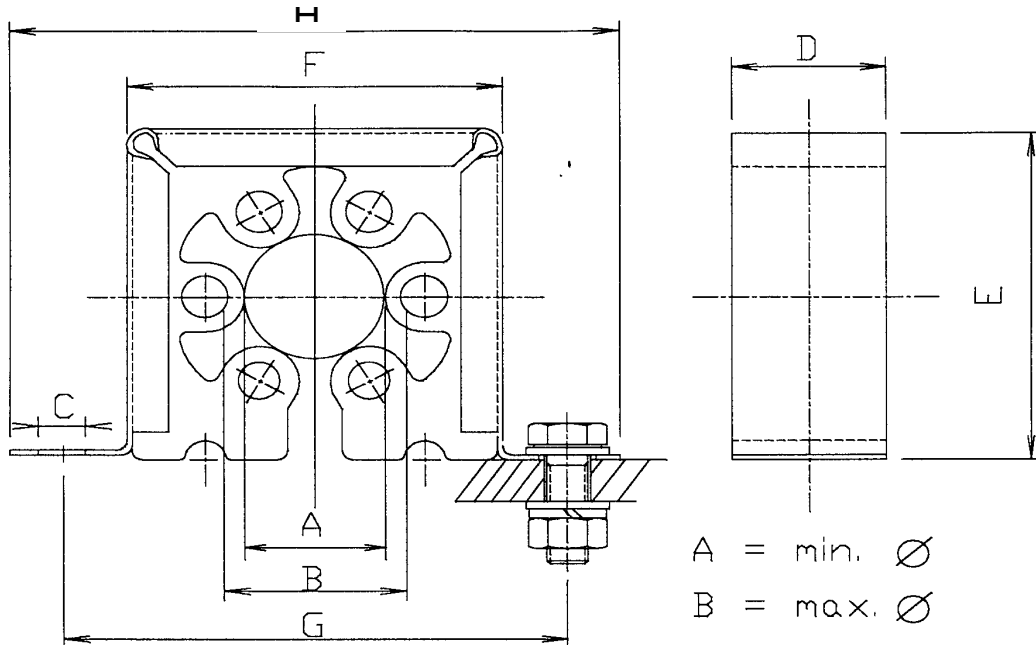
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### DIMENSIONS AND WEIGHTS



Type	A	B	C	D	E	F	G	H	Span *) Normal [mm]	Span Shock [mm]	Weight (g)
ATM 0610	6	10	6,6	18	25	27	42	57	600	600	30
ATM 1015	10	15	6,6	18	34	36	48	60	600	600	37
ATM 1520	15	20	6,6	23	40	42	60	72	625	600	60
ATM 2025	20	25	9	27	54	56	77	96	700	600	120
ATM 2530	25	30	9	27	60	62	84	102	750	600	125
ATM 3035	30	35	9	33	70	73	97	117	850	600	360
ATM 3545	35	45	11	38	85	88	112	134	950	600	382
ATM 4560	45	60	13	50	110	113	142	170	1100	600	700
ATM 6580	65	80	13	65	162	164	203	238	1300	600	1500

\*) Not final. Stiffness measurements not yet analysed in detail.

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