

Contactless Measurements

Shielding for Rod Source



*with steel shell
and lockable
useful beam*

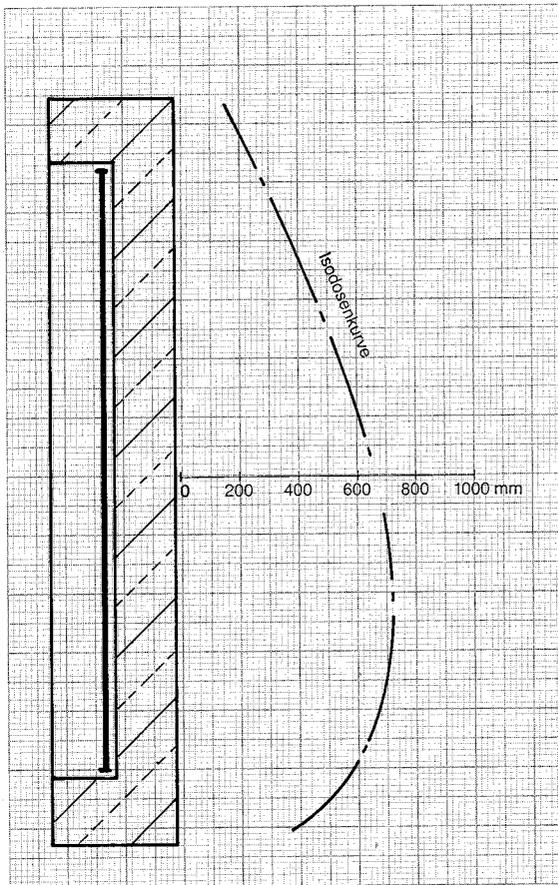
Description

The shielding is constructed out of a lead cylinder which is tightly surrounded by a steel shell. A channel for the useful beam in the lead cylinder opens for an angle of approx. 10°. The cylinder can be rotated in a stable mounting frame. With a lever the cylinder can be turned by 90° facing an additional shielding in the frame to shield the useful beam of radiation during transport or for other internal reasons. The final positions „ON“ and „OFF“ can be secured by a padlock.

On the top of the shielding cylinder there is a cap screwed on, which is sealed by an O-ring. The cap can be removed when installing the source. Within the shielding the rod source is guided in an additional pipe. Due to this installation the source is protected, in a safe and stable way, against mechanical and other environmental influences.

Due to the steel housing, the shielding is also in case of a fire with temperatu-

res of more than 300° C, protected reliably against flow out of the lead filling; so that the shielding effect cannot get lost even with temperatures of more than 1000° C.



Shielding
with, rod source

Construction

The length of the shielding is adapted to the length of the source, which is designed according to the length of the desired measuring range. Due to several sizes with different shielding effects, it is possible to find a favourable adaption to the source activity when considering the legal radiation protection regulations or special request by the customer. The technical data of the different versions are listed in the table below. Due to the special activity distribution along the rod sources, the vertical isodose curve will take an unsymmetrical form, whereby the point of the highest dose rate ist situated in the lower half of the total length. This unfavourable point is taken into consideration with all dose rate indications. The horizontal isodose curve runs circular around the shielding except in the direction of the useful beam.

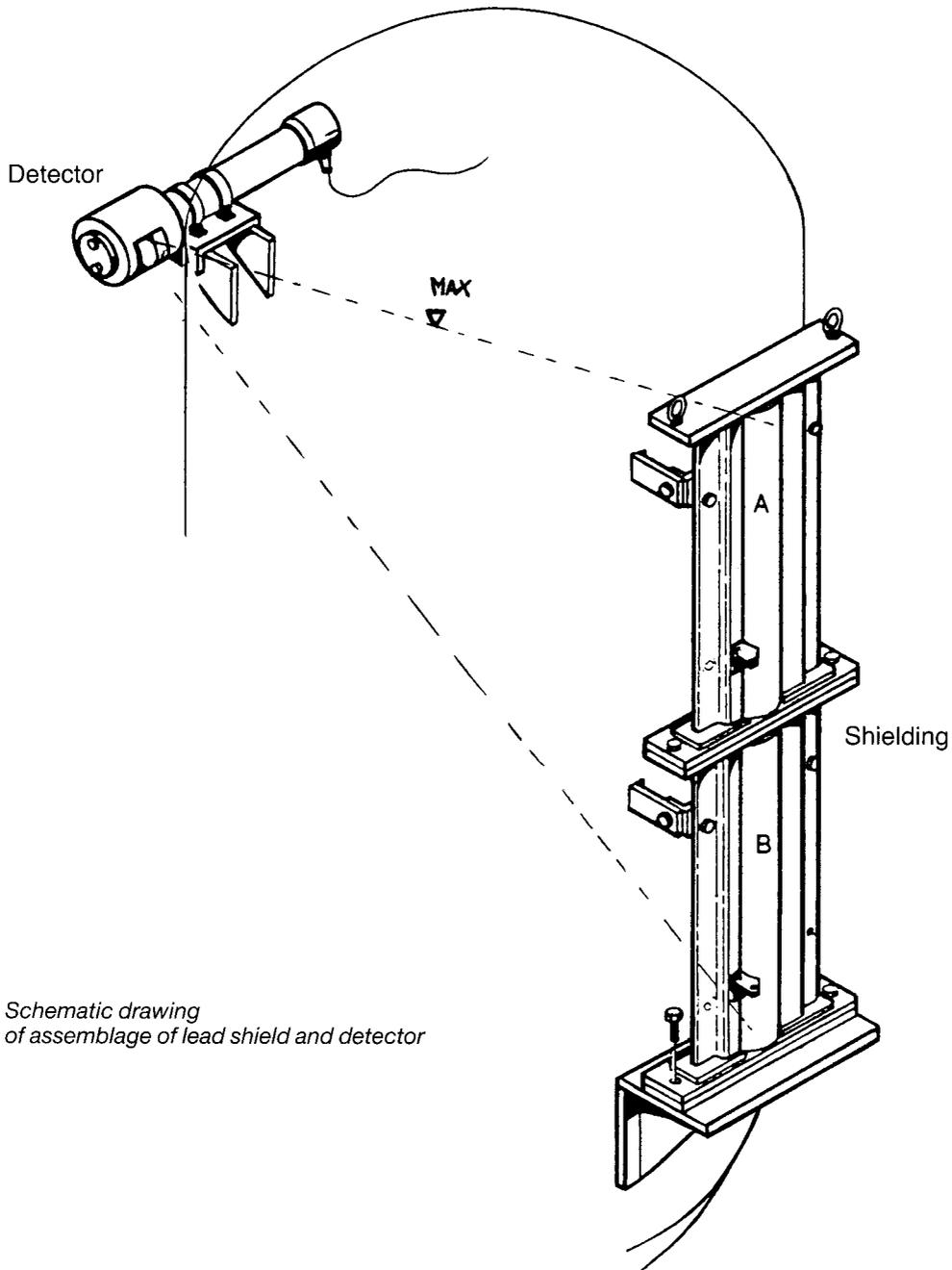
Technical Data

Typ Dia	shielding thickness mm Pb	weakening factor for ⁶⁰ Co	weigth (approx.) kg/m	drawing no.
80	34	~ 5	95	21156.000-000
100	44	~ 9	126	21157.000-000
120	54	~ 15	182	21158.000-000
150	69	~ 40	291	21159.000-000
200	94	~ 170	447	21160.000-000
270	124	~1000	786	21161.000-000

Installation

The installation of the shielding can be done on a pedestal or bracked as near as possible to the surface of the container or the heat insulation. Furthermore, on the left and the right side of the frame of the shielding a fence or perforated plates can be installed which protect against unintended reaching inside the useful beam of radiation. For measuring ranges of more than 1m a multiparted shielding is used, whereby the individual parts are stapled one on top of the other and

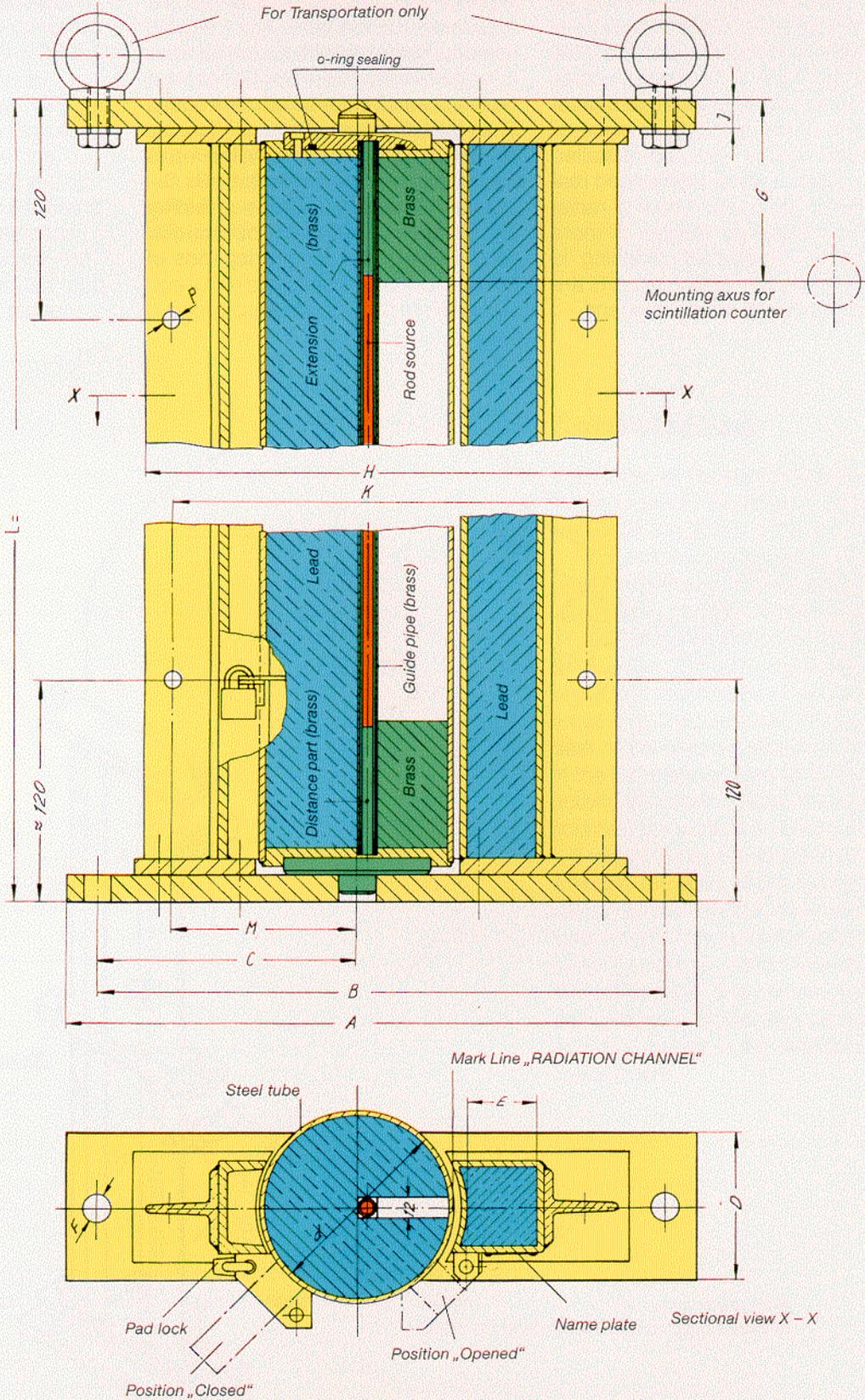
screwed together. Each part should be supported on the side. For irregular container forms shieldings can also be arranged on an angle. Specially linked brackets can be delivered on request. The identification of the individual shielding parts is made from the top to the bottom with the letters A, B, C... etc. The dimensions of the shielding can be taken from the dimensional drawing whereby the length depends of the application.



*Schematic drawing
of assemblage of lead shield and detector*

Shielding for rod source

Dimensions in mm



MØ	80	100	120	150	200	270
P	11,5	11,5	11,5	14	14	14
M=	90	100	120	150	180	222,5
K=	205	225	268	334	402	502
J	15	15	20	20	25	25
H	235	255	310	375	450	545
G	93	107	128	147	184	207
F	14	14	18	18	25	26
E	41	41	47	65	75	100
D	80	80	80	100	120	125
C	130	140	165	195	235	230
B	285	305	360	425	510	510
A	320	340	400	465	560	580
d	80	100	119	150	190	254

Design modifications may occur without notice.

