



**X-Ray Protective Clothing & Accessories**  
in the Field of Medical Radiation

**MAVIG**

# TRADITION AND INNOVATION



1921



1960



1972



1985

For over 90 years, MAVIG has been the specialist in personal protection at workplaces exposed to risk.

What began in Leipzig in 1921 with the production of protective products for X-rays and welding has now become an internationally successful company with an excellent reputation in the field of radiation protection and medical suspension systems for hospitals and medical practices.

Production grew steadily in the decades that followed the founding of the company. Protective products for X-rays and welding were successfully marketed all over the world under the MAVIG® trademark. In the post-war years, the company's headquarters and production facilities were relocated to Munich.

The family-run company "MAVIG" has always maintained the principles of a modern company:  
"The customer and customer satisfaction are the top priority".

1999 - The product name "MAVIG" also became the company name.

Since 2006, MAVIG has also been developing and distributing the world's first confocal laser scan microscope for use at the practice, VivaScope®. For the first time, "in vivo" optical biopsies of the skin are possible in real time.

*MAVIG is 100% independent and owner-managed.*

**MAVIG**  
Today



## Quality Management

The intended use of our products requires maximum reliability and quality.

To ensure this high level of quality and to make optimum use of improvement potential, MAVIG applies a consistent quality management system in accordance with

### DIN EN ISO 13485:2012

for medical devices. Our top priority is to provide our customers with high-quality products that are free of defects and delivered on time.

## Certifications

MAVIG products are designed, manufactured and distributed in strict observance of all laws, regulations, and standards.

Every product is tested for its safety and reliability, in some cases applying higher and stricter requirements than are specified by law.

Personal protective equipment for the user (PPE) is subject to European Directive 89/686/EEC (CE0123) and protective X-ray clothing for the patient is subject to European Directive 93/42/EEC (CE).

MAVIG is certified in accordance with DIN EN ISO 13485:2012. All MAVIG products are CE marked: EU Directive 89/686/EEC for personal protective equipment and 93/42/EEC for medical devices. Most products are UL listed. In addition, we have numerous international certificates.

Tradition and Innovation		02
<b>Index</b>		<b>03</b>
CE Mark, DIN EN 61331-1, DIN EN 61331-3		04-05
Material – Radiation Protection Inlay		06
Material – ComforTex® Outer Cover		07
<b>RA</b>	<b>X-Ray Protection for Health Care Staff</b>	<b>08-29</b>
	Vest & Skirt for Allround Protection	BALANCE RA631 08-09
	Coat for Allround Protection	SYNERGY RA632 10-11
	Front Protection Apron	BASIC RA640 12-13
	Front Protection Apron for Seated Activities	EXTENDED RA641 14-15
	Front Protection Apron	ERGONOMIC RA650 16-17
	Front Protection Apron	COMFORT RA660 18-19
	Thyroid and Sternum Shield	RA614 20
	Sleeves, Breast Pocket, Embroidery	21
	X-Ray Protection for the Skull	RA610, RA611 & RA612 22-23
<b>HS</b>	X-Ray Protective Gloves	HS100 24-25
<b>BR</b>	X-Ray Protection for the Eyes	26-27
<b>ST</b>	Radiation Protective Drapes	ST-FS5AMM & ST-RZ5AMM 28
<b>AS</b>	Radiation Protective Drapes	AS100 29
<b>RP</b>	<b>X-Ray Protection for the Patient</b>	<b>30-43</b>
	Patient Shield	RP648 & RP689 30
	Gonad Apron	RP643 31
	Children's Apron	RP664 32-33
	Children's Coat	RP668 34-35
	Ovary Shield with Belt	RP679 36
	Ovary Shield	RP278 37
	Testicle Shield	RP276 & RP280 37
	Children Testicle Shield Set	RP276-S 38
	Gonad Protection Pants Set	RP274 38
	Mammary Gland Shield	RP271 & RP270 39
<b>RD</b>	Panoramic Dental X-Ray Apron	RD635 40
	Patient's Dental X-Ray Apron	RD642 41
	Dental X-Ray Apron with Thyroid Shield	RD644 42
	Thyroid Shield for Patients	RD614 43
<b>AW</b>	Storage Systems for X-Ray Protective Clothing	AW Systems 44-47
<b>AZ</b>	Single Layer Lead Rubber	AZ187 48
	Scatter Grids	49
	Measurement Sheet for X-Ray Protective Clothing	51

**"Made in Germany" since 1921 – International – From Munich to the World**







### **CE Mark for Personal Protective Equipment (PPE)**

X-ray protective clothing for personnel applying radiation falls under the legally binding EU Directive 89/686/EEC for personal protective equipment (PPE).



Please always check whether the product that you plan on using is marked correctly!

The familiar CE symbol alone is not sufficient; the four-digit registration number issued by the authorized certification agency (notified body) also has to be stated.

Naturally, all MAVIG products are correctly certified. With us, you "play it safe" in every respect.

**CE 0123**

# UPDATE

## Since July 1<sup>st</sup>, 2017, also for Europe Update: DIN EN 61331-1:2016

DIN EN 61331-1:2016 (IEC 61331-1:2014) describes the correct determination of the shielding properties of materials used in protection against radiation.

One of the new parts is the introduction of inverse broad beam geometry, which is also able to detect any fluorescence radiation that may occur. This may happen if lead-reduced or lead-free radiation protection materials are used.

Since this low-energy type of radiation is biologically very active and can pose a risk to the user, the new standard is of great importance.

Furthermore, it is obligatory for every manufacturer to prove the protective effect of the apron over the entire X-ray tube voltage range of 50 kV to 110 kV and/or 150 kV. This is necessary because the protective effect shows a clear decrease at the lower and upper end of the X-ray tube voltage range, especially in the case of lead-reduced or lead-free protective materials.

For manufacturing X-ray protective clothing, MAVIG uses only radiation protective materials which are classified according to this standard. MAVIG has already been meeting these requirements since 2009, as comparable requirements were already described in DIN 6857-1.

## In Accordance with the Standard Update: DIN EN 61331-3:2016

Part 3 of the DIN EN 61331 series of standards deals with the design of X-ray protective clothing. Here too, important innovations have been added as of July 1<sup>st</sup>, 2017.

**NEW:** In order to protect the sides of the body as well, the front area of the protective clothing must now cover 60% of the user's body circumference at its widest point.

Sophisticated weight-distributing mechanisms are therefore even more important, as the aprons will consequently have an altered overall weight.

Furthermore, the new DIN EN 61331-3:2016 (IEC 61331-3:2014) requires more transparency concerning the properties of the radiation protective material used. The weight per unit area must now be specified on the apron so that a comparison of the protective clothing is easier for the user.

But caution is advised: A slightly heavier apron might be able to offer greater wearing comfort thanks to clever design and weight distribution.

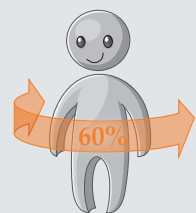
In addition, the aprons have to be correlated to the body measurements, so that it is easier to select the appropriate apron without the need to try them on. (see table)

In order to meet these new requirements, MAVIG X-ray protective clothing has been further enhanced and additionally optimised to ideally fit the user.

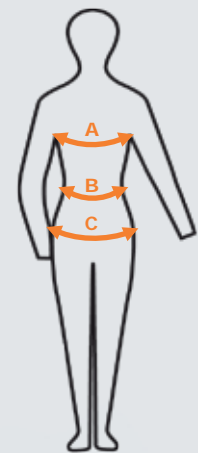
Thus, we continue to offer you the usual comfort, comprehensive radiation protection, and absolute compliance with the applicable standards.

## Size Determination According to the Updated Standard

Radiation protective clothing must be chosen in such a way that the width of front protective aprons or the width of the front area of the allround protective aprons covers 60% of the body circumference.



The circumference of the chest, waist, or hip, depending on which of the three dimensions is the greatest, is used for this purpose.



- A Chest girth
- B Waist girth
- C Hip girth

## Overview of the New Sizes\*<sup>1</sup> of the PPE Series, from 1<sup>st</sup> July 2017

RA631* <sup>2</sup>	XS	S	M	L	XL	XXL	3XL
Chest Girth	≤ 84 cm	85 - 95 cm	96 - 106 cm	107 - 117 cm	118 - 128 cm	129 - 139 cm	140 - 150 cm
Waist/Hip Girth	≤ 86 cm	87 - 97 cm	98 - 107 cm	108 - 118 cm	119 - 129 cm	130 - 140 cm	141 - 151 cm
RA632	XS	S	M	L	XL	XXL	3XL
Chest Girth	≤ 84 cm	85 - 95 cm	96 - 106 cm	107 - 117 cm	118 - 128 cm	129 - 139 cm	140 - 150 cm
Waist/Hip Girth	≤ 98 cm	99 - 108 cm	109 - 119 cm	120 - 130 cm	131 - 141 cm	142 - 152 cm	153 - 163 cm
RA640/RA641/RA650/RA660	XS	S	M	L	XL	XXL	3XL
Chest Girth	≤ 84 cm	85 - 95 cm	96 - 106 cm	107 - 117 cm	118 - 128 cm	129 - 139 cm	140 - 150 cm
Waist/Hip Girth	≤ 91 cm	92 - 102 cm	103 - 112 cm	113 - 123 cm	124 - 134 cm	135 - 145 cm	146 - 156 cm

\*<sup>1</sup> Please also note the recommended lengths, depending on your height.

The respective sizes and lengths in the series can be found on the following pages.

\*<sup>2</sup> In the case of model RA631, the sizes are separate for the vest and the skirt.

# RADIATION PROTECTIVE INLAY

## High Performance in Protection

The quality demands for X-ray protective clothing are now greater than ever. Wearing times of the protective clothing are extended by modern, radiologically supported procedures in diagnostics and treatment. The protection requirements differ depending on the intended use.

Our well-thought out product line allows us to offer you the technically mature and wide range of models that you can expect from us as an international market leader in the field of radiation protection. Two different protective materials are used to attenuate X-radiation. Each of the materials is optimally adapted to the required radiation protection at a minimum weight.

### Standard Lead Radiation Protective Material

With our standard lead material on a natural rubber base, we have maintained our leading position as a manufacturer of X-ray protective clothing for years. This high quality and flexible material offers you protection against radiation in accordance with IEC 61331-1:2014 / DIN EN 61331-1:2016 over the entire X-ray tube voltage range from 50 - 150 kV. Therefore, it is also suitable e.g. for CT applications.

### NovaLite® Radiation Protective Material

This first-class radiation protective material achieves outstanding results in terms of weight orientation and radiation protection properties. The NovaLite generation ensures that basic requirements of occupational physiology are met, especially in workplaces where X-ray protective clothing has to be worn for long periods of time.

And of course, here too: Radiation protection tested in accordance with IEC 61331-1:2014 / DIN EN 61331-1:2016 in the X-ray tube voltage range of 50 - 110 kV.

## Degree of Protection (and Area Weight) of MAVIG Radiation Protection Materials:

Standard Lead	Lead Equivalent	50 kV	70 kV	90 kV	110 kV	150 kV
(3.3 - 3.6 kg/m <sup>2</sup> )	0.25 mmPb	99 %	96 %	91 %	87 %	80 %
(4.6 - 5.2 kg/m <sup>2</sup> )	0.35 mmPb	> 99 %	98 %	95 %	92 %	87 %
(6.6 - 7.2 kg/m <sup>2</sup> )	0.50 mmPb	> 99 %	99 %	97 %	95 %	92 %
Novalite 0.25	Lead Equivalent	50 kV	70 kV	90 kV	110 kV	
(3.0 - 3.3 kg/m <sup>2</sup> )	0.25 mmPb	99 %	96 %	92 %	87 %	
Novalite 0.35	Lead Equivalent	50 kV	70 kV	90 kV	110 kV	
(4.3 - 4.9 kg/m <sup>2</sup> )	0.35 mmPb	> 99 %	98 %	95 %	91 %	
Novalite 0.50	Lead Equivalent	50 kV	70 kV	90 kV	110 kV	
(6.0 - 6.6 kg/m <sup>2</sup> )	0.50 mmPb	> 99 %	99 %	97 %	95 %	

*Through extensive research and testing, we ensure a healthy work environment for the users of our products, which are largely harmless in environmental and toxicological terms. This is achieved by the careful selection of the materials, as well as our suppliers, and strict controls in the production process.*



## ComforTex® HPMF Hybrid – A Reliable Outer Material With an Optimised Coating

In clinics hygienic demands are constantly growing. This means the requirements for X-ray protective clothing are also increasing, especially with regard to their resistance to chemicals.

The hybrid version of our ComforTex HPMF for X-ray protective clothing was developed in order to best meet your daily working needs. With our ComforTex HPMF Hybrid, we combine maximum comfort for the wearer with optimum hygiene and cleaning properties.

In order to maintain our exceptional level of wearer comfort, the side facing your body is still manufactured with ComforTex HPMF. At the same time, thanks to the new special coating of the hybrid material, the exterior surface has clearly improved hygiene and cleaning properties. For this reason, our hybrid material is particularly suitable in areas with high fluid volumes.

It goes without saying that ComforTex HPMF Hybrid, like a high-performance surgical textile, also fulfils the relevant requirements in accordance with DIN EN 13795:2013. This series of standards regulates important and sensible safety requirements for the quality of surgical textiles that is necessary in order to protect patients and staff from infections.

Just like our basic material ComforTex HPMF, the innovative ComforTex HPMF Hybrid offers safety and protection against electrostatic charges which can affect the proper function of sensitive medical devices.

From now on all aprons, costumes, and coats for medical personnel, as well as the thyroid protector (RA) are available with our new ComforTex HPMF Hybrid material.

## ComforTex® HPMF Robustness, Protection and Safety

Whether as the base material for our hybrid variant or as the entire surface of your X-ray protective clothing, our tried and tested ComforTex HPMF will, of course, remain the same.

ComforTex HPMF still fulfils all relevant requirements in accordance with DIN EN 13795:2013 and offers you maximum wearing comfort during the working day.

## Protection of Staff and Patients From Health Risks

The special properties of both of our materials provide a high degree of barrier protection, which prevents the penetration of infectious pathogens and their carrier media such as liquids and solid particles.

The development of MAVIG's innovative textiles has led to the following list of basic performance requirements:

- **High Barrier Function**
- **Absolute Cleanliness**
- **Low Particle Release**
- **Material Strength**

## Flexible Comfort for Users and Best Workmanship

Smoothness and flexibility are special features of MAVIG X-ray protective clothing.

To further optimise wearing comfort for the user, special attention is paid to superior cuts and excellent workmanship.

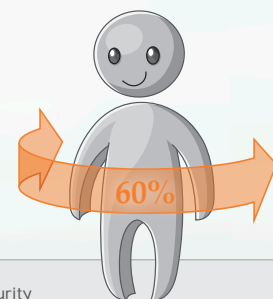
*A fresh look, a pleasant feel and comfort for the wearer are the first impressions of the current X-ray protection collection by MAVIG.*



Please note that for printing reasons, the colours in the photos may differ from the original colours of the products.

VEST & SKIRT FOR ALLROUND PROTECTION

## BALANCE RA631



X-ray protective clothing from MAVIG gives you the security of knowing that you comply with all applicable legal requirements.

This model complies with IEC 61331-1:2014 / DIN EN 61331-1:2016 and IEC 61331-3:2014 / DIN EN 61331-3:2016.

Naturally, MAVIG X-ray protective clothing also underwent the required prototype testing and certification in compliance with PPE 89/686/EEC (CE0123).



## BALANCE RA631

Allround optimum protection! The patented Balance RA631 series sees you through a safe and comfortable day.

Its special features differentiate this model significantly from other two-piece models.

Fully overlapping front panels achieve lead equivalent values of Pb 0.25 mm, Pb 0.35 mm, or 0.50 mm for the front and create the basis for the incredible wearing comfort of the Balance series, with its great weight distribution and a high degree of movement and flexibility.

The integrated, colour-contrast safety zones (ocean) guarantee ideal X-ray protection. They will give you the certainty of being optimally protected in all situations. In the side area, the vest and skirt each have an ample 12 cm wide double layer with the full lead equivalent. This is also the case in the sections of the shoulder area where the cut is designed as non-overlapping.

If the end of the front panel is within this clearly recognisable zone after putting on the protective clothing, you are covering the full 60% of the body circumference with the maximum protective value.

MAVIG X-ray protective materials achieve an outstanding rating in terms of weight and X-ray protection. Produced with the first-class X-ray protective material NovaLite, the apron ensures fulfilment of fundamental occupational health requirements for long wearing periods in radiological workplaces.

## Peace of Mind Through Safety

This statement distinguishes the BALANCE RA631 series more than one might think at first glance.

- Significantly reduced weight burden on the spinal column
- The two piece model allows better ventilation of body heat
- Ideal fit, maximum wearing comfort
- Shoulder pads as standard equipment

The skirt has a wide belt strap in addition to the high-quality hook & burr fastener. An elastic insert in the back part allows the user to hold his/her posture and can be easily replaced if necessary, thanks to a zipper. The upper width of the skirt can be varied by changing the size of the insert.



The belt strap supports without constriction and ensures an optimum, secure fit.

In the bottom area, the skirt is also secured with a snap buckle fastener.

### Back Relief

The elastic insert in the back of the skirt makes it easier for the user to keep his/her posture in daily routines.

### Free Movement

For greater freedom of movement, the skirt has a cut-out at the back.

Of course, the knees are still optimally protected at the front and sides.



### Overlapping Area

In order to ensure protection during movements (e.g. when bending), the vest has sufficient length and overlaps the skirt.

## Protective Material

- NovaLite or
- Standard Lead

## Lead Equivalent Values

Front, optionally: Pb 0.25 mm, Pb 0.35 mm, or Pb 0.50 mm  
(fully overlapping front pieces achieve the desired Pb value)  
Back generally: Pb 0.25 mm

## Outer Material / Colours

Optionally ComforTex® HPMF Hybrid or ComforTex® HPMF, available in the colours:

- Curacao
- Orchidee
- Regatta
- Indian Summer
- Limette
- Ocean
- Lagoon

## Sizes\*, recommended for:

- XS** Chest girth ≤ 84 cm  
Waist/hip girth ≤ 86 cm
- S** Chest girth approx. 85 - 95 cm  
Waist/hip girth approx. 87 - 97 cm
- M** Chest girth approx. 96 - 106 cm  
Waist/hip girth approx. 98 - 107 cm
- L** Chest girth approx. 107 - 117 cm  
Waist/hip girth approx. 108 - 118 cm
- XL** Chest girth approx. 118 - 128 cm  
Waist/hip girth approx. 119 - 129 cm
- XXL** Chest girth approx. 129 - 139 cm  
Waist/hip girth approx. 130 - 140 cm
- 3XL** Chest girth approx. 140 - 150 cm  
Waist/hip girth approx. 141 - 151 cm

\* As model RA631 consists of two pieces, the following applies: For the vest, the larger value of the chest and waist determines the size. For the skirt, the larger value of the waist and hip determines the size.

## Skirth Lengths, recommended height:

- 65 cm for approx. 150 - 170 cm
- 70 cm for approx. 170 - 180 cm
- 75 cm for approx. 180 - 190 cm
- 80 cm for approx. 190 - 200 cm

## Optional / On Request

**Sleeves** (page 21)

**Breast Pocket** (page 21)

**Embroidery** (page 21):

- on the breast pocket
- on permanently sewn-on border
- on detachable border

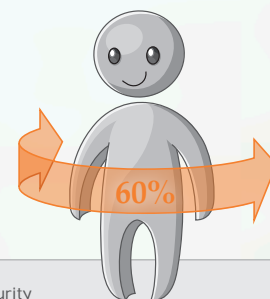
**Thyroid Protection** (page 20)

**Made-to-Measure Protection**  
(possible on an individual basis, see dimension sheet page 51)

**Replacement Stretch Insert**  
(adapted via zipper)

COAT FOR ALLROUND PROTECTION

## SYNERGY RA632



X-ray protective clothing from MAVIG gives you the security of knowing that you comply with all applicable legal requirements.

This model complies with IEC 61331-1:2014 / DIN EN 61331-1:2016 and IEC 61331-3:2014 / DIN EN 61331-3:2016.

Naturally, MAVIG X-ray protective clothing also underwent the required prototype testing and certification in compliance with PPE 89/686/EEC (CE0123).

## SYNERGY RA632 – Allround Protection

Heavy allround protection models lead to a considerable physical load on the user. This problem could be solved with the development of this X-ray protection coat - the patented Synergy RA632 series.

This special user comfort also includes being able to put on the apron comfortably and easily. The coat is simply closed at the chest with a hook & burr fastener and fits properly without any fuss.

The necessary front protection is provided from side seam to side seam by overlapping front panels. The RA632 series creates the required safety zones by a double-layer structure in the sensitive areas.

MAVIG X-ray protective materials achieve an outstanding rating in terms of weight and X-ray protection. Produced with the first-class X-ray protective material NovaLite, the apron ensures fulfilment of fundamental occupational health requirements for long wearing periods in radiological workplaces.

### Safety in the fit

Colour-contrast safety zones (ocean) give you the certainty of being optimally protected in all situations.

In the side area, the coat has an ample 12 cm wide double layer. This is also the case in the sections of the shoulder area where the cut is designed as non-overlapping.

If the end of the front panel is within this clearly recognisable zone after putting on the protective clothing, you are covering the full 60% of the body circumference with the maximum protective value.



## Back Relief par Excellence

An elastic belt (included) provides shoulder relief without any uncomfortable restriction. The variable snap fasteners strip permits each user to adjust the belt to his or her individual waist height. The belt can be buttoned onto the coat on one side or both sides.



In the bottom area, the coat is also secured with a snap buckle fastener.

Ideal protection against radiation, as we understand it, lets you tackle the daily routine unencumbered.

- Ideal fit, maximum comfort for the wearer
- Continuous support thanks to the wide elastic stretch belt (included)
- Shoulder pads as standard equipment



### Back relief

The elastic stretch belt makes it easier for you to keep your posture in daily routines.

### Free movement

For greater freedom of movement, the coat has a cut-out at the back.

Of course, the knees are still optimally protected at the front and sides.

### Protective Material

- Novalite

### Lead Equivalent Values

Front side, optionally: Pb 0.35 mm or Pb 0.50 mm  
(Fully overlapping front pieces achieve the desired Pb value)  
Back generally: Pb 0.25 mm

### Outer Material / Colours

Optionally ComforTex® HPMF Hybrid or ComforTex® HPMF, available in the colours:

- Curacao
- Orchidee
- Regatta
- Indian Summer
- Limette
- Ocean
- Lagoon

### Sizes\*, recommended for:

- XS** Chest girth ≤ 84 cm  
Waist/hip girth ≤ 98 cm
- S** Chest girth approx. 85 - 95 cm  
Waist/hip girth approx. 99 - 108 cm
- M** Chest girth approx. 96 - 106 cm  
Waist/hip girth approx. 109 - 119 cm
- L** Chest girth approx. 107 - 117 cm  
Waist/hip girth approx. 120 - 130 cm
- XL** Chest girth approx. 118 - 128 cm  
Waist/hip girth approx. 131 - 141 cm
- XXL** Chest girth approx. 129 - 139 cm  
Waist/hip girth approx. 142 - 152 cm
- 3XL** Chest girth approx. 140 - 150 cm  
Waist/hip girth approx. 153 - 163 cm

\* The size depends on the girth of the chest, waist, or hip, depending on which of the three measurements is the largest.

### Lengths, recommended height:

- 90 cm for approx. 150 - 160 cm
- 100 cm for approx. 160 - 170 cm
- 110 cm for approx. 170 - 180 cm
- 120 cm for approx. 175 - 190 cm
- 130 cm for approx. 185 - 195 cm
- 140 cm for approx. 195 - 205 cm

### Optional / On Request

**Sleeves** (page 21)

**Breast Pocket** (page 21)

**Embroidery** (page 21):

- on the breast pocket
- on permanently sewn-on border
- on detachable border

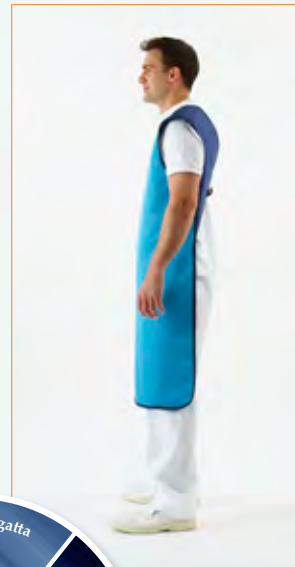
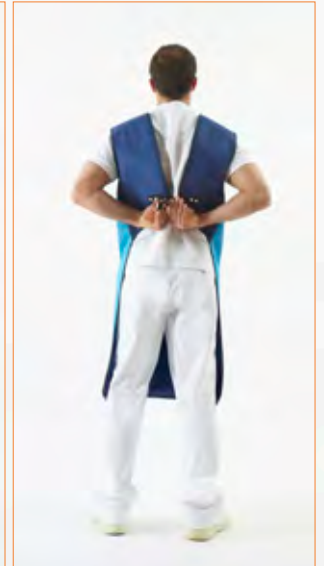
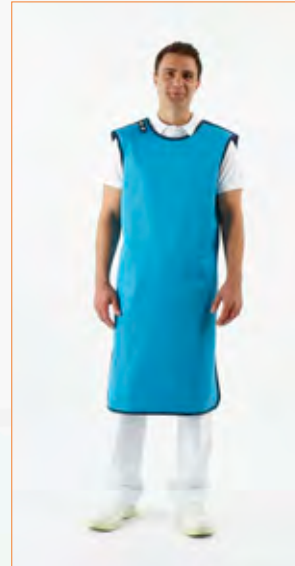
**Thyroid Protection** (page 20)

**Made-to-Measure Protection**  
(possible on an individual basis, see dimension sheet page 51)

**Replacement Stretch Belt**  
(adapted via snap fastener)



## BASIC RA640



X-ray protective clothing from MAVIG gives you the security of knowing that you comply with all applicable legal requirements.

This model complies with IEC 61331-1:2014 / DIN EN 61331-1:2016 and IEC 61331-3:2014 / DIN EN 61331-3:2016.

Naturally, MAVIG X-ray protective clothing also underwent the required prototype testing and certification in compliance with PPE 89/686/EEC (CE0123).

## BASIC RA640

The classic Basic RA640 model has proved itself over many years and is normally worn as front protection for short and occasional periods during conventional X-ray without fluoroscopy.

The front protection apron is also suitable as protective clothing for people accompanying the patient. The line of the cut takes into account all of the requirements of conventional radiology.

For the manufacturing of RA640 basic aprons we only use high-quality, flexible standard lead material.

It goes without saying that all aprons have flawless radiation protection properties and comply with the updated series of standards DIN EN 61331:2016 / IEC 61331:2014.

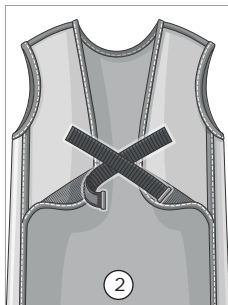
The RA640 is now equipped with shoulder pads as standard for optimised comfort.

### You can Decide ...

We offer different closure systems for this series of aprons. Choose your favourite:



**Snap Fasteners**  
Elastic band with snap fasteners for closing at the back.



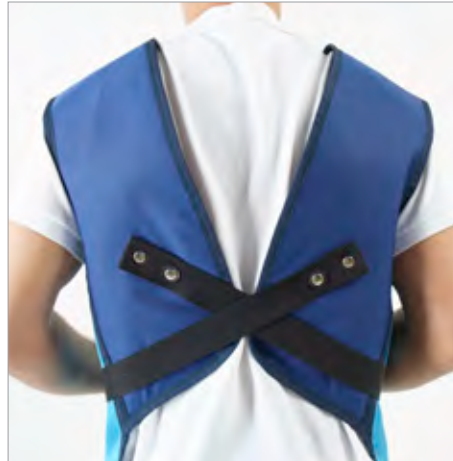
**Crossbands**  
Crossbands with hook & burr for closing at the back.



**Straps & Snap Buckle**  
Straps with snap buckle for closing at the front.



**Snap Buckles**  
2 straps with snap buckles for closing at the back.



For model RA640 it is now possible to choose whether protection of Pb 0.25 mm should be maintained in the back wings or dispensed with to reduce the weight of the apron.

### Crossband Closure

MAVIG uses only top quality hook & burr fasteners.



If wear should occur on the fleece of the hook & burr closure, which is typically more susceptible to wear, the crossbands can be easily replaced.

### Protective Material

- Standard lead

### Lead Equivalent Values

Front side, optionally: Pb 0.25 mm, Pb 0.35 mm, or Pb 0.50 mm  
Back, optionally: Pb 0.25 mm or without protection

### Outer Material / Colours

Optionally ComforTex® HPMF Hybrid or ComforTex® HPMF, available in the colours:

- Curacao
- Orchidee
- Regatta
- Indian Summer
- Limette
- Ocean
- Lagoon

### Type of Closure

Available with the closure systems:

- Snap Fasteners
- Straps & Snap Buckle
- Crossbands
- Snap Buckles

### Sizes\*, recommended for:

- XS** Chest girth  $\leq 84$  cm  
Waist/hip girth  $\leq 91$  cm
- S** Chest girth approx. 85 - 95 cm  
Waist/hip girth approx. 92 - 102 cm
- M** Chest girth approx. 96 - 106 cm  
Waist/hip girth approx. 103 - 112 cm
- L** Chest girth approx. 107 - 117 cm  
Waist/hip girth approx. 113 - 123 cm
- XL** Chest girth approx. 118 - 128 cm  
Waist/hip girth approx. 124 - 134 cm
- XXL** Chest girth approx. 129 - 139 cm  
Waist/hip girth approx. 135 - 145 cm
- 3XL** Chest girth approx. 140 - 150 cm  
Waist/hip girth approx. 146 - 156 cm

\* The size depends on the girth of the chest, waist, or hip, depending on which of the three measurements is the largest.

### Lengths, recommended height:

- 90 cm for approx. 150 - 160 cm
- 100 cm for approx. 160 - 170 cm
- 110 cm for approx. 170 - 180 cm
- 120 cm for approx. 175 - 190 cm
- 130 cm for approx. 185 - 195 cm
- 140 cm for approx. 195 - 205 cm

### Optional / On Request

**Sleeves** (page 21)

**Breast Pocket** (page 21)

**Embroidery** (page 21):

- on the breast pocket
- on permanently sewn-on border
- on detachable border

**Thyroid Protection** (page 20)

**Made-to-Measure Protection**  
(possible on an individual basis, see dimension sheet page 51)

**Replacement Crossband Closure**  
(adapted via snap fasteners)

## EXTENDED RA641



X-ray protective clothing from MAVIG gives you the security of knowing that you comply with all applicable legal requirements.

This model complies with IEC 61331-1:2014 / DIN EN 61331-1:2016 and IEC 61331-3:2014 / DIN EN 61331-3:2016.

Naturally, MAVIG X-ray protective clothing also underwent the required prototype testing and certification in compliance with PPE 89/686/EEC (CE0123).



## Perfect Protection Against Radiation

Up-to-date user protection for multiple applications, which can also be carried out sitting down: Specifically, this means that using a front protective apron as a functional one-piece unit in compliance with current practice naturally provides ideal radiation protection in any working position.

Radiation protection aprons are already standard equipment in different departments, e.g. urology, anaesthesia, etc.. However, the currently used front protective aprons are designed for standing positions. But especially in the above mentioned departments, some interventions are performed with the operator in a seated position. This holds the risk that the gonads will be exposed to a considerably higher dose than when standing when a regular front protective apron is used. The main reason for this is the gap in the radiation protection that occurs due to the apron resting on the knees.

## Sophisticated Relief

The innovative elastic belt, located on the inside of the front panel, rests most of the apron's weight on the hips. This relieves the back and shoulders. In addition, soft shoulder pads are standard.

To reduce the weight of the apron, "without protection" can be optionally chosen in the back area.



### Replaceable Belt

The hook & burr of the belt can be exchanged, if necessary, by means of zippers.

## Protection Especially for Seated Activities

For this purpose, a special gonad protector is attached on the inside of the apron. When sitting in front of a patient, facing forward, this protector hangs down protectively in front of the gonads, while the apron lies on the legs.



### Correct Length!

When working in a sitting position, the apron should be approximately 10 cm longer than recommended for your body size, so that the knees are covered. (see: "Lengths, recommended height")

At the same time, the new design prevents the apron from slipping down the legs and exposing them. The larger side pieces in the lower part keep the apron in position during any movement.

When you are standing, the RA641 also guarantees complete X-ray protection from neck to knees. Here, the side flaps of the lower part of the apron can simply be fastened together in the back, so that they do not interfere with any movements allowing unrestricted work.

In this working position, the gonad protection may be removed to save a few extra grams of weight.



### Removable Gonad Protection

The gonad protection attached with hook & burr can be simply removed for weight reduction when standing.

## Protective Material

- NovaLite or
- Standard lead

## Lead Equivalent Values

Front (including gonad protection) optionally in:	Pb 0.25 mm, Pb 0.35 mm, or Pb 0.50 mm
Back, optionally:	Pb 0.25 mm or without protection

## Outer Material / Colours

ComforTex® HPMF Hybrid, available in the colours:

- Curacao
- Orchidee
- Regatta
- Indian Summer
- Limette
- Ocean
- Lagoon

## Type of closure

Available with the closure systems:

- Straps & snap buckle
- Snap buckles

## Sizes\*, recommended for:

<b>XS</b>	Chest girth ≤ 84 cm Waist/hip girth ≤ 91 cm
<b>S</b>	Chest girth approx. 85 - 95 cm Waist/hip girth approx. 92 - 102 cm
<b>M</b>	Chest girth approx. 96 - 106 cm Waist/hip girth approx. 103 - 112 cm
<b>L</b>	Chest girth approx. 107 - 117 cm Waist/hip girth approx. 113 - 123 cm
<b>XL</b>	Chest girth approx. 118 - 128 cm Waist/hip girth approx. 124 - 134 cm
<b>XXL</b>	Chest girth approx. 129 - 139 cm Waist/hip girth approx. 135 - 145 cm
<b>3XL</b>	Chest girth approx. 140 - 150 cm Waist/hip girth approx. 146 - 156 cm

\* The size depends on the girth of the chest, waist, or hip, depending on which of the three measurements is the largest.

## Lengths, recommended height:

90 cm	for approx. 150 - 160 cm
100 cm	for approx. 160 - 170 cm
110 cm	for approx. 170 - 180 cm
120 cm	for approx. 175 - 190 cm
130 cm	for approx. 185 - 195 cm
140 cm	for approx. 195 - 205 cm

\* Recommendation for work while standing

## Optional / On Request

**Sleeves** (page 21)

**Breast Pocket** (page 21)

**Embroidery** (page 21):

- on the breast pocket
- on permanently sewn-on border
- on detachable border

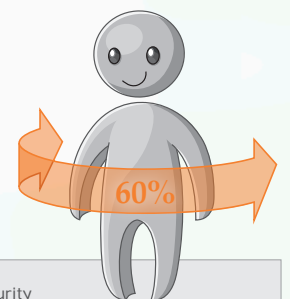
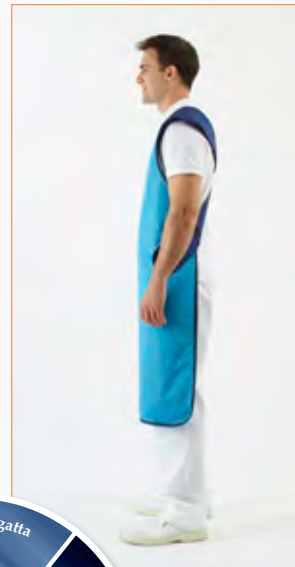
**Thyroid Protection** (page 20)

**Made-to-Measure Protection** (possible on an individual basis, see dimension sheet page 51)

**Replacement Order for Belt** (adapted via zipper)

**Replacement Order for Gonad Protection** (adapted via hook & burr)

## ERGONOMIC RA650



X-ray protective clothing from MAVIG gives you the security of knowing that you comply with all applicable legal requirements.

This model complies with IEC 61331-1:2014 / DIN EN 61331-1:2016 and IEC 61331-3:2014 / DIN EN 61331-3:2016.

Naturally, MAVIG X-ray protective clothing also underwent the required prototype testing and certification in compliance with PPE 89/686/EEC (CE0123).

## ERGONOMIC RA650

Front protection in its pure form - this includes full protection over the entire front part. To reduce the weight of the apron, "without protection" can be optionally chosen in the back area.

MAVIG X-ray protective materials achieve an outstanding rating in terms of weight and X-ray protection. Produced with the first-class X-ray protective material NovaLite, the apron ensures fulfilment of fundamental occupational health requirements for long wearing periods in radiological workplaces.

The RA650 is now equipped with shoulder pads as standard for optimised comfort.



Comfortable, wide crossbands allow the apron to be slid off easily by opening the hook & burr closures in the front area, through the sterile surgical coat.

### Wide crossbands

MAVIG uses only top quality hook & burr fasteners.



If wear and tear should occur on the fleece of our hook & burr closure, it can easily be exchanged.

### Protective Material

- NovaLite or
- Standard Lead

### Lead Equivalent Values

- Front side, optionally: Pb 0.25 mm, Pb 0.35 mm, or Pb 0.50 mm
- Back, optionally: Pb 0.25 mm or without protection

### Outer Material / Colours

Optionally ComforTex® HPMF Hybrid or ComforTex® HPMF, available in the colours:

- Curacao
- Orchidee
- Regatta
- Indian Summer
- Limette
- Ocean
- Lagoon

### Sizes\*, recommended for:

- XS** Chest girth ≤ 84 cm  
Waist/hip girth ≤ 91 cm
- S** Chest girth approx. 85 - 95 cm  
Waist/hip girth approx. 92 - 102 cm
- M** Chest girth approx. 96 - 106 cm  
Waist/hip girth approx. 103 - 112 cm
- L** Chest girth approx. 107 - 117 cm  
Waist/hip girth approx. 113 - 123 cm
- XL** Chest girth approx. 118 - 128 cm  
Waist/hip girth approx. 124 - 134 cm
- XXL** Chest girth approx. 129 - 139 cm  
Waist/hip girth approx. 135 - 145 cm
- 3XL** Chest girth approx. 140 - 150 cm  
Waist/hip girth approx. 146 - 156 cm

\* The size depends on the girth of the chest, waist, or hip, depending on which of the three measurements is the largest.

### Lengths, recommended height:

- 90 cm for approx. 150 - 160 cm
- 100 cm for approx. 160 - 170 cm
- 110 cm for approx. 170 - 180 cm
- 120 cm for approx. 175 - 190 cm
- 130 cm for approx. 185 - 195 cm
- 140 cm for approx. 195 - 205 cm

### Optional / On Request

**Breast Pocket** (page 21)

**Embroidery** (page 21):

- on the breast pocket
- on permanently sewn-on border
- on detachable border

**Thyroid Protection** (page 20)

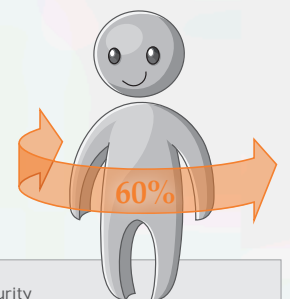
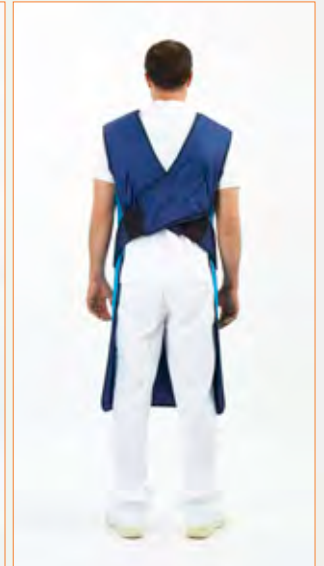
**Made-to-Measure Protection**  
(possible on an individual basis, see dimension sheet page 51)

**Replacement Order:**

**Fleece for Hook & Burr Closure**  
(adapted via zipper)



## COMFORT RA660



X-ray protective clothing from MAVIG gives you the security of knowing that you comply with all applicable legal requirements.

This model complies with IEC 61331-1:2014 / DIN EN 61331-1:2016 and IEC 61331-3:2014 / DIN EN 61331-3:2016.

Naturally, MAVIG X-ray protective clothing also underwent the required prototype testing and certification in compliance with PPE 89/686/EEC (CE0123).

## Comfort RA660

Up-to-date radiation protective clothing which accompanies your active working day and provides outstanding qualifications.

Our customers declare that this model is their favourite front apron. It stands out because it can be put on and taken off easily, fits the body well, stays in place and provides outstanding shoulder relief.

The exceptional comfort of the Comfort RA660 series is enhanced by the wide stretch inserts on the back wings.

MAVIG X-ray protective materials achieve an outstanding rating in terms of weight and X-ray protection. Produced with the first-class X-ray protective material NovaLite, the apron ensures fulfilment of fundamental occupational health requirements for long wearing periods in radiological workplaces.

The RA660 model is now equipped with shoulder pads as standard for optimised wearing comfort.



### Special Features

The wide stretch inserts in the back wings ensures individual adjustment, a good fit and shoulder relief, even when the X-ray protective clothing is worn for a long time.

To reduce the weight of the apron, "without protection" can be optionally chosen in the back area.

### Closure System

MAVIG uses only top quality hook & burr fasteners.



If wear and tear should occur on the fleece of our hook & burr closure, it can easily be exchanged.

### Protective Material

- NovaLite or
- Standard Lead

### Lead Equivalent Values

Front side, optionally: Pb 0.25 mm, Pb 0.35 mm, or Pb 0.50 mm  
Back, optionally: Pb 0.25 mm or without protection

### Outer Material / Colours

Optionally ComforTex® HPMF Hybrid or ComforTex® HPMF, available in the colours:

- Curacao
- Orchidee
- Regatta
- Indian Summer
- Limette
- Ocean
- Lagoon

### Sizes\*, recommended for:

- XS** Chest girth ≤ 84 cm  
Waist/hip girth ≤ 91 cm
- S** Chest girth approx. 85 - 95 cm  
Waist/hip girth approx. 92 - 102 cm
- M** Chest girth approx. 96 - 106 cm  
Waist/hip girth approx. 103 - 112 cm
- L** Chest girth approx. 107 - 117 cm  
Waist/hip girth approx. 113 - 123 cm
- XL** Chest girth approx. 118 - 128 cm  
Waist/hip girth approx. 124 - 134 cm
- XXL** Chest girth approx. 129 - 139 cm  
Waist/hip girth approx. 135 - 145 cm
- 3XL** Chest girth approx. 140 - 150 cm  
Waist/hip girth approx. 146 - 156 cm

\* The size depends on the girth of the chest, waist, or hip, depending on which of the three measurements is the largest.

### Lengths, recommended height:

- 90 cm for approx. 150 - 160 cm  
100 cm for approx. 160 - 170 cm  
110 cm for approx. 170 - 180 cm  
120 cm for approx. 175 - 190 cm  
130 cm for approx. 185 - 195 cm  
140 cm for approx. 195 - 205 cm

### Optional / On Request

**Sleeves** (page 21)

**Breast Pocket** (page 21)

**Embroidery** (page 21):

- on the breast pocket
- on permanently sewn-on border
- on detachable border

**Thyroid Protection** (page 20)

**Made-to-Measure Protection**  
(possible on an individual basis, see dimension sheet page 51)

**Replacement Order: Elastic Bands with a Hook & Burr Closure (fleece)**  
(adapted via zipper)

# RA614 THYROID AND STERNUM PROTECTION

RA614

## Protective Material

NovaLite

## Lead Equivalent Value

As standard: Pb 0.50 mm

## Outer Material / Colours

Optionally ComforTex® HPMF Hybrid or ComforTex® HPMF, available in the colours:

- Curacao
- Limette
- Orchidee
- Ocean
- Regatta
- Lagoon
- Indian Summer

## Type of Closure / Neck Sizes

### Hook & Burr Closure (RA614KL)

Standard size fits neck sizes of 32 - 45 cm.

### Exchangeable Hook & Burr Closure (RA614AK)

Standard size fits neck sizes of 37 - 50 cm.

### NEW: Magnetic Closure\* (RA614MA)

Standard size fits neck sizes of 32 - 45 cm.

\*not available in USA, Canada, and Japan

## Optional / On Request

### Embroidery (page 21):

The application of a logo as a print or embroidery is available on request.

### Made-to-Measure Protection

Deviating neck sizes can be provided as a special order item.

### Hygienic Cover (RA614HF)

In order to meet hygiene requirements, we recommend that you use our washable hygienic cover made of the special ComforTex® MF material ("Ocean" colour).

### Exchange Hook & Burr Closure (RA614AKV) (adapted via snap fasteners)



## Model Variants RA614

Thyroid and sternum protection with snap fasteners, suitable for all models. With a permanently sewn-on hook & burr closure as standard, additional types of closures are optional.



### NEW Type of Closure - Magnetic\*

The thyroid and sternum protection is now also available with a practical magnetic closure (variant RA614MA).

Also available is the tried and tested hook & burr fastener, which can also be exchangeable (option RA614AK). All models provide enough room for adjustment.

## Thyroid and Sternum Protection

The thyroid is a radiation-sensitive organ of the human body and therefore in particular need of protection.

Wearing appropriate protection during dose-intensive examinations should therefore always be a matter of course.

Our thyroid and sternum protector is characterised by its first-class cut and the best fit, taking into account all aspects of radiation protection.

As a new closure option in the neck, the sternum protection is now also available with a magnetic closure system.

The snap fasteners allow the secure attachment of the thyroid and sternum protection to MAVIG X-ray protective clothing.



X-ray protective clothing from MAVIG gives you the security of knowing that you comply with all applicable legal requirements. This model complies with IEC 61331-1:2014 / DIN EN 61331-1:2016 and IEC 61331-3:2014 / DIN EN 61331-3:2016.

Naturally, MAVIG X-ray protective clothing also underwent the required prototype testing and certification in compliance with PPE 89/686/EEC (CE0123).



Sleeves

For all models (except RA650), you can select optional sleeves to extend protection. The exposure of the shoulder joint to radiation can be significantly reduced by wearing aprons with sleeves. This also reduces laterally occurring radiation.

The standard lead value is Pb 0.25 mm. This ensures good mobility during the daily working routine. Sleeves are always in the colour Ocean. Size, and X-ray protective material of the sleeves are matched to the apron ordered.



MAVIG offers the sleeves as a detachable solution (pictured above) or permanently sewn-on (bottom picture).  
You can also choose whether you want only one sleeve (on the right or left) or a pair.

Breast Pocket

The breast pocket ① is usually designed to be on the outside, away from the body, and at chest height. For allround protection it is located on the left side, for front protection on the right side (from the user's point of view).

Embroidery

In many cases, it is useful to assign X-ray protection clothing to an individual or a department using an embroidery. We offer the following options:

- ② On a border of the left shoulder seam
- ③ Alternatively on a detachable border
- ④ Line of text or logo on an optional breast pocket
- ⑤ Line of text on a skirt border
- ⑥ Text on the left hand side of the head cover
- ⑦ Text or logo on the thyroid protection

Provide us with your desired text and we will carry out the embroidery in top quality. Block letters are standard for clear legibility. The font height is determined by the length of the text and the number of lines.



Protective Material

- NovaLite or
- Standard lead

Lead Equivalent Values Sleeves

As standard:	Pb 0.25 mm,
On request:	Pb 0.35 mm, or Pb 0.50 mm

Outer Material / Colours

Optionally ComforTex® HPMF Hybrid or ComforTex® HPMF, only available in the colour:

- Ocean

Sleeve Lengths

XS	22.0 cm	XL	29.0 cm
S	23.5 cm	XXL	30.5 cm
M	25.5 cm	3XL	32.5 cm
L	27.0 cm		

Positioning, breast pocket/embroidery:



## X-RAY PROTECTION FOR THE SKULL



### Currently Under Discussion

Working in interventional radiology can involve risks. The probability of the development of a brain tumour in medical staff exposed to radiation is currently under lively debate among specialists.

Without effective on-site over-table anti-scatter protection, the skull might be at risk of high exposure to radiation, depending on the procedure and the fluoroscopy time.

### The Task

The skull has to be protected. To deal with the occupational health issues in the best way possible, protection for the user's skull requires a well-thought-out design.

The user is already under physical strain by wearing the usual X-ray protective clothing. The additional component of the personal protective equipment (PPE) has to provide the perfect balance between radiation protection, weight, and comfort.

### The Solution

MAVIG has therefore developed three different radiation protective head coverings to meet the users' individual needs. The models differ in the balance between the required protected area and heat dissipation.

The one-size cuts of the head coverings, which are legally protected designs, allow optimal adjustment to the individual head circumference and head shape. Temperature regulation requirements and wearing comfort are met in the best way possible by the variety of available models.

## Radiation Protective Headbands & Caps



MAVIG head coverings conform to IEC 61331-1:2014 / DIN EN 61331-1:2016.  
Naturally, these models also have the necessary prototype testing and certification in accordance with PPE 89/686/EEC (CE0123).  
MAVIG X-ray protective clothing gives you the security of fulfilling all applicable legal requirements.



## Series RA610

### Radiation Protective Headband

The headband protects the skull at the front and sides, leaving the top of the skull clear.

Depending on the angle of incidence of the scattered rays, the headband forms a shade from the rays, which reduces the radiation exposure of the top of the skull. The radiation reduction depends on the height and position of the headband.

## Protective Material

NovaLite

## Lead Equivalent

Protection in: Pb 0.25 mm, Pb 0.35 mm, or Pb 0.50 mm

## Outer Material / Colours

ComforTex® HPMF, available in the colours:

- Curacao
- Orchidee
- Regatta
- Indian Summer
- Limette
- Ocean
- Lagoon

## Head Circumference

Suitable for head circumferences of 54 - 63 cm.



## Series RA611

### Radiation Protective Cap With Breathable Insert

This series combines the advantages of the headband with regard to heat dissipation with the increased radiation protection of a closed cap on the top of the head – a beneficial compromise.

A breathable insert which provides very good heat dissipation is incorporated into the top of the cap.

## Optional / On Request

**Embroidery** (page 21)  
on the left side



## Series RA612

### Closed Radiation Protective Cap

With a closed cap, the skull is shielded at the front, at the sides, and at the top.

However, heat dissipation through the cranium is restricted.





## X-RAY PROTECTION FOR THE HANDS

### Important Information

#### Statutory Regulations Within the EU

Sterile protective gloves with a shielding effect against stray X-ray radiation are classified both as personal protective equipment and as medical devices.

Hence, CE-marked conformity with the relevant European Directives, 89/686/EEC (PPE) and 93/42/EEC for medical devices is mandatory.

With the MAVIG HS100 product, you can be assured:

Our protective gloves are correctly certified and conform to the aforementioned EU directives.

#### DIN 6815, Appendix A

DIN 6815, Appendix A, recommends the use of surgical gloves with a radiation shielding effect for staff in Angio/DSA, cardiac catheter examination and intraoperative X-rays under relevant circumstances.

#### Sizes / Article Numbers

Size 6.5 = HS10065  
Size 7.0 = HS10070  
Size 7.5 = HS10075  
Size 8.0 = HS10080  
Size 8.5 = HS10085  
Size 9.0 = HS10090

The gloves come in a practical dispensing box; each box contains 5 pairs of gloves in one size. Each pair is stored sterile in a peel pack with an added inlay. Use under sterile conditions is ensured.

### HS100 – Sterile Protective Gloves With a Shielding Effect Against X-ray Radiation

MAVIG sterile protective gloves with a shielding effect against X-ray radiation make it possible to optimise radiation protection measures for medical staff.

In developing these gloves, MAVIG has succeeded in combining traditionally conflicting characteristics:

- High shielding effect
- High elasticity
- High touch sensitivity and
- Protection against scatter radiation

Reducing the equivalent dose for medical staff with occupational exposure to radiation is essential, not just because effective dose limits have been reduced.

The idea of optimisation of radiation protection requires that every possible precaution is taken to minimise the dose which is caused by radiation exposure.

With the HS100 X-ray absorbing sterile gloves, MAVIG provides an effective option for reducing the doses in the area of scatter radiation exposure.



### Effective Protection for Your Hands Against Scatter X-Ray Radiation

A remarkable protective factor of 2 is obtained when the gloves are worn in the scattered radiation zone (X-ray tube voltage 60 - 80 kV).

This dose reduction of > 50% effectively helps to minimise the risk.

#### Material

The high shielding effect of our gloves is achieved by means of metal oxides which do not contain lead.

The special quality features of the MAVIG HS100 gloves are partly the result of the use of elastic natural rubber in their manufacture.

The manufacturing process ensures that the protein concentration is kept as low as possible. Water-soluble allergenic proteins are removed from the latex as far as possible.

The gloves are therefore referred to as low-protein latex gloves.



Outstanding performance characteristics and an optimised fit make it easy to protect yourself better and still feel good.

- Lead equivalent: Pb 0.03 – 0.04 mm
- Powder-free
- Low protein natural rubber
- No added lead
- Non-toxic
- Sterile
- Impressive grip and touch sensitivity
- High elasticity and very high tear resistance
- Available in a wide range of sizes

Average Values	X-Ray Tube Voltage / Attenuation		
Attenuation of scatter X-ray radiation (skin dose reduction)	60 kV / 63 %	80 kV / 53 %	100 kV / 46 %
Attenuation of the primary beam	80 kV / 20–25 %		

The attenuation properties were determined in the broad beam in accordance with DIN EN 61331-1. The values for the skin dose reduction refer to a nominal material thickness of 0.30 mm.

## Properties

The product is classified as a powder-free surgical glove that, in addition to the basic properties in respect of material consistency, impermeability, dimensions, and protection against chemicals and micro-organisms, also has an X-ray absorbing effect.

High elasticity in combination with an excellent, anatomical fit ensures optimal working conditions that reach the level of high-quality OR gloves with effective protection against secondary X-ray radiation.

The gloves allow impressive touch sensitivity and dexterity. Microtextured surfaces ensure a good grip even in a wet environment.

The soft and elastic material and the anatomically contoured fit prevent fatigue and ensure optimal ergonomic properties.

The gloves can be put on comfortably. Particular tear resistance is achieved by the high elasticity of the product. In addition, the rolled edge prevents tearing when pulling them on.

## Use

The gloves are intended for protection against secondary radiation and ensure an efficient protective absorption effect here. In the case of automatic dose rate control, use in the primary radiation area can be counter-productive.

If use in primary radiation is intended, the automatic dose rate control must be switched off. As a sterile product the gloves are intended for one-time use.



### **X-Ray Protective Glasses and Visors in Separate Catalogue**

The lens of the human eye is regarded as very sensitive towards radiation exposure.

X-ray protection glasses for health care professionals are used for the protection against scatter radiation. This is secondary radiation, which is mainly emitted by the irradiated volume of the patient.

A correct fit is particularly important for safety glasses. Therefore the differences in facial geometry require a correspondingly wide range of models.







### "Eye Protection against Diagnostic or Therapeutic Radiation"

You can find our individual range with various shapes for optimal fit in our separate catalogue.



### Cataract Risk

It has been known for many years that exposure to ionising radiation in the workplace can lead to radiation-induced clouding of the cornea.

According to current findings, early stages can occur even after exposure to only 0.5 Gy.

Irrespective of whether the dose is acute or protracted, the effect is cumulative; individual doses add up.

#### "Cataract Risk"

You can find further information about radiation cataracts in our flyer.

# ST RADIATION PROTECTIVE DRAPES

## Protective Material

Standard lead

## Lead Equivalent

Standard: Pb 0.50 mm

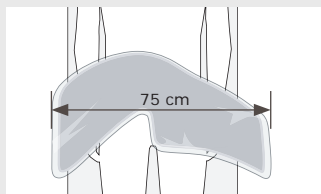
## Outer Material / Colours

ComforTex® HPMF, available in the colour:

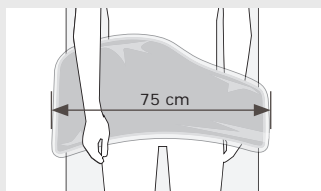
- Mandarin/Titan

## Dimensions

Femoral drape - ST-FS5AMM



Radial drape - ST-RZ5AMM



## Accessories

**Sterile Disposable Covers:**

**For Femoral Drape - STEA-FSAM**

50 sterile disposable covers

**For Radial Drape - STEA-RZAM**

50 sterile disposable covers

## Re-usable Radiation Protective Drapes

The optimal size of our multi-use drapes ensures maximum comfort for the patient, while providing excellent protection for the clinician.

The specific shape of the drapes is designed for the particular use:

- ST-FS5AMM with cut-out for femoral puncture



- ST-RZ5AMM without cut-out for radial puncture



At the same time, the unique cuts of the drapes prevent them from entering into the image area during angulation.

The drapes are made from a highly flexible radiation protection material with a suitable textile outer cover and can be cleaned just like a conventional radiation protection apron.

Sterile single-use covers for the drapes allow them to be placed above the sterile patient drape. They ensure rapid positioning and easy removal in an emergency situation, as well as continuous monitoring of the position.



*You can find more detailed information on the radiation protection drapes and their use in combination with our innovative new radiation protective shield OT54/OT94 in the separate flyer.*

## Lead-free Single-use Radiation Protective Drapes

The application-specific cut of the Radionex® protective products offers the health care professional optimal safety without interfering with his/her work.

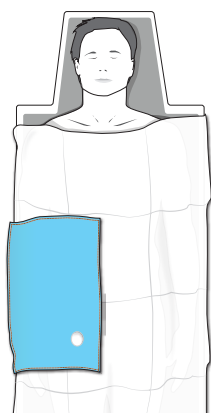
Furthermore, special adhesive strips on the back of the drape make them easy to re-position if the drape happens to enter into the image area.

The outer material of the Radionex® models is absorbent in order to take up fluids such as blood and saline solution.

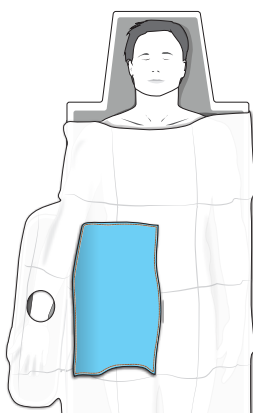
Thanks to these features, Radionex® products can be simply and conveniently incorporated into the existing radiation protection strategy without complicating the existing work procedures.

The drapes are available in four different types, whereby each type is especially suitable for a particular application.

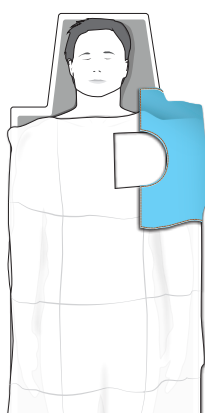
Furthermore, the drapes are available in three different protection levels (low, medium, high) - depending on your requirements and needs.



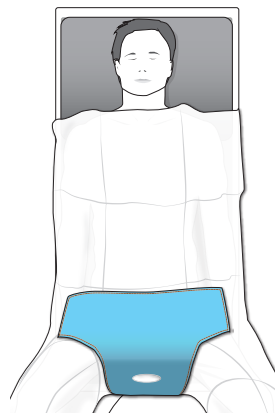
AS1001 "Angio"  
for angiography  
via femoral access



AS1005 "Multi"  
for angiography  
via radial access and  
other applications



AS1007 "Surgery"  
for Electrophysiology (EP),  
cardiac pacemakers,  
and Percutaneous  
Nephrolithotomy (PCNL)



AS1006 "Uro"  
for lithotomy position

### Protective Material

Lead-free protective material

### Protection Level

Low  
Medium  
High

### Outer Material

Hydrophilic fleece

### Applications

#### Angio

Angiography via femoral access

#### Multi

Angiography via radial access  
and other applications

#### Surgery

Electrophysiology (EP), cardiac pacemakers,  
and Percutaneous Nephrolithotomy (PCNL)

#### Uro

Lithotomy position

### Sizes

#### Angio

Protected area 30 x 40 cm

#### Multi

Protected area 30 x 40 cm

#### Surgery

Protected area 30 x 40 cm

#### Uro

Protected area 30 x 40 cm



# RP648 & RP689 PATIENT DRAPES

RP648, RP689

## Protective Material

Standard lead

## Lead Equivalent

RP648, standard: Pb 0.35 mm

RP689, options: Pb 0.50 mm or Pb 1.00 mm

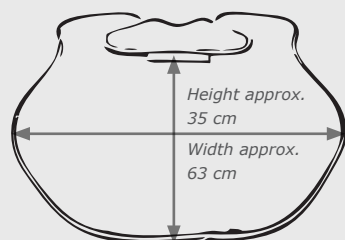
## Outer Material / Colours

ComforTex® HPMF, available in the colours:

- Curacao
- Orchidee
- Regatta
- Indian Summer
- Limette
- Ocean
- Lagoon
- Teddy design

## Formats / Sizes

### RP648



### RP689

Our standard widths of material are 60 and 90 cm; you can determine the length.

However, you can, of course, define a cut that differs from the standard widths of 60 and 90 cm.

We are completely flexible for your specifications for this product.

## RP648 – Patient Shields for CT Scans

Patient shields for CT scans not only have to provide ideal radiation protection, but have to offer the possibility of putting them on quickly and staying in the desired position.

The MAVIG RP648 patient CT shield is an optimal solution.



The patient shield is easy to use and position without any tools or closure systems.

An additional thyroid shield can be folded into position if necessary.

For sustainability, the patient shield is not a disposable product and can be re-used.

Patient protection during CT scans, e.g. cranial CT, means a reduction in the radiation exposure of:

- The thyroid by approx. 65 %
- The sternum by approx. 80 %
- The chest and shoulder joints by approx. 90 %

## RP689 – Patient Drape

This versatile patient drape is a must have in every radiology practice.

It offers targeted protection for your patients, combined with simple handling. You can choose the format according to your intended use.

Only high quality flexible standard lead material with the best radiation protective properties is used for our MAVIG RP689 patient drapes.

We are glad to provide additional hook & burr bands or cut the drape individually according to your preferences at any time.

Effective radiation protection for patients involves covering the areas of the body adjacent to the diagnostic field, so in most cases it is better to use a series of smaller drapes, which can also be used in combination.



*Don't be over-generous with the size when choosing your patient drape. Remember that you are the one who has to move the drape and that the size is directly proportional to the weight.*

Our patient protection products conform to the medical devices directive 93/42/EEC.

MAVIG X-ray protective clothing gives you the security of fulfilling all applicable legal requirements.

## RP643 – Gonad Aprons

In addition to being functional and easy to use, an article that is used every day has to meet special requirements when it comes to material quality and workmanship. The MAVIG series RP643 gonad aprons offer all this and more.

The number of patients passing through today's X-ray facilities is very high making it important for the X-ray shields to be practical and easy to put on and take off quickly. The flexible tension strap of our series RP643 offers the easiest solution.

Your patients' radiation protection is perfect and the fit is right.

Our gonadal aprons are made of high quality, flexible, lead rubber material. It goes without saying that excellent radiation protection properties are a basic requirement.

We recommend our specially designed wall rack model AW417 for proper storage of your gonadal aprons.



With the aprons kept well organized, you will be able to select the appropriate size for your patient quickly, without having to remove the other aprons on the rack.

### Protective Material

Standard lead

### Lead Equivalent

Standard: Pb 0.50 mm

### Outer Material / Colours

ComforTex® HPMF, available in the colours:

- Curacao
- Orchidee
- Regatta
- Indian Summer
- Limette
- Ocean
- Lagoon
- Teddy design

### Sizes, recommended for:

- |    |  |
|----|--|
| S  | for infants, apron in the format 20 x 25 cm (HxW)  |
| M  | for children, apron in the format 30 x 30 cm (HxW) |
| L  | for adults, apron in the format 37 x 40 cm (HxW)   |
| XL | for adults, apron in the format 45 x 50 cm (HxW)   |



### Storage

Wall Hanger, Model AW417

### Price Saving

The gonad aprons are also available as a complete set (all 4 sizes) with or without the wall rack.

Our patient protection products conform to the medical devices directive 93/42/EEC.

MAVIG X-ray protective clothing gives you the security of fulfilling all applicable legal requirements.

## X-RAY PROTECTION FOR CHILDREN





## RP664 – Children Apron

This children apron is specially designed for universal use and is thus the optimal front protection for your young patients.

The generously cut, overlapping back panels offer additional protection for the back of the body and ensure a perfect fit.

Ease of putting on and taking off is particularly important when it comes to X-ray protection for children.

The RP664 model is easy to fasten in the front with a snap buckle providing enough room for exact adjustments.

MAVIG manufactures the children apron with the innovative NovaLite radiation protective material in order to achieve the best possible weight ratio and thus put no more physical strain on the children than is absolutely necessary.

### Protective Material

NovaLite

### Lead Equivalent

Front protection: Pb 0.50 mm  
Back wings: Pb 0.25 mm

### Outer Material / Colours

ComforTex® HPMF, available in the colours:

- Curacao
- Orchidee
- Regatta
- Indian Summer
- Limette
- Ocean
- Lagoon
- Teddy design

### Sizes, recommended for:

**SMALL** Length: 59 cm  
Width: 35 cm  
for children aged approx. 3 - 5 years

**MEDIUM** Length: 67 cm  
Width: 43 cm  
for children aged approx. 6 - 8 years

**LARGE** Length: 84 cm  
Width: 45 cm  
for children aged approx. 9 - 12 years



Our patient protection products conform to the medical devices directive 93/42/EEC.

MAVIG X-ray protective clothing gives you the security of fulfilling all applicable legal requirements.



**RP668 – Children Coat**

With this model, you have chosen a practical allround protection for your young patients.

The cut combines ideal radiation protection with a variable fit and high wearing comfort. The flexible material plus the generously measured flexibility for width adjustment guarantee a comfortable fit.

X-ray protection for children must be particularly easy to put on and take off. The patients rarely have enough patience for long preparations.

Therefore you can adjust and re-adjust the RP668 children coat quickly and securely by means of the hook & burr fastenings at the front.

MAVIG manufactures the children coat with the innovative NovaLite radiation protective material in order to achieve the best possible weight ratio and thus put no more physical strain on the children than absolutely necessary.

**Protective Material**

NovaLite

**Lead Equivalent**

Front protection:	Pb 0.50 mm
Back:	Pb 0.25 mm

**Outer Material / Colours**

ComforTex® HPMF, available in the colours:

- |                 |                |
|-----------------|----------------|
| • Curacao       | • Limette      |
| • Orchidee      | • Ocean        |
| • Regatta       | • Lagoon       |
| • Indian Summer | • Teddy design |

**Sizes, recommended for:**

SMALL	Length: 60 cm Hips: 68 - 75 cm for children aged approx. 3 - 5 years
MEDIUM	Length: 80 cm Hips: 76 - 83 cm for children aged approx. 6 - 8 years
LARGE	Length: 84 cm Hips: 84 - 95 cm for children aged approx. 9 - 12 years



Our patient protection products conform to the medical devices directive 93/42/EEC.

MAVIG X-ray protective clothing gives you the security of fulfilling all applicable legal requirements.



# RP679 PATIENT SHIELD

RP679SET

## Protective Material

Standard lead

## Lead Equivalent

Standard: Pb 1.00 mm

## Outer Material / Colours

Stretch belt with hygienic cover.

Protectors in the following colours (adults):

- Small - Ocean
- Medium - Indian Summer
- Large - Regatta

Protectors in the following colours (children):

- Small - Orchidee
- Medium - Limette
- Large - Curacao

## Sizes

Adults	S	16 x 11 cm
	M	18 x 13 cm
	L	20 x 19 cm
Children	S	7 x 6 cm
	M	9 x 8 cm
	L	10 x 10 cm

## Note

The ovary protection is available as a set of protectors in 3 sizes with an adjustable stretch belt:

<b>RP679SET-E</b>	for adults
<b>RP679SET-K</b>	for children

## RP679 – Ovary Shield With Belt

### For the Standing Patient

The RP679 patient shield protects the ovaries of the standing patient during X-rays.

The stretch belt with snap buckle ensures ease of putting on and taking off and convenient size adjustment.

- Quick and easy to put on
- Convenient size adjustment by means of the stretch belt with hygienic cover and snap buckle
- Set consisting of the belt and one protector in each of the following sizes: small, medium, and large
- Protectors can be attached to the belt with the hook & burr fastening



\* A custom size belt is available for patients with a girth greater than 128 cm.

### For Children

Patient protection in paediatrics for X-ray images in medical diagnostics

- Quick and easy to put on
- Convenient size adjustment by means of the stretch belt with hygienic cover and snap buckle
- Set consisting of the belt and one protector in each of the following sizes: small, medium, and large
- Protectors can be attached to the belt with the hook & burr fastening



Our patient protection products conform to the medical devices directive 93/42/EEC.

MAVIG X-ray protective clothing gives you the security of fulfilling all applicable legal requirements.

## RP278 – Ovary Shield

Extensive tests created the basis for the size and positional relationship between the fixation point "Spinae iliacae anteriores" and the ovarian protection applied. The two radiolucent centring marks ensure correct and simple fixation.

A complete set (all 3 sizes) enables the best possible protection for all your patients. In addition, each model can be modified by means of a "fan" principle, ensuring optimal fine adjustment.

The RP278 is, of course, easy to clean and disinfect.



The design of this MAVIG ovary shield is unsurpassed and meets all requirements of radiology practice. Radiation exposure of the female gonads is considerably reduced without impairing the diagnostic procedure.

## RP276 – Testicle Shield for Boys/Men

This model for the protection of male gonads also completely covers the penis and scrotum with a lead equivalent value of Pb 1.00 mm.

MAVIG has, of course, made sure that using the shield does not cause any risk of injury to the patient.

The hook & burr closure provides good stability when adjusted correctly. This model can be unfolded by means of snap fasteners for cleaning and disinfection.

*Our range also includes matching disposable hygiene bags.*



## RP280 – Testicle Shield for Boys/Men

The penis and scrotum are completely protected with a lead equivalent value of Pb 1.00 mm.

A padded, elastic case clasp ensures a safe and correct fit with gentle pressure for the duration of the entire test. Due to the rounded design there is no risk of injury to the patient.

Putting it on is simple and the skin-friendly coating of the MAVIG RP280 testicle capsules provides perfect hygiene inside and out. Cleaning and disinfection are easy.

Of course, radiation protection is the focus of our product design and with the use of the RP280 series, you can guarantee your patients that perfect protection of the genital area in compliance with all legal specifications is ensured.



### Protective Material

Standard lead  
(RP278 and RP276)

Single layer lead rubber  
(RP280)

### Lead Equivalent

Standard: Pb 1.00 mm

### Outer Material / Colours

Soft PVC cover in light grey  
(RP278 and RP276)

Skin-friendly coating in medico-white  
(RP280)

### Sizes

RP2781	Large	height 12 cm
RP2782	Medium	height 9 cm
RP2783	Small	height 7 cm
RP276M	For men, dimensions approx. 155 x 120 x 90 mm	
RP276K	For boys, dimensions approx. 110 x 90 x 65 mm	
RP280M	For men, dimensions approx. 135 x 105 x 60 mm	
RP280K	For boys, dimensions approx. 105 x 85 x 55 mm	

### Price Saving

The ovary shield is also available as a complete set with all 3 sizes (RP278SET).

### Accessories

#### Hygienic Bag for RP276/RP280

RP-HYG-CM	- Set of 100 bags in men's size
RP-HYG-CK	- Set of 100 bags in boys' size
RP-HYG-CMK	- Set of 100 bags in men's size and 100 bags in boys' size

Our patient protection products conform to the medical devices directive 93/42/EEC.

MAVIG X-ray protective clothing gives you the security of fulfilling all applicable legal requirements.

## Protective Material

Standard lead  
(RP276-S)

NovaLite  
(RP274)

## Lead Equivalent

Standard: Pb 1.00 mm

## Outer Material / Colours

ComforTex® HPMF in:

- Teddy design

## Sizes / Sets

The 3-piece set RP276-S-SET contains testicle shields for infants, babies, and children aged 1 to 10.

The 3-piece set RP274SET6 is suitable for infants, babies, and children aged 1 to 6.

The sizes in each set can be adjusted by means of a hook & burr fastener.

## Note

Both the children testicle shield and the gonad protection pants are only available as a set:

**RP276-S-SET** 3 children sizes

**RP274SET6** 3 children sizes

## RP276-S – Testicle Protection for Infants, Toddlers, and Children

The model is for the protection of the male gonads of young patients during X-ray images in medical diagnostics.

Care was taken in the design to ensure that there is no risk of injury to the patient. The shield can be unfolded by means of snap fasteners for cleaning and disinfection.

The full set of sizes contains testicle shields for infants, babies, and children aged 1 to 10.



## RP274 – Gonad Protection Pants Set

The gonad protection pants provide comfortable complete protection for the gonads of your smallest patients.

The practical hook & burr fasteners make them easy to put on and take off, and permit convenient size adjustment.

The full set of sizes contains protective pants for infants, babies, and children aged 1 to 6.



Our patient protection products conform to the medical devices directive 93/42/EEC.

MAVIG X-ray protective clothing gives you the security of fulfilling all applicable legal requirements.



## RP271 – Mammary Gland Shield for Children

The children patient shield reliably protects your young patients' mammary glands during X-rays in medical diagnostics.

The children mammary gland shield can be conveniently adjusted to the size needed.

- Approx. 80% reduction in the radiation exposure in the area of the mammary glands
- Hygienic, skin-friendly outer material
- Can be re-used, not a disposable product
- Comfortable, non-rubbing neoprene stoppers
- Easy to adjust



## RP270 – Mammary Gland Shield for Women

The mammary gland shield protects your patients effectively during mammograms.

The shield is made up of two parts, each 18 x 40 cm (W x H) in size, joined by an length adjustable hook & burr fastener for enhanced comfort when putting it on and easy adjustment.



### Protective Material

NovaLite

### Lead Equivalent

Standard: Pb 0.50 mm

### Outer Material / Colours

Comfortex® HPMF for RP271 in:

- Teddy design

Comfortex® HPMF for RP270 in the colours:

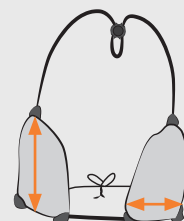
- Curacao
- Orchidee
- Regatta
- Indian Summer
- Limette
- Ocean
- Lagoon
- Teddy design

### Sizes

#### RP271

Height approx.  
11 cm

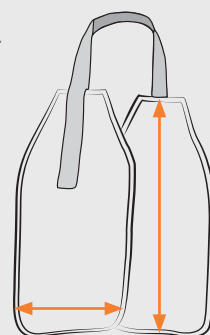
Width approx.  
10 cm



#### RP270

Height approx.  
40 cm

Width approx.  
18 cm



Our patient protection products conform to the medical devices directive 93/42/EEC.

MAVIG X-ray protective clothing gives you the security of fulfilling all applicable legal requirements.



# RD635 X-RAY PROTECTION IN DENTISTRY

RD635

## Protective Material

Standard lead

## Lead Equivalent

Standard: Pb 0.50 mm

## Outer Material / Colours

ComforTex® HPMF, available in the colours:

- Curacao
- Orchidee
- Regatta
- Indian Summer
- Limette
- Ocean
- Lagoon
- Teddy design

## Closure

Practical hook & burr fastener on the front

## Sizes / Dimensions

RD635E for adults  
Front: 90.0 x 60.0 cm (L x W)  
RD635K for children  
Front: 70.0 x 45.0 cm (L x W)

## Note

Matching the model RD635, our thyroid protection RD614 for patients is available.

**RD614** see page 43

## RD635 – Patient X-Ray Apron

for panoramic X-rays in a standing position

The patient protective apron RD635 offers ideal radiation protection during panoramic X-ray imaging, cephalometry, or cone beam computed tomography (CBCT) of a standing patient.

It is particularly comfortable to put on, as the protective clothing can be individually adjusted to the patient's girth with a single move.

The closure system at the front prevents parts of the protective clothing entering into the image-relevant area due to incorrect closure. The back lies smooth and flat against the body.



Our patient protection products conform to the medical devices directive 93/42/EEC.

MAVIG X-ray protective clothing gives you the security of fulfilling all applicable legal requirements.

**RD642 – Patient X-Ray Apron**  
for X-rays in a sitting position

Flexibility and wearing comfort are special features of the MAVIG RD642 patient protective apron which is used for dental X-rays in the sitting position.

High quality hook & burr fasteners make it possible to put it on quickly and securely, with an exact fit.



**Protective Material**

Standard lead

**Lead Equivalent**

Standard: Pb 0.50 mm

**Outer Material / Colours**

ComforTex® HPMF, available in the colours:

- Curacao
- Orchidee
- Regatta
- Indian Summer
- Limette
- Ocean
- Lagoon
- Teddy design

**Closure**

Practical hook & burr fastener on the back

**Sizes / Dimensions**

- RD642E for adults  
Front: 90.0 x 60.0 cm (L x W)
- RD642K for children  
Front: 70.0 x 45.0 cm (L x W)

**Note**

Matching the model RD642, our thyroid protection RD614 for patients is available.

**RD614** see page 43

Our patient protection products conform to the medical devices directive 93/42/EEC.

MAVIG X-ray protective clothing gives you the security of fulfilling all applicable legal requirements.





# RD644 X-RAY PROTECTION IN DENTISTRY

RD644

## Protective Material

Standard lead

## Lead Equivalent

Standard: Pb 0.50 mm

## Outer Material / Colours

ComforTex® HPMF, available in the colours:

- Curacao
- Orchidee
- Regatta
- Indian Summer
- Limette
- Ocean
- Lagoon
- Teddy design

## Closure

Practical hook & burr fastener on the back/ neck

## Sizes / Dimensions

RD644E for adults  
Front: 90.0 x 60.0 cm (L x W)  
RD644K for children  
Front: 70.0 x 45.0 cm (L x W)

## Note

Also available in a two-colour design:  
"Curacao with Orchidee" or  
"Limette with Ocean".

## RD644 – Patient X-Ray Apron

with thyroid shield, for X-rays in a sitting position

Like the classical dental apron (RD642), this model offers high flexibility and wearing comfort.

The apron does not only offer extensive protection up to the gonads, but also for the thyroid gland of the sitting patient during dental X-rays.

The hook and burr fastener on the sewn-on protective collar ensures a perfect fit, as well as safe and fast putting on and taking off. Loops on the back of the apron allow the apron to be fastened to the dental chair.

Model RD644 is designed as a reversible X-ray apron for patients. The design thus allows you to choose between a single-colour or two-colour design. As two-colour designs the combinations "Curacao with Orchidee" and "Limette with Ocean" are available.



Our patient protection products conform to the medical devices directive 93/42/EEC.

MAVIG X-ray protective clothing gives you the security of fulfilling all applicable legal requirements.

**RD614 – Thyroid and Sternum Protection**  
for patients – fitting RD635 & RD642

The thyroid is a radiation-sensitive organ of the human body which requires particular protection.

Our thyroid and sternum protector is characterised by its first-class cut and the best fit, taking into account all aspects of radiation protection.

A simple, optionally replaceable hook & burr fastener ensures sufficient room for adjustment.



*With replaceable hook & burr fastener*



*Children size in Teddy design*



*Optional hygienic cover*

**Protective Material**

Standard lead

**Lead Equivalent**

Standard: Pb 0.50 mm

**Outer Material / Colours**

ComforTex® HPMF, available in the colours:

- Curacao
- Orchidee
- Regatta
- Indian Summer
- Limette
- Ocean
- Lagoon
- Teddy design

**Closure / Sizes**

**Hook & burr fastening:**

- RD614E for adults  
One size that fits most neck sizes from 32 - 45 cm.
- RD614K for children  
One size that fits most neck sizes from 28 - 36 cm.

**Replaceable hook & burr fastening:**

- RD614EAK for adults  
One size that fits most neck sizes from 37 - 50 cm.
- RD614KAK for children  
One size that fits most neck sizes from 28 - 36 cm

**Note**

To meet hygiene requirements, we recommend using our washable hygienic cover made of the special ComforTex® MF material in the colour "Ocean".

Our patient protection products conform to the medical devices directive 93/42/EEC.

MAVIG X-ray protective clothing gives you the security of fulfilling all applicable legal requirements.

# STORAGE SYSTEMS FOR X-RAY PROTECTIVE CLOTHING

## Storage Systems for X-Ray Protective Clothing – A Daily Assistant

This assistant must fulfil a number of basic criteria in order to be useful to you in your daily work:

- Convenient & simple access
- Smallest possible footprint
- Easy assembly
- Clear arrangement
- Appropriate and protective storage

We designed the MAVIG storage systems with these points in mind.

Functional, partly modular technology which provides the greatest possible scope in your space planning.



Wall System AW412

Always ready at hand, your dental apron (front or panoramic apron) or X-ray protective drape is stored safely with minimum space required thanks to this practical wall system.

Functional metal construction, painted in medico-white (RAL 9002).



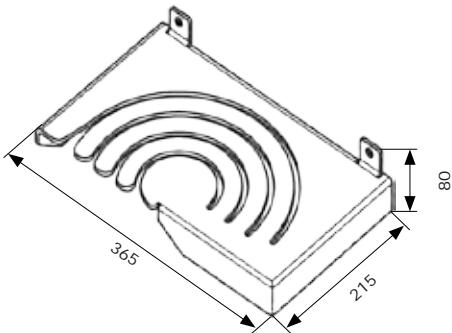
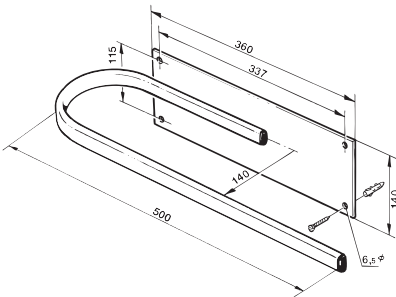
Wall System AW417

The ideal solution for the storage of your RP643 gonad aprons.

With the clear arrangement, you can determine the correct apron size for your patients at a glance and easily take the appropriate apron from the wall system, without having to remove other aprons.

Heavy duty metal construction in cool-white (RAL 9016).

	AW412	AW417
Wall System	•	•
Mobile System	-	-
Dimensions (H x W x D)	140 x 500 x 160 mm	80 x 365 x 215 mm
Overhang	-	-
Design as (for)	AW412 (apron/drape)	AW417 (gonad apron)
Max. Capacity	1 (apron) / 2 (drapes)	4 (various sizes)
Empty Weight / Load	1.5 kg / 10.0 kg	1.3 kg / 5.0 kg
Dental Aprons	•	-
Gonad Aprons	-	•
Front Aprons	-	-
Coats	-	-
Costumes	-	-







### Special Hanger AW106

This clothes hanger made of high-tensile material with a special form is ideally suited for the storage of individual aprons, coats, or costumes.

Colour: medico-white (RAL 9002)

### Mobile System AW423

The AW423 mobile storage system is easy, convenient, and safe to move.

It also has brakes for stabilisation.

Functional metal construction, painted in medico-white (RAL 9002), chrome-plated swivel bars.

#### AW106

-  
-  
520 x 90 mm  
-  
1  
0.2 kg / 9.0 kg

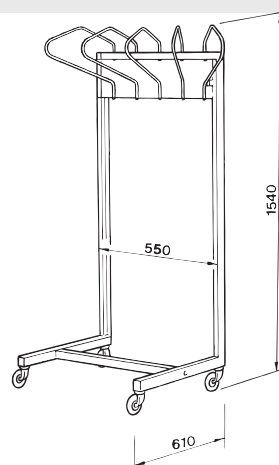
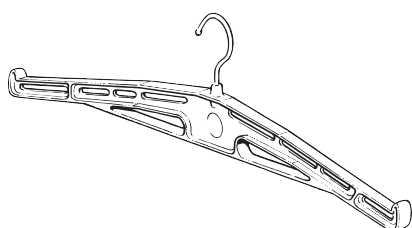
•  
-  
•  
•  
•

#### AW423

-  
•  
- \*  
630 mm  
AW423/5 (5 aprons)  
AW423/10 (10 aprons)  
5 / 10  
20.0 kg / 45.0 kg (AW423/5)  
25.0 kg / 90.0 kg (AW423/10)

•  
-  
•  
•  
•

\* System Dimensions (H x W x D)  
AW423/5 1540 x 550 x 610 mm  
AW423/10 1540 x 900 x 610 mm



# STORAGE SYSTEMS FOR X-RAY PROTECTIVE CLOTHING

Tip

Prolong the life of your X-ray protective clothing by making sure that you store it correctly from the start:

Never fold the clothing, lay it over edges, or hang it on inappropriate hooks. Also avoid storing the aprons close to heat sources. It is dangerous to use damaged radiation protective clothing. This is particularly critical, as damage to the inner radiation protective material usually goes unnoticed, or is not noticed until very late. Therefore check the protective properties of your apron regularly.

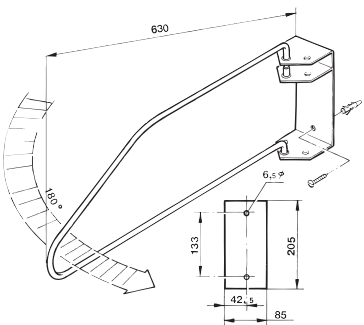


Wall System AW421/1

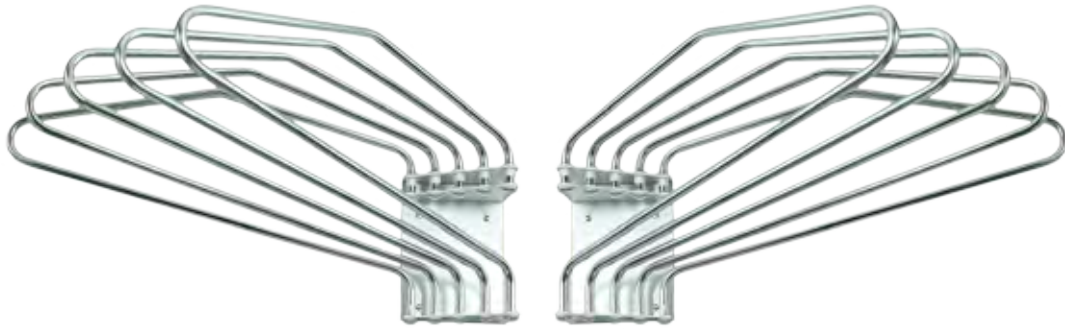
This system is recommended if you want to store one garment without using much space.

Functional metal construction, painted in medico-white (RAL 9002), chrome-plated swivel bar.

		AW421/1
Wall System		•
Dimensions (H x W)		205 x 85 mm
Overhang		630 mm
Design as (for)		AW421-1
Max. Capacity		1
Empty Weight / Load		1.2 kg /12.0 kg
Front Aprons		•
Coats		•
Costumes		•



Base Plate Measurements



### Wall System AW419

The wall system with the best ratings for user-friendliness and storage space.

The five chrome swivel bars give you an operating radius of 180°. On the other hand, when they are folded against the wall, parallel to each other, the bars create plenty of space in the room.

Do you need a wall system for up to 10 garments, with optimal use of space and excellent user convenience?

Then the combination of the systems AW419-R and AW419-L is ideal for you. The shape of the base plate permits seamless installation of the two racks next to each other.

Functional metal construction, painted in medico-white (RAL 9002), chrome-plated swivel bars.



### Wall System AW421/2 & /3

Depending on the version, a wall system for the appropriate storage of two or three garments.

You can spread the hangers apart 180° as well as fold a maximum of two hangers to one side, flat against the wall.

Functional metal construction, painted in medico-white (RAL 9002), chrome-plated swivel bars.



#### AW421/2 & AW421/3

205 x 85 mm  
630 mm  
AW421-2-R (right-hinged)  
AW421-2-L (left-hinged)  
AW421-3  
2 / 3  
1.7 kg / 24.0 kg (AW421-2)  
2.2 kg / 36.0 kg (AW421-3)

#### AW419

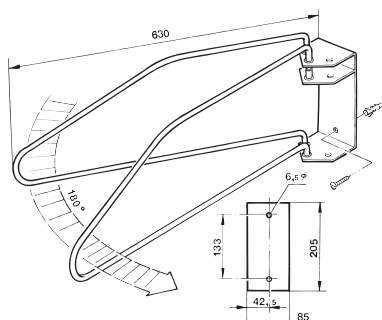
205 x 148 mm  
670 mm  
AW419-R (right-hinged)  
AW419-L (left-hinged)

5  
4.3 kg / 60.0 kg

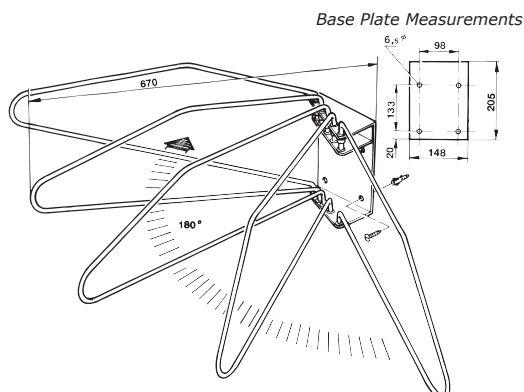
#### Skirt hooks AW427

To store costume skirts, please add our special hooks to systems AW419, AW421, and AW423. These can easily be mounted on the chrome hangers, even after installation of the system.

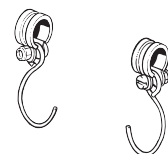
However, please check that your costume skirt is provided with loops. This is not always the case for skirts from other manufacturers.



Base Plate Measurements



Base Plate Measurements



# AZ187 SINGLE LAYER MATERIAL

## Single Layer Material AZ187

In radiography this single layer lead rubber is the main material used as, for example, a cassette cover or as a cover angle to mask a defined X-ray field.

The high quality, robust material AZ187 has a double-sided, easy to clean coating and a fabric insert inside.

The colour of the material on the visible outer side is medico-white.

Available as rolled material with an effective width of 90 cm, edges uncut, and in various lead equivalents from Pb 0.50 mm to Pb 2.00 mm, in increments of 0.50 mm.





## Scatter Grids

Scatter grids are the most important and most effective means of reducing the incidence of secondary rays on the image receiver, for clearly improved contrast rendering.

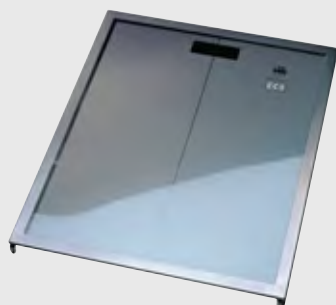
The MAVIG range of grids can considerably enhance the image quality of your X-rays.

The effect of the scatter grid is due to its directional effect. The scattered radiation, which strikes at a different angle to the primary beam, is absorbed by the lead strips, while the primary beam travelling in the direction of the strips passes through with minimal attenuation.

The quality of a grid is greatly determined by the choice of the interspacer (interspace material). In order for the image-producing primary beam to pass through the grid largely unattenuated, MAVIG uses only the highest quality aluminium as the interspace material between the lead strips.

The grid surfaces, which protect the lead strips and interspacer, are also quality-relevant. If these are not well-constructed, they can cause unwanted attenuation of the primary beam or fail to meet the protection requirement for the sensitive internal features of the grid.

Our grids ensure ideal protection against mechanical damage and penetration of moisture and at the same time ensure first-class image quality.



## Parallel Versus Focussed Grids

Parallel grids are mainly used in cases where the radiography technique cannot guarantee the high requirements of a focussed grid in terms of precise centring and focussing, e.g. bedside X-rays or in the emergency department.

The great advantage of parallel grids is that the absorber strips are not inclined and so exact focussing of the central beam is less important.

## Inserted Versus Tunnel Grids

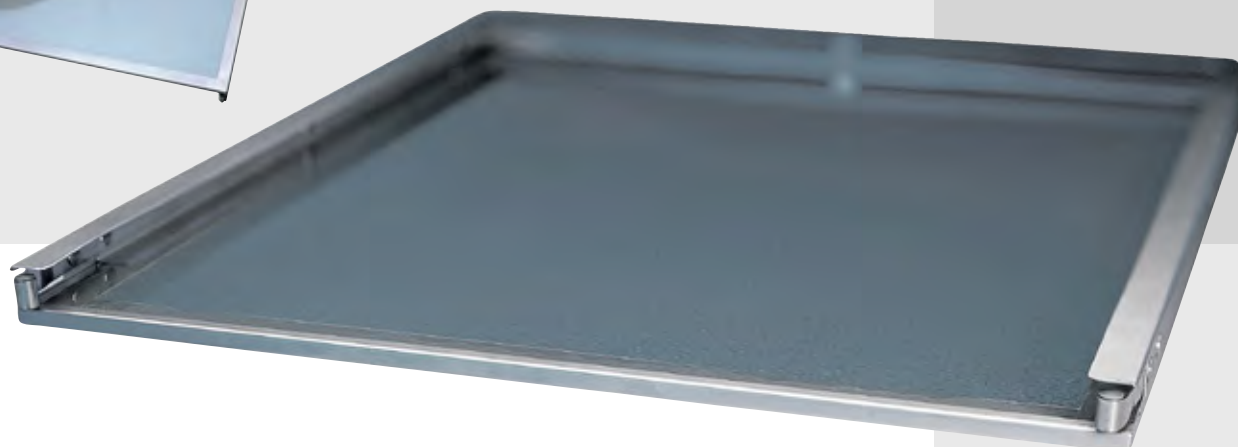
The tunnel grid (grid bridge) design offers the following advantages:

- One scatter grid can be used for any number of cassettes of the same size with different screen combinations
- Additional protection of the grid against mechanical damage
- Practical for use in bedside X-rays

It is worth paying particular attention to the clever design of the frame structure in the MAVIG tunnel grids.

MAVIG tunnel grids are only available as parallel grids.

User-friendliness and toughness, together with considerably longer service life of the scatter grid, are of highest importance.



## Interspace Ratio, Number of Lines

The characteristics of a scatter grid depend on the following variables:

- Height of the lead strips
- Thickness of the lead strips
- Thickness of the interspace medium
- Number of lines per cm

These characteristics determine the parameters which define the final grid design: ratio (height of lead strips versus distance between each strip) and lines/cm (number of lines per cm).

## Course of Lines

The lines run parallel to the long side of the grid (standard).

On request, grids with "transverse lamellae", i.e., with lines running parallel to the narrow side of the grid, can also be supplied.

Lines per cm	Interspace Ratio (ratio)			
	Parallel grid			
	6:1	8:1	10:1	12:1
30 L/cm	x	x		
40 L/cm	x	x	x	x
70 L/cm	x	x	x	x

Film Format in cm	Tunnel Grid parallel
24.0 x 30.0	x
35.6 x 43.2	x

## Note

As standard, the cassette drawer is intended to be on the narrow side of the grid in all formats.

However, on request, the drawer can be placed on the long side of the grid in a customised version for the format 35.6 cm x 43.2 cm.

## NOTES

## Personal X-Ray Protection – Made to Measure

This data sheet has been developed in order to assist with taking correct measures for tailor-made aprons. Before ordering a tailor-made apron, please double check with our customer service if not a standard size of our extensive product range would be suitable.

Please always consider the following points in order to achieve the best protection:

- Measure precisely: tape should be snug, but not restrictive
- According to RbV and DIN EN 61331-3:2016 the front of the body should be covered from the lowest point of the neck down incl. knee caps
- MAVIG recommends to even measure to the point underneath the knees for max. safety
- All of the below measures are relevant, regardless if a coat, apron or costume is requested

Please fill in this chart completely.

### 1 \_\_\_\_\_ cm Width of Back

Measured across the back from armpit to armpit, while arms are down and close to body.

### 2a \_\_\_\_\_ cm Breast Girth

Measured horizontally around the body at the widest point of the chest.

### 2b \_\_\_\_\_ cm Under Breast Girth (Lady)

Measured horizontally around the body just below the breast.

### 3 \_\_\_\_\_ cm Waist Girth

Measured snug around the waist, but not restrictive.

- Ladies: at the slimmest point of the waist
- Gents: slightly below the navel

### 4 \_\_\_\_\_ cm Waist Level

Measured from the middle of the shoulder to the waist.

- Ladies: to the slimmest point of the waist
- Gents: to a point slightly below the navel

### 5 \_\_\_\_\_ cm Hip-/Bottom Girth

Measured horizontally around the body at the widest point of the hip/bottom.

### 6 \_\_\_\_\_ cm Length of Apron / Coat

Measured from the middle of the shoulder to the lower edge of the apron / coat.

### 7 \_\_\_\_\_ cm Length of Costume Skirt

Measured from waist level to the lower edge of the skirt.

### 8 \_\_\_\_\_ cm Total Body Height

### 9 Model \_\_\_\_\_, Pb Value Front \_\_\_\_\_ mm

(Pb value back, standard: 0.25 mm)

### 10 Apron for ☐ Lady ☐ Gent

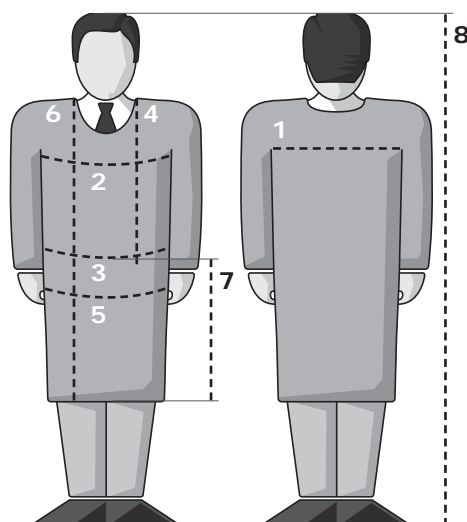
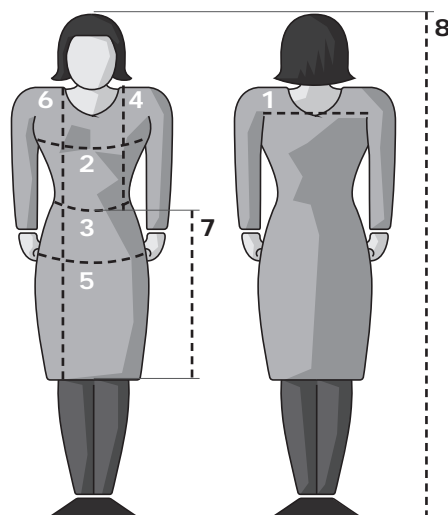
### 11 Measured by: \_\_\_\_\_

(Name)

Date: \_\_\_\_\_

(Date)

By/From: ☐ Hospital / ☐ Supplier / ☐ MAVIG Employee





## MAVIG GmbH Headquarters

PO Box 82 03 62  
81803 Munich  
Germany

Stahlgruberring 5  
81829 Munich  
Germany

Phone: +49 (0) 89 420 96 0  
Fax: +49 (0) 89 420 96 200  
e-Mail: [info@mavig.com](mailto:info@mavig.com)

### WORLDWIDE MAVIG OFFICES

#### Nordic & Baltic Countries MAVIG Nordic

Stockholm  
Sweden

Phone: +46 (0) 722 25 25 68  
e-Mail: [larsson@mavig.com](mailto:larsson@mavig.com)

#### Benelux, GB, Ireland MAVIG B.V.

Mercuriusweg 86  
2516AW Den Haag  
Netherlands

Phone: +31 (0) 70 33 11 688  
Mobile: +31 (0) 61 595 43 48  
e-Mail: [simmonds@mavig.nl](mailto:simmonds@mavig.nl)

#### France MAVIG France SARL

66, Ave. des Champs Elysées  
F-75008 Paris  
France

Phone: +33 (0)1 30 59 46 23  
Fax: +33 (0)1 30 59 46 23  
e-Mail: [info@mavig.fr](mailto:info@mavig.fr)

#### China MAVIG Healthcare Beijing Co., Ltd.

Block C - Room No. 2607  
Wangjing SOHO Tower 1  
Futong East Street No. 1  
Wangjing Area, Chaoyang District  
Beijing 100102, China

Phone: +86 - 10 - 64 78 19 21  
Fax: +86 - 10 - 64 78 19 21  
Mobile: +86 - 13 70 122 85 86  
e-Mail: [zhang@mavig.com](mailto:zhang@mavig.com)

### REPRESENTATION

#### USA & Canada Ti-Ba Enterprises, Inc.

25 Hytec Circle  
Rochester, NY 14606  
USA

Phone: +1 (1) 585 247 1212  
Fax: +1 (1) 585 247 1395  
e-Mail: [mavigusteam@mavig.com](mailto:mavigusteam@mavig.com)

#### Middle East & Northern Africa Mena Medical Development

Ashrafieh - Adlieh Square - Alfaras St.  
- Alboustany Building, 5th floor  
Beirut  
Lebanon

Phone: +961 14 23 499  
Fax: +961 14 26 499  
e-Mail: [mavig@mena-md.com](mailto:mavig@mena-md.com)

# www.mavig.com