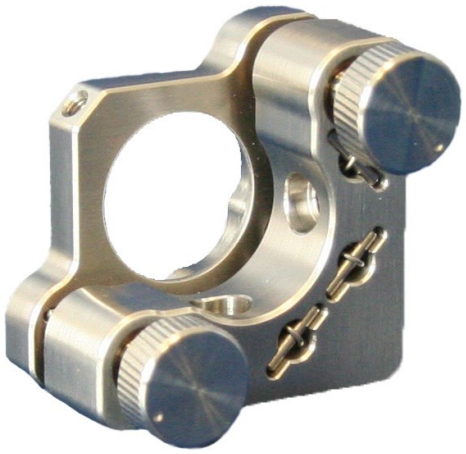
Radiant Dyes Laser Accessories GmbH

Optomechanics

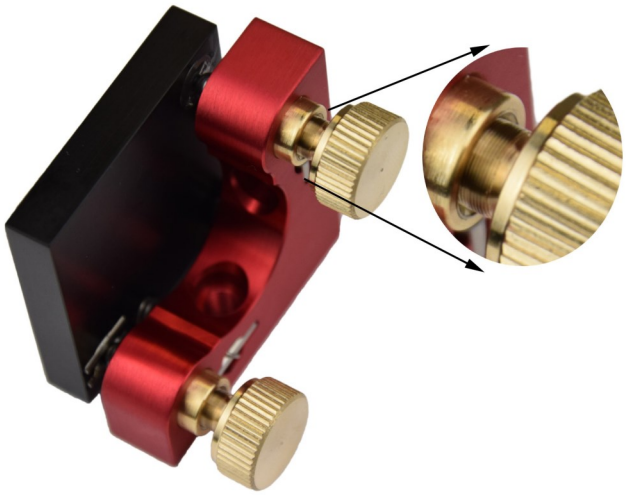
Innovative Products for Scientific Applications

V6

Radiant Dyes Laser



100 µm/turn (250 TPI) fine thread screws



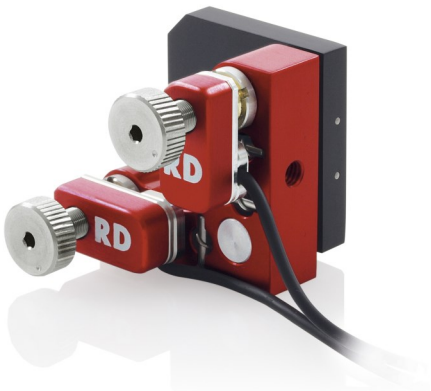


Table of Contents

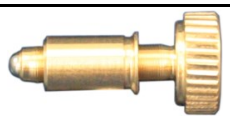
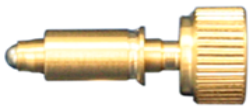
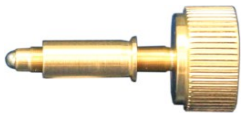
Fine Thread Screws

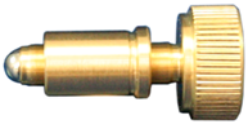
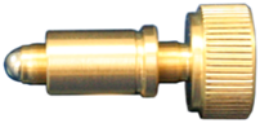
Radiant Dyes offer a variety of fine thread screws and micrometer screws. The screws are made in single-part production and are aligned to the nuts. This guarantees that the screws do not scratch or bounce and they can turn smoothly without jerking.

Options for all Fine Thread Screws	
• 4 mm fit for plastic heads	
• Hexagon socket without knurled head	
• Hexagon socket with knurled head	
• Counter nut (Screw length +2 mm)	
• Stainless steel screws	

Besides our standard models we also produce custom-made screws

Models

Model 1	Model 2	Model 3
Fit liner: 6 mm **Adjustment line:** 5 mm **Thread:** M4.15 x **0.25** milled head top with braze ball (**100 TPI**) M4.15 x **0.15** milled head top with braze ball (**170 TPI**) M4.15 x **0.10** milled head top with braze ball (**250 TPI**)	**Fit liner:** 6 mm **Adjustment line:** 6 mm **Thread:** M4.15 x **0,25** milled head top with braze ball (**100 TPI**) M4.15 x **0,15** milled head top with braze ball (**170 TPI**) M4.15 x **0.10** milled head top with braze ball (**250 TPI**)	**Fit liner:** 6 mm **Adjustment line:** 8 mm **Thread:** M4.15 x **0.25** milled head top with braze ball (**100 TPI**) M4.15 x **0.15** milled head top with braze ball (**170 TPI**) M4.15 x **0.10** milled head top with braze ball (**250 TPI**)
		

Model 4S Model 4L	Model 5	Model 6
Fit liner: 9,5 mm **Adjustment line:** 6,5 mm *Model 4S* 8 mm *Model 4L* **Thread:** M6.15 x **0.25** milled head top with braze ball (**100 TPI**) M6.15 x **0.15** milled head top with braze ball (**170 TPI**) M6.15 x **0.10** milled head top with braze ball (**250 TPI**)	**Fit liner:** 9,5 mm **Adjustment line:** 12 mm **Thread:** M6.15 x **0.25** milled head top with braze ball (**100 TPI**) M6.15 x **0.15** milled head top with braze ball (**170 TPI**) M6.15 x **0.10** milled head top with braze ball (**250 TPI**)	**Fit liner:** 9,5 mm **Adjustment line:** 29 mm **Thread:** M6.15 x **0.25** milled head top with braze ball (**100 TPI**) M6.15 x **0.15** milled head top with braze ball (**170 TPI**) M6.15 x **0.10** milled head top with braze ball (**250 TPI**)
		

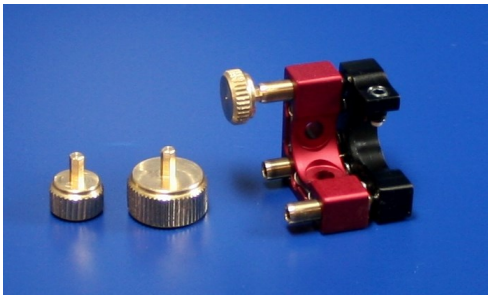
Screw Heads

Screw heads to adjust mirror mounts with hexagon socket screws:

RD-SH-S for Model 1

RD-SH-M for Model 2

RD-SH-B for Model 3, 4 L/S, 5, 6



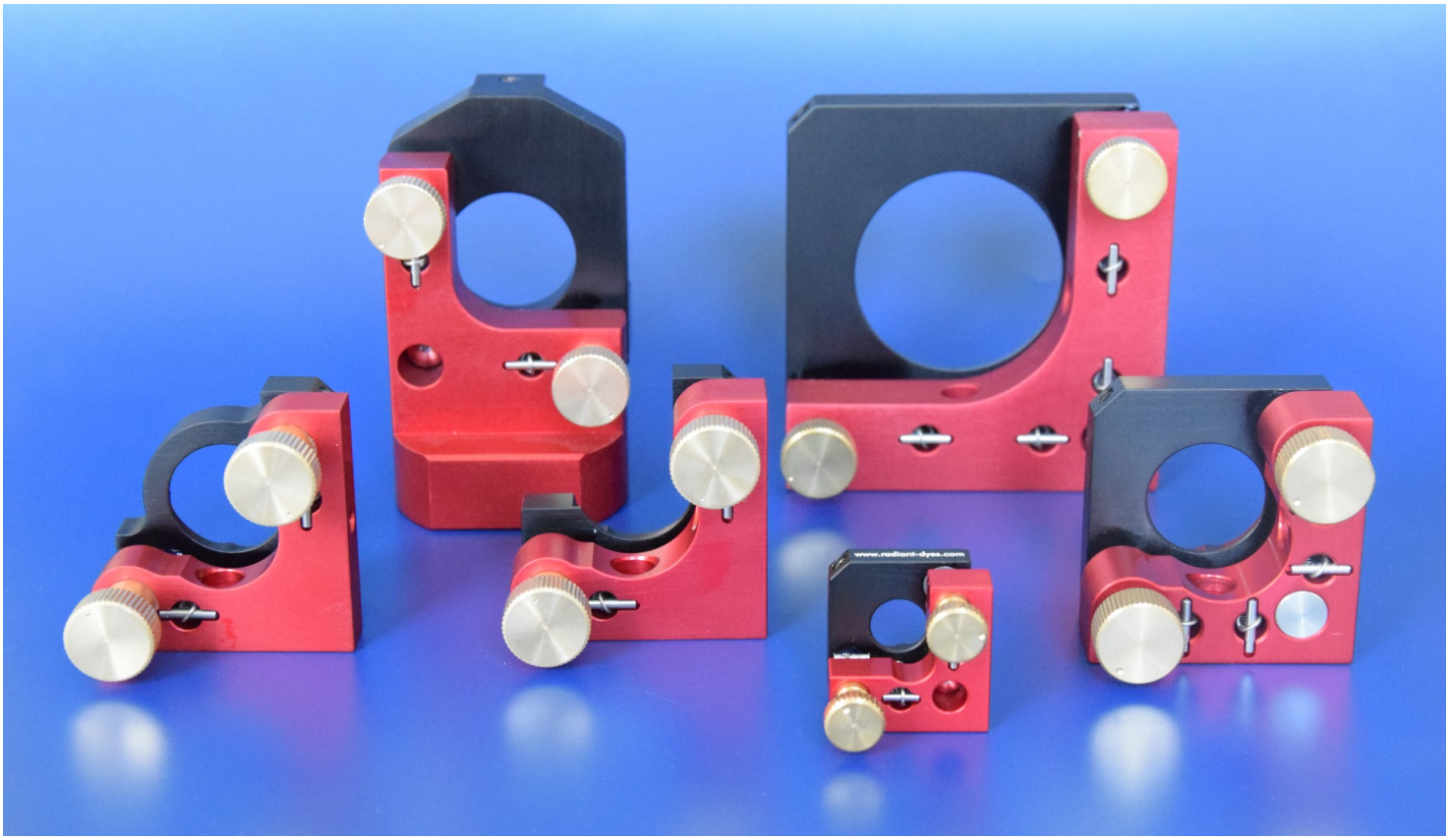
Micrometer Screws

Radiant Dyes offer a variety of precise micrometer screws. Different threads (500, 250, 100 µm/turn) and adjustment lines are available.

Model 1/2	Model 3/4	Model 5
Adjustment line: Model 1: 0-5 mm Model 2: 0-10 mm **Thread:** **500** µm/turn (**50** TPI) **250** µm/turn (**100** TPI) Crowned measuring surface 6H7 shank	**Adjustment line:** Model 3: 0-10 mm Model 4: 0-15 mm **Thread:** **500** µm/turn (**50** TPI) **250** µm/turn (**100** TPI) **100** µm/turn (**250** TPI) Crowned measuring surface 9.5H7 shank	**Adjustment line:** 0-25 mm **Thread:** **500** µm/turn (**100** TPI) Flat measuring surface 12H6 shank
		

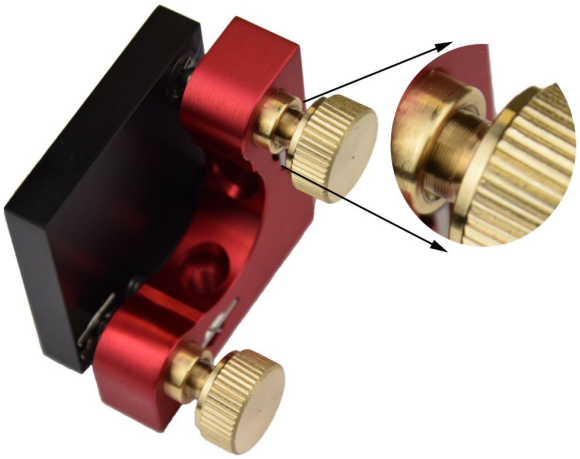
Model 6	Model 7	Model 8
Adjustment line: 0-6,5 mm **Thread:** **100** µm/turn (**250** TPI) Crowned measuring surface 6 mm shank	**Adjustment line:** 0-6,5 mm **Thread:** **100** µm/turn (**250** TPI) Crowned measuring surface 9.5 mm shank	Differential Micrometer screw **Adjustment line:** 0-15 mm **Thread:** Fine: **25** µm/turn (**1000** TPI) Crowned measuring surface 9.5H7 shank
		

Model 9
Adjustment line: 0-6,5 mm **Thread:** **100** µm/turn (**250** TPI) Crowned measuring surface 9.5 mm shank

We, Radiant Dyes Laser Accessories GmbH, produce **high-quality** opto-mechanical components in our own manufacturing centre. The screws are made in **single-part production** and are **aligned to the nuts.** This guarantees that the screws **do not scratch** or **bounce** and they can **turn smoothly without jerking.**
We offer a **wide range of front plates** for the various mirror mounts from closed up to two inch and for special applications for optics up to six inch.
Due to the fact that we produce everything in our own factory, we are able to manufacture also custom-made products.
Our **high-quality and stable** optomechanical components will help you to build up successful experiments.

100 µm/turn (250 TPI) fine thread screws



Options for all Mirror Mounts

Colors

All mirror mounts are available in six colors to signalize different optical beams:

Red
Black
Gold
Silver
Violet
Orange

The standard color is red.
Other colors on request

Custom designed Optomechanics

You design it – We manufacture it!

Customized optomechanics:

- From 2 inch up to 20 inch diameter
- From aluminum to ceramic
- From red to black
- Spherical or cylindrical lenses
- Rectangular or round filter

Customized Prism Mounts

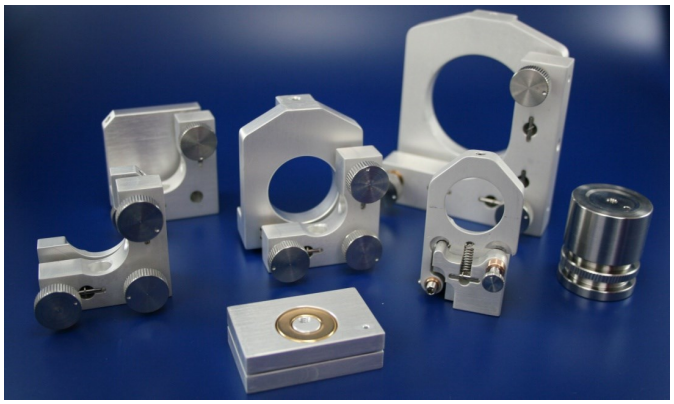
Customized Breadboards

Customized Posts & Pedestals

For further questions please feel free to contact us.

Operational Safety

For optimal operational safety all optomechanical components are also available with a sandblasted surface.



MIKRO

These mirror holders are manufactured of a special steel. They allow the assembly of a rigid resonator in a very small housing.

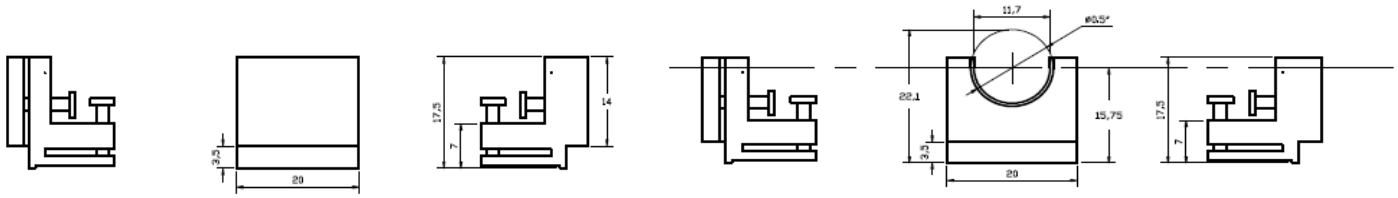
MRO-UL

Front plate 20 x 15 mm

MRO-ST-TR

- Beam splitter and trans adjustment
- Front plate 20 x 15 mm
- With 10 mm notch

Other versions on request.



MNI

The **MNI** mount is a very compact mirror mount which is ideal for application with low space. It can be used for optics up to one inch.

Features:

- Small stable mirror mount
- Open or closed back plate
- Different front plates available
- M4 thread
- #8-32 thread available on request

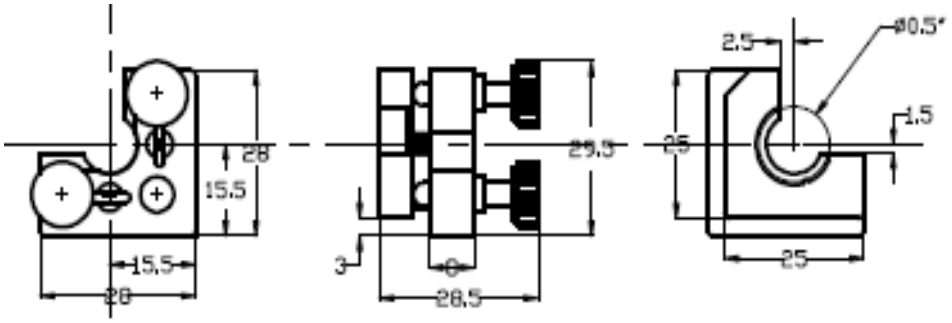
Screw Options:

- Fine thread screws Model 1:

  with **150** µm/turn (**170** TPI)
  with **100** µm/turn (**250** TPI)

- Micrometer screws:

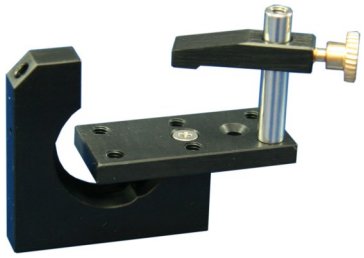
  500 µm/turn (**50** TPI)
  250 µm/turn (**100** TPI)
  100 µm/turn (**250** TPI)



Back plates

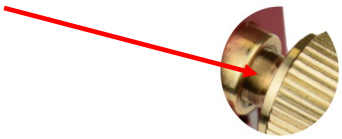
			
MNI-2-...	**MNI-3-...**	**MNI-2G-...**	**MNI-3G-...**

Front plates

				
…-3000	**…-3010** *(6H7)*	**…-3021** *(1/2“)*	**…-3030** *(1/2“)*	**…-3025** *(1“)*
				
…-3035Up	**…-3035Down**	**Prism Holder …-3030PH**		

The order number of the desired MNI mirror mount consists of the number of the back plate including the quantity of the screws and the number of the chosen front plate.

100 µm/turn (250 TPI) fine thread screws



MNI-HS

The **MNI-HS** is the high stable version of the MNI mirror mount. The MNI-HS can be used for applications where a high stability is necessary.

Features:

- Small high stable mirror mount
- 4 springs
- Open or closed back plate
- Different front plates available
- Stainless steel insert for stabilization
- M4 thread
- #8-32 thread available on request

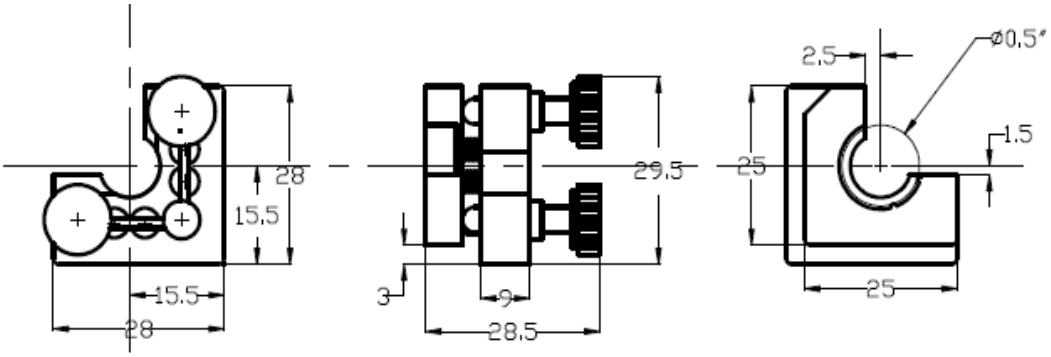
Screw Options:

- Fine thread screws Model 1:

  with **150** µm/turn (**170** TPI)
  with **100** µm/turn (**250** TPI)

- Micrometer screws:

  500 µm/turn (**50** TPI)
  250 µm/turn (**100** TPI)
  100 µm/turn (**250** TPI)



Back plates

		***Due to strong spring forces we offer the MNI-H only with two alignment screws. If a third screw should be necessary, we recommend the screw as hexagon socket for easier alignment.***
MNI-HS-2-...	**MNI-HS-2G-...**	

Front plates

				
…-3000	**…-3010** *(6H7)*	**…-3021** *(1/2“)*	**…-3030** *(1/2“)*	**…-3025** *(1“)*

The order number of the desired MNI-HS mirror holder consists of the number of the back plate including quantity of the screws and the number of the chosen front plate.

MNI-H-U

- Extra small mirror mount
- 4 strong springs
- High-precision screws with hexagon socket
- with M4 inner lowering
- Option: with locking device

MNI-H-U-2-3030
MNI-H-U-3-3030

MDI

The **MDI** is our most popular mirror mount. The mount is available with different front plates (from closed up to two inch) and two or three screws. It is our standard mirror mount which can be used for most applications in the laboratory.

Features:

- Stable mirror mount
- Open or closed back plate
- Different front plates available
- M6 thread with M4 inner
- lowering (standard)
- M4 or M8 thread available on request
- #8-32 or #1/4-20 thread available on request

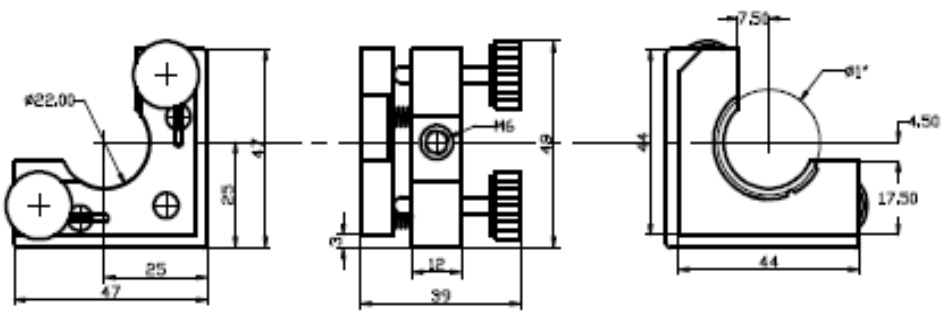
Screw Options:

- Fine thread screws Model 4:

  with **250** µm/turn (**100** TPI)
  with **150** µm/turn (**170** TPI)
  with **100** µm/turn (**250** TPI)

- Micrometer screws:

  500 µm/turn (**50** TPI)
  250 µm/turn (**100** TPI)
  100 µm/turn (**250** TPI)



MDI-HS

The **MDI-HS** is the high stable version of the MDI mirror mount. The MDI-HS can be used for applications where a high stability is necessary.

Features:

- High stable mirror mount
- 4 springs
- Stainless steel insert for stabilization
- Thicker open back plate
- Different front plates available
- M6 thread with M4 inner
- lowering (standard)
- M4 thread available on request
- #8-32 or #1/4-20 thread available on request

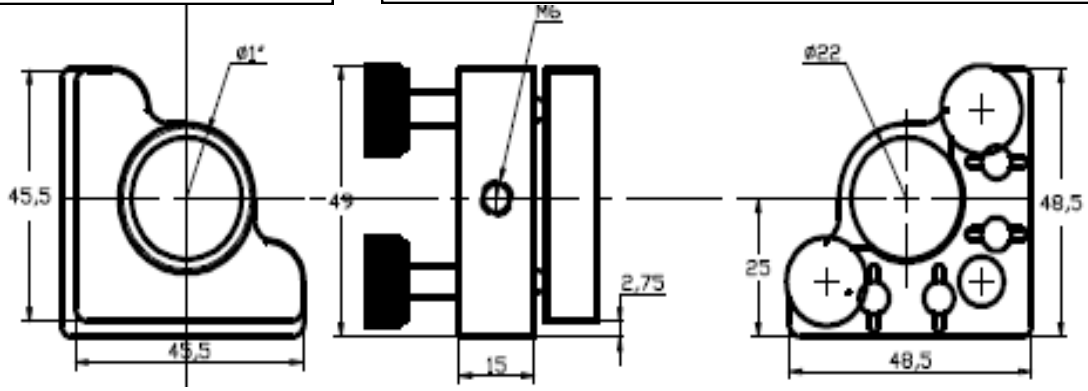
Screw Options:

- Fine thread screws Model 4:

  with **250** µm/turn (**100** TPI)
  with **150** µm/turn (**170** TPI)
  with **100** µm/turn (**250** TPI)

- Micrometer screws:

  with **500** µm/turn
  with **250** µm/turn
  with **100** µm/turn



Back plates MDI

			
MDI-2-...	**MDI-3-...**	**MDI-2G-...**	**MDI-3G-...**

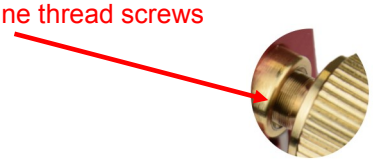
The order number of the desired MDI mirror mount consists of the number of the back plate including quantity of the screws and the number of the chosen front plate.

Back plates MDI-HS

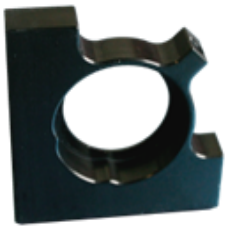
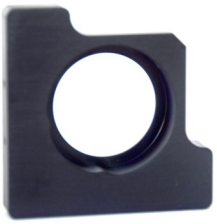
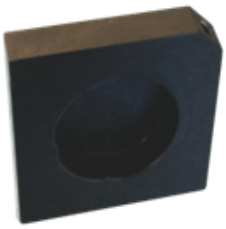
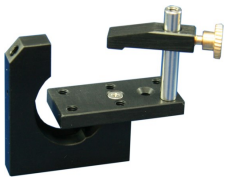
	***Due to strong spring forces we offer the MDI-HS only with two alignment screws. If a third screw should be necessary, we recommend the screw as hexagon socket for easier alignment.***
MDI-HS-2-...	

The order number of the desired MDI-HS mirror mount consists of the number of the back plate including quantity of the screws and the number of the chosen front plate.

100 µm/turn (250 TPI) fine thread screws



Front plates

				
…-3000	**…-3010** *(6H7)*	**…-3021** *(1/2“)*	**…-3025** *(1“)*	**…-3030z** *(1“)*
				
…-3030 *(1”)*	**…-3060a** *(1”)*	**…-3060b** *(1”)*	**…-3000-25** *(1”)*	**…-3040** *(1,5”)*
				
…-3050 *(1,5”)*	**…-3000-50** *(1,5”)*	**…-3045** *(2”)*	**…-3055** *(2”)*	**…-3035Up**
				
…-3035Down	**…-3000-27** *(Optics 27x50 mm)*	**…-3030PH** *(Prism Holder)*	**…-3030H** *(1“)*	**...-3025/50** *(1“ and 1,5“)*
				
…-3012I *(12 mm)*	**…-3012T** *(12 mm)*	**…-RM** *(Rotation Mount)*	**…-RMup**	**…-3030up**
				
…-AOM	**…-3000-30**	**…-U(p)** *(1”)*	**…-360°**	

MDI-H

The **MDI-H** is the most stable mirror mount in our product range. The optics are fixed by a retaining ring instead of a set screw.

The order number of the desired MDI-H mirror mount consists of the number of the back plate including quantity of the screws and the number of the chosen front plate.

Features:

- High stable mirror mount
- Standard MDI-H with axial mounting ring for distortion free wavefront
- 4 springs
- Stainless steel insert for stabilization
- Thicker open back plate
- Thicker front plate
- Different front plates available
- M6 thread with M4 inner lowering (standard)
- M4 thread available on request
- #8-32 or #1/4-20 thread available on request

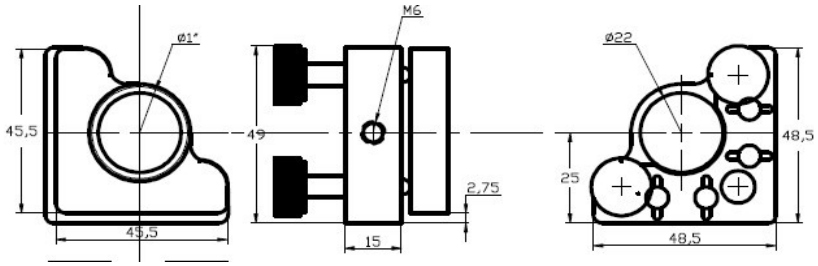
Screw Options:

- Fine thread screws Model 4:

  with **250** µm/turn (**100** TPI)
  with **150** µm/turn (**170** TPI)
  with **100** µm/turn (**250** TPI)

- Micrometer screws:

  500 µm/turn (**50** TPI)
  250 µm/turn (**100** TPI)
  100 µm/turn (**250** TPI)

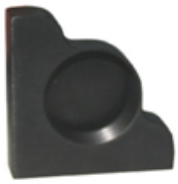
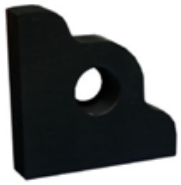
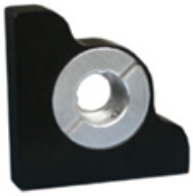
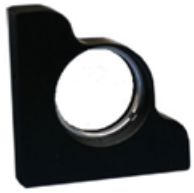


Back plates

MDI-H-2-...

Due to strong spring forces we offer the MDI-H only with two alignment screws. If a third screw should be necessary, we recommend the screw as hexagon socket for easier alignment.

Front plates

			
…-3010 *(1")*	**…-3021** *(1/2")*	**…-E3021** *(1/2")*	**…-3025** *(1")*

E-MDI

E-MDI

The **Easy MDI** is a low cost version of the MDI mirror mount. But the Easy MDI also guarantees a precise and repeatable adjustment for one inch optics.

Features:

- Precisely adjustable
- Low price
- Available with following front plates

	
…-3021 (1/2“)	**…-3031 (1“)**

The difference to the original MDI:

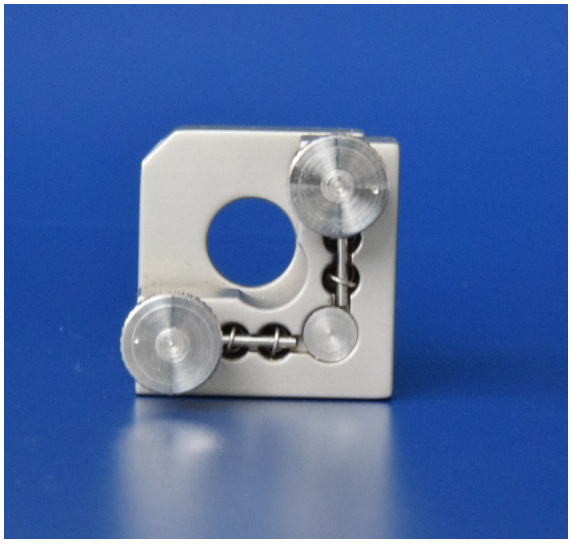
- no carbide spikes
- smaller back plate
- without thread but with lowering for M4 screws
- only available with 2 screws with **250** µm/turn (**100** TPI)

Stainless Steel mirror mounts

MNI-HSS

As special option for ultimate stability we offer the **MNI-HSS**. The back plate, the front plate and the screws are made of stainless steel.
This mirror mount guarantees high thermal and highest dimensional stability.

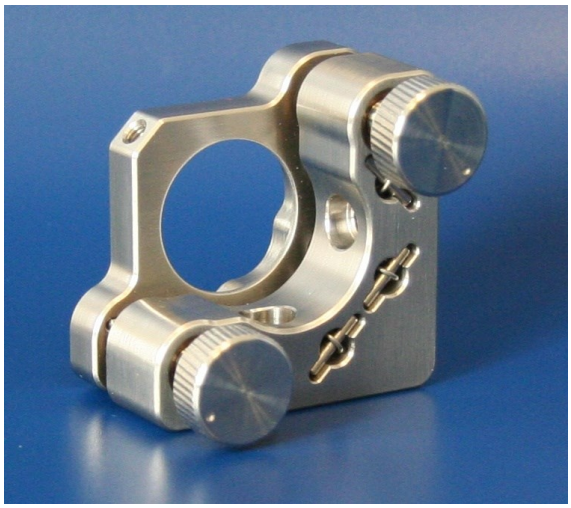
- Thick back plate and thick front of special stainless steel
- 4 strong springs
- Equipped with two stainless steel or brass fine thread screws with **150 µm/turn** (**170 TPI**) thread
- M4 thread (standard)
- #8-32 thread available on request



MDI-HSS

As special option for ultimate stability we offer the **MDI-HSS**. The back plate, the front plate and the screws are made of stainless steel.
This mirror mount guarantees high thermal and highest dimensional stability.

- Thick back plate and thick front of special stainless steel
- 4 strong springs
- Equipped with two stainless steel or brass fine thread screws with **150 µm/turn** (**170 TPI**) or **250 µm/turn** (**100 TPI**) thread
- M6 thread with M4 inner lowering (standard)
- M4 thread available on request
- #8-32 or #1/4-20 thread available on request

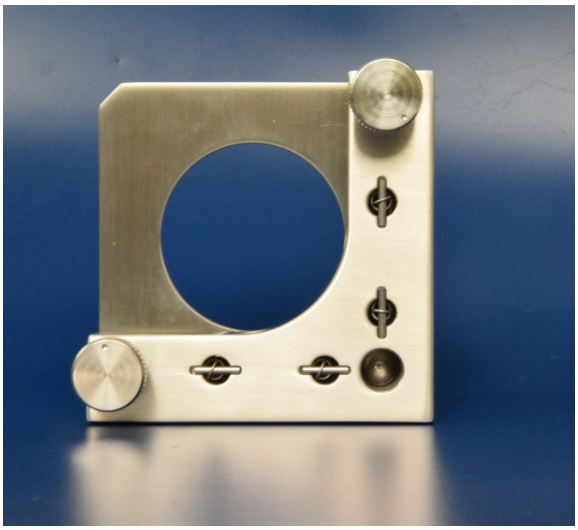


Stainless Steel & Ceramic mirror mounts

MXI-HSS

As special option for ultimate stability we offer the **MXI-HSS**. The back plate, the front plate and the screws are made of stainless steel.
This mirror mount guarantees high thermal and highest dimensional stability.

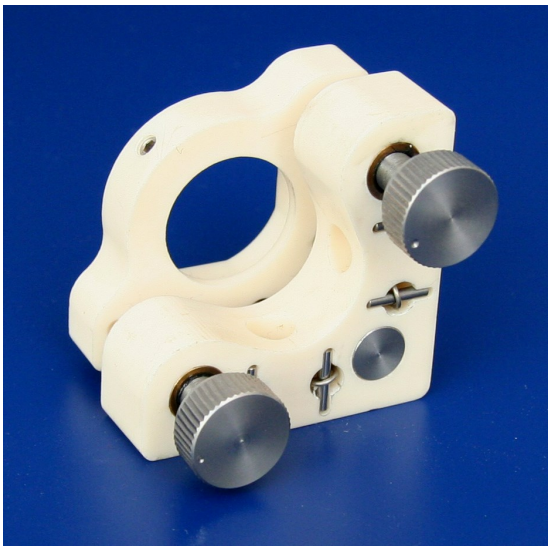
- Thick back plate and thick front of special stainless steel
- 4 strong springs
- Equipped with two stainless steel or brass fine thread screws with **150 µm/turn** (**170 TPI**) thread or **250 µm/turn** (**100 TPI**) thread
- M6 thread with M4 inner lowering (standard)
- M4 thread available on request
- #8-32 or #1/4-20 thread available on request



MDI-HC

For ultimate thermal stability we offer the **MDI-HC**. The back plate and the front plate are made of ceramic. This mirror mount is available with brass or stainless steel screws.

- Thick back plate and thick front plate of ceramic
- 4 strong springs
- Equipped with two brass or stainless steel fine thread screws with **150 µm/turn** (**170 TPI**) thread or **250 µm/turn** (**100 TPI**) thread
- Inner lowering for M4 screws



MXI

The **MXI** mirror mount is our standard mount for two inch optics. Due four strong springs this mount is high stable.

Features:

- High stable mirror mount
- 4 springs
- Thicker back plate
- Different front plates available
- M6 thread with M4 inner
- lowering (standard)
- M4 thread available on request
- #8-32 or #1/4-20 thread available on request

Screw Options:

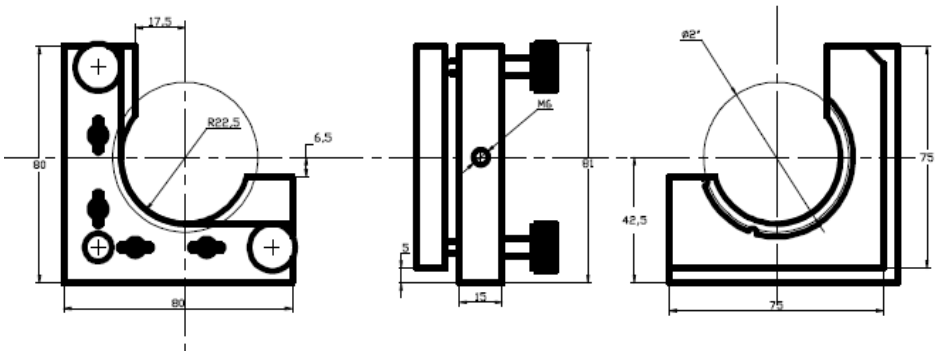
- Fine thread screws Model 5:

  with **250** µm/turn (**100** TPI)
  with **150** µm/turn (**170** TPI)
  with **100** µm/turn (**250** TPI)

- Micrometer screws:

  500 µm/turn (**50** TPI)
  250 µm/turn (**100** TPI)
  100 µm/turn (**250** TPI)

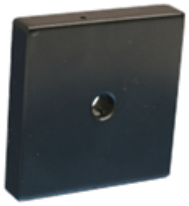
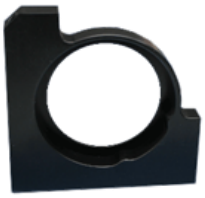
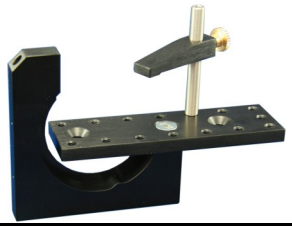
The order number of the desired MXI mirror mount consists of the number of the back plate including quantity of the screws and the number of the chosen front-plate.



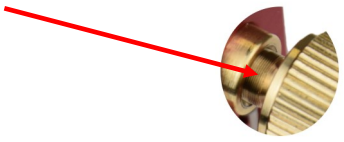
Back plates

			
MXI-2-...	**MXI-3-...**	**MXI-2G-...**	**MXI-3G-...**

Front plates

				
…-3000	**…-3010** *(6H7)*	**...-3021** *(1/2")*	**...-3025** *(1")* **...-3027** *(2")*	**...-3030** *(2")*
				
...-3030z *(2")*	**...-3050** *(3")*	**…-3030PH** *(Prism Holder)*	**…-3012T**	
				
…-BGS-T	**…-BGS-RD**			

100 µm/turn (250 TPI) fine thread screws



MXI-HS-C

The **MXI-HS-C** is the high stable version of the MXI mirror mount. This mount is more compact than our MXI mount.

Only availabe with following front plates:

- …-3030 (1,5")
- …-3030 (2")
- …-3027 (2")

RD1

The **RD1** is a small stable mirror mount with an integrated base.

Features:

- Very stable mirror mount
- Available in “right hand” and “left hand”
- Different front plates available
- With M6 thread (standard)
- M4 and M8 thread are also available
- #8-32 or #1/4-20 thread available on request

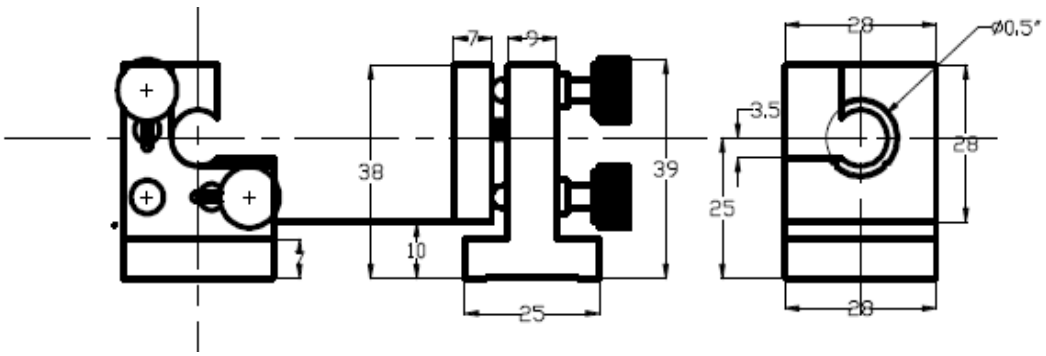
Screw Options:

- Fine thread screws Model 2:

  with **150** µm/turn (**170** TPI)
  with **100** µm/turn (**250** TPI)

- Micrometer screws:

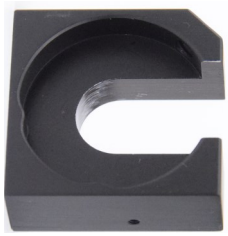
  500 µm/turn (**50** TPI)
  250 µm/turn (**100** TPI)
  100 µm/turn (**250** TPI)



Back plates

			
RD1-L2-30...	**RD1-L3-30...**	**RD1-R2-40...**	**RD1-R3-40...**

Front plates

				
...-3000/4000	**...-3010/4010** *(6H7)*	**…-3021/4021** *(0,5“)*	**...-3030/4030** *(0,5“)*	**...- 3025/4025** *(1”)*
				
...-3035Up **...-4035Up**	**...-3035Down** **...-4035Down**	**…-3030-12** **…-4030-12**		

The order number of the desired RD1 mirror mount consists of the number of the back plate including quantity of the screws and the number of the chosen front-plate.

RD1-HS

The **RD1-HS** is the high stable version of the RD1 mirror mount. The RD1-HS can be used for applications where a high stability is necessary.

Features:

- High stable mirror mount
- Available as “right hand” and “left hand” version
- 4 springs
- Stainless steel insert for stabilization
- Different front plates available
- With M6 thread (standard)
- M4 and M8 thread are also available
- #8-32 or #1/4-20 thread available on request

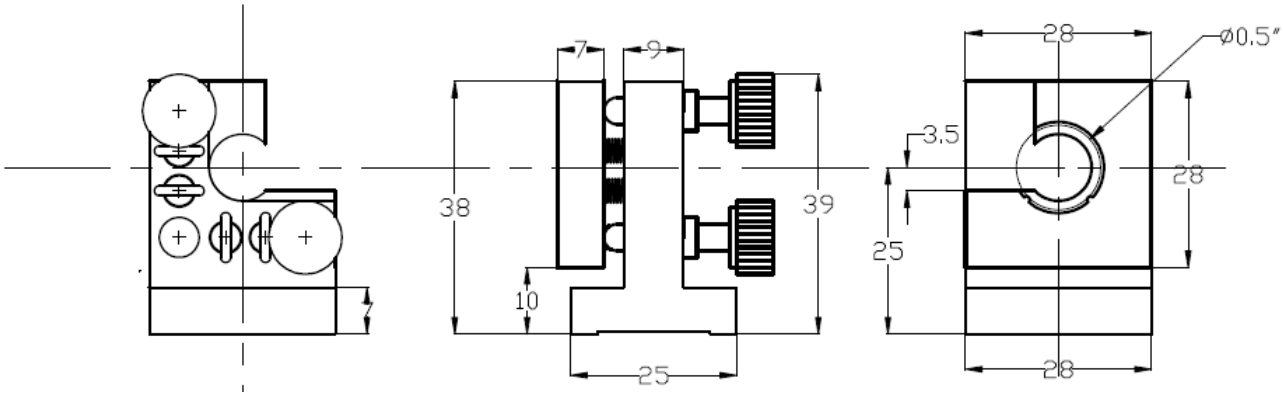
Screw Options:

- Fine thread screws Model 2:

  with **150** µm/turn (**170** TPI)
  with **100** µm/turn (**250** TPI)

- Micrometer screws:

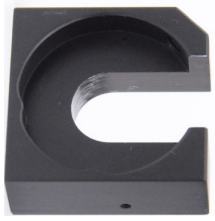
  500 µm/turn (**50** TPI)
  250 µm/turn (**100** TPI)
  100 µm/turn (**250** TPI)



Back plates

		***Due to strong spring forces we offer the RD1-HS only with two alignment screws. If a third screw should be necessary we recommend the screw as hexagon socket for easier alignment.***
RD1-HS-L2-30...	**RD1-HS-R2-40...**	

Front plates

				
...-3000/4000	**...-3010/4010** *(6H7)*	**…-3021/4021** *(0,5“)*	**...-3030/4030** *(0,5“)*	**...- 3025/4025** *(1”)*
				
…-3035Up **...-4035Up**	**…-3035Down** **...-4035Down**	**…-3030-12** **…-4030-12**		

The order number of the desired RD1-HS mirror mount consists of the number of the back plate including quantity of the screws and the number of the chosen front-plate.

RD2

The **RD2** is a stable mirror mount with an integrated base. It can be used for optics up to two inch.

Features:

- Very stable mirror mount
- Available as “right hand” and “left hand” version.
- Different front plates available
- With M8 thread (standard)
- M6 thread is also available
- #1/4-20 thread available on request

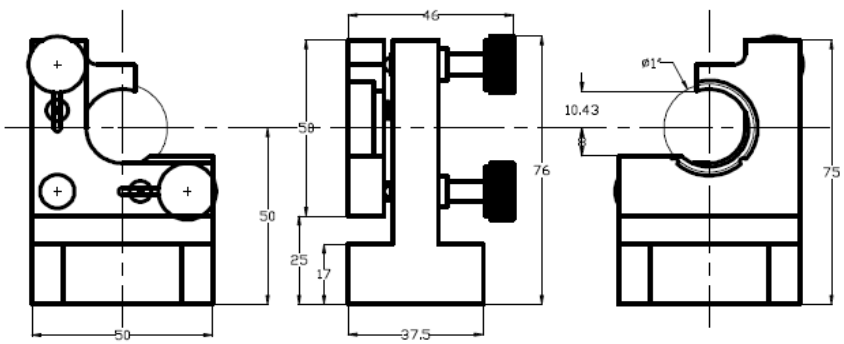
Screw Options:

- Fine thread screws Model 5:

  with **250** µm/turn (**100** TPI)
  with **150** µm/turn (**170** TPI)
  with **100** µm/turn (**250** TPI)

- Micrometer screws:

  500 µm/turn (**50** TPI)
  250 µm/turn (**100** TPI)
  100 µm/turn (**250** TPI)



RD2-HS

The **RD2-HS** is the high stable version of the RD2 mirror mount. The RD2-HS can be used for applications where a high stability is necessary.

Features:

- High stable mirror mount
- Available as “right hand” and “left hand” version
- 4 springs
- Stainless steel insert for stabilization
- Different front plates available
- With M8 thread (standard)
- M6 thread is also available
- #1/4-20 thread available on request

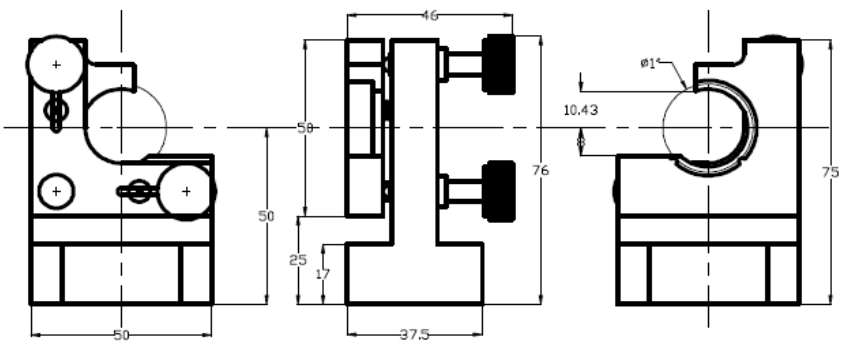
Screw Options:

- Fine thread screws Model 5:

  with **250** µm/turn
  with **150** µm/turn (**170** TPI)
  with **100** µm/turn (**250** TPI)

- Micrometer screws:

  500 µm/turn (**50** TPI)
  250 µm/turn (**100** TPI)
  100 µm/turn (**250** TPI)



Back plates RD2

			
RD2-L2-30...	**RD2-L3-30...**	**RD2-R2-40...**	**RD2-R3-40...**

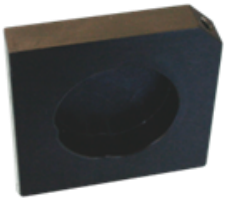
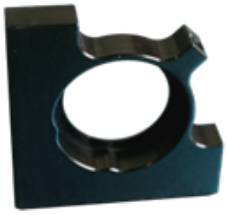
The order number of the desired RD2 mirror mount consists of the number of the back plate including quantity of the screws and the number of the chosen front plate.

Back plates RD2-HS

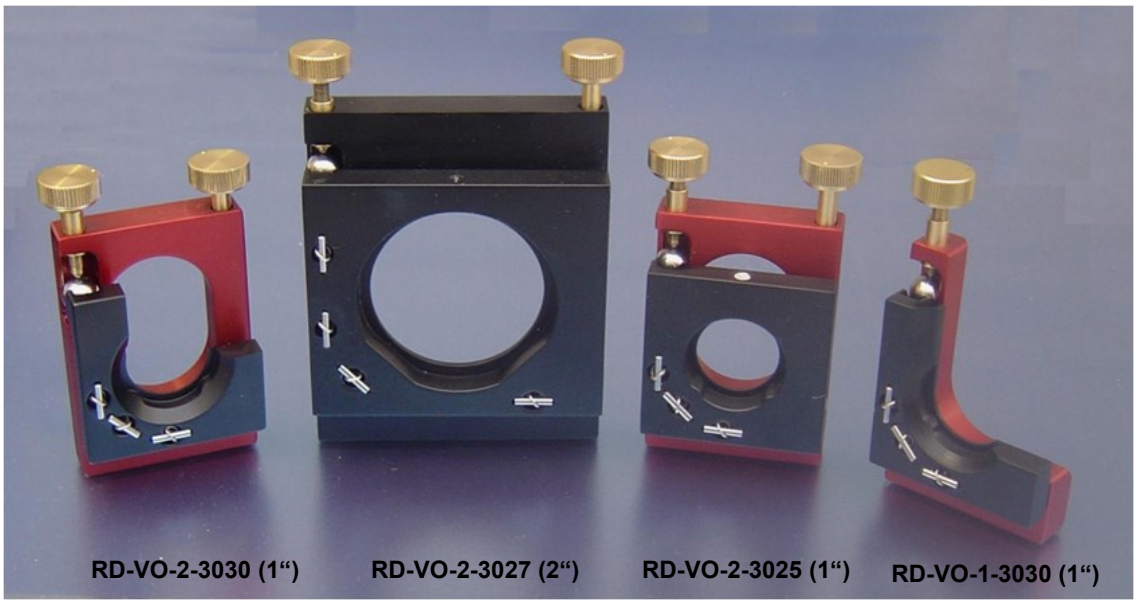
		***Due to strong spring forces we offer the RD2-HS only with two alignment screws. If a third screw should be necessary we recommend the screw as hexagon socket for easier alignment***
RD2-HS-L2-30...	**RD2-HS-R2-40...**	

The order number of the desired RD2-HS mirror mount consists of the number of the back plate including quantity of the screws and the number of the chosen front plate.

Front plates

				
…-3000/4000	**…-3010/4010** *(6H7)*	**…-3021/4021** *(1/2“)*	**…-3025/4025** *(1“)*	**…-3030/4030** *(1“)*
				
3030z/4030z *(1“)*	**…-3000-25***(1”)* **…-4000-25** *(1”)*	**…-3060/4060** *(1”)*	**…-3040/4040** **(***1,5”)*	**…-3045/4045** *(2”)*
				
…-3050/4050 *(1,5”)*	**…-3055/4055** *(2”)*	**…-3035Up/ …-4035Up**	**...-3035Down/ ...-4035Down**	**…-U(p)** *(1”)*
				
…-D(own) (*1“)*	**…-RM** *(Rotation Mount)*			

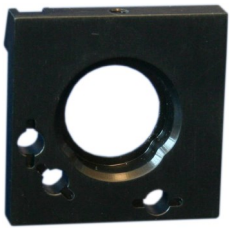
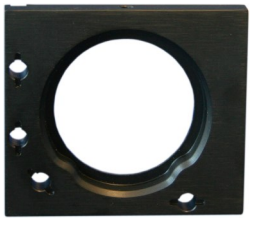
RD-VO

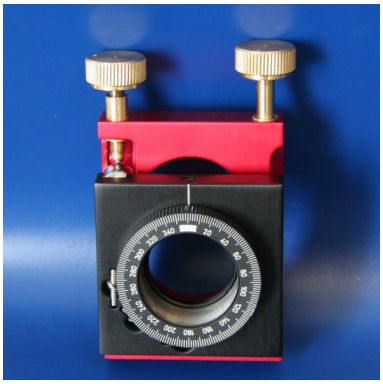


These mirror holders can be used from top, allow a smooth and very precise adjustment without the danger to reach into the beam path. The translation of the rotary motion through a ball facilitate a resolution of 0.125 mm per turn.
Because of their robust construction the mirror holder can be built into resonators without any problems.

Available in the following versions:

- **RD-VO-1-...** One fine thread screw
- **RD-VO-2-...** Two fine thread screws
- For 1/2, one or two inch optics
- four different front plates

			
...-3030 *(1”)*	**...-3025** *(1”)*	**...-3027** *(2”)*	**...-RM** *(0,5 “ or 1” Rotation Mount)*



MNI-VO

- For 1/2” optical devices
- Ideal for fitting into small spaces
- Hysteresis free
- 170 TPI fine thread screws
- M4.5 adjusters
- Mounting hole M6
- 2 strong springs
- Available with 1/2” closed front plate

MNI-HS-VO

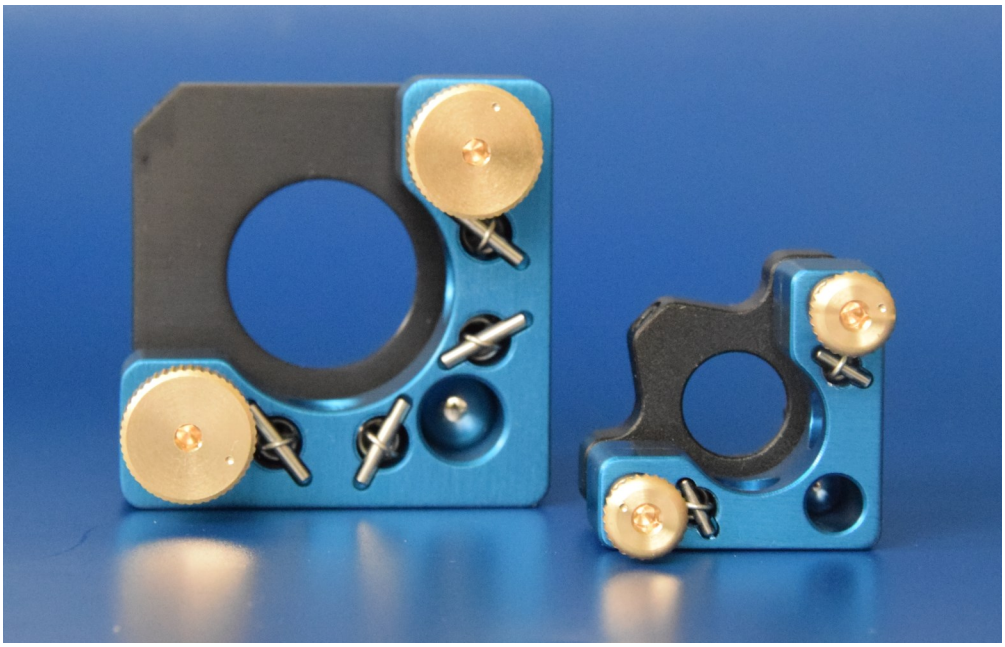
- For 1/2” optical devices
- Ideal for fitting into small spaces
- Hysteresis free
- 170 TPI fine thread screws
- M4.5 adjusters
- Mounting hole M6
- 4 strong springs
- Available with 1/2” closed front plate

MDI-HS-VO-R/L

- For 1” optical devices
- Left– and right-handed
- Ideal for fitting into small spaces
- Hysteresis free
- 170 TPI fine thread screws
- M4.5 adjusters
- Mounting hole M6
- 4 strong springs
- Available with all front plates of our MDI/MDI-HS Series

Fine Adjustment

The *Fine Adjustment* mirror mounts do not have the quality of the Radiant Dyes Mirror mounts. The screws of these mounts have a standard pitch of 170 TPI but they are made in serial production and are not aligned to the nut.



Venus Series

- 170 TPI fine thread screws made of brass
- M4 inner lowering
- Low price
- Available with following front plates
- Part. No. = Venus-2-(name of front plate)

		
1/2“ open	**1/2“ closed**	**closed**

Earth Series

- 170 TPI fine thread screws made of brass
- M6 inner lowering
- Low price
- Available with following front plates
- Part. No. = Earth-2-(name of front plate)

		
1“ open	**1“ closed**	**closed**

Gimbal Mirror Mounts

SK-FGS

Features:

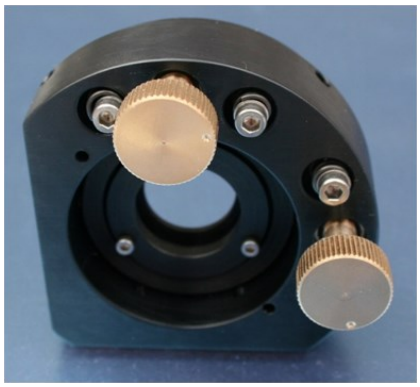
- Gimbal Mount
- 2 brass screws with 0.25 mm pitch is standard
- Option: with 150 µm fine thread screws
- On request micrometer screws with 0.25 mm or 0.5 mm pitch or stainless steel fine thread screws are available.

SK- FGS-1

Cardanic mirror mount for 1” optics

SK-FGS-0.5

0,5” inserts for cardanic mirror mount

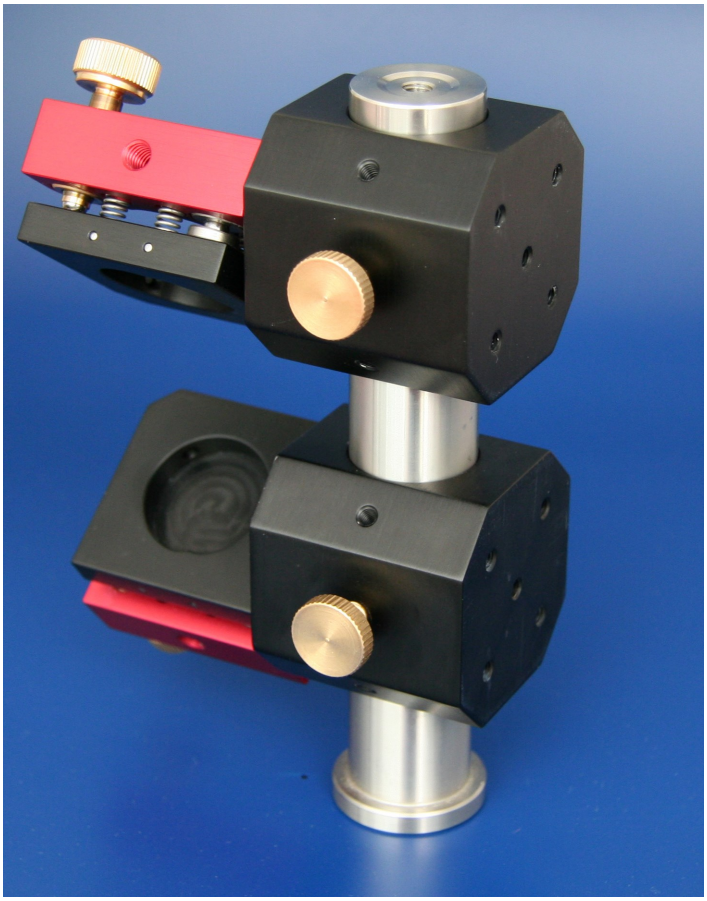


Beam Height Adjustment Unit VSHW

This system offers the possibility to adjust the beam height over a broad range and to turn the beam direction at the same time continuously around an angle of 90° - 270°. It is possible to carry out a specific adaptation of the polarization direction, because with a change of the angle a turn of the polarization is combined.
The installation sheet consists of different scanning and fastening possibilities.

VSHW includes:

- Two mirror mounts (you can chose between MDI or MDI-HS) with two fine thread screws and adapters
- Stainless Steel Pedestal (Standard length 200 mm, on request up to 300 mm)
- Holding Fork
- Option: with 150 µm fine thread screws
- On request stainless steel fine thread screws are available.



Flip Mounts & Magnet plates

Flip Mounts

Our Flip Mount allows the user to flip an optic out of the beam path and back again without any realignment.

- With M4 thread

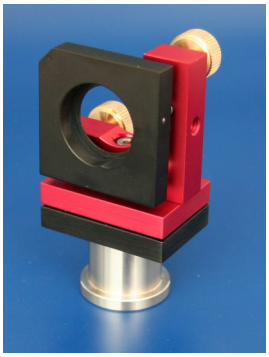
The Flip Mount is available in one and two inch (1” and 2”).

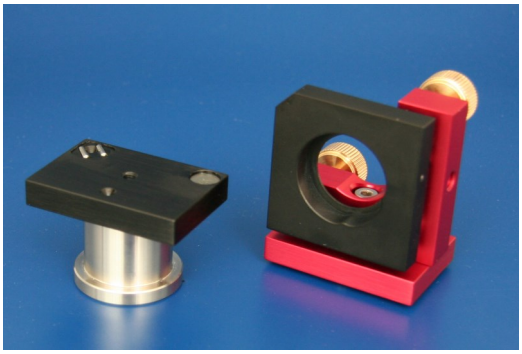
Magnet Plates

The stable, repeatable and better option to flip mounts. 2 plates with 3 point bases fixed by a magnet.

RD-MP

- With M4 thread



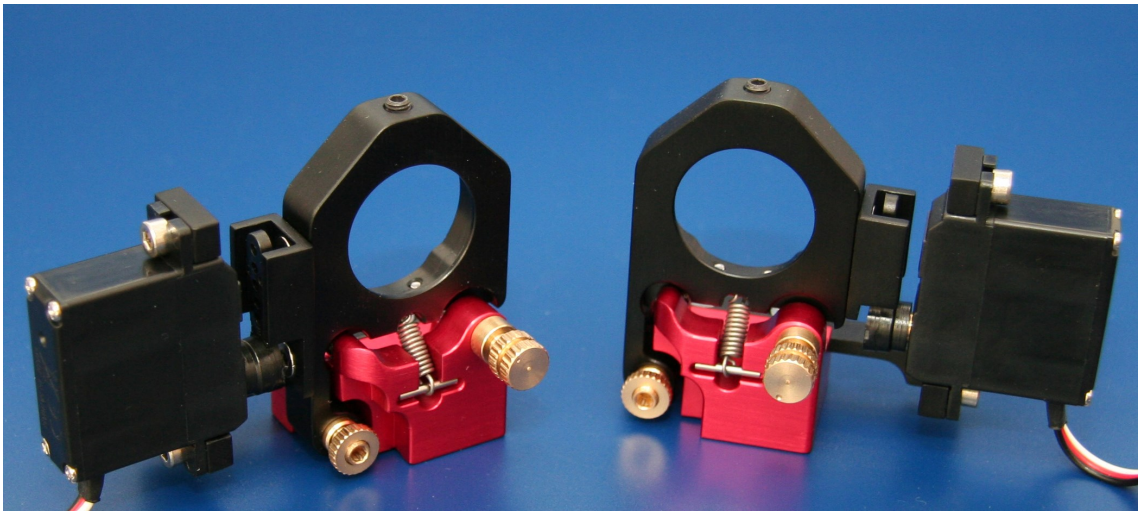


Magnet Plates for Prism Turn Tables

Repeatable, demountable option
for Prism Turn Tables with magnets.

RD-MP-PDT-S	for **RD-PDT-S**
RD-MP-PDT-B	for **RD-PDT-B**

Flip Mount Motorized



Both Flip Mounts (1” and 2”) are also available as motorized version.

RD-KLS-1”-M(otorized)
RD-KLS-2”-M(otorized)

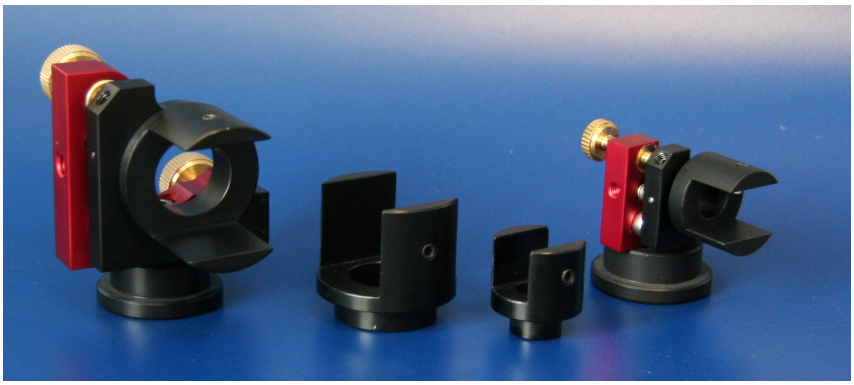
Option: Motor left or right handed

Flip Mount Controller

Position control is realized by Atmel RISC processor ATmega8 and standard servomechanism (servo) used in automation. RS-232C interface is used to control position and speed of the servo, connected to a mirror mount. Alternatively, the position can be controlled manually by switch. All parameters are stored in EEPROM memory and can be controlled by the user. LabVIEW sample driver is included. Depending on HW/SW versions concurrent control of one or two servos is possible.

Adapters for Optomechanics

Cube Holders



- Cube Holders
- Can be mounted on mirror mounts with an intake of 0,5 inch or 1 inch

For 0,5 inch intakes and cubes up to 0,5 inch

RD-CH-05-05

For 1 inch intakes and cubes up to 0,5 inch

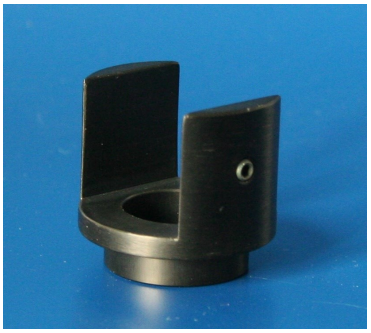
RD-CH-1-05

For 1 inch intakes and cubes up to 22 mm

RD-CH-1-22

For 1 inch intakes and cubes up to 1 inch

RD-CH-1-1



90° Adapter

- 90° Adapters for mirror mounts
- For optics 0,5 inch or 1 inch
- Intakes 0,5 inch or 1 inch

For 0,5 inch intakes and 0,5 inch optics

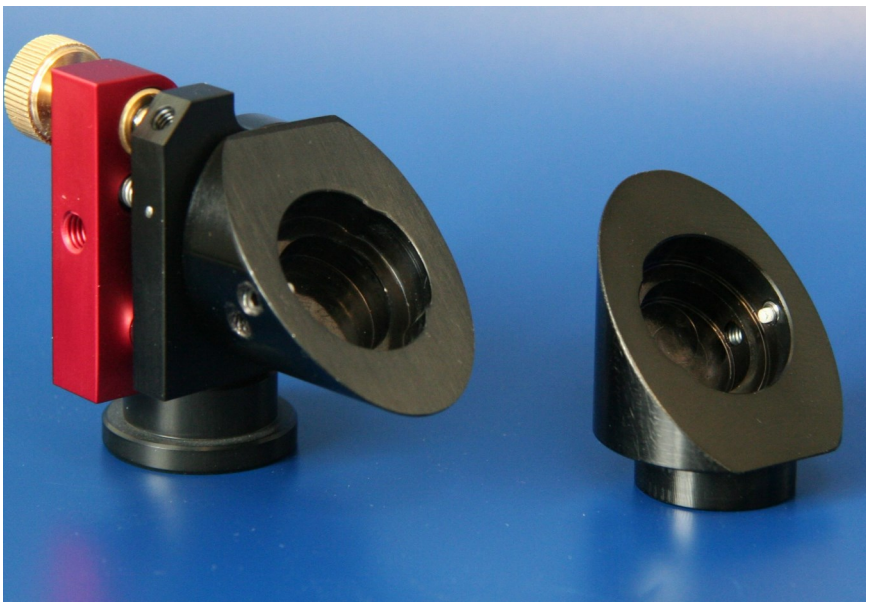
RD-90°M-05-05

For 1 inch intakes and 0,5 inch optics

RD-90°M-1-05

For 1 inch intakes and 1 inch optics

RD-90°M-1-1



PiezoMike Linear Actuators

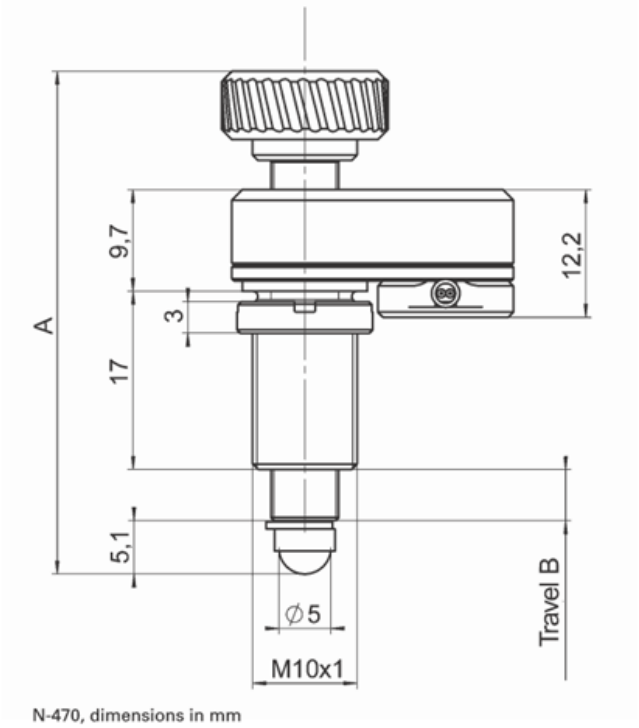
N-470

- Holding force >100 N
- Step size 20 nm
- Travel range 7.5 mm
- Compact design
- Feed force 22 N
- Lifetime >1.000.000.000 steps

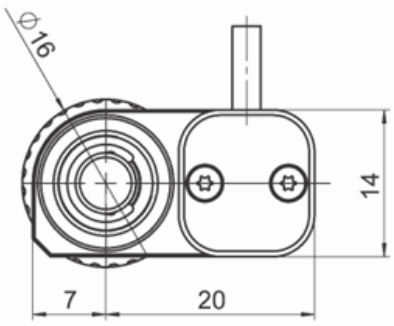
Linear actuator with PIShift piezomotor
Linear screw-type actuator with PIShift piezo inertia drive for high-resolution and stable positioning. Open-loop operation.

PIShift piezomotors
Compact, cost-effective inertia drive (Stick-Slip). When at rest, the drive is self-locking and therefore requires no current and generates no heat. It holds the position with maximum force.

Alignment of mechanical and optical components
Stable alignment of optical paths. Long-term positioning stability: High stability in target position, reliable start-up even after longer downtimes. High holding force and resolution by combining piezo actuators with mechanical thread translation. Optionally vacuum-compatible to 10^{-9} hPa.



N-470, dimensions in mm



A	48 mm
B	7,5 mm

Specificatiions of N-470

	N-470 Radiant Dyes	Unit
Active axes	X	
Motion and positioning		
Travel range	7.5	mm
Max. step size	30	nm
Typical step size	20	nm
Max. step frequency	2000	Hz
Max. velocity in full-step mode	3	mm/minute
Typical velocity in full-step mode	2	mm/minute
Mechanical properties		
Stiffness in motion direction	15.5	N/µm
Feed force (active)	22	N
Holding force (passive)	>100	N
Permissible lateral force	1	N
Drive properties		
Drive type	PIShift piezomotor	
Max. operating voltage	80	V
Max. power consumption	6.4	W
Miscellaneous		
Operating temperature range	10 to 40	°C
Material	Screw: Stainless steel Case: Aluminium	
Dimensions	14 mm x 28 mm x48 mm	
Mass	80	g
Cable length	2	m
Connector	DIN 4-pin	
Recommend driver	E-870 PIShift drive electronics	

Specificatiions of N-470

- High stability and holding force >100 N
- Self- locking at rest even when closed-loop control is switched off
- Travel range 7.5 mm and 13 mm
- Compact design with integrated incremental encoder
- Encoder resolution up to <1 nm, 50 nm minimum incremental motion
- Feed force 22 N
- Lifetime > 1.000.000.000 steps
- Versions with cable exit offset by 180°
- Nonmagnetic and vacuum compatible operating principle

PIShift Piezomotors
Compact, low- cost inertia drive principle (Stick–Slip). When at rest, the drive is self-locking, requires no current and generates no heat. It holds the position with maximum force.

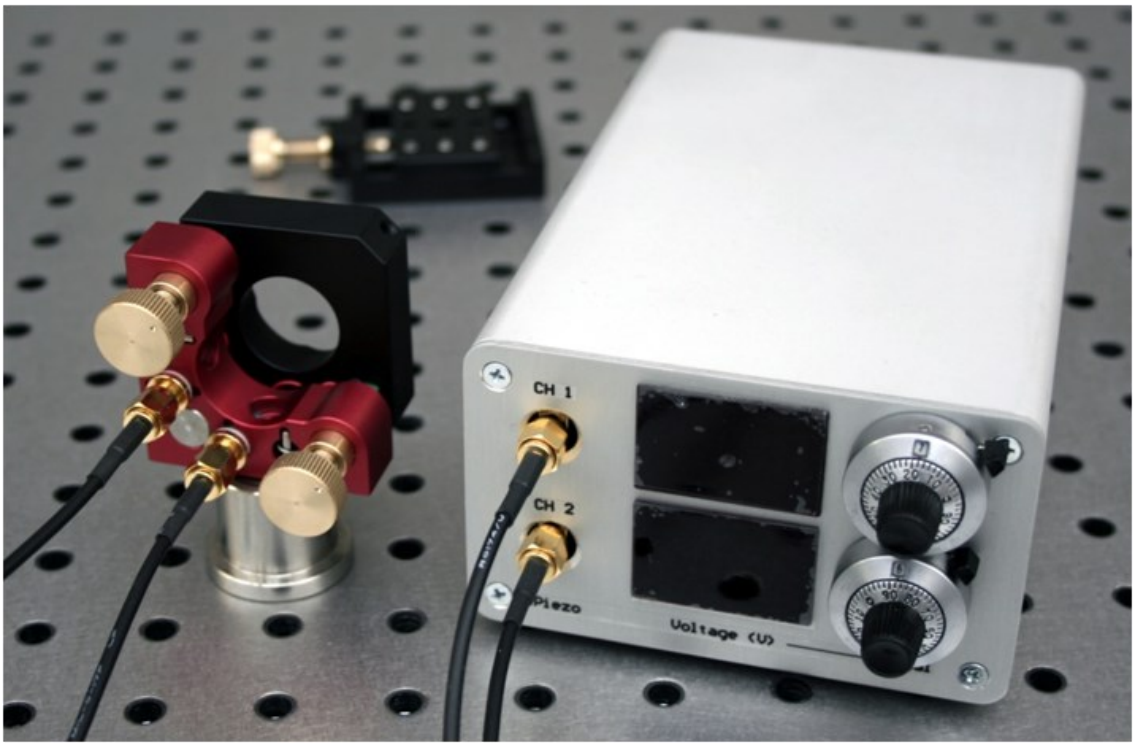
Integrated Position Sensor
An incremental encoder measures the motion performed relative to a freely definable reference position. In combination with the E-871 motion controller, the encoder resolution is up to <1 nm.

Alignment of Mechanical and Optomechanical Components
Stable alignment of optical paths. Long-term positioning stability: High stability in target position, reliable start- up even after longer downtimes. High holding force and resolution by combining piezo actuators with mechanical thread translation. Vacuum- compatible versions to 10-6 hPa available.

Specificatiions of N-472

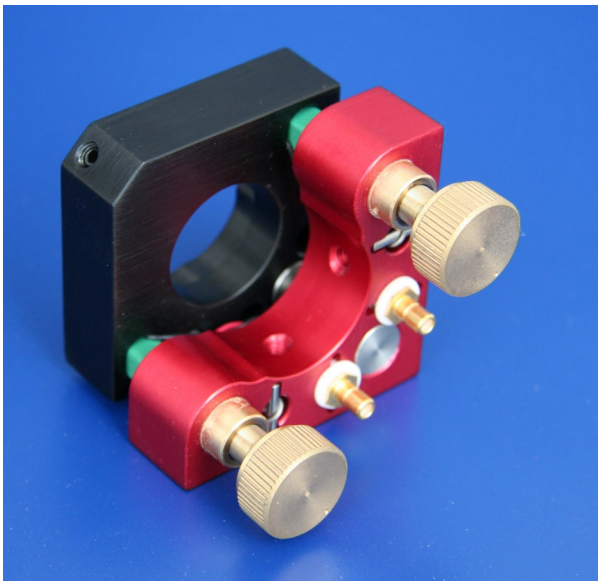
Active axis	X	X	X	X	
Motion and positioning					
Travel range	7,5	7,5	13	13	mm
Integrated sensor	incremental, optical	incremental, optical	incremental, optical	incremental, optical	
Sensor signal	Analog, 1	Analog, 1	Analog, 1	Analog, 1	Vpp
Resolution	<1	<1	<1	<1	nm
Maximum velocity, open-loop	3,6	3,6	3,6	3,6	mm/min
Recommended max. velocity in continuous operation	2	2	2	2	mm/min
Mechanical properties					
Holding force, de-energized	> 100	> 100	> 100	> 100	N
Feed force (active)	22	22	22	22	N
Drive properties					
Drive type	PIShift piezo inertia drive	PIShift piezo inertia drive	PIShift piezo inertia drive	PIShift piezo inertia drive	
Motor voltage	80	80	80	80	Vpp
Miscellaneous					
Operating temperature range	10 to 40	10 to 40	10 to 40	10 to 40	°C
Material	Screw: Stainless steel, case: Aluminum	Screw: Stainless steel, case: Aluminum	Screw: Stainless steel, case: Aluminum	Screw: Stainless steel, case: Aluminum	
Cable length	2	2	2	2	m
Connector	Actuator: D-Sub 15 (m)	Actuator: D-Sub 15 (m)	Actuator: D-Sub 15 (m)	Actuator: D-Sub 15 (m)	
Recommended controller/driver	E-871	E-871	E-871	E-871	

MDI-H with Piezo Drive



The **MDI-H with Piezo Drive** is a mirror mount which is controlled by a piezo system with our own electronics. Besides a manual adjustment by 0.15 mm / 0.25 mm per turn, the systems can be adjusted electronically within a µm-range.
The piezoelectric actuators are built into the mirror holder. Each of them have the following specifications:

The operation voltage range is -10 V ... +150 V, leading to maximum stroke of > 20 µm (typically 23 µm).

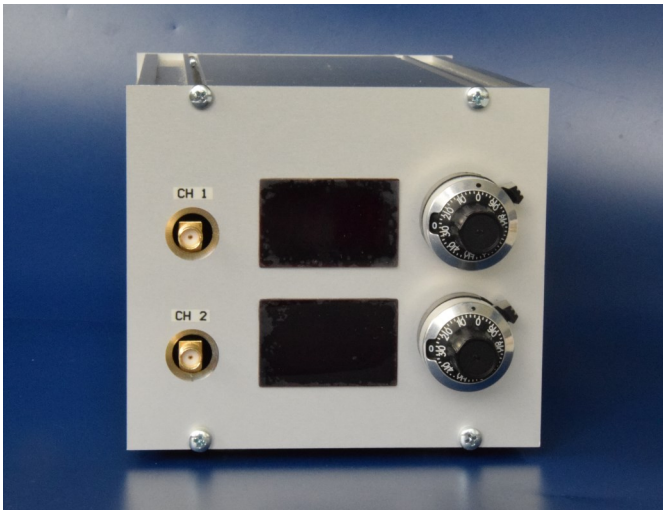


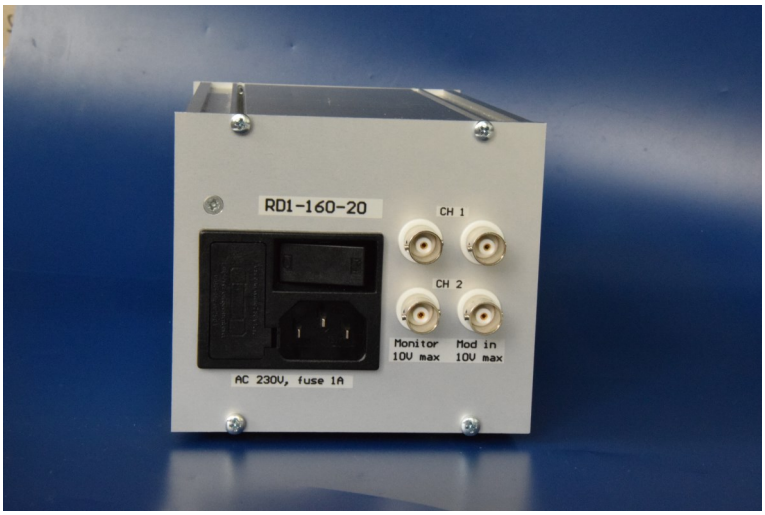
Optomechanical Components with Piezo Drive

Many of our optomechanical components can be equipped with piezo drives.

For detailed information please contact us.

Piezo controller





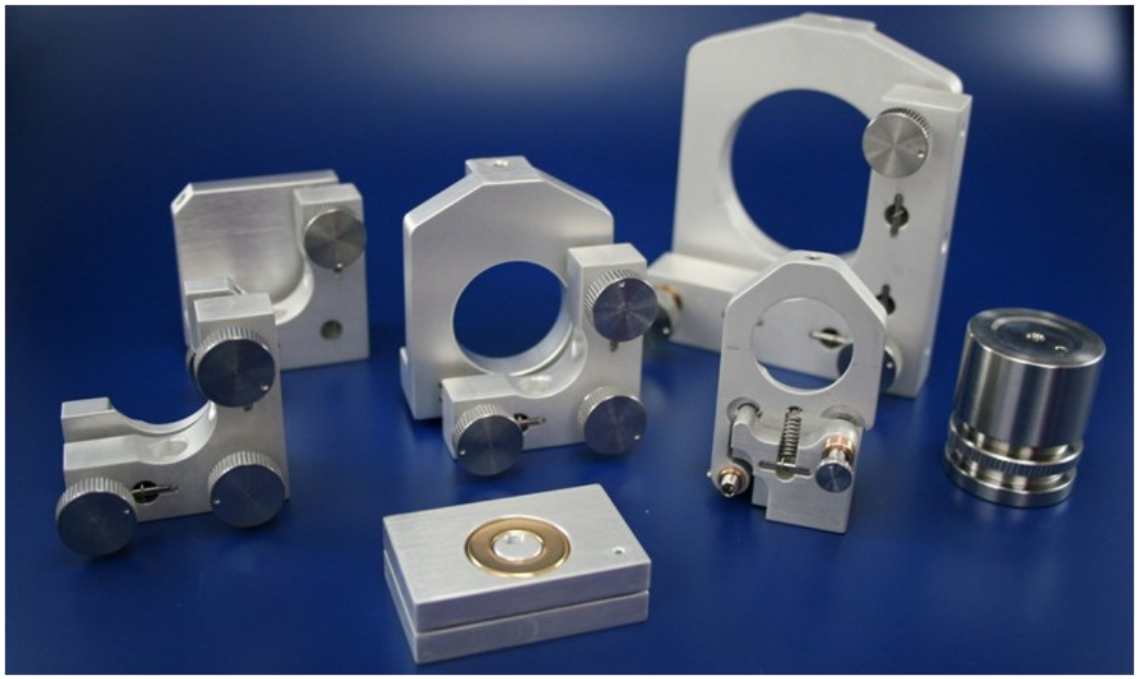
The power supply **RD2-16020** was developed for two axes positioning of piezo-electrically controlled mirror mounts.
Piezo Driver Datasheet:

Power supply	AC 230V internal
Dimensions HxWxD (mm)	65 x 110 x 165
Front panel HxW (mm)	65 x 110
Channels	2
Output power per channel (W)	3
Output current per channel (mA)	20
Output voltage (V)	-10…+150
Output noise (mV_{RMS} @500Hz)	<0.3
Output noise amplitude (mVpp)	3 (typical)
Output connector for piezo [1)] (front side)	SMA
Monitor voltage connector [1)] (back side)	BNC
Monitor voltage (V)	-0.67…+10
Modulation input connector [1)] (back side)	BNC
Modulation input (V)	0…5
Modulation input resistance (kW)	1
Output indicator [1)] (front side)	LED or LCD (max -10.0…+150.0)
Manual adjustment [1)] (front side)	Potentiometer 10 turns, precision

[1)] one item per channel

We also offer **piezo controlled translation stages** (page 78)

Mirror Mounts & Accessories for Vacuum Applications

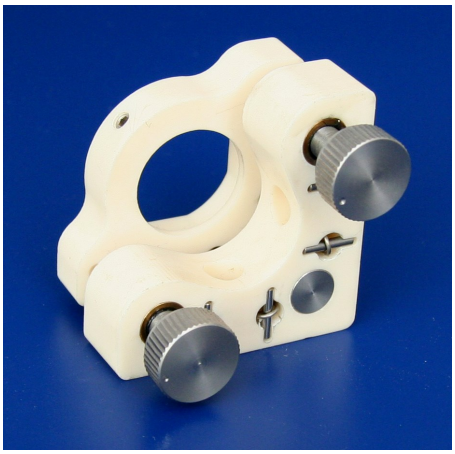


With a special choice of **vacuum suitable materials and a special cleaning process**, we guarantee an **optimal vacuum suitability** of our components.

We are able to supply a great number of our standard components for vacuum and UHV applications.

We offer the following products for vacuum applications:

- MNI & MNI-HS
- MDI & MDI-HS and MDI-H
- MDI-HC (Ceramic Mirror Mount)
- MXI
- RD1 & RD2
- RD-KLS-1” and 2”
- Lens Mounts
- Magnet Plates (RD-MP)
- Posts & Pedestals
- RDS-HS (Height adjustable pedestals)
- Translation Stages
- Breadboards & Optical Tables

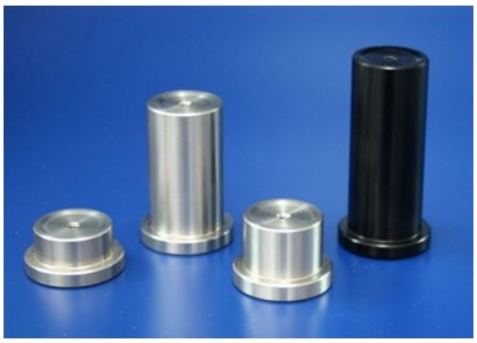


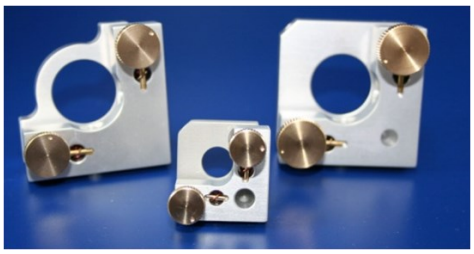
Mirror Mounts & Accessories as nonmagnetic Versions

By choosing special **nonmagnetic materials** we guarantee an **optimum nonmagnetic suitability** of our components. All nonmagnetic products are available as anodized and non-anodized.

We offer the following products for non-magnetic applications:

- MNI & MNI-HS
- MDI
- MXI
- RD1 & RD2
- Lens Mounts
- Breadboards
- Aluminium Post Holders & Posts
- Etc.





Lens Mounting

Lens Mounting – Lens Mounts RD-LM

RD-LM

Features:

- Fixed lens mount
- With 3 point bases
- Available for several lens sizes
- Mountable on a M4 post

Available for the following lens sizes:

- **Ø 12 mm and Ø 0.5“**
- **Ø 18 mm and Ø 20 mm**
- **Ø 25 mm and Ø 1“**
- **Ø 30 mm**
- **Ø 40 mm**
- **Ø 50 mm and Ø 2“**
- **Ø 75 mm**

Lens Mounting – Lens Mounts with internal thread

RD-LM-WR

Features:

- Fixed lens mount
- With internal thread
- One retaining ring included
- Mountable on a M4 post

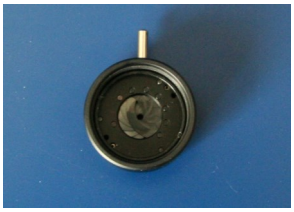
Available for the following lens sizes:

- Ø 0.5“
- Ø 1“
- Ø 2“

Adapters:

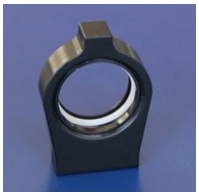
RD-LM-I Adapter with integrated iris

RD-LT-I Iris without adapter



RD-LM-WR-H25

- Lens mount for 25 mm beam height



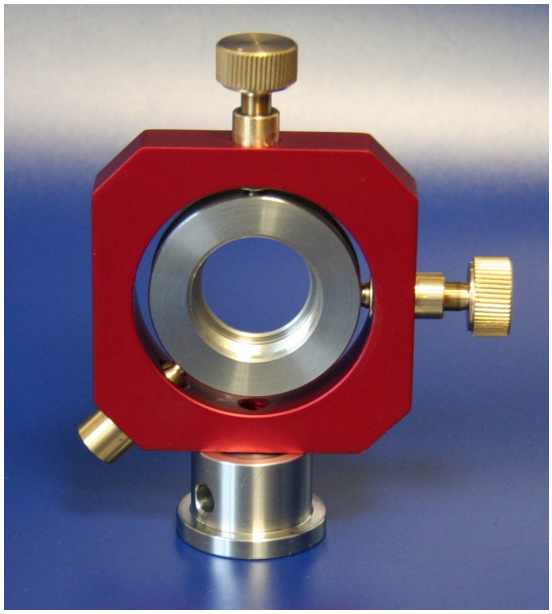
RD-VL

RD-VL

Features:

- Stable lens mount
- 2 screws and 1 thread pin
- Several inserts available
- with **250** µm/turn (**100** TPI) with **150** µm/turn (**170**TPI) fine thread screws
- Adjustment line in x-y direction: 8 mm

This variable lens mounting consists of an adjustment body and a 1” lens insert (on request also 0.5”). The great advantage of the variable lens mounting is the possibility to adjust the lens in the xy-plane. The lens mounting is delivered with thread pin.



RD-VL-MNI

Inserts for RD-VL-MNI:

Ø 12 mm and Ø 1/2” lenses
Ø 18 mm and Ø 20 mm lenses
Ø 25 mm and Ø 1” lenses

RD-VL-MDI

Inserts for RD-VL-MDI:

Ø 30 mm lenses
Ø 40 mm lenses

RD-VL-MXI

Inserts for RD-VL-MXI:

Ø 50 mm lenses
Ø 75 mm lenses

Lens Mounting – Lens Inserts

Inserts for RD-VL-MNI:

Ø 12 mm and Ø 1/2” lenses
Ø 18 mm and Ø 20 mm lenses
Ø 25 mm and Ø 1” lenses

Inserts for RD-VL-MDI:

Ø 30 mm lenses
Ø 40 mm lenses

Inserts for RD-VL-MXI:

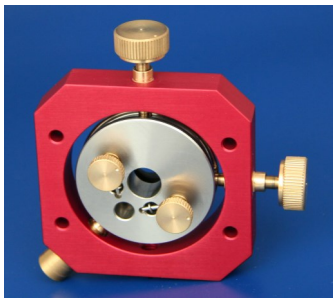
Ø 50 mm lenses
Ø 75 mm lenses

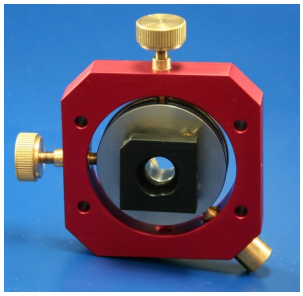
RD-VL Mirror Mounts

This variable lens mount consists of an adjustment body and a lens mount (1” or 0.5”). The great advantage of the variable lens mount is the possibility to adjust the lens in the xyz-plane with the aid of a small round mirror mount. The lens mounting is delivered with thread pin.
Adjustment line in x-y direction: 8 mm

Available in the following sizes:

- **RD-VL-MNI-Mirror Mount (1/2”)**
- **RD-VL-MDI-Mirror Mount (1”)**
- **RD-VL-MXI-Mirror Mount (2”)**





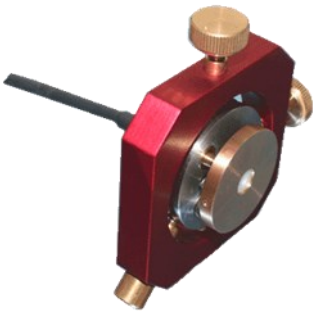
Lens mounting RD-VL-FC for Fiber Coupling

Ready to use for the following fibers:

- SMA **RD-VL-FC-SMA**
- FC/PC **RD-VL-FC-FC/PC**

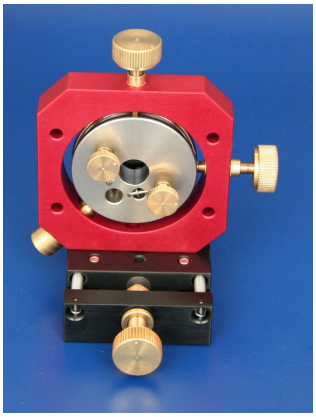
Mounts for

- 6 mm, 8 mm, or 12 mm fiber couplers

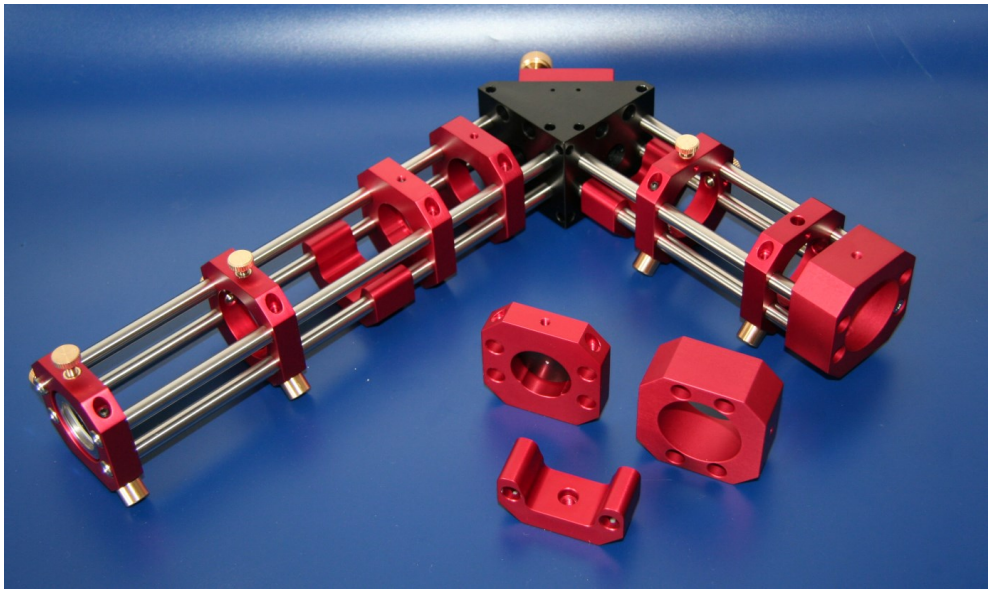


Example:

Easy to fix on a translation stage



Beam Guide System



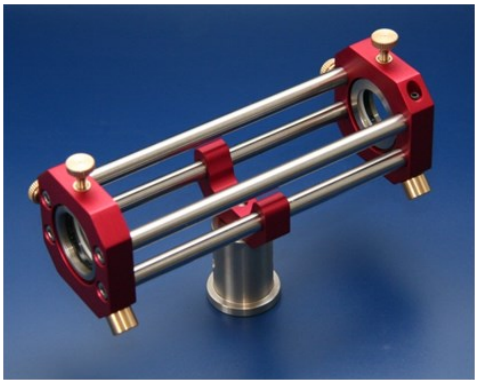
Based on our variable lens mounts RD-VL we created a high stable Beam Guide System **RD-BGS** with a rod diameter of 8 mm.

Telescope

- Telescope for 1 inch or ½ inch optics

RD-BGS-T-0,5” 0,5 inch
RD-BGS-T-1” 1 inch

- including:
  - 1 pc. RD-BGS-VL (endpiece)
  - 1 pc. RD-BGL-VL (movable)
  - 1 pc. RD-BGS-BB
  - 4 pcs RD-BGS-R-150 mm

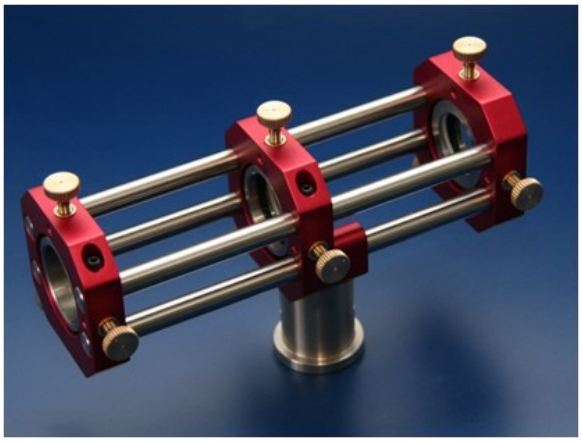


Spartial Filter

- Spartial Filter for 1 inch or ½ inch optics

RD-BGS-SF-0,5” 0,5 inch
RD-BGS-SF-1” 1 inch

- including:
  - 1 pc. RD-BGS-VL (endpiece)
  - 2 pcs RD-BGL-VL (movable)
  - 1 pc. RD-BGS-BB
  - 4 pcs RD-BGS-R-150 mm



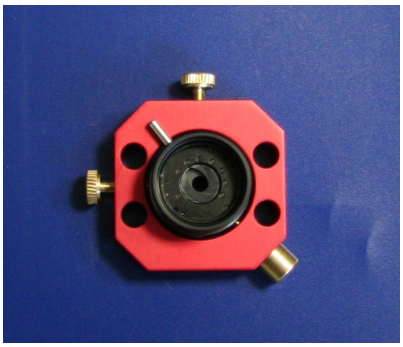
Variable Lens Mount

- Variable lens mount for 1 inch or ½ inch optics or with an iris

Features:

- Stable lens mount
- 2 screws & 1 thread pin
- Several inserts available
- Option: with 150 µm fine thread screws

RD-BGS-VL-0,5”	*0,5 inch*
RD-BGS-VL-1”	*1 inch*
RD-BGS-VL-I	*Iris*



Variable Mirror Mount & Fiber Coupler

This variable lens mount consists of an adjustment body and a lens mount. The great advantage of the variable lens mount is the possibility to adjust the lens in the xyz-plane with the aid of a small round mirror mount.

Features:

- Stable lens mount
- 2 screws & 1 thread pin
- Several inserts available
- Option: with 150 µm fine thread screws

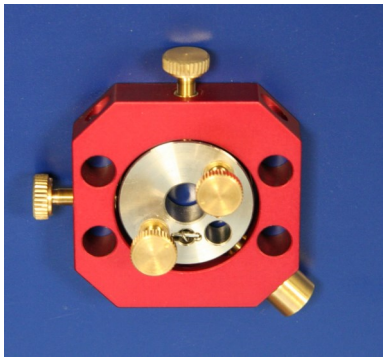
RD-BGS-VL-MM-6H7
RD-BGS-VL-MM-1/4”
RD-BGS-VL-MM-0,5”

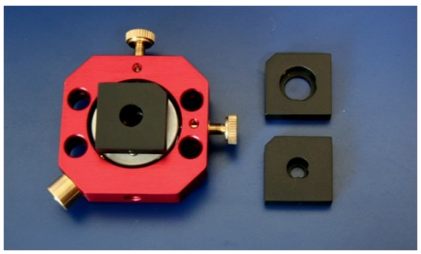
The variable lens mount is also available with two different fiber couplers:

- **SMA**
- **FC/PC**

Mounts for

- 6 mm, 8 mm, 12 mm fiber couplers

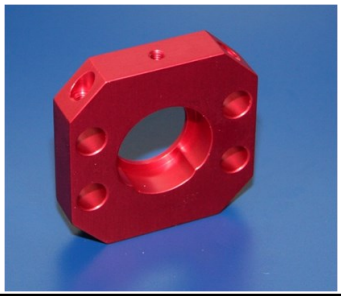




Fixed Plate

- For lenses, pinholes, optical Diaphragms etc.
- For 1 inch or ½ inch

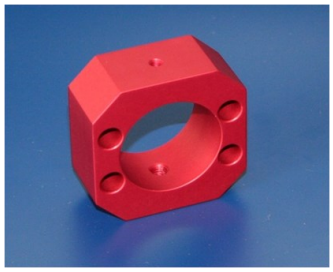
RD-BGS-FP-0,5”	0,5 inch
RD-BGS-FP-1”	1 inch



Laser Holders

- For mounting of e.g. HeNe-Laser
- Diameter 35 mm

RD-BGS-LH



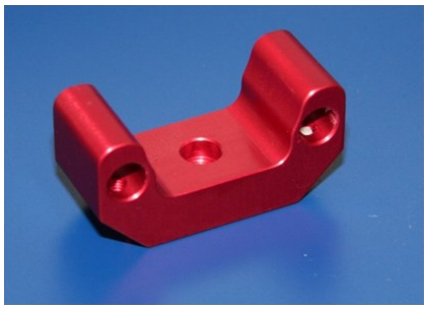
Rod Bases

- Mounting Base for Rods
- M4 Thread

or

- M6 Threads with Counterbore for M4

RD-BGS-BB (big mounting base)
RD-BGS-SB (small mounting base)

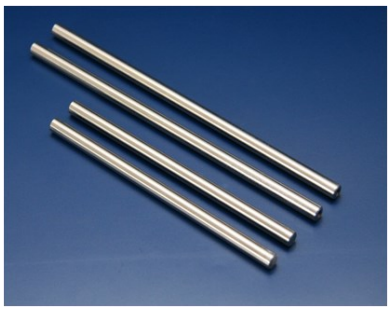


Rods

- Diameter 8 mm

RD-BGS-R-100	50 mm - 100 mm
RD-BGS-R-200	150 mm - 200 mm
RD-BGS-R-300	250 mm - 300 mm

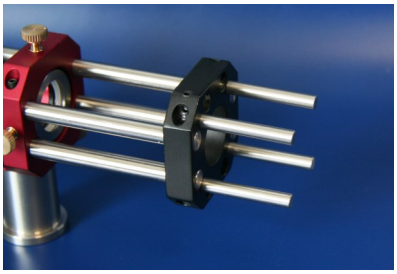
- Other lenghts on request



Adapter Plates

- Apadapter plates for rods with a diameter of 6 mm

RD-BGS-AP

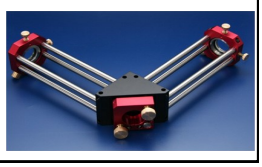


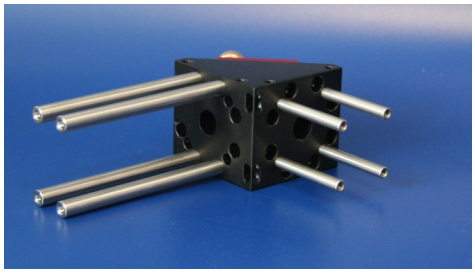
90° Mounts

- 90° Mount

RD-BGS-90°M

Example of use:



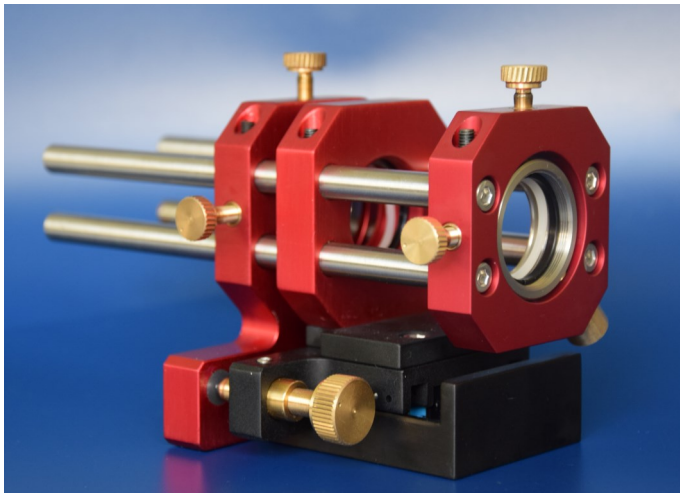


Translation Stages

- Integrated Translation Stage for precise adjustment
- Adjustment line 30 mm

RD-BGS-TS

- including:
  - 1 pc. RD-BGS-VL (endpiece)
  - 1 pc. RD-BGL-VL (movable)
  - 1 pc. RD-BGS-FP-1'' incl. adapter plate
  - 4 pcs RD-BGS-R-150 mm
  - 1 pc. RD-KUL-15-01-S



Rotation Mounts

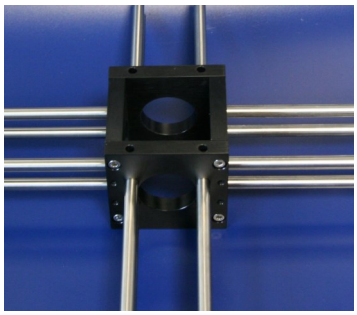
- Rotation mounts for ½ inch or 1 inch
- With or without scale
- With grub screw including a spring mounted ball for precise adjusting
- Optics are fixed by a retaining ring

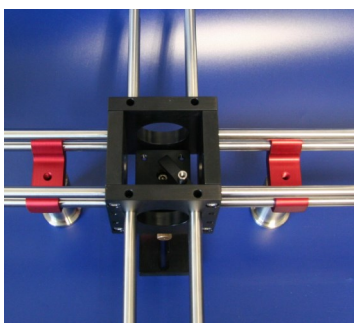
RD-BGS-RM– 0,5”	0,5 inch without scale
RD-BGS-RM– 1”	1 inch without scale
RD-BGS-RM-SK– 05”	0,5 inch with scale
RD-BGS-RM-SK– 1”	1 inch with scale

Cubes

- Beam Guide Cubes
- To combine up to four Beam Guide Systems in one center position

RD-BGS-C

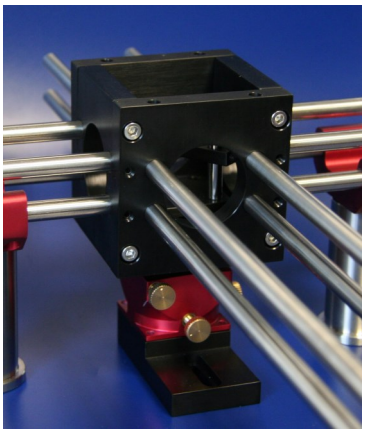




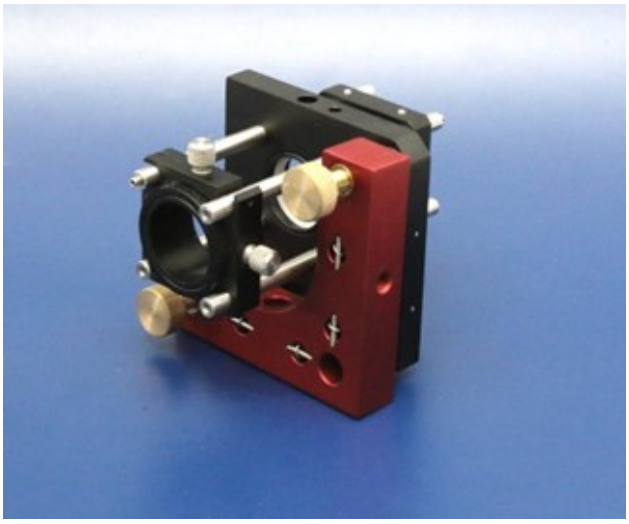
Special application:

- Cubes with integrated prism turn table *RD-PDT-S* for mounting of optical devices

RD-BGS-C-PDT



MXI cage systems



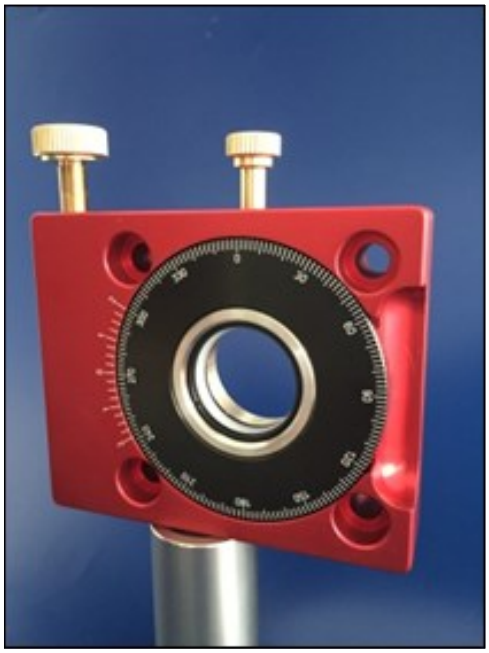
MXI cage system

for Radiant Dyes *compatible for Thorlabs and Qioptic*

Rotation Mount RD-RMP-1“

RD-RMP-1“

- Precise rotation mount with 360° laser engraved scale
- Finest adjustment 20°
- Resolution < 0,003°
- Also available with PiezoMike



Rotation Mount RD-RM-1“-M

RD-RM-1“M

- Precise motorized rotation mount 90°/180° optional, for 1“ optics with SM1-thread
- Resolution 90° or 180° ±1%
- Electronic & software

Specifications for RD-RM-1“-M

Rotational mirror mount parameters

Servo motor pulse length for 0°	**980** µs
Servo motor pulse length for 180°	**500** µs
Interpolation in range 0° …180°	linear ±1%
Recommended minimum speed (interpolation time)	200 time steps
Measured absolute precision in range 0° …180°	±1% (unidirectional)
Measured unidirectional repeatability in range 0°…180°	1°
Positioning resolution in range 0° …180°	0.38° / µs
Start-up position at power on	vertical
Hysteresis	1.5°

Small Rotation Mounts

- With plastic screw
- Small dimensions
- Integrated notch for safe fixing
- Optics are fixed by a retaining ring

RD-RM-S-0,5” 0,5 inch without scale

Rotation Mounts

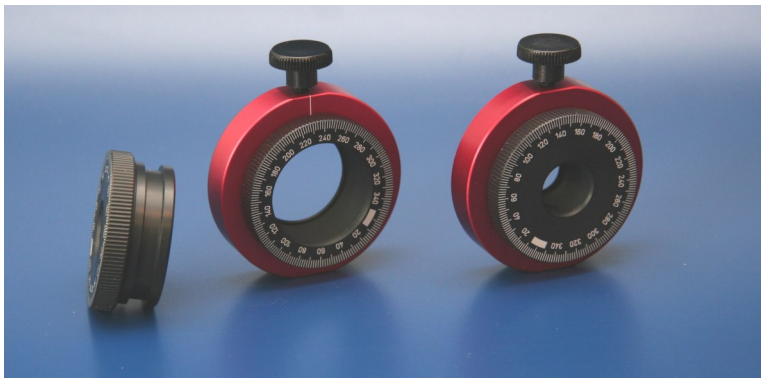
- With plastic screw
- Integrated notch for safe fixing
- Optics are fixed by a retaining ring

RD-RM-0,5” 0,5 inch without scale
RD-RM-1” 1 inch without scale

Rotation Mounts with Scale

- With plastic screw
- Integrated notch for safe fixing
- Optics are fixed by a retaining ring
- With 360° laser-engraved scale

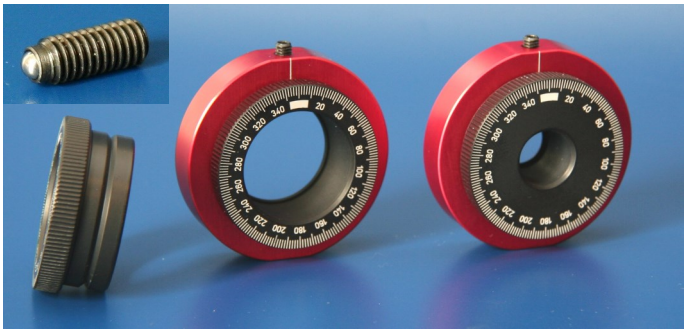
RD-RM-SK-0,5” 0,5 inch with scale
RD-RM-SK-1” 1 inch with scale



High precise Rotation Mounts

- With grub screw including a spring mounted ball for precise adjusting
- Integrated notch for save fixing
- With 360° laser-engraved scale
- Optics are fixed by a retaining ring

RD-RMM-SK– 0,5” 0,5 inch with scale
RD-RMM-SK– 1” 1 inch with scale



RD-RM-PTT & RD-RM-PTT-SK

- Rotation Mounts for Prism Turn Tables
- Available with and without scale
- One clamping arm included

For the small Prism Turn Table (RD-PDT-S):

RD-RM-PTTS without scale
RD-RM-PTTS-SK with scale

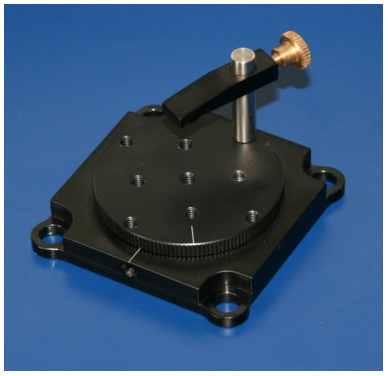
For the big Prism Turn Table (RD-PDT-B):

RD-RM-PTTB without scale
RD-RM-PTTB-SK with scale

Rotation Mounts for Optical Tables

- Rotation Mounts for optical tables
- Compatible to optical tables
- with 25 mm x 25 mm raster
- Hole spacing 50 mm x 50 mm
- Available with and without scale
- One clamping arm included

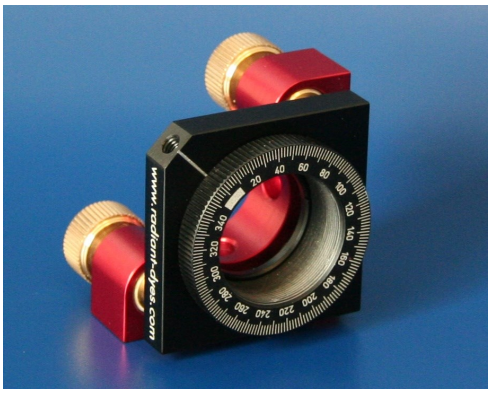
RD-RM-OT without scale
RD-RM-OT-SK with scale

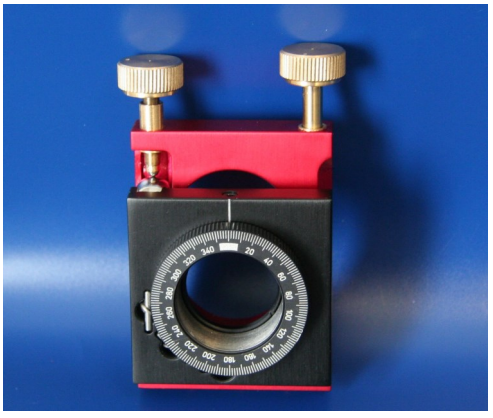


Rotation Mounts for Mirror Mounts

- Mirror Mounts equipped with a Rotation Mount
- With and without scale
- With grub screw including a spring mounted ball for precise adjusting
- Available for:

MDI
MDI-HS
RD2
RD2-HS
RD-VO





Double Rotation Mounts

- Double rotation mount
- With grub screw including a spring mounted ball for precise adjusting
- With scale
- Optics are fixed by a retaining ring

RD-RMM-SK-DRM-1’’

Double Rotation Mount for beam splitter cube

RD-RM-1“-D-2

- Precise rotation mount with 360° laser
- engraved scale
- Double rotation mount for beam splitter cube

Quad rotation mount for beam splitter cube

RD-RM-1“-Q-4

- Precise Rotation Mount with 360° laser engraved scale
- Quad Rotation Mount for beam splitter cube

Servo Motor and controller Settings

Mini Servo Motor

• Configuration	Digital	
• Operating speed (at 4.8 V)	0.055 s/60˚ without load	
• Center position pulse length	760 µs	
• Stall Torque (at 4.8 V)	2.3 kg·cm	
• Maximum pulse frequency	333 Hz	
• Minimum pulse period	3000 µs	
• Minimum pulse length (typical)	500 µs	Channels A, B, C, D preprogrammed
• Maximum pulse length (typical)	1000 µs	Channels A, B, C, D preprogrammed

Titanium Mini Servo Motor

• Configuration	Digital	
• Operating speed (at 4.8 V)	0.047 s/60˚ without load	
• Center position pulse length	760 µs	
• Stall Torque (at 4.8 V)	1.92 kg·cm	
• Maximum pulse frequency	333 - 560 Hz	
• Minimum pulse period	3000 µs	
• Minimum pulse length (typical)	500 µs	Channels A, B, C, D preprogrammed
• Maximum pulse length (typical)	1000 µs	Channels A, B, C, D preprogrammed

Medium Speed Servo Motor

• Configuration	Digital	
• Dead band	8 µs	
• Operating speed (at 4.8 V)	0.052 s/60˚ without load	
• Center position pulse length	760 µs	
• Stall Torque (at 4.8 V)	2.1 kg·cm	
• Maximum pulse frequency	560 Hz	
• Minimum pulse period	1786 µs	
• Minimum pulse length (typical)	500 µs	Channels A, B, C, D preprogrammed
• Maximum pulse length (typical)	1000 µs	Channels A, B, C, D preprogrammed

Compact Titanium Gear High Speed Servo Motor

• Configuration	Digital	
• Dead band	8 µs	
• Operating speed (at 4.8 V)	0.034 s/60˚ without load	
• Center position pulse length	760 µs	
• Stall Torque (at 4.8 V)	3.9 kg·cm	
• Maximum pulse frequency	560 Hz	
• Minimum pulse period	760 µs	
• Minimum pulse length (typical)	500 µs	Channels A, B, C, D preprogrammed
• Maximum pulse length (typical)	1000 µs	Channels A, B, C, D preprogrammed

All channels are preprogrammed with factory default parameters. The time base values are changed to 3000 µs. These parameters are saved to the EEPROM and if there is a need for modification, the parameters have to be re-saved with the command ***save***. To restore the saved parameters, the command ***restore*** has to be sent to the controller.

Controller settings

All channels of the controller are preprogrammed for medium servo motors (parameters in EEPROM), by default time base 1 is used with all servo channels.

Parameter	Value	Commands to set parameters	Commands to read parameters	Answer from controller	Factory default
Time base	1	ta=1 tb=1 tc=1 td=1	ta? tb? tc? td?	1 1 1 1	1 1 1 1
Period (t1) Period (t2) – not used	3000 µs 3000 µs	t1=3000 t2=3000	t1? t2?	3000 3000	**2500** **20000**
Min pulse length	500 µs	a=500 b=500 c=500 d=500	a? b? c? d?	499 499 499 499	499 499 499 499
Max pulse length	1000 µs	A=1000 B=1000 C=1000 D=1000	A? B? C? D?	998 998 998 998	998 998 998 998
Power on time	200 ms	pta=200 ptb=200 ptc=200 ptd=200	pta? ptb? ptc? ptd?	200 200 200 200	200 200 200 200
Speed	max	lta=0 ltb=0 ltc=0 ltd=0	lta? ltb? ltc? ltd?	0 0 0 0	0 0 0 0

Servo motors for lens mount with counter weight for titanium and compact shutters

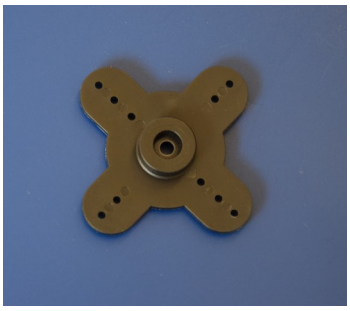
Extension cables

of 0,5 m, 1 m, or 2 m available

Options

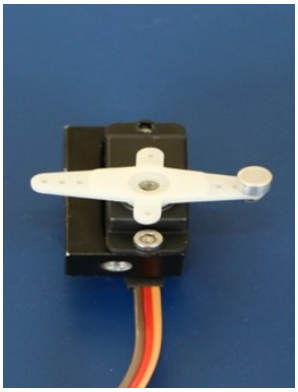
- **Arms**

  Different arm lengths (15 mm, 38 mm and 52 mm) for titanium and compact shutter

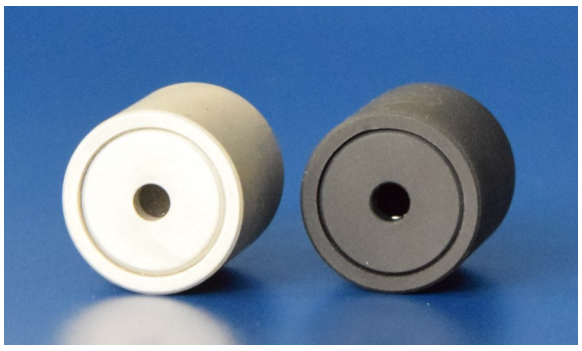


- **Double arms for mini shutters**

  Optional for the wavelenghts to avoide reflexes, we offer shutters in aluminium sand blasted or mat black.



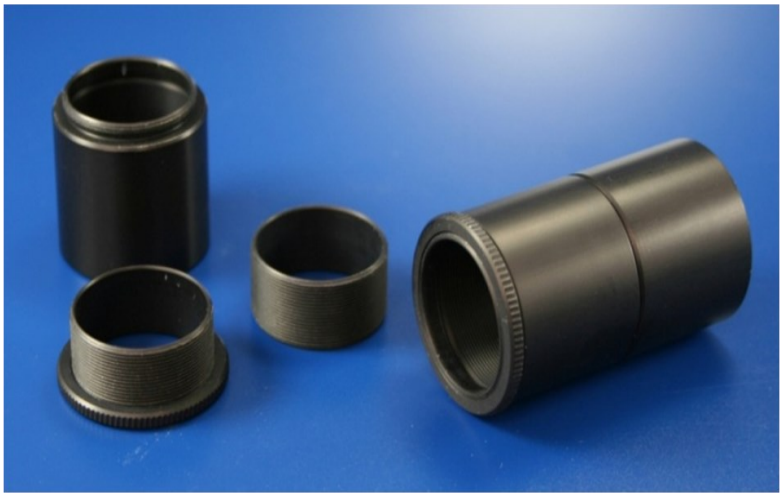
Beam Blockers for titanium and compact shutters



- Medium to high power without heat release.
- They can also be offered as static standalone units.

- High power with heat release

Lens Tube System



The Radiant Dyes Lens Tube System (**RD-LT**) is an easily combinable system to built up complex optical systems. The Lens Tubes are available with the diameters 0.5” and 1”. The system is compatible with the Radiant Dyes Lens Mounts (**RD-LM-WR**) and also compatible to other manufacturing companies.

Lens Tubes Ø 0,5“

Size	Order number
0,3“	**RD-LT-05-03**
0,5“	**RD-LT-05-05**
1“	**RD-LT-05-1**
2“	**RD-LT-05-2**
3“	**RD-LT-05-3**

External/internal thread 0,5“-40

Size	Order number
0,3“	**RD-LT-1-03**
0,5“	**RD-LT-1-05**
1“	**RD-LT-1-1**
2“	**RD-LT-1-2**
3“	**RD-LT-1-3**

Retaining Rings

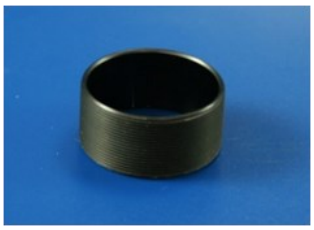
- **RD-LT-RR-05** (for Ø 0.5”)
- **RD-LT-RR-1** (for Ø 1”)

With the retaining ring different optics can be mounted into the lens tubes. Two retaining rings are necessary to mount one optic.

Lens Tube Couplers

- **RD-LT-C-05** (for Ø 0.5”)
- **RD-LT-C-1** (for Ø 1”)

Lens Tube Couplers with external thread.

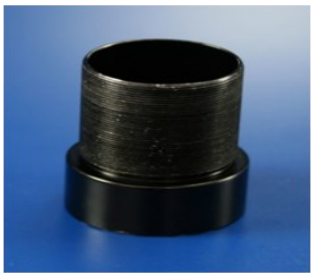


Counter Rings

- **RD-LT-CR-05** (for Ø 0,5”)
- **RD-LT-CR-1** (for Ø 1”)

Adjustable Lens Tubes

- **RD-LT-A-05-05** (for Ø 0.5” -Thread size 0.5”)
- **RD-LT-A-05-1** (for Ø 0.5” -Thread size 1”)
- **RD-LT-A-1-05** (for Ø 1” -Thread size 0.5”)
- **RD-LT-A-1-1** (for Ø 1” -Thread size 1”)



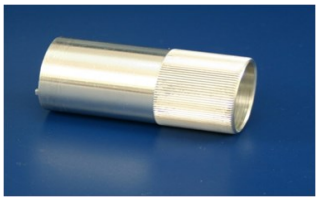
Lens Tube Inserts

- **RD-LT-I-05** (for Ø 0.5”)
- **RD-LT-I-1** (for Ø 1”)

Mounting Tools

- **RD-LT-MTRR-05** (for Ø 0.5”)
- **RD-LT-MTRR-1** (for Ø 1”)

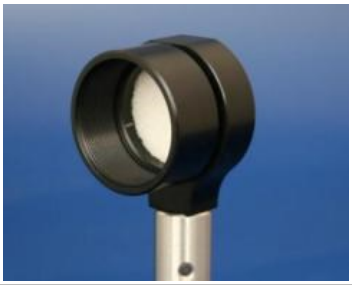
This tool is for installation and adjustment of the retaining rings (RD-LT-RR).



Beam Dump

RD-BD
- With M4 thread
- Passive cooling

RD-BDL
- Beam dump for lens mounts
- incl. RD-LT-05-05



Prism Turn Tables

RD-PDT-B (big)

RD-PDT-S (small)

Maximum capacity central	100 N
Inclination around both horizontal axes	± 3°
Turning around the vertical axis	± 9°
Adjustment sensitivity	2’

(One clamping arm RD-CH-CA-S included)

Mirror Mounts for Prism Mounting

Back plate with clamping arm for mounting of prisms.
(One clamping arm RD-CA-S included, see page 17)

Inclination Tables

Our mirror mounts with a closed back plate can also be used as inclination table, because there is a M6 thread on the back. The mounts as inclination tables are offered with thread pin and alternate inserts for optical components. The alternate insert offers the possibility to rotate the optical components around the axis perpendicular to the inclination table.

MNI-inclination table **RD-ICT-MNI**
MNI-2G with alternate insert & one clamping arm RD-CA-S

MDI-inclination table **RD-ICT-MDI**
MDI-2G with alternate insert & one clamping arm RD-CA-S

MXI-inclination table **RD-ICT-MXI**
MXI-2G with alternate insert & one clamping arm RD-CA-S

Cube Holder RD-CH-CA-S
(One clamping arm RD-CA-S included)

Prism Mounting & Filter Holder

Clamping Arms

RD-CA-S

Clamping height < 23 mm
Thread M4

RD-CA-L

Clamping height < 40 mm
Thread M4

Mounting Options:

V-mounts

For mounting of cylindrical objects
(one clamping arm included)

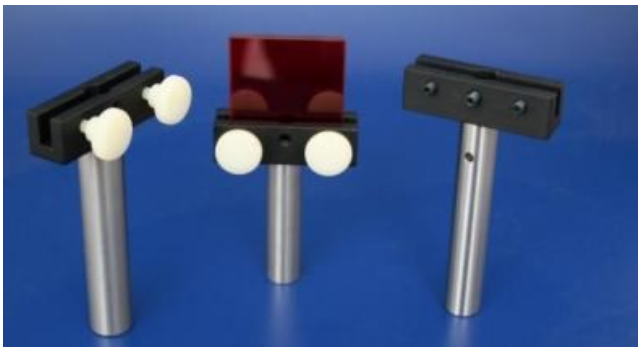
RD-VM-S
Ø 0.5 mm - Ø 22 mm

RD-VM-L
Ø 14 mm - Ø 50 mm

Filter Holder

RD-FH-K
Plastic thread screw with knurled head

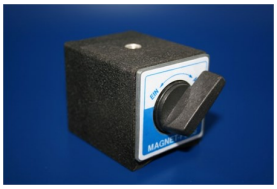
RD-FH-M
Including grub screws with plastic inserts



Post Holders & Bases

Magnetic Bases

Magnetic bases **MF-OG**	without adapter sheet
Magnetic bases **MF-MA**	with adapter sheet



Post Holder RDS

The RDS post holders (including base) are suitable for post dimensions from 11 to 15 mm diameter. Very stable through a precise three-point-support. They are compatible to posts and post holders on the market.

Clearence hole (100% of the height is usable)
Magnetic base (for fast mounting)

Size	Inner lowering for M6 or M8 screws	With M6 thread	Clearance Hole 15 mm	Magnetic Base
25 mm	- - -	- - -	**RDS-H-25**	**RDS-M-25**
35 mm	**RDS-35**	**RDS-T-35**	**RDS-H-35**	**RDS-M-35**
40 mm	**RDS-40**	**RDS-T-40**	**RDS-H-40**	**RDS-M-40**
50 mm	**RDS-50**	**RDS-T-50**	**RDS-H-50**	**RDS-M-50**
75 mm	**RDS-75**	**RDS-T-75**	**RDS-H-75**	**RDS-M-75**
100 mm	**RDS-100**	**RDS-T-100**	**RDS-H-100**	**RDS-M-100**
				

RD-SB

- Mounting Screw with ball, which is under spring tension to pre-adjust the post height.

Post Holder without Base

- Post Holder without base
- M6 thread on the bottom
- Suitable for post from 11 to 15 diameter

Size	Order Number
25 mm	**RDS-OF-25**
40 mm	**RDS-OF-40**
65 mm	**RDS-OF-65**
90 mm	**RDS-OF-90**

Post Holder Base for RDS-OF

RDS-F

- Base for RDS-OF
- Height 4,5 mm
- With M6 thread

Mounting Bases for Post Holders and Pedestals

RD-MB-2 (76 mm x 26 mm x 10 mm)

RD-MB-1 (58 mm x 25 mm x 10 mm)

Posts RD-GS

- Stainless steel posts
- Posts fit to all post holders
- Standard M4 inside threads on the one side and M6 on the other side
- One grub screw (M4) including

Diameter	Size	Order number
∅ 0,5 inch	50 mm	RD-GS-50 ∅ 0,5 inch
	75 mm	RD-GS-75 ∅ 0,5 inch
	100 mm	RD-GS-100 ∅ 0,5 inch

Diameter	Size	Order number
∅ 13 mm	50 mm	RD-GS-50 ∅ 13 mm
	75 mm	RD-GS-75 ∅ 13 mm
	100 mm	RD-GS-100 ∅ 13 mm

Diameter	Size	Order number
∅ 15 mm	50 mm	RD-GS-50 ∅ 15 mm
	75 mm	RD-GS-75 ∅ 15 mm
	100 mm	RD-GS-100 ∅ 15 mm

Post Holder Connector

RD-PHC

- 90° connection between two posts

Mounting option

Holding Forks RDK-1

RDK-1 Holding Fork, flexible and stable fixing of all RDS, RDS-G and RDS-OG post holders and pedestals through precise three-point-support.

Compatible to other pedestals on the market.

- **RDK-1 mini**
- **RDK-1 midi**
- **RDK-1 maxi**

Holding Forks RDK-2

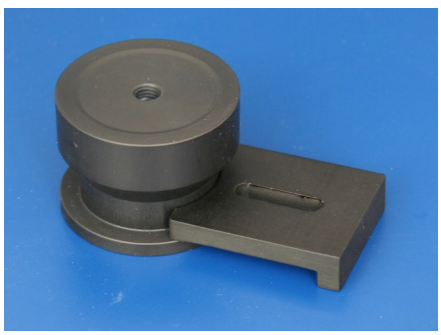
RDK-2 Holding Fork, flexible and stable fixing of RDS-G pedestals

For RDS-G Pedestals:

RDK-2 midi (∅ 25 mm)

For RDS-G-B Pedestals:

RDK-2 maxi (∅ 51 mm)



Clamping Forks RD-PH

RD-PH clamping fork, stable fixing of our RD1 and RD2 Mirror Mounts:

- **RD-PH-1** (38 mm x 16 mm x 9 mm)
- **RD-PH-2** (50 mm x 19 mm x 17 mm)
- **RD-PH-3** (50 mm x 19 mm x 23 mm) *for RD2*
- **RD-PH-4** (50 mm x 12 mm x 8 mm) *for RD1*

Table Clamps RD-TC

Table Clamp to fix several optomechanics on the table.

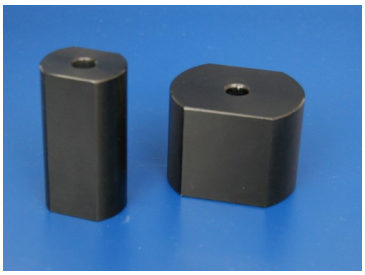
RD-TC-B RD-TC-S **RD-TC-D**

Base Plates and Height Adapter for RD1 and RD2

Base Plate:

for RD1 Mirror Mounts:
RD1-GP

for RD2 Mirror Mounts:
RD2-GP



Height Adapter:

for RD1 Mirror Mounts:
RD1-HA1 beam height 50 mm

for RD2 Mirror Mounts:
RD2-HA1 beam height 75 mm

RD2-HA2 beam height 100 mm

The heights are always total heights:

Beam height=

Base plate + height adapter + mirror mount

Base Plates & Height Adapters for *MNI, MNI-HS, MDI, MDI-H(S), MXI*

MNI Base plate:
- Available with long hole in longitudinal direction or with long holes in crosswise direction

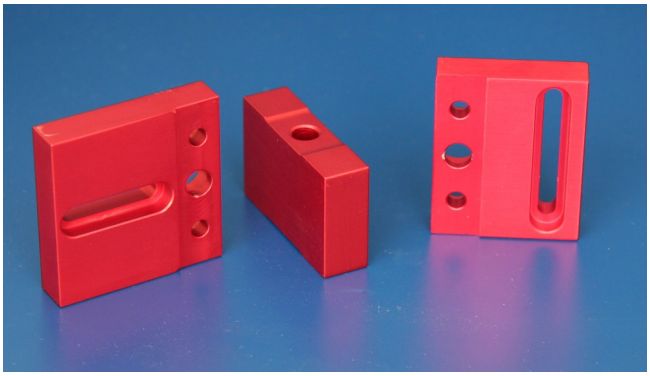
MNI Height Adapters:
- For 50 mm beam height
- For 75 mm beam height

MDI Base plate:
- Available with long hole in longitudinal direction
- Available with long holes in crosswise direction

MDI Height Adapters:
- For 50 mm beam height
- For 75 mm beam height

MXI Base plate:
- Available with long hole in longitudinal direction
- Available with long hole in crosswise direction

MXI Height Adapters:
- For 75 mm beam height
- For 100 mm beam height



The heights are always total heights:

Beam height=

Base plate + height adapter + mirror mount

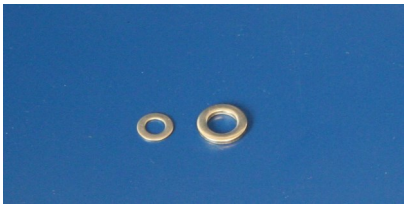
Cap Screws, Washers & Set Screws

Cap screws

RD-CS-M4-16	*(M4 x16 mm)*
RD-CS-M6-16	*(M6 x16 mm)*
RD-CS-M6-20	*(M6 x 20 mm)*

Washers

RD-W-M4	*(for M4 screws)*
RD-W-M6	*(for M6 screws)*



Set screws

RD-SC-M4-12	*(length 12 mm)*
RD-SC-M6-16	*(length 16 mm)*

Other length on request

Pedestals




All pedestals with thread (RDS-G and RDS-HS) can be combined with each other.

All Posts and Pedestals are also available with a lateral hole.

All pedestals are available made of POM.

All pedestals are available with a magnetic base for fast alignment.

Mirror mounts can be fixed by a set screw or a cap screw


RDS-MNI

- Stainless steel pedestal
- **Diameter 25.4 mm (∅ 1”)**
- The RDS-MNI system fits to our MNI mirror mounts
- Can be used on both sides
- Top side M4, bottom side M6 thread (standard)

Pedestal:

RDS-MNI-P

Size in mm	Order number
25	RDS-MNI-P-25
50	RDS-MNI-P-50
75	RDS-MNI-P-75

Other sizes on request

Holding Fork:

RDS-MNI-HF-S (small)
RDS-MNI-HF-M (medium)

RDS-OG

- **Diameter 25.4 mm (∅ 1”)**
- Pedestal with inner lowering for M4, M6 or M8 screws
- Available in aluminium, anodized aluminium or
- stainless steel

Size in mm	Size in inch	Order number
12.7	½	RDS-OG-0,5
19.1	¾	RDS-OG-0,75
25		RDS-OG-25
25.4	1	RDS-OG-1
38.1	3/2	RDS-OG-1,5
50		RDS-OG-50
50.8	2	RDS-OG-2
63.5	5/2	RDS-OG-2,5
75		RDS-OG-75
76.2	3	RDS-OG-3
100		RDS-OG-100
101.6	4	RDS-OG-4
127	5	RDS-OG-5
152.4	6	RDS-OG-6

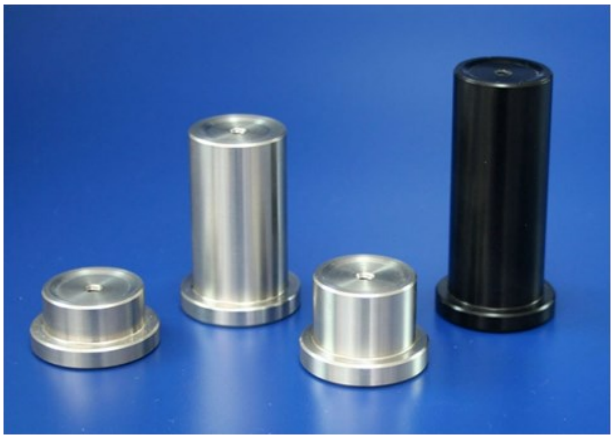
Other sizes on request

RDS-G

- **Diameter 25.4 mm (∅1”)**
- Top side M4 thread (standard)
- Also available with M6 thread
- Available in aluminium, anodized aluminium or
- stainless steel

Size in mm	Size in inch	Order number
12.7	½	RDS-G-0,5
19.1	¾	RDS-G-0,75
25		RDS-G-25
25.4	1	RDS-G-1
38.1	3/2	RDS-G-1,5
50		RDS-G-50
50.8	2	RDS-G-2
63.5	5/2	RDS-G-2,5
75		RDS-G-75
76.2	3	RDS-G-3
100		RDS-G-100
101.6	4	RDS-G-4
127	5	RDS-G-5
152.4	6	RDS-G-6

Other sizes or threads on request



RDS-G-M

- **Diameter 31.5 mm**
- Pedestal with M4 (standard) or M6 thread on top
- Available in aluminium, anodized aluminium or
- stainless steel

Size in mm	Size in inch	Order number
25		RDS-G-M-25
25.4	1	RDS-G-M-1
38.1	3/2	RDS-G-M-1,5
50		RDS-G-M-50
50.8	2	RDS-G-M-2
63.5	5/2	RDS-G-M-2,5
75		RDS-G-M-75
76.2	3	RDS-G-M-3
100		RDS-G-M-100

Other sizes on request

RDS-G-B

- **Diameter 51 mm**
- Very stable pedestal with M4, M6 or M8 thread on top
- Available in aluminium, anodized aluminium or stainless steel
- Fits perfectly for our RD2 mirror mounts

Other sizes on request

RDS-HS

- Height adjustable pedestals
- Top side M4, bottom side M6 thread (standard)
- Easy to use
- Precise and ultra stable design

Available in the following sizes:	
Size in mm	**Order number**
30-38 mm	RDS-HS-30-38
38-50 mm	RDS-HS-38-50
50-70 mm	RDS-HS-50-70
55-80 mm	RDS-HS-55-80
70-110 mm	RDS-HS-70-110

eveloped by the University of Heidelberg, Inst. of Physics ,AG Prof. Schmiedmayer by Dr. Alois Mair

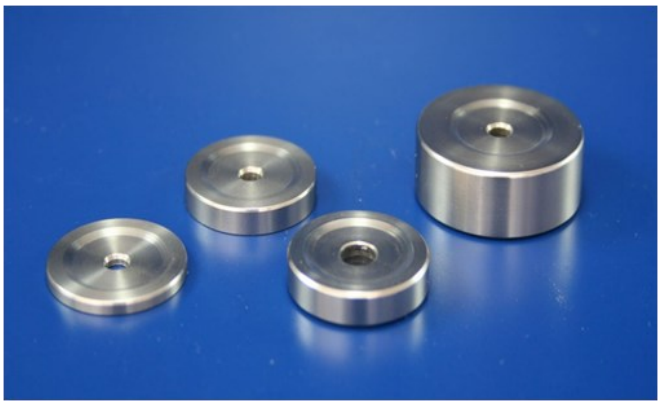
RDS-HSA

- Height adjustable adapter for pedestals
- Compatible to all pedestals
- Size 20-29 mm

RDS-HA

- Height adjustable adapter for pedestals
- With M4 (standard) or M6 clearance hole
- Compatible to all pedestals
- Size 20-29 mm

Available in the following sizes:		
Size in mm	**Order number ∅ 1”**	**Order number ∅ 31.5 mm**
2 mm	RDS-HA-1”-2	RDS-HA-M-2
3 mm	RDS-HA-1”-3	RDS-HA-M-3
4 mm	RDS-HA-1”-4	RDS-HA-M-4
5 mm	RDS-HA-1”-5	RDS-HA-M-5
10 mm	RDS-HA-1”-10	RDS-HA-M-10



Thread Adapters

Available in the following sizes:			
External Thread	**Internal Thread**	**Length**	**Order Number**
M8	M6	9 mm	**RD-TA-8-6-9**
M8	M6	6 mm	**RD-TA-8-6-6**
M6	M4	8 mm	**RD-TA-6-4-8**
M6	M4	6 mm	**RD-TA-6-4-6**

Thread Adapters with Set Screw

Available in the following sizes:		
Grub Screw	**External Thread**	**Order Number**
M4	M6	**RD-TA-GS-4-6**
M4	M8	**RD-TA-GS-4-8**
M6	M8	**RD-TA-GS-6-8**

Newport compatible translation stage

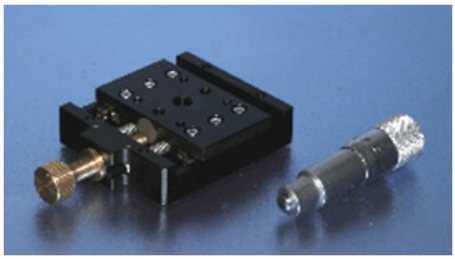
Made of aluminium with high precision *"Schneeberger"* crossed roller way guides.

With this kind of longitudinal guide we can offer a high precision guiding system with extremely low height (13 mm). The use of cross roller way guides ensures a well fitted guide with a very smooth operation. These translation stages are equipped with a fine thread screw (thread pitch 0.25mm). The dimensions of the drill holes are designed in that way that two stages are easily mounted to one XY-unit. Using a special adapter it is possible to realise a XYZ-unit.

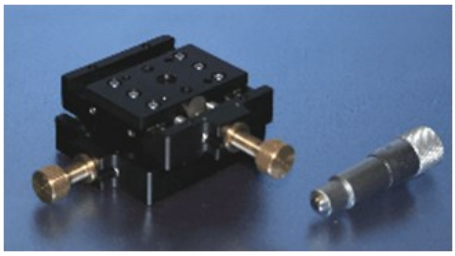
RD-KRU-NP-15-01 -02 -03

Translation stage with fine thread screws:
- 0.25 mm per turn
- 0.15 mm per turn

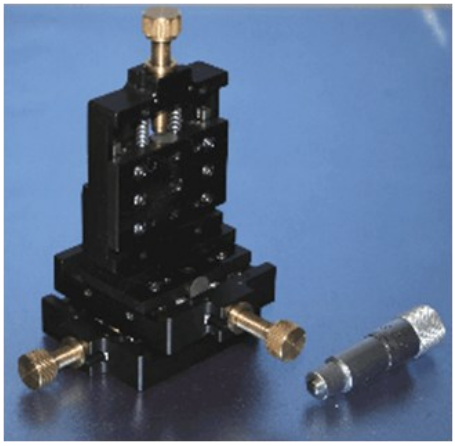
Translation stage with micrometer screws:
- 0.5 mm per turn
- 0.25 mm per turn



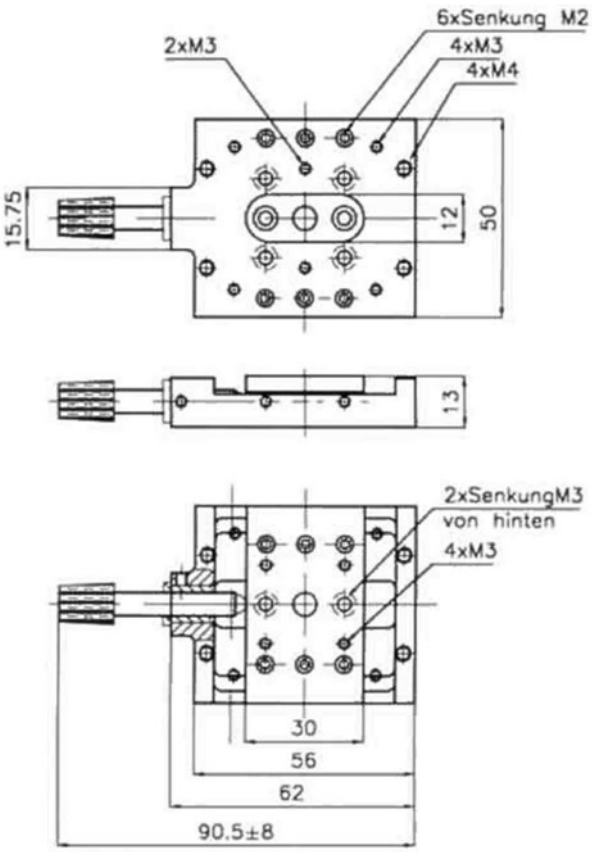
RD-KRU-NP-15-01



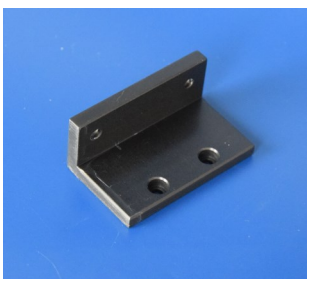
RD-KRU-NP-15-02



RD-KRU-NP-15-03



Different adapter plates for all our translation stages available.



Adapter angle X-Y-Z

Translation stage with crossed roller way guides 15 mm adjustment line

With this kind of longitudinal guide we can offer a high precision guide system for high loading with well fitted guide and extremely smooth operation. The lateral guidance offers the possibility to build in a passage notch, f.e. for a laser beam.

RD-KRU-15-01 -02 -03

With fine thread screws:
- 0.25 mm per turn

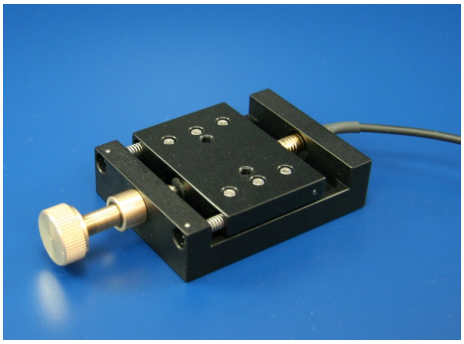
- 0.15 mm per turn
With micrometer screws:
- 0.5 mm per turn
- 0.25 mm per turn

RD-KRU-15-01-piezodrive

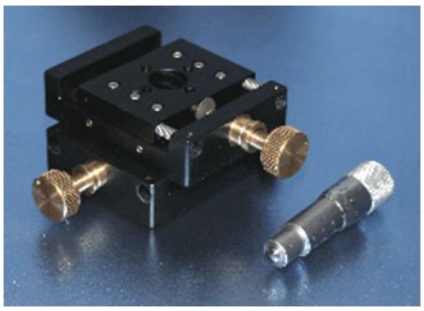
With fine thread screws:
- 0.25 mm per turn

- 0.15 mm per turn
With micrometer screws:
- 0.5 mm per turn
- 0.25 mm per turn

RD-KRU-15-01

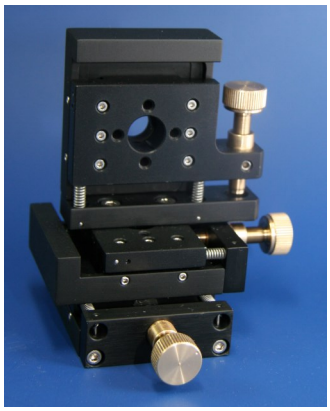


RD-KRU-15-01- piezo drive



RD-KRU-15-02

RD-KRU-15-01-S



RD-KRU-15-03

Different adapter plates for all our translation stages available.

Also available:

RD-KRU-15-02-S

RD-KRU-15-03-S

Translation stage with crossed roller way guides 25 mm adjustment line

RD-KRU-25-01 –02 –03

With fine thread screws:
- 0.25 mm per turn
- 0.15 mm per turn

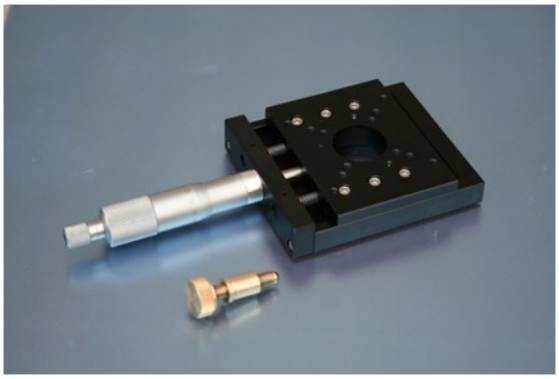
With micrometer screws:
- 0.5 mm per turn

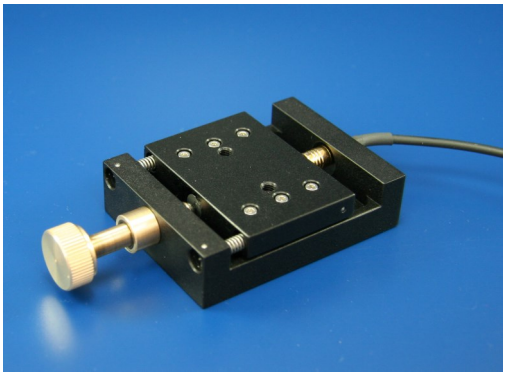
RD-KRU-25-01 -02 –03
-piezo drive

With fine thread screws:
- 0.25mm per turn
- 0.15 mm per turn

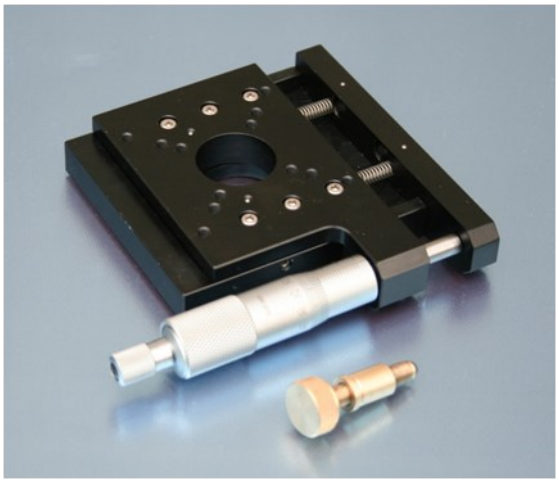
With micrometer screws:
- 0.5 mm per turn

-piezo drive 27/35µm





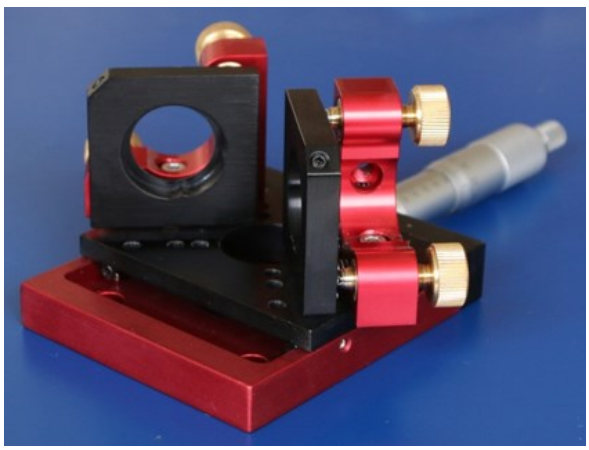
RD-KRU-25-01-S
RD-KRU-25-02-S
RD-KRU-25-03-S



RD-KRU-25-01-S

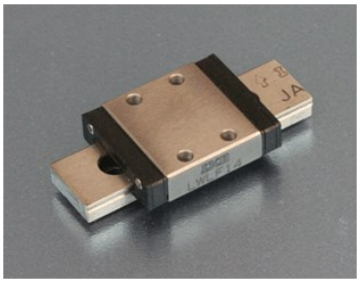
Different adapter plates for all our translation stages available.

Variable Delay-Line
- 2 mirror mounts
- 1 RD-KRU-25-01

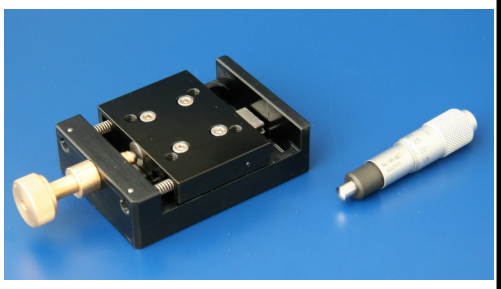


Translation stage with linear roller way guides 15 mm adjustment line

The linear roller way guides are commercial systems which we built in our sliding stages. We are in the position to offer inexpensive but high quality systems, because of the simple assembly and the high precision. The linear roller way guides are delivered well fitted and with high rigidity. The sliding units are also available for custom-made units in different lengths. The adjustment of the sliding stages is carried out by fine thread or micrometer screws, stepper motor control on request.



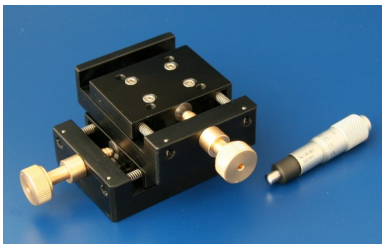
Different adapter plates for all our translation stages available.



RD-KUL-15-01 -02 -03

Translation stage with fine thread screws:
- 0.25 mm per turn
- 0.15 mm per turn

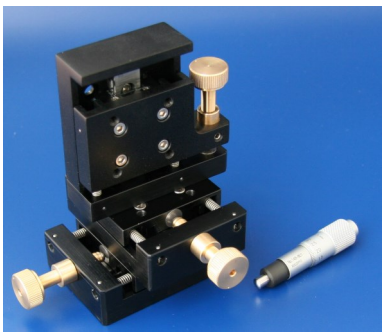
Translation stage with micrometer screws:
- 0.5 mm per turn
- 0.25 mm per turn

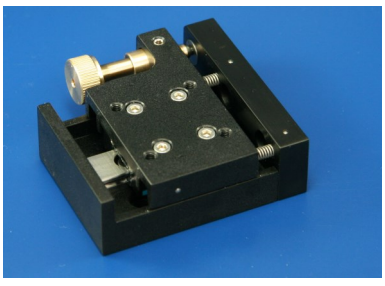


RD-KUL-15-01S -02S -03S

Translation stage with fine thread screws:
- 0.25 mm per turn
- 0.15 mm per turn

Translation stage with micrometer screws:
- 0.5 mm per turn
- 0.25 mm per turn



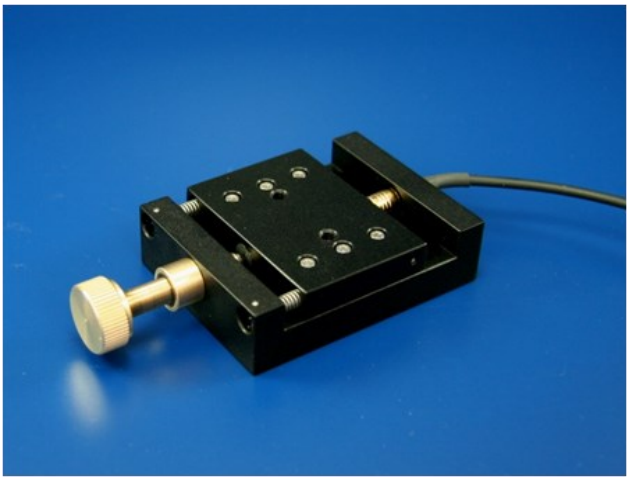


Translation stage with linear roller way guides 25 mm adjustment line

RD-KUL-25-01
RD-KUL-25-02
RD-KUL-25-03

Translation Stage with Piezo Drive

The new MDI-H with piezo drive is a mirror mount which is controlled by a piezo system with our own electronics. Besides a manual adjustment by 0.15 mm/0.25 mm per turn, the systems can be adjusted electronically within a µm-range.
The piezoelectric actuator is built into the translation stage. Specifications:
The operation voltage range is -10 V.....+150 V, leading to maximum stroke of > 20 µm
(typically 23 µm).



Piezo Controller

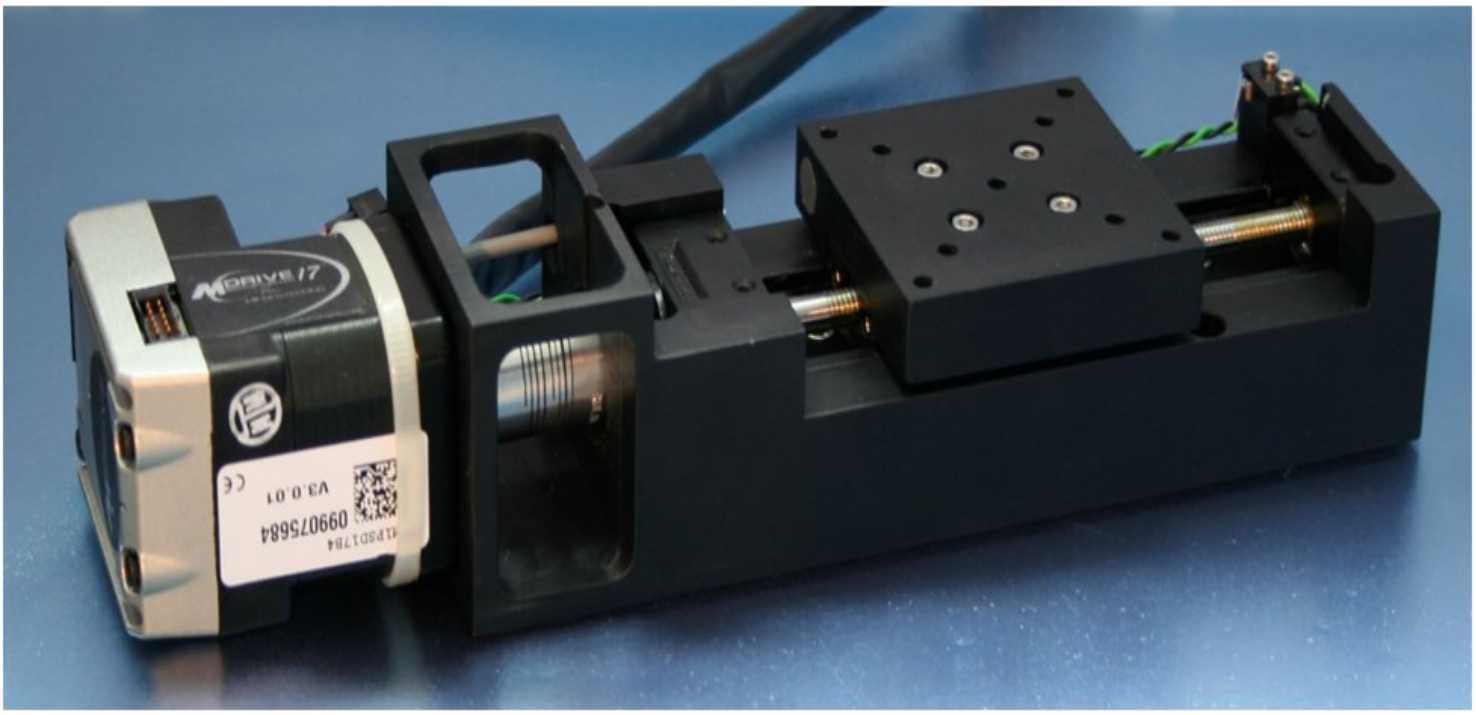
For further information please see on page 43

Translation Stage with Stepper Motor

RD Stepper motor drive 55	55 mm travel range xy and xyz available
RD Stepper motor drive 130	130 mm travel range
RD Stepper motor drive 180	180 mm travel range

Specifications:

- Preloaded lead screw
- Min. incremental motion 0,1µm low cost version 0,3 µm
  (Higher resolution on request)
- Max. load 200N
- Limit and reference switches
- Control unit for three motors
- low cost version: control unit for 16 motors

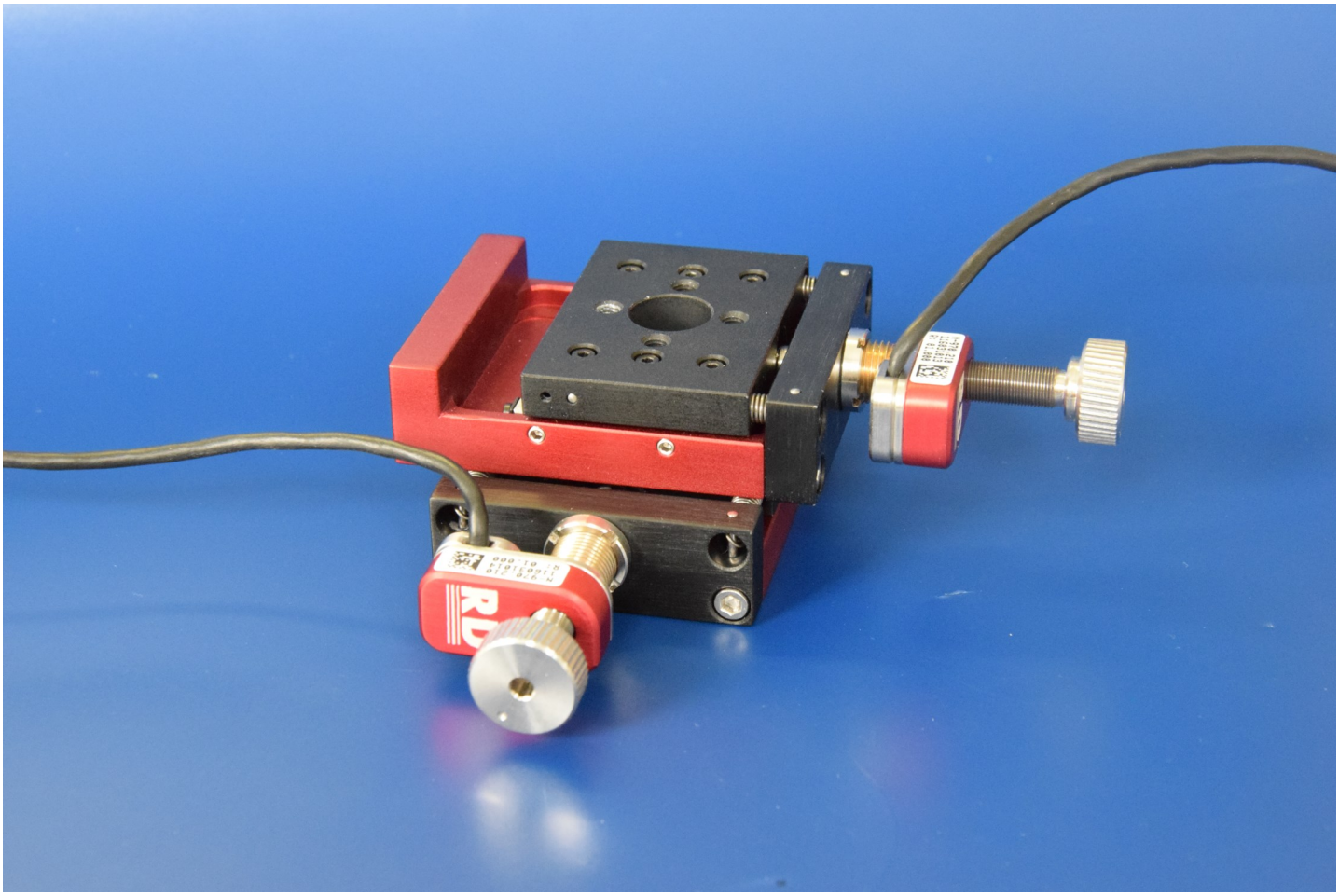


Translation stage with Piezo Drive

- Can be delivered with Piezo Prive

- **Examples:**
- our RD-KRU-15-01 Piezo Drive with tolerances of an accuracy of +/- 1 hundredth mm over the whole sliding range

- the 25 mm translation of +/- 2 hundredth mm



Translation stage with stepper motor

- our extremely precise laser control as standalone unit as x, xy and xyz version with the different travel ranges between 50 and 180 mm
- These are our translation elements on the basis of a pre-stressed linear roller way, combined with a translation stage with linear roller way, free from play. The accuracy and reproducibility is of highest precision.

Specifications

Min. incremental motion 0,1 µm
Max. 64.000 steps per turn
Max. speed: 16.000 steps per second
Max. load: 200 N
Limit and reference switches

A special feature is that the stepper motor can be controlled directly over a PC as the control card is installed inside the stepper motor. We can also offer a complete control box.

4-Axis Linear Stage

Our 4-Axis Linear Stage offers you the possilibilty to align optical tubes which contain an input and output (for lenses or modulators). While one end is focused on the laser beam, you can simply adjust the other one until the beam arises.
Every motion is stand-alone and conjoined to a single base, so you will not create a linked motion during your adjustments.

- Available for M4 and M6 threads
- Because of fine thread screws and the strong springs, you can adjust the stage very precise
- Available with 250 µm/turn and 150 µm/turn fine thread screws

5-Axis Linear Stage

Our 5-Axis Linear Stage offers you the possilibilty to align optical tubes which contain an input and output (for lenses or modulators). While one end is focused on the laser beam, you can simply adjust the other one until the beam arises.
Every motion is stand-alone and conjoined to a single base, so you will not create a linked motion during your adjustments.

- Available for M4 and M6 threads
- BEcause of fine thread screws and the strong springs, you can adjust the stage very precise
- Available with 250 µm/turn and 150 µm/turn fine thread screws

Aluminium Breadboards

- **All sizes up to 720x1300 mm**
- Thread M6
- Raster 25 mm

Standard Thickness:
- 12 mm
- 15 mm
- 20 mm

Also available on request:
- 10 mm
- 25 mm

Standard sizes (12 mm)
300 x 450 x 12 mm
450 x 600 x 12 mm
600 x 600 x 12 mm
900 x 600 x 12 mm

Standard sizes (15 mm)
300 x 450 x 15 mm
450 x 600 x 15 mm
600 x 600 x 15 mm
900 x 600 x 15 mm

Standard sizes (20 mm)
600 x 600 x 20 mm
900 x 600 x 20 mm

Other sizes also available

On request every custom product available

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