



Consommable pour machine laser

**BYSTRONIC / 2009**



"Оборудование Интернейшенел"

Тел. +7 (495) 413-0095

Факс +7 (495) 413-9580

[www.obint.ru](http://www.obint.ru)  
[info@obint.ru](mailto:info@obint.ru)

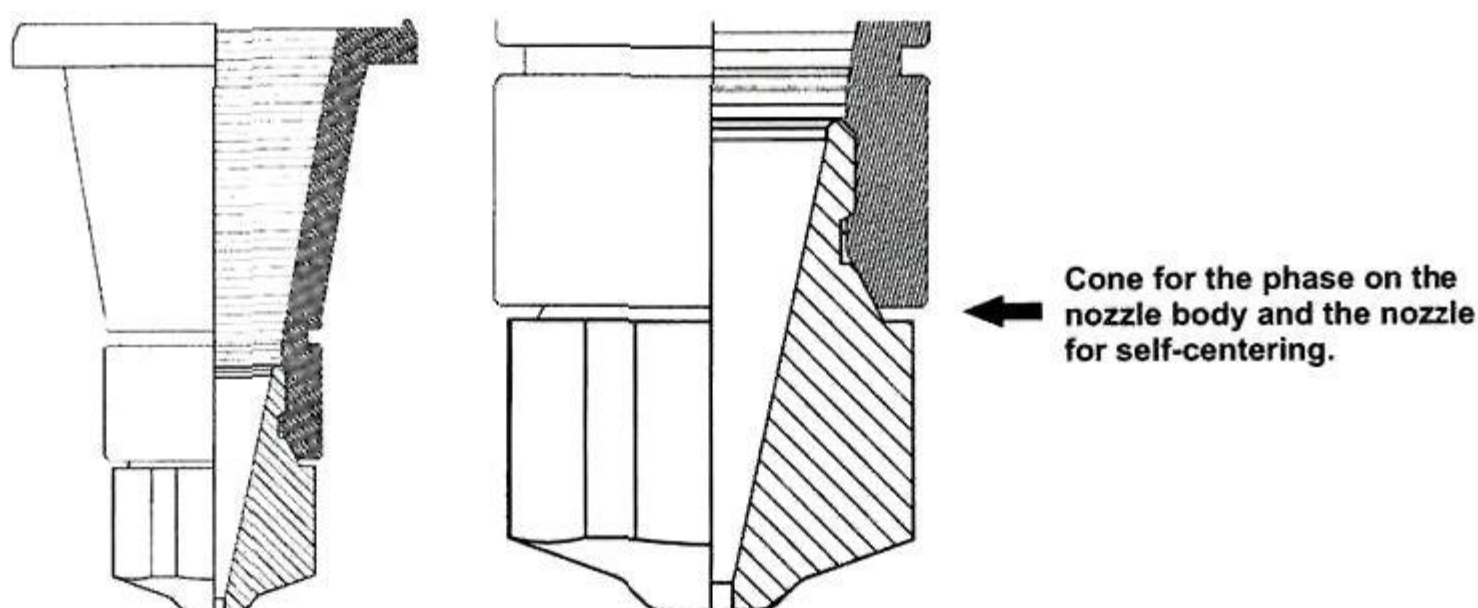
# Self centering nozzle

**suitable for Bystronic**

The nozzles as well as the nozzle bodies have a phase after the thread (see image below). Therefore the nozzle will center itself when you screw it into the nozzle body.

You adjust the focus only one time! - Next time you change the nozzle, it is not necessary to adjust the focus anymore.

**This will save you a lot of time!!!**









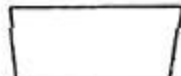


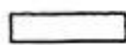






The new style nozzles will also fit into the old style nozzle body without centering.

Therefore you are able to already use the new style nozzles on your laser, having the possibility to use up your old style nozzle bodies.

New style nozzles can be used with old style nozzle bodies, but they will not be centered. This result you will only get with the new style nozzle body and the new style nozzles.









**Our nozzles do fit in our nozzle body with cone for self-centering as well as in the genuine nozzle body from Bystronic® !!**



Ref.- No.	Order-No.	Description	
<b>Consumables suitable for Bystronic BY Serie</b>			
4-03136	HG 10.437		Knurled screw.....
4-00324	HG 10.438		Knurled screw.....
4-03137	HG 10.439		Pin.....
3-02291	HG 10.474		Nozzle body.....
3-02291	HG 10.474/K		<b>Nozzle body with cone for self-centering.....</b>
4-01642	HG 10.433		Insulating ring - ceramic.....
3-05497	HG 10.432		Nozzle body.....
3-05497	HG 10.432/K		<b>Nozzle body with cone for self-centering.....</b>
4-01959	HG 10.434		Conical ceramic.....
2-08701	HG 10.471		Nozzle body.....
2-08701	HG 10.471/K		<b>Nozzle body with cone for self-centering.....</b>
3-11071	HG 10.473		Fastener nut.....
4-09010	HG 10.470		Ceramic.....
2-08700	HG 10.472		Shield (copper).....
3-13113-1	HG 10.493		Insulating ring (small).....
2-10837-1	HG 10.495		Nozzle body.....
2-10837-1	HG 10.495/K		<b>Nozzle body with cone for self-centering.....</b>
3-13422	HG 10.494		Insulating ring (large).....
3-06035	HG 10.440		Insulating disc (teflon).....
3-03663	HG 10.469		Insulating disc (teflon) - old Ref. 3-02951 .....

Page B



Ref.- No.	Order-No.	Description	
<div>Consumables suitable for Bystronic BY Serie</div> <div>The following nozzles have a phase after the thread for self-centering. They can be used with the new system nozzle body, but also with the conventional nozzle body:</div> <div>Nozzles are packed in strips of 10 tear-off bags</div>			
Standard copper nozzle			
3-01894	HG 10.403/K		10 Nozzle Ø 1,00 mm.....
3-01895	HG 10.404/K		12 Nozzle Ø 1,25 mm.....
3-01896	HG 10.405/K		15 Nozzle Ø 1.50 mm.....
3-01899	HG 10.408/K		H10 Nozzle Ø 1,00 mm.....
3-01900	HG 10.409/K		H12 Nozzle Ø 1,25 mm.....
3-01901	HG 10.410/K		H15 Nozzle Ø 1,50 mm.....
3-01902	HG 10.411/K		H17 Nozzle Ø 1,75 mm.....
3-01903	HG 10.412/K		H20 Nozzle Ø 2,00 mm.....
3-01905	HG 10.413/K		K10 Nozzle Ø 1,00 mm.....
3-01906	HG 10.414/K		K12 Nozzle Ø 1,25 mm.....
3-01907	HG 10.415/K		K15 Nozzle Ø 1,50 mm.....
3-01908	HG 10.416/K		K17 Nozzle Ø 1,75 mm.....
3-01909	HG 10.417/K		K20 Nozzle Ø 2,00 mm.....
3-04274	HG 10.426/K		K25 Nozzle Ø 2.50 mm.....
3-01910	HG 10.418/K		HK 10 Nozzle Ø 1,00 mm.....
3-01911	HG 10.419/K		HK 12 Nozzle Ø 1,25 mm.....
3-01912	HG 10.420/K		HK 15 Nozzle Ø 1,50 mm.....
3-01913	HG 10.421/K		HK 17 Nozzle Ø 1,75 mm.....
3-01914	HG 10.422/K		HK 20 Nozzle Ø 2,00 mm.....
3-03854	HG 10.423/K		HK 25 Nozzle Ø 2,50 mm.....
3-06112	HG 10.425/K		HK 30 Nozzle Ø 3,00 mm.....
	HG 10.424/K		HK 35 Nozzle Ø 3,50 mm.....
Nozzles with hard chromium plating			
3-01894	HG 10.403/KC		10 Nozzle Ø 1,00 mm Hard chromium plating...
3-01895	HG 10.404/KC		12 Nozzle Ø 1,25 mm Hard chromium plating...
3-01896	HG 10.405/KC		15 Nozzle Ø 1.50 mm Hard chromium plating...
3-01899	HG 10.408/KC		H10 Nozzle Ø 1,00 mm Hard chromium plating...
3-01900	HG 10.409/KC		H12 Nozzle Ø 1,25 mm Hard chromium plating...
3-01901	HG 10.410/KC		H15 Nozzle Ø 1,50 mm Hard chromium plating...
3-01902	HG 10.411/KC		H17 Nozzle Ø 1,75 mm Hard chromium plating...
3-01903	HG 10.412/KC		H20 Nozzle Ø 2,00 mm Hard chromium plating...
3-01905	HG 10.413/KC		K10 Nozzle Ø 1,00 mm Hard chromium plating...
3-01906	HG 10.414/KC		K12 Nozzle Ø 1,25 mm Hard chromium plating...
3-01907	HG 10.415/KC		K15 Nozzle Ø 1,50 mm Hard chromium plating...
3-01908	HG 10.416/KC		K17 Nozzle Ø 1,75 mm Hard chromium plating...
3-01909	HG 10.417/KC		K20 Nozzle Ø 2,00 mm Hard chromium plating...
3-04274	HG 10.426/KC		K25 Nozzle Ø 2.50 mm Hard chromium plating...
3-01910	HG 10.418/KC		HK 10 Nozzle Ø 1,00 mm Hard chromium plating...
3-01911	HG 10.419/KC		HK 12 Nozzle Ø 1,25 mm Hard chromium plating...
3-01912	HG 10.420/KC		HK 15 Nozzle Ø 1,50 mm Hard chromium plating...
3-01913	HG 10.421/KC		HK 17 Nozzle Ø 1,75 mm Hard chromium plating...
3-01914	HG 10.422/KC		HK 20 Nozzle Ø 2,00 mm Hard chromium plating...
3-03854	HG 10.423/KC		HK 25 Nozzle Ø 2,50 mm Hard chromium plating...
3-06112	HG 10.425/KC		HK 30 Nozzle Ø 3,00 mm Hard chromium plating...
	HG 10.424/KC		HK 35 Nozzle Ø 3,50 mm Hard chromium plating...

Page C

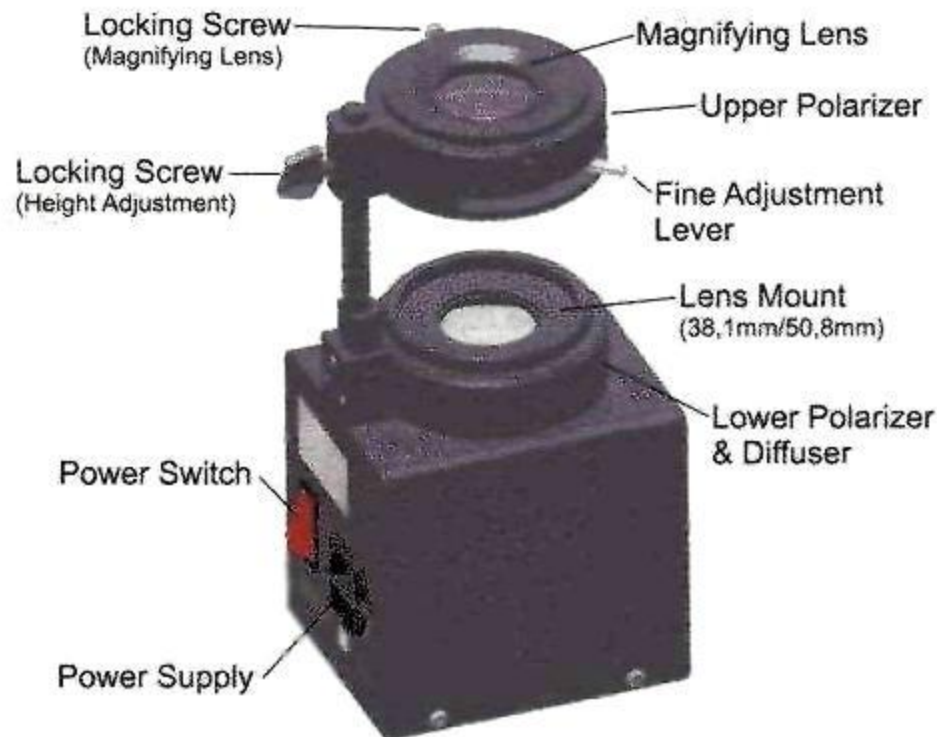


Ref.-No.	Order-No.	Description
<div><div><div><div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div>&lt;/</div></div></div></div></div></div>		



Ref.-No.	Order-No.	Description	
<p style="text-align: center;"><b>M.P.S</b></p> <p style="text-align: center;"><b>CO<sub>2</sub> - Laser - Lenses</b></p> <p style="text-align: center;"><b>suitable for Bystronic</b></p>			
4-00185	HG 10.730/H	ZnSe-Meniscus Lens 3,75" High Pressure Lens (16 bar), Ø 38,1 mm Effective Focal Length: 95,3 mm Edge Thickness: 6,0 mm AR/AR for 10,6µm (Absorption <0.20%)	
4-00186	HG 10.731/H	ZnSe-Meniscus Lens 5,00" High Pressure Lens (16 bar), Ø 38,1 mm Effective Focal Length: 127,0 mm Edge Thickness: 6,0 mm AR/AR for 10,6µm (Absorption <0.20%)	
4-00187	HG 10.732/H	ZnSe-Meniscus Lens 7,50" High Pressure Lens (16 bar), Ø 38,1 mm Effective Focal Length: 190,5 mm Edge Thickness: 6,0 mm AR/AR for 10,6µm (Absorption <0.20%)	
4-05094	HG 10.733/H	ZnSe-Meniscus Lens 5,00" High Pressure Lens (35 bar), Ø 38,1 mm Effective Focal Length: 127,0 mm Edge Thickness: 9,0 mm AR/AR for 10,6µm (Absorption <0.20%)	
4-05095	HG 10.734/H	ZnSe-Meniscus Lens 7,50" High Pressure Lens (35 bar), Ø 38,1 mm Effective Focal Length: 190,5 mm Edge Thickness: 9,0 mm AR/AR for 10,6µm (Absorption <0.20%)	
		<p>For a laserpower above 4kW, we do recommend lenses with the special            * Ultra Low coating for the following reasons.</p> <p>These lenses do offer a lower absorption (&lt;0.15%). The results of the            lower heat absorption are less tensions and optical distortions.            Furthermore the focal length is more stable. Also in case of a slightly            dirty lens you can still profit from these advantages.</p> <p>These lenses are not black. Therefore it is not possible to differentiate            them from the standard ZnSe-Meniscus lenses.</p> <p>* Ultra Low lenses are appropriately marked on the edge.</p>	
	HG 10.733/HU	ZnSe-Meniscus Lens 5,00" High Pressure Lens (35 bar), Ø 38,1 mm Effective Focal Length: 127,0 mm Edge Thickness: 9,0 mm * Ultra Low AR/AR for 10,6µm (Absorption <0.15%)	
	HG 10.734/HU	ZnSe-Meniscus Lens 7,50" High Pressure Lens (35 bar), Ø 38,1 mm Effective Focal Length: 190,5 mm Edge Thickness: 9,0 mm * Ultra Low AR/AR for 10,6µm (Absorption <0.15%)	
	HG 10.174	<p>* Polish</p> <p>Polish for laseroptics, 100ml</p>	
	HG 10.173	<p>Original lens cleaning paper from Kodak®</p> <p>Art. KP 62647-B / Sheet size: ca. 70 x 115 mm            Package containing: 50 sheets</p>	

# Dirt & Strain Viewer for Lenses and Cleaning Set

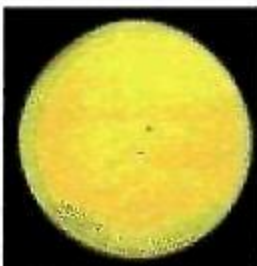


Picture 1



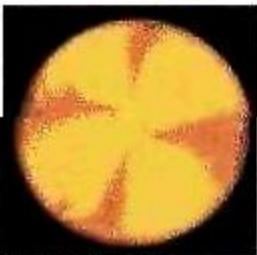
It is easily visible, that this lens is dirty.

Picture 2



Here are two small pieces of backscatter in the very center of the lens.

Picture 3



Lens was overheated (stress). This cannot be seen with the naked eye. This problem is mainly occurring with lasers with a power of 4, 5, 6 or 7kW.

Here we do recommend our **M.P.S Ultra Low®** - lenses with very low absorption values.

Picture 4



The bright spots at the edge of the lens show, that the lens was mounted too tight in the holder. The reason is, that the holder is dirty or was screwed too tight. Because the lens consists of soft material, it is strained, so that you have problems finding the focussing point and it is stressed very easily. You can see the stress in the middle of the lens (shadow - cross). All this is not visible with the naked eye. Because you could not see the cause without the dirt & strain viewer, every new lens would have been also damaged when built in.



**C'est aussi .....**

