

**The lens mount of Great Wall is M39 and the standard-optic is : f:/ 3,5 / 90mm**



This is the only lens ever produced by Great Wall for this camera – f:3.5/90mm.

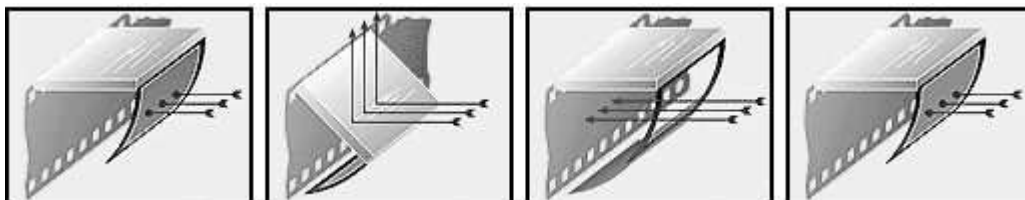
**The German Manual for the DF-4 says:**

*“ Accessories: the lens-thread is M39. You can use a teleconverter. If you work with extensionrings, bellows or other lenses you will have to use this converter as well. This is because of the small diameter of the thread. Therefor you need a 2<sup>nd</sup> lens to bring the light in correct size to the filmplane”*

unfortunately there are no further information about “other lenses” or the converter itself. Ok. To understand what that means we have to give a look inside our GW. Compared to other MF-SLR cameras the mirror is quiet small. The result is that the picture you see in the finder is not very bright and if you have a long tele-lens or you stop down to f=11 or 16 it will get even darker.

But the main reason is the GW`s shutter sytem.

The shutter is an „exa-like“ ( Exa cameras were produced by VEB Pentacon in the former GDR ) swing-mirror that is used as 1<sup>st</sup> curtain and a metal segment as 2<sup>nd</sup> curtain.



The problem was the same with those cameras. All lenses longer than 135mm gave a black stripe on top and bottom of the film, due to construction of the shutterunit inside the camera! The same problem occures when you use extension rings of more than 60 mm.

As long as the telelens used with GW is up to 180 mm I think the result will be acceptable, especially if you work with inserted 4.5x6 mask.

Interesting is the fact that when you use a 2x converter this problem will not occure!

A second disadvantage of this shutter principle is that you can hardly get fast speeds. Great Wall shutter speeds are: 1/30 ; 1/60 ; 1/125 ; 1/200 and B . The very first *Exa*-models also offered 1/200 – but were hardly reached , so what is realistic might come along 1/175 .

Well, the most important fact of all is the **register**, the distance between rear lens element and filmplane.

What can happen? Here are 4 possible cases:

1. the register of the lens is correct. This is what all lenses have that are produced for that kind of camera. In our case it is the one and only lens GW 3.5 / 90mm ! with a register of around 73,5 mm.
2. the register of the lens is shorter (e.c. Leica rangefinder M39). This means that you won't get focus from close distance to infinity, but within a short range of distance; kind of macro lens. The only solution to this is using an adapter with an extra optical element. So here we are, that means at least a mild teleconverter. But, that will never improve the image quality and does not make sense if we want to use a wide-angle lens. Apart from that it reduces the light values (1.5 to 3 f stops) depending on the quality of used optics.
3. a lens without ability to focus at all – like enlarger lenses. This should work, but only within a short range of distance again. Enlarger lenses for medium format are of 85 to 135 mm in average. That will work at an distance of about 3m to the object like a portrait lens. So there is no real advantage to the standart GW lens!
4. The register of the lens is larger. That will work. The only problem is to get an adapter that fits on **both** sides: lens and camera!

### **Finding solutions:**

All **Leica M39** (and it's copies) have a register of 28.8 mm ( so called **LTM** = Leica thread mount ) and the rear part of the lenses will not fit correct into GW's M39 due to construction. I think that might be the reason of the inner Ring on the GW – to avoid the use of those lenses and protect the mirror! A second problem with this thread is that it is M39 x 26tpi ( which is adequate to 0.97mm) and the thread of other M39 manufacturers is M39 x 1mm ! So when using an original Leica lens you may ruin the thread of your camera mount!

There are plenty of lenses for russian Zenit ( C, 3, 3M ) SLR M39 Cameras. That is the so called **M39 ZTM** ( Zenit thread mount ) with a register of 45.2 mm and a thread of M39x1. That still is not enough for our GW but you can work with those lenses within an acceptable range of distance – apart from infinity of course – with converter.

BUT, does it make much sense? To tell the truth: no!. The construction of those lenses may give excellent resolution on 135 film and acceptable results on film material up to 4x4 cm. But MF is 6x6, so that means that you might get good results in the center but the edges are very poor.

All **M42** SLR's have 45.5 mm register.

So it will be nearly impossible to use common M39 or M42 lenses on the GW without a special converter and the result will be middle-class if you are lucky.

So what about **add-on lenses** ? Most common are *close-up* and so called *semi-fisheye add on lenses*. Those lenses are easily screwed in the filterring of the lens. Fortunately our GW has 52mm thread. That is very common, so no big problem to get those lenses.

Here are : **Danubia tele** and **wide angle** add- on lenses and **fish-eye**



To me this is the low-budget solution that works, is easy to handle and is not heavy.

So apart from the problems mentioned before, what is this converter like and where to get it? I've tried using M42 converter that did not work because the register of the converter is wrong. Any available M39 converter are of wrong register as well. So it seems that the only possibility is to build a converter by yourself. I will do some experiments on that and update this file then. If anybody has infos on the original GW converter please let me know.

Now the ultimate solution. In general all **MF lenses** have large registers ( Kiev 60 and Pentacon six : 74.10 mm ; Kiev 88 and Hasselblatt : 82.10mm ). So it seems to be best to build an adapter that has a pentacon six / kiev 60 breech lock mount on one side and M39 on the other. That will probably work and give the most variety of lens-usage. So this is the next project I try .

To be continued....