Re: Olympus PMG

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- *From*: "Kevin Cunningham" <smskjv@xxxxxxxxxxxxxx>
- *Date*: Sat, 23 Jun 2007 19:53:40 GMT

<dljones@xxxxxxxxxxx> wrote in message
news:1182548998.964128.23410@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

> On Jun 22, 5:04 pm, "Kevin Cunningham" <sms...@xxxxxxxxxxxxxx> wrote:
>
> > <dljo...@xxxxxxxxxxx> wrote in message
> >
> > news:1182529678.586722.324840@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
> >
> > > On Jun 22, 7:50 am, "Kevin Cunningham"
> > > <sms...@xxxxxxxxxxxxxx> wrote:
> > >
> > > > <dljo...@xxxxxxxxxxx> wrote in message
> > >
> > > > news:1182435550.466441.146040@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
> > >
> > > > Hello all,
> > >
> > > > I'm new to this forum, so if
> > > > anything I ask has been
> > > > answered
> > > > before,
> > > > I would be happy to learn
> > > > how to find the answer...
> > >
> > > > I have just gotten a, I think,
> > > > very beautiful Olympus

PMG
metallograph. It's from the
1960's I believe. I am in the
very
beginning stages of
restoring it. So really right
now I'm just doing
an inventory of what's good,
bad, broken, etc.

I need the screw that holds
the fine focus lever in place,
it is
sheared off. If anyone
knows a source for these
kinds pf parts, do
let
me know. My guess is I'll
become friends with a
machinist...

I would like to know if
anyone may have technical
documentation
about
this instrument so that I can
know how to take various
things apart
and if there are hidden small
parts that I'll likely loose if
I'm
not
aware they exist...

All existing mechanically
moving parts need to be
cleaned of their
old
grease and new grease
applied. Does anyone have
suggestions as to
what
kind of grease should be
used where?

I have a protocol from Olympus on how to clean optical surfaces, but when it gets to cleaning internal prisms and mirrors, it says to contact a local technician.... Any advice on how best to clean these internal optical surfaces, or what not to do, etc.

Here's a bit of a brain teaser for you. The instrument came with a eye piece mounted micrometer but I can't figure out the scale that is being used. The piece has the following markings on it:

On the body that houses the micrometer mechanism − OSM 202575
On the eyepiece itself − Olympus Elgeet R10X

I am assuming the 10X is the magnification of the eyepiece, I don't know what the R means.

I put a stage micrometer on and measured the following:

0.05 mm = 57 units on eye piece micrometer

0.10 mm = 114 units
0.15 mm = 171 units
0.20 mm = 228 units.

Does anyone recognize what unit system this eyepiece micrometer works in? Or what this eyepiece may have originally been used for?

Thank you very much for your time.

dj

There are several grease maker that I use. I use only synthetic greases, they last a lot longer. One good quality maker is Dow−Corning, their 111 and 43 (?) work well. I still use the 111. Mostly I use Nye lubricants from TAI (http://easyweb.abtnet.com/inetisscripts/abtinetis.exe/ecproductlist@xxxx). Their assortment of synthetic greases will run less than $90.00 and last for ever. Get a small artists paint brush to apply it at an artists store.

Cleaning internal prisms, etc. is the same as cleaning the surfaces of lenses. BE CAREFULL! Don't act like an ass. Use either Kimwipes or Kleenex tissues, just the tissues. The put a

small amount of Windex
and
Alcohol on and gently wipe the surface.
Then throw the wipe away and
gently
wipe with a dry wipe. Never clean dry.
Always clean wet.

Don't get overly worried about what alcohol
you use, I buy mine at the
local
hardware store. The point is to have a high
vapor pressure and a safe
product. The high vapor pressure is what
cleans the lens and it
evaporates
rapidly meaning it won't penetrate into the
lens. Its alcohol so its
safe,
I plan to drink so alcohol containing beer
this evening so I know its
safe.

Its best to use a set of Menda bottles or an
imitation of a Menda.
They
dispense a very little every time you hit the
top. That works best.
Oh,
these are metric, don't use inch tools.

Thanks and let us know what happens.

Kevin Cunningham
SMS

Kevin,

Thank you. This question has had me at a complete standstill. I was going to tear apart the stage last night and then realized I still didn't have a clue as to what grease to use putting it back together...

One comment, I was reading somewhere (darn, wish I'd marked the source) that alcohol shouldn't be used on older microscopes. Oh, yes, there it is, found it on the yahoo group Gordon Cougar runs, The Clean Microscope published by Zeiss. Now maybe this only applies to Zeiss? I don't know. On page 11 of that document under point 5 it says: " Do not use ethanol or acetone for the cleaning of older microscopes." It then lists a bunch of Zeiss' older scopes. Do you have any thoughts on this?

Very nice suggestion on the Menda bottles.

Also, excellent suggestion on how to test for safety on the alcohol...
I think I'll have to try tonight also, do you think wine as a medium will work as well as beer? :)

Thanks again,

dj

Wine works darn well! Now on to the dull stuff. Alcohol works well for cleaning all objectives in my profesional experience and I am Zeiss trained.
Zeiss and most makers are quite leary of acetone since a lot of bright work is now plastic, particularly modern stereos headed for cleans rooms. You

are usually told not to bring it if your going to service one of their modern microscopes but it is still usefull, just be quite carefull around modern instruments.

Alcohol isn't really a problem, never has been, probably won't be. If your working on an instrument built before 1960 (aprox.) if you use a whole bunch or soak a lens in alcohol it could disolve since way back when the lenses were glued with Canadian Balsam that dissolves in alcohol. How ever if you use a small amount it will evaporate before it ever touches the glue. I've used alcohol of various descriptions (yes, including Vodka) since 1977 and it works well. I've never dissolved the glue between two elements, not even intentionally. Its darn hard to do.

Again, remember that what I use is high vapor pressure chemicals, they evaporate rapidly. Why I use alcohol, acetone and heptane is for personal safety. The least safe of these chemicals is the acetone. Thats why I recommend Menda bottles, the chemicals are safe and the Menda makes sure you have a very little in front of you. Heptane is a very good chemical for removing old grease and cleaning up old parts. However you will probably have to buy five gallons and there's no way you need five gallons.

Back in the good ole days I learned to use ether and benzene which Zeiss approved of. Now the Zeiss techs were in nice, clean, well ventilated rooms, I was in a closet cleaning a giant Ultraphot. I went a bit crazy so I got rid of the benzene and soon got rid of the ether. There great stuff, work well, but they can kill you.

Thanks, let me know how it goes!

Kevin Cunningham
SMS

Kevin,

How interesting. OK, I'm going to ask more stupid questions here. I am hearing you talk about lenses, but just to be on the safe side, are you also saying alcohol is OK on the internal optical surfaces like the mirrors, prisms and all those internal surfaces that the cleaning manuals supplied with the instrument all end up saying go get a technician if you want to clean these? I'm worried especially about

> the mirrors. I don't know how they were made and I'd hate to strip off a fine coating that I don't know about.
>
> Second question, a guy here at my work says he was told that a really great lens cleaning solution is a mixture of 50% Toluene and 50% Ethyl Alcohol. Do you have any thoughts on this concoction?
>
> I don't actually know when this microscope was made, but others who know a whole lot more than I do, have told me it looks like the 1960's. My guess is on the early side since it has those three photography systems, with one being "dry plate photography".
>
> I will indeed let you know how it goes. I'm feeling mighty confident at this point... well, OK, maybe just a couple steps above scared to death....I think that test for alcohol safety might help here...
>
> Thank you very much for the excellent advice.
>
> dj

dj, I've been in this business since 1977, if alcohol destoyed optics I think I might have detected it by now. Alcohol has been used since around 1840, you think some one in the business would have picked it up. Oh, my ex−boss married a woman who ran the Carl Zeiss alcohol re−distill units.

Actually for cleaning internal optical parts I use a little bit of Windex and alcohol on a Kim−Wipe. Then I remove it with a clean Kim−Wipe. You can use a diamond holding tweezer and roll a Kim−Wipe around the tip using the tip. Some times you will extend the tip with the Kim−Wipe, make it pointy or some times the tip will need to be very close, just depends on what your cleaning were. Never clean dry.

Now I don't use toluene all though it works well since it can kill you and I would really resent being dead. Like I said, any high vapor pressure chemicals all work, I just want to use chemicals that won't kill me. Ether is one of the best chemical I ever used. It, however, can explode plus kill you in kinder, gentler ways. The explosions can happen from ether or a hybrid that ether grows as it ages. I stopped at the "ether can kill you" part.

One point here is I'm a pro, I do this daily so I have to be extra carefull. Every thing has to travel whether in a car or on mass transit. Safety really has to come first. (sigh) I've heard all kinds of stories about how to clean 'scopes. Most of them work but are slow, I had to learn from makers how to clean stuff and do it safely and promptly. Charge some one for a days work at my fees for a tiny microscope and there will be problems. Of course your work area should always have plenty of light, a window and lots of ventilation.

Let me know how it goes.

Kevin Cunningham
SMS

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