

**Franz, Scott**

**From:** Danner, Dale  
**Sent:** Wednesday, March 06, 2002 1:18 PM  
**To:** Franz, Scott  
**Subject:** FW: 710 Connectors

What do we want to do here??  
ought to be enough right?? W

a drop test then 10 guns

-----Original Message-----

**From:** Keeney, Mike  
**Sent:** Wednesday, March 06, 2002 1:18 PM  
**To:** Franz, Scott; Danner, Dale  
**Cc:** Thweatt, Ed T.; H  
**Subject:** 710 Connectors

Mayfield has received a sample  
complete firearms to current s  
we need for testing?

Thanks  
Mike

Misc. E-Mails

ON 710 "Holeless"

sed, they are to build up  
many sample firearms do

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Franz, Scott

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**From:** Danner, Dale  
**Sent:** Wednesday, March 06, 2002 1:18 PM  
**To:** Franz, Scott  
**Subject:** FW: 710 Connectors

What do we want to do here??? I'm guessing drop test only but what's your thoughts. . . . If it's a drop test then 10 guns ought to be enough right?? What about Extended SAAMI ??? Dale

-----Original Message-----

**From:** Keeney, Mike  
**Sent:** Wednesday, March 06, 2002 1:10 PM  
**To:** Franz, Scott; Danner, Dale  
**Cc:** Thweatt, Ed T.; Helmer, Gerald A.; Diaz, Danny  
**Subject:** 710 Connectors

Mayfield has received a sample lot of 710 Connectors without the hole. As we previously discussed, they are to build up complete firearms to current specifications and send to us for evaluation. Their question is how many sample firearms do we need for testing?

Thanks  
Mike

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**Franz, Scott**

**From:** Danner, Dale  
**Sent:** Monday, March 18, 2002 5:21 PM  
**To:** Helmer, Gerald A.; Thweatt, Ed T.  
**Cc:** Golemboski, Matt R.; Franz, Scott  
**Subject:** FW: Ilion Screws

Jerry,

Your package of screws arrived today -- we'll incorporate them into the M/710 No Hole Connector and/or the m/710 Magnum test. ....

For your info -- Sietsema's review of the Ilion screw -- spec issues vs. actual part. ...  
Dale

-----Original Message-----

**From:** Sietsema, Glen  
**Sent:** Monday, March 18, 2002 2:11 PM  
**To:** Urbon, James E  
**Cc:** Danner, Dale; Thweatt, Ed T.; Cross, Peter J.  
**Subject:** RE: Ilion Screws

Jim,

The problem is the print is not correct. The nitre black process can not result in a hardness of H15n 88 - 92.

The process is carburize, then Nitre Black.

Nitre Black is a Tempering Salt that is run at 900 - 950 Deg. F.

It results in a hardness of H15n 75 - 85 (HRc 30 - 49). This lower hardness results in a tougher component.

The advantage of the Nitre Black is it also colors while it is tempering (hence the name nitre BLACK). This is good, but if you need a wear resistant hard case it can not be used because of the high temperature (900 degrees) which "draws" the hardness back to the HRc 35 range.

The parts you analyzed from Ilion were carburized at .65 - .70 % C. Oil Quenched, then Tempered at 900 Deg. F. This results in a case, but a softer more ductile one. The parts are tough enough that they don't strip when being installed, but not so hard that they break when in use.

I never noticed the print was incorrect as I haven't worked on this part before.

As a corrective action at Ilion I will change the hardness from H15n 88 - 92 to H15n 75 - 85. Also there was no hardness inspection on the part, only color inspection. I don't know why as it the process has been here longer than I have. I will also add the 15n hardness inspection to the process.

Contact me if I can provide any additional information.

Glen

-----Original Message-----

**From:** Urbon, James E  
**Sent:** Monday, March 18, 2002 11:05 AM  
**To:** Sietsema, Glen  
**Cc:** Danner, Dale  
**Subject:** Ilion Screws

Glen,

As you know from Dale, Mayfield is using an Ilion screw, B-28505, to hold on the scope rail on the M/710. The material and heat treat block on the print is as below.

Material 1113 or 1215  
Heat Treat CASE HDN. .005 MIN.  
Hardness 15N 88-92  
Color NITRE BLACK

I checked case depth on some of these screws, see attached, and found that they were not case hardened. The surface hardness was only HV 371 which is about HRc 38. I then sent some of these screws out for chemical analysis, see attached. The chemist found the parts to have a chemistry consistent with 12L14 with high carbon. The screw were too small for the chemist to check the carbon of just the core, so he checked the carbon by burning the

entire screw. The carbon level is consistent with that of the other carburized screws, so this indicates to me that these screws were carburized but not quenched.

Our question is what exactly has happened to these screws? Is this a desired change from the print? The screws seem to be working just fine. Please let me know what you find out.

Thanks,  
Jim

<< File: Scope Screw Case Depth2.xls >> << File: Scope Screw Chemical Analysis.xls >>

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**Franz, Scott**

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**From:** Danner, Dale  
**Sent:** Tuesday, March 19, 2002 9:13 AM  
**To:** Helmer, Gerald A.  
**Cc:** Franz, Scott  
**Subject:** RE: Screws

Jerry -- thanks. ....

Scott -- can we do endurance work on a selected set of guns with some junk slave Bushnell scopes attached???? I'd like to confirm that the non-cased Ilion screw presents no problem. . . . I'm not looking for a problem -- this is more of a confirmation sort of thing than anything else.

Thks,  
Dale

-----Original Message-----

**From:** Helmer, Gerald A.  
**Sent:** Monday, March 18, 2002 5:47 PM  
**To:** Danner, Dale  
**Subject:** Screws

Dale, Thanks for the Ilion review data. Interesting. We got the 15 test guns built up today and will shoot tomorrow. I built them up with scope rails and Ilion screws but no scopes per Scott Franz and I talking about that. Scott said he has some scopes up there to use. I sent the 100 Ilion screws to you the other day in case you wanted to run another test or a different test. Thanks.

**Franz, Scott**

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**From:** Danner, Dale  
**Sent:** Monday, March 25, 2002 1:55 PM  
**To:** Helmer, Gerald A.  
**Cc:** Franz, Scott  
**Subject:** RE: Screws

OK Jerry Thanks -- we'll replace the ones on the "holeless" M/710 connector test. . . .

I understand from Golemboski and Thweatt that your time is about up and that retirement is at hand. . . . Let me say how nice it was to work with you -- I really appreciated your desire to do the RIGHT technical thing for Remington even if it caused you personally increased work. . . . If I can ever be of assistance to you in the future please let me know.

Kind Regards,  
Dale

-----Original Message-----

**From:** Helmer, Gerald A.  
**Sent:** Monday, March 25, 2002 12:24 PM  
**To:** Danner, Dale  
**Cc:** Thweatt, Ed T.  
**Subject:** Screws

Dale, The Tempered and untempered screws that you requested will go out by UPS Ground to you today. We apply a little Loctite 222MS Threadlocker into the four holes on the receiver then lay the scope rail on the receiver and install the screws. We torque them to 15 to 20 in. lbs. Thanks.

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**Danner, Dale**

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**From:** Helmer, Gerald A.  
**Sent:** Monday, March 25, 2002 2:04 PM  
**To:** Danner, Dale  
**Subject:** RE: Screws

Dale, Thanks for the kind words, always appreciated your help and the help from your team. I never thought 35 1/2 yrs. would go by so fast. Take care.

-----Original Message-----

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**Sent:** Monday, March 25, 2002 12:55 PM  
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**Cc:** Franz, Scott  
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**Franz, Scott**

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**From:** Danner, Dale  
**Sent:** Monday, April 01, 2002 3:38 PM  
**To:** Franz, Scott  
**Cc:** Thweatt, Ed T.  
**Subject:** M/710 Firecontrol Process Record

Scott,  
Talked with Ed Thweatt in Mayfield and he provided/confirmed the following criteria for M/710 Firecontrol adjustment:

**PULL:** 4.0 to 5.5 lbs  
**ENGAGE:** 0.020 to 0.025 inch  
**OVERTRAVEL:** 0.020 to 0.025 inch

Dale

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**Franz, Scott**

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**From:** Arnold, Jesse T.  
**Sent:** Thursday, April 11, 2002 8:01 AM  
**To:** Franz, Scott  
**Subject:** RE:

Spring Gage. Thanks Jesse

-----Original Message-----

**From:** Franz, Scott  
**Sent:** Thursday, April 11, 2002 7:31 AM  
**To:** Arnold, Jesse T.  
**Subject:**

Jesse,  
How was trigger pulled measured on the "Holeless" Connector guns, spring scale or digital force gage??

Thanks  
Scott

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