
Subject: Service manual for 1520 plotter
Posted by [Fergus Logan](#) on Sat, 05 Aug 2006 18:06:05 GMT
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Is there such a thing as a service manual for the 1520 printer plotter, or the Alps plotter mechanism?

I have 2 of these beasts, both with the same problem; the paper feed slips. On the right hand side of the mechanism, the cog that is attached to the platten seems to have a spring that has come loose. This cog has two wheels to it and appears to be some sort of clutch mechanism. does anyone know how the cog should look with the spring in the correct place?

Kind Regards,
Fergus.

Subject: Re: Service manual for 1520 plotter
Posted by [Charles Richmond](#) on Sun, 06 Aug 2006 00:09:48 GMT
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Fergus Logan wrote:

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> the cog should look with the spring in the correct place?
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Radio Shack sold this same mechanism in a pen plotter of theirs.
I know that RS had a maintenance manual for their plotter, and you may still be able to order it through them.

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+-----+
| Charles and Francis Richmond richmond at plano dot net |
+-----+

Subject: Re: Service manual for 1520 plotter
Posted by [Brian Ketterling](#) on Sun, 06 Aug 2006 04:46:53 GMT
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"Charles Richmond" <richchas@comcast.net> wrote in message

news:44D5334D.7A4FFEFF@comcast.net...

>

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> I know that RS had a maintenance manual for their plotter, and you

> may still be able to order it through them.

For what it's worth, I believe Alps sold this printer-plotter mechanism to a number of home computer manufacturers around 1985. The Tandy plotter was a CGP-115, and there were also the Atari 1020 and Texas Instruments HX-1000, among others.

Amazingly, Radio Shack has a diagram of the mechanism ("head assembly") here:

http://support.radioshack.com/support_accessories/5632.htm

Brian

--

Subject: Re: Service manual for 1520 plotter

Posted by [Fergus Logan](#) on Sun, 06 Aug 2006 07:21:00 GMT

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Thanks for the info.

"Brian Ketterling" <tweel6510@no-potted-meat-products-peoplepc.com> wrote in message [news:1veBg.173\\$Sn3.91@newsread3.news.pas.earthlink.net...](mailto:news:1veBg.173$Sn3.91@newsread3.news.pas.earthlink.net...)

> "Charles Richmond" <richchas@comcast.net> wrote in message

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> here:

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>

> Brian

> --
>
>

Subject: Re: Service manual for 1520 plotter
Posted by [a7yvm109gf5d1](#) on Sun, 06 Aug 2006 17:02:33 GMT
[View Forum Message](#) <> [Reply to Message](#)

Fergus Logan wrote:

> Is there such a thing as a service manual for the 1520 printer plotter, or
> the Alps plotter mechanism?
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> On the right hand side of the mechanism, the cog that is attached to the
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> the cog should look with the spring in the correct place?
>
> Kind Regards,
> Fergus.

IIRC, the main failure mode of these printers is that the plastic gear
on the motor's shaft cracks. You can't repair that failure. I'm not
sure what you mean by "slips", but if the gear is cracked, the printer
can't feed paper properly.

Subject: Re: Service manual for 1520 plotter
Posted by [Brian Ketterling](#) on Sun, 06 Aug 2006 18:32:22 GMT
[View Forum Message](#) <> [Reply to Message](#)

<a7yvm109gf5d1@netzero.com> wrote in message
news:1154883753.500129.102060@h48g2000cwc.googlegroups.com...

>
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> on the motor's shaft cracks. You can't repair that failure. I'm not
> sure what you mean by "slips", but if the gear is cracked, the printer
> can't feed paper properly.

Arr... the pinion gear on the X and Y stepper-motor shafts? One of those
split on my plotter, and I was never able to find a replacement: Alps seems
to have used a gear with some arcane combination of diameter and pitch. I
was able to fix it to the "workable" point, though, with Sicomet #50
adhesive. It both filled the crack and glued the gear to the shaft,
preventing slipping -- I just precleaned carefully with acetone, then
cleared the set adhesive from between adjacent gear teeth with an X-Acto.

It's probably been a decade, and the fix is still good (as far as I know -- I haven't dug out the plotter this summer). Of course, when the pinion gear split (longitudinally, between 2 teeth), the sides of the crack retracted a little from each other, so I've got that damn little "long step" on the Y axis. It's a niggling concern, though -- for example, text at small sizes is still perfectly legible.

Brian

--

Subject: Re: Service manual for 1520 plotter
Posted by [Raymond Day](#) on Mon, 07 Aug 2006 08:36:18 GMT
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Yes the thing that goes bacd on the 1520 plotter is the plastic gears! It's like they get old and brittle. There are 2 of them to gether with a spring. I guess so the teeth in the gears can be real tight. But printing out something that takes a lot to do like a screen dump can crack the gears.

To bad they did not make the gears out of metal or steel. Or a 80 column one.

I remember at one time long ago toys R us selling them for very cheep. I for get what cost just that it was very cheep. It would be good to have a back up. But I think with out ever using on with the age the plastic gears would still crack.

-Raymond Day

Subject: Re: Service manual for 1520 plotter
Posted by [Fergus Logan](#) on Mon, 07 Aug 2006 11:29:51 GMT
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After closely checking these gears I did notice that on one of the mechanisms this is indeed the case, and you physically see the motor spinning, but the gear does not turn. However, on the other mechanism, this gear does seem intact and all gears on the feed mechanism spin as they should. However, the feed still slips. I am not sure whether or not the gear with the spring mechanism has anything to do with it, but it certainly isnt attached to anything at the moment.

"Raymond Day" <raymondday61@sbcglobal.net> wrote in message [news:6YCBg.1719\\$1f6.219@newssvr27.news.prodigy.net](mailto:news:6YCBg.1719$1f6.219@newssvr27.news.prodigy.net)...

> Yes the thing that goes bad on the 1520 plotter is the plastic gears!
> It's like they get old and brittle. There are 2 of them together with a
> spring. I guess so the teeth in the gears can be real tight. But printing
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> backup. But I think without ever using on with the age the plastic gears
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> -Raymond Day
>

Subject: Re: Service manual for 1520 plotter
Posted by [a7yvm109gf5d1](#) on Mon, 07 Aug 2006 16:50:47 GMT
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Fergus Logan wrote:

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> mechanisms this is indeed the case, and you physically see the motor
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> should. However, the feed still slips. I am not sure whether or not the gear
> with the spring mechanism has anything to do with it, but it certainly isn't
> attached to anything at the moment.
>

There you go. Sadly, this is why the 1520 is a door-stop or a paper-weight. You can improvise new pens, or drill them out and try to fill them, but those gears are hopeless. I think they crack because they are just poorly designed. There just isn't enough plastic (nylon?) left around the shaft and the friction-fit stresses the gear too much.

I've wanted to make a mold of it and somehow make a new one but when you can get inkjets for 60\$, who cares anymore?

Subject: Re: Service manual for 1520 plotter
Posted by [Patryk 'Silver Dream'](#) on Tue, 08 Aug 2006 09:03:12 GMT
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[a7yvm109gf5d1@netzero.com](#) wrote:

>
> I've wanted to make a mold of it and somehow make a new one but when
> you can get inkjets for 60\$, who cares anymore?
>

Well, some people do. Isn't it the same as "when you can get a pc for \$100 or less, who cares about the PETs" ;-)

Subject: Re: Service manual for 1520 plotter
Posted by [a7yvm109gf5d1](#) on Tue, 08 Aug 2006 13:49:10 GMT
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silverdr wrote:

> a7yvm109gf5d1@netzero.com wrote:
>
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>> I've wanted to make a mold of it and somehow make a new one but when
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> \$100 or less, who cares about the PETs" ;-)

Not really, people never built new gears for old printers, but you can still program old computers today and build generic electronics for them... Making nylon gears is a bit less accessible I think. :)

Subject: Re: Service manual for 1520 plotter
Posted by [Charles Richmond](#) on Tue, 08 Aug 2006 15:48:16 GMT
[View Forum Message](#) <> [Reply to Message](#)

a7yvm109gf5d1@netzero.com wrote:

>
> silverdr wrote:
>> a7yvm109gf5d1@netzero.com wrote:
>>
>>>
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> Not really, people never built new gears for old printers, but you can
> still program old computers today and build generic electronics for
> them... Making nylon gears is a bit less accessible I think. :)

>
Maybe a group here can get together and get a machine shop to tool
up some steel gears. Or who ever does this work...perhaps someone
can "forge" some nylon gears.

You can find a list of folks who make nylon gears at:

<http://www.thomasnet.com/products/nylon-gears-34200402-1.htm> I

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+-----+
| Charles and Francis Richmond richmond at plano dot net |
+-----+

Subject: Re: Service manual for 1520 plotter
Posted by [Brian Ketterling](#) on Tue, 08 Aug 2006 17:10:03 GMT
[View Forum Message](#) <> [Reply to Message](#)

"Charles Richmond" <richchas@comcast.net> wrote in message
news:44D8B240.931FD43F@comcast.net...

>
> Maybe a group here can get together and get a machine shop to tool
> up some steel gears...

Or brass.

Brian

--

Subject: Re: Service manual for 1520 plotter
Posted by [a7yvm109gf5d1](#) on Tue, 08 Aug 2006 18:06:57 GMT
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Charles Richmond wrote:

>
> You can find a list of folks who make nylon gears at:
>
> <http://www.thomasnet.com/products/nylon-gears-34200402-1.htm> I
>

If we could find a machinist or mech eng that specializes in these tiny

gears it would be cool. Or perhaps we can think sideways and look into toys like those miniature r/c cars that you can buy parts for... The best thing would be to measure the 1520's gear with a good caliper and get all the relevant data on it. # of teeth, pitch, etc...

My 1520 is in deep, deep DEEP storage. As in I don't know where it is.

Subject: Re: Service manual for 1520 plotter

Posted by [Fergus Logan](#) on Tue, 08 Aug 2006 20:14:49 GMT

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Your absolutley right about the price of a new Inkjet. Here in the UK, you can pick them up for less then the price of an ink cartridge these days. But the 1520 has the novelty factor that you just dont get with printers these days.

Mind you, the printer doesnt really help itself; when you power the thing up, the pen carriage shoots to the left and makes a grinding noise, before finally printing the four squares. I wonder if the other manufacturers plotters did this same ritual, or is it just a Commodore thing.

a7yvm109gf5d1@netzero.com wrote:

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Subject: Re: Service manual for 1520 plotter

Posted by [Fergus Logan](#) on Tue, 08 Aug 2006 20:16:40 GMT

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Subject: Re: Service manual for 1520 plotter

Posted by [a7yvm109gf5d1](#) on Tue, 08 Aug 2006 20:20:57 GMT

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Ferg wrote:

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Perhaps a microswitch is defective? Don't know if there is one, but
tiny cheap switches with no current going through them to "clean" the
contacts often go bad.

Subject: Re: Service manual for 1520 plotter
Posted by [Fergus Logan](#) on Tue, 08 Aug 2006 20:46:21 GMT
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No. It is the normal behaviour on the 1520. I have seen this on others,
and back in the '80s when mine was new, it did that then too.

a7yvm109gf5d1@netzero.com wrote:

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Subject: Re: Service manual for 1520 plotter
Posted by [Brian Ketterling](#) on Thu, 10 Aug 2006 06:51:45 GMT
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"Ferg" <fergus@logans.kicks-ass.net> wrote in message
news:1155069981.643373.142340@m79g2000cwm.googlegroups.com...
> No. It is the normal behaviour on the 1520. I have seen this on others,
> and back in the '80s when mine was new, it did that then too.

It's getting itself oriented during its power-up initialization. First it
drives the "head" to the left stop. It doesn't have a switch or other
sensor for this, so it simply does enough motor-steps to place it there,
even if it had been at the full-right position at power-on. If it *wasn't*
full-right to start with, then it hits the left stop and "grinds" its way

through the full number of steps -- kind of like a 1541 head-bump.

After this, it orients the rotating four-color pen turret to the "black" position. It does have a sensor for this: there's a little bar magnet set into the side of the turret which activates a magnetic reed switch on the carriage's frame. You can hear this second stage, too -- a "ticka-ticka-ticka, ticka-ticka-ticka" as it steps the turret around.

Finally it draws the four-color squares to get the pens started, feeds to a new line, then comes to rest.

You can avoid the nasty grinding by pressing the pen-change button and letting it ride over to the full-right position before turning it off (you ought to anyway, so you can take the pens out and cap them -- they use liquid ink and will dry up if you leave them in the plotter).

Brian

--

Subject: Re: Service manual for 1520 plotter
Posted by [Anonymous](#) on Wed, 08 Oct 2014 22:57:12 GMT
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Originally posted by: Aturnwald

Hello, I've got the Manual, also I've got help for the paper problem, just write a Email to Aturnwald@eclipso.at

Subject: Re: Service manual for 1520 plotter
Posted by [Anonymous](#) on Wed, 08 Oct 2014 23:12:26 GMT
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Originally posted by: Aturnwald

Hello, I've got the Manual, also I've got help for the paper problem, just write a Email to Aturnwald@eclipso.at

Subject: Re: Service manual for 1520 plotter
Posted by [Anonymous](#) on Mon, 23 Dec 2019 23:52:45 GMT
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Originally posted by: IDLookout

On Wednesday, October 8, 2014 at 3:57:12 PM UTC-7, Aturnwald wrote:

> Hello, I've got the Manual, also I've got help for the paper problem, just write a Email to Aturnwald@eclipso.at

I can't get your email to work, not sure if you're still in the group, but:

My gears are new, everything is fine.. mostly.

But my paper slips, with just a little pressure, i can hold the gear and turn the platen. There are no splits in the gears. It does seem like there is a clutch/spring in the platen roll, but i'm not sure.

You said that you had a solution?

thanks for your time
