GE has made it possible to upgrade any PETtrace cyclotron to its latest 800 series platform. You can now upgrade a PETtrace Original, or any PETtrace 4, 6, 8, or 10 to a PETtrace 840, 860, or 880 cyclotron.

The PETtrace cyclotron upgrade packages include new control systems, new liquid target fillers, niobium targets, water-cooled DPA, and dual-beam functionality for the PETtrace 860 and PETtrace 880. We recognize that your cyclotron may be uniquely configured, so it is possible for you to customize your upgrade package to meet your specific needs.

Here are some things to consider:

- What is the beam current of your cyclotron today? Would you like to increase it to 60, 100, or 130 µA?
- Do you have silver targets or niobium targets?
- Does your control system’s master and software hardware platform run on Solaris*/Sun or Linux*/PC??
- Does your Accelerator Control System run on VxWork** or Linux?
- Does your Service PC run on DOS or Windows?
- Do you have Gen1 or Gen2 for your RFPG System Control Unit (SCU)?
- Is your RFPG Drive Power Amplifier (DPA) air- or water-cooled?
- Does your Liquid Target Filler (LTF) have a stepper or pneumatic motor drive?
What can be upgraded and why is it important?

<table>
<thead>
<tr>
<th>System/Component</th>
<th>If current status is...</th>
<th>Upgrade to...</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beam Current</td>
<td>40, 60, 75, 80, 100 µA</td>
<td>60, 100, 130 µA</td>
<td>Increase performance, greater output, less time to achieve desired output</td>
</tr>
<tr>
<td>Target Type</td>
<td>Silver</td>
<td>Niobium</td>
<td>Increase time to maintain target from 5K beam current hours to 20K beam current hours. Less downtime, increase in production capacity</td>
</tr>
<tr>
<td>Hardware</td>
<td>Sun</td>
<td>PC</td>
<td>Increase functionality with InSite* and diagnostic tools. Increase uptime, decrease time to service cyclotron, customize preventative maintenance schedule</td>
</tr>
<tr>
<td>Software</td>
<td>Solaris**/VxWork**</td>
<td>Linux**</td>
<td>Increase flexibility in SW development and releases</td>
</tr>
<tr>
<td>Service System</td>
<td>PC</td>
<td>DOS</td>
<td>Increase functionality, increase uptime, decrease time to service cyclotron, customize preventative maintenance schedule</td>
</tr>
<tr>
<td>RFPG-SCU</td>
<td>Gen1</td>
<td>Gen2</td>
<td>Optimize the performance of the cyclotron—increase the lifetime of ion source, decrease time to service cyclotron</td>
</tr>
<tr>
<td>Liquid Target Filler</td>
<td>Stepper</td>
<td>Pneumatic</td>
<td>Increase reliability of the LTF—decrease time to service, increase uptime</td>
</tr>
</tbody>
</table>

Example of production capacity of F18 gained with upgrade

<table>
<thead>
<tr>
<th>µA</th>
<th>PT840</th>
<th>PT860</th>
<th>PT880</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>50%</td>
<td>150%</td>
<td>225%</td>
</tr>
<tr>
<td>60</td>
<td>N/A</td>
<td>67%</td>
<td>117%</td>
</tr>
<tr>
<td>80</td>
<td>33%</td>
<td>73%</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>25%</td>
<td>63%</td>
<td></td>
</tr>
<tr>
<td>130</td>
<td>30%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Example of time efficiencies gained with upgrade

<table>
<thead>
<tr>
<th>µA</th>
<th>PT840</th>
<th>PT860</th>
<th>PT880</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>64 min/44%</td>
<td>100 min/69%</td>
<td>112 min/78%</td>
</tr>
<tr>
<td>60</td>
<td>N/A</td>
<td>44 min/45%</td>
<td>58 min/60%</td>
</tr>
<tr>
<td>80</td>
<td>17 min/28%</td>
<td>29 min/48%</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>11 min/21%</td>
<td>23 min/42%</td>
<td></td>
</tr>
<tr>
<td>130</td>
<td></td>
<td>N/A</td>
<td>12 min/27%</td>
</tr>
</tbody>
</table>
Baseline upgrade packages listed below. Packages are subject to change based on customer's current configuration.

**PT Original to PT60, PT880**
- S9120YF (Americas Only) and S9120YA, S9120YB (Rest of the world) (PT60 OR PT880 upgrade of original pt) P5260TE, P5260TK (Americas Only) | SW Key for upg PT60 & PT880
- P5260KA (PT800 RFPG water-cooled dpa)
- P5260PB (PT800 chemistry control system)
- P5260MK (PETtrace client station)
- P5260PE (PT800 ion source GEN2 upgrade)
- P5260LL (PT800 RFPG — flap upgrade)
- P5260LK (PT800 H target port upgrade)
- P5260LM (PT800 IB general HW upgrade)
- P5260NH (PT800 pneumatic ltf)

**PT4 to PT840, PT860, PT880**
- S9120YC or S9120YD (PT800 upgrade of PT4 Master on Unix OR Master on PCLynx)
- P5260TA, P5260TB, P5260TF (PT800 upgrade to 60 µA, 100 µA, 130 µA)
- P5260PB (PT800 chemistry control system)
- P5260MK (PETtrace client station)
- P5260PE (PT800 ion source GEN2 upgrade)
- P5260LL (PT800 RFPG — flap upgrade)
- P5260LK (PT800 extraction — diagnostic upgrade)
- P5260LM (PT800 H target port upgrade)
- P5260NH (PT800 pneumatic ltf)
- P5220JC (PETtrace dual extraction option)
- P5260NC (PT800 F NB25 spare target)

**PT6 to PT840**
- S9120YC or S9120YD (PT800 upgrade of PT6 Master on Unix or Master on PCLynx)
- P5260TL (PT800 UPG PT6 TO 840)
- P5260PB (PT800 chemistry control system)
- P5260MK (PETtrace client station)
- P5260PE (PT800 ion source GEN2 upgrade)
- P5260LL (PT800 RFPG — flap upgrade)
- P5260LK (PT800 extraction — diagnostic upgrade)
- P5260LM (PT800 H target port upgrade)
- P5260NH (PT800 IB general HW upgrade)
- P5220JC (PETtrace dual extraction option)
- P5260NC (PT800 F NB25 spare target)

**PT6 to PT860, PT880**
- S9120YC or S9120YD (PT800 upgrade of PT6 Master on Unix or Master on PCLynx)
- P5260TC, P5260TG (PT800 upgrade 60 to 100 µA, 130 µA)
- P5260PB (PT800 chemistry control system)
- P5260MK (PETtrace client station)
- P5260PE (PT800 ion source GEN2 upgrade)
- P5260LL (PT800 RFPG — flap upgrade)
- P5260LK (PT800 extraction — diagnostic upgrade)
- P5260LM (PT800 H target port upgrade)
- P5260NH (PT800 pneumatic ltf)
- P5220JC (PETtrace dual extraction option)
- P5260NC (PT800 F NB25 spare target)

**PT840 to PT860**
- P5260TC (PT800 upgrade 60 TO 100 µA)
- P5260NF (PT800 F NB25 target sys)

**PT860 to PT880**
- P5260TC (PT800 upgrade 100 to 130 µA)
- P5260PE (PT800 is GEN2 upgrade)
- P5260LL (PT800 RFPG — flap upgrade)
- P5260LK (PT800 extraction — diagnostic upgrade)
- P5260NH (PT800 pneumatic ltf)
About GE Healthcare

GE Healthcare provides transformational medical technologies and services that are shaping a new age of patient care. Our broad expertise in medical imaging and information technologies, medical diagnostics, patient monitoring systems, drug discovery, biopharmaceutical manufacturing technologies, performance improvement and performance solutions services helps our customers to deliver better care to more people around the world at a lower cost. In addition, we partner with healthcare leaders, striving to leverage the global policy change necessary to implement a successful shift to sustainable healthcare systems.

Our "healthymagination" vision for the future invites the world to join us on our journey as we continuously develop innovations focused on reducing costs, increasing access, and improving quality around the world. Headquartered in the United Kingdom, GE Healthcare is a unit of General Electric Company (NYSE: GE). Worldwide, GE Healthcare employees are committed to serving healthcare professionals and their patients in more than 100 countries. For more information about GE Healthcare, visit our website at www.gehealthcare.com

GE Healthcare
3000 N. Grandview Blvd.
Waukesha, WI  53188
U.S.A.

www.gehealthcare.com