Integration & replacement performed by customer
Cost & time saving
Limited training required
Affordable & transportable capabilities
Check on proper cooler functioning
Thales Cryogenics support to make it easy and secure
Approved by leading companies
IDCA (Integrated Detector Cooler Assembly) cooler is delivered with a bare displacer (1) covered by a transport cap.

The cold finger -internal part of the dewar- will "close" the cooler after integration (2,3)

Do the integration or replacement of your cooler yourself?

The process described below is identical for both initial integration and replacement, also identical training and capabilities apply (see page 4)

Principle of IDCA integration

Dewar check before integration

- The cold finger (standard products delivered by Thales Cryogenics) must have appropriate dimensions, compliant with the displacer.
- The thermal losses of the dewar are measured for performance analysis afterwards, e.g. using our thermal measurement equipment

Mechanical integration

- The protective cap of the cold finger is removed (1)
- The dewar build around specific cold finger will receive the bare displacer (2)
- The dewar is bolted to the cooler using the cold finger flange (3) and an integration kit.
**Conditioning process**

This process consists of removing particles in the cooler, using:
- Conditioning and filling tool VM0003 for all IDCA coolers, with conditioning by vacuum pumping
- Filling tool RT0009 for the RM3 cooler only, with conditioning by dilution method

**Filling process**

The cooler is filled with helium using one of the previously mentioned tools, VM0003 or RT0009

**Helium leak test**

Helium leak test is achieved: under the bell, the leak tester (5) can identify if there is a leak. Once identified, the tester can locate the leak using the "sniffer" mode (6).

**Performance Test**

- If He tightness is confirmed, cryogenic performance can be checked directly into the system of the customer, with standard equipment or with an automatic bench (can be provided by Thales Cryogenics)
- If He tightness is not confirmed, the integration has to be started again.
What capabilities do you need?

- Conditioning and filling tool, one of the following:

<table>
<thead>
<tr>
<th>Type</th>
<th>Number of coolers at one time</th>
<th>Compatible with</th>
<th>Conditioning process</th>
</tr>
</thead>
<tbody>
<tr>
<td>VM0003</td>
<td>1</td>
<td>All IDCA coolers</td>
<td>Vacuum pumping</td>
</tr>
<tr>
<td>RT0009</td>
<td>1</td>
<td>RM3 cooler only</td>
<td>Dilution method</td>
</tr>
<tr>
<td>Bench</td>
<td>several</td>
<td>All IDCA coolers or RM3 cooler only</td>
<td>Vacuum pumping or dilution</td>
</tr>
</tbody>
</table>

- Helium leak tester
- Clean workshop (e.g. with laminar flow hood)
- Optional: Dewar thermal loss measurement equipment
- Optional: Performance test bench or standard equipment

Training program

You will need to follow a training program usually consisting of 2 parts, typically 4 to 5 days each:

1. **1st part**: At Thales Cryogenics site to learn and practice with Thales’ support.
2. **2nd part**: At customer’s site, to improve the experience of complete integration.

How much does it save?

- All together, it will save money: you buy the coolers directly from Thales Cryogenics and replace them yourself.
- The operability of the system is improved by huge reduction of the TAT of the repair cycle.

Our experience

- Many customers in countries all over the world were trained by us, using our conditioning & filling tool (e.g. China, India, Russia, Spain, England, France).
- Experienced engineers for rotary and or linear integration & maintenance
- Various user supports can be proposed

Please contact us to discuss your specific project needs.