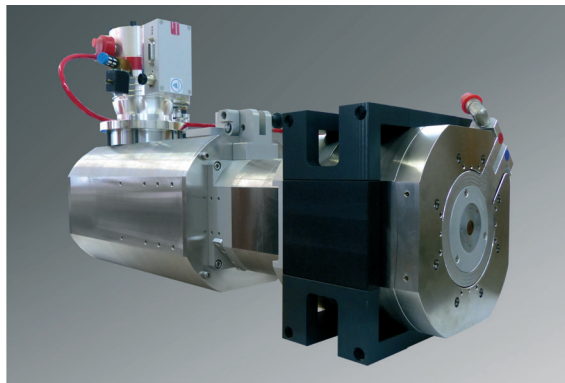


Transmission tubes with 50 W target power - the „Plus“ for highest resolution

Due to the increasing demand for high-resolution microfocus X-ray tubes up to an acceleration voltage of 240 kV, X-RAY WorX has extended the product families *TC* and *TCNF* with the models *TCHE Plus* and *TCNF Plus*.

TCHE Plus

Compared to other *TC* family models, the *TCHE Plus* model offers a water-cooled diamond target. It allows a JIMA resolution of 0.9 microns at 1 watt target power and a maximum target power of 50 watts, still providing 15 microns resolution.



Microfocus X-ray tube XWT-240-TCHE Plus

Using the optional **High Resolution Diamond Target** you will even achieve a resolution of 0.5 μm . The *TCHE Plus* model is offered up to an acceleration voltage of 240 kV.

Research project RADICLE X-Ray



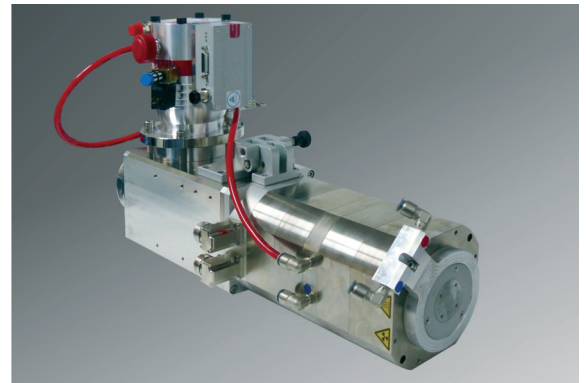
In cooperation with Evince Technology from Sedgefield in England and Magnatek from Aarhus in Denmark, X-RAY WorX is developing a new generation of microfocus X-ray tubes.

The technical innovation is based on the integration of diamond-based electron sources (VES) and high voltage diodes developed by Evince into X-ray tubes and high voltage generators.

The new technology offers the potential to significantly increase the stability and efficiency of open microfocus X-ray tubes by reducing thermal wear and eliminating active thermal management. The

TCNF Plus

The expansion of the *TCNF* product line with the internally cooled models *XWT-160-TCNF Plus* and *XWT-190-TCNF Plus*, also featuring a water-



Microfocus X-ray tube XWT-190-TCNF Plus

cooled **High Resolution Diamond Target**, meets many requirements of users in semiconductor industry and materials research.

Increasing the maximum target power up to 50 watts also means a significant expansion of possible applications while still allowing for highest resolution of 0.5 μm in the lower performance range.

maintenance effort would be reduced by a longer life of the cathode.

Areas of application for the new system include high-resolution in-line X-ray inspection, industrial CT imaging, metrology and scientific research.

The project, called „RADICLE X-Ray“, covers a period of two years and is funded by EUR 1.585 million from the Eurostars program of the European Union.

Maintenance, diagnostics, and tools

Adherence of regular maintenance intervals for your microfocus X-ray system and maintenance works by qualified personnel ensures a higher availability and a longer lifetime of your system and its single components.

Run the **Startup** procedure once a day up to the desired high voltage. Turn your system into standby instead of switching it off completely. This reduces contamination in the tube and speeds up rebooting.

In addition, it is important to adhere to the recommended maintenance intervals, for example:

Every 2 weeks:

- ▶ Rotation of the target by 5 degrees

Every 3 months:

- ▶ Cleaning the high voltage socket and greasing the connectors
- ▶ Checking of the coolant level and, if necessary, refill of coolant

Annually:

- ▶ Replacement of all O-ring sealings

- ▶ Cleaning of vacuum gauges (IKR), cathode chamber, grid base, and grid cap

Tools, spare parts, and appropriate lubricants are included in the spare parts case delivered with each tube. Missing components can be reordered from our [service department](#). Detailed maintenance instructions, circuit diagrams, information on the X-COM software and the vacuum components can be found on the documentation CD in the spare parts case.

If you have any questions, please contact our [service department](#).

In order to gain a comprehensive insight into the maintenance and diagnostics of X-ray systems, we recommend to participate in our **Microfocus Training Week**.

Alternatively you may sign a maintenance contract and transfer the regular maintenance and care of your X-ray system to one of our service partners or to X-RAY WorX

Targets optimize inline application

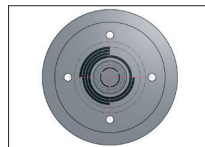
Transmission targets can be optimized by different materials and layer thicknesses for recurring inspection tasks.

In particular for inline applications, the required exposure time can be optimized by selecting the appropriate layer thickness for the high voltage used.

X-RAY WorX offers transmission targets

with layer thicknesses between 1 and 10 microns.

The innovative **FlexFocus Target** offers different tungsten layer thicknesses in four quadrants, which can be flexibly selected by the user.



Events 2019

In 2019, X-RAY WorX will again participate in various events.

We are looking forward to meet you at these shows. If you like to make an appointment please contact our [sales and marketing department](#).

We also support our partners at events - personally, and/or providing our demo tube, and marketing materials.

Currently planned events include:

- ▶ **iCT Konferenz 2019**
Padua, Italy | 13. - 15.02.2019
- ▶ **DIR Symposium 2019**
Fuerth, Germany
02. - 04.07.2019
- ▶ **Material Testing 2019**
Telford, UK | 03. - 05.09.2019
- ▶ **Space Tech Expo Europe 2019**
Bremen, Germany
19. - 21.11.2019

■ X-RAY WorX is again growing

In 2018, X-RAY WorX has again invested in new staff and has now grown to a number of 21 employees. The production team has been increased by two to seven technicians. In the area of logistics and warehouse management a job has been created which is now organized and supervised by a new colleague. In the next two years X-RAY WorX is once again training a young school graduate as industrial clerk.

The production capacity was significantly increased by new X-ray cabins as well as additional floor space for offices, storage and production.

■ Microfocus Training Week 2019

X-RAY WorX microfocus tubes are integrated into numerous industrial CT and DR systems around the globe. To support our customers with first class maintenance, diagnostics, and repair, we offer regular training courses for the service engineers of our partners.

If you would like to participate in spring or autumn training week in 2019, please contact our service department: service@x-ray-worx.com.

Trainings in 2019:

- 11. - 15. March 2019
- 02. - 06. September 2019

■ Marketing support

X-RAY WorX offers comprehensive marketing support, including a demo tube for exhibitions, brochures, data sheets, images and text for websites etc.

Please contact our [sales and marketing department](#) for the marketing support overview.

■ Christmas in Hanover!

From 28th November until 22nd December, it's time again to stroll and gourmandise on one of the many [christmas markets in Hanover's city centre](#).

- Classical christmas market in the old town
- The historic village
- The Finnish christmas village
- The wishing well forest
- Traditional christmas markets around the central station and in the district List
- "Winter Zoo" in the zoo of Hanover