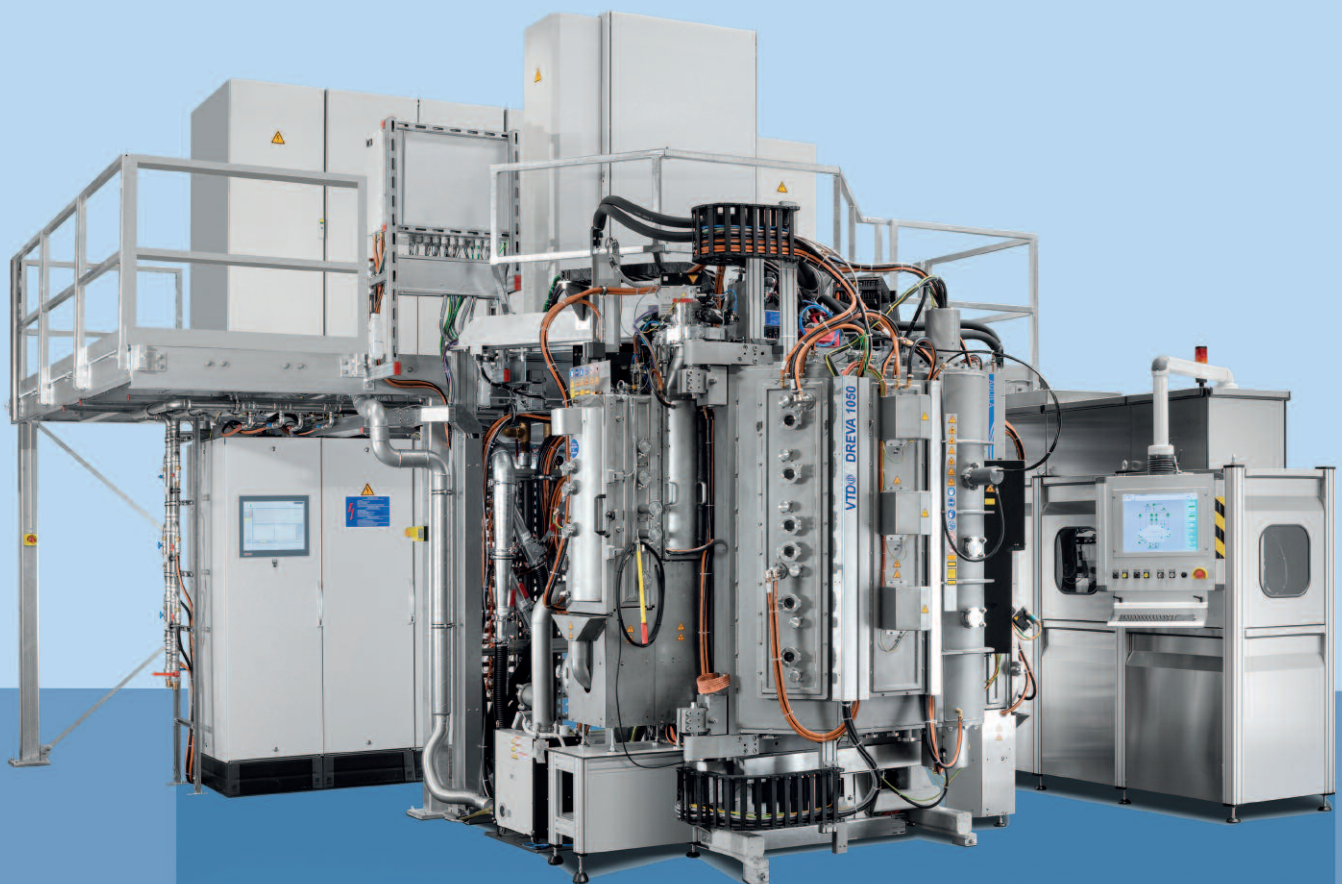


# ta-C Coating System **DREVA 1050 LAM**



## Main Features

- Field proven, reliable and refined equipment concept
- Laser-ARC-Modul (LAM) for ta-C deposition optional with macroparticle filter
- ARC evaporation sources for base coatings
- Option: magnetrons for sputtering (planar and tubular), including HIPIMS
- Hollow cathode for plasma pre-treatment
- Segmented substrate heating unit
- Usable coating volume:  $\varnothing$  1,050mm x 1,100mm
- High capacity combined with high productivity
- Adjustable substrate carrier: dedicated holding fixtures for various tool and component designs
- Fully automated control system and data logging

## Applications

- ta-C deposition in combination with subsequent polishing step for tribological systems
- Macroparticle filtered ta-C deposition for thin layers on 2D & 3D substrates

## Process Benefits

- Low friction coefficient of polished ta-C down to  $\mu < 0.01$ , supra lubricity verified
- Indentation acc. to ISO 14577: E-modulus 300 – 600 GPa / hardness 40 – 80 GPa
- ta-C layer properties:  $sp^3/sp^2$  up to 80%, H-content  $< 0.1$ at % (at detection limit of NRA)
- Thermal stability of layer properties in use:  $< 400^\circ\text{C}$  ( $\Delta < 750^\circ\text{F}$ )
- Low deposition temperature:  $< 180^\circ\text{C}$  ( $\Delta < 360^\circ\text{F}$ )
- Many substrate materials: steel, hard metals, Si, Al, Ti-alloys, glass, polymers
- Certified ta-C adhesion to substrate material in tribological applications
- Layer thickness: up to  $30\mu\text{m}$  in use
- Thick ta-C coatings  $> 3\mu\text{m}$  can be polished to achieve a very smooth surface
- Production proven & effective deposition rate on substrates: up to  $1\mu\text{m}/\text{h}$  on surface area of about  $8\text{m}^2$  per batch (macroparticle filtered ta-C deposition: up to  $0.3\mu\text{m}/\text{h}$ )

## Customer Benefits

- Superior wear protection of up to  $30\mu\text{m}$  thick ta-C layers with outstanding properties
- Deposition rate at the maximum physical limit shortens process time to a competitive advantage
- Production proven technology, equipment concept and layer properties

## Range of Coatings:

- Standard layer stack: Cr / ta-C
- Optional base coatings: Cr, Ti, CrN, WC, other hard coatings on request