

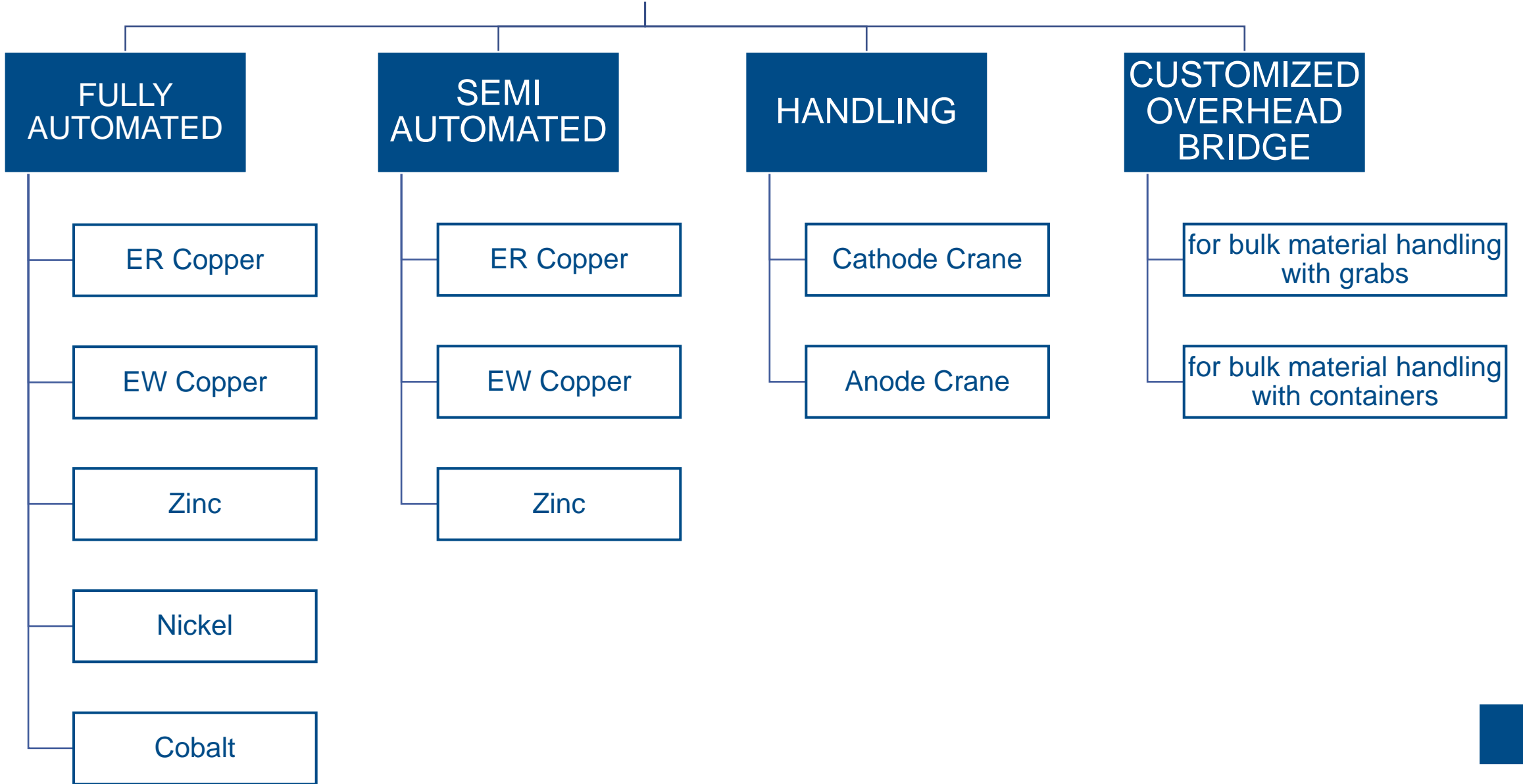


TANKHOUSE CRANES

COOPER

Dietmar Nußbaumer

KUENZ TANKHOUSE CRANES



REFERENCES COPPER

- JSC Kysthtym Electrolytic Plant, Russia
- Glencore Nikkelverk AS, Norway
- Boliden Pori, Finland – BOLIDEN Harjavalta OY
- BHP Olympic Dam, Australia
- Vale Inco Newfoundland & Labrador Ltd, Canada
- Vendanta, Finland – Larsen & Toubro Limited
- JSC Uralelectromed, Russia
- Kennecott Utah Copper, USA
- Guangxi Jinchuan, China – Xstrata Technology
- Zijin Copper, China – Xstrata Technology
- Montanwerke Brixlegg, Austria



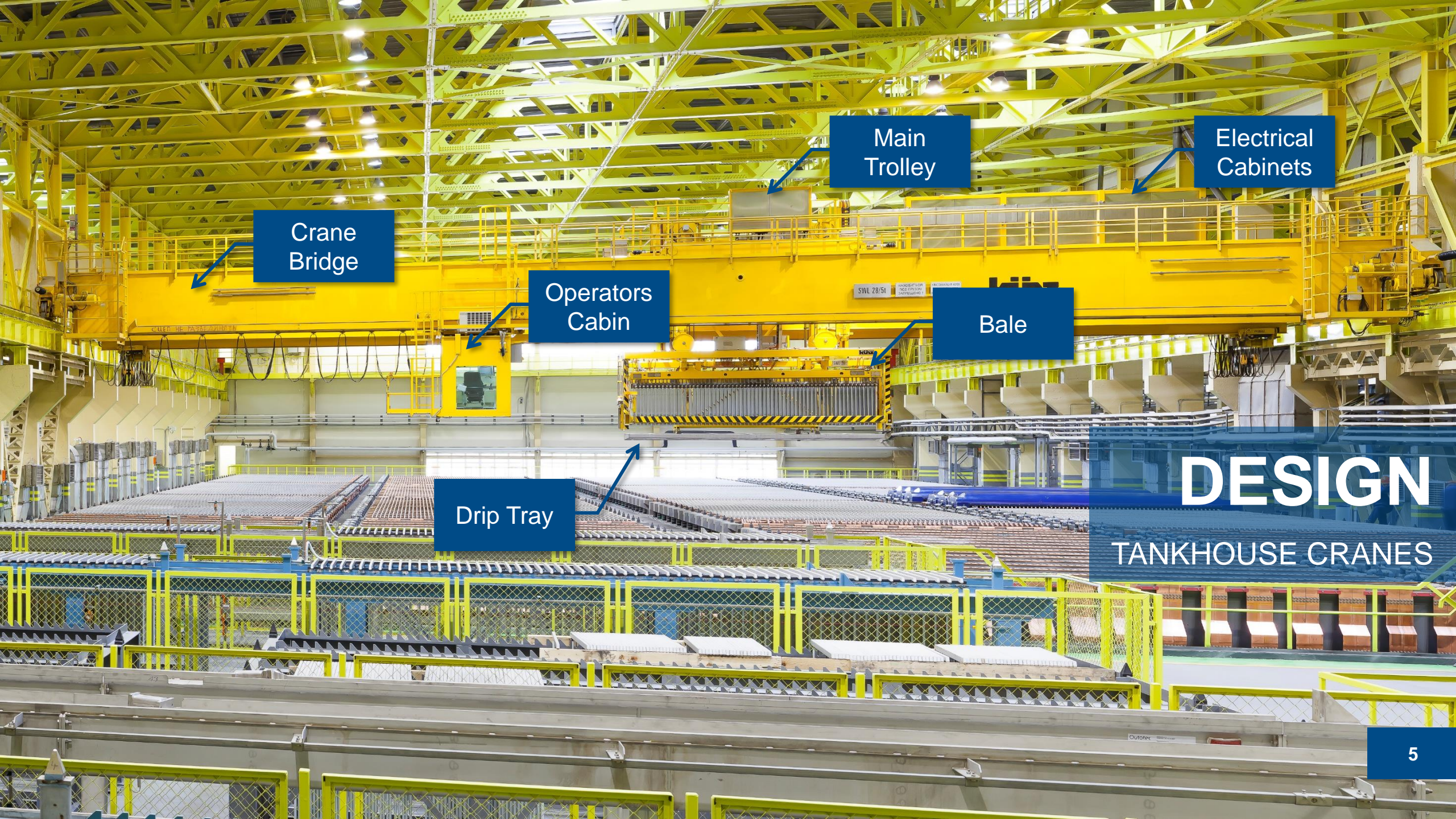
MINING INDUSTRY

PRECISION WHERE IT COUNTS...



Automated Tankhouse Cranes

- Electro Refinery Process
- Electro Winning Process
- Materials: Copper, Zinc, Nickel, Cobalt
- Anode - Cathode Handling
- General Material Handling



Crane Bridge

Main Trolley

Electrical Cabinets

Operators Cabin

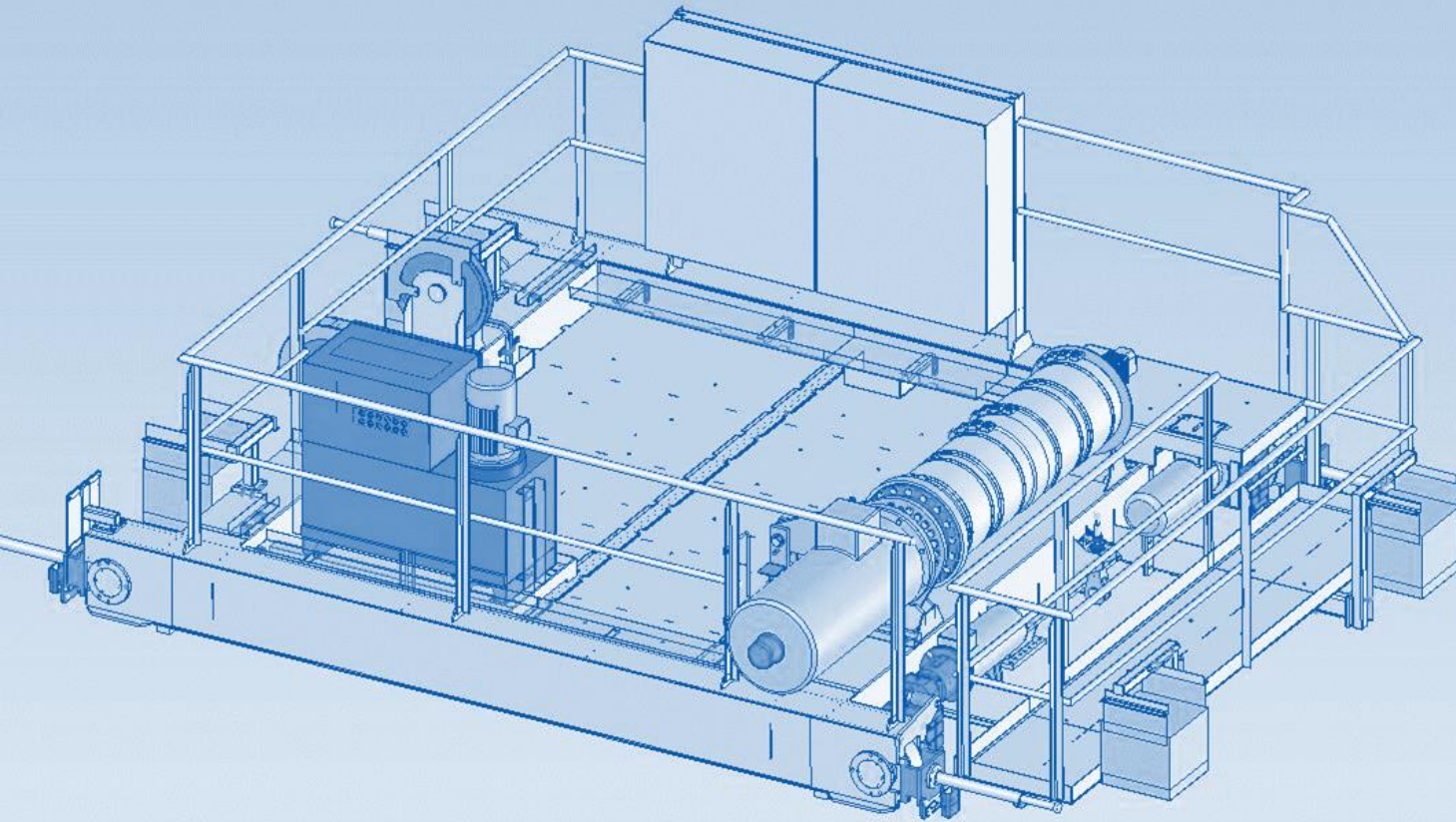
Bale

Drip Tray

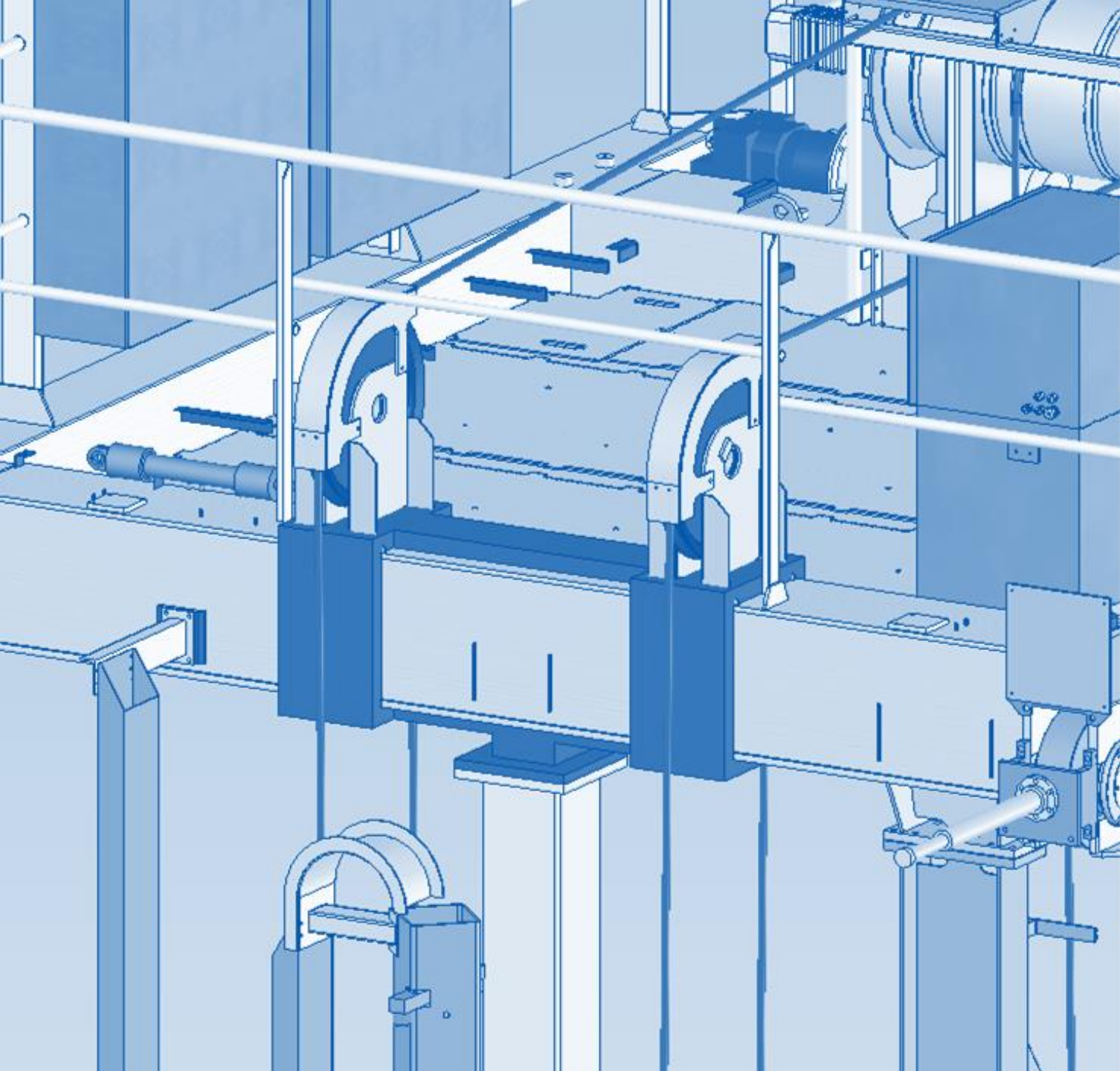
DESIGN

TANKHOUSE CRANES

TROLLEY



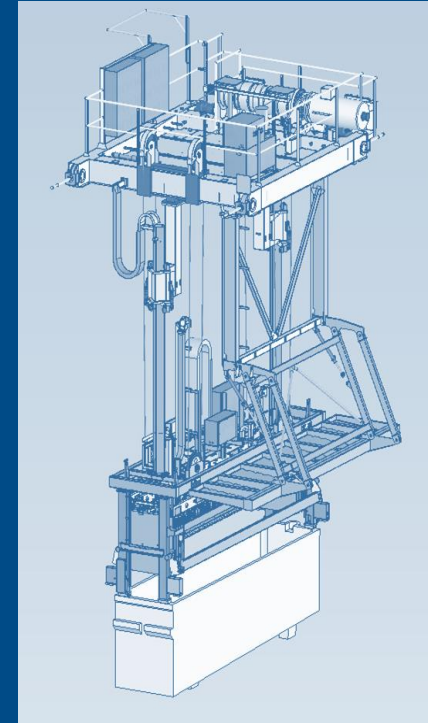
- **UPPER TROLLEY**
- **MAIN HOIST ASSEMBLY**
 - Hoist Motor and Break
 - Gear Box
 - Rope Drum
 - Overload Protection
- **DRIP TRAY**
- **HYDRAULIC POWER PACK**
- **TROLLEY DRIVE UNITS**
- **WORK PLACE LIGHTING**



TROLLEY

SKEW OPTION for Refurbishment

- Cell misalignment up to +/-50 mm
- Activated during crane travel
- No additional cycle time





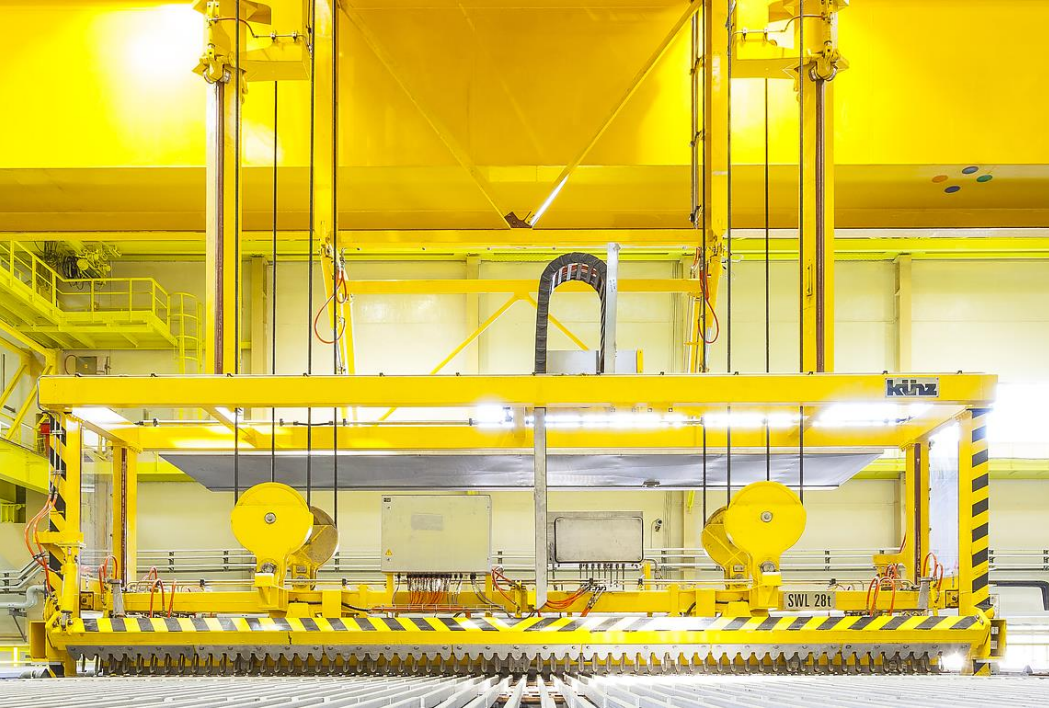
GUIDING SYSTEM

Telescopes (mounted on the trolley) guide the bale

CABIN

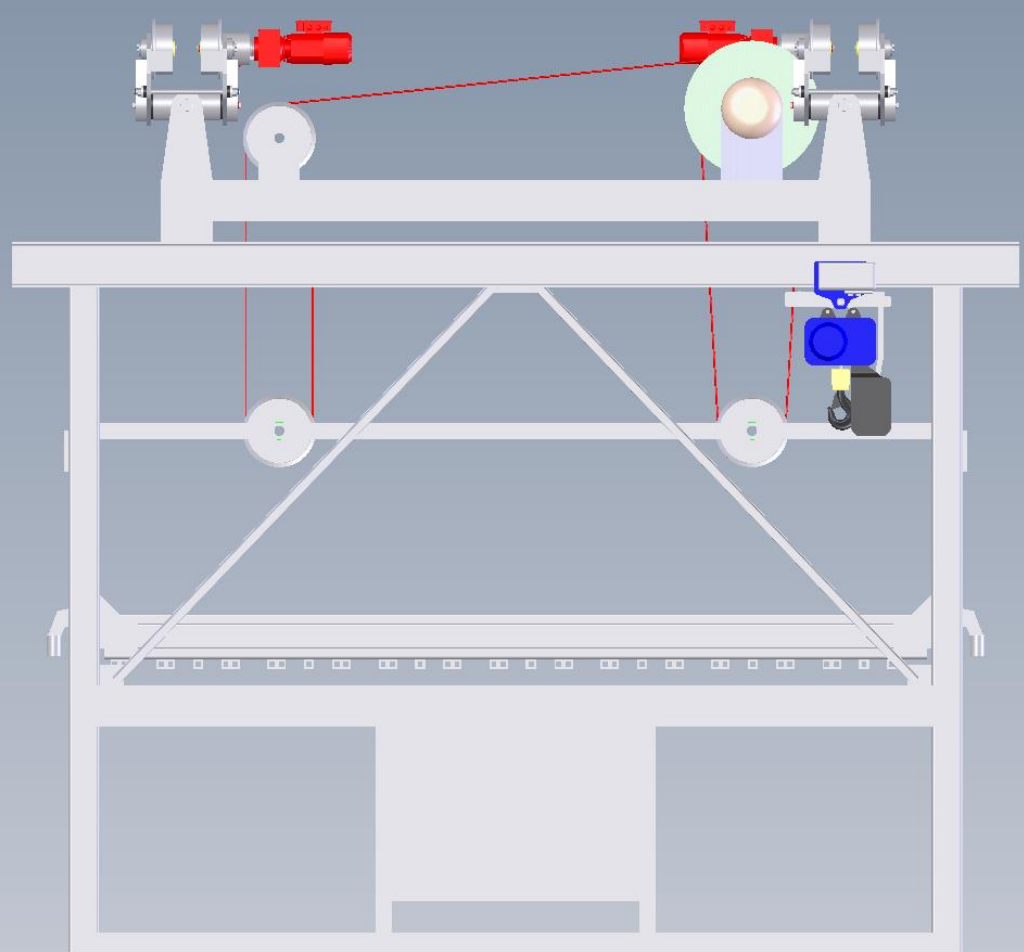
- **Movable Cabin**
Cabin traveling independent from Trolley
- **Fixed Cabin**
Cabin stationary, mounted at a fixed position





BALE

- **Guide Frame**
 - Centering Comb
 - Positioning Device
- **Hook Frame**
 - Anode Hooks
 - Cathode Hooks
 - Insulation Points B + C
- **Insulation of Travelling Gear**



BALE

- Under Hung Design
- Contact Washing
- Contact Temperature Monitoring
- Drip Tray (optional)

DOUBLE LIFT BALE

Criteria for Crane Selection

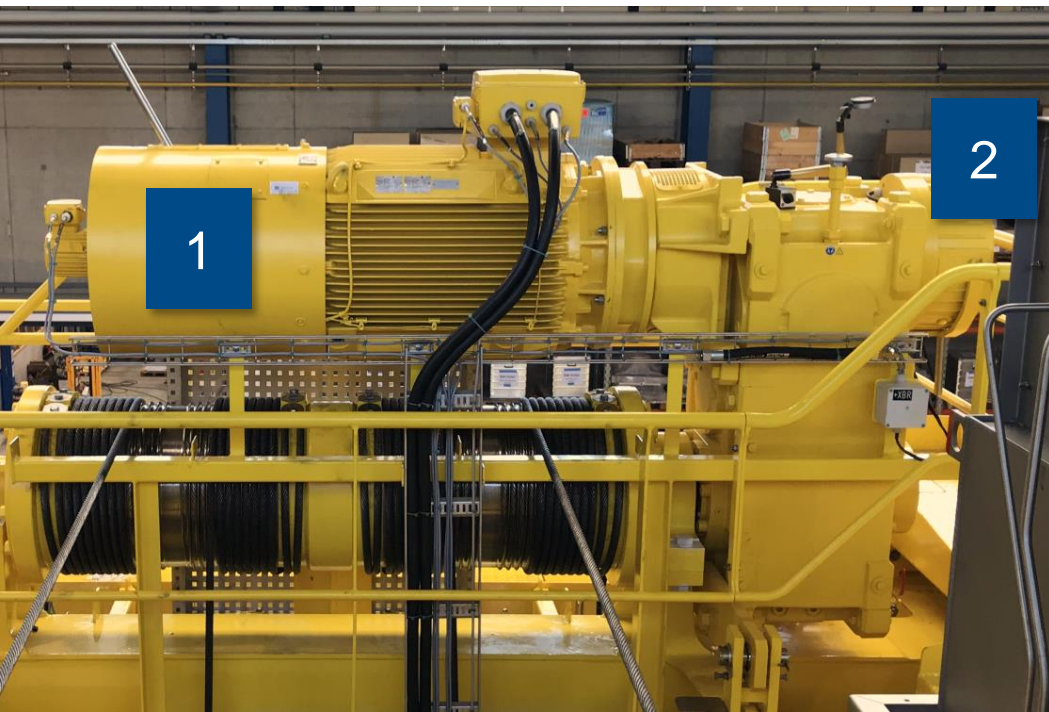
- Plant capacity - up to 200 tty per crane
→ no difference to single lift
- Stripping capacity - up to 500 plates / hour
→ no difference to single lift
- Travel distance - further to 120 m between cell and machine (machine bay at the end of tank house)





HOIST SYSTEM

- **Standard Hoist System**
- **2 Brake Hoist System**
two Brakes attached to motor and gear box



GANTRY DRIVE

- Travel Gear

→ crane movement



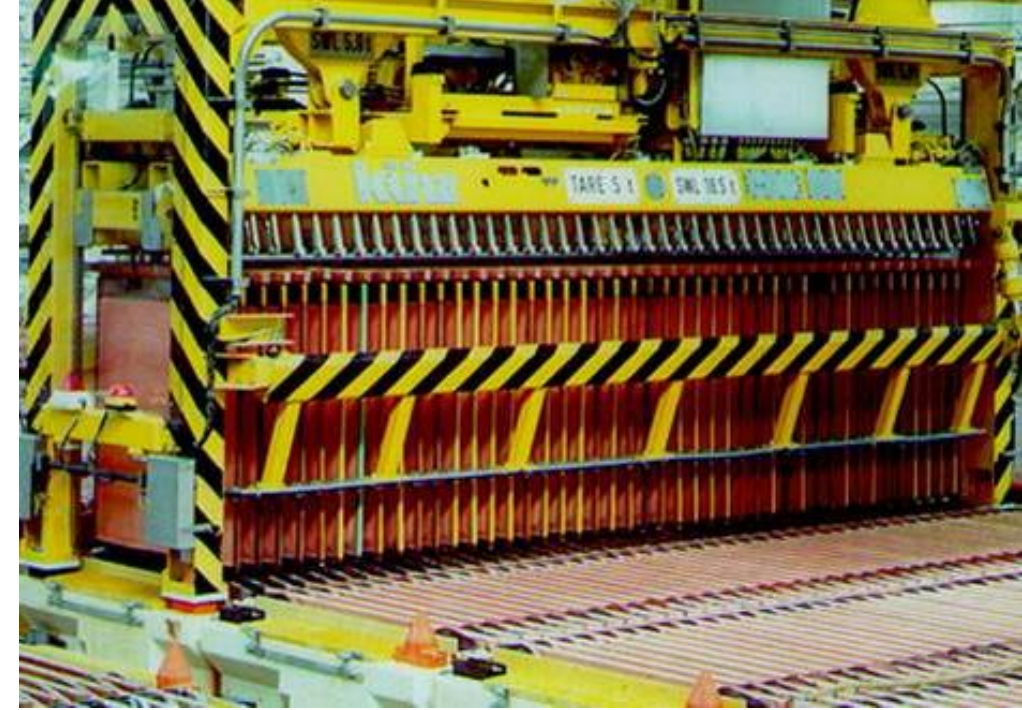
AUXILIARY HOIST



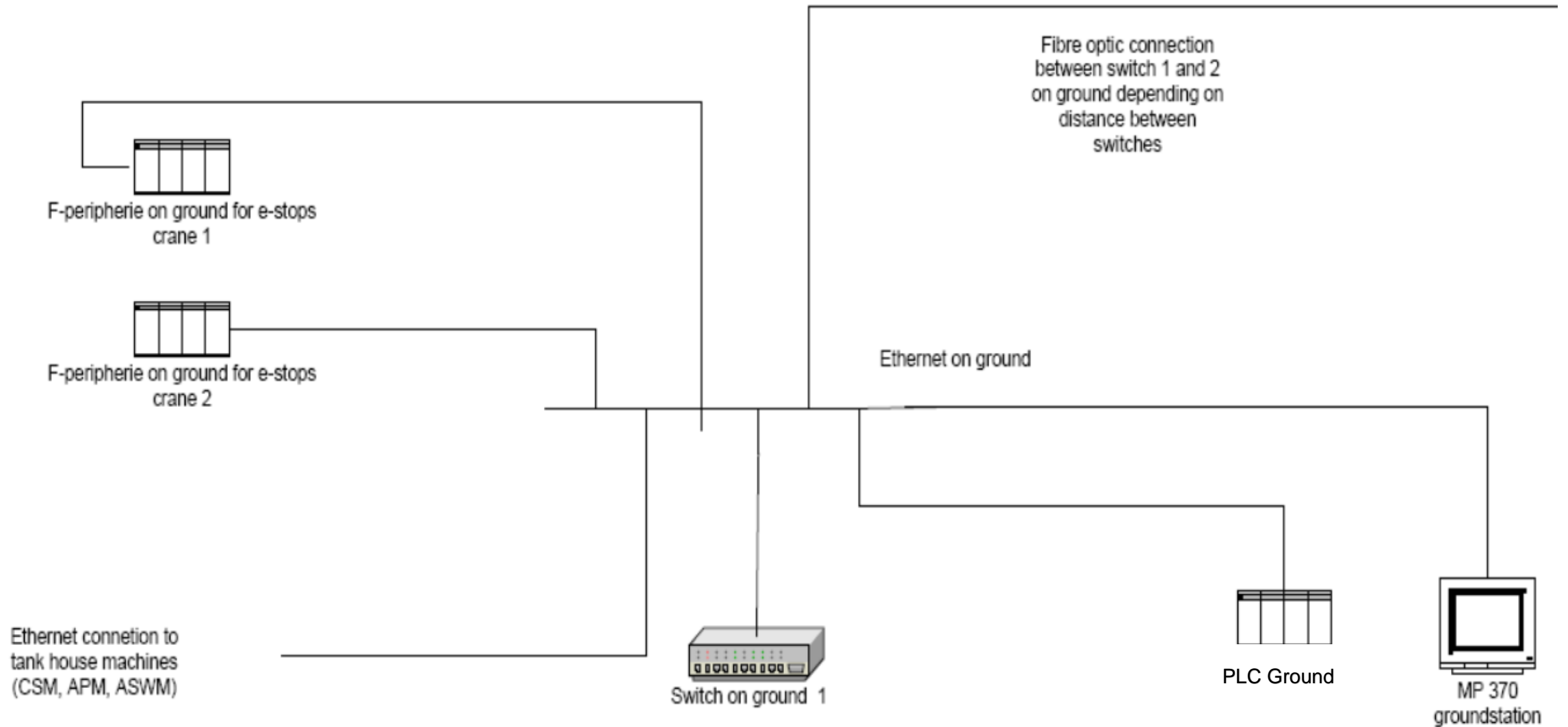
GROUND STATION

HMI / Tankhouse Control System Interface

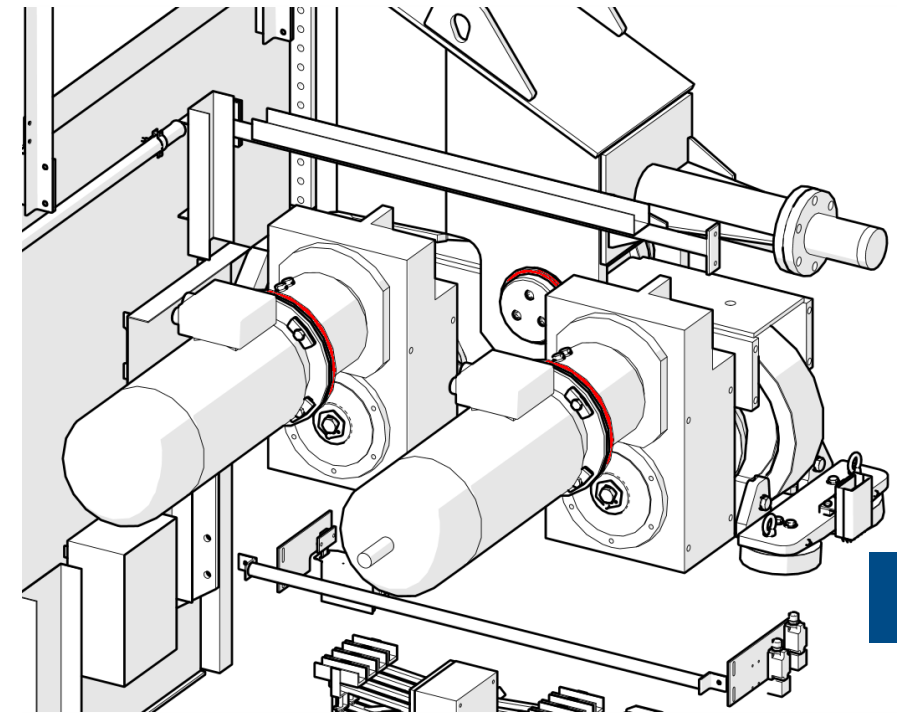
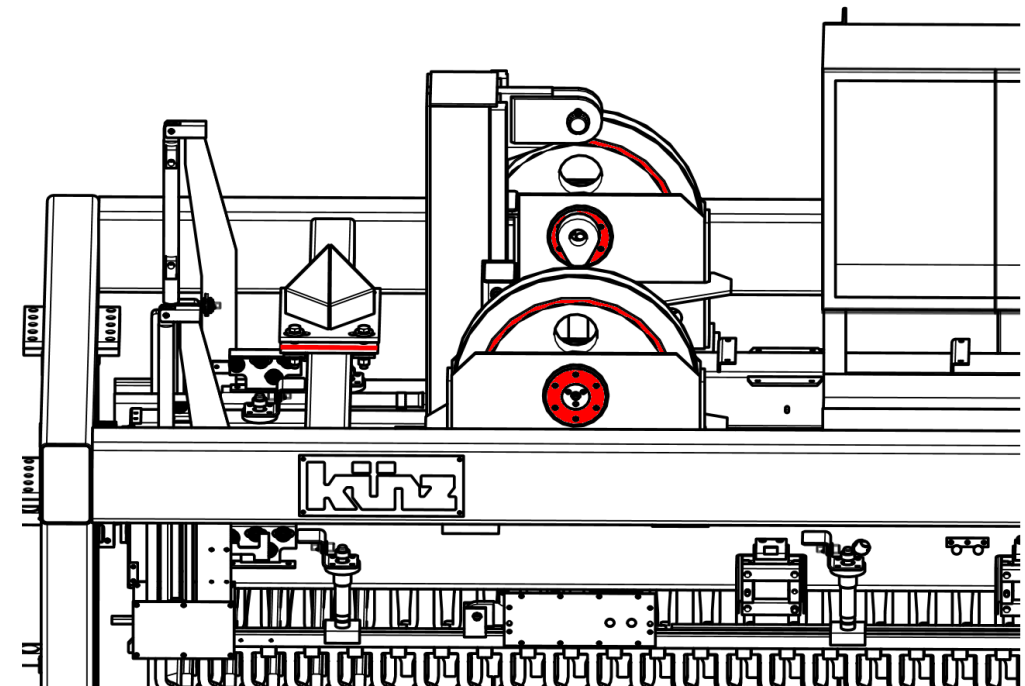
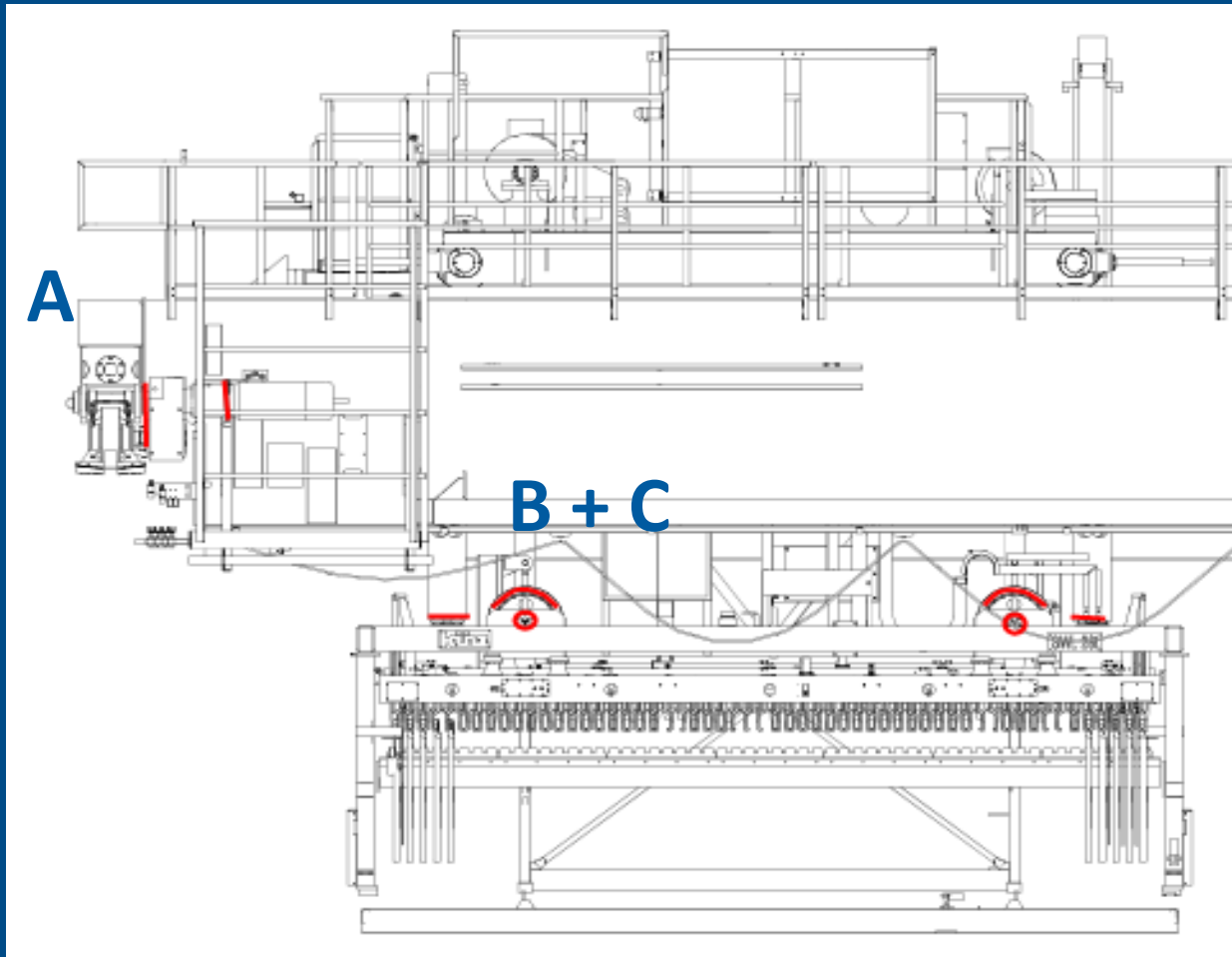
- CSM input station
- Harvesting scheduling
- Temperature tracing
- Statistic – Tracing
- Interface point to machine park
- Interface to Tank house operation
- PC technology based
- Improved data storage
- Crane and machine diagnose
- Hook up for remote service



NETWORK TOPOLOGY



ISOLATION



SPRAYING SYSTEM

Water System is used for:

- Spraying and cleaning intermediate bus bar
- Rinsing cathodes to avoid copper sulfate crystallization
- Crane cleaning

KÜNZ SOLUTION

- ➔ Automated water filling system at the CMS position
- ➔ Water reservoir and high pressure pump on board
- ➔ Controlling the filling valve on the building structure from the crane PLC

