



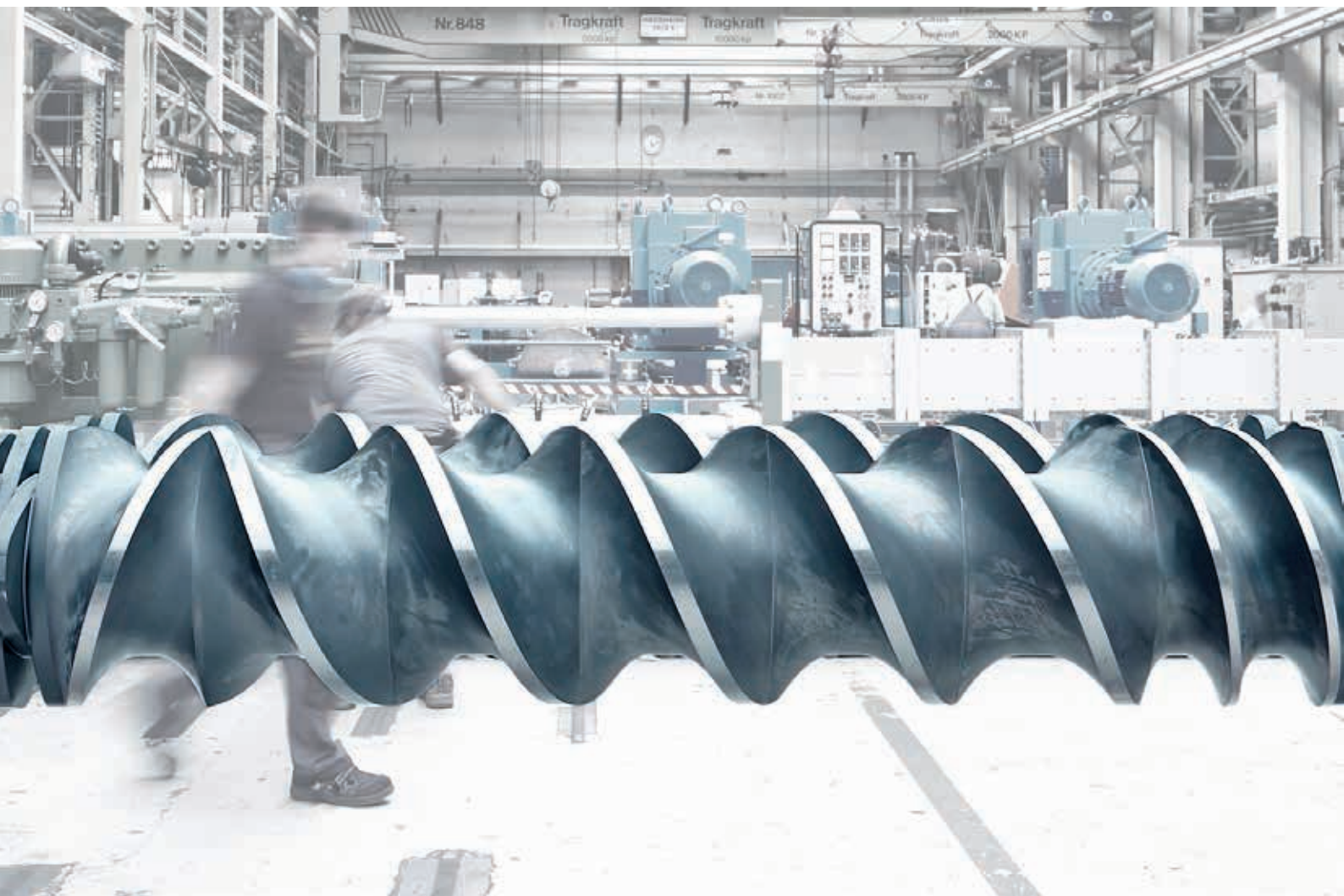
Preventive Maintenance for Coperion Extruders. [Maximizing availability and performance.](#)

➤ Optimal performance and maximum extruder lifetime are dependent on regular preventive maintenance, a service offered by Coperion. **With our maintenance service packages we maximize your plant availability as well as the reliability of the whole system.**

**Coperion Maintenance Service Offerings Includes:**

Gearbox Overhaul
Die Plate Grinding
Knife Rotor Refurbishment
Barrel Overhaul
Online and Remote Support
Training
Inspection, Maintenance and Service Contracts

› EXTRUDER ASSEMBLY AND WORKSHOP IN STUTTGART/GERMANY



## Gearbox Overhaul

The gearbox of an extruder is a key element for the smooth operation of the system. Regular inspections and overhauls of gearboxes are mandatory to ensure a long lifetime and availability of the extruder. Coperion's gearbox overhaul service can safeguard and increase the reliability and performance of the whole system. The work is done by trained specialists in one of our workshops in Stuttgart/Germany and Wytheville, VA/USA..

### Our Service Offerings

- › Disassembly and inspection of the complete gearbox in one of our Coperion gearbox overhaul workshops or on site
- › Cleaning of each internal part
- › Visual inspection and quality check
- › Dimensional check
- › Clearance check
- › Detailed inspection report
- › Repair and replacement of internal parts based on report results

### Your Benefits

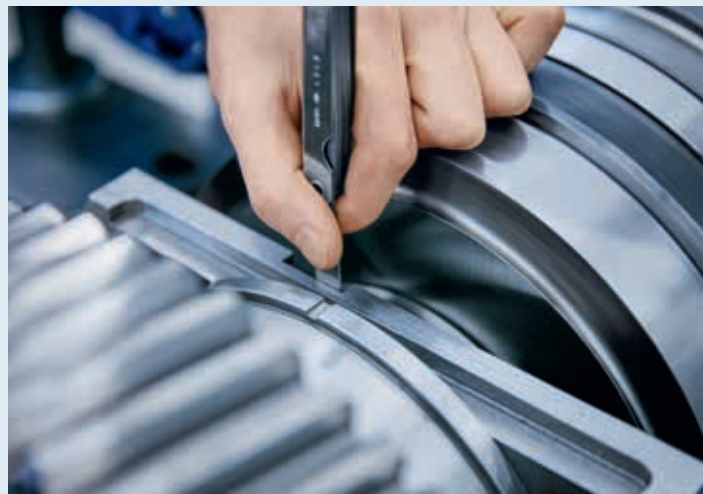
- › Increased lifetime of the system
- › High availability
- › Improved reliability and performance



› COPERION OFFERS GEARBOX OVERHAUL TO ENSURE SMOOTH OPERATION OF THE WHOLE SYSTEM.



› CLEARANCE CHECK OF GEARBOXES



› INSPECTION OF AXIAL CLEARANCE

## Die Plate Grinding

Due to the high productivity of a pelletizing system, die plates are constantly exposed to high wear and subject to corrosion. Coperion refurbishes die plates using a specialized technology and custom precision grinding machines. At one of our three global grinding centers in Stuttgart/Germany, Wytheville, VA/

USA and Al Jubail/Saudi Arabia, we can reshape the surface of a die plate quickly and efficiently. This special process restores the necessary parameters required for reliable pellet cutting quality even for the most difficult products. Knife blade lifetime improvement is an additional benefit.

### Our Service Offerings

- › Inspection of die plates
- › Cleaning, precise measurement and identification of necessary repairs
- › Grinding of the cutting and contact surfaces
- › Pressure and leak test
- › Quality control and final report
- › Operator training
- › Supply of die hole plugs, accessories, insulation rings, disks and specialized gaskets

### Your Benefits

- › Reduced downtime and reduction in production costs by maintaining the underwater pelletizer with quick turnaround
- › Detailed inspection report on the die plate
- › Record of re-grinding cycles to predict end of life



› DIE PLATE USED IN PRODUCTION BEFORE GRINDING



› DIE PLATE AFTER GRINDING

› PRECISE MEASUREMENT



› WEAR AND QUALITY ANALYSIS



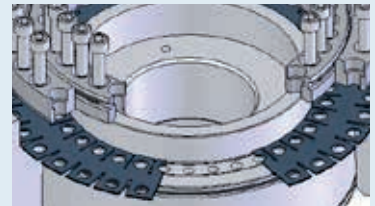
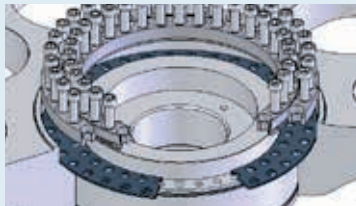
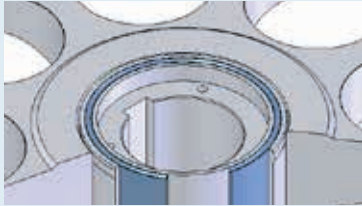
› DIE PLATE INSPECTION



## Knife Rotor Refurbishment

In order to achieve an optimal pelletizing result, the knives of a knife rotor must contact the pelletizer die plate precisely and evenly. This is achieved by the cardan suspension of the knife rotor. Upgrading existing Metalastik bushings to Coperion Met-

alflex bushings offers high precision pelletizing with minimal maintenance effort. Metalflex bushings combine the advantages of Metalastik bushings with those of steel springs.



### Metalastik bushings

Knife rotors of underwater pelletizers up to size UG 750 were previously equipped with Metalastik bushings. This suspension ensures a very good cardan effect by a rubber mixture but requires great maintenance.

### Steel springs

A steel spring was used for the suspension in pelletizers size UG 925 and upwards. This is responsible for the low degree of wear. However, the cardan effect is reduced in comparison with Metalastik bushings.

### Metalflex bushings

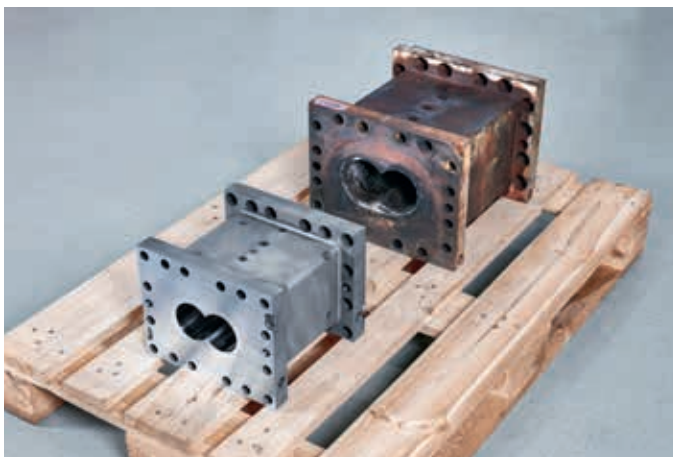
The newly developed Metalflex bushing combines the advantages of the Metalastik bushing with those of the steel spring. An optimal cardan effect is achieved by using a very flexible plate spring made of cold-rolled, stainless steel. At the same time the maintenance effort for Metalflex bushing is extremely low.

## Barrel Overhaul

Wear and tear during operation affect extruder barrels, making regular preventive maintenance a necessity. Due to their design and metallurgical properties, Coperion extruder barrels are important but also complex components of the extrusion system and therefore expensive to replace. Many Coperion barrels are equipped with liners, so overhaul of the barrel is simply

a matter of replacing the liner. Barrels without liners can be overhauled in one of the Coperion workshops, using various methods such as laser welding, to extend their lifetime. The overhaul of extruder barrels can be done with fast turnaround times to reduce extruder downtime.

› BARREL OVERHAUL - OLD AND REFURBISHED BARRELS



### GOOD TO KNOW

Coperion has a broad material portfolio for extruder barrels. The materials used are adapted to the individual process requirements - starting from basic requirements to even the most demanding tasks and extreme protection.

## Online and Remote Support

Coperion offers online and remote support via the Coperion ServiceBox - an optional remote interface that can be added to any extruder. This integrated system for online monitoring

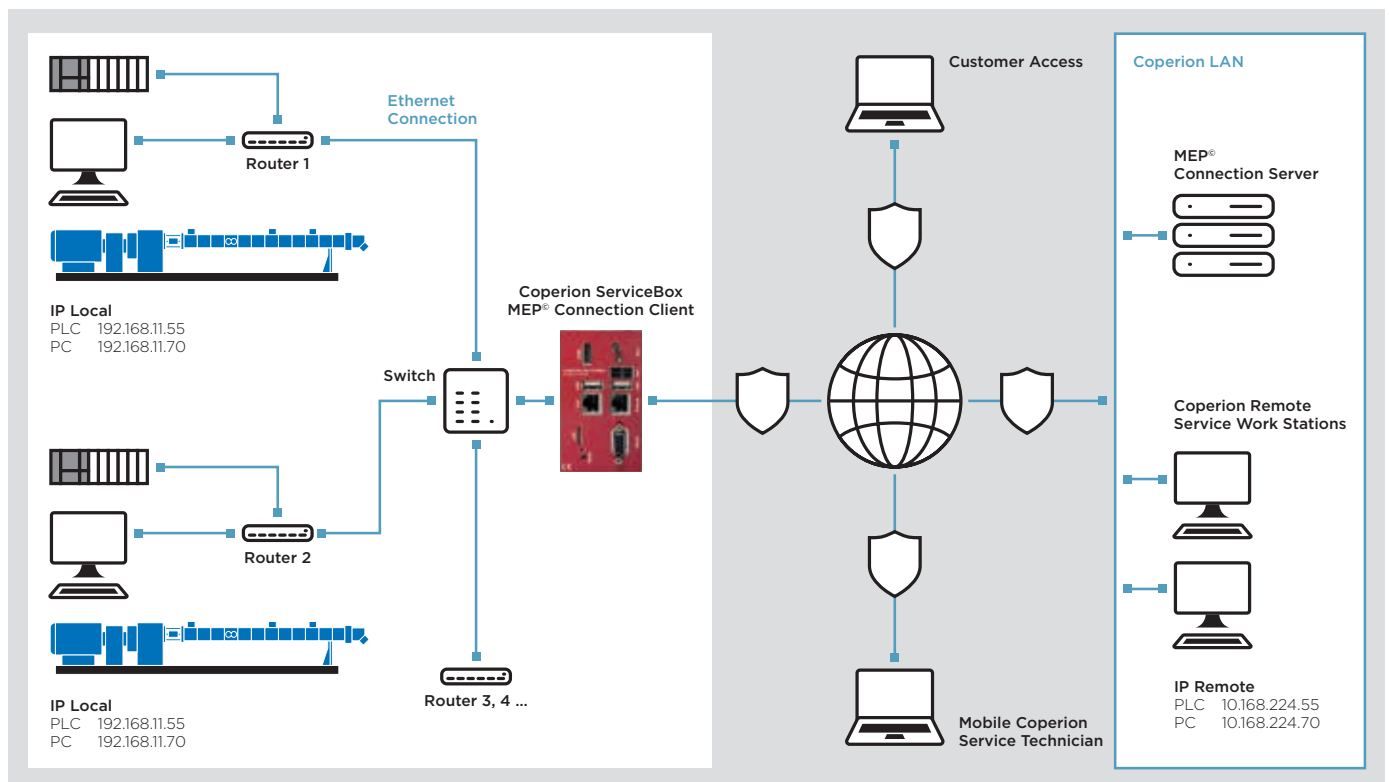
and logging of errors in your plant and components helps safeguard trouble-free compounding and ensure stable product quality.

### ServiceBox Functions:

- › Remote operation of the control PC
- › Updating functional files on the PC
- › Diagnosis and programming of the PLC
- › Remote troubleshooting
- › Remote root cause analysis
- › Remote start-up support

### Your Benefits

- › Use of existing data network infrastructure for comprehensive, successful, remote online diagnosis
- › Automated online error report to Coperion and rapid support from our team of experts
- › Integration and monitoring of a multitude of plant and system components
- › Fast response times to effectively reduce your plant's downtime
- › Reduction in expensive on-site deployments



## Training

Our range of training courses increases the sensitivity of your production and maintenance staff to working with technically complex machines and systems. Our extensive range of training courses is geared specifically towards your requirements

- from entry level staff all the way up to specialists. We offer training at our Coperion locations but we can also hold training courses on your premises on request.

## Inspection, Maintenance and Service Contracts

A Coperion service consultant can inspect your entire extrusion system and evaluate the impact of individual components on the overall process. We advise you in all matters - from investment and analysis of existing plants through maintenance and modernization issues. Our service consultants have the experience and specific know-how to very quickly detect available potentials, eliminate deficits or optimize processes.

### Our Service Offerings

- › Control system error analysis
- › Process and performance evaluation
- › Analysis of energy consumption
- › Gearbox and clutch inspection
- › Barrel and element wear measurement
- › Die plate wear inspection
- › Hazard analysis

### Service Contracts for Extruders

It's your choice. From a basic inspection to a full-service agreement: our service agreements are geared to accommodate your individual requirements. They minimize your risk whilst

maximizing the availability of your machines and plants. The main focus of a service contract is defining the right palette of services, configured specifically to your requirements.

#### Standard Maintenance Contracts for Extruders

With our service contracts, Coperion schedules maintenance appointments - in advance and coordinated with your production staff - to avoid any unwanted breakdowns. A service contract provides the basis for frequent and continuous preventive extruder maintenance. In this way, we offer you regular, dependable maintenance with transparent costs.

#### Individual Service Contracts for Extruders

As a Coperion customer you can take advantage of customized service agreements, tailored to your specific needs and requirements based on an analysis of your expected service requirements. Furthermore, we continue to remain flexible during the course of the contract and beyond: the level of services and agreement length can be adapted at any time and without any difficulties. That is what we mean when we say 'confidence through partnership'.

#### Benefits of a Customized Contract

- › A flexible answer to your needs
- › Transparent cost overview in predefined service levels (inspection, maintenance and overhaul)
- › Service and repair cost savings during the entire life of your Coperion extruder
- › Maximize equipment reliability
- › Maintenance teams at your disposal
- › 24/7 Hotline
- › Diagnosis reports
- › Safety checks (inspection incl. barrel bore measuring)
- › Preventive maintenance
- › Process consulting

› COPERION SERVICE CONTRACTS TAILORED TO YOUR REQUIREMENTS



› PLANNED PREVENTIVE MAINTENANCE TO MINIMIZE RISKS



› SAFETY CHECKS TO ENSURE RELIABLE PERFORMANCE



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