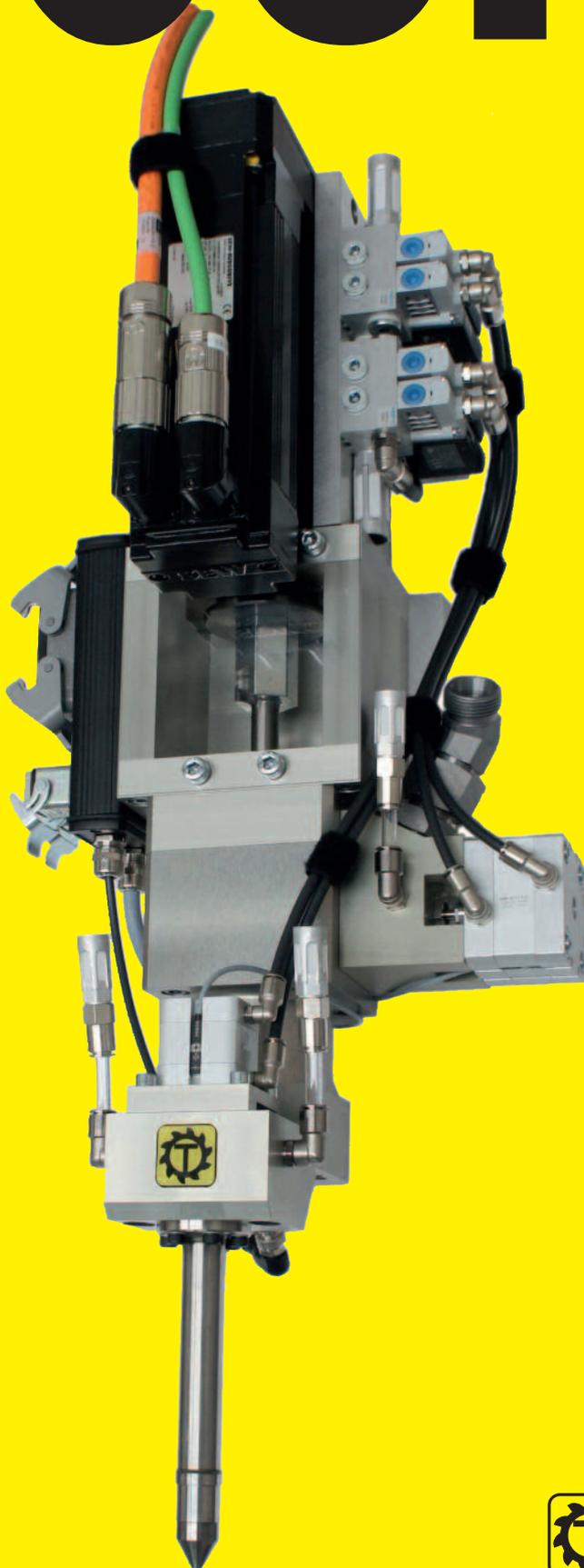


DOSING





Dosing

In recent years, the dosing of adhesives, sealing compounds, filling materials or even grease has gained increasing significance.

Not only in automobile manufacture but also in machinery and plant construction, dosing systems are always facing new challenges.

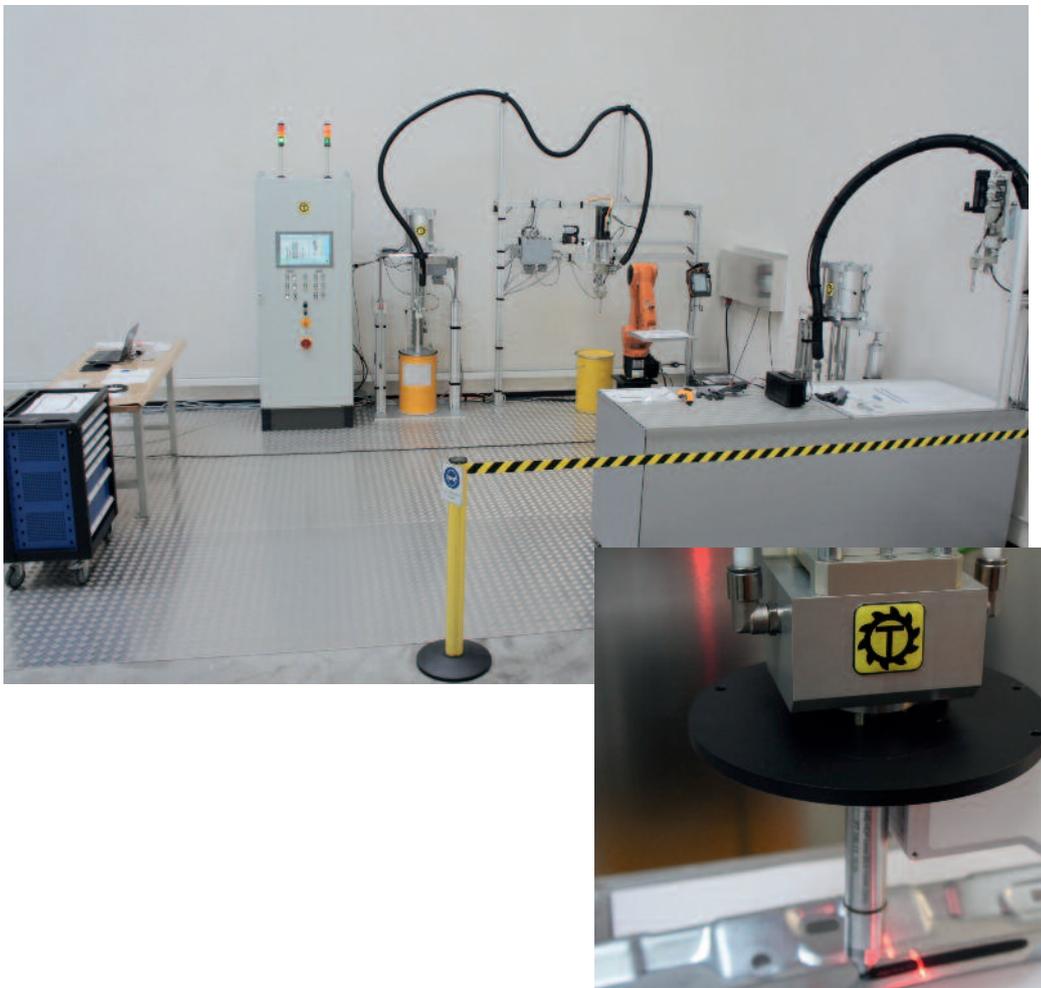
When dosing such materials onto the widest variety of components, the following parameters are of prime importance: **precision, speed¹ of application and accuracy of repetition.**

However, the **ease of maintenance and repair** of dosing systems are equally essential requirements. For this reason, in developing our TÜNKERS Dosing Systems we have paid particular attention to these factors.

With our product portfolio, we cover a very wide range of the dosing applications that the market demands.

The product portfolio described here can be adapted to satisfy your requirements. The TÜNKERS Team will be pleased to respond to your new challenges.

Contact: www.tuenkers-nickel.de and info@tuenkers-nickel.de





Doser



6-4

Controller



6-5

Pump Stands



6-7

Applicator Heads



6-8

All-electric Dosing Installation



6-9

TÜNKERS Condition Monitoring

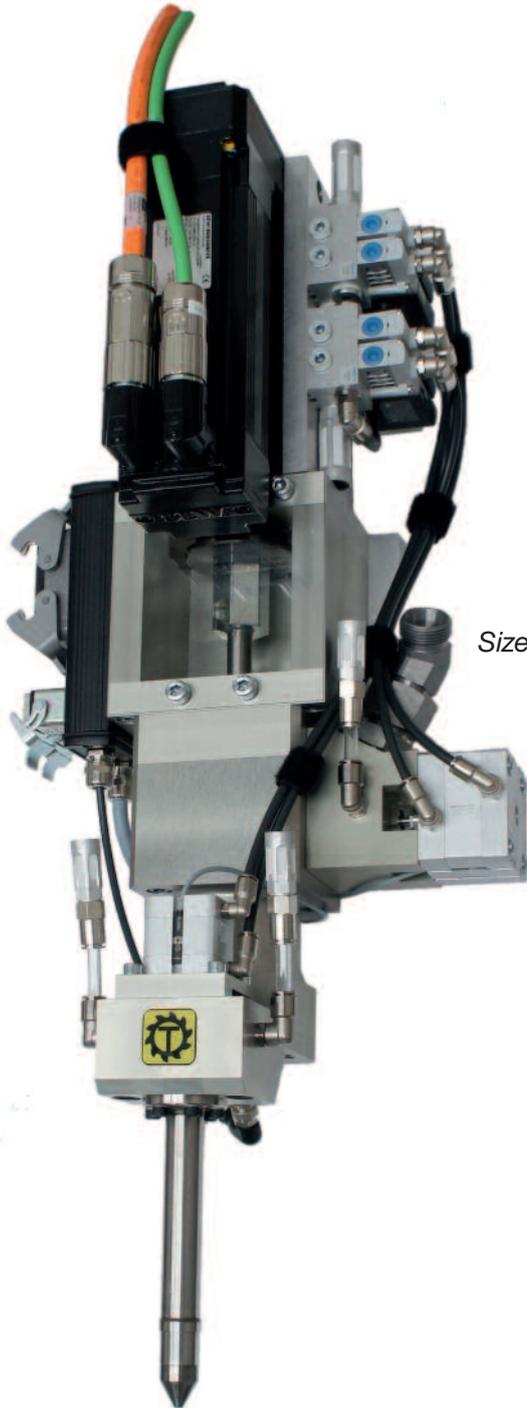


6-10

ApplicationMaster Modular Concept



6-11



Sizes: 10, 80 and 150

The seal package and the guides of the TUNKERS-doser are mounted together as one block. Therefore the complete block can be taken out very easy and uncompliate in the case of maintenance.

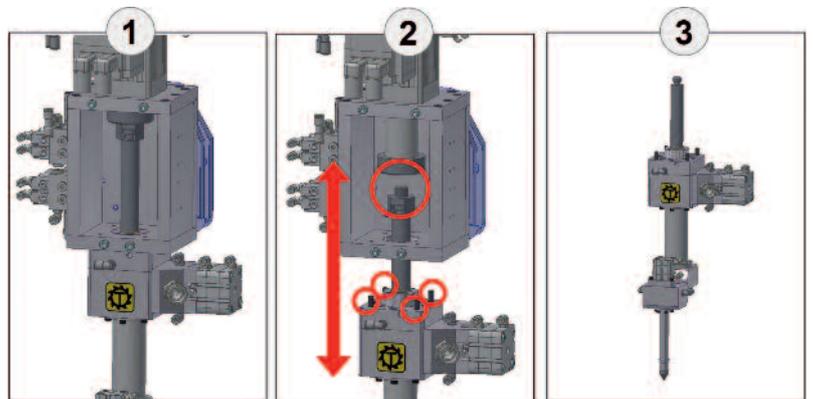
Based on the FIFO concept, the TUNKERS doser is designed according to a compact and module way of construction. The maintenance-friendly design of the doser allows uncomplicated and structured workflows.

As well the TCP does not change when the dosing chamber is changed to another standard volume-size. Furthermore there are special dosers for 300 ccm as well as a compact application head for mounting on robots with ~10 kg payload.

Cost reduction due to the interchangeability concept:

With only 5 screws the material-carrying part of the doser can be dismantled from its fixture. Changing the doser in case of a maintenance therefore can be done very fast and without a crane, because the carrying plates, the motor and the electronic parts will stay in the manufacturing station.

This concept leads to a significant cost reduction because in total less spare parts are needed to kept on stock.





The TÜNKERS dosing controller is designed in a very compact way, but still able to be adapted to individual needs. The controller rack itself needs very little floor space. All connectors are located on the backside of the controller. The socket of the rack has a separate drawer. In this drawer all pneumatic components are mounted very neatly. All the processes itself are controlled by a Siemens SIMOTION.

This platform was enhanced together with the support of SIEMENS to run as well the complete dosing process on it.

Furthermore still the PLC-functions are available. Therefore this concepts allows customized adaptations, even afterwards at the customer. At the touchpanel monitor different user levels can be settled up.

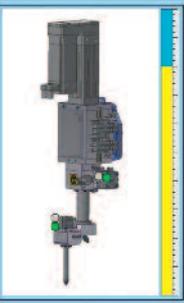




Control/Display Unit

Dosierer

TÜNKERS-NICKEL
Dosiersysteme GmbH



Betriebsart

Automatik
Manuell

Füllstand Dosierer: 67,46 cm³
Verdruck: 0,00 bar

Materialtemperatur: 20,01 °C
Drehmoment: 0,00 Nm
Position: 27,38 mm

Überwachungszeit: 100,00 s
Materialfluss: 2,00 cm³/s
Füllzeit: 0,00 s

Ein-/Auswertfenster
Öffnen
Schließen

Druckentlastung
Schwierung

Übersicht | **Dosierer** | Pumpen | Heizung | Programme | Auswertung | F/A Diagnose | Zurück | System

Pumpen

TÜNKERS-NICKEL
Dosiersysteme GmbH

Hauptkitt | Pumpenstop | Not-Halt

Temperatur
Schlauch
Manschette
Folienplatte

Füllstand
Im Fass
Gut leer
Leer

Temperatur
Schlauch
Manschette
Folienplatte

Füllstand
Im Fass
Fast leer
Leer

Pumpe 1
Automatik

Füllstand: 30650 cm³
Pumpendruck: 31 bar

Hoben | Senken
Belüften | Pumpen
Überprüfen

Pumpe 2
Hand

Füllstand: 0 cm³
Pumpendruck: 0 bar

Hoben | Senken
Belüften | Pumpen
Heizung | Füllstand

Übersicht | Dosierer | **Pumpen** | Heizung | Programme | Auswertung | F/A Diagnose | Zurück | System

Programme

TÜNKERS-NICKEL
Dosiersysteme GmbH

Program Nr.: 1
Parameter Nr.: 2

Program Name: Programm 1
Parameter Name: Gerade50%

Gesamtvolumen: 22,00 cm³
Materialfluss: 3,00 cm³/s
Verdruck: 62,00 bar
Vorteilzeit: 250,00 mm/s
Reaktionszeit: Dynamisch
Vermengergrenze oben: 110,00 %
Vermengergrenze unten: 90,00 %
Druckgrenze oben: 100,00 bar
Druckgrenze unten: 10,00 bar

Volumen: 10,00 cm³
Materialfluss: 50,00 %
Vordruck: 55,00 %

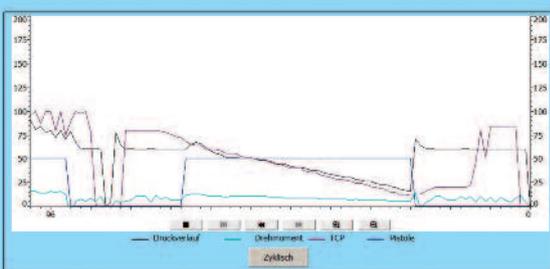
Kickprogramm: 0
Kickparameter: 0
 Prozessluft
TCP
Speed

Übersicht | Dosierer | Pumpen | Heizung | **Programme** | Auswertung | F/A Diagnose | Zurück | System

Auswertung

TÜNKERS-NICKEL
Dosiersysteme GmbH

| Zeitstempel | Volumen | | Volumen Abweichung | Druck | Mittelwert Drehmoment | Dosierer Füllzeit | Prozess Dauer | Prog. Nr. |
|-----------------------|-----------------------|-----------------------|--------------------|-----------|-----------------------|-------------------|---------------|-----------|
| | Soll | Ist | | | | | | |
| Leistest: 15:40:41 | 12,75 cm ³ | 12,72 cm ³ | -0,2 % | 40,31 bar | 0,85 Nm | 1,13 s | 11,11 s | 3 |
| Verleibzeit: 15:36:00 | 6,50 cm ³ | 6,25 cm ³ | -3,9 % | 77,46 bar | 1,45 Nm | 3,09 s | 2,35 s | 2 |



Gesamtzähler: 226
Schichtzähler: 183
Reset

Übersicht | Dosierer | Pumpen | Heizung | Programme | **Auswertung** | F/A Diagnose | Zurück | System

DOSING

The TÜNKERS barrel pump stations are designed in a very modular way to allow a maintenance-friendly usage as well. There is a robust displacement encoder mounted on the cylinder to get a permanent reliable signal about the filling level of the barrel.

The TÜNKERS piston pump is very robust, durable and easy to dismount. The seal package of the piston pump itself is easily to replace as well. The straight and cylindrical design allows a very close and therefore energy-efficient fixing of the heating sleeve on the pump.



Sizes:
30, 50 and 200 litres

*Pump stand with FW01
drum changing system*





Applicator Heads

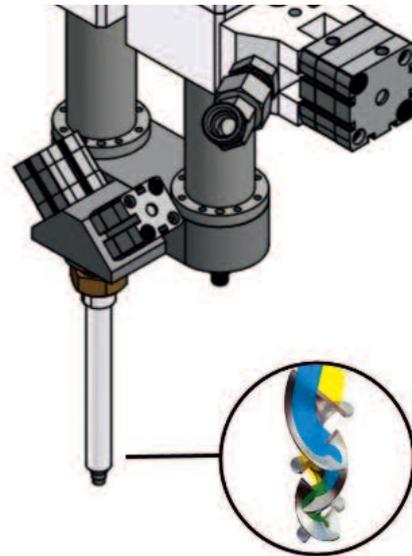
With TÜNKERS dosing systems several different application methods are possible.

Next to the 1-component dosing heads, like for example the adjustable, electrical swirl head for very accurate application pictures, there are 2-components heads available.

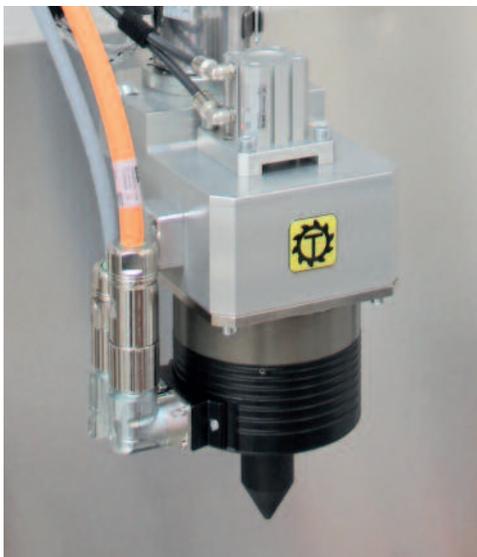
The 2-components heads can be chosen between static and dynamic mixing heads.



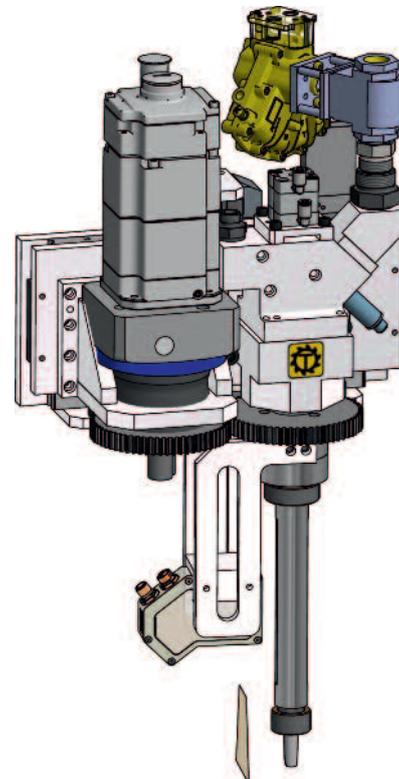
2K Dynamic Mixer



2K Static Mixer



eSwirl Applicator Head



Windscreen bonding (7th axis)

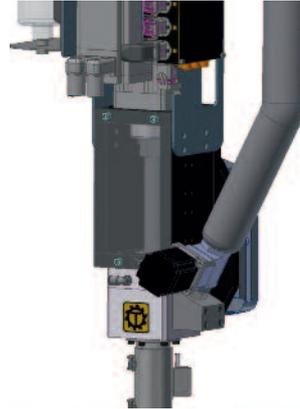
DOSING

All-electric Dosing System



TÜNKERS-NICKEL has developed the worldwide first fully electrical dosing system that reaches the same price level as a pneumatic dosing system. Above that the fully electrical dosing system saves costs during operation due to that there is no air consumption by cylinders.

Furthermore the barrel changing process can partly be automatized due to the usage of electrical components. This automatization helps to prevent potential accident risks for the operator.



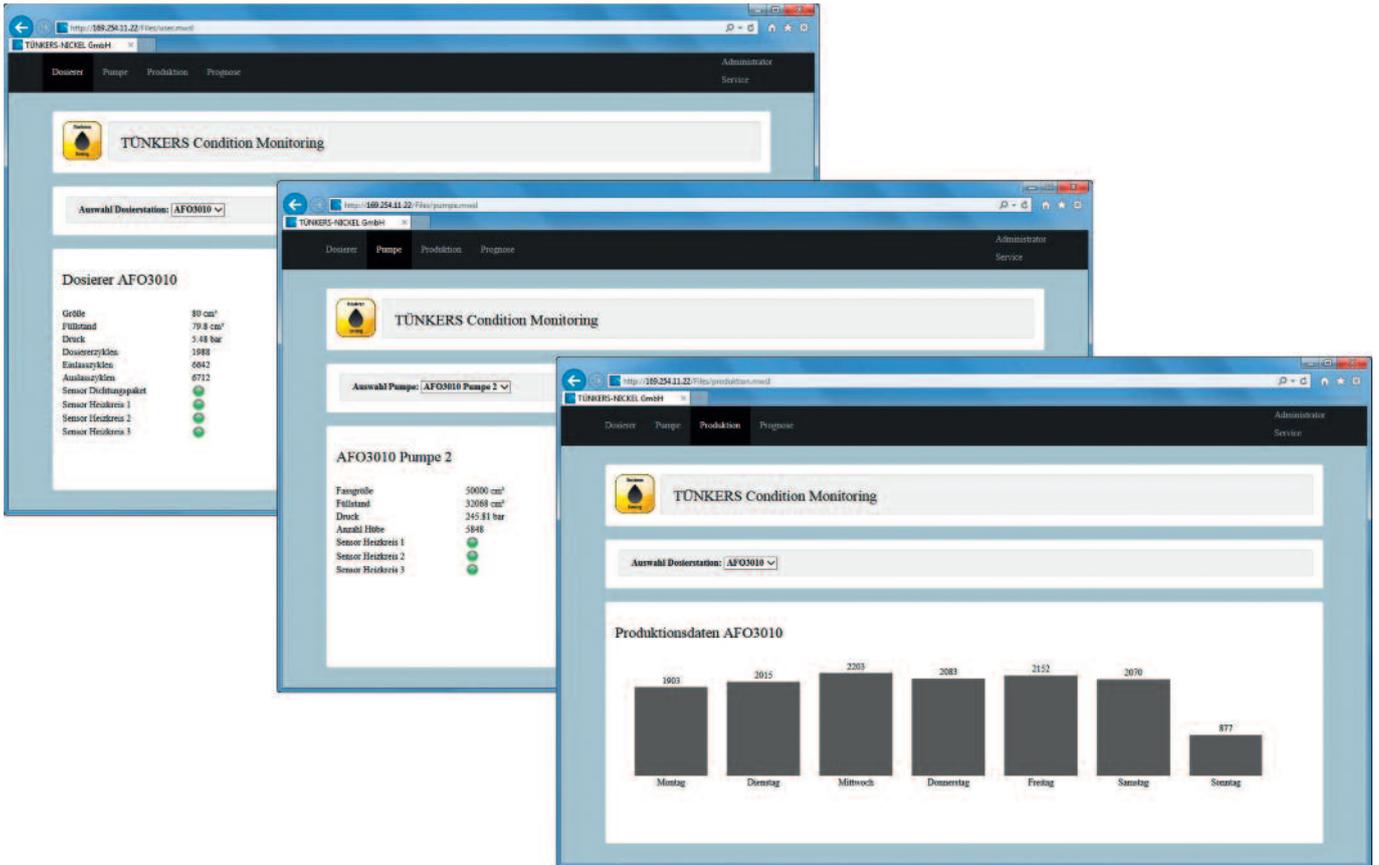
DOSING



TÜNKERS Condition Monitoring

Based on the concept of Industry 4.0 the TÜNKERS-dosing controller has been enhanced with a webserver functionality. Depending on different user levels, several process and sensor datas can be collected via the network by a central software. With these datas a complex picture of the performance in production can be created.

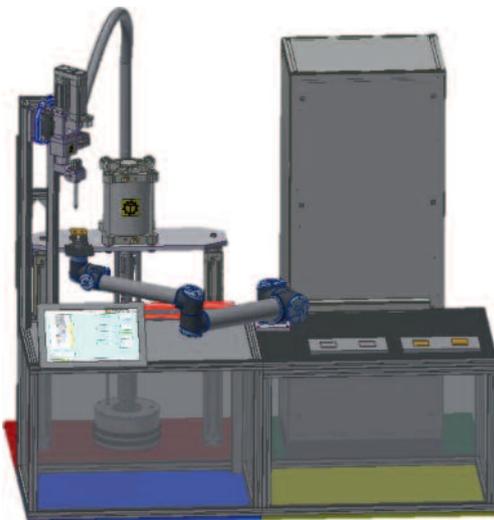
Especially in combination with the TÜNKERS leakage sensor a upcoming maintenance case can be predicted in a very early stage.



DOSING

Configure your own flexible dosing system

The 4 modules (**barrel pump station**, **system/dosing controller**, **doser** and **handling unit**) of the TÜNKERS ApplicationMaster allow for a very flexible and easy way of building up a dosing workstation. The modules themselves are freely configurable and can be changed by the customer in line with new tasks.



Collaborative Version



Classic Version

