FLENDER SERVICES

GEAR UNITS IN FOCUS. PROCESSES UNDER CONTROL.

DIAGNOSTEX: sensors, diagnostics, services

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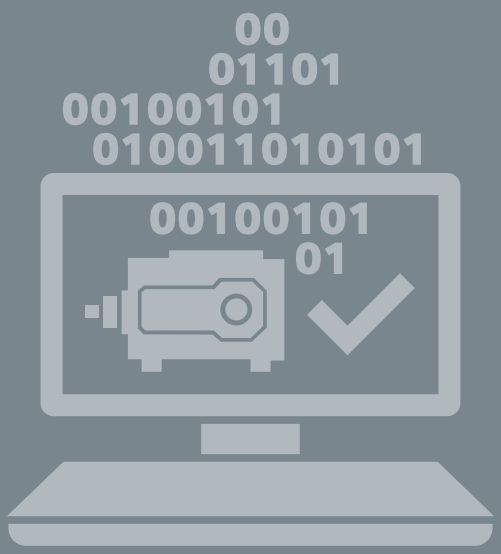
FLENDER
A Siemens Company



DIAGNOSTEX

Securing process stability requires condition-based maintenance of the drive train. Sensors on our gear units measure deviations from the nominal condition. These can be analyzed and evaluated for the purpose of maximizing plant availability.

DIAGNOSTEX® marks an important step into the digital future of mechanical drive technology. With the help of DIAGNOSTEX, the gear unit identifies and communicates any deviations during operation, thereby initiating highly precise early damage detection by our experts. The "digital gear unit" opens up new possibilities for predictive maintenance: required measures can be taken in a timely manner and our services can be better planned. In connection with optimized spare parts management, life cycle costs are significantly reduced and longer gear unit downtimes virtually eliminated.

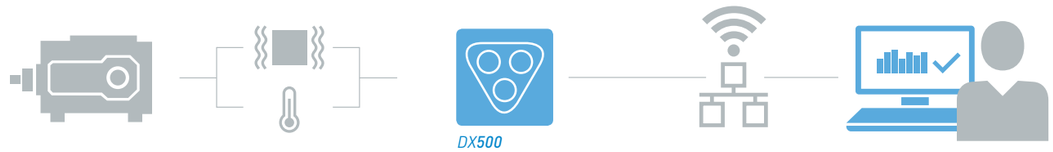
WE OFFER YOU:

- Globally available mobile measurement and diagnostic services from local service teams
- Remote diagnostic services for standard and application-specific gear units
- Highest reliability of results due to comprehensive technology and product knowledge as well as the industry expertise of those responsible for diagnosis
- Single-source gear unit services directly from the manufacturer

THE GEAR UNIT IS THE KEY COMPONENT IN THE DRIVE TRAIN.

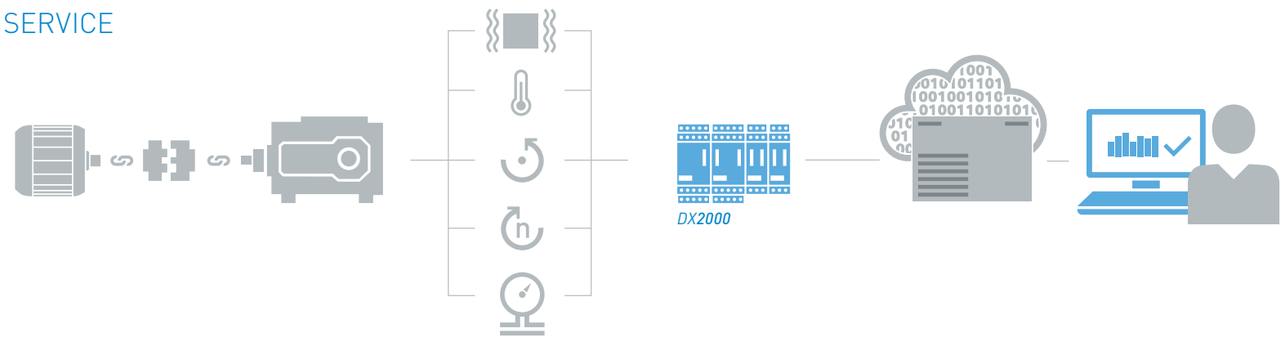
In order to detect damage early, the appropriate sensors are installed on the gear unit as part of our individually tailored diagnostic services. Depending on the configuration, these can measure vibration, temperature, rotational speed, torque and pressure. This data is conveyed via scalable hardware components and visualized using the DIAGNOSTEX software.

OPTION 1: DX**500** ONLINE DIAGNOSIS STANDARD GEAR UNITS



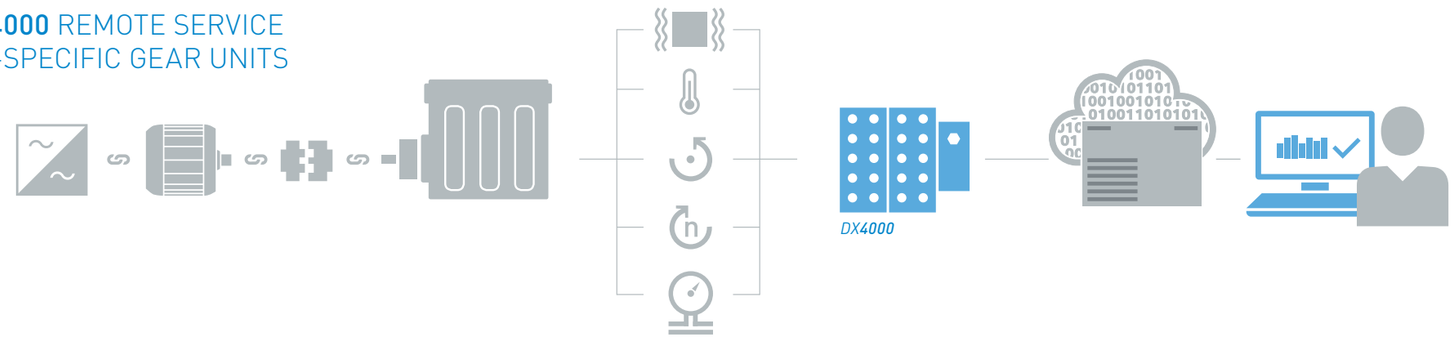
- DX500 is ideal for helical gear units in applications such as bucket conveyors, water turbines, blowers/fans, cooling towers, agitators, aerators, dryers and many others.
- Cost-effective solution for the measurement of vibration and temperature in standard gear units, especially in the low-torque range
- Early alarm message possible directly at the sensor or via the DX Assist app
- Data evaluation and diagnosis by our expert team

OPTION 2: DX**2000** REMOTE SERVICE STANDARD GEAR UNITS



- DX2000 monitors gear units in conveyor belts, bucket conveyors, compressors, pumps, water turbines and many other applications.
- Online data collection and recording
- Communication of measurement data to our Remote Expert Center via secure data links
- Qualified data evaluation and diagnosis by our expert team
- Specific recommendations for action as well as early warnings in the event of an error
- Monitoring of up to ten gear units with one industrial PC; cost savings of up to 50% per drive

OPTION 3: DX**4000** REMOTE SERVICE APPLICATION-SPECIFIC GEAR UNITS



- DX4000 is designed for gear units and complex drive trains in demanding applications such as ball, vertical and sugar mills, roller presses, cranes and many others.
- Suitable for sophisticated applications in, for example, the cement, crane and mining industries
- Monitoring of complex drive trains
- Online data collection and recording
- Communication of measurement data to our Remote Expert Center via secure data links
- Qualified data evaluation and diagnosis by our expert team
- Specific recommendations for action as well as early warnings in the event of an error

DX MOBILE SERVICES

A flexible solution for standard and application-specific gear units

DX Mobile Services offer a flexible and cost-effective solution for both standard and application-specific gear units. Measurements are carried out using handheld devices by Flender service professionals at regular intervals or as required, e.g. in troubleshooting cases. Data evaluation and diagnosis are carried out by our competent expert team.

YOUR BENEFITS AT A GLANCE:

- Plannable maintenance activities
- Optimized spare parts management
- Reduced maintenance costs through early detection of wear-related anomalies

MOBILE SERVICES – STEP BY STEP

→ Definition and preparation of measurement task by Siemens experts using original gear unit documentation before vibration measurement

→ On-site data collection by qualified personnel using portable device GearControl and visual inspection

→ Evaluation of measurement data and in-depth diagnosis by expert team

→ Detailed report with maintenance recommendations

DX ASSIST APP

Available for iOS and Android* smartphones and tablets and for Windows 10 computers – FREE DOWNLOAD

DX**500** MONITORING

- Status and alarm monitoring
- Alarm text message indicating area of potential failure

DX500 *Alarm text message*

DX**500** DATA ANALYSIS

- Download of DX**500** alarm data for analysis by a Flender expert to get detailed information about alarm cause

DX500 *Alarm data analysis*

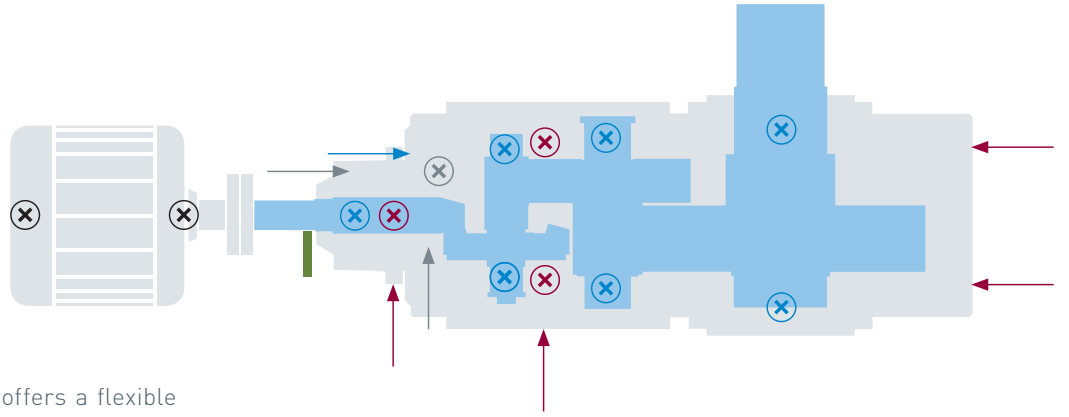
GEAR UNIT MANAGEMENT

- Add your Flender gear units
- View equipment-specific spare parts
- View log book (last alarm message)

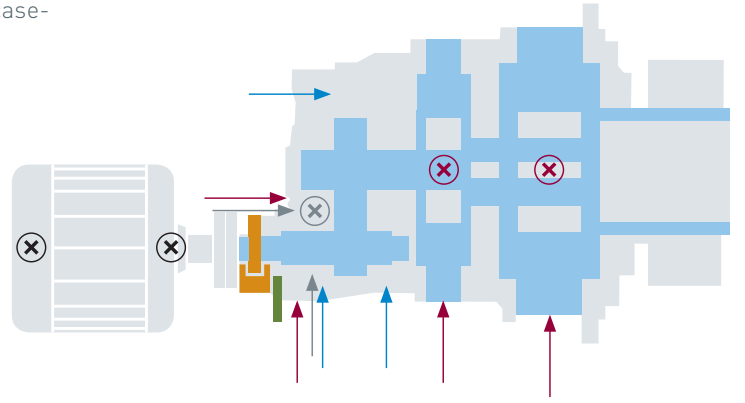
** Android version 6 and higher.*

Get the DX ASSIST APP here:

www.flender.com/dxassistapp



DIAGNOSTEX offers a flexible range of types and numbers of measuring points for diagnosis. The scope of diagnosis must always be determined on a case-specific basis



SENSOR CONFIGURATION EXAMPLES FOR STANDARD AND APPLICATION-SPECIFIC GEAR UNITS

	STANDARD GEAR UNITS	APPLICATION-SPECIFIC GEAR UNITS
	7× acceleration for gear units	6× acceleration for gear units
	2× acceleration for motors	2× acceleration for motors
	8× temperature sensor	3× temperature sensor
	1× rotational speed	1× rotational speed
		1× torque
	3× vibration transmitter	3× vibration transmitter

Further information on service:
www.flender.com/service

Further information on gear units:
www.flender.com/gearunits

Further information on DIAGNOSTEX:
www.flender.com/diagnostex

Further information on couplings:
www.flender.com/couplings

FLENDER BY YOUR SIDE.

All sectors of industry and raw material extraction know Flender drive technology and the people behind it as highly capable and reliable. They require a flexible, forward-thinking partner for consulting and development that is at the same time a globally positioned, committed business partner. This is how we understand our mission. In the future, we want to stand at our customers' side again under the name Flender, as part of the Siemens corporation.

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