



# **SENSORS** *Application* Brochure



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# TSM SENSORS: Made in Italy excellence



MAGNETOSTRICTIVE SENSORS



ROTARY ENCODERS



ELECTRONIC CONTROL UNITS



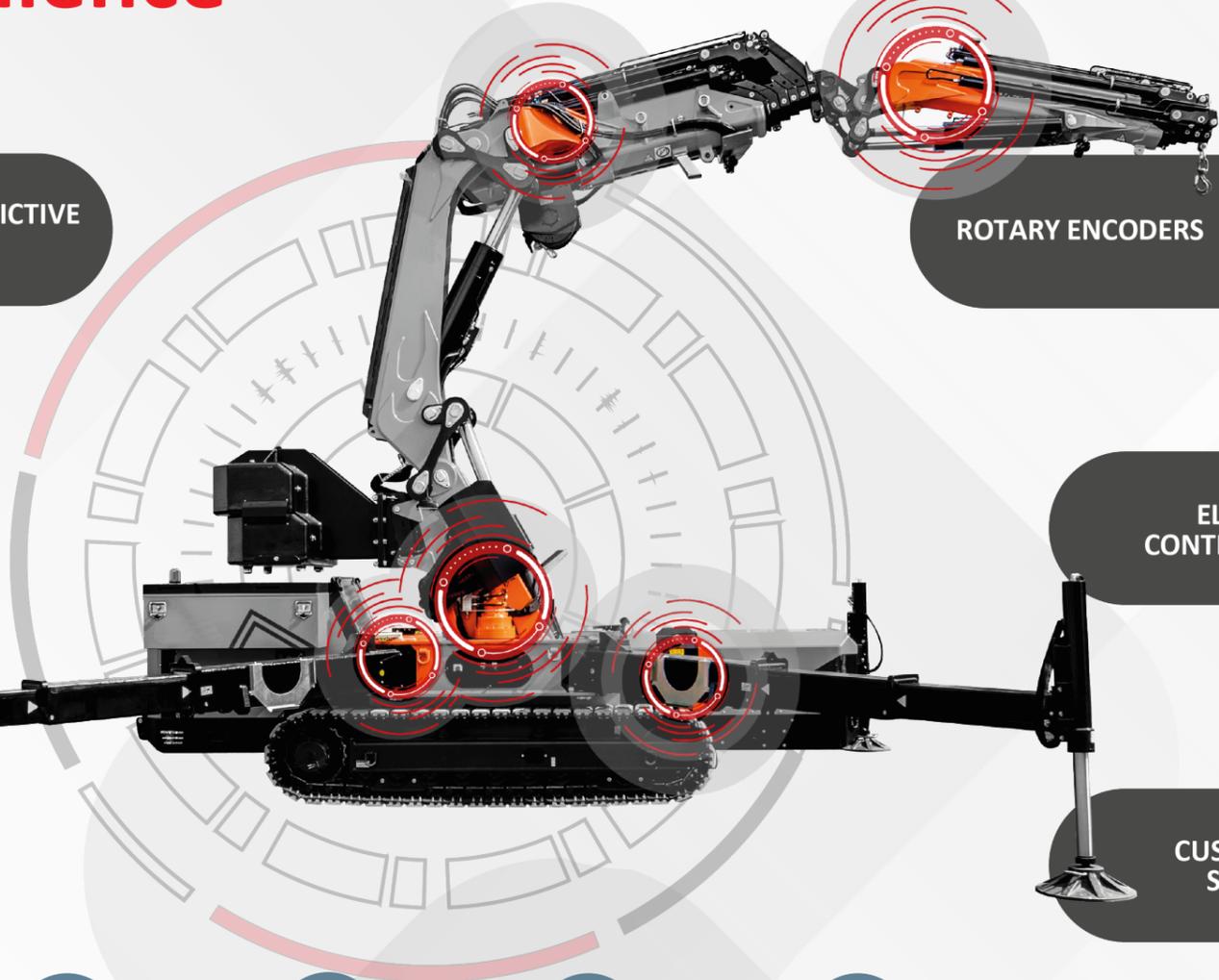
CABLE EXTENSION TRANSDUCERS



CUSTOMISED SOLUTIONS



INCLINOMETERS



Wide-range operating temperature from -40°C to +85°C



IP67 protection guaranteed



High electromagnetic compatibility EMC



High resistance to vibration and shock



Accurate and reliable measurements



Constant Growth



Established since 2015



A team of 40 people



2400 m<sup>2</sup> including production facilities, offices and warehouses



Over 300k sensors sold



Operating in 22 Countries

A reality of excellence of Made in Italy, TSM SENSORS is a reference point in the development and realization of position sensors for automation and control of mobile machines.

TSM acts as a reliable partner for OEMs and system integrators, providing specialized expertise, technological innovation and a quality-oriented approach to meet market needs.



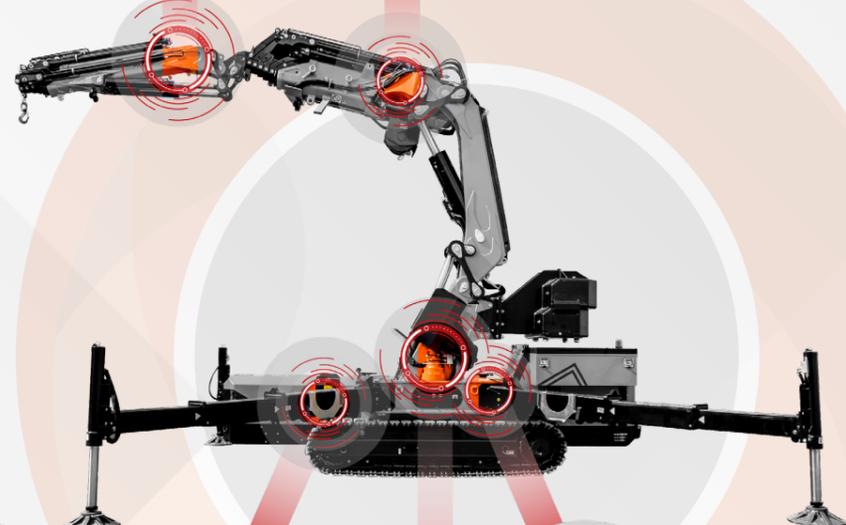


# HANDLING & LIFTING






**TLP200**  
Detection of boom and JIB inclination


**CET5**  
Outrigger extension position




**RTE200**  
Outrigger angle position




**RTP100H**  
Detection of crane rotation angle




**RTP100H**  
Detection of crane rotation angle




**TLP200**  
Detection of boom and JIB inclination





**CET5**  
Outrigger extension position



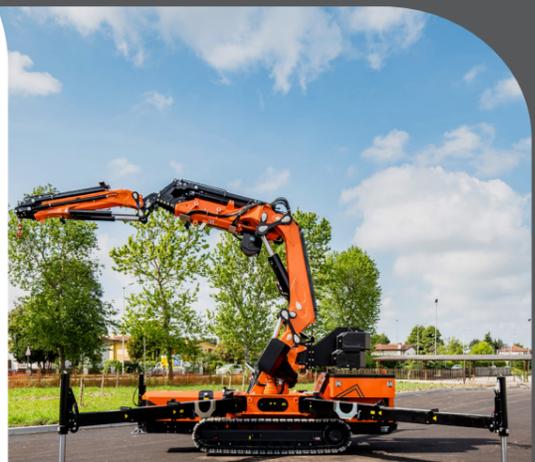

**TLP300**  
Tilt position feedback



# ARTICULATED CRAWLER CRANE



HANDLING & LIFTING

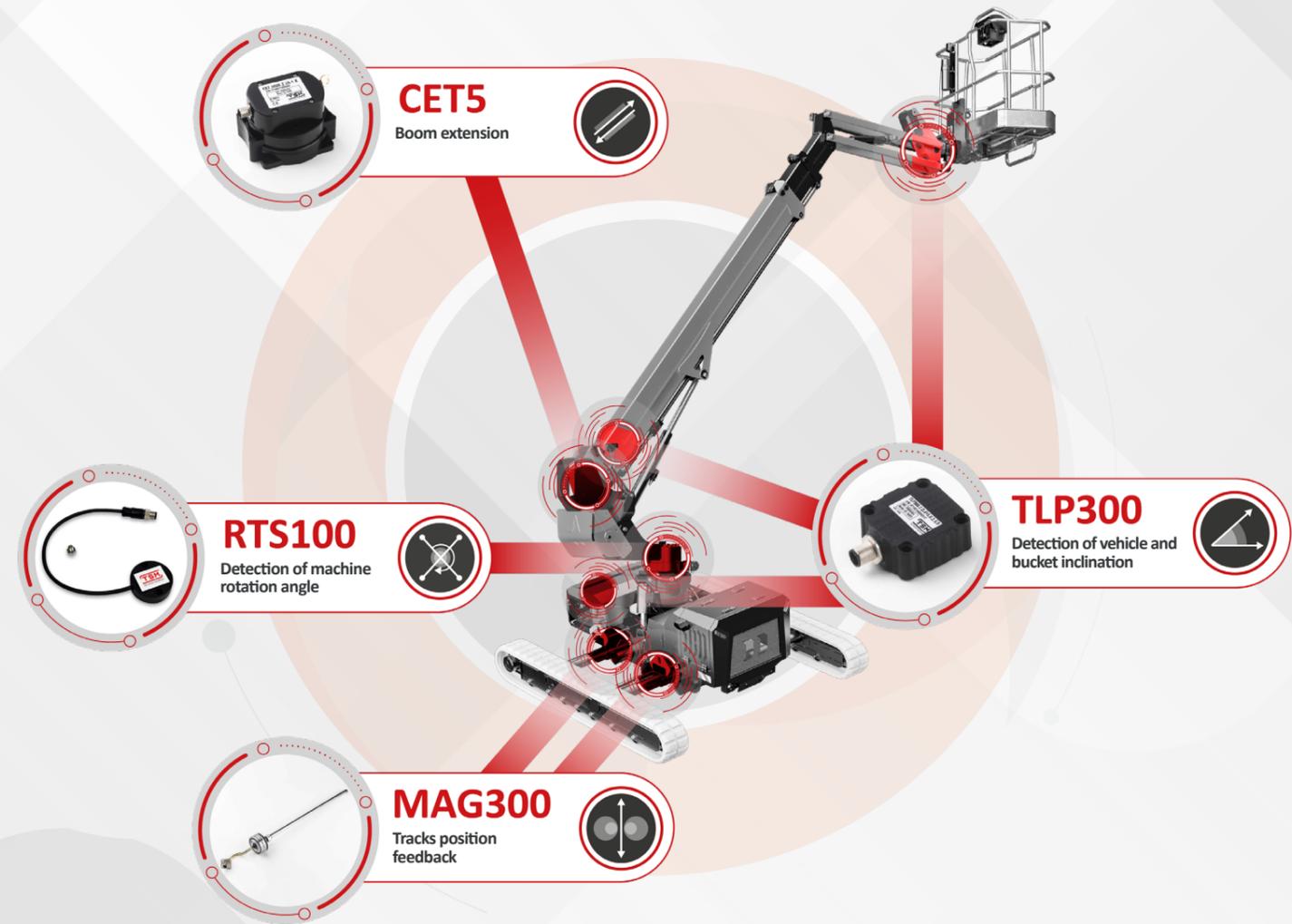


# TRUCK MOUNTED CRANE



HANDLING & LIFTING

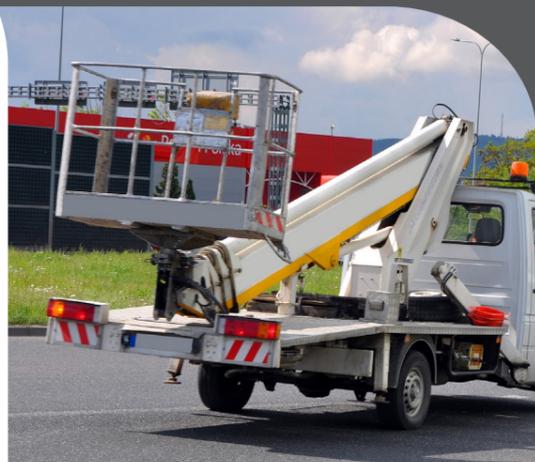




# TRUCK MOUNTED AWP



HANDLING & LIFTING



# SPIDER-TYPE AWP



HANDLING & LIFTING





# SELF-PROPELLED AWP



HANDLING & LIFTING



# TELEHANDLER



HANDLING & LIFTING





**RTS100**  
Scissors position feedback



**TLP300**  
Detection of vehicle and bucket inclination





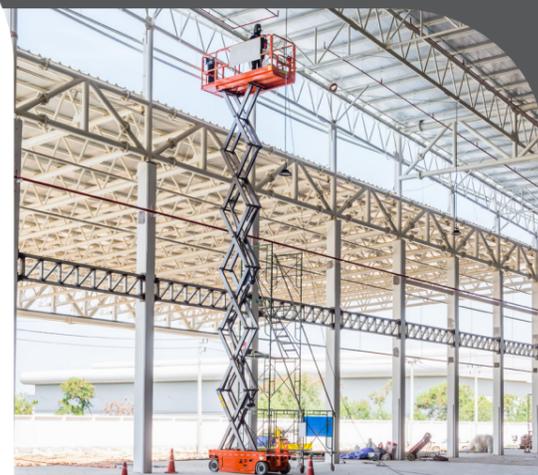
**MAG300**  
Detection of hooklift position



## SCISSOR LIFT



HANDLING & LIFTING

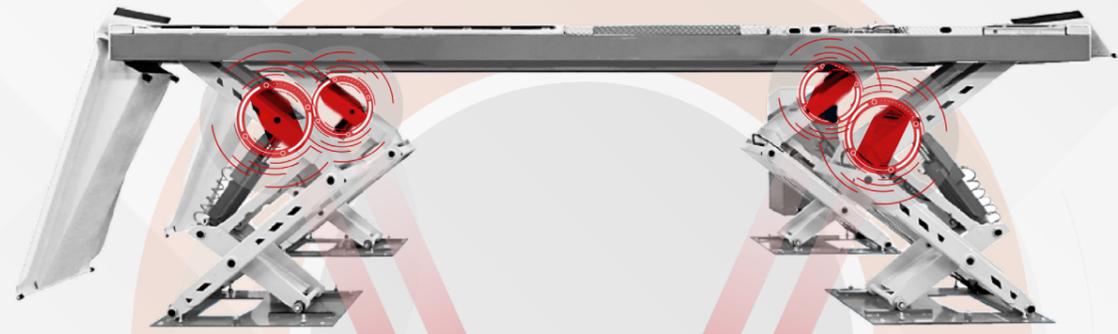


## HOOKLIFT



HANDLING & LIFTING






**TLP200**  
Lift tilt position




**CET5**  
Lift position feedback




# ELECTROHYDRAULIC LIFT



HANDLING & LIFTING



# STRADDLE CARRIER



HANDLING & LIFTING






**RTS100**  
Steering control





**CET5**  
Lift position feedback




**TLP300**  
Detection of boom and JIB inclination





**CET5**  
Outrigger extension position



# SIDELoader



HANDLING & LIFTING



# FORESTRY CRANE



HANDLING & LIFTING






**TLP300**  
Detection of boom and JIB inclination





**CET12**  
Boom extension / inclination position






**RTS100**  
Steering control



# SELF-PROPELLED MATERIAL HANDLER



HANDLING & LIFTING



# REACH STACKER



HANDLING & LIFTING





# AGRICULTURAL MACHINERY





**RTS100**  
Accelerator pedal position feedback

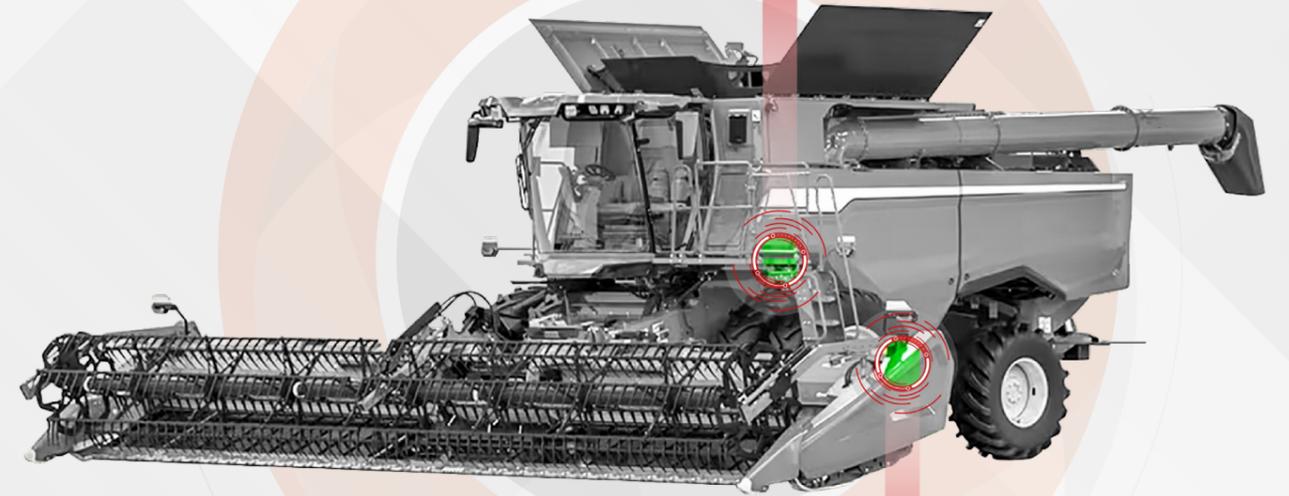
**MAG300**  
Cabin position control



**RTA100**  
Steering control

**TLP300**  
Tilt position feedback

**TLP300**  
Tilt position feedback



**RTA100**  
Header position feedback

# TRACTOR



## AGRICULTURAL MACHINERY



# COMBINE HARVESTER



## AGRICULTURAL MACHINERY






**TLP300**  
Detection of vehicle inclination





**RTS100**  
Steering control




**TLP200**  
Wing inclination





**MAG300**  
Height adjustment spray wings




**RTS100**  
Wings/boom open & close position




**RTA100**  
Steering control




**TLP300**  
Tilt position feedback



# FRUIT HARVESTER



AGRICULTURAL MACHINERY



# AGRICULTURAL SPRAYER



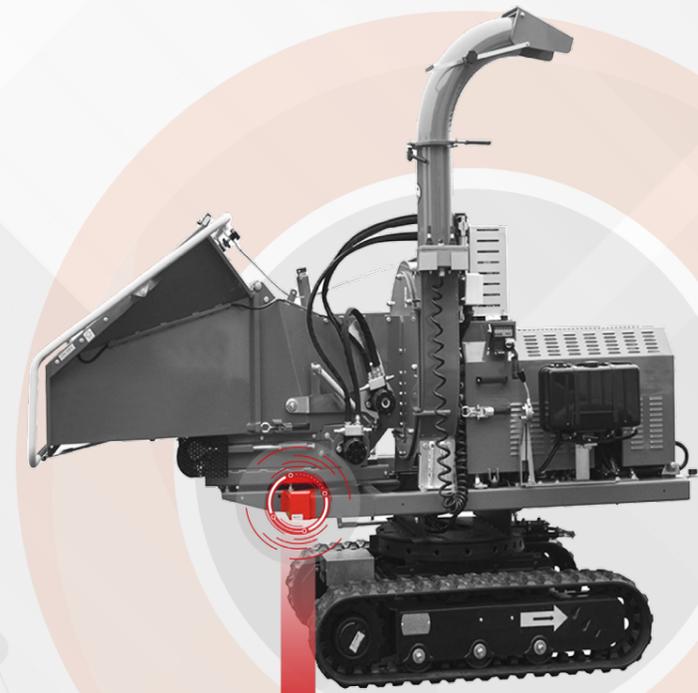
AGRICULTURAL MACHINERY






**CET12**  
Boom inclination / length feedback






**TLP200**  
Main boom inclination




**TLP300**  
Tilt position feedback




**TLK100**  
Relay tilt switch with LED status feedback



# SELF-PROPELLED MACHINE



## AGRICULTURAL MACHINERY



# SHREDDER



## AGRICULTURAL MACHINERY





**TLP300**  
Tilt position feedback



**RTS100**  
Steering control

# AUTONOMOUS IMPLEMENT CARRIER



## AGRICULTURAL MACHINERY





### TLP210

Triaxial accelerometer for dynamic weighing system



### RTS100

Position monitoring of the parallel link arms of the row units



## FERTILIZER SPREADER



AGRICULTURAL MACHINERY

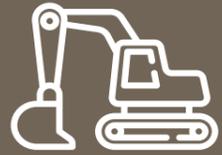


## PLANTING MACHINE



AGRICULTURAL MACHINERY





# CONSTRUCTION EARTH MOVING





# EXCAVATOR



CONSTRUCTION  
EARTH MOVING



# WHEEL LOADER



CONSTRUCTION  
EARTH MOVING





# CONCRETE MIXER PUMP

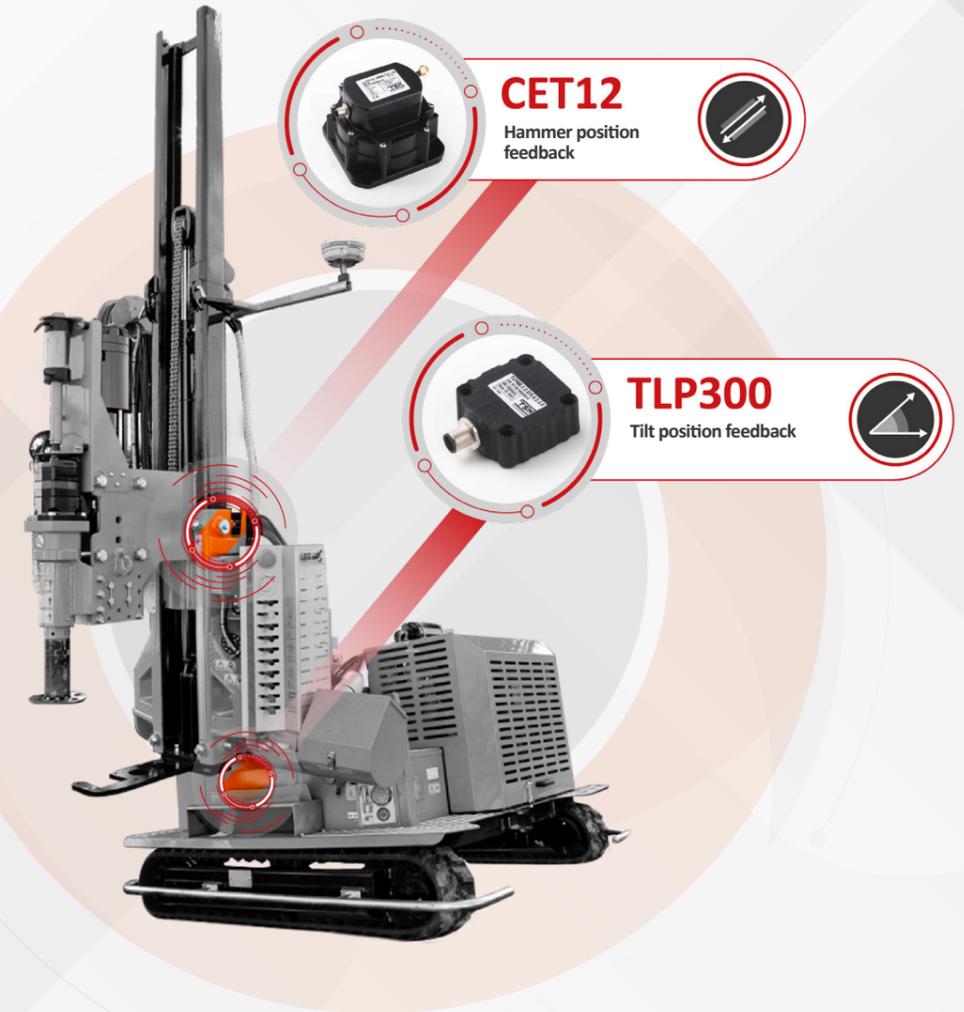
COSTRUCTION  
EARTH MOVING



# PILING RIG

COSTRUCTION  
EARTH MOVING





# TIPPER SEMI-TRAILER



CONSTRUCTION  
EARTH MOVING



# PILE DRIVER

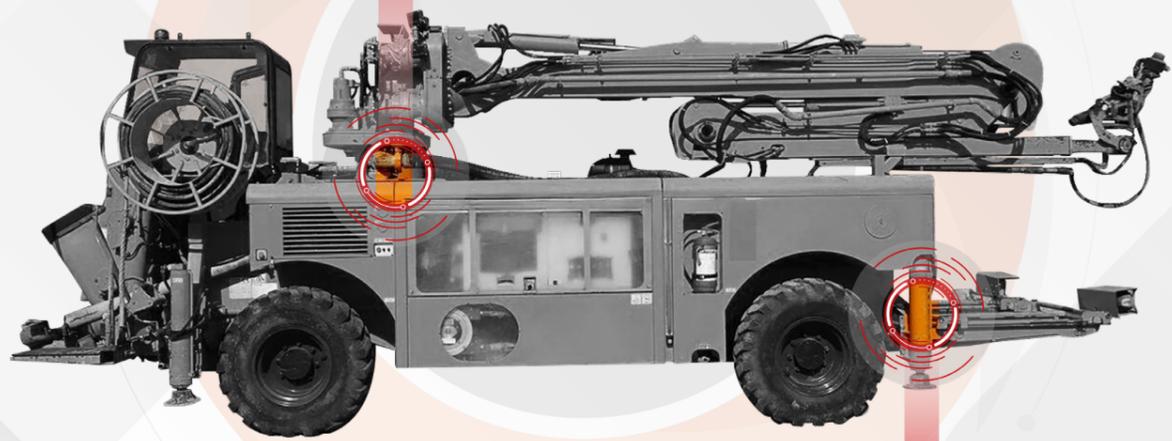


CONSTRUCTION  
EARTH MOVING






**TLP300**  
Tilt position feedback


**CET5**  
Outrigger position feedback




SPRITZ  
BETON



CONSTRUCTION  
EARTH MOVING





# URBAN AND MUNICIPAL





# ROAD SWEEPER

URBAN AND MUNICIPAL



# REFUSE COLLECTION VEHICLE

URBAN AND MUNICIPAL





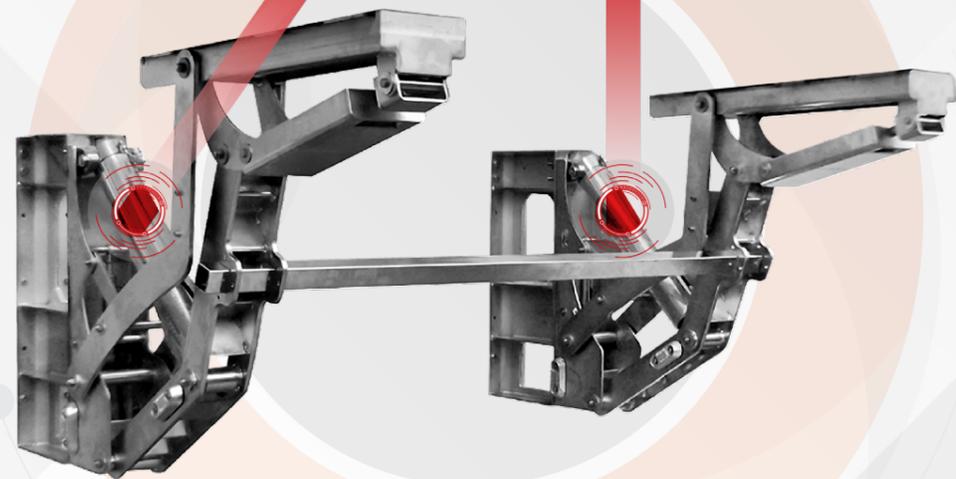
# MARINE





**MAG300**

Cylinder position control  
for automatic tenderlift  
leveling



**TLP300**

Detection of gangway  
inclination



**TENDERLIFT**



MARINE



**GANGWAY**



MARINE





# HYDRAULIC CRANE



MARINE



# TENDER BOOM



MARINE





# MANUFACTURERS OF ELECTRICAL SLIP RINGS





### RTP100H

Slip ring position feedback (encoder with shaft technology)



### RTS100

Slip ring position feedback (contact-less encoder technology)



## SLIP RING



MANUFACTURERS OF ELECTRICAL SLIP RINGS



Electrical slip rings play a simple role: they transmit power and electrical signals (digital and analogue data) from a fixed structure to a rotating element and vice-versa. TSM offers shaft-mounted or separate magnetic rotor solutions that

are suited to all types of installation. This allows electrical slip rings to monitor and manage power and/or data flows in a single combined solution, improving mechanical performance and simplifying the functioning of the entire system.



# MANUFACTURERS OF HYDRAULIC CYLINDERS



Every sector and every machine requires a different type of hydraulic cylinder. TSM collaborates in this field with the most important hydraulic cylinder manufacturers to develop high-quality

magnetostrictive transducers that guarantee the highest levels in terms of performance and safety for related sectors.



TSM has a **global certified quality management system according to DIN EN ISO 9001:2015** that is pervasive in all business settings.

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