

TOTAL
DEPTH

Tesco Corporation RIGSMART™ Wireless Anti-collision System

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TESCO's exclusive partner for anti-collision systems

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What is it?

- The RIGSMART™ wireless Top Drive Anti-Collision system is designed to eliminate collisions between the Top Drive and automatic pipe handlers, the monkey board, and the derrick. TESCO is a global leader in portable top drive drilling technology and mechanized casing running services and as such, we are committed to making the rig floor a safer and more productive place.
- TESCO is the exclusive provider of this proven technology to the drilling community, which is applicable to any top drive system and is easily integrated with other rig floor mechanization equipment for inclination and proximity sensing.



What are the RIGSMART™ system components?

- **Wireless components** allow for quick installation, a small footprint and advanced trouble shooting. The system does constant health checks for both signal strength and battery strength.
- **Reduced maintenance cost** over traditional wired solutions. Cable breaks or damage can take time to diagnose. It is often the source for a number of system issues.
- **Solid state** components and light weight allow for installation on vibrating equipment.
- **Intrinsically safe** or Class 1 Div 2 ratings meet site requirements for drilling within gas environments. Low power radio components are safe for use with downhole tools and electronic detonators



Wireless components that are used...

- **Bail angle** - This sensor lets the system know when the bails are not perpendicular to the rig floor.
- **Top Drive In/Out.** This sensor lets the system know that the Top Drive is extended.
- **Elevator (Pipe Handler) rotation** - This sensor lets the system know the direction, full 360 degrees, the elevators are pointing.
- **Block height** – This sensor tells the system the block height relative to the automatic pipe handlers, crown and floor.
- **Third party position integration** – positional information can be integrated or additional sensors can be added to pipe handlers used in the derrick and/or on the floor.

What Do We Do With The Wireless Information?

- Alarm conditions are established for all of the wireless sensors. When the equipment is in a potential collision zone throttle/rheostat limiting and/or braking is applied to prevent a collision.
- Collision “Zone-Management” is also incorporated and may include safety interlock/overrides to work in the defined collision zone in a controlled manner.

System Benefits

- The RIGSMART™ System is available for **purchase**. System purchase offers an excellent return on investment with no residual costs for operating system. The system can be used as the primary anti collision system or as a fail safe back-up, redundant system or a combination of both.
- **Back-up safety** for the Driller. Immediate throttle overrides or braking is triggered when alarm conditions are triggered.
- **Reduced downtime**. Collisions cause downtime. Guard against rig downtime due to equipment damage, well-bore consequential damage and worker lost time incidents.
- **Built tough and durable**. All components are weather proof and tested from -50C +60C, vibration resistant, and engineered to withstand harsh rig environments
- **Intrinsically safe** or Class 1 Div 2 ratings meet site requirements for drilling within gas environments. Low power radio components are safe for use with down hole tools and electronic detonators
- **Proven technology**. RIGSMART™ is a division of Cranesmart Systems Inc. Cranesmart is the market leader in load moment indicators and crane safety equipment with over 27,000 systems installed worldwide. Rigsmart is applying a proven technology to the service drilling industry with a new way of looking at service rig safety.
- **Service & Maintenance**. Wireless components are self-diagnosing and allow for quick installation. Our technicians are available to troubleshoot errors remotely or travel to the rig site when needed.

Value

- Damage to the rig is eliminated. These photos illustrate how some masts are prone to damage when retrofitted with a Top Drive due to limited clearance. The efficiencies of using modern technology on rigs is reduced when repairs are required. In this instance, The operator shut down operations for 2 days to perform repairs, target corrective actions and re-install equipment.
 - Downtime costs to the operator at the well site = \$150,000.00
 - Non-Productive time (day-rate losses) for the rig contractor at the well site = \$12,000.00
 - Repairs to rig = \$6,000.00
 - Repairs to Top Drive = \$5,200.00
 - No injuries resulted from this incident but could reach into the **\$\$Millions** should death, dismemberment or paralysis to personnel occur.
 - 2 – days of lost production downstream at 5,000bbls/day X \$50.00 oil = \$.5Million.
 - Total financial loss in 2-days = \$670K not including potential human loss.



Value

In events like the one in this photo, costs soar into \$MILLIONS and put our personnel in harm's way.



The damage as seen above was a direct result of human error and an antiquated safety device that could not stop the momentum of the traveling blocks. How many of these do you have in YOUR rig fleet??



Do not let this this happen on your
rig operation – call TESCO /
RIGSMART today



RIGSMART's™ safety equipment is approved and meets and/or exceeds the guidelines set forth by the following regulatory bodies

- ANSI American National Standards Institute



- SAE Society of Automotive Engineers



- ASME American Society of Mechanical Engineers



- OSHA Occupational Safety and Health Administration



- UL Underwriters Laboratories



- API American Petroleum Institute



- FCC Federal Communications Commission



- CSA Canadian Standards Association



- International Makers of Explosives

