

# T H E X T E K *Difference*

## Case Study

### XTEK TSP SHEAVE WHEELS Impact on Maintenance Expense

Xtek **TSP** Carburized sheaves have been employed by numerous customers in some of the harshest of applications to address wear issues related to both the sheave wheel and wire rope. The following study was conducted on an overhead crane located at a petrochemical company.

#### Case in Point:

This installation utilizes two cranes, operating in a continuous 24 hour, 7 day a week environment. Prior to testing the Xtek **TSP** Carburized sheave wheels, the average sheave wheel life was six (6) months and the wire rope life was six (6) weeks. Both of these wear related problems were due to the excessive wear and corrugation of the sheave wheel throat.



CLAMSHELL BUCKET - LOADING COKE

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## **Summary of the Test:**

Xtek **TSP** Carburized sheave wheels were installed on one of the cranes and the results have been dramatic. After two continuous years of service, the Xtek sheave wheels remain relatively unworn, providing more than four times the life of the original sheave wheels. In addition, this customer has also tripled the life of the wire rope in this application, strictly due to the improved performance of the Xtek sheave wheels.



*WORN FLANGE AND THROAT OF AN ORIGINAL SHEAVE WHEEL  
RESULTING IN FREQUENT REPLACEMENT OF ROPE AND SHEAVES*



**XTEK TSP CARBURIZED SHEAVES AFTER TWO YEARS OF SERVICE  
NO WEAR, NO CORRUGATION**

**- PROBLEM SOLVED -**



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## What is Different about the Xtek TSP Sheave Wheels:

Xtek Carburized sheave wheels have a high-carbon case around the entire groove to greatly reduce wear and extend the life of the sheaves and the rope. This method of heat treatment provides a much harder wear surface than flame-hardened sheaves. The Xtek TSP sheaves are 60+ Rc from the throat to the tops of the flanges.

With softer surfaces, the throat and flange area of the sheave wheel wears, resulting in pinching the wire rope between the flanges and cutting the rope as it twists in the corrugations. The Xtek TSP sheave is specially hardened, resulting in a surface that actually polishes under use, providing a smooth surface for the wire rope

## Financial Results:

The savings for this petrochemical company in the first year of operation for each of their cranes has been documented as follows:

	Cost per Change	OEM Annual Quantity	OEM Total Cost	Xtek Total Quantity	Xtek Total Cost
Sheave Wheel	\$2,000.00	8	\$16,000.00	4	\$8,000.00
Wire Rope	\$1,750.00	9	\$15,750.00	3	\$5,250.00
Labor to Change Sheave Wheels	\$800.00	2	\$1,600.00	1	\$800.00
Labor to Change Wire Rope	\$750.00	9	\$6,750.00	3	\$2,250.00
<b>Total Cost:</b>			<b>\$40,100.00</b>		<b>\$16,300.00</b>

**First year savings per crane = \$ 23,800.00**  
**Second year savings per crane = \$ 32,600.00**

Note: This customer has already benefited from the use of the Xtek TSP Carburized sheave wheels in subsequent years, due to the remaining service life after this initial testing period.

## This Customers Next Step:

It's not surprising that the Xtek TSP sheaves show no measurable wear after two years of service. This customer has already installed Xtek sheaves on their second crane and ordered a set for their spare bucket.

