

**Customer**  
Major coal export terminal

**Industry**  
Energy

**Application**  
Conveying — belt conveyor

**Rexnord Solution:**  
Falk V-Class Gear Drives with transition bases, Falk Magnum Seals, DuraPlate Cooling Systems and Falk Steelflex Spacer Couplings

**Total Annual Savings**  
\$238,176

For a detailed cost analysis for your application, contact your local Rexnord Representative.

## Falk V-Class Solution Drives Significant Maintenance Cost Savings for Coal Export Terminal

### Challenge

A major coal export terminal customer loads the world's largest ocean-going dry bulk carriers with coal 24 hours per day, seven days per week, year round. As a result of this continuous, high demand on the conveyor gear drives, the customer was experiencing frequent and costly maintenance of the gear drives:

- The gear drives were running very hot, and shortly after installation, the gear drives leaked oil from the deteriorating seals.
- The conveyor gear drives were being taken out of service and rebuilt, including seal replacement, and repair of other internal wear issues, resulting in downtime about every six months.
- As a result of these issues, the customer was experiencing approximately \$153,600 in maintenance costs every year.

### Rexnord Solution

The continuous, heavy demand placed on the system demonstrated the thermal capacity of the installed gear drives to be inadequate. Rexnord replaced eight of the gear drives with Falk V-Class™ Gear Drives including transition bases, DuraPlate™ Cooling Systems and Falk® Steelflex® Spacer Couplings. This solution was chosen for multiple reasons.

- **Long service life.** Falk V-Class Gear Drives utilize state-of-the-art technology to lubricate, cool and minimize maintenance, resulting in long service life and reduced maintenance costs.
- **No-leak design.** The Falk Magnum seal no-leak design prevents leaking.
- **Increased thermal capabilities.** As a result of this challenging application, the Falk V-Class Gear Drives are equipped with the patent-pending DuraPlate self-contained cooling system, integral to the gear drive. The customer more than doubled the thermal capacity of the installed gear drives without over sizing the mechanical rating.
- **Drop-in replacement.** With Falk Steelflex Spacer Couplings and gear drive transition bases as part of the Rexnord solution, the customer was provided a convenient, drop-in replacement solution for the installed gear drives.

### Rexnord Solutions and Savings in Action

Since installing the Rexnord solution, the customer has:

- Reduced its total cost of ownership by 89 percent.
- Maintenance is done on the Falk V-Class Gear Drive in place without the need to remove it for biannual rebuild as previously required with the old gear drives, resulting in annual maintenance cost savings of \$148,800.
- Has experienced complete elimination of lubricant spillage.

## Calculating the Annual Total Cost of Ownership (TCO)

Rexnord worked with the customer to determine the current costs compared to the TCO using the Rexnord solution. Factors considered were:

- Acquisition costs.
- Installation costs.
- Maintenance costs.



The Rexnord solution, which included Falk V-Class Gear Drives (pictured above) with transition bases (not shown), Falk Magnum Seals, DuraPlate Cooling Systems and Falk Steelflex Spacer Couplings, reduced the customer's total cost of ownership by 89 percent.

## Annual Cost Analysis Breakdown (in \$USD)

### Acquisition Costs

	Purchase Price	Expected Life (years)	Units Installed	Total
Current gear drive	n/a	n/a	8	n/a
Falk V-Class Gear Drive and accessories	\$59,000	25	8	\$18,880
Drop-In Replacement Facilitation — Falk Steelflex Couplings and gear drive transition bases	\$14,500	25	8	\$4,640
<b>Annualized Savings</b>				<b>-\$23,520</b>

### Installation Costs

	Installation Cost	Installation/Year	Units Installed	Total
Current gear drive — remove and replace	\$7,200	2 per gear drive	8	\$115,200
Falk V-Class Gear Drive —remove existing gear drives and drop in Falk V-Class Gear Drive solution	\$7,200	0.04 per gear drive (once every 25 years)	8	\$2,304
<b>Annualized Savings</b>				<b>\$112,896</b>

### Reduced Maintenance Events

Reduced maintenance costs by \$148,800.

	Downtime Cost/Event	Events/Year	Units Installed	Total
Current gear drive — rebuild	\$9,600	2	8	\$153,600
Falk V-Class Gear Drive — scheduled oil change	\$300	2	8	\$4,800
<b>Annualized Savings</b>				<b>\$148,800</b>

### Rexnord Solution Annual Savings Summary

Total current cost	\$268,800
Total proposed cost	\$30,624
Total savings	\$238,176
TCO reduction percent	89%

**Total Cost of Ownership Annual Savings: \$238,176**