

**Customer**  
Natural gas  
gathering facility

**Industry**  
Oil and gas production

**Application**  
Centrifugal compressor

**Rexnord Solution:**  
Thomas Series 52 Disc  
Coupling

**Total Annual Savings**  
\$36,763

## Thomas Disc Coupling Saves Significant Maintenance and Downtime Costs for Natural Gas Gathering Facility

### Challenge

As natural gas is extracted at a customer's natural gas gathering facility, it is drawn to a gas separation plant to remove water and other contaminants. A gear coupling was being used to drive the customer's centrifugal compressor for the gathering process and required regular maintenance and inspection to protect against unplanned shutdowns. The customer was disappointed with the gear coupling maintenance and inspection process because:

- The environment and the heat produced during compression required the coupling to cool before the maintenance crew could handle it, prolonging downtime.
- The gear coupling required lubrication and the removal of a cover to inspect the condition of the gear teeth.

### Rexnord Solution

As a result of its vast coupling and application expertise, Rexnord identified the Thomas<sup>®</sup> Series 52 Disc Coupling as the ideal replacement for the installed gear coupling. This solution was chosen by the customer for multiple reasons:

- **Significant reduction of required downtime for coupling inspection and maintenance.** The coupling's disc packs can be visually inspected and maintained without disassembly of components. In addition, there is no lubrication to maintain and handling of hot coupling components is eliminated.
- **Reduced conversion cost by mating to existing coupling hubs.** Rexnord provided a customized design to mate the coupling to the existing gear coupling hubs, preventing the costly step of uninstalling and installing interference fit hubs onto the driver and driven equipment shafts.
- **Proven reliability and quality.** The Thomas Series 52 Disc Coupling provides the same torque capacity and balancing required for this high-speed application as the old gear coupling. Additionally, Rexnord's experience and dedication to proven design standards ensure maximum reliability for this critical application.



Thomas Series 52 Disc Coupling

### Rexnord Solutions and Savings in Action

Since installing this Rexnord solution, the customer has:

- Reduced their annual total cost of ownership by 63 percent.
- Reduced plant downtime due to coupling maintenance from eight to two hours per year.
- Reduced the number of required coupling maintenance personnel from three people to one.
- Eliminated the need for lubrication and solvent used to lubricate and clean the gear coupling.



### 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.
- Reduced maintenance costs.
- Lost production costs.

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

#### Acquisition Costs

	Purchase Price	Expected Life (years)	Units Installed	Total
Current coupling	\$3,096	10 years	1	\$310
Thomas Disc Coupling	\$8,915	20 years	1	\$446
<b>Annualized Savings</b>				<b>(\$136)</b>

#### Installation Costs

	Installation Cost	Installation/Year	Units Installed	Total
Current coupling	\$8,500	0.1	1	\$850
Thomas Disc Coupling	\$6,000	0.05	1	\$300
<b>Annualized Savings</b>				<b>\$550</b>

#### Reduced Maintenance Costs

Reduced the number of personnel needed for scheduled downtime.

	Events/Year	Maintenance Resources	Maintenance Cost/Event	Total
Current coupling	0.67	3 people	\$4,850	\$3,250
Thomas Disc Coupling	1.00	1 person	\$500	\$500
<b>Annualized Savings</b>				<b>\$2,750</b>

#### Lost Production Costs

Reduced the amount of time needed for scheduled downtime.

	Events/Year	Downtime/Event (hours)	Downtime Cost/Hour	Total
Current coupling	0.67	8 hours	\$10,000	\$53,600
Thomas Disc Coupling	1.00	2 hours	\$10,000	\$20,000
<b>Annualized Savings</b>				<b>\$33,600</b>

### Rexnord Solution Annual Savings Summary

Total current cost	\$58,009
Total proposed cost	\$21,246
Total savings	<b>\$36,763</b>
TCO reduction percent	63%

**Total Cost of Ownership  
Annual Savings: \$36,763**