

SHOCK DAMPING SHOVEL PENDANTS



TCO / RETURN CASE STUDY

CHALLENGE: Boom jacking and dipper overloading cause fatigue cracking on the shovel boom, boom feet and A-legs. Annual welding associated with these cracks add substantially to the maintenance costs and downtime. In many cases, the welding repairs can go beyond the PM causing operational downtime for the shovel.

SOLUTION: Applied Fiber's shovel pendants are an **energy-absorbing dampener designed to reduce the shock loads that create boom cracking and machine wear**. This reduced wear combined with **extended pendant life** over traditional steel wire pendants creates compelling support to install these pendants as soon as possible.

FINANCIAL CONSIDERATIONS:

- Extend Shovel / Boom Life
- Increase Operational Uptime
- Reduce Fatigue Cracks
- Reduce Welding Hours
- Reduce Overall Machine Vibration
- Reduce Installation Costs
- Safer and Faster Handling
- Extend Pendant Life and Defer Install Costs

SEE P&H 4100 CASE STUDY & TCO CALCULATOR ON BACK



TOTAL COST OF OWNERSHIP

LEARN THE REAL IMPACT FOR YOUR OPERATION

With the assistance of our customers and partners, Applied Fiber has developed a total cost of ownership calculator that demonstrates how converting to synthetic boom pendants will improve performance and increase returns.

A short discussion with our team will allow you to enter key inputs relevant for your specific equipment, mine and operation, revealing how implementing this productivity tool will impact your mine site.

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| CALCULATOR: P&H 4100 EXAMPLE | | |
|--|-----------|-------------------------------|
| Synthetic Shovel Pendants - Return on Investment Calculator | | |
| Inputs — Enter In White Cells Mine Example | | Typical Range |
| Shovel Model - Enter the Shovel Model → | 4100 | |
| Steel Pendant Life in Years - How Long Between Replacements | 4 | 2-6 years |
| Purchase Price of Steel Pendant Set | \$ 85,000 | \$50,000-\$85,000 |
| Stress/Fatigue Cracking Repair Costs | | |
| Welding Man Hours Per Year on Boom/A Frame | 380 | 300-800 total hrs |
| Cost Per Man Hour | \$ 120 | \$80-\$180 per hour |
| Other Equipment Costs for Repairs, Rentals, Replacement Parts, etc. | \$ 5,000 | \$5,000-\$20,000 |
| OR - Enter Total Annual Welding and Repair Costs | \$ - | \$25,000 - \$110,000 |
| Downtime Hours | | |
| Lost Machine Service Hours Due to Repair/Welding Work | 20 | 12-96+ hours |
| Costs / Productivity Inputs | | |
| Machine Productivity Value Per Hour \$ | \$ 15,000 | \$6,000-\$35,000 per hr |
| Pendant Installation Cost Steel - Cost Associated with Pendant Install/Swap Out | | |
| Crane / Equipment Costs and or Rentals | \$ 10,000 | \$7,500 - \$15,000 |
| Man Hours for Install = (# Men X Hours) | 12 | 8-48 hours |
| Cost Per Man Hour | \$ 60 | \$40-\$110 |
| Or Total Cost to Perform a Pendant Changeout | \$ - | Or Enter Total Changeout Cost |
| Hours to Perform Take Down/Replacement - Lost Service Hours | \$ 8 | 8-24 hours |

| RESULTS | |
|---|--------------|
| Equipment Cost Savings Over Synthetic Pendant Set Life | \$ 103,120 |
| Annual Increased Production - Welding Savings | \$ 150,000 |
| Savings per Skipped Pendant Changeout | \$ 120,000 |
| \$ Value of Maintenance Savings / Increased Production over Useful Life | \$ 1,320,000 |
| Breakeven | < 2 years |
| IRR | 97% |
| NPV | \$ 806,866 |

TRUSTED PERFORMANCE

Applied Fiber Pendants are made from Dyneema® DM20 fiber. Dyneema® is the brand of Ultra High Molecular Weight PolyEthylene (UHMWPE) fiber, invented and manufactured by DSM Dyneema. It offers maximum strength combined with minimum weight. Diameter for diameter, a rope with Dyneema® is as strong as steel wire rope, but seven times lighter. Dyneema® is extremely durable and resistant to moisture, UV light and chemicals. For more information about Dyneema®, visit www.dyneema.com



Applied Fiber is the most trusted company for terminated synthetic fiber systems worldwide. Our products are utilized where performance, reliability, and quality are essential. We deliver engineered tension systems for production and specialty applications across Defense, Offshore Oil and Gas, Mining, Medical, Commercial Marine, Energy, Industrial, and OEM markets, among others. To learn more about other Applied Fiber products and technology, visit www.applied-fiber.com

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