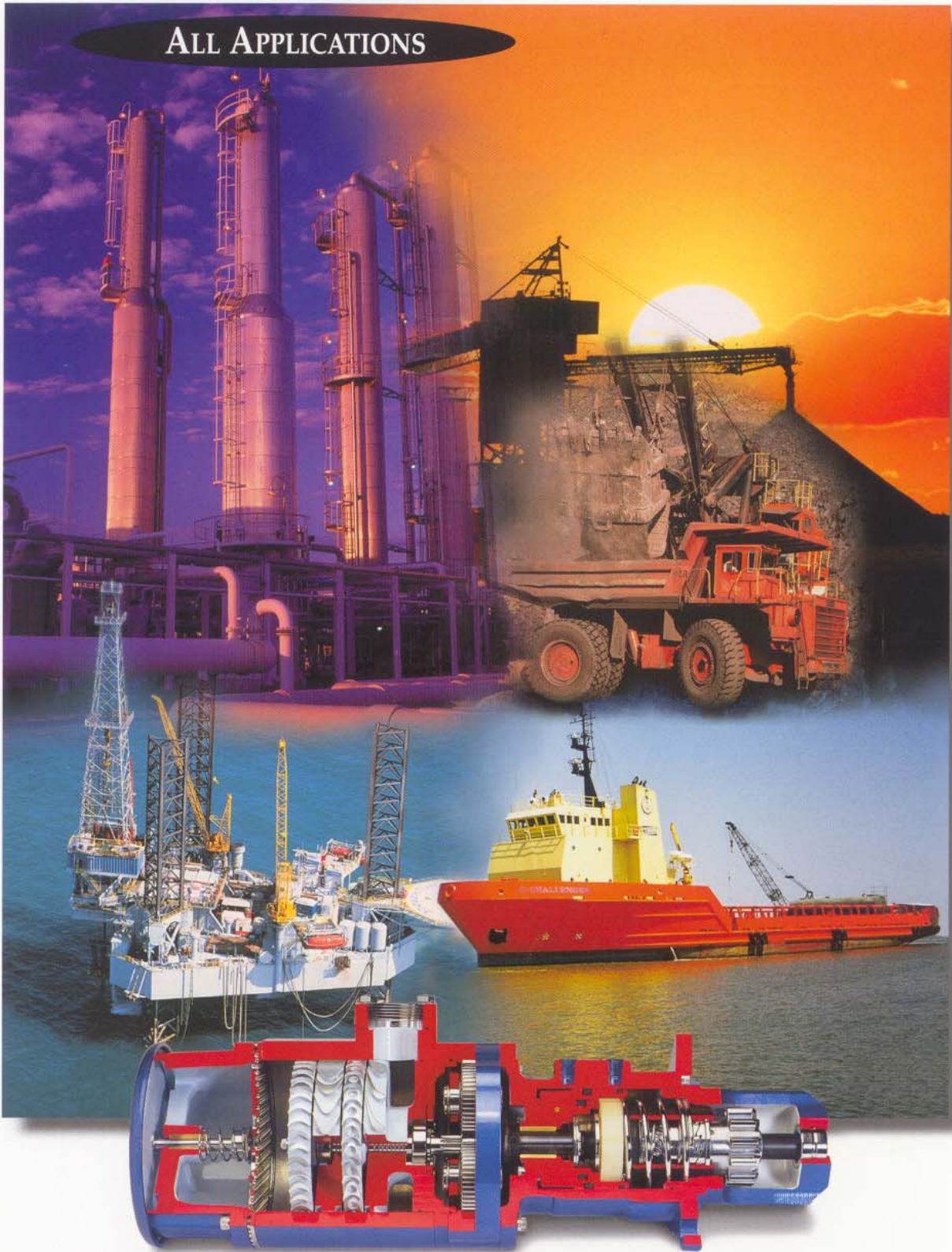


**TDI *TURBOTWIN*<sup>TM</sup>**

**AIR STARTERS FOR**

**ALL APPLICATIONS**



Anything Less Than a *TURBOTWIN* is a Compromise

**TDI**  
TECH DEVELOPMENT INC.  
[www.tdiairstarters.com](http://www.tdiairstarters.com)



# TURBOTWIN™ TURBINE AIR STARTERS: Redefining Performance and Reliability in the World's Harshest Environments.

**W**e've engineered our starters to take on the dirtiest, messiest, most demanding places on earth. Environments where the supply air is foul with water, pipe scale, rust or even H<sub>2</sub>S. In places where frequent starting and long cranking cycles are the norm. And in places where engine starting system maintenance is at best an afterthought. Where lesser starters simply don't survive, TurboTwin Starters thrive.

TurboTwin's solid performance in extreme environments has set the industry standard for reliability, but it's also unmatched in for cost reduction, safety, and ease of installation.

High tolerance of supply air contamination allows you to eliminate expensive fine-mesh or coalescing air filters. Air dryers for cleaning up the starting air, or high capacity gas scrubbers for the starting gas are also eliminated. Low pressure starting capability means you can eliminate the cost and physical space for multiple air receiver tanks. It also means you'll use less gas—and probably won't even need a regulator. And in the gas patch, even on field gas pressures to 30 psig, the cost of a starting air system can be totally eliminated. Add to that, the elimination of lubricators (and their maintenance cost) because TDI starters don't require supply air lubrication, and the savings are significant.

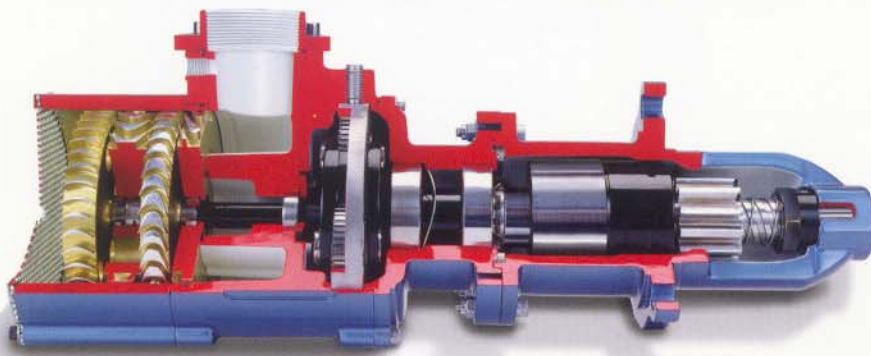
The performance doesn't stop there. TDI manufactures the lightest starters in the industry so shipping, handling, and installation by one person is a snap. Using TDI starting system accessories and controls, you can literally bolt on a TurboTwin upgrade in minutes—not days. And after its installed, our new Quiet-Turbine® technology means your engine room stays cleaner, quieter, and safer. Now that's what we call performance!

## RELIABILITY

- TDI **TURBOTWIN** Motor Resists Damage by Air/Gas Contamination.
- Never Needs Lubrication of the Supply Air/Gas, Eliminating the Oily, Messy Exhaust from Vane-Type Starters
- Aerodynamic Speed Control ... Prevents Starter Over-Speed or Gear Box Burn-Out Even on Extended Crank Cycles
- Fugitive Starter Exhaust Emissions are Eliminated
- No Plastic Parts ... Robust Steel and Aluminum Alloy Construction Throughout
- Up to 25% More Power than Other Turbine Starters
- Grease-Packed Gears and Bearings on TurboTwin Models Eliminate Maintenance
- Standard or Low-Pressure Models Provide Unmatched Efficiency and Low Air Consumption







*Contaminated air that clogs and shuts down lesser units, passes right through TurboTwin's open air path design.*

## WHY INERTIA?

Other manufacturers had given up trying to design a vane-type air starter that didn't hit like a jackhammer. Instead, they promoted new pre-engaged designs as a cure-all for starter engagement problems. Meanwhile, in 1979 TDI coupled a lightweight turbine rotor and simple planetary gearing, with a time tested inertia drive. The result was the "soft engagement" TurboStart™ which took the market by storm.

Competitors only tactic against this innovative starter design was to cast inertia engagement as "old fashioned." This diversion simply delayed what has been played out in the market. Today, packagers, system integrators, and the aftermarket has made inertia-engaged starters from TDI the clear choice for reliability and performance.

If your starters are still pre-engaged, you may want to consider some of these performance issues below as a reason to take a second look at inertia engagement:

- Pre-engagement relies on a control air circuit that must ideally be supplied with clean, dry air. Not so with inertia engaged starters where only the motor receives air.
- While control air-line freeze-ups can paralyze a pre-engaged starter, inertia engaged starters are much less likely to experience problems due to the cold.
- Specifications for operating critical equipment, such as offshore fire pumps, and emergency generator sets in hospitals and nuclear power stations, seek to eliminate the possibility of even one failed start attempt. Inertia engaged starters from TDI helps meet these requirements.
- Inertia engaged starters have fewer moving parts thereby costing less to buy and install. Unlike pre-engaged units, their simple operation requires minimal control tubing or they can be operated using a simple manual ball valve.

## We've Made Our Inertia Drive Component Even Better

Refining the proven design of Tech Development's inertia drive component has improved both performance and reliability. First we streamlined the design by reducing the number of parts by 22%. We then added an internal clutch loading spring to prevent possible damage during handling. We improved its resistance to contaminants. And finally, when we examined the stack ups, we found we were able to deliver better dimensional control, which yields more consistent torque values across the operating range of our starters. The new drives are now more rugged, with fewer moving parts, more resistant to contaminants and perform within a very narrow band width of torque values. Now that's higher performance!



## Introducing The TDI Starter Remanufacturing Program

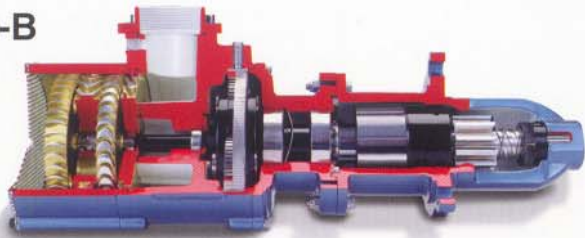
When you build starters that last as long as ours, it takes time before a remanufacturing program is even an issue. However, with so many TDI TurboTwin Starters now in use in some pretty tough places, we just want to take a few moments to highlight our long standing factory remanufacturing program. This can be a fast alternative to repairing an existing TurboStart or TurboTwin starter. Factory remanufactured units can be very cost effective alternative to repairing your existing starter. Contact your nearest TDI Distributor for pricing and availability details.





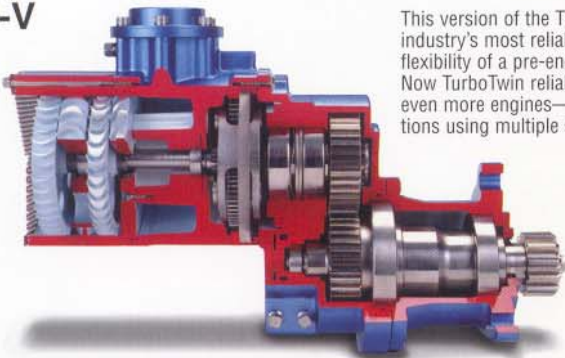
# TURBOTWIN™ AIR STARTERS

## T100-B



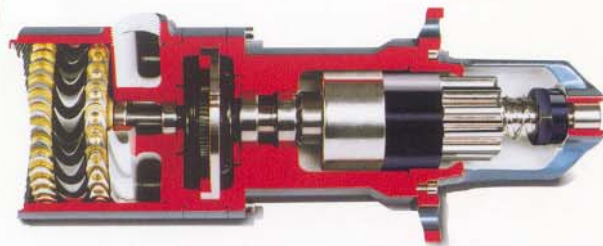
Aerodynamic speed control that prevents starter burn-out and an open-air path design that resists contaminants are just two of the features that make T100-B the most reliable starter for engines up to 300 liters.

## T100-V



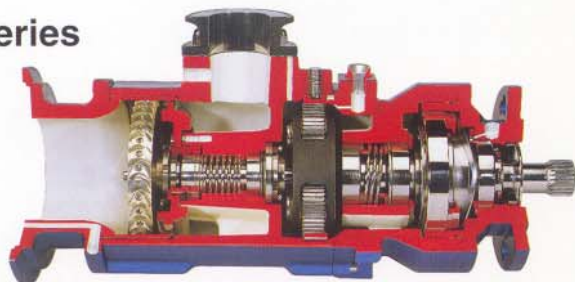
This version of the T100 delivers the industry's most reliable starting with the flexibility of a pre-engaged pinion gear. Now TurboTwin reliability is available for even more engines—including applications using multiple starters.

## T30-I



This lightweight compact turbine air starter delivers 25% more stall torque than other starters in its class. At just 29 lbs., low pressure starting is now an option for engines up to 20 liters.

## 56 Series



Designed specifically for starting gas turbine engines, these starters deliver excellent reliability in the most challenging environments and for thousands less than aeroderivative models.

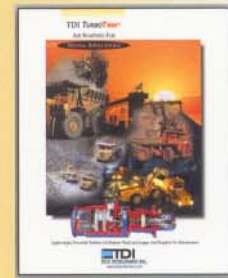
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Anything Less Than a **TURBOTWIN** is a Compromise  
A part of Smiths Aerospace

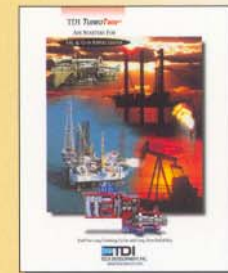
## DO YOU HAVE OUR STARTER CATALOGS?

1-937-898-9600



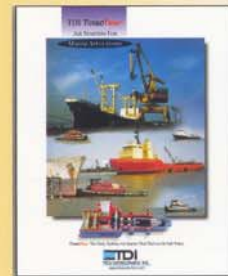
### Starters for Mining Applications

Catalog features a complete line of turbine starters for mine haul trucks, gen sets, and other mining vehicles.



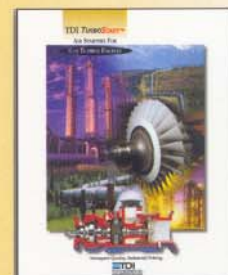
### Starters for Oil & Gas Applications

Complete selection of long-cranking turbine starters designed for the remote applications of the oil and gas industry.



### Starters for Marine Applications

Salt water and moisture-resistant starters for marine engines from 6-300 liters.



### Starters for Gas Turbine Engines

Aerospace quality and reliability are available on these starters specifically designed for industrial gas turbine engines.