

A-Force[™] SERIES

PERFORMANCE THAT'S AIRTIGHT



EXCELLENCE IN
UNDERBALANCED
DRILLING



VAREL
INTERNATIONAL

Overview

Introducing: A-Force™

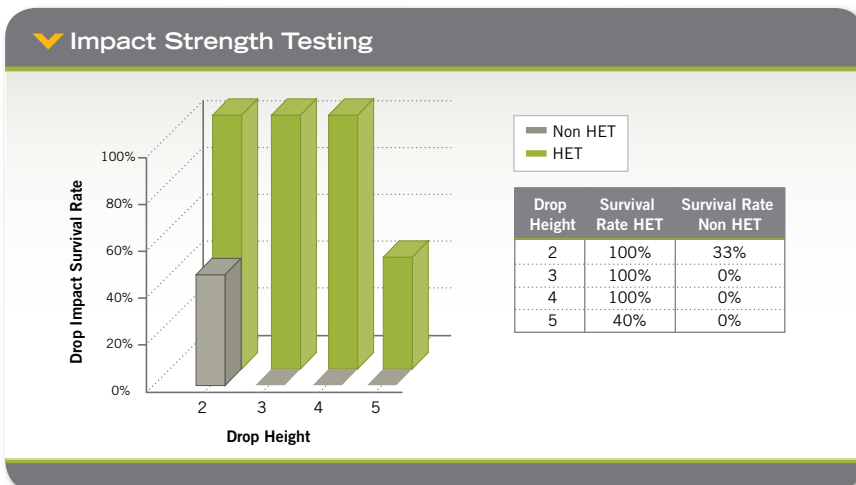
In the quest for higher rates of penetration, operators are increasingly turning to underbalanced drilling that utilizes air, water mist and foam fluid systems. These complex systems require specialized bits to maximize efficiency and performance.

Varel International has been engineering roller cone bits for air and underbalanced drilling applications since 1994. Now Varel introduces the A-Force series of sealed journal bearing jet air bits to meet the needs of these applications and provide superior results.

Newly Engineered Bearing and Seal System

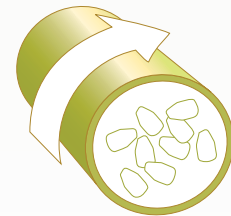
Included on all A-Force series bits is an updated sealed journal bearing system designed with new technology that improves management of bearing heat and better accommodates high drilling loads.

- › Silver plated journal bushing and thrust washer
- › Patent pending heat shield ring between the seal and inner bearing
- › Patent pending conical seal gland
- › High temperature, high lubricity bearing grease
- › High capacity grease reservoir
- › Improved bearing hardmetal inlays for increased wear resistance

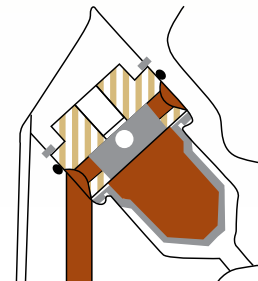


Patented High Energy Tumbled (HET) Inserts

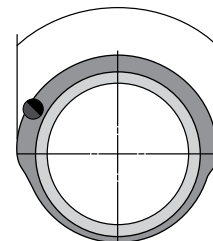
Varel A-Force bits are designed with tough HET conical inserts with medium extension. The conical shape promotes high ROPs in underbalanced drilling. The engineered cutting structures of A-Force bits are both durable and efficient.



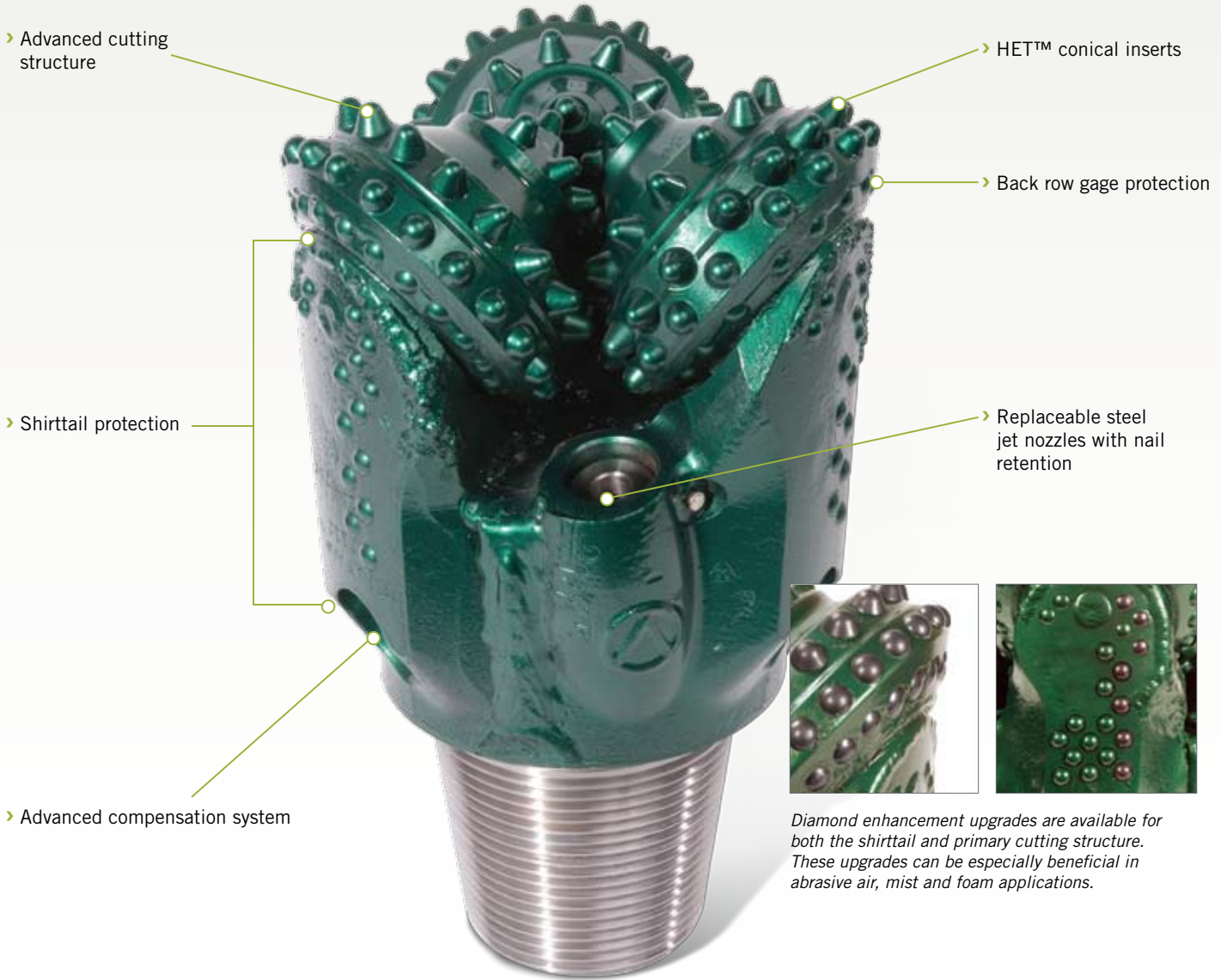
Patented High Energy Tumbled Inserts



High capacity grease reservoir system improves grease distribution within the bearing



Step-shaped diverter insert works in conjunction with newly configured shirttail contour to direct drilled fines away from the seal



› Advanced cutting structure

› HET™ conical inserts

› Back row gage protection

› Shirttail protection

› Replaceable steel jet nozzles with nail retention

› Advanced compensation system



Diamond enhancement upgrades are available for both the shirttail and primary cutting structure. These upgrades can be especially beneficial in abrasive air, mist and foam applications.

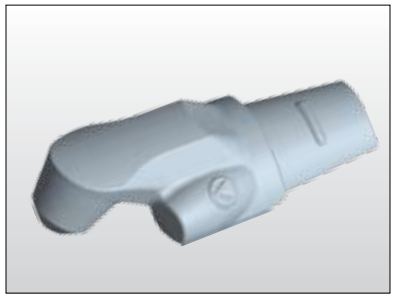
AF35MS



Heat shield ring with a conical seal gland helps prevent thermal degradation of the seal



Cutaway view of the new high load bearing system



All new head forgings maximize leg strength while increasing clearance area for cuttings removal

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