

High-Torque Hydraulics  
Dig Deep and Wide p30

Best Practices to  
Prepare the Air p32

Do Your Pumps Need  
Case Drain Filters? p44

JOHN B. LACSON

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MAY 2017

# Hydraulics & Pneumatics®

THE AUTHORITY ON FLUID POWER TECHNOLOGY  
AND ITS CONTROL

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## HYDRAULIC STARTERS

Get BIG Engines Going p14



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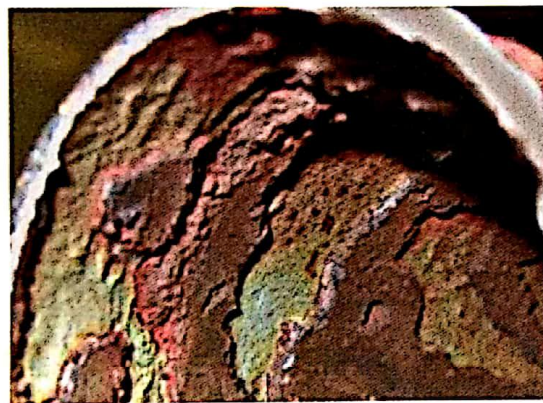
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Comparing DC Motors  
to Hydraulic  
Motors  
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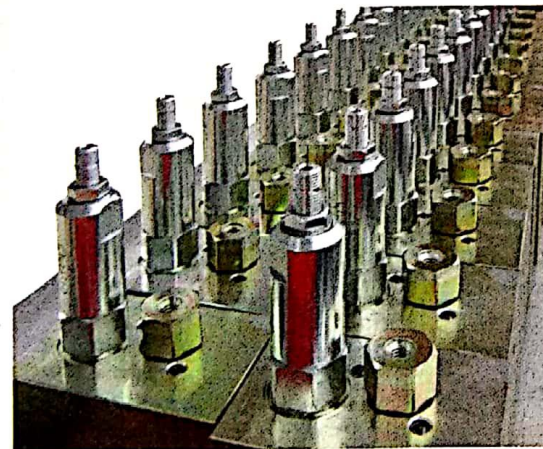
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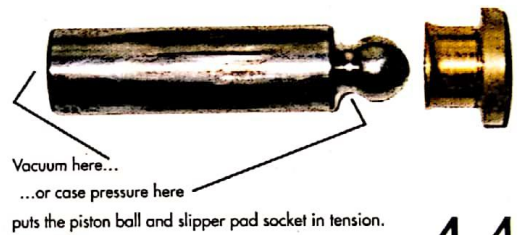
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- 30 High-VI Fluid Cuts Fleet-Fuel Costs**  
The higher a fluid's viscosity index, the less likely it is to thicken at low temperature, leading to substantial reduction in a machine's fuel consumption.
- 32 Clean, Dry Air Is Fundamental to Productivity**  
At its worst, contamination will render a pneumatic system inoperable. But even at its best, it will rob efficiency, productivity, and reliability.
- 38 Using Cartridge Valves to Optimize Hydraulic Systems**  
Common-cavity cartridge valves offer many advantages over their conventional counterparts.
- 44 When Installing Filters in Case Drain Lines, Proceed with Caution**  
Filtering case drain lines will help maintain fluid cleanliness, but there's a downside that needs to be avoided.



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**ON THE COVER:** Photo of the U. S. Coast Guard's newest National Security Cutter, Munro, by PO2 Adam Stanton.

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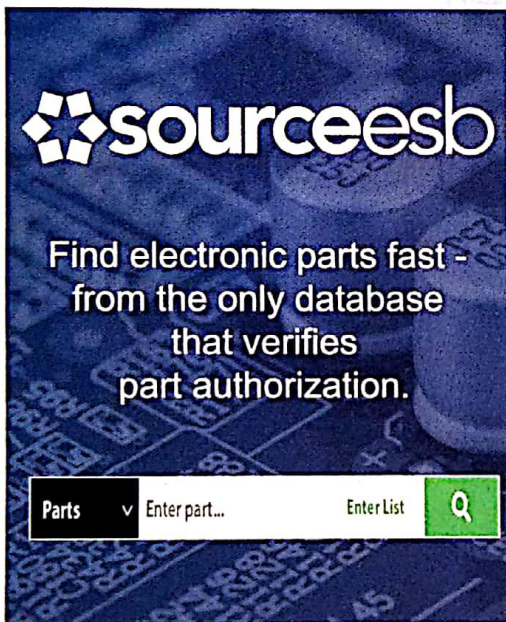
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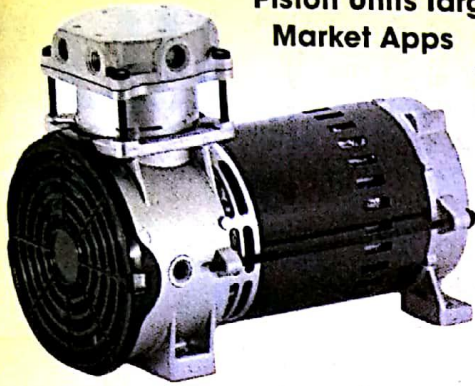
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