DATE: 7-May-2018 (revised)

TO: Auto Crane Dealers

SUBJECT: Hydraulic System Recommendations and FAQs

PART NUMBERS OF AFFECTED PRODUCTS:
All EHC and HC Cranes

SERIAL NUMBERS OF AFFECTED PRODUCTS
Not applicable

System Design
All hydraulic ratings and pressures are at the crane, compressor or outriggers. Pressure drops within the hydraulic system is not taken into account. These pressure drops are added to the rating of the hydraulic pump and components. Auto Crane highly recommends consulting a hydraulic expert for specifying the correct hydraulic pump type and size, oil reservoir size, hydraulic cooler, hydraulic pressure relief, and other hydraulic supply components for your application.

Please take into consideration the following: The hydraulic flow and pressure requirements of the crane and air compressor, the continuous hydraulic load when the crane and compressor are running, the duty cycle and ambient operating temperatures, and any other hydraulic equipment that may share the same hydraulic supply system.

Cooling
Trucks which are operated with the PTO continuously engaged will build-up more heat than a passive oil tank can dissipate and will require auxiliary cooler or additional cooling from another component such as the Vanair RS85 compressor.

Oil Type
The recommended hydraulic oil weight with anti-wear (AW) properties is as follows:

- ISO 32 or equivalent: -10°F to 85°F (-23°C to 30°C) ambient
- ISO 46 or equivalent: 10°F to 110°F (-12°C to 43°C) ambient
The chart below lists equivalent oils of common brands:

<table>
<thead>
<tr>
<th>Oil Weight</th>
<th>Conoco</th>
<th>Mobil</th>
<th>Shell</th>
<th>Chevron</th>
<th>Exxon</th>
<th>Texaco</th>
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<tbody>
<tr>
<td>ISO 32</td>
<td>Super Hydraulic MV 32 SAE5W20</td>
<td>Hydraulic Oil 13 DTE 12M DTE 13M DTE23</td>
<td>Tellus T 32</td>
<td>AW Hydraulic Oil 32</td>
<td>Humble Hydraulic 1193</td>
<td>Rando HDZ 32</td>
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Q: Can I use ATF oil instead of hydraulic oil?
A: Short answer, yes!

ATF is a premium hydraulic fluid, but also comes at a premium price, which is its major downside. A gallon of ATF is hard to find for less than $30, but five gallons of hydraulic oil can be had for less than $60. However, ATF is closer in quality to synthetic hydraulic fluid making the choice seem more reasonable.

ATF is formulated for high viscosity index (the ability to maintain test viscosity over a wide temperature range) and has excellent water control properties allowing the fluid to hold more water in saturation before being released to create corrosion. Also, the additives in ATF are formulated to improve lubricity, anti-foaming, shear stability and resistance to oxidation.

**Oil Cleanliness**

Proportional hydraulic systems require extra care to maintain clean oil. New hydraulic oil is not “clean” hydraulic oil. New oil is typically ISO 4406: 22/21/19 cleanliness whereas proportional controls require oil that is at least ISO 4406: 17/15/12 cleanliness. *Using new oil that does not meet this cleanliness means the oil is 32-125x dirtier than what is required!*

While the NexStar cranes feature a 5 micron pressure filter to help prevent deposits from reaching the proportional valves, you must insure the oil and hydraulic tank and lines must be clean before running the crane for the first time. Failure to do so will result in contamination problems for your customer.

For questions or concerns please contact our customer service group at 800.777.2760 or 918.438.2760.