TECHNICAL BULLETIN

IMPROVED ACCUMULATOR RELIABILITY

PRODUCT ALL SEAKEEPER MODELS

PURPOSE

The reliability of the Accumulators provided with each Seakeeper Stabilizer has dramatically increased due to improved Brake System design and component quality.

DESCRIPTION

Seakeeper stabilizers are equipped with hydraulic accumulators on the brake manifolds. Ongoing improvements to the quality and design of the Brake system have resulted in heightened reliability. The Brake system is a closed, factory-pressurized system, and any Low Brake Pressure Alarm indicates a Low Hydraulic Pressure condition resulting from one or more causes listed below.

1. Leaking Hydraulic fluid from the Brake Manifold, Manifold components such as the pressure switch or solenoid valve, or
2. Leaking Brake Cylinder fittings or Seals
3. Failed Accumulator (loss of Nitrogen pressure)

Service interventions performed on Seakeeper stabilizers with early generation Accumulators resulted in more confirmed failures. A failure of the Accumulator Bladder or Nitrogen charge port caused the Low Brake Pressure condition many times.

Accumulators of better quality and design have been integrated into the Seakeeper production on various models since 2019. Seakeeper has performed numerous tests on this improved generation of Accumulators that were replaced during warranty service interventions and determined that over 90% of the Accumulators were not defective and in good working order.

In addition, improvements to the design and operation of the Brake System have reduced the overall impact and duty cycle on the Accumulators, further extending their expected life.

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SEAKEEPER RECOMMENDED MAINTENANCE SCHEDULE

Seakeeper stabilizers are designed to require minimal maintenance since most of the critical components operate in a sealed enclosure, protected from the corrosive moisture involved in life on the water. Outside the sphere, the closed loop hydraulic and cooling circuits should be inspected and serviced periodically.

Historically we have included the Accumulators in the Maintenance Plan with an Inspection at 1000 RUN hours or Annually and Replacement (as needed) at 2000 RUN hours. The Accumulator inspection reference will be removed and replaced with a Hydraulic Manifold Component Inspection. Replacement, like other critical components, should be approached as needed.

The Inspection is an essential part of annual scheduled maintenance to ensure there are no Hydraulic leaks, physical damage, or other apparent imperfections that may lead to failure or reduced effectiveness of any Hydraulic Manifold Components.

The system is designed to notify the user with an operational alarm if a reduction in Hydraulic pressure is low enough to result in poor stabilization performance. For this to occur, the system hydraulic pressure must be at or near the Pressure Switch set point, as shown in Technical Bulletin TB-90616. If this is the case, routine inspection and troubleshooting steps should be taken to determine the cause of the low-pressure condition.

A check of the Hydraulic brake pressure using the Seakeeper Hydraulic Brake Service Tool Kit will determine if the pressure is low. A pressure reading of +/- 10% or more from factory charge pressure recommendations may be acceptable. More information summarizing charge pressures and expected variance due to temperature may be referenced in Service Work Instruction SWI-106 on the Dealer Access website. The Alarm threshold for pressure switches is set to accommodate pressure fluctuations due to temperatures and still allow regular operation.

In the absence of Hydraulic leaks and any active low-pressure alarms, pressurizing the system to the factory setting is recommended without replacing Accumulators.

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REFERENCE DOCUMENTS

1. TB 90554 - Accumulator Reference Guide
    a. This Bulletin will give information about new generation Accumulators and compatibility with current and early model Seakeepers.
2. TB 90426 - Seakeeper-Scheduled-Maintenance-Plan

ATTACHMENT 1 – BRAKE PRESSURE / ALARM THRESHOLD

BRAKE PRESSURE / ALARM THRESHOLD						
MODEL (Serial #)	Manifold Type	CHARGE PRESSURE (PSI/BAR)	ALARM THRESHOLD (PSI/BAR)	VALID ALARMS BY MODEL		
				CODE 12	CODE 13	CODE 14
SEAKEEPER 1	Rectified	50/3.4	27/1.86	X		
SEAKEEPER 2	Rectified	350/24.1	215/14.8	X		
SEAKEEPER 3 (3-0001 to 3-0561)	Rectified	240/16.5	72/5	X		
SEAKEEPER 3 (3-0562 to Current)	Rectified	350/24.1	215/14.8	X		
SEAKEEPER 5/3DC(EM) (5-0001 to 5-1049)	bi-directional	240/16.5	72/5			X
SEAKEEPER 6/5 (5-193-1512 to 5-194-1935) (6-0001 to 6-201-1934)	bi-directional	240/16.5	72/5			X
SEAKEEPER 6/5 (5-201-1969 to Current) (6-201-1936 to Current)	Rectified	350/24.1	150/10.3	X		
SEAKEEPER 9/7HD (9-0001 – 9-201-2838)	bi-directional	240/16.5	72/5			X
SEAKEEPER 9/7HD (9-201-2839 to Current)	Rectified	350/24.1	230/15.9	X		
SEAKEEPER 16/12HD(EM) (16-0001 to 16-193-0912)	bi-directional	240/16.5	72/5	X	X	
SEAKEEPER 18/16/12HD	Rectified	350/24.1	200/13.8	X		
SEAKEEPER 26/20HD	bi-directional	240/16.5	72/5	X	X	
SEAKEEPER 35/30HD	bi-directional	240/16.5	72/5	X	X	

EM = Legacy Discontinued Seakeeper Model

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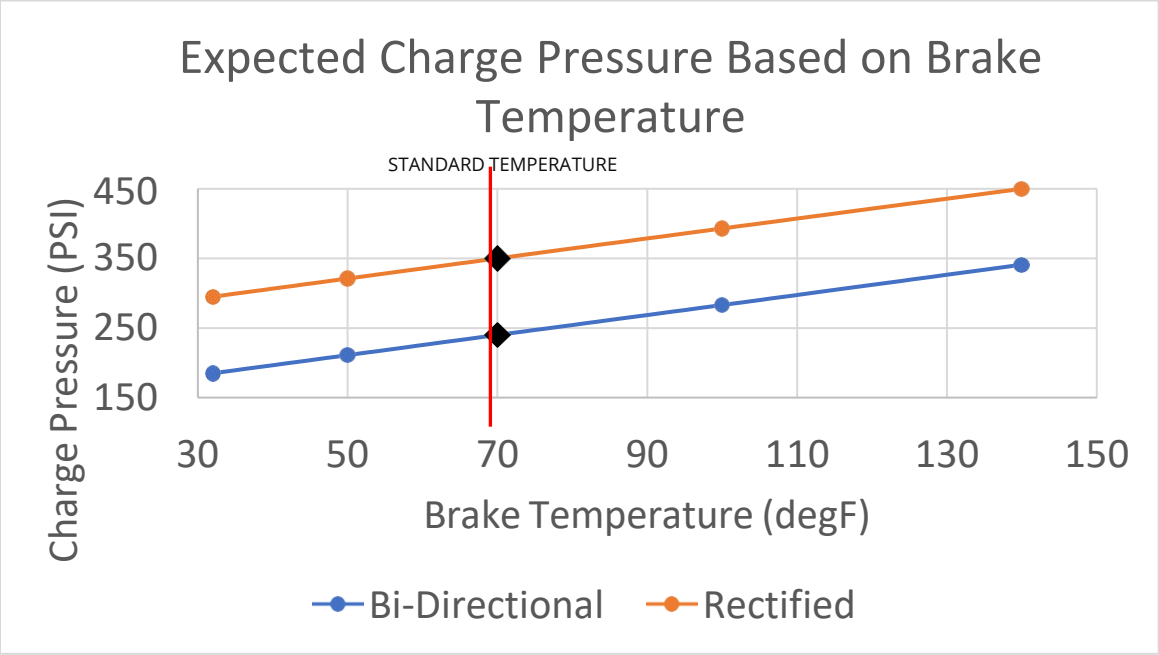
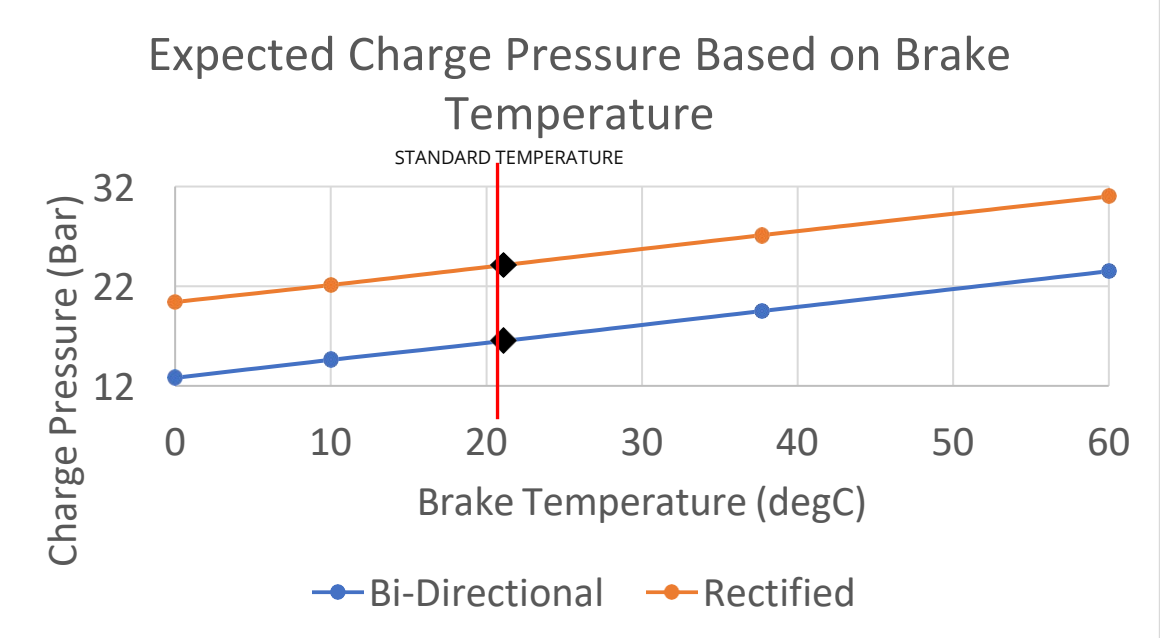
ATTACHMENT 2 – CHARGE PRESSURE BASED ON TEMPERATURE





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Revision	Description	Approval	Date
1	Initial Release	K. Zervas	24MAY2021
2	Updated low pressure alarm set points. Corrected links. Editorial corrections.	A Patricio	13JUN2023