

# SAPO<sup>®</sup>

## Pulley Commissioning Manual



### Contents

Introduction .....	2
Pulley Installation.....	3
Oil System Installation .....	5

## Introduction

SAPO seals (photo below left) are designed to allow angular misalignment of the shaft with respect to the housing within the acceptable limits of the installed spherical roller bearing (sealed or unsealed). Although the SAPO Seal is designed to accommodate misalignment; correct housing alignment procedures should be undertaken to ensure satisfactory bearing performance.

The seals are oil filled and pressurized using an external oil accumulator (photo below right). The accumulators are spring loaded and provide approximately 0.5 BAR of pressure. This is a sealed system and requires only visual inspection of the oil level in the accumulators during operation.

### The SAPO seals are filled with oil during pulley assembly



*SAPO Seal installed on a drive pulley*

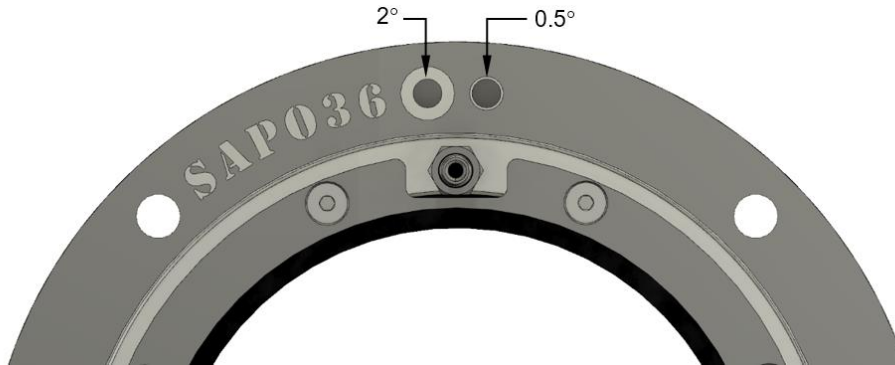


*Oil Accumulator*

## Pulley Installation

Mount the pulley to the structure using standard installation procedures. While mounting, the seal will align itself with respect to the shaft.

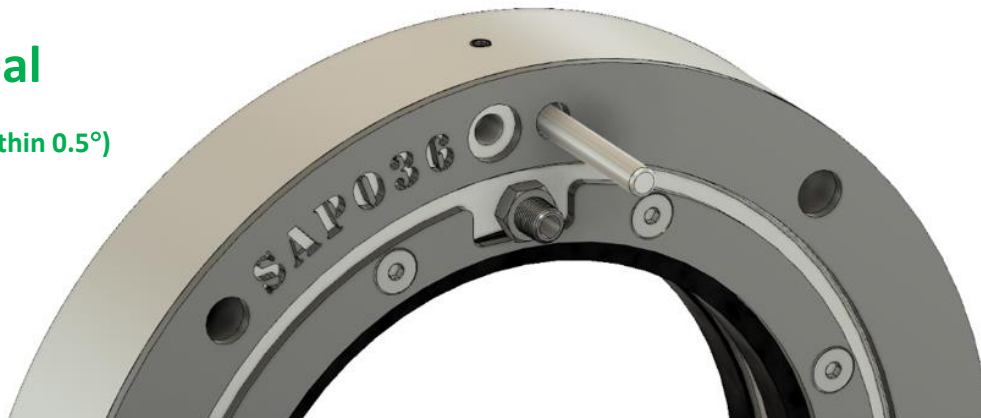
Once the housings are mounted, use the alignment pin provided (8mm diameter pin) to check alignment at the verification holes (see diagram below). If the housing is aligned within 0.5°, the pin should slide freely into both holes. *Note; if a sealed bearing is installed the 0.5° alignment is necessary*



**Acceptable –**  
**\*open/unsealed bearings only\***  
(aligned within 2°)



**Ideal**  
(aligned within 0.5°)



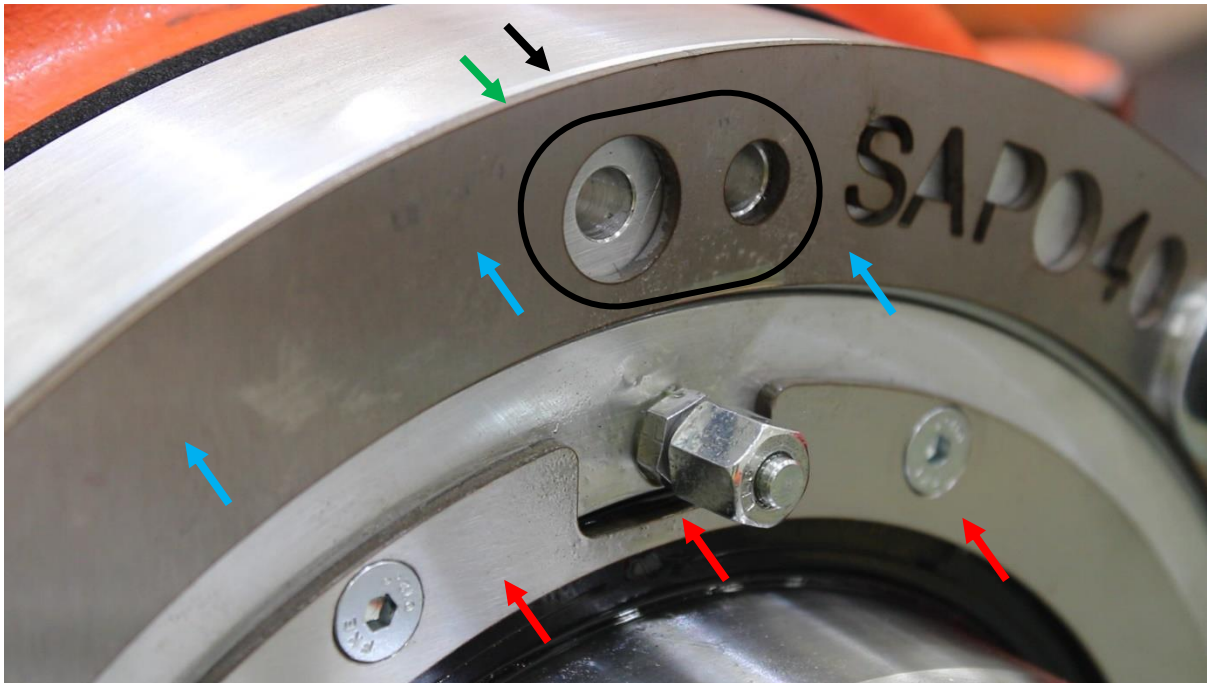
SAPO Seal Alignment check using pin

If adjustment is necessary, you may 'guide' the housing to alignment by looking for concentricity between the outer ring and ring washer outer diameters (indicated with yellow and green arrows in picture below).

**Note:** Alignment to the 2° position (larger alignment hole) will suffice for open (unsealed) bearings.

Because the rings of the SAPO Seal may have become temporarily 'stuck' during manipulation of the housing; visually check:

- The front face of the inner ring (indicated red below) is approximately parallel with the front face of the outer ring (indicated blue below);
- The front face of the inner ring is approximately tangential (90°) to the shaft (wear collar) at 12, 3, 6, and 9 o'clock positions;
- It is acceptable to tap the front face of the inner ring with a soft face hammer if it appears to be out of position



*SAPO seal inner ring front face (indicated red), outer ring front face (indicated blue), ring washer OD (indicated green) and outer ring OD (indicated black)*

## Oil System Installation



*Accumulator Monitoring box containing accumulator with ball valve (circled red) & return line with ball valve (circled yellow)*

The SAPO Seal oil lines and accumulator are supplied pre-assembled and shipped within the mounting boxes. Each seal is supplied with two (2) oil lines: an inlet and a return. Once the pulley is installed, connect the oil lines and accumulator using the following procedure:

- On the face of the SAPO Seal, remove the transport caps from the oil inlet/outlet nipples and attach the oil lines using the 90° std pipe end (see photo below).  
**Note:** The SAPO seal has oil ports 90° apart and the oil lines should be attached at the gravitational 12 and 6 O'clock positions. If the nipples are incorrectly located (when the housing is to be mounted with the feet vertical) they can be unscrewed and swapped with the plug at the correct location.
- Mount the monitoring box in a safe location outside the guard.
- Remove ball valves from both oil lines and route them into the monitoring box through the cable glands at the bottom.  
**Note:** Ensure the oil lines will not interfere with the shaft or belt.
- Replace the ball valve onto the **inlet** oil line (that leads to the 12 O'clock position on the seal) and secure it to the accumulator in the monitoring box (refer picture above).
- Replace the ball valve onto the **return** oil line (from the 6 O'clock position on the seal) and secure it to the holder in the monitoring box (refer picture above).
- Close both cable glands.

- Connect a SAPO oil pump to the quick-connect coupling on the accumulator and fill it with **VG220 or 320 Gear Oil**. Open both ball valves and continue pumping oil through the system gradually with a light but constant pressure to bleed any air in the lines and ensure the system is full of oil.  
**Note:** Oil will flow from the return line attached to the bottom (6 O'clock) position. Ensure this is collected and disposed of correctly.
- Once bled close the return line ball valve and disconnect the filler pump. Replace the dust cap and on the accumulator coupling and close the monitoring box.
- Note that residual air may bleed into the accumulator from the seals in subsequent days/weeks.



*Oil line 90° std pipe end attached to SAPO seal nipple*

**Please call DASH Engineering for Technical Support & Troubleshooting**

*Rhys Morgan: 0417 070 243*

*Jack Simms: 0417 546 456*



*Oil system layout with inlet line attached to 12 O'clock position (ends circled red) and return line attached to 6 O'clock position (ends circled blue). Ends circled green are to be installed outside the guard within the monitoring box.*