



805 13<sup>th</sup> St. North  
Humboldt, IA 50548

1101 Center St.  
Redding, CA 96001

Wholesale Agricultural, Heavy Off-Road, Heavy-Duty Truck, & Automotive Air Conditioning Parts & Supplies

## Compressor and Clutch Inspection

Has the compressor been installed yet? **STOP!** Before the compressor is installed let's talk about the importance of checking some key factors that can directly affect the life of the compressor or how the system performs. It can also save time of unnecessary installation and or removal by following these simple steps.

- First key factor is visual inspection. Verify it is the correct compressor and it matches the old unit before installation. Make sure there is no physical damage to the clutch assembly, mounting points, and hose fittings. If there are any signs of damage, please call the customer service department to discuss before installation.
- When examining the clutch assembly spin the pulley by hand to ensure it is straight. A compressor clutch can be easily knocked out of alignment and show no physical damage. A lot of clutch pulleys are cast steel which results in weaker metal. When looking at the face of the pulley notice the small tabs of metal circled in red from **Example 1**. Since there is not a lot of metal contact in these areas it is very easy for a pulley to become damaged and out of alignment. When this happens, the hub cannot make full contact with the pulley and will cause a "wobble". Also notice the area circled in orange. This is the area the compressor was dropped on causing the pulley to be out of balance.
- In **Example 2** notice how out of balance the pulley is. On a flat surface the gap indicated by the red arrow is .075" and the orange arrow is .032". Keep it mind all clutches are not made the same. Depending on the pulley you may not be able to measure it this way.
- When spinning a clutch by hand, reference the backside of the pulley to the compressor housing. **Example 3** in this case is a Sanden compressor. Use the body bolt in reference to the pulley to check for misalignment or "wobble" as indicated by the orange arrow. Notice some compressors have a dust seal made onto the outer field coil to try and eliminate the possibility of dirt and debris. This will cause a slight bit of drag and will not freely spin by hand. This will not hurt the performance of the clutch under working conditions.
- Be sure to check the air gap with a feeler gauge where applicable as indicated by the red arrow from **Example 3**. This is the distance or "air gap" between the clutch hub and pulley. Notice some larger clutches do not have clearance to check this due to the hub being inset into the pulley. A clutch air gap can have a working distance of .010" to .057" depending on what type of compressor it is. In this case a Sanden calls for .016" to .031". Visit the technical tab at [www.apairinc.com](http://www.apairinc.com) to see the **Complete Guide to Clutch Specifications** for more types.
- Check the clutch coil for proper Ohm range with a Multimeter. A 12V clutch should test out between 2.9 to 6 Ohms. A 24V clutch should test out between 12 to 15 Ohms. To be sure there are no issues with the clutch it can be energized with direct power. If the air gap is set correct you will see the hub engage and come into contact with the pulley once the coil is energized. There should also be an audible "click" when this happens.
- When checking the oil, always consider what work has been performed on the system. All systems have a working Oil to Gas ratio. If system ratios are off this will affect the performance and can cause damage voiding the warranty. Especially when the system is not flushed. **For example**, a Case MX245 Tractor calls for 10 oz of oil for the system. The Sanden compressor 509-603 comes with a full charge of Sanden oil of 285cc or 9.64 oz which is sufficient. If the system is not properly flushed and proper components are not replaced the system will be Overcharged in oil. You **MUST** always adjust your procedure depending on the work performed to the system.



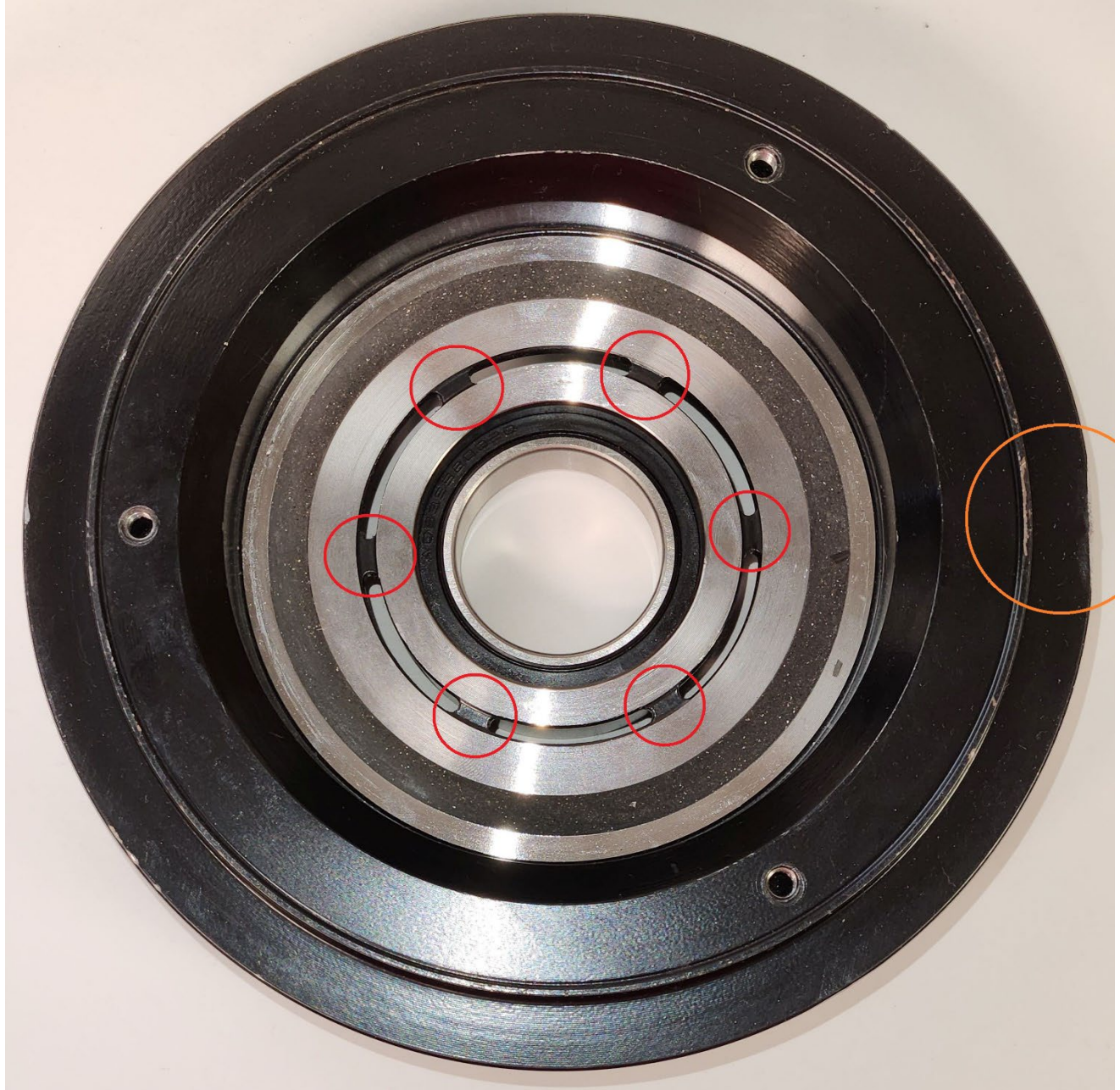
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### Example 1





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Example 2



Example 3

