



SAFETY ALERT

Casagrande Concrete 125/100mm Swivel Part Number 205220019 (generally pre-2000) NOT to be used with air

Type of
Incident:

Equipment failure and parts falling from height

Nature of
Incident/Injury

Near Miss

Details of
Incident:

A Casagrande CFA26 piling rig was being used to drill a 650mm diameter socket in rock using a 450mm Down The Hole hammer (DTH) with a 3000 cfm air supply. The hammer was being fed with air through the existing concrete pipe feed system and the above CFA concrete swivel, 125mm dia. During drilling operations the concrete swivel body became separated from its shaft, which was bolted to the Kelly extension. The swan neck and swivel body was lifted off the reaction bar and fell to the ground with the attached concrete hose.



Above pictures show a channel was carved by the seal bush retaining grub screw on the shaft and scorching of the metal due to heat build up.

shaft and scorching of the metal due to heat build up.



Outer body of the swivel still attached to the swan neck and concrete hose after having fallen an estimated 15m to ground. Fortunately no persons were injured.

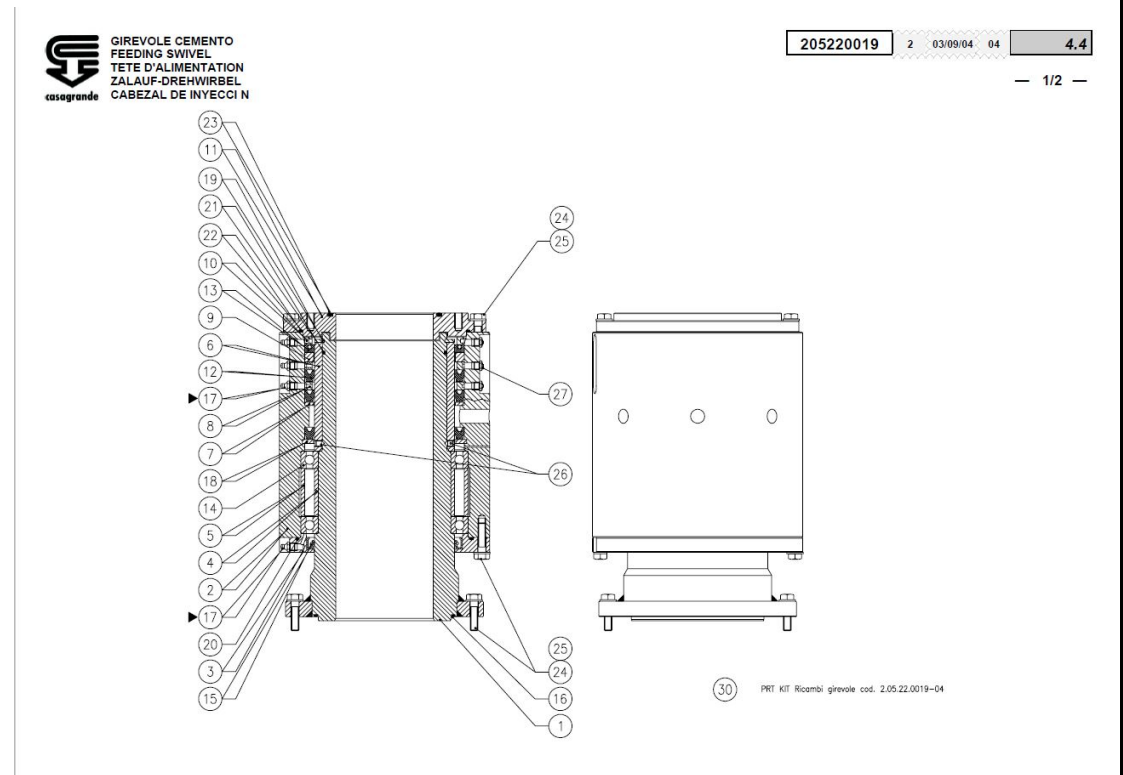


	Retaining circlip is still in the body of the swivel although the seals have bonded
Root cause (if known):	The cause of the swivel failure was the failure of the retaining circlip under pressure and heat generated by the air passing through the seal pack to the outside of the swivel body. As the circlip in this type of swivel is essential to holding the unit together, failure of the circlip lead to separation of the swivel. It was also later found that the retaining cap normally fitted to the top of the reaction bar was missing on this rig

Action Taken:

The Casagrande factory was consulted and they confirmed that the use of this type of swivel with air may compromise the seals (designed for concrete) and this may cause extreme heat build up with subsequent circlip failure.

Swivel part number 205220019

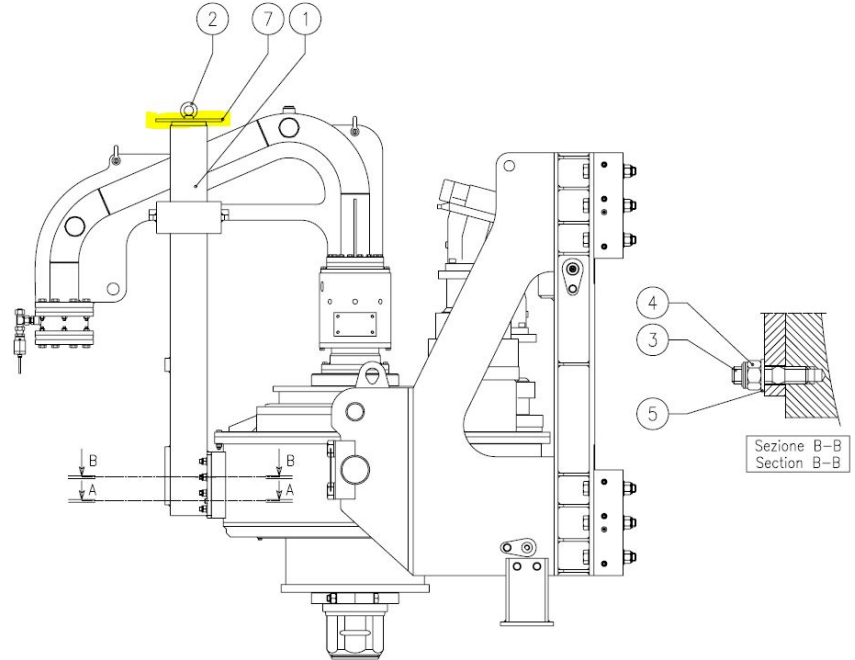


Swivel part number 205220019 can be identified by its clean barrel cylindrical body with 6 grease holes on upper seal path.

These swivels are common in pre-2000 models of CFA and Mini piling rigs manufactured by Casagrande and Hutte.

Lessons Learnt:

1. All modifications to Casagrande rigs and/or OEM applications fitted to Casagrande rigs should only be done with prior approval from Casagrande.
2. Concrete swivel 205220019 cannot be used with air as a medium.
3. The retaining cap (see below) should be fitted on all reaction bars to help prevent the swivel and swan neck being lifted off



Note: All Casagrande CFA rigs are supplied with this retaining cap fitted.

Compiled By

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