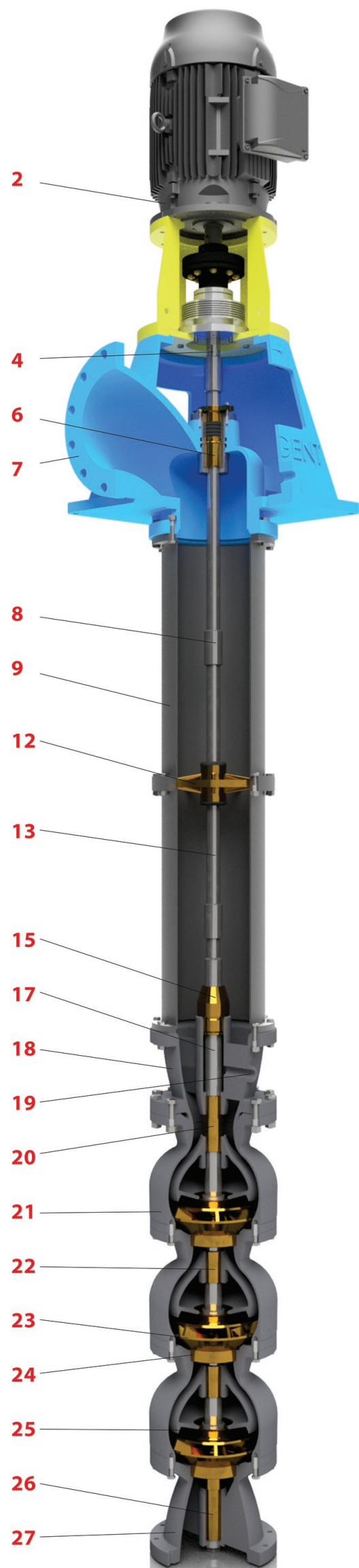


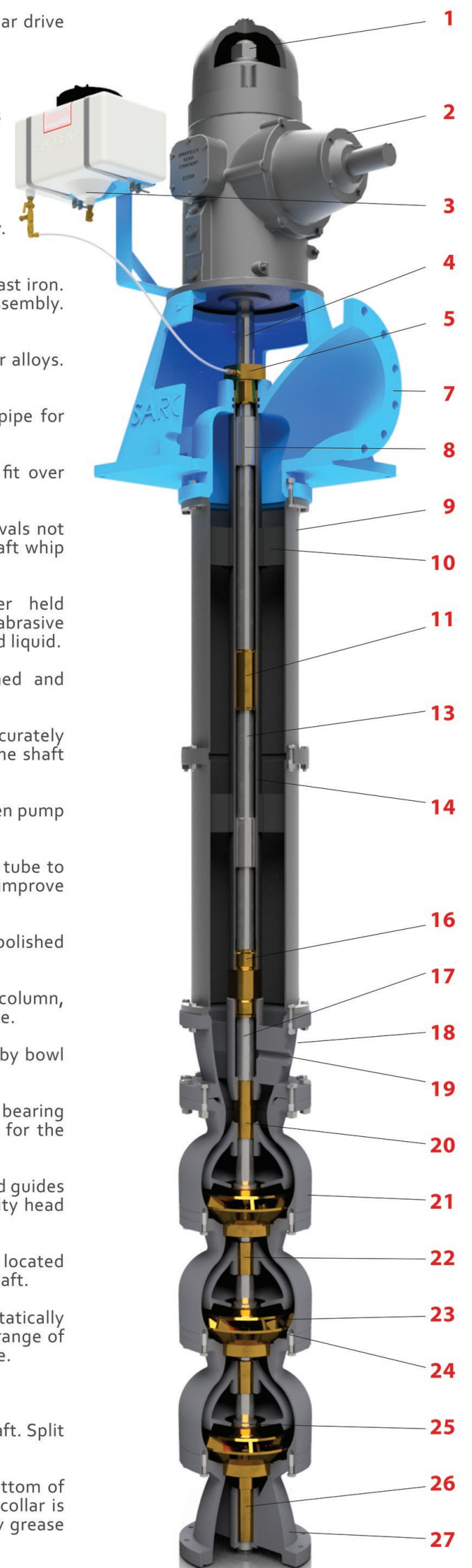
# PUMP FEATURES

## ORNEL VERTICAL TURBINE PUMPS



WATER LUBRICATED,  
ELECTRIC DRIVE

1. **HEAD SHAFT NUT:** Sets pump impellers at correct height to achieve optimum pump efficiency.
2. **DRIVES:** Vertical flanged electric motor with coupling or right angle gear drive specifically designed for vertical turbine pumps.
3. **FEED LUBRICATOR:** Maintains lubrication of all line shaft bearings.
4. **HEAD SHAFT:** Precision machined, polished and straightened stainless steel shaft.
5. **TUBE TENSION ASSEMBLY:** Bronze, spiral grooved, upper line shaft bearing which tensions enclosing tube bearing for vertical alignment.
6. **PACKING BOX ASSEMBLY:** Contains bronze bearing for shaft stability. Packing is compressed around the shaft by an adjustable gland.
7. **SURFACE DISCHARGE HEAD:** Cast and machined from close grained cast iron. Discharge head provides support for column pipe, shaft and bowl assembly. Maintains accurate alignment between discharge column and motor.
8. **LINE SHAFT COUPLING:** Manufactured from high tensile steel or other alloys. Provides means of connecting all shafts.
9. **DISCHARGE COLUMN:** Machined and faced from Sch 40 ERW steel pipe for diameters up to 500 millimetres and Sch 30 ERW for larger diameters.
10. **ENCLOSING TUBE STABILISERS:** Reinforced neoprene rubber, press fit over enclosing tube and spaced as required.
11. **LINE SHAFT BEARING:** Spiral grooved bronze bearing spaced at intervals not exceeding 1.5 metres. These bearings stabilise the line shaft against shaft whip and vibration.
12. **LINE SHAFT BEARING ASSEMBLY:** Includes a cast bronze retainer held concentrically between the column pipe and coupling, housing an abrasive resistant, spiral grooved, neoprene rubber bearing, lubricated by pumped liquid.
13. **LINE SHAFT:** High tensile stainless steel. Precision ground, polished and straightened. Supplied in 3 metres sections.
14. **SHAFT ENCLOSING TUBE:** Heavy wall, Sch 80 ERW pipe machined accurately for a watertight butt fit between sections. Provides alignment of the line shaft bearing and gravity lubrication feed to each bearing.
15. **DISCHARGE CASE CAP:** Seals top bearing from cascading abrasives when pump stops.
16. **TUBE ADAPTOR:** Watertight bronze bearing which connects enclosing tube to the discharge case, providing additional bearing length, which serves to improve pump life.
17. **PUMP SHAFT:** Manufactured from high tensile stainless steel. Ground, polished and straightened.
18. **DISCHARGE CASE:** Guides transition of fluid from pump to discharge column, minimising friction loss. Adaptors to suit larger column pipes are available.
19. **BYPASS PORTS:** Two large ports vent any excess pressure, developed by bowl assembly, to prevent liquid rising in the enclosing tube.
20. **DISCHARGE CASE BEARING:** Extra long, water lubricated, bronze bearing located immediately above the upper impeller. Provides rigid support for the pump shaft.
21. **INTERMEDIATE BOWLS:** Support the impeller shaft bearing housing and guides the fluid from impeller discharge to additional stages, converting velocity head into pressure head with minimum friction loss.
22. **BOWL BEARINGS:** Extra long, water lubricated, bronze bearing located immediately above each impeller. Provides rigid support for the pump shaft.
23. **ENCLOSED BRONZE IMPELLER:** Precision cast, hydraulically and statically balanced to provide high efficiency and vibration free operation. Wide range of impeller selections to suit most conditions. Other alloys are also available.
24. **ABRASIVE CAST LUGS:** Prevent bowl erosion due to vortex action.
25. **TAPERED IMPELLER COLLET:** Positive means of locking impeller to shaft. Split to simplify assembly.
26. **SUCTION CASE BEARING:** Extra long bronze bearing, supports the bottom of pump shaft to provide accurate alignment of all impellers. A deflector collar is mounted above the bearing to prevent entry of abrasive. Lubrication by grease packed chamber and also by pumped liquid.
27. **SUCTION CASE:** Cast with guide vanes to minimise entrance losses. Adaptors are available to increase suction pipe size.



OIL LUBRICATED,  
RIGHT ANGLE GEAR DRIVE

