

Carl Hamm

PIPES | PUMPS | SOLUTIONS

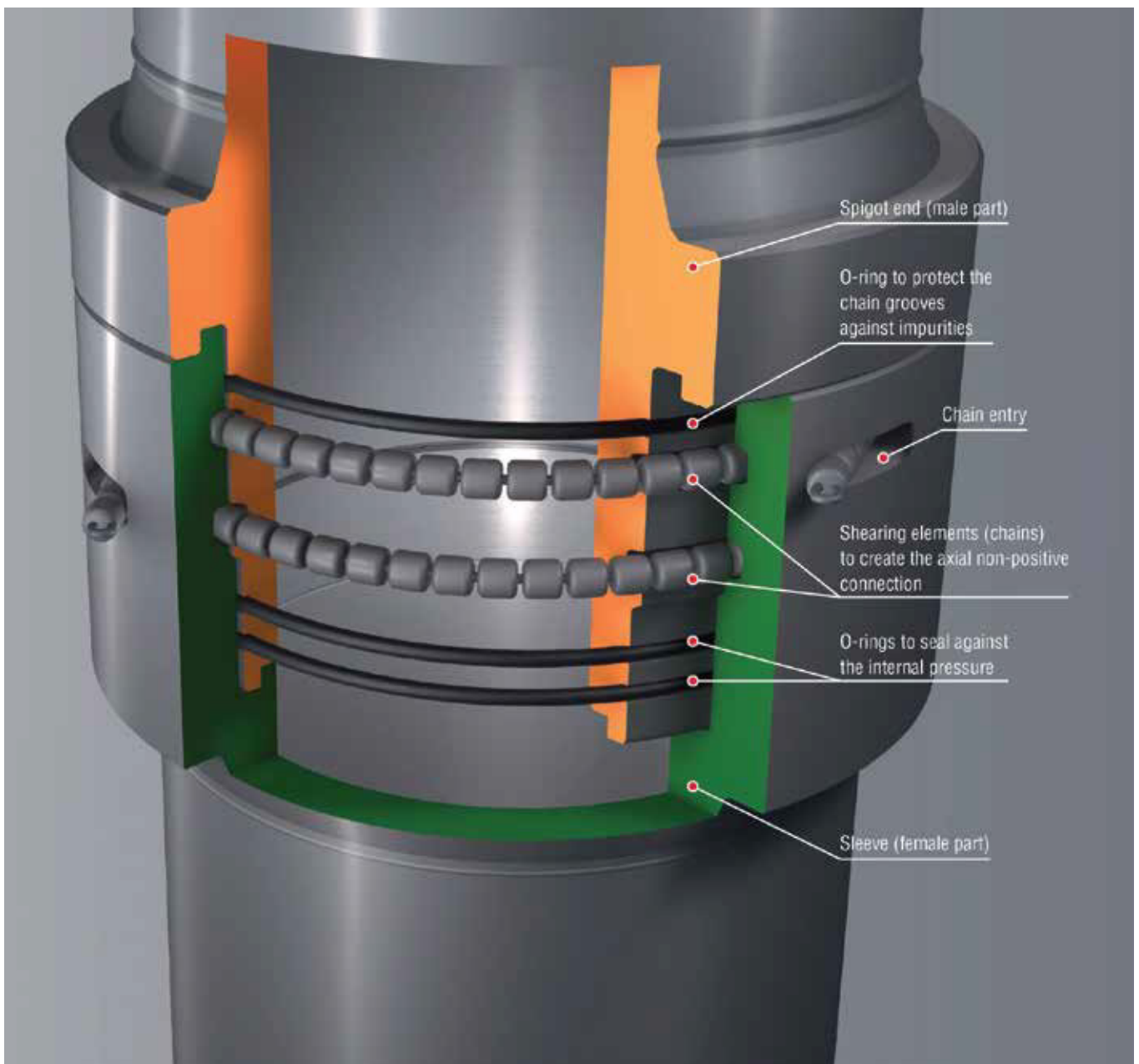


ZSM INSTALLATION PROCEDURE



Step By Step ZSM Installation Procedure

Pre-installation Site Preparation & Equipment Check





Step 1: Positioning of mobile crane on site.



Step 2: All equipment placed in proximity to the borehole - ready for installation.





Step 3: Cables are loaded onto the cable dispenser, which is used to prevent cable damages and injuries during the installation.



Step 4: Once all equipment is in place, the motor stand should be positioned next to the borehole, and the inducer sleeve lifted and installed into the stand.

- In this case the motor is installed inside the inducer sleeve.

- This sleeve is used to cool the motor and acts as a sand separator.





Step 5: The pump will be equipped with a double acting non-return valve, the ZSM adaptor is screwed on the double acting valve. Pump will then be lifted off the ground with a lifting device attached to a crane hook. See **Figure 3** Pump and motor connected.

Fig 1



Fig 2



Fig 3





Step 6: The pump is then swung by the crane to the installation point, lowered & secured on the assembly table.

Assembly table is in a closed position, ready to swing the first ZSM pipe.





Step 7: With the guide wheel attached at the bottom, the first ZSM pipe will be lifted up and swung to the borehole & assembly table.



Pipe is now closer to the borehole, suspended by the crane.





Step 8: 3x'O-rings' per coupling are then inserted.





Step 9: Once in place, the O-rings are lubricated with petroleum jelly before the coupling is inserted.



Step 10: Once ZSM coupling is seated, chains can be inserted into the grooves. 2x Chains per coupling.





Step 11: Chains are then inserted, and the cover plate fitted to protect chains from mud and dust.



Step 12: Crane will then lift the complete pipe and pump unit, from the assembly table, this is to allow the assembly table to open.





Step 13: The pipe and pump will be lowered about 1m into the borehole. (See **Figure 1**)

Once lowered, the first HCL clamp is attached to secure cables. (See **Figure 2**)

When the clamp is attached onto the pipe, the centralizer can be installed. (See **Figure 3**)

NOTE

HCL clamps are supplied with a boot, black strap and a special tourgue tool for fastening.





Step 14: Once the strap is tightened and all cables are secured, the pipe is lowered for the next cable strap

NOTE

The space and quantity of clamps will depend on the length of the pipe and weight of cable.



Step 15: Now that the pipe is installed completely, repeat Step 6 - Step 14.



Step 16: When all ZSM pipes have been installed, the supporting pipe can be installed.

- Once the supporting pipe is seated on the assembly table, fasten the bolts supplied to the supporting pipe.





Step 17: Final step to secure the supporting pipe is to install the adaptor on the supporting pipe over the ZSM female coupling with a gasket in between. Conversion from ZSM to flange then takes place.

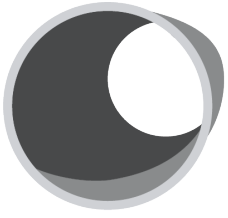


Step 18: After the adaptor has been installed and fastened with nuts and bolts, installation of the header works can begin.





**Complete header works installed.
Pump is ready for commissioning.**



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