

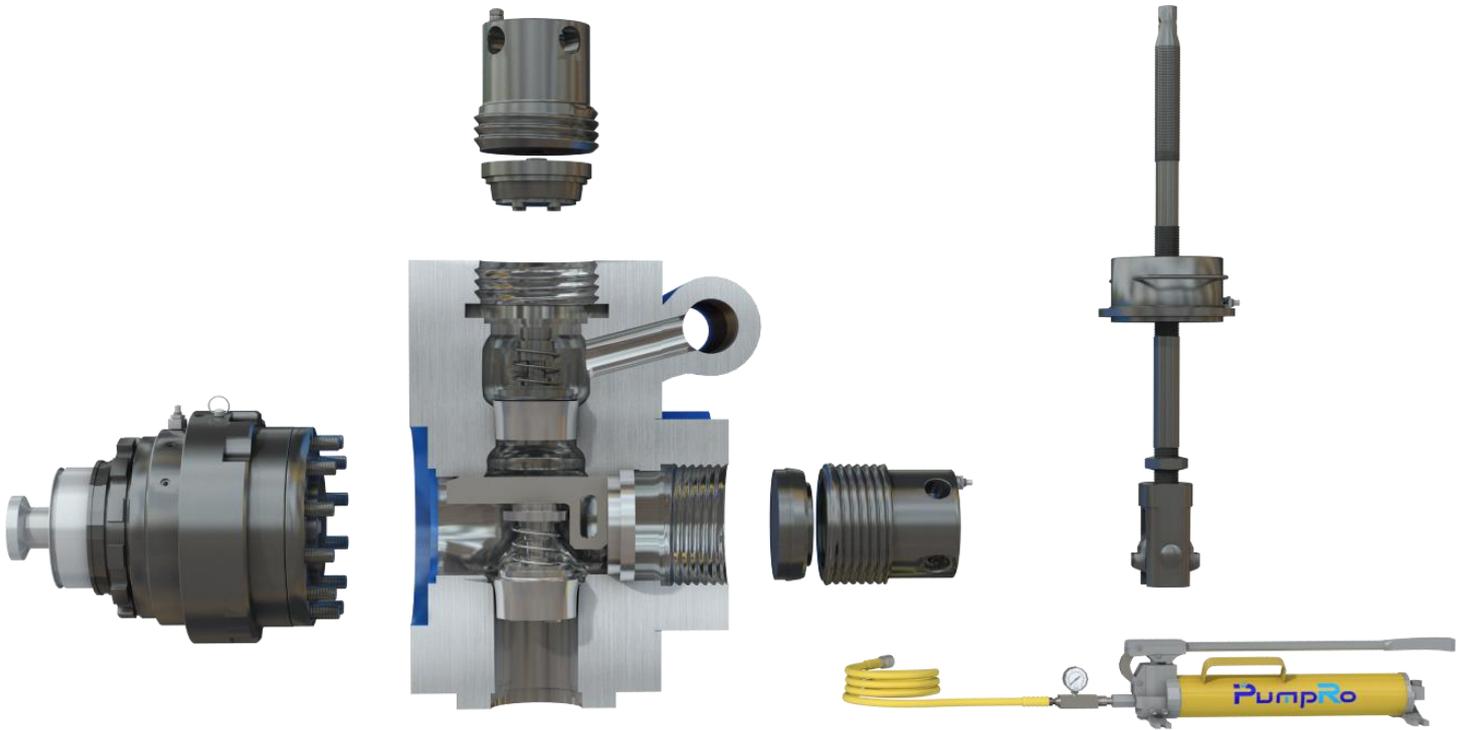
OPERATING MANUAL

Ezy-Release Pump Tool.

P/N: PPTLA01



- Doc. No.: PP-MAN-TL-A01
- Version: Rev. A
- Dept: Special Tools
- Doc. Holder: M.H.



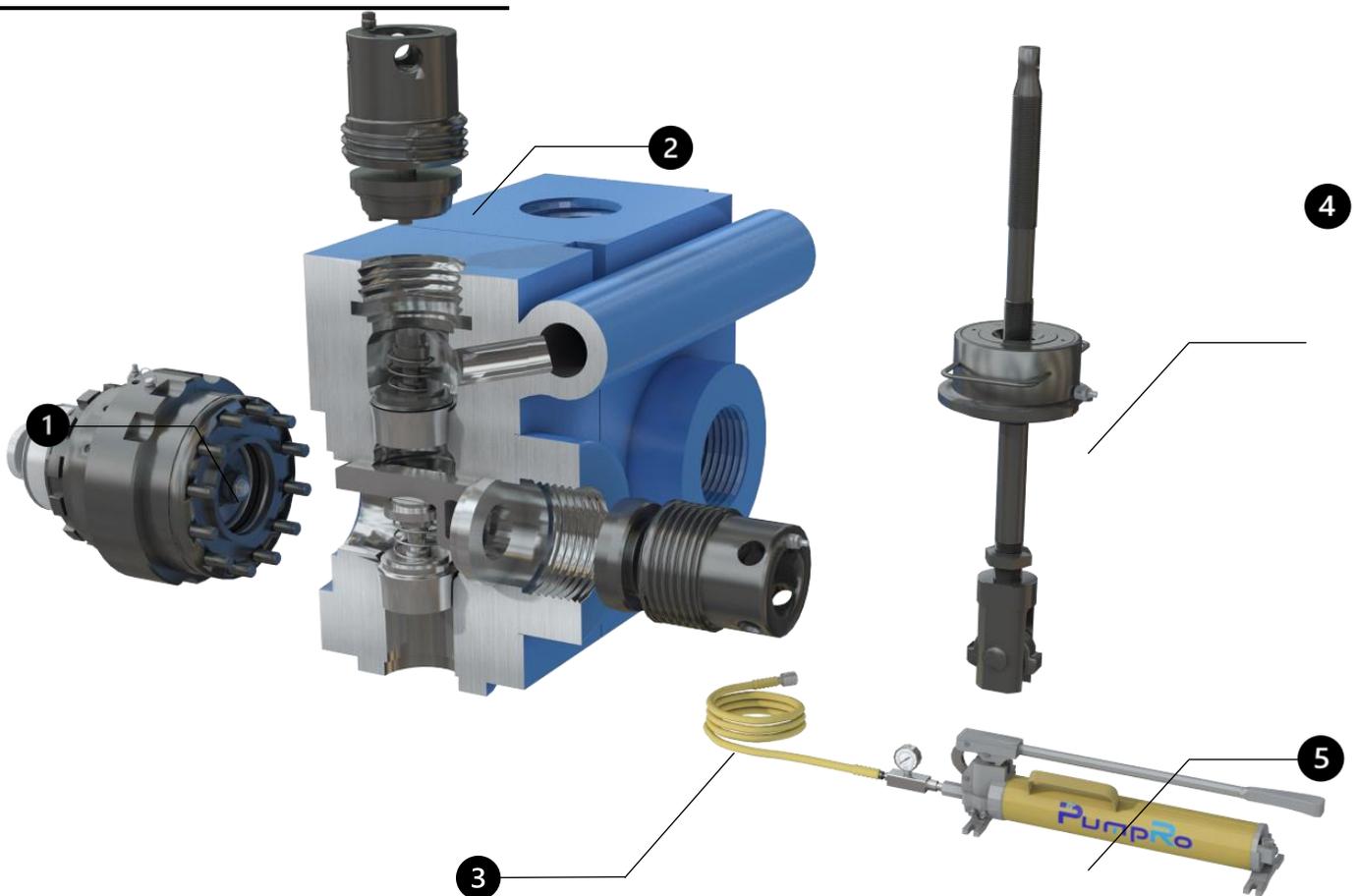
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I. General Introduction

The Ezy-release tool system is used to run fast uninstalling & installing of the parts on the mud pump fluid end without changing pump structure.

II. System Drawing



- ❶ Cylinder Assy.
- ❷ Valve Cover Assy
- ❸ Cylinder Cover Assy
- ❹ Valve Puller
- ❺ Hand Pump

III. Operation Procedures 操作过程

PART I: Remove the valve cover assy.

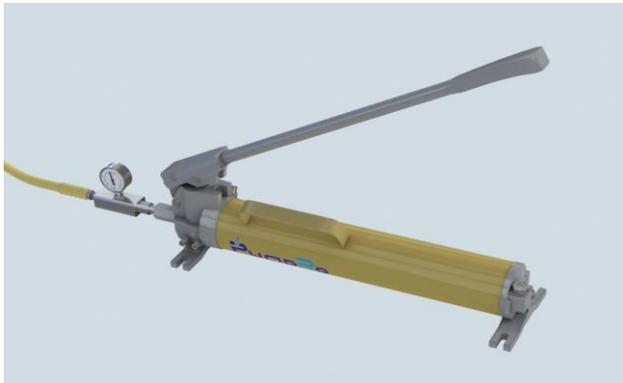
👉 1st Step

Remove the plug bolt on the valve head, plug on the hose quick connector of hand pump.



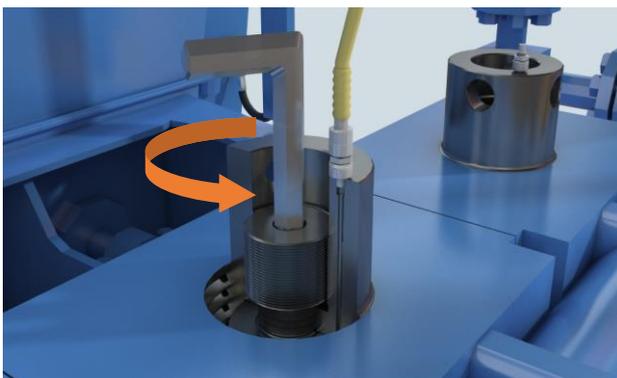
👉 2nd Step

▶ Remove safety pin on hand pump and build up pressure to 42MPa.



👉 3rd Step

▶ Keep the pressure. Turn the nut more than 1/2 round with the special Box Wrench.



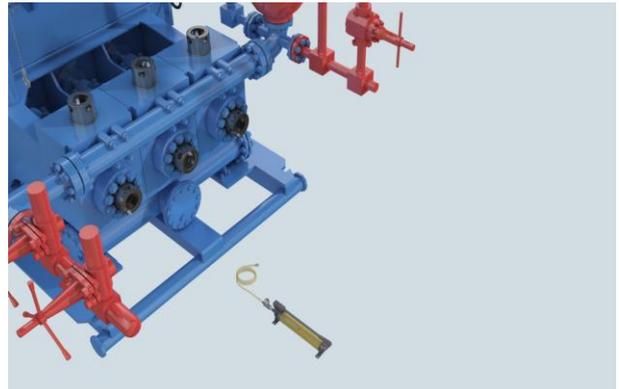
↘ 4th Step

- ▶ Release the pressure to zero.



↘ 5th Step

- ▶ Disconnect the hose quick connector. Put back the plug bolt.



↘ 6th Step

- ▶ Take out the valve cover assy.

◦



Part II: Remove the valve assy.

➤ 1st Step

▶ Take out the cover.



▶ Take out the spring and valve



➤ 2nd Step

▶ Stick the puller into the valve bore and shake the puller to see the hook turnover to horizontal



↘ 3rd Step

- ▶ Put on the cylinder seat and then cylinder on the puller.



↘ 4th Step

- ▶ Fasten the nut.



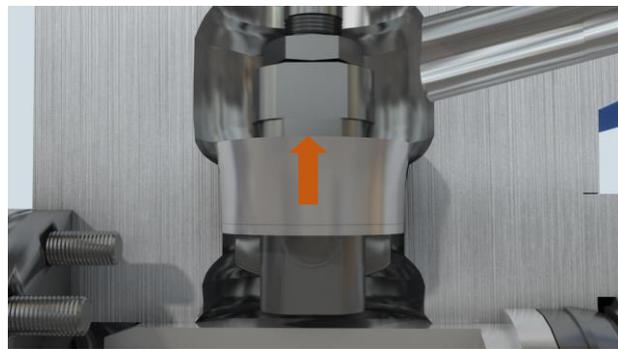
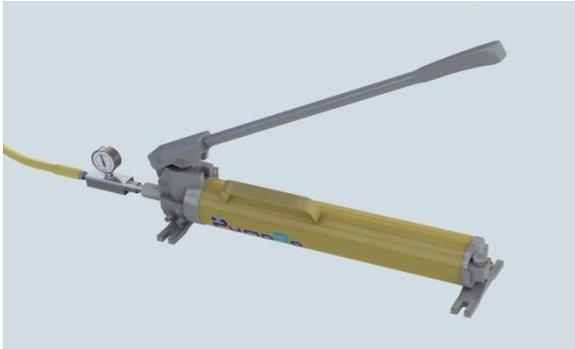
↘ 5th Step

- ▶ Remove the plug bolt and plug the quick connector.



↘ 6th Step

- ▶ Build up the pressure around 25MPa till the valve seat is loose.



↘ 7th Step

- ▶ Release the pressure to zero.



↘ 8th Step

- ▶ Disconnect the hose, put back the plug bolt.



➤ 9th Step

- ▶ Open the nut by pressing



➤ 10th Step

- ▶ Remove the cylinder and cylinder seat, take out the valve seat with puller



Part III: Change the lower valve seat.

➤ 1st Step

▶ Take out the cylinder head assy, plug and stick-in ring using the same procedure as valve head assy.



➤ 2nd Step

▶ Take out ring and valve body.



↘ 3rd Step

- ▶ Stick the puller into the valve bore.



↘ 4th Step

- ▶ Put on the cylinder seat and then cylinder on the puller.



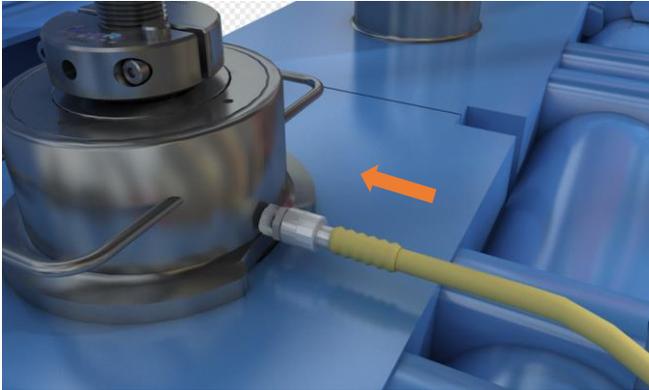
↘ 5th Step

- ▶ Fasten the bolt



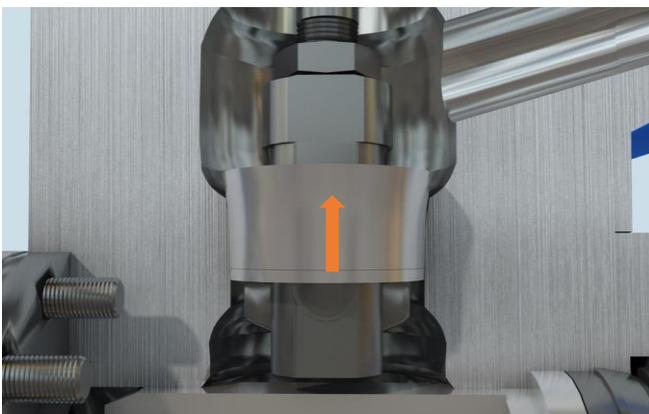
↘ 6th Step

- ▶ Remove the plug bolt, connect the hose



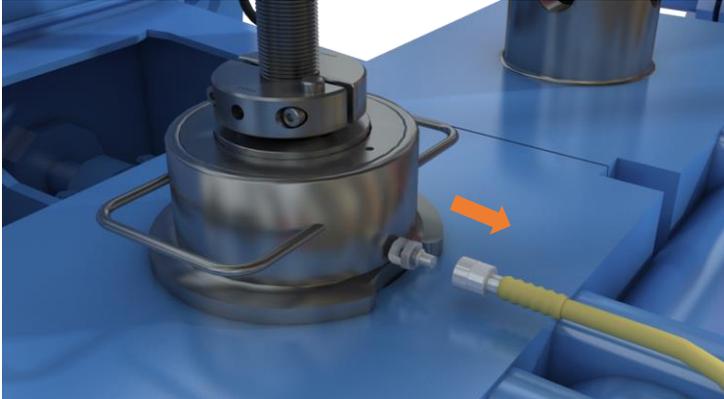
↘ 7th Step

- ▶ Build up the pressure around 25MPa till the valve seat is loose.



➤ 8th Step

- ▶ Disconnect the hose, put back the plug bolt.



➤ 9th Step

- ▶ Pull up the lower valve seat to the crossing position.



- ▶ Remove the bolt, cylinder, cylinder seat. Remove the puller rod.



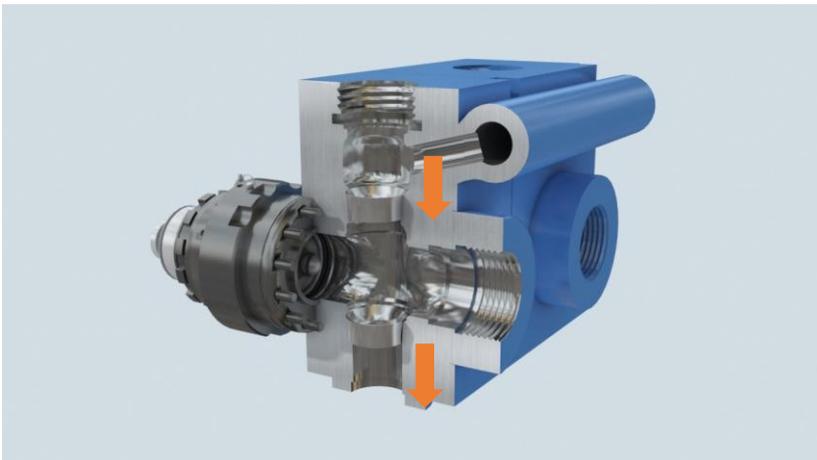
➤ 10th Step

- ▶ Take out the lower valve seat from the horizontal bore.



➤ 11th Step

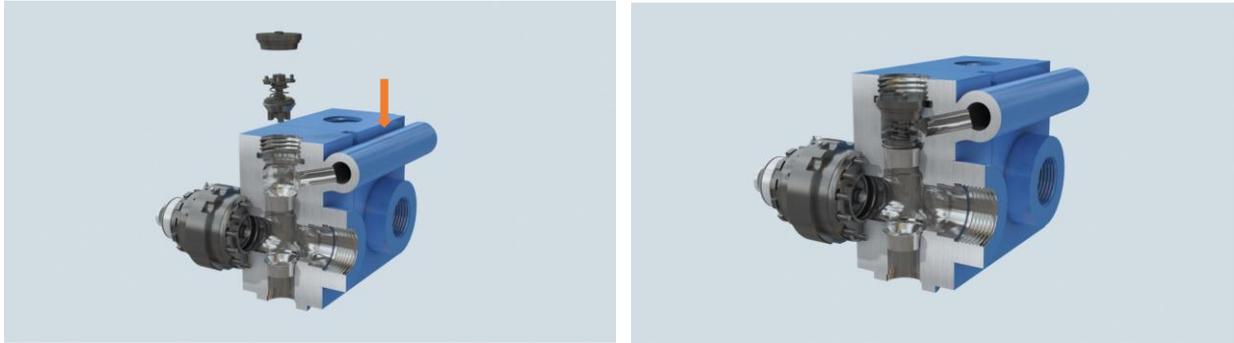
- ▶ Put in new upper and lower valve seat.



Part IV: Install Valve Head Assy.

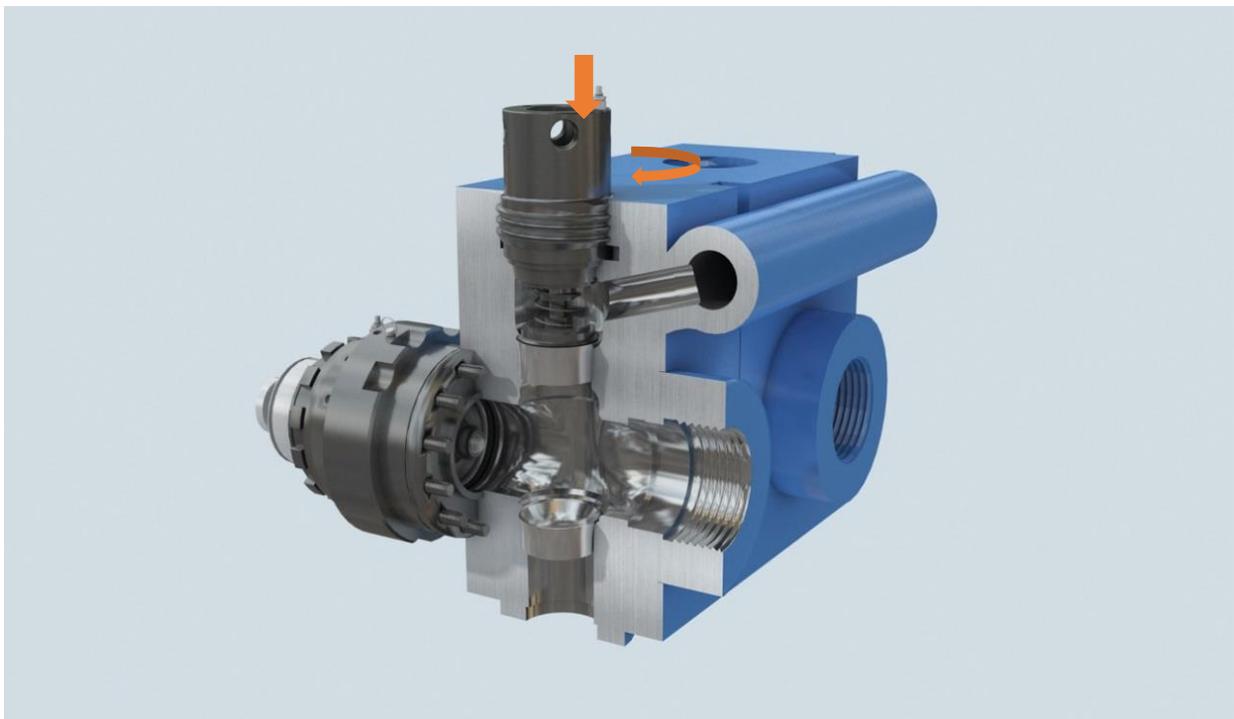
➤ 1st Step

- ▶ Put in upper valve seat, valve body and spring. Put in plug using accessory tool.



➤ 2nd Step

- ▶ Thread in the valve head assy and turn tight (Do not hammer it)



↘ 3rd Step

- ▶ Remove the plug bolt and connect the hose



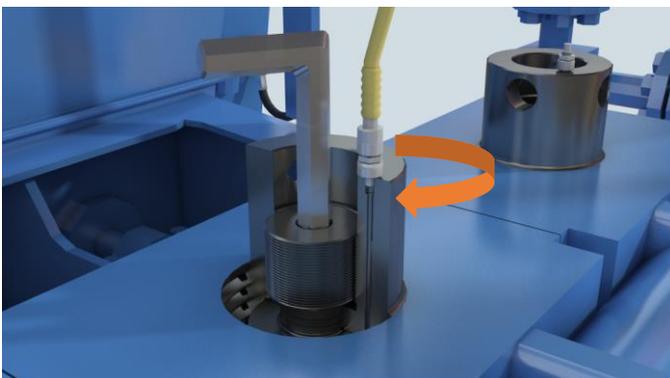
↘ 4th Step

- ▶ Remove safety pin on hand pump and build up pressure to 42MPa.



↘ 5th Step

- ▶ Keep the pressure. Tight the nut with special Allen key.



↘ 6th Step

- ▶ Release the pressure to zero



↘ 7th Step

- ▶ Disconnect the hose quick connector. Put back the plug bolt.



Part V: Install Liner Cover Assembly

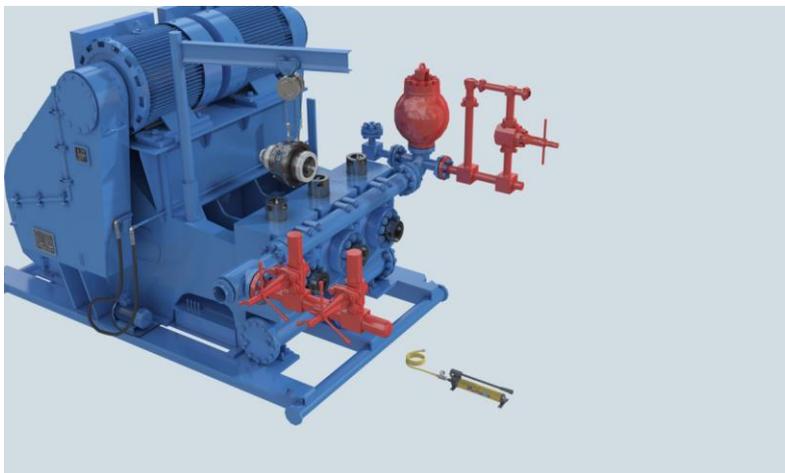
➤ 1st Step

- ▶ Slide the liner and piston into the pressing sleeve.



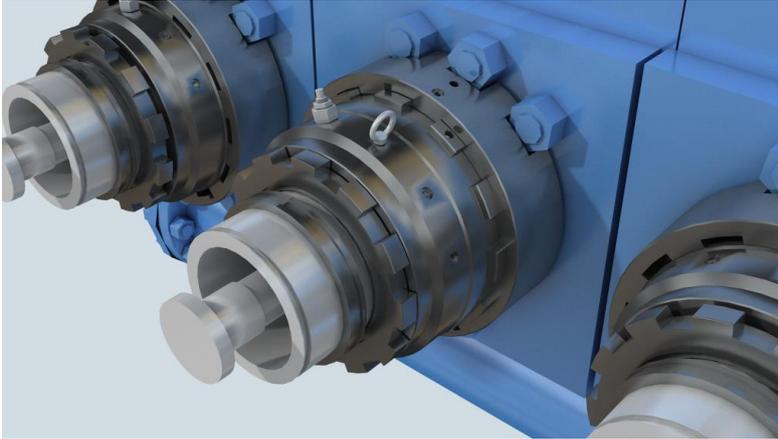
➤ 2nd Step

- ▶ Lift the pressing sleeve to pre-installing position with jib

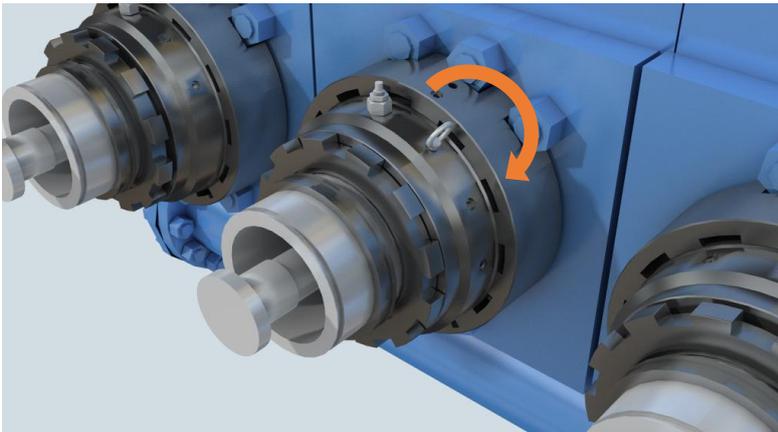


➤ **3rd Step**

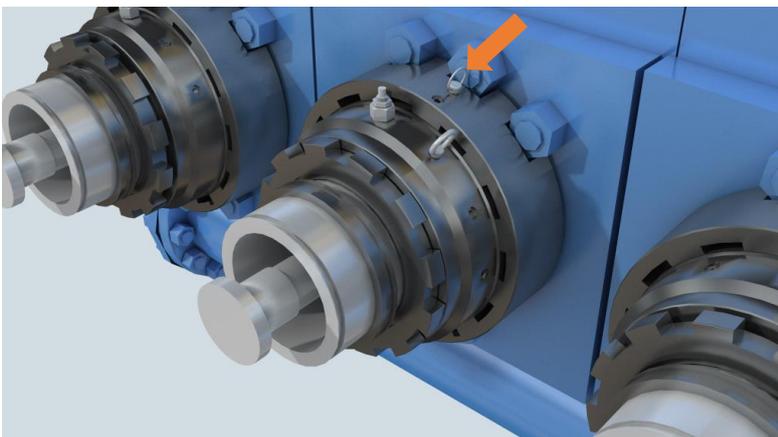
- ▶ **Align the sleeve and liner seat (pre-installed), and push the sleeve in.**



- ▶ **Turn 15°**

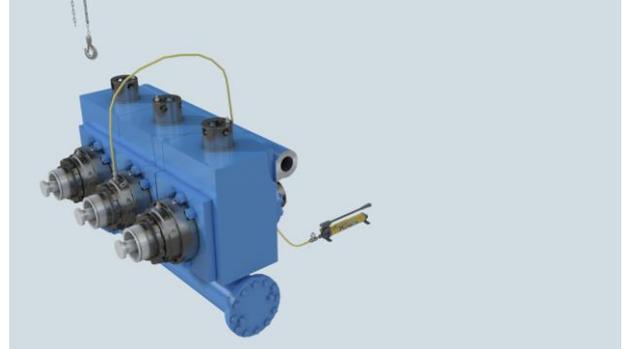
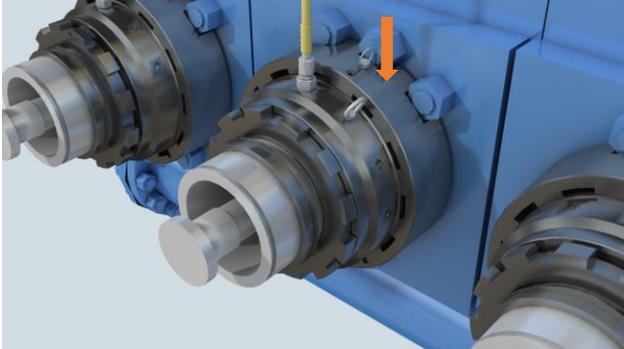


- ▶ **Put in the stop pin**



↘ 4th Step

- ▶ Remove the plug bot, connect the hose



↘ 5th Step

- ▶ Remove safety pin on hand pump and build up pressure to 42MPa.



↘ 6th Step

- ▶ Hand turn the sleeve cover.



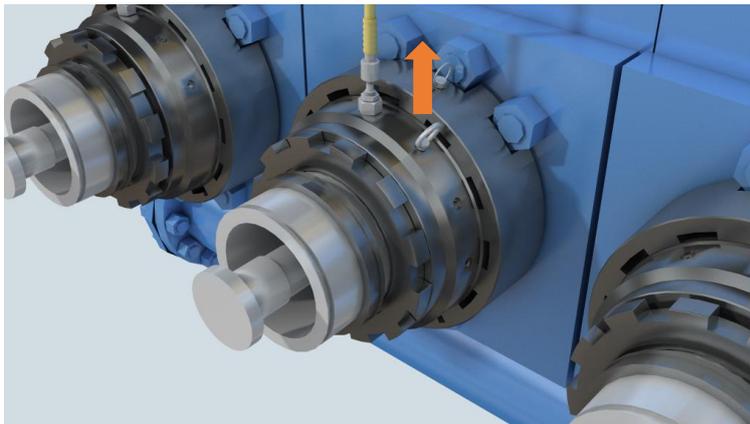
↘ **7th Step**

- ▶ Release the pressure to zero.



↘ **8th Step**

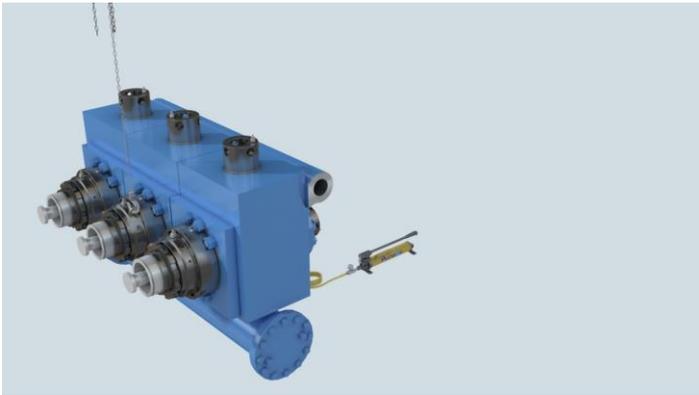
- ▶ Disconnect the hose. Put back the plug bolt.



Part VI: Uninstall Liner.

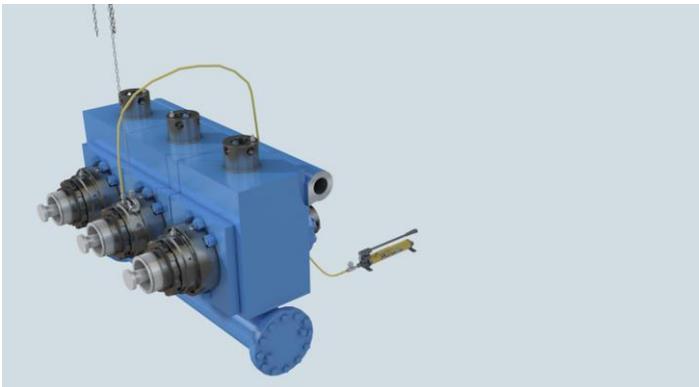
➤ 1st Step

- ▶ Connect the jib hook to the sleeve lifting ring.



➤ 2nd Step

- ▶ Remove the plug bolt on sleeve, connect the hose.



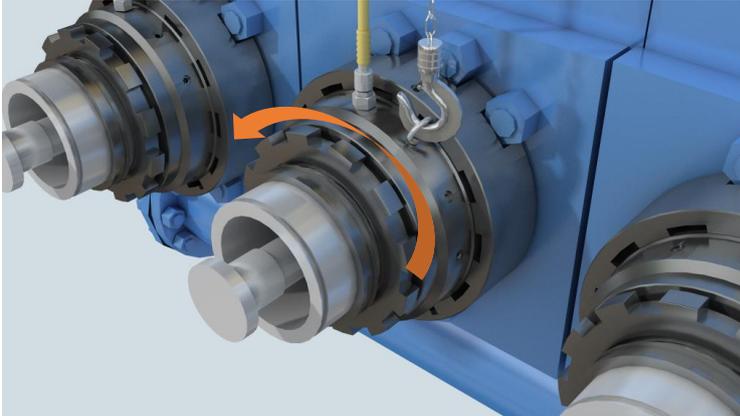
➤ 3rd Step

- ▶ Remove safety pin on hand pump and build up pressure to 42MPa.



↘ 4th Step

- ▶ Turn the sleeve cover 1 round.



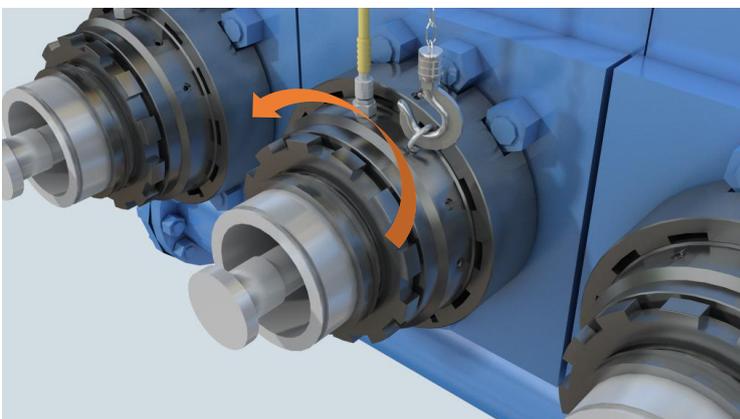
↘ 5th Step

- ▶ Release the pressure to zero.



↘ 6th Step

- ▶ Again turn the sleeve cover till loose.



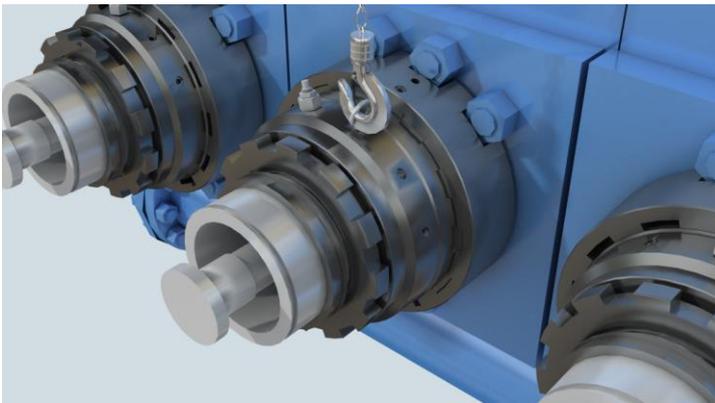
➤ **7th Step**

- ▶ Put out the stop pin.

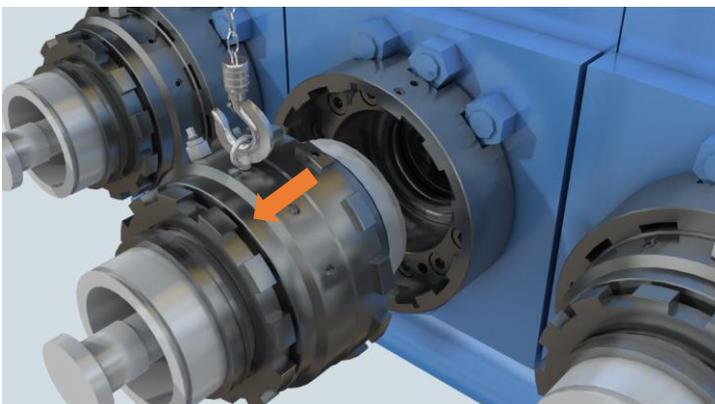


➤ **8th Step**

- ▶ Turn the sleeve 15° .



- ▶ Take out the sleeve.



➤ **9th Step**

▶ **Jib up and take out the sleeve, liner and piston.**

