

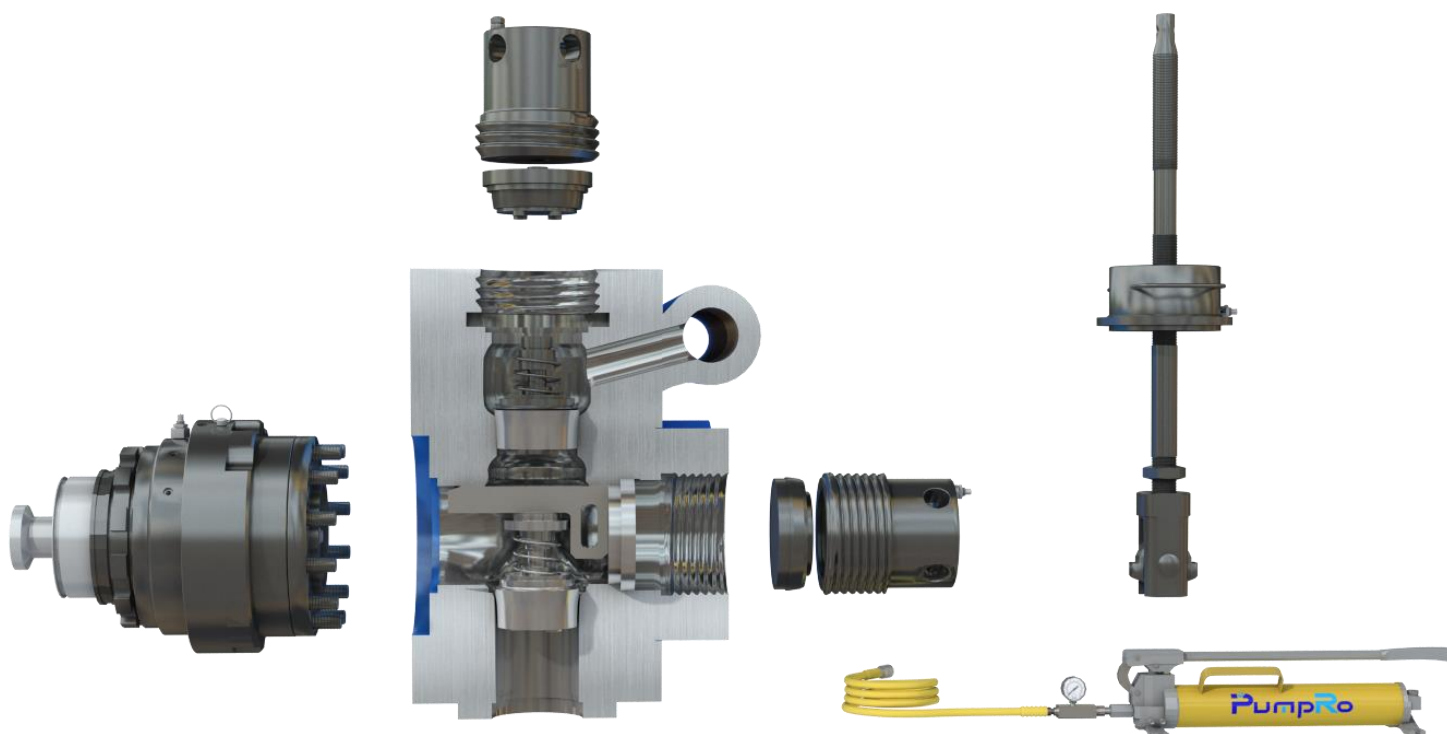
OPERATING MANUAL

Ezy-Release Pump Tool.

P/N: PPTLA01



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



CONTENT

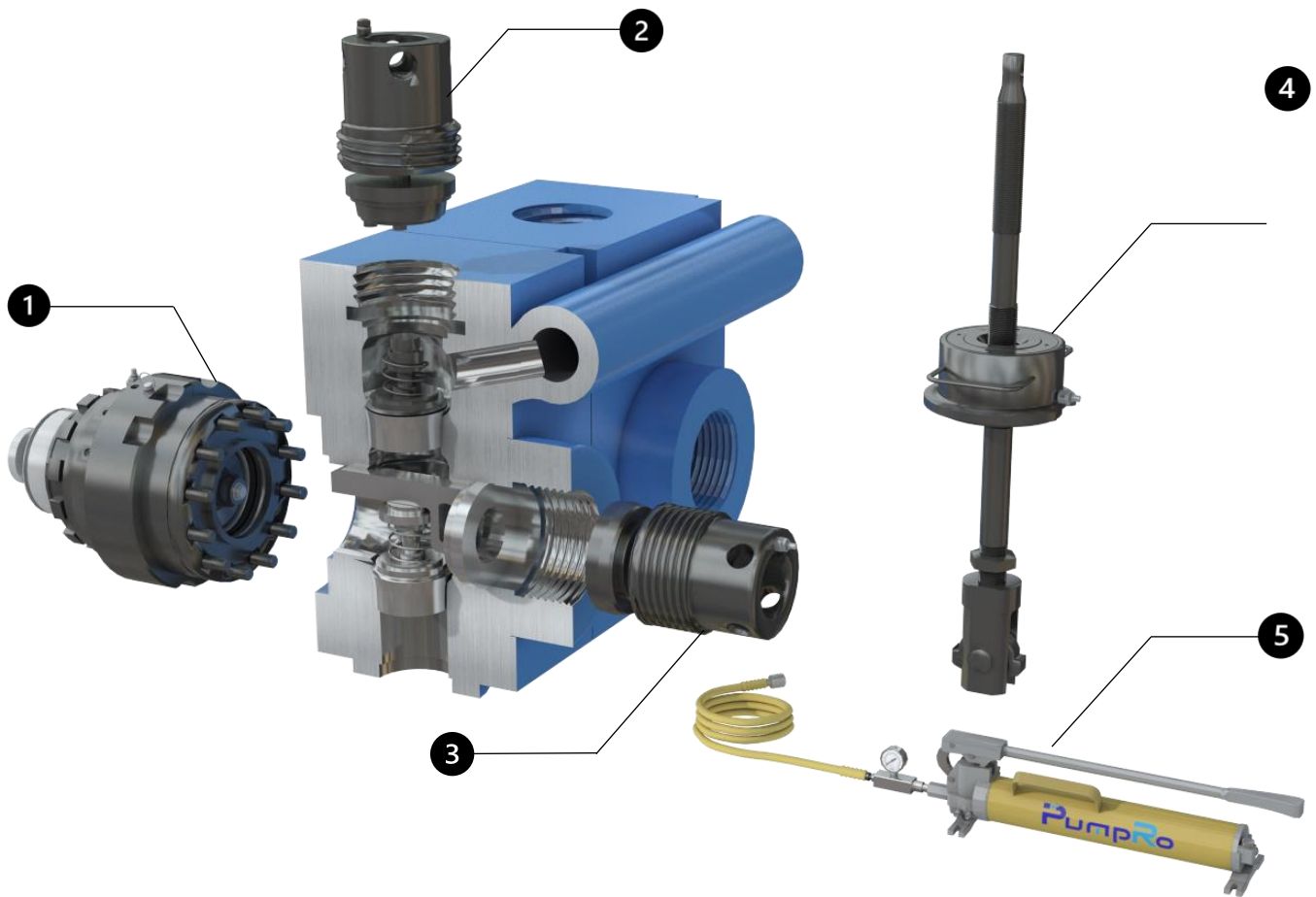
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I. General Introduction 简介

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.

在不改变原有泥浆泵结构情况下，泥浆泵液压快速拆装系统，使用手动或电动液压泵，对液力端的阀盖总成、缸盖总成、缸套总成，以及阀总成进行快速拆装，实现安全、高效、低成本更换易损件。

II. System Drawing 系统图



- ① Cylinder Assy. 缸套总成
- ② Valve Cover Assy 阀盖总成
- ③ Cylinder Cover Assy 缸盖总成
- ④ Valve Puller 液压拔阀器
- ⑤ Hand Pump 液压泵

III. Operation Procedures 操作过程

PART I: Remove the valve cover assy.

第一部分：拆卸阀盖总成

🔥 1st Step

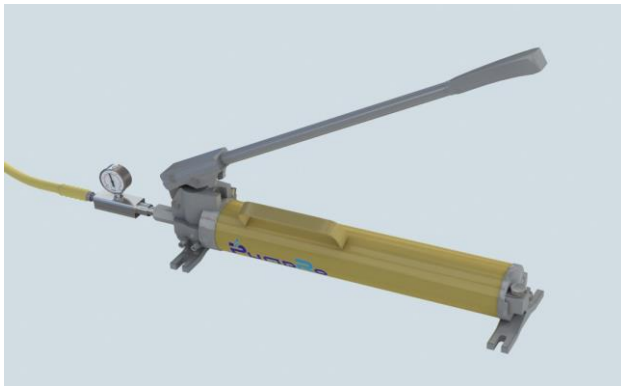
Remove the plug bolt on the valve head, plug on the hose quick connector of hand pump. 拆掉阀盖顶部的螺塞；插入液压泵软管快拔接头，连接液压泵与阀盖总成。



🔥 2nd Step

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

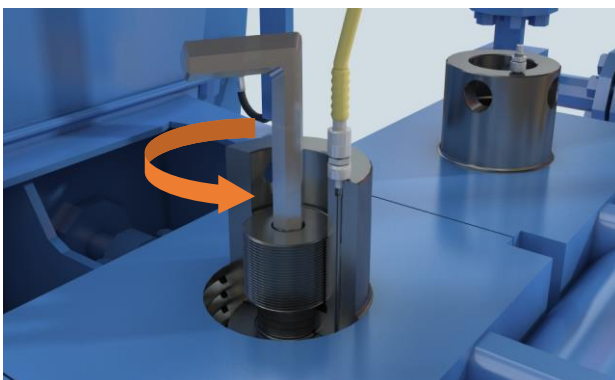
拔出液压泵安全插销，手动加压至工作压力 42MPa。



🔥 3rd Step

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

保持液压泵压力，使用随机工具拧松阀盖中间的并紧螺母 1/2 圈以上。



➡ 4th Step

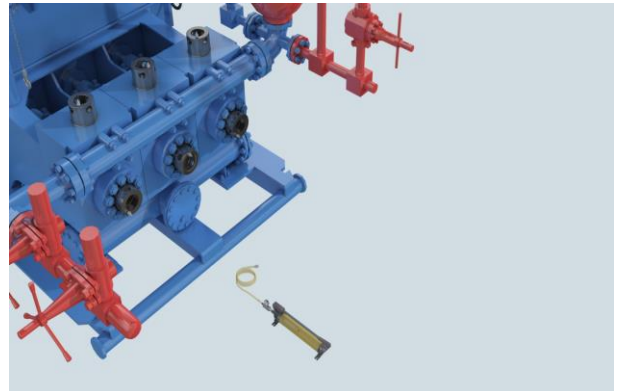
- Release the pressure to zero. 液压泵卸压至零。



➡ 5th Step

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

拆下液压泵软管快拔接头，断开液压泵与阀盖总成的连接；并重新装上阀盖顶部的螺塞。



➡ 6th Step

- Take out the valve cover assy.

将阀盖总成从液缸的螺纹孔内旋出。



Part II: Remove the valve assy.

第二部分：拆除阀总成

🔪 1st Step

► Take out the cover.

取出堵头



► Take out the spring and valve

用随机工具或手工依次将堵头、阀弹簧、阀体从液缸内取出。



🔪 2nd Step

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

将液压拔阀器的挂座和丝杠插入阀座孔，摇动丝杠使挂座挂钩翻转至水平状态与阀座下端面贴合。



➡ 3rd Step

► Put on the cylinder seat and then cylinder on the puller.

依次安装液压拔阀器的缸座和液缸。



➡ 4th Step

► Fasten the nut.

安装扣紧螺母。



➡ 5th Step

► Remove the plug bolt and plug the quick connector.

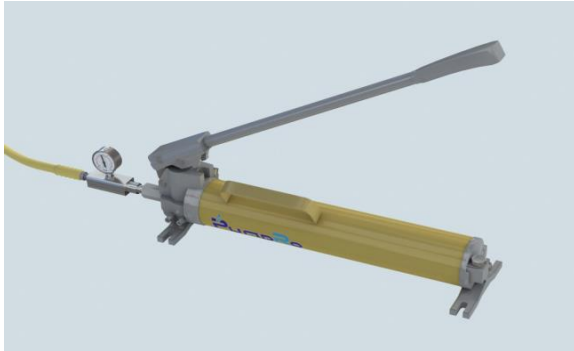
拆掉液缸上的螺塞；连接软管快拔接头。



➡ 6th Step

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

拔出液压泵的安全销；手动加压至 25MPa 左右，直至上阀座完全松退。



➡ 7th Step

► Release the pressure to zero.

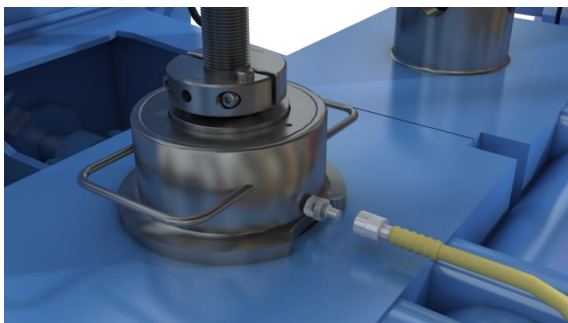
液压泵卸压至零



➡ 8th Step

► Disconnect the hose, put back the plug bolt.

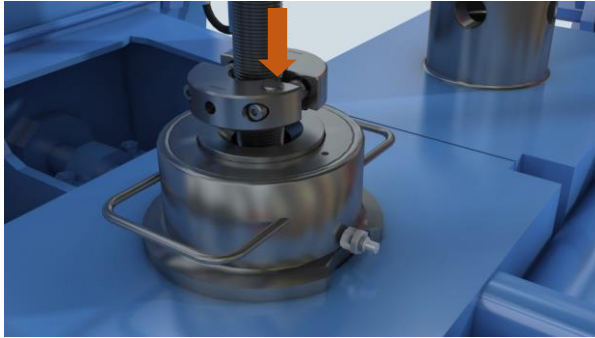
拆掉软管快拔接头；重新装上螺塞。



🔴 9th Step

► Open the nut by pressing

按扣紧螺母上的按钮，打开螺母



🔴 10th Step

► Remove the cylinder and cylinder seat, take out the valve seat with puller

依次取出液缸、缸座，阀座随丝杠和挂座一同取出。



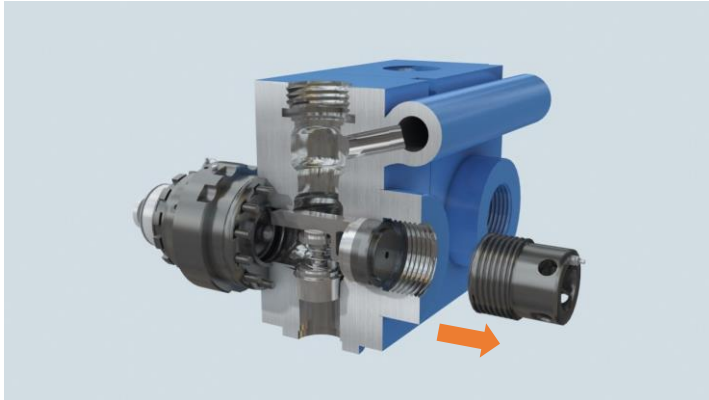
Part III: Change the lower valve seat.

第三部分：更换下阀座

➤ 1st Step

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

用与拆卸阀盖总成相同的方法，拆掉缸盖总成、以及水平堵头、插板等。



➤ 2nd Step

► Take out ring and valve body.

拆掉阀弹簧、阀体。



➤ 3rd Step

► Stick the puller into the valve bore.

将液压拔阀器的挂座和丝杠插入阀座孔。



➤ 4th Step

► Put on the cylinder seat and then cylinder on the puller.

依次安装液压拔阀器的液缸。



➤ 5th Step

► Fasten the bolt

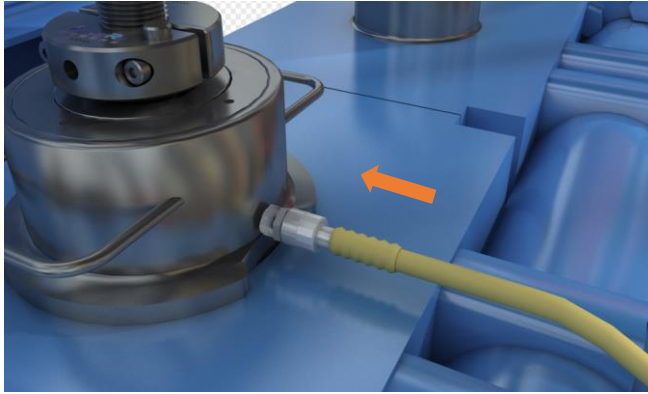
安装扣紧螺母。



🔴 6th Step

► Remove the plug bolt, connect the hose

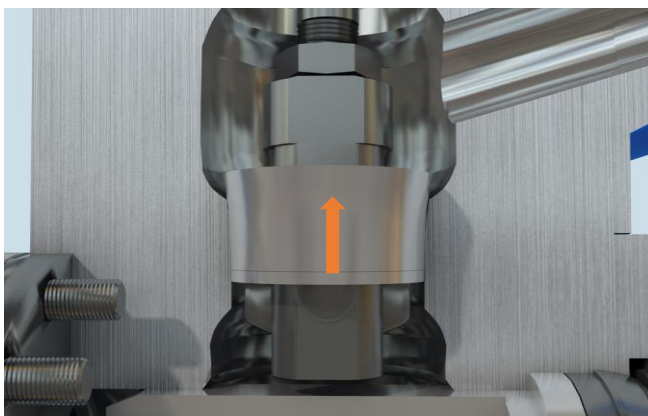
拆掉螺塞，连接软管接头。



🔴 7th Step

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

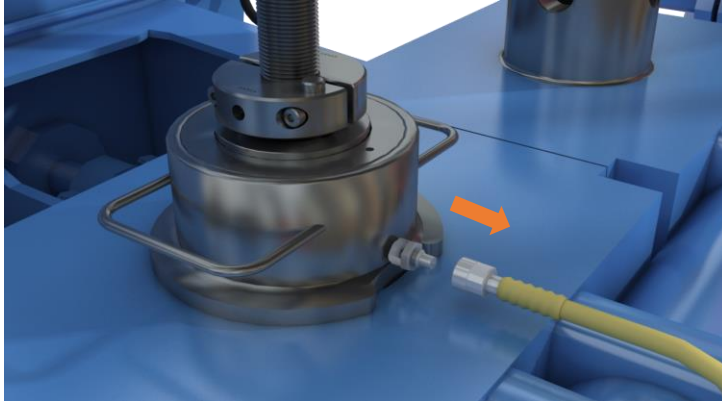
拔出液压泵的安全销；手动加压至 25MPa 左右，直至上阀座完全松退



➡ 8th Step

► Disconnect the hose, put back the plug bolt.

拆掉软管快拔接头；重新装上螺塞。



➡ 9th Step

► Pull up the lower valve seat to the crossing position.

将下阀座提至十字交差孔位置。



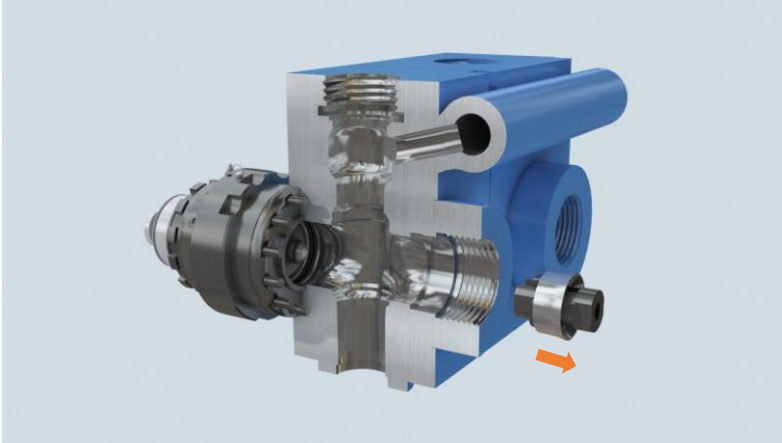
► Remover the bolt, cylinder, cylinder seat. Remove the puller rod.

拆掉螺母、液缸、缸座等，拧掉丝杠。



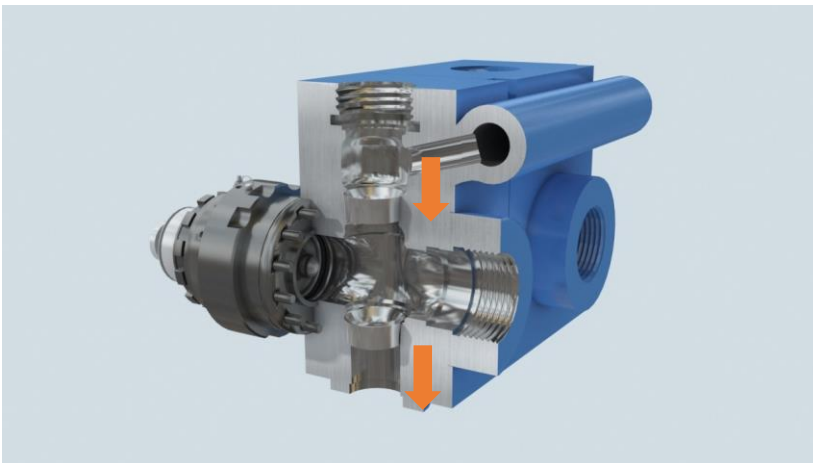
➤ 10th Step

- Take out the lower valve seat from the horizontal bore.
从水平孔取出下阀座和挂座。



➤ 11th Step

- Put in new upper and lower valve seat.
更换新的上、下阀座

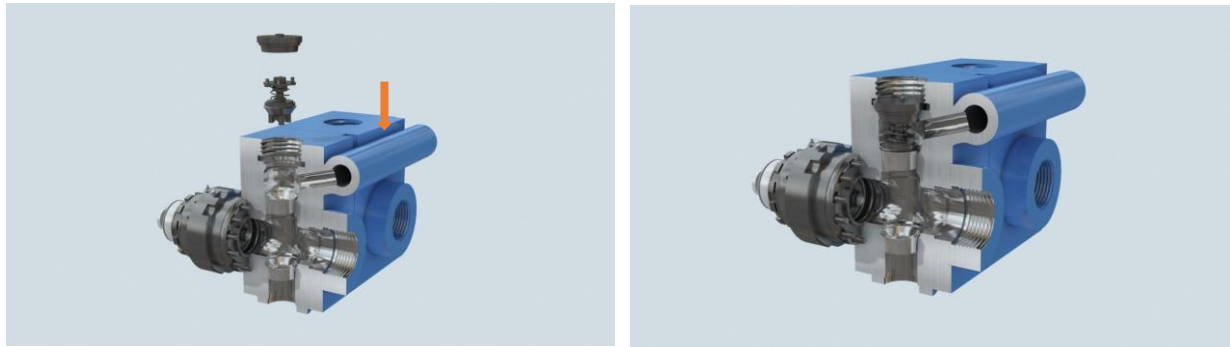


Part IV: Install Valve Head Assy.

第四部分：安装阀盖总成

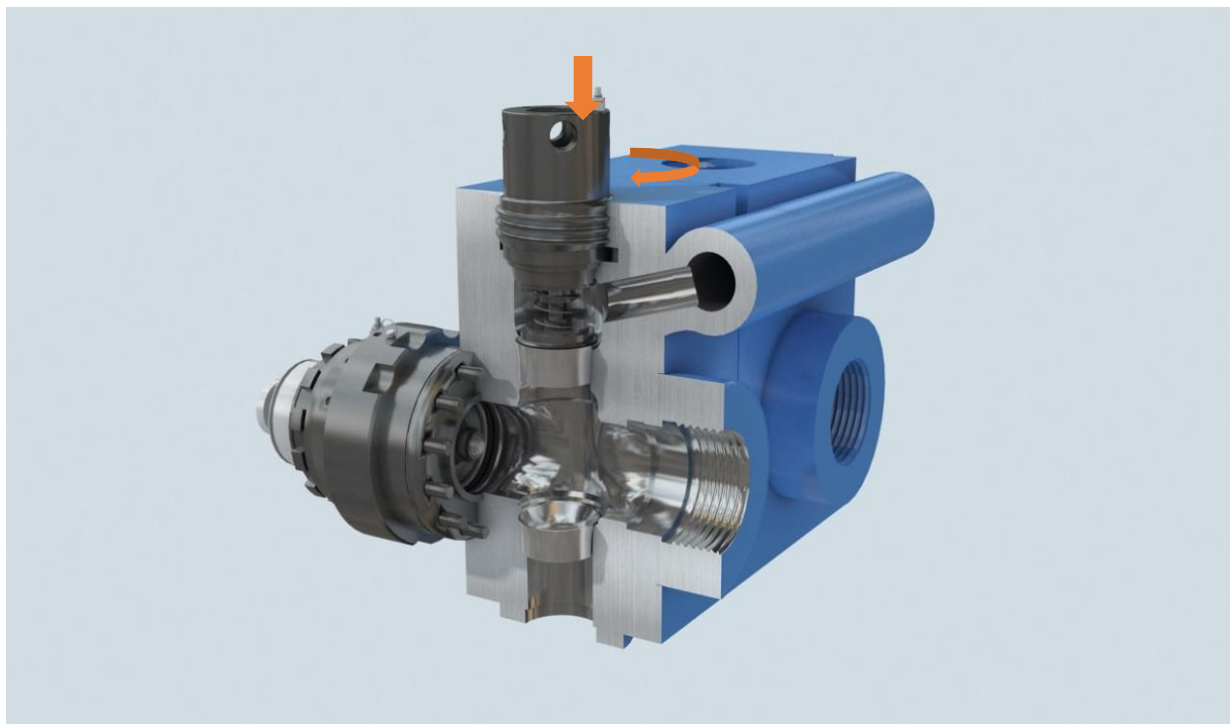
➤ 1st Step

- Put in upper valve seat, valve body and spring. Put in plug using accessory tool.
依次安装上阀座、阀体、阀弹簧等，用随机工具将堵头装入液缸内。



➤ 2nd Step

- Thread in the valve head assy and turn tight (Do not hammer it)
将阀盖总成旋入液缸的螺纹孔内，并适当上紧（不需要敲击砸紧）。



➡ 3rd Step

- Remove the plug bolt and connect the hose

拆掉阀盖上方的螺栓；接手动液压泵软管接头。



➡ 4th Step

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

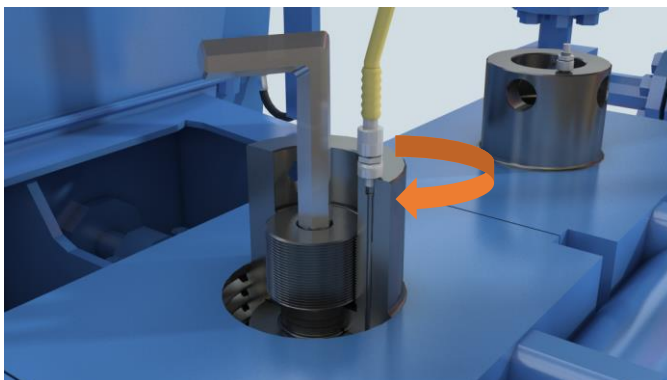
拔掉液压泵上的安全插销，手动加压至工作压力 42MPa。



➡ 5th Step

- Keep the pressure. Tight the nut with special allen key.

保持液压泵压力；用工具用力上紧阀盖中间的并紧螺母。



🔴 6th Step

► Release the pressure to zero.

液压泵卸压至零。



🔴 7th Step

► Disconnect the hose quick connector. Put back the plug bolt.

拆下液压泵软管快拔接头，断开液压泵与阀盖总成的连接；并重新装上阀盖顶部的螺塞。



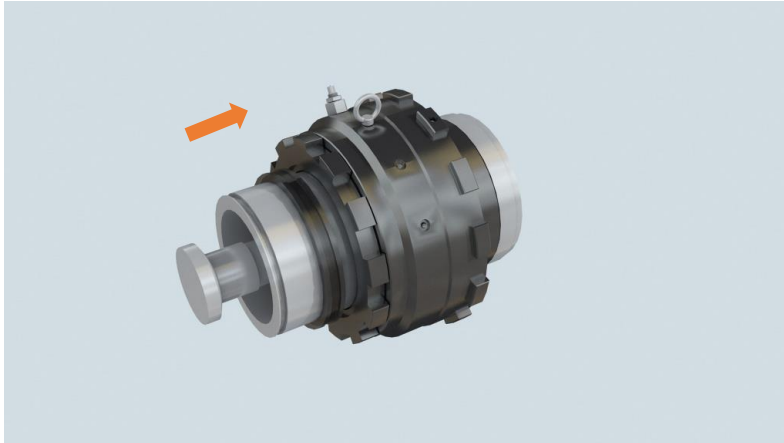
Part V: Install Liner Cover Assembly.

第五部分：缸套压盖总成安装

🔴 1st Step

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

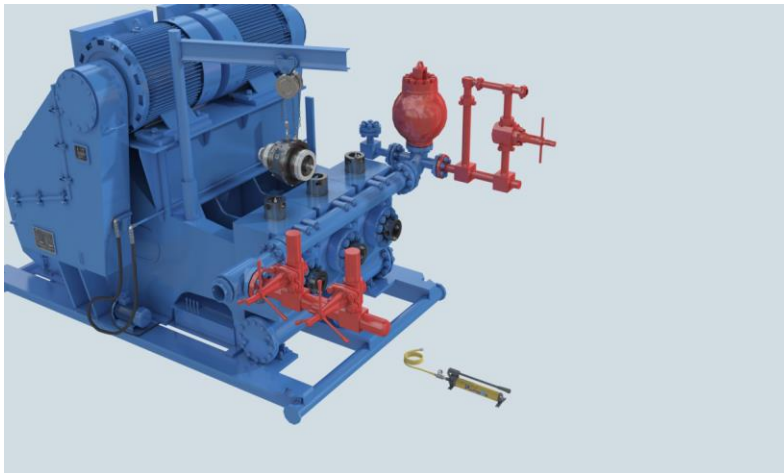
在泵外将缸套和活塞装入缸套压紧装置。



🔴 2nd Step

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

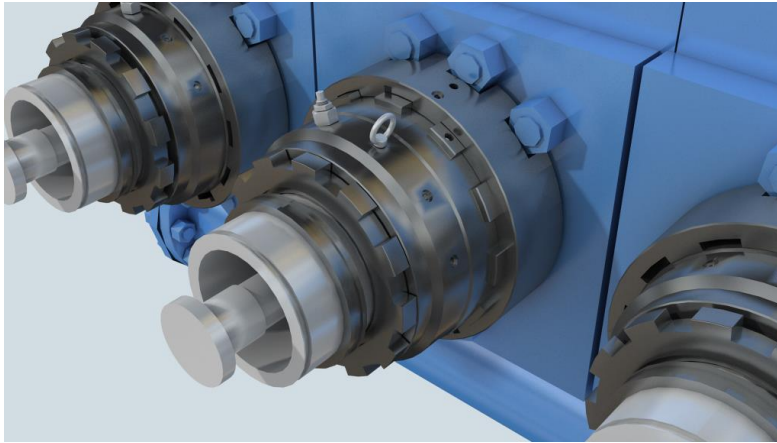
使用小吊车和导链通过吊环螺钉一起吊装到缸套的安装位置。



🔴 3rd Step

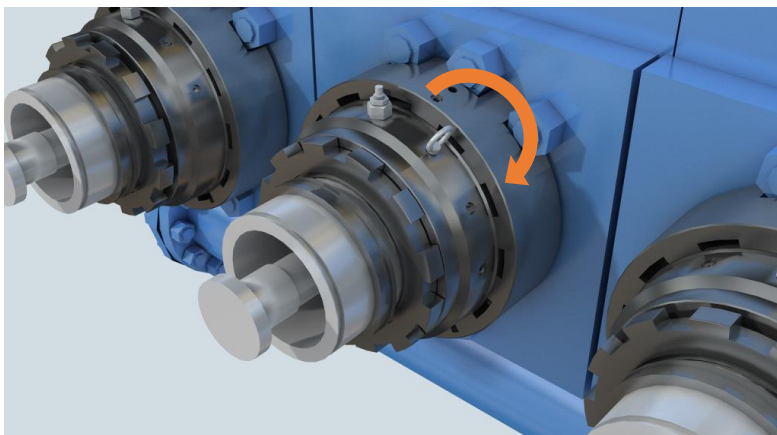
- ▶ **Align the sleeve and liner seat (pre-installed), and push the sleeve in.**

将缸套压紧装置与缸套座（事先已经安装好）的齿部对准。



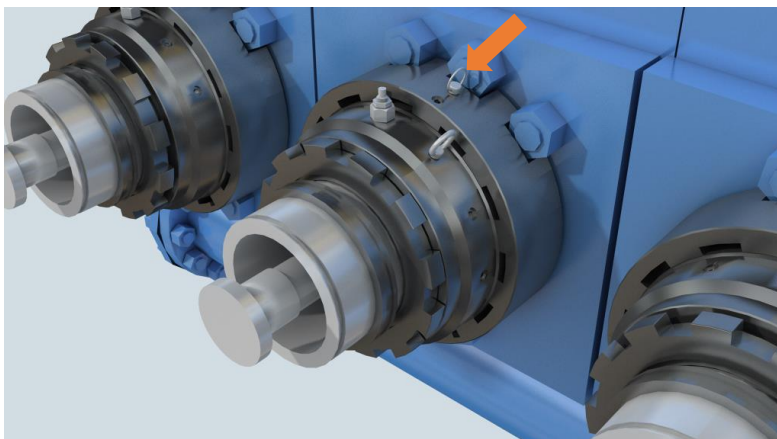
- ▶ **Turn 15°**

旋转 15°



- ▶ **Put in the stop pin**

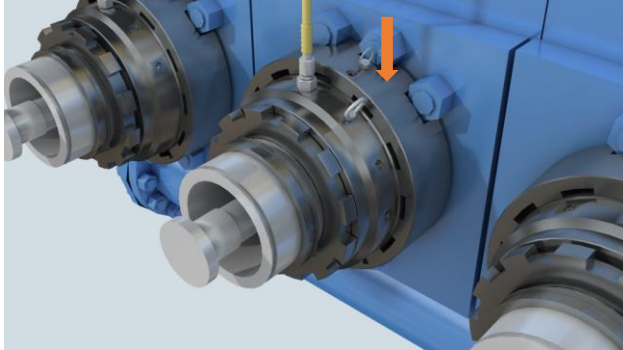
插入定位销防止松退。



➤ 4th Step

► Remove the plug bot, connect the hose

拆掉缸套压紧装置上方的螺塞，接上软管接头。



➤ 5th Step

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

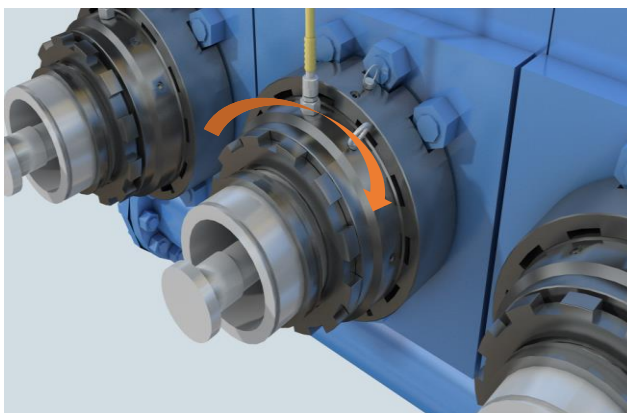
拔出液压泵安全插销，手动加压至工作压力 42MPa。



➤ 6th Step

► Hand turn the sleeve cover.

手动上紧压盖。



7th Step

► Release the pressure to zero.

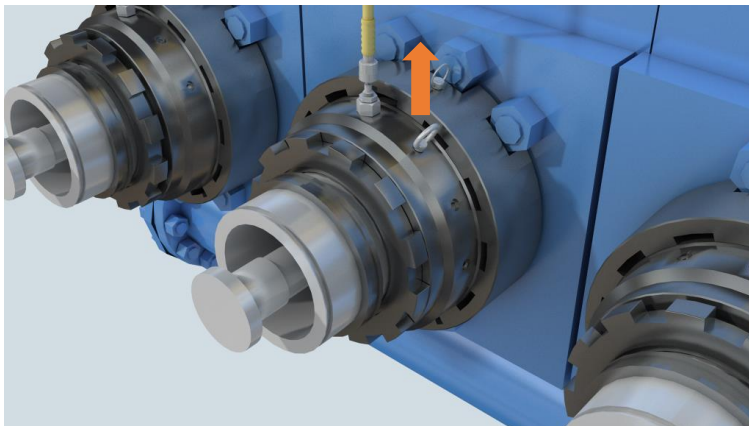
液压泵卸压至零。



8th Step

► Disconnect the hose. Put back the plug bolt.

并拆下软管接头；重新安装螺塞。



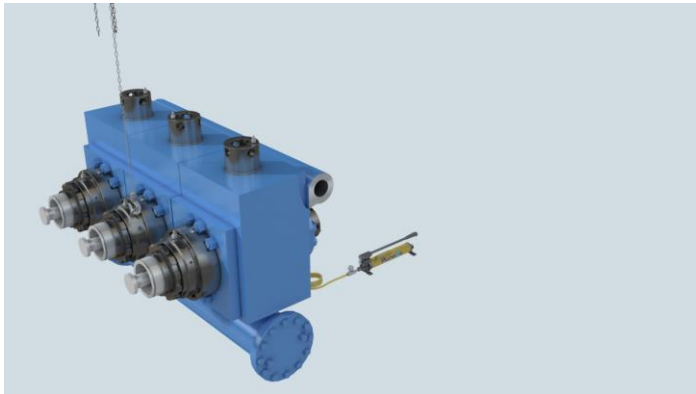
Part VI: Uninstall Liner.

第六部分：缸套压盖装置拆卸

➡ 1st Step

► Connect the jib hook to the sleeve lifting ring.

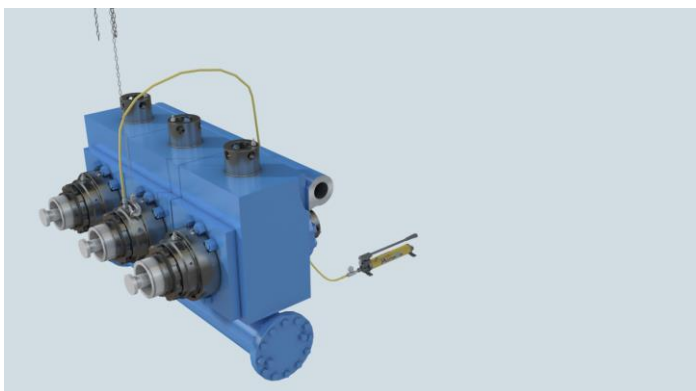
将小吊车上的导链连接到吊环钉。



➡ 2nd Step

► Remove the plug bolt on sleeve, connect the hose.

拆掉缸套压紧装置上方的螺塞，接上软管接头。



➡ 3rd Step

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

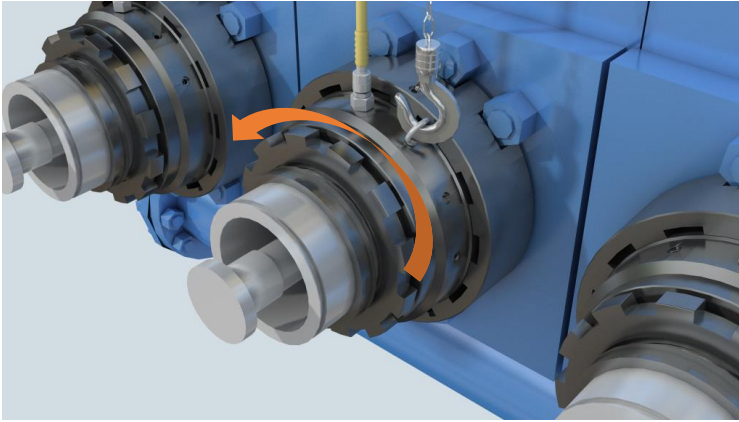
拔出液压泵安全插销，手动加压至工作压力 42MPa。



➤ 4th Step

► Turn the sleeve cover 1 round.

旋松压盖 1 周。



➤ 5th Step

► Release the pressure to zero.

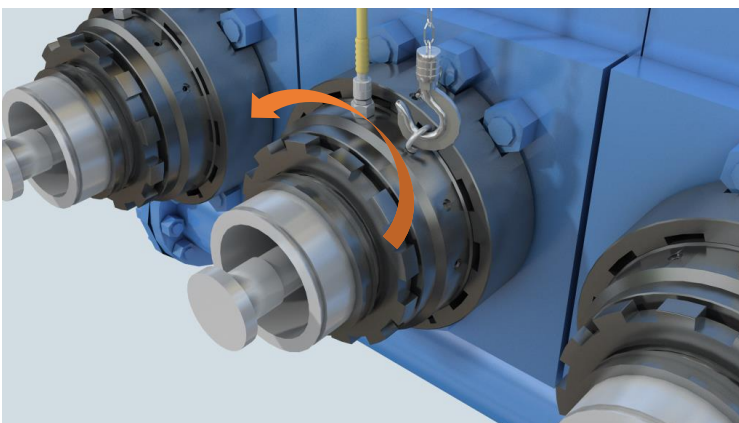
液压泵卸压至零。



➤ 6th Step

► Again turn the sleeve cover till loose.

再次旋退压盖，直至缸套松动。



➡ 7th Step

► Put out the stop pin.

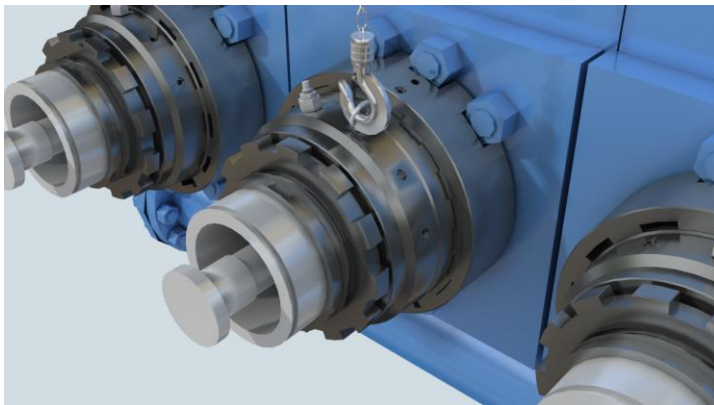
拔出定位销。



➡ 8th Step

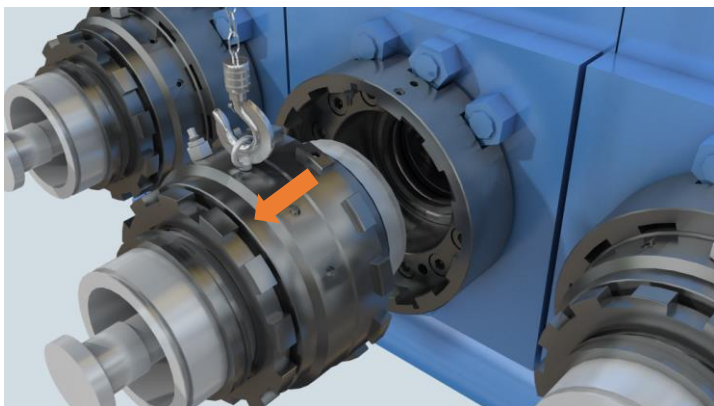
► Turn the sleeve 15°.

将缸套压紧装置旋转 15°。



► Take out the sleeve.

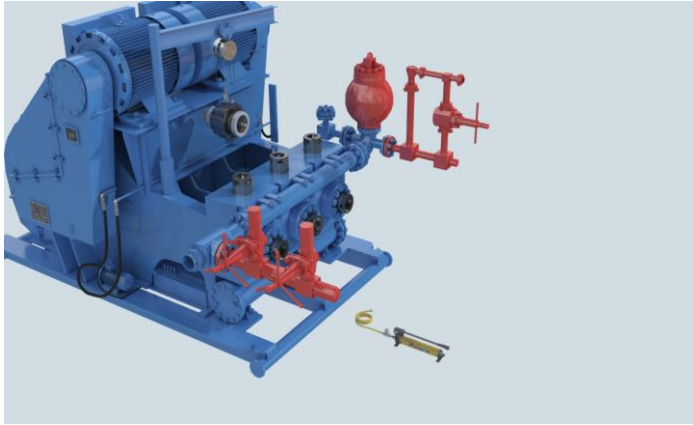
取出缸套压紧装置。



🔴 9th Step

► Jib up and take out the sleeve, liner and piston.

将缸套压紧装置、缸套、活塞总成一起吊出。



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