

# USER MANUAL TIGHTENING SYSTEM FOR EF SADDLE (SPIDER TOOL)

(OUTLET DIAMETER 225 mm – 800 mm)

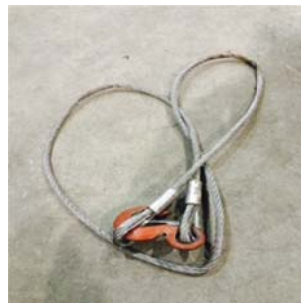
**PERSONAL PROTECTIVE EQUIPMENTS REQUIRED DURING THE INSTALLATION  
AND USE OF THIS SYSTEM**



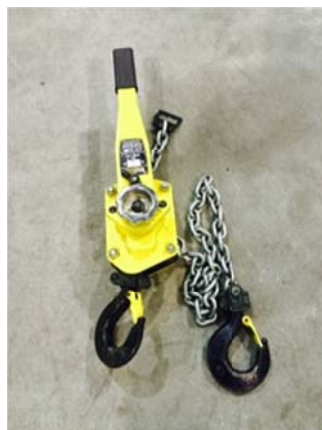
## COMPONENTS OF SPIDER TOOL



Spider Tool Main Body



Steel Rope



Lever Hoist

## OTHER TOOLS/EQUIPMENTS NECESSARY DURING THE INSTALLATION



Marker



Hand Scraper



Drill

- Re-rounding clamp
- Cleaning agent (eg. isopropyl alcohol, trichloroethane)
- Lint free towel/paper
- Welding tent

## INSTALLATION STEPS

1. Drilling of outlet hole can be done either before or after the fusion of saddle. If it is drilled after fusion, it cannot be possible to get a full bore.
2. Measure the saddle base length as shown below and record the measurement.

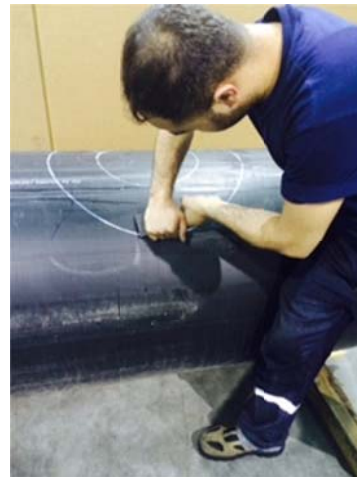


3. Put the saddle onto pipe. Check if it fits pipe properly. If the gap between pipe and saddle is bigger than 4 mm, use re-rounding tool to minimize gap. If necessary, pipe can be turned for this purpose.

4. After providing a proper fit of pipe and saddle, mark the exterior and interior circles as shown below pictures.

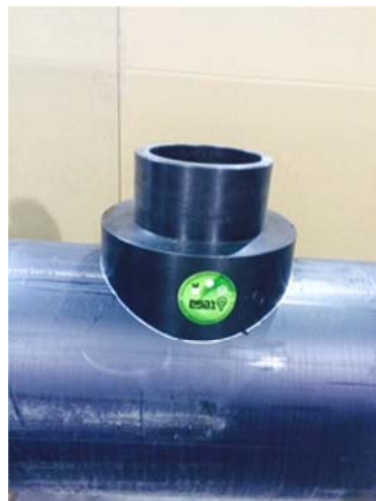


5. Mark and scrape the fusion area.



6. Clean the fusion area with an appropriate chemical. EF Saddle must be cleaned with an appropriate chemical before placing it on pipe.

7. Put the saddle onto pipe.



8. Measure the distance between the bases of spider tool as shown below. The measured distance and the length of saddle base measured in step 2 should be compared for proper fit.



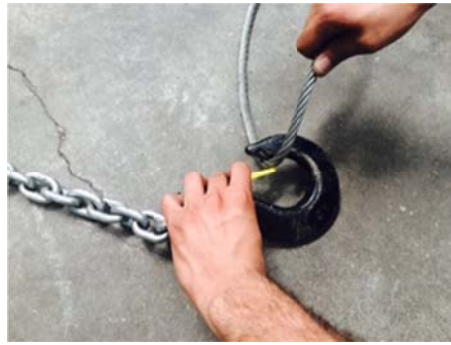
There are several screw holes on spider tool. If necessary, distance between bases of spider tool should be adjusted by using a suitable allen key. This adjustment should be done crosswise.



9. After providing a proper fit of tool onto saddle, tool is placed on saddle.



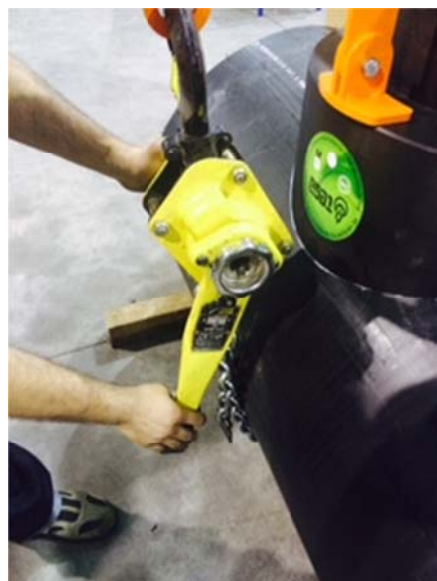
**10.** Connect steel rope and lever hoist.



**11.** Place the steel rope + lever hoist under pipe and fix hook of rope. Then fix hook of lever hoist at the other side of saddle.



**12.** Tighten the steel rope by operating the lever hoist.





13. Check the gap between pipe and saddle. Use a paper for this purpose. Paper shall not enter more than 2 cm.



14. Put the adaptor pins of EF welding machine on EF saddle and load welding data to EF welding machine by the help of barcode reader. After completion of electrofusion, do not move the pipe assembly or tightening system until cooling time is completed.



15. Remove the tightening system after cooling time is elapsed.