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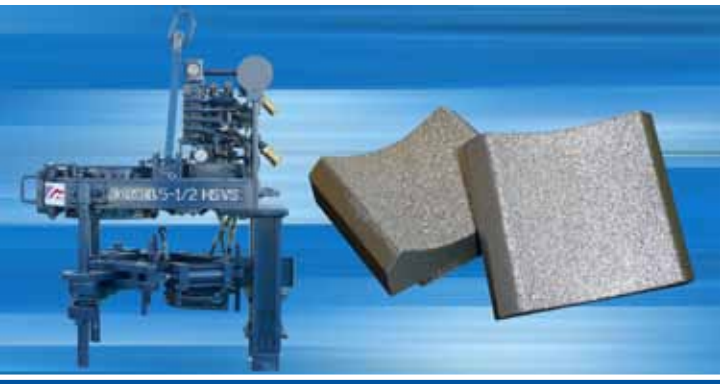
Hydraulic Power Tongs - World-Wide

Corrosion Resistant Alloy Running Procedures with Eckel Tongs and Non-Marking Grit Faced Dies



Eckel Hydraulic Power Tongs, Power Units, and Accessories

ECKEL MANUFACTURING COMPANY
50 plus Years
QUALITY - EXPERIENCE - SERVICE

Eckel Running Procedures for Corrosion Resistant Alloy Tublars

Introduction to Corrosion Resistant Alloys (CRA) Tubulars:

When running CRA tubulars, extra precaution is required to not overly mark or gouge the tubular to prevent premature failure of the tubular.

Eckel 8-5/8 HS HT Tong with Tri-Grip Backup

The operator should have experience with running traditional steel tubulars prior to being trained on the differences between CRA and steel tubulars. He should understand why CRA tubulars are used on the well and that the procedures can eliminate most of the problems that the Oil Companies have by using the much more expensive tubular.

Most casing crew personnel have been trained that faster is better, but with CRA tubular, extra time in handling of the CRA tubular is critical. A tong operator with experience with CRA tubular will only make-up one connection of CRA tubular in the same time it would take to run three or four connections of steel tubular.

In normal steel tubular running operations the tong is used to make-up the initial threads and then the final torque is applied. With CRA material, strap wrenches are used to make-up the connection until hand tight, and final torque is applied with the tong.

Required Tools for Running CRA Tubulars

A qualified casing crew will understand why many different tools are used to run CRA tubular such as: Special non-marking tong dies, weight compensators, and strap wrenches. Additional tools maybe required by the Oil Company. If the casing crew is to clean the connections, pin and coupling, then other equipment will be needed, but in general, the

following equipment is required to run CRA tubular:

Eckel Tong with Tri-Grip Backup:
Eckel recommends the Eckel 5-1/2 HS VS and the 8-5/8 HS HT tong for running CRA tubulars. You will need an Eckel tong model that will deliver more torque than make-up and break-out operations. Normally break-out operations require more torque than make-up.

Eckel Grit Faced Dies:
With at least 2 extra sets of dies on hand.

Eckel Bushings:
Eckel recommends bushing in the head roller on tubular 3½ inches and smaller. Depending on the tubular wall thickness this may not be required on sizes larger than 3½ inch.

Wire Brushes:
New wire brush – rust and contaminant free (Qty: 2) for cleaning grit faced dies.

Quicksolve II Cleaner:
Eckel recommends (2-3) cases to run a job. Used for cleaning grit face dies and tubular if needed – Eckel Part No. 121348.

Stabbing Guide:
Eliminates pin / coupling damage while stabbing.

Safety Clamp:
Prevents tubular from sliding into well.

Pickup Elevator (single joint elevator):
Picks one joint of tubular at a time.

Single Joint Compensator:
Pneumatic tool that slowly lowers the tubular into the coupling.

Strap Wrenches:
Used to make up the connection to hand tight position. (Qty: 2)

Nylon Slings:
For lifting up joint (one joint at a time). (Qty: 2)

Thread Protectors:
Quick change without metal on inside for protection of threads.

Thread Lubricant:
API Modified thread lubricant, API 5A3 or other approved thread lubricant.

Torque Control Computer:
Used with a fast acting dump valve to stop the tong at a particular torque.

Long Slips:
Non-directional dies or grit face dies.

Collar Type Elevator or Spider:
Non directional dies or grit faced dies.

Wood lined V-Door Edge:
Keeps tubular from coming into contact with ferrous metal.

Running Procedures for CRA Tubulars:

Most Oil & Gas Companies, at least in the USA, will have a tubular pipe representative on location when making-up or breaking-out CRA tubular.

All required equipment should have spares available in case the primary equipment fails. Spare non-marking / grit faced dies should be on location in case they are damaged beyond repair or cleaning.

It is recommended to meet with the Oil or Gas Company along with the CRA tubular representative prior to running any tubular. In this meeting you will identify the maximum RPM, torque and any other special procedures required when running the CRA tubular.

Make-Up the CRA Tubular as follows:

1. Install new grit faced dies and Eckel bushings in the head rollers on tubular 3½ inch and smaller in the tong and install new grit faced dies into the backup.
2. Setup the tong and power unit equipment as indicated in the operations manual.
3. Hang the tong and test the tong and backup to insure they are operating correctly.
4. Both brake bands must be in good working condition and properly adjusted to insure the rotary gear comes out of the cage plates correctly.

5. After the first joint is lowered into the well, have the rig operator stop the joint and place the tong on the tubular, without heads engaged, to insure the tong is level.
6. Remove the tong and have the rig operator lower the first joint into the hole and set the slips after the tubular comes to a stop.
7. The rig operator should slowly set the weight down.
8. Place a safety clamp around the tubular and tighten, but not so tight that deep marks appear in the tubular wall.
9. Place a stabbing guide over the coupling to prevent any damage to the coupling face.
10. Attach single joint elevator around second joint and lift into the derrick.
11. With the weight compensator, slowly lower the joint into the connection.
12. Remove the stabbing guide.
13. Insure that the connection is doped properly.
14. A person in the derrick should be holding the tubular in a complete vertical position.
15. Using a strap wrench, tighten the connection to a hand tight position.
16. Remove the single joint elevator.
17. Place the tong on the tubular and engage the backup first.

WARNING: Do not have the elevator or spider on the tubular while it is being made up!

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18. Slowly engage the tong and begin makeup in low/low speed until final makeup torque is reached. Rotation speed should not exceed more than five rotations per minute – one turn every 12 seconds.

NOTE: If the dies slip on the tubular at any point during make-up or break-out stop the tong and check the dies. The dies should be replaced at the operator's discretion. Clean the dies according to the Cleaning Procedures Section.

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19. Release the tong heads and then backup heads.
20. Attach an elevator or spider onto the tubular and lower the tubular into the well.
21. Check tong dies and backup dies to see if they need to be cleaned. At a minimum of every third grip clean the dies with QUICKSOLVE II (Eckel Part No. 121348) according to the Grit Faced Die Cleaning Procedure Section. If the tubular is not free of coatings, paint or other foreign matter, then a higher cleaning interval maybe required.
22. Repeat Steps 8 through 21.

Torque Control System

When running CRA tubulars with a torque control system, the tong operator should know torque values. If the torque goes over maximum torque, and the dump valve does not activate, the tong operator should stop operations and troubleshoot the problem.

Six Key Elements to Successfully Running CRA and Cleaning Procedures for Maximum Life and Performance of the Grit Faced Die

Proper cleaning and running of the tubular will achieve the maximum life of the die. Life of the dies is greatly determined by the tong operator and his attention to these instructions. There are six key elements for successfully running Eckel Grit Faced Dies with chrome tubular:

1. Eckel bushing in the head rollers on tubular 3½" and smaller. Depending on tubular wall thickness this may not be required on sizes larger than 3½".
2. Both brake bands must be in good working condition and properly adjusted.
3. Tong must be level while on the tubular.
4. Rotation speed should not exceed more than five rotations per minute – one turn every 12 seconds.
5. Clean dies at a minimum of every third grip on the tubular using QUICKSOLVE II (Eckel Part No. 121348). If the tubular is not free of coatings, paint or other foreign matter then

higher cleaning intervals maybe required. For make-up operations Eckel recommends (1-2) cases of QUICKSOLVE II and for break-out operations Eckel recommends (2-3) cases of QUICKSOLVE II.

6. If the die slips on the tubular at any point the dies should be replaced at the operator's discretion.

Grit Faced Die Cleaning Procedure

Dies should be cleaned at a minimum of every third grip on the tubular. If the tubular is not free of coatings, paint or other foreign matter then a higher cleaning interval maybe required. Use QUICKSOLVE II safety solvent cleaner.

1. Attach the straw to the QUICKSOLVE II spray nozzle.
2. Initial wash of the die - Spray the QUICKSOLVE II cleaner starting at the top of the die wash away contaminants in a back and forth pattern while moving down the face of the die.
3. Brush the die with a clean steel brush to remove any additional material.
4. Final wash of the die - Spray the QUICKSOLVE II cleaner starting at the top of the die. Wash away contaminants in a back and forth pattern while moving down the face of the die.

Cleaning Supplies Required:

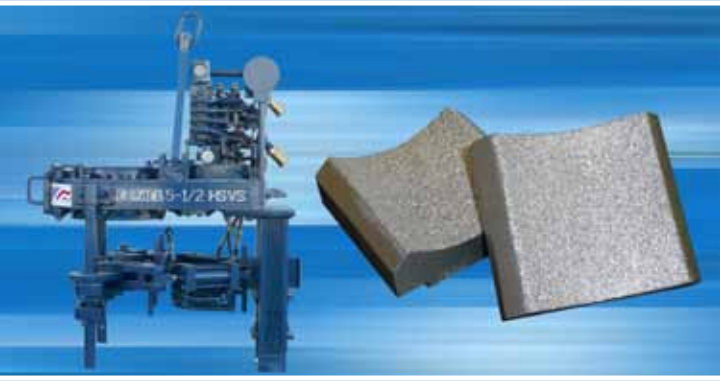
Wire Brush:
(Qty: 1) – rust and contaminant free.

QUICKSOLVE II:
(Qty: 2 or 3 cases) - Eckel Part No. 121348 to run a job.

Conclusion

The important thing to remember is that you are a team operation. Everyone needs to work together to get the job done correctly; even though the job will take a lot more time to run than a normal steel tubular job.

Eckel Tongs with Non-Marking Grit Faced Dies minimize penetration of Corrosion Resistant Alloys (CRA) while allowing you to reach the higher torques today's tubulars require. Our customers are assured they will achieve a successful experience running of CRA tubular relies on the integration of thee main principles: the right equipment, operating procedures, and properly trained people.



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