

**All Star I&E, Inc. LO/TO Guide To Ideal Rigs**



## Lockout/Tagout Guide For Rig Packages

**Mudpumps, Drawworks, Topdrive, Rotary, Auxiliaries, Hpu**

**Mudtanks, Accumulator, 120V & 480V Panels**

This will be your basic guidelines and steps to locking out your Main Traction Motors, Pumps and Auxiliaries to the following equipment. When locking out any equipment, all personnel who are working on the equipment shall be present when locking out any electrical device. Any third party that needs to work on the same equipment will need to provide their own lock. Below will be the basic devices that you will need to lockout accordingly.



These are your basic lockout items; Tag, Lock, Hasp, Breaker Locking Device and Lockout Bag.





**PATTERSON-UTI**  
DRILLING COMPANY LLC

# LOCK OUT STATION

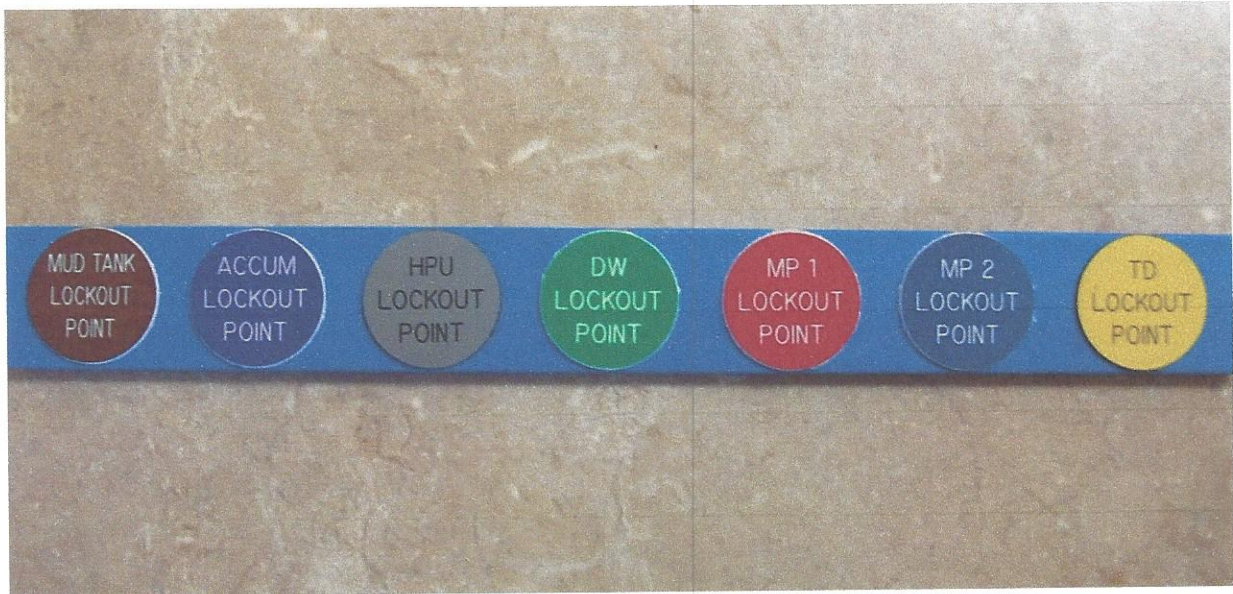
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
106	107	108	109	110	111	112	113	114	115	116	117	118	119	120





## Lockout Dot System

This will be your basic lockout checkpoint system to help and guide when locking out Mudpumps, Top Drive, Drawworks, Centrifugals, Ect.



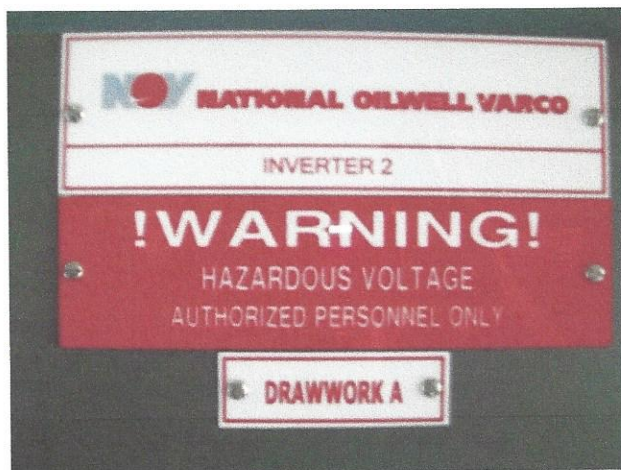
These are the dots to help identify what all needs to be locked out.



The dots are placed on designated disconnects and breakers so make sure all lockout points have been acknowledged.

## Drawworks and Auxiliaries

When working on the Drawworks, you may have 1 or 2 Traction motors depending on what type of Drawwork is sent with the rig. Each Traction motor has its own drives in the VFD house labeled Drawworks A & Drawworks B. You will also have auxiliary motors such as Drawworks Lube Pump, Drawworks Oil Cooler, Drawworks Blower A & Drawworks Blower B. So when working on the Drawworks, be sure and lockout all necessary electrical devices.



The drives will be labeled what its powering and the lockout should be directly above or under the label itself.

←Label for drives





## Drawworks and Auxiliaries



This is the lockout device on the drive powering the Drawworks.



Your Drawworks Lube Pump, Drawworks Oil Cooler, Drawworks Blower A & Drawworks Blower B will be located in the MCC in the VFD house.

## Mudpumps and Auxiliaries

When working on the Mudpumps, you will have 2 Traction motors per pump. Mudpump 1A, Mudpump 1B, Mudpump 2A & Mudpump 2B. Sometimes the drives themselves are separated in the VFD house per pump but never the less it will be labeled Mudpump 1, Mudpump 2, Mudpump 3, ect.



←Label for drives



## Mudpumps and Auxiliaries



↑

This is the lockout device on the drive powering the Mudpumps.



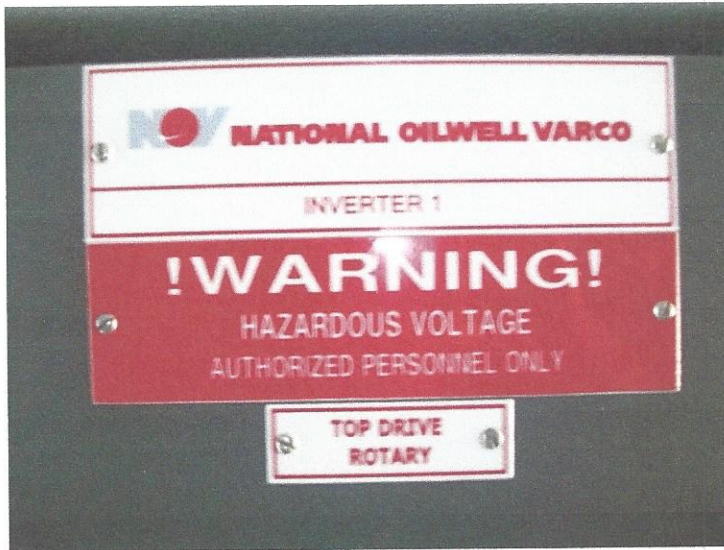
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Your Mudpump Blowers 1 & 2, Mudpump Oilers 1 & 2 & Mudpump Liner Washers 1 & 2 will be located in the MCC in the VFD house.



## Topdrive and Auxiliaries

When working on the Topdrive, there are 2 Traction Motors but 1 drive. This drive is sometimes separate or paired in the same cabinet with the Rotary Table.



← Label for drives



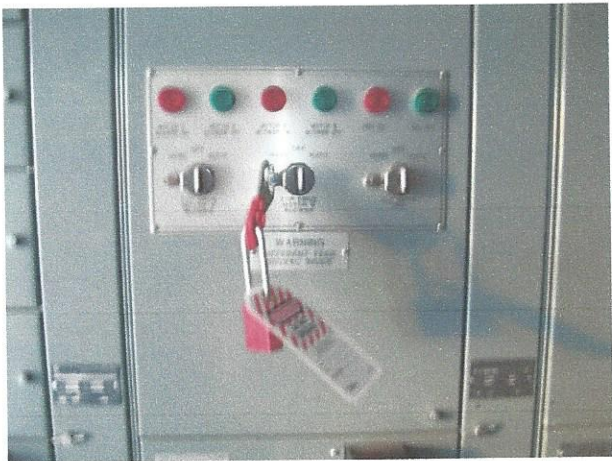
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This is the lockout device on the drive powering the Topdrive.

## Topdrive and Auxiliaries



This is the main disconnect for the 600V supply for the Topdrive auxiliaries.

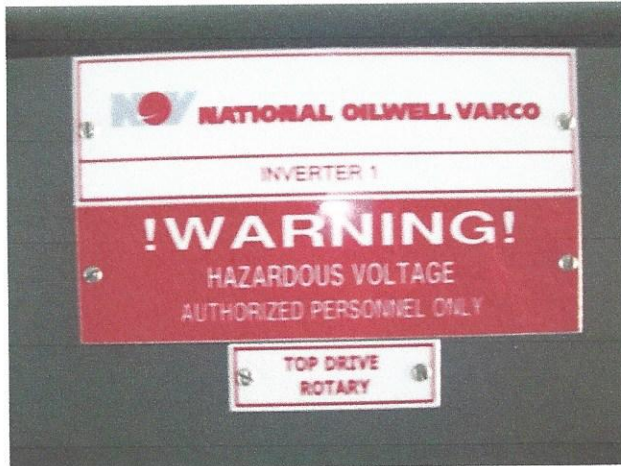


These are the individual HOA's for the Topdrive Blower A, Topdrive Blower B & Topdrive HPU. This section is located in the MCC in the VFD house.

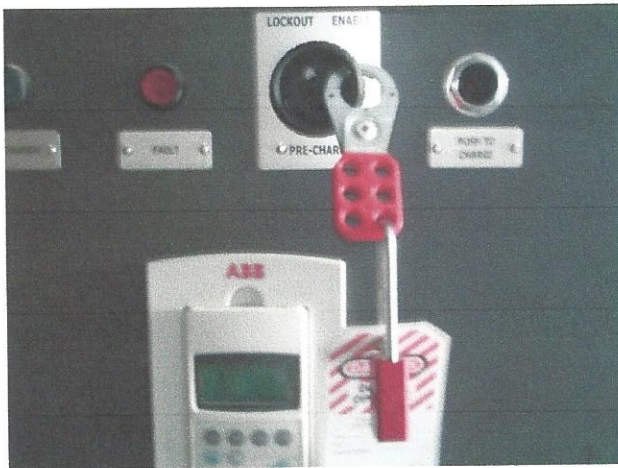


## Rotary and Auxiliaries

When working on the Rotary Table, there will be only 1 Traction Motor and 1 auxiliary motor. This drive is sometimes separate or paired in the same cabinet with the Topdrive.



← Label for drives



↑

This is the lockout device on the drive powering the Rotary Table.

## Rotary and Auxiliaries



Your Rotary Blower will be located in the MCC in the VFD house.



## Accumulator

When working on the Accumulator you will have 2 different voltages -120V & 480V to lockout. The control panel consists of 120V and the motor/pump is 480V. Keep in mind that this unit may be under pressure and any stored energy will need to be released before servicing.



This is the control box for the accumulator.



← The way to lock this out is by installing a breaker lockout device located in the Drillers Cabin.

## Accumulator

When working on the pump you will need to lock this out in the VFD house.



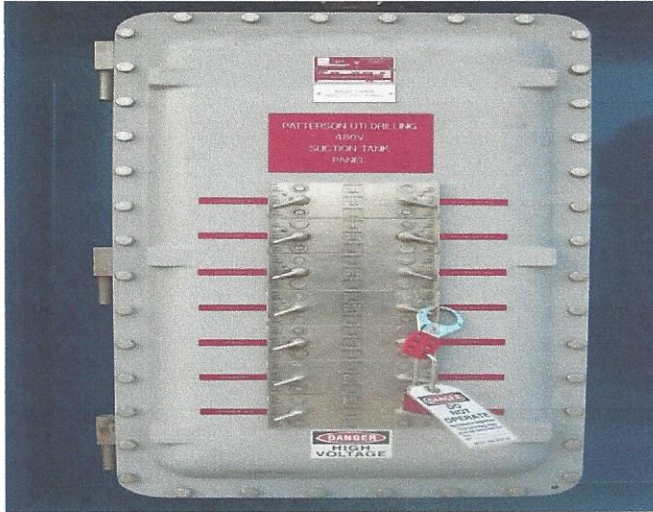
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The Accumulator disconnect will be located in the MCC in the VFD house.



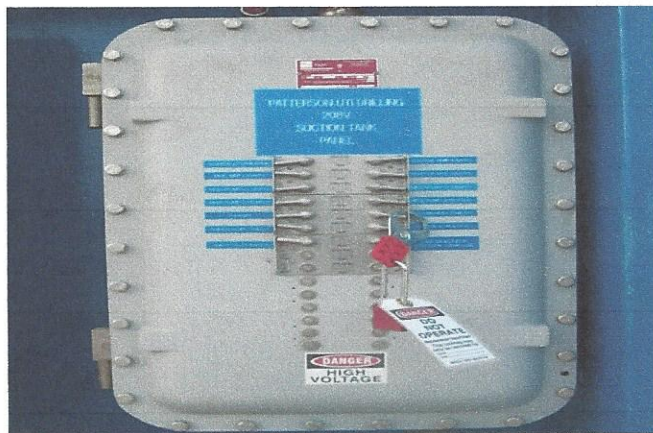
## Mudtank Pumps and Centrifugals

When servicing the Agitators, Shale Shakers or Vacuum Degasser, you will need to lock these out located in the 480V panel.



↑

This is the panel that supplies the 480V to these motors.



↑

When servicing any Lighting, Intercom or Cameras, be sure and lock these out accordingly. The 120V panel provides power to all the Lighting, Intercom and Cameras.

## Mudtank Pumps and Centrifugals

When working on any pumps, motors or routine maintenance you will need to lockout the device at the proper destination.



↑

Each motor has a Start/Stop located near the motor itself. This is the device for locking out the motor mechanically, not electrically.



## HPU Unit and Auxiliaries

When working on the Hpu unit, you will have 1 to 2 motors on this unit. You will also have a control box or a start/stop at the Hpu skid itself. To ensure safely turning off the unit for maintenance, lockout the main disconnect inside the VFD house.



This is the control device that will only lockout the controls for this unit.

## HPU Unit and Auxiliaries



↑

This is the main disconnect located in the MCC in the VFD house. When working or servicing the Hpu unit, be sure and lock the disconnect out. This is your primary power source and should always be locked out during maintenance.