LIDAN DRAWWORKS BRAKE CONTROL SYTEMS PICTUREs

This document is intended as a guide and may give an idea about how an installation may be performed on different rigs

Picture 1

Jack Up Rig “Gulf 3”
(Gulf Drilling International),
delivered 2005.

Oilwell-2000 drawworks.
equipped with DBS Brake
Servo & ADS Autodrilling
System.

The dual Brake
Actuator (active & passive)
is mounted on the brake shaft.
Note the brake lever stump,
to which the “old” lever
extension can bebolted for
brake band adjust service.
The lever may serve as and
ultimate safety brake means.

Picture 2

Jack Up Rig “Gulf 3”.

Autodriller hydraulic encoder unit*
Typically mounted on top of the
Baylor Brake, installation
opposite side alternatively.
Includes chain (stainless steel)
Transmission and clutch,
both auto-lubricated

New design available:
Autodriller Hydraulic Encoder Unit
positioned direct on Baylor shaft
(no chain transmission)

Drawworks Oilwell 2000

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Picture 3

Jack Up Rig “Gulf 3”.

Drillers cabin with the
Brake Servo and Autodriller
Controls integrated with the
Main Console

Drawworks Oilwell 2000

Picture 4

Land Drilling Rig (13 units) for

Gazprom / Burgaz, Russia

“Dual Main Brake Actuator”
mounted on Drawworks Brake
shaft f

Active actuated (manual joystick)

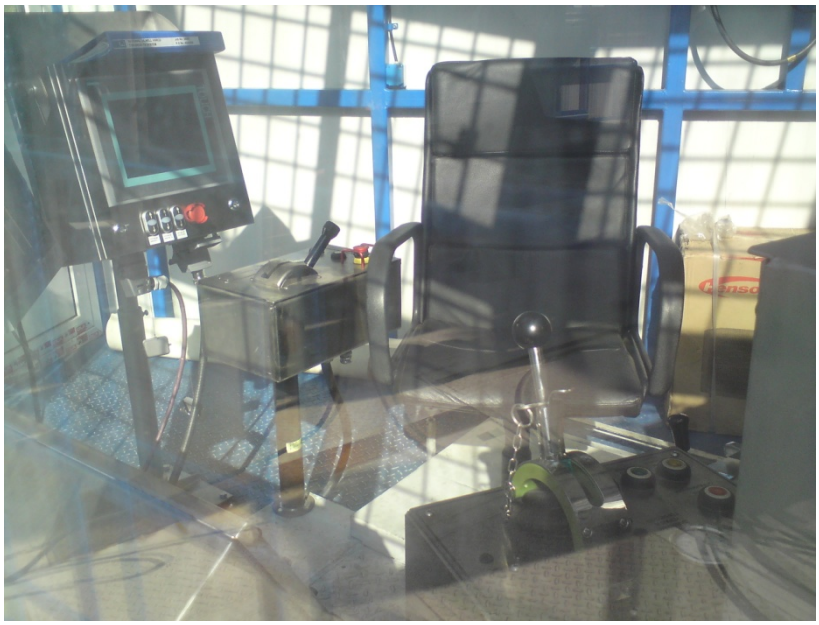
Hydraulic pressure applied

Passive actuated

spring applied (auto brake or
emergency push button)

Lidan delivery
2007/2008/2009

Drawworks Upetrom
F-500 Ton 1 Unit
F-400 Ton 2 Units
F-320 Ton 9 Units
F-200 Ton 1 Unit



Cabin Joystick Control shown on front
(through glass window).

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Picture 5

Stena Spey, (Semisub)
Lidan delivery 2007

Typical drillers cabin view. Note driller's eyes focusing the up-travelling block and his right hand on the brake handle ready to brake and stop while his left hand signaling his readiness for a synchronized disconnection of the clutch!

In addition to the DBS Brake Servo, Stena Spey is equipped with a BCS Kinetic Energy Monitoring System, see the display monitor at his right hand.

A Lidan ADS Autodriller and FeedOff system, working in concert with the Compensator, installation is pending.

Drawworks National 1625 DE.

Picture 6

Transocean Winner, (Semisub)
Lidan delivery 1998, upgr. 2007.

The Lidan DBS Brake Servo in a Cyber Base environment.

Drawworks National 1620E

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Picture 7

Bredford Dolphin, (Semisub)
Lidan delivery in 2007

The Lidan DBS Brake Servo in a Cyber Base environment, see through the “panorama” window the dual actuator connected to the brake shaft. The Lidan electro-hydraulic servo control valve system interfaces the National Oilwell DCDA “Cyberbase”

Drawworks Ideco 3000

Picture 8

Noble Kolskaya, (Jack Up)
Lidan delivery in 2002

DBS Brake Servo and ADS Autodriller console is integrated with the drillers main console.

Note: a locker, by gravity, automatically locks for “full brake applied”!

Should driller leave his control position, a small chain pin secures the locker, copying the traditional chain locker pin for the original heavy brake lever!

National-Oilwell 3000

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Picture 9

A view of the Brake Servo Hydraulic Power Unit, positioned on drill floor, Zone 1 area.

Manufactured in stainless steel to resist the tough environment, with a plastic curtain to protect against mud contamination and to permit high pressure water cleaning.

Picture 10
Nabors Int. Rig 103, Land Rig
Lidan delivery 2006

Land rig operating in the Middle East.

View from drillers cabin, Brake Servo handle to the right, Baylor Brake handle to the left.

Emsco C3 Type2 drawworks

Picture 11

Transocean Prospect, Semisub
Lidan delivery 1996, upgr 2006

The dual Actuator installation, here applied to the drawworks on an extended brake shaft.

Note the loose brake arm, shown on top of the picture, which can be adapted to the actuator for temporary manual operation as an ultimate emergency option .

The manual lever also is used for brake the band tension adjustment procedure.

The correct adjustment can easily be set and checked by pressing drillers full weight onto the lever for the actuator stroke to align with two pre-positioned marking pins (as seen on the picture: one is welded on the wall, the other one is welded to the actuator's brake lever adaptor).

National 1625 DE drawworks

Picture 12

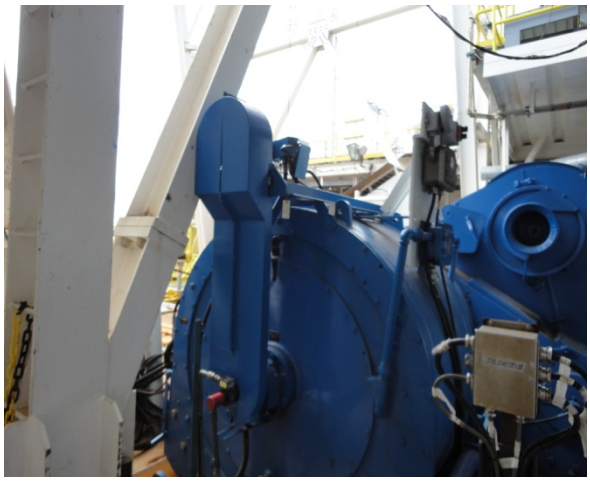
Statoil "Peregrino A" (Brazil)
Platform Rig, commissioned 2010

The Lidan console mid forward includes Band Brake Joystick, Autodriller Feed Off / WOB control

Picture 13

Statoil “Peregrino A” (Brazil)
Platform Rig, commissioned 2010

Autodriller hydraulic encoder drive unit positioned at the Baylor´s rear side with stainless steel feed back chain connected to water swivel rotary .



Picture 14

Statoil “Peregrino B” (Brazil)
Platform Rig, commissioned 2010

Band brake HPU on picture to right.

Band brake actuator below low clutch “under cover”

Picture 15

Statoil “Peregrino B” (Brazil

The Lidan console mid forward includes Band Brake Joystick, Autodriller Feed Off / WOB control

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Picture 16

Turkish Petroleum (TPAO) - Turkey
Land Rig, delivered 2011

The unit is equipped with quick connections for easy assembly/disassembly during rig move

The system is equipped with autodriller and block control system

Picture 17

Weatherford “Rig No 174.”-Saudi Arabia
Land Rig delivered 2012

System delivered with autodrilsystem for WOB as well as delta P and TD torque control.

Control through a 10” touch screen mounted in zone 1 environment.

Picture 18

Maers Kan Tan IV, (Semisub)
Lidan delivery 2009

Typical drillers cabin view.

In addition to the DBS Brake Servo, Kan Tan IV is equipped with a BCS Kinetic Energy Monitoring System, see the display monitor above the TD control.

A Lidan ADS Autodriller FeedOff system, working in concert with the Compensator with one botton control is installed.