Stand Hand, STV, SBBC-6, SBBC-10

*For reference only, please contact your local sales contact for more information.

Stand Hand

Description

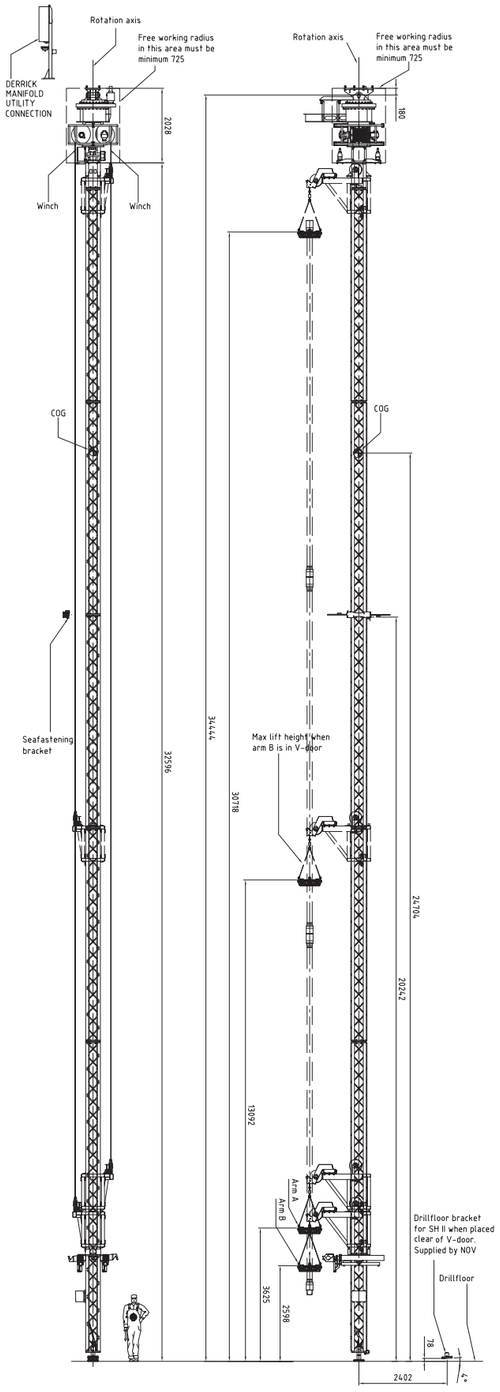
The Stand Hand is designed to safely facilitate off-line stand building of drill pipe or casing using a mousehole. It provides a system that simultaneously picks up or lays down single joints of drill pipe or casing from a pipe ramp and delivers those to a dedicated mousehole for off-line stand building operations without the need for personnel tailing pipe between the v-door and mousehole. It consists of a tall square tubular column and a pair of vertical traveling dollies. The traveling dollies are hoisted along the vertical column with a pair of remote controlled hydraulic winches whose hoist lines are connected to a pair of single joint elevators through a fairlead assembly incorporated into the vertical traveling dollies. Additionally, the system includes a pair of hydraulically deployed and operated tailing arms to receive the lower end of the pipe joint as it comes into the vertical position at the end of the pipe ramp.

All control is electro-hydraulic with profibus network linking tool components to the tool controller. The tool controller is an SBC controller, and can be either a dedicated NOV SBC control cabinet, or part of a NOV MTC (Multi Tool Controller) configuration.

The Stand Hand comprises of 7 components that are required to be controlled by the control system:

- 1 slewing gantry frame
- 2 hoist winches and associated hoisting mechanisms and elevator assemblies
- 2 tailing arm assemblies with discrete proximity sensors for position control
- 2 tailing arm claws driven by discrete on/off solenoids for open and close, no feedback

Stand Hand	
Service	Vertical Pipe Racking
Area classification	Zone 2
Design Standards	FEM / NS 3472
Design temperature	-20 °C to +45 °C
Operating temperature	-10 °C to +40 °C
SWL	2300 kg
Weight, dry	7000 kg
Weight, operating	7200 kg
Equipment Shipment Size (L x W x H)	1950 mm x 1100 mm x 32600 mm
Hydraulic Flow Rate (Max)	189 l/min
Hydraulic Operating Pressure (Min)	-
Hydraulic Operating Pressure (Max)	172 bar
Power consumption (Max)	2.2 kW
Voltage	230 V
Frequency	60 HZ
Tubular Range: Size 1 Size 2 Size 3	 2 3/8" - 4" 4 1/2" - 6 5/8" 7" - 10 3/4"



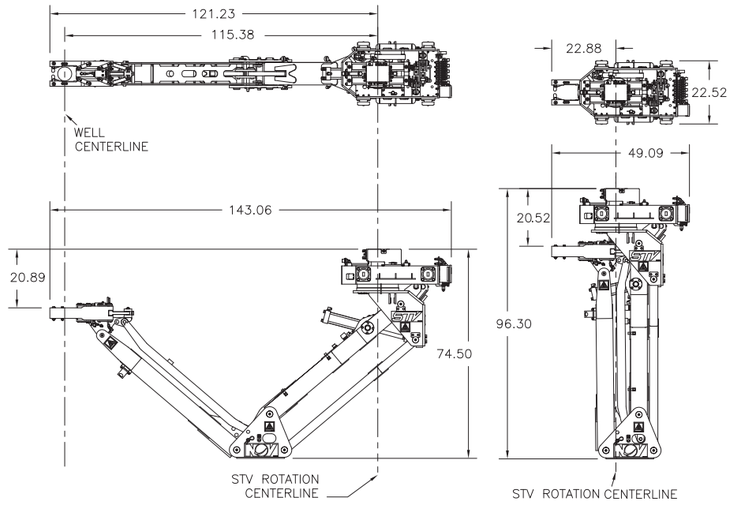
STV

Description

The Stand Transfer Vehicle (STV) is a derrick mounted system designed to perform the functions of a derrickman. It does not lift stands of tubulars, but guides the top of the stand between the elevators and the fingerboard.

The STV system includes the fingerboard and a carriage mounted arm which rides up and down rails which are integral to the diving board. The pipe handling head is designed to capture rather than grip the stand. This prevents adverse loading due to the lean of the stand present when the pin is in the setback and the box is at well center.

The pipe handling head consists primarily of two arms and a body. The two arms are connected to the body via parallel linkages and one hydraulic cylinder. The arm is a double parallelogram type modeled after those used on Iron Roughnecks.



STV	
Service	Upper guide arm
Area classification	Zone 1
Hydraulic requirements	15 GPM 2500 psi
Electrical	120 VAC
Compressed air	90 psi
Weight (guide arm only)	2500 lbs
Extension force	1800 lbs retracted, 2700 lbs extended
Retraction force	1800 lbs extended, 1200 lbs retracted
Max radial force at extension	1500 lbs
Max slew moment	2500 ft lbs
Tubular capacities	3 1/2" drill pipe to 10" collars
Extension speed	Up to 0.67 ft/sec
Retraction speed	Up to 0.67 ft/sec
Slew time	90 ° in 3.2 sec
Carriage travel	Up to 0.75 ft/sec

SBBC-6, SBBC-10

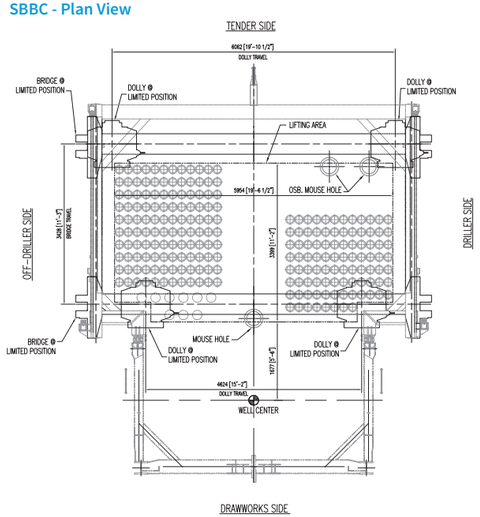
Description

The Stand Building Bridge Crane (SBBC) is mounted in the derrick above the fingerboard. The function of the bridge crane is to allow for offline stand building and guidance of drill pipe stands and BHA assemblies to the setback/ fingerboard area. The SBBC can also move the drill pipe to well center in preparation for pick up by the top drive.

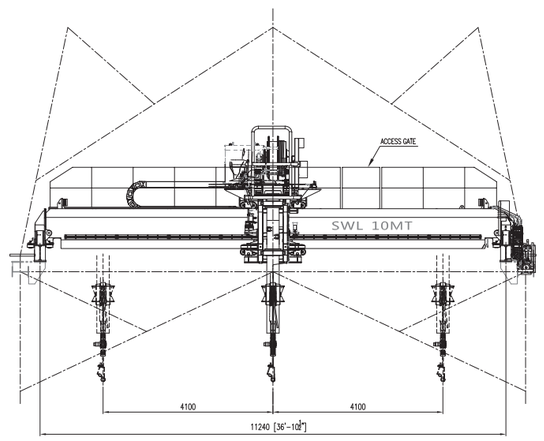
The SBBC is primarily intended to provide a means for lifting and moving tubulars in the derrick for the purpose of assembling multiple joint stands from single joint stands using one or more mouseholes on the drill floor. It can also be used for general purpose lifting provided safe working practices are followed.

The machine is not intended as a high production pipe racking machine. It does not have powered pipe gripping and lifting jaws and utilizes manually operated elevators or lifting subs for lifting tubulars. The derrickmen can use the SBBC to assist in racking pipe in the fingerboard and moving pipe from the fingerboard to a point where it can be set on the floor.

SBBC - Plan View



SBBC-10 -Elevation View



	SBBC-6	SBBC-10
Service	Vertical Pipe Racking	Vertical Pipe Racking
Area classification	Zone 2	Zone 2
Design Standards	FEM	FEM
Design temperature	-20°C to ~50 °C	-20°C to ~50 °C
SWL	6000 kg	10000 kg
Weight, operating	14200 kg	15400 kg
Hydraulic Flow Rate (Max)	300 l/min	300 l/min
Hydraulic Operating Pressure (Min)	180 bar (normal operating)	180 bar (normal operating)
Hydraulic Operating Pressure (Max)	204 bar	204 bar
Vertical hook travel	55 m	47 m
Hoist speed (full load)	0.5 m/sec	0.35 m/sec
Hoist speed (2000 kg load)	1.3 m/sec	1.3 m/sec

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