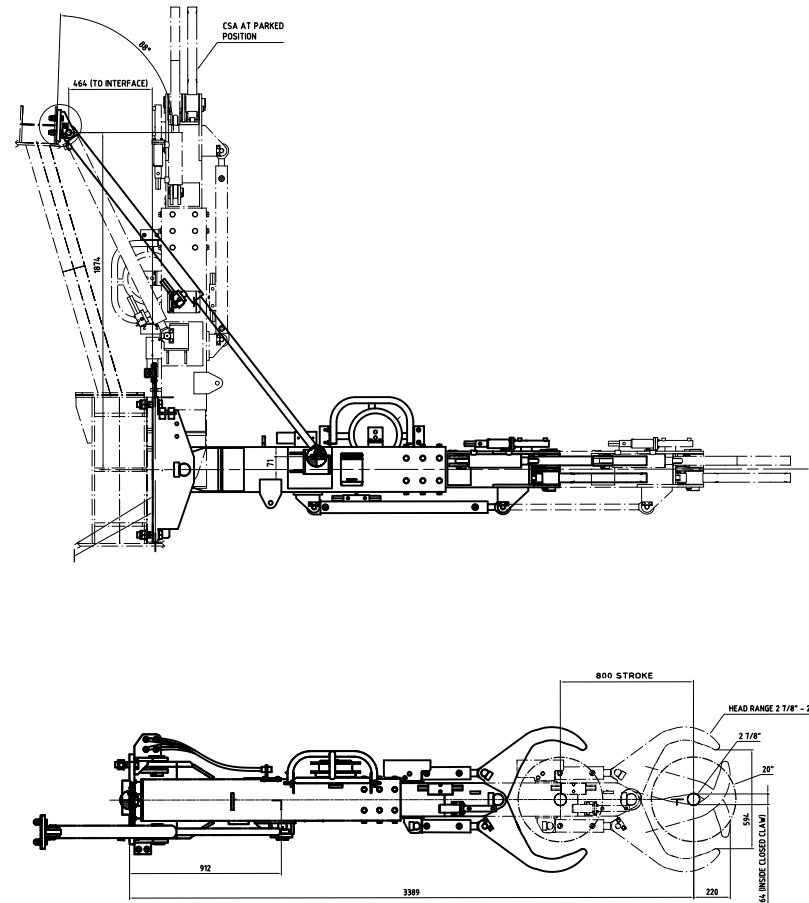


### Casing Stabbing Arm

The Casing Stabbing Arm (CSA) is mounted on the derrick structure at the required height above the drillfloor. The purpose of the CSA is to bring tubular into position in the well center. The CSA is made of square steel profiles. An external hydraulic cylinder mounted underneath the telescopic boxes provides telescoping. There is a claw at the front tip of each telescope arm. The telescope arm can be tilted to the upright position. The CSA is operated from a control stand located nearby the CSA.

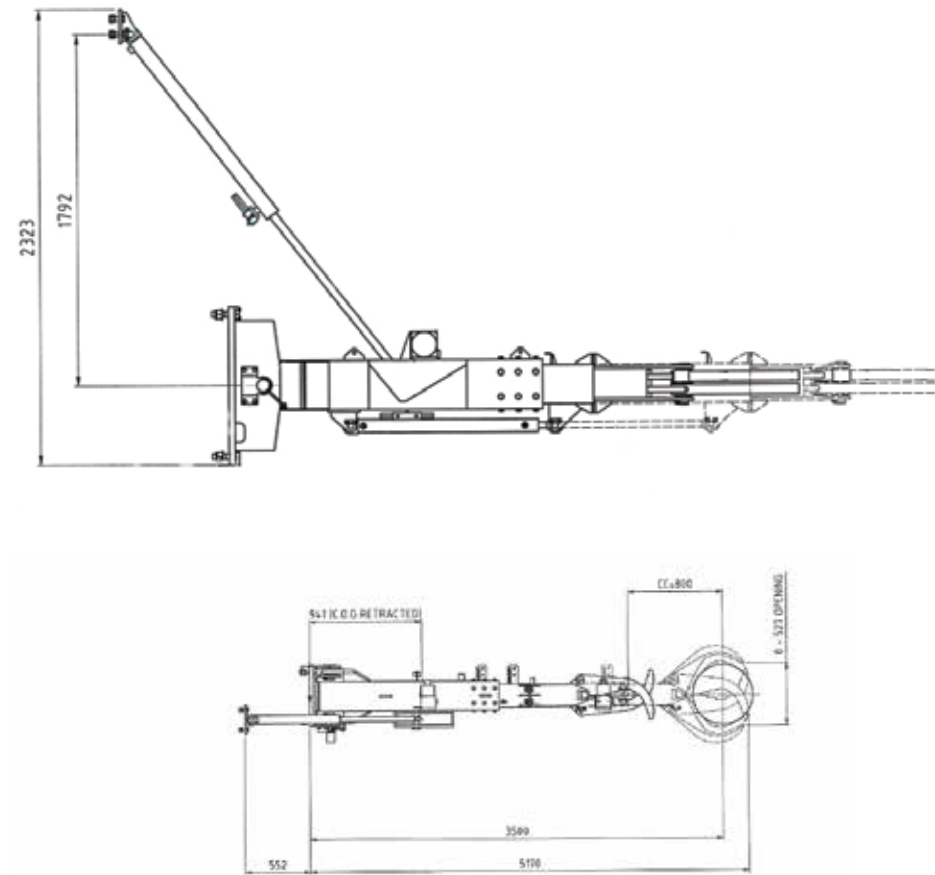


#### Technical specifications

DESIGN DATA	
Service	Vertical stabbing and guiding tubular
Area classification	IEC Zone 1
Design standards	FEM "rules for the design of hoisting appliances"
Design temperature	°C -20 to +45
Weight, dry	kg 750
Weight, operation	kg 780
PERFORMANCE DATA	
Guide head tubular reach	mm (in) 73 - 508 (2 7/8" - 20")
Reach	mm 2,589 - 3,389
Telescope length	mm 800
Tilt angle	degrees 90
Maximum head load	kN 9
UTILITY CONSUMPTION	
Hydraulic flow rate	l/min. 25
Hydraulic oil pressure, min.	bar 180
Hydraulic oil pressure, max.	bar 207
Power	W 31

### Standbuilding Guide Arm - Hydraracker

The Standbuilding guide arm - Hydraracker (SB-GA-HR) is mounted on the derrick structure approximately 9.3 meters above the drill floor. The purpose of the SB-GA-HR is to stabilize pipe stands during stand building when the Hydraracker changes gripper position. The SB-GA-HR can also be designed for stabbing operations. It has a telescopic arm with guide claws mounted at the tip. The SB-GA-HR is normally operated from the driller's cabin, but for maintenance and emergency operations it should be operated from the hydraulic control panel. It is parked in a vertical position to avoid collisions with other drilling equipment.

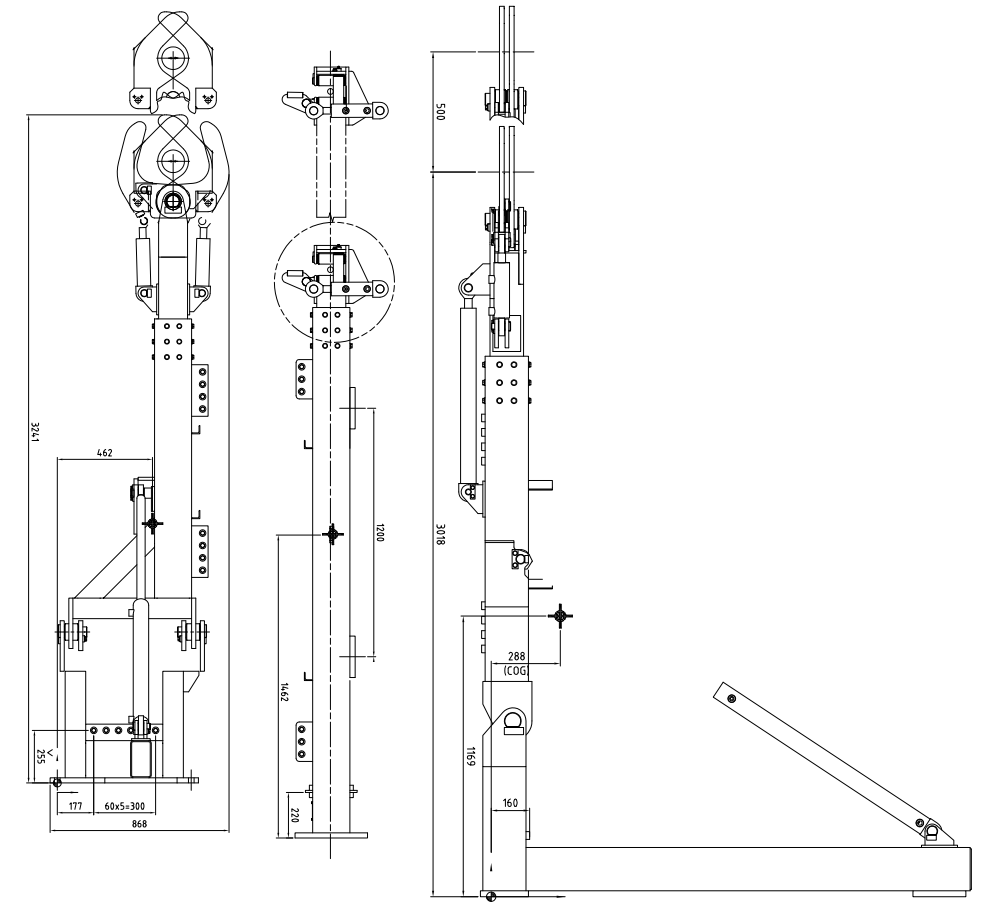


#### Technical specifications

DESIGN DATA	
Service	Guiding and stabbing operations during pipe handling
Area classification	IEC Zone 1
Design standards	FEM "rules for the design of hoisting appliances"
Design temperature	°C -20 to +45
Weight, dry	kg 700
Weight hydraulic control panel, dry	kg 170
PERFORMANCE DATA	
Claw range	mm (in.) 90 - 508 (3 1/2" - 20")
Reach	mm 3,500
Telescope length	mm 800
Tilt angle	degrees 0-90
Maximum head load	kN 9
UTILITY CONSUMPTION	
Hydraulic flow rate	l/min. 25
Hydraulic oil pressure, min.	bar 180
Hydraulic oil pressure, max.	bar 207
Power	W 31

### Standbuilding 3-Guide Arm System

The standbuilding 3-guide arm system consists of a lower and upper telescopic guide arm and guide frame. The guide frame is mounted in the derrick structure at the required height above the drill floor. The purpose of the lower telescopic guide arm is to guide the upper part of a double pipe during make-up. The purpose of the upper telescopic arm is to guide the upper part of a triple stand during make-up. The guide frame's purpose is to guide the wire when handling stands. The standbuilding 3-guide arm system is operated from the control stand located on the drill floor.



#### Technical specifications

DESIGN DATA	
Service	Handling and guiding of drill pipes during standbuilding in a derrick
Area classification	Zone 2
Design standards	FEM "rules for the design of hoisting appliances"
Design temperature	°C -20 to +45
Weight lower telescopic guide arm	kg 470
Weight upper telescopic guide arm	kg 470
Weight guide frame	kg 260
Weight control valve unit, dry	kg 130
Weight control valve unit, operation	kg 130
PERFORMANCE DATA	
Tubular	mm (in.) 90 - 168 (3 1/2" - 6 3/4")
Lower telescopic guide arm	Double stand (within tube dimension range)
Upper telescopic guide arm	Triple stand (within tube dimension range)
Guide frame	Single, double and triple stand (within tube dimension range)
Telescope length	mm 800
UTILITY CONSUMPTION	
Hydraulic oil consumption	l/min. 50
Hydraulic oil pressure, min.	bar 80
Hydraulic oil pressure, max.	bar 207