

PIPE HANDLING MODERNIZATION PACKAGE

# UPGRADE PACKAGES FOR AUTOMATED TUBULAR HANDLING

## Modernization packages for conventional rigs

- › Upgrade of conventional vertical pipe racking systems to automate the handling of tubular goods
- › Customized equipment adaptable to a broad range of rig types
- › Increased working safety and smaller crew size thanks to reduced manual work
- › Higher working efficiency and improved performance through process automation
- › Remotely controlled from a control stand including video control
- › With stand-alone hydraulic power unit
- › Made in Germany

**AUTOMATED  
RIG TECHNOLOGY**



# Modernization packages

## Technical specifications



**Herrenknecht Vertical's hydraulic pipe handling modernization package** automates conventional vertical pipe racking in the mast, eliminating the hazardous work of the derrick man and rig floor personnel. Tubulars are handled safely and highly efficient by applying PLC-controlled continuous repetitive movements. The upgrade package works hand in hand with customer's equipment, such as catwalk, iron roughneck elevator and top

drive. Interface signals from and to customer's components are integrated into the PLC control system ensuring smooth and reliable processes. A comprehensive anti-collision and interlock system guarantees safe operations at all time. The highly automated system can be customized according to customer's requirements and are adaptable to a broad range of rig types by using mechanical adapters.

### Key features

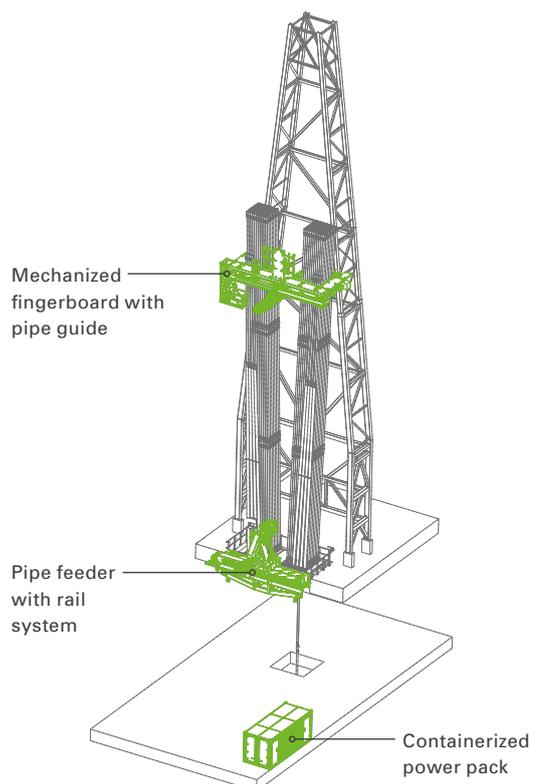
- › The **pipe feeder (PF)** mounted on the rig floor transports tubulars between setback area and well center, bearing the full load of the stands. HNC-controlled movements with special kinematics enable precise handling and handover operations.
- › The **mechanized fingerboard system with pipe guide (PG)** replaces the derrick man. The pipe guide moves in two axes simultaneously with the pipe feeder to ensure safe tubular transport at any time. It only has a guiding function; therefore, reduced forces are applied to the mast.
- › The **remote PLC control** system with touch screens, joysticks and video control of critical areas can be integrated into existing driller's cabins. Different operating modes provide maximum flexibility: semiautomatic mode for continuous tripping, sequential mode for preset step-by-step operations and manual setup mode.
- › The **containerized power pack** includes a hydraulic power unit (HPU) plus control cabinets and PLC. The HPU can also provide hydraulic power to customer's equipment, e.g. catwalk or iron roughneck.

### PIPE HANDLING MODERNIZATION PACKAGE

› Pipe feeder max. load:	6 mt (6.6 sht)
› Pipe feeder gripping range:	3½"-9"
› Pipe guide gripping range:	3½"-6"
› Tubular stands handling capacity:	DP 3½"-6" as triples, DC up to 9" as doubles <sup>1</sup>
› Racking capacity:	approx. 5,000m (16,400ft) (expandable)
› PF max. extraction to well center:	3.4 m (11.2 ft)
› Max. travel speed of PF and PG:	0.5 m/s (1.64 ft/s)
› Tripping speed:	850 m/h (2,790 ft/h) <sup>2</sup>
› HPU power:	90 kW (120 hp)

<sup>1</sup>With one DP on top for handling with the pipe guide

<sup>2</sup>Actual speed depending on customer's equipment configuration



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