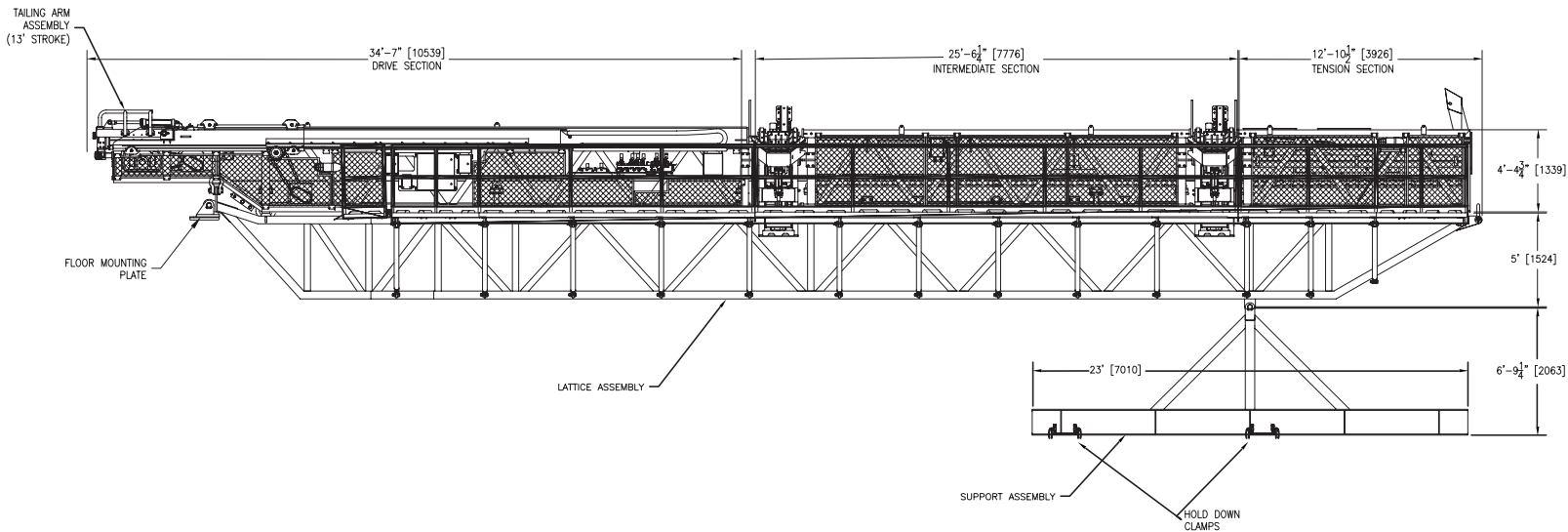


PTC-LD

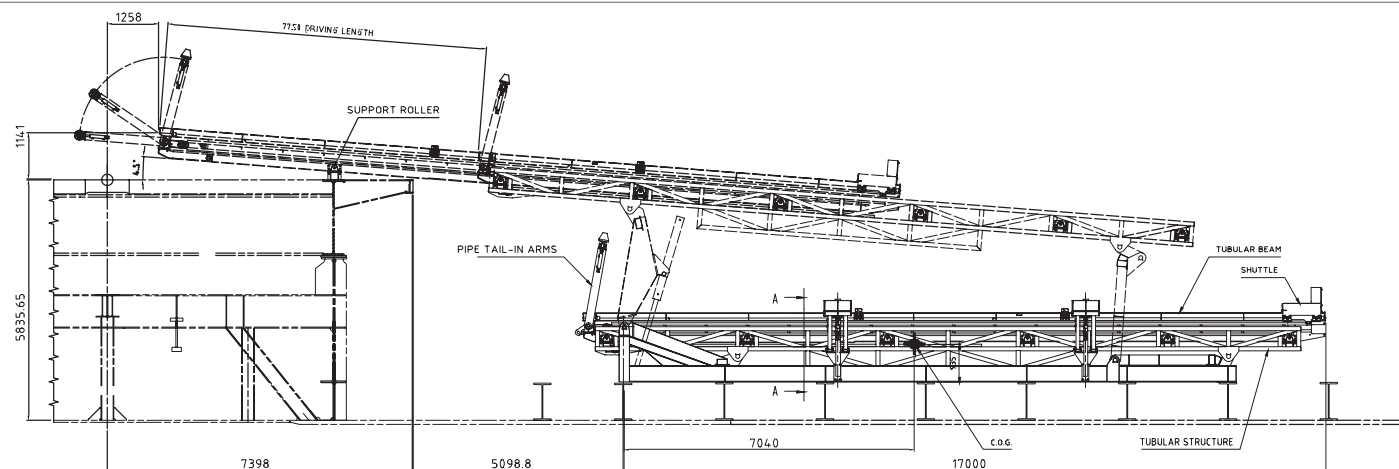


The Pipe Transfer Conveyor (PTC-LD) is a light duty conveyor with an attached Tailing Arm Assembly. The PTC transports drilling tubulars between their storage location on the main pipe deck and well-center without manual intervention from the rig crew. The PTC can be remotely operated from the rigs main control cabin through a NOV Integrated Control and Information System (V-ICIS), or operated locally from a local control station. The PTC has two main sections: Conveyor & Tailing Arm Assembly

The V-ICIS control system processes all data from the operator controls to the PTC and all feedback from the PTC. The processed data is used to control all tool functions and inform the operator of tool operations and status. Local operator controls are provided on a PTC V-door control panel J-box. Hydraulic services to/from the PTC are directed by a hydraulic interface panel (HIP). Both components are installed on the derrick structure near the PTC.

Service	Transport of tubulars and risers	Max weight allowed (lbs)	22,000
Tubular Range	2 3/8" - 20"	Max weight on tailing arm (lbs)	50,000
Belt speed (ft/sec)	1.0 - 2.5	Hydraulic power required (psi)	2,500 - 3,000

TS-P



The Tubular Shuttle Machine (TS) is designed to transfer tubulars between the pipe-deck and the drill-floor. Tubulars can be removed from or landed onto the Tubular Beam using the elevator in combination with the front mounted Pipe Tail-in Arm. The design of the machine is basically very simple and utilizes tried and tested solutions.

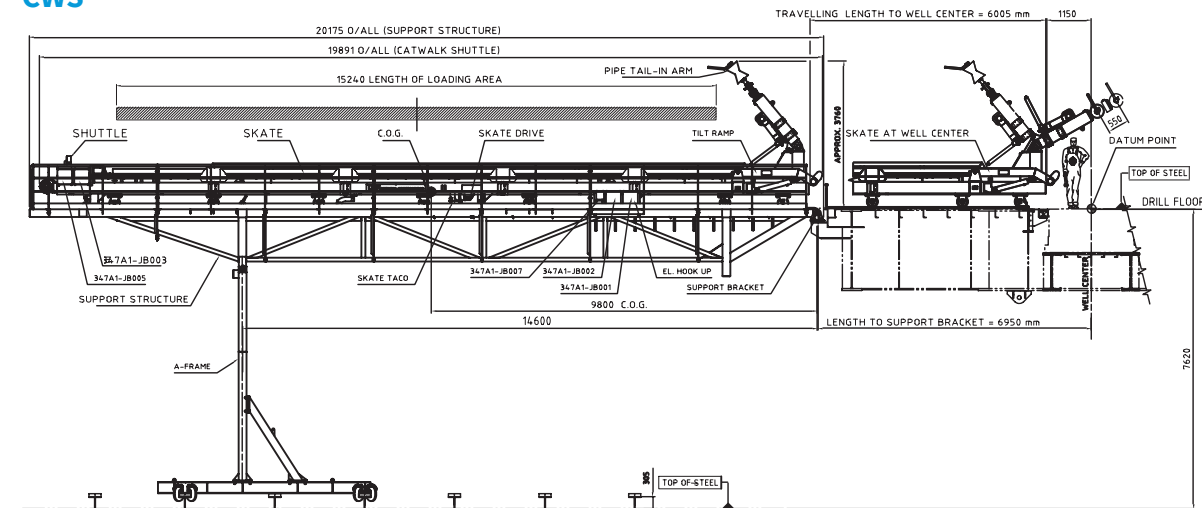
The design philosophy is intended to achieve the following:

- Minimum complexity
- Safe and reliable operation
- Simple maintenance
- Modularity for simple installation and replacement of components
- Generous installation tolerances and a simple interface

Max. hydr. flow rate (l/min)	220
Min. working pressure (barg.)	180
Max. operating pressure (brag.)	210
Weight, dry (kg)	33000
Skate traveling speed (m/s)	-
Skate driving force (N)	-
Equipment shipment size (LxWxH) (mm)	32800 x 3760 x 2800

Service	Pipe & Casing Single
Tubular Range	2 7/8" - 20"
Design code/ standard	F.E.M. / NS 3472
Area classification	Safe area
Design temperature	-20°C to +45°C
Operating Temperature	-20°C to +45°C
SWL (kg)	20500

CWS



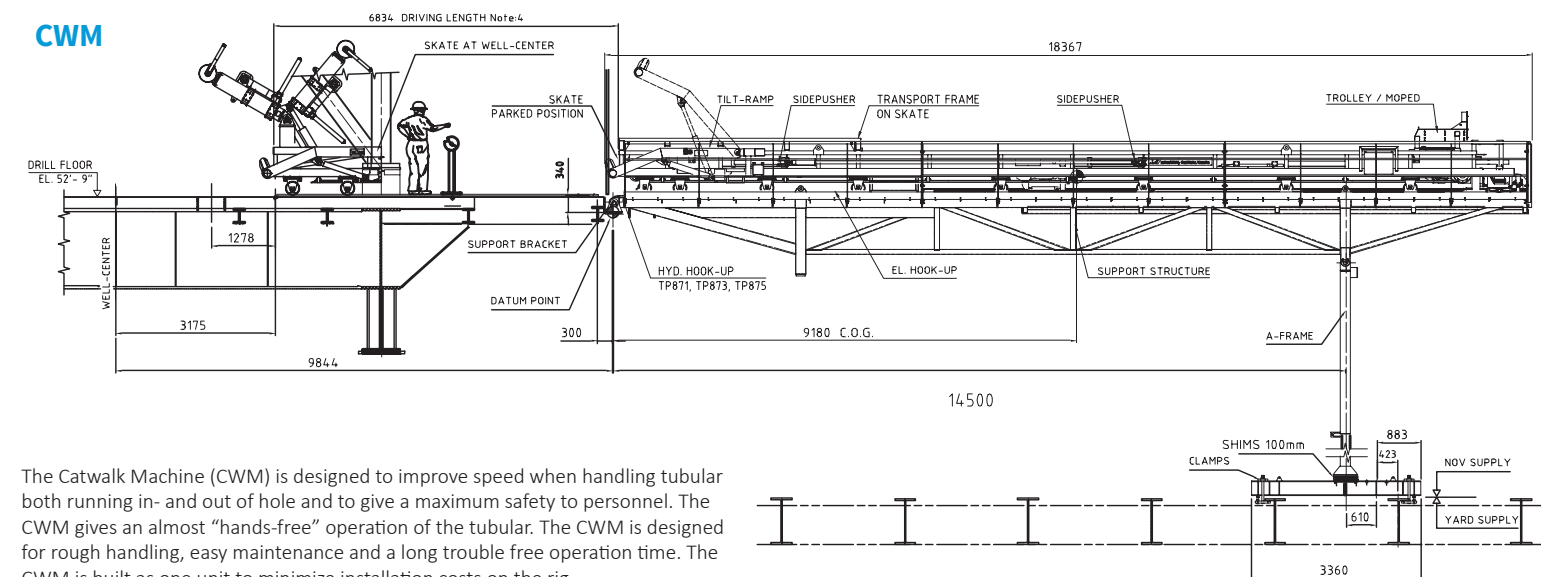
The tubular shuttle machine is designed to transfer tubulars between the pipe barn and the drill floor. The design of the machine is basically very simple and utilizes tried and tested solutions from previous Hydralift ASA equipment wherever possible.

The design philosophy is intended to achieve the following:

- Minimum complexity
- Safe and reliable operation
- Simple maintenance
- Modularity for simple installation and replacement of components
- Generous installation tolerances and a simple interface

Service	Transport of tubulars and risers	Max. hydr. flow rate (l/min)	240
Tubular Range	2 7/8" - 30"	Min. working pressure (barg.)	180
Design code/ standard	F.E.M. "Rules for the design of Hoisting Appliances"	Max. operating pressure (brag.)	207
Area classification	Zone 1	Weight, dry (kg)	40500
Design temperature	-20°C to +45°C	Skate traveling speed (m/s)	0 - 0.4
Operating Temperature	-10°C to +45°C	Skate driving force (N)	90000
SWL (kg)	40000	Equipment shipment size (LxWxH) (mm)	31735 x 2660 x 2400

CWM



The Catwalk Machine (CWM) is designed to improve speed when handling tubular both running in- and out of hole and to give a maximum safety to personnel. The CWM gives an almost "hands-free" operation of the tubular. The CWM is designed for rough handling, easy maintenance and a long trouble free operation time. The CWM is built as one unit to minimize installation costs on the rig.

Service	Transport of tubular and risers
Tubular Range	2 7/8" - 36"
Design code/ standard	F.E.M. "Rules for the design of Hoisting Appliances"
Area classification	Zone 1
Design temperature	-20°C to +45°C
Operating Temperature	-20°C to +45°C
SWL (kg)	40000

Max. hydr. flow rate (l/min)	150
Min. working pressure (barg.)	200
Max. operating pressure (brag.)	207
Weight, dry (kg)	31300
Skate traveling speed (m/s)	0 - 0.4
Skate driving force (N)	75000
Equipment shipment size (LxWxH) (mm)	25300 x 1970 x 2200