

TENSA 200T LOAD LIMITING BAILS (LLB200-600) WELL COMPLETION OR WORKOVER SAFETY ELEVATOR LINK

During well completion, well intervention, well testing or workover operations from a floating rig, safe operation can be compromised by failure of the rig's heave compensation system. This can cause catastrophic damage to the rig, equipment and personnel especially when the rig is connected to the seabed with hydrocarbons in the system.

The TENSA Load Limiting Bails (LLB) work as an independent safety mechanism when the rig's heave compensator fails. The LLB is normally fully retracted and will not affect the normal functionality of the compensator. It will automatically extend when its preload tension is exceeded.

The TENSA LLB evolved from our Dynamic Load Reducer product range. These use similar technology that has been proven from extensive offshore operational experience. A pair of LLB200-600 bails is rated for a SWL of 200t (ie SWL 100t per bail). During normal operation, the LLB is maintained fully retracted by pressurized nitrogen. The LLB starts extending only when the load is higher than 100t on a bail. By adjusting the precharge pressure the initial load at which the bail arm extends is adjustable.

The LLB load is limited to 125 tonnes. It will initially extend by 1.5m and the load will rise from 100t to 125t. It can be stroked further up to the full stroke of 6m but the load will remain constant at approximately 125t. If the extended length is below 1.5m, the LLB will retract and remain at its initial load setting after the overload scenario has passed. When further extension is utilized a small amount of the internal nitrogen precharge is relieved and the preload will be slightly less.

The TENSA LLB200-600 has the following features:

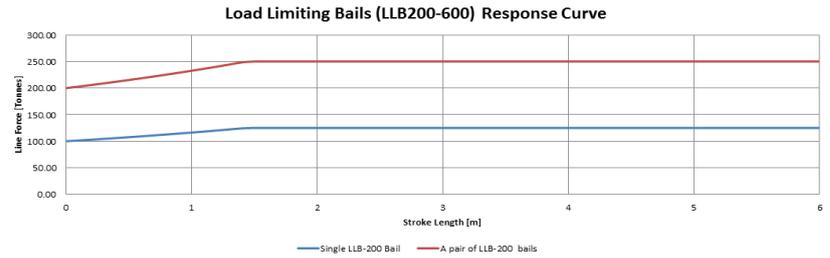
- Automatically returns to retracted position once the overload condition has passed.
- No replacement parts are required once activation has occurred. (eg shear pins)
- No connecting hoses. Each bail arm is a standalone system.
- Robust and easy to handle. The unit can be laid directly on the deck in any orientation.
- Activation load can easily be adjusted by changing the initial pre-charge pressure
- Direct replacement of the existing rig conventional elevator links.
- Does not affect the normal operation of the existing compensator.
- Bail arm ends are replaceable and alternative end attachments can be provided (eg lifting padeyes)

For less demanding applications we can offer units with reduced stroke and lower load capacity based on the same design concept. Units with higher capacity can also be produced.



SPECIFICATIONS (LLB200-600):
SWL: 200 metric tonne (pair), 100metric tonnes (one bail)
Design Code: API 8C Specification for Drilling and Production Hoisting Equipment
Testing: Each bail is load tested to 150 metric tonnes
Operating Stroke: 6000mm
Precharge medium: Nitrogen gas
Initial Activation line force: 200 metric tonnes (adjustable)
Maximum line force: 250 metric tonnes (adjustable)
Overall Dimensions: 740(W) x 740(H) x 10200(L) mm
End Connections: API 8C standard 350t Elevator link upper and lower eye
Weight: approx 6100 kg (one bail), 12200kg (one pair)
Surface Treatment: 3 coat Marine paint system
Operating Temperature: -20° C-+50° C (-10° C opt)

Other capacities and lengths are available on request. Please consult Tensa.



Stroke Length (m)	Line Force (Tonnes) - Single LLB-200 Bail	Line Force (Tonnes) - A pair of LLB-200 bails
0	100.00	200.00
1	110.00	230.00
1.5	125.00	250.00
2	125.00	250.00
3	125.00	250.00
4	125.00	250.00
5	125.00	250.00
6	125.00	250.00

LLB200-600 v3