

LIFTSTAR® and PULLSTAR® Air Series

General description

The LIFTSTAR® / PULLSTAR® series from Ingersoll Rand are the world's first "lube free" air winches.

Designed for the demanding conditions found in tough environments with dirty air, these winches feature a rugged gear air motor made of strong composite material with only two moving parts. These low maintenance winches provide high torque, long life, and "lube free" operation.

Standards:

The LS and PS air winches meet the requirements set by the FEM 9.511 standard which covers rating and classification, and the FEM 1001 standard for the calculation of lifting equipment (for LIFTSTAR®).

Compliance with these standards exceeds the requirements for DIN, NF and BSI and, of course, they meet ASME B30.7.

The European Directive concerning "Machines," the specific rules of the Norwegian Petroleum Directorate, and the standards set by classification societies such as DNV and LLOYDS have also been adhered to.

The winches can usually be supplied with traceability certificates according to DIN 50049, if requested at time of the order.

Special versions of LIFTSTAR® winches are also available for personnel lifting operations on offshore installations, SWL 150 to 1000 kg (330 to 2200 lbs). Please call for details.

Test certificates:

Each winch is provided with a test certificate covering factory construction and performance. On request, these tests can be witnessed by an independent organization which will assess their conformity to agreed standards before they are dispatched.



All models delivered in countries where European Machinery Directive No. 89/392 and 91/368 applies can be ordered with a CE package (-E) which includes as standard:

- Drum guard
- Emergency stop (main air shut-off)
- Overload device (for LIFTSTAR® lifting series only)
- Instruction and safety manual
- Declaration of conformity

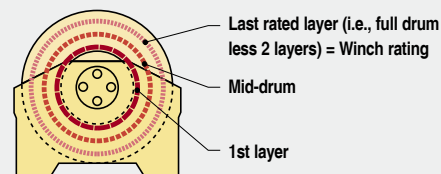


LS and PS air winches are particularly suitable for use in potentially explosive atmospheres, unlike electric winches.

In their standard design, they are classified as equipment category 2 for applications in zone 1 of group II (surface industry, as per ATEX 94/9/CE directive). For classification as equipment category M2, they can be fitted with a special "mining" package. Please call for details.

LIFTSTAR® lifting series:

- LIFTSTAR® winches are designed with a 5:1 minimum safety factor at "rated load."
- The nominal lifting capacity of the LIFTSTAR® is calculated at the top rated layer which corresponds to the full drum rope capacity less two layers free at the top of the drum flange. A LIFTSTAR® winch always lifts its "rated load," no matter what layer of wire rope it is operating on.
- LIFTSTAR® winch is designed so that at its "rated load" capacity, the line speed remains constant at any layer.
- The drums are generously dimensioned to obtain a minimum D to d ratio (drum diameter / rope diameter) of 18:1 with a safety factor of 5 for standard ropes.
- The rated rope capacities are calculated for ropes conforming to the required safety factors and correspond to the working rope capacities, i.e., leaving two free layers below the top of the drum flanges (as per European lifting rules).



With rated load, the line speed is constant at all layers

PULLSTAR® pulling series:

- PULLSTAR® winches are directly derived from the LIFTSTAR® series but with a 3:1 minimum safety factor at "rated line pull."
- PULLSTAR® winches are **first layer** rated pulling capacity. The nominal line pull stated corresponds to the maximum force required to start the initial pulling motion of the load (refer to detailed curves to get corresponding pulls / speeds at different layers).
- PULLSTAR® are fitted as standard with a drum free spool clutch for rapid manual unwinding.

