



# Reciprocating Pump LDPD



★ **DISTRIBUTION**  
CRYOSTAR

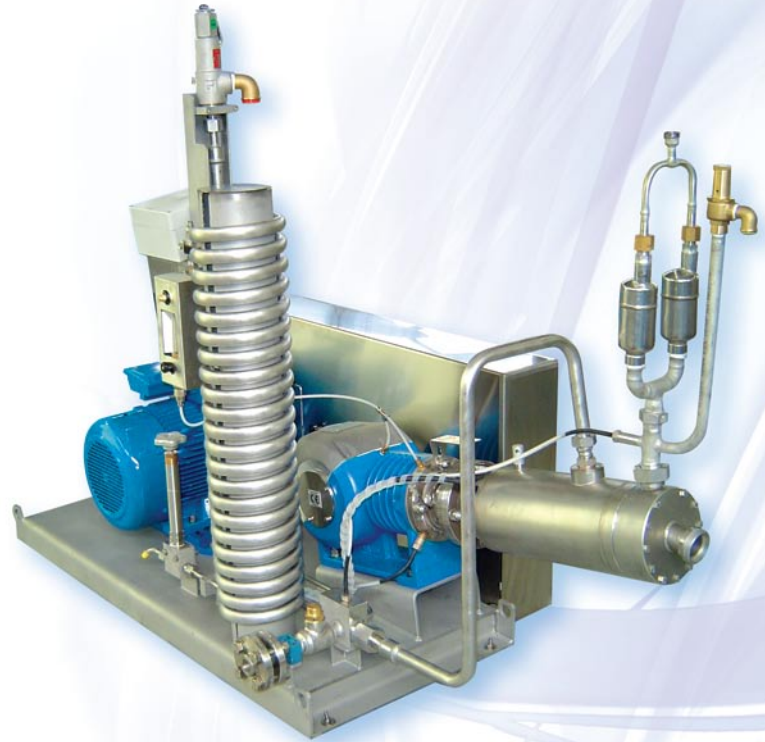
★ **PROCESS**  
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## Technical Index

### ★ Pump ID Meaning

LDPD 50 or 65 or 80 / 40 or 50  
(model) (Piston Ø in mm) / (Piston stroke in mm)

Applications	Cylinder and buffer tank filling
Liquids pumped	LOX, LIN, LAr, LCO <sub>2</sub> , LN <sub>2</sub> O, LNG
Drive type	Grease lubricated crank drive
Design pressure 50/40	200 bar / 2900 PSI
Design pressure 80/50	80 bar / 1160 PSI



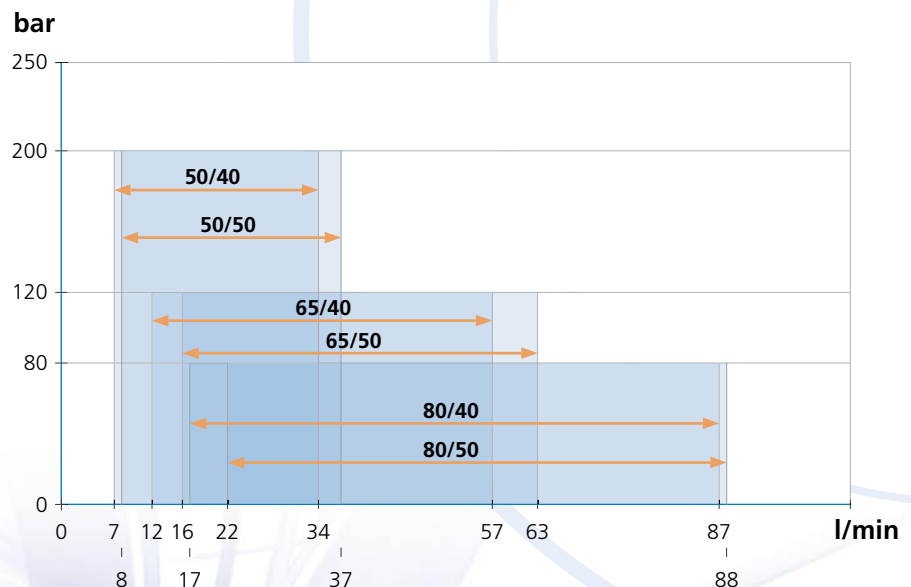
### ★ Test Procedure

Each pump manufactured by CRYO-STAR is mechanically and cryogenically tested prior to shipment in our state-of-the-art testing facility to ensure that performance meets customer specification. The precision of measuring devices provides essential results : differential head, flow rate, seal gas consumption, pump efficiency, NPSH, noise and vibration levels – all documented and submitted to the customer.

### ★ Quality

Designed in compliance with guidelines like IGC 11/82 norm

### ★ Performance



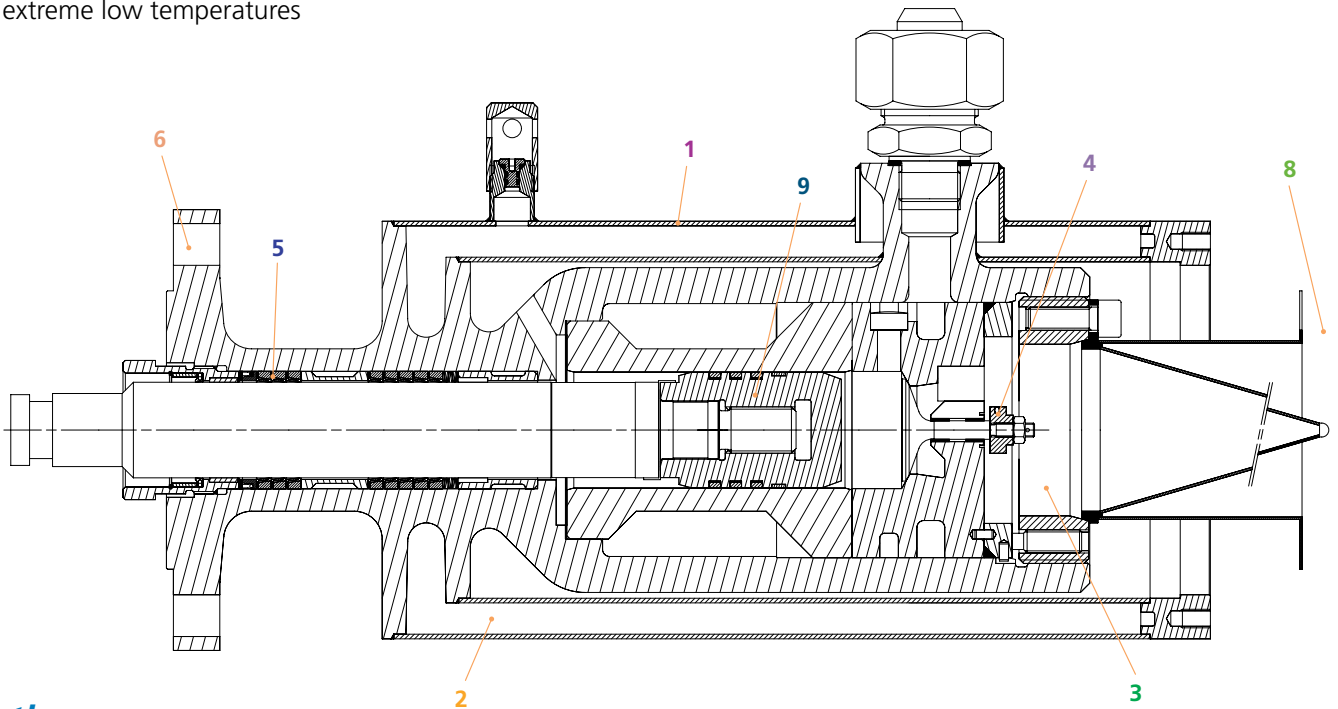


## ★ Features

- 1 The cold end is slanted upwards by 10 degrees, to assist degassing of the pump cylinder and preventing accumulation of gas in the suction chamber prior to start-up and during operation
- 2 Thanks to the excellent vacuum insulation, the lowest temperature is kept in the pump body, and the liquid is available for an instant re-start (without venting)
- 3 The suction chamber is designed to separate any flash gas from the incoming liquid, assuring an homogeneous flow of cold liquid into the cylinder
- 4 The straight inflow suction valve provides the best possible low resistance flow characteristic, ensuring a low NPSH requirement. (large diameter of the inflow suction valve)
- 5 The thin "hat" seal rings remain flexible even at extreme low temperatures
- 6 The cold end is screwed on an open intermediate piece for low thermal conductivity.
- 7 Both the crank drive and the intermediate part have connections for an optional nitrogen purge
- 8 Thermosiphon tank suction valve execution (option), allowing a shorter cool down period as well as reduced losses
- 9 Piston head made of bronze allowing a safer operation

Longer cold end life time is assured by relative low pump speeds and the KWIKSTART installation.

The flexible suction and return line sections are also slanted and made as short as possible so that the pump can be placed very close to the tank pod.



## ★ Options

- ★ PT100 probe in gas return line for cool-down protection
- ★ Low Pressure seals heater for cold standby periods over 3 hours
- ★ PT100 probe in discharge line for anti-cavitation protection
- ★ PT100 probe in intermediate piece for leakage detection

*For more details please contact your local Cryostar representative*



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