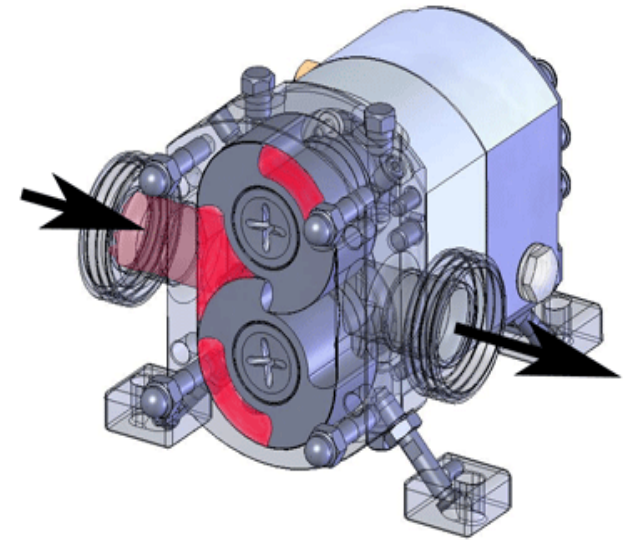
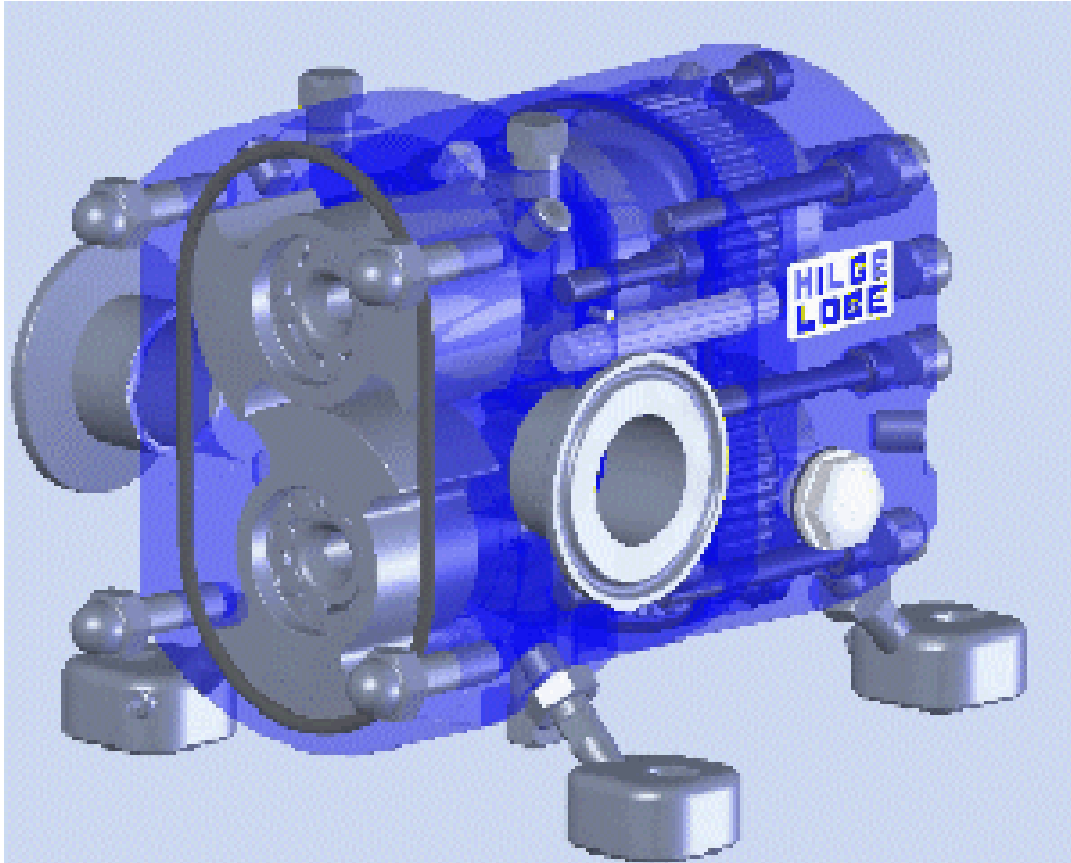


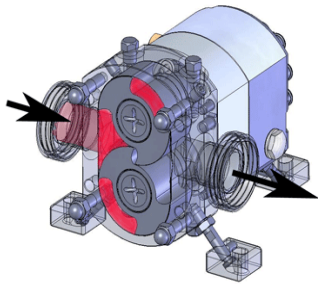
Working Principle

Working Principle





NOVAlobe Working Principle



PD pumps displace a known volume of liquid so that the pumps, running at a constant speed, positively displace a liquid volume at a fixed rate.



Two accurate Synchronize rotors contra rotate (1 clockwise 1 anti-clockwise). The rotation by the rotors create a vacuum that allows atm. pressure to force the product into the pump.

The vacuum is created by volume expansion at the inlet of the pump.



b



c



d

The pumped product is carried around the by the rotors, between the rotors and the rotorcase.

The two Rotors move in a position so that the volume decrease. Hereby the pressure increase at the outlet and the product is puch out of the pump.

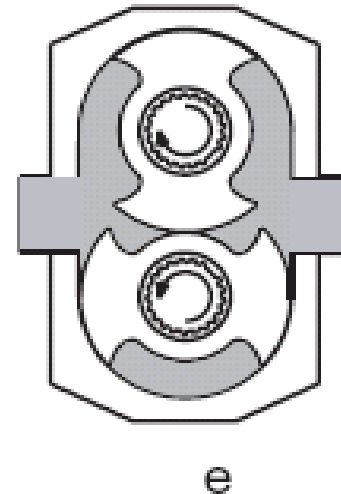
NOVAlobe Working Principle

Efficiency and Slip:

NOVAlobe 20/006 :  Displacement 0.06 Litre /rev.

NOVAlobe : A non contacting pump / small space between Rotor and Rotor-casing and between the two Rotors

100% Volumetric Efficiency = 0 slip in the pump.
Slip = Backflow / loss in the pump.



Efficiency for Rotary lobe pumps: Volumetric efficiency (flow/m³/h) : Flow Pump / Pump Displacement.

(Efficiency for Centrifugal pumps: Hydraulic efficiency (Head /meter).)

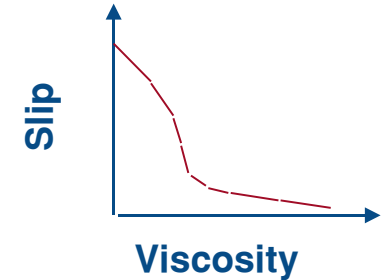
NOVAlobe Working Principle

Influence on Slip in the pump:

Higher Viscosity



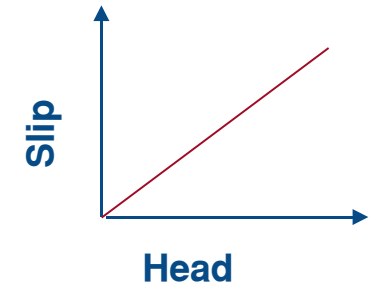
Less Slip



Higher Head



More Slip



Bigger Clearance



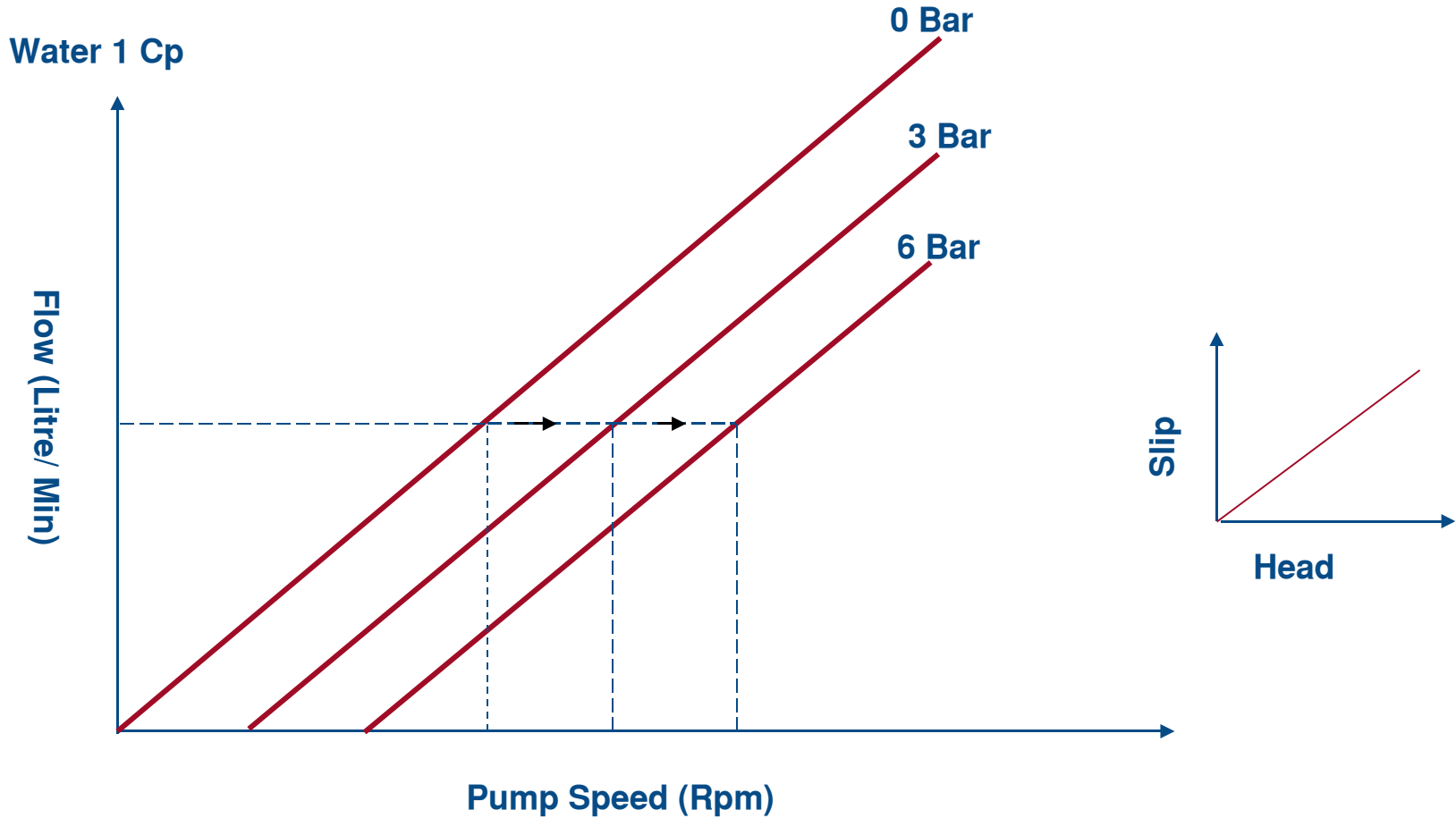
More Slip



NOVAlobe Selection Principle

Pump curves:

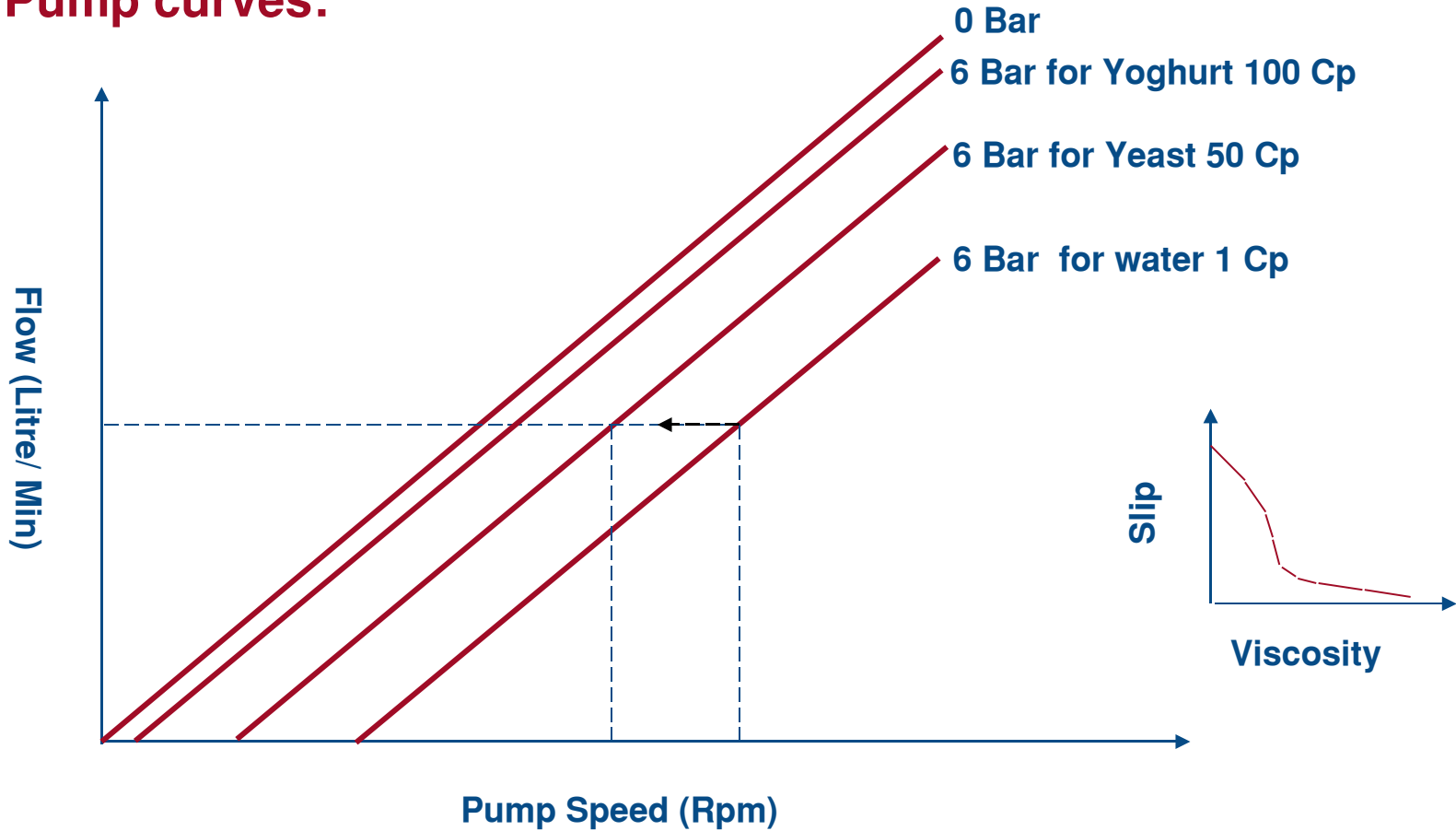
Higher Head → More Slip → Higher Speed to keep Flow



NOVAlobe Selection Principle

Higher viscosity → Less Slip → Lower speed to keep Flow

Pump curves:



NOVAlobe Selection Principle

Conclusion for selection:

Higher HEAD → More Slip → Higher speed to keep Flow

Higher viscosity → Less Slip → Lower speed to keep Flow

More sensitive product → Lower speed not to damage product

Application NOVAlobe

Performance Curve

Selection made by: Drop down list

Liquid Details

Liquid Name: Not Stated

Viscosity: cP 100,00; Ns/M² 0,100; SSU 463,4; cst cst

Density: Kg/M3 998

Temp: C 20; F 68

Solids: No

Size um: NA

VP mbar: Not Stated

Behaviour: Not Stated

Hilge Pump Model: NOVA 30/0.33

Duty Details

Flow: LPM 66,67; M3/hr 4,00; IGPM 14,66; USGPM 17,61; Kg/hr 3992,00

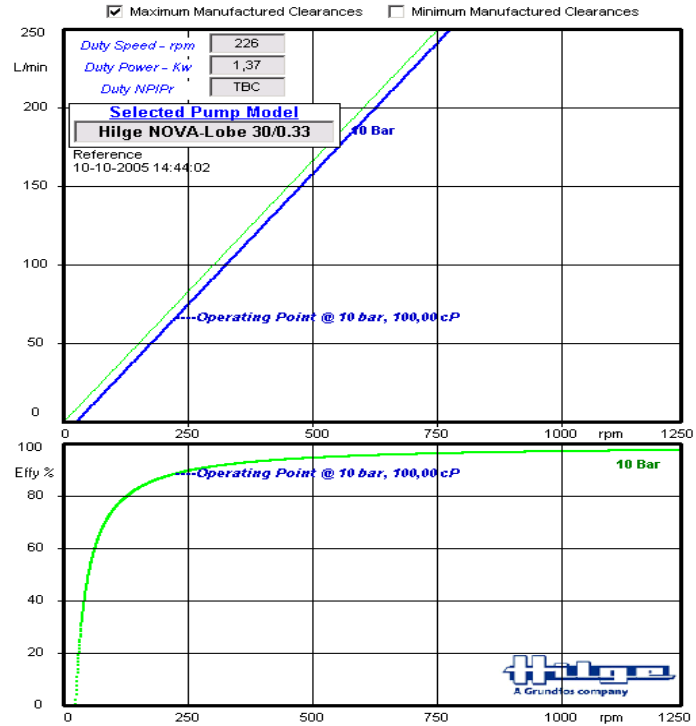
Differential Pressure: Bar 10; PSI 145,04; Metres Head 102,14; Feet Head 335,11

Hydraulic Power [KW]: 1,11

NPIP available [Bar A]: Not Stated

HILGE PUMPS LTD
Email: pumps@hilge.co.uk
Ref:TB-10/04 - Issue 1

Save to DataBase



Input:

Flow

Diff. Pressure

Viscosity

Density



Output:

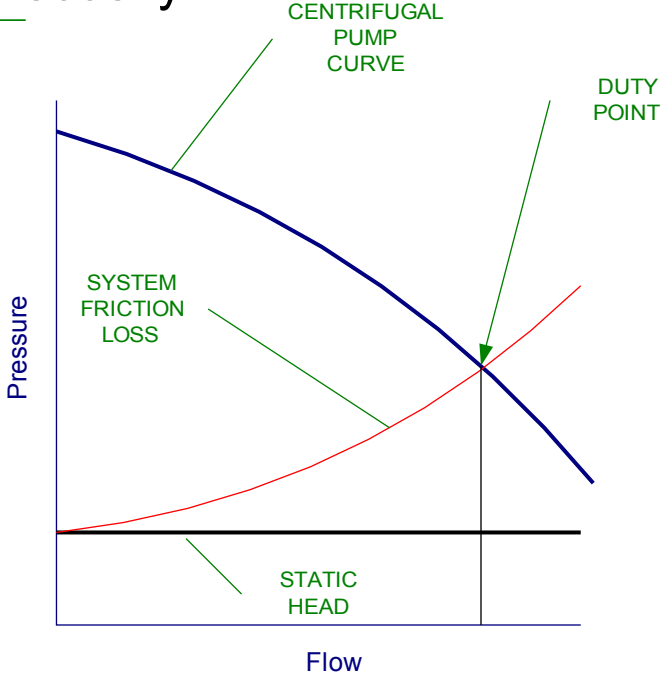
Speed, Power



Pump size, Motor size

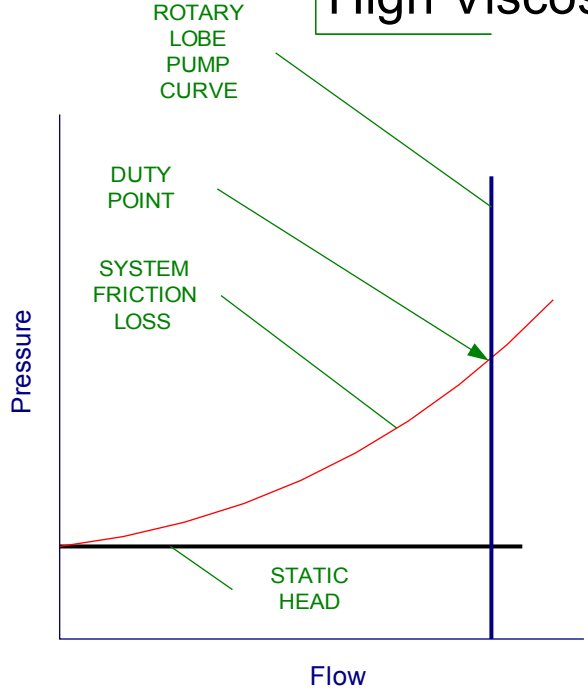
Centrifugal/Rotary lobe

Low Viscosity



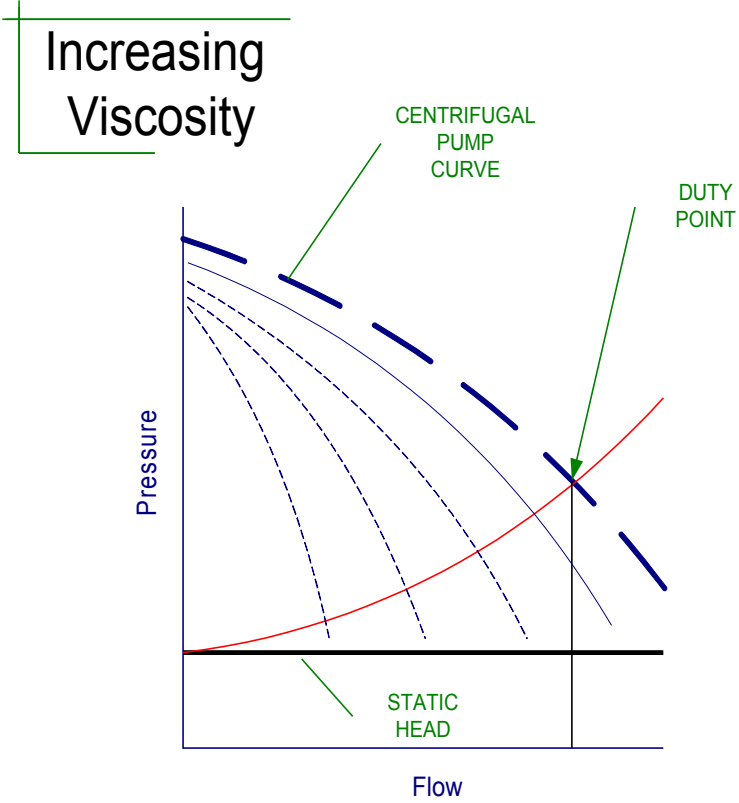
CENTRIFUGAL PUMP PERFORMANCE

High Viscosity

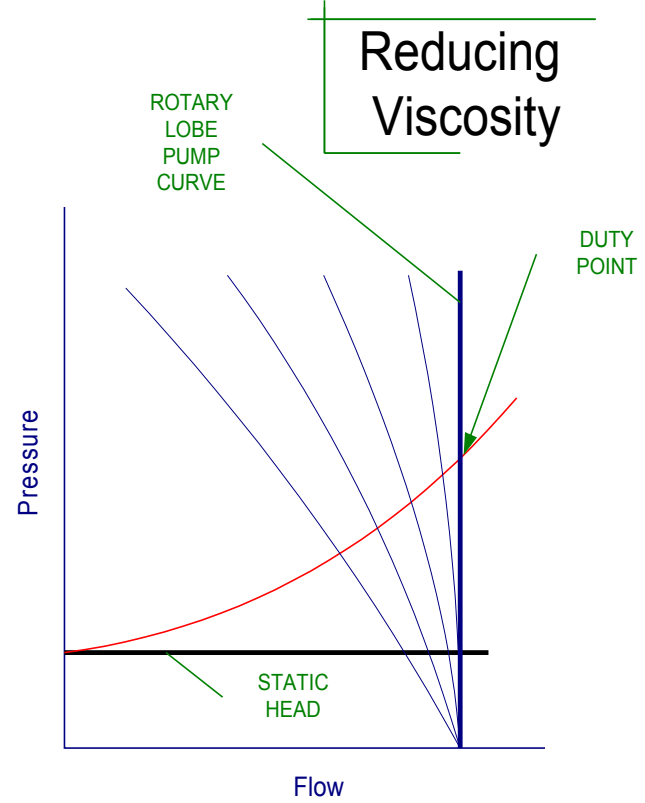


ROTARY LOBE PUMP PERFORMANCE

Centrifugal/Rotary lobe



CENTRIFUGAL PUMP PERFORMANCE



ROTARY LOBE PUMP PERFORMANCE

Pulsations

1 cP

>400 cP

Bi-Wing



Tri-Lobe



Tri-Lobe



Circumferential Piston



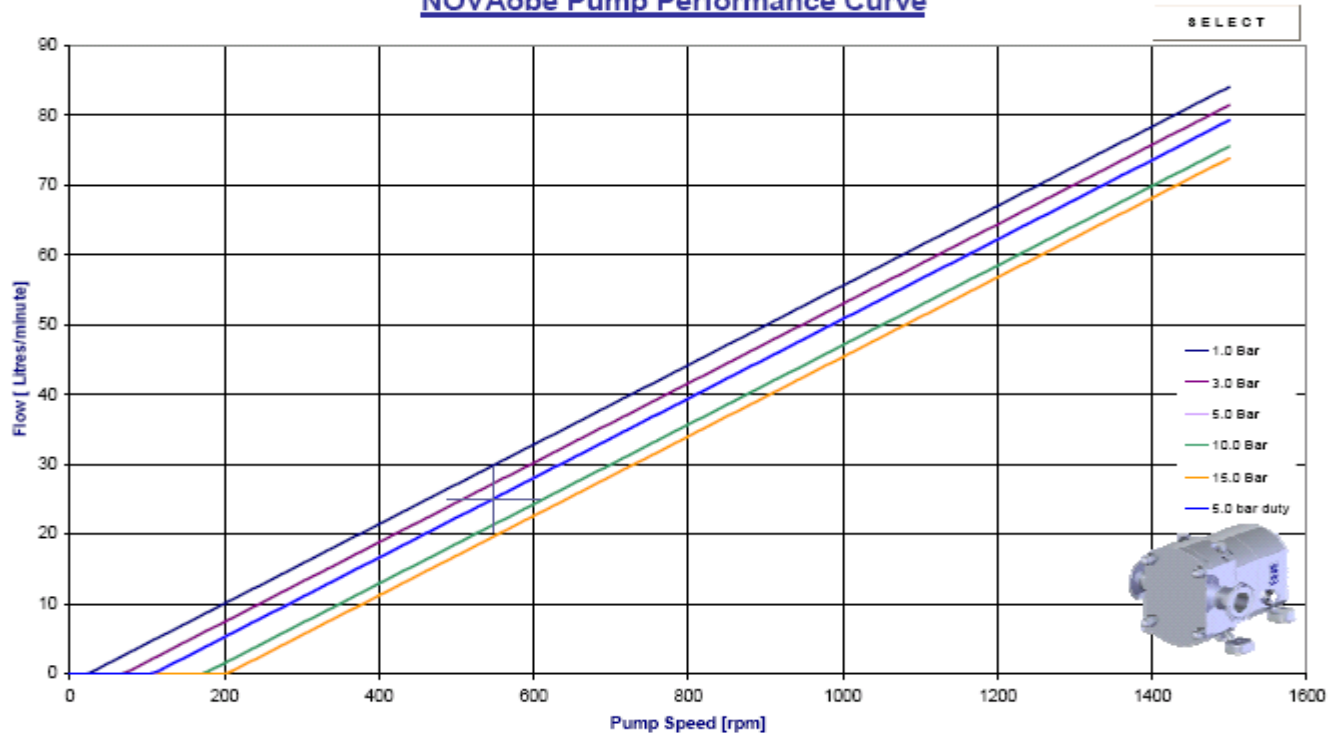
Pump range

Pump curves for NOVAlobe 10/006
Max Speed : 1500 rpm



NOVAlobe

NOVAlobe Pump Performance Curve



Hilge Pump Model:	10/0.06	Duty Liquid	Water
Operating Speed [rpm]	547.5	Duty Viscosity cP	1
Hydraulic Power [kW]	0.21	Duty Flow [Lpm]	25
Volumetric Efficiency [%]	80.1	Duty Pressure [bar]	5

Pump Performance curves may alter as a result in variation of component dimensions. Hilge Pumps reserves the right to alter pump performance curves without notice

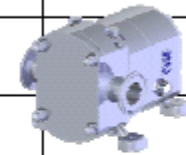
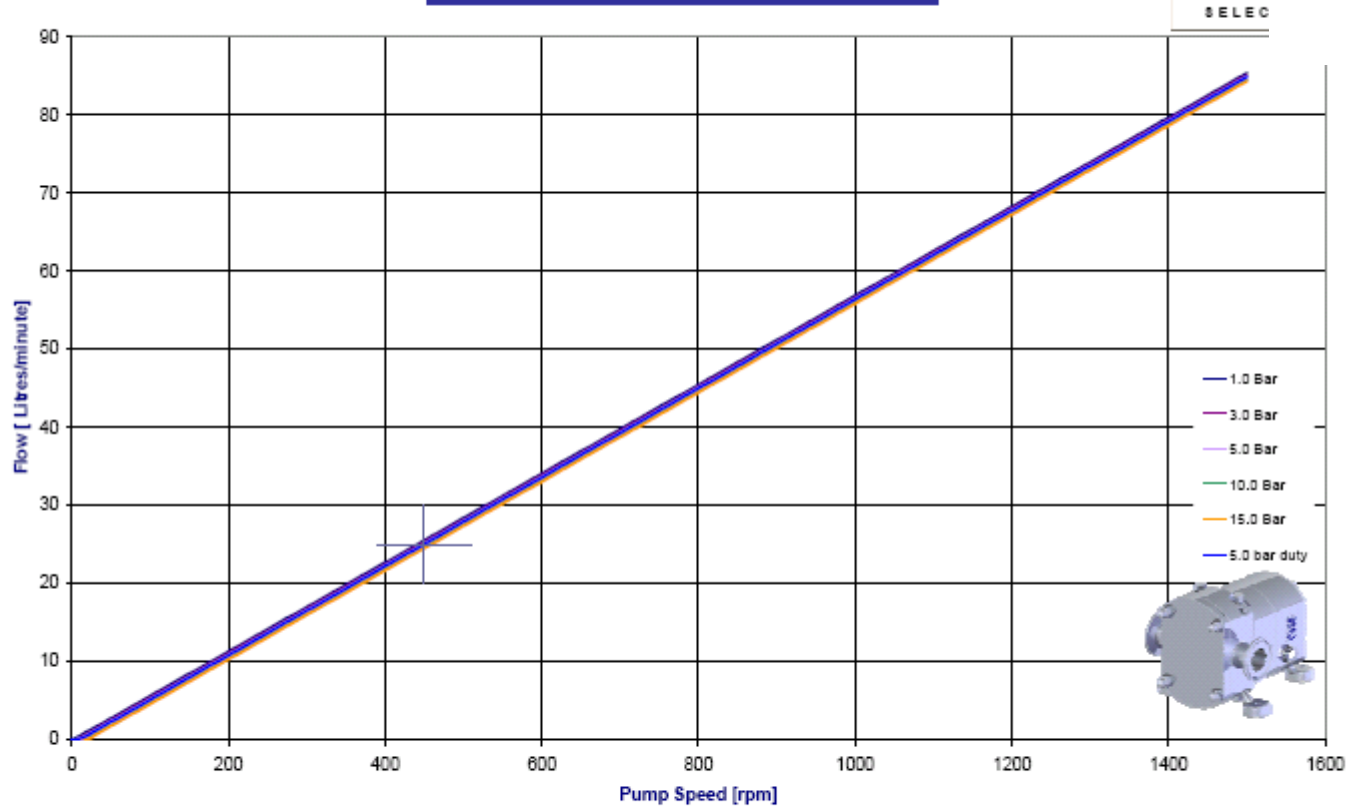
Pump curves for NOVAlobe 10/006

Max Speed : 1500 rpm



NOVAlobe

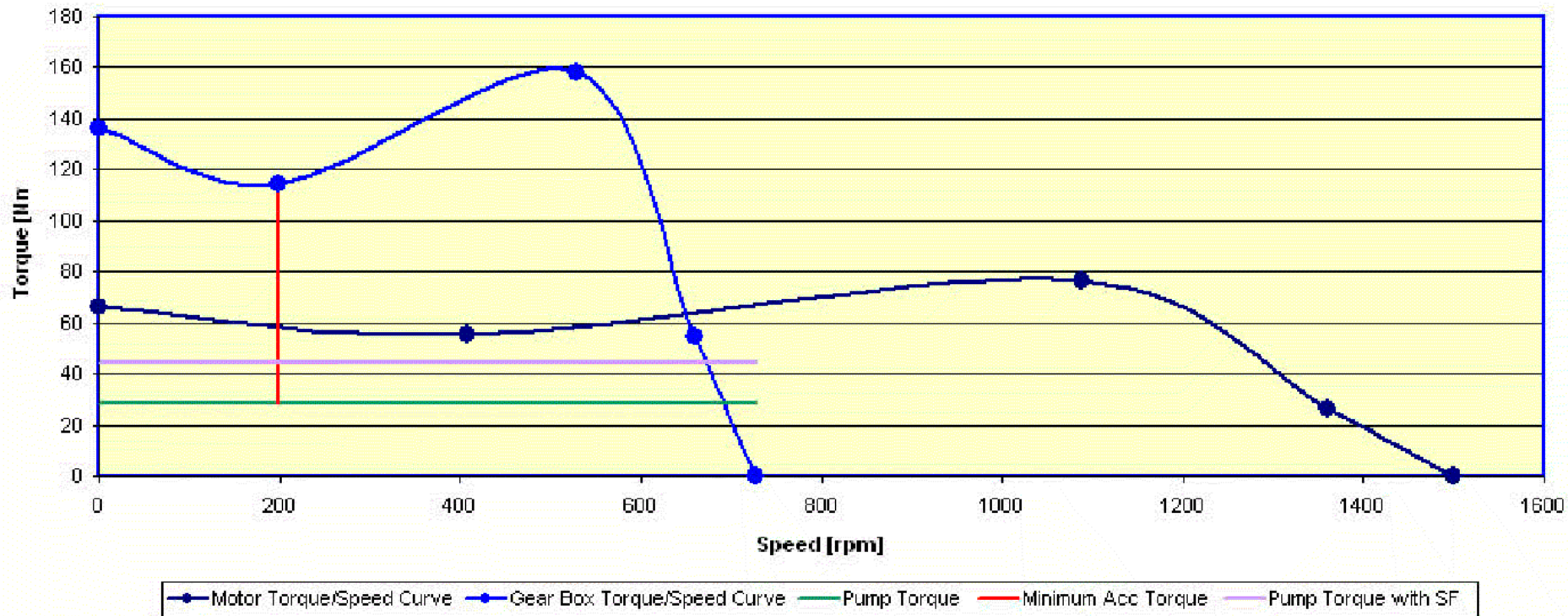
NOVAlobe Pump Performance Curve



Hilge Pump Model:	10/0.06	Duty Liquid	Water
Operating Speed [rpm]	450	Duty Viscosity cP	1000
Hydraulic Power [kW]	0.21	Duty Flow [Lpm]	25
Volumetric Efficiency [%]	97.5	Duty Pressure [bar]	5

Pump Performance curves may alter as a result in variation of component dimensions. Hilge Pumps reserves the right to alter pump performance curves without notice

Torque:



Thank you