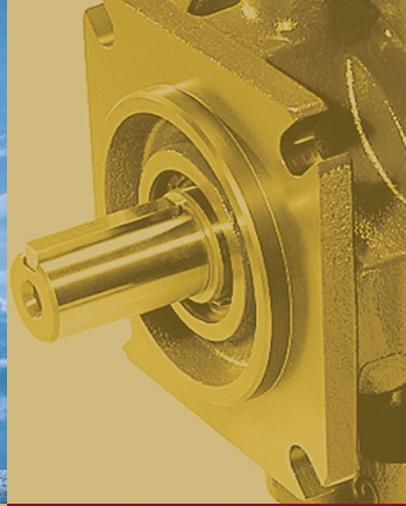


HYDRAULIC PITCH PUMP

Advanced Solutions for Durable and Robust Pitch Control



Moog is one of the leading suppliers of variable displacement piston pumps. The wind turbine hydraulic pitch pump has been specifically designed to withstand the harsh environments in wind turbine locations. Our field-proven, robust and contamination-resistant concepts lead to longer product lifetime and higher reliability.

Moog has significantly reduced both primary and secondary noise emission levels, delivering overall noise optimization and much less vibration. The result is one of the quietest piston pumps in the marketplace with the same high performance and long life for which Moog is known.

The wind turbine hydraulic pitch pump is characterized by a rapid response time and high volumetric efficiency for hydraulic power units (HPU) with demanding flow and pressure control needs. It benefits from a high oil temperature range from -40 to +80 °C (-40 to +176 °F) and a flushing function that starts at -40 °C (-40 °F) to heat the pump up to -15 °C (+5 °F). Operation of the pump itself starts at -15 °C (+5 °F).

Our broad product range includes various sizes and pressure levels, single and multiple configurations, several control options and mounting flanges to provide maximum flexibility. The Hydraulic Pitch Pump is suitable for various fluids such as mineral oil, transmission oil and biodegradable oil. Further options and features can be provided on demand.

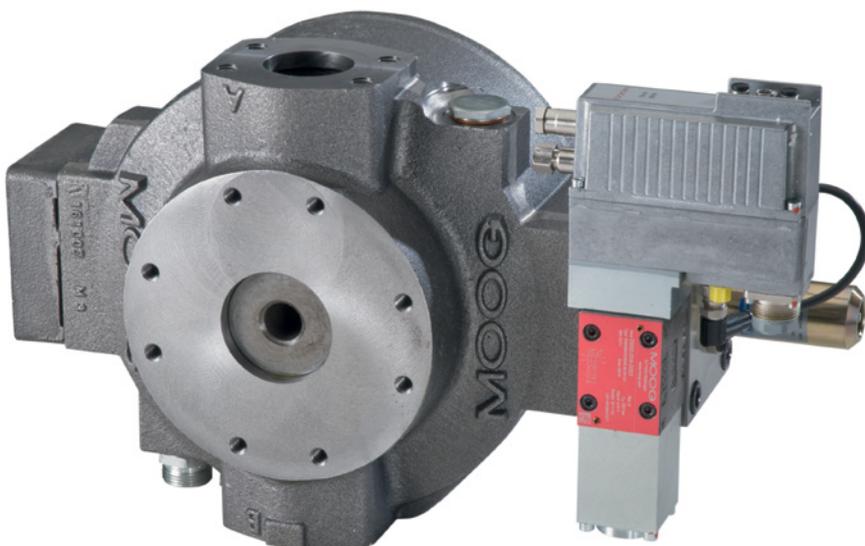
ADVANTAGES

- Durability, low maintenance requirements and long pump life help to significantly reduce maintenance costs and encourage more uptime
- Increased robustness, even under harsh operating conditions
- High efficiency leads to low energy consumption
- Low sound level
- High modularity in design due to a large number of sizes, control types and mounting flanges, as well as approved versions for a variety of operating liquids
- Low pressure pulsation
- Fast response time for higher dynamic pitch control

APPLICATIONS

Hydraulic power units for pitch control solutions

- Onshore
- Offshore



TECHNICAL DATA

Displacement [cm ³ /rev]	19	32	45	63	80	100	140
Type of construction	Pump for open circuit with various control devices						
Type of mounting	<ul style="list-style-type: none"> • End mounting, centering and hole-circle Ø to ISO 3019-2 (metric) • Mounting flange to ISO 3019-1 (inch) • Mounting flange to ISO 3019-2 (metric) 						
Mounting position	Any						
Weight [kg (lb)]	22 (49)	33 (73)		71 (157)			105 (232)
Mass moment of inertia [kg cm² (10⁻⁴ lbf in²)]	17.7 (157)	61 (540)		186.3 (1649)			380 (3363)
Drain line [mm (in)]	15 (5/8)	18 (3/4)		22 (7/8)			
Type of drive	Direct drive with coupling (please inquire with your Moog contact for other types)						
Ambient temperature range [°C (°F)]	-15 to +60 (5 to +140)						
Maximum housing pressure	2 bar (29 psi) (1 bar (15 psi) gauge pressure)						
Maximum speed							
At inlet pressure 0.8 bar (12 psi) absolute [min ⁻¹] ¹⁾	2,700	2,500	2,000	2,400	2,000	1,800	
At inlet pressure 1 bar (15 psi) absolute [min ⁻¹] ¹⁾	2,800	2,600	2,100	2,500	2,050	1,850	1,900
For quiet running [min ⁻¹]	1,800						
Medium pressure series							
Continuous pressure [bar (psi)]	280 (4000)						
Maximum pressure [bar (psi)] ²⁾	315 (4500)						
Pressure peak [bar (psi)]	350 (5000)						
High pressure series							
Continuous pressure [bar (psi)]	350 (5000)		-	350 (5000)		-	
Maximum pressure [bar (psi)] ²⁾	385 (5500)		-	385 (5500)		-	
Pressure peak [bar (psi)]	420 (6000)		-	420 (6000)		-	
Viscosity	<ul style="list-style-type: none"> • Allowable operational range 12 to 100 mm²/s (cSt): Recommended 16 to 46 mm²/s (cSt) • Hydraulic fluid according to ISO VG 46 or VG 32 viscosity class • Maximum viscosity 500 mm²/s (cSt) during start-up with electric motor at 1,800 min⁻¹ 						
Filtering³⁾	<ul style="list-style-type: none"> • NAS 1638, class 9; ISO 4406, class 20/18/15; obtained with filter fineness of β₂₀ = 75 • NAS 1638, class 7; ISO 4406, class 18/16/13; with electro-hydraulic control 						

¹⁾ Maximum speed increase on request

²⁾ Maximum pressure according to DIN 24312

³⁾ Dirt particles retention rate > 20 µm is 1:75, i.e. 98,67%

Note: For special fluids like HFA, HFC and emulsions the above pressure, viscosity and filtration parameters may be changed.

Moog has offices around the world. For more information or the office nearest you, contact us online.

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www.moog.com/wind

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This technical data is based on current available information and is subject to change at any time. Specifications for specific systems or applications may vary.

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