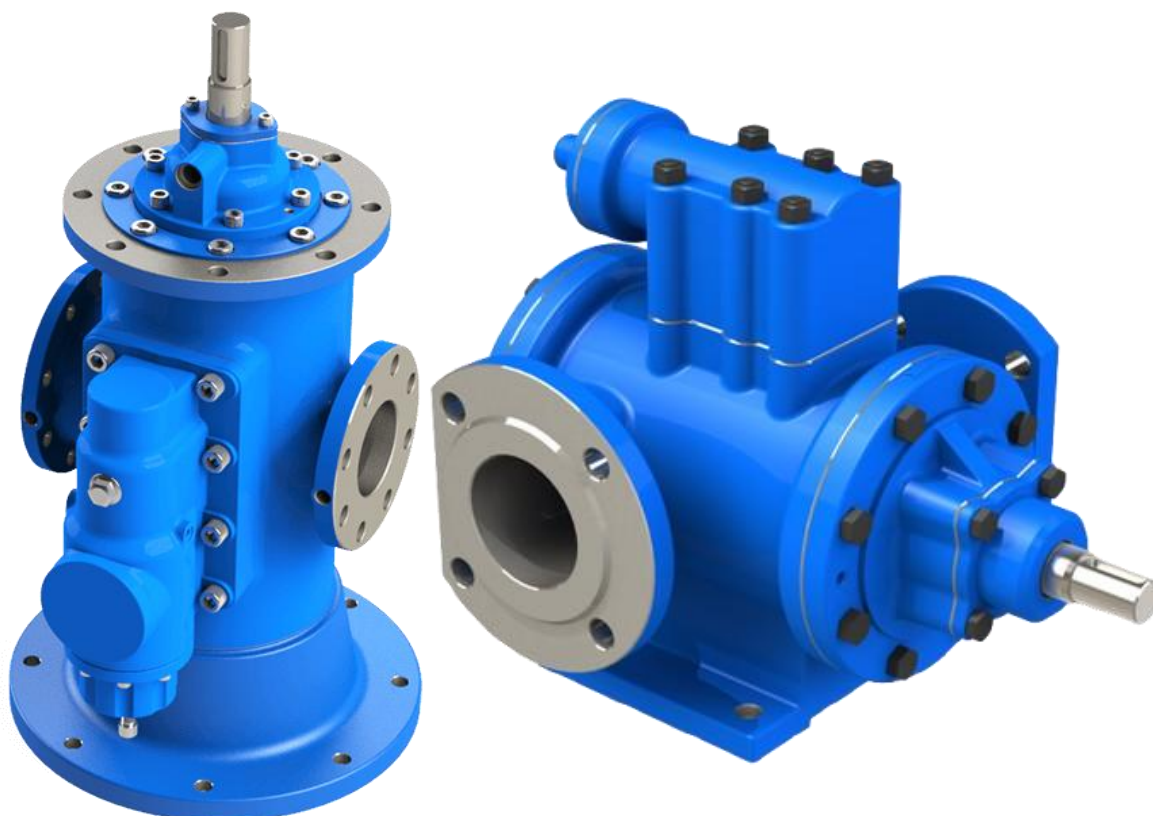




TRI-SCREW PUMP

High-Efficiency Triple-Rotor PD Technology

Model: STG Series



SPEW STG Series (Single & Double Suction)

Triple Screw Pumps offer Single & double suction, smooth, pulse-free flow with high efficiency and quiet operation. Their three intermeshing rotors ensure gentle handling of viscous or lubricating fluids, minimizing wear and vibration. With only one moving part in contact, they deliver excellent reliability, long service life, and low maintenance. Ideal for continuous duty in oil, marine, and process applications where steady, leak-free performance is critical.

Data Sheet: STG-06-04

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1. Introduction

SPEW STG Series Tri-Screw Pump is a Low to high pressure, High-performance positive displacement unit engineered for continuous, low-noise transfer of clean lubricating liquids.

SPEW STG Series offers Single and double suction making it a versatile high performance PD flow pumps among other models.

Its three precisely machined rotors operate within a close-tolerance housing to deliver **constant, pulse-free flow**, independent of pressure or viscosity variations. Designed for heavy-duty industrial and marine service, the STG pump ensures reliable operation under high differential pressures and demanding thermal conditions.

2. Key Features & Benefits

Feature	Benefit
Triple-rotor design	Smooth, non-pulsating delivery with minimal vibration and noise.
Single & Double suction	It offers single and double suction for high dynamic flow
Hydrodynamic sealing	Leak-free operation without mechanical seal wear.
High-viscosity capability	Handles oils up to 5000 Cst efficiently.
High suction lift	Self-priming with excellent NPSH characteristics.
Compact modular construction	Easy integration in confined skid or marine layouts.
Robust materials	Carbon-steel or alloyed construction for long life.
Low maintenance	Only one rotating element—no dynamic axial load.
Variable mounting	Horizontal, vertical, or submerged versions.

3. Construction Types

- **Standard Foot-Mounted (STG):** for baseplate or skid installation.
- **Vertical Inline (STG-V):** space-saving design for tank top or pit mounting.
- **Submerged Type (STG-S):** pump casing immersed in tank for zero-leak transfer.
- **Heating-Jacketed Version (STG-J):** for high-viscosity oils, bitumen, or waxes.

4. Model Types & Specification:

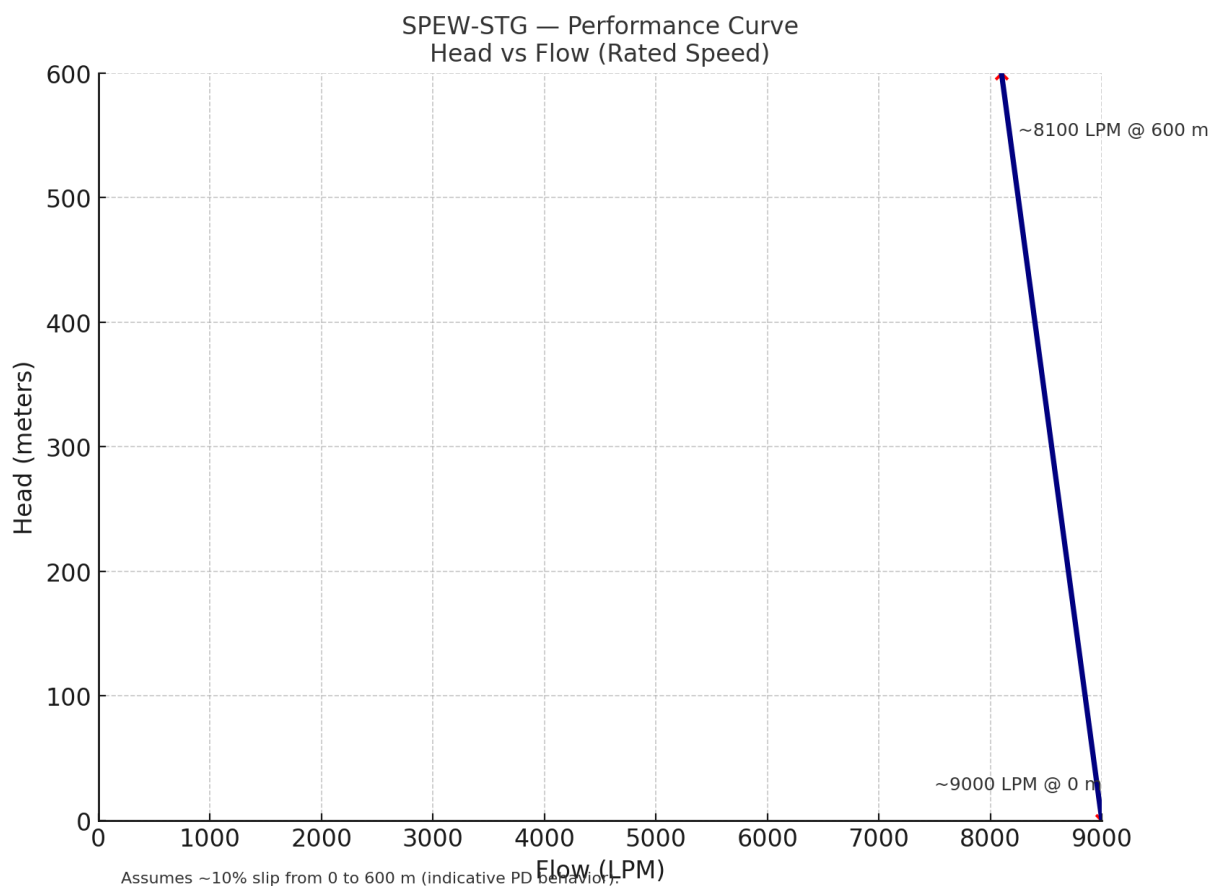
Consult Model selection and specification data sheets.

5. Mountings

Mounting Code	Description	Typical Use
H	Horizontal, foot-mounted	Lube oil and transfer skids, cream, paste, bitumen
V	Vertical, close-coupled	Tank top discharge, confined spaces, marines
S	Submerged	Sump or tank applications, marines
J	Jacketed	Heated service for viscous media
VJ	Vertical Jacketed	High Viscosity Fluids, bitumen
HJ	Horizontal Jacketed	High Viscosity Fluids, bitumen

6. Typical Performance Envelope

- **Flow range** : 0.2 – 9000 LPM (540 m³/h)
 - **Differential pressure** : up to 60 bar
 - **Viscosity range** : 2 – 5000 cSt
 - **Temperature** : –20 °C to +250 °C
 - **Speed** : 400 – 3 000 rpm
- (Performance depends on viscosity and clearances; refer to performance curves.)*



7. Specifications

Parameter	Value
Model	Consult Model selection & specification sheet
Pump type	Triple-screw, self-priming, positive displacement
Flow range	up to 540 m ³ /h
Pressure range	up to 60 bar
Viscosity range	2 – 100 cSt
Temperature range	–20 °C to +250 °C
Drive	Direct-coupled or via reduction gear
Lubrication	Pumped fluid lubricates screws and bearings
Direction of rotation	Clockwise (viewed from drive end)

8. Construction & Materials

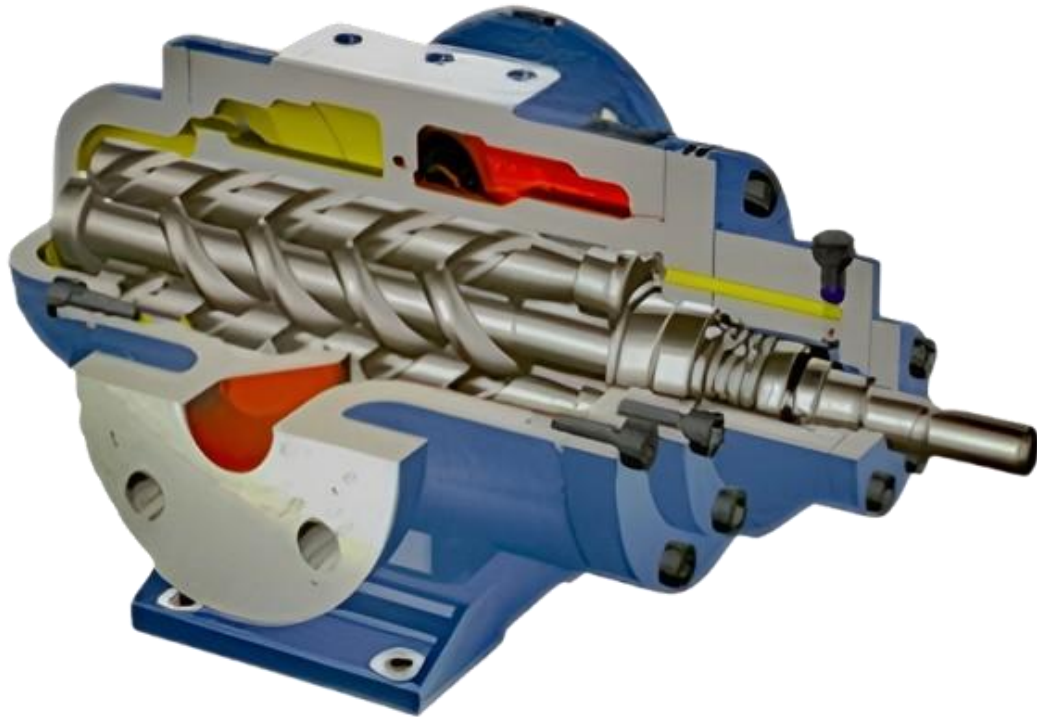
Component	Standard Material	Optional Material
Casing / Insert	Cast steel / Ductile iron	Stainless steel AISI 316
Rotor set	Case-hardened steel / Alloyed steel	Nitrided / Stainless steel
Bearings	Carbon / Antifriction type	Tungsten-coated
Shaft seal	Mechanical seal / Lip seal	Double mechanical seal
Heating jacket	Carbon steel	Stainless steel
Fasteners	Alloy steel	SS316

Note: For detail MOC, consult Model selection and specifications sheet.

9. Operating Principle

The **STG** pump employs **three precision screws**—a power rotor driving two idler rotors within a close-fitting housing. As the screws rotate, **sealed cavities** form between the threads and casing, progressing axially to convey liquid from suction to discharge with **no pulsation or turbulence**.

The pumped fluid itself provides **hydrodynamic sealing and lubrication**, ensuring quiet, efficient operation with minimal mechanical contact.



10. Installation & Controls

- Mount pump rigidly on a flat, level base or common skid.
- Use flexible coupling or gear reducer aligned within 0.05 mm TIR.
- Install suction strainer (mesh 40–60) to prevent debris entry.
- Provide pressure relief valve and bypass line for overload protection.
- For heated or jacketed models, ensure steam/thermal oil inlet and condensate outlets are properly vented.
- Integrate with PLC / temperature / pressure sensors for automated control in continuous process lines.

11. Applications

- Lube oil circulation and transfer systems
- Hydraulic oil and fuel oil handling
- Bitumen, polymer, and resin transfer
- Power plant and turbine skid lubrication
- Marine and ship engine systems
- Petrochemical and refinery service
- Gear oil and hydraulic fluid blending

12. Advantages

- Smooth, **pulse-free flow** for sensitive equipment
- High volumetric & mechanical efficiency even at low speeds
- Long service life with **low maintenance cost**
- Compact, low-noise, leak-free construction
- **Self-priming**, reversible, and easy to automate
- Proven reliability under **continuous 24×7 duty**





Contact Us

Business Hours

☎ Weekdays: 8.30AM to 5.30PM

Weekends: Closed

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