

**SAFE, POWERFUL  
& SILENT**



**INDUSTRIAL**



**POWER GEN**



**OIL & GAS**

# GR125 - GR150 - GR180 SMT16B & SMAPI Series

**Dry screw pumps for industrial  
& for API676 applications**

**Up to 40 bar**



### Three screw pumps

Three screw pumps represent the largest class of multiple screw pumps in service today. No matter the applications and the environmental conditions, three-screws pump is the most flexible pump on the market. Well known to be very reliable, at reasonable cost, virtually pulsation-free flow, very low acoustic emissions, three screw pumps are extensively used in meeting the requirements of oil & gas, chemical, marine, industrial, mobile, alternative energy, food processing, paper, power gen, pharmaceutical and many other industries. SMT16B represent one of the most used pump series all over the world after thirty-five years of experience.

### **Le pompe a tre viti**

*Le pompe a tre viti, oggi, rappresentano la classe di pompe a viti maggiormente utilizzate, indipendentemente dal tipo di applicazione e dalle condizioni ambientali, in quanto sono le più flessibili sul mercato. Sono considerate le più affidabili, a prezzi ragionevoli, e raggiungono bassissimi livelli di emissioni acustiche e assenza di vibrazioni nella trasmissione del flusso. Le pompe a tre viti sono ampiamente utilizzate in quanto rispettano i requisiti di settori quali oil & gas, chimico, navale, mobile, agroalimentare, power generation ed energie alternative, industria della carta, industria farmaceutica e molte altre. Le pompe a tre viti della serie SMT16B, sono tra le più usate in tutto il mondo e vantano oltre trent'anni di esperienza.*

### **No pulsation, smooth flow and low noise**

SMT16B three screw pumps are designed to avoid any pulsation, to ensure a smooth operation and to reduce to the lowest level the acoustic emissions reducing all costs of second noise reduction measures. The pulsation-free flow of SMT16B pumps allows Settima screw pumps also in output condition management critical to applications such as precision hydraulic controls and fuel metering.

### **Flusso omogeneo, nessuna pulsazione, basse emissioni acustiche**

*Le pompe a tre viti della serie SMT16B sono progettate per eliminare le pulsazioni, assicurare un funzionamento omogeneo e ridurre al minimo le emissioni acustiche, riducendo in questo modo i costi legati alla necessità di ricorrere a misure secondarie per la riduzione del rumore. Il flusso privo di pulsazioni delle pompe SMT16B, permette l'applicazione delle pompe Settima anche in condizioni critiche, come ad esempio idraulica di precisione, dosaggio e misurazione di carburanti.*

### **SMT16B Magnetic coupling: the leakage free solution**

SMT16B can be equipped with a magnetic coupling if required. The hermetically sealed magnetic coupling is a permanent magnetic synchronous coupling able to transmit torque through magnetic forces between the internal and external rotor. Applying a magnetic coupling, the drive and the driven sides are hermetically separated. In case of critical media the magnetic coupling is a reliable seal and avoids any serious leaking. The magnetic coupling is the containment shroud that is fixed to the driven sided power unit and separates internal and external rotor from each other. Due to the absence of mechanical connection the vibrations torque transmission are very low, with completely leak-proof separation of product and atmosphere. The magnetic coupling is used to ensure no media leaking or when working in environments with potentially explosive atmospheres.

### **SMT16B Giunto magnetico: assenza garantita di perdite**

*Le pompe SMT16B possono, su richiesta, essere dotate di giunto magnetico. Il giunto magnetico permette di sigillare l'accoppiamento che trasmette la coppia tra il rotore interno ed esterno tramite forza magnetica. Con l'applicazione del giunto magnetico, l'elemento di trasmissione e quello condotto sono ermeticamente separati. In caso di fluidi pericolosi, il giunto magnetico garantisce una tenuta affidabile che impedisce perdite. Il giunto magnetico consiste nella copertura fissata sull'elemento condotto che separa il rotore interno da quello esterno. Grazie all'assenza di connessioni meccaniche, le vibrazioni dovute alla trasmissione di potenza sono molto ridotte, senza possibilità di contaminazione dell'atmosfera da parte del fluido e viceversa. Il giunto magnetico è utilizzato per prevenire in modo sicuro perdite in ambienti con atmosfera potenzialmente esplosiva.*

### **Applications / Applicazioni**

**INDUSTRIAL** | Lube services, Power hydraulics, Hydraulic governors, Cooling, heating, recycling, Driving and filtering, Process technology and chemistry, Filtration applications, Chip conveyors, Hydro power (turbines & compressor lubrication power), Paper & Pulp (lubrication & filtration), Gear box lube and filtration system (high viscosity lube, air emulsion)

**POWER GENERATION** | Lube oil service, Control oil service, Sealing oil service for gas turbine, Fuel unloading station, Fuel transfer, Fuel feeding, Burner operations service, Filtration & cooling

**MARINE** | Off-line filtration, Off-line filtration cart and trolleys, Filtration & oil transfer, Fuel service, Lube oil circulation service, Lubricating liquids (machines, turbines, gear sets, motors)

**OIL & GAS** | Oil filtration & cooling, Oil and fuel oil lubrication, Oil rigs, Refineries (transport, meter and mix), Off-shore platform, Petrochemical industry, Transfer service

## Technical characteristics / Caratteristiche tecniche

<b>Assembly Types</b> <i>Tipi montaggio</i>	Dry (SMT16B) <i>Esterno (SMT16B)</i>	
<b>Models</b> <i>Modelli</i>	125 – 150 – 180	
<b>Installation</b> <i>Installazione</i>	Foot mounted Con piedi	
<b>Suction &amp; pressure ports</b> <i>Flange mandata e aspirazione</i>	ANSI / DIN	
<b>Drive loading</b> <i>Carichi</i>	No axial or radial loads <i>Nessun carico assiale o trasversale</i>	
<b>Shaft rotation</b> <i>Rotazione albero</i>	Clockwise (from shaft end) , (available also the counter clockwise rotation) <i>Destra (disponibile anche per rotazione sinistra)</i>	
<b>Shaft speed</b> <i>Velocità di rotazione</i>	From 300 to 1.800 rpm <sup>(1)</sup> <i>Da 300 a 1.800 rpm <sup>(1)</sup></i>	
<b>Flows</b> <i>Portate</i>	From 1.700 L / min up to 4.900 L / min <i>Da 1.700 L / min a 4.900 L / min</i>	
<b>Outlet Pressure</b> <i>Pressione di mandata</i>	Up to 40 bar <i>Fino a 40 bar</i>	
<b>Inlet Pressure</b> <i>Pressione in aspirazione</i>	Min. - 0.7 bar max. 3 bar <sup>(2)</sup> <i>Min. - 0.7 bar max. 3 bar <sup>(2)</sup></i>	
<b>Fluids(3)</b> <i>Fluidi(3)</i>	<ul style="list-style-type: none"> <li>Mineral oil HLP e HLVP</li> <li>Ecologic fluids HETG, HEPG, HEE</li> <li>Synthetic fluid or emulsion: HFA oil-water emulsion, HFB water-oil emulsion 40% of volume, HFC water/ glycole – water max 35 to 55%, HFDR phosphate ester</li> <li>Lubrication high viscosity oils</li> <li>Special synthetic fluid: MIL-H, SKYDROL,</li> <li>Fuel oil: MGO, MDO, Low sulfur MDO and HFO</li> <li>DMX (ISO8217), DMA, DMB, DMC, DMZ</li> <li>Bunker oil, furnace oil, engines oil, heating oil, hydraulics oils DIN 51524</li> </ul>	<ul style="list-style-type: none"> <li><i>Oli minerali HLP e HLVP</i></li> <li><i>Fluidi ecologici HETG, HEPG, HEE</i></li> <li><i>Fluidi sintetici o emulsioni: HFA emulsione olio-acqua, HFB emulsione acqua-olio 40% dl volume, HFC acqua/glicole – acqua max 35 to 55%, HFDR phosphate ester</i></li> <li><i>Olio ad alta viscosità per lubrificazione</i></li> <li><i>Fluidi speciali sintetici: MIL-H, SKYDROL</i></li> <li><i>Fuel oil: MGO, MDO, Basso livello di zolfo MDO e HFO • DMX (ISO8217), DMA, DMB, DMC, DMZ</i></li> <li><i>Bunker oil, furnace oil, olio per motori, heating oil, olio idraulico DIN 51524</i></li> </ul>
<b>Viscosity</b> <i>Viscosità</i>	From 2 up to 10.000 cSt <sup>(4)</sup> <i>Da 2 fino a 10.000 cSt <sup>(4)</sup></i>	
<b>Seals</b> <i>Guarnizioni</i>	NBR, FKM, EPDM <sup>(5)</sup>	
<b>Acoustic Emissions</b> <i>Emissioni Acustiche</i>	From 52 up to 68 db(A) at 1.800 rpm value based on ISO 4412 test procedure <i>Da 52 fino a 68 db(A) a 1.800 rpm (ISO 4412 test)</i>	
<b>Pump Body</b> <i>Corpo Pompa</i>	Aluminum alloy <i>Alluminio</i>	
<b>Pump Body (special applications)</b> <i>Corpo Pompa (applicazioni speciali)</i>	Cast iron, steel and stainless steel available on request <i>Ghisa, acciaio e acciaio inox su richiesta</i>	
<b>Screw</b> <i>Viti</i>	Steel for main screw , idler cast iron <i>Acciaio vite principale, ghisa viti secondarie</i>	
<b>Screws (special applications)</b> <i>Viti (applicazioni speciali)</i>	Core hardened steel screws, surface treated screws <i>Viti in acciaio temprato, viti trattate superficialmente</i>	
<b>Environment Temperature</b> <i>Temperatura Ambiente</i>	From - 50 ° up to + 100°C <sup>(6)</sup> <i>Da - 50 ° a + 100°C <sup>(6)</sup></i>	
<b>Hydraulic Temperature</b> <i>Temperatura Olio</i>	From - 50° C up to + 300° C <sup>(6)</sup> <i>Da - 50° C a + 300° C <sup>(6)</sup></i>	
<b>Filtration</b> <i>Filtrazione</i>	Permissible degree of fluid contamination NAS to 1638 class 10 or ISO DIS 4406 – 19/16. Recommended filtration β 25 ≥ 75 <i>Contaminazione NAS tipo 1638 classe 10 o ISO DIS 4406 – 19/16 . Filtrazione raccomandata β 25 ≥ 75</i>	

All data reported by catalogue can change without any notice. I dati presenti nel catalogo possono cambiare senza preavviso.

(1) For shaft speed lower than 1.000 rpm and over 1.800 rpm please contact Settima. Per velocità inferiori a 1.000 rpm e maggiori di 1.800 rpm contattare Settima.

(2) For higher pressure please contact Settima. Per pressioni maggiori contattare Settima.

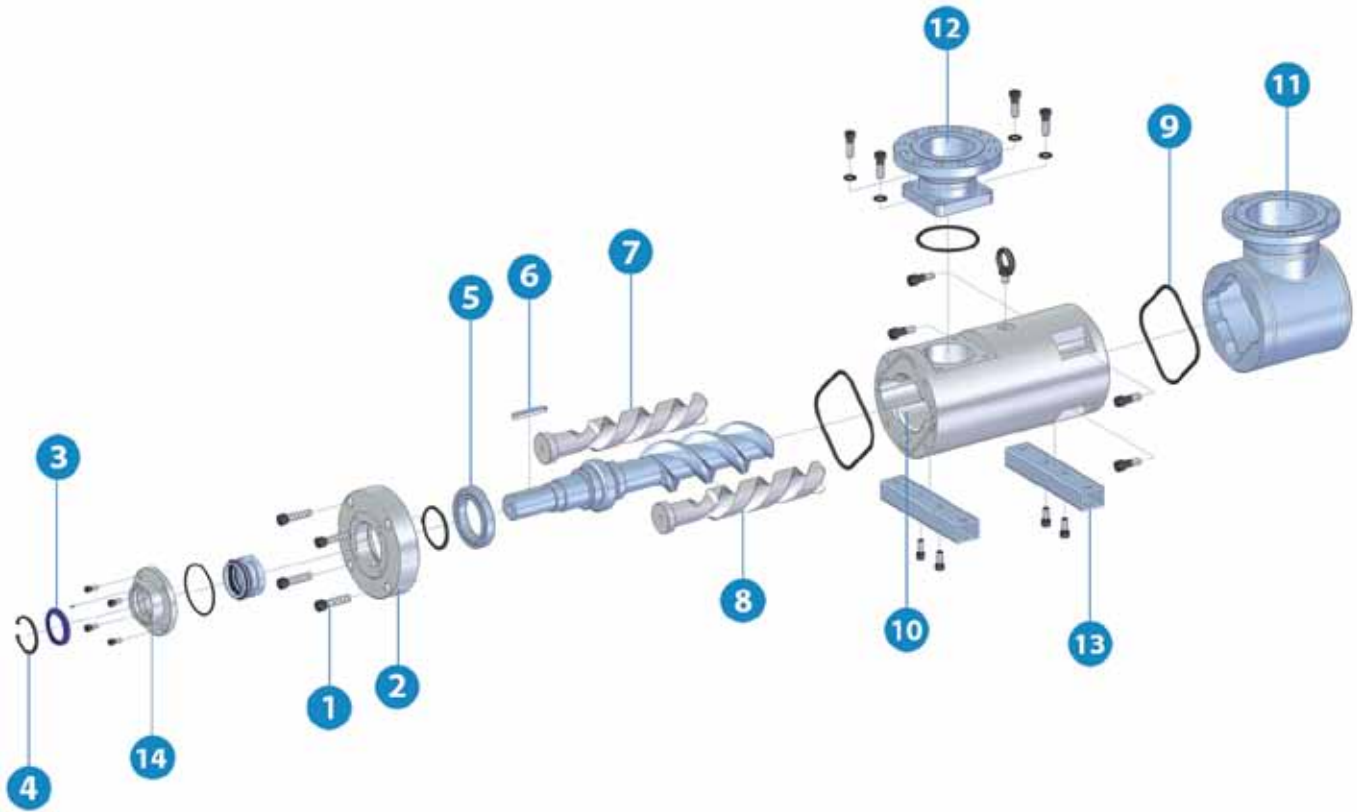
(3) For request of different fluids please contact Settima. Per l'utilizzo di diversi fluidi contattare Settima.

(4) For level of viscosity lower than 20 cSt and over 320 cSt please contact Settima. Per livelli di viscosità inferiori a 20 cSt e superiori a 320 cSt contattare Settima.

(5) For special seals, contact Settima. Per tenute speciali, contattare Settima.

(6) For higher/lower temperature, please, contact Settima. Per temperature superiori/inferiori contattare Settima.

## Part list / Componenti



N°	Description / Descrizione	Material / Materiale
1	Screw / Vite	Steel
2	Flange / Flangia anteriore	Aluminum / Cast iron / Steel
3	Seal / Anello di tenuta	FKM / Viton / SPDM
4	Seeger	Steel
5	Ball bearing / Cuscinetto	Steel / Ceramic
6	Key / Linguetta	Steel
7	Main screw / Vite centrale	Steel
8	Idler screw / Vite laterale	Cast iron / Steel
9	O-ring / Anello O-ring	FKM / NBR / EPDM
10	Pump body / Corpo pompa	Aluminum / Cast iron / Steel
11	Radial suction port / Tappa radiale	Steel
12	Pressure port / Flangia mandata	Steel
13	Foot / Piede	Steel
14	Mechanical seal cartridge / Tenuta meccanica a cartuccia	Aluminum / Cast iron / Steel

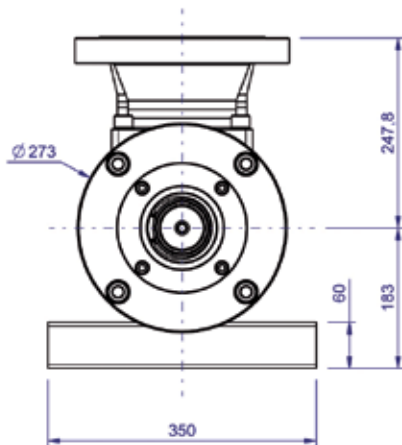
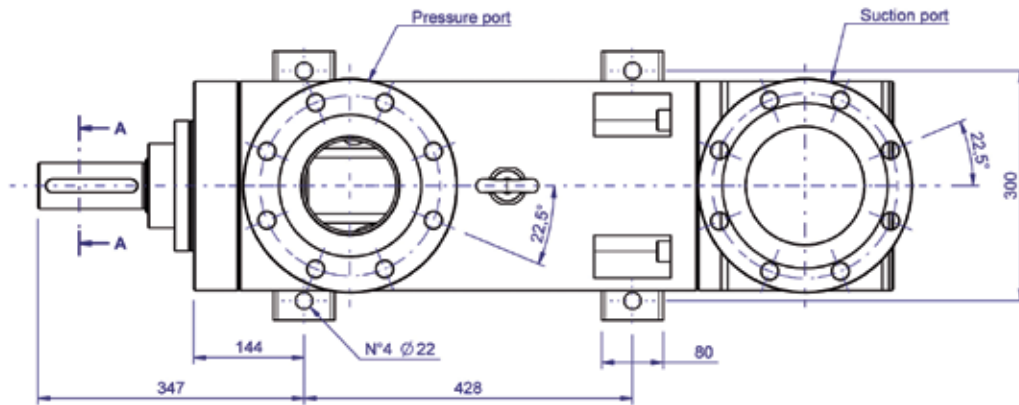
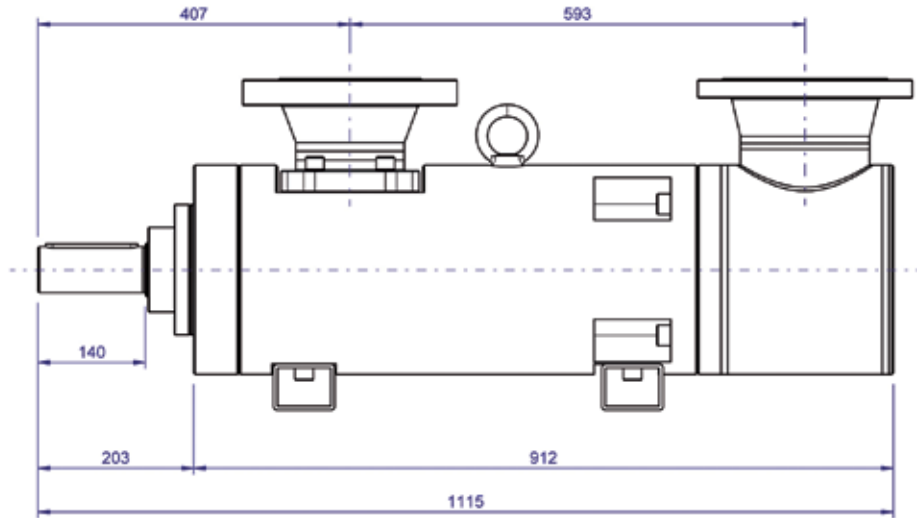


### Mechanical seal cartridge / Tenuta meccanica a cartuccia

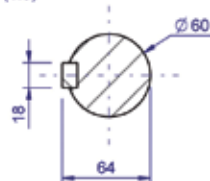
Easy replacement of the mechanical seal by disassembling the cartridge with no need to disassemble the pump.

*Disassemblando la cartuccia è possibile sostituire facilmente la tenuta meccanica senza smontare la pompa.*

## GR 125



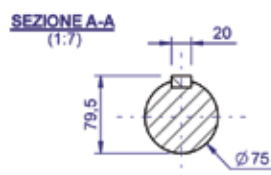
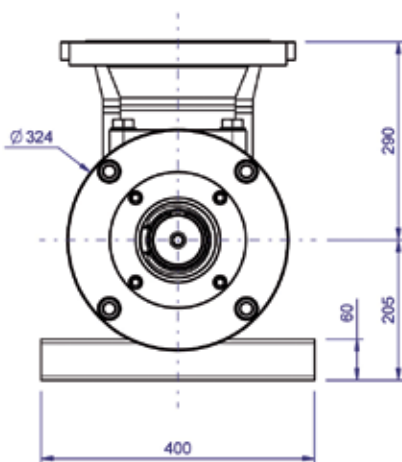
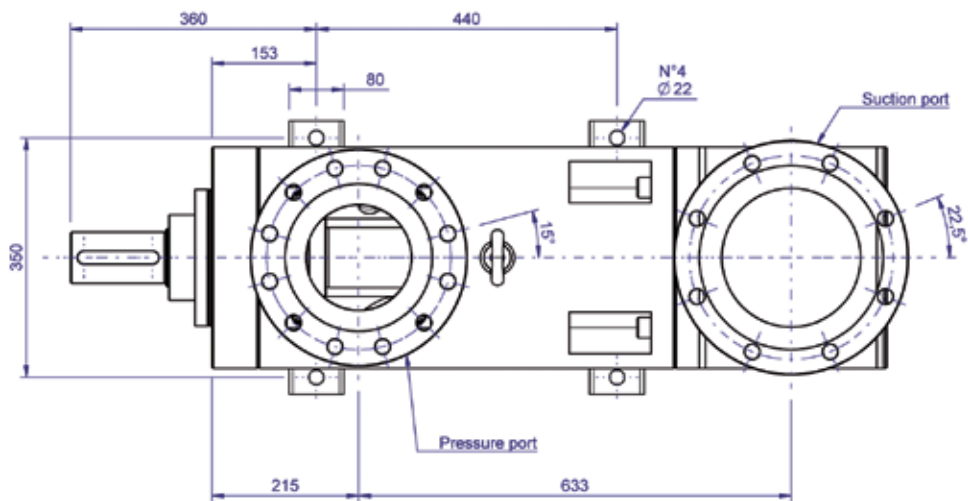
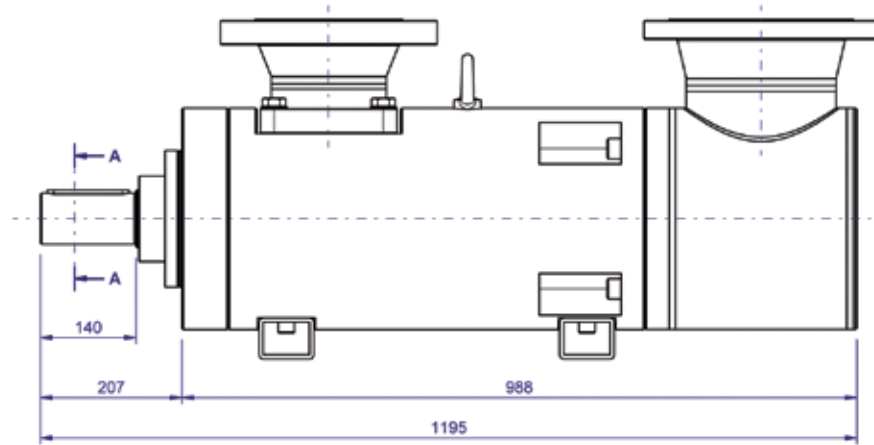
SEZIONE A-A  
(1.5)



GR125	Suction	Pressure
ANSI	6"	5"
DIN	DN 150	DN 125

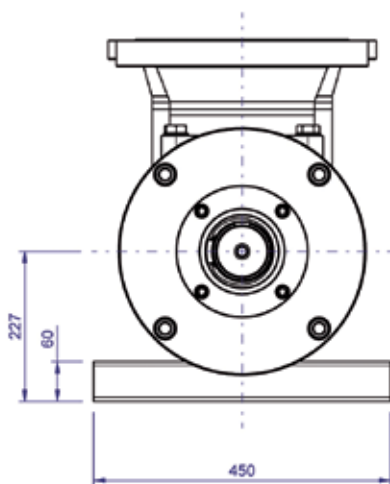
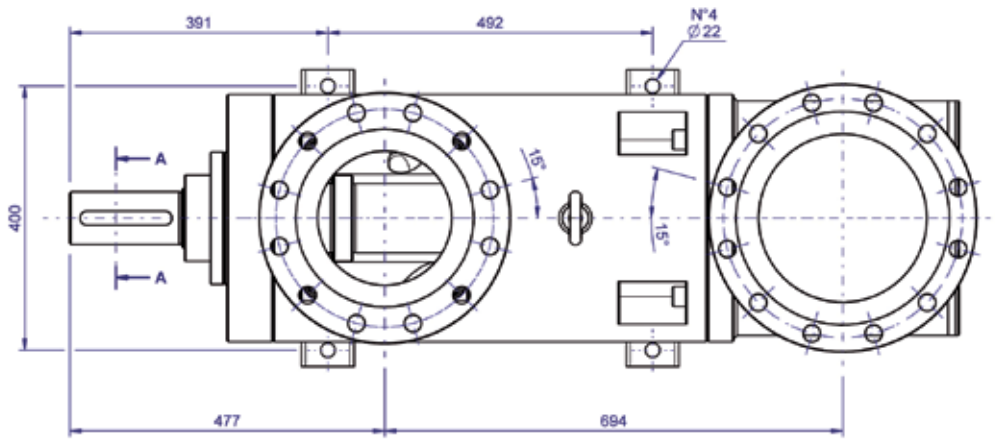
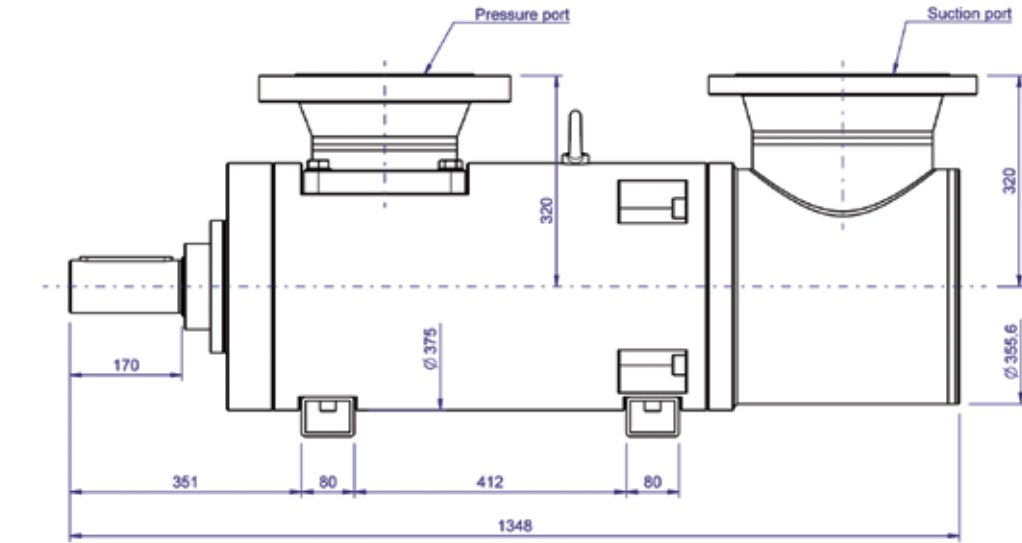


## GR 150

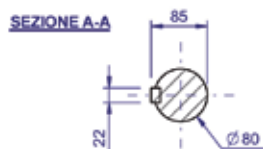


GR150	Suction	Pressure
ANSI	8"	6"
DIN	DN 200	DN 150

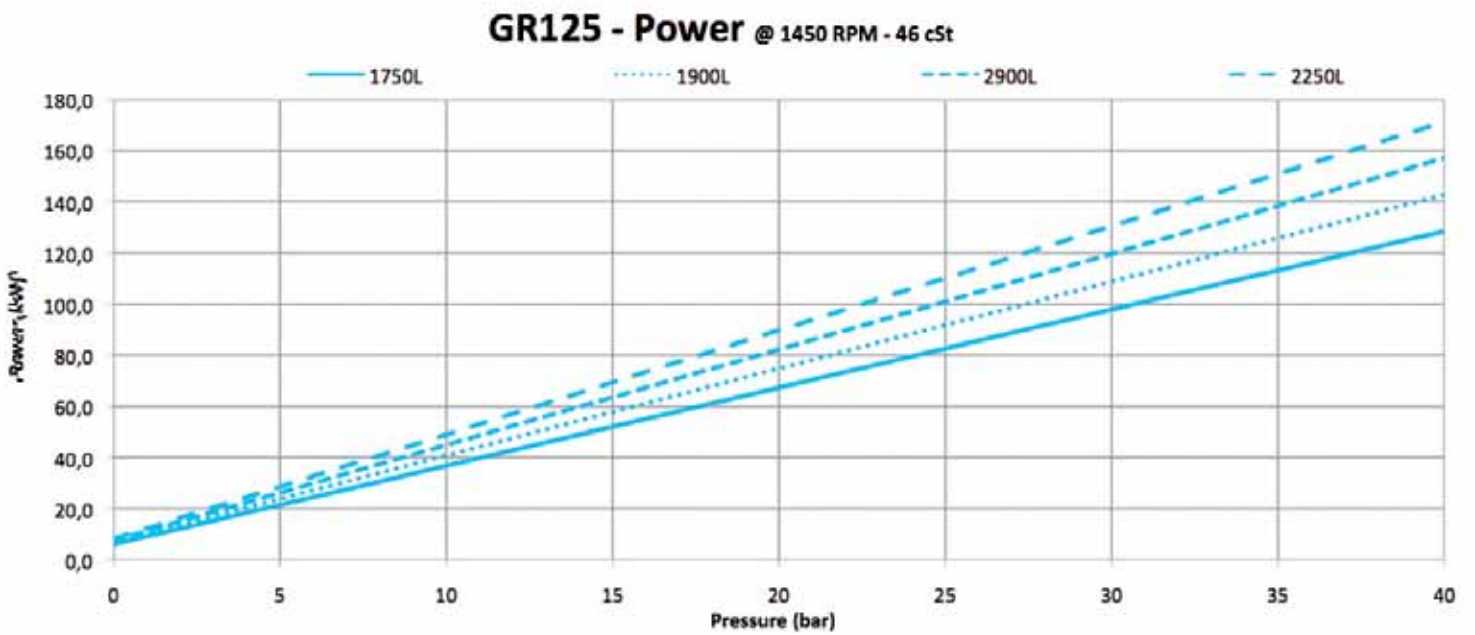
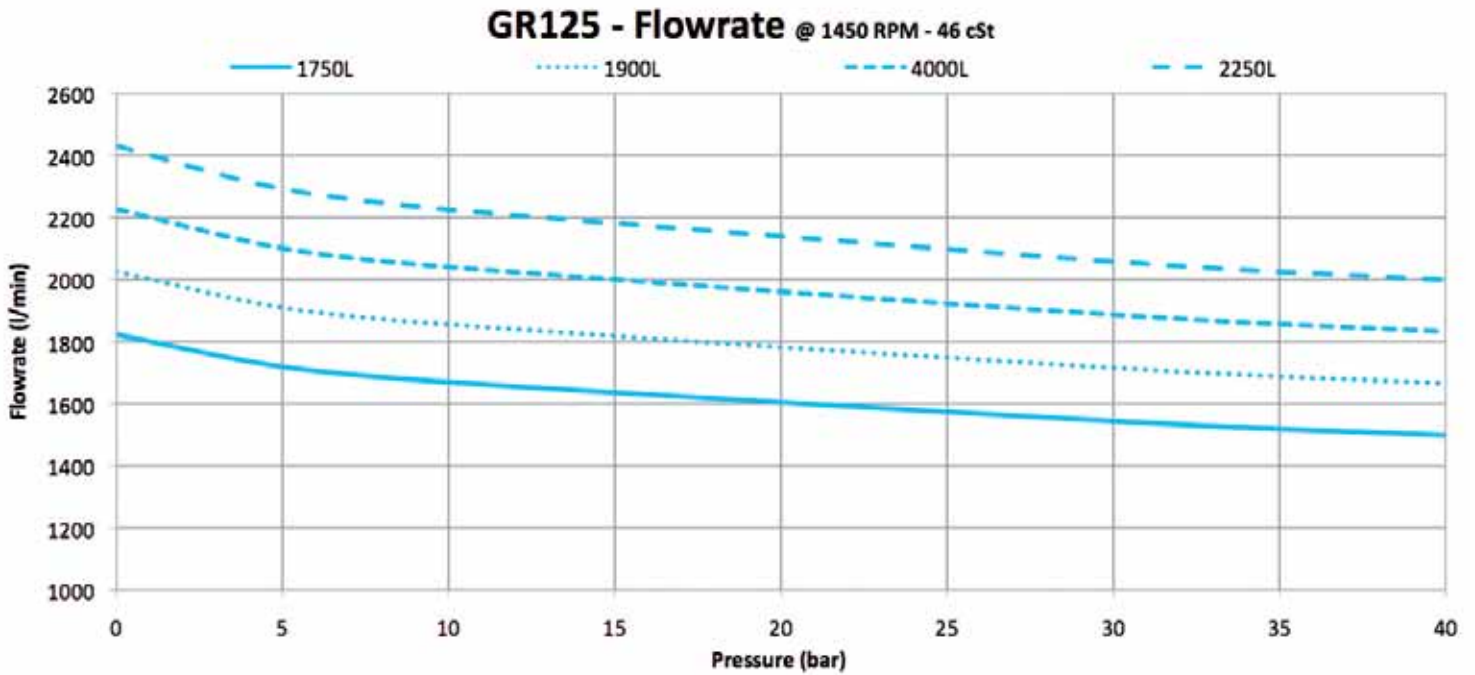
## GR 180



GR180	Suction	Pressure
ANSI	10"	8"
DIN	DN 250	DN 200



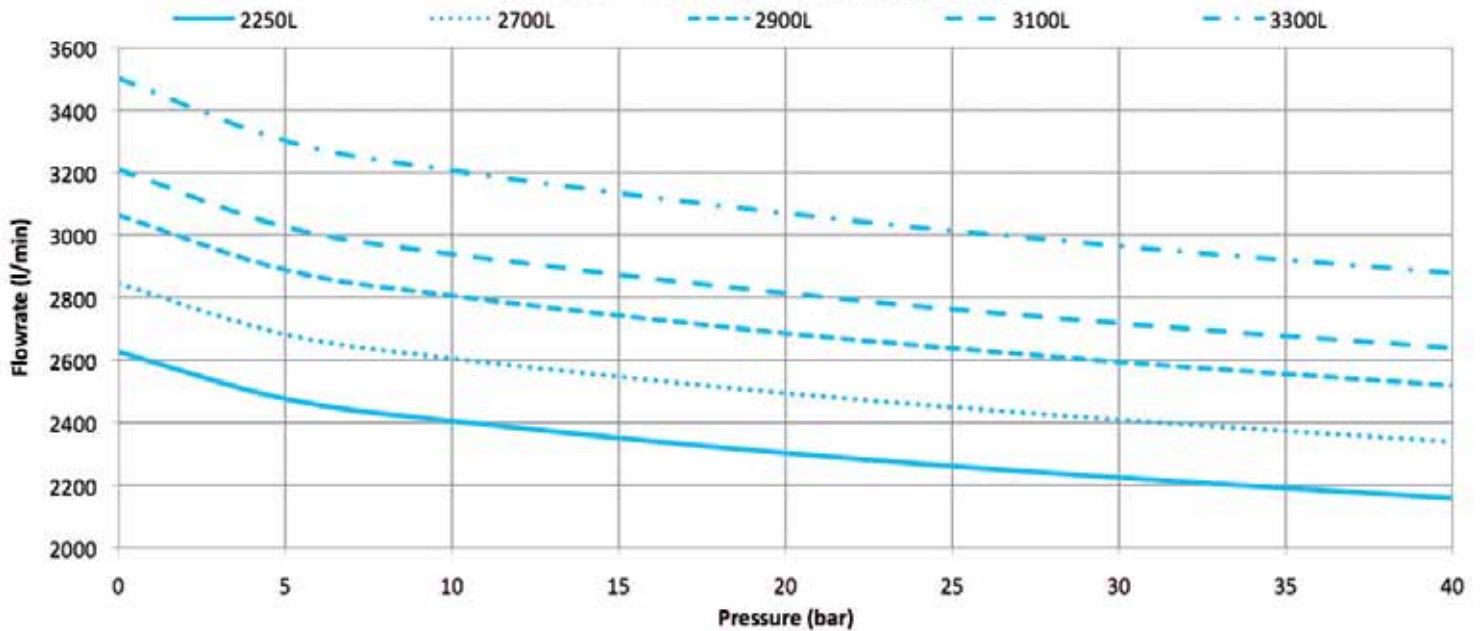
## GR125 performance charts / GR125 diagrammi delle prestazioni



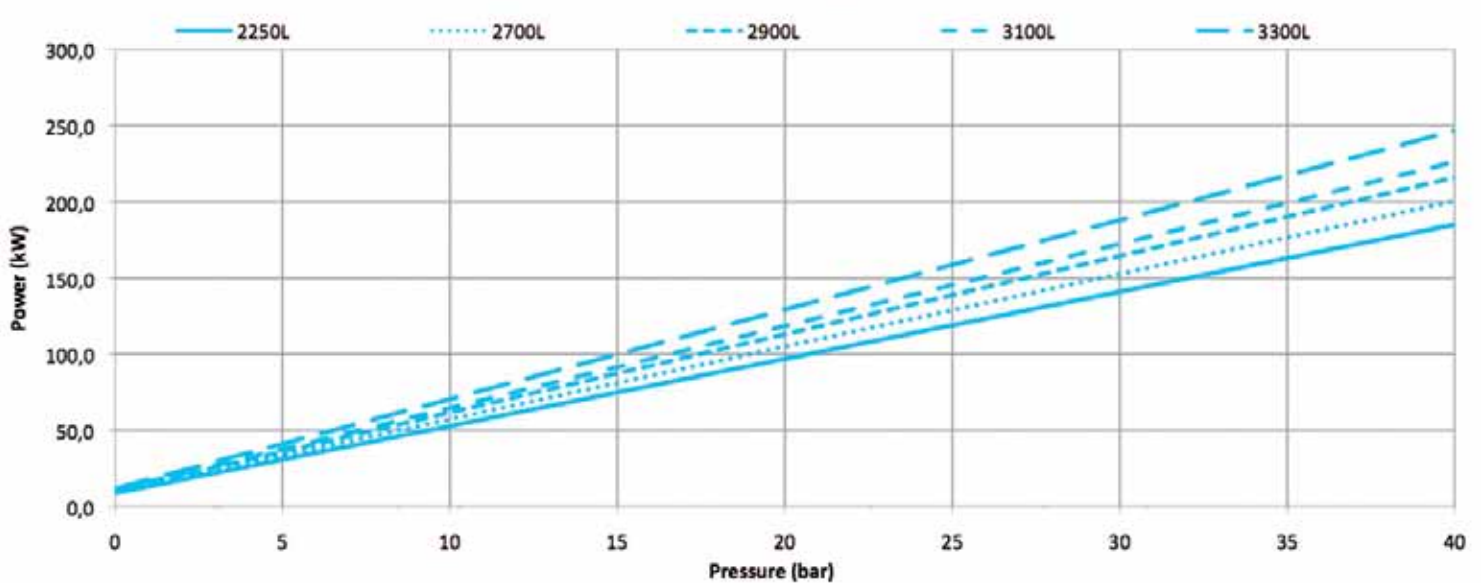


## GR150 performance charts / GR150 diagrammi delle prestazioni

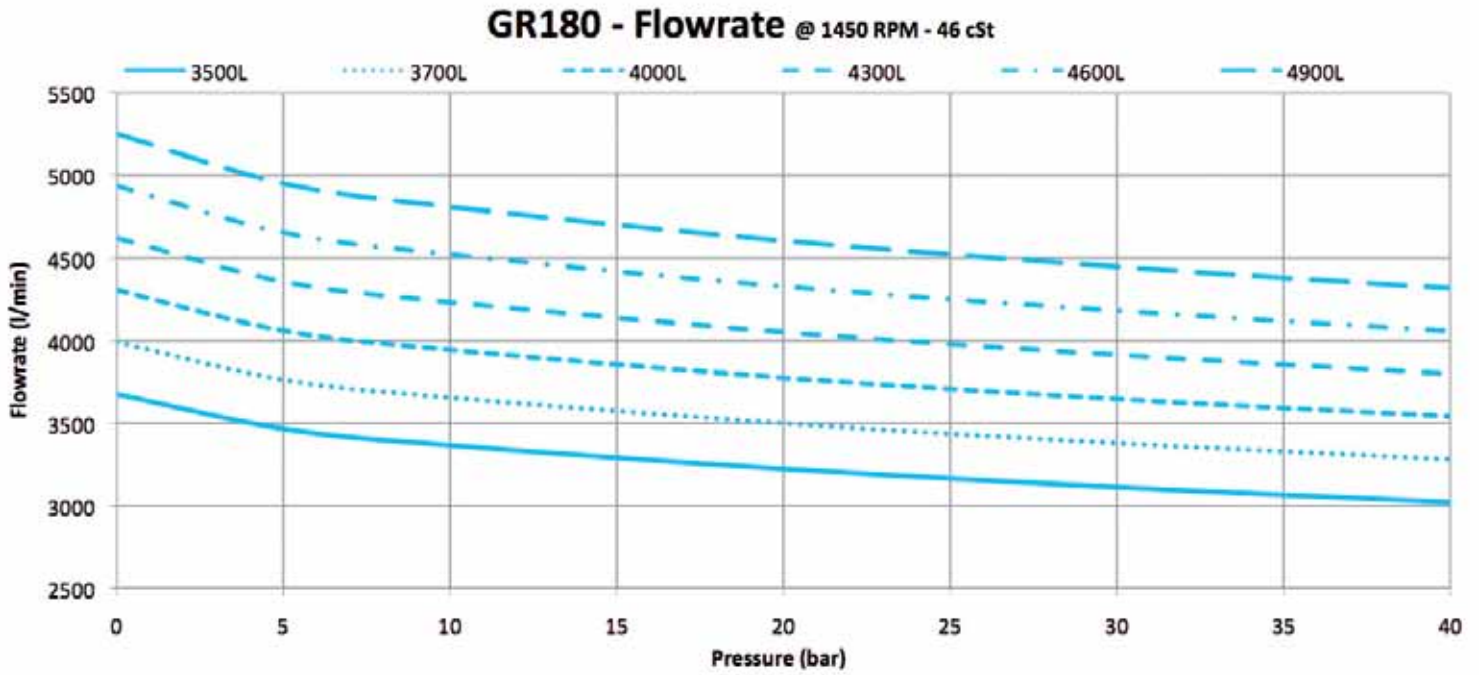
**GR150 - Flowrate @ 1450 RPM - 46 cSt**



**GR150 - Power @ 1450 RPM - 46 cSt**



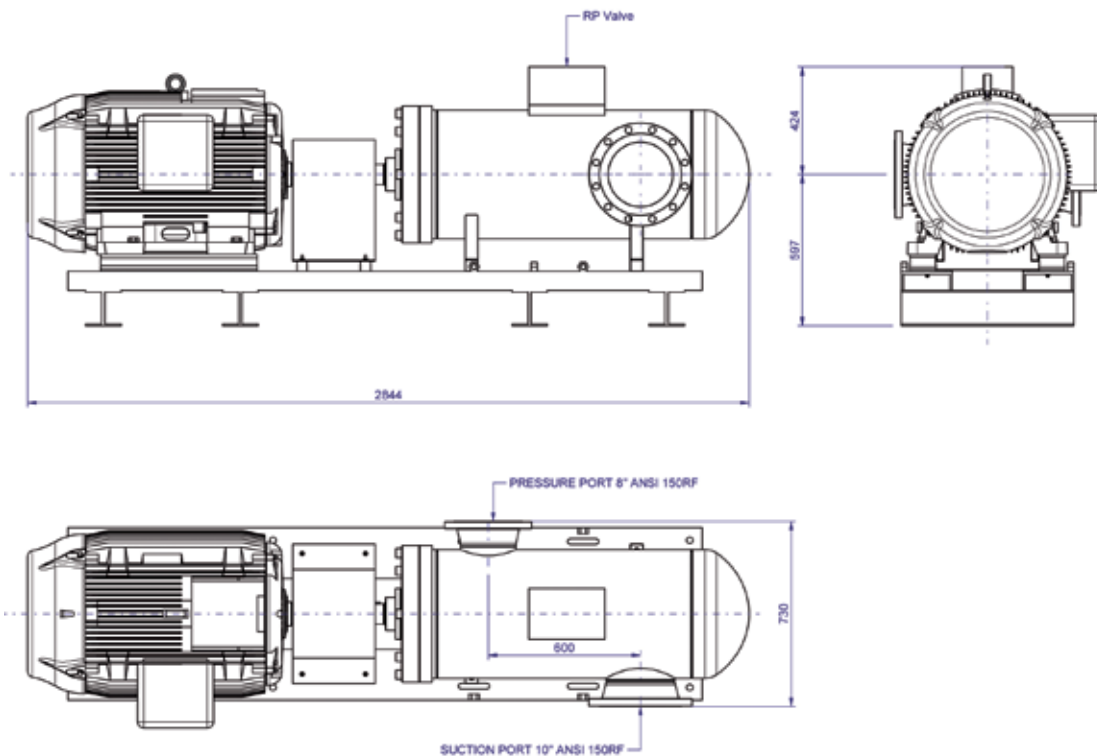
## GR180 performance charts / GR180 diagrammi delle prestazioni



## Ordering code / Codice ordinazione

Pump Type	Pump Model	Nominal Flow	High Viscosity Flag	Pump Body	Seals	Screw Threatment	Mechanical Shaft Seal	Suction Port	Bypass	Rotation
GR 125	SMT16B	1750 L 1900 L 2100 L 2250 L	(none) Standard up to 100cSt	(none) Aluminum	(none) Standard NBR	(none) Standard	(none) Standard Lip Seal	(none) Radial	(none) No Bypass	(none) Clockwise
GR 150		2550 L 2700 L 2900 L 3100 L 3300 L		G Cast Iron		HD Surface Threatment		AX Axial Suction Cover		
GR 180		3500 L 3700 L 4000 L 4300 L 4600 L 4900 L	S1 S4 100cSt 800cSt	A Steel	V FKM	HA Core Hardened	TM Mechanical Seal			

## Skid & API 676 / Skid e API 676



The pumps of group GR125, GR150 and GR180 can be delivered already installed over a **skid**, including motor, baseplate, coupling guard and various types of coupling (flexible, steel laminae, magnetic). The pumps can be delivered also according to **API676** standards.

*Le pompe GR125, GR150 e GR180 possono anche essere consegnate già installate su **skid** che includono motore, basamento, coprigiunto e diversi tipi di giunto elastico (flessibile, steel laminae, magnetico). Le pompe possono essere realizzate anche secondo gli standard **API676**.*



**SETTIMA**

**Settima, Italy**

Headquarter, r&d and production

**SETTIMA**

USA  
Warehouse

**SETTIMA**

ASIA Ltd.  
Sales Office



**Settima Meccanica Srl**

Settima - 29020 Piacenza (Italia)

tel. +39 0523.3650

fax +39 0523.3650299

[www.settima.it](http://www.settima.it)

[info@settima.it](mailto:info@settima.it)

**SETTIMA**  
research & innovation, always

Grampelhuber GmbH | [www.grampelhuber.at](http://www.grampelhuber.at)  
A-4810 Gmunden/Österreich  
T: +43 (0)7612-64902-0 [office@grampelhuber.at](mailto:office@grampelhuber.at)

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