

GO SILENTLY AT HIGH PRESSURE & HIGH SPEED



CONTINUUM[®] Series

Helical rotor pumps for high pressure and no noise application

The new generation of gear pumps for
NO PULSATION & NO NOISE



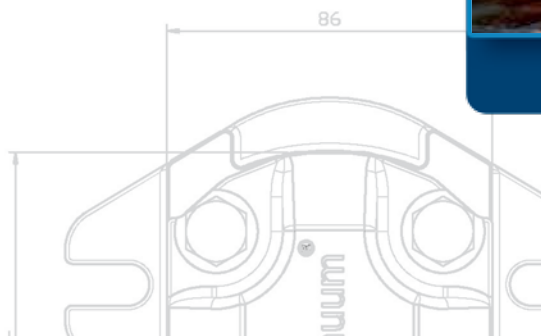
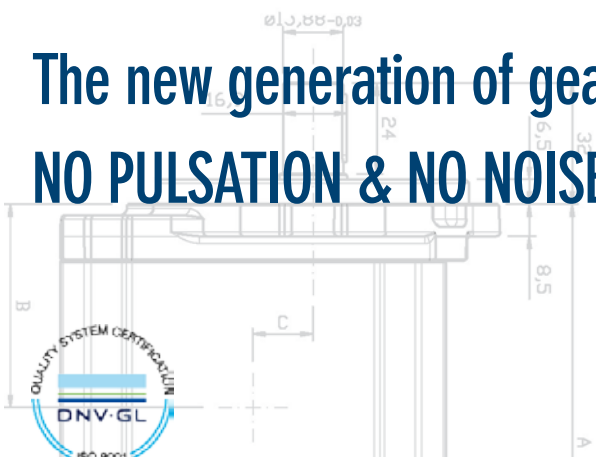
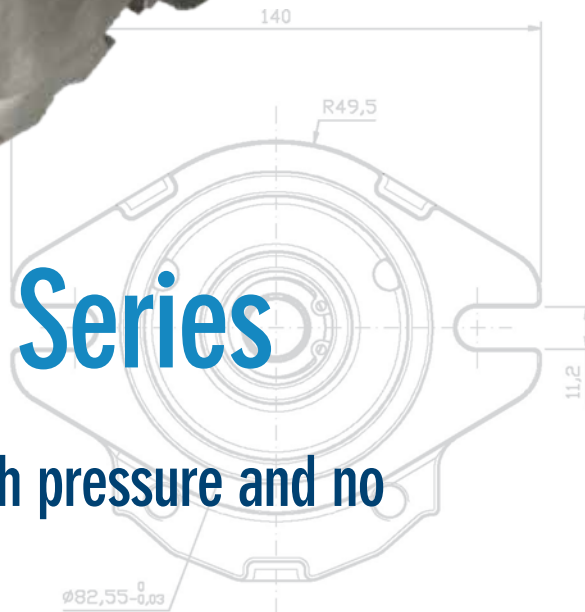
INDUSTRIAL



MOBILE



MARINE



Achieves better efficiency, lower production cost, better life quality for the industrial world.
Ottiene alti livelli di efficienza, ridotti costi di produzione ed una migliore qualità del lavoro.

Reducing noise in the workplace has become a necessity for many companies. By now most companies have recognized noise as a cost weighting on the economics of their businesses. Noise pollution remains a serious problem to be solved for both stationary and mobile machinery. Hydraulic pumps, above all those for high pressure, entail unacceptable noise and/or vibration levels in many different applications. Up to now the noise problem has always been approached in the only possible way: with secondary and expensive activities such as using pulsation dampers, hoses, damping rails and rings, encapsulating the hydraulic components or the entire system and so on. **SETTIMA** decided to start to design a new gear pumps generation capable to reduce as much as possible the acoustic emissions and the consequent vibration level. Some years ago the result was the **Continuum® pump series**, able to reduce down to 52 dB(A) the normal operation noise. Today **SETTIMA** presents the new generation of **Continuum® pumps**, silent as always, but much more efficient and with longer lifetime even at heavy duty, at all pressure and speed ranges.

The most important economic benefits of using **Continuum® pumps** are:

- very low pump pulsations reduce dramatically also vibrations with no dispersion of energy,
- saving money respect to the more expensive traditional pumps such as piston pumps and internal gear pumps,
- high volumetric efficiency, also at very low speed, contributes to cost reduction and also enables the pump to be driven by motor at a variable velocity with consequent energy saving,
- cost saving by eliminating second noise reduction measures,
- keeping the same external dimensions of gear pump, with no necessity to redesign the system in case of replacement.

COMPETITIVE ANALYSIS / ANALISI COMPETITIVA

Continuum® pump is a valid alternative to silently replace different traditional solutions of noisy high pressure pump.

Continuum® pump can replace the following types of high pressure pumps:

- External gear pumps
- Internal gear pumps
- Fixed displacement vane pumps
- Fixed displacement piston pumps

Please contact Settima for all information about any possible replacement.



ORIGIN OF NOISE AND VIBRATIONS KNOCKED DOWN BY CONTINUUM® PUMP / LA POMPA CONTINUUM® HA ELIMINATO LE ORIGINI DEL RUMORE E DELLE VIBRAZIONI

The typical sound emissions of gear pumps have two distinct origins: mechanical noise and hydraulic noise. The mechanical noise is what can be expected from any pair of gears. The hydraulic noise, however, is generated by the perturbations of fluid pressure through the pump. This noise and/or vibration comes from three basic components:

- cavitation, that can cause serious noise in addition to structural damage to mechanical components
- the peak pressure that arises from trapping of fluid between the top and the bottom of the tooth,
- the "ripple" or the flow pulsation during meshing that causes pressure pulsation.

The continuous contact helical rotor **Continuum® pump** has solved these problems with sophisticated and efficient systems.

THINK DIFFERENT: THE SILENT AND UNIQUE REVOLUTION OF CONTINUUM® PUMP / UNA RIVOLUZIONE SILENZIOSA: LA POMPA CONTINUUM®

As for classic gear pumps, the transport flow is perpendicular to the axes, but the rotors profile, specially developed and internationally patented, does not trap any volume since the helical design of the profile plays the role of completing an overlap, making a gentle transmission of fluid resulting in a dramatic reduction of pulsation. There is just a single point of contact between the profiles during rotation, which eliminates the pockets acting on the axial thrust washer and the noise associated with this problem.

The Continuum® core and its technological innovation is based on three patented breakthroughs:

- The rotor profile
- The screw step
- The inner force balancing.

MANUFACTURING ACCURACY IN ANY DETAILS / MASSIMA ACCURATEZZA NEI DETTAGLI

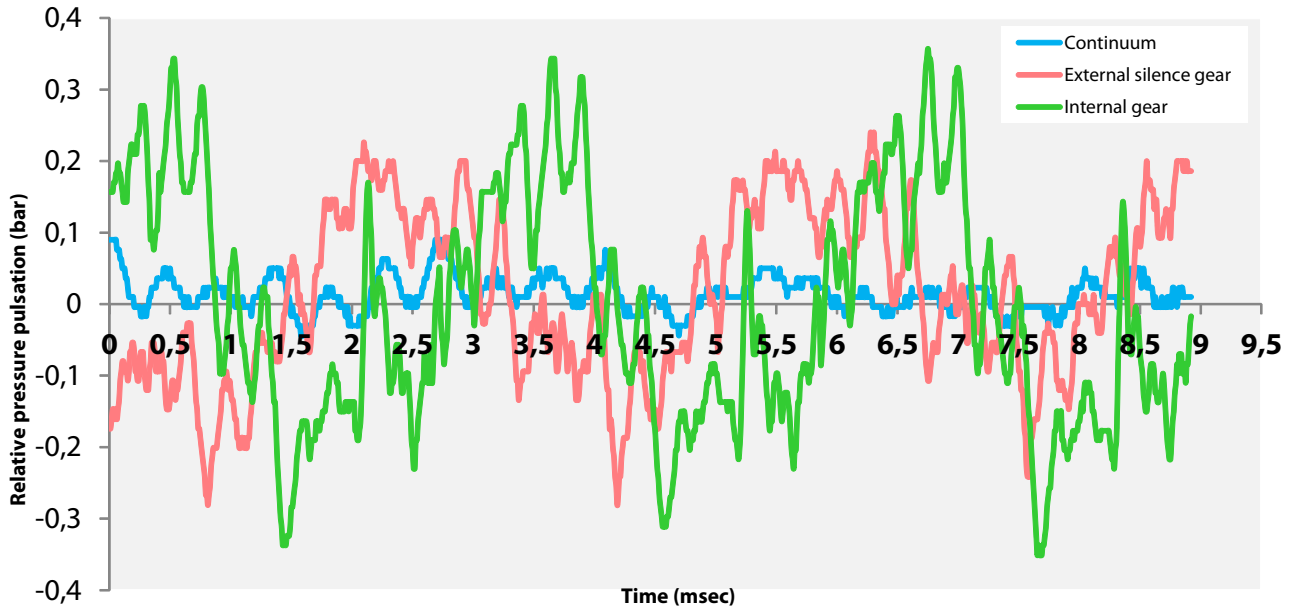
SETTIMA produces hydraulic no noise pumps since over thirty years, achieving a high level of competence and accuracy in the manufacture of high-precision hydraulic pump drives.

Together with top production machineries, efficient test environments, 3D drawing capability and special materials for rotors and bushings, **SETTIMA** constantly achieves products of high quality that is the industry standard.

CONTINUUM® PUMP ADVANTAGES / VANTAGGI DELLA POMPA CONTINUUM®

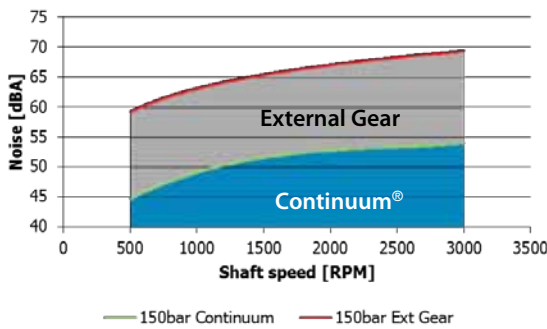
- Low noise also at high speed (up to 6.500 RPM).
- Average of 15dB(A) less noisy than standard external gear pumps.
- Reduced noise level for the machine operator and surroundings.
- Cost saving by eliminating second noise reduction measures.
- Easy to replace - compatible with all external gear pumps.
- Helps meet legal noise requirements.
- Continuous variable flow rate (0% to 100%).
- Intermittent operation at high pressure & low speed.
- High volumetrical efficiency.

PULSATIONS LEVEL GRAPH / GRAFICO PULSAZIONI (100 bar - 40 cSt - 1.500 rpm)

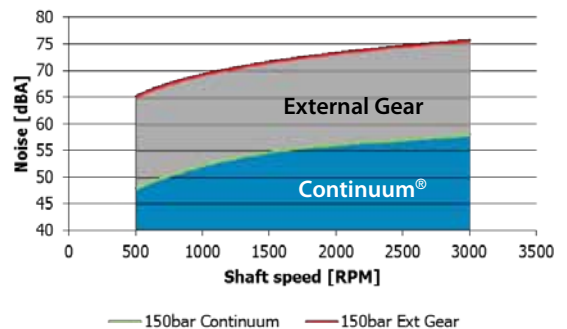


NOISE LEVEL GRAPH / GRAFICO EMISSIONI ACUSTICHE (150 bar)

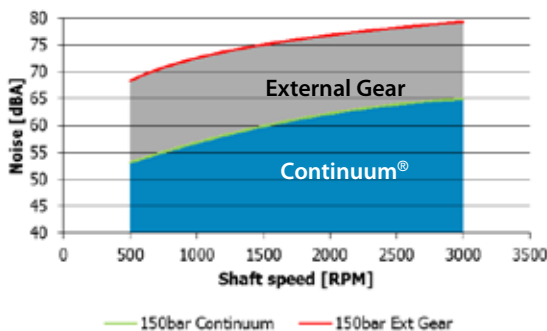
GR 28



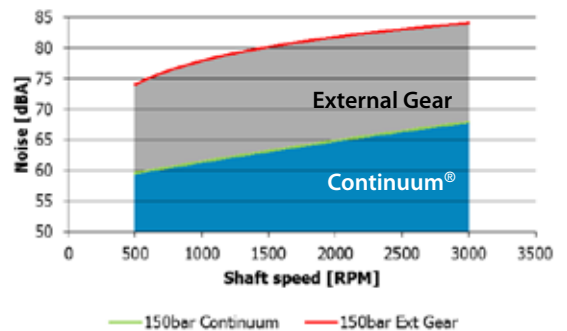
GR 33 - 38



GR 47 - 55

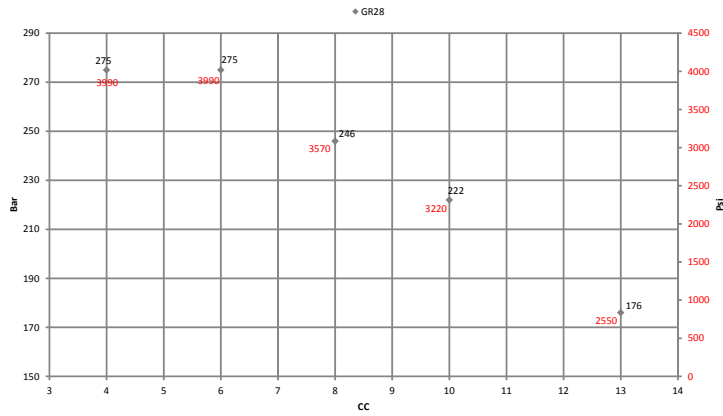


GR 72

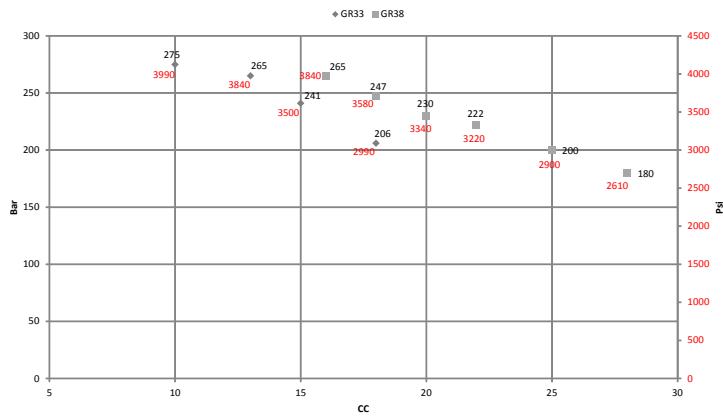


Pump displacements / Cilindrate

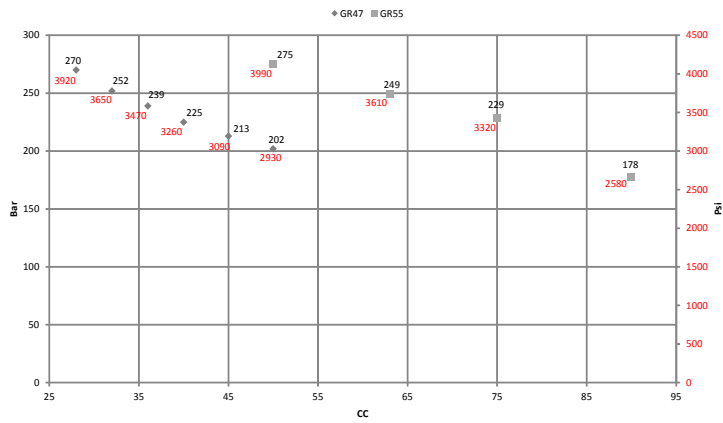
Group 1



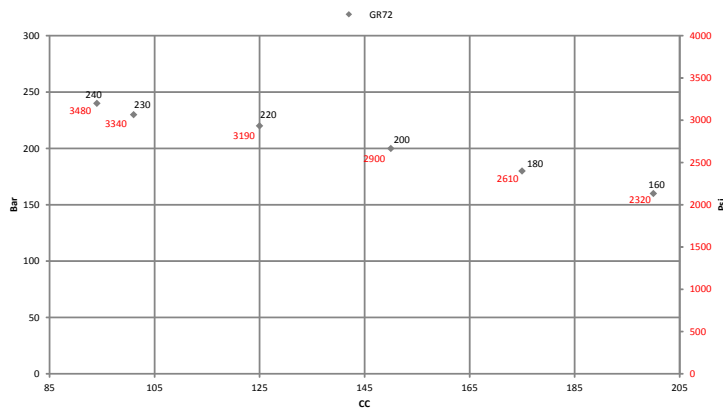
Group 2



Group 3



Group 4



Applications / Applicazioni

INDUSTRIAL

Machine tools lubrication systems.

Lifting equipment, hydraulic systems for dock-levelers.

Hydraulic transmission systems.

Machines lubrication.

Chemical metering.

Hydraulic systems for injection moulding machines, presses, compactors and balers.

Systems for lubrication and cooling of gearboxes and bearings.

Hydraulic powerpack.

Hydro power.

Feeder system for filter circuits, cooling circuits, lubrication applications, pump transfer unit.

MOBILE

Ground-handling equipment.

Agricultural machinery.

Hydraulic systems for parking systems.

Steering units.

Torque converters & power-shift transmissions.

Street-sweeping vehicles.

Shredder systems.

Waste container level lifter.

ENVIRONMENTAL INDUSTRY

Baler and compacting of waste.

Containers.

Hooklift containers.

Back loading containers.

Front loading containers.

Liftdumper containers.

Hooklift systems.

Garbage trucks.

Mobile compactors.

Stationary compactors.

MARINE

Marine power hydraulics.

Rudder actuators (tandem system).

Propeller pitch control.

Propeller drive (power transmission from engine).

Rotary vane steering gears.

Minipowerpacks (dock operation, door control).

Yacht building industry (lifting systems: fly bridge cranes, tenderlift, elevator, walkways, automatic swimming ladders, side boarding ladders, pitch controls and operations, hydraulic davits).



Technical characteristics / Caratteristiche tecniche

SPECIAL HELICAL ROTORS – CONTINUUM® represents an innovative and revolutionary gear pump. The patented profile of the **Continuum®** rotors permits just a single point of contact between gears: this results, together with a particular screw step and inner force balancing, in the total absence of trapped and compressed oil, and leads to no noise and no pulsation.

HIGH PRESSURE – CONTINUUM® has been designed for high pressure, high speed and heavy duty.

TANDEM GROUP – CONTINUUM® can be also assembled as a double pump, connecting two pumps from different groups: from group 1 to group 4.

Technical characteristics

| | | |
|---|--|--|
| Models / Modelli | 28 - 33 - 38 - 47 - 55 - 72 - 92* - 106* | |
| Flanges Flange | Group 1 – Group 2 (European, German, BKT, SAE-A) – Group 3 (European, SAE-B) – Group 4 (SAE-D) <i>Gruppo 1 – Gruppo 2 (Europeo, Tedesco, BKT, SAE-A) – Gruppo 3 (Europeo, SAE-B) – Gruppo 4 (SAE-D)</i> | |
| Connections Connessioni | BSPP (GAS) – SAE 3000/6000 PSI – FL 4 HOLES M6 SU Ø40 DN20 (mentioned connections depend on model) <i>BSPP (GAS) – SAE 3000/6000 PSI – FL 4 HOLES M6 SU Ø40 DN20 (in base al modello)</i> | |
| Installation position Posizione di installazione | External and/or under oil <i>Esterna e/o immersa</i> | |
| Shaft rotation Rotazione | Clockwise (please contact Settima for counter clockwise) <i>Destra (contattare Settima per sinistra)</i> | |
| Shaft speed Velocità di rotazione | From 150 to 6.500 rpm (for usage below 1.000 rpm or over 1.800 rpm please contact Settima) <i>Da 150 a 6.500 rpm (per utilizzi a giri inferiori a 1.000 rpm o superiori a 1.800 rpm contattare Settima)</i> | |
| Flows Portate | From 6 L/min up to 330 L/min (at 1.500 rpm) <i>Da 6 L/min fino a 330 L/min (a 1.500 rpm)</i> | From 1.585 GPM up to 87.176 GPM (at 1,500 rpm) |
| Operating pressure Pressione operativa**** | Max. Continuous: 275 bar/3,988.5 PSI Max. Cycle ON/OFF: 280 bar/4,061 PSI Max. Peak: 300 bar/4,351.1 PSI | <i>Max. Continuo: 275 bar Max. Ciclo ON/OFF: 280 bar Max. Picco: 300 bar</i> |
| Inlet pressure Pressione di aspirazione**** | 0,8 – 3 bar | 11,603 - 43,511 PSI |
| Fluids Fluidi | - Mineral oil - Synthetic oil | - <i>Olio minerale</i> - <i>Olio sintetico</i> |
| Viscosity Viscosità | Possible: from 5 up to 800 cSt** Recommended: from 32 up to 150 cSt Starting condition: up to 3.000 cSt** | <i>Consentita: da 5 fino a 800 cSt** Raccomandata: da 32 fino a 150 cSt Condizioni di avviamento: fino a 3.000 cSt**</i> |
| Environmental temperature Temperatura ambiente | From -15°C up to +60°C <i>Da -15°C a +60°C</i> | |
| Oil temperature Temperatura olio | From -15°C up to +80°C*** <i>Da -15°C a +80°C***</i> | |
| Contamination level Livello di contaminazione | Up to 8 NAS (18/17/14 ISO4406) (for heavy duty operations over 150 bar, over 4 working hours/day, 100 cycle/day oil ISO 46) <i>Fino a 8 NAS (18/17/14 ISO4406) (per lavoro ad alto sforzo oltre 150 bar, oltre 4 ore lavorative/giorno, 100 cicli/giorno olio ISO 46)</i> | |
| Filtration Filtrazione | From 25 to 10 µm (for heavy duty operations over 150 bar, over 4 working hours/day, 100 cycle/day oil ISO 46) <i>Da 25 a 10 µm (per lavoro ad alto sforzo oltre 150 bar, oltre 4 ore lavorative/giorno, 100 cicli/giorno olio ISO 46)</i> | |
| Seals Guarnizioni | NBR, FKM (others on request) <i>NBR, FKM (altri a richiesta)</i> | |
| Acoustic emissions Emissioni acustiche | From 52 up to 63 db(A) at 2.950 rpm <i>Da 52 fino a 63 db(A) at 2.950 rpm</i> | |
| Flanges material Materiale delle flange | Cast iron <i>Ghisa</i> | |
| Pump body / Corpo | Extruded aluminium alloy / <i>Alluminio estruso</i> | |
| Screws / Viti | Hardened steel / <i>Acciaio temprato</i> | |

* Model GR92 and GR106 will be available soon. *I modelli GR92 e GR106 saranno disponibili a breve.*

** Please for more information about possible and starting conditions of viscosity contact Settima. *Contattare Settima per maggiori informazioni sui livelli di viscosità possibili e quelli delle condizioni di inizio lavoro.*

*** For higher temperature than 80°C, please, contact Settima. *Per temperature superiori a 80°C, contattare Settima.*

**** Depending on models. *In base al modello*

System requirements / Requisiti del sistema

Inlet pressure

The inlet vacuum must be controlled within the prescribed range in order to achieve the expected pump life and performance. The system design must meet inlet pressure requirements during all modes of operation.

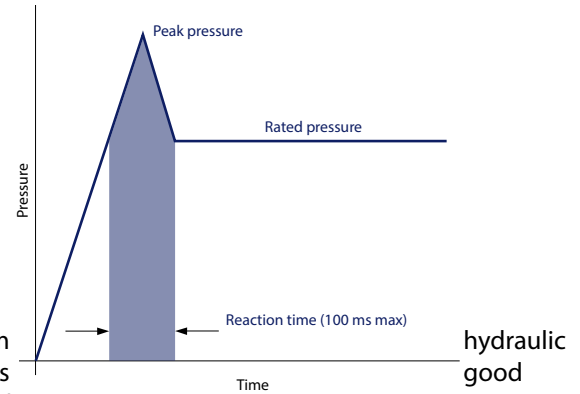
Peak pressure is the highest intermittent pressure allowed. The reaction time of the pressure relief valve determines the duration of operation at pressure above the rated value. The maximum time interval is 100 ms. The illustration to the right shows peak pressure in relation to rated pressure and reaction time (100 ms maximum).

Rated pressure is the average, regularly occurring, operating pressure that does not compromise the product's life and performance.

System pressure is the pressure differential between the outlet and inlet ports. System pressure must remain at, or below, the rated pressure during normal operation to achieve expected life.

| | | |
|---------------------------------|----------------------|------------|
| Max. continuous vacuum | bar abs. [in. Hg] | 0.8 [23.6] |
| Max. intermittent vacuum | | 0.6 [17.7] |
| Max. pressure | | 3.0 [88.5] |

Time versus pressure



Hydraulic fluids

Ratings and data for Continuum® pumps are valid for operation with premium fluids containing oxidation, rust, and foam inhibitors. These fluids must possess thermal and hydrolytic stability to prevent wear, erosion, and corrosion of internal components. They include:

- Hydraulic fluids following DIN 51524, part 2 (HLP) and part 3 (HVLP) specifications
- API CD engine oils conforming to SAE J183
- M2C33F or G automatic transmission fluids
- Certain agricultural tractor fluids

Use only clean fluid in the pump and hydraulic circuit. Never mix hydraulic fluids.

Temperature and viscosity

Temperature and viscosity requirements must be concurrently satisfied. Use petroleum / mineral-based fluids.

High temperature limits apply at the inlet port to the pump. The pump should run at or below the maximum continuous temperature. The peak temperature is based on material properties. Don't exceed it. Cold oil, generally, doesn't affect the durability of pump components. It may affect the ability of oil to flow and transmit power. For this reason, keep the temperature at 16 °C [60 °F] above the pour point of the hydraulic fluid.

Minimum (cold start) temperature relates to the physical properties of component materials.

Minimum viscosity occurs only during brief occasions of maximum ambient temperature and severe duty cycle operation. You will encounter maximum viscosity only at cold start. During this condition, limit speeds until the system warms up. Size heat exchangers to keep the fluid within these limits. Test regularly to verify that these temperatures and viscosity limits aren't exceeded. For maximum unit efficiency and bearing life, keep the fluid viscosity in the recommended viscosity range.

Fluid viscosity

| | | |
|-----------------------------|-----------------------------|--------------------|
| Maximum (cold start) | mm ² /s [SUS] | 3000 [13904] |
| Recommended range | | 32-150** [148-695] |
| Minimum | | 5 [23] |

Temperature

| | | |
|-----------------------------|------------|-----------|
| Minimum (cold start) | °C [°F] | -15 [-4] |
| Maximum continuous | | 50* [122] |
| Peak (intermittent) | | 90* [176] |

*For higher temperature than 50°C, please contact Settima.

**For viscosity value out of this range, please contact Settima.

Filtration

A Class 18/17/14 of ISO 4406 (or better) filter must be used.

Selecting a filter

When selecting a filter, please consider:

- Contaminant ingress rate
(determined by factors such as the number of actuators used in the system)
- Generation of contaminants in the system
- Required fluid cleanliness

- Desired maintenance interval
- Filtration requirements of other system components

Measure filter efficiency with a Beta ratio (β_x). For:

- Suction filtration, with controlled reservoir ingress, use a $\beta_{35-45} = 75$ filter
- Return or pressure filtration, use a pressure filtration with an efficiency of $\beta_{10} = 75$.

β_x ratio is a measure of filter efficiency defined by ISO 4572. It is the ratio of the number of particles greater than a given diameter (" x " in microns) upstream of the filter to the number of these particles downstream of the filter.

Fluid cleanliness level and β_x ratio

| | |
|---|---|
| Fluid cleanliness level (per ISO 4406) | Class 18/17/14 or better |
| β_x ratio (suction filtration) | $\beta_{35-45} = 75$ and $\beta_{10} = 2$ |
| β_x ratio (pressure or return filtration) | $\beta_{10} = 75$ |
| Recommended inlet screen size | 100-125 μm [0.004-0.005 in] |

The filtration requirements for each system are unique. Evaluate filtration system capacity by monitoring and testing prototypes.

Reservoir

The **reservoir** provides clean fluid, dissipates heat, removes entrained air and makes up for changes in fluid volume due to fluid expansion-contraction and flow imbalances associated with differential cylinders. A correctly sized reservoir accommodates maximum volume changes during all system operating modes. It promotes de-aeration of the fluid as it passes through, and accommodates a fluid dwell-time between 60 and 180 seconds, allowing entrained air to escape.

Hydraulic oil contains 10% of dissolved air by volume in normal conditions and the system should be design in order to avoid any over-aeration of the hydraulic fluid, to limit any air release at the inlet port.

Minimum reservoir capacity depends on the volume required to cool and hold the oil from all retracted cylinders, allowing for expansion due to temperature changes. A fluid volume of 1 to 3 times the pump output flow (per minute) is satisfactory. The minimum reservoir capacity is 125% of the fluid volume.

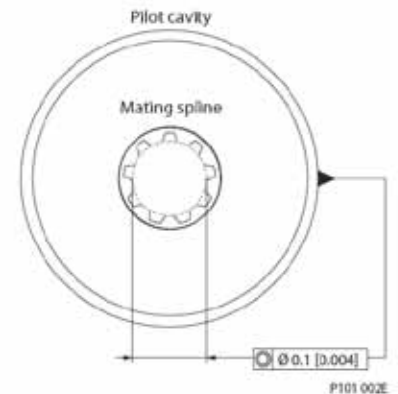
The suction line shall be installed above the bottom of the reservoir to take advantage of gravity separation and prevent large foreign particles from entering the line. Cover the line with a 100-125 micron screen. The pump should be below the lowest expected fluid level. Put the return-line below the lowest expected fluid level to allow discharge into the reservoir for maximum dwell and efficient deaeration. A baffle (or baffles) between the return and suction lines promotes deaeration and reduces fluid surges.

Pump drive

Shaft options for Continuum® pumps include tapered, tang, splined, or parallel shafts. They are suitable for a wide range of direct and indirect drive applications for radial and thrust loads.

Plug-in drives, acceptable only with a splined shaft, can impose severe radial loads when the mating spline is rigidly supported. Increasing spline clearance does not alleviate this condition. Use plug-in drives if the concentricity between the mating spline and pilot diameter is within 0.1 mm [0.004 in]. Lubricate the drive by flooding it with oil. A 3-piece coupling minimizes radial or thrust shaft loads. In order to avoid spline shaft damages it is recommended to use carburized and hardened steel couplings with 60-62 HRC surface hardness.

Allowable **radial shaft loads** are a function of the load position, load orientation, and operating pressure of the hydraulic pump. All external shaft loads have an effect on bearing life, and may affect pump performance.



Pump life

Pump life is a function of speed, system pressure, and other system parameters (such as fluid quality and cleanliness). All Continuum® pumps use hydrodynamic journal bearings that have an oil film maintained between the gear/shaft and bearing surfaces at all times. If the oil film is sufficiently sustained through proper system maintenance and operating within recommended limits, long life can be expected. B10 life expectancy number is generally associated with rolling element bearings. It does not exist for hydrodynamic bearings. High pressure, resulting from high loads, impacts pump life. When submitting an application for review, provide machine duty cycle data that includes percentages of time at various loads and speeds. We strongly recommend a prototype testing program to verify operating parameters and their impact on life expectancy before finalizing any system design.

Continuum® Servo drive pumps

Servo drive systems: easy, no noise, fast and energy saving.

Hydraulic press servo drives have been on the market since many years already. In Asia most of the market of plastic injection molding machines is using variable servo drive motors and fixed displacement pumps, like external gear, vane or internal gear pumps. The usage of this type of systems enables **energy savings up to 65%** when compared to conventional drive systems (fixed speed motor and variable displacement hydraulic pumps). Today, more than 100.000 servo drive systems are used in the manufacturing process of hydraulic presses.

This kind of systems, while reaching real energy savings, also enables **huge simplifications of the hydraulic circuits**: no more proportional valves or complicated hydraulic pressure feedback are needed to control the press actions and cycles. Servo pump systems use motor speed between nearly 0 and 3.000 RPM, to enable very fast movement of the molds and a high cycle dynamics.

The noise of hydraulic pumps is the issue, Continuum® is the solution.

The real innovation in the pump market is the **Continuum® pump**.

Continuum® is on the market since early 2004 and brought Settima to the very top amongst manufacturers of silent components establishing a new high standard that all competitors struggle to reach but without success.

This technology cuts the noise at the root: the profile of the rotors has been engineered to reach **no-noise** and **no-pulsations**. The **Continuum® servo pump** is used in the market of presses since 2008, enabling the press designers to reach wide speed dynamics in heavy duty pressing cycles without noise.

Settima package is suitable for **press modernization and revamping**. It's possible to remove all of the old and noisy hydraulic components and to replace them with our system, making the old machines more flexible and quieter than ever.



Continuum® Servo Drive pump

The Continuum® servo drive pump possible applications:



PLASTICS

Plastic injection molding machines,
Plastic injection machines retrofitting,
Blow molding machines,
Rubber presses.



PRESSES

Hydraulic presses,
Press modernization and revamping.



ENVIRONMENTAL INDUSTRY

Balers,
Waste compactors.

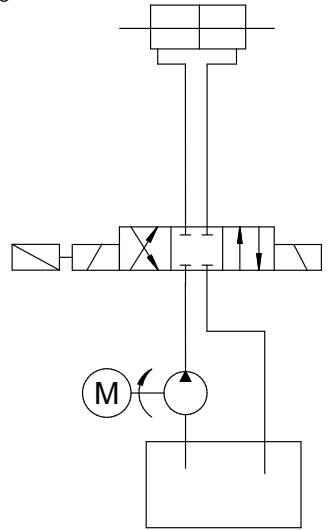
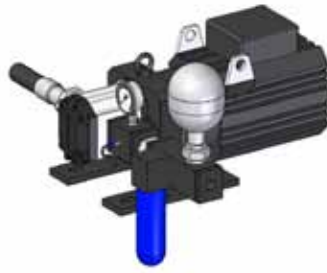
The Continuum® servo drive pump advantages & economical benefit

| | |
|---|--|
| Variable servo drive motors + Gear pump | <ul style="list-style-type: none"> Enables energy savings up to 65% Simplification of the hydraulic circuits More compact hydraulic units, up to 80% less space needed |
| High pressure and flow control through gear pumps | <ul style="list-style-type: none"> No more need for proportional valves Significant reduction of all operating cost |
| Special profile of the rotors | <ul style="list-style-type: none"> No-noise and No-pulsations No noise reduction measures needed to fulfill the Occupational Guidelines |

Continuum® Servo drive pumps

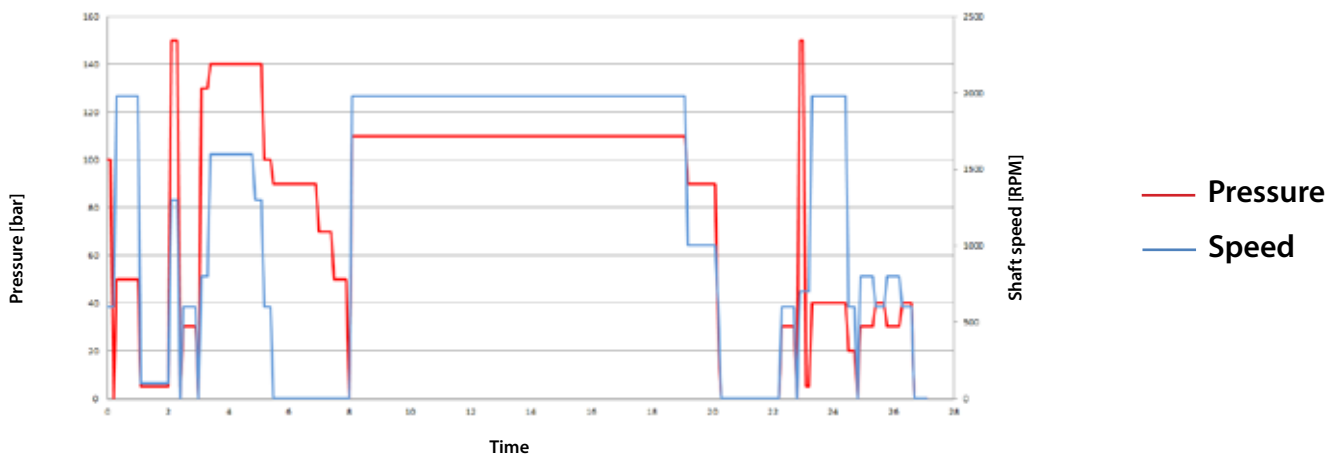
The Continuum® servo drive pump can be equipped with (optional):

- Accumulator: the bypass valve never reacts with the same dynamic and speed of the **Continuum® servo drive pump**. The accumulator catches the risky pressure peaks.
- Pressure line filter.
- Non return valve: to make the management of pressure “holding” phases stronger.
- Inline pressure and temperature sensor: to enable quick and easy installation.
- Servo drive and motor: can be supplied by **Settima** (many brands are available). This enables a better management of the electronic components maintenance and service programs of the machines of our customer.

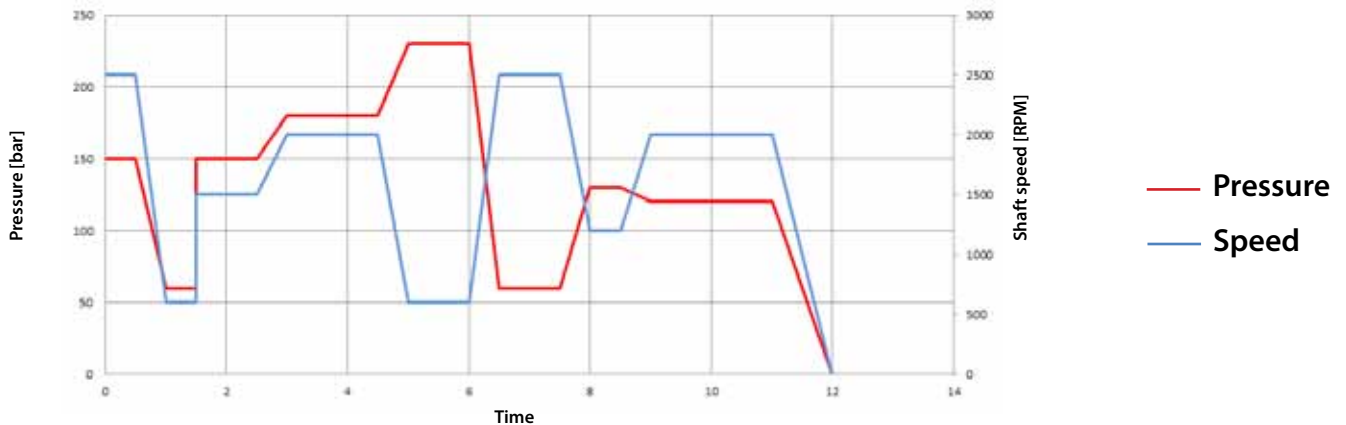


The below graphs show two real examples of PIMM working cycles with Continuum® servo drive pump.

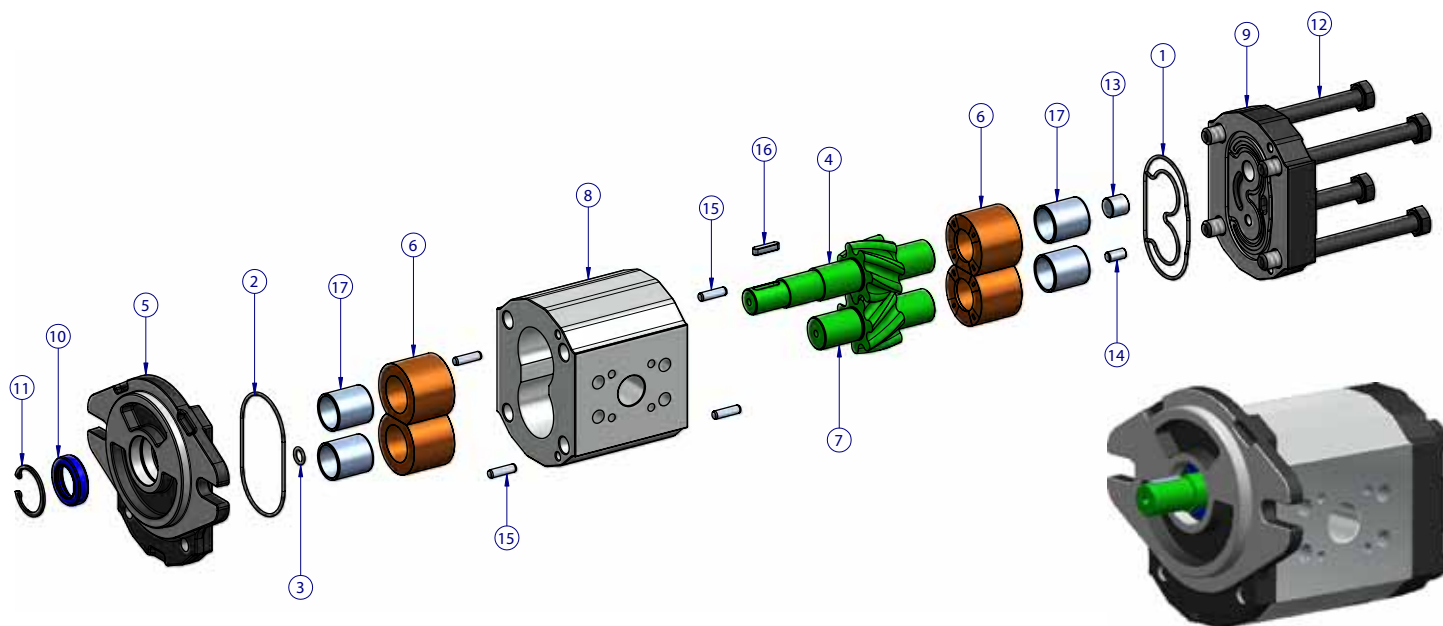
Ex. 1



Ex. 2



Product description / Descrizione prodotto





| N° | DESCRIPTION/DESCRIZIONE | MATERIAL / MATERIALE |
|----|---|---|
| 1 | O-ring seal / O-ring | NBR |
| 2 | O-ring seal / O-ring | NBR |
| 3 | O-ring seal / O-ring | NBR |
| 4 | Driving Continuum® rotor / Rotore guida Continuum® | Hardened steel / Acciaio temprato |
| 5 | Motor flange / Flangia motore | Cast iron / Ghisa |
| 6 | Ring for bush / Anello porta boccia | Aluminium / Alluminio |
| 7 | Driven Continuum® rotor / Rotore guidato Continuum® | Hardened steel / Acciaio temprato |
| 8 | Body / Corpo | Extruded aluminum alloy / Alluminio estruso |
| 9 | Cover flange / Flangia | Cast iron / Ghisa |
| 10 | Seal / Anello di tenuta | NBR |
| 11 | Seeger / Seeger | Steel / Acciaio |
| 12 | Screws / Viti di fissaggio | Steel / Acciaio |
| 13 | Piston / Pistone | Steel / Acciaio |
| 14 | Piston / Pistone | Steel / Acciaio |
| 15 | Centring Keys / Spine di centraggio | Steel / Acciaio |
| 17 | Bushings / Boccole | Steel / Acciaio |

Standard type and options

| | STANDARD MATERIAL | OPTIONAL MATERIAL |
|--------------------|------------------------|-------------------|
| Body / Corpo | Alluminium / Alluminio | Cast iron / Ghisa |
| Seal kit | NBR | FKM |
| Bushings / Boccole | Alluminium / Alluminio | Bronze / Bronzo |

Single pump / Pompa singola

| Type <i>Tipo</i> | Class <i>Classe</i> | Displacement <i>Cilindrata</i> | Flange & shaft <i>Flangia & albero</i> | Ports <i>Porte</i> | Shaft seal <i>Guarnizione albero</i> | Rotation <i>Rotazione</i> |
|---------------------|------------------------|-----------------------------------|---|-----------------------|---|---|
| GR28 | 2V | 004-006-008-010-013 | F1AC3-F1PAC2-F1KAG54-F1LAGL54-FSAEAAAC-F1KAGL54 | G-U | Standard NBR (none) Optional FKM V | Standard DX (none)  Optional SX*  |
| GR33 | 2C | 010-013-015-018 | F2AC4-F2BK7AG-FSAEAAAC-FSAEAAT9 | G-Q-U | | |
| GR38 | 2C | 016-018-020-022-025-028 | F2AC4-F2BK7AG-FSAEAAAC-FSAEAAT11-FSAEAAT9 | G-Q-U | | |
| GR47 | 2C | 028-032-036-040-045-050 | F3AC9-FSAEBAC-FSAEBAT13 | G-O-U | | |
| GR55 | 2C | 050-063-075-090 | FSAEBAC-FSAEBAT15 | O-OE | | |
| GR72 | 2V | 094-101-125-150-175-200-220 | FSAEDAC-FSAEDAT23 | ME | | |

* Please Contact Settima for SX counter clockwise optional rotation.
Contattare Settima per rotazione SX opzionale.

DIRECTION OF ROTATION / SENSO DI ROTAZIONE

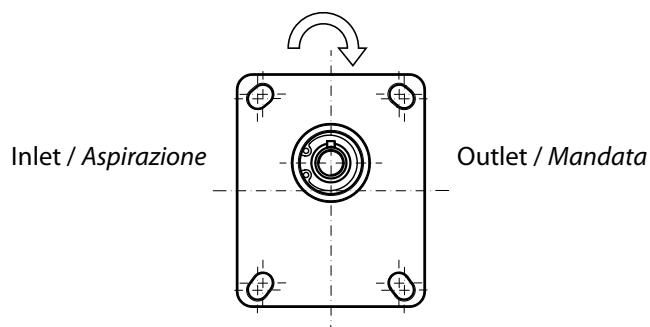
Continuum® pumps are available with right rotation as standard configuration and left rotation as optional configuration. Right hand rotation means that, when standing in front of the pump, with driving shaft towards to the observer, the pump is rotating clockwise (DX). The other way around with left hand rotation, counter clockwise (SX).

*Le pompe **Continuum**® sono fornite con la configurazione standard di rotazione destra. Opzionale la rotazione sinistra. Con rotazione destra (DX) si intende che, guardando la pompa frontalmente, con l'albero conduttore sporgente verso il punto di osservazione, la rotazione sarà in senso orario, con il lato mandata sulla destra e il lato aspirazione sulla sinistra della pompa. Viceversa per quanto riguarda la rotazione sinistra (SX).*

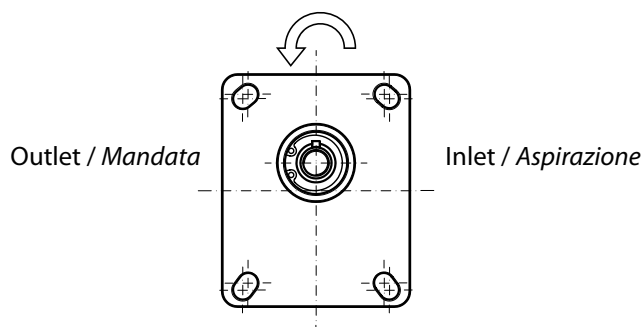
Continuum® pumps, despite the type of configuration, can rotate to the opposite side if the pressure is not higher than 10% of maximum continuous pressure (check the Technical Characteristics table).

*Le pompe **Continuum**®, qualunque configurazione di rotazione abbiano, possono ruotare in senso inverso a pressioni non superiore al 10% della massima pressione continua (verificare nella tabella delle caratteristiche tecniche).*

DX: Clockwise rotation / Rotazione destra



SX: Counter clockwise rotation / Rotazione sinistra



Variant codes for ordering integral relief valves*

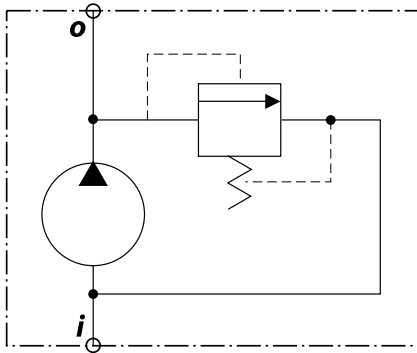
The tables below detail the various codes for ordering integral relief valves.

R:

| Code | Pump speed for RV setting |
|----------|------------------------------|
| C | 500 min ⁻¹ (rpm) |
| E | 1000 min ⁻¹ (rpm) |
| F | 1250 min ⁻¹ (rpm) |
| G | 1500 min ⁻¹ (rpm) |
| K | 2000 min ⁻¹ (rpm) |
| I | 2250 min ⁻¹ (rpm) |
| L | 2500 min ⁻¹ (rpm) |
| M | 2800 min ⁻¹ (rpm) |
| N | 3000 min ⁻¹ (rpm) |
| O | 3250 min ⁻¹ (rpm) |

| Code | Pressure setting |
|------------|--------------------|
| 18 | 18 bar [261 psi] |
| 30 | 30 bar [435 psi] |
| 40 | 40 bar [580 psi] |
| 50 | 50 bar [725 psi] |
| 60 | 60 bar [870 psi] |
| 70 | 70 bar [1015 psi] |
| 80 | 80 bar [1160 psi] |
| 90 | 90 bar [1305 psi] |
| 100 | 100 bar [1450 psi] |
| 120 | 120 bar [1740 psi] |
| 140 | 140 bar [2030 psi] |
| 160 | 160 bar [2320 psi] |
| 180 | 180 bar [2611 psi] |
| 210 | 210 bar [3046 psi] |
| 250 | 250 bar [3626 psi] |

Integral relief valve schematic



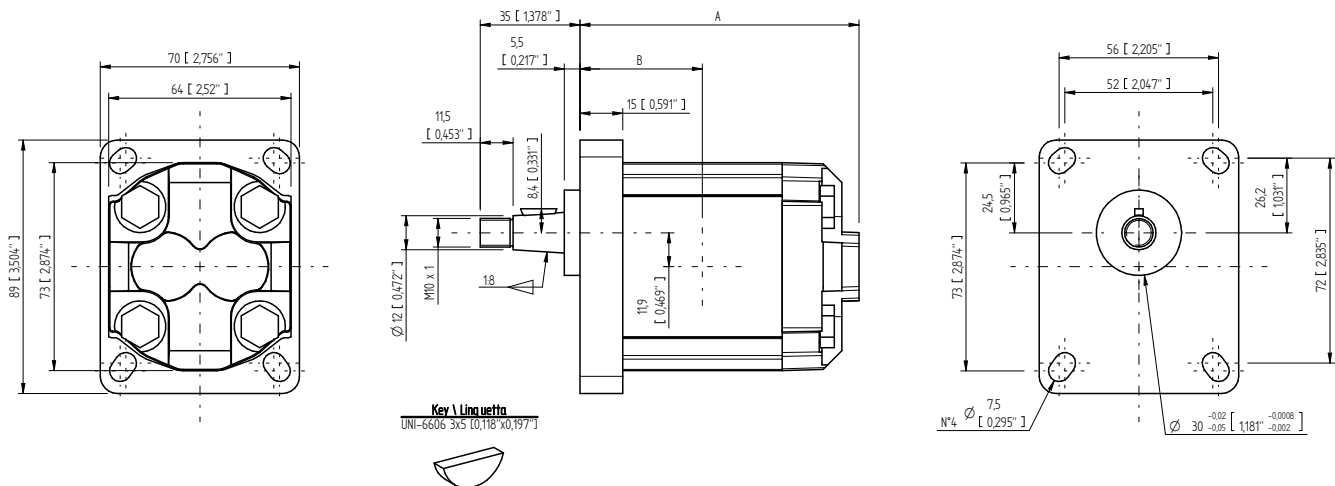
* Please, contact Settima for this option.

GR28 - Dimensional drawings / Disegni dimensionali

GR28 SHAFT AND FLANGE TYPES AND DIMENSIONS / TIPI DI ALBERO E FLANGIA E DIMENSIONI

Group 1 pumps / Pompe gruppo 1

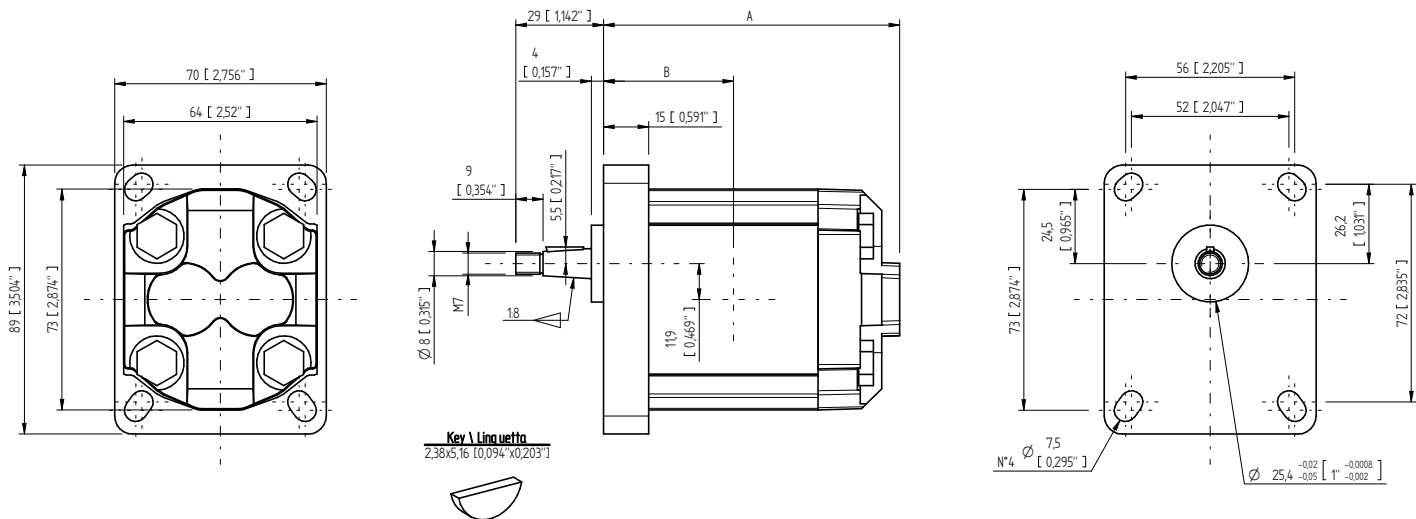
| Type | Class | Flange & Shaft available types | Ports | Weight |
|-----------|-------|--------------------------------|-------|--------|
| GR28 | 2V | F1 AC3 | G-U | 2 Kg |
| | | F1P AC2 | | |
| | | F1K AG54 | | |
| | | F1K AGL54 | | |
| | | F1L AG54 | | |
| | | F1L AGL54 | | |
| FSAEAA AC | | | | |



| GR28 - TYPE / TIPO F1 AC3 | | | | | | | | | | | | | | | |
|---------------------------|------|-----------------|-------|------------------------------|-------|------------------------------|-------|--|------|--|------|--------------------------------------|------|----------------------------------|--------------------------------|
| Type Tipo | CC | Flow Portata | | Dimensions A Dimensioni A | | Dimensions B Dimensioni B | | Continuous Pressure Pressione continua | | Intermittent Pressure Pressione intermittente (*) | | Peak pressure Picco pressione (*) | | Noise level Livello rumore | Max torque Coppia max |
| | | L/min | GPM | mm | inc | mm | inc | bar | PSI | bar | PSI | bar | PSI | | |
| 4 | 4,2 | 6 | 1,585 | 101 | 3,976 | 44,5 | 1,752 | 275 | 3989 | 280 | 4061 | 300 | 4351 | 55 | 100 |
| 6 | 6,4 | 9,2 | 2,430 | 106,5 | 4,193 | 47,25 | 1,860 | 275 | 3989 | 280 | 4061 | 300 | 4351 | | |
| 8 | 8,3 | 12 | 3,170 | 111,5 | 4,390 | 49,75 | 1,959 | 246 | 3568 | 260 | 3771 | 280 | 4061 | | |
| 10 | 10,2 | 14,7 | 3,883 | 116,5 | 4,587 | 52,25 | 2,057 | 222 | 3220 | 250 | 3626 | 270 | 3916 | | |
| 13 | 12,9 | 18,6 | 4,914 | 123,4 | 4,858 | 55,7 | 2,193 | 176 | 2553 | 230 | 3336 | 250 | 3626 | | |

Max torque / Coppia max: 100 Nm

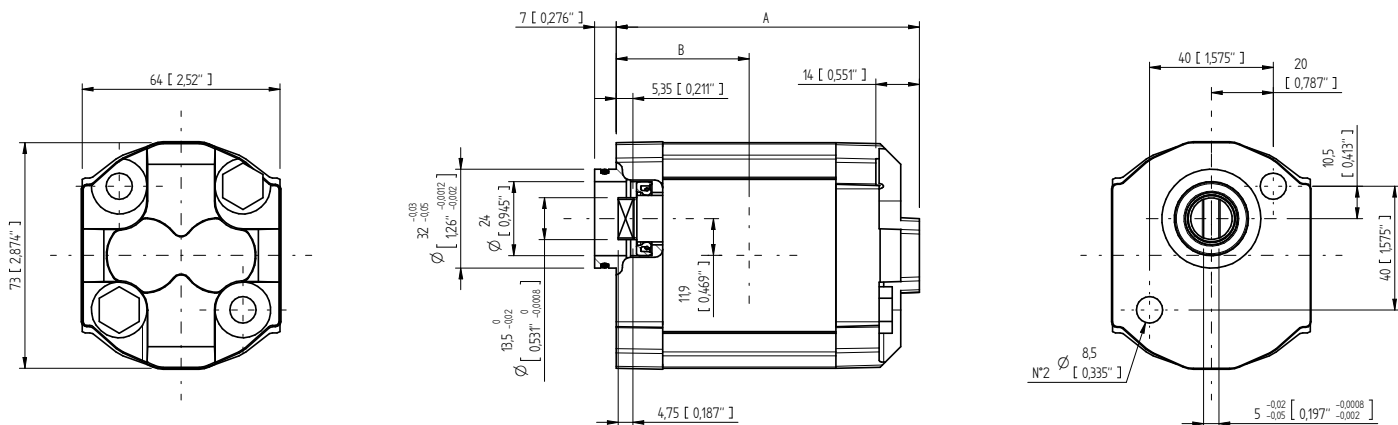
* Intermittent: cycle 20 sec. ON & 3 sec. OFF - Peak: cycle 1 sec. ON & 3 sec OFF. Intermittente: ciclo 20 sec. ON & 3 sec. OFF - Picco: ciclo 1 sec. ON & 3 sec OFF



| GR28 - TYPE / TIPO F1P AC2 | | | | | | | | | | | | | | | |
|----------------------------|------|-----------------|-------|------------------------------|-------|------------------------------|-------|--|------|--|------|--------------------------------------|------|--|--------------------------------------|
| Type Tipo | CC | Flow Portata | | Dimensions A Dimensioni A | | Dimensions B Dimensioni B | | Continuous Pressure Pressione continua | | Intermittent Pressure Pressione intermittente (*) | | Peak pressure Picco pressione (*) | | Noise level Livello rumore dB | Max torque Coppia max Nm |
| | | L/min | GPM | mm | inc | mm | inc | bar | PSI | bar | PSI | bar | PSI | | |
| 4 | 4,2 | 6 | 1,585 | 101 | 3,976 | 44,5 | 1,752 | 240 | 3481 | 260 | 3771 | 280 | 4061 | 55 | 50 |
| 6 | 6,4 | 9,2 | 2,430 | 106,5 | 4,193 | 47,25 | 1,860 | 230 | 3336 | 240 | 3481 | 270 | 3916 | | |
| 8 | 8,3 | 12 | 3,170 | 111,5 | 4,390 | 49,75 | 1,959 | 200 | 2901 | 210 | 3046 | 220 | 3191 | | |
| 10 | 10,2 | 14,7 | 3,883 | 116,5 | 4,587 | 52,25 | 2,057 | 160 | 2321 | 170 | 2466 | 180 | 2611 | | |
| 13 | 12,9 | 18,6 | 4,914 | 123,4 | 4,858 | 55,7 | 2,193 | 140 | 2031 | 150 | 2176 | 160 | 2321 | | |

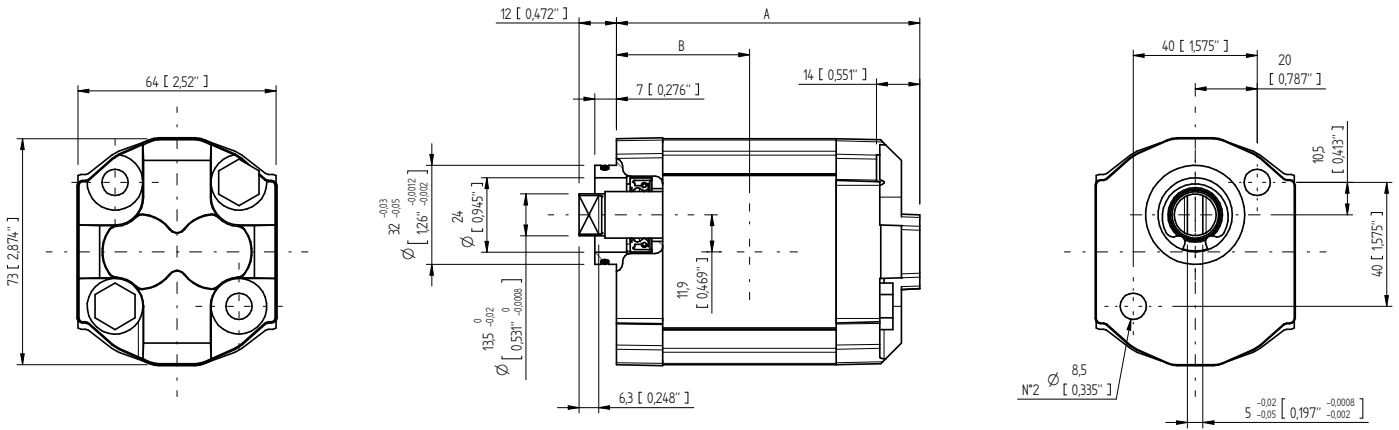
Max torque / Coppia max: 50 Nm

* Intermittent: cycle 20 sec. ON & 3 sec. OFF - Peak: cycle 1 sec. ON & 3 sec OFF. Intermittente: ciclo 20 sec. ON & 3 sec. OFF - Picco: ciclo 1 sec. ON & 3 sec OFF



| GR28 - TYPE / TIPO F1K AG54 | | | | | | | | | | | | | | | |
|-----------------------------|------|-----------------|-------|------------------------------|-------|------------------------------|-------|--|------|--|------|--------------------------------------|------|--|--------------------------------------|
| Type Tipo | CC | Flow Portata | | Dimensions A Dimensioni A | | Dimensions B Dimensioni B | | Continuous Pressure Pressione continua | | Intermittent Pressure Pressione intermittente (*) | | Peak pressure Picco pressione (*) | | Noise level Livello rumore dB | Max torque Coppia max Nm |
| | | L/min | GPM | mm | inc | mm | inc | bar | PSI | bar | PSI | bar | PSI | | |
| 4 | 4,2 | 6 | 1,585 | 101 | 3,976 | 44,5 | 1,752 | 275 | 3989 | 280 | 4061 | 300 | 4351 | 55 | 40 |
| 6 | 6,4 | 9,2 | 2,430 | 106,5 | 4,193 | 47,25 | 1,860 | 230 | 3336 | 240 | 3481 | 270 | 3916 | | |
| 8 | 8,3 | 12 | 3,170 | 111,5 | 4,390 | 49,75 | 1,959 | 180 | 2611 | 200 | 2901 | 210 | 3046 | | |
| 10 | 10,2 | 14,7 | 3,883 | 116,5 | 4,587 | 52,25 | 2,057 | 150 | 2176 | 160 | 2321 | 170 | 2466 | | |
| 13 | 12,9 | 18,6 | 4,914 | 123,4 | 4,858 | 55,7 | 2,193 | 120 | 1740 | 130 | 1885 | 140 | 2031 | | |

Max torque / Coppia max: 40 Nm

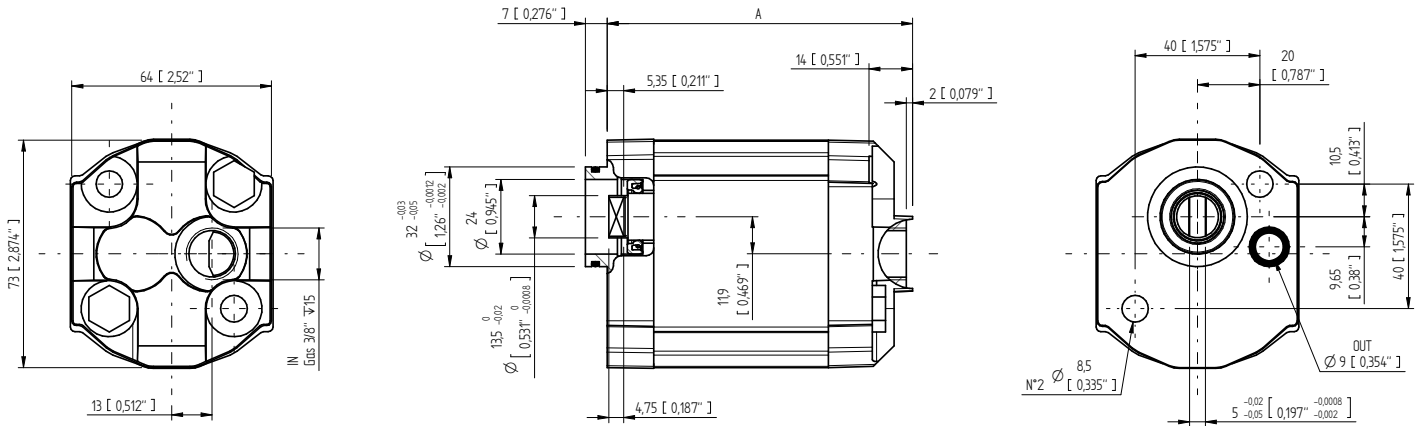


GR28 - TYPE / TIPO F1K AGL54

| Type Tipo | CC | Flow Portata | | Dimensions A Dimensioni A | | Dimensions B Dimensioni B | | Continuous Pressure Pressione continua | | Intermittent Pressure Pressione intermittente (*) | | Peak pressure Picco pressione (*) | | Noise level Livello rumore dB | Max torque Coppia max Nm |
|--------------|------|-----------------|-------|------------------------------|-------|------------------------------|-------|--|------|--|------|--------------------------------------|------|--|--------------------------------------|
| | | L/min | GPM | mm | inc | mm | inc | bar | PSI | bar | PSI | bar | PSI | | |
| 4 | 4,2 | 6 | 1,585 | 101 | 3,976 | 44,5 | 1,752 | 275 | 3989 | 280 | 4061 | 300 | 4351 | 55 | 50 |
| 6 | 6,4 | 9,2 | 2,430 | 106,5 | 4,193 | 47,25 | 1,860 | 260 | 3771 | 275 | 3989 | 290 | 4206 | | |
| 8 | 8,3 | 12 | 3,170 | 111,5 | 4,390 | 49,75 | 1,959 | 230 | 3336 | 210 | 3046 | 250 | 3626 | | |
| 10 | 10,2 | 14,7 | 3,883 | 116,5 | 4,587 | 52,25 | 2,057 | 180 | 2611 | 190 | 2756 | 200 | 2901 | | |
| 13 | 12,9 | 18,6 | 4,914 | 123,4 | 4,858 | 55,7 | 2,193 | 150 | 2176 | 160 | 2321 | 170 | 2466 | | |

Max torque / Coppia max: 50 Nm

* Intermittent: cycle 20 sec. ON & 3 sec. OFF - Peak: cycle 1 sec. ON & 3 sec OFF. Intermittente: ciclo 20 sec. ON & 3 sec. OFF - Picco: ciclo 1 sec. ON & 3 sec OFF

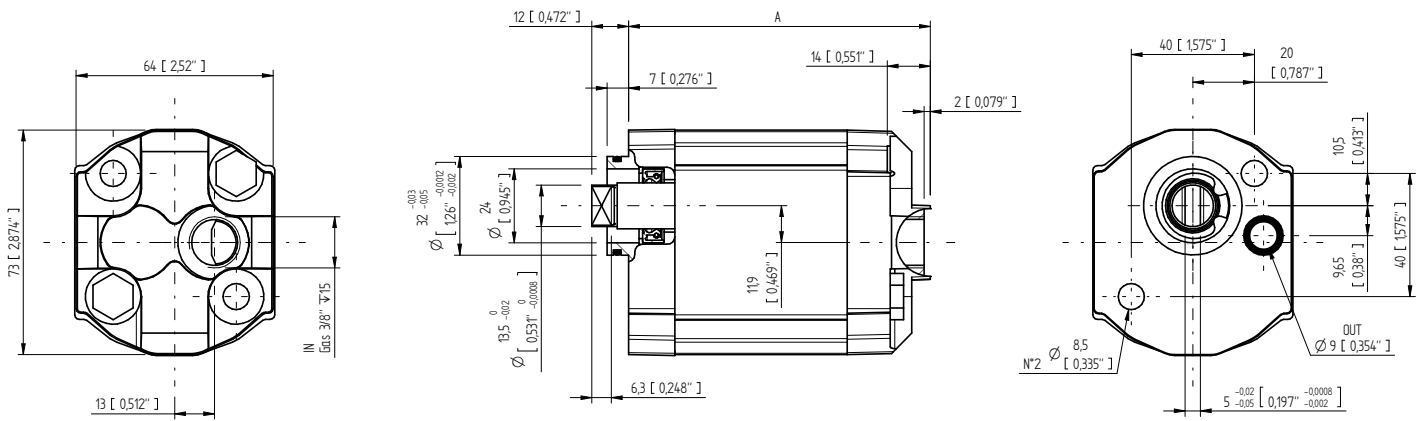


GR28 - TYPE / TIPO F1L AG54

| Type Tipo | CC | Flow Portata | | Dimensions A Dimensioni A | | Continuous Pressure Pressione continua | | Intermittent Pressure Pressione intermittente (*) | | Peak pressure Picco pressione (*) | | Noise level Livello rumore dB | Max torque Coppia max Nm |
|--------------|------|-----------------|-------|------------------------------|-------|--|------|--|------|--------------------------------------|------|--|--------------------------------------|
| | | L/min | GPM | mm | inc | bar | PSI | bar | PSI | bar | PSI | | |
| 4 | 4,2 | 6 | 1,585 | 101 | 3,976 | 275 | 3989 | 280 | 4061 | 300 | 4351 | 55 | 40 |
| 6 | 6,4 | 9,2 | 2,430 | 106,5 | 4,193 | 230 | 3336 | 240 | 3481 | 270 | 3916 | | |
| 8 | 8,3 | 12 | 3,170 | 111,5 | 4,390 | 180 | 2611 | 200 | 2901 | 210 | 3046 | | |
| 10 | 10,2 | 14,7 | 3,883 | 116,5 | 4,587 | 150 | 2176 | 160 | 2321 | 170 | 2466 | | |
| 13 | 12,9 | 18,6 | 4,914 | 123,4 | 4,858 | 120 | 1740 | 130 | 1885 | 140 | 2031 | | |

Max torque / Coppia max: 40 Nm

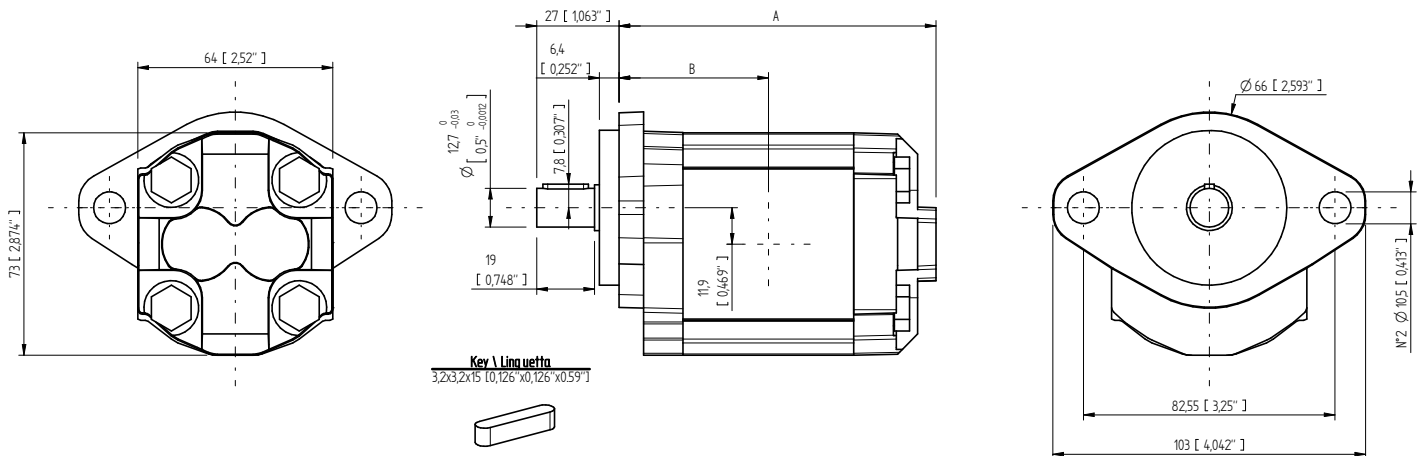
* Intermittent: cycle 20 sec. ON & 3 sec. OFF - Peak: cycle 1 sec. ON & 3 sec OFF. Intermittente: ciclo 20 sec. ON & 3 sec. OFF - Picco: ciclo 1 sec. ON & 3 sec OFF



GR28 - TYPE / TIPO F1L AGL54

| Type Tipo | CC | Flow Portata | | Dimensions A Dimensioni A | | Continuous Pressure Pressione continua | | Intermittent Pressure Pressione intermittente (*) | | Peak pressure Picco pressione (*) | | Noise level Livello rumore dB | Max torque Coppia max Nm |
|--------------|------|-----------------|-------|------------------------------|-------|--|------|--|------|--------------------------------------|------|--|-----------------------------------|
| | | L/min | GPM | mm | inc | bar | PSI | bar | PSI | bar | PSI | | |
| 4 | 4,2 | 6 | 1,585 | 101 | 3,976 | 275 | 3989 | 280 | 4061 | 300 | 4351 | 55 | 50 |
| 6 | 6,4 | 9,2 | 2,430 | 106,5 | 4,193 | 260 | 3771 | 275 | 3989 | 290 | 4206 | | |
| 8 | 8,3 | 12 | 3,170 | 111,5 | 4,390 | 230 | 3336 | 240 | 3481 | 250 | 3626 | | |
| 10 | 10,2 | 14,7 | 3,883 | 116,5 | 4,587 | 180 | 2611 | 190 | 2756 | 200 | 2901 | | |
| 13 | 12,9 | 18,6 | 4,914 | 123,4 | 4,858 | 150 | 2176 | 160 | 2321 | 170 | 2466 | | |

Max torque / Coppia max: 50 Nm



GR28 - TYPE / TIPO FSAEAA AC

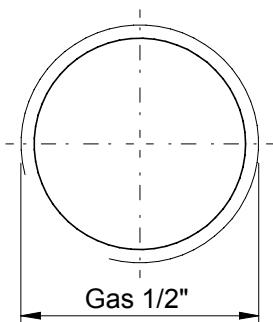
| Type Tipo | CC | Flow Portata | | Dimensions A Dimensioni A | | Dimensions B Dimensioni B | | Continuous Pressure Pressione continua | | Intermittent Pressure Pressione intermittente (*) | | Peak pressure Picco pressione (*) | | Noise level Livello rumore dB | Max torque Coppia max Nm |
|--------------|------|-----------------|-------|------------------------------|-------|------------------------------|-------|--|------|--|------|--------------------------------------|------|--|-----------------------------------|
| | | L/min | GPM | mm | inc | mm | inc | bar | PSI | bar | PSI | bar | PSI | | |
| 4 | 4,2 | 6 | 1,585 | 107 | 4,213 | 50,50 | 1,988 | 234 | 3394 | 238 | 3452 | 255 | 3698 | 55 | 60 |
| 6 | 6,4 | 9,2 | 2,430 | 112,5 | 4,429 | 53,25 | 2,096 | 234 | 3394 | 238 | 3452 | 255 | 3698 | | |
| 8 | 8,3 | 12 | 3,170 | 117,5 | 4,626 | 55,75 | 2,195 | 209 | 3031 | 221 | 3205 | 238 | 3452 | | |
| 10 | 10,2 | 14,7 | 3,883 | 122,5 | 4,823 | 58,25 | 2,293 | 189 | 2741 | 213 | 3089 | 230 | 3336 | | |
| 13 | 12,9 | 18,6 | 4,914 | 129,4 | 5,094 | 61,7 | 2,429 | 170 | 2466 | 196 | 2843 | 213 | 3089 | | |

Max torque / Coppia max: 60 Nm

* Intermittent: cycle 20 sec. ON & 3 sec. OFF - Peak: cycle 1 sec. ON & 3 sec OFF. Intermittente: ciclo 20 sec. ON & 3 sec. OFF - Picco: ciclo 1 sec. ON & 3 sec OFF

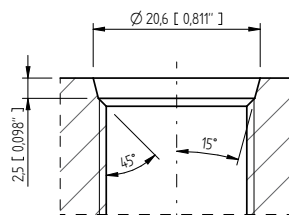
INLET AND OUTLET PORTS / PORTE DI ASPIRAZIONE E MANDATA (Suction / Pressure)

Type G / Tipo G



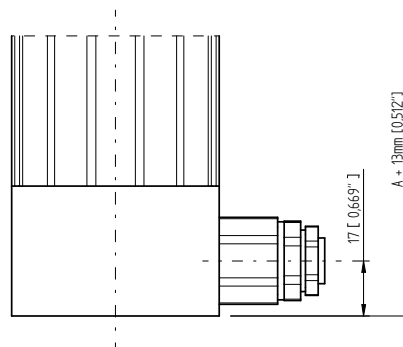
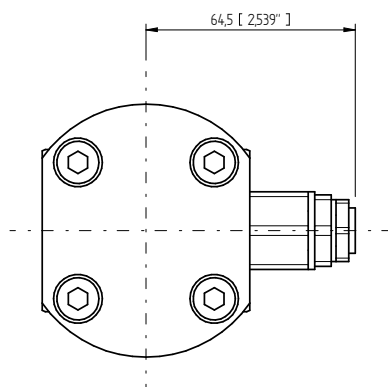
Type U / Tipo U

SAE O-Ring port 10
Thread ANSI B1.1 3/4-16 UNF-2B



SAFETY VALVE / VALVOLA DI MASSIMA

Not available on models / Non disponibile per i modelli F1L AG54 and F1L AGL54

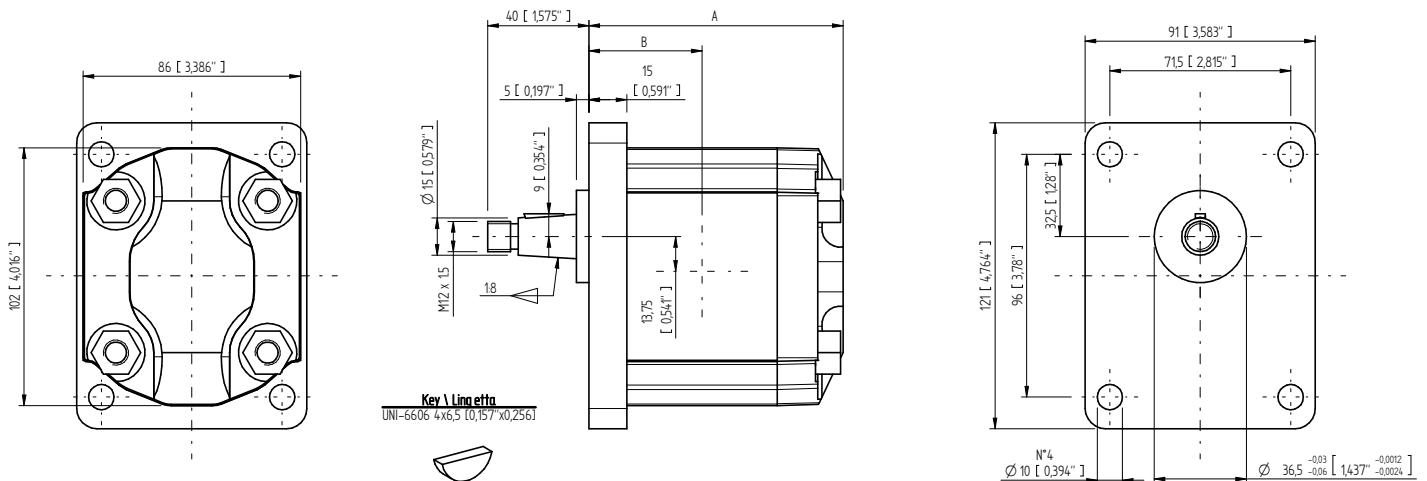


GR33 - Dimensional drawings / Disegni dimensionali

GR33 SHAFT AND FLANGE TYPES AND DIMENSIONS / TIPI DI ALBERO E FLANGIA E DIMENSIONI

Group 2 pumps / Pompe gruppo 2

| Type | Class | Flange & Shaft available types | Ports | Weight |
|------|-------|--------------------------------|-------|--------|
| GR33 | 2C | F2 AC4 | Q-G-U | 5 Kg |
| | | F2BK7 AG | | |
| | | FSAEA AC | | |
| | | FSAEA AT9 | | |

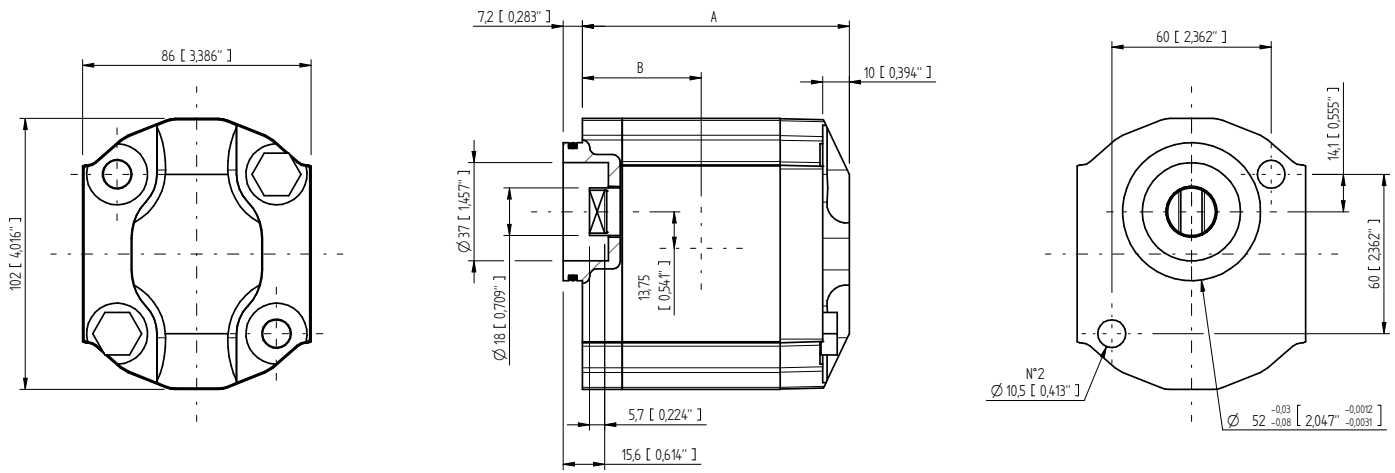


GR33 - TYPE / TIPO F2 AC4

| Type Tipo | CC | Flow Portata | | Dimensions A Dimensioni A | | Dimensions B Dimensioni B | | Continuous Pressure Pressione continua | | Intermittent Pressure Pressione intermittente (*) | | Peak pressure Picco pressione (*) | | Noise level Livello rumore | Max torque Coppia max |
|--------------|------|-----------------|-------|------------------------------|-------|------------------------------|-------|--|------|--|------|--------------------------------------|------|-------------------------------------|--------------------------------|
| | | L/min | GPM | mm | inc | mm | inc | bar | PSI | bar | PSI | bar | PSI | | |
| 10 | 10,1 | 14,5 | 3,830 | 104,5 | 4,114 | 46,75 | 1,841 | 275 | 3989 | 280 | 4061 | 300 | 4351 | 55 | 210 |
| 13 | 12,6 | 18,1 | 4,782 | 109,4 | 4,307 | 49,2 | 1,937 | 265 | 3844 | 270 | 3916 | 290 | 4206 | | |
| 15 | 15,2 | 21,8 | 5,759 | 114,4 | 4,504 | 51,7 | 2,035 | 241 | 3495 | 250 | 3626 | 270 | 3916 | | |
| 18 | 18,2 | 26,1 | 6,895 | 120,2 | 4,732 | 54,6 | 2,150 | 206 | 2988 | 250 | 3626 | 270 | 3916 | | |

Max torque / Coppia max: 210 Nm

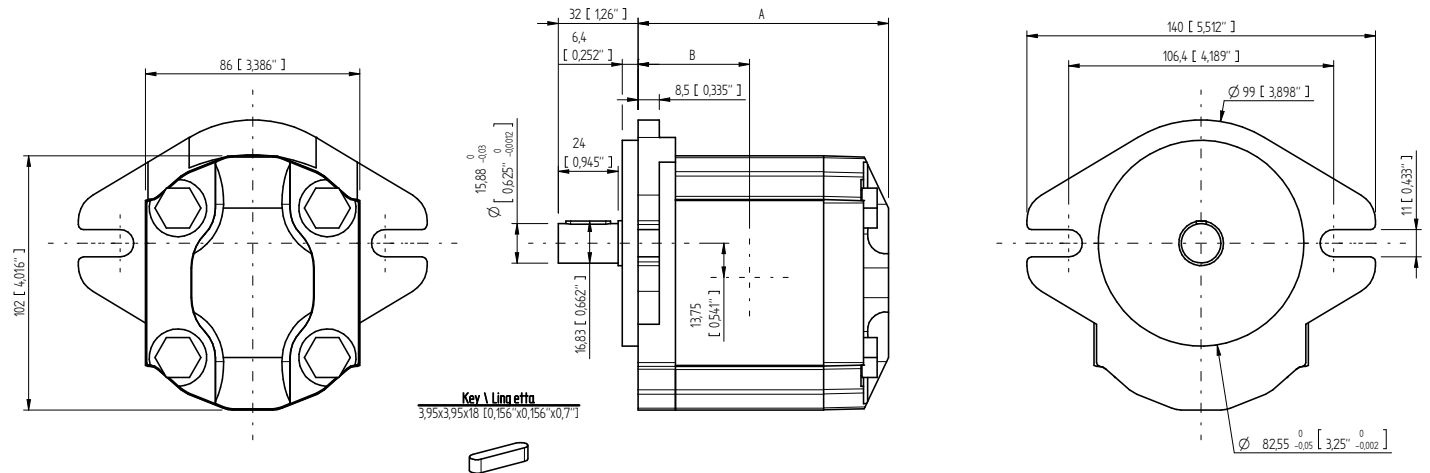
* Intermittent: cycle 20 sec. ON & 3 sec. OFF - Peak: cycle 1 sec. ON & 3 sec OFF. Intermittente: ciclo 20 sec. ON & 3 sec. OFF - Picco: ciclo 1 sec. ON & 3 sec OFF



GR33 - TYPE / TIPO F2 BK7 AG

| Type Tipo | CC | Flow Portata | | Dimensions A Dimensioni A | | Dimensions B Dimensioni B | | Continuous Pressure Pressione continua | | Intermittent Pressure Pressione intermittente (*) | | Peak pressure Picco pressione (*) | | Noise level Livello rumore | Max torque Coppia max |
|--------------|------|-----------------|-------|------------------------------|-------|------------------------------|-------|--|------|--|------|--------------------------------------|------|-------------------------------------|--------------------------------|
| | | L/min | GPM | mm | inc | mm | inc | bar | PSI | bar | PSI | bar | PSI | | |
| 10 | 10,1 | 14,5 | 3,830 | 104,5 | 4,114 | 46,75 | 1,841 | 275 | 3989 | 280 | 4061 | 300 | 4351 | 55 | 110 |
| 13 | 12,6 | 18,1 | 4,782 | 109,4 | 4,307 | 49,2 | 1,937 | 265 | 3844 | 270 | 3916 | 290 | 4206 | | |
| 15 | 15,2 | 21,8 | 5,759 | 114,4 | 4,504 | 51,7 | 2,035 | 241 | 3495 | 250 | 3626 | 270 | 3916 | | |
| 18 | 18,2 | 26,1 | 6,895 | 120,2 | 4,732 | 54,6 | 2,150 | 206 | 2988 | 250 | 3626 | 270 | 3916 | | |

Max torque / Coppia max: 110 Nm

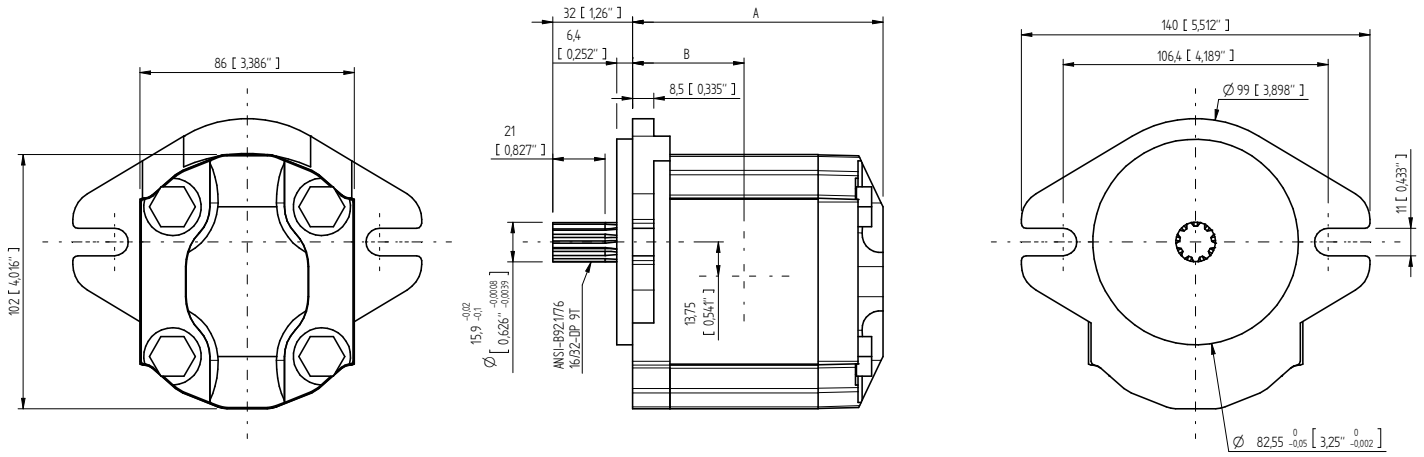


GR33 - TYPE / TIPO FSAEA AC

| Type Tipo | CC | Flow Portata | | Dimensions A Dimensioni A | | Dimensions B Dimensioni B | | Continuous Pressure Pressione continua | | Intermittent Pressure Pressione intermittente (*) | | Peak pressure Picco pressione (*) | | Noise level Livello rumore | Max torque Coppia max |
|--------------|------|-----------------|-------|------------------------------|-------|------------------------------|-------|--|------|--|------|--------------------------------------|------|-------------------------------------|--------------------------------|
| | | L/min | GPM | mm | inc | mm | inc | bar | PSI | bar | PSI | bar | PSI | | |
| 10 | 10,1 | 14,5 | 3,830 | 104,5 | 4,114 | 46,75 | 1,841 | 275 | 3989 | 280 | 4061 | 300 | 4351 | 55 | 140 |
| 13 | 12,6 | 18,1 | 4,782 | 109,4 | 4,307 | 49,2 | 1,937 | 265 | 3844 | 270 | 3916 | 290 | 4206 | | |
| 15 | 15,2 | 21,8 | 5,759 | 114,4 | 4,504 | 51,7 | 2,035 | 241 | 3495 | 250 | 3626 | 270 | 3916 | | |
| 18 | 18,2 | 26,1 | 6,895 | 120,2 | 4,732 | 54,6 | 2,150 | 206 | 2988 | 250 | 3626 | 270 | 3916 | | |

Max torque / Coppia max: 140 Nm

* Intermittent: cycle 20 sec. ON & 3 sec. OFF - Peak: cycle 1 sec. ON & 3 sec OFF. Intermittente: ciclo 20 sec. ON & 3 sec. OFF - Picco: ciclo 1 sec. ON & 3 sec OFF



GR33 - TYPE / TIPO FSAEA ACT9

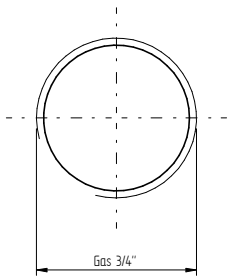
| Type Tipo | CC | Flow Portata | | Dimensions A Dimensioni A | | Dimensions B Dimensioni B | | Continuous Pressure Pressione continua | | Intermittent Pressure Pressione intermittente (*) | | Peak pressure Picco pressione (*) | | Noise level Livello rumore dB | Max torque Coppia max Nm |
|--------------|------|-----------------|-------|------------------------------|-------|------------------------------|-------|--|------|--|------|--------------------------------------|------|--|--------------------------------------|
| | | L/min | GPM | mm | inc | mm | inc | bar | PSI | bar | PSI | bar | PSI | | |
| 10 | 10,1 | 14,5 | 3,830 | 104,5 | 4,114 | 46,75 | 1,841 | 275 | 3989 | 280 | 4061 | 300 | 4351 | 55 | 190 |
| 13 | 12,6 | 18,1 | 4,782 | 109,4 | 4,307 | 49,2 | 1,937 | 265 | 3844 | 270 | 3916 | 290 | 4206 | | |
| 15 | 15,2 | 21,8 | 5,759 | 114,4 | 4,504 | 51,7 | 2,035 | 241 | 3495 | 250 | 3626 | 270 | 3916 | | |
| 18 | 18,2 | 26,1 | 6,895 | 120,2 | 4,732 | 54,6 | 2,150 | 206 | 2988 | 250 | 3626 | 270 | 3916 | | |

Max torque / Coppia max: 190 Nm

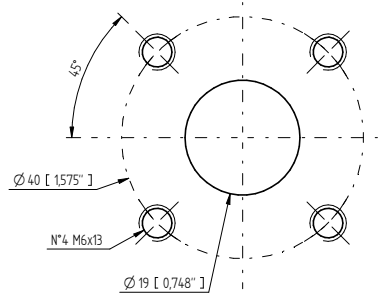
* Intermittent: cycle 20 sec. ON & 3 sec. OFF - Peak: cycle 1 sec. ON & 3 sec OFF. Intermittente: ciclo 20 sec. ON & 3 sec. OFF - Picco: ciclo 1 sec. ON & 3 sec OFF

INLET OUTLET PORTS / PORTE DI ASPIRAZIONE E MANDATA (Suction / Pressure)

Type G / Tipo G

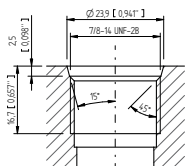


Type Q / Tipo Q

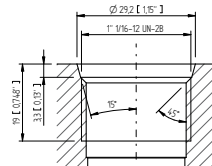


UNF INLET OUTLET PORTS / PORTE DI ASPIRAZIONE E MANDATA UNF - Type U / Tipo U

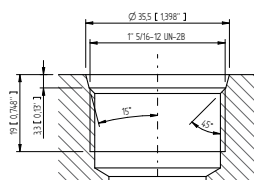
**SAE O-Ring ANSI B1.1
port 10**



**SAE O-Ring ANSI B1.1
port 12**



**SAE O-Ring ANSI B1.1
port 16**



Suction/Pressure U ports possible configuration
Possibili combinazioni porte di aspirazione/mandata di tipo U

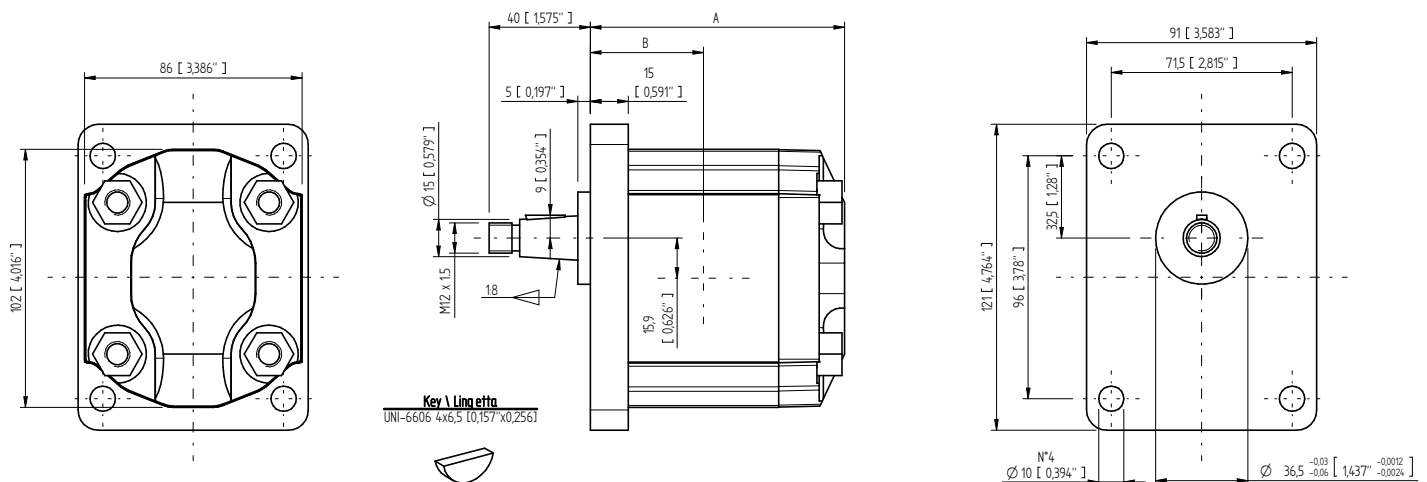
| Pump | Suction port | Pressure port |
|-------|--------------------|--------------------|
| 10 cc | SAE O-Ring port 12 | SAE O-Ring port 10 |
| 13 cc | SAE O-Ring port 12 | SAE O-Ring port 10 |
| 15 cc | SAE O-Ring port 12 | SAE O-Ring port 10 |
| 18 cc | SAE O-Ring port 16 | SAE O-Ring port 12 |

GR38 - Dimensional drawings / Disegni dimensionali

GR38 SHAFT AND FLANGE TYPES AND DIMENSIONS / TIPI DI ALBERO E FLANGIA E DIMENSIONI

Group 2 pumps / Pompe gruppo 2

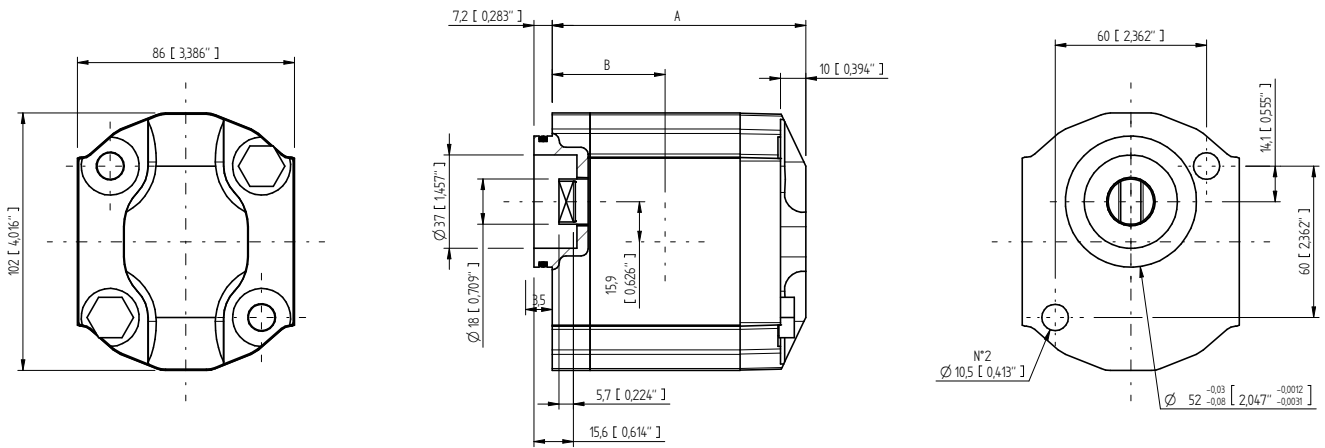
| Type | Class | Flange & Shaft available types | Ports | Weight |
|------|-------|--------------------------------|-------|--------|
| GR38 | 2C | F2 AC4 | Q-G-U | 6 Kg |
| | | F2BK7 AG | | |
| | | FSAEA AC | | |
| | | FSAEA AT9 | | |
| | | FSAEA AT11 | | |



| GR38 - TYPE / TIPO F2 AC4 | | | | | | | | | | | | | | | |
|---------------------------|------|-----------------|--------|------------------------------|-------|------------------------------|-------|--|------|--|------|--------------------------------------|------|----------------------------------|--------------------------------|
| Type Tipo | CC | Flow Portata | | Dimensions A Dimensioni A | | Dimensions B Dimensioni B | | Continuous Pressure Pressione continua | | Intermittent Pressure Pressione intermittente (*) | | Peak pressure Picco pressione (*) | | Noise level Livello rumore | Max torque Coppia max |
| | | L/min | GPM | mm | inc | mm | inc | bar | PSI | bar | PSI | bar | PSI | | |
| 16 | 15,9 | 22,8 | 6,023 | 108 | 4,252 | 48,5 | 1,909 | 265 | 3844 | 280 | 4061 | 300 | 4351 | 55 | 210 |
| 18 | 17,9 | 25,8 | 6,816 | 111 | 4,370 | 50 | 1,969 | 247 | 3582 | 260 | 3771 | 280 | 4061 | | |
| 20 | 20 | 28,8 | 7,608 | 114 | 4,488 | 51,5 | 2,028 | 230 | 3336 | 250 | 3626 | 270 | 3916 | | |
| 22 | 22,1 | 31,8 | 8,401 | 117 | 4,606 | 53 | 2,087 | 222 | 3220 | 240 | 3481 | 260 | 3771 | | |
| 25 | 25,2 | 36,2 | 9,563 | 121,5 | 4,783 | 55,25 | 2,175 | 200 | 2901 | 210 | 3046 | 220 | 3191 | | |
| 28 | 28,3 | 40,7 | 10,752 | 126 | 4,961 | 57,5 | 2,264 | 180 | 2611 | 190 | 2756 | 200 | 2901 | | |

Max torque / Coppia max: 210 Nm

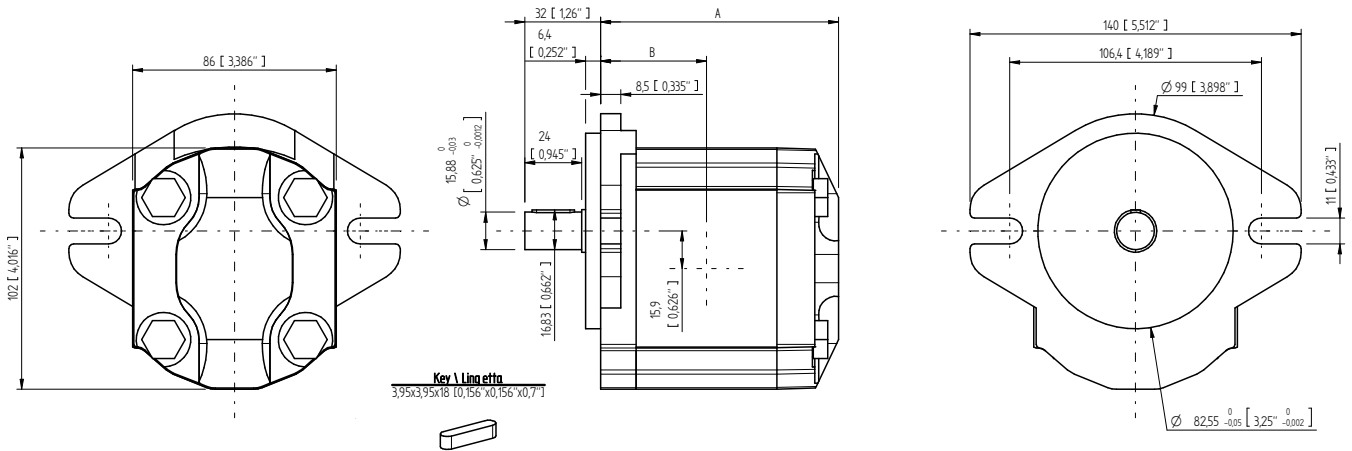
* Intermittent: cycle 20 sec. ON & 3 sec. OFF - Peak: cycle 1 sec. ON & 3 sec OFF. Intermittente: ciclo 20 sec. ON & 3 sec. OFF - Picco: ciclo 1 sec. ON & 3 sec OFF



GR38 - TYPE / TIPO F2BK7 AG

| Type Tipo | CC | Flow Portata | | Dimensions A Dimensioni A | | Dimensions B Dimensioni B | | Continuous Pressure Pressione continua | | Intermittent Pressure Pressione intermittente (*) | | Peak pressure Picco pressione (*) | | Noise level Livello rumore | Max torque Coppia max |
|--------------|------|-----------------|--------|------------------------------|-------|------------------------------|-------|--|------|--|------|--------------------------------------|------|----------------------------------|--------------------------------|
| | | L/min | GPM | mm | inc | mm | inc | bar | PSI | bar | PSI | bar | PSI | | |
| 16 | 15,9 | 22,8 | 6,023 | 108 | 4,252 | 48,5 | 1,909 | 265 | 3844 | 280 | 4061 | 300 | 4351 | 55 | 110 |
| 18 | 17,9 | 25,8 | 6,816 | 111 | 4,370 | 50 | 1,969 | 247 | 3582 | 260 | 3771 | 280 | 4061 | | |
| 20 | 20 | 28,8 | 7,608 | 114 | 4,488 | 51,5 | 2,028 | 230 | 3336 | 250 | 3626 | 260 | 3771 | | |
| 22 | 22,1 | 31,8 | 8,401 | 117 | 4,606 | 53 | 2,087 | 210 | 3046 | 230 | 3336 | 240 | 3481 | | |
| 25 | 25,2 | 36,2 | 9,563 | 121,5 | 4,783 | 55,25 | 2,175 | 200 | 2901 | 210 | 3046 | 220 | 3191 | | |
| 28 | 28,3 | 40,7 | 10,752 | 126 | 4,961 | 57,5 | 2,264 | 180 | 2611 | 190 | 2756 | 200 | 2901 | | |

Max torque / Coppia max: 110 Nm

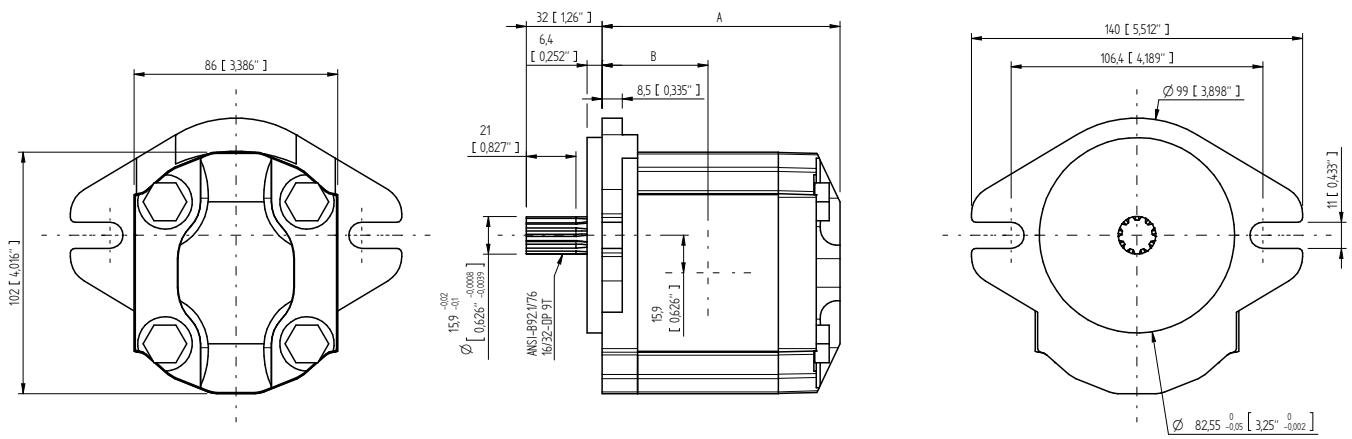


GR38 - TYPE / TIPO FSAEA AC

| Type Tipo | CC | Flow Portata | | Dimensions A Dimensioni A | | Dimensions B Dimensioni B | | Continuous Pressure Pressione continua | | Intermittent Pressure Pressione intermittente (*) | | Peak pressure Picco pressione (*) | | Noise level Livello rumore | Max torque Coppia max |
|--------------|------|-----------------|--------|------------------------------|-------|------------------------------|-------|--|------|--|------|--------------------------------------|------|----------------------------------|--------------------------------|
| | | L/min | GPM | mm | inc | mm | inc | bar | PSI | bar | PSI | bar | PSI | | |
| 16 | 15,9 | 22,8 | 6,023 | 108 | 4,252 | 48,5 | 1,909 | 265 | 3844 | 280 | 4061 | 300 | 4351 | 55 | 140 |
| 18 | 17,9 | 25,8 | 6,816 | 111 | 4,370 | 50 | 1,969 | 247 | 3582 | 260 | 3771 | 280 | 4061 | | |
| 20 | 20 | 28,8 | 7,608 | 114 | 4,488 | 51,5 | 2,028 | 230 | 3336 | 250 | 3626 | 270 | 3916 | | |
| 22 | 22,1 | 31,8 | 8,401 | 117 | 4,606 | 53 | 2,087 | 222 | 3220 | 240 | 3481 | 260 | 3771 | | |
| 25 | 25,2 | 36,2 | 9,563 | 121,5 | 4,783 | 55,25 | 2,175 | 200 | 2901 | 210 | 3046 | 220 | 3191 | | |
| 28 | 28,3 | 40,7 | 10,752 | 126 | 4,961 | 57,5 | 2,264 | 180 | 2611 | 190 | 2756 | 200 | 2901 | | |

Max torque / Coppia max: 140 Nm

* Intermittent: cycle 20 sec. ON & 3 sec. OFF - Peak: cycle 1 sec. ON & 3 sec. OFF - Picco: ciclo 1 sec. ON & 3 sec OFF

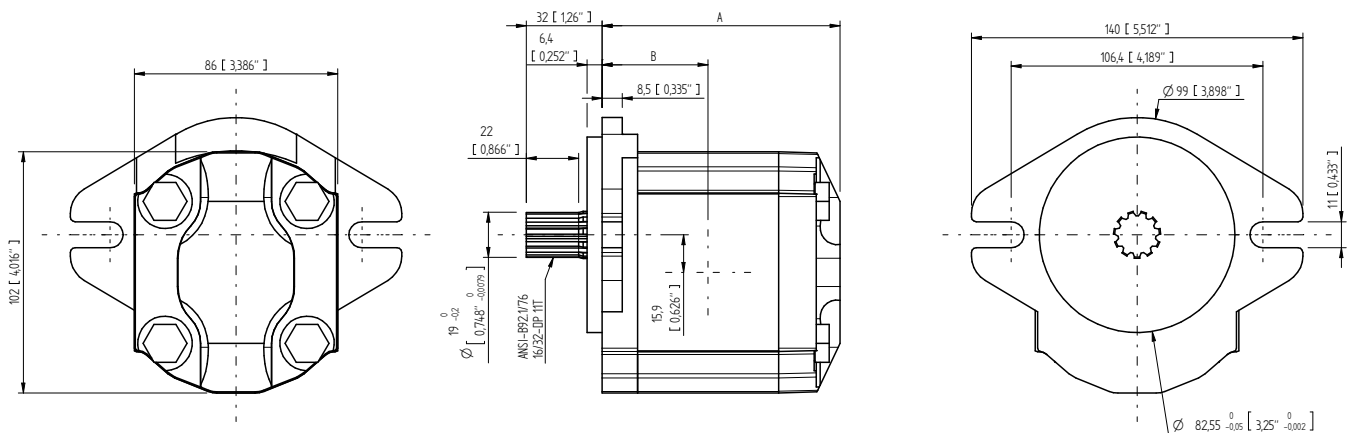


GR38 - TYPE / TIPO FSAEA AT9

| Type Tipo | CC | Flow Portata | | Dimensions A Dimensioni A | | Dimensions B Dimensioni B | | Continuous Pressure Pressione continua | | Intermittent Pressure Pressione intermittente (*) | | Peak pressure Picco pressione (*) | | Noise level Livello rumore | Max torque Coppia max |
|--------------|------|-----------------|--------|------------------------------|-------|------------------------------|-------|--|------|--|------|--------------------------------------|------|-------------------------------------|--------------------------------|
| | | L/min | GPM | mm | inc | mm | inc | bar | PSI | bar | PSI | bar | PSI | | |
| 16 | 15,9 | 22,8 | 6,023 | 108 | 4,252 | 48,5 | 1,909 | 265 | 3844 | 280 | 4061 | 300 | 4351 | 55 | 190 |
| 18 | 17,9 | 25,8 | 6,816 | 111 | 4,370 | 50 | 1,969 | 247 | 3582 | 260 | 3771 | 280 | 4061 | | |
| 20 | 20 | 28,8 | 7,608 | 114 | 4,488 | 51,5 | 2,028 | 230 | 3336 | 250 | 3626 | 270 | 3916 | | |
| 22 | 22,1 | 31,8 | 8,401 | 117 | 4,606 | 53 | 2,087 | 222 | 3220 | 240 | 3481 | 260 | 3771 | | |
| 25 | 25,2 | 36,2 | 9,563 | 121,5 | 4,783 | 55,25 | 2,175 | 200 | 2901 | 210 | 3046 | 220 | 3191 | | |
| 28 | 28,3 | 40,7 | 10,752 | 126 | 4,961 | 57,5 | 2,264 | 180 | 2611 | 190 | 2756 | 200 | 2901 | | |

Max torque / Coppia max: 190 Nm

* Intermittent: cycle 20 sec. ON & 3 sec. OFF - Peak: cycle 1 sec. ON & 3 sec OFF. Intermittente: ciclo 20 sec. ON & 3 sec. OFF - Picco: ciclo 1 sec. ON & 3 sec OFF



GR38 - TYPE / TIPO FSAEA AT11

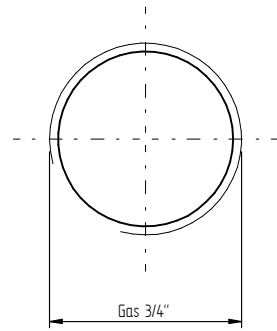
| Type Tipo | CC | Flow Portata | | Dimensions A Dimensioni A | | Dimensions B Dimensioni B | | Continuous Pressure Pressione continua | | Intermittent Pressure Pressione intermittente (*) | | Peak pressure Picco pressione (*) | | Noise level Livello rumore | Max torque Coppia max |
|--------------|------|-----------------|--------|------------------------------|-------|------------------------------|-------|--|------|--|------|--------------------------------------|------|-------------------------------------|--------------------------------|
| | | L/min | GPM | mm | inc | mm | inc | bar | PSI | bar | PSI | bar | PSI | | |
| 16 | 15,9 | 22,8 | 6,023 | 108 | 4,252 | 48,5 | 1,909 | 265 | 3844 | 280 | 4061 | 300 | 4351 | 55 | 210 |
| 18 | 17,9 | 25,8 | 6,816 | 111 | 4,370 | 50 | 1,969 | 247 | 3582 | 260 | 3771 | 280 | 4061 | | |
| 20 | 20 | 28,8 | 7,608 | 114 | 4,488 | 51,5 | 2,028 | 230 | 3336 | 250 | 3626 | 270 | 3916 | | |
| 22 | 22,1 | 31,8 | 8,401 | 117 | 4,606 | 53 | 2,087 | 222 | 3220 | 250 | 3626 | 270 | 3916 | | |
| 25 | 25,2 | 36,2 | 9,563 | 121,5 | 4,783 | 55,25 | 2,175 | 200 | 2901 | 250 | 3626 | 270 | 3916 | | |
| 28 | 28,3 | 40,7 | 10,752 | 126 | 4,961 | 57,5 | 2,264 | 197 | 2857 | 250 | 3626 | 270 | 3916 | | |

Max torque / Coppia max: 210 Nm

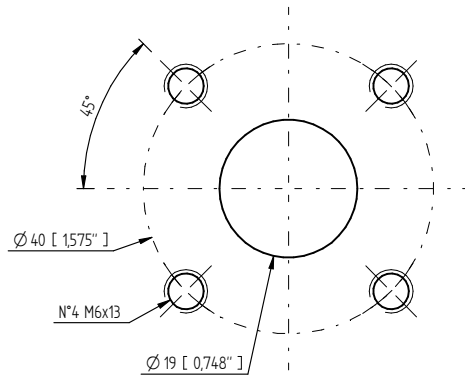
* Intermittent: cycle 20 sec. ON & 3 sec. OFF - Peak: cycle 1 sec. ON & 3 sec OFF. Intermittente: ciclo 20 sec. ON & 3 sec. OFF - Picco: ciclo 1 sec. ON & 3 sec OFF

INLET OUTLET PORTS / PORTE DI ASPIRAZIONE E MANDATA (Suction / Pressure)

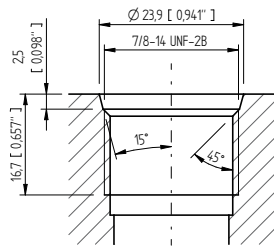
Type G / Tipo G



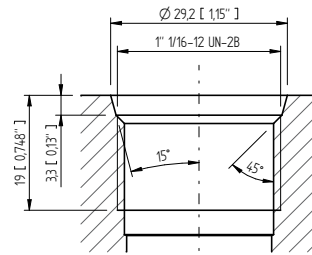
Type Q / Tipo Q



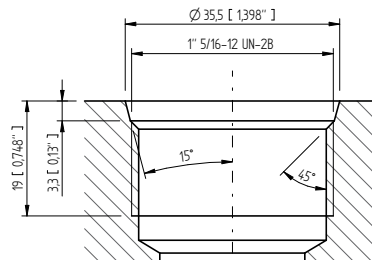
UNF INLET OUTLET PORTS / PORTE DI ASPIRAZIONE E MANDATA UNF - **Type U / Tipo U**



SAE O-Ring ANSI B1.1
port 10



SAE O-Ring ANSI B1.1
port 12



SAE O-Ring ANSI B1.1
port 16

Suction/Pressure UNF ports possible configuration
 Possibili combinazioni porte di aspirazione/mandata di tipo UNF

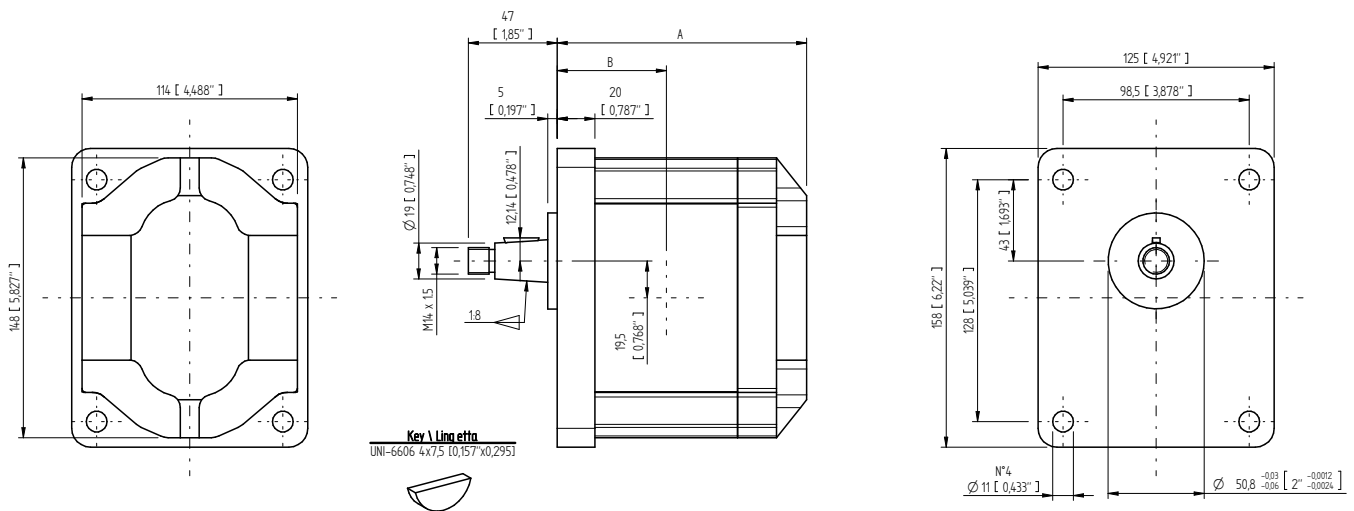
| Pump | Suction port | Pressure port |
|-------|--------------------|--------------------|
| 16 cc | SAE O-Ring port 12 | SAE O-Ring port 10 |
| 18 cc | SAE O-Ring port 16 | SAE O-Ring port 12 |
| 20 cc | SAE O-Ring port 16 | SAE O-Ring port 12 |
| 22 cc | SAE O-Ring port 16 | SAE O-Ring port 12 |
| 25 cc | SAE O-Ring port 16 | SAE O-Ring port 12 |
| 28 cc | SAE O-Ring port 16 | SAE O-Ring port 12 |

GR47 - Dimensional drawings / Disegni dimensionali

GR47 SHAFT AND FLANGE TYPES AND DIMENSIONS / TIPI DI ALBERO E FLANGIA E DIMENSIONI

Group 3 pumps / Pompe gruppo 3

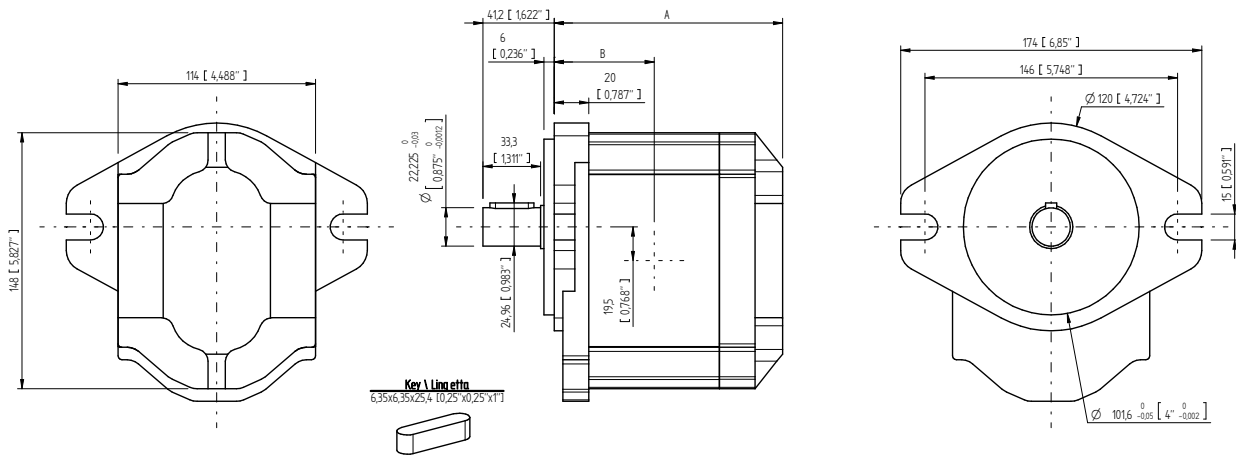
| Type | Class | Flange & Shaft available types | Ports | Weight |
|------|-------|--------------------------------|-------|--------|
| GR47 | 2C | F3 AC9 | G-O-U | 10 Kg |
| | | FSAEB AC | | |
| | | FSAEB AT13 | | |



| GR47 - TYPE / TIPO F3 AC9 | | | | | | | | | | | | | | | |
|---------------------------|------|-----------------|--------|------------------------------|-------|------------------------------|-------|--|------|--|------|--------------------------------------|------|----------------------------------|--------------------------------|
| Type Tipo | CC | Flow Portata | | Dimensions A Dimensioni A | | Dimensions B Dimensioni B | | Continuous Pressure Pressione continua | | Intermittent Pressure Pressione intermittente (*) | | Peak pressure Picco pressione (*) | | Noise level Livello rumore | Max torque Coppia max |
| | | L/min | GPM | mm | inc | mm | inc | bar | PSI | bar | PSI | bar | PSI | | |
| 28 | 28 | 40,3 | 10,646 | 139,5 | 5,492 | 61,5 | 2,421 | 270 | 3916 | 280 | 4061 | 300 | 4351 | 57 | 320 |
| 32 | 32,2 | 46,3 | 12,231 | 143,5 | 5,65 | 63,5 | 2,5 | 252 | 3655 | 270 | 3916 | 280 | 4061 | | |
| 36 | 36,3 | 52,3 | 13,816 | 147,5 | 5,807 | 65,5 | 2,579 | 239 | 3466 | 250 | 3626 | 270 | 3916 | | |
| 40 | 40,5 | 58,3 | 15,401 | 151,5 | 5,965 | 67,5 | 2,657 | 225 | 3263 | 250 | 3626 | 270 | 3916 | | |
| 45 | 45,5 | 65 | 17,171 | 156 | 6,142 | 69,75 | 2,746 | 213 | 3089 | 250 | 3626 | 270 | 3916 | | |
| 50 | 50,3 | 72,4 | 19,126 | 161 | 6,339 | 72,25 | 2,844 | 202 | 2930 | 250 | 3626 | 270 | 3916 | | |

Max torque / Coppia max: 320 Nm

* Intermittent: cycle 20 sec. ON & 3 sec. OFF - Peak: cycle 1 sec. ON & 3 sec OFF. Intermittente: ciclo 20 sec. ON & 3 sec. OFF - Picco: ciclo 1 sec. ON & 3 sec OFF

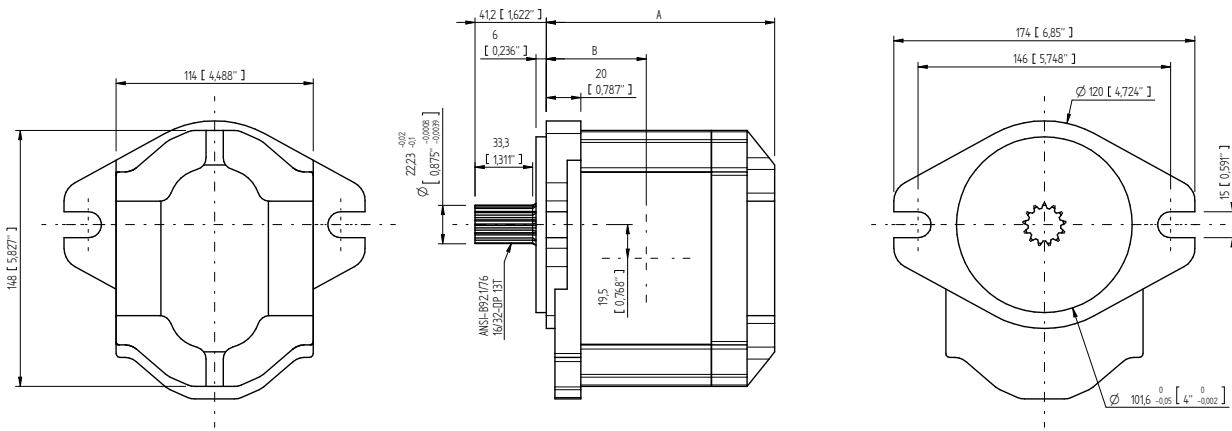


GR47 - TYPE / TIPO FSAEB AC

| Type Tipo | CC | Flow Portata | | Dimensions A Dimensioni A | | Dimensions B Dimensioni B | | Continuous Pressure Pressione continua | | Intermittent Pressure Pressione intermittente (*) | | Peak pressure Picco pressione (*) | | Noise level Livello rumore dB | Max torque Coppia max Nm |
|--------------|------|-----------------|--------|------------------------------|-------|------------------------------|-------|--|------|--|------|--------------------------------------|------|--|--------------------------------------|
| | | L/min | GPM | mm | inc | mm | inc | bar | PSI | bar | PSI | bar | PSI | | |
| 28 | 28 | 40,3 | 10,646 | 139,5 | 5,492 | 61,5 | 2,421 | 270 | 3916 | 280 | 4061 | 300 | 4351 | 57 | 450 |
| 32 | 32,2 | 46,3 | 12,231 | 143,5 | 5,65 | 63,5 | 2,5 | 252 | 3655 | 270 | 3916 | 280 | 4061 | | |
| 36 | 36,3 | 52,3 | 13,816 | 147,5 | 5,807 | 65,5 | 2,579 | 239 | 3466 | 250 | 3626 | 270 | 3916 | | |
| 40 | 40,5 | 58,3 | 15,401 | 151,5 | 5,965 | 67,5 | 2,657 | 225 | 3263 | 250 | 3626 | 270 | 3916 | | |
| 45 | 45,5 | 65 | 17,171 | 156 | 6,142 | 69,75 | 2,746 | 213 | 3089 | 250 | 3626 | 270 | 3916 | | |
| 50 | 50,3 | 72,4 | 19,126 | 161 | 6,339 | 72,25 | 2,844 | 202 | 2930 | 250 | 3626 | 270 | 3916 | | |

Max torque / Coppia max: 450 Nm - Max torque / Coppia max: 600 Nm

* Intermittent: cycle 20 sec. ON & 3 sec. OFF - Peak: cycle 1 sec. ON & 3 sec OFF. Intermittente: ciclo 20 sec. ON & 3 sec. OFF - Picco: ciclo 1 sec. ON & 3 sec OFF



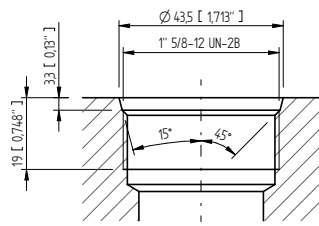
GR47 - TYPE / TIPO FSAEB AT13

| Type Tipo | CC | Flow Portata | | Dimensions A Dimensioni A | | Dimensions B Dimensioni B | | Continuous Pressure Pressione continua | | Intermittent Pressure Pressione intermittente (*) | | Peak pressure Picco pressione (*) | | Noise level Livello rumore dB | Max torque Coppia max Nm |
|--------------|------|-----------------|--------|------------------------------|-------|------------------------------|-------|--|------|--|------|--------------------------------------|------|--|--------------------------------------|
| | | L/min | GPM | mm | inc | mm | inc | bar | PSI | bar | PSI | bar | PSI | | |
| 28 | 28 | 40,3 | 10,646 | 139,5 | 5,492 | 61,5 | 2,421 | 270 | 3916 | 280 | 4061 | 300 | 4351 | 57 | 600 |
| 32 | 32,2 | 46,3 | 12,231 | 143,5 | 5,65 | 63,5 | 2,5 | 252 | 3655 | 270 | 3916 | 280 | 4061 | | |
| 36 | 36,3 | 52,3 | 13,816 | 147,5 | 5,807 | 65,5 | 2,579 | 239 | 3466 | 250 | 3626 | 270 | 3916 | | |
| 40 | 40,5 | 58,3 | 15,401 | 151,5 | 5,965 | 67,5 | 2,657 | 225 | 3263 | 250 | 3626 | 270 | 3916 | | |
| 45 | 45,5 | 65 | 17,171 | 156 | 6,142 | 69,75 | 2,746 | 213 | 3089 | 250 | 3626 | 270 | 3916 | | |
| 50 | 50,3 | 72,4 | 19,126 | 161 | 6,339 | 72,25 | 2,844 | 202 | 2930 | 250 | 3626 | 270 | 3916 | | |

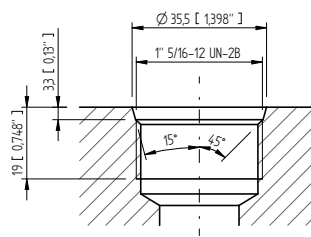
Max torque / Coppia max: 450 Nm - Max torque / Coppia max: 600 Nm

* Intermittent: cycle 20 sec. ON & 3 sec. OFF - Peak: cycle 1 sec. ON & 3 sec OFF. Intermittente: ciclo 20 sec. ON & 3 sec. OFF - Picco: ciclo 1 sec. ON & 3 sec OFF

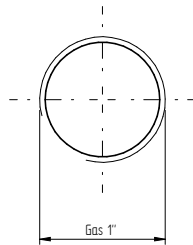
Suction port
Type "U"



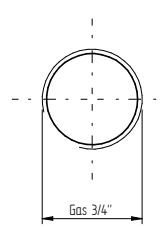
Pressure port
Type "U"



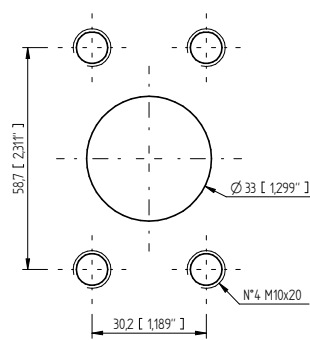
Suction port
Type "G"



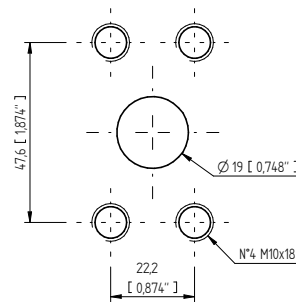
Pressure port
Type "G"



Suction port
Type "O"



Pressure port
Type "O"

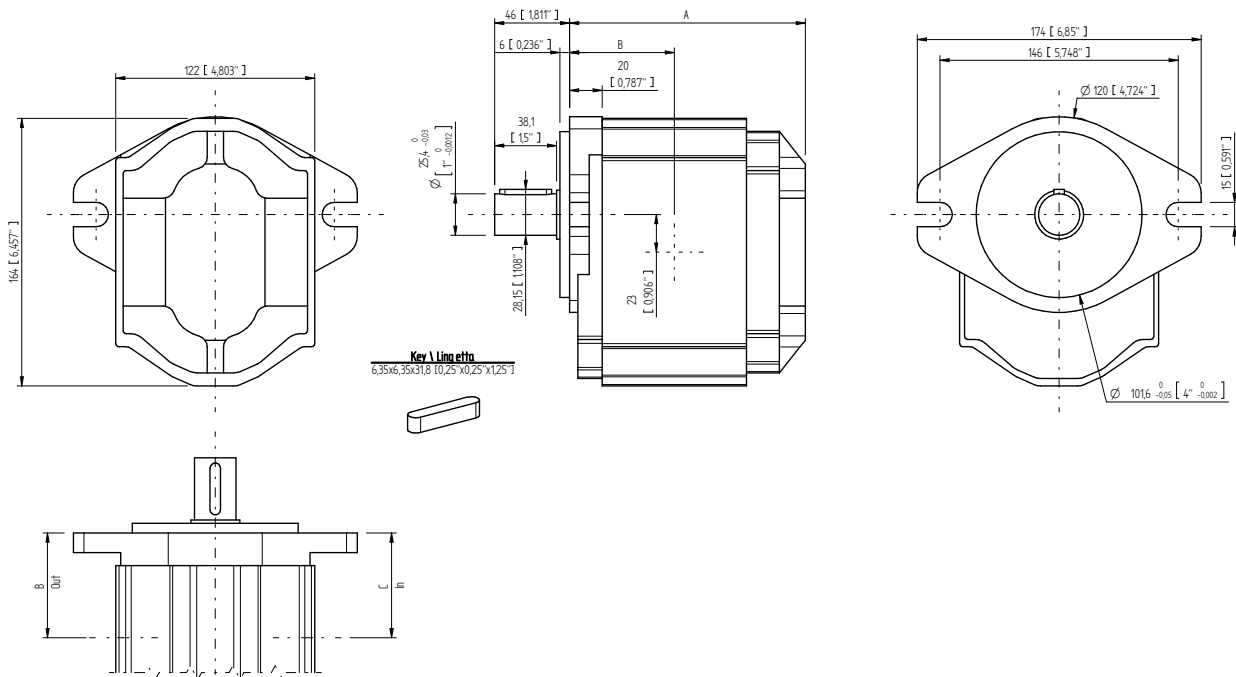


GR55 - Dimensional drawings / Disegni dimensionali

GR55 SHAFT AND FLANGE TYPES AND DIMENSIONS / TIPI DI ALBERO E FLANGIA E DIMENSIONI

Group 3 pumps / Pompe gruppo 3

| Type | Class | Flange & Shaft available types | Ports | Weight |
|------|-------|--------------------------------|-------|--------|
| GR55 | 2C | FSAEB AC | O-OE | 15 Kg |
| | | FSAEB AT15 | | |

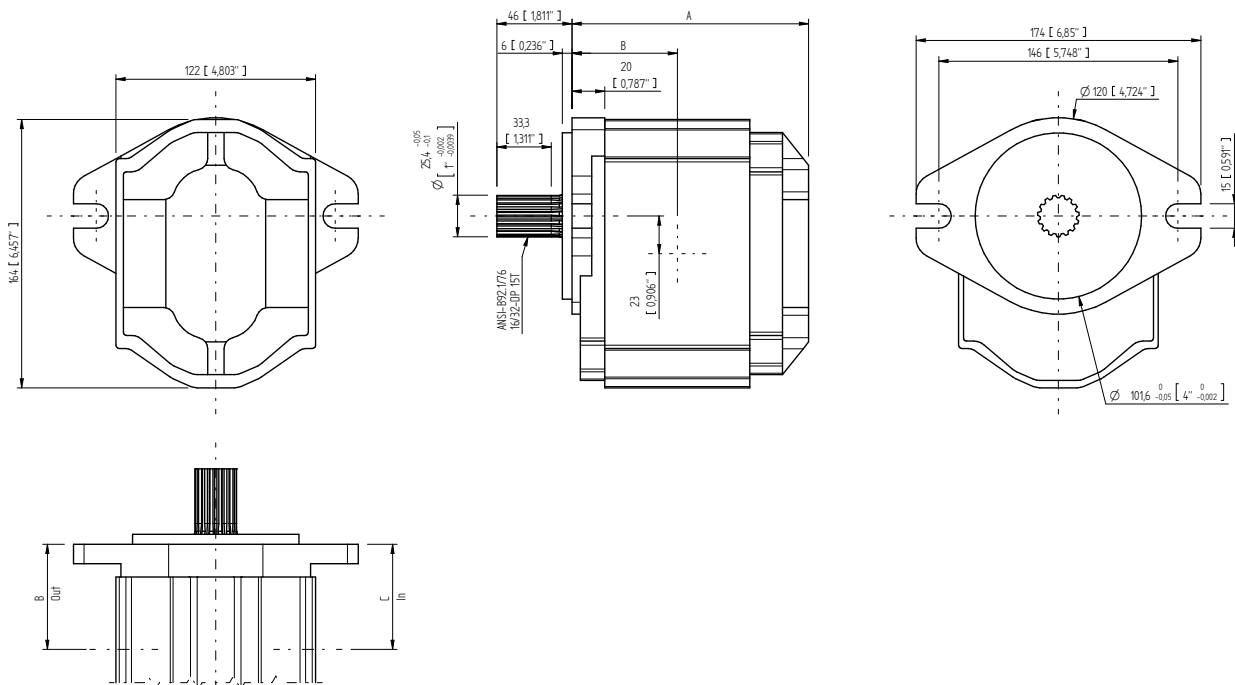


GR55 - TYPE / TIPO FSAEB AC

| Type Tipo | CC | Flow Portata | | Dimensions A Dimensioni A | | Dimensions B Dimensioni B | | Dimensions C Dimensioni C | | | | Continuous Pressure Pressione continua | | Intermittent Pressure Pressione intermittente (*) | | Peak pressure Picco pres- sione (*) | | Noise level Livello rumore | Max torque Coppia max |
|--------------|------|-----------------|--------|------------------------------|-------|------------------------------|-------|------------------------------|-------|-------|-------|---|------|---|------|---|------|-------------------------------------|--------------------------------|
| | | L/ min | GPM | mm | inc | mm | inc | O | | OE | | bar | PSI | bar | PSI | bar | PSI | | |
| | | | | | | | | mm | inc | mm | inc | | | | | | | | |
| 50 | 50,5 | 72,7 | 19,205 | 157 | 6,181 | 70,5 | 2,776 | 70,5 | 2,776 | 70,5 | 2,776 | 275 | 3989 | 280 | 4061 | 300 | 4351 | 57 | 550 |
| 63 | 63,5 | 91,4 | 24,145 | 166 | 6,535 | 75 | 2,953 | 75 | 2,953 | 78,5 | 3,091 | 249 | 3611 | 260 | 3771 | 280 | 4061 | | |
| 75 | 75 | 108,1 | 28,557 | 174 | 6,85 | 79 | 3,11 | 79 | 3,11 | 82,50 | 3,248 | 229 | 3321 | 250 | 3626 | 270 | 3916 | | |
| 90 | 90,2 | 130,9 | 34,580 | 185 | 7,283 | 84,5 | 3,327 | 84,5 | 3,327 | 88 | 3,465 | 178 | 2582 | 240 | 3481 | 260 | 3771 | | |

Max torque / Coppia max: 700 Nm

* Intermittent: cycle 20 sec. ON & 3 sec. OFF - Peak: cycle 1 sec. ON & 3 sec OFF. Intermittente: ciclo 20 sec. ON & 3 sec. OFF - Picco: ciclo 1 sec. ON & 3 sec OFF



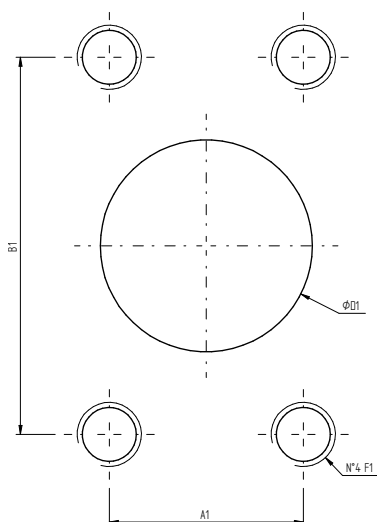
GR55 - TYPE / TIPO FSAEB AT15

| Type Tipo | CC | Flow Portata | | Dimensions A Dimensioni A | | Dimensions B Dimensioni B | | Dimensions C Dimensioni C | | | | Continuous Pressure Pressione continua | | Intermittent Pressure Pressione intermittente (*) | | Peak pressure Picco pres- sione (*) | | Noise level Livello rumore dB | Max torque Coppia max Nm |
|--------------|------|-----------------|--------|------------------------------|-------|------------------------------|-------|------------------------------|-------|-------|-------|---|------|---|------|---|------|--|--------------------------------------|
| | | L/ min | GPM | mm | inc | mm | inc | O | | OE | | bar | PSI | bar | PSI | bar | PSI | | |
| | | | | | | | | mm | inc | mm | inc | | | | | | | | |
| 50 | 50,5 | 72,7 | 19,205 | 157 | 6,181 | 70,5 | 2,776 | 70,5 | 2,776 | 70,5 | 2,776 | 275 | 3989 | 280 | 4061 | 300 | 4351 | 57 | 700 |
| 63 | 63,5 | 91,4 | 24,145 | 166 | 6,535 | 75 | 2,953 | 75 | 2,953 | 78,5 | 3,091 | 249 | 3611 | 260 | 3771 | 280 | 4061 | | |
| 75 | 75 | 108,1 | 28,557 | 174 | 6,85 | 79 | 3,11 | 79 | 3,11 | 82,50 | 3,248 | 229 | 3321 | 250 | 3626 | 270 | 3916 | | |
| 90 | 90,2 | 130,9 | 34,580 | 185 | 7,283 | 84,5 | 3,327 | 84,5 | 3,327 | 88 | 3,465 | 178 | 2582 | 240 | 3481 | 260 | 3771 | | |

Max torque / Coppia max: 550 Nm

* Intermittent: cycle 20 sec. ON & 3 sec. OFF - Peak: cycle 1 sec. ON & 3 sec OFF. Intermittente: ciclo 20 sec. ON & 3 sec. OFF - Picco: ciclo 1 sec. ON & 3 sec OFF

GR55 INLET OUTLET PORTS / PORTE DI ASPIRAZIONE E MANDATA - Type / Tipo O - OE



| INLET | | | |
|-----------|-----------------|----------------------------------|--------------------|
| Type port | "O" | "OE" | |
| Size port | SAE-3000 1" 1/4 | SAE-3000 1" 1/4 only for 50cc | SAE-3000 1" 1/2 |
| A1 | 30,20 | 30,20 | 35,70 |
| B1 | 58,70 | 58,70 | 69,85 |
| ØD1 | 33,00 | 33,00 | 38,00 |
| F1 | M10x20 | M10x18 | M12x18 |

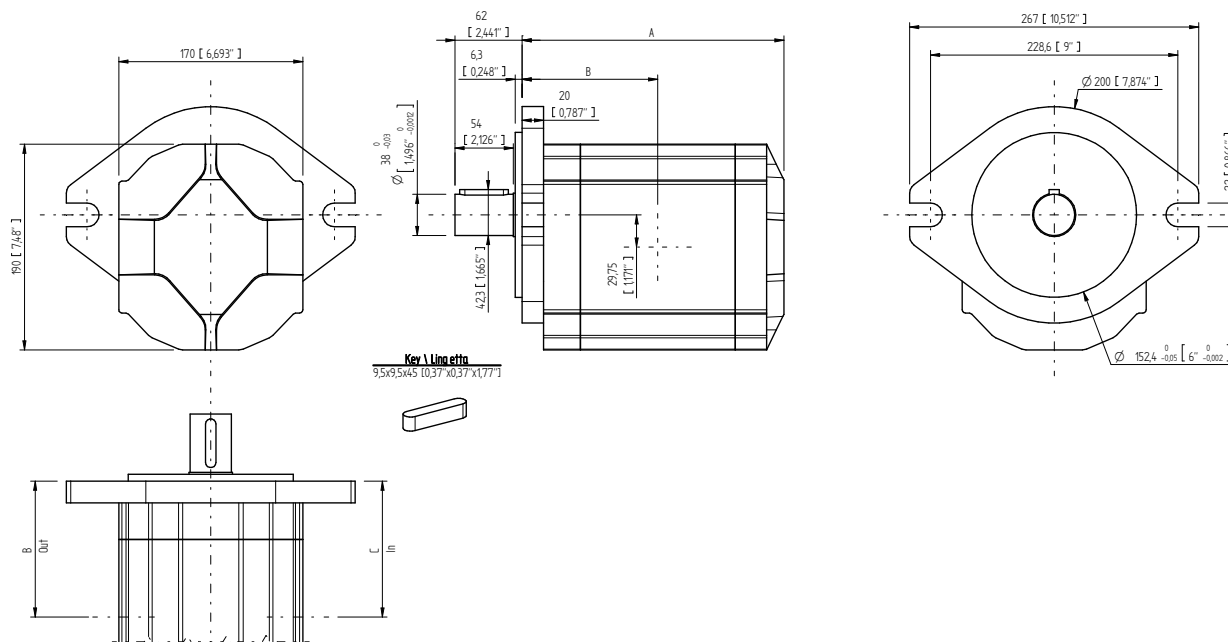
| OUTLET | | |
|-----------|---------------|-------------|
| Type port | "O" | "OE" |
| Size port | SAE-3000 3/4" | SAE-3000 1" |
| A2 | 22,20 | 26,20 |
| B2 | 47,60 | 52,40 |
| ØD2 | 19,00 | 25,00 |
| F2 | M10X18 | M10X18 |

GR72 - Dimensional drawings / Disegni dimensionali

GR72 SHAFT AND FLANGE TYPES AND DIMENSIONS / TIPI DI ALBERO E FLANGIA E DIMENSIONI

Group 4 pumps / Pompe gruppo 4

| Type | Class | Flange & Shaft available types | Ports | Weight |
|------|-------|--------------------------------|-------|--------|
| GR72 | 2V | FSAED AC | ME | 30 Kg |
| | | FSAED AT23 | | |

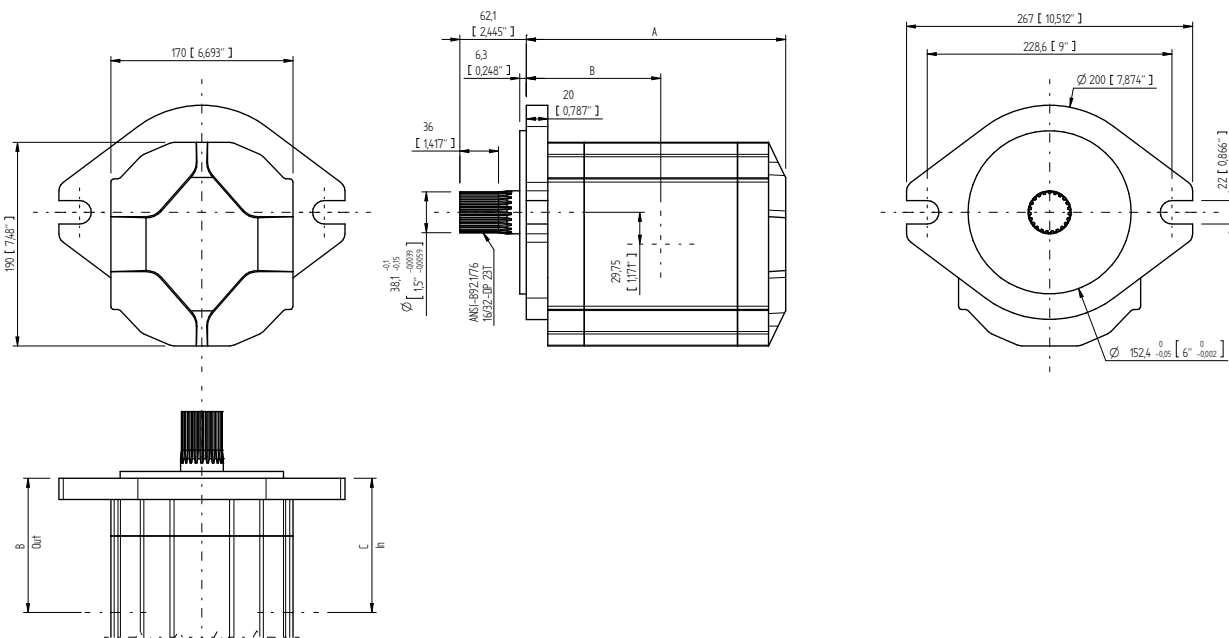


GR72 - TYPE / TIPO FSAED AC

| Type Tipo | CC | Flow Portata | | Dimensions A Dimensioni A | | Dimensions B Dimensioni B | | Dimensions C Dimensioni C | | Continuous Pressure Pressione con- tinua | | Intermittent Pressure Pressione intermittente (*) | | Peak pressure Picco pressione (*) | | Noise level Liv- ello ru- more dB | Max torque Coppia max Nm |
|--------------|-------|-----------------|--------|------------------------------|--------|------------------------------|-------|------------------------------|-------|---|------|--|------|---|------|---|--------------------------------------|
| | | L/min | GPM | mm | inc | mm | inc | mm | inc | bar | PSI | bar | PSI | bar | PSI | | |
| 94 | 94,1 | 136 | 35,927 | 245 | 9,646 | 125,5 | 4,941 | 128,5 | 4,941 | 240 | 3481 | 250 | 3626 | 260 | 3771 | 57 | 1000 |
| 101 | 101,4 | 147 | 38,833 | 248 | 9,764 | 127 | 5 | 134 | 5,276 | 230 | 3336 | 240 | 3481 | 250 | 3626 | | |
| 125 | 125,5 | 181 | 47,815 | 258 | 10,157 | 132 | 5,197 | 145 | 5,709 | 220 | 3191 | 220 | 3191 | 230 | 3336 | | |
| 150 | 150,9 | 218 | 57,589 | 268,5 | 10,571 | 137,25 | 5,404 | 150,25 | 5,915 | 200 | 2901 | 210 | 3046 | 220 | 3191 | | |
| 175 | 175 | 253 | 66,836 | 278,5 | 10,965 | 142,25 | 5,6 | 155,25 | 6,112 | 180 | 2611 | 190 | 2756 | 200 | 2901 | | |
| 200 | 200,4 | 290 | 76,610 | 289 | 11,378 | 147,5 | 5,807 | 160,5 | 6,319 | 160 | 2321 | 170 | 2466 | 180 | 2611 | | |

Max torque / Coppia max: 1000 Nm

* Intermittent: cycle 20 sec. ON & 3 sec. OFF - Peak: cycle 1 sec. ON & 3 sec OFF. Intermittente: ciclo 20 sec. ON & 3 sec. OFF - Picco: ciclo 1 sec. ON & 3 sec OFF



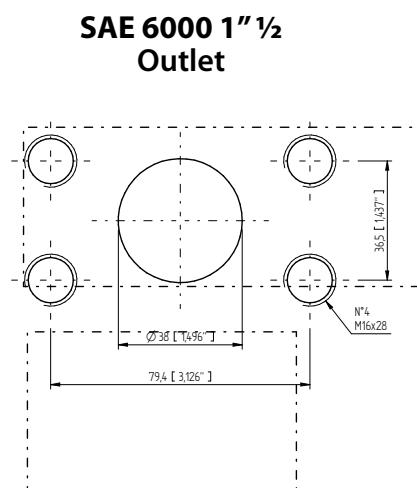
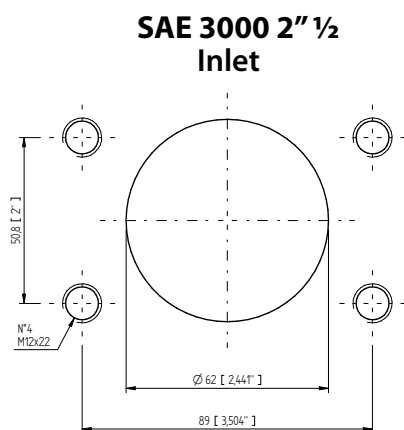
GR72 - TYPE / TIPO FSAED AT23

| Type Tipo | CC | Flow Portata | | Dimensions A Dimensioni A | | Dimensions B Dimensioni B | | Dimensions C Dimensioni C | | Continuous Pressure Pressione con- tinua | | Intermittent Pressure Pressione intermittente (*) | | Peak pressure Picco pressione (*) | | Noise level Livello ru- more dB | Max torque Coppia max Nm |
|--------------|-------|-----------------|--------|------------------------------|--------|------------------------------|-------|------------------------------|-------|---|------|--|------|---|------|--|--------------------------------------|
| | | L/min | GPM | mm | inc | mm | inc | mm | inc | bar | PSI | bar | PSI | bar | PSI | | |
| 94 | 94,1 | 136 | 35,927 | 245 | 9,646 | 125,5 | 4,941 | 128,5 | 4,941 | 240 | 3481 | 250 | 3626 | 260 | 3771 | 57 | 1200 |
| 101 | 101,4 | 147 | 38,833 | 248 | 9,764 | 127 | 5 | 134 | 5,276 | 230 | 3336 | 240 | 3481 | 250 | 3626 | | |
| 125 | 125,5 | 181 | 47,815 | 258 | 10,157 | 132 | 5,197 | 145 | 5,709 | 220 | 3191 | 220 | 3191 | 230 | 3336 | | |
| 150 | 150,9 | 218 | 57,589 | 268,5 | 10,571 | 137,25 | 5,404 | 150,25 | 5,915 | 200 | 2901 | 210 | 3046 | 220 | 3191 | | |
| 175 | 175 | 253 | 66,836 | 278,5 | 10,965 | 142,25 | 5,6 | 155,25 | 6,112 | 180 | 2611 | 190 | 2756 | 200 | 2901 | | |
| 200 | 200,4 | 290 | 76,610 | 289 | 11,378 | 147,5 | 5,807 | 160,5 | 6,319 | 160 | 2321 | 170 | 2466 | 180 | 2611 | | |

Max torque / Coppia max: 1200 Nm

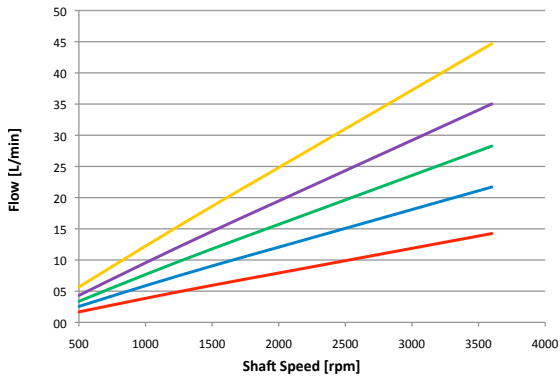
* Intermittent: cycle 20 sec. ON & 3 sec. OFF - Peak: cycle 1 sec. ON & 3 sec OFF. Intermittente: ciclo 20 sec. ON & 3 sec. OFF - Picco: ciclo 1 sec. ON & 3 sec OFF

GR72 INLET OUTLET PORTS / PORTE DI ASPIRAZIONE E MANDATA - Type ME / Tipo ME

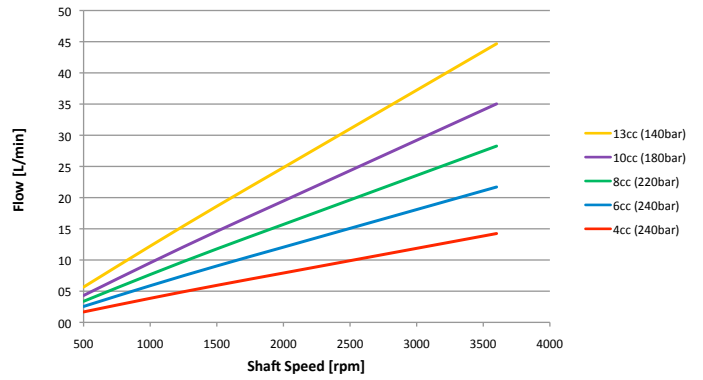


Flow performances @ 46 cSt

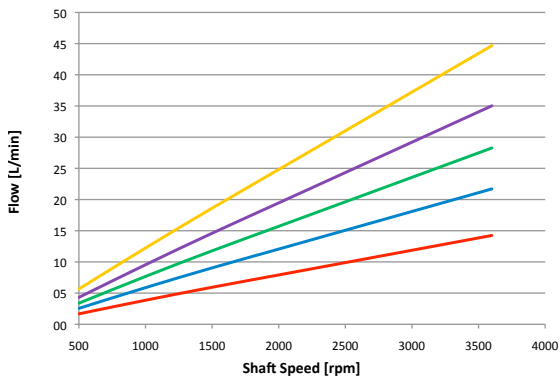
GR28 1-C3 / 1L-GL54 / 1L-G54



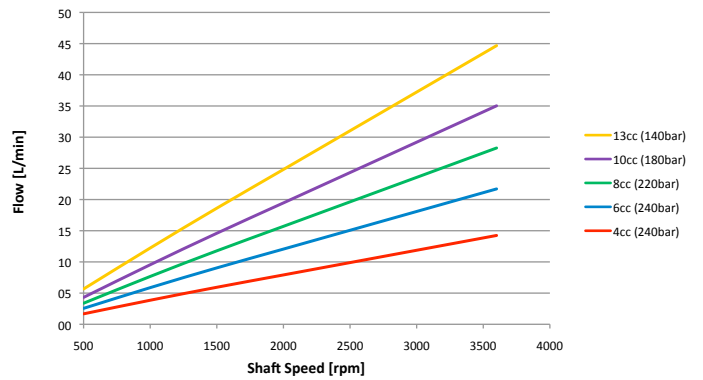
GR28 1P-C2



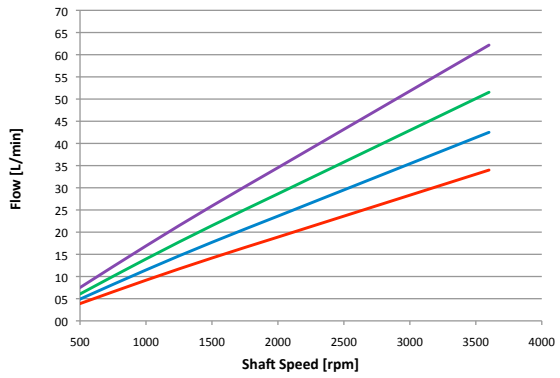
GR28 1K-G54 / 1K-GL54



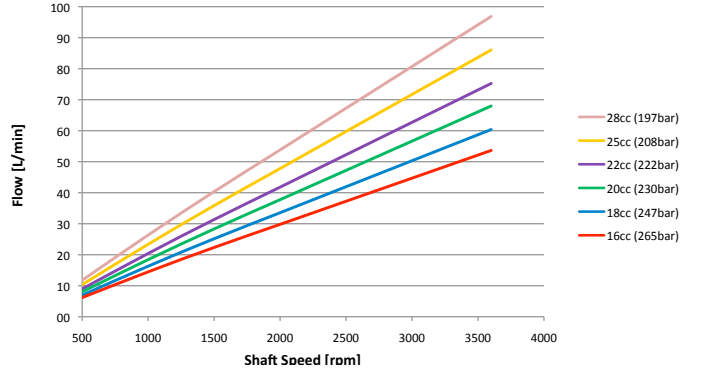
GR28 SAEA-AC



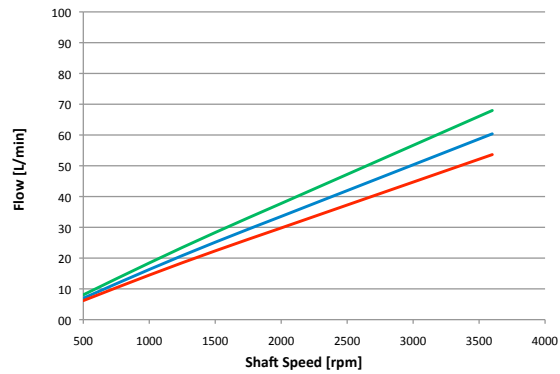
GR33



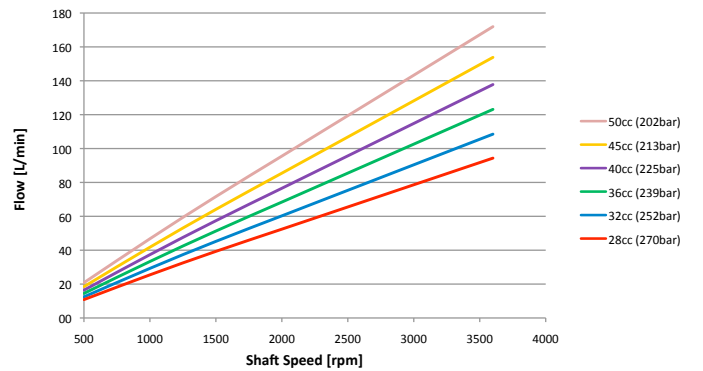
GR38



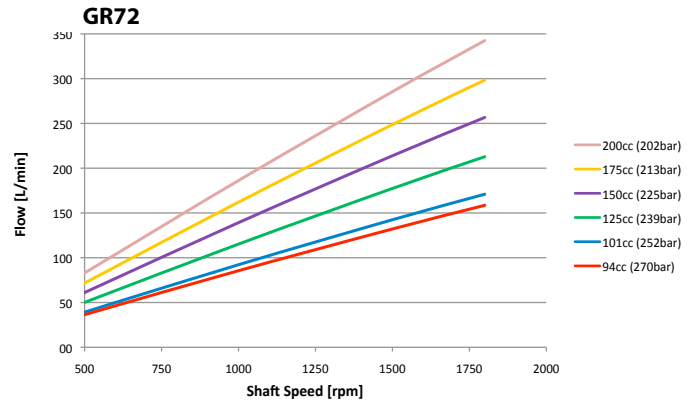
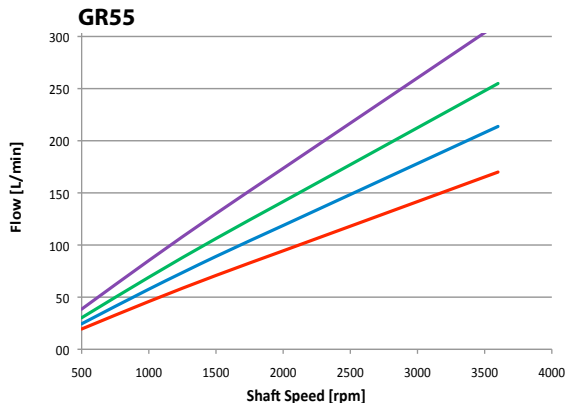
GR38 SAEA-T9



GR47

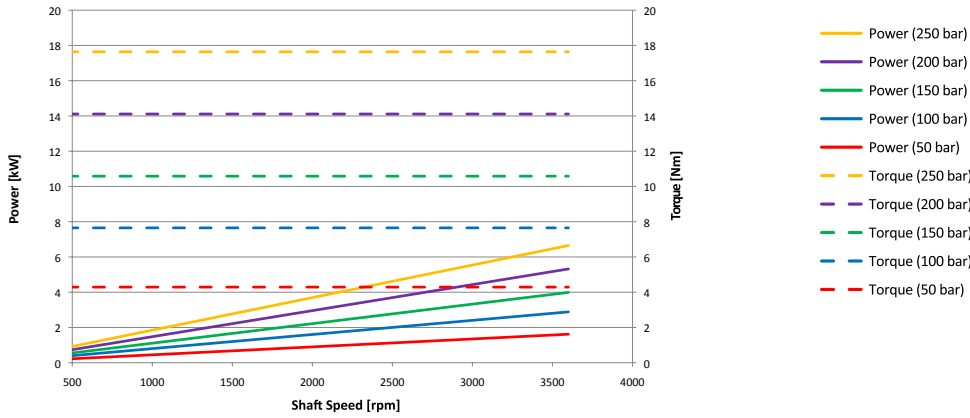


Flow performances @ 46 cSt

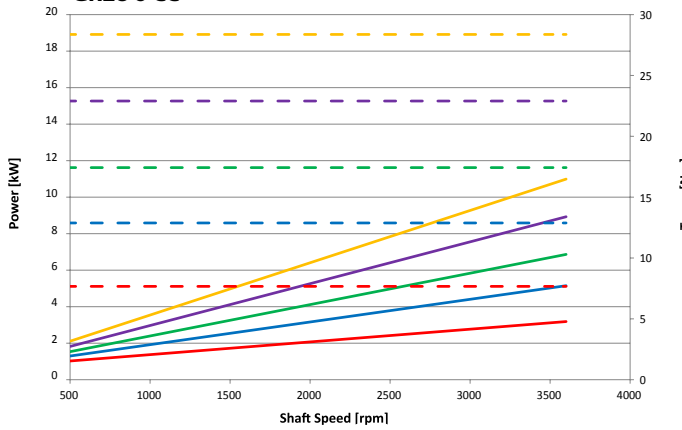


Power-torque performances @ 46 cSt

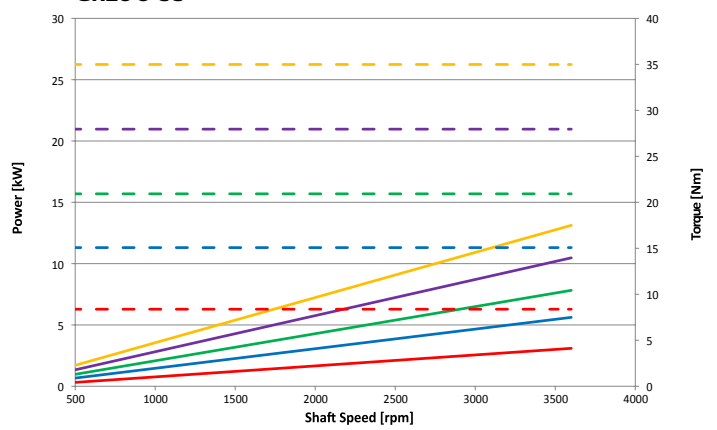
GR28 4 CC



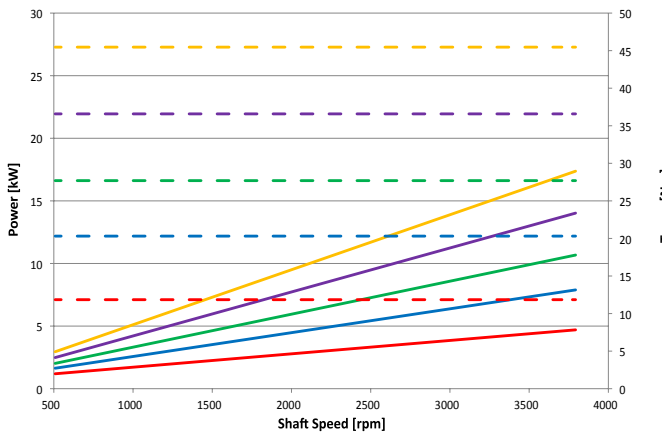
GR28 6 CC



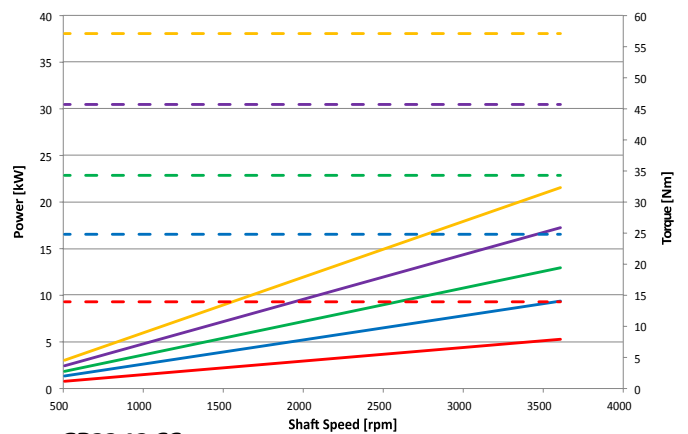
GR28 8 CC



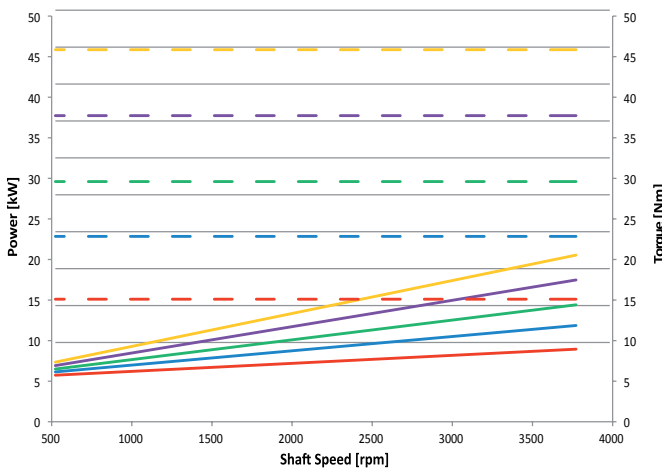
GR28 10 CC



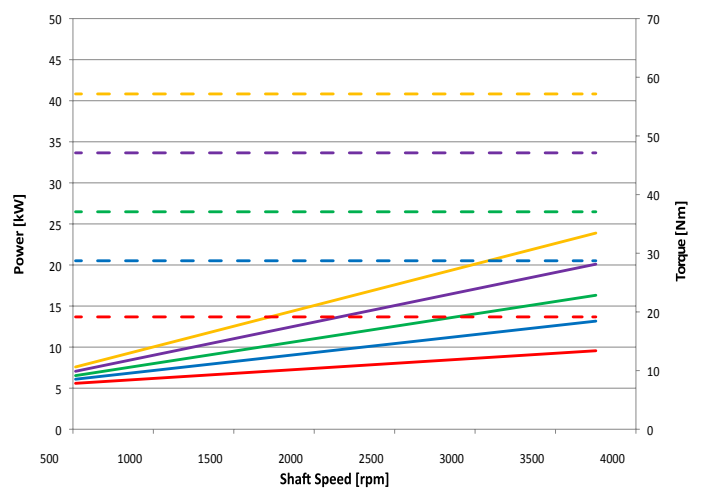
GR28 13 CC



GR33 10 CC

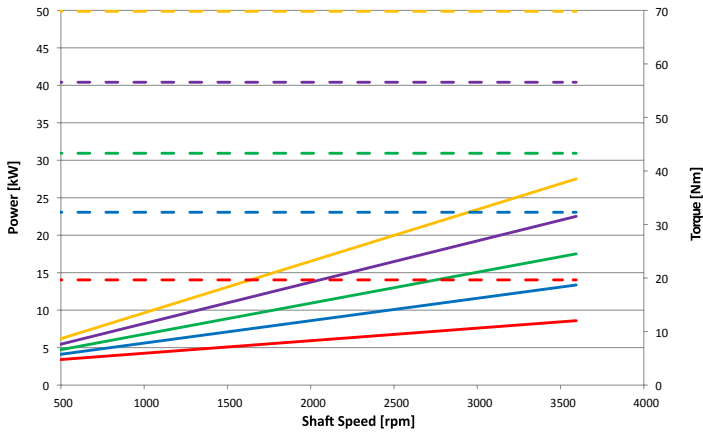


GR33 13 CC

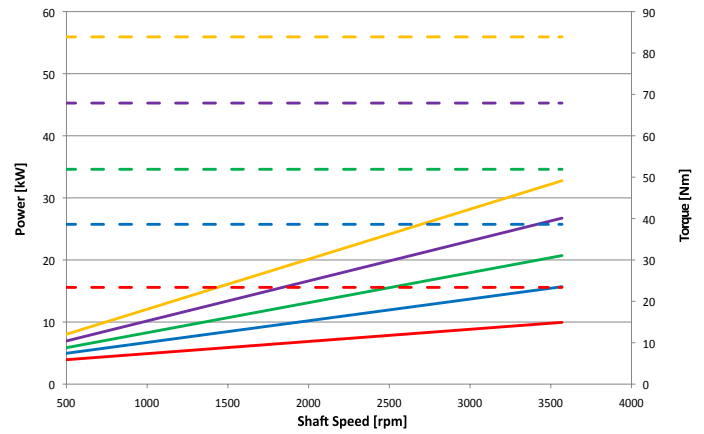


Power-torque performances @ 46 cSt

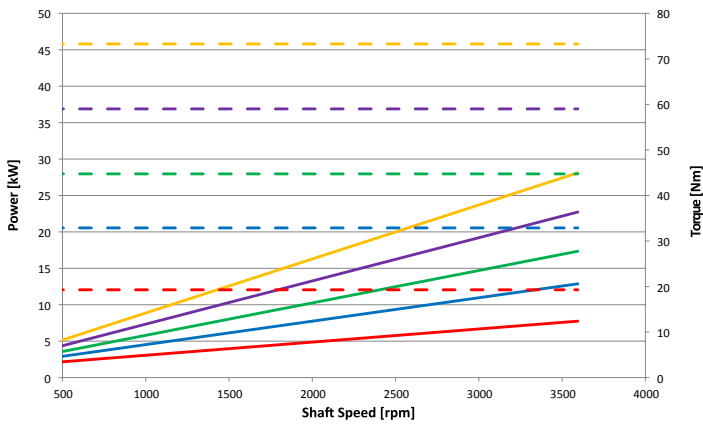
GR33 15 CC



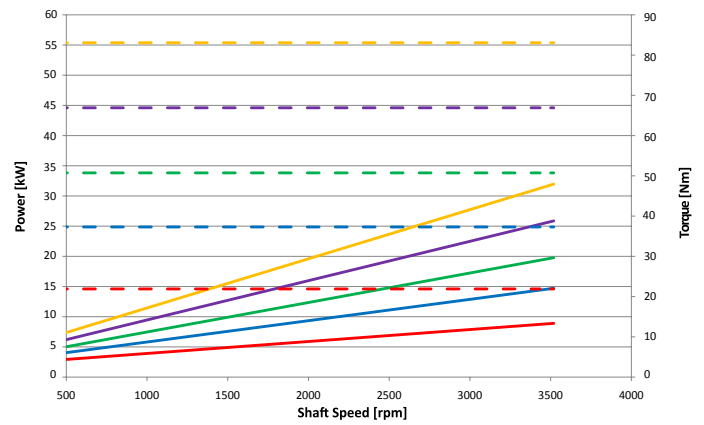
GR33 18 CC



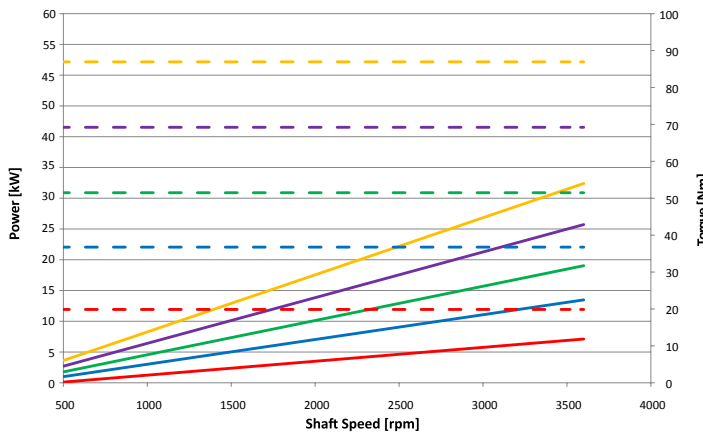
GR38 16 CC



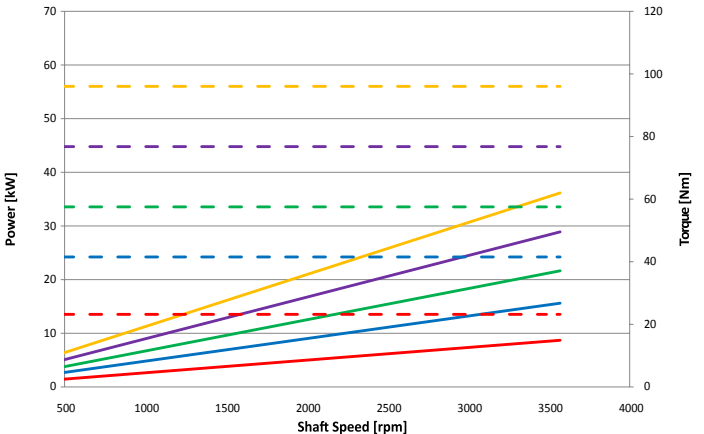
GR38 18 CC



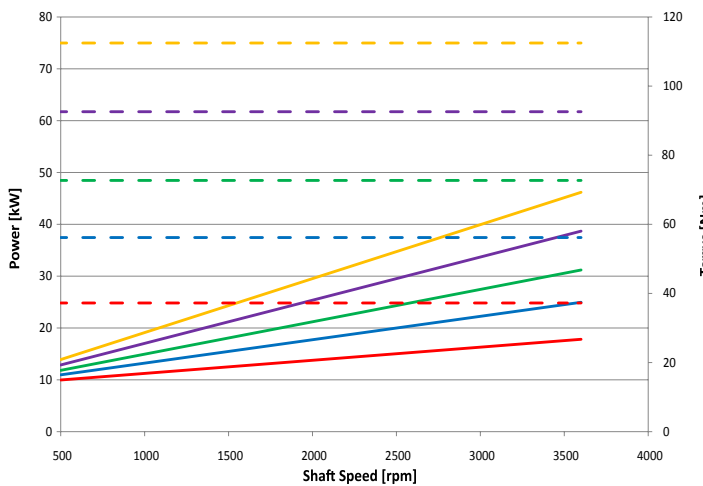
GR38 20 CC



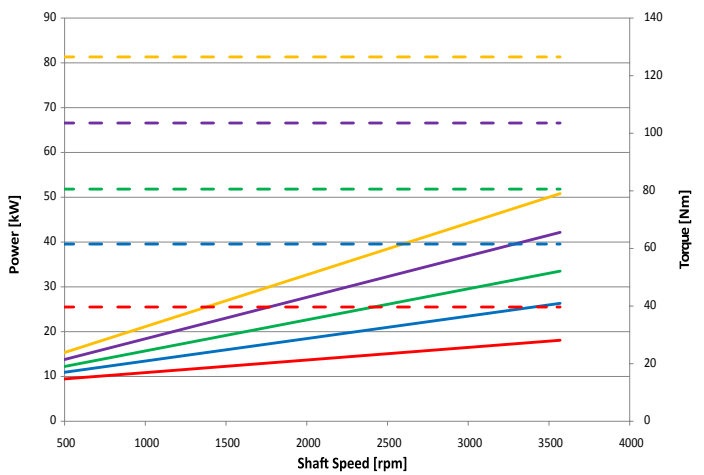
GR38 22 CC



GR38 25 CC

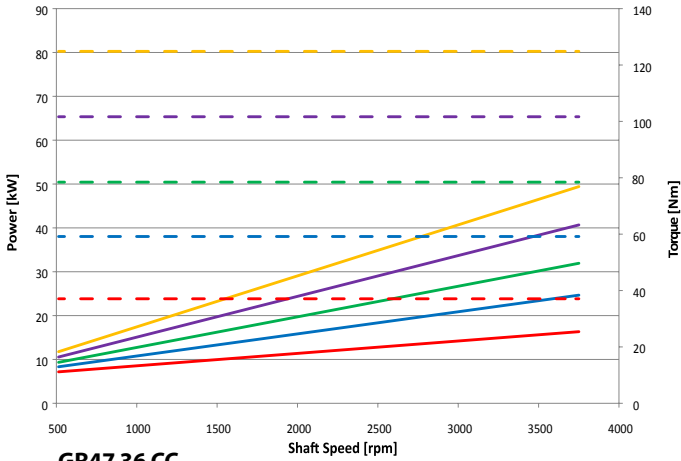


GR38 28 CC

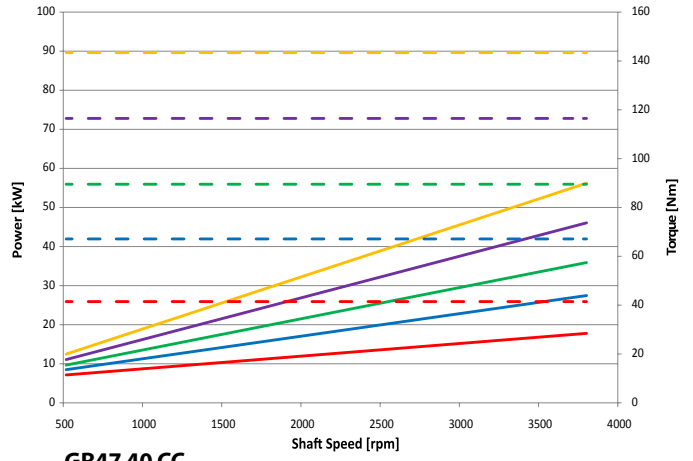


Power-torque performances @ 46 cSt

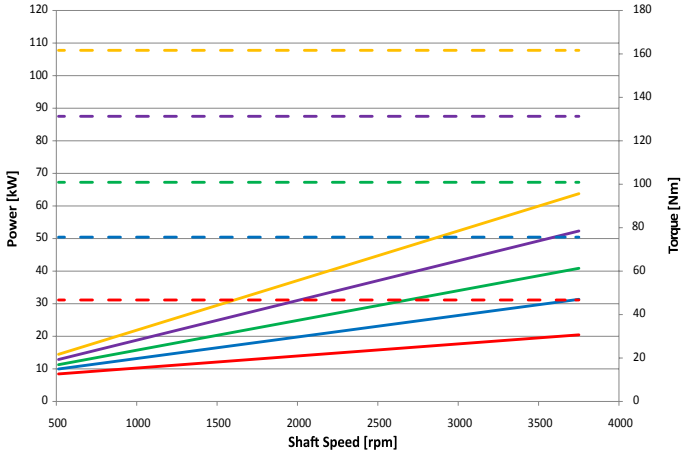
GR47 28 CC



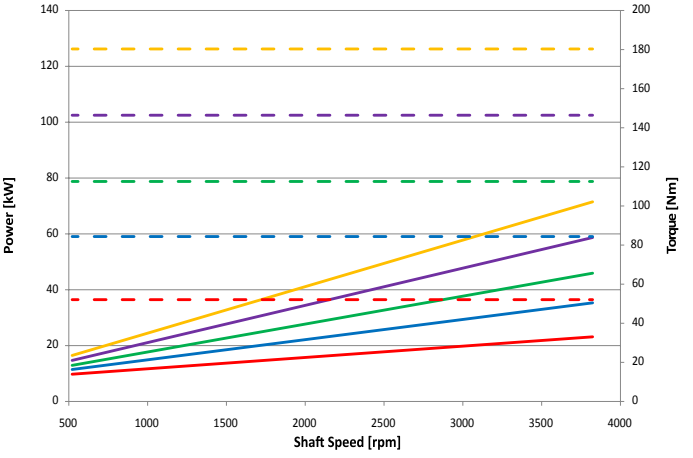
GR47 32 CC



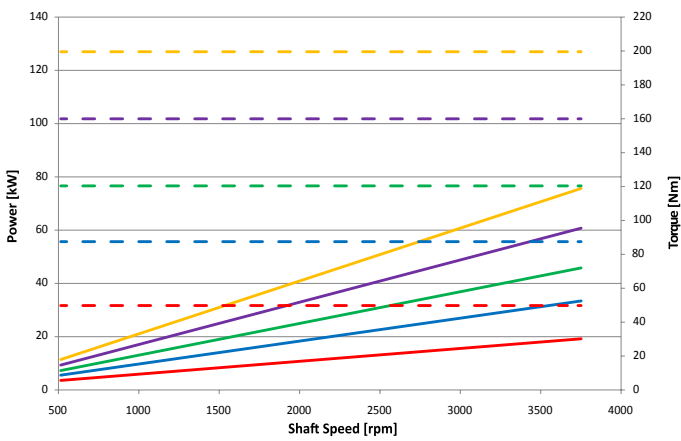
GR47 36 CC



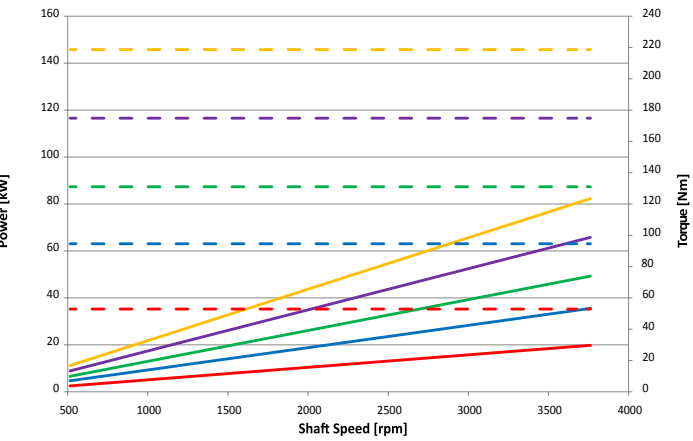
GR47 40 CC



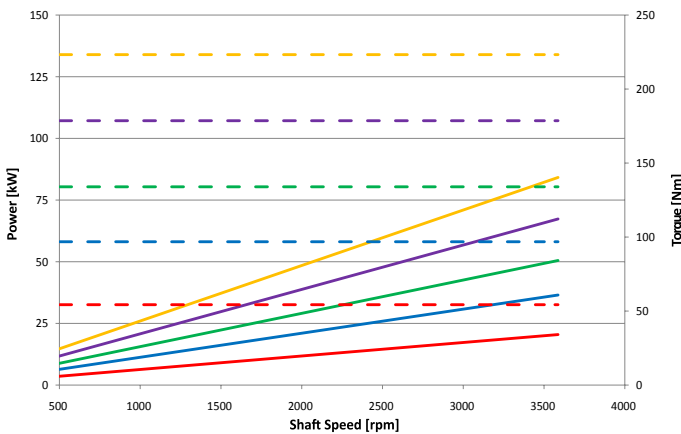
GR47 45 CC



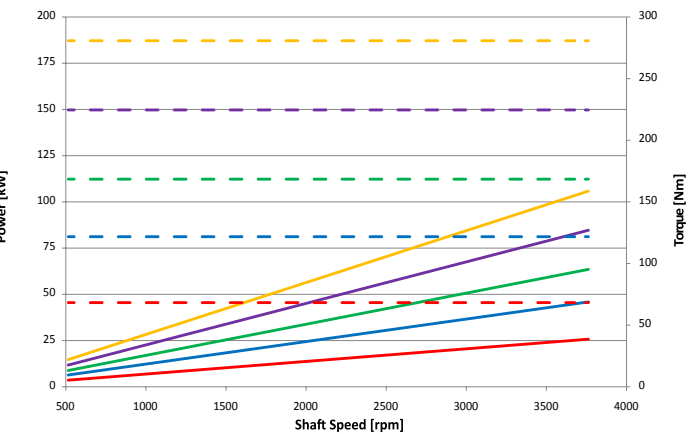
GR47 50 CC



GR55 50 CC

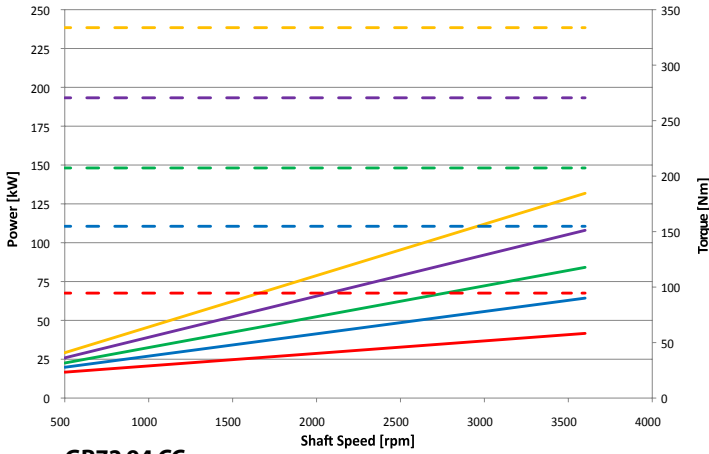


GR55 63 CC

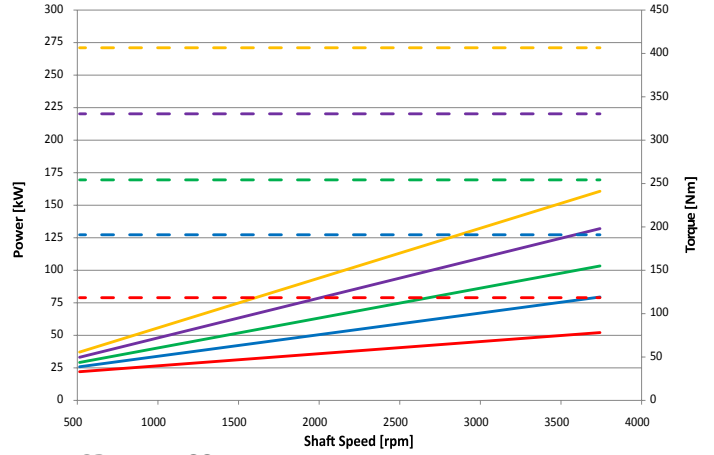


Power-torque performances @ 46 cSt

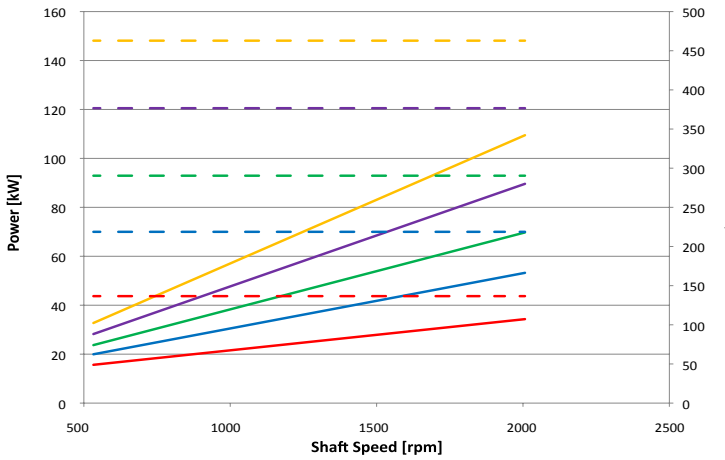
GR55 75



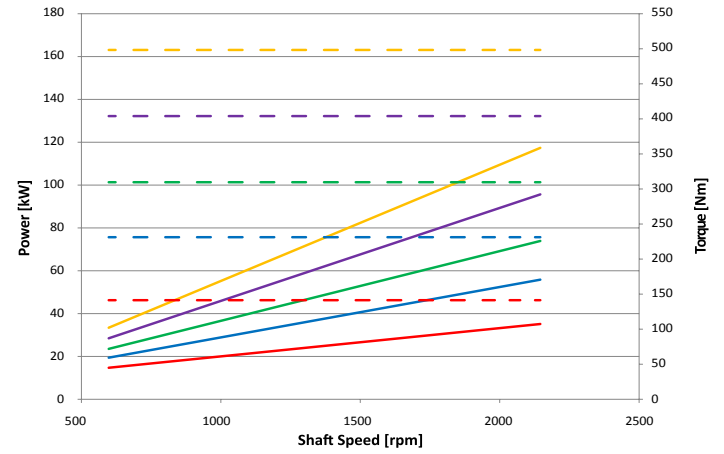
GR55 90 CC



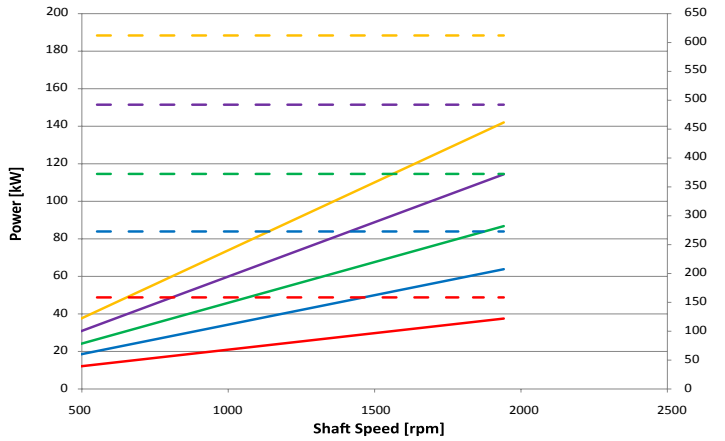
GR72 94 CC



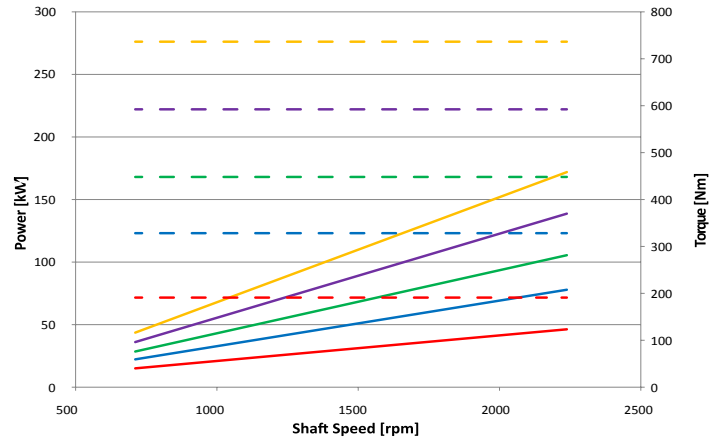
GR72 101 CC



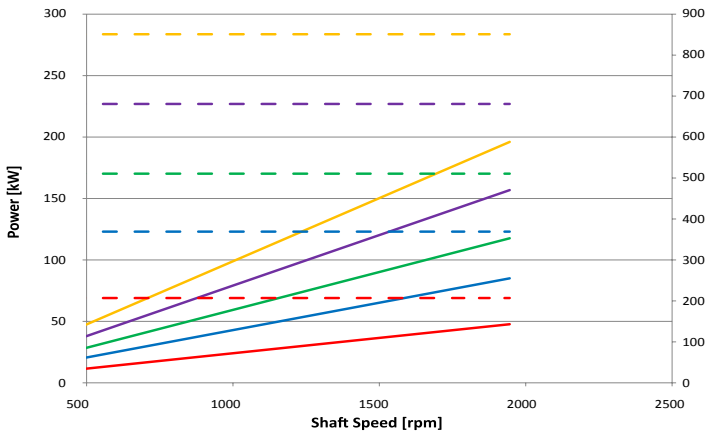
GR72 125 CC



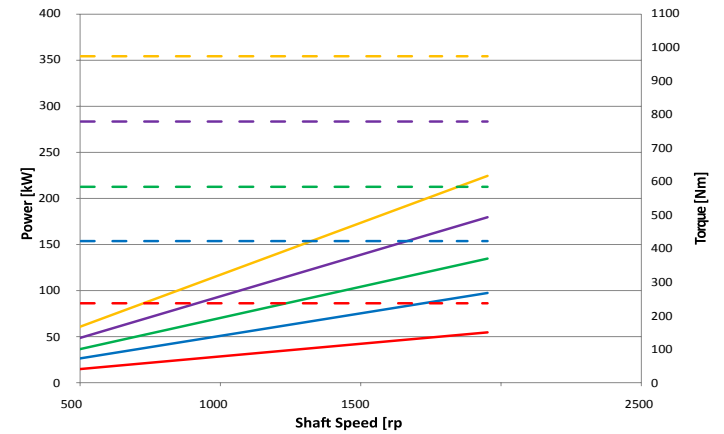
GR72 150 CC



GR72 175 CC



GR72 200 CC





Tandem & multiple pumps / Pompe doppie e multiple

Continuum[®] pumps are suitable for multiple setups, whereby the drive shaft of the first pump is extended to a second and even a third **Continuum**[®] pump. Each pump is connected to another by means of coupling. Each pump has its own suction port. Basically the technical specifications of single pumps apply also to multiple setups**. The maximum speed is determined by the highest pump speed rate in use. In case of multiple setup configurations, it is recommended to use the largest displacement for the first pump. The front pump may be equipped with different types of flange and shaft.

Ordering code / Codice ordine

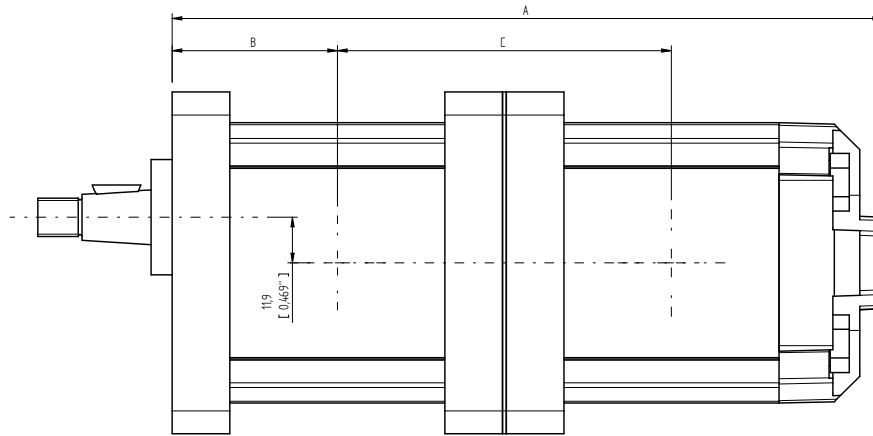
Multiple setups / Pompe multiple

| Type Tipo | Class Classe | Displacement Cilindrata | Flange & shaft Flangia & albero | Ports Porte | Type ^{2nd} stage Tipo 2° stadio | Displacement ^{2nd} stage Cilindrata 2° stadio | Ports Porte | Shaft seal Guarnizione albero | Rotation Rotazione |
|--------------|-----------------|---------------------------------|------------------------------------|----------------|---|---|----------------|---|---|
| DG28 | 2V | 004-006-008-010-013 | F1AC3 | G-U | GR28 | 004-006-008-010-013 | G-U | Standard NBR (none) Optional FKM V | Standard DX (none)  Optional SX*  |
| DG33 | 2C | 010-013-015-018 | F2AC4 | G-Q- U-M | GR28 | | G-U | | |
| | | | | | GR33 | 010-013-015-018 | G-Q-U | | |
| | | | | | GR38 | 016-018-020-022-025-028 | G-Q-U | | |
| DG38 | 2C | 016-018-020- 022-025-028 | F2AC4 | G-Q- U-M | GR28 | 004-006-008-010-013 | G-U | | |
| | | | | | GR33 | 010-013-015-018 | G-Q-U | | |
| | | | | | GR38 | 016-018-020-022-025-028 | G-Q-U | | |
| DG47 | 2C | 028-032-036- 040-045-050 | F3AC9 FSAEBAT13 | G-O- U | GR28 | 004-006-008-010-013 | G-U | | |
| | | | | | GR33 | 010-013-015-018 | G-Q-U | | |
| | | | | | GR38 | 016-018-020-022-025-028 | G-Q-U | | |
| | | | | | GR47 | 028-032-036-040-045-050 | O-U | | |
| DG55 | 2C | 050-063-075-090 | FSAEBAT15 | O-OE | GR28 | 004-006-008-010-013 | G-U | | |
| | | | | | GR33 | 010-013-015-018 | G-Q-U | | |
| | | | | | GR38 | 016-018-020-022-025-028 | G-Q-U | | |
| | | | | | GR47 | 028-032-036-040-045-050 | O-U | | |
| | | | | | GR55 | 050-063-075-090 | O-OE | | |
| DG72 | 2V | 094-101-125- 150-175-200-225 | FSAEDAT23 | ME | GR47 | 028-032-036-040-045-050 | O-U | | |
| | | | | | GR55 | 050-063-075-090 | O-OE | | |
| | | | | | GR72 | 094-101-125-150-175-200 | ME | | |

* Please contact Settima for SX counter clockwise optional rotation. *Contattare Settima per rotazione SX opzionale.*

** The minimum operating pressure recommended for the second stage is 30 bar. In case of lower pressure, please, contact Settima. *Minima pressione di funzionamento consigliata per il secondo stadio 30 bar, al di sotto, contattare Settima.*

GR28 - Group 1 tandem pumps*

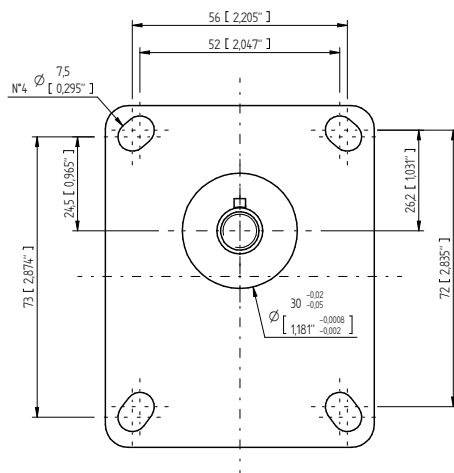


| GR28 + GR28 | | | GR28 - 2° | | | | | | | | | |
|-------------|----|-------|-----------|--------|-------|--------|-------|--------|-------|-------|--------|------|
| | | | 4 | | 6 | | 8 | | 10 | | 13 | |
| | | | mm | inc | mm | inc | mm | inc | mm | inc | mm | inc |
| GR28 - 1° | 4 | A | 191 | 7,52 | 196,5 | 7,73 | 201,5 | 7,93 | 206,5 | 8,13 | 213,4 | 8,40 |
| | | B | 44,5 | 1,75 | 44,5 | 1,75 | 44,5 | 1,75 | 44,5 | 1,75 | 44,5 | 1,75 |
| | | C | 90 | 3,54 | 92,75 | 3,65 | 95,25 | 3,75 | 97,75 | 3,85 | 101,2 | 3,98 |
| | 6 | A | 196,5 | 7,74 | 202 | 7,95 | 207 | 8,15 | 212 | 8,35 | 218,9 | 8,62 |
| | | B | 47,25 | 1,86 | 47,25 | 1,86 | 47,25 | 1,86 | 47,25 | 1,86 | 47,25 | 1,86 |
| | | C | 92,75 | 3,65 | 95,5 | 3,76 | 98 | 3,86 | 100,5 | 3,96 | 103,95 | 4,09 |
| | 8 | A | 201,5 | 7,93 | 207 | 8,15 | 212 | 8,35 | 217 | 8,54 | 223,9 | 8,81 |
| | | B | 49,75 | 1,96 | 49,75 | 1,96 | 49,75 | 1,96 | 49,75 | 1,96 | 49,75 | 1,96 |
| | | C | 95,25 | 3,75 | 98 | 3,86 | 100,5 | 3,96 | 103 | 4,06 | 106,45 | 4,19 |
| | 10 | A | 206,5 | 8,13 | 212 | 8,35 | 217 | 8,54 | 222 | 8,74 | 228,9 | 9,01 |
| | | B | 52,25 | 2,06 | 52,25 | 2,06 | 52,25 | 2,06 | 52,25 | 2,06 | 52,25 | 2,06 |
| | | C | 97,75 | 3,85 | 100,5 | 3,96 | 103 | 4,06 | 105,5 | 4,15 | 108,95 | 4,29 |
| 13 | A | 213,4 | 8,40 | 218,9 | 8,62 | 223,9 | 8,81 | 228,9 | 9,01 | 235,8 | 9,28 | |
| | B | 55,7 | 2,19 | 55,7 | 2,19 | 55,7 | 2,19 | 55,7 | 2,19 | 55,7 | 2,19 | |
| | C | 101,2 | 3,98 | 103,95 | 4,09 | 106,45 | 4,19 | 108,95 | 4,29 | 112,4 | 4,43 | |

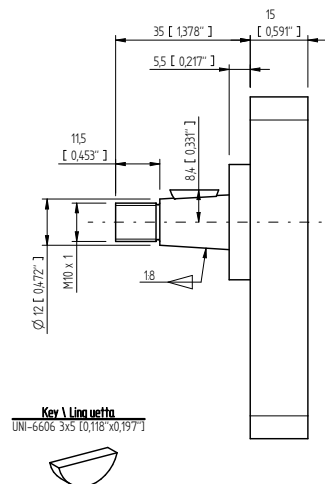
Available flanges and shafts for GR28

Flange e alberi disponibili per GR28

Type flange 1C3 / Flangia tipo 1 C3

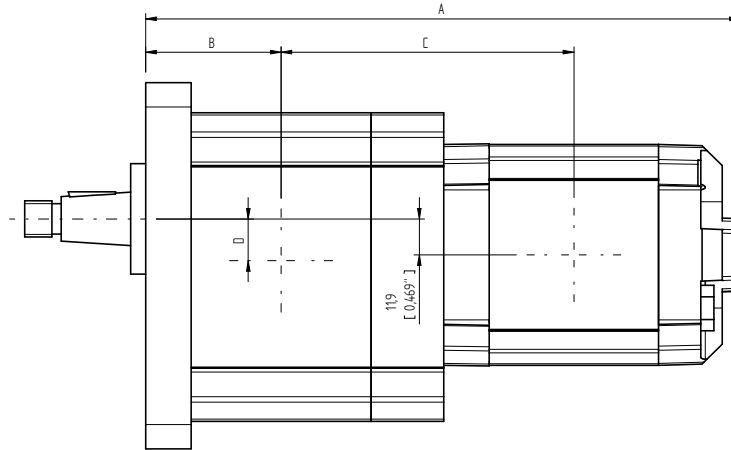


Type shaft 1C3 / Albero tipo 1 C3
Max torque / Coppia max 100 Nm



* Standard multiple pumps are delivered with both stages in fluid communication. When placing an order, it is necessary to specify if the two stages will handle different kinds of fluids or fluids coming from more than one reservoir. / Le pompe multiple sono consegnate con entrambi gli stadi in comunicazione di fluido. In fase di ordine, occorre specificare se la pompa multipla utilizza oli differenti sui diversi stadi o provenienti da più di un serbatoio.

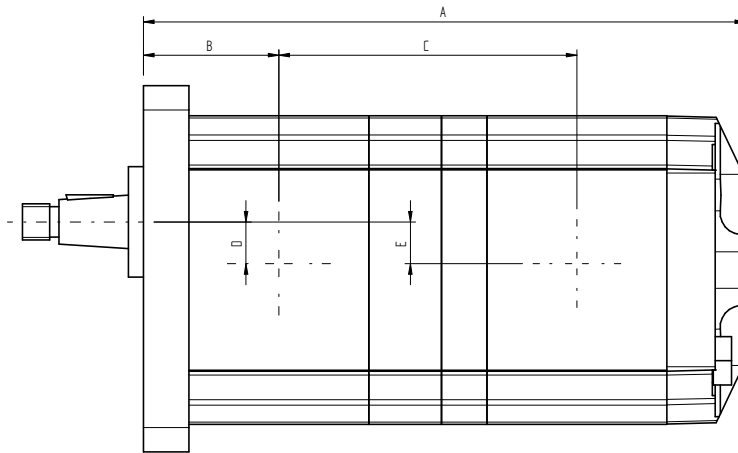
GR33 - Groups 2 tandem pumps*



| GR33 + GR28 | | | GR28 - 2° | | | | | | | | | |
|-------------|----|---|-----------|------|--------|------|--------|------|--------|------|--------|-------|
| | | | 4 | | 6 | | 8 | | 10 | | 13 | |
| | | | mm | inc | mm | inc | mm | inc | mm | inc | mm | inc |
| GR33 - 1° | 10 | A | 217,5 | 8,56 | 223 | 8,78 | 228 | 8,98 | 233 | 9,17 | 239,9 | 9,44 |
| | | B | 53,75 | 2,12 | 53,75 | 2,12 | 53,75 | 2,12 | 53,75 | 2,12 | 53,75 | 2,12 |
| | | C | 107,25 | 4,22 | 110 | 4,33 | 112,5 | 4,43 | 115 | 4,53 | 118,45 | 4,67 |
| | | D | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 |
| | 13 | A | 222,4 | 8,76 | 227,9 | 8,97 | 232,9 | 9,17 | 237,9 | 9,37 | 244,8 | 9,64 |
| | | B | 56,2 | 2,21 | 56,2 | 2,21 | 56,2 | 2,21 | 56,2 | 2,21 | 56,2 | 2,21 |
| | | C | 109,7 | 4,32 | 112,45 | 4,43 | 114,95 | 4,53 | 117,45 | 4,62 | 120,9 | 4,76 |
| | | D | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 |
| | 15 | A | 227,4 | 8,95 | 232,9 | 9,17 | 237,9 | 9,37 | 242,9 | 9,56 | 249,8 | 9,83 |
| | | B | 58,7 | 2,31 | 58,7 | 2,31 | 58,7 | 2,31 | 58,7 | 2,31 | 58,7 | 2,31 |
| | | C | 112,2 | 4,42 | 114,95 | 4,53 | 117,45 | 4,63 | 119,95 | 4,72 | 123,4 | 4,86 |
| | | D | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 |
| | 18 | A | 233,2 | 9,18 | 238,7 | 9,40 | 243,7 | 9,59 | 248,7 | 9,79 | 255,6 | 10,06 |
| | | B | 61,6 | 2,43 | 61,6 | 2,43 | 61,6 | 2,43 | 61,6 | 2,43 | 61,6 | 2,43 |
| | | C | 115,1 | 4,53 | 117,85 | 4,64 | 120,35 | 4,74 | 122,85 | 4,84 | 126,3 | 4,97 |
| | | D | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 |

* Standard multiple pumps are delivered with both stages in fluid communication. When placing an order, it is necessary to specify if the two stages will handle different kinds of fluids or fluids coming from more than one reservoir. / Le pompe multiple sono consegnate con entrambi gli stadi in comunicazione di fluido. In fase di ordine, occorre specificare se la pompa multipla utilizza oli differenti sui diversi stadi o provenienti da più di un serbatoio.

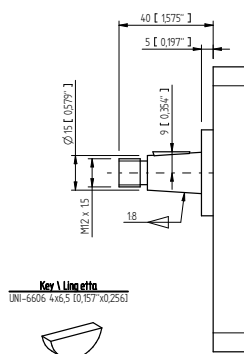
GR33 - Groups 2 tandem pumps*



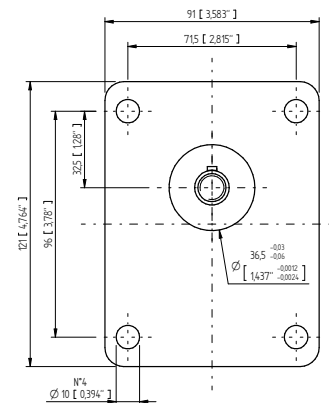
| GR33 + GR33 | | GR33 - 2° | | | | | | | | |
|-------------|----|-----------|--------|------|--------|------|--------|------|--------|------|
| | | 10 | | 13 | | 15 | | 18 | | |
| | | mm | inc | mm | inc | mm | inc | mm | inc | |
| GR33 - 1° | 10 | A | 218 | 8,58 | 222,9 | 8,78 | 227,9 | 8,97 | 233,7 | 9,20 |
| | | B | 53,75 | 2,11 | 53,75 | 2,12 | 53,75 | 2,12 | 53,75 | 2,12 |
| | | C | 106,5 | 4,19 | 108,95 | 4,29 | 111,45 | 4,39 | 114,35 | 4,50 |
| | | D | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 |
| | | E | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 |
| | 13 | A | 222,9 | 8,78 | 227,8 | 8,97 | 232,8 | 9,17 | 238,6 | 9,39 |
| | | B | 56,2 | 2,21 | 56,2 | 2,21 | 56,2 | 2,21 | 56,2 | 2,21 |
| | | C | 108,95 | 4,29 | 111,4 | 4,39 | 113,9 | 4,48 | 116,8 | 4,60 |
| | | D | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 |
| | | E | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 |
| | 15 | A | 227,9 | 8,97 | 232,8 | 9,17 | 237,8 | 9,36 | 243,6 | 9,59 |
| | | B | 58,7 | 2,31 | 58,7 | 2,31 | 58,7 | 2,31 | 58,7 | 2,31 |
| | | C | 111,45 | 4,39 | 113,9 | 4,48 | 116,4 | 4,58 | 119,3 | 4,70 |
| | | D | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 |
| | | E | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 |
| | 18 | A | 233,7 | 9,20 | 238,6 | 9,39 | 243,6 | 9,59 | 249,4 | 9,82 |
| | | B | 61,6 | 2,43 | 61,6 | 2,43 | 61,6 | 2,43 | 61,6 | 2,43 |
| | | C | 114,35 | 4,50 | 116,8 | 4,60 | 119,3 | 4,70 | 122,2 | 4,81 |
| | | D | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 |
| | | E | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 |

Available flanges and shafts for GR33 Flange ed alberi disponibili per GR33

Type flange 2C4 /
Flangia tipo 2C4

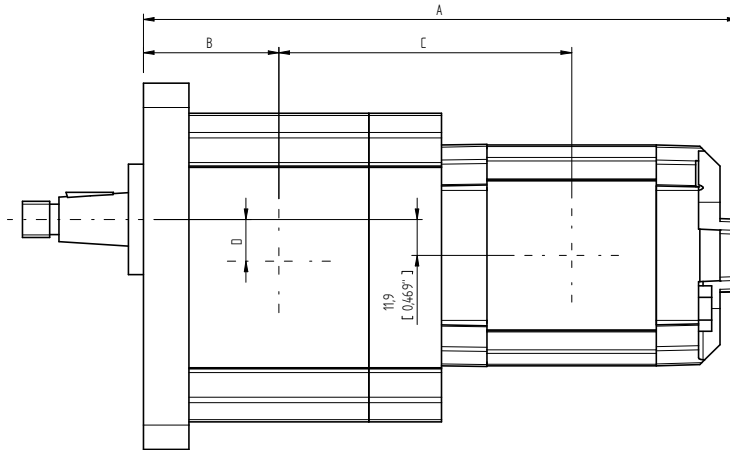


Type shaft 2C4 /
Albero tipo 2C4
Max torque /
Coppia max 210 Nm



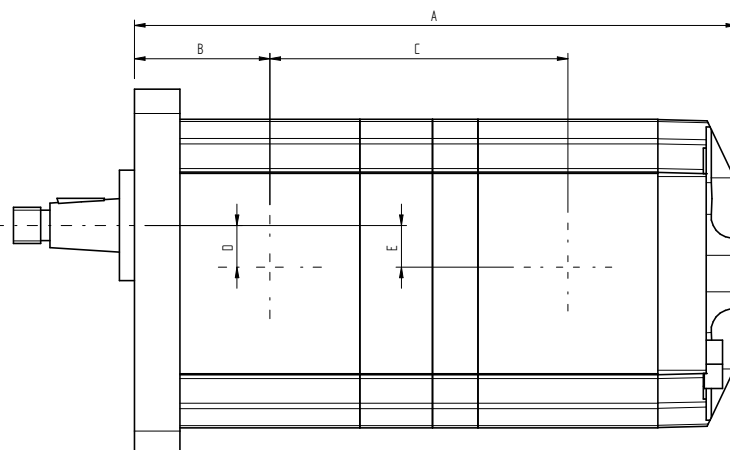
* Standard multiple pumps are delivered with both stages in fluid communication. When placing an order, it is necessary to specify if the two stages will handle different kinds of fluids or fluids coming from more than one reservoir. / Le pompe multiple sono consegnate con entrambi gli stadi in comunicazione di fluido. In fase di ordine, occorre specificare se la pompa multipla utilizza oli differenti sui diversi stadi o provenienti da più di un serbatoio.

GR38 - Groups 2 tandem pumps*



| GR38 + GR28 | | GR28 - 2° | | | | | | | | | | |
|-------------|----|-----------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| | | 4 | | 6 | | 8 | | 10 | | 13 | | |
| | | mm | inc | mm | inc | mm | inc | mm | inc | mm | inc | |
| GR38 - 1° | 16 | A | 224 | 8,81 | 229,5 | 9,03 | 234,5 | 9,23 | 239,5 | 9,429 | 246,4 | 9,701 |
| | | B | 55,5 | 2,18 | 55,5 | 2,18 | 55,5 | 2,185 | 55,5 | 2,185 | 55,5 | 2,185 |
| | | C | 112 | 4,40 | 114,75 | 4,51 | 117,25 | 4,61 | 119,75 | 4,71 | 123,2 | 4,85 |
| | | D | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 |
| | 18 | A | 227 | 8,93 | 232,5 | 9,15 | 237,5 | 9,35 | 242,5 | 9,54 | 249,4 | 9,81 |
| | | B | 57 | 2,24 | 57 | 2,24 | 57 | 2,24 | 57 | 2,24 | 57 | 2,24 |
| | | C | 113,5 | 4,46 | 116,25 | 4,57 | 118,75 | 4,67 | 121,25 | 4,77 | 124,7 | 4,90 |
| | | D | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 |
| | 20 | A | 230 | 9,05 | 235,5 | 9,27 | 240,5 | 9,46 | 245,5 | 9,66 | 252,4 | 9,93 |
| | | B | 58,5 | 2,30 | 58,5 | 2,30 | 58,5 | 2,30 | 58,5 | 2,30 | 58,5 | 2,30 |
| | | C | 115 | 4,52 | 117,75 | 4,63 | 120,25 | 4,73 | 122,75 | 4,83 | 126,2 | 4,96 |
| | | D | 15,9 | 0,626 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 |
| | 22 | A | 233 | 9,173 | 238,5 | 9,39 | 243,5 | 9,58 | 248,5 | 9,78 | 255,4 | 10,05 |
| | | B | 60 | 2,36 | 60 | 2,36 | 60 | 2,36 | 60 | 2,36 | 60 | 2,36 |
| | | C | 116,5 | 4,58 | 119,25 | 4,69 | 121,75 | 4,79 | 124,25 | 4,89 | 127,7 | 5,02 |
| | | D | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 |
| | 25 | A | 237,5 | 9,35 | 243 | 9,56 | 248 | 9,76 | 253 | 9,96 | 259,9 | 10,23 |
| | | B | 62,25 | 2,45 | 62,25 | 2,45 | 62,25 | 2,45 | 62,25 | 2,45 | 62,25 | 2,45 |
| | | C | 118,75 | 4,67 | 121,5 | 4,78 | 124 | 4,88 | 126,5 | 4,98 | 129,95 | 5,11 |
| | | D | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 |
| 28 | A | 242 | 9,52 | 247,5 | 9,74 | 252,5 | 9,94 | 257,5 | 10,13 | 264,4 | 10,40 | |
| | B | 64,5 | 2,53 | 64,5 | 2,53 | 64,5 | 2,53 | 64,5 | 2,53 | 64,5 | 2,53 | |
| | C | 121 | 4,76 | 123,75 | 4,87 | 126,25 | 4,97 | 128,75 | 5,06 | 132,2 | 5,20 | |
| | D | 15,9 | 0,626 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | |

GR38 - Groups 2 tandem pumps*



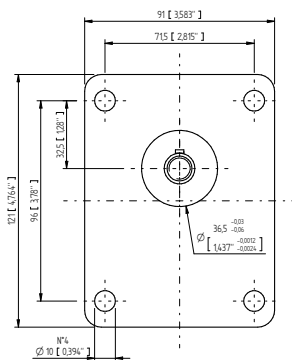
| GR38 + GR33 | | | GR33 - 2° | | | | | | | |
|-------------|----|-------|-----------|-------|--------|-------|--------|-------|--------|-------|
| | | | 10 | | 13 | | 15 | | 18 | |
| | | | mm | inc | mm | inc | mm | inc | mm | inc |
| GR38 - 1° | 16 | A | 224,5 | 8,84 | 229,4 | 9,03 | 234,4 | 9,23 | 240,2 | 9,46 |
| | | B | 55,5 | 2,19 | 55,5 | 2,19 | 55,5 | 2,19 | 55,5 | 2,19 |
| | | C | 111,25 | 4,38 | 113,7 | 4,48 | 116,2 | 4,57 | 119,1 | 4,69 |
| | | D | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 |
| | | E | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 |
| | 18 | A | 227,5 | 8,96 | 232,4 | 9,15 | 237,4 | 9,35 | 243,2 | 9,57 |
| | | B | 57 | 2,24 | 57 | 2,24 | 57 | 2,24 | 57 | 2,24 |
| | | C | 112,75 | 4,44 | 115,2 | 4,54 | 117,7 | 4,63 | 120,6 | 4,75 |
| | | D | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 |
| | | E | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 |
| | 20 | A | 230,5 | 9,07 | 235,4 | 9,27 | 240,4 | 9,46 | 246,2 | 9,69 |
| | | B | 58,5 | 2,30 | 58,5 | 2,30 | 58,5 | 2,30 | 58,5 | 2,30 |
| | | C | 114,25 | 4,50 | 116,7 | 4,59 | 119,2 | 4,69 | 122,1 | 4,81 |
| | | D | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 |
| | | E | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 |
| | 22 | A | 233,5 | 9,19 | 238,4 | 9,39 | 243,4 | 9,58 | 249,2 | 9,81 |
| | | B | 60 | 2,36 | 60 | 2,36 | 60 | 2,36 | 60 | 2,36 |
| | | C | 115,75 | 4,56 | 118,2 | 4,65 | 120,7 | 4,75 | 123,6 | 4,87 |
| | | D | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 |
| | | E | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 |
| | 25 | A | 238 | 9,37 | 242,9 | 9,56 | 247,9 | 9,76 | 253,7 | 9,99 |
| | | B | 62,25 | 2,45 | 62,25 | 2,45 | 62,25 | 2,45 | 62,25 | 2,45 |
| | | C | 118 | 4,65 | 120,45 | 4,74 | 122,95 | 4,84 | 125,85 | 4,96 |
| | | D | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 |
| | | E | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 |
| | 28 | A | 242,5 | 9,55 | 247,4 | 9,74 | 252,4 | 9,94 | 258,2 | 10,17 |
| | | B | 64,5 | 2,54 | 64,5 | 2,54 | 64,5 | 2,54 | 64,5 | 2,54 |
| | | C | 120,25 | 4,74 | 122,7 | 4,83 | 125,2 | 4,93 | 128,1 | 5,04 |
| D | | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | |
| E | | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | |

GR38 - Groups 2 tandem pumps*

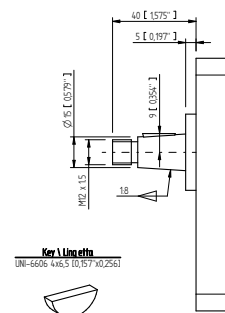
| GR38 + GR38 | | | GR38 - 2° | | | | | | | | | | | |
|-------------|----|------|-----------|-------|--------|------|--------|-------|--------|--------|--------|-------|--------|-------|
| | | | 16 | | 18 | | 20 | | 22 | | 25 | | 28 | |
| | | | mm | inc | mm | inc | mm | inc | mm | inc | mm | inc | mm | inc |
| GR38 - 1° | 16 | A | 228 | 8,98 | 231 | 9,09 | 234 | 9,21 | 237 | 9,33 | 241,5 | 9,51 | 246 | 9,69 |
| | | B | 55,5 | 2,19 | 55,5 | 2,19 | 55,5 | 2,19 | 55,5 | 2,19 | 55,5 | 2,19 | 55,5 | 2,19 |
| | | C | 113 | 4,45 | 114,5 | 4,51 | 116 | 4,57 | 117,5 | 4,63 | 119,75 | 4,71 | 122 | 4,80 |
| | | D | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 |
| | | E | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 |
| | 18 | A | 231 | 9,09 | 234 | 9,21 | 237 | 9,33 | 240 | 9,45 | 244,5 | 9,63 | 249 | 9,80 |
| | | B | 57 | 2,24 | 57 | 2,24 | 57 | 2,24 | 57 | 2,24 | 57 | 2,24 | 57 | 2,24 |
| | | C | 114,5 | 4,51 | 116 | 4,57 | 117,5 | 4,63 | 119 | 4,69 | 121,25 | 4,77 | 123,5 | 4,86 |
| | | D | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 |
| | | E | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 |
| | 20 | A | 234 | 9,21 | 237 | 9,33 | 240 | 9,45 | 243 | 9,57 | 247,5 | 9,74 | 252 | 9,92 |
| | | B | 58,5 | 2,30 | 58,5 | 2,30 | 58,5 | 2,30 | 58,5 | 2,30 | 58,5 | 2,30 | 58,5 | 2,30 |
| | | C | 116 | 4,57 | 117,5 | 4,63 | 119 | 4,69 | 120,5 | 4,74 | 122,75 | 4,83 | 125 | 4,92 |
| | | D | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 |
| | | E | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 |
| | 22 | A | 237 | 9,33 | 240 | 9,45 | 243 | 9,57 | 246 | 9,69 | 250,5 | 9,86 | 255 | 10,04 |
| | | B | 60 | 2,36 | 60 | 2,36 | 60 | 2,36 | 60 | 2,36 | 60 | 2,36 | 60 | 2,36 |
| | | C | 117,5 | 4,63 | 119 | 4,69 | 120,5 | 4,74 | 122 | 4,80 | 124,25 | 4,89 | 126,5 | 4,98 |
| | | D | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 |
| | | E | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 |
| | 25 | A | 241,5 | 9,51 | 244,5 | 9,63 | 247,5 | 9,74 | 250,5 | 9,86 | 255 | 10,04 | 259,5 | 10,22 |
| | | B | 62,25 | 2,45 | 62,25 | 2,45 | 62,25 | 2,45 | 62,25 | 2,45 | 62,25 | 2,45 | 62,25 | 2,45 |
| | | C | 119,75 | 4,72 | 121,25 | 4,77 | 122,75 | 4,83 | 124,25 | 4,89 | 126,5 | 4,98 | 128,75 | 5,07 |
| | | D | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 |
| | | E | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 |
| 28 | A | 246 | 9,69 | 249 | 9,80 | 252 | 9,92 | 255 | 10,04 | 259,5 | 10,22 | 264 | 10,39 | |
| | B | 64,5 | 2,54 | 64,5 | 2,54 | 64,5 | 2,54 | 64,5 | 2,54 | 64,5 | 2,54 | 64,5 | 2,54 | |
| | C | 122 | 4,80 | 123,5 | 4,86 | 125 | 4,92 | 126,5 | 4,98 | 128,75 | 5,07 | 131 | 5,16 | |
| | D | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | |
| | E | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | |

Available flanges and shafts for GR38 Flange ed alberi disponibili per GR38

Type flange 2C4 /
Flangia tipo 2C4

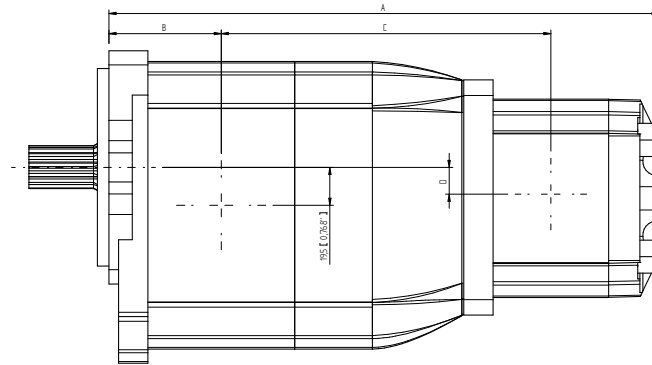


Type shaft 2C4 /
Albero tipo 2C4
Max torque /
Coppia max 210 Nm



* Standard multiple pumps are delivered with both stages in fluid communication. When placing an order, it is necessary to specify if the two stages will handle different kinds of fluids or fluids coming from more than one reservoir. / Le pompe multiple sono consegnate con entrambi gli stadi in comunicazione di fluido. In fase di ordine, occorre specificare se la pompa multipla utilizza oli differenti sui diversi stadi o provenienti da più di un serbatoio.

GR47 - Group 3 tandem pumps

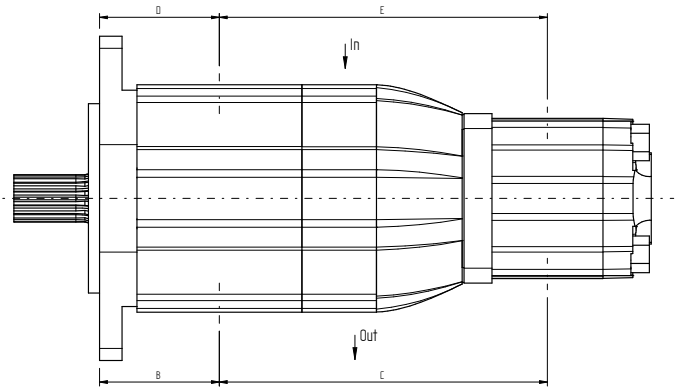
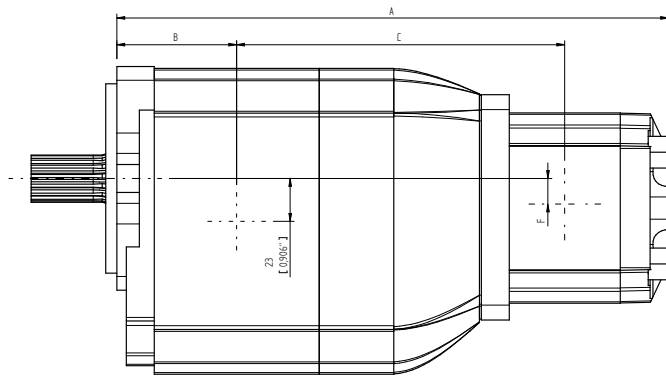


| GR47 + GR28 | | | GR28 - 2° | | | | | | | | | |
|-------------|----|--------|-----------|--------|--------|-------|--------|-------|--------|--------|--------|-------|
| | | | 4 | | 6 | | 8 | | 10 | | 13 | |
| | | | mm | inc | mm | inc | mm | inc | mm | inc | mm | inc |
| GR47 - 1° | 28 | A | 293 | 11,54 | 298,50 | 11,75 | 303,5 | 11,95 | 308,5 | 12,15 | 315,4 | 12,42 |
| | | B | 67,5 | 2,66 | 67,5 | 2,66 | 67,5 | 2,66 | 67,5 | 2,66 | 67,5 | 2,66 |
| | | C | 169 | 6,65 | 171,75 | 6,76 | 174,25 | 6,86 | 176,75 | 6,96 | 180,20 | 7,10 |
| | | D | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 |
| | 32 | A | 297 | 11,69 | 302,5 | 11,91 | 307,5 | 12,11 | 312,5 | 12,30 | 319,4 | 12,57 |
| | | B | 69,5 | 2,74 | 69,5 | 2,74 | 69,5 | 2,74 | 69,5 | 2,74 | 69,5 | 2,74 |
| | | C | 171 | 6,73 | 173,75 | 6,84 | 176,25 | 6,94 | 178,75 | 7,04 | 182,2 | 7,17 |
| | | D | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 |
| | 36 | A | 301 | 11,85 | 306,5 | 12,07 | 311,5 | 12,26 | 316,5 | 12,46 | 323,4 | 12,73 |
| | | B | 71,5 | 2,81 | 71,5 | 2,81 | 71,5 | 2,81 | 71,5 | 2,81 | 71,5 | 2,81 |
| | | C | 173 | 6,81 | 175,75 | 6,91 | 178,25 | 7,01 | 180,75 | 7,11 | 184,2 | 7,25 |
| | | D | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 |
| | 40 | A | 305 | 12,01 | 310,5 | 12,22 | 315,5 | 12,42 | 320,5 | 12,62 | 327,4 | 12,89 |
| | | B | 73,5 | 2,89 | 73,5 | 2,89 | 73,5 | 2,89 | 73,5 | 2,89 | 73,5 | 2,89 |
| | | C | 175 | 6,89 | 177,75 | 7,00 | 180,25 | 7,96 | 182,75 | 7,19 | 186,2 | 7,33 |
| | | D | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 |
| | 45 | A | 309,5 | 12,19 | 315 | 12,40 | 320 | 12,60 | 325 | 12,80 | 331,9 | 13,07 |
| | | B | 75,75 | 2,98 | 75,75 | 2,98 | 75,75 | 2,98 | 75,75 | 2,98 | 75,75 | 2,98 |
| | | C | 177,25 | 6,98 | 180 | 7,09 | 182,5 | 7,19 | 185 | 7,28 | 188,45 | 7,42 |
| | | D | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 |
| 50 | A | 314,5 | 12,38 | 320 | 12,60 | 325 | 12,80 | 330 | 12,99 | 336,9 | 13,26 | |
| | B | 78,25 | 3,08 | 78,25 | 3,08 | 78,25 | 3,08 | 78,25 | 3,08 | 78,25 | 3,08 | |
| | C | 179,75 | 7,08 | 182,50 | 7,19 | 185 | 7,28 | 187,5 | 7,38 | 190,95 | 7,52 | |
| | D | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 | |

| GR47 + GR33 | | | GR33 - 2° | | | | | | | |
|-------------|----|---|-----------|-------|--------|-------|--------|-------|--------|-------|
| | | | 10 | | 13 | | 15 | | 18 | |
| | | | mm | inc | mm | inc | mm | inc | mm | inc |
| GR47 - 1° | 28 | A | 306,5 | 12,07 | 311,4 | 12,26 | 316,4 | 12,46 | 322,2 | 12,69 |
| | | B | 67,5 | 2,66 | 67,5 | 2,66 | 67,5 | 2,66 | 67,5 | 2,66 |
| | | C | 181,25 | 7,14 | 183,7 | 7,23 | 186,2 | 7,33 | 189,1 | 7,44 |
| | | D | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 |
| | 32 | A | 310,5 | 12,22 | 315,4 | 12,42 | 320,4 | 12,61 | 326,2 | 12,84 |
| | | B | 69,5 | 2,74 | 69,5 | 2,74 | 69,5 | 2,74 | 69,5 | 2,74 |
| | | C | 183,25 | 7,21 | 185,7 | 7,31 | 188,2 | 7,41 | 191,1 | 7,52 |
| | | D | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 |
| | 36 | A | 314,5 | 12,38 | 319,4 | 12,57 | 324,4 | 12,77 | 330,2 | 13,00 |
| | | B | 71,5 | 2,81 | 71,5 | 2,81 | 71,5 | 2,81 | 71,5 | 2,81 |
| | | C | 185,25 | 7,29 | 187,7 | 7,39 | 190,2 | 7,49 | 193,1 | 7,60 |
| | | D | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 |
| | 40 | A | 318,5 | 12,54 | 323,4 | 12,73 | 328,4 | 12,93 | 334,2 | 13,16 |
| | | B | 73,5 | 2,89 | 73,5 | 2,89 | 73,5 | 2,89 | 73,5 | 2,89 |
| | | C | 187,25 | 7,37 | 189,7 | 7,47 | 192,2 | 7,57 | 195,1 | 7,68 |
| | | D | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 |
| | 45 | A | 323 | 12,72 | 327,9 | 12,91 | 332,9 | 13,11 | 338,7 | 13,33 |
| | | B | 75,75 | 2,98 | 75,75 | 2,98 | 75,75 | 2,98 | 75,75 | 2,98 |
| | | C | 189,5 | 7,46 | 191,95 | 7,56 | 194,45 | 7,66 | 197,35 | 7,77 |
| | | D | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 |
| | 50 | A | 328 | 12,91 | 332,9 | 13,11 | 337,9 | 13,30 | 343,7 | 13,53 |
| | | B | 78,25 | 3,08 | 78,25 | 3,08 | 78,25 | 3,08 | 78,25 | 3,08 |
| | | C | 192 | 7,56 | 194,45 | 7,66 | 196,95 | 7,75 | 199,85 | 7,87 |
| | | D | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 |

| GR47 + GR38 | | | GR38 - 2° | | | | | | | | | | | |
|-------------|----|---|-----------|--------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|
| | | | 16 | | 18 | | 20 | | 22 | | 25 | | 28 | |
| | | | mm | inc | mm | inc | mm | inc | mm | inc | mm | inc | mm | inc |
| GR47 - 1° | 28 | A | 310 | 12,205 | 313 | 12,32 | 316 | 12,44 | 319 | 12,55 | 323,5 | 12,73 | 328 | 12,91 |
| | | B | 67,5 | 2,65 | 67,5 | 2,65 | 67,5 | 2,65 | 67,5 | 2,65 | 67,5 | 2,65 | 67,5 | 2,65 |
| | | C | 183 | 7,20 | 184,5 | 7,26 | 186 | 7,32 | 187,5 | 7,38 | 189,75 | 7,47 | 192 | 7,55 |
| | | D | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 |
| | 32 | A | 314 | 12,36 | 317 | 12,48 | 320 | 12,59 | 323 | 12,89 | 327,5 | 12,89 | 332 | 13,07 |
| | | B | 69,5 | 2,73 | 69,5 | 2,73 | 69,5 | 2,73 | 69,5 | 2,73 | 69,5 | 2,73 | 69,5 | 2,73 |
| | | C | 185 | 7,28 | 186,5 | 7,34 | 188 | 7,40 | 189,5 | 7,46 | 191,75 | 7,54 | 194 | 7,63 |
| | | D | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 |
| | 36 | A | 318 | 12,52 | 321 | 12,38 | 324 | 12,75 | 327 | 12,87 | 331,5 | 13,05 | 336 | 13,22 |
| | | B | 71,50 | 2,81 | 71,50 | 2,81 | 71,50 | 2,81 | 71,50 | 2,81 | 71,50 | 2,81 | 71,50 | 2,81 |
| | | C | 187 | 7,36 | 188,5 | 7,42 | 190 | 7,48 | 191,5 | 7,53 | 193,75 | 7,62 | 196 | 7,71 |
| | | D | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 |
| | 40 | A | 322 | 12,67 | 325 | 12,79 | 328 | 12,91 | 331 | 13,03 | 335,5 | 13,2 | 340 | 13,38 |
| | | B | 73,50 | 2,89 | 73,50 | 2,89 | 73,50 | 2,89 | 73,50 | 2,89 | 73,50 | 2,89 | 73,50 | 2,89 |
| | | C | 189 | 7,44 | 190,5 | 7,50 | 192 | 7,55 | 193,5 | 7,61 | 195,75 | 7,70 | 198 | 7,79 |
| | | D | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 |
| | 45 | A | 326,5 | 12,85 | 329,5 | 12,97 | 332,5 | 13,09 | 335,5 | 13,20 | 340 | 13,38 | 344,5 | 13,56 |
| | | B | 75,75 | 2,98 | 75,75 | 2,98 | 75,75 | 2,98 | 75,75 | 2,98 | 75,75 | 2,98 | 75,75 | 2,98 |
| | | C | 191,25 | 7,53 | 192,75 | 7,58 | 194,25 | 7,64 | 195,75 | 7,70 | 198 | 7,79 | 200,25 | 7,88 |
| | | D | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 |
| | 50 | A | 331,5 | 13,05 | 334,5 | 13,16 | 337,5 | 13,28 | 340,5 | 13,40 | 345 | 13,58 | 349,5 | 13,76 |
| | | B | 78,25 | 3,08 | 78,25 | 3,08 | 78,25 | 3,08 | 78,25 | 3,08 | 78,25 | 3,08 | 78,25 | 3,08 |
| | | C | 193,75 | 7,62 | 195,25 | 7,68 | 196,75 | 7,74 | 198,25 | 7,80 | 200,5 | 7,89 | 202,75 | 7,98 |
| | | D | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 |

GR55 - Group 3 tandem pumps



| GR55 + GR28 | | | GR28 - 2° | | | | | | | | | | | |
|-------------|----|----|-----------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|-------|
| | | | 4 | | 6 | | 8 | | 10 | | 13 | | | |
| | | | mm | inc | mm | inc | mm | inc | mm | inc | mm | inc | | |
| GR55 - 1° | 50 | A | 324 | 12,76 | 329,5 | 12,97 | 334,5 | 13,17 | 339,5 | 13,37 | 346,4 | 13,64 | | |
| | | B | 81,5 | 3,21 | 81,5 | 3,21 | 81,5 | 3,21 | 81,5 | 3,21 | 81,5 | 3,21 | | |
| | | C | 186 | 7,32 | 188,75 | 7,43 | 191,25 | 7,53 | 193,75 | 7,63 | 197,2 | 7,76 | | |
| | | D | 81,5 | 3,21 | 81,5 | 3,21 | 81,5 | 3,21 | 81,5 | 3,21 | 81,5 | 3,21 | | |
| | | E | 186 | 7,32 | 188,75 | 7,43 | 191,25 | 7,53 | 193,75 | 7,63 | 197,2 | 7,76 | | |
| | | F | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 | | |
| | 63 | A | A | 333 | 13,11 | 338,5 | 13,33 | 343,5 | 13,52 | 348,5 | 13,72 | 355,4 | 13,99 | |
| | | | B | 86 | 3,39 | 86 | 3,39 | 86 | 3,39 | 86 | 3,39 | 86 | 3,39 | |
| | | | C | 190,5 | 7,50 | 193,25 | 7,61 | 195,75 | 7,71 | 198,25 | 7,81 | 201,7 | 7,94 | |
| | | D | O ports | 86 | 3,39 | 86 | 3,39 | 86 | 3,39 | 86 | 3,39 | 86 | 3,39 | |
| | | | OE ports | 89,5 | 3,52 | 89,5 | 3,52 | 89,5 | 3,52 | 89,5 | 3,52 | 89,5 | 3,52 | |
| | | E | O ports | 190,5 | 7,50 | 193,25 | 7,61 | 195,75 | 7,71 | 198,25 | 7,81 | 201,7 | 7,94 | |
| | | | OE ports | 187 | 7,36 | 189,75 | 7,47 | 192,25 | 7,57 | 194,75 | 7,67 | 198,2 | 7,80 | |
| | | F | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 | | |
| | 75 | A | A | 341 | 13,43 | 346,5 | 13,64 | 351,5 | 13,84 | 356,5 | 14,04 | 363,4 | 14,31 | |
| | | | B | 90 | 3,54 | 90 | 3,54 | 90 | 3,54 | 90 | 3,54 | 90 | 3,54 | |
| | | | C | 194,50 | 7,66 | 197,25 | 7,77 | 199,75 | 7,86 | 202,25 | 7,96 | 205,7 | 8,10 | |
| | | D | O ports | 90 | 3,54 | 90 | 3,54 | 90 | 3,54 | 90 | 3,54 | 90 | 3,54 | |
| | | | OE ports | 93,5 | 3,68 | 93,5 | 3,68 | 93,5 | 3,68 | 93,5 | 3,68 | 93,5 | 3,68 | |
| | | E | O ports | 194,5 | 7,66 | 197,25 | 7,77 | 199,75 | 7,86 | 202,25 | 7,96 | 205,7 | 8,10 | |
| | | | OE ports | 191 | 7,52 | 193,75 | 7,63 | 196,25 | 7,73 | 198,75 | 7,82 | 202,2 | 7,96 | |
| | | F | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 | | |
| | | 90 | A | A | 352 | 13,86 | 357,5 | 14,07 | 362,5 | 14,27 | 367,5 | 14,47 | 374,4 | 14,74 |
| | | | | B | 95,5 | 3,76 | 95,5 | 3,76 | 95,5 | 3,76 | 95,5 | 3,76 | 95,5 | 3,76 |
| | C | | | 200 | 7,87 | 202,75 | 7,98 | 205,25 | 8,08 | 207,75 | 8,18 | 211,2 | 8,31 | |
| | D | | O ports | 95,5 | 3,76 | 95,5 | 3,76 | 95,5 | 3,76 | 95,5 | 3,76 | 95,5 | 3,76 | |
| | | | OE ports | 99 | 3,90 | 99 | 3,90 | 99 | 3,90 | 99 | 3,90 | 99 | 3,90 | |
| | E | | O ports | 200 | 7,87 | 202,75 | 7,98 | 205,25 | 8,08 | 207,75 | 8,18 | 211,2 | 8,31 | |
| | | | OE ports | 196,5 | 7,74 | 199,25 | 7,84 | 201,75 | 7,94 | 204,25 | 8,04 | 207,7 | 8,18 | |
| | F | | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 | 11,9 | 0,47 | | |

| GR55 + GR33 | | | GR33 - 2° | | | | | | | | |
|-------------|----|----|-----------|--------|-------|-------|-------|-------|-------|-------|-------|
| | | | 10 | | 13 | | 15 | | 18 | | |
| | | | mm | inc | mm | inc | mm | inc | mm | inc | |
| GR55 - 1° | 50 | A | 334,5 | 13,17 | 339,4 | 13,36 | 344,4 | 13,56 | 350,2 | 13,79 | |
| | | B | 81,5 | 3,21 | 81,5 | 3,21 | 81,5 | 3,21 | 81,5 | 3,21 | |
| | | C | 195,25 | 7,70 | 197,7 | 7,78 | 200,2 | 7,88 | 203,1 | 8,00 | |
| | | D | 81,5 | 3,21 | 81,5 | 3,21 | 81,5 | 3,21 | 81,5 | 3,21 | |
| | | E | 195,25 | 7,69 | 197,7 | 7,78 | 200,2 | 7,88 | 203,1 | 8,00 | |
| | | F | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | |
| | 63 | A | 343,5 | 13,52 | 348,4 | 13,72 | 353,4 | 13,91 | 359,2 | 14,14 | |
| | | B | 86 | 3,39 | 86 | 3,39 | 86 | 3,39 | 86 | 3,39 | |
| | | C | 199,75 | 7,86 | 202,2 | 7,96 | 204,7 | 8,06 | 207,6 | 8,17 | |
| | | D | O ports | 86 | 3,39 | 86 | 3,39 | 86 | 3,39 | 86 | 3,39 |
| | | | OE ports | 89,5 | 3,52 | 89,5 | 3,52 | 89,5 | 3,52 | 89,5 | 3,52 |
| | | E | O ports | 199,75 | 7,86 | 202,2 | 7,96 | 204,7 | 8,06 | 207,6 | 8,17 |
| | | | OE ports | 196,25 | 7,73 | 198,7 | 7,82 | 201,2 | 7,92 | 204,1 | 8,04 |
| | | F | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | |
| | | 75 | A | 351,5 | 13,84 | 356,4 | 14,03 | 361,4 | 14,23 | 367,2 | 14,46 |
| | | | B | 90 | 3,54 | 90 | 3,54 | 90 | 3,54 | 90 | 3,54 |
| | C | | 203,75 | 8,02 | 206,2 | 8,12 | 208,7 | 8,22 | 211,6 | 8,33 | |
| | F | | O ports | 90 | 3,54 | 90 | 3,54 | 90 | 3,54 | 90 | 3,54 |
| | | | OE ports | 93,5 | 3,68 | 93,5 | 3,68 | 93,5 | 3,68 | 93,5 | 3,68 |
| | G | | O ports | 203,75 | 8,02 | 206,2 | 8,12 | 208,7 | 8,22 | 211,6 | 8,33 |
| | | | OE ports | 200,25 | 7,88 | 202,7 | 7,98 | 205,2 | 8,08 | 208,1 | 8,19 |
| | F | | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | |
| | 90 | A | 362,5 | 14,27 | 367,4 | 14,46 | 372,4 | 14,66 | 378,2 | 14,89 | |
| | | B | 95,5 | 3,76 | 95,5 | 3,76 | 95,5 | 3,76 | 95,5 | 3,76 | |
| | | C | 209,25 | 8,24 | 211,7 | 8,33 | 214,2 | 8,43 | 217,1 | 8,55 | |
| | | D | O ports | 95,5 | 3,76 | 95,5 | 3,76 | 95,5 | 3,76 | 95,5 | 3,76 |
| | | | OE ports | 99 | 3,90 | 99 | 3,90 | 99 | 3,90 | 99 | 3,90 |
| | | E | O ports | 209,25 | 8,24 | 211,7 | 8,33 | 214,2 | 8,43 | 217,1 | 8,55 |
| | | | OE ports | 205,75 | 8,10 | 208,2 | 8,20 | 210,7 | 8,30 | 213,6 | 8,41 |
| | | F | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | 13,75 | 0,54 | |

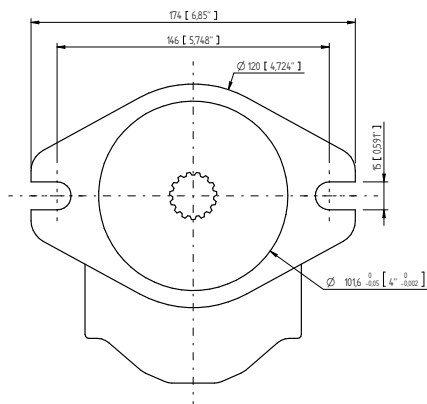
| GR55 + GR38 | | | GR38 - 2° | | | | | | | | | | | | |
|-------------|----|---|-----------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|------|
| | | | 16 | | 18 | | 20 | | 22 | | 25 | | 28 | | |
| | | | mm | inc | mm | inc | mm | inc | mm | inc | mm | inc | mm | inc | |
| GR55 - 1° | 50 | A | 338 | 13,31 | 341 | 13,43 | 344 | 13,54 | 347 | 13,66 | 351,5 | 13,84 | 356 | 14,02 | |
| | | B | 81,5 | 3,21 | 81,5 | 3,21 | 81,5 | 3,21 | 81,5 | 3,21 | 81,5 | 3,21 | 81,5 | 3,21 | |
| | | C | 197 | 7,76 | 198,5 | 7,81 | 200 | 7,87 | 201,5 | 7,93 | 203,75 | 8,02 | 206 | 8,11 | |
| | | D | 81,5 | 3,21 | 81,5 | 3,21 | 81,5 | 3,21 | 81,5 | 3,21 | 81,5 | 3,21 | 81,5 | 3,21 | |
| | | E | 197 | 7,76 | 198,5 | 7,81 | 200 | 7,87 | 201,5 | 7,93 | 203,75 | 8,02 | 206 | 8,11 | |
| | | F | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | |
| | 63 | A | 347 | 13,66 | 350 | 13,78 | 353 | 13,90 | 356 | 14,02 | 360,5 | 14,19 | 365 | 14,37 | |
| | | B | 86 | 3,39 | 86 | 3,39 | 86 | 3,39 | 86 | 3,39 | 86 | 3,39 | 86 | 3,39 | |
| | | C | 201,5 | 7,93 | 203 | 7,99 | 204,5 | 8,05 | 206 | 8,11 | 208,25 | 8,20 | 210,5 | 8,29 | |
| | | D | O ports | 86 | 3,39 | 86 | 3,39 | 86 | 3,39 | 86 | 3,39 | 86 | 3,39 | 86 | 3,39 |
| | | | OE ports | 89,5 | 3,52 | 89,5 | 3,52 | 89,5 | 3,52 | 89,5 | 3,52 | 89,5 | 3,52 | 89,5 | 3,52 |
| | | E | O ports | 201,5 | 7,93 | 203 | 7,99 | 204,5 | 8,05 | 206 | 8,11 | 208,25 | 8,20 | 210,5 | 8,29 |
| | | | OE ports | 198 | 7,80 | 199,5 | 7,85 | 201 | 7,91 | 202,5 | 7,97 | 204,75 | 8,06 | 207 | 8,15 |
| | | F | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | |

| GR55 + GR38 | | | GR38 - 2° | | | | | | | | | | | | |
|-------------|----------|------|-----------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|------|
| | | | 16 | | 18 | | 20 | | 22 | | 25 | | 28 | | |
| | | | mm | inc | mm | inc | mm | inc | mm | inc | mm | inc | mm | inc | |
| GR55 - 1° | 75 | A | 355 | 13,98 | 358 | 14,09 | 361 | 14,21 | 364 | 14,33 | 368,5 | 14,51 | 373 | 14,69 | |
| | | B | 90 | 3,54 | 90 | 3,54 | 90 | 3,54 | 90 | 3,54 | 90 | 3,54 | 90 | 3,54 | |
| | | C | 205,5 | 8,09 | 207 | 8,15 | 208,5 | 8,21 | 210 | 8,27 | 212,25 | 8,36 | 214,5 | 8,44 | |
| | | D | O ports | 90 | 3,54 | 90 | 3,54 | 90 | 3,54 | 90 | 3,54 | 90 | 3,54 | 90 | 3,54 |
| | | | OE ports | 93,5 | 3,68 | 93,5 | 3,68 | 93,5 | 3,68 | 93,5 | 3,68 | 93,5 | 3,68 | 93,5 | 3,68 |
| | | E | O ports | 205,5 | 8,09 | 207 | 8,15 | 208,5 | 8,21 | 210 | 8,27 | 212,25 | 8,36 | 214,5 | 8,44 |
| | OE ports | | 202 | 7,95 | 203,5 | 8,01 | 205 | 8,07 | 206,5 | 8,13 | 208,75 | 8,22 | 211 | 8,31 | |
| | F | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 | 15,9 | 0,63 |
| | 90 | A | 366 | 14,40 | 369 | 14,52 | 372 | 14,64 | 375 | 14,76 | 379,5 | 14,94 | 384 | 15,11 | |
| | | B | 95,5 | 3,76 | 95,5 | 3,76 | 95,5 | 3,76 | 95,5 | 3,76 | 95,5 | 3,76 | 95,5 | 3,76 | |
| | | C | 211 | 8,3 | 212,5 | 8,36 | 214 | 8,42 | 215,5 | 8,48 | 217,75 | 8,57 | 220 | 8,66 | |
| | | D | O ports | 95,5 | 3,76 | 95,5 | 3,76 | 95,5 | 3,76 | 95,5 | 3,76 | 95,5 | 3,76 | 95,5 | 3,76 |
| | | | OE ports | 99 | 3,89 | 99 | 3,89 | 99 | 3,89 | 99 | 3,89 | 99 | 3,89 | 99 | 3,89 |
| | | E | O ports | 211 | 8,30 | 212,5 | 8,36 | 214 | 8,42 | 215,5 | 8,48 | 217,75 | 8,57 | 220 | 8,66 |
| | | | OE ports | 207,5 | 8,16 | 209 | 8,22 | 210,5 | 8,28 | 212 | 8,34 | 214,25 | 8,43 | 216,5 | 8,52 |
| | | F | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 | 0,62 | 15,9 |

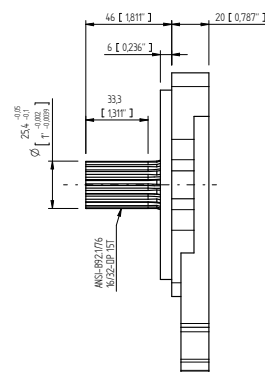
| GR55 + GR47 | | | GR47 - 2° | | | | | | | | | | | | |
|-------------|----------|----------|-----------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|------|
| | | | 28 | | 32 | | 36 | | 40 | | 45 | | 50 | | |
| | | | mm | inc | mm | inc | mm | inc | mm | inc | mm | inc | mm | inc | |
| GR55 - 1° | 50 | A | 377,5 | 14,86 | 381,5 | 15,02 | 385,5 | 15,18 | 389,5 | 15,33 | 394 | 15,51 | 399 | 15,71 | |
| | | B | 81,5 | 3,21 | 81,5 | 3,21 | 81,5 | 3,21 | 81,5 | 3,21 | 81,5 | 3,21 | 81,5 | 3,21 | |
| | | C | 218 | 8,58 | 220 | 8,66 | 222 | 8,74 | 224 | 8,82 | 226,25 | 8,91 | 228,75 | 9,01 | |
| | | D | 81,5 | 3,21 | 81,5 | 3,21 | 81,5 | 3,21 | 81,5 | 3,21 | 81,5 | 3,21 | 81,5 | 3,21 | |
| | | E | 218 | 8,58 | 220 | 8,66 | 222 | 8,74 | 224 | 8,82 | 226,25 | 8,91 | 228,75 | 9,01 | |
| | | F | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | |
| | 63 | A | 386,5 | 15,22 | 390,5 | 15,37 | 394,5 | 15,53 | 398,5 | 15,69 | 403 | 15,87 | 408 | 16,06 | |
| | | B | 86 | 3,39 | 86 | 3,39 | 86 | 3,39 | 86 | 3,39 | 86 | 3,39 | 86 | 3,39 | |
| | | C | 222,5 | 8,76 | 224,5 | 8,84 | 226,5 | 8,92 | 228,5 | 9,00 | 230,75 | 9,08 | 233,25 | 9,18 | |
| | | D | O ports | 86 | 3,39 | 86 | 3,39 | 86 | 3,39 | 86 | 3,39 | 86 | 3,39 | 86 | 3,39 |
| | | | OE ports | 89,5 | 3,52 | 89,5 | 3,52 | 89,5 | 3,52 | 89,5 | 3,52 | 89,5 | 3,52 | 89,5 | 3,52 |
| | | E | O ports | 222,5 | 8,76 | 224,5 | 8,84 | 226,5 | 8,92 | 228,5 | 9,00 | 230,75 | 9,08 | 233,25 | 9,18 |
| | OE ports | | 219 | 8,62 | 221 | 8,70 | 223 | 8,78 | 225 | 8,86 | 227,25 | 8,95 | 229,75 | 9,05 | |
| | F | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 |
| | 75 | A | 394,5 | 15,53 | 398,5 | 15,69 | 402,5 | 15,85 | 406,5 | 16,00 | 411 | 16,18 | 416 | 16,38 | |
| | | B | 90 | 3,54 | 90 | 3,54 | 90 | 3,54 | 90 | 3,54 | 90 | 3,54 | 90 | 3,54 | |
| | | C | 226,5 | 8,92 | 228,5 | 9,00 | 230,5 | 9,07 | 232,5 | 9,15 | 234,75 | 9,24 | 237,25 | 9,34 | |
| | | D | O ports | 90 | 3,54 | 90 | 3,54 | 90 | 3,54 | 90 | 3,54 | 90 | 3,54 | 90 | 3,54 |
| | | | OE ports | 93,5 | 3,68 | 93,5 | 3,68 | 93,5 | 3,68 | 93,5 | 3,68 | 93,5 | 3,68 | 93,5 | 3,68 |
| | | E | O ports | 226,5 | 8,91 | 225,5 | 8,99 | 230,5 | 9,07 | 232,5 | 9,15 | 234,75 | 9,24 | 237,25 | 9,34 |
| | | | OE ports | 223 | 8,78 | 225 | 8,85 | 227 | 8,93 | 229 | 9,01 | 231,25 | 9,10 | 233,75 | 9,20 |
| | | F | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 |
| | 90 | A | 405,5 | 15,96 | 409,5 | 16,12 | 413,5 | 16,28 | 417,5 | 16,44 | 422 | 16,61 | 427 | 16,81 | |
| | | B | 95,5 | 3,76 | 95,5 | 3,76 | 95,5 | 3,76 | 95,5 | 3,76 | 95,5 | 3,76 | 95,5 | 3,76 | |
| C | | 232 | 9,13 | 234 | 9,21 | 236 | 9,29 | 238 | 9,37 | 240,25 | 9,46 | 242,75 | 9,56 | | |
| D | | O ports | 95,5 | 3,76 | 95,5 | 3,76 | 95,5 | 3,76 | 95,5 | 3,76 | 95,5 | 3,76 | 95,5 | 3,76 | |
| | | OE ports | 99 | 3,90 | 99 | 3,90 | 99 | 3,90 | 99 | 3,90 | 99 | 3,90 | 99 | 3,90 | |
| E | | O ports | 232 | 9,13 | 234 | 9,21 | 236 | 9,29 | 238 | 9,37 | 240,25 | 9,46 | 242,75 | 9,56 | |
| | | OE ports | 228,5 | 9,00 | 230,5 | 9,07 | 232,5 | 9,15 | 234,5 | 9,23 | 236,75 | 9,32 | 239,5 | 9,43 | |
| F | | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 |

| GR55 + GR55 | | | 2° | | | | | | | | | | | | | | | | |
|-------------|----|----|----------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|-------|-------|
| | | | 50 | | | | 63 | | | | 75 | | | | 90 | | | | |
| | | | mm | | inc | | mm | | inc | | mm | | inc | | mm | | inc | | |
| | | | O | OE | O | OE | O | OE | O | OE | O | OE | O | OE | O | OE | O | OE | |
| 1° | 50 | A | 395 | | 15,55 | | 404 | | 15,91 | | 412 | | 16,22 | | 423 | | 16,65 | | |
| | | B | 81,5 | | 3,21 | | 81,5 | | 3,21 | | 81,5 | | 3,21 | | 81,5 | | 3,2 | | |
| | | C | 227 | | 8,94 | | 231,5 | | 9,11 | | 235,5 | | 9,27 | | 241 | | 9,48 | | |
| | | D | 81,5 | | 3,21 | | 81,5 | | 3,21 | | 81,5 | | 3,21 | | 81,5 | | 3,2 | | |
| | | E | 227 | | 8,94 | | 231,5 | | 9,11 | | 235,5 | | 9,27 | | 241 | | 9,48 | | |
| | | F | 23 | | 0,91 | | 23 | | 0,91 | | 23 | | 0,91 | | 23 | | 0,9 | | |
| | 63 | A | 404 | | 15,91 | | 413 | | 16,26 | | 421 | | 16,57 | | 432 | | 17,01 | | |
| | | B | 86 | | 3,39 | | 86 | | 3,39 | | 86 | | 3,39 | | 86 | | 3,39 | | |
| | | C | 231,5 | | 9,11 | | 236 | | 9,29 | | 240 | | 9,45 | | 245,5 | | 9,67 | | |
| | | D | O ports | 86 | | 3,39 | | 86 | | 3,39 | | 86 | | 3,39 | | 86 | | 3,39 | |
| | | | OE ports | 89,5 | | 3,52 | | 89,5 | | 3,52 | | 89,5 | | 3,52 | | 89,5 | | 3,52 | |
| | | E | O ports | 231,5 | | 9,11 | | 236 | 239,5 | 9,29 | 9,43 | 240 | 243,5 | 9,45 | 9,59 | 245,5 | 249 | 9,67 | 9,80 |
| | | | OE ports | 228 | | 8,98 | | 232,5 | 236 | 9,15 | 9,29 | 236,5 | 240 | 9,31 | 9,45 | 242 | 245,5 | 9,53 | 9,67 |
| | | F | 23 | | 0,91 | | 23 | | 0,91 | | 23 | | 0,91 | | 23 | | 0,91 | | |
| | 75 | A | 412 | | 16,22 | | 421 | | 16,57 | | 429 | | 16,89 | | 440 | | 17,32 | | |
| | | B | 90 | | 3,54 | | 90 | | 3,54 | | 90 | | 3,54 | | 90 | | 3,54 | | |
| | | C | 235,5 | | 9,27 | | 240 | | 9,45 | | 244 | | 9,61 | | 249,5 | | 9,82 | | |
| | | F | O ports | 90 | | 3,54 | | 90 | | 3,54 | | 90 | | 3,54 | | 90 | | 3,54 | |
| | | | OE ports | 93,5 | | 3,68 | | 93,5 | | 3,68 | | 93,5 | | 3,68 | | 93,5 | | 3,68 | |
| | | G | O ports | 235,5 | | 9,27 | | 240 | 243,5 | 9,45 | 9,59 | 244 | 247,5 | 9,61 | 9,74 | 249,5 | 253 | 9,82 | 9,96 |
| | | | OE ports | 232 | | 9,13 | | 236,5 | 240 | 9,31 | 9,45 | 240,5 | 244 | 9,47 | 9,61 | 246 | 249,5 | 9,69 | 9,82 |
| | | F | 23 | | 0,91 | | 23 | | 0,91 | | 23 | | 0,91 | | 23 | | 0,91 | | |
| | 90 | A | 423 | | 16,65 | | 432 | | 17,01 | | 440 | | 17,32 | | 451 | | 17,76 | | |
| | | B | 95,5 | | 3,76 | | 95,5 | | 3,76 | | 95,5 | | 3,76 | | 95,5 | | 3,76 | | |
| | | C | 241 | | 9,49 | | 245,5 | | 9,67 | | 249,5 | | 9,82 | | 255 | | 10,04 | | |
| | | D | O ports | 95,5 | | 3,76 | | 95,5 | | 3,76 | | 95,5 | | 3,76 | | 95,5 | | 3,76 | |
| | | | OE ports | 99 | | 3,90 | | 99 | | 3,90 | | 99 | | 3,90 | | 99 | | 3,90 | |
| | | E | O ports | 241 | | 9,49 | | 245,5 | 249 | 9,67 | 9,80 | 249,5 | 253 | 9,82 | 9,96 | 255 | 258,5 | 10,04 | 10,18 |
| OE ports | | | 237,5 | | 9,35 | | 242 | 245,5 | 9,53 | 9,67 | 246 | 249,5 | 9,69 | 9,82 | 251,5 | 255 | 9,90 | 10,04 | |
| F | | 23 | | 0,91 | | 23 | | 0,91 | | 23 | | 0,91 | | 23 | | 0,91 | | | |

Available flanges and shafts for GR55
Flange ed alberi disponibili per GR55

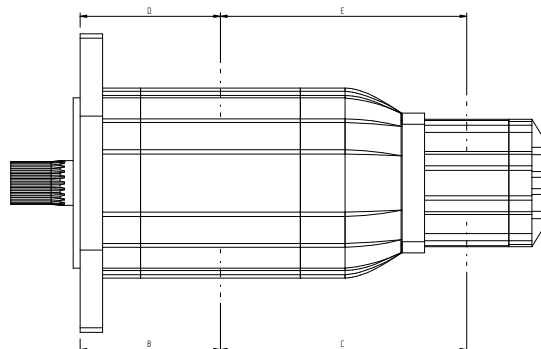
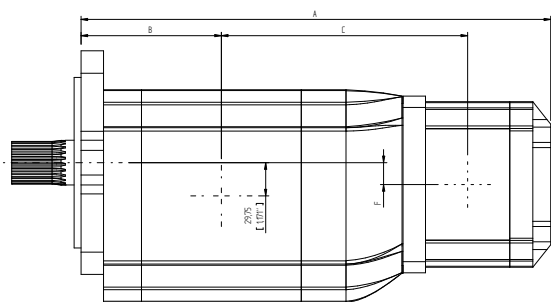


Type flange SAEB-T15
 Flangia tipo SAEB-T15



Type shaft SAEB-T15
 Albero tipo SAEB-T15
 Max torque / Coppia max: 700 Nm

GR72 - Group 4 tandem pumps



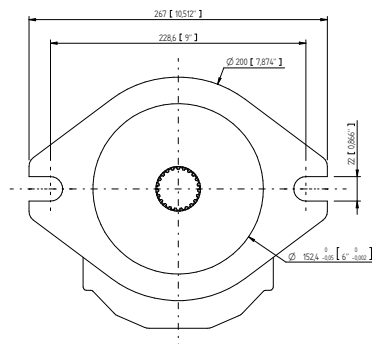
| GR72 + GR47 | | | GR47 - 2° | | | | | | | | | | | |
|-------------|-----|---|-----------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|
| | | | 28 | | 32 | | 36 | | 40 | | 45 | | 50 | |
| | | | mm | inc | mm | inc | mm | inc | mm | inc | mm | inc | mm | inc |
| GR72 - 1° | 94 | A | 430,5 | 16,95 | 434,5 | 17,11 | 438,5 | 17,26 | 442,5 | 17,42 | 447 | 17,60 | 452 | 17,80 |
| | | B | 125,5 | 4,94 | 125,5 | 4,94 | 125,5 | 4,94 | 125,5 | 4,94 | 125,5 | 4,94 | 125,5 | 4,94 |
| | | C | 227 | 8,94 | 229 | 9,02 | 231 | 9,09 | 233 | 9,17 | 235,25 | 9,26 | 237,75 | 9,36 |
| | | D | 128,5 | 5,06 | 128,5 | 5,06 | 128,5 | 5,06 | 128,5 | 5,06 | 128,5 | 5,06 | 128,5 | 5,06 |
| | | E | 224 | 8,82 | 226 | 8,90 | 228 | 8,98 | 230 | 9,06 | 232,25 | 9,14 | 234,75 | 9,24 |
| | | F | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 |
| | 101 | A | 433,5 | 17,07 | 437,5 | 17,22 | 441,5 | 17,38 | 445,5 | 17,54 | 450 | 17,72 | 455 | 17,91 |
| | | B | 127 | 5,00 | 127 | 5,00 | 127 | 5,00 | 127 | 5,00 | 127 | 5,00 | 127 | 5,00 |
| | | C | 228,5 | 9,00 | 230,5 | 9,07 | 232,5 | 9,15 | 234,5 | 9,23 | 236,75 | 9,32 | 239,25 | 9,42 |
| | | D | 134 | 5,28 | 134 | 5,28 | 134 | 5,28 | 134 | 5,28 | 134 | 5,28 | 134 | 5,28 |
| | | E | 221,5 | 8,72 | 223,5 | 8,80 | 225,5 | 8,88 | 227,5 | 8,96 | 229,75 | 9,05 | 232,25 | 9,14 |
| | | F | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 |
| | 125 | A | 443,5 | 17,46 | 447,5 | 17,62 | 451,5 | 17,78 | 455,5 | 17,93 | 460 | 18,11 | 465 | 18,31 |
| | | B | 132 | 5,20 | 132 | 5,20 | 132 | 5,20 | 132 | 5,20 | 132 | 5,20 | 132 | 5,20 |
| | | C | 233,5 | 9,19 | 235,5 | 9,27 | 237,5 | 9,35 | 239,5 | 9,43 | 241,75 | 9,52 | 244,25 | 9,62 |
| | | D | 145 | 5,71 | 145 | 5,71 | 145 | 5,71 | 145 | 5,71 | 145 | 5,71 | 145 | 5,71 |
| | | E | 220,5 | 8,68 | 222,5 | 8,76 | 224,5 | 8,84 | 226,5 | 8,92 | 228,75 | 9,01 | 231,25 | 9,10 |
| | | F | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 |
| | 150 | A | 454 | 17,87 | 458 | 18,03 | 462 | 18,19 | 466 | 18,35 | 470,5 | 18,52 | 475,5 | 18,72 |
| | | B | 137,25 | 5,40 | 137,25 | 5,40 | 137,25 | 5,40 | 137,25 | 5,40 | 137,25 | 5,40 | 137,25 | 5,40 |
| | | C | 238,75 | 9,40 | 240,75 | 9,48 | 242,75 | 9,56 | 244,75 | 9,64 | 247 | 9,72 | 249,5 | 9,82 |
| | | D | 150,25 | 5,92 | 150,25 | 5,92 | 150,25 | 5,92 | 150,25 | 5,92 | 150,25 | 5,92 | 150,25 | 5,92 |
| | | E | 225,75 | 8,89 | 227,5 | 8,96 | 229,75 | 9,05 | 231,75 | 9,12 | 234 | 9,21 | 236,5 | 9,31 |
| | | F | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 |
| | 175 | A | 464 | 18,27 | 468 | 18,43 | 472 | 18,58 | 476 | 18,74 | 480,5 | 18,92 | 485,5 | 19,11 |
| | | B | 142,25 | 5,60 | 142,25 | 5,60 | 142,25 | 5,60 | 142,25 | 5,60 | 142,25 | 5,60 | 142,25 | 5,60 |
| | | C | 243,75 | 9,60 | 245,75 | 9,68 | 247,75 | 9,75 | 249,75 | 9,83 | 252 | 9,92 | 254,5 | 10,02 |
| | | D | 155,25 | 6,11 | 155,25 | 6,11 | 155,25 | 6,11 | 155,25 | 6,11 | 155,25 | 6,11 | 155,25 | 6,11 |
| | | E | 230,75 | 9,08 | 232,75 | 9,16 | 234,75 | 9,24 | 236,75 | 9,32 | 239 | 9,41 | 241,5 | 9,51 |
| | | F | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 |
| | 200 | A | 474,5 | 18,68 | 478,5 | 18,84 | 482,5 | 19,00 | 486,5 | 19,15 | 491 | 19,33 | 496 | 19,53 |
| | | B | 147,5 | 5,81 | 147,5 | 5,81 | 147,5 | 5,81 | 147,5 | 5,81 | 147,5 | 5,81 | 147,5 | 5,81 |
| | | C | 249 | 9,80 | 251 | 9,88 | 253 | 9,96 | 255 | 10,04 | 257,25 | 10,13 | 259,75 | 10,23 |
| | | D | 160,5 | 6,32 | 160,5 | 6,32 | 160,5 | 6,32 | 160,5 | 6,32 | 160,5 | 6,32 | 160,5 | 6,32 |
| | | E | 236 | 9,29 | 238 | 9,37 | 240 | 9,45 | 242 | 9,53 | 244,25 | 9,62 | 246,75 | 9,71 |
| | | F | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 | 19,5 | 0,77 |

| GR72 + GR55 | | | GR55 - 2° | | | | | | | | | | | | | | | |
|-------------|-----|---|-----------|-------|--------|-------|--------|-------|--------|-------|--------|-------|------|-------|-------|-------|-------|-------|
| | | | 50 | | | | 63 | | | | 75 | | | | 90 | | | |
| | | | mm | | inc | | mm | | inc | | mm | | inc | | mm | | inc | |
| | | | O | OE | O | OE | O | OE | O | OE | O | OE | O | OE | O | OE | O | OE |
| GR72 - 1° | 94 | A | 448 | 17,64 | 457 | 17,99 | 465 | 18,31 | 476 | 18,74 | | | | | | | | |
| | | B | 125,5 | 4,94 | 125,5 | 4,94 | 125,5 | 4,94 | 125,5 | 4,94 | 125,5 | 4,94 | | | | | | |
| | | C | 236 | 9,29 | 240,5 | 9,47 | 244,5 | 9,63 | 250 | 9,84 | | | | | | | | |
| | | D | 128,5 | 5,06 | 128,5 | 5,06 | 128,5 | 5,06 | 128,5 | 5,06 | 128,5 | 5,06 | | | | | | |
| | | E | 233 | 9,17 | 237,5 | 9,21 | 241 | 9,35 | 245 | 9,48 | 241 | 245 | 9,50 | 9,64 | 247 | 250,5 | 9,72 | 9,86 |
| | | F | 23 | 0,91 | 23 | 0,9 | 23 | 0,9 | 23 | 0,9 | 23 | 0,9 | | | | | | |
| | 101 | A | 451 | 17,76 | 460 | 18,11 | 468 | 18,42 | 479 | 18,85 | | | | | | | | |
| | | B | 127 | 5,00 | 127 | 5,00 | 127 | 5,00 | 127 | 5,00 | 127 | 5,00 | | | | | | |
| | | C | 237,5 | 9,35 | 242 | 9,52 | 246 | 9,68 | 251,5 | 9,9 | | | | | | | | |
| | | D | 134 | 5,28 | 134 | 5,28 | 134 | 5,28 | 134 | 5,28 | 134 | 5,28 | | | | | | |
| | | E | 230,5 | 9,07 | 235 | 9,25 | 238,5 | 9,39 | 242,5 | 9,54 | 239 | 242,5 | 9,4 | 9,54 | 244,5 | 248 | 9,62 | 9,76 |
| | | F | 23 | 0,91 | 23 | 0,91 | 23 | 0,91 | 23 | 0,91 | 23 | 0,91 | | | | | | |
| | 125 | A | 461 | 18,15 | 470 | 18,5 | 478 | 18,81 | 489 | 19,25 | | | | | | | | |
| | | B | 132 | 5,20 | 132 | 5,20 | 132 | 5,20 | 132 | 5,20 | 132 | 5,20 | | | | | | |
| | | C | 242,5 | 9,55 | 247 | 9,72 | 251 | 9,88 | 256,5 | 10,09 | | | | | | | | |
| | | D | 145 | 5,71 | 145 | 5,71 | 145 | 5,71 | 145 | 5,71 | 145 | 5,71 | | | | | | |
| | | E | 234,7 | 9,24 | 234 | 9,21 | 237,5 | 9,35 | 241,5 | 9,5 | 238 | 241,5 | 9,37 | 9,5 | 243,5 | 247 | 9,58 | 9,72 |
| | | F | 23 | 0,91 | 23 | 0,91 | 23 | 0,91 | 23 | 0,91 | 23 | 0,91 | | | | | | |
| | 150 | A | 471,5 | 18,56 | 480,5 | 18,91 | 488,5 | 19,23 | 499,5 | 19,66 | | | | | | | | |
| | | B | 137,25 | 5,40 | 137,25 | 5,40 | 137,25 | 5,40 | 137,25 | 5,40 | 137,25 | 5,40 | | | | | | |
| | | C | 247,7 | 9,75 | 252,2 | 9,93 | 256,2 | 10,09 | 261,7 | 10,30 | | | | | | | | |
| | | D | 150,25 | 5,91 | 150,25 | 5,91 | 150,25 | 5,91 | 150,25 | 5,91 | 150,25 | 5,91 | | | | | | |
| | | E | 234,75 | 9,24 | 239,2 | 9,41 | 242,7 | 9,55 | 246,7 | 9,71 | 243,2 | 246,7 | 9,57 | 9,71 | 248,7 | 252,2 | 9,7 | 9,93 |
| | | F | 23 | 0,91 | 23 | 0,91 | 23 | 0,91 | 23 | 0,91 | 23 | 0,91 | | | | | | |
| | 175 | A | 481,5 | 18,96 | 490,5 | 19,31 | 498,5 | 19,62 | 509,5 | 20,05 | | | | | | | | |
| | | B | 142,25 | 5,60 | 142,25 | 5,60 | 142,25 | 5,60 | 142,25 | 5,60 | 142,25 | 5,60 | | | | | | |
| | | C | 252,75 | 9,95 | 257,25 | 10,12 | 261,25 | 10,28 | 266,75 | 10,50 | | | | | | | | |
| | | D | 155,25 | 6,11 | 155,25 | 6,11 | 155,25 | 6,11 | 155,25 | 6,11 | 155,25 | 6,11 | | | | | | |
| | | E | 239,75 | 9,44 | 244,2 | 9,61 | 247,7 | 9,75 | 251,7 | 9,91 | 248,2 | 251,7 | 9,77 | 9,91 | 253,7 | 257,2 | 9,99 | 10,12 |
| | | F | 23 | 0,91 | 23 | 0,91 | 23 | 0,91 | 23 | 0,91 | 23 | 0,91 | | | | | | |
| | 200 | A | 492 | 19,37 | 501 | 19,72 | 509 | 20,04 | 520 | 20,47 | | | | | | | | |
| | | B | 147,5 | 5,81 | 147,5 | 5,81 | 147,5 | 5,81 | 147,5 | 5,81 | 147,5 | 5,81 | | | | | | |
| | | C | 258 | 10,16 | 262,5 | 10,33 | 266,5 | 10,49 | 272 | 10,71 | | | | | | | | |
| | | D | 160,5 | 6,32 | 160,5 | 6,32 | 160,5 | 6,32 | 160,5 | 6,32 | 160,5 | 6,32 | | | | | | |
| | | E | 245 | 9,64 | 249,5 | 9,82 | 253 | 9,96 | 257 | 10,11 | 253,5 | 257 | 9,98 | 10,11 | 259 | 262,5 | 10,19 | 10,33 |
| | | F | 23 | 0,91 | 23 | 0,91 | 23 | 0,91 | 23 | 0,91 | 23 | 0,91 | | | | | | |

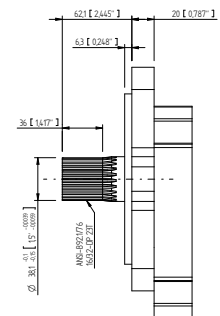
| GR72 + GR72 | | | GR72 - 2° | | | | | | | | | | | |
|-------------|-----|--------|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| | | | 94 | | 100 | | 125 | | 150 | | 175 | | 200 | |
| | | | mm | inc | mm | inc | mm | inc | mm | inc | mm | inc | mm | inc |
| GR72 - 1° | 94 | A | 559,8 | 22,03 | 562,8 | 22,15 | 572,8 | 22,55 | 583,3 | 22,96 | 593,3 | 23,35 | 603,8 | 23,77 |
| | | B | 125,5 | 4,94 | 125,5 | 4,94 | 125,5 | 4,94 | 125,5 | 4,94 | 125,5 | 4,94 | 125,5 | 4,94 |
| | | C | 314,8 | 12,39 | 316,3 | 12,45 | 321,3 | 12,65 | 326,55 | 12,86 | 331,55 | 13,05 | 336,8 | 13,26 |
| | | D | 128,5 | 5,06 | 128,5 | 5,06 | 128,5 | 5,06 | 128,5 | 5,06 | 128,5 | 5,06 | 128,5 | 5,06 |
| | | E | 314,8 | 12,39 | 320,3 | 12,61 | 331,3 | 13,04 | 336,5 | 13,25 | 341,55 | 13,45 | 346,8 | 13,65 |
| | | F | 29,75 | 1,17 | 29,75 | 1,17 | 29,75 | 1,17 | 29,75 | 1,17 | 29,75 | 1,17 | 29,75 | 1,17 |
| | 101 | A | 562,8 | 22,16 | 565,8 | 22,28 | 575,8 | 22,67 | 586,3 | 23,08 | 596,3 | 23,48 | 606,8 | 23,89 |
| | | B | 127 | 5,00 | 127 | 5,00 | 127 | 5,00 | 127 | 5,00 | 127 | 5,00 | 127 | 5,00 |
| | | C | 316,3 | 12,45 | 317,8 | 12,51 | 322,8 | 12,71 | 328 | 12,91 | 333 | 13,11 | 338,3 | 13,32 |
| | | D | 134 | 5,28 | 134 | 5,28 | 134 | 5,28 | 134 | 5,28 | 134 | 5,28 | 134 | 5,28 |
| | | E | 312,3 | 12,30 | 317,8 | 12,51 | 328,8 | 12,94 | 334 | 13,15 | 339 | 13,35 | 344,3 | 13,56 |
| | | F | 29,75 | 1,17 | 29,75 | 1,17 | 29,75 | 1,17 | 29,75 | 1,17 | 29,75 | 1,17 | 29,75 | 1,17 |
| | 125 | A | 572,8 | 22,55 | 575,8 | 22,67 | 585,8 | 23,06 | 596,3 | 23,48 | 606,3 | 23,87 | 616,8 | 24,28 |
| | | B | 132 | 5,20 | 132 | 5,20 | 132 | 5,20 | 132 | 5,20 | 132 | 5,20 | 132 | 5,20 |
| | | C | 321,3 | 12,65 | 322,8 | 12,71 | 327,8 | 12,91 | 333 | 13,11 | 338 | 13,31 | 343 | 13,50 |
| | | D | 145 | 5,71 | 145 | 5,71 | 145 | 5,71 | 145 | 5,71 | 145 | 5,71 | 145 | 5,71 |
| | | E | 311,3 | 12,26 | 316,8 | 12,47 | 327,8 | 12,91 | 333 | 13,11 | 338 | 13,31 | 343,3 | 13,52 |
| | | F | 29,75 | 1,17 | 29,75 | 1,17 | 29,75 | 1,17 | 29,75 | 1,17 | 29,75 | 1,17 | 29,75 | 1,17 |
| | 150 | A | 583,3 | 22,96 | 586,3 | 23,08 | 596,3 | 23,48 | 606,8 | 23,89 | 616,8 | 24,28 | 627,3 | 24,70 |
| | | B | 137,25 | 5,40 | 137,25 | 5,40 | 137,25 | 5,40 | 137,25 | 5,40 | 137,25 | 5,40 | 137,25 | 5,40 |
| | | C | 326,55 | 12,85 | 328 | 12,91 | 333 | 13,11 | 338,3 | 13,32 | 343,3 | 13,52 | 348,5 | 13,72 |
| | | D | 150,25 | 5,91 | 150,25 | 5,91 | 150,25 | 5,91 | 150,25 | 5,91 | 150,25 | 5,91 | 150,25 | 5,91 |
| | | E | 316,55 | 12,46 | 322 | 12,67 | 333 | 13,11 | 338,3 | 13,31 | 343,3 | 13,51 | 348,55 | 13,72 |
| | | F | 29,75 | 1,17 | 29,75 | 1,17 | 29,75 | 1,17 | 29,75 | 1,17 | 29,75 | 1,17 | 29,75 | 1,17 |
| 175 | A | 593,3 | 23,36 | 596,3 | 23,47 | 606,3 | 23,87 | 616,8 | 24,28 | 626,8 | 24,67 | 637,3 | 25,09 | |
| | B | 142,25 | 5,60 | 142,2 | 5,60 | 142,2 | 5,60 | 142,2 | 5,60 | 142,2 | 5,60 | 142,2 | 5,60 | |
| | C | 331,55 | 13,05 | 330 | 13,11 | 338 | 13,30 | 343,3 | 13,51 | 348,3 | 13,71 | 353,55 | 13,91 | |
| | D | 155,25 | 6,11 | 155,25 | 6,11 | 155,25 | 6,11 | 155,25 | 6,11 | 155,25 | 6,11 | 155,25 | 6,11 | |
| | E | 321,55 | 12,65 | 327 | 12,87 | 338 | 13,3 | 343,3 | 13,51 | 348,3 | 13,71 | 353,55 | 13,91 | |
| | F | 29,75 | 1,17 | 29,75 | 1,17 | 29,75 | 1,17 | 29,75 | 1,17 | 29,75 | 1,17 | 29,75 | 1,17 | |
| 200 | A | 603,8 | 23,77 | 606,8 | 23,89 | 616,8 | 24,28 | 627,3 | 24,69 | 637,3 | 25,09 | 647,8 | 25,5 | |
| | B | 147,5 | 5,8 | 147,5 | 5,8 | 147,5 | 5,8 | 147,5 | 5,8 | 147,5 | 5,8 | 147,5 | 5,8 | |
| | C | 336,8 | 13,26 | 338,3 | 13,31 | 343,3 | 13,51 | 348,55 | 13,72 | 353,55 | 13,91 | 358,8 | 14,12 | |
| | D | 160,5 | 6,31 | 160,5 | 6,31 | 160,5 | 6,31 | 160,5 | 6,31 | 160,5 | 6,31 | 160,5 | 6,31 | |
| | E | 326,8 | 12,86 | 332,3 | 13,08 | 343,3 | 13,51 | 348,55 | 13,72 | 353,55 | 13,91 | 358,8 | 14,12 | |
| | F | 29,75 | 1,17 | 29,75 | 1,17 | 29,75 | 1,17 | 29,75 | 1,17 | 29,75 | 1,17 | 29,75 | 1,17 | |

Available flanges and shafts for GR72
Flange ed alberi disponibili per GR72

Type flange SAED-23T
 Flangia tipo SAED-23T



Type shaft SAED-23T
 Albero tipo SAED-23T
 Max torque / Coppia max: 1200 Nm



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