V 180

Positive displacement internal gear pump

Indicative picture of the product

Product Data

Capacity
Up to 2.900 l/min

Pressure
Up to 8 bar

Viscosity
Up to 60.000 cSt
for standard versions

Temperature
Up to 300°C

Characteristics

The V Series internal gear volumetric pumps, standard versions, are designed to handle clean fluids (including abrasive fluids) with viscosity from 20 to 60.000 cSt. Higher viscosities can also be managed by V Series pumps with:
- accurate size selectio
- fluid-specific rotation speed adjustment
- clearances adjustments and specific construction

Designed for heavy and demanding duties, they are used in all industrial applications where gentle management of viscous, sensitive and challenging products is required. V Series rotary volumetric pumps ensure flow rates are proportional to the rotational speed and allow constant pulsation-free flows, regardless of the back pressure; setups with frequency variators ensure accurate and variable flow rates based on feedback signals coming from control devices (flow rate, pressure, mass, level, etc.). Volumetric rotary pumps with internal gears allow reversible rotation and different ports orientation, for maximum intallation versatility and flexibility.

Advantages

1. **Simple design**. Only two moving parts: rotor and idler gears, and only one shaft seal.
2. **Reliable, robust and built for long life.** Perfect handling of medium-high viscosity fluids, low peripheral speeds of the rotor, an external support with a large-sized roller bearing to support axial and radial loads in order to ensure a longer service life.
3. **Simple and minimal maintenance.** Inspections and adjustments can be carried out without removing the pump, piping or drive.
4. **Reversibility.** By inverting the direction of rotation the flow of liquid is reversed. Full performance is available in either direction of flow.
5. **Preheating.** Heating chambers cast around the casing or integrated in the cover and on the seal housing, allowing high viscosities accurate control.
6. **Constant flow.** directly proportional to the rotational speed and virtually independent of the pressure. Smooth pulsation-free flow, preveting pressure spikes which could cause vibrations in the pipework.
7. **Gentle handling of shear-sensitive fluids.** Thanks to low rotation speed and wider cavities between gear teeth, any alterations of viscous and sensitive products are avoided.

Applications *(some type of fluids)*

Resins, polymers
Polyurethane foams (isocyanate and polyol)
Glues, adhesives, sealants
Plastic materials, rubbers, compounds for coatings
Paints, inks, dyes and synthetic pigments
Soaps, surfactants, cleaning products
Bitumen, pitch, tar
Food production fluids such as molasses, dextrose, glycerin,lecithin, syrups, chocolate, peanut butter, vegetable oils, starches, animal feed, animal fats, pet food
Fertilizers
Lubricating fuel oils
Additives
Alcohols and solvents
Glycol

Certifications

ATEX 2014/34/EU
EC N. 1935 / 2004

V 180 - PERFORMANCES BASED ON VISCOSITY AND WORKING PRESSURE

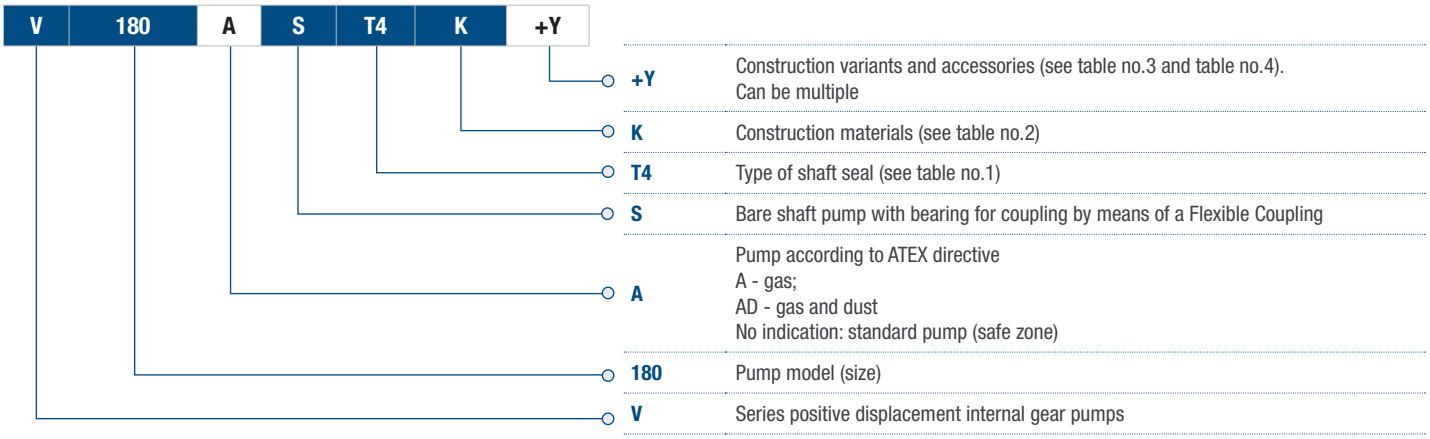
Displacement	Viscosity	Rpm (max)*	Pressure (bar)			
liters/rev	mm²/s (cSt)	rpm	2	4	6	8
			Power (kW) / Capacity (l/min)			
12,4	20	245	12,0 / 2.850	22,0 / 2.700	32,0 / 2.560	42,0 / 2.400
	60	245	13,0 / 2.900	23,0 / 2.760	33,0 / 2.620	43,0 / 2.490
	200	220	20,0 / 2.600	30,0 / 2.500	40,0 / 2.390	50,0 / 2.280
	600	220	23,0 / 2.640	33,0 / 2.550	43,0 / 2.460	53,0 / 2.380
	2.000	160	22,0 / 1.900	30,0 / 1.860	38,0 / 1.790	44,0 / 1.730
	6.000	130	23,0 / 1.570	29,0 / 1.535	34,0 / 1.495	40,0 / 1.460
	20.000		26,0 / 1.340	31,0 / 1.321	36,0 / 1.300	41,0 / 1.270
	60.000		24,0 / 1.045	28,0 / 1.040	32,0 / 1.035	36,0 / 1.030

*Max allowed speed - based only on the viscosity of the pumped fluid.
Select correct maximum speed value considering all the other chemical-physical characteristics of the pumped fluid.

V 180 - TYPE AND POSITION OF SUCTION AND DISCHARGE PORTS - WEIGHTS - WORKING TEMPERATURES

Suction and discharge ports		Port position		Weight (kg)	Max Temperature fluid [°C] (depending on the type of mechanical seal selected)
Type	Measure	Cast iron pump	Carbon steel and stainless steel pump	Depending on pump version	
EN - EN 1092-2 CAST IRON EN 1092-1 STAINLESS STEAL TYPE B (R.F.) or TYPE A (F.F)	DN200 PN16	Not available	180°	600	300 for cast iron pumps 200 or stainless steel pumps Depending on the type of seal
ANSI - ANSI B16.1 CAST IRON CLASS 125 R.F. o F.F. ANSI B16.5 STAINLESS STEAL CLASS 150 R.F. o F.F.	8"	Not available	180°		

V 180 - PRODUCT DESCRIPTION



Key:
*highlighted backgrounds: **always present in the pump naming***
*backgrounds not highlighted: **construction variants and accessories***

TABLE 1 - SHAFT SEALING	
P	Packing gland
P1	Flushed packed gland
P...-RAD	Lip Ring Seal - Not available
T4 (T6)	UNI EN 12756 standard dimension mechanical seal. Graphite/ceramic with PTFE gaskets. A PTFE lip seal is mounted behind the main seal to contain a barrier liquid (Quench). On request, a quench liquid reservoir (+O2). For the V 25-2 and V 30-2, the denomination is T5
T4W (T6W)	UNI EN 12756 standard dimension mechanical seal. Tungsten or silicon carbide/ceramic with PTFE gaskets. A PTFE lip seal is mounted behind the main seal to contain a barrier liquid (Quench). On request, a quench liquid reservoir (+O2) can be supplied. For the V 25-2 and V 30-2, the denomination is T5W.
T7*	Double tandem mechanical seal (not available on V 25-2 and V 30-2)
T8*	Double back-to-back mechanical seal *

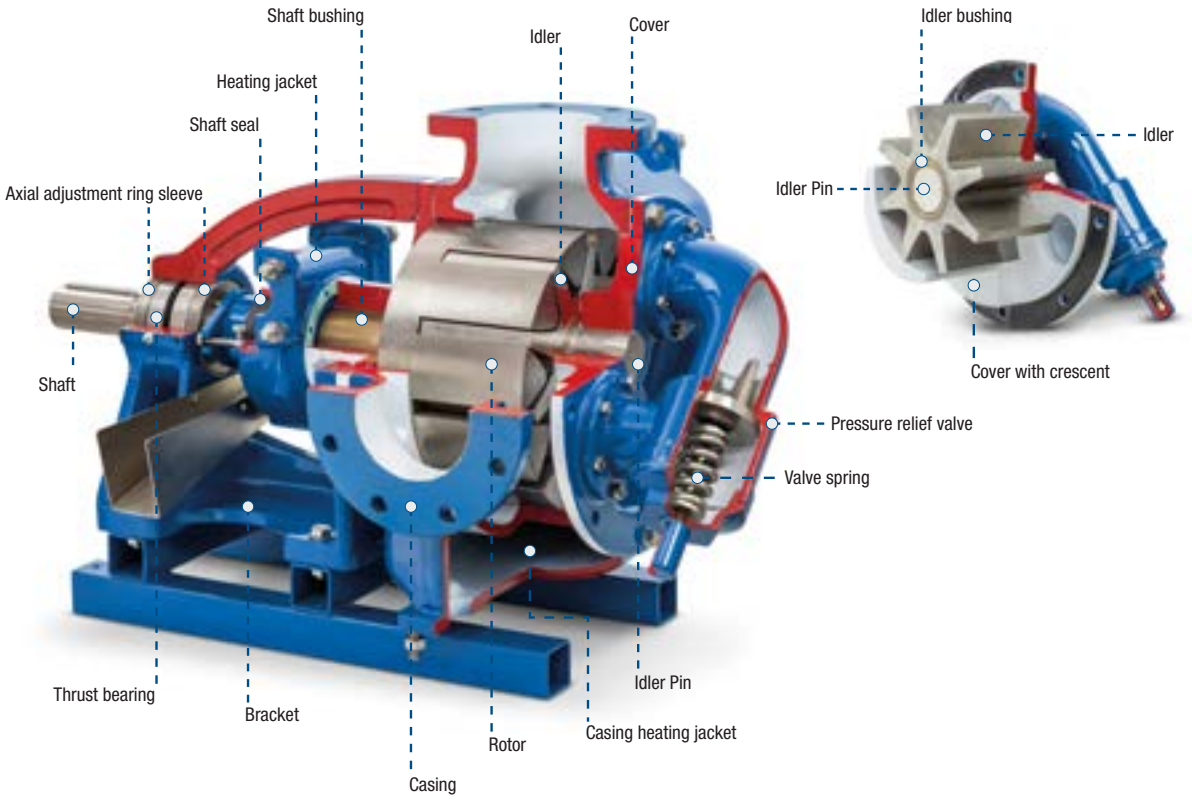
* The seal materials and lubrication system are decided on case by case depending on the chemical and physical characteristics of the liquids

TABLE 2 - MATERIAL	
No key	Cast iron with bronze bushes. For lubricating and non lubricating liquids - Not available.
G	Cast iron construction with cast iron bushes. For lubricating and non-lubricating fluids. Available in all sizes (for alkaline liquids) - Not available.
BS	Cast iron with graphite bushes. Tight tolerances. Idler with special antigalling treatment. AISI 329 or SAF 2205 steel shaft and idler pin. Suitable for all types of solvents, including chlorinated solvents, which do not corrode cast iron - Not available.
HT	In ductile iron with internal bronze bushes for circulating heat transfer oil up to +300°C. - Not available.
HTR	Ductil cast iron construction with bronze bushes for the circulation of fluids up to +300°C. Construction suitable for hot bitumen, tar, and pitch. Heating jacket formed by casting around the pump casing. - Not available.
K	CF-8M (AISI 316) stainless steel. Graphite bushes (liquids with viscosity up to 10.000 cSt). For higher viscosities or abrasive liquids, use pumps with options +B (bronze bushes) or +W2 (idler pin and bushes in tungsten carbide)
AW	Construction in hardened steel with bronze or graphite bushes. - Request feasibility.

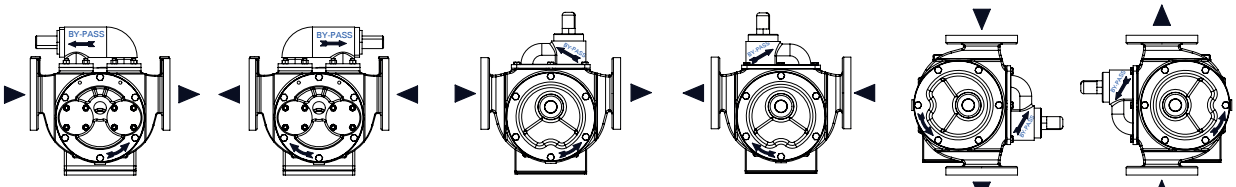
TABLE 3 - EXECUTIONS	
A - AD	ATEX version; A = gas; AD = gas and dust (for pumps with mechanical seal, the +O2 barrier fluid containment tank is included)
+FR	EN 1092 type B flanges on suction and discharge ports (inquire for availability on other connections).
+FA	ANSI 125/150 FF flanges on suction and discharge ports (inquire for availability on other connections).
+FAR	ANSI 125/150 RF flanges on suction and discharge ports (inquire for availability on other connections).
+R2	Heating (or cooling) jacket on the cover
+B	Bronze bushes (where not present on standard version)
+W	Mechanical seal static face in tungsten carbide or silicon carbide (see table 1 - T4 - T4W - T6 - T6W).
+K33	Hardened components (only for stainless steel pumps) - Request feasibility.
+X	Special construction (as specified on the product offer)

TABLE 4 - OPTIONALS	
+O2	With quench liquid reservoir (included for ATEX pumps)
+O2X	Pressure vessel for double mechanical seals ST8 (API PLAN 53A - Refer to specific documents)
+Y	Pressure relief valve - Calibration for standard pressures (from 1 to 8 bar).
+PT	Thermowell for ATEX pump (to be evaluated for ATEX version as indicated in the manual)
+TC	Thermocouple for ATEX pump (to be evaluated for ATEX version as indicated in the manual)
+X	Special construction (possible additional description in specific document)

*The use of some types of variants and accessories excludes others; if in doubt, contact the office.



V 180 PUMP MODEL - PORT POSITION: 180°



STANDARD POSITIONING: V7

V 180 MODEL - PORT POSITION: 180° (L*) - BARE SHAFT PUMP FOR ELASTIC COUPLING (S) WITH PACKING GLAND (P)								
Standard version	Casing	Cover	Rotor	Idler	Idler Pin	Shaft	Bushings	Seal
V 180 SPK D.90 PUMP	ASTM A351 CF8M STAINLESS STEEL	ASTM A351 CF8M STAINLESS STEEL	ASTM A351 CF8M STAINLESS STEEL	ASTM A351 CF8M STAINLESS STEEL	AISi 329 STAINLESS STEEL	AISi 329 STAINLESS STEEL	GRAPHITE	PTFE
V 180 MODEL - PORT POSITION: 180° (L*) - BARE SHAFT PUMP FOR ELASTIC COUPLING (S) WITH SINGLE MECHANICAL SEAL (T4-T4W)								
Standard version	Casing	Cover	Rotor	Idler	Idler Pin	Shaft	Bushings	Seal
V 180 ST4K D.90 PUMP	EN 1563 EN-GJS-500 DUCTILE CAST IRON	EN 1563 EN-GJS-500 DUCTILE CAST IRON	EN 1563 EN-GJS-500 DUCTILE CAST IRON	EN 1563 EN-GJS-500 DUCTILE CAST IRON	AISi 329 STAINLESS STEEL	AISi 329 STAINLESS STEEL	GRAPHITE	GRAPHITE - CERAMIC - PTFE - STAINLESS STEEL
V 180 MODEL - PORT POSITION: 180° (L*) - BARE SHAFT PUMP FOR ELASTIC COUPLING (S) WITH DOUBLE MECHANICAL SEAL (T8)								
Standard version	Casing	Cover	Rotor	Idler	Idler Pin	Shaft	Bushings	Seal
V 180 ST8K D.90 PUMP	ASTM A351 CF8M STAINLESS STEEL	ASTM A351 CF8M STAINLESS STEEL	ASTM A351 CF8M STAINLESS STEEL	ASTM A351 CF8M STAINLESS STEEL	AISi 329 STAINLESS STEEL	AISi 329 STAINLESS STEEL	GRAPHITE	GRAPHITE - CERAMIC - PTFE - STAINLESS STEEL

DIMENSIONS FOR 180° PORTS POSITIONING VERSION

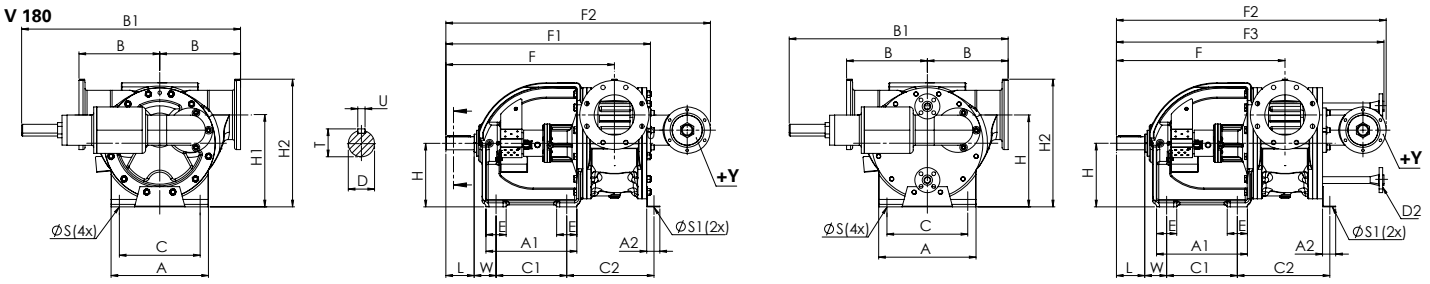


TABLE FOR 180° PORTS POSITIONING VERSION																								
	A		A1		A2		C		C1		C2		E		ØS		ØS1		W		L		H	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
V 180	482	19.0	450	17.7	65	2.6	400	15.7	350	13.8	431	17.0	100	3.9	28	1.1	22	0.9	110	4.3	140	5.5	315	12.4

	H1		H2		B		B1		F		F1		F2		F3		Dm6		T		U		D2	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
V 180	455	17.9	626.5	24.7	400	15.7	1060	41.7	835	32.9	1014	39.9	1310	51.6	1325	52.2	65	2.6	69	3	18	0.7	DN25	DN25