

# Positive displacement internal gear pump



### **Product Data**

Capacity
Up to 65 I/min

Pressure
Up to 16 bar

Viscosity
Up to 60,000 cSt
for standard versions

Temperature **Up to 300°C** 

Indicative picture of the product

## **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 selection
- 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



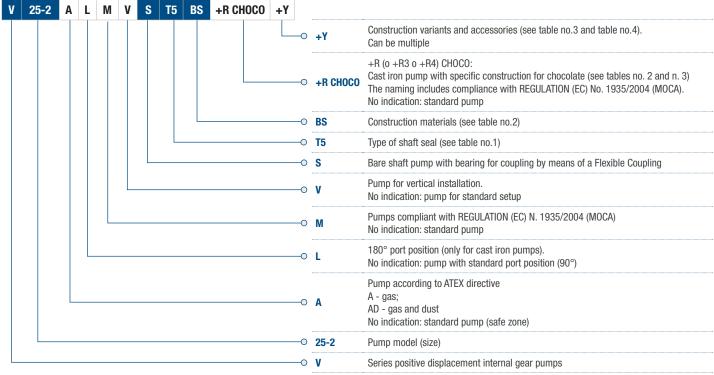
	V 25-2 -	PERFORMANC	ES BASED ON	VISCOSITY AND	WORKING PRE	SSURE	
Displacement	Viscosity	Rpm (max)			Pressure (bar)		
liters/rev	mm <sup>2</sup> /a (aCt)	rom.	2	4	8	12	16
illers/rev	mm²/s (cSt)	rpm		Powe	er (kW)/ Capacity (l	/min)	
	20	1.450	1,1 / 64	1,4 / 63	1,8 / 60	2,3 / 58	_
	60	1.450	1,3 / 64	1,5 / 63	2,0 / 61	2,5 / 59	_
	200	1.450	1,7 / 65	1,9 / 64	2,4 / 62	2,8 / 61	3,4 / 59
0,045	600	1.300	2,0 / 58	2,3 / 58	2,7 / 56	3,2 / 55	3,6 / 54
0,045	2.000	1.100	2,1 / 50	2,3 / 49	2,7 / 48	3,1 / 48	3,5 / 47
	6.000	900	2,2 / 40	2,5 / 40	2,8 / 40	3,1 / 39	3,4 / 39
	20.000	680	2,2 / 31	2,2 / 31	2,5 / 30	2,7 / 30	3,0 / 30
	60.000	525	1,7 / 23	1,8 / 23	2,1 / 23	2,4 / 23	2,6 / 23

<sup>\*</sup>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 25-2 - TYPE AND POSIT	ION OF SU	CTION AND	DISCHARGE PORTS	- WEIGHTS - WORKIN	IG TEMPERATURES
Suction and discharge port	s		Port position	Weight (kg)	Max Temperature fluid [°C]
Туре	Measure	Cast iron pump	Carbon steel and stainless steel pump	Depending on pump version	(depending on the type of mechanical seal selected)
ISO 228 (BSP)	11/4"	90°	90°		300
EN - EN 1092-2 CAST IRON EN 1092-1 STAINLESS STEAL TYPE B (R.F.) or TYPE A (F.F)	DN40 PN16	90° / 180°	90°	13 / 14	for cast iron pumps
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.	1½"	90° / 180°	90°	10 / 14	or stainless steel pumps  Depending on the type of seal

#### **V 25-2 - PRODUCT DESCRIPTION**



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



TABI	LE 1 - SHAFT SEALING
P	Packing gland
P1	Flushed packing gland. For ATEX pumps' versions, this option is mandatory and specifies a construction with a thermocouple well (no flushing).
PRAD	Lip Ring Seal (only sizes up to V 100-2 included ) - Contact factory for availability of combinations with ATEX versions (A - AD)
T5 (T6)	Single mechanical seal UNI EN 12756 with graphite rotary face and ceramic static face - PTFE gaskets (T6 in FKM). Additional sealing ring for the containment of the barrier fluid (Quench). Upon request, a containment tank for the fluid is available. (+02). Only available for sizes V 25-2 and V 30-2, the designation T5 replaces the designation T4.
T5W (T6W)	Mechanical seal UNI EN 12756 with tungsten carbide (or silicon) rotary face and ceramic static face - PTFE gaskets (T6W in FKM). Additional sealing ring for the containment of the barrier fluid (Quench). Upon request, a containment tank for the fluid is available (+02). Only available for sizes V 25-2 and V 30-2, the designation T5 replaces the designation T4.
T7*	Double tandem mechanical seal (not available on V 25-2 and V 30-2)
T8*	Double back-to-back mechanical seal

 $<sup>^{\</sup>star}$  The seal materials and lubrication system are decided on case by case depending on the chemical and physical characteristics of the liquids

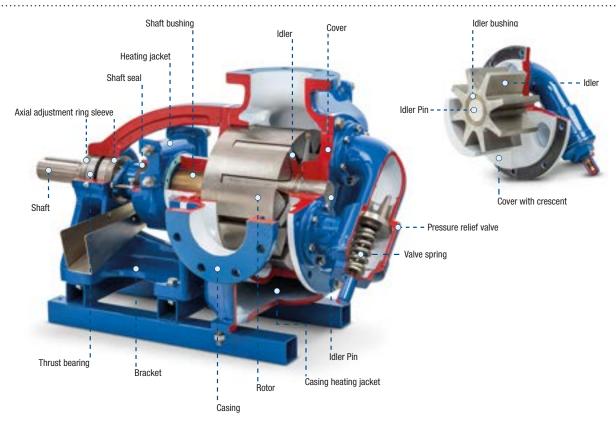
TABL	E 2 - MATERIAL
No key	Cast iron with bronze bushes. For lubricating and non lubricating liquids
G	Cast iron construction with cast iron bushes. For lubricant and non-lubricant fluids.
G+R (o +R3 o +R4) CHOCO	Specific construction in cast iron for chocolate (Dedicated tolerances, heating chambers, cast iron bushings).  Compliance with REGULATION (EC) N. 1935/2004 (MOCA - Materials intended to come into contact with food)
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
HT	In ductile iron with internal bronze bushes for circulating heat transfer oil up to +300°C.
HTR	In cast iron with internal bronze bushes and generous tolerances for liquids up to +300°C. Especially suitable for pumping hot bitumen, tar and pitch. Preheating jacket around casing. On request on type V 50-3 and up, preheating jacket also around axial seal (+R1). On type V 50-3 and up, preheating jackets with flanged ports, plain or grooved
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	Hardened steel construction for highly abrasive fluids (such as paints, resins, polyols, and bitumens); tungsten carbide idler pin and bushings.

TABI	LE 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)
L	180° ports casing (only cast iron pumps). Not available for HTR version or with the +R option
М	Pumps compliant with REGULATION (EC) N. 1935/2004 (MOCA)
V	Vertical pump installation (from V 25-2 to V 100-2 - only with mechanical seal). Request feasibility.
+R (o +R3 o +R4) CHOCO	Sub-version for chocolate with heating jacket/s; Pump compliant with REGULATION (EC) No. 1935/2004 (MOCA) (only models from V 25-2 to V 100-2 in cast iron).
+F	Only available for V 25-2 and V 30-2 - pump casing with DIN PN 16 FF flanges (refers to suction and discharge flanges only - please contact factory for feasibility if required for other connections). For HTR or +R versions, only threaded flanges are available.
+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).
+R	Full jacketing around the pump casing (available only for cast iron pumps with 90° ports).
+R1	Heating jacket on the seal box (not available for ATEX pumps; not available with accessory +02).
+R2	Heating (or cooling) jacket on the cover (not available in combination with +EH)
+R3	+R +R1 (only available for cast iron pumps with 90° ports - Not available for ATEX pumps, with +O2 option and in combination with +EH)
+R4	+R1 +R2 (not available for ATEX pumps, with +02 option and in combination with +EH)
+EH	Not available
+B	Bronze bushes (if not provided as a standard - not in combination with +W1 - +W2).
+W	Mechanical seal static face in tungsten carbide or silicon carbide (see table 1 - T5 - T5W - T6 - T6W).
+W1	Tungsten carbide idler pin and idler bush
+W2	Tungsten carbide idler pin and bushes, and stainless steel stellite coated shaft for stainless steel pumps
+QPQ	ardened components (only for cast iron pumps)
+K33	Hardened components (only for stainless steel pumps)
+X	Special construction (as specified on the product offer)

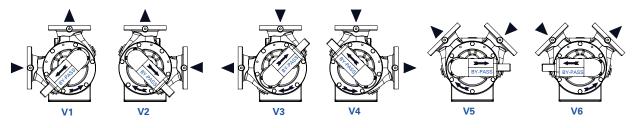
	TABLE 4 - OPTIONALS
+02	With quench liquid reservoir (included for ATEX pumps)
+02X	Pressure vessel for double mechanical seals ST8 (API PLAN 53A - Refer to specific documents)
+Y	Pressure relief valve - Calibration for standard pressures (from 1 to 5 bar for cast iron models - from 1 to 15 bar stainless steel models).
+YH	High-pressure relief valve - Calibration for high pressures (from 6 to 16 bar cast iron models).
+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)

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





### V 25-2 PUMP MODEL - PORT POSITION: 90°



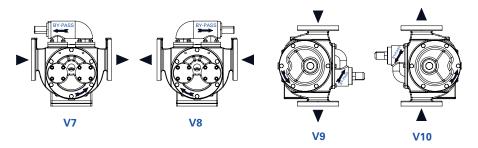
#### STANDARD POSITIONING: V1

	V 2	25-2 MODEL - PORT	POSITION: 90° - BA	ARE SHAFT PUMP F	OR ELASTIC COUPLING	(S) WITH PACKING	GLAND (P)	
Standard version	Casing	Cover	Rotor	Idler	ldler Pin	Shaft	Bushings	Packing gland
V 25-2 SP PUMP	EN 1561 EN-GJL-200 GREY CAST IRON	EN 1561 EN-GJL-200 GREY CAST IRON	EN 1563 EN-GJS-600 DUCTILE CAST IRON	EN 1561 EN-GJL-250 GREY CAST IRON	X210Cr13KU EN ISO 4957 CARBON STEEL	18NiCrMo5 EN 10084 CARBON STEEL	BRONZE	PTFE
V 25-2 SPG PUMP	EN 1561 EN-GJL-200 GREY CAST IRON	EN 1561 EN-GJL-200 GREY CAST IRON	EN 1563 EN-GJS-600 DUCTILE CAST IRON	EN 1561 EN-GJL-250 GREY CAST IRON	X210Cr13KU EN ISO 4957 CARBON STEEL	18NiCrMo5 EN 10084 CARBON STEEL	GREY CAST IRON	PTFE
V 25-2 SPG+R CHOCO PUMP	EN 1561 EN-GJL-200 GREY CAST IRON	EN 1561 EN-GJL-200 GREY CAST IRON	EN 1563 EN-GJS-600 DUCTILE CAST IRON	EN 1561 EN-GJL-250 GREY CAST IRON	X210Cr13KU EN ISO 4957 CARBON STEEL	18NiCrMo5 EN 10084 CARBON STEEL	GREY CAST IRON	PTFE
V 25-2 SPHTR PUMP	EN 1561 EN-GJL-200 GREY CAST IRON	EN 1561 EN-GJL-200 GREY CAST IRON	EN 1563 EN-GJS-600 DUCTILE CAST IRON	EN 1561 EN-GJL-250 GREY CAST IRON	X210Cr13KU EN ISO 4957 CARBON STEEL	18NiCrMo5 EN 10084 CARBON STEEL	BRONZE	PTFE - GRAPHITE
V 25-2 SPK 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 25-2 MOE	DEL - PORT POSITIO	N: 90° - BARE SHA	FT PUMP FOR ELAS	TIC COUPLING (S) WIT	H SINGLE MECHANI	CAL SEAL (1	[5-T5W)
Standard version	Casing	Cover	Rotor	Idler	ldler Pin	Shaft	Bushings	Seal
V 25-2 ST5W PUMP	EN 1561 EN-GJL-200 GREY CAST IRON	EN 1561 EN-GJL-200 GREY CAST IRON	EN 1563 EN-GJS-600 DUCTILE CAST IRON	EN 1561 EN-GJL-250 GREY CAST IRON	X210Cr13KU EN ISO 4957 CARBON STEEL	18NiCrMo5 EN 10084 CARBON STEEL	BRONZE	TUNGSTEN CARBIDE or SILICON CARBIDE - CERAMIC - PTFE - STAINLESS STEEL
V 25-2 ST5WG PUMP	EN 1561 EN-GJL-200 GREY CAST IRON	EN 1561 EN-GJL-200 GREY CAST IRON	EN 1563 EN-GJS-600 DUCTILE CAST IRON	EN 1561 EN-GJL-250 GREY CAST IRON	X210Cr13KU EN ISO 4957 CARBON STEEL	18NiCrMo5 EN 10084 CARBON STEEL	GREY CAST IRON	TUNGSTEN CARBIDE or SILICON CARBIDE - CERAMIC - PTFE - STAINLESS STEEL
V 25-2 ST5BS PUMP	EN 1561 EN-GJL-200 GREY CAST IRON	EN 1561 EN-GJL-200 GREY CAST IRON	EN 1563 EN-GJS-600 DUCTILE CAST IRON	EN 1561 EN-GJL-250 GREY CAST IRON	AISi 329 STAINLESS STEEL	AISi 329 STAINLESS STEEL	GRAPHITE	GRAPHITE - CERAMIC - PTFE - STAINLESS STEEL
V 25-2 ST5K 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
	V 25-2 M	ODEL - PORT POSIT	ION: 90° - BARE SH	IAFT PUMP FOR EL	ASTIC COUPLING (S) W	ITH DOUBLE MECHA	NICAL SEA	L (T8)
Standard version	Casing	Cover	Rotor	Idler	ldler Pin	Shaft	Bushings	Seal
V 25-2 ST8W PUMP	EN 1561 EN-GJL-200 GREY CAST IRON	EN 1561 EN-GJL-200 GREY CAST IRON	EN 1563 EN-GJS-600 DUCTILE CAST IRON	EN 1561 EN-GJL-250 GREY CAST IRON	X210Cr13KU EN ISO 4957 CARBON STEEL	18NiCrMo5 EN 10084 CARBON STEEL	BRONZE	TUNGSTEN CARBIDE or SILICON CARBIDE - CERAMIC - PTFE - STAINLESS STEEL
V 25-2 ST8BS PUMP	EN 1561 EN-GJL-200 GREY CAST IRON	EN 1561 EN-GJL-200 GREY CAST IRON	EN 1563 EN-GJS-600 DUCTILE CAST IRON	EN 1561 EN-GJL-250 GREY CAST IRON	AISi 329 STAINLESS STEEL	AISi 329 STAINLESS STEEL	GRAPHITE	GRAPHITE - CERAMIC - PTFE - STAINLESS STEEL
V 25-2 ST8K 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
V 25-2 ST8WK 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	TUNGSTEN CARBIDE or SILICON CARBIDE - CERAMIC - PTFE - STAINLESS STEEL

# V 25-2 STANDARD CONSTRUCTION



## V 25-2 PUMP MODEL - PORT POSITION: 180°



#### STANDARD POSITIONING: V7

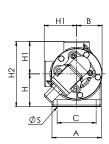
	V 25-2 N	NODEL - PORT POSIT	ION: 180° (L*) - BARE	SHAFT PUMP FOR	ELASTIC COUPLING (S	) WITH PACKING GL	AND (P)	
Standard version	Casing	Cover	Rotor	Idler	ldler Pin	Shaft	Bushings	Packing gland
V 25-2L SPG PUMP	EN 1561 EN-GJL-200 GREY CAST IRON	EN 1561 EN-GJL-200 GREY CAST IRON	EN 1563 EN-GJS-600 DUCTILE CAST IRON	EN 1561 EN-GJL-250 GREY CAST IRON	X210Cr13KU EN ISO 4957 CARBON STEEL	18NiCrMo5 EN 10084 CARBON STEEL	GREY CAST IRON	PTFE
	V 25-2 MODEL -	PORT POSITION: 180°	(L*) - BARE SHAFT I	PUMP FOR ELASTIC	COUPLING (S) WITH S	SINGLE MECHANICA	L SEAL (T5-	T5W)
Standard version	Casing	Cover	Rotor	Idler	ldler Pin	Shaft	Bushings	Seal
V 25-2L ST5WG PUMP	EN 1561 EN-GJL-200 GREY CAST IRON	EN 1561 EN-GJL-200 GREY CAST IRON	EN 1563 EN-GJS-600 DUCTILE CAST IRON	EN 1561 EN-GJL-250 GREY CAST IRON	X210Cr13KU EN ISO 4957 CARBON STEEL	18NiCrMo5 EN 10084 CARBON STEEL	GREY CAST IRON	TUNGSTEN CARBIDE or SILICON CARBIDE - CERAMIC - PTFE - STAINLESS STEEL
V 25-2L ST5BS PUMP	EN 1561 EN-GJL-200 GREY CAST IRON	EN 1561 EN-GJL-200 GREY CAST IRON	EN 1563 EN-GJS-600 DUCTILE CAST IRON	EN 1561 EN-GJL-250 GREY CAST IRON	AISi 329 STAINLESS STEEL	AISi 329 STAINLESS STEEL	GRAPHITE	GRAPHITE - CERAMIC - PTFE - STAINLESS STEEL

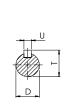
# V 25-2 DIMENSIONAL DRAWING

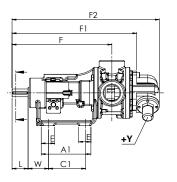


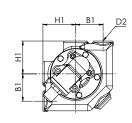
## DIMENSIONS FOR 90° PORTS POSITIONING VERSION

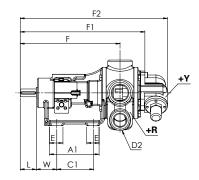
#### V 25-2 SP G



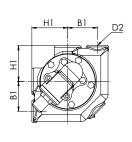


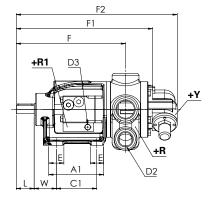


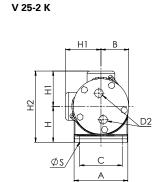


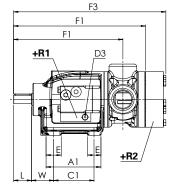


V 25-2 ST G

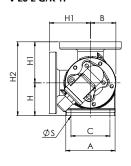


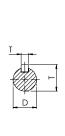


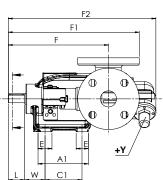


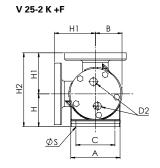


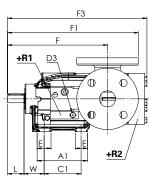
V 25-2 G/K +F









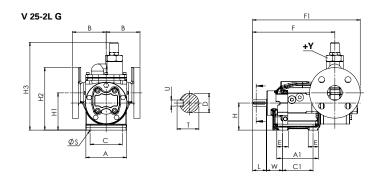


							T.	ABLE F	OR 90°	PORTS	POSIT	IONING	VERSI	ON.								
	A A1 C		C1		ı	E		ØS		٧	l	-	I	1	Н	1	H2					
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
V 25-2 SP G	120	4.7	120	4.7	95	3.7	90	3.5	30	1.2	14	0.6	49	1.9	40	1.6	80	3.1	79	3.1	159	6.3
V 25-2 ST G	120	4.7	120	4.7	95	3.7	90	3.5	30	1.2	14	0.6	49	1.9	40	1.6	80	3.1	79	3.1	159	6.3
V 25-2 K	120	4.7	120	4.7	95	3.7	90	3.5	30	1.2	14	0.6	49	1.9	40	1.6	80	3.1	79	3.1	159	6.3
V05 0 04/ 5	400	4.7	400	4.7	0.5	0.7	00	0.5	00	4.0	- 4 4	0.0	40	4.0	40	4.0	00	0.4	400	0.0	400	7.4
V 25-2 G/K +F	120	4.7	120	4.7	95	3.7	90	3.5	30	1.2	14	0.6	49	1.9	40	1.6	80	3.1	100	3.9	180	7.1
V 25-2 K+F	120	4.7	120	4.7	95	3.7	90	3.5	30	1.2	14	0.6	49	1.9	40	1.6	80	3.1	100	3.9	180	7.1

	Е	3	В	1	F		F	1	F	2	F	3	D.	j6	I	Г	l	J	D	2	D	3
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
V 25-2 SP G	62	2.4	66	2.6	244	9.6	309	12.2	365	14.4	-	-	19	0.7	21.5	1	6	0.2	1"	1"	-	-
V 25-2 ST G	62	2.4	66	2.6	244	9.6	309	12.2	365	14.4	-	-	19	0.7	21.5	1	6	0.2	1"	1"	1/4"	1/4"
V 25-2 K	62	2.4	-	-	244	9.6	309	12.2	365	14.4	330	13.0	19	0.7	21.5	1	6	0.2	1/2"	1/2"	1/4"	1/4"
V 25-2 G/K +F	62	2.4	-	-	244	9.6	319	12.6	365	14.4	330	13.0	19	0.7	21.5	1	6	0.2	1/2"	1/2"	1/4"	1/4"
V 25-2 K+F	62	2.4	-	-	244	9.6	319	12.6	365	14.4	330	13.0	19	0.7	21.5	1	6	0.2	1/2"	1/2"	1/4"	1/4"



## DIMENSIONS FOR 180° PORTS POSITIONING VERSION



							T/	ABLE FO	OR 180°	PORTS	POSIT	IONIN	G VERS	ION								
	A A1 C C1 E ØS W L H H1 H2															2						
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
V 25-2L G	120	4.7	120	4.7	95	3.7	90	3.5	30	1.2	14	0.6	49	1.9	40	2	80	3.1	110	4.3	185	7.3

	H3 B		Н3		3	F	=	F1		F2		F3		Dj6		T		U		D2		D3	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	
V 25-2L G	260	10.2	100	3.9	244	9.6	319	12.6	-	-	-	-	19	0.7	21.5	1	6	0.2	-	-	-	-	