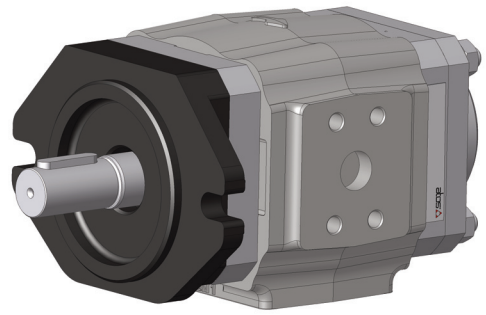
Aluminium internal gear pumps for SSP servopumps

fixed displacement



PGIL-2032/1D* /PE

PGIL are fixed displacement internal gear pumps suitable for use in SSP system with variable speed drives to provide variable flow rate.

Their particular design allows outstanding efficiencies due to radial and axial gap compensation, low pressure pulsation and very low noise level.

The internal gear is supported by a hydrodynamic/hydrostatic lubrication film, which allows operation at low viscosities and low/high speeds.

Max displacement: up to **125 cm³/rev**

Max pressure: up to **250 bar**

1 MODEL CODE

PGIL	-	**2**	**020**	/	**1**	**D**	*	/	**PE**

Internal gear pump

Size, see section 2 :
2, **3**, **4**

Displacement (cm³/rev), see section 2 :
020, **025**, **032**, **040**, **050**, **064**, **080**, **100**, **125**

Shaft, SAE Standard:
1 = keyed

Direction of rotation, viewed at the shaft end:
D = clockwise

Series number

Seals material:
PE = FKM

2 HYDRAULIC CHARACTERISTICS - based on mineral oil ISO VG 46 at 50 °C

Size code		**2**					**3**			**4**
Displacement code		**020**	**025**	**032**	**040**	**050**	**064**	**080**	**100**	**125**
Max displacement	(cm³/rev)	20	24,8	31,6	39,5	49,5	65,3	80,4	100,5	125,7
Continuous pressure	(bar)	250	250	250	250	250	250	250	250	250
Peak pressure **(1)**	(bar)	320	320	320	300	280	270	270	270	280
Recommended pressure on inlet port	(bar)	from 0,8 to 2 (absolute pressure)								
Max speed **(2)**	(rpm)	3900	3800	3700	3600	3600	3000	3000	3000	2800
Volumetric efficiency **(3)**		93	93	94	95	95	94	95	95	94
Hydromechanical efficiency **(3)**		91	92	92	93	93	92	93	93	90
Noise **(3)**	(dBA)	62	63	64	65	66	69	70	71	76

(1) 15% duty cycle, max 10 sec continuously
(2) For SSP system max speed please consider table **AS100**;
(3) Measuring data with: n = 1450 rpm; Δp = 250 bar;

3 GENERAL CHARACTERISTICS

Assembly position	Any position.
Loads on the shaft	Axial and radial loads are not allowed on the shaft
Ambient temperature range	-20°C ÷ +80°C
Compliance	REACH Regulation (EC) n°1907/2006

4 HYDRAULIC FLUIDS - for other fluids not included in below table, consult our technical office

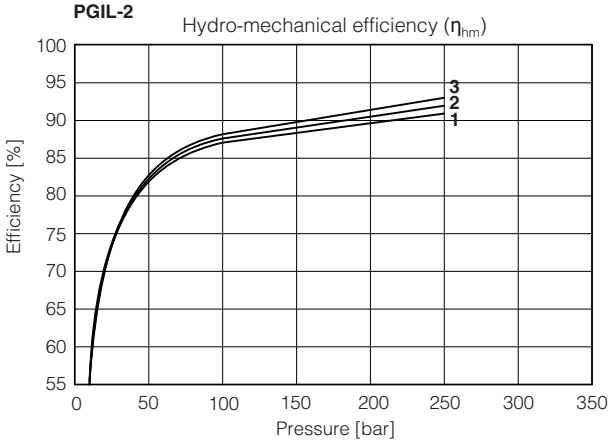
Fluid temperature		-20°C ÷ +80°C	
Recommended viscosity		10 ÷ 300 mm²/s - max at cold start 2000 mm²/s	
Max fluid contamination level	normal operation	ISO4406 class 20/18/13 NAS1638 class 9	see also filter section at www.atos.com or KTF catalog
	longer life	ISO4406 class 18/16/11 NAS1638 class 7	
Hydraulic fluid		**Classification**	**Ref. Standard**
Mineral oils		HL, HLP, HLPD, HVLP, HVLPD	DIN 51524

5 DIAGRAMS at 1450 rpm (based on mineral oil ISO VG 46 at 40°C)

5.1 Efficiency

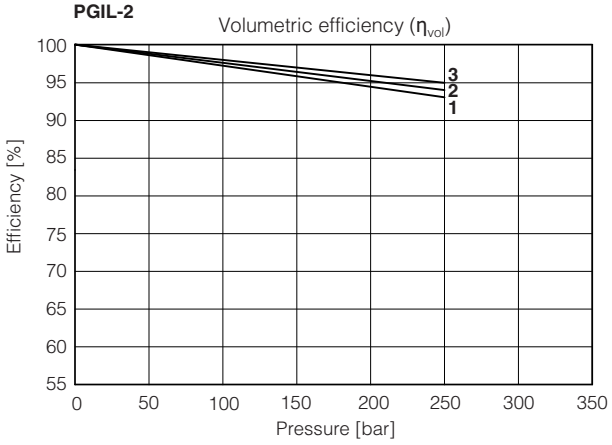
Efficiency is the ratio of useful output energy in relation to the input energy fed to a component.
In fluid power, pump efficiency can split in two different contributes:
- hydro-mechanical efficiency (η_{hm}), that describes the losses created by frictional forces (both mechanical and viscous)
- volumetric efficieny (η_V), that accounts for the flow leakages of a pump

PGIL-2



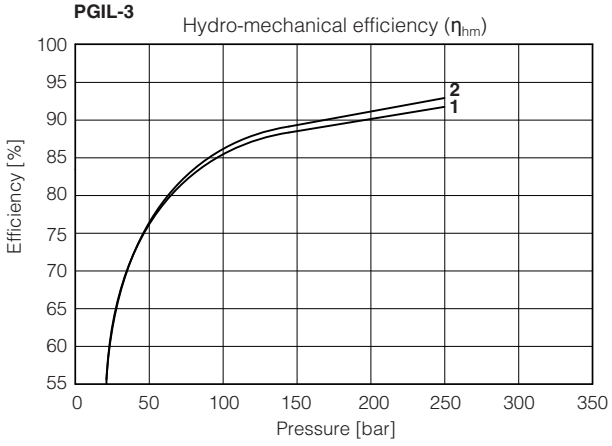
1 = PGIL-2020 **2** = PGIL-2025 **2** = PGIL-2032
3 = PGIL-2040 **3** = PGIL-2050

PGIL-2



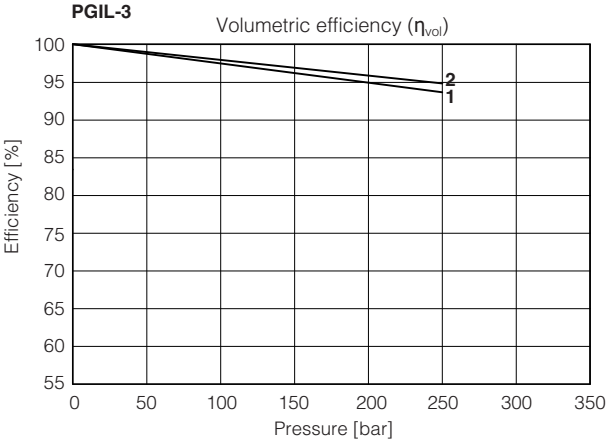
1 = PGIL-2020 **1** = PGIL-2025 **2** = PGIL-2032
3 = PGIL-2040 **3** = PGIL-2050

PGIL-3



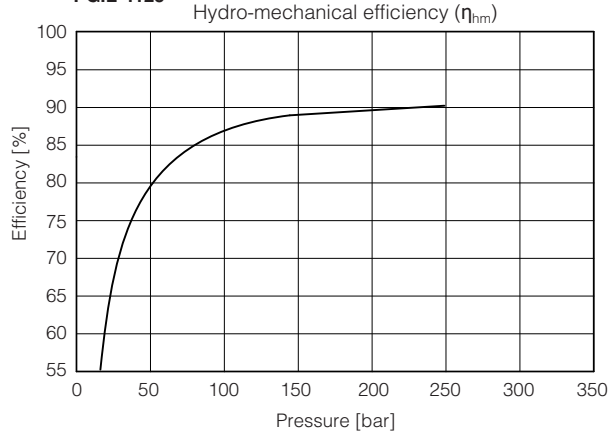
1 = PGIL-3064 **2** = PGIL-3080 **2** = PGIL-3100

PGIL-3

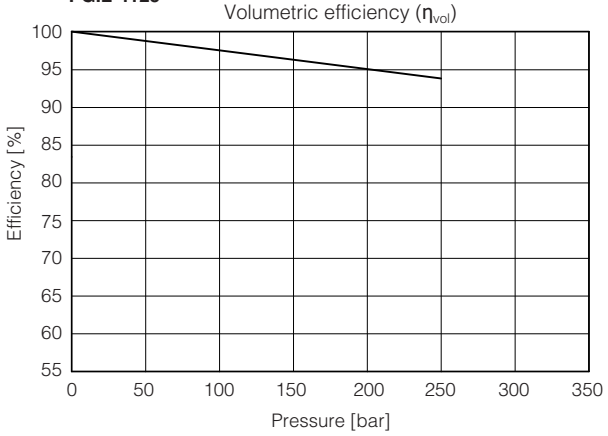


1 = PGIL-3064 **2** = PGIL-3080 **2** = PGIL-3100

PGIL-4125

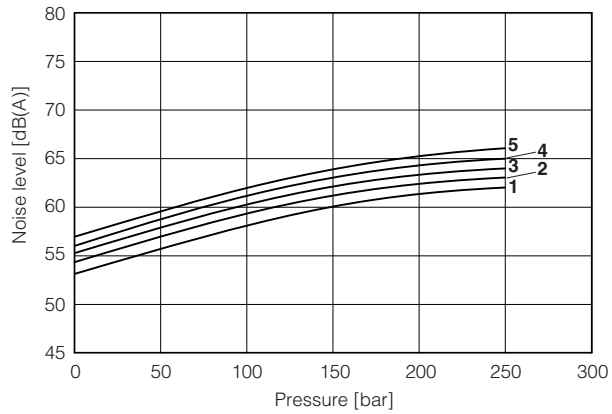


PGIL-4125



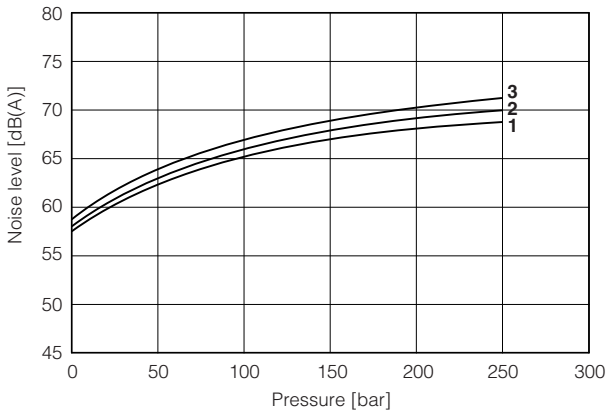
5.2 Noise level

PGIL-2



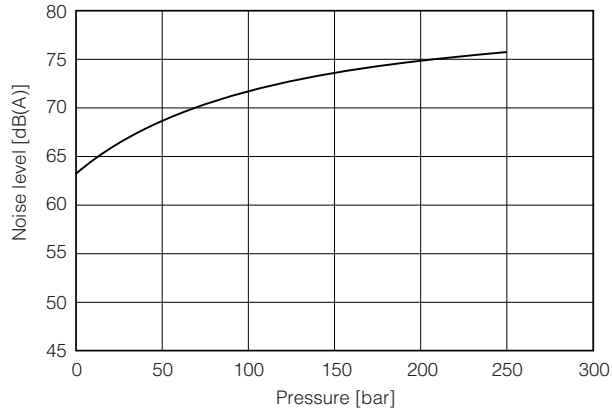
1 = PGIL-2020 **2** = PGIL-2025 **3** = PGIL-2032
3 = PGIL-2040 **4** = PGIL-2050

PGIL-3

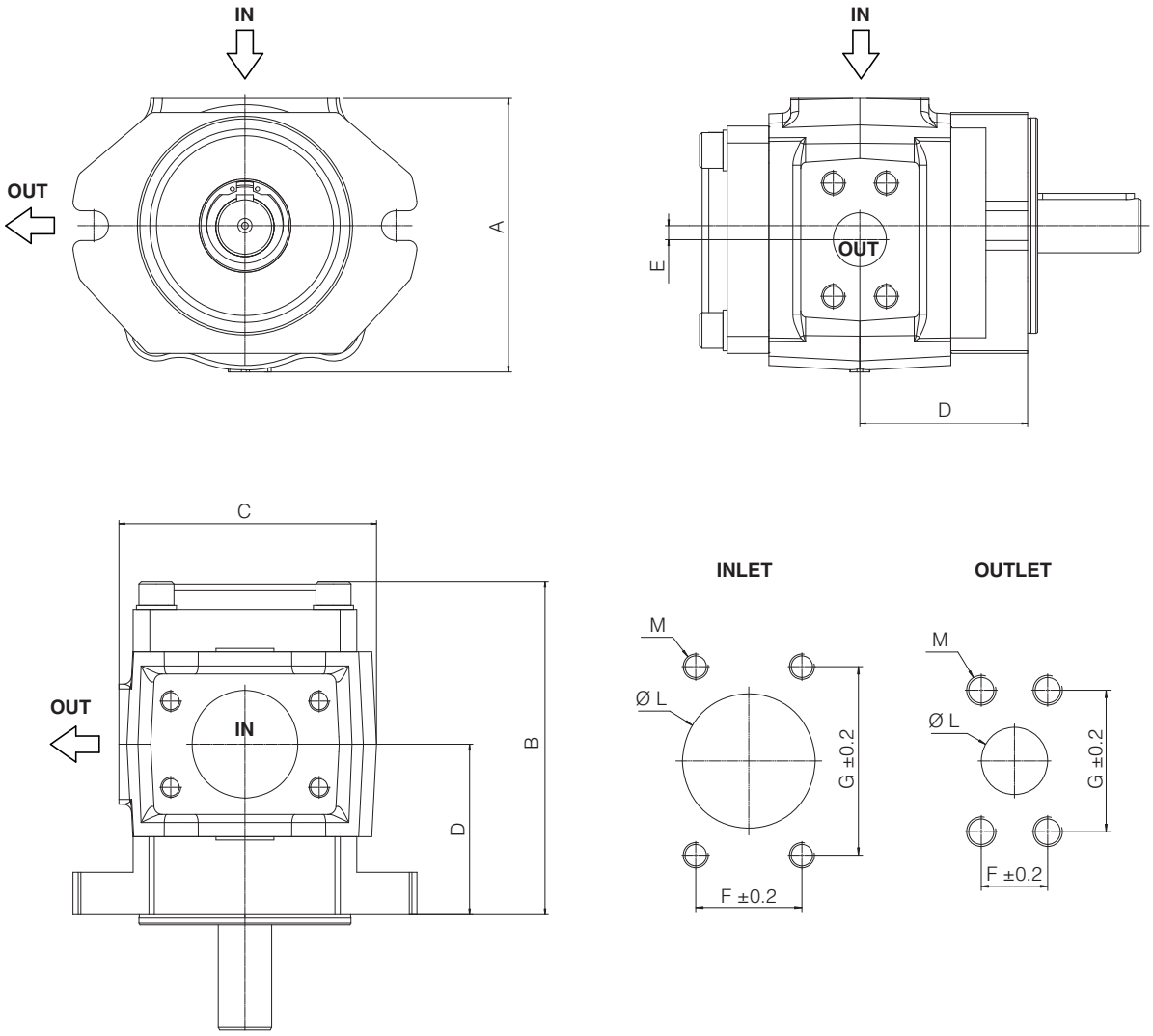


1 = PGIL-3064 **2** = PGIL-3080 **3** = PGIL-3100

PGIL-4125



6 DIMENSIONS



Pump code	Dimensions [mm]															Mass [kg]
	A	B	C	D	E	INLET port					OUTLET port					
						F	G	L	M	SAE flange	F	G	L	M	SAE flange	
PGIL-2020	126	158	129	75	6.5	30.2	58.7	32	M10x17	1 1/4" SAE3000	22	47.5	18	M10x17	3/4" SAE3000	8.3
PGIL-2025	126	165	129	79	6.5	30.2	58.7	32	M10x17	1 1/4" SAE3000	22	47.5	18	M10x17	3/4" SAE3000	8.6
PGIL-2032	126	175	129	83.2	6.5	30.2	58.7	32	M10x17	1 1/4" SAE3000	22	47.5	18	M10x17	3/4" SAE3000	9.2
PGIL-2040	135	185	138	88.7	6.5	42.9	77.8	51	M12x17	2" SAE3000	26.2	52.4	20	M10x17	1" SAE3000	9.8
PGIL-2050	135	200	138	95.7	6.5	42.9	77.8	51	M12x17	2" SAE3000	26.2	52.4	20	M10x17	1" SAE3000	10.5
PGIL-3064	160	169	155	86.5	8.3	42.9	77.8	51	M12x21	2" SAE3000	27.8	57.2	25.4	M12x22	1" SAE6000	11.5
PGIL-3080	160	181	155	92.5	8.3	42.9	77.8	51	M12x21	2" SAE3000	31.8	66.7	31.75	M14x24	1 1/4" SAE6000	13
PGIL-3100	160	197	155	100.5	8.3	50.8	88.9	63.5	M12x21	2 1/2" SAE3000	31.8	66.7	31.75	M14x24	1 1/4" SAE6000	13.5
PGIL-4125	189.6	212	185	109.5	9.8	50.8	88.9	63.5	M12x22	2 1/2" SAE3000	36.5	79.4	38.1	M16x27	1 1/2" SAE6000	27.5

7 RELATED DOCUMENTATION

AS050 Basics for Smart Servopumps - SSP
AS100 SSP Smart Servopumps
AS200 Sizing criteria for servopumps
AS300 PGI cast iron internal gear pumps, high pressure
AS400 PMM high performance synchronous servomotors
AS500 D-MP electronic drives
AS800 Programming tools for pumps & servopumps
AS810 Accessories for servopumps
AS910 Operating and maintenance information for servopumps
GS510 Fieldbus
S-MAN-HW Servopumps installation manual
S-MAN-SW Servopumps programming software manual