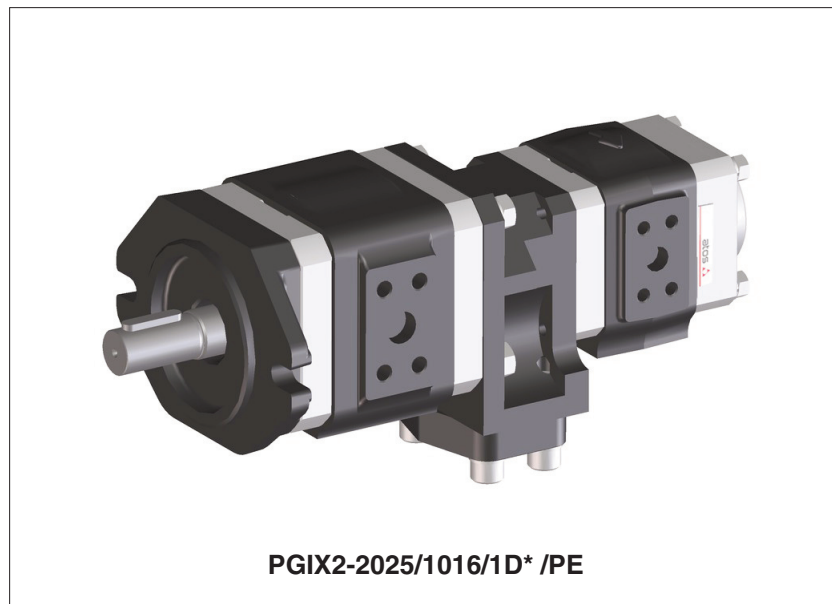


Cast iron double internal gear pumps for SSP servopumps

fixed displacement, high pressure



PGIX2 are fixed displacement cast iron double internal gear pumps designed for high pressure application and are suitable for use in SSP system with variable speed drives to provide variable flow rate.

They are composed of two PGI pumps, mechanically coupled by means of an intermediate housing, as to be driven by a single motor. The suction and delivery ports remain separate and independent.

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 **50+16 cm³/rev**

Max pressure: up to **330 bar**

1 MODEL CODE

PGIX	2	-	2	025	/	1	016	/	1	D	*	/	PE
Double internal gear pumps											Series number		Seals material: PE = FKM
Execution 2 = double pumps													
Size of first pump , see section 2 :													
1, 2													
Displacement of first pump (cm³/rev) , see section 2 :													
011, 016, 020, 025, 032, 040, 050													
Direction of rotation , viewed at the shaft end: D = clockwise													
Shaft, SAE Standard : 1 = keyed													
Displacement of second pump (cm³/rev) , see section 2 :													
011, 016													
Size of second pump , see section 2 :													
1													

Note: second pump must be selected with equal or smaller displacement than first pump

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

Size code	1			2			
Displacement code	011	016	020	025	032	040	050
Displacement (cm ³ /rev)	10,8	15,6	20	24,5	31,6	39,5	49,5
Continuous pressure (bar)	330	330	330	330	330	280	280
Peak pressure (1) (bar)	350	350	350	350	350	300	300
Recommended pressure on inlet port (bar)	from 0,8 to 2 (absolute pressure)						
Max speed (2) (rpm)	4000	4000	3400	3200	3000	3600	3600
Volumetric efficiency (3)	93	95	93	93	94	95	95
Hydromechanical efficiency (3)	92	93	91	92	92	93	93
Noise (3) (dBA)	58	60	62	63	64	65	66

(1) 15% duty cycle, max 10 sec continuously

(2) For SSP system max speed please consider table AS200;

(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 mm ² /s - max at cold start 2000 mm ² /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

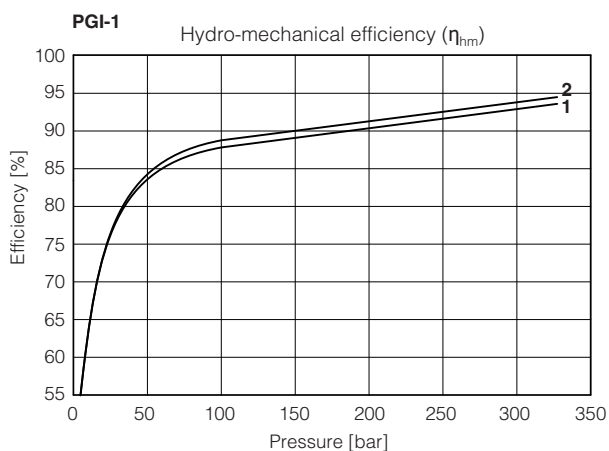
5 DIAGRAMS at 1450 rpm (based on mineral oil ISO VG 46 at 40°C)

5.1 Efficiency

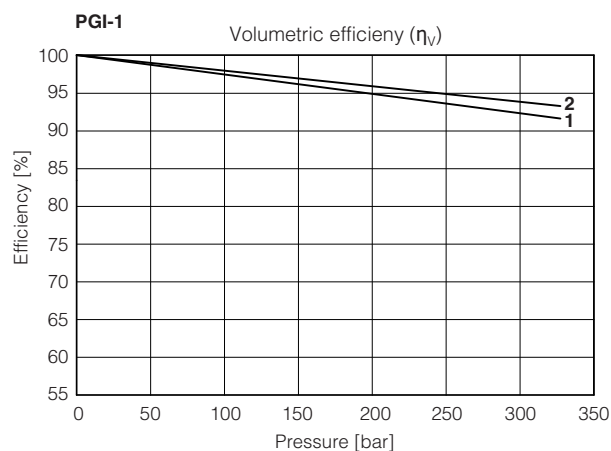
Efficiency is the ratio of useful output energy in relation to the input energy fed to a component.

In fluid power, pump efficiency can split in two different contributes:

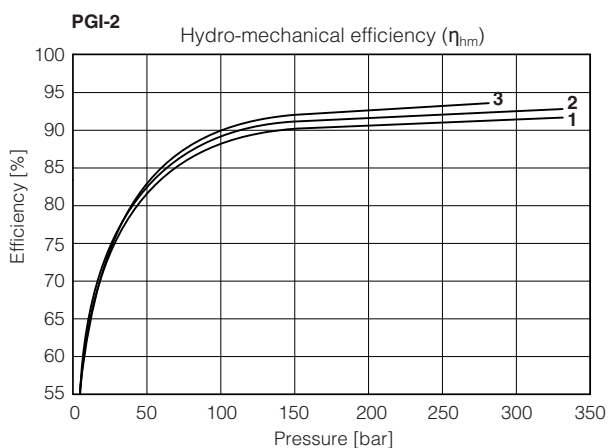
- hydro-mechanical efficiency (η_{hm}), that describes the losses created by frictional forces (both mechanical and viscous)
- volumetric efficiency (η_v), that accounts for the flow leakages of a pump



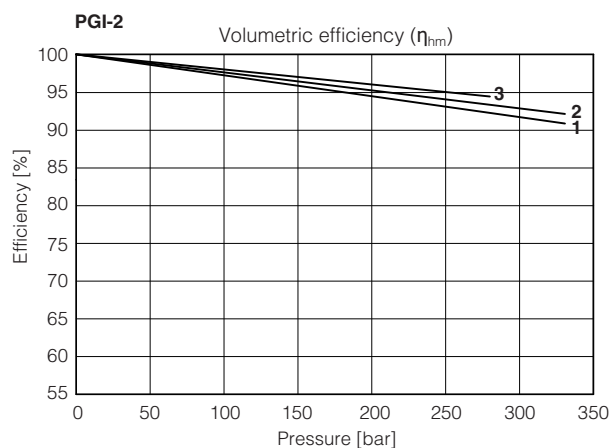
1 = PGI-1011 2 = PGI-1016



1 = PGI-1011 2 = PGI-1016

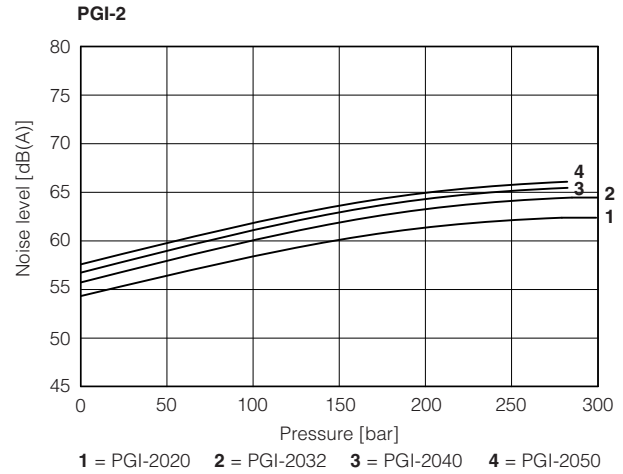
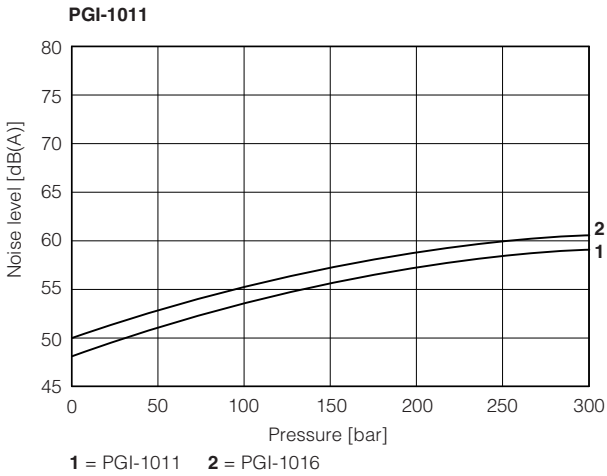


1 = PGI-2020 2 = PGI-2025; PGI-2032
3 = PGI-2040; PGI-2050

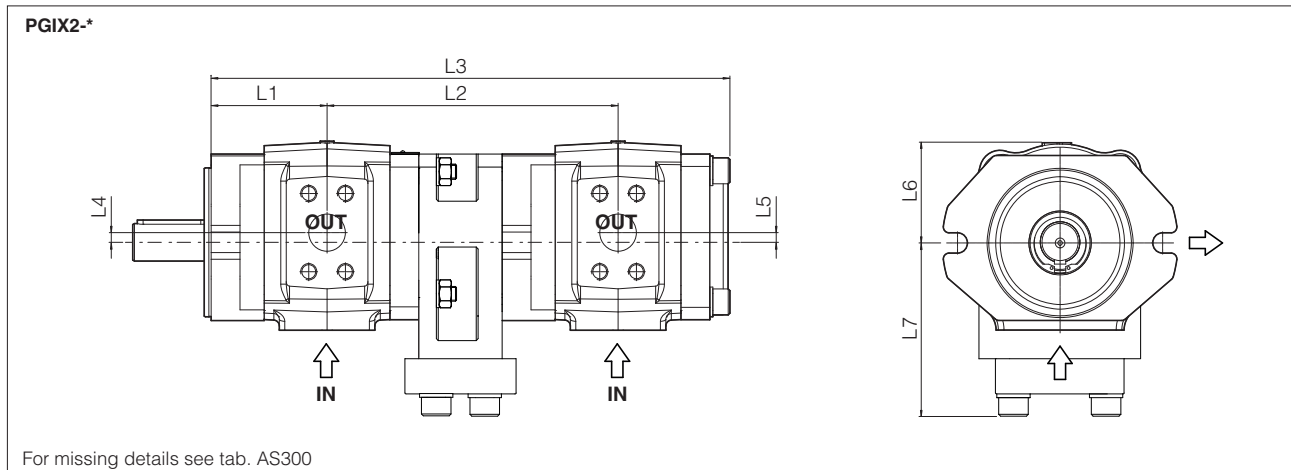


1 = PGI-2020; PGI-2025 2 = PGI-2032
3 = PGI-2040; PGI-2050

5.2 Noise level



6 DIMENSIONS OF PGIX2* [mm]



Model code	First pump	Intermediate housing	Second pump	L1	L2	L3	L4	L5	L6	L7	Mass
PGIX2-1011/1011/1D*	PGI-1011/1D*	KIT-DOUBLE-PUMP-PGI-1/1 04-16	PGI-1011/5D*	60.5	127	251.5	6.5	6.5	59	96.5	10.8
PGIX2-1016/1011/1D*	PGI-1016/1D*	KIT-DOUBLE-PUMP-PGI-1/1 04-16	PGI-1011/5D*	65.5	132	261.5	6.5	6.5	59	96.5	11.1
PGIX2-1016/1016/1D*	PGI-1016/1D*	KIT-DOUBLE-PUMP-PGI-1/1 04-16	PGI-1016/5D*	65.5	137	271.5	6.5	6.5	59	96.5	11.4
PGIX2-2020/1011/1D*	PGI-2020/1D*	KIT-DOUBLE-PUMP-PGI-2/1	PGI-1011/5D*	75	156	295	5.4	6.5	69	104.2	15.9
PGIX2-2020/1016/1D*	PGI-2020/1D*	KIT-DOUBLE-PUMP-PGI-2/1	PGI-1016/5D*	75	161	284	5.4	6.5	69	104.2	16.2
PGIX2-2025/1011/1D*	PGI-2025/1D*	KIT-DOUBLE-PUMP-PGI-2/1	PGI-1011/5D*	78.2	159.2	301.4	5.4	6.5	69	104.2	16.6
PGIX2-2025/1016/1D*	PGI-2025/1D*	KIT-DOUBLE-PUMP-PGI-2/1	PGI-1016/5D*	78.2	164.2	311.4	5.4	6.5	69	104.2	16.9
PGIX2-2032/1011/1D*	PGI-2032/1D*	KIT-DOUBLE-PUMP-PGI-2/1	PGI-1011/5D*	83.2	164.2	311.4	5.4	6.5	69	104.2	17.4
PGIX2-2032/1016/1D*	PGI-2032/1D*	KIT-DOUBLE-PUMP-PGI-2/1	PGI-1016/5D*	83.2	169.2	321.4	5.4	6.5	69	104.2	17.7
PGIX2-2040/1011/1D*	PGI-2040/1D*	KIT-DOUBLE-PUMP-PGI-2/1	PGI-1011/5D*	88.7	169.7	322.4	5.4	6.5	69	104.2	20.4
PGIX2-2040/1016/1D*	PGI-2040/1D*	KIT-DOUBLE-PUMP-PGI-2/1	PGI-1016/5D*	88.7	174.7	332.4	5.4	6.5	69	104.2	20.7
PGIX2-2050/1011/1D*	PGI-2050/1D*	KIT-DOUBLE-PUMP-PGI-2/1	PGI-1011/5D*	95.7	176.7	336.4	5.4	6.5	69	104.2	22.4
PGIX2-2050/1016/1D*	PGI-2050/1D*	KIT-DOUBLE-PUMP-PGI-2/1	PGI-1016/5D*	95.7	181.7	346.4	5.4	6.5	69	104.2	22.7

7 RELATED DOCUMENTATION

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