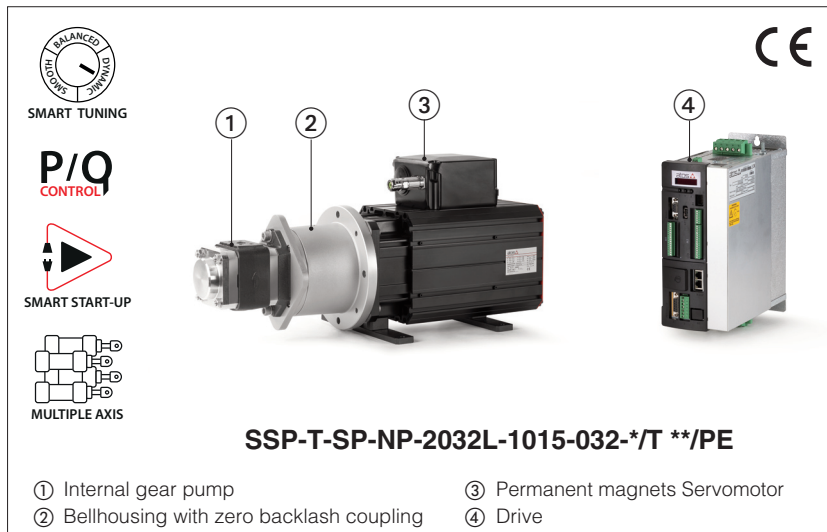


Smart Servopump - SSP

high performance P/Q control and energy saving



SSP systems combine the typical advantages of hydraulic power transmission with the ease of control and adjustment of an electric drive while also ensuring maximum levels of energy efficiency.

They are used in high performance machines mainly for the plastic, die-casting and deformation sectors.

Maximum flow:	350 l/min
Maximum rated power:	100 kW
Maximum continuous pressure:	
cast iron pump	330 bar
aluminium pump	250 bar

They consist of a fixed displacement internal gear pump, driven by a permanent magnet synchronous servomotor controlled by an electronic drive. The latter controls the speed of the servomotor and therefore of the pump, to adjust the flow rate or pressure of the system based on the reference signals received from the PLC of the machine.

A dedicated algorithm optimizes the P/Q function by automatically selecting the activation of the flow or pressure control.

Compared to traditional systems, SSPs offer the following advantages:

- significant reduction in energy consumption, as the pump operates at the speed strictly necessary to generate the required flow rate / pressure
- high dynamics and precision of P/Q control thanks to a dedicated algorithm
- reduction of the noise level, thanks to the design of the pump and the variable speed
- maximum flexibility thanks to dedicated software
- simplified commissioning thanks to the Smart start-up and Smart tuning functions
- possibility of customization up to 4 axes with Multiple axis function

For more details see technical table AS050

1 MODEL CODE

SSP	-	T-SP	-	NP	-	2020L	-	1024	-	046	/	C	/	T	/	*	/	PE
Smart servopump																Series number		Seals material PE = FKM
Control logic: T-SP = alternated P/Q control with resolver																		
Fieldbus interface , serial port always present: NP = Not present BC = CANopen EH = EtherCAT BP = PROFIBUS DP EP = PROFINET RT/IRT																		
Pump PGI, cast iron pump , Pmax 330 bar (1) - see table AS300: 1011 = 10,9 cm ³ /rev 2050 = 50 cm ³ /rev 3080 = 80 cm ³ /rev 2020 = 20 cm ³ /rev 4050 = 50 cm ³ /rev 4080 = 80 cm ³ /rev 2032 = 32,1 cm ³ /rev 3064 = 64 cm ³ /rev 3100 = 100 cm ³ /rev 2040 = 40,1 cm ³ /rev 4064 = 64 cm ³ /rev 4100 = 100 cm ³ /rev PGIL, aluminium pump , Pmax 250 bar - see table AS350: 2020L = 20 cm ³ /rev 2050L = 50 cm ³ /rev 3100L = 100 cm ³ /rev 2032L = 32,1 cm ³ /rev 3064L = 64 cm ³ /rev 4125L = 125 cm ³ /rev 2040L = 40,1 cm ³ /rev 3080L = 80 cm ³ /rev																		
Drive D-MP - see table AS500: 022 = 22 A 060 = 57 A 140 = 140 A 032 = 32 A 090 = 87 A 165 = 165 A 046 = 46 A 100 = 100 A 210 = 210 A																		
Motor PMM - see table AS400: 1009 = 8,7 kW 1032 = 30 kW 2080 = 80 kW 1015 = 15 kW 2042 = 42 kW 2100 = 100 kW 1024 = 24 kW 2055 = 55 kW																		

(1) Pmax depends on the pump displacement



For optimal sizing, download the sizing software from www.atos.com

8 HYDRAULIC OPTION

C = This option provides a hydraulic block mounted directly on the pump outlet, which integrates a mechanical pressure relief valve with safety function on the maximum system pressure and a pressure transducer for the feedback of the actual pressure on the delivery line.

- ① Mechanical pressure relief valve; the valve is supplied with zero adjustment, and must be adjusted by the user at a pressure slightly higher than the maximum pressure required by the system.
- ② Pressure transducer E-ATR-8/400/I - see technical table GS465

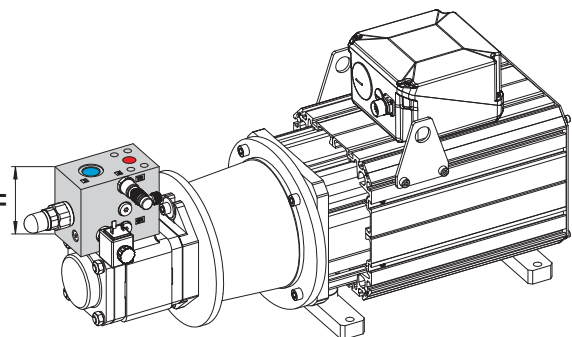
D = This option allows to protect the pump from overheating when it is subjected to particularly heavy duty cycles, in particular in the prolonged phases of static pressure control.

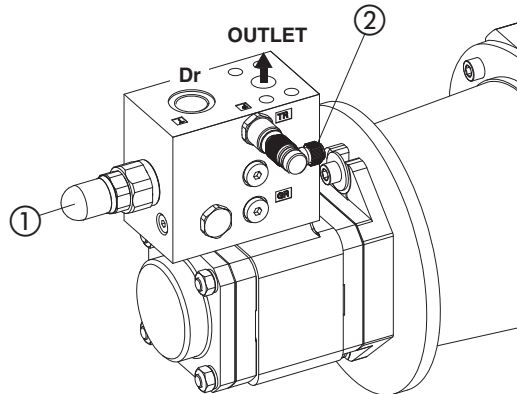
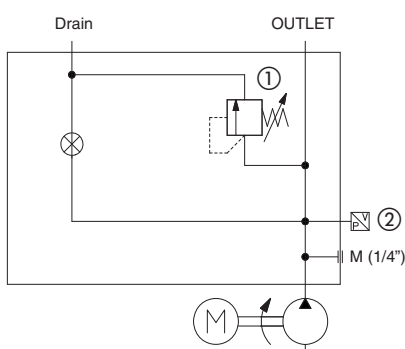
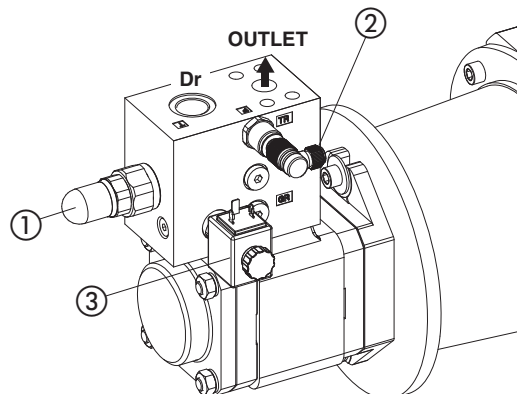
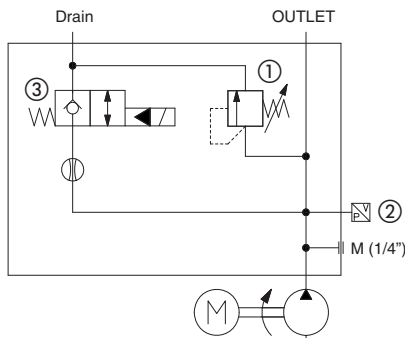
This option includes a hydraulic block with relief valve and pressure transducer, as for the /C option, with also integrated:

- ③ Smart Cooling cartridge valve JO-DL-4-2/NC-X 24DC - see technical table E105

When a temperature considered critical is reached, the Smart Cooling valve opens ③ as to cause a small recirculation of oil through the pump which protects it from dangerous overheating.

The sizing software for SSP suggests the need for the /D option based on the machine cycle.

Options C and D dimensions	SSP CODE	OUTLET	Dr (drain)	H (mm)
	SSP-T-SP**-1011*	1/2" SAE3000	G1/2"	105
	SSP-T-SP**-2020*	3/4" SAE3000	G3/4"	110
	SSP-T-SP**-2032*			
	SSP-T-SP**-2040*	1" SAE3000	G1"	115
	SSP-T-SP**-2050*			
	SSP-T-SP**-4050	1" SAE6000	G1"	115
	SSP-T-SP**-3064*	1" SAE6000	G1 1/4"	125
	SSP-T-SP**-4064			
	SSP-T-SP**-3080*	1 1/4" SAE6000	G1 1/2"	140
	SSP-T-SP**-4080*			
	SSP-T-SP**-3100*			
	SSP-T-SP**-4100			
	SSP-T-SP**-4125*	1 1/2" SAE6000	G 2"	140

<p>Detail option C</p> 	<p>Hydraulic scheme option C</p> 
<p>Detail option D</p> 	<p>Hydraulic scheme option D</p> 

9 ELECTRONIC OPTION

K = Safe Torque Off (STO) safety function to prevent accidental starting of the servo pump, in accordance with the Machinery Directive 2006/42/EC (MD) - standard EN 61800-5-2

The STO function is implemented in the D-MP Drive and is activated by two digital signals sent by the control unit of the machine that allow to remove the power supply to the servomotor in order to prevent unwanted start-up.

At the same time, two digital signals are generated by the Drive to confirm that the power supply to the motor has been removed and the absence of other anomalies. These signals are read by the machine control unit for safety management.

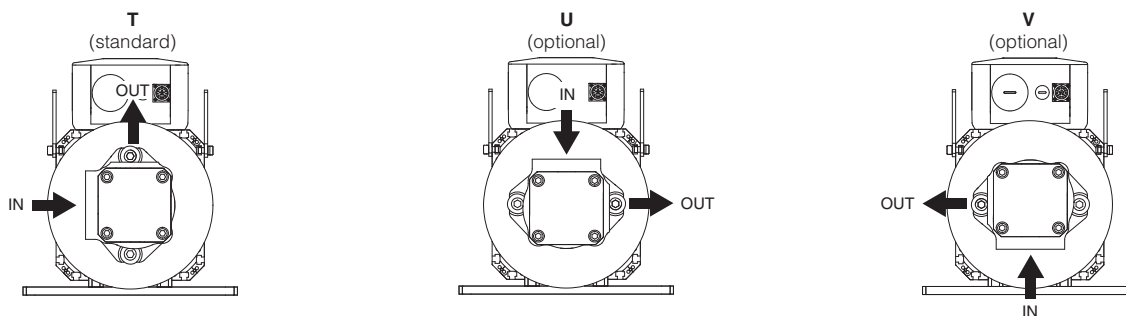
For more information see the S-MAN-STO manual.

Possible combined option:

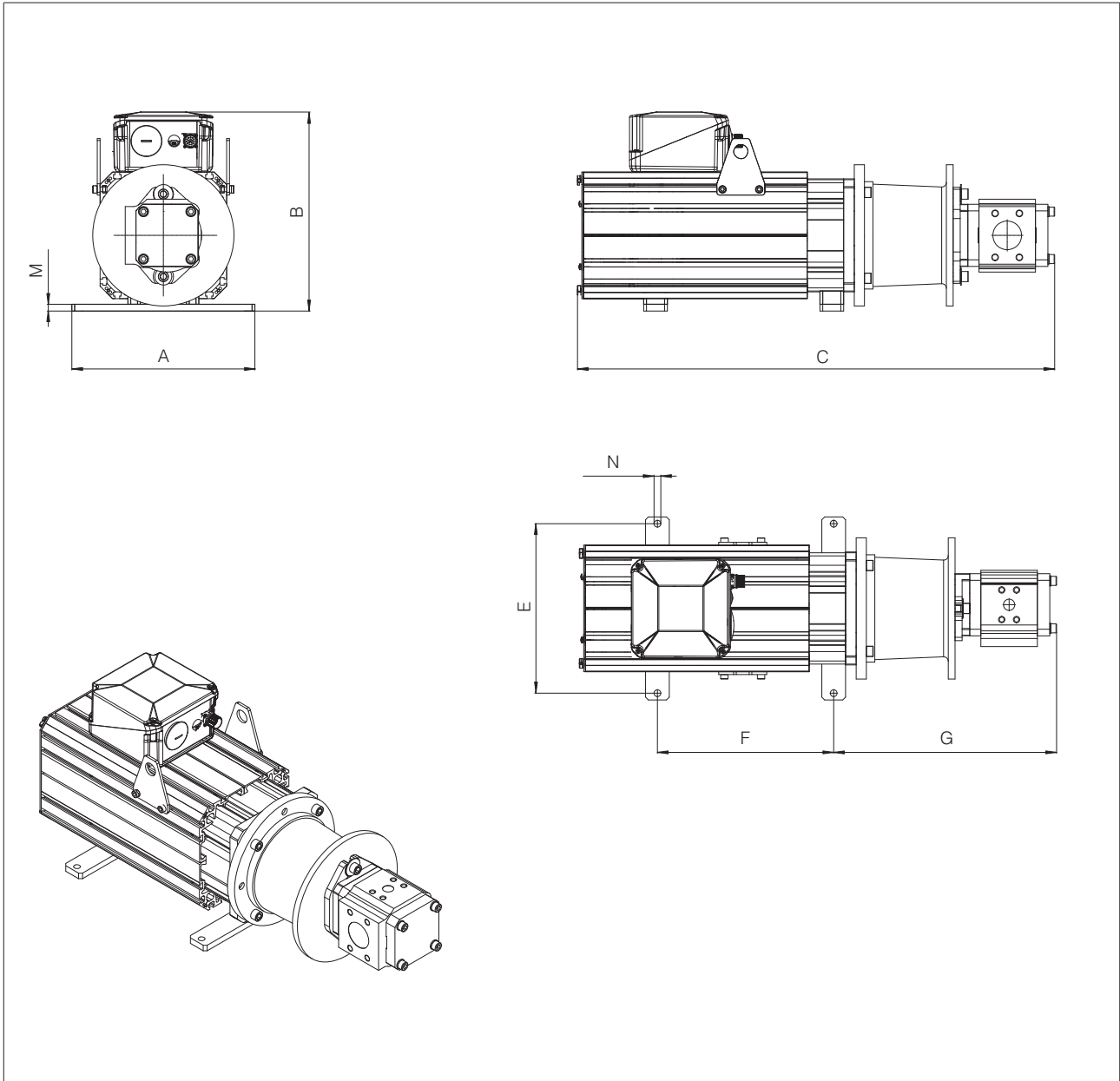
/CK, /DK

10 PORTS ORIENTATION

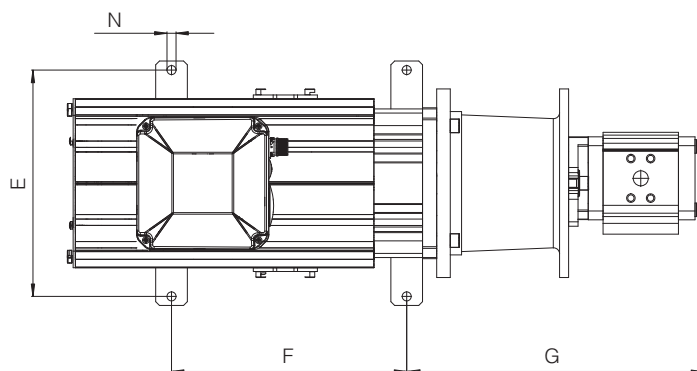
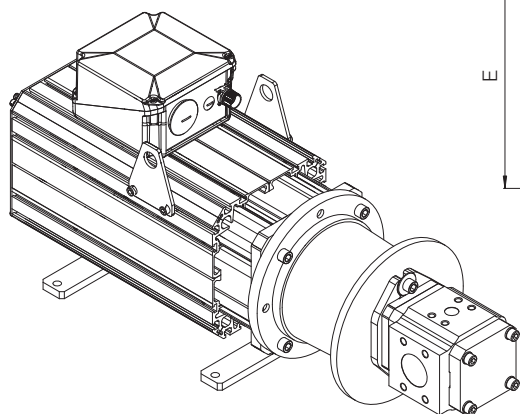
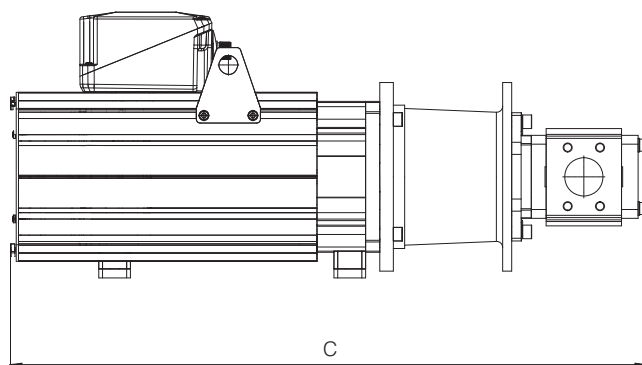
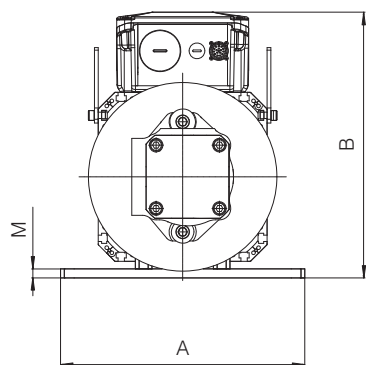
The pump can be supplied with inlet and outlet ports oriented in different configurations, as shown in the figure (seen from the bottom of the pump)



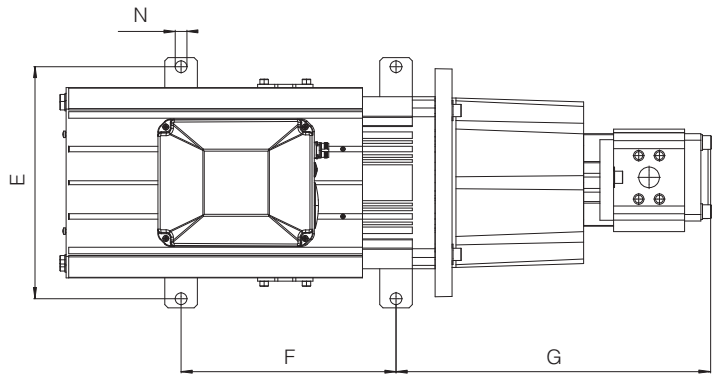
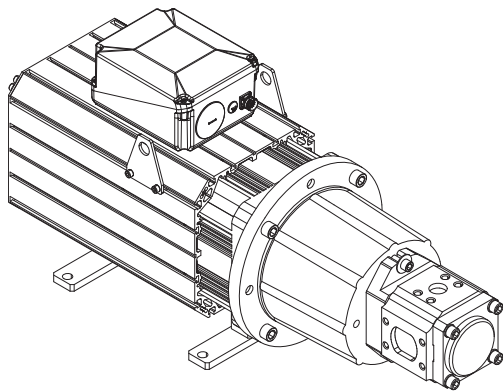
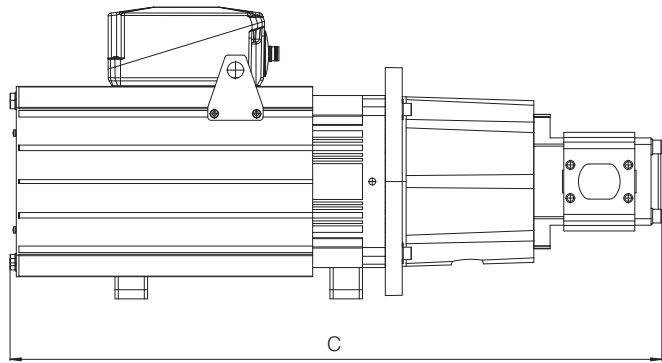
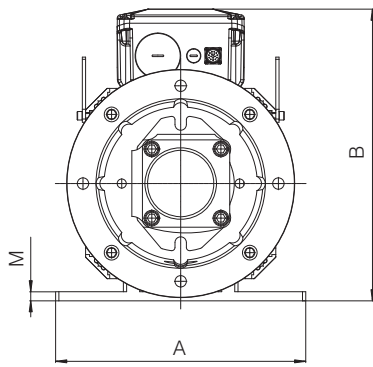
11 INSTALLATION DIMENSIONS - motor pump unit [mm] for drive dimensions see AS500



MODEL CODE	A	B	C	E	F	G	M	N	Mass [Kg]
SSP-*-1011-1009-*	324	335	630	300	168	324	12	12	56
SSP-*-1011-1015-*		355	700		240				68
SSP-*-2020*-1009-*	324	335	680	300	168	373	12	12	62
SSP-*-2020*-1015-*		355	750		240				74
SSP-*-2020*-1024-*			820		312				90
SSP-*-2020-1032-*			890		385				105
SSP-*-2032*-1009-*	324	335	670	300	168	368	12	12	63
SSP-*-2032*-1015-*		355	750		240				76
SSP-*-2032*-1024-*			820		312				91
SSP-*-2032*-1032-*			890		385				107
SSP-*-2032-2042-*	384	435	890	356	275	417	14	18	145
SSP-*-2040*-1015-*	278	355	760	300	240	381	12	12	79
SSP-*-2040*-1024-*			830		312				94
SSP-*-2040*-1032-*			900		385				110
SSP-*-2040*-2042-*	384	435	900	356	275	430	14	18	148
SSP-*-2050*-1015-*	324	355	770	300	240	395	12	12	81
SSP-*-2050*-1024-*			840		312				96
SSP-*-2050*-1032-*			910		385				112
SSP-*-2050*-2042-*	384	435	910	356	275	444	14	18	150
SSP-*-2050*-2055-*		450	970		330				172



MODEL CODE	A	B	C	E	F	G	M	N	Mass [Kg]
SSP-*-3064*-1024-*	324	355	830	300	312	383.5	12	12	94
SSP-*-3064*-1032-*			900		385				111
SSP-*-3064*-2042-*	384	435	930	356	275	456.5	14	18	149
SSP-*-3064*-2055-*			450		980				330
SSP-*-3064*-2080-*		112			476				213
SSP-*-3080*-1024-*		324	355		840				300
SSP-*-3080*-1032-*	920			385	113				
SSP-*-3080*-2042-*	384	435	940	356	275	468.5	14	12	151
SSP-*-3080*-2055-*			450		1000				330
SSP-*-3080*-2080-*		1123			476				216
SSP-*-3080*-2100-*		1200			583				257
SSP-*-3100*-1032-*		324	355		930				300
SSP-*-3100*-2042-*	384	435	950	356	275	484.5	14	18	152
SSP-*-3100*-2055-*			450		1011				330
SSP-*-3100*-2080-*		1140			476				217
SSP-*-3100*-2100-*		490	1210		583				258
SSP-*-4050*-1015-*	324	355	810	300	240	427	12	12	108
SSP-*-4050*-1024-*			870		312				122
SSP-*-4050*-1032-*			950		385				138
SSP-*-4050*-2042-*	384	435	950	356	275	481	14	18	166
SSP-*-4050*-2055-*			450		1011				330
SSP-*-4050*-2080-*		1155			476				239



MODEL CODE	A	B	C	E	F	G	M	N	Mass [Kg]
SSP-*-4064-1024-*	324	355	860	300	312	438	12	12	124
SSP-*-4064-1032-*			960		385				140
SSP-*-4064-2042-*	384	445	48	356	275	492	14	18	168
SSP-*-4064-2055-*			1020		330				189
SSP-*-4064-2080-*		450	476		511	241			
SSP-*-4080-1024-*		890	312		447	126			
SSP-*-4080-1032-*	324	355	970	300	385	447	12	12	142
SSP-*-4080-2042-*			435		275				170
SSP-*-4080-2055-*	384	450	1032	356	330	501	14	18	191
SSP-*-4080-2080-*			1175		476				243
SSP-*-4080-2100-*		1250	583		520	284			
SSP-*-4100-1032-*		324	355		980	300			385
SSP-*-4100-2042-*	384	435	980	356	275	514	14	18	173
SSP-*-4100-2055-*			1040		330				194
SSP-*-4100-2080-*		450	476		533	246			
SSP-*-4100-2100-*		1260	583		533	287			
SSP-*-4125L-2042-*	384	435	980	356	275	509	14	18	162
SSP-*-4125L-2055-*			1032		330				183
SSP-*-4125L-2080-*		450	476		528	229			
SSP-*-4125L-2100-*		490	583		528	234			

12 RELATED DOCUMENTATION

AS050	Basics for Smart Servopumps - SSP	AS800	Programming tools for pumps & servopumps
AS200	Sizing criteria for servopumps	AS810	Accessories for servopumps
AS300	PGI cast iron internal gear pumps, high pressure	AS910	Operating and maintenance information for servopumps
AS350	PGIL aluminium internal gear pumps	S-MAN-HW	Servopumps installation manual
AS400	PMM high performance synchronous servomotors	S-MAN-SW	Servopumps programming software manual
AS500	D-MP electronic drives	S-MAN-STO	Servopumps Safe Torque Off manual
AS510	Fieldbus		