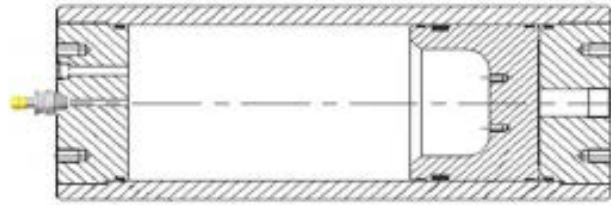


PISTON ACCUMULATOR TYPE PAC/PAS

**1. FEATURES**

PAC – Carbon steel
PAS – Stainless steel

- Easy connected to gas backup
- Visual as well as electrical indicators can be provided
- 250 or 350 bar operating pressure as standard; up to 3000 bar on request
- Volumes from 0,2 to 400 litres as standard; up to 3000 litres on request
- Diameter 50 to 360 mm (internal); up to 1000 mm on request
- Temperature range -20 to +80 °C ; -40 to 150 °C on request

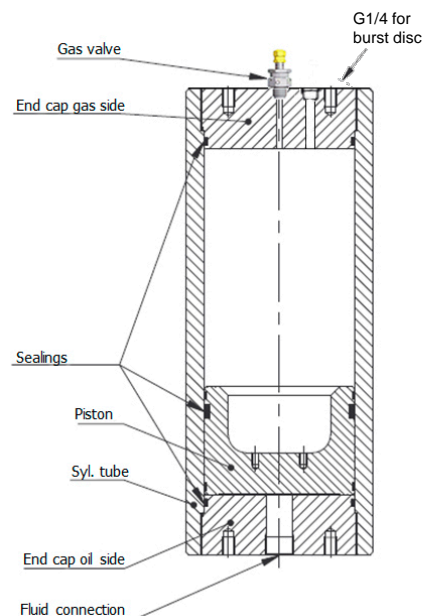
2. FUNCTION

The piston accumulator is designed with two chambers. The gas side, filled with suitable Nitrogen pressure, and the fluid side connected to the fluid system.

The piston accumulator consists of a steel cylinder, two end caps, usually threaded into the cylinder and a piston with seals.

The accumulator can be delivered in a large variation of steels, carbon steel, stainless steel, duplex etc.

The seals are key components and are chosen according to system fluid, temperature and flow requirement.



3. TECHNICAL DATA

Standard values :

Volume : 0,2 to 400 litres

Diameter : 50 to 360 mm (internal)
: 60 to 419 mm (external)

Operating pressure : up to 350 bar

Temperature range : -20 °C to +80 °C

Materials according to PED 97/23/EC requirements

Carbon steel accumulators may be delivered with ATEX certificates (PACX)
Stainless steel accumulators have ATEX certification as standard

Standard gas valve : Part no. : 24140
(UNF ½"-20 body - 5/16"-32 UNF SS - stainless steel)
Max. Operation pressure : 350 bar



The piston accumulator is delivered either :

Pre-charged with nitrogen gas (N₂) at a pressure of max 2 bar in order to prevent corrosion and to prevent the piston from moving during transport.
This is not counted as pre-charged and is not specified on the piston accumulator's label.

Or :

Pre-charged with nitrogen (N₂) to a pressure specified by the customer.
This pressure is declared on the label on the piston accumulator.

4. DIMENSIONS/WEIGHT – 250 bar

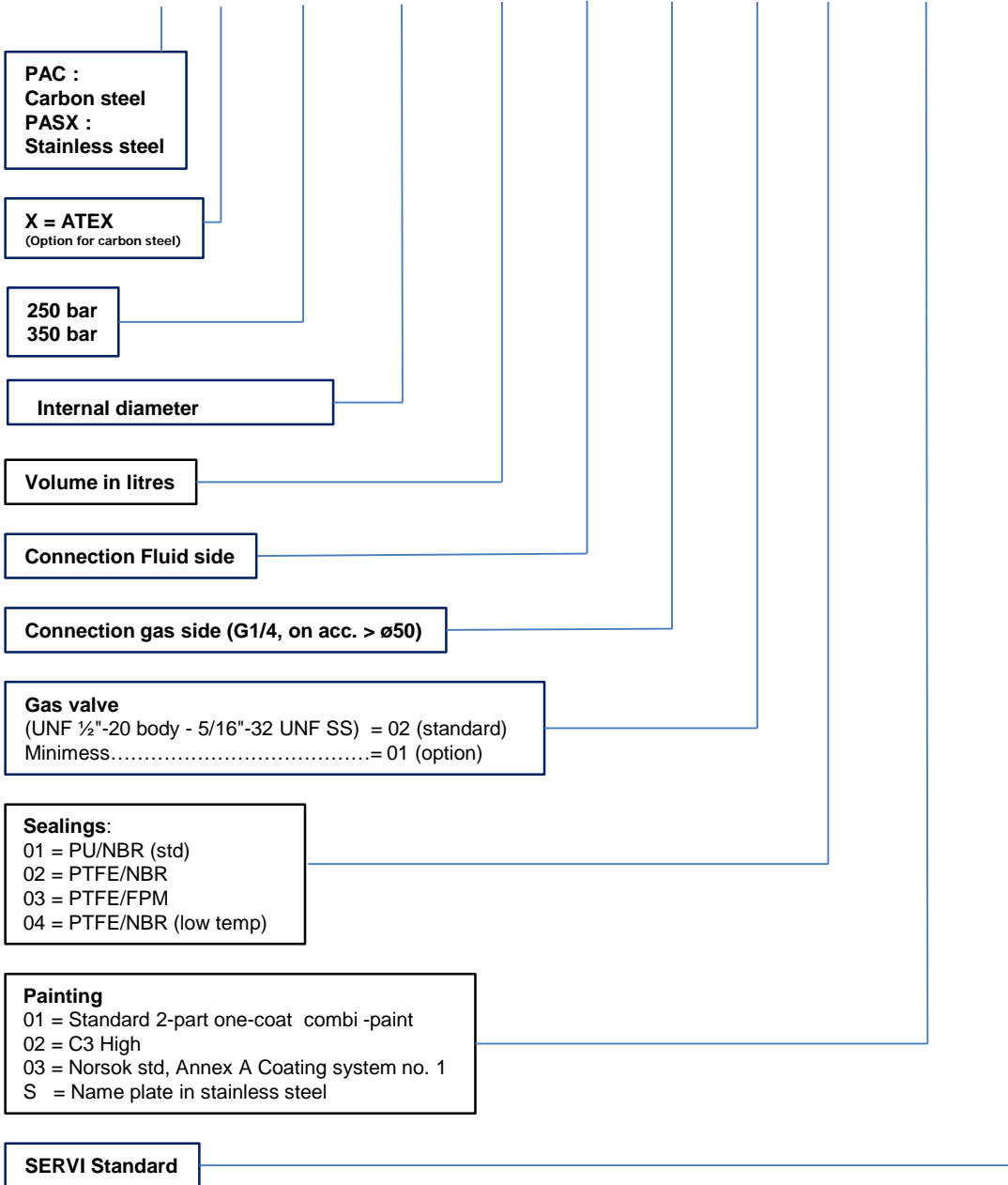
Article No	Type designation	L-ød-ØD	Max. pressure	Volume, litres	Connection	Weight
6810043-001	SERVI-PAC-250-080-001-AP-00-02-01-01-Y	360/80/92	250	1	G3/4	8,5
6810043-002	SERVI-PAC-250-080-002-AP-00-02-01-01-Y	559/80/92	250	2	G3/4	11
6810043-003	SERVI-PAC-250-080-003-AP-00-02-01-01-Y	758/80/92	250	3	G3/4	14
6810043-004	SERVI-PAC-250-080-004-AP-00-02-01-01-Y	957/80/92	250	4	G3/4	16
6810044-001	SERVI-PAC-250-100-001-AR-AL-02-01-01-Y	294/100/115	250	1	G1	13
6810044-002	SERVI-PAC-250-100-002-AR-AL-02-01-01-Y	421/100/115	250	2	G1	16
6810044-004	SERVI-PAC-250-100-004-AR-AL-02-01-01-Y	675/100/115	250	4	G1	21
6810044-006	SERVI-PAC-250-100-006-AR-AL-02-01-01-Y	929/100/115	250	6	G1	26
6810044-008	SERVI-PAC-250-100-008-AR-AL-02-01-01-Y	1183/100/115	250	8	G1	31
6810044-010	SERVI-PAC-250-100-010-AR-AL-02-01-01-Y	1437/100/115	250	10	G1	36
6810044-012	SERVI-PAC-250-100-012-AR-AL-02-01-01-Y	1691/100/115	250	12	G1	41
6810044-015	SERVI-PAC-250-100-015-AR-AL-02-01-01-Y	2072/100/115	250	15	G1	49
6810045-004	SERVI-PAC-250-140-004-AT-AL-02-01-01-Y	480/140/160	250	4	G11/2	34
6810045-006	SERVI-PAC-250-140-006-AT-AL-02-01-01-Y	610/140/160	250	6	G11/2	39
6810045-008	SERVI-PAC-250-140-008-AT-AL-02-01-01-Y	740/140/160	250	8	G11/2	43
6810045-010	SERVI-PAC-250-140-010-AT-AL-02-01-01-Y	870/140/160	250	10	G11/2	48
6810045-012	SERVI-PAC-250-140-012-AT-AL-02-01-01-Y	1000/140/160	250	12	G11/2	53
6810045-015	SERVI-PAC-250-140-015-AT-AL-02-01-01-Y	1195/140/160	250	15	G11/2	60
6810045-020	SERVI-PAC-250-140-020-AT-AL-02-01-01-Y	1520/140/160	250	20	G11/2	71
6810045-025	SERVI-PAC-250-140-025-AT-AL-02-01-01-Y	1845/140/160	250	25	G11/2	83
6810045-030	SERVI-PAC-250-140-030-AT-AL-02-01-01-Y	2170/140/160	250	30	G11/2	95
6810046-010	SERVI-PAC-250-200-010-AU-AL-02-01-01-Y	563/200/230	250	10	G2	34
6810046-015	SERVI-PAC-250-200-015-AU-AL-02-01-01-Y	723/200/230	250	15	G2	58
6810046-020	SERVI-PAC-250-200-020-AU-AL-02-01-01-Y	882/200/230	250	20	G2	82
6810046-025	SERVI-PAC-250-200-025-AU-AL-02-01-01-Y	1041/200/230	250	25	G2	106
6810046-030	SERVI-PAC-250-200-030-AU-AL-02-01-01-Y	1200/200/230	250	30	G2	130
6810046-040	SERVI-PAC-250-200-040-AU-AL-02-01-01-Y	1518/200/230	250	40	G2	154
6810046-050	SERVI-PAC-250-200-050-AU-AL-02-01-01-Y	1836/200/230	250	50	G2	178
6810046-060	SERVI-PAC-250-200-060-AU-AL-02-01-01-Y	2155/200/230	250	60	G2	202
6810046-070	SERVI-PAC-250-200-070-AU-AL-02-01-01-Y	2473/200/230	250	70	G2	226
6810046-080	SERVI-PAC-250-200-080-AU-AL-02-01-01-Y	2792/200/230	250	80	G2	250
6810046-090	SERVI-PAC-250-200-090-AU-AL-02-01-01-Y	3110/200/230	250	90	G2	274
6810046-100	SERVI-PAC-250-200-100-AU-AL-02-01-01-Y	3428/200/230	250	100	G2	298
6810046-110	SERVI-PAC-250-200-110-AU-AL-02-01-01-Y	3746/200/230	250	110	G2	322
6810046-120	SERVI-PAC-250-200-120-AU-AL-02-01-01-Y	4064/200/230	250	120	G2	346
6810046-130	SERVI-PAC-250-200-130-AU-AL-02-01-01-Y	4382/200/230	250	130	G2	370
6810047-050	SERVI-PAC-250-250-050-AU-AL-02-01-01-Y	1317/250/286	250	50	G2	228
6810047-060	SERVI-PAC-250-250-060-AU-AL-02-01-01-Y	1521/250/286	250	60	G2	251
6810047-070	SERVI-PAC-250-250-070-AU-AL-02-01-01-Y	1725/250/286	250	70	G2	274
6810047-080	SERVI-PAC-250-250-080-AU-AL-02-01-01-Y	1929/250/286	250	80	G2	297
6810047-090	SERVI-PAC-250-250-090-AU-AL-02-01-01-Y	2133/250/286	250	90	G2	320
6810047-100	SERVI-PAC-250-250-100-AU-AL-02-01-01-Y	2337/250/286	250	100	G2	343
6810047-110	SERVI-PAC-250-250-110-AU-AL-02-01-01-Y	2541/250/286	250	110	G2	366
6810047-120	SERVI-PAC-250-250-120-AU-AL-02-01-01-Y	2745/250/286	250	120	G2	389
6810047-140	SERVI-PAC-250-250-140-AU-AL-02-01-01-Y	3153/250/286	250	140	G2	435
6810047-150	SERVI-PAC-250-250-150-AU-AL-02-01-01-Y	3357/250/286	250	150	G2	458
6810047-160	SERVI-PAC-250-250-160-AU-AL-02-01-01-Y	3561/250/286	250	160	G2	481
6810047-170	SERVI-PAC-250-250-170-AU-AL-02-01-01-Y	3765/250/286	250	170	G2	504
6810047-180	SERVI-PAC-250-250-180-AU-AL-02-01-01-Y	3969/250/286	250	180	G2	527
6810047-190	SERVI-PAC-250-250-190-AU-AL-02-01-01-Y	4173/250/286	250	190	G2	550
6810047-200	SERVI-PAC-250-250-200-AU-AL-02-01-01-Y	4377/250/286	250	200	G2	573
6810047-210	SERVI-PAC-250-250-210-AU-AL-02-01-01-Y	4581/250/286	250	210	G2	596
6810047-220	SERVI-PAC-250-250-220-AU-AL-02-01-01-Y	4785/250/286	250	220	G2	619
6810048-100	SERVI-PAC-220-360-100-AU-AL-02-01-01-Y	1388/360/419	220	100	G2	565
6810048-150	SERVI-PAC-220-360-150-AU-AL-02-01-01-Y	1879/360/419	220	150	G2	703
6810048-200	SERVI-PAC-220-360-200-AU-AL-02-01-01-Y	2371/360/419	220	200	G2	842
6810048-300	SERVI-PAC-220-360-300-AU-AL-02-01-01-Y	3353/360/419	220	300	G2	1119
6810048-350	SERVI-PAC-220-360-350-AU-AL-02-01-01-Y	3845/360/419	220	350	G2	1257
6810048-400	SERVI-PAC-220-360-400-AU-AL-02-01-01-Y	4336/360/419	220	400	G2	1396

4. DIMENSIONS/WEIGHT - 350 bar

Article No	Type designation	L-ød-ØD	Max. pressure	Volume, litres	Connection	Weight
6810049-0,4	SERVI-PAC-350-050-0,4-AN-00-02-01-01-Y	260/50/60	350	0,4	G1/2	3,8
6810049-0,6	SERVI-PAC-350-050-0,6-AN-00-02-01-01-Y	464/50/60	350	0,6	G1/2	4,5
6810049-0,8	SERVI-PAC-350-050-0,8-AN-00-02-01-01-Y	515/50/60	350	0,8	G1/2	5,2
6810050-001	SERVI-PAC-350-080-001-AP-AL-02-01-01-Y	360/80/96	350	1	G3/4	9,7
6810050-002	SERVI-PAC-350-080-002-AP-AL-02-01-01-Y	559/80/96	350	2	G3/4	13
6810050-003	SERVI-PAC-350-080-003-AP-AL-02-01-01-Y	758/80/96	350	3	G3/4	17
6810050-004	SERVI-PAC-350-080-004-AP-AL-02-01-01-Y	957/80/96	350	4	G3/4	19
6810051-001	SERVI-PAC-350-100-001-AR-AL-02-01-01-Y	294/100/120	350	1	G1	15
6810051-002	SERVI-PAC-350-100-002-AR-AL-02-01-01-Y	421/100/120	350	2	G1	19
6810051-004	SERVI-PAC-350-100-004-AR-AL-02-01-01-Y	675/100/120	350	4	G1	26
6810051-006	SERVI-PAC-350-100-006-AR-AL-02-01-01-Y	929/100/120	350	6	G1	33
6810051-008	SERVI-PAC-350-100-008-AR-AL-02-01-01-Y	1183/100/120	350	8	G1	40
6810051-010	SERVI-PAC-350-100-010-AR-AL-02-01-01-Y	1437/100/120	350	10	G1	46
6810051-012	SERVI-PAC-350-100-012-AR-AL-02-01-01-Y	1691/100/120	350	12	G1	53
6810051-015	SERVI-PAC-350-100-015-AR-AL-02-01-01-Y	2072/100/120	350	15	G1	64
6810052-004	SERVI-PAC-350-140-004-AT-AL-02-01-01-Y	480/140/170	350	4	G11/2	44
6810052-006	SERVI-PAC-350-140-006-AT-AL-02-01-01-Y	610/140/170	350	6	G11/2	51
6810052-008	SERVI-PAC-350-140-008-AT-AL-02-01-01-Y	740/140/170	350	8	G11/2	58
6810052-010	SERVI-PAC-350-140-010-AT-AL-02-01-01-Y	870/140/170	350	10	G11/2	66
6810052-012	SERVI-PAC-350-140-012-AT-AL-02-01-01-Y	1000/140/170	350	12	G11/2	73
6810052-015	SERVI-PAC-350-140-015-AT-AL-02-01-01-Y	1195/140/170	350	15	G11/2	84
6810052-020	SERVI-PAC-350-140-020-AT-AL-02-01-01-Y	1520/140/170	350	20	G11/2	102
6810052-025	SERVI-PAC-350-140-025-AT-AL-02-01-01-Y	1845/140/170	350	25	G11/2	121
6810052-030	SERVI-PAC-350-140-030-AT-AL-02-01-01-Y	2170/140/170	350	30	G11/2	139
6810053-010	SERVI-PAC-350-200-010-AU-AL-02-01-01-Y	563/200/240	350	10	G2	53
6810053-015	SERVI-PAC-350-200-015-AU-AL-02-01-01-Y	723/200/240	350	15	g2	83
6810053-020	SERVI-PAC-350-200-020-AU-AL-02-01-01-Y	882/200/240	350	20	G2	113
6810053-030	SERVI-PAC-350-200-030-AU-AL-02-01-01-Y	1200/200/240	350	30	G2	172
6810053-040	SERVI-PAC-350-200-040-AU-AL-02-01-01-Y	1518/200/240	350	40	G2	207
6810053-050	SERVI-PAC-350-200-050-AU-AL-02-01-01-Y	1836/200/240	350	50	G2	242
6810053-060	SERVI-PAC-350-200-060-AU-AL-02-01-01-Y	2155/200/240	350	60	G2	277
6810053-070	SERVI-PAC-350-200-070-AU-AL-02-01-01-Y	2473/200/240	350	70	G2	312
6810053-080	SERVI-PAC-350-200-080-AU-AL-02-01-01-Y	2792/200/240	350	80	G2	347
6810053-090	SERVI-PAC-350-200-090-AU-AL-02-01-01-Y	3110/200/240	350	90	G2	382
6810053-100	SERVI-PAC-350-200-100-AU-AL-02-01-01-Y	3428/200/240	350	100	G2	417
6810053-110	SERVI-PAC-350-200-110-AU-AL-02-01-01-Y	3746/200/240	350	110	G2	452
6810053-120	SERVI-PAC-350-200-120-AU-AL-02-01-01-Y	4064/200/240	350	120	G2	487
6810054-050	SERVI-PAC-350-250-050-AU-AL-02-01-01-Y	1317/250/300	350	50	G2	299
6810054-060	SERVI-PAC-350-250-060-AU-AL-02-01-01-Y	1521/250/300	350	60	G2	333
6810054-070	SERVI-PAC-350-250-070-AU-AL-02-01-01-Y	1725/250/300	350	70	G2	367
6810054-080	SERVI-PAC-350-250-080-AU-AL-02-01-01-Y	1929/250/300	350	80	G2	401
6810054-090	SERVI-PAC-350-250-090-AU-AL-02-01-01-Y	2133/250/300	350	90	G2	435
6810054-100	SERVI-PAC-350-250-100-AU-AL-02-01-01-Y	2337/250/300	350	100	G2	469
6810054-110	SERVI-PAC-350-250-110-AU-AL-02-01-01-Y	2541/250/300	350	110	G2	503
6810054-120	SERVI-PAC-350-250-120-AU-AL-02-01-01-Y	2745/250/300	350	120	G2	537
6810054-130	SERVI-PAC-350-250-130-AU-AL-02-01-01-Y	2949/250/300	350	130	G2	571
6810054-140	SERVI-PAC-350-250-140-AU-AL-02-01-01-Y	3153/250/300	350	140	G2	605
6810054-150	SERVI-PAC-350-250-150-AU-AL-02-01-01-Y	3357/250/300	350	150	G2	640
6810054-160	SERVI-PAC-350-250-160-AU-AL-02-01-01-Y	3561/250/300	350	160	G2	674
6810054-170	SERVI-PAC-350-250-170-AU-AL-02-01-01-Y	3765/250/300	350	170	G2	708
6810054-180	SERVI-PAC-350-250-180-AU-AL-02-01-01-Y	3969/250/300	350	180	G2	742
6810054-190	SERVI-PAC-350-250-190-AU-AL-02-01-01-Y	4173/250/300	350	190	G2	776
6810054-200	SERVI-PAC-350-250-200-AU-AL-02-01-01-Y	4377/250/300	350	200	G2	810
6810054-210	SERVI-PAC-350-250-210-AU-AL-02-01-01-Y	4581/250/300	350	210	G2	844
6810054-220	SERVI-PAC-350-250-220-AU-AL-02-01-01-Y	4785/250/300	350	220	G2	878

5. MODEL CODE

SERVI - PAC(X)– 250 – 100 – 010 – AR – AL – 01 – 01 – 01(S) - Y



Connection table		K	L	M	N	P	R	S	T	U	V	W
Thread ISO 228-1 (G)	A	G1/8	G1/4	G3/8	G1/2	G3/4	G1	G11/4	G11/2	G2	G21/2	G3
Thread ISO 6149-1 (M)	B	M10x1	M12x1,5	M14x1,5	M18x1,5	M22x1,5	M27x2	M33x2	M42x2	M48x2		
SAE-flange ISO6162-1, 3000 psi	C	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"			
SAE-flange ISO6162-2, 6000 psi	D	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"			
NPT	E	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"		

6. MATERIALS

Carbon Steel	Stainless Steel
Tubes : Cold drawn steel	Tubes : AISI 316
End Caps : Carbon steel	End Caps : AISI 316
Piston : Aluminum*	Piston : Anodized aluminum**
Seals : PU/NBR – PTFE/NBR	Seals : PU/NBR – PTFE/NBR

* Anodized for water/glycol applications

** AISI 316 on request

7. INSTALLATION

No welding, riveting, soldering or mechanical work may be performed on the piston accumulator, to avoid the risk of explosion. Any such work would also void the certificates.

Be extra careful when installing equipment on the gas side of the piston accumulator. The piston accumulator may be pre-charged.

Different regulations can apply to the use and installation of the accumulator in different countries. Before installation and use, find out which national regulations are applicable in the country in which the piston accumulator is to be used.

In Norway, this is Norwegian Directorate for Civil Protection (DSB).

Ships and offshore installations often have their own, local rules.

The piston accumulator can be installed in any position. To reduce the risk of wear and tear, installation in a vertical position is recommended, with the fluid port downwards.

The following are strictly prohibited:

- To weld, rivet or solder components onto the piston accumulator.
- To perform any measure that can affect the accumulator's mechanical properties.
- To alter the accumulator without the consent of SERVI GROUP.

Ensure that the fluid is suitable for the equipment.

Ensure that the highest permissible pressure of the piston accumulator is the same or higher

than that of the hydraulic circuit.

Check the environmental conditions and protect the equipment as required.

Ensure that there is a space of approx. 200 mm above the gas valve to allow the pre-charging and control equipment to be mounted.

All markings must remain visible. Take care not to damage while shot blasting.

8. MAINTENANCE

To ensure long, problem-free usage, the following maintenance measures should be performed regularly.

Check the pre-charging pressure of the nitrogen gas regularly during the first weeks of usage, and thereafter at appropriate intervals.

When filling with nitrogen gas:

- ensure it is sufficiently clean and dry
- that connections have been tightened and are free of leakage
- the performance of the safety and stop blocks
- the mounting brackets

Check the accumulator visually at regular intervals to look for any damage due to corrosion, or any other deformation. External corrosion must be dealt with immediately and is not permissible. Minor external corrosion is repaired by painting.

Check that the marking on the accumulator is legible.

If the accumulator is worn, contact SERVI GROUP.

We recommend the following intervals between testing of the pre-charged pressure:

- directly after installation
- one week after installation
- six weeks after installation

Thereafter, in the case of normal operations, once every six months and, in the case of high working temperatures, once a month.

Before disassembly the plant, ensure that there is no residual hydraulic pressure. Completely discharge nitrogen before any maintenance.

9. STORAGE

The piston accumulator is in preserved form on delivery (greased, plugged and filled with nitrogen).

It can be stored for up to two years in a dry, cool place out of direct sunlight.

If the piston accumulator is stored for more than two years, all seals must be changed before being taken into operation.

If the piston accumulator is stored for more than three months and is pre-charged to >5 bar, the pressure must be reduced to a maximum of 5 bar.

Pre-charged piston accumulators must be stored in a safe place, protected from collision and fire, which can cause explosions.

10. SPARE PARTS

Artikkel nummer	Artikkel beskrivelse
753640	Seal kit ø80mm 250 BAR standard for carbon steel, singel seal, 01=PU/NBR
753641	Seal kit ø100mm 250 BAR standard for carbon steel, singel seal, 01=PU/NBR
753642	Seal kit ø140mm 250 BAR standard for carbon steel, singel seal, 01=PU/NBR
753643	Seal kit ø200mm 250 BAR standard for carbon steel, singel seal, 01=PU/NBR
753644	Seal kit ø250mm 250 BAR standard for carbon steel, singel seal, 01=PU/NBR
753645	Seal kit ø50mm 350 BAR standard for carbon steel, singel seal, 01=PU/NBR
753646	Seal kit ø80mm 350 BAR standard for carbon steel, singel seal, 01=PU/NBR
753647	Seal kit ø100mm 350 BAR standard for carbon steel, singel seal, 01=PU/NBR
753648	Seal kit ø140mm 350 BAR standard for carbon steel, singel seal, 01=PU/NBR
753649	Seal kit ø200mm 350 BAR standard for carbon steel, singel seal, 01=PU/NBR
753650	Seal kit ø250mm 350 BAR standard for carbon steel, singel seal, 01=PU/NBR
753651	Seal kit ø100mm 290 BAR standard for stainless steel, singel seal
753652	Seal kit ø180mm 242 BAR standard for stainless steel, singel seal
753653	Seal kit ø195mm 242 BAR standard for stainless steel, singel seal
753654	Seal kit incl piston ø80mm 250 BAR Carbon steel, singel seal, 01= PU/NBR
753655	Seal kit incl piston ø100mm 250 BAR Carbon steel, singel seal, 01= PU/NBR
753656	Seal kit incl piston ø140mm 250 BAR Carbon steel, singel seal, 01= PU/NBR
753657	Seal kit incl piston ø200mm 250 BAR Carbon steel, singel seal, 01= PU/NBR
753658	Seal kit incl piston ø250mm 250 BAR Carbon steel, singel seal, 01= PU/NBR
753659	Seal kit incl piston ø50mm 350 BAR Carbon steel, singel seal, 01= PU/NBR
753660	Seal kit incl piston ø80mm 350 BAR Carbon steel, singel seal, 01= PU/NBR
753661	Seal kit incl piston ø100mm 350 BAR Carbon steel, singel seal, 01= PU/NBR
753662	Seal kit incl piston ø140mm 350 BAR Carbon steel, singel seal, 01= PU/NBR
753663	Seal kit incl piston ø200mm 350 BAR Carbon steel, singel seal, 01= PU/NBR
753664	Seal kit incl piston ø250mm 350 BAR Carbon steel, singel seal, 01= PU/NBR
753665	Seal kit incl piston ø100mm 290 BAR Stainless steel, singel seal
753666	Seal kit incl piston ø180mm 242 BAR Stainless steel, singel seal
753667	Seal kit incl piston ø195mm 242 BAR Stainless steel, singel seal
753668	Stainless steel nameplate incl. 2X stainless steel straps PMC part no: 1X 927228 + 2X 921312 Complete with engraving