

The technical requirements

- The design, manufacture, inspection (test) and acceptance of the product are in accordance with PED 2014/68/EU *Pressure Equipment Directive* and EN14359:2017 *Gas Loaded Accumulators for Fluid Power Applications*
- All parts shall be cleaned and checked before assembly. The inner surface of the shell should be clean without any sundries; The outer surface of the capsule shall not have scratches, sundries, pores and other air leakage defects; Other parts should be free of rust, burr and scratch defects.
- The coating, packaging and transportation of the accumulator shall comply with the provisions of JB/T4711-2003 "Pressure Vessel Coating and Transportation Packaging", and shall be equipped with the accompanying documents and spare parts.

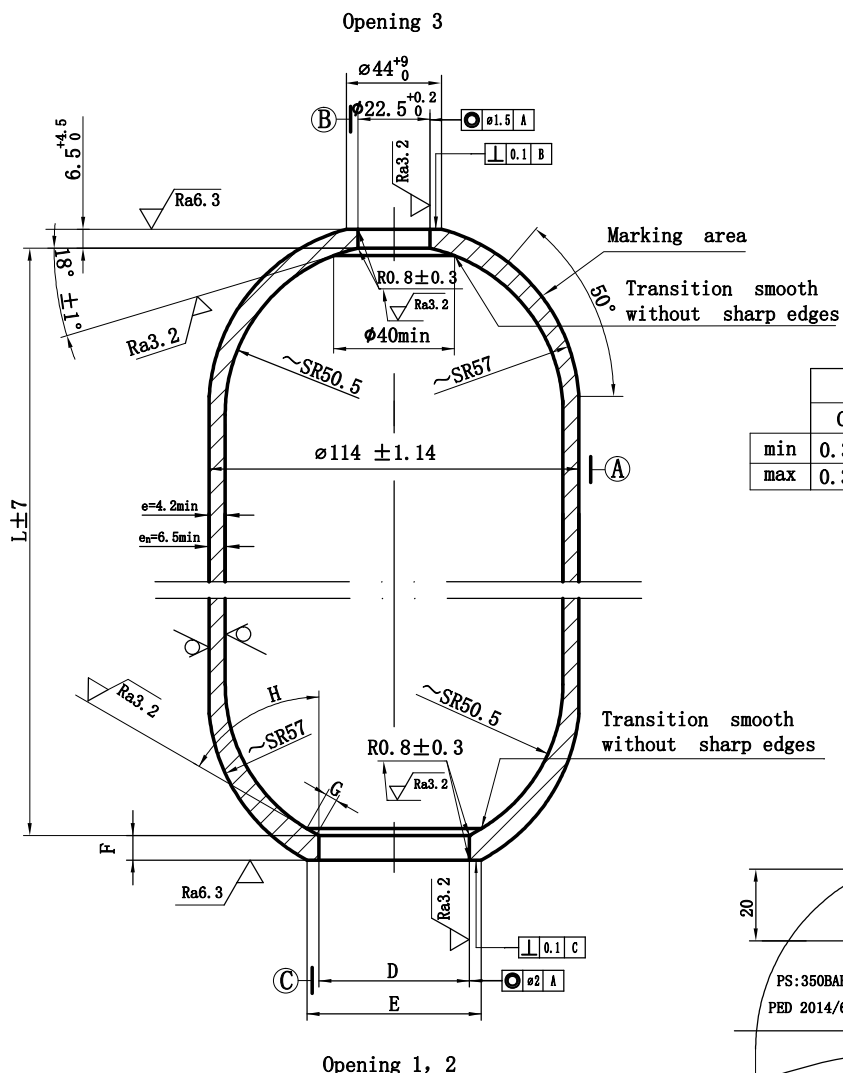
Notes:

- Designed in accordance with EN14359:2017
- Maximum working pressure:350BAR
- Design pressure:350BAR
- Test pressure:501BAR
- Design temperature:-50°C TO +80°C

volume (L)	1	1.5	2.5	3	5
L ₁ ± 7 (mm)	181	241	393	426	676
L ± 16 (mm)	278	338	490	523	773

24		CHARGING VALVE QXF 23	1		
23	NX393-16	SEALING GASKET 2	1	T ₃	
22	NX393-15	PROTECTIVE CAP	1	35	
21	GB810-76	GAS VALVE LOCKNUT	2	45	
20	NX393-14	NAMEPLATE	1	AL	
19	GB1235-76	FLUID PORT 'O' RING	1	OIL RESISTANT RUBBER	
18	NX393-13	GERM VALVE	1	40Cr	
17	NX393-12	SPRING	1	65Mn	
16	NX393-11	PISTON	1	40Cr	
15	GB93-1987	SINGLE COIL SPRING LOCK WASHERS	1	65Mn	
14	GB/T9457-1988	HEXAGON SLOTTED AND CASTLE NUTS	1	A ₃	
13	GB/T91-2000	SPLIT PINS	1	Q235	
12	NX393-10	OIL VALVE BODY	1	40Cr	
11	NX393-9	SEALING GASKET 1	1	T ₃	
10	NX393-8	SCREW PLUG	1	45	
9	GB812-76	LOCKING RING	2	45	
8	NX393-7	PRESSURE RING	1	45	
7	NX393-6	ADJUSTING GEAR RING	1	POLYTETRAFLUORETHYLENE	
6	GB1235-76	FLUID PORT 'O' RING	1	VITON	
5	NX393-5	SPACER RING	1	35	
4	NX393-4	RETAINING RING	1	40Cr	
3	NX393-3	FILLER RING	1	NITRILE	
2	NX393-2	BLADDER	1	NITRILE	
1	NX393-1	ACCUMULATOR SHELL	1	34CrMo4	
ITEM	PART No.	DESCRIPTION	QTY	MATERIAL	

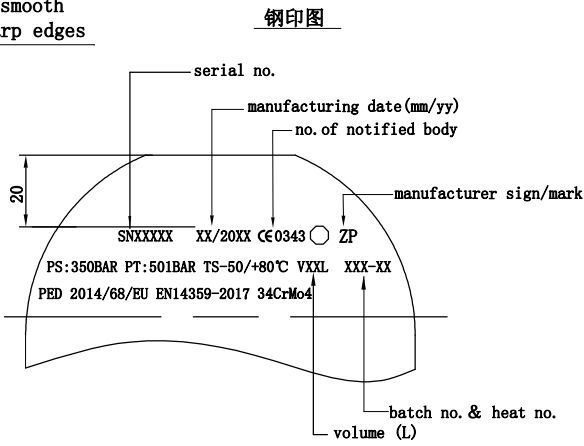
		PRODUCT		Drawing No.	NX393 Rev. 0
		HPD-S-(1~5)-350-G-Y Bladder Accumulator		Mark of drawing	Weight Scale
				S	
Design	Reviewed	Material			
Drawing	Approved				
Corrected	Date:			Zhuolu High Pressure Vessel Co., Ltd.	



MELT ANALYSIS

PROPORTION IN %

	C	Si	Mn	P	S	Cr	Mo
min	0.30	0.15	0.50	-	-	0.90	0.15
max	0.37	0.35	0.80	0.035	0.020	1.20	0.30



Note: The letters and CE marks height shall be 0.197 in/5.0 mm.
 CE shape to meet PED requirements.

	D	E	F	G	H
Opening 1	$\phi 44.4^{+0.062}_0$	$\geq \phi 48$	8 ± 0.5	8min	$47^\circ \pm 1^\circ$
Opening 2	$\phi 50.5^{+0.074}_0$	$\geq \phi 56$	8 ± 0.5	8min	$47^\circ \pm 1^\circ$

PRODUCT	ACCUMULATOR SHELL	APPROVED	NAME	DATE
TYPE	1L-5L 350BAR	Zhuolu High Pressure Vessel Co., Ltd		
MATERIAL	34CrMo4 VdTUV 431	DRG. NO.	NX393	REV 1

VOLUME (L)	1	1.5	2.5	3	5
L (mm)	181	241	393	426	676
WEIGHT ±15% (Kg)	4.0	5.3	8.0	9.0	13.8

DESIGN DATA

-VOLUME : 1L-5L
 -MAX. WORKING PRESSURE: 350BAR
 -TEST PRESSURE: 501BAR
 -DESIGN TEMP: -50°C TO +80°C
 -CALCULATION/MANUFACTURING: EN14359-2017
 -APPROVED ACC TO: PED 2014/68/EU MODULE G
 -MATERIAL: 34CrMo4 ACC TO VdTUV431: 2020

-CLASSIFICATION: CATEGORY III-FLUID GROUP 2(1.5L&2.5L)
 CATEGORY IV-FLUID GROUP 2(3L&5L)
 SEP-FLUID GROUP2(1L), NO CE MARKING

-OVALITY: ≤1.5%
 -ROUGHNESS: Rz≤200 μm

-FATIGUE ANALYSIS AND CALCULATION RESULTS (ACC TO EN13445-3, art. 17)
 Pmax-Pmin=350BAR-220BAR, Nzul=110290 CYCLES

MECHANICAL DATA:

-TENSILE STRENGTH: $880 \leq R_m \leq 1030 \text{ N/mm}^2$
 -YIELD STRENGTH : $R_{p0.2}(20^\circ\text{C}) \geq 755 \text{ N/mm}^2$
 $R_{p0.2}(80^\circ\text{C}) \geq 707 \text{ N/mm}^2$;
 $R_{p0.2}(150^\circ\text{C}) \geq 650 \text{ N/mm}^2$;

-YIELD IS TO TEST AT 150°C:
 -ELONGATION A: LONGITUDINAL 16% AT L₀=5d
 -AVERAGE CHARPY ISO-V MW≥49J/cm² (AT -50°C)
 EW≥34J/cm²
 IN LONGITUDINALLY LIQUID QUENCHED AND TEMPERED

-HEAT TREATMENT: 0mm
 -CORROSION ALLOWANCE: 230HBW-313HBW
 -HARDNESS: INTERNAL SHOT BLAST AND OILED
 -SURFACE TREATMENT: EXTERNAL SHOT BLAST AND PAINTED

NOTES:

-THE MAX. ADMITTED DEFLECTION OF CYLINDER IS 0.3%.
 -ALL MACHINED SURFACE TO BE SMOOTH AND FREE OF TOOL MARKS AND NO COLOR .
 -INSIDE SHELL SURFACE MUST BE FREE FROM RUST, BURRS, SHARP EDGES AND CUTS.
 -PROTECT MACHINED PARTS WITHOUT CORROSION AND DAMAGE DURING STORAGE AND SHIPPING.
 -GENERAL TOLERANCES ISO 2768-mk.
 -TYPICALLY, A PRESSURE VESSEL OPERATING IN FATIGUE SHOULD BE INTERNALLY AND IF NECESSARY EXTERNALLY INSPECTED (BY VT, RT, UT, PT, ETC. AS RELEVANT) AT A PERIOD NOT LATER THAN 20% OF THE ALLOWABLE FATIGUE LIFE.
 -THE INTERNAL INSPECTIONS SHOULD BE SUPPLEMENTED BY NON-DESTRUCTIVE TESTS ON HIGHLY LOADED LOCATIONS ESPECIALLY BY SURFACE CRACK TESTS AND ULTRASONIC TESTS.
 -ACCORDING TO ARTICLE EN13445-3(E) 18 DO DETAILED ASSESSMENT.