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# HG

Chemical Industry Standard of the People's Republic  
of China

HG/T 3126-2017

Replace HG/T 2126-2009

## Glass-lined steel vessels for distillation

## 搪玻璃蒸馏容器

(English Translation)

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## Foreword

SAC/TC 72 is in charge of this English translation. In case of any doubt about the contents of English translation, the Chinese original shall prevail.

This standard is drafted in accordance with the rules given in GB/T 1.1—2009.

This standard replaces HG/T 3126-2009 *Glass-lined steel vessel for distillation* in whole.

In addition to some editing, the following technical revisions have been made with respect to the HG/T 3126-2009:

- Deleted the original standard 3.3 "The mounting support can be selected according to JB / T 4724 or JB / T 4725." and 3.4 "The thermometer sleeve is selected according to HG / T 2058.1, of which type A is a general structure thermometer cover without a temperature measuring head, type B is a thermometer sleeve with a rapid temperature measuring device. ", 4.2 "Accessories for glass-lined distillation vessels, such as manholes, high neck flanges, clamps, loose flanges, gaskets, nozzles, sight glasses, manhole flanges, flange covers, etc. must comply with the relevant provisions of the standards for glass lined equipment parts and components. ";
- Table 1 added "The container head shall conform to the EHA oval head type in GB / T 25198, the high neck flange for containers shall meet the requirements of HG / T 2049, and the manhole flange shall meet the requirements of HG / T 2053, The container nozzle shall meet the requirements of HG / T 2143, and the pipe flange shall comply with the requirements of HG / T 20592. ";
- Added specifications for 4,000L K-type and 4,000L F-type vessels;
- The support numbers of container lug supports in nominal diameter DN800, DN900, DN1 000, DN1 200, DN1 300, DN1 600 and DN2 200 in table 4 are increased;
- Increase the thickness requirements of the glass-lined layer;
- Revised individual dimensions.

This standard was proposed by China Petroleum and Chemical Industry Association.

This standard was prepared by SAC/TC 72 National Technical Committee for Glass-lined Equipment Standardization .

The previous editions of this standard are as follow (s) :

- HG 5-38—1969、HG 5-39—1969、HG 5-38—1979、HG 5-39—1979、HG 5-1231—1979、

HG/T 3126—1998 and HG/T 3126—2009

# Glass-lined steel vessel for distillation

## 1 Scope

This standard specifies the type, basic parameters, main dimension, requirements, nameplate, factory documents, packaging and transportation of glass-lined steel vessel for distillation.

This standard is applicable to the glass-lined steel vessel for distillation with a design pressure of 0.6 MPa or less, a design pressure of 0.6 MPa or less in the jacket, and a design temperature in the vessel and the jacket of higher than  $-20^{\circ}\text{C}$  to  $200^{\circ}\text{C}$  with a nominal volume of 300L to 8 000L.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB 25025 Specification of glass-lined equipment for industry

GB/T 25198 Heads for pressure vessels

HG/T 2049 Glass-lined equipment—H Flange

HG/T 2050 Gaskets for glass-lined steel vessel

HG/T 2053 Glass-lined equipment—Manhole flange

HG/T 2054 Clamps for glass-lined vessels

HG/T 2055.1 Manhole for glass-lined steel vessel

HG/T 2058.1 Glass-lined thermowell

HG/T 2105 Loose flange for glass-lined steel vessel

HG/T 2143 Nozzles for glass-lined steel vessel

HG/T 20592 Steel pipe flanges (PN series)

JB/T 4712.3 Vessel supports—Part 3: Lug support

JB/T 4712.4 Vessel supports—Part 4: Bracket support

## 3 Type, marks, basic parameters and main dimension

3.1 The glass-lined steel vessel for distillation can be divided into two types: Type K (see Fig. 1) and type F (see Fig. 2) according to different structural types

3.2 The type, basic parameters and main dimension of the glass-lined steel vessel for distillation, see Figure 1, Figure 2 and Table 1, Table 2, Table 3 and Table 4.

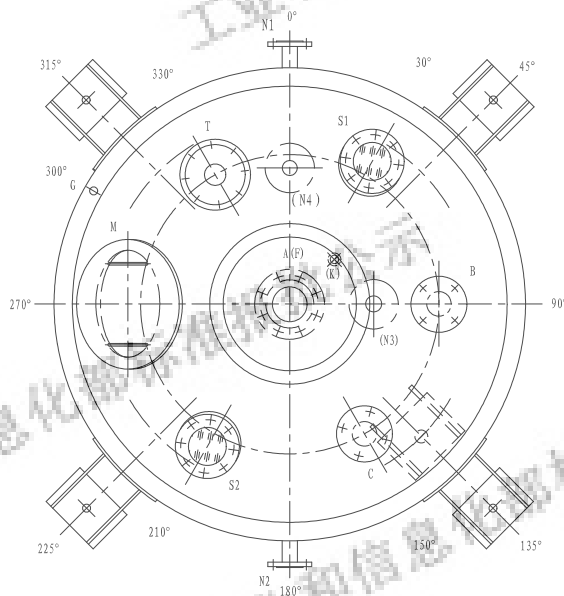
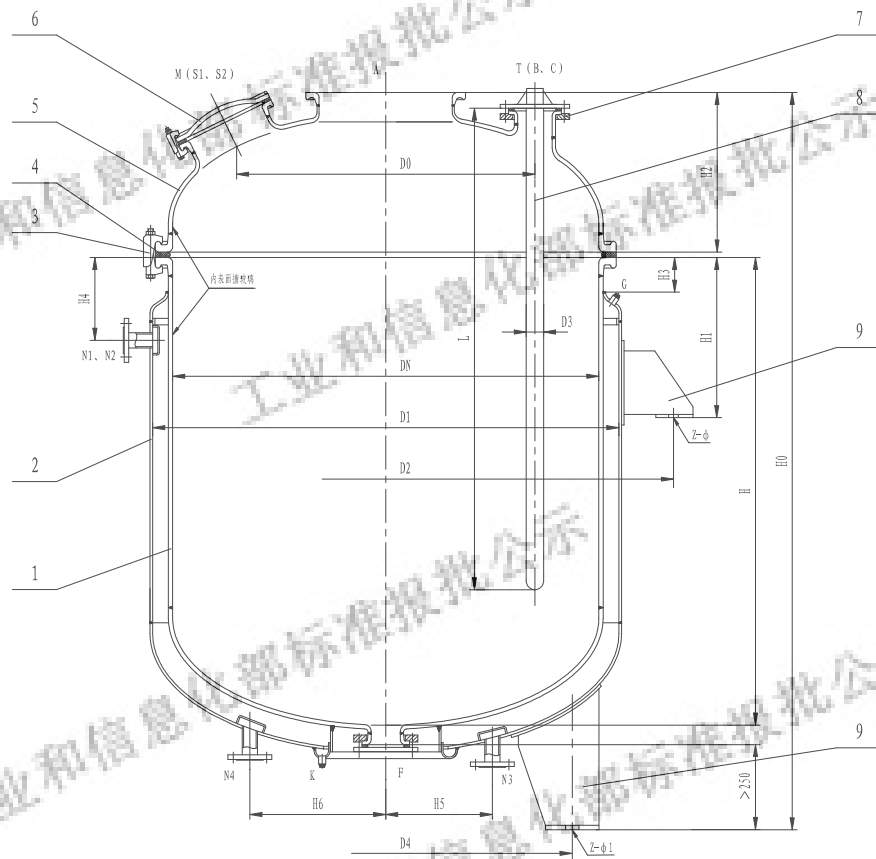


Fig.1 Type K

Units: mm

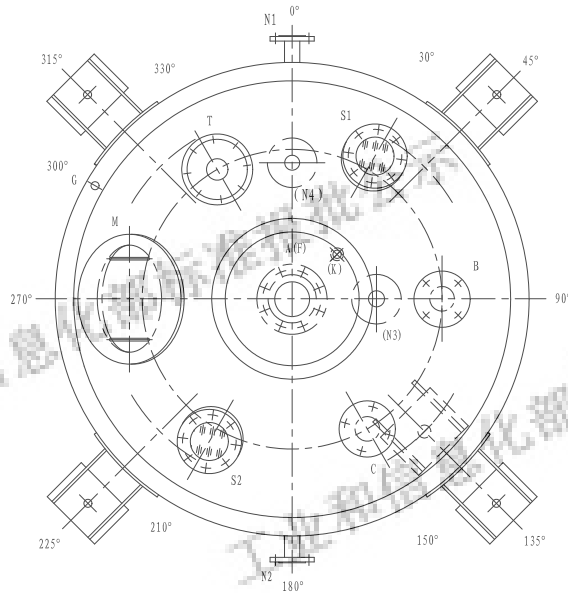
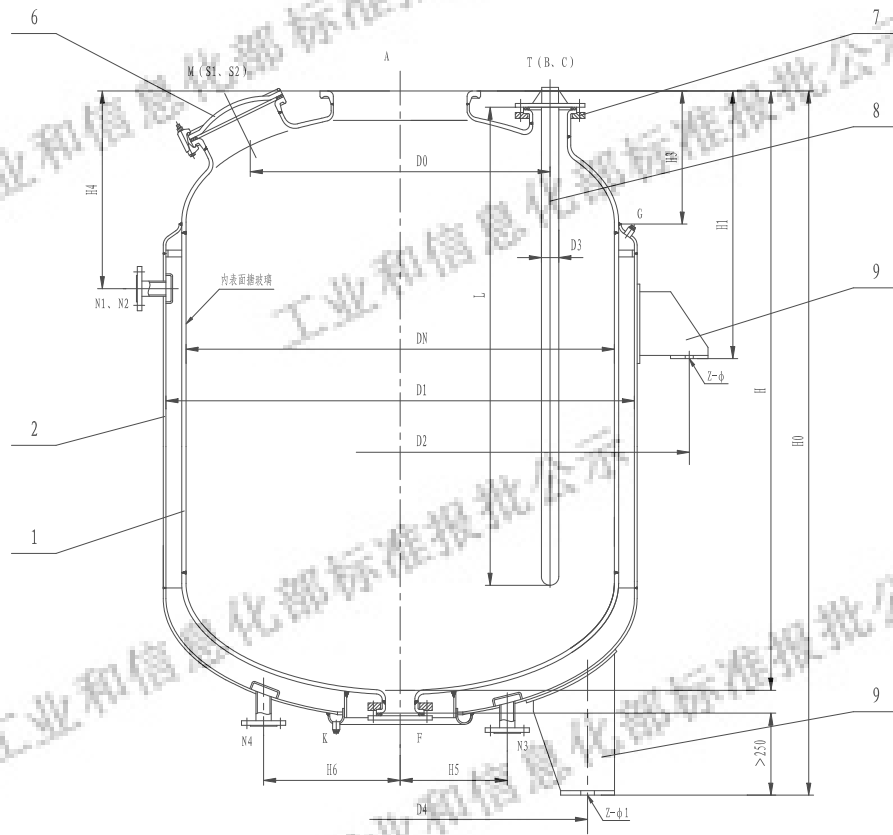


Fig. 2 Type F

Table1. Details

Part number	Standard	Name	Quantity	Material	Remark
1	—	Main body	1	As specified in GB 25025	Glass lined
2	—	Jacket	1	Assembly	—
3	HG/T 2054	Clamp	See table 3	Assembly	—
4	HG/T 2050	Gasket	1	Soft gasket	As specified in working conditions
5	—	Tank lid	1	As specified in GB 25025	Glass lined
6	HG/T 2055.1 (HG/T 2145.1)	Man hole (hand hole)	1	As specified in GB 25025	Glass lined
7	HG/T 2105	Loose flange	—	Assembly	—
8	HG/T 2058.1	Thermowell	1	Assembly	Glass lined
9	JB/T 4712.3	Lug support	4	Assembly	—
	JB/T 4712.4	Bracket support	4	Assembly	—

Heads for pressure vessels shall be in conformity with the EHA elliptical head type in GB/T 25198. H flanges for containers shall be in conformity with the provisions of HG /T 2049. Manhole flanges shall be in conformity with the provisions of HG/T 2053. The nozzle of the container shall be in conformity with the provisions of HG/T 2143. Pipe flanges shall be in conformity with the provisions of HG/T20592.

Table2. Nozzle chart

Nominal volume V N/L	n Nominal diameter D N/mm		Nozzle nominal diameter D N/mm										
	Type K	Type F	A	M	T	S <sub>1</sub> 、 S <sub>2</sub>	B、C	F	N <sub>1</sub> 、 N <sub>2</sub>	N <sub>3</sub> 、 N <sub>4</sub>	G	K	
300	800	—	150	125	80	80	80	80	25	25	Rp3/8		
500	900	—	200	150	100	100	80	80	32	32			
800	1 000	—	250	200	100	100	80	80	32	32			
1 000	1 200	—	300	200	100	100	80	100	32	32			
	—	1 200	400	200	100	100	80	100	32	32			
1 500	1 300	—	400	400×300	150	100	80	100	40	40			
	—	1 300	400		150	100	80	100	40	40			
2 000	1 450	—	400		150	125	100	125	50	50	Rp1/2		
	—	1 450	400		150	125	100	125	50	50			
3 000	1 600	—	500		150	125	100	125	65	65			
	—	1 600	500		150	125	100	125	65	65			
4 000	1 750	—	600		200	125	125	125	65	65			Rp3/4
	—	1 750	600		200	125	125	125	65	65			
5 000	1 750	—	600		200	125	125	125	65	65			
	—	1 900	600		200	125	125	125	65	65			
6 300	—	1 900	600		200	125	150	125	65	65			
8 000	—	2 200	700		200	125	150	125	80	80			

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Table3. Dimension chart

Nominal volume VN /L	Nominal diameter D N/mm		Calculated volume VJ/L	Jacket heat transfer area /m <sup>2</sup>	D <sub>0</sub> /mm	D <sub>1</sub> /mm	D <sub>2</sub> /mm	D <sub>3</sub> /mm	D <sub>4</sub> /mm	L/mm
	Type K	Type F								
300	800	—	369	1.9	560	900	1 242	320	—	1 000
500	900	—	573	2.6	630	1 000	1 336	50	—	1 200
800	1 000	—	878	3.7	700	1 100	1 437	50	740	1 200
1 000	1 200	—	1 132	4.5	840	1 300	1 765	50	950	1 400
	—	1 200	1 132	3.9	840	1 300	1 765	50	950	1 000
1 500	1 300	—	1 714	5.2	910	1 450	1 915	65	1 020	1 600
	—	1 300	1 704	4.6	910	1 450	1 915	65	1 020	1 300
2 000	1 450	—	2 530	6.7	1 020	1 600	2 066	65	1 200	1 700
	—	1 450	2 300	7.4	1 020	1 600	2 066	65	1 200	1 400
3 000	1 600	—	3 380	9.3	1 120	1 750	2 261	65	1 300	1 900
	—	1 600	3 811	9.74	1 120	1 750	2 261	65	1 300	1 700
4 000	1 750	—	4 340	10.9	1 220	1 900	2 412	80	1 400	1 700
	—	1 750	4 917	11.7	1 220	1 900	2 412	80	1 400	1 600
5 000	1 750	—	5 435	13.4	1 220	1 900	2 412	80	1 400	2 100
	—	1 900	5 734	12.4	1 330	2 050	2 566	80	1 450	1 800
6 300	—	1 900	6 868	14.8	1 330	2 050	2 566	80	1 450	2 400
8 000	—	2 200	8 976	16.5	1 540	2 350	2 917	80	1 650	2 500



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Table3. Dimension chart (continued)

Nominal volume VN / L	Nominal diameter D N/mm		~ H <sub>0</sub> /mm	H <sub>1</sub> /mm	H <sub>2</sub> /mm	H <sub>3</sub> /mm	H <sub>4</sub> /mm	H <sub>5</sub> /mm	H <sub>6</sub> /mm	H/mm
	Type K	Type F								
300	800	—	1 505	380	394	100	250	270	270	800
500	900	—	1 735	400	424	110	270	270	270	1 000
800	1 000	—	1 940	450	440	110	270	270	270	1 200
1 000	1 200	—	2 005	500	499	110	270	350	350	1 200
	—	1 200	1 765	700	—	370	530	350	350	1 465
1 500	1 300	—	2 235	650	524	120	310	350	510	1 400
	—	1 300	1 970	950	—	370	560	350	510	1 670
2 000	1 450	—	2 325	650	563	120	310	350	510	1 450
	—	1 450	2 175	950	—	450	640	350	510	1 875
3 000	1 600	—	2 700	650	585	120	315	400	510	1 810
	—	1 600	2 550	960	—	450	700	400	510	2 250
4 000	1 750	—	2 875	700	625	140	350	400	510	1 950
	—	1 750	2 840	1 000	—	480	750	400	510	2 428
5 000	1 750	—	3 335	700	625	140	350	400	510	2 410
	—	1 900	2 730	1 050	—	512	770	400	510	2 428
6 300	—	1 900	3 120	1 050	—	512	770	400	510	2 828
8 000	—	2 200	3 120	1 200	—	595	850	400	550	2 825

Table4 Clamp and support

Nominal diameter D N/mm	Clamp: specifications × quantity		Lug support Z— $\phi$	Bracket support Z— $\phi$ 1
	High neck flange port	Distillation port		
800	AM16×36	—	B3 4-30	—
900	AM16×40	—	B3 4-30	—
1 000	AM16×44	—	B3 4-30	A2 4-24
1 200	AM16×56	AM12×16	B4 4-30	A2 4-24
1 300	AM20×52	AM12×20	B4 4-30	A3 4-30
1 450	AM20×60	AM12×20	B4 4-30	A3 4-30
1 600	AM20×68	AM12×24	B5 4-30	A3 4-30
1 750	AM20×76	AM12×36	B5 4-30	A4 4-30
1 900	—	AM12×36	B5 4-30	A5 4-36
2 200	—	AM16×32	B6 4-36	A5 4-36

### 3.3. Tags and their examples

Take the glass-lined steel vessel for distillation that conforms to HG/T 3126 with the design pressure of 0.6 MPa, the nominal volume of 2 000 L and the nominal diameter of 1 450 mm as an example. It is marked as:

HG/T 3126-K-0.6-2000-1450 Glass-lined steel vessel for distillation

The meaning of each element in the mark is as follows:

K — glass-lined steel vessel for open distillation;

0.6 — The design pressure is 0.6MPa;

2000—the nominal volume is 2 000L;

1450 — Nominal diameter is 1 450mm.

## 4 Requirement

4.1 The design, materials, manufacture, inspection and acceptance of the glass-lined steel vessels for distillation should conform with this Standard and GB 25025.

4.2 The thickness of the glass-lined layer shall meet the requirements of GB 25025, and the thickness value should be the lower limit of the value specified by GB 25025.

## 5 Nameplate, factory documents, packaging and transportation

5.1 The nameplate, factory documents, packaging and transportation of glass-lined steel vessel for distillation are as specified in GB 25025.

5.2 Collisions are prohibited when moving and transporting glass-lined steel vessel for distillation.

5.3 The exposed glass-lined surface of the glass-lined steel vessel for distillation must be strictly protected.

5.4 The container shall be properly stored before delivery against the erosion of rain and snow and corrosive media . Generally, store it in the open air is not allowed.