

HTN

减温水调节阀

SPRAY WATER CONTROL VALVE
FOR SUPERHEAT STEAM



HTN 减温水调节阀

概 要:

HTN 减温水调节阀是一种防空化的多级节流调节阀,也叫高压差调节阀,这是一种结构新颖的调节阀。该阀可用于大、中型火力发电机组,控制锅炉主蒸汽和再热蒸汽温度所需减温水的流量,它是发电厂关键调节阀之一。

HTN 减温水调节阀的阀内组件结构是串级式结构,流体通过曲折的通道,可以消耗大量能量,降低流速,防止空化。公称通径 40mm 以上的阀,采用高压自密封结构。

考虑电厂现有减温水调节阀都是安装在一条水平管线上,为此阀体分成“平口阀体”和“错口阀体”。平口阀体是指进口管与出口管处在同一条水平线上;而错口阀体则指进口管与出口管不在同一条水平线上。

减温水调节阀具有如下优点:

1. 流体逐级降压,流体方向不断改变,增加流阻、控制流速,防止流体发生空化破坏,阀内允许压差 25MPa。

2. 多级节流:小流量时 4 级节流,大流量时 5 级节流,以减少流体对阀芯表面的冲刷磨蚀。

3. 节流面与密封面分开,阀芯和阀芯套表面硬化处理,硬度达到 HRC70 左右,关闭严密,寿命长。

4. 阀芯表面开有大缺口,流体含有 2~3mm 焊渣等固体颗粒,阀芯也不会卡死。

5. 流量调节特性好,调整范围大(约 60%~70%)

6. 阀体设有两种结构型式:DN25、32 采用整体式结构,即没有上阀盖;DN40 以上口径阀采用高压自密封结构。

7. 该调节阀是专利产品,我国专利登记号是 NO15739,许多电厂已成功使用这种多级节流调节阀。

HTN SPRAY WATER CONTROL VALVE FOR SUPERHEAT STEAM

General

HTN control valve is characterized by anti-cavitation multi-stage throttling for high differential pressure. Its structure is unique. It is engineered specially for thermal power station. The valve is applicable for large and medium sized thermal generator set to control the flow of spray water that main steam and reheat steam require. It is a key control valve in electric power plant.

Considering the straight installation of the valve, the body is engineered for the straight connection and mismatch.

The valve has the following advantages:

1. The multi-stage under pressure controls velocity of flow and prevents from cavitating and wrecking by forcing the process fluid to follow a tortuous path.; Allowable pressure drop is 25MPa.

2. The multi-stage throttling: 4-stage throttling at the time of small flow, 5-stage throttling at the time of large flow can decrease the erode and rusty that the fluid

3. Throttling surface, sealing surface are separated, and surface of the plug and throttling parts are hardened up to HRC70. So the valve can provide longer service life and tighter shutoff performance.

4. There are the big nicks on the surface of the plug. Even through there is 2 or 3 mm solid grain like weld dregs, the plug will not be choked and its action is flexible.

5. Flow regulated performance is excellent and regulated range is wide (approximately percent 60~70).

6. Two structures:

7. The valve is a patented product, the number is NO15739. It is successfully used in a lot of the power plant.

本体部 BODY

阀体型式 Body type	锻造角型、平口或“Z”型 Forging angle type, straight type or "Z" type
公称通径 Body size	DN25、DN32、DN40、DN50(1"、1 1/4"、1 1/2"、2")
阀体材质 Body & Bonnet Material	20# 锻钢 20# forging carbon
阀芯形状 Plug form	防空化串级式节流阀芯 Anti-cavitation concatenation throttling plug
阀内件材质 Trim materials 阀内件处理 Trim treatment	9Cr18MoV 或不锈钢材料 9Cr18MoV & Stainless steel 渗氮硬化处理 NT
公称压力 Body ratings	HG20592 PN25、32MPa; ANSI B16.5 ANSI1500、ANSI2500
连接方式 Body connections	焊接式 BW 或按用户要求 Welded ends BW or According to client's requirement.
上阀盖形式 Bonnet type	标准型 Standard type: $\leq 420^{\circ}\text{C}$
填料 Packing	石墨加因科镍丝编织填料 Graphite Inco nickel weave packing
表面涂层 Painting color	阀体喷银色环氧树脂 Argentate munsell on carbon steel

执行机构 ACTUATOR

规格 Specification	形式 Type	电动式 Electric Motor type
		SIPOS 5 Flash
用途 Purpose		开关 on-off
供气压力或供给电压 Air supply or Power supply		供电电源:380V 50Hz Power supply 输入信号:4~20mA Input signal
接口 Connection		进出线口:M25X1.5(2个) Conduit entry
正作用 Direct action		输入信号增加阀闭 Signal increase to valve shut
反作用 Reverse action		输入信号增加阀开 Signal increase to valve open
滞后 Hysteresis		$\leq 0.8\%$
线性 Linearity		$\leq \pm 1\%$
允许环境温度 Ambient Temp		$-20^{\circ}\text{C} \sim +60^{\circ}\text{C}$
标准涂层色 Painting		中国蓝 China blue
选购设备 Option		限位开关 Limit switch

性能 PERFORMANCE

额定 Kv 值及行程 Rated Kv and stroke	请参见表 1 See Table 1
流量特性 Flow characteristics	近似等百分比特性 请参见图 1 Approximately equal percent characteristic, see Fig.1
可调比 R Rangeability	30:1
阀座泄漏量 Seat leakage	符合 ANSI B16.104-1976 IV 级 According to ANSI B16.104-1976 Class IV
允许压差 Allowable pressure drops	25MPa

表 1 Kv 值和行程
Fig.1 Kv and stroke

公称通径(mm) Body Size	25	32	40	50
公称压力(MPa) Body Ratings	ANSI1500、2500 或(or)PN25、32MPa			
Kv 值 Rated Kv	2.0 2.5	6.8	10	18
	3.0 4.0		12	
	5.0 5.5		14	
	6.0 6.6	9.5	16	25
额定行程(mm) Rated Stroke	20		25	

图 1.流量特性 Flow characteristic

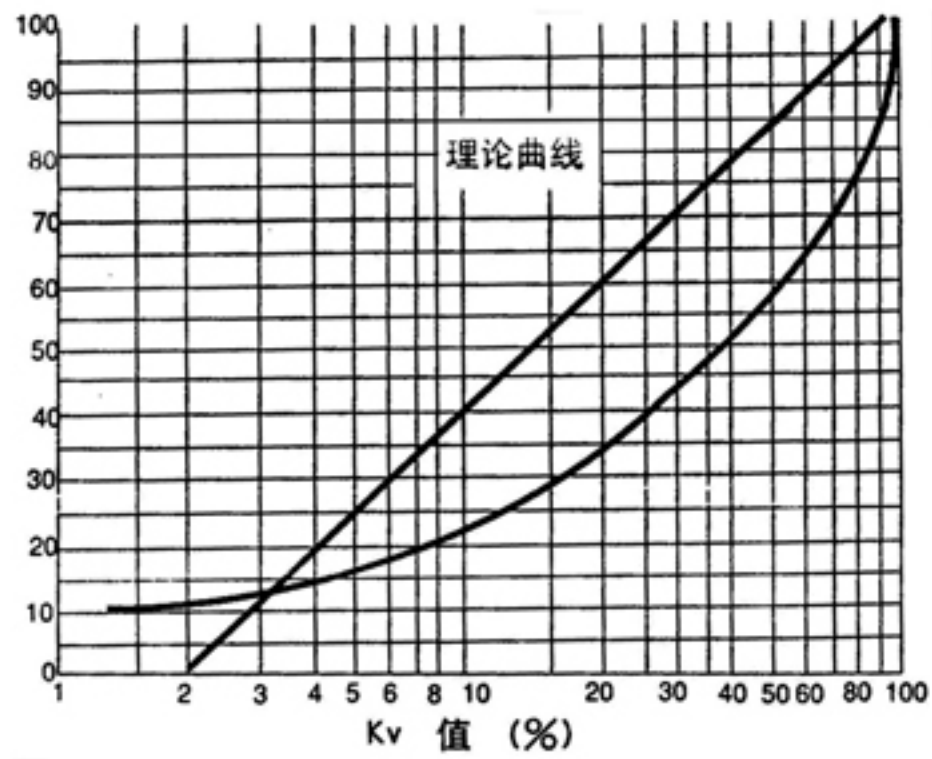


图 2.本体部构造 Fig.1 BODY SECTION VIEW

图 2-1 公称通径 DN25、DN32 Fig 2-1 Body size DN25、DN32

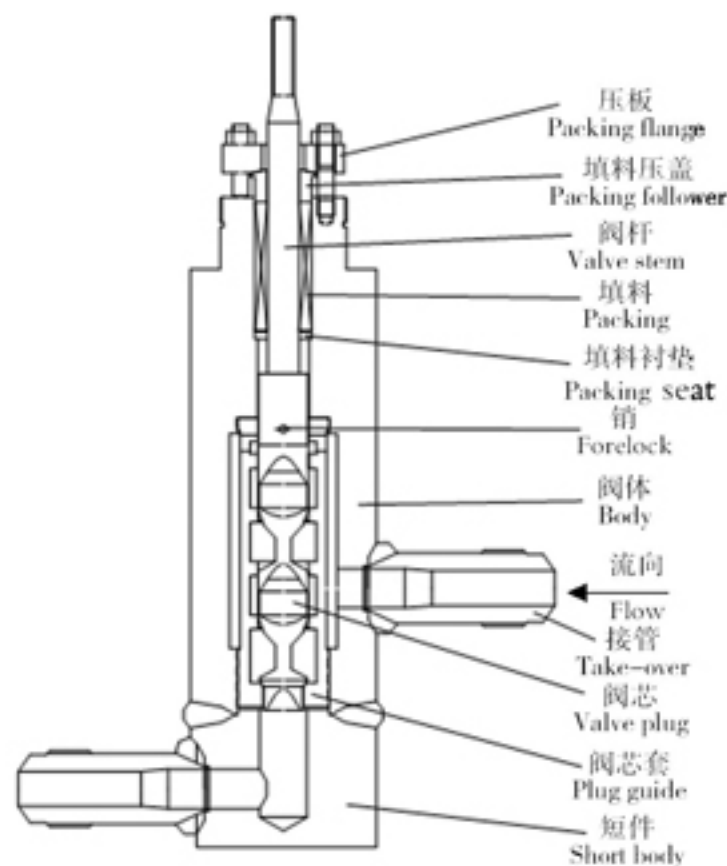


图 2-2 公称口径 DN40、DN50
Fig 2-2 Body size DN40、DN50

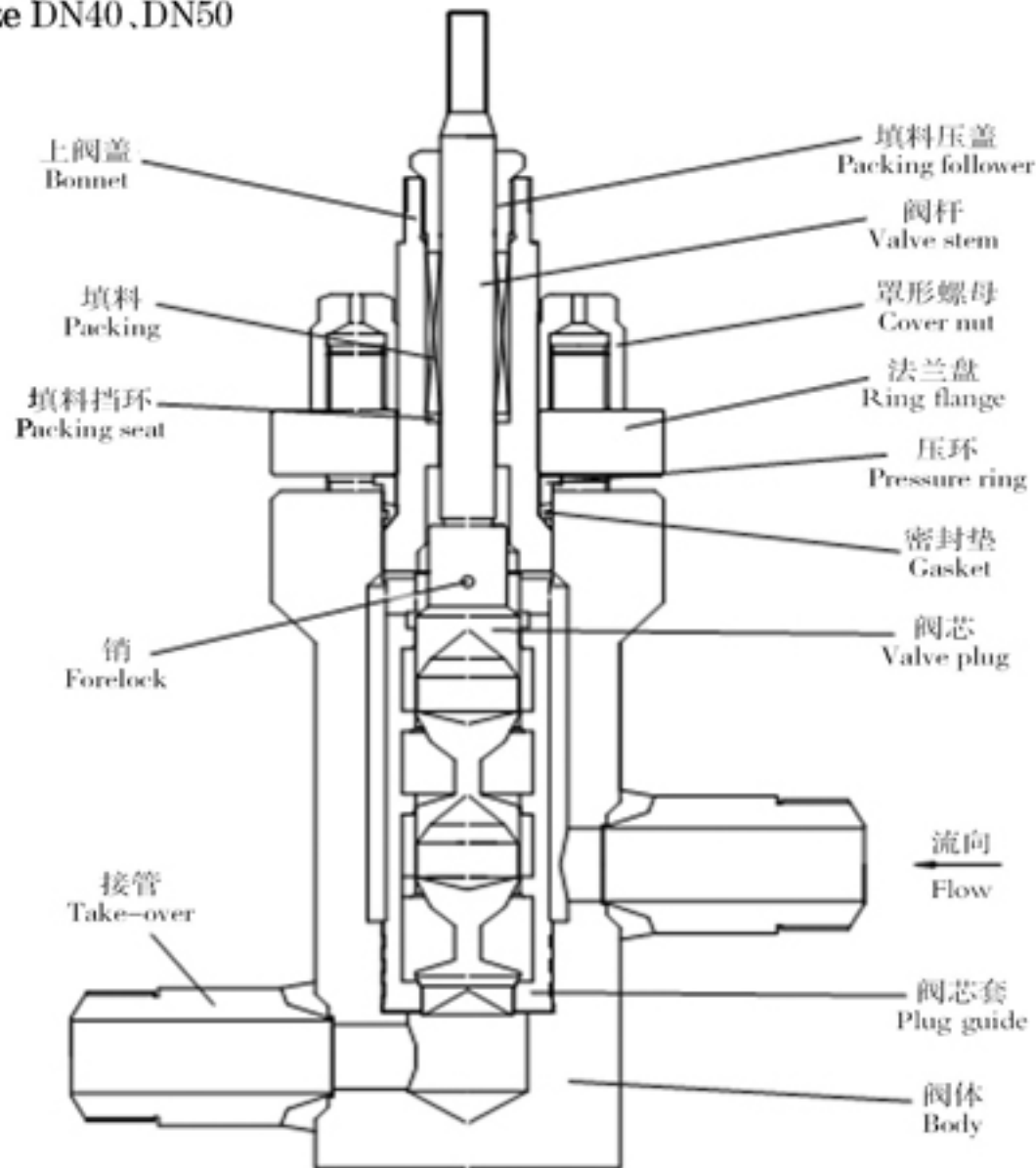
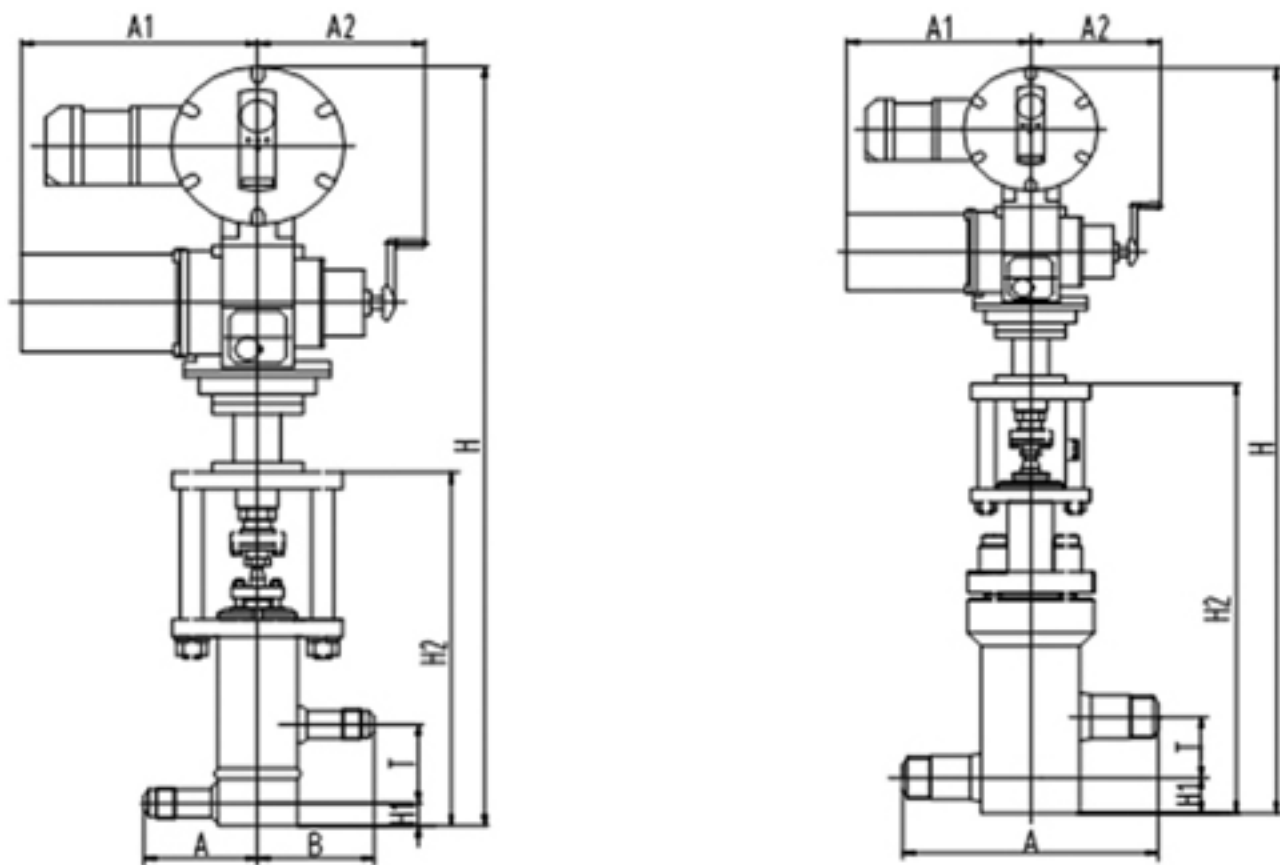


图 3.配 SIPOS 5 Flash 电动执行机构外形图
Fig.3 Outline with SIPOS 5 Flash electric motor



整体式错口阀体外形尺寸图
Outline with integral and stagger connection

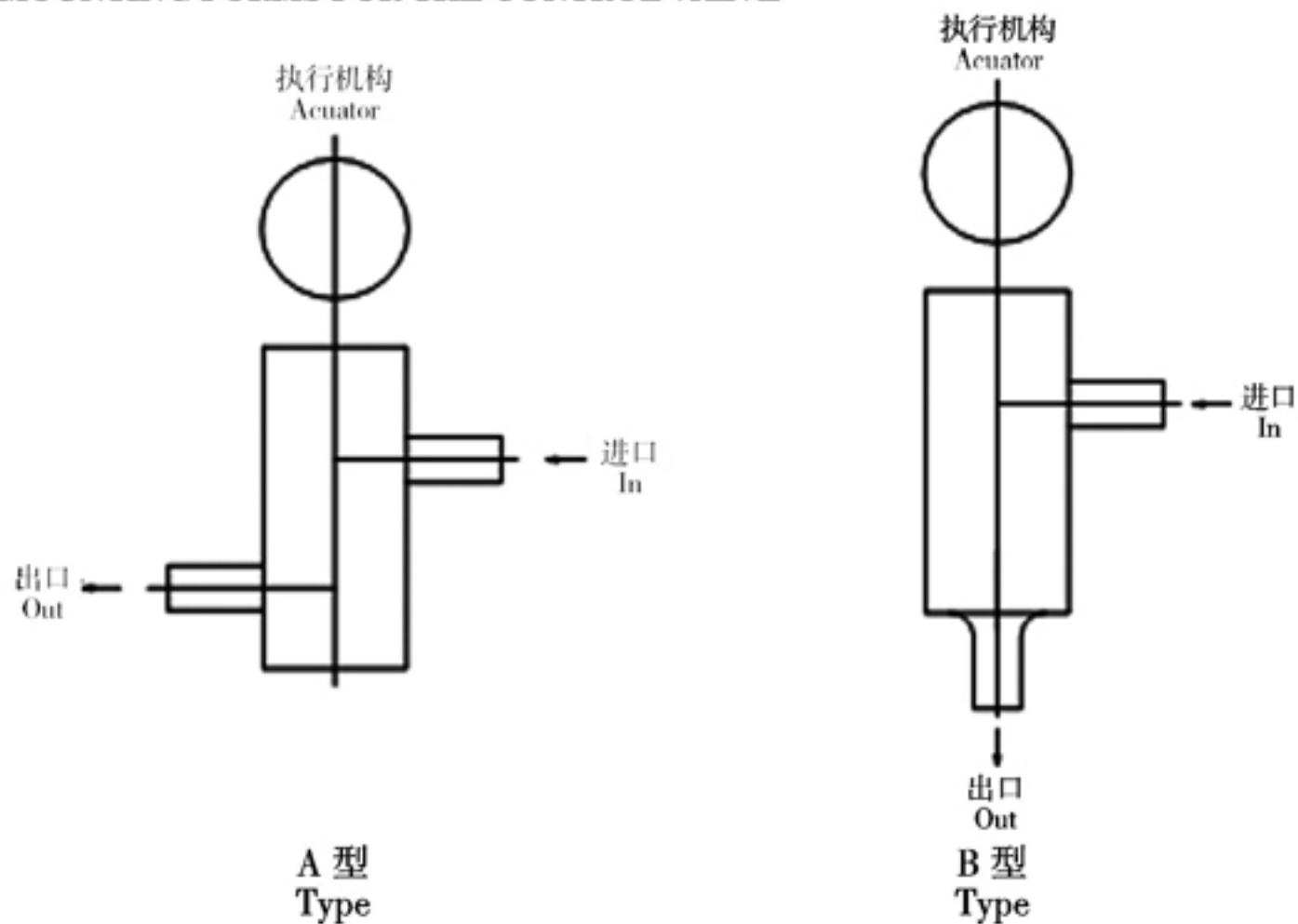
高压自密封口阀体外形尺寸图
Outline with high pressure self-sealing and stagger connection

表 2. 配 SIPOS 5 Flash 电动执行机构外形尺寸(单位:mm)
Table 2. Outline size with SIPOS 5 Flash electric motor (UNIT:mm)
表 2.1 整体式错口阀体调节阀外形尺寸表
Outline with integral and stagger connection

公称 通径(mm) Body Size	公称 压力(MPa) Body Ratings	电动执行机构 Electric Motor SIPOS 5 Flash	A	B	T	H1	H2	H	A1	A2
DN25	PN32MPa PN25MPa	LE25.1	168	172	127	37	611	1241	238	214
DN32			168	177.5	135	40	637	1267		

表 2.2 高压自密封错口阀体调节阀外形尺寸表
Outline with high pressure self-sealhf and stagger connection

公称通径 (mm) Body Size	公称 压力(MPa) Body Ratings	Electric Motor SIPOS 5 Flash	A	T	H1	H2	H	A1	A2
DN40	PN32MPa PN25MPa	LE50.1	364	95	55	674	1436	325	235
DN50			362	114	66	712	1474		

图 4.调节阀安装位置
Fig. 4. MOUNTING FORMS FOR THE CONTROL VALVE


50年控制阀制造经验
QUALITY SINCE 1959

宁夏吴忠仪表公司
Ningxia Wuzhong Instrument Co., LTD.
地址：宁夏吴忠市朝阳街67号 邮编：751100
Tel:0953-3929024 Fax:3929014
[http:// www.wzyb.com.cn](http://www.wzyb.com.cn)