

10. 中部调压条型分接开关外形、安装尺寸图 Outline Diagram and Mounting Dimension List of the Central Voltage Regulating Strip tap changer

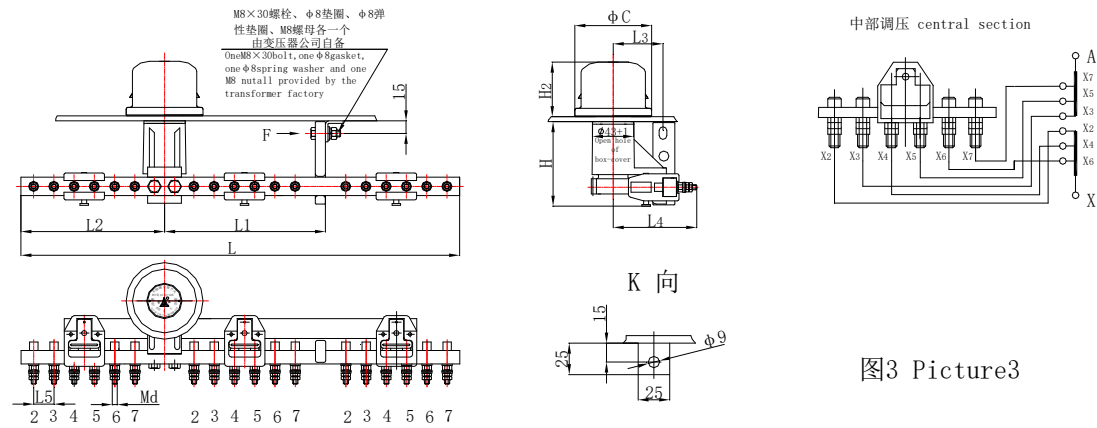
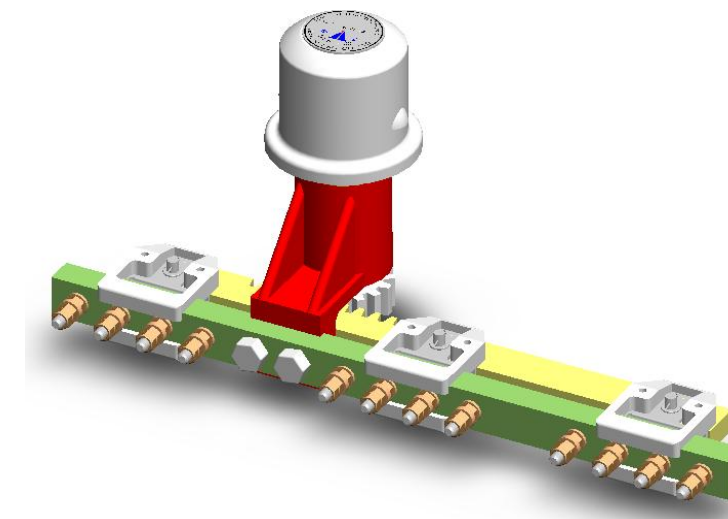


图3 Picture3



WST 系列无励磁分接开关
OFF-CIRCUIT BAR-FORM TAP-CHANGE
安装使用说明书
OPERATION INSTRUCTION

开关型号 Product Type	额定电流 A Rated Current	额定电压 KV Rated Voltage	相数 Phase number	调压部位 Voltage Regulating Place	安装尺寸 mm Install dimension mm									
					L	L1	L2	L3	L4	L5	H	ΦC	H2	
WST II 63/10-4×3 (D)	63	10	3	中部 Middle part	376	143	122	59	99	24	96	80	67	
WST II 3 63/10-4×3					376	143	122	54	89	24	96			
WST II 125/10-4×3	125	431			163	142	59	107	29	100				
WST II 3 125/10-4×3		431			163	142	54	97	29	100				
WST II 250/10-4×3	250	431			163	142	59	112	29	100				
WST II 63/20-4×3		63			426	168	137	59	99	24	120			
WST II 125/20-4×3	125				475	183	154	59	107	29	120			
WST II 250/20-4×3		250			530	203	169	59	112	34	120			
WST II 63/10-6×5 (D)	63				10	520	191	170	59	99	24			96
WST II 3 63/10-6×5		520				191	170	54	89	24	96			
WST II 125/10-6×5 (D)	125	10			605	221	200	59	107	29	102			
WST II 3 125/10-6×5					605	221	200	59	97	29	100			
WST II 250/10-6×5Z	250	20			800	316	282	67	112	29	102			
WST II 63/20-6×5					63	570	216	185	59	99	24	120		
WST II 125/20-6×5	125	649				241	212	59	107	29	120			
WST II 250/20-6×5Z		250			856	331	298	67	112	34	120			
WST II 63/10-8×7	63				10	674	244	223	70	110	24	100		
WST II 125/10-8×7		125				783	279	258	70	123	29	100		
WST II 63/10-10×9	63				35	818	292	271	70	110	24	100		
WST II 63/35-4×3		63				526	218	157	59	103	24	120		
WST II 125/35-4×3	125				580	228	179	59	107	34	120			
WST II 250/35-4×3		250			580	228	179	59	112	34	120			
WST II 63/35-6×5	63				40.5	670	266	205	59	103	24	120		
WST II 63/40.5-6×5		63				670	266	205	59	103	24	120		
WST II 125/35-6×5	125		35	784	296	247	59	107	34	120				
WST II 250/35-6×5Z		250		1042	426	367	67	112	34	120				
WST II 63/35-8×7	63		80	814	314	253	70	119	24	120				
WST II 125/35-8×7		125		883	329	278	70	128	29	120				



11. 端部调压条型分接开关外形图、安装尺寸图

The outline Diagram and Mounting Dimension List of Terminal Voltage Regulating Strip Tap changers

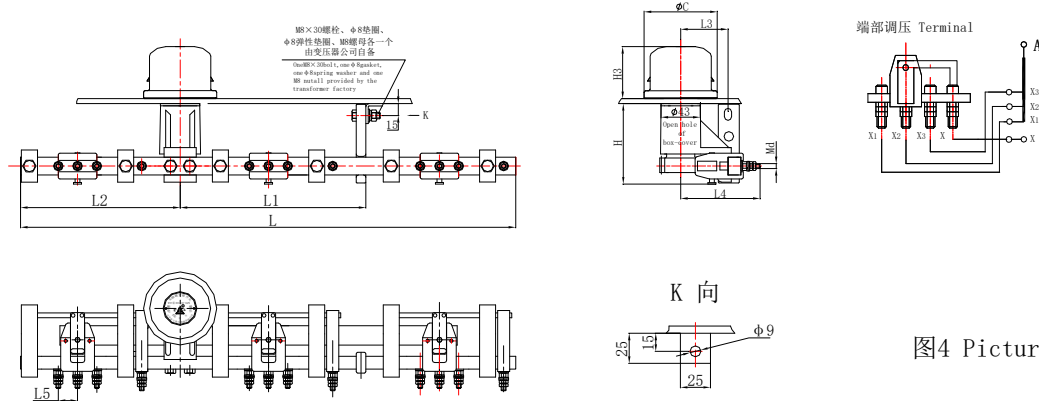


图4 Picture4

开关型号 Product Type	额定电流 A Rated Current	额定电压 KV Rated Voltage	相数 Phase number	调压部位 Voltage Regulating Plac	安装尺寸 mm Install dimension mm									
					L	L1	L2	L3	L4	L5	ΦC	H2		
WST I 63/10-3×3	63	10	3	端部 End section	617	232	199	59	101	24	96	80	67	
WST I 125/10-3×3	125				665	249	214	59	111	29	100			
WST I 250/10-3×3	250				665	249	214	59	116	29	100			
WST I 63/10-5×5	63				761	280	246	59	101	24	96			
WST I 125/10-5×5	125				839	307	272	59	111	29	100			

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1. 用途及使用范围 Application and operating principle

本系列分接开关适用于频率 50Hz、60Hz,额定电压等级为 10KV~35KV, 额定通过电流 63A~250A 的油浸式电力变压器。**当需要调整电压时, 必须将变压器从网络上切除。**使变压器在无励磁的情况下改变变压器初级线圈匝数, 以实现变压器电压调整的目的。达到调整次级输出电压的目的。

This series of tapping switches are suitable for the oil immersed transformer with frequency 50HZ、60Hz, rated voltage 10KV~35KV, rated current 63A~250A. **When needing to regulate voltage, must have the transformer cut off from coil of transformer.** be changed under no-load condition so as to realize the purpose to regulate the voltage of the transformer; and reach the purpose to regulate the secondary-grade output voltage.

2. 型号说明 Explanation of types

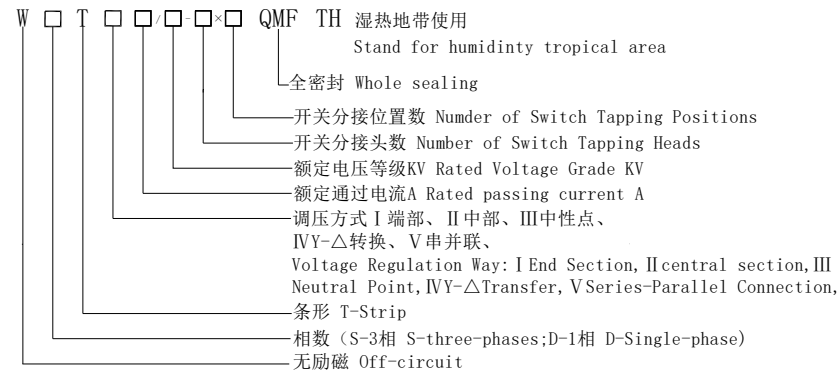
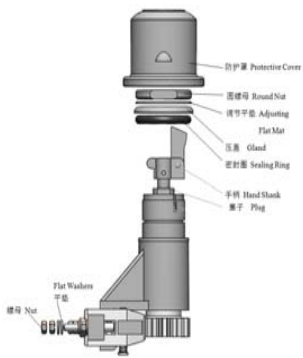


图 1 Picture 1



3. 工作 The principle of operation

通过手柄往返旋转带动齿条机构运动, 齿条带动动触头水平移动, 以改变开关的分接位置, 从而改变变压器初级线圈的匝数, 达到改变变压器的变化, 调整次级电压的目的。

Driven through the handle from rotating rack body movement, led moving contacts horizontal rack to change the tap position of the switch, thereby changing the transformer primary winding turns, to change the transformer changes, adjust the secondary voltage of purpose.

4. 主要技术参数 Major Technical Parameter

规格 Specifications		WST 63	WST 125	WST 250	WST 300
相数 Phase number		三相 three-phases			
接线方式 Wiring way		中部调压 (II) 中性点调压 (III) 端部调压 (I) Central section (II) Neutral Point (III) End Section (I)			
额定通过电流 (A) Rated through current (A)		63	125	250	300
短路能力 Short-circuit capacity	热稳定 (KA/2s) Heat stableness current (KA/2)	1.26	2.5	3.75	3.9
	动稳定 (KA) Dynamic stableness current (KA)	3.15	6.25	9.375	9.75
额定频率 (Hz) rated frequency	50~60				
绝缘水平 (KV) Insulation level (KV)	额定电压等级 (KV) Rated Voltage	10KV	20KV	35KV	
	工频耐受电压 (50Hz / 1min) Power-frequency withstand Voltage (50Hz / min)	42KV	5KV	95 V	
	冲击 (1.2 / 50 μs) Impales (1.2 / 50 μs)	75KV	125KV	250KV	
密封性 (KPa/24h) Sealing Performance (KPa/24h)	60				
机械寿命 (千次) Machine life (Thousands of times)	2				

4.1 WST 63A / 10KV~35 的分接开关适用于变压器箱盖厚度为 5~8mm; 静触头接线螺栓 Md=M6。

4.2 WST 125A / 10KV 分接开关适用于变压器箱盖厚度为 6~10mm; 静触头接线螺栓 Md=M8。

4.3 WST 250A / 10KV~35KV 分接开关适用于变压器箱盖厚度为 8~12mm; 静触头接线螺栓 Md=M10。

4.4 WST 125A / 35KV 分接开关适用于变压器箱盖厚度为 8~12mm。

4.1 WST 63A / 10KV~35KV this type of tan changer applies to the box-cover of the transformer 5~8mm; the static Contact wiring bolt Md=M6

4.2 WST 125A / 10KV this type of tan changer applies to the box-cover of the transformer 6~10mm; the static Contact wiring bolt Md=M8

4.3 WST 250A / 10KV~35KV this type of tan changer applies to the box-cover of the transformer 8~12mm; the static Contact wiring bolt Md=M10

4.4 WST 125A / 35KV this type of tan changer applies to the box-cover of the transformer 8~12mm.

5. 安装程序 Installation procedure

见图 1: 旋下防护罩, 旋下圆螺母, 取下调节平垫、压盖、密封圈, 将以上零件放到一起, 不要丢失。然后将开关手柄竖起来从箱盖下面向上伸出, 将密封圈, 压盖, 调节平垫, 圆螺母依次装到开关上, 并将开关尾端支板与变压器的固定板用 M8 螺栓固定住, **注意一定要保证开关的本身与箱盖平行以保证主传动部分的齿轮齿条正确啮合。**

Figure 1: screw off the protective cover, screw off the adjustment ring. And then erected upward switch handle, from the lid out below put seal ring, gland, adjustment ring, round nut loaded into the switch in turn, and switch the transformer end of the support plate and fixed plate with M8 bolted to live, pay attention to make sure the switch body and the lid parallel to the main drive in order to ensure the correct part of the gear rack teeth together.

6. 使用注意事项 Caution for operation

警告 Warning
变压器必须处在无励磁状态下, 方能调节分接开关档位。
 The transformer should be in the won-excitation condition, can change the tap gears.

6.1 使用环境温度: 空气中-25℃~40℃, 油中-25℃~100℃。

6.2 安装场所应无爆炸与腐蚀性气体。

6.3 分接开关组装前, 一定要检查分接开关是否符合变压器型号要求, 以免造成不应有的损失。

6.4 **变压器分接抽头引线不能过短, 并在装配时消除引线拉力, 以免造成开关的绝缘杆变形导致操作力矩过大和触头接触不良。**

6.5 分接开关在安装使用前放在 105℃±5℃烘箱中去潮, 干燥后如分接开关沿转轴渗油, 请将塞子旋紧即可, 如沿变压器箱盖渗油, 请将圆螺母旋紧即可。(见图 1)

6.6 **当开关在极限档位时, 严禁向极限方向用力扳动手柄。**

6.7 开关在完成调换后, 再左右微动手柄几次, **将手柄垂直、自然放入法兰档位槽口内**, 并将防护罩拧紧, 以防变压器在运行中开关触头接触窜动而将变压器烧毁, 防护罩既是防雨装置又是开关的限位保护装置, 故一定要拧紧, 切勿丢失。

6.8 根据变压器箱盖厚度确定是否需要调节平垫及平垫的个数, 请将调节平垫加安在分接开关圆螺母下。

6.9 分接开关干燥后, 必须将静触头与动触头滴上变压器油后方可旋转开关, 组装前应将分接开关来回旋转 5~8 次。

6.10 说明书中的分接开关安装方式为: 箱顶式安装

6.1 Use of environmental temperature: in air -25 °C ~ 40 °C, in oil -25 °C ~ 100 °C.

6.2 Installation places should not be explosive and corrosive gases.

6.3 Before tap-assembled, be sure to check whether the tapping switch could meet the transformer type requirements, so as to avoid unnecessary losses.

6.4 **Transformer tap-tap-lead can not be too short, and eliminate the lead tension in the assemble so as to avoid switching operation of the insulating rod deformation lead to poor contact and torque too large.**

6.5 Tap should be on the 105 °C ±5 °C oven or dry transformers with the body of 24 to 48 hours to the influx of dry tap before installed and use, such as oil leakage along the shaft, tighten the stopper, if the oil leaks along the transformer lid, tighten the round nut.

6.6 When the switch unit is in the limit is strictly prohibited forced to slid the handle to the direction of limit.

6.7 After completing the exchange of switch, and then fretting about the handle several times, **it shall put handle vertical, natural notch into the stall inside the flange**, and tighten the protective cover to prevent the transformer burned in operation ran but will switch contact transformer, protective cover is rain-proof device as well as a limit switch protection device, it must be tightened, do not lose.

6.8 According to the thickness of transformer to determine whether the lid needs to adjust the number of flat and flat pad, please add the adjust flat pad under the round nut of the tap changer.

6.9 Tap-dried, must drop the transformer oil on static contact and moving contacts then rotary switches. rotate back and forth the tap 5~8times before assembly.

6.10 In the operation instruction, the installation method of the tap changer is roof type installation

7. 维护 Maintain
操作必须在变压器完全从电网上切除, 在变压器无励磁的情况下进行。

7.1 见图 1: 旋下防护罩, 竖起手柄, 往返旋转手柄 5~8 个循环, 然后将手柄旋到需要的分接位置上, 再左右微动手柄几次, 将手柄垂直、自然卡入定位槽中, 再将上述各件复原, 有条件的最好对其接触情况测量, 以验证其接触可靠性。

7.2 开关在正常运行时, 为了防止锈蚀保证转动的灵活性, 每两年至少进行一次维护。方法同 7.1。

7.3 一般故障维护方法: 当箱盖密封出现渗油现象时, 应调节圆螺母松紧, 失效时应及时更换 密封圈。当开关轴上出现渗漏油时扭紧调节塞子。

7.1 Figure 1: screw off the protective cover, stick up the handle, rotate the handle from 5 to 8 cycles, and then rotating the handle to the desired tap position, and then fretting about the handle several times, put the handle vertical, natural to card into the slot position, and then recover the above-mentioned pieces, if there is conditions, it is best to its exposure measurements to verify the reliability of their contacts.

7.2 When the switch in normal operation, in order to prevent corrosion to ensure the flexibility of rotation, maintain less than once every two years. Approach with method 5.1.

7.3 General maintenance methods
 When the lid seal oil leakage phenomenon occurs that there should be regulation round nut, elastic, failure should be timely replace the seal ring. When the switch leakage of oil occurs on the switch axis should tighten the regulation stopper.

8. 贮存、运输 Storage、transportation

8.1 存放在空气流通, 阴凉, 干燥, 无腐蚀性气体的环境中。

8.2 在运输途中应小心轻放, 严禁冲击, 防水防潮。

8.1 Deposited in the air circulation, cool, dry, non-corrosive gas environment.

8.2 In transit should be handled be care, non-impact, waterproof and anti-moisture.

9. 中性点调压条型分接开关外形、安装尺寸图 Outline Diagram and Mounting Dimension of Neutral Point Voltage Regulating Strip tap changer

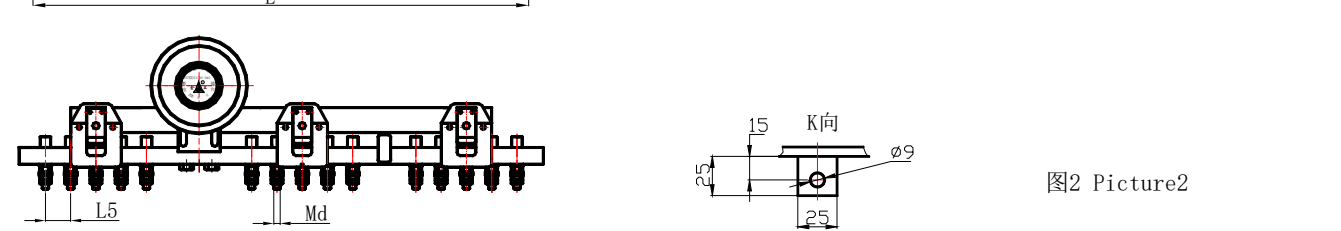


图 2 Picture 2

开关型号 Product Type	额定电流 Rated Current A	额定电压 Rated Voltage KV	相数 Phase number	调压部位 Voltage Regulating Place	安装尺寸 mm Install dimension mm									
					L	L1	L2	L3	L4	L5	H	ΦC	H3	
WSTIII63/10-3×3	63	10	3	中性点 Neutral point	362	139	122	59	99	24	96	80	67	
WSTIII125/10-3×3	125				394	149	133	59	107	29	100			
WSTIII250/10-3×3	250				394	149	133	59	112	29	100			
WSTIII63/20-3×3	63	20			362	139	122	59	99	24	120			
WSTIII125/20-3×3	125				394	149	133	59	107	29	120			
WSTIII250/20-3×3	250				446	169	144	59	112	34	120			
WSTIII63/10-5×5	63	10			506	187	170	59	99	24	96			
WSTIII125/10-5×5	125				568	207	191	59	107	29	100			
WSTIII63/20-5×5	63				506	187	170	59	99	24	120			
WSTIII125/20-5×5	125	20			568	207	191	59	107	29	120			
WSTIII63/10-7×7	63				650	235	218	70	99	24	96			
WSTIII125/10-7×7	125				742	265	249	70	123	29	100			
WSTIII63/35-3×3	63	35	362	139	122	59	103	24	140					
WSTIII125/35-3×3	125		424	159	143	59	107	34	140					
WSTIII250/35-3×3	250		424	159	143	59	112	34	140					
WSTIII63/35-5×5	63		506	187	170	59	103	24	140					
WSTIII125/35-5×5	125		628	227	211	59	107	34	140					