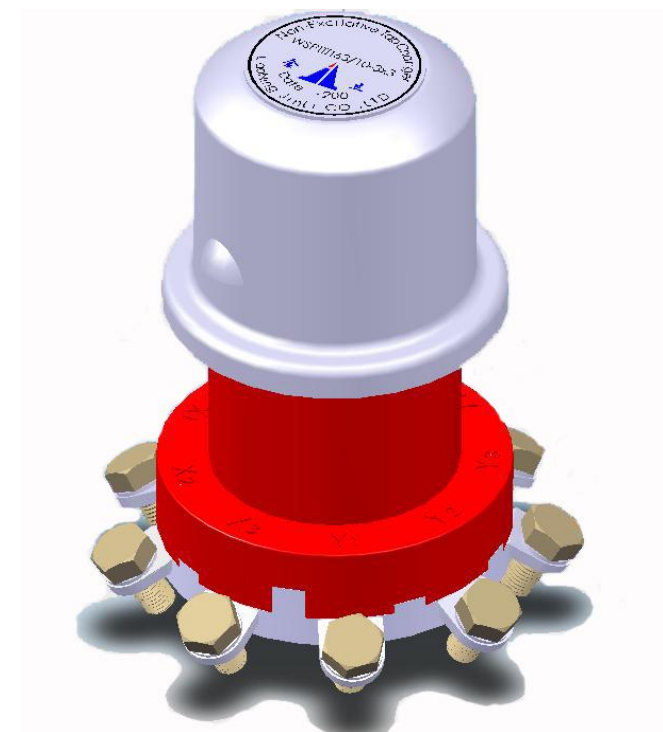


P 系列无励磁分接开关

OFF-CIRCUIT ROUND/DISC FORM TAP-CHANGE

安装使用说明书

OPERATION INSTRUCTION



开关型号 Type of tap changer	额定电流 A Rated Current	额定电压 KV Rated Voltage	相数 NO. of phases	安装尺寸 mm Install dimension								
				φC	L	H	Md	φD				
WSPIII1 63/10-3×3	63	10	3	80	67	75	M6	110				
WSPIII1 63/10-3×3D (双密封)	63					82						
WSPIII1 125/10-3×3	125					75	M8	120				
WSPIII1 125/10-3×3D (双密封)	125					82						
WSPIII1 250/10-3×3	250					94	M6	154				
WSPIII1 63/10-5×5 (D)	63					75						
WSPIII1 125/10-5×5 (D)	125					75	M8	168				
WSPIII1 250/10-5×5	250					96						
WSPIII1 63/10-7×7	63					75	M8	215				
WSPIII1 125/10-7×7	125					75						
WSPIII1 63/20-3×3	63					20	3	80	67	95	M6	110
WSPIII1 125/20-3×3	125									M8	120	
WSPIII1 63/20-5×5	63	M6	183									
WSPIII1 125/20-5×5	125	M8	188									
WSPIII1 63/35-3×3	63	35	3	80	67	126	M6	135				
WSPIII1 125/35-3×3	125					M8	200					
WSPIII1 63/35-5×5	63					105		75	130			
WSPIII1 125/35-5×5	125	M6	162									
WSP II 1 63/10-4×3 (D)	63	10		3	80	67	83	M8	220			
WSP II 1 125/10-4×3 (D)	125		83									
WSP II 1 250/10-4×3	250		83				M6	192				
WSP IV 250/10-3×2	250		83									
WSP II 1 63/10-6×5 (D)	63		80				M8	196				
WSP II 1 125/10-6×5 (D)	125		80									
WSP II 1 250/10-6×5	250		105				M6	280				
WSP II 1 63/20-4×3	63		80						M8	173		
WSP II 1 125/20-4×3	125		80				M8	177				
WSP II 1 250/20-4×3	250		105						M6	225		
WSP II 1 63/20-6×5	63		80				M8	232				
WSP II 1 125/20-6×5	125		80						M8	236		
WSP II 1 250/20-6×5	250	105	M6	278								
WSP II 1 63/35-4×3	63	35			3	80	67	120	M8	225		
WSP II 1 125/35-4×3	125		120									
WSP II 1 250/35-4×3	250		120	M6				278				
WSP II 1 63/35-6×5	63		120									
WSP II 1 125/35-6×5	125		120	M8				278				
WSP II 1 250/35-6×5	250		120									
※WSP II 1 63/10-8×7	63	10	3	80	67	83	M6	277				
※WSP II 1 125/10-8×7	125					83	M8	281				
WDP II 1 63/10-4×3	63					10	3	80	67	75	M6	110
WDP II 1 125/10-4×3	125									75	M8	120
WDP II 1 63/15-6×5	63									75	M6	110
WDP II 1 125/10-6×5	125									75	M8	120
WDP II 1 63/35-4×3	63	35	3	80	67	130	M6	168				
WDP II 1 63/35-6×5	63								M8			
WDP II 1 63/35-8×7	63									M6		
WDP II 1 63/35-10×9	63						M8					
WDP II 1 125/35-4×3	125								M6			
WDP II 1 125/35-6×5	125									M8		
WDP II 1 125/35-8×7	125					M6						
WDP II 1 125/35-10×9	125						M8					
WDP II 1 250/35-4×3	250							M6				
WDP II 1 250/35-6×5	250					M8						
WDP II 1 250/35-8×7	250						M6					
WDP II 1 250/35-10×9	250							M8				
WDP I 1 63/10-3×3	63	10	3	80	67	75			M6	110		
WDP I 1 125/10-3×3	125					75	M8		120			

※WSP II 1 63 / 10-8×7 与※WSP II 1 125 / 10-8×7 变压器箱盖开孔 φ61
The tank cover hole of ※WSP II 1 63 / 10-8×7 and ※WSP II 1 125 / 10-8×7 is φ61

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1. 用途及使用范围 Purpose and scope of use

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中。**当需要调整电压时, 必须将变压器从电网上切除。**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 applied to the oil immersed transformer with frequency 50HZ、60Hz, rated voltage 10KV~35KV, rated current 63A~250A, **Before changing the voltage, must cut of the power of the transformer,** changed the turns of coil under off-circuit condition so as to realize the purpose of adjusting the voltage of the transformer; finally reach the purpose to adjust the secondary output voltage.

2. 型号说明 Explanation of model no

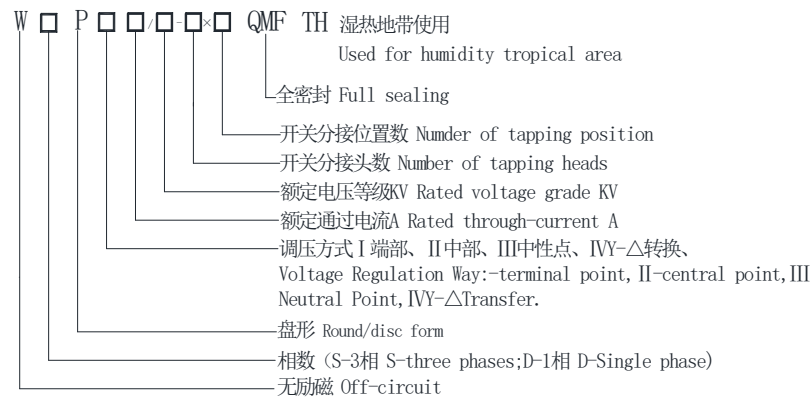
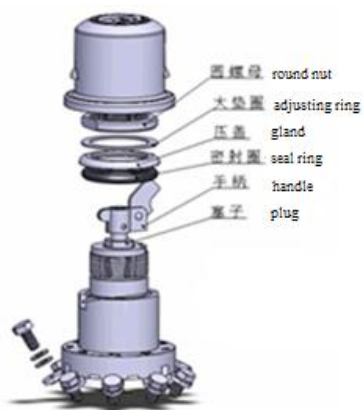


图 1 Picture 1



3. 工作原理 The principle of operation

通过手柄旋转带动转轴旋转, 转轴旋转带动动触片, 以改变开关的分接位置, 从而改变变压器初级线圈的匝数, 达到改变变压器的电压变化, 调整次级电压的目的。

Changing the tapping position by such way: rotate the handle to drive the shaft, then the shaft drive the moving contactors. Thereby changing the transformer primary winding turns in order to change the transformer voltage and adjust the secondary voltage.

4. 主要技术参数 Main Technical Parameter

规格 Specifications		WSP 63	WSP 125	WSP 250
相数 Phase number		三相 three-phases		
连接方式 Wiring way		中部调压 (II) Central Point (II)	中性点调压 (III) Neutral Point (III)	端部调压 (I) Terminal Point (I)
额定通过电流 (A) Rated through current(A)		63	125	250
短路能力 Short-circuit capacity	热稳定 (KA/2S) Heat stableness current(KA/2S)	1.6	2.5	5
	动稳定 (KA) Dynamic stableness current(KA)	4	6.25	12.5
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	12KV	23KV	40.5KV
	工频耐受电压 (50Hz / 1min) Power-frequency withstand Voltage	42KV	55KV	95KV
	冲击耐受电压 (1.2 / 50 μs) Impulse (1.2 / 50μs)	75KV	125KV	250KV
密封性 (KPa/24h) Sealing Performance(KPa/24h)		60		
机械寿命 (千次) Mechanical life(Thousands of times)		2		

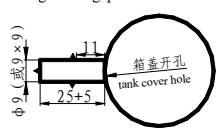
- 1 WSP 63A / 10KV 的分接开关适用于变压器箱盖厚度为 5~8mm; 静触头接线螺栓 Md=M6。
- 2 WSP 125A / 10KV 分接开关适用于变压器箱盖厚度为 6~10mm; 静触头接线螺栓 Md=M8。
- 3 WSP 250A / 10KV~35KV 分接开关适用于变压器箱盖厚度为 8~12mm; 静触头接线螺栓 Md=M8。
- 4 WSP 63A~125A / 35KV 分接开关适用于变压器箱盖厚度为 8~12mm。
- 4.1 WSP 63A / 10KV applies to the thickness of tank cover is 5~8mm; the fixed contactor terminal stud is M6
- 4.2 WSP 125A / 10KV applies to the thickness of tank cover is 6~10mm; the fixed contactor terminal stud is M8
- 4.3 WSP 250A / 10KV~35KV applies to the thickness of tank cover is 8~12mm; the fixed contactor terminal stud is M8
- 4.4 WSP 63A~125A / 35KV applies to the thickness of tank cover is 8~12mm.

5. 安装程序 Installation program

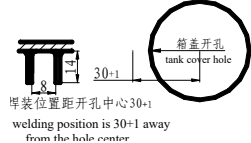
如图 1: 旋下防护罩, 旋下圆螺母, 取下调节平垫、压盖、密封圈, 将以上零件放到一起, 不要丢失。然后将开关手柄竖起来从箱盖下面向上伸出, 同时将变压器箱盖上的定位销插入开关上的定位缺口, 再将密封圈, 压盖, 调节平垫, 圆螺母依次装到开关上, 将圆螺母紧固好。

As Figure 1: take off the waterproof cap and round nut, remove the adjustable flat mat, gland, sealing rings, put the above parts together and do not lose. And then sets upright the switch handle, then stretches out upward from the box lid, at the same time insert the location pin on tank cover into locating gap of tap changer, after that install the seal ring, the gland, the adjustment flat mat, the round nut in turn again on the switch, fastens the round nut. Sees the attached figure:

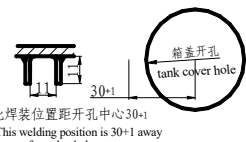
P系列开关缺口定位方式变压器定位焊接图
The transformer location welding assembling diagram of gap location



P系列开关圆销子定位方式变压器定位焊接图
The transformer location welding assembling diagram of pin location



P系列开关方销子定位方式变压器定位焊接图
The transformer location welding assembling diagram of round pin location in case tap changer model with D(double sealing)



6. 使用注意事项 Attention

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。
Change the position only when transformer in the off-circuit condition.

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℃烘箱中或同变压器器身一起干燥 24~48 小时进行去潮, 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, **应将手柄垂直、自然放入档位法兰定位槽内**, 并将防护罩拧紧, 以防止变压器在运行中开关触头接触滑动而将变压器烧毁, 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。

6.1 Working environmental temperature: -25 ℃ ~ 40 ℃ in air, -25 ℃ ~ 100 ℃ in oil.

6.2 Installation site should be without explosion and corrosive gas.

6.3 Before assemble, be sure that the tap changer is right for transformer requirements, so as to avoid unnecessary losses.

6.4 Transformer tap lead wires should not be too short, and should eliminate the wire tension during the assembly, so as to avoid the large operation torque and poor contact of contactors due to deformation of tap changer.

6.5 Tap changer should be in the 105 ℃ ± 5 ℃ oven or dry of 24 to 48 hours together with the transformers body. After drying, if oil leakage along the shaft, tighten the stopper, if the oil leaks along the transformer lid, tighten the round nut.

6.6 When the tap changer is in the limit position, it is strictly prohibited forced to slid the handle to the direction of limit.

6.7 After completing the exchange of tap changer, **the handle should be vertically, naturally put into locating slot in flange**, and tighten the waterproof cap to prevent the transformer burned during operation because of changing the tapping position. Waterproof cap is rainproof device and a limit protection device, it must be tightened, do not lose.

6.8 According to the thickness of transformer tank cover to decide whether needs to adjust the number of flat and flat mat, please add the adjust flat mat under the round nut of the tap changer.

6.9 After drying, must drop the transformer oil on fixed contactors and moving contactors then rotate tap changer. It should be rotated back and forth 5~8times before assembly.

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, 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。

Change the position only when transformer cut off from power net and in the off-circuit condition.

7.1 Figure 1: take off the waterproof cap, stick up the handle, rotate the handle for 5 to 8 cycles, and then rotate the handle to the right tap position, and then fretting about the handle several times, put the handle vertically, naturally into locating slot, 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 at less once every two years. Approach with method 7.1.

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

8. 贮存、运输 Storage、transportation

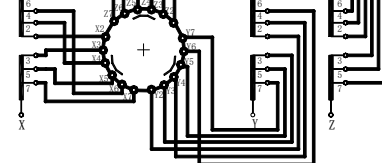
8.1 存放在空气流通, 阴凉, 干燥, 无腐蚀性气体的环境中。

8.2 在运输途中应小心轻放, 严禁冲击, 防水防潮。

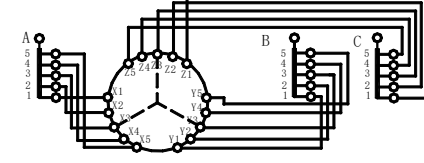
8.1 Storage under such environment with air circulation, cool, dry, non-corrosive gas.

8.2 During transportation should be handle with care, non-impact, waterproof and moisture proof.

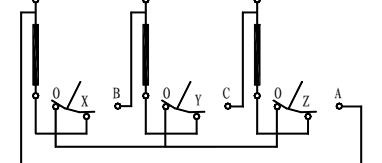
9. 开关接线方式 Connection Mode



中部调压原理图
Connection diagram



中性点调压原理图
Connection diagram



Y-Δ转换原理图
Connection diagram

10 外形、安装尺寸图 Outline and installation size diagram

