

前 言

有一段时间，有一种力量，无声的接近。

有一种思维，有一种融合，有一种变迁，有一种.....

徘徊在都市的街口，就在回首间竟不经意的发现那突如其来的漫天遍地的“泊来”文字不知何时就占领了我极目可触的远近距离。街上匆匆的行人脚步，仿佛也隐隐的暗示着某种侵蚀的渐渐“衍化”，林林总总的人形，象形字母也更是广而告之的跃然其中。

这就是我们的生存现境，在这整个地球日益联系紧密的今天——在官方的语言里——加强多边联系，增强相互理解，我们似乎更需要一种沟通的工具，于是我们接受了一种文化——正如这种文化的前身所影射的一样——只有英文化，而无日不落。但正是这种扩张，才使英文化迅速的成为唯一的世界性语言，而正是种语言使国家相互之间的交流，民族相互之间的融合，企业相互之间的竞争变的越发简捷，方便.....

本手册仅致力于能为加强变压器行业的相互沟通，相互合作，相互交流作一些绵薄之力。由于作者水平有限，书中难免出现纰漏，还望读者不吝提出指导意见。

——编者注

变压器有关名词术语英译词汇表

A GLOSSARY FOR ENGLISH TRSNSFORMER OF TRANSFORMER TERMINOLOGY

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I. 基础词汇

BASIC TERMINOLOGY

1. 变压器的电压组合	voltage combination (of a transformer)
2. 额定电压	rated voltage
3. 额定电流	rated current
4. 额定容量	rated power
5. 额定电压比	rated voltage ratio
6. 空载电流	no-load current
7. 空载损耗	no-load loss
8. 负载损耗	load loss
9. 附加损耗	additional loss
10. 杂散损耗	stray loss
11. 阻抗电压	impedance voltage
12. 电阻电压	resistance voltage
13. 电抗电压	reactance voltage
14. 电压调整率	voltage regulation
15. 相位差	phase displacement
16. 零序阻抗	zero-sequence impedance
17. 工频	power frequency
18. 中频	medium frequency
19. 高频	high frequency
20. 振荡频率	oscillating frequency
21. 谐振频率	resonance frequency
22. 绝缘强度	dielectric strength insulation strength
23. 主绝缘	main insulation
24. 纵绝缘	longitudinal insulation
24. 自振频率	natural frequency of vibration
25. 频率响应	frequency response
26. 介电常数	dielectric constant
27. 绝缘击穿	insulation breakdown
28. 沿面放电 (爬电)	creeping discharge
29. 局部放电	partial discharge
30. 破坏性放电	disruptive discharge
31. 局部放电起始电压	partial discharge inception voltage
32. 局部放电终止电压	partial discharge extinction voltage
33. 过电压	over voltage
34. 短时过电压	short time over voltage
35. 暂态过电压	transient over voltage
36. 操作过电压	switching over voltage
37. 大气过电压	atmospheric over voltage

38. 额定耐受电压	rated withstand voltage
39. 短时工频耐受电压	short-duration power frequency withstand voltage
40. 额定雷电冲击耐受电压	rated lightning impulse withstand voltage
41. 屏蔽	shielding
42. 静电屏蔽	electrostatic shielding
43. 磁屏蔽	magnetic shielding
44. 标准大气条件	standard atmosphere condition
45. 全波雷电冲击	full wave lightning impulse
46. 截波雷电冲击	chopped wave lightning impulse
47. 冲击伏秒特性	voltage/time characteristics of impulse
48. 爬电距离	creepage distance
49. 体积电阻	volume resistance
50. 截断时间	time to chopping
51. 视在电荷	apparent charge
52. 波前时间视在波前时间	time to crest ,virtual front time
53. 半峰值时间	time to half value of crest
54. 峰值	peak value
55. 有效值	root-mean-square value
56. 标称值	nominal value
57. 标值	per unit value
58. 导电率	admittance
59. 电导	conductance , conductivity
60. 介质损耗	dielectric loss
61. 介损角的正切值	loss tangent
62. 电晕放电	corona discharge
63. 闪络	flashover
64. 内外绝缘	internal external insulation
65. 绝缘电阻	insulation resistance
66. 绝缘电阻吸收比	absorption ratio of insulation resistance
67. 避雷器	surge arrestor
68. 避雷器的残压	residual voltage of an arrestor
69. 绝缘材料的耐温等级	temperature class of insulation
70. 感应耐压试验	induced over voltage withstand test
71. 突发短路试验	short-circuit test
72. 互感器的负荷	burden of an instrument transformer
73. 额定负荷	rated burden of an instrument transformer
74. 准确级次	accuracy class
75. 电流电压误差	current voltage error
76. 相角差(互感器)	phase displacement (instrument transformer)
77. 复合误差	composite error
78. 暂态特性(误差)	transient characteristics error
79. 额定短时热电流	rated short thermal current

80. 额定连续热电流	rated continuous thermal current
81. 额定动稳定电流	rated dynamic current
82. 额定仪表保安电流	rated instrument security current
83. 二次极限感应电流（保安因数）	secondary limiting e.m.f.(security factor)
84. 额定准确极限值的一次电流	rated accuracy limit primary current
85. 误差补偿	error compensation
86. 额定电压因数	rated voltage factor
87. 准确限值因数	accuracy limit factor
88. 笛卡儿坐标	Cartesian coordinate
89. 极坐标	polar coordinate
90. 横坐标	abscissa X-axis
91. 纵坐标	ordinate Y-axis
92. 复数	complex number
93. 实数部分	real number component
94. 虚数部分	imaginary number component
95. 正负数	positive negative number
96. 小数	decimal
97. 四舍五入	round off
98. 分数，分子，分母	fraction, numerator, denominator
99. 假分数	improper fraction
100. 钝锐角	obtuse (acute) angle
101. 补角	supplementary angle
102. 余角	complement angle
103. 平行	parallel
104. 垂直	perpendicular
105. 乘方	involution
106. 开方	evolution extraction of root
107. n 的五次方	involve to the fifth power , 5th power of n
108. 幂	exponent , exponential
109. 微分	differential , differentiation
110. 积分	integrate , integration
111. 成正比	proportional (inversely proportional) to
112. 概率	probability
113. 归纳法	inductive method
114. 插入法	interpolation method
115. 外推	extrapolation method
116. 最大似然法	maximum likelihood method
117. 图解法	graphic method
118. 有限元法	finite element method
119. 模拟法	simulation method
120. 方波响应	step response
121. 叠加电荷	superimposed charge

122. 电位梯度	potential gradient
123. 杂散电容	stray capacitance
124. 超声定位	ultrasonic location
125. 无损探伤	non-destructive flaw detection
126. 红外线扫描	infrared scanning
127. 计算机辅助设计	computer aided design and manufacturing
128. 计算机辅助实验	computer aided test
129. 最大, 小	maximum minimum
130. 近似于	approximate
131. 每分钟转数	revolution per minute
132. 速度	speed, velocity
133. 加速度	acceleration
134. 重力加速度	gravitational acceleration
135. 地震	earthquake, seism
136. 数量	quantity
137. 部门	department
138. 缩写	abbreviation
139. 以下简称为 XX	here in after referred as XX
140. 参见 XX	see XX, vide XX

II 常用单位 (包括缩写)

UNIT COMMONLY USED (INCLUDING ABBREVIATION)

1. 米, 分米, 厘米, 毫米	meter, decimeter, centimeter millimeter
2. 公里	kilometer
3. 英里, 海里	mile, knot
4. 码, 吋	yard, inch
5. 磅, 磅 / 平方吋	pound, pound per square inch
6. 呎	foot
7. 英制热量单位	British thermal unit
8. 马力	horse power
9. 压强	intensity of pressure
10. 帕斯卡, 千帕	Pascal
11. 托	Torr
12. 粘度, 帕斯卡秒	viscosity, Pascal . Second
13. 泊, 厘泊	poise, Centpoise
14. 焦耳	Joule
15. 千瓦时	kilowatt-hour
16. 特斯拉	Tesla
17. 高斯	gauss
18. 奥斯特	Oersted

19. 库仑	Coulomb
20. 牛顿, 达因	Newton , dyne
21. 摄氏度, 开尔文	Celsius(centigrade) , Kelvin
22. 法拉, 皮克法拉	Farad , pico-farad
23. 升, 立方分米	Liter , cubic decimeter
24. 加仑	gallon
25. 桶 (石油)	barrel (petroleum)
26. 标准国际单位制	standard international unit
27. 厘米-克-秒 单位制	CGS unit
28. 磁通密度	flux density
29. 电流密度	current density
30. 安匝数	number of ampere-turns
31. 轴向 (径向) 漏磁通	axial (radial) leakage flux
32. 热点(最热点)	hot (hottest) spot
33. 局部过热	local over hot
34. 涡流损耗	eddy current loss
35. 磁滞损耗	Hysteresis loss

III 各类产品名称及类型

TYPE AND NAME OF KINDS OF PRODUCT

1. 电力变压器	power transformer
2. 有 (无) 载调压电力变压器	power transformer with OLTC (off-circuit tap-changer)
3. 配电变压器	distribution transformer
4. 自耦变压器	autotransformer
5. 联络变压器	interconnecting transformer
6. 升 (降) 压变压器	step-up (step-down) transformer
7. 发电机变压器	generator transformer
8. 电站用变压器	substation transformer
9. 变流变压器	converter transformer
10. 分裂变压器	transformer with split windings
11. 厂用变压器	power plant transformer
12. 单相变压器	single-phase transformer
13. 三相变压器	three-phase transformer
14. 油浸式变压器	oil-immersed transformer
15. 浸难燃油变压器	nonflammable medium impregnated trans-
16. 干式变压器	dry type transformer
17. 塑料浇注变压器	cast resin (resin moulded) transformer
18. H 级绝缘变压器	transformer with H class insulation
19. 气体绝缘变压器	gas insulated transformer

- | | |
|------------------|----------------------------------------------------|
| 20. 单相变压器组成的三相组合 | three-phase banks with separate single-phase tran- |
| 21. 电炉变压器 | furnace transformer |
| 22. 整流变压器 | rectifier tran- |
| 23. 列车牵引变压器 | traction (locomotive) tran- |
| 24. 矿用变压器 | mining tran- |
| 25. 防爆变压器 | flame-proof tran- |
| 26. 隔离变压器 | isolation tran- |
| 27. 试验变压器 | testing tran- |
| 28. 灯丝变压器 | filament tran- |
| 29. 电焊变压器 | welding tran- |
| 30. 钎焊变压器 | brazing tran- |
| 31. 船用变压器 | marine tran- |
| 32. 启动自耦变压器 | starting autotransformer |
| 33. 串级式试验变压器 | cascade testing transformer |
| 34. 三线圈变压器 | three-phase tran- |
| 35. 增压变压器 | booster tran- |
| 36. 移动式变压器 | movable substation |
| 37. 成套变电站 | complete substation |
| 38. 全自动保护单相变压器 | complete self-protected single-phase tran- |
| 39. 电流互感器 | current tran- |
| 40. 电压互感器 | voltage tran- |
| 41. 母线式电流互感器 | bus-type current tran- |
| 42. 瓷箱式电流互感器 | porcelain type current tran- |
| 43. 套管用电流互感器 | bushing current tran- |
| 44. 电容式电流互感器 | capacitor type current tran- |
| 45. 倒立式电流互感器 | reverse type current tran- |
| 46. 塑料浇注式互感器 | cast resin current tran- |
| 47. 电容式电压互感器 | capacitor type current tran- |
| 48. 接地电压互感器 | earthed voltage tran- |
| 49. 组合式互感器 | combined instrument tran- |
| 50. 移圈调压器 | moving-coil voltage tran- |
| 51. 自耦调压器 | autotransformer regulator |
| 52. 接触调压器 | variac |
| 53. 感应调压器 | introduction voltage regulator |
| 54. 磁饱和调压器 | magnetic saturation voltage regulator |
| 55. 电抗器 | reactor |
| 56. 串联电抗器 | series reactor |
| 57. 并联电抗器 | shunt reactor |
| 58. 铁心电抗器 | iron core reactor |
| 59. 空心电抗器 | air core reactor |
| 60. 水泥电抗器 | concrete (cement) reactor |
| 61. 三相接地电抗器 | three-phase neutral reactor |

62. 启动电抗器	starting reactor
63. 平波电抗器	smoothing reactor
64. 平衡电抗器	balance reactor
65. 消弧电抗器	arc-suppression reactor
66. 阻波器	wave trap coil
67. 镇流器	ballast
68. 饱和电抗器	saturable reactor
69. 密闭式, 包封式	sealed enclosed type
70. 芯式	core type
71. 壳式	shell type
72. 户外(户内)式, 柱上式	outdoor (indoor, pole mounting) type
73. 移动式(列车式)	movable (trailer mounted) type
74. 自然冷却(吹风冷却)	natural cooling (air blast cooling)
75. 强油风冷(水冷)	forced oil air cooling (water cooling)
76. 油导向冷却	directed forced oil circulation cooling
77. 油导向吹风冷却	directed forced oil circulation forced air cooling
78. 恒磁通调压	constant flux voltage variation(C.F.V.V.)
79. 变磁通调压	variable flux voltage variation(C.F.V.V.)
80. 混合调压	combined voltage variation
81. 油浸自冷	oil-immersed natural cooling
82. 油浸风冷	oil-immersed air cooling
83. 油浸强迫油循环风冷	oil-immersed forced oil circulation air cooling
84. 油浸强迫导向风	oil-immersed forced directed oil circulation air cooling

IV 铁芯及铁芯制造

CORE AND CORE MANUFACTURING

1. 铁心片	core lamination
2. 一叠铁心	a lamination stack
3. 铁心叠积图	lamination drawing diagram
4. 45°斜接缝	45° mitred joint
5. 铁心油道(气道)	oil-duct air ventilating duct of core
6. 阶梯接缝	stepped lap core
7. 对接铁心	butt joint core
8. 卷铁心	wound core
9. 渐开线铁心	evolute core
10. 空气隙	air gap
11. 铁心拉板	tensile plate of core limb
12. 铁心柱	core limb
13. 上(下)铁轭	yoke (upper, lower)
14. 旁轭	side yoke

15. 环氧绑扎带	epoxy-bound bandage
16. 轭拉带	yoke tensile belt
17. 上轭顶梁（侧梁）	top jointing beam of upper yoke (side yoke)
18. 上夹件（下夹件）	upper yoke clamping (lower)
19. 夹件腹板（肢板）	web (limb) of yoke clamping
20. 夹件加强铁	stiffening plate of yoke clamping
21. 压线圈的压钉	winding compression bolt
22. 压钉螺母	nut of compressing bolt
23. 弹簧压钉（油缸压钉）	compressing bolt with spring (hydraulic damper)
24. 线圈支撑架	winding supporting plate
25. 垫脚	foot pad
26. 定位孔	positioning hole
27. 带螺母的定位柱	positioning stud
28. 拉螺杆	tensile rod
29. 夹件夹紧螺杆	yoke clamping bolt
30. 铁芯接地片	core earthing strip
31. 铁芯地屏（旁轭地屏）	earthing screen of core (side yoke)
32. 窗口高度（中心距M0）	window height (center line distance M0)
33. 木垫块	wood padding block
34. 叠片系数	lamination factor
35. 铁芯的级	stage of lamination stacks
36. 芯柱外接圆	circumscribed circle of core leg
37. 铁芯端面	core surface perpendicular to lamination
38. 木棒（木垫块）	wood bar (padding block)
39. 定位板	positioning plate
40. 隔板	partition

V 线圈及线圈制造

WINDING AND WINDING MANUFACTURING

1. 单层（双层，多层）圆筒式线圈	single layer (double, multi-) cylindrical winding
2. 大型层式线圈	large size long layer winding
3. 连续式线圈	continuous winding
4. 半连续式线圈	semi-continuous winding
5. 纠结式线圈	interleaved winding
6. 纠结—连续式线圈	interleaved-continuous winding
7. 部分纠结式线圈	partial-interleaved winding
8. 插花纠结式线圈	sandwich-interleaved winding
9. 插入电容式线圈	capacitor shield winding
10. 饼式线圈（双饼线圈）	disk winding
11. 交错式线圈	sandwich winding

12. 螺旋式线圈	helical winding
13. 单列螺旋	single-row
14. 分列线圈	split winding
15. 箔式线圈	foil winding
16. 分段式线圈	sectional winding
17. 全绝缘式线圈	uniformly insulated winding
18. 第三线圈	tertiary winding
19. 高压线圈 (中压, 低压)	high voltage (low, mid-) winding
20. 辅助线圈	auxiliary winding
21. 调压线圈	regulating winding
22. 星形连接 (三角形, 曲折形, T形)	star (delta, zigzag) connection
23. 开口三角连接	open-delta connection
24. 线段 (线层)	winding disk (winding layer)
25. 层绝缘 (段)	layer insulation (insulation between disk)
26. 端绝缘	end insulation
27. 分接头	tapping terminal
28. 段间横垫块	radial spacer between disk
29. 轴向撑条	axial strip
30. 径向撑条	radial strip
31. 段间过渡联线	transformer connection between disks
32. 段间换位联线	transposed connection between disks
33. 线圈起始端 (终)	initial terminal (final terminal) of winding
34. 绝缘纸筒	insulating cylinder
35. 匝间绝缘	insulation between turns
36. 绝缘角环	insulation angled ring (collar ring)
37. 线匝间垫条	insulating filling strips between turns
38. 分数匝 (整数匝)	fractional turn (integer turn)
39. 并绕导线	parallel wound conductors
40. 复合导线	composite conductor
41. 换位导线	transposed conductor
42. 纸包线	paper wrapped conductor
43. 漆包线	enameled wrapped conductor
44. 硬拉铜导线	hard drawn copper conductor
45. 退火导线	annealed conductor
46. 玻璃丝包线	glass-fibre covered conductor
47. 纸槽	paper channel
48. 绑线 (绳)	banding wire (rope)
49. 静电板 (环)	electrostatic plate (ring)
50. 绝缘包扎	insulation wrapping
51. 线圈总高度	overall height of winding
52. 铜线高度	copper height of winding
53. 线圈修整	trimming of winding

54. 线圈浸漆	varnish impregnation of winding
55. 线圈的换位	transposition of windings
56. 分组换位	transposition by groups
57. 标准换位	standard transposition
58. 线圈展开图	planiform drawing of winding
59. 线圈的干燥与压缩	drying and compressing of winding
60. 绝缘的压缩收缩率	shrinkage of insulation under compression
61. 无氧铜导线	deoxygenized copper conductor
62. 铝合金导线	aluminium-alloy conductor
63. 纵向油道	vertical oil-duct
64. 横向油道	horizontal oil-duct

VI 油箱附件及油箱制造

TANK AND TANK'S FITTING MANUFACTURING

1. 钟罩式油箱	bell type tank
2. 上下节油箱	upper part (bottom part) of tank
3. 箱壁 (带磁屏蔽)	tank wall (with magnetic shield)
4. 箱底	tank bottom
5. 联管夹	tube connecting flange
6. 放油活门	draining valve
7. 油样活门	oil sampling valve (plug)
8. 闸阀 (蝶阀, 球阀)	gate (butterfly, ball) valve
9. 压力释放阀	pressure relief valve
10. 安全气道 (防爆筒)	explosion-proof pipe
11. 真空接头 (滤油接头)	connecting flange for evacuation (for oil filter)
12. 水银温度计座	pocket for mercury thermometer
13. 铭牌底板	base plate of rating plate
14. 手孔 (人孔)	hand hole (manhole)
15. 箱沿	tank rim
16. 箱沿护框	pad frame for tank rim gasket
17. 升高座	ascending flanged base
18. 吊板与千斤顶支座	lifting lug with bearing plate for jacks
19. 定位钉	positioning pin
20. 盖板 (临时)	cover plate (temporary)
21. 带隔膜储油柜	conservator with rubber diaphragm (bladder)
22. 沉淀盒 (集污盒)	precipitation well
23. 导气管	air exhausting pipe
24. 导油管	oil conduit
25. 吊拌 (吊环)	lifting lug (lifting eyebolt)
26. 有围栏的梯子	ladder with balustrade
27. 适形油箱	form-fit tank

28. 呼吸品	breather
29. 气体继电器	gas relay
30. 皮托继电器	pitot relay
31. 流动继电器	flow relay
32. 风(水)冷却品	air (water) cooler
33. 冷却品托架	bracket (tensile rod) for cooler
34. 潜油泵	oil-submerged pump
35. 流量	flow quantity (m ³ /min)
36. 扬程	lift
37. 控制箱(盘)	control box (panel)
38. 端子箱	terminal box (block)
39. 风扇接线盒	connecting box for fan-motors
40. 金属软管	metallic hose
41. 封闭母线联接法兰	joint flange for enclosed bus-bar
42. 管式油位指示表	tubular oil-level indicator
43. 磁铁式油位指示器	magnetic type oil-level indicator
44. 钢板表面预处理	steel plate surface pre-processing
45. 刻线	layout
46. 剪切	shearing
47. 刨边	edge shaping
48. 气割	gas cutting (automatic gas cutting)
49. 等离子切割	plasma cutting
50. 折板机(液压)	bending press (brake)
51. 埋弧自动焊	automatic submerged-arc wilding
52. CO ₂ 保护焊	co ₂ protected welding
53. 氩弧焊	argon protected welding
54. 型材冷弯机	cold bending machine for profiles
55. 弯管机	pipe bending machine
56. 钢管压弯模	bending die for steel tube
57. 双动冲床	double-action punching machine
58. 龙门冲床	double column punching machine
59. 单点液压矫正机	single pole correction press
60. 移动式摇臂转床	movable radial drilling machine
61. 深颈冲床	deep-throat punching machine
62. 夹件焊装翻转架	revolving fixture for core clamping fabrication
63. 焊接变位架	welding transposition fixture
64. 螺杆焊机	stud welder
65. 点焊机	spot welder
66. 缝焊机	seam welder
67. 多点焊机	multi-point spot welder
68. 端面车床	surface lathe
69. 火油着色试漏	coloured kerosene leakage test

70. 荧光试漏	fluorescent leakage test
71. 真空强度试验	vacuum strength test
72. 超声探伤	ultrasonic flaw detection
73. 磁力探伤	magnetic flaw detection
74. 消除焊药皮	clear away welding flux
75. 消除焊渣飞溅	clear away welding splashes
76. 防锈底漆	antirust primer
77. 环氧铁红底漆	iron red epoxy primer
78. 淋漆 (喷漆)	lacquer showering
79. 溶剂 (稀释剂)	thinner
80. 硝基漆	nitrocellulose lacquer
81. 酚醛漆	alkyd base lacquer

VII 装配, 干燥及油处理

TRANSFORMER ASSEMBLY , DRY AND OIL-PROCESS

1. 引线附加绝缘	additional insulation of lead
2. 引线夹 (支架)	leads clamping (supporting frame)
3. 线圈围屏	winding screen (fastening belt of screen)
4. 软电缆	flexible cable
5. 有载开关	on-load tap-changer (OLTC)
6. 切换开关	diverter switch
7. 选择开关	selector switch
8. 软接线片	flexible connecting strip
9. 线圈直流电阻测试	winding d.c. resistance measurement
10. 联结组 (极性) 校验	check on connection group (polarity)
11. 铜焊机	brazing transformer
12. 磷铜焊料	phosphor-copper brazing metal
13. 铜焊钳夹	brazing pliers
14. 锡焊	soldering
15. 气相加热真空干燥	vacuum drying with vapour phase heating
16. 循环热风干燥	drying with hot-air circulation
17. 真空浸油	oil impregnation under vacuum
18. 真空干燥缸	vacuum drying autoclave
19. 真空系统	vacuum plant
20. 真空泵 (真空阀, 真空计)	vacuum pump (vacuum valve)
21. 增压泵	booster (pump)
22. 自动记录仪表	autographic recording instrument
23. 干燥的终点判断	terminus determination of drying process

24. 露点测量	dew point measurement
25. 高压套管导杆头	inner connecting stud of HV bushing
26. 接地套管 (端子)	earthing bushing (terminal)
27. 热油循环	hot-oil circulation
28. 注油后静放	standstill after oil-filling
29. 密封式滤	leakage test on sealed parts
30. 穿缆式高压套管	cable through type HV bushing
31. 高压套管绝缘护筒	cylindrical insulating barrier of HV bushing
32. 大电流套管	heavy current bushing
33. 加强式套管	long-creepage bushing
34. 接地标志	earthing mark
35. 中点套管	neutral bushing
36. 有载开关操作系统	driving mechanism of OLTC
37. 操作机构手柄	operating handle of driving mechanism
38. 活性氧化铝	active aluminium oxide (activated alumine)
39. 硅胶	silica gel
40. 电阻温度计	resistance thermometer
41. 信号温度计	signaling thermometer
42. 线圈温度指示器	winding temperature indication
43. 远距离温度计	thermometer with remote indication
44. 瓷箱 (互感器)	porcelain casing (instrument transformer)
45. 瓷箱压圈	clamping ring for porcelain casing
46. 膨胀器	expander
47. 二次端子箱	secondary terminal box
48. 胶囊	rubber bladder
49. 电缆夹	cable clip
50. 绝缘装配	insulation assembly
51. 器身装配	active part assembly
52. 总装配	final assembly
53. 自动升降装配架	automatic assembly scaffold
54. 线圈吊具	winding hoisting tool (two-leg, three-leg)
55. 插板刀	lamination inserting knife
56. 拆除上轭	dismantle of upper yoke
57. 插板	reinsertion of upper yoke
58. 线圈油压千斤顶	hydraulic jacks for winding compression
59. 油压泵站	hydraulic pump station
60. 引线绝缘包扎机	lead insulation wrapping machine
61. 冷压焊钳	cold pressing pliers
62. 线圈纸筒较紧器	tightening device for winding cylinder
63. 轭片N型夹	n-shaped clips for upper yoke
64. 斜纹布带	twill cotton tape
65. 箱壁绝缘隔板	insulation diaphragm on the tank wall

66. 绝缘成型件	paper moulded insulating part
67. 真空干燥	vacuum drying
68. 气相加热阶段	vapour-phase heating period
69. 高真空阶段	high vacuum period
70. 真空注油阶段	vacuum oil filling period
71. 煤油蒸发器	kerosene evaporator
72. 煤油回收泵	kerosene recycling pump
73. 蒸汽加热排管	steam heating radiators
74. 立式真空缸	top loading vacuum drying autoclave
75. 缸开启开油缸	opening mechanism of autoclave cover
76. 移动式净油站	movable oil purificator
77. 油脱水装置	oil-dehydrating device
78. 油过滤芯子	cartridge of oil-filer
79. 油基(石蜡基, 环烷基)	oil base (paraffin base, naphthene base)
80. 油的吸气性	gas separating property of oil
81. 油闪点(凝固点)	flash point (congealing point) of oil
82. 酸值	acid value
83. 抗氧化剂	antioxidant
84. 抗凝剂	anticoagulent
85. 阻化油(非阻化油)	inhibited (un-) oil
86. 油试验器	oil tester
87. 油的胶体污染	colloidal contamination of oil
88. 吸附剂	absorbent
89. 油中含水量(含气量)	gas (moisture) content of oil
90. 油中颗粒数	particle content of oil
91. 气相色谱分析	chromatography
92. 甲烷(乙烷)	methane, ethane
93. 乙炔	acetylene
94. 乙烯	ethylene
95. 一氧化碳	carbon monoxide
96. 丙烯	acryl
97. 氧(氮, 氢)	oxygen, nitrogen, hydrogen
98. 总烃含量	overall hydrocarbon content
99. 百万分之一	parts per million

VIII 包装及运输

PACKAGE AND TRANSPORTATION

1. 包装箱	package
2. 装箱单	packing list

3. 花板包装	packaged in crate
4. 铁路（公路）运输	railway highway transportation
5. 水路（海路）运输	water(sea) transportation
6. 凹形车	saddle bottomed wagon
7. 落孔车	open web girder wagon
8. 拖车	trailer
9. 卡车	truck
10. 油罐车	tanker
11. 钳夹式车	schmabel wagon
12. 起重机	hoisting crane
13. 浮吊	floating crane
14. 履带吊	caterpillar crane
15. 铁路轨道吊	railway crane
16. 钢丝绳	steel cable
17. 手拉葫芦	chain block
18. 集装箱运输	container transport
19. 绞盘与滑轮组	capstan and pulley block
20. 发货日期	delivery date
21. 到站	destination
22. 唛头	shipping mark
23. 小心轻放	handled with care
24. 不准叠放	don' t stack up
25. 不准倒置	don' t turn over
26. 发货人	consignor
27. 收货人	consignee
28. 毛重	gross weight
29. 箱号	case No.
30. 发货单	dispatch list
31. 底拖	pallet
32. 叉车	fork lift
33. 重心	center of gravity
34. 限速运输	oversize transport
35. 不准流放	don' t uncouple with slipping
36. 装载量	loading capacity
37. 装货港口	port of loading
38. 铁路编组站	marshalling yard
39. 产品总重	total weight of product
40. 器身重量	weight of active part
41. 油重	weight of oil
42. 运输重	transport weight
43. 拆卸附件	dismantled accessories
44. 备件	spare parts

45. 易损件	parts subjected to wear
46. 充氮运输	transported with nitrogen filling
47. 充油运输	transported with oil filling
48. 运输尺寸图	transportation dimension size
49. 铭牌数据	rating plate data
50. 标志牌, 指示牌	designating plate , illustration plate
51. 指示标记	indication mark
52. 标准号	design code
53. 产品代号	symbol of product
54. 产品序号	serial No.
55. 使用条件	service condition
56. 绝缘水平	insulating level
57. 海拔高度	working altitude
58. 环境温度	ambient temperature
59. 线圈温升	winding temperature-rise
60. 线圈端子位置示意图	illustrative drawing for winding terminals
61. 线圈连接组图	illustrative drawing for winding connection
62. 最大最小分接	maximum (minimum) tapping
63. 额定分接	rated tapping

IX 图纸及技术文件用语

TECHNICAL FOR DRAWING AND TECHNICAL DOCUMENTS

1. 零件	parts
2. 部件	component (assembly) parts
3. 基础件	basic parts
4. 借用件	shared parts
5. 标准件	standard parts
6. 外购件	general parts
7. 附件	accessories
8. 配合件	mating parts
9. 可拆卸件	dismountable parts
10. 成套设备	a complete
11. 初步设计	preliminary
12. 技术设计	technical design
13. 技术设计说明书	instruction for technical design
14. 施工图设计	working drawing design
15. 技术协议	technical agreement
16. 技术任务书	assignment for technical design
17. 技术条件	technical condition

18. 合同附件	annex (appendix) to the contract
19. 检验鉴定大纲	examination and appraisal program
20. 试制总结	summary of trial production
21. 形式试验报告	type test report
22. 出厂试验报告	routine test report
23. 技术经济分析	technical and economical analysis
24. 可行性分析	feasibility study
25. 出厂技术文件	technical document for product delivery
26. 产品合格证	quality certificate
27. 变压器使用说明书	operation instruction of transformer
28. 总图	general layout
29. 外形尺寸图	overall dimension
30. 安装图	installation drawing
31. 示意图	illustrative drawing
32. 线路原理图	principle circuit diagram
33. 方框图	block diagram
34. 图表	table (graph)
35. 运输图	shipping dimension drawing
36. 地基图	foundation drawing
37. 底图	originals (transparent print)
38. 蓝图	blue print
39. 复制图	duplicates
40. 图样目录	contents of drawing (documents)
41. 零件明细表	detail list of drawing
42. 外购件明细表	detail list of purchased parts
43. 产品用户一览表	reference list of customers
44. 图纸标题栏	title block of drawing
45. 项号	number item
46. 名称	name
47. 图号	drawing No.
48. 单件重量	unit weight
49. 设计, 校核, 审定	designed, checked, approved
50. 隶属装配图号	pertaining to assembly drawing No.
51. 比例	scale
52. 纸型	paper size
53. 其余	for unmarked
54. 其余倒角	for unmarked edges
55. 淬火	hardening
56. 表面淬火	surface hardening
57. 镀锌	galvanized
58. 镀镍	nikel,
59. 酸洗	pickling

60. 磷化	phosphorated
61. 涂两遍底漆	coated with two layers of primer
62. 表漆	surface coating
63. 半导体涂层	semi-conducting coating
64. 热浸	hot dipping
65. 防叠层	anti-cornu coating
66. 点固焊	tack weld
67. 点焊	spot weld
68. 标杆焊	stud weld
69. 配焊	welded according to practical condition
70. 与配合件同时钻孔	drilled together with mating parts
71. 钻后绞孔	ream after drilling
72. 透孔	through hole
73. 吹砂 (抛丸)	shot-blast
74. 焊后磨平	grinding to flat after welding
75. 去毛刺	clear away burrs
76. 回火	tempering
77. 校直	straightening
78. 对称件	symmetrical parts
79. 锥度孔	tapered hole
80. 锻件 (压铸件)	forging (die casting)
81. 角钢 (槽钢)	angle
82. 整齐度	evenness
83. 表面光洁度 (粗糙度)	finish (roughness)
84. 倾斜度	inclination
85. 圆度 (椭圆度)	circularity (ellipticity)
86. 偏心度 (同心度)	eccentricity (concentricity)
87. 不同心度	inconcentricity
88. 平 (不平) 度	flatness
89. 直度	straightness
90. 平行度	parallelism
91. 垂直度	perpendicularity
92. 展开图	unfolded
93. A-A 放大	A-A enlarged
94. B-B 转	B-B tuned by
95. K 向	viewed from K
96. A-A 剖面	A-A section
97. 对中心 (不对中心)	alignment
98. 冲铆三点锁紧螺母	nut locked by punching three points
99. 铆接	pieced together
100. 改版	reverse

X 质量控制及试验设备

QUALITY CONTROL AND TEST EQUIPMENT

101.	质量 (质量控制)	quality control
102.	质量方针	quality policy
103.	质量管理	quality management
104.	质量保证体系	quality guarantee
105.	质量监督	quality supervisor
106.	质量成本	quality rated cost
107.	可靠性	reliability
108.	可用性	availability
109.	合格	conformity
110.	缺陷	nonconformity
111.	设计评审	design review
112.	关键工序	critical process
113.	控制点	control point
114.	验收检验	acceptance inspection
115.	准确度	accuracy
116.	校准	calibration
117.	误差	error
118.	产品鉴定	product appraisal
119.	投运试验	commissioning test
120.	首件试验	first item inspection
121.	工序间试验	in-process inspection
122.	最终检验	final inspection
123.	出厂检验	routine test
124.	形式试验	type test
125.	特殊试验	special test
126.	标准偏差	standard deviation
127.	正态分布	normal distribution
128.	设计定型	finalization of design
129.	定形改版	finalized revision
130.	市场调查	market survey
131.	试验用仪器仪表	testing instrument
132.	冲击电压发生器	impulse voltage generator
133.	截断装置	chopping device
134.	试验发电机组	testing generator set
135.	电容补偿装置	capacitor compensation device
136.	高压示波器	high voltage
137.	分压器	voltage divider
138.	标准电容器	standard capacitor

139.	法拉第笼	faraday cage
140.	局放测试仪	partial discharge tester
141.	数字电压表	digital display voltmeter
142.	低功率因数瓦特表	low power factor wattmeter
143.	西林电桥	schering bridge
144.	变比电桥	bridge for testing of voltage transformation ratio
145.	频率表	frequency meter
146.	热电偶	thermoelectric couple
147.	红外线扫描仪	infrared scanner
148.	水电阻	water resistance
149.	球极	sphere-gap
150.	峰值电压表	peak value voltmeter
151.	表面温度计	surface thermometer
152.	记忆示波器	memory scope
153.	钳形电流器	tong-type ammeter
154.	万用表	universal tester

XI 常用生产及工装设备

EQUIPMENT AND TOOLS COMMONLY USED

1.	车床	lathe
2.	立式车床	vertical lathe
3.	断面车床	surfacing lathe
4.	马鞍车床	saddle bed lathe
5.	自动车床	automatic lathe
6.	数控车床	numerical control lathe
7.	大角车床	turret lathe
8.	铲背车床	backing off lathe
9.	旋压车床	bulging lathe
10.	钻床	drill
11.	台钻	bench drill
12.	摇臂钻	radial drill
13.	镗床	boring machine
14.	坐标镗床	jig boring machine
15.	落地镗床	facing boring lathe
16.	铣床	miller
17.	螺旋铣床	screw
18.	万能铣床	universal miller
19.	花键铣床	spline miller
20.	龙门铣床	planer type miller
21.	插床	slotting machine

22. 插齿机	gear slotting
23. 双柱龙门刨	double housing planer
24. 单臂刨床	open side planer
25. 刨边机	shaper
26. 液压刨床	hydraulic planer
27. 牛头刨床	shaper
28. 拉床	broaching machine
29. 弓锯床	hack saw
30. 圆锯床	disk saw
31. 带锯床	band saw
32. 压力机	press
33. 冲压机	punch press
34. 剪板机	shearing machine
35. 剪断机	punch shear
36. 折板机	bending press
37. 滚丝机	thread hobbing machine
38. 磨床	grinder
39. 外圆 (内圆) 磨床	circular (internal) grinder

XII 材料标准件及标准零件

MATERIALS AND STANDARD PARTS

1. 黑色金属 (有色金属)	ferrous metal (non-ferrous metal)
2. 绝缘材料 (保温材料)	insulating material (heat-resistant material)
3. 低碳钢 (合金钢)	low carbon steel (alloy steel)
4. 抗磁钢 (低温钢)	anti-magnetic steel (low-temperature steel)
5. 不锈钢	stainless steel
6. 热轧 (冷轧) 硅钢片	hot-rolled (cold-rolled) silicon sheet steel
7. 冷轧晶粒取向硅钢片	cold rolled grain oriented silicon sheet steel
8. 紫铜 (黄铜, 青铜, 磷铜)	copper (brass, bronze, phosphor bronze)
9. 铅 (锡, 银, 锌)	lead (tin, silver, zinc)
10. 铂 (金, 铋, 汞)	platinum (gold, antimony, mercury)
11. 绝缘纸 (纸板)	insulating paper (press board)
12. 高密度纸板	high-density pressboard
13. 纸浆	pulp
14. 皱纹纸 (压光皱纹纸)	crepe paper
15. 压延绝缘纸	calendered insulating paper
16. 电缆纸	cable paper
17. 电容器纸	condenser paper
18. 牛皮纸 (青壳纸)	kraft paper

19. 碳纤维纸板 (管)	fibreboard (fibretube)
20. 层压木板	plywood
21. 胶纸板(环氧玻璃布板)	bakelized paper board(cpoxy resin glass-fibre)
22. 聚醋酸乙烯酯	polyvinyl acelated
23. 聚乙烯醇	polyvinyl alcohol
24. 聚酰亚胺	polymide
25. 聚酰胺	ploymide
26. 聚氯乙烯	polyvinyl chloride
27. 聚乙烯树脂	polyvinyl resin
28. 聚乙烯缩醛	polyvinyl acetal
29. 聚缩醛 (聚脂) 树脂	polyacetal (polyester)resin
30. 聚丙烯酸树脂	polyacrylic resin
31. 聚碳酸酯	polycarbonate
32. 聚丙烯酯	polyacrylonitrile
33. 聚胺酯	polyurethane
34. 有机玻璃 (聚甲醛丙烯酸甲酯)	Perspex (polymethylmethacrylate)
35. 醋酸	acetic acid ethylic
36. 水曲柳	northeast china ash tree
37. 胺基醇酸漆	lacquer of amidoalkyd base
38. 硝基漆 (硝基清漆)	lacquer of nitrocellulose
39. 稀释剂	lacquer thinner
40. 丙酮	acetone
41. 龙胆紫	gentian violet
42. 绝缘材料丙酮抽出物	acetone extraction of insulating material
43. 挥发物含量	volatile content
44. 上胶绝缘纸	bakelite coated insulating paper
45. 半导体纸	semi-conducting paper
46. 金属化纸 (金属化皱纹纸)	metallized paper (crepe paper)
47. 铜 (铝) 箔	copper (aluminium) foil
48. 铜带	copper tape
49. 铜网	copper wire screen
50. 试管	test tube
51. 烧杯	beaker
52. 干燥管	desiccator
53. 滴定管	buret
54. 比色计	colorimeter
55. 长颈瓶	flask
56. 蒸发器皿	crucible
57. 坩埚	beaker flask
58. 锥形瓶	beaker flask
59. 量瓶	measuring flask
60. 轧制方向	rolling direction

61. 抄纸方向	machine direction
62. 网面 (毡面)	wire (felt) side
63. 层压纸板	laminated pressboard
64. 成型绝缘件	moulded insulating parts
65. 紧缩带	shrinkable tape
66. 白布带	plain cotton tape
67. 斜纹布带	twill cotton tape
68. 玻璃丝带	glass fibre woven tape
69. 透明粘带	transparent adhesive tape
70. 稀纬布带	reduced weft cotton tape
71. 单芯 (多芯) 电缆	single-lead (multi-lead) cable
72. 辫子线	braided wire
73. 橡胶电缆	rubber cable
74. 胶联聚合物电缆	cross-linked polymer cable
75. 铠装电缆	sheathed cable
76. 屏蔽电缆	shielded cable
77. 单丝漆包线	single silk cover
78. 双丝包线	double cotton covered enamel cable
79. 合成橡胶	synthetic rubber
80. 氯丁橡胶	polychloroprene rubber
81. 抗油橡胶	oil-proof rubber
82. 软木	cork rubber
83. 无头螺杆	button head cap screw
84. 光螺杆 (螺母)	bright bolt
85. 方头螺栓	coach bolt
86. 半圆头螺栓	cup head bolt
87. 六角头螺栓	hexagonal head bolt
88. 内六角头螺栓	hexagonal socket head bolt
89. 镀锌螺栓	calvanized bolt
90. 全螺纹螺栓	full thread bolt
91. 吊环螺丝	eyebolt
92. 水螺丝	lag bolt
93. 圆螺母 (滚花螺母)	ring nut
94. 连接螺母	union nut
95. 梭螺母	locking nut
96. 开口螺母	slit nut
97. 翼形螺母	wing nut , thumb nut
98. 方螺母	square nut
99. 夹紧螺母	grip nut
100. 槽顶螺母	crown nut
101. 销钉	pin
102. 胶联销	hinge pin

103.	定位销	locating pin
104.	导销	pilot pin
105.	柱螺旋销	stud pin
106.	开口销	split pin
107.	锥销	tapered pin
108.	垫圈	washer
109.	光垫圈	bright washer
110.	防尘垫圈	anti-dust washer
111.	平垫圈	flat washer
112.	止退垫圈	locking washer
113.	止退线圈	lug washer
114.	曲面垫圈	ogee washer
115.	轴承	bearing
116.	滚柱（锥形）轴承	roller (tapered roller) bearing
117.	止推轴承	thrust bearing
118.	向心止推滚珠轴承	angular contact ball bearing
119.	双列滚珠轴承	double-row bearing
120.	弹簧	spring
121.	板弹簧	band spring
122.	盘簧	coiled spring
123.	碟形弹簧	elastic washer
124.	齿轮	gear
125.	正齿轮	spur gear
126.	人字齿轮	chevron gear
127.	伞齿轮	bevel gear
128.	内齿轮	annular gear
129.	差动齿轮	differential gear
130.	蜗轮	worm gear
131.	渐开线齿轮	involute gear
132.	摆线齿轮	cycloidal gear
133.	圆柱齿轮	cylindrical gear
134.	斜齿伞齿轮	spiral bevel gear
135.	斜齿轮	helical gear , screw gear
136.	空转齿轮	idler gear
137.	齿轮节距	pitch diameter of gear
138.	齿轮外（齿底）直径	major (minor) diameter of gear
139.	啮合齿	engaging tooth
140.	压力角	engaging angle
141.	模数	modulus
142.	联轴器	coupling
143.	方向联（十字接头）	Geneva (spider , universal joint cross)
144.	铆钉	rivet

145. 減速器

reductor

146. 包閘

brake

