

Oil Immersed Transformer



Max. Manufacture voltage & capacity: 36KV & 5000KVA.

Many kinds of standards are applicable: IEC, ANSI, BS, JEC, CNS... Energy Saving

The importance in designing oil-immersed distribution transformers is attached on reducing the consumption losses to provide customers with economical and energy saving distribution transformers.

Extraordinary wave-shape heat sink oil-immersed switching power transformer has a high performance wave-shaped outer casing that has the following.

Benefits:

1. Excellent radiation
2. The number of runs is cut by a half to reduce oil-leaking possibility Oil flow condition on the outer casing.
3. Good outer casing strain ability
4. Unique radiator respiration effect.



Remarkable fully sealed structure oil-immersed distribution transformer uses good quality moisture-proof board to provide tight sealing on the composition plane between the top cabinet and the outer casing.

Prevent contact between insulation oil and air so that the insulation oil deterioration can be avoided.

The outer casing uses high weather fastness coating painting.

Using high weather fastness paint to increase transformer coating painting performance.

Simplification of the transformer allocation operation.

Simplify the grounding terminal structure to make grounding be convenient.

Easy transformer installation.

The long-hole type stone screw design provides better workability.

A : INSTRUCTION :

1. SITE CONDITION :

TRANSFORMERS SHALL BE SUITABLE FOR OPERATION AT RATED KVA UNDER AMBIENT TEMPERATURE 40 °C BELOW AND ALTITUDE 1000M BELOW .

2. STANDARD :

THE TRANSFORMER IS DESIGNED , MANUFACTURED AND TESTED IN ACCORDANCE WITH THE PURCHASER'S SPECIFICATION AND APPLICABLE PARTS OF IEC 60076 STANDARD .

3. CONSTRUCTION :

3.1 CORES : THE CORES SHALL BE FABRICATED FROM COLD ROLLED GRAIN ORIENTED SILICONE STEEL SHEETS .

EACH CORE WILL BE EARTHED TO THE TANK AT ONE POINT WITH A DETACHABLE FLEXIBLE STRAP AND SECURELY FASTENED TO PREVENT MOVEMENT RELATIVE TO THE TANK .

3.2 WINDING : THE WINDING SHALL BE OF COPPER AND FULLY INSULATED FOR THE CONTINUOUS WORKING AT THE SPECIFIED SERVICE VOLTAGE .

THE MATERIALS FOR INSULATION OF WINDING AND ALL CONNECTION SHALL HAVE ADEQUATE CHARACTERISTICS NOT TO BE DETERIORATED UNDER THE ACTION OF HOT OIL OR FROM OTHER CAUSE AT THE MAXIMUM PERMISSIBLE LOAD . THE WINDING WILL WITHSTAND THE EFFECT OF SHORT CIRCUIT .

3.3 TANKS : THE TANK OF TRANSFORMER IS MADE OF MILD STEEL PLATE WITH EXTERNAL COOLING FINS OR RADIATORS WHERE NECESSARY .

THE TANK WILL BE SO DESIGNED AS TO PREVENT THE COLLECTION OF MOISTURE ON ANY PART AND TO BE SUFFICIENTLY RIGID TO RESIST DISTORTION WHEN THE TRANSFORMER IS LIFTED .

3.4 PAINTING : TRANSFORMER IS FINISHED WITH THREE COATS .

THE FIRST COAT IS APPLIED WITH A RUST INHIBITOR .

THE QUALITY OF PAINTING SHALL BE ACCORDING TO THE MANUFACTURER'S STANDARD PRACTICE .

THE COLOR REFER TO NO.14 (B.TECHNICAL DATA) .

3.5 OIL : THE TRANSFORMER WILL BE FILLED WITH NORMAL QUANTITY OF INSULATION OIL OF IEC 296 CLASS I .

4. TOLERANCES : +10% OF THE TOTAL LOSSES .

+15% OF EACH COMPONENT LOSS , PROVIDED THAT THE TOLERANCE FOR TOTAL LOSSES IS NOT EXCEEDED .

B : TECHNICAL DATA :

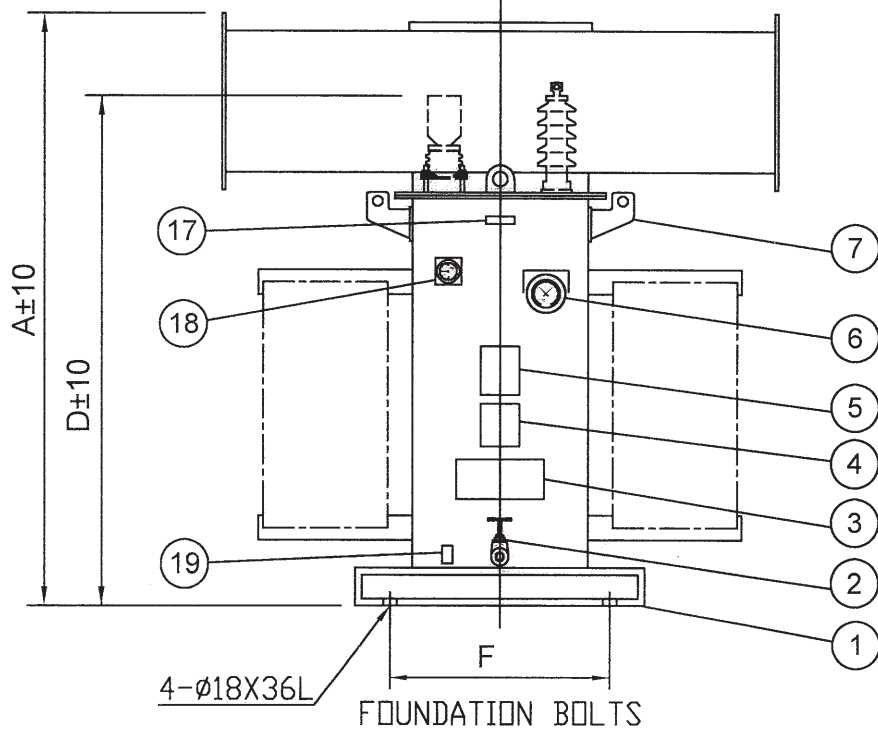
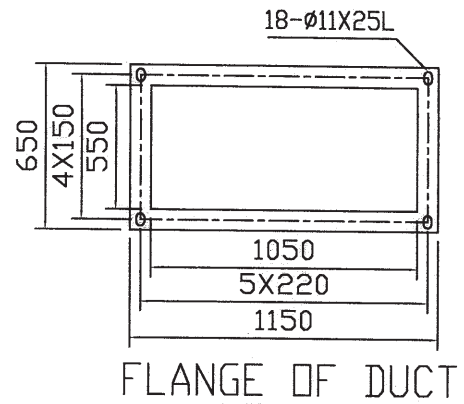
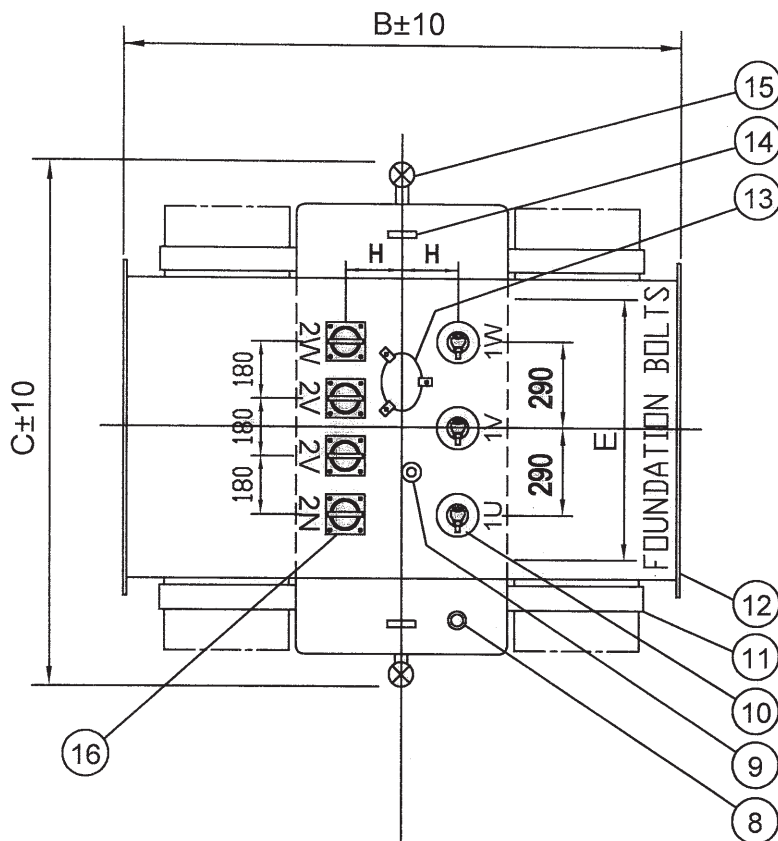
01. Item	1		2		3	
02. Quantity	120		140		140	
03. ϕ ---Hz---kVA	3 ϕ 50Hz 1000 kVA		3 ϕ 50Hz 800 kVA		3 ϕ 50Hz 630 kVA	
04. Type	ONAN SEALED		ONAN SEALED		ONAN SEALED	
05. High Voltage (V)	F 21000 F 20500 R 20000 Δ F 19500 F 19000		F 21000 F 20500 R 20000 Δ F 19500 F 19000		F 21000 F 20500 R 20000 Δ F 19500 F 19000	
06. Low Voltage (V)	400Y/231		400Y/231		400Y/231	
07. BIL (kV)	HV 125 -- LV --		HV 125 -- LV --		HV 125 -- LV --	
08. AC VOLTAGE (kV)	HV 50 -- LV 3		HV 50 -- LV 3		HV 50 -- LV 3	
09. Connection symbol	Dyn5		Dyn5		Dyn5	
10. Temperature - rise ($^{\circ}$ C)	Oil 60 Coil 65		Oil 60 Coil 65		Oil 60 Coil 65	
11. Characteristic	(at 75 $^{\circ}$ C ,pf=1.0.)	Tolerances	(at 75 $^{\circ}$ C ,pf=1.0.)	Tolerances	(at 75 $^{\circ}$ C ,pf=1.0.)	Tolerances
Total losses (W)	15228	+10%	12595	+10%	10244	+10%
Efficiency (%)	98.50		98.45		98.40	
Voltage regulation (%)	1.40		1.40		1.50	
No - load current (%)	3.50		4.00		4.50	
Short-circuit impedance (%)	4.5~5.5		4.5~5.5		3.5~4.5	
12. Outline drawing (Dimensions: m/m)	TA038D774A A= 1875 E= 900 B= 2200 F= 900 C= 1760 H= 160 D= 1455		TA038D774A A= 1875 E= 800 B= 2100 F= 800 C= 1700 H= 160 D= 1455		TA038D774A A= 1775 E= 800 B= 1900 F= 800 C= 1725 H= 160 D= 1290	
13. Oil (L) -- Total weight (kg)	800 L 3500 kg		750 L 3150 kg		650 L 2700 kg	
14. Color No.	Munsell No. 10BG 4/2(Azure grey)					
Remark	1. Distribution Transformer 2.With P-S shield 3.L.V. Bushing:T450430A(TL091)		1. Distribution Transformer 2.With P-S shield 3.L.V. Bushing:T450430A(TL091)		1. Distribution Transformer 2.With P-S shield 3.L.V. Bushing:T450430A(TL040)	
	Tolerances in accordance with IEC 60076 . +10% of the total losses ◦ +15% of each component loss , provided that the tolerance for total losses is not exceeded ◦ The efficiency shall be calculated according to the tolerance of total losses ◦					

B : TECHNICAL DATA :

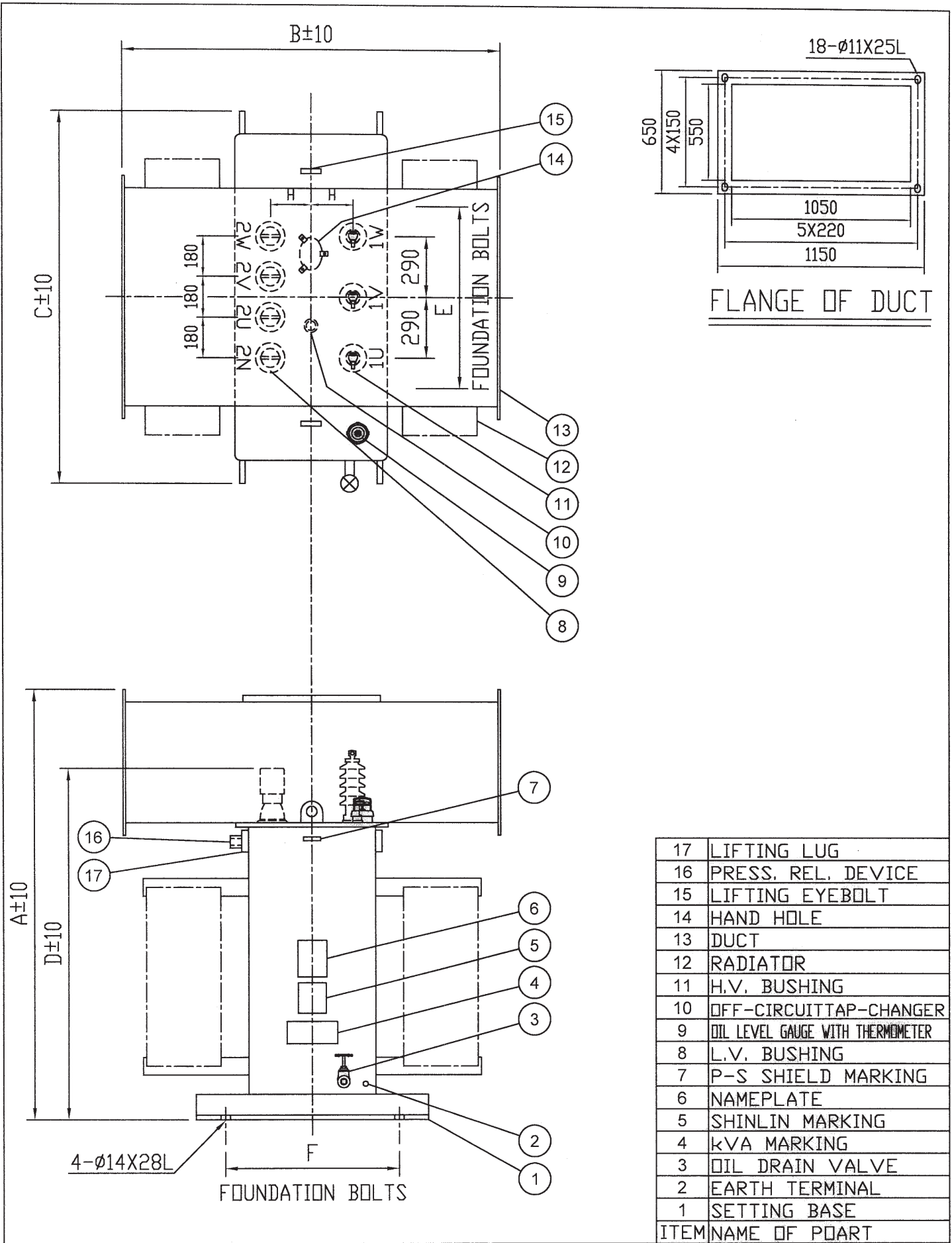
01. Item	4			5			6		
02. Quantity	160			120			120		
03. ϕ ---Hz---kVA	3 ϕ	50Hz	400 kVA	3 ϕ	50Hz	250 kVA	3 ϕ	50Hz	160 kVA
04. Type	ONAN SEALED			ONAN SEALED			ONAN SEALED		
05. High Voltage (V)	F 21000 F 20500 R 20000 Δ F 19500 F 19000			F 21000 F 20500 R 20000 Δ F 19500 F 19000			F 21000 F 20500 R 20000 Δ F 19500 F 19000		
06. Low Voltage (V)	400Y/231			400Y/231			400Y/231		
07. BIL (kV)	HV 125	--	LV --	HV 125	--	LV --	HV 125	--	LV --
08. AC VOLTAGE (kV)	HV 50	--	LV 3	HV 50	--	LV 3	HV 50	--	LV 3
09. Connection symbol	Dyn5			Dyn5			Dyn5		
10. Temperature - rise (°C)	Oil 60	Coil 65		Oil 60	Coil 65		Oil 60	Coil 65	
11. Characteristic	(at 75°C ,pf=1.0.)		Tolerances	(at 75°C ,pf=1.0.)		Tolerances	(at 75°C ,pf=1.0.)		Tolerances
Total losses (W)	7124	+10%		4712	+10%		3265	+10%	
Efficiency (%)	98.25			98.15			98.00		
Voltage regulation (%)	1.50			1.60			1.70		
No - load current (%)	4.50			5.00			5.00		
Short-circuit impedance (%)	3.0~4.0			2.0~3.5			1.5~3.0		
12. Outline drawing (Dimensions: m/m)	TA038D775A A= 1665 E= 700 B= 1700 F= 650 C= 1500 H= 140 D= 1225			TA038D775A A= 1665 E= 700 B= 1700 F= 650 C= 1500 H= 140 D= 1215			TA038D775A A= 1515 E= 700 B= 1300 F= 600 C= 1370 H= 140 D= 1065		
13. Oil (L) -- Total weight (kg)	480 L	2000 kg		480 L	1940 kg		350 L	1350 kg	
14. Color No.	Munsell No. 10BG 4/2(Azure grey)								
Remark	1. Distribution Transformer 2.With P-S shield 3.L.V. Bushing:T450430A(TL014)			1. Distribution Transformer 2.With P-S shield 3.L.V. Bushing:T450430A(TL010)			1. Distribution Transformer 2.With P-S shield 3.L.V. Bushing:T450430A(TL008)		
	Tolerances in accordance with IEC 60076 . +10% of the total losses ◦ +15% of each component loss ◦ provided that the tolerance for total losses is not exceeded ◦ The efficiency shall be calculated according to the tolerance of total losses ◦								

B : TECHNICAL DATA :

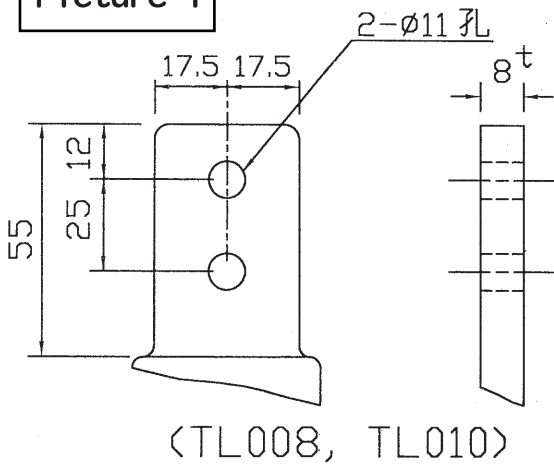
01. Item	7			
02. Quantity	75			
03. ϕ ---Hz---kVA	3 ϕ	50Hz	100	kVA
04. Type	ONAN SEALED			
05. High Voltage (V)	F 21000 F 20500 R 20000 Δ F 19500 F 19000			
06. Low Voltage (V)	400Y/231			
07. BIL (kV)	HV 125	--	LV --	
08. AC VOLTAGE (kV)	HV 50	--	LV 3	
09. Connection symbol	Dyn5			
10. Temperature - rise ($^{\circ}$ C)	Oil 60	Coil 65		
11. Characteristic	(at 75 $^{\circ}$ C ,pf=1.0,)	Tolerances		
Total losses (W)	2041	+10%		
Efficiency (%)	98.00			
Voltage regulation (%)	1.70			
No - load current (%)	5.00			
Short-circuit impedance (%)	1.5~3.0			
12. Outline drawing (Dimensions: m/m)	TA038D775A A= 1515 E= 700 B= 1300 F= 600 C= 1370 H= 140 D= 1065			
13. Oil (L) -- Total weight (kg)	350	L	1300	kg
14. Color No.	Munsell No. 10BG 4/2(Azure grey)			
Remark	1. Distribution Transformer 2.With P-S shield 3.L.V. Bushing:T450430A(TL008)			
	Tolerances in accordance with IEC 60076 . +10% of the total losses ◦ +15% of each component loss ◦ provided that the tolerance for total losses is not exceeded ◦ The efficiency shall be calculated according to the tolerance of total losses ◦			



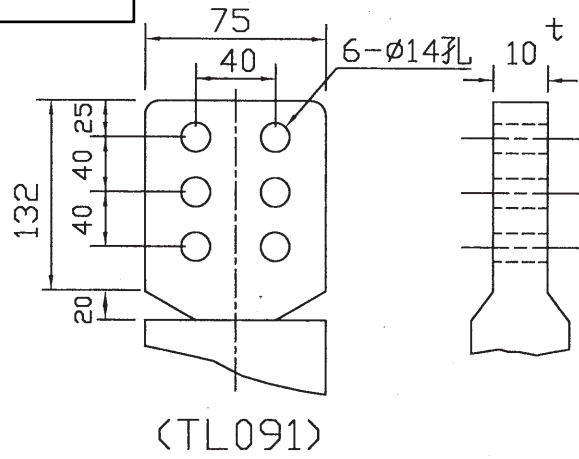
19	EARTH TERMINAL
18	OIL LEVEL GAUGE
17	P-S SHIELD MARKING
16	L.V. BUSHING
15	OIL FILTER VALVE
14	LIFTING EYEBOLT
13	HAND HOLE
12	DUCT
11	RADIATOR
10	H.V. BUSHING
9	OFF-CIRCUIT TAP-CHANGER
8	PRESS. REL. DEVICE
7	LIFTING LUG
6	THERMOMETER (ALARM)
5	NAMEPLATE
4	SHINLIN MARKING
3	KVA MARKING
2	OIL DRAIN VALVE
1	SETTING BASE
ITEM	NAME OF PART



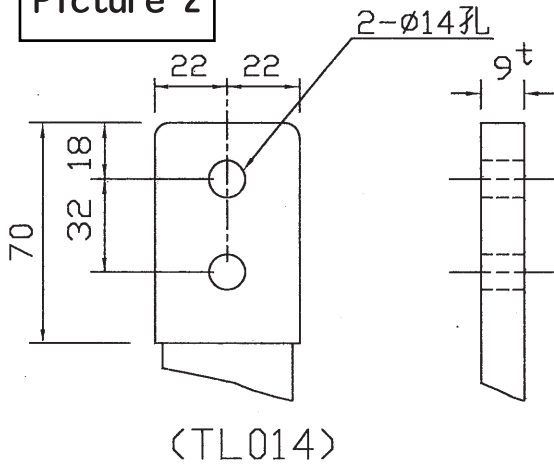
Picture 1



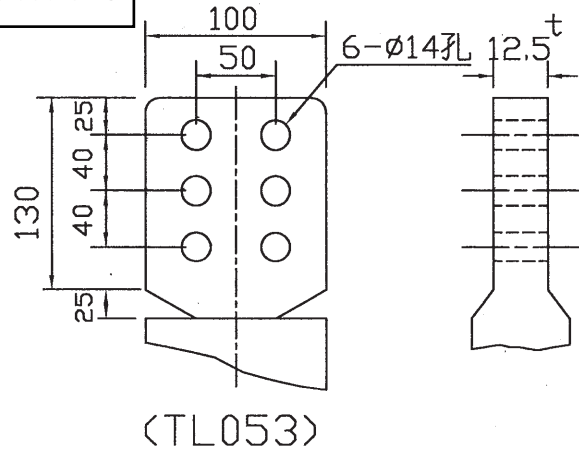
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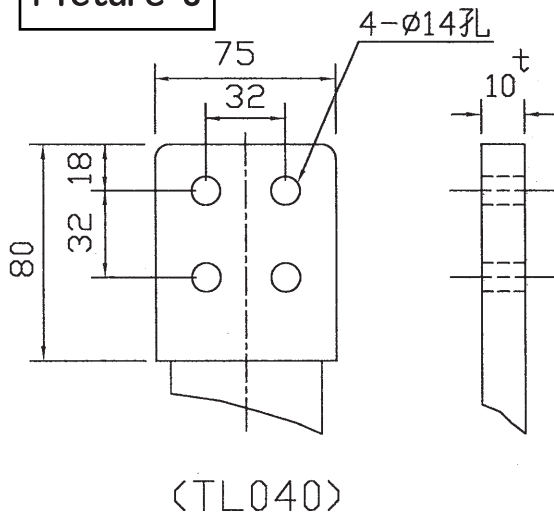
Picture 2



Picture 5



Picture 3



Picture 6

