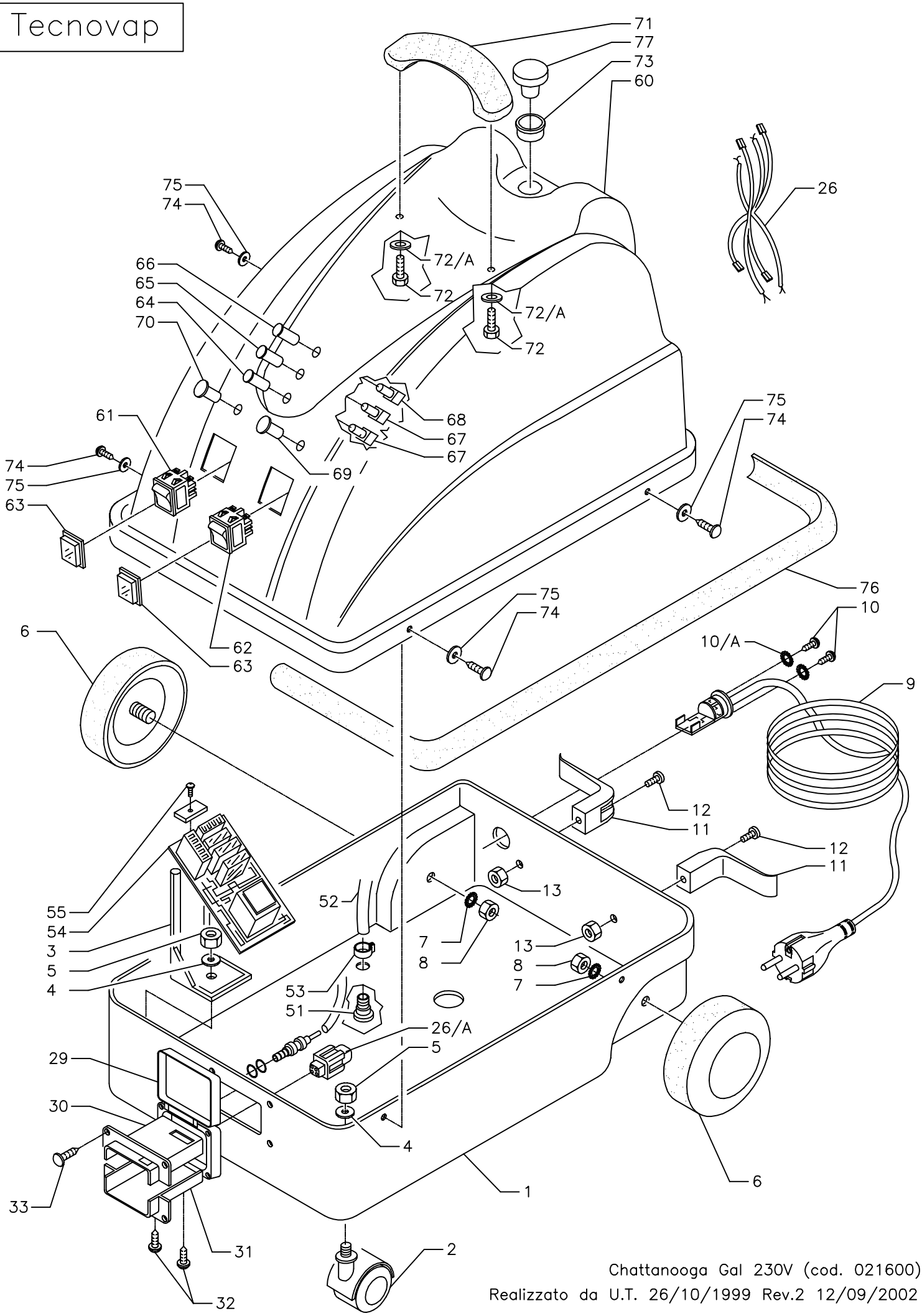
Tecnovap

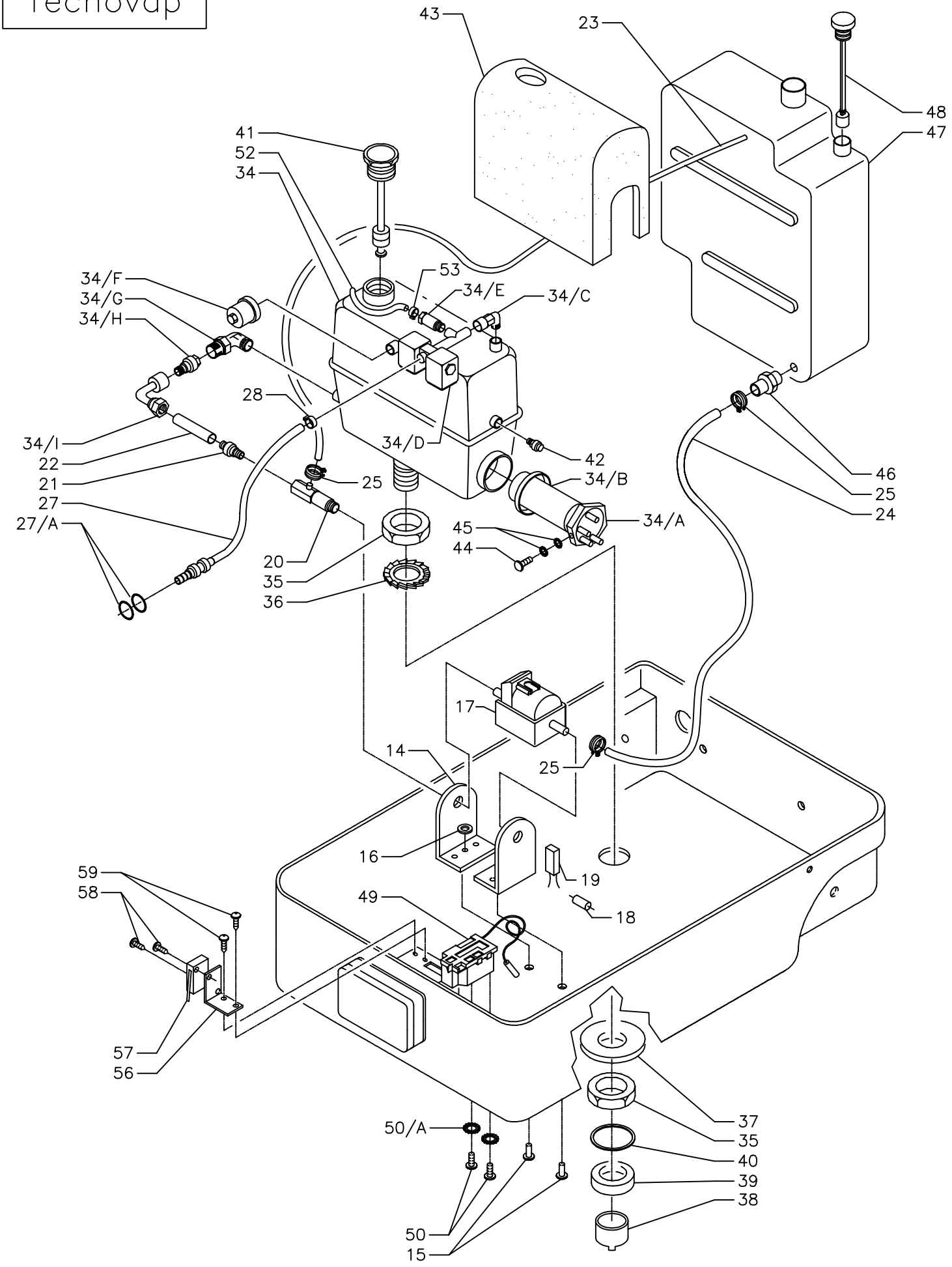


Chattanooga Gal 230V (cod. 021600)

Realizzato da U.T. 26/10/1999 Rev.2 12/09/2002

FIRMA RUT .....

Tecnovap



Chattanooga Gal 230V (cod. 021600)

Realizzato da U.T. 26/10/1999 Rev.2 12/09/2002

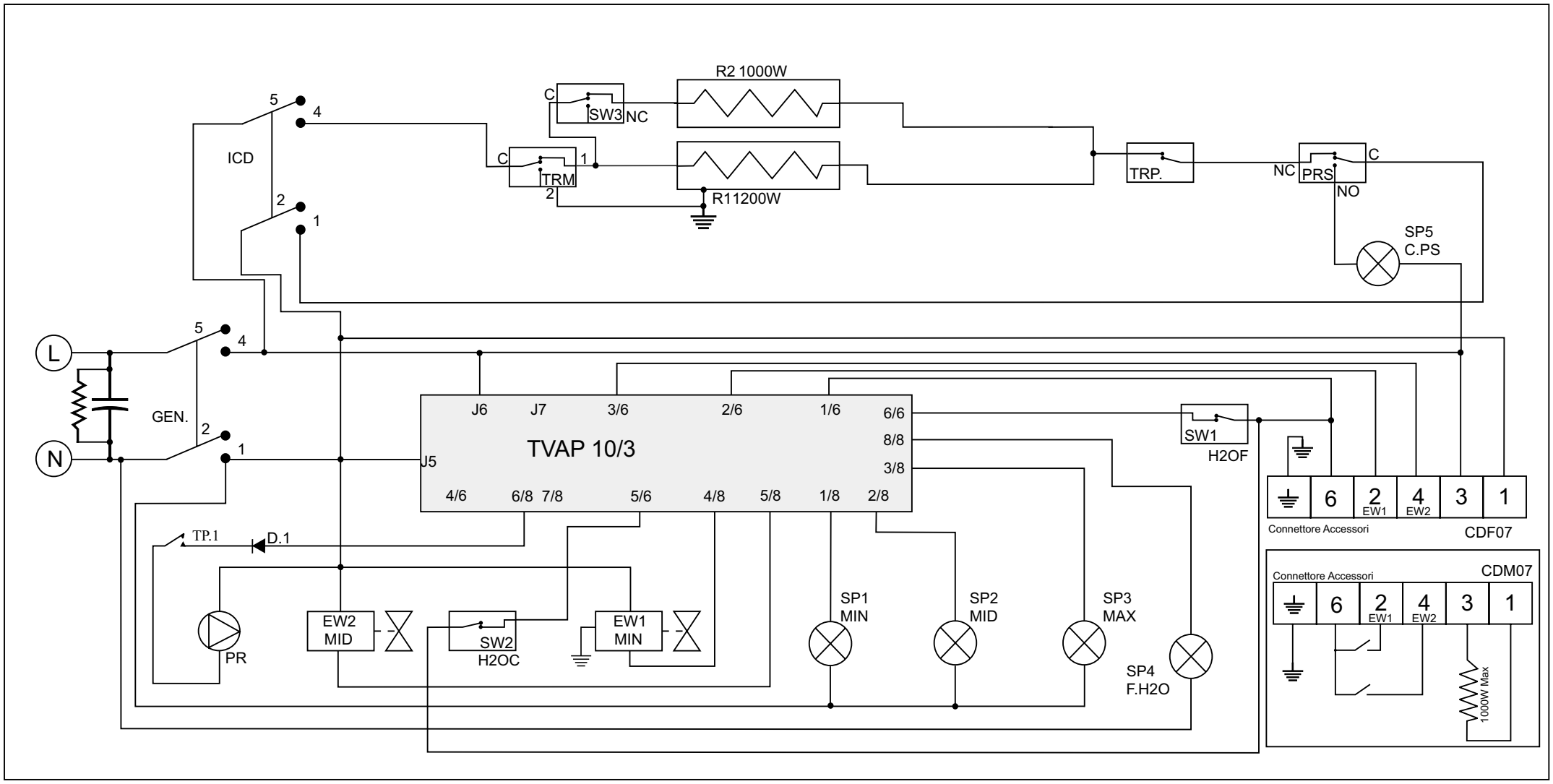
FIRMA RUT .....

Pos.	Codice	Q.tà	Denominazione	Denomination	Description	Benennung	Descripcion
CHATTANOOGA GAL 230V (cod. 021600)							
1	CA1161	1	SOTTOBASE GAL GA2 NERA	LOWER BODY - CHASSIS	BASE - CHASSIS INF.	UNTERE BASE	BASE INFERIOR
2	PG5401	2	RUOTA DIAM.35	PIVOTING WHEEL	ROUE PIVOTANTE	RAD	RUEDA
3	PG5034	1	STAFFA SUPPORTO SCHEDA	SUPPORT MOUNT - EL. BOARD	BRIDE SUPPORT - PLATINE ELECTR.	HALTERUNG - ELEKTR. PLATINE	SOPORTE - PLACA ELECTRON.
4	VI7305	2	RONDELLA 8X24 ZINCATA	WASHER ZN	RONDELLE	SCHEIBE	ARANDELA
5	VI7202	2	DADO ZINCATO M8	NUT ZN	ECROU	MUTTER	TUERCA
6	PG5407	2	RUOTA DIAM.100 8X10	FIXED WHEEL	ROUE FIXE	RAD	RUEDA
7	VI 7306	2	RONDELLA DENT. DIAM.8	LOCK WASHER	RONDELLE	SCHEIBE	ARANDELA
8	VI7202	2	DADO ZINC. M8	NUT ZN	ECROU	MUTTER	TUERCA
9	PE2107	1	CAVO 3X1.5 M5 SCHUKO	POWER CORD	CABLE	STROMKABEL	CABLE
10	VI7101	2	VITE AUTOF. 3,5X9,5 TORX	SCREW	VIS	SCHRAUBE	TORNILLO
10/A	VI7319	2	RONDELLA DENTELLATA Ø3	WASHER Ø3	RONDELLE	SCHEIBE	ARANDELA
11	010108	2	MEZZAMANIGLIA NERA	CABLE SUPPORT HANDLE	CROCHET POUR CABLE	KABELHALTERUNG	GANCHO PARA CABLE
12	VI7118	2	VITE 6X16	SCREW	VIS	SCHRAUBE	TORNILLO
13	VI7201	2	DADO ZINC. M6	NUT ZN	ECROU	MUTTER	TUERCA
14	PE240A	2	SUPPORTO AMMORT. A “L”	SUPPORT MOUNT - PUMP	SUPPORT AMMORTISANT	DÄMPFENDE HALTERUNG	SOPORTE AMORTIGUADOR
15	VI7022	2	RIVETTO ALLUM. DIAM.3,8X12	ALUMINIUM RIVET	RIVET	ALUMINIUMNIETE	RIVET
16	VI7314	2	RONDELLA ZINC. 4X12	WASHER ZN	RONDELLE	SCHEIBE	ARANDELA
17	PE2404	1	POMPA ET500	PUMP	POMPE	PUMPE	BOMBA
18	PE2016	1	DIODO MOD.BY255	DIODE	DIODE	DIODE	DIODE
19	PE2408	1	TERMOPROTETTORE POMPA	THERMAL CUT OUT - PUMP	THERMOPROTECTION - POMPE	THERMOSCHUTZ - PUMPE	TERMOPROTECTOR - BOMBA
20	PE2415	1	DEAREATORE 1/8MX1/8F	BLEEDER VALVE FOR PUMP	DESAERATEUR	ENTLÜFTER	DEAREATOR
21	RA3183	1	RACCORDO DIRITTO 1/8”	STRAIGHT CONNECTING VALVE	RACCORD DIRECT	DIREKTANSCHLUß	UNION DIRECTA
22	RA3201	1	TUBO IN TEFLON 6X8 mm 135	TEFLON TUBE	TUYAU TEFLON	TEFLONROHR	TUBO TEFLON
23	PG8006	1	TUBO IN SILICONE 4X7 mm 290	SILICONE TUBE	TUYAU SILICONE	SILIKONROHR	TUBO SILICONE
24	PG8007	1	TUBO IN SILICONE 4X7 mm 220	SILICONE TUBE	TUYAU SILICONE	SILIKONROHR	TUBO SILICONE
25	PG5238	3	FASCETTA FSW086	TUBE CLAMP	COLLIER	SCHELLE	ABRAZADERA
26	PE2033	1	CABLAGGIO COMPLETO	COMPLETE INTERNAL WIRING	CABLAGE COMPLET	KOMPL. VERKABELUNG	CABLES COMPLETOS
26/A	PE2118	1	CONNETTORE CKF 07	CONNECTOR FOR TOOLS	CONNECTEUR POUR ACCESSOIRES	KONNEKTOR FÜR ZUBEHÖR	CONECTOR PARA ACESORIOS
27	PG7002	1	UGELLO MASCHIO CON TUBO	MALE NOZZLE + STEAM HOSE	BUSE MALE + TUBE VAPEUR	DÜSE + DAMPFSCHLAUCH	BOQUILLA + TUBO VAPOR
27/A	PG5106	2	GUARNIZIONE OR 9,25X1,78	O-RING	JOINT O-RING	O-RING DICHTUNG	GUARNICION O-RING
28	PG5209	1	FASCETTA STRIK	SINGLE EAR CLAMP	COLLIER	SCHELLE	ABRAZADERA
29	PP0008	1	SPORTELLINO COPRI PRESA	PLUG PROTECTION	COUVERCLE PROTECTEUR	SCHUTZKAPPE	TAPON PROTECTOR
30	120101	1	CORPO PRESA SUPERIORE	TOP SOCKET COVER	CORPS DE PRISE SUPERIEUR	OBERER TEIL STECKER	CUERPO SUPERIOR TOMA
31	120102	1	CORPO PRESA INFERIORE	BOTTOM SOCKET COVER	CORPS DE PRISE INFERIEUR	UNTERER TEIL STECKER	CUERPO INFERIOR TOMA
32	VI7105	2	VITE RAPIDA 3,9X16	SCREW	VIS	SCHRAUBE	TORNILLO
33	VI7152	4	VITE AUTOF. 3.9X19 BRUNITA	SCREW ZN	VIS	SCHRAUBE	TORNILLO
34	090232	1	CALDAIA COMPLETA L1,5	COMPLETE BOILER	CHAUDIÈRE COMPLETE	KOMPLETER DAMPFKESSEL	CALDERA COMPLETA
34/A	PE2520	1	RESISTENZA 230V 50HZ	HEATING ELEMENT	RESISTANCE	WIDERSTAND	RESISTENCIA
34/B	PG5103	1	GUARNIZ. ALLUM. Ø33X40X1.5	GASKET ALUMINIUM	JOINT ALUMINIUM	ALUMINIUMDICHTUNG	JUNTA EN ALUMINIUM
34/C	RA3147	1	RACCORDO A GOMITO 1/8”	ELBOW CONNECTION	RACCORD COUDÉ	WINKELANSCHLUß	RACORDO "L"
34/D	PE2342	1	ELETTROVALVOLA	SOLENOID VALVE DOUBLE OUTLET	ÉLECTROVANNE	ELEKTROVENTIL	ELECTROVALVULA
34/E	RA3410	1	VALVOLA DI SICUREZZA	SAFETY VALVE	SOUPAPE DE SÉCURITE	SICHERHEITSVENTIL	VALVULA DE SEGURIDAD
34/F	PE2401	1	PRESSOSTATO 2-6 BAR	PRESSURE SWITCH	PRESSOSTAT	DRUCKWACHTER	MADITOR DE PRESION
34/G	RA3147	1	RACCORDO A GOMITO 1/8”	ELBOW CONNECTION	RACCORD COUDÉ	WINKELANSCHLUß	RACORDO "L"
34/H	RA3408	1	VALVOLA NON RITORNO	NON-RETURN VALVE	SOUPAPE DE RETENUE	ABSPERRVENTIL	VALVULA DE SOBREPRESION
34/I	RA3167	1	RACCORDO A GOMITO 6X8	ELBOW CONNECTION	RACCORD COUDÉ	WINKELANSCHLUß	RACORDO "L"
35	VI7203	2	DADO GAS OTTONE	BRASS NUT	ECROU LAITON	MESSINGMUTTER	TUERCA LATÓN
36	VI7335	1	RONDELLA DENT. DIAM.20	LOCK WASHER	RONDELLE DENTELÉE	SCHEIBE	ARANDELA

37	VI7336	1	RONDELLA PIANA DIAM.20	WASHER	RONDELLE PLATE	SCHEIBE	ARANDELA
38	RA3315	1	TAPPO 3/8M CIECO	DRAIN CAP	BOUCHON DRAINAGE	ABLAßDECKEL	TAPON DRENAJE
39	RA3062	1	ANELLO PORTA O-RING	BRASS RING FOR RUBBER O-RING	BAGUE LAITON POUR JOINTS OR	MESSINGRING OR DICHTUNG	ANILLO LATÓN PARA GUARN.OR
40	PG5107	1	O-RING 13,95X2,62	O-RING SEAL	JOINT O-RING	O-RING DICHTUNG	GUARNICIÓN O-RING
41	RA3321	1	GALLEGGIANTE INOX	STAINLESS STEEL FLOAT	FLOTTEUR INOX	INOX SCHWIMMSPERRE	FLOTADOR INOX
42	PE2303	1	TERMOSTATO MANUALE	RESET THERMOSTAT	THERMOSTAT MANUEL "RESET"	MANUEL. "RESET" THERMOSTAT	TERMOSTATO MANUAL "RESET"
43	IS4006	1	CUFFIA ISOLANTE CALDAIA	BOILER INSULATION	ISOLATION CHAUDIERE	DAMPFKESSELISOLIERUNG	ISOLACIÓN CALDERA
44	VI7130	1	VITE 3,5X9,5	SCREW	VIS	SCHRAUBE	TORNILLO
45	VI7318	2	RONDELLA DENT DIAM.4	LOCK WASHER	RONDELLE	SCHEIBE	ARANDELA
46	RA3140	1	PORTA GOMMA OTTONE 1/8M	RUBBER OUTLET + BRASS NOZZLE	RACCORD LAITON	MESSINGANSCHLUß	RACORDO LATÓN
47	CA1224	1	SERBATOIO ACQUA GAL	WATER TANK GAL	RESERVOIR D'EAU	WASSERTANK	DEPOSITO AGUA
48	PE2245	1	SONDA CONTROLLO LIVELLO	WATERLEVEL CONTROL SWITCH	SONDE CONTROLE NIVEAU	KONTROLLSONDE WASSERNIV.	SONDA CONTROL NIVEL AGUA
49	PE2301	1	TERMOSTATO 195°	THERMOSTAT 195°	THERMOSTAT 195°	THERMOSTAT 195°	TERMOSTATO 195°
50	VI7125	2	VITE M4X5	SCREW	VIS	SCHRAUBE	TORNILLO
50/A	VI7318	2	ROND. DENT. ESTERNA Ø4	WASHER	RONDELLE PLATE	SCHEIBE	ARANDELA
51	VI7001	1	INSERTO FILETTATO M6	THREADED PIN	INSERT FILETÉ	NIPPEL	BOQUILLA
52	PG8008	1	TUBO GOMMA 10X7 mm 280	RUBBER TUBE	TUYAU CAOUTCHOUC	GUMMISCHLAUCH	TUBO DE GOMA
53	PG5209	2	FASCETTA STRIK	SINGLE EAR CLAMP	COLLIER	SCHELLE	ABRAZADERA
54	PE2345	1	SCHEDA CONTR. TVAP10/3	ELECTRONIC BOARD SYST.CONTROL	PLATINE ELECTRONIQUE	ELEKTR. PLATINE	PLACA ELECTRONICA
55	VI7152	1	VITE AUTOFILETTANTE 3,5X9,5	SCREW ZN	VIS	SCHRAUBE	TORNILLO
56	PG5062	1	STAFFA PORTA MICROINT.	MOUNT BASE MICRO SWITCH	BRIDE SUPPORT MICROINTERR.	HALTERUNG MIKROSCHALTER	SOPORTE MICROINTERRUPTOR
57	PE2209	1	MICROINTERRUT. 16A 250V	MICROSWITCH	MICROINTERRUPTEUR	MIKROSCHALTER	MICROINTERRUPTOR
58	VI7122	2	VITE AUT. 2,9X16	SCREW	VIS	SCHRAUBE	TORNILLO
59	VI7048	2	VITE 2,9X9,5 ZINCATA	SCREW ZN	VIS	SCHRAUBE	TORNILLO
60	CA1160	1	BASE PST GAL GA1	PLASTIC BODY COVER	BASE SUP. PLASTIQUE	OBERE PLASTIKBASE	BASE SUP. PLASTICA
61	PE227C	1	INTERRUTTORE I6A	BOILER SWITCH	INTERRUPTEUR CHAUDIERE	DAMPFKESSELSCHALTER	INTERRUPTOR CALDERA
62	PE227R	1	INTERRUTTORE 16A	GENERAL POWER SWITCH	INTERRUPTEUR GENERAL	HAUPTSCHALTER	INTERRUPTOR GENERAL
63	PG5021	2	CUFFIA PROTEZIONE INTERR.	RUBBER SWITCH PROTECTION	PROTECTION CAOTCHOUC INTERR.	GUMMISCHUTZ SCHALTER	PROTECCIÓN GOMA INTERR.
64	PE22M1	1	GEMMA ARANCIONE MIN.	ORANGE LIGHT MIN	LAMPE ORANGE MIN	KONTROLLICHT ORANGE MIN	ESPÍA NARANJA MIN
65	PE22M2	1	GEMMA ARANCIONE MED.	ORANGE LIGHT MED	LAMPE ORANGE MED	KONTROLLICHT ORANGE MED	ESPÍA NARANJA MED
66	PE22M3	1	GEMMA ARANCIONE MAX.	ORANGE LIGHT MAX	LAMPE ORANGE MAX	KONTROLLICHT ORANGE MAX	ESPÍA NARANJA MAX
67	PE2230	2	SPIA LUMINOSA 230V	NEON LIGHT	TEMOIN LUMINEUX	KONTROLLICHT	ESPÍA LUMINOSA
68	PE2241	1	SPIA LUMINOSA 110V	NEON LIGHT	TEMOIN LUMINEUX	KONTROLLICHT	ESPÍA LUMINOSA
69	PE22S9	1	SPIA SERIGRAFATA 230V ROSSA	RED "LOW WATER" INDICATOR	TEMOIN "MANQUE D'EAU"	KONTROLLICHT "WASSERMANGEL"	ESPÍA LUMINOSA "FALTA AGUA"
70	PE22S2	1	SPIA SERIGRAFATA 230V VERDE	GREEN "READY STEAM" INDICATOR	TEMOIN "VAPEUR OK"	KONTROLLICHT "DAMPF OK"	ESPÍA LUMINOSA "VAPOR OK"
71	010105	1	MANIGLIA NERA PIATTA	BLACK FLAT HANDLE	POIGNEE NOIRE PLATE	FLACHER GRIFF	MANGO LLANO
72	VI7167	2	VITE F/R TE ZN. 6,3X13-14X1/2	SCREW	VIS	SCHRAUBE	TORNILLO
72/A	VI7320	2	RONDELLA GREMBIULINA Ø6X24	WASHER Ø6X24	RONDELLE	SCHEIBE	ARANDELA
73	PG5339	1	PASSATUBO	RUBBER MOUTHPIECE WATER TANK	PASSAGE POUR TUBE	SCHLAUCHDURCHGANG	PASAJE PARA TUBO
74	VI7101	4	VITE 3,5X9,5 TORX	SCREW	VIS	SCHRAUBE	TORNILLO
75	VI7325	4	RONDELLA ZINCATA Ø4	WASHER ZN	RONDELLE	SCHEIBE	ARANDELA
76	PG5314	1	PARABORDO IN GOMMA GAL	RUBBER PROTECTIVE SEAL	PARE-CHOCS	GUMMISTOßDÄMPFER	PARACHOQUES DE GOMA
77	RA3313	1	TAPPO SERBATOIO GAL	CAP FOR WATER TANK	BOUCHON RESERVOIR D'EAU	WASSERTANKDECKEL	TAPON DEPOSITO DE AGUA

CHATTANOOGA GAL 230 (cod. 021600)
U.T. 26/10/1999 REV.2 12/09/2002

I particolari evidenziati sono validi solo come parti sostitutive, da non considerarsi nella fase di montaggio.



GEN.	INTERRUTTORE GENERALE	R2.	ELEMENTO RISCALDANTE 800W 230V
ICD.	INTERRUTTORE CALDAIA	D1.	DIODO BY 255
SW1.	SONDA DI CONTROLLO ACQUA SERBATOIO	SP1.	INDICATORE DI USCITA VAPORE MINIMA
SW2.	SONDA CONTROLLO LIVELO ACQUA IN CALDAIA	SP2.	INDICATORE DI USCITA VAPORE MEDIA
SW3.	MICROINTERRUTTORE DI CONTROLLO POTENZA	SP3.	INDICATORE DI USCITA VAPORE MASSIMA
EW1.	ELETTROVALVOLA VAPORE CON USCITA MINIMA	SP4.	INDICATORE FINE ACQUA SERBATOIO
EW2.	ELETTROVALVOLA VAPORE CON USCITA MEDIA	SP5.	INDICATORE CALDAIA IN PRESSIONE
PR.	POMPA D'ALIMENTAZIONE CALDAIA	PRS.	PRESSOSTATO 2-6 bar
TP1.	TERMOSTATO DI PROTEZIONE POMPA 100°	TRP.	TERMOSTATO DI SICUREZZA A RIARMO MAN.
TVAP 10/3.	SISTEMA ELETTRONICO DI CONTROLLO	TRM.	TERMOSTATO CALDAIA 195°
R1.	ELEMENTO RISCALDANTE 1200W 230V	CKF 04.	CONNETTORE ACCESSORI

Rif.01	q.tà 01	Titolo/Nome T.TOSCA GAL			N.articolo/Riferimento 021600
Progettato da Renzo Ceschi	Controllato da A.qualità	Approvato da-data Direz. generale	Nome file T-GAL	Data emissione 27 Aprile 1999	Revisione 1
TECNOVAP	T.TOSCA GAL. 1200/2000W 230V 50HZ				
	Questo disegno è di proprietà della Tecnovap S.N.C. che si riserva tutti i diritti sanciti dalla legge: qualsiasi divulgazione o riproduzione è vietata senza autorizzazione			Modifica 02 Giugno 2000	

DICHIARAZIONE DI CONFORMITA' CE
(EC DECLARATION OF CONFORMITY)

Il sottoscritto (The undersigned) FRANCHINI GIULIANO

TECNOVAP SNC
VIA R. ROSANI, 18
37024 NEGRAR VR

Attesta che le macchine per pulizia a vapore modello :
(Certifies that the steam cleaning machine model):
Chattanooga Gal 1.

Risultano conformi alle specifiche delle direttive
(conforms to the specifications of directives)
73/23/EEC – 93/68/EEC 89/336/EEC – 93/68/EEC

Per il controllo della conformità alle sopraindicate direttive, sono stati seguiti i seguenti standard :
(For the checking of conformity to the above directives, the following standards have been used):

Riferimento alle norme armonizzate:
(Reference to harmonized standards):

EN 60335-2-3+A1+A52
EN 60335-2-54
EN 60335-2-54/A1/A11
EN 55014
EN 60555-2 1ed
EN 60555-3 1ed
EN 50082-1

NEGRAR – VERONA (ITALY) 01-01-1998

FRANCHINI Giuliano
(Managing Director)

S.T.A. s.r.l.

VIA MILANO 6 ARBIZZANO 37020 VERONA ITALY
TEL+39 45 7514610 -FAX 045 -7514729 - E-Mail: stalab@wirteme.com Test report n. E0301

TEST REPORT

Electromagnetic compatibility

Client:	Equipment under test:
TECNOVAP s.n.c.di Franchini Giuliano & C v. Rita Rosani, 18 37024 NEGRAR (VR) ITALY	Steam Cleaning Machine Model TOSCA GAL

Contact: Order verbal Mr. Franchini

type	Type of test	Results		
		Yes	No	Sr
E	Conducted emission frequency range 0,15 ÷ 30 Mhz	**X**		
E	Radiated emission frequency range 30 ÷ 1000 Mhz			
E	Discontinuous disturbance	**X**		
E	Disturbance power frequency range 30 ÷ 300 Mhz	**X**		
E	Harmonic emission current			
E	Limitation fluctuations and flicker			
I	Electrostatic discharge			
I	Electrical fast transient (Burst)			
I	Surge immunity			
I	Voltage dips and interruption			
I	Conducted disturbances induced by radio frequency fields			
I	Radiated electromagnetic field			
I	Radiated electromagnetic field from digital radio telephones			

Yes =test complied with test specification limit, No = test did not comply with test specification limit, Sr = see internal report

Test specification				Note
	EN 55013		EN 61000-4-4	
	EN 55011		ENV 50141	
X	EN 55014		ENV 50140	
	EN 55022		EN 61000-4-5	
	EN 61000-3-2		IEC 1000-4-11	
	EN 61000-3-3			
	EN 61000-4-2			
	IEC 801-3(1984)			

Report number	date:
E0301	04.02.2000
total pages	verify
11	

The laboratory responsible

Quintarelli Dott. Renzo

VIA MILANO 6 ARBIZZANO 37020 VERONA ITALY
TEL+39 45 7514610 -FAX 045 -7514729 - E-Mail: stalab@wirteme.com

1. LIST OF EQUIPMENT USED TO TEST

DEVICE	MODEL DESCRIPTION
	Steam Cleaning Machine Model TOSCA GAL 230V~,200 W

2. TABLE OF CONTENTS

Paragraph	Title	page.
E1	Measurement conducted emission frequency range 0,15 ÷ 30 MHz	3-4
E3	Disturbance power frequency range 30 ÷ 300 MHz	5-6
E6	Discontinuous disturbance (click)	7-8
A	Photo EUT	9
A-E1	conducted emission annex	10
A-E3	disturbance power annex	11

E1 MEASUREMENT OF CONDUCTED DISTURBANCE AT MAINS PORTS

E1.1 TEST DESCRIPTION

- Reference European Standard:
  EN 55014. Limits and methods of measurement of radio disturbance characteristics of electrical motor-operated and thermal appliances for household and similar purposes, electrical tools and similar electric apparatus. (April 1994)
- Measurements Equipment:
  - EMC Analyzer HP. Model No: 8591 EM serial No: 3520A00252
  - Transient limiter Hewlett Packard Model No: 11947A, Serial No : 3107A01449
  - LISN della Telemeter Electronic GmbH, Tipo NNB-4/32T Nr. 0151
  - mains filter Corcom Mod. 45AYT6C, n. F7476
- Abbreviations:
  C. In compliance with Standard
  N.C. Not in compliance with Standard.

E1.1.1 EN 55014. Terminal voltage limits for the frequency range 148,5 KHz to 30 MHz

Frequency Range (Mhz)	limits dB (μV)		Result
	Quasi peak	Average	
0,15 to 0,50	66 to 56	59 to 46	C
0,50 to 5	56	46	
5 to 30	60	50	

date : 18 Jan 2000 technician:

E1.2 MEASUREMENT PROCEDURE

The measurement, in compliance with the EN 55014 Standard, has been performed with the following methods:

- Mains voltage was changed in the range ± 10 % of the nominal voltage, and the measurement was made at the stronger value of disturbance (V = 239 V)

In annex A-E1 are reported the spectrum diagrams of the conducted disturbance at the mains ports

E1.2.1 DIAGRAMS DESCRIPTION

picture	description	Phase	remark
pic. 1	Peak measurement in the range 0,15 ÷ 30 Mhz	L1	
pic. 2	Peak measurement in the range 0,15 ÷ 30 Mhz	N	

L1 = phase conductor, N= neutral conductor, AVG= Average, QP= quasi peak

E3 DISTURBANCE POWER MEASUREMENT

E3.1 TEST DESCRIPTION

- Reference European Standard:
  EN 55014. Limits and methods of measurement of radio disturbance characteristics of electrical motor-operated and thermal appliances for household and similar purposes, electrical tools and similar electric apparatus. (April 1994)

- Measurement equipment:
  - EMC Analyzer HP . Model No: 8591EM serial No: 3520A00252
  - Transient limiter Hewlett Packard. Model No: 11947A , Serial No : 3107A01449
  - LISN Telemeter, Electronic GmbH, NNB-4/32T model, Nr. 0151
  - Mains filter Mod. MPE DS2548C
- Abbreviations:
  C. In compliance with Standard
  N.C. Not in compliance with Standard.

E3.1.1 EN 55014. Disturbance power limits for the frequency range 30 MHz to 300 MHz. Household and similar appliances

Frequency range (MHz)	limits dB (pW)		results
	quasi peak	Average	
30 to 300	45 to 55	35 to 45	C

date : 18 Jan 2000 technician: _____

E3.2 MEASUREMENT PROCEDURE

The measurements were carried out in compliance with the EN 55014 Standard as follows:

The radiated disturbance power (dBpW) spectrum diagram generated by mains lead is reported in annex A-E3

E3.2.1 DIAGRAM DESCRIPTION

Picture	description	Remarks
pic. 1	Peak measurement in the range 30 ÷ 300 Mhz	
pic. 2	Bar Diagram of the emissions and measured values table	

AVG= Average QP= quasi peak

E6. DISCONTINUOUS DISTURBANCE MEASUREMENT

E6.1. PROCEDURE DESCRIPTION

- Reference Standard:

  EN 55014 Limits and methods of measurement of radio-disturbance characteristics of electrical motor-operated and thermal appliances for household and similar purposes, electric tools and electric apparatus

- Measuring devices

  signal Generator Rhode & Schwarz Model SMY01
  oscilloscopes LeCroy model 9310, S.N. 93104295
  receiver RF EMC Analyzer HP Model No: 8391 EM S. N. :3520A00252
  transient limiter Hewlett Packard Model No: 11947A, Serial No : 3107A01449
  lisn Telemeter Electronic GmbH, Model NNB-4/32T Nr. 0151
  radio frequency impedance Corcom Model 45AYT6C, n. F7476

- Definitions

Click rate	Number of clicks or switching operations within one minute.
Observation time	The needed minimum time to count 40 clicks (or relevant switching operations).
Higher Limit	In the measurement with the quasi-peak detector, the relevant limit for continuous disturbance, increased by a certain value determined by the click rate.

- Abbreviations:

  C (Compliance) The EUT is in compliance with disturbance limits.
  NC (Not compliance) The EUT does not comply with disturbance limits.
  N Clicks rate.
  L_q Higher limit.
  T Minimum observation time.
  V_a Supply voltage.

E6.1.1. EN 55014. Terminal voltage limits for the frequency range 148,5 KHz to 30 MHz

Frequency range (MHz)	Limits dB (µV) Quasi - peak	Result
0,15 to 0,50	66 to 56	C
0,50 to 5	56	
5 to 30	60	

VIA MILANO 6 ARBIZZANO 37020 VERONA ITALY
TEL+39 45 7514610 -FAX 045 -7514729 - E-Mail: stalab@wirteme.com Test report n. E0301

date : 18 Jan 2000 technician:

E6.2. MEASUREMENT REPORT

Measuring arrangement s have been carried out according to European standard EN 55014 requirements.

In details:

- The test has been carried out at a frequency of 150 kHz on a range of 0.9 to 1.1 times the rated voltage of the appliance, to find the rated voltage which causes maximum disturbance.
- The Va = 239 V voltage producing the highest value of disturbance has been picked out and reported

E6.2.1 Clicks rate

Frequency	T (minutes)	N	Clicks length	Notes
150 KHz	3	15	< 10ms	
500 KHz	3	7	< 10ms	

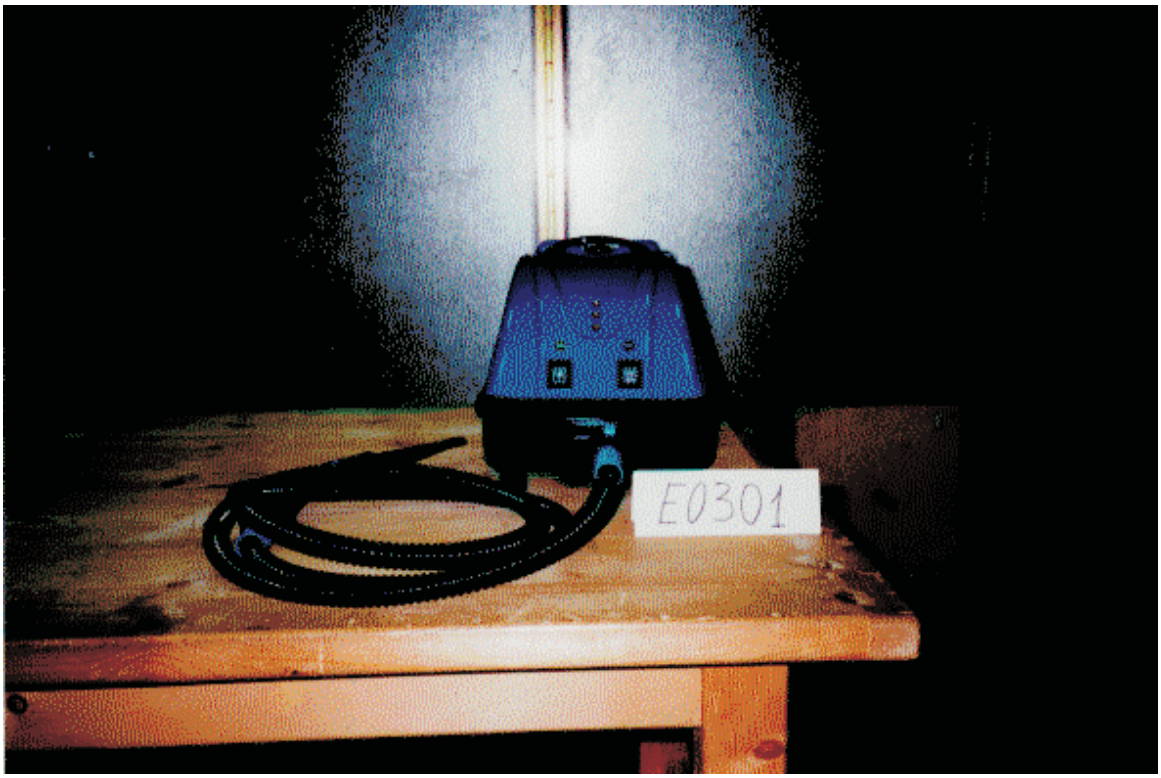
Note If N=0 the EUT is compliance with the limits without any further test

E6.2.2 Final observation

Frequency	T (minutes)	L_q (dBµV)	Number of clicks allowed	Number of clicks above L_q	Result	Notes
150 KHz	3	72	11	3	C	
500 KHz	3	68	5	2	C	
1,4 MHz	3	68	5	2	C	
30 MHz	3	72	5	2	C	

ANNEX A

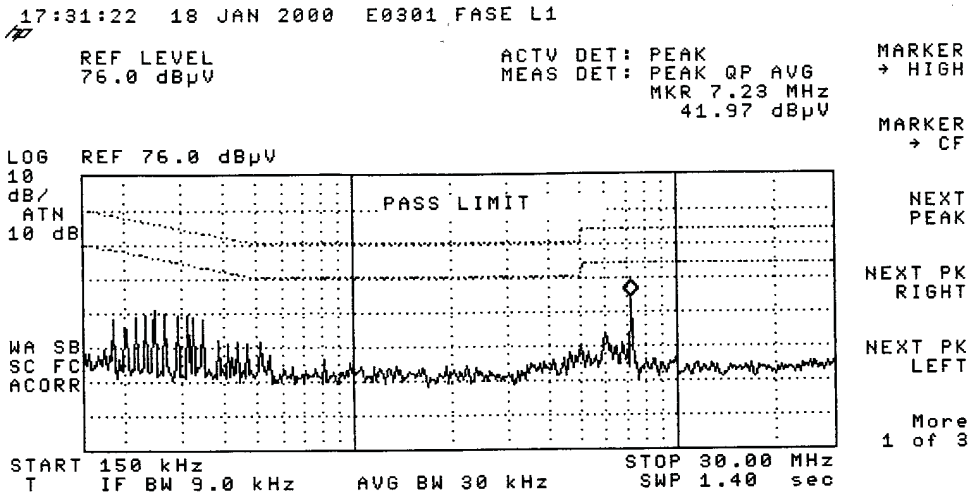
Photo of EUT



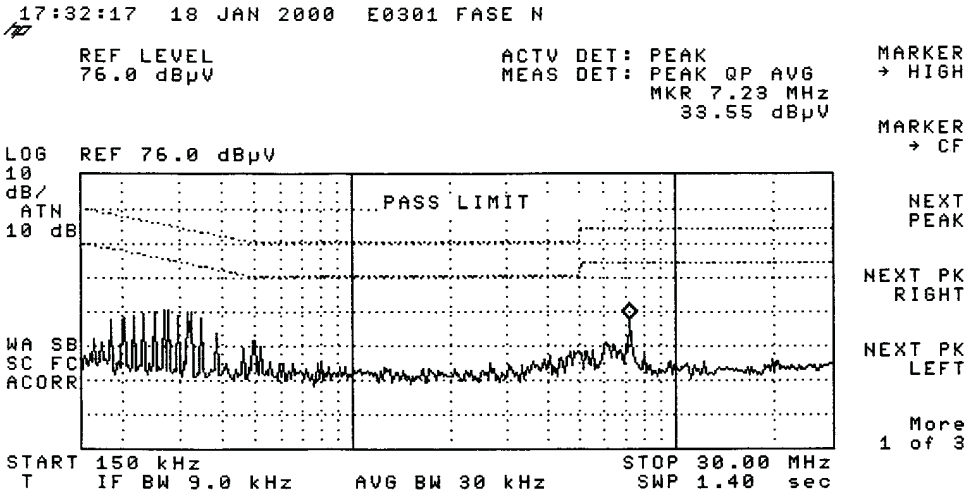
VIA MILANO 6 ARBIZZANO 37020 VERONA ITALY
TEL+39 45 7514610 -FAX 045 -7514729 - E-Mail: stalab@wirteme.com | Test report n. E0301

ANNEX A - E1

date: 18 Jan 2000	technician:



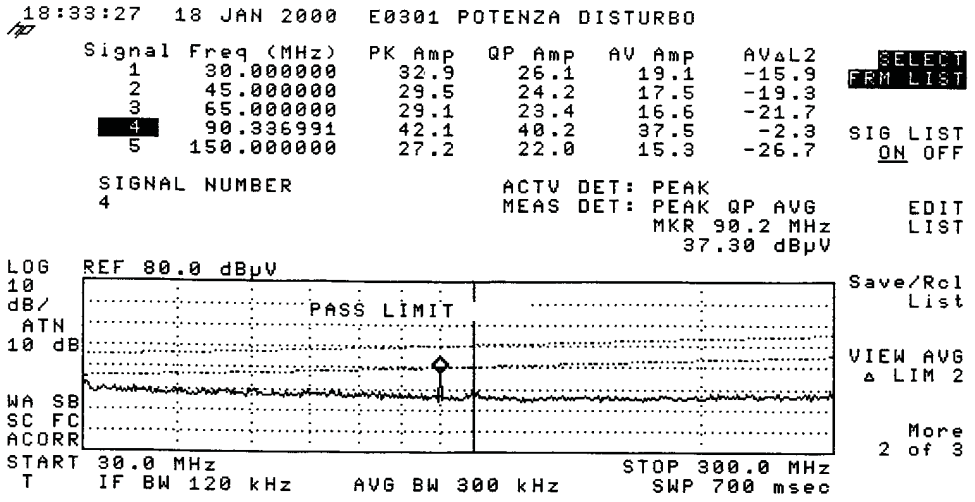
Pic. 1



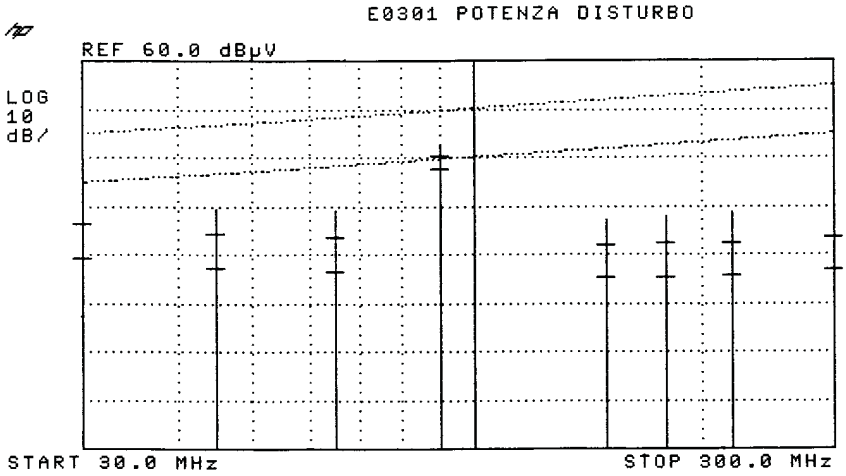
Pic. 2

ANNEX A - E3

date: 18 Jan 2000	technician:



Pic. 1



Signal Number	Frequency (MHz)	Peak (dBuV)	QP (dBuV)	QP Delta L 1 (dB)	Avg (dBuV)	Av Delta L 2 (dB)
1	30.000000	32.9	26.1	-18.9	19.1	-15.9
2	45.000000	29.5	24.2	-22.5	17.5	-19.3
3	65.000000	29.1	23.4	-25.0	16.6	-21.7
4	90.336991	42.1	40.2	-9.6	37.5	-2.3
5	150.000000	27.2	22.0	-30.0	15.3	-26.7
6	180.000000	28.0	22.2	-30.6	15.3	-27.5
7	220.000000	28.4	22.5	-31.1	15.7	-28.0
8	300.000000	29.5	23.4	-31.6	16.7	-28.3

Pic. 2

Reference No. **NTR-** 20631/IMQ

CCA - CENELEC Certification Agreement
Accord de Certification du CENELEC - CENELEC-Zertifizierungs-Abkommen

NOTIFICATION OF TEST RESULTS

Product: STEAM CLEANER WITH PRESSURIZED STEAM IRON

tested by request of: TECNOVAP SNC di FRANCHINI G. & C.
VIA RITA ROSANI 18 – NEGRAR VR (I)

manufactured at (name and place): TECNOVAP SNC di FRANCHINI G. & C - PESCANTINA VR (I)

Rating and principal characteristics: 230V~; 50Hz; max 2200W; with iron 2000W

Preliminary visit carried out by: IMQ

Trade mark (if any): TECNOVAP

Model/Type Ref.: CHATTANOOGA GAL 1

Additional Information (if any): THIS PRODUCT IS COVERED BY A LICENCE OF IMQ MARK

(INT. REF. C.A. NO. CA05.00704)

A sample of the product has been tested and found to be in conformity with the current HD/EN and equivalent national standard (number and edition)
EN 60 335-1:94 + A11:95 + A12:96 + A1:96 + A13/14:98 + A2:00 (EN 60 335-2-3:95 + A1:99 + A2:00; EN 60 335-2-54:97 + A11:98 + A1:99)

as shown in the test report (reference No. 05AB00319)

This Notification of Test Results is the result of testing a sample of the product submitted, in accordance with the provisions of the relevant specific standard.

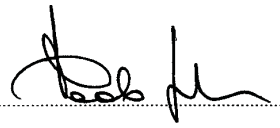
This Notification of Test Results has been established by a body which, participates in the CENELEC Certification Agreement (CCA) of 11th September 1973 as amended on 29th March 1983. Any other body participating in the CCA will take this Notification as a basis for granting a national mark of conformity or a national approval, as specified in the CCA as long as the standard referred to above is still in force in the country of that body.

20138 MILANO - Via Quintiliano, 43
Telephone: (+39) 02-50731
Telefax: (+39) 02-50991500
e-mail: info@imq.it

IMQ S.p.A.

Internal ref.: MR. PAOLO GIANOGLIO
(Name or initials of contact persons)

Date: 2002-07-30

Signature, 

TEST REPORT

EN 60 335-2-3

Safety of household and similar electrical appliances
Part 2: Particular requirements for electric irons

Report

Reference No. ..... : 05AB00319

Compiled by (+ signature) ..... : Andrea Lovati

Approved by (+ signature) ..... : Giovanni De Felippis

Date of issue ..... : 29/07/2002

Contents ..... : 99 pages

..... :

This report is based on a blank test report that was prepared by KEMA using information obtained from the TRF originator (see below).

Testing laboratory

Name ..... : IMQ S.p.A.

Address ..... : via Quintiliano, 43 –20138- Milano ITALY

Testing location ..... : as above

..... :

Client

Name ..... : TECNOVAP SNC DI FRANCHINI G. & C

Address ..... : via Rita Rosani, 18 –37024- Negrar (VR) ITALY

..... :

Test specification

Standard ..... : EN 60 335-2-3:95 + A1:99 + A2:00 (see also EN 60 335-1:94 + A11:95 + A12:96 + A1:96 + A13/14:98 + A2:00)

Test procedure ..... : CCA-scheme

Procedure deviation ..... : N.A.

Non-standard test method ..... : N.A.

Test Report Form/blank test report

Test Report Form No. ..... : 6335203B/97-03

TRF originator ..... : NEMKO

Master TRF ..... : reference No. 60 335-2-3, dated 96-10

Test item

Description ..... : STEAM CLEANER WITH PRESSURIZED STEAM IRON

Trademark ..... : TECNOVAP

Model and/or type reference ..... : CHATTANOOGA GAL 1

Manufacturer ..... : TECNOVAP SNC DI FRANCHINI G. & C

Rating(s) ..... : 230V~; 50Hz; max 2200W; with iron 2000W

Test case verdicts

Test case does not apply to the test object ..... : N(.A.)

Test item does meet the requirement ..... : P(ass)

Test item does not meet the requirement ..... : F(ail)

..... :

Testing

Date of receipt of test item ..... : --

Date(s) of performance of test ..... : 26/11/01

..... :

General remarks

This test report shall not be reproduced except in full without the written approval of the testing laboratory.

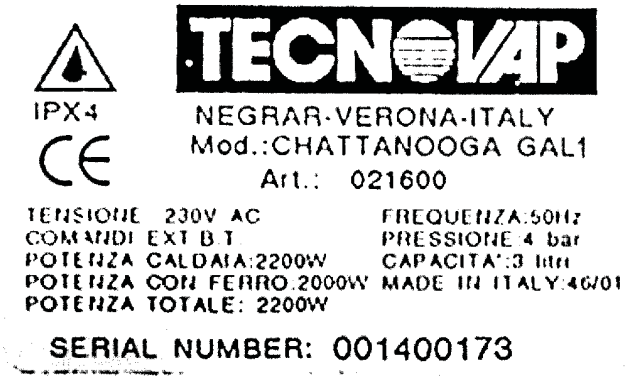
The test results presented in this report relate only to the item tested.

"(see remark #)" refers to a remark appended to the report.

"(see appended table)" refers to a table appended to the report.

Throughout this report a comma is used as the decimal separator.

Copy of marking plate



EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
4	GENERAL CONDITIONS FOR THE TESTS		
	Tests performed according to Cl. 4, e.g. nature of supply, sequence of testing, etc.		P
4.3	Irons with thermostat, test of 21.101 made before test of Cl. 11 (EN 60 335-2-3)		P
	Test of 22.103 made at the end of the test of Cl. 11 (EN 60 335-2-3)		P
4.8.1	For a.c. only, tested at rated frequency (EN 60 335-1:94)		P
	For a.c./d.c., tested at the most unfavourable supply (EN 60 335-1:94)		N
	Appliances not marked with rated frequency, tested with 50 Hz (EN 60 335-1:94)		N
	Appliances for a.c. with frequency range of 50 to 60 Hz, tested with 50 or 60 Hz, the most unfavourable (EN 60 335-1:94)		N
4.101	Irons tested as heating appliance, even if incorporating a motor (EN 60 335-2-3)		P
4.102	Cordless irons which also can be directly connected to the supply mains during ironing, tested in both modes of operation (EN 60 335-2-3)		N
6	CLASSIFICATION		
6.1	Protection against electric shock: Class I, II, III (EN 60 335-1:94) .....:	Class I	P
6.2	Protection against harmful ingress of water		P
7	MARKING		
7.1	Rated voltage or voltage range (V) .....:	230	P
	Single-phase appliances: 230 V covered (EN 60 335-1:94)		P
	Multi-phase appliances: 400 V covered (EN 60 335-1:94)		N
	Nature of supply	a.c.	P
	Rated frequency or frequency range (Hz) .....:	50	P
	Rated power input in W or kW .....:	max 2200W; with iron 2000W	P
	Manufacturer's or responsible vendor's name,	TECNOVAP	P

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
	trademark or identification mark		
	Model or type reference	CHATTANOOGA GAL 1	P
	Symbol for Class II		N
	IP number	IPX4 (only boiler)	P
	Stands of cordless irons marked with (EN 60 335-2-3):		
	- rated voltage or voltage range(V) .....:		N
	- rated power input or power input range (W) or (kW) .....:		N
7.2	Warning for stationary appliances		N
	Warning placed in vicinity of terminal cover		N
7.3	Range of rated values correctly marked		N
7.4	Voltage setting clearly discernible		N
7.5	Marking of rated input for each rated voltage		N
	Marking for upper and lower limits of rated input		N
7.6	Correct symbols used		P
7.7	Correct connection diagram, fixed to the appliance		N
7.8	Not for type Z attachment:		
	- marking of terminals for the neutral conductor (N)		N
	- marking of earthing terminals		P
	- marking not placed on removable parts		P
	- marking of terminal for single-pole protective device		N
7.9	Marking or placing of switches which may cause a hazard		P
7.10	Indications of switches and regulating devices by use of figures, letters or other		P
	The figure 0 indicates only OFF position, unless no confusion with the OFF position		P
7.11	Indication for direction of adjustment of controls		P
7.12	Instructions for safe use provided		P
	The instructions shall contain the substance of the following (EN 60 335-2-3):		
	- the user must not leave the iron unattended while connected to the supply		P
	- for steam irons and irons incorporating means for spraying water, the plug of the supply cord must be removed from the socket-outlet before the water		P

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
	reservoir is filled with water		
	- for pressurized steam irons, that the filling aperture must not be opened during use		N
	- instructions for safe refilling of the water reservoir given		P
	- for cordless irons, that the iron must be used with the stand provided		N
	- travel irons, not intended for regular use		N
	Appliances incorporating batteries which contain materials hazardous to the environment: statement in the instructions how to remove, scrap and dispose of the battery safely (EN 60 335-1:94)		N
	Statement in the instructions that the appliance must be disconnected from the supply (EN 60 335-1:94)		N
7.12.1	Sufficient details for installation or maintenance supplied		P
7.12.2	Means for disconnection with contact separation at least 3 mm		N
	Stationary appliance with supply cord and plug: statement in the instructions that the appliance is so positioned that the plug is accessible (EN 60 335-1:94)		N
7.12.3	Insulation in contact with parts exceeding 50 K; instruction		N
7.12.4	Information with regard to building-in:		
	- dimensions of space		N
	- dimensions and position of support		N
	- ventilation openings		N
	- connection/interconnection plug accessible		N
7.12.5	Replacement cord, type X attachment		N
	Replacement cord, type Y attachment		P
	Replacement cord, type Z attachment		N
7.13	Instructions and other texts in official language		P
7.14	Marking easily legible and durable		P
7.15	Marking on a main part		P
	Marking clearly discernible from outside		P
	Stationary appliance: name or trademark and model or type reference visible after installation		N

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
	Indication for switches and controls in vicinity of components; not on removable parts if misleading		P
	Steam irons with a separate water reservoir or boiler, total rated power input marked on the part containing the supply terminals or supply cord (EN 60 335-2-3)		P
7.16	Marking of a possible replaceable thermal link or fuse link clearly visible with regard to replacing the link		N
7.101	Separate stands marked with (EN 60 335-2-3):		
	- manufacturer's or responsible vendor's name, trademark or identification mark		P
	- model or type reference of the stand		P

8	PROTECTION AGAINST ACCESSIBILITY TO LIVE PARTS		
8.1	Adequate protection against accidental contact with live parts		P
8.1.1	All positions; detachable parts removed		P
	Removal of lamps: protection against contact with live parts		P
	Use of test finger: no contact with live parts		P
8.1.2	Use of test pin: no contact with live parts (EN 60 335-1:94)		P
	Test applied to openings in earthed metal enclosures having a coating such as enamel or varnish (see Interpretation Sheet I-SH 02) (EN 60 335-2-3)		N
	Connecting devices in stands of cordless irons are not regarded as socket-outlets (IEC 335-2-3:93)		N
8.1.3	Use of test probe: no contact with live parts of visible glowing heating elements		N
8.1.4	Accessible part not considered live if:		
	- extra-low a.c. voltage: peak values not exceeding 42,4 V		P
	- extra-low d.c. voltage: not exceeding 42,4 V		N
	- or separated from live parts by protective impedance, d.c. current not exceeding 2 mA		N
	- or separated from live parts by protective impedance, a.c. peak value not exceeding 0,7 mA		N

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
	- for peak value 42,4 V up to and including 450 V capacitance not exceeding 0,1 μF		N
	- for peak value 450 V up to and including 15 kV capacitance not exceeding 0,1 μF		N
8.1.5	Live parts protected at least by basic insulation before installation or assembly (checked by inspection and the test of 8.1.1) (EN 60 335-1:94):		
	- built-in appliances		N
	- fixed appliances		N
	- separate units		N
8.2	Class II appliances and constructions adequately protected against accidental contact with basic insulation and metal parts separated from live parts with only basic insulation		P
	Only possible to touch parts separated from live parts by double or reinforced insulation		P
	Appliances with batteries replaceable by the user, basic insulation between live parts and the inner surface of the battery compartment adequate (EN 60 335-1:94)		N
	If appliance can be operated without batteries: double or reinforced insulation used (EN 60 335-1:94)		N

10	POWER INPUT AND CURRENT		
10.1	Power input at rated voltage and normal operating temperature not deviating from rated input by more than shown in table; measured power input (W); rated input (W); deviation .....:	**Boiler + iron** 1910; 2000; -4,5% (+5/-10%) **Only iron** 775; 800; -3,1% (+5/-10%)	P
10.2	Current at normal operating temperature not deviating from rated current by more than shown in table; measured current at rated voltage under normal operation (A); rated current (A); deviation ..:		N

11	HEATING		
11.1	No excessive temperatures in normal use		P
11.2	Irons placed on their stands on the floor of a test corner and away from the walls (EN 60 335-2-3)		P
	Separate water reservoir or boiler of steam irons placed as near to the wall as possible (EN 60 335-2-3)		P

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
	Vented steam irons with a separate water reservoir, pressurized steam irons and instantaneous steam irons tested both with the water reservoir empty and filled, but without steam emission (EN 60 335-2-3)		P
	Irons, other than cordless irons, also tested with the soleplate in the horizontal position placed on three pointed metallic supports having a height of at least 100 mm (EN 60 335-2-3)		P
	Vented steam irons with a separate water reservoir, pressurized steam irons and instantaneous steam irons operated with the water reservoir or boiler filled (EN 60 335-2-3)		P
	One-third of the total length of the cord unreeled for appliances with an automatic cord reel, and temperature rise determined (EN 60 335-2-3):		
	- as near as possible to the hub of the reel		N
	- between the two outermost layers of the cord on the reel		N
	Cord reel incorporated in a part moved during ironing, the cord completely unreeled (EN 60 335-2-3)		N
	50 cm of the cord unwound for cord storage devices intended to partially accommodate the supply cord while the appliance is in operation (EN 60 335-2-3)		P
	Cord completely unwound for cord storage devices on parts moved during ironing (EN 60 335-2-3)		N
	Temperature rise of the stored part of the cord determined at the most unfavourable place (EN 60 335-2-3)		P
11.3	Temperature rises determined by thermocouples or resistance method		P
11.4	Heating appliances operated under normal operation at 1,15 times rated power input		P
11.5	Motor-operated appliances operated under normal operation at most unfavourable voltage between 0,94 and 1,06 times rated voltage		N
11.7	Irons operated until steady conditions established		P
	Vented steam irons with a separate water reservoir, pressurized steam irons and instantaneous steam irons tested with the iron placed on the pointed supports, steam emitted in cycles, each cycle having a period of 10 s with		P

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
	steam emission interrupted (EN 60 335-2-3)		
11.8	Protective devices do not operate		P
	Sealing compound not flowing out		P
	During the test with the iron placed on the pointed supports, only temperature rise of the insulation of internal wiring and flexible cords measured (EN 60 335-2-3)		P
	The temperature rise limits apply to the water reservoir and the hose of pressurized steam irons and instantaneous steam irons (EN 60 335-2-3)		P
	The temperature rise of the accessible surface of the hose complying with the temperature rise limits for handles which in normal use are held for short periods only (EN 60 335-2-3)		P
	Temperature rise limits of motors, transformers, components of electronic circuits and parts directly influenced by them may be exceeded when the appliance is operated at 1,15 times rated power input (EN 60 335-2-3)		P
	Temperatures not exceeding values in table 3 (EN 60 335-1:94)	(see appended table)	P
	Temperature rise limit for rubber or polyvinyl chloride insulation of internal and external wiring, including supply cords without T-marking, changed from 50 K to 60 K (EN 60 335-2-3)		P

13	LEAKAGE CURRENT		
13.1	Leakage current not excessive and electric strength adequate		P
13.2	Leakage current measured by means of circuit described in Annex G		P
	Leakage current measurements	(see appended table)	P
13.3	Electric strength test of insulation. See Note in Interpretation Sheet I-SH 02, August 1994	(see appended table)	P
	No breakdown during the test		P

15	MOISTURE RESISTANCE		
15.1	Enclosure provides the degree of moisture protection according to classification of appliance (EN 60 335-1:94)		P

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
15.1.1	Appliance subjected to test as specified	IPX4 (only boiler)	P
	Withstand electric strength test specified in 16.3		P
	No trace of water on insulation which can result in a reduction of distances and clearances below values specified in 29.1		P
15.1.2	Hand-held appliance turned continuously through the most unfavourable positions during the test		N
	Built-in appliance installed according to the manufacturer's instruction		N
	Other appliances tested as specified		P
15.2	Spillage of liquid does not affect the electrical insulation		P
	Overfilling test with additional amount of liquid (l), equal to 15% of the capacity of the container or 0,25 l, whichever is the greater, poured in steadily over a period of 1 min .....:	0,45l	P
	After the spillage test the appliance withstand the electric strength test of 16.3		P
	No trace of water on insulation which can result in reduction of distances and clearances below values specified in 29.1		P
	Steam irons, other than those with a separate water reservoir or boiler, placed in the filling position and filled, a further 0,1 l is steadily poured in over a period of 1 min (EN 60 335-2-3)		N
	The iron withstand electric strength test of 16.3 (EN 60 335-2-3)		N
	The iron also withstand the electric strength test of 16.3 repeated after 10 min (EN 60 335-2-3)		N
	The iron while still filled operated at rated power input for 1 min under normal operation (EN 60 335-2-3)		N
	The iron shall then withstand the electric strength test of 16.3 (EN 60 335-2-3)		N
	Spillage test also made on cordless irons with the iron on its stands, if the iron can be easily filled in that position, the iron being positioned on its stand as in normal position (EN 60 335-2-3)		N
15.3	Humidity treatment for 48 h		P
	Withstanding the test of Cl. 16		P

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
16	LEAKAGE CURRENT AND ELECTRIC STRENGTH		
16.1	No excessive leakage current and adequate insulation and electric strength (tests 16.2 and 16.3)		P
16.2	Leakage current measurements	(see appended table)	P
16.3	Electric strength tests (values in table 5). See Note in Interpretation Sheet I-SH 02, August 1994	(see appended table)	P
17	OVERLOAD PROTECTION OF TRANSFORMERS AND ASSOCIATED CIRCUITS		
	No excessive temperatures in transformer or associated circuits in event of short-circuits likely to occur in normal use		P
	Appliance supplied with 1,06 or 0,94 times rated voltage and the most unfavourable short-circuit or overload likely to occur in normal use applied	(see appended table)	P
	Temperature rise of insulation of the conductors of safety extra-low voltage circuits not exceeding the relevant value specified in table 3 by more than 15 K		P
	Temperature of the winding not exceeding the value specified in table 6		P
19	ABNORMAL OPERATION		
19.1	The risk of fire or mechanical damage under abnormal or careless operation obviated		P
	Electronic circuits so designed and applied that a fault will not render the appliance unsafe		P
	For irons, compliance is checked by the tests of 19.4, 19.6 and 19.101 as applicable, and for separate boilers 19.5 (EN 60 335-2-3)		P
19.2	Test of appliance with heating elements with restricted heat dissipation; test voltage (V): power input of 0,85 times rated power input .....:		N
19.3	Test of 19.2 repeated; test voltage (V): power input of 1,24 times rated power input .....:		N
19.4	Test conditions as in Cl. 11, at rated power input, any control limiting the temperature during tests of Cl. 11 short-circuited (EN 60 335-2-3)		P

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
	Steam irons, any control limiting the pressure during tests of Cl. 11 rendered inoperative (EN 60 335-2-3)		P
	Steam irons, tested in the most unfavourable way, with or without water (EN 60 335-2-3)		P
	Irons without thermostats operated continuously (EN 60 335-2-3)		N
	Test made only with the iron on its stand (EN 60 335-2-3)		P
19.5	Test of 19.4 repeated on Class 0I and I appliances with tubular sheathed or embedded heating elements. No short-circuiting, but one end of the element connected to the elements sheath (EN 60 335-1:94)		P
	The test repeated with reversed polarity and the other end of the heating element connected to the sheath		P
19.6	Appliances with PTC heating elements tested as specified. Supplied at rated voltage, establishing steady conditions, then the voltage increased in steps by 5% until 1,5 times rated voltage is reached or until the heating element ruptures		N
19.7	Stalling test by locking the rotor if the locked rotor torque is smaller than the full load torque or locking moving parts (EN 60 335-1:94)		P
	Locked rotor, motor capacitors open circuited or short-circuited, if required		N
	Appliances with timer or controller supplied with rated voltage for each of the tests, for a period equal to the maximum period allowed		N
	Test period at rated voltage (s or min) or until steady state conditions established .....:		N
	Winding temperatures not exceeding limiting temperature; type of appliance; insulation class; measured temperature (°C) .....:	Pump Cl.F 161°C (240°C)	P
	Motor not kept switched on by hand, the test made for 5 min (EN 60 335-2-3)		P
19.8	Three-phase motors operated at rated voltage with one phase disconnected		N
19.9	Running overload test of appliance incorporating motors at rated voltage; motor windings insulation class; measured temperature (°C); allowed temperature (°C) (EN 60 335-1:94) .....:		N

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
19.10	Series motor operated at 1,3 times rated voltage for 1 min		N
	Parts not ejected from the appliance during test (EN 60 335-1:94)		N
19.11	Electronic circuits, compliance checked by evaluation of the fault conditions specified in 19.11.2 for all circuits or parts of circuits, unless they comply with the conditions specified in 19.11.1		P
19.11.1	Before applying the fault conditions a) to f) in 19.11.2, it is checked if circuits or parts of circuit meet both of the following conditions:		
	- the electronic circuit is a low-power circuit, that is, the maximum power at low-power points does not exceed 15 W according to the tests specified		N
	- the protection against electric shock, fire hazard, mechanical hazard or dangerous malfunction in other parts of the appliance does not rely on the correct functioning of the electronic circuit		N
19.11.2	Fault conditions applied one at a time, the appliance operated under conditions specified in Cl. 11, but supplied at rated voltage, the duration of the tests as specified:		
	a) short-circuit of creepage distances and clearances between live parts of different potential, if these distances are less than the values specified in 29.1, unless the relevant part is adequately encapsulated		P
	b) open circuit at the terminals of any component		P
	c) short-circuit of capacitors, unless they comply with IEC 384-14 or 14.2 of IEC 65		P
	d) short-circuit of any two terminals of an electronic component, other than integrated circuits. This fault condition is not applied between the circuits of an optocoupler		P
	e) failure of triacs in the diode mode		N
	f) failure of an integrated circuit. In this case the possible hazardous situations of the appliance are assessed to ensure that safety does not rely on the correct functioning of such a component		P
	During and after each test the following is checked:		
	- the temperature rise of the windings do not exceed the values specified in table 6		P
	- the appliance complies with the conditions specified in 19.13		P

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
	- live parts not accessible to the test finger or test pin as specified in Cl. 8		P
	- any current flowing through protective impedance not exceeding the limits specified in 8.14		N
	If a conductor of a printed board becomes open circuited, the appliance is considered to have withstood the particular test, provided all three of the following conditions are met:		
	- the material of the printed circuit board withstands the burning test of 20.1 of IEC 65		N
	- any loosened conductor does not reduce the creepage distances or clearances between live part and accessible metal parts		N
	- the appliance withstands the tests of 19.11.2 with open circuited conductor bridged		N
19.12	If the safety of the appliance for any of the fault conditions specified in 19.11.2 depends on the operation of a miniature fuse-link complying with IEC 127, the test is repeated, measuring the current flowing through the fuse-link; measured current (A); rated current of the fuse-link (A) .....:		N
19.13	During the tests the appliance does not emit flames, molten metal, poisonous or ignitable gas in hazardous amounts		P
	Temperature rises not exceeding the values shown in table 7		P
	Enclosures not deformed to such an extent that compliance with Cl. 8 is impaired		P
	Appliance still operable and complying with 20.2		P
	Appliance, other than Class III, withstands the electric strength test of 16.3, however, the test voltage being:		
	- basic insulation: 1000 V		P
	- supplementary insulation: 2750 V		N
	- reinforced insulation: 3750 V		P
19.101	Cordless irons operated under normal operation at rated power input until the thermostat operates for the first time (EN 60 335-2-3)		N
	The iron then placed on its stand in the position that most adversely effects the material of the stand (EN 60 335-2-3)		N

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
20	STABILITY AND MECHANICAL HAZARDS		
20.1	Irons shall have adequate stability (EN 60 335-2-3)		P
	Irons incorporating a stand, placed on their stand on an inclined plane at an angle of 10E to the horizontal, the cord resting on the plane in the most unfavourable position (EN 60 335-2-3)		P
	Irons provided with a separate stand, placed on the stand on a plane inclined at an angle of 15E to the horizontal (EN 60 335-2-3)		P
	Irons which are filled with liquid by the user in normal use, tested empty/filled with the most unfavourable quantity of water (EN 60 335-2-3) ....:		N
	Irons overturned or slipped off the stand in one or more positions, tested as specified in Cl. 11 in all positions (EN 60 335-2-3)		N
	Temperature rise does not exceed values shown in table 7 (EN 60 335-2-3)		N
20.2	Moving parts adequately arranged or enclosed as to provide protection against personal injury		N
	Protective enclosures, guards and similar parts are non-detachable		N
	Adequate mechanical strength and fixing of protective enclosures		N
	Self-resetting thermal cut-outs and overcurrent protective devices not causing a hazard, if unexpectedly reclosed		N
	Not possible to touch dangerous moving parts with test finger		N
21	MECHANICAL STRENGTH		
	Appliance has adequate mechanical strength and is constructed as to withstand rough handling		P
	No damage after three blows applied to various parts of the enclosure, impact energy 0,5 ± 0,04 J		P
	If necessary, supplementary or reinforced insulation subjected to the electric strength test of 16.3		N
	If necessary, repetition of groups of three blows on a new sample		N

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
22	CONSTRUCTION		
22.1	Appliance marked with the first numeral of the IP system: relevant requirements of IEC 529 are fulfilled		N
22.2	Stationary appliance: means to provide all-pole disconnection from the supply provided, the following means being available:		
	- a supply cord fitted with a plug		N
	- a switch complying with 24.3		N
	- a statement in the instruction sheet that a disconnection incorporated in the fixed wiring is to be provided		N
	- an appliance coupler		N
	Single-phase Class I appliance with heating elements, intended to be permanently connected to fixed wiring, incorporating single-pole switches or single-pole protective devices for the disconnection of the heating element(s): the switches/devices being connected in the phase conductor (EN 60 335-1:94)		N
22.3	Appliance provided with pins: no undue strain on socket-outlets		P
	Applied torque not exceeding 0,25 Nm		N
22.4	Appliance for heating liquids and appliance causing undue vibration not provided with pins for insertion into socket-outlets		P
22.5	No risk of electric shock when touching the pins of the plug		P
22.6	Electrical insulation not affected by condensing water or leaking liquid		P
	Electrical insulation of Class II appliances not affected in case of a hose rupture or seal leak		N
22.7	Pressurized steam irons and instantaneous steam irons shall incorporate adequate safeguards against the risk of excessive pressure (EN 60 335-2-3)		P
	No jets of steam or hot water through protective devices, affecting the electrical insulation or exposing the user to a hazard (EN 60 335-2-3)		P
	With all pressure regulating devices in pressurized steam irons rendered inoperative, the pressure not	5,5 bar (4,3 bar)	P

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
	increased by more than 200 kPa (2 bars) from the pressure measured during the test of Cl. 11 (EN 60 335-2-3)		
	Pressure limiting protective device rendered inoperative, and (EN 60 335-2-3)		P
	the pressure in the boiler raised hydraulically to five times the pressure measured originally, or (EN 60 335-2-3)	21,5 bar	P
	twice the pressure measured with the pressure regulating device operating during the test of Cl. 11 rendered inoperative (EN 60 335-2-3)		N
	No leakage from the water reservoir (EN 60 335-2-3)		P
	Pressurized steam iron with steam supply regulating device in the boiler, operated with pressure regulating devices rendered inoperative, all vents in the soleplate sealed and the steam regulating device opened (EN 60 335-2-3)		N
	No leakage from the hose, except at an intentionally weak place within the boiler (EN 60 335-2-3)		N
	The test repeated on another appliance, which leaks in the same way (EN 60 335-2-3)		N
	Instantaneous steam irons, all vents in the soleplate sealed and the pressure in the water reservoir raised hydraulically until the pressure limiting protective device operates (EN 60 335-2-3)		N
	Pressure not exceeding 50 kPa (0,5 bar) (EN 60 335-2-3)		N
	Outlet through the protective device sealed and the pressure raised to 100 kPa (1 bar) and maintained for 1 min (EN 60 335-2-3)		N
	No leakage from the container (EN 60 335-2-3)		N
22.8	Electrical connections not subject to pulling during cleaning of compartments to which access can be gained without the aid of a tool, and which are likely to be cleaned in normal use		N
22.9	Insulation, internal wiring, windings, commutators and slip rings not exposed to oil, grease or similar substances		N
	Adequate insulating properties of oil or grease to which insulation is exposed		N
22.10	Location or protection of reset buttons of non-self-		P

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
	resetting controls is so that accidental resetting is unlikely		
22.11	Reliable fixing of non-detachable parts which provide the necessary degree of protection against electric shock, moisture or contact with moving parts		P
	Obvious locked position of snap-in devices used for fixing such parts		N
	No deterioration of the fixing properties of snap-in devices used in parts which are likely to be removed during installation or servicing		N
	Tests		P
22.12	Handles, knobs etc. fixed in a reliable manner		P
	Fixing in wrong position of handles, knobs etc. indicating position of switches or similar components not possible		P
	Axial force 15 N applied to parts, the shape of which being so that an axial pull is unlikely to be applied		P
	Axial force 30 N applied to parts, the shape of which being so that an axial pull is likely to be applied		P
22.13	Unlikely that handles, when gripped as in normal use, make the operators hand touch parts having a temperature rise exceeding the value specified for handles which are held for short periods only		P
22.14	No ragged or sharp edges creating a hazard for the user in normal use, or during user maintenance		P
	No exposed pointed ends of self tapping screws etc., liable to be touched by the user in normal use or during user maintenance		P
22.15	Storage hooks and the like for flexible cords smooth and well rounded		P
22.16	Automatic cord reels cause no undue abrasion or damage to the sheath of the flexible cord, no breakage of conductors strands, no undue wear of contacts		N
	Cord reel tested with 6000 operations, as specified		N
	Electric strength test of 16.3, voltage of 1000 V applied		N
22.17	Spacers not removable from the outside by hand or by means of a screwdriver or a spanner		N

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
22.18	Current-carrying parts and other metal parts resistant to corrosion under normal conditions of use		P
22.19	Driving belts not used as electrical insulation		N
22.20	Direct contact between live parts and thermal insulation effectively prevented, unless material used is non-corrosive, non-hygroscopic and non-combustible		P
22.21	Wood, cotton, silk, ordinary paper and fibrous or hygroscopic material not used as insulation, unless impregnated		N
22.22	Asbestos not used in the construction of the appliance		P
	Asbestos is used, but the liberation of dust of impregnated asbestos or of asbestos fibres into the surrounding air adequately prevented		N
22.23	Oils containing polychlorinated biphenyl (PCB) not used		P
22.24	Bare heating elements adequately supported		N
	In case of rupture, the heating conductor is unlikely to come in contact with earthed metal parts or accessible metal parts		N
22.25	Sagging heating conductors cannot come into contact with accessible metal parts		N
22.26	The insulation between parts operating at safety extra-low voltage and other live parts complies with the requirements for double or reinforced insulation		N
22.27	Parts connected by protective impedance separated by double or reinforced insulation		N
22.28	Metal parts of Class II appliances conductively connected to gas pipes or in contact with water: separated from live parts by double or reinforced insulation		N
22.29	Class II appliances permanently connected to fixed wiring so constructed that the required degree of protection against electric shock is maintained after installation		N
22.30	Parts serving as supplementary or reinforced insulation fixed so that they cannot be removed without being seriously damaged, or		N
	so constructed that they cannot be replaced in an incorrect position, and so that if they are omitted, the appliance is rendered inoperable or manifestly		P

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
	incomplete		
22.31	Creepage distances and clearances over supplementary and reinforced insulation not reduced below values specified in 29.1 as a result of wear		N
	Creepage distances and clearances over supplementary or reinforced insulation not reduced to less than 50% of values specified in 29.1 if wires, screws etc. becomes loose		P
22.32	Supplementary and reinforced insulation designed or protected against deposition of dirt or dust		N
	Ceramic material not tightly sintered, similar material or beads alone not used as supplementary or reinforced insulation (EN 60 335-1:94)		N
	Supplementary insulation of natural or synthetic rubber resistant to ageing, or arranged and dimensioned so that creepage distances are not reduced below values specified in 29.1		N
	Oxygen bomb test at 70 °C for 96 h and 16 h at room temperature		N
22.33	Conductive liquids which are or may become accessible in normal use are not in direct contact with live parts		P
	Conductive liquids are not in direct contact with basic insulation or reinforced insulation in Class II constructions		P
	Conductive liquids in contact with live parts, not in direct contact with reinforced insulation		P
22.34	Shafts of operating knobs, handles, levers etc. not live, unless the shaft is not accessible when the part is removed		P
22.35	Handles, levers and knobs, held or actuated in normal use, not becoming live in the event of an insulation fault		P
	Such parts being of metal, and their shafts or fixings are likely to become live in the event of an insulation fault, they are either adequately covered by insulation material, or their accessible parts are separated from their shafts or fixings by supplementary insulation		P
	This requirement does not apply to handles, levers and knobs on stationary appliances other than those of electrical components, provided they are either reliably connected to an earthing terminal or		N

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
	earthing contact, or separated from live parts by earthed metal		
22.36	Handles continuously held in the hand in normal use are so constructed that when gripped as in normal use, the operators hand is not likely to touch metal parts, unless they are separated from live parts by double or reinforced insulation		P
22.37	Capacitors in Class II appliances not connected to accessible metal parts, unless complying with 22.42		N
	Metal casings of capacitors in Class II appliances separated from accessible metal parts by supplementary insulation, unless complying with 22.42		N
22.38	Capacitors not connected between the contacts of a thermal cut-out		N
22.39	Lamp holders only used for the connection of lamps		N
22.40	Motor-operated appliances and combined appliances, intended to be moved while in operation or which have accessible moving parts, are fitted with a switch to control the motor (EN 60 335-1:94)		N
	The actuating member of this switch easily visible and accessible (EN 60 335-1:94)		N
22.Z1	Appliance enclosure not shaped and decorated so that the appliance is likely to be treated as a toy by children (EN 60 335-1:94)		P
22.Z2	Fully halogenated chlorofluorocarbons (CFC's) not used (EN 60 335-1:94)		P
22.41	Mercury switches mounted according to the requirement		N
22.42	Protective impedance consisting of at least two separate components		N
	Values specified in 8.1.4 not exceeded if any one of the components is short-circuited or open circuited		N
22.43	Appliances adjustable for different voltages, accidental changing of the setting of the voltage unlikely to occur		N
22.101	Irons shall be provided with a stand (EN 60 335-2-3)		P
22.102	Device incorporated in the iron in order to comply		P

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
	with 19.4 is of the non-self-resetting type (EN 60 335-2-3)		
	This device is only accessible by means of a tool (EN 60 335-2-3)		P
	For steam irons with a separate boiler, the water reservoir incorporates at least one non-self-resetting thermal cut-out (EN 60 335-2-3)		P
	The thermal cut-out only accessible by means of a tool (EN 60 335-2-3)		P
22.103	Steam irons so constructed that there is no spillage of water or sudden jets of steam or hot water, likely to expose the user to a hazard (EN 60 335-2-3)		P
	When removing filling cap of boilers, pressure is relieved in a controlled manner (EN 60 335-2-3)		N
22.104	Pressure limiting protective devices operating during the tests of 19.4 and 22.7 shall have an inlet aperture at least 5 mm in diameter or 20 mm^2 in area and a width of at least 3 mm (EN 60 335-2-3)		P
	The area of the aperture at the outlet is not less than that of the aperture at the inlet (EN 60 335-2-3)		P
22.105	Connection contacts of cordless irons so constructed that any electrical or mechanical failure occurring in normal use will not give rise to a hazard (EN 60 335-2-3)		N
	Supplied at rated voltage, and with an external load such that the current is 1,1 times the rated current, the iron withdrawn 50 000 times from its stand at a rate of 10 times per min (EN 60 335-2-3)		N
	Test continued 50 000 times without current flowing (EN 60 335-2-3)		N
	The iron is fit for further use after the test, and (EN 60 335-2-3)		N
	compliance with 8.1, 16.3 and 29.1 not impaired (EN 60 335-2-3)		N
22.106	The necessary force to withdraw the connector from the iron is at least 30 N for cordless irons which may be directly connected to the supply mains (EN 60 335-2-3)		N

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
23	INTERNAL WIRING		
23.1	Wireways smooth and free from sharp edges		P
	Wires protected against contact with burrs, cooling fins etc.		P
	Wire holes in metal well rounded or provided with bushings		N
	Wiring effectively prevented from coming into contact with moving parts		N
23.2	Beads etc. on live wires cannot change their position, and are not resting on sharp edges or corners		N
	Beads inside flexible metal conduits contained within an insulating sleeve		N
23.3	Electrical connections and internal conductors movable relatively to each other not exposed to undue stress		P
	Flexible metallic tubes not causing damage to insulation of conductors		N
	Open-coil springs not used		
	Adequate insulating lining provided inside a coiled spring, the turns of which touch one another		N
	No damage after 10 000 flexings		N
	Electric strength test, 1000 V between live parts and metal parts		N
23.4	Bare internal wiring sufficiently rigid and fixed		N
23.5	The basic insulation of internal wiring withstanding the electrical stress likely to occur in normal use (EN 60 335-1:94)		P
	No breakdown when a voltage of 2000 V is applied for 15 min between the conductor and metal foil wrapped around the insulation		N
23.6	Sleeving used as supplementary insulation on internal wiring retained in position by positive means		N
23.7	Only the colour combination green/yellow used for earthing conductors		P
23.8	Aluminium wires not used for internal wiring		N
23.9	No lead-tin soldering of stranded conductors where they are subject to contact pressure, unless		P

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
	clamping means so constructed that there is no risk of bad contact due to cold flow of the solder		N
24	COMPONENTS		
24.1	Components comply with safety requirements in relevant IEC standards (EN 60 335-1:1994)		P
24.1.1	Capacitors likely to be subjected to the supply mains voltage and used for radio interference suppression or voltage dividing, comply with Annex ZC (EN 60 335-1:94)		P
	Small lampholders: compliance with requirements for E10 lampholders		N
	Isolating transformers and safety isolating transformers comply with IEC 742		P
	Safety isolating transformers tested with the appliance comply with Annex ZD (EN 60 335-1:94)		N
	Appliance couplers for IPx0 appliances: compliance with IEC 320		N
	Automatic controls: compliance with IEC 730, unless tested with the appliance		P
	Other appliance couplers: compliance with IEC 309		N
	Switches: compliance with IEC 1058, unless tested with the appliance (EN 60 335-1:94)		P
24.1.2	Automatic controls complying with IEC 730: additional tests according to this standard and 11.3.5 to 11.3.8 and Cl. 17 of IEC 730 as type 1 controls, the cycles of operation being:		
	- thermostats: 10 000		P
	- temperature limiters: 1000		N
	- self-resetting thermal cut-outs: 300		N
	- non-self-resetting thermal cut-outs: 30		P
	- energy regulators: 3000 (EN 60 335-1:94)		N
	- timers: 10 000 (EN 60 335-1:94)		N
24.1.3	For switches, the test of 17.2.7 of IEC 1058-1 carried out for 10 000 cycles of operation (EN 60 335-1:94)		P
	Switches not separately tested and found to comply with IEC 1058-1 under conditions covering those occurring in the appliance, comply with Annex ZE (EN 60 335-1:94)		N

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
	Switches for no-load-operation and operable only with the aid of a tool, are not subjected to the tests of Cl. 17 of IEC 1058-1 (EN 60 335-1:94)		N
	This applies also to switches operated by hand, and with interlock for no-load-operation (EN 60 335-1:94)		N
	Switches without this interlock subjected to the test of 17.2.7 of IEC 1058-1 for 100 cycles of operation (EN 60 335-1:94)		N
	Switches controlling steam or water emission subjected to 50 000 cycles of operation (EN 60 335-2-3)		P
24.1.4	Components marked with their operating characteristics are used in the appliance in accordance with these markings		P
	Components which have to comply with other standard is tested separately, according to the relevant standard		P
	Components used within the limits of its marking, tested in accordance with conditions occurring in the appliance		P
	Components not marked, or not used in accordance with its marking, or no IEC standard exists, tested under the conditions occurring in the appliance		N
	Components not mentioned in table 3 tested as part of the appliance		N
24.1.5	Voltage across capacitors in series with a motor winding does not exceed 1,1 times rated voltage, when the appliance is supplied at 1,1 times rated voltage under minimum load		N
	List of components	(see appended table)	P
24.2	No switches or automatic controls in flexible cords		P
	No devices causing the protective device in the fixed wiring to operate in the event of a fault in the appliance		P
	No thermal cut-outs which can be reset by soldering		P
24.3	Switch intended for all-pole disconnection of stationary appliances is directly connected to the supply terminals, having a contact separation of at least 3 mm in each pole		N
24.4	Plugs and socket-outlets for heating elements and		P

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
	extra-low voltage circuits, not interchangeable with plugs, and		
	socket-outlets or with connectors and appliance inlets complying with IEC 83 or IEC 320, respectively		P
24.5	Plugs and socket-outlets etc. for interconnection cords, not interchangeable with plugs and socket-outlets or connectors and appliance inlets complying with IEC 83 or IEC 320, respectively, if direct supply from the mains could give rise to a hazard		P
24.6	Motors connected to the supply mains and having inadequate basic insulation for the rated voltage of the appliance, comply with the requirements of Annex F		N
	The components are listed on an appended table		N
25	SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CORDS		
25.1	Appliance not intended for permanent connection to fixed wiring, means for connection to the supply:		
	- supply cord fitted with a plug		P
	- an appliance inlet having at least the same degree of protection against moisture as required for the appliance		N
	- pins for insertion into socket-outlets		N
25.2	Appliance not provided with more than one means of connection to the supply		P
	Stationary appliance for multiple supply may be provided with more than one means of connection, provided electric strength test of 1250 V for 1 min between each means of connection causes no breakdown		N
25.3	Connection of supply wires for appliance intended to be permanently connected to fixed wiring possible after the appliance has been fixed to its support		N
	Appliance provided with a set of terminals for the connection of cables or fixed wiring, cross-sectional areas specified in 26.2		N
	Appliance provided with a set of terminals allowing the connection of a flexible cord		N
	Appliance provided with a set of terminals and		N

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
	cable entries, conduit entries, knock-outs or glands, allowing connection of appropriate type of cable or conduit		
25.4	Cable and conduit entries, rated current of appliance not exceeding 16 A, dimensions according to table 8 (EN 60 335-1:94)		N
	Introduction of conduit or cable does not affect the protection against electric shock or reduce creepage distances and clearances below values specified in 29.1		N
25.5	Method for assemble supply cord with the appliance:		
	- type X attachment		N
	- type Y attachment		P
	- type Z attachment, allowed for travel irons and cordless irons (EN 60 335-2-3)		N
	- type Z attachment, not allowed for travel irons and cordless irons which may also be directly connected to the supply mains during ironing (EN 60 335-2-3)		N
	Type X attachment: specially prepared cord		N
	Type X attachment not used for flat twin tinsel cord		N
25.6	Plugs fitted with only one flexible cord		P
	Supply cords of single-phase portable appliances having a rated current not exceeding 16 A, provided with a plug complying with the following Standard Sheets of IEC 83 (EN 60 335-1:94):		
	- for Class I appliances: Standard Sheet C2b, C3b or C4 (EN 60 335-1:94)		P
	- for Class II appliances: Standard Sheet C5 or C6 (EN 60 335-1:94)		N
25.7	Appliance supply cord not lighter than:		
	- braided cord (245 IEC 51)		N
	- ordinary tough rubber sheathed cord (245 IEC 53)		N
	- ordinary polychloroprene sheathed flexible cord (245 IEC 57) (EN 60 335-1:94)	H05VV-F	P
	- flat twin tinsel cord (227 IEC 41)		N
	- light polyvinyl chloride sheathed cord (227 IEC 52), appliance not exceeding 3 kg		N
	- ordinary polyvinyl chloride sheathed cord (227 IEC 53), appliance exceeding 3 kg		N

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
	(EN 60 335-1:94)		
	Temperature rise of external metal parts exceeding 75 K, PVC cord not used		N
	PVC cord used: appliance so constructed that the supply cord is not likely to touch external metal parts in normal use		N
	PVC supply cord appropriate for higher temperatures, type Y or type Z attachment used		N
	Braided cords may be used (EN 60 335-2-3)		N
	PVC cords only allowed for the connection to the supply mains of stands of cordless irons and separate water reservoir or boiler of steam irons (EN 60 335-2-3)		P
25.8	Nominal cross-sectional area of supply cords according to table 9; rated current (A); cross-sectional area (mm^2) (EN 60 335-1:94) .....:	max 9,6A; 3x1,5mm^2	P
25.9	Supply cord not in contact with sharp points or edges		P
25.10	Green/yellow core for earthing purposes in Class I appliance		P
25.11	Conductors of supply cords not consolidated by lead-tin soldering where they are subject to contact pressure, unless		N
	clamping means so constructed that there is no risk of bad contacts due to cold flow of the solder		P
25.12	Moulding the cord to part of the enclosure does not damage the insulation of the supply cord		N
25.13	Inlet opening provided with a bushing, or is so constructed, that there is no risk of damage to the supply cord when introduced		P
25.13.1	Inlet bushing so shaped as to prevent damage to the supply cord		N
	Inlet bushing not detachable		N
25.13.2	At inlet openings, the insulation between the conductor of a supply cord and the enclosure of the appliance is consisting of the insulation of the conductor, and in addition:		
	- for Class 0 appliances: at least one separate insulation		N
	- for other appliances: at least two separate insulations		P
	Only one separate insulation is required if the enclosure at the inlet opening is of insulating		P

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
	material		
	The separate insulation consists of:		
	- the sheath of a supply cord at least equivalent to that of a cord complying with IEC 227 or 245		P
	- a lining or bushing of insulating material complying with the requirements of 29.2 for supplementary insulation		N
25.14	Supply cords adequately protected against excessive flexing		P
	Flexing test; applied force (N); number of flexings .:	20N; 20000	P
	The test does not result in:		
	- short-circuit between the conductors		P
	- breakage of more than 10% of the strands of any conductor		P
	- separation of the conductor from its terminal		P
	- loosening of any cord guard		P
	- damage, within the meaning of the standard, to the cord or the cord guard		P
	- broken strands piercing the insulation and becoming accessible		P
	For steam irons with a separate water reservoir or boiler, the test made on the steam hose and the interconnection cord together, but (EN 60 335-2-3)		P
	if contained in one sheath or otherwise attached to each other, assembly not turned through an angle of 90E (EN 60 335-2-3)		P
	After the test (EN 60 335-2-3):		
	- no loosening of the hose		P
	- no damage to the hose to such an extent that compliance with the standard is impaired		P
	- no leakage from the hose		P
25.15	Conductors of the supply cord relieved from strain, twisting and abrasion by use of cord anchorages		P
	The cord cannot be pushed into the appliance to such an extent that the cord or internal parts of the appliance can be damaged		P
	Pull and torque test of supply cord, values shown in table 10: pull (N); torque (Nm) (not on automatic cord reel) .....:	100N; 0,35Nm	P

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
	Max. 2 mm displacement of the cord, and conductors not moved more than 1 mm in the terminals		P
	Creepage distances and clearances not reduced below values specified in 29.1		P
25.16	Cord anchorages for type X attachments so constructed and located that:		
	- replacement of the cord is easily possible		N
	- it is clear how the relief from strain and the prevention of twisting are obtained		N
	- they are suitable for different types of cord		N
	- cord cannot touch the clamping screws of cord anchorage if these screws are accessible, unless separated from		N
	- accessible metal parts by supplementary insulation		N
	- the cord is not clamped by a metal screw which bears directly on the cord		N
	- at least one part of the cord anchorage securely fixed to the appliance, unless part of a specially prepared cord		N
	- screws which have to be operated when replacing the cord do not fix any other component, if applicable		N
	- if labyrinths can be bypassed the test of 25.15 is nevertheless withstood		N
	- for Class 0, 0I and I appliances: they are of insulating material or are provided with an insulating lining, unless a failure of the insulation of the cord does not make accessible metal parts live		N
	- for Class II appliances: they are of insulating material, or if of metal, they are insulated from accessible metal parts by supplementary insulation		N
25.17	Adequate cord anchorages for type Y and Z attachment		P
25.18	Cord anchorages only accessible with the aid of a tool, or		P
	so constructed that the cord only can be fitted with the aid of a tool		P
25.19	Type X attachment, glands not used as cord anchorage in portable appliances		N
	Tying the cord into a knot or tying the cord with		N

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
	string not used		
25.20	Conductors of the supply cord for type Y and Z attachment adequately additionally insulated		P
25.21	Space for supply cable for fixed wiring or supply cord for type X attachment constructed to permit checking of conductors with respect to correct positioning and connection before fitting any cover, no risk of damage, no contact with accessible metal parts if a conductor becomes loose, etc.		N
	For portable appliances, the uninsulated end of a conductor prevented from any contact with accessible metal parts, unless the end of the cord is such that the conductors are unlikely to slip free		N
25.22	Appliance inlet:		
	- live parts not accessible during insertion or removal		N
	- connector can be inserted without difficulty		N
	- the appliance is not supported by the connector		N
	- is not for cold conditions if temperature rise of external metal parts exceeds 75 K, unless the supply cord is not likely to touch such metal parts		N
25.23	Interconnection cords comply with the requirements for the supply cord, except as specified		P
	If necessary, electric strength test of 16.3		P
25.24	Interconnection cords not detachable without the aid of a tool		P

26	TERMINALS FOR EXTERNAL CONDUCTORS		
26.1.1	Appliances with type X attachment and appliances for connection to fixed wiring provided with terminals in which connection is made by means of screws, nuts or equally effective devices		N
	Screws and nuts serve only to clamp supply conductors, except		N
	internal conductors, if so arranged that they are unlikely to be displaced when fitting the supply conductors		N
26.1.2	For type X attachment soldered connections used, the conductor so positioned or fixed that reliance is not placed on soldering alone		N

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
	Soldering alone used, barriers provided, creepage distances and clearances satisfactory if the conductor becomes free		N
	For type Y and Z attachment: soldered, welded, crimped and similar connections used		P
	For Class II appliances: the conductor so positioned or fixed that reliance is not placed on soldering, welding or crimping alone		N
	For Class II appliances: soldering, welding or crimping alone used, barriers provided, creepage distances and clearances satisfactory if the conductor becomes free		N
26.2	Terminals for type X attachment and for connection to fixed wiring suitable for connection of conductors with required cross-sectional area according to table 11; rated current (A); nominal cross-sectional area (mm^2) .....:		N
	Terminals only suitable for a specially prepared cord		N
26.3	Terminals for the supply cord suitable for their purpose		P
	Terminals with screw clamping and screwless terminals not used for flat twin tinsel cords, unless conductors ends fitted with a device suitable for screw terminals		P
	Pull test of 5 N to the connection		P
26.4	Terminals for type X attachment and those for connection to fixed wiring so fixed that when tightening or loosening the clamping means:		
	- the terminal does not loosen		N
	- internal wiring is not subjected to stress		N
	- creepage distances and clearances are not reduced below the values in 29.1		N
26.5	Terminals for type X attachment and for connection to fixed wiring so constructed that the conductor is clamped between metal surfaces with sufficient contact pressure and without damaging the conductor		N
26.6	Terminals for type X attachment, no special preparation of conductors required, and so constructed and placed that conductors prevented from slipping out, except those with a specially prepared cord and those for connection to fixed wiring		N

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
26.7	Terminals of the pillar type constructed and located as specified		N
26.8	Terminals for the connection to fixed wiring located close to each other, including the earthing terminal		P
26.9	Terminals for type X attachment accessible after removal of a cover or part of the enclosure		N
26.10	Terminals not accessible without the aid of a tool		P
26.11	Terminals for type X attachment so located or shielded that if a wire of a stranded conductor escapes, no risk of accidental connection between live parts and accessible metal parts,		N
	and for Class II construction, between live parts and metal parts separated from accessible metal parts by supplementary insulation only		N
	Stranded conductor test, 8 mm insulation removed		N
27	PROVISION FOR EARTHING		
27.1	Accessible metal parts of Class 0I and I appliances, permanently and reliably connected to an earthing terminal		P
	Earthing terminals not connected to neutral terminal		P
	Class 0, II and III appliance have no provision for earthing		N
27.2	Screw clamping terminals comply with Cl. 26		P
	Screwless terminals comply with IEC 998-2-2 (EN 60 335-1:94)		N
	Terminals used for the connection of external equipotential bonding conductors allow connection of conductors of 2,5 to 6 mm□, and		N
	do not provide earthing continuity between different parts of the appliance		N
	Conductors cannot be loosened without the aid of a tool		P
	Clamping means adequately secured against accidental loosening		P
27.Z1	In hand-held appliances printed conductors of printed circuit boards not used to provide earthing continuity (EN 60 335-1:94)		N
	In other appliances at least two tracks are used		N

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
	with independent soldering points, and		
	the appliance complies with the requirements of 27.5 for each circuit, and		N
	the material of the printed board complies with IEC 249-2-4 or IEC 249-2-5		N
27.3	Earth connection "made before" and "separated after" current-carrying connections		P
	Current-carrying conductors become taut before earthing conductor, if the cord slips out of the cord anchorage		P
27.4	No risk of corrosion resulting from contact between metal of earthing terminal and other metal		P
	Adequate resistance to corrosion of coated or uncoated parts providing earthing continuity, other than parts of a metal frame or enclosure		P
	Parts of steel providing earthing continuity provided at the essential areas with an electroplated coating, thickness at least 5 μm		P
	Adequate protection against rusting of parts of coated or uncoated steel, only intended to provide or transmit contact pressure		P
	In case of aluminium alloys precautions taken to avoid risk of corrosion		N
27.5	Low resistance of connection between earthing terminal and earthed metal parts		P
	Resistance not exceeding 0,1 Ω at the specified low-resistance test		P

28	SCREWS AND CONNECTIONS		
28.1	Fixings and electrical connections withstand mechanical stresses		P
	Screws not of soft metal liable to creep, such as zinc or aluminium		P
	Diameter of screws of insulating material min. 3 mm		N
	Screws of insulating material not used for any electrical connection		N
	Screws transmitting electrical contact only screwing into metal		P
	Screws not of insulating material if their replacement by a metal screw can impair		N

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
	supplementary or reinforced insulation		
	Type X attachment, screws to be removed for replacement of supply cord, or for users maintenance, not of insulating material if their replacement by a metal screw can impair basic insulation		N
	Screws and nuts transmitting contact pressure subjected to torque test as specified, applying torque as shown in table 12		P
	The test is not carried out on screws and nuts transmitting contact pressure for earthing continuity provided at least two screws or nuts are used (EN 60 335-1:94)		N
28.2	Contact pressure not transmitted through insulating material liable to shrink or distort, unless shrinkage or distortion compensated		P
	This requirement does not apply to electrical connections in circuits carrying a current not exceeding 0,5 A (EN 60 335-1:94)		N
28.3	Space-threaded (sheet metal) screws only used for the connection of current-carrying parts if they clamp these parts directly in contact with each other		N
	Thread-cutting (self-tapping) screws not used for electrical connection of current-carrying parts, unless generating a full form standard machine screw thread		N
	Thread-cutting (self-tapping) screws not used if they are likely to be operated by the user or installer unless the thread is formed by a swaging action		P
	Use of thread-cutting and space-threaded screws for earthing continuity according to specification		N
	Screws for current-carrying mechanical connection or screws providing earthing continuity secured against loosening		N
28.4	Screws and nuts making mechanical connection between different parts of the appliance, and also making electrical connection or providing earthing continuity secured against loosening		P
	Rivets for current-carrying connections subject to torsion secured against loosening		N

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
29	CREEPAGE DISTANCES, CLEARANCES AND DISTANCES THROUGH INSULATION		
29.1	Creepage distances and clearances not less than specified in table 13 (EN 60 335-1:94)		P
	Resonant voltage between the point where a winding and a capacitor are connected together and metal parts separated from live parts by basic insulation only, creepage distances and clearances not less than the values specified for the value of the voltage produced by the resonance (EN 60 335-1:1994)		N
	Values increased by 4 mm in case of reinforced insulation when resonance voltage		N
	Distance between the socket contact and the surface for stands of cordless irons at least 5,7 mm (EN 60 335-2-3)		N
29.2	Distances through insulation not less than 1,0 mm for supplementary insulation, and 2,0 mm for reinforced insulation. See Interpretation Sheet I-SH 02, August 1994		P
29.2.1	Supplementary insulation applied in thin sheet form, other than mica or similar scaly material, consists of at least two layers, each of the layers withstands the electric strength test of 16.3 for supplementary insulation		N
	Reinforced insulation applied in thin sheet form, other than mica or similar scaly material, consists of at least three layers, and any two of the layers together withstand the electric strength test of 16.3 for reinforced insulation		N
29.2.2	Supplementary or reinforced insulation inaccessible and does not exceed the maximum permissible temperature values		N
	Supplementary or reinforced insulation, after conditioning as specified, withstands the electric strength test as specified in 16.3, both at the oven temperature and room temperature		N
30	RESISTANCE TO HEAT, FIRE AND TRACKING		
30.1	See Annex H		P
	Relevant external parts of non-metallic material		P

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
	Parts supporting live parts and parts providing supplementary or reinforced insulation sufficiently resistant to heat		P
	Ball-pressure test with a force of 20 N, diameter of impression not exceeding 2 mm		P
	External parts: at 75 °C		P
	Parts supporting live parts: at 125 °C		P
	Parts providing supplementary or reinforced insulation: temperature (°C) .....:		P
	For irons with thermostats, the temperature rises occurring during Cl. 19 are not taken into consideration (EN 60 335-2-3)		P
30.2	Relevant parts of non-metallic material adequately resistant to ignition and spread of fire		P
30.2.1	Possible burning test of relevant parts according to Annex J		N
	Glow-wire test of Annex K made at temperature 550 °C		P
30.2.2	Appliances operated while attended, parts of insulating material supporting connections carrying a current exceeding 0,5 A in normal operation, subjected to the glow-wire test of Annex K at 650 °C		P
30.2.4	Parts of non-metallic material within a distance of 50 mm from parts not withstanding the tests of 30.2.2 or 30.2.3, subjected to the needle-flame test of Annex M		N
30.3	Relevant insulating material have adequate resistance to tracking		P
	Tracking test at 175 V according to Annex N		P
	Tracking test at 250 V according to Annex N		N
	No hazard other than fire, tracking test at 175 V according to Annex N, and in addition needle-flame test of surrounding parts according to Annex M		P
	Possible needle-flame test of non-metallic material		N

31	RESISTANCE TO RUSTING		
	Relevant ferrous parts adequately protected against rusting		P

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
32	RADIATION, TOXICITY AND SIMILAR HAZARDS		
	Appliance does not emit harmful radiation		P
	Appliance does not present a toxic or similar hazard		P
A	ANNEX A, NORMATIVE REFERENCES		
	The annex contains a list of standards which are referred to, and thus become part of, this standard		P
C	ANNEX C, AGEING TEST ON MOTORS		
	Test carried out when doubt with regard to the classification of the insulating system of a motor winding		N
D	ANNEX D, ALTERNATIVE REQUIREMENTS FOR PROTECTED MOTOR UNITS		
	Void (EN 60 335-1:94)		N
E	ANNEX E, MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		
	Methods of measuring creepage distances and clearances, specified in 29.1, indicated in 10 different cases		P
F	ANNEX F, MOTORS NOT ISOLATED FROM THE SUPPLY MAINS AND HAVING BASIC INSULATION NOT DESIGNED FOR THE RATED VOLTAGE OF THE APPLIANCE		
	Motors having a working voltage not exceeding 42 V, not being isolated from the supply mains, and having basic insulation not designed for the rated voltage of the appliance are tested according to this annex		N
	All clauses of this standard apply, unless otherwise specified in this annex		N
F.8	Protection against accessibility to live parts		N
F.11.8	Temperature rise of the body of the motor, where in contact with insulating material, not exceeding		N

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
	values in table 3 for the relevant insulating material		
F.16	Leakage current and electric strength		N
F.19	Abnormal operation		N
F.19.101	Appliance operated at rated voltage with each of the following defects:		
	- short-circuit of the terminals of the motor, including any capacitor incorporated in the motor circuit		N
	- open circuit of the supply to the motor		N
	- open circuit of any shunt resistor during operation of the motor		N
F.22	Construction		N
F.22.101	Class I appliance incorporating a motor supplied by a rectifier circuit, the d.c. circuit being insulated from accessible parts of the appliance by double or reinforced insulation		N
G	ANNEX G, CIRCUIT FOR MEASURING LEAKAGE CURRENTS		
	A suitable circuit for measuring leakage currents is shown		P
H	ANNEX H, SELECTION AND SEQUENCE OF THE TESTS OF CLAUSE 30		
J	ANNEX J, BURNING TEST		
	The burning test is made in accordance with IEC 707, and method FH is used		N
	Category FH3 applies, the maximum burning rate being 40 mm/min		N
K	ANNEX K, GLOW-WIRE TEST		
	The glow-wire test is made in accordance with IEC 695-2-1 (clause numbers between parentheses refer to IEC 695-2-1)		
(4)	Description of test apparatus: the last paragraph before the note is replaced		P
(5)	Severities: the duration of application of the tip of the glow-wire to the specimen being (30 ± 1) s		P
(10)	Observations and measurements: item c) does not apply		P

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
L	ANNEX L, BAD-CONNECTION TEST WITH HEATERS		
	The bad-connection test with heaters is made in accordance with IEC 695-2-3 (clause numbers between parentheses refer to IEC 695-2-3)		
(3)	General description of the test: additions concerning crimped connections		N
(4)	Description of test apparatus: replacements of some of the test specifications and the first paragraph of the note		N
(6)	Severities: the duration of application of the test power being (30 ± 1) min		N
(8)	Test procedure: 8.6 replaced		N
(11)	Information to be given in the relevant specification: item h), the first dashed paragraph, does not apply		N
M	ANNEX M, NEEDLE-FLAME TEST		
	The needle-flame test is made in accordance with IEC 695-2-2 (clause numbers between parentheses refer to IEC 695-2-2)		
(4)	Description of the apparatus: the sixth paragraph is replaced		N
(5)	Severities: the duration of application of the test flame is (30 ± 1) s		N
(8)	Test procedure: some changes in the test specifications		N
(10)	Evaluation of the test results: addition in the test specification		N
N	ANNEX N, PROOF TRACKING TEST		
	The proof tracking test is made in accordance with IEC 112 (clause numbers between parentheses refer to IEC 112)		
(3)	Test specimen: the last sentence of the first paragraph does not apply		P
(5)	Test apparatus: some changes in the subclauses		P
(6)	Procedure: adjustments of the test specifications		P

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
P	ANNEX P, SEVERITY OF DUTY CONDITIONS OF INSULATING MATERIAL WITH RESPECT TO THE RISK OF TRACKING		
	Recognition of different duty conditions with respect to the risk of tracking		P
ZA	ANNEX ZA, SPECIAL NATIONAL CONDITIONS		
7.12	DENMARK: requirements regarding marking tag of power supply cord and connecting of earthing wire		N
19.5	NORWAY: the test is also applicable to appliances intended to be permanently connected to fixed wiring		N
19.11.2	AUSTRIA: requirements regarding appliances having circuits which under fault conditions may cause earth-leakage currents having a d.c. component exceeding 5 mA and exceeding 20% of the total earth-leakage		N
22.2	FRANCE, NORWAY: The second paragraph of this subclause dealing with single-phase Class I appliances with heating elements is not applicable due to the supply system		N
25.6	BELGIUM, FRANCE, GREECE, UNITED KINGDOM: plugs according to Standard Sheet C2b not allowed		N
	AUSTRIA, GERMANY, FINLAND, ICELAND, IRELAND, ITALY, LUXEMBOURG, NETHERLANDS, NORWAY, PORTUGAL, SPAIN, SWEDEN, SWITZERLAND, UNITED KINGDOM: plugs according to Standard C3b not allowed		N
	DENMARK: Supply cords of single-phase portable appliances having a rated current not exceeding 10 A provided with a plug according to the following:		
	Class I appliances: Section 107-2-DI Standard Sheet DK2-1a		N
	For appliances covered by a Part 2 of EN 60 335, also plugs in accordance with IEC 83, Standard Sheet C2b, C3b or C4 are allowed		N
	Class II appliances: IEC 83, Standard Sheet C5 or C6		N
	Stationary single-phase appliances, having a rated current not exceeding 10 A, and provided with a plug, the plug is in accordance with the requirements above		N

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
	Multi-phase appliances and single-phase appliances having a rated current exceeding 10 A, and provided with a plug, the plug is in accordance with the requirements below:		
	Class I appliances: Section 107-2-D1, Standard Sheet DK6-1a/EN 60 309-2, Standard Sheet 2-II, 2-IV		N
	Class II appliances: Section 107-2-D1, Standard Sheet DK6-1a/2-II, 2-IV		N
	IRELAND: plug is in accordance with Standard Sheets B1 (15A), B2 and C2b		N
	SPAIN: Appliances having a rated current not exceeding 6 A, provided with a plug complying with UNE 20 315:		
	for Class I appliances: Figure 7C		N
	for Class II appliances: Figure 15A		N
	Class I appliances having a rated current not exceeding 16 A, provided with a plug complying with Standard UNE 20 315 Figure 7B		N
	SWITZERLAND: supply cords of portable household and similar electrical appliances, rated current not exceeding 10 A, provided with a plug complying with SEV 1011 or IEC 884-1 and one of the following dimension sheets:		
	SEV 6532-2:1991 plug type 15 3P+N+PE 250/400 V, 10 A		N
	SEV 6532-2:1991 plug type 11 L+N 250 V, 10 A		N
	SEV 6532-2:1991 plug type 12 L+N+PE 250 V, 10 A		N
	UNITED KINGDOM: plug according to Standard Sheet B2 or C5 used (refer to Annex ZB)		N
	IRELAND, UNITED KINGDOM: replacement of figures (rated current/cross-sectional area) in the table		N

ZB	ANNEX ZB, A-DEVIATIONS		
3	SWITZERLAND: information about batteries		N
7.1	ITALY: the voltage is 220 V/380 V		N
	SPAIN: the voltages are 127 V/220 V and 220 V/380 V		N
7.12	IRELAND: information about required label attached to the supply cord, concerning the colour code of the wires		N
22.22	GERMANY: the amount of asbestos in the mass		N

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
	containing asbestos not exceeding 0,1%		
	FINLAND: certain types of asbestos not used		N
24	SWEDEN: components containing mercury not used		N
25.6	UNITED KINGDOM: regulations concerning plugs to be fitted to domestic appliances		N

ZC	ANNEX ZC, CAPACITORS		
	The following clauses and subclauses of IEC 384-14:1981 apply to capacitors likely to be permanently subjected to the supply mains voltage and used for radio interference suppression or for voltage dividing purposes with the following modifications		N
4	Terminology		
4.3	Applicable, capacitors of Class X tested as capacitors of Class X2		N
4.4	Applicable		N
6	Marking		
6.1	Items a) and b) applicable		N
8	Schedules for qualification approval tests		
8.1	Table II, group 0, group 2 and group 3 applicable as follows:		
	- group 0: subclauses 10.1, 10.2, 11.1 and 11.3		N
	- group 2: subclause 12.10		N
	- group 3: subclause 12.11		N
10.1	Visual examination and check of dimensions		
	Applicable		N
10.2	Applicable for the marking required by 6.1a) and b)		N
11	Electrical tests		
11.1	Applicable		N
11.3	Only table VI applies; climatic category is -/-/21; the values for test A apply; capacitors in heating appliances, the values for test B or C apply		
12	Environmental test		
12.10	Applicable; only insulation resistance and voltage proof are checked (see table X)		N
12.11	Applicable with 12.11.2 and 12.11.6 modified as follow		

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
	Capacitors are subjected to an impulse voltage test if they are incorporated:		
	- in appliances liable to be operated while unattended		N
	- in other appliances where they are liable to remain under electric stress while the ON/OFF switch or control is in the OFF position, irrespective of the position of the plug in the socket-outlet		N
	The wave form of the impulse is 1,2/50 with a peak value of 2,5 kV		N
	Alternatively, the test is carried out with an impulse voltage having any front time but with a time to half value not exceeding 100 μs		N
	The peak value of the impulse voltage adjusted by a suitable means such as an impulse proof capacitor of low inductance and having a capacitance similar to that of the capacitor under test		N
	No flashover or visible damage when the impulse voltage is applied 3 times with at least 1 s between the impulses		N
12.11.6	See Note (EN 60 335 1:94)		N
ZD	ANNEX ZD, SAFETY ISOLATING TRANSFORMERS		
	Safety isolating transformers, tested with the appliance, comply with this standard and the following additional requirements	VDE APPROVAL	N
7	Marking and instructions		
7.1	Marking of transformers for specific use (EN 60 335 1:94):		
	- name		N
	- trademark/identification mark of manufacturer or responsible vendor		N
	- model or type reference		N
17	Overload protection of transformers and associated equipment		
	The temperature limits specified for the windings do not apply to fail-safe transformers		N
	Such transformers comply with 14.5 of EN 60 742		N
22	Construction		
22.501	Subclause 8.6 of EN 60 742 applicable		N
29	Creepage distances, clearances and distances through insulation		

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict
29.1	The distances specified in Table XV of EN 60 742, items 1a, 1c and 2 apply		N
ZE	ANNEX ZE, SWITCHES		
	Switches tested with the appliance comply with this standard and the following clauses of IEC 1058-1, as modified		
	- the tests of IEC 1058-1 carried out under the conditions occurring in the appliance, unless		N
	- otherwise specified, the tests are carried out on the switch incorporated in the appliance		N
	- before being tested in the appliance, switches are operated 20 times without load		N
8	Marking and documentation		
	Switches are not required to be marked except, that incorporated switches shall be marked with the manufacturer's name or trademark and the type reference		N
13	Mechanism		
	Applicable		N
15	Insulation resistance and electric strength		
15.1	Not applicable		N
15.2	Not applicable		N
15.3	Applicable for full disconnection micro-disconnection		N
17	Endurance		
	Applicable, at the end of the tests, temperature rise of the terminals not increased by more than 30 K		N
20	Clearances, creepage distances and distances through insulation		
	Applicable for creepage distances and clearances for live parts of different potential only, as stated in table 18 for operational insulation, and across full disconnection and micro-disconnection		N
ZF	ANNEX ZF, informative		
	IEC and CENELEC code designations for flexible cords		P

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict

Tests:

1) iron on stand without emission of steam at 1,15 times rated input
2) iron on stand without emission of steam at 1,06 times rated voltage
3) iron on the pointed support and steam emissionin cycles at 1,15 times rated input
4) iron on the pointed support and steam emissionin cycles at 1,06 times rated voltage
5) iron on the pointed support without emission of steam

The values written are referred at the most unfavourable results obtained during the test with the appliance is operated in all possible process.

11.8	TABLE: temperature rise measurements		
	t1 (°C) .....:	22-24	-
	t2 (°C) .....:	22-24	-
	test voltage (V) .....:	261 or 244	-

temperature rise dT of part/at:	dT (K)	required dT (K)
Supply cable	27	50
Supply terminals	29	see § 30
Filter (T100)	29	75
Electronic assembly	39	see § 30
Relais (T85)	39	60
Pressure switch with microswitch (T125)	75	100
Boiler thermostat (T150)	72	125
Boiler thermal cut-out (T175)	83	150
Connector	44	see § 30
Connector microswicth (T85)	44	60
Switches (T120)	33	95
Pilot lamps	73	see § 30
Internal wirings (silicone rubber)	53	145
External enclosure (plastic material)	48	see § 30
Switch (iron) (T85)	16	60
Thermostat and thermal cut-out (iron) (T300)	182	275
Boiler/iron cable (wires)	65	60
External wiring (iron)	53	80
Handle and switch (boiler)	20	60
Handle (iron)	21	50

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict

Switch and knob (iron)			34	60	
Walls and floor of test corner			51	65	
	winding temperature rise measurements:				
	insulation class .....:		B, H, F		-
temperature rise dT of winding:	R_1 (Ω)	R_2 (Ω)	dT (K)	required dT (K)	insulation class
Transformer (PRI)	2150	2520	44	95	B
Transformer (SEC)	17	19,8	42	95	B
Electromagnetic valve (1,5mm)	2170	3270	130	140	H
Electromagnetic valve (1,0mm)	2150	3270	133	140	H
Pump	114,4	143	63	115	F

13.2	TABLE: leakage current measurements at operating temperature		
	heating appliances: at 1,15 times rated input (W) ..:	2530	-
	motor-operated and combined appliances: at 1,06 times rated voltage (V) .....:	--	-
leakage current I between:		I (mA)	required I (mA)
Live parts and accessible metal parts (basic insulation)		0,1	0,75
Live parts and accessible metal parts (reinforced insulation)		< 0,1	0,25

13.3	TABLE: electric strength measurements at operating temperature		
test voltage applied between:		test voltage (V)	breakdown
			Yes / No
Live parts and accessible metal parts (basic insulation)		1000	No
Live parts and accessible metal parts (reinforced insulation)		3750	No

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict

16.2	TABLE: leakage current measurements		
	at 1,06 times rated voltage (V) .....:	244	-

leakage current I between:	I (mA)	required I (mA)
Live parts and accessible metal parts (basic insulation)	< 0.1	0.75
Live parts and accessible metal parts (reinforced insulation)	< 0.1	0.25

16.3	TABLE: electric strength measurements	

test voltage applied between:	test voltage (V)	breakdown
		Yes / No
Live parts and accessible metal parts (basic insulation)	1250	No
Live parts and accessible metal parts (supplementary insulation)	2500	No
Live parts and accessible metal parts (reinforced insulation)	3750	No
Metal foil wrapped on knobs and handles	2500	No

17.	TABLE: overload protection, temperature rise measurements	
17.1	at 1,06 or 0,94 times rated voltage (V) .....:	244 -

temperature rise dT of part/at:	T (°C)	required T (°C)
Tansformer PRI (cl.B)	130	175
Tansformer SEC (cl.B)	123	175

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict

24.1	TABLE: components				
object/part No.	manufac-turer/trademark	type/model	technical data	standard	mark(s) of conformity[1])
Plug +	EURO-CABLAGGI	ART.05	10-16A; 250V	CEE 7	IMQ
cable	PECSO	H05VV-F	3x1,5mm^2	HD 22 S1/S2	<HAR>
Supply terminals	ELETTROGIBI	PA 84	380V	EN 60998-2-1	CSv-IMQ
Boiler heating element	TECNOVAP (FER)	--	230V; 2200W	CHECKED IN THE APPLIANCE	--
Boiler thermostat	IMIT	TR2	15(2,5)A/250V; 10A/380V; T150	EN 60730	CSv-IMQ
Boiler thermostat (*)	COTHERM	TR98..	5A/250V; 10A/250V; T150	EN 60730	VDE
Pressure switch	CEME	5611	0,2-6bar; T85; 16(1,6)A; 250V;	EN 61058	IMQ
Pressure switch with: (*)	MATER	XP	16A; 250V; T125; P	EN 61058	IMQ
Microswitch	CHERRY	045X	16(4)A; 250V; T125	EN 61058	ENEC
Boiler non self resetting thermal cut-out	ELMWOOD	24.55R	10(6)A; 250V; T177	EN 60730	IMQ
Boiler non self resetting thermal cut-out (*)	ELTH	261/PB	16(3)A; 250V; T175	EN 60730	VDE
Electromagnetic valve (n°2)	OLAM	6000/BH	230V; 50Hz; 9VA; Cl.H; Ta80	EN 61058	VDE
Electromagnetic valve (n°2) (*)	CEME	5581	220V; 50Hz	EN 61058	IMQ
Electromagnetic valve (n°2) (*)	CEME	588	230V; 13,5VA	EN 61058	IMQ
Switch (n°2)	MOLVENO COMETTI	B4..	10(4)A; 250V; P; T120	EN 61058	IMQ
Pilot lamp (n°2)	SIGNAL LUX	31B	250V; T120	CHECKED IN THE APPLIANCE	--
Pilot lamp (n°3)	ELETTRO-METAL	NSC4	240V; T150	CHECKED IN THE APPLIANCE	VDE

EN 60 335-2-3			
Clause	Requirement - Test	Result - Remark	Verdict

Connector microswitch	SAIA	X662..	16(4)A; 250V; T85; P	EN 61058	ENEC
Electronic assembly with:	(FM ELETTRONICA)	TVAP10..	--	CHECKED IN THE APPLIANCE	--
Transformer	ERA	EL 30/18	PRI 230V; SEC 12V; 50/60Hz; 2,3VA; Cl.B	EN 60742	VDE
Relay (n°3)	FINDER	40/61	16A/250V; 12V; T85	EN 61058	IMQ
Pump	CEME	ET500	230V; 55W	EN 60335-1	CSv-IMQ
Connector (socket-outlet)	ILME	--	10A; 250V	CHECKED IN THE APPLIANCE	--
Interference suppressor	ARKOTRONICS	KNB1533	0,47μF 10%; X2 + 470kΩ; 275VAC	EN 132400 IEC 384-14	VDE
Steam gun switch (n°2)	AC (S.E.C.E.)	A2...	10(4)A/250V; 6(4)A/250V; T105; P	EN 61058	IMQ
Steam gun push-switch	AC (S.E.C.E.)	SCA	6(4)A/250V; 5(2)A/250V; T120; P	EN 61058	IMQ
Steam gun connector plug	ILME	--	10A; 250V	CHECKED IN THE APPLIANCE	--
Interconnection cable iron/boiler	--	H05RR-F	4x0,75mm^2	HD 22 S1/S2	<HAR>
Switch (iron)	ELECTRICA	NRA1N3	13(3)A; 250V; T85; P	EN 61058	IMQ
Thermostat with sel-resetting thermal cut-out (iron)	TSB	14127025EFD	100°C; 298°C	EN 60730	VDE
Iron connector plug	ILME	--	10A; 250V	CHECKED IN THE APPLIANCE	--

[1]) an asterisk indicates a mark which assures the agreed level of surveillance

(*) Alternative component

Remarks

	EN 60335-2-3/A1:99 + EN 60335-2-3/A2:00		
4.2	Addition (note):		
	Addition (note):		
11.8	Addition:		
24.4	Addition (note):		
24.5	Addition (note):		
25.14	Addition:		

TEST REPORT

EN 60 335-2-54

Safety of household and similar electrical appliances

Part 2: Particular requirements for surface-cleaning appliances employing liquids

Report reference No ..... :	05AB00319
Tested by (printed name and signature) ..... :	Andrea Lovati
Approved by (printed name and signature) ..... :	Giovanni De Felippis
Date of issue ..... :	29/07/2002

This report is based on a blank test report that was prepared by SGS Fimko Ltd using information obtained from the TRF originator (see below).

Testing Laboratory Name ..... :	IMQ S.p.A.
Address ..... :	via Quintiliano, 43 –20138- Milano ITALY
Testing location ..... :	as above
Applicant's Name ..... :	TECNOVAP SNC DI FRANCHINI G. & C
Address ..... :	via Rita Rosani, 18 –37024- Negrar (VR) ITALY
Test specification	
Standard ..... :	EN 60 335-2-54:97 + A11:98 + A1:99 used in conjunction with EN 60 335-1:94 + A11:95 + A1:96 + A12:96 + A13:98 + A14:98 + A2:00
Test procedure ..... :	CCA
Non-standard test method ..... :	
Test Report Form No.	EN60335_2_54B/01-01
TRF originator ..... :	ÖVE
Master TRF ..... :	dated 00-08

Test item description ..... :	STEAM CLEANER WITH PRESSURIZED STEAM IRON
Trademark ..... :	TECNOVAP
Model and/or type reference ..... :	CHATTANOOGA GAL 1
Rating(s) ..... :	230V~; 50Hz; max 2200W; with iron 2000W

Test items particulars:

..... :

..... :

..... :

Test case verdicts	
Test case does not apply to the test object .. :	N/A
Test item does meet the requirement ..... :	P(ass)
Test item does not meet the requirement ..... :	F(ail)
Testing	
Date of receipt of test item ..... :	--
Date(s) of performance of test ..... :	26/11/01

General remarks

This report shall not be reproduced except in full without the written approval of the testing laboratory.

The test results presented in this report relate only to the item(s) tested.

"(see remark #)" refers to a remark appended to the report.

"(see Annex #)" refers to an annex appended to the report.

Throughout this report a comma is used as the decimal separator.

Copy of marking plate

SEE PAGE 2

Summary of testing

EN 60 335-2-54			
Clause	Requirement – Test	Result - Remark	Verdict
4	GENERAL CONDITIONS FOR THE TESTS		
	Tests performed according to Cl. 4, e.g. nature of supply, sequence of testing, etc.		P
4.2	If the tests of 24.1.3 are carried out, three switches or three additional appliances are needed		N
4.8.1	Appliances for a.c. only, tested at rated frequency		P
	Appliances for a.c./d.c., tested at the most unfavourable supply		N
	Appliances not marked with rated frequency, tested with 50 Hz		N
	Appliances for a.c. with frequency range of 50 to 60 Hz, tested with 50 or 60 Hz, the most unfavourable		N
4.101	Appliances incorporating heating elements are tested as heating appliances even if they incorporate motors		P
6	CLASSIFICATION		
6.1	Protection against electric shock: Cl. 0/0I/I/II/III ... :	Cl.I	P
6.2	Protection against harmful ingress of water		P
	Hand-held appliances dispensing liquids shall be at least IPX7		N
	Other appliances shall be at least IPX4		P
	Appliances of Cl. III construction not exceeding 24 V		N
7	MARKING		
7.1	Rated voltage or voltage range (V) ..... :	230	P
	- Single-phase appliances: 230 V covered		P
	- Multi-phase appliances: 400 V covered		N
	Nature of supply ..... :	a.c.	P
	Rated frequency or frequency range (Hz) ..... :	50	P
	Rated power input (W) ..... :	max 2200W; with iron 2000W	P
	Manufacturer's or responsible vendor's name, trademark or identification mark..... :	TECNOVAP	P
	Model or type reference ..... :	CHATTANOOGA GAL 1	P

EN 60 335-2-54			
Clause	Requirement – Test	Result - Remark	Verdict
	Symbol for Class II ..... :		N
	IP number..... :	IPX4	P
	Max. permissible water pressure in Mpa (bar)..... :		N
	Appliance marked with warning "Danger of scalding"		P
	Appliance marked with symbol 5598 of IEC 60417 and meaning of symbol explained in the instruction sheet		P
	Appliance outlets for accessories marked with the maximum load in watts		P
	Sum of rated power input and maximum load of the appliance outlet marked on the appliance		P
	Warning placed in vicinity of terminal cover		P
7.3	Range of rated values correctly marked		N
7.4	Voltage setting clearly discernible		N
7.5	Marking of rated input for each rated voltage		N
	Marking for upper and lower limits of rated input		N
7.6	Correct symbols used		P
7.7	Correct connection diagram, fixed to the appliance		N
7.8	Not for type Z attachment:		
	- marking of terminals for the neutral conductor (N)		N
	- marking of earthing terminals		P
	- marking not placed on removable parts		P
	- marking of terminal for single-pole protective device		N
7.9	Marking or placing of switches which may cause a hazard		P
7.10	Indications of switches and regulating devices by use of figures, letters or other		P
	The figure 0 indicates only OFF position, unless no confusion with the OFF position		P
7.11	Indication for direction of adjustment of controls		P
7.12	Instructions for safe use provided		P
	Appliances incorporating batteries which contain materials hazardous to the environment: statement in the instructions how to remove, scrap and dispose		N

EN 60 335-2-54			
Clause	Requirement – Test	Result - Remark	Verdict
	Statement in the instructions		P
	- that the appliance must be disconnected from the supply		P
	- that the liquid or the steam must not be directed towards equipment containing electrical components		P
	- that the filling aperture must not be opened during use, for steam cleaners having a pressurized container		N
	- for the safe refilling of the water container		P
7.12.1	Sufficient details for installation or maintenance supplied		P
	Instruction sheet includes a note specifying that the appliance has to be unplugged before cleaning or user maintenance		P
	Instruction sheet for appliances intended to clean swimming pools includes in substance "Do not use in swimming pools containing water"		N
7.12.2	Means for disconnection with contact separation at least 3 mm		N
	Stationary appliance with supply cord and plug: statement in the instructions that the appliance is so positioned that the plug is accessible		N
7.12.3	Insulation of supply cord in contact with parts exceeding 50 K; instruction to use T-marked cord		N
7.12.4	Information with regard to building-in:		—
	- dimensions of space		N
	- dimensions and position of support		N
	- ventilation openings		N
	- connection/interconnection plug accessible		N
7.12.5	Replacement of cord type X attachment		N
	Replacement of cord type Y attachment		P
7.13	Instructions and other texts in official language		P
7.14	Marking easily legible and durable		P
7.15	Marking on a main part		P
	Marking clearly discernible from outside		P
	Stationary appliance: name or trademark and model or type reference visible after installation		N

EN 60 335-2-54			
Clause	Requirement – Test	Result - Remark	Verdict
	Indication for switches and controls in vicinity of components; not on removable parts if misleading		P
7.16	Marking of a possible replaceable thermal link or fuse link clearly visible with regard to replacing the link		N

8	PROTECTION AGAINST ACCESSIBILITY TO LIVE PARTS		
8.1	Adequate protection against accidental contact with live parts		
8.1.1	All positions; detachable parts removed		P
	Removal of lamps: protection against contact with live parts		N
	Use of test finger: no contact with live parts		P
8.1.2	Use of test pin: no contact with live parts		P
8.1.3	Use of test probe: no contact with live parts of visible glowing heating elements		N
8.1.4	Accessible part not considered live if:		
	- extra-low a.c. voltage: peak values not exceeding 42,4 V		P
	- extra-low d.c. voltage: not exceeding 42,4 V		N
	- or separated from live parts by protective impedance, d.c. current not exceeding 2 mA		N
	- or separated from live parts by protective impedance, a.c. peak value not exceeding 0,7 mA		N
	- for peak value 42,4 V up to and including 450 V capacitance not exceeding 0,1 μF		N
	- for peak value 450 V up to and including 15 kV discharge not exceeding 45 μC		N
8.1.5	Live parts protected at least by basic insulation before installation or assembly: checked by inspection and the test of 8.1.1:		—
	- built-in appliances		N
	- fixed appliances		N
	- separate units		N
8.2	Class II appliances and constructions adequately protected against accidental contact with basic insulation and metal parts separated from live parts with basic insulation only		P
	Only possible to touch parts separated from live parts by double or reinforced insulation		P

EN 60 335-2-54			
Clause	Requirement – Test	Result - Remark	Verdict
	Appliances with batteries replaceable by the user, basic insulation between live parts and the inner surface of the battery compartment adequate		N
	If appliance can be operated without batteries: double or reinforced insulation used		N

10	POWER INPUT AND CURRENT		
10.1	Power input at rated voltage and normal operating temperature not deviating from rated input by more than shown in table; measured power input (W); rated input (W); deviation .....:	**Boiler + steam gun** 2160; 2200; -1,8% (+5/-10%)	P
10.2	Current at normal operating temperature not deviating from rated current by more than shown in table; measured current at rated voltage under normal operation (A); rated current (A); deviation:		N

11	HEATING		
11.1	No excessive temperatures in normal use		P
11.2	Placing and mounting of appliance as described		P
11.3	Temperature rises determined by thermocouples or resistance method		P
11.4	Heating appliances operated under normal operation at 1,15 times rated power input		P
	If the temperature rise limits are exceeded in appliances incorporating motors, transformers or electronic circuits and the power input is lower than the rated power input, the test is repeated with the appliance supplied at 1,06 times rated voltage.		P
11.5	Motor-operated appliances operated under normal operation at most unfavourable voltage between 0,94 and 1,06 times rated voltage		N
11.6	Combined appliances operated under normal operation, supply voltage at most unfavourable voltage between 0,94 and 1,06 times rated voltage		N
11.7	Appliances are operated until steady conditions are established		P
	Steam cleaner operated without emission of steam		P

EN 60 335-2-54			
Clause	Requirement – Test	Result - Remark	Verdict
	Appliances incorporating an automatic cord reel operated with 1/3 of the total length of the cord unreeled for 30 min, after which the cord is completely unreeled		N
11.8	Protective devices do not operate		P
	Sealing compound not flowing out		P
	Temperatures not exceeding values in table 3	(see appended table)	P
	Temperatures rises of the accessible surface of hoses supplying steam to hand held parts are complied with		P
	If a non-metallic hose is covered by textile material, the temperature rise of the surface of the textile material shall not exceed 80 K		N
	Temperature rise limits of motors, transformers, components of electronic circuits and parts directly influenced by them may be exceeded when the appliance is operated at 1,15 times rated power input		P

13	LEAKAGE CURRENT		
13.1	Leakage current not excessive and electric strength adequate		P
13.2	Leakage current measured by means of circuit described in Annex G		P
	Leakage current measurements	(see appended table)	P
13.3	Electric strength test of insulation	(see appended table)	P
	No breakdown during the test		P

15	MOISTURE RESISTANCE		
15.1	Enclosure provides the degree of moisture protection according to classification of appliance		P
15.1.1	Appliance subjected to test as specified	IPX4	P
	Hand-held appliances dispensing liquids subjected to test specified for IPX7 unless Cl. III construction not exceeding 24 V		N
	Withstand electric strength test specified in 16.3		P
	No trace of water on insulation which can result in a reduction of distances and clearances below values specified in 29.1		P
15.1.2	Hand-held appliance turned continuously through the most unfavourable positions during the test		N

EN 60 335-2-54			
Clause	Requirement – Test	Result - Remark	Verdict
	Built-in appliance installed according to the manufacturer's instruction		N
	Other appliances tested as specified		P
15.2	Spillage of liquid does not affect the electrical insulation		P
	Overfilling test with additional amount of liquid (l) :		P
	Withstand electric strength test in 16.3		P
	No trace of water on insulation which can result in reduction of distances and clearances below values specified in 29.1		P
15.3	Humidity treatment for 48 h		P
	Withstanding the test of Cl. 16		P

16	LEAKAGE CURRENT AND ELECTRIC STRENGTH		
16.1	No excessive leakage current and adequate insulation and electric strength (tests 16.2 and 16.3)		P
16.2	Leakage current measurements	(see appended table)	P
16.3	Electric strength tests (values in table 5)	(see appended table)	P

17	OVERLOAD PROTECTION OF TRANSFORMERS AND ASSOCIATED CIRCUITS		
	No excessive temperatures in transformer or associated circuits in event of short-circuits likely to occur in normal use		P
	Appliance supplied with 1,06 or 0,94 times rated voltage and the most unfavourable short-circuit or overload likely to occur in normal use applied	(see appended table)	P
	Temperature rise of insulation of the conductors of safety extra-low voltage circuits not exceeding the relevant value specified in table 3 by more than 15 K		P
	Temperature of the winding not exceeding the value specified in table 6		P

19	ABNORMAL OPERATION		
19.1	The risk of fire or mechanical damage under abnormal or careless operation obviated		P
	Electronic circuits so designed and applied that a fault will not render the appliance unsafe		P

EN 60 335-2-54			
Clause	Requirement – Test	Result - Remark	Verdict
19.2	Test of appliance with heating elements with restricted heat dissipation (not connected to the water mains, operating with containers empty); test voltage (V): power input of 0,85 times rated power input.....:	210	P
19.3	Test of 19.2 repeated; test voltage (V): power input of 1,24 times rated power input.....:	257	P
19.4	Test conditions as in Cl. 11, the power input being 1,15 times rated power input, any control limiting the temperature during tests of Cl. 11 short-circuited		P
	For steam cleaners, any control which limits the pressure during the test of Cl. 11 is rendered inoperative		P
19.5	Test of 19.4 repeated on Class 0I and I appliances with tubular sheathed or embedded heating elements. No short-circuiting, but one end of the element connected to the elements sheath		P
	The test repeated with reversed polarity and the other end of the heating element connected to the sheath		P
19.6	Appliances with PTC heating elements tested as specified. Supplied at rated voltage, establishing steady conditions, then the voltage increased in steps by 5% until 1,5 times rated voltage is reached or until the heating element ruptures		N
19.7	Stalling test by locking the rotor if the locked rotor torque is smaller than the full load torque or locking moving parts		P
	Locked rotor, motor capacitors open circuited or short-circuited, if required		N
	Appliances with timer or controller supplied with rated voltage for each of the tests, for a period equal to the maximum period allowed		N
	Test period at rated voltage (s or min) or until steady state conditions established .....:	5 min	P
	Winding temperatures not exceeding limiting temperature; type of appliance; insulation class; measured temperature (°C) .....:	Pump Cl.F 161°C (240°C)	P
19.8	Three-phase motors operated at rated voltage with one phase disconnected		N
19.10	Series motor operated at 1,3 times rated voltage for 1 min		N
	Parts not ejected from the appliance during test		N

EN 60 335-2-54			
Clause	Requirement – Test	Result - Remark	Verdict
19.11	Electronic circuits, compliance checked by evaluation of the fault conditions specified in 19.11.2 for all circuits or parts of circuits, unless they comply with the conditions specified in 19.11.1		P
19.11.1	Before applying the fault conditions a) to f) in 19.11.2, it is checked if circuits or parts of circuit meet both of the following conditions:		
	- the electronic circuit is a low-power circuit, that is, the maximum power at low-power points does not exceed 15 W according to the tests specified		N
	- the protection against electric shock, fire hazard, mechanical hazard or dangerous malfunction in other parts of the appliance does not rely on the correct functioning of the electronic circuit		N
19.11.2	Fault conditions applied one at a time, the appliance operated under conditions specified in Cl. 11, but supplied at rated voltage, the duration of the tests as specified:		—
	a) short-circuit of creepage distances and clearances between live parts of different potential, if these distances are less than the values specified in 29.1, unless the relevant part is adequately encapsulated		P
	b) open circuit at the terminals of any component		P
	c) short-circuit of capacitors, unless they comply with IEC 60384-14 or 14.2 of IEC 60065		P
	d) short-circuit of any two terminals of an electronic component, other than integrated circuits. This fault condition is not applied between the circuits of an optocoupler		P
	e) failure of triacs in the diode mode		N
	f) failure of an integrated circuit. In this case the possible hazardous situations of the appliance are assessed to ensure that safety does not rely on the correct functioning of such a component		P
	During and after each test the following is checked:		
	- the temperature rise of the windings do not exceed the values specified in table 6		P
	- the appliance complies with the conditions specified in 19.13		P
	- live parts not accessible to the test finger or test pin as specified in Cl. 8		P

EN 60 335-2-54			
Clause	Requirement – Test	Result - Remark	Verdict
	- any current flowing through protective impedance not exceeding the limits specified		N
	If a conductor of a printed board becomes open circuited, the appliance is considered to have withstood the particular test, provided all three of the following conditions are met:		
	- the material of the printed circuit board withstands the burning test of 20.1 of IEC 60065		N
	- any loosened conductor does not reduce the creepage distances or clearances between live part and accessible metal parts		N
	- the appliance withstands the tests of 19.11.2 with open circuited conductor bridged		N
19.12	If the safety of the appliance for any of the fault conditions specified in 19.11.2 depends on the operation of a miniature fuse-link complying with IEC 60127, the test is repeated, measuring the current flowing through the fuse-link; measured current (A); rated current of the fuse-link (A) .....:		N
19.13	During the tests the appliance does not emit flames, molten metal, poisonous or ignitable gas in hazardous amounts		P
	Temperature rises not exceeding the values shown in table 7		P
	Enclosures not deformed to such an extent that compliance with Cl. 8 is impaired		P
	Appliance still operable and complying with 20.2		P
	Appliance, other than Class III, withstands the electric strength test of 16.3, however, the test voltage being:		P
	- basic insulation: 1000 V		P
	- supplementary insulation: 2750 V		N
	- reinforced insulation: 3750 V		P

20	STABILITY AND MECHANICAL HAZARDS		
20.1	Adequate stability		P
20.2	Moving parts adequately arranged or enclosed as to provide protection against personal injury		N
	Protective enclosures, guards and similar parts are non-detachable		N
	Adequate mechanical strength and fixing of protective enclosures		N

EN 60 335-2-54			
Clause	Requirement – Test	Result - Remark	Verdict
	Self-resetting thermal cut-outs and overcurrent protective devices not causing a hazard, if unexpectedly reclosed		N
	Not possible to touch dangerous moving parts with test finger		N
20.101	Appliance so constructed that inadvertent operation is unlikely		P

21	MECHANICAL STRENGTH		
	Appliance has adequate mechanical strength and is constructed as to withstand rough handling		P
	No damage after three blows applied to various parts of the enclosure, impact energy 0,5 J ± 0,04 J		P
	Supplementary or reinforced insulation subjected to the electric strength test of 16.3 if necessary		N
	If necessary, repetition of groups of three blows on a new sample		N
	No damage after dropping for three times from 2 m onto a hardwood floor		N
21.101	Current-carrying hoses containing live parts are resistant to crushing		N
21.102	Current-carrying hoses containing live parts are resistant to abrasion		N
21.103	Current-carrying hoses containing live parts are resistant to flexing		N
21.104	Current-carrying hoses containing live parts are resistant to torsion		N

22	CONSTRUCTION		
22.1	Appliance marked with the first numeral of the IP system: relevant requirements of IEC 60529 are fulfilled		N
22.2	Stationary appliance: means to provide all-pole disconnection from the supply provided, the following means being available:		
	- a supply cord fitted with a plug		N
	- a switch complying with 24.3		N
	- a statement in the instruction sheet that a disconnection incorporated in the fixed wiring is to be provided		N

EN 60 335-2-54			
Clause	Requirement – Test	Result - Remark	Verdict
	- an appliance coupler		N
	Single-phase Cl. I appliance with heating elements, intended to be permanently connected to fixed wiring, incorporating single-pole switches or single-pole protective devices for the disconnection of the heating element(s): the switches/devices being connected in the phase conductor		N
22.3	Appliance provided with pins: no undue strain on socket-outlets		N
	Applied torque not exceeding 0,25 Nm		N
22.4	Appliance for heating liquids and appliance causing undue vibration not provided with pins for insertion into socket-outlets		P
22.5	No risk of electric shock when touching the pins of the plug		P
22.6	Electrical insulation not affected by condensing water or leaking liquid		P
	Electrical insulation of Class II appliances not affected in case of a hose rupture or seal leak		N
	Dimensions of drain holes are in accordance		N
22.7	Adequate safeguards against the risk of excessive pressure in appliances having a pressurized container		P
	Electrical insulation is not affected by jets of steam or liquids emitted through protective devices		P
	User is not exposed to a hazard by jets of steam or liquids emitted through protective devices		P
22.8	Electrical connections not subject to pulling during cleaning of compartments to which access can be gained without the aid of a tool, and which are likely to be cleaned in normal use		N
22.9	Insulation, internal wiring, windings, commutators and slip rings not exposed to oil, grease or similar substances		N
	Adequate insulating properties of oil or grease to which insulation is exposed		N
22.10	Location or protection of reset buttons of non-self-resetting controls is so that accidental resetting is unlikely		P

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Clause	Requirement – Test	Result - Remark	Verdict
22.11	Reliable fixing of non-detachable parts which provide the necessary degree of protection against electric shock, moisture or contact with moving parts		P
	Obvious locked position of snap-in devices used for fixing such parts		N
	No deterioration of the fixing properties of snap-in devices used in parts which are likely to be removed during installation or servicing		N
	Tests		P
22.12	Handles, knobs etc. fixed in a reliable manner		P
	Fixing in wrong position of handles, knobs etc. indicating position of switches or similar components not possible		P
	Axial force 15 N applied to parts, the shape of which being so that an axial pull is unlikely to be applied		P
	Axial force 30 N applied to parts, the shape of which being so that an axial pull is likely to be applied		P
22.13	Unlikely that handles, when gripped as in normal use, make the operators hand touch parts having a temperature rise exceeding the value specified for handles which are held for short periods only		P
22.14	No ragged or sharp edges creating a hazard for the user in normal use, or during user maintenance		P
	No exposed pointed ends of self tapping screws etc., liable to be touched by the user in normal use or during user maintenance		P
22.15	Storage hooks and the like for flexible cords smooth and well rounded		P
22.16	Automatic cord reels cause no undue abrasion or damage to the sheath of the flexible cord, no breakage of conductors strands, no undue wear of contacts		N
	Cord reel tested with 6000 operations, as specified		N
	Electric strength test of 16.3, voltage of 1000 V applied		N
22.17	Spacers not removable from the outside by hand or by means of a screwdriver or a spanner		N

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Clause	Requirement – Test	Result - Remark	Verdict
22.18	Current-carrying parts and other metal parts resistant to corrosion under normal conditions of use		P
22.19	Driving belts not used as electrical insulation		N
22.20	Direct contact between live parts and thermal insulation effectively prevented, unless material used is non-corrosive, non-hygroscopic and non-combustible		P
22.21	Wood, cotton, silk, ordinary paper and fibrous or hygroscopic material not used as insulation, unless impregnated		N
22.22	Appliances shall not contain asbestos		P
22.23	Oils containing polychlorinated biphenyl (PCB) not used		P
22.24	Bare heating elements adequately supported		N
	In case of rupture, the heating conductor is unlikely to come in contact with earthed metal parts or accessible metal parts		N
22.25	Sagging heating conductors cannot come into contact with accessible metal parts		N
22.26	The insulation between parts operating at safety extra-low voltage and other live parts complies with the requirements for double or reinforced insulation		P
22.27	Parts connected by protective impedance separated by double or reinforced insulation		N
22.28	Metal parts of Class II appliances conductively connected to gas pipes or in contact with water: separated from live parts by double or reinforced insulation		N
22.29	Class II appliances permanently connected to fixed wiring so constructed that the required degree of protection against electric shock is maintained after installation		N
22.30	Parts serving as supplementary or reinforced insulation and which could be omitted during reassembly after servicing shall be:		P
	- fixed so that they cannot be removed without being seriously damaged		N
	- so constructed that they cannot be replaced in an incorrect position, and so that if they are omitted, the appliance is rendered inoperable or manifestly incomplete		P

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Clause	Requirement – Test	Result - Remark	Verdict
22.31	Creepage distances and clearances over supplementary and reinforced insulation not reduced below values specified in 29.1 as a result of wear		N
	Creepage distances and clearances over supplementary or reinforced insulation not reduced to less than 50% of values specified in 29.1 if wires, screws etc. becomes loose		P
22.32	Supplementary and reinforced insulation designed or protected against deposition of dirt or dust		N
	Ceramic material not tightly sintered, similar material or beads alone not used as supplementary or reinforced insulation		N
	Supplementary insulation of natural or synthetic rubber resistant to ageing, or arranged and dimensioned so that creepage distances are not reduced below values specified in 29.1		N
	Oxygen bomb test at 70 °C for 96 h and 16 h at room temperature		N
22.33	Conductive liquids which are or may become accessible in normal use are not in direct contact with live parts		P
	Conductive liquids are not in direct contact with basic insulation or reinforced insulation in Class II constructions		P
	Conductive liquids in contact with live parts, not in direct contact with reinforced insulation		P
22.34	Shafts of operating knobs, handles, levers etc. not live, unless the shaft is not accessible when the part is removed		P
22.35	Handles, levers and knobs, held or actuated in normal use, not becoming live in the event of an insulation fault		P
	Such parts being of metal, and their shafts or fixings are likely to become live in the event of an insulation fault, they are either adequately covered by insulation material, or their accessible parts are separated from their shafts or fixings by supplementary insulation		P
	This requirement does not apply to handles, levers and knobs on stationary appliances other than those of electrical components, provided they are either reliably connected to an earthing terminal or earthing contact, or separated from live parts by earthed metal		N

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Clause	Requirement – Test	Result - Remark	Verdict
22.36	Handles continuously held in the hand in normal use are so constructed that when gripped as in normal use, the operators hand is not likely to touch metal parts, unless they are separated from live parts by double or reinforced insulation		P
22.37	Capacitors in Class II appliances not connected to accessible metal parts, unless complying with 22.42		N
	Metal casings of capacitors in Class II appliances separated from accessible metal parts by supplementary insulation, unless complying with 22.42		N
22.38	Capacitors not connected between the contacts of a thermal cut-out		P
22.39	Lamp holders only used for the connection of lamps		N
22.40	Motor-operated appliances and combined appliances, intended to be moved while in operation or which have accessible moving parts, are fitted with a switch to control the motor		N
	The actuating member of this switch easily visible and accessible		N
	Switch provides all-pole disconnection		N
22.Z1	Appliance enclosure not shaped and decorated so that the appliance is likely to be treated as a toy by children		P
22.Z2	Fully halogenated chlorofluorocarbons (CFC's) not used		P
22.41	Appliances shall not incorporate components containing liquid mercury		P
22.42	Protective impedance consisting of at least two separate components		N
	Values specified in 8.1.4 not exceeded if any one of the components is short-circuited or open circuited		N
22.43	Appliances adjustable for different voltages, accidental changing of the setting of the voltage unlikely to occur		N
22.101	Rotating parts secured against loosening		N
22.102	Withstanding the water pressure expected in normal use if appliance connected to the water		N
	No leakage of water		N

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Clause	Requirement – Test	Result - Remark	Verdict
22.103	Steam cleaners so constructed that the user is not exposed to a hazard if the appliance is used in accordance with the instructions for use		P
22.104	Dimensions of pressure limiting protective devices are in accordance		P
	Area of outlet aperture ≥ area of inlet aperture		P
22.105	Current-carrying hoses containing live parts are resistant to low temperatures		N

23	INTERNAL WIRING		
23.1	Wireways smooth and free from sharp edges		P
	Wires protected against contact with burrs, cooling fins etc.		P
	Wire holes in metal well rounded or provided with bushings		N
	Wiring effectively prevented from coming into contact with moving parts		N
23.2	Beads etc. on live wires cannot change their position, and are not resting on sharp edges or corners		N
	Beads inside flexible metal conduits contained within an insulating sleeve		N
23.3	Electrical connections and internal conductors movable relatively to each other not exposed to undue stress		P
	Flexible metallic tubes not causing damage to insulation of conductors		N
	Open-coil springs not used		N
	Adequate insulating lining provided inside a coiled spring, the turns of which touch one another		N
	No damage after 10 000 flexings		N
	Electric strength test, 1000 V between live parts and metal parts		N
23.4	Bare internal wiring sufficiently rigid and fixed		N
23.5	The basic insulation of internal wiring withstanding the electrical stress likely to occur in normal use		P
	No breakdown when a voltage of 2000 V is applied for 15 min between the conductor and metal foil wrapped around the insulation		N

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Clause	Requirement – Test	Result - Remark	Verdict
23.6	Sleeving used as supplementary insulation on internal wiring retained in position by positive means		N
23.7	Only the colour combination green/yellow used for earthing conductors		P
23.8	Aluminium wires not used for internal wiring		N
23.9	No lead-tin soldering of stranded conductors where they are subject to contact pressure, unless clamping means so constructed that there is no risk of bad contact due to cold flow of the solder		P

24	COMPONENTS		
24.1	Components comply with safety requirements in relevant IEC standards		P
24.101	Any device incorporated in an appliance in order to comply with cl. 19.4 shall be non-self resetting and shall only be accessible by means of a tool		P
24.1.1	Capacitors likely to be subjected to the supply mains voltage and used for radio interference suppression or voltage dividing, comply with Annex ZC		P
	Small lampholders: compliance with requirements for E10 lampholders		N
	Isolating transformers and safety isolating transformers comply with IEC 60742		P
	Safety isolating transformers tested with the appliance comply with Annex ZD		N
	Appliance couplers for IPX0 appliances: compliance with IEC 60320		N
	Automatic controls: compliance with IEC 60730, unless tested with the appliance		P
	Other appliance couplers: compliance with IEC 60309		N
	Switches: compliance with IEC 61058, unless tested with the appliance		P
24.1.2	Automatic controls complying with IEC 60730: additional tests according to this standard and 11.3.5 to 11.3.8 and Cl. 17 of IEC 60730 as type 1 controls, the cycles of operation being:		P
	- thermostats: 10 000		P
	- temperature limiters: 1000		N

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Clause	Requirement – Test	Result - Remark	Verdict
	- self-resetting thermal cut-outs: 300		P
	- non-self-resetting thermal cut-outs: 30		N
	- energy regulators: 3000		N
	- timers: 10 000		N
24.1.3	For switches, the test of 17.2.7 of IEC 61058-1 carried out for 10 000 cycles of operation		P
	Switches not separately tested and found to comply with IEC 61058-1 under conditions covering those occurring in the appliance, comply with Annex ZE		N
	Switches for no-load-operation and operable only with the aid of a tool, are not subjected to the tests of Cl. 17 of IEC 61058-1		N
	This applies also to switches operated by hand, and with interlock for no-load-operation		N
	Switches without this interlock subjected to the test of 17.2.7 of IEC 61058-1 for 100 cycles of operation		N
24.1.4	Components marked with their operating characteristics are used in the appliance in accordance with these markings		P
	Components which have to comply with other standards are tested separately, according to the relevant standard		P
	Components used within the limits of its marking, tested in accordance with conditions occurring in the appliance		N
	Components not marked, or not used in accordance with its marking, or no IEC standard exists, tested under the conditions occurring in the appliance		N
	Components not mentioned in table 3 tested as part of the appliance		N
24.1.5	Voltage across capacitors in series with a motor winding does not exceed 1,1 times rated voltage, when the appliance is supplied at 1,1 times rated voltage under minimum load		N
	List of components	(see appended table)	P
24.2	No switches or automatic controls in flexible cords		P
	No devices causing the protective device in the fixed wiring to operate in the event of a fault in the appliance		P

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Clause	Requirement – Test	Result - Remark	Verdict
	No thermal cut-outs which can be reset by soldering		P
24.3	Switch intended for all-pole disconnection of stationary appliances is directly connected to the supply terminals, having a contact separation of at least 3 mm in each pole		N
24.4	Plugs and socket-outlets for heating elements and extra-low voltage circuits, not interchangeable with plugs, and		P
	socket-outlets or with connectors and appliance inlets complying with IEC 60083 or IEC 60320, respectively		P
24.5	Plugs and socket-outlets etc. for interconnection cords, not interchangeable with plugs and socket-outlets or connectors and appliance inlets complying with IEC 6083 or IEC 60320, respectively, if direct supply from the mains could give rise to a hazard		P
24.6	Motors connected to the supply mains and having inadequate basic insulation for the rated voltage of the appliance, comply with the requirements of Annex F		N
	The components are listed on an appended table		P

25	SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CORDS		
25.1	Appliance not intended for permanent connection to fixed wiring, means for connection to the supply:		—
	- supply cord fitted with a plug		P
	- an appliance inlet having at least the same degree of protection against moisture as required for the appliance		N
	- pins for insertion into socket-outlets		N
25.2	Appliance not provided with more than one means of connection to the supply		P
	Stationary appliance for multiple supply may be provided with more than one means of connection, provided electric strength test of 1250 V for 1 min between each means of connection causes no breakdown		N
25.3	Connection of supply wires for appliance intended to be permanently connected to fixed wiring possible after the appliance has been fixed to its support		N

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Clause	Requirement – Test	Result - Remark	Verdict
	Appliance provided with a set of terminals for the connection of cables or fixed wiring, cross-sectional areas specified in 26.2		N
	Appliance provided with a set of terminals allowing the connection of a flexible cord		N
	Appliance provided with a set of terminals and cable entries, conduit entries, knock-outs or glands, allowing connection of appropriate type of cable or conduit		N
25.4	Cable and conduit entries, rated current of appliance not exceeding 16 A, dimensions according to table 8		N
	Introduction of conduit or cable does not affect the protection against electric shock or reduce creepage distances and clearances below values specified in 29.1		N
25.5	Method for assemble supply cord with the appliance:		—
	- type X attachment		N
	- type Y attachment		P
	- type Z attachment		N
	Type X attachment: specially prepared cord		N
	Type X attachment not used for flat twin tinsel cord		N
	Type X attachment not used for appliances classified IPX7		N
25.6	Plugs fitted with only one flexible cord		P
	Supply cords of single-phase portable appliances having a rated current not exceeding 16 A, provided with a plug complying with the following Standard Sheets of IEC 60083		P
	- for Class I appliances: Standard Sheet C2b, C3b or C4		P
	- for Class II appliances: Standard Sheet C5 or C6		N
25.7	Appliance supply cord not lighter than:		—
	- ordinary tough rubber sheathed cord (245 IEC 53)		N
	- ordinary polychloroprene sheathed flexible cord (245 IEC 57)		N
	- ordinary polyvinyl chloride sheathed cord (227 IEC 53)	H05VV-F	P

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Clause	Requirement – Test	Result - Remark	Verdict
	Appliance supply cords having high flexibility not lighter than:		—
	- rubber insulated and sheathed cord (245 IEC 86)		N
	- rubber insulated crosslinked PVC sheathed cord (245 IEC 87)		N
	- crosslinked PVC insulated and sheathed cord (245 IEC 88)		N
	Temperature rise of external metal parts exceeding 75 K, PVC cord not used		N
	PVC cord used: appliance so constructed that the supply cord is not likely to touch external metal parts in normal use		N
	PVC supply cord appropriate for higher temperatures, type Y or type Z attachment used		P
25.8	Nominal cross-sectional area of supply cords according to table 9; rated current (A); cross-sectional area (mm^2) .....:	max 9,6A; 3x1,5mm^2	P
25.9	Supply cord not in contact with sharp points or edges		P
25.10	Green/yellow core for earthing purposes in Class I appliance		P
25.11	Conductors of supply cords not consolidated by lead-tin soldering where they are subject to contact pressure, unless		P
	clamping means so constructed that there is no risk of bad contacts due to cold flow of the solder		P
25.12	Moulding the cord to part of the enclosure does not damage the insulation of the supply cord		N
25.13	Inlet opening provided with a bushing, or is so constructed, that there is no risk of damage to the supply cord when introduced		P
25.13.1	Inlet bushing so shaped as to prevent damage to the supply cord		N
	Inlet bushing not detachable		N
25.13.2	At inlet openings, the insulation between the conductor of a supply cord and the enclosure of the appliance is consisting of the insulation of the conductor, and in addition:		—
	- for Class 0 appliances: at least one separate insulation		N
	- for other appliances: at least two separate insulations		P

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Clause	Requirement – Test	Result - Remark	Verdict
	Only one separate insulation is required if the enclosure at the inlet opening is of insulating material		P
	The separate insulation consists of:		—
	- the sheath of a supply cord at least equivalent to that of a cord complying with IEC 60227 or IEC 60245		P
	- a lining or bushing of insulating material complying with the requirements of 29.2 for supplementary insulation		N
25.14	Supply cords adequately protected against excessive flexing		P
	Flexing test; applied force (N); number of flexings .....:	20N; 20000 (see EN 60335-2-3)	P
	The test does not result in:		—
	- short-circuit between the conductors		P
	- breakage of more than 10% of the strands of any conductor		P
	- separation of the conductor from its terminal		P
	- loosening of any cord guard		P
	- damage, within the meaning of the standard, to the cord or the cord guard		P
	- broken strands piercing the insulation and becoming accessible		P
25.15	Conductors of the supply cord relieved from strain, twisting and abrasion by use of cord anchorages		P
	The cord cannot be pushed into the appliance to such an extent that the cord or internal parts of the appliance can be damaged		P
	Pull and torque test of supply cord, values shown in table 10: pull (N); torque (Nm) (not on automatic cord reel) .....:	0,35 100	P
	Max. 2 mm displacement of the cord, and conductors not moved more than 1 mm in the terminals		P
	Creepage distances and clearances not reduced below values specified in 29.1		P
25.16	Cord anchorages for type X attachments so constructed and located that:		—
	- replacement of the cord is easily possible		N

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Clause	Requirement – Test	Result - Remark	Verdict
	- it is clear how the relief from strain and the prevention of twisting are obtained		N
	- they are suitable for different types of cord		N
	- cord cannot touch the clamping screws of cord anchorage if these screws are accessible, unless separated from		N
	- accessible metal parts by supplementary insulation		N
	- the cord is not clamped by a metal screw which bears directly on the cord		N
	- at least one part of the cord anchorage securely fixed to the appliance, unless part of a specially prepared cord		N
	- screws which have to be operated when replacing the cord do not fix any other component, if applicable		N
	- if labyrinths can be bypassed the test of 25.15 is nevertheless withstood		N
	- for Cl. I appliances: they are of insulating material or are provided with an insulating lining, unless a failure of the insulation of the cord does not make accessible metal parts live		N
	- for Cl. II appliances: they are of insulating material, or if of metal, they are insulated from accessible metal parts by supplementary insulation		N
25.17	Adequate cord anchorages for type Y attachment		P
25.18	Cord anchorages only accessible with the aid of a tool		P
	Cord anchorages so constructed that the cord only can be fitted with the aid of a tool		P
25.19	Type X attachment, glands not used as cord anchorage in portable appliances		N
	Tying the cord into a knot or tying the cord with string not used		N
25.20	Conductors of the supply cord for type Y attachment adequately additionally insulated		P
25.21	Space for supply cable for fixed wiring or supply cord for type X attachment constructed to permit checking of conductors with respect to correct positioning and connection before fitting any cover, no risk of damage, no contact with accessible metal parts if a conductor becomes loose, etc.		N

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Clause	Requirement – Test	Result - Remark	Verdict
	For portable appliances, the uninsulated end of a conductor prevented from any contact with accessible metal parts, unless the end of the cord is such that the conductors are unlikely to slip free		N
25.22	Appliance inlet:		—
	- live parts not accessible during insertion or removal		N
	- connector can be inserted without difficulty		N
	- the appliance is not supported by the connector		N
	- is not for cold conditions if temperature rise of external metal parts exceeds 75 K, unless the supply cord is not likely to touch such metal parts		N
25.23	Interconnection cords comply with the requirements for the supply cord, except as specified		P
	If necessary, electric strength test of 16.3		N
	Insulation and sheath thickness of live conductors in a flexible hose at least equivalent to that specified in IEC 60227, cord 2x0,75 mm² code designation 227 IEC 53		P
25.24	Interconnection cords not detachable without the aid of a tool		P

26	TERMINALS FOR EXTERNAL CONDUCTORS		
26.1.1	Appliances with type X attachment and appliances for connection to fixed wiring provided with terminals in which connection is made by means of screws, nuts or equally effective devices		N
	Screws and nuts serve only to clamp supply conductors, except		N
	internal conductors, if so arranged that they are unlikely to be displaced when fitting the supply conductors		N
26.1.2	For type X attachment soldered connections used, the conductor so positioned or fixed that reliance is not placed on soldering alone		N
	Soldering alone used, barriers provided, creepage distances and clearances satisfactory if the conductor becomes free		N
	For type Y attachment: soldered, welded, crimped and similar connections used		P

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Clause	Requirement – Test	Result - Remark	Verdict
	For Cl. II appliances: the conductor so positioned or fixed that reliance is not placed on soldering, welding or crimping alone		N
	For Cl. II appliances: soldering, welding or crimping alone used, barriers provided, creepage distances and clearances satisfactory if the conductor becomes free		N
26.2	Terminals for type X attachment and for connection to fixed wiring suitable for connection of conductors with required cross-sectional area according to table 11; rated current (A); nominal cross-sectional area (mm^2) ..... :		N
	Terminals only suitable for a specially prepared cord		N
26.3	Terminals for the supply cord suitable for their purpose		P
	Terminals with screw clamping and screwless terminals not used for flat twin tinsel cords, unless conductors ends fitted with a device suitable for screw terminals		P
	Pull test of 5 N to the connection		P
26.4	Terminals for type X attachment and those for connection to fixed wiring so fixed that when tightening or loosening the clamping means:		—
	- the terminal does not loosen		N
	- internal wiring is not subjected to stress		N
	- creepage distances and clearances are not reduced below the values in 29.1		N
26.5	Terminals for type X attachment and for connection to fixed wiring so constructed that the conductor is clamped between metal surfaces with sufficient contact pressure and without damaging the conductor		N
26.6	Terminals for type X attachment, no special preparation of conductors required, and so constructed and placed that conductors prevented from slipping out, except those with a specially prepared cord and those for connection to fixed wiring		N
26.7	Terminals of the pillar type constructed and located as specified		N
26.8	Terminals for the connection to fixed wiring located close to each other, including the earthing terminal		N

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Clause	Requirement – Test	Result - Remark	Verdict
26.9	Terminals for type X attachment accessible after removal of a cover or part of the enclosure		N
26.10	Terminals not accessible without the aid of a tool		P
26.11	Terminals for type X attachment so located or shielded that if a wire of a stranded conductor escapes, no risk of accidental connection between live parts and accessible metal parts,		N
	For Class II constructions: between live parts and metal parts separated from accessible metal parts by supplementary insulation only		N
	Stranded conductor test, 8 mm insulation removed		N

27	PROVISION FOR EARTHING		
27.1	Accessible metal parts of Cl. I appliances, permanently and reliably connected to an earthing terminal		P
	Earthing terminals not connected to neutral terminal		P
	Cl. 0, II and III appliances have no provision for earthing		N
27.2	Screw clamping terminals comply with Cl. 26		P
	Screwless terminals comply with IEC 60998-2-2		N
	Terminals used for the connection of external equipotential bonding conductors allow connect-ion of conductors of 2,5 to 6 mm², and do not provide earthing continuity between different parts of the appliance		N
	Conductors cannot be loosened without the aid of a tool		P
	Clamping means adequately secured against accidental loosening		P
27.Z1	In hand-held appliances printed conductors of printed circuit boards not used to provide earthing continuity		N
	In other appliances at least two tracks are used with independent soldering points		N
	The appliance complies with the requirements of 27.5 for each circuit		N
	The material of the printed board complies with IEC 60249-2-4 or IEC 60249-2-5		N

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Clause	Requirement – Test	Result - Remark	Verdict
27.3	Earth connection "made before" and "separated after" current-carrying connections		P
	Current-carrying conductors become taut before earthing conductor, if the cord slips out of the cord anchorage		P
27.4	No risk of corrosion resulting from contact between metal of earthing terminal and other metal		P
	Adequate resistance to corrosion of coated or uncoated parts providing earthing continuity, other than parts of a metal frame or enclosure		P
	Parts of steel providing earthing continuity provided at the essential areas with an electroplated coating, thickness at least 5 μm		P
	Adequate protection against rusting of parts of coated or uncoated steel, only intended to provide or transmit contact pressure		P
	In case of aluminium alloys precautions taken to avoid risk of corrosion		N
27.5	Low resistance of connection between earthing terminal and earthed metal parts		P
	Resistance not exceeding 0,1 Ω at the specified low-resistance test		P

28	SCREWS AND CONNECTIONS		
28.1	Fixings and electrical connections withstand mechanical stresses		P
	Screws not of soft metal liable to creep, such as zinc or aluminium		P
	Diameter of screws of insulating material min. 3 mm		N
	Screws of insulating material not used for any electrical connection		N
	Screws transmitting electrical contact only screwing into metal		P
	Screws not of insulating material if their replacement by a metal screw can impair supplementary or reinforced insulation		N
	Type X attachment, screws to be removed for replacement of supply cord, or for users maintenance, not of insulating material if their replacement by a metal screw can impair basic insulation		N

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Clause	Requirement – Test	Result - Remark	Verdict
	Screws and nuts transmitting contact pressure subjected to torque test as specified, applying torque as shown in table 12		P
	The test is not carried out on screws and nuts transmitting contact pressure for earthing continuity provided at least two screws or nuts are used		N
28.2	Contact pressure not transmitted through insulating material liable to shrink or distort, unless shrinkage or distortion compensated		N
	This requirement does not apply to electrical connections in circuits carrying a current not exceeding 0,5 A		N
28.3	Space-threaded (sheet metal) screws only used for the connection of current-carrying parts if they clamp these parts directly in contact with each other		N
	Thread-cutting (self-tapping) screws not used for electrical connection of current-carrying parts, unless generating a full form standard machine screw thread		P
	Thread-cutting (self-tapping) screws not used if they are likely to be operated by the user or installer unless the thread is formed by a swaging action		P
	Thread-cutting and space-threaded screws used provide earthing continuity:		—
	- it is not necessary to disturb the connection in normal use		N
	- two screws used for each connection		N
28.4	Screws and nuts making mechanical connection between different parts of the appliance, and also making electrical connection or providing earthing continuity secured against loosening		P
	Rivets for current-carrying connections subject to torsion secured against loosening		N

29	CREEPAGE DISTANCES, CLEARANCES AND DISTANCES THROUGH INSULATION		
29.1	Creepage distances and clearances not less than specified in table 13		P

EN 60 335-2-54			
Clause	Requirement – Test	Result - Remark	Verdict
	Resonant voltage between the point where a winding and a capacitor are connected together and metal parts separated from live parts by basic insulation only, creepage distances and clearances not less than the values specified for the value of the voltage produced by the resonance		N
	Values increased by 4 mm in case of reinforced insulation when resonance voltage		N
29.2	Distances through insulation not less than 1,0 mm for supplementary insulation, and 2,0 mm for reinforced insulation		P
29.2.1	Supplementary insulation applied in thin sheet form, other than mica or similar scaly material, consists of at least two layers, each of the layers withstands the electric strength test of 16.3 for supplementary insulation		N
	Reinforced insulation applied in thin sheet form, other than mica or similar scaly material, consists of at least three layers, and any two of the layers together withstand the electric strength test of 16.3 for reinforced insulation		N
29.2.2	Supplementary or reinforced insulation inaccessible and does not exceed the maximum permissible temperature values		N
	Supplementary or reinforced insulation, after conditioning as specified, withstands the electric strength test as specified in 16.3, both at the oven temperature and room temperature		N

30	RESISTANCE TO HEAT, FIRE AND TRACKING		
30.1	See Annex H		P
	Relevant external parts of non-metallic material		P
	Parts supporting live parts and parts providing supplementary or reinforced insulation sufficiently resistant to heat		P
	Ball-pressure test with a force of 20 N, diameter of impression not exceeding 2 mm		P
	External parts: at 75 °C		P
	Parts supporting live parts: at 125 °C		P
	Parts providing supplementary or reinforced insulation: temperature (°C) ..... :		P
30.2	Relevant parts of non-metallic material adequately resistant to ignition and spread of fire		P

EN 60 335-2-54			
Clause	Requirement – Test	Result - Remark	Verdict
30.2.1	Possible burning test of relevant parts according to Annex J		N
	Glow-wire test of Annex K made at temperature 550° C		P
30.2.2	Appliances operated while attended, parts of insulating material supporting connections carrying a current exceeding 0,5 A in normal operation, subjected to the glow-wire test of Annex K at 650° C		P
30.2.4	Parts of non-metallic material within a distance of 50 mm from parts not withstanding the tests of 30.2.2 or 30.2.3, subjected to the needle-flame test of Annex M		N
30.3	Relevant insulating material have adequate resistance to tracking		P
	Tracking test at 175 V according to Annex N		P
	Tracking test at 250 V according to Annex N		N
	No hazard other than fire, tracking test at 175 V according to Annex N, and in addition needle-flame test of surrounding parts according to Annex M		P
	Possible needle-flame test of non-metallic material		N

31	RESISTANCE TO RUSTING		
	Relevant ferrous parts adequately protected against rusting		P

32	RADIATION, TOXICITY AND SIMILAR HAZARDS		
	Appliance does not emit harmful radiation		P
	Appliance does not present a toxic or similar hazard		P

A	ANNEX A, NORMATIVE REFERENCES		
	The annex contains a list of standards which are referred to, and thus become part of, this standard		P

B	ANNEX B, TESTING OF APPLIANCES POWERED BY RECHARGEABLE BATTERIES		
B.2	Definitions		N

EN 60 335-2-54			
Clause	Requirement – Test	Result - Remark	Verdict
B.2.2.9	Appliances operated under the following conditions:		
	- the appliance supplied by its fully charged battery is operated as specified in part 2		N
	- the appliance is charged, the battery being initially discharged to such an extent that the appliance cannot operate		N
	- if possible, the appliance is supplied from the supply mains through its battery charger, the battery being initially discharged to such an extent that the appliance cannot operate. The appliance is operated as specified in part 2		N
B.2.7.2	If a part has to be removed in order to discard the battery before scrapping the appliance, this part is not considered to be detachable even if the instructions state that it is to be removed		N
B.4	General conditions for the tests		N
B.4.101	Unless otherwise specified, appliances supplied from the supply mains are tested as specified for motor-operated appliances		N
B.7	Marking and instructions		N
B.7.1	Battery compartment for batteries intended to be replaced by the user, marked with battery voltage and polarity of the terminals		N
B.7.12	The instructions for appliances incorporating batteries intended to be replaced by the user, include required information		N
	Details given about how to remove batteries containing materials hazardous to the environment		N
	Materials which are hazardous to the environment are mercury, cadmium or lead		N
B.7.15	Markings placed on the part connected to the supply mains		N
B.8	Protection against access to live parts		N
B.8.2	Basic insulation between live parts and parts accessible during and after removal of the battery		N
B.11	Heating		N
B.11.7	Charging time for the battery		N
B.19	Abnormal operation		N
B.19.101	Charging time at rated voltage		N

EN 60 335-2-54			
Clause	Requirement – Test	Result - Remark	Verdict
B.19.102	Short-circuiting of the battery, fully charged, for appliances having batteries which can be removed without the aid of a tool		N
B.19.103	Appliances having batteries replaceable by the user, supplied at rated voltage under normal operation with the battery removed or in any position allowed by the construction		N
B.21	Mechanical strength		N
B.21.101	Appliances having pins for insertion into socket-outlets, checked according to procedure 2 of IEC 60068-2-32		N
	Mass of part not exceeding 250 g, 100 falls		N
	Mass of part exceeding 250 g, 50 falls		N
B.22	Construction		N
B.22.3	Appliances having pins for insertion into socket-outlets are tested as fully assembled as possible		N
B.25	Supply connection and external flexible cords		N
B.25.13.2	The requirement is not applicable to interconnection cords subjected to safety extra-low voltage		N
B.30	Resistance to heat, fire and tracking		N
B.30.2	For parts connected to the supply mains during the charging period, 30.2.3 applies		N
	For other parts, 30.2.2 applies		N

C	ANNEX C, AGEING TEST ON MOTORS		
	Test carried out when doubt with regard to the classification of the insulating system of a motor winding		N

E	ANNEX E, MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		
	Methods of measuring creepage distances and clearances, specified in 29.1, indicated in 10 different cases		P

F	ANNEX F, MOTORS NOT ISOLATED FROM THE SUPPLY MAINS AND HAVING BASIC INSULATION NOT DESIGNED FOR THE RATED VOLTAGE OF THE APPLIANCE	

EN 60 335-2-54			
Clause	Requirement – Test	Result - Remark	Verdict
	Motors having a working voltage not exceeding 42 V, not being isolated from the supply mains, and having basic insulation not designed for the rated voltage of the appliance are tested according to this annex		N
	All clauses of this standard apply, unless otherwise specified in this annex		N
F.8	Protection against accessibility to live parts		N
F.11.8	Temperature rise of the body of the motor, where in contact with insulating material, not exceeding values in table 3 for the relevant insulating material		N
F.16	Leakage current and electric strength		N
F.19	Abnormal operation		N
F.19.101	Appliance operated at rated voltage with each of the following defects:		
	- short-circuit of the terminals of the motor, including any capacitor incorporated in the motor circuit		N
	- open circuit of the supply to the motor		N
	- open circuit of any shunt resistor during operation of the motor		N
F.22	Construction		N
F.22.101	Class I appliance incorporating a motor supplied by a rectifier circuit, the d.c. circuit being insulated from accessible parts of the appliance by double or reinforced insulation		N

G	ANNEX G, CIRCUIT FOR MEASURING LEAKAGE CURRENTS		
	A suitable circuit for measuring leakage currents is shown		P

H	ANNEX H, SELECTION AND SEQUENCE OF THE TESTS OF CLAUSE 30		

J	ANNEX J, BURNING TEST		
	The burning test is made in accordance with IEC 60707, and method FH is used		N
	Category FH3 applies, the maximum burning rate being 40 mm/min		N

K	ANNEX K, GLOW-WIRE TEST		

EN 60 335-2-54			
Clause	Requirement – Test	Result - Remark	Verdict
	The glow-wire test is made in accordance with IEC 60695-2-1 (clause numbers between parentheses refer to IEC 60695-2-1)		
(4)	Description of test apparatus: the last paragraph before the note is replaced		P
(5)	Severities: the duration of application of the tip of the glow-wire to the specimen being (30 ± 1) s		P
(10)	Observations and measurements: item c) does not apply		P

L	ANNEX L, BAD-CONNECTION TEST WITH HEATERS		
	The bad-connection test with heaters is made in accordance with IEC 60695-2-3 (clause numbers between parentheses refer to IEC 60695-2-3)		N
(3)	General description of the test: additions concerning crimped connections		N
(4)	Description of test apparatus: replacements of some of the test specifications and the first paragraph of the note		N
(6)	Severities: the duration of application of the test power being (30 ± 1) min		N
(8)	Test procedure: 8.6 replaced		N
(11)	Information to be given in the relevant specification: item h), the first dashed paragraph, does not apply		N

M	ANNEX M, NEEDLE-FLAME TEST		
	The needle-flame test is made in accordance with IEC 60695-2-2 (clause numbers between parentheses refer to IEC 60695-2-2)		
(4)	Description of the apparatus: the sixth paragraph is replaced		N
(5)	Severities: the duration of application of the test flame is (30 ± 1) s		N
(8)	Test procedure: some changes in the test specifications		N
(10)	Evaluation of the test results: addition in the test specification		N

N	ANNEX N, PROOF TRACKING TEST	
	The proof tracking test is made in accordance with IEC 60112 (clause numbers between parentheses refer to IEC 60112)	P

EN 60 335-2-54			
Clause	Requirement – Test	Result - Remark	Verdict
(3)	Test specimen: the last sentence of the first paragraph does not apply		P
(5)	Test apparatus: some changes in the subclauses		P
(6)	Procedure: adjustments of the test specifications		P

P	ANNEX P, SEVERITY OF DUTY CONDITIONS OF INSULATING MATERIAL WITH RESPECT TO THE RISK OF TRACKING		
	Recognition of different duty conditions with respect to the risk of tracking		P

ZA	ANNEX ZA, SPECIAL NATIONAL CONDITIONS		
7.12	DENMARK: requirements regarding marking tag of power supply cord and connecting of earthing wire		N
19.5	NORWAY: the test is also applicable to appliances intended to be permanently connected to fixed wiring		N
19.11.2	AUSTRIA: requirements regarding appliances having circuits which under fault conditions may cause earth-leakage currents having a d.c. component exceeding 5 mA and exceeding 20% of the total earth-leakage current		N
22.2	FRANCE, NORWAY: The second paragraph of this subclause dealing with single-phase Class I appliances with heating elements is not applicable due to the supply system		N
25.6	BELGIUM, FRANCE, GREECE, UNITED KINGDOM: plugs according to Standard Sheet C2b not allowed		N
	AUSTRIA, GERMANY, FINLAND, ICELAND, IRELAND, ITALY, LUXEMBOURG, NETHERLANDS, NORWAY, PORTUGAL, SPAIN, SWEDEN, SWITZERLAND, UNITED KINGDOM: plugs according to Standard C3b not allowed		N
	DENMARK: Supply cords of single-phase portable appliances having a rated current not exceeding 10 A provided with a plug according to the following:		N
	Class I appliances: Section 107-2-DI Standard Sheet DK2-1a		N

EN 60 335-2-54			
Clause	Requirement – Test	Result - Remark	Verdict
	For appliances covered by a Part 2 of EN 60335, also plugs in accordance with IEC 60083, Standard Sheet C2b, C3b or C4 are allowed		N
	Class II appliances: IEC 60083, Standard Sheet C5 or C6		N
	Stationary single-phase appliances, having a rated current not exceeding 10 A, and provided with a plug, the plug is in accordance with the requirements above		N
	Multi-phase appliances and single-phase appliances having a rated current exceeding 10 A, and provided with a plug, the plug is in accordance with the requirements below:		—
	Cl. I appliances: Section 107-2-D1, Standard Sheet DK6-1a/EN 60309-2, Standard Sheet 2-II, 2-IV		N
	Cl. II appliances: Section 107-2-D1, Standard Sheet DK6-1a/2-II, 2-IV		N
	IRELAND: plug is in accordance with Standard Sheets B1 (15A), B2 and C2b		N
	SPAIN: Appliances having a rated current not exceeding 6 A, provided with a plug complying with UNE 20315:		N
	for Cl. I appliances: Figure 7C		N
	for Cl. II appliances: Figure 15A		N
	Cl. I appliances having a rated current not exceeding 16 A, provided with a plug complying with Standard UNE 20315 Figure 7B		N
	SWITZERLAND: supply cords of portable household and similar electrical appliances, rated current not exceeding 10 A, provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets:		N
	SEV 6532-2:1991 plug type 15, 3P+N+PE, 250/400 V, 10 A		N
	SEV 6533-2:1991 plug type 11, L+N, 250 V, 10 A		N
	SEV 6534-2:1991 plug type 12, L+N+PE, 250 V, 10 A		N
	UNITED KINGDOM: plug according to Standard Sheet B2 or C5 used (refer to Annex ZB)		N
25.8	IRELAND, UNITED KINGDOM: replacement of figures (rated current/cross-sectional area) in the table		N

EN 60 335-2-54			
Clause	Requirement – Test	Result - Remark	Verdict
ZB	ANNEX ZB, A-DEVIATIONS		
3	SWITZERLAND: information about batteries		N
7.1	ITALY: the voltage is 220 V/380 V		N
	SPAIN: the voltages are 127 V/220 V and 220 V/380 V		N
7.12	IRELAND: information about required label attached to the supply cord, concerning the colour code of the wires		N
22.22	GERMANY: the amount of asbestos in the mass containing asbestos not exceeding 0,1%		N
	FINLAND: certain types of asbestos not used		N
24	SWEDEN: components containing mercury not used		N
25.6	UNITED KINGDOM: regulations concerning plugs to be fitted to domestic appliances		N
ZC	ANNEX ZC, CAPACITORS		
	The following clauses and subclauses of IEC 60384-14 apply to capacitors likely to be permanently subjected to the supply mains voltage and used for radio interference suppression or for voltage dividing purposes with the following modifications		N
	SECTION ONE - GENERAL		—
1.5	Terminology		N
1.5.3	Applicable. Class X capacitors tested according to sub-Class X2		N
1.5.4	Applicable		N
1.6	Marking		N
	Items a) and b) are applicable		N
	SECTION THREE - QUALITY ASSESSMENT PROCEDURES		—
3.4.3.2	Tests		N
	Table II is applicable as follows:		
	- group 0: subclause 4.1, 4.2.1 and 4.2.5		N
	- group 1A: subclause 4.1.1		N
	- group 2: subclause 4.12		N
	- group 3: subclause 4.13 and 4.14		N

EN 60 335-2-54			
Clause	Requirement – Test	Result - Remark	Verdict
	- group 6: subclause 4.17		N
	- group 7: subclause 4.18		N
	SECTION FOUR - TEST AND MEASUREMENT PROCEDURES		—
4.1	Visual examination and check of dimensions		N
	Applicable		N
4.2	Electrical tests		N
4.2.1	Applicable		N
4.2.5	Applicable		N
4.2.5.2	Only Table IX applicable. Values for test A apply, for capacitors in heating appliances the values for test B or C apply		N
4.12	Applicable, only insulation resistance and voltage proof are checked (see Table XIII)		N
4.13	Applicable, when capacitors are used for voltage dividing purposes, the impulse voltage is applied to the terminals of the appliance		N
4.14	Applicable, together with subclauses 4.14.1, 4.14.3 and 4.14.7		N
4.17	Applicable		N
4.18	Applicable		N

ZD	ANNEX ZD, SAFETY ISOLATING TRANSFORMERS		
	Safety isolating transformers, tested with the appliance, comply with this standard and the following additional requirements	VDE APPROVAL	N
7	Marking and instructions		
7.1	Marking of transformers for specific use:		
	- name		N
	- trademark/identification mark of manufacturer or responsible vendor		N
	- model or type reference		N
17	Overload protection of transformers and associated equipment		
	The temperature limits specified for the windings do not apply to fail-safe transformers		N
	Such transformers comply with 14.5 of EN 60742		N
22	Construction		
22.501	Subclause 8.6 of EN 60742 applicable		N
29	Creepage distances, clearances and distances through insulation		

EN 60 335-2-54			
Clause	Requirement – Test	Result - Remark	Verdict
29.1	The distances specified in Table XV of EN 60742, items 1a, 1c and 2 apply		N

ZE	ANNEX ZE, SWITCHES		
	Switches tested with the appliance comply with this standard and the following clauses of IEC 61058-1, as modified		N
	- the tests of IEC 61058-1 carried out under the conditions occurring in the appliance, unless		N
	- otherwise specified, the tests are carried out on the switch incorporated in the appliance		N
	- before being tested in the appliance, switches are operated 20 times without load		N
8	Marking and documentation		—
	Switches are not required to be marked except, that incorporated switches shall be marked with the manufacturer's name or trademark and the type reference		N
13	Mechanism		—
	Applicable		N
15	Insulation resistance and electric strength		—
15.1	Not applicable		N
15.2	Not applicable		N
15.3	Applicable for full disconnection micro-disconnection		N
17	Endurance		—
	Applicable, at the end of the tests, temperature rise of the terminals not increased by more than 30 K		N
20	Clearances, creepage distances and distances through insulation		
	Applicable for creepage distances and clearances for live parts of different potential only, as stated in table 18 for operational insulation, and across full disconnection and micro-disconnection		N

ZF	ANNEX ZF, informative		
	IEC and CENELEC code designations for flexible cords		P

11.8	TABLE: temperature rise measurements		
	t1 (°C) ..... :	22	—
	t2 (°C) ..... :	22	—
	test voltage (V) ..... :	245	—

temperature rise dT of part/at:	dT (K)	required dT (K)
Supply cable	28	50
Supply terminals	30	see § 30
Filter (T100)	30	75
Electronic assembly	42	see § 30
Relais (T85)	42	60
Pressure switch with microswitch (T125)	75	100
Boiler thermostat (T150)	33	125
Boiler thermal cut-out (T175)	87	150
Connector	48	see § 30
Connector microswicth (T85)	48	60
Switches (T120)	35	95
Pilot lamps	75	see § 30
Internal wirings (silicone rubber)	55	145
External enclosure (plastic material)	48	see § 30
Steam gun switch (T105)	30	80
Boiler/steam gun cable (wires)	30	50
External wiring (steam gun)	18	60
Handle and switch (boiler)	20	60
Handle and switch (steam gun)	13	60
Walls and floor of test corner	13	65

	winding temperature rise measurements:		
	insulation class ..... :	B, H, F	—

temperature rise dT of winding:	R_1 (Ω)	R_2 (Ω)	dT (K)	required dT (K)	insulation class
Transformer (PRI)	2150	2528	45	95	B
Transformer (SEC)	17	19,9	44	95	B
Electromagnetic valve (1,5mm)	2170	3337	138	140	H
Electromagnetic valve (1,0mm)	2150	3315	139	140	H
Pump	114,4	146,6	72	115	F

13.2	TABLE: leakage current measurements at operating temperature		
	heating appliances: at 1,15 times rated input (W) ..... :	2530	—
	motor-operated and combined appliances: at 1,06 times rated voltage (V) ..... :	--	—

leakage current I between:	I (mA)	required I (mA)
Live parts and accessible metal parts (basic insulation)	0,1	0,75
Live parts and accessible metal parts (reinforced insulation)	< 0,1	0,25

13.3	TABLE: electric strength measurements at operating temperature	

test voltage applied between:	test voltage (V)	breakdown
		Yes / No
Live parts and accessible metal parts (basic insulation)	1000	No
Live parts and accessible metal parts (supplementary insulation)	2500	No
Live parts and accessible metal parts (reinforced insulation)	3750	No

16.2	TABLE: leakage current measurements		
	at 1,06 times rated voltage (V) .....:	244	—

leakage current I between:	I (mA)	required I (mA)
Live parts and accessible metal parts (basic insulation)	< 0.1	0.75
Live parts and accessible metal parts (reinforced insulation)	< 0.1	0.25

16.3	TABLE: electric strength measurements	

test voltage applied between:	test voltage (V)	breakdown
		Yes / No
Live parts and accessible metal parts (basic insulation)	1250	No
Live parts and accessible metal parts (supplementary insulation)	2500	No
Live parts and accessible metal parts (reinforced insulation)	3750	No
Metal foil wrapped on knobs and handles	2500	No

17.	TABLE: overload protection, temperature rise measurements		
17.1	at 1,06 or 0,94 times rated voltage (V) .....:		—

temperature rise dT of part/at:	dT (K)	required dT (K)
Tansformer PRI (cl.B)	130	175
Tansformer SEC (cl.B)	123	175

24.1	TABLE: components	

object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Plug +	EURO-CABLAGGI	ART.05	10-16A; 250V	CEE 7	IMQ
cable	PECSO	H05VV-F	3x1,5mm^2	HD 22 S1/S2	<HAR>
Supply terminals	ELETTROGIBI	PA 84	380V	EN 60998-2-1	CSv-IMQ
Boiler heating element	TECNOVAP (FER)	--	230V; 2200W	CHECKED IN THE APPLIANCE	--
Boiler thermostat	IMIT	TR2	15(2,5)A/250V; 10A/380V; T150	EN 60730	CSv-IMQ
Boiler thermostat (*)	COTHERM	TR98..	5A/250V; 10A/250V; T150	EN 60730	VDE
Pressure switch	CEME	5611	0,2-6bar; 16(1,6)A; 250V; T85	EN 61058	IMQ
Pressure switch with: (*)	MATER	XP	16A; 250V; T125; P	EN 61058	IMQ
Microswitch	CHERRY	045X	16(4)A; 250V; T125	EN 61058	ENEC
Boiler non self resetting thermal cut-out	ELMWOOD	24.55R	10(6)A; 250V; T177	EN 60730	IMQ
Boiler non self resetting thermal cut-out (*)	ELTH	261/PB	16(3)A; 250V; T175	EN 60730	VDE
Electromagnetic valve (n°2)	OLAM	6000/BH	230V; 50Hz; 9VA; Cl.H; Ta80	EN 61058	VDE
Electromagnetic valve (n°2) (*)	CEME	5581	220V; 50Hz	EN 61058	IMQ
Electromagnetic valve (n°2) (*)	CEME	588	230V; 13,5VA	EN 61058	IMQ
Switch (n°2)	MOLVENO COMETTI	B4..	10(4)A; 250V; P; T120	EN 61058	IMQ
Pilot lamp (n°2)	SIGNAL LUX	31B	250V; T120	CHECKED IN THE APPLIANCE	--
Pilot lamp (n°3)	ELETTRO-METAL	NSC4	240V; T150	CHECKED IN THE APPLIANCE	VDE

object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity[1])
Connector microswitch	SAIA	X662..	16(4)A; 250V; T85; P	EN 61058	ENEC
Electronic assembly with:	(FM ELETTRONICA)	TVAP10..	--	CHECKED IN THE APPLIANCE	--
Transformer	ERA	EL 30/18	PRI 230V; SEC 12V; 50/60Hz; 2,3VA; Cl.B	EN 60742	VDE
Relay (n°3)	FINDER	40/61	16A/250V; 12V; T85	EN 61058	IMQ
Pump	CEME	ET500	230V; 55W	EN 60335-1	CSv-IMQ
Connector (socket-outlet)	ILME	--	10A; 250V	CHECKED IN THE APPLIANCE	--
Interference suppressor	ARKOTRONICS	KNB1533	0,47μF 10%; X2 + 470kΩ; 275VAC	EN 132400 IEC 384-14	VDE
Steam gun switch	AC (S.E.C.E.)	A2...	10(4)A/250V; 6(4)A/250V; T105; P	EN 61058	IMQ
Steam gun switch	AC (S.E.C.E.)	SCA	6(4)A/250V; 5(2)A/250V; T120; P	EN 61058	IMQ
Steam gun connector plug	ILME	--	10A; 250V	CHECKED IN THE APPLIANCE	--
Interconnection cable iron/boiler	--	H05RR-F	4x0,75mm^2	HD 22 S1/S2	<HAR>
Switch (iron)	ELECTRICA	NRA1N3	13(3)A; 250V; T85; P	EN 61058	IMQ
Thermostat with sel-resetting thermal cut-out (iron)	TSB	14127025EFD	100°C; 298°C	EN 60730	VDE
Iron connector plug	ILME	--	10A; 250V	CHECKED IN THE APPLIANCE	--

[1]) an asterisk indicates a mark which assures the agreed level of surveillance

(*) Alternative component