

**CPRI
INDIA**

TEST REPORT





**UHV RESEARCH LABORATORY
CENTRAL POWER RESEARCH INSTITUTE**
P.B. No. 9, UPPAL P.O., HYDERABAD - WARANGAL HIGHWAY
HYDERABAD - 500 039

Phone : Direct (040)-27203622, EPABX : (040)-27203112, 27204701
Fax : (040)-27203378, E-mail: uhvac@cprihyderabad.com

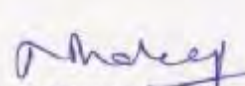


Certificate No. : T-0098

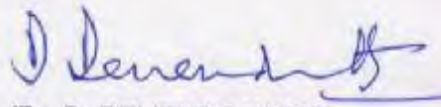
Sheet 01 of 03

TEST REPORT

Test report number	: UHV/T/305	Dated: 11-10-2010
Name & address of the customer	: M/s. Crompton Greaves Ltd, D-2, M.I.D.C. Waluj, Aurangabad, Maharastra-431136.	
Name & address of the manufacturer	: M/s. Crompton Greaves Ltd, D-2, MIDC, Waluj, Aurangabad, Maharastra - 431136.	
Particulars of sample tested		
Condition of sample on receipt	: New	
Type	: CT:145/275/650	
Description	: 145 kV Live tank Hermetically sealed, Current transformer	
Serial No.	: 92623	
Number of samples tested	: One	
Date(s) of test(s)	: 08-10-2010	
CPRI sample code number	: UHV10S0427	
Particulars of tests conducted	: Dry Lightning Impulse Voltage Test	
Test method		
Standard/specification	: IEC: 60044-1 /2003	
Sampling plan	: Not applicable	
Customer's requirement	: Nil	
Deviations if any	: Nil	
Name of the witnessing persons		
Customers representatives	: Mr. Yogesh P.Sonune	
Other than customer's representatives	: Nil	
Test subcontracted with address of the laboratory	: Nil	
Documents constituting this report (in words)		
Number of sheets	: Three	
Number of oscillograms	: Four (One sheet)	
Number of graphs	: Nil	
Number of photos	: Nil	
Number of test circuit diagrams	: One in Sheet 03 of 03	
Number of drawings	: Three (Three sheets)	


(Dr. PRADEEP M. NIRGUDE)
Test Engineer




(Dr. D. DEVENDRANATH)
Joint Director

AUTHORISED SIGNATORIES



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Certificate No. : T-0098

Sheet 02 of 03

Test Report Number

: UHV/T/305

Dated: 11-10-2010

MOUNTING ARRANGEMENTS & TEST CONNECTIONS DURING TEST:

Mounting Arrangements: The sample was placed at outdoor.

Reference drawing Nos.: 1) 413491798 CT1 GA 2) 413491798 CT1 RS(E)
3) 413491798 CT1 SB

Test connections:

Voltage source connected to	Earth connected to
Primary terminal P ₁ P ₂	Cx terminal connected to earth through shunt. All secondary terminal shorted and connected to earth. Base also connected to earth.

AMBIENT CONDITIONS:

Temperature (Degree Celsius)		Atmospheric pressure in mm of Hg.
Dry bulb	Wet bulb	
30	26	718

TEST PROCEDURE: Test conducted as per standard.

RESULTS & OBSERVATIONS:

TEST : LIGHTNING IMPULSE VOLTAGE TEST

Polarity	Lightning impulse	No. of Impulses applied	Test voltage kV (peak)*	Reference Oscillogram Nos. C:\CPRI2010\10\CGLS6\....DAT CH-1: Voltage CH-2: Current
Negative	Reduced Full Wave	01	457	041
	Full Wave	15	650	052
Positive	Reduced Full Wave	01	460	060
	Full Wave	15	650	073

*These are the test voltages for the ambient atmospheric conditions mentioned.

The Current transformer withstood the above mentioned Lightning impulse voltage applications.

(Dr. PRADEEP M. NIRGUDE)
Test Engineer



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Certificate No. : T-0098

Sheet 03 of 03

Test Report Number

: UHV/T/305

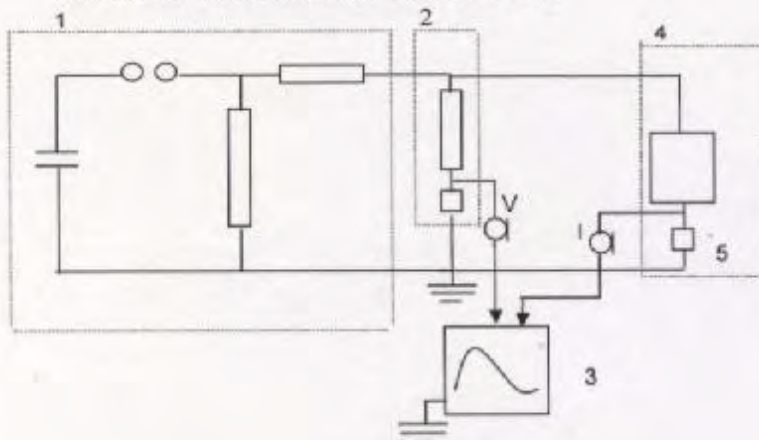
Dated: 11-10-2010

NOTE

- The test results relate only to the items tested.
- Publication or reproduction of this report in any form other than by complete set of the whole report and in the language written is not permitted without the written approval of CPRI.
- Corrections/erasings invalidate the test report.
- Any anomalies/discrepancies in the test report should be brought to our notice within 45 days from the date of issue

TEST CIRCUIT DIAGRAM

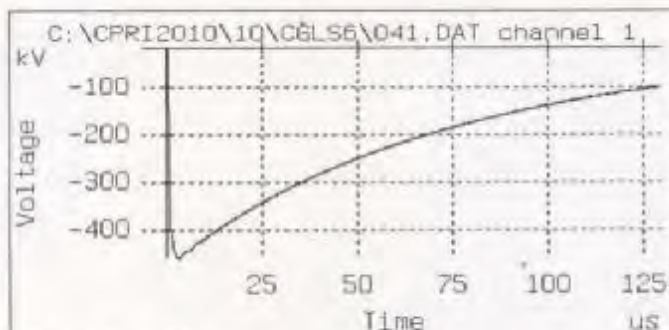
TEST : LIGHTNING IMPULSE VOLTAGE TEST



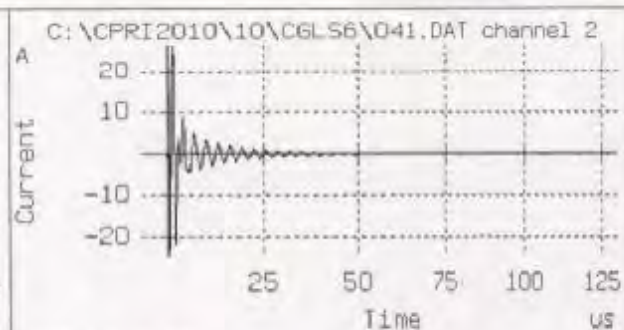
Legend:

- 1: Impulse voltage generator
- 2: Impulse voltage divider
- 3: Digital recorder for measurement Of Voltage
- 4: Test object
- 5: Current Shunt
- V : Voltage
- I : Current

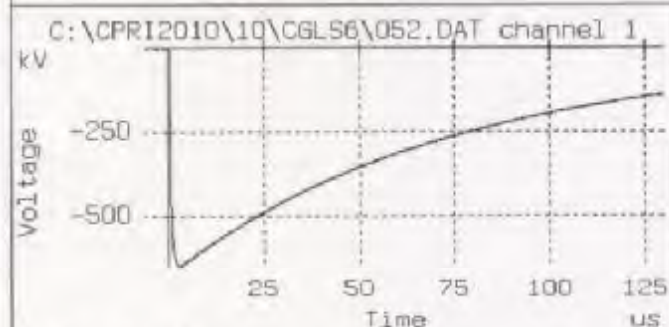
Pradeep M. Nirgude
(Dr. PRADEEP M. NIRGUDE)
Test Engineer



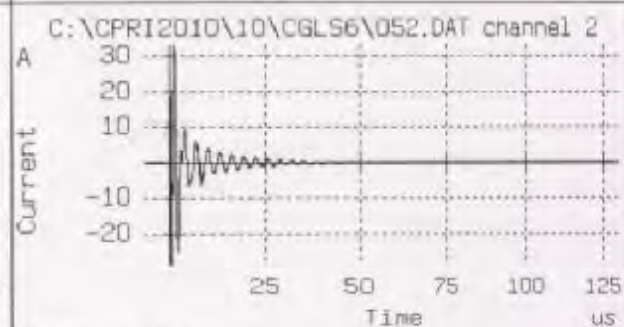
70% LI full
-457.2kV T1=1.38us T2=56.5us



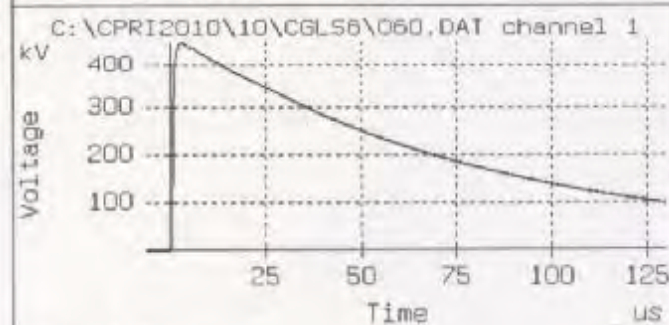
70% LI full
Max:27.54A Min:-24.22A



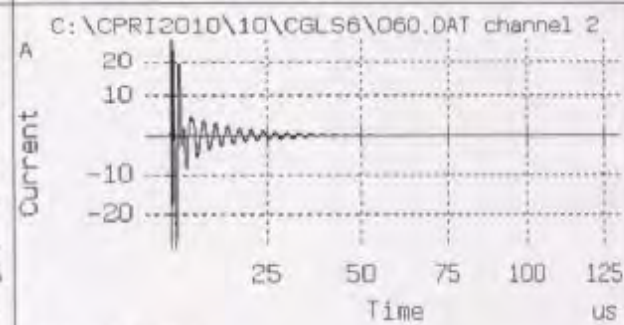
100% LI full
-852kV T1=1.42us T2=56.4us



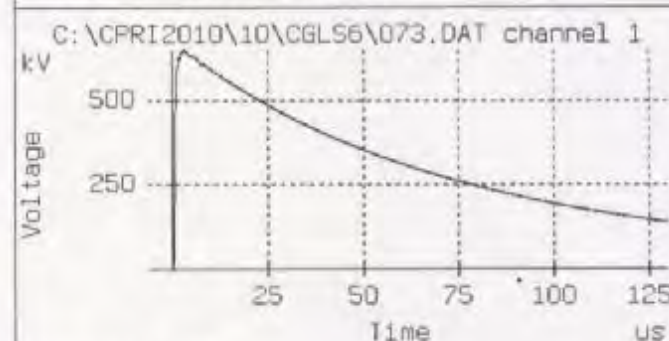
100% LI full
Max:33A Min:-28.88A



70% LI full
460kV T1=1.39us T2=57.3us



70% LI full
Max:-28.18A Min:26.89A



100% LI full
650.6kV T1=1.44us T2=57.3us



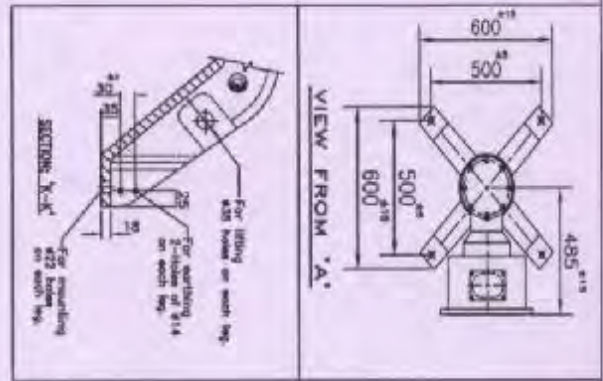
100% LI full
Max:-34.69A Min:31.87A

Test Report Number: UHV/T/305

Dt.11-10-2010

TEST ENGINEER

C.G. APPROX 1650



TEST ENGINEER
Central Power Research Institute
HYDERABAD

प्रमाणित किया जाता है :-
 दिनांक :- 3
 (प्रमाणित करने वाले का नाम)
 04/07/2025 11:10 AM
 (प्रमाणित करने वाले का पता)
 1. Size of drawing is limited
 2. Checking of dimensions only

- MAKE OF ITEMS TO PGCI'S OK APPROVAL
- DEGREE OF PROTECTION FOR SECONDARY TERMINAL BOX- IP 55
- INSULATION OF OIL SHALL BE ENV GRADE AS PER IS:335-1983; IEC:298-1982
- HARDWARE-M10 BELLOW ELECTRICAL WINKED M12 & ABOVE STAINLESS STEEL
- RIV LEVEL AT 82 KV LESS THAN 500 MICRO VOLTS.
- PROJECTED AREA OF PRODUCT ~ 1.0 SQ.METER.
- CANTILEVER LOAD OF INSULATOR= 700 Kgr.
- PRIMARY NO OF TURN= 2
- MIN. CROSS SECTION= 1962 mm ALUMINIUM
- FINISH : EPOXY PAINT SHADE = 697 OF IS:5-1994
- CROSS SECTION OF TUBE = 2034 SQ.MM.

Class 2



एशिया व्यापार निगम लिमिटेड
(एशिया ट्रेड कॉर्पोरेशन लिमिटेड)
FOREIGN TRADE CORPORATION OF INDIA LIMITED.
(Incorporated in India)

R4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					</
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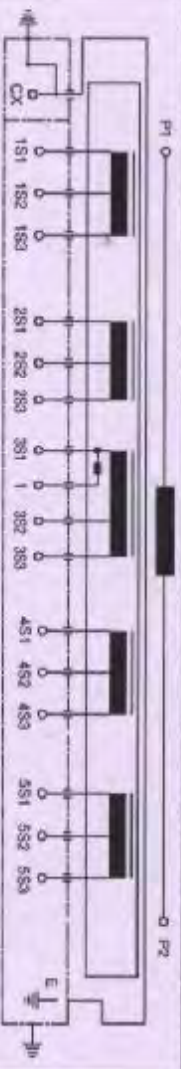
IF IN DOUBT ASK

270
256



145 KV CURRENT TRANSFORMER RATING & SCHEMATIC DIAGRAM

CUSTOMER : GAZIOMANUVA KALVANI
TYPE : CT 145/275/5000
SHEET NO : 31.5 KVA SEC. 100/5
INSULATION LEVEL : 275KV (5000V)
FREQUENCY : 50 Hz
S.E. NO. : 412401708
SER. NO. :
YEAR : 2008
SPECIFICATION : IEC : 60044-1
CHIEF ENGINEER :
DATE : 10.12.09



CORE NO.	I	II	III	IV	V
RATIO	3000/1	6000/1	3000/1	6000/1	3000/1
PRIMARY TERMINAL	P1-P2	P1-P2	P1-P2	P1-P2	P1-P2
SECONDARY TERMINAL	1S1-1S2	2S1-2S2	3S1-3S2	4S1-4S2	5S1-5S2
BURDEN (VA)	-	-	20	20	-
CLASS	PS	PS	PS	PS	PS
ISF/ALE	-	-	4.5	4.5	-
MPV (MIN) V	300	600	300	600	300
Sec(max) AT VA	40	30	30	30	30
Rat 75% ~	≤ 3	≤ 8	≤ 3	≤ 8	≤ 3

CAUTION: SHORT ALL SEC. TERMINALS WHEN NOT IN USE OR BEFORE DISCONNECTING BURENS. CONNECT CT TERMINAL TO EARTH WHEN CT IS IN OPERATION.

Ø4.5 Holes, 4Nos.
MATERIAL : ALUMINIUM ANOD.

Job No. 145-92628

Client :
Gazipur Power Corporation Ltd.
Gazipur Power Corporation Ltd.
Gazipur Power Corporation Ltd.

NO	REVISION	SIGNATURE	NO	REVISION	SIGNATURE	NO	REVISION	SIGNATURE	NO	REVISION	SIGNATURE
R4			R2			R1			R1		
R3											
R2											
R1											



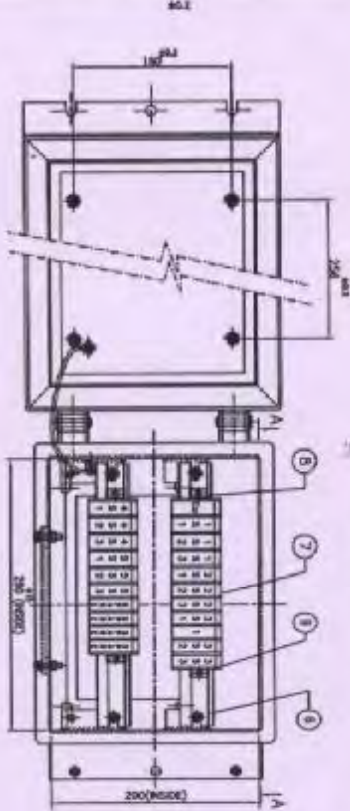
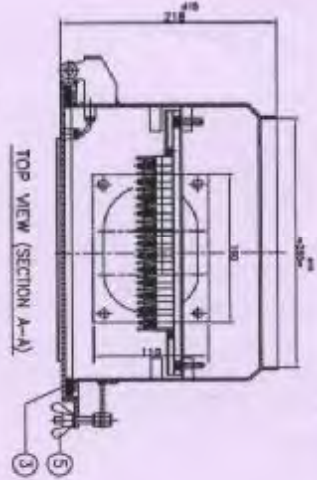
GAZIOMANUVA KALVANI
Gazipur Power Corporation Ltd.
Gazipur Power Corporation Ltd.

TEST ENGINEER
Central Power Research Institute
HYDERABAD

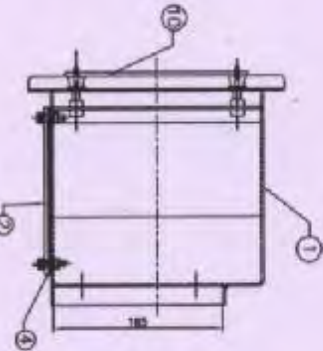
145KV/305 d.11-10-2010

Verification of drawing is limited to checking of 'dimensions only'

IF IN DOUBT ASK



ELEVATION



SIDE VIEW

- NOTES:
- 1) SECONDARY BOX ASSEMBLY TO CONFORM IEC AS PER IS:1547-1993.
 - 2) CABLES FOR CABLES & TAP DATA MEASUREMENT ONLY.
 - 3) MATERIAL : SHEET THK. 2mm MIN.
 - 4) FINISH : EPOXY PAINT.
 - 5) BOX INSIDE - EPOXY PAINT : SHADE - GLOSS WHITE.
 - 6) BOX OUTSIDE - EPOXY PAINT : SHADE - 697 OF IS:5-1994.
 - 7) TERMINALS SHALL BE NON-DISCONNECTING SOLDER TYPE.

Shree
TEST ENGINEER
 Central Power Research Institute
 HYDERABAD

UHV/IT/305 dt. 11-10-2010

Testing of drawing is limited
 the checking of dimensions only

CHART 1:
 POWER TYPE APPROPRIATE FOR HYDRO POWER
 (HYDRO POWER TYPE)
 POWER GRID CORPORATION OF INDIA LIMITED.
 (A Government of India Enterprise)

NO	QTY	PARTS & SCHEMATIC DIAGRAM	UNIT	NAME/CONNECTOR
1	1	END PLATE	WELON	WAVE-CONNECTOR
2	1	END CLAMP	STEEL	WAVE-CONNECTOR
3	21	SECONDARY TERMINAL BLOCK WITH MARKER	WELON	WAVE-CONNECTOR
4	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
5	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
6	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
7	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
8	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
9	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
10	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
11	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
12	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
13	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
14	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
15	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
16	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
17	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
18	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
19	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
20	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
21	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
22	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
23	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
24	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
25	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
26	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
27	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
28	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
29	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
30	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
31	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
32	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
33	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
34	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
35	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
36	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
37	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
38	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
39	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
40	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
41	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
42	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
43	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
44	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
45	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
46	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
47	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
48	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
49	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
50	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR

NO	QTY	PARTS & SCHEMATIC DIAGRAM	UNIT	NAME/CONNECTOR
1	1	END PLATE	WELON	WAVE-CONNECTOR
2	1	END CLAMP	STEEL	WAVE-CONNECTOR
3	21	SECONDARY TERMINAL BLOCK WITH MARKER	WELON	WAVE-CONNECTOR
4	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
5	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
6	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
7	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
8	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
9	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
10	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
11	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
12	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
13	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
14	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
15	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
16	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
17	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
18	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
19	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
20	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
21	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
22	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
23	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
24	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
25	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
26	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
27	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
28	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
29	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
30	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
31	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
32	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
33	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
34	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
35	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
36	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
37	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
38	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
39	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
40	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
41	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
42	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
43	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
44	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
45	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
46	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
47	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
48	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
49	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
50	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR

NO	QTY	PARTS & SCHEMATIC DIAGRAM	UNIT	NAME/CONNECTOR
1	1	END PLATE	WELON	WAVE-CONNECTOR
2	1	END CLAMP	STEEL	WAVE-CONNECTOR
3	21	SECONDARY TERMINAL BLOCK WITH MARKER	WELON	WAVE-CONNECTOR
4	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
5	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
6	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
7	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
8	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
9	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
10	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
11	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
12	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
13	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
14	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
15	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
16	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
17	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
18	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
19	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
20	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
21	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
22	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
23	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
24	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
25	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
26	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
27	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
28	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
29	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
30	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
31	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
32	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
33	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
34	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
35	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
36	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
37	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
38	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
39	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
40	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
41	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
42	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
43	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
44	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
45	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
46	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
47	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
48	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
49	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR
50	1	WAVE-CONNECTOR	STEEL	WAVE-CONNECTOR