ISO 669:2016-02 (E)

Resistance welding - Resistance welding equipment - Mechanical and electrical requirements

Contents

Page

Foreword v

1 Scope 1

2 Normative references 1

3 Termsanddefinitions 2
3.1 Mechanical parts of spot, projection, and seam welding equipment 2
3.2 Mechanical parts of upset and flash welding equipment 8
3.3 Static mechanical characteristics 11
3.4 Electrical and thermal characteristics 14
3.5 Pneumatic and hydraulic characteristics 16

4 Symbols and abbreviated terms 16

5 Physical environment and operating conditions 18
5.1 General 18
5.2 Ambient air temperature 18
5.3 Liquid cooling medium 18
5.4 Humidity 18
5.5 Altitude 19
5.6 Transportation and storage 19

6 Test conditions 19
6.1 General 19
6.2 Environmental conditions 19
6.3 Measuring instruments 19

7 Rated no load voltage at the output 20
7.1 General 20
7.2 a.c. no load voltage (U20) 20
7.3 d.c. no load voltage (U2d) 20

8 Maximum short circuit current 20
8.1 General 20
8.2 Spot and seam welding equipment 21
8.3 Projection welding equipment 21
8.4 Upset and flash welding equipment 22

9 Thermal rating 23
9.1 General 23
9.2 Thermal test 23

10 Cooling liquid circuit (liquid cooled welding equipment) 23

11 Static mechanical characteristics 24
11.1 General 24
11.2 Spot and projection welding equipment 24
11.2.1 General 24
11.2.2 Eccentricity 25
11.2.3 Angular deflection 26

11.2.4 Radial deflection 26
11.2.5 Axial deflection 27
11.2.6 Machine stiffness 27
11.2.7 Parallelism of top and bottom platen 27
11.2.8 Perpendicularity in platen movement, 4 28
11.3 Seam welding equipment 29
11.3.1 General 29
11.3.2 Eccentricity 29
11.3.3 Angular deflection 30
11.4 Upset welding equipment 30
11.4.1 General 30
11.4.2 Angular deflection 31

12 Rating plate 31
12.1 General 31
12.2 Description 32
12.3 Tolerances 34

13 Instruction manual 34

Annex A (informative) Examples of rating plates 36

Bibliography 38