ISO 16092-4:2019-11 (E)

Machine tools safety - Presses - Part 4: Safety requirem ents for pneumatic presses

Contents

Page

Foreword iv

Introduction v

1 Scope 1

2 Normative references 1

3 Termsanddefinitions 1

4 Listofsignificanthazards 2

5 Safety requirements and/or measures 2
5.1 General 2
5.2 Basic design considerations 2
5.2.1 Hydraulic and pneumatic systems -- Common features 2
5.2.2 Pneumatic systems 2
5.2.3 Hydraulic systems 2
5.2.4 Electric systems 2
5.3 Mechanical hazards in the tools area 2
5.3.1 Major danger zone 2
5.3.2 Safeguarding measures 2
5.3.3 Other safety requirements 2
5.3.4 Release of trapped persons between the tools 2
5.3.5 Release of persons trapped inside enclosed areas 3
5.3.6 Prevention of gravity fall during maintenance or repair 3
5.3.7 Prevention of unintended gravity fall during production (down-stroking press) 3
5.4 Control and monitoring system 3
5.4.1 Control and monitoring functions 3
5.4.2 Muting 4
5.4.3 Selection devices 4
5.4.4 Position sensors 4
5.4.5 Control devices 4
5.4.6 Valves 4
5.4.7 Performance level of safety functions 4
5.5 Tool-setting, trial strokes, maintenance and lubrication 19
5.6 Mechanical hazards -- Other 19
5.7 Slips, trips and falls 19
5.8 Protection against other hazards 19

6 Verificationofthesafetyrequirementsand/ormeasures 19

7 Information for use 20
7.1 General 20
7.2 Marking 20
7.3 Warnings 21
7.4 Instruction handbook 21

Annex A (informative)Additionalsignificanthazards,hazardoussituationsandprotective measures 22

Annex B (normative) Calculation of minimum distances 23

Annex C (informative) Examples and principles of pneumatic press and power interlocking 24

Bibliography 27