



Servo mechatronic press brake

SAFAN E-Brake 50-2050 HS TS 1

User manual M1177 2007



This manual

Chapter 1 Introduction

Informs the operator and other persons who are involved about the press brake approximately.

Chapter 2 Description

Gives a circumstantial description of the press brake in order to inform the operator and professional personnel as well.

Chapter 3 Working

Tells the operator and professional personnel how the press brake works.

Chapter 4 Safety

Is important for everyone who is involved with the press brake; it is about safety

Chapter 5 Transport, installation, commissioning

Is to use by persons involved in setting up, transporting and starting up the machine and preparations for these activities. They should also take account of chapter 4 Safety.

Chapter 6 Accessories

Offers information about accessories, which are delivered with the machine; back gauge, clamping and crowning, etc.

Chapter 7 Operation

In combination with the TS Control manual tells the operator how to operate the press brake. The operator should have a good knowledge of sheet handling

Chapter 8 Troubleshooting

Is about troubleshooting and remedies.

Chapter 9 Maintenance

Is meant for the authorized maintenance personnel.

Content

| Subject | page | Subject | page |
|--|------|--|------|
| Preliminaries | 3 | 4.1. Work safely ! | 49 |
| 1. Introduction | 13 | 4.1.1. During repair work/maintenance (lubrication) | 49 |
| 1.1. General | 14 | 4.1.2. Restricted application | 49 |
| 1.1.1. Application | 14 | 4.1.3. Daily checking procedures. | 49 |
| 1.2. Design and data | 15 | 4.1.4. Safety parts and instructions | 50 |
| 1.2.1. Main dimensions and foundation measurements | 16 | 4.1.5. Changing tools | 50 |
| 1.2.2. Technical data | 17 | 4.1.6. Changing print cards or other maintenance in the electrical cabinet | 50 |
| 1.3. Information about the noise interference of the machine | 18 | 4.1.7. Caution ! | 50 |
| 1.4. Information about the maximum pressure of the machine | 19 | 4.1.8. Examples of jamming hazards | 51 |
| 1.5. Description of the bending process | 21 | 5. Transportation, installation, commissioning | 53 |
| 1.5.1. The different axis of a press brake | 23 | 5.1. Transportation | 55 |
| 2. Description | 25 | 5.1.1. Internal transport in your company | 55 |
| 2.1. General | 27 | 5.1.2. Hoisting | 55 |
| 2.2. The main components | 28 | 5.1.3. Delivery | 56 |
| 2.2.1. Description of the main components | 29 | 5.2. Installation Cleaning | 57 |
| 2.3. Electrical cabinet | 32 | 5.2.1. Electrical connections | 57 |
| 2.3.1. The controls on the electrical cabinet | 32 | 5.2.2. Required operating and maintenance space | 58 |
| 2.3.2. Functions of the controls on the electrical cabinet | 32 | 5.2.3. Calculation of floor | 58 |
| 2.4. Machine identification | 34 | 5.2.4. Erecting and anchoring | 58 |
| 2.4.1. Description of the machine identification | 34 | 5.3. Commissioning | 59 |
| 2.5. Control panel | 36 | 5.3.1. Commissioning report. | 59 |
| 2.5.1. Description of the main controls on the control panel | 37 | 6. Accessories | 61 |
| 2.6. Terminology | 38 | 7. Operation | 63 |
| 2.6.1. Description of the various terms | 39 | 7.1. Press brake control | 65 |
| 3. Working | 41 | 7.2. Starting the machine | 66 |
| 3.1. General | 43 | 7.3. Choosing the easiest operating mode | 67 |
| 3.2. Working of the selector safety switch | 44 | 7.4. Stopping the machine | 68 |
| 3.2.1. Working of the control panel | 45 | 8. Troubleshooting | 69 |
| 3.3. Working of the back gauge | 46 | 8.1. Trouble shooting chart | 71 |
| 4. Safety | 47 | 8.2. Explanation of the indicator light signals | 72 |

| | |
|--|----|
| 9. Maintenance | 73 |
| 9.1. General | 75 |
| 9.2. Maintenance | 76 |
| 9.2.1. Checking and re-adjusting the upper beam guides | 76 |
| 9.2.2. Changing tools | 78 |
| 9.2.3. Checking top tool adaptation runs parallel to bottom tool adaptation. | 81 |
| 9.2.4. Upper beam in tilted position. | 81 |
| 9.2.5. Checking and re-adjusting the position of the back gauge | 81 |
| 9.3. Lubrication | 82 |
| 9.3.1. Lubrication each month/200 hours | 82 |
| 9.3.2. Lubrication each quarter/600 hours | 82 |
| 9.3.3. Lubrication each year/2000 hours | 82 |
| 9.3.4. Lubrication each two year/5000 hrs | 82 |
| 9.3.5. Lubrication each three year/25000 hrs | 83 |
| 9.3.6. Maintenance- and lubrication chart | 84 |
| 9.3.7. Lenze fault messages | 84 |
| 9.4. Electrical scheme | 85 |
| 9.5. Mechanical scheme | 87 |
| Register | 89 |
| Annex | 93 |

© Safan BV.

List of illustrations

| <u>Illustration</u> | <u>page</u> |
|--|-------------|
| Figure 1-1 Main dimensions and foundation measurements | 16 |
| Figure 1-2 Allowable bending force SAFAN E-Brake press brakes | 19 |
| Figure 1-3 Examples allowable eccentric bending force SAFAN E-Brake press brake | 20 |
| Figure 1-4 Preparation of a bending | 21 |
| Figure 1-5 Sheet clamping | 21 |
| Figure 1-6 Bending | 22 |
| Figure 1-7 Removing the sheet | 22 |
| Figure 1-8 Bending result | 23 |
| Figure 1-9 The different axis of a press brake | 23 |
| Figure 2-10 Mechatronic: combination of mechanics and electronics | 27 |
| Figure 2-11 The main components of the SAFAN E-Brake press brake | 28 |
| Figure 2-12 Examples of blanking of the safety light guard. | 30 |
| Figure 2-13 Operators console with HTR device. | 31 |
| Figure 2-14 Controls on the electrical cabinet | 32 |
| Figure 2-15 Machine identification | 34 |
| Figure 2-16 Control panel | 36 |
| Figure 2-17 Survey of the various terms | 38 |
| Figure 4-18 Examples of jamming hazards | 51 |
| Figure 5-19 Transport and hoisting instructions press brake | 55 |
| Figure 5-20 No forklift truck | 56 |
| Figure 5-22 Required operating and maintenance space | 58 |
| Figure 9-24 Cross section press brake guiding | 77 |
| Figure 9-25 Upper tool adaptation | 78 |
| Figure 9-26 Bottom tool adaptation (single V tools) | 80 |
| Figure 9-27 Bottom tool adaptation OB3/EUR-1 | 80 |