

# DIN EN 1005-3:2002-05 (E)

## Safety of machinery - Human physical performance - Part 3: Recommended force limits for machinery operation; English version of DIN EN 1005-3

---

### Contents

	Page
Foreword.....	3
Introduction .....	4
1 Scope .....	4
2 Normative references .....	5
3 Terms and definitions.....	5
4 Recommendations .....	5
4.1 General recommendations and information .....	5
4.2 Risk assessment of action forces.....	5
4.2.1 Step A: Determination of basic force generating capacity.....	7
4.2.2 Step B: Determination of adjusted capacity .....	8
4.2.3 Step C: Evaluation of tolerability and risk.....	10
4.3 Factors affecting risk.....	11
4.3.1 Working posture.....	11
4.3.2 Acceleration and movement precision.....	11
4.3.3 Vibration.....	11
4.3.4 Man-machine interaction.....	11
4.3.5 Personal protective equipment .....	11
4.3.6 External environment .....	11
Annex A (informative) Calculation procedure for Alternative 2.....	12
A.1 General.....	12
A.2 Input parameters.....	12
A.3 Procedure .....	13
A.3.1 Force distribution .....	13
A.3.2 Logarithmic transformation .....	13
A.3.3 Calculation of force percentiles .....	14
A.4 Results .....	14
Annex B (informative) Calculation procedure for Alternative 3.....	15
B.1 General.....	15
B.2 Input parameters.....	15
B.2.1 Force .....	15
B.2.2 User demography.....	16
B.3 Procedure .....	17
B.3.1 Synthetical distribution parameters of subgroups .....	17
B.3.2 Logarithmic distributions.....	18
B.3.3 Generation of new distribution functions of male and female subgroups .....	19
B.3.4 Weighting and combining of all subgroup distributions.....	20
B.3.5 Calculation of percentiles .....	21
B.4 Result.....	21
Annex ZA (informative) Relationship of this document with EC Directives.....	22
Bibliography .....	23