

# DIN EN 614-2:2008-12 (E)

## Safety of machinery - Ergonomic design principles - Part 2: Interactions between the design of machinery and work tasks (includes Amendment A1:2008)

---

<b>Contents</b>		<b>Page</b>
Foreword .....		3
Introduction .....		4
1	Scope .....	4
2	Normative references .....	4
3	Terms and definitions .....	5
4	Principles of work task design .....	5
4.1	Characteristics of well-designed operator work tasks .....	5
4.2	Methodology of work task design in relation to machinery design .....	6
4.2.1	Establishing the design objectives .....	10
4.2.2	Function analysis .....	10
4.2.3	Function allocation .....	11
4.2.4	Work task specification .....	12
4.2.5	Assignment of work tasks to operators .....	12
4.3	Evaluation of work task design .....	13
5	Design procedure .....	14
Annex A (informative) Interaction between machinery design, task design and job design .....		15
A.1.1	Good job design .....	15
A.2	Characteristics of well-designed jobs and implications for design .....	17
A.2.1	Experience and capabilities of the operator .....	17
A.2.2	Meaningful whole .....	17
A.2.3	Contribution to the total work output .....	17
A.2.4	Variation .....	17
A.2.5	Autonomy .....	17
A.2.6	Learning opportunities .....	17
A.2.7	Feedback .....	17
A.2.8	Over- and underload .....	17
A.2.9	Repetitiveness .....	18
A.2.10	Opportunities for contact .....	18
A.3	Ways of job re-design .....	18
A.3.1	Job rotation, job enlargement and job enrichment .....	18
A.3.2	Working groups and teams .....	18
A.3.3	Participative design .....	19
A.3.4	Managerial development .....	19
Annex B (informative) Illustrative example: Design of a drilling machine .....		20
B.1	Introduction .....	20
B.2	Establishing design objectives .....	21
B.3	Function analysis .....	22
B.4	Function allocation .....	24
B.5	Work task specification .....	26

<b>Annex ZA (informative) !!!!Relationship between this European Standard and the Essential Requirements of EU Directive 98/37/EC, amended by 98/79/EC""""</b> .....	<b>28</b>
<b>Annex ZB (informative) !!!!Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC""""</b> .....	<b>29</b>