

DIN 28086:2022-11 (E)

Eyelets on apparatuses - Dimensions and maximum loadings

Contents

Page

Foreword	3
1 Scope	4
2 Normative references	4
3 Terms and definitions.....	4
4 Symbols and abbreviations.....	5
5 General	6
6 Dimensions, designation.....	6
6.1 General	6
6.2 Designation example.....	7
7 Lifting lug arrangement	7
8 Maximum lifting capacities	9
8.1 General	9
8.2 Maximum shackle forces	10
8.3 Maximum lifting lug forces.....	10
8.4 Reinforcement plate and throat thicknesses	11
8.5 Maximum vessel end load	11
9 Material	12
10 Welding.....	12
Annex A (informative) Sample calculation.....	13
Bibliography	16

Figures

Figure 1 — Lifting lug	6
Figure 2 — Maximum force $F_G = F_L$ for a lifting lug	7
Figure 3 — Maximum force $F_G = 2 \cdot F_L$ for two lifting lugs and lifting beam.....	8
Figure 4 — Maximum force F_G for two lifting lugs and a double sling ($F_L = F_G / (2 \cdot \cos \alpha)$)	8
Figure 5 — Maximum force F_G for three lifting lugs and a triple sling ($F_L = F_G / (3 \cdot \cos \alpha)$).....	8
Figure 6 — Force coefficient f	12
Figure A.1 — Lifting the vessel	13

Tables

Table 1 — Symbols and units.....	5
Table 2 — Lifting lug dimensions	7
Table 3 — Maximum shackle force F_s in accordance with DIN 82016 or DIN 82101 ^b	9
Table 4 — Maximum forces F_G for various lifting lug arrangements.....	10
Table 5 — Force increase factor W	11
Table 6 — Geometric intermediate value A	12