

DETAN TENSION ROD SYSTEM

Carbon Steel System DETAN-S460

System components, material/finish

| | Tension rod | Tension rod | Fork | Fork | Couplers, locking nuts | Anchor disc |
|----------------------|--------------------|-------------|------------------|----------------------|------------------------|--------------|
| Rod diameter* D [mm] | 6 - 12 | 16 - 95 | 6 - 12 | 16 - 95 | 6 - 95 | 6 - 95 |
| Material | S 355 | S460N | Cast iron GGG 40 | Cast steel GS 20Mn5v | S 355 | S 355 |
| Finish | black | | dacrometised ① | | dacrometised ① | hot-dip galv |
| | hot dip galvanised | | | | | |

Notes ① An inorganic coating approximately equivalent to a hot dip galvanising.

System load capacity

| Rod diameter* D [mm] | 6 | 8 | 10 | 12 | 16 | 20 | 24 | 27 | 30 | 36 | 42 | 48 | 52 | 56 | 60 | 64 | 76 | 85 | 95 |
|----------------------|-------|------|------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|
| Load capacity [kN] | ② 6.5 | 11.5 | 18.5 | 27 | 65 | 102 | 147 | 192 | 234 | 342 | 468 | 616 | 735 | 848 | 987 | 1119 | 1626 | 2069 | 2623 |

Notes ② Design load acc. to DIN 18800 (Nov. 1990), if for the combined loads a partial safety factor γ_F has been calculated. The partial safety factor γ_M has been applied in the calculation. See also Type Approvals DETAN-S460 (for system sizes 16 to 95 mm) and DETAN-S (for system sizes 6 to 12 mm).

Minimum system length [mm]

| Rod diameter* D [mm] | 6 | 8 | 10 | 12 | 16 | 20 | 24 | 27 | 30 | 36 | 42 | 48 | 52 | 56 | 60 | 64 | 76 | 85 | 95 |
|----------------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| Carbon steel | ⑤ 139 | 155 | 189 | 237 | 267 | 327 | 384 | 416 | 446 | 513 | 586 | 666 | 713 | 761 | 828 | 886 | 1042 | 1152 | 1272 |

Maximum system length with one rod [mm] ④

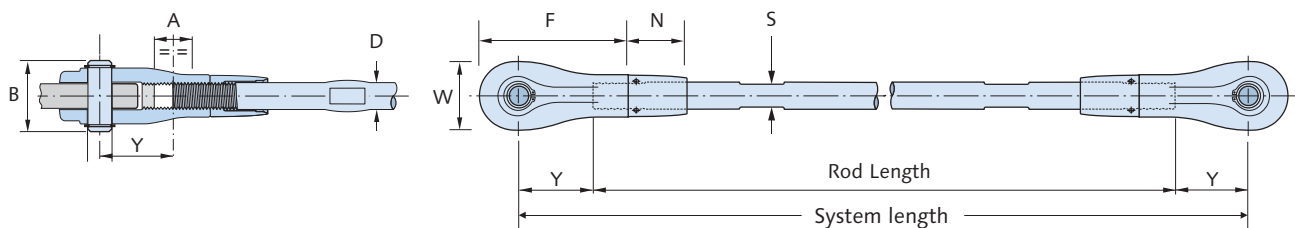
| Rod diameter* D [mm] | 6 | 8 | 10 | 12 | 16 | 20 | 24 | 27 | 30 | 36 | 42 | 48 | 52 | 56 | 60 | 64 | 76 | 85 | 95 |
|----------------------|--------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Carbon steel | ⑤ 3044 | 6051 | 6060 | 6073 | 12085 | 12107 | 12128 | 12140 | 12148 | 12179 | 12220 | 12264 | 12277 | 12290 | 12324 | 15356 | 15432 | 15482 | 15532 |

Maximum rod length [mm]

| | | | | | | | | | | | | | |
|--------------|--------|----------|-----------|--|--|--|--|--|--|--|--|--|-----------|
| Carbon steel | ⑤ 3000 | ← 6000 → | ← 12000 → | | | | | | | | | | ← 15000 → |
|--------------|--------|----------|-----------|--|--|--|--|--|--|--|--|--|-----------|

④ Greater system lengths can be achieved using more than one rod in combination with DETAN couplers.

⑤ Size D = 6 mm only available in black (mill finish - code wb).



System dimensions [mm]

| Rod Diameter* | D | 6 | 8 | 10 | 12 | 16 | 20 | 24 | 27 | 30 | 36 | 42 | 48 | 52 | 56 | 60 | 64 | 76 | 85 | 95 |
|--------------------|---|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-----|-----|-----|-----|
| Fork length | F | 42 | 50 | 60 | 73 | 89 | 110 | 133 | 147 | 160 | 192 | 225 | 265 | 285 | 305 | 335 | 380 | 460 | 520 | 580 |
| Fork width | W | 17 | 21 | 26 | 31 | 41 | 51 | 61 | 69 | 75 | 90 | 105 | 119 | 125 | 137 | 146 | 176 | 196 | 216 | 236 |
| Pin Length | B | 18 | 22 | 27 | 32 | 44 | 52 | 60 | 65 | 72 | 84 | 97 | 111 | 119 | 130 | 139 | 157 | 180 | 202 | 229 |
| Adjustment | A | 9 | 9 | 10 | 13 | 15 | 16 | 22 | 25 | 25 | 28 | 30 | 35 | 40 | 45 | 50 | 60 | 78 | 90 | 120 |
| Spanner size | S | 5 | 6 | 8 | 10 | 14 | 18 | 21 | 24 | 27 | 32 | 36 | 41 | 46 | 50 | 55 | 55 | 65 | 75 | 85 |
| Pin to bar end | Y | 22 | 25.5 | 30 | 36.5 | 42.5 | 53.5 | 64 | 70 | 74 | 89.5 | 110 | 132 | 138.5 | 145 | 162 | 178 | 216 | 241 | 266 |
| Locking nut length | N | 17.5 | 20.0 | 24.5 | 37.0 | 41.0 | 50.0 | 58.0 | 63.0 | 64.0 | 72.0 | 83.0 | 91.0 | 98.0 | 105.0 | 112.0 | 120 | 148 | 165 | 205 |

* The system designation is the rod dia.

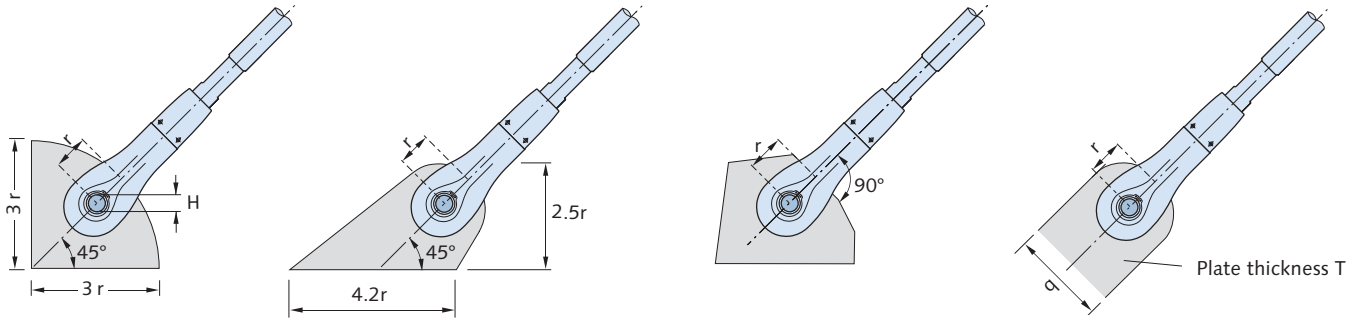
Note: dia 52-95 are under development, please check current availability with Halfen Ltd

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Connecting plates

Connecting plates should be designed to suit each application. The critical dimensions are provided in the table and in the diagrams below. For guidance on specific applications please contact our technical staff.

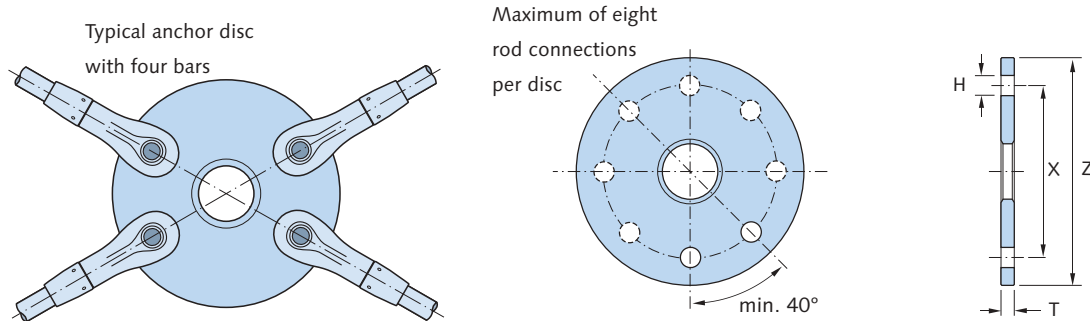


Dimensions [mm]

| Rod diameter* | D | 6 | 8 | 10 | 12 | 16 | 20 | 24 | 27 | 30 | 36 | 42 | 48 | 52 | 56 | 60 | 64 | 76 | 85 | 95 |
|------------------|---|-----|-----|-----|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Plate thickness | T | 5 | 7 | 8 | 10 | 15 | 18 | 20 | 22 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 55 | 65 | 75 | 85 |
| Hole diameter | H | 6.5 | 7.5 | 9.5 | 11.5 | 15.5 | 19.5 | 23.5 | 26.5 | 29.5 | 33.5 | 41 | 47 | 49 | 53 | 57 | 66 | 76 | 86 | 96 |
| Position of hole | r | 9 | 12 | 15 | 18 | 24 | 29 | 35 | 39 | 43 | 51 | 60 | 70 | 76 | 83 | 88 | 107 | 129 | 149 | 159 |
| Minimum width | q | 17 | 21 | 26 | 31 | 41 | 51 | 61 | 69 | 75 | 90 | 105 | 119 | 125 | 136 | 146 | 176 | 196 | 216 | 236 |

Material specification: steel strength grade S355

Anchor Discs

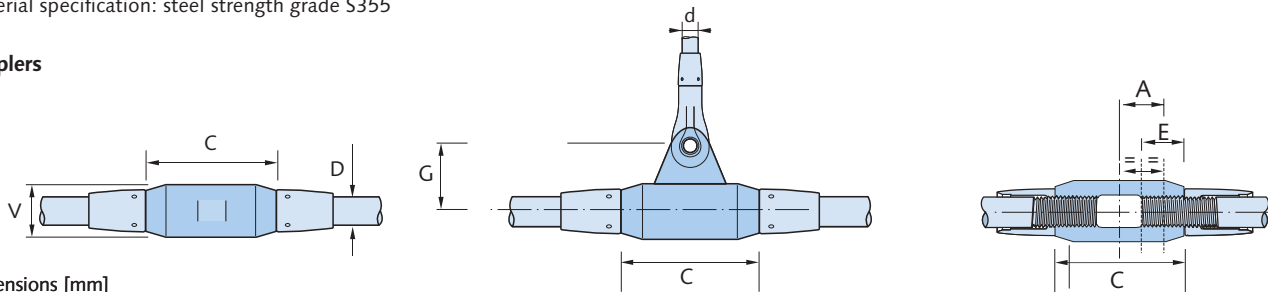


Dimensions [mm]

| Rod diameter* | D | 6 | 8 | 10 | 12 | 16 | 20 | 24 | 27 | 30 | 36 | 42 | 48 | 52 | 56 | 60 | 64 | 76 | 85 | 95 |
|--------------------|---|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| Effective diameter | X | 55 | 75 | 90 | 110 | 140 | 180 | 210 | 240 | 260 | 310 | 360 | 420 | 450 | 490 | 520 | 596 | 702 | 777 | 832 |
| Disc diameter | Z | 73 | 99 | 120 | 146 | 186 | 238 | 280 | 318 | 346 | 412 | 480 | 558 | 600 | 652 | 692 | 810 | 960 | 1075 | 1150 |

Material specification: steel strength grade S355

Couplers



Dimensions [mm]

| Rod diameter* | D | 6 | 8 | 10 | 12 | 16 | 20 | 24 | 27 | 30 | 36 | 42 | 48 | 52 | 56 | 60 | 64 | 76 | 85 | 95 |
|------------------|---|------|------|----|------|------|----|----|------|------|-----|------|------|-------|-------|-----|-----|-----|-----|-------|
| Coupler length | C | 34 | 40 | 40 | 50 | 62 | 78 | 94 | 104 | 120 | 140 | 158 | 180 | 195 | 210 | 245 | 270 | 328 | 370 | 450 |
| Coupler diameter | V | 12 | 15 | 20 | 22 | 28 | 35 | 42 | 47 | 53 | 64 | 75 | 87 | 93 | 98 | 104 | 135 | 155 | 180 | 195 |
| Screw-in depth | E | 10.5 | 12.5 | 15 | 18.5 | 22.5 | 27 | 34 | 37.5 | 42.5 | 51 | 55 | 62.5 | 70.5 | 77.5 | 85 | 95 | 115 | 130 | 155 |
| Adjustment | A | 9 | 9 | 10 | 13 | 15 | 16 | 22 | 25 | 25 | 28 | 30 | 35 | 40 | 45 | 50 | 60 | 78 | 90 | 120 |
| Hanger diameter | d | - | - | - | 6 | 6 | 8 | 8 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 12 | 12 | 16 | 16 |
| Hole position | G | - | - | - | 27.5 | 33 | 37 | 44 | 50.5 | 57.5 | 72 | 86.5 | 98.5 | 111.5 | 124.5 | 137 | 130 | 140 | 150 | 157.5 |

Material specification: steel strength grade S355

* The system designation is the rod dia.

Note: Adjustment (A) means each coupler or fork end gives $\pm \frac{A}{2}$