

Moduł

z ob 4

pow. 1 do 10

pow. 10 do 24

| Dopuszczalny błąd pomiarowości<br>i zwężenia osi na długości 100 mm w J |    |    | Klasa<br>dokładności | Dopuszczalny błąd pomiarowości<br>i zwężenia osi na długości 100 mm w J |    |    | Grubość powierzchni tward. |
|-------------------------------------------------------------------------|----|----|----------------------|-------------------------------------------------------------------------|----|----|----------------------------|
| 14                                                                      | 6  | 21 | ▽9                   | 17                                                                      | 7  | 27 | ▽8                         |
| 21                                                                      | 8  | 34 | ▽8                   | 25                                                                      | 9  | 45 | ▽6                         |
| 31                                                                      | 10 | 58 | ▽6                   | 38                                                                      | 11 | 75 | ▽4                         |
| 46                                                                      | 12 | 98 | ▽3                   |                                                                         |    |    |                            |

Średnica podziałowa w mm

pow. 1800 do 3200  
pow. 800 do 1800  
pow. 400 do 800  
pow. 200 do 400  
pow. 100 do 200  
pow. 50 do 100  
pow. 25 do 50

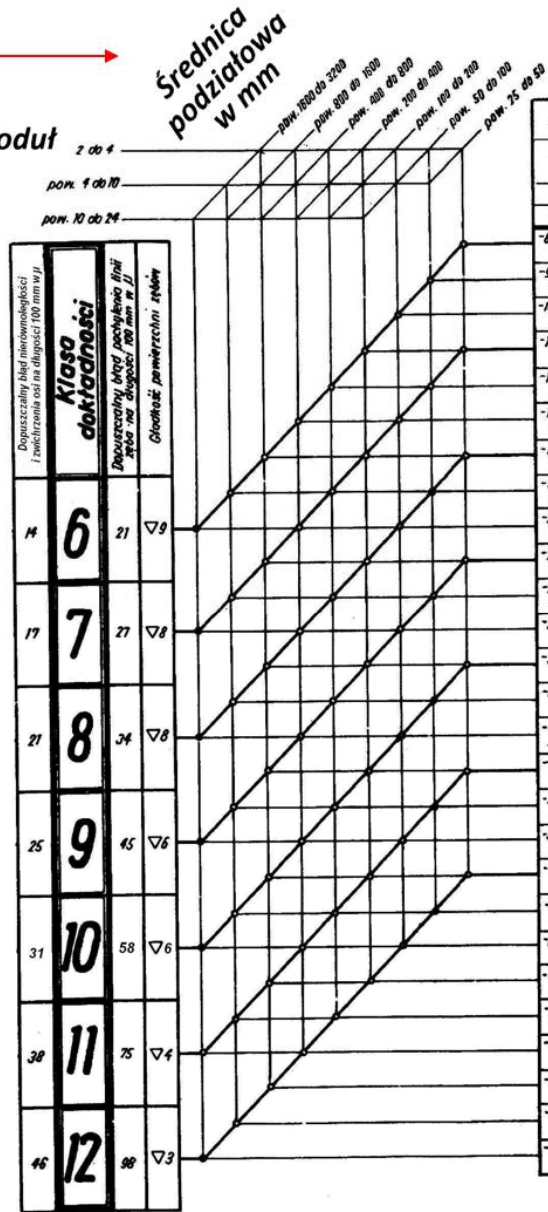
Odchyłki górne i dolne dla grubości zębów

| mierzonych na stałej cięciwie |      |      |      |      |      |      |      |      |      | przy pomiarze przez "n" zębów |      |      |      |      |      |      |      |      |      |
|-------------------------------|------|------|------|------|------|------|------|------|------|-------------------------------|------|------|------|------|------|------|------|------|------|
| g                             |      |      |      |      |      |      |      |      |      | M                             |      |      |      |      |      |      |      |      |      |
| zakresy odchyłek              |      |      |      |      |      |      |      |      |      | zakresy odchyłek              |      |      |      |      |      |      |      |      |      |
| I                             | II D | III  | IV   | V    | I    | II D | III  | IV   | V    | I                             | II D | III  | IV   | V    | I    | II D | III  | IV   | V    |
| -8                            | -16  | -24  | -32  | -40  | -25  | -15  | -23  | -30  | -45  | -8                            | -16  | -24  | -32  | -40  | -25  | -15  | -23  | -30  | -45  |
| -24                           | -32  | -40  | -48  | -56  | -73  | -30  | -38  | -45  | -60  | -24                           | -32  | -40  | -48  | -56  | -73  | -30  | -38  | -45  | -60  |
| -9                            | -18  | -27  | -36  | -45  | -63  | -18  | -25  | -34  | -51  | -9                            | -18  | -27  | -36  | -45  | -63  | -18  | -25  | -34  | -51  |
| -27                           | -36  | -45  | -54  | -63  | -81  | -25  | -34  | -42  | -58  | -27                           | -36  | -45  | -54  | -63  | -81  | -25  | -34  | -42  | -58  |
| -10                           | -20  | -30  | -40  | -50  | -69  | -20  | -28  | -36  | -54  | -10                           | -20  | -30  | -40  | -50  | -69  | -20  | -28  | -36  | -54  |
| -30                           | -40  | -50  | -60  | -70  | -90  | -28  | -36  | -45  | -75  | -30                           | -40  | -50  | -60  | -70  | -90  | -28  | -36  | -45  | -75  |
| -11                           | -22  | -33  | -44  | -55  | -75  | -22  | -31  | -41  | -62  | -11                           | -22  | -33  | -44  | -55  | -75  | -22  | -31  | -41  | -62  |
| -33                           | -44  | -55  | -66  | -77  | -99  | -31  | -41  | -51  | -83  | -33                           | -44  | -55  | -66  | -77  | -99  | -31  | -41  | -51  | -83  |
| -12                           | -24  | -36  | -48  | -60  | -81  | -24  | -36  | -48  | -72  | -12                           | -24  | -36  | -48  | -60  | -81  | -24  | -36  | -48  | -72  |
| -36                           | -48  | -60  | -72  | -84  | -108 | -36  | -48  | -60  | -94  | -36                           | -48  | -60  | -72  | -84  | -108 | -36  | -48  | -60  | -94  |
| -14                           | -28  | -42  | -56  | -70  | -94  | -28  | -42  | -56  | -88  | -14                           | -28  | -42  | -56  | -70  | -94  | -28  | -42  | -56  | -88  |
| -42                           | -56  | -70  | -84  | -98  | -128 | -42  | -56  | -70  | -105 | -42                           | -56  | -70  | -84  | -98  | -128 | -42  | -56  | -70  | -105 |
| -15                           | -30  | -45  | -60  | -75  | -100 | -30  | -45  | -60  | -90  | -15                           | -30  | -45  | -60  | -75  | -100 | -30  | -45  | -60  | -90  |
| -45                           | -60  | -75  | -90  | -105 | -135 | -45  | -60  | -75  | -110 | -45                           | -60  | -75  | -90  | -105 | -135 | -45  | -60  | -75  | -110 |
| -16                           | -32  | -48  | -64  | -80  | -104 | -32  | -48  | -64  | -92  | -16                           | -32  | -48  | -64  | -80  | -104 | -32  | -48  | -64  | -92  |
| -80                           | -96  | -112 | -128 | -144 | -174 | -32  | -48  | -64  | -115 | -16                           | -32  | -48  | -64  | -80  | -104 | -32  | -48  | -64  | -115 |
| -17                           | -34  | -51  | -68  | -85  | -111 | -34  | -51  | -68  | -94  | -17                           | -34  | -51  | -68  | -85  | -111 | -34  | -51  | -68  | -94  |
| -85                           | -102 | -119 | -136 | -153 | -183 | -34  | -51  | -68  | -118 | -17                           | -34  | -51  | -68  | -85  | -111 | -34  | -51  | -68  | -118 |
| -18                           | -36  | -54  | -72  | -90  | -116 | -36  | -54  | -72  | -96  | -18                           | -36  | -54  | -72  | -90  | -116 | -36  | -54  | -72  | -96  |
| -90                           | -108 | -126 | -144 | -162 | -198 | -36  | -54  | -72  | -120 | -18                           | -36  | -54  | -72  | -90  | -116 | -36  | -54  | -72  | -120 |
| -19                           | -38  | -57  | -76  | -95  | -122 | -38  | -57  | -76  | -98  | -19                           | -38  | -57  | -76  | -95  | -122 | -38  | -57  | -76  | -98  |
| -95                           | -114 | -133 | -152 | -171 | -210 | -38  | -57  | -76  | -122 | -19                           | -38  | -57  | -76  | -95  | -122 | -38  | -57  | -76  | -122 |
| -20                           | -40  | -60  | -80  | -100 | -128 | -40  | -60  | -80  | -100 | -20                           | -40  | -60  | -80  | -100 | -128 | -40  | -60  | -80  | -100 |
| -100                          | -120 | -140 | -160 | -180 | -220 | -40  | -60  | -80  | -128 | -20                           | -40  | -60  | -80  | -100 | -128 | -40  | -60  | -80  | -128 |
| -21                           | -42  | -63  | -84  | -105 | -134 | -42  | -63  | -84  | -105 | -21                           | -42  | -63  | -84  | -105 | -134 | -42  | -63  | -84  | -105 |
| -105                          | -126 | -147 | -168 | -189 | -231 | -42  | -63  | -84  | -134 | -21                           | -42  | -63  | -84  | -105 | -134 | -42  | -63  | -84  | -105 |
| -22                           | -44  | -66  | -88  | -110 | -140 | -44  | -66  | -88  | -110 | -22                           | -44  | -66  | -88  | -110 | -140 | -44  | -66  | -88  | -110 |
| -110                          | -132 | -154 | -176 | -198 | -242 | -44  | -66  | -88  | -140 | -22                           | -44  | -66  | -88  | -110 | -140 | -44  | -66  | -88  | -110 |
| -23                           | -46  | -69  | -92  | -115 | -146 | -46  | -69  | -92  | -115 | -23                           | -46  | -69  | -92  | -115 | -146 | -46  | -69  | -92  | -115 |
| -115                          | -138 | -160 | -182 | -204 | -249 | -46  | -69  | -92  | -146 | -23                           | -46  | -69  | -92  | -115 | -146 | -46  | -69  | -92  | -115 |
| -24                           | -48  | -72  | -96  | -120 | -152 | -48  | -72  | -96  | -120 | -24                           | -48  | -72  | -96  | -120 | -152 | -48  | -72  | -96  | -120 |
| -120                          | -144 | -168 | -192 | -216 | -262 | -48  | -72  | -96  | -152 | -24                           | -48  | -72  | -96  | -120 | -152 | -48  | -72  | -96  | -120 |
| -25                           | -50  | -75  | -100 | -125 | -158 | -50  | -75  | -100 | -125 | -25                           | -50  | -75  | -100 | -125 | -158 | -50  | -75  | -100 | -125 |
| -125                          | -150 | -175 | -200 | -225 | -273 | -50  | -75  | -100 | -158 | -25                           | -50  | -75  | -100 | -125 | -158 | -50  | -75  | -100 | -125 |
| -26                           | -52  | -78  | -104 | -130 | -164 | -52  | -78  | -104 | -130 | -26                           | -52  | -78  | -104 | -130 | -164 | -52  | -78  | -104 | -130 |
| -130                          | -156 | -182 | -208 | -234 | -284 | -52  | -78  | -104 | -164 | -26                           | -52  | -78  | -104 | -130 | -164 | -52  | -78  | -104 | -130 |
| -27                           | -54  | -81  | -108 | -135 | -170 | -54  | -81  | -108 | -135 | -27                           | -54  | -81  | -108 | -135 | -170 | -54  | -81  | -108 | -135 |
| -135                          | -162 | -189 | -216 | -243 | -294 | -54  | -81  | -108 | -170 | -27                           | -54  | -81  | -108 | -135 | -170 | -54  | -81  | -108 | -135 |
| -28                           | -56  | -84  | -112 | -140 | -176 | -56  | -84  | -112 | -140 | -28                           | -56  | -84  | -112 | -140 | -176 | -56  | -84  | -112 | -140 |
| -140                          | -168 | -196 | -224 | -252 | -306 | -56  | -84  | -112 | -176 | -28                           | -56  | -84  | -112 | -140 | -176 | -56  | -84  | -112 | -140 |
| -29                           | -58  | -87  | -116 | -145 | -182 | -58  | -87  | -116 | -145 | -29                           | -58  | -87  | -116 | -145 | -182 | -58  | -87  | -116 | -145 |
| -145                          | -174 | -203 | -232 | -261 | -318 | -58  | -87  | -116 | -182 | -29                           | -58  | -87  | -116 | -145 | -182 | -58  | -87  | -116 | -145 |
| -30                           | -60  | -90  | -120 | -150 | -190 | -60  | -90  | -120 | -150 | -30                           | -60  | -90  | -120 | -150 | -190 | -60  | -90  | -120 | -150 |
| -150                          | -180 | -210 | -240 | -270 | -330 | -60  | -90  | -120 | -190 | -30                           | -60  | -90  | -120 | -150 | -190 | -60  | -90  | -120 | -150 |
| -31                           | -62  | -93  | -124 | -155 | -196 | -62  | -93  | -124 | -155 | -31                           | -62  | -93  | -124 | -155 | -196 | -62  | -93  | -124 | -155 |
| -155                          | -186 | -217 | -248 | -279 | -342 | -62  | -93  | -124 | -196 | -31                           | -62  | -93  | -124 | -155 | -196 | -62  | -93  | -124 | -155 |
| -32                           | -64  | -96  | -128 | -160 | -202 | -64  | -96  | -128 | -160 | -32                           | -64  | -96  | -128 | -160 | -202 | -64  | -96  | -128 | -160 |
| -160                          | -192 | -224 | -256 | -288 | -354 | -64  | -96  | -128 | -202 | -32                           | -64  | -96  | -128 | -160 | -202 | -64  | -96  | -128 | -160 |
| -33                           | -66  | -99  | -132 | -165 | -206 | -66  | -99  | -132 | -165 | -33                           | -66  | -99  | -132 | -165 | -206 | -66  | -99  | -132 | -165 |
| -165                          | -198 | -231 | -264 | -297 | -366 | -66  | -99  | -132 | -206 | -33                           | -66  | -99  | -132 | -165 | -206 | -66  | -99  | -132 | -165 |
| -34                           | -68  | -102 | -135 | -168 | -210 | -68  | -102 | -135 | -168 | -34                           | -68  | -102 | -135 | -168 | -210 | -68  | -102 | -135 | -168 |
| -168                          | -202 | -235 | -268 | -301 | -372 | -68  | -102 | -135 | -210 | -34                           | -68  | -102 | -135 | -168 | -210 | -68  | -102 | -135 | -168 |
| -35                           | -70  | -105 | -138 | -171 | -214 | -70  | -105 | -138 | -171 | -35                           | -70  | -105 | -138 | -171 | -214 | -70  | -105 | -138 | -171 |
| -171                          | -206 | -239 | -272 | -305 | -378 | -70  | -105 | -138 | -214 | -35                           | -70  | -105 | -138 | -171 | -214 | -70  | -105 | -138 | -171 |
| -36                           | -72  | -108 | -141 | -174 | -218 | -72  | -108 | -141 | -174 | -36                           | -72  | -108 | -141 | -174 | -218 | -72  | -108 | -141 | -174 |
| -174                          | -210 | -243 | -276 | -309 | -384 | -72  | -108 | -141 | -218 | -36                           | -72  | -108 | -141 | -174 | -218 | -72  | -108 | -141 | -174 |
| -37                           | -74  | -111 | -144 | -177 | -222 | -74  | -111 | -144 | -177 | -37                           | -74  | -111 | -144 | -177 | -222 | -74  | -111 | -144 | -177 |
| -177                          | -214 | -247 | -280 | -313 | -390 | -74  | -111 | -144 | -222 | -37                           | -74  | -111 | -144 | -177 | -222 | -74  | -111 | -144 | -177 |
| -38                           | -76  | -114 | -147 | -180 | -226 | -76  | -114 | -147 | -180 | -38                           | -76  | -114 | -147 | -180 | -226 | -76  | -114 | -147 | -180 |
| -180                          | -218 | -251 | -284 | -317 | -396 | -76  | -114 | -147 | -226 | -38                           | -76  | -114 | -147 | -180 | -226 | -76  | -114 | -147 | -180 |
| -39                           | -78  | -117 | -150 | -183 | -230 | -78  | -117 | -150 | -183 | -39                           | -78  | -117 | -150 | -183 | -230 | -78  | -117 | -150 | -183 |
| -183                          | -222 | -255 | -288 | -321 | -402 | -78  | -117 | -150 | -230 | -39                           | -78  | -117 | -150 | -183 | -230 | -78  | -117 | -150 | -183 |
| -40                           | -80  | -120 | -153 | -186 | -234 | -80  | -120 | -153 | -186 | -40                           | -80  | -120 | -153 | -186 | -234 | -80  | -120 | -153 | -186 |
| -186                          | -226 | -259 | -292 | -325 | -408 | -80  | -120 | -153 | -234 | -40                           | -80  | -120 | -153 | -186 | -234 | -80  | -120 | -153 | -186 |
| -41                           | -82  | -123 | -156 | -189 | -242 | -82  | -123 | -156 | -189 | -41                           | -82  | -123 | -156 | -189 | -242 | -82  | -123 | -156 | -189 |
| -189                          | -230 | -263 | -296 | -329 | -414 | -82  | -123 | -156 | -242 | -41                           | -82  | -123 | -156 | -189 | -242 | -82  | -123 | -156 | -189 |
| -42                           | -84  | -126 | -159 | -192 | -246 | -84  | -126 | -159 | -192 | -42                           | -84  | -126 | -159 | -192 | -246 | -84  | -126 | -159 | -192 |
| -192                          | -234 | -267 | -300 | -333 | -418 | -84  | -126 | -159 | -246 | -42                           | -84  | -126 | -159 | -192 | -246 | -84  | -126 | -159 | -192 |
| -43                           | -86  | -129 | -162 | -195 | -250 | -86  | -129 | -162 | -195 | -43                           | -86  | -129 | -162 | -195 | -250 | -86  | -129 | -162 | -195 |
| -195                          | -238 | -271 | -304 | -337 | -423 | -86  | -129 | -162 | -250 | -43                           | -86  | -129 | -162 | -195 | -250 | -86  | -129 | -162 | -195 |
| -44                           | -88  | -132 | -165 | -198 | -254 | -88  | -132 | -165 | -198 | -44                           | -88  | -132 | -165 | -198 | -254 | -88  | -132 | -165 | -198 |
| -198                          | -242 | -275 | -308 | -341 | -426 | -88  | -132 | -165 | -254 | -44                           | -88  | -132 | -165 | -198 | -254 | -88  | -132 | -165 | -198 |

Dane:  
 $d_1 = 70.082 \text{ mm}$   $\longrightarrow$

$m = 4 \text{ mm}$   $\longrightarrow$  **Moduł**

**Średnica  
podziałowa  
w mm**

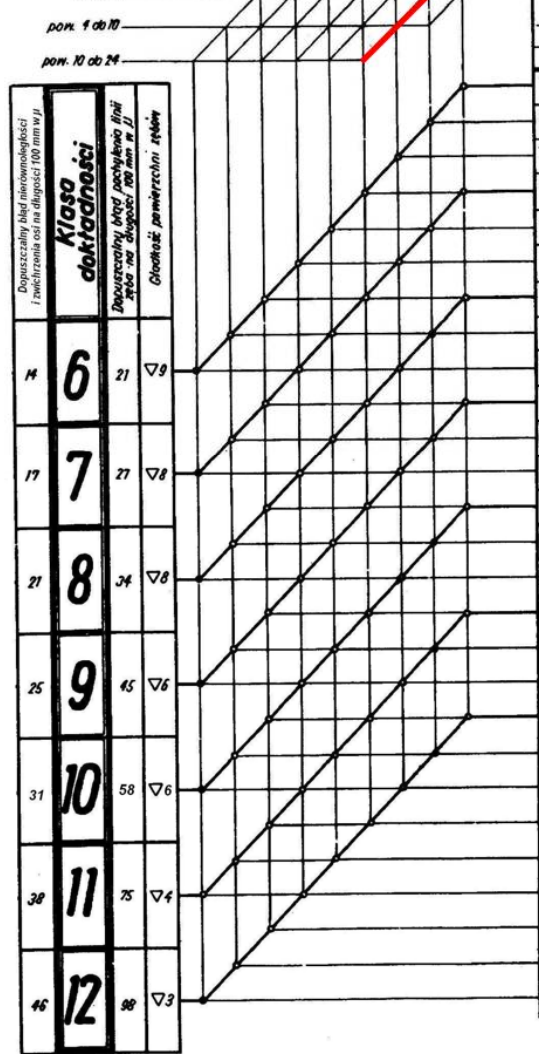


| Odchyłki górne i dolne dla grubości zębów <sup>1)</sup> |      |      |      |      |      |                                    |      |      |      |      |      |  |
|---------------------------------------------------------|------|------|------|------|------|------------------------------------|------|------|------|------|------|--|
| mierzonych na stałej cięciwie<br>g                      |      |      |      |      |      | przy pomiarze przez "n" zębów<br>M |      |      |      |      |      |  |
| zakresy odchyłek                                        |      |      |      |      |      | zakresy odchyłek                   |      |      |      |      |      |  |
| I                                                       | II D | III  | IV   | V    |      | I                                  | II D | III  | IV   | V    |      |  |
| -8                                                      | -16  | -24  | -32  | -40  | -48  | -25                                | -15  | -23  | -30  | -45  | -60  |  |
| -24                                                     | -32  | -40  | -48  | -56  | -64  | -73                                | -30  | -38  | -45  | -60  | -80  |  |
| -9                                                      | -18  | -27  | -36  | -45  | -54  | -63                                | -17  | -25  | -34  | -51  | -68  |  |
| -27                                                     | -36  | -45  | -54  | -63  | -72  | -81                                | -24  | -32  | -42  | -58  | -78  |  |
| -10                                                     | -20  | -30  | -40  | -50  | -60  | -70                                | -19  | -28  | -38  | -54  | -75  |  |
| -30                                                     | -40  | -50  | -60  | -70  | -80  | -90                                | -26  | -36  | -47  | -66  | -88  |  |
| -11                                                     | -22  | -33  | -44  | -55  | -66  | -77                                | -21  | -31  | -41  | -62  | -83  |  |
| -33                                                     | -44  | -55  | -66  | -77  | -88  | -99                                | -28  | -39  | -50  | -72  | -94  |  |
| -12                                                     | -24  | -36  | -48  | -60  | -72  | -84                                | -23  | -35  | -47  | -70  | -94  |  |
| -36                                                     | -48  | -60  | -72  | -84  | -96  | -108                               | -30  | -42  | -54  | -80  | -106 |  |
| -14                                                     | -28  | -42  | -56  | -70  | -84  | -98                                | -26  | -39  | -53  | -78  | -105 |  |
| -42                                                     | -56  | -70  | -84  | -98  | -112 | -126                               | -33  | -46  | -60  | -86  | -114 |  |
| -15                                                     | -30  | -45  | -60  | -75  | -90  | -105                               | -27  | -40  | -55  | -80  | -108 |  |
| -45                                                     | -60  | -75  | -90  | -105 | -120 | -135                               | -36  | -50  | -65  | -90  | -120 |  |
| -16                                                     | -32  | -48  | -64  | -80  | -96  | -112                               | -29  | -43  | -57  | -82  | -110 |  |
| -48                                                     | -64  | -80  | -96  | -112 | -128 | -144                               | -39  | -54  | -69  | -94  | -124 |  |
| -17                                                     | -34  | -51  | -68  | -85  | -102 | -119                               | -31  | -46  | -61  | -86  | -116 |  |
| -51                                                     | -68  | -85  | -102 | -119 | -136 | -153                               | -40  | -56  | -72  | -98  | -128 |  |
| -18                                                     | -36  | -54  | -72  | -90  | -108 | -126                               | -33  | -49  | -65  | -91  | -122 |  |
| -54                                                     | -72  | -90  | -108 | -126 | -144 | -162                               | -43  | -60  | -77  | -104 | -136 |  |
| -19                                                     | -38  | -57  | -76  | -95  | -114 | -133                               | -35  | -52  | -69  | -96  | -128 |  |
| -60                                                     | -80  | -100 | -120 | -140 | -160 | -180                               | -46  | -64  | -82  | -110 | -144 |  |
| -20                                                     | -40  | -60  | -80  | -100 | -120 | -140                               | -37  | -55  | -73  | -101 | -136 |  |
| -60                                                     | -80  | -100 | -120 | -140 | -160 | -180                               | -49  | -68  | -87  | -116 | -152 |  |
| -21                                                     | -42  | -63  | -84  | -105 | -126 | -147                               | -39  | -58  | -77  | -106 | -144 |  |
| -63                                                     | -84  | -105 | -126 | -147 | -168 | -189                               | -51  | -71  | -91  | -120 | -160 |  |
| -22                                                     | -44  | -66  | -88  | -110 | -132 | -154                               | -41  | -61  | -81  | -110 | -150 |  |
| -66                                                     | -88  | -110 | -132 | -154 | -176 | -198                               | -54  | -75  | -96  | -126 | -170 |  |
| -23                                                     | -46  | -69  | -92  | -115 | -138 | -161                               | -43  | -64  | -85  | -114 | -156 |  |
| -69                                                     | -92  | -115 | -138 | -161 | -184 | -207                               | -57  | -78  | -99  | -130 | -176 |  |
| -24                                                     | -48  | -72  | -96  | -120 | -144 | -168                               | -45  | -67  | -89  | -118 | -160 |  |
| -72                                                     | -96  | -120 | -144 | -168 | -192 | -216                               | -59  | -81  | -103 | -134 | -182 |  |
| -25                                                     | -50  | -75  | -100 | -125 | -150 | -175                               | -47  | -70  | -93  | -122 | -166 |  |
| -75                                                     | -100 | -125 | -150 | -175 | -200 | -225                               | -61  | -84  | -107 | -140 | -190 |  |
| -26                                                     | -52  | -78  | -104 | -130 | -156 | -182                               | -49  | -73  | -97  | -126 | -172 |  |
| -78                                                     | -104 | -130 | -156 | -182 | -208 | -234                               | -63  | -87  | -111 | -144 | -196 |  |
| -27                                                     | -54  | -81  | -108 | -135 | -162 | -189                               | -51  | -76  | -101 | -132 | -180 |  |
| -81                                                     | -108 | -135 | -162 | -189 | -216 | -243                               | -65  | -90  | -115 | -148 | -202 |  |
| -28                                                     | -56  | -84  | -112 | -140 | -168 | -196                               | -53  | -78  | -103 | -136 | -184 |  |
| -84                                                     | -112 | -140 | -168 | -196 | -224 | -252                               | -67  | -93  | -119 | -152 | -208 |  |
| -29                                                     | -58  | -87  | -116 | -144 | -172 | -200                               | -55  | -81  | -107 | -138 | -188 |  |
| -87                                                     | -116 | -144 | -172 | -200 | -228 | -256                               | -71  | -96  | -123 | -156 | -214 |  |
| -30                                                     | -60  | -90  | -120 | -150 | -180 | -210                               | -57  | -85  | -113 | -142 | -190 |  |
| -90                                                     | -120 | -150 | -180 | -210 | -240 | -270                               | -75  | -105 | -135 | -170 | -220 |  |
| -31                                                     | -62  | -93  | -124 | -155 | -186 | -217                               | -59  | -89  | -117 | -146 | -194 |  |
| -93                                                     | -124 | -155 | -186 | -217 | -248 | -279                               | -79  | -111 | -141 | -176 | -228 |  |
| -32                                                     | -64  | -96  | -128 | -160 | -192 | -224                               | -61  | -93  | -121 | -150 | -198 |  |
| -96                                                     | -128 | -160 | -192 | -224 | -256 | -288                               | -81  | -113 | -143 | -180 | -234 |  |
| -33                                                     | -66  | -99  | -132 | -164 | -196 | -228                               | -63  | -96  | -125 | -154 | -202 |  |
| -99                                                     | -132 | -164 | -196 | -228 | -260 | -292                               | -83  | -115 | -145 | -182 | -238 |  |
| -34                                                     | -68  | -102 | -136 | -168 | -200 | -232                               | -65  | -99  | -127 | -156 | -206 |  |
| -102                                                    | -136 | -168 | -200 | -232 | -264 | -296                               | -85  | -117 | -147 | -184 | -242 |  |
| -35                                                     | -70  | -105 | -140 | -172 | -204 | -236                               | -67  | -101 | -130 | -160 | -210 |  |
| -105                                                    | -140 | -172 | -204 | -236 | -268 | -300                               | -87  | -119 | -149 | -186 | -246 |  |
| -36                                                     | -72  | -108 | -144 | -176 | -208 | -240                               | -69  | -103 | -133 | -162 | -214 |  |
| -108                                                    | -144 | -176 | -208 | -240 | -272 | -304                               | -89  | -121 | -151 | -188 | -250 |  |
| -37                                                     | -74  | -111 | -148 | -180 | -212 | -244                               | -71  | -105 | -135 | -164 | -218 |  |
| -111                                                    | -148 | -180 | -212 | -244 | -276 | -308                               | -91  | -123 | -153 | -190 | -254 |  |
| -38                                                     | -76  | -114 | -152 | -184 | -216 | -248                               | -73  | -107 | -137 | -166 | -222 |  |
| -114                                                    | -152 | -184 | -216 | -248 | -280 | -312                               | -93  | -125 | -155 | -192 | -258 |  |
| -39                                                     | -78  | -117 | -156 | -188 | -220 | -252                               | -75  | -109 | -140 | -168 | -226 |  |
| -117                                                    | -156 | -188 | -220 | -252 | -284 | -316                               | -95  | -127 | -157 | -194 | -262 |  |
| -40                                                     | -80  | -120 | -160 | -192 | -224 | -256                               | -77  | -111 | -142 | -170 | -230 |  |
| -120                                                    | -160 | -192 | -224 | -256 | -288 | -320                               | -97  | -129 | -159 | -196 | -266 |  |
| -41                                                     | -82  | -123 | -164 | -196 | -228 | -260                               | -79  | -113 | -144 | -172 | -234 |  |
| -123                                                    | -164 | -196 | -228 | -260 | -292 | -324                               | -99  | -131 | -161 | -198 | -270 |  |
| -42                                                     | -84  | -126 | -168 | -200 | -232 | -264                               | -81  | -115 | -146 | -174 | -238 |  |
| -126                                                    | -168 | -200 | -232 | -264 | -296 | -328                               | -101 | -133 | -163 | -200 | -274 |  |
| -43                                                     | -86  | -129 | -172 | -204 | -236 | -268                               | -83  | -117 | -148 | -176 | -242 |  |
| -129                                                    | -172 | -204 | -236 | -268 | -300 | -332                               | -103 | -135 | -165 | -202 | -278 |  |
| -44                                                     | -88  | -132 | -176 | -208 | -240 | -272                               | -85  | -119 | -150 | -178 | -246 |  |
| -132                                                    | -176 | -208 | -240 | -272 | -304 | -336                               | -105 | -137 | -167 | -204 | -282 |  |
| -45                                                     | -90  | -135 | -180 | -212 | -244 | -276                               | -87  | -121 | -152 | -180 | -250 |  |
| -135                                                    | -180 | -212 | -244 | -276 | -308 | -340                               | -107 | -139 | -169 | -206 | -286 |  |
| -46                                                     | -92  | -138 | -184 | -216 | -248 | -280                               | -89  | -123 | -154 | -182 | -254 |  |
| -138                                                    | -184 | -216 | -248 | -280 | -312 | -344                               | -109 | -141 | -171 | -208 | -290 |  |
| -47                                                     | -94  | -141 | -188 | -220 | -252 | -284                               | -91  | -125 | -156 | -184 | -258 |  |
| -141                                                    | -188 | -220 | -252 | -284 | -316 | -348                               | -111 | -143 | -173 | -210 | -296 |  |
| -48                                                     | -96  | -144 | -192 | -224 | -256 | -288                               | -93  | -127 | -158 | -186 | -262 |  |
| -144                                                    | -192 | -224 | -256 | -288 | -320 | -352                               | -113 | -145 | -175 | -212 | -300 |  |
| -49                                                     | -98  | -147 | -196 | -228 | -260 | -292                               | -95  | -129 | -160 | -188 | -266 |  |
| -147                                                    | -196 | -228 | -260 | -292 | -324 | -356                               | -115 | -147 | -177 | -214 | -304 |  |
| -50                                                     | -100 | -150 | -200 | -232 | -264 | -296                               | -97  | -131 | -162 | -190 | -270 |  |
| -150                                                    | -200 | -232 | -264 | -296 | -328 | -360                               | -117 | -149 | -179 | -216 | -308 |  |
| -51                                                     | -102 | -153 | -204 | -236 | -268 | -300                               | -99  | -133 | -164 | -192 | -274 |  |
| -153                                                    | -204 | -236 | -268 | -300 | -332 | -364                               | -119 | -151 | -181 | -218 | -312 |  |
| -52                                                     | -104 | -156 | -208 | -240 | -272 | -304                               | -101 | -135 | -166 | -194 | -278 |  |
| -156                                                    | -208 | -240 | -272 | -304 | -336 | -368                               | -121 | -153 | -183 | -220 | -316 |  |
| -53                                                     | -106 | -159 | -212 | -244 | -276 | -308                               | -103 | -137 | -168 | -196 | -282 |  |
| -159                                                    | -212 | -244 | -276 | -308 | -340 | -372                               | -123 | -155 | -185 | -222 | -320 |  |
| -54                                                     | -108 | -162 | -216 | -248 | -280 | -312                               | -105 | -139 | -170 | -198 | -286 |  |
| -162                                                    | -216 | -248 | -280 | -312 | -344 | -376                               | -125 | -157 | -187 | -224 | -324 |  |
| -55                                                     | -110 | -165 | -220 | -252 | -284 | -316                               | -107 | -141 | -172 | -200 | -290 |  |
| -165                                                    | -220 | -252 | -284 | -316 | -348 | -380                               | -127 | -159 | -189 | -226 | -328 |  |
| -56                                                     | -112 | -168 | -224 | -256 | -288 | -320                               | -109 | -143 | -174 | -202 | -294 |  |
| -168                                                    | -224 | -256 | -288 | -320 | -352 | -384                               | -129 | -161 | -191 | -230 | -332 |  |
| -57                                                     | -114 | -171 | -228 | -260 | -292 | -324                               | -111 | -145 | -176 | -204 | -298 |  |
| -171                                                    | -228 | -260 | -292 | -324 | -356 | -388                               | -131 | -163 | -193 | -232 | -336 |  |
| -58                                                     | -116 | -174 | -232 | -264 | -296 | -328                               | -113 | -147 | -178 | -206 | -302 |  |
| -174                                                    | -232 | -264 | -296 | -328 | -360 | -392                               | -133 | -165 | -195 | -234 | -340 |  |
| -59                                                     | -118 | -177 | -236 | -268 | -300 | -332                               | -115 | -149 | -180 | -208 | -306 |  |
| -177                                                    | -236 | -268 | -300 | -332 | -364 | -396                               | -135 | -167 | -197 | -236 | -344 |  |
| -60                                                     | -120 | -180 | -240 | -272 | -304 | -336                               | -117 | -151 | -182 | -210 | -310 |  |
| -180                                                    | -240 | -272 | -304 | -336 | -368 | -400                               | -137 | -169 | -199 | -238 | -348 |  |
| -61                                                     | -122 | -183 | -244 | -276 | -308 | -340                               | -119 | -153 | -184 | -212 | -314 |  |
| -183                                                    | -244 | -276 | -308 | -340 | -372 | -404                               | -139 | -171 | -201 | -240 | -352 |  |
| -62                                                     | -124 | -186 | -248 | -280 | -312 | -344                               | -121 | -155 | -186 | -214 | -318 |  |
| -186                                                    | -248 | -280 | -312 | -344 | -376 | -408                               | -141 | -173 | -203 | -242 | -356 |  |
| -63                                                     | -126 | -189 | -252 | -284 | -316 | -348                               | -123 | -157 | -188 | -216 | -322 |  |
| -189                                                    | -252 | -284 | -316 | -348 | -380 | -412                               | -143 | -175 | -205 | -244 | -360 |  |
| -64                                                     | -128 | -192 | -256 | -288 | -320 | -352                               | -125 | -159 | -190 | -218 | -326 |  |
| -192                                                    | -256 | -288 | -320 | -352 | -384 | -416                               | -145 | -177 | -207 | -246 | -364 |  |
| -65                                                     | -130 | -195 | -260 | -292 | -324 | -356                               | -127 | -161 | -192 | -220 | -330 |  |
| -195                                                    | -260 | -292 | -324 | -356 | -388 | -420                               | -147 | -179 | -209 | -248 | -368 |  |
| -66                                                     | -132 | -198 | -264 | -296 | -328 | -360                               | -129 | -163 | -194 | -222 | -334 |  |
| -198                                                    | -264 | -296 | -328 | -360 | -392 | -424                               | -149 | -181 | -211 | -250 | -372 |  |
| -67                                                     | -134 | -201 | -268 | -300 | -332 | -364                               | -131 | -165 | -196 | -224 | -338 |  |
| -201                                                    | -268 | -300 | -332 | -364 | -396 | -428                               | -151 | -183 | -213 | -252 | -376 |  |
| -68                                                     | -136 | -204 | -272 | -304 | -336 | -368                               | -133 | -167 | -198 | -226 | -342 |  |
| -204                                                    | -272 | -304 | -336 | -368 | -400 | -432                               | -153 | -185 | -215 | -254 | -380 |  |
| -69                                                     | -138 | -207 | -276 | -308 | -340 | -372                               | -135 | -169 | -200 | -228 | -346 |  |
| -207                                                    | -276 | -3   |      |      |      |                                    |      |      |      |      |      |  |

Dane:  
 $d_1 = 70.082 \text{ mm}$   $\longrightarrow$

$m = 4 \text{ mm}$   $\longrightarrow$  **Moduł**

**Średnica  
podziałowa  
w mm**



| Odchyłki górne i dolne dla grubości zębów <sup>1)</sup> |       |       |       |       |       |                                 |      |      |      |      |  |  |
|---------------------------------------------------------|-------|-------|-------|-------|-------|---------------------------------|------|------|------|------|--|--|
| mierzonych na stałej cięciwie g                         |       |       |       |       |       | przy pomiarze przez "n" zębów M |      |      |      |      |  |  |
| zakresy odchyłek                                        |       |       |       |       |       | zakresy odchyłek                |      |      |      |      |  |  |
| i                                                       | II D  | III   | IV    | V     |       | i                               | II D | III  | IV   | V    |  |  |
| -8                                                      | -16   | -24   | -32   | -48   | -72   | -15                             | -23  | -30  | -45  | -60  |  |  |
| -24                                                     | -32   | -40   | -48   | -64   | -72   | -30                             | -38  | -45  | -60  | -80  |  |  |
| -9                                                      | -18   | -27   | -36   | -54   | -72   | -17                             | -25  | -34  | -51  | -68  |  |  |
| -27                                                     | -36   | -45   | -54   | -72   | -72   | -25                             | -34  | -42  | -51  | -68  |  |  |
| -10                                                     | -20   | -30   | -40   | -60   | -80   | -9                              | -18  | -24  | -36  | -48  |  |  |
| -30                                                     | -40   | -50   | -60   | -80   | -80   | -26                             | -36  | -47  | -58  | -75  |  |  |
| -11                                                     | -22   | -33   | -44   | -66   | -88   | -10                             | -21  | -31  | -41  | -62  |  |  |
| -33                                                     | -44   | -55   | -66   | -88   | -88   | -31                             | -41  | -52  | -62  | -83  |  |  |
| -12                                                     | -25   | -37   | -50   | -75   | -100  | -12                             | -23  | -36  | -47  | -70  |  |  |
| -37                                                     | -50   | -62   | -75   | -100  | -100  | -36                             | -47  | -59  | -70  | -94  |  |  |
| -14                                                     | -28   | -42   | -56   | -84   | -112  | -13                             | -26  | -39  | -53  | -79  |  |  |
| -42                                                     | -56   | -70   | -84   | -112  | -112  | -39                             | -53  | -66  | -79  | -105 |  |  |
| -15                                                     | -32   | -48   | -64   | -96   | -128  | -15                             | -30  | -45  | -60  | -90  |  |  |
| -48                                                     | -64   | -80   | -96   | -128  | -128  | -45                             | -60  | -75  | -90  | -120 |  |  |
| -16                                                     | -36   | -54   | -72   | -108  | -144  | -17                             | -34  | -51  | -68  | -101 |  |  |
| -54                                                     | -72   | -90   | -108  | -144  | -144  | -51                             | -68  | -85  | -101 | -135 |  |  |
| -17                                                     | -40   | -60   | -80   | -120  | -160  | -19                             | -38  | -58  | -75  | -113 |  |  |
| -60                                                     | -80   | -100  | -120  | -160  | -160  | -58                             | -75  | -94  | -113 | -150 |  |  |
| -22                                                     | -45   | -67   | -90   | -135  | -180  | -21                             | -42  | -63  | -85  | -127 |  |  |
| -67                                                     | -90   | -112  | -135  | -180  | -180  | -63                             | -85  | -105 | -127 | -169 |  |  |
| -25                                                     | -50   | -75   | -100  | -150  | -200  | -23                             | -47  | -70  | -94  | -141 |  |  |
| -75                                                     | -100  | -125  | -150  | -200  | -200  | -94                             | -117 | -141 | -169 | -210 |  |  |
| -26                                                     | -56   | -84   | -112  | -168  | -224  | -26                             | -53  | -79  | -105 | -158 |  |  |
| -84                                                     | -112  | -140  | -168  | -224  | -224  | -105                            | -132 | -158 | -180 | -230 |  |  |
| -32                                                     | -63   | -95   | -126  | -189  | -252  | -30                             | -59  | -89  | -118 | -178 |  |  |
| -95                                                     | -126  | -158  | -189  | -252  | -252  | -118                            | -148 | -178 | -200 | -267 |  |  |
| -36                                                     | -71   | -107  | -142  | -213  | -284  | -34                             | -67  | -101 | -133 | -200 |  |  |
| -107                                                    | -142  | -170  | -213  | -284  | -284  | -133                            | -169 | -200 | -226 | -301 |  |  |
| -40                                                     | -80   | -120  | -160  | -240  | -320  | -38                             | -75  | -113 | -150 | -226 |  |  |
| -120                                                    | -160  | -200  | -240  | -320  | -320  | -150                            | -180 | -216 | -246 | -320 |  |  |
| -45                                                     | -90   | -135  | -180  | -270  | -360  | -42                             | -85  | -127 | -169 | -254 |  |  |
| -135                                                    | -180  | -225  | -270  | -360  | -360  | -169                            | -211 | -254 | -298 | -390 |  |  |
| -50                                                     | -100  | -150  | -200  | -300  | -400  | -47                             | -94  | -141 | -189 | -282 |  |  |
| -150                                                    | -200  | -250  | -300  | -400  | -400  | -189                            | -235 | -282 | -336 | -430 |  |  |
| -55                                                     | -110  | -165  | -220  | -330  | -440  | -51                             | -103 | -155 | -207 | -310 |  |  |
| -165                                                    | -220  | -275  | -330  | -440  | -440  | -207                            | -258 | -310 | -360 | -463 |  |  |
| -62                                                     | -125  | -189  | -252  | -375  | -500  | -59                             | -117 | -177 | -235 | -352 |  |  |
| -189                                                    | -250  | -313  | -375  | -500  | -500  | -235                            | -284 | -352 | -410 | -520 |  |  |
| -70                                                     | -140  | -210  | -280  | -420  | -560  | -65                             | -132 | -197 | -263 | -395 |  |  |
| -210                                                    | -280  | -350  | -420  | -560  | -560  | -263                            | -329 | -395 | -465 | -595 |  |  |
| -80                                                     | -160  | -240  | -320  | -480  | -640  | -75                             | -150 | -216 | -282 | -431 |  |  |
| -240                                                    | -320  | -400  | -480  | -640  | -640  | -282                            | -360 | -431 | -507 | -657 |  |  |
| -90                                                     | -180  | -270  | -360  | -540  | -720  | -85                             | -169 | -234 | -308 | -467 |  |  |
| -270                                                    | -360  | -450  | -540  | -720  | -720  | -308                            | -386 | -467 | -547 | -707 |  |  |
| -100                                                    | -200  | -300  | -400  | -600  | -800  | -94                             | -189 | -262 | -336 | -504 |  |  |
| -300                                                    | -400  | -500  | -600  | -800  | -800  | -336                            | -413 | -504 | -584 | -752 |  |  |
| -110                                                    | -220  | -330  | -440  | -660  | -880  | -103                            | -207 | -282 | -360 | -527 |  |  |
| -330                                                    | -440  | -550  | -660  | -880  | -880  | -360                            | -437 | -527 | -607 | -777 |  |  |
| -125                                                    | -250  | -375  | -500  | -750  | -1000 | -117                            | -235 | -310 | -390 | -557 |  |  |
| -750                                                    | -1000 | -1250 | -1500 | -2000 | -2000 | -390                            | -467 | -557 | -637 | -807 |  |  |
| -140                                                    | -280  | -420  | -560  | -840  | -1120 | -132                            | -263 | -343 | -423 | -593 |  |  |
| -420                                                    | -560  | -700  | -840  | -1120 | -1120 | -423                            | -504 | -584 | -664 | -834 |  |  |
| -150                                                    | -300  | -450  | -600  | -900  | -1200 | -139                            | -282 | -362 | -442 | -612 |  |  |
| -600                                                    | -800  | -1000 | -1200 | -1600 | -1600 | -442                            | -522 | -602 | -682 | -852 |  |  |

| Dozwolone bieżne<br>wzrosty | Dozwolone bieżne<br>wzrosty | Dozwolone bieżne<br>wzrosty |
|-----------------------------|-----------------------------|-----------------------------|
| 22                          | 8                           | 25                          |
| 25                          | 9                           | 28                          |
| 28                          | 10                          | 32                          |
| 32                          | 12                          | 36                          |
| 36                          | 14                          | 40                          |
| 40                          | 16                          | 45                          |
| 45                          | 18                          | 50                          |
| 50                          | 20                          | 55                          |
| 55                          | 22                          | 60                          |
| 60                          | 25                          | 65                          |
| 65                          | 28                          | 70                          |
| 70                          | 32                          | 75                          |
| 75                          | 36                          | 80                          |
| 80                          | 40                          | 85                          |
| 85                          | 45                          | 90                          |
| 90                          | 50                          | 95                          |
| 95                          | 55                          | 100                         |
| 100                         | 60                          | 105                         |
| 105                         | 65                          | 110                         |
| 110                         | 70                          | 115                         |
| 115                         | 75                          | 120                         |
| 120                         | 80                          | 125                         |
| 125                         | 85                          | 130                         |
| 130                         | 90                          | 135                         |
| 135                         | 95                          | 140                         |
| 140                         | 100                         | 145                         |
| 145                         | 105                         | 150                         |
| 150                         | 110                         | 155                         |
| 155                         | 115                         | 160                         |
| 160                         | 120                         | 165                         |
| 165                         | 125                         | 170                         |
| 170                         | 130                         | 175                         |
| 175                         | 135                         | 180                         |
| 180                         | 140                         | 185                         |
| 185                         | 145                         | 190                         |
| 190                         | 150                         | 195                         |
| 195                         | 155                         | 200                         |
| 200                         | 160                         | 205                         |
| 205                         | 165                         | 210                         |
| 210                         | 170                         | 215                         |
| 215                         | 175                         | 220                         |
| 220                         | 180                         | 225                         |
| 225                         | 185                         | 230                         |
| 230                         | 190                         | 235                         |
| 235                         | 195                         | 240                         |
| 240                         | 200                         | 245                         |
| 245                         | 205                         | 250                         |
| 250                         | 210                         | 255                         |
| 255                         | 215                         | 260                         |
| 260                         | 220                         | 265                         |
| 265                         | 225                         | 270                         |
| 270                         | 230                         | 275                         |
| 275                         | 235                         | 280                         |
| 280                         | 240                         | 285                         |
| 285                         | 245                         | 290                         |
| 290                         | 250                         | 295                         |
| 295                         | 255                         | 300                         |
| 300                         | 260                         | 305                         |
| 305                         | 265                         | 310                         |
| 310                         | 270                         | 315                         |
| 315                         | 275                         | 320                         |
| 320                         | 280                         | 325                         |
| 325                         | 285                         | 330                         |
| 330                         | 290                         | 335                         |
| 335                         | 295                         | 340                         |
| 340                         | 300                         | 345                         |
| 345                         | 305                         | 350                         |
| 350                         | 310                         | 355                         |
| 355                         | 315                         | 360                         |
| 360                         | 320                         | 365                         |
| 365                         | 325                         | 370                         |
| 370                         | 330                         | 375                         |
| 375                         | 335                         | 380                         |
| 380                         | 340                         | 385                         |
| 385                         | 345                         | 390                         |
| 390                         | 350                         | 395                         |
| 395                         | 355                         | 400                         |
| 400                         | 360                         | 405                         |
| 405                         | 365                         | 410                         |
| 410                         | 370                         | 415                         |
| 415                         | 375                         | 420                         |
| 420                         | 380                         | 425                         |
| 425                         | 385                         | 430                         |
| 430                         | 390                         | 435                         |
| 435                         | 395                         | 440                         |
| 440                         | 400                         | 445                         |
| 445                         | 405                         | 450                         |
| 450                         | 410                         | 455                         |
| 455                         | 415                         | 460                         |
| 460                         | 420                         | 465                         |
| 465                         | 425                         | 470                         |
| 470                         | 430                         | 475                         |
| 475                         | 435                         | 480                         |
| 480                         | 440                         | 485                         |
| 485                         | 445                         | 490                         |
| 490                         | 450                         | 495                         |
| 495                         | 455                         | 500                         |
| 500                         | 460                         | 505                         |
| 505                         | 465                         | 510                         |
| 510                         | 470                         | 515                         |
| 515                         | 475                         | 520                         |
| 520                         | 480                         | 525                         |
| 525                         | 485                         | 530                         |
| 530                         | 490                         | 535                         |
| 535                         | 495                         | 540                         |
| 540                         | 500                         | 545                         |
| 545                         | 505                         | 550                         |
| 550                         | 510                         | 555                         |
| 555                         | 515                         | 560                         |
| 560                         | 520                         | 565                         |
| 565                         | 525                         | 570                         |
| 570                         | 530                         | 575                         |
| 575                         | 535                         | 580                         |
| 580                         | 540                         | 585                         |
| 585                         | 545                         | 590                         |
| 590                         | 550                         | 595                         |
| 595                         | 555                         | 600                         |
| 600                         | 560                         | 605                         |
| 605                         | 565                         | 610                         |
| 610                         | 570                         | 615                         |
| 615                         | 575                         | 620                         |
| 620                         | 580                         | 625                         |
| 625                         | 585                         | 630                         |
| 630                         | 590                         | 635                         |
| 635                         | 595                         | 640                         |
| 640                         | 600                         | 645                         |
| 645                         | 605                         | 650                         |
| 650                         | 610                         | 655                         |
| 655                         | 615                         | 660                         |
| 660                         | 620                         | 665                         |
| 665                         | 625                         | 670                         |
| 670                         | 630                         | 675                         |
| 675                         | 635                         | 680                         |
| 680                         | 640                         | 685                         |
| 685                         | 645                         | 690                         |
| 690                         | 650                         | 695                         |
| 695                         | 655                         | 700                         |
| 700                         | 660                         | 705                         |
| 705                         | 665                         | 710                         |
| 710                         | 670                         | 715                         |
| 715                         | 675                         | 720                         |
| 720                         | 680                         | 725                         |
| 725                         | 685                         | 730                         |
| 730                         | 690                         | 735                         |
| 735                         | 695                         | 740                         |
| 740                         | 700                         | 745                         |
| 745                         | 705                         | 750                         |
| 750                         | 710                         | 755                         |
| 755                         | 715                         | 760                         |
| 760                         | 720                         | 765                         |
| 765                         | 725                         | 770                         |
| 770                         | 730                         | 775                         |
| 775                         | 735                         | 780                         |
| 780                         | 740                         | 785                         |
| 785                         | 745                         | 790                         |
| 790                         | 750                         | 795                         |
| 795                         | 755                         | 800                         |
| 800                         | 760                         | 805                         |
| 805                         | 765                         | 810                         |
| 810                         | 770                         | 815                         |
| 815                         | 775                         | 820                         |
| 820                         | 780                         | 825                         |
| 825                         | 785                         | 830                         |
| 830                         | 790                         | 835                         |
| 835                         | 795                         | 840                         |
| 840                         | 800                         | 845                         |
| 845                         | 805                         | 850                         |
| 850                         | 810                         | 855                         |
| 855                         | 815                         | 860                         |
| 860                         | 820                         | 865                         |
| 865                         | 825                         | 870                         |
| 870                         | 830                         | 875                         |
| 875                         | 835                         | 880                         |
| 880                         | 840                         | 885                         |
| 885                         | 845                         | 890                         |
| 890                         | 850                         | 895                         |
| 895                         | 855                         | 900                         |
| 900                         | 860                         | 905                         |
| 905                         | 865                         | 910                         |
| 910                         | 870                         | 915                         |
| 915                         | 875                         | 920                         |
| 920                         | 880                         | 925                         |
| 925                         | 885                         | 930                         |
| 930                         | 890                         | 935                         |
| 935                         | 895                         | 940                         |
| 940                         | 900                         | 945                         |
| 945                         | 905                         | 950                         |
| 950                         | 910                         | 955                         |
| 955                         | 915                         | 960                         |
| 960                         | 920                         | 965                         |
| 965                         | 925                         | 970                         |
| 970                         | 930                         | 975                         |
| 975                         | 935                         | 980                         |
| 980                         | 940                         | 985                         |
| 985                         | 945                         | 990                         |
| 990                         | 950                         | 995                         |
| 995                         | 955                         | 1000                        |

1) Dobór zakresu odchyłek grubości zębów zależy od wymaganego dla przekładni zębatej typu międzyzębnego.

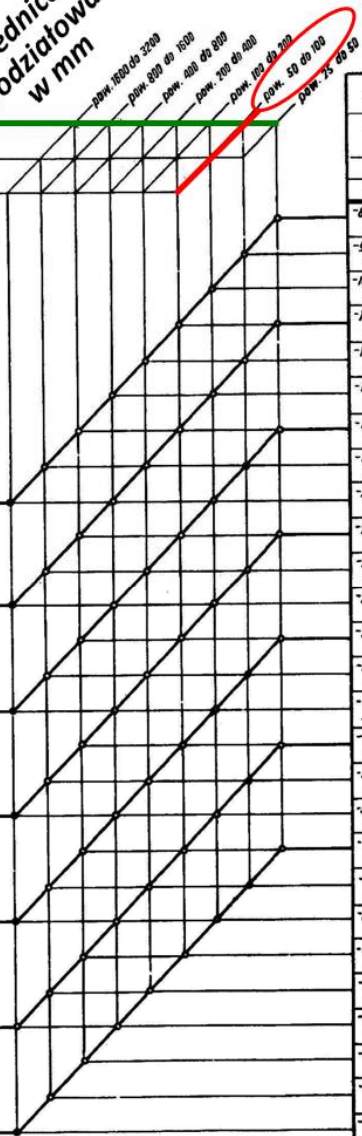
Dane:  
 $d_1 = 70.082 \text{ mm}$   $\longrightarrow$

$m = 4 \text{ mm}$   $\longrightarrow$

Moduł **2 do 4**

Średnica podziałowa w mm

| Dopuszczalny błąd odchyłki<br>i zwichrzań od na długości 100 mm w $\mu$ |    |    | Klasa dokładności |  | Dopuszczalny błąd nachylenia linii<br>zęba na długości 100 mm w $\mu$ |  | Dopuszczalne odchyłki<br>parametrów zębów |  |
|-------------------------------------------------------------------------|----|----|-------------------|--|-----------------------------------------------------------------------|--|-------------------------------------------|--|
| 14                                                                      | 6  | 21 | $\nabla 9$        |  |                                                                       |  |                                           |  |
| 17                                                                      | 7  | 27 | $\nabla 8$        |  |                                                                       |  |                                           |  |
| 21                                                                      | 8  | 34 | $\nabla 8$        |  |                                                                       |  |                                           |  |
| 25                                                                      | 9  | 45 | $\nabla 6$        |  |                                                                       |  |                                           |  |
| 31                                                                      | 10 | 58 | $\nabla 6$        |  |                                                                       |  |                                           |  |
| 38                                                                      | 11 | 75 | $\nabla 4$        |  |                                                                       |  |                                           |  |
| 46                                                                      | 12 | 98 | $\nabla 3$        |  |                                                                       |  |                                           |  |



| Odchyłki górne i dolne dla grubości zębów $\mu$ |      |      |      |      |      |                                 |      |      |      |      |      |
|-------------------------------------------------|------|------|------|------|------|---------------------------------|------|------|------|------|------|
| mierzonych na stałej cięciwie g                 |      |      |      |      |      | przy pomiarze przez "n" zębów M |      |      |      |      |      |
| zakresy odchyłek                                |      |      |      |      |      | zakresy odchyłek                |      |      |      |      |      |
| i                                               | II D | III  | IV   | V    |      | i                               | II D | III  | IV   | V    |      |
| -8                                              | -16  | -24  | -32  | -40  | -48  | -25                             | -15  | -23  | -30  | -45  | -60  |
| -24                                             | -32  | -40  | -48  | -56  | -64  | -73                             | -30  | -38  | -45  | -60  | -80  |
| -9                                              | -18  | -27  | -36  | -45  | -54  | -85                             | -17  | -25  | -34  | -51  | -68  |
| -27                                             | -36  | -45  | -54  | -63  | -72  | -25                             | -34  | -42  | -51  | -68  | -88  |
| -10                                             | -20  | -30  | -40  | -50  | -60  | -9                              | -19  | -28  | -38  | -54  | -75  |
| -30                                             | -40  | -50  | -60  | -70  | -80  | -26                             | -38  | -47  | -56  | -75  | -100 |
| -11                                             | -22  | -33  | -44  | -55  | -66  | -10                             | -21  | -31  | -41  | -62  | -83  |
| -33                                             | -44  | -55  | -66  | -77  | -88  | -31                             | -41  | -51  | -62  | -83  | -104 |
| -12                                             | -24  | -36  | -48  | -60  | -72  | -12                             | -23  | -36  | -47  | -70  | -94  |
| -36                                             | -48  | -60  | -72  | -84  | -96  | -36                             | -47  | -59  | -70  | -94  | -118 |
| -14                                             | -28  | -42  | -56  | -70  | -84  | -13                             | -26  | -39  | -53  | -79  | -105 |
| -42                                             | -56  | -70  | -84  | -96  | -112 | -39                             | -53  | -66  | -79  | -105 | -130 |
| -15                                             | -30  | -45  | -60  | -75  | -90  | -15                             | -30  | -45  | -60  | -90  | -120 |
| -45                                             | -60  | -75  | -90  | -105 | -120 | -45                             | -60  | -75  | -90  | -120 | -150 |
| -16                                             | -32  | -48  | -64  | -80  | -96  | -17                             | -34  | -51  | -68  | -101 | -135 |
| -48                                             | -64  | -80  | -96  | -112 | -128 | -51                             | -68  | -85  | -101 | -135 | -170 |
| -17                                             | -34  | -51  | -68  | -85  | -102 | -19                             | -38  | -55  | -75  | -113 | -150 |
| -51                                             | -68  | -85  | -102 | -120 | -138 | -55                             | -75  | -94  | -113 | -150 | -190 |
| -18                                             | -36  | -54  | -72  | -90  | -108 | -21                             | -42  | -63  | -85  | -127 | -169 |
| -54                                             | -72  | -90  | -108 | -126 | -144 | -63                             | -85  | -105 | -127 | -169 | -210 |
| -19                                             | -38  | -57  | -76  | -95  | -114 | -23                             | -47  | -70  | -94  | -141 | -188 |
| -57                                             | -76  | -95  | -114 | -133 | -152 | -70                             | -94  | -117 | -141 | -188 | -230 |
| -20                                             | -40  | -60  | -80  | -100 | -120 | -25                             | -50  | -75  | -100 | -150 | -200 |
| -60                                             | -80  | -100 | -120 | -140 | -160 | -94                             | -117 | -141 | -188 | -230 | -280 |
| -21                                             | -42  | -63  | -84  | -105 | -126 | -26                             | -53  | -79  | -105 | -158 | -210 |
| -63                                             | -84  | -105 | -126 | -147 | -168 | -105                            | -132 | -158 | -210 | -280 | -340 |
| -22                                             | -44  | -66  | -88  | -110 | -132 | -28                             | -56  | -84  | -118 | -178 | -237 |
| -66                                             | -88  | -110 | -132 | -154 | -176 | -118                            | -148 | -178 | -237 | -300 | -367 |
| -23                                             | -46  | -69  | -92  | -115 | -138 | -30                             | -60  | -90  | -120 | -180 | -240 |
| -69                                             | -92  | -115 | -138 | -162 | -186 | -120                            | -150 | -180 | -240 | -300 | -370 |
| -24                                             | -48  | -72  | -96  | -120 | -144 | -32                             | -64  | -96  | -128 | -192 | -256 |
| -72                                             | -96  | -120 | -144 | -168 | -192 | -132                            | -165 | -200 | -265 | -330 | -400 |
| -25                                             | -50  | -75  | -100 | -125 | -150 | -34                             | -68  | -102 | -136 | -204 | -272 |
| -75                                             | -100 | -125 | -150 | -175 | -200 | -144                            | -180 | -216 | -288 | -360 | -440 |
| -26                                             | -52  | -78  | -104 | -130 | -156 | -36                             | -72  | -108 | -144 | -216 | -288 |
| -78                                             | -104 | -130 | -156 | -182 | -208 | -156                            | -204 | -240 | -312 | -396 | -480 |
| -27                                             | -54  | -81  | -108 | -136 | -162 | -38                             | -76  | -114 | -152 | -228 | -304 |
| -81                                             | -108 | -136 | -162 | -188 | -214 | -168                            | -216 | -252 | -324 | -408 | -496 |
| -28                                             | -56  | -84  | -112 | -144 | -176 | -40                             | -80  | -120 | -160 | -240 | -320 |
| -84                                             | -112 | -144 | -176 | -208 | -240 | -180                            | -240 | -280 | -360 | -450 | -540 |
| -29                                             | -58  | -87  | -116 | -148 | -180 | -42                             | -84  | -126 | -168 | -252 | -336 |
| -87                                             | -116 | -148 | -180 | -212 | -244 | -192                            | -252 | -292 | -372 | -464 | -556 |
| -30                                             | -60  | -90  | -120 | -150 | -180 | -44                             | -88  | -132 | -176 | -264 | -348 |
| -90                                             | -120 | -150 | -180 | -210 | -240 | -204                            | -264 | -304 | -384 | -476 | -568 |
| -31                                             | -62  | -93  | -124 | -156 | -188 | -46                             | -92  | -138 | -184 | -276 | -360 |
| -93                                             | -124 | -156 | -188 | -220 | -252 | -216                            | -276 | -316 | -396 | -488 | -580 |
| -32                                             | -64  | -96  | -128 | -160 | -192 | -48                             | -96  | -144 | -192 | -288 | -372 |
| -96                                             | -128 | -160 | -192 | -224 | -256 | -228                            | -288 | -328 | -408 | -500 | -592 |
| -33                                             | -66  | -99  | -132 | -164 | -196 | -50                             | -100 | -150 | -200 | -300 | -390 |
| -99                                             | -132 | -164 | -196 | -228 | -260 | -240                            | -300 | -340 | -420 | -512 | -604 |
| -34                                             | -68  | -102 | -136 | -168 | -200 | -52                             | -104 | -156 | -204 | -304 | -396 |
| -102                                            | -136 | -168 | -200 | -232 | -264 | -252                            | -312 | -352 | -432 | -524 | -616 |
| -35                                             | -70  | -105 | -140 | -172 | -204 | -54                             | -108 | -160 | -210 | -310 | -402 |
| -105                                            | -140 | -172 | -204 | -236 | -268 | -264                            | -324 | -364 | -444 | -536 | -628 |
| -36                                             | -72  | -108 | -144 | -176 | -208 | -56                             | -112 | -164 | -216 | -316 | -408 |
| -108                                            | -144 | -176 | -208 | -240 | -272 | -276                            | -336 | -376 | -456 | -548 | -640 |
| -37                                             | -74  | -111 | -148 | -180 | -212 | -58                             | -116 | -168 | -220 | -320 | -412 |
| -111                                            | -148 | -180 | -212 | -244 | -276 | -288                            | -348 | -388 | -468 | -560 | -652 |
| -38                                             | -76  | -114 | -152 | -184 | -216 | -60                             | -120 | -172 | -224 | -324 | -416 |
| -114                                            | -152 | -184 | -216 | -248 | -280 | -300                            | -360 | -400 | -480 | -572 | -664 |
| -39                                             | -78  | -117 | -156 | -188 | -220 | -62                             | -124 | -176 | -228 | -328 | -420 |
| -117                                            | -156 | -188 | -220 | -252 | -284 | -312                            | -372 | -412 | -492 | -584 | -676 |
| -40                                             | -80  | -120 | -160 | -192 | -224 | -64                             | -128 | -180 | -232 | -332 | -424 |
| -120                                            | -160 | -192 | -224 | -256 | -288 | -324                            | -384 | -424 | -504 | -596 | -688 |
| -41                                             | -82  | -123 | -164 | -196 | -228 | -66                             | -132 | -184 | -236 | -336 | -428 |
| -123                                            | -164 | -196 | -228 | -260 | -292 | -336                            | -396 | -436 | -516 | -608 | -700 |
| -42                                             | -84  | -126 | -168 | -200 | -232 | -68                             | -136 | -188 | -240 | -340 | -432 |
| -126                                            | -168 | -200 | -232 | -264 | -296 | -348                            | -408 | -448 | -528 | -620 | -712 |
| -43                                             | -86  | -129 | -172 | -204 | -236 | -70                             | -140 | -192 | -244 | -344 | -436 |
| -129                                            | -172 | -204 | -236 | -268 | -300 | -360                            | -420 | -460 | -540 | -632 | -724 |
| -44                                             | -88  | -132 | -176 | -208 | -240 | -72                             | -144 | -196 | -248 | -348 | -440 |
| -132                                            | -176 | -208 | -240 | -272 | -304 | -372                            | -432 | -472 | -552 | -644 | -736 |
| -45                                             | -90  | -135 | -180 | -212 | -244 | -74                             | -148 | -200 | -252 | -352 | -444 |
| -135                                            | -180 | -212 | -244 | -276 | -308 | -384                            | -444 | -484 | -564 | -656 | -748 |
| -46                                             | -92  | -138 | -184 | -216 | -248 | -76                             | -152 | -204 | -256 | -356 | -448 |
| -138                                            | -184 | -216 | -248 | -280 | -312 | -396                            | -456 | -496 | -576 | -668 | -760 |
| -47                                             | -94  | -141 | -188 | -220 | -252 | -78                             | -156 | -208 | -260 | -360 | -452 |
| -141                                            | -188 | -220 | -252 | -284 | -316 | -408                            | -468 | -508 | -588 | -680 | -772 |
| -48                                             | -96  | -144 | -192 | -224 | -256 | -80                             | -160 | -212 | -264 | -364 | -456 |
| -144                                            | -192 | -224 | -256 | -288 | -320 | -420                            | -480 | -520 | -600 | -692 | -784 |
| -49                                             | -98  | -147 | -196 | -228 | -260 | -82                             | -164 | -216 | -268 | -368 | -460 |
| -147                                            | -196 | -228 | -260 | -292 | -324 | -432                            | -492 | -532 | -612 | -704 | -796 |
| -50                                             | -100 | -150 | -200 | -232 | -264 | -84                             | -168 | -220 | -272 | -372 | -464 |
| -150                                            | -200 | -232 | -264 | -296 | -328 | -444                            | -504 | -544 | -624 | -716 | -808 |
| -51                                             | -102 | -153 | -204 | -236 | -268 | -86                             | -172 | -224 | -276 | -376 | -468 |
| -153                                            | -204 | -236 | -268 | -300 | -332 | -456                            | -516 | -556 | -636 | -728 | -820 |
| -52                                             | -104 | -156 | -208 | -240 | -272 | -88                             | -176 | -228 | -280 | -380 | -472 |
| -156                                            | -208 | -240 | -272 | -304 | -336 | -468                            | -528 | -568 | -648 | -740 | -832 |
| -53                                             | -106 | -159 | -212 | -244 | -276 | -90                             | -180 | -232 | -284 | -384 | -476 |
| -159                                            | -212 | -244 | -276 | -308 | -340 | -480                            | -540 | -580 | -660 | -752 | -844 |
| -54                                             | -108 | -162 | -216 | -248 | -280 | -92                             | -184 | -236 | -288 | -388 | -480 |
| -162                                            | -216 | -248 | -280 | -312 | -344 | -492                            | -552 | -592 | -672 | -764 | -856 |
| -55                                             | -110 | -165 | -220 | -252 | -284 | -94                             | -188 | -240 | -292 | -392 | -484 |
| -165                                            | -220 | -252 | -284 | -316 | -348 | -504                            | -564 | -604 | -684 | -776 | -868 |
| -56                                             | -112 | -168 | -224 | -256 | -288 | -96                             | -192 | -244 | -296 | -396 | -488 |
| -168                                            | -224 | -256 | -288 | -320 | -352 | -516                            | -576 | -616 | -696 | -788 | -880 |
| -57                                             | -114 | -171 | -228 | -260 | -292 | -98                             | -196 | -248 | -300 | -400 | -492 |
| -171                                            | -228 | -260 | -292 | -324 | -356 | -528                            | -588 | -628 | -708 | -800 | -892 |
| -58                                             | -116 | -174 | -232 | -264 | -296 | -100                            | -200 | -252 | -304 | -404 | -496 |
| -174                                            | -232 | -264 | -296 | -328 | -360 | -540                            | -600 | -640 | -720 | -812 | -904 |
| -59                                             | -118 | -177 | -236 | -268 | -300 | -102                            | -204 | -256 | -308 | -408 | -500 |
| -177                                            | -236 | -268 | -300 | -332 | -364 | -552                            | -612 | -652 | -732 | -824 | -916 |
| -60                                             | -120 | -180 | -240 | -272 | -304 | -104                            | -208 | -260 | -312 | -412 | -504 |
| -180                                            | -240 | -272 | -304 | -336 | -368 | -564                            | -624 | -664 | -744 | -836 | -928 |
| -61                                             | -122 | -183 | -244 | -276 | -308 | -106                            | -212 | -264 | -316 | -416 | -508 |
| -183                                            | -244 | -276 | -308 | -340 | -372 | -576                            | -636 | -676 | -756 | -848 | -940 |
| -62                                             | -124 | -186 | -248 | -280 | -312 | -108                            | -216 | -268 | -320 | -420 | -512 |
| -186                                            | -248 | -280 | -312 | -344 | -376 | -588                            | -648 | -688 | -768 | -860 | -952 |
| -63                                             | -126 | -189 | -252 | -284 | -316 | -110                            | -220 | -272 | -324 | -424 | -516 |
| -189                                            | -252 | -284 | -316 | -348 | -380 | -600                            | -660 | -700 | -780 | -872 | -964 |
| -64                                             | -128 | -192 | -256 | -288 | -320 | -112                            | -224 | -276 | -328 | -428 | -520 |

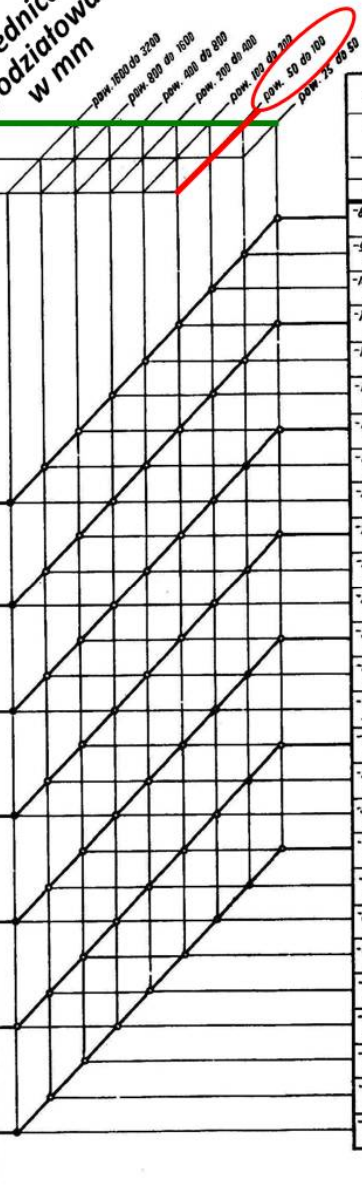
Dane:  
 $d_1 = 70.082 \text{ mm}$   $\longrightarrow$

$m = 4 \text{ mm}$   $\longrightarrow$

Moduł **2 do 4**

Średnica podziałowa w mm

| Klasa dokładności                                                       |    |               |
|-------------------------------------------------------------------------|----|---------------|
| Dopuszczalny błąd odchyłki<br>i zwichrzań od na długości 100 mm w $\mu$ |    |               |
| Dopuszczalny błąd nachylenia linii<br>zęba na długości 100 mm w $\mu$   |    |               |
| Długość pomiaru zębów                                                   |    |               |
| 14                                                                      | 6  | 21 $\nabla 9$ |
| 17                                                                      | 7  | 27 $\nabla 8$ |
| 21                                                                      | 8  | 34 $\nabla 8$ |
| 25                                                                      | 9  | 45 $\nabla 6$ |
| 31                                                                      | 10 | 58 $\nabla 6$ |
| 38                                                                      | 11 | 75 $\nabla 4$ |
| 46                                                                      | 12 | 98 $\nabla 3$ |



Odchyłki górne i dolne dla grubości zębów

| mierzonych na stałej cięciwie g |       | przy pomiarze przez "n" zębów M |      |
|---------------------------------|-------|---------------------------------|------|
| zakresy odchyłek                |       | zakresy odchyłek                |      |
| I                               | II D  | I                               | II D |
| -18                             | -24   | -15                             | -23  |
| -24                             | -32   | -23                             | -30  |
| -32                             | -40   | -30                             | -38  |
| -40                             | -48   | -38                             | -45  |
| -48                             | -56   | -45                             | -52  |
| -56                             | -64   | -52                             | -60  |
| -64                             | -72   | -60                             | -68  |
| -72                             | -80   | -68                             | -75  |
| -80                             | -88   | -75                             | -82  |
| -88                             | -96   | -82                             | -90  |
| -96                             | -104  | -90                             | -98  |
| -104                            | -112  | -98                             | -105 |
| -112                            | -120  | -105                            | -112 |
| -120                            | -128  | -112                            | -120 |
| -128                            | -136  | -120                            | -128 |
| -136                            | -144  | -128                            | -136 |
| -144                            | -152  | -136                            | -144 |
| -152                            | -160  | -144                            | -152 |
| -160                            | -168  | -152                            | -160 |
| -168                            | -176  | -160                            | -168 |
| -176                            | -184  | -168                            | -176 |
| -184                            | -192  | -176                            | -184 |
| -192                            | -200  | -184                            | -192 |
| -200                            | -208  | -192                            | -200 |
| -208                            | -216  | -200                            | -208 |
| -216                            | -224  | -208                            | -216 |
| -224                            | -232  | -216                            | -224 |
| -232                            | -240  | -224                            | -232 |
| -240                            | -248  | -232                            | -240 |
| -248                            | -256  | -240                            | -248 |
| -256                            | -264  | -248                            | -256 |
| -264                            | -272  | -256                            | -264 |
| -272                            | -280  | -264                            | -272 |
| -280                            | -288  | -272                            | -280 |
| -288                            | -296  | -280                            | -288 |
| -296                            | -304  | -288                            | -296 |
| -304                            | -312  | -296                            | -304 |
| -312                            | -320  | -304                            | -312 |
| -320                            | -328  | -312                            | -320 |
| -328                            | -336  | -320                            | -328 |
| -336                            | -344  | -328                            | -336 |
| -344                            | -352  | -336                            | -344 |
| -352                            | -360  | -344                            | -352 |
| -360                            | -368  | -352                            | -360 |
| -368                            | -376  | -360                            | -368 |
| -376                            | -384  | -368                            | -376 |
| -384                            | -392  | -376                            | -384 |
| -392                            | -400  | -384                            | -392 |
| -400                            | -408  | -392                            | -400 |
| -408                            | -416  | -400                            | -408 |
| -416                            | -424  | -408                            | -416 |
| -424                            | -432  | -416                            | -424 |
| -432                            | -440  | -424                            | -432 |
| -440                            | -448  | -432                            | -440 |
| -448                            | -456  | -440                            | -448 |
| -456                            | -464  | -448                            | -456 |
| -464                            | -472  | -456                            | -464 |
| -472                            | -480  | -464                            | -472 |
| -480                            | -488  | -472                            | -480 |
| -488                            | -496  | -480                            | -488 |
| -496                            | -504  | -488                            | -496 |
| -504                            | -512  | -496                            | -504 |
| -512                            | -520  | -504                            | -512 |
| -520                            | -528  | -512                            | -520 |
| -528                            | -536  | -520                            | -528 |
| -536                            | -544  | -528                            | -536 |
| -544                            | -552  | -536                            | -544 |
| -552                            | -560  | -544                            | -552 |
| -560                            | -568  | -552                            | -560 |
| -568                            | -576  | -560                            | -568 |
| -576                            | -584  | -568                            | -576 |
| -584                            | -592  | -576                            | -584 |
| -592                            | -600  | -584                            | -592 |
| -600                            | -608  | -592                            | -600 |
| -608                            | -616  | -600                            | -608 |
| -616                            | -624  | -608                            | -616 |
| -624                            | -632  | -616                            | -624 |
| -632                            | -640  | -624                            | -632 |
| -640                            | -648  | -632                            | -640 |
| -648                            | -656  | -640                            | -648 |
| -656                            | -664  | -648                            | -656 |
| -664                            | -672  | -656                            | -664 |
| -672                            | -680  | -664                            | -672 |
| -680                            | -688  | -672                            | -680 |
| -688                            | -696  | -680                            | -688 |
| -696                            | -704  | -688                            | -696 |
| -704                            | -712  | -696                            | -704 |
| -712                            | -720  | -704                            | -712 |
| -720                            | -728  | -712                            | -720 |
| -728                            | -736  | -720                            | -728 |
| -736                            | -744  | -728                            | -736 |
| -744                            | -752  | -736                            | -744 |
| -752                            | -760  | -744                            | -752 |
| -760                            | -768  | -752                            | -760 |
| -768                            | -776  | -760                            | -768 |
| -776                            | -784  | -768                            | -776 |
| -784                            | -792  | -776                            | -784 |
| -792                            | -800  | -784                            | -792 |
| -800                            | -808  | -792                            | -800 |
| -808                            | -816  | -800                            | -808 |
| -816                            | -824  | -808                            | -816 |
| -824                            | -832  | -816                            | -824 |
| -832                            | -840  | -824                            | -832 |
| -840                            | -848  | -832                            | -840 |
| -848                            | -856  | -840                            | -848 |
| -856                            | -864  | -848                            | -856 |
| -864                            | -872  | -856                            | -864 |
| -872                            | -880  | -864                            | -872 |
| -880                            | -888  | -872                            | -880 |
| -888                            | -896  | -880                            | -888 |
| -896                            | -904  | -888                            | -896 |
| -904                            | -912  | -896                            | -904 |
| -912                            | -920  | -904                            | -912 |
| -920                            | -928  | -912                            | -920 |
| -928                            | -936  | -920                            | -928 |
| -936                            | -944  | -928                            | -936 |
| -944                            | -952  | -936                            | -944 |
| -952                            | -960  | -944                            | -952 |
| -960                            | -968  | -952                            | -960 |
| -968                            | -976  | -960                            | -968 |
| -976                            | -984  | -968                            | -976 |
| -984                            | -992  | -976                            | -984 |
| -992                            | -1000 | -984                            | -992 |

| Dopuszczalne bieżnie uzębienia w $\mu$ | Dopuszczalne błędy zorygow (płaski) i nierówności zębów i nachylenia zębów i nachylenia zębów | Sumaryczny błąd podziału, obrotowy |
|----------------------------------------|-----------------------------------------------------------------------------------------------|------------------------------------|
| 22                                     | 8                                                                                             | 25                                 |
| 25                                     | 9                                                                                             | 28                                 |
| 28                                     | 10                                                                                            | 32                                 |
| 32                                     | 12                                                                                            | 36                                 |
| 36                                     | 14                                                                                            | 40                                 |
| 40                                     | 16                                                                                            | 45                                 |
| 45                                     | 18                                                                                            | 50                                 |
| 50                                     | 20                                                                                            | 63                                 |
| 56                                     | 22                                                                                            | 71                                 |
| 63                                     | 25                                                                                            | 80                                 |
| 71                                     | 28                                                                                            | 90                                 |
| 80                                     | 32                                                                                            | 100                                |
| 90                                     | 36                                                                                            | 110                                |
| 100                                    | 40                                                                                            | 125                                |
| 110                                    | 45                                                                                            | 140                                |
| 125                                    | 50                                                                                            | 160                                |
| 140                                    | 63                                                                                            | 200                                |
| 160                                    | 71                                                                                            | 220                                |
| 180                                    | 85                                                                                            | 250                                |
| 200                                    | 100                                                                                           | 320                                |
| 220                                    | 125                                                                                           | 360                                |
| 250                                    | 140                                                                                           | 400                                |
| 280                                    | 160                                                                                           | 500                                |
| 320                                    | 180                                                                                           | 630                                |
| 360                                    | 200                                                                                           | 710                                |
| 400                                    | 220                                                                                           | 800                                |
| 450                                    | 250                                                                                           | 900                                |

1) Zakresy odchyłek grubości zębów zależny jest od wymaganego dla przekładni zębatej typu międzyczębnego.

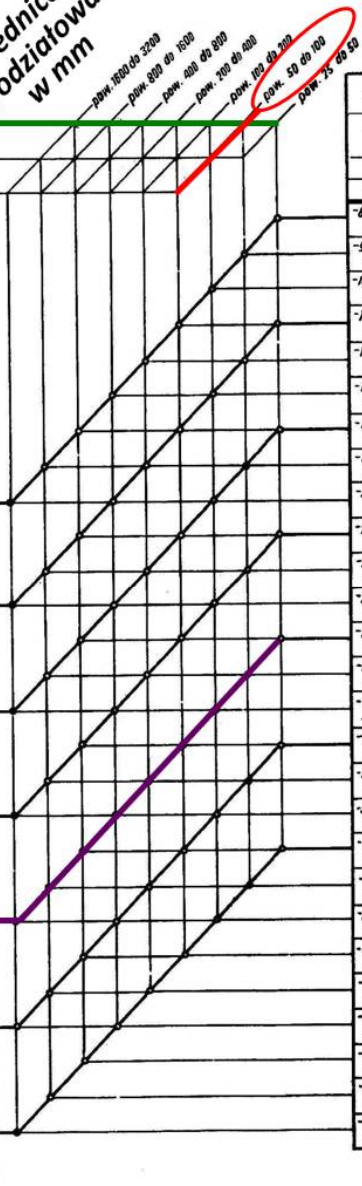
Dane:  
 $d_1 = 70.082 \text{ mm}$   $\longrightarrow$

$m = 4 \text{ mm}$   $\longrightarrow$

Moduł **2 do 4**

Średnica podziałowa w mm

| Klasa dokładności                                                      |    |               |
|------------------------------------------------------------------------|----|---------------|
| Dopuszczalny błąd odchyłki<br>zwiększony od na długości 100 mm w $\mu$ |    |               |
| Dopuszczalny błąd nachylenia linii<br>zęba na długości 100 mm w $\mu$  |    |               |
| Długość pomiarowej zębiny                                              |    |               |
| 14                                                                     | 6  | 21 $\nabla 9$ |
| 17                                                                     | 7  | 27 $\nabla 8$ |
| 21                                                                     | 8  | 34 $\nabla 8$ |
| 25                                                                     | 9  | 45 $\nabla 6$ |
| 3                                                                      | 10 | 54 $\nabla 5$ |
| 38                                                                     | 11 | 75 $\nabla 4$ |
| 46                                                                     | 12 | 98 $\nabla 3$ |



| Odchyłki górne i dolne dla grubości zębów <sup>1)</sup> |      |      |      |      |                                    |      |      |      |      |  |
|---------------------------------------------------------|------|------|------|------|------------------------------------|------|------|------|------|--|
| mierzonych na stałej cięciwie<br>g                      |      |      |      |      | przy pomiarze przez "n" zębów<br>M |      |      |      |      |  |
| zakresy odchyłek                                        |      |      |      |      | zakresy odchyłek                   |      |      |      |      |  |
| I                                                       | II D | III  | IV   | V    | I                                  | II D | III  | IV   | V    |  |
| -8                                                      | -16  | -24  | -32  | -48  | -75                                | -15  | -23  | -30  | -45  |  |
| -24                                                     | -32  | -40  | -48  | -64  | -75                                | -30  | -38  | -45  | -60  |  |
| -9                                                      | -18  | -27  | -36  | -54  | -45                                | -17  | -26  | -34  | -51  |  |
| -27                                                     | -36  | -45  | -54  | -72  | -45                                | -34  | -42  | -51  | -68  |  |
| -10                                                     | -20  | -30  | -40  | -60  | -9                                 | -19  | -28  | -38  | -56  |  |
| -30                                                     | -40  | -50  | -60  | -80  | -9                                 | -28  | -37  | -47  | -64  |  |
| -11                                                     | -22  | -33  | -44  | -66  | -10                                | -21  | -31  | -41  | -62  |  |
| -33                                                     | -44  | -55  | -66  | -88  | -31                                | -41  | -52  | -62  | -83  |  |
| -12                                                     | -24  | -36  | -48  | -72  | -12                                | -23  | -36  | -47  | -70  |  |
| -37                                                     | -50  | -62  | -75  | -100 | -26                                | -47  | -59  | -70  | -94  |  |
| -13                                                     | -26  | -39  | -52  | -78  | -13                                | -26  | -39  | -53  | -79  |  |
| -62                                                     | -78  | -94  | -112 | -144 | -29                                | -53  | -65  | -79  | -105 |  |
| -14                                                     | -28  | -42  | -56  | -84  | -15                                | -30  | -45  | -60  | -90  |  |
| -84                                                     | -108 | -132 | -156 | -192 | -45                                | -60  | -75  | -90  | -120 |  |
| -15                                                     | -30  | -45  | -60  | -90  | -16                                | -32  | -48  | -64  | -96  |  |
| -96                                                     | -128 | -160 | -192 | -240 | -60                                | -80  | -100 | -120 | -160 |  |
| -16                                                     | -32  | -48  | -64  | -96  | -17                                | -34  | -51  | -68  | -102 |  |
| -54                                                     | -72  | -90  | -108 | -144 | -51                                | -68  | -85  | -102 | -136 |  |
| -17                                                     | -34  | -51  | -68  | -102 | -18                                | -36  | -54  | -72  | -108 |  |
| -68                                                     | -90  | -108 | -126 | -168 | -54                                | -72  | -90  | -108 | -144 |  |
| -18                                                     | -36  | -54  | -72  | -108 | -19                                | -38  | -56  | -75  | -113 |  |
| -54                                                     | -72  | -90  | -108 | -144 | -56                                | -75  | -94  | -113 | -150 |  |
| -19                                                     | -38  | -57  | -76  | -114 | -20                                | -40  | -59  | -78  | -117 |  |
| -60                                                     | -80  | -100 | -120 | -160 | -56                                | -75  | -94  | -113 | -150 |  |
| -20                                                     | -40  | -60  | -80  | -120 | -21                                | -42  | -63  | -85  | -127 |  |
| -60                                                     | -80  | -100 | -120 | -160 | -56                                | -75  | -94  | -113 | -150 |  |
| -21                                                     | -42  | -63  | -84  | -126 | -22                                | -44  | -66  | -90  | -134 |  |
| -63                                                     | -84  | -105 | -126 | -168 | -57                                | -77  | -99  | -124 | -168 |  |
| -22                                                     | -44  | -66  | -88  | -132 | -23                                | -46  | -69  | -93  | -138 |  |
| -66                                                     | -88  | -110 | -132 | -176 | -57                                | -77  | -99  | -124 | -168 |  |
| -23                                                     | -46  | -69  | -92  | -138 | -24                                | -48  | -72  | -96  | -144 |  |
| -69                                                     | -92  | -114 | -138 | -184 | -57                                | -77  | -99  | -124 | -168 |  |
| -24                                                     | -48  | -72  | -96  | -144 | -25                                | -50  | -75  | -100 | -150 |  |
| -72                                                     | -96  | -120 | -144 | -192 | -57                                | -77  | -99  | -124 | -168 |  |
| -25                                                     | -50  | -75  | -100 | -150 | -26                                | -52  | -78  | -104 | -156 |  |
| -75                                                     | -100 | -125 | -150 | -200 | -57                                | -77  | -99  | -124 | -168 |  |
| -26                                                     | -52  | -78  | -104 | -156 | -27                                | -54  | -81  | -108 | -162 |  |
| -78                                                     | -104 | -130 | -156 | -208 | -57                                | -77  | -99  | -124 | -168 |  |
| -27                                                     | -54  | -81  | -108 | -162 | -28                                | -56  | -84  | -112 | -168 |  |
| -81                                                     | -108 | -132 | -156 | -208 | -57                                | -77  | -99  | -124 | -168 |  |
| -28                                                     | -56  | -84  | -112 | -168 | -29                                | -58  | -87  | -116 | -174 |  |
| -84                                                     | -112 | -140 | -168 | -224 | -57                                | -77  | -99  | -124 | -168 |  |
| -29                                                     | -58  | -87  | -116 | -174 | -30                                | -60  | -90  | -120 | -180 |  |
| -87                                                     | -116 | -144 | -174 | -232 | -57                                | -77  | -99  | -124 | -168 |  |
| -30                                                     | -60  | -90  | -120 | -180 | -31                                | -62  | -93  | -124 | -168 |  |
| -90                                                     | -120 | -150 | -180 | -240 | -57                                | -77  | -99  | -124 | -168 |  |
| -31                                                     | -62  | -93  | -124 | -186 | -32                                | -64  | -96  | -128 | -192 |  |
| -93                                                     | -124 | -156 | -186 | -248 | -57                                | -77  | -99  | -124 | -168 |  |
| -32                                                     | -64  | -96  | -128 | -192 | -33                                | -66  | -99  | -132 | -204 |  |
| -96                                                     | -128 | -160 | -192 | -256 | -57                                | -77  | -99  | -124 | -168 |  |
| -33                                                     | -66  | -99  | -132 | -198 | -34                                | -68  | -102 | -136 | -216 |  |
| -99                                                     | -132 | -164 | -198 | -264 | -57                                | -77  | -99  | -124 | -168 |  |
| -34                                                     | -68  | -102 | -136 | -204 | -35                                | -70  | -104 | -138 | -222 |  |
| -102                                                    | -136 | -168 | -204 | -272 | -57                                | -77  | -99  | -124 | -168 |  |
| -35                                                     | -70  | -105 | -140 | -210 | -36                                | -72  | -108 | -144 | -228 |  |
| -105                                                    | -140 | -172 | -210 | -280 | -57                                | -77  | -99  | -124 | -168 |  |
| -36                                                     | -72  | -108 | -144 | -216 | -37                                | -74  | -111 | -148 | -234 |  |
| -108                                                    | -144 | -176 | -216 | -288 | -57                                | -77  | -99  | -124 | -168 |  |
| -37                                                     | -74  | -111 | -148 | -222 | -38                                | -76  | -114 | -152 | -240 |  |
| -111                                                    | -148 | -180 | -222 | -296 | -57                                | -77  | -99  | -124 | -168 |  |
| -38                                                     | -76  | -114 | -152 | -228 | -39                                | -78  | -117 | -156 | -246 |  |
| -114                                                    | -152 | -184 | -228 | -304 | -57                                | -77  | -99  | -124 | -168 |  |
| -39                                                     | -78  | -117 | -156 | -234 | -40                                | -80  | -120 | -160 | -252 |  |
| -117                                                    | -156 | -188 | -234 | -312 | -57                                | -77  | -99  | -124 | -168 |  |
| -40                                                     | -80  | -120 | -160 | -240 | -41                                | -82  | -123 | -164 | -258 |  |
| -120                                                    | -160 | -192 | -240 | -320 | -57                                | -77  | -99  | -124 | -168 |  |
| -41                                                     | -82  | -123 | -164 | -258 | -42                                | -84  | -126 | -168 | -264 |  |
| -123                                                    | -164 | -196 | -258 | -336 | -57                                | -77  | -99  | -124 | -168 |  |
| -42                                                     | -84  | -126 | -168 | -264 | -43                                | -86  | -130 | -172 | -270 |  |
| -126                                                    | -168 | -200 | -264 | -344 | -57                                | -77  | -99  | -124 | -168 |  |
| -43                                                     | -86  | -129 | -172 | -270 | -44                                | -88  | -132 | -176 | -276 |  |
| -129                                                    | -172 | -204 | -276 | -352 | -57                                | -77  | -99  | -124 | -168 |  |
| -44                                                     | -88  | -132 | -176 | -282 | -45                                | -90  | -135 | -180 | -282 |  |
| -132                                                    | -176 | -208 | -282 | -360 | -57                                | -77  | -99  | -124 | -168 |  |
| -45                                                     | -90  | -135 | -180 | -288 | -46                                | -92  | -138 | -184 | -288 |  |
| -135                                                    | -180 | -212 | -288 | -368 | -57                                | -77  | -99  | -124 | -168 |  |
| -46                                                     | -92  | -138 | -184 | -296 | -47                                | -94  | -141 | -192 | -294 |  |
| -138                                                    | -184 | -216 | -296 | -376 | -57                                | -77  | -99  | -124 | -168 |  |
| -47                                                     | -94  | -141 | -192 | -304 | -48                                | -96  | -144 | -196 | -300 |  |
| -141                                                    | -192 | -220 | -304 | -384 | -57                                | -77  | -99  | -124 | -168 |  |
| -48                                                     | -96  | -144 | -196 | -312 | -49                                | -98  | -147 | -198 | -306 |  |
| -144                                                    | -196 | -224 | -312 | -392 | -57                                | -77  | -99  | -124 | -168 |  |
| -49                                                     | -98  | -147 | -198 | -320 | -50                                | -100 | -150 | -200 | -312 |  |
| -147                                                    | -198 | -228 | -320 | -400 | -57                                | -77  | -99  | -124 | -168 |  |
| -50                                                     | -100 | -150 | -200 | -300 | -51                                | -102 | -153 | -204 | -318 |  |
| -150                                                    | -200 | -232 | -300 | -400 | -57                                | -77  | -99  | -124 | -168 |  |
| -51                                                     | -102 | -153 | -204 | -312 | -52                                | -104 | -156 | -208 | -324 |  |
| -153                                                    | -204 | -236 | -312 | -416 | -57                                | -77  | -99  | -124 | -168 |  |
| -52                                                     | -104 | -156 | -208 | -324 | -53                                | -106 | -160 | -212 | -330 |  |
| -156                                                    | -208 | -240 | -324 | -432 | -57                                | -77  | -99  | -124 | -168 |  |
| -53                                                     | -106 | -159 | -212 | -336 | -54                                | -108 | -162 | -216 | -336 |  |
| -159                                                    | -212 | -244 | -336 | -448 | -57                                | -77  | -99  | -124 | -168 |  |
| -54                                                     | -108 | -162 | -216 | -348 | -55                                | -110 | -165 | -220 | -342 |  |
| -162                                                    | -216 | -248 | -348 | -464 | -57                                | -77  | -99  | -124 | -168 |  |
| -55                                                     | -110 | -165 | -220 | -360 | -56                                | -112 | -168 | -224 | -348 |  |
| -165                                                    | -220 | -252 | -360 | -480 | -57                                | -77  | -99  | -124 | -168 |  |
| -56                                                     | -112 | -168 | -224 | -372 | -57                                | -114 | -171 | -228 | -354 |  |
| -168                                                    | -224 | -256 | -372 | -496 | -57                                | -77  | -99  | -124 | -168 |  |
| -57                                                     | -114 | -171 | -228 | -384 | -58                                | -116 | -174 | -232 | -360 |  |
| -171                                                    | -228 | -260 | -384 | -512 | -57                                | -77  | -99  | -124 | -168 |  |
| -58                                                     | -116 | -174 | -232 | -396 | -59                                | -118 | -177 | -236 | -366 |  |
| -174                                                    | -232 | -264 | -396 | -528 | -57                                | -77  | -99  | -124 | -168 |  |
| -59                                                     | -118 | -177 | -236 | -408 | -60                                | -120 | -180 | -240 | -372 |  |
| -177                                                    | -236 | -268 | -408 | -544 | -57                                | -77  | -99  | -124 | -168 |  |
| -60                                                     | -120 | -180 | -240 | -360 | -61                                | -123 | -183 | -244 | -378 |  |
| -180                                                    | -240 | -272 | -360 | -480 | -57                                | -77  | -99  | -124 | -168 |  |
| -61                                                     | -123 | -183 | -244 | -378 | -62                                | -126 | -186 | -248 | -384 |  |
| -183                                                    | -244 | -276 | -378 | -496 | -57                                | -77  | -99  | -124 | -168 |  |
| -62                                                     | -126 | -186 | -248 | -392 | -63                                | -129 | -189 | -252 | -390 |  |
| -186                                                    | -248 | -280 | -392 | -512 | -57                                | -77  | -99  | -124 | -168 |  |
| -63                                                     | -129 | -189 | -252 | -408 | -64                                | -132 | -192 | -256 | -396 |  |
| -189                                                    | -252 | -284 | -408 | -528 | -57                                | -77  | -99  | -124 | -168 |  |
| -64                                                     | -132 | -192 | -256 | -424 | -65                                | -135 | -195 | -260 | -402 |  |
| -192                                                    | -256 | -288 | -424 | -544 | -57                                | -77  | -99  | -124 | -168 |  |
| -65                                                     | -135 | -195 | -260 | -440 | -66                                | -138 | -198 | -264 | -408 |  |
| -195                                                    | -260 | -292 | -440 | -560 | -57                                | -77  | -99  | -124 | -168 |  |
| -66                                                     | -138 | -198 | -264 | -456 | -67                                | -141 | -201 | -268 | -414 |  |
| -198                                                    | -264 | -296 | -456 | -576 | -57                                | -77  | -99  | -124 | -168 |  |
| -67                                                     | -141 | -201 | -272 | -472 | -68                                | -144 | -204 | -272 | -420 |  |
| -201                                                    | -272 | -304 | -472 | -592 | -57                                | -77  | -99  | -124 | -168 |  |
| -68                                                     | -144 | -204 | -276 | -488 | -69                                | -147 | -207 | -276 | -426 |  |
| -204                                                    | -276 | -308 | -488 | -608 | -57                                | -77  | -99  | -124 | -168 |  |
| -69                                                     | -147 | -207 | -280 | -504 | -70                                | -150 | -210 | -282 | -432 |  |
| -207                                                    | -280 | -312 | -504 | -624 | -57                                | -77  | -99  | -124 | -168 |  |
| -70                                                     | -150 | -210 | -288 | -520 | -71                                | -153 | -213 | -288 | -438 |  |
| -210                                                    | -288 | -316 | -520 | -640 | -57                                | -77  | -99  | -124 | -168 |  |
| -71                                                     | -153 | -213 | -296 | -536 | -72                                | -156 | -216 | -294 | -444 |  |
| -213                                                    | -296 | -320 | -536 | -656 | -57                                | -77  | -99  | -124 | -168 |  |
| -72                                                     | -156 | -216 | -304 | -552 | -73                                | -159 | -219 | -300 | -450 |  |
| -216                                                    | -304 | -328 | -552 | -672 | -57                                | -77  | -99  | -124 | -168 |  |
| -73                                                     | -159 | -219 | -312 | -568 | -74                                | -162 | -222 | -306 | -456 |  |
| -219                                                    | -312 | -332 | -568 | -688 | -57                                | -77  | -99  | -124 | -168 |  |
| -74                                                     | -162 | -222 | -320 | -584 | -75                                | -165 | -225 | -312 | -462 |  |
| -222                                                    | -320 | -336 | -584 | -704 | -57                                | -77  | -99  | -124 | -168 |  |
| -75                                                     | -165 | -225 | -328 | -600 | -76                                | -168 | -228 | -318 | -468 |  |
| -225                                                    | -328 | -340 | -600 | -720 | -57                                | -77  | -99  | -124 | -168 |  |
| -76                                                     | -168 | -228 | -336 | -616 | -77                                | -171 | -231 | -324 | -474 |  |
| -228                                                    | -336 | -344 | -616 | -736 | -57                                | -77  | -99  | -124 | -168 |  |
| -77                                                     | -171 | -231 | -344 | -632 | -78                                | -174 | -234 | -330 | -480 |  |
| -231                                                    | -344 | -348 | -632 | -752 | -57                                | -77  | -99  | -124 | -168 |  |
| -78                                                     | -174 | -234 | -352 | -648 | -79                                | -177 | -237 | -336 | -486 |  |
| -234                                                    | -352 | -352 | -648 | -768 | -57                                | -77  | -99  | -124 | -168 |  |
| -79                                                     | -177 | -237 | -360 | -664 | -80                                | -180 | -240 | -342 | -492 |  |
| -237                                                    | -360 | -356 | -664 | -784 | -57                                | -77  | -99  | -124 | -168 |  |
| -80                                                     | -180 | -240 | -368 | -680 | -81                                | -183 | -243 | -348 | -498 |  |
| -240                                                    | -368 | -360 | -680 | -792 | -57                                | -77  | -99  | -124 | -168 |  |
| -81                                                     | -183 | -243 | -376 | -696 | -82                                | -186 | -246 | -354 | -504 |  |
| -243                                                    | -376 | -364 | -696 | -808 | -57                                | -77  | -99  | -124 | -168 |  |
| -82                                                     | -186 | -246 | -384 | -712 | -83                                | -189 | -249 | -360 | -510 |  |
| -246                                                    | -384 | -368 | -712 | -824 | -57                                | -77  | -99  | -124 | -168 |  |
| -83                                                     | -189 | -249 | -392 | -728 | -84                                | -192 | -252 | -366 | -516 |  |
| -249                                                    | -392 | -372 | -728 | -840 | -57                                | -77  | -99  | -124 | -168 |  |
| -84                                                     | -192 | -252 | -400 | -744 | -85                                | -195 | -255 | -372 | -52  |  |

Dane:  
 $d_1 = 70.082 \text{ mm}$   $\longrightarrow$

$m = 4 \text{ mm}$   $\longrightarrow$

Moduł **2 do 4**

Średnica podziałowa w mm

| Klasa dokładności |    |    |
|-------------------|----|----|
| 14                | 6  | 21 |
| 17                | 7  | 27 |
| 21                | 8  | 34 |
| 25                | 9  | 45 |
| 3                 | 10 | 5  |
| 38                | 11 | 75 |
| 46                | 12 | 98 |



| Odchyłki górne i dolne dla grubości zębów <sup>1)</sup> |      |      |      |      |                                    |      |      |      |        |  |
|---------------------------------------------------------|------|------|------|------|------------------------------------|------|------|------|--------|--|
| mierzonych na stałej cięciwie<br>g                      |      |      |      |      | przy pomiarze przez "n" zębów<br>M |      |      |      |        |  |
| zakresy odchyłek                                        |      |      |      |      | zakresy odchyłek                   |      |      |      |        |  |
| I                                                       | II D | III  | IV   | V    | I                                  | II D | III  | IV   | V      |  |
| -8                                                      | -16  | -24  | 32   | -48  | -75                                | -15  | -73  | -30  | -15    |  |
| -9                                                      | -18  | -27  | -36  | -54  | -81                                | -17  | -38  | -45  | -60    |  |
| -10                                                     | -20  | -30  | -40  | -60  | -90                                | -19  | -39  | -47  | -63    |  |
| -11                                                     | -22  | -33  | -44  | -66  | -99                                | -21  | -41  | -50  | -67    |  |
| -12                                                     | -24  | -36  | -48  | -72  | -108                               | -23  | -43  | -53  | -71    |  |
| -13                                                     | -26  | -39  | -52  | -78  | -117                               | -25  | -45  | -56  | -75    |  |
| -14                                                     | -28  | -42  | -56  | -84  | -126                               | -27  | -47  | -59  | -79    |  |
| -15                                                     | -30  | -45  | -60  | -90  | -135                               | -29  | -49  | -62  | -83    |  |
| -16                                                     | -32  | -48  | -64  | -96  | -144                               | -31  | -51  | -65  | -87    |  |
| -17                                                     | -34  | -51  | -68  | -102 | -153                               | -33  | -53  | -69  | -93    |  |
| -18                                                     | -36  | -54  | -72  | -108 | -162                               | -35  | -55  | -73  | -100   |  |
| -19                                                     | -38  | -57  | -76  | -114 | -171                               | -37  | -57  | -77  | -107   |  |
| -20                                                     | -40  | -60  | -80  | -120 | -180                               | -39  | -59  | -81  | -115   |  |
| -21                                                     | -42  | -63  | -84  | -126 | -189                               | -41  | -61  | -85  | -123   |  |
| -22                                                     | -44  | -66  | -88  | -132 | -198                               | -43  | -63  | -89  | -131   |  |
| -23                                                     | -46  | -69  | -92  | -138 | -207                               | -45  | -65  | -93  | -140   |  |
| -24                                                     | -48  | -72  | -96  | -144 | -216                               | -47  | -67  | -97  | -149   |  |
| -25                                                     | -50  | -75  | -100 | -150 | -225                               | -49  | -69  | -101 | -159   |  |
| -26                                                     | -52  | -78  | -104 | -156 | -234                               | -51  | -71  | -105 | -169   |  |
| -27                                                     | -54  | -81  | -108 | -162 | -243                               | -53  | -73  | -109 | -179   |  |
| -28                                                     | -56  | -84  | -112 | -168 | -252                               | -55  | -75  | -113 | -190   |  |
| -29                                                     | -58  | -87  | -116 | -174 | -261                               | -57  | -77  | -117 | -201   |  |
| -30                                                     | -60  | -90  | -120 | -180 | -270                               | -59  | -79  | -121 | -213   |  |
| -31                                                     | -62  | -93  | -124 | -186 | -279                               | -61  | -81  | -125 | -225   |  |
| -32                                                     | -64  | -96  | -128 | -192 | -288                               | -63  | -83  | -129 | -238   |  |
| -33                                                     | -66  | -99  | -132 | -198 | -297                               | -65  | -85  | -133 | -251   |  |
| -34                                                     | -68  | -102 | -136 | -204 | -306                               | -67  | -87  | -137 | -265   |  |
| -35                                                     | -70  | -105 | -140 | -210 | -315                               | -69  | -89  | -141 | -279   |  |
| -36                                                     | -72  | -108 | -144 | -216 | -324                               | -71  | -91  | -145 | -294   |  |
| -37                                                     | -74  | -111 | -148 | -222 | -333                               | -73  | -93  | -149 | -309   |  |
| -38                                                     | -76  | -114 | -152 | -228 | -342                               | -75  | -95  | -153 | -325   |  |
| -39                                                     | -78  | -117 | -156 | -234 | -351                               | -77  | -97  | -157 | -341   |  |
| -40                                                     | -80  | -120 | -160 | -240 | -360                               | -79  | -99  | -161 | -358   |  |
| -41                                                     | -82  | -123 | -164 | -246 | -369                               | -81  | -101 | -165 | -375   |  |
| -42                                                     | -84  | -126 | -168 | -252 | -378                               | -83  | -103 | -169 | -393   |  |
| -43                                                     | -86  | -129 | -172 | -258 | -387                               | -85  | -105 | -173 | -411   |  |
| -44                                                     | -88  | -132 | -176 | -264 | -396                               | -87  | -107 | -177 | -430   |  |
| -45                                                     | -90  | -135 | -180 | -270 | -405                               | -89  | -109 | -181 | -450   |  |
| -46                                                     | -92  | -138 | -184 | -276 | -414                               | -91  | -111 | -185 | -470   |  |
| -47                                                     | -94  | -141 | -188 | -282 | -423                               | -93  | -113 | -189 | -491   |  |
| -48                                                     | -96  | -144 | -192 | -288 | -432                               | -95  | -115 | -193 | -513   |  |
| -49                                                     | -98  | -147 | -196 | -294 | -441                               | -97  | -117 | -197 | -535   |  |
| -50                                                     | -100 | -150 | -200 | -300 | -450                               | -99  | -119 | -201 | -558   |  |
| -51                                                     | -102 | -153 | -204 | -306 | -459                               | -101 | -121 | -205 | -582   |  |
| -52                                                     | -104 | -156 | -208 | -312 | -468                               | -103 | -123 | -209 | -607   |  |
| -53                                                     | -106 | -159 | -212 | -318 | -477                               | -105 | -125 | -213 | -633   |  |
| -54                                                     | -108 | -162 | -216 | -324 | -486                               | -107 | -127 | -217 | -660   |  |
| -55                                                     | -110 | -165 | -220 | -330 | -495                               | -109 | -129 | -221 | -688   |  |
| -56                                                     | -112 | -168 | -224 | -336 | -504                               | -111 | -131 | -225 | -717   |  |
| -57                                                     | -114 | -171 | -228 | -342 | -513                               | -113 | -133 | -229 | -748   |  |
| -58                                                     | -116 | -174 | -232 | -348 | -522                               | -115 | -135 | -233 | -780   |  |
| -59                                                     | -118 | -177 | -236 | -354 | -531                               | -117 | -137 | -237 | -813   |  |
| -60                                                     | -120 | -180 | -240 | -360 | -540                               | -119 | -139 | -241 | -848   |  |
| -61                                                     | -122 | -183 | -244 | -366 | -549                               | -121 | -141 | -245 | -884   |  |
| -62                                                     | -124 | -186 | -248 | -372 | -558                               | -123 | -143 | -249 | -921   |  |
| -63                                                     | -126 | -189 | -252 | -378 | -567                               | -125 | -145 | -253 | -960   |  |
| -64                                                     | -128 | -192 | -256 | -384 | -576                               | -127 | -147 | -257 | -1000  |  |
| -65                                                     | -130 | -195 | -260 | -390 | -585                               | -129 | -149 | -261 | -1042  |  |
| -66                                                     | -132 | -198 | -264 | -396 | -594                               | -131 | -151 | -265 | -1086  |  |
| -67                                                     | -134 | -201 | -268 | -402 | -603                               | -133 | -153 | -269 | -1132  |  |
| -68                                                     | -136 | -204 | -272 | -408 | -612                               | -135 | -155 | -273 | -1180  |  |
| -69                                                     | -138 | -207 | -276 | -414 | -621                               | -137 | -157 | -277 | -1230  |  |
| -70                                                     | -140 | -210 | -280 | -420 | -630                               | -139 | -159 | -281 | -1282  |  |
| -71                                                     | -142 | -213 | -284 | -426 | -639                               | -141 | -161 | -285 | -1336  |  |
| -72                                                     | -144 | -216 | -288 | -432 | -648                               | -143 | -163 | -289 | -1392  |  |
| -73                                                     | -146 | -219 | -292 | -438 | -657                               | -145 | -165 | -293 | -1450  |  |
| -74                                                     | -148 | -222 | -296 | -444 | -666                               | -147 | -167 | -297 | -1510  |  |
| -75                                                     | -150 | -225 | -300 | -450 | -675                               | -149 | -169 | -301 | -1572  |  |
| -76                                                     | -152 | -228 | -304 | -456 | -684                               | -151 | -171 | -305 | -1636  |  |
| -77                                                     | -154 | -231 | -308 | -462 | -693                               | -153 | -173 | -309 | -1703  |  |
| -78                                                     | -156 | -234 | -312 | -468 | -702                               | -155 | -175 | -313 | -1772  |  |
| -79                                                     | -158 | -237 | -316 | -474 | -711                               | -157 | -177 | -317 | -1844  |  |
| -80                                                     | -160 | -240 | -320 | -480 | -720                               | -159 | -179 | -321 | -1918  |  |
| -81                                                     | -162 | -243 | -324 | -486 | -729                               | -161 | -181 | -325 | -1995  |  |
| -82                                                     | -164 | -246 | -328 | -492 | -738                               | -163 | -183 | -329 | -2075  |  |
| -83                                                     | -166 | -249 | -332 | -498 | -747                               | -165 | -185 | -333 | -2158  |  |
| -84                                                     | -168 | -252 | -336 | -504 | -756                               | -167 | -187 | -337 | -2244  |  |
| -85                                                     | -170 | -255 | -340 | -510 | -765                               | -169 | -189 | -341 | -2333  |  |
| -86                                                     | -172 | -258 | -344 | -516 | -774                               | -171 | -191 | -345 | -2425  |  |
| -87                                                     | -174 | -261 | -348 | -522 | -783                               | -173 | -193 | -349 | -2520  |  |
| -88                                                     | -176 | -264 | -352 | -528 | -792                               | -175 | -195 | -353 | -2618  |  |
| -89                                                     | -178 | -267 | -356 | -534 | -801                               | -177 | -197 | -357 | -2720  |  |
| -90                                                     | -180 | -270 | -360 | -540 | -810                               | -179 | -199 | -361 | -2825  |  |
| -91                                                     | -182 | -273 | -364 | -546 | -819                               | -181 | -201 | -365 | -2934  |  |
| -92                                                     | -184 | -276 | -368 | -552 | -828                               | -183 | -203 | -369 | -3046  |  |
| -93                                                     | -186 | -279 | -372 | -558 | -837                               | -185 | -205 | -373 | -3161  |  |
| -94                                                     | -188 | -282 | -376 | -564 | -846                               | -187 | -207 | -377 | -3280  |  |
| -95                                                     | -190 | -285 | -380 | -570 | -855                               | -189 | -209 | -381 | -3403  |  |
| -96                                                     | -192 | -288 | -384 | -576 | -864                               | -191 | -211 | -385 | -3530  |  |
| -97                                                     | -194 | -291 | -388 | -582 | -873                               | -193 | -213 | -389 | -3661  |  |
| -98                                                     | -196 | -294 | -392 | -588 | -882                               | -195 | -215 | -393 | -3796  |  |
| -99                                                     | -198 | -297 | -396 | -594 | -891                               | -197 | -217 | -397 | -3935  |  |
| -100                                                    | -200 | -300 | -400 | -600 | -900                               | -199 | -219 | -401 | -4079  |  |
| -101                                                    | -202 | -303 | -404 | -606 | -909                               | -201 | -221 | -405 | -4227  |  |
| -102                                                    | -204 | -306 | -408 | -612 | -918                               | -203 | -223 | -409 | -4379  |  |
| -103                                                    | -206 | -309 | -412 | -618 | -927                               | -205 | -225 | -413 | -4535  |  |
| -104                                                    | -208 | -312 | -416 | -624 | -936                               | -207 | -227 | -417 | -4695  |  |
| -105                                                    | -210 | -315 | -420 | -630 | -945                               | -209 | -229 | -421 | -4860  |  |
| -106                                                    | -212 | -318 | -424 | -636 | -954                               | -211 | -231 | -425 | -5030  |  |
| -107                                                    | -214 | -321 | -428 | -642 | -963                               | -213 | -233 | -429 | -5205  |  |
| -108                                                    | -216 | -324 | -432 | -648 | -972                               | -215 | -235 | -433 | -5385  |  |
| -109                                                    | -218 | -327 | -436 | -654 | -981                               | -217 | -237 | -437 | -5571  |  |
| -110                                                    | -220 | -330 | -440 | -660 | -990                               | -219 | -239 | -441 | -5763  |  |
| -111                                                    | -222 | -333 | -444 | -666 | -999                               | -221 | -241 | -445 | -5961  |  |
| -112                                                    | -224 | -336 | -448 | -672 | -1008                              | -223 | -243 | -449 | -6165  |  |
| -113                                                    | -226 | -339 | -452 | -678 | -1017                              | -225 | -245 | -453 | -6376  |  |
| -114                                                    | -228 | -342 | -456 | -684 | -1026                              | -227 | -247 | -457 | -6594  |  |
| -115                                                    | -230 | -345 | -460 | -690 | -1035                              | -229 | -249 | -461 | -6819  |  |
| -116                                                    | -232 | -348 | -464 | -696 | -1044                              | -231 | -251 | -465 | -7052  |  |
| -117                                                    | -234 | -351 | -468 | -702 | -1053                              | -233 | -253 | -469 | -7293  |  |
| -118                                                    | -236 | -354 | -472 | -708 | -1062                              | -235 | -255 | -473 | -7542  |  |
| -119                                                    | -238 | -357 | -476 | -714 | -1071                              | -237 | -257 | -477 | -7799  |  |
| -120                                                    | -240 | -360 | -480 | -720 | -1080                              | -239 | -259 | -481 | -8064  |  |
| -121                                                    | -242 | -363 | -484 | -726 | -1089                              | -241 | -261 | -485 | -8338  |  |
| -122                                                    | -244 | -366 | -488 | -732 | -1098                              | -243 | -263 | -489 | -8621  |  |
| -123                                                    | -246 | -369 | -492 | -738 | -1107                              | -245 | -265 | -493 | -8914  |  |
| -124                                                    | -248 | -372 | -496 | -744 | -1116                              | -247 | -267 | -497 | -9217  |  |
| -125                                                    | -250 | -375 | -500 | -750 | -1125                              | -249 | -269 | -501 | -9531  |  |
| -126                                                    | -252 | -378 | -504 | -756 | -1134                              | -251 | -271 | -505 | -9857  |  |
| -127                                                    | -254 | -381 | -508 | -762 | -1143                              | -253 | -273 | -509 | -10195 |  |
| -128                                                    | -256 | -384 | -512 | -768 | -1152                              | -255 | -275 | -513 | -10547 |  |
| -129                                                    | -258 | -387 | -516 | -774 | -1161                              | -257 | -277 | -517 | -10913 |  |
| -130                                                    | -260 | -390 | -520 | -780 | -1170                              | -259 | -279 | -521 | -11294 |  |
| -131                                                    | -262 | -393 | -524 | -786 | -1179                              | -261 | -281 | -525 | -11690 |  |
| -132                                                    | -264 | -396 | -528 | -792 | -1188                              | -263 | -283 | -529 | -12102 |  |
| -133                                                    | -266 | -399 | -532 | -798 | -1197                              | -265 | -285 | -533 | -12530 |  |
| -134                                                    | -268 | -402 | -536 | -804 | -1206                              | -267 | -287 | -537 | -12975 |  |
| -135                                                    | -270 | -405 | -540 | -810 | -1215                              | -269 | -289 | -541 | -13438 |  |
| -136                                                    | -272 | -408 | -544 | -816 | -1224                              | -271 | -291 | -545 | -13919 |  |
| -137                                                    | -274 | -411 | -548 | -822 | -1233                              | -273 | -293 | -549 | -14419 |  |
| -138                                                    | -276 | -414 | -552 | -828 | -1242                              | -275 | -295 | -553 | -14939 |  |
| -139                                                    | -278 | -417 | -556 | -834 | -1251                              | -277 | -297 | -557 | -15479 |  |
| -140                                                    | -280 | -420 | -560 | -840 | -1260                              | -279 | -299 | -561 | -16041 |  |
| -141                                                    | -282 | -423 | -564 | -846 | -1269                              | -281 | -301 | -565 | -16616 |  |
| -142                                                    | -284 | -426 | -568 | -852 | -1278                              | -283 | -303 | -569 | -17205 |  |
| -143                                                    | -286 | -429 | -572 | -858 | -1287                              | -285 | -305 | -573 | -17809 |  |
| -144                                                    | -288 | -432 | -576 | -864 | -1296                              | -287 | -307 | -577 | -18438 |  |
| -145                                                    | -290 | -435 | -580 | -870 | -1305                              | -289 | -309 | -581 | -19093 |  |
| -146                                                    | -292 | -438 | -584 | -876 | -1314                              | -291 | -311 | -585 | -19775 |  |
| -147                                                    | -294 | -441 | -588 | -882 | -1323                              | -293 | -313 | -589 | -20485 |  |
| -148                                                    | -296 | -444 | -592 | -888 | -1332                              | -295 | -315 | -593 | -21224 |  |
| -149                                                    | -298 | -447 | -596 | -894 | -1341                              | -297 | -317 | -597 | -22003 |  |
| -150                                                    | -300 | -450 | -600 | -900 | -1350                              | -299 | -319 | -601 | -22824 |  |
| -151                                                    | -302 | -453 | -604 | -906 | -1359                              | -301 | -321 | -605 | -23678 |  |
| -152                                                    | -304 | -456 | -608 | -912 | -1368                              | -303 | -323 | -609 | -24558 |  |
| -153                                                    | -306 | -459 | -612 | -918 | -1377                              | -305 | -325 | -613 | -25465 |  |
| -154                                                    | -308 | -462 | -616 | -924 | -1386                              | -307 | -327 | -617 | -26    |  |

$$m = 4 \text{ mm}$$

Średnica  
podziałowa  
w mm

Modu

DATE: 4 Oct 10.

пер. 12 ок 24.

| Klasa dokładności |    | Dopuszczalny błąd pomiarowości<br>i zmierzona ośi na długości 100 mm w J | Dopuszczalny błąd pomiarowości<br>i zmierzona ośi na długości 100 mm w J | Dopuszczalny błąd pomiarowości<br>i zmierzona ośi na długości 100 mm w J | Dopuszczalny błąd pomiarowości<br>i zmierzona ośi na długości 100 mm w J | Dopuszczalny błąd pomiarowości<br>i zmierzona ośi na długości 100 mm w J | Dopuszczalny błąd pomiarowości<br>i zmierzona ośi na długości 100 mm w J |
|-------------------|----|--------------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------|
| 14                | 6  | 21                                                                       | ▽9                                                                       |                                                                          |                                                                          |                                                                          |                                                                          |
| 17                | 7  | 27                                                                       | ▽8                                                                       |                                                                          |                                                                          |                                                                          |                                                                          |
| 21                | 8  | 34                                                                       | ▽8                                                                       |                                                                          |                                                                          |                                                                          |                                                                          |
| 25                | 9  | 45                                                                       | ▽6                                                                       |                                                                          |                                                                          |                                                                          |                                                                          |
| 31                | 10 | 58                                                                       | ▽6                                                                       |                                                                          |                                                                          |                                                                          |                                                                          |
| 38                | 11 | 75                                                                       | ▽4                                                                       |                                                                          |                                                                          |                                                                          |                                                                          |
| 46                | 12 | 98                                                                       | ▽3                                                                       |                                                                          |                                                                          |                                                                          |                                                                          |

Klasa dokładności  
IT10 –

## Pole tolerancji **D**

| Odchylki górne i dolne dla grubości zębów <sup>1)</sup> |      |       |       |       |                                    |      |       |       |       |
|---------------------------------------------------------|------|-------|-------|-------|------------------------------------|------|-------|-------|-------|
| mierzonych na stałej cięciwie<br>g                      |      |       |       |       | przy pomiarze przez "n" zębów<br>M |      |       |       |       |
| zakresy odchylek                                        |      |       |       |       | zakresy odchylek                   |      |       |       |       |
| I                                                       | II   | III   | IV    | V     | I                                  | II   | III   | IV    | V     |
| -8                                                      | -16  | -24   | -32   | -48   | -25                                | -15  | -23   | -30   | -45   |
| -24                                                     | -32  | -40   | -48   | -64   | -45                                | -30  | -38   | -45   | -60   |
| -9                                                      | -18  | -27   | -36   | -54   | -25                                | -17  | -24   | -32   | -51   |
| -27                                                     | -36  | -45   | -54   | -77   | -25                                | -24  | -32   | -42   | -61   |
| -10                                                     | -20  | -30   | -40   | -60   | -9                                 | -19  | -28   | -37   | -57   |
| -30                                                     | -40  | -50   | -60   | -80   | -26                                | -38  | -47   | -56   | -76   |
| -11                                                     | -22  | -33   | -44   | -66   | -18                                | -21  | -31   | -41   | -62   |
| -33                                                     | -44  | -55   | -66   | -88   | -31                                | -41  | -52   | -62   | -83   |
| -12                                                     | -24  | -37   | -50   | -75   | -12                                | -23  | -36   | -47   | -70   |
| -37                                                     | -50  | -62   | -75   | -100  | -26                                | -47  | -59   | -70   | -94   |
| -14                                                     | -28  | -42   | -56   | -84   | -13                                | -26  | -39   | -53   | -79   |
| -42                                                     | -56  | -70   | -84   | -112  | -39                                | -53  | -66   | -79   | -108  |
| -16                                                     | -32  | -48   | -64   | -96   | -15                                | -30  | -45   | -60   | -90   |
| -48                                                     | -64  | -80   | -96   | -128  | -45                                | -60  | -75   | -90   | -120  |
| -18                                                     | -36  | -54   | -72   | -108  | -17                                | -34  | -51   | -68   | -101  |
| -54                                                     | -72  | -90   | -108  | -144  | -51                                | -68  | -85   | -101  | -133  |
| -20                                                     | -40  | -60   | -80   | -120  | -19                                | -38  | -56   | -75   | -113  |
| -60                                                     | -80  | -100  | -120  | -160  | -58                                | -75  | -94   | -113  | -150  |
| -22                                                     | -44  | -67   | -90   | -135  | -21                                | -42  | -63   | -85   | -127  |
| -67                                                     | -90  | -112  | -135  | -180  | -63                                | -85  | -105  | -127  | -169  |
| -25                                                     | -50  | -75   | -100  | -150  | -23                                | -47  | -70   | -94   | -141  |
| -75                                                     | -100 | -125  | -150  | -200  | -70                                | -94  | -117  | -141  | -191  |
| -28                                                     | -56  | -84   | -112  | -168  | -26                                | -53  | -79   | -105  | -158  |
| -84                                                     | -112 | -140  | -168  | -224  | -79                                | -105 | -132  | -158  | -210  |
| -32                                                     | -64  | -96   | -128  | -192  | -30                                | -59  | -88   | -118  | -178  |
| -96                                                     | -128 | -160  | -192  | -256  | -88                                | -118 | -148  | -178  | -232  |
| -36                                                     | -72  | -108  | -144  | -216  | -34                                | -67  | -101  | -133  | -200  |
| -107                                                    | -144 | -180  | -216  | -288  | -101                               | -133 | -169  | -200  | -266  |
| -40                                                     | -80  | -120  | -160  | -240  | -38                                | -75  | -113  | -150  | -226  |
| -120                                                    | -160 | -200  | -240  | -320  | -113                               | -150 | -188  | -226  | -300  |
| -45                                                     | -90  | -135  | -180  | -270  | -42                                | -85  | -127  | -169  | -254  |
| -135                                                    | -180 | -225  | -270  | -360  | -127                               | -169 | -211  | -254  | -333  |
| -50                                                     | -100 | -150  | -200  | -300  | -47                                | -94  | -141  | -188  | -282  |
| -150                                                    | -200 | -250  | -300  | -400  | -141                               | -188 | -235  | -282  | -371  |
| -55                                                     | -110 | -165  | -220  | -330  | -52                                | -103 | -155  | -207  | -310  |
| -165                                                    | -220 | -275  | -330  | -440  | -155                               | -207 | -258  | -310  | -409  |
| -63                                                     | -126 | -189  | -252  | -378  | -59                                | -117 | -177  | -235  | -358  |
| -189                                                    | -252 | -313  | -378  | -500  | -177                               | -235 | -294  | -352  | -471  |
| -70                                                     | -140 | -210  | -280  | -420  | -66                                | -132 | -197  | -263  | -396  |
| -210                                                    | -280 | -350  | -420  | -560  | -197                               | -263 | -329  | -395  | -520  |
| -80                                                     | -160 | -240  | -320  | -480  | -75                                | -150 | -225  | -300  | -450  |
| -240                                                    | -320 | -400  | -480  | -640  | -225                               | -300 | -375  | -450  | -600  |
| -90                                                     | -180 | -270  | -360  | -540  | -85                                | -169 | -254  | -339  | -504  |
| -270                                                    | -360 | -450  | -540  | -720  | -254                               | -339 | -423  | -507  | -672  |
| -100                                                    | -200 | -300  | -400  | -600  | -94                                | -188 | -282  | -376  | -554  |
| -300                                                    | -400 | -500  | -600  | -800  | -282                               | -376 | -470  | -564  | -750  |
| -110                                                    | -220 | -330  | -440  | -660  | -103                               | -207 | -310  | -413  | -620  |
| -330                                                    | -440 | -550  | -660  | -880  | -310                               | -413 | -517  | -620  | -827  |
| -125                                                    | -250 | -375  | -500  | -750  | -117                               | -235 | -352  | -470  | -705  |
| -375                                                    | -500 | -625  | -750  | -1000 | -352                               | -470 | -587  | -705  | -940  |
| -140                                                    | -280 | -420  | -560  | -840  | -132                               | -263 | -396  | -528  | -785  |
| -420                                                    | -560 | -700  | -840  | -1120 | -396                               | -528 | -660  | -795  | -1080 |
| -160                                                    | -320 | -480  | -640  | -960  | -150                               | -300 | -450  | -600  | -900  |
| -600                                                    | -800 | -1000 | -1200 | -1600 | -600                               | -800 | -1000 | -1200 | -1600 |

| Dopuszczalne białe<br>uzupełnienia<br>w MJ | Dopuszczalne białe<br>zaopaszenie (tłaki), 100-<br>letni poziom i niewy-<br>nawierzonego podzia-<br>łu obrotowych<br>w MJ | Sumaryczny błąd<br>podziałek obrot-<br>wych |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| 22                                         | 8                                                                                                                         | 25                                          |
| 25                                         | 9                                                                                                                         | 28                                          |
| 28                                         | 10                                                                                                                        | 32                                          |
| 32                                         | 12                                                                                                                        | 36                                          |
| 36                                         | 14                                                                                                                        | 40                                          |
| 40                                         | 16                                                                                                                        | 45                                          |
| 45                                         | 18                                                                                                                        | 50                                          |
| 50                                         | 20                                                                                                                        | 63                                          |
| 56                                         | 22                                                                                                                        | 71                                          |
| 63                                         | 25                                                                                                                        | 80                                          |
| 71                                         | 28                                                                                                                        | 90                                          |
| 80                                         | 32                                                                                                                        | 100                                         |
| 90                                         | 36                                                                                                                        | 110                                         |
| 100                                        | 40                                                                                                                        | 125                                         |
| 110                                        | 45                                                                                                                        | 140                                         |
| 125                                        | 50                                                                                                                        | 160                                         |
| 140                                        | 63                                                                                                                        | 200                                         |
| 160                                        | 71                                                                                                                        | 220                                         |
| 180                                        | 85                                                                                                                        | 250                                         |
| 200                                        | 100                                                                                                                       | 270                                         |
| 220                                        | 125                                                                                                                       | 360                                         |
| 250                                        | 140                                                                                                                       | 400                                         |
| 280                                        | 160                                                                                                                       | 500                                         |
| 320                                        | 180                                                                                                                       | 630                                         |
| 360                                        | 200                                                                                                                       | 710                                         |
| 400                                        | 220                                                                                                                       | 800                                         |
| 450                                        | 250                                                                                                                       | 900                                         |

1) Dobór zakresu odchylek grubości zębów zależy jest od wymaganego dla przekładni zębatej luzu międzyzębnego.

$$m = 4 \text{ mm}$$

Modu

Średnica  
podziałowa  
w mm

## Pole tolerancji D



| Odchylki górne i dolne dla grubości zębów <sup>9)</sup> |      |      |      |      |        |      |      |                                    |      |      |      |      |      |      |  |
|---------------------------------------------------------|------|------|------|------|--------|------|------|------------------------------------|------|------|------|------|------|------|--|
| mierzone na stałej cięciwie<br>g                        |      |      |      |      |        |      |      | przy pomiarze przez "n" zębów<br>M |      |      |      |      |      |      |  |
| za resy odchylek                                        |      |      |      |      |        |      |      | za resy odchylek                   |      |      |      |      |      |      |  |
| I                                                       | II   | III  | IV   | V    | I      | II   | III  | IV                                 | V    | I    | II   | III  | IV   | V    |  |
| -8                                                      | -12  | -20  | 32   | -48  | -25    | -15  | -33  | -26                                | -45  | -8   | -12  | -20  | 32   | -45  |  |
| -24                                                     | -32  | -40  | 40   | -64  | -33    | -20  | -39  | -26                                | -45  | -24  | -32  | -40  | 40   | -64  |  |
| -9                                                      | -16  | -27  | -26  | -54  | -45    | -17  | -25  | -34                                | -51  | -9   | -16  | -27  | -26  | -51  |  |
| -27                                                     | -36  | -45  | -54  | -72  | -25    | -34  | -47  | -51                                | -78  | -27  | -36  | -45  | -54  | -78  |  |
| -10                                                     | -20  | -30  | -40  | -60  | -9     | -18  | -28  | -38                                | -54  | -10  | -20  | -30  | -40  | -60  |  |
| -30                                                     | -40  | -50  | -60  | -80  | -28    | -38  | -47  | -54                                | -72  | -30  | -40  | -50  | -60  | -80  |  |
| -11                                                     | -22  | -33  | -44  | -66  | -10    | -21  | -31  | -41                                | -62  | -11  | -22  | -33  | -44  | -62  |  |
| -33                                                     | -44  | -55  | -66  | -88  | -31    | -41  | -52  | -62                                | -83  | -33  | -44  | -55  | -66  | -83  |  |
| -12                                                     | -24  | -37  | -50  | -75  | -12    | -23  | -36  | -47                                | -70  | -12  | -24  | -37  | -50  | -70  |  |
| -37                                                     | -50  | -62  | -75  | -100 | -36    | -47  | -59  | -70                                | -94  | -37  | -50  | -62  | -75  | -94  |  |
| -14                                                     | -18  | -42  | -56  | -84  | -13    | -26  | -39  | -53                                | -79  | -14  | -18  | -42  | -56  | -79  |  |
| -62                                                     | -56  | -70  | -84  | -112 | -39    | -53  | -66  | -79                                | -104 | -62  | -56  | -70  | -84  | -104 |  |
| -16                                                     | -32  | -48  | -64  | -96  | -15    | -30  | -45  | -60                                | -90  | -16  | -32  | -48  | -64  | -90  |  |
| -64                                                     | -64  | -80  | -96  | -128 | -45    | -60  | -75  | -90                                | -120 | -64  | -64  | -80  | -96  | -120 |  |
| -18                                                     | -36  | -54  | -72  | -108 | -17    | -34  | -51  | -68                                | -101 | -18  | -36  | -54  | -72  | -101 |  |
| -54                                                     | -72  | -90  | -108 | -144 | -51    | -68  | -85  | -101                               | -133 | -54  | -72  | -90  | -108 | -133 |  |
| -20                                                     | -40  | -60  | -80  | -120 | -19    | -38  | -58  | -75                                | -113 | -20  | -40  | -60  | -80  | -113 |  |
| -60                                                     | -80  | -100 | -120 | -160 | -58    | -75  | -94  | -113                               | -150 | -60  | -80  | -100 | -120 | -150 |  |
| -22                                                     | -45  | -67  | -90  | -135 | -21    | -42  | -63  | -85                                | -121 | -22  | -45  | -67  | -90  | -121 |  |
| -67                                                     | -90  | -112 | -135 | -180 | -63    | -85  | -105 | -121                               | -161 | -67  | -90  | -112 | -135 | -161 |  |
| -25                                                     | -50  | -75  | -100 | -150 | -23    | -47  | -70  | -94                                | -141 | -25  | -50  | -75  | -100 | -141 |  |
| -75                                                     | -100 | -125 | -150 | -200 | -70    | -94  | -117 | -141                               | -181 | -75  | -100 | -125 | -150 | -181 |  |
| -26                                                     | -52  | -78  | -102 | -156 | -26    | -53  | -79  | -105                               | -158 | -26  | -52  | -78  | -102 | -158 |  |
| -102                                                    | -156 | -210 | -264 | -318 | -105   | -158 | -212 | -266                               | -320 | -102 | -156 | -210 | -264 | -320 |  |
| -32                                                     | -63  | -95  | -126 | -189 | -30    | -59  | -89  | -118                               | -173 | -32  | -63  | -95  | -126 | -173 |  |
| -95                                                     | -126 | -157 | -189 | -252 | -89    | -118 | -149 | -178                               | -231 | -95  | -126 | -157 | -189 | -231 |  |
| -36                                                     | -71  | -107 | -142 | -213 | -34    | -67  | -101 | -133                               | -200 | -36  | -71  | -107 | -142 | -200 |  |
| -107                                                    | -142 | -178 | -213 | -284 | -101   | -133 | -165 | -200                               | -266 | -107 | -142 | -178 | -213 | -266 |  |
| -38                                                     | -76  | -114 | -152 | -228 | -38    | -76  | -114 | -152                               | -228 | -38  | -76  | -114 | -152 | -228 |  |
| -114                                                    | -152 | -190 | -228 | -304 | -152   | -190 | -228 | -304                               | -384 | -114 | -152 | -190 | -228 | -384 |  |
| -40                                                     | -80  | -120 | -160 | -240 | -40    | -80  | -120 | -160                               | -240 | -40  | -80  | -120 | -160 | -240 |  |
| -160                                                    | -240 | -320 | -400 | -480 | -240   | -320 | -400 | -480                               | -640 | -160 | -240 | -320 | -400 | -640 |  |
| -42                                                     | -84  | -126 | -168 | -252 | -42    | -84  | -126 | -168                               | -252 | -42  | -84  | -126 | -168 | -252 |  |
| -126                                                    | -168 | -210 | -252 | -336 | -168</ |      |      |                                    |      |      |      |      |      |      |  |

| Dopuszczalne białe<br>uzupełnienia<br>w J | Dopuszczalne białe<br>zaopatrzenie (plan); do-<br>datk. zgłosz. i nieza-<br>mierzanych podzia-<br>lek dodatkowych<br>w J | Sumaryczny błąd<br>podziałek obno-<br>szonej |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| 22                                        | 8                                                                                                                        | 25                                           |
| 25                                        | 9                                                                                                                        | 28                                           |
| 28                                        | 10                                                                                                                       | 32                                           |
| 32                                        | 12                                                                                                                       | 36                                           |
| 36                                        | 14                                                                                                                       | 40                                           |
| 40                                        | 16                                                                                                                       | 45                                           |
| 45                                        | 18                                                                                                                       | 50                                           |
| 50                                        | 20                                                                                                                       | 63                                           |
| 56                                        | 22                                                                                                                       | 71                                           |
| 63                                        | 25                                                                                                                       | 80                                           |
| 71                                        | 28                                                                                                                       | 90                                           |
| 80                                        | 32                                                                                                                       | 100                                          |
| 90                                        | 36                                                                                                                       | 110                                          |
| 100                                       | 40                                                                                                                       | 125                                          |
| 110                                       | 45                                                                                                                       | 140                                          |
| 125                                       | 50                                                                                                                       | 160                                          |
| 140                                       | 63                                                                                                                       | 200                                          |
| 160                                       | 71                                                                                                                       | 220                                          |
| 180                                       | 85                                                                                                                       | 250                                          |
| 200                                       | 100                                                                                                                      | 320                                          |
| 220                                       | 125                                                                                                                      | 360                                          |
| 250                                       | 140                                                                                                                      | 400                                          |
| 280                                       | 160                                                                                                                      | 500                                          |
| 320                                       | 180                                                                                                                      | 630                                          |
| 360                                       | 200                                                                                                                      | 710                                          |
| 400                                       | 220                                                                                                                      | 800                                          |
| 450                                       | 250                                                                                                                      | 900                                          |

1) Dobór zakresu odchylek grubości zębów zależy jest od wymaganego dla przekładni zębatej luzu międzyzębnego.

Klasa dokładności  
IT10

Dane:  
 $d_1 = 70.082 \text{ mm}$   
 $m = 4 \text{ mm}$



| Klasa dokładności           |    |    |
|-----------------------------|----|----|
| Dopuszczalny błąd pomiarowy |    |    |
| Dopuszczalny błąd pomiarowy |    |    |
| Dopuszczalny błąd pomiarowy |    |    |
| Dopuszczalny błąd pomiarowy |    |    |
| 14                          | 6  | 21 |
| 17                          | 7  | 27 |
| 21                          | 8  | 34 |
| 25                          | 9  | 45 |
| 3                           | 10 | 5  |
| 38                          | 11 | 75 |
| 46                          | 12 | 98 |

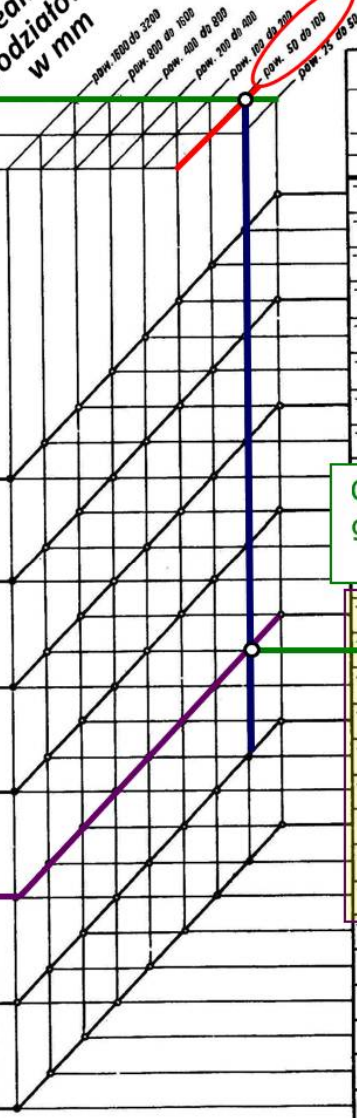
| Pole tolerancji D                         |      |      |      |      |      |                                 |      |     |      |      |  |
|-------------------------------------------|------|------|------|------|------|---------------------------------|------|-----|------|------|--|
| Odchyłki górne i dolne dla grubości zębów |      |      |      |      |      |                                 |      |     |      |      |  |
| mierzonej na stałej cięciwie g            |      |      |      |      |      | przy pomiarze przez "n" zębów M |      |     |      |      |  |
| zakresy odchyłek                          |      |      |      |      |      | zakresy odchyłek                |      |     |      |      |  |
| I                                         | II D | III  | IV   | V    |      | I                               | II D | III | IV   | V    |  |
| -8                                        | -16  | -24  | -32  | -40  | -48  | -25                             | -15  | -23 | -30  | -35  |  |
| -24                                       | -32  | -40  | -48  | -56  | -64  | -73                             | -30  | -38 | -45  | -50  |  |
| -9                                        | -18  | -27  | -36  | -45  | -54  | -63                             | -17  | -25 | -34  | -41  |  |
| -27                                       | -36  | -45  | -54  | -63  | -72  | -81                             | -25  | -34 | -42  | -51  |  |
| -10                                       | -20  | -30  | -40  | -50  | -60  | -70                             | -18  | -28 | -38  | -48  |  |
| -30                                       | -40  | -50  | -60  | -70  | -80  | -90                             | -28  | -38 | -48  | -58  |  |
| -11                                       | -22  | -33  | -44  | -55  | -66  | -77                             | -19  | -29 | -39  | -49  |  |
| -33                                       | -44  | -55  | -66  | -77  | -88  | -99                             | -29  | -39 | -49  | -59  |  |
| -12                                       | -24  | -36  | -48  | -60  | -72  | -84                             | -20  | -30 | -40  | -50  |  |
| -36                                       | -48  | -60  | -72  | -84  | -96  | -108                            | -30  | -40 | -50  | -60  |  |
| -13                                       | -26  | -39  | -52  | -65  | -78  | -91                             | -21  | -31 | -41  | -51  |  |
| -39                                       | -52  | -65  | -78  | -91  | -104 | -117                            | -31  | -41 | -51  | -61  |  |
| -14                                       | -28  | -42  | -56  | -70  | -84  | -98                             | -22  | -32 | -42  | -52  |  |
| -42                                       | -56  | -70  | -84  | -98  | -112 | -126                            | -32  | -42 | -52  | -62  |  |
| -15                                       | -30  | -45  | -60  | -75  | -90  | -105                            | -23  | -33 | -43  | -53  |  |
| -45                                       | -60  | -75  | -90  | -105 | -120 | -135                            | -33  | -43 | -53  | -63  |  |
| -16                                       | -32  | -48  | -64  | -80  | -96  | -112                            | -24  | -34 | -44  | -54  |  |
| -48                                       | -64  | -80  | -96  | -112 | -128 | -144                            | -34  | -44 | -54  | -64  |  |
| -17                                       | -34  | -51  | -68  | -85  | -102 | -119                            | -25  | -35 | -45  | -55  |  |
| -51                                       | -68  | -85  | -102 | -119 | -136 | -153                            | -35  | -45 | -55  | -65  |  |
| -18                                       | -36  | -54  | -72  | -90  | -108 | -126                            | -26  | -36 | -46  | -56  |  |
| -54                                       | -72  | -90  | -108 | -126 | -144 | -162                            | -36  | -46 | -56  | -66  |  |
| -19                                       | -38  | -57  | -76  | -95  | -114 | -133                            | -27  | -37 | -47  | -57  |  |
| -57                                       | -76  | -95  | -114 | -133 | -152 | -171                            | -37  | -47 | -57  | -67  |  |
| -20                                       | -40  | -60  | -80  | -100 | -120 | -140                            | -28  | -38 | -48  | -58  |  |
| -60                                       | -80  | -100 | -120 | -140 | -160 | -180                            | -38  | -48 | -58  | -68  |  |
| -21                                       | -42  | -63  | -84  | -105 | -126 | -147                            | -29  | -39 | -49  | -59  |  |
| -63                                       | -84  | -105 | -126 | -147 | -168 | -189                            | -39  | -49 | -59  | -69  |  |
| -22                                       | -44  | -66  | -88  | -110 | -132 | -154                            | -30  | -40 | -50  | -60  |  |
| -66                                       | -88  | -110 | -132 | -154 | -176 | -198                            | -40  | -50 | -60  | -70  |  |
| -23                                       | -46  | -69  | -92  | -115 | -138 | -161                            | -31  | -41 | -51  | -61  |  |
| -69                                       | -92  | -115 | -138 | -161 | -184 | -207                            | -41  | -51 | -61  | -71  |  |
| -24                                       | -48  | -72  | -96  | -120 | -144 | -168                            | -32  | -42 | -52  | -62  |  |
| -72                                       | -96  | -120 | -144 | -168 | -192 | -216                            | -42  | -52 | -62  | -72  |  |
| -25                                       | -50  | -75  | -100 | -125 | -150 | -175                            | -33  | -43 | -53  | -63  |  |
| -75                                       | -100 | -125 | -150 | -175 | -200 | -225                            | -43  | -53 | -63  | -73  |  |
| -26                                       | -52  | -78  | -104 | -130 | -156 | -182                            | -34  | -44 | -54  | -64  |  |
| -78                                       | -104 | -130 | -156 | -182 | -208 | -234                            | -44  | -54 | -64  | -74  |  |
| -27                                       | -54  | -81  | -108 | -136 | -162 | -188                            | -35  | -45 | -55  | -65  |  |
| -81                                       | -108 | -136 | -162 | -188 | -214 | -240                            | -45  | -55 | -65  | -75  |  |
| -28                                       | -56  | -84  | -112 | -140 | -168 | -196                            | -36  | -46 | -56  | -66  |  |
| -84                                       | -112 | -140 | -168 | -196 | -224 | -252                            | -46  | -56 | -66  | -76  |  |
| -29                                       | -58  | -87  | -115 | -144 | -172 | -200                            | -37  | -47 | -57  | -67  |  |
| -87                                       | -115 | -144 | -172 | -200 | -228 | -256                            | -47  | -57 | -67  | -77  |  |
| -30                                       | -60  | -90  | -120 | -150 | -180 | -210                            | -38  | -48 | -58  | -68  |  |
| -90                                       | -120 | -150 | -180 | -210 | -240 | -270                            | -48  | -58 | -68  | -78  |  |
| -31                                       | -62  | -93  | -124 | -156 | -188 | -220                            | -39  | -49 | -59  | -69  |  |
| -93                                       | -124 | -156 | -188 | -220 | -252 | -284                            | -49  | -59 | -69  | -79  |  |
| -32                                       | -64  | -96  | -128 | -160 | -192 | -224                            | -40  | -50 | -60  | -70  |  |
| -96                                       | -128 | -160 | -192 | -224 | -256 | -288                            | -50  | -60 | -70  | -80  |  |
| -33                                       | -66  | -99  | -132 | -164 | -196 | -228                            | -41  | -51 | -61  | -71  |  |
| -99                                       | -132 | -164 | -196 | -228 | -260 | -292                            | -51  | -61 | -71  | -81  |  |
| -34                                       | -68  | -102 | -136 | -168 | -200 | -232                            | -42  | -52 | -62  | -72  |  |
| -102                                      | -136 | -168 | -200 | -232 | -264 | -296                            | -52  | -62 | -72  | -82  |  |
| -35                                       | -70  | -105 | -140 | -172 | -204 | -236                            | -43  | -53 | -63  | -73  |  |
| -105                                      | -140 | -172 | -204 | -236 | -268 | -300                            | -53  | -63 | -73  | -83  |  |
| -36                                       | -72  | -108 | -144 | -176 | -208 | -240                            | -44  | -54 | -64  | -74  |  |
| -108                                      | -144 | -176 | -208 | -240 | -272 | -304                            | -54  | -64 | -74  | -84  |  |
| -37                                       | -74  | -111 | -147 | -179 | -211 | -243                            | -45  | -55 | -65  | -75  |  |
| -111                                      | -147 | -179 | -211 | -243 | -275 | -308                            | -55  | -65 | -75  | -85  |  |
| -38                                       | -76  | -114 | -150 | -182 | -214 | -246                            | -46  | -56 | -66  | -76  |  |
| -114                                      | -150 | -182 | -214 | -246 | -278 | -312                            | -56  | -66 | -76  | -86  |  |
| -39                                       | -78  | -117 | -153 | -185 | -217 | -249                            | -47  | -57 | -67  | -77  |  |
| -117                                      | -153 | -185 | -217 | -249 | -281 | -316                            | -57  | -67 | -77  | -87  |  |
| -40                                       | -80  | -120 | -156 | -188 | -220 | -252                            | -48  | -58 | -68  | -78  |  |
| -120                                      | -156 | -188 | -220 | -252 | -284 | -320                            | -58  | -68 | -78  | -88  |  |
| -41                                       | -82  | -122 | -158 | -190 | -222 | -254                            | -49  | -59 | -69  | -79  |  |
| -122                                      | -158 | -190 | -222 | -254 | -286 | -322                            | -59  | -69 | -79  | -89  |  |
| -42                                       | -84  | -124 | -160 | -192 | -224 | -256                            | -50  | -60 | -70  | -80  |  |
| -124                                      | -160 | -192 | -224 | -256 | -288 | -324                            | -60  | -70 | -80  | -90  |  |
| -43                                       | -86  | -126 | -162 | -194 | -226 | -258                            | -51  | -61 | -71  | -81  |  |
| -126                                      | -162 | -194 | -226 | -258 | -290 | -326                            | -61  | -71 | -81  | -91  |  |
| -44                                       | -88  | -128 | -164 | -196 | -228 | -260                            | -52  | -62 | -72  | -82  |  |
| -128                                      | -164 | -196 | -228 | -260 | -292 | -328                            | -62  | -72 | -82  | -92  |  |
| -45                                       | -90  | -130 | -166 | -198 | -230 | -262                            | -53  | -63 | -73  | -83  |  |
| -130                                      | -166 | -198 | -230 | -262 | -294 | -330                            | -63  | -73 | -83  | -93  |  |
| -46                                       | -92  | -132 | -168 | -200 | -232 | -264                            | -54  | -64 | -74  | -84  |  |
| -132                                      | -168 | -200 | -232 | -264 | -296 | -332                            | -64  | -74 | -84  | -94  |  |
| -47                                       | -94  | -134 | -170 | -202 | -234 | -266                            | -55  | -65 | -75  | -85  |  |
| -134                                      | -170 | -202 | -234 | -266 | -298 | -334                            | -65  | -75 | -85  | -95  |  |
| -48                                       | -96  | -136 | -172 | -204 | -236 | -268                            | -56  | -66 | -76  | -86  |  |
| -136                                      | -172 | -204 | -236 | -268 | -300 | -336                            | -66  | -76 | -86  | -96  |  |
| -49                                       | -98  | -138 | -174 | -206 | -238 | -270                            | -57  | -67 | -77  | -87  |  |
| -138                                      | -174 | -206 | -238 | -270 | -302 | -338                            | -67  | -77 | -87  | -97  |  |
| -50                                       | -100 | -140 | -176 | -208 | -240 | -272                            | -58  | -68 | -78  | -88  |  |
| -140                                      | -176 | -208 | -240 | -272 | -304 | -340                            | -68  | -78 | -88  | -98  |  |
| -51                                       | -102 | -142 | -178 | -210 | -242 | -274                            | -59  | -69 | -79  | -89  |  |
| -142                                      | -178 | -210 | -242 | -274 | -306 | -342                            | -69  | -79 | -89  | -99  |  |
| -52                                       | -104 | -144 | -180 | -212 | -244 | -276                            | -60  | -70 | -80  | -90  |  |
| -144                                      | -180 | -212 | -244 | -276 | -308 | -344                            | -70  | -80 | -90  | -100 |  |
| -53                                       | -106 | -146 | -182 | -214 | -246 | -278                            | -61  | -71 | -81  | -91  |  |
| -146                                      | -182 | -214 | -246 | -278 | -310 | -346                            | -71  | -81 | -91  | -101 |  |
| -54                                       | -108 | -148 | -184 | -216 | -248 | -280                            | -62  | -72 | -82  | -92  |  |
| -148                                      | -184 | -216 | -248 | -280 | -312 | -348                            | -72  | -82 | -92  | -102 |  |
| -55                                       | -110 | -150 | -186 | -218 | -250 | -282                            | -63  | -73 | -83  | -93  |  |
| -150                                      | -186 | -218 | -250 | -282 | -314 | -350                            | -73  | -83 | -93  | -103 |  |
| -56                                       | -112 | -152 | -188 | -220 | -252 | -284                            | -64  | -74 | -84  | -94  |  |
| -152                                      | -188 | -220 | -252 | -284 | -316 | -352                            | -74  | -84 | -94  | -104 |  |
| -57                                       | -114 | -154 | -190 | -222 | -254 | -286                            | -65  | -75 | -85  | -95  |  |
| -154                                      | -190 | -222 | -254 | -286 | -318 | -354                            | -75  | -85 | -95  | -105 |  |
| -58                                       | -116 | -156 | -192 | -224 | -256 | -288                            | -66  | -76 | -86  | -96  |  |
| -156                                      | -192 | -224 | -256 | -288 | -320 | -356                            | -76  | -86 | -96  | -106 |  |
| -59                                       | -118 | -158 | -194 | -226 | -258 | -290                            | -67  | -77 | -87  | -97  |  |
| -158                                      | -194 | -226 | -258 | -290 | -322 | -358                            | -77  | -87 | -97  | -107 |  |
| -60                                       | -120 | -160 | -196 | -228 | -260 | -292                            | -68  | -78 | -88  | -98  |  |
| -160                                      | -196 | -228 | -260 | -292 | -324 | -360                            | -78  | -88 | -98  | -108 |  |
| -61                                       | -122 | -162 | -198 | -230 | -262 | -294                            | -69  | -79 | -89  | -99  |  |
| -162                                      | -198 | -230 | -262 | -294 | -326 | -362                            | -79  | -89 | -99  | -109 |  |
| -62                                       | -124 | -164 | -200 | -232 | -264 | -296                            | -70  | -80 | -90  | -100 |  |
| -164                                      | -200 | -232 | -264 | -296 | -328 | -364                            | -80  | -90 | -100 | -110 |  |
| -63                                       | -126 | -166 | -202 | -234 | -266 | -298                            | -71  | -81 | -91  | -101 |  |
| -166                                      | -202 | -234 | -266 | -298 | -330 | -366                            | -81  | -91 | -101 | -111 |  |
| -64                                       | -128 | -168 | -204 | -236 | -268 | -300                            | -72  | -82 | -92  | -102 |  |
| -168                                      | -204 | -236 | -268 | -300 | -332 | -368                            | -82  | -92 | -102 | -112 |  |
| -65                                       | -130 | -170 | -206 | -238 | -270 | -302                            | -73  | -83 | -93  | -103 |  |
| -170                                      | -206 | -238 | -270 | -302 | -334 | -370                            | -83  | -93 | -103 | -113 |  |
| -66                                       | -132 | -172 | -208 | -240 | -272 | -304                            | -74  | -84 | -94  | -104 |  |
| -172                                      | -208 | -240 | -272 | -304 | -336 | -372                            | -84  | -94 | -104 | -114 |  |
| -67                                       | -134 | -174 | -210 | -242 | -274 | -306                            | -75  | -85 | -95  | -105 |  |
| -174                                      | -210 | -242 | -274 | -306 | -338 | -374                            | -85  | -95 | -105 | -115 |  |
| -68                                       | -136 | -176 | -212 | -244 | -276 | -308                            | -76  | -86 | -96  | -106 |  |
| -176                                      | -212 | -244 | -276 | -308 | -340 | -376                            | -86  | -96 | -106 | -116 |  |
| -69                                       | -138 | -178 | -214 | -246 | -278 | -310                            | -77  | -87 | -97  | -107 |  |
| -178                                      | -214 | -246 | -278 | -310 | -342 | -378                            | -87  | -97 | -107 | -117 |  |

$$m = 4 \text{ mm}$$

Modu

Średnica  
podziałowa  
w mm

## Pole tolerancji D



| Odchylki górne i dolne dla grubości zębów <sup>g</sup> |      |      |      |      |      |                                        |      |      |      |      |      |  |
|--------------------------------------------------------|------|------|------|------|------|----------------------------------------|------|------|------|------|------|--|
| mierzone na stałej cięciwie <b>G</b>                   |      |      |      |      |      | przy pomiarze przez "n" zębów <b>M</b> |      |      |      |      |      |  |
| za resy odchylek                                       |      |      |      |      |      | za resy odchylek                       |      |      |      |      |      |  |
| I                                                      | II   | III  | IV   | V    |      | I                                      | II   | III  | IV   | V    |      |  |
| -8                                                     | -24  | -32  | -40  | -48  | -55  | -15                                    | -23  | -30  | -38  | -45  | -50  |  |
| -9                                                     | -10  | -17  | -26  | -34  | -42  | -17                                    | -25  | -32  | -40  | -47  | -51  |  |
| -10                                                    | -12  | -19  | -27  | -35  | -43  | -18                                    | -26  | -34  | -42  | -50  | -54  |  |
| -11                                                    | -14  | -21  | -29  | -37  | -45  | -19                                    | -27  | -35  | -43  | -51  | -55  |  |
| -12                                                    | -16  | -23  | -31  | -39  | -47  | -20                                    | -28  | -36  | -44  | -52  | -56  |  |
| -13                                                    | -18  | -25  | -33  | -41  | -49  | -21                                    | -29  | -37  | -45  | -53  | -57  |  |
| -14                                                    | -20  | -27  | -35  | -43  | -51  | -22                                    | -30  | -38  | -46  | -54  | -58  |  |
| -15                                                    | -22  | -29  | -37  | -45  | -53  | -23                                    | -31  | -39  | -47  | -55  | -59  |  |
| -16                                                    | -24  | -31  | -39  | -47  | -55  | -24                                    | -32  | -40  | -48  | -56  | -60  |  |
| -17                                                    | -26  | -33  | -41  | -49  | -57  | -25                                    | -33  | -41  | -49  | -57  | -61  |  |
| -18                                                    | -28  | -35  | -43  | -51  | -59  | -26                                    | -34  | -42  | -50  | -58  | -62  |  |
| -19                                                    | -30  | -37  | -45  | -53  | -61  | -27                                    | -35  | -43  | -51  | -59  | -63  |  |
| -20                                                    | -32  | -39  | -47  | -55  | -63  | -28                                    | -36  | -44  | -52  | -60  | -64  |  |
| -21                                                    | -34  | -41  | -49  | -57  | -65  | -29                                    | -37  | -45  | -53  | -61  | -65  |  |
| -22                                                    | -36  | -43  | -51  | -59  | -67  | -30                                    | -38  | -46  | -54  | -62  | -66  |  |
| -23                                                    | -38  | -45  | -53  | -61  | -69  | -31                                    | -39  | -47  | -55  | -63  | -67  |  |
| -24                                                    | -40  | -47  | -55  | -63  | -71  | -32                                    | -40  | -48  | -56  | -64  | -68  |  |
| -25                                                    | -42  | -49  | -57  | -65  | -73  | -33                                    | -41  | -49  | -57  | -65  | -69  |  |
| -26                                                    | -44  | -51  | -59  | -67  | -75  | -34                                    | -42  | -50  | -58  | -66  | -70  |  |
| -27                                                    | -46  | -53  | -61  | -69  | -77  | -35                                    | -43  | -51  | -59  | -67  | -71  |  |
| -28                                                    | -48  | -55  | -63  | -71  | -79  | -36                                    | -44  | -52  | -60  | -68  | -72  |  |
| -29                                                    | -50  | -57  | -65  | -73  | -81  | -37                                    | -45  | -53  | -61  | -69  | -73  |  |
| -30                                                    | -52  | -59  | -67  | -75  | -83  | -38                                    | -46  | -54  | -62  | -70  | -74  |  |
| -31                                                    | -54  | -61  | -69  | -77  | -85  | -39                                    | -47  | -55  | -63  | -71  | -75  |  |
| -32                                                    | -56  | -63  | -71  | -79  | -87  | -40                                    | -48  | -56  | -64  | -72  | -76  |  |
| -33                                                    | -58  | -65  | -73  | -81  | -89  | -41                                    | -49  | -57  | -65  | -73  | -77  |  |
| -34                                                    | -60  | -67  | -75  | -83  | -91  | -42                                    | -50  | -58  | -66  | -74  | -78  |  |
| -35                                                    | -62  | -69  | -77  | -85  | -93  | -43                                    | -51  | -59  | -67  | -75  | -79  |  |
| -36                                                    | -64  | -71  | -79  | -87  | -95  | -44                                    | -52  | -60  | -68  | -76  | -80  |  |
| -37                                                    | -66  | -73  | -81  | -89  | -97  | -45                                    | -53  | -61  | -69  | -77  | -81  |  |
| -38                                                    | -68  | -75  | -83  | -91  | -99  | -46                                    | -54  | -62  | -70  | -78  | -82  |  |
| -39                                                    | -70  | -77  | -85  | -93  | -101 | -47                                    | -55  | -63  | -71  | -79  | -83  |  |
| -40                                                    | -72  | -79  | -87  | -95  | -103 | -48                                    | -56  | -64  | -72  | -80  | -84  |  |
| -41                                                    | -74  | -81  | -89  | -97  | -105 | -49                                    | -57  | -65  | -73  | -81  | -85  |  |
| -42                                                    | -76  | -83  | -91  | -99  | -107 | -50                                    | -58  | -66  | -74  | -82  | -86  |  |
| -43                                                    | -78  | -85  | -93  | -101 | -109 | -51                                    | -59  | -67  | -75  | -83  | -87  |  |
| -44                                                    | -80  | -87  | -95  | -103 | -111 | -52                                    | -60  | -68  | -76  | -84  | -88  |  |
| -45                                                    | -82  | -89  | -97  | -105 | -113 | -53                                    | -61  | -69  | -77  | -85  | -89  |  |
| -46                                                    | -84  | -91  | -99  | -107 | -115 | -54                                    | -62  | -70  | -78  | -86  | -90  |  |
| -47                                                    | -86  | -93  | -101 | -109 | -117 | -55                                    | -63  | -71  | -79  | -87  | -91  |  |
| -48                                                    | -88  | -95  | -103 | -111 | -119 | -56                                    | -64  | -72  | -80  | -88  | -92  |  |
| -49                                                    | -90  | -97  | -105 | -113 | -121 | -57                                    | -65  | -73  | -81  | -89  | -93  |  |
| -50                                                    | -92  | -99  | -107 | -115 | -123 | -58                                    | -66  | -74  | -82  | -90  | -94  |  |
| -51                                                    | -94  | -101 | -109 | -117 | -125 | -59                                    | -67  | -75  | -83  | -91  | -95  |  |
| -52                                                    | -96  | -103 | -111 | -119 | -127 | -60                                    | -68  | -76  | -84  | -92  | -96  |  |
| -53                                                    | -98  | -105 | -113 | -121 | -129 | -61                                    | -69  | -77  | -85  | -93  | -97  |  |
| -54                                                    | -100 | -107 | -115 | -123 | -131 | -62                                    | -70  | -78  | -86  | -94  | -98  |  |
| -55                                                    | -102 | -109 | -117 | -125 | -133 | -63                                    | -71  | -79  | -87  | -95  | -99  |  |
| -56                                                    | -104 | -111 | -119 | -127 | -135 | -64                                    | -72  | -80  | -88  | -96  | -100 |  |
| -57                                                    | -106 | -113 | -121 | -129 | -137 | -65                                    | -73  | -81  | -89  | -97  | -101 |  |
| -58                                                    | -108 | -115 | -123 | -131 | -139 | -66                                    | -74  | -82  | -90  | -98  | -102 |  |
| -59                                                    | -110 | -117 | -125 | -133 | -141 | -67                                    | -75  | -83  | -91  | -99  | -103 |  |
| -60                                                    | -112 | -119 | -127 | -135 | -143 | -68                                    | -76  | -84  | -92  | -100 | -104 |  |
| -61                                                    | -114 | -121 | -129 | -137 | -145 | -69                                    | -77  | -85  | -93  | -101 | -105 |  |
| -62                                                    | -116 | -123 | -131 | -139 | -147 | -70                                    | -78  | -86  | -94  | -102 | -106 |  |
| -63                                                    | -118 | -125 | -133 | -141 | -149 | -71                                    | -79  | -87  | -95  | -103 | -107 |  |
| -64                                                    | -120 | -127 | -135 | -143 | -151 | -72                                    | -80  | -88  | -96  | -104 | -108 |  |
| -65                                                    | -122 | -129 | -137 | -145 | -153 | -73                                    | -81  | -89  | -97  | -105 | -109 |  |
| -66                                                    | -124 | -131 | -139 | -147 | -155 | -74                                    | -82  | -90  | -98  | -106 | -110 |  |
| -67                                                    | -126 | -133 | -141 | -149 | -157 | -75                                    | -83  | -91  | -99  | -107 | -111 |  |
| -68                                                    | -128 | -135 | -143 | -151 | -159 | -76                                    | -84  | -92  | -100 | -108 | -112 |  |
| -69                                                    | -130 | -137 | -145 | -153 | -161 | -77                                    | -85  | -93  | -101 | -109 | -113 |  |
| -70                                                    | -132 | -139 | -147 | -155 | -163 | -78                                    | -86  | -94  | -102 | -110 | -114 |  |
| -71                                                    | -134 | -141 | -149 | -157 | -165 | -79                                    | -87  | -95  | -103 | -111 | -115 |  |
| -72                                                    | -136 | -143 | -151 | -159 | -167 | -80                                    | -88  | -96  | -104 | -112 | -116 |  |
| -73                                                    | -138 | -145 | -153 | -161 | -169 | -81                                    | -89  | -97  | -105 | -113 | -117 |  |
| -74                                                    | -140 | -147 | -155 | -163 | -171 | -82                                    | -90  | -98  | -106 | -114 | -118 |  |
| -75                                                    | -142 | -149 | -157 | -165 | -173 | -83                                    | -91  | -99  | -107 | -115 | -119 |  |
| -76                                                    | -144 | -151 | -159 | -167 | -175 | -84                                    | -92  | -100 | -108 | -116 | -120 |  |
| -77                                                    | -146 | -153 | -161 | -169 | -177 | -85                                    | -93  | -101 | -109 | -117 | -121 |  |
| -78                                                    | -148 | -155 | -163 | -171 | -179 | -86                                    | -94  | -102 | -110 | -118 | -122 |  |
| -79                                                    | -150 | -157 | -165 | -173 | -181 | -87                                    | -95  | -103 | -111 | -119 | -123 |  |
| -80                                                    | -152 | -159 | -167 | -175 | -183 | -88                                    | -96  | -104 | -112 | -120 | -124 |  |
| -81                                                    | -154 | -161 | -169 | -177 | -185 | -89                                    | -97  | -105 | -113 | -121 | -125 |  |
| -82                                                    | -156 | -163 | -171 | -179 | -187 | -90                                    | -98  | -106 | -114 | -122 | -126 |  |
| -83                                                    | -158 | -165 | -173 | -181 | -189 | -91                                    | -99  | -107 | -115 | -123 | -127 |  |
| -84                                                    | -160 | -167 | -175 | -183 | -191 | -92                                    | -100 | -108 | -116 | -124 | -128 |  |
| -85                                                    | -162 | -169 | -177 | -185 | -193 | -93                                    | -101 | -109 | -117 | -125 | -129 |  |
| -86                                                    | -164 | -171 | -179 | -187 | -195 | -94                                    | -102 | -110 | -118 | -126 | -130 |  |
| -87                                                    | -166 | -173 | -181 | -189 | -197 | -95                                    | -103 | -111 | -119 | -127 | -131 |  |
| -88                                                    | -168 | -175 | -183 | -191 | -199 | -96                                    | -104 | -112 | -120 | -128 | -132 |  |
| -89                                                    | -170 | -177 | -185 | -193 | -201 | -97                                    | -105 | -113 | -121 | -129 | -133 |  |
| -90                                                    | -172 | -179 | -187 | -195 | -203 | -98                                    | -106 | -114 | -122 | -130 | -134 |  |
| -91                                                    | -174 | -181 | -189 | -197 | -205 | -99                                    | -107 | -115 | -123 | -131 | -135 |  |
| -92                                                    | -176 | -183 | -191 | -199 | -207 | -100                                   | -108 | -116 | -124 | -132 | -136 |  |
| -93                                                    | -178 | -185 | -193 | -201 | -209 | -101                                   | -109 | -117 | -125 | -133 | -137 |  |
| -94                                                    | -180 | -187 | -195 | -203 | -211 | -102                                   | -110 | -118 | -126 | -134 | -138 |  |
| -95                                                    | -182 | -189 | -197 | -205 | -213 | -103                                   | -111 | -119 | -127 | -135 | -139 |  |
| -96                                                    | -184 | -191 | -199 | -207 | -215 | -104                                   | -112 | -120 | -128 | -136 | -140 |  |
| -97                                                    | -186 | -193 | -201 | -209 | -217 | -105                                   | -113 | -121 | -129 | -137 | -141 |  |
| -98                                                    | -188 | -195 | -203 | -211 | -219 | -106                                   | -114 | -122 | -130 | -138 | -142 |  |
| -99                                                    | -190 | -197 | -205 | -213 | -221 | -107                                   | -115 | -123 | -131 | -139 | -143 |  |
| -100                                                   | -192 | -199 | -207 | -215 | -223 | -108                                   | -116 | -124 | -132 | -140 | -144 |  |
| -101                                                   | -194 | -201 | -209 | -217 | -225 | -109                                   | -117 | -125 | -133 | -141 | -145 |  |
| -102                                                   | -196 | -203 | -211 | -219 | -227 | -110                                   | -118 | -126 | -134 | -142 | -146 |  |
| -103                                                   | -198 | -205 | -213 | -221 | -229 | -111                                   | -119 | -127 | -135 | -143 | -147 |  |
| -104                                                   | -200 | -207 | -215 | -223 | -231 | -112                                   | -120 | -128 | -136 | -144 | -148 |  |
| -105                                                   | -202 | -209 | -217 | -225 | -233 | -113                                   | -121 | -129 | -137 | -145 | -149 |  |
| -106                                                   | -204 | -211 | -219 | -227 | -235 | -114                                   | -122 | -130 | -138 | -146 | -150 |  |
| -107                                                   | -206 | -213 | -221 | -229 | -237 | -115                                   | -123 | -131 | -139 | -147 | -151 |  |
| -108                                                   | -208 | -215 | -223 | -231 | -239 | -116                                   | -124 | -132 | -140 | -148 | -152 |  |
| -109                                                   | -210 | -217 | -225 | -233 | -241 | -117                                   | -125 | -133 | -141 | -149 | -153 |  |
| -110                                                   | -212 | -219 | -227 | -235 | -243 | -118                                   | -126 | -134 | -142 | -150 | -154 |  |
| -111                                                   | -214 | -221 | -229 | -237 | -245 | -119                                   | -127 | -135 | -143 | -151 | -155 |  |
| -112                                                   | -216 | -223 | -231 | -239 | -247 | -120                                   | -128 | -136 | -144 | -152 | -156 |  |
| -113                                                   | -218 | -225 | -233 | -241 | -249 | -121                                   | -129 | -137 | -145 | -153 | -157 |  |
| -114                                                   | -220 | -227 | -235 | -243 | -251 | -122                                   | -130 | -138 | -146 | -154 | -158 |  |
| -115                                                   | -222 | -229 | -237 | -245 | -253 | -123                                   | -131 | -139 | -147 | -155 | -159 |  |
| -116                                                   | -224 | -231 | -239 | -247 | -255 | -124                                   | -132 | -140 | -148 | -156 | -160 |  |
| -117                                                   | -226 | -233 | -241 | -249 | -257 | -125                                   | -133 | -141 | -149 | -157 | -161 |  |
| -118                                                   | -228 | -235 | -243 | -251 | -259 | -126                                   | -134 | -142 | -150 | -158 | -162 |  |
| -119                                                   | -230 | -237 | -245 | -253 | -261 | -127                                   | -135 | -143 | -151 | -159 | -163 |  |
| -120                                                   | -232 | -239 | -247 | -255 | -263 | -128                                   | -136 | -144 | -152 | -160 | -164 |  |
| -121                                                   | -234 | -241 | -249 | -257 | -265 | -129                                   | -137 | -145 | -153 | -161 | -165 |  |
| -122                                                   | -236 | -243 | -251 | -259 | -267 | -130                                   | -138 | -146 | -154 | -162 | -166 |  |
| -123                                                   | -238 | -245 | -253 | -261 | -269 | -131                                   | -139 | -147 | -155 | -163 | -167 |  |
| -124                                                   | -240 | -247 | -255 | -263 | -271 | -132                                   | -140 | -148 | -156 | -164 | -168 |  |
| -125                                                   | -242 | -249 | -257 | -265 | -273 | -133                                   | -141 | -149 | -157 | -165 | -169 |  |
| -126                                                   | -244 | -251 | -259 | -267 | -275 | -134                                   | -142 | -150 | -158 | -166 | -170 |  |
| -127                                                   | -246 | -253 | -261 |      |      |                                        |      |      |      |      |      |  |

| Dopuszczalne błędy<br>w $\mu$ | Dopuszczalne błędy<br>zarysów (fotok.)<br>i<br>kół zębów i nierów-<br>nomierność podzia-<br>łań obrotowych<br>w $\mu$ | Sumaryczny błąd<br>podziałek i ome-<br>dżeń |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| 22                            | 8                                                                                                                     | 25                                          |
| 25                            | 9                                                                                                                     | 28                                          |
| 28                            | 10                                                                                                                    | 32                                          |
| 32                            | 12                                                                                                                    | 36                                          |
| 36                            | 14                                                                                                                    | 40                                          |
| 40                            | 16                                                                                                                    | 45                                          |
| 45                            | 18                                                                                                                    | 50                                          |
| 50                            | 20                                                                                                                    | 63                                          |
| 56                            | 22                                                                                                                    | 71                                          |
| 63                            | 25                                                                                                                    | 80                                          |
| 71                            | 28                                                                                                                    | 90                                          |
| 80                            | 32                                                                                                                    | 100                                         |
| 90                            | 36                                                                                                                    | 110                                         |
| 100                           | 40                                                                                                                    | 125                                         |
| 110                           | 45                                                                                                                    | 140                                         |
| 125                           | 50                                                                                                                    | 160                                         |
| 140                           | 63                                                                                                                    | 200                                         |
| 160                           | 71                                                                                                                    | 220                                         |
| 180                           | 85                                                                                                                    | 250                                         |
| 200                           | 100                                                                                                                   | 320                                         |
| 220                           | 125                                                                                                                   | 360                                         |
| 250                           | 140                                                                                                                   | 400                                         |
| 280                           | 160                                                                                                                   | 500                                         |
| 320                           | 180                                                                                                                   | 630                                         |
| 360                           | 200                                                                                                                   | 710                                         |
| 400                           | 220                                                                                                                   | 800                                         |
| 450                           | 250                                                                                                                   | 900                                         |

Klasa dokładności  
IT10

Odchył  
grubość  
zęba

1) Dobór zakresu odchylek grubości zębów zależy od wymaganego dla przekładni zębatej luzu międzyzębnego.

Dane:  
 $d_1 = 70.082 \text{ mm}$   
 $m = 4 \text{ mm}$



Pole tolerancji D

Odchyłki górne i dolne dla grubości zębów

mierzonych na stałej cięciwie g przy pomiarze przez "n" zębów M

zakresy odchyłek

| i   | II D | III | IV   | V    | i   | II D | III | IV  | V   |
|-----|------|-----|------|------|-----|------|-----|-----|-----|
| -8  | -16  | -24 | -32  | -48  | -25 | -15  | -23 | -30 | -45 |
| -24 | -32  | -40 | -48  | -64  | -73 | -30  | -38 | -45 | -60 |
| -9  | -18  | -27 | -36  | -54  | -45 | -17  | -25 | -34 | -51 |
| -27 | -36  | -45 | -54  | -72  | -25 | -34  | -42 | -51 | -68 |
| -10 | -20  | -30 | -40  | -60  | -9  | -18  | -24 | -30 | -45 |
| -30 | -40  | -50 | -60  | -80  | -26 | -38  | -47 | -56 | -75 |
| -11 | -22  | -33 | -44  | -66  | -10 | -21  | -28 | -35 | -52 |
| -33 | -44  | -55 | -66  | -88  | -31 | -41  | -49 | -58 | -79 |
| -12 | -24  | -36 | -48  | -72  | -12 | -24  | -32 | -40 | -60 |
| -36 | -48  | -60 | -72  | -96  | -32 | -42  | -50 | -58 | -79 |
| -13 | -26  | -39 | -52  | -78  | -13 | -26  | -34 | -42 | -63 |
| -39 | -52  | -65 | -78  | -104 | -34 | -45  | -54 | -63 | -85 |
| -14 | -28  | -42 | -56  | -84  | -14 | -28  | -36 | -44 | -66 |
| -42 | -56  | -70 | -84  | -112 | -36 | -48  | -57 | -66 | -89 |
| -15 | -30  | -45 | -60  | -90  | -15 | -30  | -39 | -48 | -70 |
| -45 | -60  | -75 | -90  | -120 | -39 | -51  | -60 | -69 | -93 |
| -16 | -32  | -48 | -64  | -96  | -16 | -32  | -41 | -50 | -72 |
| -48 | -64  | -80 | -96  | -128 | -41 | -53  | -62 | -71 | -95 |
| -17 | -34  | -51 | -68  | -102 | -17 | -34  | -43 | -52 | -74 |
| -51 | -68  | -85 | -102 | -136 | -43 | -55  | -64 | -73 | -97 |

| Dozwolone bieżne uzębienie w $\mu$ | Dozwolone bieżne uzębienie w $\mu$ | Sumaryczny błąd podziałek, obrotowy |
|------------------------------------|------------------------------------|-------------------------------------|
| 22                                 | 8                                  | 25                                  |
| 25                                 | 9                                  | 28                                  |
| 28                                 | 10                                 | 32                                  |
| 32                                 | 12                                 | 36                                  |
| 36                                 | 14                                 | 40                                  |
| 40                                 | 16                                 | 45                                  |
| 45                                 | 18                                 | 50                                  |
| 50                                 | 20                                 | 63                                  |
| 56                                 | 22                                 | 71                                  |
| 63                                 | 25                                 | 80                                  |
| 71                                 | 28                                 | 90                                  |
| 80                                 | 32                                 | 100                                 |
| 90                                 | 36                                 | 110                                 |
| 100                                | 40                                 | 125                                 |
| 110                                | 45                                 | 140                                 |
| 125                                | 50                                 | 160                                 |
| 140                                | 63                                 | 200                                 |
| 160                                | 71                                 | 220                                 |
| 180                                | 85                                 | 250                                 |
| 200                                | 100                                | 320                                 |
| 220                                | 125                                | 360                                 |
| 250                                | 140                                | 400                                 |
| 280                                | 160                                | 500                                 |
| 320                                | 180                                | 630                                 |
| 360                                | 200                                | 710                                 |
| 400                                | 220                                | 800                                 |
| 450                                | 250                                | 900                                 |

Odchyłki  
grubości  
zęba

Odchyłki  
wartości  
pomiarowej

|     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| -22 | -63 | -85 | -106 | -128 | -149 | -170 | -192 | -213 | -234 | -255 | -276 | -297 | -318 | -339 | -360 | -381 | -402 | -423 | -444 | -465 | -486 | -507 | -528 | -549 | -570 | -591 | -612 | -633 | -654 | -675 | -696 | -717 | -738 | -759 | -780 | -801 | -822 | -843 | -864 | -885 | -906 | -927 | -948 | -969 | -990 | -1011 | -1032 | -1053 | -1074 | -1095 | -1116 | -1137 | -1158 | -1179 | -1200 | -1221 | -1242 | -1263 | -1284 | -1305 | -1326 | -1347 | -1368 | -1389 | -1410 | -1431 | -1452 | -1473 | -1494 | -1515 | -1536 | -1557 | -1578 | -1599 | -1620 | -1641 | -1662 | -1683 | -1704 | -1725 | -1746 | -1767 | -1788 | -1809 | -1830 | -1851 | -1872 | -1893 | -1914 | -1935 | -1956 | -1977 | -1998 | -2019 | -2040 | -2061 | -2082 | -2103 | -2124 | -2145 | -2166 | -2187 | -2208 | -2229 | -2250 | -2271 | -2292 | -2313 | -2334 | -2355 | -2376 | -2397 | -2418 | -2439 | -2460 | -2481 | -2502 | -2523 | -2544 | -2565 | -2586 | -2607 | -2628 | -2649 | -2670 | -2691 | -2712 | -2733 | -2754 | -2775 | -2796 | -2817 | -2838 | -2859 | -2880 | -2901 | -2922 | -2943 | -2964 | -2985 | -3006 | -3027 | -3048 | -3069 | -3090 | -3111 | -3132 | -3153 | -3174 | -3195 | -3216 | -3237 | -3258 | -3279 | -3300 | -3321 | -3342 | -3363 | -3384 | -3405 | -3426 | -3447 | -3468 | -3489 | -3510 | -3531 | -3552 | -3573 | -3594 | -3615 | -3636 | -3657 | -3678 | -3699 | -3720 | -3741 | -3762 | -3783 | -3804 | -3825 | -3846 | -3867 | -3888 | -3909 | -3930 | -3951 | -3972 | -3993 | -4014 | -4035 | -4056 | -4077 | -4098 | -4119 | -4140 | -4161 | -4182 | -4203 | -4224 | -4245 | -4266 | -4287 | -4308 | -4329 | -4350 | -4371 | -4392 | -4413 | -4434 | -4455 | -4476 | -4497 | -4518 | -4539 | -4560 | -4581 | -4602 | -4623 | -4644 | -4665 | -4686 | -4707 | -4728 | -4749 | -4770 | -4791 | -4812 | -4833 | -4854 | -4875 | -4896 | -4917 | -4938 | -4959 | -4980 | -5001 | -5022 | -5043 | -5064 | -5085 | -5106 | -5127 | -5148 | -5169 | -5190 | -5211 | -5232 | -5253 | -5274 | -5295 | -5316 | -5337 | -5358 | -5379 | -5400 | -5421 | -5442 | -5463 | -5484 | -5505 | -5526 | -5547 | -5568 | -5589 | -5610 | -5631 | -5652 | -5673 | -5694 | -5715 | -5736 | -5757 | -5778 | -5799 | -5820 | -5841 | -5862 | -5883 | -5904 | -5925 | -5946 | -5967 | -5988 | -6009 | -6030 | -6051 | -6072 | -6093 | -6114 | -6135 | -6156 | -6177 | -6198 | -6219 | -6240 | -6261 | -6282 | -6303 | -6324 | -6345 | -6366 | -6387 | -6408 | -6429 | -6450 | -6471 | -6492 | -6513 | -6534 | -6555 | -6576 | -6597 | -6618 | -6639 | -6660 | -6681 | -6702 | -6723 | -6744 | -6765 | -6786 | -6807 | -6828 | -6849 | -6870 | -6891 | -6912 | -6933 | -6954 | -6975 | -6996 | -7017 | -7038 | -7059 | -7080 | -7101 | -7122 | -7143 | -7164 | -7185 | -7206 | -7227 | -7248 | -7269 | -7290 | -7311 | -7332 | -7353 | -7374 | -7395 | -7416 | -7437 | -7458 | -7479 | -7500 | -7521 | -7542 | -7563 | -7584 | -7605 | -7626 | -7647 | -7668 | -7689 | -7710 | -7731 | -7752 | -7773 | -7794 | -7815 | -7836 | -7857 | -7878 | -7899 | -7920 | -7941 | -7962 | -7983 | -7999 | -8000 |
|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|

Klasa dokładności IT10

1) Zakres odchyłek grubości zębów zależy od wymaganego dla przekładni zębatej typu międzyszębnego.

Dane:  
 $d_1 = 70.082 \text{ mm}$   
 $m = 4 \text{ mm}$



Pole tolerancji D  
Dopuszczalne bicie uzębienia

| Klasa dokładności |    |    |
|-------------------|----|----|
| IT                | IT | IT |
| 6                 | 7  | 8  |
| 9                 | 10 | 11 |
| 12                |    |    |

| Odchyłki górne i dolne dla grubości zębów |      |     |      |      |      |                                 |      |     |     |     |  |
|-------------------------------------------|------|-----|------|------|------|---------------------------------|------|-----|-----|-----|--|
| mierzonej na stałej cięciwie g            |      |     |      |      |      | przy pomiarze przez "n" zębów M |      |     |     |     |  |
| zakresy odchyłek                          |      |     |      |      |      | zakresy odchyłek                |      |     |     |     |  |
| I                                         | II D | III | IV   | V    |      | I                               | II D | III | IV  | V   |  |
| -8                                        | -16  | -24 | -32  | -40  | -48  | -25                             | -15  | -23 | -30 | -35 |  |
| -24                                       | -32  | -40 | -48  | -56  | -64  | -73                             | -30  | -38 | -45 | -50 |  |
| -9                                        | -18  | -27 | -36  | -45  | -54  | -63                             | -17  | -25 | -34 | -41 |  |
| -27                                       | -36  | -45 | -54  | -63  | -72  | -81                             | -25  | -34 | -42 | -51 |  |
| -10                                       | -20  | -30 | -40  | -50  | -60  | -70                             | -18  | -28 | -38 | -48 |  |
| -30                                       | -40  | -50 | -60  | -70  | -80  | -90                             | -28  | -38 | -48 | -58 |  |
| -11                                       | -22  | -33 | -44  | -55  | -66  | -77                             | -19  | -29 | -39 | -49 |  |
| -33                                       | -44  | -55 | -66  | -77  | -88  | -99                             | -29  | -39 | -49 | -59 |  |
| -12                                       | -24  | -36 | -48  | -60  | -72  | -84                             | -20  | -30 | -40 | -50 |  |
| -36                                       | -48  | -60 | -72  | -84  | -96  | -108                            | -30  | -40 | -50 | -60 |  |
| -13                                       | -26  | -39 | -52  | -65  | -78  | -91                             | -21  | -31 | -41 | -51 |  |
| -39                                       | -52  | -65 | -78  | -91  | -104 | -117                            | -31  | -41 | -51 | -61 |  |
| -14                                       | -28  | -42 | -56  | -70  | -84  | -98                             | -22  | -32 | -42 | -52 |  |
| -42                                       | -56  | -70 | -84  | -98  | -112 | -126                            | -32  | -42 | -52 | -62 |  |
| -15                                       | -30  | -45 | -60  | -75  | -90  | -105                            | -23  | -33 | -43 | -53 |  |
| -45                                       | -60  | -75 | -90  | -105 | -120 | -135                            | -33  | -43 | -53 | -63 |  |
| -16                                       | -32  | -48 | -64  | -80  | -96  | -112                            | -24  | -34 | -44 | -54 |  |
| -48                                       | -64  | -80 | -96  | -112 | -128 | -144                            | -34  | -44 | -54 | -64 |  |
| -17                                       | -34  | -51 | -68  | -85  | -102 | -119                            | -25  | -35 | -45 | -55 |  |
| -51                                       | -68  | -85 | -102 | -119 | -136 | -153                            | -35  | -45 | -55 | -65 |  |

Odchyłki grubości zęba  
Odchyłki wartości pomiarowej

| Odchyłki górne i dolne dla grubości zębów |      |     |      |      |      |                                 |      |     |     |     |  |
|-------------------------------------------|------|-----|------|------|------|---------------------------------|------|-----|-----|-----|--|
| mierzonej na stałej cięciwie g            |      |     |      |      |      | przy pomiarze przez "n" zębów M |      |     |     |     |  |
| zakresy odchyłek                          |      |     |      |      |      | zakresy odchyłek                |      |     |     |     |  |
| I                                         | II D | III | IV   | V    |      | I                               | II D | III | IV  | V   |  |
| -8                                        | -16  | -24 | -32  | -40  | -48  | -25                             | -15  | -23 | -30 | -35 |  |
| -24                                       | -32  | -40 | -48  | -56  | -64  | -73                             | -30  | -38 | -45 | -50 |  |
| -9                                        | -18  | -27 | -36  | -45  | -54  | -63                             | -17  | -25 | -34 | -41 |  |
| -27                                       | -36  | -45 | -54  | -63  | -72  | -81                             | -25  | -34 | -42 | -51 |  |
| -10                                       | -20  | -30 | -40  | -50  | -60  | -70                             | -18  | -28 | -38 | -48 |  |
| -30                                       | -40  | -50 | -60  | -70  | -80  | -90                             | -28  | -38 | -48 | -58 |  |
| -11                                       | -22  | -33 | -44  | -55  | -66  | -77                             | -19  | -29 | -39 | -49 |  |
| -33                                       | -44  | -55 | -66  | -77  | -88  | -99                             | -29  | -39 | -49 | -59 |  |
| -12                                       | -24  | -36 | -48  | -60  | -72  | -84                             | -20  | -30 | -40 | -50 |  |
| -36                                       | -48  | -60 | -72  | -84  | -96  | -108                            | -30  | -40 | -50 | -60 |  |
| -13                                       | -26  | -39 | -52  | -65  | -78  | -91                             | -21  | -31 | -41 | -51 |  |
| -39                                       | -52  | -65 | -78  | -91  | -104 | -117                            | -31  | -41 | -51 | -61 |  |
| -14                                       | -28  | -42 | -56  | -70  | -84  | -98                             | -22  | -32 | -42 | -52 |  |
| -42                                       | -56  | -70 | -84  | -98  | -112 | -126                            | -32  | -42 | -52 | -62 |  |
| -15                                       | -30  | -45 | -60  | -75  | -90  | -105                            | -23  | -33 | -43 | -53 |  |
| -45                                       | -60  | -75 | -90  | -105 | -120 | -135                            | -33  | -43 | -53 | -63 |  |
| -16                                       | -32  | -48 | -64  | -80  | -96  | -112                            | -24  | -34 | -44 | -54 |  |
| -48                                       | -64  | -80 | -96  | -112 | -128 | -144                            | -34  | -44 | -54 | -64 |  |
| -17                                       | -34  | -51 | -68  | -85  | -102 | -119                            | -25  | -35 | -45 | -55 |  |
| -51                                       | -68  | -85 | -102 | -119 | -136 | -153                            | -35  | -45 | -55 | -65 |  |

| Dopuszczalne bicie uzębienia             |                                          |                                          |
|------------------------------------------|------------------------------------------|------------------------------------------|
| Dopuszczalne bicie zoryg. (maks. i min.) | Dopuszczalne bicie zoryg. (maks. i min.) | Dopuszczalne bicie zoryg. (maks. i min.) |
| 8                                        | 9                                        | 10                                       |
| 12                                       | 14                                       | 16                                       |
| 16                                       | 18                                       | 20                                       |
| 20                                       | 22                                       | 25                                       |
| 25                                       | 28                                       | 32                                       |
| 32                                       | 36                                       | 40                                       |
| 40                                       | 45                                       | 50                                       |
| 50                                       | 56                                       | 63                                       |
| 63                                       | 71                                       | 80                                       |
| 80                                       | 90                                       | 100                                      |
| 100                                      | 110                                      | 125                                      |
| 125                                      | 140                                      | 160                                      |
| 140                                      | 160                                      | 180                                      |
| 160                                      | 180                                      | 200                                      |
| 180                                      | 200                                      | 220                                      |
| 200                                      | 220                                      | 250                                      |
| 220                                      | 250                                      | 280                                      |
| 250                                      | 280                                      | 320                                      |
| 280                                      | 320                                      | 360                                      |
| 320                                      | 360                                      | 400                                      |
| 360                                      | 400                                      | 450                                      |
| 400                                      | 450                                      | 500                                      |
| 450                                      | 500                                      | 560                                      |
| 500                                      | 560                                      | 630                                      |
| 560                                      | 630                                      | 710                                      |
| 630                                      | 710                                      | 800                                      |
| 710                                      | 800                                      | 900                                      |
| 800                                      | 900                                      | 1000                                     |

1) Zakres odchyłek grubości zębów zależy od wymaganego dla przekadni zębatej typu międzyzębnego.

Dane:  
 $d_1 = 70.082 \text{ mm}$

$m = 4 \text{ mm}$



| Klasa dokładności |    |    |
|-------------------|----|----|
| 6                 | 21 | ▽9 |
| 7                 | 27 | ▽8 |
| 8                 | 34 | ▽8 |
| 9                 | 45 | ▽6 |
| 10                | 50 | ▽6 |
| 11                | 75 | ▽4 |
| 12                | 98 | ▽3 |

| Odchyłki górne i dolne dla grubości zębów |      |                                 |      |
|-------------------------------------------|------|---------------------------------|------|
| mierzonych na stałej cięciwie g           |      | przy pomiarze przez "n" zębów M |      |
| zakresy odchyłek                          |      | zakresy odchyłek                |      |
| I                                         | II D | I                               | II D |
| -8                                        | -16  | -9                              | -18  |
| -24                                       | -32  | -25                             | -30  |
| -9                                        | -18  | -25                             | -30  |
| -27                                       | -36  | -25                             | -30  |
| -10                                       | -20  | -9                              | -18  |
| -30                                       | -40  | -25                             | -30  |
| -11                                       | -22  | -33                             | -44  |
| -33                                       | -44  | -33                             | -44  |
| -12                                       | -24  | -33                             | -44  |
| -37                                       | -50  | -37                             | -50  |
| -14                                       | -28  | -37                             | -50  |
| -42                                       | -56  | -42                             | -56  |
| -15                                       | -30  | -45                             | -60  |
| -45                                       | -60  | -45                             | -60  |
| -16                                       | -32  | -48                             | -64  |
| -54                                       | -72  | -54                             | -72  |

| Dopuszczalne bicie uzębienia |    |    |
|------------------------------|----|----|
| 8                            | 25 | 25 |
| 9                            | 28 | 28 |
| 10                           | 32 | 32 |
| 12                           | 36 | 36 |
| 14                           | 40 | 40 |
| 16                           | 45 | 45 |
| 18                           | 50 | 50 |
| 20                           | 63 | 63 |

| Bicie dopuszczalne uzębienia |     |     |
|------------------------------|-----|-----|
| 90                           | 36  | 110 |
| 100                          | 40  | 125 |
| 110                          | 45  | 140 |
| 125                          | 50  | 160 |
| 140                          | 63  | 200 |
| 160                          | 71  | 220 |
| 180                          | 85  | 250 |
| 200                          | 100 | 320 |
| 220                          | 125 | 360 |
| 250                          | 140 | 400 |
| 280                          | 160 | 500 |
| 320                          | 180 | 630 |
| 360                          | 200 | 710 |
| 400                          | 220 | 800 |
| 450                          | 250 | 900 |

Klasa dokładności IT10

1) Zakres zakresu odchyłek grubości zębów zależny jest od wymaganego dla przekładni zębatej typu międzyszębnego.