

## UMRECHNUNG ZOLL - MILLIMETER

|    | 0"     | 1/8"   | 1/4"   | 3/8"   | 1/2"   | 5/8"   | 3/4"   | 7/8"   |     | 0"     | 1/8"   | 1/4"   | 3/8"   | 1/2"   | 5/8"   | 3/4"   | 7/8"   |
|----|--------|--------|--------|--------|--------|--------|--------|--------|-----|--------|--------|--------|--------|--------|--------|--------|--------|
| 0" | -      | 3,20   | 6,40   | 9,50   | 12,70  | 15,90  | 19,10  | 22,20  | 6"  | 152,40 | 155,60 | 158,80 | 161,90 | 165,10 | 168,30 | 171,50 | 174,60 |
| 1" | 25,40  | 28,60  | 31,75  | 34,90  | 38,10  | 41,27  | 44,45  | 47,60  | 7"  | 177,80 | 181,00 | 184,20 | 187,30 | 190,50 | 193,70 | 196,90 | 200,00 |
| 2" | 50,80  | 54,00  | 57,15  | 60,30  | 63,50  | 66,70  | 69,85  | 73,00  | 8"  | 203,20 | 206,40 | 209,60 | 212,70 | 215,90 | 219,10 | 222,30 | 225,40 |
| 3" | 76,20  | 79,40  | 82,55  | 85,70  | 88,90  | 92,10  | 95,25  | 98,40  | 9"  | 228,60 | 231,80 | 235,00 | 238,10 | 241,30 | 244,50 | 247,70 | 250,80 |
| 4" | 101,60 | 104,80 | 108,00 | 111,10 | 114,30 | 117,50 | 120,70 | 123,80 | 10" | 254,00 | 257,20 | 260,40 | 263,50 | 266,70 | 269,90 | 273,10 | 276,20 |
| 5" | 127,00 | 130,20 | 133,40 | 136,50 | 139,70 | 142,90 | 146,10 | 149,20 | 11" | 279,40 | 282,60 | 285,75 | 288,90 | 292,10 | 295,30 | 298,45 | 301,60 |

## UMRECHNUNG LÄNGENMASSE

|               | m        | cm     | mm    | µm        | in                     | ft                    | yd                     |
|---------------|----------|--------|-------|-----------|------------------------|-----------------------|------------------------|
| 1 m           | 1        | 100    | 1.000 | 1.000.000 | 39,37                  | 3,28                  | 1,094                  |
| 1 cm          | 0,01     | 1      | 10    | 10.000    | 0,3937                 | 0,0328                | 0,01094                |
| 1 mm          | 0,001    | 0,1    | 1     | 1.000     | 0,03937                | 0,00328               | 0,001094               |
| 1 µm          | 0,000001 | 0,0001 | 0,001 | 1         | 3,937x10 <sup>-5</sup> | 3,28x10 <sup>-6</sup> | 1,094x10 <sup>-6</sup> |
| 1 in = 1 inch | 0,0254   | 2,54   | 25,4  | 25.400    | 1                      | 0,083                 | 0,0278                 |
| 1 ft = 1 feet | 0,3048   | 30,48  | 304,8 | 304.800   | 12                     | 1                     | 0,333                  |
| 1 yd = 1 yard | 0,9144   | 91,44  | 914,4 | 914.400   | 36                     | 3                     | 1                      |

## UMRECHNUNG TEMPERATUR °C °F °K

| Temperatur |            | °C               | °F                  | °K                    |
|------------|------------|------------------|---------------------|-----------------------|
| °C         | Celsius    | 1                | (1,8 x °C) +32      | °C + 273,15           |
| °F         | Fahrenheit | (°F -32) x 0,555 | 1                   | (0,555 x °F) + 255,39 |
| °K         | Kelvin     | °K - 273,15      | (1,8 x °K) - 459,67 | 1                     |
| 0°C        |            | 0                | +32                 | +273,15               |
| 0°F        |            | -17,78           | 0                   | +255,37               |
| 0°K        |            | -273,15          | -459,67             | 0                     |

## TEMPERATUR - LÄNGENÄNDERUNG

| Werkstoff | 100°C / 373°K | 200°C / 473°K | 300°C / 573°K | 400°C / 673°K |  |
|-----------|---------------|---------------|---------------|---------------|--|
| St 37-2   | 1,11          | 2,42          | 3,87          | 5,40          | Die Tabelle gibt die mittlere Längenänderung (in mm) für 1m Rohrlänge bei Temperaturänderungen von 0°C um je 100°C an. |
| 1.4541    | 1,60          | 3,40          | 5,10          | 7,20          |  |
| 1.4571    | 1,65          | 3,50          | 5,40          | 7,40          |  |

## EINHEITENPRÄFIXE (SI)

| Name  | Symbol | Faktor           | Wert                              |             | Name  | Symbol | Faktor            | Wert                              |                 |
|-------|--------|------------------|-----------------------------------|-------------|-------|--------|-------------------|-----------------------------------|-----------------|
|       |        |                  |                                   |             |       |        | 10 <sup>0</sup>   | 1                                 | Eins            |
| Deka  | da     | 10 <sup>1</sup>  | 10                                | Zehn        | Dezi  | d      | 10 <sup>-1</sup>  | 0,1                               | Zehntel         |
| Hekto | h      | 10 <sup>2</sup>  | 100                               | Hundert     | Zenti | c      | 10 <sup>-2</sup>  | 0,01                              | Hundertstel     |
| Kilo  | k      | 10 <sup>3</sup>  | 1.000                             | Tausend     | Milli | m      | 10 <sup>-3</sup>  | 0,001                             | Tausendstel     |
| Mega  | M      | 10 <sup>6</sup>  | 1.000.000                         | Million     | Mikro | µ      | 10 <sup>-6</sup>  | 0,000.001                         | Millionstel     |
| Giga  | G      | 10 <sup>9</sup>  | 1.000.000.000                     | Milliarde   | Nano  | n      | 10 <sup>-9</sup>  | 0,000.000.001                     | Milliardstel    |
| Tera  | T      | 10 <sup>12</sup> | 1.000.000.000.000                 | Billion     | Piko  | p      | 10 <sup>-12</sup> | 0,000.000.000.001                 | Billionstel     |
| Peta  | P      | 10 <sup>15</sup> | 1.000.000.000.000.000             | Billiarde   | Femto | f      | 10 <sup>-15</sup> | 0,000.000.000.000.001             | Billiardstel    |
| Exa   | E      | 10 <sup>18</sup> | 1.000.000.000.000.000.000         | Trillion    | Atto  | a      | 10 <sup>-18</sup> | 0,000.000.000.000.000.001         | Trillionstel    |
| Zetta | Z      | 10 <sup>21</sup> | 1.000.000.000.000.000.000.000     | Trilliade   | Zepto | z      | 10 <sup>-21</sup> | 0,000.000.000.000.000.000.001     | Trilliardstel   |
| Yotta | Y      | 10 <sup>24</sup> | 1.000.000.000.000.000.000.000.000 | Quadrillion | Yokto | y      | 10 <sup>-24</sup> | 0,000.000.000.000.000.000.000.001 | Quadrillionstel |

# UMRECHNUNG DRUCK

## ZAHLENVERHÄLTNIS

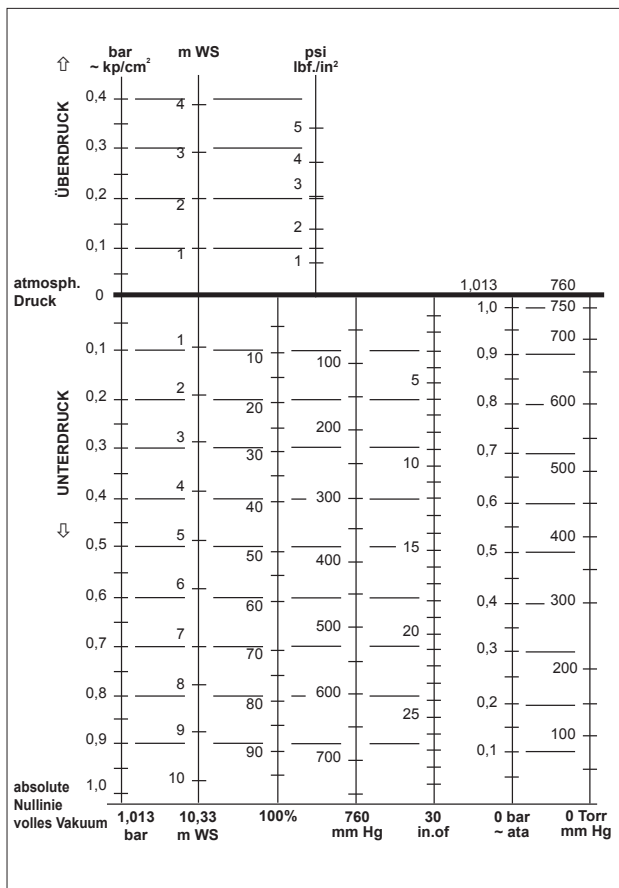
1 Pa =  $1 \text{ N/m}^2$   
 10 Pa = 1 daPa = 1 hPa = 0,1 mbar  
 100 Pa = 10 daPa = 1 hPa = 1 mbar  
 1.000 Pa = 1 kPa = 0,1 N/cm<sup>2</sup>  
 100.000 Pa = 0,1 MPa = 1 bar = 1.000 mbar = 1 N/cm<sup>2</sup>  
 1.000.000 Pa = 1 MPa = 10 bar = 1 N/mm<sup>2</sup>

mittlerer Atmosphärendruck auf Meereshöhe (Standard- bzw. Normaldruck)  
 101.325 Pa = 1.013,25 hPa = 101,325 kPa

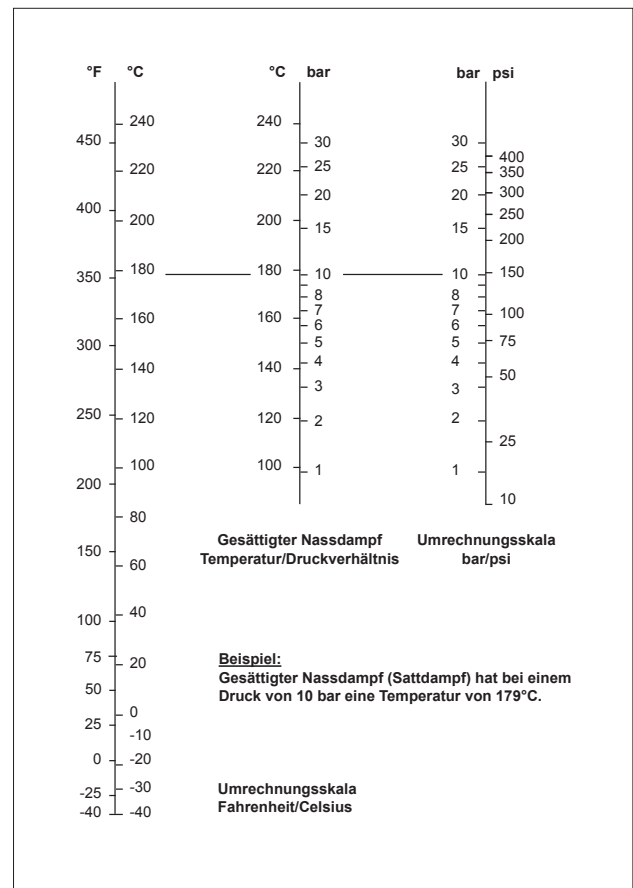
Pa Verwendung:  
 Lüftungstechnik daPa  
 Luftdruck hPa  
 Reifenfülldruck kPa  
 Technik MPa

|             | <b>Pa</b><br>(Pascal)<br>N/m <sup>2</sup><br>kg/(m·s <sup>2</sup> ) | <b>bar</b><br>(Bar)<br>N/cm <sup>2</sup><br>Mdyn/cm <sup>2</sup> | <b>mWS</b><br>(m Wassersäule) | <b>torr</b><br>(Torr)<br>mmHg | <b>at</b><br>(technische Atmosphäre)<br>kp/cm <sup>2</sup> | <b>atm</b><br>(physik. Atmosphäre)<br>PSTP | <b>psi</b><br>pound-force/square inch<br>lbf/in <sup>2</sup> |
|-------------|---|--|-------------------------------|-------------------------------|--|--|--|
| <b>Pa</b>   | 1   | 0,000102   | 0,001                         | 0,0075                        | 0,000102   | 0,00000987                                 | 0,000145   |
| <b>bar</b>  | 100.000   | 1  | 10,197                        | 750,062                       | 1,0197   | 0,98692                                    | 14,504   |
| <b>mWS</b>  | 9.806,65  | 0,09807  | 1                             | 73,556                        | 0,1  | 0,0987                                     | 1,4223   |
| <b>torr</b> | 133,322   | 0,0013332  | 0,0136                        | 1                             | 0,0013595  | 0,0013158                                  | 0,019337   |
| <b>at</b>   | 98.065,5  | 0,98067  | 10                            | 735,559                       | 1  | 0,96784                                    | 14,223   |
| <b>atm</b>  | 101.325   | 1,0133   | 10,33                         | 760,0                         | 1,0332   | 1  | 14,696   |
| <b>psi</b>  | 6.894,76  | 0,0689476  | 0,70307                       | 51,715                        | 0,070307   | 0,068046                                   | 1  |

## ÜBERDRUCK-UNTERDRUCK



## SATTDAMPF



## UMRECHNUNG BAR - PSI

1 psi = 0,068947573 bar

| bar | psi | 0        | 1         | 2        | 3         | 4        | 5         | 6        | 7         | 8        | 9         |
|-----|-----|----------|-----------|----------|-----------|----------|-----------|----------|-----------|----------|-----------|
|     |     |          | 14,5035   | 29,007   | 43,5105   | 58,014   | 72,5175   | 87,021   | 101,5245  | 116,028  | 130,5315  |
| 10  |     | 145,035  | 159,5385  | 174,042  | 188,5455  | 203,049  | 217,5525  | 232,056  | 246,5595  | 261,063  | 275,5665  |
| 20  |     | 290,076  | 304,5735  | 319,077  | 333,5805  | 348,084  | 362,5875  | 377,091  | 391,5945  | 406,098  | 420,6015  |
| 30  |     | 435,105  | 449,6085  | 464,112  | 478,6155  | 493,119  | 507,6225  | 522,126  | 536,6295  | 551,133  | 565,6365  |
| 40  |     | 580,152  | 594,6435  | 609,147  | 623,6505  | 638,154  | 652,6575  | 667,161  | 681,6645  | 696,168  | 710,6715  |
| 50  |     | 725,175  | 739,6785  | 754,182  | 768,6855  | 783,189  | 797,6925  | 812,196  | 826,6995  | 841,203  | 855,7065  |
| 60  |     | 870,228  | 884,7135  | 889,217  | 913,7205  | 928,224  | 942,7275  | 957,231  | 971,7345  | 986,238  | 1000,7415 |
| 70  |     | 1015,245 | 1029,7485 | 1044,252 | 1058,7555 | 1073,259 | 1087,7625 | 1102,266 | 1116,7695 | 1131,273 | 1145,7765 |
| 80  |     | 1160,380 | 1174,7835 | 1189,287 | 1203,7905 | 1218,294 | 1232,7975 | 1247,301 | 1261,8045 | 1276,308 | 1290,8115 |
| 90  |     | 1305,315 | 1319,8185 | 1334,322 | 1348,8255 | 1363,329 | 1377,8325 | 1392,336 | 1406,8395 | 1421,343 | 1435,8465 |
| 100 |     | 1450,381 | 1464,8535 | 1479,357 | 1493,8605 | 1508,364 | 1522,8675 | 1537,371 | 1551,8745 | 1566,378 | 1580,8815 |

## UMRECHNUNG PSI - BAR

1 bar = 14,503773773 psi

| psi | bar | 0     | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      |
|-----|-----|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|     |     |       | 0,0689 | 0,1378 | 0,2067 | 0,2756 | 0,3445 | 0,4134 | 0,4823 | 0,5512 | 0,6201 |
| 10  |     | 0,689 | 0,7579 | 0,8268 | 0,8957 | 0,9646 | 1,0335 | 1,1024 | 1,1713 | 1,2402 | 1,3091 |
| 20  |     | 1,378 | 1,4469 | 1,5158 | 1,5847 | 1,6536 | 1,7225 | 1,7914 | 1,8603 | 1,9292 | 1,9981 |
| 30  |     | 2,067 | 2,1359 | 2,2048 | 2,2737 | 2,3426 | 2,4115 | 2,4804 | 2,5493 | 2,6182 | 2,6871 |
| 40  |     | 2,756 | 2,8249 | 2,8938 | 2,9627 | 3,0316 | 3,1005 | 3,1694 | 3,2383 | 3,3072 | 3,3761 |
| 50  |     | 3,445 | 3,5139 | 3,5828 | 3,6517 | 3,7206 | 3,7895 | 3,8584 | 3,9273 | 3,9962 | 4,0651 |
| 60  |     | 4,134 | 4,2029 | 4,2718 | 4,3407 | 4,4096 | 4,4785 | 4,5474 | 4,6163 | 4,6852 | 4,7541 |
| 70  |     | 4,823 | 4,8919 | 4,9608 | 5,0297 | 5,0986 | 5,1675 | 5,2364 | 5,3053 | 5,3742 | 5,4431 |
| 80  |     | 5,512 | 5,5809 | 5,6498 | 5,7187 | 5,7876 | 5,8565 | 5,9254 | 5,9943 | 6,0632 | 6,1321 |
| 90  |     | 6,201 | 6,2699 | 6,3388 | 6,4077 | 6,4766 | 6,5455 | 6,6144 | 6,6833 | 6,7522 | 6,8211 |
| 100 |     | 6,895 | 6,9589 | 7,0278 | 7,0967 | 7,1656 | 7,2345 | 7,3034 | 7,3723 | 7,4412 | 7,5101 |