

4
Ø D (MM)

57
L (MM)

3
Z

MATERIAL COMPATIBILITY

●●● Excellent (3/3) ●●○ Good (2/3) ●○○ Possible (1/3) ○○○ Not recommended

MATERIAL	SPECIFICATION	GRP	28033A-4-6
Alloyed and non-alloyed steels Non-alloyed steels	Rm < 450 N/mm ²	1a	●●●
	Rm 450–700 N/mm ²	1b	●●●
	Rm 700–900 N/mm ²	1c	●●●
	Rm > 1200 N/mm ²	1d	●●●
Stainless steels Stainless steels	Rm < 650 N/mm ²	2a	●●●
	Rm 650–950 N/mm ²	2b	●●●
	Rm > 950 N/mm ²	2c	●●●
Hardened steels Hardened steels	44–56 HRC	3a	●●○
	57–67 HRC	3b	●●○
Exotic materials Special alloys	< 32 HRC	4a	●●○
	> 32 HRC	4b	●●○
Graphite Industrial graphite		5	●●○
Cast iron Grey / nodular cast iron	< 32 HRC	6a	●●○
	> 32 HRC	6b	●●○
Titanium Titanium alloys	Rm < 600 N/mm ²	7a	●●●
	600 < Rm N/mm ²	7b	●●●
Nickel alloys Inconel, Hastelloy	Rm < 1000 N/mm ²	8a	●●●
	Rm > 1000 N/mm ²	8b	●●●
Copper, brass, bronze Copper-based	Rm < 850 N/mm ²	9a	●●●
	Rm > 850 N/mm ²	9b	●●●
Aluminum Aluminum alloys	Si < 0.5%	10a	●●○
	0.5% < Si < 5%	10b	●●○
	Si > 5%	10c	●●○
Synthetic materials Engineering plastics	Thermoplastic	11a	○○○
	Thermoset	11b	○○○
Composite materials Reinforced composites	Glass fiber / GFK	12a	●●○
	Carbon fiber / KFK	12b	●●○
Precious metals Gold, platinum, silver	Gold	13a	●●●
	Platinum	13b	●●○

TECHNICAL DRAWING



DIMENSIONS

NOMINAL DIMENSIONS	
D (0 / -0.01)	4 mm
d (h5)	6 mm
L	57 mm
l1	5 mm
l3	12 mm
d3	-
R	-
e	-
Z	3
Chamfer K	-
w° collision	3.7°

