INFORMATION

PP-GFR Adapter Set M1

Dimensions DN10 – DN80 d110
For M1 Ball Valve PVC-U, PP-H and PVDF

chemical resistance

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The new PP-GFR Adapter Set M1 is characterized by both high chemical resistance and long life in acid applications.

INFO PP-GFR Adapter Set M1 DN10 – DN80 d110

Material

In order to ensure that the requirements for strength and chemical resistance are met even in applications with high chemical concentrations, the material selected was polypropylene with 50% glass fiber content.

The signal color red should serve as an optical differentiation to the standard product made of glass fiber reinforced polyamide.

Material properties PP-GFR

- high chemical restistance
- small decrease of mechanical strength in use
- minimum water absorption
- low wight

The fact that the choice of material is correct for the field of application „chemical resistance“ has been proven by an independent testing institute by means of tests for chemical resistance and mechanical strength.

Praher internal mechanical function tests confirmed the reliable combination of the PP-GFR adapter set with the M1 ball valve and possible automation.

Test

Chemical restistance

Universal test specimens as well as the coupling of the adapter set were stored in three different media at 40°C and the test specimens were then subjected to a mechanical test.

(1) 98% sulfuric acid (H_2SO_4) – strongly oxidizing

(2) 10% hydrofluoric acid (HF) – attacks the glass fiber (Fig. 1)

(3) 20% nitric acid (HNO_3) and 4 % hydrofluoric acid (HF)

INFO

No changes in the surface of the universal test specimens and coupling are visible to the eye after testing.

Fig. 1 10% HF at 40°C

Strength

Before the mechanical test, the test specimens were conditioned to 50% relative humidity in a climatic cabinet.

INFO

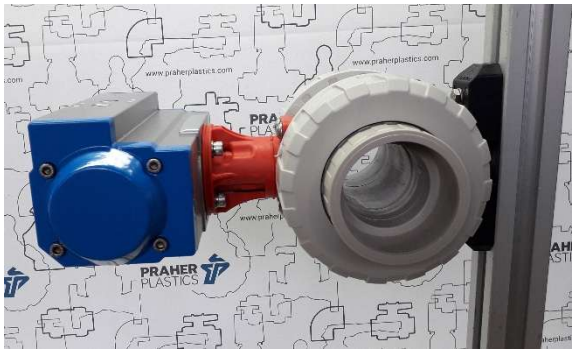
A slight decrease in the modulus of elasticity was observed, but without a significant effect on the overall strength.

Praher internal mechanical function tests

The case of a blocking ball during operation with a double-acting pneumatic actuator was simulated.

The tests on the product were divided into two test series and loaded for elongation. In each case, a determined minimum torque at 20°C and 60°C should not be undercut.

1) Connection shaft of M1 ball valve via PP-GFR coupling to pneumatic actuator
2) Connection PP-GFR bracket to double-acting pneumatic actuator



INFO

At the required control pressure for double-acting pneumatic actuators the minimum torque was not undercut.

Adapter set PP-GFR and PP-GFR M1		
Material	PP-GFR	PA-GFR
Product line	chemical resistance	high durability
Acid resistance Tensile modulus of elasticity Flexural modulus of elasticity Notch impact strength (23°C)	++ + + +	o ++ +++ +
Fields of application	Electorlysis Acid applications Chrome, copper, hydrofluoric acid	Water applications Ultrafiltration Semiconductor industry
Product range	Retrofit kit for M1 ball valve series	Standard oft the M1 ball valves series adapter set and autmatic
Recommended installation	Horizontal	Horizontal Vertical (support the actuator)
Recommended maintenance	Short maintenance intervals	Regular inspections
Recommended accessories	Silencer for pneumatic actuator	
M1 Ball Valve	PVC-U / PP-H / PVDF	
Dimensionens	DN10 – DN80 d110	
ISO 5211	F04 / F05 / F07	
Accessories	Half-shell set for position feedback • mechanical Ag-Ni • inductive PNP	

INFO

We recommend a maintenance service and careful visual inspection in regular maintenance intervals minimum once a year, whereas with highly aggressive media, strong vibrations and significant variations of temperature, the intervals should be shortened.

Praher Plastics Austria GmbH
Poneggenstraße 5 . 4311 Schwertberg . Austria
T +43 (0)7262 / 61178-2231 . F +43 (0)7262 / 61203

sales@praherplastics.com . www.praher-plastics.com