



Issuing Entity:
 Vekoma Rides Parts & Services B.V.
 Schaapweg 18
 6063 BA VLODRUP
 The Netherlands
 CoC Number: 12049585

Bulletin No.: SB-063_00
 Release Date: April 25, 2018
 Effective Date: immediately
 Supersedes: N.A.
 Completion Date: May 31, 2018

Service Bulletin

Original Ride Manufacturer: Table 1	Affected Production Dates: All
Ride Name: Several, see table 1	Affected Serial Nos: Table 1
Model No: Several, see table 1	

Abstract of issue:

This Service Bulletin describes the possible failure cause of a damaged Emergency Power Pack and the corresponding required actions to reduce possible risks as a consequence of this issue.

Reason for release:

Detection of a broken Emergency Power Pack.

Action to be taken:

Install pressure relief stopper in cover of electric box.

Date	Revision date	Comment
April 25, 2018	00	Initial version

* In the interests of safety and as a service to the industry, Vekoma Rides Parts & Services B.V. issues technical information bulletins for the benefit of owners of amusement rides that are manufactured by Vekoma Rides Manufacturing B.V. (both companies are members of the Vekoma Rides B.V. These bulletins may also contain technical information, on parts or modifications relating to amusement rides, manufactured by *Vekoma International B.V.* and / or *Vekoma Manufacturing B.V.* These are dissolved companies which have no legal relationship whatsoever with the Vekoma Rides B.V.

Vekoma Rides B.V. including its affiliated companies, agents and employees make no warranties and assume no responsibility for any misapplication or misinterpretation of the information provided, ride down time, consequential damages, loss, injuries, causes of action, claims, demands and expenses (including legal fees), of any kind or nature, arising directly or indirectly, in whole or in part, from or in relation to this technical information bulletin; nor for any amusement ride equipment built by any manufacturer(s) other than Vekoma Rides Manufacturing B.V.

All information relating to amusement rides, parts or modifications built or carried out by manufacturers other than Vekoma Rides Manufacturing B.V. and/or marked with an asterisk "*" are recommendations only and are not to be considered in any way to be advisory or mandatory, relied upon, nor imply any obligations or liabilities whatsoever.

Details of issue continued:

IB-nr.	Original Ride Manufacturer	Project number
28001	Vekoma International B.V. / Vekoma Manufacturing B.V.	93102
44507	Vekoma Rides Manufacturing B.V.	60386
39509	Vekoma Rides Manufacturing B.V.	60350
39510	Vekoma Rides Manufacturing B.V.	60428
38058	Vekoma Rides Manufacturing B.V.	60588
38059	Vekoma Rides Manufacturing B.V.	60612
38061	Vekoma Rides Manufacturing B.V.	60671
38062	Vekoma Rides Manufacturing B.V.	60724
38063	Vekoma Rides Manufacturing B.V.	60725
38064	Vekoma Rides Manufacturing B.V.	60726
38065	Vekoma Rides Manufacturing B.V.	60750
38066	Vekoma Rides Manufacturing B.V.	60746
38067	Vekoma Rides Manufacturing B.V.	60747
38068	Vekoma Rides Manufacturing B.V.	60759
38069	Vekoma Rides Manufacturing B.V.	60760
38070	Vekoma Rides Manufacturing B.V.	60761
38071	Vekoma Rides Manufacturing B.V.	60762
38072	Vekoma Rides Manufacturing B.V.	60763
38073	Vekoma Rides Manufacturing B.V.	60764
38074	Vekoma Rides Manufacturing B.V.	60765
38075	Vekoma Rides Manufacturing B.V.	60766
38076	Vekoma Rides Manufacturing B.V.	60767

* In the interests of safety and as a service to the industry, Vekoma Rides Parts & Services B.V. issues technical information bulletins for the benefit of owners of amusement rides that are manufactured by Vekoma Rides Manufacturing B.V. (both companies are members of the Vekoma Rides B.V. These bulletins may also contain technical information, on parts or modifications relating to amusement rides, manufactured by *Vekoma International B.V.* and / or *Vekoma Manufacturing B.V.* These are dissolved companies which have no legal relationship whatsoever with the Vekoma Rides B.V.

Vekoma Rides B.V. including its affiliated companies, agents and employees make no warranties and assume no responsibility for any misapplication or misinterpretation of the information provided, ride down time, consequential damages, loss, injuries, causes of action, claims, demands and expenses (including legal fees), of any kind or nature, arising directly or indirectly, in whole or in part, from or in relation to this technical information bulletin; nor for any amusement ride equipment built by any manufacturer(s) other than Vekoma Rides Manufacturing B.V.

All information relating to amusement rides, parts or modifications built or carried out by manufacturers other than Vekoma Rides Manufacturing B.V. and/or marked with an asterisk "*" are recommendations only and are not to be considered in any way to be advisory or mandatory, relied upon, nor imply any obligations or liabilities whatsoever.

38077	Vekoma Rides Manufacturing B.V.	60768
38078	Vekoma Rides Manufacturing B.V.	60769
38079	Vekoma Rides Manufacturing B.V.	60770
38080	Vekoma Rides Manufacturing B.V.	60774
38081	Vekoma Rides Manufacturing B.V.	60775
38082	Vekoma Rides Manufacturing B.V.	60776
38083	Vekoma Rides Manufacturing B.V.	60777
38084	Vekoma Rides Manufacturing B.V.	60778
38501	Vekoma International B.V. / Vekoma Manufacturing B.V.	94138
50001	Vekoma Rides Manufacturing B.V.	60195
50501	Vekoma Rides Manufacturing B.V.	60327
50502	Vekoma Rides Manufacturing B.V.	60356
50504	Vekoma Rides Manufacturing B.V.	60357
50505	Vekoma Rides Manufacturing B.V.	60584
50507	Vekoma Rides Manufacturing B.V.	60605
50508	Vekoma Rides Manufacturing B.V.	60610
50509	Vekoma Rides Manufacturing B.V.	60696
50510	Vekoma Rides Manufacturing B.V.	60697
50511	Vekoma Rides Manufacturing B.V.	60782
50512	Vekoma Rides Manufacturing B.V.	60780
50513	Vekoma Rides Manufacturing B.V.	60862
50514	Vekoma Rides Manufacturing B.V.	60881
10507	Vekoma International B.V. / Vekoma Manufacturing B.V. / Arrow	91030
10508	Arrow	P15SP0011
30501	Vekoma International B.V. / Vekoma Manufacturing B.V.	20142

* In the interests of safety and as a service to the industry, Vekoma Rides Parts & Services B.V. issues technical information bulletins for the benefit of owners of amusement rides that are manufactured by Vekoma Rides Manufacturing B.V. (both companies are members of the Vekoma Rides B.V. These bulletins may also contain technical information, on parts or modifications relating to amusement rides, manufactured by *Vekoma International B.V.* and / or *Vekoma Manufacturing B.V.* These are dissolved companies which have no legal relationship whatsoever with the Vekoma Rides B.V.

Vekoma Rides B.V. including its affiliated companies, agents and employees make no warranties and assume no responsibility for any misapplication or misinterpretation of the information provided, ride down time, consequential damages, loss, injuries, causes of action, claims, demands and expenses (including legal fees), of any kind or nature, arising directly or indirectly, in whole or in part, from or in relation to this technical information bulletin; nor for any amusement ride equipment built by any manufacturer(s) other than Vekoma Rides Manufacturing B.V.

All information relating to amusement rides, parts or modifications built or carried out by manufacturers other than Vekoma Rides Manufacturing B.V. and/or marked with an asterisk "*" are recommendations only and are not to be considered in any way to be advisory or mandatory, relied upon, nor imply any obligations or liabilities whatsoever.



Issuing Entity:
 Vekoma Rides Parts & Services B.V.
 Schaapweg 18
 6063 BA VLODROP
 The Netherlands
 CoC Number: 12049585

Bulletin No.: SB-063_00
 Release Date: April 25, 2018
 Effective Date: immediately
 Supersedes: N.A.
 Completion Date: May 31, 2018

30502	Vekoma International B.V. / Vekoma Manufacturing B.V.	20144
30503	Vekoma International B.V. / Vekoma Manufacturing B.V.	20143
30504	Vekoma Rides Manufacturing B.V.	91011
30505	Vekoma Rides Manufacturing B.V.	60329
30506	Vekoma Rides Manufacturing B.V.	60403
31501	Vekoma International B.V. / Vekoma Manufacturing B.V.	96590
31503	Vekoma International B.V. / Vekoma Manufacturing B.V.	97160
31504	Vekoma International B.V. / Vekoma Manufacturing B.V.	98158
32001	Vekoma International B.V. / Vekoma Manufacturing B.V.	92604
32002	Vekoma International B.V. / Vekoma Manufacturing B.V.	93144
32003	Vekoma International B.V. / Vekoma Manufacturing B.V.	93137
32004	Vekoma International B.V. / Vekoma Manufacturing B.V.	94103
32005	Vekoma International B.V. / Vekoma Manufacturing B.V.	94117
32007	Vekoma International B.V. / Vekoma Manufacturing B.V.	94119
32008	Vekoma International B.V. / Vekoma Manufacturing B.V.	94124
32009	Vekoma International B.V. / Vekoma Manufacturing B.V.	94133
32010	Vekoma International B.V. / Vekoma Manufacturing B.V.	94136
32011	Vekoma International B.V. / Vekoma Manufacturing B.V.	95107
32012	Vekoma International B.V. / Vekoma Manufacturing B.V.	96398
32013	Vekoma International B.V. / Vekoma Manufacturing B.V.	95164
32014	Vekoma International B.V. / Vekoma Manufacturing B.V.	95170
32015	Vekoma International B.V. / Vekoma Manufacturing B.V.	96350
32016	Vekoma International B.V. / Vekoma Manufacturing B.V.	96362
32017	Vekoma International B.V. / Vekoma Manufacturing B.V.	96344
32018	Vekoma International B.V. / Vekoma Manufacturing B.V.	96356

* In the interests of safety and as a service to the industry, Vekoma Rides Parts & Services B.V. issues technical information bulletins for the benefit of owners of amusement rides that are manufactured by Vekoma Rides Manufacturing B.V. (both companies are members of the Vekoma Rides B.V. These bulletins may also contain technical information, on parts or modifications relating to amusement rides, manufactured by *Vekoma International B.V.* and / or *Vekoma Manufacturing B.V.* These are dissolved companies which have no legal relationship whatsoever with the Vekoma Rides B.V.

Vekoma Rides B.V. including its affiliated companies, agents and employees make no warranties and assume no responsibility for any misapplication or misinterpretation of the information provided, ride down time, consequential damages, loss, injuries, causes of action, claims, demands and expenses (including legal fees), of any kind or nature, arising directly or indirectly, in whole or in part, from or in relation to this technical information bulletin; nor for any amusement ride equipment built by any manufacturer(s) other than Vekoma Rides Manufacturing B.V.

All information relating to amusement rides, parts or modifications built or carried out by manufacturers other than Vekoma Rides Manufacturing B.V. and/or marked with an asterisk "*" are recommendations only and are not to be considered in any way to be advisory or mandatory, relied upon, nor imply any obligations or liabilities whatsoever.

32019	Vekoma International B.V. / Vekoma Manufacturing B.V.	96289
32020	Vekoma International B.V. / Vekoma Manufacturing B.V.	97119
32021	Vekoma International B.V. / Vekoma Manufacturing B.V.	97103
32022	Vekoma International B.V. / Vekoma Manufacturing B.V.	97163
32023	Vekoma International B.V. / Vekoma Manufacturing B.V.	97330
32024	Vekoma International B.V. / Vekoma Manufacturing B.V.	97154
32025	Vekoma International B.V. / Vekoma Manufacturing B.V.	97197
32026	Vekoma International B.V. / Vekoma Manufacturing B.V.	97332
32027	Vekoma International B.V. / Vekoma Manufacturing B.V.	97331
32028	Vekoma International B.V. / Vekoma Manufacturing B.V.	97123
32029	Vekoma International B.V. / Vekoma Manufacturing B.V.	98130
32030	Vekoma International B.V. / Vekoma Manufacturing B.V.	99262
32031	Vekoma International B.V. / Vekoma Manufacturing B.V.	98182
32032	Vekoma International B.V. / Vekoma Manufacturing B.V.	99272
32033	Vekoma Rides Manufacturing B.V.	91000
32034	Vekoma Rides Manufacturing B.V.	91015/16
32035	Vekoma Rides Manufacturing B.V.	91084
32036	Vekoma Rides Manufacturing B.V.	91004
32037	Vekoma Rides Manufacturing B.V.	91013
32038	Vekoma Rides Manufacturing B.V.	60007
32039	Vekoma Rides Manufacturing B.V.	60032
32040	Vekoma Rides Manufacturing B.V.	60158
32041	Vekoma Rides Manufacturing B.V.	60468
32042	Vekoma Rides Manufacturing B.V.	60614
32043	Vekoma Rides Manufacturing B.V.	60698

* In the interests of safety and as a service to the industry, Vekoma Rides Parts & Services B.V. issues technical information bulletins for the benefit of owners of amusement rides that are manufactured by Vekoma Rides Manufacturing B.V. (both companies are members of the Vekoma Rides B.V. These bulletins may also contain technical information, on parts or modifications relating to amusement rides, manufactured by *Vekoma International B.V.* and / or *Vekoma Manufacturing B.V.* These are dissolved companies which have no legal relationship whatsoever with the Vekoma Rides B.V.

Vekoma Rides B.V. including its affiliated companies, agents and employees make no warranties and assume no responsibility for any misapplication or misinterpretation of the information provided, ride down time, consequential damages, loss, injuries, causes of action, claims, demands and expenses (including legal fees), of any kind or nature, arising directly or indirectly, in whole or in part, from or in relation to this technical information bulletin; nor for any amusement ride equipment built by any manufacturer(s) other than Vekoma Rides Manufacturing B.V.

All information relating to amusement rides, parts or modifications built or carried out by manufacturers other than Vekoma Rides Manufacturing B.V. and/or marked with an asterisk "*" are recommendations only and are not to be considered in any way to be advisory or mandatory, relied upon, nor imply any obligations or liabilities whatsoever.



Issuing Entity:
 Vekoma Rides Parts & Services B.V.
 Schaapweg 18
 6063 BA VLODROP
 The Netherlands
 CoC Number: 12049585

Bulletin No.: SB-063_00
 Release Date: April 25, 2018
 Effective Date: immediately
 Supersedes: N.A.
 Completion Date: May 31, 2018

32501	Vekoma Rides Manufacturing B.V.	91050
34001	Vekoma Rides Manufacturing B.V.	60189
34501	Vekoma International B.V. / Vekoma Manufacturing B.V.	86760
34502	Vekoma International B.V. / Vekoma Manufacturing B.V.	86700
36501	Vekoma International B.V. / Vekoma Manufacturing B.V.	20121
36502	Vekoma International B.V. / Vekoma Manufacturing B.V.	20160
36503	Vekoma International B.V. / Vekoma Manufacturing B.V.	91086
36504	Vekoma International B.V. / Vekoma Manufacturing B.V.	91091
36505	Vekoma International B.V. / Vekoma Manufacturing B.V.	91152
36506	Vekoma International B.V. / Vekoma Manufacturing B.V.	60001
36507	Vekoma Rides Manufacturing B.V.	60024
45501	Vekoma Rides Manufacturing B.V.	60160
52001	Vekoma Rides Manufacturing B.V.	60577
52501	Vekoma Rides Manufacturing B.V.	60615
52504	Vekoma Rides Manufacturing B.V.	60699

Table 1: Affected serial Nos.

* In the interests of safety and as a service to the industry, Vekoma Rides Parts & Services B.V. issues technical information bulletins for the benefit of owners of amusement rides that are manufactured by Vekoma Rides Manufacturing B.V. (both companies are members of the Vekoma Rides B.V. These bulletins may also contain technical information, on parts or modifications relating to amusement rides, manufactured by *Vekoma International B.V.* and / or *Vekoma Manufacturing B.V.* These are dissolved companies which have no legal relationship whatsoever with the Vekoma Rides B.V.

Vekoma Rides B.V. including its affiliated companies, agents and employees make no warranties and assume no responsibility for any misapplication or misinterpretation of the information provided, ride down time, consequential damages, loss, injuries, causes of action, claims, demands and expenses (including legal fees), of any kind or nature, arising directly or indirectly, in whole or in part, from or in relation to this technical information bulletin; nor for any amusement ride equipment built by any manufacturer(s) other than Vekoma Rides Manufacturing B.V.

All information relating to amusement rides, parts or modifications built or carried out by manufacturers other than Vekoma Rides Manufacturing B.V. and/or marked with an asterisk "*" are recommendations only and are not to be considered in any way to be advisory or mandatory, relied upon, nor imply any obligations or liabilities whatsoever.



Issuing Entity:
Vekoma Rides Parts & Services B.V.
Schaapweg 18
6063 BA VLODROP
The Netherlands
CoC Number: 12049585

Bulletin No.: SB-063_00
Release Date: April 25, 2018
Effective Date: immediately
Supersedes: N.A.
Completion Date: May 31, 2018

Contents

1.1	Introduction.....	8
1.2	Failure cause.....	8
1.3	Required actions.....	9

* In the interests of safety and as a service to the industry, Vekoma Rides Parts & Services B.V. issues technical information bulletins for the benefit of owners of amusement rides that are manufactured by Vekoma Rides Manufacturing B.V. (both companies are members of the Vekoma Rides B.V. These bulletins may also contain technical information, on parts or modifications relating to amusement rides, manufactured by *Vekoma International B.V.* and / or *Vekoma Manufacturing B.V.* These are dissolved companies which have no legal relationship whatsoever with the Vekoma Rides B.V.

Vekoma Rides B.V. including its affiliated companies, agents and employees make no warranties and assume no responsibility for any misapplication or misinterpretation of the information provided, ride down time, consequential damages, loss, injuries, causes of action, claims, demands and expenses (including legal fees), of any kind or nature, arising directly or indirectly, in whole or in part, from or in relation to this technical information bulletin; nor for any amusement ride equipment built by any manufacturer(s) other than Vekoma Rides Manufacturing B.V.

All information relating to amusement rides, parts or modifications built or carried out by manufacturers other than Vekoma Rides Manufacturing B.V. and/or marked with an asterisk "*" are recommendations only and are not to be considered in any way to be advisory or mandatory, relied upon, nor imply any obligations or liabilities whatsoever.



Issuing Entity:	Bulletin No.: SB-063_00
Vekoma Rides Parts & Services B.V.	Release Date: April 25, 2018
Schaapweg 18	Effective Date: immediately
6063 BA VLODRUP	Supersedes: N.A.
The Netherlands	Completion Date: May 31, 2018
CoC Number: 12049585	

Details of issue continued:

1.1 Introduction

An Emergency Power Pack is part of the Vekoma deliverables when passenger restraints are powered and controlled electrically by the ride control system.

This Emergency Power Pack can be used to open the restraints, in case of the train not stopping at the right position in the station to engage the current collectors or in case of power shut down of the 24Vdc power supply.

During operations at one of the rides an issue with this Emergency Power Pack was discovered, specifically being the detection of a broken electric box of the Emergency Power Pack.

The possible cause of this box failure has been investigated by Vekoma Rides Parts & Services BV (hereafter VRP&S) and is presented in Chapter 2.

To reduce possible risks regarding this issue, please follow the required actions according to Chapter 3.

1.2 Failure cause

Inside a Vekoma Emergency Power Pack, Valve Regulated Lead Acid Batteries (*so called VRLA's*) are used. During charging of this type of battery hydrogen gas is released.

The electric box Vekoma uses to mount the VRLA's into, is a sealed container. If the concentration of hydrogen gas inside this electric box is too high, it is considered to be a possible cause for damage to the electric box.

To prevent this too high concentration of hydrogen gas inside the electric box containing the VRLA's, VRP&S advices to install a pressure relief stopper in the cover of the electric box.

* In the interests of safety and as a service to the industry, Vekoma Rides Parts & Services B.V. issues technical information bulletins for the benefit of owners of amusement rides that are manufactured by Vekoma Rides Manufacturing B.V. (both companies are members of the Vekoma Rides B.V. These bulletins may also contain technical information, on parts or modifications relating to amusement rides, manufactured by *Vekoma International B.V.* and / or *Vekoma Manufacturing B.V.* These are dissolved companies which have no legal relationship whatsoever with the Vekoma Rides B.V.

Vekoma Rides B.V. including its affiliated companies, agents and employees make no warranties and assume no responsibility for any misapplication or misinterpretation of the information provided, ride down time, consequential damages, loss, injuries, causes of action, claims, demands and expenses (including legal fees), of any kind or nature, arising directly or indirectly, in whole or in part, from or in relation to this technical information bulletin; nor for any amusement ride equipment built by any manufacturer(s) other than Vekoma Rides Manufacturing B.V.

All information relating to amusement rides, parts or modifications built or carried out by manufacturers other than Vekoma Rides Manufacturing B.V. and/or marked with an asterisk "*" are recommendations only and are not to be considered in any way to be advisory or mandatory, relied upon, nor imply any obligations or liabilities whatsoever.

1.3 Required actions

Install a pressure relief stopper (see suggestions) in the cover of the electric box.

Please execute the following steps:

1. Remove the cover of the electric box.
2. Looking at the position the electric box is normally stored in your specific situation, drill a hole into the cover at the highest point, according to the technical specifications of the chosen pressure relief stopper.

Note: Do **NOT** drill a hole in the electric box cover if this cover is still mounted to the electric box!

3. Mount the pressure relief stopper in the electric box cover, and re-assemble the cover onto the box.

VRP&S suggestions of pressure relief stoppers (also see attachments to this Service Bulletin):



Rittal pressure relief stopper (2459500).pdf



Pflitsch pressure equalisation element.pdf

(see Pflitsch type K99.2, art.nr. DAE 212u/1,5mm at page 456)

* In the interests of safety and as a service to the industry, Vekoma Rides Parts & Services B.V. issues technical information bulletins for the benefit of owners of amusement rides that are manufactured by Vekoma Rides Manufacturing B.V. (both companies are members of the Vekoma Rides B.V. These bulletins may also contain technical information, on parts or modifications relating to amusement rides, manufactured by *Vekoma International B.V.* and / or *Vekoma Manufacturing B.V.* These are dissolved companies which have no legal relationship whatsoever with the Vekoma Rides B.V.

Vekoma Rides B.V. including its affiliated companies, agents and employees make no warranties and assume no responsibility for any misapplication or misinterpretation of the information provided, ride down time, consequential damages, loss, injuries, causes of action, claims, demands and expenses (including legal fees), of any kind or nature, arising directly or indirectly, in whole or in part, from or in relation to this technical information bulletin; nor for any amusement ride equipment built by any manufacturer(s) other than Vekoma Rides Manufacturing B.V.

All information relating to amusement rides, parts or modifications built or carried out by manufacturers other than Vekoma Rides Manufacturing B.V. and/or marked with an asterisk "*" are recommendations only and are not to be considered in any way to be advisory or mandatory, relied upon, nor imply any obligations or liabilities whatsoever.

Details of issue continued:

According to the ASTM F853/ F1193 latest revision:

Supplemental bulletins delivered by the manufacturer to the owner / operator that were not provided at the time of hand over of the amusement ride and contain new information or newly recommended inspections or testing, or both, will be released as a Safety Alert, Service Bulletin or an Notification, with the following criteria in order to carry the force and effect of this practice:

“Safety Alert” For notifications that recommend immediate action.

“Service Bulletin” For notifications that do not recommend immediate action but do recommend future action.

“Notification” For notifications that do not necessarily recommend future action but are promulgation of information.



For additional information contact Vekoma Rides Parts & Services B.V.:

P.O. Box 8006, 6060 AA Posterholt
Schaapweg 18, 6063 BA Vlodrop,
The Netherlands

Tel: +31 (0) 475-409222 (office hours)
Cellphone: +31 (0) 6-10917506 (outside office hours)
Fax: +31 (0) 475-403415

Email: service@vekoma.com

Copyright © 2018

* In the interests of safety and as a service to the industry, Vekoma Rides Parts & Services B.V. issues technical information bulletins for the benefit of owners of amusement rides that are manufactured by Vekoma Rides Manufacturing B.V. (both companies are members of the Vekoma Rides B.V. These bulletins may also contain technical information, on parts or modifications relating to amusement rides, manufactured by *Vekoma International B.V.* and / or *Vekoma Manufacturing B.V.* These are dissolved companies which have no legal relationship whatsoever with the Vekoma Rides B.V.

Vekoma Rides B.V. including its affiliated companies, agents and employees make no warranties and assume no responsibility for any misapplication or misinterpretation of the information provided, ride down time, consequential damages, loss, injuries, causes of action, claims, demands and expenses (including legal fees), of any kind or nature, arising directly or indirectly, in whole or in part, from or in relation to this technical information bulletin; nor for any amusement ride equipment built by any manufacturer(s) other than Vekoma Rides Manufacturing B.V.

All information relating to amusement rides, parts or modifications built or carried out by manufacturers other than Vekoma Rides Manufacturing B.V. and/or marked with an asterisk “*” are recommendations only and are not to be considered in any way to be advisory or mandatory, relied upon, nor imply any obligations or liabilities whatsoever.

Rittal – The System.

Faster – better – everywhere.

► Pressure relief stoppers – SZ 2459.500

Date : Apr 12, 2018

ENCLOSURES

POWER DISTRIBUTION

CLIMATE CONTROL

IT INFRASTRUCTURE

SOFTWARE & SERVICES

FRIEDHELM LOH GROUP



Pressure relief stoppers – SZ 2459.500

created: 12.04.2018 build on www.rittal.com/uk-en



Product description

Description: Especially when enclosures are exposed to changing climatic conditions (e.g. with outdoor siting), condensation may form in sealed enclosures due to pressure differences. The integral sealing membrane largely prevents such pressure differences and hence condensation; additionally, it also prevents the ingress of moisture from the outside. Installed in vertical surfaces to protect against dirt.

Material: Polyamide

Colour: Similar to RAL 9005

Technical specifications: Air permeability up to 120 litres/hour with a pressure difference of 70 mbar
Connection thread M12 x 1.5
For fitting in material thicknesses up to 4 mm

**Protection category
IP to IEC 60 529:** IP 66
IP 68

**Protection category
IP to DIN 40 050-9:** IP 69K

Supply includes: Lock nut

Product features

Packs of: 5 pc(s).

Weight/pack: 0.02 kg

EAN: 4028177516960

Customs tariff number:	39269097
ETIM 6.0:	EC002009
ETIM 5.0:	EC002620
eCl@ss 8.0/8.1:	27180715
eCl@ss 7.0/7.1:	27180715
eCl@ss 6.0/6.1:	27180715
eCl@ss 5.1/5.1.4:	27182092
Product description (long):	SZ Pressure relief stoppers
Approvals	
Certificates:	EAC

13

Zubehör *Accessories*



Druckausgleichselemente DAE

Pressure equalisation elements DAE



Abb. 1
Fig. 1



Abb. 2
Fig. 2

Polyamid 6 (schwarz), Edelstahl
Schutzart IP 65 und IP 65K
Temperaturbereich: -30 °C bis +100 °C

Polyamide 6 (black), stainless steel
Type of protection IP 65 and IP 65K
Temperature range: -30 °C up to +100 °C

Eigenschaften der Membranfolie

Luftdurchsatz PA: 0,8 l/min bei 0,1 bar nP
bis 7,6 l/min bei 1 bar nP
Luftdurchsatz VA: 0,4 l/min bei 0,1 bar nP
bis 5,0 l/min bei 1 bar nP
Wassereintrittspunkt: > 1,5 bar

IP-Schutzart IP 66, IP 67 und IP 69K:

- Staubdichtheit nach EN 60529
- Strahlwasserschutz und Schutz gegen dauerndes Untertauchen EN 60529
- Schutz gegen Hochdruck/Dampfstrahlreinigung nach IEC 60529

Properties of the membrane foil

Airflow rate PA: 0,8 l/min at 0,1 bar nP
up to 7,6 l/min at 1 bar nP
Airflow rate VA: 0,4 l/min at 0,1 bar nP
up to 5,0 l/min at 1 bar nP
Water ingress point: > 1,5 bar

Type of protection IP 66, IP 67 and IP 69K:

- Dust proofness as per EN 60529
- Jet water protection and protection against continuing submerging EN 60529
- Protection against high pressure/steam jet cleaning as per IEC 60529

Temperaturschwankungen im Inneren von Gehäusen führen zur Kondenswasserbildung und somit auch zu möglichen Beschädigungen von Bauteilen.

Druckausgleichselemente (DAE) passen den Innendruck geschlossener, elektronischer und elektrotechnischer Bauteile an den Umgebungsdruck an und verhindern gleichzeitig den Eintritt von Wasser.

Variations in temperature inside housings lead to condensation water forming and thus also to components possibly being damaged.

Pressure equalisation elements (DAE) adjust the internal pressure of closed, electronic and electrotechnical components to the ambient pressure and at the same time prevent water from entering.

Beständigkeit gegen Chemikalien und Lösemittel

Resistance to chemicals and solvents

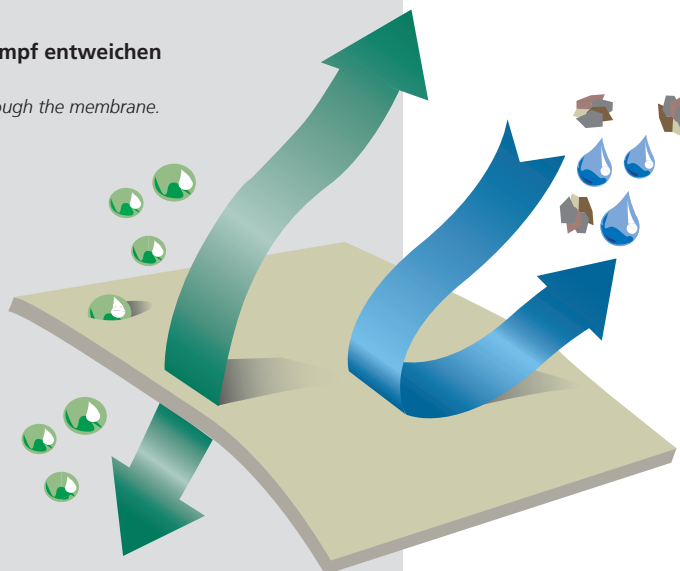
Testflüssigkeit Test liquid	Dauer der Belastung (23 °C) Load duration (23 °C)	Veränderung Change
Superbenzin/Premium gasoline	15 min.	keine/none
Dieseldieselkraftstoff/Diesel fuel	30 min.	keine/none
Motorenöl/Motor oil	60 min.	keine/none
Wasser (dest.)/Water (dest.)	60 min.	keine/none
Bremsschmierflüssigkeit/Brake fluid	60 min.	keine/none
Innenreiniger/Indoor cleaner	60 min.	keine/none

Eigenschaften einer Membran:

Properties of a membrane:

Gasmoleküle und Wasserdampf entweichen durch die Membran.

Gas molecules and steam pass through the membrane.



Flüssigkeiten und Partikel werden abgewiesen.

Liquids and particles are repelled.

K99.3. DAE Druckausgleichseinsatz

K99.3. DAE Pressure equalisation plug insert

RoHS



Polyamid 6 (schwarz), Edelstahl
Schutzart IP 65 und IP 65K
Temperaturbereich: -30 °C bis +100 °C

Polyamide 6 (black), stainless steel
Type of protection IP 65 and IP 65K
Temperature range: -30 °C up to +100 °C

Abb. 1
Fig. 1

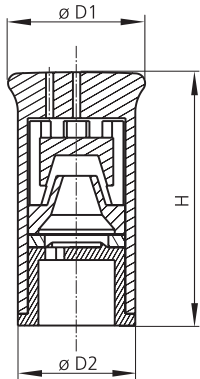


Abb. 2
Fig. 2

Durchmesser Diameter		Art.-Nr. Art. no.	H	
D1 mm	D2 mm		mm	
14	12,0	DAE-E12	25	50

18250 TTT01250

Prüfung des Luftdurchlasses – Druckausgleichseinsatz

Test of air permeability – Pressure equalisation plug insert

Luftdurchlass bei variablem Luftdruck im Gehäuse

Air permeability with variable air pressure in the housing

0,1 bar l/min	0,2 bar l/min	0,3 bar l/min	0,4 bar l/min	0,5 bar l/min	0,6 bar l/min	0,7 bar l/min	0,8 bar l/min	0,9 bar l/min	1,0 bar l/min
1,2	2,5	4,0	6,4	8,3	9,4 - 10,2	12,5 - 12,6	15,3 - 15,4	18,5 - 18,9	21,9 - 22,1

K99.2. Druckausgleichselement – Edelstahl

K99.2. Pressure equalisation element – Stainless steel

RoHS



Edelstahl 1.4305
Metrisches Anschlussgewinde EN 60423 und Pg-Anschlussgewinde
Schutzart IP 66, IP 68 und IP 69K, Temperaturbereich: -40 °C bis +105 °C
Membran aus Acryl-CoPolymer, Flachdichtung aus Perbunan

Stainless steel AISI 303
Metric connection thread EN 60423 and Pg connection thread
Type of protection IP 66, IP 68 and IP 69K, temperature range: -40 °C up to +105 °C
Membrane made of Acryl-CoPolymer, flat sealing made of Perbunan

Abb. 1
Fig. 1

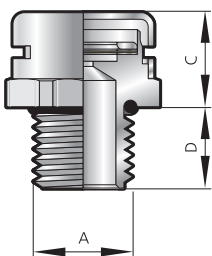


Abb. 2
Fig. 2

Normgröße Nom. size	D	Art.-Nr. Art. no.	Bauhöhe Mounting height	Schlüsselweite Spanner width	
A	mm		C mm	SW x E mm	
M12x1,5	10,0	DAE 212st/1,5mm	11,1	17x19	50
Pg 7	10,0	DAE 149st	10,1	17x19	50

18400 TTT01400

Prüfung des Luftdurchlasses – Druckausgleichselement aus PA und Edelstahl

Test of air permeability – Pressure equalisation element made of PA and stainless steel

Luftdurchlass bei variablem Luftdruck im Gehäuse

Air permeability with variable air pressure in the housing

Werkstoff Material	0,1 bar l/min	0,2 bar l/min	0,3 bar l/min	0,4 bar l/min	0,5 bar l/min	0,6 bar l/min	0,7 bar l/min	0,8 bar l/min	0,9 bar l/min	1,0 bar l/min
PA	0,8	1,5	2,2	2,9	3,7	4,4	5,2	6,0	6,8	7,6
Edelstahl/Stainless steel	0,4	0,8	1,2	1,7	2,2	2,7	3,3	3,8	4,4	5,0

K99.1. Druckausgleichselement – Polyamid

RoHS

K99.1. Pressure equalisation element – Polyamide



Polyamid 6
Metrisches Anschlussgewinde EN 60423
Schutzart IP 66, IP 68 und IP 69K
Membran aus Acryl-CoPolymer, Flachdichtung O-Ring aus Perbunan

Polyamide 6
Metric connection thread EN 60423
Type of protection IP 66, IP 68 and IP 69K
Membrane made of Acryl-CoPolymer, o-ring made of Perbunan

Abb. 1
Fig. 1

Werkstoff Verschraubungskörper Material gland body	Ausführung/Farbe Version/colour	Bestellschlüssel Art. no. supplement	Temperaturbereich min./max. Temperature range min./max.
PA 6-3	grau grey		-40 °C / +105 °C
PA 6-3	schwarz black	n	-40 °C / +105 °C

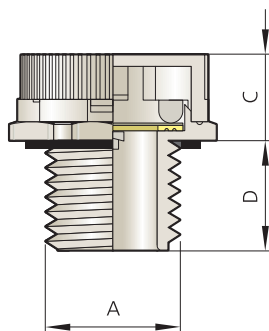


Abb. 2
Fig. 2

Anschlussgewinde/ -länge Connection thread/length		Art.-Nr. Art. no.	Ausführung bitte ergänzen Indicate product details	Bauhöhe Mounting height	Schlüsselweite Spanner width
A	D mm	grau/grey schwarz/black	= = n	C mm	SW x E mm
M12x1,0	6,6	DAE 212u	/1mm	7,0	17x18,3
M12x1,5	6,6	DAE 212u	/1,5mm	7,0	17x18,3
M12x1,5	10,0	DAE 812u	/1,5mm	7,5	17x18,3

UL-Prüfung des Luftdurchlasses – Druckausgleichselement aus PA und Edelstahl

UL test of air permeability – Pressure equalisation element made of PA and stainless steel

Luftdurchlass bei variablem Luftdruck im Gehäuse

Air permeability with variable air pressure in the housing

Werkstoff Material	0,05 bar l/min	0,1 bar l/min	0,2 bar l/min	0,3 bar l/min
PA	1,6	3,5	7,9	14,0
Edelstahl/Stainless steel	1,2	2,4	5,1	9,8

UL-Druckausgleichselement – Edelstahl

UL-Pressure equalisation element – Stainless steel

RoHS



Edelstahl 1.4305
Metrisches Anschlussgewinde EN 60423
Schutzart IP 66, IP 67 und IP 69K, Temperaturbereich: -40 °C bis +105 °C
Membrane aus Acryl-CoPolymer, Flachdichtung O-Ring aus Perbunan

Stainless steel AISI 303
Metric connection thread EN 60423
Type of protection IP 66, IP 67 and IP 69K, temperature range: -40 °C up to +105 °C
Membrane made of Acryl-CoPolymer, o-ring made of Perbunan

Abb. 1
Fig. 1

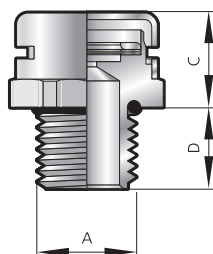


Abb. 2
Fig. 2

Normgröße Nom. size	D mm	Art.-Nr. Art. no.	Bauhöhe Mounting height C mm	Schlüsselweite Spanner width SW x E mm
M12x1,5	10,0	DAE 212st/1,5mm-UL	11,0	17x19

Prüfung des Luftdurchlasses – Druckausgleichselement aus PA und Edelstahl

Test of air permeability – Pressure equalisation element made of PA and stainless steel

Luftdurchlass bei variablem Luftdruck im Gehäuse

Air permeability with variable air pressure in the housing

Werkstoff Material	0,1 bar l/min	0,2 bar l/min	0,3 bar l/min	0,4 bar l/min	0,5 bar l/min	0,6 bar l/min	0,7 bar l/min	0,8 bar l/min	0,9 bar l/min	1,0 bar l/min
PA	0,8	1,5	2,2	2,9	3,7	4,4	5,2	6,0	6,8	7,6
Edelstahl/Stainless steel	0,4	0,8	1,2	1,7	2,2	2,7	3,3	3,8	4,4	5,0

UL-Druckausgleichselement – Polyamid

UL-Pressure equalisation element – Polyamide

RoHS



Polyamid
Metrisches Anschlussgewinde EN 60423
Schutzart IP 66, IP 67 und IP 69K

Polyamide
Metric connection thread EN 60423
Type of protection IP 66, IP 67 and IP 69K

Abb. 1
Fig. 1

Werkstoff Verschraubungskörper Material gland body	Ausführung/Farbe Version/colour	Bestellschlüssel Art. no. supplement	Temperaturbereich min./max. Temperature range min./max.
PA 6-3	grau grey		-40 °C / +105 °C
PA 6-3	schwarz black	n	-40 °C / +105 °C

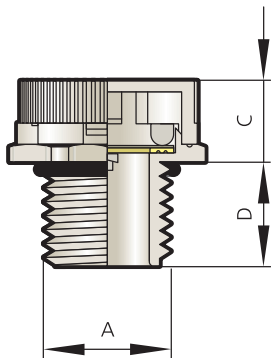


Abb. 2
Fig. 2

Anschlussgewinde/ -länge Connection thread/length		Art.-Nr. Art. no.	Ausführung bitte ergänzen Indicate product details		Bauhöhe Mounting height	Schlüsselweite Spanner width
A	D mm	grau/grey schwarz/black	= =	n	C mm	SW x E mm
M12x1,5	6,0	DAE 212u	/	/1,5mm-UL	7,0	17x18,3
M12x1,5	10,0	DAE 812u	/	/1,5mm-UL	7,5	17x18,3

18860 | TTD1320

UL-Prüfung des Luftdurchlasses – Druckausgleichselement aus PA und Edelstahl

UL test of air permeability – Pressure equalisation element made of PA and stainless steel

Luftdurchlass bei variablem Luftdruck im Gehäuse
 Air permeability with variable air pressure in the housing

Werkstoff Material	0,05 bar l/min	0,1 bar l/min	0,2 bar l/min	0,3 bar l/min
PA	1,6	3,5	7,9	14,0
Edelstahl/Stainless steel	1,2	2,4	5,1	9,8

Entwässerungstutzen

Drain connection

RoHS



Abb. 1
Fig. 1

Abb. 2
Fig. 2

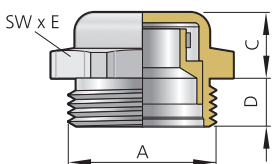


Abb. 3
Fig. 3

Wasserdurchflussmenge: > 0,4 Liter/Minute
 Water flow rate: > 0.4 litres/minute

Nenngröße Nom. size	Art.-Nr. Art. no.	Bauhöhe Mounting height	Schlüsselweite Spanner width
A	D mm	C mm	SW x E mm
M20x1,5	6,5	EL 220d	8,7
			22x24,4

46000 | TTD1400

K18. Gegenmutter – Metrisches Gewinde – Messing

K18. Lock nut – Metric thread – Brass

RoHS



Messing vernickelt
Metrisches Gewinde EN 60423

Brass, nickel plated
Metric thread EN 60423

Abb. 1
Fig. 1

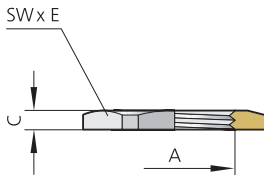


Abb. 2
Fig. 2

Anschlussgewinde Connection thread A	Art.-Nr. Art. no.	Bauhöhe Mounting height C mm	Schlüsselweite Spanner width SW x E mm	
M8x1,0	208/5	2,5	11x12,2	50
M10x1,0	210/5	2,8	14x15,5	50
M12x1,5	212/5	2,8	15x16,6	50
M16x1,5	216/5	2,8	19x21	50
M20x1,5	220/5	3,0	24x26,7	50
M25x1,5	225/5	3,5	30x33,5	50
M32x1,5	232/5	4,0	36x39	50
M40x1,5	240/5	5,0	46x50	25
M50x1,5	250/5	5,0	55x60	10
M63x1,5	263/5	6,0	70x78	10
M72x2,0	GMM 72	8,0	81x87	10
M75x1,5	GMM 75	8,0	81x87	10
M80x2,0	GMM 80	8,0	95x102	10
M85x2,0	GMM 85	8,0	95x102	5
M90x2,0	GMM 90	8,0	120x128	5
M100x2,0	GMM 100	8,0	120x128	5
M120x2,0	GMM 120	8,0	145x155	1

19200 | IT01600

K18. Gegenmutter mit Schaft – Metrisches Gewinde – Messing

K18. Lock nut with shaft – Metric thread – Brass

RoHS



Messing vernickelt
Metrisches Gewinde EN 60423

Brass, nickel plated
Metric thread EN 60423

Abb. 1
Fig. 1

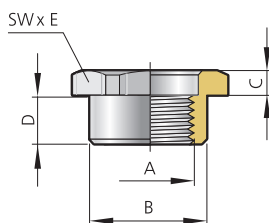


Abb. 2
Fig. 2

Anschlussgewinde Connection thread A	Art.-Nr. Art. no.	Außendurchmesser B Außendurchmesser B B mm	Bauhöhe Mounting height C mm	D mm	Schlüsselweite Spanner width SW x E mm	
M20x1,5	GMS 220/15	26	5,0	10,0	30x33,5	50
M25x1,5	GMS 225/15	33	5,0	10,0	35x38,5	50
M32x1,5	GMS 232/15	41	5,0	10,0	43x47,3	50
M40x1,5	GMS 240/15	46	5,0	10,0	50x54	50

22200 | IT02200

K18. Gegenmutter – Pg-Gewinde – Messing

K18. Lock nut – Pg thread – Brass

RoHS



**Messing vernickelt
Pg-Gewinde**
Brass, nickel plated
Pg thread

Abb. 1
Fig. 1

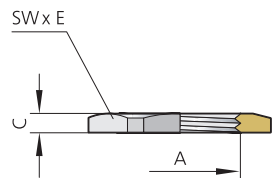


Abb. 2
Fig. 2

Anschlussgewinde Connection thread A	Art.-Nr. Art. no.	Bauhöhe Mounting height C mm	Schlüsselweite Spanner width SW x E mm	
Pg 7	749/5	2,8	15x16,6	50
Pg 9	750/5	2,8	18x20	50
Pg 11	751/5	3,0	21x23,5	50
Pg 13,5	752/5	3,0	23x25,5	50
Pg 16	753/5	3,0	26x29	50
Pg 21	754/5	3,5	32x35,5	50
Pg 29	755/5	4,0	41x45	50
Pg 36	756/5	5,0	51x56	25
Pg 42	757/5	5,0	60x65	10
Pg 48	758/5	5,5	64x69	10

19400 | TTD1600

K18. DIN Gegenmutter – Zoll-Gewinde – Messing

K18. DIN Lock nut – Inch thread – Brass

RoHS



**Messing vernickelt
Zoll-Gewinde DIN ISO 228**
Brass, nickel plated
Inch thread DIN ISO 228

Abb. 1
Fig. 1

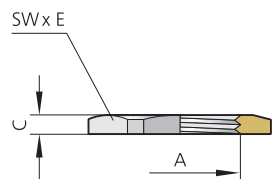


Abb. 2
Fig. 2

Anschlussgewinde Connection thread A	Art.-Nr. Art. no.	Bauhöhe Mounting height C mm	Schlüsselweite Spanner width SW x E mm	
G1/4"	7014/5	3,0	19x21	50
G3/8"	7038/5	3,0	19x21	50
G1/2"	7012/5	3,0	24x26	50
G5/8"	7058/5	3,0	26x28,9	50
G3/4"	7034/5	3,5	30x33,5	50
G1"	7100/5	3,5	38x41,5	50
G1 1/4"	7114/5	5,0	46x50	50
G1 1/2"	7112/5	5,0	51x56	25
G2"	7200/5	5,5	64x69	25
G2 1/2"	7212/5	7,0	80x87	10
G3"	7300/5	8,0	100x106,9	5

19500 | TTD1600

U40.5.1. Gegenmutter für Potentialausgleich – Metrisches Gewinde – Messing

RoHS

U40.5.1. Lock nut for equipotential bonding – Metric thread – Brass



Messing vernickelt
Metrisches Gewinde EN 60423

Brass, nickel plated
Metric thread EN 60423

Abb. 1
Fig. 1

Beschreibung: Gegenmuttern für den Potentialausgleich und für EMV-Anwendungen *Description: Lock nuts for equipotential bonding and for EMC applications*

Lackierte oder pulverbeschichtete Metall-Gehäuse lassen sich nicht ohne Vorbehandlung der Anschlussstellen in den Potentialausgleich einbeziehen. Bei der Verwendung von Gegenmutter muss die Kontaktfläche blank gemacht werden.

Painted or powder-coated metal housings cannot be included in equipotential bonding without the connection points being pretreated. If lock nuts are used, the contact surface must be polished.

Diese zusätzliche Arbeit entfällt mit der Verwendung der Gegenmutter U40.5.1. Die Zähne der Gegenmutter durchreiben beim Anziehen die Isolierschichten von Nass- oder Pulverlackierungen und schaffen einen leitenden Kontakt. Der Übergangswiderstand zwischen Kabelverschraubung und Gehäuse muss niederohmig sichergestellt sein. Die Gegenmutter U40.5.1 eignen sich besonders gut für die Befestigung von EMV-Kabelverschraubungen in Durchgangslöchern von Gehäusen.

This additional work is no longer necessary if lock nuts with teeth are used (U40.5.1). When fastened, the teeth of the lock nut fray the insulating layers of paint or powder coatings, creating a conductive contact. The contact resistance between the cable gland and housing must be of very low-impedance. Lock nuts U40.5.1 are particularly suitable for attaching EMC cable glands in the through holes of housings.

Bei der Leitungseinführung in Gehäuse mit Durchgangslöchern sollte im Rahmen von EMV-Maßnahmen immer eine Gegenmutter mit Zähnen verwendet werden. Die Gegenmutter ist auch für eine vibrationsfeste Befestigung von Kabelverschraubungen geeignet.

In the case of the cable leadthrough in housings with through holes, a counter nut with teeth should always be used in the context of EMC measures. This lock nut is also suitable for vibration-resistant fixing of cable glands.

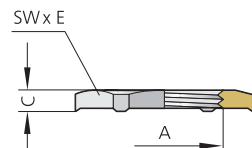


Abb. 2
Fig. 2

Anschlussgewinde Connection thread A	Art.-Nr. Art. no.	Bauhöhe Mounting height C mm	Schlüsselweite Spanner width SW x E mm	
M10x1,0	GMM 210/7 PA	3,3	15x16,6	50
M12x1,5	GMM 212/7 PA	3,3	17x18,9	50
M16x1,5	GMM 216/7 PA	3,5	22x24,4	50
M20x1,5	GMM 220/7 PA	3,7	24x26,7	50
M25x1,5	GMM 225/7 PA	4,5	30x33,5	50
M32x1,5	GMM 232/7 PA	5,0	40x43,5	50
M40x1,5	GMM 240/7 PA	6,0	50x54	50
M50x1,5	GMM 250/7 PA	6,2	60x65	25
M63x1,5	GMM 263/7 PA	6,7	68x74	10
M75x1,5	GMM 275 PA	8,0	81x87	10
M80x2,0	GMM 280 PA	8,0	95x102	10
M85x2,0	GMM 285 PA	8,0	95x102	10
M90x2,0	GMM 290 PA	8,0	128x139	10

19600 | ITT1600

U40.5.1. Gegenmutter für Potentialausgleich – Marine-Gewinde – Messing

RoHS

U40.5.1. Lock nut for equipotential bonding – Marine thread – Brass



Messing vernickelt
Metrisches Gewinde DIN 89280

Brass, nickel plated
Metric thread DIN 89280

Abb. 1
Fig. 1

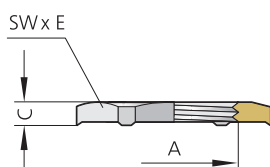


Abb. 2
Fig. 2

Anschlussgewinde Connection thread A	Art.-Nr. Art. no.	Bauhöhe Mounting height C mm	Schlüsselweite Spanner width SW x E mm	
M18x1,5	GMM 218 PA	6,0	22x24,4	50
M24x1,5	GMM 224 PA	7,0	30x33,5	50
M30x2,0	GMM 230 PA	7,0	35x38,5	50
M36x2,0	GMM 236 PA	7,0	40x43,5	50
M45x2,0	GMM 245 PA	7,0	50x54	25
M56x2,0	GMM 256 PA	8,0	60x65	25
M72x2,0	GMM 272 PA	8,0	81x87	10

19700 | ITT1600

U40.5.1. Gegenmutter für Potentialausgleich – Pg- und Zoll-Gewinde – Messing

RoHS

U40.5.1 Lock nut for equipotential bonding – Pg and inch thread – Brass



Messing vernickelt
Pg-Gewinde und Zoll-Gewinde DIN ISO 228
Brass, nickel plated
Pg thread and inch thread DIN ISO 228

Abb. 1
Fig. 1

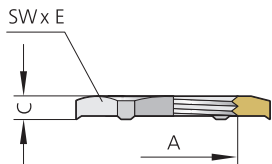


Abb. 2
Fig. 2

Anschlussgewinde Connection thread A	Art.-Nr. Art. no.	Bauhöhe Mounting height C mm	Schlüsselweite Spanner width SW x E mm	
Pg 7	GM 49/7 PA	3,3	15x16,6	50
Pg 9	GM 50/7 PA	3,3	18x19,5	50
Pg 11	GM 51/7 PA	3,5	22x24,4	50
Pg 13,5	GM 52/7 PA	3,7	24x26,7	50
Pg 16	GM 53/7 PA	3,7	26x28,8	50
Pg 21	GM 54/7 PA	4,5	32x35,5	50
Pg 29	GM 55/7 PA	5,0	40x43,5	50
Pg 36	GM 56/7 PA	6,0	50x54	25
Pg 42	GM 57/7 PA	6,2	60x65	10
Pg 48	GM 58/7 PA	6,7	64x69	10
G2 1/2"	GM 1212 PA	9,0	81x87	10

19860 | TTD1600

K18. Gegenmutter – Metrisches Gewinde – Edelstahl

RoHS

K18. Lock nut – Metric thread – Stainless steel



Edelstahl 1.4305 blank
Metrisches Gewinde EN 60423
Stainless steel AISI 303 untreated
Metric thread EN 60423

Abb. 1
Fig. 1

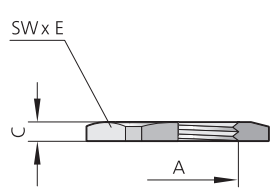


Abb. 2
Fig. 2

Anschlussgewinde Connection thread A	Art.-Nr. Art. no.	Bauhöhe Mounting height C mm	Schlüsselweite Spanner width SW x E mm	
M10x1,0	210/5stv	2,8	14x15,5	50
M12x1,5	212/5stv	2,8	17x18,9	50
M16x1,5	216/5stv	3,0	19x21	50
M20x1,5	220/5stv	3,0	24x26,6	50
M25x1,5	225/5stv	4,0	27x29,5	50
M32x1,5	232/5stv	5,0	36x39	50
M40x1,5	240/5stv	5,0	46x50	50
M50x1,5	250/5stv	5,0	55x60	25
M63x1,5	263/5stv	5,5	68x72	10

19900 | TTD1600

K18. Gegenmutter – Pg-Gewinde – Edelstahl

RoHS

K18. Lock nut – Pg thread – Stainless steel



Edelstahl 1.4305 blank
Pg-Gewinde
 Stainless steel AISI 303 untreated
 Pg thread

Abb. 1
Fig. 1

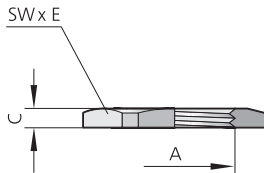


Abb. 2
Fig. 2

Anschlussgewinde Connection thread A	Art.-Nr. Art. no.	Bauhöhe Mounting height C mm	Schlüsselweite Spanner width SW x E mm	
Pg 7	749/5stv	2,8	17x19	50
Pg 9	750/5stv	2,8	22x24,4	50
Pg 11	751/5stv	3,0	22x24,4	50
Pg 13,5	752/5stv	3,0	24x26,7	50
Pg 16	753/5stv	3,0	27x29,5	50
Pg 21	754/5stv	3,5	32x35,5	50
Pg 29	755/5stv	4,0	41x45	50
Pg 36	756/5stv	5,0	50x54	50
Pg 42	757/5stv	5,0	60x65	10
Pg 48	758/5stv	5,5	64x69	10

20100 | IT01600

K19. Gegenmutter – Metrisches Gewinde – Polyamid

RoHS

K19. Lock nut – Metric thread – Polyamide



Polyamid, Farbe: RAL 7035 (hellgrau)
Metrisches Gewinde EN 60423
Temperaturbereich: -40 °C bis +100 °C
 Polyamide, colour: RAL 7035 (light grey)
 Metric thread EN 60423
 Temperature range: -40 °C up to +100 °C

Abb. 1
Fig. 1

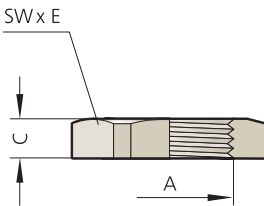


Abb. 2
Fig. 2

i Ausführung in Schwarz auf Anfrage
 Black version on request

Anschlussgewinde Connection thread A	Art.-Nr. Art. no.	Bauhöhe Mounting height C mm	Schlüsselweite Spanner width SW x E mm	
M12x1,5	1420/212	5,0	17x19	50
M16x1,5	1420/216	5,0	22x25	50
M20x1,5	1420/220	6,0	26x29	50
M25x1,5	1420/225	6,0	32x36	50
M32x1,5	1420/232	7,0	41x46	50
M40x1,5	1420/240	7,0	50x54	25
M50x1,5	1420/250	8,0	60x67	10
M63x1,5	1420/263	8,0	75x82	5

20100 | IT01600

K19. Gegenmutter – Pg-Gewinde – Polyamid

RoHS

K19. Lock nut – Pg thread – Polyamide



Polyamid-GFK, Farbe: RAL 7035 (hellgrau)
Pg-Gewinde
Temperaturbereich: -40 °C bis +100 °C

Polyamide-GFK, colour: RAL 7035 (light grey)
Pg thread
Temperature range: -40 °C up to +100 °C

Abb. 1
Fig. 1

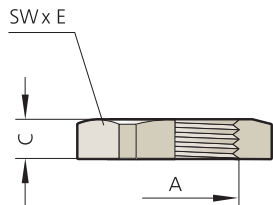


Abb. 2
Fig. 2

Anschlussgewinde Connection thread A	Art.-Nr. Art. no.	Bauhöhe Mounting height C mm	Schlüsselweite Spanner width SW x E mm	
Pg 7	1420/ 7	5,0	19x21	50
Pg 9	1420/ 9	5,0	22x24,3	50
Pg 11	1420/11	5,0	24x26	50
Pg 13,5	1420/13	6,0	27x29	50
Pg 16	1420/16	6,0	30x33	50
Pg 21	1420/21	7,0	36x39	50
Pg 29	1420/29	7,0	46x50	50
Pg 36	1420/36	8,0	60x66,5	25
Pg 42	1420/42	8,0	65x72,5	10
Pg 48	1420/48	8,0	70x78	10

202001 TTD1600

K11. Erweiterung Sechskant – M- auf M-Gewinde – Messing

RoHS

K11. Extension hexagonal – M to M thread – Brass



Messing vernickelt
Metrisches Anschlussgewinde auf metrisches Innengewinde EN 60423
Schutzart IP 68 bis 10 bar, mit O-Ring NBR
Temperaturbereich: -30 °C bis +100 °C

Brass, nickel plated
Metric connection thread and metric inner thread EN 60423
Type of protection IP 68 up to 10 bar, with o-ring NBR
Temperature range: -30 °C up to +100 °C

Abb. 1
Fig. 1

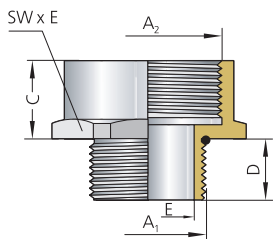


Abb. 2
Fig. 2

Anschlussgewinde/ -länge Connection thread/length A₁	D mm	Innengewinde Inner thread A₂	Art.-Nr. Art. no.	Bauhöhe Mounting height C mm	Innendurchmesser Inner diameter E mm	Schlüsselweite Spanner width SW x E mm	
M12x1,5	5,0	M16x1,5	8212216	10,0	9,0	18x20	50
M16x1,5	5,0	M20x1,5	8216220	10,5	12,5	22x24,4	50
M20x1,5	6,0	M25x1,5	8220225	11,5	16,0	28x31,2	50
M25x1,5	7,0	M32x1,5	8225232	12,5	20,0	35x38,5	50
M32x1,5	8,0	M40x1,5	8232240	14,5	28,0	43x47,3	25
M40x1,5	8,0	M50x1,5	8240250	19,5	36,0	54x58	25
M50x1,5	9,0	M63x1,5	8250263	22,0	44,0	68x74	10
M63x1,5	10,0	M72x2,0	8263272	22,0	55,0	81x87	5
		M75x1,5	8263275	22,0	55,0	81x87	5
		M80x2,0	8263280	26,0	55,0	90x96,5	5
M72x2,0	16,0	M75x1,5	8272275	30,0	64,0	81x87	5
M75x1,5	15,0	M80x2,0	8275280	26,0	69,0	90x96,5	5
M80x2,0	15,0	M85x2,0	8280285	32,0	73,0	95x102	5

301001 TTD5000

K11. Erweiterung Sechskant – M- auf Pg-Gewinde – Messing

RoHS

K11. Extension hexagonal – M to Pg thread – Brass



Messing vernickelt
Metrisches Anschlussgewinde EN 60423 und Pg-Innengewinde
Schutzart IP 68 bis 10 bar, mit O-Ring NBR
Temperaturbereich: -30 °C bis +100 °C

Brass, nickel plated
Metric connection thread EN 60423 and Pg inner thread
Type of protection IP 68 up to 10 bar, with o-ring NBR
Temperature range: -30 °C up to +100 °C

Abb. 1
Fig. 1

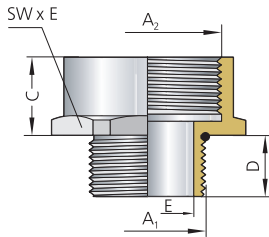


Abb. 2
Fig. 2

Anschlussgewinde/ -länge		Innengewinde	Art.-Nr.	Bauhöhe	Innendurchmesser	Schlüsselweite	
Connection thread/length		Inner thread	Art. no.	Mounting height	Inner diameter	Spanner width	
A ₁	D	A ₂		C	E	SW x E	
	mm			mm	mm	mm	
M12x1,5	5,0	Pg 9	821209	11,0	8,0	17x18,9	50
M16x1,5	5,0	Pg 11	821611	11,5	12,0	20x22,2	50
M20x1,5	5,5	Pg 16	822016	13,5	14,5	24x26,7	50
M25x1,5	7,0	Pg 21	822521	14,5	20,5	30x33,5	50
M32x1,5	8,0	Pg 29	823229	17,0	26,0	40x43,5	25
M40x1,5	8,0	Pg 36	824036	20,5	34,0	50x54	25
M50x1,5	9,0	Pg 42	825042	23,0	44,0	57x61	10
		Pg 48	825048	23,0	46,0	64x69	10
M63x1,5	9,0	Pg 48	826348	23,0	55,0	68x74	5

30200 | TT05000

K11. Erweiterung Sechskant – Pg- auf M-Gewinde – Messing

RoHS

K11. Extension hexagonal – Pg to M thread – Brass



Messing vernickelt
Pg-Anschlussgewinde und M-Innengewinde EN 60423
Schutzart IP 68 bis 10 bar, mit O-Ring NBR
Temperaturbereich: -30 °C bis +100 °C

Brass, nickel plated
Pg connection thread and metric inner thread EN 60423
Type of protection IP 68 up to 10 bar, with o-ring NBR
Temperature range: -30 °C up to +100 °C

Abb. 1
Fig. 1

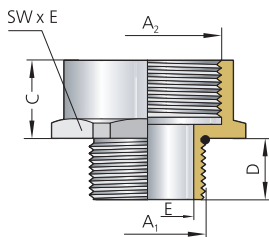


Abb. 2
Fig. 2

Anschlussgewinde/ -länge		Innengewinde	Art.-Nr.	Bauhöhe	Innendurchmesser	Schlüsselweite	
Connection thread/length		Inner thread	Art. no.	Mounting height	Inner diameter	Spanner width	
A ₁	D	A ₂		C	E	SW x E	
	mm			mm	mm	mm	
Pg 9	6,0	M16x1,5	809216	10,0	10,0	18x20	50
Pg 11	6,0	M20x1,5	811220	10,0	13,5	22x24,4	50
Pg 13,5	6,0	M20x1,5	813220	10,0	13,5	22x24,4	50
Pg 16	6,0	M25x1,5	816225	10,0	16,0	28x31,2	50
Pg 21	7,0	M32x1,5	821232	12,5	22,5	35x38,5	50
Pg 29	8,0	M40x1,5	829240	14,5	29,5	43x47,3	25
Pg 36	8,0	M50x1,5	836250	14,5	38,0	54x58	25

30300 | TT05000

K11. Erweiterung rund – Pg- auf Pg-Gewinde – Messing

RoHS

K11. Extension round – Pg to Pg thread – Brass



Messing vernickelt
Pg-Anschlussgewinde und Pg-Innengewinde
Schutzart IP 54, ohne O-Ring
Max. Temperatur: +200 °C

Brass, nickel plated
Pg connection thread and inner thread
Type of protection IP 54, without o-ring
Max. temperature range: +200 °C

Abb. 1
Fig. 1

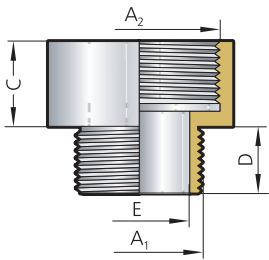


Abb. 2
Fig. 2

Anschlussgewinde/ -länge Connection thread/length		Innengewinde Inner thread	Art.-Nr. Art. no.	Bauhöhe Mounting height C	Innendurchmesser Inner diameter E	
A ₁	D mm	A ₂		mm	mm	
Pg 7	5,0	Pg 9	70709	10,0	10,0	50
Pg 9	6,0	Pg 11	70911	10,5	12,0	50
		Pg 13,5	70913	11,5	12,0	50
Pg 11	6,0	Pg 13,5	71113	11,5	14,5	50
		Pg 16	71116	12,5	14,5	50
Pg 13,5	6,5	Pg 16	71316	12,5	17,0	50
		Pg 21	71321	14,5	17,0	50
Pg 16	6,5	Pg 21	71621	14,5	18,0	50
Pg 21	7,0	Pg 29	72129	16,0	24,0	25
Pg 29	8,0	Pg 36	72936	19,5	32,0	25
Pg 36	9,0	Pg 42	73642	22,0	42,0	10
Pg 42	10,0	Pg 48	74248	23,0	48,0	10

30400 | IT05100

K11. Erweiterung Sechskant – M- auf M-Gewinde – Polyamid

RoHS

K11. Extension hexagonal – M to M thread – Polyamide



Polyamid-GFK, Farbe: RAL 7035
Metrisches Anschlussgewinde auf metrisches Innengewinde EN 60423
Schutzart IP 54
Temperaturbereich: -40 °C bis +100 °C

Polyamide-GFK, colour: RAL 7035,
Metric connection thread and inner thread EN 60423
Type of protection IP 54
Temperature range: -40 °C up to +100 °C

Abb. 1
Fig. 1

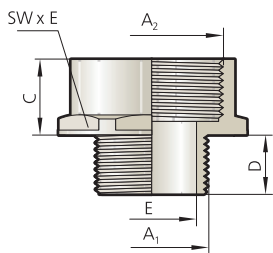


Abb. 2
Fig. 2

Anschlussgewinde/ -länge Connection thread/length		Innengewinde Inner thread	Art.-Nr. Art. no.	Bauhöhe Mounting height C	Innendurchmesser Inner diameter E	Schlüsselweite Spanner width SW x E	
A ₁	D mm	A ₂		mm	mm	mm	
M12x1,5	9,0	M16x1,5	EW 212216	18,0	6,0	20x22	50
M16x1,5	9,0	M20x1,5	EW 216220	18,0	10,0	24x27	50
M20x1,5	9,0	M25x1,5	EW 220225	18,0	14,0	29x32	50
M25x1,5	10,0	M32x1,5	EW 225232	18,0	19,0	36x40	50
M32x1,5	12,0	M40x1,5	EW 232240	18,0	26,0	46x51	25
M40x1,5	12,0	M50x1,5	EW 240250	18,0	32,0	55x61	10
M50x1,5	14,0	M63x1,5	EW 250263	18,0	42,0	68x75	5

30500 | IT05000

K12. Erweiterung Sechskant – Pg- auf M-Gewinde – Polyamid

RoHS

K12. Extension hexagonal – Pg to M thread – Polyamide



Polyamid, Farbe: RAL 7035 (hellgrau)
Pg-Anschlussgewinde und metrisches Innengewinde EN 60423
Schutzart IP 54
Temperaturbereich: -40 °C bis +100 °C

Polyamide, colour: RAL 7035 (light grey)
Pg connection thread and metric inner thread EN 60423
Type of protection IP 54
Temperature range: -40 °C bis +100 °C

Abb. 1
Fig. 1

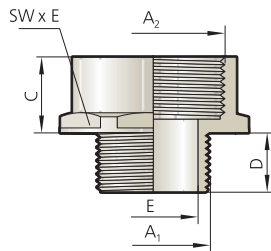



Abb. 2
Fig. 2

Anschlussgewinde/ -länge <i>Connection thread/length</i>	Innengewinde <i>Inner thread</i>	Art.-Nr. <i>Art. no.</i>	Bauhöhe <i>Mounting height</i>	Innendurchmesser <i>Inner diameter</i>	Schlüsselweite <i>Spanner width</i>	
A₁	A₂		C	E	SW x E	
D			mm	mm	mm	
mm						
Pg 7	M12x1,5	EW 07212	18,0	5,5	16x18	50
	M16x1,5	EW 07216	18,0	5,5	20x22	50
Pg 9	M12x1,5	EW 09212	18,0	9,5	20x22	50
	M16x1,5	EW 09216	18,0	9,5	20x22	50
	M20x1,5	EW 09220	18,0	9,5	24x27	50
Pg 11	M16x1,5	EW 11216	18,0	12,5	22x24	50
	M20x1,5	EW 11220	18,0	12,5	24x27	50
	M25x1,5	EW 11225	18,0	12,5	29x32	50
Pg 13,5	M16x1,5	EW 13216	18,0	13,5	24x27	50
	M20x1,5	EW 13220	18,0	13,5	24x27	50
	M25x1,5	EW 13225	18,0	13,5	29x32	50
Pg 16	M20x1,5	EW 16220	18,0	16,5	27x29	50
	M25x1,5	EW 16225	18,0	16,5	29x32	50
	M32x1,5	EW 16232	18,0	16,5	36x40	50
Pg 21	M25x1,5	EW 21225	18,0	21,5	33x36	50
	M32x1,5	EW 21232	18,0	21,5	36x40	50
	M40x1,5	EW 21240	18,0	21,5	46x51	50
Pg 29	M40x1,5	EW 29240	18,0	30,0	46x51	25
	M50x1,5	EW 29250	18,0	30,0	55x61	25
Pg 36	M50x1,5	EW 36250	18,0	40,5	55x61	10
	M63x1,5	EW 36263	18,0	40,5	68x75	10
Pg 42	M50x1,5	EW 42250	18,0	47,5	60x67	10
	M63x1,5	EW 42263	18,0	47,5	68x75	10
Pg 48	M63x1,5	EW 48263	18,0	52,0	68x75	10

30600 | TT05000

K16. Reduktion Sechskant – M- auf M-Gewinde – Messing

RoHS

K16. Reduction hexagonal – M to M thread – Brass



Messing vernickelt

Metrisches Außen- und Innengewinde EN 60423

Variante mit O-Ring NBR: Schutzart IP 68 bis 10 bar, Temperaturbereich: -30 °C bis +100 °C

Variante ohne O-Ring: Schutzart IP 54, max. Temperatur +200 °C

Brass, nickel plated

Metric connection and inner thread EN 60423

Variant with o-ring NBR: type of protection IP 68 up to 10 bar, temperature range: -30 °C up to +100 °C

Variant without o-ring: type of protection IP 54, temperature: max. +200 °C

Abb. 1
Fig. 1

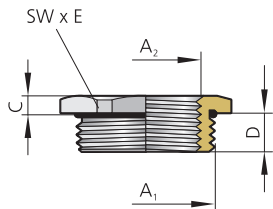


Abb. 2
Fig. 2

Anschlussgewinde/ Connection thread/length	Innengewinde Inner thread	Art.-Nr. Art. no.	Bauhöhe Mounting height	Schlüsselweite Spanner width	Art. no.		SW x E mm	mm
					ohne O-Ring without o-ring	mit O-Ring with o-ring		
A ₁	D	A ₂	C					
M16x1,5	6,0	M12x1,5	2,5	18x20,2	8.216/212	80.216/212		50
M20x1,5	6,5	M12x1,5	2,5	22x24,4	8.220/212	80.220/212		50
		M16x1,5	2,5	22x24,4	8.220/216	80.220/216		50
M25x1,5	7,0	M16x1,5	3,0	28x31,2	8.225/216	80.225/216		50
		M20x1,5	3,0	28x31,2	8.225/220	80.225/220		50
M32x1,5	8,0	M20x1,5	3,5	35x38,5	8.232/220	80.232/220		25
		M25x1,5	3,5	35x38,5	8.232/225	80.232/225		25
M40x1,5	9,0	M25x1,5	4,5	43x47,5	8.240/225	80.240/225		25
		M32x1,5	4,5	43x47,5	8.240/232	80.240/232		25
M50x1,5	10,0	M32x1,5	4,0	54x58	8.250/232	80.250/232		10
		M40x1,5	4,0	54x58	8.250/240	80.250/240		10
M63x1,5	10,0	M40x1,5	4,0	68x74	8.263/240	80.263/240		10
		M50x1,5	4,0	68x74	8.263/250	80.263/250		5
M72x2,0	10,0	M63x1,5	5,0	90x96	8.272/263	80.272/263		5
M72x2,0	12,0	M50x1,5	5,0	80x86	8.272/250	80.272/250		5
M75x1,5	15,0	M50x1,5	8,0	90x96	8.275/250	80.275/250		5
		M63x1,5	8,0	90x96	8.275/263	80.275/263		5
M80x2,0	10,0	M63x1,5	8,0	90x96	8.280/263	80.280/263		5
		M72x2,0	8,0	90x96	8.280/272	8.280/272		5
		M75x1,5	8,0	90x96	8.280/275	8.280/275		5

30800 | IT04600

K16. Reduktion gerändelt – M- auf M-Gewinde – Messing

RoHS

K16. Reduction knurled – M to M thread – Brass



Messing vernickelt
Metrisches Außen- und Innengewinde EN 60423
Ohne O-Ring, Schutzart IP 54
Max. Temperatur +200 °C

Brass nickel plated
Metric connection and inner thread EN 60423
Without o-ring, type of protection IP 54
Temperature: max. +200 °C

Abb. 1
Fig. 1

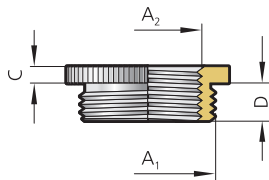



Abb. 2
Fig. 2

Anschlussgewinde/ Connection thread/length A ₁	D mm	Innengewinde Inner thread A ₂	Art.-Nr. Art. no.	Bauhöhe Mounting height C mm	
M16x1,5	6,0	M12x1,5	10.216/212	2,5	50
M20x1,5	6,5	M12x1,5	10.220/212	2,5	50
		M16x1,5	10.220/216	2,5	50
M25x1,5	7,0	M16x1,5	10.225/216	3,0	50
		M20x1,5	10.225/220	3,0	50
M32x1,5	8,0	M20x1,5	10.232/220	3,5	50
		M25x1,5	10.232/225	3,5	50
M40x1,5	9,0	M25x1,5	10.240/225	3,5	25
		M32x1,5	10.240/232	3,5	25
M50x1,5	10,0	M32x1,5	10.250/232	4,0	10
		M40x1,5	10.250/240	4,0	10
		M50x1,5	10.263/250	4,0	10
M63x1,5	10,0	M40x1,5	10.263/240	4,0	10
		M50x1,5	10.263/250	4,0	10

305900 | TT05200

K16. Reduktion Sechskant – M- auf Pg-Gewinde – Messing

RoHS

K16. Reduction hexagonal – M to Pg thread – Brass



Messing vernickelt
Metrisches Anschlussgewinde EN 60423 und Pg-Innengewinde
Variante mit O-Ring NBR: Schutzart IP 68 bis 10 bar, Temperaturbereich: -30 °C bis +100 °C
Variante ohne O-Ring: Schutzart IP 54, max. Temperatur +200 °C
Brass, nickel plated
Metric connection thread EN 60423 and Pg inner thread
Variant with o-ring NBR: type of protection IP 68 up to 10 bar, temperature range: -30 °C up to +100 °C
Variant without o-ring: type of protection IP 54, temperature: max. +200 °C

Abb. 1
Fig. 1

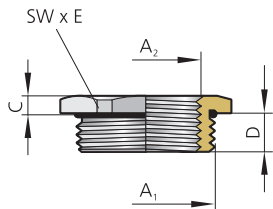


Abb. 2
Fig. 2

Anschlussgewinde/ -länge Connection thread/length	Innengewinde Inner thread	Art.-Nr. Art. no.	Bauhöhe Mounting height		Schlüsselweite Spanner width	
			ohne O-Ring without o-ring	mit O-Ring with o-ring	C mm	SW x E mm
A₁	D mm	A₂				
M16x1,5	6,0	Pg 7	8.216/07	80.216/07	3,0	18x20,2
M20x1,5	6,5	Pg 9	8.220/09	80.220/09	3,0	22x24,4
M25x1,5	7,0	Pg 9	8.225/09	80.225/09	3,0	28x31,2
		Pg 11	8.225/11	80.225/11	3,0	28x31,2
		Pg 13,5	8.225/13	80.225/13	3,0	28x31,2
M32x1,5	8,0	Pg 13,5	8.232/13	80.232/13	3,0	35x38,5
		Pg 16	8.232/16	80.232/16	3,0	35x38,5
		Pg 21	8.232/21	80.232/21	3,0	35x38,5
M40x1,5	8,0	Pg 16	8.240/16	80.240/16	4,5	43x47,3
		Pg 21	8.240/21	80.240/21	4,5	43x47,3
		Pg 29	8.240/29	80.240/29	4,5	43x47,3
M50x1,5	10,0	Pg 21	8.250/21	80.250/21	4,0	54x58
		Pg 29	8.250/29	80.250/29	4,0	54x58
		Pg 36	8.250/36	80.250/36	4,0	54x58
M63x1,5	10,0	Pg 29	8.263/29	80.263/29	4,0	68x74
		Pg 36	8.263/36	80.263/36	4,0	68x74
		Pg 42	8.263/42	80.263/42	4,0	68x74
		Pg 48	8.263/48	80.263/48	4,0	68x74
M72x2,0	16,0	Pg 42	8.272/42	80.272/42	8,0	81x87
		Pg 48	8.272/48	80.272/48	8,0	81x87

310001 | IT04600

K15. Reduktion Sechskant – Pg- auf M-Gewinde – Messing

RoHS

K15. Reduction hexagonal – Pg to M thread – Brass



Messing vernickelt

Pg-Anschlussgewinde und metrisches Innengewinde EN 60423

Variante mit O-Ring NBR: Schutzart IP 68 bis 10 bar, Temperaturbereich: -30 °C bis +100 °C

Variante ohne O-Ring: Schutzart IP 54, max. Temperatur +200 °C

Brass, nickel plated

Pg connection thread and metric inner thread EN 60423

Variant with o-ring NBR: type of protection IP 68 up to 10 bar, temperature range: -30 °C up to +100 °C

Variant without o-ring: type of protection IP 54, temperature: max. +200 °C

Abb. 1
Fig. 1

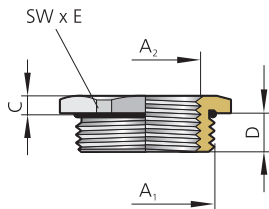



Abb. 2
Fig. 2

Anschlussgewinde/ -länge Connection thread/length	Innengewinde Inner thread	Art.-Nr. Art. no.		Bauhöhe Mounting height C mm	Schlüsselweite Spanner width SW x E mm		
		ohne O-Ring without o-ring	mit O-Ring with o-ring				
A ₁	D mm	A ₂					
Pg 7	6,0	M10x1,0	8.07/210	80.07/210	3,0	14x15,5	50
Pg 9	6,0	M10x1,0	8.09/210	80.09/210	3,0	17x18,9	50
		M12x1,5	8.09/212	80.09/212			
Pg 11	6,0	M12x1,5	8.11/212	80.11/212	3,0	20x22,2	50
Pg 13,5	6,5	M12x1,5	8.13/212	80.13/212	3,0	24x26,7	50
		M16x1,5	8.13/216	80.13/216			
Pg 16	6,5	M20x1,5	8.16/220	80.16/220	3,0	24x26,7	50
Pg 21	7,0	M16x1,5	8.21/216	80.21/216	3,5	30x33,5	50
		M25x1,5	8.21/225	80.21/225			
Pg 29	8,0	M25x1,5	8.29/225	80.29/225	4,0	40x43,5	25
		M32x1,5	8.29/232	80.29/232			
Pg 36	9,0	M32x1,5	8.36/232	80.36/232	5,0	50x54	25
		M40x1,5	8.36/240	80.36/240			
Pg 42	10,0	M32x1,5	8.42/232	80.42/232	4,0	57x61	10
		M40x1,5	8.42/240	80.42/240			
		M50x1,5	8.42/250	80.42/250			
Pg 48	10,0	M50x1,5	8.48/250	80.48/250	5,5	64x89	10

31010 ITD4600

K16. Reduktion Sechskant – Pg- auf Pg-Gewinde – Messing

RoHS

K16. Reduction hexagonal – Pg to Pg thread – Brass



Messing vernickelt

Pg-Anschluss- und Innengewinde

Variante mit O-Ring NBR: Schutzart IP 68 bis 10 bar, Temperaturbereich: -30 °C bis +100 °C

Variante ohne O-Ring: Schutzart IP 54, max. Temperatur +200 °C

Brass, nickel plated

Pg connection and inner thread

Variant with o-ring NBR: type of protection IP 68 up to 10 bar, temperature range: -30 °C up to +100 °C

Variant without o-ring: type of protection IP 54, temperature: max. +200 °C

Abb. 1
Fig. 1

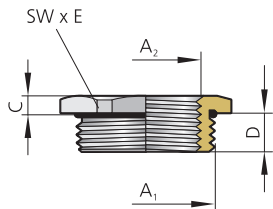


Abb. 2
Fig. 2

Anschlussgewinde/ -länge Connection thread/length A ₁	D mm	Innengewinde Inner thread A ₂	Art.-Nr. Art. no.		Bauhöhe Mounting height C mm	Schlüsselweite Spanner width SW x E mm	
			ohne O-Ring without o-ring	mit O-Ring with o-ring			
Pg 9	6,0	Pg 7	8.09/07	80.09/07	2,8	17x18,9	50
Pg 11	6,0	Pg 7	8.11/07	80.11/07	3,0	20x22,2	50
		Pg 9	8.11/09	80.11/09	3,0	20x22,2	50
Pg 13,5	6,0	Pg 7	8.13/07	80.13/07	3,0	22x24,4	50
Pg 13,5	6,5	Pg 9	8.13/09	80.13/09	3,0	22x24,4	50
Pg 13,5	8,0	Pg 11	8.13/11	80.13/11	3,0	24x26,7	50
Pg 16	6,5	Pg 7	8.16/07	80.16/07	2,5	24x26,7	50
		Pg 9	8.16/09	80.16/09	2,5	24x26,7	50
		Pg 11	8.16/11	80.16/11	2,5	24x26,7	50
Pg 16	8,0	Pg 13,5	8.16/13	80.16/13	4,5	24x26,7	50
Pg 21	7,0	Pg 11	8.21/11	80.21/11	3,5	30x33,5	50
		Pg 13,5	8.21/13	80.21/13	3,5	30x33,5	50
		Pg 16	8.21/16	80.21/16	3,5	30x33,5	50
Pg 29	8,0	Pg 9	8.29/09	80.29/09	4,0	40x43,5	25
		Pg 16	8.29/16	80.29/16	4,0	40x43,5	25
		Pg 21	8.29/21	80.29/21	4,0	40x43,5	25
Pg 36	9,0	Pg 29	8.36/29	80.36/29	5,0	50x54	25
Pg 42	10,0	Pg 29	8.42/29	80.42/29	5,0	57x61	10
		Pg 36	8.42/36	80.42/36	5,0	57x61	10
Pg 48	10,0	Pg 36	8.48/36	80.48/36	5,5	64x69	10
		Pg 42	8.48/42	80.48/42	5,5	64x69	10

311001 | TT04600

K16. Reduktion gerändelt – Pg- auf Pg-Gewinde – Messing

RoHS

K16. Reduction knurled – Pg to Pg thread – Brass



Messing vernickelt
Pg-Anschluss- und Innengewinde
Ohne O-Ring, Schutzart IP 54
Max. Temperatur +200 °C

Brass, nickel plated
Pg connection and inner thread
Without o-ring, type of protection IP 54
Temperature: max. +200 °C

Abb. 1
Fig. 1

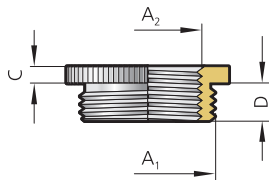


Abb. 2
Fig. 2

Anschlussgewinde/ -länge Connection thread/length		Innengewinde Inner thread	Art.-Nr. Art. no.	Bauhöhe Mounting height	
A ₁	D mm	A ₂		C mm	
Pg 9	6,0	Pg 7	10.09/07	2,5	50
Pg 11	6,0	Pg 7	10.11/07	2,5	50
		Pg 9	10.11/09	2,5	50
Pg 13,5	6,5	Pg 7	10.13/07	2,5	50
		Pg 9	10.13/09	2,5	50
		Pg 11	10.13/11	2,5	50
Pg 16	6,5	Pg 7	10.16/07	3,0	50
		Pg 9	10.16/09	3,0	50
		Pg 11	10.16/11	3,0	50
		Pg 13,5	10.16/13	3,0	50
Pg 21	7,0	Pg 11	10.21/11	3,0	50
		Pg 13,5	10.21/13	3,0	50
		Pg 16	10.21/16	3,0	50
Pg 29	8,0	Pg 13,5	10.29/13	3,5	25
		Pg 16	10.29/16	3,5	25
		Pg 21	10.29/21	3,5	25
Pg 36	9,0	Pg 21	10.36/21	3,5	25
		Pg 29	10.36/29	3,5	10
Pg 42	10,0	Pg 29	10.42/29	4,0	10
		Pg 36	10.42/36	4,0	10
Pg 48	10,0	Pg 36	10.48/36	4,0	10
		Pg 42	10.48/42	4,0	10

31200 | IT105200

K17. Reduktion Sechskant – M- auf M-Gewinde – Polyamid

RoHS

K17. Reduction hexagonal – M to M thread – Polyamide



Polyamid-GFK, Farbe: RAL 7035 (hellgrau)
Metrisches Anschluss- und Innengewinde EN 60423
Schutzart IP 54
Temperaturbereich: -40 °C bis +100 °C

Polyamide-GFK, colour: RAL 7035 (light grey)
Metric connection and inner thread EN 60423
Type of protection IP 54
Temperature range: -40 °C up to +100 °C

Abb. 1
Fig. 1

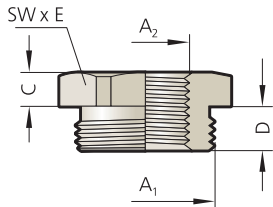


Abb. 2
Fig. 2

Anschlussgewinde/ -länge Connection thread/length A₁	D mm	Innengewinde Inner thread A₂	Art.-Nr. Art. no. ohne O-Ring without o-ring	Bauhöhe Mounting height C mm	Schlüsselweite Spanner width SW x E mm	
M20x1,5	8,0	M12x1,5	RED 220/212	4,0	24x26,5	50
		M16x1,5	RED 220/216	4,0	24x26,5	50
M25x1,5	8,0	M12x1,5	RED 225/212	6,0	29x32	50
		M16x1,5	RED 225/216	6,0	29x32	50
		M20x1,5	RED 225/220	6,0	29x32	50
M32x1,5	10,0	M12x1,5	RED 232/212	6,0	36x40	50
		M16x1,5	RED 232/216	6,0	36x40	50
		M20x1,5	RED 232/220	6,0	36x40	50
		M25x1,5	RED 232/225	6,0	36x40	50
M40x1,5	10,0	M16x1,5	RED 240/216	6,0	46x50,5	25
		M20x1,5	RED 240/220	6,0	46x50,5	25
		M25x1,5	RED 240/225	6,0	46x50,5	25
		M32x1,5	RED 240/232	6,0	46x50,5	25
M50x1,5	12,0	M20x1,5	RED 250/220	6,0	55x60,5	10
		M25x1,5	RED 250/225	6,0	55x60,5	10
		M32x1,5	RED 250/232	6,0	55x60,5	10
		M40x1,5	RED 250/240	6,0	55x60,5	10
M63x1,5	12,0	M25x1,5	RED 263/225	6,0	68x75	5
		M32x1,5	RED 263/232	6,0	68x75	5
		M40x1,5	RED 263/240	6,0	68x75	5
		M50x1,5	RED 263/250	6,0	68x75	5

317400 | IT104600

K17. Reduktion Sechskant – Pg- auf M-Gewinde – Polyamid

RoHS

K17. Reduction hexagonal – Pg to M thread – Polyamide



Polyamid, Farbe: RAL 7035 (hellgrau)
Pg-Anschlussgewinde und metrisches Innengewinde EN 60423
Schutzart IP 54
Temperaturbereich: -40 °C bis +100 °C

Polyamide, colour: RAL 7035, (light grey)
Pg connection thread and metric inner thread EN 60423
Type of protection IP 54
Temperature range: -40 °C up to +100 °C

Abb. 1
Fig. 1

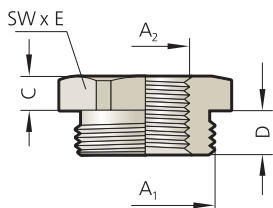


Abb. 2
Fig. 2

Anschlussgewinde/ -länge Connection thread/length A₁	D mm	Innengewinde Inner thread A₂	Art.-Nr. Art. no. ohne O-Ring without o-ring	Bauhöhe Mounting height C mm	Schlüsselweite Spanner width SW x E mm	
Pg 29	12,0	M32x1,5	RED 29/232	7,0	42x45	25
Pg 36	14,0	M40x1,5	RED 36/240	7,0	53x59	10
Pg 42	14,0	M40x1,5	RED 42/240	7,0	60x67	10
Pg 48	14,0	M50x1,5	RED 48/250	7,0	65x72	10

317400 | IT104600

K17. Reduktion Sechskant – Pg- auf Pg-Gewinde – Polyamid

RoHS

K17. Reduction hexagonal – Pg to Pg thread – Polyamide



Polyamid-GFK, Farbe: RAL 7035 (hellgrau)
Pg-Anschluss- und Innengewinde
Schutzart IP 54
Temperaturbereich: -40 °C bis +100 °C

Polyamide-GFK, colour: RAL 7035 (light grey)
Pg connection and inner thread
Type of protection IP 54
Temperature range: -40 °C up to +100 °C

Abb. 1
Fig. 1

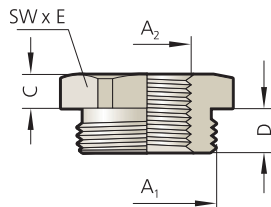


Abb. 2
Fig. 2

Anschlussgewinde/ -länge Connection thread/length		Innengewinde Inner thread	Art.-Nr. Art. no. <i>ohne O-Ring without o-ring</i>	Bauhöhe Mounting height C	Schlüsselweite Spanner width SW x E	
A ₁	D mm	A ₂		mm	mm	
Pg 9	8,0	Pg 7	RED 9/ 7	12,5	19x21	50
Pg 11	6,0	Pg 7	RED 11/ 7	6,0	22x24,4	50
Pg 11	8,0	Pg 9	RED 11/ 9	15,0	22x24,4	50
Pg 13,5	9,0	Pg 7	RED 13/ 7	6,0	24x26,3	50
		Pg 9	RED 13/ 9	6,0	24x26,3	50
		Pg 11	RED 13/11	13,0	24x26,3	50
Pg 16	9,0	Pg 9	RED 16/ 9	6,5	27x29,3	50
		Pg 11	RED 16/11	6,5	27x29,3	50
		Pg 13,5	RED 16/13	13,5	27x29,3	50
Pg 21	10,0	Pg 13,5	RED 21/13	6,5	32x35	50
		Pg 16	RED 21/16	6,5	32x35	50
Pg 21	10,5	Pg 11	RED 21/11	5,0	32x35	50
Pg 29	11,0	Pg 13,5	RED 29/13	6,0	40x43	25
Pg 29	12,0	Pg 16	RED 29/16	6,5	41x45	25
		Pg 21	RED 29/21	6,5	41x45	25
Pg 36	13,0	Pg 16	RED 36/16	6,0	50x54	25
Pg 36	14,0	Pg 21	RED 36/21	6,0	50x54	25
		Pg 29	RED 36/29	6,0	50x54	10
Pg 42	16,0	Pg 36	RED 42/36	6,0	55x60	10
Pg 42	17,0	Pg 21	RED 42/21	6,0	55x60	10
Pg 42	17,5	Pg 29	RED 42/29	6,0	55x60	10
Pg 48	16,0	Pg 36	RED 48/36	6,5	60x65,5	5
Pg 48	18,0	Pg 29	RED 48/29	5,5	60x65,5	5
		Pg 42	RED 48/42	6,0	60x65,5	5

31500 | IT04660

K21./K25. Blindstopfen Sechskant – Metrisches Gewinde – Messing

RoHS

K21./K25. Blind plug hexagonal – Metric thread – Brass



Messing vernickelt
Metrisches Anschlussgewinde EN 60423
Variante mit O-Ring NBR: Schutzart IP 68 bis 10 bar, Temperaturbereich: -30 °C bis +100 °C
Brass, nickel plated
Metric connection thread EN 60423
Variant with o-ring NBR: type of protection IP 68 up to 10 bar, temperature range: -30 °C up to +100 °C

Abb. 1
Fig. 1

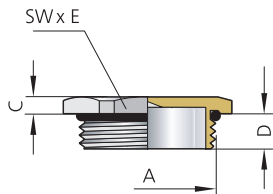


Abb. 2
Fig. 2

Nenngröße Nom. size A	D mm	Art.-Nr. Art. no.	Bauhöhe Mounting height C mm	Schlüsselweite Spanner width SW x E mm	
M12x1,5	5,0	7212/DR	3,0	14x15,5	50
M16x1,5	6,0	7216/DR	3,0	18x20	50
M20x1,5	6,5	7220/DR	3,0	22x24,4	50
M25x1,5	6,5	7225/DR	3,0	28x31,2	50
M32x1,5	7,0	7232/DR	3,5	35x38,5	50
M40x1,5	8,0	7240/DR	4,0	43x47,3	25
M50x1,5	10,0	7250/DR	7,0	54x58	10
M63x1,5	16,0	7263/DR	8,0	68x74	10
M72x2	16,0	7272/DR	8,0	80x86	5
M75x1,5	16,0	7275/DR	8,0	90x96	5
M80x2	16,0	7280/DR	8,0	90x96	5

32000 | IT01400

K21./K25. Blindstopfen rund – Metrisches Gewinde – Messing

RoHS

K21./K25. Blind plug round – Metric thread – Brass



Messing vernickelt
Metrisches Anschlussgewinde EN 60423
Mit O-Ring NBR, Schutzart IP 68 bis 10 bar
Temperaturbereich: -30 °C bis +100 °C
Brass, nickel plated
Metric connection thread EN 60423
Type of protection IP 68 up to 10 bar with o-ring NBR
Temperature range: -30 °C up to +100 °C

Abb. 1
Fig. 1

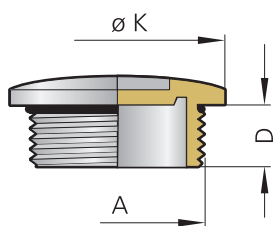


Abb. 2
Fig. 2

Nenngröße Nom. size A	D mm	Außendurchmesser Outer diameter Ø K mm	Art.-Nr. Art. no.	
M12x1,5	5,0	14	7212/rd/DR	50
M16x1,5	5,0	18	7216/rd/DR	50
M20x1,5	6,0	22	7220/rd/DR	50
M25x1,5	7,0	28	7225/rd/DR	50
M32x1,5	8,0	35	7232/rd/DR	50
M40x1,5	8,0	44	7240/rd/DR	25
M50x1,5	9,0	54	7250/rd/DR	10
M63x1,5	10,0	67	7263/rd/DR	10

31600 | IT05300

K21./K25. Blindstopfen Sechskant – Pg-Gewinde – Messing

RoHS

K21./K25. Blind plug hexagonal – Pg thread – Brass



Messing vernickelt
Pg-Gewinde

Variante mit O-Ring NBR: Schutzart IP 68 bis 10 bar, Temperaturbereich: -30 °C bis +100 °C

Brass, nickel plated
Pg thread

Variant with o-ring NBR: type of protection IP 68 up to 10 bar, temperature range: -30 °C up to +100 °C

Abb. 1
Fig. 1

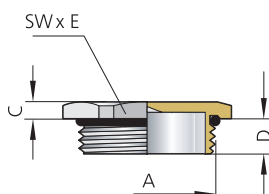


Abb. 2
Fig. 2

Nenngröße <i>Nom. size</i> A	D <i>mm</i>	Art.-Nr. <i>Art. no.</i>	Bauhöhe <i>Mounting height</i> C <i>mm</i>	Schlüsselweite <i>Spanner width</i> SW x E <i>mm</i>	
Pg 7	5,0	749/07DR	3,0	14x16	50
Pg 9	6,0	750/09DR	3,0	17x19,5	50
Pg 11	6,0	751/11DR	3,0	20x22,5	50
Pg 13,5	6,5	752/13DR	3,0	22x24,4	50
Pg 16	6,5	753/16DR	3,0	24x26,7	50
Pg 21	7,0	754/21DR	3,5	30x34	50
Pg 29	10,0	755/29DR	4,0	40x43,5	25
Pg 36	10,0	756/36DR	5,5	50x57	10

31700 | TT01400

K21. Blindstopfen Sechskant – Metrisches Gewinde – Edelstahl

RoHS

K21. Blind plug hexagonal – Metric thread – Stainless steel



Edelstahl 1.4305 blank
Metrisches Anschlussgewinde EN 60423

Variante mit O-Ring LSR: Schutzart IP 68 bis 10 bar, Temperaturbereich: -60 °C bis +200 °C

Stainless steel AISI 303 untreated
Metric connection thread EN 60423

Variant with o-ring LSR: type of protection IP 68 up to 10 bar, temperature range: -60 °C up to +200 °C

Abb. 1
Fig. 1

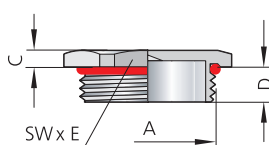


Abb. 2
Fig. 2

Nenngröße <i>Nom. size</i> A	D <i>mm</i>	Art.-Nr. <i>Art. no.</i>	Bauhöhe <i>Mounting height</i> C <i>mm</i>	Schlüsselweite <i>Spanner width</i> SW x E <i>mm</i>	
M16x1,5	6,0	7216/DR/st	3,0	19x21,1	50
M20x1,5	6,5	7220/DR/st	3,0	22x24,4	50
M25x1,5	6,5	7225/DR/st	3,0	27x29,6	50
M32x1,5	7,0	7232/DR/st	3,5	36x39,7	50
M63x1,5	16,0	7263/DR/st	8,0	68x74	10

31800 | TT01400

K25. Blindstopfen Sechskant – Pg-Gewinde – Edelstahl

RoHS

K25. Blind plug hexagonal – Pg thread – Stainless steel



Edelstahl 1.4305 blank
Pg-Gewinde

Variante mit O-Ring LSR: Schutzart IP 68 bis 10 bar, Temperaturbereich: -60 °C bis +200 °C

Stainless steel AISI 303 untreated
Pg thread

Variant with o-ring LSR: type of protection IP 68 up to 10 bar, temperature range: -60 °C up to +200 °C

Abb. 1
Fig. 1

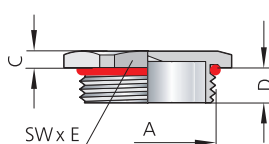


Abb. 2
Fig. 2

Nenngröße <i>Nom. size</i> A	D <i>mm</i>	Art.-Nr. <i>Art. no.</i>	Bauhöhe <i>Mounting height</i> C <i>mm</i>	Schlüsselweite <i>Spanner width</i> SW x E <i>mm</i>	
Pg 7	5,0	749/07stDR	3,0	14x15,5	50
Pg 9	6,0	750/09stDR	2,8	17x18,9	50
Pg 11	6,0	751/11stDR	3,0	22x24,4	50
Pg 13,5	6,0	752/13stDR	3,0	22x24,4	50
Pg 16	6,5	753/16stDR	3,0	24x26,7	50
Pg 21	7,0	754/21stDR	3,5	30x33,5	50

31900 | TT01400

K22. Blindstopfen rund – Metrisches Gewinde – Polyamid

RoHS

K22. Blind plug round – Metric thread – Polyamide



Polyamid-GFK, Farbe: RAL 7035 (hellgrau)
Metrisches Anschlussgewinde EN 60423
Schutzart IP 54
Temperaturbereich: -40 °C bis +100 °C

Polyamide-GFK, colour: RAL 7035 (light grey)
Metric connection thread EN 60423
Type of protection IP 54
Temperature range: -40 °C up to +100 °C

Abb. 1
Fig. 1

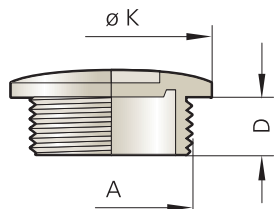


Abb. 2
Fig. 2

Nenngröße Nom. size A	D mm	Außendurchmesser Outer diameter Ø K mm	Art.-Nr. Art. no.	
M12x1,5	6,0	15	514GFK/212	50
M16x1,5	6,0	20	514GFK/216	50
M20x1,5	6,0	24	514GFK/220	50
M25x1,5	8,0	30	514GFK/225	50
M32x1,5	8,0	37	514GFK/232	50
M40x1,5	8,0	46	514GFK/240	25
M50x1,5	10,0	56	514GFK/250	10
M63x1,5	12,0	70	514GFK/263	5

32300 TT05300

K22. Blindstopfen rund – Pg-Gewinde – Polyamid

RoHS

K22. Blind plug round – Pg thread – Polyamide



Polyamid-GFK, Farbe: RAL 7035 (hellgrau)
Pg-Gewinde
Schutzart IP 54
Temperaturbereich: -40 °C bis +100 °C

Polyamide-GFK, colour: RAL 7035 (light grey)
Pg thread
Type of protection IP 54
Temperature range: -40 °C up to +100 °C

Abb. 1
Fig. 1

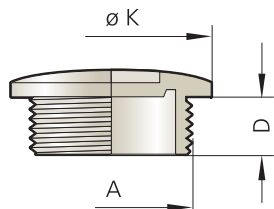


Abb. 2
Fig. 2

Nenngröße Nom. size A	D mm	Außendurchmesser Outer diameter Ø K mm	Art.-Nr. Art. no.	
Pg 7	6,0	15	514GFK/ 7	50
Pg 9	6,3	20	514GFK/ 9	50
Pg 11	6,3	22	514GFK/11	50
Pg 13,5	6,3	25,5	514GFK/13	50
Pg 16	6,3	27	514GFK/16	50
Pg 21	8,3	33,5	514GFK/21	50
Pg 29	8,3	44	514GFK/29	25
Pg 36	10,0	55	514GFK/36	25
Pg 42	10,0	62	514GFK/42	10
Pg 48	12,0	69	514GFK/48	10

32300 TT05300

K22. Blindstopfen Kreuzschlitz – Metrisches Gewinde – Polyamid

RoHS

K22. Blind plug cross recess – Metric thread – Polyamide



Polyamid-GFK, Farbe: RAL 7035 (hellgrau)
Metrisches Anschlussgewinde
Mit O-Ring aus NBR, Schutzart IP 68 bis 10 bar
Temperaturbereich: -40 °C bis +100 °C

Polyamide-GFK, colour: RAL 7035 (light grey)
Metric connection thread
With O-ring made of NBR, type of protection IP 68 up to 10 bar
Temperature range: -40 °C up to +100 °C

Abb. 1
Fig. 1

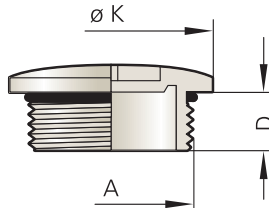


Abb. 2
Fig. 2

Nenngröße <i>Nom. size</i> A	D mm	Außendurchmesser <i>Outer diameter</i> Ø K mm	Art.-Nr. <i>Art. no.</i>	
M12x1,5	6,0	15	514GFK/212/OR	50
M16x1,5	6,0	20	514GFK/216/OR	50
M20x1,5	6,0	22	514GFK/220/OR	50
M25x1,5	8,0	26	514GFK/225/OR	50
M32x1,5	8,0	27	514GFK/232/OR	50
M40x1,5	8,0	34	514GFK/240/OR	50
M50x1,5	10,0	44	514GFK/250/OR	25
M63x1,5	12,0	55	514GFK/263/OR	25

32400 | TT06300

U7.3. Verschlussbolzen

RoHS

U7.3. Sealing plugs



Abb. 1
Fig. 1



Abb. 2
Fig. 2

PVDF, Farbe: schwarz
Verschlussbolzen für nicht belegte Bohrungen eines Mehrfach-Dichtein-
satzes
Temperaturbereich: -40 °C bis +150 °C

PVDF, colour: black
Sealing plug for spare holes of multiple sealing inserts
Temperature range: -40 °C to +150 °C

Art.-Nr. <i>Art. no.</i>	Durchmesser <i>Diameter</i> D2 mm	Länge <i>Length</i> L mm	
BO 3,0x25	3,0	25	100
BO 4,0x20	4,0	20	100
BO 4,0x25	4,0	25	100
BO 5,0x25	5,0	25	100
BO 5,3x25	5,3	25	100
BO 6,0x25	6,0	25	100
BO 6,4x25	6,4	25	100
BO 7,0x25	7,0	25	100
BO 7,5x20	7,5	20	100
BO 8,0x20	8,0	20	100
BO 9,0x20	9,0	20	100
BO 9,3x20	9,3	20	100
BO 10,0x20	10,0	20	100
BO 11,0x20	11,0	20	100
BO 12,0x25	12,0	25	100
BO 13,0x25	13,0	25	100
BO 16,2x25	16,2	25	100
BO 20,2x25	20,2	25	100

22300 | TT01910

U7.3. Verschlussbolzen

U7.3. Sealing plugs

RoHS



POM, Farbe: schwarz
Die Verschlussbolzen passen in die blueglobe®-Kabelverschraubung mit Inlet.
Temperaturbereich: -40 °C bis +110 °C

POM, colour: black
Sealing plugs fit in blueglobe® cable glands with inlet.
Temperature range: -40 °C up to +110 °C

Abb. 1
Fig. 1

i In Verbindung mit einer blueglobe® ATEX-Kabelverschraubung ist der Bolzen "ATEX" zugelassen.
 In combination with a blueglobe® ATEX cable gland the sealing plug is approved by ATEX.

Nenngröße Nom. size A	Art.-Nr. Art. no.	Schaftdurchmesser Shaft diameter mm	Kopf Head mm	Länge Length L mm	
M12x1,5	BObg 212/ 5 X	5,3	11	17,9	50
M16x1,5	BObg 216/ 7 X	7,3	13	20,6	50
M20x1,5	BObg 220/ 9 X	9,3	17	23,2	50
	BObg 220/14 X	13,4	17	20,2	50
M25x1,5	BObg 225/16 X	16,3	23	23,6	50
M32x1,5	BObg 232/20 X	20,3	28	25,1	50
M40x1,5	BObg 240/26 X	26,3	35	26,1	50

42000 | TT01500

K10. Blindscheibe

K10. Blind disk

RoHS



Polyamid, Farbe: transparent
Staub- und Feuchtigkeitsschutz bei der Vormontage und Transportschutz

Polyamide, colour: transparent,
Dust and water protection for preassembly and transport protection

Abb. 1
Fig. 1

Nenngröße Nom. size Metrisch	Nenngröße Rated size Pg	Art.-Nr. Art. no.	Passend zu UNI M Compatible with UNI M	Passend zu UNI Pg Compatible with UNI Pg	Passend zu blueglobe Compatible with blueglobe®	
M12x1,5	Pg 7	BS 7	21249...	149...	bg 212...	500
M16x1,5	Pg 9	BS 9	21650...	150...	bg 216...	500
M20x1,5	Pg 11	BS 11	22051...	151...	bg 220...	500
M20x1,5	Pg 13,5	BS 13	22052...	152...		500
M25x1,5	Pg 16	BS 16	22553...	153...		500
M32x1,5	Pg 21	BS 21	23254...	154...		500
M25x1,5		BS 22			bg 225...	500
M32x1,5		BS 27			bg 232...	500
M40x1,5	Pg 29	BS 29	24055...	155...	bg 240...	500
M50x1,5	Pg 36	BS 36	25056...	156...	bg 250...	50
M50x1,5	Pg 42	BS 42	25057...	157...		50
M63x1,5	Pg 48	BS 48	26358...	158...	bg 263...	50

36500 | TT07600

U18. Zwischenstutzen – Metrisch

U18. Adapter – Metric

RoHS



Messing vernickelt
Metrisches Innen- und Außengewinde EN 60423
Kurzes und langes Anschlussgewinde
Schutzart IP 68 bis 10 bar*

Brass, nickel plated
Metric inner and outer thread EN 60423
Short and long connection thread
*Type of protection IP 68 up to 10 bar**

Abb. 1
Fig. 1

i * Variante mit O-Ring NBR: Schutzart IP 68 bis 10 bar. Temperaturbereich: -30 °C bis +100 °C
 * Variant with o-ring NBR: type of protection IP 68 up to 10 bar. Temperature range: -30 °C up to +100 °C

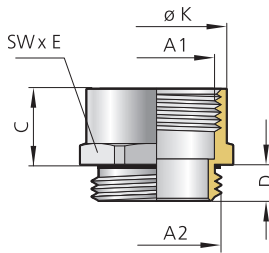


Abb. 2
Fig. 2

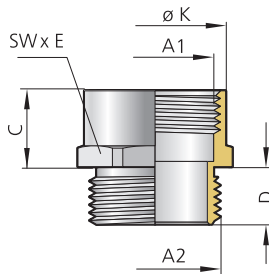


Abb. 3
Fig. 3

Anschlussgewinde/ -länge Connection thread/length		Innengewinde Inner thread	Art.-Nr. Art. no.	Bauhöhe Mounting height	Schlüsselweite Spanner width	
A1	D mm	A2		C mm	SW x E mm	
M12x1,5	5,0	M12x1,5	68212	10,0	14x15,5	50
M12x1,5	10,0	M12x1,5	88212	10,0	14x15,5	50
M16x1,5	5,0	M16x1,5	68216	11,0	18x20	50
M16x1,5	10,0	M16x1,5	88216	11,0	18x20	50
M20x1,5	6,0	M20x1,5	68220	13,0	22x24,4	50
M20x1,5	10,0	M20x1,5	88220	13,0	22x24,4	50
M25x1,5	7,0	M25x1,5	68225	15,0	27x29,5	50
M25x1,5	11,0	M25x1,5	88225	15,0	27x29,5	50
M32x1,5	8,0	M32x1,5	68232	17,0	34x37,8	50
M32x1,5	13,0	M32x1,5	88232	17,0	34x37,8	50
M40x1,5	8,0	M40x1,5	68240	18,0	42x46,5	25
M40x1,5	13,0	M40x1,5	88240	18,0	42x46,5	25
M50x1,5	9,0	M50x1,5	68250	20,0	52x56	10
M50x1,5	14,0	M50x1,5	88250	20,0	52x56	10
M63x1,5	10,0	M63x1,5	68263	22,0	66x70	5
M63x1,5	14,0	M63x1,5	88263	22,0	66x70	5

321.00 | IT104610

K13. Dichtring – Rund

K13. Sealing ring – Circular

RoHS



NBR (Perbunan), Farbe: schwarz
Für Anschlussgewinde: metrisch und Pg
Temperaturbereich: -30 °C bis +100 °C

NBR (Perbunan), colour: black
For connection thread: metric and Pg
Temperature range: -30 °C up to +100 °C

Abb. 1
Fig. 1

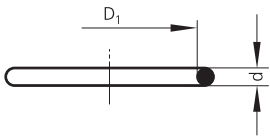


Abb. 2
Fig. 2

Metrisch - UNI Dicht®

Metric – UNI Dicht®

Nenngröße Nom. size A	D1 mm	Art.-Nr. Art. no.	d mm	
M12x1,5	10,5	OR 10,5x1,5	1,5	50
M16x1,5	13,0	OR 13x1,5	1,5	50
M20x1,5	17,0	OR 17x1,5	1,5	50
M25x1,5	22,0	OR 22x1,5	1,5	50
M32x1,5	28,0	OR 28x2	2,0	50
M40x2	42,0	OR 38x2	2,0	50
M50x1,5	45,0	OR 45x2	2,0	50
M63x1,5	58,0	OR 58x2	2,0	25
M72x2	72,0	OR 72x2	2,0	25
M75x1,5	74,0	OR 74x2	2,0	25
M80x2	88,0	OR 88x2	2,0	25

36800 | IT07/800

blueglobe®

Nenngröße Nom. size A	D1 mm	Art.-Nr. Art. no.	d mm	
M12x1,5	11,0	OR 11x1,5	1,5	50
M16x1,5	15,0	OR 15x1,5	1,5	50
M20x1,5	19,0	OR 19x1,5	1,5	50
M25x1,5	24,0	OR 24x1,5	1,5	50
M32x1,5	30,0	OR 30x1,5	1,5	50
M40x1,5	38,0	OR 38x1,5	1,5	50
M50x1,5	48,0	OR 48x2,0	2,0	50
M63x2,0	61,0	OR 61x2,0	2,0	50
M75x2,0	73,0	OR 73x2,0	2,0	50
M85x2,0	83,0	OR 83x2,0	2,0	50

44700 | IT07/800

Pg – UNI Dicht®

Nenngröße Nom. size A	D1 mm	Art.-Nr. Art. no.	d mm	
Pg 7	10,5	OR 10,5x1,5	1,5	50
Pg 9	12,0	OR 12x1,5	1,5	50
Pg 13,5	17,0	OR 17x1,5	1,5	50
Pg 11	14,0	OR 14x1,6	1,6	50
Pg 13,5	17,0	OR 17x1,5	1,5	50
Pg 16	20,0	OR 20x1,5	1,5	50
Pg 21	26,0	OR 26x1,5	1,5	50
Pg 29	33,0	OR 33x2	2,0	25
Pg 36	42,0	OR 42x2	2,0	50
Pg 42	50,0	OR 50x2	2,0	50
Pg 48	55,0	OR 55x2	2,0	50

36810 | IT07/800

K13. Dichtring – Rund

K13. Sealing ring – Circular

RoHS



LSR (Silikon), Farbe: rot
Für Anschlussgewinde: metrisch und Pg
Temperaturbereich: -60 °C bis +200 °C

LSR (silicone), colour: red
For connection thread: metric and Pg
Temperature range: -60 °C up to +200 °C

Abb. 1
Fig. 1

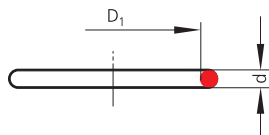


Abb. 2
Fig. 2

Metrisch - UNI Dicht®

Metric – UNI Dicht®

Nenngröße Nom. size A	D1 mm	Art.-Nr. Art. no.	d mm	
M12x1,5	10,3	OS 10,3x1,2	1,2	50
M16x1,5	13,0	OS 13x1,5	1,5	50
M20x1,5	17,0	OS 17x1,5	1,5	50
M25x1,5	22,0	OS 22x1,5	1,5	50
M32x1,5	28,0	OS 28x2	2,0	50
M40x1,5	42,0	OS 38x2	2,0	50
M50x1,5	45,0	OS 45x2	2,0	50
M63x1,5	58,0	OS 58x2	2,0	50
M75x1,5	74,0	OS 74x2	2,0	50

blueglobe®

Nenngröße Nom. size A	D1 mm	Art.-Nr. Art. no.	d mm	
M12x1,5	11,0	OS 11x1,5	1,5	50
M16x1,5	15,0	OS 15x1,5	1,5	50
M20x1,5	19,0	OS 19x1,5	1,5	50
M25x1,5	24,0	OS 24x1,5	1,5	50
M32x1,5	30,0	OS 30x1,5	1,5	50
M40x1,5	38,0	OS 38x1,5	1,5	50
M50x1,5	48,0	OS 48x2,0	2,0	50
M63x2,0	61,0	OS 61x2,0	2,0	50
M75x2,0	73,0	OS 73x2,0	2,0	50
M85x2,0	83,0	OS 83x2,0	2,0	50

Pg – UNI Dicht®

Nenngröße Nom. size A	D1 mm	Art.-Nr. Art. no.	d mm	
Pg 7	10,5	OS 10,5x1,5	1,5	50
Pg 9	12,0	OS 12x1,5	1,5	50
Pg 11	14,0	OS 14x1,6	1,6	50
Pg 13,5	17,0	OS 17x1,5	1,5	50
Pg 16	20,0	OS 20x1,5	1,5	50
Pg 21	25,0	OS 25x1,5	1,5	50
Pg 29	33,0	OS 33x2	2,0	50
Pg 36	42,0	OS 42x2	2,0	50
Pg 42	47,0	OS 47x2	2,0	50

K14. Dichtring – Flach

K14. Sealing ring – Flat

RoHS



Centellen, asbestfrei, Farbe: grau
Für Anschlussgewinde: metrisch und Pg
Temperaturbereich: -100 °C bis +180 °C

Centellen, asbestos free, colour: grey
For connection thread: metric and Pg
Temperature range: -100 °C up to +180 °C

Abb. 1
Fig. 1

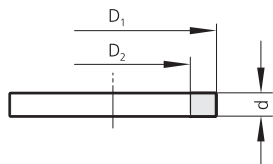


Abb. 2
Fig. 2

Metrisch - UNI Dicht®

Metric – UNI Dicht®

Nenngröße Nom. size A	Art.-Nr. Art. no.	Außendurchmesser outer diameter D1 mm	Innendurchmesser inner diameter D2 mm	d mm	
M12x1,5	DRC 212	16,0	12,0	2,0	50
M16x1,5	DRC 216	20,0	16,0	2,0	50
M20x1,5	DRC 220	24,0	20,0	2,0	50
M25x1,5	DRC 225	29,0	25,0	2,0	50
M32x1,5	DRC 232	36,0	32,0	2,0	50
M40x1,5	DRC 240	45,0	40,0	2,0	50
M50x1,5	DRC 250	56,0	50,0	2,0	50
M63x1,5	DRC 263	70,0	63,0	2,0	50

37200 | IT07910

Pg – UNI Dicht®

Nenngröße Nom. size A	Art.-Nr. Art. no.	Außendurchmesser outer diameter D1 mm	Innendurchmesser inner diameter D2 mm	d mm	
Pg 7	DRC 7	16,5	12,5	2,0	50
Pg 9	DRC 9	19,0	15,2	2,0	50
Pg 11	DRC 11	22,5	18,6	2,0	50
Pg 13,5	DRC 13	25,0	20,4	2,0	50
Pg 16	DRC 16	27,0	22,5	2,0	50
Pg 21	DRC 21	33,5	28,3	3,0	50
Pg 29	DRC 29	43,5	37,0	3,0	50
Pg 36	DRC 36	55,0	47,0	3,0	50

37300 | IT07910

K24. Dichtring – Flach

K24. Sealing ring – Flat

RoHS



Polyethylen (PE), Farbe: weiß/transparent
Für Anschlussgewinde: metrisch und Pg
Temperaturbereich: -20 °C bis +90 °C

Polyethylene (PE), colour: white/transparent
For connection thread: metric and Pg
Temperature range: -20 °C up to +90 °C

Abb. 1
Fig. 1

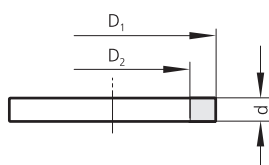


Abb. 2
Fig. 2

Metrisch - UNI Dicht®

Metric – UNI Dicht®

Nenngröße Nom. size A	Art.-Nr. Art. no.	Außendurchmesser outer diameter		Innendurchmesser inner diameter		50
		D1 mm	D2 mm	D2 mm	d mm	
M12x1,5	PY 212	16,0	12,0	12,0	2,0	50
M16x1,5	PY 216	20,0	16,0	16,0	2,0	50
M20x1,5	PY 220	24,0	20,0	20,0	2,0	50
M25x1,5	PY 225	29,0	25,0	25,0	2,0	50
M32x1,5	PY 232	36,0	32,0	32,0	2,0	50
M40x1,5	PY 240	45,0	40,0	40,0	2,0	50
M50x1,5	PY 250	56,0	50,0	50,0	2,0	50
M63x1,5	PY 263	70,0	63,0	63,0	2,0	50

Pg – UNI Dicht®

Nenngröße Nom. size A	Art.-Nr. Art. no.	Außendurchmesser outer diameter		Innendurchmesser inner diameter		50
		D1 mm	D2 mm	D2 mm	d mm	
Pg 7	PY 7	16,5	12,5	12,5	2,0	50
Pg 9	PY 9	19,0	15,2	15,2	2,0	50
Pg 11	PY 11	22,5	18,6	18,6	2,0	50
Pg 13,5	PY 13	25,0	20,4	20,4	2,0	50
Pg 16	PY 16	27,0	22,5	22,5	2,0	50
Pg 21	PY 21	33,5	28,3	28,3	3,0	50
Pg 29	PY 29	43,5	37,0	37,0	3,0	50
Pg 36	PY 36	55,0	47,0	47,0	3,0	50
Pg 42	PY 42	63,0	54,0	54,0	3,0	50
Pg 48	PY 48	69,0	59,3	59,3	3,0	50

blueglobe®-Dichtring – Flach

blueglobe® Sealing ring – Flat

RoHS



TPE, Farbe: schwarz
Für Anschlussgewinde: metrisch
Temperaturbereich: -40 °C bis +130 °C

TPE, colour: black
For connection thread: metric
Temperature range: -40 °C up to +130 °C

Abb. 1
Fig. 1

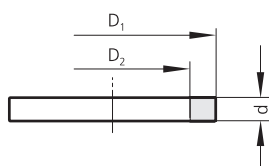


Abb. 2
Fig. 2

Nenngröße Nom. size A	Art.-Nr. Art. no.	Außendurchmesser outer diameter		Innendurchmesser inner diameter		50
		D1 mm	D2 mm	D2 mm	d mm	
M12x1,5	DRF 212	18,0	12,0	12,0	2,0	50
M16x1,5	DRF 216	21,0	16,0	16,0	2,0	50
M20x1,5	DRF 220	25,0	20,0	20,0	2,0	50
M25x1,5	DRF 225	31,5	25,0	25,0	2,0	50
M32x1,5	DRF 232	37,0	32,0	32,0	2,0	50
M40x1,5	DRF 240	46,0	40,0	40,0	2,0	50

K8. Klemmnippel

K8. Clamping nipple

RoHS



Messing vernickelt
Metrisches Anschlussgewinde EN 60423 oder Pg-Gewinde
Druckschraube mit 2 Zugentlastungsbügeln und Biegeschutz
Zugentlastungsschrauben: Stahl, verzinkt

Brass, nickel plated
Metric connection thread EN 60423 or Pg thread
Pressure screw incl. 2 brackets for strain relief and edge protection
Screws made of galvanised steel

Abb. 1
Fig. 1

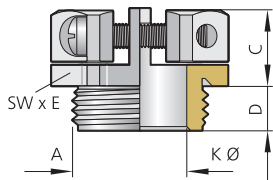


Abb. 2
Fig. 2

Nenngröße Nom. size A	D mm	Art.-Nr. Art. no.	Kabeldurchmesser Cable diameter max./min. ø mm	Bauhöhe Mounting height C mm	Schlüsselweite Spanner width SW x E mm	
M12x1,5	5,5	Kle 212	7,5 - 5,0	9,5	16x17,5	50
M16x1,5	6,0	Kle 216	10,0 - 7,0	10,0	19x20,3	50
M20x1,5	7,5	Kle 220	14,0 - 10,0	11,5	24x26,4	50
M25x1,5	8,0	Kle 225	20,0 - 12,0	13,0	34x37,8	50
M32x1,5	8,0	Kle 232	27,0 - 16,0	14,0	42x46	25
M40x1,5	9,5	Kle 240	33,0 - 22,0	16,0	52x56	25
M50x1,5	9,5	Kle 250	38,5 - 25,0	16,0	52x56	25

Pg-Anschlussgewinde

Pg connection thread

Nenngröße Nom. size A	D mm	Art.-Nr. Art. no.	Kabeldurchmesser Cable diameter max./min. ø mm	Bauhöhe Mounting height C mm	Schlüsselweite Spanner width SW x E mm	
Pg 7	5,5	Kle 7	8,0 - 5,0	9,5	16x17,5	50
Pg 9	6,0	Kle 9	10,0 - 7,0	10,0	19x20,3	50
Pg 11	6,0	Kle 11	12,0 - 8,0	11,5	22x24	50
Pg 13,5	7,5	Kle 13	14,0 - 10,0	11,5	24x26,4	50
Pg 16	7,5	Kle 16	17,0 - 11,0	11,5	27x30	50
Pg 21	8,0	Kle 21	22,0 - 12,0	13,0	34x38	25
Pg 29	8,0	Kle 29	30,0 - 19,0	14,0	42x46,5	10
Pg 36	9,5	Kle 36	37,0 - 25,5	17,5	52x56	10
Pg 42	10,0	Kle 42	43,0 - 31,0	16,3	62x65	5
Pg 48	11,0	Kle 48	48,0 - 35,0	16,3	64x69	5

U2.1.1 UNI Verbindungs-Druckschraube

U2.1.1 UNI Connection pressure screw

RoHS



Messing vernickelt
Pg-Gewinde
Kombiniert jede Pg-Schlauchverschraubung zur Kabelabdichtung innenliegend mit dem UNI Dicht®-System

Brass, nickel plated
Pg thread
Combines each Pg hose gland with the UNI Dicht® system to seal cable inside

Abb. 1
Fig. 1

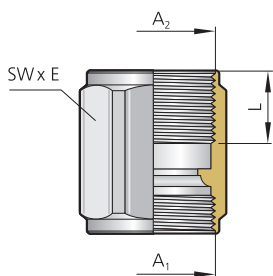


Abb. 2
Fig. 2

Anschlussgewinde/-länge Connection thread/length A1	A2	Art.-Nr. Art. no.	Gewindelänge Thread length L mm	Schlüsselweite Spanner width SW x E mm	
Pg 11	Pg 11	DS 15151d	15,0	20x22,2	50
Pg 13,5	Pg 13,5	DS 15252d	15,0	22x24,4	50
Pg 16	Pg 16	DS 15353d	15,0	24x26,7	50
Pg 21	Pg 21	DS 15454d	15,0	30x33,5	25
Pg 29	Pg 29	DS 15555d	18,0	40x43,5	10
Pg 36	Pg 36	DS 15656d	22,0	50x54	5

S4. Schlauchschelle

S4. Hose clip

RoHS



Schneckenwindeschelle nach DIN 3017 aus Edelstahl

Schraube: Stahl verzinkt mit Kreuzschlitz

*Helix clip as per DIN 3017, made of stainless steel
Screw: steel, zinc plated with cross recess*

Abb. 1
Fig. 1

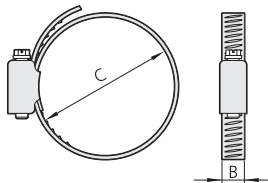


Abb. 2
Fig. 2

Art.-Nr. Art. no.	Innendurchmesser inner diameter min./max.	Breite Width B mm	
SGL 8/15	8,0 - 15,0	9,5	50
SGL12/20	12,0 - 20,0	9,5	50
SGL16/25	16,0 - 25,0	9,5	50
SGL20/32	20,0 - 32,0	9,5	25
SGL25/40	25,0 - 40,0	9,5	10
SGL32/50	32,0 - 50,0	9,5	5
SGL40/60	40,0 - 60,0	9,5	5

38100 | TT08300

K5. Erdunglasche

K5. Earth tag

RoHS



Messing vernickelt

Brass, nickel plated

Abb. 1
Fig. 1

Nenngröße Nom. size A	Art.-Nr. Art. no.	
M16	ETMM-16	50
M20	ETMM-20	50
M25	ETMM-25	50
M32	ETMM-32	25
M40	ETMM-40	25
M50	ETMM-50	10
M63	ETMM-63	10
M75	ETMM-75	10
M85	ETMM-85	10

38200 | TT08400

K5. Erdungslasche

K5. Earth tag

RoHS



Messing blank
Anschlüsse löt- oder steckbar, Montage durch Aufstecken auf Anschlussgewinde und Fixierung durch Gegenmutter

Brass, blanc
Connections can be soldered or inserted grounding strip is placed on the connection thread and fixated with a lock nut

Abb. 1
 Fig. 1

Nenngröße Nom. size A	Art.-Nr. Art. no.	
Pg 7	ETPGM-7	50
Pg 9	ETPGM-9	50
Pg 11	ETPGM-11	50
Pg 13,5	ETPGM-13	50
Pg 16	ETPGM-16	50
Pg 21	ETPGM-21	50
Pg 29	ETPGM-29	50
Pg 36	ETPGM-36	50
Pg 42	ETPGM-42	25
Pg 48	ETPGM-48	25



36300 | T108400

