

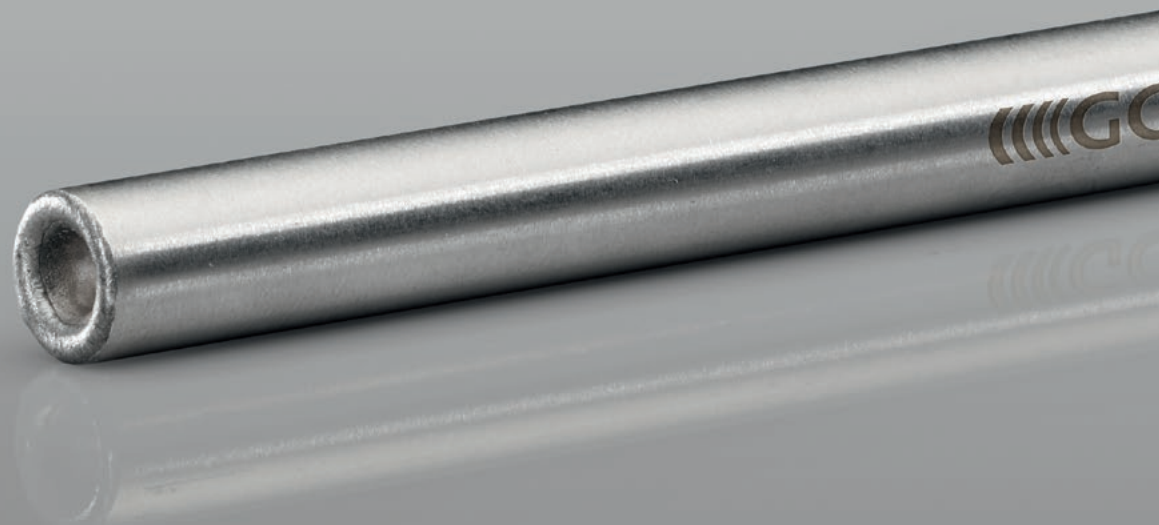
GCheat®

The highest degree.



高密度加热棒

*GC-cart high-density cartridge heaters*



## GC-cart高密度筒形加热器

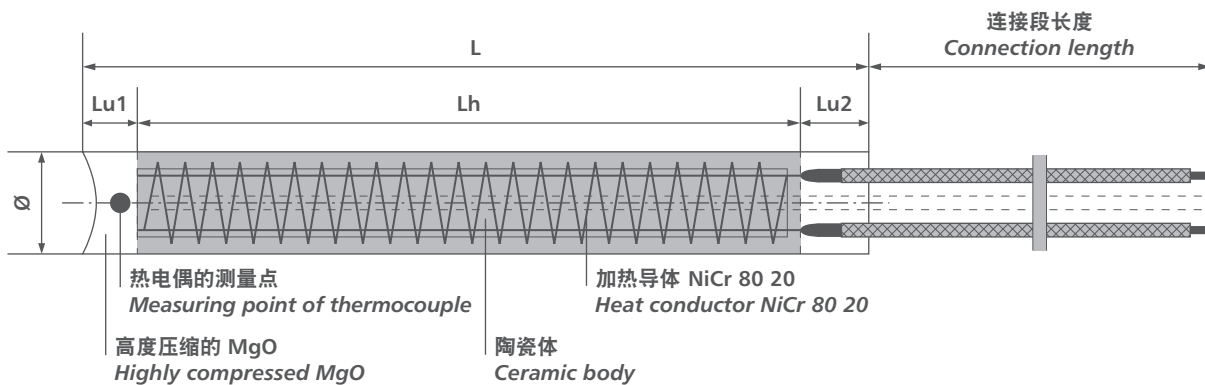
### *GC-cart high-density cartridge heaters*

由于特殊的制造工艺和高质量材料的使用，GC-cart高密度筒形加热器保证了高稳定水平，即使在苛刻的工作条件下。高表面载荷在紧凑的空间实现同样高的性能，即使在筒形加热器壳体上工作温度达750°C的条件下。GC-cart高密度筒形加热器符合公制和英制的国际标准。我们迎合每个客户的要求并按客户要求生产直径6 mm到45 mm的高密度筒形加热器。GC-heat也能够为特殊应用，例如带独立的功率分布、可开关的加热段和集成的热电偶，设计和生产定制型产品以及安装和拆卸工具。各种导线使GC-heat高密度筒形加热器能够适合特殊的应用。

*Due to a special manufacturing process and the use of high-quality materials, GC-cart high-density cartridge heaters guarantee a high level of stability even under difficult operating conditions. High surface loads enable equally high performance in a compact space, even at operating temperatures of up to 750°C on the cartridge heater's sheath. GC-cart high-density cartridge heaters conform to metric and imperial international norms. We cater to individual customer requirements and produce diameters between 6 mm and 45 mm on request. GC-heat is also able to design and produce bespoke versions for special applications, e.g. with individual power distribution, switchable heating zones and integrated thermocouples, as well as mounting and dismantling aids. Various leads enable the GC-heat high-density cartridge heaters to be adapted to suit the particular application.*



# GC-cart



## 技术可能性和选项

### Technical possibilities and options

- 紧凑，性能高  
High performance in compact spaces
- 功率分布独立  
Individual power distribution
- 加热区可切换  
Switchable zones
- 一体化热电偶  
Integrated thermocouple
- 各种导线和连接形式  
Various leads and connections
- 依照VDE0721个性化进行质量检查  
Individual quality inspection according to VDE0721

## 应用

### Applications

- 塑料行业  
Plastic industry
- 热流道系统  
Hot runner systems
- 包装机器  
Packaging machines
- 医疗设备  
Medical equipment
- 铸造工艺  
Foundry technology
- 其他许多热工艺  
Numerous other thermal processes

# GC-cart

## GC-cart标准型

### GC-cart standard version

#### 连接封装

##### Connection encapsulation

- 陶瓷填充料、硅胶封装、环氧树脂、PTFE垫片  
*Ceramic filler, silicone encapsulation, epoxy resin, PTFE disc*
- 对密封性有特殊要求时，我们可提供带有特殊铸件的GC-cart hermetic。（尺寸请洽询）  
*With special sealing requirements, we can offer our GC-cart hermetic with special sealing compound. (dimensions on request)*

#### 一般特性：

##### General characteristics

- 连接形式1000 mm玻璃纤维绝缘的整根标准导线。  
其他形式，请见第38页。  
*Connection types: 1000 mm continuous standard glass-fibre-insulated lead.*  
*For other versions, see page 38*

- 绝缘电阻：>5 M $\Omega$   
*Insulation resistance: >5 M $\Omega$*
- 壳体温度/工作温度：最大750°C  
*Sheath/operating temperature: max. 750°C*
- 依照VDE0721进行质量检查  
*Quality assurance: according to VDE0721*
- 特殊解决方案：能按客户要求定做各种规格  
*Special solutions: different sizes can be made on request*



- $\varnothing$  GC-cart直径  
*Diameter GC-cart*
- $L$  总长  
*Total length*
- $L_h$  加热段长度  
*Heated length*
- $Lu_1$  不加热段，底部  
*Unheated zone, bottom*
- $Lu_2$  不加热段，头部  
*Unheated zone, head*

GC-cart高密度筒形加热器 GC-cart high-density cartridge heater	6.0 – 6.2	6.3 – 7.5	7.8 – 9.0	9.3 – 11.5	11.9 – 12.5
连接电压 Connection voltage	最高温度415 V max. 415 V		最高温度500 V max. 500 V		
最大表面载荷 Max. surface load	50 W/cm <sup>2</sup>				
直径公差 Diameter tolerance	-0.02 mm / -0.06 mm				
长度公差 Length tolerance	± 1.5%, 最少 ± 1 mm ± 1.5%, min. ± 1 mm				
瓦数公差 Wattage tolerance	± 10%				
底部不加热段 (Lu1) Unheated at the bottom (Lu1)	最少6 mm min. 6 mm				
头部不加热段 (Lu2) Unheated at the head (Lu2)	最少6 mm min. 6 mm			最少7 mm min. 7 mm	
热电偶 Thermocouple	Fe-CuNi/NiCr-Ni		☐ 可自由选择的位置 Freely selectable position		
PT100 PT100	—		☐		
高电压稳定性 High-voltage stability	1000 V		1250 V	1500 V	
壳体材料 Sheath material	CrNi钢 CrNi steel				
瓦数分布 Wattage distribution	☐				
可独立开关的段 Zones individually switchable	—		☐ 导线最多有4根 with max. 4 leads		

GC-cart高密度筒形加热器 GC-cart high-density cartridge heater	12.6 – 17.0	17.8 – 20.4	22.0	24.7 – 26.0	29.0 - 32.5
连接电压 Connection voltage	最高温度500 V max. 500 V				
最大表面载荷 Max. surface load	50 W/cm <sup>2</sup>				
直径公差 Diameter tolerance	-0.02 mm / -0.06 mm				
长度公差 Length tolerance	± 1.5%, 最少 ± 1 mm ± 1.5%, min. ± 1 mm				
瓦数公差 Wattage tolerance	± 10%				
底部不加热段 (Lu1) Unheated at the bottom (Lu1)	最少11 mm min. 11 mm	最少12 mm min. 12 mm	最少13 mm min. 13 mm	最少23 mm min. 23 mm	
头部不加热段 (Lu2) Unheated at the head (Lu2)	最少10 mm min. 10 mm			最少12 mm min. 12 mm	最少19 mm min. 19 mm
热电偶 Thermocouple	Fe-CuNi/NiCr-Ni		☐ 可自由选择的位置 Freely selectable position		
PT100 PT100	☐				
高电压稳定性 High-voltage stability	1500 V				
壳体材料 Sheath material	CrNi钢 CrNi steel				
瓦数分布 Wattage distribution	☐				
可独立开关的段 Zones individually switchable	☐ 导线最多有4根 with max. 4 leads			☐ 导线最多有6根 with max. 6 leads	

不排除可能的技术变更和错误 Technical changes and errors excepted.

■ 标准型 Standard version

☐ 可选型 Optional version

— 没有 Not available

可按客户要求提供其他设计 Other designs available on request.

# GC-cart

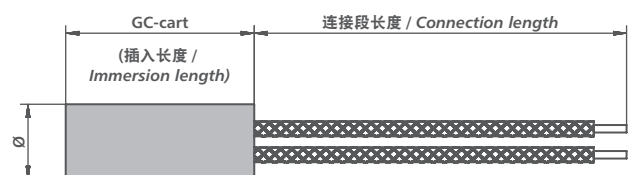
## GC-cart 的连接形式

### GC-cart connection types

#### 整根导线

##### Continuous leads

- G** 玻璃纤维绝缘导线，最大350°C  
*Glass silk insulated leads, max. 350°C*
- SFG** 玻璃纤维绝缘的导线，加强型，最大450°C  
*Glass silk insulated leads, strengthened version max. 450°C*
- T** 特氟龙导线（PTFE），最大260°C  
*PTFE leads, max. 260°C*
- SLV** 硅导线，最大180°C  
*Silicone leads, max. 180°C*
- SLF** 高柔性硅导线，最大180°C  
*Highly flexible silicone leads, max. 180°C*
- SLV** 高温导线，最大600°C  
*High-temperature leads, max. 600°C*

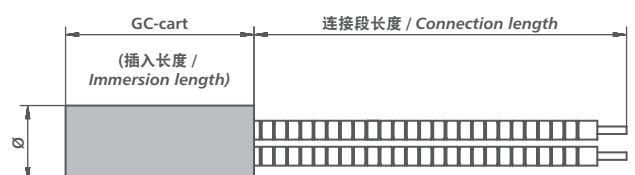


G, SFG, T, SLV, SLF, M

#### 珠状导线

##### Beaded leads

- P** 陶瓷珠体，最大750°C  
*Ceramic beads, max. 750°C*



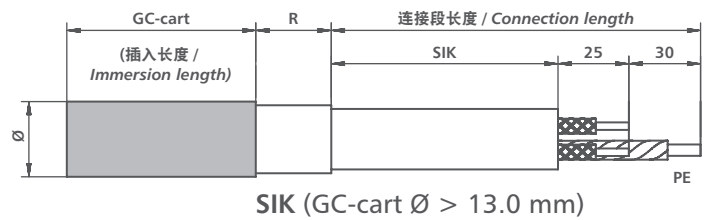
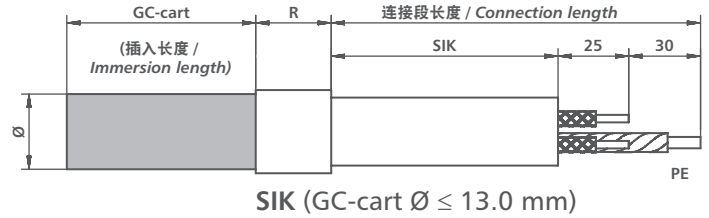
P

硅导线，最大180°C

Silicone cable, max. 180°C

SIK 2线、3线、或5线硅电缆带套管  
2-, 3- or 5-wired silicone cable with tube

Ø GC-cart		Ø R x R	
6.5	1/4"	7.5 x 40	
8.0		9.0 x 40	
10.0		11.0 x 40	
12.0		14.0 x 40	
12.5	1/2"	14.0 x 40	
16.0	5/8"	14.0 x 40	
20.0	3/4"	18.0 x 40	

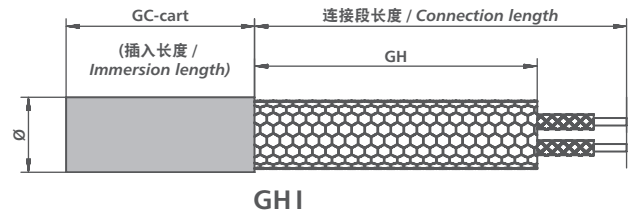


玻璃纤维绝缘衬套，最大250°C

Glass silk insulated sleeve, max. 250°C

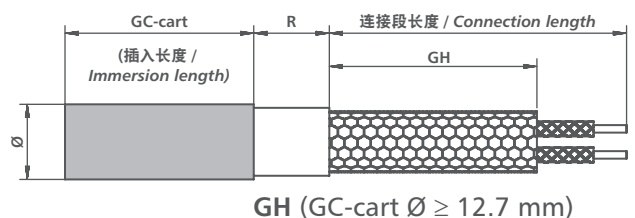
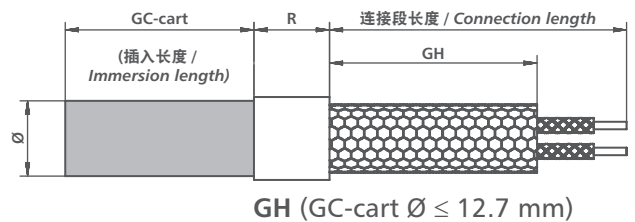
GH I 带玻璃纤维绝缘衬套的整根导线  
Continuous leads with glass silk insulated sleeve

Ø GC-cart		最高温度AD max. AD	
8.0		6.0	
10.0	3/8"	9.0	
12.0		10.0	
12.5	1/2"	10.0	
16.0	5/8"	13.0	
	3/4"	16.0	
20.0		17.0	



GH 带玻璃纤维绝缘衬套和套管的整根导线  
Continuous leads with glass silk insulated sleeve and tube

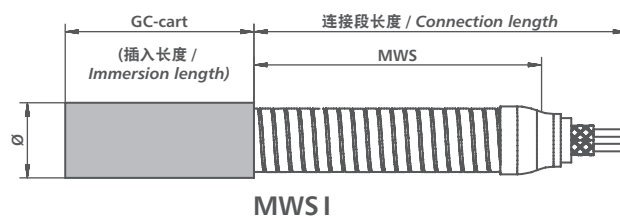
Ø GC-cart		Ø R x R	最高温度AD max. AD
6.5	1/4"	7.5 x 40	6.0
8.0		9.0 x 40	7.0
10.0	3/8"	11.0 x 40	9.0
12.0		14.0 x 40	11.0
12.5	1/2"	14.0 x 40	11.0
16.0	5/8"	14.0 x 40	11.0
	3/4"	18.0 x 40	17.0
20.0		18.0 x 40	17.0



**金属衬套，最大220°C**  
**Metal sleeve, max. 220°C**

**MWS I 内部金属衬套**  
*Metal sleeve from the inside*

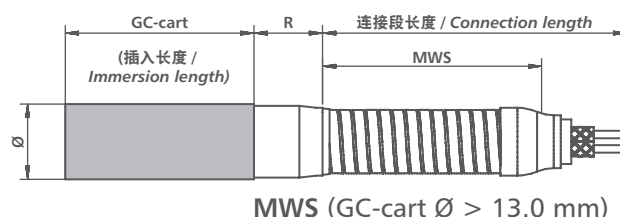
Ø GC-cart	Ø MWS AD	
12.0	11.0	
12.5 1/2"	11.0	
16.0 5/8"	14.0	
3/4"	17.0	
20.0	17.0	



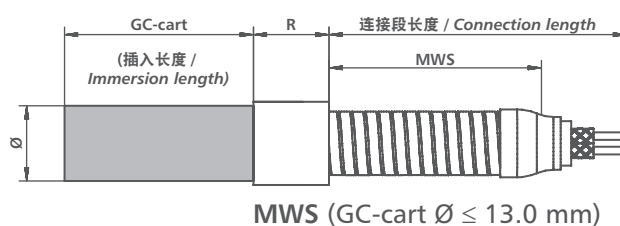
**MWS I**

**MWS 金属衬套带套管**  
*Metal sleeve with tube*

Ø GC-cart	Ø R x R	Ø MWS AD
6.5 1/4"	7.5 x 40	7.0
8.0	9.0 x 40	8.0
10.0 3/8"	11.0 x 40	10.0
12.0	14.0 x 40	13.0
12.5 1/2"	14.0 x 40	13.0
16.0 5/8"	14.0 x 40	13.0
20.0 3/4"	18.0 x 40	16.0



**MWS (GC-cart Ø > 13.0 mm)**

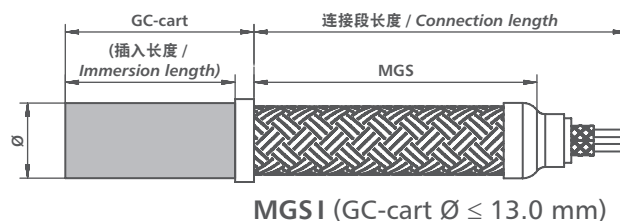


**MWS (GC-cart Ø ≤ 13.0 mm)**

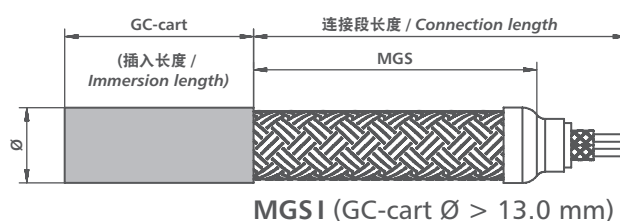
**金属编织衬套，最大250°C**  
**Braided metal sleeve, max. 250°C**

**MGS I 金属编织衬套不带套管**  
*Braided metal sleeve without tube*

Ø GC-cart	Ø R10	Ø MGS
6.5 1/4"	9.0	4.0 – 6.0
8.0	11.0	4.0 – 6.0
10.0 3/8"	14.0	5.0 – 12.0
12.0	16.0	5.0 – 12.0
12.5 1/2"	16.0	5.0 – 12.0
16.0 5/8"	12.5	5.0 – 12.0
3/4"	15.0	12.0 – 22.0
20.0	16.0	12.0 – 22.0
25.0	21.0	12.0 – 22.0



**MGS I (GC-cart Ø ≤ 13.0 mm)**



**MGS I (GC-cart Ø > 13.0 mm)**



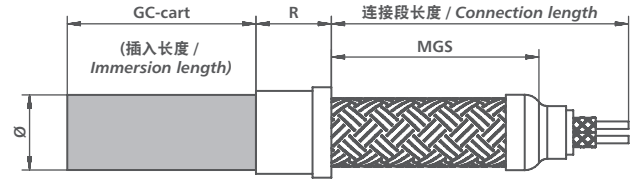
金属编织衬套

Braided metal sleeve

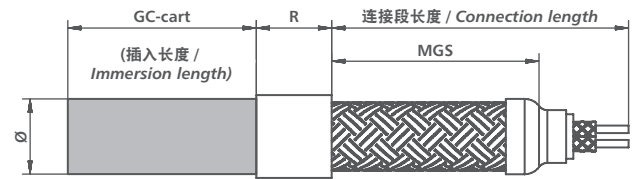
MGS 金属编织衬套带套管

Braided metal sleeve with tube

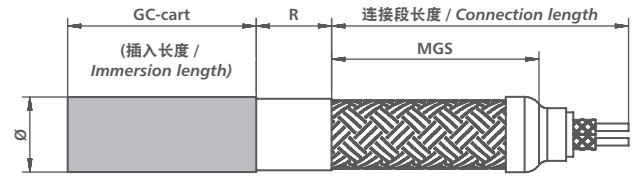
Ø GC-cart		Ø R x R	Ø R10
6.5	1/4"	7.5 x 40	10.0
8.0		9.0 x 40	11.0
10.0	3/8"	11.5 x 40	14.0
12.0		14.0 x 40	
12.5	1/2"	14.0 x 40	
16.0	5/8"	14.0 x 40	
20.0	3/4"	18.0 x 40	
25.0		22.0 x 40	



MGS (GC-cart Ø ≤ 10.0 mm)



MGS (GC-cart Ø ≤ 13.0 mm)



MGS (GC-cart Ø > 13.0 mm)

不锈钢衬套，最大450°C

Stainless-steel sleeve, max. 450°C

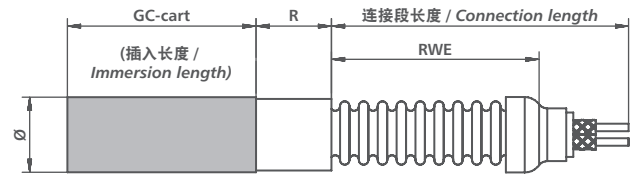
RWE I 内部不锈钢衬套

Stainless-steel sleeve from the inside

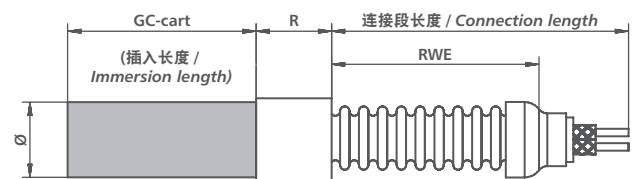
MWS 不锈钢衬套带套管

Stainless-steel sleeve with tube

Ø GC-cart		Ø R x R	Ø RWE
8.0		9.0 x 40	9.7
10.0	3/8"	11.0 x 40	9.7
12.0		14.0 x 40	12.7
12.5	1/2"	14.0 x 40	12.7
16.0	5/8"	14.0 x 40	12.7
20.0	3/4"	18.0 x 40	16.8



RWE I (GC-cart Ø > 13.0 mm)



RWE (GC-cart Ø ≤ 13.0 mm)

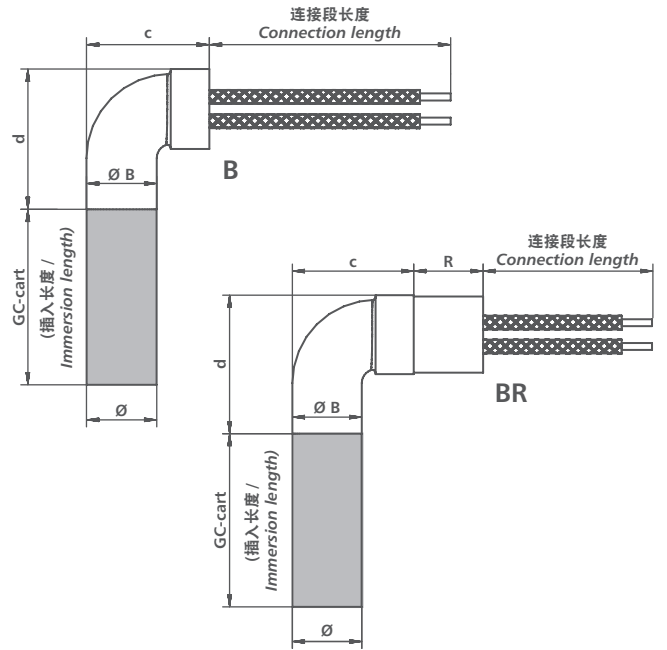
管形弯曲

**Tubular bend**

**B** 钢管弯曲  
*Tubular steel bend*

**BR** 管形弯曲带套管  
*Tubular bend with tube*

Ø GC-cart	Ø B	c	d	Ø R x R
6.5	1/4"	8.0	15.5	18.9
8.0	8.0	15.5	18.9	10.0 x 40
10.0	3/8"	10.0	19.0	24.0
12.0	12.0	21.5	27.5	14.0 x 40
12.5	1/2"	12.0	21.5	27.5
16.0	5/8"	16.0	28.5	33.5
20.0	3/4"	20.0	35.0	40.0



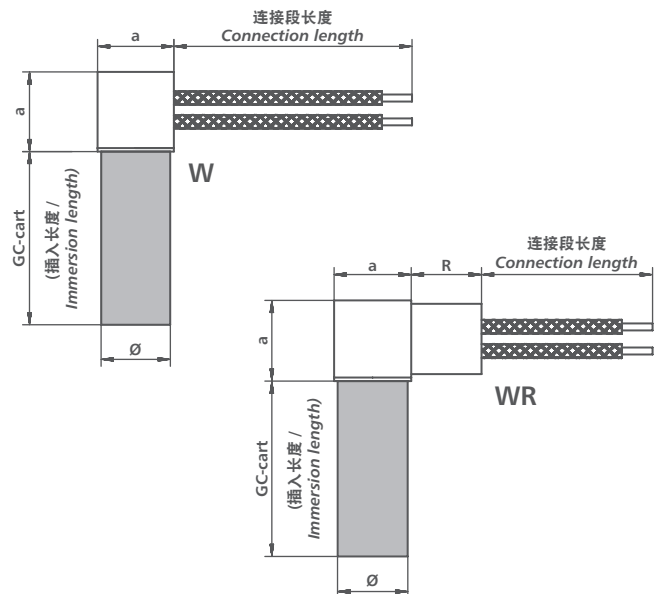
角块

**Angular block**

**W** 角块  
*Angular block*

**WR** 角块带管套  
*Angular block with tube*

Ø GC-cart	a	Ø R x R		
6.5	1/4"	10.0	9.0 x 40	
8.0	10.0	9.0 x 40		
10.0	3/8"	14.0	11.0 x 40	
12.0	14.0	11.0 x 40		
12.5	1/2"	14.0	11.0 x 40	
16.0	5/8"	18.0	14.0 x 40	
20.0	3/4"	22.0	18.0 x 40	
25.0	30.0	24.0 x 40		
30.0	40.0	28.0 x 40		



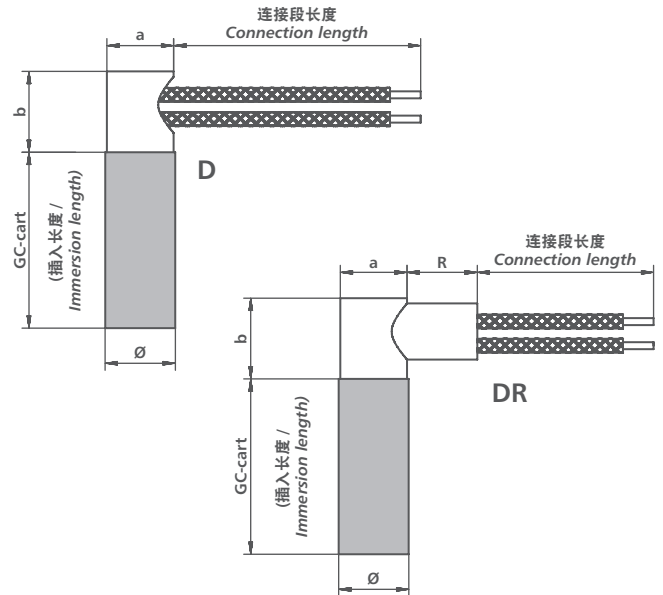
角形弯曲零件

Turned part

D 直角弯曲零件  
Right-angle turned part

DR 直角弯曲零件带套管  
Right-angle turned part with tube

Ø GC-cart		a	b	Ø R x R
8.0		7.8	10.0	9.0 x 40
10.0	3/8"	9.0	12.0	11.0 x 40
12.0		12.0	13.0	11.0 x 40
12.5	1/2"	12.0	13.0	11.0 x 40
16.0	5/8"	15.5	18.0	14.0 x 40
	3/4"	19.0	23.0	18.0 x 40
20.0		19.0	23.0	18.0 x 40

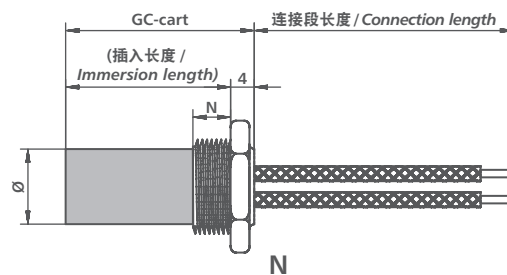


## 螺纹接套

### Screw-in nipple

N 螺纹接套  
Screw-in nipple

Ø GC-cart	SW	N	Ø N
6.5	12.0	6.0	M 10 x 1
8.0	14.0	6.0	M 12 x 1
3/8"	17.0	8.0	1/4"
10.0	17.0	8.0	M 14 x 1.5
12.5	19.0	8.0	M 16 x 1.5
1/2"	19.0	8.0	3/8"
5/8"	24.0	8.0	1/2"
16.0	24.0	8.0	M 20 x 1.5
20.0	27.0	10.0	M 26 x 1.5

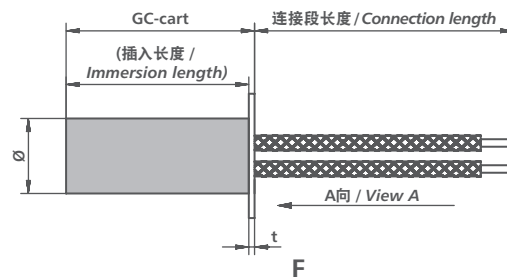


## 法兰

### Flange

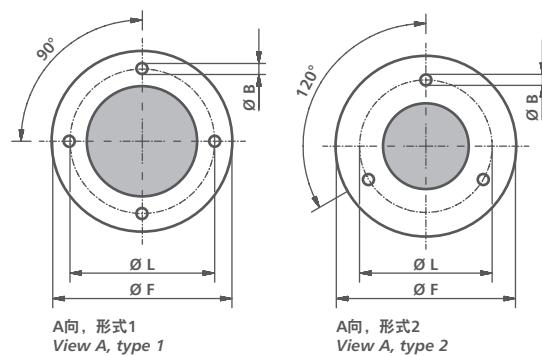
F1 法兰, 形式1  
Flange, type 1

Ø GC-cart	Ø F	Ø L	Ø B	t	
6.5	1/4"	18.0	13.0	2.2	1.0
8.0	18.0	13.0	2.2	1.0	
10.0	3/8"	27.0	20.0	3.2	1.5
12.0	27.0	20.0	3.2	1.5	
12.5	1/2"	27.0	20.0	3.2	1.5
16.0	5/8"	33.0	25.6	3.2	1.5
20.0	3/4"	33.0	25.6	3.2	1.5



F2 法兰, 形式2  
Flange, type 2

Ø GC-cart	Ø F	Ø L	Ø B	t
≤ 15.0	35.0	25.0	4.2	2.0
≤ 25.0	44.0	34.0	4.2	2.0
≤ 32.0	52.0	42.0	4.2	2.0
≤ 40.0	62.0	52.0	4.2	2.0



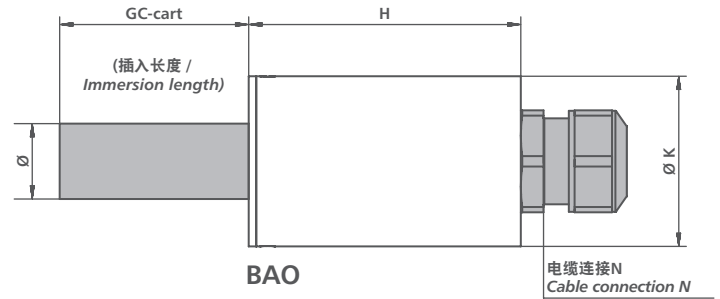
接线盒

Connection housing

BAO 接线盒

Connection housing

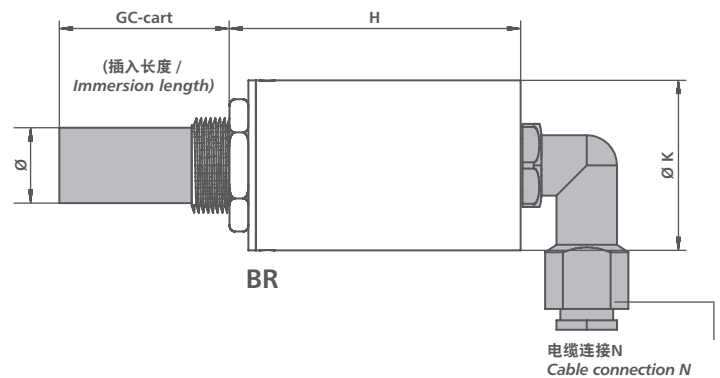
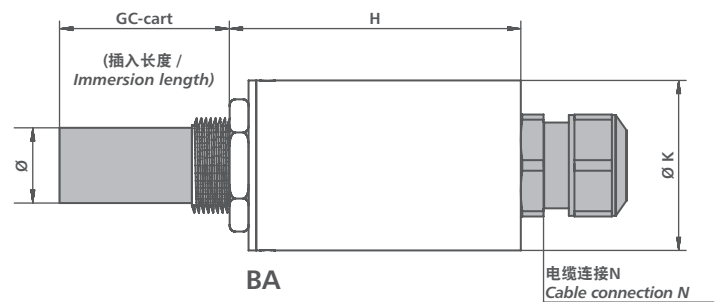
Ø GC-cart	SW	Ø K	H	N
12.7		31.5	67.0	M 16x1.5
16.0		31.5	67.0	M 16x1.5
20.0		36.5	67.0	M 20x1.5
25.0		36.5	67.0	M 20x1.5
32.0		46.5	67.0	M 20x1.5
40.0		60.0	60.0	M 20x1.5



BA/BR 接线盒

Connection housing

Ø GC-cart	Thread 螺纹	SW	Ø K	H	N
12.7	G 3/8"	32	31.5	65+7=72	M 16x1.5
16.0	G 1/2"	32	31.5	65+8=73	M 16x1.5
20.0	G 3/4"	36	36.5	65+8=73	M 20x1.5
25.0	G 1"	41	36.5	65+8=73	M 20x1.5
32.0	G 1 1/4"	50	46.5	65+8=73	M 20x1.5
40.0	G 1 1/2"	60	60.0	60+10=70	M 20x1.5





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