

Product data sheet

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VT020 - 90° ANGLE V-LINE THERMOMETERS



Features:

- Glass thermometer in heavy duty protective housing
- Reliable instrument with no moving parts
- Wide choice of pocket lengths and temperature ranges
- Customer branded products available subject to quantity
- Replacement thermometer tubes available (to order, substitute last digit of product number for "6" ie replacement tube for 82/090/0 is 82/090/6)
- **Brannan** quality and accuracy
- For indoor, outdoor and high humidity installations
- Manufactured to DIN 16195
- For accuracy, see above standard
- Made in UK
- Supplied in individual box

Standard product specifications:

| | |
|-----------------------|---|
| Case lengths | 110mm, 150mm & 200mm |
| Ranges | -30 to +200°C only or °C&F |
| Case | < +120°C: polypropylene > +160°C: painted aluminium |
| Form | 90° Angle |
| Glass filling | Blue spirit |
| Connection | 1/2" BSP |
| Pocket | Brass (stainless steel available on request) |
| Pocket lengths | 30mm, 40mm, 50mm, 63mm, 75mm, 100mm, 160mm, 200mm, 250mm x 10mm diameter |

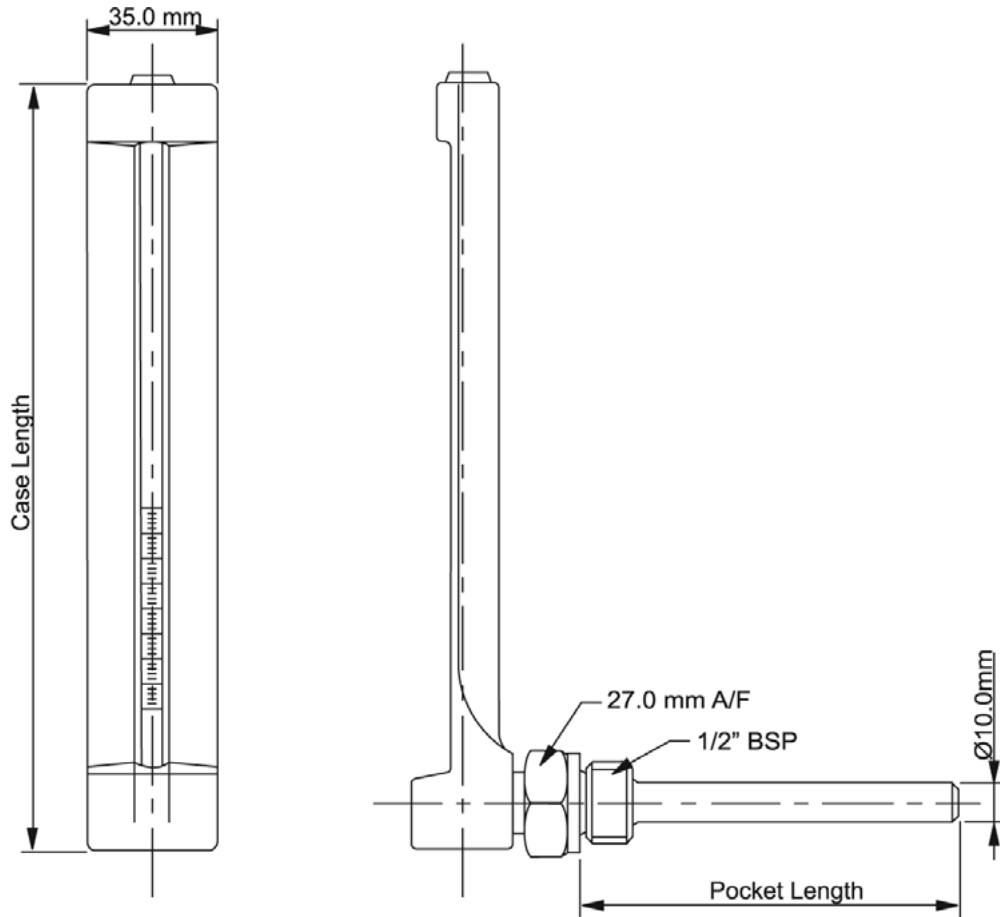
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Dimensions:



Standard product numbers - 110mm case:

| Range | Divs | 30mm Pocket | 40mm Pocket | 50mm Pocket | 63mm Pocket | 75mm Pocket | 100mm Pocket | 160mm Pocket | 200mm Pocket | 250mm Pocket |
|----------------|------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|
| -30 to +50°C | 1°C | 88/090/0 | 88/091/0 | 88/092/0 | 88/093/0 | 88/094/0 | 88/095/0 | 88/096/0 | 88/099/0 | 88/097/0 |
| -30 to +50°C&F | 1°C | 88/100/0 | 88/101/0 | 88/102/0 | 88/103/0 | 88/104/0 | 88/105/0 | 88/106/0 | 88/109/0 | 88/107/0 |
| 0 to +50°C | 1°C | 88/150/0 | 88/151/0 | 88/152/0 | 88/153/0 | 88/154/0 | 88/155/0 | 88/156/0 | 88/159/0 | 88/157/0 |
| 0 to +50°C&F | 1°C | 88/160/0 | 88/161/0 | 88/162/0 | 88/163/0 | 88/164/0 | 88/165/0 | 88/166/0 | 88/169/0 | 88/167/0 |
| 0 to +60°C | 1°C | 88/170/0 | 88/171/0 | 88/172/0 | 88/173/0 | 88/174/0 | 88/175/0 | 88/176/0 | 88/179/0 | 88/177/0 |
| 0 to +60°C&F | 1°C | 88/140/0 | 88/141/0 | 88/142/0 | 88/143/0 | 88/144/0 | 88/145/0 | 88/146/0 | 88/149/0 | 88/147/0 |
| 0 to +100°C | 1°C | 88/190/0 | 88/191/0 | 88/192/0 | 88/193/0 | 88/194/0 | 88/195/0 | 88/196/0 | 88/199/0 | 88/197/0 |
| 0 to +100°C&F | 1°C | 88/180/0 | 88/181/0 | 88/182/0 | 88/183/0 | 88/184/0 | 88/185/0 | 88/186/0 | 88/189/0 | 88/187/0 |
| 0 to +120°C | 1°C | 88/220/0 | 88/221/0 | 88/222/0 | 88/223/0 | 88/224/0 | 88/225/0 | 88/226/0 | 88/229/0 | 88/227/0 |
| 0 to +120°C&F | 1°C | 88/230/0 | 88/231/0 | 88/232/0 | 88/233/0 | 88/234/0 | 88/235/0 | 88/236/0 | 88/239/0 | 88/237/0 |
| 0 to +160°C | 2°C | 88/290/0 | 88/291/0 | 88/292/0 | 88/293/0 | 88/294/0 | 88/295/0 | 88/296/0 | 88/299/0 | 88/297/0 |
| 0 to +160°C&F | 2°C | 88/300/0 | 88/301/0 | 88/302/0 | 88/303/0 | 88/304/0 | 88/305/0 | 88/306/0 | 88/309/0 | 88/307/0 |
| 0 to +200°C | 2°C | 88/320/0 | 88/321/0 | 88/322/0 | 88/323/0 | 88/324/0 | 88/325/0 | 88/326/0 | 88/329/0 | 88/327/0 |
| 0 to +200°C&F | 2°C | 88/330/0 | 88/331/0 | 88/332/0 | 88/333/0 | 88/334/0 | 88/335/0 | 88/336/0 | 88/339/0 | 88/337/0 |

Product data sheet

Standard product numbers - 150mm case:

| Range | Divs | 30mm Pocket | 40mm Pocket | 50mm Pocket | 63mm Pocket | 75mm Pocket | 100mm Pocket | 160mm Pocket | 200mm Pocket | 250mm Pocket |
|----------------|------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|
| -30 to +50°C | 1°C | 85/090/0 | 85/091/0 | 85/092/0 | 85/093/0 | 85/094/0 | 85/095/0 | 85/096/0 | 85/099/0 | 85/097/0 |
| -30 to +50°C&F | 1°C | 85/100/0 | 85/101/0 | 85/102/0 | 85/103/0 | 85/104/0 | 85/105/0 | 85/106/0 | 85/109/0 | 85/107/0 |
| 0 to +50°C | 1°C | 85/150/0 | 85/151/0 | 85/152/0 | 85/153/0 | 85/154/0 | 85/155/0 | 85/156/0 | 85/159/0 | 85/157/0 |
| 0 to +50°C&F | 1°C | 85/160/0 | 85/161/0 | 85/162/0 | 85/163/0 | 85/164/0 | 85/165/0 | 85/166/0 | 85/169/0 | 85/167/0 |
| 0 to +60°C | 1°C | 85/170/0 | 85/171/0 | 85/172/0 | 85/173/0 | 85/174/0 | 85/175/0 | 85/176/0 | 85/179/0 | 85/177/0 |
| 0 to +60°C&F | 1°C | 85/140/0 | 85/141/0 | 85/142/0 | 85/143/0 | 85/144/0 | 85/145/0 | 85/146/0 | 85/149/0 | 85/147/0 |
| 0 to +100°C | 1°C | 85/190/0 | 85/191/0 | 85/192/0 | 85/193/0 | 85/194/0 | 85/195/0 | 85/196/0 | 85/199/0 | 85/197/0 |
| 0 to +100°C&F | 1°C | 85/180/0 | 85/181/0 | 85/182/0 | 85/183/0 | 85/184/0 | 85/185/0 | 85/186/0 | 85/189/0 | 85/187/0 |
| 0 to +120°C | 1°C | 85/220/0 | 85/221/0 | 85/222/0 | 85/223/0 | 85/224/0 | 85/225/0 | 85/226/0 | 85/229/0 | 85/227/0 |
| 0 to +120°C&F | 1°C | 85/230/0 | 85/231/0 | 85/232/0 | 85/233/0 | 85/234/0 | 85/235/0 | 85/236/0 | 85/239/0 | 85/237/0 |
| 0 to +160°C | 2°C | 85/290/0 | 85/291/0 | 85/292/0 | 85/293/0 | 85/294/0 | 85/295/0 | 85/296/0 | 85/299/0 | 85/297/0 |
| 0 to +160°C&F | 2°C | 85/300/0 | 85/301/0 | 85/302/0 | 85/303/0 | 85/304/0 | 85/305/0 | 85/306/0 | 85/309/0 | 85/307/0 |
| 0 to +200°C | 2°C | 85/320/0 | 85/321/0 | 85/322/0 | 85/323/0 | 85/324/0 | 85/325/0 | 85/326/0 | 85/329/0 | 85/327/0 |
| 0 to +200°C&F | 2°C | 85/330/0 | 85/331/0 | 85/332/0 | 85/333/0 | 85/334/0 | 85/335/0 | 85/336/0 | 85/339/0 | 85/337/0 |

Standard product numbers - 200mm case:

| Range | Divs | 30mm Pocket | 40mm Pocket | 50mm Pocket | 63mm Pocket | 75mm Pocket | 100mm Pocket | 160mm Pocket | 200mm Pocket | 250mm Pocket |
|----------------|------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|
| -30 to +50°C | 1°C | 82/090/0 | 82/091/0 | 82/092/0 | 82/093/0 | 82/094/0 | 82/095/0 | 82/096/0 | 82/099/0 | 82/097/0 |
| -30 to +50°C&F | 1°C | 82/100/0 | 82/101/0 | 82/102/0 | 82/103/0 | 82/104/0 | 82/105/0 | 82/106/0 | 82/109/0 | 82/107/0 |
| 0 to +50°C | 1°C | 82/150/0 | 82/151/0 | 82/152/0 | 82/153/0 | 82/154/0 | 82/155/0 | 82/156/0 | 82/159/0 | 82/157/0 |
| 0 to +50°C&F | 1°C | 82/160/0 | 82/161/0 | 82/162/0 | 82/163/0 | 82/164/0 | 82/165/0 | 82/166/0 | 82/169/0 | 82/167/0 |
| 0 to +60°C | 1°C | 82/170/0 | 82/171/0 | 82/172/0 | 82/173/0 | 82/174/0 | 82/175/0 | 82/176/0 | 82/179/0 | 82/177/0 |
| 0 to +60°C&F | 1°C | 82/140/0 | 82/141/0 | 82/142/0 | 82/143/0 | 82/144/0 | 82/145/0 | 82/146/0 | 82/149/0 | 82/147/0 |
| 0 to +100°C | 1°C | 82/190/0 | 82/191/0 | 82/192/0 | 82/193/0 | 82/194/0 | 82/195/0 | 82/196/0 | 82/199/0 | 82/197/0 |
| 0 to +100°C&F | 1°C | 82/180/0 | 82/181/0 | 82/182/0 | 82/183/0 | 82/184/0 | 82/185/0 | 82/186/0 | 82/189/0 | 82/187/0 |
| 0 to +120°C | 1°C | 82/220/0 | 82/221/0 | 82/222/0 | 82/223/0 | 82/224/0 | 82/225/0 | 82/226/0 | 82/229/0 | 82/227/0 |
| 0 to +120°C&F | 1°C | 82/230/0 | 82/231/0 | 82/232/0 | 82/233/0 | 82/234/0 | 82/235/0 | 82/236/0 | 82/239/0 | 82/237/0 |
| 0 to +160°C | 2°C | 82/290/0 | 82/291/0 | 82/292/0 | 82/293/0 | 82/294/0 | 82/295/0 | 82/296/0 | 82/299/0 | 82/297/0 |
| 0 to +160°C&F | 2°C | 82/300/0 | 82/301/0 | 82/302/0 | 82/303/0 | 82/304/0 | 82/305/0 | 82/306/0 | 82/309/0 | 82/307/0 |
| 0 to +200°C | 2°C | 82/320/0 | 82/321/0 | 82/322/0 | 82/323/0 | 82/324/0 | 82/325/0 | 82/326/0 | 82/329/0 | 82/327/0 |
| 0 to +200°C&F | 2°C | 82/330/0 | 82/331/0 | 82/332/0 | 82/333/0 | 82/334/0 | 82/335/0 | 82/336/0 | 82/339/0 | 82/337/0 |

110mm Case product weights - for ranges up to 120°C (plastic case):

| Components for ranges up to 120°C | 30mm Pocket | 40mm Pocket | 50mm Pocket | 63mm Pocket | 75mm Pocket | 100mm Pocket | 160mm Pocket | 200mm Pocket | 250mm Pocket |
|-----------------------------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|
| Pocket | 109g | 112g | 114g | 119g | 120g | 126g | 147g | 159g | 169g |
| Tube | 10g | 12g | 14g | 16g | 19g | 21g | 30g | 35g | 41g |
| 110mm Plastic case | 41g | 41g | 41g | 41g | 41g | 41g | 41g | 41g | 41g |
| Plug and washers | 3g | 3g | 3g | 3g | 3g | 3g | 3g | 3g | 3g |
| NET TOTAL WEIGHT | 163g | 168g | 172g | 179g | 183g | 191g | 221g | 238g | 254g |
| Box / * bubble wrap only | 25g | 25g | 25g | 25g | 25g | 25g | 28g | 3g* | 3g* |
| GROSS TOTAL WEIGHT | 188g | 193g | 197g | 204g | 208g | 216g | 249g | 241g | 257g |

Product data sheet

110mm Case product weights - for ranges over to 160°C (metal case):

| Components for ranges over to 160°C | 30mm Pocket | 40mm Pocket | 50mm Pocket | 63mm Pocket | 75mm Pocket | 100mm Pocket | 160mm Pocket | 200mm Pocket | 250mm Pocket |
|-------------------------------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|
| Pocket | 109g | 112g | 114g | 119g | 120g | 126g | 147g | 159g | 169g |
| Tube | 10g | 12g | 14g | 16g | 19g | 21g | 30g | 35g | 41g |
| 110mm Metal case | 97g | 97g | 97g | 97g | 97g | 97g | 97g | 97g | 97g |
| Plug and washers | 3g | 3g | 3g | 3g | 3g | 3g | 3g | 3g | 3g |
| NET TOTAL WEIGHT | 219g | 224g | 228g | 235g | 239g | 247g | 277g | 294g | 310g |
| Box / * bubble wrap only | 25g | 25g | 25g | 25g | 25g | 25g | 28g | 3g* | 3g* |
| GROSS TOTAL WEIGHT | 244g | 249g | 253g | 260g | 264g | 272g | 305g | 297g | 313g |

Packaging details for 110mm cases:

V-Lines with pocket lengths of up to 160mm are packed in individual boxes.

Pocket lengths over 160mm are wrapped individually in protective plastic bubble sheeting.*

Box Dimensions: Pocket lengths up to 100mm - 120 x 160 x 40 x 35 x 40mm

Pocket lengths up to 160mm - 160 x 220 x 40 x 35 x 40mm

150mm Case product weights - for ranges up to 120°C (plastic case):

| Components for Ranges up to 120°C | 30mm Pocket | 40mm Pocket | 50mm Pocket | 63mm Pocket | 75mm Pocket | 100mm Pocket | 160mm Pocket | 200mm Pocket | 250mm Pocket |
|-----------------------------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|
| Pocket | 109g | 112g | 114g | 119g | 120g | 126g | 147g | 159g | 169g |
| Tube | 10g | 12g | 14g | 16g | 19g | 21g | 30g | 35g | 41g |
| 150mm Plastic case | 59g | 59g | 59g | 59g | 59g | 59g | 59g | 59g | 59g |
| Plug and washers | 3g | 3g | 3g | 3g | 3g | 3g | 3g | 3g | 3g |
| NET TOTAL WEIGHT | 181g | 186g | 190g | 197g | 201g | 209g | 239g | 256g | 272g |
| Box / * bubble wrap only | 33g | 33g | 33g | 33g | 33g | 33g | 36g | 3g* | 3g* |
| GROSS TOTAL WEIGHT | 214g | 219g | 223g | 230g | 234g | 242g | 275g | 259g | 275g |

150mm Case product weights - for ranges over to 160°C (metal case):

| Components for ranges over to 160°C | 30mm Pocket | 40mm Pocket | 50mm Pocket | 63mm Pocket | 75mm Pocket | 100mm Pocket | 160mm Pocket | 200mm Pocket | 250mm Pocket |
|-------------------------------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|
| Pocket | 109g | 112g | 114g | 119g | 120g | 126g | 147g | 159g | 169g |
| Tube | 10g | 12g | 14g | 16g | 19g | 21g | 30g | 35g | 41g |
| 150mm Metal case | 117g | 117g | 117g | 117g | 117g | 117g | 117g | 117g | 117g |
| Plug and washers | 3g | 3g | 3g | 3g | 3g | 3g | 3g | 3g | 3g |
| NET TOTAL WEIGHT | 239g | 244g | 248g | 255g | 259g | 267g | 297g | 314g | 330g |
| Box / * bubble wrap only | 33g | 33g | 33g | 33g | 33g | 33g | 36g | 3g* | 3g* |
| GROSS TOTAL WEIGHT | 272g | 277g | 281g | 288g | 292g | 300g | 333g | 317g | 333g |

Packaging details for 150mm cases:

V-Lines with pocket lengths of up to 160mm are packed in individual boxes.

Pocket lengths over 160mm are wrapped individually in protective plastic bubble sheeting.*

Box Dimensions: Pocket lengths up to 100mm - 160 x 160 x 40 x 35 x 40mm

Pocket lengths up to 160mm - 160 x 220 x 40 x 35 x 40mm

Product data sheet

200mm Case product weights - for ranges up to 120°C (plastic case):

| Components for Ranges up to 120°C | 30mm Pocket | 40mm Pocket | 50mm Pocket | 63mm Pocket | 75mm Pocket | 100mm Pocket | 160mm Pocket | 200mm Pocket | 250mm Pocket |
|-----------------------------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|
| Pocket | 109g | 112g | 114g | 119g | 120g | 126g | 147g | 159g | 169g |
| Tube | 10g | 12g | 14g | 16g | 19g | 21g | 30g | 35g | 41g |
| 200mm Plastic Case | 76g | 76g | 76g | 76g | 76g | 76g | 76g | 76g | 76g |
| Plug and washers | 3g | 3g | 3g | 3g | 3g | 3g | 3g | 3g | 3g |
| NET TOTAL WEIGHT | 198g | 213g | 207g | 214g | 218g | 226g | 256g | 273g | 289g |
| Box / *bubble wrap only | 35g | 35g | 35g | 35g | 35g | 35g | 42g | *3g | *3g |
| GROSS TOTAL WEIGHT | 233g | 248g | 242g | 249g | 253g | 261g | 298g | 276g | 292g |

200mm Case Product Weights - for Ranges over to 160°C (metal case):

| Components for Ranges over to 160°C | 30mm Pocket | 40mm Pocket | 50mm Pocket | 63mm Pocket | 75mm Pocket | 100mm Pocket | 160mm Pocket | 200mm Pocket | 250mm Pocket |
|-------------------------------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|
| Pocket | 109g | 112g | 114g | 119g | 120g | 126g | 147g | 159g | 169g |
| Tube | 10g | 12g | 14g | 16g | 19g | 21g | 30g | 35g | 41g |
| 200mm Metal Case | 97g | 97g | 97g | 97g | 97g | 97g | 97g | 97g | 97g |
| Plug and washers | 3g | 3g | 3g | 3g | 3g | 3g | 3g | 3g | 3g |
| NET TOTAL WEIGHT | 224g | 229g | 233g | 240g | 244g | 252g | 282g | 294g | 310g |
| Box / *bubble wrap only | 35g | 35g | 35g | 35g | 35g | 35g | 42g | *3g | *3g |
| GROSS TOTAL WEIGHT | 259g | 264g | 268g | 275g | 279g | 287g | 324g | 297g | 313g |

Packaging Details for 200mm Cases

V-Lines with pocket lengths of up to 160mm are packed in individual boxes.

Pocket lengths over 160mm are wrapped individually in protective plastic bubble sheeting.*

Box Dimensions: Pocket lengths up to 100mm - 225 x 160 x 40 x 35 x 40mm

Pocket lengths up to 160mm - 225 x 210 x 40 x 35 x 40mm



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Replacement V-line pockets:

- Available in brass or stainless steel
- 1/2" BSP connection (3/8" BSP and NPT options available on request)
- Thread connection for straight V-Line case
- Brass pockets available in 30mm, 40mm, 50mm, 63mm, 75mm, 100mm, 160mm, 200mm, 250mm & 400mm lengths
- Stainless steel pockets available in 30mm, 40mm, 50mm, 63mm, 75mm, 100mm and 160mm lengths



| Pocket length | 1/2" BSP Pockets | |
|---------------|------------------|-----------------|
| | Brass | Stainless steel |
| 30mm | 95/616/0 | 95/658/0 |
| 40mm | 95/617/0 | 95/656/0 |
| 50mm | 95/618/0 | 95/649/0 |
| 63mm | 95/607/0 | 95/650/0 |
| 75mm | 95/619/0 | 95/659/0 |
| 100mm | 95/608/0 | 95/651/0 |
| 160mm | 95/612/0 | 95/652/0 |
| 200mm | 95/609/0 | - |
| 250mm | 95/623/0 | - |
| 400mm | 95/624/0 | - |

Replacement V-line tubes:

Replacement thermometer tubes available (to order, substitute last digit of product number for "6" ie replacement tube for 81/090/0 is 81/090/6)

- Available to fit all case sizes and stem lengths
- Wide choice of temperature ranges
- Brass pockets available in 30mm, 40mm, 50mm, 63mm, 75mm, 100mm, 160mm, 200mm, 250mm & 400mm lengths
- Stainless steel pockets available in 30mm, 40mm, 50mm, 63mm, 75mm, 100mm and 160mm lengths



V-line over-pockets:

- Pockets / thermowells for use with V-line thermometers
- Allows V-line thermometers to be removed while system is filled
- Available in chrome plated mild steel or stainless steel
- For 1/2" BSP female x 1/2" BSP male V-lines
- Chrome plated mild steel over-pocket to suit 63mm or 100mm pockets in 75mm or 110mm lengths
- Stainless steel over-pocket to suit 63mm, 100mm or 160mm pockets in 75mm, 110mm or 170mm lengths
- Stainless steel over-pocket for use with corrosive liquids



| Pocket length | Chrome plated over-pockets | |
|---------------|------------------------------|-------------------------------|
| | To suit 1/2" BSP 63mm pocket | To suit 1/2" BSP 100mm pocket |
| 75mm | 62/065/0 | - |
| 110mm | - | 62/067/0 |

| Pocket length | Stainless steel over-pockets | | |
|---------------|------------------------------|-------------------------------|-------------------------------|
| | To suit 1/2" BSP 63mm pocket | To suit 1/2" BSP 100mm pocket | To suit 1/2" BSP 160mm pocket |
| 75mm | 62/068/0 | - | - |
| 110mm | - | 62/070/0 | - |
| 170mm | - | - | 62/071/0 |

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