

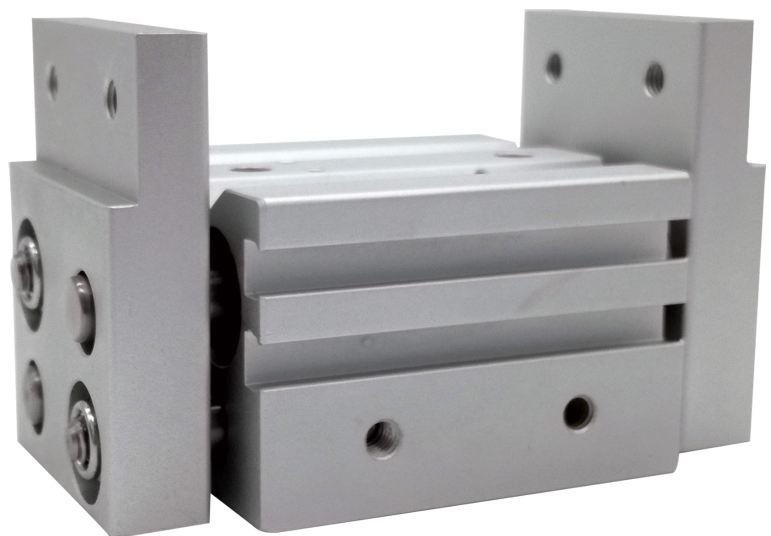
# Pneumatic Parallel Grippers

## VRG 2-Finger

VRG is a long stroke two-finger parallel gripper for lighter duty applications.

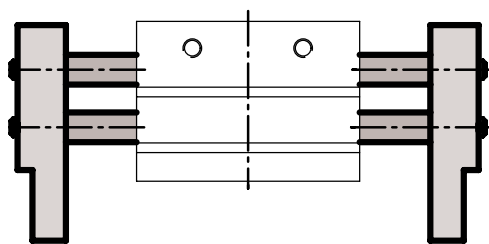
### Advantages

- Compact design and wide range of strokes available.
- Double piston design with finger synchronization by a rack and pinion mechanism.
- All shafts equipped with self-lubricating bearings.
- Long stroke, round guidance system protected from dirt and debris.
- Side finger mounting.
- Slots for mounting and positioning of magnetic-field sensors.
- Air supply via screw connections.

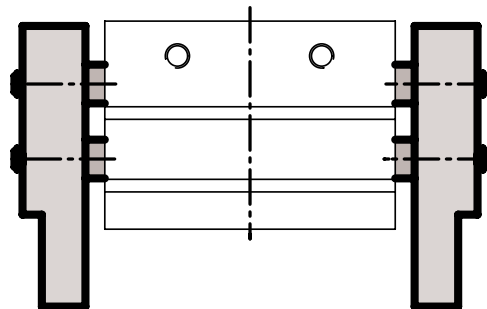


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## Open/Close Diagram

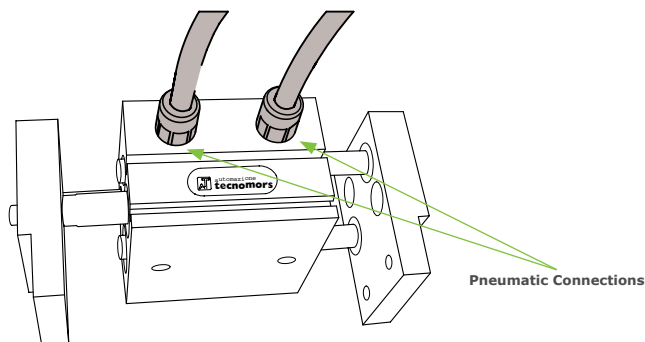


OPEN

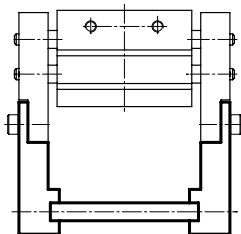


CLOSED

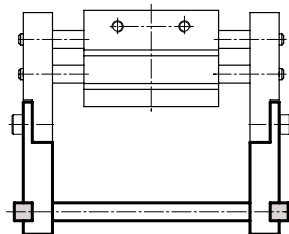
## Pneumatic Feed



## Gripping Diagram



External Clamping



Internal Clamping

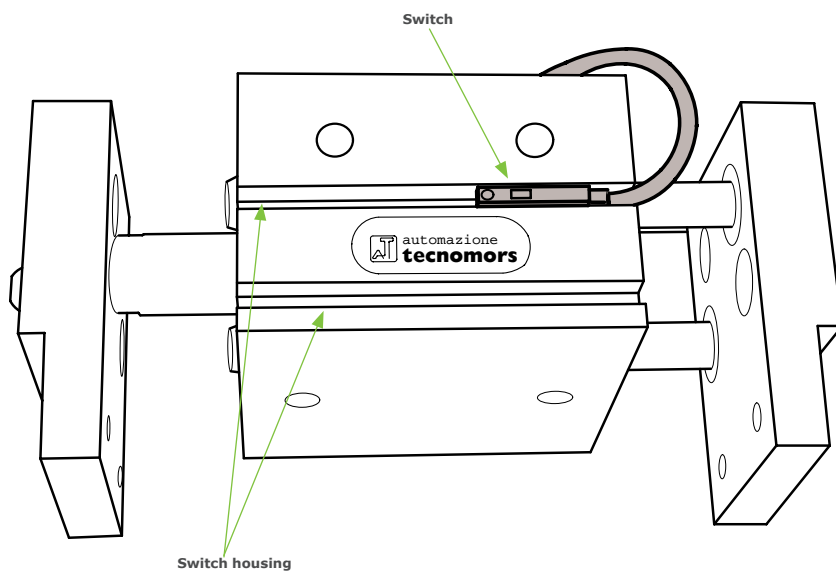
### Guidelines for the selection of a gripper model

Selection of the correct gripper model depends on the workpiece's weight, the friction coefficient between the fingers and the workpiece and the required motion of the application.

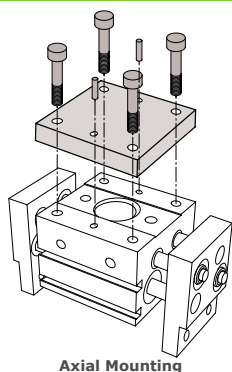
Due to inertial forces associated with motion, we recommend that the holding force of the gripper model should be from 10 to 20 times the workpiece's weight.

If the application presents high acceleration/deceleration or impacts during the motion, then a further safety margin should be considered.

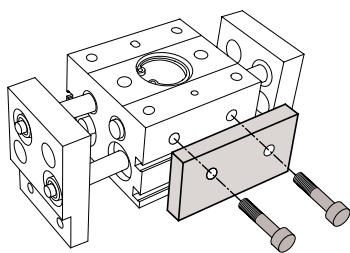
## Control Diagram



## Mounting

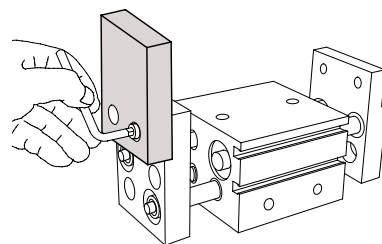


Axial Mounting

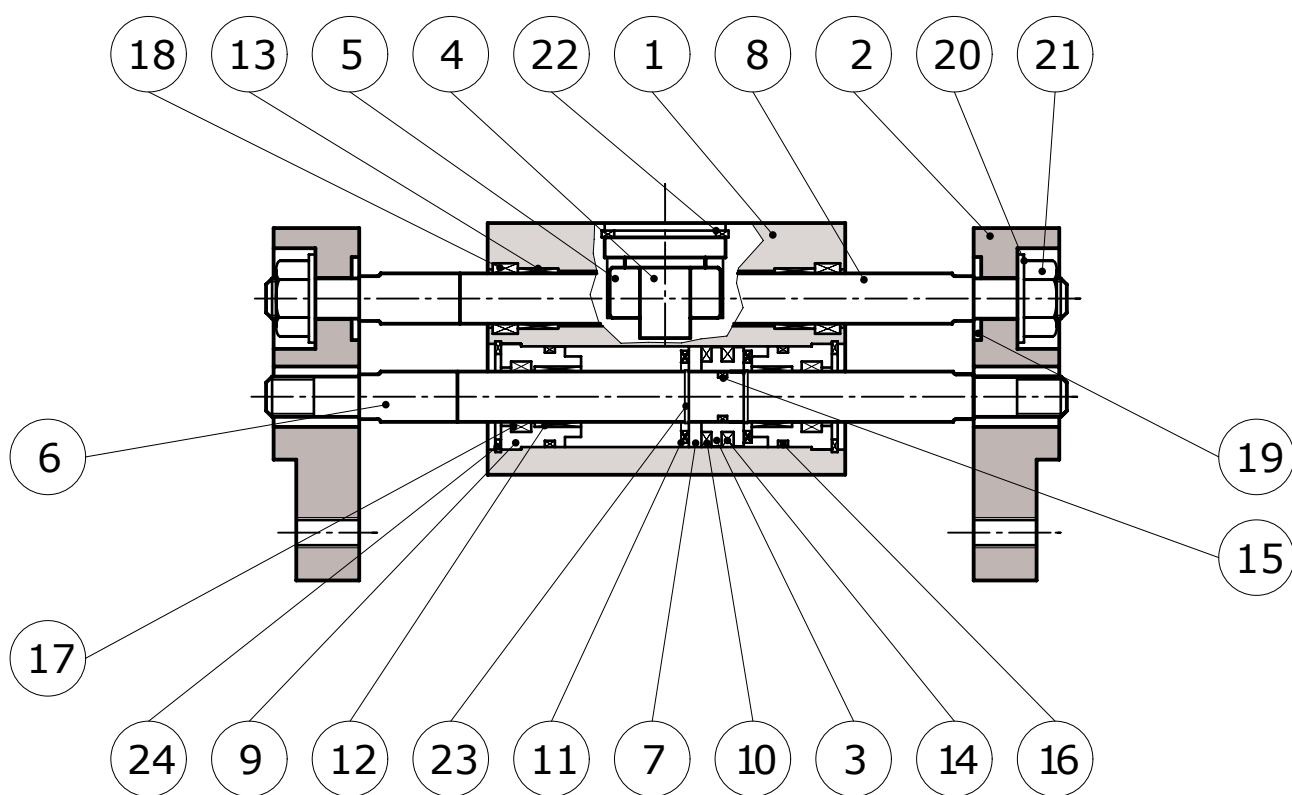


Side Mounting

## Fingers Mounting



## Construction Diagram



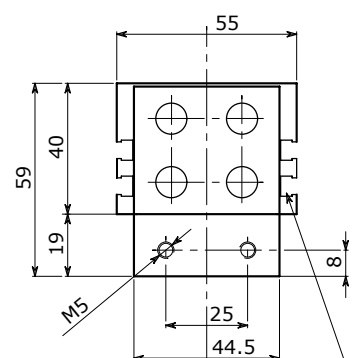
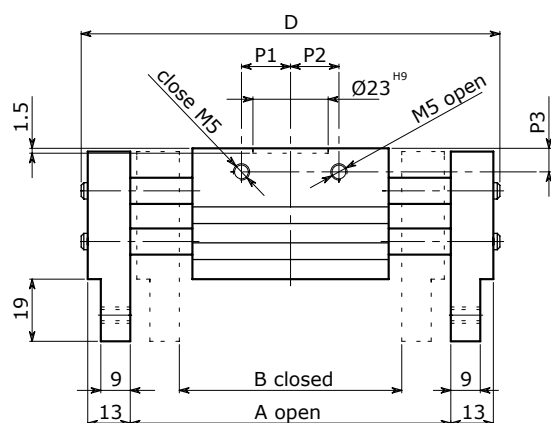
| Nr. | Description  | Material        |
|-----|--------------|-----------------|
| 01  | BODY         | Aluminum Alloy  |
| 02  | JAW          | Aluminum Alloy  |
| 03  | PISTON A     | Brass           |
| 04  | PINION SHAFT | Steel           |
| 05  | PINION       | Steel           |
| 06  | PISTON ROD   | Stainless Steel |
| 07  | PISTON B     | Brass           |
| 08  | RACK SHAFT   | Stainless Steel |
| 09  | ROD COVER    | Aluminum Alloy  |
| 10  | MAGNET       | Rubber Magnet   |
| 11  | DAMPER       | NBR             |
| 12  | BEARING      | Bronze          |

| Nr. | Description       | Material        |
|-----|-------------------|-----------------|
| 13  | BEARING           | Bronze          |
| 14  | PISTON SEAL       | NBR             |
| 15  | PISTON SEAL       | NBR             |
| 16  | SEAL              | NBR             |
| 17  | ROD SEAL          | NBR             |
| 18  | ROD SEAL          | NBR             |
| 19  | WASHER            | Steel           |
| 20  | WASHER            | Steel           |
| 21  | U-NUT             | Steel           |
| 22  | C-SHAPE SNAP RING | Steel           |
| 23  | RING              | Stainless Steel |
| 24  | R-SHAPE SNAP RING | Steel           |

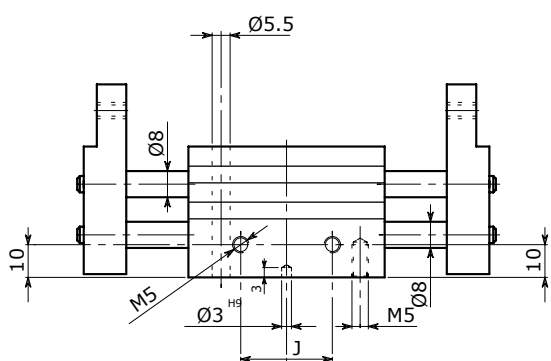
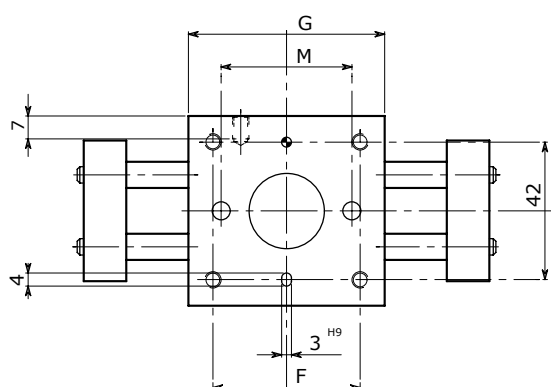
# Dimensional Drawing



VRG 16



Nr.4 switch housing



|           | VRG 16-30 | VRG 16-60 | VRG 16-80 |
|-----------|-----------|-----------|-----------|
| <b>A</b>  | 98        | 170       | 210       |
| <b>B</b>  | 68        | 110       | 130       |
| <b>D</b>  | 128       | 200       | 240       |
| <b>F</b>  | 45        | 75        | 95        |
| <b>G</b>  | 60        | 90        | 110       |
| <b>J</b>  | 28        | 58        | 78        |
| <b>M</b>  | 40        | 70        | 90        |
| <b>P1</b> | 14.8      | 30        | 40        |
| <b>P2</b> | 15        | 30        | 40        |
| <b>P3</b> | 10        | 10        | 10        |

# TECHNICAL DATA

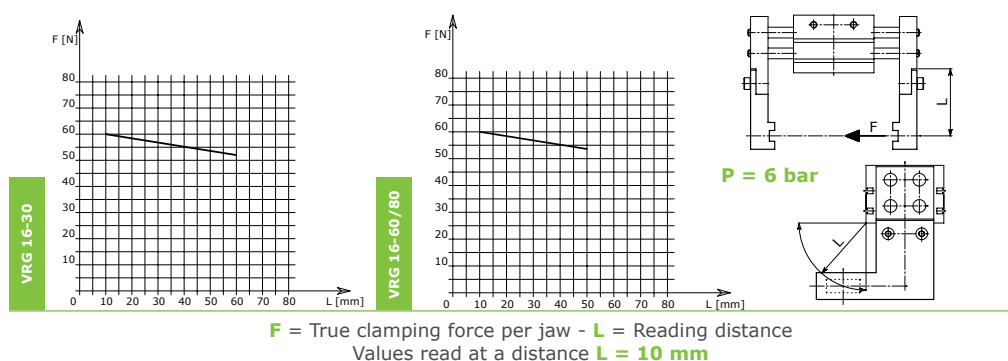
VRG 16

|                                    |                                    | VRG 16-30         | VRG 16-60         | VRG 16-80         |
|------------------------------------|------------------------------------|-------------------|-------------------|-------------------|
| Stroke per jaw                     | mm<br>in                           | 15<br>0.59        | 30<br>1.18        | 40<br>1.57        |
| Fluid consumption<br>double stroke | cm <sup>3</sup><br>in <sup>3</sup> | 9.1<br>0.6        | 18.2<br>1.1       | 24.2<br>1.5       |
| Closing force per jaw<br>@ 6 bar   | N<br>lb                            | 60<br>14          | 60<br>14          | 60<br>14          |
| Opening force per jaw<br>@ 6 bar   | N<br>lb                            | 60<br>14          | 60<br>14          | 60<br>14          |
| Total closing force<br>@ 6 bar     | N<br>lb                            | 120<br>27         | 120<br>27         | 120<br>27         |
| Total opening force<br>@ 6 bar     | N<br>lb                            | 120<br>27         | 120<br>27         | 120<br>27         |
| Recommended<br>workpiece weight    | kg<br>lb                           | 0.60<br>1.30      | 0.60<br>1.30      | 0.60<br>1.30      |
| Weight                             | kg<br>lb                           | 0.59<br>1.29      | 0.80<br>1.75      | 0.94<br>2.06      |
| Repeat accuracy                    | mm<br>in                           | ± 0.01<br>± 0.004 | ± 0.01<br>± 0.004 | ± 0.01<br>± 0.004 |

\* Recommended workpiece weight is calculated for force-fit gripping with a coefficient of static friction of 0.15 and a safety factor of 3 against workpiece slippage.  
 Opening Pressure **1 - 6 bar (14.5 - 87 psi)**  
 Working Temperature **10 - 60 °C (50 - 140 °F)**  
 Noise Emission (Sound Pressure) **≤ 70 db(A) in any direction**

## Clamping Force Diagram

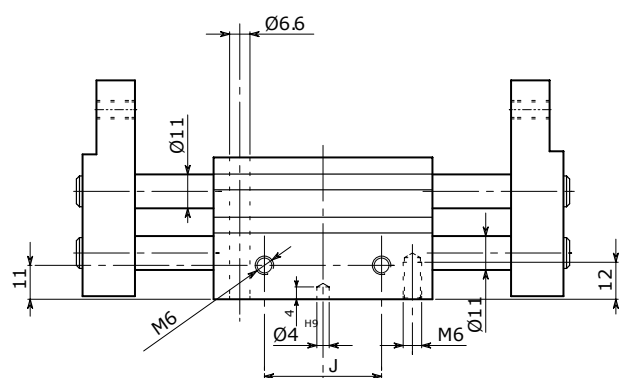
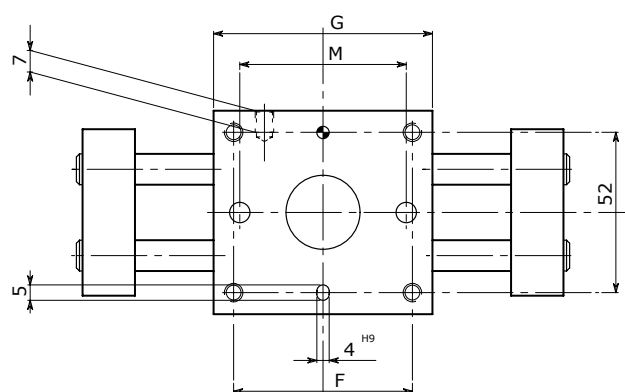
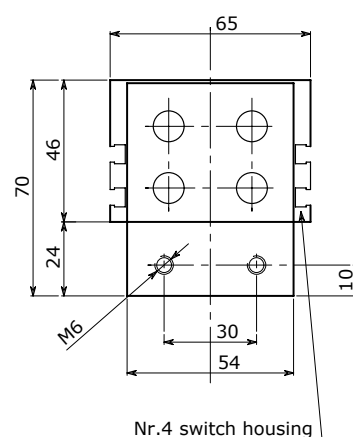
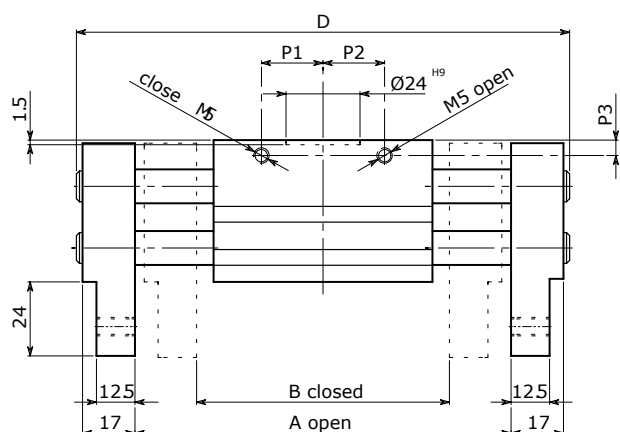
**Note:** "L" value, where the diagram's line ends, represents jaws' maximum length.



# Dimensional Drawing



VRG 20



|           | VRG 20-40 | VRG 20-80 | VRG 20-100 |
|-----------|-----------|-----------|------------|
| <b>A</b>  | 122       | 222       | 262        |
| <b>B</b>  | 82        | 142       | 162        |
| <b>D</b>  | 160       | 260       | 300        |
| <b>F</b>  | 58        | 100       | 120        |
| <b>G</b>  | 71        | 113       | 133        |
| <b>J</b>  | 38        | 80        | 100        |
| <b>M</b>  | 54        | 96        | 116        |
| <b>P1</b> | 17        | 34.5      | 44.5       |
| <b>P2</b> | 17        | 34.5      | 44.5       |
| <b>P3</b> | 11        | 11        | 11         |

## TECHNICAL DATA

|                                    |                                    | VRG 20-40         | VRG 20-80         | VRG 20-100        |
|------------------------------------|------------------------------------|-------------------|-------------------|-------------------|
| Stroke per jaw                     | mm<br>in                           | 20<br>0.79        | 40<br>1.57        | 50<br>1.97        |
| Fluid consumption<br>double stroke | cm <sup>3</sup><br>in <sup>3</sup> | 17.6<br>1.1       | 35.2<br>2.2       | 44<br>2.7         |
| Closing force per jaw<br>@ 6 bar   | N<br>lb                            | 100<br>23         | 100<br>23         | 100<br>23         |
| Opening force per jaw<br>@ 6 bar   | N<br>lb                            | 100<br>23         | 100<br>23         | 100<br>23         |
| Total closing force<br>@ 6 bar     | N<br>lb                            | 200<br>45         | 200<br>45         | 200<br>45         |
| Total opening force<br>@ 6 bar     | N<br>lb                            | 200<br>45         | 200<br>45         | 200<br>45         |
| Recommended<br>workpiece weight    | kg<br>lb                           | 1.00<br>2.20      | 1.00<br>2.20      | 1.00<br>2.20      |
| Weight                             | kg<br>lb                           | 1.03<br>2.26      | 1.50<br>3.29      | 1.69<br>3.72      |
| Repeat accuracy                    | mm<br>in                           | ± 0.01<br>± 0.004 | ± 0.01<br>± 0.004 | ± 0.01<br>± 0.004 |

\* Recommended workpiece weight is calculated for force-fit gripping with a coefficient of static friction of 0.15 and a safety factor of 3 against workpiece slippage.

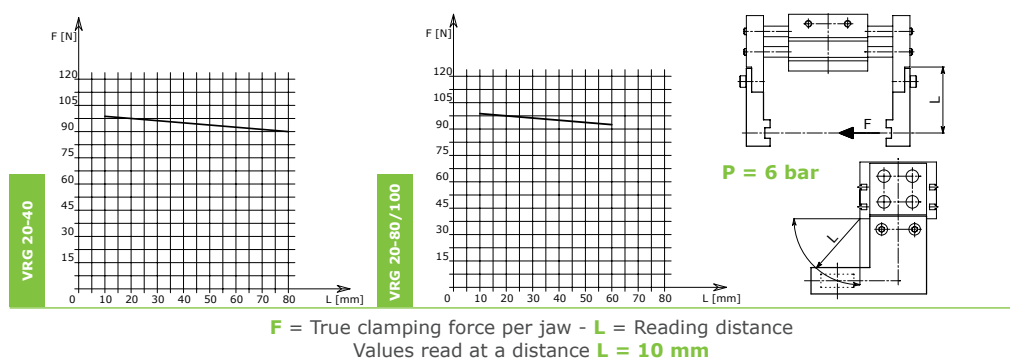
Opening Pressure **1 - 6 bar (14.5 - 87 psi)**

Working Temperature **10 - 60 °C (50 - 140 °F)**

Noise Emission (Sound Pressure) **≤ 70 db(A) in any direction**

## Clamping Force Diagram

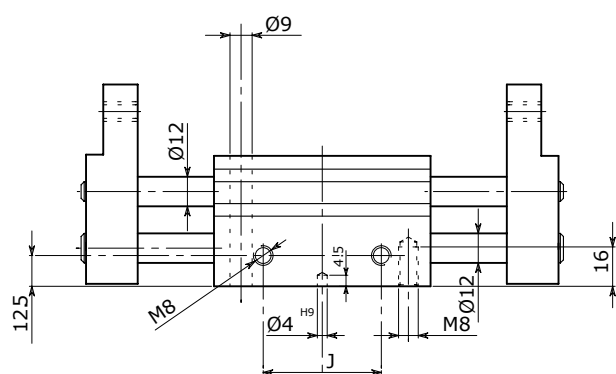
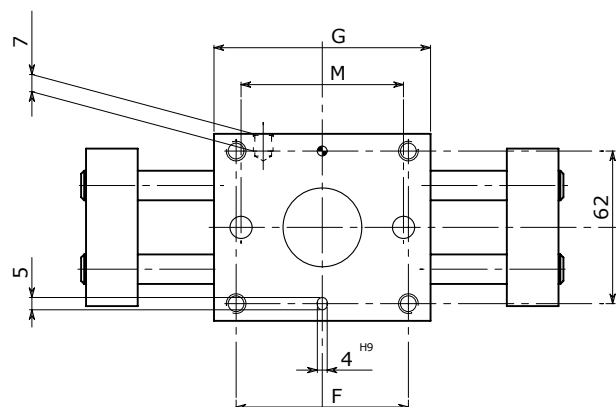
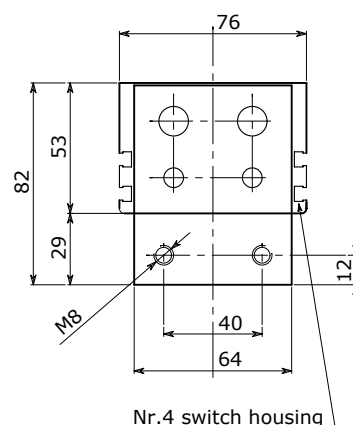
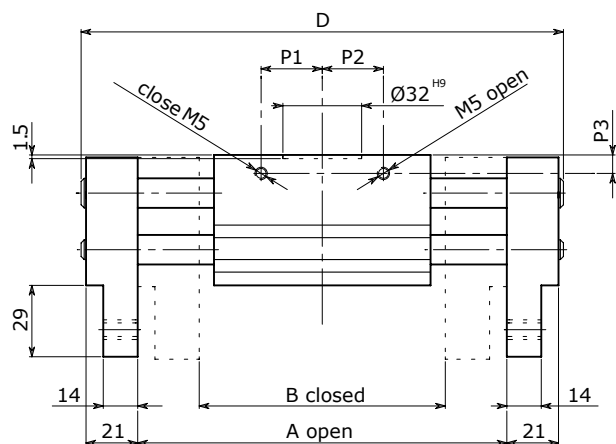
**Note:** "L" value, where the diagram's line ends, represents jaws' maximum length.



# Dimensional Drawing



VRG 25



|           | VRG 25-50 | VRG 25-100 | VRG 25-120 |
|-----------|-----------|------------|------------|
| <b>A</b>  | 150       | 282        | 320        |
| <b>B</b>  | 100       | 182        | 200        |
| <b>D</b>  | 196       | 328        | 366        |
| <b>F</b>  | 70        | 124        | 142        |
| <b>G</b>  | 88        | 142        | 160        |
| <b>J</b>  | 48        | 102        | 120        |
| <b>M</b>  | 66        | 120        | 138        |
| <b>P1</b> | 23        | 50         | 59         |
| <b>P2</b> | 23        | 23         | 24         |
| <b>P3</b> | 16        | 16         | 16         |

## TECHNICAL DATA

|                                    |                                    | VRG 25-50         | VRG 25-100        | VRG 25-120        |
|------------------------------------|------------------------------------|-------------------|-------------------|-------------------|
| Stroke per jaw                     | mm<br>in                           | 25<br>0.98        | 50<br>1.97        | 60<br>2.36        |
| Fluid consumption<br>double stroke | cm <sup>3</sup><br>in <sup>3</sup> | 38<br>2.3         | 76<br>4.6         | 91.2<br>5.6       |
| Closing force per jaw<br>@ 6 bar   | N<br>lb                            | 170<br>38         | 170<br>38         | 170<br>38         |
| Opening force per jaw<br>@ 6 bar   | N<br>lb                            | 170<br>38         | 170<br>38         | 170<br>38         |
| Total closing force<br>@ 6 bar     | N<br>lb                            | 340<br>76         | 340<br>76         | 340<br>76         |
| Total opening force<br>@ 6 bar     | N<br>lb                            | 340<br>76         | 340<br>76         | 340<br>76         |
| Recommended<br>workpiece weight    | kg<br>lb                           | 1.70<br>3.70      | 1.70<br>3.70      | 1.70<br>3.70      |
| Weight                             | kg<br>lb                           | 1.69<br>3.72      | 2.56<br>5.63      | 2.78<br>6.11      |
| Repeat accuracy                    | mm<br>in                           | ± 0.01<br>± 0.004 | ± 0.01<br>± 0.004 | ± 0.01<br>± 0.004 |

\* Recommended workpiece weight is calculated for force-fit gripping with a coefficient of static friction of 0.15 and a safety factor of 3 against workpiece slippage.

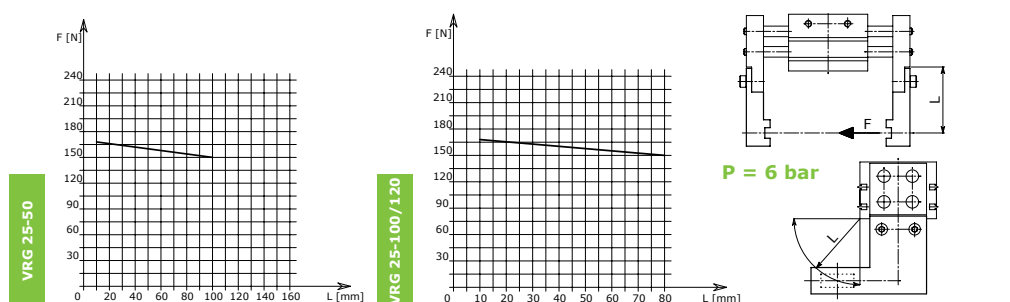
Opening Pressure **1 - 6 bar (14.5 - 87 psi)**

Working Temperature **10 - 60 °C (50 - 140 °F)**

Noise Emission (Sound Pressure) **≤ 70 db(A) in any direction**

## Clamping Force Diagram

**Note:** "L" value, where the diagram's line ends, represents jaws' maximum length.

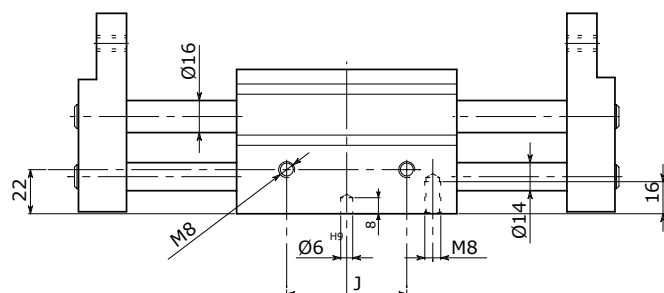
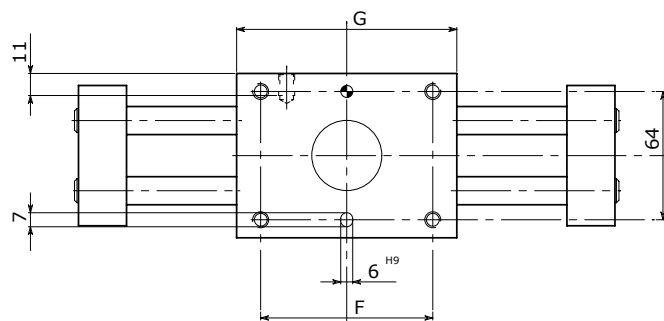
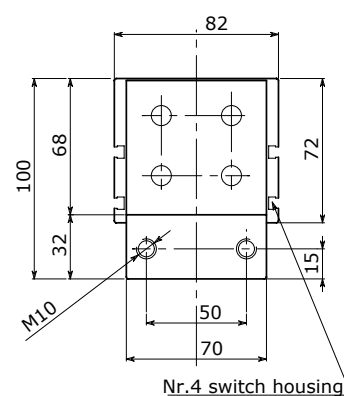
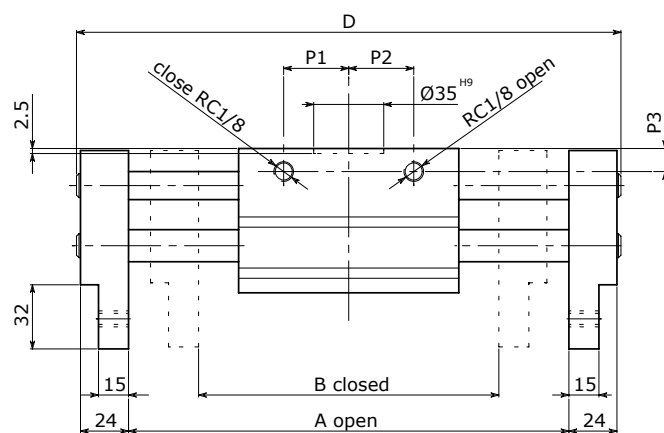


**F** = True clamping force per jaw - **L** = Reading distance  
Values read at a distance **L = 10 mm**

VRU 32



VRG 32



|           | VRG 32-70 | VRG 32-120 | VRG 32-160 |
|-----------|-----------|------------|------------|
| <b>A</b>  | 220       | 318        | 402        |
| <b>B</b>  | 150       | 198        | 242        |
| <b>D</b>  | 272       | 370        | 454        |
| <b>F</b>  | 86        | 134        | 178        |
| <b>G</b>  | 110       | 158        | 202        |
| <b>J</b>  | 60        | 108        | 152        |
| <b>P1</b> | 22.5      | 46.5       | 68.5       |
| <b>P2</b> | 26        | 27.5       | 26.5       |
| <b>P3</b> | 18.2      | 18.2       | 18.2       |

## TECHNICAL DATA

|                                    |                                    | VRG 32-70         | VRG 32-120        | VRG 32-160        |
|------------------------------------|------------------------------------|-------------------|-------------------|-------------------|
| Stroke per jaw                     | mm<br>in                           | 25<br>0.98        | 50<br>1.97        | 60<br>2.36        |
| Fluid consumption<br>double stroke | cm <sup>3</sup><br>in <sup>3</sup> | 38<br>2.3         | 76<br>4.6         | 91.2<br>5.6       |
| Closing force per jaw<br>@ 6 bar   | N<br>lb                            | 170<br>38         | 170<br>38         | 170<br>38         |
| Opening force per jaw<br>@ 6 bar   | N<br>lb                            | 170<br>38         | 170<br>38         | 170<br>38         |
| Total closing force<br>@ 6 bar     | N<br>lb                            | 340<br>76         | 340<br>76         | 340<br>76         |
| Total opening force<br>@ 6 bar     | N<br>lb                            | 340<br>76         | 340<br>76         | 340<br>76         |
| Recommended<br>workpiece weight    | kg<br>lb                           | 1.70<br>3.70      | 1.70<br>3.70      | 1.70<br>3.70      |
| Weight                             | kg<br>lb                           | 1.69<br>3.72      | 2.56<br>5.63      | 2.78<br>6.11      |
| Repeat accuracy                    | mm<br>in                           | ± 0.01<br>± 0.004 | ± 0.01<br>± 0.004 | ± 0.01<br>± 0.004 |

\* Recommended workpiece weight is calculated for force-fit gripping with a coefficient of static friction of 0.15 and a safety factor of 3 against workpiece slippage.

Opening Pressure **1 - 6 bar (14.5 - 87 psi)**

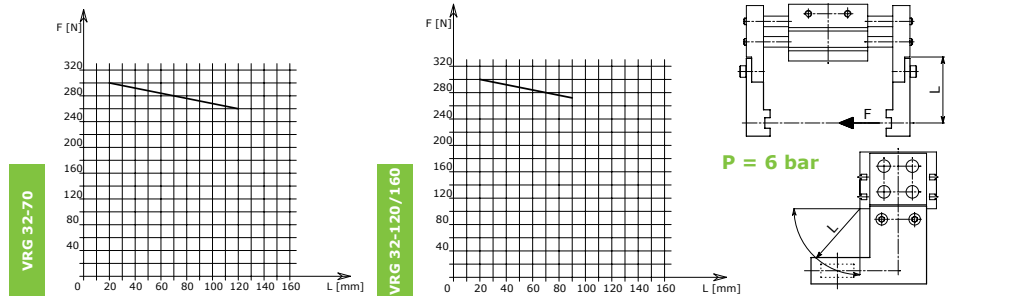
Working Temperature **10 - 60 °C (50 - 140 °F)**

Noise Emission (Sound Pressure) **≤ 70 db(A) in any direction**

VRG 32

## Clamping Force Diagram

**Note:** "L" value, where the diagram's line ends, represents jaws' maximum length.

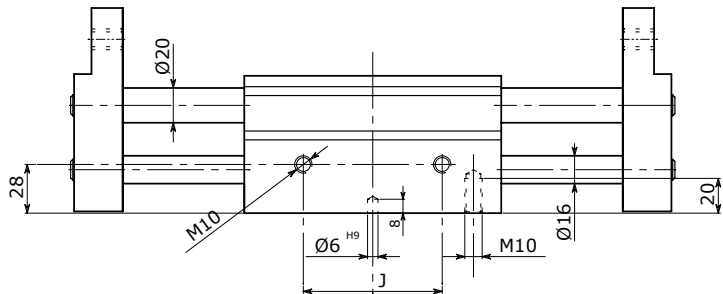
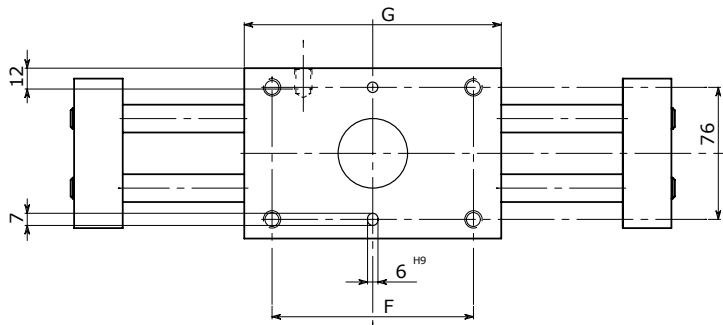
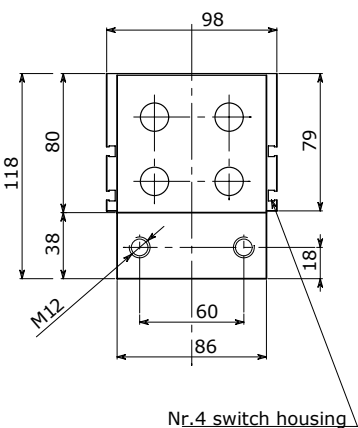
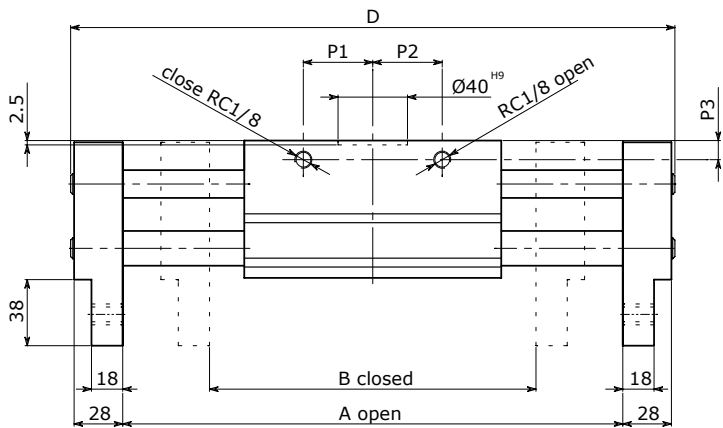


**F** = True clamping force per jaw - **L** = Reading distance  
Values read at a distance **L = 20 mm**

# Dimensional Drawing



## VRG 40



|           | VRG 40-100 | VRG 40-160 |
|-----------|------------|------------|
| <b>A</b>  | 288        | 406        |
| <b>B</b>  | 188        | 246        |
| <b>D</b>  | 348        | 466        |
| <b>F</b>  | 116        | 174        |
| <b>G</b>  | 148        | 206        |
| <b>J</b>  | 80         | 138        |
| <b>P1</b> | 32         | 60         |
| <b>P2</b> | 34         | 35.5       |
| <b>P3</b> | 18         | 18         |

# TECHNICAL DATA

|                                    |                                    | VRG 40-100        | VRG 40-160        |
|------------------------------------|------------------------------------|-------------------|-------------------|
| Stroke per jaw                     | mm<br>in                           | 50<br>1.97        | 80<br>3.15        |
| Fluid consumption<br>double stroke | cm <sup>3</sup><br>in <sup>3</sup> | 188.5<br>11.5     | 302<br>18.4       |
| Closing force per jaw<br>@ 6 bar   | N<br>lb                            | 500<br>112        | 500<br>112        |
| Opening force per jaw<br>@ 6 bar   | N<br>lb                            | 500<br>112        | 500<br>112        |
| Total closing force<br>@ 6 bar     | N<br>lb                            | 1000<br>225       | 1000<br>225       |
| Total opening force<br>@ 6 bar     | N<br>lb                            | 1000<br>225       | 1000<br>225       |
| Recommended<br>workpiece weight    | kg<br>lb                           | 5.00<br>11.00     | 5.00<br>11.00     |
| Weight                             | kg<br>lb                           | 5.27<br>11.59     | 6.83<br>15.03     |
| Repeat accuracy                    | mm<br>in                           | ± 0.01<br>± 0.004 | ± 0.01<br>± 0.004 |

\* Recommended workpiece weight is calculated for force-fit gripping with a coefficient of static friction of 0.15 and a safety factor of 3 against workpiece slippage.

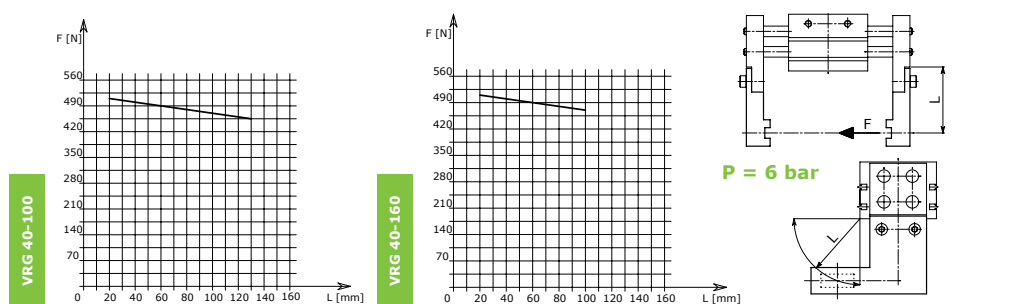
Opening Pressure **1 - 6 bar (14.5 - 87 psi)**

Working Temperature **10 - 60 °C (50 - 140 °F)**

Noise Emission (Sound Pressure) **≤ 70 db(A) in any direction**

## Clamping Force Diagram

**Note:** "L" value, where the diagram's line ends, represents jaws' maximum length.



**F** = True clamping force per jaw - **L** = Reading distance  
Values read at a distance **L = 20 mm**



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