## CONTENTS

### INTRODUCTION

- The Montalvo Guardian Safety Chuck ........................................ 1
- Standards .................................................................................. 2
- The Difference ........................................................................... 3
- Product Overview ....................................................................... 4
- Deflection, Torque and Winding Speed ........................................ 5
- Shaft Journal Designs .................................................................. 6
- Shaft End .................................................................................... 7
- Winding Shaft Journal ................................................................. 8
- Installation .................................................................................. 9

### OPTIONS

- Handwheel Safety Lock .............................................................. 11
- Axial Carrier ............................................................................... 12
- Conical Chuck Journal Seat ....................................................... 12
- Handwheel Open/Closed Indicator .............................................. 13
- Handwheel Opening Position Indicator ...................................... 13
- High Speed Safety Chucks ......................................................... 14
- Increased Handwheel Opening Angle ........................................ 15

### NORMAL CHUCKS

- Overview ................................................................................... 17
- Order Code ............................................................................... 18
- Examples .................................................................................. 19
- Square Journal (A2) ................................................................. 20
- Triangular Journal (A3) ............................................................. 21
- Winding Shaft Lengths ............................................................... 22
- Specification Sheets ................................................................. 24
- Technical Drawings .................................................................... 53

### SLIDING CHUCKS

- Overview ................................................................................... 53
- Order Code ............................................................................... 54
- Examples .................................................................................. 55
- Axial Carrier ............................................................................... 56
- Square Journal (A2) ................................................................. 57
- Triangular Journal (A3) ............................................................. 58
- Winding Shaft Lengths ............................................................... 59
- Specification Sheet ..................................................................... 61
- Technical Drawings .................................................................... 90

### MAINTENANCE

- Troubleshooting ........................................................................ 79
- Routine ...................................................................................... 80
- Handwheel Replacement .......................................................... 81
- Journal Insert Replacement ....................................................... 82
- Handwheel Safety Lock Replacement ........................................ 83
- Removing / Installing Handwheels ............................................ 84
- Dismantling Normal Chucks ....................................................... 85
- Dismantling Sliding Chucks ....................................................... 86
- Ordering Spare Parts ................................................................. 90

#### Technical Drawings

- G021.0 thru G044.0

- G131.0 thru G236.0
The Montalvo Guardian Safety Chuck

Emphasis on design, flexibility, technology and quality.

- The journal inserts are the only wear parts and are quickly and easily removed using only two wrenches!
- The standard chuck journal seat is hardened to Rc = HRC 48-50.
- The steel handwheel has a black oxide finish.
- Within maximum and minimum limits the shaft end may be customized.
- All shaft ends are drilled, tapped and machined with keyway.
- All housings are pre-drilled and tapped to accept a Montalvo brake.
- Mounting holes on flange mount chucks are counter bored.
- DXF files and 3D models are available for all sizes.

Guardian safety chucks are designed with flexibility in mind to meet specific customer needs. Montalvo engineers can assist you with the proper technical solution for your web winding application.
Standards

The Montalvo Corporation, world renowned supplier of quality web control products and services, offers a full line of safety chucks as part of an ongoing effort to supply customers with a total web control package.

The Guardian includes a series of three different normal chuck sizes and one sliding chuck size. The sliding chuck is available with either a moving head or a moving head and shaft. Both allow customers to axially align a shafted roll to a web guide or a trimmer on either unwind or rewind operations. The journal seat/handwheel assembly bolts to the shaft with four bolts and is easily serviced.

Guardian chucks provide a safe and effective way of coupling torque devices to shafted unwinds or rewinds. Heavy duty bearing design ensures maximum load and speed capacities for most converting applications. The easily replaceable journal seat / handwheel assembly supports a variety of shaft journal configurations without modification. Tightly held journal seat tolerances also provide superior roll winding / unwinding concentricity.

Shaft lengths are available to correspond to all Montalvo brakes and a wide variety of applications. Montalvo application engineers are available to assist customers with new installations or retrofit applications.

Check out Montalvo’s wide range of web control products for the converting, paper, composites, nonwovens and plastic film industries. These include brakes, clutches, electronic tension controls and indicators, load cells, and safety chucks.
The Difference

Handwheels and journal seats are critical parts of a safety chuck and subject to wear. That is why all Guardian chucks are equipped with an easily replaceable journal seat/handwheel assembly. This component is designed to be quickly installed or removed using only one wrench!

- The tilting handwheel/chuck journal seat assembly is interchangeable as a unit.
- Handwheels are available with two different types of journal seats. They can be mounted to the same type of chuck without replacing the shaft.
- The replacement handwheel/chuck journal seat assembly is mounted concentrically to the shaft and is attached using high tensile strength bolts.
- The finger guard covers the gap between handwheel and housing.
- Our modular design is not only maintenance friendly but also minimizes inventory of spare parts.
**Product Overview**

“Normal” safety chucks

- Pedestal and flange chucks
- With and without shaft end
- Square dimensions 20 - 50 mm
- Roll weights to 30,000N*

“Sliding” safety chucks

- Pedestal and flange chucks
- With and without shaft end
- With “stationary” or with “sliding” shaft end
- 50 or 100 mm axial adjustment
- Square dimensions 20 - 50 mm
- Roll weights to 30,000N*

Consider using Montalvo Tension Control Brakes and Clutches

- High Thermal Capacity
- Multiple Torque Range
- Easy Maintenance

<table>
<thead>
<tr>
<th>Size</th>
<th>Max. Roll Weight* N (lb)</th>
<th>Max. Torque Nm (in-lb)</th>
<th>Max. Shaft Extension mm (in.)</th>
<th>V-Type Square Journal Seat* A2 = mm (in.)</th>
<th>Triangle Journal Seat A3 = mm (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1000</td>
<td>10,000 (2,248)</td>
<td>200 (1,770)</td>
<td>Ø35k6 x90 (3.54)</td>
<td>20-30 (1.000-1.25)</td>
<td>20-30 (0.787-1.181)</td>
</tr>
<tr>
<td>G1800</td>
<td>18,000 (4,047)</td>
<td>380 (3,363)</td>
<td>Ø50k6 x100 (3.94)</td>
<td>30-40 (1.25-1.50)</td>
<td>32-38 (1.260-1.496)</td>
</tr>
<tr>
<td>G3000</td>
<td>30,000 (6,744)</td>
<td>1,200 (10,621)</td>
<td>Ø65k6 x140 (5.51)</td>
<td>40-50 (1.50-2.00)</td>
<td>40-47 (1.575-1.850)</td>
</tr>
</tbody>
</table>

*Chucks with A2 journal seats are required to have safety locks if roll weights exceed 70% of maximum roll weight.
INTRODUCTION

Deflection, Torque and Winding Speed

*Deflection*

Roll weight is the first consideration in the selection of a chuck.

The maximum permissible roll weight given in the data sheets refers to shaft journal design A3.

*Chucks with A2 journal seats are required to have safety locks if roll weights exceed 70% of maximum roll weight.*

The information given in this catalog refers to the load capacity of our chucks. You must consider the design, size, stability and hardness of the shaft journal as well (see below).

*Torque*

The maximum permissible roll weight given in the data sheets refers to shaft journal design A3.

*Winding Speed*

“Standard” chucks may be used up to 300 m/min winding speed.

For winding speeds over 300 m/min., “high speed, dynamically balanced” chucks should be used (see “Options”).

If your application requires combining maximum rated roll weight, torque and winding speed, please contact Montalvo for technical support.
Shaft Journal Designs

**V-Type Square (A2)**
- Easy loading of the winding shaft
- Common to most air shaft journals
- Special attention to alignment and shaft deflection is required
- Reduced play between chuck seat and journal
- Tolerance 0 / +0.1 mm
- Safety lock required when loads exceed 70% max. load rating.

**Triangle (A3)**
- Recommended for high rpm applications
- Easy loading of the winding shaft
- Max. capacity for roll weight & torque
- Reduced play between chuck seat and journal
- Tolerance H7
Shaft End

Shaft end dimension may be specified by the customer.

*If the dimensions of the shaft end are within the min./max. limits given in the data sheets and can be produced on a CNC-lathe, there is no additional charge.*

- The max. shaft diameter cannot be exceeded.
- Shaft ends, shown in the part designation by the suffix -MW-(D)x(L) are machined with a parallel key to DIN 6885, part 1, and with end threaded to DIN 332, form D. Shafts may be specified to inch tolerances as well.

<table>
<thead>
<tr>
<th>Ø SHAFT (mm)</th>
<th>THREAD</th>
<th>DEPTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>over 16 to 21</td>
<td>M6</td>
<td>16</td>
</tr>
<tr>
<td>over 21 to 24</td>
<td>M8</td>
<td>19</td>
</tr>
<tr>
<td>over 24 to 30</td>
<td>M10</td>
<td>22</td>
</tr>
<tr>
<td>over 30 to 38</td>
<td>M12</td>
<td>28</td>
</tr>
<tr>
<td>over 38 to 50</td>
<td>M16</td>
<td>36</td>
</tr>
<tr>
<td>over 50 to 85</td>
<td>M20</td>
<td>42</td>
</tr>
</tbody>
</table>
There are min./max. limits for journal seat geometry as shown on data sheets:

- Within these limits any diameter and length may be specified.
- The published values for roll weight and torque always refer to the maximum value of the journal seat geometry A3.
- To minimize wear, maximum journal size should be chosen.

In addition to total load and winding speed, deflection of the winding shaft plays an important role in the life expectancy of the journal seat and shaft journal. Therefore, please note the following:

- Carefully chamfered edges provide for safe closing function.
- Conical or tapered winding shaft journals offer improved performance and should be used whenever possible.
- Winding shafts designed for minimal deflection should be used.
- The hardness of the shaft journals and the chuck journal seat should be made to suit each other. This means that the part which is least expensive and easiest to replace can be designed as the wear part. Expensive winding shafts should always be matched with chucks having journal seats of lower hardness.

*With the exception of light applications, low winding speeds, short winding shafts or low bearing loads, winding shaft journals should conform to the specifications given in the chapters “Normal-Chucks” and “Sliding-Chucks”!*
Installation

Note the following when installing chucks:

- Excessive deflection of the winding shaft causes an upward force on the handwheel with each revolution when it is in the 12 o’clock or loading position.

- Continuous abuse of this type leads to wear on the chuck housing.

- In cases of advanced wear to the chuck housing, the handwheel could be forced open in the downward position. This presents the risk that the winding shaft could fall out during operation.

- Wear to the chuck housing presents extreme risk of accident! (See “Maintenance” section covering possible defects and their causes!)

During installation, or before start-up, please check the following:

- Does the winding shaft load easily?

- Does the winding shaft have axial play of 0.5 mm?

- Check for proper closing function of the handwheel (it should be possible to open and close the handwheel by hand without using excessive force and without the use of tools).

- Check that the chucks are precisely aligned. Ensure that, with the handwheels closed, the winding shaft can be moved easily in an axial direction when the chuck is in loading position as well as at various rotating positions.

Please contact Montalvo in case of special situations.
**Handwheel Safety Lock**

Options:

- OS designates **NO** lock
- RS designates **Right** side lock (shown below)
- LS designates **Left** side lock

Sometimes it may be prudent or even imperative, with high-speed chucks for example, to install a safety lock which will avoid unintentional opening of the handwheel during operation.

The safety lock system:

- A spring loaded, hardened pin indexes into a bore opposite the ball catch.
- In order to unlock the handwheel this pin must be pushed away from the center of the hand wheel (see below).
- When closing the handwheel the pin clicks into place automatically.

A handwheel safety lock is shown below.

- Lock installed on **RIGHT** side shown.
- Can be ordered with **NO** locks, **RIGHT** lock or **LEFT** lock.
- Can be easily installed, swapped from side to side or repaired by customer.

Chucks with A2 journal seats are required to have safety locks if roll weights exceed 70% of maximum roll weight.
Axial Carrier

The axial carrier is standard with sliding safety chucks. It can also be mounted on normal chucks.

Normal chucks can be mounted on two separate sliding bases and the axial connection of the chucks can be transmitted by the winding shaft.

The use of axial carriers can also be useful, if the chucks are installed rigidly and a precise positioning of the winding shaft is required. In this event the winding shaft journals must be designed to match sliding safety chucks.

Conical Chuck Journal Seat

A cost effective alternative to conical shaft journals.

A cost effective alternative to machining journals with difficult and expensive undercuts is the conical journal seat, which allows the use of simple journals without the risk of excessive stress and wear. They are special order - please call Montalvo for further details.
Handwheel Open/Closed Indicator and Handwheel Opening Position Indicator

Option 12h (handwheel opening position)
• Two different designs available: 12h/li (left) & 12h/re (right)
• Ensures that the proximity switch cable does not hinder operation

Both options (handwheel open/closed and opening position)
• May be installed separately or together

Definition “left / right”
• Determined by the front view of the handwheel

Available sizes (“normal” design / pedestal or flange mount)
• G1000, G1800 and G3000

<table>
<thead>
<tr>
<th>SIZE</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1000</td>
<td>76</td>
<td>60</td>
<td>23</td>
<td>30</td>
<td>20</td>
<td>19</td>
<td>67</td>
</tr>
<tr>
<td>G1800</td>
<td>96</td>
<td>65</td>
<td>20</td>
<td>32.5</td>
<td>20</td>
<td>29</td>
<td>75</td>
</tr>
<tr>
<td>G3000</td>
<td>107</td>
<td>120</td>
<td>20</td>
<td>60</td>
<td>20</td>
<td>40</td>
<td>85</td>
</tr>
</tbody>
</table>

Electrical Specifications
Voltage .................................................................................................................12-24 VDC
Circuitry................................................................................................................ PNP (3-conductor, + switched)
Characteristic ......................................................................................................NO
Power .................................................................................................................... max. 100 mA (not short circuit resistant)
Cable....................................................................................................................2m
**High Speed Safety Chucks**

High speed safety chucks should be used for web speeds over 300 m/min.

High speed safety chucks offer the following:

- Handwheel safety lock
- Balanced shaft and handwheel
- Journal design A3 only
- Maximum load = 0.6 x catalog value

Note: adhere to the installation instructions and pay special attention to the journal design (tolerance, materials, hardness, etc.)
Increased Handwheel Opening Angle

Guardian safety chuck handwheels can be fully opened within a range of +/- 10 degrees from the vertical axis.

If the shaft is turned beyond that, the handwheel begins to close and is totally closed at 30 degrees from the vertical axis.

If required, opening angle can be enlarged to customer specifications. Never use an opening angle in excess of +/- 30 degrees as this increases the risk of the winding shaft falling out of the chuck!
Overview

Guardian Normal Safety Chucks are available as pedestal or flange mount.

-OW-
Without shaft end

-BR-
Shaft end
Prepared for mounting a brake
**Normal Chucks**

The following is an explanation of the code used to describe Guardian normal safety chucks. At the beginning of each description is the chuck size. It indicates the maximum roll weight in kilograms.

<table>
<thead>
<tr>
<th>Order Code</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type Of Chuck &amp; Mount</strong></td>
<td><strong>SN</strong></td>
<td>normal / pedestal mount</td>
<td><strong>FN</strong></td>
<td>normal / flange mount</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Journal Seat Design</strong></td>
<td>2</td>
<td>V-type square (A2)</td>
<td>3</td>
<td>triangle (A3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Journal Seat Size</strong></td>
<td>___</td>
<td>measurement of A (journal seat) in millimeters (mm)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Handwheel Safety Lock</strong></td>
<td><strong>OS</strong></td>
<td>without handwheel safety lock</td>
<td><strong>RS</strong></td>
<td>with Right Side handwheel safety lock</td>
<td><strong>LS</strong></td>
<td>with Right Side handwheel safety lock</td>
<td></td>
</tr>
<tr>
<td><strong>Axial Carrier</strong></td>
<td><strong>OX</strong></td>
<td>without axial carrier</td>
<td><strong>MX</strong></td>
<td>with axial carrier</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Type Of Chuck End</strong></td>
<td><strong>OW</strong></td>
<td>without shaft end</td>
<td><strong>BR</strong></td>
<td>with shaft end and bolt circle in housing or sliding sleeve (for brake mounting)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Shaft End / Brake</strong></td>
<td>Diameter x Length (DxL) of shaft end (additional specs may be required)</td>
<td>drawing number of special shaft</td>
<td>Montalvo brake model number (or other brake specs)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Examples

The following examples are of typical order codes:

G1800-SN-2-40-000-00-OS-OX-OW

- **G1800**: maximum roll weight up to 1,800 kilograms (kg) (or 18,000 N)
- **SN**: normal chuck in pedestal mount
- **2**: journal design is V-type square (A2)
- **40**: journal size of 40 mm (measurement A from data sheet)
- **000**: option for sliding chucks only
- **00**: option for sliding chucks only
- **OS**: without handwheel safety lock
- **OX**: without axial carrier
- **OW**: without shaft end

G3000-FN-2-50-000-00-RS-OX-BR-50k6x110

- **G3000**: maximum roll weight up to 3,000 kilograms (kg) (or 30,000 N)
- **FN**: normal chuck in flange mount
- **2**: journal design is square normal (A2)
- **50**: journal size of 50 mm (measurement A from data sheet)
- **000**: option for sliding chucks only
- **00**: option for sliding chucks only
- **RS**: with Right Side handwheel safety lock
- **OX**: without axial carrier
- **BR**: with shaft end and bolt circle in housing for brake attachment
- **50k6x110**: diameter x length of shaft end (including key acc. DIN 6885, sh. 1 and thread on face acc. DIN 332, form D)

G1000-SN-3-30-000-00-LS-OX-BR-V300

- **G1000**: maximum roll weight up to 1,000 kilograms (kg) (or 10,000 N)
- **SN**: normal chuck in pedestal mount
- **3**: journal design is triangle (A3)
- **30**: journal size of 30 mm (measurement A from data sheet)
- **000**: option for sliding chucks only
- **00**: option for sliding chucks only
- **LS**: with Left Side handwheel safety lock
- **OX**: without axial carrier
- **BR**: with shaft end and bolt circle in housing for brake attachment
- **V300**: type of brake: Montalvo V Series High Performance Single Disc
### Square Journal (A2)

<table>
<thead>
<tr>
<th>SIZE</th>
<th>A min.</th>
<th>A max.</th>
<th>W</th>
<th>V</th>
<th>U</th>
<th>Z</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1000</td>
<td>20</td>
<td>30</td>
<td>27</td>
<td>14</td>
<td>4</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td>G1800</td>
<td>30</td>
<td>40</td>
<td>30</td>
<td>15</td>
<td>5</td>
<td>1.5</td>
<td>0.4</td>
</tr>
<tr>
<td>G3000</td>
<td>40</td>
<td>50</td>
<td>32</td>
<td>16</td>
<td>5</td>
<td>2</td>
<td>0.5</td>
</tr>
</tbody>
</table>

**Legend:**

- **A min.** minimum square dimension
- **A max.** maximum square dimension
- **W** minimum total length of the journal
- **V** length of the cylindrical part of the journal
- **U** front face bevel
- **Z** side bevel
- **H** angle for journal undercut
Triangular Journal (A3)

Legend:
- **Di**: triangle - inner circle diameter (tolerance f8)
- **Da**: triangle - circumference diameter (tolerance f6)  \( Da = Di \times 1.5 \)
- **W**: minimum total length of the journal
- **V**: length of the cylindrical part of the journal
- **U**: front face bevel
- **K**: control dimension (note tolerances)  \( K = \frac{Di}{2} + \frac{Da}{2} \)
- **H**: angle for journal undercut

<table>
<thead>
<tr>
<th>SIZE</th>
<th>Di (f8)</th>
<th>Tolerance for K</th>
<th>W</th>
<th>V</th>
<th>U</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1000</td>
<td>20</td>
<td>-0.027/-0.036</td>
<td>27</td>
<td>14</td>
<td>4</td>
<td>0.3</td>
</tr>
<tr>
<td>G1000</td>
<td>over 20 to 30</td>
<td>-0.031/-0.039</td>
<td>27</td>
<td>14</td>
<td>4</td>
<td>0.3</td>
</tr>
<tr>
<td>G1800</td>
<td>32 to 33</td>
<td>-0.033/-0.044</td>
<td>30</td>
<td>15</td>
<td>5</td>
<td>0.4</td>
</tr>
<tr>
<td>G1800</td>
<td>over 33 to 38</td>
<td>-0.037/-0.047</td>
<td>30</td>
<td>15</td>
<td>5</td>
<td>0.4</td>
</tr>
<tr>
<td>G3000</td>
<td>40 to 47</td>
<td>-0.037/-0.047</td>
<td>32</td>
<td>16</td>
<td>5</td>
<td>0.5</td>
</tr>
</tbody>
</table>
**Winding Shaft Lengths**

Calculate winding shaft lengths for PEDESTAL MOUNT (SN) normal chucks using the following formula:

\[
WWL = LM - K - AS
\]

<table>
<thead>
<tr>
<th>SIZE</th>
<th>K</th>
<th>AS</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1000</td>
<td>112</td>
<td>0.5</td>
</tr>
<tr>
<td>G1800</td>
<td>130</td>
<td>0.5</td>
</tr>
<tr>
<td>G3000</td>
<td>194</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Legend:

- **WWL**: winding shaft length
- **LA**: distance between chucks
- **LM**: mounting distance
- **K**: specific constant
- **AS**: axial play of the winding shaft
**Winding Shaft Lengths**

Calculate winding shaft lengths for FLANGE MOUNT (FN) normal chucks using the following formula:

\[ WWL = LW - K - AS \]

<table>
<thead>
<tr>
<th>SIZE</th>
<th>K</th>
<th>AS</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1000</td>
<td>138</td>
<td>0.5</td>
</tr>
<tr>
<td>G1800</td>
<td>146</td>
<td>0.5</td>
</tr>
<tr>
<td>G3000</td>
<td>206</td>
<td>0.8</td>
</tr>
</tbody>
</table>

Legend:
- **WWL** = winding shaft length
- **LA** = distance between chucks
- **LW** = mounting distance
- **K** = specific constant
- **AS** = axial play of the winding shaft
Specification Sheets

The following five application data sheets will help to determine which Guardian normal safety chuck best meets your requirements. The information must be complete and accurate and must accompany each order. The sheets, when properly filled out, will clearly define a specific model of chuck. Remember... the most important method of identification of our chucks is the part number!

The part number will give all relevant information, e.g.:

- Design (shaft end, chuck journal seat, housing, etc.)
- Summary of all component parts used (part number = part number list)
- Options
- Finish, etc.
- Spare parts (sufficient info in part number to order spare parts)

The part number can be found on the packing and purchase order.

Below is a list of the specification data sheets for the Guardian Safety Chuck:

G1000 p. 25
G1800 p. 26
G3000 p. 27
### NORMAL CHUCKS

**Specifications**

<table>
<thead>
<tr>
<th>Roll weight max.: 10,000 N (2,248 lb)</th>
<th>Torque max.: 200 Nm (1,770 in-lb)</th>
</tr>
</thead>
</table>

#### Roll weight max. __N__ (____ lb)

#### Roll diameter max. __mm__ (____ in)

#### Roll width max. __mm__ (____ in)

#### Roll width min. __mm__ (____ in)

#### Winding speed max. __m/min__ (____ ft/min)

#### Tension max. __N__ (____ lb)

#### Brake attachment: Type of brake ________________________ or define special shaft end (see above)

#### Roll weight max. __N__ (____ lb)

#### Roll diameter max. __mm__ (____ in)

#### Roll width max. __mm__ (____ in)

#### Roll width min. __mm__ (____ in)

#### Winding speed max. __m/min__ (____ ft/min)

#### Tension max. __N__ (____ lb)

#### Company: __________

#### Name: __________

#### Date: __________

---

**Further Options**

<table>
<thead>
<tr>
<th>Hardness</th>
<th>48/50 HRC = standard</th>
<th>_______HRC</th>
<th>not hardened</th>
<th>see page 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seat</td>
<td>cylindrical = standard</td>
<td>conical (special order)</td>
<td>see page 12</td>
<td></td>
</tr>
<tr>
<td>Balanced</td>
<td>not balanced = standard</td>
<td>balanced Q=____ n=_____rpm</td>
<td>see page 14</td>
<td></td>
</tr>
<tr>
<td>Indication</td>
<td>Handwheel Open/Closed</td>
<td>12h left</td>
<td>12h right</td>
<td>see page 13</td>
</tr>
</tbody>
</table>

---

**Technical Data**

- ** amortization factor: **
- ** torque: **
- ** deflection: **
- ** substrate: **

---

**Brake attachment: Type of brake ________________________ or define special shaft end (see above)**

- ** standard shaft (mm): **
- ** special shaft: **

---

**Brake attachment: Type of brake ________________________ or define special shaft end (see above)**

- ** standard shaft (mm): **
- ** special shaft: **

---

**Brake attachment: Type of brake ________________________ or define special shaft end (see above)**

- ** standard shaft (mm): **
- ** special shaft: **

---

**Brake attachment: Type of brake ________________________ or define special shaft end (see above)**

- ** standard shaft (mm): **
- ** special shaft: **

---

**Brake attachment: Type of brake ________________________ or define special shaft end (see above)**

- ** standard shaft (mm): **
- ** special shaft: **

---

**Brake attachment: Type of brake ________________________ or define special shaft end (see above)**

- ** standard shaft (mm): **
- ** special shaft: **
**NORMAL CHUCKS**

### Specifications

<table>
<thead>
<tr>
<th>Roll weight max.: 18,000 N (4,047 lb)</th>
<th>Torque max.: 380 Nm (3,363 in-lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Housing</strong></td>
<td></td>
</tr>
<tr>
<td>SN □ pedestal mount</td>
<td>□ standard as per data sheet</td>
</tr>
<tr>
<td>FN □ flange mount</td>
<td>□ special housing as per drawing</td>
</tr>
<tr>
<td><strong>Journal Seat</strong></td>
<td></td>
</tr>
<tr>
<td>(see page 6)</td>
<td></td>
</tr>
<tr>
<td>2 □ V-Type Square (A2)</td>
<td></td>
</tr>
<tr>
<td>3 □ Triangle (A3)</td>
<td>□ Special as per drawing</td>
</tr>
<tr>
<td><strong>Size of Journal</strong></td>
<td></td>
</tr>
<tr>
<td>(mm) standard with □</td>
<td>□ (mm) - standard with □</td>
</tr>
<tr>
<td>30 □</td>
<td>36 □</td>
</tr>
<tr>
<td>35 □</td>
<td></td>
</tr>
<tr>
<td>40 □</td>
<td></td>
</tr>
<tr>
<td><strong>Safety Lock</strong></td>
<td></td>
</tr>
<tr>
<td>(see page 11)</td>
<td></td>
</tr>
<tr>
<td>SN □ without safety lock</td>
<td>□ with safety lock - LEFT side</td>
</tr>
<tr>
<td>FN □ with safety lock - RIGHT side</td>
<td></td>
</tr>
<tr>
<td><strong>Axial Carrier</strong></td>
<td></td>
</tr>
<tr>
<td>(see page 12)</td>
<td></td>
</tr>
<tr>
<td>SN □ without axial carrier</td>
<td></td>
</tr>
<tr>
<td>FN □ with axial carrier plate</td>
<td></td>
</tr>
<tr>
<td><strong>Shaft End</strong></td>
<td></td>
</tr>
<tr>
<td>(see page 7)</td>
<td></td>
</tr>
<tr>
<td>SN □ without shaft end</td>
<td>□ with shaft end</td>
</tr>
<tr>
<td>FN □ with shaft end</td>
<td></td>
</tr>
</tbody>
</table>

**Brake attachment:** Type of brake ________________________ or define special shaft end (see above)

- Hardness □ 48/50 HRC = standard □ _____HRC □ not hardened [see page 8]
- Seat □ cylindrical = standard □ conical (special order) [see page 12]
- Balanced □ not balanced = standard □ balanced Q=____ n=_____rpm [see page 14]
- Indication □ Handwheel Open/Closed □ 12h left □ 12h right [see page 13]

**Roll weight max.** ____ N (___ lb) Winding shaft diameter ____ mm (___ in)
**Roll diameter max.** ____ mm (___ in) Winding shaft length ____ mm (___ in)
**Roll width max.** ____ mm (___ in) Deflection of winding shaft ____ mm (___ in)
**Roll width min.** ____ mm (___ in) Torque max. ____ Nm (___ in-lb)
**Winding speed max.** ____ m/min. (___ ft/min) Substrate:
**Tension max.** ____ N (___ lb) Additional:

Company: Name: Date:
## NORMAL CHUCKS

### Specifications

**G3000-__ N- -000-00- -00- - - -**

<table>
<thead>
<tr>
<th>Roll weight max.</th>
<th>30,000 N (6,744 lb)</th>
<th>Torque max.: 1,200 Nm (10,621 in-lb)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Housing</th>
<th>SN □ pedal mount</th>
<th>□ standard as per data sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FN □ flange mount</td>
<td>□ special housing as per drawing</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Journal Seat</th>
<th>2 □ V-Type Square (A2)</th>
<th>□ Special as per drawing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3 □ Triangle (A3)</td>
<td>(mm) min. / max. (data sheet)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Size of Journal</th>
<th>40 □ (mm) standard with</th>
<th>□ Special housing as per drawing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>45 □ (mm) standard with</td>
<td>(mm) - standard with</td>
</tr>
<tr>
<td>Seat</td>
<td>50 □ (mm) standard with</td>
<td>(mm) standard with</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Safety Lock</th>
<th>OS □ without safety lock</th>
<th>□ with safety lock - LEFT side</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RS □ with safety lock - RIGHT side</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Axial Carrier</th>
<th>OX □ without axial carrier</th>
<th>□ with axial carrier</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MX □ with axial carrier plate</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Shaft End</th>
<th>OW □ without shaft end</th>
<th>□ with shaft end</th>
</tr>
</thead>
</table>

**Shaft to be defined when option 6 is equal to BR**

- □ std. shaft (mm) 110 B
- □ Ø50 k6 D
- □ 100 X
- □ 14 Y
- □ 5.5 T
- □ 4 U
- □ 4 V

- □ Special shaft end as per attached drawing

- □ Brake attachment: Type of brake or define special shaft end (see above)

- □ Hardness 48/50 HRC = standard □ HRC □ not hardened see page 8
- □ Seat cylindrical = standard □ conical (special order) see page 12
- □ Balanced not balanced = standard □ balanced Q=____ n=____ rpm see page 14
- □ Indication Handwheel Open/Closed □ 12h left □ 12h right see page 13

- □ Roll weight max. N (____ lb) Winding shaft diameter mm (____ in)
- □ Roll diameter max. mm (____ in) Winding shaft length mm (____ in)
- □ Roll width max. mm (____ in) Deflection of winding shaft mm (____ in)
- □ Roll width min. mm (____ in) Torque max. Nm (____ in-lb)
- □ Winding speed max. m/min. (____ ft/min) Substrate:  
- □ Tension max. N (____ lb)  

**Technical Data**

**Further Options**

**Company:** Name: Date:
Caution: To prevent damage, journals must be manufactured according to Montalvo specifications!

G1000-SN-__-____-000-00-OS-00-OW

Roll weight: max. 10,000 N (2,248 lb)
Torque: max. 200 Nm (1,770 in-lb)

Technical details subject to change without notice. © Montalvo
Caution: To prevent damage, journals must be manufactured according to Montalvo specifications!

G1000-SN-__-__-000-00-OS-00-BR

Roll weight: max. 10,000 N (2,248 lb)  Torque: max. 200 Nm (1,770 in-lb)

Standard Journal Types

- Standard DIN 332, Design D
- Tapped hole

Usable seat length

Key depth
Key width
Shaft length
Shaft diameter
Total length

Available dimensions

- DIN 6885
- BL 1
- 6X M8x1.25 Tapped hole on 74mm BCD

Technical details subject to change without notice. © Montalvo

1-800-226-8710 / +1 207-856-2501 / info@montalvo.com / www.montalvo.com
**G1000-FN-__-___-000-00-OS-00-OW**

**Roll weight:** max. 10,000 N (2,248 lb)

**Torque:** max. 200 Nm (1,770 in-lb)

---

**Standard Journal Types**

<table>
<thead>
<tr>
<th>Type</th>
<th>Standard</th>
<th>min.</th>
<th>max.</th>
<th>A2</th>
<th>A3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>20</td>
<td>30</td>
<td>20</td>
<td>30</td>
</tr>
</tbody>
</table>

---

**Technical Details:**

- **Usable seat length:**
- **6x M8x1.25 220 on 74mm BCD**

---

**Contact Information:**

- 1-800-226-8710 / +1 207-856-2501 / info@montalvo.com / www.montalvo.com

---

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---

**G023.0**
G1800-SN-__-____-000-00-OS-00-OW

Roll weight: max. 18,000 N (4,047 lb)
Torque: max. 380 Nm (3,363 in-lb)

Caution: To prevent damage, journals must be manufactured according to Montalvo specifications!
**Caution:** To prevent damage, journals must be manufactured according to Montalvo specifications!

**G1800-SN-__-___-000-00-OS-00-BR**

**Roll weight:** max. 18,000 N (4,047 lb)

**Torque:** max. 380 Nm (3,363 in-lb)

**Available dimensions**

<table>
<thead>
<tr>
<th>Description</th>
<th>Standard</th>
<th>Bl. 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shaft diameter</td>
<td>30/35/40</td>
<td>B1</td>
</tr>
<tr>
<td>Shaft length</td>
<td>30</td>
<td>100</td>
</tr>
<tr>
<td>Total length</td>
<td>36</td>
<td>128</td>
</tr>
<tr>
<td>Key length</td>
<td>32</td>
<td>252</td>
</tr>
<tr>
<td>Key width</td>
<td>38</td>
<td>56</td>
</tr>
<tr>
<td>Key depth</td>
<td>40</td>
<td>10</td>
</tr>
<tr>
<td>DIN 6885</td>
<td>40</td>
<td>10</td>
</tr>
<tr>
<td>Seat length</td>
<td>32</td>
<td>56</td>
</tr>
<tr>
<td>Usable seat length</td>
<td>38</td>
<td>10</td>
</tr>
</tbody>
</table>

**Technical details subject to change without notice. © Montalvo**

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Bl. 1, DIN 6885, Design D

Tapped hole

DIN 332, Design D

Tapped hole

6x M8x1.25 x 20 on 93mm BCD

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EST. 1947

Montalvo, Total Control

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G1800-FN-__-__-000-00-OS-00-BR

Roll weight: max. 18,000 N (4,047 lb)
Torque: max. 380 Nm (3,363 in-lb)

Warning: To prevent damage, journals must be manufactured according to Montalvo specifications!

Key depth
Key width
Key length
Total length
Shaft length
Shaft diameter

Available dimensions

DIN 332, Design D
Tapped hole
seat length

Usable
ø D
ø 13
4
8
16
54
98
28
6
20
ø 110
ø D

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Caution: To prevent damage, journals must be manufactured according to Montalvo specifications!

Roll weight: max. 30,000 N (6,744 lb)
Torque: max. 1,200 Nm (10,621 in-lb)

Standard Journal Types

<table>
<thead>
<tr>
<th>Type</th>
<th>Standard</th>
<th>min.</th>
<th>max.</th>
<th>Standard</th>
<th>min.</th>
<th>max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A2</td>
<td>40/45/50</td>
<td>40</td>
<td>50</td>
<td>A3</td>
<td>46</td>
<td>47</td>
</tr>
</tbody>
</table>

Caution: To prevent damage, journals must be manufactured according to Montalvo specifications!
Roll weight: max. 30,000 N (6,744 lb)  
Torque: max. 1,200 Nm (10,621 in-lb)
G3000-FN-__-__-000-00-OS-00-OW

Roll weight: max. 30,000 N (6,744 lb)
Torque: max. 1,200 Nm (10,621 in-lb)

Caution: To prevent damage, journals must be manufactured according to Montalvo specifications!

Technical details subject to change without notice. © Montalvo
Caution: To prevent damage, journals must be manufactured according to Montalvo specifications!

Roll weight: max. 30,000 N (6,744 lb)
Torque: max. 1,200 Nm (10,621 in-lb)

Technical details subject to change without notice. © Montalvo

Available dimensions:

DIN 332, Design D
6X M10x1.5 225 on 115 BCD

6X ø 240 ø 170 ø 18

Standard Journal Types

A2
A2 40/45/50

A3

Standard
min.
max.

40
50
A3
46
47

Key depth
Key width

Key length
Total length
Shaft length
Shaft diameter

Key

Available dimensions Description

D 50 65
B 35 140
C 6 340
X 106 885
Y 14

DIN 332 Design D
Tapped hole

6X ø 220
 ø 18

44° 6X M10x1.5 Tv25 on 115 BCD
Overview

Guardian Sliding Safety Chucks are a cost effective solution for axial adjustment of rolls during operation. Manufactured with either a 50mm (± 25mm) or 100mm (± 50mm) adjustment range, they are available as pedestal (SS) or flange (FS) mount.

-Pedestal Mount-

-HR- - - OW-
Without shaft end
Axial adjustment by handwheel

-AZ- - - OW- (not shown)
Without shaft end
Axial adjustment by freely definable drive pivot

-Flange Mount-

-FW- - - BR-
Sliding shaft end
Additional thread in sliding sleeve
Both parts equipped with self centering spline
Prepared for mounting a brake
Guardian Sliding Safety Chucks are a cost effective solution for axial adjustment of rolls during operation. Manufactured with either a 50mm (+/- 25mm) or 100mm (+/- 50mm) adjustment range, they are available as pedestal (SS) or flange (FS) mount.

### Order Code

```
G1800-_S-_- - - - - - -
```

<p>| | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Type Of Chuck &amp; Mount</td>
<td>SS</td>
<td>sliding / pedestal mount</td>
<td>FS</td>
<td>sliding / flange mount</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Journal Seat Design</td>
<td>2</td>
<td>V-type square (A2)</td>
<td>3</td>
<td>triangle (A3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Journal Seat Size</td>
<td>___</td>
<td>measurement of A (journal seat) in millimeters (mm)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Axial Adjustment</td>
<td>050</td>
<td>50 mm (+/- 25mm)</td>
<td>100</td>
<td>100 mm (+/- 50mm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Type of Sliding Chuck</td>
<td>HR</td>
<td>shaft drive</td>
<td>AZ</td>
<td>shaft drive</td>
<td>FW</td>
<td>sliding shaft end</td>
</tr>
<tr>
<td>6</td>
<td>Handwheel Safety Lock</td>
<td>OS</td>
<td>without handwheel safety lock</td>
<td>RS</td>
<td>with safety lock - RIGHT side</td>
<td>LS</td>
<td>with safety lock - LEFT side</td>
</tr>
<tr>
<td>7</td>
<td>Axial Carrier</td>
<td>MX</td>
<td>with axial carrier</td>
<td>ST</td>
<td>with axial carrier pin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Type Of Chuck End</td>
<td>OW</td>
<td>without shaft end</td>
<td>BR</td>
<td>with shaft end and bolt circle in housing or sliding sleeve (for brake mounting)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Shaft End / Brake</td>
<td>Diameter x Length (DxL) of shaft end (additional specs may be required)</td>
<td>___</td>
<td>drawing number of special shaft</td>
<td>___</td>
<td>Montalvo brake model number (or other brake specs)</td>
<td></td>
</tr>
</tbody>
</table>
Examples

The following examples are of typical order codes:

**G1800-SS-2-40-100-HR-OS-MX-OW**
- **G1800**: maximum roll weight up to 1,800 kilograms (kg) (or 18,000 N)
- **SS**: sliding chuck in pedestal mount
- **2**: journal design is V-type square (A2)
- **40**: journal size of 40 mm (measurement A from data sheet)
- **100**: axial adjustment of 100 mm
- **HR**: handwheel axial adjustment
- **OS**: no handwheel safety lock
- **MX**: with axial carrier
- **OW**: without shaft end

**G1800-SS-1-35-050-FW-LS-MX-BR-50k6x110**
- **G1800**: maximum roll weight up to 1,800 kilograms (kg) (or 18,000 N)
- **SS**: sliding chuck in pedestal mount
- **2**: journal design is V-type square (A2)
- **35**: journal size of 35 mm (measurement A from data sheet)
- **050**: axial adjustment of 50 mm
- **FW**: with sliding shaft
- **RS**: with handwheel safety lock - RIGHT side
- **MX**: with axial carrier
- **BR**: with shaft end and bolt circle in housing for brake attachment
- **50k6x110**: diameter x length of shaft end (including key acc. DIN 6885, sh. 1 and thread on face acc. DIN 332, form D)

**G1800-SS-3-30-100-FW-OS-MX-BR-0118**
- **G1800**: maximum roll weight up to 1,800 kilograms (kg) (or 18,000 N)
- **SS**: sliding chuck in pedestal mount
- **3**: journal design is triangle (A3)
- **30**: journal size of 30 mm (measurement A from data sheet)
- **100**: axial adjustment of 100 mm
- **FW**: with sliding shaft
- **LS**: with handwheel safety lock - LEFT side
- **MX**: with axial carrier
- **BR**: with shaft end and bolt circle in housing for brake attachment
- **0118**: drawing number of special shaft for customer's brake
Axial Carrier

The axial carrier option is offered to facilitate the mechanical connection of two sliding chucks. Since only the type OW chuck is adjusted by means of a handwheel, electric or hydraulic drive, it is necessary to slave the opposite chuck through the winding shaft. The axial carrier offers the following advantages over conventional pin-type systems:

- Can be used in all designs of winding shaft journals
- Easier loading and unloading of the winding shaft

Note: Axial pin design is available for square normal journal (A1) as required.

When unloading a roll, the lift should be parallel to the carrier to avoid mechanical interference.

Assembly of the axial carrier plate:

The axial carrier is mounted in front of the journal seat as shown below. The shaft journal requires a groove in which the axial carrier fits during loading.
### Square Journal (A2)

<table>
<thead>
<tr>
<th>SIZE</th>
<th>A min.</th>
<th>A max.</th>
<th>W</th>
<th>X</th>
<th>Y</th>
<th>V</th>
<th>U</th>
<th>Z</th>
<th>H°</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1800</td>
<td>30</td>
<td>40</td>
<td>25</td>
<td>38</td>
<td>13</td>
<td>15</td>
<td>5</td>
<td>1.5</td>
<td>0.4</td>
</tr>
</tbody>
</table>

#### Legend:

- **A min.**: minimum square dimension
- **A max.**: maximum square dimension
- **W**: journal length
- **X**: minimum total length of the journal
- **Y**: recess width
- **D**: recess diameter \( D = A - 1 \)
- **V**: length of the cylindrical portion of the journal
- **U**: front face bevel
- **Z**: side bevel
- **H°**: angle for journal undercut
**Triangular Journal (A3)**

<table>
<thead>
<tr>
<th>SIZE</th>
<th>Di (f8)</th>
<th>Tolerance for K</th>
<th>W</th>
<th>X</th>
<th>Y</th>
<th>Rz</th>
<th>V</th>
<th>U</th>
<th>H°</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1800</td>
<td>32 to 33</td>
<td>-0.033/-0.044</td>
<td>24</td>
<td>36</td>
<td>12</td>
<td>6</td>
<td>15</td>
<td>5</td>
<td>0.4</td>
</tr>
<tr>
<td>G1800</td>
<td>over 33 to 38</td>
<td>-0.037/-0.047</td>
<td>24</td>
<td>36</td>
<td>12</td>
<td>6</td>
<td>15</td>
<td>5</td>
<td>0.4</td>
</tr>
</tbody>
</table>

Legend:

- **Di** triangle - inner circle diameter (tolerance f8)
- **Da** triangle - circumference diameter (tolerance f6) \( Da = Di \times 1.5 \)
- **W** journal length
- **X** minimum total length of the journal
- **Y** recess width
- **D** recess diameter \( D = Di \)
- **Rz** front recess radius
- **V** length of the cylindrical portion of the journal
- **U** front face bevel
- **K** control dimension (note tolerances) \( K = Di/2 + Da/2 \)
- **H** angle for journal undercut
Calculate winding shaft lengths for PEDESTAL MOUNT (SS) sliding chucks using the following formula:

\[ WWL = LM - K \]

**Legend:**
- WWL: winding shaft length
- LA: distance between chucks
- LM: mounting distance
- K: specific constant

<table>
<thead>
<tr>
<th>SIZE</th>
<th>K (axial adj. 50mm)</th>
<th>K (axial adj. 100mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1800</td>
<td>246</td>
<td>296</td>
</tr>
</tbody>
</table>
**Winding Shaft Lengths**

Calculate winding shaft lengths for FLANGE MOUNT (FS) sliding chucks using the following formula:

\[
WWL = LM - K
\]

**Legend:**
- **WWL**: winding shaft length
- **LA**: distance between chucks
- **LM**: mounting distance
- **K**: specific constant

<table>
<thead>
<tr>
<th>SIZE</th>
<th>K (axial adj. 50mm)</th>
<th>K (axial adj. 100mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1800</td>
<td>197</td>
<td>247</td>
</tr>
</tbody>
</table>
The application data sheet will help to determine which Guardian sliding safety chuck configuration best meets your requirements. The information must be complete and accurate and must accompany each order. The sheet, when properly filled out, will clearly define a specific chuck. Remember... the most important method of identification of our chucks is the part number!

The part number will give all relevant information, e.g.:

- Design (shaft end, chuck journal seat, housing, etc.)
- Summary of all component parts used (part number = part number list)
- Options
- Spare parts (sufficient info in part number to order spare parts)

The part number can be found on packing slips and purchase orders.
# SLIDING CHUCKS

## Specifications

### G1800-\_S-\_ - - - - - - - - -

<table>
<thead>
<tr>
<th>Roll weight max.: 18,000 N (4,047 lb)</th>
<th>Torque max.: 380 Nm (3,363 in-lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roll weight max.</td>
<td>Torque max.</td>
</tr>
<tr>
<td>Roll diameter max.</td>
<td>Winding shaft diameter</td>
</tr>
<tr>
<td>Roll width max.</td>
<td>Winding shaft length</td>
</tr>
<tr>
<td>Roll width min.</td>
<td>Deflection of winding shaft</td>
</tr>
<tr>
<td>Winding speed max.</td>
<td>Torque max.</td>
</tr>
<tr>
<td>Tension max.</td>
<td>Substrate:</td>
</tr>
</tbody>
</table>

### Housing

<table>
<thead>
<tr>
<th>SS</th>
<th>pedestal mount</th>
<th>FS</th>
<th>flange mount</th>
</tr>
</thead>
</table>

### Journal Seat

(see page 6)

<table>
<thead>
<tr>
<th>2</th>
<th>V-Type Square (A2)</th>
<th>3</th>
<th>Triangle (A3)</th>
</tr>
</thead>
</table>

### Size of Journal Seat

<table>
<thead>
<tr>
<th>30</th>
<th>(mm) standard with</th>
<th>36</th>
<th>(mm) - standard with</th>
</tr>
</thead>
</table>

### Path

<table>
<thead>
<tr>
<th>050</th>
<th>axial adjustment +/- 25mm</th>
<th>100</th>
<th>axial adjustment +/- 50mm</th>
</tr>
</thead>
</table>

### OW - Type

<table>
<thead>
<tr>
<th>HR</th>
<th>drive by hand wheel</th>
<th>AZ</th>
<th>drive by driving shaft</th>
</tr>
</thead>
</table>

### Safety Lock

(see page 11)

<table>
<thead>
<tr>
<th>OS</th>
<th>without safety lock</th>
<th>LS</th>
<th>with safety lock - LEFT side</th>
</tr>
</thead>
</table>

### Axial Carrier

(see page 12)

<table>
<thead>
<tr>
<th>MX</th>
<th>with axial carrier plate</th>
</tr>
</thead>
</table>

### Shaft End

(see page 7)

<table>
<thead>
<tr>
<th>OW</th>
<th>without shaft end</th>
<th>BR</th>
<th>with shaft end &amp; bolt circle in housing (for brake attachment)</th>
</tr>
</thead>
</table>

### For shaft end with SW/FW-BR and SW/BR or driving shaft with AZ-OW

<table>
<thead>
<tr>
<th>B</th>
<th>82</th>
<th>D</th>
<th>Ø42 k6</th>
<th>X</th>
<th>70</th>
<th>Y</th>
<th>12</th>
<th>T</th>
<th>5</th>
<th>U</th>
<th>4</th>
<th>V</th>
<th>4</th>
<th>BR or AZ as per attached drawing</th>
</tr>
</thead>
</table>

### Brake attachment: Type of brake

- 48/50 HRC = standard
- HRC = not hardened
- cylindrical = standard
- conical (special order)
- not balanced = standard
- balanced Q=______ n=______ rpm
- Handwheel Open/Closed
- 12h left
- 12h right

### Further Options

<table>
<thead>
<tr>
<th>Tech. data</th>
<th>FURTHER OPTIONS</th>
</tr>
</thead>
</table>

### Technical data

- Hardness
- Seat
- Balanced
- Indication
- Roll weight max.
- Roll diameter max.
- Roll width max.
- Roll width min.
- Winding speed max.
- Tension max.

### Company:

Name:

Date:

---

1-800-226-8710 / info@montalvo.com / www.montalvo.com

Technical details subject to change without notice. G-CAT-US-01 © Montalvo
G1800-SS-__-__-050-FW-OS-MX-BR

Roll weight: max. 18,000 N (4,047 lb)
Torque: max. 380 Nm (3,363 in-lb)

Caution: To prevent damage, journals must be manufactured according to Montalvo specifications!

G133.0

Roll weight: max. 18,000 N (4,047 lb)
Torque: max. 380 Nm (3,363 in-lb)

Standard Journal Types

<table>
<thead>
<tr>
<th>Key depth</th>
<th>Key width</th>
<th>Key length</th>
<th>Key depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIN 332, Design D</td>
<td>25</td>
<td>50</td>
<td>100</td>
</tr>
</tbody>
</table>

Available dimensions

<table>
<thead>
<tr>
<th>Standard</th>
<th>Description</th>
<th>Shaft diameter</th>
<th>Key width</th>
<th>Key depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIN 6885</td>
<td>356.5</td>
<td>25</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>338.5</td>
<td>82</td>
<td>50</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>68</td>
<td>50</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Technical details subject to change without notice. © Montalvo
Caution: To prevent damage, journals must be manufactured according to Montalvo specifications!

G1800-SS-__-__-100-HR-OS-MX-OW

Roll weight: max. 18,000 N (4,047 lb)
Torque: max. 380 Nm (3,363 in-lb)

Technical details subject to change without notice. © Montalvo
Caution: To prevent damage, journals must be manufactured according to Montalvo specifications!

Roll weight: max. 18,000 N (4,047 lb)

Torque: max. 380 Nm (3,363 in-lb)

Standard Journal Types

<table>
<thead>
<tr>
<th></th>
<th>Standard</th>
<th>min.</th>
<th>max.</th>
<th>Standard</th>
<th>min.</th>
<th>max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A2</td>
<td>30/35/40</td>
<td>30</td>
<td>40</td>
<td>A3</td>
<td>36</td>
<td>32</td>
</tr>
</tbody>
</table>

Technical details subject to change without notice. © Montalvo
Caution: To prevent damage, journals must be manufactured according to Montalvo specifications!

Roll weight: max. 18,000 N (4,047 lb)
Torque: max. 380 Nm (3,363 in-lb)

Standard Journal Types

<table>
<thead>
<tr>
<th>Type</th>
<th>Standard</th>
<th>min.</th>
<th>max.</th>
<th>Standard</th>
<th>min.</th>
<th>max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A2</td>
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<td>30</td>
<td>40</td>
<td>A3</td>
<td>32</td>
<td>38</td>
</tr>
</tbody>
</table>

Technical details subject to change without notice. © Montalvo
**Troubleshooting**

**Winding shaft cannot be easily loaded/unloaded or the journals jam when the shaft is being loaded**
- Journal tolerance incorrect
- Chuck not properly aligned
- Not enough axial play

**Handwheel cannot be opened or closed without using undue force**
- Journal tolerance incorrect
- Journal/shaft too long
- Chuck not properly aligned
- Front face bevel missing or too small
- Excessive deflection of roll shaft

**Winding shaft cannot be rotated correctly**
- Journal tolerance incorrect
- Journal/shaft too long
- Chuck not properly aligned
- Winding shaft journal not in alignment

**Handwheel opens slightly during operation, handwheel wobbles, iron filings from the housing can be seen, wear on the housing can be seen**
- Ball catch defective or dirty
- Excessive winding shaft deflection
- Load or torque too high
- Incorrect weight or torque reduction with A2 journal seat
- Journal/shaft too long
- Too much axial play

**Premature wear on the journal seat or on the winding shaft journal**
- Journal not cut back
- Chuck not properly aligned
- Too much load on chuck
- Incorrect weight or torque reduction with A2 journal seat
- Excessive winding shaft deflection
- Wrong material used for journal
- Journal hardness not compatible with chuck journal seat

**Noise**
- Handwheel/journal tolerance too loose
- Chucks misaligned or damaged

**Chuck has stiff movement**
- Defective bearing
- Improper installation of brake or drive to chuck shaft
Guardian standard chucks require no extensive maintenance!

The ball bearings are lubricated for life. Because operating conditions vary, chuck life cannot be easily estimated.

The following items should be checked at regular intervals:

- ease of rotation
- ease of closing movement
- make sure that the ball-detent can be moved easily and that it latches correctly in the closed position
- check the condition of the journal seat and the shaft journals
- check the play between the shaft journal and the journal seat of the chuck and for true running of the handwheel
- check the function of the handwheel safety catch (if option is in use)
- visual check for unusual wear or damage

If the play between the handwheel and the shaft journal is outside of the limits listed below, replacement of both parts is recommended. This is especially important in the case of high loads and speeds.

Tolerance Range: Min. = 0.15mm. Max. = 0.2mm

Based on a combination of load and web speed, replacement of the handwheel and shaft journals is recommended when the gap between the parts exceeds 0.15 to 0.20 mm.

The following items should be cleaned and/or lubricated at regular intervals:

- all surfaces related to the ball-detent catch
- the running surface of the sliding sleeve (on sliding chucks)
Handwheel Replacement

Handwheel and journal seat are supplied as an assembly and therefore they must not be disassembled!

The two pivot pins are secured in place by the manufacturer and cannot be removed without destroying the handwheel assembly!

When removing the assembly, make sure that you do not press the journal seat out of the handwheel, as this would allow the ball catch to spring out causing it to eject all parts!

A replacement handwheel is supplied as a complete unit including journal inserts.
Journal Insert Replacement

1. Remove handwheel (see instructions).
2. Remove lower inserts by sliding out towards back.
3. Remove (4) bolts holding upper inserts.
4. Reinstall new set of inserts making sure to use thread locking compound on (4) upper insert bolts.
5. Check upper insert alignment with shaft.
6. Reinstall handwheel (see instructions).
Handwheel Safety Lock Replacement

The handwheel safety lock prevents unintentional opening of the handwheel. It must be replaced when it becomes inoperable!

Follow the steps below to replace the Handwheel Safety Lock. Replacing the RIGHT side lock is shown below. Procedure for LEFT side replacement is identical. Make sure to observe all Lockout/Tagout procedures.

Removal:
1. Remove set screw.
2. Remove spring.
3. Unscrew button.
4. Remove locking pin.

Installation:
1. Grease locking pin and insert into hole. Note position of tapped hole.
2. Align tapped hole in pin with hole for button.
3. Apply a drop of thread locking compound to threads of button.
4. Screw button to pin. Do not overtighten - button should slide freely!
5. Insert spring.
6. Apply thread locking compound to set screw.
7. Screw set screw into handwheel so that it is flush to edge of handwheel.
8. Check free movement of button again. Adjust button as needed before thread locking compound sets up.

Caution - Do not remove this set screw by mistake. Removing the set screw will allow parts to eject with sufficient force to cause injury!

Caution - Do NOT press on journal seat if handwheel is removed from chuck. Pressing journal seat out of handwheel will allow parts to eject with sufficient force to cause injury!

G1800 only Locking Pin has two tapped holes. Use outboard hole only otherwise pin and lock will not function properly.
**Removing / Installing Handwheels**

1. Loosen the socket head cap screws on the journal seat. They are secured with a thread locking compound so it may be necessary to heat the heads of the screws to loosen them. Never heat the complete handwheel.

2. Remove the handwheel (whether defective or worn journal inserts).

3. Clean the socket head cap screws and tapped holes to remove all traces of adhesive. Keep socket head cap screws and tapped holes free of grease.

4. Install a replacement or existing handwheel (with new journal inserts), without canting it, on the pilot stub of the shaft and make sure that the inclined surface on the back of the journal seat is parallel to the incline of the shaft.

5. Coat the socket head cap screws with a thread locking adhesive.

6. Tighten the socket head cap screws uniformly to specified torque making sure that the handwheel is not canted in the process.

---

**Caution - DO NOT press on journal seat if handwheel is removed from chuck. Pressing journal seat out of handwheel will allow parts to eject with sufficient force to cause injury!**

---

<table>
<thead>
<tr>
<th>SIZE</th>
<th>Screw Type</th>
<th>Torque (Nm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1000</td>
<td>SHCS M8 x 30</td>
<td>35</td>
</tr>
<tr>
<td>G1800</td>
<td>SHCS M10 x 40</td>
<td>70</td>
</tr>
<tr>
<td>G3000</td>
<td>SHCS M12 x 45</td>
<td>120</td>
</tr>
</tbody>
</table>
Dismantling Normal Chucks

TYPE OW + BR

1. Remove the handwheel (10).
2. Remove the catch ring (5).
3. The shaft (2) can be removed through the front end by pressing or carefully tapping it. Bearing (3) will remain on the shaft. Bearing (4) will remain in the housing (1).
4. Perform necessary repair work.
5. Assembly is carried out in reverse sequence.
Dismantling Sliding Chucks

TYPE HR-OW

1 Remove the axial carrier (11).

2 Remove the handwheel.

3 Remove the turning safety (2).

4 By turning the handwheel (31), you can now push the sliding sleeve out of the housing.

5 Loosen the three threaded pins (23). They are secured with thread locking adhesive. Never heat the entire sliding sleeve!

6 Pull the thread ring (22) out from the rear.

7 Remove the retaining rings (7 & 8) and the support ring (6).

8 The shaft (9) can be removed through the front by pressing or carefully tapping it.

9 If you have to repair the adjustment mechanism, first remove the retaining ring (29) and the support ring (28).

10 Pull the complete adjustment mechanism out of the housing.

11 The threaded spindle (24), the spacer ring (25) and the handwheel (31) are bonded together and therefore form a single unit. They can be separate from each other only by heating them.

12 Assembly is performed in reverse sequence.

13 Make sure that thread locking adhesive is applied to the threaded pins (23) before assembling.

Keep all sliding parts, such as sliding sleeve and threaded spindle, clean. Carefully lubricate them with thickened grease containing molybdenum disulfide prior to assembly!
Dismantling Sliding Chucks
Dismantling Sliding Chucks

FW-BR

1. Remove the axial carrier (12).
2. Remove the handwheel.
3. Remove the turning safety (2).
4. You can then pull the sliding sleeve out of the housing.
5. Remove the retaining rings (7 & 8) and the support ring (pos. 6).
6. The shaft can now be removed through the front by pressing or carefully tapping it.
7. Assembly is performed in reverse sequence.

Keep the sliding sleeve clean and lubricate it carefully with thickened grease containing molybdenum disulfide before reassembly!
Dismantling Sliding Chucks
Ordering Spare Parts

Parts orders are more readily processed if you reference the part number of the safety chuck. All necessary information is clearly defined by it.

You will find the part number on the following:

- all delivery documents
- in chuck manual
- front face of safety chuck when finger guard is pushed back

On request you will receive a specific chuck manual containing the following:

- chuck designation
- part number
- specification sheet
- installation instructions
- information about winding shaft journals
- information about maintenance
- information about possible defects and their causes
- directions for replacing the handwheel
- directions for dismantling the safety chuck
- sectional view and specification of the component parts
- parts list
- information about ordering spare parts
Achieve More!

Montalvo offers a complete line of tension control products, services and solutions.

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