



BRUGG

LIFTING

Going up.

GD



groove depth comparator

User Manual

Part 11760: Standard

groove sizes: 1/2 in. (12.7 mm), 5/8 in. (16.0 mm)

Part 11770: Option Plus

groove sizes: 3/8 in. (9.5 mm),
7/16 in. (11.0 mm), 9/16 in. (14.3 mm)
11/16 in. (17.5 mm), 3/4 in. (19.0 mm)
13/16 in. (20.6 mm)

Part 11775: Metric

groove sizes: 8.0, 9.0, 10.0, 11.0, 12.0
13.0, 15.5, 16.0, 18.0, 19.0 mm

Measuring Sheave Groove Variations At The Press Of A Button.

Brugg GDC (Groove Depth Comparator)

is a unique tool that simplifies measuring sheave groove variations (*from within the groove surface*). Variations cause an impact on individual rope travel distances (*the formula at right reviews how this may be calculated*). Sheave groove variations directly influence rope life and can lead to sheave groove degradation as well.

Rope crown wear should be viewed as more than a sign of a mismatch of rope diameter and groove depth. Instead crown wear may be seen as visible evidence that natural factors such as rope stretch (*due to load stresses*) and friction have caused a rope's diameter to become slightly smaller than the groove itself. Any reduction of rope diameter means that the rope will travel lower in the sheave groove increasing the process where the rope wears into the sheave groove's bottom surface. This creates cross section distortion and leads to the pinching of the rope's outer wire strands (*crown wear*). Unless the sheave is regrooved or



replaced subsequent sets of replacement ropes used will see far less rope life than previous ones.

With GDC you can directly identify during routine maintenance the presence of sheave groove variation and determine a remedy before its leads to installation performance reduction and creates more expensive repairs.

An Explanation Of Symbols

IMPERIAL:

Rise = *Travel Distance of Elevator (feet)*

GDD = *Groove Depth Differential
from highest to lowest (inch)*

DSD = *Drive Sheave Diameter (inch)*

RTD = *Rope Travel Distance (inch)*

RTD = Rise x 12 x 2 x GDD / SD (inch)

METRIC:

Rise = *Travel Distance of Elevator (m)*

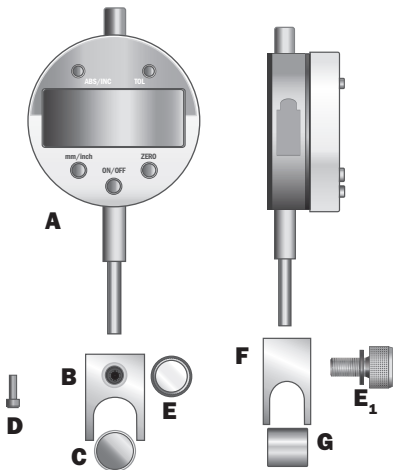
GDD = *Groove Depth Differential
from highest to lowest (mm)*

DSD = *Drive Sheave Diameter (mm)*

RTD = *Rope Travel Distance (mm)*

RTD = Rise x 1000 x 2 x GDD / SD (mm)

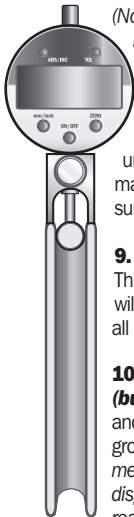
Brugg GDC (Groove Depth Comparator) Components for all Rope Diameters*



A.	<i>GDC Body/Indicator Stem</i>
B.	<i>GDC Base (front view)</i>
C.	<i>GDC Tip</i>
D.	<i>Hex Socket Cap Screw (size 4-48 x 3/8)</i>
E/E1	<i>Thumbscrew (front/side view)</i>
F.	<i>GDC Base (side view)</i>
G.	<i>GDC Tip (side view)</i>
H.	<i>Allen Wrench (not pictured)</i>

GDC Is Simple To Use And Can Be Assembled in Just Minutes.

- 1.** Remove from GDC case appropriate Base and Tip to match rope diameter present on sheave.
- 2.** Run GDC body through the Base opening and connect the indicator stem to the appropriate Tip.
- 3.** Use Allen Wrench (*not pictured*) to tighten the Hex Socket Cap Screw into the Tip base affixing the Tip to the Indicator Stem.
- 4.** Tighten Thumbscrew into Base position opening until secure. Your GDC unit is now assembled.
- 5.** Turn indicator on by pressing **ON/OFF**. If unit does not respond apply new **1.56 V** watch battery (*replacement battery not included with GDC unit*).
- 6.** Press **mm/in** indicator button to determine preferred choice of measurement using either imperial or metric units. (*Note: readings measured in 0.005 in./ 0.01 mm increments — GDC unit is accurate to within 0.0012%*).
- 7.** Now place ball Tip within drive sheave groove. Place GDC unit in any position on the drive sheave ensuring that the ball Tip has actual contact access with the groove surface itself.



(Note : normally you need not remove ropes from the sheave prior to use if a portion of the sheave is accessible).

8. Press GDC against the sheave until all four legs of the device base make contact against the drive sheave surface as shown in the drawing.

9. Press **RESET** to zero out reading. This will establish a base point which will be used to compare variances in all successive grooves.

10. Repeat Step 8 procedure **(but do not press RESET button)** and note readings on all remaining grooves. *(Note: all variance measurements are prominently displayed within the digital screen readout area.*

Measurement Explanation:

Measurements will show either a (+) positive reading indicating that the successive groove depth is shallower than the base sheave groove, or a (-) negative reading, signifying the presence of a deeper groove depth. Variance of groove measurements is evidence of sheave wear or improper groove fabrication.

Warranty Conditions:

- a. **Brugg GDC (Groove Depth Comparator)** is warranted to be free from defects in material and workmanship for one year commencing on the date the invoice is submitted by Brugg Lifting to the customer by mail.
- b. The manufacturer's sole and exclusive obligations and liabilities under this warranty are and shall be limited to issuance of credit for, or repair or replacement of this device which proves to be other than as warranted, and Brugg shall have sole discretion as to which of these remedies it shall provide. Brugg shall not reimburse or make any allowance to buyer for any labor charges incurred by buyer for replacement, adjustment, or repair any goods or parts thereof or for any other work unless Brugg authorizes such charges in advance in writing.
- c. If this device's warranty has not expired and it is claimed to be defective in material or workmanship, Brugg shall, in its sole discretion, issue shipping instructions for return of the device to Brugg. The buyer shall prepay all transportation charges for such return. Any claim for breach of Brugg GDC's warranty shall conclusively be deemed to be waived within ten (10) days after the date on which the claimed defect is discovered.

- d. The Brugg GDC warranty shall be rendered null and void if the original buyer transfers ownership of the warranted goods, unless Brugg is notified in writing of the transfer and of the name and address of the new owner within fifteen (15) days after the date on which transfer is made.
- e. Brugg GDC warranty shall not apply if the device has been subjected to any misuses, neglect or accidental damage or which contain defects that are in any way attributable to improper repairs or alterations made or performed by any person or entity not under the control of Brugg.
- f. The warranties set forth herein are Brugg's sole and exclusive warranty for or relating to this device. Brugg neither makes nor assumes any warranty of merchantability, any warranty of fitness for any particular purpose, any warranty that the goods shall be delivered free of the rightful claim of any third person by way of infringement or the like, or any other warranty of any kind, express, implied, or statutory.
- g. Brugg neither assumes nor authorizes any person or entity to assume for it any other liability or obligation in connection with the sale or use of this product, and there are not oral agreements or warranties collateral to or affecting the sale of the goods.

- h. Brugg GDC's warranty, obligations and liabilities and buyers remedies set forth herein are limited to their precise terms. Brugg shall not be liable of any damages of any kind, including without limitation, special, incidental, or consequential damages, for, resulting from, or in connection with any breach of warranty. The obligations and liabilities of seller and the remedies of buyer's set forth herein shall be the buyers sole and exclusive remedies for, resulting from, or in connection with the breach of the warranty of the GDC device.

Definition of Limitations:

The Brugg GDC is a tool designed solely for the evaluation and inspection of variations in sheave groove depths and is rated for normal industrial use when following prescribed operational procedures.

Brugg assumes no responsibility for damages to surrounding machineries through the use of Brugg GDC, or from improper use or inaccurate operator utilization. Brugg GDC should only be utilized by trained professionals and is only one part of a maintenance procedure and in no way eliminates the necessity of examining all surrounding components, lubrication, or other understood industry rope/sheave wear factors.



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