

GORBEL®
A CLASS ABOVE

The leader in crane technology
and ergonomic lifting

THE SMARTER WAY TO LIFT: G-FORCE® Lifting Devices

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ELECTRIC SERVO POWERED INTELLIGENT LIFTING DEVICES

G-LINK SMART CONNECT

Technology continues to transform the manufacturing world at an exhilarating rate. By facilitating communication between devices on the plant floor and with the internet, we have unprecedented access to data that we can have to improve every facet of production and maintenance.

That drive to be connected led us to design our new G-Force® and Easy Arm® Q2 and iQ2 units with G-Link Smart Connect. The G-Link Smart Connect solutions will enable G-Force® and Easy Arm® units to transmit data locally or anywhere with internet access. This will allow users to set parameters and view vital data remotely from their desktop, laptop, or tablet.

Two connectivity packages:

G-Link

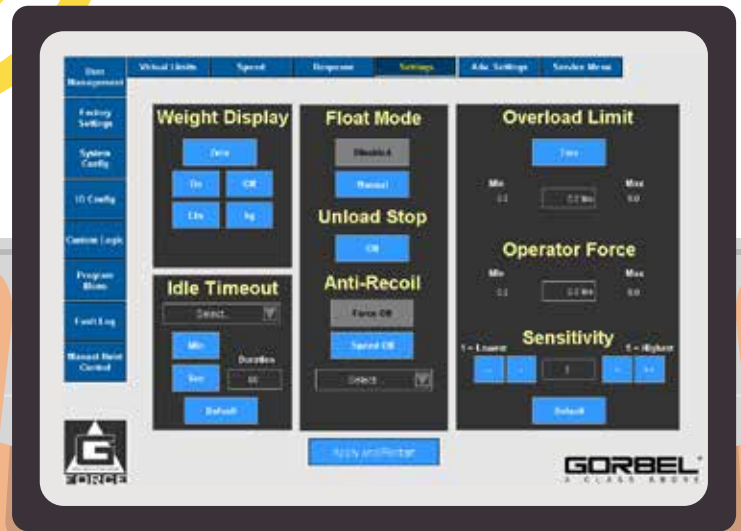
Access inside local network in addition to Line of Sight

- Expands access from Line of Sight to internal network
- Allows users to set parameters remotely from desktop, laptop, or tablet
- Data can be shared with other devices on the network (tooling, conveyors, etc). Actions may be triggered on another device or machine based on what happens with the G-Force®
- Decreases the need for costly custom programs as the user can set many unique parameters on their own

G-Link Insights

Complete access by user and permission based access by Gorbel®, along with a cloud-based dashboard for data trending and analytics

- Allows Gorbel® to troubleshoot remotely
- Provides user-friendly dashboard on the cloud so that users can monitor all units, set notifications, and receive pertinent data "at a glance" through a variety of graphs and widgets
- User can see aggregate data as well as individual unit data
- Gorbel® can transmit upgrades and changes in software directly to the units
- Allows warning criteria to be easily set and readily available so immediate action may be taken



FACTORY
EQUIPMENT
CONNECTION



INNOVATIVE HANDLE DESIGN

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1

1

G 360™ Swivel Assembly

Our G-Force® Intelligent Lifting Devices have a combined collector/air swivel that allows the handle to continuously rotate without damaging electrical conductors in the coil cord or optional air coil. This is ideal in applications where the operator is continuously rotating the handle.

2

2

Multi-Language Handle Display

High resolution OLED, multi-language handle display allows for menu style set up of features like Virtual Limits and Speed Reduction Points. It also communicates valuable information like operation modes, weight readout, diagnostic information, and fault codes.

3

3

Operator Present Function

All G-Force® and Easy Arm® control handles have operator present sensing functionality, making them safe and intuitive. This method senses the presence of the operator's hand without a physical lever to depress. The result is safe, smooth operation because the operator is not tempted to use the Operator Present Sensor safety feature as a start/stop control.

4

4

Ergonomic Handle Design

Our long lasting handle grips are designed with your operator's comfort in mind. Their shape, size, and material were carefully planned to fit comfortably in your hand, and textured to give you a positive grip.

Q2 AND iQ2 HANDLE CONFIGURATION OPTIONS

The G-Force® and Easy Arm® were designed to provide flexibility in handle configurations. Your Gorbel distributor or your tooling integrator can help you choose the handle configuration best suited for your application.

See tooling examples on pages 15-16.



In-Line Slide Handle

The in-line slide handle allows the operator to get close to the load for more control and precision. With this handle, the load moves with the motion of the operator's hand.



Remote Mount Slide Handle

This configuration offers the same smooth control as the slide handle, but accommodates set-ups where the operators can't be close to the load.



Suspended Pendant Control Handle

This handle is ideal when you have limited headroom, when the operator can't get close to the load or when the operator needs maximum lifting stroke. This handle can also be used when you expect the load to bounce or tip during lifting.



Remote Mount Pendant Control Handle

Choose this design when the handle is mounted more than one foot from where the wire rope attaches to tooling, or when you expect the load to bounce or tip during lifting.

FORCE SENSING HANDLES FOR G-FORCE® AND EASY ARM®

The Force Sensing Handles offer versatility in ergonomic lifting. Compared to standard slide handles, which use displacement of the handle to initiate upward or downward motion, this design senses force applied without any handle motion. This creates a versatile option for tooling, or elongated handles that perfectly serve applications with a wide range of motion.



In-Line (FSI)

When very low or very high pick and place points require hand-over-hand lifting. Eliminates the need to bend over to reach into deep bins or dunnage.



Hub (FSH)

Provides the most flexibility for custom tooling solutions by allowing a wide range of handle bars (by others) to be mounted to the hub. The hub can also be mounted anywhere on the custom tooling frame. When the operator needs to control up/down motion by applying force to any point on the handle bars or other control fixtures attached at the hub.

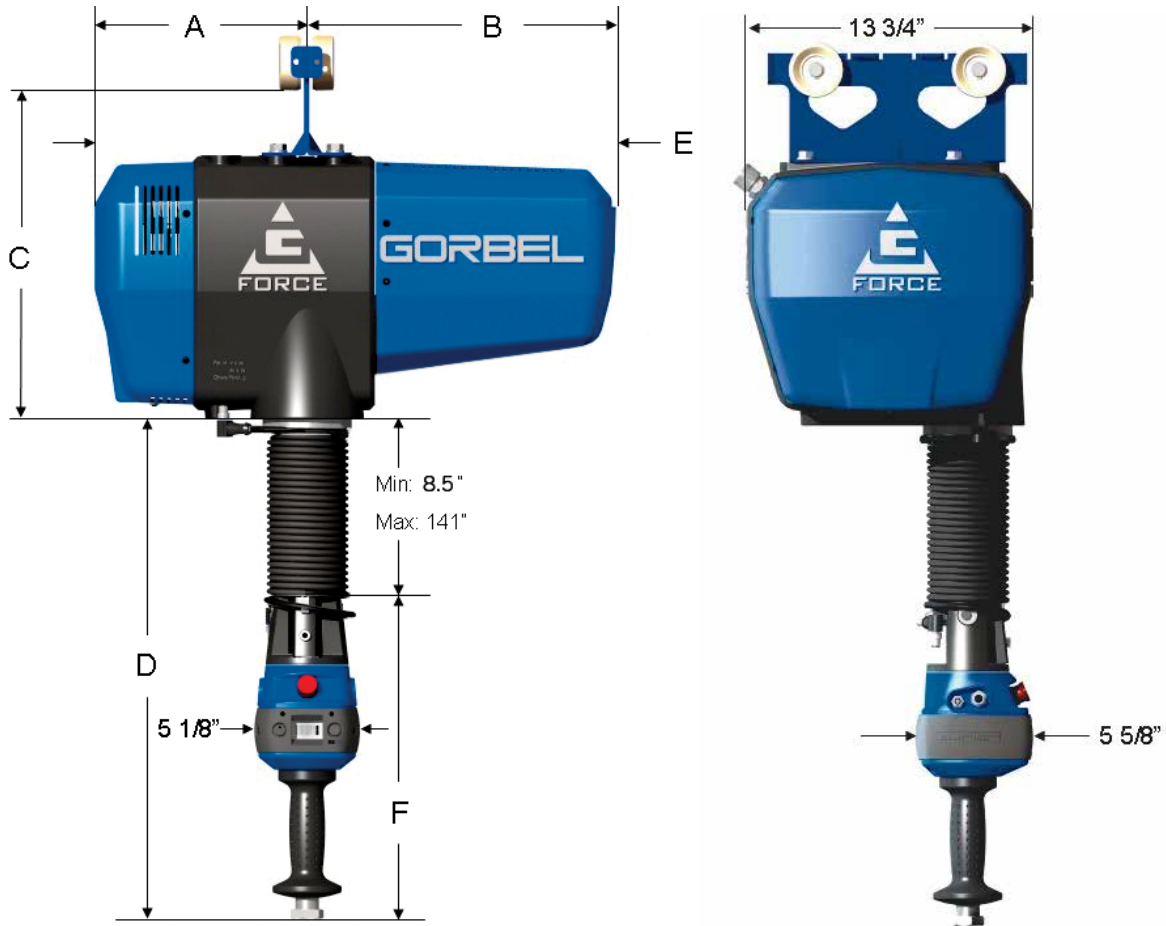


Remote mounted (FSR)

Provides the ability to remote mount a 24" or 36" Force Sensing Handle to a tooling frame (by others). This is beneficial for ergonomically reaching high and low pick/place points.

S E L E C T I O N S H A N D L E S

G-FORCE® Q2 AND iQ2: BRIDGE CRANE MOUNTED LIFTING DEVICE



Capacity	165 lb (75 kg)	330 lb (150 kg)	660 lb (300 kg)
A	8.625" (219mm)	10.25" (260mm)	10.25" (260mm)
B	14.375" (365)	15" (381)	15" (381)
C	17" (432)	17" (432)	17" (432)
D	26" (660)	26" (660)	26" (660)
E	23" (584)	25.25" (641)	25.25" (641)
F	16" (406)	16" (406)	16" (406)

C dimension may change according to the track series you're using. Consult factory for actual dimension.
D references unit in full up position.

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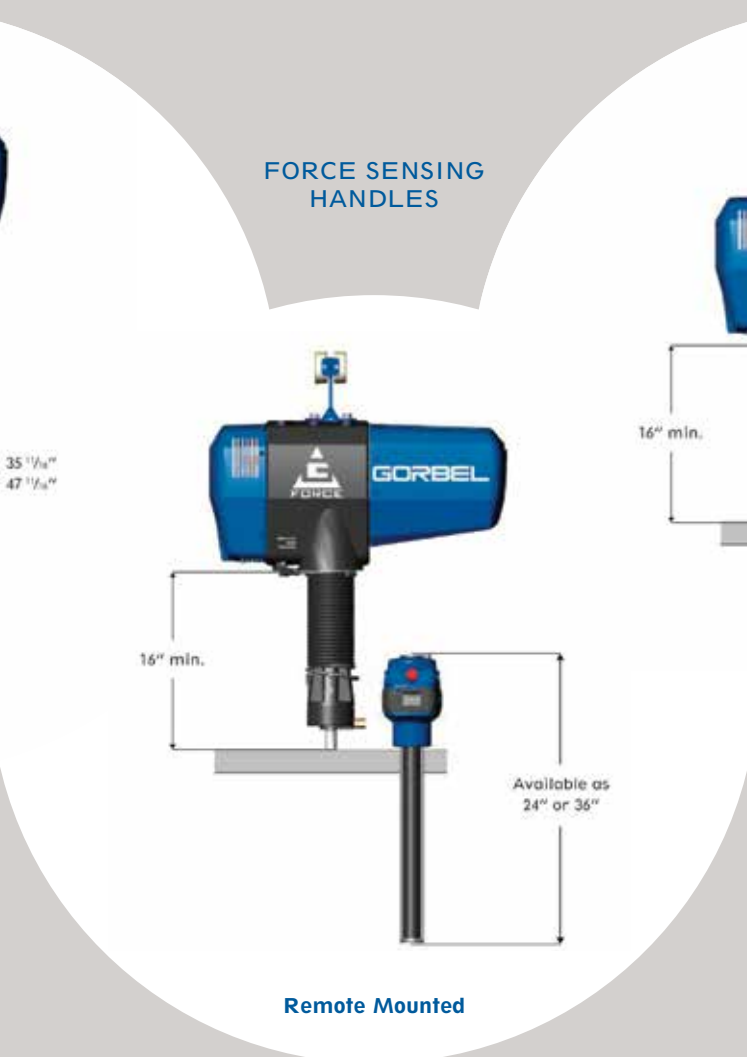
HANDLE CONFIGURATION OPTIONS



Dim	Remote Mount Slide	Suspended Pendant Control	Remote Mount Pendant Control
D	17.5" (445mm)	8.5" (216mm)	17.5" (445mm)
F	14.25" (362)	14" (356)	14" (356)



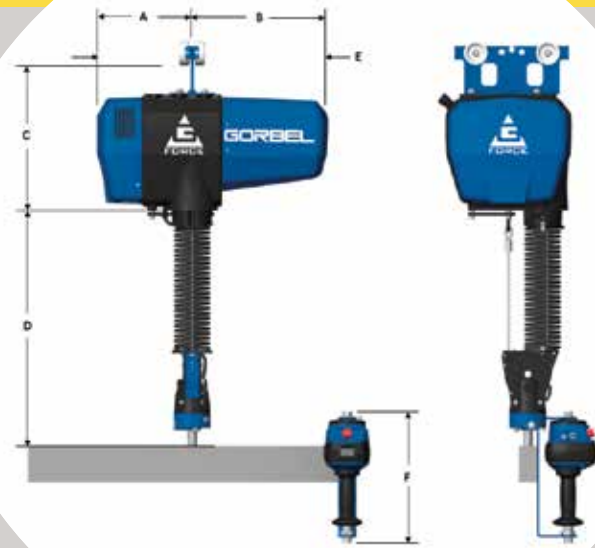
FORCE SENSING HANDLES



1320 LB. UNIT HANDLE CONFIGURATIONS



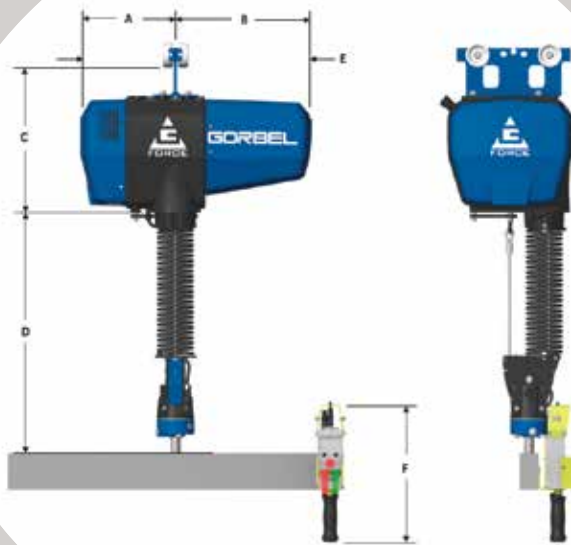
In-Line Slide



Remote Slide



Suspended Pendant



Remote Pendant

Dim	In-Line Slide	Remote Slide	Remote Pendant	Suspended Pendant
A	10.25" (260mm)	10.25" (260mm)	10.25" (260mm)	10.25" (260mm)
B	15" (381)	15" (381)	15" (381)	15" (381)
C	17" (432)	17" (432)	17" (432)	17" (432)
D	30.5" (775)	21.5" (546)	21.5" (546)	17.5" (445)
E	25.25" (641)	25.25" (641)	25.25" (641)	25.25" (641)
F	19.5" (495)	14.25" (362)	14" (356)	14" (356)

GORBEL'S G-FORCE® TECHNOLOGY: PROVEN PERFORMANCE

ERGONOMIC STUDY

The following summary is based on a study performed by the Rochester Institute of Technology. The study compared the performance of Gorbel's G-Force® Intelligent Lifting Device to other lifting devices. It focused on High Cycle Applications and Precision Placement Applications. To read the whole study, go to: <http://www.gorbels.com/pdfs/study/gforceergostudy.pdf>.

High Cycle Test

Operators were:

- **124%** more productive with the G-Force® than with air balancers
- **74%** more productive with the G-Force® than with variable frequency drive hoists

* Manual: 75% of the subjects could not complete 10 minutes of lifting & still maintain safe heart rates.

Precision Placement Test

Operators were:

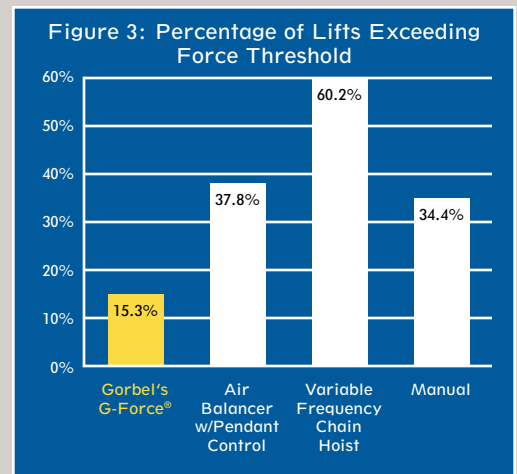
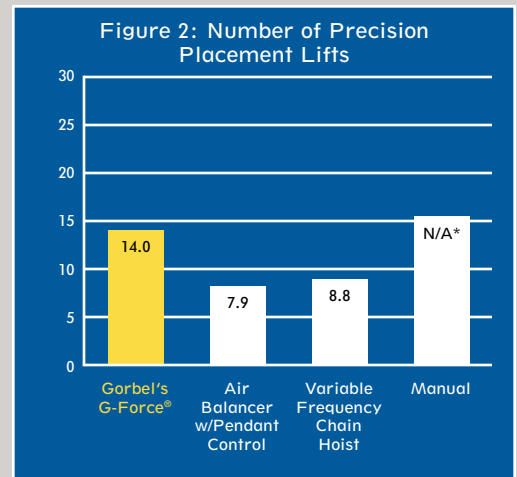
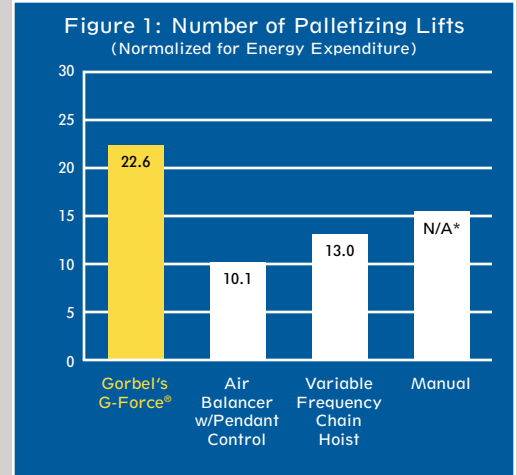
- **76%** more productive with the G-Force® than with air balancers
- **59%** more productive with the G-Force® than with variable frequency drive hoists

* Manual: None of the subjects could complete 10 minutes of lifting w/o exceeding safe heart rates.

Force of Placement

The G-Force® was:

- **2.5x** less likely to damage the load than the air balancer with pendant control
- **3.3x** less likely to damage the load than the variable frequency drive hoists
- **2.2x** less likely to damage the load than manual



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GORBEL'S Q2 AND iQ2 TECHNOLOGY: TECHNICAL SPECIFICATIONS

BRIDGE MOUNTED G-FORCE® Q2 AND iQ2 QUICK FACTS

G-Force®	Q2	iQ2	Q2	iQ2	Q2	iQ2	Q2	iQ2
Maximum Capacity	165 lb 75 kg		330 lb 150 kg		660 lb 300 kg		1320 lb 600 kg	
Maximum Lifting Speed Unloaded	200 ft/min 61 m/min		100 ft/min 30 m/min		50 ft/min 14.94 m/min		25 fpm 7.47 m/min	
Maximum Lifting Speed Fully Loaded	125 ft/min 38 m/min		75 ft/min 23 m/min		42 ft/min 12.80 m/min		21 fpm 6.4 m/min	
Maximum Float Mode Lift Speed	103 ft/min 31 m/min		65 ft/min 20 m/min		38 ft/min 11.58 m/min		19 fpm 5.79 m/min	
Duty Cycle	H5		H5		H4		H3	

FREE STANDING EASY ARM® Q2 AND iQ2 QUICK FACTS

Easy Arm®	Q2	iQ2	Q2	iQ2	Q2	iQ2
Maximum Capacity (Load & Tool)	165 lb 75 kg		330 lb 150 kg		660 lb 300 kg	
Maximum Lifting Speed Unloaded	180 fpm 55 mpm		90 fpm 27 mpm		50 fpm 14.9 mpm	
Maximum Lifting Speed Fully Loaded	125 fpm 38 mpm		75 fpm 23 mpm		42 fpm 12.8 mpm	
Maximum Float Mode Lifting Speed	103 fpm 31 mpm		65 fpm 20 mpm		38 fpm 11.58 mpm	
Maximum Lift Range	11 ft 3.35 m		11 ft 3.35 m		11 ft 3.35 m	

Q2 AND iQ2 TECHNICAL SPECS

G-Force® and Easy Arm®	Q2 iQ2
Primary Lift Voltage (VAC)	220 +/- 10%, single phase
Maximum Current (Amps)	6
Duty Cycle	H3 - H5
Operating Temperature Range	41 - 122° F 5 - 50° C
Operating Humidity Range (Non-Condensing)	35 - 90%
User Accessible Power	24VDC @ 0.5A
Virtual Limits (Upper Limit, Power Limit, Speed Reduction)	Standard

iQ2 SPECIFIC INFORMATION

I/O Actuator (iQ2 only)	
Inputs, Type	8, Sinking
Input Current @24VDC	6mA
Outputs, Type	4
Continuous Current/Channel	0.5A
Module Max Current	0.5A
X67 I/O Module (iQ2 Only)	
8 Channel	Input or Output
Nominal Voltage	24VDC
Input Current @24VDC	4mA
Input Type	Sinking
Outputs Type	FET
Continuous Current/Channel	0.5A
Total Nominal Current	0.5A
Handle I/O (Q2 Only)	
Inputs, Type	2, Sourcing
Input Current (max) @24VDC	60mA
Outputs, Type	2, Relay
Max Switch Current	0.5A
Max Available Current	0.5A

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