

# COVAL

vacuum managers

## VACUOGRIP

### VGH / VGR

Vacuum lifting devices for metal



## ADVANCED VACUUM SOLUTIONS

[www.coval.com](http://www.coval.com)

EN5

# VACUOGRIP

## Vacuum lifting devices for metal Handling loads from 100 to 1,000 kg

For more than 30 years, COVAL – the vacuum handling experts specialized in heavy loads, an ISO 9001: V2015 certified company – has been designing and manufacturing a broad range of vacuum equipment, vacuum lifting devices and lifting tubes that can be adapted to your industrial context, help prevent MSDs and improve your productivity without sacrificing safety.

Our key strengths reside in our ability to provide advice, installation services, and operator training.

Bolstered by this extensive experience and our know-how on the vacuum handling market, COVAL is now offering you our full range of VACUOGRIP vacuum lifting devices, which are dedicated to handling heavy loads from 100 to 1,000 kg (sheet metal, glass panels, plastic panels and more).

The VACUOGRIP line of vacuum lifting devices is COVAL's standard product addressing such needs as horizontal handling and 90° tilting of smooth and non-porous loads by a single operator.

They are easy to use, benefit from outstanding reliability and all-round ruggedness, and are available in electric and pneumatic versions.

VACUOGRIP vacuum lifting devices are specifically designed for the following applications:

- Palletizing and depalletizing
- Feeding machinery
- Unloading conveyors

### Advantages

- Fast and easy to implement
- Humanizes the most strenuous physical labour
- Productivity gains
- Loads can be handled by a single operator
- Will not cause any deterioration of handled loads
- Improves working conditions
- Easy to use
- Quick return on investment
- Complies with EC directives

### Ergonomics

Using VACUOGRIP vacuum lifting devices allows you to improve working conditions by reducing operator fatigue and accidents for all operations involving horizontal handling of sheet metal weighing up to 1,000 kg and 90° tilting of sheets weighing up to 500 kg.



Industry-specific applications

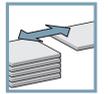


### VACUOGRIP VGH

SWL from 100 to 1,000 kg



Movements



Horizontal

### VACUOGRIP VGR

SWL from 100 to 500 kg



90°  
tilting



### SAFETY

The VACUOGRIP line includes the following safety features:

- Vacuum tank in main beam
- Check valve
- Vacuum gauge with red/green operating ranges, pointer indicates the vacuum level in suction cups
- Warning Alarm in case of power cut or drop of vacuum level
- Power on indicator
- 2 red "Release" buttons that force the user to use both hands

According to your applications and needs, additional features can be selected from the Option Packs.

COVAL vacuum lifting devices comply with the EU Machinery **2006/42/EC** and Low voltage **2014/35/EU** directives as well as with European standard **EN 13155**.



# VACUOGRIP

## Vacuum lifting devices for metal

### General information

#### MAIN BEAM

The main beam serves as a vacuum tank to retain the load in the event of a power failure.

- 3 Length: 1700, 2500, 3000 mm

#### VACUUM FILTER

#### LIFTING ARCH

#### POWER

Pneumatic, electric or battery-powered

#### ELECTRIC VERSION:

- Start/stop switchbox  
- Three-phase 230 V or 400 V or Single-phase 230 V

#### PNEUMATIC VERSION:

- 1/4 turn valve

#### AUXILIARY BEAMS

adjustable

#### HANDLING HANDLEBAR

Robust and ergonomic

#### SAFETY FEATURES

- Vacuum gauge with (red/green) usage ranges
- Visual indicator showing a power failure
- Warning alarm in case of power cut or drop of vacuum level

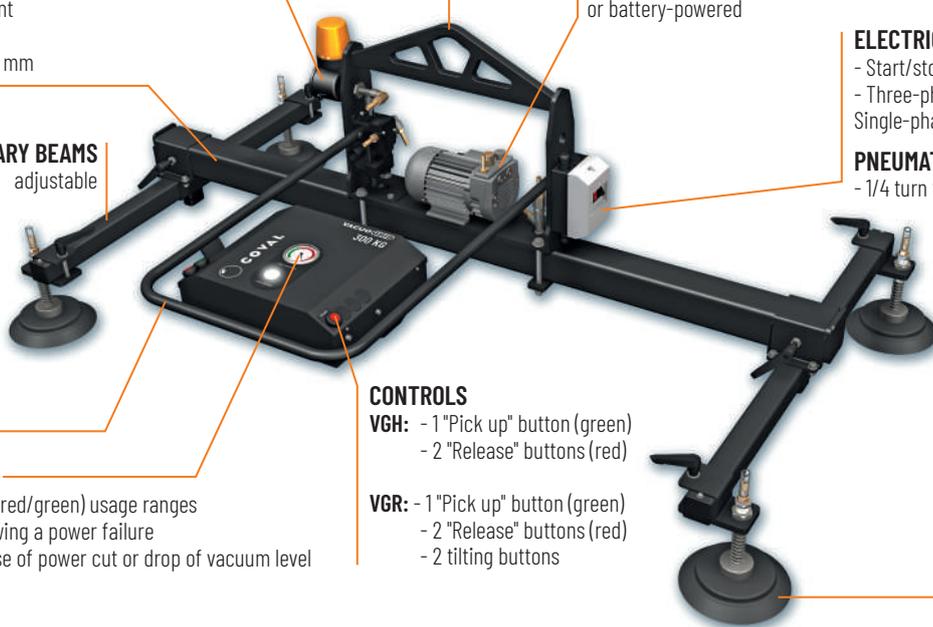
#### CONTROLS

**VGH:** - 1 "Pick up" button (green)  
- 2 "Release" buttons (red)

**VGR:** - 1 "Pick up" button (green)  
- 2 "Release" buttons (red)  
- 2 tilting buttons

#### SUCTION CUPS AND SPRING SYSTEMS

adjustable



### Power

VACUOGRIP vacuum lifting devices are available in pneumatic, electric or battery-powered versions for optimal integration in the handling workstation.

#### PNEUMATIC

The vacuum is generated by a single-stage venturi equipped with a silencer.

- Supply: non-lubricated air, filtered to 5 microns, according to standard ISO 8573-1:2010 [4:5:4].
- Operating pressure: 6 to 7 bar.
- Flow rate: 7.5 m<sup>3</sup>/h.
- Air consumption: 3.2 l/s at 5 bar.
- VGR version: pneumatic cylinder.

#### AVAILABLE OPTIONS:

- PK3 version: The venturi is equipped with a vacuum control function to reduce energy consumption.
- P3 version: The lifting device features a water trap for handling applications in wet environments.



#### ELECTRIC

The vacuum is generated by a dry rotary vane vacuum pump.

- Flow rate: 8 m<sup>3</sup>/h.
- Available voltages: - Three-phase 230 V (2.35 A - 370 W)  
- Three-phase 400 V (1.35 A - 370 W)  
- Single-phase 230 V (3.9 A - 350 W)
- VGR version: electric cylinder.



A lubricated rotary vane pump (three-phase 400 V voltage) + water trap version is available (version E3) for handling applications in wet environments, wherein the presence of water may damage the pump.

#### BATTERY

Only available in horizontal **VGH** version

The vacuum is generated by a piston vacuum pump. Flow rate: 4.2 m<sup>3</sup>/h with vacuum regulation function.



### Number of suction cups

VACUOGRIP vacuum lifting devices are available in versions equipped with 4, 6 and 8 suction cups in order to best match the dimensions and thickness of the sheet metal to be handled and ensure an optimal grip without any risk of deforming or damaging the loads.



### General features

- Frame: machine-welded steel
- Beams: steel
- Clamps: steel
- Powder-coated epoxy paint for industrial environments

# VACUOGRIP VGH

## Horizontal vacuum lifting devices

Horizontal handling of loads from 100 to 1,000 kg

The VACUOGRIP VGH line of vacuum lifting devices is COVAL's standard product addressing such needs as handling smooth and non-porous loads by a single user. They are easy to use and stand out due to their reliability and all-round ruggedness.

VGH VACUOGRIP vacuum lifting devices are specifically designed for the following applications:

- Palletizing and depalletizing
- Feeding machinery
- Unloading conveyors

Lifting capacity	Max. load (kg)										
Model	100	200	300	400	500	600	700	800	900	1000	
VACUOGRIP VGH1	[Progress bar from 100 to 200 kg]										
VACUOGRIP VGH3	[Progress bar from 100 to 300 kg]										
VACUOGRIP VGH5	[Progress bar from 100 to 500 kg]										
VACUOGRIP VGH8	[Progress bar from 100 to 800 kg]										
VACUOGRIP VGH10	[Progress bar from 100 to 1000 kg]										



Industry-specific applications



Movements



Horizontal

**PACK PK2- AND PK4-**  
Powerful warning light to warn the operator of a power failure.

**OPTION E5**  
Battery-powered



**PACK PK1-**  
Control panel including the Pick up / Release buttons as well as safety features..

**PACK PK3-**  
For applications that require remote control of the lifting device, the PK3 PACK provides a control box that can be removed and snapped onto the handlebar, which includes the Pick up / Release controls and a 4 m long cable sheath. In addition, the control box housing the safety features is in a vertical position for better visibility.



### SPRING SYSTEMS

To guarantee that all the suction cups come into contact with the load, VACUOGRIP units are equipped with spring systems as standard:



### SUCTION CUPS

The suction cups are made of nitrile, which guarantees that handled loads won't be damaged and also offers excellent resistance to hydrocarbons (oils).



### 1/4 TURN VALVE

For applications requiring frequent format changes, the VACUOGRIP lifting devices can be equipped with 1/4 turn shutoff valves on each suction cup.



### OPTIONS: INTEGRATION OF ELECTRIC HOIST CONTROLS

Note: not available in battery version (E5)



Controls of the electric hoist and/or of the bridge crane are integrated in the control panel or in the removable control box (low-voltage control, 48 V max.):

- PK-1**
- 1 "emergency stop" button
  - 1 "up" button
  - 1 "down" button

- PK-2**
- 1 "emergency stop" button
  - 1 "up" button
  - 1 "down" button
  - 1 "left" button
  - 1 "right" button

- PK-3**
- 1 "emergency stop" button
  - 1 "up" button
  - 1 "down" button
  - 1 "left" button
  - 1 "right" button
  - 1 "forward" button
  - 1 "reverse" button

# VACUOGRIP VGH

## Horizontal vacuum lifting devices

Horizontal handling of loads from 100 to 1,000 kg



**VG H 5**

**E2 - 6 - X - -**

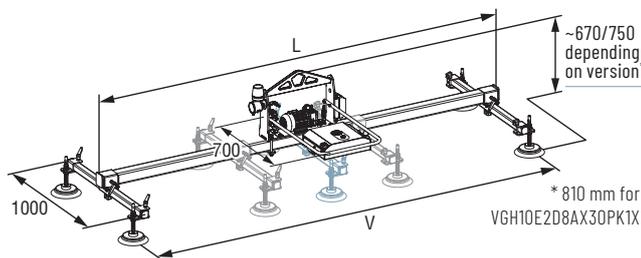
### OPTION PACKS

**PK 1 X**

TYPE	POWER
Horizontal <b>H</b>	Pneumatic <b>P1</b>
	Pneumatic with water trap <b>P3</b>
	3-phase 230 V <b>E1</b>
	3-phase 400 V <b>E2</b>
	3-phase 400 V lubricated rotary vane pump with water trap <b>E3</b>
	Single-phase 230 V <b>E4</b>
	24 VDC battery** <b>E5</b>

### NUMBER OF SUCTION PADS (to be determined based on table below)

Min. thickness	Max. dimensions of sheet metal to be handled (LxW) in mm				
	2000x1000	3000x1500	4000x2000		
0.5 mm	6	8	-	4	<b>4</b>
1 mm	4	6	8	6	<b>6</b>
1.5 mm	4	6	8	8	<b>8</b>
2 mm	4	4	6	8	<b>8</b>



1/4 TURN VALVE
<b>X</b> Without valve
<b>V</b> With valve

VACUOGRIP CONTROL	HOIST CONTROL
Control buttons on handlebar <b>1</b>	<b>X</b> No hoist control
Same as 1 + visual alarm via a warning light <b>2*</b>	<b>1</b> Integrated hoist control Up/Down
Control buttons on removable control box (snappable onto handlebar) <b>3</b>	<b>2</b> Integrated hoist control Up/Down + Left/Right
Same as 3 + visual alarm via a warning light <b>4*</b>	<b>3</b> Integrated hoist control Up/Down + Bridge crane Left/Right Forward/Reverse

\* Only available in electric version

\*\* E5 power option only available for PK1X and PK2X versions.

### ACCESSORIES (upon request)

We have several accessories available upon request that will enable you to further integrate your VACUOGRIP in your facility:

- Coiled power cable
- Coiled cable for integration of hoist controls, etc.

### CUSTOM-MADE VERSIONS

There may be situations in your business where our standard versions are not perfectly suited to your needs.

COVAL can provide custom-made solutions that meet your specifications, by integrating custom functions or by offering tailor-made vacuum lifting devices (adjusted in size or with a different type of suction cup).

### 4-suction cup VACUOGRIP VGH

Max. load (kg)	Length of main beam (L)	No. of auxiliary beams	Distance between suction cups (V)	Min. sheet format	Type of suction cup	Spring system	Weight	Part no.*
100	1700 mm	2	from 825 mm to 1725 mm	400 x 900 mm	VPG120NBR	TS4 50	90 kg	VGH1E2A4AX17PK1X
300				500 x 1000 mm	VPG200NBR	TS4 50	90 kg	VGH3E2C4AX17PK1X
500				550 x 1050 mm	SPL240NBR	TS4 50	100 kg	VGH5E2D4AX17PK1X
800				750 x 1150 mm	SPL340NBR	TS5 60	105 kg	VGH8E2E4BX17PK1X
1000				750 x 1150 mm	SPL340NBR	TS5 60	105 kg	VGH10E2E4BX17PK1X

### 6-suction cup VACUOGRIP VGH

Max. load (kg)	Length of main beam (L)	No. of auxiliary beams	Distance between suction cups (V)	Min. sheet format	Type of suction cup	Spring system	Weight	Part no.*
100	2500 mm	3	from 825 mm to 2550 mm	400 x 900 mm	VPG120NBR	TS4 50	110 Kg	VGH1E2A6AX25PK1X
300				500 x 1000 mm	VPG200NBR	TS4 50	120 Kg	VGH3E2C6AX25PK1X
500				600 x 1050 mm	SPL240NBR	TS4 50	115 Kg	VGH5E2D6AX25PK1X
800				750 x 1150 mm	SPL340NBR	TS5 60	145 Kg	VGH8E2E6BX25PK1X
1000				750 x 1150 mm	SPL340NBR	TS5 60	155 Kg	VGH10E2E6BX25PK1X

### 8-suction cup VACUOGRIP VGH

Max. load (kg)	Length of main beam (L)	No. of auxiliary beams	Distance between suction cups (V)	Min. sheet format	Type of suction cup	Spring system	Weight	Part no.*
100	3000 mm	4	from 1210 mm to 3025 mm	400 x 1300 mm	VPG120NBR	TS4 50	135 Kg	VGH1E2A8AX30PK1X
300				500 x 1500 mm	VPG200NBR	TS4 50	140 Kg	VGH3E2C8AX30PK1X
500				500 x 1500 mm	VPG200NBR	TS4 50	140 Kg	VGH5E2C8AX30PK1X
800				500 x 1620 mm	SPL240NBR	TS4 50	165 Kg	VGH8E2D8AX30PK1X
1000				500 x 1620 mm	SPL240NBR	TS4 50	165 Kg	VGH8E2D8AX30PK1X

\* Weight and part number are specified for VACUOGRIP VGH Electric 3-ph. 400 V, without 1/4 turn valve, with Pick up/Release controls on control panel, without hoist control integration option

# VACUOGRIP VGR

## 90° tilting vacuum lifting devices

Handling loads from 100 to 500 kg

The VACUOGRIP VGR line of vacuum lifting devices is COVAL's standard product addressing such needs as handling and 90° tilting of smooth and non-porous loads by a single user.

They are easy to use and stand out due to their reliability and all-round ruggedness.

VGR VACUOGRIP vacuum lifting devices are specifically designed for the following applications:

- Palletizing and depalletizing
- Feeding machinery
- Unloading conveyors



Industry-specific applications



Movements



90° tilting

Lifting capacity	Max. load (kg)				
Model	100	200	300	400	500
VACUOGRIP VGR1	[Progressive bar chart showing capacity up to 100kg]				
VACUOGRIP VGR3	[Progressive bar chart showing capacity up to 300kg]				
VACUOGRIP VGR5	[Progressive bar chart showing capacity up to 500kg]				

### PACK PK4-

Powerful warning light to warn the operator of a power failure.

### 90° TILTING CYLINDER

(electric or pneumatic)

### SAFETY FEATURES

- 2 vacuum gauges with (red/green) usage ranges indicating the vacuum level in the vacuum tank and suction cups
- Visual indicator showing a power failure
- Warning alarm in case of power cut and/ or drop of vacuum level

### SPRING SYSTEMS

To guarantee that all the suction cups come into contact with the load, VACUOGRIP units are equipped with spring systems as standard:



TS4 50

RSC1

### SUCTION CUPS

The suction cups are made of nitrile, which guarantees that handled loads won't be damaged and also offers excellent resistance to hydrocarbons (oils).

### PACK PK3-

Control buttons on control box including:

- 1 "Pick up" button (green)
- 2 "Release" buttons (red)
- 2 tilting buttons

### 1/4 TURN VALVE

For applications requiring frequent format changes, the VACUOGRIP lifting devices can be equipped with 1/4 turn shutoff valves on each suction cup.



Ø 200 mm  
VPG200NBR

Ø 240 mm  
SPL240NBRTS

Ø 340 mm  
SPL340NBRTS

### OPTIONS: INTEGRATION OF ELECTRIC HOIST CONTROLS

#### PK-1

Controls of the electric hoist are integrated in the removable control box (low-voltage control, 48 V max.):

- 1 "Emergency Stop" button
- 1 "Up" button
- 1 "Down" button

#### PK-2

Controls of the electric hoist + cart are integrated in the removable control box (low-voltage control, 48 V max.):

- 1 "Emergency Stop" button
- 1 "Up" button
- 1 "Down" button
- 1 "Left" button
- 1 "Right" button

# VACUOGRIP VGR

## 90° tilting vacuum lifting devices

Handling loads from 100 to 500 kg



	<b>VG R 5</b>	<b>E2 - 4 - X - -</b>	<b>PK 3 X</b>
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TYPE	
90° tilting	<b>R</b>
SWL	
100 kg	<b>1</b>
300 kg	<b>3</b>
500 kg	<b>5</b>

POWER	
Pneumatic system	<b>P1</b>
Pneumatic with water trap	<b>P3</b>
3-phase 230 V	<b>E1</b>
3-phase 400 V	<b>E2</b>
3-phase 400 V: lubricated rotary vane pump with water trap	<b>E3</b>
Single-phase 230 V	<b>E4</b>

1/4 TURN VALVE	
<b>X</b>	Without valve
<b>V</b>	With valve

VACUOGRIP CONTROL	
Control buttons on removable control box (snappable onto handlebar)	<b>3</b>
Same as 3 + visual alarm via a warning light	<b>4*</b>

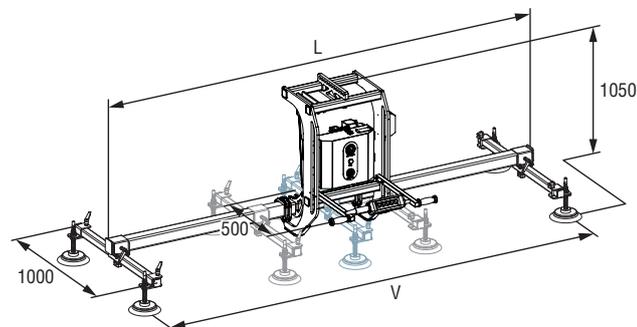
\* Only available in electric version

HOIST CONTROL	
<b>X</b>	No hoist control
<b>1</b>	Integrated hoist control Up/Down
<b>2</b>	Integrated hoist control Up/Down + Left/Right

NUMBER OF SUCTION PADS (to be determined based on table below)				
	Max. dimensions of sheet metal to be handled (LxW) in mm			
	2000x1000	3000x1500	4000x2000	
Min. thickness				
0.5 mm	6	8	-	<b>4 4</b>
1 mm	4	6	8	<b>6 6</b>
1.5 mm	4	6	8	<b>8 8</b>
2 mm	4	4	6	<b>8 8</b>

**ACCESSORIES** (upon request)  
We have several accessories available upon request that will enable you to further integrate your VACUOGRIP in your facility:

- Coiled power cable
- Coiled cable for integration of hoist controls, etc.



**CUSTOM-MADE VERSIONS**  
There may be situations in your business where our standard versions are not perfectly suited to your needs. COVAL can provide custom-made solutions that meet your specifications, by integrating custom functions or by offering tailor-made vacuum lifting devices (adjusted in size or with a different type of suction cup).

### 4-suction cup VACUOGRIP VGH

Max. load (kg)	Length of main beam (L)	No. of auxiliary beams	Distance between suction cups (V)	Min. sheet format	Type of suction cups	Spring system	Weight	Part no.*
100	1700 mm	2	from 825 mm to 1725 mm	500 x 1050 mm	VPG200NBR	TS4 50	152 Kg	VGR1E2C4AX17PK3X
300			from 750 mm to 1650 mm	800 x 1100 mm	SPL340NBR	RSC1	165 Kg	VGR3E2E4CX17PK3X
500			from 750 mm to 1650 mm	800 x 1100 mm	SPL340NBR	RSC1	165 Kg	VGR5E2E4CX17PK3X

### 6-suction cup VACUOGRIP VGH

Max. load (kg)	Length of main beam (L)	No. of auxiliary beams	Distance between suction cups (V)	Min. sheet format	Type of suction cups	Spring system	Weight	Part no.*
100	2500 mm	3	from 825 mm to 2550 mm	500 x 1050 mm	VPG200NBR	TS4 50	165 Kg	VGR1E2C6AX25PK3X
300			from 750 mm to 2450 mm	600 x 1000 mm	SPL240NBR	RSC1	180 Kg	VGR3E2D6CX25PK3X
500			from 750 mm to 2450 mm	800 x 1200 mm	SPL340NBR	RSC1	200 Kg	VGR5E2E6CX25PK3X

### 8-suction cup VACUOGRIP VGH

Max. load (kg)	Length of main beam (L)	No. of auxiliary beams	Distance between suction cups (V)	Min. sheet format	Type of suction cups	Spring system	Weight	Part no.*
100	3000 mm	4	from 1210 mm to 3025 mm	500 x 1500 mm	VPG200NBR	TS4 50	190 Kg	VGR1E2C8AX30PK3X
300			from 1450 mm to 2900 mm	600 x 1550 mm	SPL240NBR	RSC1	200 Kg	VGR3E2D8CX30PK3X
500			from 1450 mm to 2900 mm	600 x 1550 mm	SPL240NBR	RSC1	200 Kg	VGR5E2D8CX30PK3X

\* Note: Weight and part number are specified for VACUOGRIP VGR Electric 3-ph. 400 V, without 1/4 turn valve, with Pick up/Release controls on control box, without hoist control integration option



**COVAL**  
vacuum managers

vacuum  
**components**



**A TECHNOLOGICAL PARTNER ON A GLOBAL SCALE**

Located in the South of France, COVAL SAS designs, produces, and markets high-performance vacuum components and systems for industrial applications in all sectors worldwide.

An ISO 9001: V2015 certified company, COVAL innovates globally in vacuum handling. Our optimized components integrate intelligent and reliable functionalities, adapt to your industrial context, and safely improve your productivity.

With a strong spirit of innovation and technological advancements, the COVAL team is now recognized as an expert in developing reliable, economical, and productive custom solutions.

COVAL's references are found in major industrial sectors such as packaging, food processing, automotive, plastics, aerospace, and robotics, where vacuum handling is crucial for efficiency and productivity.

COVAL markets its products and services worldwide through its subsidiaries and authorized distributor network. Always attentive to its customers, COVAL supports the implementation of its solutions with a continuous and attentive relationship.

Visit the following section on COVAL's website:  
*contacts > commercial network*  
to view the most current list.



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