

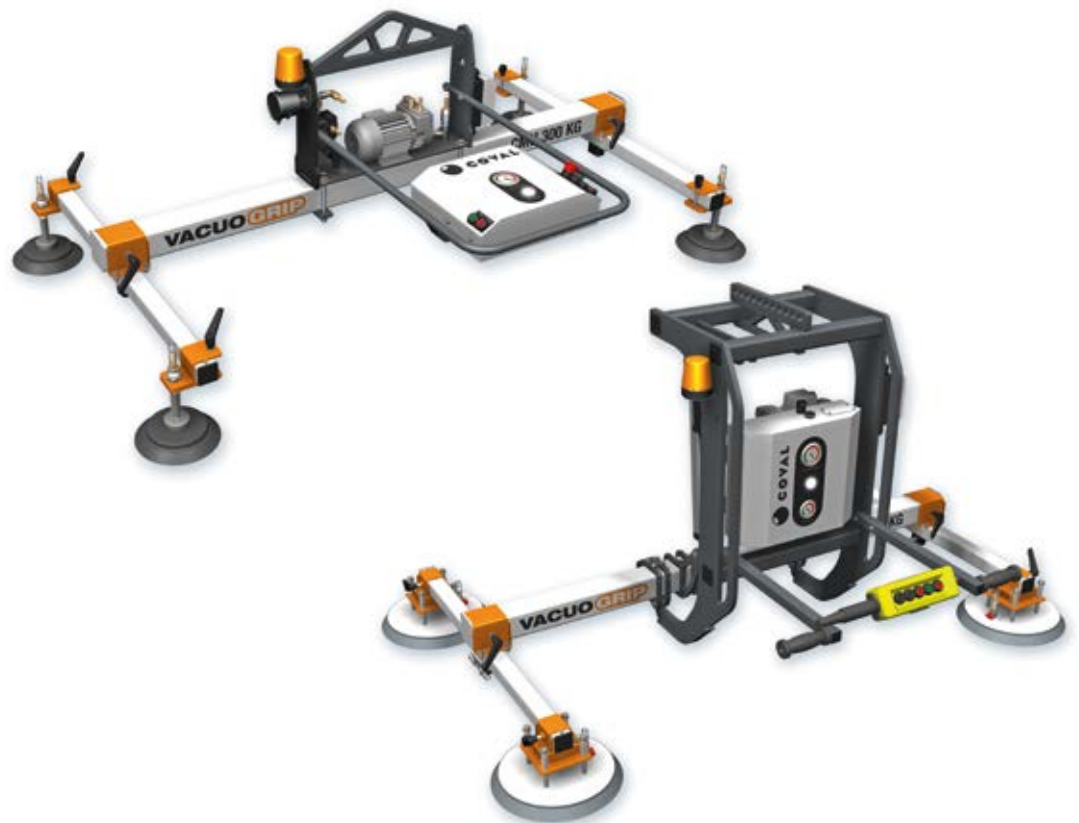
COVAL

vacuum managers

VACUOGRIP

VGH / VGR

Vacuum lifting devices



ADVANCED VACUUM SOLUTIONS

VACUOGRIP

Vacuum lifting devices

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:

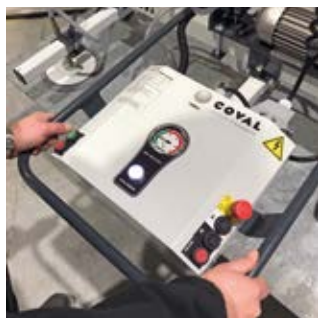
- Palletizing and depalletizing
- Feeding machinery
- Unloading conveyors

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

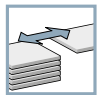


VACUOGRIP VGH

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

General information



MAIN BEAM

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

VACUUM FILTER

LIFTING ARCH

POWER
Electric or pneumatic

ELECTRIC VERSION:

- start/stop switchbox

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 electric and pneumatic 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 m³/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 m³/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.

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.



VACUOGRIP
4 suction cups



VACUOGRIP
6 suction cups



VACUOGRIP
8 suction cups

General features

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

VACUOGRIP VGH

Horizontal vacuum lifting devices

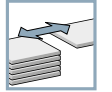
Horizontal handling of loads from 100 to 1,000 kg



Industry-specific applications



Movements



Horizontal

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)									
	100	200	300	400	500	600	700	800	900	1000
VACUOGRIP VGH1	■									
VACUOGRIP VGH3	■	■	■							
VACUOGRIP VGH5	■	■	■	■	■					
VACUOGRIP VGH8	■	■	■	■	■	■	■	■		
VACUOGRIP VGH10	■	■	■	■	■	■	■	■	■	■

PACK PK2_ and PK4_

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

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).

Ø 120 mm
VPG120NBR

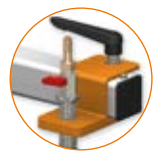
Ø 200 mm
VPG200NBR

Ø 240 mm
SPL240NBRTS

Ø 340 mm
SPL340NBRTS

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



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 PK 1 X

TYPE	POWER
horizontal H	Pneumatic P1
	Pneumatic with water trap P3
SWL	3-phase 230 V E1
100 kg 1	3-phase 400 V E2
300 kg 3	3-phase 400 V: lubricated rotary vane pump with water trap E3
500 kg 5	Single-phase 230 V E4
800 kg 8	
1,000 kg 10	

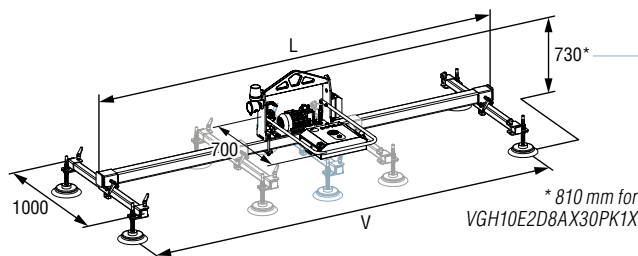
1/4 TURN VALVE
X Without valve
V With valve

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

* Only available in electric version

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	4
1 mm	4	6	8	6	6
1.5 mm	4	6	8	8	8
2 mm	4	4	8	8	8



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 pads	Spring system	Weight	Part no.*
100	1700 mm	2	from 825 mm to 1725 mm	400 x 900 mm	VPG120NBR	TS4 50	104 Kg	VGH1E2A4AX17PK1X
300				500 x 1000 mm	VPG200NBR	TS4 50	107 Kg	VGH3E2C4AX17PK1X
500				550 x 1050 mm	SPL240NBR	TS4 50	112 Kg	VGH5E2D4AX17PK1X
800				750 x 1150 mm	SPL340NBR	TS5 60	147 Kg	VGH8E2E4BX17PK1X
1000				750 x 1150 mm	SPL340NBR	TS5 60	147 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 pads	Spring system	Weight	Part no.*
100	2500 mm	3	from 825 mm to 2550 mm	400 x 900 mm	VPG120NBR	TS4 50	117 Kg	VGH1E2A6AX25PK1X
300				500 x 1000 mm	VPG200NBR	TS4 50	120 Kg	VGH3E2C6AX25PK1X
500				600 x 1050 mm	SPL240NBR	TS4 50	130 Kg	VGH5E2D6AX25PK1X
800				750 x 1150 mm	SPL340NBR	TS5 60	180 Kg	VGH8E2E6BX25PK1X
1000				750 x 1150 mm	SPL340NBR	TS5 60	180 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 pads	Spring system	Weight	Part no.*
100	3000 mm	4	from 1210 mm to 3025 mm	400 x 1300 mm	VPG120NBR	TS4 50	137 Kg	VGH1E2A8AX30PK1X
300				500 x 1500 mm	VPG200NBR	TS4 50	143 Kg	VGH3E2C8AX30PK1X
500				500 x 1500 mm	VPG200NBR	TS4 50	143 Kg	VGH5E2C8AX30PK1X
800				500 x 1620 mm	SPL240NBR	TS4 50	163 Kg	VGH8E2D8AX30PK1X
1000				500 x 1620 mm	SPL240NBR	TS4 50	175 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



Industry-specific applications



Movements



90°
tilting

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

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

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:



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.

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).



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



VG R 5 **E2** _ **4** _ **X** _ _ **PK 3 X**

TYPE	POWER
90° tilting R	Pneumatic system P1
SWL	Pneumatic with water trap P3
100 kg 1	3-phase 230 V E1
300 kg 3	3-phase 400 V E2
500 kg 5	3-phase 400 V: lubricated rotary vane pump with water trap E3
	Single-phase 230 V E4

1/4 TURN VALVE
X Without valve
V With valve

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

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

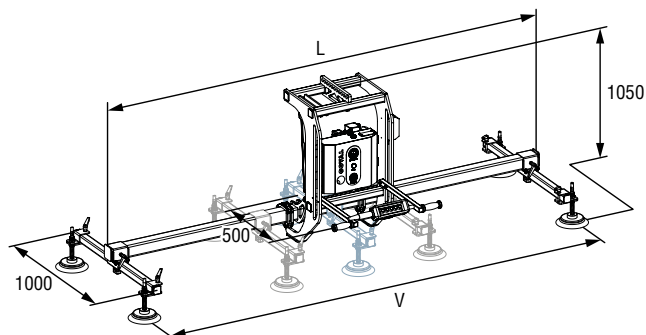
* Only available in electric version

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	–
1 mm	4	6	8
1.5 mm	4	6	8
2 mm	4	4	8

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 pad).

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	138 Kg	VGR1E2C4AX17PK3X
300			from 750 mm to 1650 mm	800 x 1100 mm	SPL340NBR	RSC1	150 Kg	VGR3E2E4CX17PK3X
500			from 750 mm to 1650 mm	800 x 1100 mm	SPL340NBR	RSC1	176 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	160 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	217 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	180 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

COVAL SERVICES

A dedicated team, benefiting from many years of experience, stands by your side to define the handling device that is best suited and optimized for your application:

- Advice on workplace layout
- Optimization of workplace ergonomics

JIB CRANES / HOISTS

COVAL offers a wide range of jib cranes and hoists to fully outfit workstations.



A TECHNOLOGICAL PARTNER ON A GLOBAL SCALE

Located in the southeast region of France, COVAL conceives, manufactures and globally distributes high performance, advanced vacuum automation components and systems for industrial applications in all branches.

COVAL is an ISO 9001: V2015 certified company which offers innovative solutions integrating reliable and optimized components with intelligent functionalities. The focus is to provide the most personalized and economic solution to a given application while assuring a significant improvement in the productivity and the safety for the vacuum users around the world.

COVAL has an ambition for technical excellence and innovation. As a specialist in vacuum automation, COVAL is reputed for offering reliable, personalized, cost effective and productive solutions.

The references of COVAL can be found in several industrial sectors (Packaging, Automotive Industry, Plastic, Graphic, Aeronautic...) where vacuum handling is important for high efficiency and productivity.

COVAL markets its products and services all over Europe, in the United States and South America through its subsidiaries and authorized distribution network. COVAL strives to provide customer driven solutions and gives the best possible treatment to satisfy all its clients.

For all enquiries from Australia, Africa and Asia kindly contact COVAL head office in France.

vacuum
components



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Head Office



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