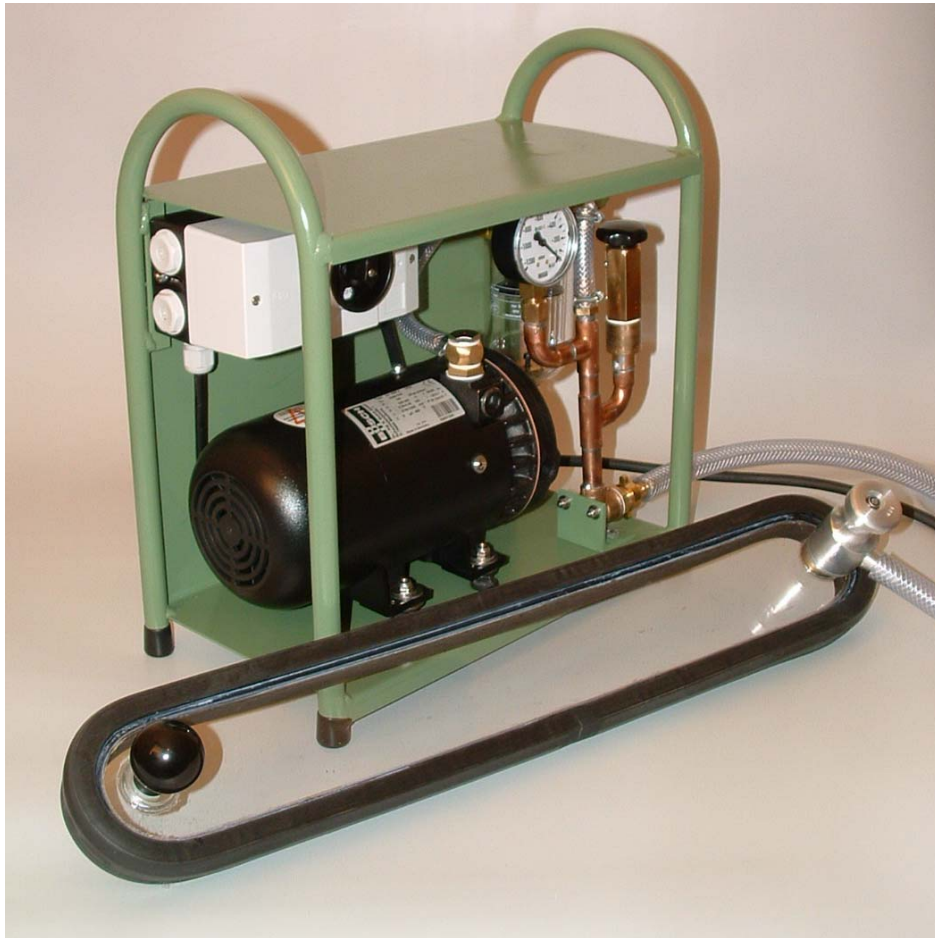


Product Specification



KOWOVAC
VSP Leak Test Units
Vacuum Test Masks

KOWOVAC VSP Leak Test Units and Vacuum Masks

Units and accessories for vacuum leak testing

Generals about vacuum leak testing with KOWOVAC VSP

Model VSP vacuum leak testing units allow a quick and safe leak test of welding seams in tanks, pipelines, and a lot more welding structures. Also castings can be inspected for cracks and porosity, if going through complete wall thickness. The KOWOVAC units use the so called "bubble testing" method and allow testing according to EN 1593 - 1999.

Leak testing with KOWOVAC VSP units is taken i.e. before a hydraulic pressure test. VSP units can be also used instead of a hydraulic pressure test, if this can be taken only with high expenses or if i.e. a pressure test can not give reliable result because of too thin wall thickness . KOWOVAC VSP units and vacuum masks are especially used for leak testing in cases where structures are accessible only from one side (tank floors) or for testing of open structures (collecting basins).

With the KOWOVAC VSP used method of leak testing a foaming agent is sprayed onto the test area of a welding seam or a casting part. Especially suitable for such a foaming agent is the G-FLEX leak finder or Necal-solutions – soap water should not be used for this application.

After applying the foaming agent the test area is covered with a vacuum mask, fitted to the geometry of the structure, which have to be tested. This vacuum mask is connected with a vacuum hose to the VSP unit. After opening the valve - which is automatically done by pressing the mask onto the test area - the volume under the vacuum mask is evacuated within a few seconds. If there is a defect within the vacuum mask, a foam hat is built up quickly, because of the streaming in air through this defect. Leaks can be determined with this method easily.

Detection limits of this method under practical testing conditions are between 0,0001 and 0,001 mbar l / s.

For safe detection of even small defects the vacuum underneath the mask have to be sustained for at least 30 seconds.

KOWOVAC VSP units

For fast and safe evacuation of even big vacuum masks through a long vacuum hose in KOWOVAC VSP units are used vacuum pumps with specially high suction power up to 16 m³ / h. The complete KOWOVAC VSP leak testing unit, the vacuum pump with all necessary aggregates is built into a solid welded steel tube frame.

The oil-free (dry running) vacuum pumps are maintenance friendly, because the impellers are made from highly wear resisting special coal.

KOWOVAC VSP units are robust and consequently designed for mobile construction-site use.



KOWOVAC VSP 1TS Leak Test Unit**60 70550**

Maintenance friendly , self lubricating / oil-free vacuum pump with suction power of 6,8 m³ / h, built into a solid, welded steel tube frame with a carrying handle.

Complete with vacuum control valve, vacuum gauge, air- / dust- and water separator, splash proof motor protective switch and oil-resistant supply cable, 3 m long.

Suction power at 1000 mbar	6,8 m ³ / h
Pressure absolute, controllable to max.	150 mbar
Vacuum pressure	850 mbar
Electrical connection	230 V / 50 Hz
Electrical power	0,25 kW
Dimensions (WxDxH)	360 x 200 x 400 mm (14 / 8 / 16 inches)
Weight	19 kg (42 lbs.)

KOWOVAC VSP 2TS Leak Test Unit**60 70560**

Maintenance friendly , self lubricating / oil-free vacuum pump with high suction power of 10 m³ / h, built into a solid, welded steel tube frame with two carrying handles.

Complete with vacuum control valve, vacuum gauge, air- / dust- and water separator, splash proof motor protective switch and oil-resistant supply cable, 3 m long.

Suction power at 1000 mbar	10 m ³ / h
Pressure absolute, controllable to max.	150 mbar
Vacuum pressure	850 mbar
Electrical connection	230 V / 50 Hz
Electrical power	0,37 kW
Dimensions (WxDxH)	480 x 360 x 310 mm (19 / 14 / 12 inches)
Weight	26 kg (58 lbs.)

Unit also available in three-phase current 3 x 400 V / 50 Hz.

60 70561**KOWOVAC VSP 3T Leak Test Unit****60 70580**

Maintenance friendly , self lubricating / oil-free vacuum pump with high suction power of 16 m³ / h, built into a solid, welded steel tube frame with two carrying handles and rain hood.

Complete with vacuum control valve, vacuum gauge, air- / dust- and water separator, splash proof motor protective switch and oil-resistant supply cable, 3 m long.

Suction power at 1000 mbar	16 m ³ / h
Pressure absolute, controllable to max.	150 mbar
Vacuum pressure	850 mbar
Electrical connection	230 V / 50 Hz
Electrical power	0,55 kW
Dimensions (WxDxH)	480 x 360 x 390 mm (19 / 14 / 15 inches)
Weight	35 kg (77 lbs.)

Unit also available in three-phase current 3 x 400 V / 50 Hz.

60 70581

KOWOVAC Leak Testing System Accessories

Vacuum Hose 1/2"

60 70405

For connecting Vacuum Mask with standard 1/2"-connection to KOWOVAC VSP units.

Reducing Adapter 1/2" / 6 mm

60 70406

Necessary for connecting Vacuum Mask with miniature vacuum valve (MINI type) to KOWOVAC VSP units. With short piece of hose Ø 6 mm (1/4").

G-FLEX Leak Test Solutions

G-FLEX solutions are highly recommended for leak testing with KOWOVAC systems. All G-FLEX products are tested and registered by the German DVGW according to DIN 30 657 and can be used for all test pieces and with all gases.

G-FLEX Leak Finder for all test purposes

Aerosol can, 400 ml, without CKW

60 00301

Cubitainer, 5 l

60 00303

Cubitainer, 10 l

60 00304

Applying can, with pump sprayer, 500 ml

60 25101

G-FLEX Leak Finder ice-proof for test purposes at temperatures down to -15°C

Aerosol can, 400 ml, without CKW

60 00121

G-FLEX Leak Finder foam for special test purposes

Aerosol can, 400 ml, without CKW

60 00101

Better contrast on dark test pieces, better adhesion on vertical surfaces

KOWOVAC Vacuum Masks for testing 180° butt weld seams (Tank Floor)

Highly limp, flexible plastics is used for the approximately 100 mm (4 inches) wide, fracture secure inspection pane. For best sealing on nearly all surfaces the pane is edged with a gasket of a special soft rubber mixture.

For evacuating the mask a 360° rotatable vacuum valve with connection for the ½" vacuum hose is used.

By pressing down the mask onto the test piece at the handles – one handle is the vacuum valve – the valve is opened.

Vacuum masks longer than 300 mm (12 inches) are fitted with an additional handle.

Vacuum Mask MINI, butt weld seam, length 200 mm (8 inches)	60 70397
Vacuum Mask MINI, butt weld seam, length 300 mm (12 inches)	60 70398
Vacuum Mask MINI, butt weld seam, length 400 mm (16 inches)	60 70399
Vacuum Mask, butt weld seam, length 500 mm (20 inches)	60 70401
Vacuum Mask, butt weld seam, length 600 mm (24 inches)	60 70400
Vacuum Mask, butt weld seam, length 750 mm (30 inches)	60 70402

Other dimensions or special types are available.



KOWOVAC Vacuum Masks for testing lap fillet weld seams (Tank Floor)

Vacuum Mask, lap fillet weld seam, for steps 3 to 9 mm, length 500 mm (20 inches)	60 70391
Vacuum Mask, lap fillet weld seam, for steps 3 to 9 mm , length 600 mm (24 inches)	60 70393
Vacuum Mask, lap fillet weld seam, for steps 3 to 9 mm , length 750 mm (30 inches)	60 70394
Vacuum Mask, lap fillet weld seam, for steps 5 to 11 mm, length 500 mm (20 inches)	60 70387
Vacuum Mask, lap fillet weld seam, for steps 5 to 11 mm , length 600 mm (24 inches)	60 70388
Vacuum Mask, lap fillet weld seam, for steps 5 to 11 mm, length 750 mm (30 inches)	60 70389
Vacuum Mask, lap fillet weld seam, for steps 7 to 13 mm, length 500 mm (20 inches)	60 70419
Vacuum Mask, lap fillet weld seam, for steps 7 to 13 mm , length 600 mm (24 inches)	60 70421
Vacuum Mask, lap fillet weld seam, for steps 7 to 13 mm, length 750 mm (30 inches)	60 70420

Other dimensions or special types are available.

KOWOVAC Vacuum Masks for testing 90° fillet weld seams (Edges and Corners)

Highly limp, flexible plastics is used for the approximately 100 mm (4 inches) wide, fracture secure inspection pane. The pane is fitted to the geometry of the test piece. For best sealing on nearly all surfaces the pane is edged with a gasket of a special soft rubber mixture.

For evacuating the mask a 360° rotatable vacuum valve with connection for the ½" vacuum hose is used.

By pressing down the mask onto the test piece at the handles – one handle is the vacuum valve – the valve is opened.

Vacuum masks longer than 300 mm (12 inches) are fitted with an additional handle.

Vacuum Mask MINI, fillet weld seam, 90°, in-side, length 250 mm (10 inches)	60 70426
Vacuum Mask, fillet weld seam, 90°, in-side, length 400 mm (16 inches)	60 70395
Vacuum Mask, fillet weld seam, 90°, in-side, length 500 mm (20 inches)	60 70403
Vacuum Mask, fillet weld seam, 90°, in-side, length 600 mm (24 inches)	60 70396
Vacuum Mask, fillet weld seam, 90°, in-side, length 750 mm (30 inches)	60 70404

Inspection pane 100 mm (4 inches) wide with bent and pointed ends for testing 90° edges from in-side

Vacuum Mask, fillet weld seam, 270°, out-side, length 500 mm (20 inches) **60 70410**

Two inspection panes 100 mm (4 inches) wide build a roof-like structure with rounded corners for testing 90° edges from out-side

Vacuum Mask MINI, fillet weld seam corner, 3 x 90°, in-side, edge length 60 mm 60 70427

Vacuum Mask, fillet weld seam corner, 3 x 90°, in-side, edge length 270 mm **60 70408**

Triangular inspection pane for testing 90° corners from in-side

This vacuum mask is fitted with a miniature vacuum valve. This valve is fitted with a vacuum hose connection of Ø 6 mm (¼") – therefore a reducing adapter (60 70406) is necessary.

Vacuum Mask, fillet weld seam corner, 3 x 270°, out-side, edge length 270 mm **60 70409**

Three sectoral inspection panes build a roof-like structure for testing 90° corners from out-side

This vacuum mask is fitted with a miniature vacuum valve. This valve is fitted with a vacuum hose connection of Ø 6 mm (¼") – therefore a reducing adapter (60 70406) is necessary.

Other dimensions or special types are available.

KOWOVAC Vacuum Masks for testing round butt weld seams (Tubes)

Highly limp, flexible plastics is used for the approximately 100 mm (4 inches) wide, fracture secure inspection pane. The pane is fitted for the diameter of the test piece.

For best sealing on nearly all surfaces the pane is edged with a gasket of a special soft rubber mixture.

For evacuating the mask a 360° rotatable vacuum valve with connection for the ½" vacuum hose is used.

By pressing down the mask onto the test piece at the handles – one handle is the vacuum valve – the valve is opened.

Vacuum masks up to Ø 150 mm are fitted with a miniature vacuum valve with the same function.

This valve is fitted with a vacuum hose connection of Ø 6 mm (¼") – therefore a reducing adapter (60 70406) is necessary.

Vacuum masks longer than 300 mm (12 inches) are fitted with an additional handle.

Vacuum Mask MINI, round butt weld seam, out-side, Ø 25, length 100 mm (4 inches)	60 70503
Vacuum Mask MINI, round butt weld seam, out-side, Ø 32, length 110 mm (4 inches)	60 70504
Vacuum Mask MINI, round butt weld seam, out-side, Ø 40, length 120 mm (5 inches)	60 70505
Vacuum Mask MINI, round butt weld seam, out-side, Ø 50, length 135 mm (5 inches)	60 70506
Vacuum Mask MINI, round butt weld seam, out-side, Ø 65, length 150 mm (6 inches)	60 70507
Vacuum Mask MINI, round butt weld seam, out-side, Ø 80, length 170 mm (7 inches)	60 70508
Vacuum Mask MINI, round butt weld seam, out-side, Ø 100, length 195 mm (8 inches)	60 70509

Vacuum Mask, round butt weld seam, out-side, Ø 125, length 220 mm (9 inches)	60 70510
Vacuum Mask, round butt weld seam, out-side, Ø 150, length 260 mm (10 inches)	60 70511
Vacuum Mask, round butt weld seam, out-side, Ø 200, length 370 mm (15 inches)	60 70512
Vacuum Mask, round butt weld seam, out-side, Ø 250, length 400 mm (16 inches)	60 70513
Vacuum Mask, round butt weld seam, out-side, Ø 300, length 440 mm (17 inches)	60 70514
Vacuum Mask, round butt weld seam, out-side, Ø 350, length 460 mm (18 inches)	60 70515
Vacuum Mask, round butt weld seam, out-side, Ø 400, length 500 mm (20 inches)	60 70516
Vacuum Mask, round butt weld seam, out-side, Ø 500, length 570 mm (23 inches)	60 70517
Vacuum Mask, round butt weld seam, out-side, Ø 600, length 650 mm (26 inches)	60 70518
Vacuum Mask, round butt weld seam, out-side, Ø 700, length 740 mm (29 inches)	60 70519
Vacuum Mask, round butt weld seam, out-side, Ø 800, length 730 mm (29 inches)	60 70520
Vacuum Mask, round butt weld seam, out-side, Ø 900, length 730 mm (29 inches)	60 70521
Vacuum Mask, round butt weld seam, out-side, Ø 1000, length 730 mm (29 inches)	60 70522
Vacuum Mask, round butt weld seam, out-side, Ø 1100, length 750 mm (30 inches)	60 70523
Vacuum Mask, round butt weld seam, out-side, Ø 1200, length 750 mm (30 inches)	60 70524
Vacuum Mask, round butt weld seam, out-side, Ø 1300, length 750 mm (30 inches)	60 70525
Vacuum Mask, round butt weld seam, out-side, Ø 1400, length 750 mm (30 inches)	60 70526
Vacuum Mask, round butt weld seam, out-side, Ø 1500, length 750 mm (30 inches)	60 70527
Vacuum Mask, round butt weld seam, out-side, Ø 1600, length 750 mm (30 inches)	60 70528

Other dimensions or special types are available.

KOWOVAC Vacuum Masks for testing round 90° fillet weld seams (Tank Floor /-Wall)

Highly limp, flexible plastics is used for the approximately 100 mm (4 inches) wide, fracture secure inspection pane. The pane is fitted for the diameter of the test piece.

For best sealing on nearly all surfaces the pane is edged with a gasket of a special soft rubber mixture.

For evacuating the mask a 360° rotatable vacuum valve with connection for the ½" vacuum hose is used.

By pressing down the mask onto the test piece at the handles – one handle is the vacuum valve – the valve is opened.

These vacuum masks are fitted with an additional handle.

Vacuum Mask, round fillet weld seam, 90°, in-side

DN 2250, Ø 2000 to 2600 mm, length 400 mm (16 inches)	60 70428
DN 2800, Ø 2600 to 3200 mm, length 400 mm (16 inches)	60 70429
DN 2800, Ø 2600 to 3200 mm, length 500 mm (20 inches)	60 70430
DN 3450, Ø 3100 to 3800 mm, length 500 mm (20 inches)	60 70432
DN 4050, Ø 3600 to 4600 mm, length 500 mm (20 inches)	60 70435
DN 4050, Ø 3600 to 4600 mm, length 600 mm (24 inches)	60 70436
DN 4900, Ø 4200 to 5800 mm, length 500 mm (20 inches)	60 70438
DN 4900, Ø 4200 to 5800 mm, length 600 mm (24 inches)	60 70439
DN 6500, Ø 5400 to 8300 mm, length 500 mm (20 inches)	60 70441
DN 6500, Ø 5400 to 8300 mm, length 600 mm (24 inches)	60 70442
DN 6500, Ø 5400 to 8300 mm, length 700 mm (28 inches)	60 70416
DN 8750, Ø 6800 to 12500 mm, length 500 mm (20 inches)	60 70444
DN 8750, Ø 6800 to 12500 mm, length 600 mm (24 inches)	60 70445
DN 8750, Ø 6800 to 12500 mm, length 700 mm (28 inches)	60 70417
DN 15000, Ø from 10000 mm, length 500 mm (20 inches)	60 70447
DN 15000, Ø from 10000 mm, length 600 mm (24 inches)	60 70448
DN 15000, Ø from 10000 mm, length 700 mm (28 inches)	60 70418

Other dimensions or special types are available.

KOWOVAC Vacuum Masks for special testing purposes

Highly limp, flexible plastics is used for the fracture secure inspection pane. For best sealing on nearly all surfaces the pane is edged with a gasket of a special soft rubber mixture. For evacuating the mask a 360° rotatable vacuum valve with connection for the ½" vacuum hose is used.

By pressing down the mask onto the test piece at the handles – one handle is the vacuum valve – the valve is opened.

These vacuum masks are fitted with an additional handle.

Vacuum Mask for castings, Ø 125 mm (5 inches)	60 70531
Vacuum Mask for castings, Ø 250 mm (10 inches) fitted with an additional handle	60 70532
Vacuum Mask for castings, Ø 400 mm (16 inches) fitted with an additional handle and one support for pane	60 70533
Vacuum Mask for castings, 200 x 300 mm (8 / 12 inches) fitted with an additional handle and one support for pane	60 70534
Vacuum Mask for castings, 400 x 400 mm (16 / 16 inches) fitted with an additional handle and two supports for pane	60 70535
Vacuum Mask, high flexible, 100 x 150 mm (4 / 6 inches) Inspection pane is especially high flexible for fitting onto vaulted surfaces	60 70539

Other dimensions or special types are available.

Spare Parts for KOWOVAC VSP Units and Vacuum Masks

KOWOVAC Vacuum units are manufactured for heavy duty use. Therefore spare parts usually are not necessarily to be kept in stock, unless supply can not be organised in sufficient time.

Vacuum Gauge 0 ... -1200 mbar	60 70549
Wearing Part Set for VSP Vacuum Pumps for 2 to 4 years operation, consisting of coal impellers, gaskets, filter	
VSP 1TS Wearing Part Set	60 70554
VSP 2TS Wearing Part Set	60 70564
VSP 3TS Wearing Part Set	60 70584

KOWOVAC Vacuum masks are manufactured for heavy duty use, and rubber gaskets are designed for very long life time.

Since for exchange of rubber gaskets of vacuum masks high workmanship and experience is needed, it is highly recommended to send back vacuum masks for repairs.



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