

L170R01V2
Mega Series

Service carts for large and extra large gas compartments

The L170 service carts for liquid gas storage have been developed to recover, purify, evacuate, fill, and vent large to extra-large SF₆ gas compartments with high process reliability. Thus, a gas compartment with 1,000l and 5 bar pa can be recovered down to 1 mbar in only 38 minutes*) when using the DN40 coupling**). Modern control technology in conjunction with a user-friendly interface in several languages make device operation simple and convenient. Operation via mobile devices such as smartphones, tablets or laptops is available as an option. The external cover of the device protects the integrated components and considerably reduces noise. This series offers fully automated operation via a 10" touch screen with protective cover shielding from sunlight and dust. The swivelling touch screen allows ergonomic working at the optimum working height. For data exchange additional USB and Ethernet connections are integrated. By using the hermetically gastight DILOR couplings and connections, emission-free gas handling is guaranteed. The series also enables short gas recovery and evacuating times thanks to the existing DN20 / DN40 couplings and is available with a second DN20 connecting coupling as an option. Thus, two functions can be carried out simultaneously. This makes it possible to evacuate air from one gas compartment and at the same time fill another gas compartment with SF₆ gas or to recover the gas from it. Thanks to the automated special functions the devices can be easily maintained without emissions.



Standard version

- B110R11 oil-free DILO compressor; delivery rate (19 m³/h [at 50 Hz]; 15 m³/h [at 60 Hz]) at medium suction pressure with SF₆
- oil-free suction pump for recovery of SF₆ gas (35 m³/h [at 50 Hz]; 42 m³/h [at 60 Hz], final vacuum 1 mbar)
- vacuum pump for evacuation of air; delivery rate (configurable)
- evaporator max. flow rate 200 kg/h)
- dry filter (water absorption capacity: 175 g at a dew point of -36°C)
- particle filter 1 µm
- operation and indication of the important process parameters via 10" touch screen with protective cover
- indication units in bar / mbar, kPa or psi / torr to be selected on the touch screen
- forklift slots
- crane eyelets
- fixing and steerable rollers (configurable)
- drawer for tools and accessories
- 2 m long storage connecting hose DN8 with DILO coupling tongue part DN20
- most common global cylinder connections
- digital weighing scales for SF₆ cylinders (with automatic switch-off function), 0 - 120 kg with tare function, accuracy ± 0.02 %
- wrenches for DILO couplings and filters
- paint: anthracite-orange

Special features

- Gas type: SF₆
- Gas recovery: < 1 mbar
- Filling of gas: 0 - 10 bar
- Evacuation of air: < 1 mbar
- Maximum storage pressure: 50 bar
- Recommended gas quantity: < 300 kg
- Operation: automatic
- DILO couplings: DN20/DN40

Advantages & functions

- SF₆ gas recovery down to 1 mbar
- optional remote control via mobile devices
- reversing switch for correcting the direction of rotation
- integrated special functions for easy maintenance and safe transport
- all versions are available with pressure vessels (integratable features) with CE marking or optionally with SQL or ASME approval
- the service carts can also be mounted onto a trailer

Technical data

Dimensions (W x H x D)	1,100 x 1,350 x 2,350 mm - Standard version
Weight	1,048 kg above-mentioned version
Dimensions (W x H x D)	1,185 x 1,960 x 2,625 mm - Version: 300 l pressure vessel, with electronic weight indication and chassis with solid tyre wheels
Weight	1,660 kg above-mentioned version
Dimensions (W x H x D)	1,185 x 2,095 x 2,625 mm - Version: 600 l pressure vessel, with electronic weight indication and chassis with solid tyre wheels
Weight	1,960 kg above-mentioned version
Dimensions (W x H x D)	1,185 x 2,095 x 2,625 mm - Version: stowage including 5 x 40 kg SF ₆ cylinders with electronic weight indication and chassis with solid tyre wheels
Weight	1,730 kg above-mentioned version
Ambient temperature	0 to +45 °C
Operating temperature	0 to +45 °C
Storage temperature	-20 to +60 °C
Protection class	IP54
Sound level	< 76 dB
Maximum delivery capacity compressor	49,8 m ³ /h at suction pressure with SF ₆ and a back pressure of 27 bar (50 Hz)
Maximum delivery capacity compressor	52,6 m ³ /h at suction pressure with SF ₆ and a back pressure of 27 bar (60 Hz)
Medium delivery capacity compressor	19 m ³ /h at suction pressure with SF ₆ and a back pressure of 25 bar (50 Hz)
Medium delivery capacity compressor	15 m ³ /h at suction pressure with SF ₆ and a back pressure of 25 bar (60 Hz)

Configuration

Screen	
10" touch panel	Operation of the device and indication of the process parameters via 10" colour touch panel
10" touch panel + WLAN	
10" touch panel+WLAN+Cosy NA	
10" touch panel+WLAN+Cosy EU	
Operating voltage range	
208-240V 60Hz	3-phase current, 208-240V / 60Hz
380-460V 50Hz	3-phase current, 380-460V / 50Hz
380-480V 60Hz	3-phase current, 380-480V / 60Hz
200V 50Hz	3-phase current, 200V / 50Hz
200V 60Hz	3-phase current, 200V / 60Hz
208-240V 50Hz	3-phase current, 208-240V / 50Hz
600V 60Hz	3-phase current, 600V / 60Hz
208-240V 60Hz (USA)	3-phase current, 208-240V / 60Hz
480V 60Hz (USA)	3-phase current, 480V / 60Hz
Vacuum pump	
Without vacuum pump	
63m ³ /h; <1mbar(S01-05+S08+S09)	Vacuum pump for evacuation of air (63 m ³ /h at 50 Hz, 76 m ³ /h at 60 Hz, final vacuum < 1 mbar)
63m ³ /h; <1mbar (S06)	Vacuum pump for evacuation of air (63 m ³ /h at 50 Hz, 76 m ³ /h at 60 Hz, final vacuum < 1 mbar)
63m ³ /h; <1mbar (S07)	Vacuum pump for evacuation of air (63 m ³ /h at 50 Hz, 76 m ³ /h at 60 Hz, final vacuum < 1 mbar)
100m ³ /h;<1mbar(S01-05+S08+S09)	Vacuum pump for evacuation of air (100 m ³ /h at 50 Hz, 120 m ³ /h at 60 Hz, final vacuum < 1 mbar)
100m ³ /h; <1mbar (S06)	Vacuum pump for evacuation of air (100 m ³ /h at 50 Hz, 120 m ³ /h at 60 Hz, final vacuum < 1 mbar)
100m ³ /h; <1mbar (S07)	Vacuum pump for evacuation of air (100 m ³ /h at 50 Hz, 120 m ³ /h at 60 Hz, final vacuum < 1 mbar)
200m ³ /h;<1mbar(S01-06+S08+S09)	Vacuum pump for evacuation of air (200 m ³ /h at 50 Hz, 240 m ³ /h at 60 Hz, final vacuum < 1 mbar)
200m ³ /h; <1mbar (S07)	Vacuum pump for evacuation of air (200 m ³ /h at 50 Hz, 240 m ³ /h at 60 Hz, final vacuum < 1 mbar)
TypRH0060; (S01-06+S08+S09)	Vacuum pump for evacuation of air, 2-stage with exhaust filter, type RH0060 Nominal suction capacity: 55 m ³ /h at 50 Hz, 65 m ³ /h at 60 Hz, final vacuum 0.0067 mbar
TypRH0060; (S07)	Vacuum pump for evacuation of air, 2-stage with exhaust filter, type RH0060 Nominal suction capacity: 55 m ³ /h at 50 Hz, 65 m ³ /h at 60 Hz, final vacuum 0.0067 mbar
TypRH0090; (S01-06+S08+S09)	Vacuum pump for evacuation of air, 2-stage with exhaust filter, type RH0090 Nominal suction capacity: 80 m ³ /h at 50 Hz, 95 m ³ /h at 60 Hz, final vacuum 0.0067 mbar
TypRH0090; (S07)	Vacuum pump for evacuation of air, 2-stage with exhaust filter, type RH0090 Nominal suction capacity: 80 m ³ /h at 50 Hz, 95 m ³ /h at 60 Hz, final vacuum 0.0067 mbar
Automatic control + exhaust monitoring	

without K141R11 and K203R01	Without automatic switch off function (evacuation of air, filling of SF ₆ , recovery of SF ₆) when reaching the corresponding final values Without exhaust monitoring for vacuum pump (additional SF ₆ sensor at the vacuum pump which terminates the function "Evacuation of air / N ₂ " automatically when detecting SF ₆ gas in the exhaust air for avoiding an inadvertent loss of SF ₆ gas)
with K141R11; without K203R01	With automatic switch off function (evacuation of air, filling of SF ₆ , recovery of SF ₆) when reaching the corresponding final values Without exhaust monitoring for vacuum pump (additional SF ₆ sensor at the vacuum pump which terminates the function "Evacuation of air / N ₂ " automatically when detecting SF ₆ gas in the exhaust air for avoiding an inadvertent loss of SF ₆ gas)
without K141R11; with K203R01	Without automatic switch off function (evacuation of air, filling of SF ₆ , recovery of SF ₆) when reaching the corresponding final values With exhaust monitoring for vacuum pump (additional SF ₆ sensor at the vacuum pump which terminates the function "Evacuation of air / N ₂ " automatically when detecting SF ₆ gas in the exhaust air for avoiding an inadvertent loss of SF ₆ gas)
with K141R11; with K203R01	With automatic switch off function (evacuation of air, filling of SF ₆ , recovery of SF ₆) when reaching the corresponding final values With exhaust monitoring for vacuum pump (additional SF ₆ sensor at the vacuum pump which terminates the function "Evacuation of air / N ₂ " automatically when detecting SF ₆ gas in the exhaust air for avoiding an inadvertent loss of SF ₆ gas)
Filling pressure + emptying of storage vessel	
K205R01 (10 bar) w/o K204R03	Filling of the gas compartment with SF ₆ gas up to max. pa 10 bar The for the filling process connected gas container (bottle, internal / external storage tank) can be emptied down to atmospheric pressure
K205R02 (15 bar) w/o K204R03	Filling of the gas compartment with SF ₆ gas up to max. pa 15 bar The for the filling process connected gas container (bottle, internal / external storage tank) can be emptied down to atmospheric pressure
K205R01 (10 bar) with K204R03	Filling of the gas compartment with SF ₆ gas up to max. pa 10 bar The for the filling process connected gas container (bottle, internal / external storage tank) can be emptied down to < 1 mbar
K205R02 (15 bar) with K204R03	Filling of the gas compartment with SF ₆ gas up to max. pa 15 bar The for the filling process connected gas container (bottle, internal / external storage tank) can be emptied down to < 1 mbar
Device covering	
Standard sheet-metal cover	
With tarpaulin- K029R68	
Integrateable features (pressure vessel, chassis and rollers)	
Without rollers	
steerable and fixing rollers	steerable and fixing rollers
chassis with solid tired wheel	Chassis with solid tired wheels
300l / 50bar CE / chassis	B172R11L170 300 l / 50 bar pressure tank in accordance with 2014/68/EU regulations and CE marked with electronic weight indication and chassis with solid tired wheels
600l / 50bar CE / chassis	B172R12L170 600 l / 50 bar pressure tank in accordance with 2014/68/EU regulations and CE marked with electronic weight indication and chassis with solid tired wheels

Storage without bottles, FW	B175R64L170 Storage with electronic weight indication, without SF ₆ bottles, chassis with solid tired wheels
Storage with 5 bottles, FW	B175R65L170 Storage with electronic weight indication, with 5 SF ₆ bottles and chassis with solid tired wheels
Trailer w/o storage (just SC)	2-axle car trailer TÜV approved, including tarpaulin, side and back walls open by pneumatic springs, service cart directly mounted on the trailer
Trailer without bottles	B175R72L170 2-axle car trailer TÜV approved, storage with weighing device for up to 4 SF ₆ cylinders (without cylinders), including tarpaulin, side and back walls open by pneumatic springs
Trailer with bottles	B175R71L170 2-axle car trailer TÜV approved, stowage with weighing device with 4 SF ₆ cylinders (50 l), including tarpaulin, side and back walls open by pneumatic springs
300l / 50bar SQL;CN / chassis	B172R91L170/CN 300 l / 50 bar pressure tank with SQL approval, electronic weight indication and chassis with solid tired wheels
600l / 50bar SQL;CN / chassis	B172R92L170/CN 600 l / 50 bar pressure tank with SQL approval, electronic weight indication and chassis with solid tired wheels
300l / 50bar ASME / chassis	B172R84L170 300 l / 50 bar pressure tank with ASME approval, electronic weight indication and chassis with solid tired wheels
600l / 50bar ASME / chassis	B172R85L170 600 l / 50 bar pressure tank with ASME approval, electronic weight indication and chassis with solid tired wheels
300l / 50bar SQL;GE / chassis	B172R91L170/GE 300 l / 50 bar pressure tank with SQL approval, electronic weight indication and chassis with solid tired wheels
600l / 50bar SQL;GE / chassis	B172R92L170/GE 600 l / 50 bar pressure tank with SQL approval, electronic weight indication and chassis with solid tired wheels
Trailer w/o storage,w/o bottle	2-axle car trailer TÜV approved, storage with weighing device without SF ₆ cylinders, including tarpaulin, side and back walls open by pneumatic springs With hose reel with spring balancer.
Trailer w. storage w. bottles	2-axle car trailer TÜV approved, storage with weighing device with SF ₆ cylinders, including tarpaulin, side and back walls open by pneumatic springs With hose reel with spring balancer.
300l/50bar austr.St. / chassis	
Storage w. 5 bottles, rollers	B175R62L170 Storage with electronic weight indication, with 5 SF ₆ bottles and fixing and steerable rollers
Dew point control + parallel operation	
w/o dew point, w/o parallel	
with dew point, w/o parallel	SF ₆ dew point indication after dry filter
w/o dew point w. parallel <200	Additional coupling DN20 for evacuation of air and recovery or filling of SF ₆ gas at the same time
w. dew point w. parallel <200	SF ₆ dew point indication after dry filter Additional coupling DN20 for evacuation of air and recovery or filling of SF ₆ gas at the same time
w/o dew point, w. parallel 200	Additional coupling DN20 for evacuation of air and recovery or filling of SF ₆ gas at the same time
w. dew point, w. parallel 200	SF ₆ dew point indication after dry filter Additional coupling DN20 for evacuation of air and recovery or filling of SF ₆ gas at the same time
Transport lock	

without transport protection	Without relief of fixing and steerable rollers for transport
with transport protection	With relief of fixing and steerable rollers for transport: By using this transport protection, the device can be stored and transported in a safe way (for example on a truck). With this system the fixing- and steerable rollers will be discharged. Therefore, the device can be transported and lashed in a safe way.
Vacuum indication	
Standard indication	0 - 100 mbar, resolution 0.1 mbar
High-precision indication A	Vacuum sensor for gas compartment A, indicating range 1x10-5 mbar
High-precision indication B	Vacuum sensor for gas compartment B, indicating range 1x10-5 mbar
High-precision indication A+B	Vacuum sensor for gas compartment A and gas compartment B, indicating range 1x10-5 mbar

Optional accessories

B077R22	Portable pre-filter unit (p _e 50 bar)
6-1017-R100	10 m long rubber hose DN20 with DILO coupling tongue part DN20 on both ends
6-1365-R050	5 m long wire braided hose DN20 with DILO coupling tongue part on both ends PN 64 bar
6-1365-R100	10 m long wire-braided hose DN20 with DILO coupling tongue part on both ends PN 64 bar
6-1076-R100	10 m long wire-braided hose DN40 with DILO-coupling tongue part DN40 on both ends
6-1080-R050	5 m long wire-braided hose DN40 with DILO coupling tongue part DN40 on one end and DILO coupling tongue part DN20 on the other end
6-1080-R100	10 m long wire-braided hose DN40 with DILO coupling tongue part DN40 on one end and DILO coupling tongue part DN20 on the other end
6-1235-R001	DILO coupling tongue part DN40 with transition piece to 2 x DN20, 2 rubber hoses DN20 (10 m long) with DILO coupling tongue part DN2
6-1048-R511	Annual maintenance kit for L170R01 with standard vacuum pump (63 m ³ /h) / 6-170VP-R001 (100 m ³ /h)
6-1048-R512	Annual maintenance kit for L170R01 with 6-170VP-R002 (200 m ³ /h) vacuum pump
6-1048-R515	Annual maintenance kit for L170R01 with 2-stage 6-170VP-R008 (55 m ³ /h) vacuum pump
6-1048-R516	Annual maintenance kit for L170R01 with 2-stage 6-170VP-R009 (80 m ³ /h) vacuum pump
6-1410-R011	Spare parts kit for compressor
6-1101-R141	Spare filter kit (for SF ₆ dry and particle filter)
6-1053-R004/1M	Electrical connecting cable 5x16 AWG5 (available lengths 5 - 30 m)

Packaging

3-788-R010-C	Packing for L170R01
3-788-R013-C	Packing for L170R01 with 6-170FG-R003 (chassis) as option
3-788-R011-C	Packing with stowage and weighing device/pressure tank with chassis
3-688-R005-C	Transport pallet mounted on a trailer

Note

For the 200 - 480 V voltage range the following cable is required: 6-1053-R004