

VETTER AIRCRAFT LIFTING BAGS 0.5 bar (7.25 psi)



We call these bags the gentle giants, since they do a powerful lifting job at an operating pressure of no more than 0.5 bar (7.25 psi). Vetter Aircraft Lifting Bags raise aircraft back onto their legs after crash-landings off the runway, or when their landing gear buckles leaving them belly-flat, helplessly spreadeagled on the ground. They need at most 20 cm (7.9 in.) to be

inserted underneath disabled aircraft, so they go to work in very small gaps. Up to nine square metres (97 sq.ft.) in area, they lift the heaviest jet evenly and gently to a height of more than 300 cm (120 inches). Each bag has an enormous lifting power of up to 43,000 kg (94,772 lbs) and immense lateral stability through the use of a special drop fabric

containing around 72,000 threads per square metre built into their material.

Vetter Aircraft Lifting Bags consist of between 5 and 20 individual bags, stacked either loosely or connected firmly together. This flexibility makes them highly effective in recovering stricken aircraft, whatever the situation.

APPLICATION:

For lifting any size of aircraft, after over-shooting the runway on take-off or landing, or after their nose wheel or main landing gear has buckled.

SIZES:

Five Lifting Bag sizes with between 5 and 20 individual bag compartments, and lifting capacities from 3,150 kg (6,942 lbs) to 43,014 kg (94,802 lbs).

LIFTING HEIGHT:

102, 162, 244 and 305 cm (40, 64, 96 and 120 in.)

ADVANTAGES:

Multi-compartment bags: each compartment or bag is only 20 cm (7.9 in.) high, giving maximum safety.
Very large bag surface, generating a powerful lift at a low

operating pressure of less than 0.5 bar (7.25 psi).

Optimum lateral stability from reinforced fabric containing about 72,000 drop threads per square metre, and with separate top compartments that mould themselves to the aircraft shape.

Supplied as individual bag compartments or firmly connected in a complete set.

The strong drop fabric gives a flat surface, without any bulges.

Robust claw couplings

Insertion height at most 20 cm (7.9 in.)

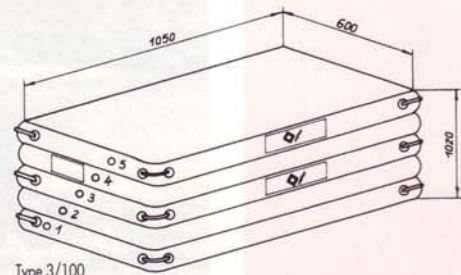
Controller with safety valve for individual control of each bag compartment

- Inlet pressure reducer and water separator
- Integrated pressure reducer, adjustable in the 0.1 to 0.5 bar range (1.46 to 7.25 psi) to

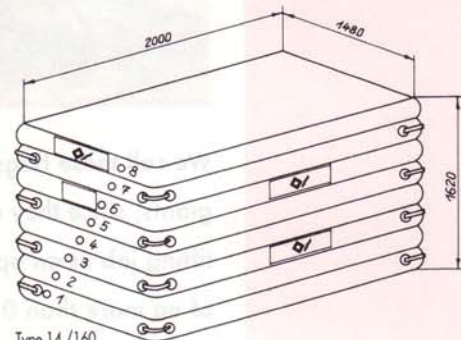


maintain pressure at a constant level in the upper compartments.

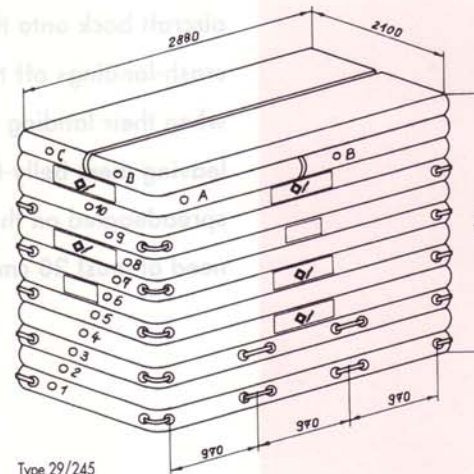
- Protective frame enclosure and screw-on foot-pads
- Modular design for flexible application with 5, 2 x 10 or 17 bag compartments
- Lightweight yet sturdy
- Robust, requiring next to no maintenance
- Made in Germany



Type 3/100



Type 14/160



Type 29/245

SAFETY:

Bursting pressure four times higher than operating pressure

Patented, in-vulcanized valve connections for optimum reinforcement at fabric joints

Protective covers at all connection couplings

Screw-type claw coupling system

All bags are tested at 1.3 times their operating pressure

Each connection on the bags and controller is alphabetically or numerically coded.

Automatic pressure monitoring of the upper bag (contour) compartments

Controller with safety units for each bag compartment to prevent inadvertent over-inflation of the bags

MATERIAL: C

Highly tear-proof polyamide fabric with about 72,000 drop threads per square metre

Highly robust and wear-resistant fabric coating

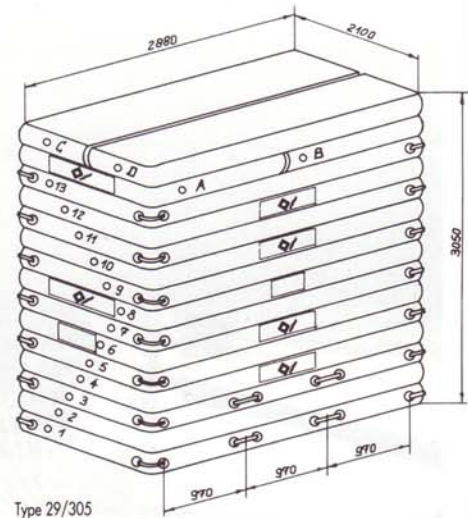
Oil-resistant and long life

AIR SOURCES:

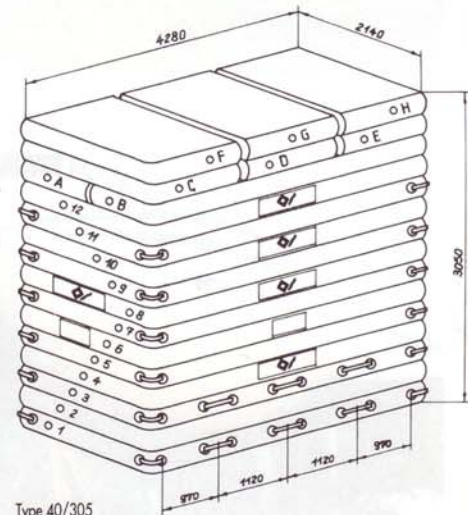
Compressed-air cylinders 200 or 300 bar (3,000 or 4,500 psi)

Single cylinders or up to four in protective carrier rack (for small Lifting Bags)

Mobile compressors



Type 29/305



Type 40/305





ACCESSORIES:

- Compressed-air cylinders
- Protective carrier rack for 4 compressed-air cylinders
- Mobile compressor
- Inflation hose 10 m (32.8 ft.), 19 mm (3/4 in.) internal diameter, screw-on claw couplings
- Compressed-air distributor
- Safety controllers with 5, 10 and 17 outlets (Fitting construction)
- Spare parts kit
- Cellular rubber pads
- Tethering winches
- Ground anchors
- Vacuum injector for fast deflation
- Portable lifting-bag valise
- Storage and transport container for lifting bags and inflation hoses

TECHNICAL DATA:

Type		ALB 3/100	ALB 14/160	ALB 29/245	ALB 29/305	ALB 40/305
USA		ALB 3.5/40	ALB 16/64	ALB 33/96	ALB 33/120	ALB 47/120
Art.-No.		350 01 000	350 02 000	350 03 000	350 04 000	350 05 000
Lifting capacity max.	kg	3,150	14,800	29,748	29,748	43,014
	lbs	6,942	32,619	65,564	65,564	94,802
Lifting height max.	cm	102	162	245	305	305
	in.	40	64	96	120	120
Compartments (total)	No.	5	8	14	17	20
Dimensions lifting surface (LxW)	cm	105 x 60	200 x 148	288 x 210	288 x 210	428 x 214
	in.	41 x 24	79 x 58	113 x 83	113 x 83	168 x 84
Dimensions total area (LxW)	cm	131 x 86	220 x 168	316 x 234	316 x 234	428 x 234
	in.	52 x 34	87 x 66	124 x 92	124 x 92	168 x 92
Insertion (deflation) height	cm	7	10	15	20	20
	in.	2.8	4	6	8	8
Nominal content	l	861	5,309	16,313	20,425	29,087
	cu. ft.	30.4	187	576	721	1,027
Air requirement at 0.5 bar	l	1,292	7,964	24,470	30,638	43,631
	cu. ft.	45	281	864	1,081	1,540
Weight	kg	26	93	261	320	418
	lbs	57	205	575	705	922
Operating pressure 0.5 bar (7.25 psi)				Test pressure 0.65 bar		Bursting pressure 2.0 bar
				9.49 psi		29.2 psi

(All figures are approximate)

VETTER AIRCRAFT LIFTING EQUIPMENT

VETTER supplies lifting equipment to raise aircraft with damaged landing gear on or off the runway. The lifting tackle is diversely designed to suit different aircraft types.

VETTER Lifting Tackle Category 1

Art.-No.: 357 03 000
consisting of:

- 1 horizontal beam and 2 adjustable cross-beams, each with 2 hooks, load-carrying capacity 12,000 kg (26,448)
- 2 lifting belts, 120 mm wide (4.7 in.), with looped reinforcement on both sides, each 5 m (16.4 ft.) long, load-carrying capacity 3,000 kg (6,612 lbs) looped 6,000 kg (13,224 lbs)

VETTER Lifting Tackle Category 2

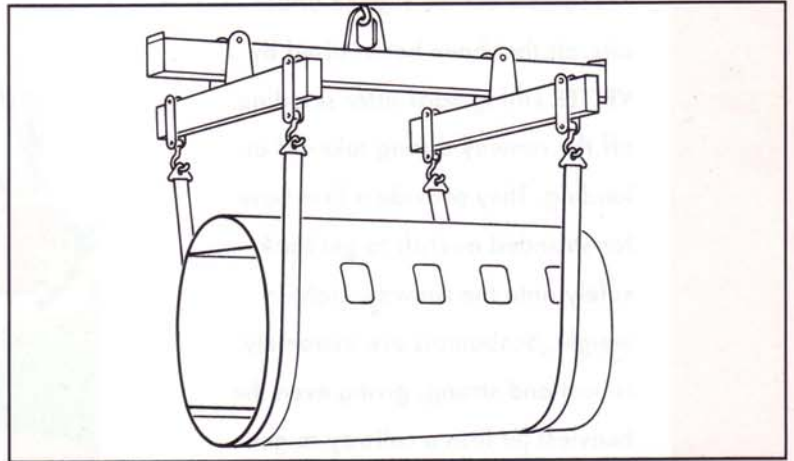
Art.-No.: 357 04 000
consisting of:

- 1 lifting belt, 300 mm (11.8 in.) wide with 4 reinforced carrier loops (7.6 m/25 ft. long).
- 2 ratchet-type lashing belts (total length 13 m/42.6 ft.), load-carrying capacity (looped) 14,000 kg (30,856 lbs) (breakage load 70,000 kg [154,280 lbs])
- 2 single-strand, suspension cables 3 m (9.8 ft.) long with crane ring, 2 coupling elements, 1 safety hook, load-carrying capacity 10,000 kg (22,040 lbs)
- 2 cable loops, circumferential length 8 m (26 ft.), load-carrying capacity (singly) 56,000 kg (123,424 lbs)

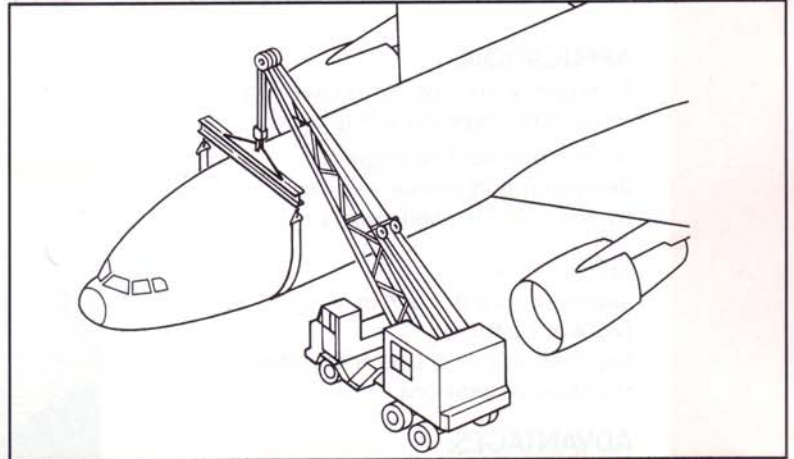
VETTER Lifting Tackle Category 3

Art.-No.: 357 05 000
consisting of:

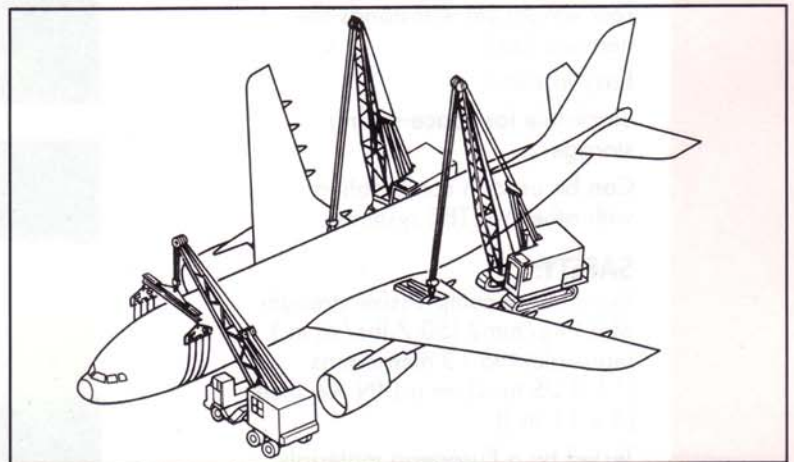
- 1 lifting belt mat system, 4 lifting belts, 180 mm (7 in.) wide, carrier loops, lashing belts with ratchets, total length of lifting belt 24 m (78.7 ft.) load-carrying capacity (looped) 24,000 kg (52,896 lbs)
- 2 metal triangular cross-beams eye-type suspension, load-carrying capacity 12,000 kg (26,448 lbs)
- 2 cable loops, circumferential length 8 m (26 ft.), load-carrying capacity (singly) 56,000 kg (123,424 lbs)



Category 1: Aircraft up to 12,000 kg (26,448), e.g. Learjet, Cessna



Category 2: Aircraft with 8-12 m (27-39 ft.) fuselage circumference, e.g. B 737, B 757, A320, DC-8 = narrow-body aircraft.



Category 3: Aircraft with fuselage circumference of 15-23 m (49-75.5 ft.), e.g. B 747, MD 11, A300, A340 = wide-body aircraft

Optional for Category 2 and 3:

Cross-beam, for use with Category 2 and 3 lifting belts, if only 1 mobile crane is available for lifting operation. Load-carrying capacity 24,000 kg (52,896 lbs), safety factor 5.

VETTER cable winch

Lashing equipment is required if lifting bags are used to prevent the aircraft from slipping during the lifting operation. The following kit is recommended for a B 747 jumbo:

Art.-No.: 357 01 000
cable winch set, hand-operated, 3,200 kg (7,053 lbs) for B 747, DC-10

consisting of:

- 6 cable winches with lever bar, 3,200 kg (7,053 lbs)
- 6 cables 30 m (98.4 ft.), 16 mm (0.6 in.) diameter
- 6 cable slings 3 m (9.8 ft.), wire
- 12 ground anchors
- 6 tool kits for cable winch
- 6 transport and storage bags for cable winch

VETTER SCOBAMAT®

Scobamats can be slipped under aircraft that have been raised by VETTER Lifting Bags after skidding off the runway during take-off or landing. They provide a firm base for stranded aircraft to get back safely onto the runway. Light in weight, Scobamats are extremely robust and strong, giving even the heaviest jet firm a rollway to get back onto the runway.

APPLICATION:

Emergency taxiway for recovering any aircraft type on soft ground.

Access way for fire engines, defuelling and rescue vehicles
Landing pad for helicopters

SIZE:

Standard size 8 x 3.7 m
(26.4 x 12 ft.)

Supplied in any shape within the standard dimensions

ADVANTAGES:

Easy and reliable in use

Low weight yet withstands the heaviest load

Easy to clean

Stackable for space-saving storage

Can be used in combination with other VETTER systems

SAFETY:

Exceptional compressive strength of 23 kg/mm² (50.7 lbs/sq.in.) (equivalent to 13 metric tons [14.3 US tons] on a DIN A4 sheet [8 x 11 in.]).

Tested by a European materials testing institute

Very pliable

Experienced and reputable supplier

MATERIAL:

Glass-fibre reinforced, studded

OPTIONAL:

Drill holes for screw fastening
special colours

Customized formats for special applications

Special sizes (optional)



TECHNICAL DATA:

Standard size: 8 x 3.7 m
(26.4 x 12 ft.)

Material thickness: 5 mm (0.2 in.)

Compressive strength: 23 kg/mm²
(50.7 lbs/sq.in.)

Weight: 260 kg (573 lbs)

Colour: red