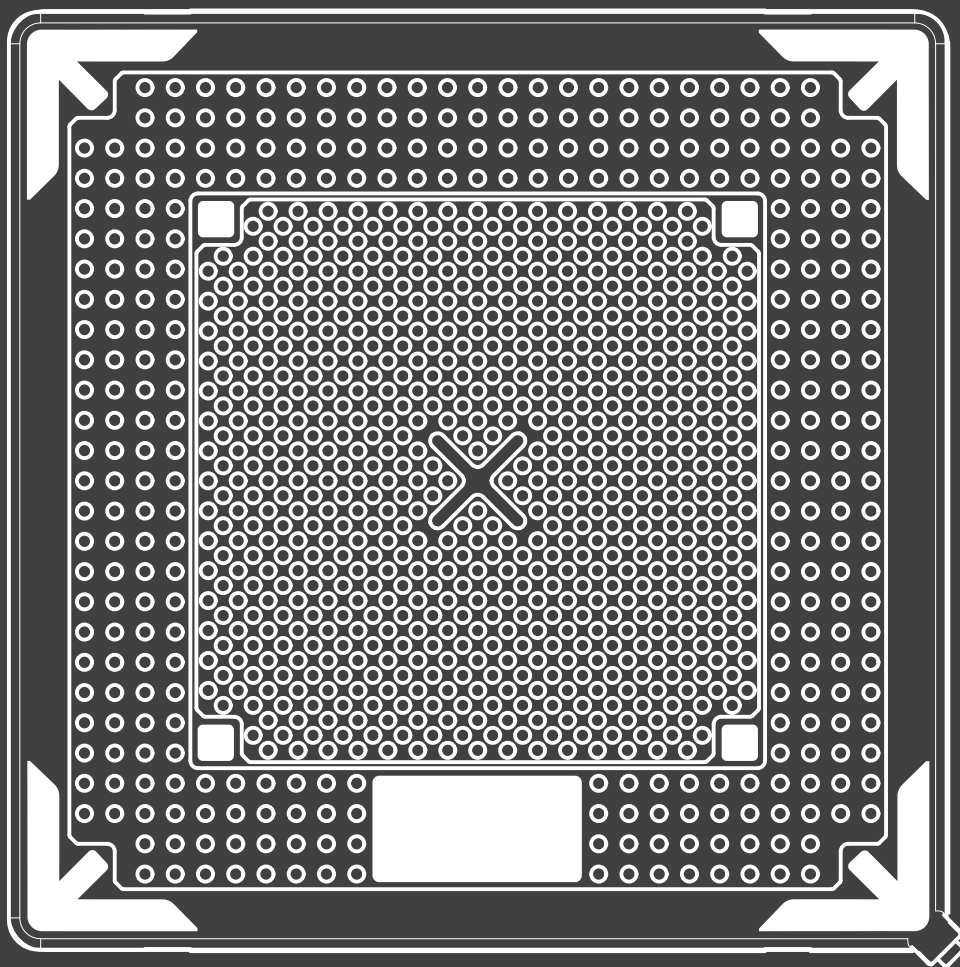


High-Pressure Lifting Bags



MFCInternational
by RESPIREX

ADVANTAGES OF FLAT FORM COMPARED TO CONVENTIONAL BAGS

The principal difference between flat form lifting bags (Stakjaks) and conventional lifting bags (Powermats) is their ease of use. Due to their nearly spherical shape when inflated, Powermats can be unstable and require extensive training to be used safely, especially when stacked (maximum of two bags). Stakjaks, with their flat lifting surface are inherently stable and have predictable lift characteristics, even when up to three bags are stacked on top of each other, so are much easier to use and training is simplified.

STAKJAK

POWERMAT

Pro's

- Highly stable, even when stacked
- Controlled lifting
- Flat surface when inflated
- Training is simplified
- Maintains min lift capacity throughout lift
- Greater lift capacity at max (stacked) height
- Only 25mm/1" thick

- Greater maximum lift height
- Quicker to deploy
- Greater range of sizes
- Only 25mm/1" thick

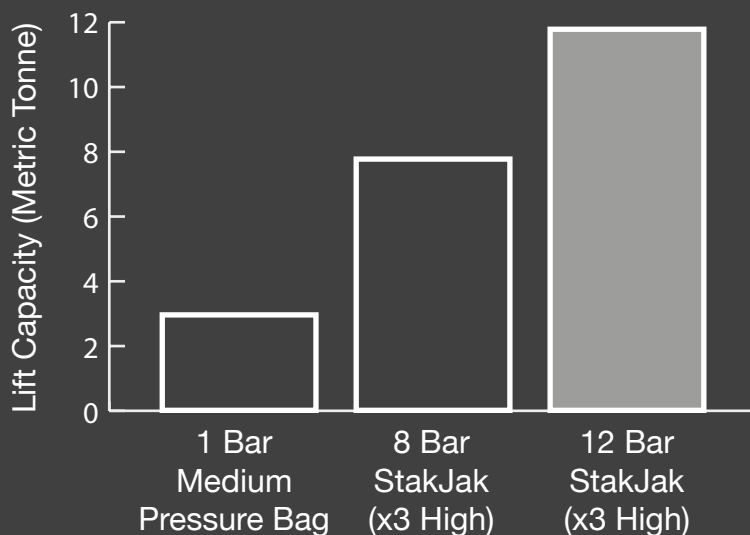
Cons

- Smaller range of sizes
- Take longer to set up

- Oval shape is less stable
- Lift capacity reduces as lift height increases
- Increased training requirements

WHY USE 12 BAR BAGS?

The graph below shows a comparison of a 1 bar medium pressure lifting bag (an MFC AK Bag, 61cm in diameter), with a 62x62cm 8 bar StakJak set and a 62x62cm 12 bar StakJak set. The maximum lifting height of the AK bag is 43cm, and the StakJak lifting height (for a set of 3 bags) is 52.5cm. The 12 bar Stakjak lift capacity is **50%** greater than the 8 bar StakJak, and **290%** greater than the 1 bar AK lifting bag.



STAKJAKS - 8 & 12 BAR



The StakJak high-pressure lifting bag is a revolutionary flat-profile lifting bag for vehicle and heavy duty lifting requirements. The flat profile of the StakJak has several distinct advantages over traditional ovoid lifting bags of which the most significant is the ability to safely stack up to three bags together. This enables a greater lift height without the risk of sudden ejection or instability that is possible when stacking ovoid bags.

In addition, the StakJak high-pressure lifting bags are not subject to the diminishing lift capacity experienced with ovoid mats. Complicated graphs and uncertain lifting heights and capacities do not need to be considered when using a StakJak, as they can lift their full height capacity (3.6 - 45 tonne depending on model) throughout the entire lift.

FEATURES

- Flat profile avoids diminishing lift
- Stack up three bags safely
- Lightweight and compact
- Controlled deflation facility
- Significantly more stable than an ovoid lifting bag
- Versatile - designed for emergency services but also used in industry, mining, railroads, armed forces, and caravan and static unit companies

StakJak lifting bags slim profile allow for use in tight spaces and reduce storage requirements. High pressure lifting bags (also sometimes called lifting mats) are constructed from exceptionally tough Kevlar cord, yet are light enough to be carried by just one person.

StakJak lifting bags can be inflated quickly to provide an instant lift, making them ideal for use in rapid response emergency situations. High pressure lifting bags of this type also have a controlled deflation facility if required, and can be supplied with an optional bleed valve on request.

USED FOR

- Road traffic incidents
- Light aircraft crash
- Rapid response rescue
- Raising submerged vehicles and small craft

COMPLIES WITH

- EN 13731:2007 (independently tested)

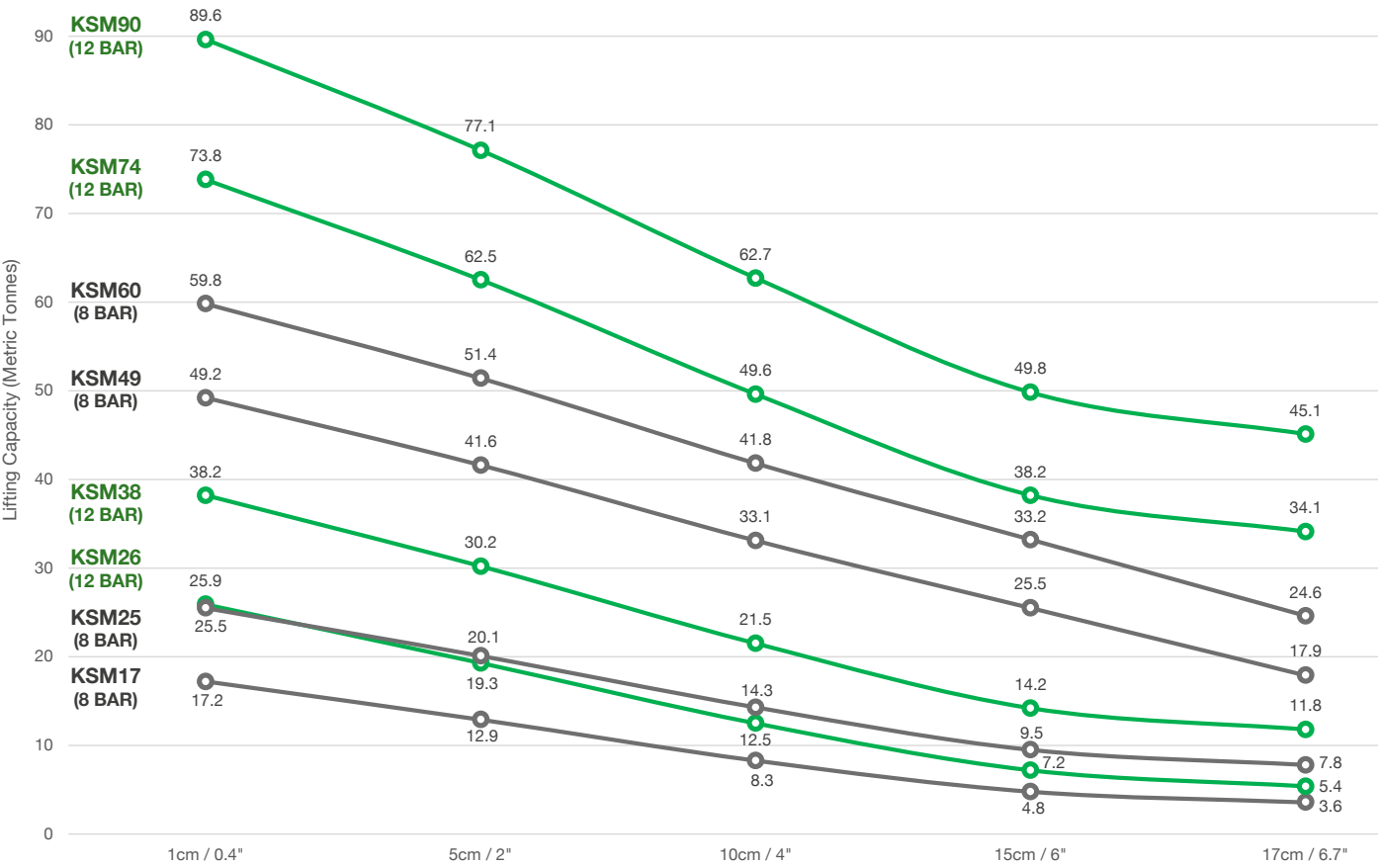
CERTIFIED TO

- NFPA 1936 (12 Bar models only)

STAKJAKS - 8 & 12 BAR

TECHNICAL DATA	KSM17 (8 BAR)	KSM26 (12 BAR)	KSM25 (8 BAR)	KSM38 (12 BAR)	KSM49 (8 BAR)	KSM74 (12 BAR)	KSM60 (8 BAR)	KSM90 (12 BAR)
Product Code	KSM17/08	KSM26/12	KSM25/08	KSM38/12	KSM49/08	KSM74/12	KSM60/08	KSM90/12
Length (cm/Inch)	52 / 20.4"	52 / 20.4"	62 / 24.4"	62 / 24.4"	84 / 33.1"	84 / 33.1"	92 / 36.2"	92 / 36.2"
Width (cm/Inch)	52 / 20.4"	52 / 20.4"	62 / 24.4"	62 / 24.4"	84 / 33.1"	84 / 33.1"	92 / 36.2"	92 / 36.2"
Inflated Height (cm/Inch)	17.5 / 6.9"	17.5 / 6.9"	17.5 / 6.9"	17.5 / 6.9"	17.5 / 6.9"	17.5 / 6.9"	17.5 / 6.9"	17.5 / 6.9"
Deflated Height (cm/Inch)	2.5 / 1"	2.5 / 1"	2.5 / 1"	2.5 / 1"	2.5 / 1"	2.5 / 1"	2.5 / 1"	2.5 / 1"
Packed Size (cm/Inch)	55 x 55 x 4 / 21.7x21.7x1.6"	55 x 55 x 4 / 21.7x21.7x1.6"	65 x 65 x 4 / 25.6x25.6x1.6"	65 x 65 x 4 / 25.6x25.6x1.6"	88 x 88 x 4 / 30.6x30.6x1.6"	88 x 88 x 4 / 30.6x30.6x1.6"	95 x 95 x 4 / 37.4x37.4x1.6"	95 x 95 x 4 / 37.4x37.4x1.6"
Max. Lift Capacity at Min. Lifting Height (tonne/ US ton)	17.2 / 19.0	25.9 / 28.5	25.5 / 28.1	38.2 / 42.1	49.2 / 54.2	73.8 / 81.4	59.8 / 65.9	89.6 / 98.8
Max. Lift Capacity at Max. Lifting Height (tonne/ US ton)	3.6 / 4.0	5.4 / 6.0	7.8 / 8.6	11.8 / 13.0	17.9 / 19.7	34.1 / 37.6	24.6 / 27.1	45.1 / 49.7
Max Flat Area (cm/Inch)	24 x 24 / 9.4 x 9.4"	24 x 24 / 9.4 x 9.4"	34 x 34 / 13.4 x 13.4"	34 x 34 / 13.4 x 13.4"	56 x 56 / 22 x 22"	56 x 56 / 22 x 22"	64 x 64 / 25.2 x 25.2"	64 x 64 / 25.2 x 25.2"
Air Requirements (ltr / ft³)	305 / 10.7	479 / 16.9	465 / 16.4	731 / 25.8	893 / 31.5	1403 / 49.5	1074 / 37.9	1687 / 59.6
Weight (kg / lbs)	8 / 18	8 / 18	12 / 27	12 / 27	20 / 44	20 / 44	23 / 51	23 / 51
Max. Pressure (bar / psi)	8 / 116	12 / 174	8 / 116	12 / 174	8 / 116	12 / 174	8 / 116	12 / 174

LIFTING CAPACITY



Lifting capacity Values in US tons are equivalent to the tonne value x 1.1

POWERMAT - 8 & 12 BAR



The Powermat is a heavy duty, high-pressure lifting bag designed primarily for lifting vehicles and objects in emergency situations. Deflated, the Powermat has a very slim profile making it suitable for use in restricted or awkward spaces and compact to store. Available in 13 standard sizes with maximum lifting capacities from 2 tonne right up to 97 tonne.

Powermats inflate rapidly offering instant lift. The most convenient source of air supply for inflation is a BA cylinder or SCUBA bottle, alternatively a compressor, factory airline supply or a truck air brake supply can be used.

FEATURES

- Slimline profile when deflated making it suitable for use in restricted or awkward places
- Inflates rapidly offering and instant lift
- Have a controlled deflation facility if required
- Large lift capacity and height

Due to their rapid response capability Powermat high-pressure lifting bags are ideally suited to emergency rescue situations, however they are an exceptionally versatile piece of equipment that also has applications in urban search and rescue, industry, mining, railroad construction/maintenance and the armed forces.

USED FOR

- Road traffic incidents
- Light aircraft crash
- Rapid response rescue
- Raising submerged vehicles and small craft

COMPLIES WITH

- EN 13731:2007 (independently tested)

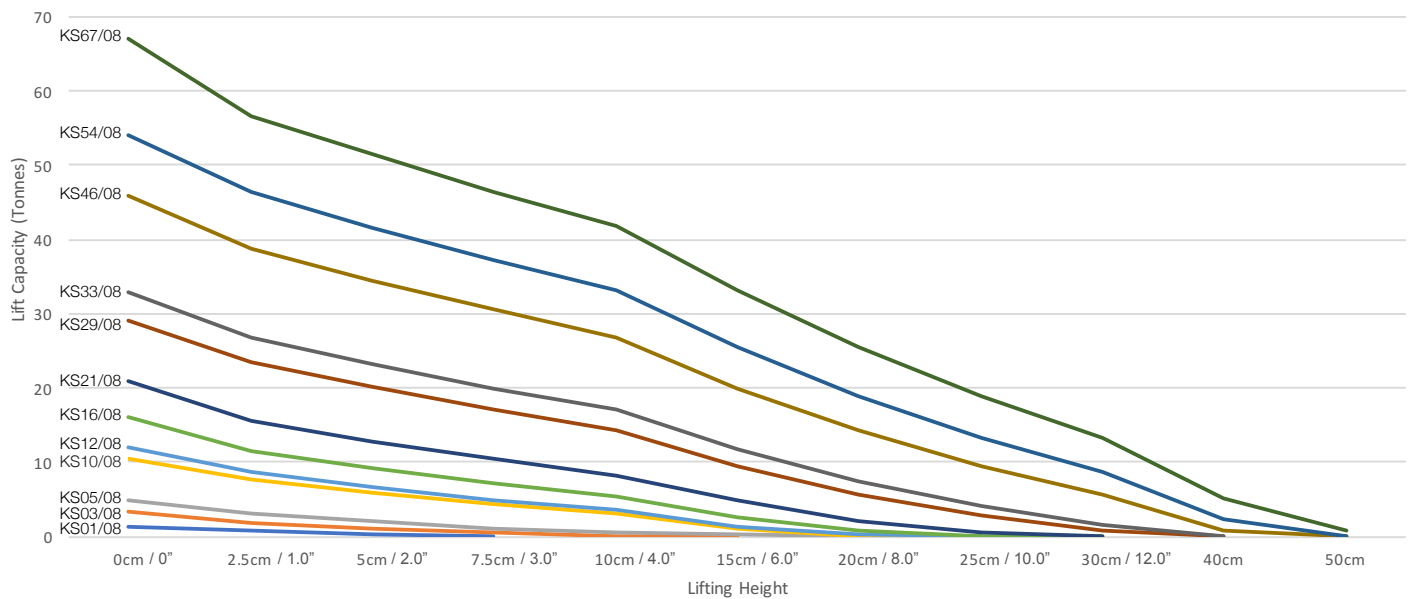
CERTIFIED TO

- NFPA 1936 (12 Bar models only)

POWERMAT - 8 BAR

Technical Data	KS1	KS3	KS5	KS10	KS12	KS16	KS21	KS29	KS33	KS46	KS54	KS67
Product Code	KS01/08	KS03/08	KS05/08	KS10/08	KS12/08	KS16/08	KS21/08	KS29/08	KS33/08	KS46/08	KS54/08	KS67/08
Length (cm / inch)	15 / 5.9"	22.5 / 8.6"	27 / 10.6"	38 / 15.0"	40.8 / 16.1"	46 / 18.1"	52 / 20.4"	62 / 24.4"	65.8 / 25.9"	77.5 / 30.5"	84 / 33.1"	92 / 36.2"
Width (cm / inch)	15 / 5.9"	22.5 / 8.6"	27 / 10.6"	38 / 15.0"	40.8 / 16.1"	46 / 18.1"	52 / 20.4"	62 / 24.4"	65.8 / 25.9"	77.5 / 30.5"	84 / 33.1"	92 / 36.2"
Inflated height (cm / inch)	8 / 3.1"	13 / 5.1"	16 / 6.3"	23 / 9.0"	25 / 9.8"	28 / 11.0"	32 / 12.6"	38 / 15"	41 / 16.1"	48 / 18.9"	52 / 20.5"	57 / 22.4"
Deflated height (cm / inch)	2.5 / 1"	2.5 / 1"	2.5 / 1"	2.5 / 1"	2.5 / 1"	2.5 / 1"	2.5 / 1"	2.5 / 1"	2.5 / 1"	2.5 / 1"	2.5 / 1"	2.5 / 1"
Maximum lift (tonne / US ton)	1.4 / 1.5	3.4 / 3.7	5.0 / 5.5	10.4 / 11.5	12.0 / 13.2	15.5 / 17.1	21.0 / 23.1	28.8 / 31.7	32.6 / 35.9	45.6 / 50.3	53.8 / 59.3	67 / 73.9
Air capacity at 8 bar (ltr / ft ³)	3 / 0.1	12 / 0.4	23 / 0.8	69 / 2.4	89 / 3.1	124 / 4.4	186 / 6.6	311 / 11.0	391 / 13.8	627 / 22.1	797 / 28.1	1051 / 37.1
Weight (kg / lbs)	0.5 / 1.1	1.3 / 2.9	1.8 / 4.0	3.6 / 7.9	4.1 / 9.0	5.1 / 11.2	8.0 / 17.6	12.0 / 27.0	13.5 / 29.8	14.5 / 32.0	20.0 / 44.1	23 / 50.7
Max. Pressure (bar / psi)	8 / 116	8 / 116	8 / 116	8 / 116	8 / 116	8 / 116	8 / 116	8 / 116	8 / 116	8 / 116	8 / 116	8 / 116

LIFTING HEIGHTS

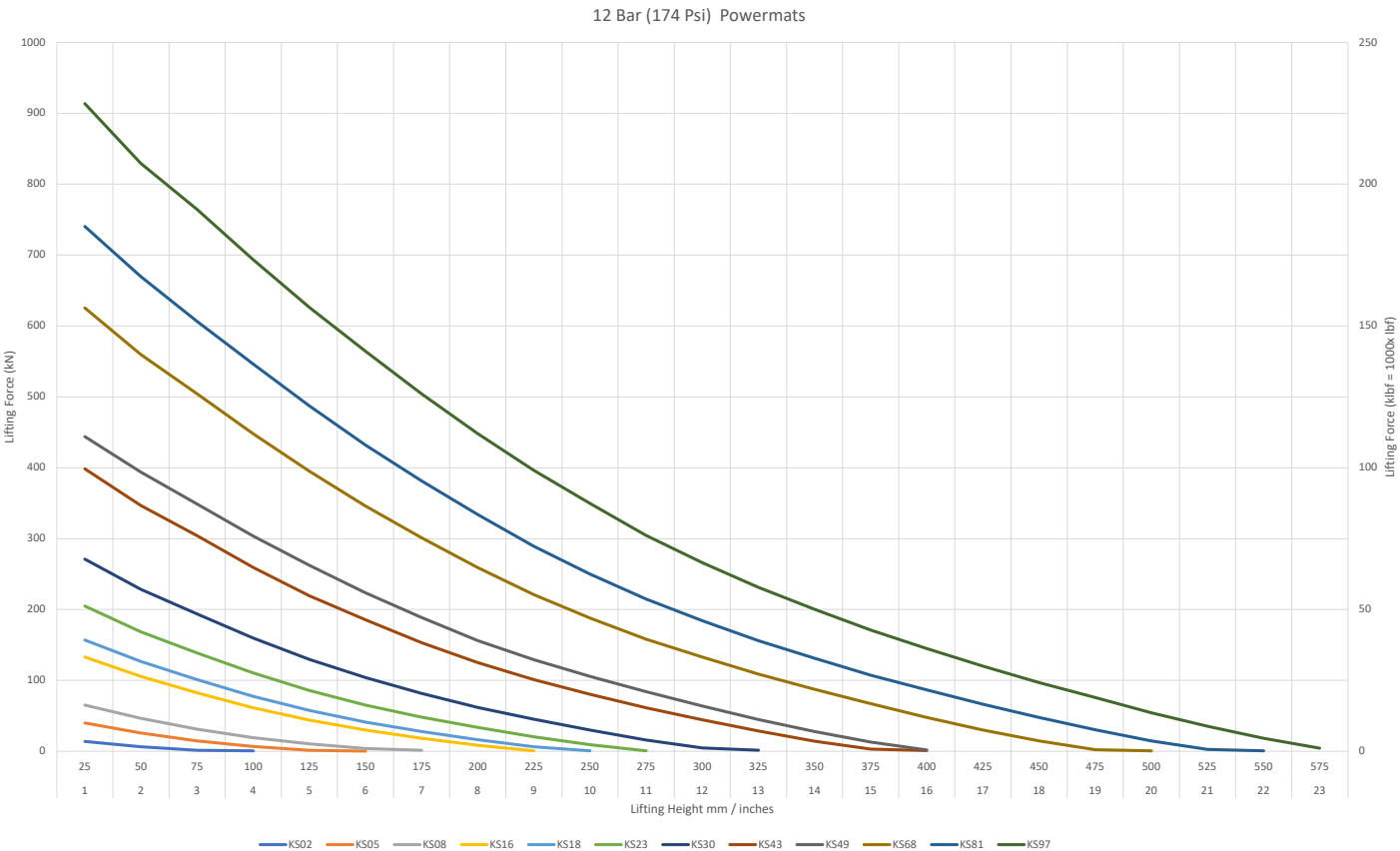


Lifting capacity Values in US tons are equivalent to the tonne value x 1.1

POWERMAT - 12 BAR

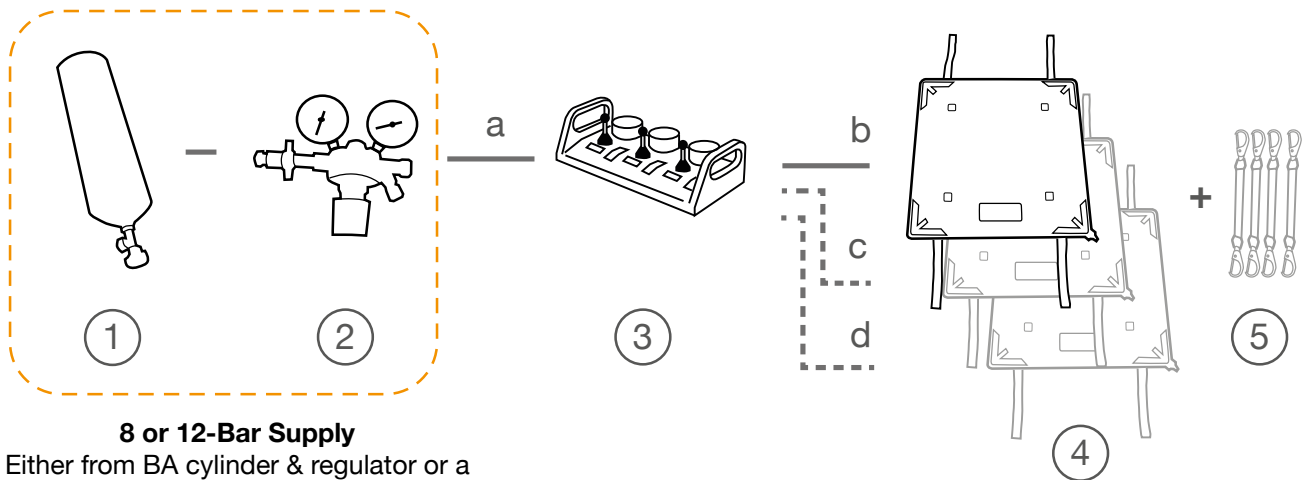
Technical Data	KS2	KS5	KS8	KS16	KS18	KS23	KS30	KS43	KS49	KS68	KS81	KS97
Product Code	KS02/12	KS05/12	KS08/12	KS16/12	KS18/12	KS23/12	KS30/12	KS43/12	KS49/12	KS68/12	KS81/12	KS97/12
Length (cm / inch)	15 / 5.9"	22.5 / 8.6"	27 / 10.6"	38 / 15.0"	40.8 / 16.1"	46 / 18.1"	52 / 20.4"	62 / 24.4"	65.8 / 25.9"	77.5 / 30.5"	84 / 33.1"	92 / 36.2"
Width (cm / inch)	15 / 5.9"	22.5 / 8.6"	27 / 10.6"	38 / 15.0"	40.8 / 16.1"	46 / 18.1"	52 / 20.4"	62 / 24.4"	65.8 / 25.9"	77.5 / 30.5"	84 / 33.1"	92 / 36.2"
Inflated height (cm / inch)	8 / 3.1"	13 / 5.1"	16 / 6.3"	23 / 9.0"	25 / 9.8"	28 / 11.0"	32 / 12.6"	38 / 15"	41 / 16.1"	48 / 18.9"	52 / 20.5"	57 / 22.4"
Deflated height (cm / inch)	2.5 / 1"	2.5 / 1"	2.5 / 1"	2.5 / 1"	2.5 / 1"	2.5 / 1"	2.5 / 1"	2.5 / 1"	2.5 / 1"	2.5 / 1"	2.5 / 1"	2.5 / 1"
Maximum lift (tonne / US ton)	1.4 / 1.5	4.1 / 4.5	6.6 / 7.3	13.6 / 15.0	16.0 / 17.6	20.9 / 23.0	27.6 / 30.4	40.6 / 44.8	45.2 / 49.8	63.8 / 70.3	75.5 / 83.2	93.2 / 102.7
Air capacity at 12 bar (ltr / ft³)	4 / 0.1	18 / 0.6	34 / 1.2	100 / 3.5	128 / 4.5	180 / 6.4	268 / 9.5	449 / 15.8	565 / 20.0	906 / 32.0	1151 / 40.6	1518 / 53.6
Weight (kg / lbs)	0.5 / 1.1	1.3 / 2.9	1.8 / 4.0	3.6 / 7.9	4.1 / 9.0	5.1 / 11.2	8.0 / 17.6	12.0 / 27.0	13.5 / 29.8	14.5 / 32.0	20.0 / 44.1	23 / 50.7
Max. Pressure (bar / psi)	12 / 174	12 / 174	12 / 174	12 / 174	12 / 174	12 / 174	12 / 174	12 / 174	12 / 174	12 / 174	12 / 174	12 / 174

LIFTING HEIGHTS



SYSTEM COMPONENTS

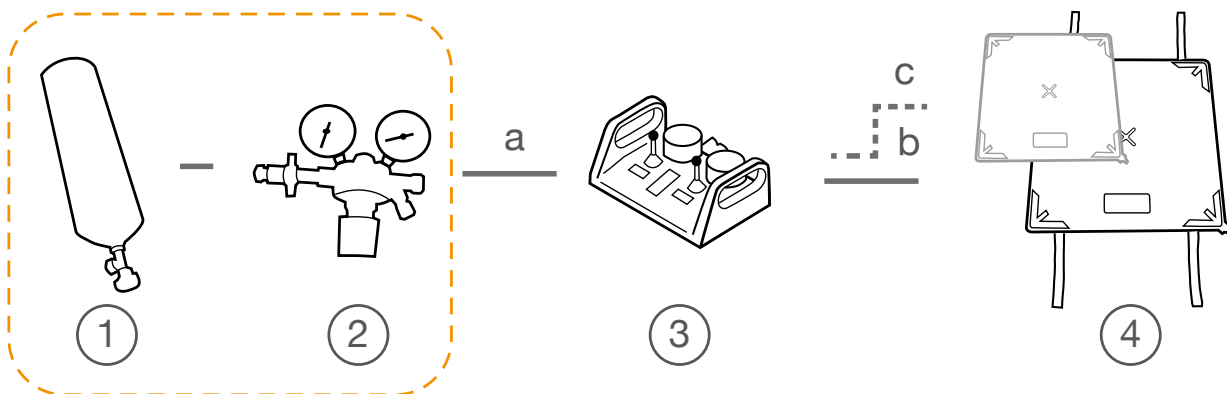
SYSTEM SCHEMATIC - STAKJAK



8 or 12-Bar Supply

Either from BA cylinder & regulator or a compressor set at either 8 or 12 bar

SYSTEM SCHEMATIC - POWERMAT



8 or 12-Bar Supply

Either from BA cylinder & regulator or a compressor set at either 8 or 12 bar

Note: The following sizes of bag do not include carrying/positioning straps due to their smaller size: 15x15cm, 22.5x22.5cm and 27x27cm

SYSTEM KITS

ONE BAG SYSTEM

Required: **1***, **2***, **3** (choose from one bag controllers), **4** (choose size) and hoses **a** and **b**

TWO BAG SYSTEM

Required: **1***, **2***, **3** (choose from two bag controllers), **4** (x2, choose size/sizes), **5** and hoses **a**, **b**, and **c**

THREE BAG SYSTEM

Required: **1***, **2***, **3** (three bag controller), **4** (x3, choose size), **5** and hoses **a**, **b**, **c** and **d**

N.B. Powermats can only be stacked two bags high and the second bag must be smaller than the first (see table above). In Two and Three bags systems where the bags are the same size, the bags can only be used in parallel (i.e. multiple lift points)

* if not using a compressor

Couplings - Please note all codes in this brochure are for our standard couplings. Equipment is available fitted with alternate couplings on request.

SYSTEM COMPONENTS

SYSTEM COMPONENTS

1



BA CYLINDER

- by others

2



REGULATOR (8 & 12 BAR)

Regulators are designed to be used with an air cylinder to reduce the amount of pressure which is leaving the cylinder and entering the inflatable product. The regulator contains an on/off valve which stops the air flowing through the hose.

	REGULATOR 8 BAR	REGULATOR 12 BAR
Product Code (regulator only)	RE0034	RE0039
Max. Pressure Gauge	0-400 / 300 bar	0-400 / 300 bar
Working Gauge	0-16 / 8 bar	0-16 / 12 bar
Max. Inlet Pressure	300 bar	300 bar
Working Pressure	0-8 bar adjustable	0-12 bar adjustable
Outlet Coupling (regulator)	Series 26 Female	Series 26 Male

a



INLET AIR HOSES

Used to connect between regulators and controllers - Type 26 plug coupling at each end

Colour	Length	Int./Ext. Diameter	Maximum Pressure	Product Code
Yellow	2m	8/13mm	20 bar	HS-01-04-02-06-06
	5m	8/13mm	20 bar	HS-01-04-05-06-06
	10m	8/13mm	20 bar	HS-01-04-10-06-06

3

TWO BAGS



THREE BAGS



LIFTING BAG CONTROLLERS (8 & 12 BAR)

MFC's 8 & 12 bar aluminium control units are robust and durable with an impact resistant design. The controller features a pressure sensitive 'deadman' control joystick and a pressure gauge with protective rubber surround for each controlled outlet. The body is made of aluminium with plastic protective handles at either end and models are available for control of one, two or three bags. The controller is supplied as standard with a type 26 socket inlet coupling and Type 25 socket outlet couplings.

TECHNICAL DATA	DOUBLE OUTLET	TRIPLE OUTLET
Product Code (8 bar models)	CO0055	CO0058
Product Code (12 bar models)	CO0091	CO0109
Inlet Coupling	Type 26 Female	Type 26 Female
Outlet Coupling	Series 25 Female	Series 25 Female

SYSTEM COMPONENTS

b

HIGH PRESSURE OUTLET AIR HOSES

Used to connect between controllers and high-pressure lifting bags - fitted with Type 26 plug coupling at one end, with a type 26 socket coupling at the other



Colour	Length	Int./Ext. Diameter	Maximum Pressure	Product Code
Red	2m	8/13mm	20 bar	HS-01-01-02-06-07
	5m	8/13mm	20 bar	HS-01-01-05-06-07
	10m	8/13mm	20 bar	HS-01-01-10-06-07
Green	2m	8/13mm	20 bar	HS-01-02-02-06-07
	5m	8/13mm	20 bar	HS-01-02-05-06-07
	10m	8/13mm	20 bar	HS-01-02-10-06-07
Blue	2m	8/13mm	20 bar	HS-01-03-02-06-07
	5m	8/13mm	20 bar	HS-01-03-05-06-07
	10m	8/13mm	20 bar	HS-01-03-10-06-07
Yellow	2m	8/13mm	20 bar	HS-01-04-02-06-07
	5m	8/13mm	20 bar	HS-01-04-05-06-07
	10m	8/13mm	20 bar	HS-01-04-10-06-07

5



Dual Bag Retaining Straps (set of 4)

RETAINING STRAPS

Retaining straps are used to secure StakJaks to each other when used stacked together, reducing the risk of lateral movement of the bags during a lift.

- Dual bag retaining strap set (SP0068/001)
- Triple bag retaining strap set (SP0068/002)

ACCESSORIES

HP Shut-off Hose (SP0154)



Inserted between the lifting bag (4) and the outlet hose (b, c or d) the 0.5m yellow shut off-hose incorporates a ball valve which allows the operator to keep the lifting bag inflated and disconnect the outlet hose.

NOTE: it is not recommended to leave a lifting bag disconnected & inflated unless the load is supported by chocks

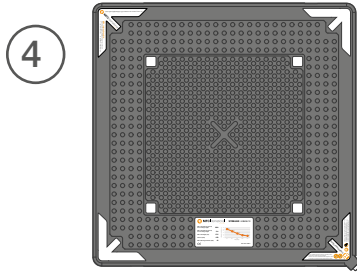
HP Shut-off Valve (010099 12 Bar, TBC 8 Bar)



Inserted between the lifting bag (4) and the outlet hose (b, c or d) the shut off-valve incorporates a ball valve which allows the operator to keep the lifting bag inflated and disconnect the outlet hose, together with a pressure relief valve to vent excess pressure if the load shifts.

NOTE: it is not recommended to leave a lifting bag disconnected & inflated unless the load is supported by chocks

SYSTEM COMPONENTS



STAKJAK LIFTING BAGS

See page 4 for full technical details - Choose between 8 or 12 bar bags and then select the size of bag required

8 BAR STAKJAKS

	KSM17/08	KSM25/08	KSM49/08	KSM60/08
Lift Capacity Max / Min tonne (US ton)	17.2 / 3.6 (19.0 / 4.0)	25.5 / 7.8 (28.1 / 8.6)	49.2 / 17.9 (54.2 / 19.7)	59.8 / 24.6 (65.9 / 27.1)
Size L x W x H cm (inches)	52 x 52 x 2.5 (20.4 x 20.4 x 1")	62 x 62 x 2.5 (24.4 x 24 x 1")	84 x 84 x 2.5 (33.1 x 33.1 x 1")	92 x 92 x 2.5 (36.2 x 36.2 x 1")

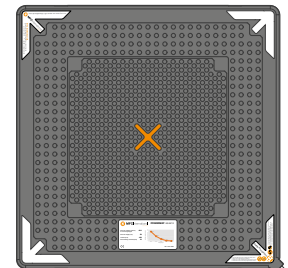
12 BAR STAKJAKS

	KSM26/12	KSM38/12	KSM74/12	KSM90/12
Lift Capacity Max / Min tonne (US ton)	25.9 / 5.4 (28.5 / 6.0)	38.2 / 11.8 (42.1 / 13.0)	73.8 / 34.1 (81.4 / 37.6)	89.6 / 45.1 (98.8 / 49.7)
Size L x W x H cm (inches)	52 x 52 x 2.5 (20.4 x 20.4 x 1")	62 x 62 x 2.5 (24.4 x 24 x 1")	84 x 84 x 2.5 (33.1 x 33.1 x 1")	92 x 92 x 2.5 (36.2 x 36.2 x 1")

POWERMAT LIFTING BAGS

See pages 6 & 7 for full technical details - Choose between 8 or 12 bar bags and then select the size(s) of bag required

8 BAR POWERMATS



Product Code	KS01/08	KS03/08	KS05/08	KS10/08	KS12/08	KS16/08	KS21/08	KS29/08	KS33/08	KS46/08	KS54/08	KS67/08
Length (cm / inch)	15 / 5.9"	22.5 / 8.6"	27 / 10.6"	38 / 15.0"	40.8 / 16.1"	46 / 18.1"	52 / 20.4"	62 / 24.4"	65.8 / 25.9"	77.5 / 30.5"	84 / 33.1"	92 / 36.2"
Inflated height (cm / inch)	8 / 3.1"	13 / 5.1"	16 / 6.3"	23 / 9.0"	25 / 9.8"	28 / 11.0"	32 / 12.6"	38 / 15"	41 / 16.1"	48 / 18.9"	52 / 20.5"	57 / 22.4"
Maximum lift (tonne / US ton)	1.4 / 1.5	3.4 / 3.7	5.0 / 5.5	10.4 / 11.5	12.0 / 13.2	15.5 / 17.1	21.0 / 23.1	28.8 / 31.7	32.6 / 35.9	45.6 / 50.3	53.8 / 59.3	67 / 73.9

Second (Stacked) Powermat - Read down from first bag for second bag code (e.g. KS12/08 & KS05/08)

Note: Total lifting capacity is determined by the smaller bag

Product Code			KS01/08	KS03/08	KS05/08	KS10/08	KS12/08	KS16/08	KS21/08	KS29/08	KS33/08	KS46/08
Maximum lift (tonne / US ton)			1.4 / 1.5	3.4 / 3.7	5.0 / 5.5	10.4 / 11.5	12.0 / 13.2	15.5 / 17.1	21.0 / 23.1	28.8 / 31.7	32.6 / 35.9	45.6 / 50.3

12 BAR POWERMATS

Product Code	KS02/12	KS05/12	KS08/12	KS16/12	KS18/12	KS23/12	KS30/12	KS43/12	KS49/12	KS68/12	KS81/12	KS97/12
Length (cm / inch)	15 / 5.9"	22.5 / 8.6"	27 / 10.6"	38 / 15.0"	40.8 / 16.1"	46 / 18.1"	52 / 20.4"	62 / 24.4"	65.8 / 25.9"	77.5 / 30.5"	84 / 33.1"	92 / 36.2"
Inflated height (cm / inch)	8 / 3.1"	13 / 5.1"	16 / 6.3"	23 / 9.0"	25 / 9.8"	28 / 11.0"	32 / 12.6"	38 / 15"	41 / 16.1"	48 / 18.9"	52 / 20.5"	57 / 22.4"
Maximum lift (tonne / US ton)	1.4 / 1.5	4.1 / 4.5	6.6 / 7.3	13.6 / 15.0	16.0 / 17.6	20.9 / 23.0	27.6 / 30.4	40.6 / 44.8	45.2 / 49.8	63.8 / 70.3	75.5 / 83.2	93.2 / 102.7

Second (Stacked) Powermat - Read down from first bag for second bag code (e.g. KS16/12 & KS05/12)

Note: Total lifting capacity is determined by the smaller bag

Product Code			KS02/12	KS05/12	KS08/12	KS16/12	KS18/12	KS23/12	KS30/12	KS43/12	KS49/12	KS68/12
Maximum lift (tonne / US ton)			1.4 / 1.5	4.1 / 4.5	6.6 / 7.3	13.6 / 15.0	16.0 / 17.6	20.9 / 23.0	27.6 / 30.4	40.6 / 44.8	45.2 / 49.8	63.8 / 70.3



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