Power Team SPX

SPX Hydraulic Technologies
5885 11th Street
Rockford, IL 61109-3699 USA
powerteam.com

Tech Services: +1 800 477 8326
Fax: +1 800 765 8326
Order Entry: +1 800 541 1418
Fax: +1 800 288 7031

Operating instructions for:

IJ13T	**IJ2211T**
IJ45T	**IJ3615T**
IJ66T	**IJ4516T**
IJ119T	**IJ7520T**

INFLATABLE JACKS

⚠ WARNING

These operating instructions must be read and thoroughly understood for the safe commissioning, operation, and maintenance of the IJxxxT Inflatable Jacks. The following procedures must be performed by qualified, trained personnel who are familiar with this equipment. While every attempt has been made to ensure clarity, the intent of this document is to provide basic guidance and it is the responsibility of the end user to review each application thoroughly for suitable usage. Users should utilize sound engineering judgment prior to, and during, product operation. Failure to comply may result in damage, injury, or death.

Form No. 1000606
Rev. 3 June 18, 2014

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Rev. 3 June 18, 2014

DESCRIPTION

- These lightweight, non-skid, reinforced, inflatable jacks are suitable for use in many low-clearance lift applications. These unique jacks are tough enough to lift a truck and thin enough to work into a tight space for use as an inflatable wedge. Deflated jacks are less than 30 mm (1.2 in.) thick — which makes them suitable for maneuvering into difficult positions in horizontal separation and pushing applications. They are also suitable for underwater use.

- To inflate, these jacks only require a pressure 8 bar (116 psi), maximum. They can be inflated with either compressed air, bottled gas, or water. When used under water, always consider their increased buoyancy if inflated with compressed air or bottled gas. Always use a pressure regulator valve when inflating.

- The jacks are rated for use in ambient temperatures of -20° C (-4° F) to +50° C (+122° F).

- Eight lift capacities are available: 1, 3, 5, 11, 22, 36, 45, and 75 US TONS. Also available is a complete line of air hoses and controls.

- The link to the Power Team warrranty website : http://www.spx.com/en/power-team/resources/warranty/

NOTE: Inflatable jacks are constructed from high quality rubber. As such, the inflatable jacks are consumable items where the effective life of the jack is materially affected by the frequency of use as well as the nature and environment of the application where this product is used.

Figure 1. Inflatable Jacks

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SAFETY SYMBOLS AND DEFINITIONS

The safety signal word designates the degree or level of hazard seriousness.

⚠ DANGER : Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING : Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION : Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

Caution : Used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

IMPORTANT: Important is used when action or lack of action can cause equipment failure, either immediate or over a long period of time.

SAFETY PRECAUTIONS

⚠ DANGER

- **In order to take the necessary actions to avoid an accident with or any damage to the Inflatable Jack, Note :**

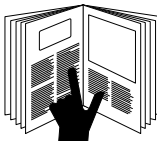
  Before putting an SPX Inflatable Jack into operation, the operator shall analyze the application for all foreseeable risks, their likelihood to occur and the potential consequences of the identified risks as per ISO 31000 and ISO/IEC 31010 in their actual current version.

- **Read and understand these operating instructions. Failure to properly support loads to be lifted, or using insufficient load surfaces, can create a condition where the inflatable jack may burst resulting in death or serious injury.**

⚠ DANGER

- **INSPECT THE CONDITION OF THE INFLATABLE JACK BEFORE EACH USE ACCORDING TO CHECKLIST FORM A, ON PAGE 13.**
- **Do not use the inflatable jack if reinforcing cords are visible.**
- **Do not use the inflatable jack if cracks are visible.**
- **Do not use the inflatable jack if layer/ply separation is visible.**
- **Do not use the inflatable jack if surface abrasion penetrates outer layer of jack.**
- **Do not use the inflatable jack if bulges, bumps, air pockets, dents, or cuts are visible.**
- **Do not use the inflatable jack if the jack has not been pressure tested within the preceding 12 months.**

⚠WARNING



- **The following procedures must be performed by qualified, trained personnel who are familiar with this equipment. Operators must read and understand all safety precautions and operating instructions included with the inflatable jack. If the operator cannot read these instructions, operating instructions and safety precautions must be read and discussed in the operator's native language.**

- **These products are designed for general use in normal environments. These products are not designed for use in special work environments such as: explosive, flammable, or corrosive. Only the user can decide the suitability of this product in these conditions or extreme environments. Power Team will supply information upon request to assist the user in making these decisions. Consult your nearest Power Team facility.**

Safety glasses and hearing protection must be worn at all time by the operator and anyone within sight of the unit. Additional personal protection equipment should include: face shield, goggles, gloves, apron, hard hat and safety shoes.

The owner of this tool must verify that safety-related decals are legible and understood. The jack should be replaced if the safety decals become hard to read.

The OPERATING INSTRUCTION cannot cover every hazard or situation so always do the job with SAFETY FIRST.

The user must be a qualified operator familiar with the correct operation, maintenance, and use of the jack. Lack of knowledge in any of these areas can lead to personal injury.

Jacks

⚠ DANGER

- **Safety is paramount. Never inflate / deflate an inflatable jack in close proximity of the jack. To help prevent personal injury, the operator and any other observers or lift participants must be at a safe distance away from the inflatable jack during inflation or deflation of the jack.**
- **Inspect the jack before each use; do not use the jack if it is damaged, altered, or in poor condition.**

- **Use the jack for designed purposes only - lifting/lowering, horizontal seperation and pushing applications. Always use a pressure regulator valve when inflating.**
- **To help prevent personal injury, do not allow personnel to go under or work on a load before it is properly supported. Use safety stands that firmly support the load before making repairs. All personnel must be clear of the load before lowering.**
- **Use compressed air or water to inflate a jack. NEVER use oxygen or other explosive gases!**

⚠WARNING

- **Do not fully inflate the jack without a load that creates a resistance to the inflation. Inflating the jack without a load resistance is like inflating a balloon. This places undue stress on the fabricationseams and reinforcing structure which can lead to bag failure.**

⚠WARNING When using inflatable jacks,

1. Do not gear near the jack as it is being inflated.

2. Do not place any part of your body under the load being lifted.

3. Do not work near an inflatable jack that is in use by others to lift or push.

4. Notify all others in your work area that you are using an inflatable jack so they may follow the safety precautions outlined in this manual.

⚠ DANGER

If a jack fails during the inflation process or once inflated and lifting/pushing a load, there will be an immediate release of energy. This release of energy can cause parts of the ruptured bag to be dislodged and ejected away from the load, becoming dangerous projectiles that may cause serious property damage, injury or death.

⚠WARNING

- **Do not exceed rated capacities of the jack. Excess pressure may result in personal injury.**

- **Read and understand all safety and warning decals and instructions for devices attached.**
- **Avoid pinch points or crush points that can be created by the load or parts of the jack.**
- **Lift only dead weight / static load. DO NOT LIFT moving or dynamic loads.**
- **Make a "lifting plan and method declaration" before any work is started. The lifting plan may include a definition of the ground surface.**
- **Stabilize the ground surface if it has insufficient load-bearing capacity. The surface must be able to resist a ground pressure of at least 75 N/cm^2 (108 PSI)**
- **To help prevent personal injury, use friction material or constraints to prevent slippage of the base or load**
- **Do not set poorly-balanced or off-center loads on a jack. The load can tip or the jack can slip out from under the load resulting in personal injury**
- **If this device is used to lift or lower loads, be certain that the load is under operator control at all times and all personnel are clear of the load**
- **Do not drop the load**
- **As the load is lifted, use safety stands to properly support the load and to guard against a falling load**
- **To help prevent accidental uncoupling and deflation of a jack, place all system quick couplers in the locked position after joining by rotating the collar on the socket so the collar groove is out of alignment with the collar pin.**
- **Keep the surface of the inflatable jack clean to maximize grip during a lift.**

- **DANGER : Make certain that sharp parts, surfaces or objects cannot penetrate the top or bottom jack surface prior to or during lifting. Use proper protection. Avoid placing the inflatable jack on surfaces that can damage the jack and cause the load to lower or drop unexpectedly. Plywood, steel plates or other suitable material larger than the surface area of the jack in its deflated condition may be placed above and/or below the jack to protect the jack from damage during the lift. See Figure 2.**

- **Follow any load being lifted with the appropriate safety stands to support the load. Only use safety stands that will not slip.**

- **WARNING The textured surface of the inflatable jack provides resistance to slippage of jack during lift and MUST ALWAYS be checked for damage prior to and during each lift. However, the textured surface MUST NOT be relied on for stability. Sound engineering judgement concerning use of friction material or physical constraints should be used to assist with stability and should be covered in the "lifting plan".**

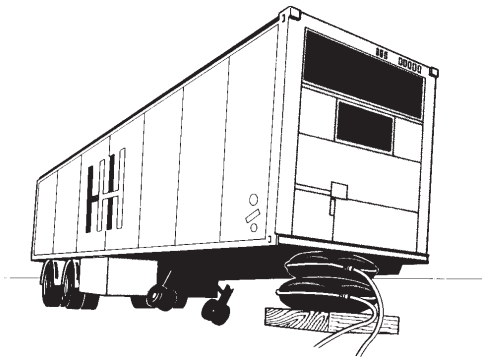


Figure 2. Stacking Inflatable Jacks

DANGER

- **See Figure 2. For control and stability of the load when stacking inflatable jacks, always inflate the lower jack first. Then inflate both jacks evenly until contact is made with the load.**

- **Make certain that sharp parts, rough pointed surfaces or objects cannot penetrate the top or bottom jack surface prior to or during lifting. Use proper protection. See Figure 3.**

Figure 3

- **Never stack more than two inflatable jacks together. NOTE: If two stacked jacks have different load ratings, always place the jack with the highest load rating on the bottom.**
- **Never expose inflatable jacks to temperatures below -20°C (-4°F) or above 50°C (122°F).**
- **Always use a pressure regulator to control inlet pressure to 8 bar (116 psi) or less, to help prevent overinflating the jack. Never exceed the maximum operating pressure or maximum recommended height of an inflatable jack.**

IMPORTANT:

- **Keep the jack clean at all times.**

INITIAL SETUP

1. **Remove all packing materials from the assembled unit**
2. **Inspect the unit upon arrival. The carrier, not the manufacturer, is responsible for any damage resulting from shipment.**

Air delivery and regulation

Several systems can be set up to deliver and regulate the air supply to the inflatable jack. It is recommended a "dead man" switch be used to prevent unwanted inflation or deflation of the jack. If the air source needs to be disconnected from the jack while in use, install a shut-off hose with a shut-off valve, between the jack and the switch.Verify setup is working properly before using jack to lift a load. See Figures 4 and 5.

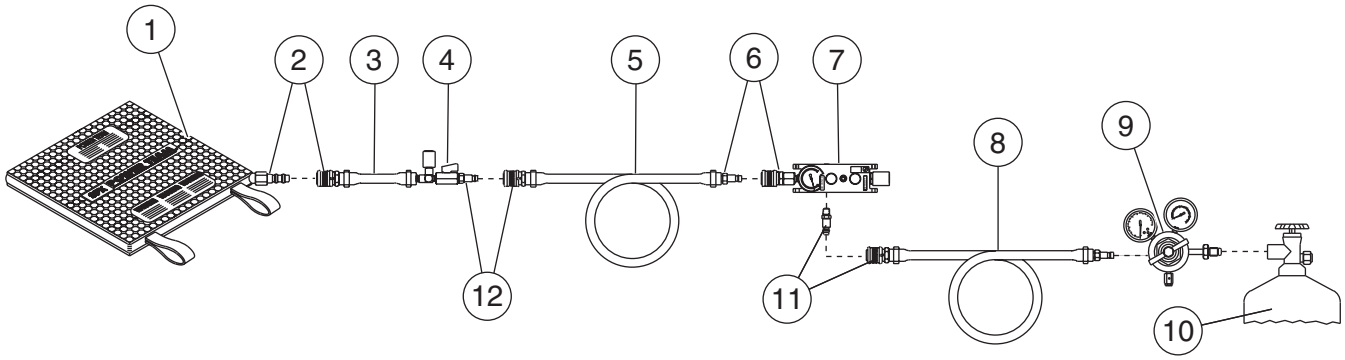
OPERATING INSTRUCTIONS

Inspection

BEFORE EACH USE, VISUALLY INSPECT THE INFLATABLE JACK AS OUTLINED IN THE INSPECTION CHECKLIST FORM A, PAGE 12.

NOTE: Review all safety precautions prior to using a jack.

Note: Power Team inflatable jacks are suitable for use in ambient temperatures of -20°C (-4°F) to



Item	Description	Item	Description
1	Inflatable Jack	7	Air Control Valve with Dead Man Control
2	Quick Couplers	8	Air Hose (Color Coded)
3	Hose	9	Pressure Regulator Valve
4	Shut Off Valve with Pressure Relief Valve	10	Compressed Gas Bottle
5	Air Hose (Color Coded)	11	Quick Couplers
6	Quick Couplers	12	Quick Couplers

Figure 4. Single Line System

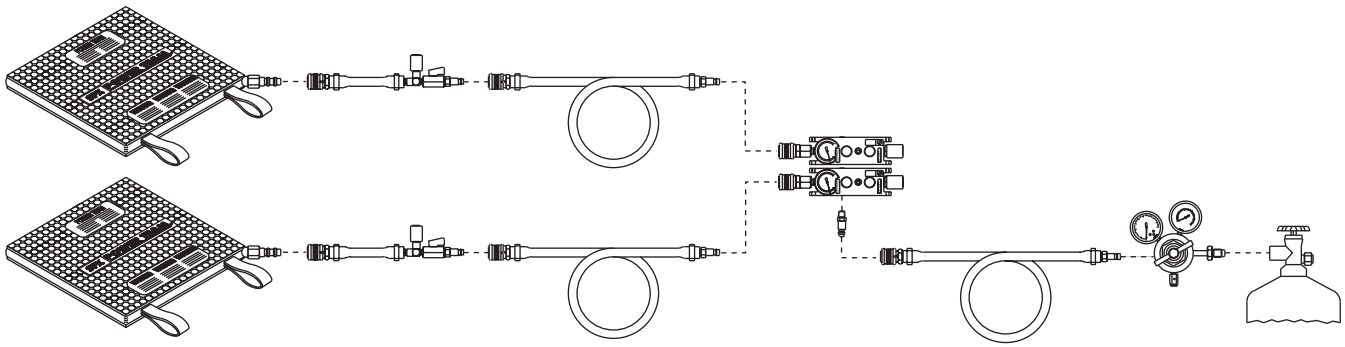


Figure 5. Dual Line System

50°C (122°F). Protect jacks from coming into contact with oil, chemicals, corrosive liquids and gases, and sharp or pointed objects.

1. **Set the pressure regulator valve at 0 psi.**
2. **Connect the pressure regulator to the pressure source.**
3. **Connect the hand control valve to the pressure regulator.**

Note: The hand control valve is a "dead man" type valve, which will remain off until the ADVANCE or RETRACT switch is pressed.

4. **Connect the inflatable jack to the hand control valve, locking the quick coupler collar to help prevent possible accidental uncoupling.**

Note: If the pressure source will be intentionally disconnected from the inflatable jack while the load is being supported, install a shut-off hose assembly between the jack and the hand control valve.

5. **Open the shut-off valve.**
6. **Adjust the pressure regulator output pressure to 8 bar(116 psi) or less.**
7. **To lift the load, depress and hold the ADVANCE switch on the hand control valve to inflate the jack. If it is necessary to disconnect the jack from the pressure source, close the valve on the shut-off hose. Bleed pressure from the system at the control valve before disconnecting the jack.**
8. **To lower the load, slowly release the pressure from the system by depressing and holding the RETRACT switch on the hand control valve until the jack is completely deflated.**

Note: If a shut-off hose is installed, the valve on the shut-off hose needs to be opened before the jack can be deflated.

9. **To disconnect the system, release the system pressure to very near 0 psi by depressing the RETRACT switch on the hand control valve. The system can then be disconnected at any point between the pressure regulator and the inflatable jack.**

See Figure 4. Single jack controller with a dead-man control can be used individually

See Figure 5. Or in multiples to regulate any number of jacks desired.

PRELIMINARY LIFTING CAPACITY DATA

Model	Approximate Size (mm)	Approximate Size (inch)	Approximate Weight(Kg)	Approximate Weight(lb)	Lift Height (mm)	Lift Height (inch)	MAX. Lift capacity (kN)	MAX. Lift capacity (lbs)	Short Tons	Metric Tonnes
IJ13T	160X160X22	6.3X6.3X0.9	0.6	1.3	80	3.1	10	2,248	1.1	1
IJ45T	238X238X22	9.4X9.4X0.9	1.5	3.3	130	5.1	32	7,194	3.3	3
IJ66T	280X280X22	11X11X0.9	2	4.4	150	5.9	50	11,240	5.5	5
IJ119T	390X390X25	15.4X15.4X1	4	8.8	215	8.5	100	22,480	11.0	10
IJ2211T	518X518X25	20.4X20.4X1	7	15.4	290	11.4	200	44,960	22.0	20
IJ3615T	668X668X25	26.3X26.3X1	13	28.6	380	15	320	71,936	36	32
IJ4516T	718X718X25	28.3X28.3X1	15	33.0	405	15.9	400	89,920	45	40
IJ7520T	918X918X25	36.1X36.1X1	24	52.9	520	20.5	670	150,616	75.3	67

GENERAL MAINTENANCE

- **⚠WARNING**
- **Repairs and maintenance are to be performed in a dust-free area by a qualified technician.**

Inspection

Keep a signed and dated copy of the equipment inspection record (Form A), located on page 13. Before each use, the operator or other designated personnel should visually inspect for the following conditions:

- **Cracked or damaged housing.**
- **Excessive wear, bending, damage, or insufficient thread engagement.**
- **Leaking air lines.**
- **Loose hardware.**
- **Reinforcing cords are visible.**

Periodic Cleaning

Establish a routine to keep the system as free from debris as possible.

- **Inspect the equipment after each use.**
- **Keep all couplers and valves clean. The coupler should never carry any load.**
- **Keep the surface of the inflatable jack clean to ensure the jack will have a sufficient grip during a lift. Use cold water with a mild soap, as necessary, for cleaning.**
- **Check all hoses, valves, and gauges periodically. Repair and replace when necessary.**

Storage

Store the unit in a dry, well-protected ozone-free area where it will not be exposed to sunlight, corrosive vapors, dust, or other harmful elements. Store the inflatable jack following the guidelines set forth in ISO standard 2230(latest revision). If a unit has been stored for an extended period of time, it must be thoroughly inspected and tested before it is used. (See inspection checklist Form A, on page 13).

FORM A

Inspection Checklist - IJxxxT Series Inflatable Jacks

VISUAL INSPECTION (PERFORM BEFORE AND AFTER EVERY USE)

- ☐ **You have read the operating instructions and understand the safe and proper use, care and handling of the inflatable jacks.**
- ☐ **No evidence of cracks on inflatable jack surfaces or around inflation fitting/nipple.**
- ☐ **Inflation fitting/nipple is free of damage and contamination (dirt, grit, chemicals, etc.).**
- ☐ **No reinforcement cords are visible on surfaces of inflatable jack.**
- ☐ **No bulges, bumps, air pockets, split seams, dents, or cuts are visible on surfaces of inflatable jack.**
- ☐ **No visible evidence of ply or layer separation of inflatable jack surfaces.**
- ☐ **No evidence of surface abrasion that penetrates outer layer of inflatable jack.**
- ☐ **Inflatable jack, before inflation, maintains its shape and lies flat without distortion, bends,or wrinkles.**

PRESSURE TEST (AT A MINIMUM, PERFORM THE TEST SEQUENCE ANNUALLY - OR BEFORE USE IF INFLATABLE JACK CONDITION IS IN QUESTION).

- ☐ **Pressurize inflatable jack to 0.5 bar (7 psi) using water. Hold for 10 minutes. Inflatable jack must not exhibit any leakage from jack or fitting. If evidence of leakage is found, or if reinforcing cords are visible, DISCARD and REPLACE.**
- ☐ **If no visible leakage/damage is found, increase pressure to 4.0 bar (58 psi) and repeat the visual inspection. If evidence of leakage is found, or if reinforcing cords are visible, DISCARD and REPLACE the inflatable jack.**
- ☐ **If no visible leakage/damage is found, increase pressure to 8.0 bar (116 psi) and repeat the visual inspection. If evidence of leakage is found, or if reinforcing cords are visible, DISCARD and REPLACE the inflatable jack.**
- ☐ **After the pressure test has been completed and the water has been safely removed from the inflatable jack, , inspect the surface of the inflatable jack for layer/ply separation. If evidence of separation is found, DISCARD and REPLACE the inflatable jack.**
- ☐ **Inflatable jack passes inflation and inspection requirements. Place inflatable jack back into service.**

Inspected by:_____

Date:_____

Power Team Facilities

Rockford, Illinois USA
Customer Service/Order Entry
Tel: +1 800 541 1418
Fax: +1 800 288 7031

Technical Services
Tel: + 1 800 477 8326
Fax: + 1 800 765 8326
info@powerteam.com

European Headquarters
Tel: +31 45 567 8877
Fax: +31 45 567 8878
infoeurope@powerteam.com

Shanghai, China
Tel: +86 21 2208 5888
Fax: +86 21 2208 5682
infochina@powerteam.com

Asia Pacific Headquarters
Tel: +65 6265 3343
Fax: +65 6265 6646
infoasia@powerteam.com

EC DECLARATION OF CONFORMITY

We declare that our Inflatable Jacks Model:

IJ13T, IJ45T, IJ66T, IJ119T, IJ2211T, IJ3615T, IJ4516T, IJ7520T

to which this declaration relates are in conformity with the following:

EN, EN-ISO, ISO standards Per the provisions of the Machinery Safety Directive	Title 2006/42 EC
EN_ISO 12100-1	Basic concepts, general principles for design - Part 1 Basic terminology, methodology
EN_ISO 12100-2	Basic concepts, general principles for design - Part 2 Technical Principles
EN ISO 14121-1:2007	Safety of machinery - Risk assessment - Part 1 Technical principles
EN 4414:2010	Pneumatic Fluid Power – general rules and safety requirements for systems & their components
EN 292-2-91	Safety of machinery. Basic concepts, general principles for design. Technical principles and specifications

We, the undersigned, hereby declare that the equipment specified conforms to the above European Communities Directive(s) and Standard(s).

SPX Hydraulic Technologies
5885 11th Street
Rockford, IL 61109-3699
United States of America

The Netherlands June 08, 2013

SPX Hydraulic Technologies
Christophe Bouvet
Andreas J. Klemm
SPX Hydraulic Technologies
Albert Thijsstraat 12
NL-6471 WX Eygelshoven
The Netherlands

Christophe Bouvet, Managing Director

Andreas J. Klemm, Appl.Eng. Manager

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