



SAFETY INSTRUCTIONS

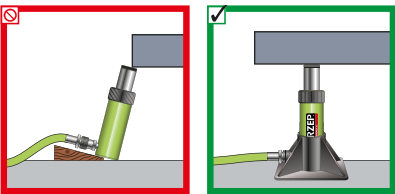
When used correctly, hydraulic power is one of the safest methods of applying force to your work. To that end we offer some **DO's and DON'Ts**, simple common sense points which apply to practically all Larzep hydraulic products.

The illustrations and application photos of Larzep products throughout this catalogue are used to portray how some of our customers have used hydraulics in industry. In designing similar systems, care must be taken to select the proper components that provide safe operation and fit your needs.

Check to see if all safety measures have been adopted to avoid the risk of injury and property damage from your application or system. Larzep cannot be held responsible for damage or injury caused by unsafe use, maintenance or application of its products. Please contact the Larzep office or a representative for guidance when you are in doubt as to the proper safety precautions to be taken in designing and setting up your particular system.

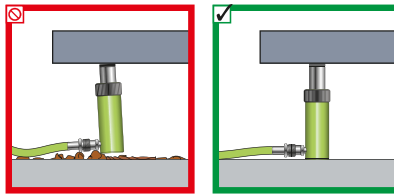
In addition to these tips, every Larzep product comes with specific safety information and instructions. **Please read them carefully.**

CYLINDERS



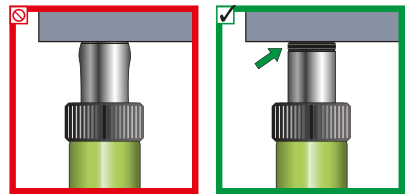
Provide a solid support for the entire cylinder base area. Use cylinder base attachment for more stability.

CYLINDERS



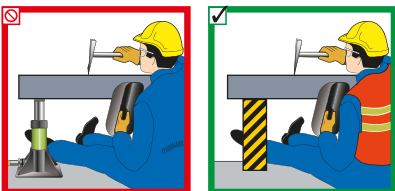
The entire cylinder saddle must be in contact with the load. Movement of the cylinder must be parallel with the movement of the load.

CYLINDERS



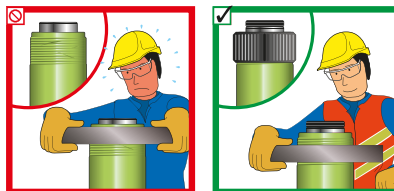
Do not use cylinder without saddle. This will cause plunger to "mushroom". Saddles distribute load evenly on the plunger.

CYLINDERS



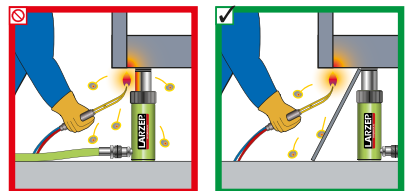
Never place any part of your body under the load. Load must be on cribbing before venturing under.

CYLINDERS



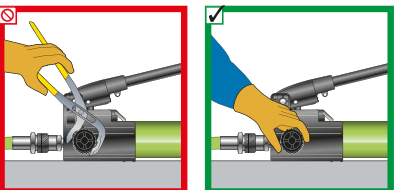
Always protect cylinder threads for use with attachments.

CYLINDERS



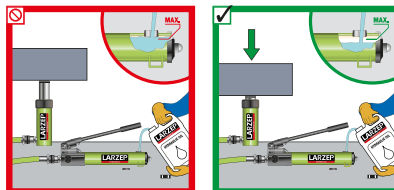
Keep hydraulic equipment away from open fire and temperatures above 65 °C.

PUMPS



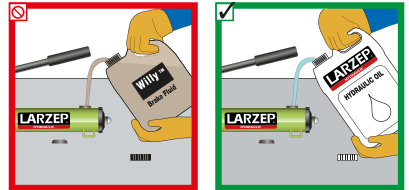
Close release valve hand tight. Using tools will ruin the valve.

PUMPS



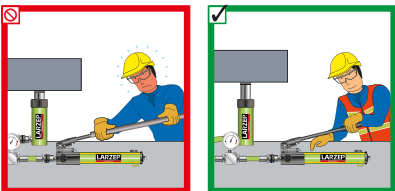
Fill pump only to recommended level. Fill only when connected cylinder is fully retracted.

PUMPS



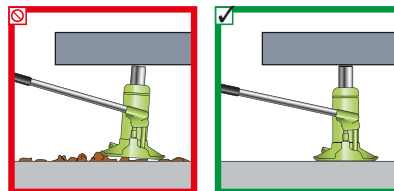
Always use genuine Larzep hydraulic oil.

PUMPS



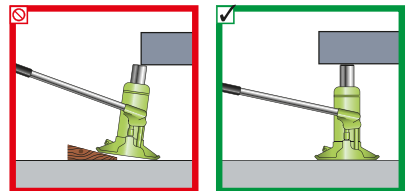
Don't use handle extenders. Hand pumps should be easy to operate when used correctly.

JACKS



Provide a leveled and solid support for the entire jack base area.

JACKS



The entire jack saddle must be in contact with the load. Movement of the load must be in the same direction as jack plunger.

SAFETY

For your application, choose the most suitable model from the wide range available, and make sure that it will not exceed 80% of its nominal capacity and stroke during normal operation.

The correct union of a pump to a cylinder via a hydraulic hose constitutes a machine designed for lifting, pulling, folding and retaining operations, etc., that, due to its high thrust capacity requires safe use in order to avoid accident risk.

Use protective goggles for eye protection. Use safety shoes for feet protection. Use protective gloves for hand protection.

Do not modify the device (welded parts, lengthening drive levers, etc.).

Do not use the hoses for transporting the device. Use the handles on the cylinders (when appropriate) and set the pump lever to the transport position.

When filling the pump with oil, use always LARZEP hydraulic oil. Fill only to the indicated level and remember that the cylinder piston should be retracted.

Before using a pump from other manufacturer, contact LARZEP's Technical Department. Otherwise, LARZEP will not be liable for any damage that may arise.

Before starting operation, check that the installation is correct, the operator position is safe and the working zone is out of bounds to all personnel.

In all cases, the operator should have received adequate training regarding the handling of the device and logical safety criteria associated with the movement of heavy loads.

Never exceed the maximum working pressure of the cylinder. Ensure that all the equipment and accessories are suitable for the maximum working pressure.



Always read the safety instructions.



JACKS

Remove the jack handle when it is not being used.

JACKS

Never place any part of your body under the load. Ensure the load is on a solid support before venturing under.

Always read instructions and safety warnings that come with your Larzep hydraulic equipment.

HOSES AND COUPLERS

Clean both coupler parts before connecting. Use dust caps when coupler parts are not connected.

HOSES AND COUPLERS

Keep hoses away from the area beneath loads.

HOSES AND COUPLERS

Don't lift hydraulic equipment by the hoses.

HOSES AND COUPLERS

Detach cylinder only when fully retracted or use shut-off valves or safety valves to lock cylinder pressure.

HOSES AND COUPLERS

Don't kink hoses. Bending radius should be at least 80 mm. Don't drive over or drop heavy objects on hoses.

HOSES AND COUPLERS

Never allow the cylinder to be lifted off of the ground through the couplers.



CYLINDER SELECTION

In order to select the right cylinder according to your needs, please answer these questions:

- Total load to lift: _____ tonne / kg
- Number of cylinders required: _____
- Stroke required: _____ millimetres
- Closed height required: _____ millimetres
- Single or Double acting cylinder: _____
- Hollow or Solid piston: _____
- Spring or Load return: _____
- Push or Pull application: _____
- Lock nut is required? _____
- Tilting saddle is required? _____
- Threads, Attachments, are required? _____
- Special treatment is required? _____



ATTENTION: DO NOT EXCEED THE 80% OF THE NOMINAL CAPACITY AND STROKE OF THE CYLINDER



Taking into account all the above, we will show you all the different options you can use. To choose the Cylinder required, keep in mind the type of application.

Our internal sales department can advice, help you with the right choice of cylinders, specific to your project.

Visit our website www.larzep.com and find the applications of each type of cylinder.

SELECTION TABLES

PUMP SELECTION

In order to select the right pump according to your needs, please answer these questions:

HAND PUMPS

Single or Double acting: _____

Number of cylinders required: _____

Cylinder capacity: _____ tonne

Cylinder stroke: _____ millimetres

Total hose length: _____ metres



POWERPACKS

Single or Double acting: _____

Number of cylinders required: _____

Cylinder capacity: _____ tonne

Cylinder stroke: _____ millimetres

Total hose length: _____ metres

Manual or Solenoid valve: _____

Load holding is required? _____

Single or Three phase: _____

Voltage: _____ V

Frequency: _____ Hz

Remote pendant (for HBM) is required? _____

Roll bar, Wheel kit, Heat exchanger, Pedal or Pressure gauge are required? _____

1. Select the right cylinder, keeping in mind the recommended use of **80%** of its nominal rating of both, load and stroke.
2. Select the pump according to the oil volume and the number of cylinders in operation.

Use the table below as guideline. It is supposed the used of only one cylinder. For several cylinders, add oil capacities.

Capacity	Stroke (mm)												
	25	50	75	100	125	150	175	200	225	250	300	325	350
Tn													
5	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Blue	Red	Red	Red	Red
10	Blue	Blue	Blue	Blue	Blue	Red	Red	Red	Red	Red	Red	Green	Green
15	Blue	Blue	Red	Red	Red	Red	Red	Red	Red	Red	Green	Green	Green
23	Red	Red	Red	Red	Red	Red	Red	Green	Green	Green	Green	Yellow	Yellow
30	Red	Red	Red	Red	Green	Green	Green	Green	Green	Yellow	Yellow	Yellow	Yellow
50	Red	Red	Green	Green	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Blue	Blue	Blue
75	Red	Green	Green	Yellow	Yellow	Yellow	Yellow	Blue	Blue	Blue	Blue	Blue	Blue
100	Red	Green	Green	Yellow	Yellow	Yellow	Blue	Blue	Blue	Blue	Blue	Purple	Purple
140	Green	Yellow	Yellow	Blue	Blue	Blue	Blue	Purple	Purple	Purple	Purple	Purple	Pink
220	Green	Yellow	Blue	Blue	Blue	Purple	Purple	Purple	Purple	Pink	Pink	Pink	Pink

- Blue: Single Acting W00307 / Double Acting X22307
- Red: Single Acting W10707 - W20707 / Double Acting X22307
- Green: Single Acting W11207 - W21207 / Double Acting X22307
- Yellow: Single Acting W22307 / Double Acting X22307
- Light Blue: Single Acting W24307 / Double Acting X24307
- Purple: Single Acting W07807 / Double Acting X07807
- Pink: Single Acting HBM, HBE, HAG, HAZ / Double Acting HBM, HBE, HAG, HAZ

NOTE: Add 35cc of oil per metre of hose used when the internal diameter of the hose is 6,4 mm.

Visit our website www.larzep.com for the online Cylinder or Pump Selection application.



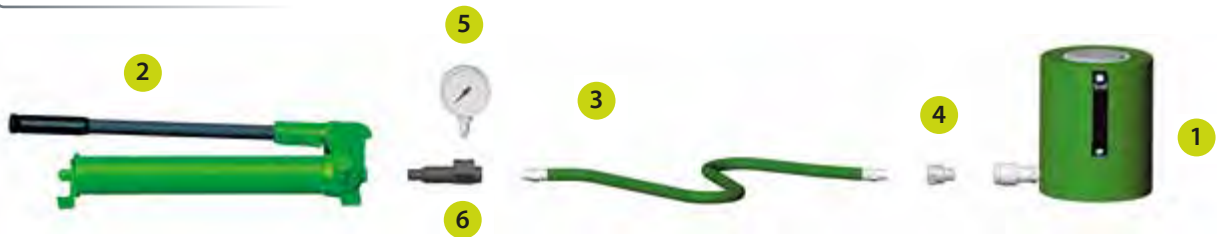
SINGLE ACTING ASSEMBLIES

- 1 Cylinder
- 2 Pump / Powerpack
- 3 Hose
- 4 Male Coupler
- 5 Pressure Gauge
- 6 Gauge Adaptor
- 7 Flow Regulating Valve
- 8 Check Valve
- 9 Female Coupler
- 10 Snubber Valve
- 11 Pilot Operated Check Valve
- 12 Tee
- 13 Split-Flow
- 14 Stroke Transducer
- * Optional
- + Female coupler included in the cylinder

BASIC SYSTEM SETUP



COMPLETE SYSTEM



COMPLETE SYSTEM WITH SEVERAL CYLINDERS

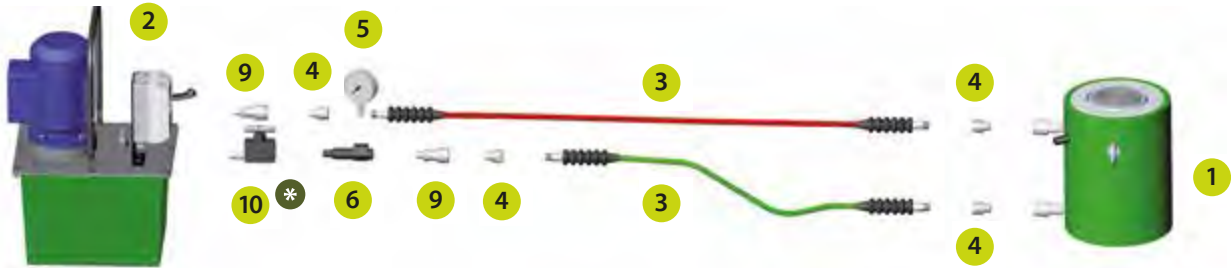


SYSTEM ASSEMBLIES

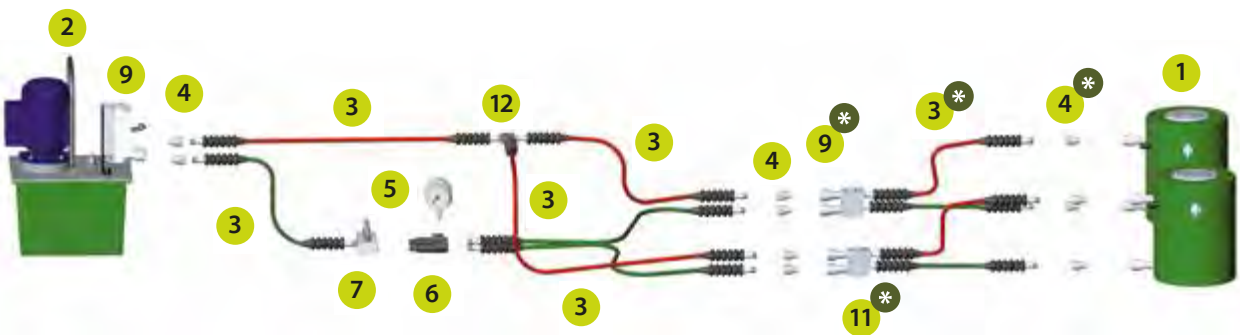
ASSEMBLIES

DOUBLE ACTING ASSEMBLIES

BASIC SYSTEM



COMPLETE SYSTEM WITH SEVERAL CYLINDERS



COMPLETE SYSTEM WITH SPLIT-FLOW PUMP

