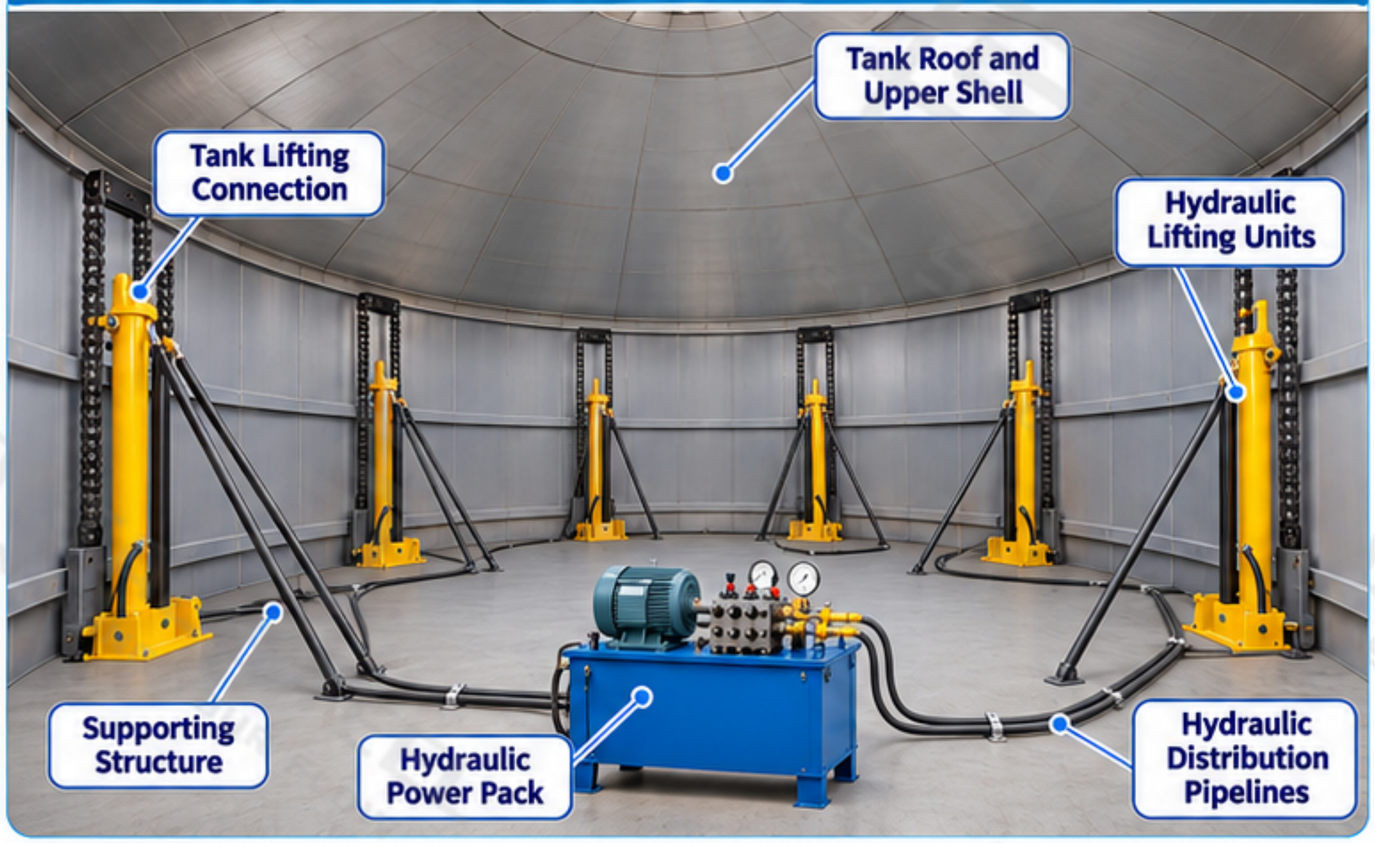
TANK JACKING SYSTEM TECHNICAL CONFIGURATION GUIDE

SYSTEM CONFIGURATION OVERVIEW

01 SYSTEM CONFIGURATION OVERVIEW

A complete Tank Jacking System consists of hydraulic lifting units, mechanical load-transfer components, supporting structures, a hydraulic power pack and oil distribution pipelines. These components work together to raise the assembled tank roof and upper shell during inverted tank erection. The overall configuration is determined by tank diameter, calculated lifting load at each construction stage, selected lifting mechanism, tank-side connections and hydraulic control arrangement.

SYSTEM CONFIGURATION OVERVIEW



SYSTEM COMPONENTS

System Component	Configuration
Hydraulic Lifting Units	LYT chain-type or SQD chuck-type lifting units
Mechanical Load Transfer	Load-bearing chains and pulley assemblies / Steel lifting rods and chucks
Tank Lifting Connection	Expansion ring or designated lifting attachments
Supporting Structure	Jack support frames and designated load-bearing structures
Hydraulic Power Pack	YB series for LYT / YH series for SQD
Hydraulic Distribution	Main supply, return, ring and branch pipelines

MECHANICAL CONFIGURATION DIFFERENCES

Configuration	LYT Chain-Type	SQD Chuck-Type
Lifting Member	Load-bearing chain	Steel lifting rod
Force Transfer	Movable pulley assembly	Alternating upper and lower chucks
Tank Connection	Expansion ring or lifting attachment	Supporting lifting structure
Load Holding	Hydraulic locking arrangement	Lower chuck engagement

LYT chain assemblies and SQD lifting rods and chucks are system-specific components and are not interchangeable.

TANK JACKING SYSTEM TECHNICAL CONFIGURATION GUIDE

TANK LIFTING POINT ARRANGEMENT AND LOAD DISTRIBUTION

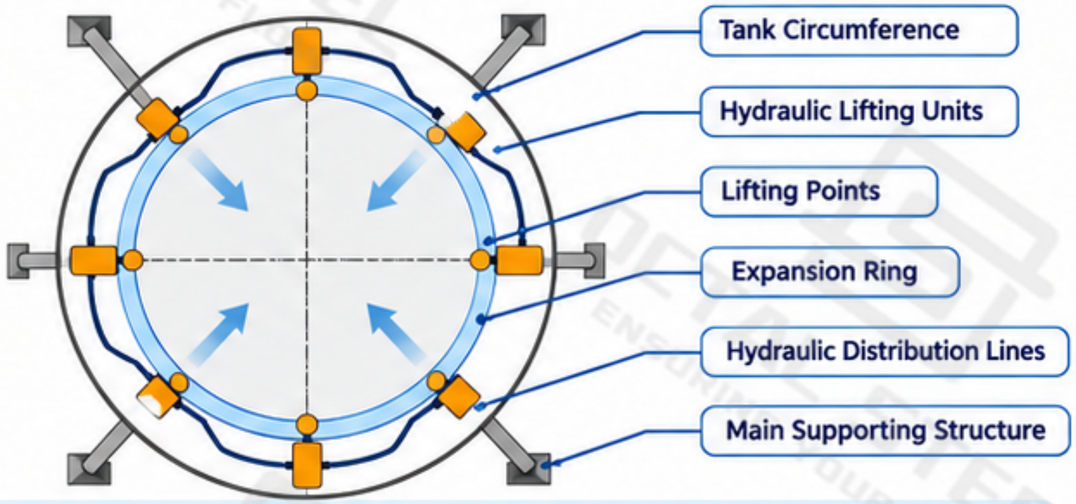
02 TANK LIFTING POINT ARRANGEMENT AND LOAD DISTRIBUTION

The arrangement of hydraulic lifting units around a storage tank must be established according to the calculated lifting load at each construction stage and the structural design of the tank. The number and position of lifting points affect how the assembled tank structure transfers its weight to the mechanical lifting units. The expansion ring, dessignated lifting attachments and supporting structures must be checked to ensure that the lifting forces are properly distributed without causing unacceptable local deformation.

TANK CONFIGURATION INPUTS

Engineering Input	Configuration Consideration
Tank Diameter	Determines the tank circumference and available lifting-point positions
Assembled Tank Weight	Establishes the lifting load at each construction stage
Shell Plate Design	Affects the structural load-transfer arrangement
Lifting Attachments	Determines the connection between lifting units and tank structure
Expansion Ring	Requires verification of load distribution and structural condition
Supporting Structure	Must accommodate the lifting forces transferred by the selected system
Installation Clearance	Must allow the full lifting stroke and mechanical movement

LIFTING POINT ARRANGEMENT



Illustrative arrangement only. Quantity and spacing of lifting points are project-specific.

MECHANICAL LOAD TRANSFER

LYT CHAIN-TYPE



Hydraulic Jack → Movable Pulley → Load-Bearing Chain → Tank Lifting Attachment

SQD CHUCK-TYPE



Hydraulic Jack and Chucks → Steel Lifting Rod → Supporting Lifting Structure

ENGINEERING CONSIDERATIONS

- Load distribution between individual lifting points
- Expansion ring deformation
- Supporting structure condition
- Tank verticality and circumferential alignment

03 MECHANICAL LIFTING SYSTEM CONFIGURATION

This page explains the internal mechanical arrangement of the LYT and SQD lifting systems, focusing on the connection between components and how the lifting members transfer load during operation.

LYT CHAIN-TYPE SYSTEM

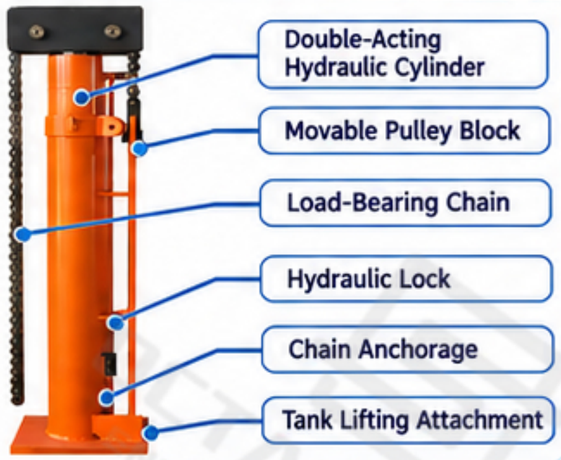


MAIN MECHANICAL COMPONENTS

Component	Function
Double-Acting Hydraulic Cylinder	Generates lifting and return movements
Movable Pulley Block	Transfers cylinder movement into chain travel
Load-Bearing Chain	Transfers lifting force to the tank structure
Hydraulic Lock	Helps hold the lifting load
Adjustable Tie Rods	Reinforce and stabilize the lifting assembly
Connecting Pins	Connect and secure mechanical components

The LYT system transfers lifting force through a movable pulley and load-bearing chain assembly. A double-acting hydraulic cylinder drives the pulley movement, causing the chain to travel and raise the connected tank structure. The hydraulic locking arrangement helps hold the load while the cylinder resets for the next lifting cycle.

MECHANICAL CONFIGURATION DIAGRAM



SQD CHUCK-TYPE SYSTEM

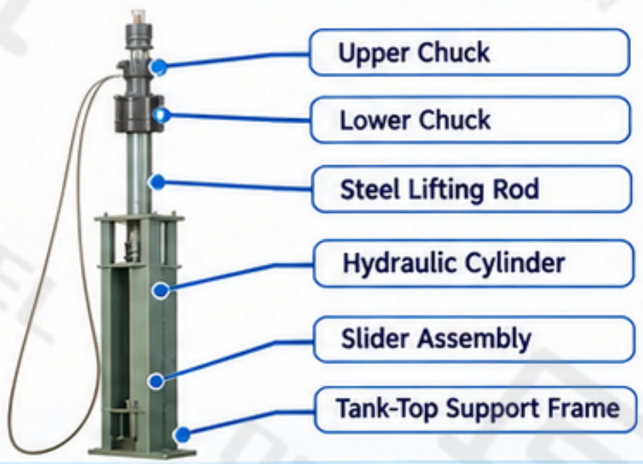


MAIN MECHANICAL COMPONENTS

Component	Function
Double-Acting Hydraulic Cylinder	Drives lifting and return strokes
Upper Chuck	Grips the lifting rod during the lifting stroke
Lower Chuck	Holds the rod while the upper chuck resets
Lifting Rod	Provides the mechanical load-transfer member
Tank-Top Support Frame	Supports the lifting jack
Slider Assembly	Guides the lifting mechanism

The SQD system uses a steel lifting rod and two alternating chucks to transfer the lifting load. During the lifting stroke, the upper chuck grips the rod and moves with the hydraulic mechanism. At the end of the stroke, the lower chuck engages the rod and holds the load while the upper chuck releases and resets. Repeated gripping and lifting movements raise the connected tank structure incrementally.

MECHANICAL CONFIGURATION DIAGRAM



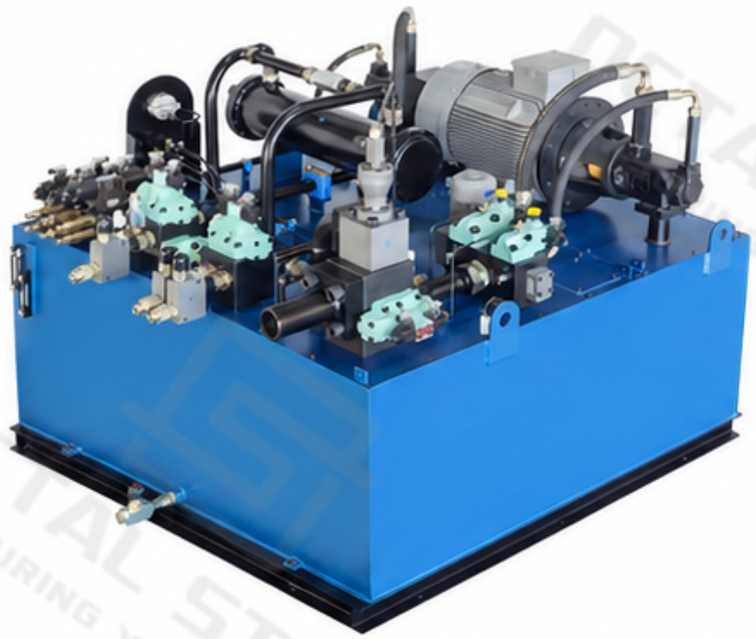
MECHANICAL MATCHING REQUIREMENTS

- **LYT System:** Chain condition, pulley alignment, connecting pins and lifting attachment positioning must be checked before operation.
- **SQD System:** Lifting rod diameter, straightness, material, chuck engagement and supporting frame alignment must match the selected equipment configuration.

04 HYDRAULIC POWER PACK AND OIL CIRCUIT CONFIGURATION

The hydraulic power pack supplies pressurized oil to the individual lifting units and controls the extension and return movements of the hydraulic cylinders.
The selected power pack must correspond to the lifting system and its hydraulic requirements. LYT and SQD configurations use different reference power pack model series.

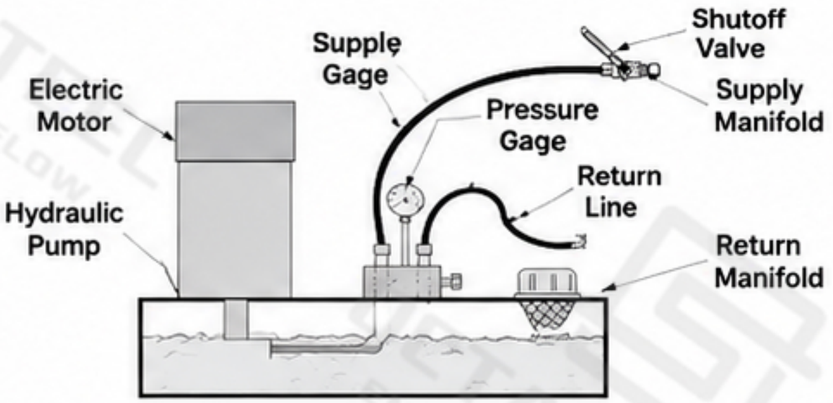
HYDRAULIC POWER PACK



POWER PACK ARRANGEMENT

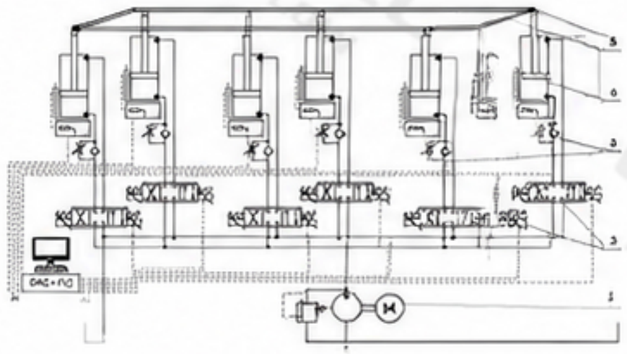
Lifting System	Reference Power Pack Models
LYT Chain-Type	YB-7.2 / YB-14.5
SQD Chuck-Type	YH-40 / YH-60 / YH-90

HYDRAULIC OIL CIRCUIT LAYOUT



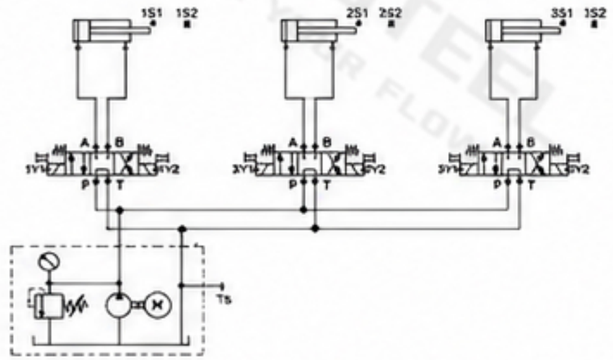
- The hydraulic circuit connects the pump station to individual lifting units through main supply and return pipelines.
- Ring distribution lines and branch connections distribute hydraulic oil to the lifting points around the tank circumference.
- The pipeline arrangement must correspond to the number and position of lifting units and the selected hydraulic control configuration.

HYDRAULIC CIRCUIT OPTIONS



Without a Dedicated Synchronizing Valve

The hydraulic circuit connects the pump station to the lifting units through the main supply, return, ring and branch pipelines. The branch connections follow the supplied hydraulic schematic.



With a Synchronizing Valve

A synchronizing valve is incorporated into the hydraulic distribution circuit. Its installation position and connection points follow the corresponding hydraulic schematic.

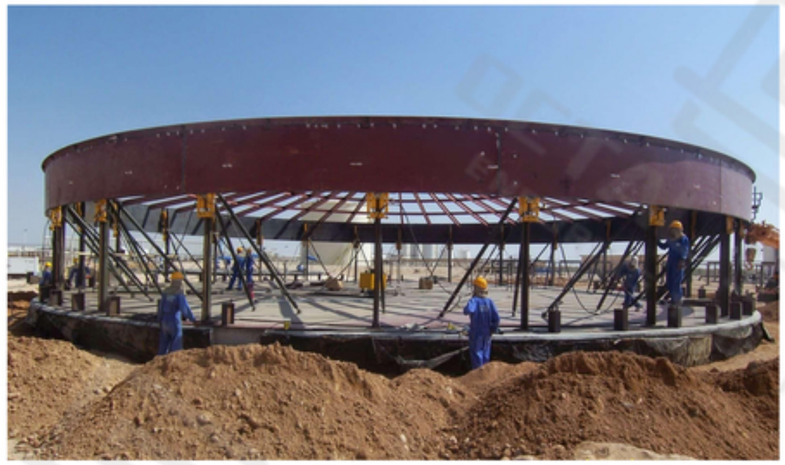
HYDRAULIC CONNECTION CHECKS

- Main supply and return connections.
- Branch pipeline and hose routing.
- Valve installation and connection positions.
- Air removal from hydraulic lines.
- Leakage at hydraulic joints and connections.

05 INSTALLATION SEQUENCE AND SYSTEM COMMISSIONING

During inverted tank erection, the roof and upper shell courses are assembled at the initial working elevation. Hydraulic lifting units are connected to their designated lifting structures; once the hydraulic system is ready, the assembled section is raised so the next lower shell course can be positioned and welded beneath it. The load is transferred to the designated supporting arrangement before the next lifting cycle.

TANK ERECTION SITE



Tank roof and upper shell assembled at the initial working elevation

TANK JACKING INSTALLATION SEQUENCE

01 INITIAL ASSEMBLY
Assemble the tank roof and upper shell courses at the initial working elevation.

02 LIFTING UNIT CONNECTION
Install the lifting units and connect chains or lifting rods to the designated tank lifting arrangement.

03 HYDRAULIC LIFTING
After the hydraulic system is ready, operate the lifting units to raise the assembled tank structure to the designated height.

04 SHELL INSTALLATION & LOAD TRANSFER
Position and weld the next lower shell course, then transfer the load to the designated supporting arrangement.

05 REPEATED LIFTING CYCLE
Repeat the lifting and shell assembly sequence until the required tank height is reached.

OPERATING MONITORING AND INSPECTION

MONITORING ITEM	INSPECTION FOCUS
Hydraulic Pressure	Operating pressure at the pump station
Lifting Height	Height differences between individual lifting points
LYT Components	Chain movement, pulley condition and mechanical connections
SQD Components	Lifting rod engagement and chuck condition
Supporting Structure	Expansion ring deformation and support condition
Tank Alignment	Tank verticality and circumferential alignment
Hydraulic System	Oil leakage and abnormal mechanical movement

FINAL CONFIGURATION CHECKLIST

REQUIRED PROJECT INFORMATION	PURPOSE
Tank Diameter	Establishes lifting-point layout
Assembled Tank Weight	Determines lifting loads at each stage
Shell Plate Design	Supports structural configuration
Lifting Attachment Details	Confirms mechanical connection
Selected Lifting System	Determines LYT or SQD equipment arrangement
Hydraulic Circuit Selection	Confirms pipeline and valve configuration
Supporting Structure Details	Checks mechanical load transfer and installation

ENGINEERING VERIFICATION

The final equipment arrangement must be verified against the tank structural design, calculated lifting loads, hydraulic circuit drawings and approved construction procedures. Lifting-point positions, supporting dimensions and hydraulic connections are project-specific.