

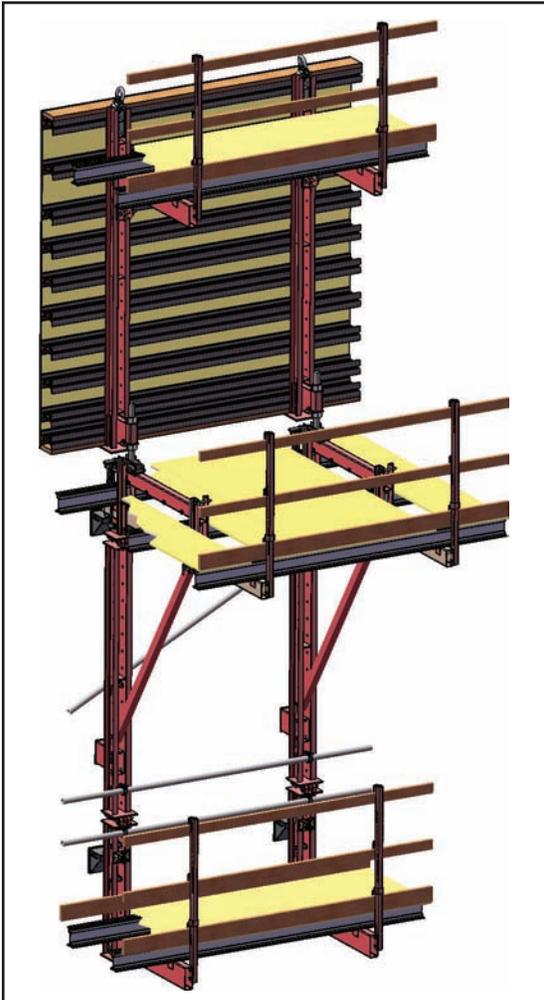
# Space-Lift™

JUMP FORMING SYSTEM



 **SYMONS**  
BY DAYTON SUPERIOR

# System Design



The Space-Lift™ system is a fully-engineered jump form system intended for concrete shear wall applications. The system consists of frame components and a carriage assembly that supports the forming equipment and crew.

The Space-Lift system supports any Symons gang form system that can utilize Versiform® walers, including:

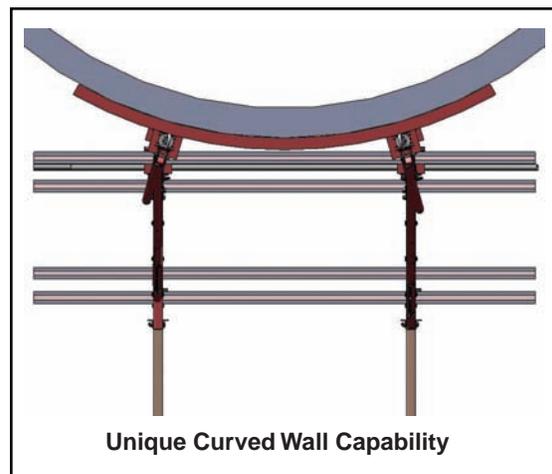
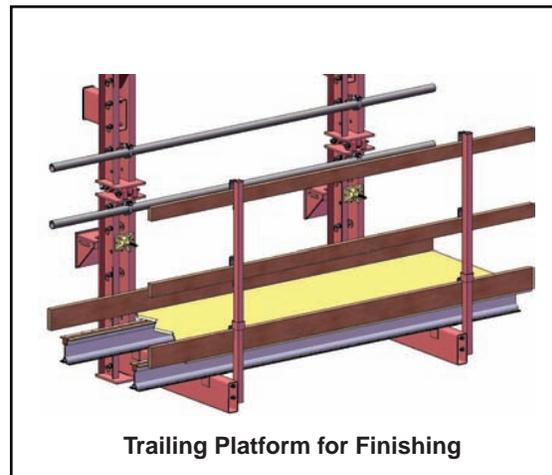
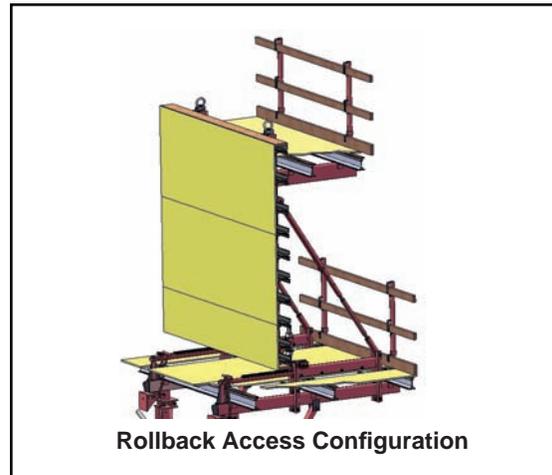
- ◆ Alispoly™
- ◆ Aluminum Beam Gang
- ◆ Flex-Form®
- ◆ FormRight™
- ◆ Steel-Ply®
- ◆ Versiform®

The Space-Lift assembly is suspended from Jump shoes that are bolted to inserts in the concrete wall. The entire assembly remains anchored to the wall during the forming operation. Work platforms provide safe access during setting, placing, stripping and finishing activities. Rollback carriages allow the gang form to be retracted from the wall without being removed. All these activities, of course, proceed without using valuable crane time.

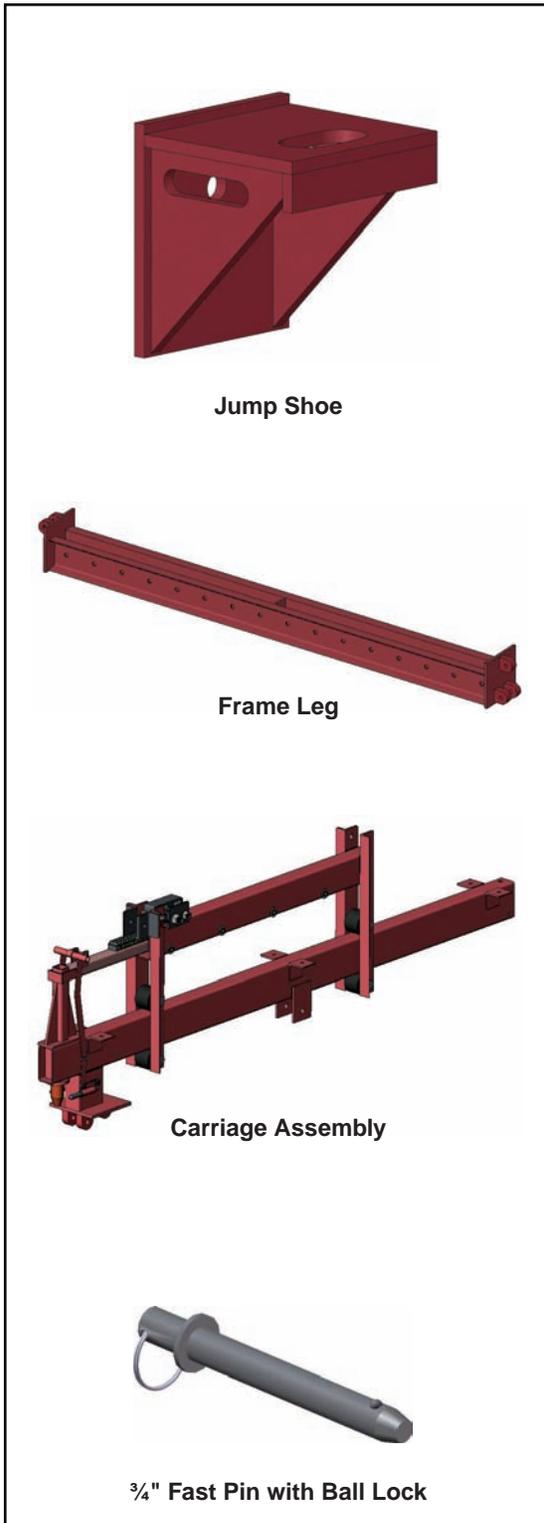
When the gang form is retracted from a completed section of concrete wall, another set of Jump Shoes can be bolted to the inserts in anticipation of the next lift.

## Highlights

- ◆ Standard Space-Lift frame heights of up to 16' for higher walls in lobby and atrium areas
- ◆ Space-Lift frame spacing up to 10' o.c. adapts to structure and gang form requirements
- ◆ Rollback form access ranges from 35" with Steel-Ply to 29" with Aluminum Beam Gangs
- ◆ Trailing platform makes operations such as removing Jump Shoes, patching and welding easy and safe
- ◆ The unique Curved Wall Bracket provides angled adjustment for Space-Lift frames on tank applications with a minimum 11' radius.
- ◆ Work platform provides ample room for crews to set, strip and clean forms
- ◆ The assembly is handled as one unit and landed into Jump Shoes, so workers do not need to be on the unit during lifts
- ◆ When properly anchored with Dayton Superior 1" F56 inserts, the Space-Lift system is designed for winds up to 120 mph (193 kph). Tiebacks are required to reduce the effect of wind loads.



# Components



## Jump Shoe

Jump Shoes, bolted to inserts anchored in the concrete of the previous pour, support the entire Space-Lift system. The Jump Shoe is designed with a slot to accept a setting pin from the Carriage Assembly. Space-Lift frames can be used on curved walls.

## Gang Shear Bracket

Reduces the amount of hardware and assembly time for all of the forming systems used with Space-Lift. Attaching formwork to the Space-Lift frames with fewer pieces means lower material costs, less labor and more production.

## Rollback Ratchet Lock

The Ratchet Lock allows the Track Frame to be locked any place along its allowable travel. This provides easy adjustment for locating and positioning the center of gravity when flying the units.

## Frame Leg

Frames Legs are 6" steel channels with end plates and gussets. The bottom of the legs have connection studs that bolt to the Carriage Assembly or another Frame Leg.

## Carriage Assembly

The Carriage Assembly is an innovative component that allows for as much as 35" of rollback. It includes a tape measure for reference and assembly.

## 3/4" Diameter Fast Pin

A 3/4" diameter Fast Pin (P/C 51396) is used throughout Space-Lift assembly to connect most of the major components. This pin reduces the need for bolted connections, saving time during assembly and construction. The pin has a ball lock which eliminates the need for hair pin clips and the time needed to secure them in place.

### Swivel Lift Bracket

The Heavy Duty Swivel Lift Bracket has a 4,000 lb capacity with a 5:1 safety factor to maximize bracket spacing. The swivel mount of the bracket can rotate 360°, and the loop can rotate 180° in a horizontal plane.

### Carriage/Waler Bracket

The bracket bolts to the Frame Leg and the 2" screw jack attaches the Carriage Assembly. This provides the vertical adjustment needed to align the inside and outside gangs for tie placement.

### Uplift Lock

The Uplift Lock helps prevent the Space-Lift units from disengaging from the Jump Shoe. The Uplift Lock is accessible from the work platform and designed to be easy to check and safely release from this position.

### Platform Beams

The work platform is built by connecting Aluminum or H20 Beams to the Access Walkway Bracket and then decking with ¾" plywood (by others).

### Work Platform

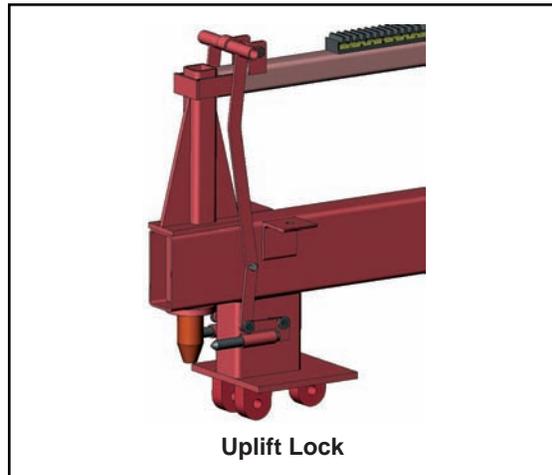
Final gang form adjustments, plumbing, and Jump Shoe attachment can all be done from the Work Platform. The Work Platform can be used to safely clean the gangs. This operation saves time compared to the conventional method of lowering the gangs to the ground by crane to clean them.

### Trailing Platform

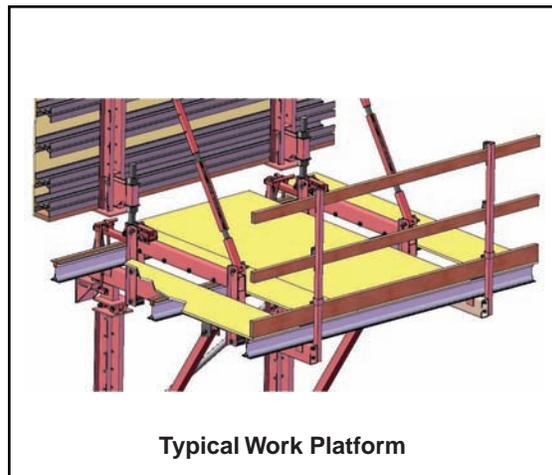
Trailing Platforms provide a 30" wide work access to the previously poured concrete wall. This allows a safe platform to patch tie holes, remove Jump Shoes and complete any other necessary finishing work. The Trailing Platform is constructed with aluminum beams or joists and ¾" plywood (by others) for the platform decking.



Heavy Duty Swivel Lift Bracket

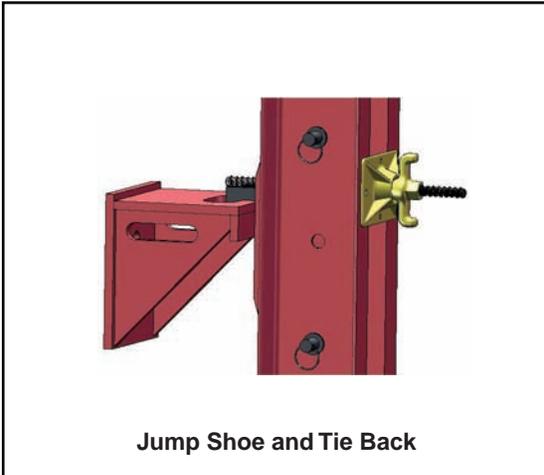


Uplift Lock

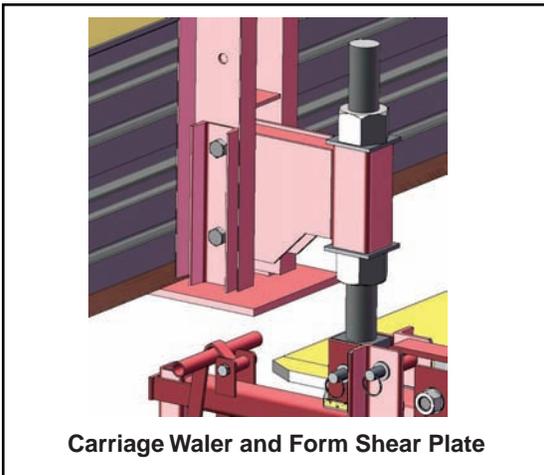


Typical Work Platform

# Space Lift™ Assembly



Jump Shoe and Tie Back



Carriage Waler and Form Shear Plate



Carriage Waler Wrench

## Assembly Tools

2" Diameter Gang Form Adjusting Screw — Requires  $3\frac{1}{8}$ " open end Carriage/Waler wrench (P/C 51367) or equivalent. A steel wrench made for adjusting screw nuts ( $3\frac{1}{8}$ " along flats) stored between channels of any 5" waler or Space-Lift leg.

1" Diameter Carriage Adjustment Nut — Ratchet wrench with at least a 24" long handle and a  $1\frac{1}{2}$ " socket or  $1\frac{1}{2}$ " box wrench, open end wrench or an equivalent adjustable wrench. 2 are required to simultaneously move a gang form along the Track Frame. (Ratchet wrench recommended)

1" Diameter Anchor Bolt —  $1\frac{5}{8}$ " socket or  $1\frac{5}{8}$ " box wrench or open end wrench

$\frac{3}{4}$ " Diameter Bolt and Nut — Ratchet wrench with  $1\frac{1}{8}$ " socket or  $1\frac{1}{8}$ " box wrench or open end wrench or equivalent adjustable wrench.

$\frac{1}{2}$ " Swivel Tube Clamp Nut — Ratchet wrench with  $\frac{7}{8}$ " socket or  $\frac{7}{8}$ " box wrench, open end wrench or an equivalent adjustable wrench.

$\frac{5}{8}$ " Contour Threaded Bolt and Nut — Ratchet wrench with  $1\frac{5}{16}$ " socket or  $1\frac{5}{16}$ " box wrench, open end wrench or equivalent adjustable wrench.

# Lifting Sequence

## Step 1 — Strip and move

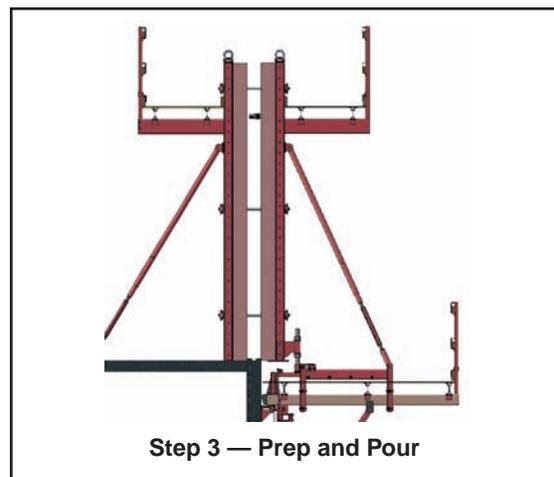
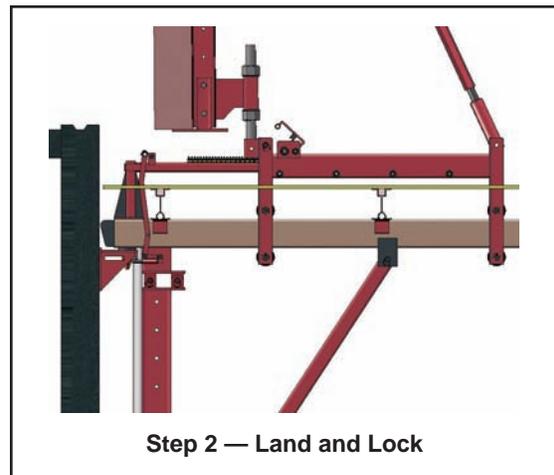
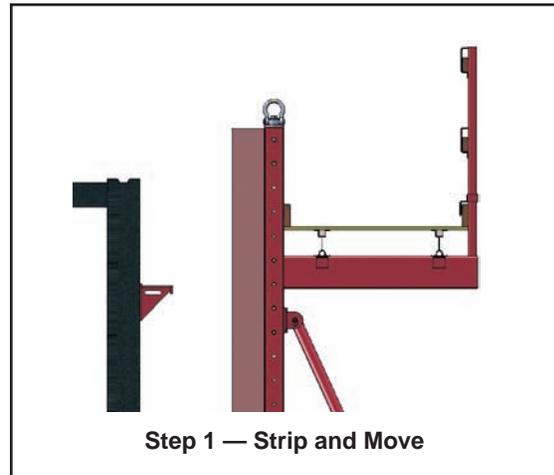
Inserts are positioned on the face of the gang form for the Jump Shoes and Space-Lift Frame connections. After the concrete walls are poured and the gang forms retracted, the Jump Shoes are bolted into the inserts for the next lift.

## Step 2 — Land and lock

The Space-Lift Frame assembly is lifted into position, lowered onto the Jump Shoe, and quickly secured with the Uplift Lock. The crane can be safely released and the gang form moved by turning the gear assembly with a wrench.

## Step 3 — Prep and pour

Inserts are again placed and the forming sequence repeats. Clean the gang forms and apply form release. Move gang form into pour position. Place ties, and pour concrete.





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