

T110 Superior Lift System

The Dayton Superior T110 Superior Lift Insert consists of a forged foot anchor, 4-leg wire base and plastic void former. The insert is positioned with the void direction toward the top of the panel and then is tied in place to the rebar cage. The T120 Superior Lifting Hardware allows quick attachment to the insert and remote ground release after panel has been erected and braced. The T110 Superior Lift Inserts are shipped assembled, ready to go and are sized 1/8" less than the panel thickness.



T110 Superior Lift System

To Order:

Specify:(1) Quantity, (2) Name, (3) Panel Thickness, (4) bottom face aggregate or formliner thickness

Example:

150, T110 Superior Lift Inserts, 9" Panel with 1/2" formliner panel

Lifting Systems

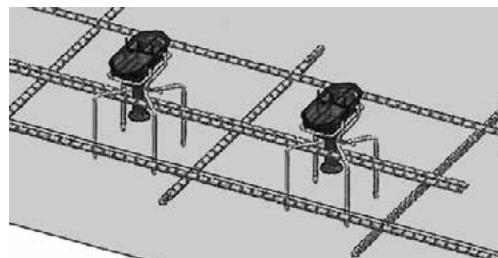
Structural Panel Thickness	Anchor Length	Tension 2:1 2500psi	Shear 2:1 2500psi	Tension 2:1 3000psi	Shear 2:1 3000psi	Tension 2:1 4000psi	Shear 2:1 4000psi	Tension 4:1 3500psi	Shear 4:1 3500psi
5	3.625	11,600	12,400	12,700	13,580	14,670	15,680	13,720	14,660
5.5	4.125	13,000	13,400	14,240	14,670	16,440	16,940	15,380	15,840
6	4.625	14,300	14,800	15,660	16,210	18,080	18,720	16,900	17,500
6.5	5.125	15,700	16,400	17,190	17,960	19,850	20,740	18,560	19,400
7	5.625	17,150	18,000	18,790	19,710	21,700	22,760	20,280	21,280
7.25	5.875	17,910	18,800	19,620	20,590	22,660	23,780	21,200	22,240
7.5	6.125	18,680	19,600	20,460	21,470	23,630	24,000	22,100	23,180
8	6.625	20,210	20,940	22,140	22,940	24,000	24,000	23,900	24,780
8.5	7.125	21,730	21,370	23,800	23,410	24,000	24,000	25,700	25,280
9	7.625	23,250	22,870	24,000	24,000	24,000	24,000	27,500	27,060
9.25	7.875	24,000	22,970	24,000	24,000	24,000	24,000	32,840	27,180
9.5	7.875	24,000	22,970	24,000	24,000	24,000	24,000	32,840	27,180
10	7.875	24,000	22,970	24,000	24,000	24,000	24,000	32,840	27,180
10.5	7.875	24,000	22,970	24,000	24,000	24,000	24,000	32,840	27,180
11	7.875	24,000	22,970	24,000	24,000	24,000	24,000	32,840	27,180
11.25	7.875	24,000	22,970	24,000	24,000	24,000	24,000	32,840	27,180
11.5	7.875	24,000	22,970	24,000	24,000	24,000	24,000	32,840	27,180
12	7.875	24,000	22,970	24,000	24,000	24,000	24,000	32,840	27,180

T110 Safe Working Loads with T46 HD at 18" Spacing

Structural Panel Thickness	Tension	Shear
	f'c=2,500 psi 2:1 S.F.	f'c=2,500 psi 2:1 S.F.
5"	23,200 lbs.	24,800 lbs.
5.5"	26,000 lbs.	26,800 lbs.
6"	28,600 lbs.	28,800 lbs.
6.5"	31,400 lbs.	30,600 lbs.
7" or greater	32,000 lbs.	32,000 lbs.

Note: The two anchors should be secured to each other and the rebar reinforcing grid at the required 18" on center spacing by wire tying with 2-40" length of #4 rebar either side of the anchors shafts or order double T110 inserts that come assembled at 18" o.c.

When using pairs of T110 anchors in up to 6.5" concrete panel thickness, the two shear cones will not intersect when they're spaced 18" apart (shear cone radius is typically 1.5x the depth of the anchor foot). For use with the T46 HD Special Spreader Bar. For deeper/thicker installations, the interaction between the two anchors would begin reducing the combined capacity to less than 2 times a single anchor. However, the 32,000 lb. capacity of the T46 will cap the system beyond 6.5" panel thickness (2 x 15,700 lbs.) to a maximum of 16,000 lbs. per anchor.

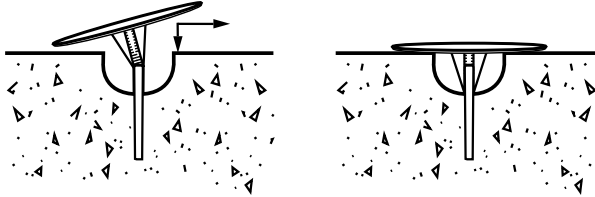


P99P Fleet Patch

The P99P Fleet Patch is a durable plastic patch designed to quickly cover T110 Superior Lift setting plug recesses. It is fabricated from an additive stabilized polypropylene to maintain the patch's slightly convex shape. The convex shape helps to keep a constant gripping pressure after installation. The patch is supplied in a concrete gray color with a matte finish that allows subsequent painting, if desired.

Fleet Patch Advantages:

- Special shape-holding composition
- Fast, one-piece "push-on" installation
- Paintable concrete gray matte finish
- Full eight (8) inch diameter
- Weather and chemical resistant
- Self adjusting grippers



P99P Fleet Patch

The P99P Fleet Patch is a high quality, one piece plastic patch that is easy to install and maintain. It provides a quick and economical solution to covering Fleet-Lift anchor recesses.

Fleet Patch

Sales Category	Product Code	Wt. for 100
P99P	FL612	24 lbs.

To Order:

Specify: (1) quantity, (2) name, (3) product code.

Example:

200, P99P Fleet Patch, FL612.

Typical P99P Fleet Patch Installation:

1. Start the patch grippers on the top edge of the anchor
2. Push the patch onto the anchor, flush with the concrete

Note: The P99P Fleet Patch will not prevent corrosion or rusting of an embedded anchor that is subjected to wet conditions. Spraying the anchor with a corrosion resistant compound and applying a bead of silicone around the underside of the patch will help prevent moisture penetration.

T275 Tilt-Up Anchor

The T275 Tilt Up Anchor consists of a dual forged foot anchor assembled with a plastic recess plug and two plastic supports. The insert is a directional insert used parallel to the height of the panel. They are shipped assembled, ready to install and sized to the panel thickness.

Concrete Strength/ Safety Factor	Safe Working Load	Structural Panel Thickness	
		7-1/4" - 9"	9-1/4" - 12"
2,500 psi concrete and 2:1 SF	Tension	20,100 lbs	24,000 lbs
	Shear	24,000 lbs	24,000 lbs
3,000 psi concrete and 2:1 SF	Tension	22,050 lbs	24,000 lbs
	Shear	24,000 lbs	24,000 lbs
4,000 psi concrete and 2:1 SF	Tension	24,000 lbs	24,000 lbs
	Shear	24,000 lbs	24,000 lbs

Note: Mechanical Capacity of steel anchor is 69,000 lbs in shear and 64,800 lbs in tension

To Order:

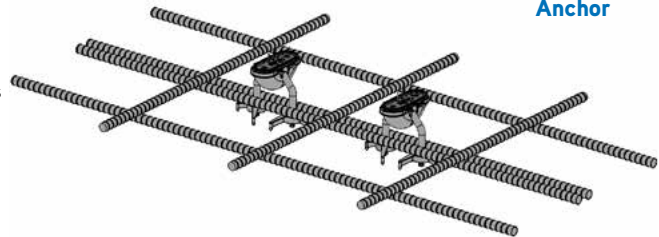
Specify:(1) Quantity, (2) Name, (3) Panel Thickness, (4) Product Code

Example:

150, T275 Tilt-Up Anchors, 7-1/4", 146553



T275 Tilt-Up Anchor



T275 Safe Working Loads with T46HD at 18" Spacing

Concrete Strength / Safety Factor	Safe Working Load	Structural Panel Thickness	
		7-1/4" to 9" – 2X T275 with T46HD	9-1/4" to 12" – 2X T275 with T46HD
2,500 psi concrete and 2:1 SF	Tension	25,925 lbs	30,950 lbs
	Shear	30,950 lbs	30,950 lbs
3,000 psi concrete and 2:1 SF	Tension	28,440 lbs	30,950 lbs
	Shear	30,950 lbs	30,950 lbs
4,000 psi concrete and 2:1 SF	Tension	30,950 lbs	30,950 lbs
	Shear	30,950 lbs	30,950 lbs

Note: The two anchors should be secured to each other and the rebar reinforcing grid at the required 18" on center spacing by wire tying with two 40" lengths of #4 rebar either side of the anchor shafts

Note: T275 Anchors cannot be used in concrete thicknesses less than 7-1/4".

T275B Base Plates

The T275B Base Plate is molded from a PC/ABS engineered polymer and designed to allow T275 inserts to be used in insulated sandwich panels.

Features

- The patch is supplied in a concrete gray color
- Fast, “push-on” installation

Installation

1. Push base plate onto the anchor base
2. Two base plates are required for each anchor



T275B Base Plates

T275P Patch Cap

The T275P Patch Cap is molded from a PC/ABS engineered polymer and designed to quickly cover setting plug recesses of T275 or T110 tilt-up lifting inserts.

Features

- The patch is supplied in a concrete gray color with a matte finish that allows subsequent painting, if desired.
- Fast, one-piece “push-on” installation
- Weather and chemical resistant
- Oval shape: 4.3” x 9”

Installation

1. Start the patch grippers on the top edge of the Anchor
2. Push the patch onto the anchor and flush with the concrete



T275P Patch Cap

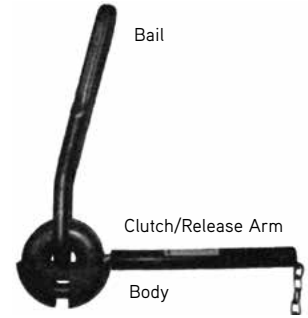
Note: The T275P Patch Cap will not prevent corrosion or rusting of an embedded anchor that is subjected to wet conditions. Spraying the anchor with a corrosion resistant compound and applying a bead of silicone around the underside of the patch will help prevent moisture penetration.

T120 Superior Lift Hardware

The Dayton Superior T120 Superior Lift Hardware is designed to easily attach to the insert by engaging the curved clutch handle into the opening in the anchor. The bail of the hardware is designed to readily align itself to the pull of the rigging. Once engaged and under load, it can not be disengaged by remote ground release until the load has been removed in lowering the rigging. The T120 is used for face or edge lift system conditions.

To Order:
Specify: (1) Quantity, (2) Name

Example:
8, T120 Superior Lift Hardware



Lifting Systems

Safety Notes:

Safe use of the Superior Lift System requires the inserts to be positioned so that the arrows on the direction label point to the top and bottom of the panel (parallel to the sides of the panel).

The inserts must be properly located in relation to edges, corners, openings and ledgers, and at distances allowing the development of a full concrete shear cone. Minimum distances are shown in the sketches above. Placing an insert closer to an edge than the minimums shown may reduce the effective concrete shear cone and reduce the insert's safe working load.

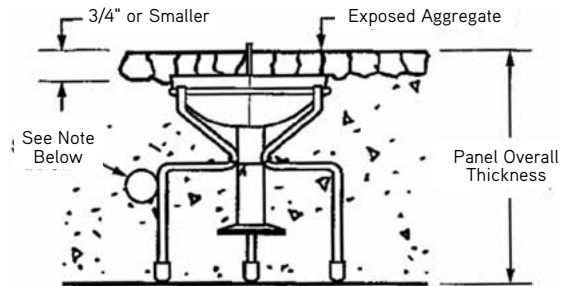
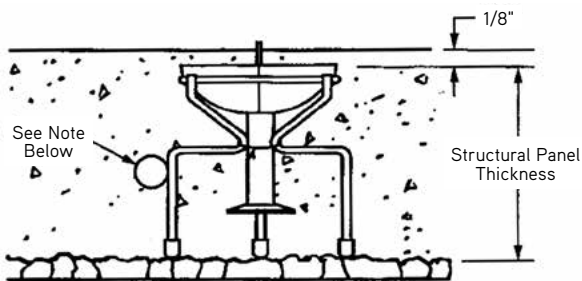
Lifting inserts must be properly wired in place so that the vertical axis of the insert is perpendicular to the panel surface. Care must be taken to avoid displacement of the inserts during concrete placement and screeding operations.

Do not weld to the Superior Lift Anchor as welding causes embrittlement and can result in premature failure.

Exposed Aggregate Panel Inserts

Tilt-up panels with exposed aggregate or formliner thickness are often cast face down. In these panels, the aggregate or formliner thickness and the structural thickness are required to determine correct insert height.

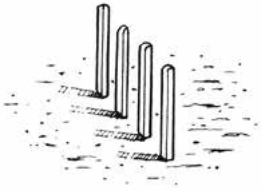

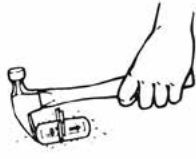






For panels exposed with aggregate face up, the overall thickness of the panel determines insert height.



NOTE: If attaching insert to rebar mat, it must be attached on vertical portion of the wire base leg as shown. **DO NOT** attach rebar to the horizontal portion of the wire base leg.

How to Remove the T110 Plastic Recess Plug

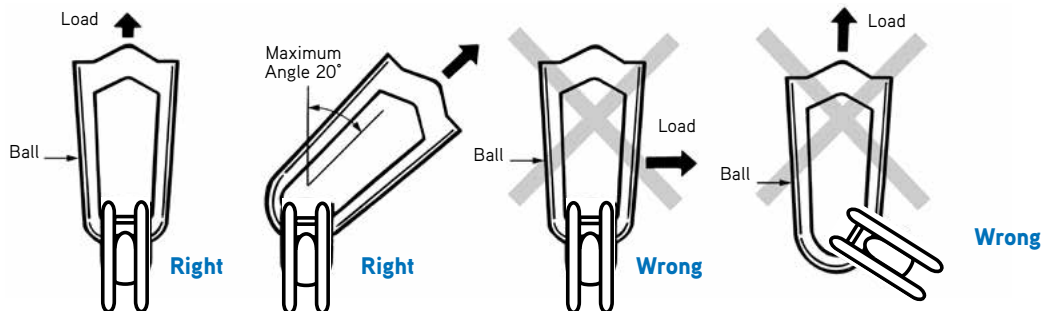
Lifting Systems

 <p>1. The T110 Insert's location in the panel is easily found by locating the antennae which will project through the surface of the concrete.</p>	 <p>2. Using an ordinary claw hammer, tap lightly around the antennae, breaking through the thin skin of concrete to expose the insert. Avoid striking the concrete too hard to avoid breaking through the plastic recess plug.</p>	 <p>3. Drive the claws of the hammer down about 3/8" between the end of the recess plug and the concrete.</p>
 <p>4. Pry up on the end of the recess plug until one half of it pops up to a point where it is about one third of the way out of the concrete. For the time being, leave it as it is and proceed with step #5.</p>	 <p>5. Repeat steps #3 and #4 to loosen the opposite half of the recess plug.</p>	 <p>6. Grasp both halves of the recess plug between the thumb and finger and squeeze.</p>
 <p>7. Both halves of the recess plug should now be easily removed, exposing the insert.</p>	 <p>8. If one half of the recess plug should be hard to remove, drive the claws of the hammer as deeply as possible between the recess plug and the top of the insert, as shown above. Push forward on the hammer with one quick motion. This will remove the recess plug.</p>	 <p>9. Remove all debris from around the insert and the recess plug. The insert is now ready to receive the lifting hardware.</p> <p>Note: For proper hardware release do not "round" out void holes.</p>

Proper Hardware Usage

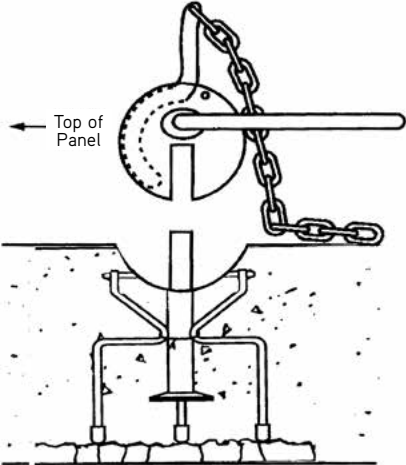
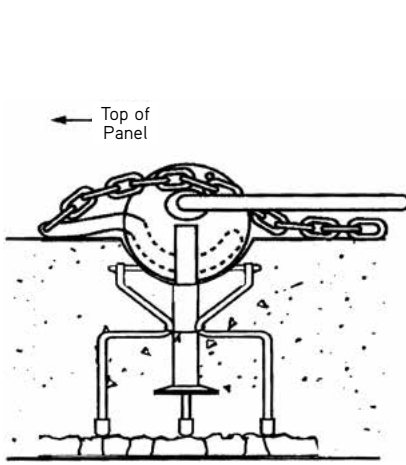
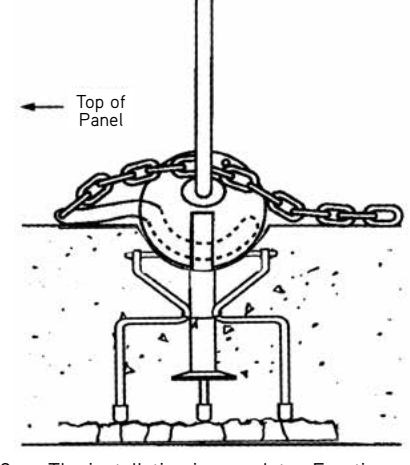
Prior to lifting any tilt-up panel, apply an initial load to the crane lines, making certain that the hardware is properly attached to the head of the T110 Insert and that the bail of the lifting hardware is aligned with the crane line.

Warning! Do not apply a sideward load to the bail of the lifting hardware.



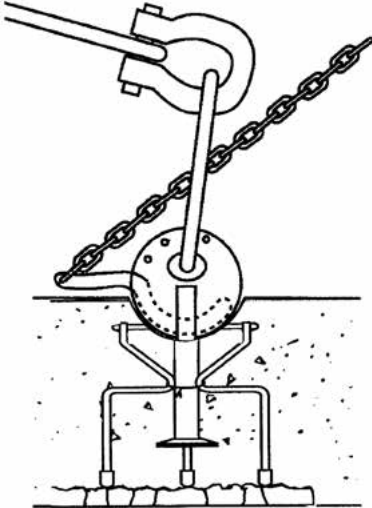
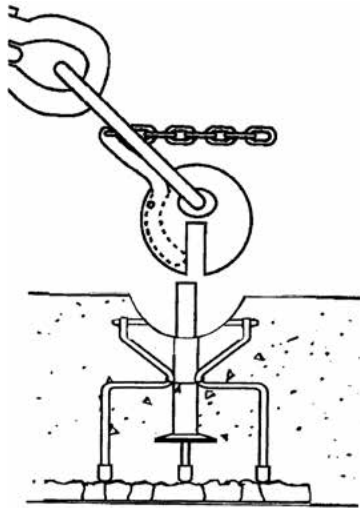
Warning! Do not modify, weld or alter in any way T120 Hardware units. Such actions could lead to premature failure of the hardware.

T120 Superior Lift Hardware Installation Sequence

		
<p>1. T120 Hardware in open position centered over the T110 Insert.</p>	<p>2. The Hardware nestled in the Insert Recess and the Bolt/Release Arm engaged. The Bolt/Release Arm must contact the panel surface as shown in the sketch. Chip away excess concrete, if necessary, to nest the Bolt/Release Arm on the concrete surface. Contact a Dayton Superior Technical Service Center if unable to nest the Bolt/Release Arm on the face of the panel.</p>	<p>3. The installation is complete. Erection may proceed.</p>

Lifting Systems

T120 Superior Lift Lifting Hardware Release Sequence

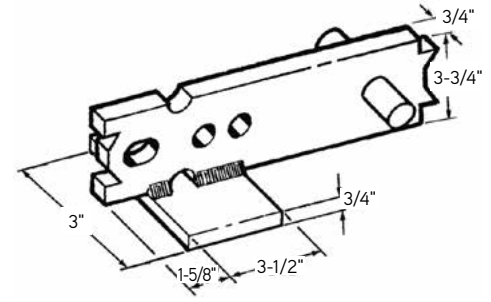
	
<p>1. After the panel erection is complete and the panel has been properly braced/tied-off, the crane line should be relaxed slightly to permit the release of the lifting hardware.</p>	<p>2. To Release the hardware, apply a quick, even downward force to the release line. The hardware stays attached to the crane line and is moved to the next panel.</p>

Note: Improper engagement of the lifting clutch could cause a lifting failure, potentially resulting in property damage, serious injury and/or death.

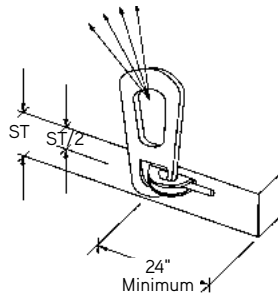
Note: If any lifting hardware appears damaged or inoperable. Do not proceed with lifting; contact Dayton Superior Immediately.

T110E Edge Lift Application

The P92P 8T x 13.25" Edge Lift Insert and P92FEW 10T x 12.75" are designed to be used with the T110 Superior Lift System for edge lift applications. These inserts have an integral shear plate for maximum transfer of shear loads into the concrete. These inserts use the P99D 8-10T Disposable Recess Plug for setting the insert. The T120 Hardware is used for erection with these inserts.



P92P



Edge Lifting



P92FEW

To Order:

Specify: (1) quantity, (2) name

Example:

20, P92P 8T FL149 Erection Anchor w/
SP20, P99D 8-12T FL068S Disposable
Recess Plug
or
20, P92FEW 10T 143426, P99D 8-12T
FL068S Disposable Recess Plug

Lifting Systems

P92P Stamped Anchor

Structural Panel Thickness	SWL 2:1 Safety Factor		
	Shear (lbs)	Tension with Anchor Only (lbs)	Tension with #6 Tension Bar (lbs)
6"	6,760	9,432	24,000
7"	7,180	11,612	24,000
8"	7,560	13,142	24,000
9"	8,000	14,030	24,000
10"	8,300	14,875	24,000
11"	8,800	16,903	24,000
12"	9,200	19,100	24,000

*SWL provides approximate safety factor shown in chart with minimum 2500 psi normal weight concrete

P92FEW Forged Anchor

Structural Panel Thickness	SWL 2:1 Safety Factor		
	Shear (lbs)	Tension with Anchor Only (lbs)	Tension with #7 Tension Bar (lbs)
7.5"	7,775	24,000	24,000
8"	8,113	24,000	24,000
9"	9,212	24,000	24,000
10"	10,311	24,000	24,000
11"	11,494	24,000	24,000
12"	12,846	24,000	24,000

*SWL provides approximate safety factor shown in chart with minimum 2,500 psi normal weight concrete

P98T Fleet-Lift Tension Bar

The Dayton Superior P98T Fleet-Lift Tension Bar is used with various Fleet-Lift Anchors to provide a simple, inexpensive method of distributing tension forces (lifting) deep into the precast panel.

Anchor Tonnage	Tension Bar (Grade 60)	Length of P98T Tension Bar
6-ton or 8-ton	#6	66"
10-ton or 12-ton	#7	96"

