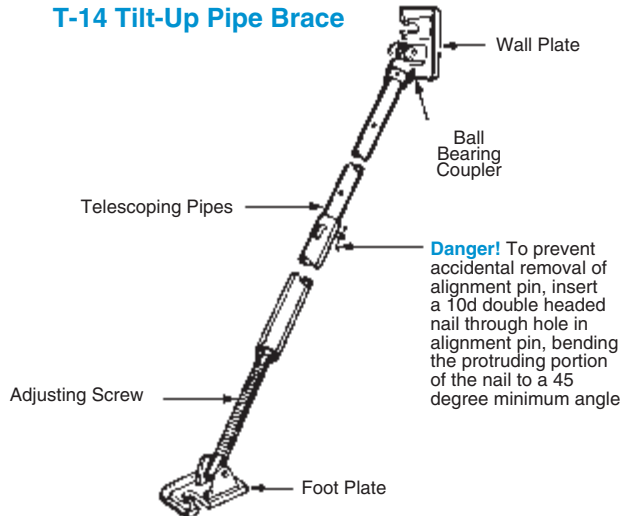


T-14 Tilt-Up Wall Braces

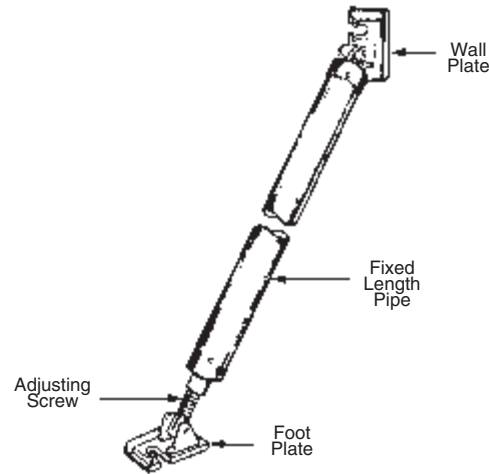
The Dayton Superior T-14 Tilt-Up Wall Braces are all steel, heavy duty wall braces designed to quickly and easily align and brace tilt-up wall panels. Rough adjustment of the T-14 braces is easily accomplished by telescoping the pipes to the nearest incremental hole.

Final adjustment is then achieved by simply turning the brace. Dayton Superior wall braces are available in numerous sizes to provide a continuous range of tilt-up panel heights of fifty feet or more. Refer to the chart below for additional information.

T-14 Tilt-Up Pipe Brace



T-14 Tilt-Up Jumbo Brace



T-14 Tilt-Up Pipe Brace Selection Chart

Type	Description	Minimum and Maximum Brace Length
B-1	On-Site Pipe Brace	7'-6" to 8'-10"
B-2	Regular Pipe Brace	13'-0" to 20'-6"
B-4	Heavy Duty Regular Pipe Brace	14'-6" to 23'-6"
B-5	Heavy Duty Long Pipe Brace	22'-6" to 39'-0"
B-6	Short Pipe Brace	10'-0" to 14'-0"
B-7	Short Jumbo Brace	17'-0" Fixed Length
B-8	Jumbo Brace	22'-0" Fixed Length
B-9	Jumbo Brace with 5'-0" Extension	27'-0" Fixed Length
B-10	Jumbo Brace with 10'-0" Extension	32'-0" Fixed Length
B-11	Tru-Ilt Brace	25'-6" to 40'-0"
B-12	Jumbo 5-1/2"	32'-0" Fixed Length
B-14*	B-12 Jumbo Brace, 10'-0" Extension	42'-0" Fixed Length
B-15*	B-12 Jumbo Brace, 20'-0" Extension	52'-0" Fixed Length
B-16	B-12 Jumbo Brace, 5'0" Extension	37'-0" Fixed Length

To Order:

Specify: (1) quantity, (2) Name, (3) model.

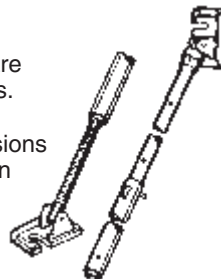
Example:

200, T-14 Tilt-Up Wall Braces. Model B-8.

* **Note:** Field assembly is required for B-14 and B-15 braces. B-11 Brace Available West Coast Only

T-15 Pipe Brace Extensions

The Dayton Superior Pipe Brace Extensions are available for the B-8 and B-12 pipe brace models. The T-15 extension for the B-12 model extends the brace five feet or ten feet increments. Extensions for the B-8 brace are available in five feet and ten feet lengths.



To Order:

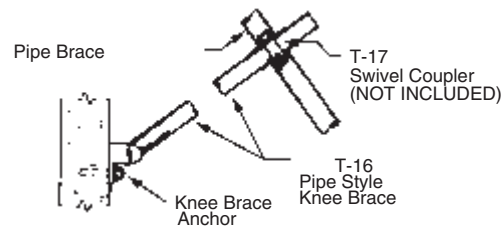
Specify: (1) quantity, (2) name, (3) model.

Example:

40, T-15 Pipe Brace Extension, 5' extension for B-8 braces.

T-16 Pipe Knee Brace

The Dayton Superior T-16 Pipe Knee Brace is an all steel, 1-1/2" diameter knee brace available in 10'-6" and 14'-6" lengths. The T-16 knee brace is used in conjunction with the T-17 Swivel Coupler to add strength and stability to standard wall braces.



T-16 Pipe Knee Brace

To Order:

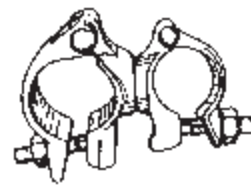
Specify: (1) quantity, (2) name, (3) length.

Example:

120, T-16 Pipe Knee Braces, 10'-6" long.

T-17 Swivel Coupler

The Dayton Superior T-17 Swivel Coupler is designed to attach standard 1-1/2" diameter knee braces to 2" or 2-1/2" diameter wall braces.



T-17 Swivel Coupler

To Order:

Specify: (1) quantity, (2) name, (3) wall brace diameter.

Example:

120, T-17 Swivel Couplers for 2" wall braces.

Brace Length and Safe Working Loads

B-1 On-Site Pipe Brace				
D	W	F	B	Safe Working Load
				Without Knee Bracing
9'-0"	6'-0"	4'-6"	7'-6"	6,500 lbs.
9'-6"	6'-5"	4'-9"	7'-11"	6,500 lbs.
10'-0"	6'-8"	5'-0"	8'-4"	6,500 lbs.
10'-6"	7'-0"	5'-3"	8'-9"	6,500 lbs.

B-2 Regular Pipe Brace					
D	W	F	B	Safe Working Load	
				Without Knee Bracing	With Knee Bracing
16'-0"	10'-8"	8'-0"	13'-4"	5,800 lbs.	6,500 lbs.
17'-0"	11'-4"	8'-6"	14'-2"	4,800 lbs.	6,500 lbs.
18'-0"	12'-0"	9'-0"	15'-0"	4,200 lbs.	6,500 lbs.
19'-0"	12'-8"	9'-6"	15'-10"	3,550 lbs.	6,500 lbs.
20'-0"	13'-5"	10'-0"	16'-7"	3,150 lbs.	6,500 lbs.
21'-0"	14'-1"	10'-6"	17'-5"	2,800 lbs.	6,500 lbs.
22'-0"	14'-9"	11'-0"	18'-3"	2,500 lbs.	6,500 lbs.
23'-0"	15'-5"	11'-6"	19'-0"	2,275 lbs.	6,500 lbs.
24'-0"	16'-1"	12'-0"	19'-11"	1,975 lbs.	5,925 lbs.

Note: Depending on panel thickness and height, a double mat of reinforcing steel may be required to resist the bending stresses of temporary wind loads.

SWL provides a minimum factor of safety of 1.5 to 1.

Danger! With knee bracing means that knee, lateral and end bracing must be installed in order to obtain SWL's shown.

Brace Length and Safe Working Loads

B-4 Heavy Duty Regular Pipe Brace					
D	W	F	B	Safe Working Load	
				Without Knee Bracing	With Knee Bracing
18'-0"	12'-0"	9'-0"	15'-0"	6,500 lbs.	6,500 lbs.
19'-0"	12'-8"	9'-6"	15'-10"	6,500 lbs.	6,500 lbs.
20'-0"	13'-4"	10'-0"	16'-8"	6,500 lbs.	6,500 lbs.
21'-0"	14'-0"	10'-6"	17'-6"	5,925 lbs.	6,500 lbs.
22'-0"	14'-8"	11'-0"	18'-4"	4,800 lbs.	6,500 lbs.
23'-0"	15'-4"	11'-6"	19'-2"	3,925 lbs.	6,500 lbs.
24'-0"	16'-0"	12'-0"	20'-0"	3,575 lbs.	6,500 lbs.
25'-0"	16'-8"	12'-6"	20'-10"	2,975 lbs.	6,500 lbs.
26'-0"	17'-4"	13'-0"	21'-8"	2,500 lbs.	6,500 lbs.
27'-0"	18'-0"	13'-6"	22'-6"	2,275 lbs.	6,500 lbs.
28'-0"	18'-8"	14'-0"	23'-4"	1,950 lbs.	6,500 lbs.

Note: Depending on panel thickness and height, a double mat of reinforcing steel may be required to resist the bending stresses of temporary wind loads.

SWL provides a minimum factor of safety of 1.5 to 1.

Danger! *With knee bracing* means that knee, lateral and end bracing must be installed in order to obtain SWL's shown.

B-5 Heavy Duty Long Pipe Brace					
D	W	F	B	Safe Working Load	
				Without Knee Bracing	With Knee Bracing
27'-0"	18'-0"	13'-6"	22'-6"	5,975 lbs.	6,500 lbs.
28'-0"	18'-8"	14'-0"	23'-4"	5,325 lbs.	6,500 lbs.
29'-0"	19'-4"	14'-6"	24'-2"	4,800 lbs.	6,500 lbs.
30'-0"	20'-0"	15'-0"	25'-0"	4,250 lbs.	6,500 lbs.
31'-0"	20'-8"	15'-6"	25'-10"	3,450 lbs.	6,500 lbs.
32'-0"	21'-4"	16'-0"	26'-8"	2,825 lbs.	6,500 lbs.
33'-0"	22'-0"	16'-6"	27'-6"	2,550 lbs.	6,500 lbs.
34'-0"	22'-8"	17'-0"	28'-4"	2,100 lbs.	6,500 lbs.
35'-0"	23'-4"	17'-6"	29'-2"	1,750 lbs.	6,500 lbs.
36'-0"	24'-0"	18'-0"	30'-0"	1,600 lbs.	6,500 lbs.
37'-0"	24'-8"	18'-6"	30'-10"	1,350 lbs.	6,500 lbs.
38'-0"	25'-4"	19'-0"	31'-8"	Not Recommended	6,300 lbs.
39'-0"	26'-0"	19'-6"	32'-6"	Not Recommended	6,000 lbs.
40'-0"	26'-8"	20'-0"	33'-4"	Not Recommended	5,600 lbs.
41'-0"	27'-4"	20'-6"	34'-2"	Not Recommended	5,200 lbs.
42'-0"	28'-0"	21'-0"	35'-0"	Not Recommended	5,000 lbs.
43'-0"	28'-8"	21'-6"	35'-10"	Not Recommended	4,650 lbs.
44'-0"	29'-4"	22'-0"	36'-8"	Not Recommended	4,325 lbs.
45'-0"	30'-0"	22'-6"	37'-6"	Not Recommended	4,175 lbs.
46'-0"	30'-8"	23'-0"	38'-4"	Not Recommended	3,900 lbs.
47'-0"	31'-4"	23'-6"	39'-0"	Not Recommended	3,775 lbs.

Note: Depending on panel thickness and height, a double mat of reinforcing steel may be required to resist the bending stresses of temporary wind loads.

SWL provides a minimum factor of safety of 1.5 to 1.

Danger! *With knee bracing* means that knee, lateral and end bracing must be installed in order to obtain SWL's shown.

Brace Length and Safe Working Loads (Cont.)

B-6 Short Pipe Brace				
D	W	F	B	Safe Working Load
				Without Knee Bracing
12'-0"	8'-0"	6'-0"	10'-0"	6,500 lbs.
13'-0"	8'-9"	6'-6"	10'-9"	6,450 lbs.
14'-0"	9'-5"	7'-0"	11'-8"	5,225 lbs.
15'-0"	10'-0"	7'-6"	12'-5"	4,450 lbs.
16'-0"	10'-9"	8'-0"	13'-3"	3,750 lbs.

Note: Depending on panel thickness and height, a double mat of reinforcing steel may be required to resist the bending stresses of temporary wind loads.

SWL provides a minimum factor of safety of 1.5 to 1.

Jumbo Pipe Braces					
Type	D	W	F	B	Safe Working Load Without Knee, Lateral and End Bracing
B-7	15'-0" to 24'-0"	13'-6"	10'-3"	17'-0"	6,500 lbs.
B-8	19'-0" to 31'-0"	17'-6"	13'-3"	22'-0"	6,500 lbs.
B-9	23'-0" to 39'-0"	21'-6"	16'-3"	27'-0"	4,800 lbs.
B-10	27'-0" to 46'-0"	25'-6"	19'-3"	32'-0"	3,600 lbs.
B-11	22'-0"	20'-5"	15'-4"	25'-6" Min.	9,000 lbs.
B-11	58'-0"	32'-0"	24'-0"	40'-0" Max.	9,000 lbs.
B-12	27'-0" to 46'-0"	25'-6"	19'-3"	32'-0"	9,000 lbs.
B-14	35'-0" to 60'-0"	33'-6"	25'-3"	42'-0"	5,200 lbs.
B-15	43'-0" to 60'-0"	41'-6"	31'-3"	52'-0"	3,800 lbs.
B-16	42'-0"	28'-9"	21'-8"	37'-0"	8,000 lbs.

Note: Depending on panel thickness and height, a double mat of reinforcing steel may be required to resist the bending stresses of temporary wind loads.

SWL provides a minimum factor of safety of 1.5 to 1.

Note! When calculating maximum brace spacing always compare the selected brace safe working load with the maximum brace load that can be safely carried by the brace anchor.

Brace Loading

Bracing recommendations shown in these instructions are for the sole purpose of temporarily bracing fully erected tilt-up panels against wind loads only. Dayton Superior uses the wind load provisions described in the American Society of Civil Engineers (ASCE) Minimum Design Loads for Building and Other Structures and the Tilt-Up Concrete Association Guideline for Temporary Wind Bracing to determine the wind loads that are applied to an erected tilt-up panel.

The ASCE 7-02 standard specifies a basic wind speed of 90 mph for most areas of the United States. This 90 mph basic wind speed is based on a fifty-year mean recurrence interval for a three second peak gust speed at thirty-three feet above ground level.

However, the ASCE standard allows and the Tilt-Up Association recommends, that the 90 mph basic wind speed be multiplied by a factor of 0.80 for a five year recurrence interval. This allows the use of a construction period design wind speed of 72 mph in calculating brace loads for most areas of the United States.

For areas of the country having a basic wind speed different than 90 mph, the following construction period wind speed will be used for the design of the temporary bracing.

Basic Wind Speed	Construction Period Wind Speed
90 mph	72 mph minimum
100 mph	80 mph minimum
140 mph	112 mph
150 mph	120 mph

Parts of the United States that are in the Special Wind Regions shown on the ASCE Basic Wind Speed map will require a higher construction period design wind speed than normal. The construction period design wind speed used in the design of the bracing for this project is shown in the lower left hand corner of each panel layout sheet. If the local building code requires a higher construction period design wind speed, DO NOT erect any panels before contacting a Dayton Superior Technical Service Center for additional bracing recommendations.



WARNING

If wind loads of 35 mph occur, an inspection of all brace connections should be made. Loose connections can cause panels to fall. If local codes require a higher construction period design wind speed, contact Dayton Superior for additional bracing recommendations.

Location	V mph	V m/s
Hawaii	105	47
Puerto Rico	145	65
Alaska	varies	varies

Brace Loading

Bracing recommendations are for the sole purpose of temporarily bracing fully erected concrete tilt-up panels during construction - against wind loads only. This temporary bracing design is based on The American Society of Civil Engineers (ASCE) *Minimum Design Loads for Building and other Structures*, as recommended by the Tilt-up Concrete Association's *Guideline for Temporary Wind Bracing of Tilt-up Concrete Panels During Construction*, TCA Guideline 1-05. The ASCE standard and the TCA guideline allow the basic wind speed, which is based on a 50-year mean recurrence interval, to be multiplied by a reduction factor for a 5-year mean recurrence interval which determines the construction wind speed used in the design of bracing systems.

Brace anchors and main, knee, lateral and/or end braces are not designed or intended to sustain impact loads. Precautions must be taken to arrange the panel erection sequence so as to avoid the potential for impacting upright panels or portions of the bracing system. Bracing recommendations for other loads or forces that might be

applied to the bracing system are beyond the scope of Dayton Superior. For bracing recommendations other than wind loads, the user should engage a design agency with capabilities of performing such a service.

Brace Removal

This bracing system is designed to temporarily support tilt-up panels against wind loads until the building structure is complete and self supporting. The bracing system should never be disconnected or removed until the panels are secured by the permanent structural connections and all lateral load resisting systems are in place.

If the structural documents do not indicate when the temporary bracing system can be removed, the engineer of record should be consulted.

Safety Notes:

- Panel should be plumb with braces and knee braces installed before crane releases panel.
- Lateral bracing should be installed immediately upon the crane and crew clearing the braces and before the next panel is erected.
- Lateral bracing must be continuous, connected at each brace, and tied off with end braces at the end of each line.
- Panels require a minimum of two braces per panel.
- End braces to ground and/or cross braces must be installed every 100 ft. to prevent lateral movement of braces and to provide total brace stability.
- All members of the brace system must be in place and secured at the end of each day.
- Knee and lateral bracing must be located at mid-length of pipe brace.
- Knee brace must be firmly fixed at bottom end to prevent possible upward buckling of main brace.
- Do not erect panels or continue working during excessive windy or adverse weather conditions.
- All brace inserts should be a minimum of 12" from any panel edge, opening, control joint or construction joint.
- Panel bracing is designed to withstand specified wind loads until panels are connected to the structural system of the building. Do not remove any members of the bracing system until all structural connections are completed.
- Use only the brace type as noted on the Panel Layout Sheet. No substitute brace hardware shall be used and all braces must be positioned at the specified locations.
- For special bracing conditions that require deviation from the bracing dimensions shown on the Panel Layout Sheet contact Dayton Superior for recommendations.
- See Panel Layout Sheet for type of brace, number of braces per panel, as well as knee and lateral bracing requirements.
- Welding or bolting the tilt-up panels in place might preclude the use of braces.
- After winds of 35 mph or more have been experienced at the job site, the tilt-up contractor must check the tightness of the bolts that secure the wall and foot plates to the concrete. Re-tightening of these bolts to the proper torque will assure that the pipe braces are secure.
- The safe working load of the panel's bracing system may be drastically reduced if other types of brace anchors are used as part of this project's bracing system, other than specified brace anchors.
- Slab design must be reviewed by the engineer of record to insure slab is capable of withstanding the loads being transferred from the braces.

Warning! Failure to install knee, lateral and end braces (when required) will greatly reduce the safe working load of the specified brace and may allow panels to fall causing severe injury or death.

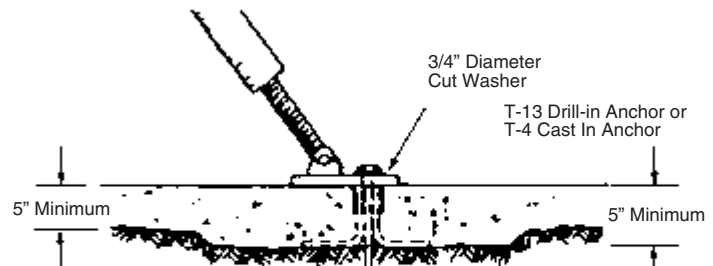
Brace to Floor Slabs

Dayton Superior specifies ONLY the T-4 cast-in-place anchor or the T-13 COIL-ANCHOR drill-in anchor for use in attaching braces to the floor slab.

When bracing tilt-up panels to a floor slab, a 5" minimum thick slab should be used unless it has been thickened at the brace anchor location as shown. Normally, a floor slab having a uniform thickness of 5" or greater is used in the construction of a tilt-up building. However, the floor slab thickness must be designed by a competent engineer as the thickness

depends on several factors, including: basic wind speed, panel height, distance from panel to the first floor joint, leave out width and various dimensions of the bracing system.

Warning! The floor slab sections may not be adequate to safely support the loads applied to the floor slab by the wall braces. It is the contractor's responsibility to decide if a section of floor slab can safely support the applied brace loads. Dayton Superior cannot make this determination as it has no control over floor slab thickness, control joint spacings, width of the floor slab "leave out" strip or other factors that may affect the load carrying capacity of the floor slab. Movement of a section of floor slab can cause panels to fall, which may result in property damage and/or severe personal injury. The floor slab should be designed by a competent engineer to resist the applied loads. To assist the contractor or engineer, the total brace load per panel is shown on each panel detail sheet provided by Dayton Superior.



Brace Length and Safe Working Loads

How to Calculate Brace Length

D = Elevation — top of panel above floor slab (not necessarily same as panel height).

W = Wall insert dimension = $2/3 D$

F = Floor insert dimension = $3/4 W$

B = Brace length = $5/4 W$

The brace dimension (**W**) must be a minimum of 5% of the panel's overall height above the panel's geometric and mass center of gravity. After the locations of the braces are determined, the panel structure should be checked to verify that it is strong enough to resist temporary wind loads.

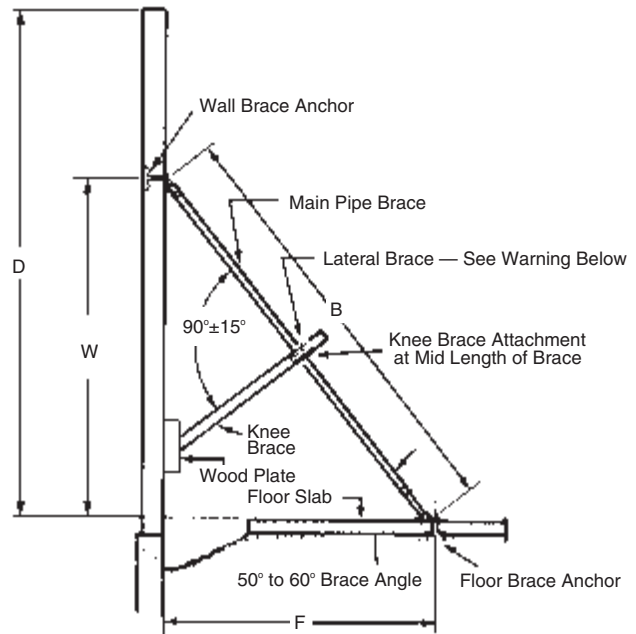
Brace locations other than those shown may drastically increase brace loads. Brace angles over 60° from the horizontal result in poor mechanical advantage and excessive vertical kick, while brace angles under 50° decrease brace buckling strength due to greater length and excessive sag.

Without knee brace means that brace type can be adjusted for various lengths of "**B**" shown, and brace may be used without knee, lateral or end bracing.

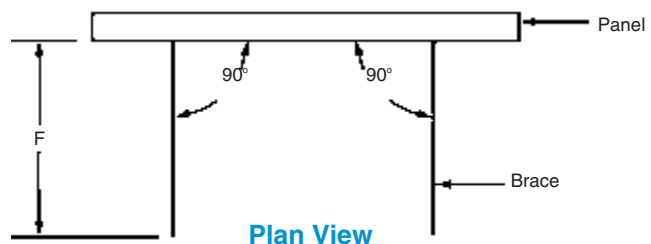
With knee brace means that brace type can be adjusted for various lengths of "**B**" shown and requires the use of knee, lateral and end bracing to obtain the SWL listed.

Danger! Bracing must be installed at $90^\circ \pm 5^\circ$ to plane of panel or brace safe working load will be greatly reduced.

The following is a quick "Rule of Thumb" to use in determining if a brace is installed at $90^\circ \pm 5^\circ$ to the panel: The brace may be skewed left or right 1 inch for every 1 foot that the brace anchor is located away from the wall. For example: If your dimension "**F**" is 15 ft. then your braces may be skewed 15" left or right and still stay within the required 5° tolerance. See panel layout sheets for proper "**F**" dimension.



Note: End braces to ground and/or cross braces must be installed every 100 ft. to prevent lateral movement of braces and to provide total brace stability.

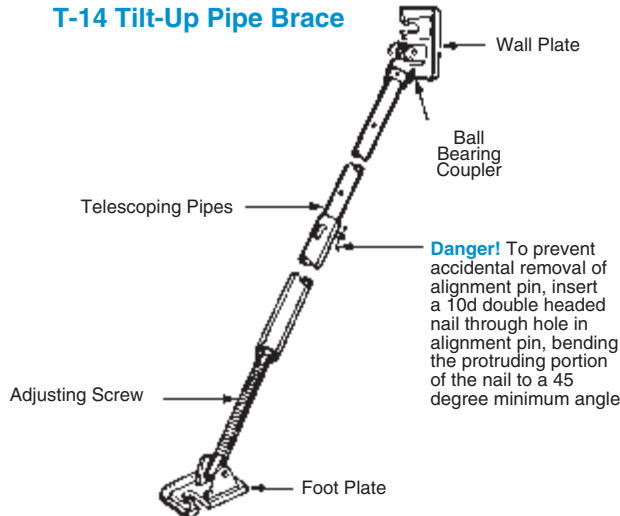


T-14 Tilt-Up Wall Braces

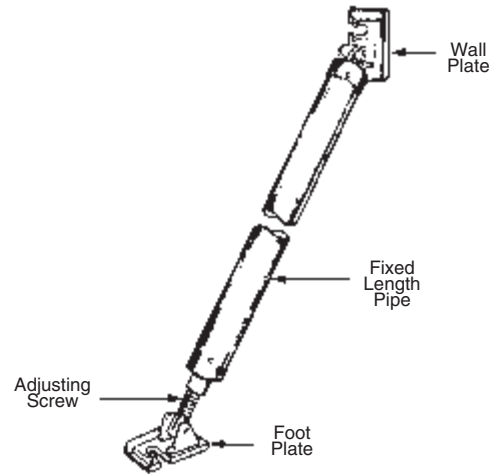
The Dayton Superior T-14 Tilt-Up Wall Braces are all steel, heavy duty wall braces designed to quickly and easily align and brace tilt-up wall panels. Rough adjustment of the T-14 braces is easily accomplished by telescoping the pipes to the nearest incremental hole.

Final adjustment is then achieved by simply turning the brace. Dayton Superior wall braces are available in numerous sizes to provide a continuous range of tilt-up panel heights of fifty feet or more. Refer to the chart below for additional information.

T-14 Tilt-Up Pipe Brace



T-14 Tilt-Up Jumbo Brace



T-14 Tilt-Up Pipe Brace Selection Chart

Type	Description	Minimum and Maximum Brace Length
B-1	On-Site Pipe Brace	7'-6" to 8'-10"
B-2	Regular Pipe Brace	13'-0" to 20'-6"
B-4	Heavy Duty Regular Pipe Brace	14'-6" to 23'-6"
B-5	Heavy Duty Long Pipe Brace	22'-6" to 39'-0"
B-6	Short Pipe Brace	10'-0" to 14'-0"
B-7	Short Jumbo Brace	17'-0" Fixed Length
B-8	Jumbo Brace	22'-0" Fixed Length
B-9	Jumbo Brace with 5'-0" Extension	27'-0" Fixed Length
B-10	Jumbo Brace with 10'-0" Extension	32'-0" Fixed Length
B-11	Tru-Ilt Brace	25'-6" to 40'-0"
B-12	Jumbo 5-1/2"	32'-0" Fixed Length
B-14*	B-12 Jumbo Brace, 10'-0" Extension	42'-0" Fixed Length
B-15*	B-12 Jumbo Brace, 20'-0" Extension	52'-0" Fixed Length
B-16	B-12 Jumbo Brace, 5'0" Extension	37'-0" Fixed Length

To Order:

Specify: (1) quantity, (2) Name, (3) model.

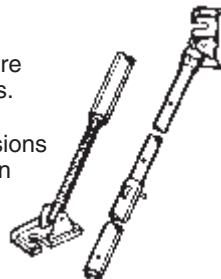
Example:

200, T-14 Tilt-Up Wall Braces. Model B-8.

* **Note:** Field assembly is required for B-14 and B-15 braces. B-11 Brace Available West Coast Only

T-15 Pipe Brace Extensions

The Dayton Superior Pipe Brace Extensions are available for the B-8 and B-12 pipe brace models. The T-15 extension for the B-12 model extends the brace five feet or ten feet increments. Extensions for the B-8 brace are available in five feet and ten feet lengths.



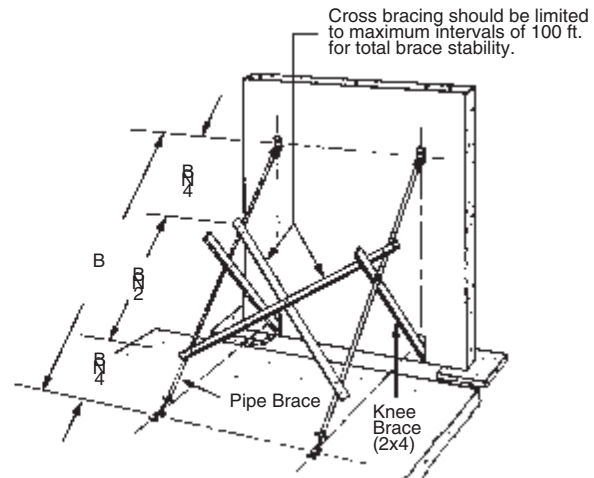
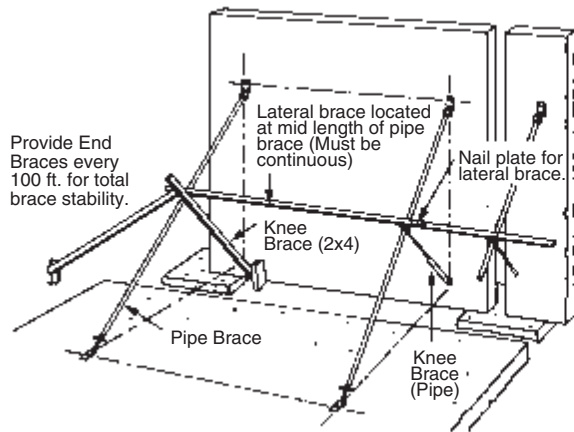
To Order:

Specify: (1) quantity, (2) name, (3) model.

Example:

40, T-15 Pipe Brace Extension, 5' extension for B-8 braces.

Knee, Lateral and End Bracing



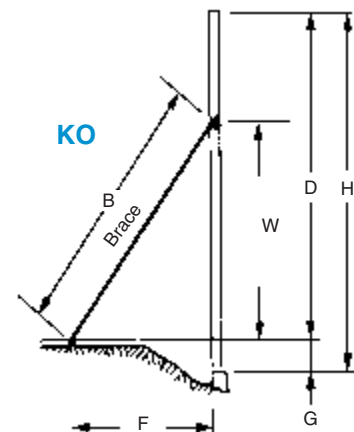
In order to properly strengthen the main pipe brace, knee bracing, lateral bracing and end bracing must be installed at the mid-point of the main pipe brace.

Cross bracing is an acceptable alternative to lateral bracing and end bracing. This method provides excellent panel stability when the erection sequence dictates that there are no adjacent panels that would make continuous lateral bracing possible.

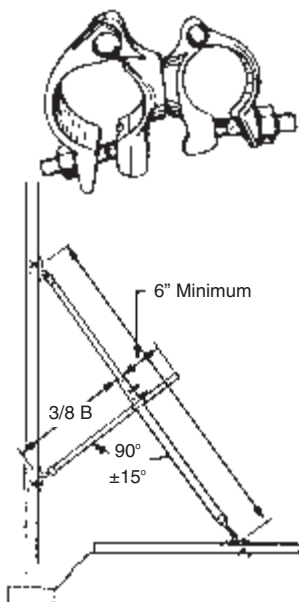
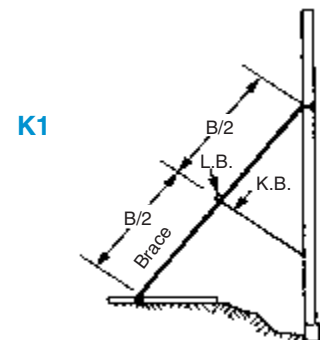
Lateral bracing must be limited to a maximum of 100 feet and each interval of lateral bracing must begin and end with either an end brace to ground or cross-bracing. In addition, each day a panel erection end or cross-bracing must be installed on the first and last wall brace to prevent compromise of the day's bracing activity.

Either lumber or pipe may be used as knee and end braces depending on the preference of the contractor. Pipe style knee or end braces shall be Dayton Superior T-16 Pipe (1-1/2" Dia.) Knee Brace and its upper end shall be attached to the main pipe brace using the T-17 Swivel Coupler, #3 Style.

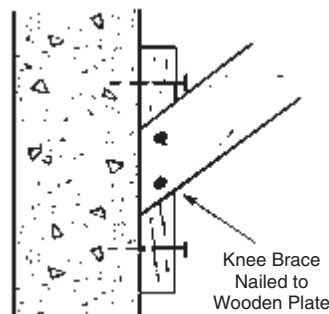
If KO is listed after the brace type, this indicates that the specified brace may be used without knee, lateral or end bracing.



If K1 is listed after the brace type, this indicates that the specified brace shall be used only with knee, lateral and end bracing.



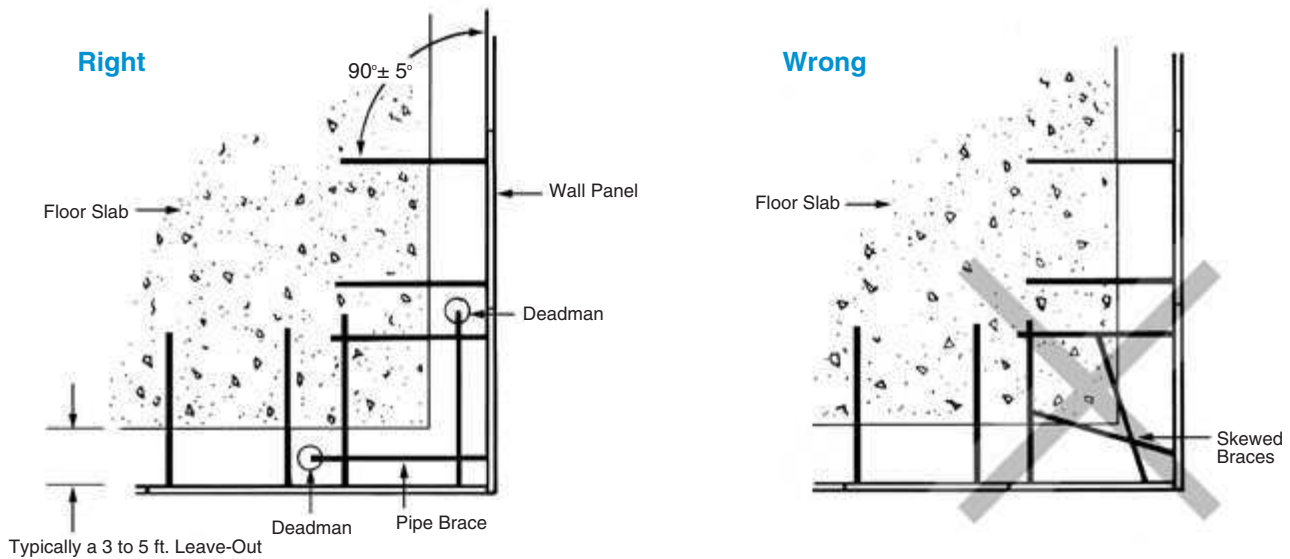
T-17 Swivel Coupler
Used to connect 1-1/2" Dia. pipe knee brace to 2" or 2-1/2" Dia. pipe brace.



Warning! If winds over 35 miles per hour are experienced on the job site, all bolts that secure the wall and foot plates to the concrete must be checked and retightened to the proper torque to assure that the pipe braces are secure.

Warning! It is common to refer to the sub-bracing support system of the main braces as knee bracing. However, the user is to be aware that when knee bracing is required, it means that lateral bracing and end bracing must also be included. This sub-support system is needed to reduce the buckling length of the main pipe braces and must have firm connections at all points. The knee brace must also be connected at its bottom end.

Corner Bracing



The proper method of bracing corner panels is shown above. Attachment of braces to deadman in the leave-out area allows the braces to be properly located without having to skew the braces for attachment to the floor slab. Corner brace lengths must be adjusted to eliminate pipe interference.

Warning! Braces must be installed at $90^{\circ} \pm 5^{\circ}$ to plane of panel or brace safe working load will be drastically reduced. Panel stability may be jeopardized when braces are skewed.

Cast-In Place Brace Anchor Loading

When using Dayton Superior T-14 Tilt-Up Pie Braces the maximum brace load and safe working load per brace anchor that can be safely transferred to T-6-A, T-5-A or T-4 Brace Anchors is as follows:

Floor or Wall Thickness	Maximum Brace Load	Safe Working Load, Tension per Brace Anchor	Torque Per Anchor	
			Minimum	Maximum
4-1/2" or Thicker	5,200 lbs.	6,000 lbs.	80 ft. lbs.	115 ft. lbs.
5" or Thicker	6,500 lbs.	7,500 lbs.	100 ft. lbs.	140 ft. lbs.

SWL provides a safety factor of approximately 1.5 to 1 in 2,500 psi Normal Weight Concrete.

Dayton Superior specifies the use of T-4, T-5-A, T-6-A cast-in-place brace anchors or the T-13 Coil-Anchor drill-in brace anchor ONLY. Dayton Superior does not specify or approve any other type of cast-in-place or drill-in anchor for the bracing of tilt-up wall panels. **If any other type of brace anchor is used, the contractor does so at his own risk and assumes the risk of all serious personal injury, death or property damage which may result. By using such unspecified and unapproved brace anchor, the contractor agrees to indemnify and hold Dayton Superior harmless against all damages and losses that may occur.**

When two braces per panel are required, the normal brace insert location for solid panels is .1 to .2 of panel width, minimum of 12", inward from panel side. Contact Dayton Superior for recommendations on panels requiring 3 braces or more, on panels with openings or for other unusual conditions.

NOTE: Notify DSC Engineering Department if slab thickness is less than 5" thick. Brace design must be changed for thinner slabs.

Bracing to Cylindrical Deadman

Use the chart at the right to select the proper size deadman if your project requires the use of a deadman for brace attachment in lieu of an anchor cast into a floor slab.

How to select the proper size deadman:

- 1) Determine the maximum applied brace load for the project.
- 2) The proper deadman must weigh at least as much as the maximum individual brace load.
- 3) Find a number on the deadman chart that is equal to or greater than the required deadman weight. Follow the numbers in the top column and the far left column of the chart for the proper diameter and height of the deadman.

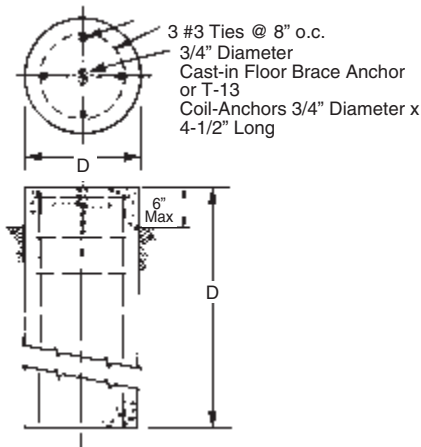
Example:

Maximum Applied brace load = 3,200 lb.

Acceptable deadman sizes are: **Diameter** **Height**

30"	4'-6"
36"	3'-6"
42"	2'-6"

4 #4 Vertical Bars



Weight of Deadman (POUNDS)					
Height	30" Diameter	36" Diameter	42" Diameter	48" Diameter	60" Diameter
2'-0"	1,470	2,120	2,890	3,770	5,888
2'-6"	1,840	2,650	3,610	4,710	7,360
3'-0"	2,210	3,180	4,330	5,650	8,832
3'-6"	2,580	3,710	5,050	6,600	10,304
4'-0"	2,950	4,240	5,770	7,536	
4'-6"	3,310	4,770	6,490	8,478	
5'-0"	3,680	5,300	7,220	9,420	
5'-6"	4,050	5,830	7,931		
6'-0"	4,420	6,360	8,652		
6'-6"	4,790	6,890	9,373		
7'-0"	5,150	7,420			
7'-6"	5,520	7,950			
8'-0"	5,890	8,480			
8'-6"	6,260	9,010			
9'-0"	6,630				

Note: Always hand or auger excavate hole for deadman. Minimum allowable soil bearing pressure is to be 1,500 psf. Minimum concrete compressive strength f'_c shall be = 2,500 psi at use. 1 Kip = 1,000 lbs.

Brace Maintenance

During the construction process braces may be exposed to adverse conditions that could damage or render them unusable. Braces should be inspected for proper operation, damage and wear after each use.

This inspection is typically performed by Dayton Superior or Dayton Superior Certified Tilt-Up Dealer when the braces are returned. However, when braces are transferred from one job to another without being returned to Dayton Superior or its dealer for maintenance, the user must inspect all braces prior to their being reused.

This inspection should check for missing parts, wear, dings, kinks, straightness, indication of any application of heat and/or other damage.

Any brace that shows signs of wear, has missing parts, damage, or is questionable should be set aside and not used.