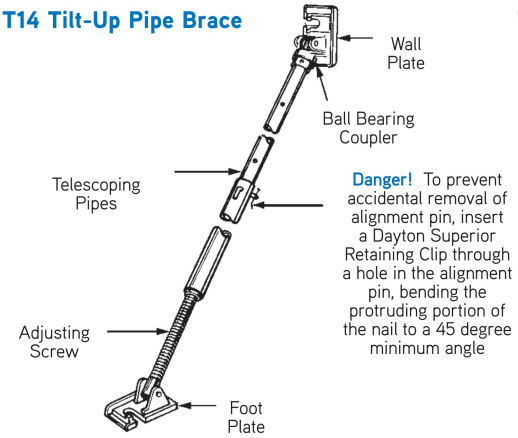
T14 Tilt-Up Wall Braces

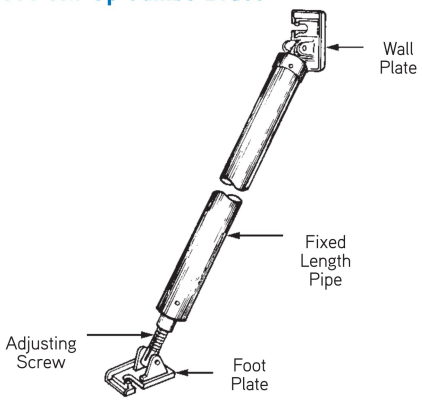
The T14 Tilt-Up Wall Braces are all steel, heavy duty wall braces designed to quickly and easily align and brace tilt-up wall panels. Rough adjustment of the T14 braces is easily accomplished by telescoping the pipes to the nearest incremental hole.

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 table below for additional information.

T14 Tilt-Up Pipe Brace



T14 Tilt-Up Jumbo Brace



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

Example:
200, T14 Tilt-Up Wall Braces. Model Superior 22.

T14 Pipe Brace Selection Chart

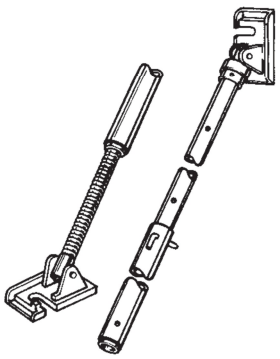
New Name	Old Name	Overall Length	Description	Brace Weight (Lbs)
Superior 5-8	B0	Adjustable - See Description	5'-0" to 8'-0"	60
Superior 8-14	B1A	Adjustable - See Description	8'-0" to 14'-0"	87
Superior 14-23	B4	Adjustable - See Description	14'-6" to 23'-6"	130
Superior 22-30	B5	Adjustable - See Description	22'-6" to 30'-10"	208
Superior 17	B7	17'-0"	17'-0" Fixed Length	107
Superior 22	B8	22'-0"	22'-0" Fixed Length	130
Superior 22+5	B9	27'-0"	22'-0" Fixed Length + 5'-0" Extension Pipe	172
Superior 22+10	B10	32'-0"	22'-0" Fixed Length + 10'-0" Extension Pipe	193
Superior 32	B12A	32'-0"	32'-0" Fixed Length	245
Superior 33 HD	B17S	33'-0"	33'-0" Fixed Length (Large Diameter HD Pipe)	489
Superior 32+5	B16	37'-0"	32'-0" Fixed Length + 5'-0" Extension Pipe	360
Superior 32+10*	B14	42'-0"	32'-0" Fixed Length + 10'-0" Extension Pipe	382
Superior 32+10+10	B15	52'-0"	32'-0" Fixed Length + (2) 10'-0" Extension Pipe	410
Superior 42	B17A	42'-0"	42'-0" Fixed Length	613
Superior 52	B18	52'-0"	52'-0" Fixed Length	984
Superior 62**	B20	62'-0"	52'-0" Fixed Length + 10'-0" Extension Pipe	1,275

Notes: Field assembly is required for Superior 32+10 (B14), Superior 32+10+10 (B15), and Superior 62 (B20) braces.Fixed length allows for +/-9" of adjustment except Superior 42 (B17A) brace has +/-7.5" of adjustment. Pipe Extensions: T15 for the Superior 22 (B8) model and T20 for the Superior 32 (B12) model.

*Ultimate Load based on adequate brace to HGA or slab connection. **Not available for rental.

T15 Pipe Brace Extensions

The Dayton Superior Pipe Brace Extensions are available for the Superior 22 (B8) and Superior 32 (B12A) pipe brace models. The T15 extension for the Superior 22 model extends the brace five feet or ten foot increments. The T20 extension for the Superior 32 model extends the brace in five or 10 foot increments.



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

Example:
40, T15 Pipe Brace Extension, 5' extension for Superior 22 braces.

Brace Length and Safe Working Loads

How to Calculate Brace Length

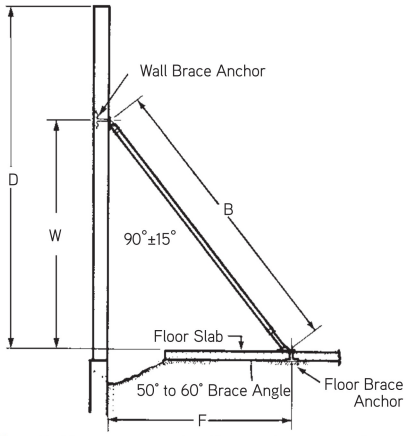
D = Elevation — top of panel above floor slab (not necessarily same as panel height).
W = Wall insert dimension = 2/3 D
F = Floor insert dimension = 3/4 W
B = Brace length = 5/4 W

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.

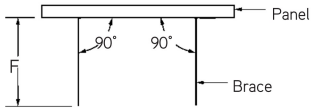
Brace locations other than those shown may drastically increase brace loads. Brace angles over 60˚ from the horizontal result in poor mechanical advantage and excessive vertical kick, while brace angles under 50˚ decrease brace buckling strength due to greater length and excessive sag.

Danger! Bracing must be installed at 90˚± 5˚ 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˚± 5˚ 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 crossbraces must be installed every 100 ft. to prevent lateral movement of braces and to provide total brace stability.



Plan View

Brace Length and Ultimate Loads

B1A Short Pipe Brace				
D	W	F	B	Ultimate Load
9'-0"	6'-0"	4'-6"	7'-6"	9,750 lbs
9'-6"	6'-5"	4'-8"	7'-11"	9,750 lbs
10'-0"	6'-8"	5'-0"	8'-4"	9,750 lbs
10'-6"	7'-0"	5'-3"	8'-9"	9,750 lbs
12'-0"	8'-0"	6'-0"	10'-0"	9,750 lbs
13'-0"	8'-9"	6'-3"	10'-9"	9,675 lbs
14'-0"	9'-6"	6'-9"	11'-8"	7,838 lbs
15'-0"	10'-0"	7'-4"	12'-5"	6,675 lbs
16'-0"	10'-9"	7'-9"	13'-3"	5,625 lbs

B4 Heavy Duty Regular Pipe Brace				
D	W	F	B	Ultimate Load
18'-0"	12'-0"	9'-0"	15'-0"	9,750 lbs
19'-0"	12'-8"	9'-6"	15'-10"	9,750 lbs
20'-0"	13'-4"	10'-0"	16'-8"	9,750 lbs
21'-0"	14'-0"	10'-6"	17'-6"	8,888 lbs
22'-0"	14'-8"	11'-0"	18'-4"	7,200 lbs
23'-0"	15'-4"	11'-6"	19'-2"	5,888 lbs
24'-0"	16'-0"	12'-0"	20'-0"	5,363 lbs
25'-0"	16'-8"	12'-6"	20'-10"	4,463 lbs
26'-0"	17'-4"	13'-0"	21'-8"	3,750 lbs
27'-0"	18'-0"	13'-6"	22'-6"	3,413 lbs
28'-0"	18'-8"	14'-0"	23'-4"	2,525 lbs

T23 Square Braces

New Name	Former Name	Outside Dim.	Std. Brace Length	Length Min.	Length Max	Ult. Load** (Lbs)	Brace Wt.* (Lbs)
B21R23S	B21F	4.0"	21'	21'-0"	23'-3"	23,250	230
B27R36S	B27BF	5.0"	27'	25'-7"	27'-3"	36,000	350
B32R24S	B32F	5.0"	32'	30'-9"	33'-3"	24,375	405
B33R22S	B33F	5.0"	33'	31'-9"	34'-3"	22,500	410

Notes::* Does not include weight of connectors.
** Ultimate Load based on adequate brace to HGA or slab connection.

B5 Heavy Duty Long Pipe Brace				
D	W	F	B	Ultimate Load
27'-0"	18'-0"	13'-6"	22'-6"	8,963 lbs
28'-0"	18'-8"	14'-0"	23'-4"	7,988 lbs
29'-0"	19'-4"	14'-6"	24'-2"	7,200 lbs
30'-0"	20'-0"	15'-0"	25'-0"	6,375 lbs
31'-0"	20'-8"	15'-6"	25'-10"	5,175 lbs
32'-0"	21'-4"	16'-0"	26'-8"	4,238 lbs
33'-0"	22'-0"	16'-6"	27'-6"	3,825 lbs
34'-0"	22'-8"	17'-0"	28'-4"	3,150 lbs
35'-0"	23'-4"	17'-6"	29'-2"	2,625 lbs
36'-0"	24'-0"	18'-0"	30'-0"	2,400 lbs
37'-0"	24'-8"	18'-6"	30'-10"	2,025 lbs

Jumbo Pipe Braces						
New Name	Old Name	D	V	X	L	Ultimate Load*
Superior 5-8	B0	8'-0"	6'-4"	4'-10"	5'-8"	10,000 lbs
Superior 17	B7	15'-0" to 24'-0"	13'-6"	10'-4"	17'-0"	13,050 lbs
Superior 22	B8	19'-0" to 31'-0"	17'-6"	13'-4"	22'-0"	9,750 lbs
Superior 22+5	B9	23'-0" to 39'-0"	21'-6"	16'-4"	27'-0"	7,200 lbs
Superior 22+10	B10	27'-0" to 46'-0"	25'-6"	19'-3"	32'-0"	5,400 lbs
Superior 32	B12A	27'-0" to 46'-0"	25'-6"	19'-4"	32'-0"	13,500 lbs
Superior 33 HD	B17S	32'-3" to 33'-6"	26'-4"	19'-11"	33'-0"	25,000 lbs
Superior 32+5	B16	42'-0"	29'-6"	22'-4"	37'-0"	12,000 lbs

Jumbo Pipe Braces cont'd						
New Name	Old Name	D	V	X	L	Ultimate Load*
Superior 32+10	B14	35'-0" to 60'-0"	33'-6"	25'-4"	42'-0"	7,800 lbs
Superior 32+10+10	B15	43'-0" to 60'-0"	41'-6"	31'-4"	52'-0"	5,700 lbs
Superior 42	B17A	35'-0" to 60'-0"	33'-6"	25'-3"	42'-0"	19,000 lbs*
Superior 52	B18	52'-0"	41'-6"	31'-4"	52'-0"	19,200 lbs*
Superior 62**	B20	62'-0"	49'-6"	37'-4"	62'-0"	17,000 lbs

Notes: Field assembly is required for Superior 32+10 (B14), Superior 32+10+10 (B15), and Superior 62 (B20) braces. Fixed length allows for +/-9" of adjustment except Superior 42 (B17A) brace has +/-7.5" of adjustment. Pipe Extensions: T15 for the Superior 22 (B8) model and T20 for the Superior 32 (B12) model.

*Ultimate Load based on adequate brace to HGA or slab connection. **Not available for rental.

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 latest editions of The American Society of Civil Engineers (ASCE-7) Minimum Design Loads for Building and other Structures, ASCE-37 Design Loads of Structures During Construction, 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 standards and the TCA guideline allow the basic wind speed, which is based on a 15% probability of three second gust wind speed in exceedence at thirty-three feet above ground level.

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 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.

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 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 a Dayton Superior Certified Precast 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, part 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.