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Service Bulletin #1

June 2009

To: Rotary Lift Distributors and RAI's

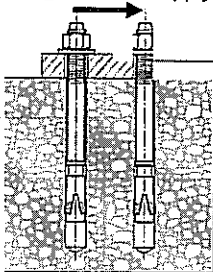
**Subject: How Abandoned Anchor Holes Can Affect Your Lift Installation - New Procedure**

Ladies and Gentlemen:

In response to your request, Rotary has obtained the following report regarding lift installation near abandoned anchor bolt holes. The information contained in this bulletin **supersedes** all previous information directly or indirectly supplied by Rotary Lift. This information is provided in cooperation with Hilti® and references a test report from the University of Tennessee and the spacing distance specifications regarding abandoned anchor holes, with or without anchors present in the hole.

The University of Tennessee anchor test report entitled, "Effect of Abandoned Holes on Capacity of Wedge Bolts"<sup>1</sup> makes the following spacing recommendations: "For no reduction in load capacity, a wedge anchor should be installed no closer than 3.0 anchor diameters (center-to-center) from an empty anchor hole of similar diameter, and no closer than 1.5 diameters from a grout-filled anchor hole of similar diameter." You can view the report at ASCE's website located at <http://cedb.asce.org/cgi/WWW/display.cgi?8200338>.

The above test report may be conservatively applied to the Hilti® HY 150 Max Adhesive Anchoring system with threaded rod because this anchorage does not apply expansion forces to the concrete during drilling, setting or loading.



New Anchor Rod Diameter	Type	Minimum Spacing Distance (center-to-center) from Abandoned Anchor Hole	Abandoned Anchor Hole Type
3/4"	Hilti® HAS Rod	2-1/4"	Empty
3/4"	Hilti Kwik Bolt III	2-1/4"	Empty
3/4"	Hilti HAS Rod	1-7/8 "	Grout filled
3/4"	Hilti Kwik Bolt III	1-7/8 "	Grout filled

Rotary states, "For instances where the abandoned anchor is still present in the hole, the minimum spacing distance (center-to-center) from an empty hole shall apply."

The allowances contained here apply only when the concrete base material condition, anchor embedment and minimum concrete thickness requirements are met. Any other concrete factors such as cracked, uneven, thin, hollow, wet, oil contaminated, etc., **PROHIBIT** the installation from meeting these requirements and require the installer to contact a Hilti Field Engineer for additional assistance before proceeding at (800) 879-8000.

Rotary Lift and Hilti do not recommend lift anchor installation outside the parameters outlined in this report.

Sincerely,

*Tammy R. Fitzpatrick*

Tammy R. Fitzpatrick  
Customer Service Consultant

cc: Field Offices International Offices Headquarters Personnel

<sup>1</sup>"Effect of Abandoned Holes on Capacity of Wedge Bolts", conducted by Edwin G. Burdette, Prof. of Civil Engineering, Univ. of Tennessee, Knoxville TN; Subir Sen, Engineering Specialist, Bechtel Power Corp., Gaithersburg MD; Ergun Ismen, Engineering Supervisor, Bechtel Power Corp., Gaithersburg MD and ASCE members as part of the Journal of the Structural Division, Proceeding of the American Society of Civil Engineers. ©ASCE, vol 108, no.ST4, April 1982 ISSN 0044-8001/82/004-0743

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RAI Bulletin #1

June 2009

# New!

To: All Rotary Distributors and RAIs

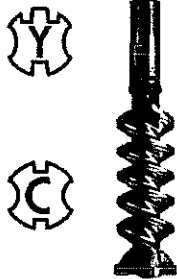


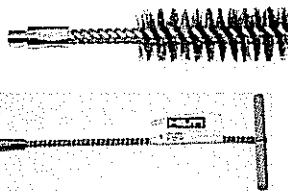

**Subject: Hilti® HIT HY150 Max Adhesive Anchoring – 2 post LD Specifications**

Ladies and Gentlemen,

Rotary has partnered with Hilti® to offer the HIT HY150 Max Adhesive Anchoring system for use in applicable installation settings that fall outside wedge anchor specifications. (See 2009 Service Bulletin #2 for updated wedge anchor specifications.) Read and follow all product labeling and instructions for use. If your installation environment does not meet the criteria for HIT HY150 Max use, contact your local Hilti engineer for additional assistance.

See attached HY 150 Max specifications for use with current Rotary 2 post Light Duty Surface lifts.

Rotary will begin supplying the following items for purchase beginning July 15, 2009. Please place your order online 24/7 via the Rotary Distributor Web (RDW) at <https://www2.rotarylif.com/RDW>.

Available Product	Description	Rotary Part #
 <p>SDS Max</p> <p>SDS+</p>	<p>Diameter (Imperial) 7/8 in Connection end TE-Y (SDS max)                      Diameter (Imperial) 7/8 in Connection end TE-C (SDS+)</p> <p>Diameter (Imperial) 3/4 in Connection end TE-Y (SDS max)                      Diameter (Imperial) 3/4 in Connection end TE-C (SDS+)</p> <p>Diameter (Imperial) 5/8 in Connection end TE-Y (SDS max)                      Diameter (Imperial) 5/8 in Connection end TE-C (SDS+)</p>	<p>IR02200000 IR02200003</p> <p>IR02200001 IR02200004</p> <p>IR02200002 IR02200005</p>
	<p>Manual Dispenser for 500 ml cartridges</p>	<p>IR02200006</p>
	<p>Extra Nozzle</p>	<p>IR02200007</p>
	<p>Round Steel Masonry Brush for cleaning out the drilled hole                      7/8 in                      3/4 in                      5/8 in                      Brush Extension (T Handle)</p>	<p>IR02200008 IR02200009 IR02200010 IR02200011</p>
	<p>(SPO/A10) Adhesive Anchor Kit including 3/4" HAS Threaded Rods                      (SPO12) Adhesive Anchor Kit including 3/4" HAS Threaded Rods                      (SPO15/18) Adhesive Anchor Kit including 3/4" HAS Threaded Rods</p>	<p>FA5918 FA5919 FA5920</p>

# Hilti® HIT HY150 Max Adhesive Anchoring System® Minimum (Non-Seismic) Requirements for Rotary Lifts 2 post Light Duty Surface

## Using HAS Threaded Rod

Base Material Temp	Base Material Type	Minimum Concrete Strength	Minimum Concrete Thickness	Embedment Depth	Recommended Hilti Anchor Rod	Recommended Anchor Diameter	Maximum Install Torque	Rotary Lift Model	Min. Edge Distance Spacing*	One Time Maintenance Torque if Applicable**
32°F to 104°F	Solid Normal Weight Concrete Un-contaminated by Oil Spills	PSI	inches	inches		inches	ft. lbs		inches	
		3000	5.1	3.25	HAS Threaded Rod	3/4	20	SPOA10/ A10i	1.6	20
		3000	5.1	3.25	HAS Threaded Rod	3/4	20	SPO10/ S10i	1.6	20
		3000	5.1	3.25	HAS Threaded Rod	3/4	20	SPO12/ S12i	0.8	20

## Using HIT TZ Threaded Rod

Base Material Temp	Base Material Type	Minimum Concrete Strength	Minimum Concrete Thickness	Embedment Depth	Recommended Hilti Anchor Rod	Recommended Anchor Diameter	Maximum Install Torque	Rotary Lift Model	Min. Edge Distance Spacing*	One Time Maintenance Torque if Applicable**
32°F to 104°F	Solid Normal Weight Concrete Un-contaminated by Oil Spills	PSI	inches	inches		inches	ft. lbs		inches	
		3000	8.2	5.25	HIT TZ Rod	3/4	20	SPOA10/ A10i	2.6	20
		3000	8.2	5.25	HIT TZ Rod	3/4	20	SPO10/ S10i	2.6	20
		3000	8.2	5.25	HIT TZ Rod	3/4	20	SPO12/ S12i	1.3	20

Always Use Compressed Air to Insure Clean Hole Installation Requirement

Use 7/8" drill bit and install in 7/8" hole.

### Note:

Parameters outside the ones listed above are considered "Special Circumstances" and require the installer to contact Hilti Engineering Technical Support at (800)-879-8000 for guidance and recommendations.

\*Edge is defined as a free-edge, sawcut or seam and does not apply to holes including abandoned anchor holes, cracks, patched or chipped concrete. See Rotary Lift 2009 Service Bulletin #1 regarding Abandoned Anchor Holes. Contact Hilti for additional assistance with cracked, patched or damaged concrete. Fill all holes with non-shrink grout or concrete.

\*\*Maintenance Torque specifications: Assuming the anchor has not permanently displaced due to overloading (in which case the anchor should be replaced), then a one time maintenance torque of the Maximum Install torque value specifications (Hilti 2008 Technical Guide) can be applied to a loose nut. The anchor should be monitored. Should the nut become loose again, further evaluation is warranted by Hilti engineering.

Produced by Rotary Lift in association with Hilti. All calculations based on current anchor loads in lift calculation packages, HIT HY150 Max 's allowable loads, load adjustment factors and edge distance formula, tension, as published in 2008 Hilti Technical Guide. © 2009 Rotary Lift Consolidated.

<http://www.rotarylift.com>

# Concrete Requirement Specification Sheet

Lift Model #	Anchor Size	Min Anchor Embedment	Min Concrete Thickness	Min Concrete PSI Strength	Min Edge Distance	Anchor Torque Ft-lbs	Concrete Pad Size If Concrete Does Not Meet Requirements
A7Di, A7Pi	3/4" x 5-1/2"	3-1/4"(83mm)	4-1/4"(108mm)	3000(207bar)	4-1/2"(114mm)	150	4'x4'x6"
SPOA10, A10i, SPO10, S10i	3/4" x 5-1/2"	3-1/4"(83mm)	4-1/4"(108mm)	3000(207bar)	4-1/2"(114mm)	150	4'x4'x6"
SPO12, S12i	3/4" x 5-1/2"	3-1/4"(83mm)	4-1/4"(108mm)	3000(207bar)	4-3/4"(121mm)	150	5'x5'x6"
SPO15, S15i, SPO18, S18i	3/4" x 5-1/2"	3-1/4"(83mm)	4-1/4"(108mm)	3000(207bar)	4-3/4"(121mm)	150	6'x6'x6"
TLO7, SPOA82	3/4" x 5-1/2"	3-1/4"(83mm)	4-1/4"(108mm)	3000(207bar)	4-3/4"(121mm)	150	4'x4'x6"
SMO14, ARO14	3/4" x 4-1/2" (F) 5/8" x 4-3/4"(R)	2-3/4"(70mm)	5-1/2"(140mm)	3000(207bar)	4-3/4"(121mm)	45 Rear 150 Front	4'x4'x6"
SM14, AR14, SM101	5/8" 4-3/4"	2-3/4"(70mm)	5-1/2"(140mm)	3000(207bar)	4-3/4"(121mm)	35-45	24"x24"x6"
SM18, SM18EL	5/8" 4-3/4"	n/a	5-1/2"(140mm)	3000(207bar)	4-3/4"(121mm)	35-45	24"x24"x6"
SM30-S, SM30- L, SM30-EL3, RFL25	5/8" x 6"	n/a	5-1/2"(140mm)	3000(207bar)	4-3/4"(121mm)	35-45	24"x24"x6"
VLXS7, VLXS10	3/4" x 4-1/4"	3-1/4"(83mm)	4-1/4"(108mm)	3000(207bar)	4-3/4"(121mm)	90	7'x9'x6"
RFP9	5/8" 4-3/4"	3-1/4"(83mm)	4"(101mm)	3000(207bar)	4-3/4"(121mm)	85	4'x4'x6"
RFP14	3/4" x 5-1/2"	3-1/4"(83mm)	4"(101mm)	3000(207bar)	4-3/4"(121mm)	85	4'x4'x6"
RTP9	3/4" x 5-1/2"	3-1/4"(83mm)	4"(101mm)	3000(207bar)	4-3/4"(121mm)	150	4'x4'x6"
RTP10	3/4" x 5-1/2"	3-1/4"(83mm)	4-1/4"(108mm)	3000(207bar)	4-3/4"(121mm)	150	4'x4'x6"

Anchor Stamp:	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Anchor Length from: Up to but not including: (inches)	1	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	11	12
	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	11	12	13

## Notes:

Information in this table is based on the use of standard anchors supplied with each lift. (Hilti Kwik Bolt III)  
This is initial torque at installation. When rechecking torque, use 60% value.

Important: An edge is defined as an edge of the concrete, expansion joint, crack & relief cut (control cut). Please see Rotary Lift for conditions outside normal specifications.