

PRODUCT BROCHURE

Color-Keyed® compression connector system

The original, all-in-one, UL listed, color-coded compression connector system.

Color-Keyed®



ABB's Color-Keyed® brand was the industry's first color-coded compression connector system. This unique, error-reducing system was developed by Thomas & Betts and established a new industry standard by using a color-coded connector matched to a color-coded crimp die. The combination of compression tool with matching dies forms the connector and conductor into a solid, homogeneous mass to provide an optimum electrical bond between connector and conductor.

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Color-Keyed compression connector system

The Color-Keyed system uses compression tools and precision dies.

ABB's Color-Keyed brand was the industry's first color-coded compression connector system.

- 01 Color-Keyed lugs
- 02 Color-Keyed hex-crimp dies



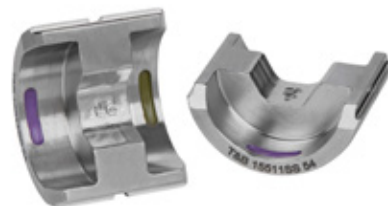
This unique, error-reducing system, was developed by Thomas & Betts and established a new industry standard by using a color-coded connector matched to a color-coded crimp die. The combination of compression tool with matching dies forms the connector and conductor into a solid, homogeneous mass to provide an optimum electrical bond between connector and conductor.

Color-Keyed compression connectors are also designed to be installed with superior hex-crimp technology — recognized as the best crimp in the market. The Color-Keyed system is available for our full range of copper and aluminum lugs, taps and splices.

Color-Keyed compression connectors offer one of the most complete connection systems in the industry and have been tested to meet UL, CSA, IEEE and Mil-Spec/SAE standards for grounding and bonding, direct burial, distribution, utility and many other applications.



01



02

UL listed vs UL classified: What's the difference?

Rely on the original — rely on the best!

The original Color-Keyed connection system combines our full line of compression crimp tools, color-coded dies and industry-leading offering of connectors suitable to almost any termination requirement. Using ABB Installation Products tools, dies and connectors provides our users with a UL listed connection. Many suppliers only offer UL classified products that do not meet the stringent testing requirements required of a full UL listing.



The Color-Keyed system offers:

- A complete range of hand tools, battery tools and bench-mount hydraulic tools.
- A variety of dies suitable for our 6-ton, 12-ton, 14-ton and 15-ton battery-powered compression crimp tools.
- Dies that provide UL listed and easily inspected crimps, complete with die code embossment.
- An industry-leading range of connectors suitable for virtually any wire size, type, class and material callout.
- A UL approved test facility capable of performing our own internal UL test procedures.
- Peace of mind that you are using the original Color-Keyed system.

Is UL classified good enough?

- Classified tools have not been investigated to all applicable wire applications.
- Classified tools have not been investigated for grounding/ bonding applications.
- Many classified tools recommend different crimp procedures than the connector manufacturers require, voiding the UL listing of the connectors.
- NEC 110.3B requires products to be installed in accordance with manufacturers' instructions. Classified tools are not called out as acceptable for use with many UL listed connectors.
- Will the UL inspectors let this pass?

Comparison of standard crimps — Can you see the difference?

- 01 Hex-style crimp
- 02 HEX-FLEX® crimp
- 03 Indent-style crimp



ABB crimp options

Hex-style crimp

The hex-style crimp has long been preferred as the industry standard for crimping compression connectors onto code copper and Al/Cu cables up to 1000 kcmil. On these cables, the hex-style crimp provides superior electrical performance and excellent pull-out strength — plus, hex dies emboss the die code onto the connector for easy inspection and verification of a proper crimp after installation.

HEX-FLEX® die crimp

The increasing popularity of flexible-conductor cable, commonly known as flex cable, for wind-power and other applications, has created new challenges — and headaches — for installers. Due to the nature of flexible conductors, the traditional hex-style crimp leaves a connection vulnerable in certain applications to a reduction in pull-out ratings. The indent-style crimp works better than the hex-style crimp on flex cable, but creates the same problem on flex cable as it does on code cable — lack of ability to inspect for a proper crimp.

This dilemma sent ABB engineers back to the drawing board, where they developed a solution that brings the best of both worlds to crimping flex cable — Color-Keyed HEX-FLEX crimp dies. The HEX-FLEX dies use a hex-shaped upper die to create an inspectable, verifiable, embossed hex crimp on the top side of the connector, with an indenter as the lower die to create an indent crimp with superior pull-out resistance on the bottom of the connector.

Indent-style crimp

When correctly performed with the proper tool that corresponds with the size of cable and connector, the indent-style crimp offers reliable electrical performance and excellent pull-out resistance. With an indent-style crimp, the connector is left with rounded edges and no flash. Also, virtually all air gaps are removed from the conductor as the strands are formed tightly together inside the connector.

Overview of crimp styles: Hex-style crimp

- 01 Hex-style crimp
- 02 15515SS hex crimp dies
- 03 Upper side of connector with hex-style crimp
- 04 Lower side of connector with hex-style crimp

When it comes to installing compression connectors, traditionally there have been two choices in crimping methods: the indent-style crimp, made by die-less compression tools, or the hex-style crimp, made by compression tools equipped with interchangeable hex dies.

Hex-style crimp

The hex-style crimp has long been preferred as the industry standard for crimping compression connectors onto code copper and Al/Cu cables up to 1000 kcmil. On these cables, the hex-style crimp provides superior electrical performance and excellent pull-out strength — plus, hex dies emboss the die code onto the connector for easy inspection and verification of a proper crimp after installation.

Dies for standard lugs and splices (TBM6PCR-LI-TBM15CR-LI)

Code copper	Al/Cu	Color code	TBM6PCR-LI, TBM62PCR-LI, TBM62CR-LI, TBM6UNICR-LI	Die code no.	TBM12PCR-LI, TBM14CR-LI, TBM15CR-LI*	Die code no.	TBM15CR-LI*	
			Die cat. no.		Die cat. no.		Die code no.	Full die cat. no.
#8	#10	Red	6TON21SS	21	15520SS	21	15520F	21
#6	#8	Blue	6TON24SS	24	15522SS	24	15522F	24
#4	#6	Gray	6TON29SS	29	15527SS	29	15527F	29
#2	—	Brown	6TON33SS	33	15528SS	33	15528F	33
#1	#4	Green	6TON37SS	37	15513SS	37	15513F	37
1/0	#2	Pink	6TON42SS	42	15508SS	42	15508F	42
2/0	—	Black	6TON45SS	45	15526SS	45	15526F	45
3/0	—	Orange	6TON50SS	50H	15530SS	50	15530F	50
4/0	—	Purple	6TON54SS	54H	15511SS	54	15511F	54
250	—	Yellow	6TON62SS	62H	15510SS	62	15510F	62
—	#1	Gold	6TON45SS	45	15526SS	45	—	—
—	1/0	Tan	6TON50SS	50H	15530SS	50	—	—
—	2/0	Olive	6TON54SS	54H	15511SS	54	—	—
—	3/0	Ruby	6TON60SS	60H	15532SS	60	15532F	60
300	4/0	White	6TON66SS	66H	15534SS	66	15534F	66
350	250	Red	6TON71SS	71H	15514SS	71	15514F	71
400	300	Blue	6TON76SS	76H	15512SS	76	15512F	76
—	—	—	6TON80SS	80H	15517SS	80H	15606	80H
500	350	Brown	6TON87SS	87H	15506SS	87H	15506F	87H
600	400	Green	6TON94SS	94H	15536SS	94H	15611	94H
700	500	Pink	—	—	15505SS	99H	15505F	99H
750	650	Black	—	—	15515SS	106H	15515F	106H
800	—	Orange	—	—	15540SS	107H	15608	107H
—	700	Purple	—	—	—	—	15602	112H
900	750	Yellow	—	—	15504SS	115H	15504F	115H
1000	800	—	—	—	—	—	15603	125H
—	1000	—	—	—	—	—	15602	140H
—	—	—	—	—	—	—	15601	150H

*15500 series dies require 15500-TB adapter on 15-ton tools. 15500F for full-size die to fit TBM15CR-LI without adapter.

Hex dies for standard lugs and splices

Dies for standard lugs and splices (TBM45S–TBM12)

Connector size			Color code	TBM45S	TBM4S	TBM8-750	TBM-8/8S	TBM-5/5S	TBM6/6S /25000		13642M / 13400 Hydraulic head		TBM12 Hydraulic head	
Code copper (AWG or kcmil)	Flex/24	Al/Cu (AWG or kcmil)					TBM8 die cat. no.	TBM5 die cat. no.	Cat. no. upper die	Cat. no. lower die	Die cat. no.	Die cat. no.	Die cat. no.	Die cat. no.
#8	37/24	#10	Red	C-taps only			–	–	13475	13477	11732	21	TBM12D-1	21
#6	61/24	#8	Blue				–	–	13475	13477	11733	24	TBM12D-1	24
#4	91/24	#6	Gray				13461	13454	13472	13476	11734	29	TBM12D-2	29
#2	125/24	–	Brown				–	–	13474	13477	11735	33	TBM12D-2	33
#1	150/24	#4	Green				–	–	13474	13477	11736	37	TBM12D-3	37
1/0	225/24	#2	Pink				–	–	13475	13477	11737	42	TBM12D-3	42
2/0	275/24	–	Black				13462	13455	13474	13477	11738	45	TBM12D-4	45
3/0	325/24	–	Orange				–	–	13474	13477	11739	50	TBM12D-4	50
4/0	450/24	–	Purple				–	–	13475	13477	11740	54	TBM12D-5	54
250	550/24	–	Yellow				13463	13456	13473	13476	11771	62	TBM12D-5	62
–	–	#1	Gold				–	–	13474	13477	11738	45	TBM12D-4	45
–	–	1/0	Tan				–	–	13474	13477	11739	50	TBM12D-4	50
–	–	2/0	Olive				13464	13457	13475	13477	11740	54	TBM12D-5	54
–	–	3/0	Ruby				–	–	13473	13476	11741	60	TBM12D-5	60
300	–	4/0	White				13465	–	13473	13476	11742	66H	TBM12D-5	66H
350	775/24 (short)	250	Red				13466	13458	13472	13476	11743	71H	TBM12D-4	71H
400	775/24 (long)	300	Blue				13467/4/0 only		13472	13476	11744	76H	TBM12D-4	76H
–	925/24*	–	–				–	–	13479	13476	11745	80H	–	–
–	–	–	–				–	–	–	–	–	–	–	–
500	–	350	Brown				13468	–	13478	13478	11746-TB	87H	TBM12D-3	87H
600	1100/24	400	Green				–	–	–	–	11747	94H	TBM12D-3	94H
–	–	–	–				–	–	–	–	–	–	–	94H
–	1325/24**	–	Pink				–	–	–	–	–	–	–	–
700	–	500	Black				–	–	–	–	11748	99H	TBM12D-2	99H
750	–	650	Black				–	–	–	–	11749	106H	TBM12D-2	106H
800	–	–	Orange				–	–	–	–	11750	107H	–	–
–	–	700	Purple				–	–	–	–	11751	112H	TBM12D-1	112H
900	1925/25	750	Yellow				–	–	–	–	11753	115H	TBM12D-1	115H
1000	–	800	–				–	–	–	–	–	–	–	–
–	–	1000	–				–	–	–	–	–	–	–	–

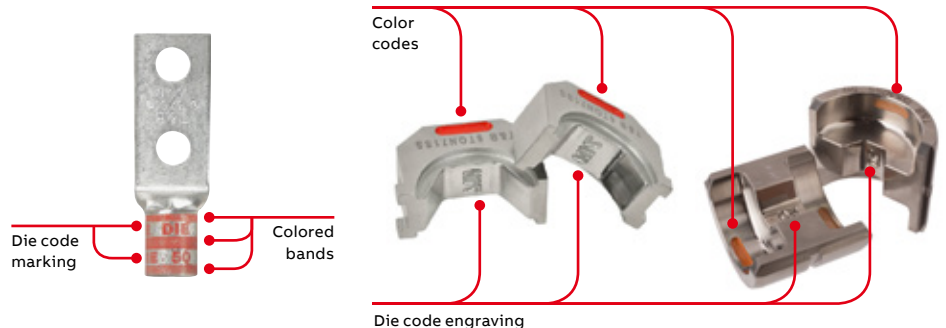
* Standard barrel only. Long barrel requires brown 87H.

** Standard barrel only. Long barrel requires brown 106H.

Select the proper installing die and appropriate tool.

Color-Keyed connectors have colored bands or colored dots that correspond to color markings on the dies.

Connectors and dies also have a die code number marked or stamped on them. Dies have a code number engraved in the crimp surface.



Overview of crimp styles: HEX-FLEX die crimp

01 HEX-FLEX crimp

02 Upper side of connector with hex-style crimp

03 Lower side of connector with indent-style crimp

04 Cat. no. 6TON24XSS
HEX-FLEX upper crimp die

05 Cat. no. 6TONXSS
HEX-FLEX lower indenter



01



02



03

The increasing popularity of flexible-conductor cable, commonly known as flex cable, for wind-power and other applications, has created new challenges — and headaches — for installers. Due to the nature of flexible conductors, the traditional hex-style crimp leaves a connection vulnerable in certain applications to a reduction in pull-out ratings. The indent-style crimp works better than the hex-style crimp on flex cable, but creates the same problem on code cable as it does on code cable — lack of ability to inspect for a proper crimp.

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04



05

- Unique dies provide an inspectable, high-performance crimp on flex-conductor cables
- Creates a hex-style crimp on the top and an indent-style crimp on the bottom — all in one easy step
- Color-coded for easy matching with Color-Keyed lugs and splices to help eliminate costly installation errors
- Die-code embossed on connection for easy inspection and verification
- Full range of sizes available to cover flex conductor sizes M through K

- Fit most existing 6- and 14-ton Color-Keyed compression tools, as well as 15-ton tools with 15500-TB adapter — no additional tool investment required
- Made from stainless steel for durability, corrosion resistance and long service life
- Creates a UL listed, CSA certified connection when used on Color-Keyed compression connectors with flex/24 plus classes G, H, I, K and M
- Can be used on flex cable as well as code wire (consult chart for proper die and tool selection)

HEX-FLEX dies for standard lugs and splices with flex cable

Dies for standard lugs and splices

Connector size (AWG or kcmil)		6-ton Li-ion tools		12- and 14-ton Li-ion tools		15-ton Li-ion tool	
Flex/24	Color code	HEX-FLEX die cat. no.	HEX-FLEX die code no.	HEX-FLEX die cat. no.†	HEX-FLEX die code no.	HEX-FLEX full die cat. no.†	HEX-FLEX full die code no.
37/24	Red	6TON21XSS	21X	15520XSS	21X	–	–
61/24	Blue	6TON24XSS	24X	15522XSS	24X	–	–
91/24	Gray	6TON29XSS	29X	15527XSS	29X	–	–
125/24	Brown	6TON33XSS	33X	15528XSS	33X	–	–
150/24	Green	6TON37XSS	37X	15513XSS	37X	–	–
225/24	Pink	6TON4X2SS	42X	15508XSS	42X	–	–
275/24	Black	6TON45XSS	45X	15526XSS	45X	–	–
325/24	Orange	6TON50XSS	50X	15530XSS	50X	–	–
450/24	Purple	6TON54XSS	54X	15511XSS	54X	–	–
550/24	Yellow	6TON62XSS	62X	15510XSS	62X	15662X	62X
650/24	White	6TON66XSS	66X	15534XSS	66X	15666X	66X
75/24 (short)	Red	6TON71XSS	71X	15514XSS	71X	15671X	71X
75-24(long)	Blue	6TON76XSS	76X	15512XSS	76X	15676X	76X
925/24*	–	6TON80XSS	80X	15517XSS	80X	15606X	80X
925/24	Brown	6TON87XSS	87X	15506XSS	87X	15687X	87X
1100/24	Green	6TON94XSS	94X	15536XSS	94X	15611X	94X
1325/24	Pink	–	–	–	–	15605X	99X
1600/24**	Black	–	–	–	–	15615X	106X
–	Orange	–	–	–	–	15608X	107X
1925/24	Yellow	–	–	–	–	15604X	115X

*Standard barrel only. Long barrel requires Brown 87H.

**Flex wire size 1600/24 requires long barrel only with die code Black 106H.

† HEX-FLEX® dies are sold separately in halves. The catalog numbers shown in the chart above are for the upper half of the die.

For the bottom half (the indenter), order one cat. no. 6TONXSS for all 6TONXSS series, one cat. no. 15500XSS for 15500XSS series die codes 21X-94X and one cat. no. 15600X for all 15600X series die codes 62X-115X.

‡ These dies require adapter 15500-TB to be used in the TBM15CR-LI.

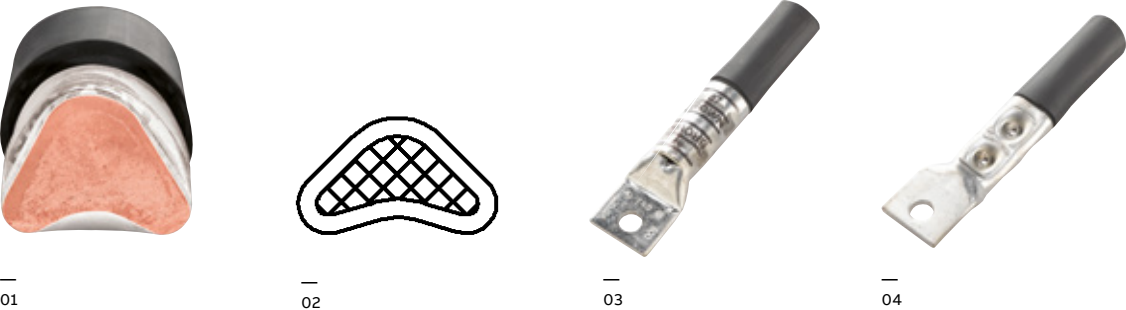
Tool warranty applies: Refer to <http://www-public.tnb.com/warranty/ta04790-tb2.pdf> for full warranty terms.

Overview of crimp styles: Indent-style crimp (dieless)

-
- 01 Indent-style crimp
-
- 02 Indent-style crimp diagram
-
- 03 Upper side of connector with indent-style crimp
-
- 04 Lower side of connector with indent-style crimp
-
- 05 TBM8-750BSCR battery-powered tool
-
- 06 TBM8-750M-1 manual hydraulic tool
-
- 07 TBM8-750 12-ton hydraulic head

When correctly performed with the proper tool that corresponds with the size of cable and connector, the indent-style crimp offers reliable electrical performance and excellent pull-out resistance. With an indent-style crimp, the connector is left with

rounded edges and no flash. Also, virtually all air gaps are removed from the conductor as the strands are formed tightly together inside the connector.



SMART® tool range-taking features
The following size Color-Keyed lugs and splices, when crimped with the dieless, indent-style SMART tools, produce these range-taking capabilities:



Copper		Aluminum	
Standard wire size (AWG or kcmil)	Range taking (AWG or kcmil)	Standard wire size (AWG or kcmil)	Range taking (AWG or kcmil)
1/0	#6–1/0	1/0	#6–1/0
2/0	#1–2/0	2/0	#1–2/0
4/0	#2–4/0	4/0	#2–4/0
300	2/0–300	300	2/0–300
350	250–350	350	250–350
500	250–500	500	4/0–500
750	500–750	750	500–750

Manual crimp tools with Shure Stake® mechanism

— 01 TBM45S Comfort Crimp® tool

— 02 TBM4S dieless crimp tool

— 03 TBM5S crimp tool

— 04 TBM6S crimp tool

— 05 TBM8S crimp tool

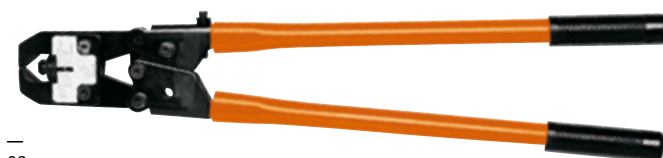
— 06 TBM14M 14-ton manual hydraulic crimp tool



— 01



Creates diamond-style crimp for #8–#2 AWG copper and #10–#6 AWG aluminum



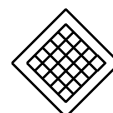
— 02



Creates indent-style crimp for #8 AWG–250 kcmil copper and #8–4/0 AWG aluminum



— 03



Creates diamond-style crimp for #8 AWG–250 kcmil copper and #10–4/0 AWG aluminum



— 04



Creates diamond-style crimp for #8 AWG–500 kcmil copper and #10 AWG–350 kcmil aluminum



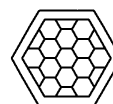
— 05



Creates diamond-style crimp for #8 AWG–500 kcmil copper and #10 AWG–350 kcmil aluminum



— 06



Creates hex-style crimp for #8 AWG–900 kcmil copper and #10 AWG–750 kcmil aluminum

Battery-powered crimp tools — 6-, 12-, 14- and 15-ton



Li 6-ton open crimp tool

- Designed for one-handed control ram advancement and retraction*
- Open yoke design with rotating head allows for maximum crimping flexibility
- Protective rubber boot on head
- Rapid advance feature decreases crimp time
- Works with MAKITA LXT 18 V lithium-ion batteries†



Li 6-ton closed crimp tool

- Designed for one-handed control ram advancement and retraction*
- Rotating head allows maximum flexibility for crimping
- Rapid advance feature decreases crimp time
- Works with MAKITA LXT 18 V lithium-ion batteries†

Cat. no.	Dimensions	Weight	Capacity	Output
TBM6PCR-LI	13.7"L x 3.3"W x 10.6"H	8.3 lbs. with battery	Cu #8–600 kcmil Al #8–400 kcmil	6 tons

Cat. no.	Dimensions	Weight	Capacity	Output
TBM62PCR-LI	13.7"L x 3.3"W x 10.6"H	8.3 lbs. with battery	Cu #8–600 kcmil Al #8–400 kcmil	6 tons



Li inline 6-ton closed crimp tool

- Designed with a rotating 180° head and integrated LED work lights, offering more maneuverability in tight spaces, while still providing 6 tons of parallel-action crimping force
- Designed for one-handed control ram advancement and retraction with a rapid advance feature that decreases crimp time*
- Accepts W-style dies
- Works with MAKITA LXT 18 V lithium-ion batteries†



Li 12-ton open crimp tool

- Designed for one-handed control ram advancement and retraction*
- Rotating head allows maximum flexibility for crimping and a protective rubber boot on "C" head
- Rapid advance feature decreases crimp time
- Works with MAKITA LXT 18 V lithium-ion batteries†

Cat. no.	Dimensions	Weight	Capacity	Output
TBM62CR-LI	15.8"L x 3.3"W x 4.5"H	5.9 lbs. with battery	Cu #8–600 kcmil Al #8–400 kcmil	6 tons

Cat. no.	Dimensions	Weight	Capacity	Output
TBM12PCR-LI	17"L x 3.6"W x 16.3 lbs. with 11.3"H battery		Cu/Al #8–750 kcmil	12 tons



Li 14-ton open crimp tool

- Installs up to 900 kcmil copper lugs and splices and up to 750 kcmil aluminum lugs and splices
- Rotating head allows maximum flexibility for crimping and a protective rubber boot on "C" head
- Rapid advance feature decreases crimp time
- Works with MAKITA LXT 18 V lithium-ion batteries†



Li 15-ton closed crimp tool

- Installs up to 1500 kcmil copper lugs and splices and up to 1250 kcmil aluminum lugs and splices
- Rotating head allows maximum flexibility for crimping and a protective rubber boot
- Rapid advance feature decreases crimp time
- Works with MAKITA LXT 18 V lithium-ion batteries†

Cat. no.	Dimensions	Weight	Capacity	Output
TBM14CR-LI	22"L x 3.5"W x 10.5"H	17.8 lbs. with battery	Cu #8–900 kcmil Al #10–750 kcmil	14 tons

Cat. no.	Dimensions	Weight	Capacity	Output
TBM15CR-LI	23.5"L x 3.5"W x 10.5"H	19.8 lbs. with battery	Cu #8–1500 kcmil Al #10–1250 kcmil	15 tons

Hydraulic-powered crimp tool heads and hydraulic pumps

—
01 TBM6H 6-ton hydraulic crimping head

—
02 13100A 14-ton hydraulic crimping head

—
03 TBM15I 15-ton hydraulic crimping head

—
04 21940 40-ton hydraulic crimping head

—
05 13606 foot-/hand-operated hydraulic pump

—
06 13600 electric hydraulic pump



01



02



03



04



05



06

Dies for copper C-taps

—
01 Standard c-tap
—
02 Large c-tap



—
01

Dies for standard C-taps

Connector	Color code	TBM45S die no.	TBM5/5S die no.	TBM6/6S die no.	TBM8/8S die no.	TBM6H/ 6-ton Li-ion tools die no.
54705	Red	Red nest	13454	13475/13477	13461	6TON21SS
54710	Blue	Blue nest	13454	13475/13477	13461	6TON24SS
54715	Gray	Grey nest	13454	13472/13476	13461	6TON29SS
54720	Brown	Brown nest	13454	13474/13477	13461	6TON33SS
54725	Green	Green nest	13455	13474/13477	13462	6TON37SS
54730	Pink	—	13455	13475/13477	13462	6TON42SS
54735	Black	—	13455	13474/13477	13462	6TON45SS
54740	Orange	—	13455	13474/13477	13462	6TON50SS
54745	Purple	—	13456	13475/13477	13463	6TON54SS
54750	Yellow	—	13456	13473/13478	13463	6TON62SS



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02

Dies for large C-taps

Connector	Color code	13642M/13400 die no.	TBM12 die no.	13100A/JB12B/ TBM14M/14-ton Li-ion tool die no.	TBM15I/ 15-ton Li-ion tool die no.
54755	Blue	11744	TBM12D-4	15512SS	15512SS*
54760	Brown	11746-TB	TBM12D-3	15506SS	15506SS*
54765	Pink	11748	TBM12D-2	15505SS	15505SS*
54770	Black	11749	TBM12D-2	15515SS	15515SS*
54775	Yellow	11753	TBM12D-1	15504SS	15504SS*
54780	White	—	—	—	15603
54785	N/A	—	—	—	15603
54790	N/A	—	—	—	15603

* 15500 Series dies need adapter 15500-TB on all TBM15 series tools.

Dies for copper and aluminum H-taps

— 01 Aluminum h-tap

— 02 Copper h-tap



— 01

Dies for aluminum H-taps

Connector	Color code	TBM5/5S die no.	TBM6/6S die no.	TBM8/8S die no.	TBM12 die no.	TBM6H/ 6-ton Li-ion tools die no.	13100A/ JB12B/ TBM14M die no.	TBM15/ 15-ton Li-ion tool die no.
63105	Orange	13455	13474/13477	13462	TBM12D-4	6TON50SS	15530SS	15530SS*
63110	Green	—	13470	—	TBM12D-H	OJB	15501A	15501A*
63118	Green	—	13470	—	TBM12D-H	OJB	15501A	15501A*
63125	Green	—	13470	—	TBM12D-H	OJB	15501A	15501A*
63140	Blue	—	13471	—	TBM12D-H	DBL	15502	15502*
63148	Blue	—	13471	—	TBM12D-H	DBL	15502	15502*
63160	Red	—	—	—	—	—	—	15612
63169	Black	—	—	—	—	—	—	15620
63170	Black	—	—	—	—	—	—	15620
63180	Black	—	—	—	—	—	—	15620

* 15500 Series dies need adapter 15500-TB on all TBM15 series tools.



— 02

Dies for copper H-taps

Connector	Color code	TBM6H/6-ton Li-ion tools die no.	13100A/JB12B/ TBM14M/14-ton Li-ion tool die no.	TBM15/15-ton Li-ion tool die no.
CHT814-10	Green	6TON37R	15CA37RCH	15CA37RCH*
CHT214-9	Brown	6TON71R	15CA71RCH	15CA71RCH*
CHT250214-8	Purple	—	15CA80RCH	15CA80RCH*
CHT25014-7	Purple	—	15CA80RCH	15CA80RCH*
CHT2502-6	Purple	—	15CA80RCH	15CA80RCH*
CHT50010-5	Brown	—	—	15612CH
CHT50040-4	Brown	—	—	15612CH
CHT750350-2	Yellow	—	—	15620CH
CHT75040-11	Yellow	—	—	15620CH
CHT750350-1F	—	—	—	15620CHF

* 15500 Series dies need adapter 15500-TB on all TBM15 series tools.

Dies for copper and aluminum H-taps



Copper H-taps – 600 V applications

Cat. no.	Fig. no.	Color code	Conductor size code (flex cable) (AWG or kcmil)				Hydraulic head	Installing die	# of crimps	Color code	Die code	Crimping information	
			Main	Branch 1	Branch 2	Branch 3						Strip length (in.)	Insulating covers
CHT750350-1F	1	White	(750–500) (750) Flex only	(750–500) (350) Flex only	–	–	TBM15I	15620CHF	1	White	F	1½	–
CHT750350-2	2	Yellow	750–500 (550–500)	750–500 (550–350)	–	–	TBM15I	15620CH	1	Yellow	Z	1¾	–
CHT50040-4	2	Brown	500–250 (350–4/0)	500–4/0 (350–4/0)	–	–	TBM15I	15612CH	2	Brown	N	1½	–
CHT50010-5	3	Brown	500–4/0 (350–4/0)	250–1/0 (4/0–1/0)	1 Str. 2–6 (1–8)	8–14 (8–14)	TBM15I	15612CH	2	Brown	N	1½	–
CHT2502-6	2	Purple	250–2 (4/0–2)	250–2 (4/0–2)	–	–	TBM15I• TBM14M	15CA80RCH	1	Purple	80R	13/16	HTC40
CHT25014-7	4	Purple	250–2 (4/0–2)	2–6 Str./Sol. (2–8)	8–14 (8–14)	–	TBM15I• TBM14M	15CA80RCH	1	Purple	80R	1½	–
CHT250214-8	5	Purple	250–2 (4/0–2)	8–14 (8–14)	8–14 (8–14)	–	TBM15I• TBM14M	15CA80RCH	1	Purple	80R	1½	–
CHT214-9	6	Brown	2–6 Str./Sol. (2–8)	2–6 Str./Sol. (2–8)	8–14 (8–14)	8–14 (8–14)	TBM15I• TBM14M 13100A	15CA71RCH	3	Brown	71R	7/8	–
CHT814-10	7	Green	8–14 (8–14)	8–14 (8–14)	–	–	TBM15I• TBM14M 13100A	15CA37RCH	1	Green	37R	½	–
CHT75040-11	8	Yellow	750 Str. (750–500)	350–4/0 Str. Cu. & Flex	–	–	TBM15I	15620CH	1	Yellow	Z	1½	HTC500

Die kit details — 6-ton tools



Hex die kit
TBM6HD1SS

Die cat. no.	Color		Die code
	Copper	Aluminum	
6TON21SS		Red	21
6TON24SS		Blue	24
6TON29SS		Gray	29
6TON33SS		Brown	33
6TON37SS		Green	37
6TON42SS		Pink	42
6TON45SS		Black	45
6TON50SS	Orange	Tan	50H
6TON54SS	Purple	Olive	54H
6TON60SS		Ruby	60H
6TON62SS		Yellow	62H
6TON66SS		White	66H
6TON71SS		Red	71H
6TON76SS		Blue	76H
6TON80SS		–	80H
6TON87SS		Brown	87H
6TON94SS		Green	94H

HEX-FLEX® die kit
TBM6HDXSS

Die cat. no.	Color		Die code
	Copper	Aluminum	
6TON21XSS		Red	21X
6TON24XSS		Blue	24X
6TON29XSS		Gray	29X
6TON33XSS		Brown	33X
6TON37XSS		Green	37X
6TON42XSS		Pink	42X
6TON46XSS		Black	45X
6TON50XSS		Orange	50X
6TON54XSS		Purple	54X
6TON62XSS		Yellow	62X
6TONXSS			INDENTOR



Die kit details – 12-, 14- and 15-ton tools



Hex die kit 15500SS-K10

Die cat. no.	Color		Die code
	Copper	Aluminum	
15522SS		Blue	24
15528SS		Brown	33
15508SS		Pink	42
15526SS	Black	Gold	45*
15530SS	Orange	Tan	50*
15511SS	Purple	Olive	54*
15510SS		Black	62
15514SS		Yellow	71
15506SS		Red	87H
15515SS		Black	106H

*Die 45, 50, 54 have dual color coding to accommodate the copper and aluminum cable crimping requirements.

Hex die kit 15500SS-K15

Die cat. no.	Color		Die code
	Copper	Aluminum	
15522SS		Blue	24
15527SS		Gray	29
15528SS		Brown	33
15512SS		Green	37
15508SS		Pink	42
15526SS	Black	Gold	45*
15530SS	Orange	Tan	50*
15511SS	Purple	Olive	54*
15510SS		Yellow	62
15534SS		White	66
15514SS		Red	71
15512SS		Blue	76
15506SS		Brown	87H
15536SS		Green	94H
15515SS		Black	106H

*Die 45, 50, 54 have dual color coding to accommodate the copper and aluminum cable crimping requirements.

HEX-FLEX® die kit 15500SS-KHF

Die cat. no.	Color	Die code
15508XSS	Pink	42X
15526XSS	Black	45X
15530XSS	Orange	50X
15511XSS	Purple	54X
15510XSS	Yellow	62X
15534XSS	White	66X
15514XSS	Red	71X
15512XSS	Blue	76X
15517XSS	–	80X
15506XSS	Brown	87X
15536XSS	Green	94X
15500XSS	None	INDENTOR

The Color-Keyed method

The Color-Keyed method of installing compression connectors is designed to provide a UL listed connection offering a high degree of reliability in electrical wiring. This termination method provides a repeatable process that will provide the same high-quality connections time after time, enabling contractors, electricians and equipment manufacturers to make installations with little effort and a considerable savings in time. The benefit is a high-quality UL listed connection at a low installed cost.

Just four easy steps to a verifiable connection!



01

01 Strip the insulation
(PPE may be required)

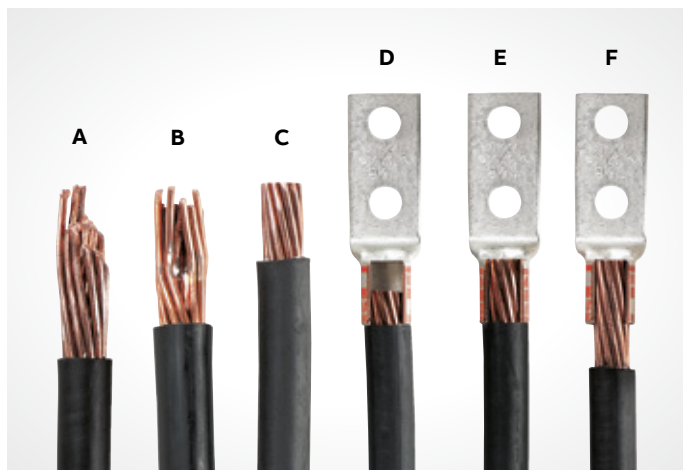
02 Stripping types and
conductor connections

Step 1

Carefully strip the insulation on de-energized wires to avoid nicking or cutting conductors (wire brush if required).

Stripping types:

- **A** – Strand cut
- **B** – Nicked strands
- **C** – Good strip



02

Strip the insulation to the proper length so that conductors can be fully inserted into the connector barrel.

Conductor connections:

- **D** – Strip length too short
- **E** – Strip length just right
- **F** – Strip length too long

The Color-Keyed method



01

01 Select the connector for the cable size

02 Connector types and markings

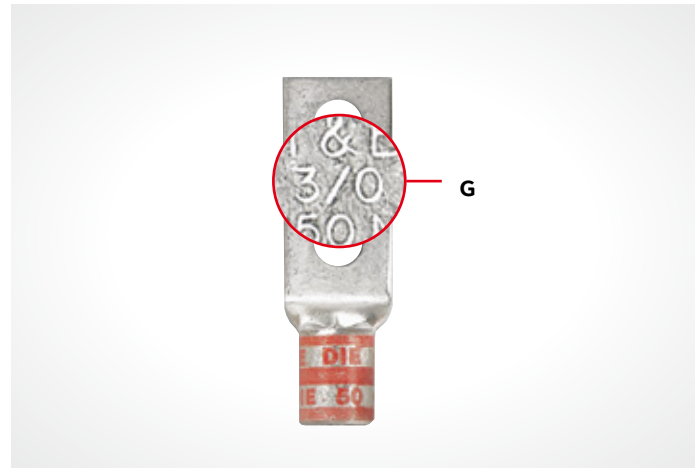
* Aluminum lugs with a "9" indicate 90 °C rating

Step 2

Determine the proper Color-Keyed connector for the cable size being used. Connectors are marked to show cable size and material:

- **G** – Cable size

02



- Connector types:
- Connectors marked with just cable size or CU should be used on copper conductors only
- Connectors marked "AL9"* with the cable size should be used on aluminum conductors only
- Connectors marked "AL9CU" with the cable size may be used on the aluminum or copper conductors



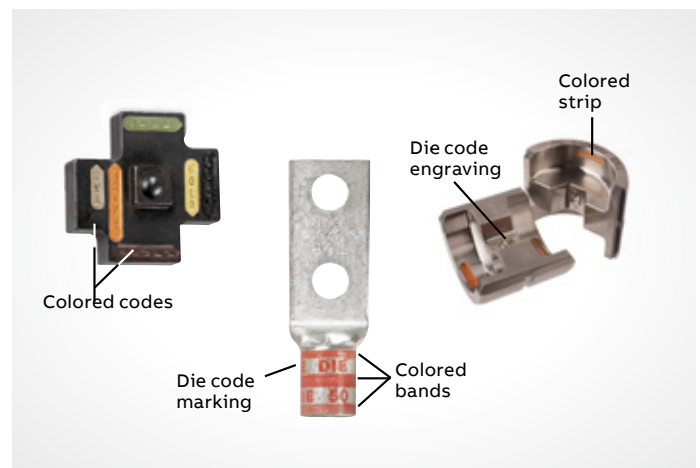
03

03 Select the installing die

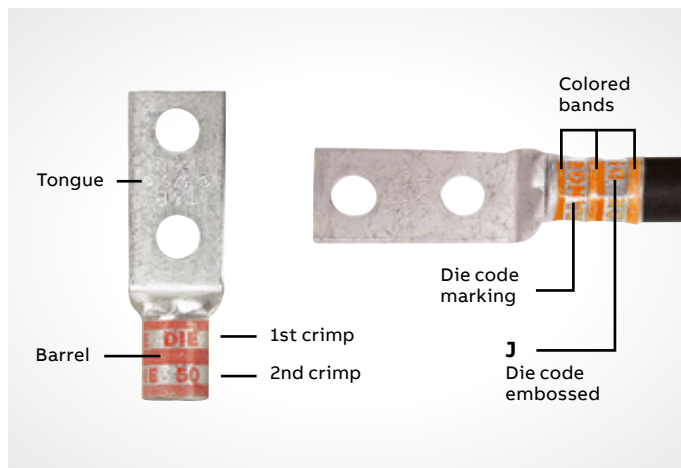
Step 3

Select the proper installing die and appropriate tool. Color-Keyed connectors have colored bands or colored dots that correspond to color markings on the dies.

Connectors and dies also have a die code number marked or stamped on them. Dies have a code number engraved in the crimp surface.



The Color-Keyed method



01

01 Color-Keyed bands and die location for compression

02 Connector types and markings

Step 4

Locate tool with correct die in proper position on connector and activate tool. When making multiple crimps, make the first crimp nearest the tongue and work towards the barrel end.

When properly crimped, the die code number will be embossed on the connector for easy inspection to determine if correct die and connector combination were used (J).

ABB uses full-width and half-width dies dependent on connector size and tool used. Half-width dies are marked with the letter “H” after the die code number. Refer to the instruction sheet supplied with the connectors for information regarding strip length, die selection and number of compressions required.

Color-Keyed connectors are banded by colored stripes or engraving to indicate location of die on connector for compression.

- **K** – Copper (die located BETWEEN bands)
- **L** – Aluminum (die located ON bands)



02

The Color-Keyed method



Precision dies form a solid homogenous mass...

The Color-Keyed method using compression tools with matching dies forms the connector and conductor into a solid, homogenous mass to provide an optimum electrical bond between connector and conductor. Color-Keyed dies are designed to produce a circumferential, hex- or diamond-shaped compression rather than a simple indent. Precision dies are an integral part of the Color-Keyed method. The precision hardened steel dies exert tremendous, controlled pressure on the connector and conductor. The dies compress

the connector around the cable, converting the round strands into hexagonal or diamond shapes and forming the strands and connector into a solid mass. Each die is designed so that all conductors receive the same amount of compression force. The circumferential compression creates a large area of high-pressure contact between cable and connector which, in turn, assures high conductivity, low resistance and high pullout values that exceed UL requirements. These features result in a permanent, low installed cost connection. Install it, and forget it.

The Color-Keyed system tells you where to place the installing die.

Color-Keyed connectors not only identify the correct installing die to be used for positive compressions, but also indicate the proper placement of the die on the connector. This is accomplished by the bands of color on the connector that match the color on the dies. Compression is made between or on these color bands. The color name is also spelled on the connector as an added means of identification.

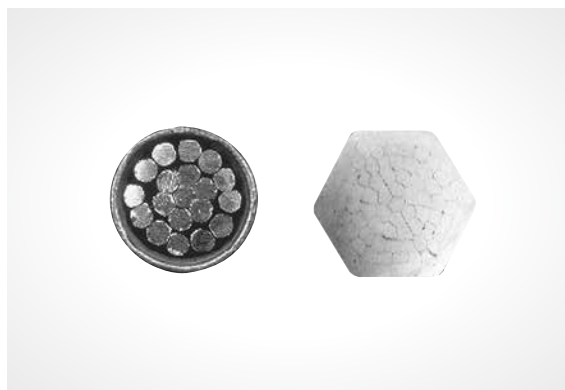
Color-Keyed dies offer inspection capability.

Dies that are used in Color-Keyed hand and hydraulic tools contain the “die code” numbers, which are engraved on the compression surface of the die. Under compression, this number becomes embossed on the completed connection for inspection purposes. The inspector can compare the die code number embossed on the connector with the die table to ensure that the proper connector was compressed with the correct die for that particular size conductor.

01 Before compression, a typical cross section of cable and connector consists of about 75% metal and 25% air.

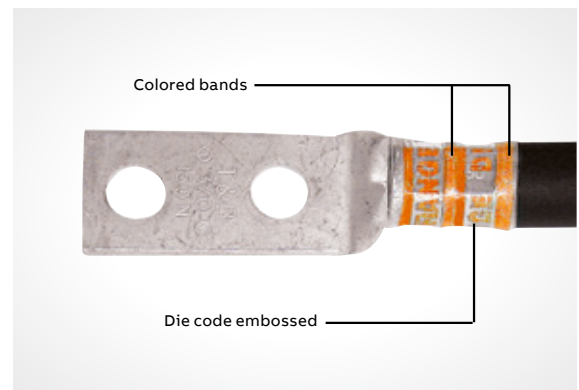
02 Color-Keyed compression by the ABB method, the cross section looks like this, nearly 100% metal with virtually no air spaces.

03 Color-Keyed connectors are banded by colored stripes or engraving to indicate location of die on connector for compression.



01

02



03

The Color-Keyed method



Quality tooling with the Shure Stake® mechanism

Color-Keyed manual tools with the exclusive Shure Stake mechanism take the guesswork out of making compression connections. The Shure Stake mechanism provides a full cycle compression stroke every time. Once the stroke has started, the tool will not release the connector until the proper amount of force has been applied. This provides assurance of a fully compressed connection. Color-Keyed compression tools develop uniform, controlled pressure to each connector within their size range. ABB offers electric and battery-powered hydraulic pumps with a Shure Stake feature that guarantees a full cycle compression.

Color-Keyed method components meet industry standards.

Depending on the application, all Color-Keyed copper connectors meet UL Std. 486A for code stranded and 24 gauge flex, CSA Std. C22.2, No. 65 600-volt requirements for power and UL Std. 467, CSA Std. 22.2 No. 0.4 requirements for direct buried grounding.

Color-Keyed connectors are available in a range of sizes and styles to accommodate #8 AWG through 1000 kcmil and larger copper or 2000 kcmil and larger aluminum cable. They may be compressed on cable with either manual or hydraulic tools. They are offered with standard length or long barrels, with one bolt or two bolt holes, or in two-way styles for splicing applications. Two-way connectors are compact, providing high pullout values with low resistance.

Color-Keyed two-hole system are ideal for bus bar applications that require two bolts to prevent lug rotation.

The Color-Keyed method is one of the most efficient, highest quality connections that have been engineered and are designed to deliver superior electrical performance and highest reliability. Color-Keyed compression connectors eliminate risk of problems relating to loose connections when installed properly.

High-grade materials incorporated in Color-Keyed method.

Low installed cost connections of superior quality can be achieved only through the use of high-grade components. That is an important part of the Color-Keyed method — quality products you can depend on.

Copper Color-Keyed connectors are made of high-conductivity wrought copper, and are electro-tin plated to prevent corrosion and to improve conductivity. Color-Keyed connectors offer the thickest tin plating in the industry. Other copper connectors for heavy-duty use and grid grounding applications are made of high-conductivity cast copper, bright finished.

High-conductivity cast aluminum connectors are available for heavy-duty application.

01 TBM6PCR-LI crimp tool

02 TBM6S crimp tool

03 TBM45S Comfort Crimp® tool



01



02



03

Tool Services and warranty

Tool repair services

ABB Installation Products Tool Services repairs all T&B tools, from simple hand tools to hydraulic pumps and crimping heads. Tool Services performs all warranty repairs and can supply you with a temporary loaner tool when necessary. Tool Services can also perform non-warranty repairs, or, if you wish to repair your own tools, contact Tool Services to obtain any needed components, technical documentation and support.

Tool rental program

For short-term installation projects, sometimes it makes more sense to rent than buy power tools. To meet this need, Tool Services has created a tool rental program geared specifically for contractors and projects. Renting T&B tools is easy. A rental agreement is available on our website at www.electrification.us.abb.com/powerconnections, and you can easily pay the rental fees by credit card. Call Tool Services at 1-800-284-TOOL (8665) for more details, including a list of T&B tools available for rental.

T&B tool warranty

You can choose T&B tools with confidence knowing we stand behind them with our warranty. The chart below shows the standard length of warranty for different types of tools.

1 Year	2 Year	5 Year
<ul style="list-style-type: none">• Cable tie installation tools• Cable cutters• Cable strippers• Dies	<ul style="list-style-type: none">• Mechanical hand tools with Shure Stake mechanism• Pneumatic tools• Hydraulic pumps	<ul style="list-style-type: none">• Battery-operated tools• Mechanical hand tools without Shure Stake mechanism• Hydraulic tools (self contained and remote heads)



Notes

Notes



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US

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