

KH ADAPTER SERIES

 **극동전자정밀(주)**

ADAPTER/KH Series

Definitions

Kukdong Connector Code

Kukdong uses a numerical code to identify connectors with similar adapter interfaces. This code is used to determine the adapter part number.

Adapter Type

This catalog explains Zetalock(braided)type only and Kukdong offers three types..... Zetalock, Tinel-lock and spin-coupling. Each is designed to offer a suitable interface between a connector and a heat-shrinkable molded part.

Adapter Part Number

This is Kukdong sequence of numbers and letters that completely describes the adapter series, size, material, finish and modification codes.

The part numbering system is explained on page 22~28.

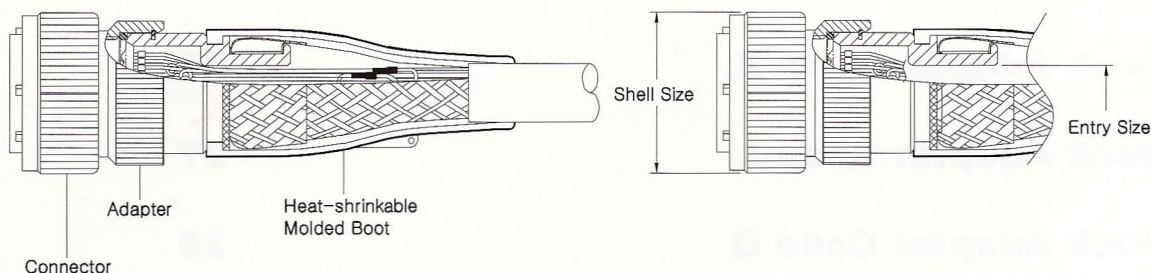
Introduction

Zetalock is a unique re-enterable termination system for connecting a cable shielding braid to a circular connector. When used in conjunction with our heatshrink molded shape, a sealed environmental termination system is achieved. Predominantly used in the Aerospace, Defense and Professional Electronics sectors.

Zetalock incorporates a specially developed backshell designed to accommodate the braid using a constant force spring.

The main feature is that the termination can be re-entered when required. It is thereby possible to effect repairs to connector pins/sockets without the need to discard any part of the shielding system.

This method gives comparable performance to the other braid trap arrangements, in terms of tensile strength and DC resistance. Furthermore, due to the self-tensioning nature of the spring, it is exceedingly resistant to vibration and shock.



cut-away view showing complete screened cable termination

ADAPTER/KH Series

Features

- Purpose developed backshell incorporating a self tensioning spring.
- Tensile force to pull off braid exceeds 150lbs (68kg). When used in combination with conventional heatshrink strain relief, tensile force required to remove is in excess of 250lbs/113.38kg
- Operator friendly and easy to install
- Constant force spring produces a DC contact resistance at 20° Celsius of less than 1 milliohm, due to 360° contact with the backshell.
- Constant force spring electrical and mechanical characteristics are unaffected by vibration, shock and temperatures between -65° and 150° Celsius.
- Comprehensive Independent witnessed test report available on request, covering Thermal Cycling to MIL-STD-202E Method 107G.Vibration Testing to MIL-STD-176-1. Shock Testing to MIL-STD-1344A Condition G.
- Constant force spring can be used in corrosive atmospheres.
- Constant force spring can be used with single or double braids when used in combination with backshells designed for use with the Zetalock spring.

Benefits

- Spring can be re-opened with no special tools and subsequently re-used.
- Possible to effect repairs to connector pins/sockets without the need to scrap any part of the shielding system.
- Product achieves a 360° screen termination.
- Four sizes of springs cover a range of entry sizes.
- Spring has a pre-set compressive force and so needs no external calibration.
- Constant force spring can be used in conjunction with backshells and braid tails, without the use of swaging equipment, in the factory or in the field.

Selection of Adapter Types

Kukdong offers several types of adapter for unscreened and screened termination systems. The choice is largely dependent upon the screening level required and the braid termination method.

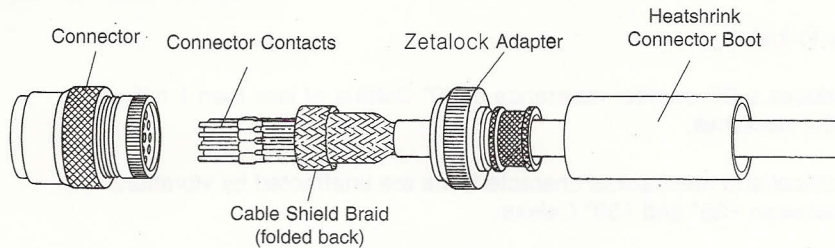
The three principal adapter types are :

1. Tinel-Lock adapter
2. Zetalock adapter
3. Spin-Coupling adapter

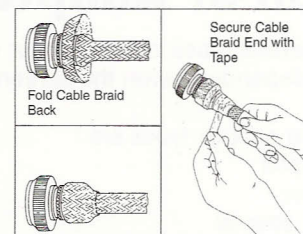
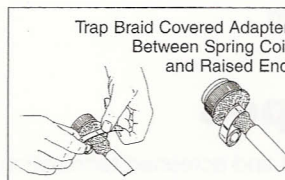
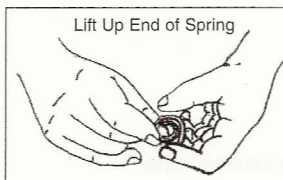
ADAPTER/KH Series

Installation - Procedure

- Prepare the cable making sure that a sufficient length of shield is available, so that it fits against the front shoulder of the lip groove
- Before insertion of connector contacts, slide the heat-shrinkable molded boot onto the cable followed by the Zetalock Adapter.



- Position the heatshrinkable boot, Zetalock Adapter and shield braid out of the way and insert the connector contacts. Depending upon the shielding braid size it can either be folded back onto itself or bunched up concertina style out of the way for easy access to the cable conductors.
- Screw the Zetalock Adapter onto the connector and tighten to the torque value specified by the connector manufacturer. Suggested torque values are shown in table on page 20. It is recommended that the connector threads are lubricated with a suitable compound if a liquid thread lock is not used. The adapter should be hand tightened to ensure proper thread alignment and then tightened with a strap wrench and torque meter to the specified torque.
- Bring the cable shield braid up onto the adapter body so that it fits against the front shoulder of the lip groove. Alternatively extend the braid past the lip groove.
- Open up the constant force spring and wrap it around the cable braid section that is positioned over the constant force spring slot area of the adapter. This is most easily accomplished by lifting up the end of the spring and trapping the braid covered adapter between the spring coil and raised end. The spring will now stay in place and can be installed by simply rolling the spring coil around the braid covered adapter. Refer to appropriate code of practice for procedure to install heatshrink shape.

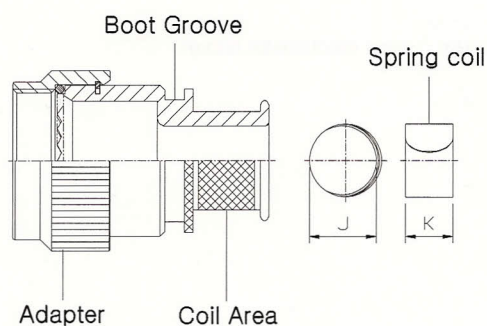


- **NOTE :** After assembly, braid can be trimmed with side cutters or folded back and secured with high temperature tape.

ADAPTER/KH Series

Spring Coil Ref and Entry Size

The Spring coil ref entry must be specified according to the type of cable braid used, and is added to the part number after the adapter entry size.



Entry Size	Spring coil ref	J	K
03, 04	HE 050	7.3	9.5
05, 06, 07	HE 100	9.2	↑
08, 09, 10, 11	HE 200	14.5	↑
12, 13, 14, 15, 16	HE 300	18.5	↑
17, 18, 19, 20, 21, 22, 23, 24	HE 400	25.0	9.5

Braid type, material and construction are variable. If in doubt, contact Kukdong for more information.

Cross Reference Chart

Entry Size	Knurl Dia øY ±0.1	Bore Dia øZ +0.1	Entry Size	Knurl Dia øY ±0.1	Bore Dia øZ +0.1
03	14.0	4.7	14	29.8	22.2
04	14.0	6.3	15	31.4	23.8
05	15.6	7.9	16	33.0	25.4
06	17.2	9.5	17	34.6	27.0
07	18.8	11.1	18	36.2	28.5
08	20.3	12.7	19	37.8	30.1
09	21.9	14.3	20	39.3	31.7
10	23.5	15.9	21	40.9	33.3
11	25.1	17.5	22	42.5	34.9
12	26.7	19.0	23	44.1	36.5
13	28.3	20.6	24	45.7	38.1

Adapter Suggested Torque

Connector Shell Size	Suggested Torque	
	In-lb	N.m
8 & 9	35-40	3.92-4.48
10 & 11	45-50	5.04-5.60
12 & 13	55-60	6.16-6.72
14 & 15	65-70	7.28-7.84
16 & 17	75-80	8.40-8.96
18 & 19	85-90	9.52-10.08
20 & 21	95-100	10.64-11.20
22 & 23	105-110	11.76-12.32
24 & 25	115-120	12.88-13.44
28	125-130	14.00-14.56
32	145-150	16.24-16.80
36	170-175	19.04-19.60
40	185-190	20.72-21.28

Note : Check connector manufacturer's recommended values!

ADAPTER/KH Series

Part Number Explanation

Zetalock Adapter

KHQ 1-28-10-1-B

Finish

B - Cadmium QQ-P-416, Type II, Class 3 over electroless nickel
C - Nickel Plating
J - Passivated

Material

1 - Aluminium alloy
2 - Stainless steel

Entry Size

03, 04	-HE050
05, 06, 07	-HE100
08, 09, 10, 11	-HE200
12, 13, 14, 15, 16	-HE300
17, 18, 19, 20, 21, 22, 23, 24	-HE400

spring coil ref

Shell Size

08-08	10-10SL	12-12s, 12	14-14s, 14	16-16s, 16
18-18	20-20	22-22	24-24	
28-28	32-32	36-36	40-40	

Angle

1 - $\angle 0^\circ$ 2 - $\angle 45^\circ$ 3 - $\angle 90^\circ$

Connector Code

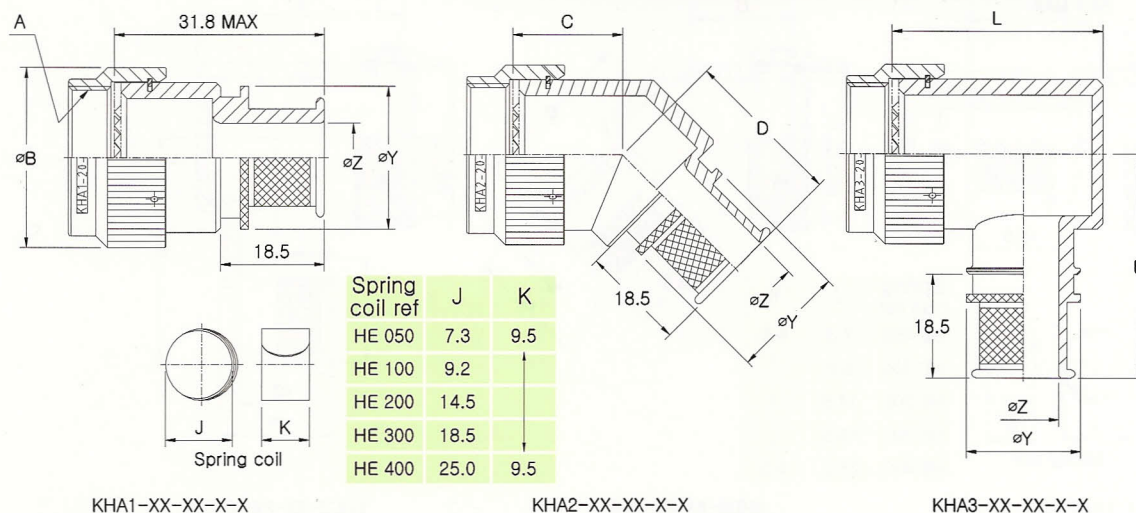
A - MIL-DTL-5015G
MIL-DTL-26482 II
MIL-DTL-81703 III
MIL-DTL-83723 I & III
D - MIL-DTL-26482 I (MS3110, MS3116)
F - MIL-DTL-38999 I & II
H - MIL-DTL-38999 III & IV
K - MIL-DTL-26482 I (MS3114)
L - MIL-DTL-5015D
Q - KDB Connector

Zetalock Adapter

Company Prefix (KUKDONG)

ADAPTER/KH Series

Zetalock Adapter Code A (MIL-DTL-5015 (MS3400), MIL-DTL-26482 Series II
MIL-DTL-81703 Series III, MIL-DTL-83723 Series I & III)



KHA1 - 20 - 10 - 1 - B

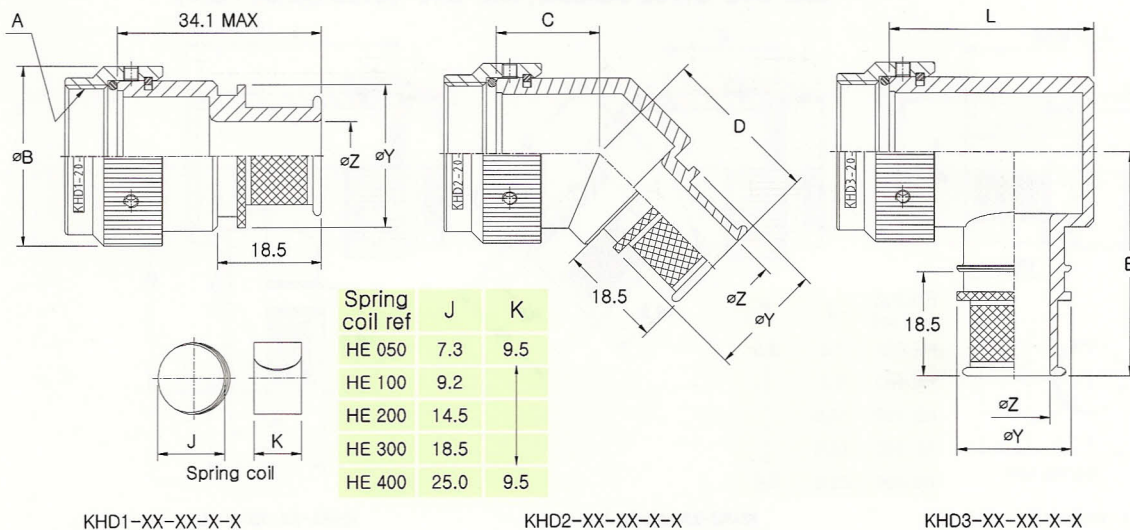
- Finish: B : Cadmium QQ-P-416, Type II, Class 3 over electroless nickel; C : Nickel Plating; J : Passivated
- Material: 1 : Aluminium alloy; 4 : Stainless steel
- Entry Size
- Shell Size
- Angle: 1 : 0°, 2 : 45°, 3 : 90°
- Connector Code
- Zetalock Adapter
- Company Prefix (KUKDONG)

Entry Size	øY ±0.1	øZ +0.1/0	Spring coil ref	Entry Size	øY ±0.1	øZ +0.1/0	Spring coil ref
03	14.0	4.7	HE 050	14	29.8	22.2	HE 300
04	14.0	6.3	HE 050	15	31.4	23.8	HE 300
05	15.6	7.9	HE 100	16	33.0	25.4	HE 300
06	17.2	9.5	HE 100	17	34.6	27.0	HE 400
07	18.8	11.1	HE 100	18	36.2	28.5	HE 400
08	20.3	12.7	HE 200	19	37.8	30.1	HE 400
09	21.9	14.3	HE 200	20	39.3	31.7	HE 400
10	23.5	15.9	HE 200	21	40.9	33.3	HE 400
11	25.1	17.5	HE 200	22	42.5	34.9	HE 400
12	26.7	19.0	HE 300	23	44.1	36.5	HE 400
13	28.3	20.6	HE 300	24	45.7	38.1	HE 400

Shell Size	A	øB	C	D	E	L	Entry
MIL-DTL-26482 II MIL-DTL-5015G	THD-2B	MAX	MAX	MAX	MAX	MAX	MAX
8	1/2-20UNEF	17.1	17.5	26.5	33.0	25.0	04
10	5/8-24UNEF	20.6	17.5	26.5	34.5	27.0	06
12	3/4-20UNEF	23.5	18.0	26.5	36.0	29.5	08
14	7/8-20UNEF	26.5	19.0	28.0	37.5	31.0	08
16	1-20UNEF	29.3	19.5	28.5	39.0	34.5	10
18	1 1/16-18UNEF	30.9	20.0	29.0	40.0	37.5	12
20	1 3/16-18UNEF	34.9	20.5	29.5	41.5	42.5	14
22	1 5/16-18UNEF	38.0	21.0	30.0	43.0	44.5	16
24	1 7/16-18UNEF	41.5	22.5	31.5	44.5	45.5	18
	28	1 3/4-18UNS	47.9	23.0	38.0	54.2	22
	32	2 -18UNS	53.7	24.5	39.5	57.3	24
	36	2 1/4-16UN	60.6	26.0	41.0	60.6	24

ADAPTER/KH Series

Zetalock Adapter Code D (MIL-DTL-26482 Series I)

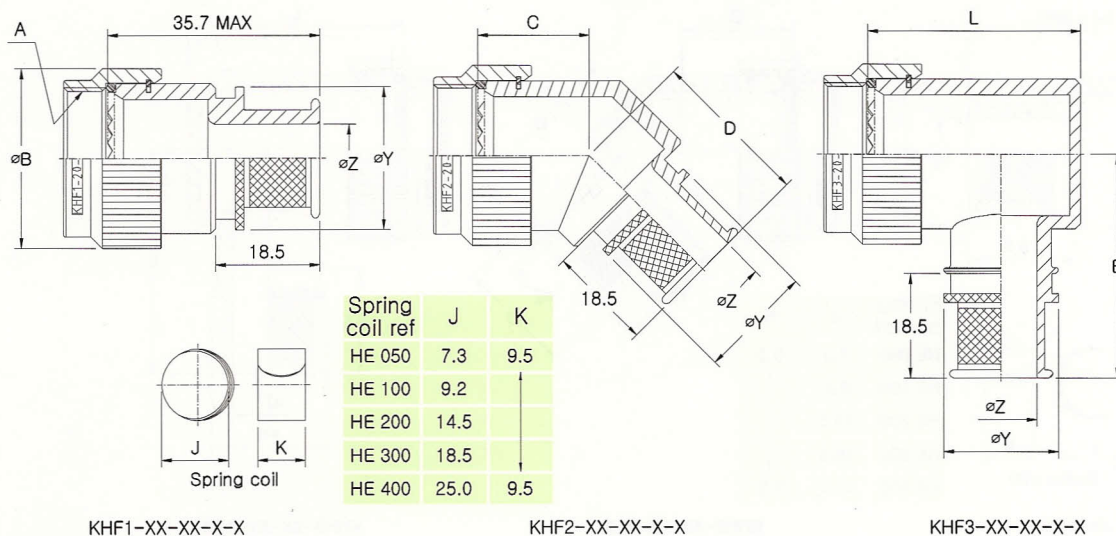


KHD1 - 20 - 10 - 1 - B	Finish				Entry Size				Spring coil ref			
	B : Cadmium QQ-P-416, Type II, Class 3 over electroless nickel				Entry Size				Spring coil ref			
	C : Nickel Plating				Entry Size				Spring coil ref			
	J : Passivated				Entry Size				Spring coil ref			
	Material				Entry Size				Spring coil ref			
	1 : Aluminium alloy				Entry Size				Spring coil ref			
	4 : Stainless steel				Entry Size				Spring coil ref			
	Entry Size				Entry Size				Spring coil ref			
	Shell Size				Entry Size				Spring coil ref			
	Angle				Entry Size				Spring coil ref			
	1 : 0° , 2 : 45° , 3 : 90°				Entry Size				Spring coil ref			
	Connector Code				Entry Size				Spring coil ref			
	Zetalock Adapter				Entry Size				Spring coil ref			
	Company Prefix (KUKDONG)				Entry Size				Spring coil ref			

Shell Size	A THD-2B	øB MAX	C MAX	D MAX	E MAX	L MAX	Entry MAX
8	7/16-28UNEF	18.3	14.5	22.0	32.5	25.5	04
10	9/16-24UNEF	21.5	15.5	23.0	34.5	28.5	06
12	11/16-24UNEF	24.7	16.0	23.5	36.0	32.0	08
14	13/16-20UNEF	28.0	16.5	24.0	37.5	35.5	10
16	15/16-20UNEF	31.2	17.0	25.0	38.0	38.5	12
18	1 1/16-18UNEF	34.3	17.5	25.5	39.0	42.0	12
20	1 3/16-18UNEF	37.5	18.5	26.0	41.5	45.5	14
22	1 5/16-18UNEF	40.7	19.0	26.5	43.0	48.5	16
24	1 7/16-18UNEF	43.9	20.0	27.5	43.5	51.5	18

ADAPTER/KH Series

Zetalock Adapter Code F (MIL-DTL-38999 Series I & II)

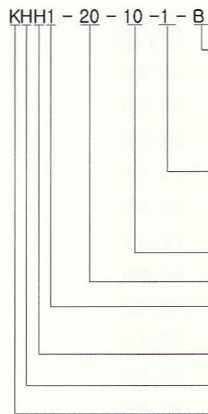
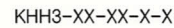
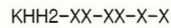
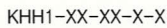


KHF1 - 20 - 10 - 1 - B

Finish
B : Cadmium QQ-P-416, Type II,
Class 3 over electroless nickel
C : Nickel Plating
J : Passivated
Material
1 : Aluminium alloy
4 : Stainless steel
Entry Size
Shell Size
Angle
1 : 0°, 2 : 45°, 3 : 90°
Connector Code
Zetalock Adapter
Company Prefix (KUKDONG)

Entry Size	øY ±0.1	øZ +0.1 0	Spring coil ref	Entry Size	øY ±0.1	øZ +0.1 0	Spring coil ref
03	14.0	4.7	HE 050	14	29.8	22.2	HE 300
04	14.0	6.3	HE 050	15	31.4	23.8	HE 300
05	15.6	7.9	HE 100	16	33.0	25.4	HE 300
06	17.2	9.5	HE 100	17	34.6	27.0	HE 400
07	18.8	11.1	HE 100	18	36.2	28.5	HE 400
08	20.3	12.7	HE 200	19	37.8	30.1	HE 400
09	21.9	14.3	HE 200	20	39.3	31.7	HE 400
10	23.5	15.9	HE 200	21	40.9	33.3	HE 400
11	25.1	17.5	HE 200	22	42.5	34.9	HE 400
12	26.7	19.0	HE 300	23	44.1	36.5	HE 400
13	28.3	20.6	HE 300	24	45.7	38.1	HE 400

Shell Size		A	øB	C	D	E	L	Entry
Series I	Series II	THD-2B	MAX	MAX	MAX	MAX	MAX	MAX
9	8	7/16-28UNEF	18.3	14.5	22.0	32.5	23.0	04
11	10	9/16-24UNEF	21.5	15.5	23.0	34.5	28.5	06
13	12	11/16-24UNEF	24.5	16.0	23.5	36.0	32.0	08
15	14	13/16-20UNEF	27.8	16.5	24.0	37.5	35.5	10
17	16	15/16-20UNEF	30.8	17.0	25.0	38.0	38.5	12
19	18	1 1/16-18UNEF	34.1	17.5	25.5	39.0	42.0	12
21	20	1 3/16-18UNEF	37.3	18.5	26.0	41.5	45.5	14
23	22	1 5/16-18UNEF	40.5	19.0	26.5	43.0	48.5	16
25	24	1 7/16-18UNEF	43.7	20.0	27.5	43.5	51.5	18



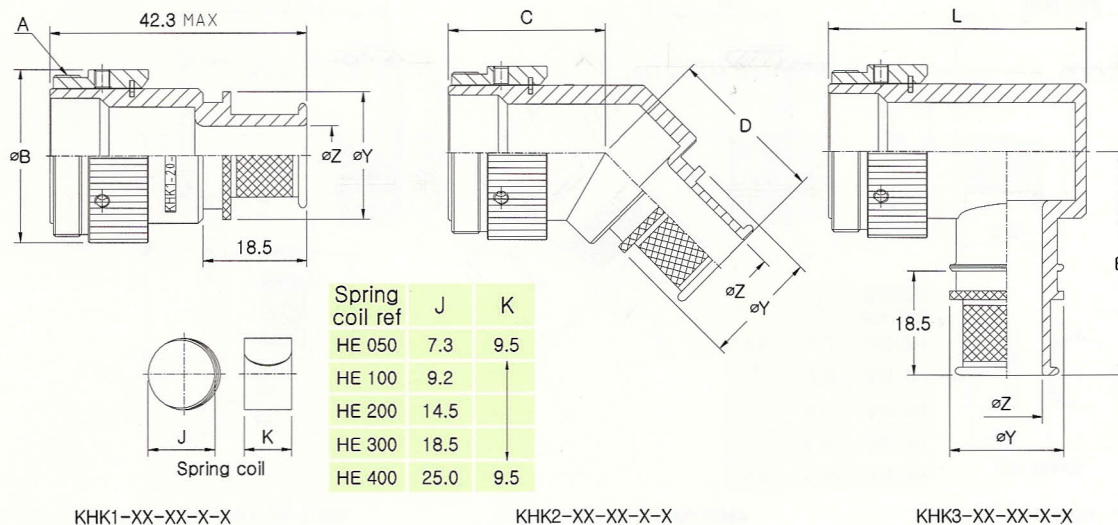
Finish
B : Cadmium QQ-P-416, Type II,
Class 3 over electroless nickel
C : Nickel Plating
J : Passivated
Material
1 : Aluminium alloy
4 : Stainless steel
Entry Size
Shell Size
Angle
1 : 0° , 2 : 45° , 3 : 90°
Connector Code
Zetalock Adapter
Company Prefix (KUKDONG)

Entry Size	$\varphi_Y \pm 0.1$	$\varphi_Z \pm 0.1$	Spring coil ref	Entry Size	$\varphi_Y \pm 0.1$	$\varphi_Z \pm 0.1$	Spring coil ref
03	14.0	4.7	HE 050	14	29.8	22.2	HE 300
04	14.0	6.3	HE 050	15	31.4	23.8	HE 300
05	15.6	7.9	HE 100	16	33.0	25.4	HE 300
06	17.2	9.5	HE 100	17	34.6	27.0	HE 400
07	18.8	11.1	HE 100	18	36.2	28.5	HE 400
08	20.3	12.7	HE 200	19	37.8	30.1	HE 400
09	21.9	14.3	HE 200	20	39.3	31.7	HE 400
10	23.5	15.9	HE 200	21	40.9	33.3	HE 400
11	25.1	17.5	HE 200	22	42.5	34.9	HE 400
12	26.7	19.0	HE 300	23	44.1	36.5	HE 400
13	28.3	20.6	HE 300	24	45.7	38.1	HE 400

K H S e r i e s

ADAPTER/KH Series

Zetalock Adapter Code K (MIL-DTL-26482 Series I)



KHK1 - 20 - 10 - 1 - B

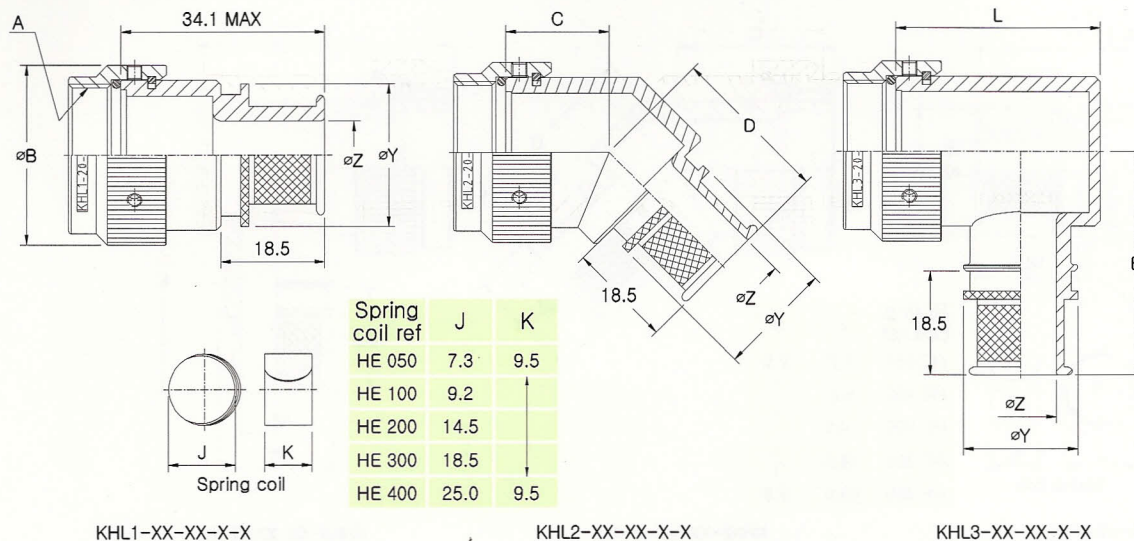
- Finish
 - B : Cadmium QQ-P-416, Type II, Class 3 over electroless nickel
 - C : Nickel Plating
 - J : Passivated
- Material
 - 1 : Aluminium alloy
 - 4 : Stainless steel
- Entry Size
- Shell Size
- Angle
 - 1 : 0° , 2 : 45° , 3 : 90°
- Connector Code
- Zetalock Adapter
- Company Prefix (KUKDONG)

Entry Size	øY ±0.1	øZ +0.1/-0	Spring coil ref	Entry Size	øY ±0.1	øZ +0.1/-0	Spring coil ref
03	14.0	4.7	HE 050	14	29.8	22.2	HE 300
04	14.0	6.3	HE 050	15	31.4	23.8	HE 300
05	15.6	7.9	HE 100	16	33.0	25.4	HE 300
06	17.2	9.5	HE 100	17	34.6	27.0	HE 400
07	18.8	11.1	HE 100	18	36.2	28.5	HE 400
08	20.3	12.7	HE 200	19	37.8	30.1	HE 400
09	21.9	14.3	HE 200	20	39.3	31.7	HE 400
10	23.5	15.9	HE 200	21	40.9	33.3	HE 400
11	25.1	17.5	HE 200	22	42.5	34.9	HE 400
12	26.7	19.0	HE 300	23	44.1	36.5	HE 400
13	28.3	20.6	HE 300	24	45.7	38.1	HE 400

Shell Size	A THD-2A	øB MAX	C MAX	D MAX	E MAX	L MAX	Entry MAX
8	5/8-24UNEF	19.8	24.0	27.0	32.0	43.5	04
10	3/4-20UNEF	23.1	24.5	28.0	33.5	46.0	06
12	7/8-20UNEF	26.2	25.0	28.5	35.5	49.5	08
14	1 -20UNEF	29.5	26.0	29.0	37.0	52.5	10
16	1 1/8-18UNEF	32.5	26.5	29.5	38.5	55.5	12
18	1 1/4-18UNEF	35.8	27.0	30.5	40.0	59.0	14
20	1 3/8-18UNEF	38.9	29.0	31.0	41.0	59.0	14
22	1 1/2-18UNEF	42.2	29.5	31.5	43.5	65.0	18
24	1 5/8-18UNEF	45.2	30.5	32.0	45.0	65.0	18

ADAPTER/KH Series

Zetalock Adapter Code L (MIL-DTL-5015)



KHL1 - 20 - 10 - 1 - B

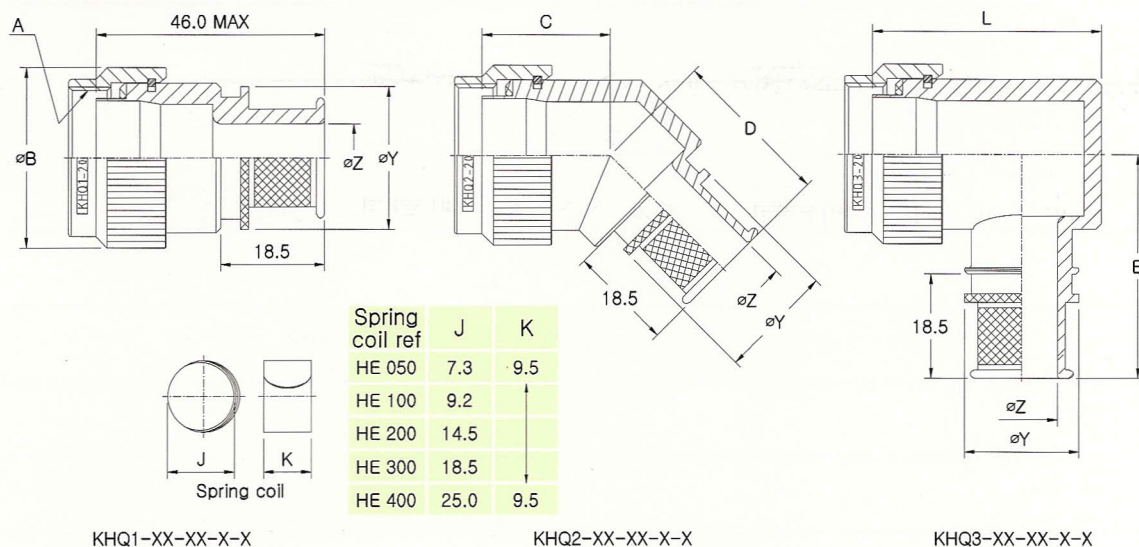
Finish
B : Cadmium QQ-P-416, Type II,
Class 3 over electroless nickel
C : Nickel Plating
J : Passivated
Material
1 : Aluminium alloy
4 : Stainless steel
Entry Size
Shell Size
Angle
1 : 0°, 2 : 45°, 3 : 90°
Connector Code
Zetalock Adapter
Company Prefix (KUKDONG)

Entry Size	øY ±0.1	øZ ±0.1	Spring coil ref	Entry Size	øY ±0.1	øZ ±0.1	Spring coil ref
03	14.0	4.7	HE 050	14	29.8	22.2	HE 300
04	14.0	6.3	HE 050	15	31.4	23.8	HE 300
05	15.6	7.9	HE 100	16	33.0	25.4	HE 300
06	17.2	9.5	HE 100	17	34.6	27.0	HE 400
07	18.8	11.1	HE 100	18	36.2	28.5	HE 400
08	20.3	12.7	HE 200	19	37.8	30.1	HE 400
09	21.9	14.3	HE 200	20	39.3	31.7	HE 400
10	23.5	15.9	HE 200	21	40.9	33.3	HE 400
11	25.1	17.5	HE 200	22	42.5	34.9	HE 400
12	26.7	19.0	HE 300	23	44.1	36.5	HE 400
13	28.3	20.6	HE 300	24	45.7	38.1	HE 400

Shell Size	A THD-2B	øB MAX	C MAX	D MAX	E MAX	L MAX	Entry MAX
10SL	9/16-24UNEF	21.5	17.5	26.5	34.0	27.5	07
12s & 12	5/8-24UNEF	21.5	17.5	26.5	34.0	27.5	08
14s & 14	3/4-20UNEF	24.9	18.0	26.5	35.0	29.0	10
16s & 16	7/8-20UNEF	28.1	19.0	28.0	36.0	32.5	12
18	1 -20UNEF	31.5	19.5	28.5	37.5	35.0	12
20	1 1/8-18UNEF	36.9	20.0	29.0	39.0	40.5	16
22	1 1/4-18UNEF	40.8	20.5	29.5	41.0	42.5	18
24	1 3/8-18UNEF	50.5	21.0	30.0	46.0	46.5	20
28	1 5/8-18UNEF	54.5	22.5	31.5	48.0	50.0	24
32	1 7/8-16UN	55.2	23.0	38.0	48.0	58.5	24
36	2 1/8-16UN	64.0	24.5	39.5	52.0	64.0	24

ADAPTER/KH Series

Zetalock Adapter Code Q (KDB Connector)



KHQ1 - 20 - 10 - 1 - B	Finish	Entry Size	ϕY	ϕZ	Spring coil ref	Entry Size	ϕY	ϕZ	Spring coil ref
	B : Cadmium QQ-P-416, Type II, Class 3 over electroless nickel		± 0.1	$+0.1$			± 0.1	$+0.1$	
	C : Nickel Plating	03	14.0	4.7	HE 050	14	29.8	22.2	HE 300
	J : Passivated	04	14.0	6.3	HE 050	15	31.4	23.8	HE 300
	Material	05	15.6	7.9	HE 100	16	33.0	25.4	HE 300
	1 : Aluminium alloy	06	17.2	9.5	HE 100	17	34.6	27.0	HE 400
	4 : Stainless steel	07	18.8	11.1	HE 100	18	36.2	28.5	HE 400
	Entry Size	08	20.3	12.7	HE 200	19	37.8	30.1	HE 400
	Shell Size	09	21.9	14.3	HE 200	20	39.3	31.7	HE 400
	Angle	10	23.5	15.9	HE 200	21	40.9	33.3	HE 400
	1 : 0°, 2 : 45°, 3 : 90°	11	25.1	17.5	HE 200	22	42.5	34.9	HE 400
	Connector Code	12	26.7	19.0	HE 300	23	44.1	36.5	HE 400
	Zetalock Adapter	13	28.3	20.6	HE 300	24	45.7	38.1	HE 400
	Company Prefix (KUKDONG)								

Shell Size	A THD-2B	ϕB MAX	C MAX	D MAX	E MAX	L MAX	Entry MAX
10SL	9/16-24UNEF	17.5	17.5	26.0	30.5	21.0	05
12s & 12	5/8-24UNEF	20.5	17.5	26.5	32.5	25.0	06
14s & 14	3/4-20UNEF	24.0	18.0	26.5	34.5	29.0	07
16s & 16	7/8-20UNEF	27.0	19.0	28.0	36.0	32.0	08
18	1 -20UNEF	30.5	19.5	28.5	37.5	35.0	10
20	1 1/8-18UNEF	35.5	20.0	29.0	39.0	38.0	12
22	1 1/4-18UNEF	38.5	20.5	29.5	40.5	41.0	14
24	1 3/8-18UNEF	41.5	21.0	30.0	41.5	44.0	16
28	1 5/8-18UNEF	48.0	22.5	31.5	43.0	47.0	18
32	1 7/8-16UN	54.5	23.0	38.0	43.5	50.0	22
36	2 1/8-16UN	62.5	24.5	39.5	46.0	53.0	24