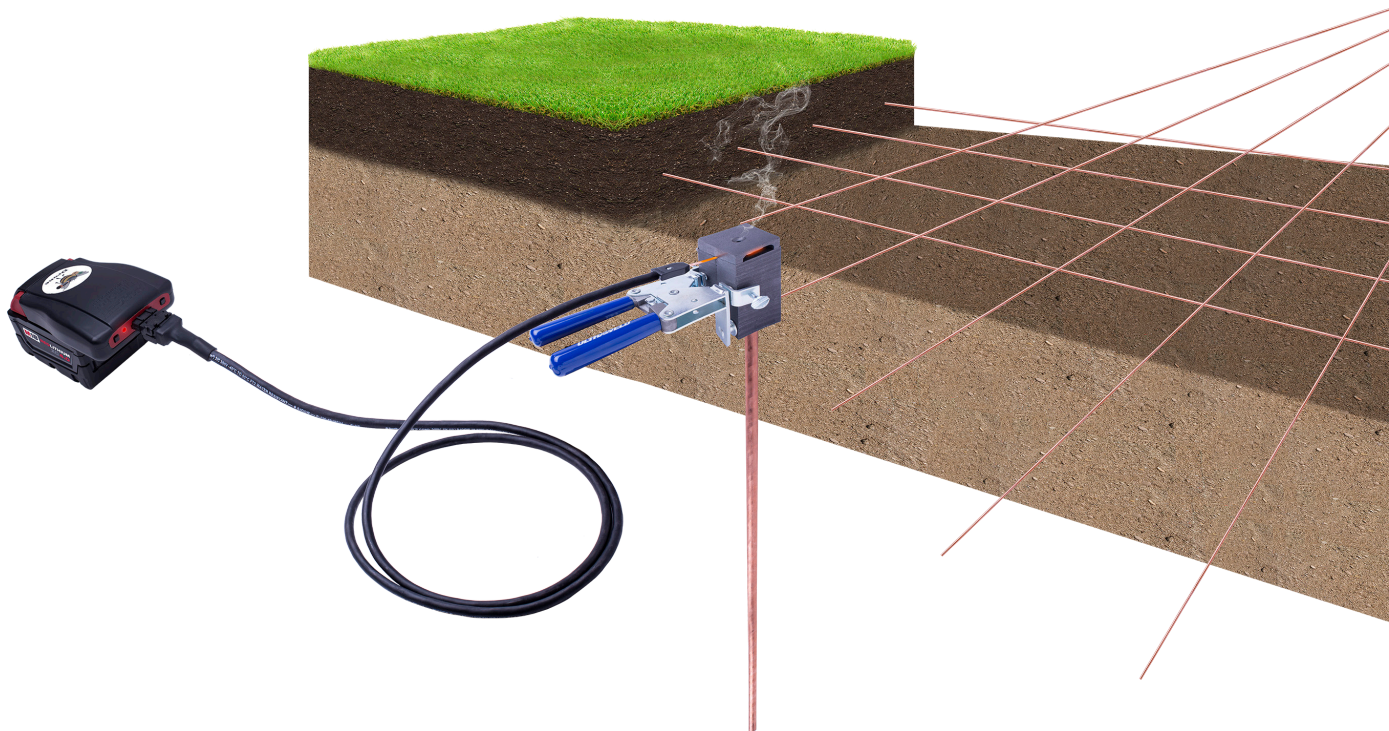


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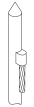
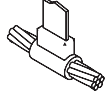
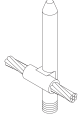
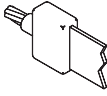
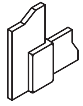
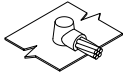

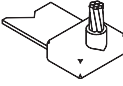
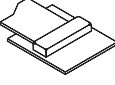
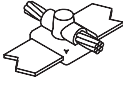
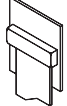
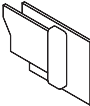
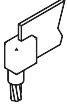
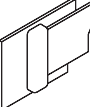


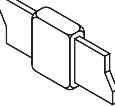
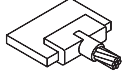
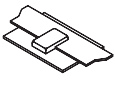
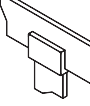
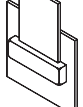
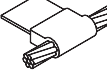
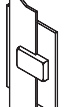

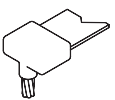
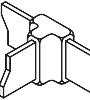


Exothermic Connections

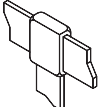
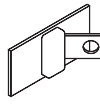
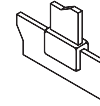
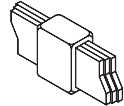
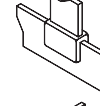
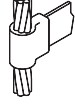
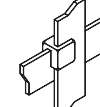

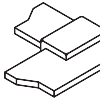
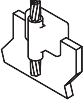
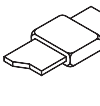
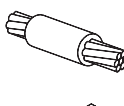
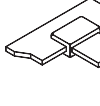
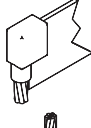
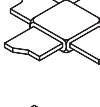
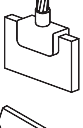
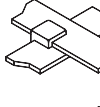
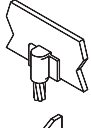
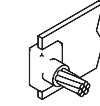
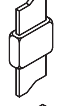
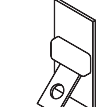
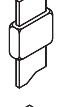
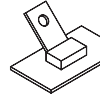
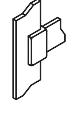
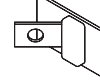
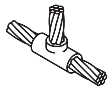
Index

Description	Page
Connection Types	4
Exothermic Process	14
Mold Numbering System	17
Molds	18
Wear Plates	18
Low Smoke-No Flame System	19
Connections: Cable to Cable	20
Cable to Ground Rod.....	24
Ground Rod to Busbar.....	25
Ground Rod to Ground Rod	28
Cable to Steel Surface.....	29
Stud to Stud.....	31
Busbar to Busbar	32
Busbar to Steel.....	34
Cable to Lug or Busbar	35
Cable to Busbar	37
Cable to Reinforcing Steel	38
Tinned Copper Lugs (Straight, Offset, Bent & Bent J).....	44
Materials, Tools & Accessories	45

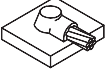
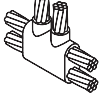
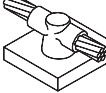
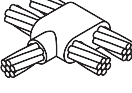

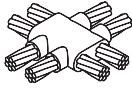

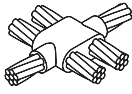

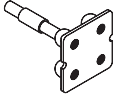

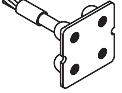

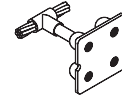





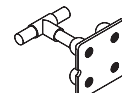






Connection Types

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	BAU	No		BCF	No		
	BBC	No		BCU	No		
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	BBDVS	Yes	34		BDELVS	No	
	BBE	No		BDERVS	No		
	BBHTVS	No		BDW	No		
	BB	Yes	32		BE	Yes	37
	BBTHS	No		BT	Yes	33	
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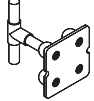
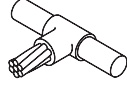



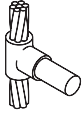

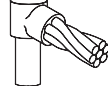



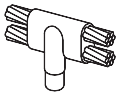


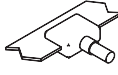
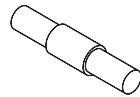
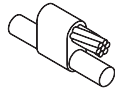
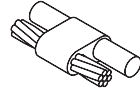
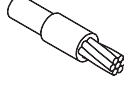
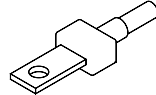
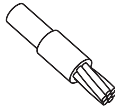
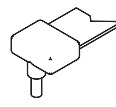

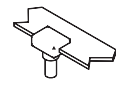

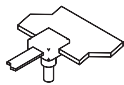
Connection Types

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	BHEXC	No			BO	No	
	BHFA	No			BP	No	
	BHFBHF	No			BS	Yes	20
	BHFBHT	Yes	33		BTE	No	
	BHFBHX	No			BUW	No	
	BHFBHXC	Yes	33		BV	No	
	BL	No			BVFBVF	No	
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	BLHS	No			BVFBVT	No	
	BLLVS	No			CH	No	

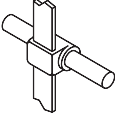
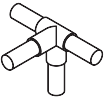
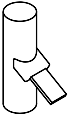
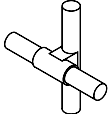
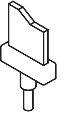
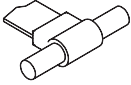
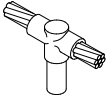
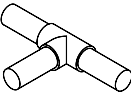
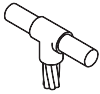
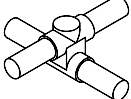
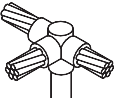
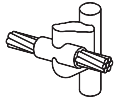
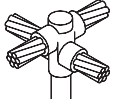
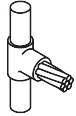
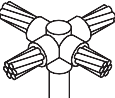
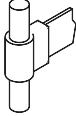
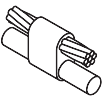
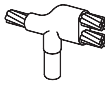
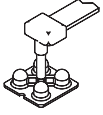
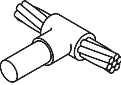

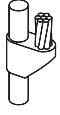

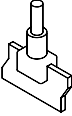
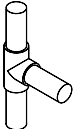

Connection Types

Connection Type	Catalog Item	Page	Connection Type	Catalog Item	Page
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	CIHU	No		DPRT	No
	CIVA	No		DX	No
	CIVD	No		DX1C	No
	CIVDO	No		EGPBS	No
	CIVH	No		EGPCB	No
	CIVL	No		EGPCT	No
	CIVR	No		EGPCVD	No
	CIVT	No		EGPCVU	No
	CIVU	No		EGPGRT	No
	CS	No		EGPHB	No
	CT	No		EGPID	No
	DPRDT	No		EGPIO	No

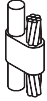
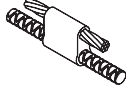
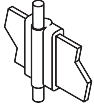

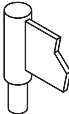
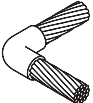

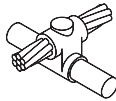
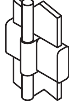
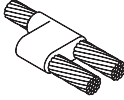
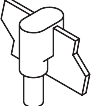
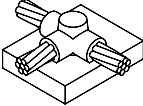
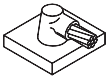
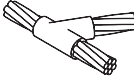
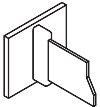
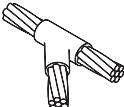
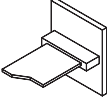
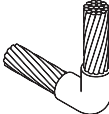
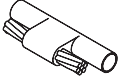
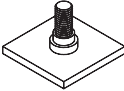
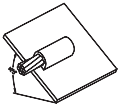
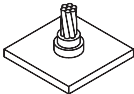
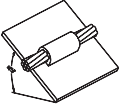
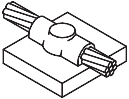
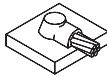
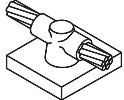
Connection Types

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	EGPVBS	No			GCU	No	
	FGRBS	No			GCV	No	
	FGRGD	No			GD	Yes	24
	FGRGO	No			GE	No	
	FGRIGD	No			GF	No	
	FGRIGO	No			GG	Yes	28
	GASO	No			GGH	No	
	GB	No			GH	No	
	GCB	No			GHLE	No	
	GCBA	No			GHSD	No	
	GCD	No			GHSO	No	
	GCH	No			GHSRT	No	

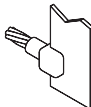
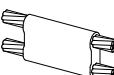
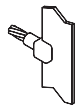

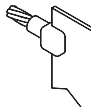

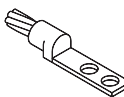
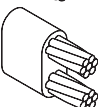
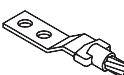
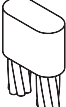

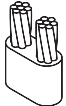

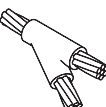
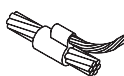
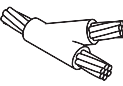

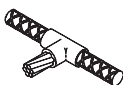
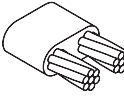
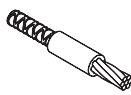
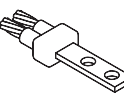

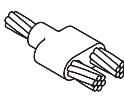

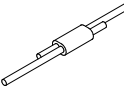

Connection Types

	Connection Type	Catalog Item	Page		Connection Type	Catalog Item	Page
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	GLA	No			GRS	No	
	GLV	No			GRST	No	
	GO	Yes	26		GRT	No	
	GOC	No			GRXO	No	
	GOT	No			GS	Yes	27
	GOXO	No			GSC	No	
	GOXX	No			GSSD	No	
	GP	No			GT	No	
	GPHSD	No			GTC	No	
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	GRHT	No			GUC	No	

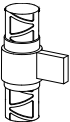

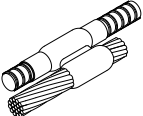
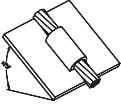
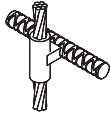
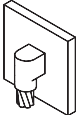
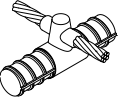



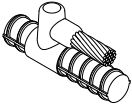
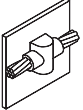
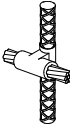

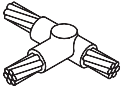
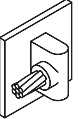
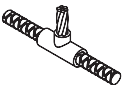
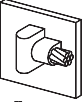
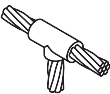
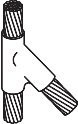
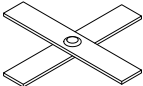





Connection Types

	Connection Type	Catalog Item	Page		Connection Type	Catalog Item	Page
	GV	No			HRCT	No	
	GVSAS	Yes	28		HRDHT	No	
	GVSD	No			HRH90B	No	
	GVSO	No			HRHCX	No	
	GVSP	No			HRPHT	No	
	GVSS	No			HRT	No	
	HB	Yes	29		HRV30TL	No	
	HBUVS	No			HRV30TR	No	
	HBVS	No			HRV90B	No	
	HCHP	No			HSVB	Yes	31
	HCLVS45	No			HSVC	No	
	HCTVS45	No			HT	No	
	HD	No	29		HU	YNo	



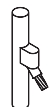


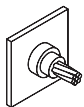
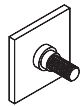
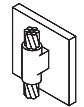
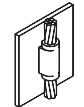
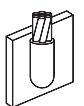
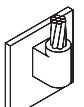
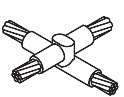

Connection Types

	Connection Type	Catalog Item	Page		Connection Type	Catalog Item	Page
	HVBB	No			PT	Yes	20
	HVBM	No			PU	No	
	HVBT	No			PV	No	
	LBJ	Yes	36		PVD	No	
	LE	Yes	35		PVDD	No	
	LU	No			PVDU	No	
	LV	No			RATD	No	
	PB	No			RATU	No	
	PD	No			RB	No	
	PHD	No			RCB	No	
	PRLE	No			RCD	No	
	PRPT	No			RCU	No	
	PS	No			RE	Yes	40

Connection Types

	Connection Type	Catalog Item	Page		Connection Type	Catalog Item	Page
	RESB	Yes	39		VCDVS45	No	
	RH	No			VCTVS45	No	
	RHCVT	No			VD	No	
	RO	Yes	41		VDO	No	
	ROC	No			VH	No	
	RP	Yes	42		VHO	No	
	RS	No			VL	No	
	RT	Yes	21		VLO	No	
	RUC	No			VR	No	
	RVT	No			VR45DT	No	
	SRG	No			VRCD	No	
	VA	Yes	30		VRCT	No	
	VBS	No			VRCU	No	

Connection Types

	Connection Type	Catalog Item	Page		Connection Type	Catalog Item	Page
	VRH90B	No					
	VRV45T	No					
	VRVCAD	No					
	VRVCAU	No					
	VSAU	No					
	VSHB	Yes	31				
	VSHBS	No					
	VT	No					
	VTO	No					
	VU	No					
	VUO	No					
	XO	Yes	22				
	XX	Yes	23				

Exothermic Process

The Exothermic Process is an effective and safe method of welding copper to copper or copper to steel for the purpose of producing permanent electrical connections. Exothermically welded connections are produced from the energy and molten copper metal liberated from an exothermic reaction between powdered copper oxide and aluminum. The exothermic reaction takes place at a theoretical temperature of 2500°C and as a result, molten copper alloy is created and used to melt the conductors and cast the finished connection. The exothermic reaction takes place in a semi-permanent graphite mold that will last 50 or more welds if properly maintained. The process is simple and easy to implement providing an on-site means to make welded electrical connections without requiring external power, equipment or the special training usually required for brazing and welding. The process will provide a finished connection that will never corrode, loosen or increase in resistance. The finished connection also provides an ampacity that exceeds that of the conductors being joined.



UltraShot® (Drop-In)



NUWTube® (Pour & Shoot)

NUWTube Pour & Shoot Process



Step 1:
Torch dry the mold before making the first connection.



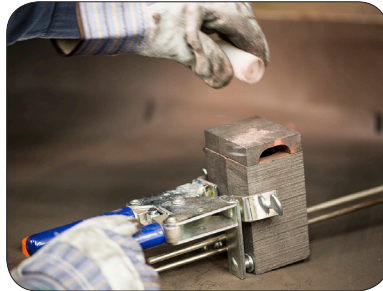
Step 2:
Clean and dry conductors, insert conductor into mold, close handle clamp and lock mold.



Step 3:
Insert disk into mold.



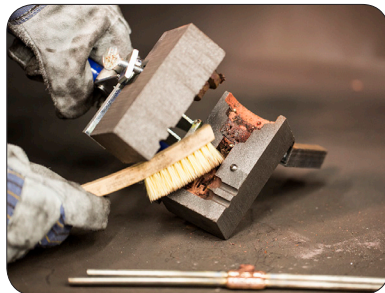
Step 4:
Remove Clear cap from NUWTube, pour weld metal into mold.



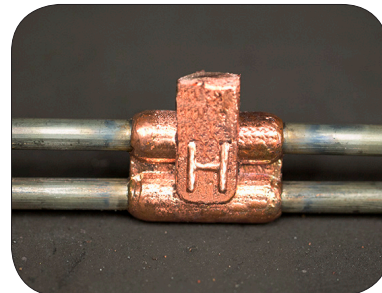
Step 5:
Close lid, remove Orange cap from starting powder chamber and sprinkle next to ignition hole.



Step 6:
Ignite material located on top of the lid using a flint igniter (FLTIG).



Step 7:
After the connection is complete, open the mold and remove the connection, remove slag and clean mold before making the next connection.



Complete NUWTUBE connection

Note: When exothermic welding, always wear proper clothing, safety glasses and gloves. Harger offers Ultraweld training. Please contact the factory for more information.

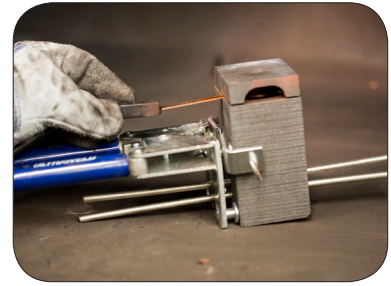
UltraShot Drop-In Process



Step 1:
Dry and clean the mold and conductor.



Step 2:
Place conductors and UltraShot cartridge into mold.



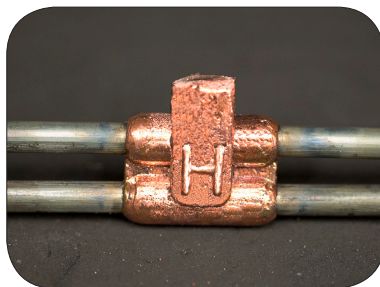
Step 3:
Close the lid and attach DRONE cord to the UltraShot igniter.



Step 4:
Push and hold both igniter buttons at the same time.



Step 5:
Reaction is made, open mold to remove connection and clean mold before next connection.



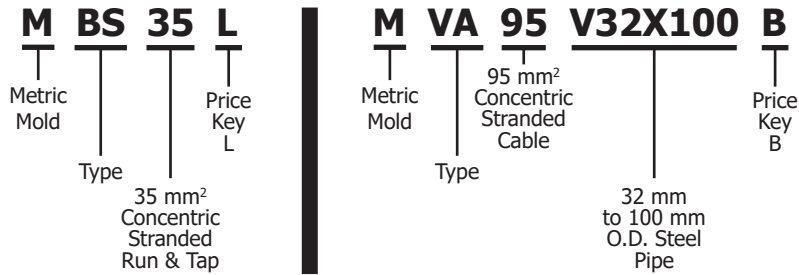
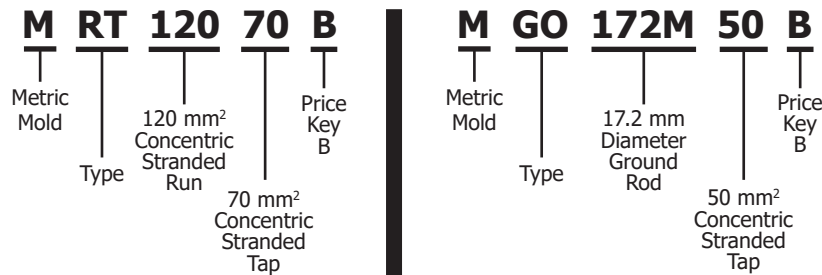
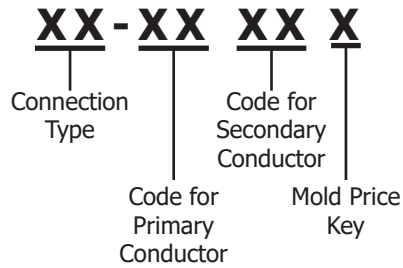
A completed UltraShot connection

Note: When exothermic welding, always wear proper clothing, safety glasses and gloves. Harger offers UltraShot training. Please contact the factory for more information.

Mold Numbering System

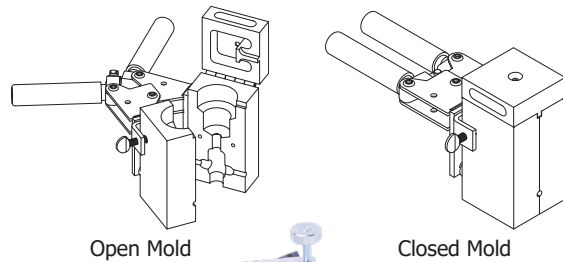
The Part Number gives, in code, the complete information of the mold.

- Type of connection, conductor size(s) and mold price key.
- Some connection types have more than 2 characters.



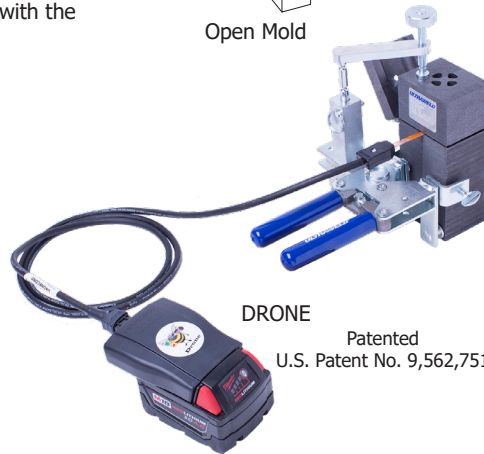
Molds

- Depending on the care and treatment of the mold, it will average 50 or more welds. Substantially more with the UltraShot process.
- The Low Smoke-No Flame process uses an integrated filter system on the mold and electric ignition of the weld metal to produce a finished connection with minimal smoke emission. Ideal for indoor and confined space working conditions. See page 19.
- For the Low Smoke-No Flame process, ignition is accomplished with the use of a DRONE.
- Mold Handle not included.



Open Mold

Closed Mold



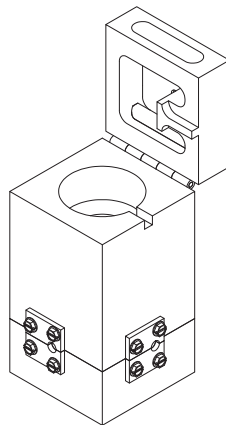
Low Smoke-No Flame Mold

DRONE

Patented
U.S. Patent No. 9,562,751

Wear Plates

- Wear plates help extend the life of the mold.
- The openings of the mold get worn down due to forcing a mold shut over "out of round" conductors, the ends of conductors hitting and chipping the openings, etc.
- Wear plates can be supplied for all molds for cable sizes; 35 sq mm, 50 sq mm through 250 sq mm.
- To order, add the suffix "WP" to the Ultraweld part number.
Example: RT-4/04/0B-WP



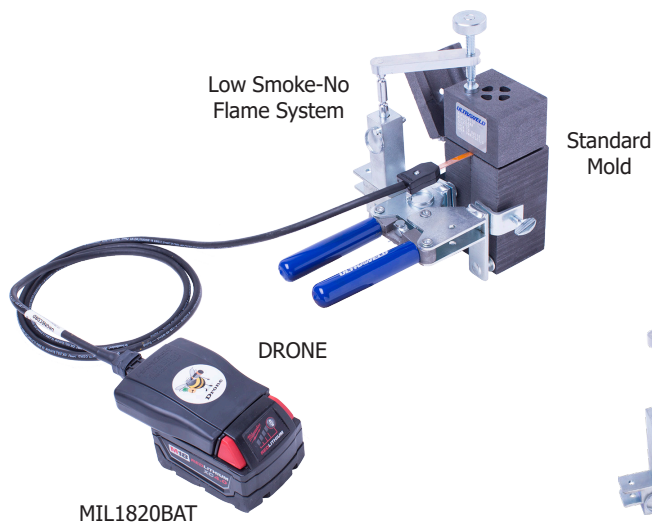
Available Weld Type	Number of Wear Plates
BH	2
BS	2
GD	2
GO	3
GS	3
HB	1
HU	2
LE	1
PB*	3
PT*	4
RO	2
RS	2
RT	3
VA	1
VH	2
VT	2
XO	4
XX	4

*Wear plates only available on 50 sq mm stranded and run and tap cables. Also available from 35 sq mm solid run and tap cables.

Low Smoke-No Flame System

Using Harger's unique mold design and patented handle clamp system, any mold that uses a MH1 or MH2 handle can be made into a Low Smoke-No Flame mold. All that is required is the purchase of a USSKIT which includes the Universal Clamp, filter housing and enough filters to do 10 shots. This system does require the use of the UltraShot™ electronic ignition system. There are three different kit sizes determined by the size of the US shot required and price key of the mold.

- The filter should be changed every connection to ensure the best performance.
- Ignition is accomplished with the use of a DRONE.



Part No.	Qty.
DRONE	EA

Low Smoke-No Flame Adapter Clamp

Part No.	Qty.
USSXADPTR	EA

Milwaukee® M18™ REDLITHIUM™ Battery

Part No.	Qty.
MIL1820BAT	EA



Low Smoke-No Flame Kit



Filter



Filter Housing

Kit Part No.	Fits Mold Price Key	Weld Metal Size	Filter Part No.	Filter Housing Part No.
USSKIT1	B, E, K, P, Q	25 thru 115	USSXFLR1.8	SAFHB25115
USSKIT2	B, E, K, P, Q	150 thru 300	USSXFLR2	SAFHB150300
USSKIT3	C, D, F, G, Y, Z	150 thru 500	USSXFLR3	SAFHC400

Kit Includes:

- (1) Adapter Clamp (USSXADPTR)
- (1) Filter Housing
- (10) Filters

• Filters sold as 10 pack.

Cable to Cable

Mold Information:

- Price Key is the **Bold Letter** in the Mold Part No.
- Molds with Price Key "L" SOLD WITH HANDLES.
- For mold Wear Plates, add suffix "WP" to the end of the Mold Part No. See page 18 for details.

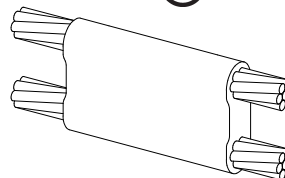
Required Tools & Accessories:

- MH1 - Handle for "B" Price Key Molds
- MH2 - Handle for "C" Price Key Molds

Recommended Tools & Accessories:

- CCBRSH1 - Cable Cleaning Brush
- MCBRSH1 - Mold Cleaning Brush

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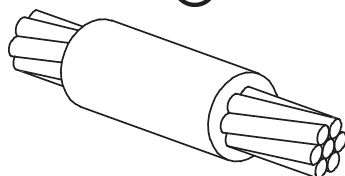
PT

(Parallel Tap of Horizontal Cables)

PT Connection Type

Cable Size (sq mm)		Mold Part No.	Weld Metal	
Run	Tap		UltraShot	NUWTUBE
25	25	MPT-2525 B	US45	NUWTUBE45
35	35	MPT-3535 B	US65	NUWTUBE65
35	25	MPT-3525 B	US65	NUWTUBE65
50	50	MPT-5050 B	US90	NUWTUBE90
50	35	MPT-5035 B	US65	NUWTUBE65
70	70	MPT-7070 B	US115	NUWTUBE115
70	50	MPT-7050 B	US115	NUWTUBE115
95	95	MPT-9595 B	US150	NUWTUBE150
95	70	MPT-9570 B	US150	NUWTUBE150
95	50	MPT-9550 B	US115	NUWTUBE115
120	120	MPT-120120 B	US250	NUWTUBE250
120	95	MPT-12095 B	US200	NUWTUBE200
120	70	MPT-12070 B	US150	NUWTUBE150
150	150	MPT-150150 B	US300	NUWTUBE300
150	120	MPT-150120 B	US250	NUWTUBE250
150	95	MPT-15095 B	US200	NUWTUBE200
150	70	MPT-15070 B	US150	NUWTUBE150
185	185	MPT-185185 B	US300	NUWTUBE300
185	150	MPT-185150 B	US300	NUWTUBE300
185	120	MPT-185120 B	US250	NUWTUBE250
240	240	MPT-240240 C	US400	NUWTUBE400
240	185	MPT-240185 B	US300	NUWTUBE300
240	150	MPT-240150 B	US300	NUWTUBE300
240	120	MPT-240120 B	US250	NUWTUBE250

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BS

(Butt End Splice of Horizontal Cables)

BS Connection Type

Cable Size (sq mm)	Mold Part No.	Weld Metal	
		UltraShot	NUWTUBE
16	MBS16 L	US25	NUWTUBE25
25	MBS-25 L	US32	NUWTUBE32
35	MBS-35 L	US32	NUWTUBE32
50	MBS-50 B	US45	NUWTUBE45
70	MBS-70 B	US65	NUWTUBE65
95	MBS-95 B	US90	NUWTUBE90
120	MBS-120 B	US115	NUWTUBE115
150	MBS-150 B	US115	NUWTUBE115
185	MBS-185 B	US150	NUWTUBE150
240	MBS-240 B	US200	NUWTUBE200
300	MBS-300 B	US250	NUWTUBE250
8 mm Ø	MBS-8 MB	US45	NUWTUBE45
10 mm Ø	MBS-10 MB	US65	NUWTUBE65

Cable to Cable

Mold Information:

- Price Key is the **Bold Letter** in the Mold Part No.
- For mold Wear Plates, add suffix "WP" to the end of the Mold Part No.
See page 18 for details.

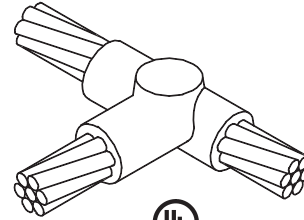
Required Tools & Accessories:

MH1 - Handle for "B" Price Key Molds

Recommended Tools & Accessories:

CCBRSH1 - Cable Cleaning Brush

MCBRSH1 - Mold Cleaning Brush



c UL US Listed 467

RT

(Tee of Horizontal Run & Tap Cables)



RT Connection Type

Cable Size (sq mm)		Mold Part No.	Weld Metal	
Run	Tap		UltraShot	NUWTUBE
16	16	MRT-1616 B	US32	NUWTUBE32
25	25	MRT-2525 B	US45	NUWTUBE45
25	16	MRT-2516 B	US45	NUWTUBE45
35	35	MRT-3535 B	US45	NUWTUBE45
	25	MRT-3525 B	US45	NUWTUBE45
	16	MRT-3516 B	US45	NUWTUBE45
50	50	MRT-5050 B	US90	NUWTUBE90
	35	MRT-5035 B	US45	NUWTUBE45
	25	MRT-5025 B	US45	NUWTUBE45
	16	MRT-5016 B	US45	NUWTUBE45
70	70	MRT-7070 B	US90	NUWTUBE90
	50	MRT-7050 B	US90	NUWTUBE90
	35	MRT-7035 B	US45	NUWTUBE45
	25	MRT-7025 B	US45	NUWTUBE45
	16	MRT-7016 B	US45	NUWTUBE45
95	95	MRT-9595 B	US115	NUWTUBE115
	70	MRT-9570 B	US90	NUWTUBE90
	50	MRT-9550 B	US90	NUWTUBE90
	35	MRT-9535 B	US90	NUWTUBE90
	25	MRT-9525 B	US90	NUWTUBE90
	16	MRT-9516 B	US90	NUWTUBE90
120	120	MRT-120120 B	US150	NUWTUBE150
	95	MRT-12095 B	US150	NUWTUBE150
	70	MRT-12070 B	US90	NUWTUBE90
	50	MRT-12050 B	US90	NUWTUBE90
	35	MRT-12035 B	US90	NUWTUBE90
150	150	MRT-150150 B	US200	NUWTUBE200
	120	MRT-150120 B	US150	NUWTUBE150
	95	MRT-15095 B	US150	NUWTUBE150
	70	MRT-15070 B	US90	NUWTUBE90
185	185	MRT-185185 B	US200	NUWTUBE200
	150	MRT-185150 B	US200	NUWTUBE200
	120	MRT-185120 B	US200	NUWTUBE200
240	240	MRT-240240 B	US300	NUWTUBE300
	185	MRT-240185 B	US200	NUWTUBE200
	150	MRT-240150 B	US200	NUWTUBE200
	120	MRT-240120 B	US200	NUWTUBE200
8 mm Ø	8 mm Ø	MRT-8M8 M	US65	NUWTUBE65
10 mm Ø	8 mm Ø	MRT-10M8 M	US90	NUWTUBE90
8 mm Ø	10 mm Ø	MRT-10M10 M	US90	NUWTUBE90

Cable to Cable

Mold Information:

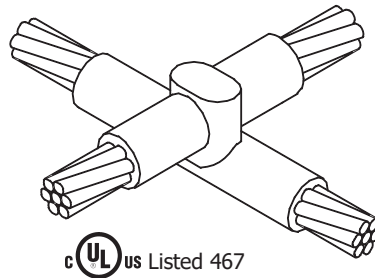
- Price Key is the **Bold Letter** in the Mold Part No.
- For mold Wear Plates, add suffix "WP" to the end of the Mold Part No. See page 18 for details.

Required Tools & Accessories:

- MH1 - Handle for "B" & "Q" Price Key Molds
- MH2 - Handle for "Z" Price Key Molds

Recommended Tools & Accessories:

- CCBRSH1 - Cable Cleaning Brush
- MCBRSH1 - Mold Cleaning Brush



XO
(Cross of Horizontal Cables,
Lapped & Not Cut)

XO Connection Type

Cable Size (sq mm)		Mold Part No.	Weld Metal	
Run	Tap		UltraShot	NUWTUBE
25	25	MXO-2525 B	US65	NUWTUBE65
35	35	MXO-3535 B	US90	NUWTUBE90
50	50	MXO-5050 Q	US150	NUWTUBE150
70	70	MXO-7070 Q	US200	NUWTUBE200
95	95	MXO-9595 Q	US250	NUWTUBE250
120	120	MXO-120120 Q	US300	NUWTUBE300
150	150	MXO-150150 Z	US400	NUWTUBE400
185	185	MXO-185185 Z	US500	NUWTUBE500
240	240	MXO-240240 Z	US750	3-NUWTUBE250

Cable to Cable

Mold Information:

- Price Key is the **Bold Letter** in the Mold Part No.

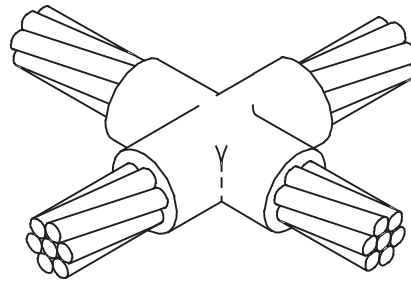
Required Tools & Accessories:

MH1 - Handle for "B" Price Key Molds

Recommended Tools & Accessories:

CCBRSH1 - Cable Cleaning Brush

MCBRSH1 - Mold Cleaning Brush



XX

(Cross of Horizontal Cables,
Tap Cable Cut, Cables
in Same Plane)

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XX Connection Type

Cable Size (sq mm)		Mold Part No.	Weld Metal	
Run	Tap		UltraShot	NUWTUBE
25	25	MXX-2525 B	US45	NUWTUBE45
35	35	MXX-3535 B	US65	NUWTUBE65
35	25	MXX-3525 B	US65	NUWTUBE65
50	50	MXX-5050 B	US90	NUWTUBE90
50	35	MXX-5035 B	US90	NUWTUBE90
70	70	MXX-7070 B	US115	NUWTUBE115
70	50	MXX-7050 B	US115	NUWTUBE115
95	95	MXX-9595 B	US150	NUWTUBE150
95	70	MXX-9570 B	US150	NUWTUBE150
95	50	MXX-9550 B	US115	NUWTUBE115
120	120	MXX-120120 B	US200	NUWTUBE200
120	95	MXX-12095 B	US200	NUWTUBE200
120	70	MXX-12070 B	US150	NUWTUBE150
150	150	MXX-150150 B	US250	NUWTUBE250
150	120	MXX-150120 B	US250	NUWTUBE250
150	95	MXX-15095 B	US200	NUWTUBE200
150	70	MXX-15070 B	US150	NUWTUBE150
185	185	MXX-185185 B	US250	NUWTUBE250
185	150	MXX-185150 B	US250	NUWTUBE250
185	120	MXX-185120 B	US250	NUWTUBE250
240	240	MXX-240240 C	US500	NUWTUBE500
240	185	MXX-240185 C	US400	NUWTUBE400
240	150	MXX-240150 C	US400	NUWTUBE400
240	120	MXX-240120 B	US300	NUWTUBE300

Cable to Ground Rod

Mold Information:

- Molds listed are for tapered ground rods. For threaded sectional rods, add suffix "S" after the ground rod number. i.e. 127 MS = 12.7 mm sectional ground rod.
- If Handles not required, add suffix "-X" after the Mold Part No.
- Price Key is the **Bold Letter** in the Mold Part No.
- For mold Wear Plates, add suffix "WP" to the end of the Mold Part No. See page 18 for details.

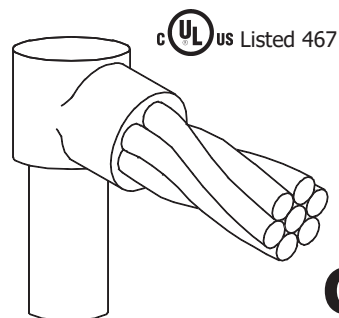
Required Tools & Accessories:

MH1 - Handle for "B" Price Key Molds

Recommended Tools & Accessories:

CCBRSH1 - Cable Cleaning Brush

MCBRSH1 - Mold Cleaning Brush



(Single Cable Dead Ended to Top of Ground Rod)

GD Connection Type

Ground Rod Size (mm)	Cable Size (sq mm)	Mold Part No.	Weld Metal	
			UltraShot	NUWTUBE
12.7	25	MGD-127M25 B	US65	NUWTUBE65
	35	MGD-127M35 B	US65	NUWTUBE65
	50	MGD-127M50 B	US65	NUWTUBE65
	70	MGD-127M70 B	US90	NUWTUBE90
	95	MGD-127M95 B	US90	NUWTUBE90
	120	MGD-127M120 B	US90	NUWTUBE90
	150	MGD-127M150 B	US90	NUWTUBE90
14.2	185	MGD-127M185 B	US115	NUWTUBE115
	25	MGD-142M25 B	US65	NUWTUBE65
	35	MGD-142M35 B	US65	NUWTUBE65
	50	MGD-142M50 B	US90	NUWTUBE90
	70	MGD-142M70 B	US90	NUWTUBE90
	95	MGD-142M95 B	US90	NUWTUBE90
	120	MGD-142M120 B	US90	NUWTUBE90
17.3	150	MGD-142M150 B	US115	NUWTUBE115
	185	MGD-142M185 B	US115	NUWTUBE115
	240	MGD-142M240 B	US150	NUWTUBE150
	25	MGD-173M25 B	US90	NUWTUBE90
	35	MGD-173M35 B	US90	NUWTUBE90
	50	MGD-173M50 B	US90	NUWTUBE90
	70	MGD-173M70 B	US90	NUWTUBE90
17.3	95	MGD-173M95 B	US90	NUWTUBE90
	120	MGD-173M120 B	US90	NUWTUBE90
	150	MGD-173M150 B	US115	NUWTUBE115
	185	MGD-173M185 B	US115	NUWTUBE115
	240	MGD-173M240 B	US150	NUWTUBE150

NOTES:

- Molds shown are for copper-clad steel ground rods.
- For welding to stainless steel, galvanized steel or solid copper ground rods, add letter "F" to ground rod size. For sectional ground rods, add letter "S" to ground rod size.

Ground Rod to Busbar

Mold Information:

- Molds listed are for tapered ground rods. For threaded sectional rods, add suffix "S" after the ground rod number. i.e. 127 MS = 12.7 mm sectional ground rod.
- If Handles not required, add suffix "-X" after the Mold Part No.
- Price Key is the **Bold Letter** in the Mold Part No.

Required Tools & Accessories:

MH1 - Handle for "B" Price Key Molds

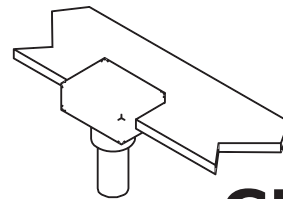
Recommended Tools & Accessories:

CCBRSH1 - Cable Cleaning Brush

MCBRSH1 - Mold Cleaning Brush

GHSO Connection Type

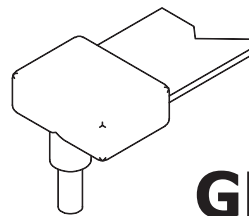
Ground Rod Size (mm)	Busbar Size (mm)	Mold Part No.	Weld Metal	
			UltraShot	NUWTUBE
12.7	2 x 30	MGHSO-127M230 B	US90	NUWTUBE90
14.2		MGHSO-142M230 B	US115	NUWTUBE115
17.3		MGHSO-173M230 B	US115	NUWTUBE115
12.7	3 x 25	MGHSO-127M325 B	US90	NUWTUBE90
14.2		MGHSO-142M325 B	US115	NUWTUBE115
17.3		MGHSO-173M325 B	US115	NUWTUBE115
12.7	6 x 40 & Wider	MGHSO-127M640 B	US150	NUWTUBE150
14.2		MGHSO-142M640 B	US150	NUWTUBE150
17.3		MGHSO-173M640 B	US200	NUWTUBE200



GHSO
(Ground Rod to Horizontal Strap on Tap)

GHSD Connection Type

Ground Rod Size (mm)	Busbar Size (mm)	Mold Part No.	Weld Metal	
			UltraShot	NUWTUBE
12.7	2 x 30	MGHSD-127M230 B	US90	NUWTUBE90
14.2		MGHSD-142M230 B	US115	NUWTUBE115
17.3		MGHSD-173M230 B	US115	NUWTUBE115
12.7	3 x 25	MGHSD-127M325 B	US90	NUWTUBE90
14.2		MGHSD-142M325 B	US115	NUWTUBE115
17.3		MGHSD-173M325 B	US115	NUWTUBE115
12.7	6 x 50 & Wider	MGHSD-127M650 B	US150	NUWTUBE150
14.2		MGHSD-142M650 B	US150	NUWTUBE150
17.3		MGHSD-173M650 B	US200	NUWTUBE200



GHSD
(Ground Rod to Horizontal Strap Dead End)

NOTES:

- Molds are for copper-clad steel ground rods.
- For welding to stainless steel, galvanized steel or solid copper ground rods, add letter "F" to ground rod size. For sectional ground rods, add letter "S" to ground rod size.

Cable to Ground Rod

Mold Information:

- Molds listed are for tapered ground rods. For threaded sectional rods, add suffix "S" after the ground rod number. i.e. 58S = 5/8" sectional ground rod.
 - If Handles not required, add suffix "-X" after the Mold Part No.
 - Price Key is the **Bold Letter** in the Mold Part No.
 - For mold Wear Plates, add suffix "WP" to the end of the Mold Part No.
- See page 18 for details.

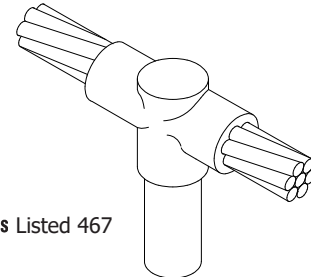
Required Tools & Accessories:

MH1 - Handle for "B" Price Key Molds

Recommended Tools & Accessories:

CCBRSH1 - Cable Cleaning Brush

MCBRSH1 - Mold Cleaning Brush



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GO

(Horizontal Thru Cable to Top of Ground Rod)

GO Connection Type

Ground Rod Size (mm)	Cable Size (sq mm)	Mold Part No.	Weld Metal	
			UltraShot	NUWTUBE
12.7	25	MGO-127M25 B	US90	NUWTUBE90
	35	MGO-127M35 B	US90	NUWTUBE90
	50	MGO-127M50 B	US90	NUWTUBE90
	70	MGO-127M70 B	US90	NUWTUBE90
	95	MGO-127M95 B	US115	NUWTUBE115
	120	MGO-127M120 B	US150	NUWTUBE150
	150	MGO-127M150 B	US200	NUWTUBE200
14.2	185	MGO-127M185 B	US200	NUWTUBE200
	25	MGO-142M25 B	US90	NUWTUBE90
	35	MGO-142M35 B	US90	NUWTUBE90
	50	MGO-142M50 B	US90	NUWTUBE90
	70	MGO-142M70 B	US115	NUWTUBE115
	95	MGO-142M95 B	US115	NUWTUBE115
	120	MGO-142M120 B	US150	NUWTUBE150
17.3	150	MGO-142M150 B	US200	NUWTUBE200
	185	MGO-142M185 B	US200	NUWTUBE200
	240	MGO-142M240 B	US250	NUWTUBE250
	25	MGO-173M25 B	US90	NUWTUBE90
	35	MGO-173M35 B	US90	NUWTUBE90
	50	MGO-173M50 B	US90	NUWTUBE90
	70	MGO-173M70 B	US115	NUWTUBE115
17.3	95	MGO-173M95 B	US115	NUWTUBE115
	120	MGO-173M120 B	US150	NUWTUBE150
	150	MGO-173M150 B	US200	NUWTUBE200
	185	MGO-173M185 B	US200	NUWTUBE200
	240	MGO-173M240 B	US250	NUWTUBE250

NOTES:

- Molds are for copper-clad steel ground rods.
- For welding to stainless steel, galvanized steel or solid copper ground rods, add letter "F" to ground rod size. For sectional ground rods, add letter "S" to ground rod size.

Cable to Ground Rod

Mold Information:

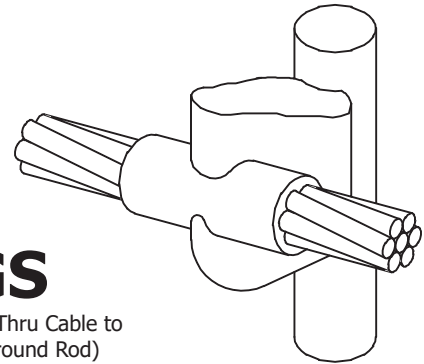
- Price Key is the **Bold Letter** in the Mold Part No.
- For mold Wear Plates, add suffix "WP" to the end of the Mold Part No.
See page 18 for details.

Required Tools & Accessories:

- MH1 - Handle for "P" Price Key Molds
- MH2 - Handle for "Y" Price Key Molds

Recommended Tools & Accessories:

- CCBRSH1 - Cable Cleaning Brush
- MCBRSH1 - Mold Cleaning Brush



GS

(Horizontal Thru Cable to Side of Ground Rod)

GS Connection Type

Ground Rod Size (mm)	Cable Size (sq mm)	Mold Part No.	Weld Metal	
			UltraShot	NUWTUBE
12.7	25	MGS-127M25 P	US90	NUWTUBE90
	35	MGS-127M35 P	US90	NUWTUBE90
	50	MGS-127M50 P	US115	NUWTUBE115
	70	MGS-127M70 P	US115	NUWTUBE115
	95	MGS-127M95 P	US150	NUWTUBE150
	120	MGS-127M120 P	US150	NUWTUBE150
	150	MGS-127M150 P	US200	NUWTUBE200
	185	MGS-127M185 P	US250	NUWTUBE250
14.2	25	MGS-142M25 P	US90	NUWTUBE90
	35	MGS-142M35 P	US90	NUWTUBE90
	50	MGS-142M50 P	US115	NUWTUBE115
	70	MGS-142M70 P	US115	NUWTUBE115
	95	MGS-142M95 P	US150	NUWTUBE150
	120	MGS-142M120 P	US150	NUWTUBE150
	150	MGS-142M150 P	US200	NUWTUBE200
	185	MGS-142M185 P	US250	NUWTUBE250
	240	MGS-142M240 Y	US400	NUWTUBE400
17.3	25	MGS-173M25 P	US90	NUWTUBE90
	35	MGS-173M35 P	US90	NUWTUBE90
	50	MGS-173M50 P	US115	NUWTUBE115
	70	MGS-173M70 P	US115	NUWTUBE115
	95	MGS-173M95 P	US150	NUWTUBE150
	120	MGS-173M120 P	US200	NUWTUBE200
	150	MGS-173M150 P	US250	NUWTUBE250
	185	MGS-173M185 Y	US300	NUWTUBE300
	240	MGS-173M240 Y	US400	NUWTUBE400

NOTES:

- Molds shown are for copper-clad steel ground rods.
- For welding to stainless steel, galvanized steel or solid copper ground rods, add letter "F" to ground rod size. For sectional ground rods, add letter "S" to ground rod size.

Ground Rod to Busbar

Mold Information:

- Molds listed are for tapered ground rods. For threaded sectional rods, add suffix "S" after the ground rod number. i.e. 127 MS = 12.7 mm sectional ground rod.
- Price Key is the **Bold Letter** in the Mold Part No.

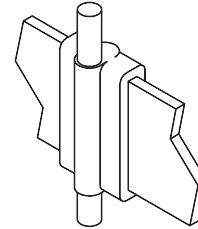
Required Tools & Accessories:

MH1 - Handle for "P" Price Key Molds

Recommended Tools & Accessories:

CCBRSH1 - Cable Cleaning Brush

MCBRSH1 - Mold Cleaning Brush



GVSAS Connection Type

Ground Rod Size (mm)	Busbar Size (mm)	Mold Part No.	Weld Metal	
			UltraShot	NUWTUBE
12.7	3 x 25	MGVSAS-127M325 P	US115	NUWTUBE115
14.2	3 x 25	MGVSAS-142M325 P	US150	NUWTUBE150
17.3	3 x 25	MGVSAS-173M325 P	US200	NUWTUBE200

GVSAS

(Ground Rod to Vertical Strap Across Side of Rod)

Ground Rod to Ground Rod

Mold Information:

- Molds listed are for tapered ground rods. For threaded sectional rods, add suffix "S" after the ground rod number. i.e. 127 MS = 12.7 mm sectional ground rod.
- Price Key is the **Bold Letter** in the Mold Part No.

Required Tools & Accessories:

MH1 - Handle for "B" Price Key Molds

MH2 - Handle for "C" Price Key Molds

Recommended Tools & Accessories:

CCBRSH1 - Cable Cleaning Brush

MCBRSH1 - Mold Cleaning Brush

GG Connection Type

Ground Rod Size (mm)	Mold Part No.	Heavy Duty Mold Weld Metal	
		UltraShot	NUWTUBE
12.7	MGG-127 M	US250	NUWTUBE250
14.2	MGG-142 M	US300	NUWTUBE300
17.3	MGG-173 M	US400	NUWTUBE400



GG

(Butt Splice of Vertical Ground Rods)

NOTES:

- Molds shown are for copper-clad steel ground rods.
- For welding to stainless steel, galvanized steel or solid copper ground rods, add letter "F" to ground rod size. For sectional ground rods, add letter "S" to ground rod size.

Cable to Steel Surface

Mold Information:

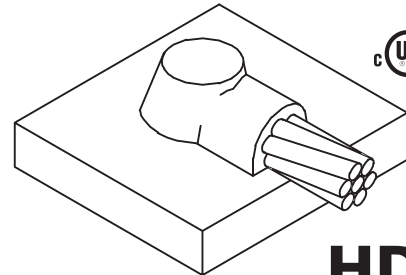
- **HB** mold cable is **off** the steel surface.
- **HD** mold cable is **on** the steel surface.
- **HD** molds used on conductors 1/0 and larger may need Mold Sealer (MLDSL, see page 52).
- Molds with Price Key "**A**" SOLD WITH FRAME.
- If Frame not required, add suffix "-X" after the Mold Part No.
- "**A**" Price Key Molds DO NOT INCLUDE Flint Igniters.
- Price Key is the **Bold Letter** in the Mold Part No.
- For **HB** mold Wear Plates, add suffix "WP" to the end of the Mold Part No. See page 18 for details.

Required Tools & Accessories:

- MH1 - Handle for "**B**" Price Key Molds
- FLTIG - Flint Igniter when Price Key is "**A**"

Recommended Tools & Accessories:

- CCBRSH1 - Cable Cleaning Brush
- MCBRSH1 - Mold Cleaning Brush
- UMHDKIT - Hold Down Kit
- UMMHDA - Hold Down Kit when Price Key is "**A**"



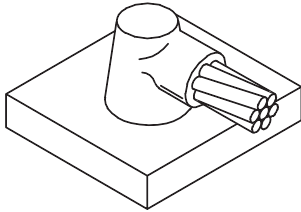
UL us Listed 467

HD

(Horizontal Cable to Horizontal Flat Steel Surface, ON Surface)

HD Connection Type

Cable Size (sq mm)	Mold Part No.	Weld Metal	
		UltraShot	NUWTUBE
25	MHD-25 A	US45	NUWTUBE45
35	MHD-35 A	US45	NUWTUBE45
50	MHD-50 A	US45	NUWTUBE45
70	MHD-70 A	US65	NUWTUBE65



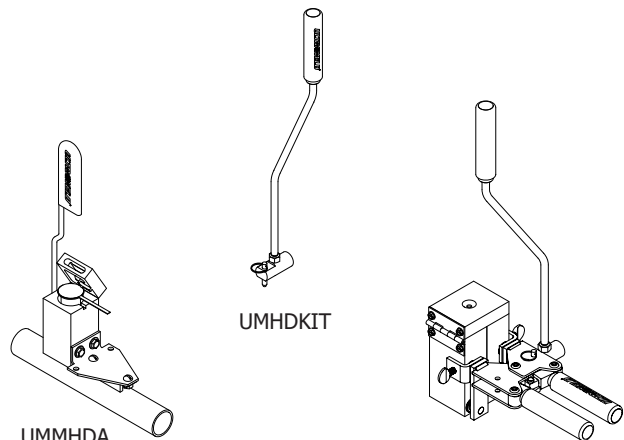
HB

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(Horizontal Cable to Horizontal Flat Steel Surface, OFF Surface)

HB Connection Type

Cable Size (sq mm)	Mold Part No.	Weld Metal	
		UltraShot	NUWTUBE
95	MHB-95 B	US115	NUWTUBE115
120	MHB-120 B	US115	NUWTUBE115
150	MHB-150 B	US150	NUWTUBE150
185	MHB-185 B	US200	NUWTUBE200
240	MHB-240 B	US200	NUWTUBE200



UMMHDA

UMHDKIT

UMHDKIT with Mold & Handle

U.S. Patent No. 6,382,496

Cable to Steel Surface

Mold Information:

- Price Key is the **Bold Letter** in the Mold Part No.
- For **VA** mold Wear Plates, add suffix "WP" to the end of the Mold Part No. See page 18 for details.

Required Tools & Accessories:

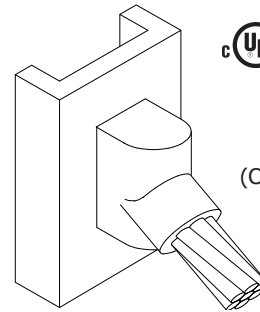
MH1 - Handle for "B" Price Key Molds

Recommended Tools & Accessories:

CCBRSH1 - Cable Cleaning Brush

MCBRSH1 - Mold Cleaning Brush

MSKIT - Magnetic Support Kit



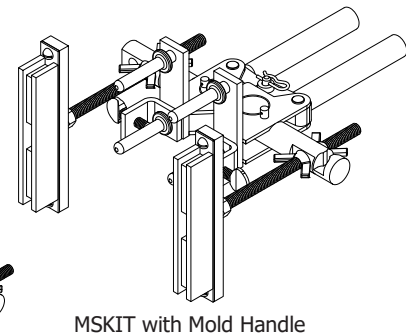
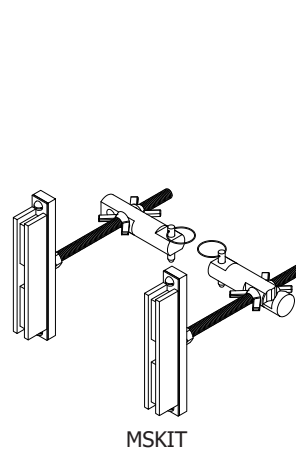
cUL us Listed 467

VA

(Cable Down at 45° to Vertical Flat Steel Surface)

VA Connection Type

Cable Size (sq mm)	Mold Part No.	Weld Metal	
		UltraShot	NUWTUBE
25	MVA-25 B	US45	NUWTUBE45
35	MVA-35 B	US45	NUWTUBE45
50	MVA-50 B	US65	NUWTUBE65
70	MVA-70 B	US90	NUWTUBE90
95	MVA-95 B	US115	NUWTUBE115
120	MVA-120 B	US115	NUWTUBE115
150	MVA-150 B	US150	NUWTUBE150
185	MVA-185 B	US200	NUWTUBE200
240	MVA-240 B	US200	NUWTUBE200



U.S. Patent No. 6,382,496

Stud to Steel

Mold Information:

- Price Key is the **Bold Letter** in the Mold Part No.

Required Tools & Accessories:

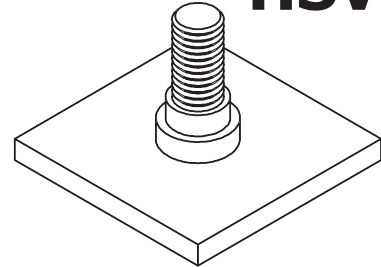
MH1 - Handle for "B" and "K" Price Key Molds

Recommended Tools & Accessories:

CCBRSH1 - Cable Cleaning Brush

MCBRSH1 - Mold Cleaning Brush

HSVB



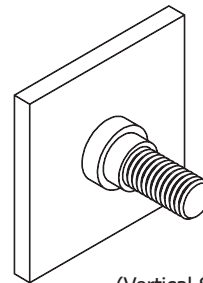
(Horizontal Steel to Vertical Butt)

HSVB Connection Type

Thread Description	Mold Part No.	Weld Metal	
		UltraShot	NUWTUBE
M6	MHSVB-6 B	US25	NUWTUBE25
M8	MHSVB-8 B	US32	NUWTUBE32
M10	MHSVB-10 B	US65	NUWTUBE65
M12	MHSVB-12 B	US65	NUWTUBE65
M16	MHSVB-16 K	US115	NUWTUBE115

VSHB Connection Type

Thread Description	Mold Part No.	Weld Metal	
		UltraShot	NUWTUBE
M6	MVSHB-6 B	US25	NUWTUBE25
M8	MVSHB-8 B	US32	NUWTUBE32
M10	MVSHB-10 B	US65	NUWTUBE65
M12	MVSHB-12 B	US65	NUWTUBE65
M16	MVSHB-16 B	US115	NUWTUBE115



VSHB

(Vertical Steel to Horizontal Butt Stud)

Busbar to Busbar

Mold Information:

- Price Key is the **Bold Letter** in the Mold Part No.

Required Tools & Accessories:

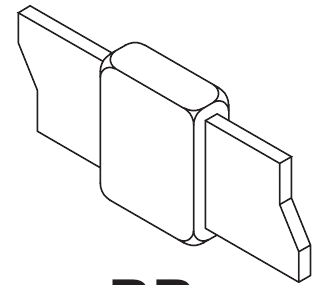
MH1 - Handle for "B & K" Price Key Molds

Recommended Tools & Accessories:

MH1 - Handle for "B & K" Price Key Molds

CCBRSH1 - Cable Cleaning Brush

MCBRSH1 - Mold Cleaning Brush



BB

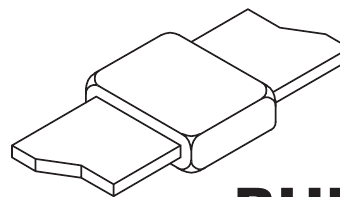
(Busbar Butt Splice on Edge)

BB Connection Type

Busbar Size (mm)	Mold Part No.	Weld Metal	
		UltraShot	NUWTUBE
3 x 25	MBB-325 B	US45	NUWTUBE45
3 x 50	MBB-350 B	US90	NUWTUBE90
4 x 40	MBB-440 B	US115	NUWTUBE115
4 x 50	MBB-450 B	US115	NUWTUBE115
5 x 40	MBB-540 B	US150	NUWTUBE150
5 x 50	MBB-550 B	US200	NUWTUBE200
6 x 25	MBB-625 B	US90	NUWTUBE90
6 x 50	MBB-650 B	US200	NUWTUBE200

BHFBHF Connection Type

Busbar Size (mm)	Mold Part No.	Weld Metal	
		UltraShot	NUWTUBE
3 x 25	MBHFBHF-325 B	US65	NUWTUBE65
3 x 50	MBHFBHF-350 K	US90	NUWTUBE90
4 x 40	MBHFBHF-440 B	US115	NUWTUBE115
4 x 50	MBHFBHF-450 K	US150	NUWTUBE150
5 x 40	MBHFBHF-540 B	US150	NUWTUBE150
5 x 50	MBHFBHF-550 K	US200	NUWTUBE200
6 x 25	MBHFBHF-625 B	US115	NUWTUBE115
6 x 50	MBHFBHF-650 K	US250	NUWTUBE250



BHFBHF

(Busbar Horizontal Flat to Busbar Horizontal Flat)

Busbar to Busbar

Mold Information:

- Price Key is the **Bold Letter** in the Mold Part No.

Required Tools & Accessories:

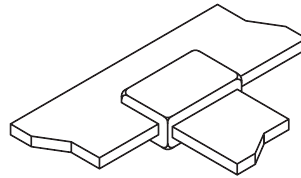
- MH1 - Handle for "B" Price Key Molds
- MH2 - Handle for "C" Price Key Molds

Recommended Tools & Accessories:

- CCBRSH1 - Cable Cleaning Brush
- MCBRSH1 - Mold Cleaning Brush

BHFBHT Connection Type

Busbar Size (mm)	Mold Part No.	Weld Metal	
		UltraShot	NUWTUBE
3 x 25	MBHFBHT-325325 B	US65	NUWTUBE65
3 x 50	MBHFBHT-350350 C	US115	NUWTUBE115
4 x 40	MBHFBHT-440440 B	US115	NUWTUBE115
4 x 50	MBHFBHT-450450 C	US200	NUWTUBE200
5 x 40	MBHFBHT-540540 B	US150	NUWTUBE150
5 x 50	MBHFBHT-550550 C	US200	NUWTUBE200
6 x 25	MBHFBHT-625625 B	US115	NUWTUBE115
6 x 50	MBHFBHT-650650 C	US250	NUWTUBE250

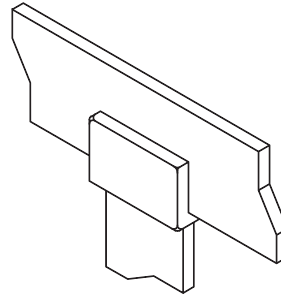


BHFBHT

(Busbar Horizontal Flat to Busbar Horizontal "T")

BT Connection Type

Busbar Size (mm)	Mold Part No.	Weld Metal	
		UltraShot	NUWTUBE
3 x 25	MBT-325325 B	US90	NUWTUBE90
3 x 50	MBT-350350 B	US200	NUWTUBE200
4 x 40	MBT-440440 B	US150	NUWTUBE150
4 x 50	MBT-450450 B	US200	NUWTUBE200
5 x 40	MBT-540540 B	US150	NUWTUBE150
5 x 50	MBT-550550 B	US200	NUWTUBE200
6 x 25	MBT-625625 B	US150	NUWTUBE150
6 x 50	MBT-650650 C	US400	NUWTUBE400

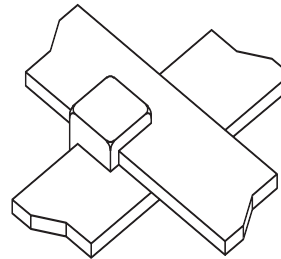


BT

(Busbar Run & Vertical Tap)

BHFBHXC Connection Type

Busbar Size (mm)	Mold Part No.	Weld Metal	
		UltraShot	NUWTUBE
3 x 25	MBHFBHXC-325325 B	US65	NUWTUBE65
3 x 30	MBHFBHXC-330330 B	US90	NUWTUBE90
3 x 50	MBHFBHXC-350350 C	US115	NUWTUBE115
4 x 40	MBHFBHXC-440440 B	US150	NUWTUBE150
4 x 50	MBHFBHXC-450450 C	US200	NUWTUBE200
5 x 40	MBHFBHXC-540540 B	US200	NUWTUBE200
5 x 50	MBHFBHXC-550550 C	US200	NUWTUBE200
6 x 25	MBHFBHXC-625625 B	US200	NUWTUBE200
6 x 50	MBHFBHXC-650650 C	US250	NUWTUBE250



BHFBHXC

(Busbar Horizontal Flat to Busbar Horizontal X (Cross) Corner Weld)

Busbar to Steel

Mold Information:

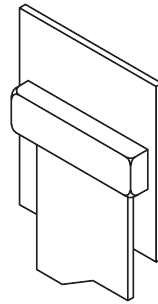
- Price Key is the **Bold Letter** in the Mold Part No.

Required Tools & Accessories:

- MH1 - Handle for "B" Price Key Molds
- MH2 - Handle for "C" Price Key Molds

Recommended Tools & Accessories:

- CCBRSH1 - Cable Cleaning Brush
- MCBRSH1 - Mold Cleaning Brush

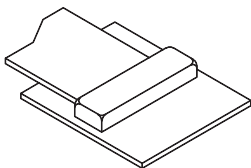


BBDVS

(Busbar to Vertical Steel)

BBDVS Connection Type

Busbar Size (mm)	Mold Part No.	Weld Metal	
		UltraShot	NUWTUBE
3 x 25	MBBDVS-325 B	US90	NUWTUBE90
3 x 50	MBBDVS-350 B	US150	NUWTUBE150
4 x 40	MBBDVS-440 B	US200	NUWTUBE200
4 x 50	MBBDVS-450 C	US200	NUWTUBE200
5 x 40	MBBDVS-540 B	US200	NUWTUBE200
5 x 50	MBBDVS-550 C	US250	NUWTUBE250
6 x 25	MBBDVS-625 B	US150	NUWTUBE150
6 x 50	MBBDVS-650 C	US300	NUWTUBE300



BBDEHS

(Busbar Dead End to
Horizontal Steel)

BBDEHS Connection Type

Busbar Size (mm)	Mold Part No.	Weld Metal	
		UltraShot	NUWTUBE
3 x 25	MBBDEHS-325 B	US90	NUWTUBE90
3 x 50	MBBDEHS-350 B	US200	NUWTUBE200
4 x 25	MBBDEHS-425 B	US115	NUWTUBE115
4 x 50	MBBDEHS-450 C	US250	NUWTUBE250
5 x 40	MBBDEHS-540 B	US200	NUWTUBE200
5 x 50	MBBDEHS-550 C	US250	NUWTUBE250
6 x 25	MBBDEHS-625 B	US150	NUWTUBE150
6 x 50	MBBDEHS-650 C	US300	NUWTUBE300

Cable to Lug or Busbar

Mold Information:

- Price Key is the **Bold Letter** in the Mold Part No.
- For mold Wear Plates, add suffix "WP" to the end of the Mold Part No.
See page 18 for details.

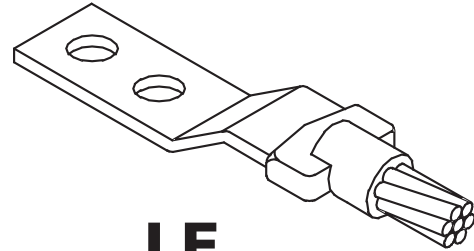
Required Tools & Accessories:

MH1 - Handle for "B" Price Key Molds

Recommended Tools & Accessories:

CCBRSH1 - Cable Cleaning Brush

MCBRSH1 - Mold Cleaning Brush



LE

(Butt End Splice of Horizontal Cable to Lug or Busbar)

LE Connection Type

Cable Size (sq mm)	Lug Size (mm)	Mold Part No.	Weld Metal	
			UltraShot	NUWTUBE
16	2 x 20	MLE-16220 B	US32	NUWTUBE32
	2 x 25	MLE-16225 B	US45	NUWTUBE45
	3 x 20	MLE-16320 B	US45	NUWTUBE45
	3 x 25	MLE-16325 B	US45	NUWTUBE45
25	2 x 25	MLE-25225 B	US45	NUWTUBE32
	3 x 20	MLE-25320 B	US45	NUWTUBE45
	3 x 25	MLE-25325 B	US45	NUWTUBE45
	4 x 25	MLE-25425 B	US45	NUWTUBE45
35	2 x 25	MLE-35225 B	US45	NUWTUBE32
	3 x 20	MLE-35320 B	US45	NUWTUBE45
	3 x 25	MLE-35325 B	US45	NUWTUBE45
	4 x 25	MLE-35425 B	US45	NUWTUBE45
50	2 x 25	MLE-50225 B	US45	NUWTUBE32
	3 x 20	MLE-50320 B	US45	NUWTUBE45
	3 x 25	MLE-50325 B	US45	NUWTUBE45
	4 x 25	MLE-50425 B	US65	NUWTUBE65
70	3 x 25	MLE-70325 B	US65	NUWTUBE65
	3 x 30	MLE-70330 B	US65	NUWTUBE65
	4 x 25	MLE-70425 B	US65	NUWTUBE65
	4 x 30	MLE-70430 B	US65	NUWTUBE65
	5 x 30	MLE-70530 B	US90	NUWTUBE90
95	3 x 25	MLE-95325 B	US65	NUWTUBE65
	3 x 30	MLE-95330 B	US90	NUWTUBE90
	4 x 25	MLE-95425 B	US90	NUWTUBE90
	4 x 30	MLE-95430 B	US90	NUWTUBE90
	5 x 30	MLE-95530 B	US90	NUWTUBE90
120	3 x 25	MLE-120325 B	US90	NUWTUBE90
	3 x 30	MLE-120330 B	US90	NUWTUBE90
	4 x 25	MLE-120425 B	US90	NUWTUBE90
	4 x 30	MLE-120430 B	US90	NUWTUBE90
	5 x 30	MLE-120530 B	US90	NUWTUBE90

Cable to Lug or Busbar

Mold Information:

- Price Key is the **Bold Letter** in the Mold Part No.
- For mold Wear Plates, add suffix "WP" to the end of the Mold Part No.
See page 18 for details.

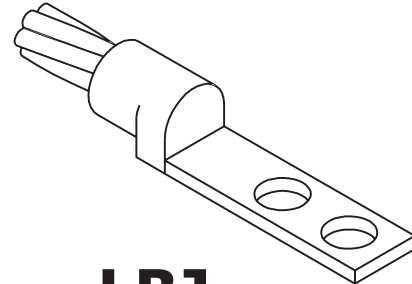
Required Tools & Accessories:

MH1 - Handle for "B" Price Key Molds

Recommended Tools & Accessories:

CCBRSH1 - Cable Cleaning Brush

MCBRSH1 - Mold Cleaning Brush



LBJ

(Butt End Splice of Horizontal Cable to Lug Bent J)

LBJ Connection Type

Cable Size (sq mm)	Lug Size (mm)	Mold Part No.	Weld Metal	
			UltraShot	NUWTUBE
25	3.18 x 25.4	MLBJ-25318254 B	US32	NUWTUBE32
35	3.18 x 25.4	MLBJ-35318254 B	US32	NUWTUBE32
50	3.18 x 25.4	MLBJ-50318254 B	US45	NUWTUBE45
70	3.18 x 25.4	MLBJ-70318254 B	US45	NUWTUBE45
95	4.76 x 25.4	MLBJ-95476254 B	US65	NUWTUBE65
120	4.76 x 25.4	MLBJ-120476254 B	US65	NUWTUBE65
150	6.35 x 25.4	MLBJ-150635254 B	US90	NUWTUBE90
185	6.35 x 25.4	MLBJ-185635254 B	US115	NUWTUBE115
240	6.35 x 38.1	MLBJ-240635381 B	US200	NUWTUBE200

Cable to Busbar

Mold Information:

- Price Key is the **Bold Letter** in the Mold Part No.

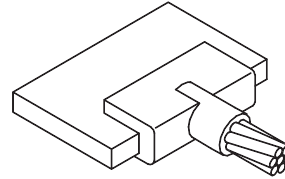
Required Tools & Accessories:

MH1 - Handle for "B" Price Key Molds

Recommended Tools & Accessories:

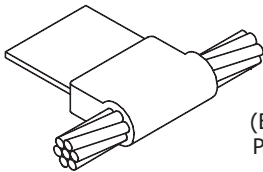
CCBRSH1 - Cable Cleaning Brush

MCBRSH1 - Mold Cleaning Brush



BE

(Horizontal Cable Tap to Edge of Horizontal Flat Busbar)



BH

(Busbar to Horizontal Perpendicular Cable)

BH Connection Type

Cable Size (sq mm)	Busbar Size (mm)	Mold Part No.	Weld Metal	
			UltraShot	NUWTUBE
16	2 x 20	MBH-16220 B	US45	NUWTUBE45
	2 x 25	MBH-16225 B	US65	NUWTUBE65
	3 x 20	MBH-16320 B	US45	NUWTUBE45
	3 x 25	MBH-16325 B	US65	NUWTUBE65
25	2 x 20	MBH-25220 B	US45	NUWTUBE45
	2 x 25	MBH-25225 B	US65	NUWTUBE65
	3 x 20	MBH-25320 B	US45	NUWTUBE45
	3 x 25	MBH-25325 B	US65	NUWTUBE65
35	4 x 25	MBH-25425 B	US65	NUWTUBE65
	2 x 25	MBH-35225 B	US65	NUWTUBE65
	3 x 20	MBH-35320 B	US45	NUWTUBE45
	3 x 25	MBH-35325 B	US65	NUWTUBE65
50	4 x 25	MBH-35425 B	US65	NUWTUBE65
	2 x 25	MBH-50225 B	US65	NUWTUBE65
	3 x 20	MBH-50320 B	US65	NUWTUBE65
	3 x 25	MBH-50325 B	US65	NUWTUBE65
70	4 x 25	MBH-50425 B	US90	NUWTUBE90
	3 x 25	MBH-70325 B	US90	NUWTUBE90
	3 x 30	MBH-70330 B	US90	NUWTUBE90
	4 x 25	MBH-70425 B	US115	NUWTUBE115
95	4 x 30	MBH-70430 B	US115	NUWTUBE115
	5 x 30	MBH-70530 B	US115	NUWTUBE115
	3 x 25	MBH-95325 B	US115	NUWTUBE115
	3 x 30	MBH-95330 B	US115	NUWTUBE115
120	4 x 25	MBH-95425 B	US150	NUWTUBE150
	4 x 30	MBH-95430 B	US150	NUWTUBE150
	5 x 30	MBH-95530 B	US150	NUWTUBE150
	6 x 40	MBH-95640 B	US200	NUWTUBE200
120	3 x 25	MBH-120325 B	US115	NUWTUBE115
	3 x 30	MBH-120330 B	US115	NUWTUBE115
	4 x 25	MBH-120425 B	US150	NUWTUBE150
	4 x 30	MBH-120430 B	US150	NUWTUBE150
	5 x 30	MBH-120530 B	US200	NUWTUBE200
	6 x 40	MBH-120640 B	US200	NUWTUBE200

BE Connection Type

Bus/Lug Size (mm)	Cable Size (mm)	Mold Part No.	Weld Metal	
			UltraShot	NUWTUBE
3 x 25	35	MBE-32535 B	US45	NUWTUBE45
	50	MBE-32550 B	US45	NUWTUBE45
	70	MBE-32570 B	US65	NUWTUBE65
4 x 40 & Wider	35	MBE-44035 B	US65	NUWTUBE65
	50	MBE-44050 B	US90	NUWTUBE90
	70	MBE-44070 B	US90	NUWTUBE90
	95	MBE-44095 B	US90	NUWTUBE90
	120	MBE-440120 B	US90	NUWTUBE90
	150	MBE-440150 B	US115	NUWTUBE115
5 x 40 & Wider	185	MBE-440185 B	US150	NUWTUBE150
	240	MBE-440240 B	US200	NUWTUBE200
	35	MBE-54035 B	US65	NUWTUBE65
	50	MBE-54050 B	US90	NUWTUBE90
	70	MBE-54070 B	US90	NUWTUBE90
	95	MBE-54095 B	US90	NUWTUBE90
6 x 40 & Wider	120	MBE-540120 B	US115	NUWTUBE115
	150	MBE-540150 B	US115	NUWTUBE115
	185	MBE-540185 B	US150	NUWTUBE150
	240	MBE-540240 B	US200	NUWTUBE200
	35	MBE-64035 B	US65	NUWTUBE65
	50	MBE-64050 B	US90	NUWTUBE90
6 x 40 & Wider	70	MBE-64070 B	US90	NUWTUBE90
	95	MBE-64095 B	US90	NUWTUBE90
	120	MBE-640120 B	US115	NUWTUBE115
	150	MBE-640150 B	US115	NUWTUBE115
	185	MBE-640185 B	US150	NUWTUBE150
	240	MBE-640240 B	US200	NUWTUBE200

Cable to Reinforcing Steel

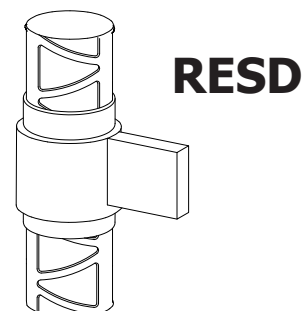
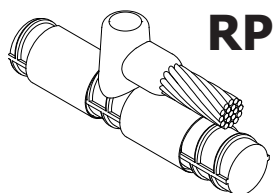
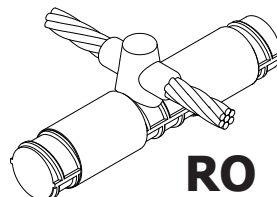
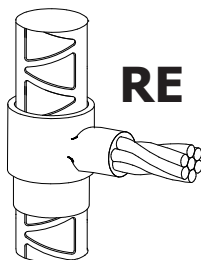
APPLICATION NOTES:

Ultraweld Connections Used for Grounding Reinforcing Steel

The Ultraweld process is ideal for providing permanent connections of grounding conductors and lightning protection conductors to reinforcing steel. Exothermically welding to the reinforcing steel ensures that the concrete encased connection will last the duration of the structure. To ensure that the connection is made properly, the mill scale must be removed from the reinforcing steel in the area of the connection. In addition to the normal materials used to make an Ultraweld connection, packing material is also required. The packing material serves as a sealant barrier between the mold and the reinforcing steel and thus prevents weld metal leakage. A piece of packing material is good for one connection.

Ultraweld Connections to Structural Reinforcing Steel

The Ultraweld process is only to be used for attaching conductors to reinforcing steel and not as a means to provide a structural welded joint of the reinforcing steel itself. The welding of ground conductors to reinforcing steel using the Ultraweld process will not be harmful if the stresses in the reinforcing steel are below its yield point. Design stresses for reinforcing steel are normally below 60% of the nominal yield strength thus Ultraweld exothermic welding process should not be detrimental under design stresses. In practice it is best to make grounding attachments to reinforcing steel in areas away from the point of maximum stress. It is best to make connections near the free end of the reinforcing steel.



Busbar to Reinforcing Steel

Mold Information:

- Price Key is the **Bold Letter** in the Mold Part No.

Required Tools & Accessories:

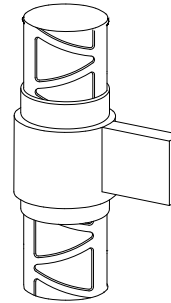
- WRPSLV or CERPM - Packing Material
- CSH1 - Chain Support Handle clamp for "K" Price Key Molds

OR

- MH1 - Handle for "K" and "E" Price Key Molds
- **CSKIT - Chain Support Kit for #7 & Larger reinforcing steel

Recommended Tools & Accessories:

- CCBRSH1 - Cable Cleaning Brush
- MCBRSH1 - Mold Cleaning Brush



RESD

(Edge of Horizontal Flat Rebar to Vertical Rebar)

RESD Connection Type

Rebar Size (mm)	Busbar Size (mm)	Mold Part No.	Packing Mat'l No.	Weld Metal	
				UltraShot	NUWTUBE
12	3 x 25	MRESD-12325 K	WRPSLV	US200	NUWTUBE200
16	3 x 25	MRESD-16325 K	WRPSLV	US200	NUWTUBE200
22	3 x 25	MRESD-22325 E	WRPSLV	US250	NUWTUBE250
25	3 x 25	MRESD-25325 E	2-WRPSLV	US250	NUWTUBE250
32	3 x 25	MRESD-32325 E	2-WRPSLV	US250	NUWTUBE250

Cable to Reinforcing Steel

Mold Information:

- Price Key is the **Bold Letter** in the Mold Part No.

Required Tools & Accessories:

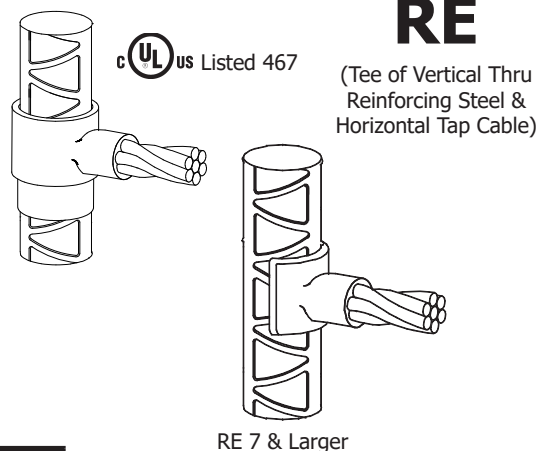
- WRPSLV or CERPM - Packing Material
- CSH1 - Chain Support Handle clamp for "B" & "K" Price Key Molds

OR

- MH1 - Handle for "B" and "K" Price Key Molds
- **CSKIT - Chain Support Kit for 22 mm diameter & Larger reinforcing steel

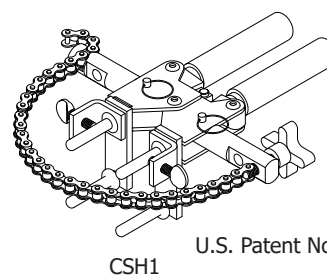
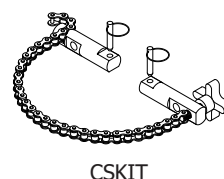
Recommended Tools & Accessories:

- CCBRSH1 - Cable Cleaning Brush
- MCBRSH1 - Mold Cleaning Brush



RE Connection Type

Rebar Size (mm)	Cable Size (sq mm)	Mold Part No.	Packing Mat'l No.	Weld Metal	
				UltraShot	NUWTUBE
12	25	MRE-1225 B	WRPSLV	US65	NUWTUBE65
	35	MRE-1235 B	WRPSLV	US65	NUWTUBE65
	50	MRE-1250 B	WRPSLV	US115	NUWTUBE115
	70	MRE-1270 B	WRPSLV	US115	NUWTUBE115
	95	MRE-1295 B	WRPSLV	US150	NUWTUBE150
16	25	MRE-1625 B	WRPSLV	US65	NUWTUBE65
	35	MRE-1635 B	WRPSLV	US65	NUWTUBE65
	50	MRE-1650 B	WRPSLV	US115	NUWTUBE115
	70	MRE-1670 B	WRPSLV	US115	NUWTUBE115
	95	MRE-1695 B	WRPSLV	US150	NUWTUBE150
22** & Larger	35	MRE-22L35 K	CERPM3	US65	NUWTUBE65
	50	MRE-22L50 K	CERPM3	US115	NUWTUBE115
	70	MRE-22L70 K	CERPM3	US115	NUWTUBE115
	95	MRE-22L95 K	CERPM3	US150	NUWTUBE150
25**	35	MRE-22L35 K	CERPM3	US65	NUWTUBE65
	50	MRE-22L50 K	CERPM3	US115	NUWTUBE115
	70	MRE-22L70 K	CERPM3	US115	NUWTUBE115
	95	MRE-22L95 K	CERPM3	US150	NUWTUBE150
32**	50	MRE-22L50 K	CERPM3	US115	NUWTUBE115
	70	MRE-22L70 K	CERPM3	US115	NUWTUBE115
	95	MRE-22L95 K	CERPM3	US150	NUWTUBE150



U.S. Patent No. 6,382,496

**Requires #CSKIT Chain Support Kit for welds made to 22 mm diameter and Larger reinforcing steel.

- (1) #WRPSLV Wrap Sleeve required per weld.
- (1) #CERPM3 Ceramic Packing Material required per weld.

**Important: See
Packing Material Notes
On Page 53.**

Cable to Reinforcing Steel

Mold Information:

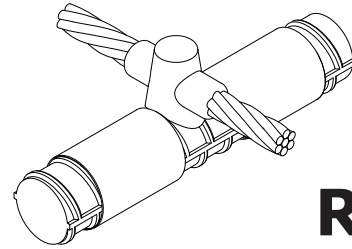
- Price Key is the **Bold Letter** in the Mold Part No.
- For mold Wear Plates, add suffix "WP" to the end of the Mold Part No.
See page 18 for details.

Required Tools & Accessories:

- MH1 - Handle for "B" and "Q" Price Key Molds
- WRPSLV or CERPM - Packing Material
- UMHDKIT - Hold Down Kit

Recommended Tools & Accessories:

- CCBRSH1 - Cable Cleaning Brush
- MCBRSH1 - Mold Cleaning Brush



RO

(Cross of Horizontal Cable Lapped Over Horizontal Reinforcing Steel)

UL us Listed 467

RO Connection Type

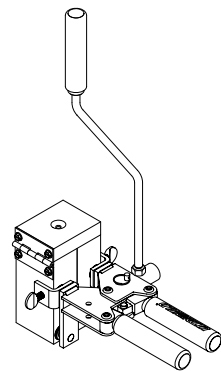
Rebar Size (mm)	Cable Size (sq mm)	Mold Part No.	Packing Mat'l No.	Weld Metal	
				UltraShot	NUWTUBE
12	25	MRO-1225 B	2-WRPSLV	US65	NUWTUBE65
	35	MRO-1235 B	2-WRPSLV	US90	NUWTUBE90
	50	MRO-1250 Q	2-WRPSLV	US115	NUWTUBE115
	70	MRO-1270 Q	2-WRPSLV	US115	NUWTUBE115
	95	MRO-1295 Q	2-WRPSLV	US150	NUWTUBE150
16	25	MRO-1625 B	2-WRPSLV	US65	NUWTUBE65
	35	MRO-1635 B	2-WRPSLV	US90	NUWTUBE90
	50	MRO-1650 Q	2-WRPSLV	US115	NUWTUBE115
	70	MRO-1670 Q	2-WRPSLV	US115	NUWTUBE115
	95	MRO-1695 Q	2-WRPSLV	US150	NUWTUBE150
20** & Larger	35	MRO-20L35 B	CERPM2	US90	NUWTUBE90
	50	MRO-20L50 B	CERPM2	US115	NUWTUBE115
	70	MRO-20L70 B	CERPM2	US115	NUWTUBE115
	95	MRO-20L95 B	CERPM2	US150	NUWTUBE150
25**	35	MRO-20L35 B	CERPM2	US90	NUWTUBE90
	50	MRO-20L50 B	CERPM2	US115	NUWTUBE115
	70	MRO-20L70 B	CERPM2	US115	NUWTUBE115
	95	MRO-20L95 B	CERPM2	US150	NUWTUBE150
32**	50	MRO-20L50 B	CERPM2	US115	NUWTUBE115
	70	MRO-20L70 B	CERPM2	US115	NUWTUBE115
	95	MRO-20L95 B	CERPM2	US150	NUWTUBE150

** Requires #UMHDKIT Hold Down Kit for welds made to 22 mm diameter and Larger reinforcing steel.

- (2) #WRPSLV Wrap Sleeve required per weld.
- (1) #CERPM1 or #CERPM2 Ceramic Packing Material required per weld.



UMHDKIT



UMHDKIT with Mold & Handle

U.S. Patent No. 6,382,496

Important: See Packing Material Notes On Page 53

Cable to Reinforcing Steel

Mold Information:

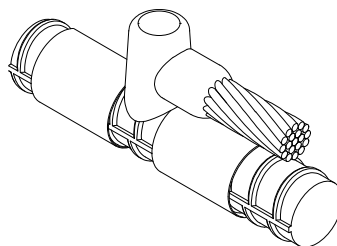
- Molds with Price Key "A" SOLD WITH FRAME.
- If Frame not required, add suffix "-X" after the Mold Part No.
- Price Key is the **Bold Letter** in the Mold Part No.

Required Tools & Accessories:

- MH1 - Handle for "B" Price Key Molds
- WRPSLV or CERPM - Packing Material

Recommended Tools & Accessories:

- CBBRSH1 - Cable Cleaning Brush
- MCBRSH1 - Mold Cleaning Brush
- UMHDKIT - Hold Down Kit
- UMMHDA - Hold Down Kit when Price Key is "A"



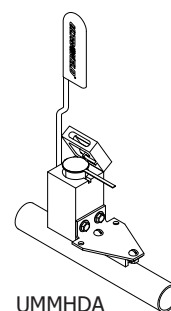
RP

(Parallel Cable Tap of Horizontal Cable to Thru Horizontal Reinforcing Steel)

cUL us Listed 467

RP Connection Type

Rebar Size (mm)	Cable Size (sq mm)	Mold Part No.	Packing Mat'l No.	Weld Metal	
				UltraShot	NUWTUBE
12	25	MRP-12L25 A	CERPM1	US45	NUWTUBE45
	35	MRP-12L35 A	CERPM1	US45	NUWTUBE45
	50	MRP-1250 B	2-WRPSLV	US90	NUWTUBE90
	70	MRP-1270 B	2-WRPSLV	US90	NUWTUBE90
	95	MRP-1295 B	2-WRPSLV	US115	NUWTUBE115
16	25	MRP-12L25 A	CERPM1	US45	NUWTUBE45
	35	MRP-12L35 A	CERPM1	US45	NUWTUBE45
	50	MRP-1650 B	2-WRPSLV	US90	NUWTUBE90
	70	MRP-1670 B	2-WRPSLV	US90	NUWTUBE90
	95	MRP-1695 B	2-WRPSLV	US115	NUWTUBE115
20** & Larger	35	MRP-12L35 A	CERPM1	US45	NUWTUBE45
	50	MRP-20L50 B	CERPM2	US90	NUWTUBE90
	70	MRP-20L70 B	CERPM2	US90	NUWTUBE90
	95	MRP-20L95 B	CERPM2	US115	NUWTUBE115
25**	35	MRP-12L35 A	CERPM1	US45	NUWTUBE45
	50	MRP-20L50 B	CERPM2	US90	NUWTUBE90
	70	MRP-20L70 B	CERPM2	US90	NUWTUBE90
	95	MRP-20L95 B	CERPM2	US115	NUWTUBE115
32**	50	MRP-20L50 B	CERPM2	US90	NUWTUBE90
	70	MRP-20L70 B	CERPM2	US90	NUWTUBE90
	95	MRP-20L95 B	CERPM2	US115	NUWTUBE115

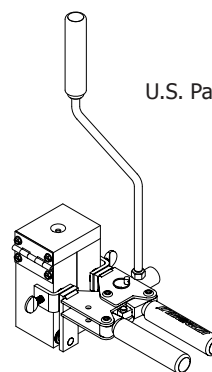


UMMHDA



UMHDKIT

U.S. Patent No. 6,382,496



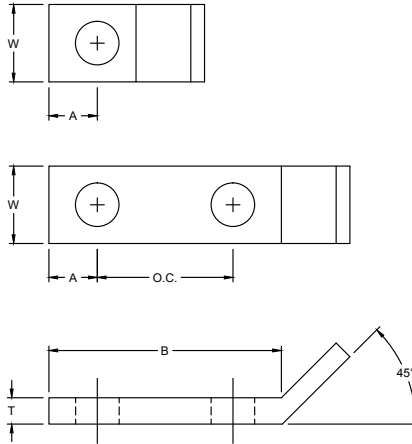
UMHDKIT with Mold & Handle

** Requires #UMHDKIT Hold Down Kit for welds made to 20 mm diameter and Larger reinforcing steel.

- (2) #WRPSLV Wrap Sleeve required per weld.
- (1) #CERPM1 or #CERPM2 Ceramic Packing Material required per weld.

Important: See Packing Material Notes On Page 53

Tinned Copper Lugs Bent & Bent J

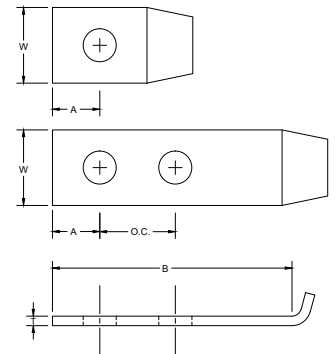


Lug Size (mm)	Bent Part No.	No. of Holes	Hole Size (mm)	O.C. Dimension (mm)	T	W	A	B
3.18 x 25.4	BXL-181	1	11.09	---	3.18	25.4	11.11	22.25
	BXL-1812B	2	11.09	19.05	3.18	25.4	15.88	76.2
	BXL-1812C	2	14.3	25.4	3.18	25.4	15.88	76.2
	BXL-1812D	2	14.3	44.45	3.18	25.4	15.88	76.2
4.76 x 25.4	BXL-3161	1	14.3	---	4.76	25.4	15.88	31.75
	BXL-31612B	2	11.09	19.05	4.76	25.4	15.88	76.2
	BXL-31612C	2	14.3	25.4	4.76	25.4	15.88	76.2
	BXL-31612D	2	14.3	44.45	4.76	25.4	15.88	76.2
6.35 x 25.4	BXL-141	1	14.3	---	6.35	25.4	15.88	31.75
	BXL-1412B	2	11.09	19.05	6.35	25.4	15.88	76.2
	BXL-1412C	2	14.3	25.4	6.35	25.4	15.88	76.2
	BXL-1412D	2	14.3	44.45	6.35	25.4	15.88	76.2
6.35 x 38.1	BXL-141.5	1	17.45	---	6.35	38.1	15.88	38.1
	BXL-141.52B	2	11.09	19.05	6.35	38.1	15.88	76.2
	BXL-141.52C	2	14.3	25.4	6.35	38.1	15.88	76.2
	BXL-141.52D	2	14.3	44.45	6.35	38.1	15.88	76.2

For Use with LE Style Molds on Page 35.

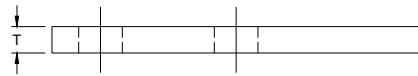
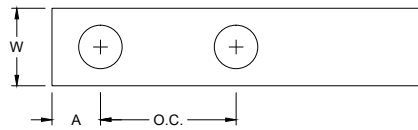
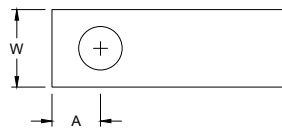
Lug Size (mm)	Bent J Part No.	No. of Holes	Hole Size (mm)	O.C. Dimension (mm)	T	W	A	B
3.18 x 25.4	JXL-1813/8	1	11.09	---	3.18	25.4	15.88	31.75
	JXL-181	1	14.3	---	3.18	25.4	15.88	31.75
	JXL-1812C1/4	2	7.92	25.4	3.18	25.4	15.88	76.2
	JXL-1812C3/8	2	11.09	25.4	3.18	25.4	15.88	76.2
	JXL-1812D	2	14.3	44.45	3.18	25.4	15.88	76.2

For Use with LBJ Style Molds on Page 36.

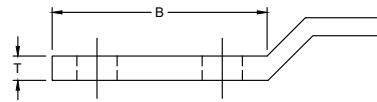
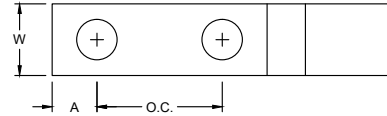
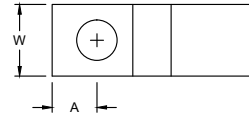


Tinned Copper Lugs

Straight & Offset



SXL



OXL

Lug Size (mm)	Straight Part No.	Offset Part No.	No. of Holes	Hole Size (mm)	O.C. Dimension (mm)	T	W	A	B
3.18 x 25.4	SXL-181	OXL-181	1	11.09	---	3.18	25.4	12.7	22.23
	SXL-1812B	OXL-1812B	2	11.09	19.05	3.18	25.4	15.88	76.2
	SXL-1812C	OXL-1812C	2	14.3	25.4	3.18	25.4	15.88	76.2
	SXL-1812D	OXL-1812D	2	14.3	44.45	3.18	25.4	15.88	76.2
4.76 x 25.4	SXL-3161	OXL-3161	1	11.09	---	4.76	25.4	14.29	28.58
	SXL-31612B	OXL-31612B	2	11.09	19.05	4.76	25.4	15.88	76.2
	SXL-31612C	OXL-31612C	2	14.3	25.4	4.76	25.4	15.88	76.2
	SXL-31612D	OXL-31612D	2	14.3	44.45	4.76	25.4	15.88	76.2
6.35 x 25.4	SXL-141	OXL-141	1	14.3	---	6.35	25.4	15.88	28.58
	SXL-1412B	OXL-1412B	2	11.09	19.05	6.35	25.4	15.88	76.2
	SXL-1412C	OXL-1412C	2	14.3	25.41	6.35	25.4	15.88	76.2
	SXL-1412D	OXL-1412D	2	14.3	44.45	6.35	25.4	15.88	76.2
6.35 x 38.1	SXL-141.5	OXL-141.5	1	17.45	---	6.35	38.1	19.05	38.1
	SXL-141.52B	OXL-141.52B	2	11.09	19.05	6.35	38.1	15.88	76.2
	SXL-141.52C	OXL-141.52C	2	14.3	25.4	6.35	38.1	15.88	76.2
	SXL-141.52D	OXL-141.52D	2	14.3	44.45	6.35	38.1	15.88	76.2
6.35 x 50.8	SXL-1422B	OXL-1422B	2	11.09	19.05	6.35	50.8	15.88	76.2
	SXL-1422C	OXL-1422C	2	14.3	25.4	6.35	50.8	15.88	76.2
	SXL-1422D	OXL-1422D	2	14.3	44.45	6.35	50.8	15.88	76.2
9.53 x 38.1	SXL-381.5	OXL-381.5	1	17.45	---	9.53	38.1	19.05	38.1
	SXL-381.52B	OXL-381.52B	2	11.09	19.05	9.53	38.1	15.88	76.2
	SXL-381.52C	OXL-381.52C	2	14.3	25.4	9.53	38.1	15.88	76.2
	SXL-381.52D	OXL-381.52D	2	14.3	44.45	9.53	38.1	15.88	76.2
9.53 x 50.8	SXL-382	OXL-382	1	14.75	---	9.53	50.8	25.4	53.98
	SXL-3822B	OXL-3822B	2	11.09	19.05	9.53	50.8	15.88	76.2
	SXL-3822C	OXL-3822C	2	14.3	25.4	9.53	50.8	15.88	76.2
	SXL-3822D	OXL-3822D	2	14.3	44.45	9.53	50.8	15.88	76.2

For Use with LE Style Molds on Page 35.

Materials, Tools & Accessories

UltraShot Controllers

- UltraShot is a patented copper drop-in cartridge that is consumed during the exothermic reaction process initiated by either the DRONE or USCONTROLLER.
- Cartridge is consumed leaving no waste such as plastic or metal containers on the job site.
- Long lasting **Ultra**-reliable ignition process allows for little to no downtime.



Patented
U.S. Patent No. 9,562,751

Part No.	Qty.
DRONE	EA

- Ignition is accomplished with the use of a hand held DRONE and 18 volt battery.
- Audible ignition alert.
- Makes over 1,300 connections on a single charge.
- UltraBright LED indicates instantaneous ignition.
- Includes six-foot cord with quick latch disconnect.



Part No.	Qty.
DRONEKIT	EA

Kit Includes:

- (1) Controller #DRONE - Compact US Controller
- (1) Battery #MIL1820BAT - Milwaukee® M18™ REDLITHIUM™
- (1) Charger #MIL1812CHARGER - Milwaukee® M18™ & M12™ Multi-Voltage
- (1) Case #DRONECASE - Storage case for Drone, Battery and Charger.



Part No.	Qty.
USCONTROLLER	EA

- Rugged long lasting 12-volt rechargeable battery control unit ignites hundreds of connections on a single charge.
- Six-foot controller cord standard, 15-foot cord optional.

Materials, Tools & Accessories

UltraShot Controller Accessories

DRONE & USCONTROLLER Cords

Part No.	Description	Qty
DRONECORD	1.8 m Drone Cord	EA
DRONECORD15	4.6 m Drone Cord	EA
USLEAD6	1.8 m Controller Cord	EA
USLEAD15	4.6 m Controller Cord	EA



- Allows for flexibility in tight spaces as well as maintaining a safe distance from the reaction.

Milwaukee® M18™ REDLITHIUM™ Battery

Part No.	Qty.
MIL1820BAT	EA



- Utilized by the DRONE to make UltraShot connections.
- 18 volt battery featuring a built-in fuel gauge.

Milwaukee® Charger

Part No.	Qty.
MIL1812CHARGER	EA



- Accepts M18™ & M12™ battery packs.

DRONE Accessory Kit

Part No.	Qty.
DAK	EA

- Includes the Drone Case, Battery & Charger.



Materials, Tools & Accessories

DRONE Case

Part No.	Qty.
DRONECASE	EA



- Organized storage option.
- Holds the Drone, Battery, Charger & Cord (not included).

DRONE Pouch

Part No.	Qty.
DRONEPOUCH	EA



- Easily transports the DRONE hands-free from connection to connection.

UltraShot Box Kit

Part No.	Qty.
USBOXKIT	EA



- Convenient and rugged exothermic UltraShot storage.
- 51 cm long x 23 cm wide x 25 cm tall
- 20 gauge electrostatically painted steel box, central lockable clasp.
- 3 stackable aluminum trays included to store Harger UltraShot size range 25-300.
- UltraShot not included. See UltraShot on page 48.
- Additional trays are available.

Kit Includes:

- (1) USBOX Storage Box
- (1) USSBT25/65 Storage Tray
- (1) USSBT90/200 Storage Tray
- (1) USSBT250/300 Storage Tray

USBOX & Storage Trays

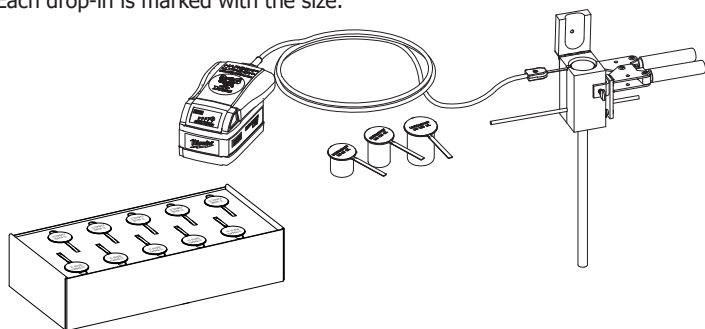
Part No.	Description	For UltraShot Sizes	Total Shot Capacity	Qty.
USBOX	Storage Box	n/a	n/a	EA
USSBT25/65	Storage Tray	25 - 65	32	EA
USSBT90/200	Storage Tray	90 - 200	18	EA
USSBT250/300	Storage Tray	250 - 300	18	EA
USSBT400/500	Storage Tray	400 - 500	12	EA

Materials, Tools & Accessories

Weld Metal

UltraShot®

- The weld metal, a mixture of copper oxide and aluminum, is packaged in individual, moisture resistant copper drop-ins.
- The copper drop-in is consumed during the reaction process.
- Each drop-in is marked with the size.

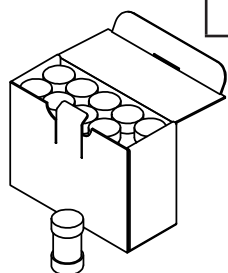


UltraShot® (Drop-In) Weld Metal

Size	Qty. Per Carton	Size	Qty. Per Carton
US25	20	US200	10
US32	20	US250	10
US45	20	US300	10
US65	20	US400	5
US90	10	US500	5
US115	10	US600	5
US150	10	US750	5

NUWTube®

- The weld metal, a mixture of copper oxide and aluminum, is packaged in individual, moisture resistant plastic tubes.
- Dual chamber design holds starting material and weld metal separately, in the same tube.
- Easy to identify with color coded caps. Clear = Weld Metal, Orange = Starting Material.
- Each cartridge is marked with the size.
- Each box also contains instructions and metal disks. One metal disk is used for each connection.

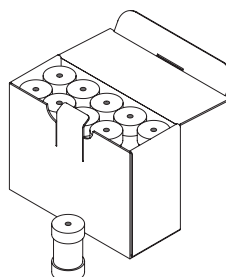


NUWTube® (Pour & Shoot) Weld Metal

Size	Qty. Per Carton	Size	Qty. Per Carton
NUWTUBE15	20	NUWTUBE90	10
NUWTUBE25	20	NUWTUBE115	10
NUWTUBE32	20	NUWTUBE150	10
NUWTUBE45	20	NUWTUBE200	10
NUWTUBE65	20	NUWTUBE250	10

Cast Iron NUWTube®

- For use on ductile iron surfaces.
- Dual chamber design holds starting material and weld metal separately, in the same tube.
- "Red Dot" on cap designates the starting material side.
- Each cartridge is marked with the size.
- Each box also contains instructions and metal disks. One metal disk is used for each connection.



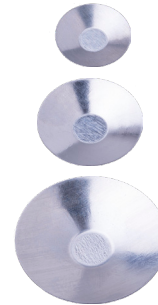
Cast Iron NUWTube® Weld Metal

Size	Qty. Per Carton
NUWTUBE25CI	20
NUWTUBE32CI	20
NUWTUBE45CI	20
NUWTUBE65CI	20
NUWTUBE90CI	10
NUWTUBE115CI	10

Materials, Tools & Accessories

Disks

Part No.	Description	Diameter (mm)	Box Qty.
DISK15/65	Used in molds using 15 thru 65 weld metal	19.05	20
DISK90/115	Used in molds using 90 thru 115 weld metal	25.4	10
DISK150/500	Used in molds using 150 thru 250 weld metal	38.1	10



- The disk rests on the bottom of the crucible and holds the weld metal powder in place until the reaction occurs.
- A new disk is required each time a weld is made.
- Disks are included with the NUWTUBE Weld Metal.

Disk Kit

Part No.	Qty.
DISKKIT1	EA



- A Disk Kit contains three sizes of steel disks; 60 small, 30 medium and 30 large.

Mold Fastening & Mounting

Mold Handle Clamps

Part No.	Application	Qty.
MH1	For All molds with B, E, K, P & Q mold price key (3" wide)	EA
MH2	For All molds with C, D, F, Y & Z mold price key (4" wide)	EA
MH3	For Combo molds with L & M mold price key	EA
MH4	For Combo molds with R mold price key	EA
MH6	For 3 Piece I mold price key	EA
MH7	For 3 Piece J mold price key	EA

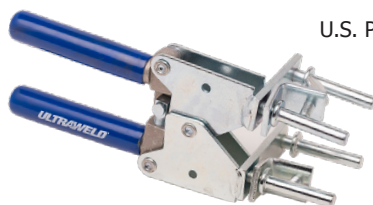
- Mold Handle Clamps are required for all molds.
- Some molds are used with specialized frames.
- Handle clamps have a Zinc plated finish.
- MH3 mold handle clamps are included with L & M molds.



MH3



MH4



MH1, MH2

U.S. Patent No. 6,382,496



MH6, MH7

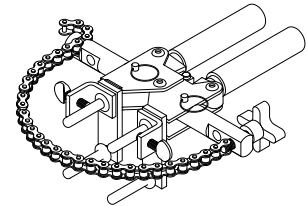
Materials, Tools & Accessories

Mold Fastening & Mounting continued

Chain Support Handle Clamps

Part No.	Fits Mold Price Key	For Following Connection Types	Pipe/ Reinforcing Steel	Qty.
CSH1	B, E, K	RE, VA, VD, VT, VU	Vertical	EA
CSH2	C, D, F	VA, VD, VT, VU	Vertical	EA

- Handle clamps CSH1 & CSH2 come with MH1 & MH2 clamps respectively as well as a CSKIT and flint igniter (FLTIG).
- Chain Support Handle Clamps are used to securely hold the mold to either a vertical or horizontal pipe.
- A 50 cm length of chain, which fits up to 10 cm pipes, comes with the chain support handle clamps.
- Extra chain length is available. Please contact factory for details.



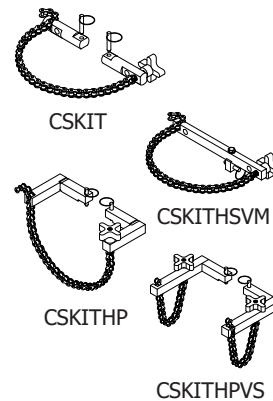
U.S. Patent No. 6,382,496

Chain Support Kits

Part No.	Fits Mold Price Key	For Following Connection Types	Pipe/ Reinforcing Steel	Qty.
CSKIT	B, C, D, E, F, K	RE, VA, VD, VT, VU	Vertical	EA
CSKITHSVM	B, C	VH, RS	Vertical	EA
CSKITHP	B, C	HB, HD, HT, HU	Horizontal	EA
CSKITHPVS	B	HTCP, RO	Horizontal	EA

- These kits convert standard mold handle clamps into chain support clamps.

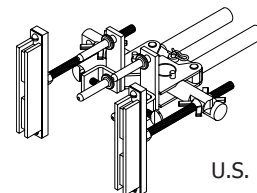
U.S. Patent No. 6,382,496



Magnetic Support Handle Clamps

Part No.	Fits Mold Price Key	Minimum Width Requirements	Qty.
MSHC1	B, E, K	8"	EA
MSHC2	C, D, F	8"	EA

- Handle clamps MSHC1 & MSHC2 come with MH1 & MH2 clamps respectively as well as a MSKIT and a flint igniter (FLTIG).
- Magnetic Support Handle Clamp allows mold to be securely held in place to steel surfaces.
- MSKIT converts the standard mold handle clamp into a magnetic support handle clamp.

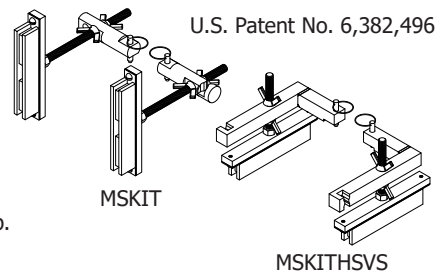


U.S. Patent No. 6,382,496

Magnetic Support Kits

Part No.	Fits Mold Price Key	Minimum Width Requirements	Qty.
MSKIT	B, C, D, E, F, K	8"	EA
MSKITHSVS	B, C, D, K	10"	EA

- These kits convert the standard mold handle clamp into a magnetic support handle clamp.



U.S. Patent No. 6,382,496

Materials, Tools & Accessories

Mold Fastening & Mounting continued

Hold Down Kit

Part No.	Qty.
UMHDKIT	EA
UMMHDA	EA

- UMHDKIT: Attaches easily to MH1 & MH2 handle clamps for holding mold in place.
- UMMHDA: Used for horizontal "A" molds.



UMHDKIT



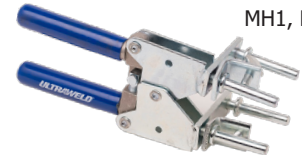
UMMHDA

U.S. Patent No. 6,382,496

Mold Handle Clamp Kits

Part No.	Fits Mold Price Key	Kit Includes	Qty.
ULTRAMH1KIT	B, E, K	MH1, CSKIT, MSKIT	EA
ULTRAMH2KIT	C, D, F	MH2, CSKIT, MSKIT	EA

- Handle clamps MH1 & MH2 come with a flint igniter (FLTIG).
- Chain Support Handle Clamp securely holds mold to a vertical pipe.
- Magnetic Support Handle Clamp holds mold securely in place when welding to steel surfaces.



MH1, MH2



CSKIT



MSKIT

Mold Stabilization Spike Kit

Part No.	Qty.
MLDSTBLZR	EA

- Help stabilize the mold when making cable to cable connections in the trench.
- Fits both the MH1 and MH2 mold handle.
- Kit Includes:
 - (2) 15 cm spike
 - (2) 30.5 cm spike
 - (1 set) Mold handle adapter
 - (1 set) Quick release pin



Mold Blanket

Part No.	Qty.
ULTRAWRAP	EA

- Contains an inner and outer E-glass yarn with a padded non-crystalline silicate filling, finished with Kevlar®.
- Extends mold life by protecting against shock impact caused by rough handling.
- Protects exothermic welders from coming into contact with hot molds.
- Used as a protection blanket against weld splatter.



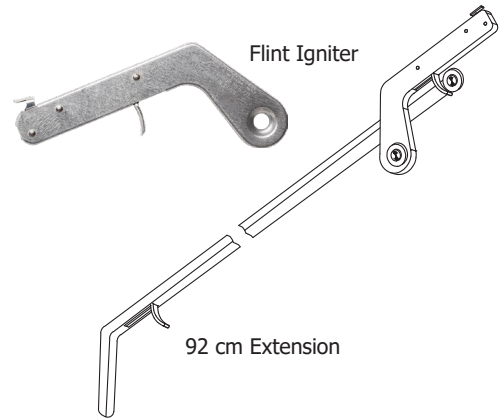
Materials, Tools & Accessories

Mold Accessories

Flint Igniters

Part No.	Description	Qty.
FLTIG	Flint Igniter	EA
FLTIGEXT	92 cm Extention	EA
RPLFLT	Replacement Flints	EA

- When making an Ultraweld connection, Flint Igniters are used to ignite the starting material.
- MH1 and MH2 handle clamps include a Flint Igniter.
- Replacement Flints are also available.



Torch Head

Part No.	Qty.
TRCHD	EA



- Self-igniting Torch Head is designed to fit 14 or 16 ounce propane cylinders.
- Torches are required to remove moisture from the mold and conductors before making the Ultraweld connections.

Materials, Tools & Accessories

Adapting Molds to Fit Conductors continued

Ceramic Reinforcing Steel Packing Material

Part No.	Box Qty.
CERPM1	25
CERPM2	25
CERPM3	25



- Packing consists of preformed ceramic batting.
- Packing is required on all reinforcing steel connections to prevent leakage.
- Some connection styles may require wrap sleeves in place of ceramic packing.

Mold Sealer

Part No.	Qty.
MLDSLRL	EA

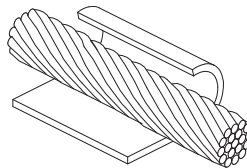


- Mold Sealer is for sealing slightly worn molds to guard against leakage from large stranded conductors.
- Available in a convenient 1 pound package.

Adapting Molds to Fit Conductors

Wrap Sleeves

Part No.	Box Qty.
WRPSLV	50



- Wrap Sleeves can be used when welding cables smaller than indicated on mold tag.
- When the cable opening in the mold is larger than the cable, copper Wrap Sleeves are wrapped around the cable until the diameter is about the same size as the mold cable opening.
- A copper Wrap Sleeve is also used for wrapping around reinforcing steel for certain connection styles.

Materials, Tools & Accessories

Cable & Work Surface Preparation continued

Cable Cleaning Brush

Part No.	Qty.
CCBRSH1	EA

- The Cable Cleaning Brush has short, stiff, metal bristles which are generally preferred for cleaning concentric conductors and busbars, that are not heavily oxidized.



Cable Cleaning Brush - Heavy Duty

Part No.	Description	Qty.
CCBRSH2	Cable Cleaning Brush	EA
CCBRSH2R	Replacement Brush Pair	EA

- Ideal for cleaning concentric stranded cable, especially very dirty or oxidized conductors.



Mold Cleaning Brushes

Part No.	Qty.
MCBRSH1	EA
MCBRSH2	EA

- Slag can be removed from molds by using a Mold Cleaning Brush.
- The brush is especially useful on vertical split molds.
- Consistent and proper use of the brush will aid in maintaining or exceeding the average mold life of 50 connections.

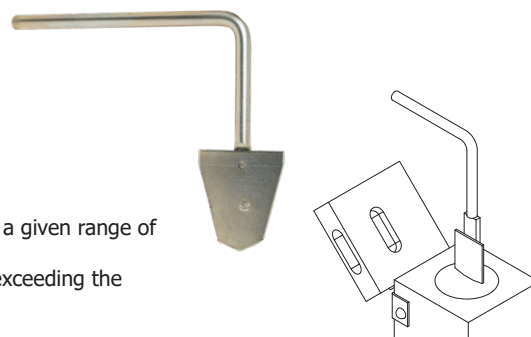


Mold Care & Use

Mold Cleaning Spades

Part No.	Weld Metal Sizes	Qty.
MCSPD25/115	25 - 115	EA
MCSPD150/400	150 and larger	EA

- Slag can be cleaned from the molds by using a Mold Cleaning Spade.
- The cleaning spade is especially useful on horizontally split molds.
- The cleaning spades are specifically designed to fit the mold crucible for a given range of weld metal sizes.
- Consistent and proper use of cleaning spades will aid in maintaining or exceeding the average mold life of 50 connections.



Materials, Tools & Accessories

Toolbox & Tools

Toolbox

Part No.	Qty.
TOOLBOX	EA

- Durable metal toolbox measures 51 cm x 23 cm x 25 cm and includes a tray.



23cm Cable Cutter

Part No.	Qty.
CC9	EA

- Cable cutters designed for special high-leverage to give excellent cutting capability.
- The cable-gripping shear-type jaw makes clean cuts up to 60 sq mm soft copper cable.
- Handles are plastic-dipped for comfort and to minimize fatigue.



Lineman's Pliers

Part No.	Qty.
LP9	EA

- 23 cm Lineman's pliers are heavy duty with non-slip cushion grips.
- Made with heat treated forged alloy steel for increased toughness and durability.
- Has a streamline head design and it's hardened side cutting edges create a clean cut and remain sharp.



Standard Slot Screwdriver

Part No.	Qty.
SSS6	EA

- Screwdriver is 15.25 cm long with a 8 mm standard head.



Standard Vise-Grip®

Part No.	Qty.
VG10	EA

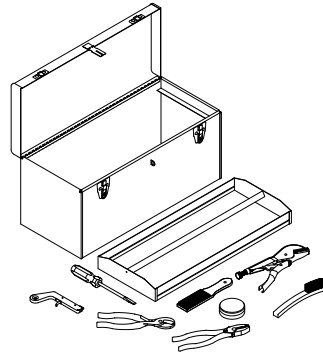
- 25 cm Vise-Grip® straight jaw locking pliers can be used as a pliers, adjustable wrench, pipe wrench, or clamp.
- They have a strong grip with quick release and locks on to a variety of sizes.



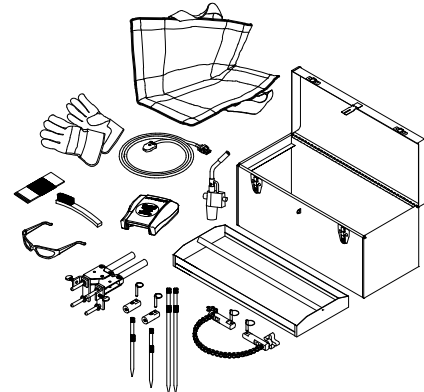
Materials, Tools & Accessories

Toolkits

Part No.	Qty.
TOOLKIT	EA
USTOOLKIT	EA



- **TOOLKIT Includes:**
 - (1) TOOLBOX: 51 x 23 x 25 cm metal toolbox with tray
 - (1) CC9: Cable Cutters
 - (1) LP9: 23 cm Lineman's Pliers
 - (1) SSS6: 15.25 cm Screwdriver
 - (1) VG10: 25 cm Vise-Grips
 - (1) FLTIG: Flint Igniter
 - (1) CCBRS1: Cable Cleaning Brush
 - (1) MCBRS1: Mold Cleaning Brush
 - (1) DISKKIT: Disk Kit

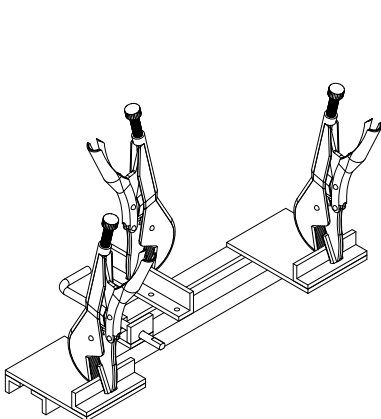


- **USTOOLKIT Includes:**
 - (1) DRONE
 - (1) TOOLBOX: 51 x 23 x 25 cm metal toolbox with tray
 - (1) MH1X: Mold Handle without Igniter
 - (1) CSKIT: Chain Support Kit
 - (1) MCBRS2: Mold Cleaning Brush
 - (1) SFTYGLS: Safety Glasses
 - (1) GLOVES: Leather Palm Gloves
 - (1) 3MABPAD: Abrasive Pad
 - (1) ULTRAWRAP: Mold Blanket
 - (1) TRCHD: Torch Head
 - (1) MLDSTBLZR: Mold Stabilizer Kit

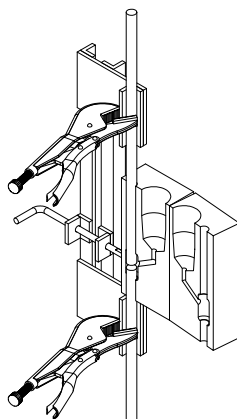
Ground Rod & Cable Clamp

Part No.	Qty.
GRCC	EA

- Clamp properly aligns and supports Ground Rods for welding type GG connections.
- Add-on third clamp (included) is used to convert into a Cable Clamping system. Thus preventing cables under tension from moving during welding and ensuring no weld metal leakage. This ensures quality connections and increases the life of the mold.



Ground Rod Clamping



Cable Clamping

ULTRAWELD[®]

Exothermic Connections

Harger Lightning Protection & Grounding

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