

# Graphite Lift Plug

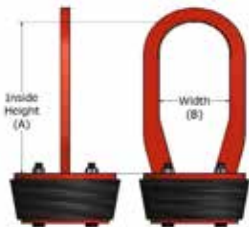
GLP

Graphite Lift Plugs (GLP) provide a safe and effective way of lifting and handling graphite electrodes and graphite electrode columns for transport to and from the furnace.

★★ American Made ★★

## PRODUCT DESCRIPTION

- Graphite Lift Plugs are designed to stay on the column during furnace operations.
- Graphite Lift Plugs are designed to lift one electrode stick from horizontal to vertical.
- Available in plug sizes from 177.17mm (6.975") to 431.8mm (17").
- Custom sizes available on request.
- Graphite pins are supplied by OEM graphite electrode and pin manufactures.
- Plate bails are fabricated from 80 KSI steel.
- Graphite Lift Plugs are designed with a minimum safety factor of 4x Working Load Limit.
- Finish: Safety Red, unless otherwise specified.
- All designs, development, production, load test and certification are performed by CMW engineers and technicians at the CMW facility in Columbia, Tennessee, according to standards: B30.26-2010, B30.10.2014, B30.20-2013, ASME BTH-I-2013, CEI IEC 60239 and DIN EN 13155.
- Each Graphite Lift Plug is tagged with the CMW name, address, product part number, manufacture working load limit, date of manufacture, weight of product and product serial number for traceability and load test certification.
- CMW offers inspection, service or repair to any brand of graphite lift plug.



Part Number*	Graphite Pin Size		Small Lifting Bail 9"h x 8"w		Medium Lifting Bail 19"h x 8"w		Large Lifting Bail 39"h x 8"w		(GLP) Capacity	
	mm	in	kg	lbs	kg	lbs	kg	lbs	kg	lbs
(A) X (B) - 6.975	177.17	6.975	17	38	24	54	45	99	1,089	2,400
(A) X (B) - 8.5	203.2	8.5	19	41	26	58	47	103	1,860	4,100
(A) X (B) - 8.75	222.25	8.75	19	42	27	59	47	104	1,860	4,100
(A) X (B) - 9.5	241.3	9.5	21	46	29	63	49	108	2,359	5,200
(A) X (B) - 10.625	269.88	10.625	29	63	38	84	59	131	3,583	7,900
(A) X (B) - 11.75	298.45	11.75	33	73	43	94	64	141	5,897	13,000
(A) X (B) - 12.5	317.5	12.5	34	75	44	96	65	143	5,897	13,000
(A) X (B) - 14.75	374.65	14.75	52	115	62	136	83	183	8,165	18,000
(A) X (B) - 16	406.4	16	60	133	70	154	91	201	9,525	21,000
(A) X (B) - 17	431.8	17	73	161	83	182	104	229	9,979	22,000

\*Part Number: (Inside Width) x (Inside Height) - (Graphite Pin Size)

GLP weights are approximate based on standard bail.



**Safe lifting is a priority at Columbia Machine Works.** Prior to using a CMW Graphite Lift Plug, a visual inspection should be performed, looking for bent or arced bails, missing bolts or nuts, or damage to the pin threads. Any of these factors could lead to failure of the GLP causing damage to equipment or danger to personnel. If you suspect damage to the GLP, contact a CMW representative before using. Modification or repairs should be performed only by qualified CMW technicians.

## FOR SALES CONTACT: COLUMBIA MACHINE WORKS OR EXO TECHNOLOGIES

1940 Oakland Pkwy., Columbia, TN 38401  
 ph: (800) 676-2694 or (931) 388-6202  
 fx: (931) 388-8128  
 info@columbiamachineworks.com  
 www.columbiamachineworks.com



P.O. Box 302  
 Cedarburg, WI 53012  
 ph: (262) 375-1212  
 fx: (262) 375-1515  
 mark@exosteel.com



# Graphite Lift Plug-Reconditioned

# GLP-r

Reconditioned Graphite Lift Plugs (GLP-r) provide a safe and effective way of lifting and handling graphite electrodes and graphite electrode columns for transport to and from the furnace.

★★ American Made ★★

## PRODUCT DESCRIPTION



- Graphite Lift Plugs wear due to repetitive use and the harsh working environment of the furnace. The graphite pin is the critical part of a plug and must be maintained. Columbia Machine Works offers services to recondition GLPs and re-certify them back to a safe and useable lifting product.
- Reconditioned plugs are available in sizes from 177.17mm (6.975”) to 431.8mm (17”).
- CMW will inspect each GLP and advise whether GLP can be reconditioned.
- Graphite pins are supplied by OEM graphite electrode and pin manufactures.
- CMW Graphite Lift Plugs are reconditioned with a minimum safety factor of 4x Working Load Limit.
- CMW performs magnetic particle and/or die-penetrant testing on all reconditioned GLPs.
- All designs, development, production, load test and certification are performed by CMW engineers and technicians at the CMW facility in Columbia, Tennessee, according to standards: B30.26-2010, B30.10.2014, B30.20-2013, ASME BTH-1-2013, CEI IEC 60239 and DIN EN 13155.
- Each Reconditioned Graphite Lift Plug is tagged with the CMW name, address, product part number, manufacture working load limit, date of manufacture, weight of product and product serial number for traceability and load test certification.
- CMW offers inspection, service or repair to any brand of graphite lift plug.

Part Number*	Graphite Pin Size		Small Lifting Bail 9”h x 8”w		Medium Lifting Bail 19”h x 8”w		Large Lifting Bail 19”h x 8”w		(GLP) Capacity	
	mm	in	kg	lbs	kg	lbs	kg	lbs	kg	lbs
(A) X (B) - 6.975	177.17	6.975	17	38	24	54	45	99	1,089	2,400
(A) X (B) - 8.5	203.2	8.5	19	41	26	58	47	103	1,860	4,100
(A) X (B) - 8.75	222.25	8.75	19	42	27	59	47	104	1,860	4,100
(A) X (B) - 9.5	241.3	9.5	21	46	29	63	49	108	2,359	5,200
(A) X (B) - 10.625	269.88	10.625	29	63	38	84	59	131	3,583	7,900
(A) X (B) - 11.75	298.45	11.75	33	73	43	94	64	141	5,897	13,000
(A) X (B) - 12.5	317.5	12.5	34	75	44	96	65	143	5,897	13,000
(A) X (B) - 14.75	374.65	14.75	52	115	62	136	83	183	8,165	18,000
(A) X (B) - 16	406.4	16	60	133	70	154	91	201	9,525	21,000
(A) X (B) - 17	431.8	17	73	161	83	182	104	229	9,979	22,000

\*Part Number: (Inside Width) x (Inside Height) - (Graphite Pin Size)

GLP-r weights are approximate based on standard bail.



**Safe lifting is a priority at Columbia Machine Works.** Prior to using a reconditioned CMW Graphite Lift Plug (GLP-r), a visual inspection should be performed, looking for bent or arced bails, missing bolts or nuts or damage to the pin threads. Any of these factors could lead to failure of the GLP-r causing damage to equipment or danger to personnel. If you suspect damage to the GLP-r, contact a CMW representative before using. Modification or repairs should be performed only by qualified CMW technicians.

## FOR SALES CONTACT: COLUMBIA MACHINEWORKS OR EXO TECHNOLOGIES

1940 Oakland Pkwy., Columbia, TN 38401  
 ph: (800) 676-2694 or (931) 388-6202  
 fx: (931) 388-8128  
 info@columbiamachineworks.com  
 www.columbiamachineworks.com



P.O. Box 302  
 Cedarburg, WI 53012  
 ph: (262) 375-1212  
 fx: (262) 375-1515  
 mark@exosteel.com



# Aluminum Addition Plug

AAP

Aluminum Addition Plugs (AAP) provide a safe and effective way of lifting electrodes from the horizontal to the vertical position and assist with additions.

★★ American Made ★★

## PRODUCT DESCRIPTION



- Aluminum Addition Plugs are designed with an alloy heat-treated stem with the same thread pitch as the electrode, insuring the plug stays engaged in the electrode during the addition.
- Aluminum Addition Plugs are not intended to stay in the electrode during furnace operations.
- Available in plug sizes from 177.17mm (6.975") to 431.8mm (17").
- Custom sizes available on request.
- The Aluminum Addition Plug stem is machined from an alloy steel, heat-treated for longevity.
- Aluminum Addition Plugs are machined from a solid 6061-T6 billet for maximum strength.
- Aluminum Addition Plugs are designed with a minimum safety factor of 4x Working Load Limit.
- Finish: Standard Machine Finish. Anodized color available on request.
- All designs, development, production, load test and certification are performed by CMW engineers and technicians at the CMW facility in Columbia, Tennessee, according to standards: B30.26-2010, B30.10.2014, B30.20-2013, ASME BTH-I-2013, CEI IEC 60239 and DIN EN 13155.
- Each Aluminum Addition Plug is tagged with the CMW name, address, product part number, manufacture working load limit, date of manufacture, weight of product and product serial number for traceability and load test certification.
- CMW offers inspection, service, repair or replacement parts to any brand of aluminum addition plug.

Part Number*	(AAP) Pin Size		(AAP) Weight		(AAP) Capacity	
	mm	in	kg	lbs	kg	lbs
AAP – 6.975	177.17	6.975	9	20	1,089	2,400
AAP – 8.5	203.2	8.5	10	23	1,860	4,100
AAP – 8.75	222.25	8.75	11	24	1,860	4,100
AAP – 9.5	241.3	9.5	11	25	2,359	5,200
AAP – 10.625	269.88	10.625	12	27	3,583	7,900
AAP – 11.75	298.45	11.75	15	33	5,897	13,000
AAP – 12.5	317.5	12.5	15	34	5,897	13,000
AAP – 14.75	374.65	14.75	17	38	8,165	18,000
AAP – 16	406.4	16	18	40	9,525	21,000
AAP – 17	431.8	17	19	42	9,979	22,000

\*Part Number: (AAP) – (Graphite Pin Size)

AAP weights are approximate.



**Safe lifting is a priority at Columbia Machine Works.** Prior to using an Aluminum Addition Plug, a visual inspection should be performed checking for damaged or missing hardware, damage to the aluminum plug threads and alloy stem. Any of these factors could lead to failure of the AAP causing an electrode or column to drop resulting in damage to equipment or personnel. Only qualified CMW technicians should make repairs to the AAP.

## FOR SALES CONTACT: COLUMBIA MACHINEWORKS OR EXO TECHNOLOGIES

1940 Oakland Pkwy., Columbia, TN 38401  
 ph: (800) 676-2694 or (931) 388-6202  
 fx: (931) 388-8128  
 info@columbiamachineworks.com  
 www.columbiamachineworks.com



P.O. Box 302  
 Cedarburg, WI 53012  
 ph: (262) 375-1212  
 fx: (262) 375-1515  
 mark@exosteel.com



# Auto Latch Recovery Tong

# ALRT

Auto Latch Recovery Tongs (ALRT) provide a safe and effective method for recovering broken electrodes and electrode columns from the furnace.

★★ American Made ★★

## PRODUCT DESCRIPTION

- The Auto Latch Recovery Tong is designed to work with all OEM electrode sizes.
- Available Electrode Diameter ranges from 229mm-305mm (9"-12") to 559mm-813mm (22"-32").
- Custom sizes available on request.
- Auto Latch Recovery Tongs are designed with a minimum safety factor of 3.5x Working Load Limit.
- Auto Latch Recovery Tongs are fitted with a semi-automatic latch which holds the tongs open until it is lowered into the furnace to retrieve the electrode.
- Finish: Safety Red, unless otherwise specified.
- All designs, development, production, load test and certification is performed by CMW engineers and technicians at the CMW facility in Columbia, Tennessee, according to standards: B30.26-2010, B30.10.2014, B30.20-2013, ASME BTH-1-2013, CEI IEC 60239 and DIN EN 13155.
- Each Auto Latch Recovery Tong is tagged with the CMW name, address, product part number, manufacture working load limit, date of manufacture, weight of product and product serial number for traceability and load test certification.
- CMW offers inspection, service or repair to any brand of auto latch recovery tong.



Part Number*	Electrode Diameter Range		(ALRT) Weight		(ALRT) Capacity	
	mm	in	kg	lbs	kg	lbs
ALRT – 9-12	229 - 305	9 - 12	125	275	1,814	4,000
ALRT – 12-18	305 - 457	12 - 18	136	300	2,495	5,500
ALRT – 16-24	406 - 610	16 - 24	170	375	5,897	13,000
ALRT – 22-32	559 - 813	22 - 32	217	480	8,165	18,000

\*Part Number: (ALRT) x (Electrode Size Range)

ALRT weights are approximate.



**Safe lifting is a priority at Columbia Machine Works.** Prior to using CMW Auto Latch Recovery Tongs, a visual inspection should be performed checking for damaged or missing hardware, damage to the auto latch or body of the tongs. Any of these factors can lead to failure of the ALRT causing the electrode or column to drop resulting in damage to equipment or personnel. Repairs or modifications should be performed only by a qualified CMW technician.

## FOR SALES CONTACT: COLUMBIA MACHINEWORKS OR EXO TECHNOLOGIES

1940 Oakland Pkwy., Columbia, TN 38401  
 ph: (800) 676-2694 or (931) 388-6202  
 fx: (931) 388-8128  
 info@columbiamachineworks.com  
 www.columbiamachineworks.com



P.O. Box 302  
 Cedarburg, WI 53012  
 ph: (262) 375-1212  
 fx: (262) 375-1515  
 mark@exosteel.com



# Electrode Recovery Ring



Electrode Recovery Rings (ERR) provide a safe and efficient way of recovering broken electrode and electrode columns from the furnace.

★ ★ American Made ★ ★

## PRODUCT DESCRIPTION



- Electrode Recovery Rings are designed to work with all OEM electrode sizes.
- Available in sizes from 335.6mm (14”) to 812.8mm (32”).
- Custom sizes available on request.
- Electrode Recovery Rings are designed with a minimum safety factor of 3.5x Working Load Limit.
- Finish: Safety Red, unless otherwise specified.
- All designs, development, production, load test and certification are performed by CMW engineers and technicians at the CMW facility in Columbia, Tennessee, according to standards: B30.26-2010, B30.10.2014, B30.20-2013, ASME BTH-1-2013, CEI IEC 60239 and DIN EN 13155.
- Each Electrode Recovery Ring is tagged with the CMW name, address, product part number, manufacture working load limit, date of manufacture, weight of product and product serial number for traceability and load test certification.
- CMW offers a variety of rigging accessories to work with our Electrode Recovery Ring, including shackles, bull rings, wire rope slings and more.
- CMW offers inspection, service or repair to any brand of electrode recovery ring.

Part Number*	(ERR) Pin Size		(ERR) Weight		(ERR) Capacity	
	mm	in	kg	lbs	kg	lbs
ERR – 14	355.6	14	25	55	1,089	2,400
ERR – 16	406.4	16	27	60	1,860	4,100
ERR – 18	457.2	18	29	65	1,860	4,100
ERR – 20	508.0	20	32	70	2,359	5,200
ERR – 22	558.8	22	34	75	3,583	7,900
ERR – 24	609.6	24	36	80	5,897	13,000
ERR – 26	660.4	26	39	85	5,897	13,000
ERR – 28	711.2	28	41	90	8,165	18,000
ERR – 30	762.0	30	43	95	9,525	21,000
ERR – 32	812.8	32	45	100	9,979	22,000

\*Part Number = (ERR) - (Electrode Size)

ERR weights are approximate.



**Safe lifting is a priority at Columbia Machine Works.** Prior to using the Electrode Recovery Ring a visual inspection should be performed checking for a bent or arced ring or bail, or damaged or missing hardware. Any of these factors could result in failure of the ERR. Only qualified CMW technicians should be allowed to service or alter the ERR.

## FOR SALES CONTACT: COLUMBIA MACHINEWORKS OR EXO TECHNOLOGIES

1940 Oakland Pkwy., Columbia, TN 38401  
 ph: (800) 676-2694 or (931) 388-6202  
 fx: (931) 388-8128  
 info@columbiamachineworks.com  
 www.columbiamachineworks.com



P.O. Box 302  
 Cedarburg, WI 53012  
 ph: (262) 375-1212  
 fx: (262) 375-1515  
 mark@exosteel.com



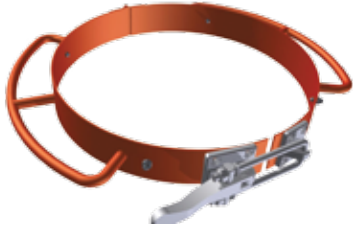
# Electrode Spin Down Collar

# SDC

Electrode Spin Down Collars (SDC) provide a safe and effective way of joining electrodes.

★★ American Made ★★

## PRODUCT DESCRIPTION



- The Electrode Spin Down Collar is designed with two horizontal handles that cover 75% of the collar body, which helps with spinning down the electrode. The SDC uses a toggle clamp with a built-in safety to latch the electrode. The SDC has four set screws built into the body to secure the electrode for safe joining.
- Available in sizes from 228.6mm (9") to 812.8mm (32").
- Custom sizes available on request.
- Electrode Spin Down Collars are made from domestic carbon steel with traceable mill and heat numbers.
- CMW Electrode Spin Down Collars are test fitted to OEM manufactured electrodes.
- Finish: Safety Red, unless otherwise specified.
- All designs, development, production, load test and certification are performed by CMW engineers and technicians at the CMW facility in Columbia, Tennessee, according to standards: B30.26-2010, B30.10.2014, B30.20-2013, ASME BTH-1-2013, CEI IEC 60239 and DIN EN 13155.
- Each Electrode Spin Down Collar is tagged with the CMW name, address, product part number, manufacture working load limit, date of manufacture, weight of product and product serial number for traceability and load test certification.
- CMW offers inspection, service or repair to any brand of electrode spin down collar.

Part Number*	(SDC) Pin Size		(SDC) Weight	
	mm	in	kg	lbs
SDC - 9	228.6	9	6.8	15
SDC - 10	254	10	6.8	15
SDC - 12	304.8	12	7.7	17
SDC - 14	355.6	14	8	18
SDC - 16	406.4	16	9	20
SDC - 18	457.2	18	10	22
SDC - 20	508	20	10.4	23
SDC - 22	558.8	22	10.9	24
SDC - 24	609.6	24	11.3	25
SDC - 26	660.4	26	12.2	27
SDC - 28	711.2	28	12.7	28
SDC - 30	762	30	13.6	30
SDC - 32	812.8	32	14.9	33

\*Part Number = (SDC) - (Electrode Diameter)  
SDC weights are approximate.



**Safety is a priority at Columbia Machine Works.** Prior to using the CMW Electrode Spin Down Collar, a visual inspection should be performed for deformation to the SDC, bent handles, missing set screws and damage to the latch. Any of these factors could lead to failure of the SDC. Only qualified CMW technicians should make repairs or modify the SDC.

## FOR SALES CONTACT: COLUMBIA MACHINEWORKS OR EXO TECHNOLOGIES

1940 Oakland Pkwy., Columbia, TN 38401  
ph: (800) 676-2694 or (931) 388-6202  
fx: (931) 388-8128  
info@columbiamachineworks.com  
www.columbiamachineworks.com



P.O. Box 302  
Cedarburg, WI 53012  
ph: (262) 375-1212  
fx: (262) 375-1515  
mark@exosteel.com





# Shock Absorbing Lift Device

SLD

Shock Absorbing Lift Devices (SLD) provide a safe and effective method for handling electrodes and electrode columns.

★★ American Made ★★

## PRODUCT DESCRIPTION



- The Shock Absorbing Lift Device transports electrodes and electrode columns safely while buffering the shock load caused by releasing electrodes from the furnace.
- CMW Shock Absorbing Lift Devices are designed to be rotational or non-rotational (SLD-NR). Non-Rotational (SLD) hooks can be positioned every 45 degrees to the lifting bail. CMW (SLDs) can be designed for your crane hook and low head room issues. CMW offers a “Low Head Room” Shock Absorbing Lift Device (SLD-LR) to accommodate this issue.
- Each Shock Absorbing Lift Device is tested to 2x Working Load Limit and meets or exceeds standards ASME B30.20-2013.
- Finish: Safety Red, unless otherwise specified.
- All designs, development, production, load test and certification are performed by CMW engineers and technicians at the CMW facility in Columbia, Tennessee, according to standards: B30.26-2010, B30.10.2014, B30.20-2013, ASME BTH-I-2013, CEI IEC 60239 and DIN EN 13155.
- Each Shock Absorbing Lift Device is tagged with the CMW name, address, product part number, manufacture working load limit, date of manufacture, weight of product and product serial number for traceability and load test certification.
- CMW offers inspection, service or repair to any brand of shock absorbing lift device.
- Call for custom capacities.

Part Number*	(SLD) Pin Size		(SLD) Weight		(SLD) Capacity	
	mm	in	kg	lbs	kg	lbs
SLD – 8000	229 - 508	9 - 20	181	400	3,629	8,000
SLD – 23000	559 - 813	22 - 32	227	500	10,433	23,000
SLD-NR – 8000-NR	229 - 508	9 - 20	181	400	3,629	8,000
SLD-NR – 23000-NR	559 - 813	22 - 32	227	500	10,433	23,000
SLD-LR – 8000-LR	229 - 508	9 - 20	192	425	3,629	8,000
SLD-LR – 23000-LR	559 - 813	22 - 32	227	500	10,433	23,000

\*Part Number = (SLD) – (Maximum Capacity - Option)

SLD weights are approximate.



**Safety is priority at Columbia Machine Works.** Prior to using the CMW Shock Absorbing Lift Device (SLD) a visual inspection should be performed looking for any deformation to the SLD including the following: bent bail, hook, body, missing or damaged hardware. Any of these factors can lead to failure of the SLD which could drop an electrode or column. Modifications or repair to our product is to be performed by Columbia Machine Works. User assumes responsibility if modified by other than CMW technicians.

## FOR SALES CONTACT: COLUMBIA MACHINE WORKS OR EXO TECHNOLOGIES

1940 Oakland Pkwy., Columbia, TN 38401  
 ph: (800) 676-2694 or (931) 388-6202  
 fx: (931) 388-8128  
 info@columbiamachineworks.com  
 www.columbiamachineworks.com



P.O. Box 302  
 Cedarburg, WI 53012  
 ph: (262) 375-1212  
 fx: (262) 375-1515  
 mark@exosteel.com



# Thread Abrasion Gauge

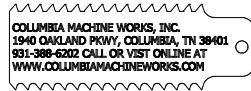
# TAG

Thread Abrasion Gauges (TAG) provide an effective way to measure GLP thread abrasion and wear.

★ ★ American Made ★ ★

## PRODUCT DESCRIPTION

- The Thread Abrasion/Wear Gauge (TAG) is a quick and effective tool to check graphite thread wear. A visual inspection should be performed before every lift. A thorough inspection should be performed weekly, checking for damage to the bail, hardware and the threads on the graphite pin. If threads are worn more than 20%, then the GLP should be removed from service.
- Additional TPI's available on request.
- Finish: Stainless
- Thread Abrasion Gauges are precision laser cut for 100% accuracy.
- Thread Abrasion Gauges are constructed from stainless steel for longevity.
- Thread Abrasion Gauges are designed to measure thread wear to notify when the GLP is no longer safe for lifting. If a GLP thread is suspect of damage or wear, use the CMW TAG for inspection. If the thread is worn beyond 20%, contact a CMW representative.
- All CMW product design, development, fabrication, assembly, load test and certification are performed by engineers and technicians at the CMW facility in Columbia, Tennessee.
- CMW Thread Abrasion Gauges are tagged with the CMW name, address, part number and abrasion/wear percentage.



Part Number*	(TAG) Thread Pitch
TAG – 3	3-TPI
TAG – 4	4-TPI

\*Part Number = (TAG) – (TPI)



**Safe lifting is a priority at Columbia Machine Works.** Prior to using the Thread Abrasion Gauge, a visual inspection should be performed looking for damage to the teeth or body. This can lead to a misrepresentation of the threads on the GLP. Repairs to this or any CMW product should be performed only by a qualified CMW technician.



FOR SALES CONTACT: COLUMBIA MACHINE WORKS OR EXO TECHNOLOGIES

1940 Oakland Pkwy., Columbia, TN 38401  
 ph: (800) 676-2694 or (931) 388-6202  
 fx: (931) 388-8128  
 info@columbiamachineworks.com  
 www.columbiamachineworks.com



P.O. Box 302  
 Cedarburg, WI 53012  
 ph: (262) 375-1212  
 fx: (262) 375-1515  
 mark@exosteel.com



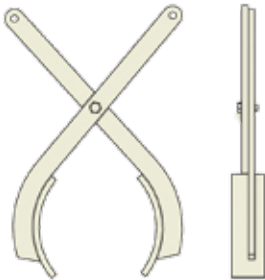
# Light Duty Recovery Tong

LDRT

Light Duty Recovery Tongs (LDRT) provide a safe and effective method for recovering broken electrodes and electrode columns from the furnace.

★ ★ American Made ★ ★

## PRODUCT DESCRIPTION



- Light Duty Recovery Tongs are designed to retrieve broken electrodes directly from the furnace. The scissors action allows for quick and safe removal of broken electrodes. CMW uses cardboard tubes to gap the tong open until it is lowered onto the broken electrode. The material then collapses, allowing the tong to close over the broken electrode.
- Light Duty Recovery Tongs have a range of electrode diameters from 229mm (9") to 610mm (24").
- Custom sizes available on request.
- Light Duty Recovery Tongs are designed with a minimum safety factor of 3.5x Working Load Limit.
- Finish: Safety Red, unless otherwise specified.
- All designs, development, production, load test and certification are performed by CMW engineers and technicians at the CMW facility in Columbia, Tennessee, according to standards: B30.26-2010, B30.10.2014, B30.20-2013, ASME BTH-I-2013, CEI IEC 60239 and DIN EN 13155.
- Each Light Duty Recovery Tong is tagged with the CMW name, address, product part number, manufacture working load limit, date of manufacture, weight of product and product serial number for traceability and load test certification.
- CMW offers replacement parts, load test and certification to shackles, chains, hooks, wire rope and other rigging accessories.
- CMW offers inspection, service or repair to any brand of light duty recovery tong.

Part Number*	Electrode Diameter		(LDRT) Weight		(LDRT) Capacity	
	mm	in	kg	lbs	kg	lbs
LDRT – 9-12	229 - 305	9 - 12	113	250	680	1,500
LDRT – 12-18	305 - 457	12 - 18	159	350	1,361	3,000
LDRT – 18-24	457 - 610	18 - 24	204	450	1,814	4,000

\*Part Number = (LDRT) to (Electrode Size Range)

LDRT weights are approximate.



**Safe lifting is a priority at Columbia Machine Works.** Prior to using a CMW Light Duty Recovery Tong, a visual inspection should be performed looking for deformation to the tong and tong rigging. This includes bent arms, arc burns and damaged or missing hardware. Any of these factors can lead to failure of the LDRT causing damage to equipment or personnel. Modification or repairs should be performed only by qualified CMW technicians.

## FOR SALES CONTACT: COLUMBIA MACHINEWORKS OR EXO TECHNOLOGIES

1940 Oakland Pkwy., Columbia, TN 38401  
 ph: (800) 676-2694 or (931) 388-6202  
 fx: (931) 388-8128  
 info@columbiamachineworks.com  
 www.columbiamachineworks.com



P.O. Box 302  
 Cedarburg, WI 53012  
 ph: (262) 375-1212  
 fx: (262) 375-1515  
 mark@exosteel.com



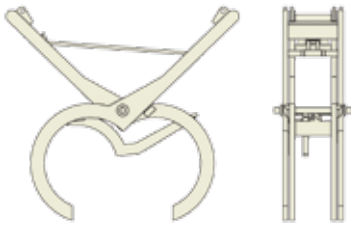
# Heavy Duty Recovery Tong

# HDRT

Heavy Duty Recovery Tongs (HDRT) provide a safe and effective method for recovering and handling electrodes and electrode columns.

★★ American Made ★★

## PRODUCT DESCRIPTION



- Heavy Duty Recovery Tongs are designed to work with all OEM electrode sizes.
- Heavy Duty Recovery Tongs are designed with a safety link which holds the tongs open until lowered onto the electrode.
- Heavy Duty Recovery Tongs are designed with a minimum safety factor of 4x Working Load Limit.
- Available for electrode sizes from 547.2mm (18") to 812mm (32").
- Custom sizes available on request.
- Finish: Safety Red, unless otherwise specified.
- All designs, development, production, load test and certification are performed by CMW engineers and technicians at the CMW facility in Columbia, Tennessee, according to standards: B30.26-2010, B30.10.2014, B30.20-2013, ASME BTH-I-2013, CEI IEC 60239 and DIN EN 13155.
- Each Heavy Duty Recovery Tong is tagged with the CMW name, address, product part number, manufacture working load limit, date of manufacture, weight of product and product serial number for traceability and load test certification.
- CMW offers replacement parts, load test and certification to shackles, chains, hooks, wire rope and other rigging accessories.
- CMW offers inspection, service or repair to any brand of heavy duty recovery tong.

Part Number*	Electrode Diameter		(HDRT) Weight		(HDRT) Capacity	
	mm	in	kg	lbs	kg	lbs
HDRT – 18	547.2	18	680	1,500	5,897	13,000
HDRT – 20	508	20	680	1,500	5,897	13,000
HDRT – 22	558.8	22	680	1,500	5,897	13,000
HDRT – 24	609.6	24	680	1,500	5,697	13,000
HDRT – 26	660.4	26	816	1,800	8,391	18,500
HDRT – 28	711.2	28	816	1,800	8,391	18,500
HDRT – 30	762	30	816	1,800	8,391	18,500
HDRT – 32	812.8	32	816	1,800	8,391	18,500

\*Part Number = (HDRT) to (Electrode Size Range)  
HDRT weights are approximate.



**Safe lifting is a priority at Columbia Machine Works.** Prior to using a CMW Heavy Duty Recovery Tong, a visual inspection should be performed looking for deformation to the tong and tong rigging. This includes bent arms, arc burns and damaged or missing hardware. Any of these factors can lead to failure of the HDRT causing damage to equipment or personnel. Modification or repairs should be performed only by qualified CMW technicians.

## FOR SALES CONTACT: COLUMBIA MACHINEWORKS OR EXO TECHNOLOGIES

1940 Oakland Pkwy., Columbia, TN 38401  
 ph: (800) 676-2694 or (931) 388-6202  
 fx: (931) 388-8128  
 info@columbiamachineworks.com  
 www.columbiamachineworks.com



P.O. Box 302  
 Cedarburg, WI 53012  
 ph: (262) 375-1212  
 fx: (262) 375-1515  
 mark@exosteel.com



# Electrode Dust Cover

# EDC

Electrode Dust Covers are a safe and effective way of protecting the exposed end of the electrode from dust and debris during furnace operations.

★★ American Made ★★

## PRODUCT DESCRIPTION



- Electrode Dust Covers are designed to work with all OEM electrode sizes.
- Available in sizes from 101.6mm (4") to 812.8mm (32").
- Custom sizes available on request.
- Electrode Dust Covers are fabricated from stainless steel to withstand heat and environment.
- Electrode Dust Covers can be engraved along the outside per request.
- Finish: Material mill finish.
- All designs, development, production, load test and certification are performed by CMW engineers and technicians at the CMW facility in Columbia, Tennessee, according to standards: B30.26-2010, B30.10.2014, B30.20-2013, ASME BTH-1-2013, CEI IEC 60239 and DIN EN 13155.
- Each Electrode Dust Covers is tagged with the CMW name, address, product part number, date of manufacture, weight of product and product serial number for traceability and load test certification.
- CMW offers inspection, service or repair to any brand of electrode dust cover.

Part Number*	Electrode Diameter		(EDC) Weight	
	mm	in	kg	lbs
EDC – 4"	101.6	4	2.7	6
EDC – 5"	127.0	5	3.2	7
EDC – 6"	152.4	6	3.6	8
EDC – 7"	177.8	7	4.1	9
EDC – 8"	203.2	8	4.5	10
EDC – 9"	228.6	9	5.0	11
EDC – 10"	254.0	10	5.4	12
EDC – 12"	304.8	12	6.4	14
EDC – 14"	355.6	14	7.3	16
EDC – 16"	406.4	16	8.2	18
EDC – 18"	457.2	18	9.5	21
EDC – 20"	508.0	20	10.4	23
EDC – 22"	558.8	22	11.8	26
EDC – 24"	609.6	24	13.6	30
EDC – 26"	660.4	26	15.4	34
EDC – 28"	711.2	28	16.3	36
EDC – 30"	762.0	30	17.2	38
EDC – 32"	812.8	32	18.1	40

\*Part Number = (EDC) - (Electrode Size)  
EDC weights are approximate.



**Safe handling is priority at Columbia Machine Works.** Prior to using the Electrode Dust Cover, a visual inspection should be performed checking for distortion or damage to the cover, preventing it from protecting the electrode as intended. Contact a CMW technician for repairs or replacement covers.

## FOR SALES CONTACT: COLUMBIA MACHINE WORKS OR EXO TECHNOLOGIES

1940 Oakland Pkwy., Columbia, TN 38401  
ph: (800) 676-2694 or (931) 388-6202  
fx: (931) 388-8128  
info@columbiamachineworks.com  
www.columbiamachineworks.com



P.O. Box 302  
Cedarburg, WI 53012  
ph: (262) 375-1212  
fx: (262) 375-1515  
mark@exosteel.com

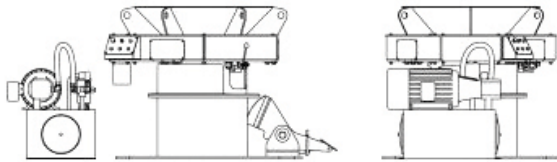
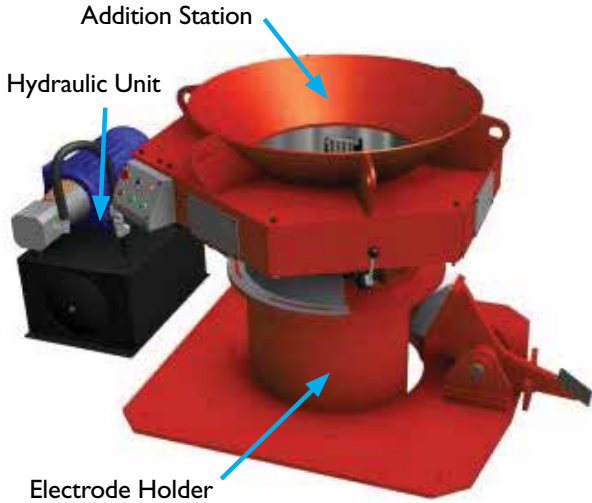


# Electrode Addition Station



The Electrode Addition Station (EAS) is a safe, effective and automated way of adding electrodes to the electrode column off line of the furnace.

★★ American Made ★★



## PRODUCT DESCRIPTION

- This unit was designed to use a mechanical lowering device to assist in joining. Failure to use this method may result in binding and improper torque of the joint and damage to the electrode.
- All units are calibrated in-house using lab-certified torque transducers to ensure that the joint is torqued to manufacturer's recommended specs.
- This device is capable of handling hot electrodes.
- The CMW Electrode Addition Station is one of the most efficient, maintenance-friendly systems on the market, with fewer components and wear parts for greater reliability.
- CMW can perform a head-room and platform evaluation to access the feasibility of the addition station in your plant.
- The CMW Electrode Addition Station torques electrodes to manufacturer-recommended specifications.
- Spare parts are kept in stock for quick turn-around to prevent prolonged downtime.
- The Addition Station can be packaged with the Station Holder or, in some cases, can be adapted to existing holders.
- All designs, development, production, load test and certification are performed by CMW engineers and technicians at the CMW facility in Columbia, Tennessee, according to standards: B30.26-2010, B30.10.2014, B30.20-2013, ASME BTH-1-2013, CEI IEC 60239 and DIN EN 13155.
- Each Electrode Addition Station is tagged with the CMW name, address, product part number, manufacture working load limit, date of manufacture, weight of product and product serial number for traceability and load test certification.
- CMW offers inspection, service or repair to any brand of addition station.
- In addition to our on-site calibration services, we also offer a transducer kit for use by your maintenance team.

Part Number*	Addition Station		Electrode Holder	
	mm	in	kg	lbs
EAS – 18	547.2	18	408	900
EAS – 20	508	20	454	1,000
EAS – 22	558.8	22	499	1,100
EAS – 24	609.6	24	544	1,200
EAS – 26	660.4	26	590	1,300
EAS – 28	711.2	28	680	1,500
EAS – 30	762	30	726	1,600
EAS – 32	812.8	32	771	1,700

\*Part Number = (EAS) - (Electrode Size)  
Add 300 lbs to each weight for the Standard Hydraulic Unit



**Safe lifting and handling is priority at Columbia Machine Works.** The Electrode Addition Station is designed for low maintenance. Daily maintenance should include: visual inspection for hydraulic leaks, blowing out the adder with an air nozzle in the openings underneath the housing and cycling the machine to insure its function. Weekly maintenance should include inspection of the holder teeth on the cam and backing bars, inspection for loose bolts and a check on the hydraulic tank fluid level. Monthly maintenance should include: removal of the motor guard, checking the chain tension (approximately 1/4" of slack), removal of the x3 side inspection covers to check for wear on the guide pads and the addition of high-temperature grease in all of the fitting located inside of the funnel. Only authorized CMW technicians should perform alterations or maintenance requiring component or assembly changes.

**FOR SALES CONTACT: COLUMBIA MACHINE WORKS OR EXO TECHNOLOGIES**

1940 Oakland Pkwy., Columbia, TN 38401  
ph: (800) 676-2694 or (931) 388-6202  
fx: (931) 388-8128  
info@columbiamachineworks.com  
www.columbiamachineworks.com



P.O. Box 302  
Cedarburg, WI 53012  
ph: (262) 375-1212  
fx: (262) 375-1515  
mark@exosteel.com



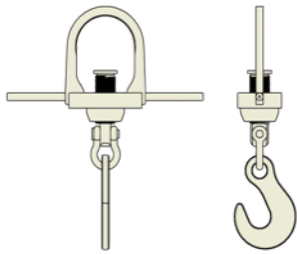
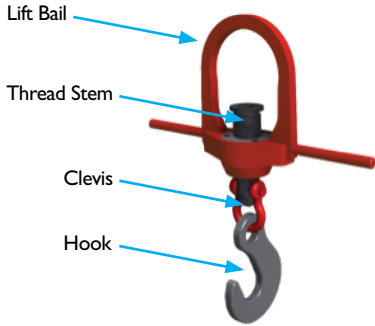
# Addition Hook

# AH

The Addition Hook (AH) provides a safe and effective way of lifting electrodes from the horizontal to the vertical position and assist with additions and handling.

★★ American Made ★★

## PRODUCT DESCRIPTION



- Addition Hooks are designed to work with a GLP to lift the electrode from horizontal to vertical and assist in the addition to the column.
- Addition Hooks are designed with an alloy heat-treated stem matching the thread pitch of the electrode, insuring the plug stays engaged in the electrode during the addition.
- The lift bail, addition hook body, threaded stem and hook are custom designed to fit the customer's needs.
- Lift bails and custom hooks are made from 80 KSI steel.
- Addition Hooks are designed with a minimum safety factor of 4x the Working Load Limit.
- CMW offers a variety of shackles, chains, hooks, wire rope and other rigging accessories.
- Finish: Safety Red, unless otherwise specified.
- All designs, development, production, load test and certification are performed by CMW engineers and technicians at the CMW facility in Columbia, Tennessee, according to standards: B30.26-2010, B30.10.2014, B30.20-2013, ASME BTH-1-2013, CEI IEC 60239 and DIN EN 13155.
- Each Addition Hook is tagged with the CMW name, address, product part number, manufacture working load limit, date of manufacture, weight of product and product serial number for traceability and load test certification.
- CMW offers inspection, service or repair to any brand of addition hook.

### Part Number

	Stem	Hook	Clevis	Capacity	kg	lbs
AH – 9500-3	3-TPI	Custom	Custom	Custom	32	70
AH – 9500-4	4-TPI	Custom	Custom	Custom	32	70

AH weights are approximate.



**Safe lifting and handling is priority at Columbia Machine Works.** Prior to using a CMW Addition Hook, a visual inspection should be made looking for bent or arced lift bail, damaged or missing rigging hardware, deformation to the lifting hook or damage to the threaded stem. Repairs should be made only by a qualified CMW technician.

## FOR SALES CONTACT: COLUMBIA MACHINEWORKS OR EXO TECHNOLOGIES

1940 Oakland Pkwy., Columbia, TN 38401  
 ph: (800) 676-2694 or (931) 388-6202  
 fx: (931) 388-8128  
 info@columbiamachineworks.com  
 www.columbiamachineworks.com



P.O. Box 302  
 Cedarburg, WI 53012  
 ph: (262) 375-1212  
 fx: (262) 375-1515  
 mark@exosteel.com



# Custom Spreader & Lift Beams

CSB

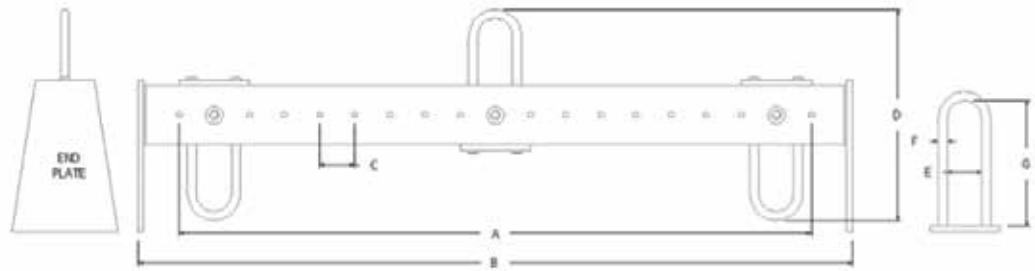
Custom Spreader & Lift Beams (CSB) are a rigid under-the-hook lift device designed with multiple pick and lifting points.

★★ American Made ★★



## PRODUCT DESCRIPTION

- Custom Spreader & Lift Beams can be designed with fixed lift and pick-points for a specific product or with multiple lift and pick-points for use with multiple products ensuring a lift at or near the center of gravity.
- Columbia Machine Works can design, fabricate and test beams with a working load limit to 50 tons.
- Beams are fabricated with endplates to protect bottom bails when sitting on a pad.
- Beams are designed with multiple pick and lifting points to insure balanced loads.
- Lifting bails are made from 80 KSI steel. The structure body is fabricated from high-quality domestic steel as required for the application to insure strength and durability.
- Fasteners are Grade-8.
- Welds are performed by CMW fabricators certified in AWS D14.1.
- Finish: Safety Red, unless otherwise specified.
- CMW offers a variety of rigging accessories to work with our lift and spreader beams, including chain, shackles, bull rings, oblong rings, clevises, wire rope and more.
- All designs, development, production, load test and certification are performed by CMW engineers and technicians at the CMW facility in Columbia, Tennessee, according to standards: B30.26-2010, B30.10.2014, B30.20-2013, ASME BTH-1-2013, CEI IEC 60239 and DIN EN 13155.
- Each Spreader or Lift Beam is tagged with the CMW name, address, product part number, manufacture working load limit, date of manufacture, weight of product and product serial number for traceability and load test certification.
- CMW offers inspection, service, repair and recertification to any brand of spreader or lift beam.



Part Number	Maximum Adjustment	Overall Length	Adjustment Spacing	Headroom Spacing	Top Bail		Bottom Bails		Working Load	
	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"E"		"F"
CSB - xxx										



**Safe lifting and handling is priority at Columbia Machine Works.** Columbia Machine Works on-site engineers and technicians design and custom build lift beams and spreader beams for your applications. The adjustment, length, spacing, headroom, bail sizes and weight are a function of your needs and the working load. Spreader & lift beams are designed to 4x the WLL and tested and certified to 2x the WLL. Repairs and modifications should be performed only by a qualified CMW technician.

## FOR SALES CONTACT: COLUMBIA MACHINE WORKS OR EXO TECHNOLOGIES

1940 Oakland Pkwy., Columbia, TN 38401  
 ph: (800) 676-2694 or (931) 388-6202  
 fx: (931) 388-8128  
 info@columbiamachineworks.com  
 www.columbiamachineworks.com



P.O. Box 302  
 Cedarburg, WI 53012  
 ph: (262) 375-1212  
 fx: (262) 375-1515  
 mark@exosteel.com





# Pallet Lifters

PL

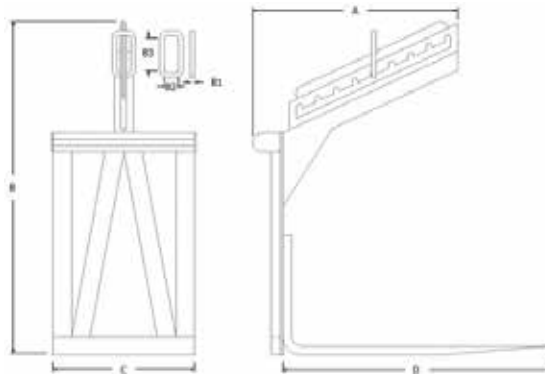
Pallet Lifter is an under-the-hook lift device designed for lifting pallets with a crane.

★★ American Made ★★

## PRODUCT DESCRIPTION



- Adjustable Lift Points eliminate the need for a counter-weight.
- Pallet Lifts can be ordered with fixed or adjustable forks.
- Pallet Lifts are fabricated with high strength, forged OEM forklift forks.
- CMW standard lift is rated at 2½ tons.
- Pallet Lift available up to 5 tons on request.
- Pallet Lifts available in custom sizes.
- Lifting bails are made from 80 KSI steel. The structure body is fabricated from high-quality domestic steel for strength and durability.
- Welds are performed by CMW fabricators certified in AWS D14.1.
- Finish: Safety Red, unless otherwise specified.
- All designs, development, production, load test and certification are performed by CMW engineers and technicians at the CMW facility in Columbia, Tennessee, according to Standards: B30.26-2010, B30.10.2014, B30.20-2013, ASME BTH-I-2013, CEI IEC 60239, DIN EN 13155.
- Each Pallet Lifter is tagged with the CMW name, address, product part number, manufacture working load limit, date of manufacture, weight of product and product serial number for traceability and load test certification.
- CMW offers inspection, service, repair, and recertification to any brand of pallet lifter.



Part Number	Capacity	Frame Length "A"	Frame Width "B"	Frame Width "C"	Fork Length "D"	Fork Centerline	Lift Bail			Product Weight
	tons	in	in	in	in	in	in	in	in	lbs
PL – 2.5T-48	2½	44	71½	30½	48	24½	1	3	7	1,100
PL – 2.5T-60	2½	44	71½	30½	60	24½	1	3	7	1,100

PL weights are approximate.



**Safe lifting and handling is priority at Columbia Machine Works.** Pallet Lifters are designed to 4x the WLL and tested and certified to 2x the WLL. Repairs and modifications should be performed only by a qualified CMW technician.

## FOR SALES CONTACT: COLUMBIA MACHINEWORKS OR EXO TECHNOLOGIES

1940 Oakland Pkwy., Columbia, TN 38401  
 ph: (800) 676-2694 or (931) 388-6202  
 fx: (931) 388-8128  
 info@columbiamachineworks.com  
 www.columbiamachineworks.com



P.O. Box 302  
 Cedarburg, WI 53012  
 ph: (262) 375-1212  
 fx: (262) 375-1515  
 mark@exosteel.com



# Inspection & Certification Services

Columbia Machine Works offers numerous inspection programs from field inspections to in-house inspections for rigging and below-the-hook lift devices.

★ ★ American Made ★ ★



- CMW performs on-site and off-site inspection, repair and testing to rigging, hoist (chain falls and lever pullers), and below-the-hook lift devices.
- Wire rope slings are inspected for missing or illegible tags, damage to the lift eyes, splices, body and attached rigging and hardware.
- Chain slings are inspected for missing or illegible tags, damaged or missing hooks, damaged chain links, oblongs, connecting links and other hardware and rigging attachments.
- Chain mesh slings are inspected for missing or illegible tags, excessive wear, cracked, damaged or stretched links, weld splatter, knots and other visible damage that could compromise the sling compliance.
- Synthetic slings are inspected for missing or illegible tags, damage to the sling body, eyes, stitching and other issues that may make the sling non-compliant.
- Hoist (chain falls and lever pullers) are inspected and load tested to 125% of capacity to comply with ASME standards.

**COLUMBIA MACHINE WORKS INC.** EST. 1927  
1940 Oakland Parkway  
Columbia, TN 38401  
Ph: 800.676.2694  
Ph: 931.388.6202  
Fx: 931.388.8128

**CERTIFICATE OF TESTING**

Customer: Columbia Machine Works  
1940 Oakland Pkwy  
Columbia, TN 38401

Test ID: 124  
Test Date: 8/19/2014 4:18:34 PM  
Test Duration: 00:00:38  
Serial Number: 57221-1

Product: Chain Sling  
Description: Single Leg With Grab Hook  
Model Number: SG

Size: 3/32"  
Length: 4' 1.58"  
WLL: 3500  
Proof Load: 4375

Channel	Peak
Load	4387

Operator: Cory Pugh  
Material: SG  
Notes: Proof Test Performed on CMW's Used Chain Sling for Recert.

Testing equipment calibrated to ASTM-E4, +/- 1%  
Traceable to NIST

Test Results:  
 Acceptable  
 Not Acceptable

Operators signature: \_\_\_\_\_

These products have been tested in accordance with the customer's specifications. There is no warranty, expressed or implied, by the test machine manufacturer that these products are suitable for a purpose or use.  
Default Software Copyright © 2008 Chart Engineering Co. Inc.  
Page 1 of 1 on 8/19/2014 4:18:38 PM

- Below-the-hook lift devices are inspected for damaged welds, deformation to the device structure, worn or damaged bails and damage to pick points. CMW can perform non-destructive testing on the device, recondition the device and recertify to comply with ASME standards B30.20-2013.

- CMW has capabilities to load test and cycle test lift devices designed for 100,000 lb. capacities. Certification and test documentation can be formatted per customer request.

- All designs, development, production, repairs, load test and certification and re-certification are performed by CMW engineers and technicians at the CMW facility in Columbia, Tennessee, according to ASME Standards: B30.26-2010, B30.10.2014, B30.20-2013, ASME BTH-I-2013, CEI IEC 60239, DIN EN 13155 and OSHA 1910.184.

- Each inspected or load tested product is tagged and a certificate supplied with the CMW name, date of certification and the certification details.



**Safe lifting and material handling is priority at Columbia Machine Works.** Our goal with the CMW inspection, repair and certification and re-certification program is to keep your company in compliance and your employees safe.

FOR SALES CONTACT: COLUMBIA MACHINE WORKS OR EXO TECHNOLOGIES

1940 Oakland Pkwy., Columbia, TN 38401  
ph: (800) 676-2694 or (931) 388-6202  
fx: (931) 388-8128  
info@columbiamachineworks.com  
www.columbiamachineworks.com



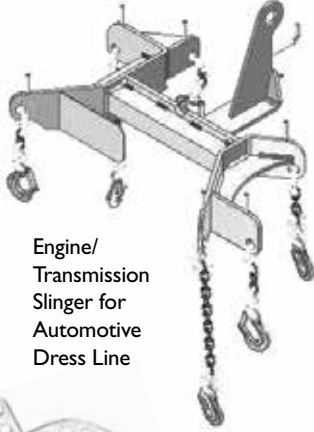
P.O. Box 302  
Cedarburg, WI 53012  
ph: (262) 375-1212  
fx: (262) 375-1515  
mark@exosteel.com



# Custom Lifting & Handling Products

Columbia Machine Works offers a variety of Custom Lifting and Handling Products from simple static devices to more complicated mechanical devices.

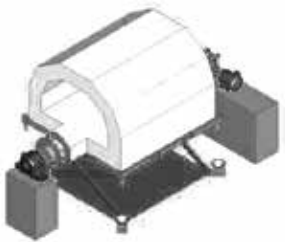
★ ★ American Made ★ ★



Engine/  
Transmission  
Slinger for  
Automotive  
Dress Line



Custom Product Tongs



Custom Mold Manipulator



Custom Torque Wrenches  
for Electrodes

- Columbia Machine Works offers a variety of custom lifting and handling devices tailored to fit your needs, including lifting beams, spreader beams, tongs, sheet lifters, fork extensions and accessories, pallet lifters, bar and tube lifters, and coil and roll lifters.
- Columbia Machine Works engineers can design a lift device for your product regardless of the geometry, available pick-points and weight.
- CMW uses only the highest quality rigging, offering a variety of shackles, chains, hooks, wire rope and other rigging accessories.
- Finish: Safety Red, unless otherwise specified.
- All designs, development, production, load test and certification are performed by CMW engineers and technicians at the CMW facility in Columbia, Tennessee, according to Standards: B30.26-2010, B30.10.2014, B30.20-2013, ASME BTH-1-2013, CEI IEC 60239 and DIN EN 13155.
- Each customer lifting or handling product is tagged with the CMW name, address, product part number, manufacture working load limit, date of manufacture, weight of product and product serial number for traceability and load test certification.
- CMW offers inspection, service or repair to any brand of custom lifting and handling product.



**Safe lifting and handling is priority at Columbia Machine Works.** Custom designed lift products are designed, manufactured and tested with the highest quality components available. Designs meet all ASME, OSHA and OSHA Standards. Instruction manuals with safety and maintenance instructions are offered with every product. Only authorized CMW technicians should perform nonscheduled maintenance or alterations to any custom lift and handling products.



FOR SALES CONTACT: COLUMBIA MACHINEWORKS OR EXO TECHNOLOGIES

1940 Oakland Pkwy., Columbia, TN 38401  
ph: (800) 676-2694 or (931) 388-6202  
fx: (931) 388-8128  
info@columbiamachineworks.com  
www.columbiamachineworks.com



P.O. Box 302  
Cedarburg, WI 53012  
ph: (262) 375-1212  
fx: (262) 375-1515  
mark@exosteel.com