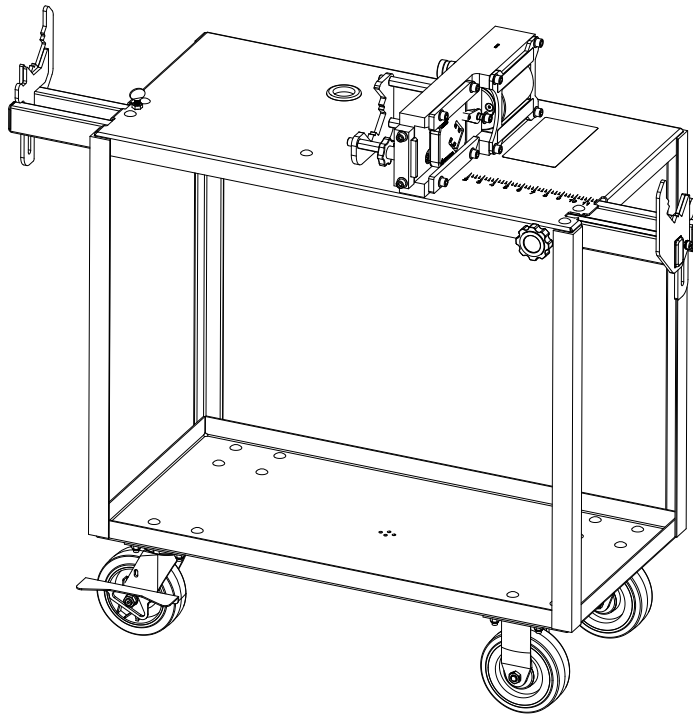


INSTRUCTION MANUAL



Shear 30T Shearing Station



Read and understand all of the instructions and safety information in this manual before operating or servicing this tool.

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Description

The Greenlee Shearing Station is used to shear commonly branded, mild steel strut channel, threaded rod, angle iron and rebar products. This tool is not designed to be used with stainless steel, aluminum or fiberglass strut or threaded rod workpieces.

Purpose of this Manual

This manual is intended to familiarize all personnel with the safe operation and maintenance procedures for the Greenlee Shearing Station.

KEEP THIS MANUAL

IMPORTANT SAFETY INFORMATION



SAFETY ALERT SYMBOL

This symbol is used to call your attention to hazards or unsafe practices which could result in an injury or property damage. The signal word, defined below, indicates the severity of the hazard. The message after the signal word provides information for preventing or avoiding the hazard.

⚠ DANGER

Immediate hazards which, if not avoided, WILL result in severe injury or death.

⚠ WARNING

Hazards which, if not avoided, COULD result in severe injury or death.

⚠ CAUTION

Hazards or unsafe practices which, if not avoided, MAY result in injury or property damage.



⚠ CAUTION

Strut channel and threaded rod ends can be sharp. Gloves are recommended when handling these materials.



⚠ WARNING

Skin injection hazard. Do not use hands to check for oil leaks. Oil under pressure easily punctures skin. If injured, seek medical attention immediately to remove oil. Failure to observe this warning could result in serious injury or death.



⚠ DANGER

Pinch points: Keep hands away from the cutting unit during the shearing process. Failure to observe this warning could result in severe injury or death.

⚠ WARNING

Do not overload cart



⚠ WARNING

Read and understand all of the instructions and safety information in this manual before operating or servicing this tool.



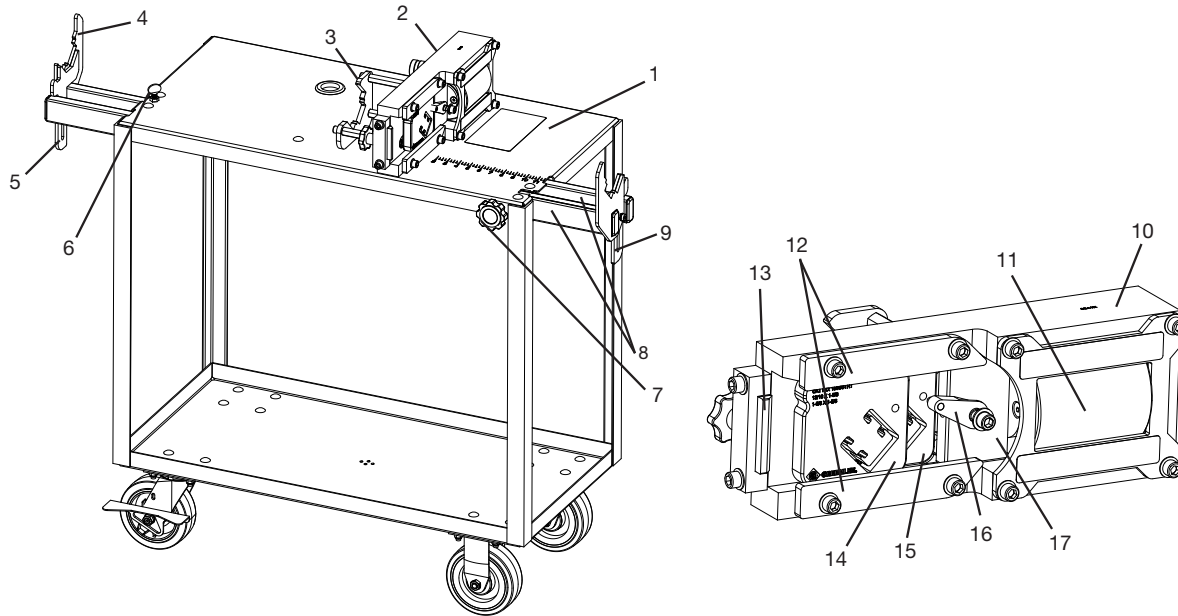
⚠ WARNING

Wear eye protection when operating or servicing this tool. Failure to wear eye protection could result in serious eye injury from flying debris or hydraulic oil.



⚠ WARNING

If operating the tool continuously for more than 2 hours hearing protection is recommended. Longterm exposure to high noise levels could result in hearing damage.

Identification


- 1. Service Cart
- 2. Cutting Unit
- 3. Front Material Rest
- 4. Rear Channel Rest
- 5. Rear Rod Rest
- 6. Rear Arm Knob
- 7. Measurement Stop Knob
- 8. Extension Arms
- 9. Measurement Stop
- 10. Alloy Steel Cassette Frame

- 11. 30 Ton Hydraulic Ram with Universal Coupling
- 12. Die Retaining Rails
- 13. End Stop
- 14. Mobile Die
- 15. Stationary Die
- 16. Swing Arm
- 17. Die Spacer

Specifications
Cutting Unit and Dies

For cutting 18, 16, 14 and 12 gauge mild steel strut channel of various finishes.

For cutting Grade 2 mild or low carbon steel threaded rod of various finishes.

For cutting mild or low carbon steel angle per ASTM A36.

For cutting carbon steel rebar, maximum capacity: #6 (3/4") grade 60.

⚠ CAUTION

The dies are not designed to cut stainless steel workpieces. Expect reduced die life if cutting this material.

Maximum Force..... 30 tons

Hydraulic Pressure 10,000 psi

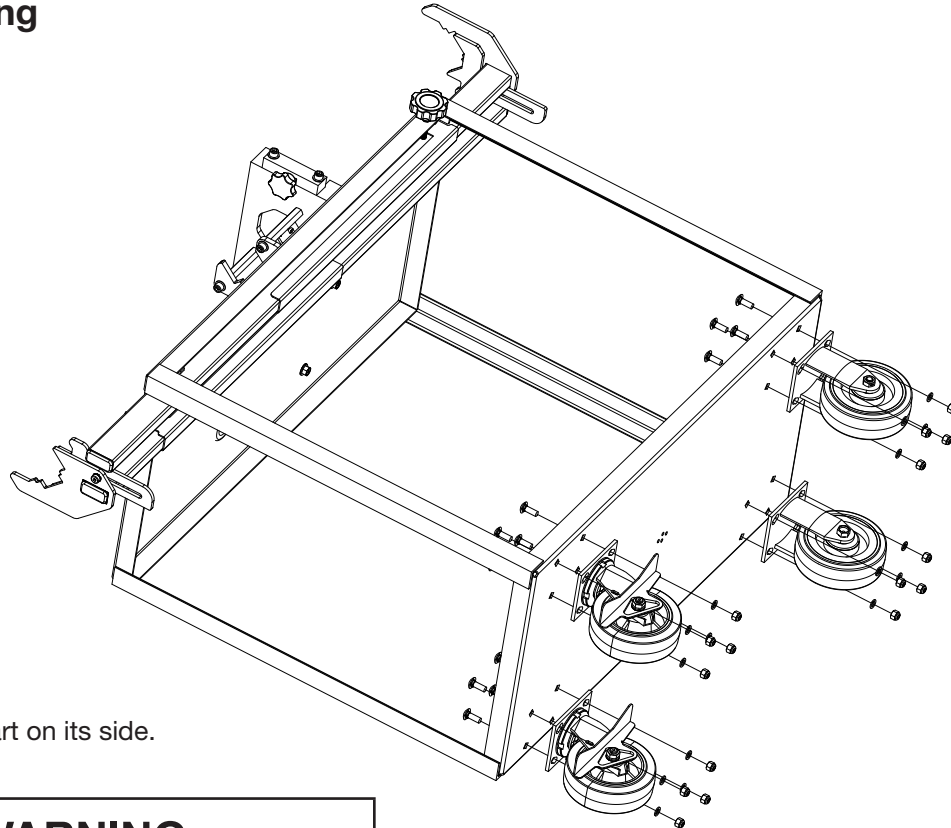
Service Cart

Dimensions..... 19" W x 44" H x 50" L

Shelf Size..... 2" H x 18" W x 36" L

Load Rating 800 lbs, evenly distributed

Caster Mounting



Rotate the Service Cart on its side.

WARNING

Cart is heavy, advise having two persons when turning cart.

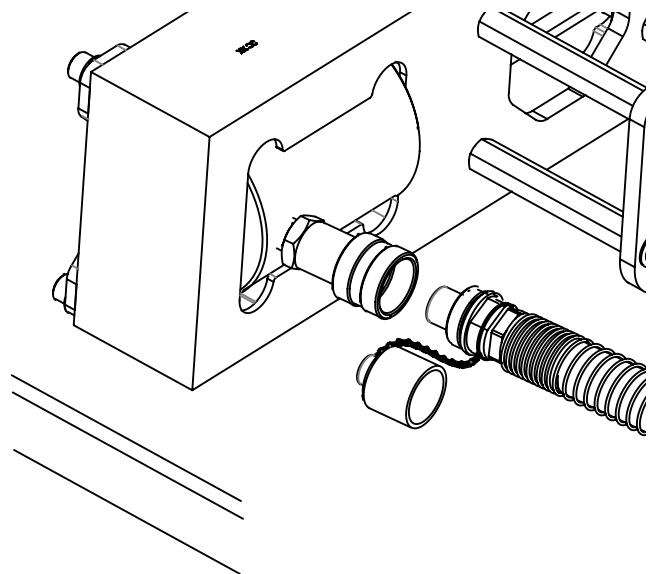
Attach the Rigid and Swivel Casters to the bottom shelf of the Service Cart with the included caster mounting hardware. Torque the nuts to 25 ft lbs. Reposition the Service Cart with casters in its upright position.

Transporting and Storage

Remove all dies from the Cutting Unit. Lower the Rear Rod Rest and Measurement Stop. Center both Extension Arms; lock the arms by tightening the Rear Arm Knob and Measurement Stop Knob.

Connecting to Power Source

Attach your 10,000 psi rated pump to the Hydraulic Ram's universal coupler with a similarly rated hydraulic hose. The Service Cart has an opening in its upper shelf for the hose to feed through if the pump is seated on the lower shelf. Tighten the hydraulic fitting and test cycle the Cutting Unit unloaded to confirm a proper connection.

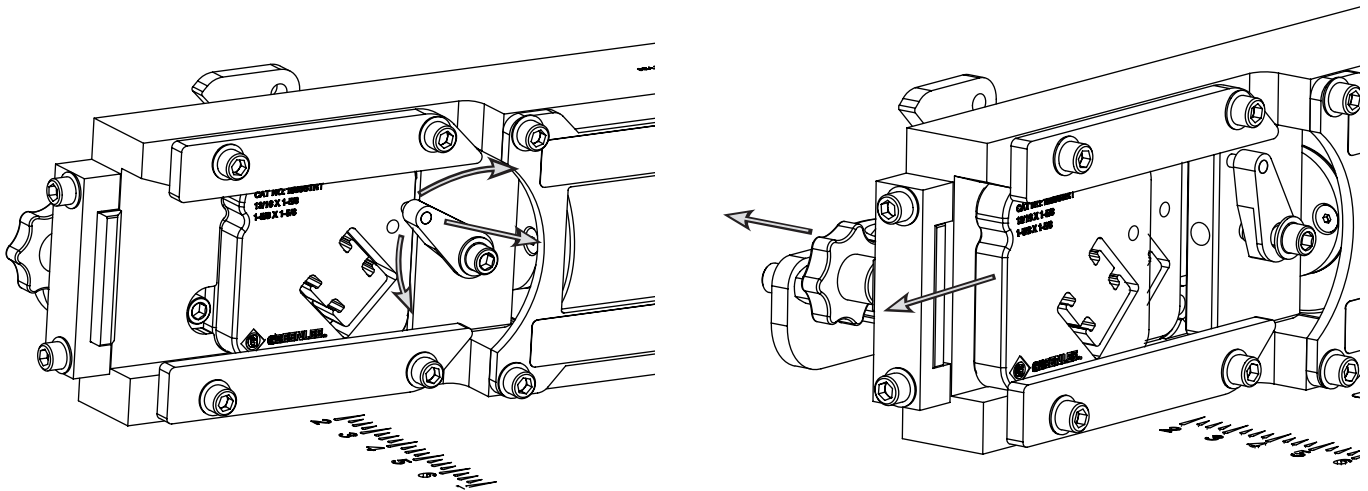


Die Loading/Changeover

If a die set is already loaded in the cutting unit, pull the Swing Arm out of the Mobile Die and rotate it onto the Die Spacer. Pull back the End Stop and slide out the Mobile Die within the Cassette Frame, then push the Stationary Die forward and slide it out also. Load the new die set in a reverse matter. Be sure to reengage the Swing Arm before beginning cutting.

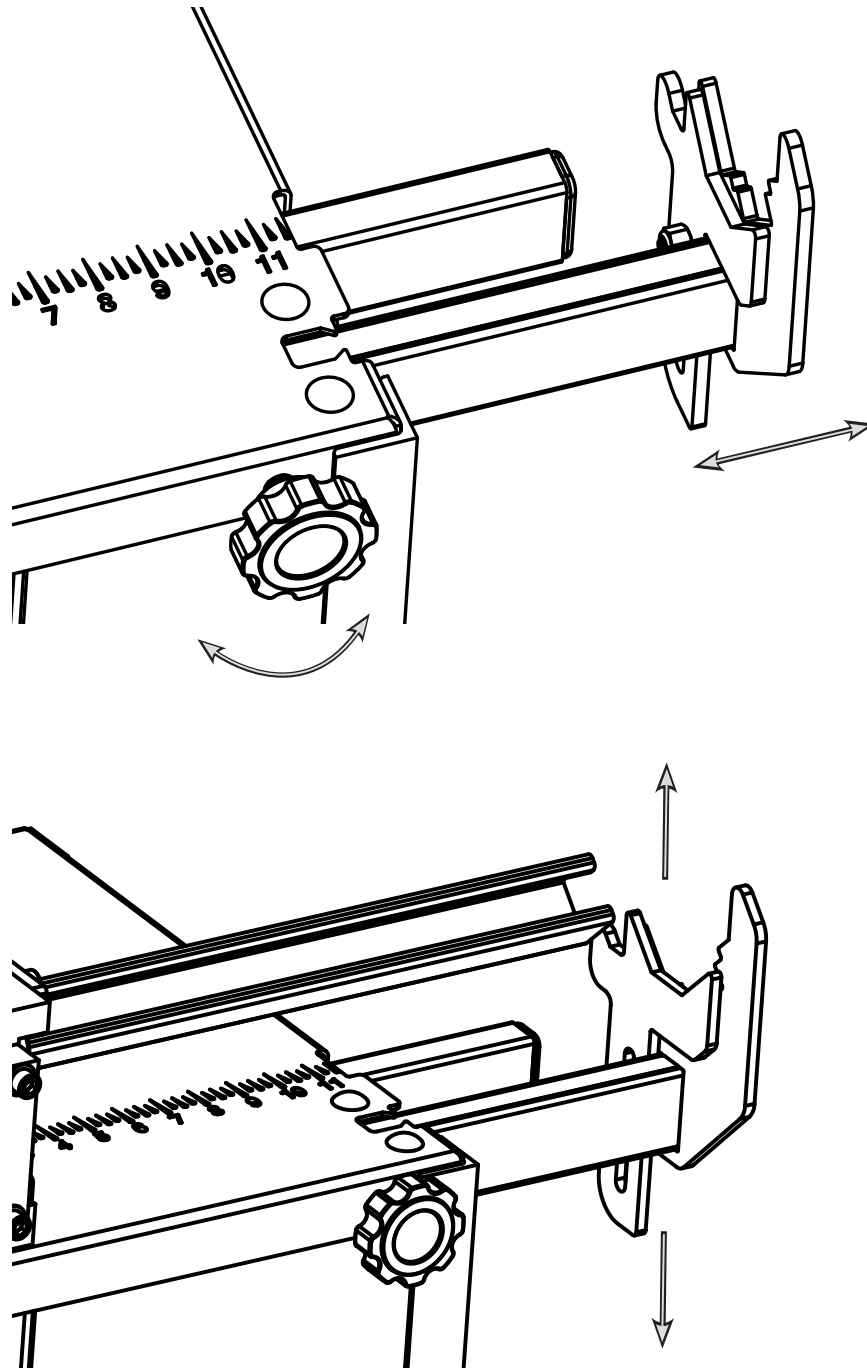
Note: if having difficulty removing or inserting dies, clear debris from the Cassette Frame die pockets.

Note: it is recommended to apply a moly-base spray lubricant to the die and frame working surfaces whenever changing dies.



Setting the Measurement Stop

The Measurement Stop can be set to repeatedly cut lengths from 12 to 48 inches. Turn the Measurement Stop Knob holding down the Extension Arm counter-clockwise to unlock. Set stop to required cut length by moving the arm left or right as needed, then retighten the knob. Raise or Lower the stop such that the workpiece being cut just makes contact.



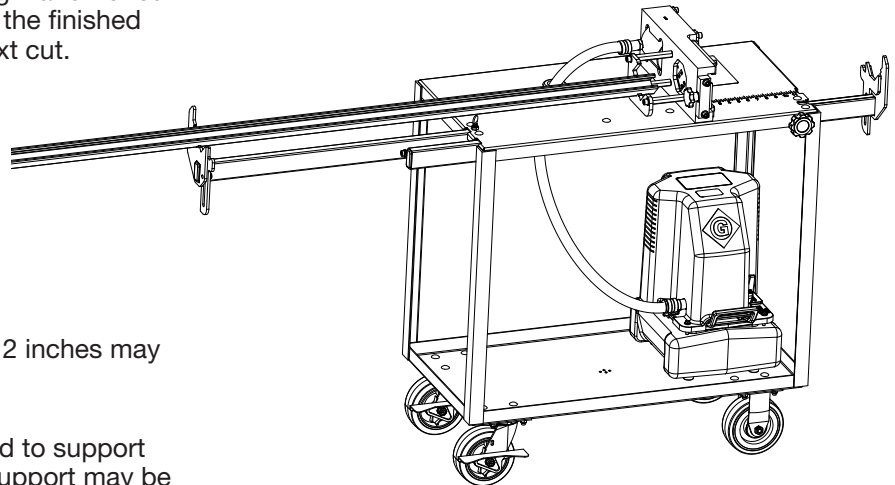
Operation**⚠ WARNING**

Engage caster brakes before operating unit.

Cutting Strut Channel

When cutting strut channel, the work piece must always be supported by the Front Material Rest. Do not cut total channel lengths of less than 7.5" as they cannot be properly supported and can cause a die to fracture.

Place the workpiece on the Front Material Rest and Rear Channel Rest (if long enough) and push through the Stationary and Mobile dies up to the Measurement Stop (if being used) or to desired finished length. The Rear Rod Rest should be lowered out of the way. Activate the hydraulic pump to begin the cut cycle. Wait for the strut to shear then release the hydraulic pressure. The Mobile Die will return to its original position to begin another cut. Lower the Measurement Stop and unload the finished workpiece, then return the stop for the next cut.



Note: cutting finished lengths of less than 2 inches may warp the channel profile.

Note: the Rear Channel Rest was designed to support up to 10ft workpiece lengths. Additional support may be required when cutting lengths longer than this.

⚠ WARNING

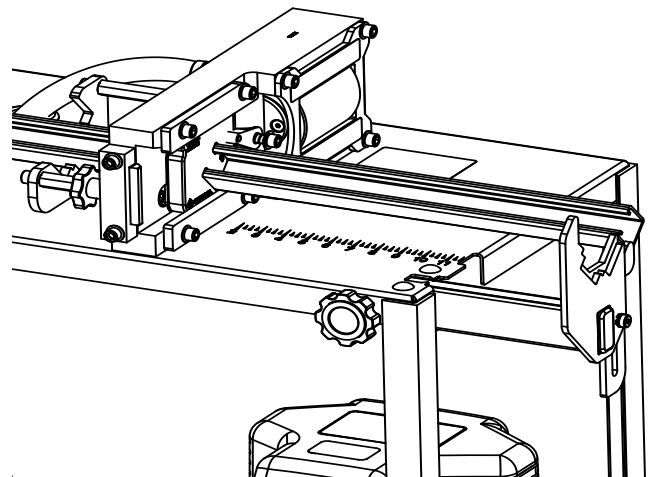
When cutting short pieces of strut channel the finished workpiece can pop out due to the shock of the cutting cycle, always wear safety glasses.

⚠ CAUTION

Shearing across holes and slots can leave sharp points on finished workpieces.

⚠ CAUTION

Do not cut single box strut workpieces with the double strut dies, the dies will fail quickly.



Operation (cont'd)

Cutting Threaded Rod

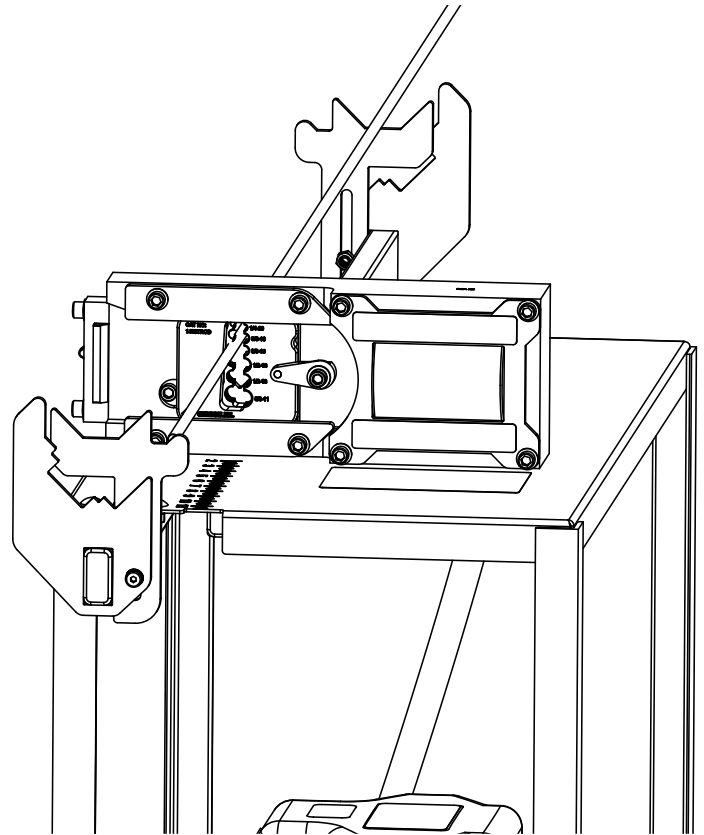
Push the workpiece through the Stationary and Mobile Dies up to the Measurement Stop (if being used) or to desired finished length. The Rear Rod Rest can be raised to support longer workpieces. Firmly seat the rod against the threads of the Stationary Die and keep the workpiece perpendicular to the dies. Activate the hydraulic pump to begin the cut cycle. Wait for the rod to shear then release the hydraulic pressure. The Mobile Die will return to its original position to begin another cut. Lower the Measurement Stop and unload the finished workpiece, then return the stop for the next cut.

Note: The threaded rod dies have been designed so that the nut threads onto the cut rod by hand. Thread quality, surface finish (i.e., galvanized or plated), dirt and scale could affect the ability of the nut to thread freely onto the cut rod.

Filing of the rod end or use of a pliers may be necessary if nut does not easily thread on due to these factors.

Note: The Rear Rod Rest was designed to support single workpieces up to 10ft lengths. Additional support may be required when cutting lengths longer than this or multiple pieces at once.

Tip: If a nut begins to thread and locks up, tapping it on a surface will often loosen it and allow continued threading.



CAUTION

Finished workpiece length should not be less than .25".

Operation (cont'd)**⚠ WARNING**

Engage caster brakes before operating unit.

Cutting Angle Iron (Steel Angles) and Rebar

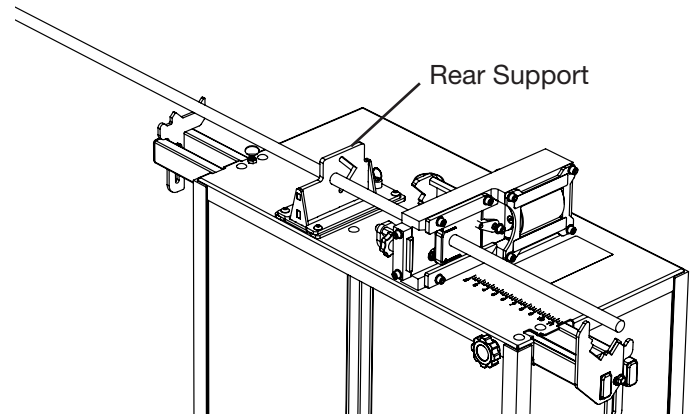
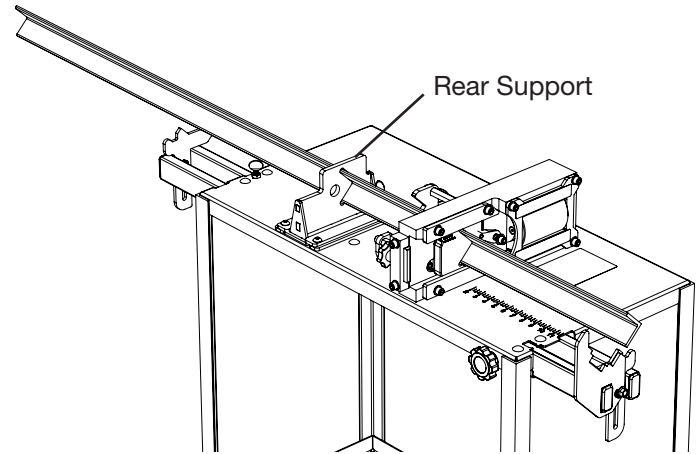
Note: When cutting angle iron and rebar, the reaction force on the ends of the workpiece can be severe. Always use the Rear Support to secure the workpiece when cutting angle iron and rebar. The current Rear Channel Rest will not provide sufficient support and damage to the Rear Channel rest will occur if not properly supported.

Lower the Rear Channel Rest and push the angle iron or rebar through the Rear Support and then through the Stationary and Mobile Dies up to the measurement stop (if being used) or to the desired finished length. Provide support to the free end of the angle iron or rebar, keeping it perpendicular to the dies, to prevent the piece from falling. Activate the hydraulic pump to begin the cut cycle. Wait for the angle iron or rebar to shear then release the hydraulic pressure. The Mobile Die will automatically return to its original position to begin another cut. Lower the Measurement Stop and unload the finished workpiece, then return the stop for the next cut.

Note: The Rear Channel Rest was designed to support up to 10 foot workpiece lengths. Additional support may be required when cutting lengths longer than this.

Note: Cutting angle iron and rebar will require more frequent cleaning in the track portions of the Cassette Frame and Die Retaining Rails. Scale on the surface of the angle iron and rebar will fall during cutting and accumulate in the unit. See maintenance instructions for cleaning.

Note: **To remove the Rear Support when it is not in use**, disengage the plunger by pulling up the key ring and slide the Support Frame out. To use the Rear Support again, lift the key ring and slide the Support Frame into the Support Base. Release the key ring and make sure that the Support Frame is secure in place.

**⚠ WARNING**

When cutting short pieces of angle iron or rebar the finished workpiece can pop out due to the shock of the cutting cycle, always wear safety glasses.

Maintenance

Lock out power to the Cutting Unit before performing any maintenance.

Change the hydraulic oil annually or after 10,000 cycles. Use ASTM 215 hydraulic fluid (or equal).

At least monthly, clean the inner track portions of the Cassette Frame and Die Retaining Rails. Apply a moly based, spray lubricant to the working surfaces. A dry film lubricant such as Molykote 557 is recommended.

The material cutting dies are wear parts and will fail over time. Order additional dies through Greenlee distributors.

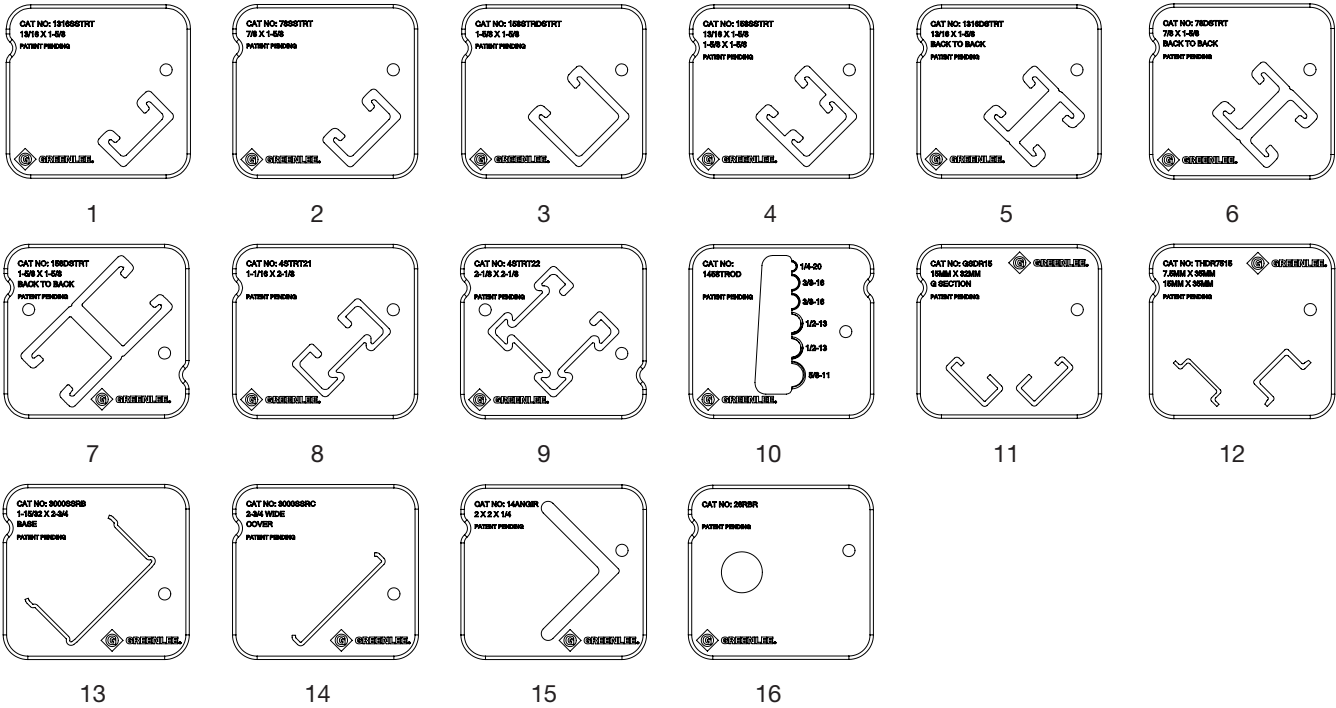
The unit experiences a shock during each cutting cycle which can loosen bolt connections over time. Periodically check all fasteners on the Cutting Unit and retighten where needed.

Available Dies

KEY	CAT NO.	DESCRIPTION	COMPATIBILITY
1	1316SSTRT	13/16 X 1-5/8 Single box profile	B-Line B52, B54, & B56 Unistrut P4520, P4100, & P4000 Powerstrut PS 520 & PS 500 Superstrut B-1200 & B-1400
2	78SSTRT	7/8" x 1-5/8 Single box profile	Unistrut P3300
3	158STRDSTRT	1-5/8 x 1-5/8 Single box profile	B-Line B22, B24, & B26 Unistrut P1000, P1100, & P2000 Powerstrut PS 200 & PS 210 Superstrut A-1200 & A-1400
4	158SSTRT	13/16 x 1-5/8 & 1-5/8 x 1-5/8 Single box profiles	B-Line B22, B24, B26 & B52, B54, B56 Unistrut P1000, P1100, P2000 & P4520, P4100, P4000 Powerstrut PS 200, PS 210 & PS 520, PS 500 Superstrut A-1200, A-1400 & B-1200, B-1400
5	1316DSTRT	13/16 x 1-5/8 Double box back-to-back profile	B-Line B52A, B54A, B56A Unistrut P4001, P4101, P4521 Powerstrut PS 500 2T3, PS 520 2T3, PS 560 2T3 Superstrut B-1202 & B-1402
6	78DSTRT	7/8 x 1-5/8 Double box back-to-back profiles	Unistrut P3301
7	158DSTRT	1-5/8 X 1-5/8 Double box back-to-back profiles	B-Line B22A, B24A, B26A Unistrut P1001, P1101, P2001 Powerstrut PS 200 2T3, PS 210 2T3 Superstrut A-1202 & B-1202
8	4STRT21	1-1/16 x 2-1/8 Single box 4D profiles	B-Line 4D21
9	4STRT22	2-1/8 x 2-1/8 Single box 4D profiles	B-Line 4D22
10	1458TROD	1/4-20, 3/8-16, 1/2-13 & 5/8-11 Threaded Rod	All mild steel rod
11	GSDR15	32 x 15mm G-Type DIN Rail profiles	TS-32 (G)
12	THDR7515	35 x 7.5mm & 35 x 15mm DIN Rail Combo profiles	TS-35 (7.5mm), TS-35 (15mm)
13	3000SSRB	3000 Series Steel Raceway Base profile	Legrand G3000B, V3000B
14	3000SSRC	3000 Series Steel Raceway Cover profile	Legrand G3000CE, V3000B
15	14ANG-KIT	Angle Iron dies with Rear Support	Mild steel in sizes up to 2"x 2" and 1/4" maximum thickness
16	26RBR-KIT	Rebar dies with Rear Support	Grade 60 Rebar in sizes up to #6 (3/4")

*Support required for angle iron and rebar dies

**See replacement parts for individual angle iron and rebar dies (page 21)

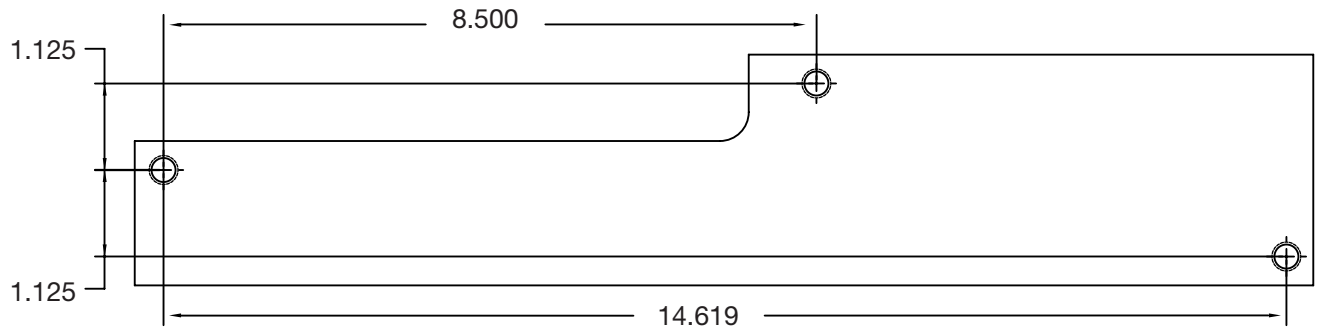
Available Dies (cont'd)


Note: The hot-dipped galvanized finished available from many manufacturers will often leave beads of finish on the product and can be more difficult to get through dies.

Cutting Unit Mounting

To mount the Cutting Unit to another surface, first unfasten the three 3/8-16 by 5/8" long hex bolts underneath the top shelf of the service cart to free the unit.

The following bolt pattern will be required on the new surface. Longer bolts may be needed if attaching the unit to a surface thicker than 12 gauge (.105 steel).

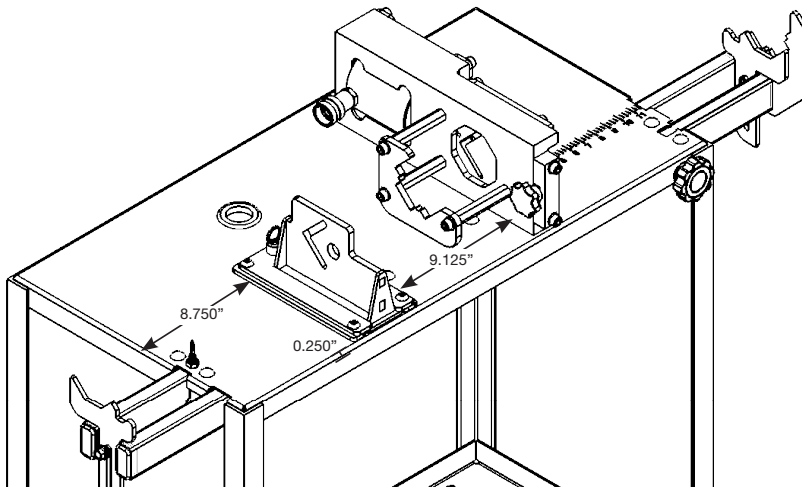


Installation Instructions – Angle Iron and Rebar Support

Please follow the directions below to create the mounting holes for the Rear Support. If your service cart already has holes drilled for the Rear Support please skip to the mounting instructions.

Use the base as a template and locate the base 8.75" from the left side of the cart (see below). Line up the left side of the base with this line. Mark a line .25" from the front of the cart (see below). Line up the front of the base with the 0.25" mark.

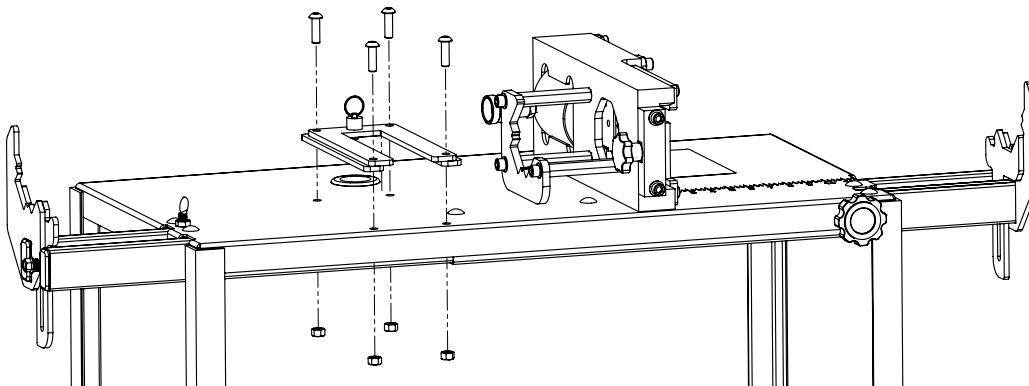
Using a marker/pencil, trace the holes on the Support Base. Drill the four holes using a 13/32" drill bit.



Angle Iron and Rebar Support Mounting

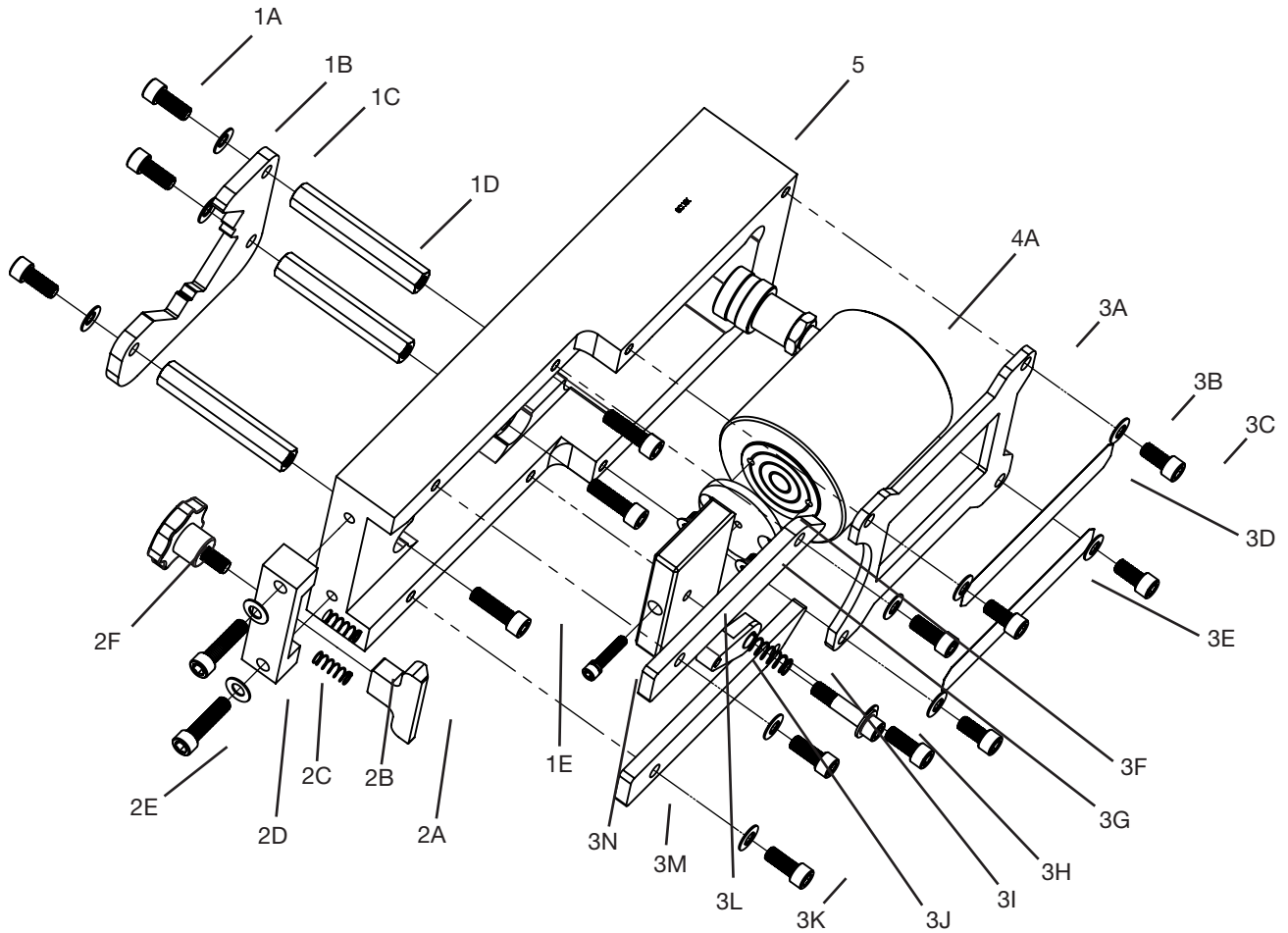
To mount the Angle Iron and Rebar Support to the cart, first line up the Support Base with the holes on the cart and bolt the Support Base down using four 3/8-16 by 1.25" socket head cap screws and four 3/8-16 hex nuts. See the image below.

Using the Loctite threadlocker capsule, apply threadlocker to each screw and tighten down to a torque of 35 ft-lbs.



Exploded Views and Parts Lists

Exploded View – Cutting Unit



Note: Torque 3/8 screws to 35ft lbs and 1/4 screws to 10ft lbs.

Exploded Views and Parts Lists (cont'd)
Exploded View – Cutting Unit

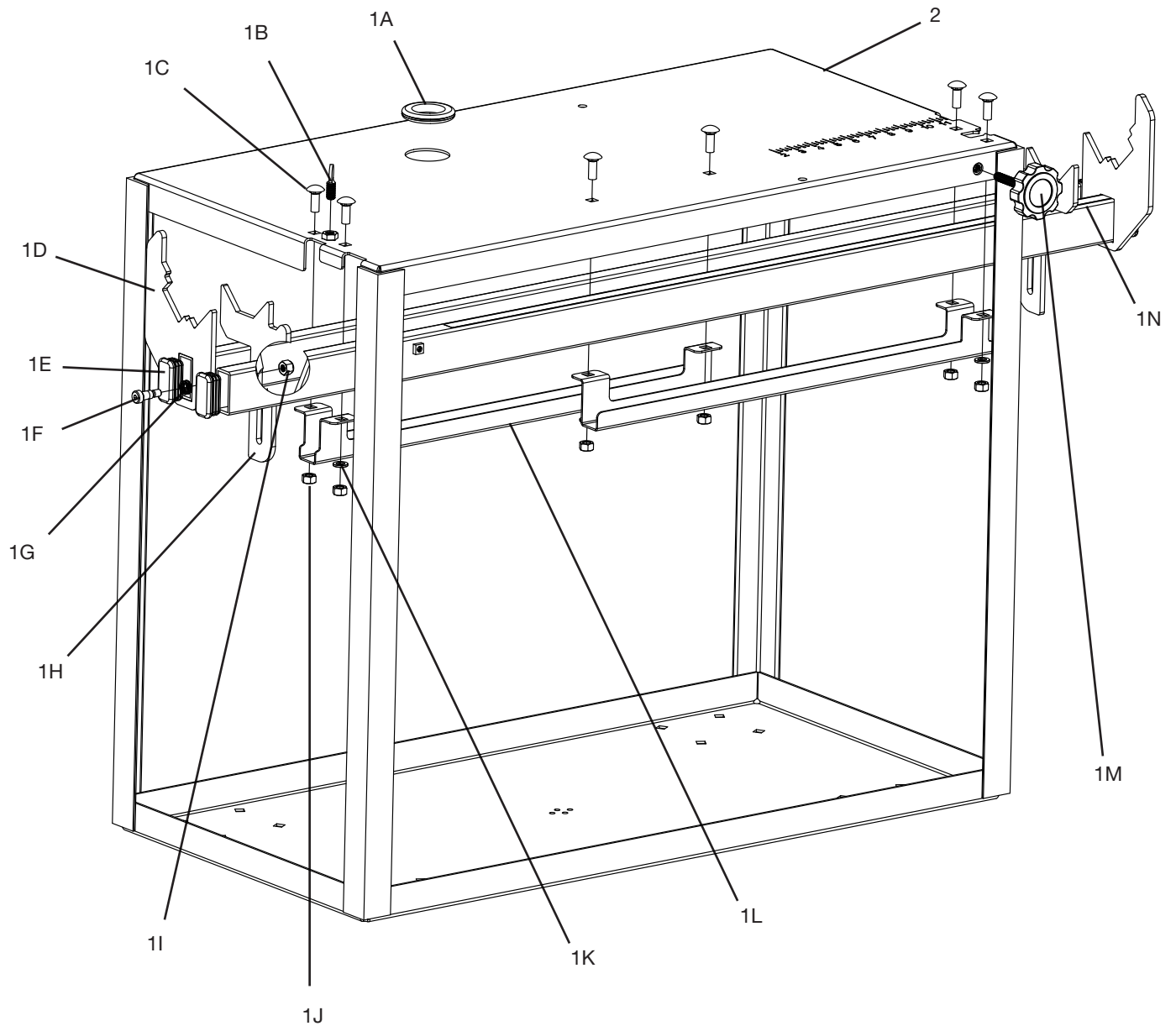
Key	Part No.	Description	Qty
1	52084465	Material Rest Kit	1
1A		Socket Head Cap Screw, 3/8-16 x 7/8 L.....	3
1B		Bellville Washer, .38 ID x 3/4 OD	3
1C		Front Material Rest	1
1D		Standoff, 3/8-16 x 4 L.....	3
1E		Socket Head Cap Screw, 3/8-16 x 1-1/4 L	4
2	52084466	End Stop Kit	1
2A		End Stop.....	1
2B		Compression Spring, .36 OD x 1 L.....	2
2C		Slide Block.....	1
2D		Bellville Washer, .38 ID x 3/4 OD	2
2E		Socket Head Cap Screw, 3/8-16 x 1-1/2 L	2
2F*		Lobed Knob, 3/6-16 x 11/16 L	1
3	52084467	Working Components Kit.....	1
3A		Faceplate	1
3B		Bellville Washer, .38 ID x 3/4 OD	8
3C		Socket Head Cap Screw, 3/8-16 x 3/4 L.....	4
3D		Identification Decal, Upper	1
3E		Piston Rod Adapter	1
3G		Flat Head Screw, 1/4-20 x 1/2 L.....	2
3H		Flanged EGL Screw, 3/8-16 x 1-5/8 L.....	1
3I		Compression Spring, .455 OD x 1-1/4 L	1
3J		Swing Arm Assembly.....	1
3K		Socket Head Cap Screw, 3/8-24 x 7/8 L.....	4
3M		Die Retaining Rail	2
3N*		SEMS Screw, 1/4-20 x 1-1/4 L.....	1
4	52084464	Cylinder Kit	1
4A		Hydraulic Cylinder, 30 Ton.....	1
5		Cassette Frame	1
6	52084463	Cylinder Seal Kit	1
6A**		Seal Kit for Hydraulic Cylinder.....	1

*Fastened with threadlocking adhesive

**Not shown

Exploded Views and Parts Lists (cont'd)

Exploded View – Service Cart





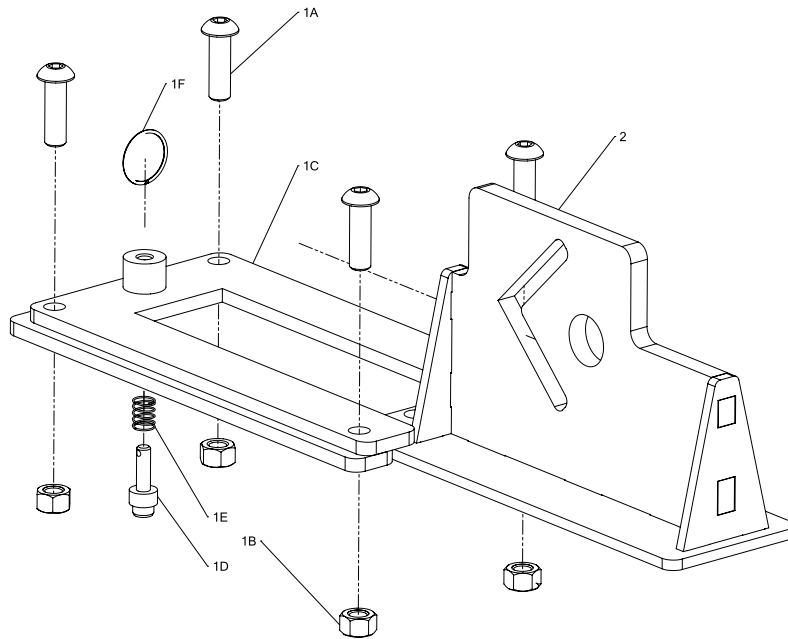
Exploded Views and Parts Lists (cont'd)

Exploded View – Service Cart

Key	Part No.	Description	Qty
1	52084468	Cart Components Kit.....	1
1A		Grommet, 1-1/2 ID x 2-3/8 OD.....	1
1B		Screw, Spade, 3/8-16 x 3/4 L.....	1
1C*		Carriage Bolt, 3/8-16 x 1 L.....	3
1D*		Extension Arm Weldment.....	1
1E*		Rectangular Plug, 1 W x 2 L.....	2
1F*		Hex Head Flange Screw, 3/8-16 x 1 L.....	1
1G*		Disc Spring, .480 ID x .6 OD.....	1
1H*		Rear Rod Rest / Measurement Stop.....	1
1I*		Hex Lock Nut, 3/8-16 x 17/64 W.....	1
1J		Hex Nut, 3/8-16 x 9/16 W.....	3
1K*		Lock Washer, .385 ID x .665 OD.....	3
1L*		Slide Plate.....	1
1M		Measurement Decal.....	1
1N		Fluted Knob, 3/8-16 x 2 L.....	1
1O		Branding Decal.....	1
2		Cart Weldment.....	1
3	52082768	Caster Kit.....	1
3A**		Locking Swivel Caster, 6 D.....	2
3B**		Rigid Caster, 6 D.....	2
3C**		Carriage Bolt, 3/8-16 x 1 L.....	16
3D**		Flat Washer, .39 ID x 5/8 OD.....	16
3E**		Hex Lock Nut, 3/8-16 x 9/16 W.....	16

*These parts can be used in either Extension Arm position, order two Cart Components Kits if both Arms must be replaced

**Not shown, see Caster Mounting section of the manual

Exploded Views and Parts Lists (cont'd)
Exploded View – Angle Iron and Rebar Support


Key	Part No.	Description	Qty
	52087961	Support Frame and Base Kit (includes items 1+2)	
1A		Screw-Cap 3/8-16 x 1.25 SKT BTN HD	4
1B		Nut-Hex 3/8-16.....	4
1C		Base Weldment.....	1
1D		Plunger	1
1E		Spring Compression.....	1
1F		Key Ring	1
1G*		Threadlocker Capsule.....	1
2	52087876	Rear Support Frame	1
	52087877	Plunger Repair Kit (includes items 1D, 1E, 1F)	
Replacement Dies			
	52086316	Angle Iron Dies	
	52086401	Rebar Dies	

*Not shown