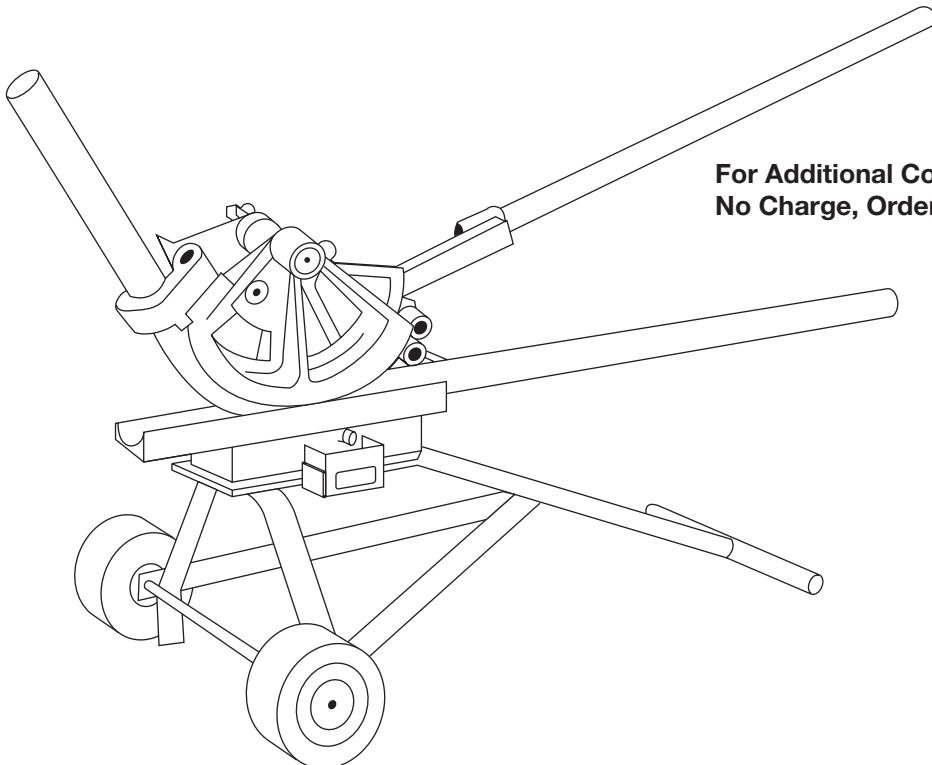


INSTRUCTION MANUAL



GREENLEE®

A Textron Company



For Additional Copies At
No Charge, Order 99901404

1818 **Mechanical Bender**

For all benders with Serial No. Code YY-0000 and up



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

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Description

Capacity:

3/4" – 2" EMT

1/2" – 1-1/4" IMC

1/2" – 1-1/2" Galvanized Rigid Conduit

2" Aluminum (only) Rigid Conduit

Note: Radius of bend is clearly marked on each bending shoe.

The 1818 Mechanical Bender is designed for years of dependable trouble-free service.

These features make the 1818 bender one of the most versatile timesaving tools on the market.

- Built-In Ratchet - lets you apply short, powerful strokes for faster bending.
- Shoe Locator - makes loading easy. Shoe rotation is restricted.
- Bending Degree Indicator - helps assure accurate bends every time.
- Follow Bars - produce smooth bends in 1-1/4", 1-1/2" and 2" EMT without kinks or wrinkles.
- Rubber Wheels - provide easy portability in the shop or on the jobsite.
- Strong Frame - keeps bender in place during bending.
- Speed-bend Mode - bypasses ratchet for fast, direct bending of smaller sizes of conduit.

Features that make the 1818 superior

- No storage box required. All of the shoes may be stored on the bender.

Note: Bender holds follow bars, rollers and pins so the complete unit may be chained to a post for security.

- The carriage minimizes deflection when bending larger conduit.
- The steel main frame does not require a tie bar to support the bending system.
- The shoe and ratchet segment unit is automatically retained by the friction button when loading the conduit. The lock system releases automatically.
- The frame unit accepts existing 1818 shoes, cushion roller and follow bars.

Safety

Safety is essential in the use and maintenance of Greenlee tools and equipment. This instruction manual and any markings on the tool provide information for avoiding hazards and unsafe practices related to the use of this tool. Observe all of the safety information provided.

Purpose

This instruction manual is intended to familiarize personnel with the safe operation and maintenance procedures for the Greenlee 1818 Mechanical Bender.

Keep this manual available to all personnel.

Replacement manuals are available upon request at no charge at www.greenlee.com.

All specifications are nominal and may change as design improvements occur. Greenlee Textron Inc. shall not be liable for damages resulting from misapplication or misuse of its products.

GATOR is a registered trademark of Greenlee Textron Inc.

Tellus is a registered trademark of Shell Oil Company.

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

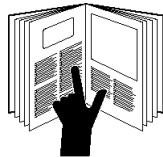
Immediate hazards which, if not avoided, WILL result in severe injury or death.

! 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.



! WARNING

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

Failure to observe this warning could result in severe injury or death.



! WARNING

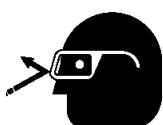
Do not leave the ratchet handle in the UP position when the bender is not in use. A handle left in the UP position could fall unexpectedly.



! WARNING

Pinch points:

Keep hands away from moving parts and conduit when bending. Failure to observe this warning could result in severe injury.



! WARNING

Wear eye protection when using this bender. Failure to wear eye protection could result in serious eye injury from flying debris.

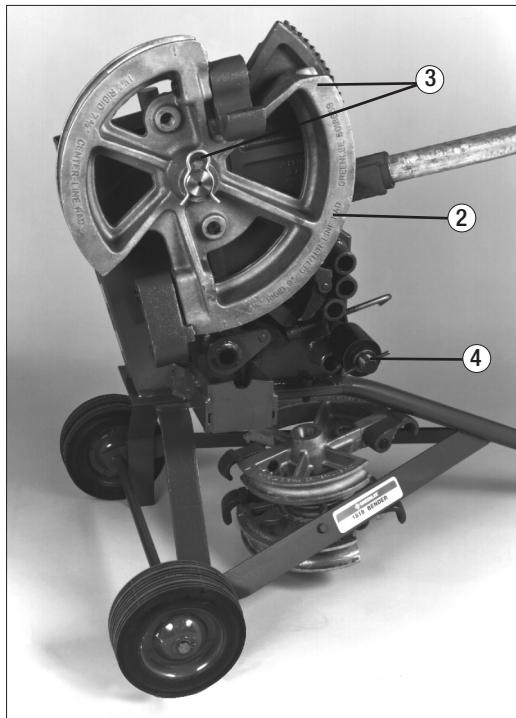
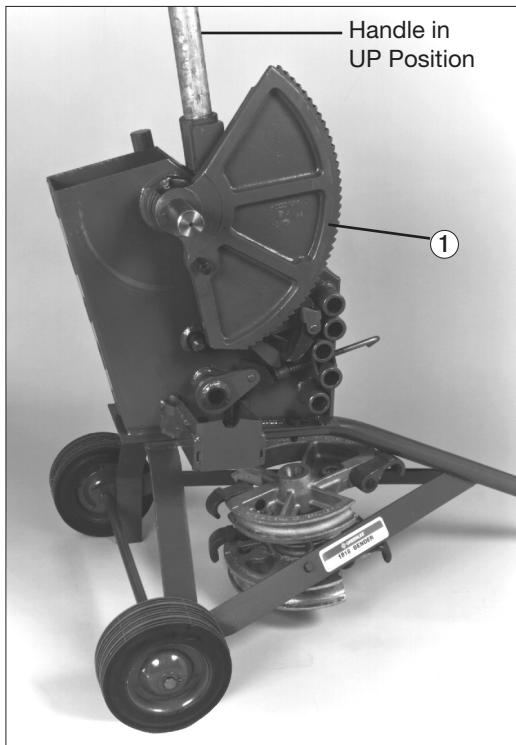
! CAUTION

- Keep the conduit under control when unloading it from the bender. Conduit may fall and strike the operator or nearby personnel.
- Maintain a firm grip on the handle when bending. Springback of the conduit may not allow the ratchet to fully engage, causing the handle to spring upward suddenly.
- Remove the handle and conduit before moving the bender. Maintain a firm grip with both hands on the frame T-handle to prevent the bender from tipping over.
- Inspect the bender before each use. Replace any worn, damaged, or missing items with Greenlee replacement parts. A damaged or improperly assembled tool can break and strike nearby personnel.
- Use proper lifting practices when lifting the bender. The bender weighs over 75 lb (34 kg), and requires more than one person to lift.

Failure to observe these precautions may result in injury.

! CAUTION

Use this product for the manufacturer's intended purpose only. Use other than that which is described in this manual may result in injury or property damage.

**Instructions for Bending:****3/4" – 1" EMT****1/2" – 1-1/4" IMC****1/2" – 1-1/2" Rigid****2" Rigid Aluminum Conduit**

For handle use 5' length of 1-1/4" rigid conduit; retain with set screw.

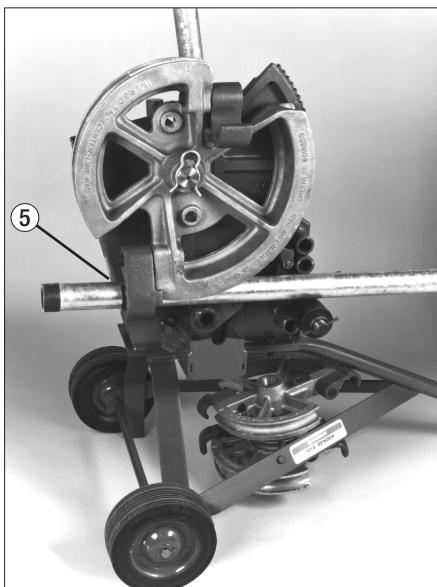
1. Rotate the ratchet segment counterclockwise to LOAD position. The friction button will pop out and retain the segment from rotating in the bend direction.

Note: The ratchet handle must be rotated to the UP position to release the lock and drive pawls from the segment. The segment may require a small amount of clockwise rotation to release the lock pawl.

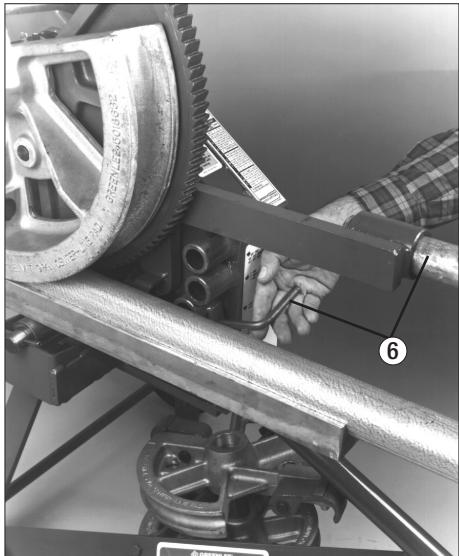
WARNING

Do not leave the ratchet handle in the UP position when the bender is not in use. A handle left in the UP position could fall unexpectedly.

2. Select the correct bending shoe (size and type of conduit is marked on the shoe).
3. Place the bending shoe on the pivot shaft and align the drive pin on the segment with the hole in the shoe. Snap spring clip on pivot shaft.
4. Place the cushion roller on the roller pin and insert into the proper hole, as indicated by the decal on the bender frame.

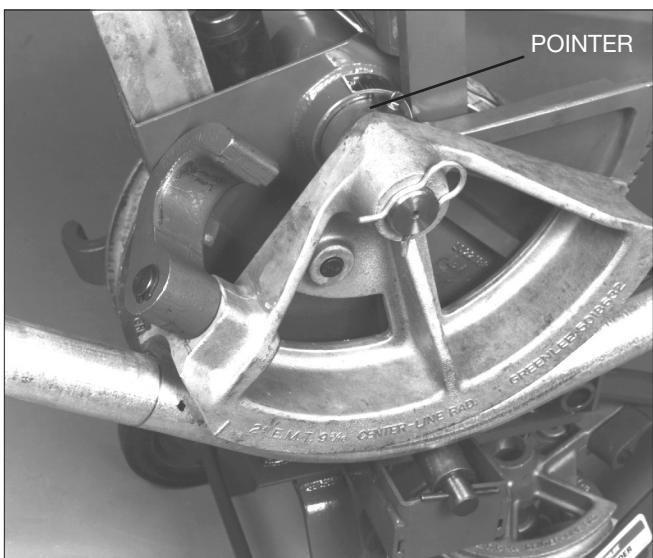
Instructions for Bending (cont'd)


5. Place the conduit in the bender as shown on the shoe and align bending marks with the front edge of the hook.



6. Lower the ratchet handle to the horizontal position, then rotate the bend control handle to the BEND position.

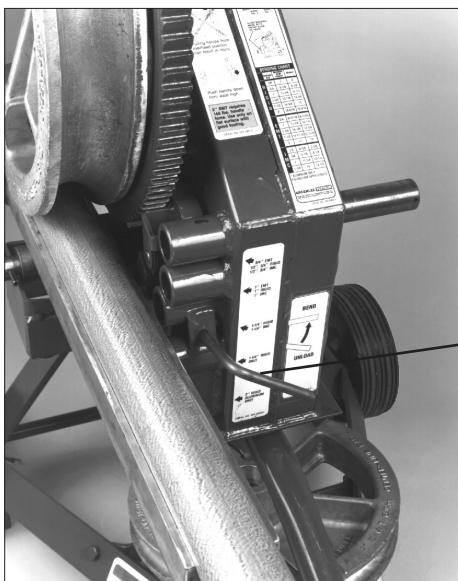
Note: Set the pointer on zero, with the conduit snug against the shoe hook. The indicator does not compensate for spring-back.



7. Ratchet the bending shoe to the desired angle, as shown by the degree angle pointer.

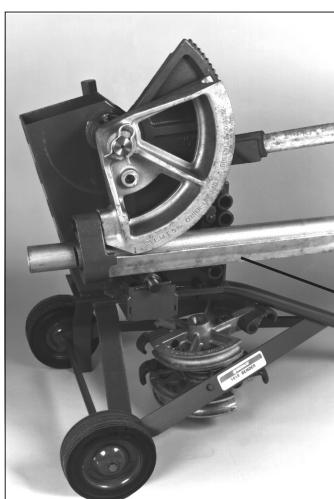
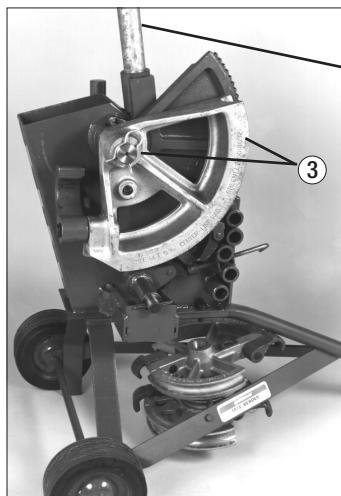
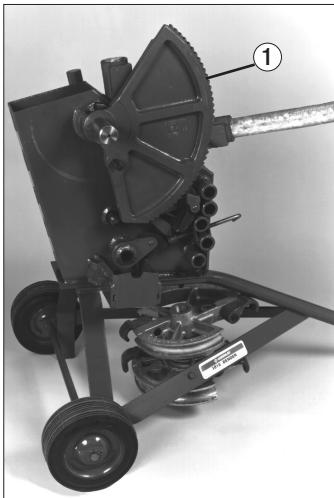
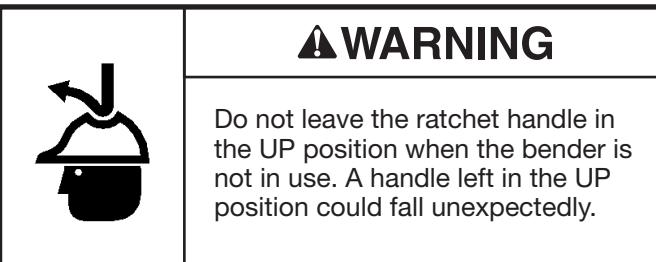


Instructions for Bending (cont'd)



8. Rotate the ratchet handle to the UP position. This will automatically move the bend control handle to the RELEASE position. Then rotate the ratchet handle down to the bending position, and apply bend pressure until the lock pawl releases. A click will be made, then rotate the ratchet handle to the UP position. The shoe and segment may be rotated to remove the bent conduit.

Bend control handle in release position.

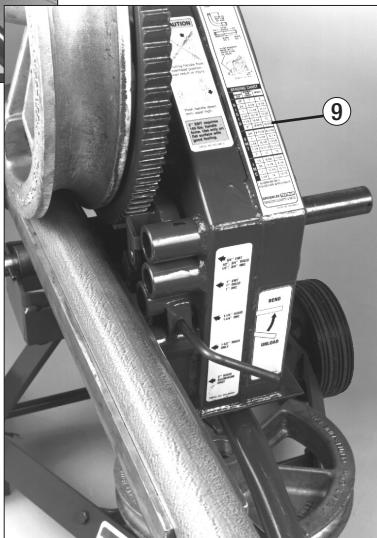
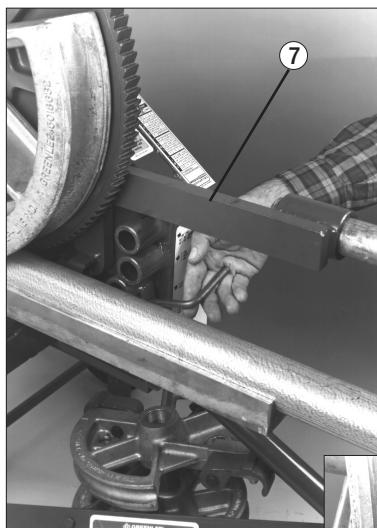
**Instructions for Bending: 1-1/4"- 2" EMT**

1. Rotate the ratchet segment counterclockwise to LOAD position. The friction button will pop out and retain the segment from rotating in the bend direction.

For handle, use 5' length of 1-1/4" rigid conduit; retain with set screw.

Note: The ratchet handle must be rotated to the UP position to release the lock and drive pawls from the segment. The segment may require a small amount of clockwise rotation to release the lock pawl.

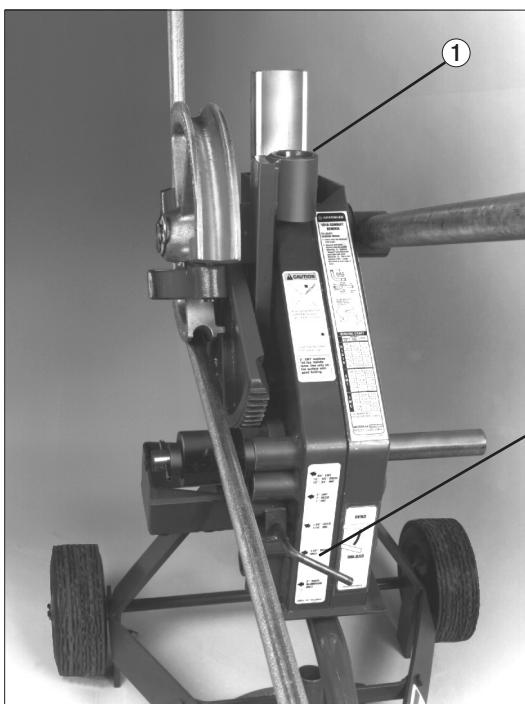
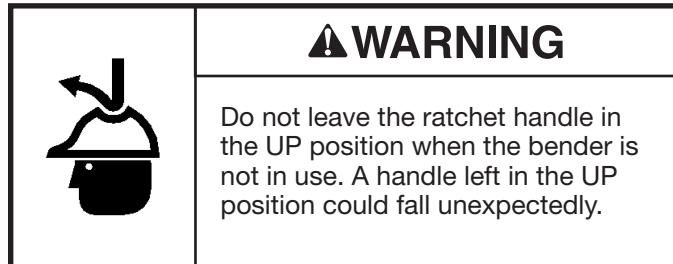
2. Select the correct bending shoe (size and type of conduit is marked on the shoe).
3. Place the bending shoe on the pivot shaft and align the drive pin on the segment with the hole in the shoe. Snap spring clip on pivot shaft.
4. Place steel roller in line with the forward hole and outboard support. Insert the roller pin to retain the roller.
5. Position the follow bar as shown.
6. Place the conduit in the bender as shown, and align bending mark with the front edge of the hook.

Instructions for Bending (cont'd)


7. Lower the ratchet handle to the horizontal position, then rotate the bend control handle to the BEND position.

Note: Set the pointer on zero with the conduit snug against the shoe hook. The indicator does not compensate for spring-back.

8. Ratchet the bend shoe to the desired angle as shown by the degree angle pointer.
9. Rotate the ratchet handle to the UP position. This will automatically move the bend control handle to the RELEASE position. Then rotate the ratchet handle down to the bending position, and apply bend pressure until the lock pawl releases. A click will be made, then rotate the ratchet handle to the UP position. The shoe and segment may be rotated to remove the bent conduit.


Speed Bending on 1/2", 3/4" and 1" Sizes

1. Rotate the ratchet handle to the UP position. Remove the handle after loosening the set screw in the ratchet handle. Place the handle on the post located on the pivot shaft. Pull down the handle until required bend is made.
2. To unload the bender, rotate the handle to the UP position and remove the conduit.

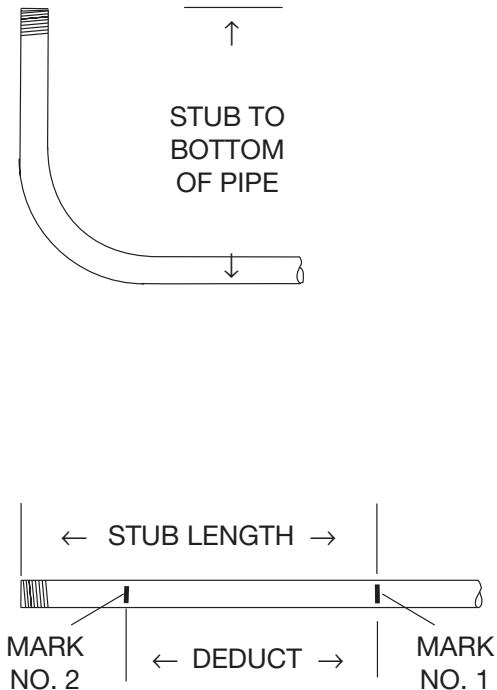
Note: Bend release handle will be in the release position for bending with handle in speed bend location.



Instructions for Bending (cont'd)

To Locate Bending Marks:

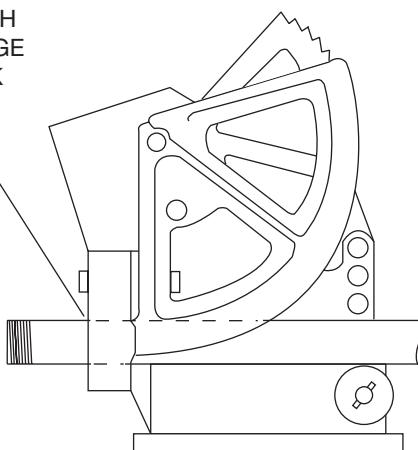
1. Check chart for minimum stub length.
2. Measure and mark desired stub on conduit (Mark No. 1). Subtract "Deduct" from this mark and make new mark (Mark No. 2). This is the bending mark. Locate this mark at front edge of hook.



BENDING CHART			
	Conduit Size	Minimum Stub Length	Deduct
R I G I D	1/2	7	6
	3/4	9-1/8	8-1/8
	1	11-1/4	10-1/4
	1-1/4	13-7/8	12-3/8
	1-1/2	16-3/4	15
	2*	18-5/16	16-5/16
	3/4	9-11/16	8-11/16
	1	11-1/4	10-1/4
	1-1/4	14-1/8	12-5/8
	1-1/2	14-11/16	12-15/16
E M T I M C	2	17	15
	1/2	6-5/8	5-5/8
	3/4	9-1/8	8-1/8
	1	11-1/4	10-1/4
	1-1/4	14	12-1/2

* ALUMINUM ONLY
FIGURES ARE APPROXIMATE

ALIGN BENDING
MARK WITH
FRONT EDGE
OF HOOK



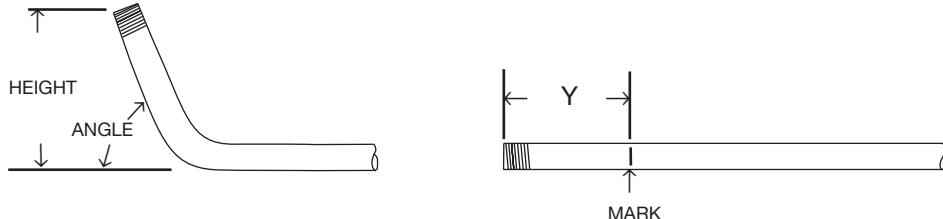


Special Bending Information

Setting Up Your Bends

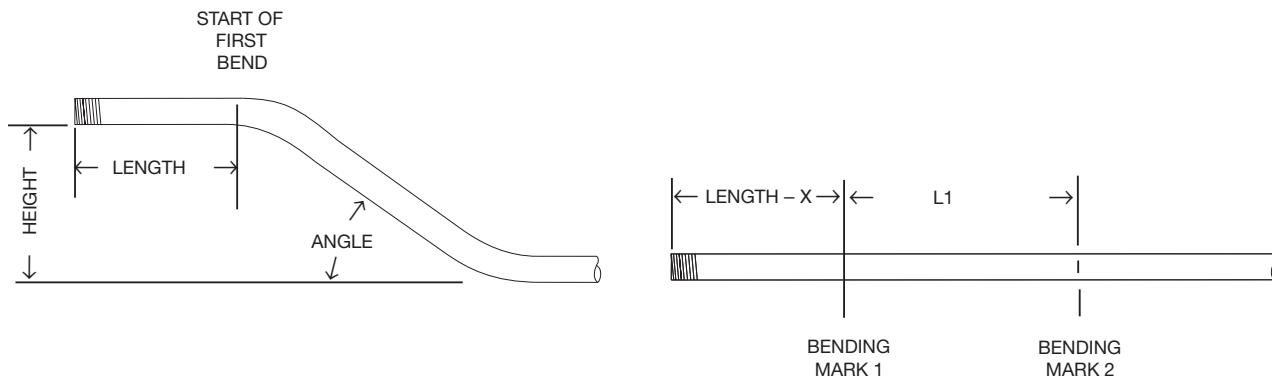
The following describes a means for laying out the starting points for various types of bends. It will give very accurate measurements for heights and bend angles commonly used.

Stubs:



1. Go to the following chart which is for the size and type of conduit you are to bend.
2. Look down to the ANGLE column until you come to the angle you want to bend to.
3. Look at the numbers in the row preceded by Y and pick the one that is directly under the height (H) you want.
4. Place a mark this distance from the end of the conduit.
5. Make your bend after positioning the front edge of the hook on your mark.

Offsets: (Controlling the start of the first bend)

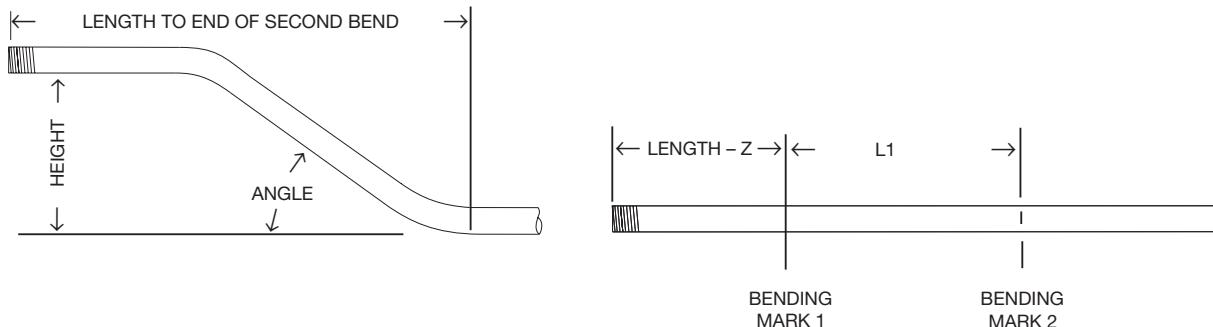


1. Subtract the X dimension for the size of conduit to be bent from the desired length.
2. Place your first mark this distance from the end of the conduit.
3. Go to the following chart which is for the size and type of conduit you are to bend.
4. Look down to the ANGLE column until you come to the angles you want to bend to.
5. Look at the numbers in the row preceded by L1 and pick the one that is directly under the height (H) you want.
6. Place a second mark this distance from your first mark.
7. Make your first bend after placing the front edge of the hook on the first mark and your second bend after placing the front edge of the hook under the second mark.



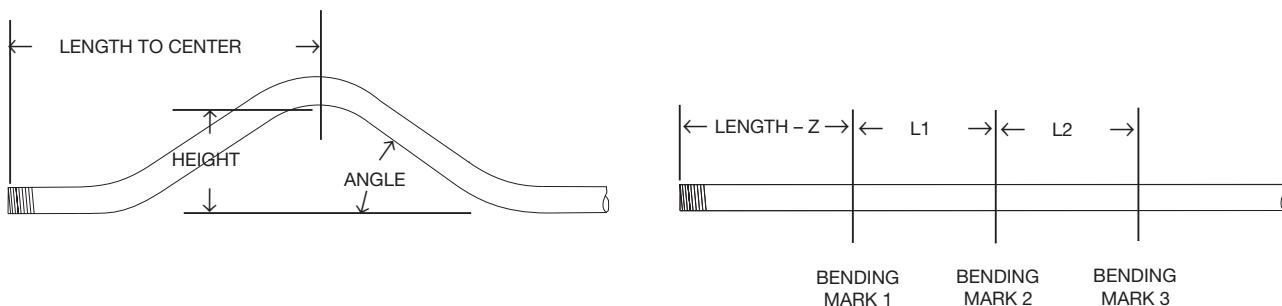
Special Bending Information (cont'd)

Offsets: (Controlling the end of the second bend)



1. Go to the following chart which is for the size and type of conduit you are to bend.
2. Look down the ANGLE column until you come to the angle you want to bend to.
3. Look at the numbers in the row preceded by Z and pick the one that is directly under the height (H) you want.
4. Subtract this Z dimension from the desired length.
5. Place your first mark this distance from the end of the conduit.
6. Look at the numbers in the row preceded by L1 and pick the one that is directly under the height (H) you want.
7. Place a second mark this distance from your first mark.
8. Make your first bend after placing the front edge of the hook on the first mark and your second bend after placing the front edge of the hook on the second mark.

3 Bend Saddles:

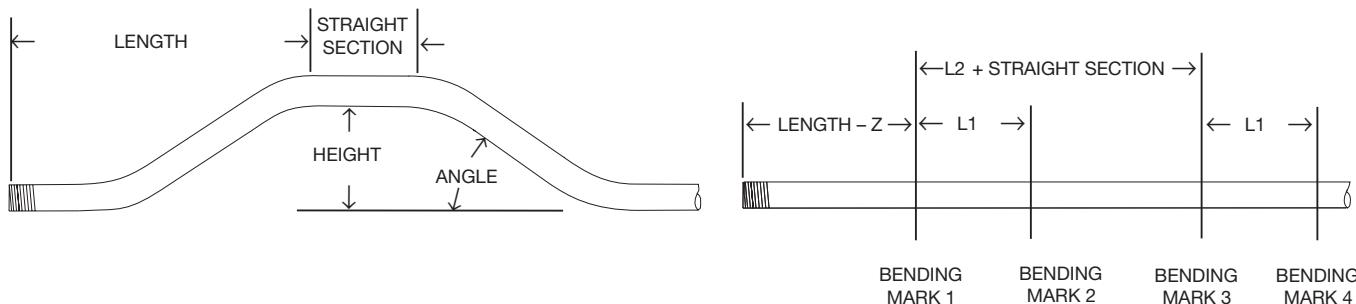


1. Go to the following chart which is for the size and type of conduit you are to bend.
2. Look down the ANGLE column until you come to the angle you want to bend to.
3. Look at the numbers in the row preceded by Z and pick the one that is directly under the height (H) you want.
4. Subtract this Z dimension from the desired length.
5. Place your first mark this distance from the end of the conduit.
6. Look at the numbers in the row preceded by L1 and pick the one that is directly under the height (H) you want.
7. Place a second mark this distance from your first mark.
8. Look at the numbers in the row preceded by L2 and pick the one that is directly under the height (H) you want.
9. Place a third mark this distance from your second mark.
10. Make your first bend after placing the front edge of the hook on the first mark and your second bend after placing the front edge of the hook on the second mark. Remember to make the second bend double the first bend.



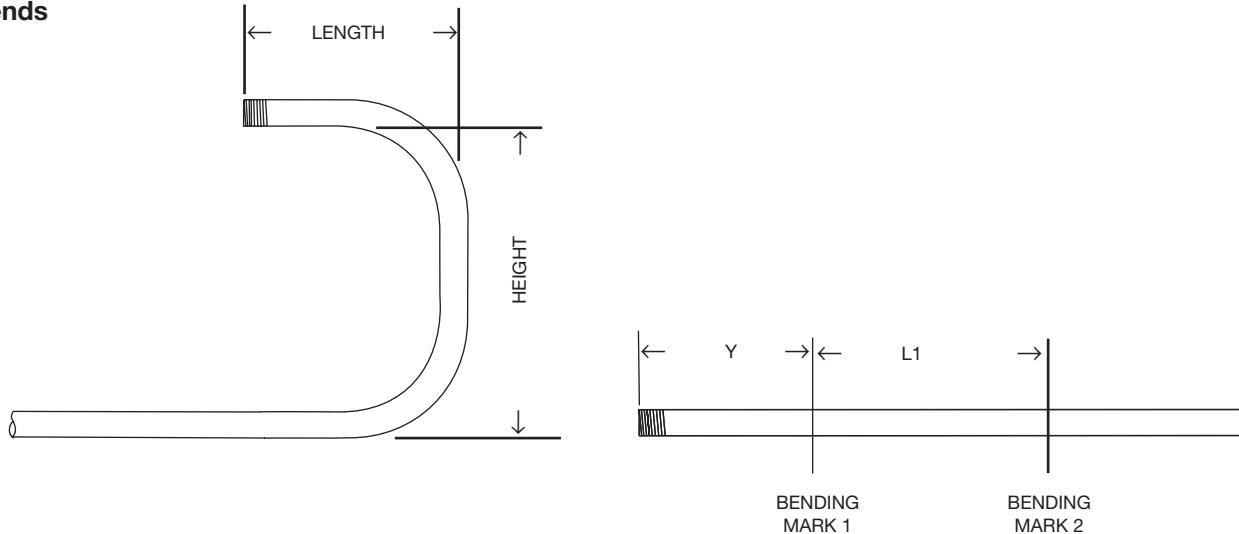
Special Bending Information (cont'd)

4 Bend Saddles with Straight



1. Go to the following chart which is for the size and type of conduit you are to bend.
2. Look down the ANGLE column until you come to the angle you want to bend to.
3. Look at the numbers in the row preceded by Z and pick the one that is directly under the height (H) you want.
4. Subtract this Z dimension from the desired length.
5. Place your first mark this distance from the end of the conduit.
6. Look at the numbers in the row preceded by L1 and pick the one that is directly under the height (H) you want.
7. Place a second mark this distance from your first mark.
8. Look at the numbers in the row preceded by L2 and pick the one that is directly under the height (H) you want.
9. Add this L2 value to the desired length of your straight section.
10. Place a third mark this distance from your first mark.
11. Look up the L1 dimension used above again.
12. Place a fourth mark this distance from your third mark.
13. Make your four bends by placing the front edge of the hook on the respective marks for each bend.

U-Bends



1. Go to the chart for the size and type of conduit you are to bend.
2. Look down the ANGLE column until you come to 90 degrees.
3. Look at the numbers in the row preceded by Y and pick the one that is directly under the length (L) you want the length to be.
4. Place your first mark at this distance from the end of the conduit.
5. Look at the numbers in the row preceded by L1 and pick the one that is directly under the height (H) you want.
6. Place a second mark this distance from your first mark.
7. Make your first bend after placing the front edge of the hook on the first mark and your second bend after placing the front edge of the hook on the second mark.



Special Bending Information Chart

DIM	ANGLE	2"	4"	6"	8"	10"	12"	15"	18"	24"	36"	
3/4 EMT		Dia. = .922		Radius = 5.25		X = 2.98		H = Height				
MINIMUM H= 1.13	Y	15.00	2.28	10.00	17.73	25.46	33.18	40.91	52.50	64.09	87.28	133.64
	L1	15.00	7.72	15.45	23.17	30.90	38.63	46.36	57.95	69.54	92.72	139.09
	L2	15.00	9.09	16.82	24.55	32.28	40.00	47.73	59.32	70.91	94.10	140.46
	Z	15.00	11.83	19.29	26.75	34.22	41.68	49.15	60.34	71.54	93.93	138.72
MINIMUM H= 1.94												
MINIMUM H= 2.90	Y	22.50		5.22	10.45	15.68	20.90	26.13	33.97	41.81	57.49	88.84
	L1	22.50	5.20	10.43	15.65	20.88	26.10	31.33	39.17	47.01	62.69	94.05
	L2	22.50	7.26	12.49	17.71	22.94	28.17	33.39	41.23	49.07	64.75	96.11
	Z	22.50	9.90	14.73	19.55	24.38	29.21	34.04	41.28	48.52	63.01	91.98
MINIMUM H= 5.18												
MINIMUM H= 7.83	Y	45.00			2.68	5.51	8.34	11.16	15.41	19.65	28.13	45.11
	L1	45.00			8.26	11.09	13.92	16.74	20.99	25.23	33.72	50.69
	L2	45.00			12.38	15.21	18.04	20.87	25.11	29.35	37.84	54.81
	Z	45.00			13.33	15.33	17.33	19.33	22.33	25.33	31.33	43.33
MINIMUM H= 13.48												
1 EMT		Dia. = 1.163		Radius = 6.6		X = 3.07		H = Height				
MINIMUM H= 1.24	Y	15.00	1.54	9.27	17.00	24.72	32.45	40.18	51.77	63.36	86.54	132.91
	L1	15.00	7.72	15.44	23.17	30.90	38.63	46.35	57.95	69.54	92.72	139.08
	L2	15.00	9.45	17.17	24.90	32.63	40.35	48.08	59.67	71.26	94.45	140.81
	Z	15.00	12.27	19.74	27.20	34.66	42.13	49.59	60.79	71.98	94.38	139.16
MINIMUM H= 2.18												
MINIMUM H= 3.30	Y	22.50		4.55	9.78	15.00	20.23	25.46	33.29	41.13	56.81	88.17
	L1	22.50		10.42	15.64	20.87	26.10	31.32	39.16	47.00	62.68	94.04
	L2	22.50		13.01	18.24	23.46	28.69	33.92	41.75	49.59	65.27	96.63
	Z	22.50		15.35	20.18	25.01	29.84	34.67	41.91	49.15	63.64	92.61
MINIMUM H= 6.04												
MINIMUM H= 9.26	Y	30.00		2.00	6.00	10.00	14.00	18.00	24.00	30.00	42.00	66.00
	L1	30.00		7.92	11.92	15.92	19.92	23.92	29.92	35.92	47.92	71.92
	L2	30.00		11.37	15.37	19.37	23.37	27.37	33.37	39.37	51.37	75.37
	Z	30.00		13.54	17.00	20.46	23.93	27.39	32.59	37.78	48.18	68.96
MINIMUM H= 16.27												



Special Bending Information Chart (cont'd)

DIM	ANGLE	2"	4"	6"	8"	10"	12"	15"	18"	24"	36"
1-1/4 EMT		Dia. = 1.51		Radius = 8.53		X = 3.34		H = Height			
Y	15.00	0.35	8.07	15.80	23.53	31.26	38.98	50.58	62.17	85.35	131.71
L1	15.00	7.71	15.44	23.17	30.90	38.62	46.35	57.94	69.53	92.72	139.08
L2	15.00	9.95	17.68	25.40	33.13	40.86	48.58	60.18	71.77	94.95	141.31
Z	15.00	13.05	20.51	27.98	35.44	42.91	50.37	61.57	72.76	95.16	139.94
MINIMUM= 1.45											
Y	22.50		3.44	8.67	13.90	19.12	24.35	32.19	40.03	55.71	87.06
L1	22.50		10.41	15.64	20.86	26.09	31.31	39.15	46.99	62.67	94.03
L2	22.50		13.76	18.98	24.21	29.44	34.66	42.50	50.34	66.02	97.38
Z	22.50		16.39	21.22	26.05	30.88	35.70	42.95	50.19	64.67	93.65
MINIMUM= 2.58											
Y	30.00		0.86	4.86	8.86	12.86	16.86	22.86	28.86	40.86	64.86
L1	30.00		7.90	11.90	15.90	19.90	23.90	29.90	35.90	47.90	71.90
L2	30.00		12.36	16.36	20.36	24.36	28.36	34.36	40.36	52.36	76.36
Z	30.00		14.84	18.30	21.77	25.23	28.70	33.89	39.09	49.48	70.27
MINIMUM= 3.96											
Y	45.00			0.54	3.37	6.20	9.03	13.27	17.51	26.00	42.97
L1	45.00				10.95	13.78	16.60	20.85	25.09	33.57	50.54
L2	45.00				17.65	20.47	23.30	27.55	31.79	40.27	57.24
Z	45.00				18.41	20.41	22.41	25.41	28.41	34.41	46.41
MINIMUM= 7.36											
Y	60.00				0.10	2.41	4.72	8.18	11.65	18.58	32.43
L1	60.00					12.94	16.40	19.87	26.80	40.65	
L2	60.00					21.87	25.34	28.80	35.73	49.58	
Z	60.00					20.12	21.85	23.58	27.05	33.97	
MINIMUM= 11.42											
Y	90.00							2.38	5.38	11.38	23.38
L1	90.00								20.34	32.34	
L2	90.00								33.74	45.74	
Z	90.00								20.40	20.40	
MINIMUM= 20.4											
1-1/2 EMT		Dia. = 1.74		Radius = 8.53		X = 3.54		H = Height			
Y	15.00		7.43	15.16	22.89	30.61	38.34	49.93	61.52	84.7	131.07
L1	15.00	7.71	15.44	23.17	30.90	38.62	46.35	57.94	69.53	92.72	139.08
L2	15.00	9.95	17.68	25.40	33.13	40.86	48.58	60.18	71.77	94.95	141.31
Z	15.00	13.25	20.71	28.18	35.64	43.11	50.57	61.77	72.96	95.36	140.14
MINIMUM= 1.50											
Y	22.50		2.94	8.17	13.39	18.62	23.85	31.69	39.53	55.2	86.56
L1	22.50		10.41	15.64	20.86	26.09	31.31	39.15	46.99	62.670	94.03
L2	22.50		13.76	18.98	24.21	29.44	34.66	42.5	50.34	66.02	97.38
Z	22.50		16.59	21.42	26.25	31.08	35.9	43.15	50.39	64.87	93.85
MINIMUM= 2.65											
Y	30.00			4.43	8.43	12.43	16.43	22.43	28.43	40.43	64.43
L1	30.00			11.90	15.90	19.90	23.90	29.90	35.90	47.90	71.90
L2	30.00			16.36	20.36	24.36	28.36	34.36	40.36	52.35	76.36
Z	30.00			18.50	21.97	25.43	28.90	34.09	39.29	49.68	70.47
MINIMUM= 4.06											
Y	45.00			0.18	3.01	5.84	8.67	12.91	17.15	25.64	42.61
L1	45.00				10.95	13.78	16.60	20.85	25.09	33.57	50.54
L2	45.00				17.65	20.47	23.30	27.55	31.79	40.27	57.24
Z	45.00				18.61	20.61	22.61	25.61	28.61	34.61	46.61
MINIMUM= 7.50											
Y	60.00				2.08	4.39	7.85	11.32	18.24	32.10	
L1	60.00					12.94	16.40	19.87	26.80	40.65	
L2	60.00					21.87	25.34	28.80	35.73	49.58	
Z	60.00					20.32	22.05	23.78	27.25	34.17	
MINIMUM= 11.60											
Y	90.00							2.06	5.06	11.06	23.06
L1	90.00								20.34	32.34	
L2	90.00								33.74	45.74	
Z	90.00								20.6	20.60	
MINIMUM= 20.6											



Special Bending Information Chart (cont'd)

DIM	ANGLE	2"	4"	6"	8"	10"	12"	15"	18"	24"	36"
2 EMT		Dia. = 2.2			Radius = 9.46		X = 4.44		H = Height		
MINIMUM H= 1.80	Y	15.00	5.52	13.25	20.97	28.70	36.43	48.02	59.61	82.79	129.16
	L1	15.00	7.71	15.44	23.17	30.90	38.62	46.35	57.94	69.53	92.71
	L2	15.00	10.19	17.92	25.64	33.37	41.10	48.83	60.42	72.01	95.19
	Z	15.00	14.39	21.86	29.32	36.79	44.25	51.72	62.91	74.11	96.50
MINIMUM H= 3.14	Y	22.50	1.26	6.48	11.71	16.94	22.16	30.00	37.84	53.52	84.88
	L1	22.50	10.40	15.63	20.86	26.08	31.31	39.15	46.99	62.67	94.02
	L2	22.50	14.12	19.35	24.57	29.80	35.02	42.86	50.70	66.38	97.74
	Z	22.50	17.86	22.69	27.52	32.35	37.17	44.42	51.66	66.14	95.12
MINIMUM H= 4.75	Y	30.00		2.83	6.83	10.83	14.83	20.83	26.83	38.83	62.83
	L1	30.00		11.88	15.88	19.88	23.88	29.88	35.88	47.88	71.88
	L2	30.00		16.84	20.84	24.84	28.84	34.84	40.84	52.84	76.84
	Z	30.00		19.90	23.37	26.83	30.29	35.49	40.69	51.08	71.86
MINIMUM H= 8.68	Y	45.00			1.40	4.23	7.06	11.30	15.54	24.03	41.00
	L1	45.00				13.74	16.56	20.81	25.05	33.53	50.50
	L2	45.00				21.16	23.99	28.24	32.48	40.96	57.93
	Z	45.00				22.28	24.28	27.28	30.28	36.28	48.28
MINIMUM H= 13.31	Y	60.00				0.38	2.68	6.15	9.61	16.54	30.40
	L1	60.00						16.30	19.77	26.70	40.55
	L2	60.00						26.21	29.67	36.60	50.46
	Z	60.00						24.02	25.76	29.22	36.15
MINIMUM H= 23.36	Y	90.00							3.00	9.00	21.00
	L1	90.00								19.94	31.94
	L2	90.00								34.80	46.80
	Z	90.00								23.36	23.36
1/2 IMC/RIGID		Dia. = .84			Radius = 2.74		X = 2.84		H = Height		
MINIMUM H= 9.22	Y	15.00	2.90	10.63	18.36	26.09	33.81	41.54	53.13	64.72	87.91
	L1	15.00	7.72	15.45	23.18	30.91	38.63	46.36	57.95	69.54	92.72
	L2	15.00	8.44	16.17	23.90	31.62	39.35	47.08	58.67	70.26	93.44
	Z	15.00	11.03	18.49	25.95	33.42	40.88	48.35	59.54	70.74	93.13
MINIMUM H= 1.50	Y	22.50	0.74	5.97	11.20	16.42	21.65	26.87	34.71	42.55	58.23
	L1	22.50	5.21	10.44	15.66	20.89	26.12	31.34	39.18	47.02	62.70
	L2	22.50	6.29	11.51	16.74	21.97	27.19	32.42	40.26	48.10	63.78
	Z	22.50	8.76	13.59	18.42	23.24	28.07	32.90	40.14	47.39	61.87
MINIMUM H = 2.15	Y	30.00		3.59	7.59	11.59	15.59	19.59	25.59	31.59	43.59
	L1	30.00		7.97	11.97	15.97	19.97	23.97	29.97	35.97	47.97
	L2	30.00		9.40	13.40	17.40	21.40	25.40	31.40	37.40	49.40
	Z	30.00		11.24	14.70	18.16	21.63	25.09	30.29	35.49	45.88
MINIMUM H= 3.61	Y	45.00		1.09	3.92	6.74	9.57	12.40	16.64	20.89	29.37
	L1	45.00		5.54	8.37	11.20	14.02	16.85	21.10	25.34	33.82
	L2	45.00		7.69	10.52	13.35	16.18	19.00	23.25	27.49	35.98
	Z	45.00		9.11	11.11	13.11	15.11	17.11	20.11	23.11	29.11
MINIMUM H= 5.20	Y	60.00			2.02	4.33	6.64	8.95	12.41	15.88	22.81
	L1	60.00			6.63	8.94	11.25	13.56	17.03	20.49	27.42
	L2	60.00			9.50	11.81	14.12	16.43	19.90	23.36	30.29
	Z	60.00			9.47	10.62	11.78	12.93	14.66	16.40	19.86
MINIMUM H= 8.32	Y	90.00				2.00	4.00	6.00	9.00	12.00	18.00
	L1	90.00					8.82	10.82	13.82	16.82	22.82
	L2	90.00					13.13	15.13	18.13	21.13	27.13
	Z	90.00					8.32	8.32	8.32	8.32	8.32



Special Bending Information Chart (cont'd)

DIM	ANGLE	2"	4"	6"	8"	10"	12"	15"	18"	24"	36"
3/4 IMC/RIGID											
		Dia. = 1.05		Radius = 4.76		X = 2.84		H = Height			
	Y	15.00	2.23	9.96	17.69	25.41	33.14	40.87	52.46	64.05	87.23
	L1	15.00	7.72	15.45	23.18	30.90	38.63	46.36	57.95	69.54	92.72
	L2	15.00	8.97	16.69	24.42	32.15	39.88	47.60	59.19	70.79	93.97
	Z	15.00	11.56	19.02	26.49	33.95	41.41	48.88	60.07	71.27	93.66
MINIMUM H= 1.06											
	Y	22.50	0.07	5.29	10.52	15.75	20.97	26.20	34.04	41.88	57.56
	L1	22.50	5.20	10.43	15.65	20.88	26.11	31.33	39.17	47.01	62.69
	L2	22.50	7.07	12.30	17.52	22.75	27.98	33.20	41.04	48.88	64.56
	Z	22.50	9.56	14.39	19.22	24.05	28.88	33.70	40.95	48.19	62.67
MINIMUM H= 1.81											
	Y	30.00		2.83	6.83	10.83	14.83	18.83	24.83	30.83	42.83
	L1	30.00		7.94	11.94	15.94	19.94	23.94	29.94	35.94	47.94
	L2	30.00		10.43	14.43	18.43	22.43	26.43	32.43	38.43	50.43
	Z	30.00		12.32	15.78	19.25	22.71	26.18	31.37	36.57	46.96
MINIMUM H= 2.70											
	Y	45.00		0.10	2.93	5.76	8.59	11.42	15.66	19.90	28.39
	L1	45.00			8.28	11.11	13.94	16.77	21.01	25.25	33.74
	L2	45.00			12.02	14.85	17.68	20.50	24.75	28.99	37.47
	Z	45.00			12.78	14.78	16.78	18.78	21.78	24.78	30.78
MINIMUM H= 4.80											
	Y	60.00			0.73	3.04	5.35	7.66	11.13	14.59	21.52
	L1	60.00				8.73	11.04	13.34	16.81	20.27	27.20
	L2	60.00				13.71	16.02	18.33	21.79	25.26	32.19
	Z	60.00				12.96	14.11	15.26	17.00	18.73	22.19
MINIMUM H= 7.22											
	Y	90.00					1.38	3.88	6.88	9.88	15.88
	L1	90.00							12.96	15.96	27.88
	L2	90.00							20.43	23.43	33.96
	Z	90.00								12.36	12.36
MINIMUM H= 12.36											
1 IMC/RIGID											
		Dia. = 1.315		Radius = 6.05		X = 3.54		H = Height			
	Y	15.00	0.85	8.58	16.31	24.03	31.76	39.49	51.08	62.67	85.85
	L1	15.00	7.72	15.45	23.17	30.90	38.63	46.36	57.95	69.54	92.72
	L2	15.00	9.30	17.03	24.76	32.48	40.21	47.94	59.53	71.12	94.30
	Z	15.00	12.60	20.06	27.53	34.99	42.45	49.92	61.11	72.31	94.70
MINIMUM H= 1.33											
	Y	22.50		3.99	9.22	14.44	19.67	24.90	32.74	40.57	56.25
	L1	22.50		10.42	15.65	20.87	26.10	31.33	39.17	47.01	62.68
	L2	22.50		12.80	18.02	23.25	28.48	33.70	41.54	49.38	65.06
	Z	22.50		15.60	20.43	25.26	30.09	34.92	42.16	49.40	63.89
MINIMUM H= 2.28											
	Y	30.00		1.52	5.52	9.52	13.52	17.52	23.52	29.52	41.52
	L1	30.00		7.93	11.93	15.93	19.93	23.93	29.93	35.93	47.93
	L2	30.00		11.09	15.09	19.09	23.09	27.09	33.09	39.09	51.09
	Z	30.00		13.71	17.17	20.64	24.10	27.57	32.76	37.96	48.35
MINIMUM H= 3.39											
	Y	45.00			1.51	4.34	7.17	9.99	14.24	18.48	26.97
	L1	45.00				11.05	13.88	16.71	20.95	25.20	33.68
	L2	45.00				15.81	18.63	21.46	25.70	29.95	38.43
	Z	45.00				16.55	18.55	20.55	23.55	26.55	44.55
MINIMUM H= 6.05											
	Y	60.00			1.45	3.75	6.06	9.53	12.99	19.92	33.78
	L1	60.00				10.90	13.21	16.67	20.13	27.06	40.92
	L2	60.00				17.23	19.54	23.01	26.47	33.40	47.25
	Z	60.00				16.30	17.45	19.19	20.92	24.38	31.31
MINIMUM H= 9.12											
	Y	90.00				1.75	4.75	7.75	13.75	25.75	
	L1	90.00						15.40	21.40	33.40	
	L2	90.00						24.91	30.91	42.91	
	Z	90.00						15.64	15.64	15.64	
MINIMUM H= 15.64											



Special Bending Information Chart (cont'd)

DIM	ANGLE	2"	4"	6"	8"	10"	12"	15"	18"	24"	36"
1-1/4 IMC/RIGID		Dia. = 1.66			Radius = 7.6		X = 3.95		H = Height		
MINIMUM H= 1.54	Y	15.00		7.30	15.02	22.75	30.48	38.21	49.80	61.39	84.57
	L1	15.00	7.72	15.44	23.17	30.90	38.63	46.35	57.94	69.54	92.72
	L2	15.00	9.71	17.43	25.16	32.89	40.62	48.34	59.93	71.52	94.71
	Z	15.00	13.42	20.88	28.34	35.81	43.27	50.74	61.93	73.13	95.52
MINIMUM H= 2.67		Y	22.50		2.82	8.05	13.27	18.50	23.73	31.57	39.41
		L1	22.50		10.41	15.64	20.87	26.09	31.32	39.16	47.00
		L2	22.50		13.40	18.62	23.85	29.08	34.30	42.14	49.98
		Z	22.50		16.63	21.46	26.29	31.12	35.94	43.19	50.43
MINIMUM H= 4.01		Y	30.00		0.35	4.35	8.35	12.35	16.35	22.35	28.35
		L1	30.00			11.91	15.91	19.91	23.91	29.91	35.91
		L2	30.00			15.89	19.89	23.89	27.89	33.89	39.89
		Z	30.00			18.42	21.88	25.34	28.81	34.00	39.20
MINIMUM H= 7.25		Y	45.00			0.21	3.04	5.87	8.70	12.94	17.18
		L1	45.00				10.99	13.82	16.64	20.89	25.13
		L2	45.00				16.96	19.78	22.61	26.86	31.10
		Z	45.00				18.25	20.25	22.25	25.25	28.25
MINIMUM H= 11.02		Y	60.00				2.25	4.56	8.02	11.49	18.42
		L1	60.00					13.04	16.50	19.97	26.90
		L2	60.00					21.00	24.46	27.93	34.85
		Z	60.00					19.65	21.39	23.12	26.58
MINIMUM H= 19.15		Y	90.00						2.62	5.62	11.62
		L1	90.00								20.74
		L2	90.00								32.68
		Z	90.00								19.15
1-1/2 IMC/RIGID		Dia. = 1.9			Radius = 9.27		X = 4.78		H = Height		
MINIMUM H= 1.87	Y	15.00		5.78	13.51	21.24	28.97	36.69	48.28	59.88	83.06
	L1	15.00	7.71	15.44	23.17	30.9	38.62	46.35	57.94	69.53	92.71
	L2	15.00	10.14	17.87	25.60	33.32	41.05	48.78	60.37	71.96	95.14
	Z	15.00	14.68	22.15	29.61	37.08	44.54	52.01	63.20	74.40	96.79
MINIMUM H= 3.2		Y	22.50		1.35	6.57	11.80	17.02	22.25	30.09	37.93
		L1	22.50		10.40	15.63	20.86	26.08	31.31	39.15	46.99
		L2	22.50		14.05	19.27	24.50	29.72	34.95	42.79	50.63
		Z	22.50		18.12	22.95	27.78	32.61	37.44	44.68	51.92
MINIMUM H= 4.87		Y	30.00			2.84	6.84	10.84	14.84	20.84	26.84
		L1	30.00			11.89	15.89	19.89	23.89	29.89	35.89
		L2	30.00			16.74	20.74	24.74	28.74	34.74	40.74
		Z	30.00			20.14	23.60	27.07	30.53	35.73	40.92
MINIMUM H= 8.81		Y	45.00			1.35	4.18	7.01	11.25	15.49	23.98
		L1	45.00				13.74	16.57	20.81	25.06	33.54
		L2	45.00				21.02	23.85	28.09	32.34	40.82
		Z	45.00				22.46	24.46	27.46	30.46	36.46
MINIMUM H= 13.41		Y	60.00				0.32	2.63	6.09	9.56	16.48
		L1	60.00						16.32	19.79	26.72
		L2	60.00						26.03	29.50	36.42
		Z	60.00						24.14	25.88	29.34
MINIMUM H= 23.32		Y	90.00						3.00	9.00	21.00
		L1	90.00							20.02	32.02
		L2	90.00							34.58	46.58
		Z	90.00							23.32	23.32

Special Bending Information Chart (cont'd)

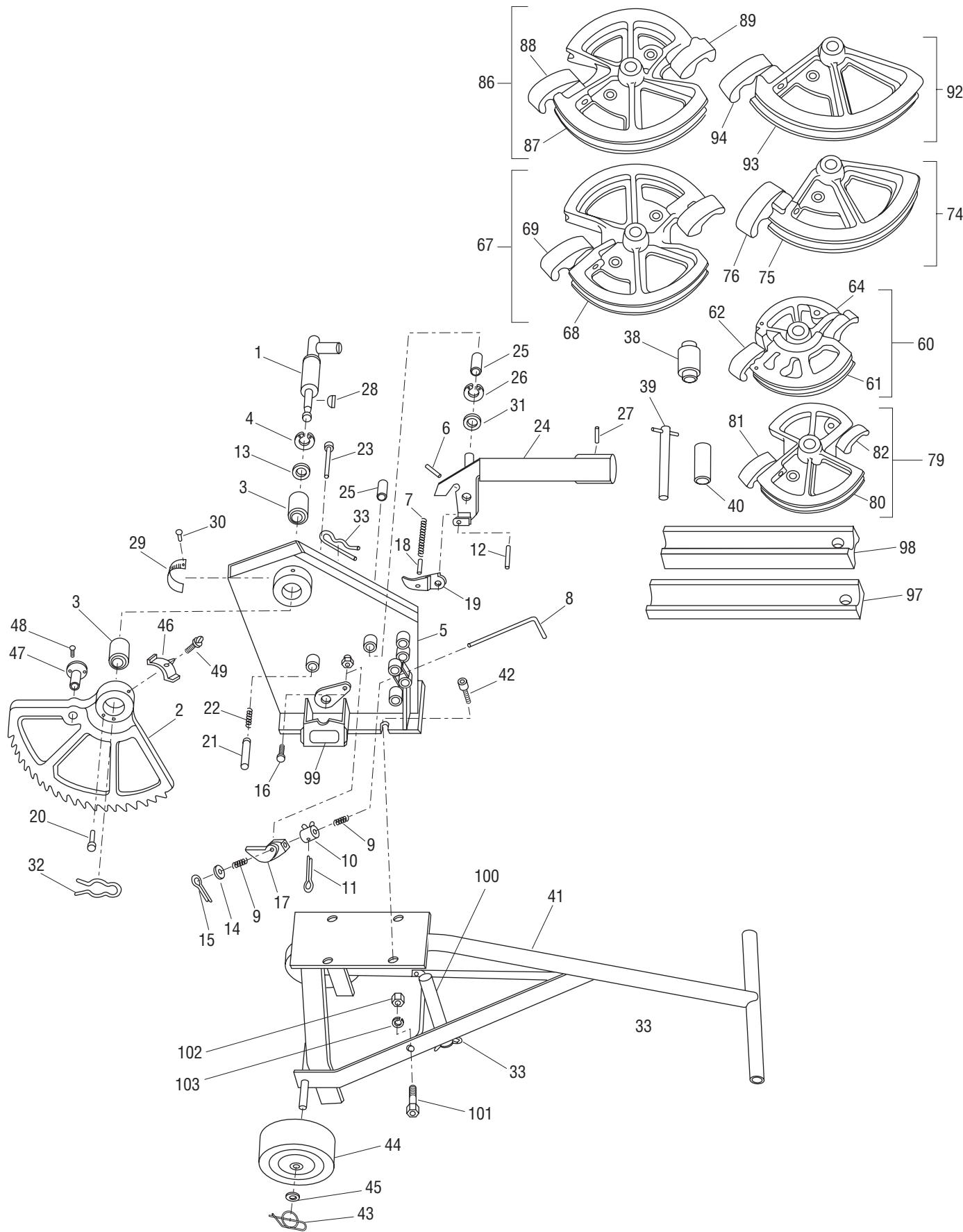
DIM	ANGLE	2"	4"	6"	8"	10"	12"	15"	18"	24"	36"
2 IMC/RIGID		Dia. = 2.375		Radius = 10.78	X = 4.35		H = Height				
Y	15.00		5.10	12.82	20.55	28.28	36.01	47.60	59.19	82.37	128.74
L1	15.00	7.71	15.44	23.17	30.89	38.62	46.35	57.94	69.53	92.71	139.08
L2	15.00	10.53	18.26	25.99	33.72	41.44	49.17	60.76	72.35	95.53	141.9
Z	15.00	14.65	22.12	29.58	37.04	44.51	51.97	63.17	74.37	96.76	141.54
MINIMUM H= 1.86											
Y	22.50		0.86	6.08	11.31	16.53	21.76	29.60	37.44	53.12	84.48
L1	22.50		10.40	15.62	20.85	26.08	31.30	39.14	46.98	62.66	94.02
L2	22.50		14.63	19.86	25.08	30.31	35.54	43.37	51.21	66.89	98.25
Z	22.50		18.30	23.12	27.95	32.78	37.61	44.85	52.09	66.58	95.55
MINIMUM H= 3.31											
Y	30.00			2.39	6.39	10.39	14.39	20.39	26.39	38.39	62.39
L1	30.00			11.87	15.87	19.87	23.87	29.87	35.87	47.87	71.87
L2	30.00			17.51	21.51	25.51	29.51	35.51	41.51	53.51	77.51
Z	30.00			20.52	23.98	27.45	30.91	36.11	41.30	51.70	72.48
MINIMUM H= 5.06											
Y	45.00				0.82	3.65	6.48	10.72	14.96	23.45	40.42
L1	45.00					13.68	16.51	20.75	24.99	33.48	50.45
L2	45.00					22.14	24.97	29.22	33.46	41.94	58.91
Z	45.00					23.28	25.28	28.28	31.28	37.28	49.28
MINIMUM H= 9.39											
Y	60.00						1.91	5.38	8.84	15.77	29.62
L1	60.00							16.16	19.63	26.55	40.41
L2	60.00							27.45	30.91	37.84	51.70
Z	60.00							25.46	27.19	30.65	37.58
MINIMUM H= 14.55											
Y	90.00								1.68	7.68	19.68
L1	90.00										31.37
L2	90.00										48.31
Z	90.00										25.91
MINIMUM H= 25.91											



GREENLEE®

1818 Mechanical Bender

1818 Mechanical Bender - Exploded View



**1818 Mechanical Bender - Parts List**

(Benders with Serial No. YY-0000GK and Up)

Mechanical Bender with attachments for bending 1/2" thru 1-1/2" rigid steel and aluminum conduit, 2" aluminum conduit, 3/4" thru 2" thin wall (EMT) conduit, and 1/2" thru 1-1/4" IMC (includes # 1 thru 84).

When ordering parts, give serial number of unit.

Key	Part No.	Description	Qty	Key	Part No.	Description	Qty
1	50361988	Shaft weldment shoe	1	38	50186817	Roller unit.....	1
2	50360949	Segment (includes #46 - 49).....	1	39	50366971	Pin unit - roller.....	1
3	90540131	Bearing, Garlock #40DU40.....	2	40	50362968	Roller - follow bar.....	1
4	90540239	Ring, retaining	1	41	50084291	Carriage unit (includes #43 - 45)	1
5	50361643	Frame weldment	1	42	90541308	Screw, cap 1/2-13 x .75 socket head	4
6	90539133	Pin, roll .187 x 1.62.....	1	43	90552989	Ring, rue, 3/4 reg.....	2
7	90540140	Spring, drive pawl.....	1	44	52022892	Wheel – no flat	2
8	50360680	Handle, lock.....	1		90515099	Wheel, 8" O.D. (benders with Serial No. preceding YY 8000).....	2
9	90540158	Spring, handle	2	45	90517407	Washer	2
10	50360809	Dog, unload lock B.....	1	46	50362011	Pointer, adjustable	1
11	90553080	Pin, cotter 3/32 x 1.25	1	47	50360914	Pin, drive.....	1
12	90540212	Pin, dowel .500 x 2.00	1	48	90540735	Screw, machine	2
13	50362054	Washer, thrust 2.50 x 3.25 x .050.....	1	49	90515021	Screw, thumb	1
14	90540336	Washer, flat .390 x .625 x .062	1	50	50369083	Decal, stub-up	1
15	90508521	Pin, cotter .093 x .750	1	51	90515587	Nut, 3/8-16 hex.....	1
16	50369849	Screw, shoulder .50 x 2.50	1	52	50363050	ID decal.....	2
17	50360760	Pawl, lock C	1	60	50188275	Shoe unit, 1/2, 3/4 and 1" rigid (includes #61 – 66).....	1
18	50360868	Pin, spring.....	1	61	50186655	Shoe, 1/2, 3/4, and 1" rigid.....	1
19	50360787	Pawl, drive C.....	1	62	50188097	Hook, 1" rigid.....	1
20	90502264	Screw, cap 5/16-18 UNC socket.....	1	63	50188364	Pin, 1" rigid hook (not shown).....	1
21	50360906	Pin, friction	1	64	50188151	Hook, 3/4" rigid	1
22	90540166	Spring, friction pin.....	1	65	90515277	Ring, retaining (not shown).....	4
23	90515951	Screw, cap 1/4-20 UNC hex head.....	1	66	50188356	Pin, 3/4" rigid hook (not shown).....	1
24	50361651	Arm weldment, ratchet.....	1	67	50188283	Shoe unit, 1-1/4" and 1-1/2" rigid (includes #68 – 73).....	1
25	90540204	Bearing, Garlock #16DU16.....	2	68	50186590	Shoe, 1-1/4" and 1-1/2" rigid.....	1
26	90513010	Ring, retaining	1	69	50188119	Hook, 1-1/2" rigid.....	1
27	90517474	Screw, set 3/8-24 x .250 UNF.....	1	70	50188380	Pin, 1-1/2" rigid hook (not shown)	1
28	90515900	Key, #15 Woodruff.....	1	71	50188135	Hook, 1-1/4" rigid.....	4
29	50362046	Dial indicator	1	72	90515285	Ring, retaining (not shown).....	1
30	90506707	Drive screw, #2 .08 x .25	2	73	50188372	Pin, 1-1/4" rigid hook (not shown)	1
31	90540301	Washer, thrust 1.00 x 1.56 x .050.....	1	74	50188291	Shoe unit, 2" rigid aluminum conduit.....	1
32	50187724	Clip, retaining	2			(includes #75 - 78, optional)	
33	90503023	Clip, #8 hitch pin.....	2	75	50186558	Shoe, 2" rigid aluminum conduit (optional).....	1
34	50369490	Decal, caution handle	1	76	50188070	Hook, 2" rigid (optional).....	1
35	50339630	Decal, instruction.....	1	77	50188380	Pin, 2" rigid hook (not shown - optional).....	4

(parts continued on next page)



1818 Mechanical Bender - Parts List (cont'd)

Key	Part No.	Description	Qty
78	90515285	Ring, retaining (not shown - optional)	1
79	50188305	Shoe unit, 3/4 and 1" EMT (includes #80 – 85)	1
80	50186485	Shoe, 3/4 and 1" EMT.....	1
81	50188240	Hook, 1" EMT.....	1
82	50188267	Hook, 3/4" EMT.....	1
83	50188402	Pin, 1" EMT hook (not shown)	1
84	50188399	Pin, 3/4" EMT hook (not shown)	1
85	90515277	Ring, retaining (not shown).....	4
86	50188313	Shoe unit, 1-1/4 and 1-1/2" EMT (includes #87 – 91).....	1
87	50186396	Shoe, 1-1/4 and 1-1/2" EMT.....	1
88	50188208	Hook, 1-1/2" EMT	1
89	50188224	Hook, 1-1/4" EMT	1
90	50188410	Pin, 1-1/4 and 1-1/2" EMT hook (not shown).....	2
91	90515293	Ring, retaining (not shown).....	4
92	50188321	Shoe unit, 2" EMT (includes #93 – 96)	1
93	50186329	Shoe, 2" EMT	1
94	50188186	Hook, 2" EMT.....	1
95	50188429	Pin, 2" EMT hook (not shown)	1
96	90515293	Ring, retaining (not shown).....	4
97	50186361	Bar, 2" EMT follow	1
98	50186426	Bar, 1-1/4 and 1-1/2" EMT follow.....	1
99	50018710	Decal	1
100	50362100	Shoe storage	1
101	90540190	Bolt, hex.....	2
102	90506464	Nut, hex	2
103	90505069	Lock washer	2



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