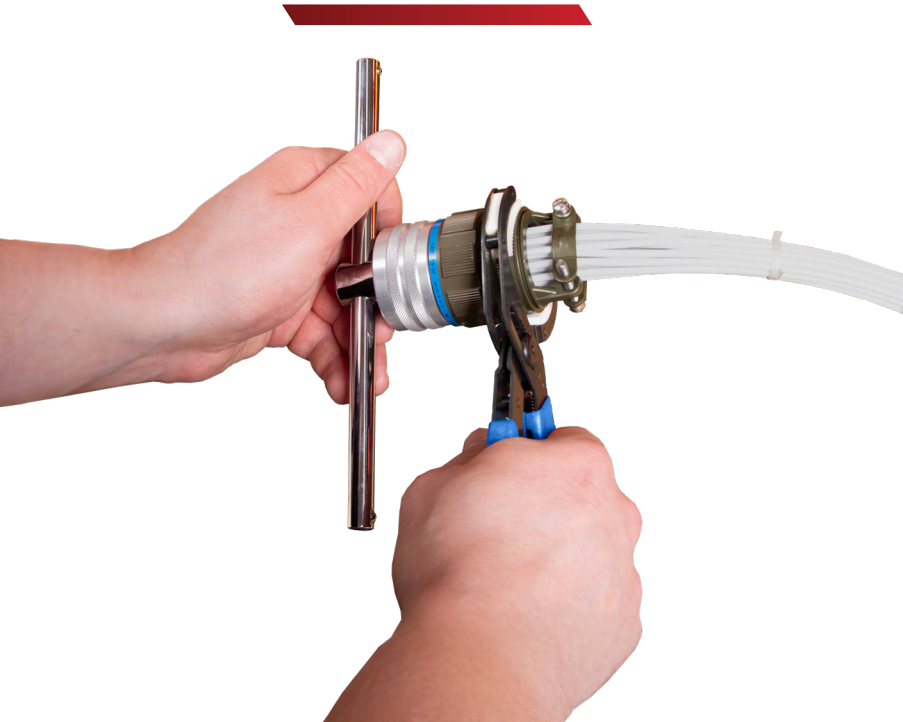


# CONNECTOR ASSEMBLY TOOLING

## Instruction Manual



**DMC** **DANIELS** <sup>®</sup>  
**MANUFACTURING**  
**CORPORATION**

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## GENERAL INFORMATION

This data sheet provides technical information for a series of backshell accessory tools designed for precision, stability, and increased user control during connector assembly applications. Each tool features unique capabilities for holding, gripping, or tightening connectors and backshell components. The tools covered in this document are suitable for use in high-reliability environments where secure and consistent connector handling and backshell assembly are essential.

The information in this data sheet pertains to the BT-SJ-468, BT-SJ-509A, BT-SJ-509R, CW100 series, DRP series, DRPM series, and JR700 tools.

<b>Application</b>	Connector Assembly and Backshell Components
<b>Power Supply</b>	Manual



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## TOOL SPECS



### BT-SJ-468

 Connector Diameter  
0.75" to 2.50"

Length	9.4"
Width	0.5"
Height	2.3"
Weight	0.5 lb



### BT-SJ-509

 Connector Diameter  
0.60" to 1.70"

Length	7.7"
Width	0.7"
Height	3.7"
Weight	0.3 lb




### CW100

 Connector Diameter  
0.42" to 1.55"

Length	6.9" - 7.5"
Width	1.2" - 1.6"
Height	2.8"
Weight	0.6 - 0.7 lb



### DRP

 Connector Diameter  
0.50" to 1.92"

Length	7.3" - 8.5"
Width	0.4"
Height	1.5" - 3"
Weight	0.3 - 0.4 lb



### DRPM

 Connector Diameter  
0.25" to 0.53"

Length	7.3"
Width	0.5"
Height	1.6"
Weight	0.3 lb



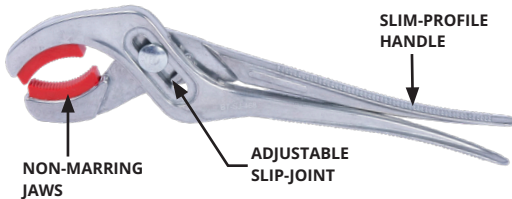
### JR700

 Connector Diameter  
0.75" to 3.25"

Length	11.1"
Width	1.3"
Height	1.7"
Weight	2 lb

## BT-SJ-468 SOFT JAW PLIERS

DMC's BT-SJ-468 soft jaw pliers provide a secure, damage-free grip on circular connectors via a manually adjustable slip-joint handle design. The non-marring jaws accommodate connectors with a 0.75" to 2.50" diameter. These pliers are ideal for tightening circular connectors or used as a holding tool during backshell assembly.



### OPERATING INSTRUCTIONS

1. Slide the slip-joint handle to adjust the jaw size. (Fig. 1)
2. Securely place the connector backshell between the two jaw inserts. (Fig. 2)
3. Squeeze the handles to tightly grip the connector. (Fig. 3)
4. Rotate to tighten/loosen as needed.



### REPLACING INSERTS

1. Use pliers to grab onto the insert.
2. Pull the jaw insert out.
3. Push the replacement jaw insert into the opening until it is fully seated.



**NOTE:** Replacement soft jaw inserts (BT-SJ-468-1) are sold individually. Two pieces are required per tool.

## BT-SJ-509A & -509R MINIATURE SOFT JAW PLIERS

DMC's miniature soft jaw pliers provide easy access to tight spaces for both holding and tightening applications. The handles automatically adapt to different connector sizes, eliminating manual adjustments between operations. Non-marring jaws are offered in either a traditional straight head (BT-SJ-509R) or a 30° angled head (BT-SJ-509A) for added clearance and improved comfort during use.



### OPERATING INSTRUCTIONS

1. Align the pliers to the connector backshell component.
2. Firmly grip the backshell component using the pliers.
3. Rotate to tighten/loosen as needed.

### REPLACING INSERTS

1. While wearing eye protection, use a heat gun to apply hot air to the rear of the jaw insert. (Fig. 1)
2. Remove the jaw inserts using sharp pliers.
3. Apply a small amount of fuel-resistant adhesive on the new insert. (Fig. 2)
4. Push the replacement insert, adhesive side first, into the opening until it is fully seated. (Fig. 3)



**NOTE:** Replacement soft jaw inserts (BT-SJ-509A-1) are sold individually. Two pieces are required per tool.

## CW100 CONNECTOR WRENCH

CW100 connector wrenches provide added stabilization to your connector assembly process. The smaller ring secures the plug portion of the connector while the larger ring holds the mating receptacle. This dual-ring design allows a single tool to securely hold both plug and receptacle configurations reducing tool changes and increasing versatility.

### OPERATING INSTRUCTIONS

1. Use your connector diameter to choose the correct CW100-type tool.
2. Measure the connector diameter to determine whether ring A or B should be used. (Fig. 1)
3. Open the handles and nest the connector within the jaws. (Fig. 2)
4. Close the handles to grip the connector. (Fig. 3)

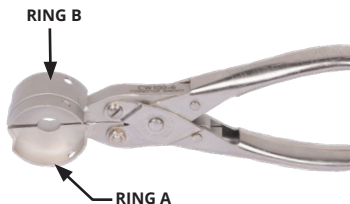


Fig. 1



Fig. 2

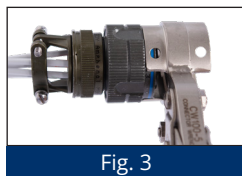


Fig. 3



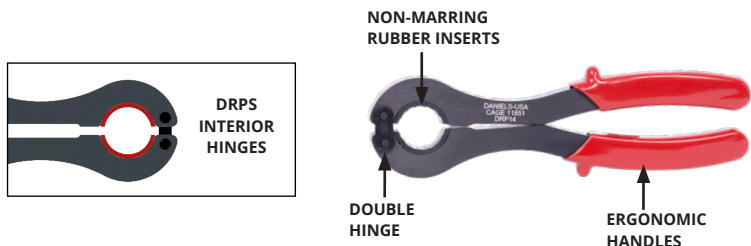
DO NOT use CW100 pliers for torquing or twisting applications.

## CW100 CONNECTOR DIAMETERS

Small Diameter "A" Inch (mm)	Large Diameter "B" Inch (mm)	DMC Pliers Part Number
0.415" (10.54mm)	0.605" (15.37mm)	CW100-1
0.53" (13.46mm)	0.69" (17.53mm)	CW100-2
0.8" (20.32mm)	0.93" (23.62mm)	CW100-3
1.022" (25.96mm)	1.172" (29.77mm)	CW100-4
1.28" (32.51mm)	1.388" (35.26mm)	CW100-5
1.53" (38.86 mm)	1.551" (39.4mm)	CW100-6

## DRP STANDARD CIRCULAR RING PLIERS

DRP circular ring pliers deliver a secure, easily accessible grip on circular connectors via a double hinge design that opens beyond 180 degrees. Their circular jaws evenly distribute pressure and feature replaceable, non-marring inserts that protect backshell components during holding or tightening tasks. The DRPS pliers are designed with interior hinges that improves access without sacrificing performance. The DRPN pliers indicate pliers with an overall narrower design.



### OPERATING INSTRUCTIONS

1. Select the correct pliers based on your connector's diameter.
2. Align the pliers to the connector backshell component.
3. Firmly grip the backshell component using the pliers. (Fig. 1)
4. Rotate to tighten/loosen as needed.



### REPLACING INSERTS

1. Fully open the pliers.
2. Remove the old pads. (Fig. 1)
3. Align the nubs on the pads with the frame holes. (Fig. 2)
4. Push in the pads for a secure fit. Trim excess pad. (Fig. 3)



Fig. 1



Fig. 2



Fig. 3



**NOTE:** Replacement pads (DRP-RS-1) are sold individually. Two pieces are required per tool.

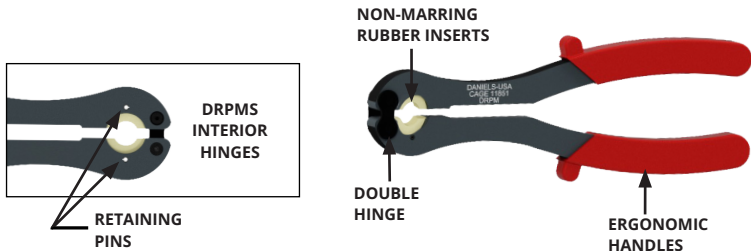
## DRP GRIP RANGE

Grip Range on Smooth Surface Inch (mm)	DMC Tool Part Number		
	DRP Pliers	DRPS Pliers	DRPN Pliers
0.50 to 0.53" (12.70 to 13.46mm)	DRP7	DRP7S	DRP7N
0.56 to 0.59" (14.22 to 14.98mm)	DRP8	DRP8S	DRP8N
0.62 to 0.65" (15.74 to 16.51mm)	DRP9	DRP9S	DRP9N
0.67 to 0.70" (17.01 to 17.78mm)	DRP10	DRP10S	DRP10N
0.74 to 0.77" (18.79 to 19.55mm)	DRP11	DRP11S	DRP11N
0.80 to 0.83" (20.32 to 21.08mm)	DRP12	DRP12S	DRP12N
0.85 to 0.88" (21.59 to 22.35mm)	DRP13	DRP13S	DRP13N
0.89 to 0.92" (22.60 to 23.36mm)	DRP14	DRP14S	DRP14N
0.97 to 1.00" (24.63 to 25.40mm)	DRP15	DRP15S	DRP15N
1.05 to 1.08" (26.67 to 27.43mm)	DRP16	DRP16S	DRP16N
1.08 to 1.11" (27.43 to 28.19mm)	DRP17	DRP17S	DRP17N
1.11 to 1.14" (28.19 to 28.95mm)	DRP18	DRP18S	DRP18N
1.20 to 1.23" (30.48 to 31.24mm)	DRP19	DRP19S	DRP19N
1.27 to 1.30" (32.25 to 33.02mm)	DRP20	DRP20S	DRP20N
1.33 to 1.36" (33.78 to 34.54mm)	DRP21	DRP21S	DRP21N
1.39 to 1.42" (35.30 to 36.06mm)	DRP22	DRP22S	DRP22N
1.45 to 1.48" (36.83 to 37.59mm)	DRP23	DRP23S	DRP23N
1.49 to 1.52" (37.84 to 38.60mm)	DRP24	DRP24S	DRP24N
1.57 to 1.60" (39.87 to 40.64mm)	DRP25	DRP25S	DRP25N
1.61 to 1.64" (40.89 to 41.65mm)	DRP26	DRP26S	DRP26N
1.76 to 1.79" (44.70 to 45.46mm)	DRP27	DRP27S	DRP27N
1.89 to 1.92" (48.00 to 48.76mm)	DRP28	DRP28S	DRP28N

**NOTE:** Knurled surfaces slightly below this range are compatible with these tools. Refer to the grip range column for an exact grip.

## DRPM MINIATURE CIRCULAR RING PLIERS

DRPM circular ring pliers are specifically engineered for miniature connectors and backshell components. DRPMS and DRPMN pliers boast a narrower frame ideal for tight workspaces. All miniature circular ring pliers utilize replaceable, non-marring nylon inserts that protect connector surfaces and maintain connector quality with every grip. Inserts sold separately.



### OPERATING INSTRUCTIONS

1. Install the correct inserts based on your connector's diameter.
2. Align the pliers to the backshell component of the connector.
3. Firmly grip the backshell component using the pliers.
4. Rotate to tighten/loosen as needed.

### INSTALLING OR REPLACING INSERTS

1. Locate the retaining pins above and below the inserts.
2. Use a pin punch and align it with the retaining pin.
3. Use a hammer to hit the back of the pin punch to remove the retaining pin.
4. Pull the insert out. Slip the new insert in.
5. Align the retaining pin with the hole. Use a hammer to secure it into the pliers.
6. Repeat steps 2-5 for the second insert.

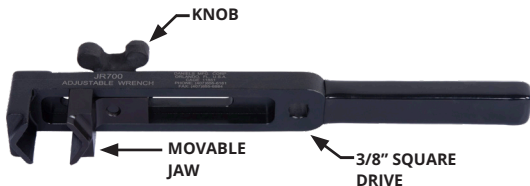
## DRPM GRIP RANGE

Grip Range on Smooth Surface (Diameter) Inch (mm)	DRPM and DRPMS Inserts	DRPMN Inserts
.25 to .28" (6.35 to 7.11mm)	DRPM-11	DRPMN-11
.30 to .33" (7.62 to 8.38mm)	DRPM-12	DRPMN-12
.35 to .38" (8.89 to 9.65mm)	DRPM-13	DRPMN-13
.40 to .43" (10.16 to 10.92mm)	DRPM-14	DRPMN-14
.45 to .48" (11.43 to 12.19mm)	DRPM-15	DRPMN-15
.50 to .53" (12.70 to 13.46mm)	DRPM-16	DRPMN-16

**NOTE:** Knurled surfaces slightly below this range are compatible with these tools.

## JR700 JAM NUT WRENCH

The JR700 jam nut wrench is a versatile tool for backshell assembly and low volume production. Its movable jaw can accommodate jam nuts measuring .75 inch to 3.25 inch across flat dimensions with a maximum working depth of 1.0 inch. The JR700's rugged steel construction withstands heavy-duty applications which ensures long-lasting durability.



### OPERATING INSTRUCTIONS

1. Twist the knob counter-clockwise to adjust the movable jaw.
2. Place the jam nut between the jaws.
3. Twist the knob clockwise to lock the movable jaw.
4. Rotate to tighten/loosen as needed.

**NOTE:** DMC's BT-ST-302D or BT-ST-302DR torque wrenches can be used with the JR700's square drive to enable accurate torquing measurement. See the table below for the desired torque value based on jam nut sizes.

Jam Nut Across Flat Measurement Inch (mm)	Desired Torque Values (In-Lbs)								
	40	60	80	100	120	140	160	180	200
0.50" (12.70mm)	25	38	51	64	76	89	102	115	127
0.75" (19.05mm)	26	39	51	64	77	90	103	116	128
1.00" (25.40mm)	26	39	52	65	78	91	104	117	129
1.50" (38.1mm)	26	40	53	66	79	92	106	119	132
1.75" (44.45mm)	27	40	53	67	80	93	107	120	133
2.00" (50.8mm)	27	40	54	67	81	94	108	121	135
2.25" (57.15mm)	27	41	54	68	82	95	109	122	136
2.50" (63.5mm)	27	41	55	69	82	96	110	124	137
2.75" (69.85mm)	28	42	55	69	83	97	111	125	139
3.00" (76.2mm)	28	42	57	70	84	98	112	126	140
3.25" (82.55mm)	28	42	57	71	85	99	113	127	141

## ADDITIONAL CONNECTOR ASSEMBLY TOOLING

In addition to the products shown here, we offer a comprehensive range of connector assembly tooling, including strap wrenches, straight and T-handle drivers, ratchet drive wrenches, and precision torque wrenches. Visit our website or product catalog for more information.

## CALIBRATION & REPAIR

We offer comprehensive calibration and repair services for many of our tools. Our technicians will inspect the tool, replace worn components, and ensure it meets factory specifications.

To begin the calibration or repair process, scan the QR code. U.S. Customers will be directed to the appropriate forms to initiate service through DMC. Customers outside of the U.S. may contact authorized repair centers near them.



<https://qrco.de/Calibrate>

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Daniels Manufacturing Corporation (DMC) warrants each new product sold by it to be free from defects in material and workmanship under normal use and service. DMC's obligation under this warranty is limited to the free correction or, at DMC's option, the refund of the purchase price of any such product which proves defective in normal service within ninety (90) days after delivery to the first user, provided that the product is returned to DMC with all transportation charges prepaid and which shall appear to DMC's satisfaction, after DMC's inspection, to have been defective in material or workmanship, it being understood that DMC products are not consumer products. This warranty shall not cover any damage to any products which, in the opinion of DMC, was caused by normal wear, misuse, improper operation, tampering, neglect or accident. This warranty is in lieu of all other warranties express or implied. No warranty, express or implied, is made or authorized to be made or assumed with respect to products of DMC other than those herein set forth.



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