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Consist of 8T-0461 Serviceman's Tool Set, 95 Piece Set (cont'd)		
Part No.	Description	Size
<b>3/8 inch Drive Tools (cont'd)</b>		
8H-8576	Adapter	3/8 in Female to 1/2 in Male
8S-1588	Adapter	1/2 in Female to 3/8 in Male
8S-1589	Socket	1/4 in (12 Point)
8S-1590	Socket	5/16 in (12 Point)
<b>1/2 inch Drive Tools</b>		
1S-0259	Socket	1/2 in
8H-8549	Socket	9/16 in
8H-8550	Socket	5/8 in
8H-8551	Socket	11/16 in
8H-8552	Socket	3/4 in
8H-8553	Socket	13/16 in
8H-8554	Socket	7/8 in
8H-8555	Socket	15/16 in
8H-8556	Socket	1 in
9S-1729	Socket	1/16 in
9S-1730	Socket	1 1/8 in
9S-1731	Socket	1 1/4 in
230-9520	Reversible Ratchet	
168-0383	Breaker Bar	
8H-8559	Socket Extension	279.0 mm (11.00 in)
9S-1732	Socket Extension	127.0 mm (5.00 in)
<b>Combination Wrenches</b>		
8H-8501	Open End Wrench (2)	1/2 in x 9/16 in
4C-9604	Combination Wrench	1/4 in
4C-9605	Combination Wrench	5/16 in
4C-9592	Combination Wrench	3/8 in
4C-9593	Combination Wrench	7/16 in
4C-9594	Combination Wrench	1/2 in
4C-9595	Combination Wrench	9/16 in
4C-9596	Combination Wrench	5/8 in
4C-9597	Combination Wrench	11/16 in
4C-9598	Combination Wrench	3/4 in
4C-9599	Combination Wrench	13/16 in
4C-9601	Combination Wrench	7/8 in
4C-9602	Combination Wrench	15/16 in
4C-9603	Combination Wrench	1 in
1S-0253	Combination Wrench	3/4 in (short)
1S-0254	Combination Wrench	9/16 in (short)

Consist of 8T-0461 Serviceman's Tool Set, 95 Piece Set (cont'd)		
Part No.	Description	Size
<b>Pliers, Punches, Screwdrivers and Hammers</b>		
1F-1159	Center Punch <sup>1</sup>	3/16 in, 152.4 mm (6.00 in) long
8H-8578	Punch <sup>1</sup>	3/8 in Point, 241.3 mm (9.50 in) long
8H-8579	Punch <sup>1</sup>	5/32 in Point, 203.2 mm (8.00 in) long
1F-1160	Chisel <sup>1</sup>	3/8 in Edge, 139.7 mm (5.50 in) long
1F-1161	Chisel <sup>1</sup>	3/4 in Edge, 177.8 mm (7.00 in) long
5F-4764	Crowfoot Bar <sup>1</sup>	406.4 mm (16.00 in) long
6V-7933	Screwdriver	5/16 in tip, 277.1 mm (10.91 in) long
6V-7937	Screwdriver	233.4 mm (9.19 in)
6V-7935	Screwdriver	1/4 in tip, 212.9 mm (8.38 in) long
6V-7932	Screwdriver	3/8 in tip, 342.1 mm (13.47 in) long
6V-7936	Screwdriver	No. 1 Phillips tip, 169.2 mm (6.66 in) long
6V-7934	Screwdriver	No. 2 Phillips tip, 213.6 mm (8.41 in) long
6V-6193	Diagonal Cutter	109.5 mm (7.50 in)
8H-8582	Vise Grip	254 mm (10.00 in)
6V-6194	Needle Nose Pliers	406.4 mm (16.00 in)
6V-6192	Slip Joint Pliers	191.8 mm (7.50 in)
6V-6195	Interlocking Joint Pliers	234.7 mm (9.25 in)
1S-0257	Ball Peen Hammer <sup>1</sup>	340.2 g (12 oz)
1S-0258	Soft Face Hammer <sup>1</sup> (Serviceable parts of the hammer — 1 Medium Tip 3S-0460, 1 Hard Tip 3S-0459)	907.2 g (32 oz)
8H-8580	Scraper <sup>1</sup>	38.1 mm (1.50 in) wide
8H-8581	Feeler Gauge <sup>1</sup>	25 blade, .0015 in - .025 in
208-6183	Hacksaw	419.0 mm (16.50 in) long
9S-1743	Ferrule Nut Wrench	3/4 in-1 in
9S-1742	Hex Key Wrench Assembly	9 bits

<sup>1</sup>Warranty: Six Months

## Individual Sockets, 1/2 inch Drive (cont'd)

1/2 inch Drive, Universal Impact Sockets, 6 Point, Black		
Size	Part No.	Length
1/2 in	214-6521	73.8 mm (2.91 in)
9/16 in	214-6522	73.8 mm (2.91 in)
5/8 in	214-6523	73.8 mm (2.91 in)
11/16 in	214-6524	77.8 mm (3.06 in)
3/4 in	214-6526	77.8 mm (3.06 in)

1/2 inch Drive, Deep Length Impact Sockets, 6 Point, Black		
Size	Part No.	Length
7/16 in	213-3516	82.6 mm (3.25 in)
1/2 in	213-3517	82.6 mm (3.25 in)
9/16 in	213-3518	82.6 mm (3.25 in)
5/8 in	213-3520	82.6 mm (3.25 in)
11/16 in	213-3521	82.6 mm (3.25 in)
3/4 in	213-3522	82.6 mm (3.25 in)
13/16 in	213-3523	82.6 mm (3.25 in)
7/8 in	213-3524	88.9 mm (3.50 in)
15/16 in	213-3525	88.9 mm (3.50 in)
1 in	213-3526	88.9 mm (3.50 in)
1 1/16 in	213-3528	88.9 mm (3.50 in)
1 1/8 in	213-3530	88.9 mm (3.50 in)

## Individual Sockets, 3/4 inch Drive

3/4 inch Drive, Standard Length Sockets, 12 Point		
Size	Part No.	Length
3/4 in	8H-8529	50.8 mm (2.00 in)
7/8 in	8H-8530	50.8 mm (2.00 in)
15/16 in	8H-8531	50.8 mm (2.00 in)
1 in	8H-8532	52.4 mm (2.06 in)
1 1/16 in	8H-8533	54.0 mm (2.13 in)
1 1/8 in	8H-8534	55.5 mm (2.19 in)
1 1/4 in	8H-8535	57.2 mm (2.25 in)
1 5/16 in	8H-8536	58.7 mm (2.31 in)
1 1/2 in	8H-8537	63.5 mm (2.50 in)
1 5/8 in	8H-8539	66.7 mm (2.63 in)
1 11/16 in	8H-8538	69.9 mm (2.75 in)
1 3/4 in	8H-8540	69.9 mm (2.75 in)
1 7/8 in	8H-8541	79.4 mm (3.13 in)
2 in	8H-8542	79.4 mm (3.13 in)
2 1/8 in	8H-8543	82.6 mm (3.25 in)
2 3/16 in	8H-8544	82.6 mm (3.25 in)
2 1/4 in	8H-8504	82.6 mm (3.25 in)
5/8 in <sup>1</sup>	2P-8276	82.6 mm (3.25 in)
3/4 in <sup>1</sup>	8S-1597	82.6 mm (3.25 in)
13/16 in <sup>1</sup>	8S-1598	82.6 mm (3.25 in)
7/8 in <sup>1</sup>	8S-1599	82.6 mm (3.25 in)
15/16 in <sup>1</sup>	8S-1600	82.6 mm (3.25 in)
1 in <sup>1</sup>	8S-1601	57.2 mm (2.25 in)
2 1/2 in <sup>2</sup>	3P-2230	152.4 mm (6.00 in)

<sup>1</sup> Shoulder bolt socket 12 point

<sup>2</sup> Special socket for fast fill fuel adapter

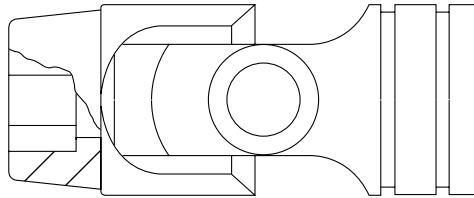
3/4 inch Drive, Standard Length Impact Sockets, 6 Point, Black		
Size	Part No.	Length
3/4 in	214-6553	44.5 mm (1.75 in)
13/16 in	214-6554	47.8 mm (1.88 in)
7/8 in	214-6556	47.8 mm (1.88 in)
15/16 in	214-6557	47.8 mm (1.88 in)
1 in	214-6558	50.8 mm (2.00 in)
1 1/16 in	214-6559	50.8 mm (2.00 in)
1 1/8 in	214-6560	54.1 mm (2.13 in)
1 3/16 in	214-6561	54.1 mm (2.13 in)
1 1/4 in	214-6562	54.1 mm (2.13 in)
1 5/16 in	214-6564	57.2 mm (2.25 in)
1 3/8 in	214-6565	57.2 mm (2.25 in)
1 7/16 in	214-6566	57.2 mm (2.25 in)
1 1/2 in	8T-5182	57.2 mm (2.25 in)
1 9/16 in	214-6567	60.5 mm (2.38 in)
1 5/8 in	214-6568	60.5 mm (2.38 in)
1 11/16 in	214-6607	65.0 mm (2.56 in)
1 3/4 in	214-6569	65.0 mm (2.56 in)
1 13/16 in	214-6570	66.8 mm (2.63 in)
1 7/8 in	214-6571	69.9 mm (2.75 in)
2 in	214-6572	73.2 mm (2.88 in)

3/4 inch Drive, Deep Length Impact Sockets, 6 Point, Black		
Size	Part No.	Length
1 in	214-6599	76.2 mm (3.00 in)
1 1/16 in	214-6600	76.2 mm (3.00 in)
1 1/8 in	214-6601	76.2 mm (3.00 in)
1 3/16 in	214-6602	82.6 mm (3.25 in)
1 1/4 in	214-6603	82.6 mm (3.25 in)
1 5/16 in	214-6604	82.6 mm (3.25 in)
1 3/8 in	214-6605	82.6 mm (3.25 in)
1 7/16 in	214-6606	88.9 mm (3.50 in)
1 1/2 in	1U-5715	88.9 mm (3.50 in)
1 9/16 in	214-6608	88.9 mm (3.50 in)
1 5/8 in	214-6609	88.9 mm (3.50 in)
1 11/16 in	6V-7874	88.9 mm (3.50 in)
1 3/4 in	214-6611	88.9 mm (3.50 in)
1 13/16 in	214-6612	95.3 mm (3.75 in)
1 7/8 in	214-6613	95.3 mm (3.75 in)
2 in	214-6614	95.3 mm (3.75 in)

### 9U-6124 Universal Metric Socket Set, 9 Piece, 3/8 inch Drive

SMCS Code: 1251-010, 0601  
Model: 3066 Engine  
Warranty: Lifetime

- 9U-6128 used to remove and install fuel injection pump
- Standard length, 12 point universal socket set
- Specially forged and heat treated for toughness and long life—meets rigid industry standards
- Includes socket bar and clips

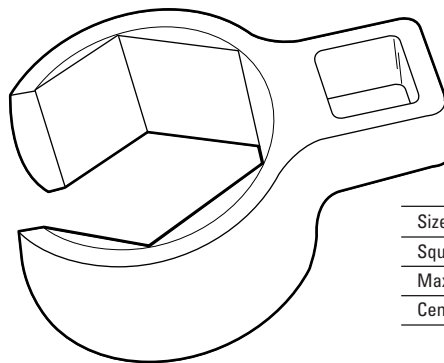


Size	Part No.	Length
10.0 mm	9U-6125	43.5 mm (1.71 in)
12.0 mm	9U-6126	45.5 mm (1.79 in)
13.0 mm	9U-6127	45.5 mm (1.79 in)
14.0 mm	9U-6128	47.9 mm (1.89 in)
15.0 mm	9U-6129	47.9 mm (1.89 in)
16.0 mm	9U-6130	47.9 mm (1.89 in)
17.0 mm	9U-6131	50.7 mm (2.00 in)
18.0 mm	9U-6132	50.7 mm (2.00 in)
19.0 mm	9U-6133	52.5 mm (2.07 in)

### 227-8209 Crowfoot Wrench

SMCS Code: 1453-010  
Model: TH210 and TH215 Telehandler  
Warranty: Lifetime

- Used to remove and install starter motor bolts
- Proper installation is very difficult without this tool
- Chrome-plated



Size	15 mm
Square drive	3/8 inch
Maximum torque	42 N-m (375 in lbs)
Center of square drive to center of wrench	18.8 mm (.74 in)

#### Reference

RENRS153 Service Manual

### 199-6156 Socket Set, 13 Piece, 1/2 inch Drive

Warranty: See individual part number

- 12 point
- 1/2 inch drive
- Standard length sockets
- Polished chrome finish
- Includes socket bar and clips



Size	Part No.	Length
12.0 mm	199-6149	38.1 mm (1.50 in)
13.0 mm	199-6150	38.1 mm (1.50 in)
14.0 mm	8T-3041	38.1 mm (1.50 in)
15.0 mm	6V-9110	38.1 mm (1.50 in)
16.0 mm	6V-9111	38.1 mm (1.50 in)
17.0 mm	6V-9112	38.1 mm (1.50 in)
18.0 mm	6V-9113	38.1 mm (1.50 in)
19.0 mm	6V-9114	38.1 mm (1.50 in)
20.0 mm	199-6152	38.1 mm (1.50 in)
21.0 mm	6V-9115	38.1 mm (1.50 in)
22.0 mm	6V-9116	38.1 mm (1.50 in)
23.0 mm	199-6153	38.1 mm (1.50 in)
24.0 mm	199-6154	38.8 mm (1.53 in)

### 194-3576 Socket Set, 10 Piece, 1/2 inch Drive

Warranty: See individual part number

- 12 point
- 1/2 inch drive
- Deep length sockets
- Polished chrome finish
- Includes socket bar and clips



Size	Part No.	Length
16.0 mm	194-3505	82.6 mm (3.25 in)
17.0 mm	194-3506	82.6 mm (3.25 in)
18.0 mm	194-3510	82.6 mm (3.25 in)
19.0 mm	194-3511	82.6 mm (3.25 in)
20.0 mm	194-3512	82.6 mm (3.25 in)
21.0 mm	194-3513	82.6 mm (3.25 in)
22.0 mm	194-3514	82.6 mm (3.25 in)
24.0 mm	194-3515	82.6 mm (3.25 in)
25.0 mm	194-3516	82.6 mm (3.25 in)
26.0 mm	194-3517	82.6 mm (3.25 in)

## 214-7318 Hand Tool Group

Model: All 300 Series Excavators

Warranty: See individual part number

- Used for routine maintenance and adjustment
- Flat top tool box provides adequate storage for all tools in this group
- Using proper tools reduces downtime

Part No.	Description
230-9520	Reversible Ratchet, 1/2 in drive
8S-1588	Socket Adapter 1/2 in Female to 3/8 in Male
9S-1732	Socket Extension, 1/2 in drive, 127.0 mm (5.00 in) long
194-3535	Socket, Assembly, T30
194-3538	Socket, Assembly, T50
194-3565	Socket, 30 mm, 1/2 in drive, 12 Pt.
199-6154	Socket, 24 mm, 1/2 in drive, 12 Pt.
213-6926	Impact Socket, 10.0 mm, 1/2 in drive, 6 Pt.
213-6927	Impact Socket, 11.0 mm, 1/2 in drive, 6 Pt.
213-6929	Impact Socket, 13.0 mm, 1/2 in drive, 6 Pt.
6V-9111	Socket, 16.0 mm, 1/2 in drive, 12 Pt.
6V-9112	Socket, 17.0 mm, 1/2 in drive, 12 Pt.
6V-9113	Socket, 18.0 mm, 1/2 in drive, 12 Pt.
6V-9116	Socket, 22.0 mm, 1/2 in drive, 12 Pt.
1U-7563	Hex Wrench, 4.0 mm
1U-7564	Hex Wrench, 5.0 mm
1U-7565	Hex Wrench, 6.0 mm
1U-7566	Hex Wrench, 8.0 mm
1U-7567	Hex Wrench, 10.0 mm
1U-7569	Hex Wrench, 14.0 mm
1U-7585	Hex Wrench, 5/8 in
6V-9096	Combination Wrench, 16.0 mm
6V-9098	Combination Wrench, 18.0 mm
6V-9099	Combination Wrench, 19.0 mm
6V-9101	Combination Wrench, 21.0 mm



Part No.	Description
6V-9102	Combination Wrench, 22.0 mm
6V-9103	Combination Wrench, 24.0 mm
6V-9104	Combination Wrench, 30.0 mm
214-7222	Combination Wrench, 32.0 mm
214-7223	Combination Wrench, 36.0 mm
8H-8424	Combination Wrench, 1 1/2 in
214-7330	Combination Wrench, 1 5/16 jaw range
214-7329	Open End Wrench, 41.0 mm
185-3630	Filter Strap Wrench
8F-9866	Grease Gun
5F-4764	Pry Bar, 406.4 mm (16.00 in) long
9U-7968	Pry Bar
6V-7932	Standard Screwdriver, 3/8 in tip, 323.9 mm (12.75 in) long
1S-0255	Combination Pliers, 163.5 mm (6.44 in) long
8H-8577	Ball Peen Hammer, 2 lb
8H-8581	Feeler Gauge, 25 blade, .0015 in to .025 in
9U-6219	Tool Box

## 214-7219 Hand Tool Group

Warranty: See individual part number

- For routine maintenance and adjustments



Part No.	Description
8H-8549	Socket, 9/16 in
8H-8556	Socket, 1 in
8H-8559	Socket Extension, 1/2 in, 254.0 mm (10.00 in) long
8H-8581	Feeler Gauge
6V-7932	Standard Screwdriver, 3/8 in tip
4C-9592	Combination Wrench, 3/8 in
4C-9595	Combination Wrench, 9/16 in
4C-9598	Combination Wrench, 3/4 in
5F-4764	Pry Bar, 406.0 mm (16.00 in) long
8F-9866	Grease Gun
185-3630	Filter Strap Wrench
213-1985	Sliding T-Handle

### Lock Removal Socket

- 1/2 inch drive



Part No.	Size
5P-6587	1/2 in Hex
5P-6588	9/16 in Hex
5P-6589	3/4 in Hex

### 4C-4601 Spark Plug Socket

- 7/8 inch hex, 1/2 inch square drive, 6 point
- 103.1 mm (4.06 in) long
- Special thin wall for use on G3500 and G3600 Engines



### 233-1640 Screwdriver Set, 5 Piece

Warranty: Lifetime

- Exclusive high-tech handle for a more comfortable grip and more powerful performance

Size	Part No.	Description
3/16	6V-7937	Standard
5/16	6V-7933	Standard
3/8	6V-7932	Standard
No. 1	6V-7936	Phillips
No. 2	6V-7934	Phillips



### 9U-7290 Screwdriver Set

Warranty: Lifetime

- Exclusive high-tech handle design for a more comfortable grip and more powerful performance
- Includes a flat 1/4 inch tip and #1 Phillips



### 162-7804 Black Plastic Handle Screwdriver Set, 6 Piece

Warranty: Lifetime

- Black plastic handles
- 6-piece set
- Includes vinyl pouch



Tip Size	Part No.	Description
1/4	6V-7935	Standard
3/16	6V-7937	Standard
5/16	6V-7933	Standard
3/8	6V-7932	Standard
No. 1	6V-7936	Phillips
No. 2	6V-7934	Phillips

### Black Plastic Handled Screwdrivers

Warranty: Lifetime

- Nickel/chrome-plated blades with vapor-blasted tips for best possible grip on screws
- Heavy duty, high impact handle
- Shape of black plastic handle provides the optimum fit to the human hand.



Standard Tip, Round Shank

Standard Tip, Round Shank Screwdrivers		
Tip Size	Part No.	Length
1/8 in	6V-9124	120.7 mm (4.75 in)
1/4 in	6V-7938	100.1 mm (3.94 in)
1/4 in	6V-7935	212.9 mm (8.38 in)
3/16 in	6V-7937	239.8 mm (9.44 in)
5/16 in	6V-7933	277.1 mm (10.91 in)
3/8 in	6V-7932	342.1 mm (13.5 in)
1/2 in	6V-7931	452.0 mm (17.79 in)



Phillips Tip, Round Shank

Phillips Tip, Round Shank Screwdrivers		
Tip Size	Part No.	Length
No. 1	6V-7936	169.2 mm (6.66 in)
No. 2	6V-7934	213.6 mm (8.41 in)
No. 3	214-7342	276.4 mm (10.88 in)

## Combination and Multiple Position Pliers

Warranty: Lifetime



Type	Part No.	Description	Length	Finish	Vinyl Grip
A	6V-6192 <sup>1</sup>	Combination Pliers	190.5 mm (7.50 in)	Black Oxide	Yes
A	213-1983	Combination Pliers	159.3 mm (6.30 in)	Chrome	Yes
A	1S-0255	Combination Pliers	163.5 mm (6.40 in)	Chrome	No
B	214-7347	Multiple Position Pliers	304.8 mm (12.00 in)	Chrome	Yes
B	6V-6195	Multiple Position Pliers	235.0 mm (9.30 in)	Black Oxide	Yes
B	236-1169	Multiple Position Pliers	400.0 mm (16.0 in)	Chrome	Yes
C	6V-6194 <sup>1</sup>	Needle Nose Pliers	181.0 mm (7.10 in)	Black Oxide	Yes
D	6V-6193 <sup>1</sup>	Diagonal Cutter Pliers	185.7 mm (7.30 in)	Black Oxide	Yes
<b>Not shown</b>					
	212-3607	End Cutter Pliers	187.3 mm (7.40 in)	Black Oxide	Yes
	8H-8582	Vise Grip, Straight Jaw	250.0 mm (9.80 in)	Chrome	No
	214-7348	Vise Grip, Curved Jaw	250.0 mm (9.80 in)	Chrome	No
	246-5128	Locking Pliers, Straight Jaw	127.0 mm (5.00 in)	Black/Yellow	No
	246-5129	Locking Pliers, Curved Jaw	177.8 mm (7.00 in)	Black/Yellow	No
	246-5131	Locking Pliers, Long Rounded Jaw	254.0 mm (10.00 in)	Black/Yellow	No
	246-5132	Locking Pliers, Curved Jaw w/cotter	254.0 mm (10.00 in)	Black Yellow	No
	246-5133	Locking Pliers, Straight Jaw	254.0 mm (10.00 in)	Black Yellow	No
	246-5134	Locking Pliers Set, 5 piece			
	236-1169	Multiple Position Pliers	400.0 mm (16.00 in)	Chrome	Yes

<sup>1</sup> 233-1639 Yellow Grip Pliers Set, 3 Piece contains 6V-6192, 6V-6193, and 6V-6194

## Retaining Ring Pliers



Straight Tips

Item	Part No.	Tip Size	Type
1	1P-1863 (No. 26)	.12 in	External
2	1P-1861 (No. 25)	.09 in	Internal
3	1P-1857 (No. 23)	.07 in	Internal
4	1P-1855 (No. 22)	.04 in	External
5	1P-1859 (No. 24)	.07 in	External
6	1P-1853 (No. 21)	.04 in	Internal



Right Angle Tips

Item	Part No.	Tip Size	Type
1	1P-1864 (No. 26-90)	.12 in	External
2	1P-1862 (No. 25-90)	.09 in	Internal
3	1P-1858 (No. 23-90)	.07 in	Internal
4	1P-1856 (No. 22-90)	.04 in	External
5	1P-1860 (No. 24-90)	.07 in	External
6	1P-1854 (No. 21-90)	.04 in	Internal

## 5P-5197 External Pliers

- Use to compress or expand large retaining rings
- A double ratchet locks to hold the handles at any given point without hand pressure.
- Gap between the plier tips ranges from 12.7 mm (.50 in) fully closed to 76.0 mm (3.00 in) fully open.



Item	Part No.	Description
1	5P-5197	External Pliers
2	136-1452	Internal Pliers
3	1U-6728	Tip Set
4	1U-6728	Tip Set
Not shown	6V-2062	Tip Set, 90° (Used for 5P-5197)

### Special Sockets and Extensions

- For use with the 8T-5230 Air Wrench Group to remove and install rear dual rims on 785 and 789 trucks, or other similarly sized rim

Model	Requirement	Tool Description	Tool Part No.
785 and 789	Remove and Install Rim Nuts	Socket (1.50 Hex)	8T-5182
785 and 789	Standard Rim	Extension (16 inch long)	8T-5183
785 and 789	Rim Pilot Stud Nuts	Deep Socket (1.50 Hex)	1U-5715
789	Large Optional Rims	Extension (10 inch long)	8T-9265

### Pneumatic Wrench Groups

- Allows controlled output torque from 286 N-m (200 ft lbs) to 4125 N-m (3000 ft lbs)
- Output torque is set by adjusting air pressure regulator (part of 194-7591 Regulator Group)
- All wrench groups have standard 1 inch square drive
- Requires 689 kPa (100 PSI) air pressure to achieve maximum torque

- Wrench group works well in applications requiring different torque specifications (readjust torque setting by simply adjusting air pressure)
- Regulator group includes cage, hose, pressure gauge, and filter assembly — filter assembly is equipped with air filter, pressure regulator, and automatic oiling system
- Requires 4C-8856 Fitting and 8T-9568 Oil (not included)



194-7582 Pneumatic Wrench Group (RAD 25)	
Torque range	1143 to 4285 N-m (800 to 3000 ft lbs)
Square drive	1 inch
Air pressure for maximum torque	689 kPa (100 PSI)
Air consumption at 689 kPa (100 PSI)	32 cfm
Minimum pressure	103 kPa (15 PSI)
Service Parts	
Part No.	Description
194-7590	Pneumatic Wrench Group
194-7605	Reaction Arm
194-7608	Snap Ring Kit
195-3501	Wrench Assembly
194-7591	Regulator Group
194-7609	Hose Assembly
194-7610	Cage Assembly
194-7611	Filter Assembly
194-7612	Gauge Pressure

194-7586 Pneumatic Wrench Group (RAD 2000)	
Torque range	571 to 2857 N-m (400 to 2000 ft lbs)
Square drive	1 inch
Air pressure for maximum torque	689 kPa (100 PSI)
Air consumption at 689 kPa (100 PSI)	20 cfm
Minimum pressure	103 kPa (15 PSI)
Service Parts	
Part No.	Description
194-7589	Pneumatic Wrench Group
195-7592	Reaction Arm
194-7607	Snap Ring Kit
195-3500	Wrench Assembly
194-7591	Regulator Group
194-7609	Hose Assembly
194-7610	Cage Assembly
194-7611	Filter Assembly
194-7612	Gauge Pressure

### Repair Information

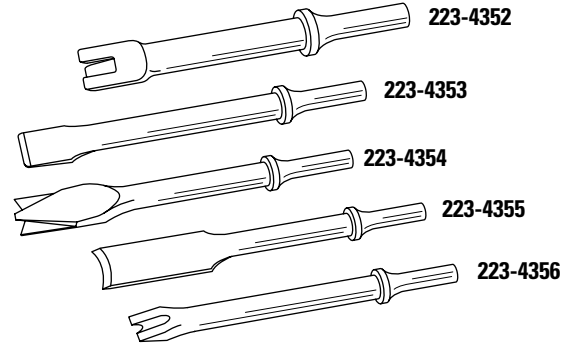
195-3499, 195-3500, and 195-3501 Wrench Assemblies must be sent to the address below for repair. The wrench must be accompanied with a Return Material Authorization Number before shipping to the OEM.

Global Bolting Technologies  
827 Anchor Ave.  
Billings, MT 59105-2519  
Phone and fax: (406) 259-9111

### Air Hammer Accessories

- Used with 222-3080 Air Hammer
- Material: tungsten carbide steel

Part No.	Description	Size	Use
223-4352	Sheet Metal Ripper	5/8 in wide 5 in long	—
223-4353	Flat Chisel	3/4 in wide 7 in long	—
223-4354	Panel Cutter	3/4 in wide 6 in long	Slices bushings, cylinder sleeves, etc.
223-4355	Slitting Chisel	1 in wide 6 7/8 in long	Cuts exhaust and tail pipes
223-4356	Weld Breaker	5/8 in wide (tip) 6 3/4 in long	—



### 222-3059 Air Ratchet

Warranty: Manufacturer's

#### CE Compliant

- Aluminum housing reduces weight and provides durable long life
- Versatile, easy-to-use paddle-style trigger; variable speed trigger
- Ball bearing mounted air motor reduces vibration and operator fatigue; prolongs motor life
- 200 RPM free speed, 250 in-lbs torque output — fast and powerful



Drive size	3/8 in
Recommended air pressure	620 kPa (90 PSIG)
Free speed air consumption	22 SCFM (3.0 CFM)
Free speed	200 RPM
Sound level, free speed	95.1 dBa
Torque range	7-81 N-m (5-60 ft-lb)
Air inlet thread size	1/4 in - 18 NPT
Recommended hose size	10 mm (3/8 in)
Overall length	256 mm (10.43 in)
Weight	1.09 kg (2.4 lbs)

### 222-3083 Shears

Warranty: Manufacturer's

#### CE Compliant

Recommended air pressure	620 kPa (90 PSIG)
Average air consumption	4 CFM [113.3 l/min.]
Horsepower	0.6
Sound level, free speed	88.1 dBa
Sound level, working	99.6 dBa
Cutting capacity	1.2 mm (3/64 in)
Width of cut	5.6 mm (1/32 in)
Cutting speed	4.572 m (15 ft) per minute
Strokes	2500 per minute
Air inlet thread size	1/4 in - 18 NPT
Recommended hose size, ID min.	8 mm (5/16 in)
Overall length	254 mm (10 in)
Weight	1.3 kg (2.8 lbs)



## Tool Boxes

### Tool Storage Units

Warranty: One Year

- 40 inch and 30 inch top chests have a top compartment—gas spring in 40 inch top chest and slide lock on 30 inch top chest allow top compartment to open easily
- Double-wall steel construction provides strength and durability to support loaded drawers so they stay level
- Full length stiffener under the cover is welded to sides of the cover to provide the strongest top cover available and to minimize racking
- Extra deep drawer pulls give more finger room (almost 1 inch) to comfortably pull the drawer
- Rolled edges on drawers add strength, rigidity, and safety
- Ball-bearing slides provide extra weight support with smooth, one-hand operation
- Ergonomic handle design provides comfortable gripping and ease of maneuvering
- Gussets on corners improve cabinet strength so the cabinet stays square
- Drawer liners included
- Caster plates and weldnuts keep casters tight for smooth rolling—caster screws pass through double thick steel plates and pre-threaded weldnuts

Part No.	Description
214-6144	30 inch Roller Cabinet
214-6145	30 inch Top Chest
214-6146	30 inch Combo (Roller Cabinet and Top Chest) <sup>1</sup>
214-6147	40 inch Roller Cabinet
214-6148	40 inch Top Chest
214-6149	40 inch Combo (Roller Cabinet and Top Chest) <sup>1</sup>
214-6150	53 inch Roller Cabinet
214-6151	53 inch Top Chest
214-6152	53 inch Combo (Roller Cabinet and Top Chest) <sup>1</sup>
214-7344	Side Cabinet (bulk)
214-7345	Side Cabinet (6 drawer)

<sup>1</sup> Combo part numbers available for sale only in North and South America



#### Tool Box Accessories

Part No.	Description	Width	Depth	Height
<b>Work Surfaces</b>				
223-3835	Laminated Press Board Top for the 76.2 cm (30 in) roller cabinet	76.2 cm (30 in)	50.80 cm (20.00 in)	.97 cm (0.38 in)
223-3836	Laminated Press Board Top for the 101.6 cm (40 in) roller cabinet	101.6 cm (40 in)	50.80 cm (20.00 in)	.97 cm (0.38 in)
223-3837	Butcher Block Top for the 134.62 cm (53 in) roller cabinet	134.77 cm (53.06 in)	49.38 cm (19.44 in)	4.45 cm (1.75 in)
<b>Covers - black with CAT logo printed in yellow and white on the front of the cover</b>				
223-3832	Cover for the 76.2 cm (30 in) combo top chest and roller cabinet			
223-3833	Cover for the 101.6 cm (40 in) combo top chest and roller cabinet			
223-3834	Cover for the 134.62 cm (53 in) combo top chest and roller cabinet			
<b>Organizing Foam</b>				
246-7948	Organizing Foam for 212-6146 30 inch Combo for 222-7876 Student Tool Set			
246-7950	Organizing Foam for 212-6149 40 inch Combo for 222-7876 Student Tool Set			

	Drawers	Width	Depth	Height	Cubic cm (in)	Weight	Load Capacity
<b>214-6144 Roller Cabinet, 30 inch</b>							
Overall	7	74.93 cm (29.5 in)	50.29 cm (19.8 in)	102.36 cm (40.3 in)	18891.6 cm (11519 in)	86.71 kg (191 lb)	508.48 kg (1120 lb)
Drawer, 5.08 cm (2 inch) full width	2	61.47 cm (24.2 in)	44.45 cm (17.5 in)	4.06 cm (1.6 in)	22222 cm (1355 in)		
Drawer, 10.16 cm (4 inch) full width	3	61.47 cm (24.2 in)	44.45 cm (17.5 in)	9.14 cm (3.6 in)	75013.6 cm (4574 in)		
Drawer, 15.24 cm (6 inch) full width	1	61.47 cm (24.2 in)	44.45 cm (17.5 in)	14.22 cm (5.6 in)	38900.8 cm (2372 in)		
Drawer, 20.32 cm (8 inch) full width	1	61.47 cm (24.2 in)	44.45 cm (17.5 in)	19.30 cm (7.6 in)	52719.6 cm (3219 in)		

## Brushes

## Abrasives — Safety and Storage

**Safety**

To avoid injury always wear impact-resistant protective glasses, full face shield, safety shoes, arm guards, leather gloves and apron for all grinding operations.

**For Abrasive Disc Grinding:**

- Never grind without a proper backup pad.
- Never use another grinding disc as backup pad.
- Never use a larger diameter disc than specified by manufacturer.
- Check all backup pads for signs of irregularities. Check for concentricity. Do not exceed maximum RPM.
- Always use the grinder's safety pad. Check spindle for wobble.
- Check disc retainer nut for thread wear. Check for snug fit and full three-thread contact (except with quick change or non-wrench systems).

**For Abrasive Belt Grinding and Polishing:**

- Never run an abrasive belt on unfamiliar machinery.
- Inspect for safe operating conditions: the abrasive belt, idler assembly and contact wheel should be enclosed within sheet metal hood; adjustable deflector should be installed within ¼ inch of abrasive belt working surface; use adequate exhaust system; employ special precautions with inflammable or other hazardous materials.

- Use workpiece fixture whenever possible.
- Always check: grinder spindle for run-out (wobble); contact wheel for balance, face trueness and run-out; idler pulley spindle for run-out and balance.

**Proper Storage of Coated Abrasives**

Follow these guidelines to prolong life and maintain the efficiency of coated abrasives.

- Keep stockroom at constant levels of humidity (35-50%) and temperature [12.8-21.1°C (55-70°F)].
- Keep cartons away from damp or cold walls and floor where they may absorb moisture.
- Store coated abrasives away from any heat source.
- Keep products in original packages for easy handling and stacking.
- Store bulk rolls flat on shelves or pallets — not on edge.
- Belts removed from packing case should be rolled up and stood on edge on a clean shelf. They may be draped over a large cylinder but NEVER hang a belt from a nail or peg (the backing will crease and the abrasive may crack).
- Precondition coated abrasive product in a chamber of controlled temperature and humidity before use for maximum efficiency.

## Brushes — Safety Requirements

All operators must read this information thoroughly and completely before using the brush.

**Operators and Work Area**

Osborn Power Brushes are built to rigid manufacturing specifications that combine the finest in design, materials and workmanship. The product you receive will give you maximum work performance, and safe operation if used properly.

**All power brushes, like other rotating cutting tools, demand that certain operating precautions be observed to assure operator and work area safety. Inspection**

Brushes should be carefully checked when removed from original carton. Do not use if rusted or damaged.

**Storage and Handling**

Store brushes in original boxes. Wire brushes should not be exposed to heat, high humidity, acids, fumes or liquids that can result in deterioration of wire filaments, and subsequently, premature failure of the wires. Also, check for distortion of brush fill that can cause imbalance and excessive vibration when brush is run. Do not allow foreign material to accumulate in brush face.

**Machine Condition**

Proper maintenance of machines is essential to keep them in safe operating condition. Special operating instructions furnished with a machine should be closely followed. Hoods and safety guards must be kept in place at all times. Use adequate spindle diameter for the brush — do not use brush larger than the machine was designed for. Brushing machines should have sufficient power to maintain rated spindle speeds.

Provide proper ventilation and/or exhaust systems on all brushing operations.

**Mounting Brushes**

Brushes should be inspected for rust, oxidation and other damage. Do not use the brush if it is not in good condition. Check spindle speed RPM. Do not mount and operate brush if spindle RPM exceeds MAXIMUM SAFE FREE SPEED (MSFS) for which brush is rated.

Brush arbor hole and spindle diameter should be the same for free fit. Spindle length should be sufficient to permit a full nut mounting. Direction of spindle nut thread should be in such relation to the direction of rotation that the nut will tend to tighten as spindle revolves. When flanges are used, they should be identical in size and radial bearing surface to avoid cross-bending pressure on the brush.

**Work Rest**

On single or double end pedestal machines, work rests of rigid and adjustable design should be used to support the work piece while brushing. Adjust the work rest for a maximum opening of ⅛ inch to the brush face. This will prevent the work from being forced between the brush and rest. The work rest should be adjusted only when the brush is not in motion.

**Speed**

MAXIMUM SAFE FREE SPEED (MSFS) is the maximum RPM at which the brush should be operated with no work applied (spinning free). It is not the recommended operating speed. The application determines the recommended operating speed, which should never exceed the MSFS brush ratings marked on the brush and/or shown in this catalog. Periodic speed checks of the spindle are the responsibility of the operator and user.

In all cases where MSFS is not indicated, and on special brushes, contact Shop Supplies and Tools Group for specific operating speed details.

**Protective Equipment**

The potential of serious injury exists for both the brush operator and others in the work area (possibly 50 or more feet from the brush). To protect against this hazard, before rotating the brush, during rotation, and until rotation stops operators and others in the area must wear SAFETY GOGGLES or FULL FACE SHIELDS WORN OVER SAFETY GLASSES WITH SIDE SHIELDS. Comply with the requirements of ANSI Z87.1-1979 "Occupational Eye and Face Protection."

Appropriate protective clothing and equipment (such as gloves, respirators, etc.) shall be used where there is probability of injury that can be prevented by such clothing or equipment.

Certain brushing operations, because of their nature and location, may require an enclosure to isolate the operation from other personnel.

**Machine Guards**

Rotating power brushes should be used only on machines that are equipped with safety guards, and these guards must be kept in place at all times.

**Starting the Brush**

Jog the machine before starting to determine if it is ready to use, and that the brush is fastened securely. Run the brush at operating speed with safety guards in place for at least one minute before applying work. Do not stand in front of or in line with the brush during this time.

**Brush Pressure**

Avoid excessive pressure against the work. This reduces the efficiency of the brush and could cause premature failure during operation.

Comply with the Safety Standards of the Industrial Division of the American Brush Manufacturers Association and the American National Standards Institute B 165.1-1985 "Safety Requirements for the Design, Care and Use of Power Driven Brushing Tools," and B 165.2-1982 "Safety Requirements for the Design, Care and Use of Power Driven Brushing Tools constructed with wood, plastic, or composition hubs and cores."

### PSA Discs, Glue-Backed, PSA/No Hole

- These discs have glue on the back and are used with backup pads to deburr, blend, etc.
- Pressure sensitive adhesive on disc back makes changes fast and easy.
- Efficient on flat and contoured metal surfaces and hard to reach areas



Part No.	Grit	Description	Size Dia x Hole	Pkg. Qty.
4C-3809	36	Cloth Backed Disc	50.8 mm (2 in)	50
4C-3810	50	Cloth Backed Disc	50.8 mm (2 in)	50
4C-3811	60	Cloth Backed Disc	50.8 mm (2 in)	50
4C-3813	100	Cloth Backed Disc	50.8 mm (2 in)	50
4C-3817	80	Cloth Backed Disc	76.2 mm (3 in)	50
4C-3819	60	Cloth Backed Disc	101.6 mm (4 in)	50
4C-3821	100	Cloth Backed Disc	101.6 mm (4 in)	50
4C-3822	120	Cloth Backed Disc	101.6 mm (4 in)	50
4C-3824	80	PSA — Paper Disc Rolls	127 mm (5 in)	100
4C-3834	80	Cloth Backed Disk	304.8 mm (12 in)	25

### PSA Sanding Discs

- Ideally used on dual action (DA) air and electrical random orbit sanders
- Used on metal, plastic, fiberglass, wood, and painted surfaces
- Anti-clog release agents are an additive process for long life.
- Quality full resin-over-resin bond
- Each disc has protective backing to protect the adhesive in dusty environments before use.
- Priced per roll



Part No	Diameter	Grit	Pkg. Qty.
236-8039	127 mm (5 in)	A/O 60	100
236-8040	127 mm (5 in)	A/O 80	100
236-8041	127 mm (5 in)	A/O 100	100
236-8042	127 mm (5 in)	A/O 120	100
236-8043	127 mm (5 in)	A/O 150	100
236-8044	127 mm (5 in)	A/O 180	100
236-8045	127 mm (5 in)	A/O 220	100
236-8046	127 mm (5 in)	A/O 320	100
236-8047	127 mm (5 in)	A/O 400	100
236-8048	152.4 mm (6 in)	A/O 60	100
236-8049	152.4 mm (6 in)	A/O 80	100
236-8050	152.4 mm (6 in)	A/O 100	100
236-8051	152.4 mm (6 in)	A/O 120	100
236-8052	152.4 mm (6 in)	A/O 150	100
236-8053	152.4 mm (6 in)	A/O 180	100
236-8054	152.4 mm (6 in)	A/O 220	100
236-8055	152.4 mm (6 in)	A/O 320	100
236-8056	152.4 mm (6 in)	A/O 400	100

### Backup Pads for PSA Discs

- Use stick and sand disc backup pads with all PSA discs.
- Made of flexible rubber that tapers at the edge.
- Come with 6.4 mm (1/4 in) steel shank for fast mounting into portable tool chunks.

Part No.	Size Dia.	Shank	Pkg. Qty.
4C-3837	50.8 mm (2 in)	6.4 mm (1/4 in)	1
4C-3838	76.2 mm (3 in)	6.4 mm (1/4 in)	1
4C-3840	127 mm (5 in)	5/16 in-24 Thread Shank	1



## Surface Reconditioning Flex Hone Tools

- The FLEX-HONE® process (Superfinishing) produces a controlled surface condition that will result in:

- Lowered oil consumption
- Less blow-by
- Less friction
- Plateaued finish over 50%
- Finish free from cut, and folded metal

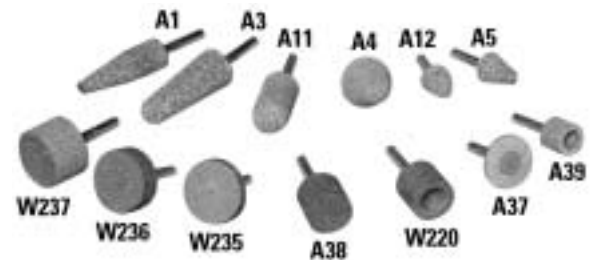
- All abrasive is silicone carbide.
- Resilient, flexible, honing tool with soft cutting action
- Abrasive (points) globules each have independent suspension that assures the hone to be self-centering, self-aligning to the bore, and self-compensating for wear.
- A low temperature abrading process that exposes the undisturbed base metal structure to produce a long wearing surface.
- Method of developing a surface on a metal part which is optically smooth and metallurgically free of any fragmented, amorphous or smeared metal from previous operations.
- Accomplished at a low pressure where the "stones" float
- Hone crosshatch is extremely efficient in providing a multiplicity of oil grooves or valleys for oil retention as opposed to the uni-directional or uneven valleys common to the conventional type rigid hone. A crosshatch that usually remains as the cylinder wall has been wear-reduced by the hone.



Part No.	Pkg. Qty.	Engine Bore Size	Grit
4C-6322	1	101.6 mm (4 in)	180
4C-6323	1	107.95 mm (4¼ in)	180
4C-6324	1	117.3 mm (4½ in)	180
1U-9787	1	120.65-127 mm (4¾ in-5 in)	180
4C-6325	1	133.5-137.16 mm (5¼ in-5.4 in)	180
4C-6326	1	146.05-152.4 mm (5¾ in-6 in)	180
4C-6327	1	158.75 mm (6¼ in)	180
4C-6328	1	169.92-177.8 mm (6.69 in-7 in)	180
4C-6329	1	190.5 mm (7½ in)	180
4C-6330	1	203.2 mm (8 in)	180
4C-6331	1	241.3 mm (9½ in)	180
4C-6332	1	60.33 mm (2⅝ in)	240
4C-6333	1	79.38 mm (3⅜ in)	240
4C-6334	1	92.08 mm (3⅝ in)	240
1U-7428	1	101.6 mm (4 in)	240
4C-6335	1	104.78 mm (4⅛ in)	240
4C-6336	1	114.3 mm (4½ in)	240
4C-6337	1	12.7 mm (½ in)	320
4C-6338	1	15.88 mm (⅝ in)	320
4C-6339	1	19 mm (¾ in)	320
4C-6340	1	25.4 mm (1 in)	320
4C-6341	1	38.1 mm (1½ in)	320

## Mounted Points

- Mounted wheels are used with horizontal or straight shaft, die and pencil grinders on jobs where larger wheels will not fit.
- Offer maximum performance for grinding ferrous metals
- Accurate spindles ensure precision grinding and minimize run-out.
- A-shaped wheels are for medium to heavy-duty blending and contouring.
- W-shaped wheels are for off-hand and precision grinding of medium to heavy stock.



Part No.	Shape	Grit Spec.	Size Dia. x Length	Mandrel Dia.	Pkg. Qty.
1U-6820	A1	A36	19 mm x 63.5 mm (¾ in x 2½ in)	6.35 mm (¼ in)	25
1U-6821	A1	A60	19 mm x 63.5 mm (¾ in x 2½ in)	6.35 mm (¼ in)	25
1U-6822	A3	A36	25.4 mm x 69.85 mm (1 in x 2¾ in)	6.35 mm (¼ in)	25
1U-6823	A3	A60	25.4 mm x 69.85 mm (1 in x 2¾ in)	6.35 mm (¼ in)	25
4C-3845	A4	A60	31.75 mm x 31.75 mm (1¼ in x 1¼ in)	6.35 mm (¼ in)	25
4C-3846	A5	A36	19 mm x 28.58 mm (¾ in x 1⅛ in)	6.35 mm (¼ in)	25
1U-6824	A11	A36	22.23 mm x 50.8 mm (⅞ in x 2 in)	6.35 mm (¼ in)	25
1U-6825	A11	A60	22.23 mm x 50.8 mm (⅞ in x 2 in)	6.35 mm (¼ in)	25
4C-3849	A12	A36	26.9 mm x 31.75 mm (1⅛ in x 1¼ in)	6.35 mm (¼ in)	25
4C-3850	A12	A60	26.9 mm x 31.75 mm (1⅛ in x 1¼ in)	6.35 mm (¼ in)	25
6V-4802	A37	A60	31.75 mm x 31.75 mm (1¼ in x 1¼ in) (with hub)	6.35 mm (¼ in)	25
1U-6826	A38	A60	25.4 mm x 25.4 mm (1 in x 1 in)	6.35 mm (¼ in)	25
4C-3852	A39	A60	19 mm x 19 mm (¾ in x ¾ in)	6.35 mm (¼ in)	25
4C-3853	W220	A60	25.4 mm x 25.4 mm (1 in x 1 in)	6.35 mm (¼ in)	25
4C-3854	W235	A60	38.1 mm x 6.35 mm (1½ in x ¼ in) (with hub)	6.35 mm (¼ in)	25
4C-3855	W236	A60	38.1 mm x 12.7 mm (1½ in x ½ in) (with hub)	6.35 mm (¼ in)	25
4C-3856	W237	A60	38.1 mm x 25.4 mm (1½ in x 1 in)	6.35 mm (¼ in)	25

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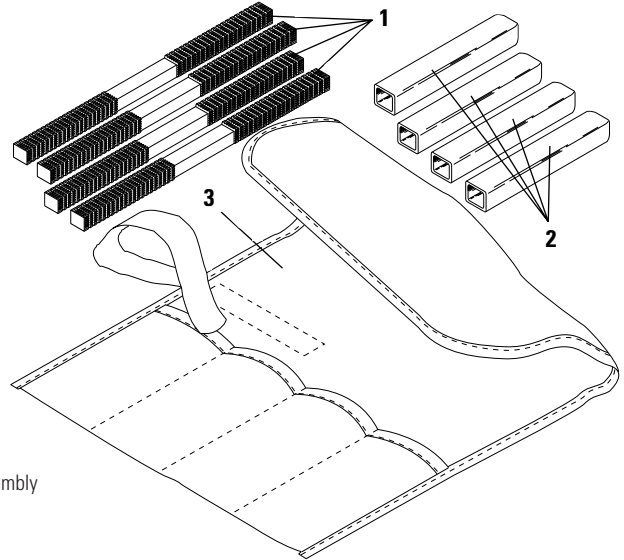
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## 154-9315 Thread File Group

SMCS Code: 4050-006, 0671

Model: 311, 312, 312B, 315B, and 318B Excavators (Grenoble Version)

- Used to renew damaged external threads on any diameter shaft (right or left handed)
- Cross-cut and thread proportional to thread pitch (helps eliminate file skipping or jumping out of fine pitches)
- Each file has eight separate pitches
- Makes thread repairs without using a thread die
- Red plastic handle protects hands
- Each file is individually packaged in a plastic tube
- Carrying pouch keeps files together
- Files can also be ordered separately.



### Reference

REN1113 Service Manual, 312B Excavators Machine Systems Disassembly and Assembly  
SEN6139 Service Manual, 311 and 312 Excavators Machine Systems Disassembly and Assembly

Item	Part No.	Description	Pitch
1	154-9316	Metric Thread File	0.75, 1.00, 1.25, 1.50, 1.75, 2.00, and 3.00
	154-9317	Inch Thread File	11, 12, 13, 14, 16, 18, 20, and 24 tpi
	154-9318	Inch Thread File	9, 10, 12, 16, 20, 27, 28, and 32 tpi
	154-9319	Pipe Thread File	8, 10, 11½, 14, 16, 18, 24, and 27 tpi
2		Plastic handle	
3	160-1749	Roll-up Pouch	

## Special Rethreading Dies

- Used for cleaning up damaged external threads
- Not readily obtainable on the market because the threads are not common standards



Part No.	Size
9F-9397	24 mm x 1.5 mm Pitch
9F-9398	14 mm x 1.5 mm Pitch
1P-2998	1 in-12 UNF
5P-4238	1¼ in-5 NC
6V-7052	1½ in-12 NF

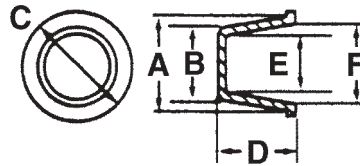
## Convenient Hardware Packages

- Hardware packaged in resealable plastic clamshell packages
- Product includes inch and metric bolts, nuts, washers, hose clamps, cable ties, electrical fuses, and cotter pins
- Smaller easy-to-use packages offer convenience for the service technician



Retail Package Part No.	Description	Consists of:	
		Retail Pkg. Qty.	Bulk Part No.
247-0188	1/4-20 x 1/2 in Hex Head Bolt	50	0S-1614
247-0189	1/4-20 x 3/4 in Hex Head Bolt	50	0S-1615
247-0190	1/4-20 x 1 in Hex Head Bolt	50	0S-1616
247-0191	1/4-20 x 1 1/4 in Hex Head Bolt	50	7B-2742
247-0192	1/4-20 x 1 1/2 in Hex Head Bolt	25	9F-7022
247-0193	1/4-20 x 1 3/4 in Hex Head Bolt	25	1B-2713
247-0194	1/4-20 x 2 in Hex Head Bolt	25	8B-2377
247-0195	1/4-20 x 2 1/4 in Hex Head Bolt	25	1D-4533
247-0196	1/4-20 x 2 1/2 in Hex Head Bolt	25	1B-2714
247-0197	1/4-20 x 2 3/4 in Hex Head Bolt	25	2A-4781
247-0198	1/4-20 x 3 in Hex Head Bolt	25	4B-9365
247-0199	1/4 in Hard Washer	25	5P-0537
247-0200	1/4 in Lock Washer	100	3B-4504
247-0201	1/4-20 Full Nut	50	9S-8750
247-0202	5/16-18 x 1/2 in Hex Head Bolt	50	1C-0569
247-0203	5/16-18 x 3/4 in Hex Head Bolt	50	0S-1617
247-0204	5/16-18 x 1 in Hex Head Bolt	25	0S-1618
247-0205	5/16-18 x 1 1/4 in Hex Head Bolt	25	1B-7182
247-0206	5/16-18 x 1 1/2 in Hex Head Bolt	25	1A-9579
247-0207	5/16-18 x 1 3/4 in Hex Head Bolt	25	1B-9575
247-0208	5/16-18 x 2 in Hex Head Bolt	25	2B-2694
247-0209	5/16-18 x 2 1/4 in Hex Head Bolt	25	1D-4538
247-0210	5/16-18 x 2 1/2 in Hex Head Bolt	25	1D-4539
247-0211	5/16-18 x 2 3/4 in Hex Head Bolt	25	1D-4540
247-0212	5/16-18 x 3 in Hex Head Bolt	10	1D-4541
247-0213	5/16 in Hard Washer	25	9M-1974
247-0214	5/16 in Lock Washer	100	3B-4505
247-0215	5/16-18 Full Nut	50	5S-0003
247-0216	3/8-16 x 1/2 in Hex Head Bolt	50	4F-4879
247-0217	3/8-16 x 3/4 in Hex Head Bolt	25	0S-0509
247-0218	3/8-16 x 1 in Hex Head Bolt	25	0S-1594
247-0219	3/8-16 x 1 1/4 in Hex Head Bolt	25	0S-1588
247-0220	3/8-16 x 1 1/2 in Hex Head Bolt	25	0S-1591

Retail Package Part No.	Description	Consists of:	
		Retail Pkg. Qty.	Bulk Part No.
247-0221	3/8-16 x 1 3/4 in Hex Head Bolt	25	0S-1571
247-0222	3/8-16 x 2 in Hex Head Bolt	25	0S-1590
247-0223	3/8-16 x 2 1/4 in Hex Head Bolt	10	0L-2070
247-0224	3/8-16 x 2 1/2 in Hex Head Bolt	10	0L-1143
247-0225	3/8-16 x 2 3/4 in Hex Head Bolt	10	0T-0573
247-0226	3/8-16 x 3 in Hex Head Bolt	10	0S-1619
247-0227	3/8 in Hard Washer	25	5M-2894
247-0228	3/8 in Lock Washer	100	3B-4506
247-0229	3/8-16 Full Nut	50	9S-8752
247-0230	1/2-13 x 1/2 in Hex Head Bolt	25	1K-6705
247-0231	1/2-13 x 3/4 in Hex Head Bolt	25	0S-1620
247-0232	1/2-13 x 1 in Hex Head Bolt	25	0S-1621
247-0233	1/2-13 x 1 1/4 in Hex Head Bolt	10	0S-1595
247-0234	1/2-13 x 1 1/2 in Hex Head Bolt	10	0S-1585
247-0235	1/2-13 x 1 3/4 in Hex Head Bolt	10	0S-1587
247-0236	1/2-13 x 2 in Hex Head Bolt	10	1A-1460
247-0237	1/2-13 x 2 1/4 in Hex Head Bolt	5	2B-0947
247-0238	1/2-13 x 2 1/2 in Hex Head Bolt	5	9S-1366
247-0239	1/2-13 x 2 3/4 in Hex Head Bolt	5	1A-5822
247-0240	1/2-13 x 3 in Hex Head Bolt	5	0L-1329
247-0241	1/2 in Hard Washer	25	5P-8245
247-0242	1/2 in Lock Washer	50	3B-4508
247-0243	1/2-13 Full Nut	25	1F-7958
247-0244	5/8-11 x 3/4 in Hex Head Bolt	10	1H-9456
247-0245	5/8-11 x 1 in Hex Head Bolt	10	0S-1624
247-0246	5/8-11 x 1 1/4 in Hex Head Bolt	10	0S-1592
247-0247	5/8-11 x 1 1/2 in Hex Head Bolt	5	0S-1566
247-0248	5/8-11 x 1 3/4 in Hex Head Bolt	5	0S-1589
247-0249	5/8-11 x 2 in Hex Head Bolt	5	1A-1135
247-0250	5/8-11 x 2 1/4 in Hex Head Bolt	5	8S-9092
247-0251	5/8-11 x 2 1/2 in Hex Head Bolt	5	0S-1625
247-0252	5/8-11 x 2 3/4 in Hex Head Bolt	5	1A-8537
247-0253	5/8-11 x 3 in Hex Head Bolt	5	1B-4367

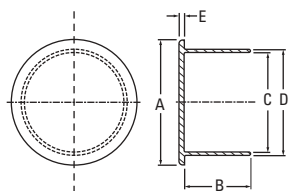


Tapered Cap and Plug Protectors

PART NO.	PKG. QTY.	MAT. <sup>1</sup>	A (in)	A (mm)	B (in)	B (mm)	C (in)	C (mm)	D (in)	D (mm)	E (in)	E (mm)	F (in)	F (mm)	COMMON USES CAPS	COMMON USES PLUGS
9U-7067	250	1	0.40	10	0.33	8	0.56	14	0.38	10	0.27	7	0.33	8		1/8 in NPT
9U-7068	250	1	0.43	11	0.36	9	0.59	15	0.38	10	0.30	8	0.37	9		7/16 in Std. Thd.
9U-7069	250	1	0.49	12	0.42	11	0.59	15	0.38	10	0.36	9	0.42	11	1/8 in NPT	1/4 in NPT 1/2 in Std. Thd.
9U-7070	250	1	0.55	14	0.49	12	0.72	18	0.50	13	0.41	10	0.49	12	1/2 in Std. Thd.	9/16 in Std. Thd.
9U-7071	250	1	0.62	16	0.53	13	0.75	19	0.50	13	0.47	12	0.55	14	1/4 in NPT	5/8 in Std. Thd.
9U-7072	250	1	0.63	16	0.55	14	0.78	20	0.50	13	0.49	12	0.57	14	9/16 in Std. Thd.	3/8 in NPT
9U-7073	250	1	0.73	18	0.64	16	0.88	22	0.50	13	0.58	15	0.67	17		3/4 in Std. Thd.
9U-7074	250	1	0.75	19	0.67	17	0.88	22	0.63	16	0.62	16	0.69	18	3/8 in NPT	
9U-7075	250	1	0.79	20	0.69	18	0.94	24	0.63	16	0.63	16	0.72	18		1/2 in NPT
9U-7076	250	1	0.85	22	0.75	19	1.03	26	0.63	16	0.69	17	0.79	20		7/8 in Std. Thd.
9U-7077	250	1	0.91	23	0.80	20	1.09	28	0.75	19	0.74	19	0.85	21	1/2 in NPT	
9U-7078	250	1	0.98	25	0.87	22	1.11	28	0.63	16	0.81	21	0.92	23		3/4 in NPT
9U-7079	250	1	1.04	26	0.90	23	1.16	29	0.75	19	0.83	21	0.98	25		11/16 in Std. Thd.
9U-7080	250	1	1.09	28	0.97	25	1.25	32	0.75	19	0.90	23	1.03	26	3/4 in NPT	
9U-7081	250	1	1.15	29	1.00	25	1.31	33	0.75	19	0.94	24	1.08	27	11/16 in Std. Thd.	
9U-7082	250	1	1.23	31	1.11	28	1.52	39	0.75	19	1.04	26	1.18	30		1 in NPT
7E-8716	250	1	1.29	33	1.18	30	1.44	37	0.75	19	1.11	28	1.22	31		15/16 in Std. Thd.
9U-7084	250	1	1.35	34	1.24	31	1.50	38	0.75	19	1.17	30	1.30	33	1 in NPT 15/16 in Std. Thd.	
9U-7085	250	1	1.60	41	1.45	37	1.75	44	0.75	19	1.39	35	1.54	39		1 1/4 in NPT
9U-7086	100	1	1.60	41	1.52	39	1.75	44	0.75	19	1.46	37	1.54	39		1 5/8 in Std. Thd.
9U-7087	100	1	1.68	43	1.56	40	1.88	48	0.75	19	1.50	38	1.62	41	1 1/4 in NPT 1 5/8 in Std. Thd.	1 3/4 in Std. Thd.
9U-7088	100	1	1.88	48	1.75	44	2.03	52	0.75	19	1.69	43	1.82	46		1 1/2 in NPT 1 7/8 in Std. Thd.
9U-7089	100	1	1.94	49	1.81	46	2.13	54	1.00	25	1.75	44	1.88	48	1 1/2 in NPT 1 7/8 in Std. Thd.	
9U-7090	50	1	2.26	57	2.23	57	2.50	64	0.50	13	2.17	55	2.20	56		2 in NPT
9U-7091	50	1	2.47	63	2.30	58	2.63	67	1.00	25	2.24	57	2.40	61	2 in NPT	
9U-7092	50	1	2.79	71	2.65	67	3.00	76	0.50	13	2.58	66	2.73	69		2 1/2 in NPT
6V-7494	50	1	3.00	76	2.74	70	3.13	79	1.00	25	2.68	68	2.94	75	2 1/2 in NPT	
9U-7094	50	1	3.45	88	3.32	84	3.63	92	0.50	13	3.24	82	3.37	86		3 in NPT
9U-7095	50	1	3.58	91	3.24	82	3.94	100	1.00	25	3.16	80	3.49	89	3 in NPT	
9U-7096	50	1	4.46	113	4.22	107	5.00	127	1.00	25	4.14	105	4.38	111		4 in NPT
6V-7496	50	1	4.62	117	4.37	111	5.00	127	1.00	25	4.29	109	4.50	114	4 in NPT	

<sup>1</sup> 1 - Grade 1 Virgin Polyethylene 2 - Low Density Polyethylene 3 - High Density Polyethylene

**NOTE:** To assure a proper fit, dimension "E" should be approximately .020 in smaller than the opening diameter of the part to be protected, or dimension "A" should be approximately .020 in larger than the opening diameter of the part to be protected.



Straight Cap

PART NO.	PKG. QTY.	MAT.	A (in)	A (mm)	B (in)	B (mm)	C (in)	C (mm)	D (in)	D (mm)	E (in)	E (mm)
217-1591	50	1	1.25	31.65	0.67	17	1	25.22	1.06	26.82	0.05	1.4

## Window Bonding Adhesives and Tooling

### To reseal windows with weather-strip:

- 9U-7239 Liquid Butyl Resealant, 1/10 gallon caulking gun cartridge
- 9U-6919 Butyl Sealant, 3/8 inch x 1/8 inch x 50 foot roll

### To bond windows to full cure within 2 hours:

**Caution: Window must be installed within 10 minutes using this system.**

- 121-3911 Window Primer, 250 m. (8.5 oz) tube
- 175-2934 Activator, 250 ml tube
- 175-2935 Fast Cure Window Adhesive and Booster, 10.5 oz tube
- 175-2936 Heating Oven

Pre-heat 175-2935 inside 175-2936 Oven for 1 hour prior to repairs. Clean the area to be repaired with 9U6917 (pour top quart) or 222-3117 (aerosol).

If glass is supplied without ceramic coating, use 121-3911 to prepare the area. Wait 10 minutes, then use 175-2934 to activate the area. Wait 10 minutes, then apply the pre-heated 175-2935 to the area.

1-hour drive-away time, 2-hour full cure. See SEHS9824-01 Special Instruction (6/99) for detailed instructions.

### To bond large windows:

- 121-3911 Window Primer, 250 m. (8.5 oz) tube
- 175-2934 Activator, 250 ml tube
- 121-3908 Window Adhesive, 310 ml (10.5 oz) tube

Clean the area to be repaired with 9U-6917 (pour top quart) or 222-3117 (aerosol). Use 121-3911 to prepare the area. Wait 10 minutes, then use 175-2934 to activate the area. Wait 10 minutes, then apply 121-3908 to the area.

See SEHS9824-01 Special Instruction (6/99) for detailed instructions.

### Seal glass to glass joints:

- 119-0781 Clear Silicone Adhesive, 300 ml. cartridge

### Primer for polycarbonate

- 166-1358 Polycarbonate Primer

### Primer for ABS plastic:

- 166-1359 ABS Primer

### Cleaner:

- 154-5835 Cleaner

#### 127-6421 Window Tool Kit

Part No.	Description
121-9777	Cutout Wire
121-9780	Handles for cutout wire
121-9778	Cutout Knife
121-9779	Replacement Blades for 121-9778
121-9782	Suction Cup Holder
121-9781	Heavy Duty Caulking Gun
127-6883	Sponge Brushes

## Cleaners

### 222-3120 Windshield Cleaner

- Good for all types of glass
- Safe for plastics, vinyl, tile, and all hard surfaces
- Non-streaking
- Dries completely
- Does not leave a film
- Size: 340 g (12 oz)



### 222-3122 Plastic and Rubber Protectant

- Contains no silicone
- Formulated with UV inhibitors to protect surface area
- Cleans and protects
- Size: 340 g (12 oz)



### 169-0503 Seal Installation Kit

- Used to clean and lubricate Duo Cone seals prior to installation (developed by Cat MVC)
- Cleaner dries quickly and leaves no film
- For best results, use cleaner, lubricant, and critical task wipers

Service Parts	
Part No.	Description
169-5418	Seal Lubricant (1 Gallon)
169-5420	Seal Cleaner (1 Gallon)
166-6384	Wipers

Seal cleaner	237 ml (8 oz.)
Lubricant	237 ml (8 oz.)
Critical task wipers	203 x 203 mm (8 x 8 in); 50 per package



### Cat Preventive Maintenance Kits

Kit Consist							
Engine	Kit Part No.	Oil Filter	High Efficiency Fuel Filter	S-O-S <sup>SM</sup> Oil Analysis (Oil Sample Kit)	Fuel/Water Separator (Primary Fuel Filter)	DEAC Spin-on Filter	SCA (Liquid Additive) for DEAC (Conventional Coolant)
<b>Kits for Use with ELC (No DEAC Spin-on filter or SCA/liquid additive required with ELC)</b>							
3116 (7SF, 2BK,9GK)	173-4437	•	•	•			
3126, 3126B, 3116	173-5325	•	•	•			
3176, 3406, C-10, C-12,	173-4431	•	•	•			
C-15, C-16	198-9681	•	•		175-2949		
<b>Kits for Use with DEAC (Conventional Coolant)</b>							
3116 (7SF, 2BK, 9GK)	163-1157	•	•				8 oz. bottle
3126, 3126B, 3116	173-5326	•	•	•			8 oz. bottle
	163-1156	•	•				8 oz. bottle
3176, C-10	163-1158	•	•			111-2369	
3406, C-12, C-15, C-16	163-1129	•	•			9N3368	
	163-1128	•	•				16 oz. bottle
	163-1127	•	•	•		9N3368	
	163-1126	•	•	•			16 oz. bottle

### Leak Detection

#### 9U-5031 Oil Dye, Red 9U-5032 Oil Dye, Blue

- Highly concentrated oil soluble dyes for adding color to lubricating oils, transmission oils, hydraulic oils and fuels
- Visible at concentrations of 1 part in 10,000 or more. It only takes 30 ml (1 oz) to color 473 l (125 gal) of light color oil
- Use it to color code oils to prevent mixups.
- Use it to identify the source of leaks when more than one source is possible.
- Hint: For sumps with dark colored oil, use oil dyes which are visible in black light (ultraviolet) such as 1U-5572 through 1U-5575.
- Size: 240 ml (8 oz) container
- Quantity: 1



#### Toolmaker's Ink/Layout Blue and Remover

- Use to check fit on fuel injectors/sleeves
- Check fits between engine valves and valve seats.
- Allow to dry and use for sheet metal layout.
- Deep blue color makes scribed lines stand out.

Part No.	Qty.	Description	Size
9U-6075	12	Toolmaker's Ink/Layout Blue	339 g (12 oz) Aerosol
9U-6076	12	Toolmaker's Ink/Layout Blue	222 ml (7.5 fl oz) Brush Top Can
9U-6077	12	Toolmaker's Ink Remover	397 g (14 oz) Aerosol

### 8T-9018 Radiator Repair

- Fills seams and holes in radiators
- For temporary in field repairs
- Cures in 15 minutes
- Withstands normal cooling system operating pressures
- Also see Iron-Stitch Repair Kit in Salvaging Equipment Section.
- Size: 14 g (.5 oz)
- Quantity: 10



### 2P-2333 Caterpillar Manifold Sealer

- Seals and bonds at temperatures up to 1093°C (2000°F)
- Seals male/female joints in segmented exhaust manifolds
- Size: 473 ml (16 fl oz)



### Ether Cylinder

- Cold weather starting aid
- Heavy-duty construction
- Quick starts from -45.5°C (-50°F)
- Easy to install, hand tighten

#### 7N-0296

- Fits most 3400 series and smaller engine applications
- For measured shot systems

#### 7X-1062

- Fits most 3500 series engine applications
- Comes with specially designed filter and foam disc collar to keep impurities out of the system



Part No.	Qty.	Size
7N-0296	24	509 g (18 oz) — 7.6 cm (3 in) diameter
7X-1062	12	594 g (21 oz) — 10 cm (4 in) diameter
130-8414	12	227 g (8 oz)

### 8T-9019 Fuel Tank Repair

- Fill seams and holes in fuel tanks
- For temporary in field repairs
- Hardens in 15 minutes
- Will adhere to fuel wetted surfaces
- Also see 1U-8118 Fuel Tank Repair Kit for Plastic Fuel Tanks.
- Size: 7 g (.25 oz)
- Quantity: 10



## Mechanics Gloves

Warranty: Manufacturer's

### Standard Mechanics Glove

- Best fitting, most comfortable work glove available — provides ultimate dexterity and finger tip control
- Protects against nicks, cuts, and abrasions
- Offers dexterity for small intricate tasks
- Machine washable
- Easy entry, non-restrictive wrist opening with double elastic wrist cuff
- Stretch knit spandex top ensures snug fit
- Genuine Clarino wrap-around outer palm area, fingers, and thumb
- Seamless thumb and index finger design
- 1 year guarantee on workmanship and materials



Part No.	Size
197-7677	Medium
197-7678	Large
197-7679	Extra Large
240-5130	XX Large

### Mechanics Glove with GEL Palm Padding

- Ultimate mechanics glove with exclusive "Split-Fit" palm design developed and tested by world's finest race mechanics
- Anti-vibration GEL palm padding [3 mm (.1 in) thick]
- Provides protection, comfort, and dexterity demanded by race mechanics
- Great for working around heat, cold, vibration producing power tools, and sharp or abrasive surfaces
- Genuine Clarino palm, fingers, and thumb with 100% Clarino index finger
- Rubber "over the top", non-restrictive, wrist closure
- Stretch knit spandex top ensures snug fit
- Hidden seam stitching reduces snagging
- Seamless, reinforced thumb and index finger design
- 1 year guarantee on workmanship and materials

Part No.	Size
197-7674	Medium
197-7675	Large
197-7676	Extra Large
240-5140	XX Large

### Winter Gloves

- Insulated palm and finger design is great in cold-weather applications
- Full grain leather on entire palm adds durability and helps prevent water/oil penetration
- Free-flex neoprene knuckle and index protection
- Made with 3 mm (.12 in) thick shock absorbing gel padding in palm
- Back of glove made from tough, insulated spandex to ensure snug fit
- Hidden seam design eliminates snagging
- Glove is not machine washable
- 1 year guarantee on workmanship and materials



Part No.	Size
247-2911	Medium
247-2912	Large
247-2913	Extra Large
247-2914	XX Large

### Fingerless Gloves

- Fingerless design for greater flexibility
- Made from breathable neoprene for added comfort
- Impact resistant palm design — 3 mm (.12 in) thick shock absorbing gel
- Back of glove made from tough spandex to ensure snug fit
- Hand wash in warm water using mild detergent, air dry
- 1 year guarantee on workmanship and materials



Part No.	Size
247-2915	Medium
247-2916	Large
247-2917	Extra Large
247-2918	XX Large

## WypAll Plus® Paper Wipers

- Made with the same patented manufacturing process as original WypAll — and 25% stronger.
- Combines clothlike softness with extra strength and durability.
- Sturdy, corrugated, pop-up dispenser carton for easy storage and extra protection — ideal for service truck and outdoor use.
- 1U-5352 Blue color hides stains, controls usage by encouraging employees to use the same wiper longer.
- Compatible with the 1U-5353 White Metal “Grabber” holder that mounts anywhere, putting wipers right at the worker’s fingertips.



Part No. for Case	Part No. for Bundle or Carton	Towel Size	Color	Quantity
1U-5351	1U-9580	25.4 cm x 40.6 cm (10 in x 16 in)	white	100 wipers per carton, 9 cartons per case
1U-5352	1U-9581	25.4 cm x 40.6 cm (10 in x 16 in)	blue	100 wipers per carton, 9 cartons per case

Dealers must order case quantity part number.

## Paper Wipers Dispensers

Part No.	Description	Usage
1U-5432	Plastic Paper Wiper Dispenser	use for 9U-6000 Paper Wiper and 162-5791 Shop Towel
1U-5353	Paper Wiper Grabber, White Metal	use for 1U-5351 and 1U-5352 Paper Wipers

## 162-5791 Shop Towel

- Controls contamination — low linting and tear resistant
- Safe to use for power train and hydraulic system repairs
- Reusable — heavy-weight rayon/polyester blend towel is washable/rinsable
- Solvent resistant — compatible with most industrial solvents
- Can be used with 1U-5432 Paper Wipers Dispenser
- Size: 34 cm x 38 cm (13.5 in x 15 in)
- Retail package: 100 towels/box



## 1U-7427 Engine Cover

- Protect engine from falling debris
- Can be used as a drop cloth/dust cover
- Affordable, disposable
- Packaged 50 sheets per case
- Size: 122 cm x 183 cm (48 in x 72 in)



## Rugs

- Keep shop floors cleaner and safer
- Absorb most shop fluids and oils
- Tough and tear resistant—won't break down
- Durable enough to withstand heavy traffic
- Coated rug has a poly-backed coating to provide extra protection to shop floors

Part No.	Description	Size	Absorbent Capacity
159-5155	Rug	91 x 91.5 m (36 x 300 in)	121 l (32 gal) per roll
159-5160	Rug (Coated)	91 x 254 cm (36 x 100 in)	40 l (10.5 gal) per roll



### Tradesman Vises

Warranty: Manufacturer's

- Replaceable, hardened steel serrated jaw inserts and replaceable pipe jaws
- Precision, machined keyed slide bar
- Built for maximum quality and performance
- Straight line design means no wear on spindle or nut.
- 360° swivel base, double lockdowns
- Side play is eliminated by precision machined slide bar — keyed for precision.
- Fully enclosed design keeps dirt and contaminants out.



Cat Part No.	Jaw Width	Pipe Capacity	Throat Depth	Max. Opening	Shipping Weight	Replacement Jaw Insert Kits	Replacement Pipe Jaw Inserts
233-8145	4 in	¼ in-2 in	3 <sup>7</sup> / <sub>16</sub> in	4½ in	37 lb	236-2646	236-2654
233-8146	5 in	¼ in-2½ in	3¾ in	5¼ in	50 lb	236-2647	236-2655
233-8147	6 in	¼ in-3½ in	4 <sup>1</sup> / <sub>8</sub> in	5¾ in	64 lb	236-2648	236-2656
188-2163	8 in	½ in-3½ in	4¾ in	7 in	109 lb	188-2171	188-2752

Replacement Parts for Non Current Vises			
Cat Part No.	Jaw Width	Replacement Jaw Insert	Replacement Pipe Jaw Inserts
188-2143	4½ in	188-2165	4C-4400
188-2145	5½ in	188-2167	4C-4400
188-2147	6½ in	188-2170	4C-4400
4C-3741	4 in	4C-4391	4C-4400
4C-3742	5 in	4C-4392	4C-4400
4C-3743	6 in	4C-4393	4C-4400

### Machinists' Vises

Warranty: Manufacturer's

- Stressed parts are made of 60,000 PSI tensile strength ductile iron.
- Straight line design guarantees a lifetime spindle and nut.
- Precision slide bar is moveable, maintained with hardened steel key, insuring a .002 mm fit.
- 360° slip proof swivel base—serrated teeth and double lockdowns
- Largest anvil of any machinists' vise



Cat Part No.	Wilton Part No.	Jaw Width	Throat Depth	Max. Opening	Shipping Weight	Replacement Jaw Inserts
4C-3751	350S	3½ in	2¾ in	5¼ in	46 lb	4C-4397
4C-3752	400S	4 in	3½ in	6½ in	66 lb	4C-4398
4C-3753	450S	4½ in	4 <sup>3</sup> / <sub>16</sub> in	7½ in	73 lb	4C-4394
4C-3754	500S	5 in	4¼ in	8 in	97 lb	4C-4399

### Combination Pipe and Bench Vises

Warranty: Manufacturer's

- Stressed parts are made of 60,000 PSI tensile strength ductile iron.
- Replaceable hardened steel jaw inserts
- Hardened, replaceable steel pipe jaws
- Alloy steel slide bar



Cat Part No.	Wilton Part No.	Jaw Width	Pipe Capacity	Throat Depth	Max. Opening	Shipping Weight	Replacement Jaw Inserts	Replacement Pipe Jaw Inserts
4C-3744	C-1	4½ in	⅛ in-3½ in	4¾ in	6 in	80 lb	4C-4394	4C-4401
4C-3745	C-2	5 in	⅛ in-4½ in	5 <sup>5</sup> / <sub>16</sub> in	7 in	113 lb	4C-4395	4C-4402
4C-3746	C-3	6 in	⅜ in-6 in	6 <sup>5</sup> / <sub>8</sub> in	9 in	209 lb	4C-4396	4C-4403

### 141-1655 Inspection Light

Warranty: Manufacturer's

- Molded in Lexan®, designed to stand up to almost any punishment
- Lightweight, super compact light source
- Water-tight to 609.6 m (2000 ft)
- Shock proof, corrosion proof
- Economical, 30-hour long life lamp module
- Handy shirt clip
- Includes two AA batteries
- Includes 90° light bender
- Service Part: 4C-6741 Replacement Lamp Module (Qty. 12)



### 238-8244 Pen Light

Warranty: Manufacturer's

CE Compliant

- Made from tempered aircraft aluminum
- 100,000 hour lifetime, hi-intensity light emitting diode (LED) bulb
- Batteries last up to 60 hours
- Includes 3 AAAA batteries
- Handy shirt clip
- Push end of pen light to momentarily illuminate or twist end clockwise for constant "on"
- Waterproof



### Flashlight Bulbs

Warranty: Manufacturer's

- Ultra high intensity Krypton
- Use for increased brightness and visibility
- Built with integral lens providing an even distribution of light with excellent focusing characteristics
- Use with alkaline batteries for best economy

Part No.	Description	Application
4C-9464	Bulb	2 cell C and D flashlights
4C-9465	Bulb	3 cell C and D flashlights
4C-9466	Bulb	4 cell C and D flashlights
<b>Special Flashlight Bulbs</b>		
4C-9463	Mini MagLite (Qty. 2)	
4C-9470	Mag Charg Rechargeable Flashlight	
4C-6741	Lamp Module (Qty. 12)	

### Industrial Batteries

Warranty: Manufacturer's

#### Alkaline

- Top-of-the-line for maximum service life
- Best for use in high-drain, continuous use situations

#### Heavy-Duty

- Ideally suited for normal industrial use



Size	Alkaline	Pkg. Qty.	Heavy-Duty	Pkg. Qty.
C, 1.5 Volt	1U-9531	72	1U-9536	72
D, 1.5 Volt	1U-9532	72	1U-9537	72
AA, 1.5 Volt	1U-9533	96	1U-9538	96
9 Volt	1U-9534	72	1U-9539	72
AAA, 1.5 Volt	1U-9535	96	—	—
AAAA, 1.5 Volt	245-3224	6	—	—

### Lantern Batteries

Warranty: Manufacturer's

- Offers dependable high performance for portable lighting uses
- Recommended for all industrial lanterns



Part No.	Description	Pkg. Qty.
1U-9546	Lantern Batteries, Barricade Lighting, 6 Volt	12
1U-9547	Lantern Batteries, Spring Terminal, 6 Volt	12

## Casting Salvage

## Ironstitch® Kits

- Repairs holes and cracks in nonstructural area of castings
- Cold process — eliminates difficulties associated with welding
- Repair process is simple to perform and provides a permanent repair to cast iron damage.
- Ironstitch is a registered trademark of Reed Systems, Incorporated.
- It is recommended that you not perform any procedure, or order any parts, until you've ordered and read the Special Instruction SEHS8841 "Using the Ironstitch® Procedure for Casting Salvage."

## 1U-6393

- For use in the repair of material that is up to, and including, 16 mm (5/8 inch) thick

Part No.	Description	Quantity
1U-6367	Pin — No. 6A	250
1U-6368	Pin — No. 6B	250
1U-6369	Pin — No. 8	125
1U-6371	Tap — No. 6	6
1U-6372	Tap — No. 8	6
225-4208	Locating Punch — Discontinued <sup>1</sup>	1
225-4209	Locating Punch — Discontinued <sup>1</sup>	1
1U-6375	Lock — No. 1	25
1U-6376	Lock — No. 2	25
1U-6377	Lock — No. 3	25
1U-6380	Lock Drill Jig Set	1
1U-6381	Lock Drill Jig Set	1
1U-6382	Lock Drill Jig Set	1
1U-6385	Drill Collar Set	1
1U-6386	Drill Collar Set	1
1U-6387	Drill Collar Set	1

<sup>1</sup>For parts service: 225-4208 and 225-4209 Drill Jigs are available to replace discontinued 1U-6373 and 1U-6374 Locating Punch. Drill starter hole and drill jig spaces additional holes automatically.

## Test Equipment (pressure test)

- Water tank with rust inhibitor
- Test plates (for covering water ports)
- Compressed air supply [861 kPa (125 PSI)]
- Air pressure regulator
- Non-corrosive soap solution and a squirt bottle
- Flashlight and mirrors

## Measuring Tools

- Outside micrometers
- Vernier calipers
- Straight-edge, 914 mm (36.0 in) long

## 1U-6535

- For use in the repair of material that is over 16 mm (5/8 inch) thick

Part No.	Description	Quantity
1U-6369	Pin — No. 8A	125
1U-6370	Pin — No. 8B	125
1U-6372	Tap — No. 8	6
1U-6374	Locating Punch	1
1U-6378	Lock — No. 4	25
1U-6379	Lock — No. 5	25
1U-6383	Lock Drill Jig Set	1
1U-6384	Lock Drill Jig Set	1
1U-6388	Drill Collar Set	1
1U-6389	Drill Collar Set	1

## Additional Supplies Needed (not included with repair kits)

Part No.	Description
1U-5499	Tapping Fluid
9S-3263	Thread Lock
	Carbide grinder bits
	Tap extractors
1U-5517	Disc 76.2 mm (3.00 in)
1U-5518	Threaded Shaft (mandrel)
1U-5520	Disc Pad
1U-6699	No. 7 Drill, 0.201 inch diameter for #6 pins
1U-6700	No. L Drill, 0.290 inch diameter for #8 pins
<b>#1 Lock Drill Set</b>	
1U-5590	Drill, 5/64 inch diameter
1U-5592	Drill, 7/64 inch diameter
1U-5595	Drill, 9/32 inch diameter
<b>#2 Lock Drill Set</b>	
1U-5592	Drill, 7/64 inch diameter
1U-5594	Drill, 9/64 inch diameter
1U-5597	Drill, 3/16 inch diameter
<b>#3 Lock Drill Set</b>	
1U-5594	Drill, 9/64 inch diameter
1U-5596	Drill, 11/64 inch diameter
1U-5597	Drill, 3/16 inch diameter
<b>#4 Lock Drill Set</b>	
1U-5596	Drill, 11/64 inch diameter
1U-5600	Drill, 15/64 inch diameter
1U-5605	Drill, 3/16 inch diameter
<b>#5 Lock Drill Set</b>	
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