



WELDING
REQUIRED TOOLS, SAFETY EQUIPMENT & TEXTS
Updated 09/16/2024

(Items in parentheses or italics are part numbers at Central Welding Supply)

PUT YOUR NAME ON ALL YOUR TOOLS

Required Clothing/other equipment for all classes (You will not be allowed to work in our shop without these items)

1. Cotton Shirt (short sleeve or long sleeve okay, No tank tops allowed)
2. Canvas or denim pants (no frays, loose ends, or holes allowed. Pants should not drag on the ground at any time)
3. High-top 8" boots with a steel or composite toe (buying spare laces is recommended)
4. Clear or yellow safety glasses
 - a. If you have regular glasses you can wear side shields on your regular glasses. (Buying safety glasses that fit over your regular glasses is preferred.)

Oxy-acetylene welding (OAW) and Thermal Cutting (OAC, PAC, and CAC-A)
(For classes: Weld 101 and Weld 102)

1. Welding and cutting goggles shade #4 or #5
2. Light-duty leather welding gloves. (It is recommended to buy more than one pair)
3. Standard OAW tip cleaner
4. Safety glasses. (Clear/yellow okay)
5. Earplugs
6. Welding respirator/particle mask
7. Whelper Pliers
8. 2- Paint markers (any color)
9. 2- soapstone sticks (holder optional)
10. Welding Tips for a series 100 Victor welding torch in the sizes #0, #00, and #1
11. Welding Helmet; electronic with full range of lens darkness selection (#8-#13)
 - a. It is HIGHLY recommended you buy spare front and internal lenses for the hood you buy
12. Heavy Duty leather gloves (it is recommended you buy more than one pair)
13. Leather welding jacket or sleeves.
14. Leather apron or chaps.

Shielded Metal Arc Welding (SMAW)
(For classes: Weld 105, 106, 138, and 143)

If not already purchased for Weld 101:

1. Welding helmet, electronic with full range of lens selection #8 - #13. (standard #10 flip front)
2. Spare outside and internal lenses for the type of weld hood you buy
3. Heavy leather gloves. (it is recommended you buy more than one pair)
4. Leather welding jacket or sleeves
5. Leather apron or chaps
6. Welder's respirator/particle mask
7. 2- Paint markers (any color)
8. 2- soapstone sticks (holder optional)



New items:

9. Slag hammer
10. Wire brush (it is recommended you buy a few of these)
11. Welders cap
12. Vise grips
13. 4 1/2" or 5" angle grinder (any brand)
 - a. Twisted wire wheel that fits on the grinder (it is recommended you buy a few of these)
 - b. Grinding disc wheels that fit on the grinder (it is recommended you buy a few of these)
 - c. Fine grit sanding/flapper wheels that fit on the grinder (it is recommended you buy a few of these)
14. Flashlight

Flux Core Arc Welding (FCAW-G/FCAW-S)

(For Classes: Weld 110 and 140)

In addition to the above arc welding gear:

Note...The following consumables must match.

All the guns in the RTC shop are 5/8" size Bernard BTB MIG/Dualsheild guns

FCAW-G

1. Gas diffuser #D-1
2. Heavy duty fastip style Gas diffuser #D118
3. Heavy duty fastip contact tips for wire size .052" (it is recommended you buy a few of each of these sizes)
4. Copper nozzle size 5/8" #N51C58

FCAW-S

Additional consumables for Lincoln Innersheild 350/400 amp guns.

1. 60° gooseneck *LIN KP 1928-1*
2. 5/64" diameter contact tips *LIN KP 2100-4B1* (it is recommended you buy a few of these)
3. 0.072" diameter contact tips *LIN KP 2100-1B1* (it is recommended you buy a few of these)
4. 1/16" diameter contact tips *LIN KP 2100-2B1*(it is recommended you buy a few of these)
5. Tip insulator (it is recommended you buy a few of these)
6. Hand shield (it is recommended you buy a few of these)

GMAW (MIG) Aluminum

(Weld 120)

1. A new wire brush that has never been used on steel (make sure to mark the handle so you know it's for aluminum ONLY)

For the Lincoln Machine:

2. Heavy duty fastip style Gas diffuser #KP2747-1A
3. Heavy-duty fast-tip contact tips for wire size 3/64" #KP2745-364A (it is recommended you buy a few of these)
4. Heavy duty nozzle size 5/8" #KP2743-1-62RA

For the Miller Machine:

5. Heavy duty fast-tip style Gas diffuser #199623
6. Heavy-duty fast-tip contact tips for wire size 3/64" #198852 (it is recommended you buy a few of these)
7. Heavy duty nozzle size 5/8" #198856



Gas Metal Arc Welding (GMAW Steel only)
(For Classes: Weld 111 and 140)

In addition to the above arc welding gear:

Note...The following consumables must match.

Note: We have both Benard 5/8" guns in the shop and Lincoln Manum Pro 350 Guns make sure you have a set of parts for both types, they are not interchangeable!

1. Gas diffuser
2. Gas cup in the following size: 5/8" ID #
3. Contact tips in the sizes .035" (T-035) (it is recommended you buy a few of these)
4. Anti-stick Nozzle spray (more than one can is preferable)

Gas Tungsten Arc Welding (GTAW)
(For classes: Weld 114, 115, and Weld 142)

The Following TIG consumables must fit our CK series 2 and 3 torches.

Buy the following consumable parts individually or ask about the RTC TIG Kit.

1. 1-each 1/16", 3/32", and 1/8" collet bodies
2. 1-each 1/16", 3/32", and 1/8" collets
3. 1-each 1/16", 3/32", and 1/8" collets
4. 1-each 1/16", 3/32", and 1/8" gas lenses
5. 1-each 1/16", 3/32", and 1/8" gas lens collets
6. 1 pack each 1/16", 3/32", and 1/8" tungsten in the following colors: red, gold, gray, green (for aluminum), or white (for aluminum). (Gray least preferred) *(they offer a 3-pack of each – start with that)*
7. Heatshield
8. Back cap (any length, long and medium are the most common)
 - a. It recommended you buy a few spare o rings for your back caps
9. 1-each #4, #5, #6, #7, and #8 gas nozzles
10. 1-each #4, #5, #6, #7, and #8 ceramic cups (non-gas lens style)
11. 1-each #4, #5, #6, #7, and #8 ceramic cups (for gas lenses)

Part Numbers:

Series 3:

Standard style (non-gas lens)

Back Caps	Heat Sheild	Collets	Collet Body	Cups:
Back Cap Short- CKW 300S	Heatshield – CKW 300HS	Collet 1/16" – CKW 3C116	Collet Body 1/16" – CKW 3CB116	#4 Alumina – CKW 3A4
Back Cap Med- CKW 300M		Collet 3/32" – CKW 3C332	Collet Body 3/32" – CKW 3CB332	#5 Alumina – CKW 3A5
Back Cap Long – CKW 300L		Collet 1/8" – CKW 3C418	Collet Body 1/18" – CKW 3CB418	#6 Alumina – CKW 3A6
				#7 Alumina – CKW 3A7
				#8 Alumina – CKW 3A8
				#10 Alumina – CKW 3A10



Part Numbers:

Series 2:

Standard style (non-gas lens)

Back Caps	Heat Sheild	Collets	Collet Body	Cups:
Back Cap Short- <i>CKW 200S</i>	Heatshield – <i>CKW 200HS</i>	Collet 1/16” – <i>CKW 2C116</i>	Collet Body 1/16” – <i>CKW 2CB116</i>	#4 Alumina – <i>CKW 2A4</i>
Back Cap Med- <i>CKW 200M</i>		Collet 3/32” – <i>CKW 2C332</i>	Collet Body 3/32” – <i>CKW 2CB332</i>	#5 Alumina – <i>CKW 2A5</i>
Back Cap Long – <i>CKW 200L</i>		Collet 1/8” <i>CKW 2C418</i>	Collet Body 1/18” <i>CKW 2CB418</i>	#6 Alumina – <i>CKW 2A6</i>
				#7 Alumina – <i>CKW 2A7</i>
				#8 Alumina – <i>CKW 2A8</i>
				#10 Alumina – <i>CKW 2A10</i>

Part Numbers:

Series 3:

Gas Lens style

Back Caps	Heat Sheild	Collets	Collet Body	Cups:
Back Cap Short- <i>CKW 300S</i>	Heatshield – <i>CKW 3GHS</i>	Collet 1/16” – <i>CKW 3C116</i>	Collet Body 1/16” – <i>CKW 3GL116</i>	1/4” Alumina – <i>CKW 3AG4</i>
Back Cap Med- <i>CKW 300M</i>		Collet 3/32” – <i>CKW 3C332</i>	Collet Body 3/32” – <i>CKW 3GL332</i>	5/16” Alumina – <i>CKW 3AG5</i>
Back Cap Long – <i>CKW 300L</i>		Collet 1/8” <i>CKW C418</i>	Collet Body 1/18” <i>CKW 3GL418</i>	3/8” Alumina – <i>CKW 3AG6</i>
				7/16” Alumina – <i>CKW 3AG7</i>
				1/2” Alumina – <i>CKW 3AG8</i>
				11/16” Alumina – <i>CKW 3AG11</i>
				3/4” Alumina – <i>CKW 3AG12</i>



Part Numbers:

Series 2:

Gas Lens style

Back Caps	Heat Sheild	Collets	Collet Body	Cups:
Back Cap Short- <i>CKW 200S</i>	Heatshield – <i>CKW 2GHS</i>	Collet 1/16” – <i>CKW 2C116</i>	Collet Body 1/16” – <i>CKW 2CB116</i>	#4 Alumina – <i>CKW 2AG4</i>
Back Cap Med- <i>CKW 200M</i>		Collet 3/32” – <i>CKW 2C332</i>	Collet Body 3/32” – <i>CKW 2CB332</i>	#5 Alumina – <i>CKW 2AG5</i>
Back Cap Long – <i>CKW 200L</i>		Collet 1/8” <i>CKW 2C418</i>	Collet Body 1/18” <i>CKW 2CB418</i>	#6 Alumina – <i>CKW 2AG6</i>
				#7 Alumina – <i>CKW 2AG7</i>
				#8 Alumina – <i>CKW 2AG8</i>
				#10 Alumina – <i>CKW 2AG10</i>

Required Textbooks for Welding Theory

Weld 130 (offered winter quarter only) - Blueprint Book is OER (The book is provided for free)

Weld 104 (offered in fall quarter only) **and 135** (offered in winter quarter only)

(Available in the RTC bookstore or through personal publishing directly):

NCCER Welding Trainee Guide Level 1 Fifth edition ISBN: 9780134163116

NCCER Welding Trainee Guide Level 2 Fifth edition ISBN: 9780134163109

Weld 136 (offered in spring quarter only)

NCCER Welding Trainee Guide Level 2 Fifth edition ISBN: 9780134163109

NCCER Welding Trainee Guide Level4 Fifth edition ISBN: 9780134514222

Other Required items:

1. A computer with an internet connection
2. Graph paper
3. Pencils
4. Silver lead pencils
5. Notebook paper

Highly recommended items:

1. 12' tape measure
2. 6" center punch
3. 12" combination square
4. 10" adjustable wrench
5. 9-piece folding Allen wrench set 5/64" - 1/4"
6. Scribe



Welding tools and consumables can be bought at:

Central Welding Supply:

1200 Union Ave NE, Renton, WA 98059 -- 425 255 5926 (this one is the closest to the college)

If you mention you are an RTC student you can get a 10-15% discount on your purchase.

Boots and work pants can be bought at most workwear stores/websites:

Most of our students go to the website below to buy boots:

<https://www.workwearboots.com/>

We recommend students go to the store listed below for pants:

Willys discount workwear

25609 104th Ave SE, Kent, WA 98030 – They also have boots

They have genuine Carhartt pants for almost 50% of other retail stores.

Instructors:

Elisa Westcreek ewestcreek@rtc.edu (425) 235-2489

Rick Geist rgeist@rtc.edu (425) 235-2341

Phil Woodbridge pwoodbrigde@rtc.edu (425)235- 2392

Ray Martin Rmartin@rtc.edu (425)235- 2392

RTC Welding Address: 3000 NE Fourth St Renton, WA 98056; Building A room one

This is the official Renton Technical College tool list, if you have any questions please contact one of the instructors above.