



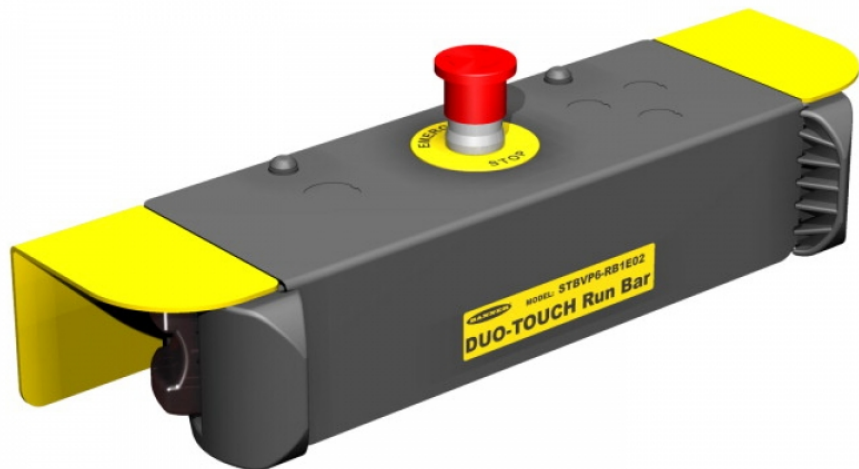
Welder Initiation: Anti-Tie-Down Palm Buttons

Safety: The purpose of using palm buttons, in general, is for added safety. It replaces the standard foot switch with two buttons that must be pressed at the same time to initiate the weld sequence. This prevents the operator from having their hands in the machinery during the weld cycle. The “anti-tie-down” feature prevents the operator from simply tying down one of the two buttons (with tape or wire or something else), which would otherwise allow them to initiate the controller one handed.

NOTE: There is a downside to Palm Buttons. Palm Buttons can only be used when the operator can release their grip on the part. Tooling, fixturing, conveyors, weld tables, or other means will most commonly be needed to allow the part to be self-supporting.

There are instances where tooling is not feasible; where the operator must still keep their hands on the part during the weld cycle. For these instances, a foot pedal is still recommended. For other safety options available when Palm Buttons are not available, consider these options:

- Soft-Touch Safety system
- Detect-A-Finger Pinch Prevention

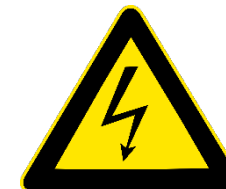




Circuit Protection (Breaker/Disconnect)



Circuit Protection & Welder On/Off Switch: Resistance welders, relative to other industrial equipment, require a tremendous amount of electricity (for extremely short periods of time). It is common to require 480V and 400-Amps of incoming power. This power, if handled improperly, is fatal. There is no traditional “On/Off” switch besides the breaker/disconnect on a spot welder.



The three primary purposes of a circuit protection mounted on a machine then are:

1. To have a way to turn all the incoming power off locally, at the machine
2. To have a safety circuit that will automatically shut off the machine if something is wrong
3. To force a maintenance person to turn the power off before servicing the equipment***

There are two different styles of circuit protection. (We can install either).

- Fused Disconnect (shown to the left here)
- Magnetic Circuit Breaker (shown to the right, built into a weld control)

A Magnetic Circuit Breaker, if the line voltage exceeds it’s rating and settings, then it will trip. To reset, simply throw the switch back to the “ON” position (after ensuring all potential problems have been remedied).

A Fused Disconnect uses replaceable fuses instead of a switch. It still has a handle (switch) that allows them to be turned on and off.

Some manufacturing facilities prefer to use their own breaker/disconnect and do not want this feature. A fused disconnect is initially less expensive, but replacement fuses can cost hundreds of dollars. Fused Disconnects are typically much larger than Magnetic Breakers.

Magnetic Circuit Breakers that are mounted inside the weld control have a mechanical lock-out that shut off the breaker when opening the cabinet door. OSHA has been known to require this feature in some districts as it provides the maximum level of safety.

***NOTE: This feature is only available with a Magnetic Circuit Breaker that is *built into the weld control*, from the factory.





Soft-Touch Safety System

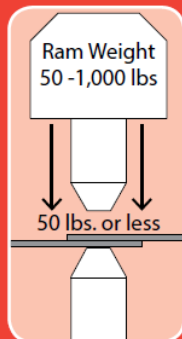
Safety: The purpose of the Soft-Touch Safety System is to attempt to prevent pinching injuries on a spot welder. There are many newcomers (since 2015) soon to be available in this pinch-point prevention arena. The Soft-Touch however was the first, and has a well proven track record. It is also the most cost effective for this level of protection.

NOTE: The Unitrol Soft-Touch can now be mounted to a Unitrol weld control or ANY other known weld control.

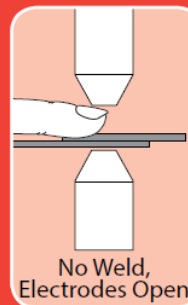


HOW SOFT TOUCH WORKS

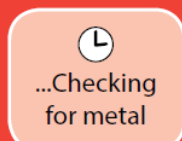
SEQUENCE: *When the foot or hand switch is closed to start a weld:*



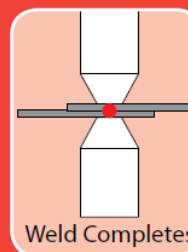
1. The welding electrodes close under **low force**. The unique pneumatic systems designed by UNITROL for this process can counter-balance the weight of the ram on large press welders. Even where the dead-weight of the welder ram is hundreds of pounds, the electrode force produced will be 50 pounds or less.



3. If metal is **not** detected, the electrodes open automatically and do not go to welding force. A display tells the operator the problem.



2. The welding control checks to see if metal has been detected between the electrodes within a customer set maximum time limit.



4. If metal **is** detected, full welding force is applied and the weld proceeds normally



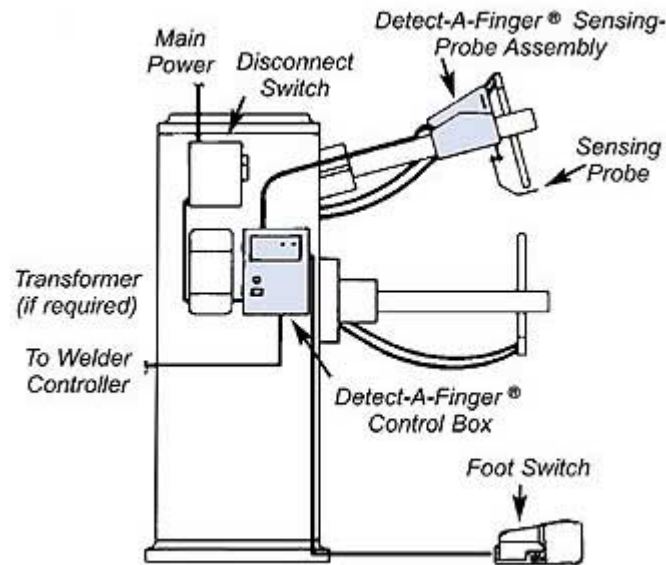


Detect-A-Finger

Safety: Somewhat similar to the Soft-Touch Safety System, the purpose of the Detect-A-Finger is to attempt to prevent pinching injuries on a spot welder. This uses a ring-guard system that mounts to the spot welder. With this type of guard, the moving electrode goes through the center of a wire loop. The loop is connected to a rod that trips a limit switch when it moved downward a certain distance. At the start of each weld, the loop is sent downward before movement of the upper electrode. If the ring is stopped by a finder or other object before reaching the top of the part being welded, the limit switch does not trip and the electrodes will not close.



NOTE: This method is less expensive than the Soft-Touch, but it has its limitations. If welding on three-dimensional stampings, multiple thicknesses, near flanges, tooling, clamps, or other obstructions, it may not work. The Detect-A-Finger can be easily adjusted out of the way to continue production, which is a good thing. On the other hand, the ability to easily adjust it can mean it can be easily defeated.





Retract (Fixed / Adjustable)



Improved Access: The purpose of Retract is to improve access between the electrodes. This helps in loading and unloading parts into the machine, as well as maintaining the electrodes.

- A standard air cylinder has two positions: extended (weld position), and retracted (part loading position)
- A Fixed Retract air cylinder will have three positions: fully extended (weld position), weld ready position, and retracted (part load position).
- An Adjustable Retract air cylinder also has the same three weld position as “fixed” retract, but the weld stroke (i.e., the distance between the electrode tips when welding) can be adjusted.

Note: OSHA states that anything less than 0.250” is not a pinch point. An Adjustable Retract air cylinder can help set this gap to be compliant.



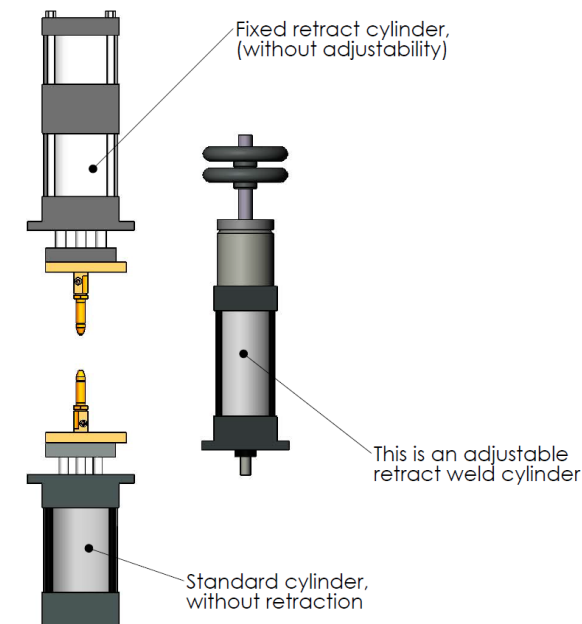
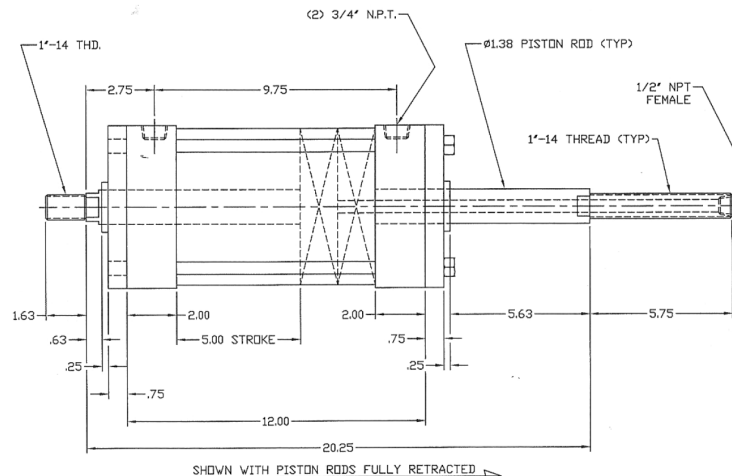
Load



Weld Ready



Weld





Electronic Air

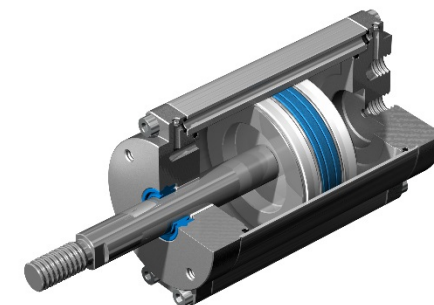


Functionality: The purpose of electronic air is to allow an operator to program a weld force (or pressure) into an individual weld schedule.

Fundamentally, spot welding is only a function of three simple variables: Current (a.k.a. “heat”), Time, and Force. On a traditional spot welder, only two of those variables are adjustable from programming the weld control; Current and Time. It is often left to the operator to determine and adjust the weld force by manually adjusting a pneumatic regulator. Charts are available to look up the appropriate force, then an operator needs to translate the force to PSI (pressure) using the diameter of the air cylinder, and finally the operator needs to set the regulator at the appropriate pressure for the material. A force gauge is often handy for calibration as well, because the weld head weight is not taken into account.

Electronic Air uses a pressure transducer and volume booster, allowing an operator to skip the steps laid out above and simply program the weld force. This feature is useful when production requires the frequent changing of materials or parts, or for welding single parts with variable thicknesses, or for factories where operators tend to forget to adjust the force settings.

If the welder is going to see the same parts 24/7/365, or has infrequent change-over, it makes less sense to spend the money for this option.



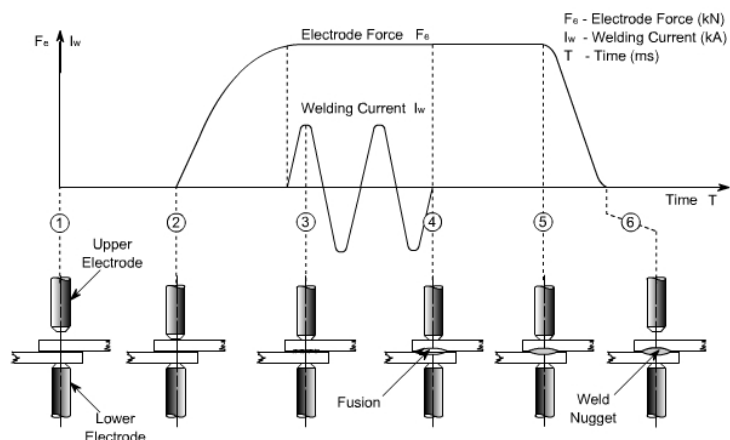
**OPTIMUM CONDITIONS
SCHEDULES FOR SPOT WELDING LOW CARBON STEEL—SAE 1010**

DATA COMMON TO ALL CLASSES OF SPOT WELDS				WELDING SETUP FOR BEST QUALITY—CLASS A WELDS				WELDING SETUP FOR MEDIUM QUALITY—CLASS B WELDS				WELDING SETUP FOR GOOD QUALITY—CLASS C WELDS							
Thick-ness of the Two Work Pieces (inches)	Electrode Diam. & Shape (inches)	Min. Spacing (inches)	Min. Overlap (inches)	Weld Time (Cycles)	Elec. Force (Pounds)	Welding Current (kA)	Welding Time (ms)	Diam. of Fused Zone (inches)	Average Tensile Strength x14% (Pounds)	Weld Time (Cycles)	Elec. Force (Pounds)	Welding Current (kA)	Welding Time (ms)	Diam. of Fused Zone (inches)	Average Tensile Strength x17% (Pounds)				
																Min. Con. (inches)	Min. Overlap (inches)	Weld Time (Cycles)	Welding Current (kA)
0.010	1/2	1/8	1/4	3/8	4	200	4900	13	235	5	130	3700	12	200	15	65	3000	11	160
0.021	1/2	3/16	3/8	7/16	6	300	6100	17	330	10	200	5100	16	450	22	100	3800	14	390
0.031	1/2	3/16	1/2	7/16	8	400	6000	21	980	15	275	6300	20	850	29	135	4700	18	790
0.040	5/8	1/4	3/4	1/2	10	500	6000	25	1305	21	360	7500	22	1230	38	180	5600	21	1180
0.050	5/8	1/4	7/8	3/16	12	650	6000	25	1620	24	410	6900	23	1700	42	205	6100	22	1600
0.062	5/8	1/4	1	5/8	14	800	1600	27	2350	29	500	9000	26	2150	48	250	6800	25	3050
0.078	5/8	5/16	1-1/8	11/16	21	1100	3300	31	3225	36	650	10400	30	3025	58	325	7900	28	2900
0.094	5/8	5/16	1-1/4	3/4	25	1300	4400	34	4100	44	790	11400	33	3900	68	390	8800	31	3750
0.109	7/8	3/8	1-5/16	13/16	29	1600	6100	37	5300	50	960	12200	36	5050	72	480	9500	35	4850
0.125	7/8	3/8	1-1/2	7/8	30	1800	7500	40	6900	60	1140	12900	39	6500	78	570	10000	37	6150

NOTES:
1. Low Carbon Steel as hot rolled, pickled, and slightly oiled with an ultimate strength of 42,000 to 45,000 PSI Similar to SAE 1005—SAE 1010.
2. Electrode Material is CMV-3.
3. Surface of steel is lightly oiled but free from grease, scale or dirt.
4. Minimum weld spacing is that distance for which no increase in welding current is necessary to compensate for the shunted current effect in adjacent welds.

5. Radius Face electrodes may be used 0.010 to 0.031 — 2" Radius 0.031 to 0.078 — 4" Radius 0.078 to 0.125 — 4" Radius
6. 7. Weld time is indicated in cycles of 60 cycle frequency.

8. Tensile shear strength values are based on recommended test sample sizes:
Direction of Force Thickness Width Length
0.010 to 0.021 1/8" 1/8" 3"
0.021 to 0.050 1/4" 1/4" 4"
0.050 to 0.062 3/8" 3/8" 6"
0.062 to 0.078 1/2" 1/2" 6"
0.078 to 0.109 3/4" 3/4" 6"
0.109 to 0.125 1" 1" 6"
9. Tolerance for manufacturing of electrode diameter "d" is ±0.015" of specified dimension.
10. Electrode force does not provide for force to press & filling parts together.



Cyl. Diam. in.	Cyl. Area Sq. in.	PRESSURE, PSI., GAGE							
		30	40	50	60	70	80	90	100
1	0.7854	24	31	39	47	55	63	71	79
2	3.1416	94	126	157	188	220	251	283	314
2.5	4.91	147	196	245	295	344	393	442	491
3	7.07	212	283	353	424	495	565	636	707
3.5	9.62	289	385	481	577	673	770	866	962
4	12.57	377	503	628	754	880	1,005	1,131	1,257
4.5	15.90	477	636	795	954	1,113	1,272	1,431	1,590
5	19.64	589	785	982	1,178	1,374	1,571	1,767	1,963
6	28.27	848	1,131	1,414	1,696	1,979	2,262	2,545	2,827
7	38.49	1,155	1,539	1,924	2,309	2,694	3,079	3,464	3,848
8	50.27	1,508	2,011	2,513	3,016	3,519	4,021	4,524	5,027
9	63.62	1,909	2,545	3,181	3,817	4,453	5,089	5,726	6,362
10	78.54	2,356	3,142	3,927	4,712	5,498	6,283	7,069	7,854
12	113.10	3,393	4,524	5,655	6,786	7,917	9,048	10,179	11,310
14	153.94	4,618	6,158	7,697	9,236	10,776	12,315	13,854	15,394
16	201.06	6,032	8,042	10,053	12,064	14,074	16,085	18,096	20,106
18	254.47	7,634	10,179	12,723	15,268	17,813	20,358	22,902	25,447
20	314.16	9,425	12,566	15,708	18,850	21,991	25,133	28,274	31,416

For Hydraulic pressures, multiply pressure per sq. in. and resultant pressures by 10.



Constant Current & Automatic Voltage Control



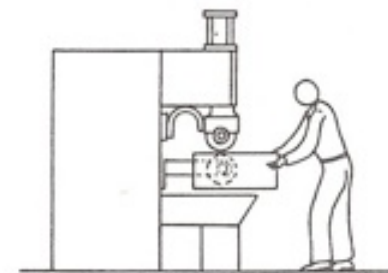
Functionality: The purpose of Constant Current is to compensate for the change in impedance induced in a spot welder as steel is pushed into the throat of the welding machine.

With many weld controls, this feature also will allow an operator to program a weld Current (amperage) into an individual weld schedule, instead of programming “percent heat”. On older or more simple weld controls, there is only control over the percent of the capability of the machine (0%-99%).

Fundamentally, spot welding is only a function of three simple variables: Current (a.k.a. “heat”), Time, and Force. On a traditional spot welder that is only programmed in “percent heat”, an operator can only know the percent of the capacity of their own machine, and can never compare that with other equipment. All specifications provided by the American Welding Society (AWS), all projects that require machinery calibration, and all available technical support is going to discuss weld Current (and not “percent heat”), as it is a common entity between all machines.

The Constant Current function “reads” the current, though either a primary or secondary coil, and uses an algorithm to compensate for variations in that current as it’s welding.

Another byproduct of this feature is that it will compensate for fluctuations in the incoming primary voltage supply to the machine (Automatic Voltage Control). Voltage in a plant can vary greatly throughout the day and many elusive welding anomalies can be attributed to these variations.

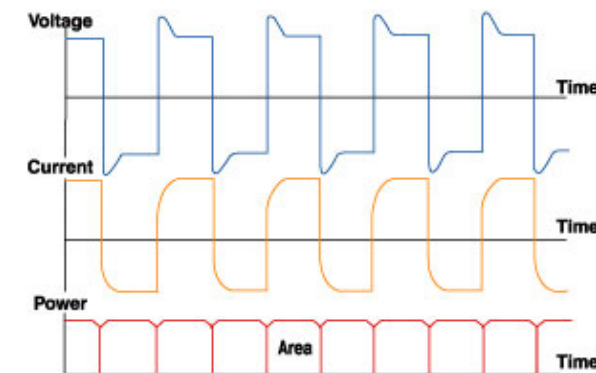
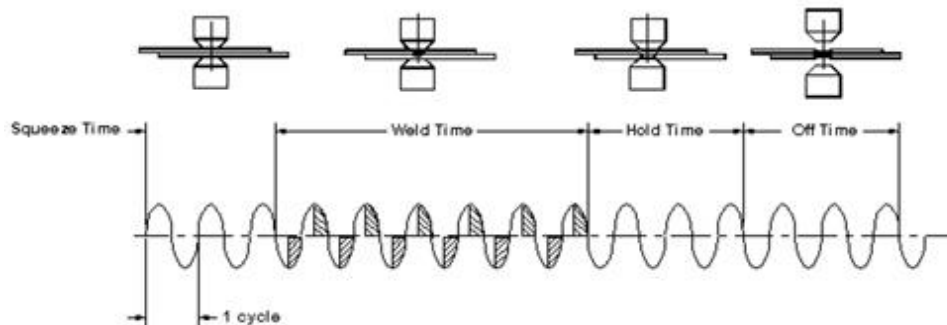
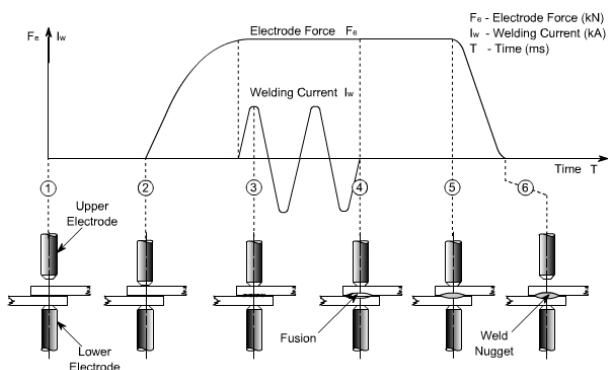


Primary Coil



Secondary Coils:

5"
8"

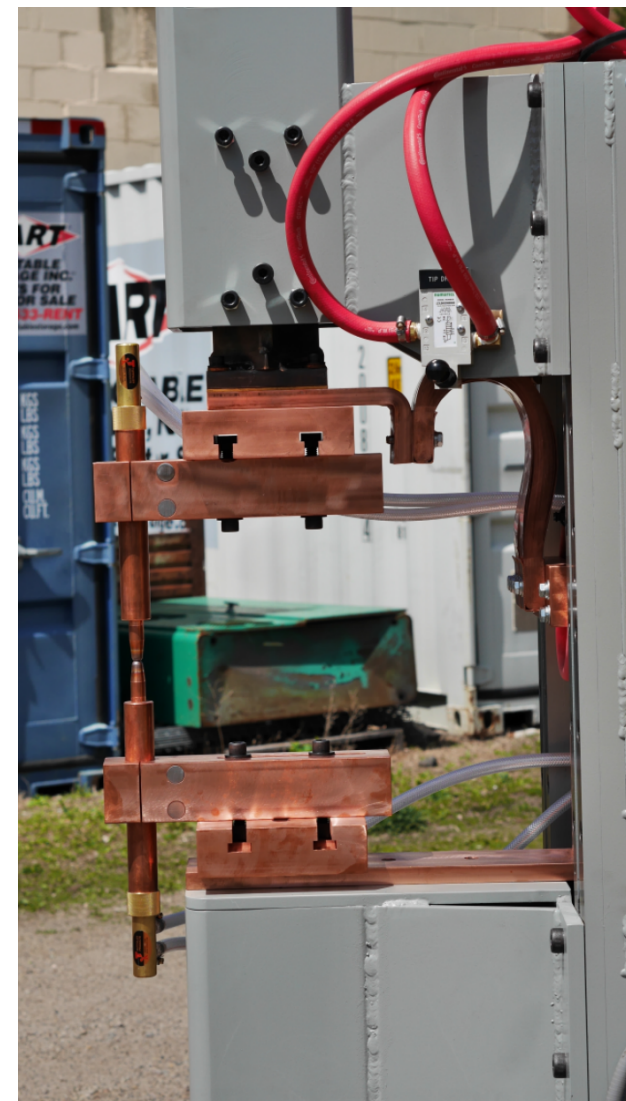
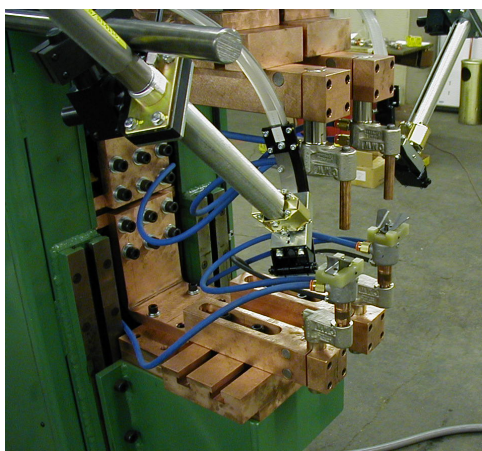




Platens

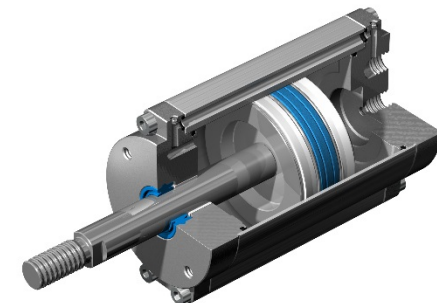
EASE OF USE

Improved Functionality: Welding Platens are copper pads mounted to the secondary of a welder and allow tooling to be more easily added and removed. Without platens, the machine will come with square arms bolted straight to the secondary bars.





Weld Cylinder Bore Increase

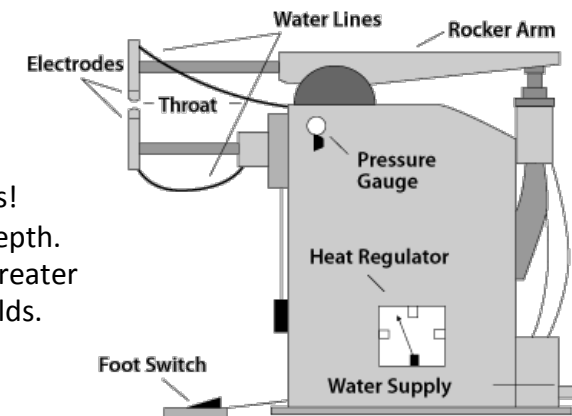


Productivity: Increasing the weld cylinder bore will provide greater forces for weld applications that need it.

Fundamentally, spot welding is only a function of three simple variables: Current (a.k.a. "heat"), Time, and Force. Force is equally as important as your welding Current and Time. As your material thickness increases, you need greater clamping force.

Many new high-strength steels, stainless steels, Titanium, and other metals require higher clamping forces than traditional mild steel. For this reason, we offer an upgrade in the size of the air cylinder.

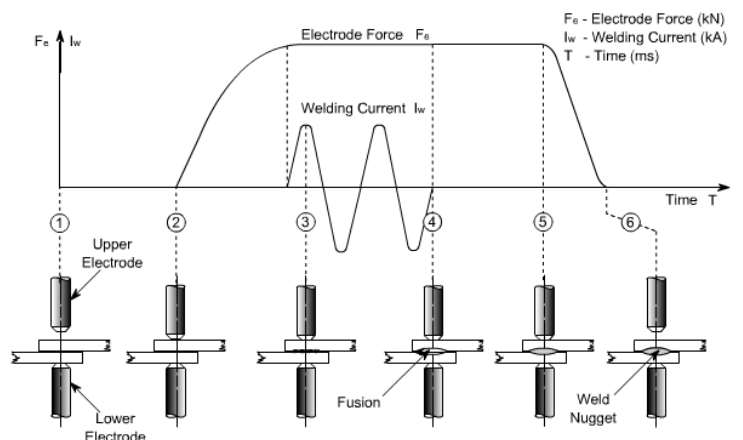
NOTE: Simply increasing the air cylinder bore will not always allow a machine to weld greater material thicknesses! There is an upper limit to what the frame of the welder is able to handle. It is typically directly related to throat depth. (Throat depth on a spot welder is the distance from the electrodes to the first obstruction on the machine). The greater the throat depth (cantilever), the more the frame will flex. Flex on a welder will provide inconsistent and poor welds.



OPTIMUM CONDITIONS SCHEDULES FOR SPOT WELDING LOW CARBON STEEL—SAE 1010

DATA COMMON TO ALL CLASSES OF SPOT WELDS		WELDING SETUP FOR BEST QUALITY—CLASS A WELDS				WELDING SETUP FOR MEDIUM QUALITY—CLASS B WELDS				WELDING SETUP FOR GOOD QUALITY—CLASS C WELDS							
Thick-ness of Top Piece (inches)	Thick-ness of Bot. Piece (inches)	Electrode Dia. (inches)	Min. Con. Spacing (inches)	Min. Con. Overlap (inches)	Weld Time (Cycles)	Exc. Force (Pounds)	Weld. Temp. (F)	Average Tensile Strength x14% (Pounds)	Weld Time (Cycles)	Exc. Force (Pounds)	Weld. Temp. (F)	Average Tensile Strength x17% (Pounds)	Weld Time (Cycles)	Exc. Force (Pounds)	Weld. Temp. (F)	Average Tensile Strength x20% (Pounds)	
0.10	1/2	1/8	1/4	3/8	4	200	4000	13	235	5	130	3700	12	200	15	65	3000
0.21	1/2	3/16	3/8	7/16	6	300	6100	17	330	10	200	5100	16	450	22	100	3800
0.31	1/2	3/16	1/2	7/16	8	400	6000	21	980	15	275	6300	20	850	29	135	4700
0.40	5/8	1/4	3/4	1/2	10	500	6000	25	1305	21	360	7500	22	1230	38	180	5600
0.50	5/8	1/4	7/8	3/16	12	650	6000	25	1820	24	410	8000	23	1700	42	205	6100
0.62	5/8	1/4	1	5/8	14	800	1600	27	2350	29	500	9000	26	2150	48	250	6800
0.78	5/8	5/16	1-1/8	11/16	21	1100	3300	31	3225	36	650	10400	30	3025	58	325	7900
0.94	5/8	5/16	1-1/4	3/4	25	1500	4700	34	4100	44	790	11400	33	3900	66	390	8800
1.09	7/8	3/8	1-5/16	13/16	37	1600	6100	37	5300	50	960	12200	36	5050	72	480	9500
1.25	7/8	3/8	1-1/2	7/8	30	1800	7500	40	6900	60	1140	12900	39	6500	78	570	10000

- NOTES:**
- Low Carbon Steel as hot rolled, pickled, and slightly oiled with an ultimate strength of 42,000 to 45,000 PSI. Similar to SAE 1005—SAE 1010.
 - Electrode Material is CMV-3.
 - Surface of steel is lightly oiled but free from grease, scale or dirt.
 - Minimum weld spacing is that distance for which no increase in welding current is necessary to compensate for the shunted current effect in adjacent welds.
 - Radius Face electrodes may be used 0.010 to 0.031 — 2" Radius 0.031 to 0.078 — 4" Radius 0.078 to 0.125 — 4" Radius
 - Electrode diameter is 1/16" to 1/2"
 - Weld time is indicated in cycles of 60 cycle frequency.
 - Tensile shear strength values are based on recommended test sample sizes: Direction of Force: Thickness: Width: Length: 0.010 to 0.031" — 3" 0.031 to 0.058" — 4" 0.058 to 0.088" — 4" 0.088 to 0.119" — 4" 0.119 to 0.150" — 6"
 - Tolerance for manufacturing of electrode diameter "d" is ±0.015 of specified dimension.
 - Electrode force does not provide for force to press & fitting parts together.



Cyl. Diam. in.	Cyl. Area Sq. in.	PRESSURE, PSI., GAGE							
		30	40	50	60	70	80	90	100
1	0.7854	24	31	39	47	55	63	71	79
2	3.1416	94	126	157	188	220	251	283	314
2.5	4.91	147	196	245	295	344	393	442	491
3	7.07	212	283	353	424	495	565	636	707
3.5	9.62	289	385	481	577	673	770	866	962
4	12.57	377	503	628	754	880	1,005	1,131	1,257
4.5	15.90	477	636	795	954	1,113	1,272	1,431	1,590
5	19.64	589	785	982	1,178	1,374	1,571	1,767	1,963
6	28.27	849	1,131	1,414	1,696	1,979	2,262	2,545	2,827
7	38.49	1,155	1,539	1,924	2,309	2,694	3,079	3,464	3,848
8	50.27	1,508	2,011	2,513	3,016	3,519	4,021	4,524	5,027
9	63.62	1,909	2,545	3,181	3,817	4,453	5,089	5,726	6,362
10	78.54	2,356	3,142	3,927	4,712	5,498	6,283	7,069	7,854
12	113.10	3,393	4,524	5,655	6,786	7,917	9,048	10,179	11,310
14	153.94	4,618	6,158	7,697	9,236	10,776	12,315	13,854	15,394
16	201.06	6,032	8,042	10,053	12,064	14,074	16,085	18,096	20,106
18	254.47	7,634	10,179	12,723	15,268	17,813	20,358	22,902	25,447
20	314.16	9,425	12,566	15,708	18,850	21,991	25,133	28,274	31,416

For Hydraulic pressures, multiply pressure per sq. in. and resultant pressures by 10.



Chiller / Recirculator

Productivity: Every pedestal-style industrial scale spot welder requires a water cooling source. One could argue that the key to a balanced spot welder is generating enough heat while controlling it's cooling. Every Spot Weld, Inc. standard spot welder has three or more water coolant circuits.

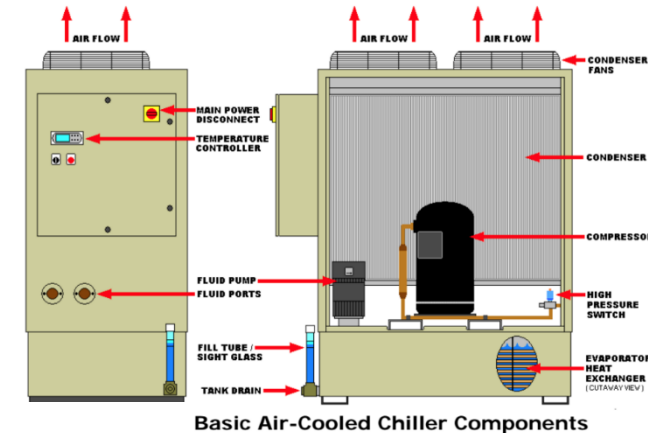
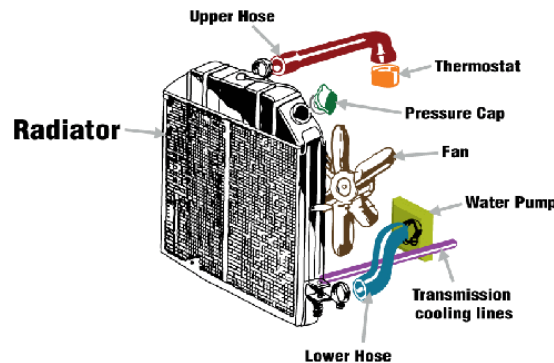
Generally, it is recommended to have at least 3.5 Gallons Per Minute (GPM) flow rate at between 35-50PSI.

Chillers vs. Water Recirculators: What's the difference between a chiller and a water recirculator? The major difference between the two is whether or not the unit contains a refrigerant.

An actual CHILLER will have a compressor and a pump to actively remove heat from the liquid flowing through it, using a refrigerant (much the same way a refrigerator or a drinking fountain works).

A WATER RECIRCULATOR does just that; it recirculates coolant through a radiator (much like the radiator in your car). It passively cools liquid by using a heat exchanger and cooling fins.

Do I need a chiller or a recirculator? There is no simple rule to determine whether you need a chiller or a recirculator. If you are welding in high production, welding aluminum, or other important or exotic applications, a chiller is the clear choice. If the production rate is low, or the machine is used infrequently, a recirculator is probably fine. Please contact us for details.





Hydraulic Force Gauge

Productivity: A hydraulic force gauge is an inexpensive way to measure force.

Fundamentally, spot welding is only a function of three simple variables: Current (a.k.a. “heat”), Time, and Force. Force is equally as important as your welding Current and Time. As your material thickness increases, you need greater clamping force.

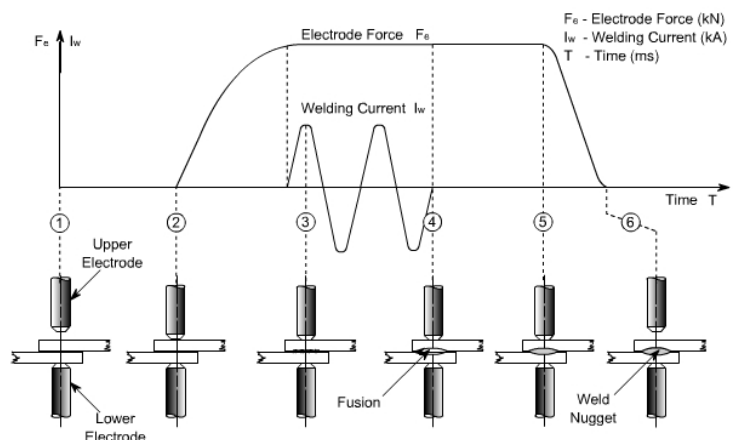
A force gauge is a handheld tool used for calibrating your weld force. Paper Certifications are typically available for additional cost.



**OPTIMUM CONDITIONS
SCHEDULES FOR SPOT WELDING LOW CARBON STEEL—SAE 1010**

DATA COMMON TO ALL CLASSES OF SPOT WELDS				WELDING SETUP FOR BEST QUALITY—CLASS A WELDS				WELDING SETUP FOR MEDIUM QUALITY—CLASS B WELDS				WELDING SETUP FOR GOOD QUALITY—CLASS C WELDS							
Thick-ness of the Top Electrode (inches)	Thick-ness of the Bottom Electrode (inches)	Min. Spacing (inches)	Min. Overlap (inches)	Weld Time (Cycles)	Electrode Force (Pounds)	Welding Current (kA)	Average Tensile Strength (Pounds)	Weld Time (Cycles)	Electrode Force (Pounds)	Welding Current (kA)	Average Tensile Strength (Pounds)	Weld Time (Cycles)	Electrode Force (Pounds)	Welding Current (kA)	Average Tensile Strength (Pounds)				
0.010	1/2	1/8	1/4	3/8	4	200	4900	13	235	5	130	3700	12	200	15	65	3000	11	160
0.021	1/2	3/16	3/8	7/16	6	300	6100	17	330	10	200	5100	16	450	22	100	3800	14	390
0.031	1/2	3/16	1/2	7/16	8	400	6000	21	980	15	275	6300	20	850	29	135	4700	18	790
0.040	5/8	1/4	3/4	1/2	10	500	6000	25	1305	21	360	7500	22	1230	38	180	5600	21	1180
0.050	5/8	1/4	7/8	3/16	12	650	6000	25	1620	24	410	6900	23	1700	42	255	6100	22	1600
0.062	5/8	1/4	1	5/8	14	800	1600	27	2350	29	500	9000	26	2150	48	250	6800	25	3050
0.078	5/8	5/16	1-1/8	11/16	21	1100	3300	31	3225	36	650	10400	30	3025	58	325	7900	28	2900
0.084	5/8	5/16	1-1/4	3/4	25	1500	4400	34	4100	44	790	11400	33	3900	66	390	8800	31	3750
0.109	7/8	3/8	1-5/16	13/16	29	1600	6100	37	5300	50	960	12200	36	5050	72	480	9500	35	4850
0.125	7/8	3/8	1-1/2	7/8	30	1800	7500	40	6900	60	1140	12900	39	6500	78	570	10000	37	6150

- NOTES:**
- Low Carbon Steel as hot rolled, pickled, and slightly oiled with an ultimate strength of 42,000 to 45,000 PSI. Similar to SAE 1005—SAE 1010.
 - Electrode Material is CMV³.
 - Surface of steel is lightly oiled but free from grease, scale or dirt.
 - Minimum weld spacing is that distance for which no increase in welding current is necessary to compensate for the shunted current effect in adjacent welds.
 - Radius Face electrodes may be used 0.010 to 0.031 — 2" Radius 0.031 to 0.078 — 3" Radius 0.078 to 0.125 — 4" Radius
 - Electrode Force is in pounds.
 - Weld time is indicated in cycles of 60 cycle frequency.
 - Tensile shear strength values are based on recommended test sample sizes: Direction of Force Thickness Width Length 0.007 to 0.020 — 3/8" 3" 0.020 to 0.050 — 1" 4" 0.050 to 0.080 — 1 1/2" 6" 0.080 to 0.110 — 1 1/2" 6" 0.110 to 0.150 — 2" 6"
 - Tolerance for manufacturing of electrode diameter "d" is ±0.015" of specified dimension.
 - Electrode force does not provide for force to press & fitting parts together.



Cyl. Diam. in.	Cyl. Area Sq. in.	PRESSURE, PSI., GAGE							
		30	40	50	60	70	80	90	100
1	0.7854	24	31	39	47	55	63	71	79
2	3.1416	94	126	157	188	220	251	283	314
2.5	4.91	147	196	245	295	344	393	442	491
3	7.07	212	283	353	424	495	565	636	707
3.5	9.62	289	385	481	577	673	770	866	962
4	12.57	377	503	628	754	880	1,005	1,131	1,257
4.5	15.90	477	636	795	954	1,113	1,272	1,431	1,590
5	19.64	589	785	982	1,178	1,374	1,571	1,767	1,963
6	28.27	848	1,131	1,414	1,696	1,979	2,262	2,545	2,827
7	38.49	1,155	1,539	1,924	2,309	2,694	3,079	3,464	3,848
8	50.27	1,508	2,011	2,513	3,016	3,519	4,021	4,524	5,027
9	63.62	1,909	2,545	3,181	3,817	4,453	5,089	5,726	6,362
10	78.54	2,356	3,142	3,927	4,712	5,498	6,283	7,069	7,854
12	113.10	3,393	4,524	5,655	6,786	7,917	9,048	10,179	11,310
14	153.94	4,618	6,158	7,697	9,236	10,776	12,315	13,854	15,394
16	201.06	6,032	8,042	10,053	12,064	14,074	16,085	18,096	20,106
18	254.47	7,634	10,179	12,723	15,268	17,813	20,358	22,902	25,447
20	314.16	9,425	12,566	15,708	18,850	21,991	25,133	28,274	31,416

For Hydraulic pressures, multiply pressure per sq. in. and resultant pressures by 10.



Low-Ride Casters

Productivity: Casters allow the machine to be moved with relative ease.

A spot welder is typically a stationary machine that requires dedicated services (power, air, and water) to make them run. They are not very portable. With that said, it is indeed possible to make them semi-portable if your facility properly equipped.

More important than portability however is cleaning and maintenance, and that is one of the prime reasons to get the machine mounted on castors. It allows the machine to be slid into a tighter space, when floor space is at a premium. It allows a service person to access all sides of the machine. It allows maintenance teams to move it for cleaning and organization.

We mount our castors on outriggers so that the height of the machine remains unaffected.

All four castors lock. The front two swivel.

