

Schnelldorfer CornerWelder



Quick Start Guide

Includes how to:

Start Up/Shut Down

Set Up Jobs

Solve Problems

Store Data

Perfect Welds Together

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1. Power Up & Shut Down
2. Maintenance Checklist
3. Job Set-Up
4. Problems & Solutions
5. CornerWeld Data Storage
6. Welding Parameters

CornerWelder Power Up Procedure

- Open gas supply 1 revolution, all bottles (*Picture 1*)
- Open compressed air valve (pg. 33 sec. 7.2) (*Picture 2*)
- Turn electric on at panel, wait for control to boot up (pg. 35 sec. 8.1.2) (*Picture 3*)
- Press Plant On button (pg. 37 sec. 8.2.1) (*Picture 4*)
- Press the Next button on the display screen (pg. 41 sec. 8.4.4) (*Picture 5*)
- Press the Home Position Travel button on display screen (pg. 41 sec. 8.4.5 step 1) (*Picture 6*)
- Press the Start button on the display screen (pg. 42 sec. 8.4.5 step 2) (*Picture 7*)
- Press the Home Icon button on the display screen (pg. 42 sec. 8.4.5 step 3) (*Picture 7*)
- Press the Gas Test button on the display screen (pgs. 44 & 45 sec. 8.4.2.1) (*Picture 8*)

CornerWelder Power Down Procedure

- Save any changes made to existing program (pg. 66 sec. 8.4.2.11.2)
- Press Plant Off button (pg. 37 sec. 8.2.2) (*Picture 1*)
- Clean welding blocks and clamping fingers (*Picture 2*)
- Close gas supply, all bottles (*Picture 3*)
- Close compressed air valve (pg. 33 sec. 7.2)
- Turn electric Off at panel (pg. 35 sec. 8.1.2) (*Picture 4*)

CornerWelder Power Up Procedures



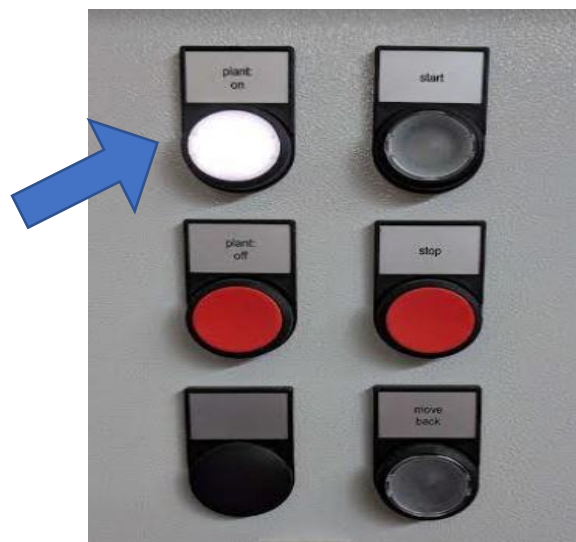
Picture 1



Picture 2



Picture 3

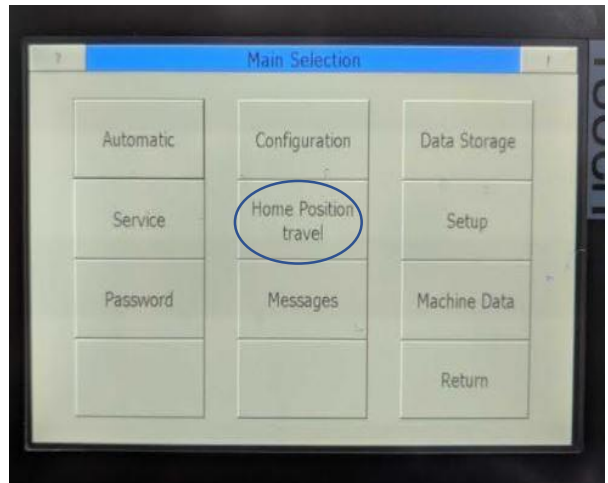


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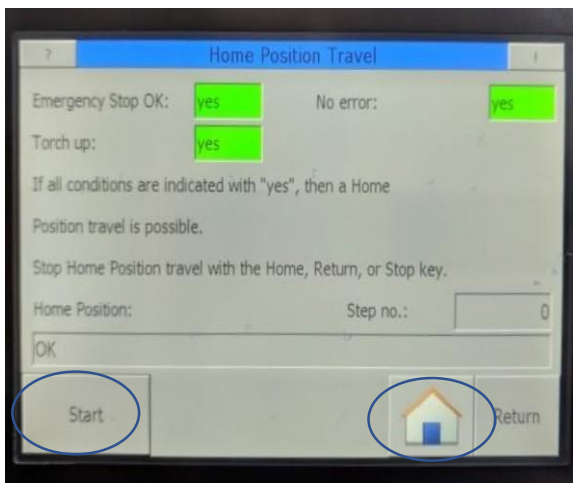
CornerWelder Power Up Procedures



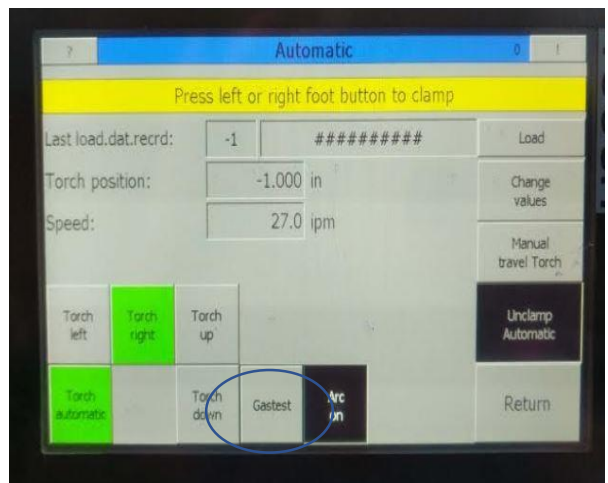
Picture 5



Picture 6

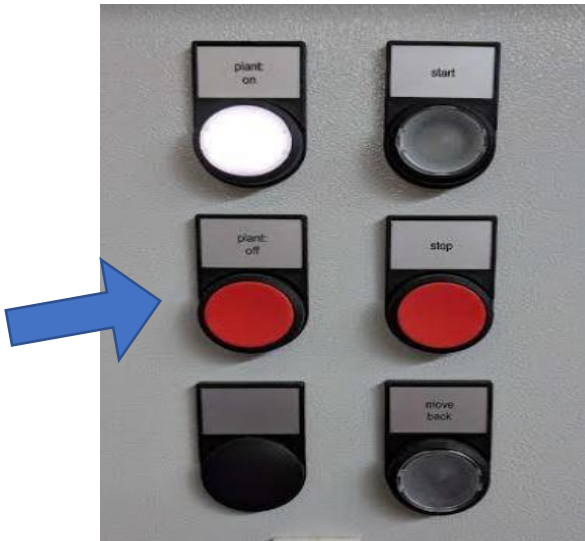


Picture 7

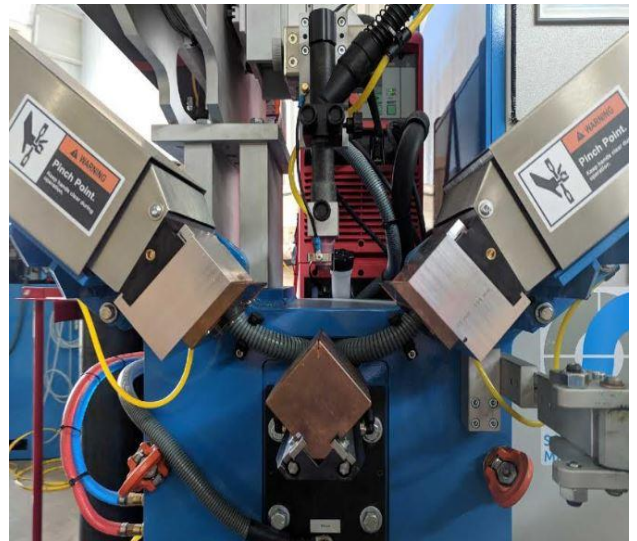


Picture 8

CornerWelder Power Down Procedures



Picture 1



Picture 2



Picture 3



Picture 4

Maintenance Checklist NimbleSafe 100-42

POST ON THE MACHINE CONTROL PANEL FOR DAILY VIEWING

DAILY MAINTENANCE:

Visual Inspection:

1. Nozzle
 - *Remove*, inspect for cracks, clean off burn marks
 - *Replace*, if cracked
2. Tungsten stick
 - *Check* height
 - *Grind* in tungsten grinder, if necessary
 - *Replace*, if necessary
3. Diffuser
 - *Clean* any residue
 - *Look* for clean path for welding gas
 - *Replace* if cleaning does not clear the debris
4. Gas bottles
 - *Check* gas volume remaining in each bottle
 - *Check* Liter pressure to the NimbleSafe – match set-up instructions?
 - Gas test – getting good gas pressure at all 4 locations?
5. Check air filter of compressed air input for excessive dirt or moisture
6. Copper
 - *Pull* copper, check gas holes to insure gas flow
 - If badly stained, *clean* copper with rag & acetone
 - use scotch brite gently if necessary
 - *Inspect* for good condition, replace as necessary

WEEKLY MAINTENANCE:

Daily Maintenance, plus **Clean** these devices at least once per week

1. Copper
2. Diffuser
3. Air Filter in air line
4. Filter on Chiller (some chillers do not have a filter)

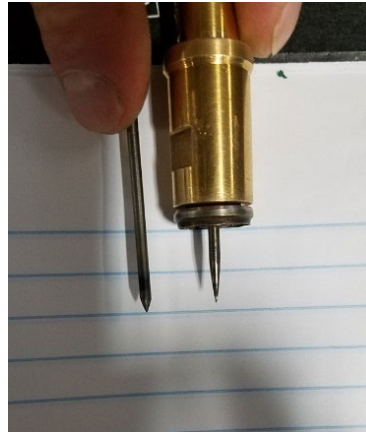
MONTHLY MAINTENANCE:

Daily & Weekly Maintenance, plus

1. *Check* the air & gas lines for leaks
2. *Replace* the Air Filter for the incoming compressed air
3. *Inspect* the sliding surfaces of the torch axis
 - *Clean & Spray* with a Teflon grease, if necessary

Perfect Welds Together

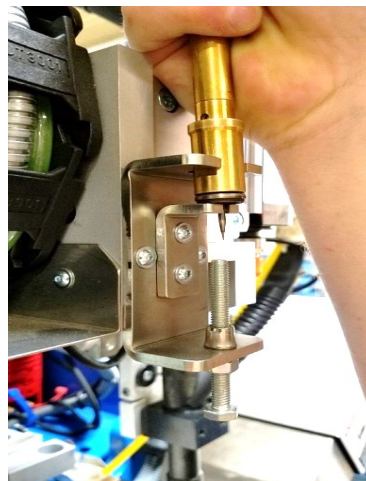
**Image 1 –
Incorrectly
ground
tungsten in
holder**



**Image 2 –
Diffuser
not
cleaned
regularly**



**Image 3 –
Tungsten
height not
properly set**



CornerWelder Job Set-Up Procedure

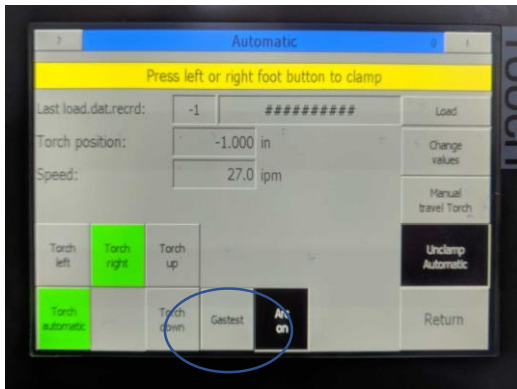
After Power Up procedure

- Press the Gas Test button on the display screen (*Picture 1*)
- Check for gas at Backing Blocks, Shield gas, and Clamp Fingers (*Picture 2*)
- Change out the backing blocks to match the part (*Picture 3*)
 - Use the closest possible combination
- Change out welding fingers to match the part (*Picture 4*)
 - Use the closest possible combination
- Insert part into the Nimble Safe (*Picture 5*)
- Set soft clamp (pgs. 35 & 36 sec. 8.1.4) (*Picture 6*)
 - Adjust the clamping fingers over the part
 - Adjust the part
- Set hard clamp (pgs. 35 & 36 sec. 8.1.4) (*Picture 6*)
- Manually raise the torch further, at least 2 revolutions using knurled knob (*Picture 7*)
- Remove the torch nozzle (*Picture 8*)
 - If the tip is dirty (see examples – *Pictures 9, 10, 11*)
 - Remove electrode assembly
 - Grind the tip in a tungsten grinder
 - Set the length in the fixture
 - Re-install into the torch assembly
- Reposition back shielding nozzle for better sight of the torch tip (*Picture 12*)
- Set electrode height to part (see manual) (*Picture 13*)
- Press the Manual Torch Travel button on the display screen (pg. 44 sec. 8.4.2.1) (*Picture 14*)
 - Set Torch Travel distance to Max Travel (pg. 48 sec. 8.4.2.3) (*Picture 15*)
- Position electrode over part (*Picture 16*)
- Press Torch Down button on display screen (*Picture 17*)

Perfect Welds Together

- Set electrode needle over the part manually to proper height (approx. 1mm above part) by using a feeler gauge (*Picture 18*)
 - See manual (pg. 34 sec. 7.6)
- Press the Torch Up button (*Picture 19*)
- Reassemble the torch nozzle & ground (*Picture 20*)
- Press the Torch Down button (*Picture 21*)
- Manually lock the shield gas housing just above the part (*Picture 22*)
- Press the Torch Up button (*Picture 23*)
- Press Return to auto screen (*Picture 24*)
- Load a program - material type & thickness (Possibly part number for special programs or tooling)
 - Press the Load button on the display screen (*Picture 25*)
 - Enter user name (Training level dependent) (*Picture 26*)
 - Enter password (Training level dependent) (*Picture 26*)
 - Press OK button on the display screen (*Picture 27*)
 - Press the Load button on the display screen (*Picture 28*)
 - Choose the correct program (*Picture 29*)
 - Press the Load button on the display screen (*Picture 30*)
 - Press the Yes button on the display screen (*Picture 31*)
- Press the Home Icon button (*Picture 32*)
- Push flashing Start button to start the weld (*Picture 33*)

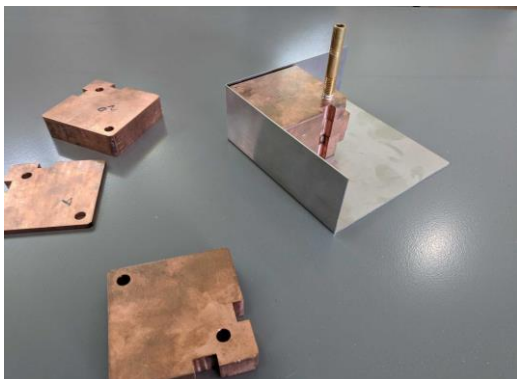
Job Set-Up Procedures



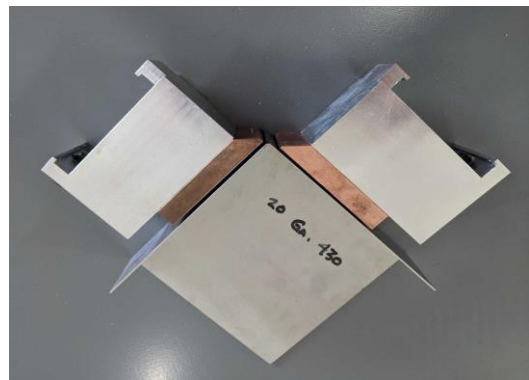
Picture 1



Picture 2



Picture 3



Picture 4



Picture 5



Picture 6

Job Set-Up Procedures (cont.)



Picture 7



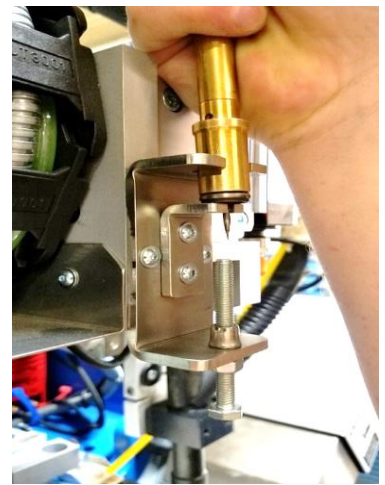
Picture 8



Picture 9



Picture 10



Picture 11

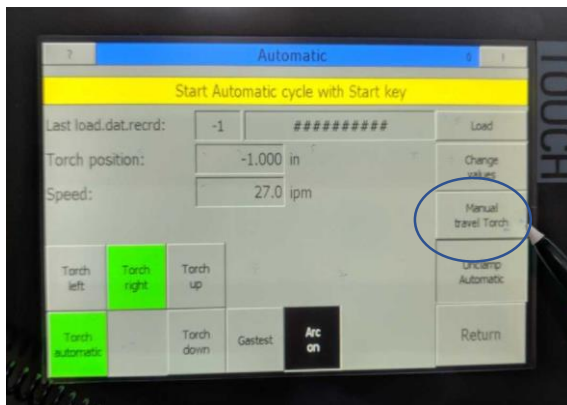
Job Set-Up Procedures (cont.)



Picture 12



Picture 13

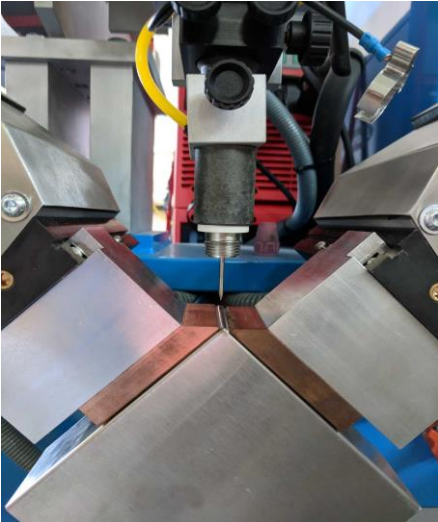


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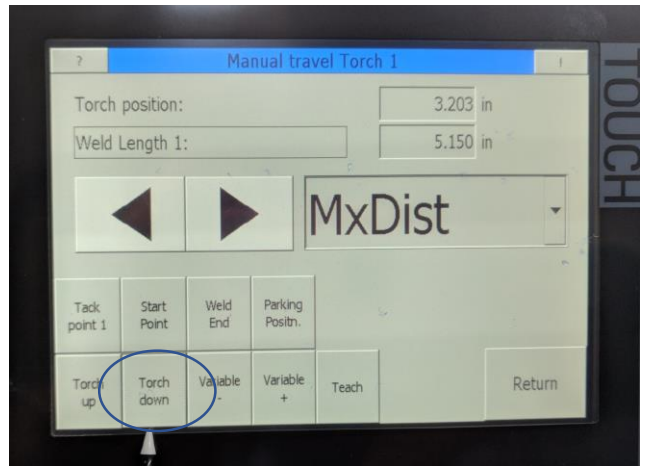


Picture 15

Job Set-Up Procedures (cont.)



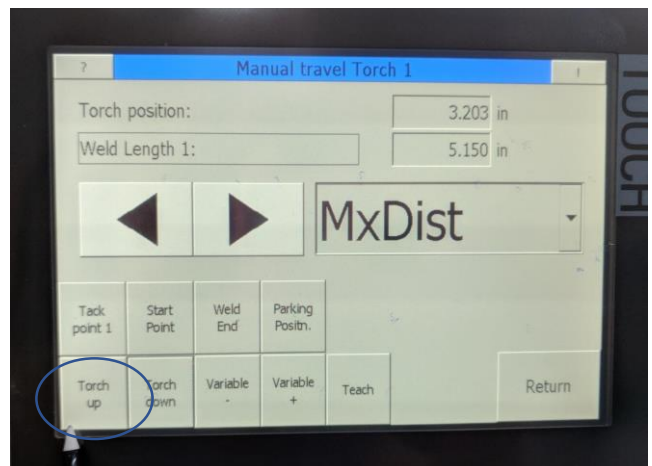
Picture 16



Picture 17



Picture 18

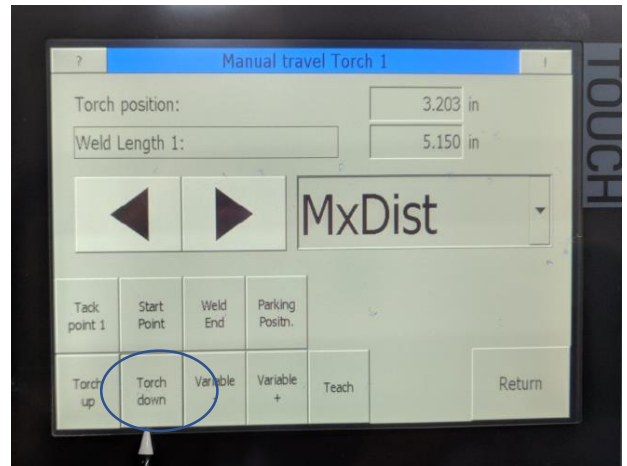


Picture 19

Job Set-Up Procedures (cont.)



Picture 20



Picture 21



Picture 22

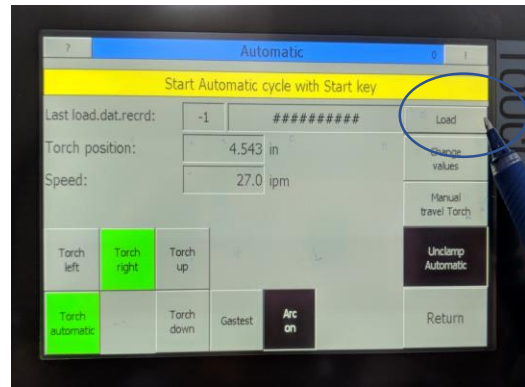


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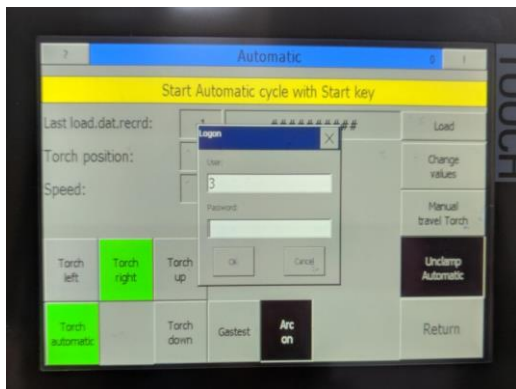
Job Set-Up Procedures (cont.)



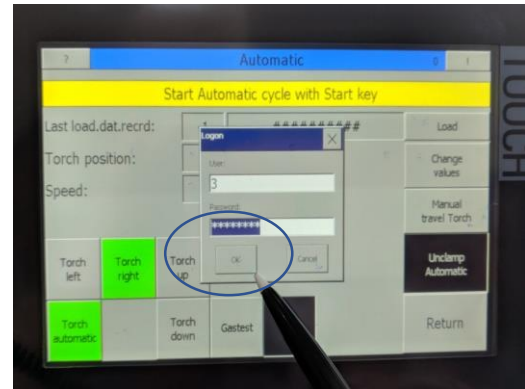
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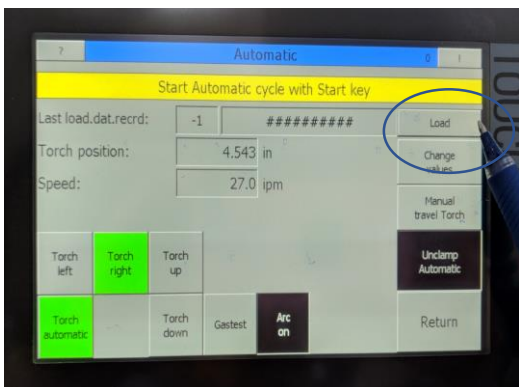
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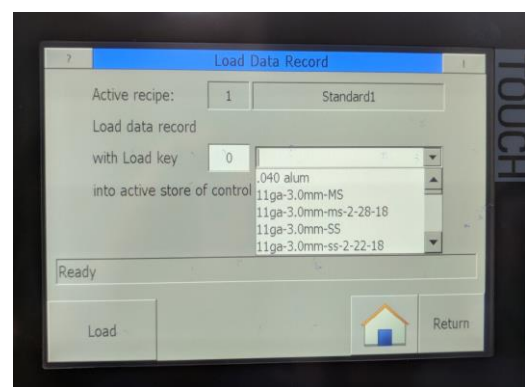
Picture 26



Picture 27

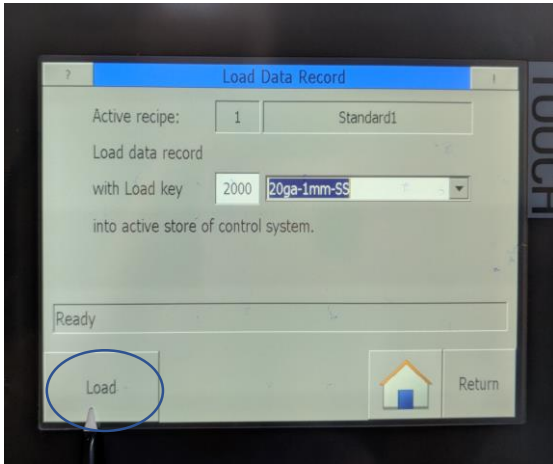


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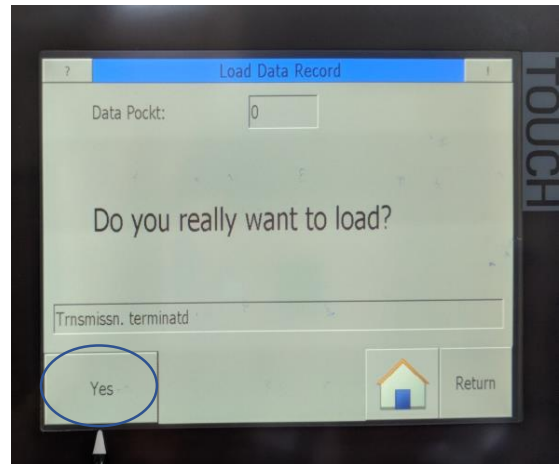


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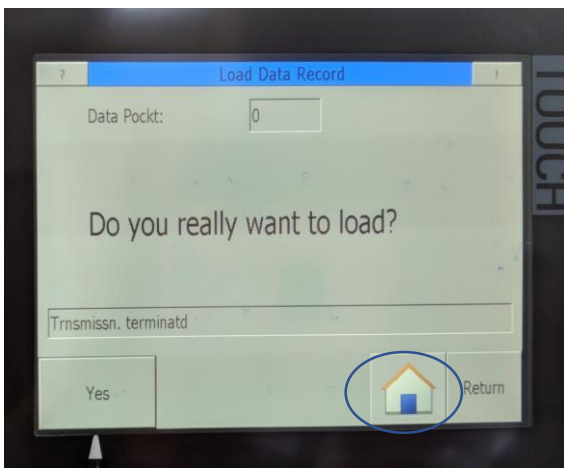
Job Set-Up Procedures (cont.)



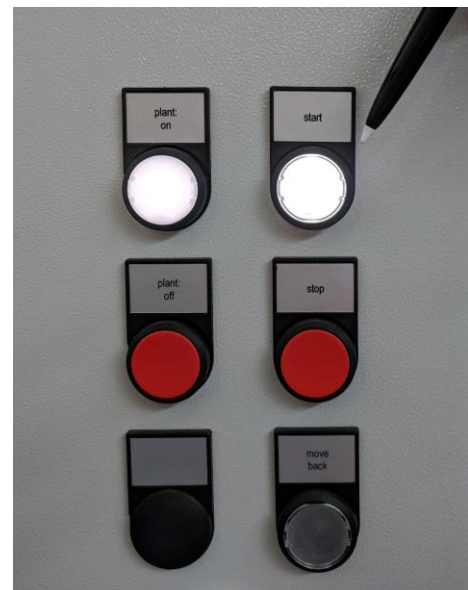
Picture 30



Picture 31



Picture 32



Picture 33

Set-Up Data Page for Each Program
NimbleSafe 100-42

**PLEASE KEEP THE SET-UP PAGE IN A BINDER NEAR THE MACHINE SO
THE OPERATOR CAN USE THIS TO CORRECTLY SET UP & POSITION THE
TOOLING FOR EACH PROGRAM BEING USED**

PROGRAM NUMBER: _____

Material Type: _____

Material Thickness: _____

Needle Type: _____

Needle Diameter: _____

Backing Block material: _____

Backing Block Size: _____
(special tool or segment sizes, Back to Front)

Clamp Finger material: _____

Clamp Finger Size: _____

Clamp Finger Distance to Weld Bead: _____ {position copper after 1st test weld}

Weld Gas setting: _____

Trail Gas setting: _____

Backing Gas setting: _____

Clamping Gas setting: _____

Problems and Solutions at Welding with the CornerWeld Machine

Problem: Coloration

- Solution:**
- Switch gas on (flowmeter, machine parameter, valve)
 - Adjust Carrie gas nozzle (direction, after torch)
 - Gas flow-times before and after
 - Adjust gas pressure
 - Clean material in front of welding

Problem: Penetration too low

- Solution:**
- More current I-O
 - Lower speed
 - Less wire-filler

Problem: Penetration too high

- Solution:**
- Less current
 - Higher speed
 - More wire-filler

Problem: Hole on the Start Point

- Solution:**
- Less start current I-O
 - Less pre-weld time
 - Higher upslope
 - Adjust start point more in material

Problem: Hole in Welding End

- Solution:**
- Less end current I-E
 - Less post-weld time
 - Lower downslope
 - Higher downslope length
 - Adjust welding-end more in material

Problem: Holes during welding

- Solution:**
- Clamping without gap
 - Adjust tungsten in the middle
 - Clean material

Problem: No Arc

- Solution:**
- Turn direction (Start point should be lower than welding end)
 - Adjust the Tungsten high (Same distance as material thickness)
 - Switch Arc on (Automatic menu)

Problem: Pores and bad welding

- Solution:**
- Switch gas on
 - Take care on Airflow (Fans, open windows and doors)
 - Choose the right operation (DC- or AC for Aluminum)
 - Change Tungsten (DC- = Blue 30°) (AC = green, point)

Problem: Wire fixed on the welding end

- Solution:**
- Higher coldwire hold-time
 - Lower coldwire lead-time
 - Higher coldwire downslope length

Problem: Welding overlap on one side

- Solution:**
- Adjust Tungsten in the middle
 - Adjust Copper-Clamping-Finger parallel
 - Check if bending is between 60-80% overlapping

Problem: Holes During the Welding

- Solution:**
- Clamping without gap
 - Adjust tungsten in the middle
 - Clean material

Problem: Gap will not close

- Solution:**
- Try to minimize the gap manually and weld with Filler-wire
 - Higher coldwire speed

CornerWelder Data Storage

Data storage begins on automatic screen (*Picture 1*)

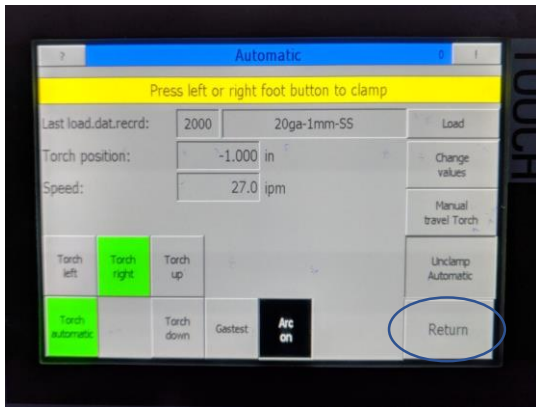
- **Save changes made to an existing program name**
 - Press Return button (*Picture 1*)
 - Press Data Storage (*Picture 2*)
 - Press Store Data Record (*Picture 3*)
 - Enter ID number (*Picture 4*)
 - Press Store (*Picture 4*)
 - Press Yes (*Picture 5*)
 - Question – Do you want to override existing ID Number? (*Picture 6*)
 - Press Yes (*Picture 6*)
 - Press Home Icon button (*Picture 6*)

- **Copy a program under a new name**
 - Press Return (*Picture 1*)
 - Press Data Storage (*Picture 2*)
 - Press Data Record Management (*Picture 3*)
 - Select program using blue up or down arrow (*Picture 4*)
 - Press Disc Icon (*Picture 5*)
 - Save As pop up, Change ID number and name (*Picture 6*)
 - Save As pop up, Press OK - New name will appear on the program menu
 - Press Home Icon (*Picture 7*)

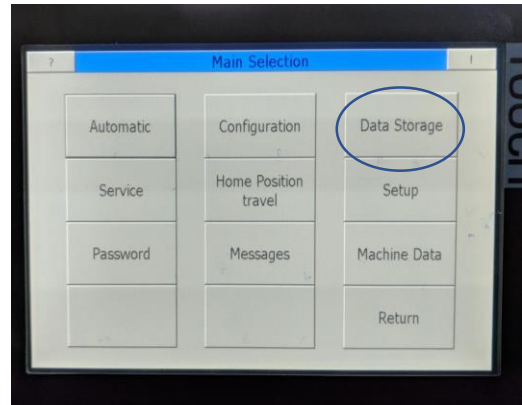
- **Change a program name**
 - Press Return (*Picture 1*)
 - Press Data Storage (*Picture 2*)
 - Press Data Record Management (*Picture 3*)
 - Select program to be changed using the blue up or down arrow (*Picture 4*)
 - Press the B – A Icon (*Picture 5*)
 - Rename pop up, Change the ID number and name (*Picture 6*)
 - Rename pop up, Press OK (*Picture 6*)
 - Press the Home Icon (*Picture 7*)

- **Load programs to and from a Flash Drive**
 - Press Return (*Picture 1*)
 - Press Data Storage (*Picture 2*)
 - Press Data Record Management (*Picture 3*)
 - Press Flash Drive icon – Blue for data from flash drive or Green for data to the flash drive (Password pop up Production management ID number and Password is required) (*Picture 5*)
 - **Use a dedicated Flash Drive for NimbleSafe programs only**
 - **The NimbleSafe will only transfer entire content of Welder on Flash Drive**
 - Press the Home Icon (*Picture 6*)

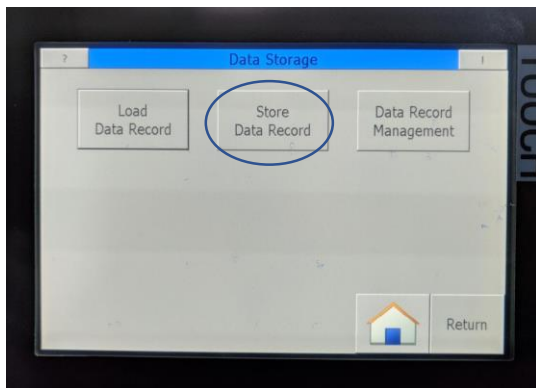
Save changes to an existing program name



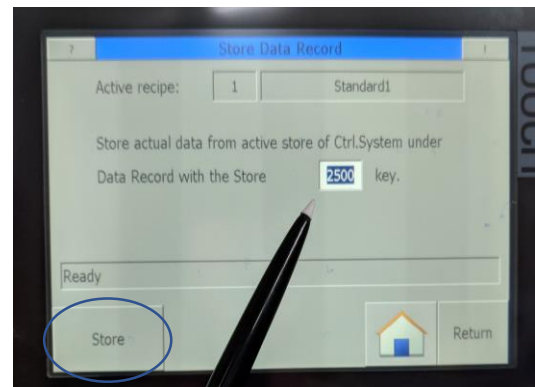
Picture 1



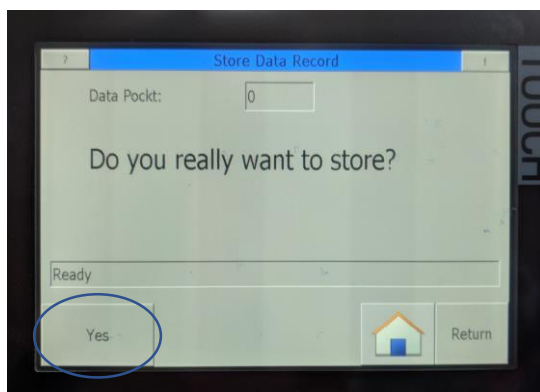
Picture 2



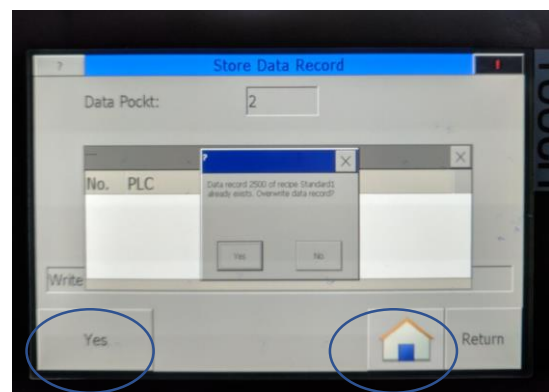
Picture 3



Picture 4

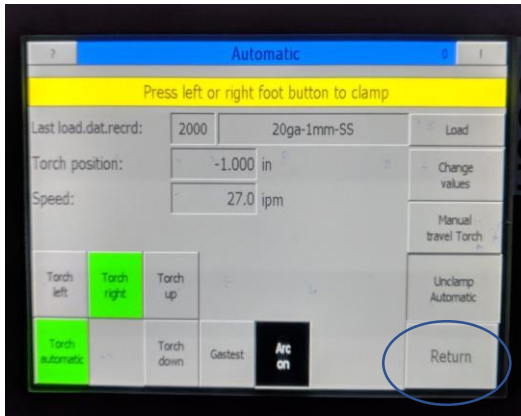


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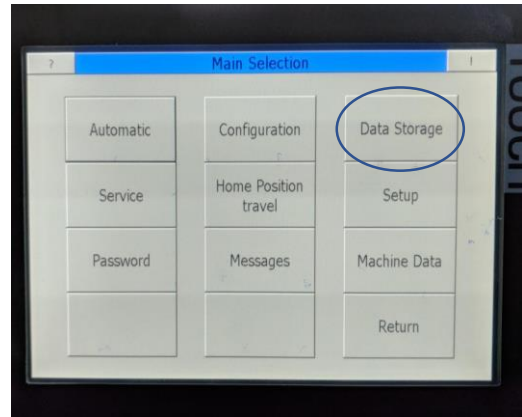


Picture 6

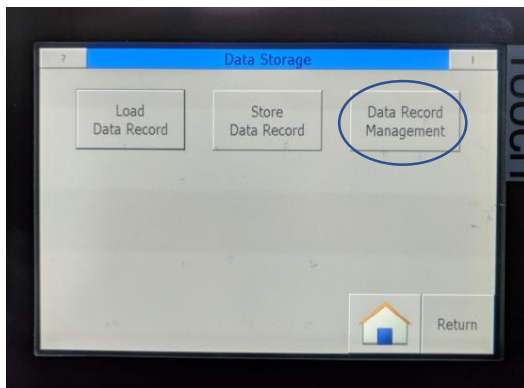
Copy a program under a new name



Picture 1



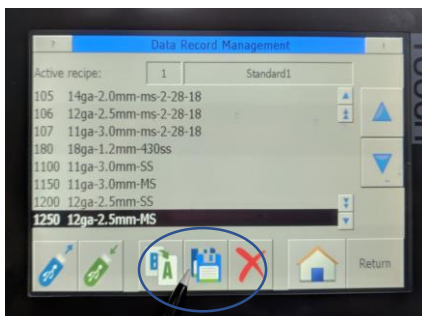
Picture 2



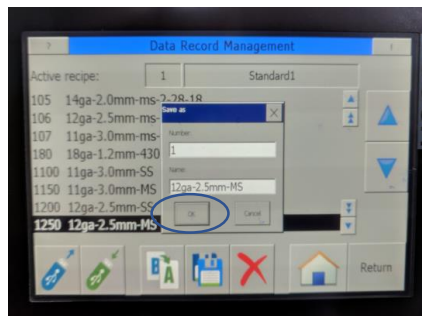
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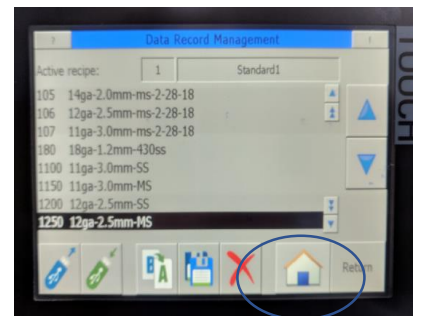
Picture 4



Picture 5

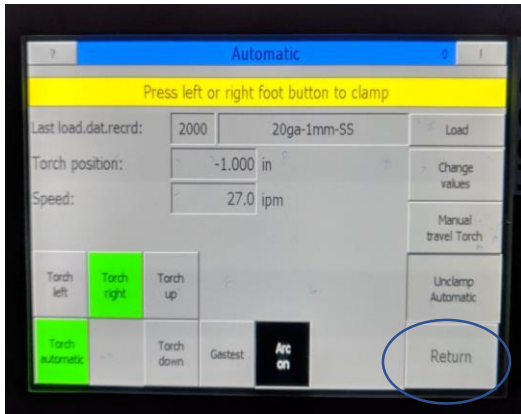


Picture 6

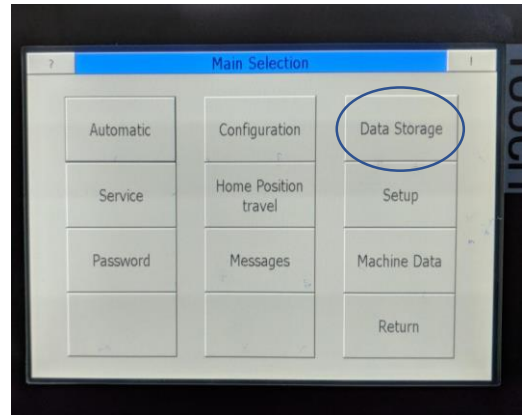


Picture 7

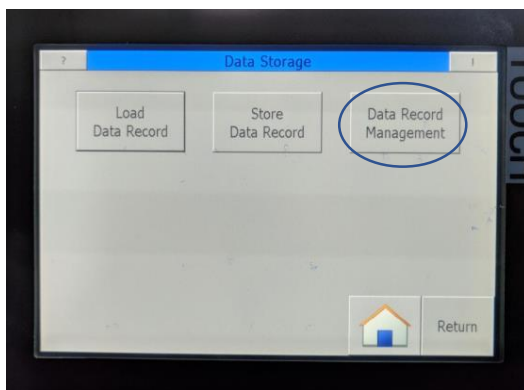
Change a program name



Picture 1



Picture 2



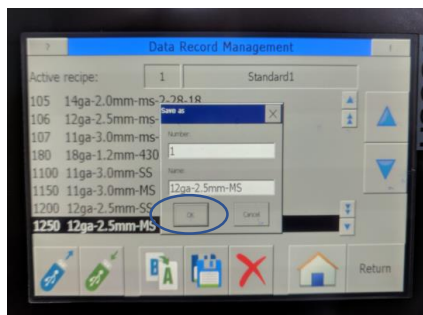
Picture 3



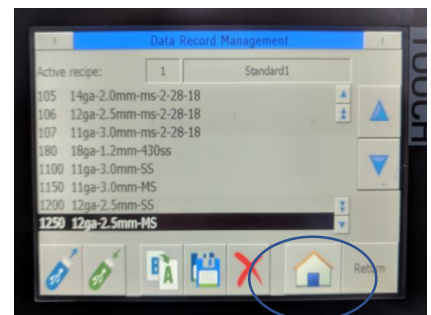
Picture 4



Picture 5

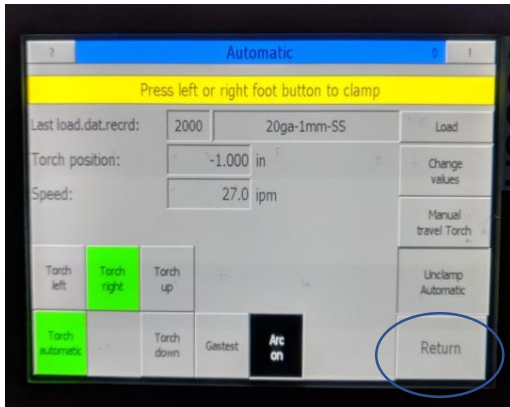


Picture 6

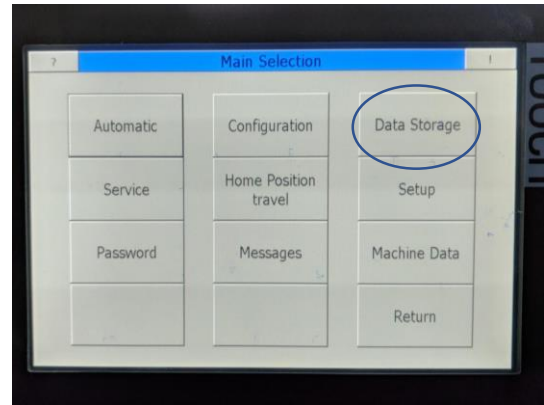


Picture 7

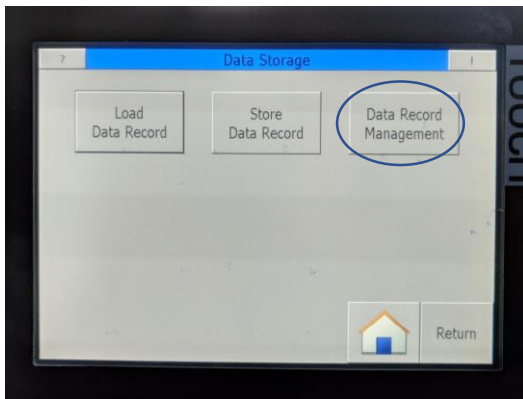
Load programs to and from a flash drive



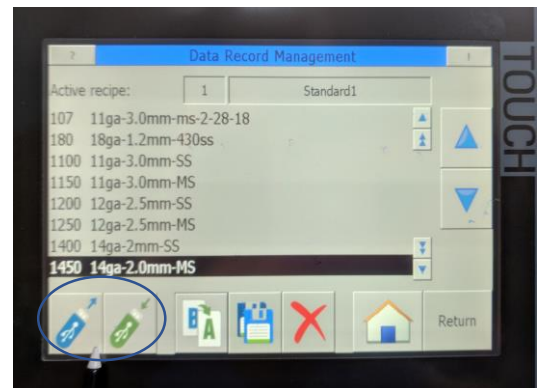
Picture 1



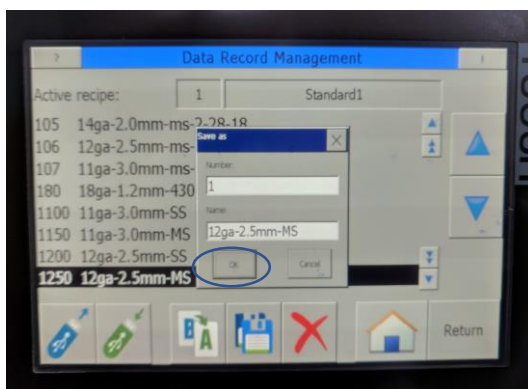
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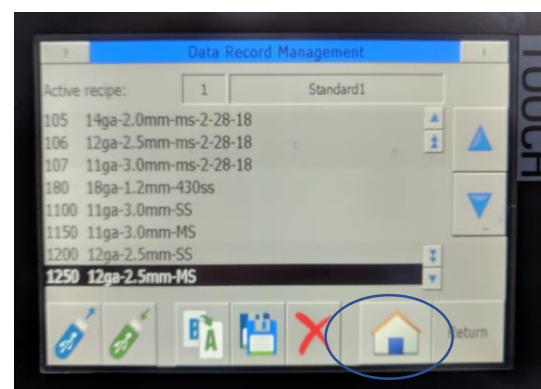
Picture 3



Picture 4



Picture 5



Picture 6

Welding Parameters - Stainless Steel

Parameter Name	316L 1,2mm Pulse	316L 1,2mm Re to Fr	316L 1,2 PUL Fr>Re	316L 1,5mm Argon	316L 1,5mm Re to fr	316L 2,0mm Pulse	316L 0,3mm	316L 0,5mm	316L 1,0mm	316L 1,5mm	316L 2,0mm	316L 2,5mm	316L 3,0mm	
Parameter Number	12	13	14	15	16	20	103	105	110	115	120	125	130	
Welding Parameter														
Welding Parameter	Unit													
No. of Segments	Segments	1	1	1	1	1	1	1	1	1	1	1	1	
Start point 1	mm	25.7706	440	13.67929	8.785492	440	122.8486	5	356.5	439.3382	1	1	0	18
Welding length 1	mm	501.5795	506.4842	441.7457	74	506.4842	421.0594	295	502	506.4842	200	200	200	185
Welding Speed	cm/min	70	70	70	65	65	50	150	100	70	60	50	40	25
Gas pre-flowtime	sec	2	2	2	2	2	2	1	2	2	2	2	2	2
Gas after-flowtime	sec	2	2	2	2	2	2	2	2	2	4	4	4	4
Parkposition	mm	300	300	300	300	300	300	0	300	300	0	0	0	0
Gas pre-flowtime torch	sec	2	2	2	2	2	2	2	2	2	2	2	2	2
pre-weldtime	sec	0.1	0.1	0.1	0.1	0.1	0.1	0	0.1	0.1	0.2	0.2	0.2	0.2
Startcurrent I-S	A	40	40	40	40	40	85	8	20	40	90	100	120	170
Upslope	sec	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.2	0.2	0.4	0.4	0.4	0.4
Maincurrent I-O	A	100	95	100	100	100	120	25	65	85	105	130	170	240
No. Of Switch length		0	0	0	0	0	0	0	0	0	0	0	1	0
Downslope length	mm	2.5	2.5	2.5	2.5	2.5	2.5	3	3	3	5	5	5	5
Downslope	sec	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.5	0.5	0.2	0.2
End Current I-E	A	25	25	25	25	25	46	6	12	20	80	100	140	140
post-weldtime	sec	0.3	0.3	0.3	0.3	0.3	0.1	0	0.1	0.1	0.1	0.1	0.1	0.1
Gas after-flowtime torch	sec	8	8	8	8	8	8	2	8	8	2	2	2	2
Welding Machine Parameter														
Type of Operation	DC- / AC	DC-	DC-	DC-	DC-	DC-	DC-	DC-	DC-	DC-	DC-	DC-	DC-	DC-
Second Current	%	70	70	70	70	70	70	0	70	70	90	90	90	90
Frequency	Hz	65	65	65	65	65	65	0.2	65	65	90	90	90	90
DC-Balance	%	20	20	20	20	20	20	10	10	20	10	10	10	20
AC-Balance	%	0	0	0	0	0	0	0	0	0	0	0	0	0
Pulse	on / off	on	off	on	off	off	off	off	on	on	off	off	on	on
Coldwire Parameter														
Coldwire	on / off	off	off	off	off	off	on	off	off	off	off	off	off	off
Coldwire delay time	sec	0.1	0.1	0.1	0.1	0.1	0.1	0	0.1	0.1	0	0	0	0
Speed Wirefiller	cm/min	50	50	50	50	50	50	1	50	50	1	1	1	1
No. Of switch length	No.	0	0	0	0	0	0	0	0	0	0	0	0	0
Downslope length	mm	0	0	0	0	0	0	0	0	0	0	0	0	0
Wire Holdtime	sec	0.2	0.2	0.2	0.2	0.2	0.3	0	0.2	0.2	0	0	0	0
Wire Leadtime	sec	0	0	0	0	0	0	0	0	0	0	0	0	0
Tack Parameter														
Tack	on / off	off	off	off	off	off	off	off	off	off	off	off	off	off
No. Of Tacks	No.	5	5	5	5	5	1	1	5	5	1	1	1	1
Tack position 1	mm	400	10	400	10	10	79.8	0	10	10	198	0	0	0
Tack position 2	mm	375	11	375	11	11	0	0	11	11	0	0	0	0
Tack position 3	mm	350	12	350	12	12	0	0	12	12	0	0	0	0
Tack position 4	mm	325	13	325	13	13	0	0	13	13	0	0	0	0
Tack position 5	mm	40	15	40	15	15	0	0	15	15	0	0	0	0
Tack Time	sec	1	1	1	1	1	2	0	1	1	2	0	0	0
Tack Current	A	40	80	40	80	80	80	3	80	80	80	3	3	3
Gas after Flowtime	sec	1	0	1	0	0	0	0	0	0	2	0	0	0
Coldwire	on / off	off	off	off	off	off	off	off	off	off	off	off	off	off
Coldwire Delaytime	sec	0	0	0	0	0	0	0	0	0	0	0	0	0
Coldwire Speed	cm/min	1	1	1	1	1	1	1	1	1	1	1	1	1
Machine Parameter														
Parkposition	on / off	on	on	on	on	on	on	off	on	on	off	off	off	off
Partstop position	mm	0	0	90	90	0	0	190	0	0	190	190	190	90
Back sheilding gas	on / off	on	on	on	on	on	on	on	on	on	on	on	on	on
Carrie gas (sheilding nozzle)	on / off	on	on	on	on	on	on	on	on	on	on	on	on	on
Direction	fr>re / re>fr	re>fr	re>fr	fr>re	fr>re	re>fr	fr>re	fr>re	re>fr	re>fr	fr>re	fr>re	fr>re	fr>re

